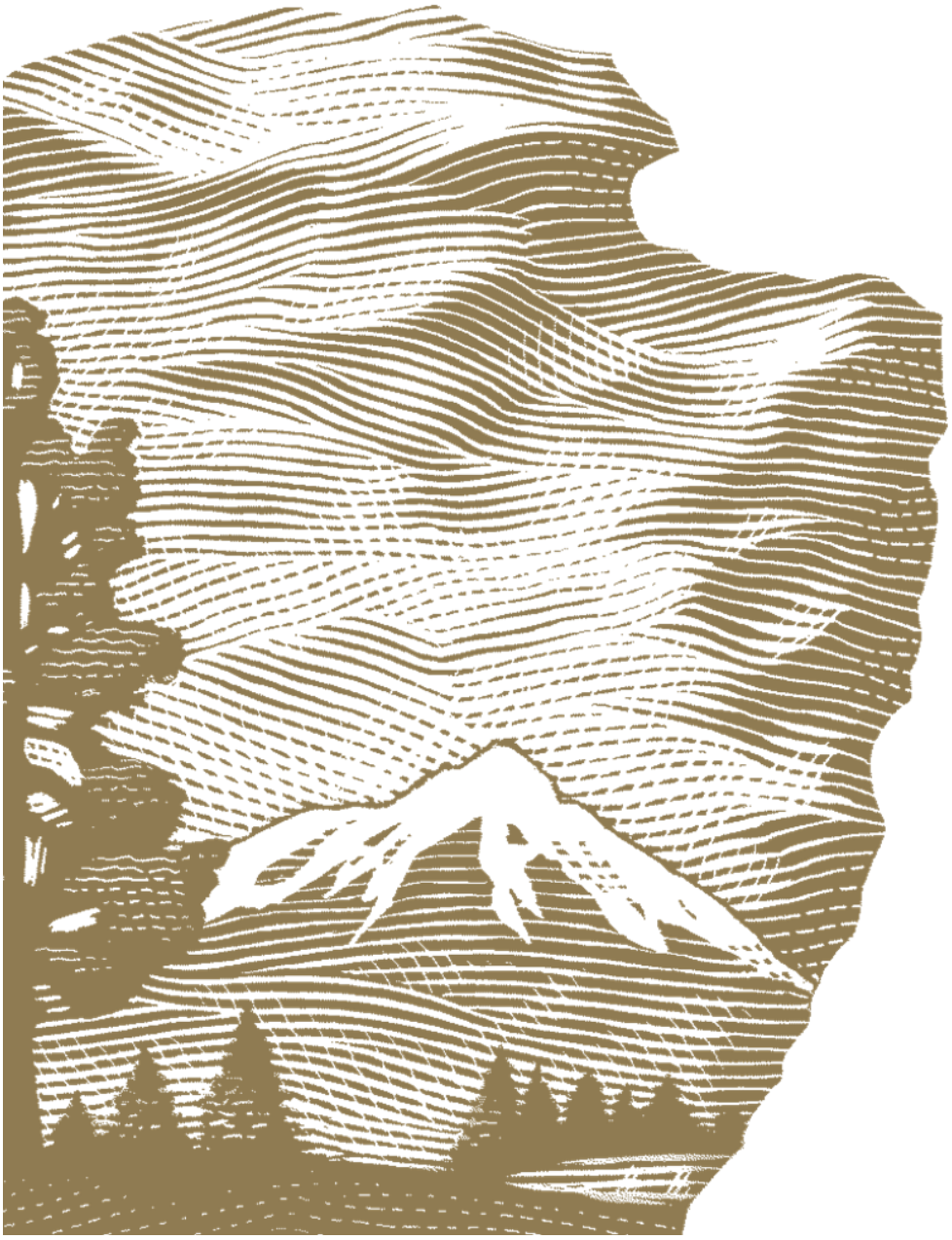
National Park Service
U.S. Department of the Interior

South Atlantic-Gulf Region 2

JELA BARATARIA PRESERVE
Future Conditions Modeling Study
Modeling Report

Contract: ***140P2019D0008-5220F0044***

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CROFT

moffatt & nichol

National Park Service
JELA Barataria Preserve Future Conditions Modeling



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EXECUTIVE SUMMARY

The objective of the Barataria Preserve Future Conditions Modeling project is to provide park managers with scientifically rigorous projections of key coastal environmental conditions across the Barataria Preserve landscape over the next 25 to 50 years. The park will use these projections to inform and guide park planning and to prioritize management endeavors over this interval.

To provide projections of future coastal conditions at the preserve, M&N performed a modeling study based in part on the Louisiana Coastal Master Plan Integrated Compartment Model (ICM) modeling approach. Two complementary coastal numerical models were developed for this study: a detailed hydrodynamic model of the Barataria Basin that represents the complex basin and JELA Barataria Preserve landscape with high resolution; and a "downscaled" JELA ICM that offers improved resolution and representation of the hydrology in the upper basin.

Both models were calibrated using measured water levels and salinities throughout the basin and within the preserve to ensure they adequately reproduced recent historic conditions in the preserve. The models were then used to provide projections of coastal landscape and hydrologic conditions at the preserve over a future 50-year period. To account for uncertainty in the key drivers of future conditions, several future climate and project scenarios were developed to provide a range of plausible outcomes. A total of three climate scenarios, with varying SLR, subsidence, and precipitation boundary conditions, and four project scenarios were developed. The project scenarios analyze the impacts of two proposed large Mississippi River sediment diversions.

The JELA ICM model was used to simulate the 12 future conditions scenarios each for a 52-year period, providing water level and salinity results and coastal landscape and wetland vegetation community evolution results. The hydrodynamic model was coupled with the JELA ICM model to utilize the same changing boundary conditions due to SLR and restoration project implementation as in the ICM, updated to include the ICM-predicted changes to the coastal landscape and vegetation in future years. Yearlong simulations were then conducted once every decade of the 50-year future conditions analysis period.

Results from both models show consistent trends for future water level and salinity conditions in the preserve that vary according to climate or project scenario. Water levels for all simulations increase through time along with SLR, with water levels for the Intermediate-High and High scenarios deviating significantly from the Low scenario by approximately 2050. The Mid Barataria Sediment Diversion (MBSD) influence on water levels is relatively minor in areas of the preserve north of the GIWW, while the Ama Sediment Diversion (ASD) increases water levels across the preserve landscape. With no diversion project implementation, the salinity regime in the preserve would remain relatively stable for the next 30 to 40 years, then could become significantly saltier under higher SLR climate scenarios. The MBSD reduces salinities across the preserve, especially areas south of the GIWW until the later decades in high SLR scenarios. The ASD would lower salinities in the preserve significantly, keeping the preserve completely fresh for several decades after diversion implementation.

Coastal landscape trajectories vary significantly among the three climate scenarios. In the low scenario, most of the preserve landscape remains as marsh through 50 years, though with shifting vegetation community dynamics that vary with project scenario. In the Intermediate-High scenario, significant land loss does not occur until the later decades of the simulation, and total land loss at the end of the simulation as well as vegetation community composition is heavily influenced by project implementation. Finally, in the High scenario, nearly all preserve land area is lost by year 50 regardless of project scenario, but the collapse of certain areas is delayed or accelerated depending on which diversion project is implemented. Importantly, loss of the preserve landscape appears to be accelerated by the ASD with higher inundation.

1. INTRODUCTION

1.1. Barataria Preserve

This project addresses the Barataria Preserve in Jefferson Parish, Louisiana, one of six sites of Jean Lafitte National Historical Park and Preserve (JELA, the park). The Barataria Preserve (the preserve) protects 26,000 acres of primarily freshwater deltaic wetlands in the Mississippi River delta's Barataria Basin (National Park Service, 2020). These wetlands are among the most biologically productive ecosystems in North America, and they sustain some of the richest fisheries on the planet. The preserve's floating marshes are one of only four large estuarine floating freshwater marsh systems in the world. The preserve reflects thousands of years of human interaction with the land from American Indian shell middens to canals built for drainage, navigation, logging, and oil and gas development. The park aims to protect and conserve the natural landscape, its biological diversity, its human history and the diverse cultural traditions it has inspired and nurtured. As part of the National Park Service (NPS) system, the Barataria Preserve hosts nearly 300,000 recreation visitors annually who walk trails, canoe waterways, and attend programs designed to inspire stewardship and to share an understanding of the area and the challenges it faces due to rising seas and sinking land (National Park Service, 2020).

The Barataria Preserve is located in the upper Barataria Basin (see Figure 1-1), to the south of the West Bank of greater New Orleans and adjacent to the West Bank and Vicinity hurricane protection levee system (U.S. Army Corps of Engineers, 2019). Barataria Basin is bounded by Bayou Lafourche to the west, the west bank of the Mississippi River to the north and east and is separated from the Gulf of Mexico by a chain of barrier islands hydraulically connected to the Gulf through tidal inlets. The lower (southern) basin consists of a large system of shallow, interconnected bays and tidal marshes, while the upper (northern) basin contains more land area surrounding several large, shallow lakes (U.S. Army Corps of Engineers and G.E.C., Inc. , 2021). The Barataria Waterway (BWW) navigation channel runs from Barataria Pass north through the Preserve, while the middle Basin is traversed by the Gulf Intracoastal Waterway (GIWW) navigation channel. Hydrodynamics and circulation in the Basin are influenced by tides, winds, and precipitation, and modern freshwater inflows are limited to precipitation, urban runoff, and several controlled diversions from the Mississippi River (Georgiou, FitzGerald, & Stone, 2005).

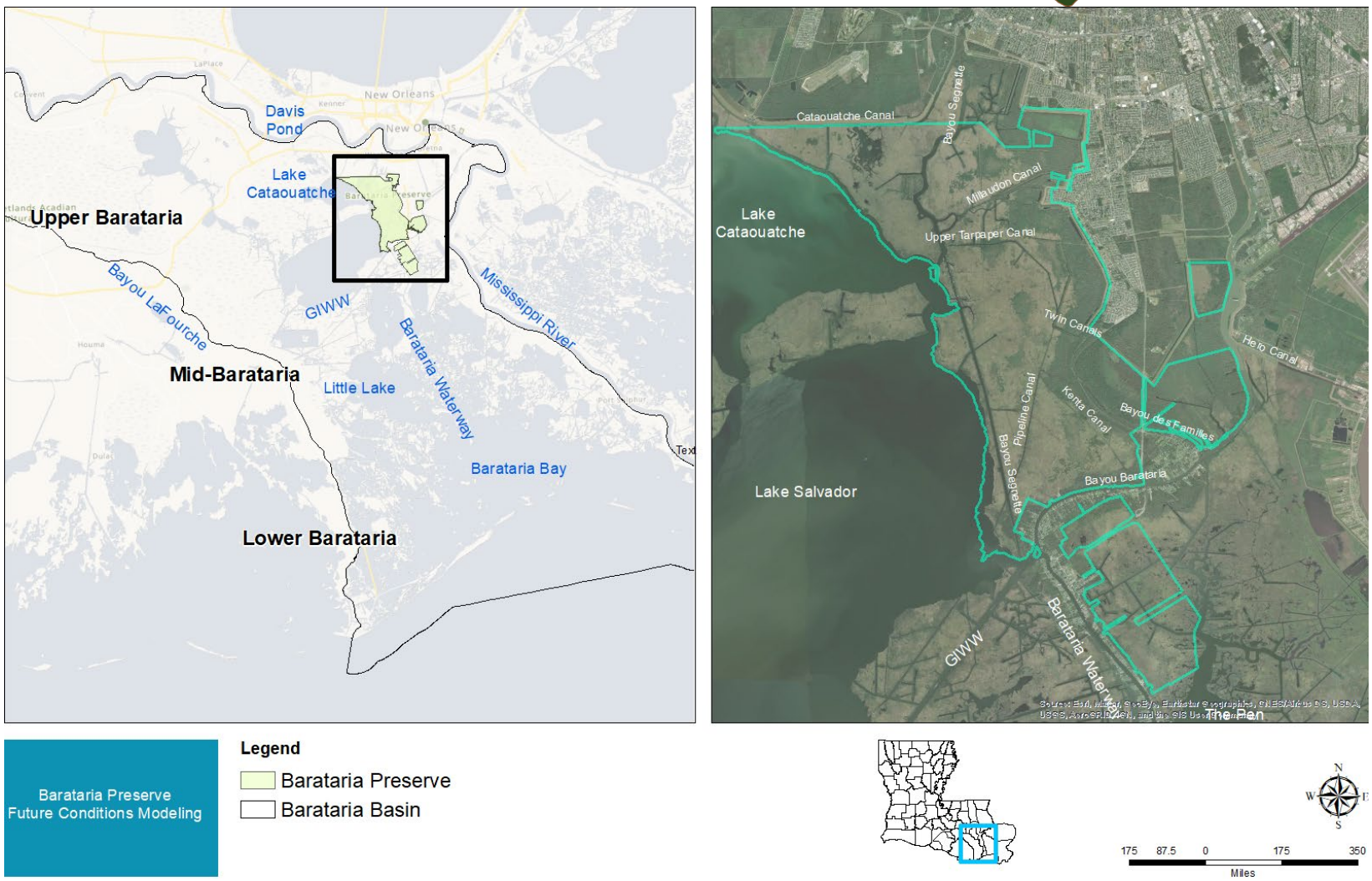


Figure 1-1: Location of JELA Barataria Preserve within the Barataria Basin and key hydrologic features in the park vicinity

1.2. Background and Purpose

The objective of the Barataria Preserve Future Conditions Modeling project is to provide park managers with scientifically rigorous projections of key coastal environmental conditions across the Barataria Preserve landscape over the next 25 to 50 years. The park will use these projections to inform and guide park planning and to prioritize management endeavors over this interval. The park seeks a sound scientific understanding of key factors influencing the Barataria Preserve landscape, its natural, cultural, and historical resources, and park facilities (buildings, trails, road/boat access) in the near future. For these purposes, the most important 'key factors' are flooding depth and salinity, followed by vegetation cover and type. The park is interested in a higher spatial resolution version of the Integrated Compartment Model (ICM) used for the state of Louisiana's Coastal Master Plan (CMP) and in other modeling approaches that would deliver the higher spatial resolution appropriate for understanding variation in flooding depth, salinity and vegetation cover across the Preserve landscape, at management-relevant spatial scales. As in the CMP, park managers want to be able to understand how major coastal management projects influence these key factor outcomes across the Barataria Preserve landscape. Also like the CMP and most such models, the park wants to understand how different Sea Level Rise (SLR) scenarios (Pahl, 2016) shift the temporal and spatial distributions of these key factors across the Preserve landscape (National Park Service, 2020).

1.3. Scope

To aid JELA in understanding potential future conditions for the Barataria Preserve to inform planning and resource management decisions, Moffatt & Nichol (M&N) performed a modeling study based on the Louisiana Coastal Master Plan ICM modeling approach (CPRA, 2012; CPRA, 2017). This modeling platform enables efficient computation of the water level and salinity parameters that influence landscape evolution so that simulations can be performed over decadal timescales for multiple scenarios. A modified, "down-scaled" version of Louisiana's ICM model under development to support the 2023 Coastal Master Plan (CPRA, in preparation) was developed to better represent the environmental conditions at the Preserve and project future conditions for a range of climate and restoration project scenarios. Additionally, a complementary two-dimensional hydrodynamic model of the Barataria Basin was developed to simulate water levels, flows, velocities, and salinities at a much higher spatial resolution for shorter periods within the long-term future planning horizon. Together with the modified ICM model, the higher-resolution model enables a comprehensive understanding of future conditions at the park over multiple spatial scales.

2. MODEL DEVELOPMENT

2.1. Modeling Approach

This study utilized two different models to optimally forecast and analyze the coastal landscape and coastal environmental conditions at the Preserve at different spatial scales. The Louisiana CMP ICM, developed, updated, and refined to support the state's coastal master planning efforts, excels at projecting long-term changes to the coastal Louisiana landscape due to changing hydraulic and salinity regimes as well as the geologic and eco-geomorphic processes controlling wetland elevations and vegetation distributions. The included model processes specifically enable assessments of coastal landscape and ecosystem evolution under a variety of future environmental scenarios (including varying SLR and subsidence rates), subject to the influence of planned or proposed protection or restoration projects (Meselhe, Reed, & Grace, 2017), and this ICM is the ideal tool for providing the park with future projections of key coastal environmental conditions at the Barataria Preserve (National Park Service, 2020).

Still, the ICM is a "computationally efficient, coast wide mass balance model that can be used for a large number of 50-year simulations in a reasonable timeframe" (Brown, et al., 2017a), with hydrology modeled using a mass balance approach where coastal Louisiana is discretized into a series of compartments connected by links that control flow. These compartments vary widely in size across the coast but are on the order of 100 km^2 (Brown, et al., 2017a). To provide higher resolution future projections of water levels, inundation, and salinities at the preserve, the ICM currently under development to support the 2023 CMP (CPRA, in preparation) was "downscaled" with higher resolution compartments in the mid- and upper- Barataria Basin and preserve vicinity.

A two-dimensional (2-D) hydrodynamic and salinity model was also used in this study to offer a more detailed understanding of the hydro- and salinity-dynamics within the Barataria Preserve under future environmental scenarios and associated landscape evolution. While the ICM-based approach described above is the most appropriate to efficiently project future conditions at the preserve, a complementary, high-resolution model enables a more comprehensive understanding of future conditions at the park over multiple spatial scales. This computational hydraulic model (developed using the Mike21-Flexible Mesh (FM) Hydrodynamic (HD) platform) solves hydrodynamic (water level, velocity, flows) and salinity parameters on a high-resolution computational mesh with spatial resolution on the order of 10's of meters, representative of the flow patterns across the preserve landscape. While landscape and vegetation schematizations within this more-detailed model are developed from ICM model predictions, the results from the high-resolution 2D model can help to inform ICM model development and results interpretation.

2.2. ICM Model

2.2.1. Integrated Compartment Model

The State of Louisiana has developed a suite of individual modeling tools to aid in their coastal master planning efforts that are designed to study key factors that are similar to those of interest for the Barataria Preserve over decadal timescales. Originally developed for use in the 2012 Coastal Master Plan, the ICM modeling components were subsequently integrated and improved for the 2017 Coastal Master Plan. For more information on the different modules and components of the ICM, the reader is directed to the technical appendices of the 2017 CMP: https://coastal.la.gov/our-plan/2017-coastal-master-plan/ (CPRA, 2017). During these efforts, hundreds of projects were modeled for 50 years into the future to determine effectiveness in achieving restoration and protection goals and to prioritize investments.

The Coastal Protection and Restoration Authority (CPRA) is currently preparing for the 2023 update to the Coastal Master Plan by modeling future scenarios and proposed projects with an updated and improved version of the ICM. Updates to the modeling approach for the 2023 CMP generally included improved integration of models and components, incorporating newly available data, including updated topo/bathy and wetland vegetation data, and applying new approaches to better capture wetland morphology processes (Baustian, et al., 2020). While documentation of ICM updates for the 2023 CMP is pending, significant updates for the wetland morphology (ICM-Morph) and vegetation (ICM-LAVegMod) modules replaced habitat type specific wetland collapse thresholds with a habitat independent critical water depth that varies as a function of salinity, revised the approach for determining marsh accretion incorporating organic matter accretion rates, and updated the treatment of flotant marsh (Baustian, et al., 2020). The ICM-Hydro module, responsible for computing stages and salinities across the coast, was updated to include coupled one-dimensional hydrodynamic models for four major rivers and channels (including the Lower Mississippi River), and compartments and links were re-delineated to better correspond to coastal features; however, the basic mass-balance type approach for wetland and coastal areas remains unchanged from that used in the 2017 CMP (Brown, et al., 2017a).

The ICM modeling for this study used the most up to date 2023 CMP ICM code at the time runs were conducted (late fall 2021), with version numbers and code repository links for the most important modules provided in Table 2-1. While the module codes continued to be updated by the 2023 CMP team afterwards, updates were largely related to implementation of future project types not relevant for this study.

Table 2-1: ICM module code versions used in this study

ICM Module	Version	Repository Link
ICM-Hydro	v23.4.1	https://github.com/CPRA-MP/ICM_Hydro/tree/71ff02c84520d3c0c2a1994ecba668ee2046180e
ICM-Morph	v23.1.1	https://github.com/CPRA-MP/ICM_Morph/tree/f6c549c27af080eff3beb97dda87c68c2afa4bb4
ICM-LAVegMod	v3.0.0	https://github.com/CPRA-MP/ICM_LAVegMod/releases/tag/ICM-LAVegMod_v3.0.0

2.2.2. JELA ICM Downscaling

The spatial scales on which each ICM module operates are demonstrated in Figure 2-1, showing the relatively large and irregular ICM-Hydro compartments overlaying the finer 500-m ICM-LAVegMod and 30-m ICM-Morph regular grids. The mass-balance approach of the ICM-Hydro module assumes that both water level and salinity values are spatially-constant across the area of a compartment.

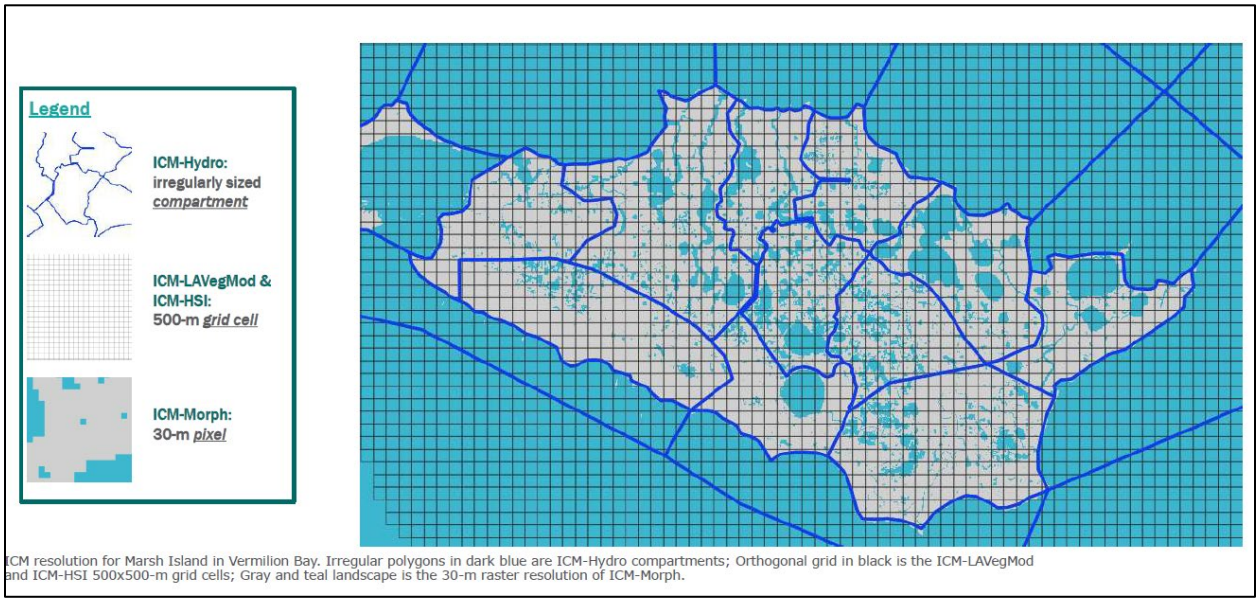


Figure 2-1: ICM Module grids and spatial scales. Source: CPRA Technical Modeling Webinar, June 16, 2020. (White, 2020).

As part of the 2023 CMP update to the ICM, ICM-Hydro compartments and links have been re-delineated to be more aligned and representative of the coastal hydrologic features. Still, the spatial resolution of the coastwide model is relatively low (see Figure 2-2) with most of the preserve represented by one compartment, so that variations in depth, salinity, and other parameters on the scale of local features within the Barataria Preserve are unavailable. To better understand and predict future conditions at the preserve, the ICM model developed for the Coastal Master Plan was modified as part of this study to include much higher spatial resolution in the vicinity of the preserve, enabling more useful and detailed predictions of future conditions to support JELA Barataria Preserve management. After downscaling, the JELA ICM has 34 more compartments and 163 more links in the Barataria Basin than the 2023 CMP ICM model (see Figure 2-3 and Figure 2-4).

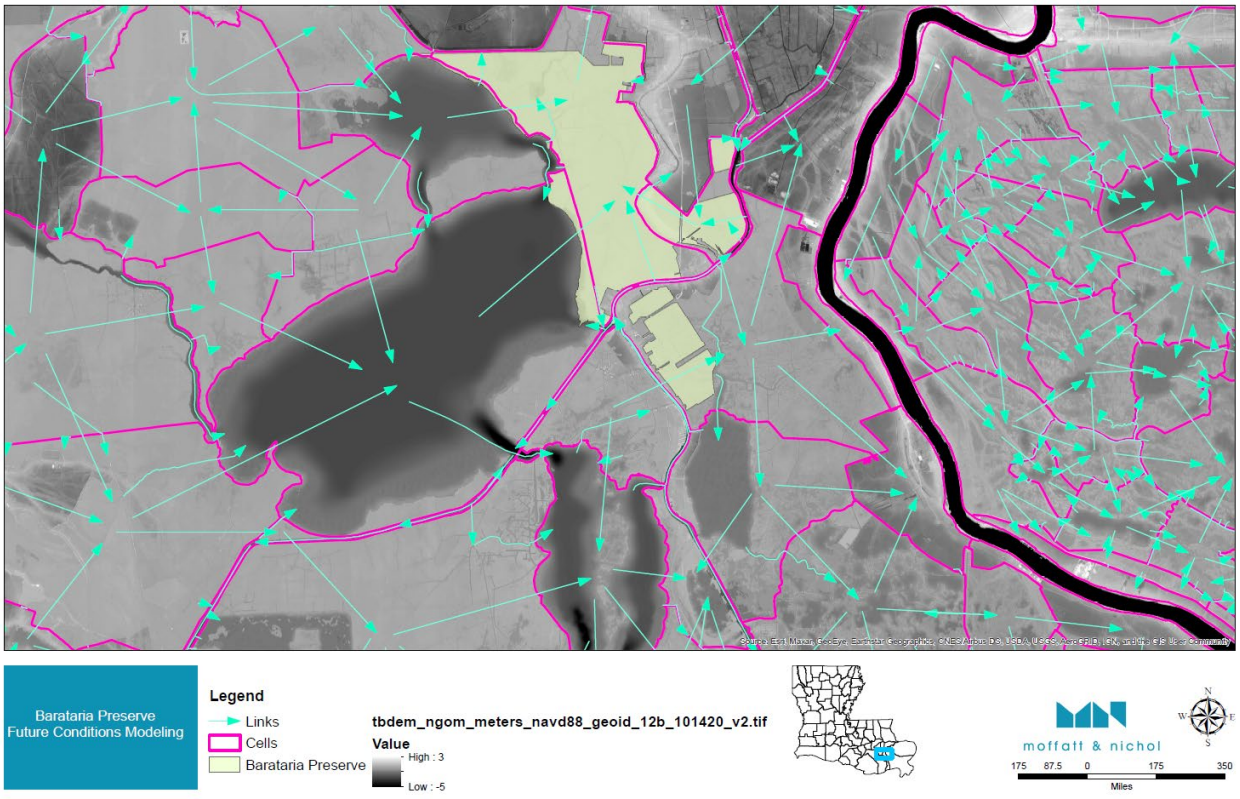


Figure 2-2: Example of the DRAFT 2023 Coastal Master Plan ICM compartment and link resolution in the Upper Barataria Basin

There were several factors considered when downscaling the MP2023 ICM compartments at the preserve and adjacent areas:

- Making major flowpaths their own compartments. Barataria Waterway was separated from the MP2023 ICM compartments into its own compartments from the Barataria Pass to the GIWW intersection. The major flowpaths in the Preserve area (such as Bayou Segnette, Pipeline Canal, Mullaudon Canal, etc.) were also delineated as separate compartments.
- Making compartments cover areas of similar elevation and vegetation types.
- Increasing resolution of the compartments to better represent spatial variability in water level and salinity.

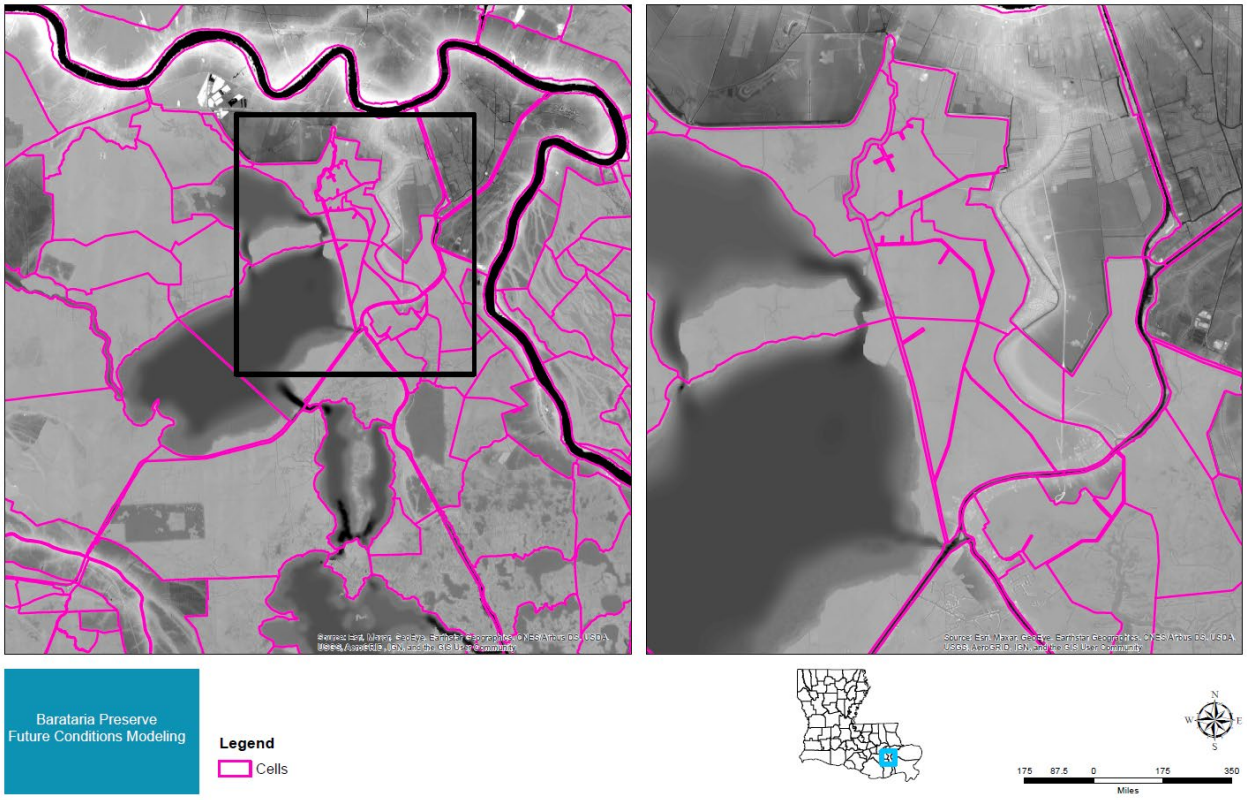


Figure 2-3: Downscaled JELA ICM compartment resolution in the Upper Barataria Basin and preserve vicinity

Links between refined compartments were either updated or added. Their dimensions were based on the MIKE model bathymetry (see Section 2.3.2) and depths on the National Oceanic and Atmospheric Administration (NOAA) navigation charts for several major flowpaths. While the

downscaled JELA ICM domain still covers the full Louisiana coastal zone, links in the Pontchartrain Basin and Chenier Plain (areas with no cross-basin interactions with Barataria Basin) were deactivated for computational efficiency. While ICM output including landscape projections are still produced by the model for these areas, results outside of the Barataria Basin should not be considered valid or used.

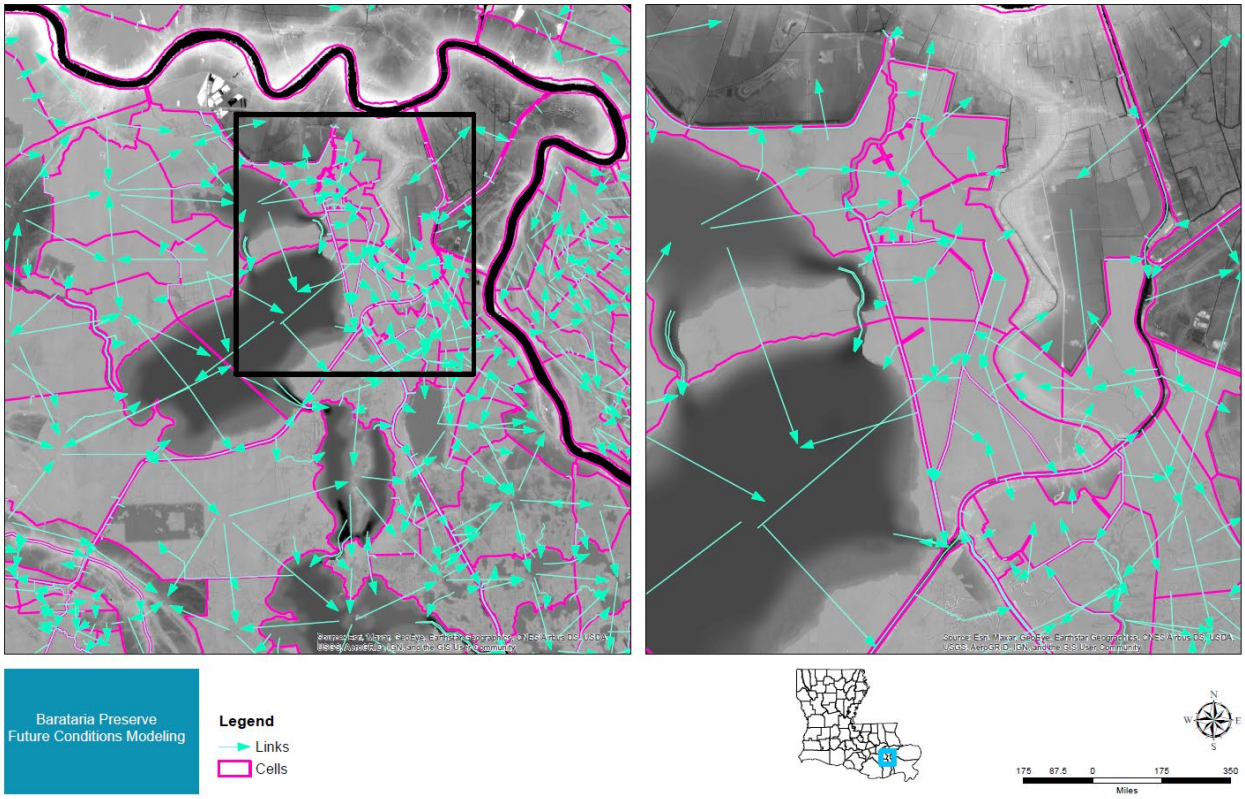


Figure 2-4: Downscaled JELA ICM compartment resolution and connecting links in the Upper Barataria Basin and preserve vicinity

2.2.3. Boundary Conditions

Model boundary conditions for the JELA ICM model were generally the same as those used to support the state's 2023 CMP ICM modeling (CPRA, in preparation). Detailed documentation of the boundary condition data sources and derivations for the 2023 CMP is in preparation; however, the approach for each boundary condition type is similar to the 2017 CMP (Brown, 2017b).

- Precipitation: daily rainfall depths for model calibration periods were developed from a combination of radar rainfall data and rain gauge data.
- Tidal: tidal water levels at the Gulf boundaries were driven by measured data from NOAA tidal gages, adjusted to remove the long-term subsidence trend (Brown, 2017b).

- Tributary Inflows: freshwater inputs from rivers were developed using a combination of measured data and derived rating curves, similar to the 2017 CMP approach (Brown, 2017b). For the Barataria Basin, these include the Davis Pond freshwater diversion and the Naomi and West Pointe a la Hache siphons. For the JELA ICM specifically, additional tributary inflows were added to account for pumped drainage discharges from the urban areas adjacent to the preserve and the Mississippi River. Development of these sources is discussed in greater detail in Section 2.3.3.

2.2.4. Initial Landscape Conditions

The coastwide Digital Elevation Model (DEM) and vegetation distribution maps developed to support the 2023 CMP were used in the JELA ICM (CPRA, in preparation). These data rasters are used directly by the ICM-LAVegMod and ICM-Morph modules and updated throughout the simulation and are used indirectly by the ICM-Hydro module to define mean elevations and habitat cover statistics for each compartment. Compartment attributes for the downscaled JELA ICM model, including bed elevation, marsh elevation, and the percentages of marsh and open water, were recalculated using these data. It should be noted that there may be some discrepancies between the 2023 CMP initial vegetation distribution and that observed at the preserve, especially some large areas of flotant marsh (J. Whitbeck, *personal communication,* October 12, 2021).

2.3. Hydrodynamic Model

2.3.1. Model Platform

The Mike 21/3 FM model is a commercially available modeling suite developed by the Danish Hydraulics Institute (DHI). The suite is able to fully couple a number of modules, including hydrodynamics, spectral waves, sediment transport (cohesive and non-cohesive), morphology, and water quality. The Mike21 FM HD model is a two-dimensional, depth-averaged model which simulates unsteady free-surface water levels, flows, and salinity transport in rivers, estuaries, lagoons, and other coastal water bodies. The horizontal grid uses unstructured triangles or quadrilaterals, and the mesh can be easily refined in a particular area without affecting the mesh resolution in the rest of the model, allowing for a more detailed assessment in small areas of interest while still efficiently integrating with the full domain. The flexible mesh of Mike 21 FM is ideal for developing large regional models with areas of high local resolution. Without any important vertical variations in flows and salinity patterns within the shallow Barataria Basin, the model was run two-dimensionally (2D) in depth-averaged mode.

2.3.2. Model, Mesh, and Bathymetry

The study area is the Barataria Preserve site within the Jean Lafitte National Historical Park and Preserve, which is located outside Marrero on the west bank of the Mississippi River (Figure 2-5). To assess the future evolution of water levels and salinity at the Barataria Preserve site in detail, a 2D hydrodynamic model was developed to simulate the flow of water and salinity from the barrier islands near Grand Island along the Gulf of Mexico up basin to the upper Basin (including the preserve vicinity). The Mike21-FM HD model mesh domain extends from the Gulf of Mexico at Grand Isle to approximately Vacherie within the Barataria Basin and is also bound by Bayou Lafourche back levees to the west and the Mississippi River back levees to the east.

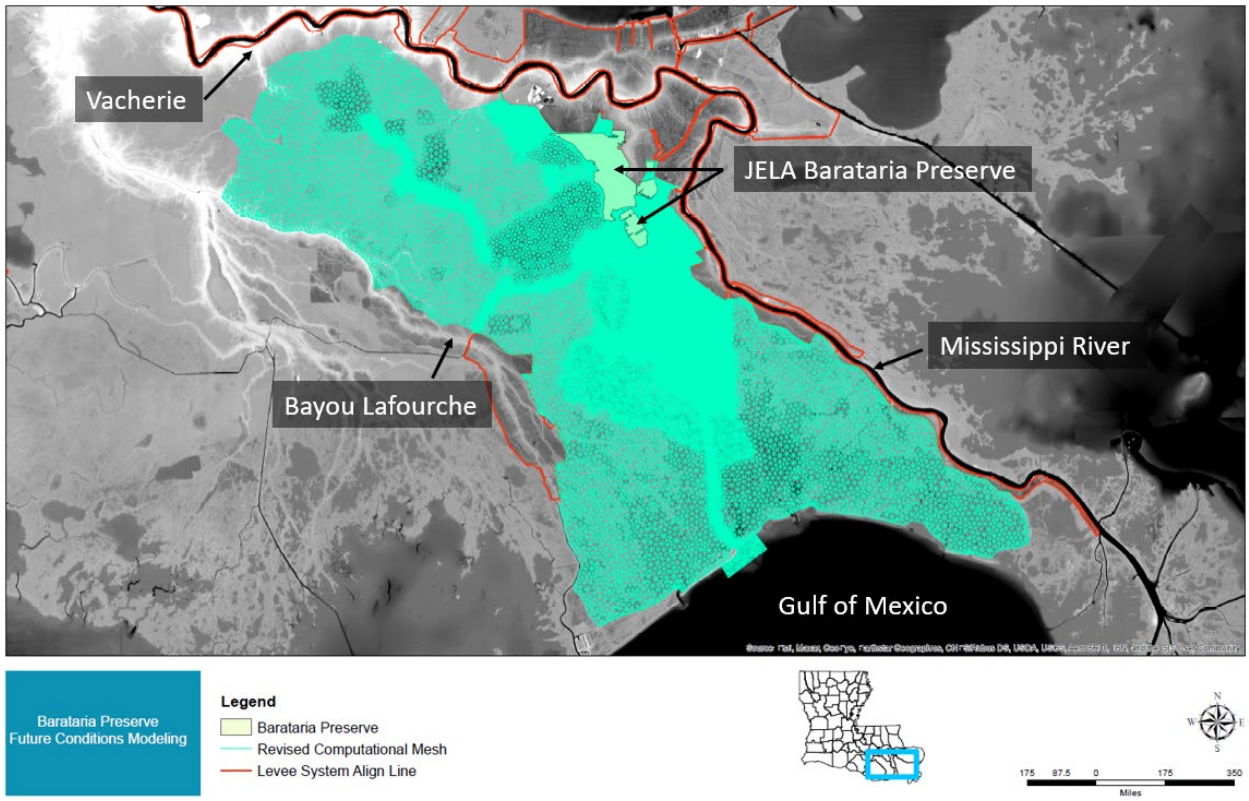


Figure 2-5: Hydrodynamic model mesh – Barataria Basin

The mesh resolution varied across the Barataria Basin, with coarse element lengths of approximately 1000 m near the Gulf of Mexico and higher resolution elements of less than 10 m within the Barataria Preserve canals (Figure 2-6). The mesh is comprised of 282,338 triangular elements and was spatially referenced to the UTM 15N (WGS84) coordinate system.

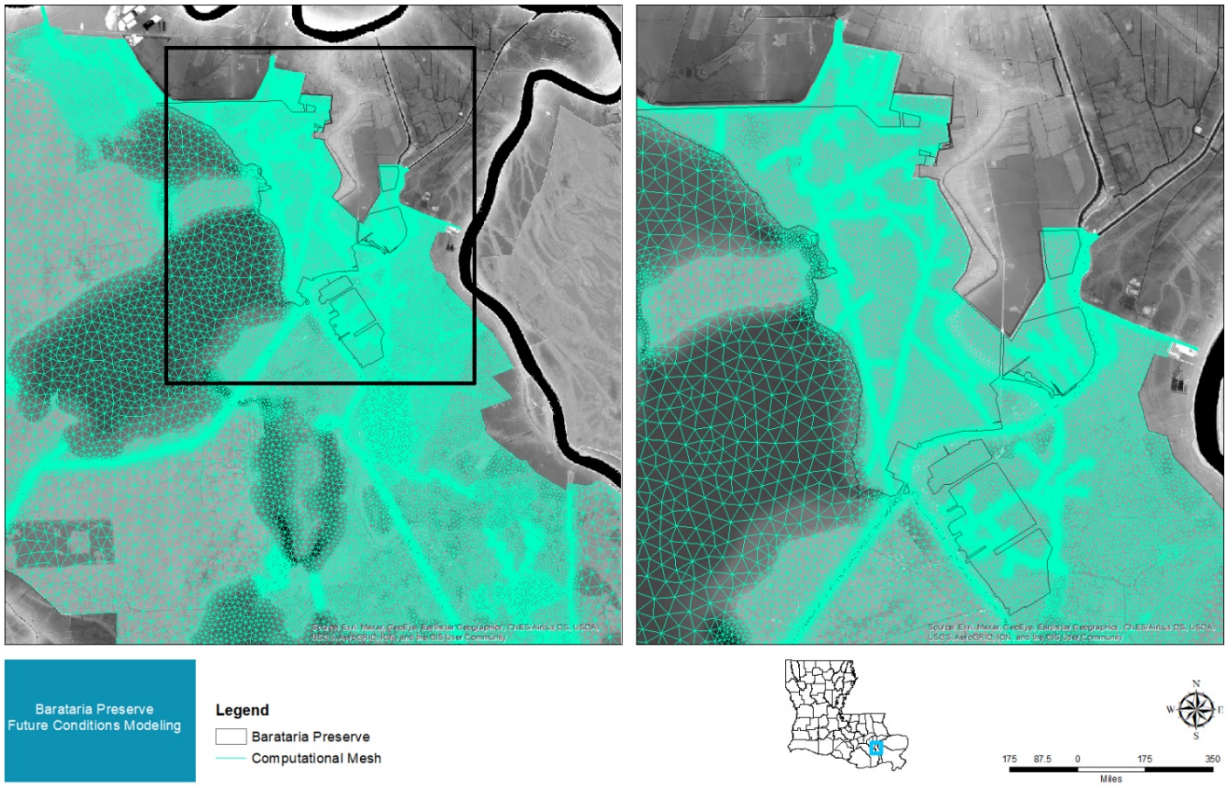


Figure 2-6: Hydrodynamic model mesh – Barataria Preserve vicinity

Bathymetry data were combined and interpolated on to the model mesh from the following sources (Moffatt & Nichol, 2019):

- Topographic and bathymetric DEM of coastal Louisiana developed in collaboration between the United States Geological Survey (USGS) and CPRA to support the 2023 CMP. Bathymetry from the DEM was referenced to NAVD88 (CPRA, in preparation).
- U.S. Army Corps of Engineers (USACE) Barataria Waterway hydrographic survey transects collected in May 2019 and Bayou Segnette transects collected in May 2014. The dataset datum was converted from mean low gulf to NAVD88 (U.S. Army Corps of Engineers, 2019).
- Limited JELA canal and bayou survey transects collected to support the canal backfilling project (National Park Service, 2020).
- Depths of JELA canals without any survey data determined via engineering judgement.

Figure 2-7 shows the resulting model bathymetry. Note that a non-uniform color scale is used to better visualize the varying elevations over the entire basin and within the preserve vicinity.

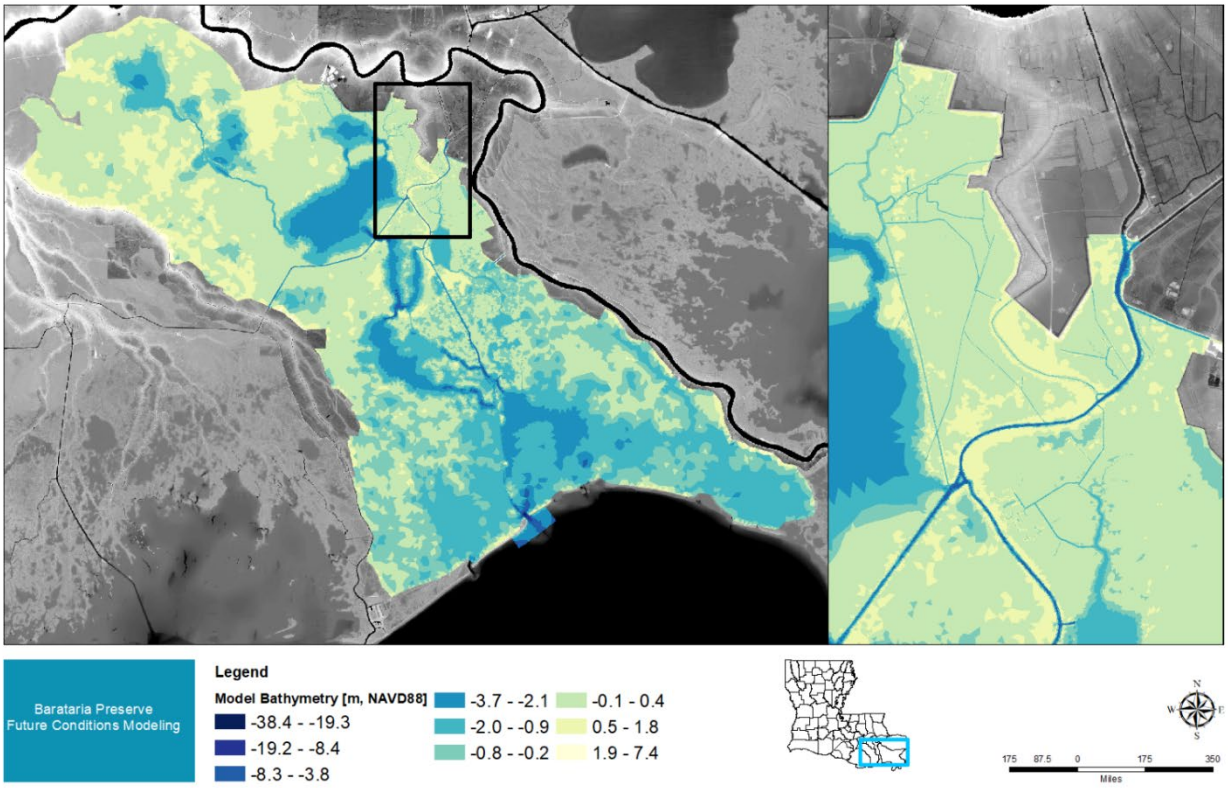


Figure 2-7: Bathymetry – Barataria Basin and JELA Barataria Preserve. Note that a non-uniform color scale is used to better visualize the varying elevations over the entire basin and within the preserve vicinity.

2.3.3. Boundary Conditions

Hydrodynamics and salinities were forced with water level and salinity boundary conditions at nine open water boundary segments at major inlets between barrier islands along the SE border of the mesh between Bayou Lafourche and the Mississippi River (Figure 2-8).

Water Levels

Measured water levels obtained from the USGS station 073802516 (Barataria Pass at Grand Isle) and station 07380260 (Empire Waterway south of Empire) were applied as time-varying, spatially constant water level boundary conditions at the nine offshore boundaries for the model calibration period (see Section 3.4) (USGS, 2019). Figure 2-8 shows the location of the USGS stations, the model mesh boundary, and the boundary segments for which each station was used. Boundary segments labeled 1 to 5 were forced with water levels from USGS station 073802516 and segments 6 to 9 were forced with water levels from USGS station 07380260.

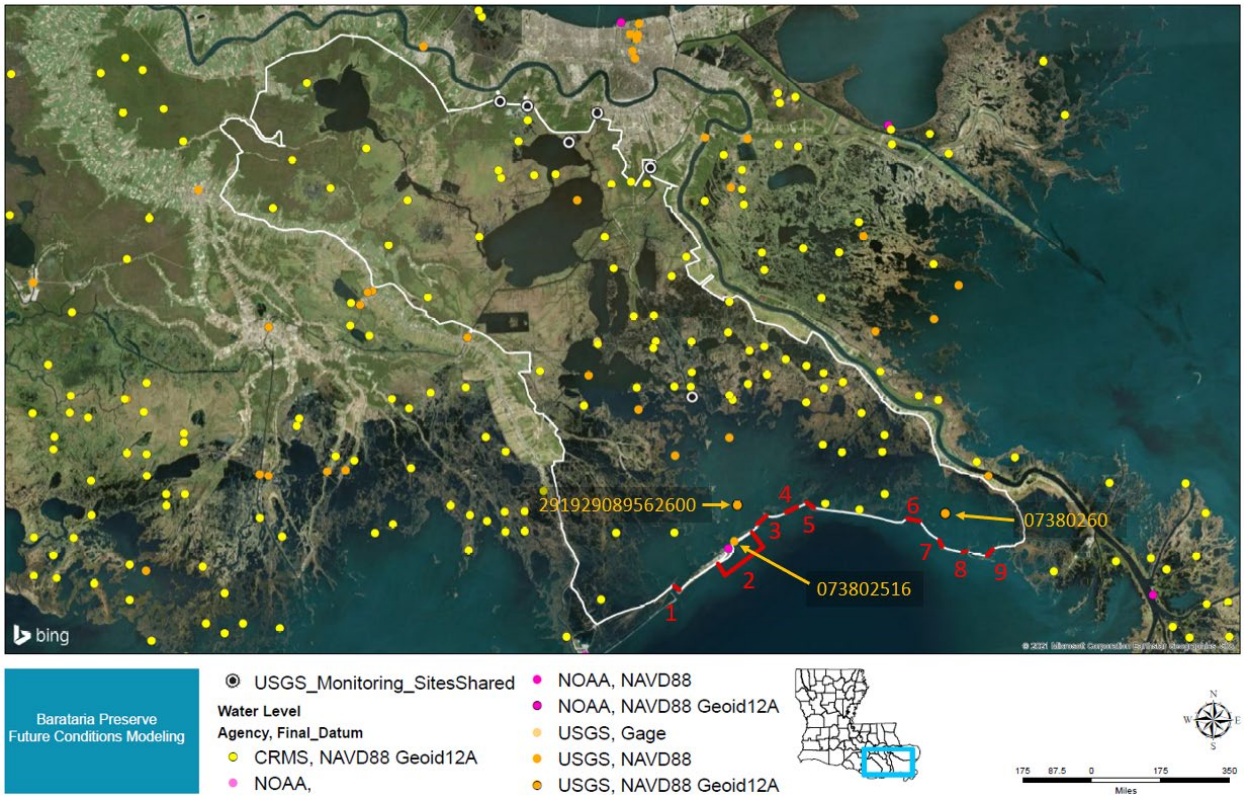


Figure 2-8: Water Level and Salinity Grid Boundary Locations and Data Locations

Wind

Wind exerts a shear stress on the water surface that induces currents and causes water level set-up or set-down in confined water bodies and along the coast. In shallow coastal waters, wind impact on water levels is greater, producing extreme water levels (surge) often associated with storms (Bosboom & Stive, 2011). Wind-driven subtidal variability (i.e. timeframe of days to months) in water levels and salinities is particularly important in Barataria Basin due to the shallow depths, microtidal environment, and limited connectivity to the Gulf of Mexico (Georgiou, FitzGerald, & Stone, 2005; Payandeh, Justic, Mariotti, Huang, & Sorourian, 2019).

Spatially and time-varying wind velocity and air pressure maps were extracted from the Climate Forecast System (CFS) hindcast dataset. The Climate Forecast System (Saha, et al., 2014) was developed by Environmental Modeling Center at the U.S. National Centers for Environmental Protection (NCEP). The model represents interaction between Earth's atmosphere, oceans, and land. The CFS global model provides wind velocity components at 10 m above ground at 3-hour intervals on a 30 arc-minute grid. In the region of interest, the resolution of the data is 1000 meters in the x-direction and 600 meters in the y-direction.

Salinity

A spatially varying initial salinity condition contour map was applied for January 7, 2018, which corresponded closely with the calibration simulation start data of January 1, 2018 (Figure 2-9). The salinity contours were generated by the Pontchartrain Conservancy's Hydrocoast program, which aggregates continuously measured data, field data, and remotely sensed data to represent the spatial variation in average salinity on a bi-monthly basis (Pontchartrain Conservancy, 2019). Offshore salinity boundaries 1-2 were forced with salinity timeseries measured at USGS station 073802516 while boundaries 3-9 were forced with data collected from station 291929089562600 (Figure 2-8) (USGS, 2019). Salinity results in the basin were less sensitive to the gage used to define boundary conditions at boundaries 3-9, with salinities at Barataria pass (boundary 2) being more influential.

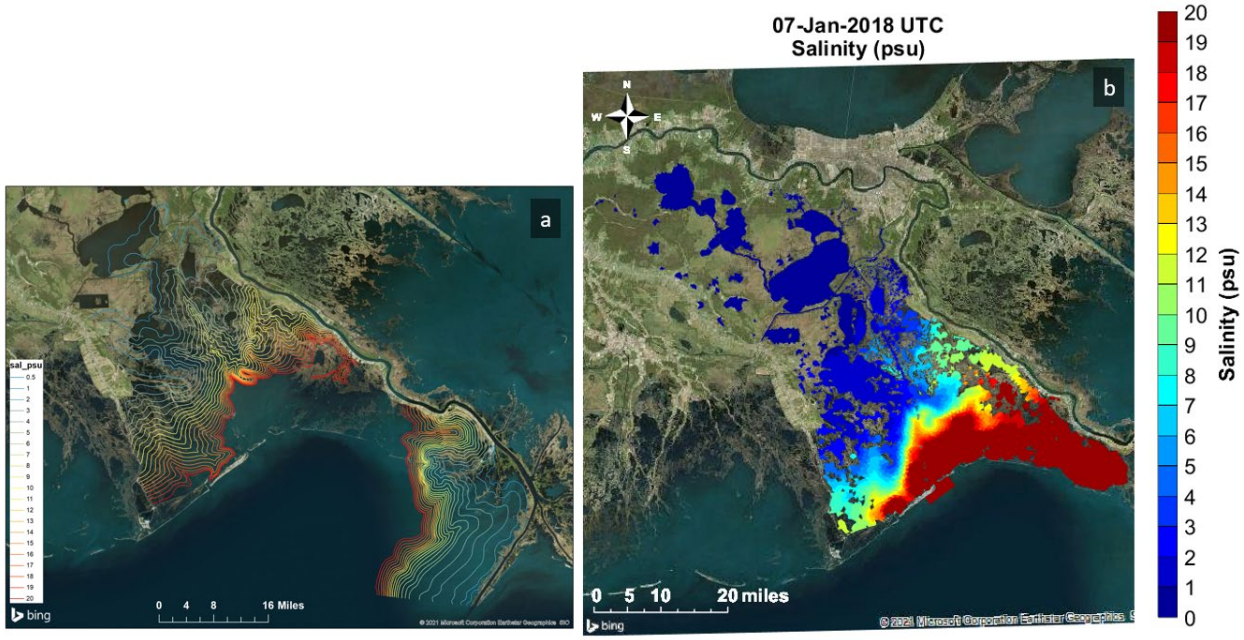


Figure 2-9: Initial Salinity contours from the Pontchartrain Conservancy's Hydrocoast (Pontchartrain Conservancy, 2019) map (a) and initial salinity implemented in the model (b)

Freshwater Discharge

The largest contributor of freshwater input into the Barataria Basin is discharge diverted from the Mississippi River via the Davis Pond diversion, followed by the Naomi and West Point a la Hache siphons. Measured discharge timeseries for the Davis Pond diversion were available at the USGS streamflow gage 295501090190400 (Davis Pond Freshwater Diversion near Boutte) (USGS, 2019), while Naomi and West Point a la Hache discharge timeseries were sourced from the 2023 CMP inflow timeseries for these sources (CPRA, in preparation) derived using a rating curve approach (Brown, 2017b).

Precipitation, Evapotranspiration, and Urban Drainage

Additional freshwater model inputs include precipitation falling directly in the Barataria Basin and urban drainage pumped into drainage canals adjacent to the back levees of Jefferson and Plaquemines Parishes. The source of the urban drainage freshwater is assumed precipitation falling within each urban area polder. The precipitation data was processed from daily measurements at the Barataria Preserve Visitor's Center weather station (J. Whitbeck, personal communication, 2020) (Figure 2-10).

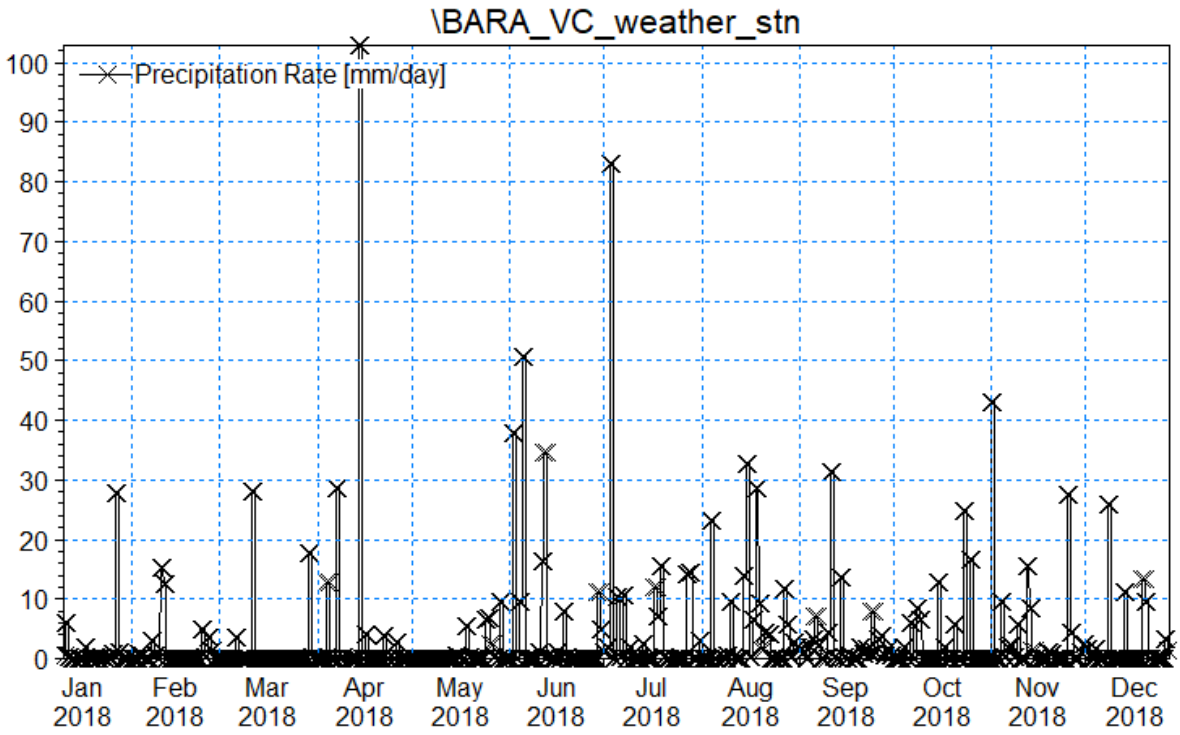


Figure 2-10: Barataria Preserve Precipitation (mm/day)

Evapotranspiration (ET) was also implemented in the model using the same evapotranspiration timeseries from the 2023 CMP for the preserve vicinity. Subsequent model calibration found that applying these ET values over the full Barataria Basin model domain required a reduction in the rates of 50%.

The precipitation falling within the Barataria Basin was included as a direct model input according to the timeseries in Figure 2-10. Urban drainage was included as model input point sources at the location of major pumping stations. The discharge for each point source was determined by the rational method, which relates the peak-runoff rate, Q_p, to the rainfall intensity, i, via the following equation (Chin, 2006):

$$Q_p = CiA$$

Where: C is the runoff coefficient and A is the catchment area. The following assumptions are associated with the rational method: (1) the entire catchment area contributes to the runoff (2) rainfall is uniformly distributed over the catchment area, and (3) all catchment losses are incorporated into the runoff coefficient.

To compute Q_p for each area, first the maximum discharge capacity for each pump station was found. The red dots in Figure 2-11 (Jefferson Parish, 2017) indicate locations of pump stations. Stations adjacent to each other (e.g. Lake Cataouatche #1 and Lake Cataoutche #2 were grouped as "Lake Cataouatche") (Table 2-1). For pumps without maximum capacity data in Figure 2-11, additional capacity data was located from the relevant drainage authority (i.e. Sewerage and Water Board for Algiers pumps). Table 2-1 shows the maximum discharge capacity for all pump stations (some grouped) in Figure 2-11 as well as pump stations for developed polders of Plaquemines Parish adjacent to the Mississippi River to Venice levee.

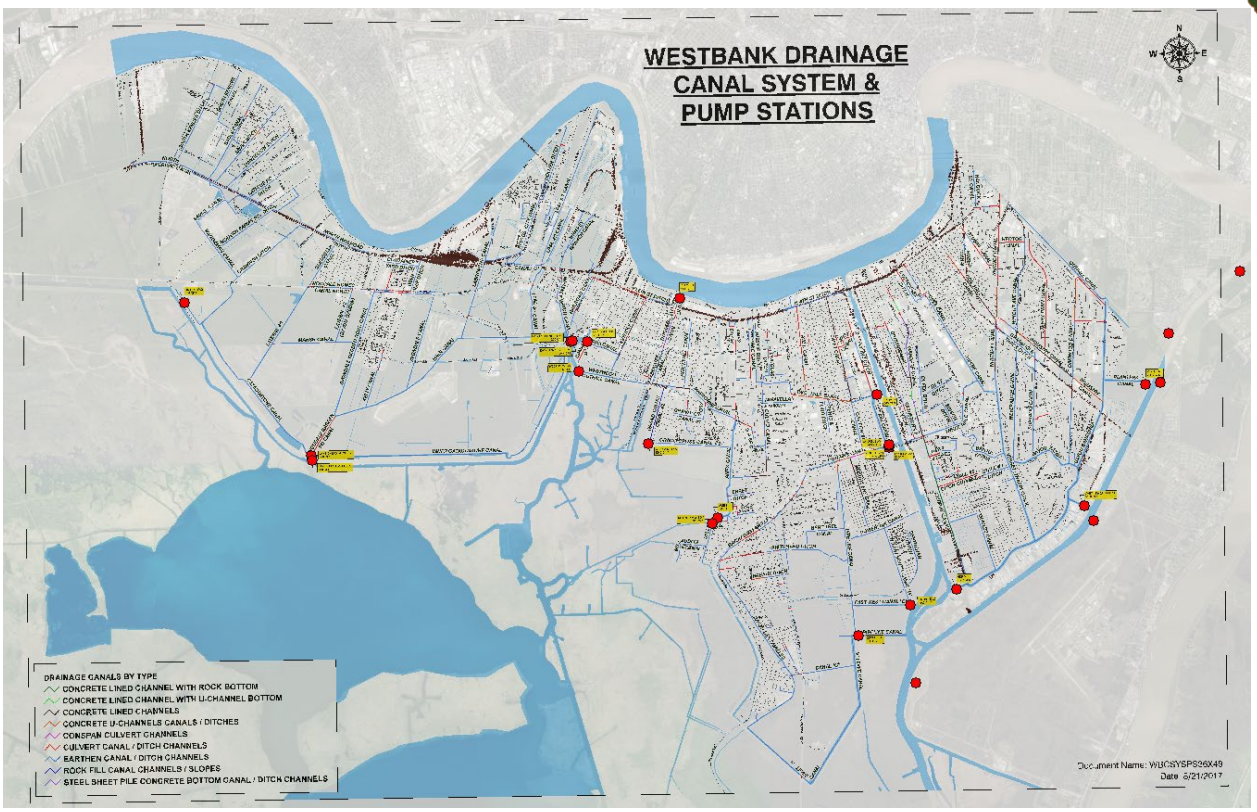


Figure 2-11: Westbank Drainage Canal System & Pump Stations

Table 2-2: Maximum Discharge Capacity for All Pump Stations sources included in Model

Name	Discharge (cfs)
Highway 90	145
Lake Cataouatche	1,100
Bayou Segnette	2,156
Westwego #1	500
Westwego #2	936
Westminister	1,248
Ames	1,930
Mount Kennedy	501
Estelle #1	370
Harvey Canal	7,600
GIWW - East	6,730
Hero	3,852
GIWW - West	10,158
Belle Chasse South	1,087
Woodland	2,228
Myrtle Grove	2,708
PS North	267
Port Sulphur	490
PS South	1,098
Empire	587
Triumph	994
Venice	699

Next, the catchment areas were defined according to hydrologic borders and surface area characteristics (e.g. residential, rural, etc.), and pump stations were further grouped and moved to the model domain (Figure 2-12, Figure 2-13). For example, all pump stations within the Harvey Canal were grouped and all stations on the west side of the Gulf Intracoastal Waterway (GIWW) were grouped "GIWW – West". Similarly, stations on the east side of the GIWW were grouped "GIWW – East" (Table 2-1). Runoff coefficients were based on typical runoff coefficients defined by Chin, 2006 (Table 2-2). After runoff coefficients were assigned for each area (Table 2-3), maximum discharge capacity for the remaining pump stations without published capacities were calculated by assuming a similar ratio of capacity to runoff coefficient multiplied by catchment area (Figure 2-13).

Table 2-3: Range of Runoff Coefficients (Chin, 2006)

Name	Runoff Coefficient	Description
Gretna-Algiers	0.30 - 0.50	single-family residential
Belle Chasse	0.10 - 0.30	Unimproved areas
Lake Cataouatche	0.10 - 0.30	Unimproved areas
Harvey-Westwego	0.30 - 0.50	Single-family residential

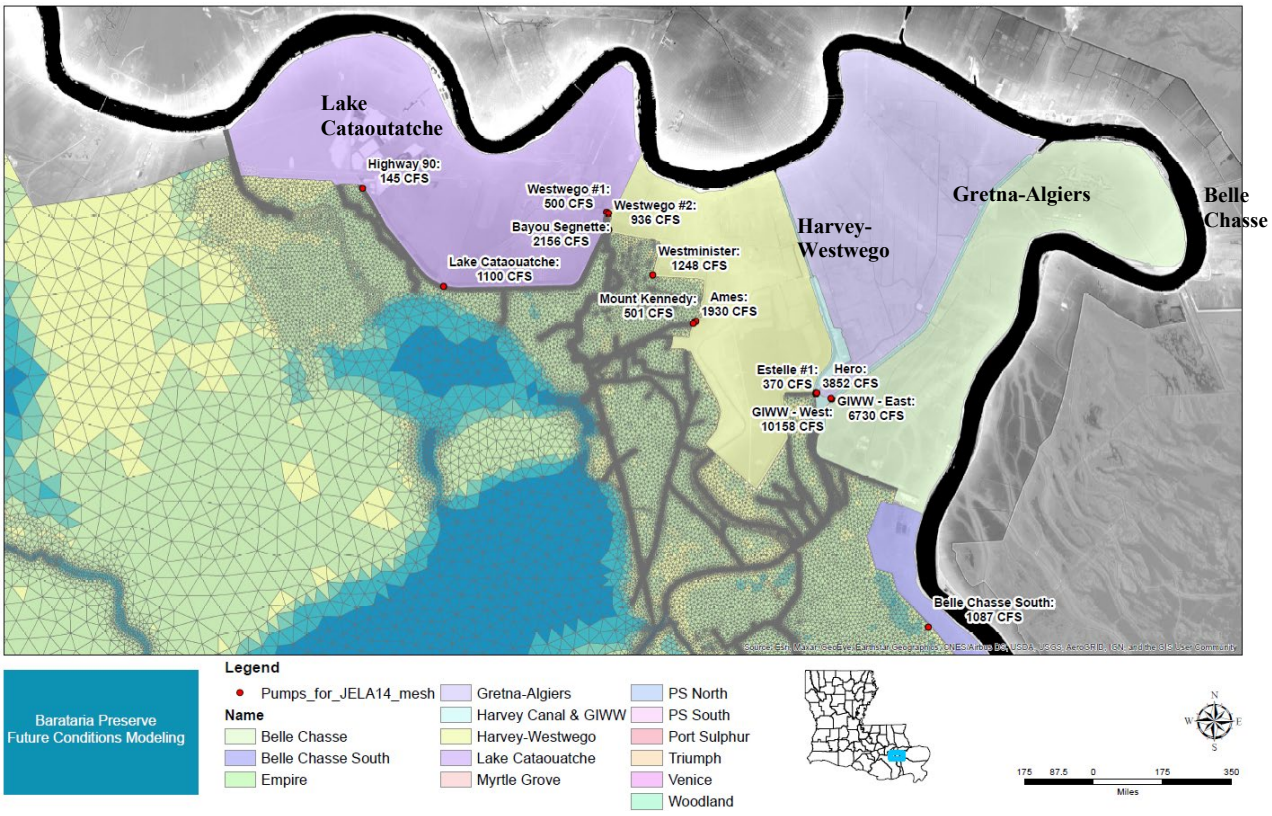


Figure 2-12: Urban Drainage Areas and Discharges (Westbank and JELA Vicinity)

Table 2-3 shows the total area within each catchment basin, the total pump capacity (sum of all pumps draining each catchment), and the respective runoff coefficient. Finally, a timeseries of runoff discharge from each catchment was calculated according to the rational method, then distributed to each of the pump stations draining the catchment according to the proportion of total discharge capacity provided by each pump. At each pump, computed discharge was further limited by the maximum discharge capacity, with excess discharge above the maximum distributed to subsequent hour time steps. Ultimately, urban drainage discharges were found to only impact modeled water level and salinity results locally, while regional results were more sensitive to Davis Pond and freshwater siphon discharges and direct precipitation within Barataria Basin.

Table 2-4: Area, Discharge and Runoff Coefficients for each Catchment

Name	Area [m^2]	Total Pump Capacity (CFS)	Runoff Coefficient
Gretna-Algiers	76,898,589	14,010	0.45
Belle Chasse	73,380,532	6,730	0.25
Lake Cataouatche	101,313,418	3,401	0.1
Harvey-Westwego	61,704,773	13,126	0.45
Belle Chasse South	11,857,539	1,087	0.1
Woodland	24,289,699	2,228	0.1
Myrtle Grove	29,524,339	2,708	0.1
Venice	7,625,528	699	0.3
Triumph	10,834,210	994	0.3
Empire	6,405,250	587	0.3
PS South	11,976,978	1,098	0.3
Port Sulphur	5,339,902	490	0.3

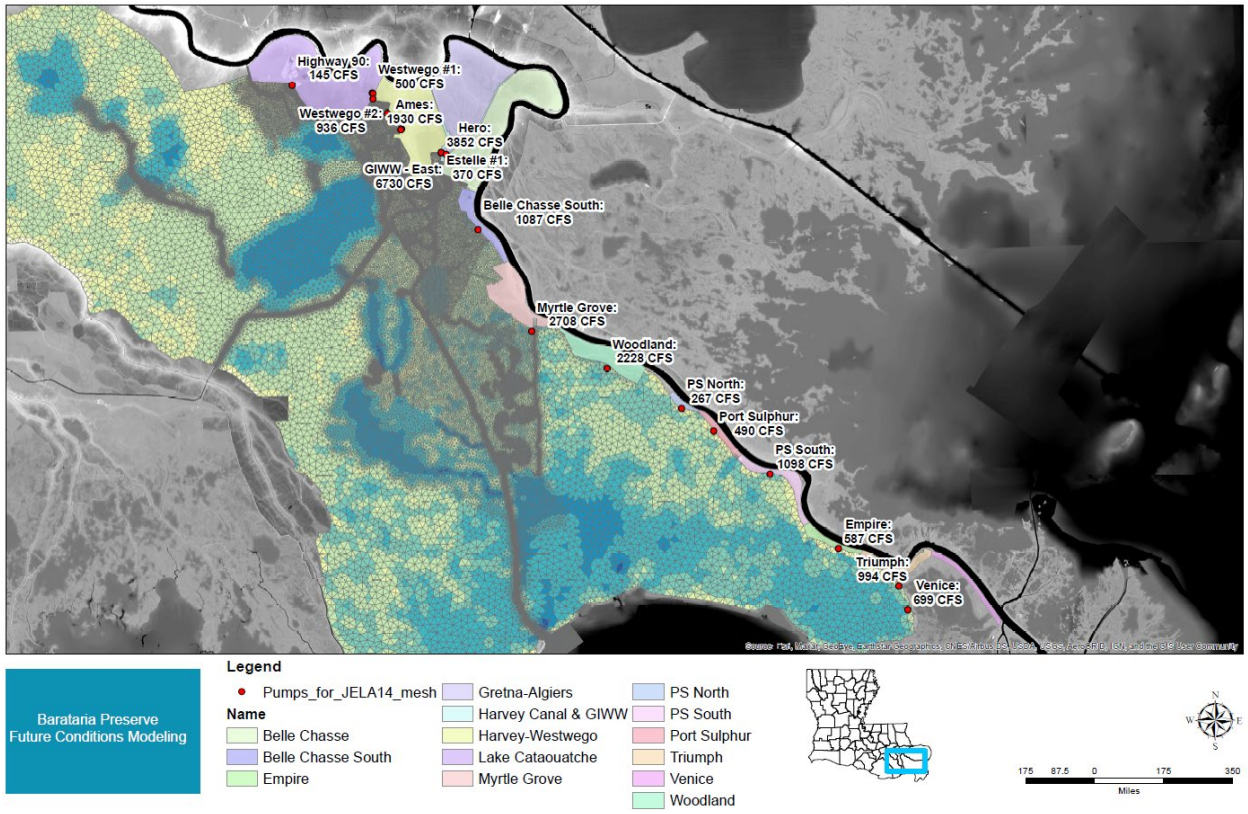


Figure 2-13: Urban Drainage Areas and modified pumps with maximum discharge capacities (all areas)

2.3.4. Roughness

In the Mike21-FM HD model, the stress generated as water flows over the bottom is formulated using a quadratic friction law with a drag coefficient that is defined as a function of bed roughness, represented by a Manning's roughness value. The roughness is parameterized by setting a roughness value that can either be constant over the full domain or vary to represent the natural variation in bed roughness of different environments.

For this model, an approach was used which assumes the roughness value is dependent on the water depth and the wetland vegetation type. In the implemented formulation, higher n values correspond to rougher beds. To account for the spatial distribution of vegetation types and roughness values throughout the domain, the roughness n is calculated by using the "RMA2 roughness coefficient by depth" equation where *AveDep* is the average depth of the water in the element in meters and the coefficients are specified in Table 2-4 Recommendations and guidance for these coefficients were taken from the RMA2 manual (Donnel et al., 2006).

$$nValue = \frac{RDR0}{AveDep^{RDCoef}} + RDRM * e^{(\frac{-AveDep}{RDD0})}$$ (Donnell et al., 2006)

where:

RDR0 = maximum Manning's "n" value for non-vegetated inundated element
RDD0 = depth at which vegetation effects roughness [m]
RDRM = Manning's "n" for vegetated inundated element
RDCoef = calibration coefficient.

Table 2-5: Manning's coefficients by marsh type

Marsh Type	RDR0	RDD0 [m]	RDRM	RDCoef
Swamp	0.023	0.61	0.100	0.03
Other Marsh Types	0.023	0.61	0.050	0.05
Open Water	0.020	0.305	0.026	0.08

An average water level of +0.4 m, NAVD88 was assumed when calculating average depths and resulting roughness values, along with the initial conditions vegetation type map developed for the 2023 CMP (CPRA, in preparation) (see *Figure 2-15*) . Manning's n values are transformed into Manning's M (the reciprocal of n) to be input into the Mike21 FM model (see Figure 2-14). Figure 2-16 shows how the bed roughness (Manning's M) values are distributed throughout the domain, varying with marsh type and water depth.

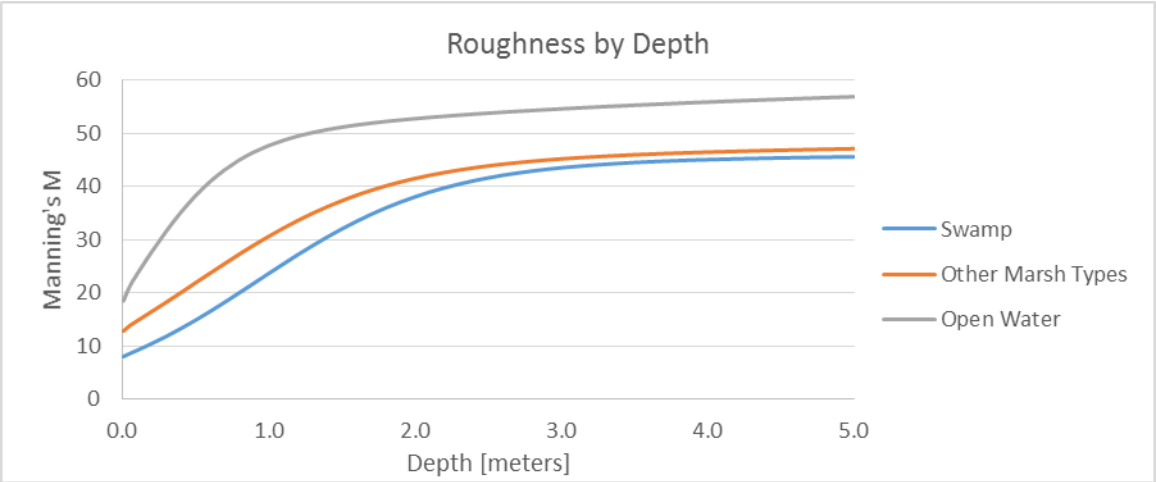


Figure 2-14: Manning's M [$m^{1/3}/s$] Roughness by Depth as calculated using the equation above and values from Table 2-4.

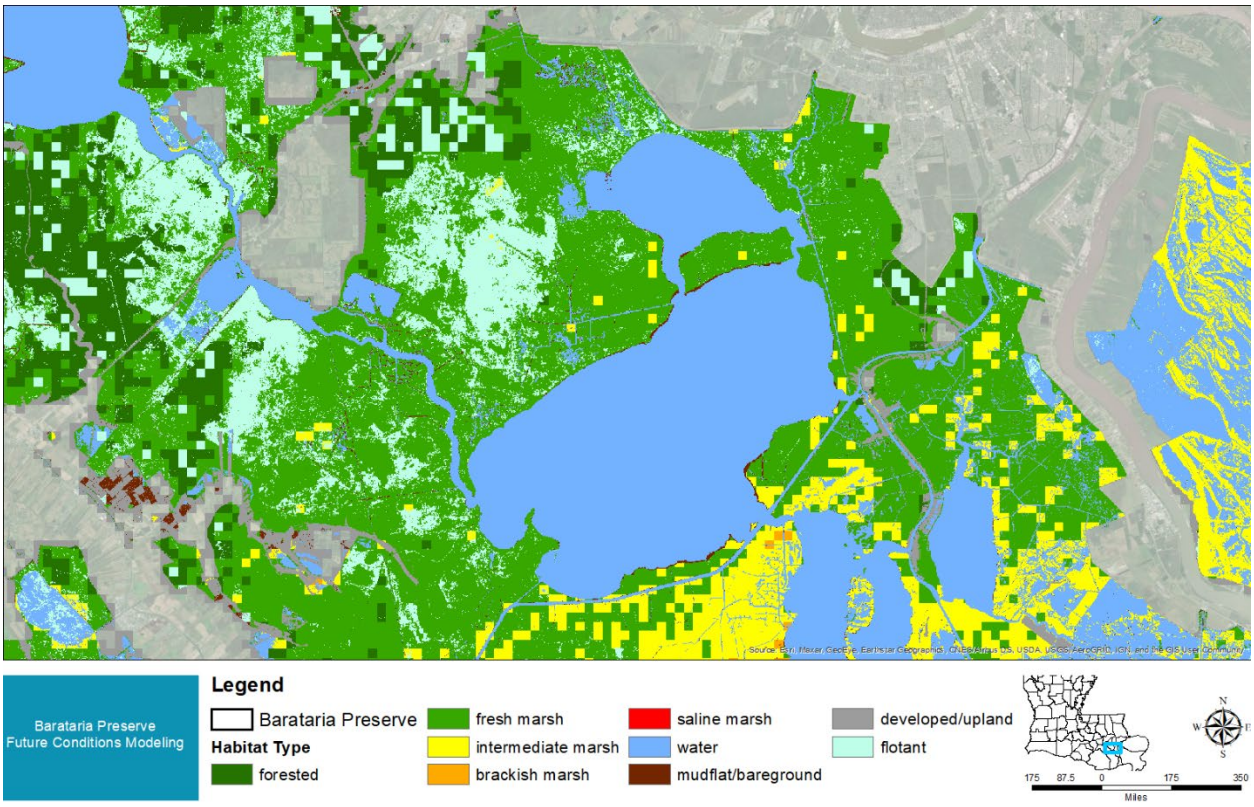


Figure 2-15: Initial conditions vegetation type map in the preserve vicinity from the 2023 CMP (CPRA, in preparation).

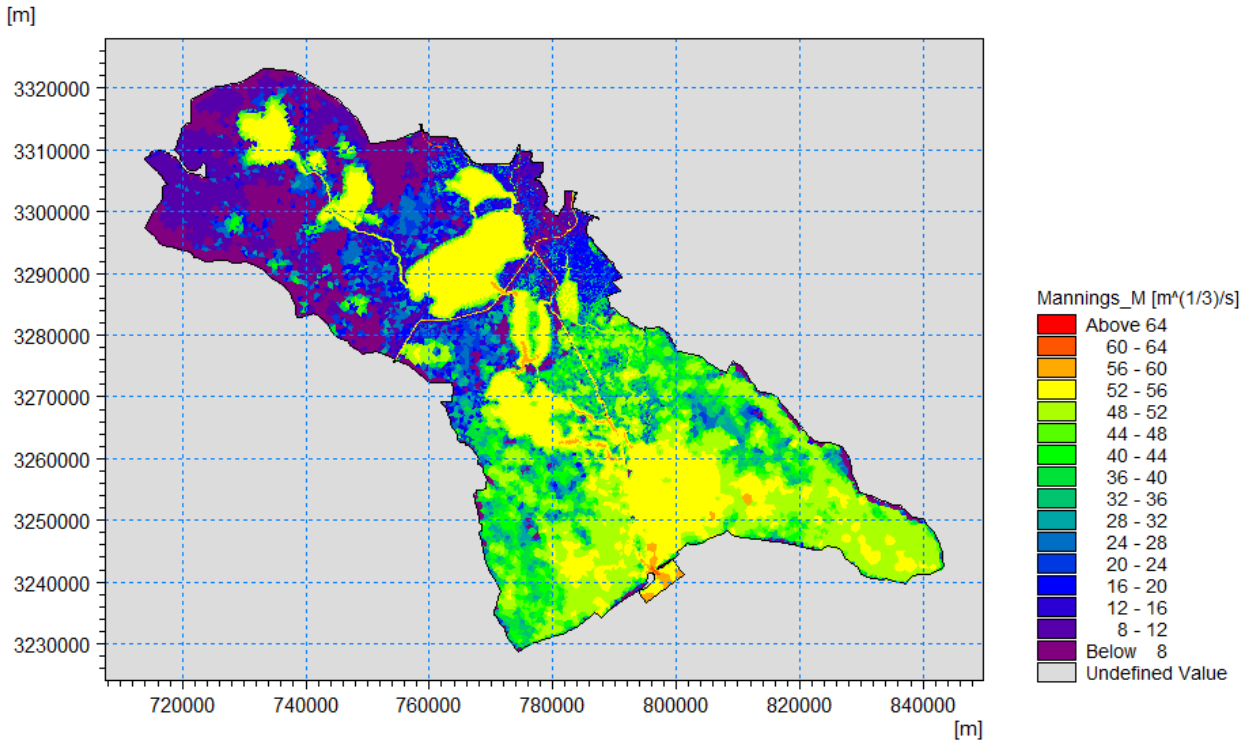


Figure 2-16: Model Bed Roughness Settings, Manning's M [$m^{1/3}/s$]

3. MODEL CALIBRATION

3.1. Calibration Goals

The present study, in a significant part, is based on the use of a numerical hydrodynamic model, which should represent the behavior of the real physical system with the accuracy sufficient for evaluation of various potential future scenarios. Since the numerical model is just a representation of the real physical system, it is not possible to have the perfect match for many reasons, which may relate to the numerical model implementation or even the accuracy of definition of the real system. Additionally, historical observations are only available for the calibration scenario, so it is not feasible to compare future model results to existing data. Therefore, while the model can be used to simulate many possible or hypothetical scenarios, accuracy of such predictions will always be unknown. However, with the understanding of the model limitations as not being a perfect representation of the real system, the numerical models remain useful and practical tools. Their usefulness is limited by the level of confidence in their results which depends on the inherited deviations from the real system.

The modern numerical models are complex systems, which are based on known relationships in physical systems, their numerical representations, and which include many physical parameters and various numerical coefficients. Only a few physical parameters, like bathymetry, water levels, current velocities, precipitation, and temperature, or others, can be reliably measured in the field. However, even these parameters can be impossible to obtain over a large area or during a long period of time. Other important physical parameters, such as bottom roughness or mixing diffusion coefficients, cannot be measured in the field, but are important parameters in the numerical model configurations. These parameters are often selected to be the calibration parameters in the model. Therefore, to achieve the best model performance in terms of matching observed parameters, one needs to know the real system's physical conditions in space and in time during the simulation period and then develop the most suitable model configuration which represents the physical conditions and its forcing. Model calibration includes tuning of the calibration parameters to match the measured parameters. When the number of physical parameters is small and the complexity of the system is relatively low, the modern state-of-the-art numerical systems can achieve high levels of agreement with measurements. This is because the numerical models are based on accurate representations of the physical processes. However, when the complexity of the system is high and the number of physical parameters is significant, then many limitations arise which prevent development of the "perfect" model. Often, such limitations are practical. For example, if a high-resolution model is required to represent the real

system with a high accuracy, then the model runtimes may become too long, and applications of such a model may become impractical. As a result, the model development includes a combination of simplifications or uncertainties, which may affect the model accuracy to various levels. To remain practical, the main goal of the numerical model development process should be the achievement of a sufficient level of representation of the real system which suits the purpose of the model application.

An assessment of the level of representation is usually done through a comparison of model predictions with historical measurements under the matching conditions. In such cases, the model is configured to represent the physical configuration similar to the real system at the time of the measurements. Many parameters can be used in the comparison, including measurements of water levels and salinities at various stations. The most appropriate method of comparison is selection of each parameter with two main goals: 1) to minimize the effect of measurement errors and uncertainties; and 2) to evaluate the accuracy of the model in its representation of the main physical processes important to the model application. The first goal implies that the model results should be compared to measured or derived quantities, which by themselves do not include large errors or uncertainties (for example, water level measurements that include uncertainties in the vertical datum). The second goal implies that the model calibration should focus on the parameters which are most critical for the proposed application. The model performance should be evaluated over a range of values for each measured parameter. As a result of the comparison, the model is confirmed to be representative of the real system and its results are deemed trustworthy.

There are no specific codes or standards for assessing performance of numerical models in terms of simulation of observations. In this modeling study, an approach to assess the performance of each model is adopted from the Louisiana Coastal Area Program Mississippi River Hydrodynamics and Delta Management Study. The study is similar to the present study in complexity, extent, and evaluated parameters. The report "Model Performance Assessment Metrics and Uncertainty Analysis" (Meselhe & Rodrigue, 2013) includes targets for various parameters, which are discussed in the following section.

To assess model performance, Normalized Root Mean Squared (RMS) ($\varepsilon_{rms}N$) and Correlation Coefficient (R) metrics proposed in the report "Model Performance Assessment Metrics and Uncertainty Analysis" report (Meselhe et al., 2013) are adopted in this study. In the report, the normalized RMS value is computed as the RMS value divided by the mean observed value. However, when the mean observed value is near zero, the resulting metric value can become large

making the metric unreliable. In this analysis, the normalized RMS value is computed as the RMS value divided by the range of observed value. An additional Mean Error (ME) performance metric representing unnormalized bias between measured and computed values is included in this analysis, though a target for this metric is not included in Meselhe et al., 2013. The correlation coefficient is a metric assessing the phasing between the modeled and observed data. The correlation coefficient and Mean Error (ME) are computed as presented in Appendix A.

Table 3-1: Model Performance Targets (based on Meselhe et al., 2013)

Model Output	Normalized RMS		Correlation Coefficient (R)	
	Target Desired	Target Acceptable	Target Desired	Target Acceptable
Water levels	<15% for all stations	<15% for 80% of stations	>0.9 for all stations	>0.9 for 80% of stations
Salinity[†] (depth average or vertical profile)	<20% for all stations	<40% for 50% of stations	>0.7 for all stations	>0.5 for 50% of stations

[†] If phase errors are detected, and since it may amplify RMS errors and present unrealistic model performance metrics, it is recommended to compare maximum and minimum or daily mean salinities.

Note that the target performance metrics were developed for hydrodynamic models and do not discuss targets for mass-balance type models such as the JELA ICM. With the reduced process complexity and spatial resolution, expectations for the level of calibration for this type of model are generally lower (Brown, et al., 2017c)

3.2. Available Data

Both water level and salinity measurements at a number of locations throughout Barataria Basin and the preserve vicinity were available from a variety of sources including the USGS *National Water Information System* (USGS, 2019), the state of Louisiana's *Coastal Information Management System (CIMS)* (CPRA, 2019) which includes *Coastwide Reference Monitoring System (CRMS)* (Steyer, et al., 2003) hydrographic data, and NPS water quality monitoring programs at the preserve (see Figure 3-1). Given the large number of measurement stations in the basin, including many water level gages without reliable vertical datum adjustments, the model calibration process instead focused on measurements from a selected set of stations in the mid- and upper-basin that are the most important for characterizing conditions in the preserve vicinity (see Figure 3-2).

Figure 3-3 through Figure 3-5 plot measured water levels and salinities at a few selected measurement stations in the upper-basin and preserve vicinity. The data show that water level

variability is dominated by subtidal signals, with relatively little spatial variability. In the mid-basin area, especially along the BWW salinity intrusion pathway, salinity is highly variable, while conditions within the preserve are generally fully fresh (i.e. 0 Practical Salinity Units (psu)) except for short, episodic intrusion events. Conditions in Pipeline Canal (measured by CRMS0188-H01 station) are notably more saline than expected given the near zero salinities measured by other gages in the preserve.

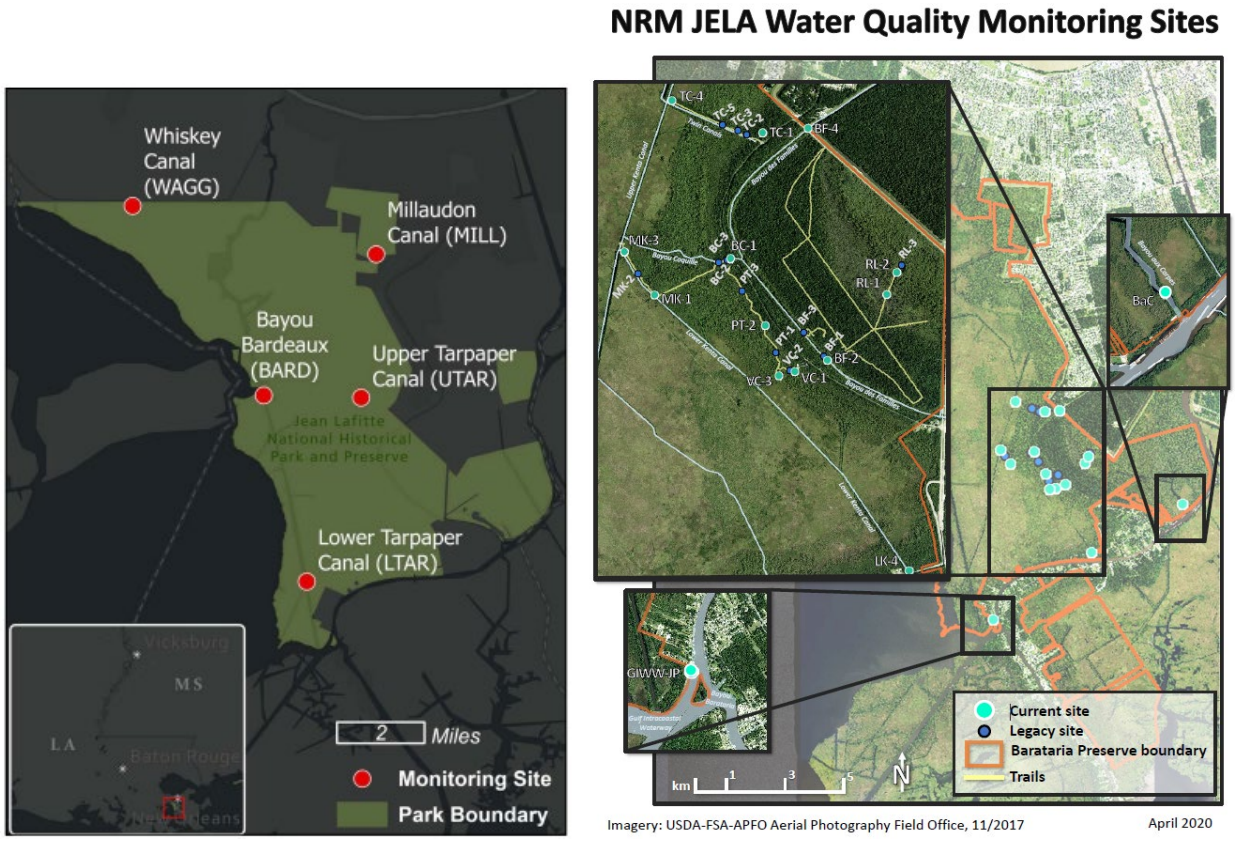


Figure 3-1: Water quality monitoring sites for the JELA Barataria Preserve from the NPS Gulf Coast Inventory and Monitoring Network (GULN) (left panel) and the Barataria Elevation & Hydrology Monitoring Array (EHMA) (right panel) (Meiman, 2006) (Whitbeck, J., Personal Communication, 2020).

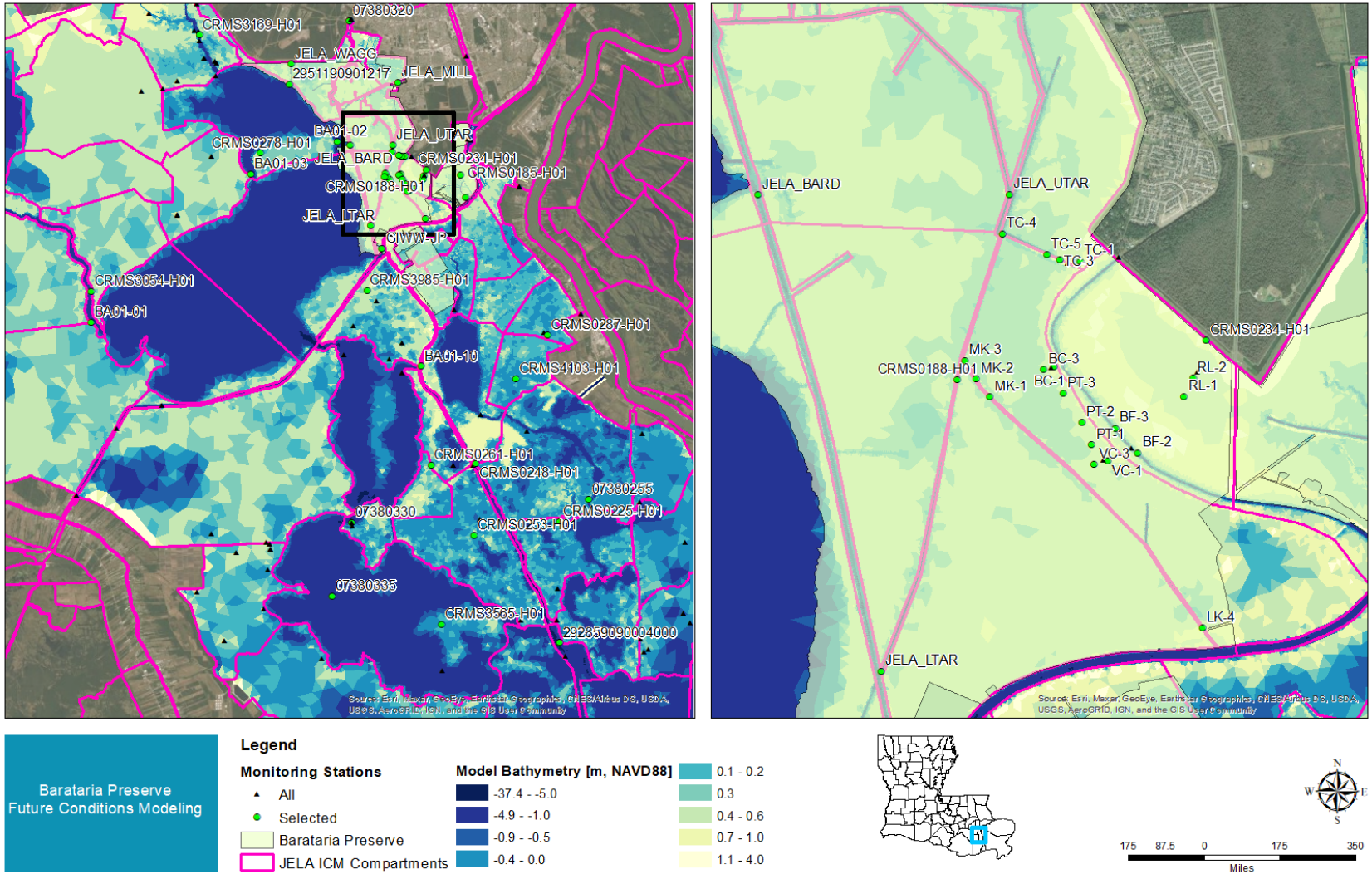


Figure 3-2: Selected water level and salinity monitoring station locations used in ICM and Hydrodynamic model calibration.

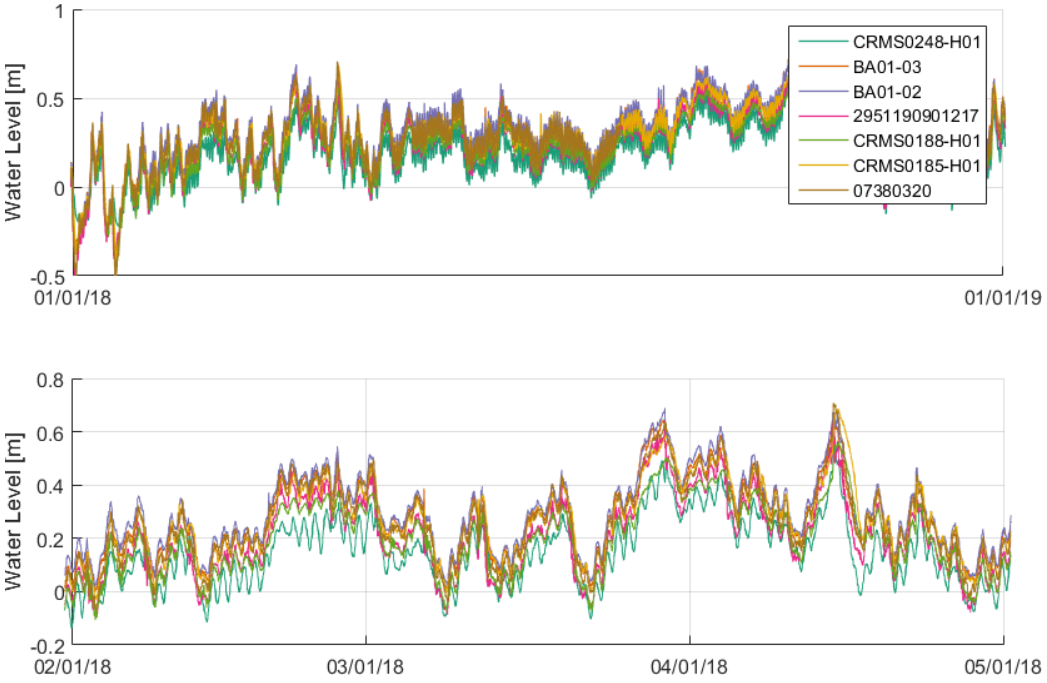


Figure 3-3: Measured water levels at a selection of USGS and CIMS measurement stations in the upper-basin and JELA vicinity during all of 2018 (upper panel) and February-May (lower panel).

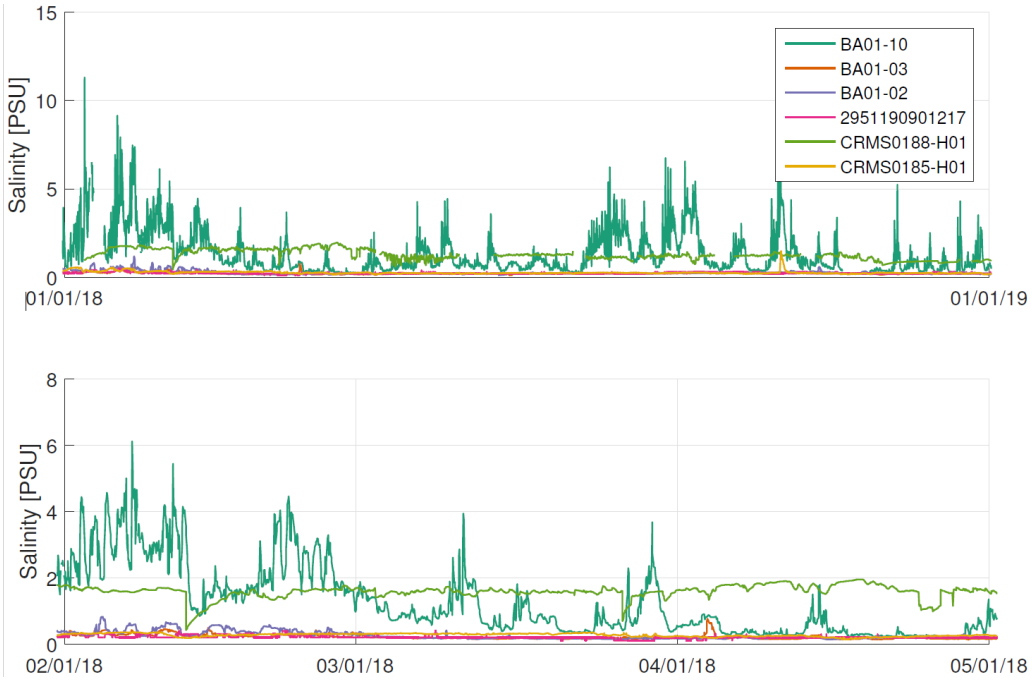


Figure 3-4: Measured salinities at a selection of USGS and CIMS measurement stations in the upper-basin and JELA vicinity during all of 2018 (upper panel) and February-May (lower panel).

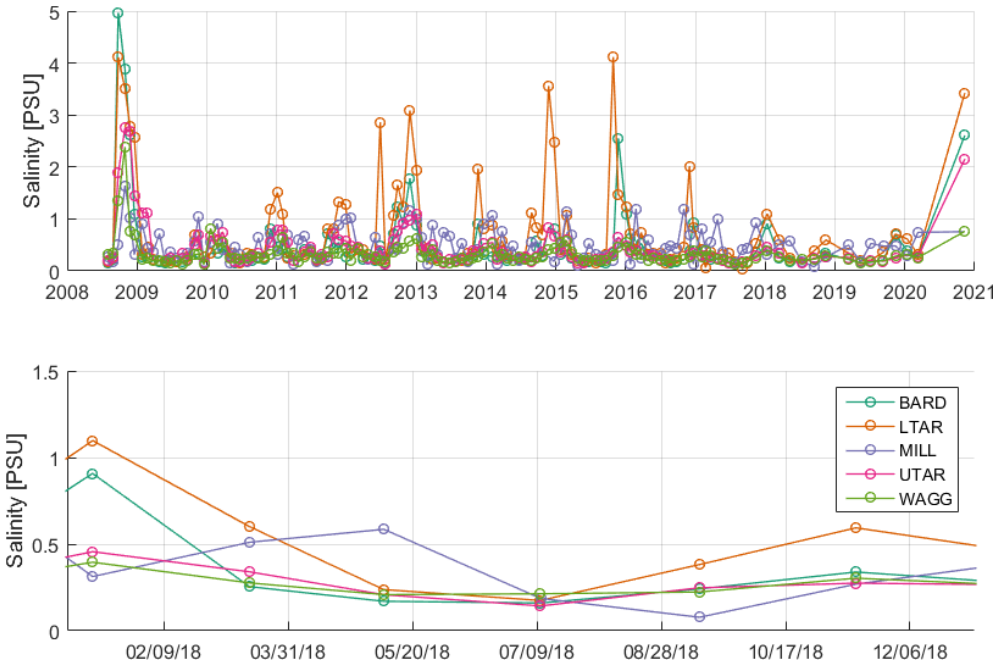


Figure 3-5: Measured salinities (at approximately monthly intervals) at the NPS GULN measurement stations during 2008-2021 (upper panel) and the year 2018 (lower panel).

3.3. ICM Model

3.3.1. Introduction

The development of the downscaled JELA ICM model began with the already calibrated 2023 CMP ICM; however, the addition of new, higher resolution compartments and connecting links required an additional calibration to ensure model performance in the downscaled region. The JELA ICM model was calibrated by adjusting several model parameters including the link geometry (depths and widths) for water level calibration and diffusion coefficients and upwind factors for salinity calibration.

The most recent four year subset (2014-2018) of the 2023 CMP ICM calibration/validation period (CPRA, in preparation) was chosen to calibrate the JELA ICM model to take advantage of the boundary conditions developed to support the 2023 CMP and to evaluate model performance during a period when the coastal landscape and hydrologic conditions closely resemble those at the start of future scenario simulations. Consistent with the 2023 CMP approach, calibration of the JELA ICM is based on daily-averaged water levels and salinities.

3.3.2. Water Levels

Figure 3-6 through Figure 3-9 present water level calibration results for the JELA ICM model, comparing measured and calculated (modeled) daily-averaged water levels at selected measurement stations in the mid- and upper- basin and preserve (see Figure 3-2 for station locations) during the 2014-2018 calibration period. Complete calibration results for all stations, including those outside of the area of interest, are included in Appendix B.

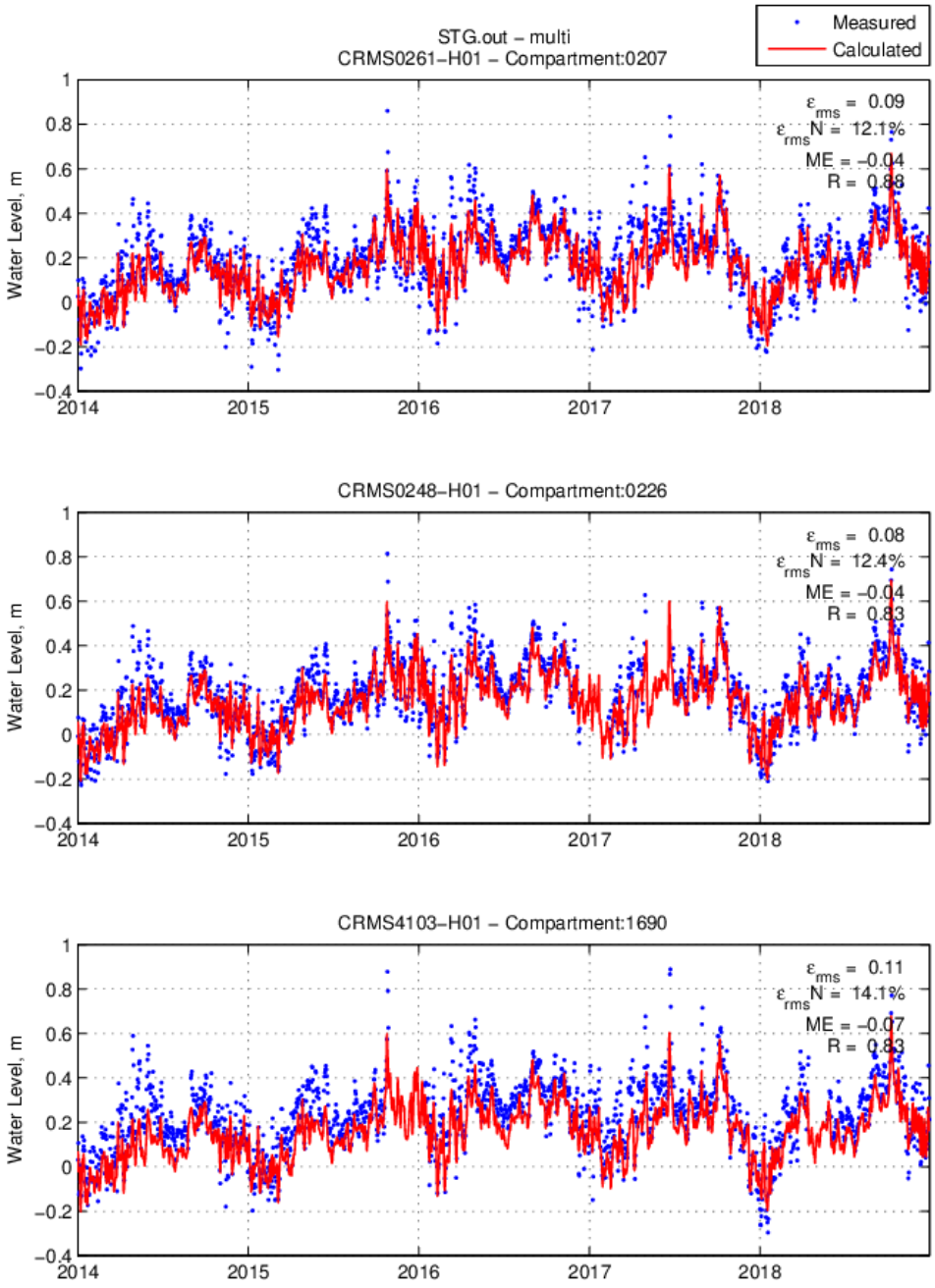


Figure 3-6: JELA ICM water level calibration results in the mid-basin (1)

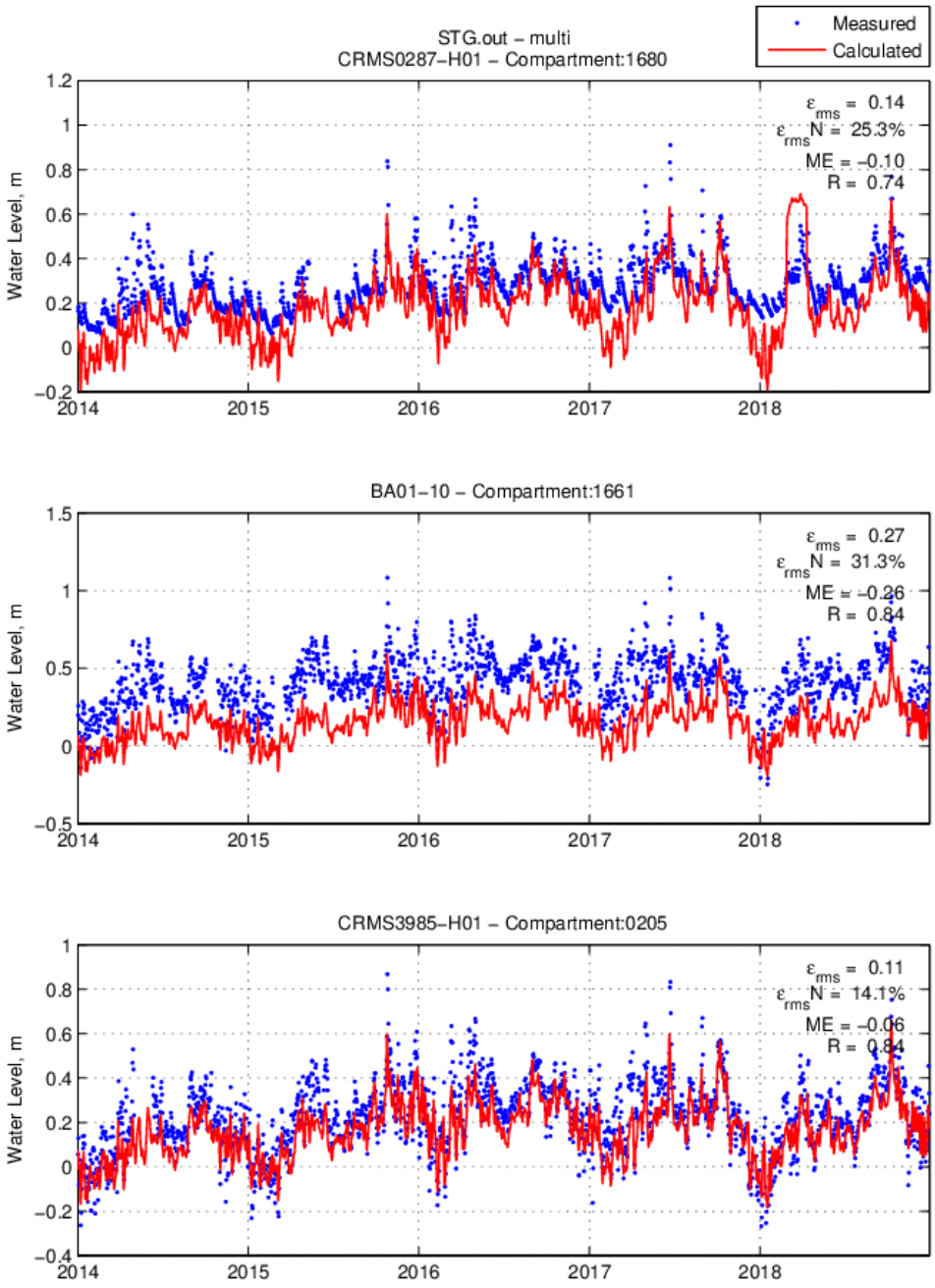


Figure 3-7: JELA ICM water level calibration results in the mid-basin (2)

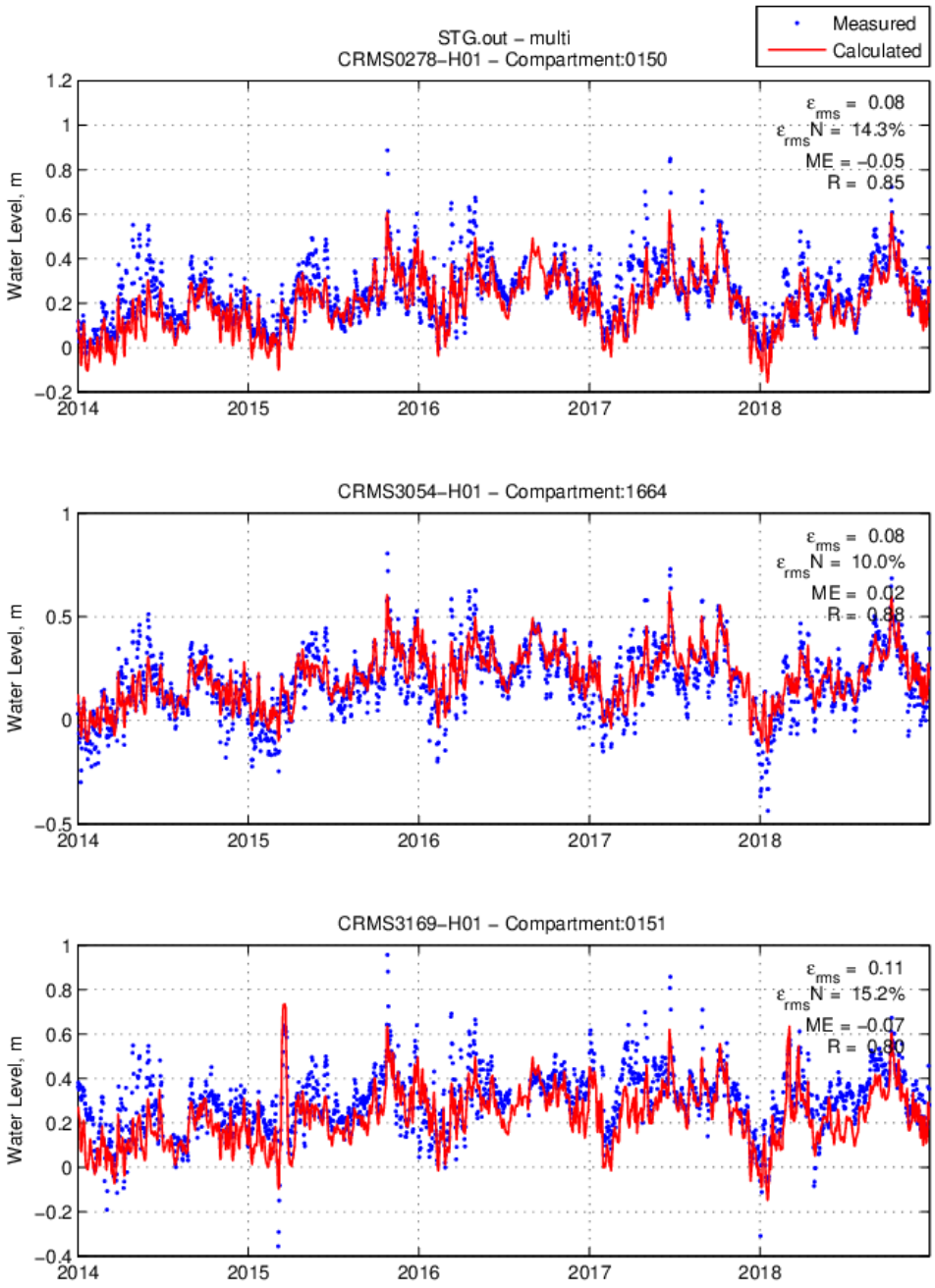


Figure 3-8: JELA ICM water level calibration results in the upper-basin.

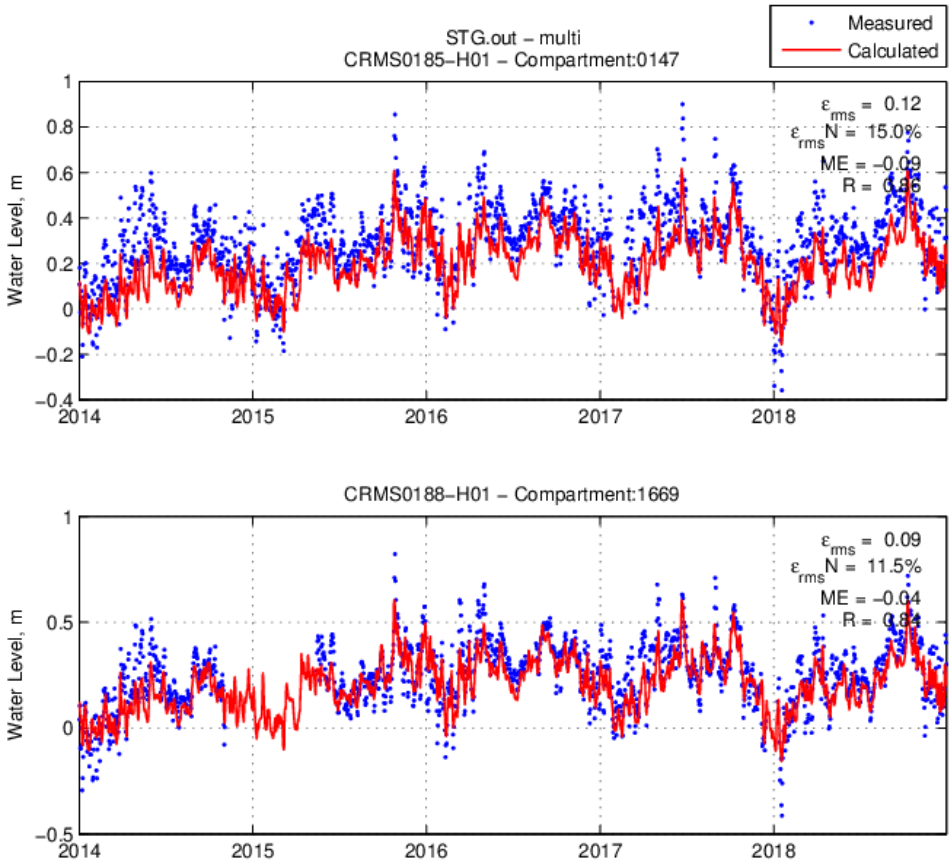


Figure 3-9: JELA ICM water level calibration results in the Barataria Preserve

3.3.3. Salinity

Figure 3-10 through Figure 3-16 present salinity calibration results for the JELA ICM model, comparing measured and calculated (modeled) daily averaged salinities at selected measurement stations in the Barataria Basin and preserve (see Figure 3-2 for station locations) during the 2014-2018 calibration period. Complete calibration results for all stations, including those outside of the area of interest, are included in Appendix B.

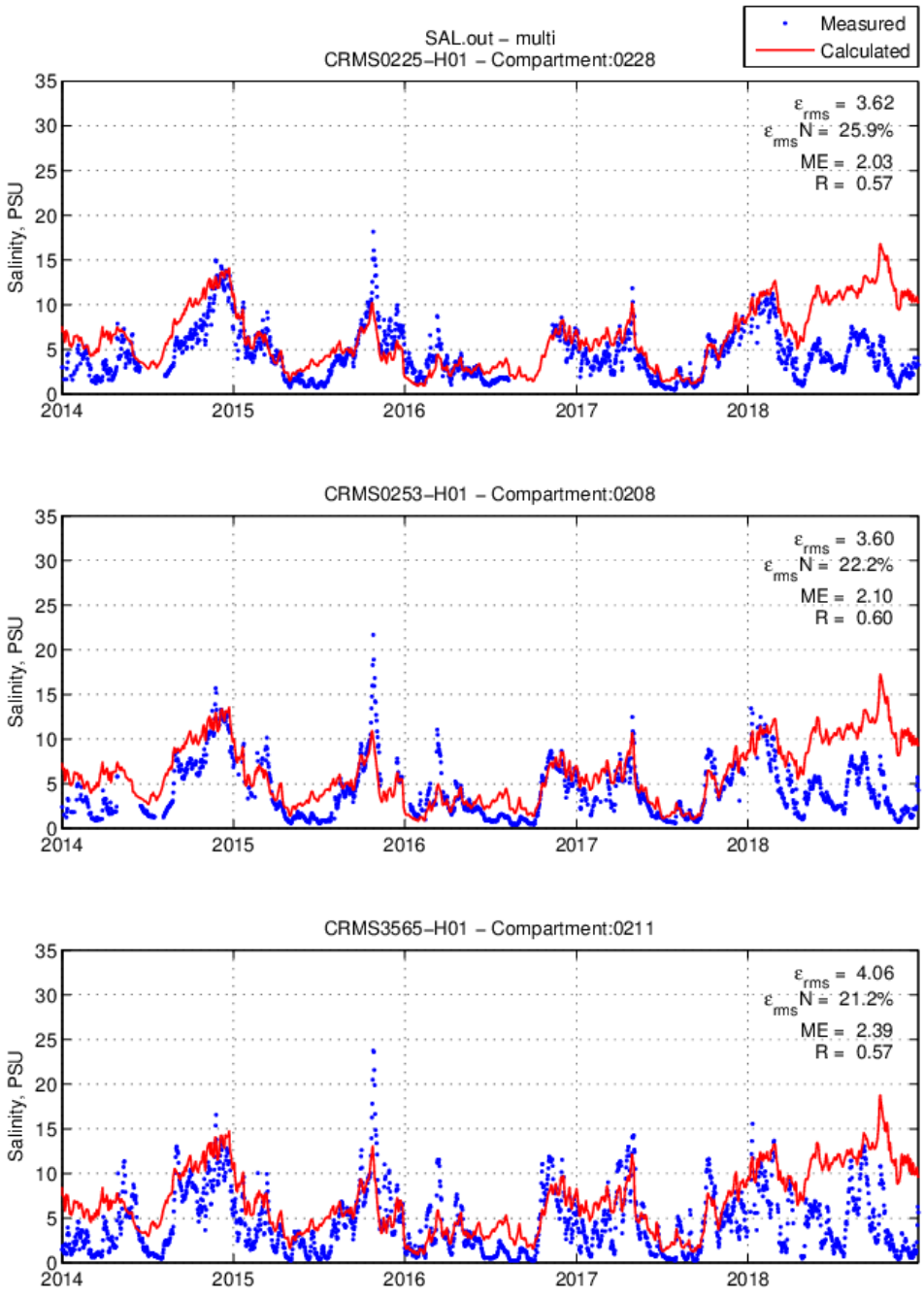


Figure 3-10: JELA ICM salinity calibration results in the lower-basin region.

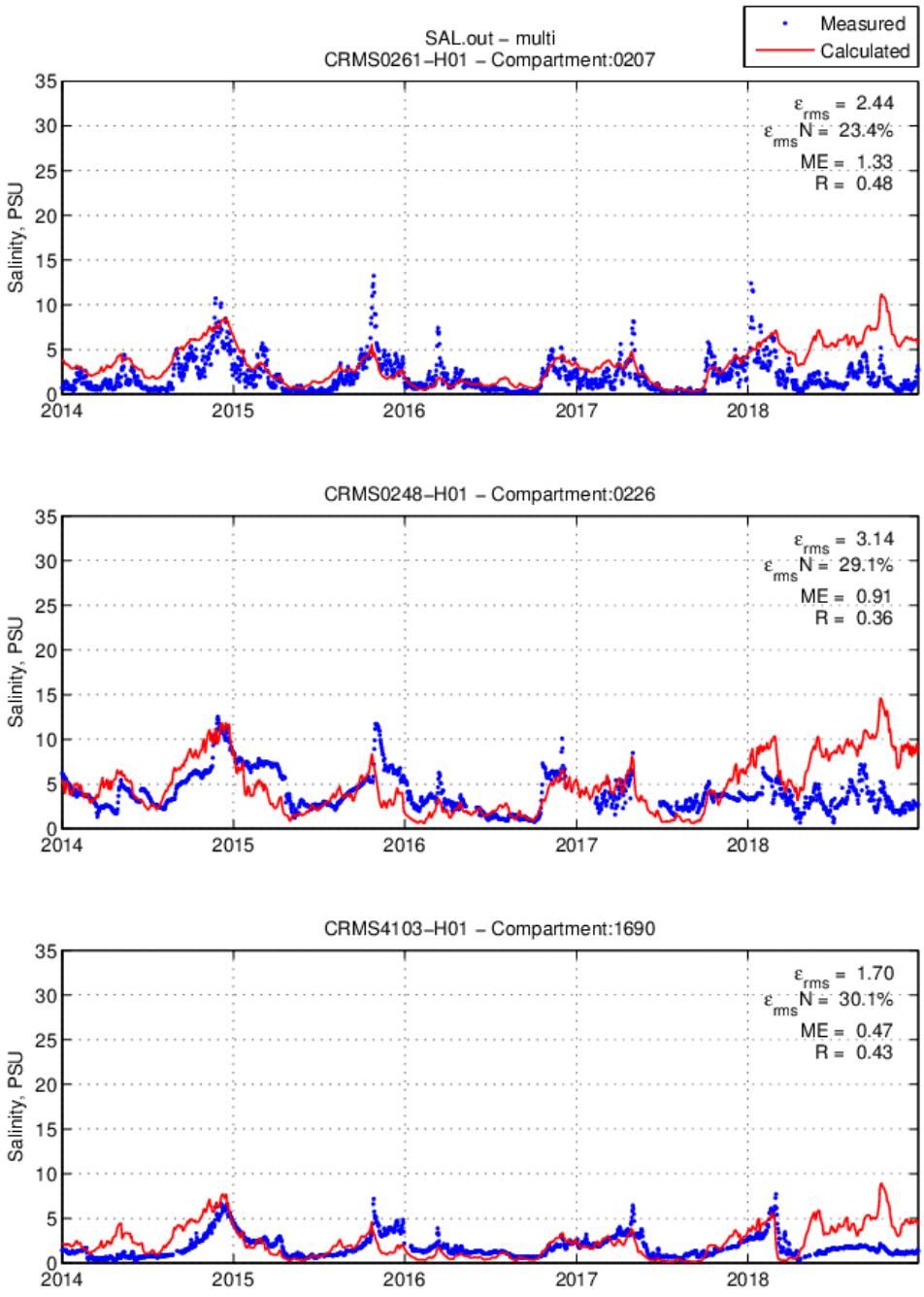


Figure 3-11: JELA ICM salinity calibration results in the mid-basin region.

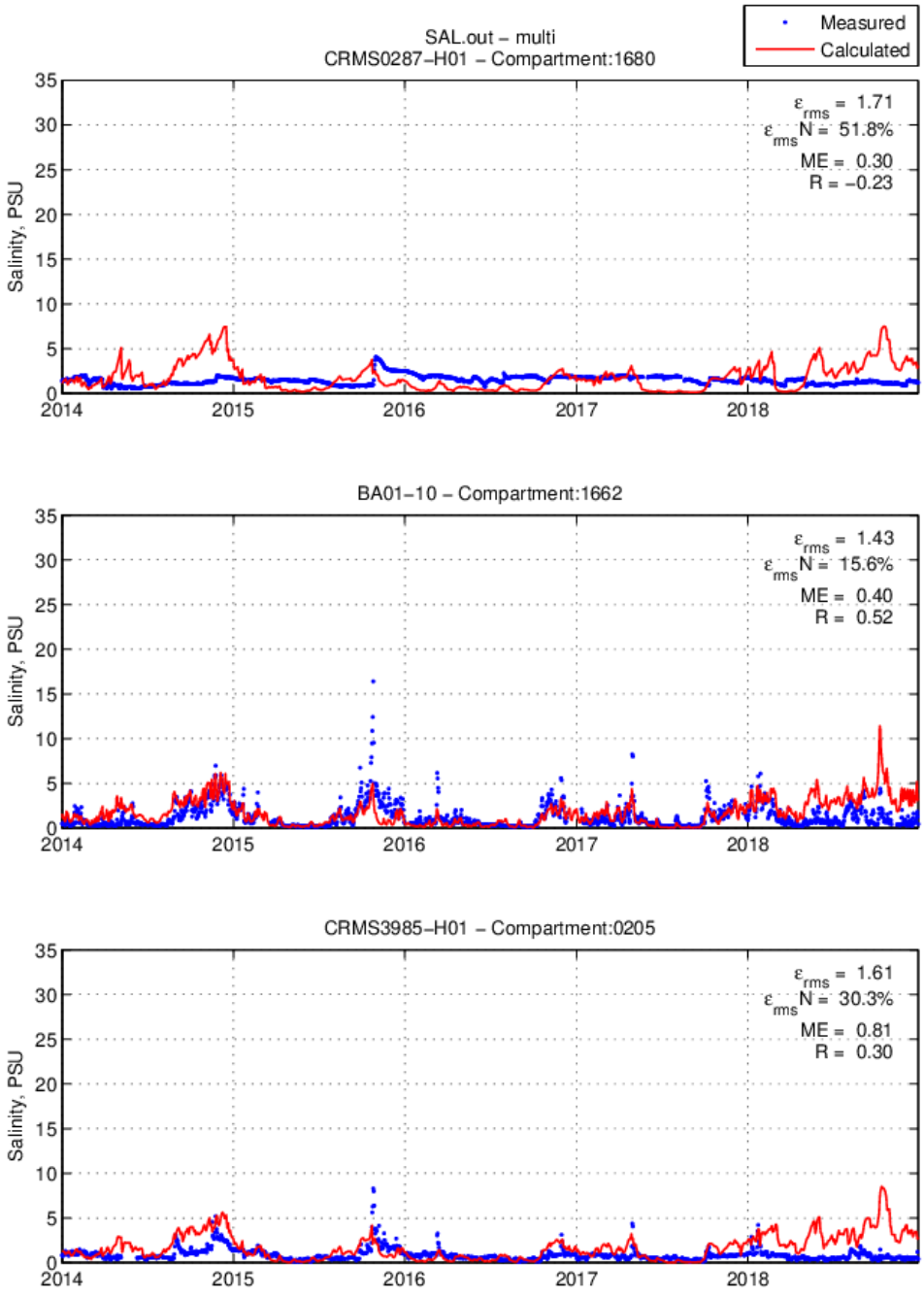


Figure 3-12: JELA ICM salinity calibration results in the mid-basin region.

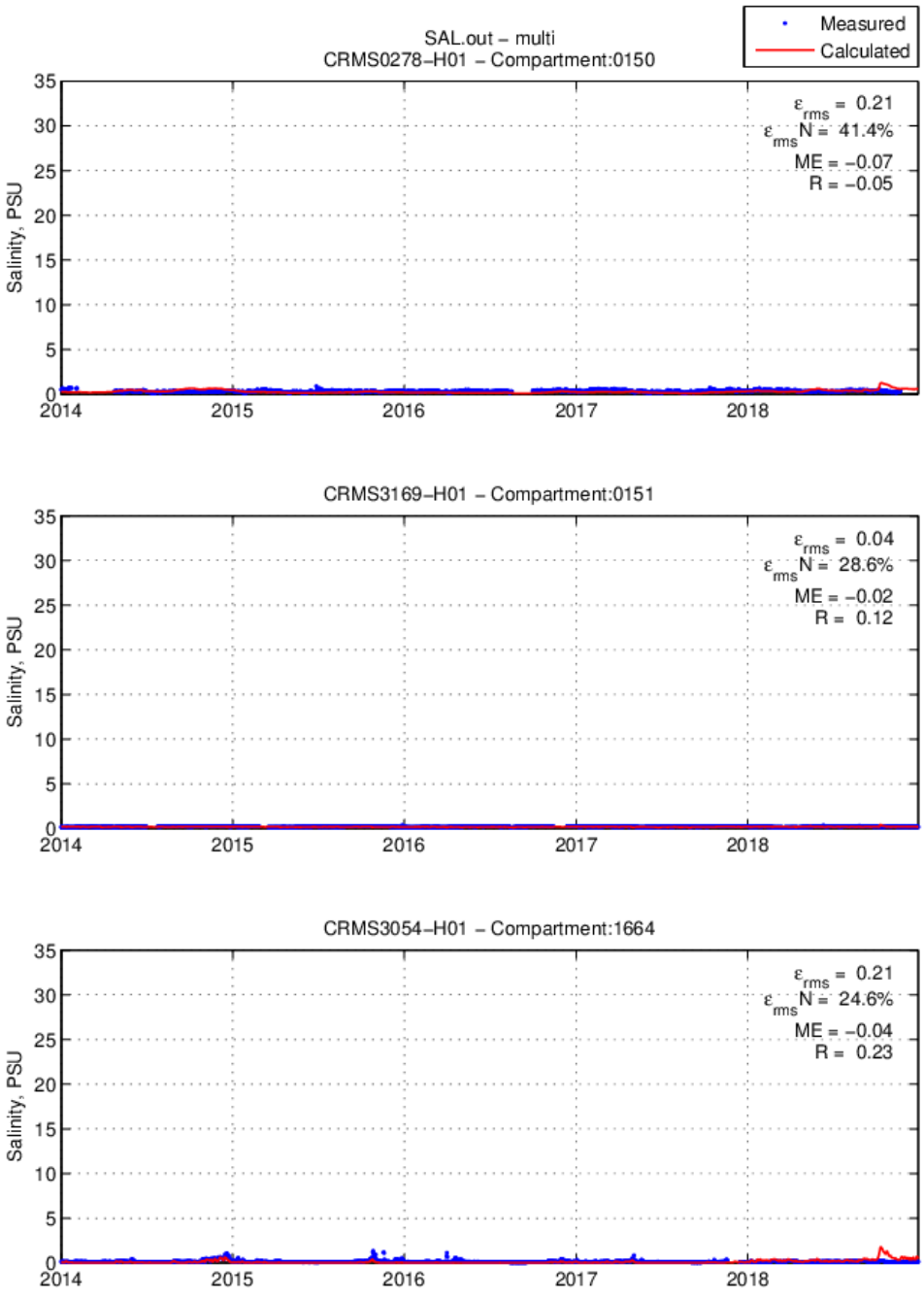


Figure 3-13: JELA ICM salinity calibration results in the eastern upper-basin region.

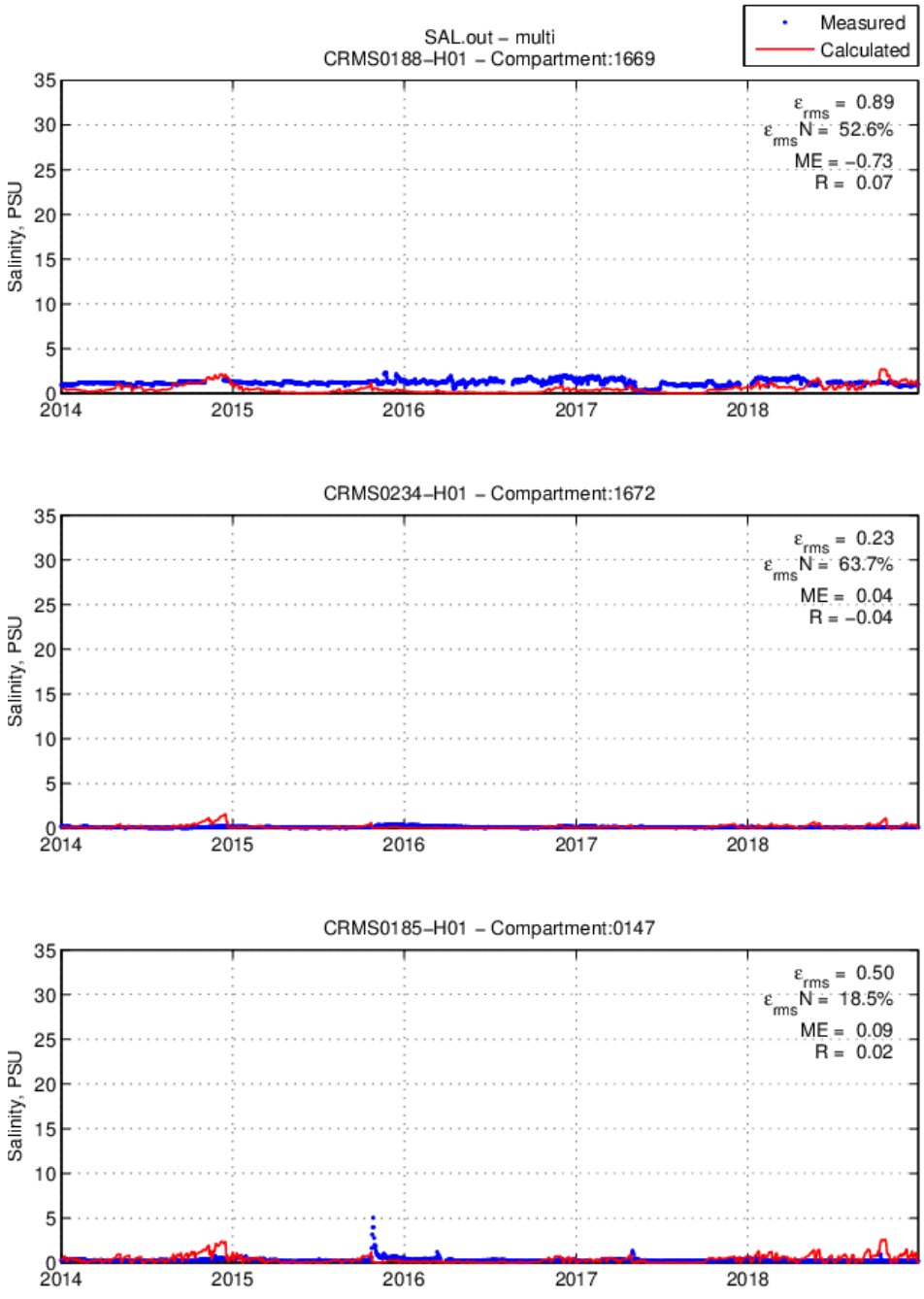


Figure 3-14: JELA ICM salinity calibration results in the Barataria Preserve (1)

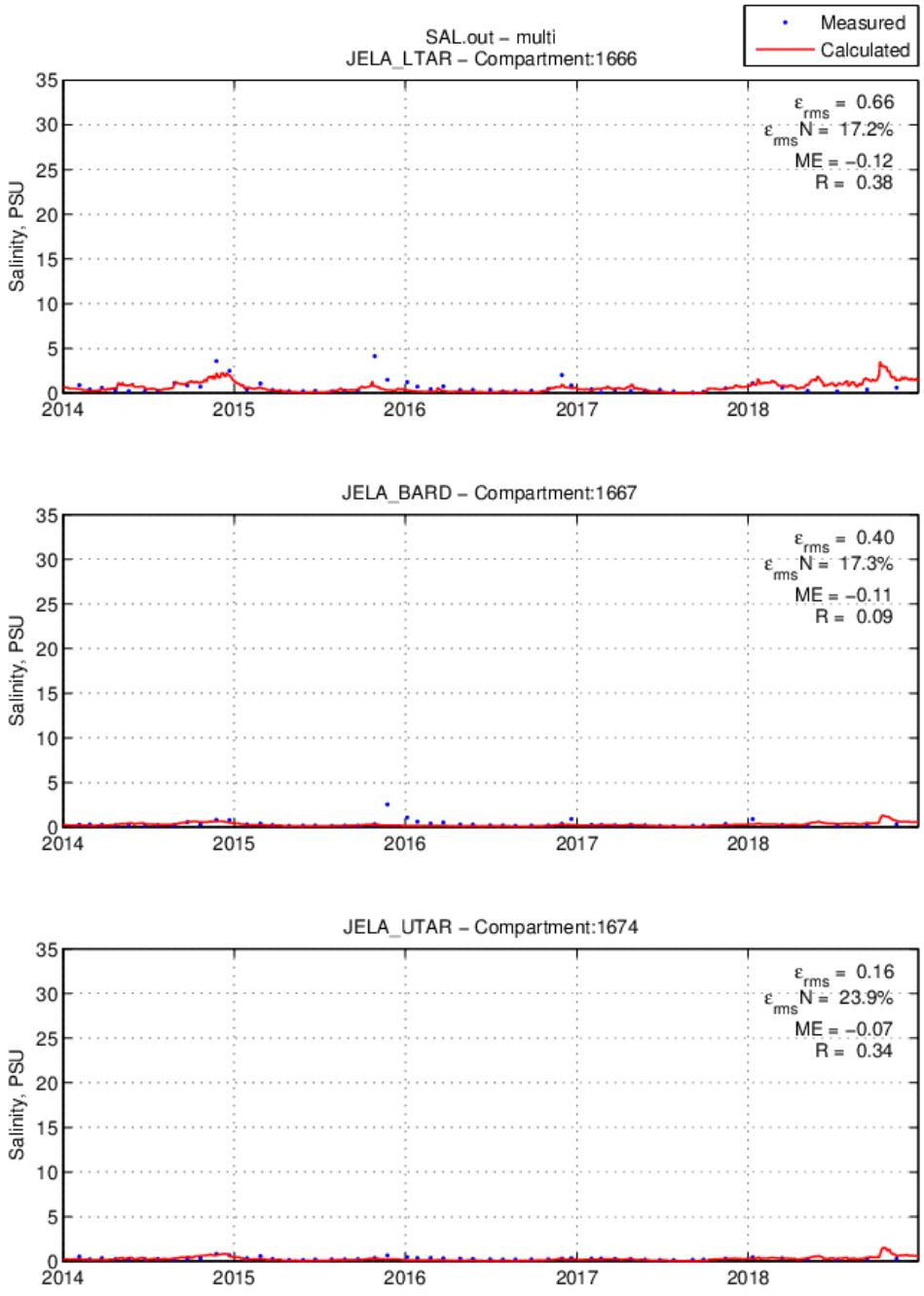


Figure 3-15: JELA ICM salinity calibration results in the Barataria Preserve (2)

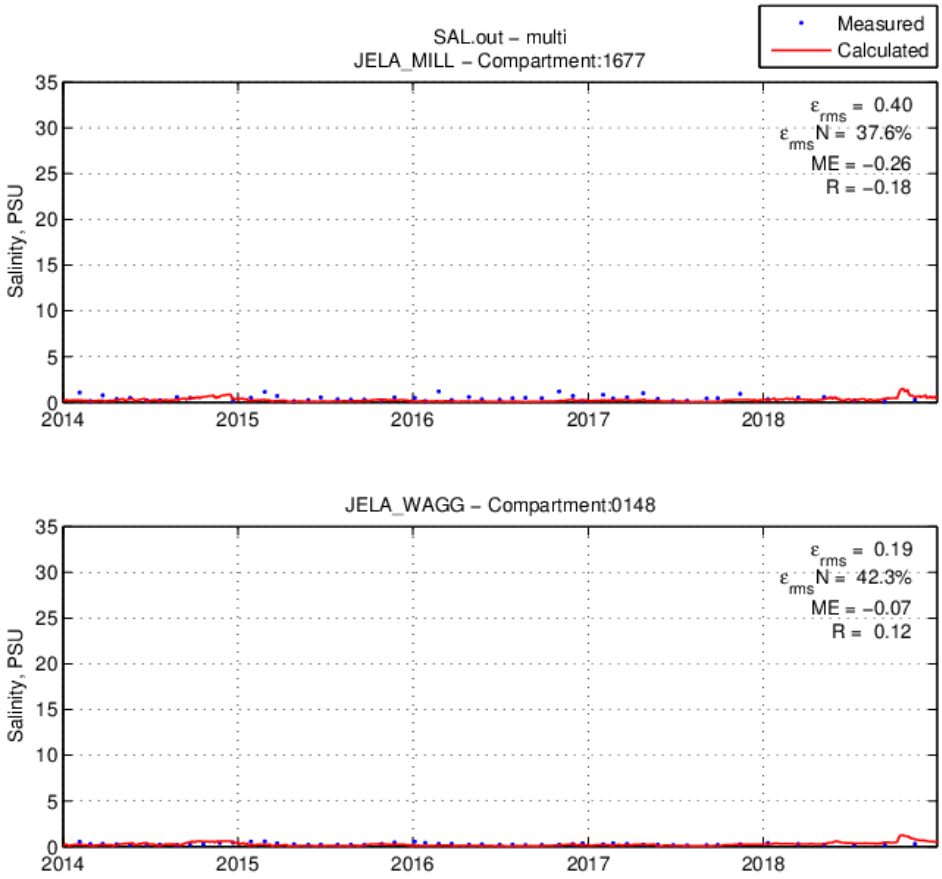


Figure 3-16: JELA ICM salinity calibration results in the Barataria Preserve (3)

3.3.4. Calibration Synopsis

The comparisons between measured and modeled (calculated) daily averaged water levels and salinities in the preceding sections indicate that the JELA ICM model adequately reproduces hydrologic conditions within the Barataria Basin. The results demonstrate good agreement for water levels with RMS errors and normalized RMS for most gages below 0.10 m and 15% respectively (see Table 3-2). The higher mean error at station BA01-10 may be the result of a datum shift between the measured and modeled stages. Correlation coefficients for nearly all stations are between 0.8 and 0.9. While they do not exceed the target value of 0.9 (Meselhe & Rodrigue, 2013), those targets were originally developed to apply to higher-resolution hydrodynamic models and not the mass balance JELA ICM with reduced spatial resolution. Overall, the water levels are considered well calibrated, especially in the upper basin and preserve vicinity.

Salinity results demonstrate good agreement with measurements throughout the basin as well, with RMS errors and normalized RMS for most stations below 2 psu and 40% respectively (see Table 3-3). Note that even with RMS values normalized to the range of simulated salinities, near-zero salinities for much of the upper basin render the normalized percentage value less useful for assessing model performance. Similarly, the correlation coefficient is not a useful performance metric for stations with only episodic (i.e. every few months) measurements, so it is not reported for the synoptic preserve water quality monitoring sites. The model reproduces the generally fresh conditions in the upper basin and captures observed higher-salinity intrusion events, despite a lack of wind driven transport included in the ICM mass-balance formulation. The improved resolution in the preserve vicinity improves prediction of salinities in the upper basin, especially intrusion events, compared with the 2023 CMP ICM. The plotted salinity timeseries show significantly increased errors between measured and calculated values for the calendar year 2018, which could indicate potential issues in the year 2018 offshore salinity boundary conditions; however, the level of agreement shown in the previous three years sufficiently demonstrates the model skill. While correlation coefficients do not generally meet the target values prescribed for higher-resolution hydrodynamic models, the low RMS error and mean error values indicate a level of calibration acceptable for the model purpose and comparable to 2017 and 2023 CMP ICM calibrations (Brown, et al., 2017c).

Table 3-2: JELA ICM water level calibration metrics for selected measurement stations

Station	RMS error [m]	Normalized RMS [%]	Correlation Coefficient (R)	Mean Error [m]
CRMS0261-H01 - Compartment:0207	0.09	12.1	0.88	-0.04
CRMS0248-H01 - Compartment:0226	0.08	12.4	0.83	-0.04
CRMS4103-H01 - Compartment:1690	0.11	14.1	0.83	-0.07
CRMS0287-H01 - Compartment:1680	0.14	25.3	0.74	-0.10
BA01-10 - Compartment:1661	0.27	31.3	0.84	-0.26
CRMS3985-H01 - Compartment:0205	0.11	14.1	0.84	-0.06
CRMS0185-H01 - Compartment:0147	0.12	15.0	0.86	-0.09
CRMS0188-H01 - Compartment:1669	0.09	11.5	0.84	-0.04
CRMS0278-H01 - Compartment:0150	0.08	14.3	0.85	-0.05
CRMS3054-H01 - Compartment:1664	0.08	10.0	0.88	0.02
CRMS3169-H01 - Compartment:0151	0.11	15.2	0.80	-0.07

Table 3-3: JELA ICM salinity calibration metrics for selected measurement stations

Station	RMS error [psu]	Normalized RMS [%]	Correlation Coefficient (R)	Mean Error [psu]
CRMS0225-H01 - Compartment:0228	3.6	25.9	0.57	2.0
CRMS0253-H01 - Compartment:0208	3.6	22.2	0.60	2.1
CRMS3565-H01 - Compartment:0211	4.1	21.2	0.57	2.4
CRMS0261-H01 - Compartment:0207	2.4	23.4	0.48	1.3
CRMS0248-H01 - Compartment:0226	3.1	29.1	0.36	0.9
CRMS4103-H01 - Compartment:1690	1.7	30.1	0.43	0.5
CRMS0287-H01 - Compartment:1680	1.7	51.8	-0.23	0.3
BA01-10 - Compartment:1662	1.4	15.6	0.52	0.4
CRMS3985-H01 - Compartment:0205	1.6	30.3	0.30	0.8
JELA_LTAR - Compartment:1666	0.7	17.2	-	-0.1
CRMS0188-H01 - Compartment:1669	0.9	52.6	0.07	-0.7
CRMS0234-H01 - Compartment:1672	0.2	63.7	-0.04	0.0
CRMS0185-H01 - Compartment:0147	0.5	18.5	0.02	0.1
JELA_BARD - Compartment:1667	0.4	17.3	-	-0.1
JELA_UTAR - Compartment:1674	0.2	23.9	-	-0.1
JELA_MILL - Compartment:1677	0.4	37.6	-	-0.3
JELA_WAGG - Compartment:0148	0.2	42.3	-	-0.1
CRMS0278-H01 - Compartment:0150	0.2	41.4	-0.05	-0.1
CRMS3169-H01 - Compartment:0151	0.0	28.6	0.12	0.0
CRMS3054-H01 - Compartment:1664	0.2	24.6	0.23	0.0

3.4. Hydrodynamic Model

3.4.1. Introduction

If the hydrodynamic model of the Barataria Basin is to be successfully used to analyze future hydrodynamics and salinity patterns, it must, to the greatest extent possible, mimic the behavior of the observed hydrodynamics within the basin under similar physical forcings. This is accomplished by simulating historical forcing for which important hydrodynamic parameters have been measured and adjusting the model to minimize the difference between calculated and measured values.

The following sub-sections detail the Mike21-FM HD model calibration for both water level and salinity. After the model was developed and the depth- and vegetation- dependent roughness formulation implemented (see Section 2.3.4), the model was effectively calibrated for water levels except at the Davis Pond outflow channel. Mesh bathymetry and roughness were manually

adjusted in this limited area to better represent the flow through many small channels between the Davis Pond outflow channel and Lake Cataouatche.

Mesh bathymetry and roughness adjustments also guided the salinity calibration process. Mesh resolution was significantly increased east of the Barataria Waterway and south of the Barataria Preserve (see Figure 2-6), to accurately depict the bathymetry of the mid-basin. Additionally, the mesh bathymetry was simplified along the west bank levees in the southeast area of the model to better capture tidal flow at the lower area of the basin. Both the higher mesh resolution mid-basin and bathymetry simplification in the lower basin improved the salinity calibration.

The calibration period for the hydrodynamic model was also chosen to be as recent as possible to evaluate model performance during a period when the coastal landscape and hydrologic conditions closely resemble those at the start of future scenario simulations; however, the period of analysis needed to be more limited compared with the JELA ICM due to the greater computational resources and model runtimes required. The calendar year 2018 was chosen for the hydrodynamic model calibration as it was both recent with abundant available measured data and long enough to capture the full range of the seasonal forcing conditions in the Barataria Basin.

3.4.2. Water Levels

Figure 3-17 and Figure 3-18 present water level calibration results for the JELA Mike21-FM HD model, comparing measured and calculated (modeled) water levels at selected measurement stations near the preserve (see Figure 3-2 for station locations) during the year 2018 calibration period. Complete calibration results for all stations, including those outside of the area of interest, are included in Appendix C. Model output indicates water levels are well calibrated within the preserve and upper basin vicinity.

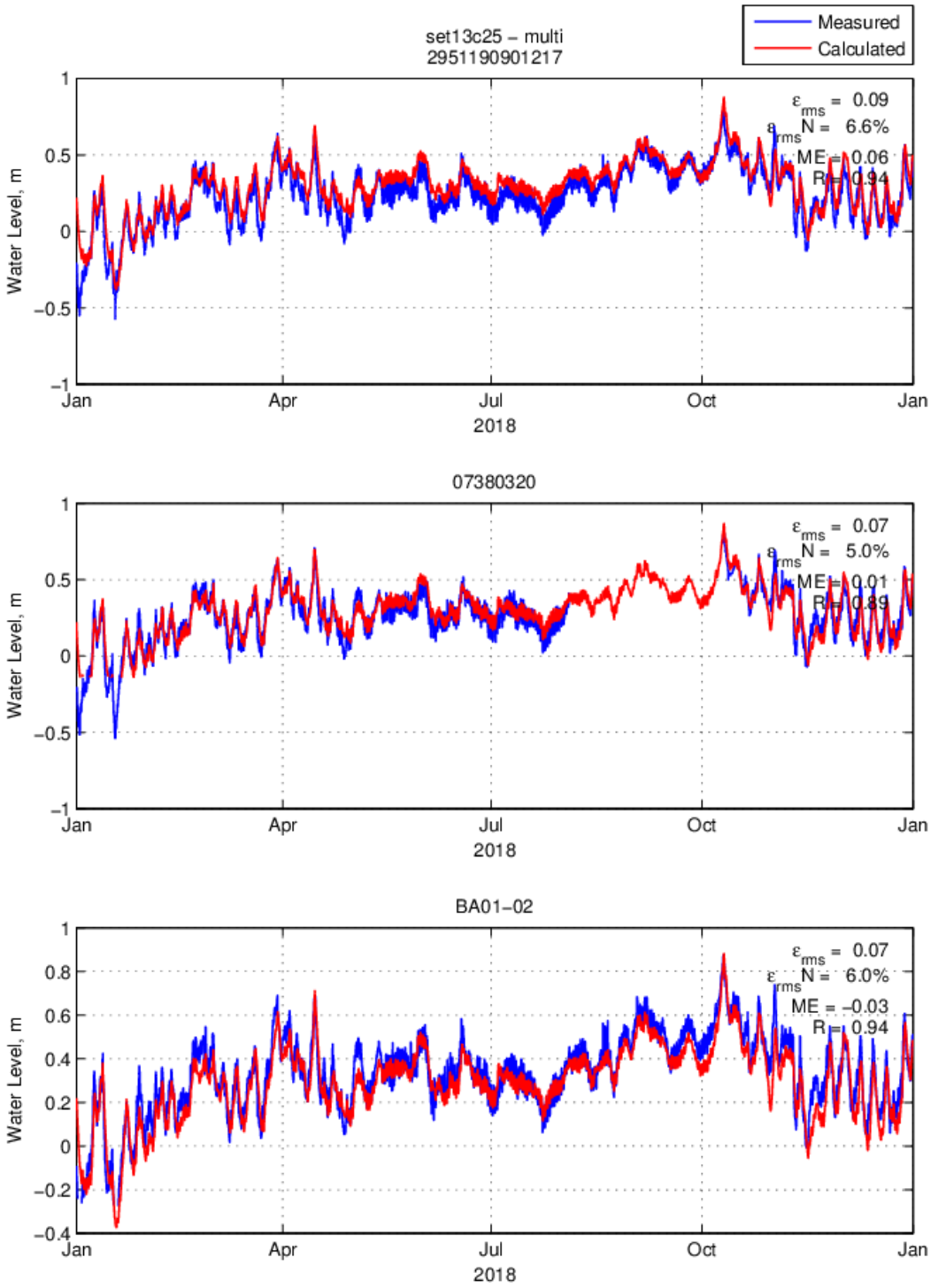


Figure 3-17: Hydrodynamic model water level calibration North and West of the Barataria Preserve

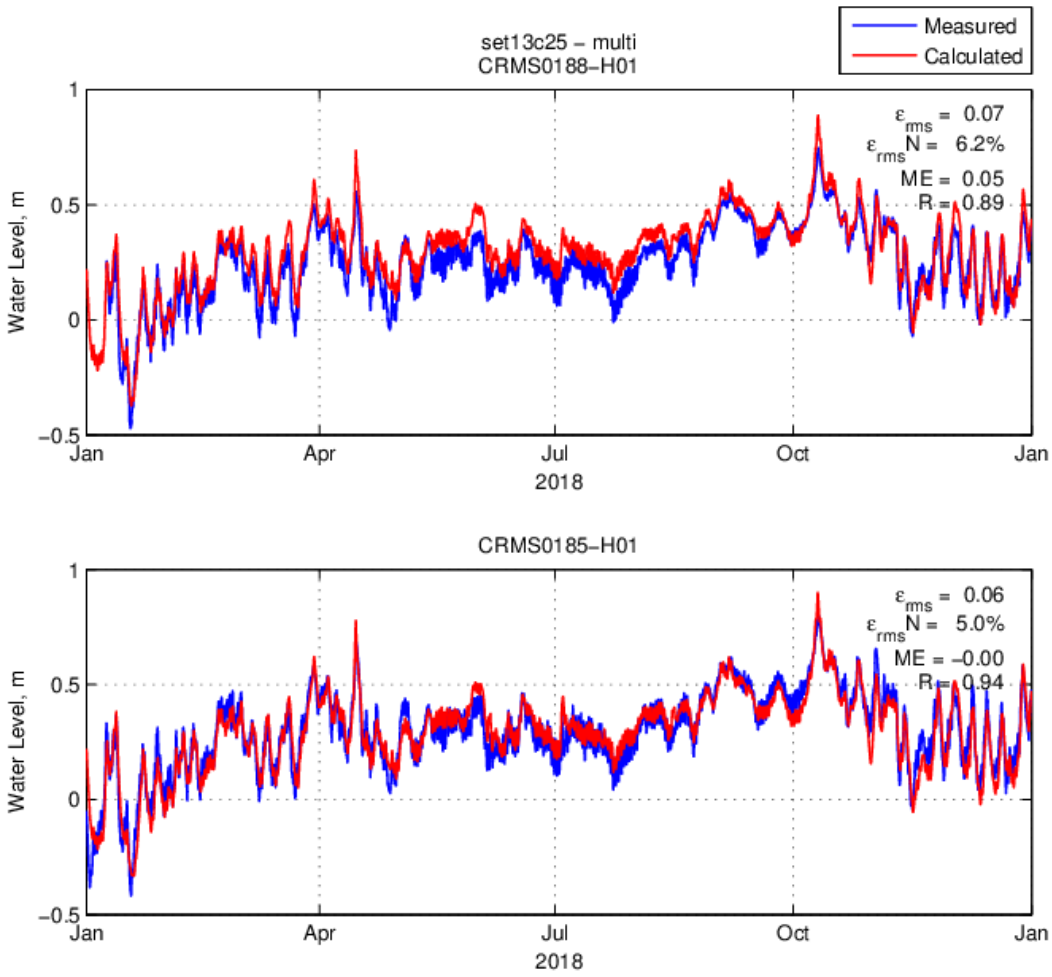


Figure 3-18: Hydrodynamic model water level calibration within the Barataria Preserve

3.4.3. Salinity

Figure 3-19 through Figure 3-24 present salinity calibration results for the JELA Mike21-FM HD model, comparing measured and calculated (modeled) salinities at selected measurement stations in the Barataria Basin and preserve (see Figure 3-2 for station locations) during the year 2018 calibration period. Complete calibration results for all stations, including those outside of the area of interest, are included in Appendix C.

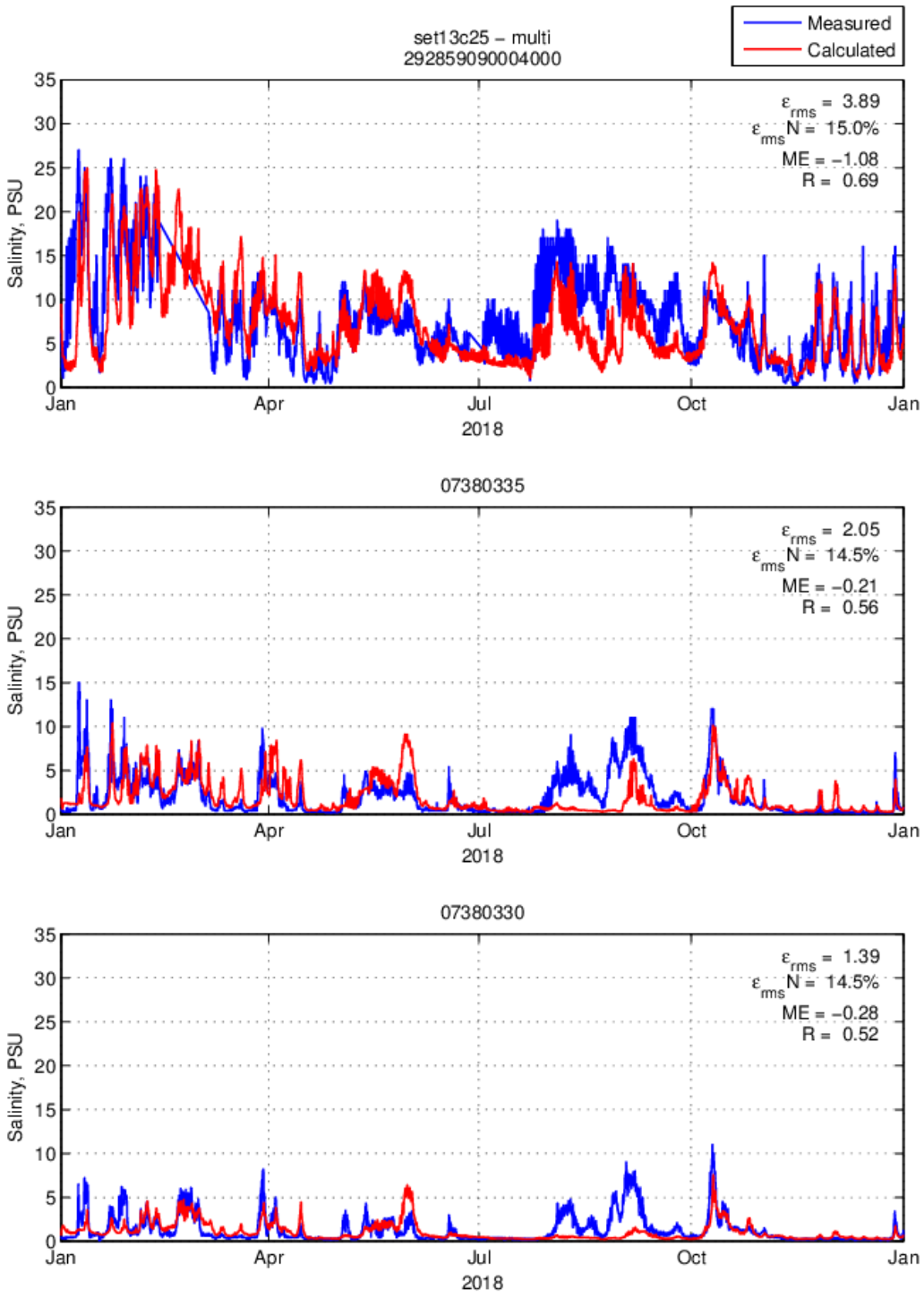


Figure 3-19: Hydrodynamic model salinity calibration in the western mid-basin (Barataria Waterway and Little Lake)

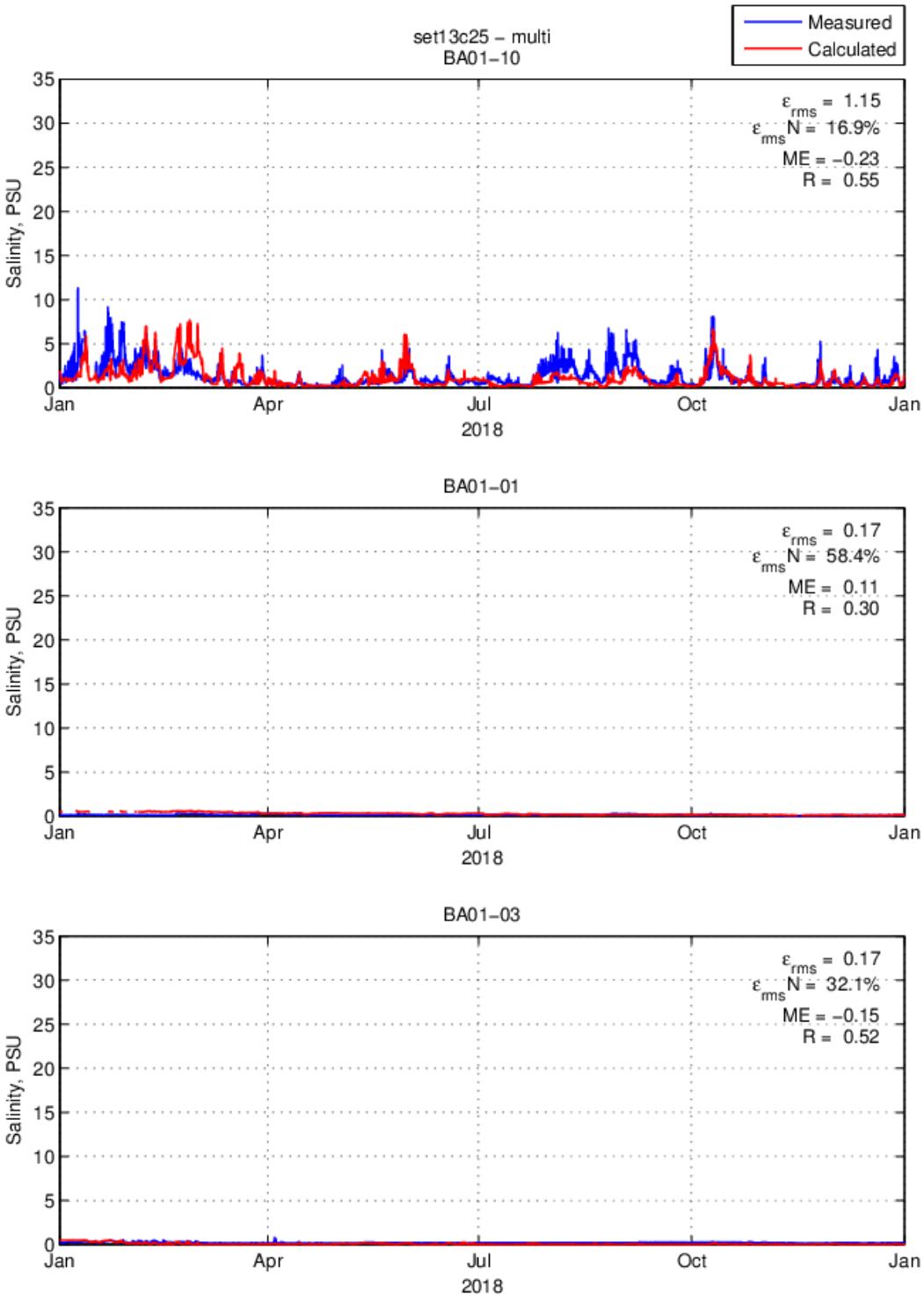


Figure 3-20: Hydrodynamic model salinity calibration in the western upper-basin (Barataria Waterway and Lake Salvador)

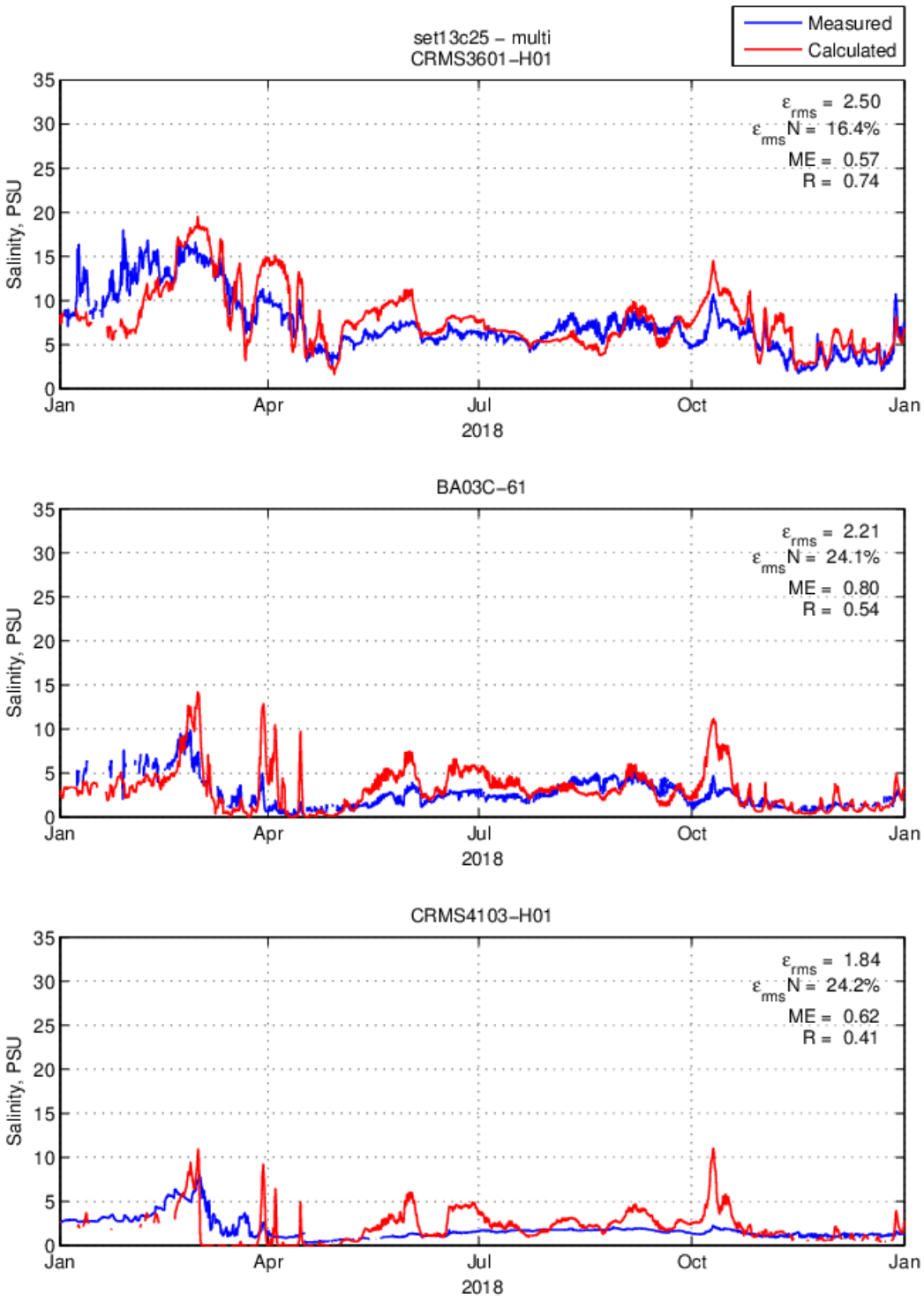


Figure 3-21: Hydrodynamic model salinity calibration in the eastern mid-basin (southeast of The Pen)

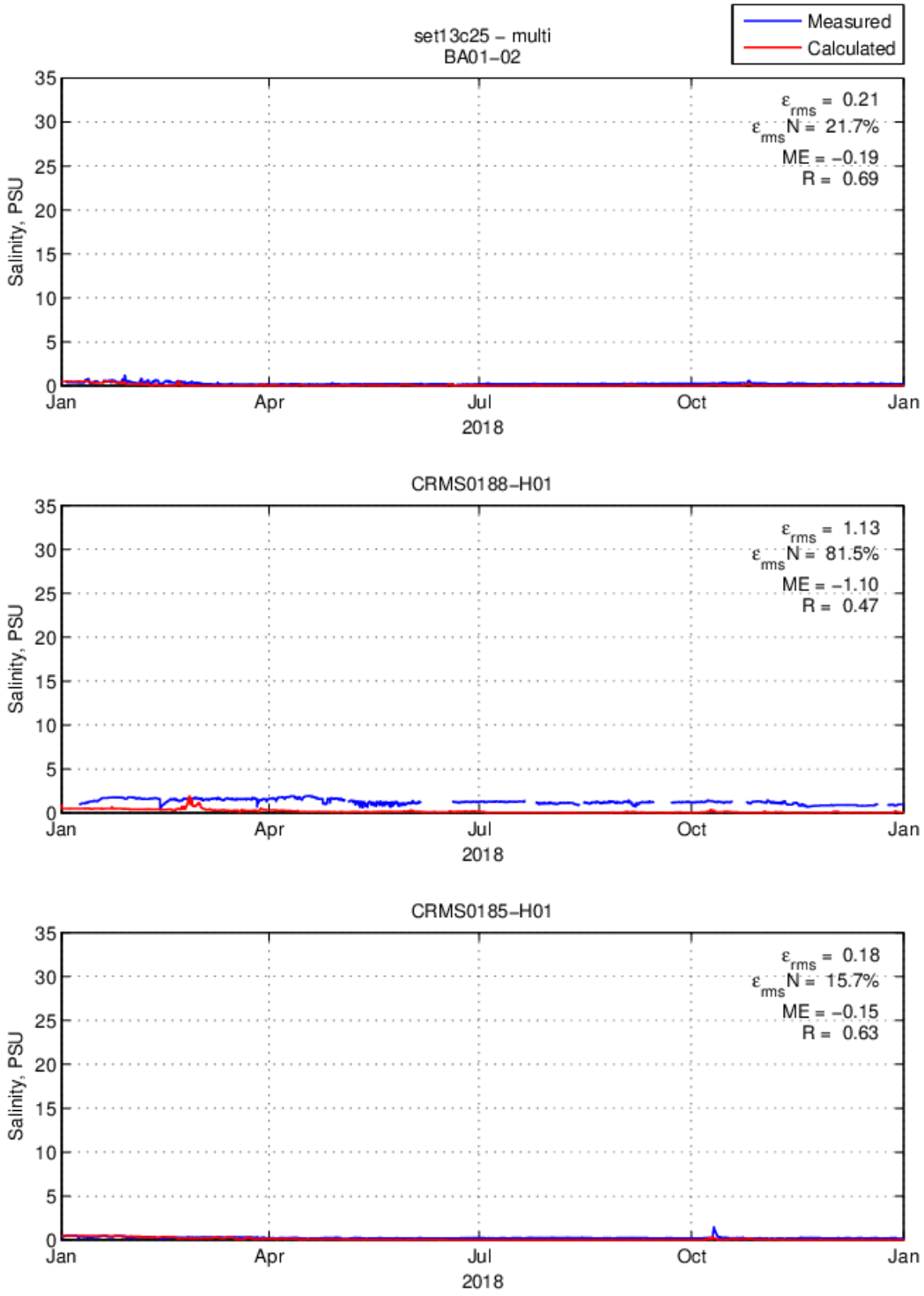


Figure 3-22: Hydrodynamic model salinity calibration in the Barataria Preserve (1)

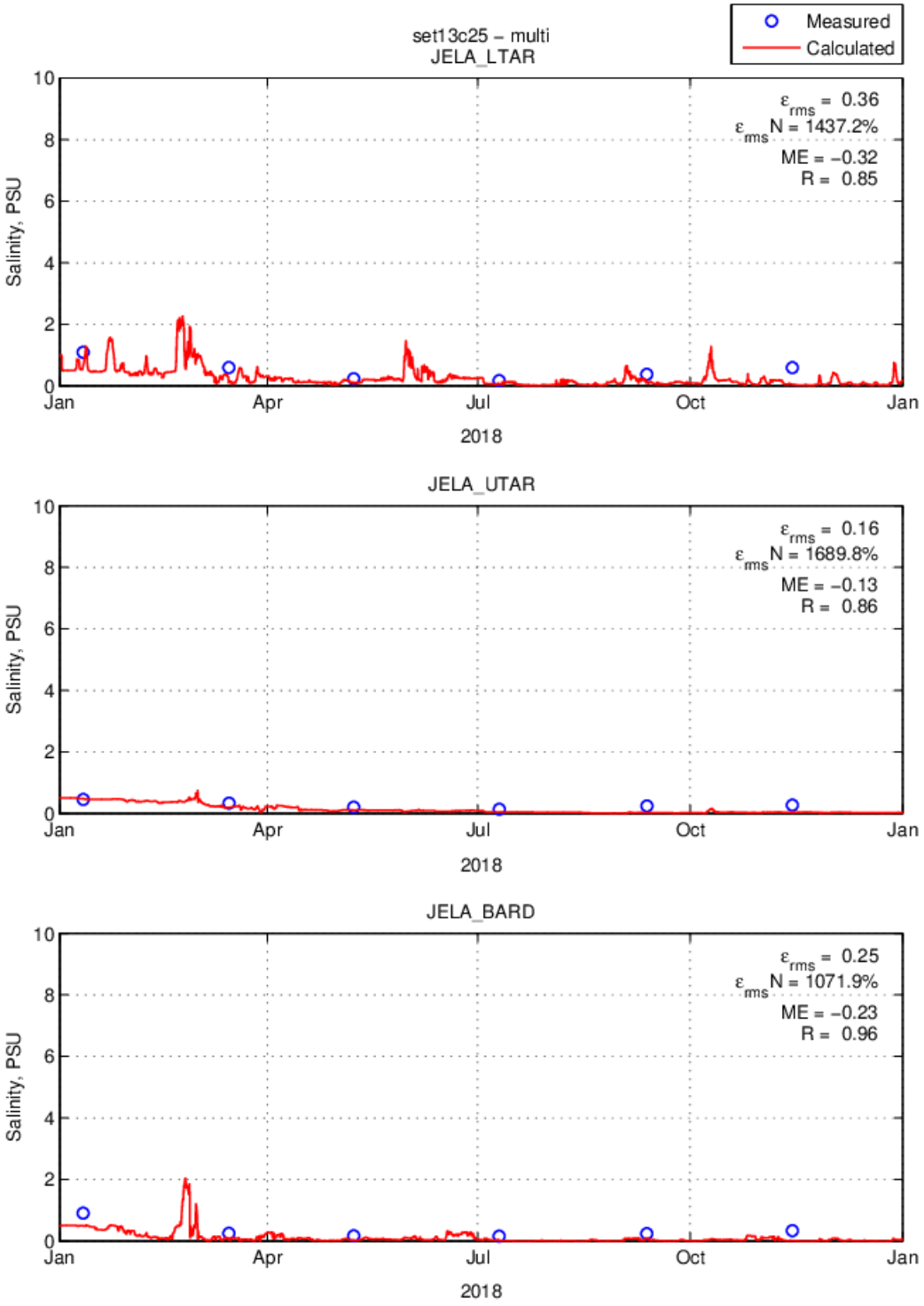


Figure 3-23: Hydrodynamic model salinity calibration in the Barataria Preserve (2)

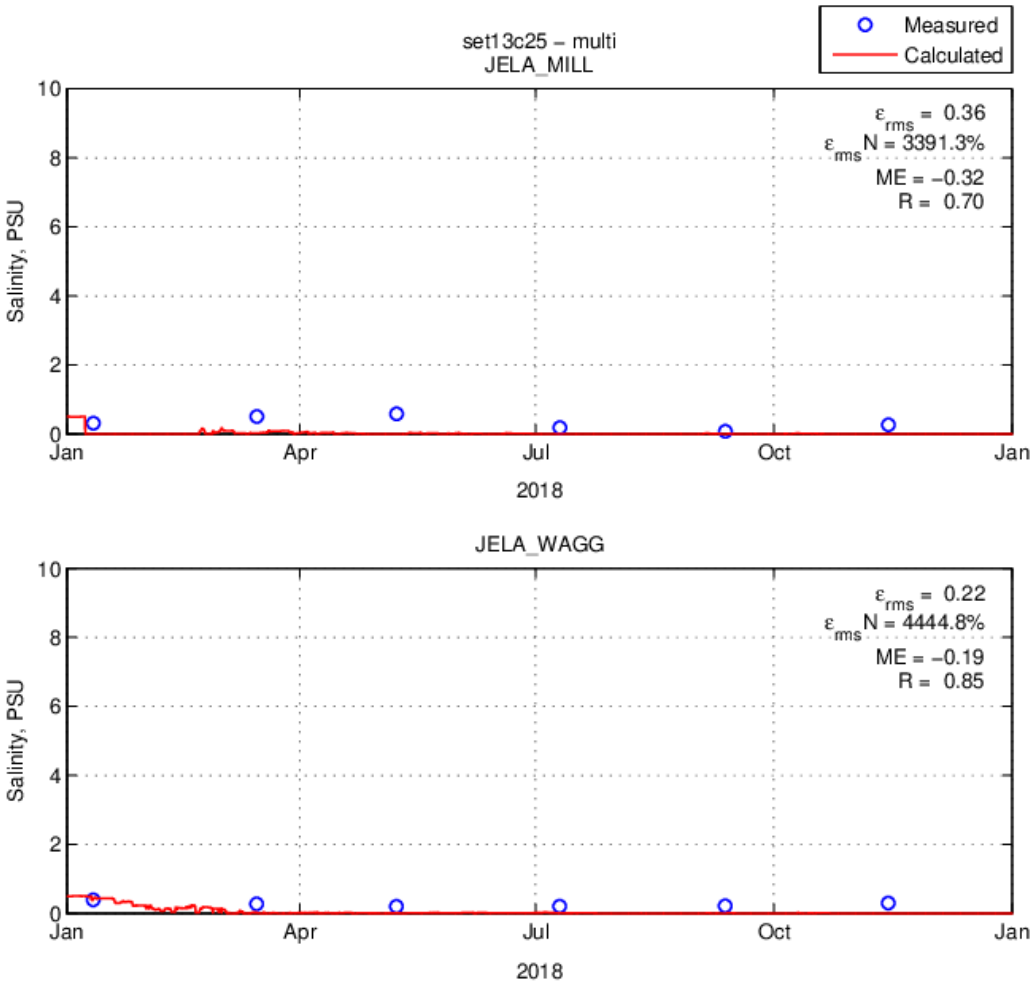


Figure 3-24: Hydrodynamic model salinity calibration in the Barataria Preserve (3)

3.4.4. Calibration Synopsis

Calibration results indicate a very good agreement between measured values and hydrodynamic model results. The results demonstrate good agreement for water levels with RMS errors and normalized RMS for most gages below 0.10 m and 10% respectively (see Table 3-4). Correlation coefficients show similarly good agreement with values for most gages greater than 0.9. Overall, the water levels are considered very well calibrated, especially in the upper basin and preserve vicinity.

Salinities in the hydrodynamic model are also well calibrated, especially in the mid- to –upper basin (see Table 3-5). RMS error values for most gages are below 1 psu, and correlation coefficients are generally greater than 0.4. Note that normalized RMS values for gages with near-zero salinities can produce very high values due to the small denominator; for gages with very

high normalized RMS values due to near-zero salinity ranges, the normalized value is not reported, though very low RMS error values for these gages indicate good model performance. Similarly, the correlation coefficient is not a useful performance metric for stations with only episodic (i.e. every few months) measurements, so it is not reported for the synoptic preserve water quality monitoring sites. At stations with generally low salinities that are occasionally increased by episodic saline intrusion (i.e. gages 0738355 and 07380330 shown in Figure 3-19), the model generally performs well. Though some specific intrusions such as in September 2018 events are not modeled as well, the good agreement for other intrusion events likely indicates that the model processes are representative but model boundary conditions (especially the wind derived from global hindcast models) may not adequately capture the forcings driving every event.

Table 3-4: Hydrodynamic model water level calibration metrics for selected measurement stations

Station	RMS error [m]	Normalized RMS [%]	Correlation Coefficient (R)	Mean Error [m]
292859090004000	0.07	4.9	0.93	0.00
7380335	0.08	5.7	0.91	0.02
7380330	0.12	8.8	0.94	-0.10
BA01-10	0.14	10.5	0.91	-0.13
BA01-01	0.10	8.0	0.91	-0.08
BA01-03	0.07	5.4	0.94	-0.02
2951190901217	0.09	6.6	0.94	0.06
7380320	0.07	5.0	0.89	0.01
BA01-02	0.07	6.0	0.94	-0.03
CRMS0188-H01	0.07	6.2	0.89	0.05
CRMS0185-H01	0.06	5.0	0.94	0.00
CRMS4103-H01	0.08	6.9	0.86	0.06

Table 3-5: Hydrodynamic model salinity calibration metrics for selected measurement stations

Station	RMS error [psu]	Normalized RMS [%]	Correlation Coefficient (R)	Mean Error [psu]
292859090004000	3.9	15.0	0.69	-1.1
7380335	2.0	14.5	0.56	-0.2
7380330	1.4	14.5	0.52	-0.3
BA01-10	1.2	16.9	0.55	-0.2
BA01-01	0.2	58.4	0.30	0.1
BA01-03	0.2	32.1	0.52	-0.1
2951190901217	0.2	52.8	0.42	-0.2
CRMS3169-H01	0.2	120.8	0.06	-0.2
CRMS0278-H01	0.4	72.9	0.39	-0.4
BA01-02	0.2	21.7	0.69	-0.2
CRMS0188-H01	1.1	81.5	0.47	-1.1
CRMS0185-H01	0.2	15.8	0.63	-0.1
CRMS3601-H01	2.5	16.4	0.74	0.6
BA03C-61	2.2	24.1	0.54	0.8
CRMS4103-H01	1.8	24.2	0.41	0.6
JELA_LTAR	0.4	-	-	-0.3
JELA_UTAR	0.2	-	-	-0.1
JELA_BARD	0.3	-	-	-0.2
JELA_MILL	0.4	-	-	-0.3
JELA_WAGG	0.2	-	-	-0.2
BC-1	0.1	-	-	-0.1
BC-3	0.1	-	-	-0.1
BF-2	0.1	-	-	-0.1
BF-3	0.1	-	-	-0.1
BaC	0.1	-	-	-0.1
LK-4	0.3	-	-	-0.2
MK-1	0.3	-	-	-0.1
MK-2	0.3	-	-	-0.1
MK-3	0.3	-	-	-0.1
PT-1	0.0	-	-	0.0
PT-3	0.2	-	-	-0.2
RL-2	0.1	-	-	-0.1
TC-1	0.1	-	-	-0.1
TC-3	0.1	-	-	-0.1
TC-4	0.2	-	-	-0.1
TC-5	0.2	-	-	-0.2
VC-1	0.1	-	-	0.0
VC-3	0.1	-	-	-0.1

4. FUTURE CONDITIONS MODELING

4.1. Overview

With both ICM and 2D hydrodynamic models developed and calibrated as representative of conditions within Barataria Basin, the models were then used to provide projections of coastal landscape and hydrologic conditions at the preserve over the next 50 years. With uncertainty in the key drivers of future conditions in the basin, namely climate change, sea level rise, and the implementation of major coastal restoration and management projects, projections are provided for several future climate and project scenarios to provide a range of plausible outcomes, an approach consistent with both the 2023 CMP (Pahl, 2016) and NPS climate change planning guidance (National Park Service, 2010). The following sections detail key aspects of the future scenarios used in this modeling.

To ensure consistency in terminology used to describe the timeline of future conditions modeling, Figure 4-1 demonstrates the correspondence between calendar and model years in the future 50-year modeling period. Consistent with the 2023 CMP modeling, the JELA ICM is run for a 52-year period from the beginning of 2019 through the end of 2069, with the first two-year period used to "spin-up" initial model conditions to the imposed forcings. This study thus begins the scenario analysis period at year 3, and results are generally referred to using the sequential year of simulation (i.e. year 3, year 13, year 23, etc.).

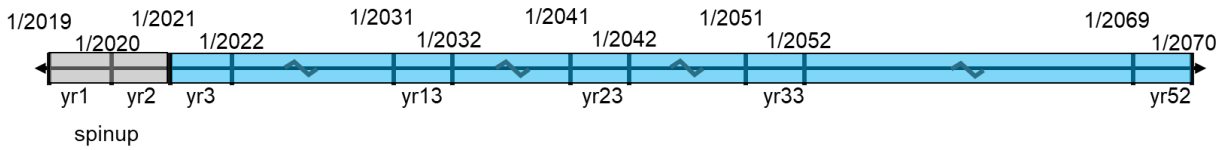


Figure 4-1: Timeline for modeled years giving the correspondence between future calendar years and modeled year sequencing and terminology.

With the JELA ICM model providing projections of landscape conditions for the future 50-year period, the 2D Mike21-FM HD hydrodynamic model is used to simulate single annual periods every 10-years for the future analysis period. Incorporating the same changing boundary conditions due to SLR and restoration project implementation as in the JELA ICM, this is updated to include the ICM-predicted changes to the coastal landscape and vegetation in future years. The process for developing these future conditions hydrodynamic model runs from the JELA ICM model results is also detailed in Section 4.3.

4.2. Future Scenarios

4.2.1. Climate Scenarios

During the course of this study, the 2023 CMP team developed a set of four future climate scenarios for use in ICM modeling and planning (CPRA, in preparation; White, 2021). Each of the scenarios imposes specific sea level rise values (regionally adjusted for the Louisiana coast) (Sweet, et al., 2017), combinations of deep and shallow subsidence, and precipitation/evapotranspiration values. SLR and Precipitation/ET values are tied to future emission scenarios or Representative Concentration Pathways (RCP), while subsidence varies by using either the first quartile or median of estimated ecoregion shallow subsidence values (Table 4-1). Note that the Mississippi River discharge boundary conditions and derived Barataria Basin inflows from existing and proposed river diversions are constant across all scenarios. For more information on the development of each climate scenario, including source data and studies, the reader is directed to the CPRA 2023 Coastal Master Plan Technical Webinar on scenario settings[1] (White, 2021), pending additional documentation in the 2023 CMP.

Figure 4-2 plots the SLR (eustatic), subsidence, and total Relative Sea Level Rise (RSLR) associated with each considered climate scenario.

Table 4-1: Summary of climate scenarios developed and considered for use in the 2023 CMP (CPRA, in preparation; White, 2021). The three scenarios selected for use in this study ("Low", "Intermediate-High", and "High") are highlighted in blue.

	"Low"	"Intermediate"	"Intermediate-High"	"High"
Sea Level Rise	RCP 4.5, 83rd percentile (0.38 m)	NOAA Intermediate (0.50 m)	NOAA Intermediate-High (0.77 m)	NOAA High (1.09 m)
Precipitation/ET	RCP 4.5 50th percentile	RCP 4.5 50th percentile	RCP 8.5 50th percentile	RCP 8.5 50th percentile
Subsidence	Low: DS + 1st quartile SS	Low: DS + 1st quartile SS	High: DS + median SS	High: DS + median SS

[1] https://coastal.la.gov/wp-content/uploads/2021/03/ICM-Landscape-Modeling_Part2_Jan2021_ppt.pdf and https://vimeo.com/522902690?embedded=true&source=vimeo_logo&owner=42454040

After discussing these scenarios with the project team, the park selected three for use in this study based on planning and management priorities. The three selected (see Table 4-1) scenarios are the “Low”, “Intermediate-High”, and “High” scenarios, which are hereafter referred to as S06, S08, and S09, respectively, according to the 2023 CMP scenario terminology.

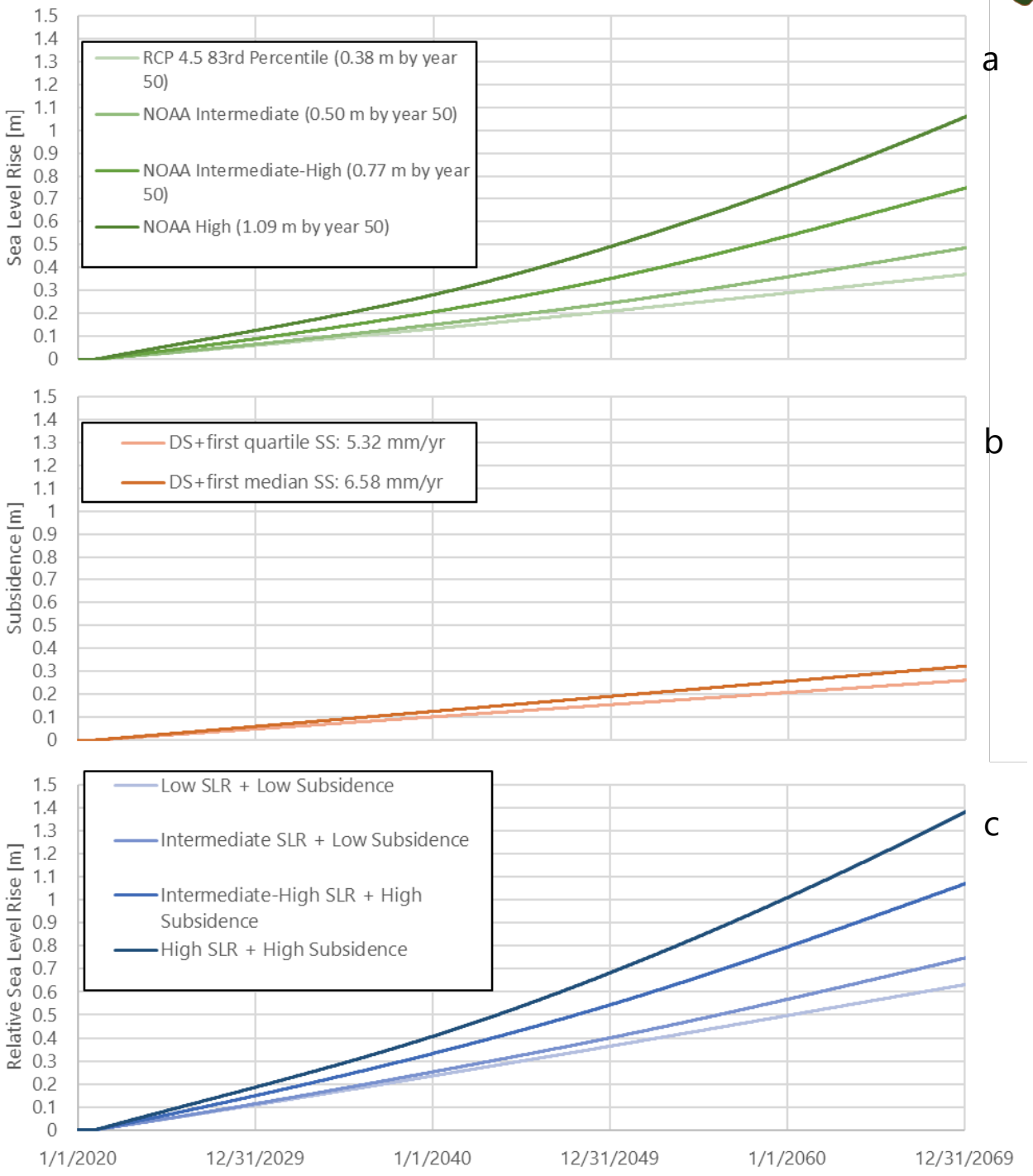


Figure 4-2: Sea level rise (a), subsidence (b), and relative sea level rise (c) for the four considered climate scenarios. RSLR (c) = (a) + (b).

4.2.2. Project Scenarios

Project scenarios were also informed by the 2023 CMP effort and developed collaboratively with the project team and preserve resource managers. After examining all Barataria Basin projects included in the 2017 CMP and preliminary candidate projects to be evaluated for the 2023 CMP, two Mississippi River sediment diversions were identified as having the greatest potential impact to the upper basin coastal landscape. These were the Mid-Barataria Sediment Diversion, which is nearing full design and construction so has been included in the initial 2023 CMP model runs, and the Ama Sediment Diversion, which remains a candidate project for evaluation in the 2023 CMP (see Figure 4-3 for diversion project locations).

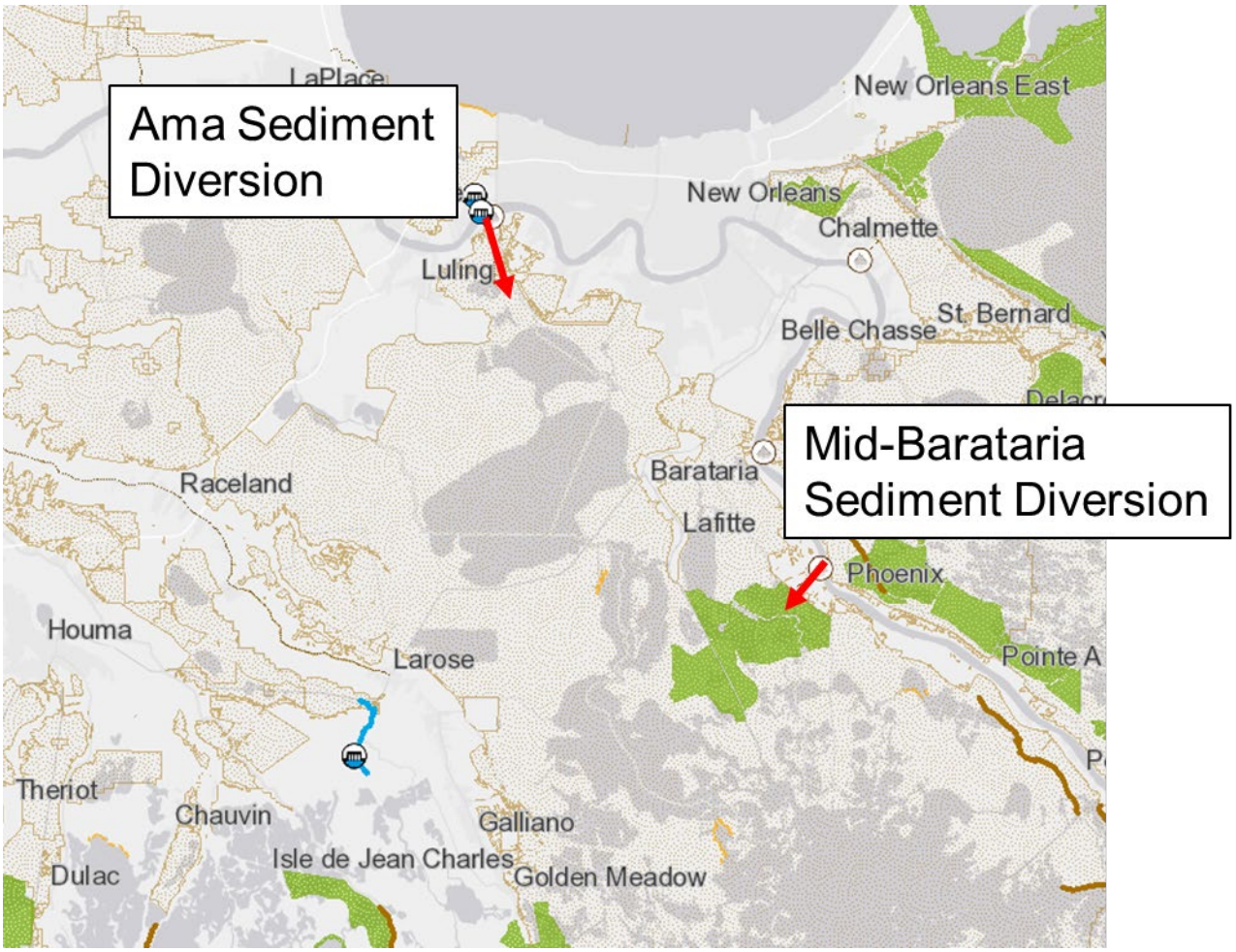


Figure 4-3: Locations of Ama and Mid-Barataria Sediment Diversions in Barataria Basin (CPRA, 2017).

Project characteristics, diversion capacities, and operations timeseries for each project were determined from 2023 CMP project attributes (CPRA, 2019; CPRA, 2020) and implemented diversion rating curves (CPRA, in preparation). The implementation year of the Mid-Barataria Sediment Diversion (MBSD) was set to year 3, immediately following the 2-year spin-up period. The implementation year for the Ama Sediment Diversion (ASD) had yet to be defined in the 2023 CMP, so an implementation year 10 years into the future (year 12) was used based on reasonable expectation for project engineering, design, and construction timeframes. To evaluate the impact of each project, a total of four project scenarios were developed to be analyzed in the models: a Future Without Action (FWOA) case with neither diversion implemented, a case with only MBSD implemented, a case with only the ASD implemented, and a final case with both diversions implemented (see Table 4-2), hereafter referred to as "group" G503, G603, G703, and G803, respectively.

Table 4-2: Summary of project scenarios, diversion discharge capacities, and implementation years used in this study.

Group	**G503**	**G603**	**G703**	**G803**
Project Scenario	**FWOA, no diversions**	**Mid-Barataria Only**	**ASD Only**	**Both Mid-Barataria and ASD**
Mid-Barataria Sediment Diversion	-	75k cfs capacity, implemented at year 3 (2021)	-	75k cfs capacity, implemented at year 3 (2021)
Ama Sediment Diversion	-	-	50k cfs capacity, implemented at year 12 (2030)	50k cfs capacity, implemented at year 12 (2030)

While the ASD is located near the existing Davis Pond Diversion and shares an outfall area, the Davis Pond Diversion is assumed to remain operational into the future in all scenarios to maintain low-flow period estuarine gradient maintenance flows even after ASD implementation. Other river diversions in the 2023 CMP FWOA scenario (namely the Mid-Breton Sediment Diversion) were assumed to be operating in the same manner and leaving the same residual Mississippi River flows as in the 2023 CMP modeling. When comparing results with those of the 2023 CMP, it should be noted that this study implements the MBSD after the 2-year spin-up interval, while the MBSD in 2023 CMP models is operating during the spin-up interval as part of the FWOA.

In the JELA ICM, both the MBSD and ASD projects are implemented via activated tributary inflows with discharges determined by rating curves, with no needed updates to existing compartments or links. In the hydrodynamic model, however, the model mesh was refined and updated to include truncated diversion channels and outfall areas, with channel dimensions derived from the most recent CMP resources or updated project designs (CPRA, 2019; CPRA, 2020). Figure 4-4 shows the updated hydrodynamic model bathymetry in the outfall areas of the two diversions and including diversion channels. Another project included in both the JELA ICM and hydrodynamic models for all scenarios is the Upper Barataria Marsh Creation Project (UBMC) (Moffatt & Nichol, 2019) located south of the Pen, as construction of the project has just begun (as of January 2022).

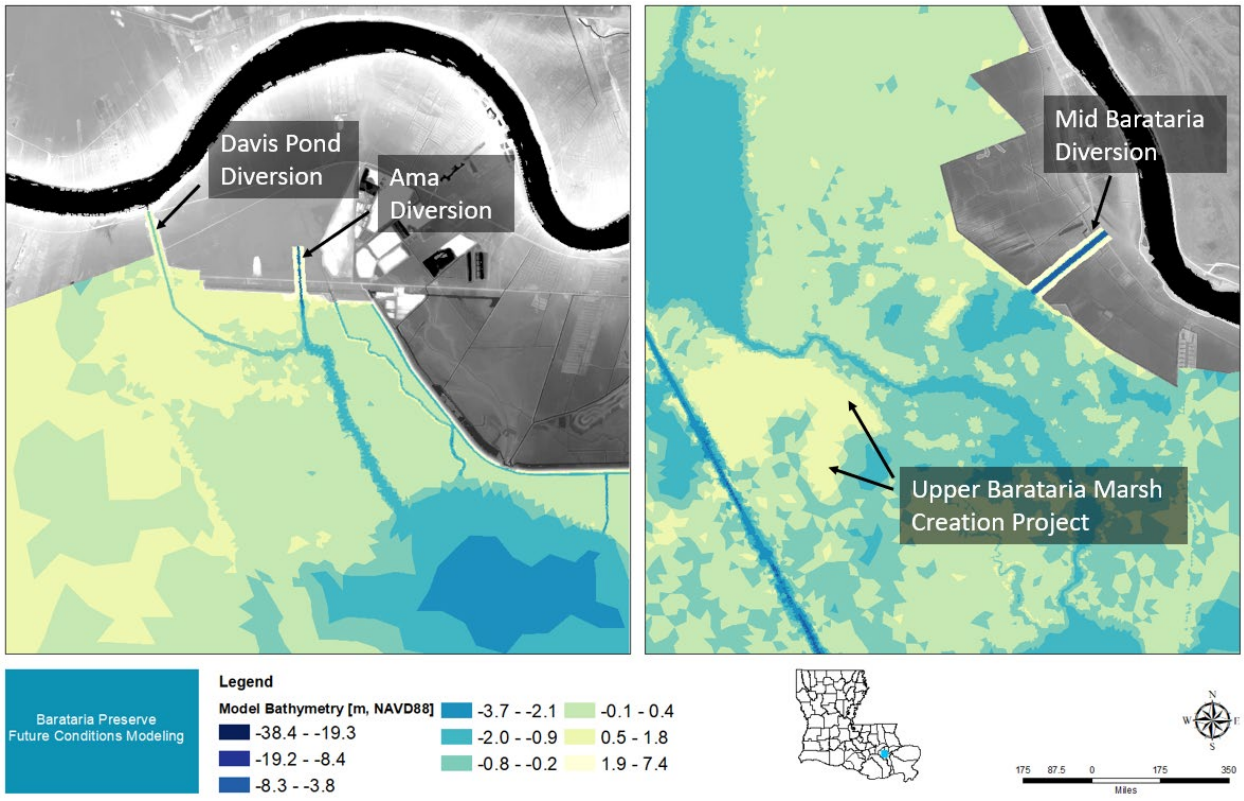


Figure 4-4: Hydrodynamic Model Bathymetry – Diversions and Marsh Creation Project. Note that a non-uniform color scale is used to better visualize the varying elevations over the entire basin and within the preserve vicinity.

4.3. ICM – Mike21-HD Model Coupling

Since simulation of decadal timescales with a high-resolution hydrodynamic and salinity model (especially for multiple future scenarios) is less practical, only single annual periods every decade of the full 50-year JELA ICM simulations are run with the hydrodynamic model. Yearlong simulations are conducted for years 3, 13, 23, 33, 43, and 52, or approximately every decade from

2021 through 2070. The hydrodynamic model is coupled with the JELA ICM model to utilize the same changing boundary conditions due to SLR and restoration project implementation as in the ICM and is updated to include the ICM-predicted changes to the coastal landscape and vegetation in future years. The setup of each yearly hydrodynamic model run using the JELA ICM model inputs and results was automated using *MATLAB* and *Python*-based scripting, with major components of the process summarized as follows.

Model Boundary Conditions

Hydrodynamic model water level and salinity boundary conditions (Figure 4-5) are taken from simulated ICM-Hydro results for the same year of analysis. Water levels outputs are processed on an hourly timestep, while salinity outputs are daily-averaged. As stage and salinity outputs from the JELA ICM are available for each compartment, hydrodynamic model boundary conditions are assigned based on the location of each mesh boundary relative to the ICM compartments.

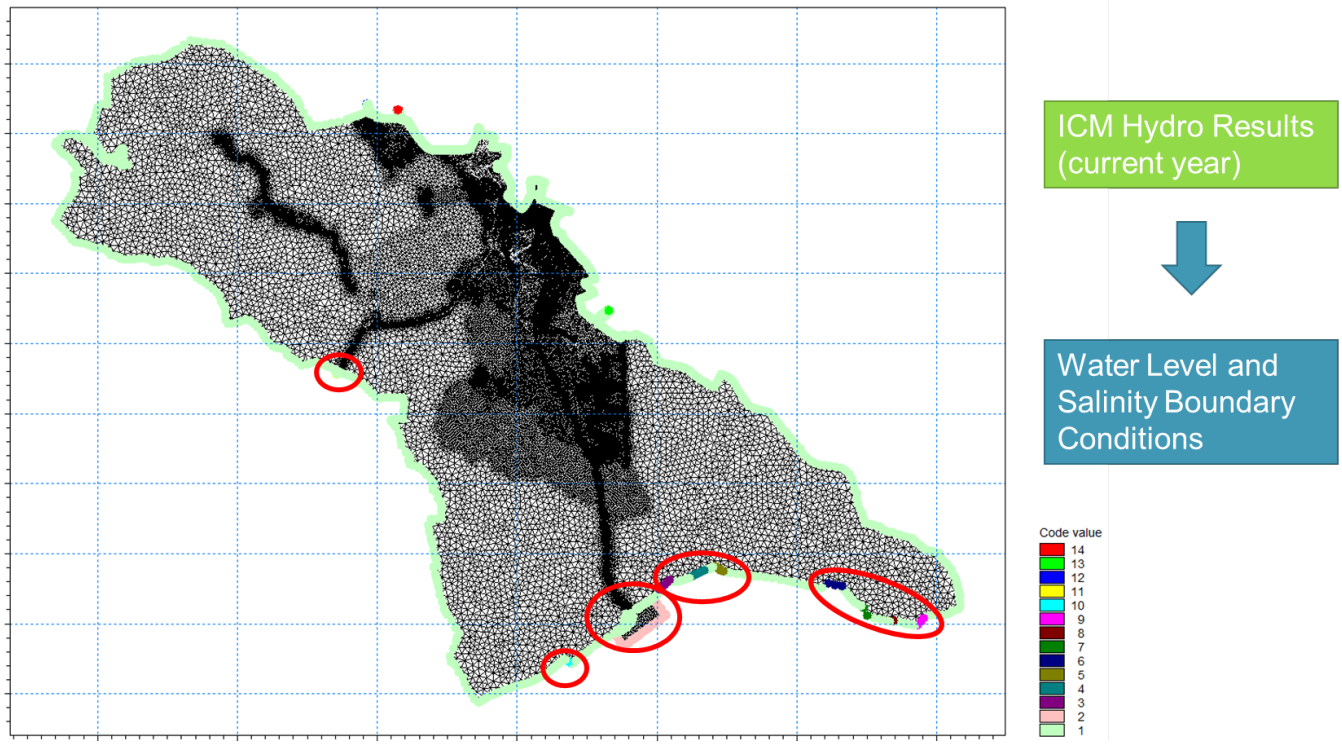


Figure 4-5: Schematic representing process of incorporating JELA ICM modeled stage and salinity results into annual run hydrodynamic model boundary conditions. The areas of the model boundary circled in red are open boundaries, each identified by a unique code value shown in the legend, where water level and salinity boundary conditions derived from ICM-Hydro model results are imposed.

JELA ICM model inputs are also used to define boundary conditions for the hydrodynamic model for the concurrent annual simulation periods. These include:

- Tributary inflows developed for the JELA ICM for the two diversion projects and the Davis Pond Diversion are converted to discharge boundary conditions for the hydrodynamic model (see Figure 4-6).
- Tributary inflows developed for the JELA ICM for the Naomi and Point a la Hache siphons are converted to freshwater discharge source boundary conditions for the hydrodynamic model
- The spatially varying precipitation boundary condition for the JELA ICM is converted to a spatially constant boundary condition for the hydrodynamic model, using the simplifying assumption that the values in the preserve vicinity are applied over the full model domain
- The spatially varying evapotranspiration boundary condition for the JELA ICM is converted to a spatially constant boundary condition for the hydrodynamic model, using the simplifying assumption that the values in the preserve vicinity are applied over the full model domain. Additionally, the evapotranspiration values are reduced by 50% based on the model calibration (see Section 3.4.1)
- Urban drainage freshwater sources are developed using the JELA ICM precipitation timeseries and the catchment area and runoff computation detailed in Section 2.3.3.

Note that wind boundary conditions are excluded from future conditions runs, as winds in the JELA-ICM are only used in sediment distribution computations and do not impact the simulated hydrology.

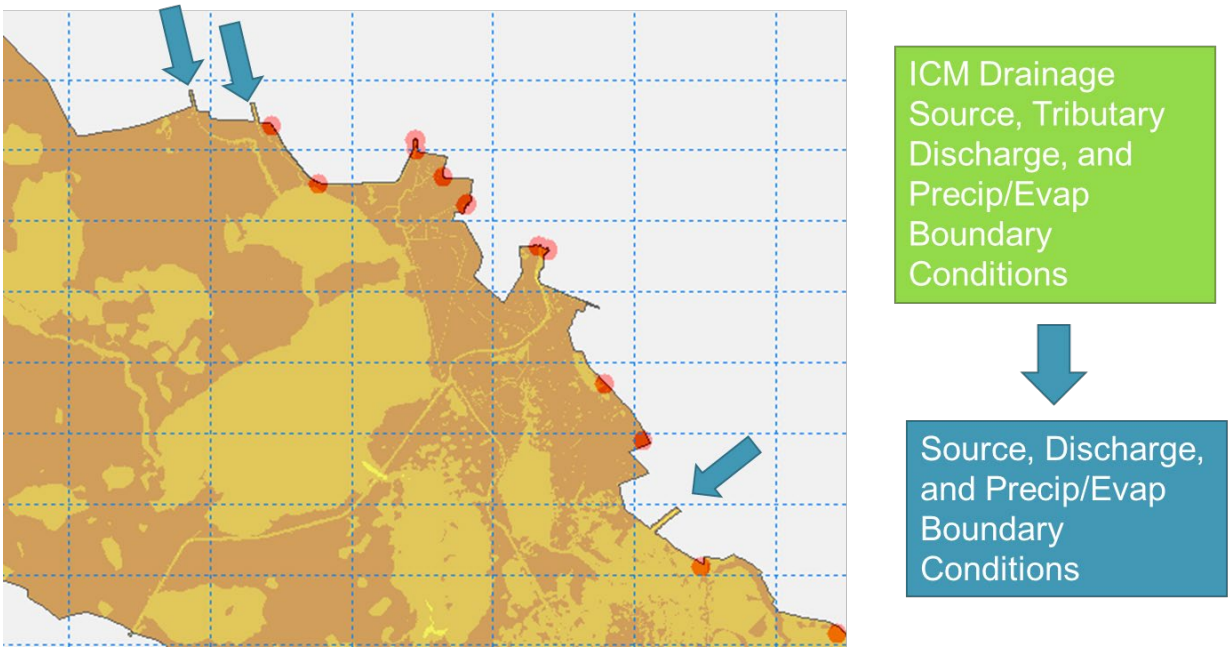


Figure 4-6: Schematic representing process of incorporating JELA ICM tributary inputs of freshwater flows into annual run hydrodynamic model discharge boundary conditions and urban drainage sources. The blue arrows identify the diversion locations in the Mike21-FM model where discharge boundary conditions, derived from ICM-Hydro tributary inputs, are imposed. Similarly, the red dots are locations where pumped discharges representing urban runoff from adjacent polders (see section 2.2.3) are applied.

Model Initial Conditions

Each single-year period hydrodynamic run is initialized with water level and salinity results at the end of the prior year JELA ICM simulation. Additionally, the final timestep water levels from the prior year JELA ICM are used to compute initial water depths across the hydrodynamic model domain, which are the used to define hydrodynamic model bed roughness (see following sections).

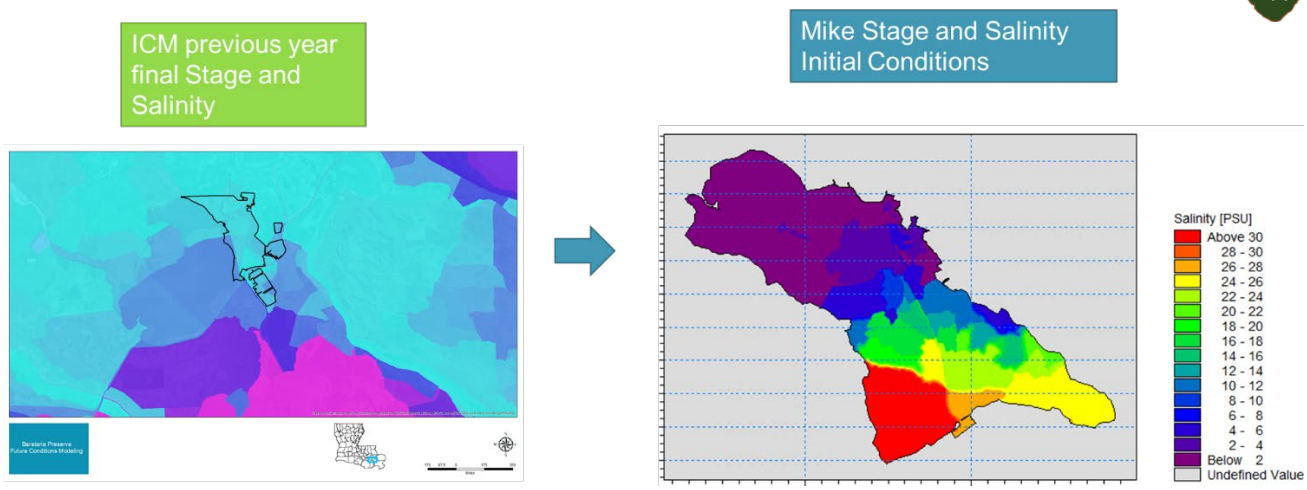


Figure 4-7: Schematic representing process of incorporating JELA ICM modeled stage and salinity results into annual run hydrodynamic model initial conditions

Elevation Change and Model Bathymetry

The ICM-Morph module (Baustian, et al., 2020; Brown, et al., 2017a; Couvillion, Steyer, Wang, Beck, & Rybczyk, 2013) updates the 30 m x 30 m gridded DEM topographic and bathymetric elevations on an annual basis taking into account organic and mineral accretion, deep and shallow subsidence, marsh edge erosion, and wetland loss. The cumulative elevation change at each hydrodynamic model evaluation year as predicted by the JELA ICM is incorporated with updated bathymetry in the computational mesh according to the following process (see Figure 4-8):

1. Determine modeled elevation change within each hydrodynamic model mesh element by calculating spatial statistics on the previous year's output DEM
2. Update model mesh bathymetry values from initial conditions using computed cumulative elevation change
3. Override elevation change values in pre-designated channel locations with no change to preserve flow connectivity (consistent with the 2023 CMP practice of not updating channel link geometries as the simulations progress)

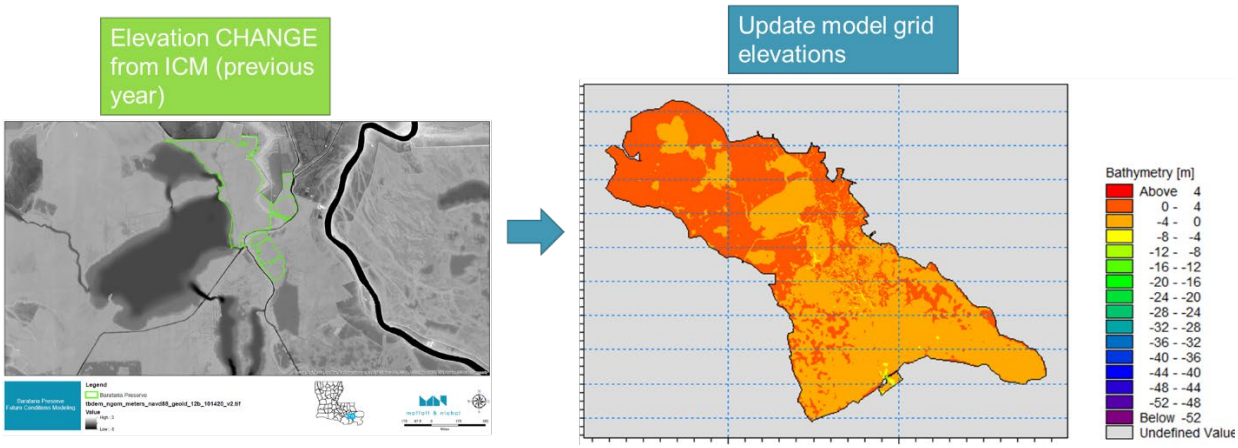


Figure 4-8: Schematic representing process of incorporating JELA ICM modeled elevation change into annual run hydrodynamic model bathymetry

Wetland Vegetation Types and Model Roughness

The ICM-LAVegMod computes the wetland vegetation species distribution coverage on the 480 m x 480 m LAVegMod grid and determines a composite "FFIBS" score for each of the ICM-Morph 30 m x 30 m grid cells. The FFIBS score (Forested, Fresh, Intermediate, Brackish, or Saline) reflects the predicted wetland vegetation community type in each grid cell based on an area weighted composite of specific vegetation species (Baustian, et al., 2020). The wetland community change at each hydrodynamic model evaluation year as predicted by the JELA ICM is incorporated with updated hydrodynamic bed roughness values according to the following process (see Figure 4-9):

1. Determine dominant (majority) wetland vegetation community type within each hydrodynamic model mesh element by calculating spatial statistics on the previous year's output FFIBS score raster
2. Create model mesh with values representing predicted wetland vegetation community type within each mesh element
3. Override predicted community type for mesh elements with elevations below -1 m and set to open water type.
4. Assign mesh element roughness values using the same wetland vegetation type and water depth dependent formulation detailed in Section 2.3.4

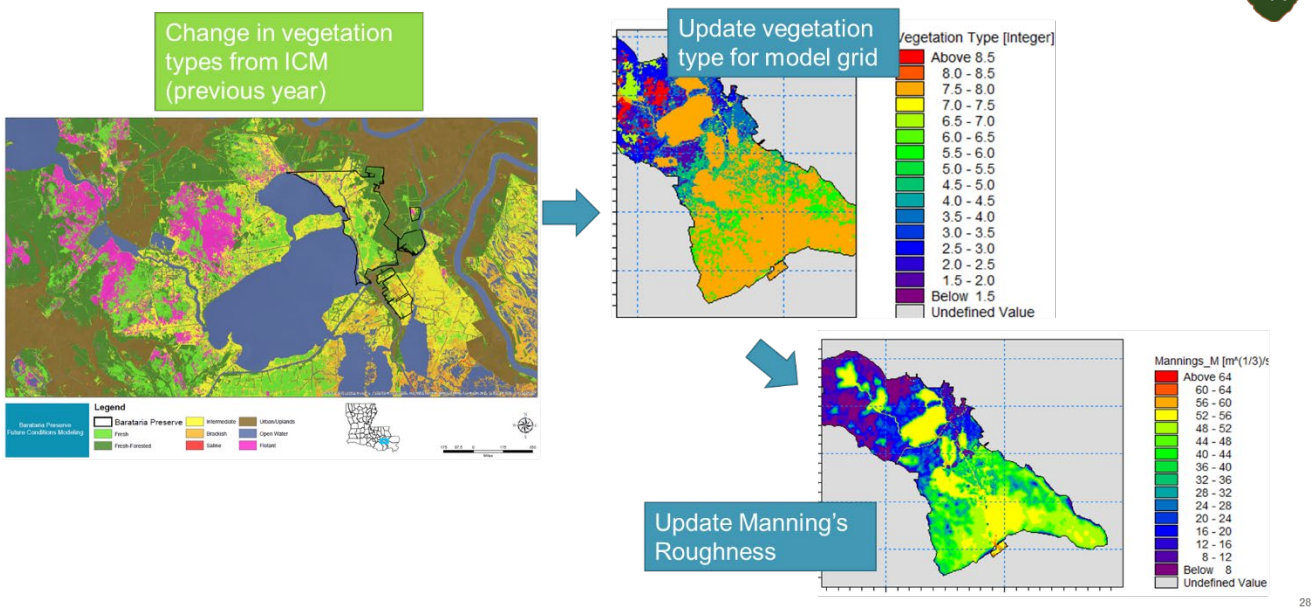


Figure 4-9: Schematic representing process of incorporating JELA ICM modeled vegetation community change into annual run hydrodynamic model bed roughness

4.4. Production Runs

With three future climate scenarios and four project scenarios, a total of 12 scenarios are used for production runs in this study. The production run matrix for the JELA ICM model showing combinations of scenarios (SXX) and groups (GXXX) is shown in Table 4-3.

Table 4-3: JELA ICM Future Conditions Modeling production run matrix

Scenario/Group Description		G503	G603	G703	G803
		FWOA, no diversions	**Mid-Barataria Only**	**ASD Only**	**Both Mid-Barataria and ASD**
S06	**Low**	S06.G503	S06.G603	S06.G703	S06.G803
S08	**Intermediate-High**	S08.G503	S08.G603	S08.G703	S08.G803
S09	**High**	S09.G503	S09.G603	S09.G703	S09.G803

For the hydrodynamic model, a total of six annual model runs for years 3, 13, 23, 33, 43, and 52 are conducted for each combination of group and scenario as detailed in Table 4-4. Since the ASD included in the G703 and G803 project scenarios is not implemented until year 12, the year 3 simulations for these groups are identical to the setups for the corresponding project scenarios without the ASD so they did not need to be re-run.

Table 4-4: Hydrodynamic Model Future Conditions Modeling production run matrix

Scenario/Group Description		G503	G603	G703	G803
		FWOA, no diversions	**Mid-Barataria Only**	**ASD Only**	**Both Mid-Barataria and Ama**
S06	**Low**	Year 3	Year 3	Not run, same as G503	Not run, same as G603
		Year 13	Year 13	Year 13	Year 13
		Year 23	Year 23	Year 23	Year 23
		Year 33	Year 33	Year 33	Year 33
		Year 43	Year 43	Year 43	Year 43
		Year 52	Year 52	Year 52	Year 52
S08	**Intermediate-High**	Year 3	Year 3	Not run, same as G503	Not run, same as G603
		Year 13	Year 13	Year 13	Year 13
		Year 23	Year 23	Year 23	Year 23
		Year 33	Year 33	Year 33	Year 33
		Year 43	Year 43	Year 43	Year 43
		Year 52	Year 52	Year 52	Year 52
S09	**High**	Year 3	Year 3	Not run, same as G503	Not run, same as G603
		Year 13	Year 13	Year 13	Year 13
		Year 23	Year 23	Year 23	Year 23
		Year 33	Year 33	Year 33	Year 33
		Year 43	Year 43	Year 43	Year 43
		Year 52	Year 52	Year 52	Year 52

4.4.1. ICM Model Output

While the different modules of the JELA ICM produce output for many different parameters over several spatial and temporal scales, the most important for the purposes of this study are the yearly ICM-Morph outputs indicating land type (i.e. vegetated land or open water) and wetland vegetation community type (Forest, Fresh, Intermediate, Brackish, or Saline) at each 30 m by 30 m cell in the model domain. While these outputs are available for every year of simulation, detailed maps of results are generally only shown for approximately every decade of simulation, at the end of the years preceding the annual hydrodynamic model runs.

Additionally, timeseries of the ICM-Hydro outputs of daily-averaged water level and salinity are available for the full 50-year simulation at each modeled compartment. While the downscaled JELA ICM domain still covers the full Louisiana coastal zone, links in the Pontchartrain Basin and Chenier Plain, and areas with no cross-basin interactions with Barataria Basin, were deactivated for computational efficiency. While ICM output including landscape projections are still produced by the model for these areas, results outside of the Barataria Basin should not be considered valid or used.

In November 2021, the NPS team communicated a list of locations across the preserve at which they are interested in developing timeseries plots of future conditions. These points were mapped relative to the JELA ICM compartments (see Figure 4-10) to determine the compartment with ICM-Hydro stage and salinity results that are representative of conditions at each point. JELA ICM timeseries outputs in subsequent sections are presented for these compartments (identified in Table 4-5) that correspond to the points of interest. Note that the names for each point of interest are taken from the *BARA 45 Additional Locations v2.kml* file provided by NPS (J. Williams, personal communication, November 12, 2021).



Figure 4-10: Preserve locations of interest and corresponding JELA ICM compartments

Table 4-5: Preserve locations of interest and corresponding JELA ICM compartments

Point	Name	Compartment
1	BARA Electrical Substation	1670
2	Private Land 107-03 and Arch Site JE133	148
3	Fleming Marvis Groves Proposed Purchase	1686
4	Fleming Fisher Trail 113-03	1685
5	Fleming Access 113-01	1685
6	Public Lands 107-06	1677
7	Public Lands 107-07	1673
8	Private Lands 107-28	1678
9	Private Lands 107-27	1679
10	Private Lands 112-02	147
11	404c Crown Point Proposed Levee	147
12	Private Lands 107-35	1676
13	Fleming Extra 113-03	224
14	29.80513 -90.11858	1676
15	29.79991 -90.16303	1665
16	29.79936 -90.13646	1668
17	29.78419 -90.11541	1671
18	29.79319 -90.12262	1671
19	29.79933 -90.12892	1671
20	29.78677 -90.11279	1672
21	29.80039 -90.11995	1672
22	29.80037 -90.11741	1672
23	29.80017 -90.11197	1672
24	29.74508 -90.13805	1670
25	29.76467 -90.10405	1671
26	29° 49.734′ -90° 07.974′	1675

4.4.2. Hydrodynamic Model Output

2D Mike21 HD outputs are available for the major parameters of interest including water level, salinity, and current speed across the full model domain at a frequency of every 6 hours. Additionally, the same parameters of interest are available at a set of pre-defined model output points at a higher frequency of every hour. Because the preserve points of interest were defined after model runs had begun, output points could not be located exactly at every point of interest. Instead, the nearest pre-defined output point located in a similar landscape as the point of interest was found and is considered representative of the results at the desired locations (see Table 4-5 and Figure 4-10), though six of the locations of interest did not have a nearby corresponding model output point.

Table 4-6: Preserve locations of interest and corresponding Hydrodynamic Model output points

Point	Name	Model Output Point
1	BARA Electrical Substation	p169
2	Private Land 107-03 and Arch Site JE133	-
3	Fleming Marvis Groves Proposed Purchase	p159
4	Fleming Fisher Trail 113-03	p141
5	Fleming Access 113-01	-
6	Public Lands 107-06	p185
7	Public Lands 107-07	p177
8	Private Lands 107-28	p192
9	Private Lands 107-27	p194
10	Private Lands 112-02	p151
11	404c Crown Point Proposed Levee	-
12	Private Lands 107-35	p183
13	Fleming Extra 113-03	p093
14	29.80513 -90.11858	TC-1
15	29.79991 -90.16303	p186
16	29.79936 -90.13646	-
17	29.78419 -90.11541	VC-1
18	29.79319 -90.12262	-
19	29.79933 -90.12892	p165
20	29.78677 -90.11279	-
21	29.80039 -90.11995	p160
22	29.80037 -90.11741	p160
23	29.80017 -90.11197	p160
24	29.74508 -90.13805	GIWW-JP
25	29.76467 -90.10405	LK-4
26	29° 49.734′ -90° 07.974′	p182

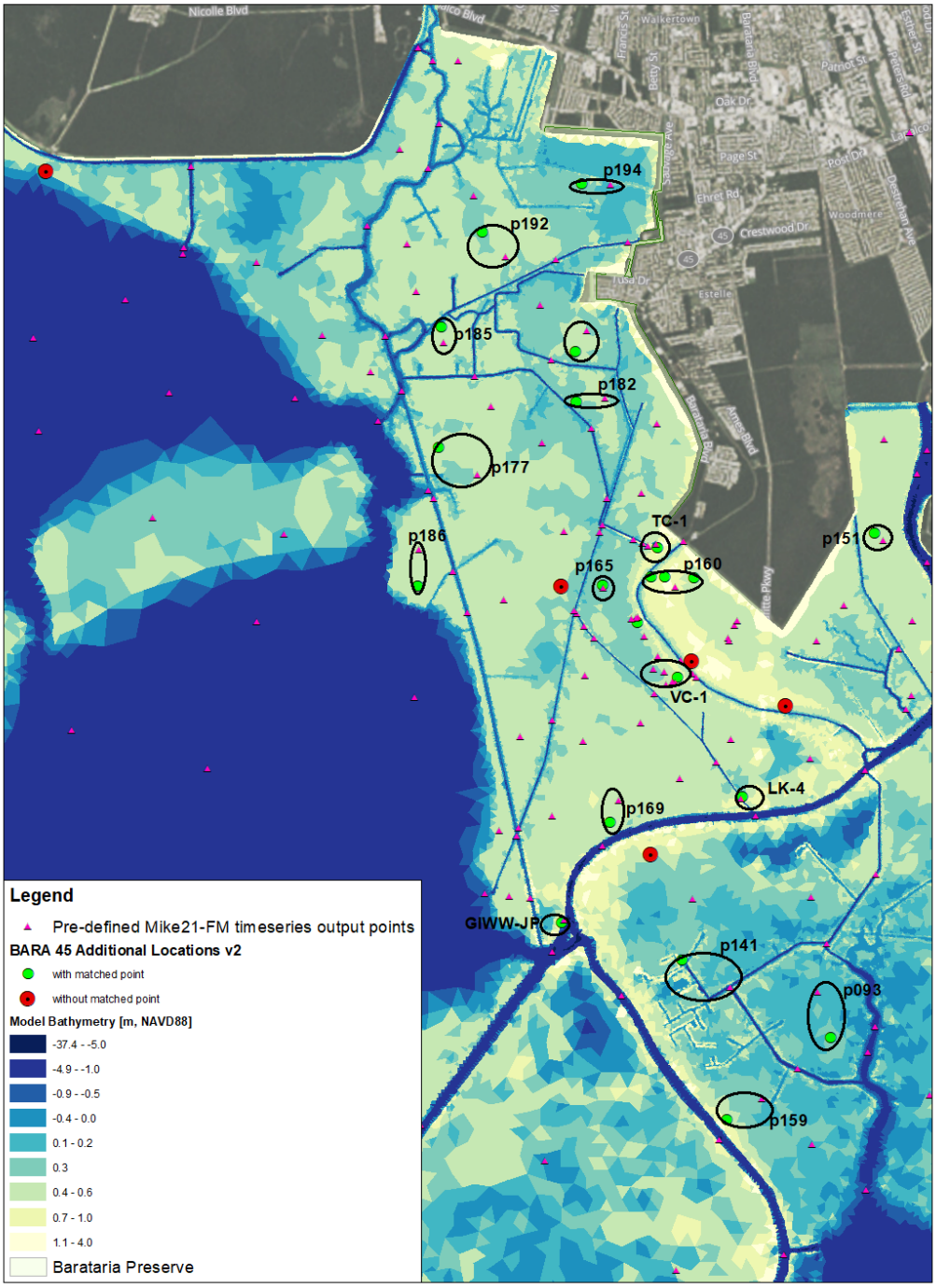


Figure 4-11: Preserve locations of interest and corresponding Hydrodynamic Model output points

5. RESULTS AND DISCUSSION

Results for the future conditions simulations from both the JELA ICM and hydrodynamic model are presented in a logical fashion. As the primary driver of future landscape conditions, stage and salinity results from the ICM-Hydro module over the 50-year simulation period are first explored. Next, the resulting coastal landscape and wetland vegetation community results are shown at selected years and aggregated to show evolution of the preserve landscape through time. Afterwards, more detailed water level and salinity results from the 2D hydrodynamic model annual runs are analyzed and presented. Please note that only a limited set of results for specific scenarios, years, or output points are shown here to support discussion of future conditions at the preserve and how they vary among the scenarios; however, full sets of results are included as appendices where appropriate.

5.1. ICM-Hydro Results

Figure 5-1 and Figure 5-2 show timeseries results of the water levels and salinities, respectively, in compartment 1668 for all future conditions productions runs. Each figure panel shows results for a different project scenario, so the timeseries plots in the same panel compare results among climate scenarios (Appendix D includes alternative plots with the different project scenarios plotted on the same panel). Compartment 1668 is located in the preserve between Bayou Segnette and Pipeline Canal (see Figure 4-10) and is representative of conditions in the central portion of the preserve dominated by marsh vegetation – results for other compartments of interest are included in Appendix D. These figures show the monthly averaged water level and salinity values so that longer term trends over the 50-year simulation are more evident.

Water levels for all simulations increase through time along with SLR, and water levels for the Intermediate-High and High scenarios begin to deviate significantly from the Low scenario by approximately 2050. In the preserve north of the GIWW, the water levels do not differ significantly between G503 and G603 or G703 and G803, indicating that the MBSD does not increase water levels here when operating. Conversely, G703 and G803 show large increases in average water levels after ASD implementation compared with the other project scenarios, with the increase diminishing somewhat through time with increased SLR. For areas of the preserve south of the GIWW, the water level increase due to MBSD and ASD are relatively greater and lesser, respectively.

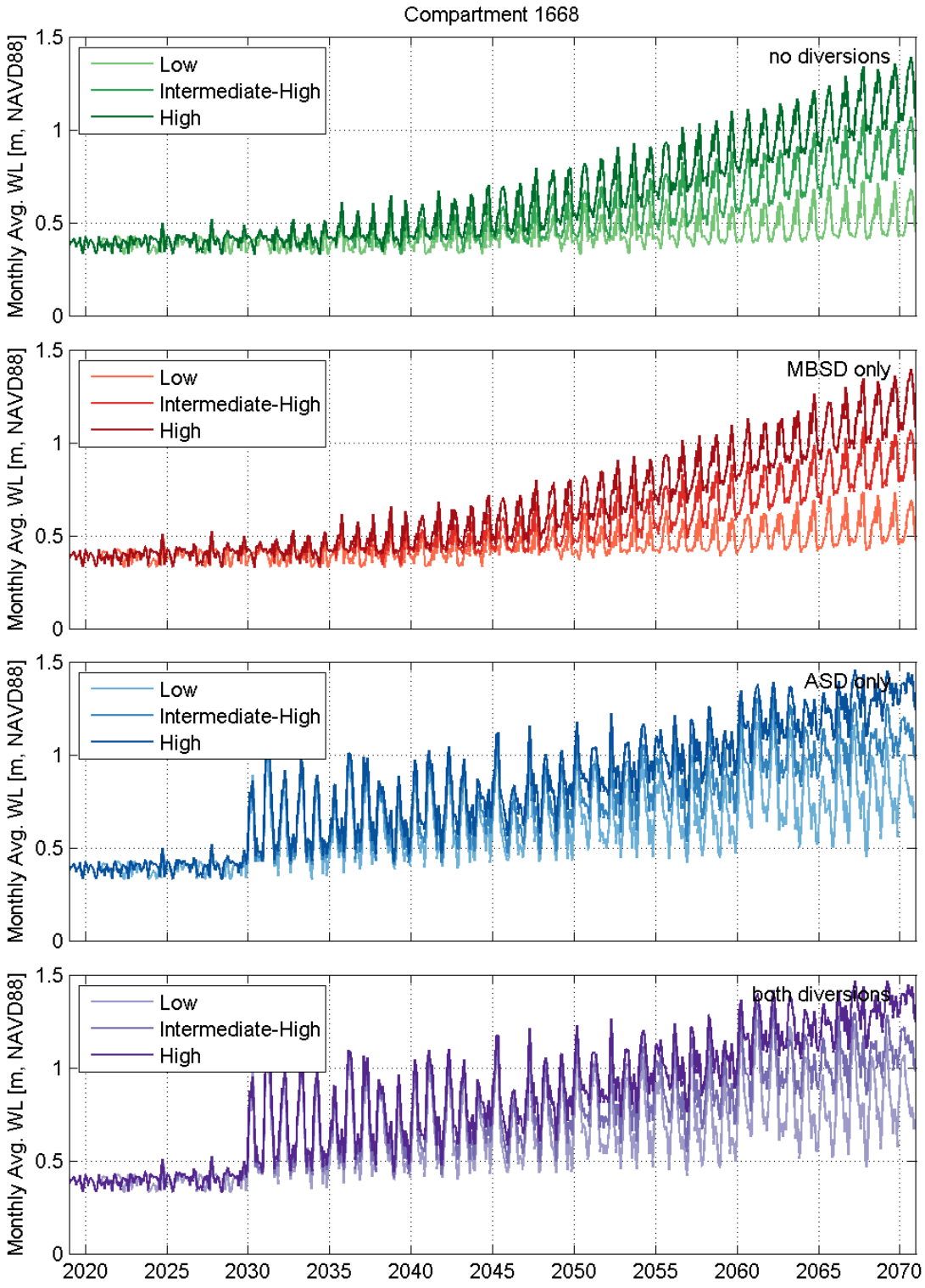


Figure 5-1: Monthly averaged water levels for all JELA ICM production runs in compartment 1668

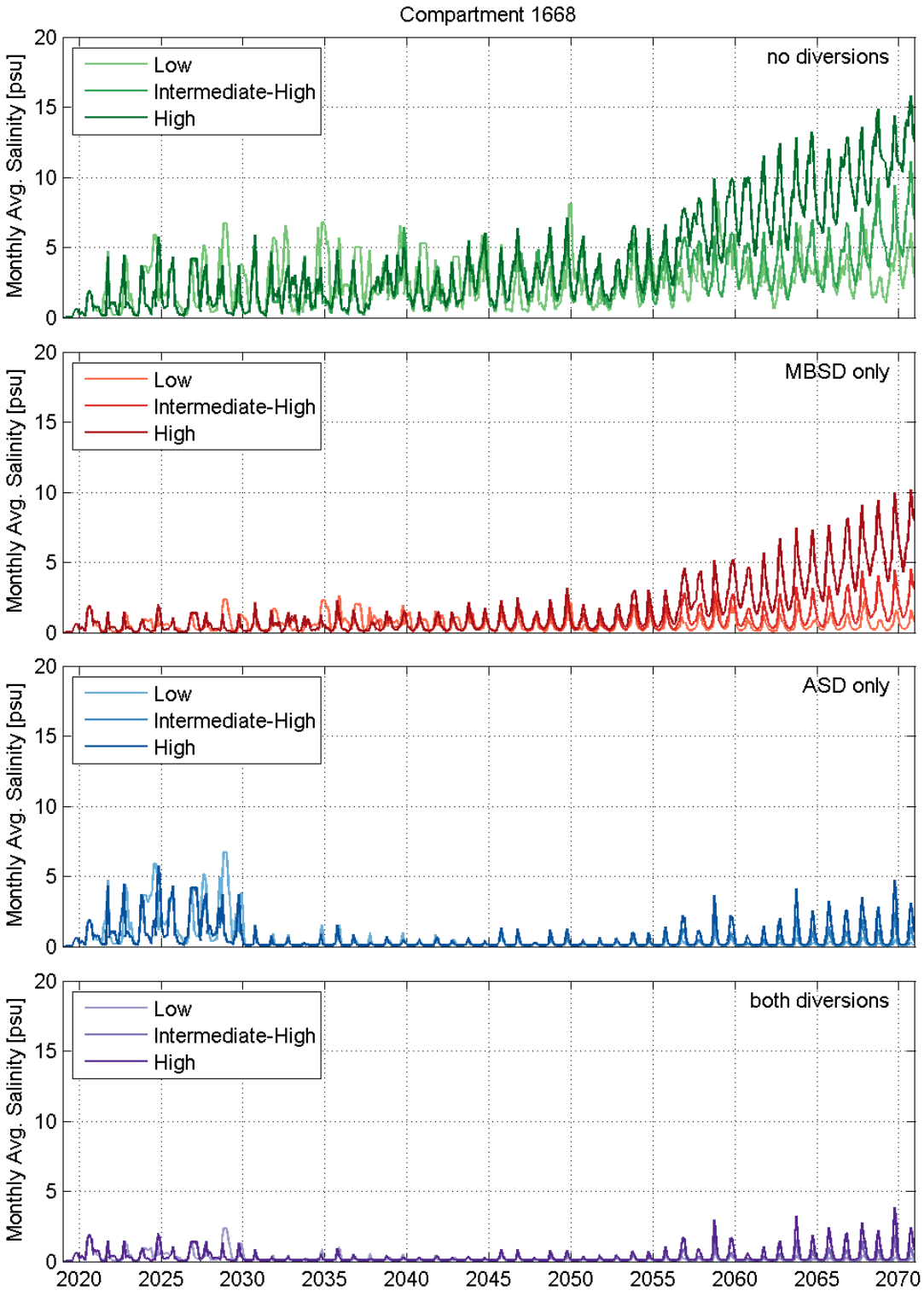


Figure 5-2: Monthly averaged salinities for all JELA ICM production runs in compartment 1668

Mean monthly salinities in the preserve vicinity are more stable through time compared to water levels, and long-term trends are more dependent on project scenarios. Seasonal trends in salinities generally follow the seasonal trends in Davis Pond Diversion freshwater discharge. In the FWOA, no diversions scenario (G503), salinities only begin to increase significantly in the final decade of simulation for the High climate scenario and in the final few years for the lower SLR scenarios. With the MBSD active in G603, salinities are held to comparatively lower, relatively stable levels until 2055 for the High climate scenario when they begin to increase. In the Low climate scenario, there is no long-term increasing trend. In G703, the ASD significantly lowers salinities to near zero values in the preserve after operations begin. For the Low scenario, these low salinities persist through the end of the simulation, while in the higher climate scenarios increases of a few psu begin in the last decade.

5.2. ICM Future Landscape Results

In this section, the coastal landscape and wetland vegetation community evolution as predicted by the JELA ICM are shown at selected years. Figure 5-3 and Figure 5-4 map the areas of vegetated land, bare ground, floating marsh, and open water in the full basin (left panel) and preserve vicinity (right panel) at the start and end of the 50-year simulation period for S06.G503 (Low scenario with no diversions). Figure 5-5 and Figure 5-6 further distinguish the vegetated land into wetland vegetation communities (i.e., FFIBS type). For all maps presented here and in Appendix E, background imagery is from a mosaic of 2014 Landsat 8 imagery (Louisiana Sea Grant, 2014). Results show some land loss in the lower basin in later years with some isolated losses elsewhere as well as marsh edge erosion along lakes and bay shorelines. During the 2-year spin-up period, areas of the preserve south of the GIWW convert to intermediate marsh. By the end of the simulation, most of the upper basin has converted to intermediate marsh while the mid-basin region south of the GIWW has converted to brackish marsh. Coastal landscape, wetland community type, and cumulative elevation change maps for all scenarios at 10-year intervals are included in Appendix E.

As noted, the ICM model simulation begins with a 2-year spin-up period to allow model initial conditions (including wetland vegetation community types) to adjust to the hydrologic conditions simulated by the model, ensuring that modeled changes after this period reflect project and climate scenario impacts and that scenario results can be compared based on a common initial landscape after the spin-up period. The modeled changes to the coastal landscape during the spin-up period proceed according to the ICM-LAVegMod and ICM-Morph algorithms, which have not been calibrated specifically to recreate observed vegetation species distribution within the

preserve and may shift the vegetation community distribution away from what is currently present in the preserve. Thus, the coastal landscape and wetland vegetation community results are more useful for understanding the relative impacts of the various project and climate scenarios over decadal timescales than for providing absolute projections of near-term vegetation dynamics over limited spatial scales.

To facilitate comparison of results among climate and project scenarios, the wetland vegetation community results were aggregated within the approximately 25,000 acre preserve boundary each year of the simulation and plotted through time (see Figure 5-7, Figure 5-8, and Figure 5-9). Each of these figures groups results by climate scenario, with each panel showing the preserve landscape and vegetation community evolution through time for each project scenario.

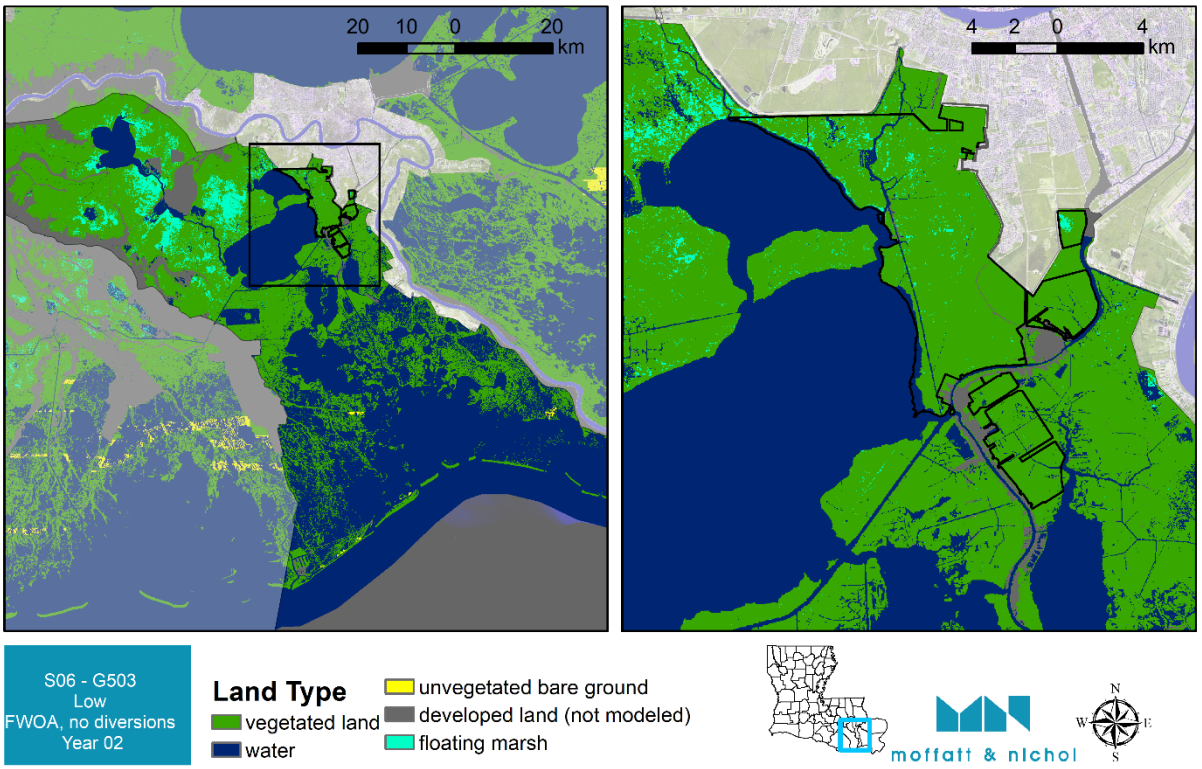


Figure 5-3: Simulated coastal landscape for S06.G503 scenario at the end of year 2

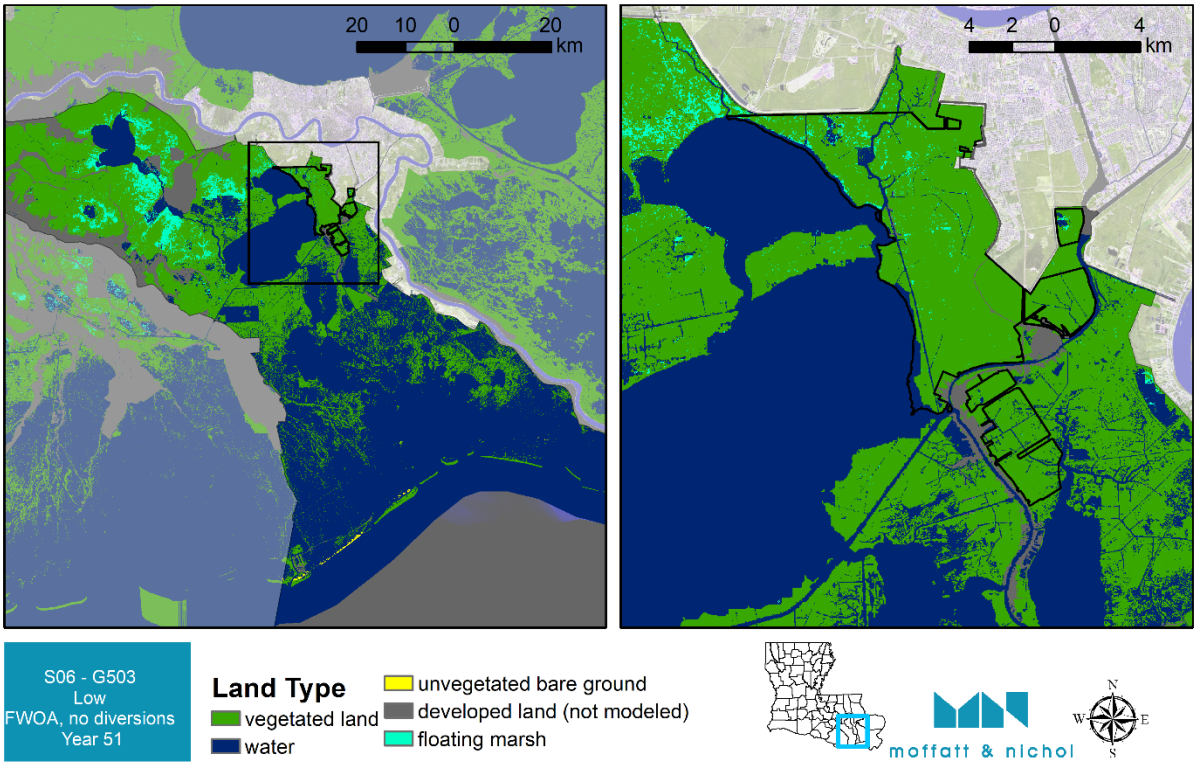


Figure 5-4: Simulated coastal landscape for S06.G503 scenario at the end of year 51

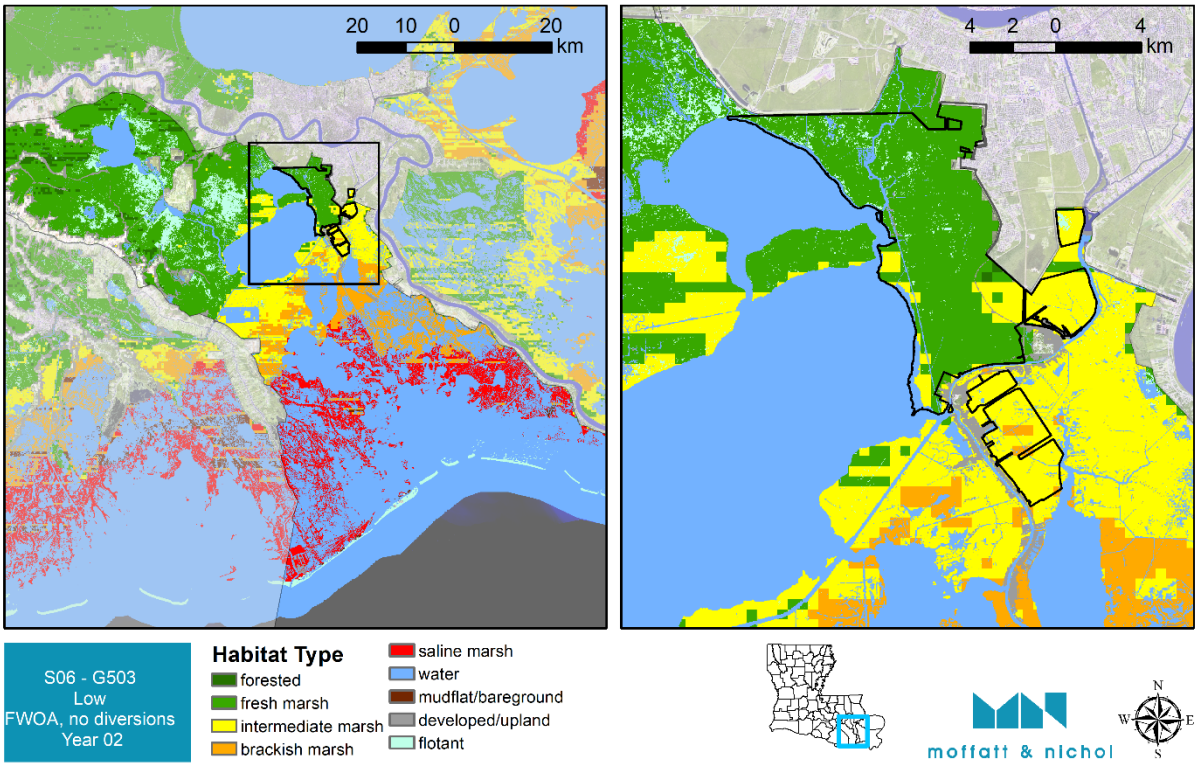


Figure 5-5: Simulated wetland vegetation community for S06.G503 scenario at the end of year 2

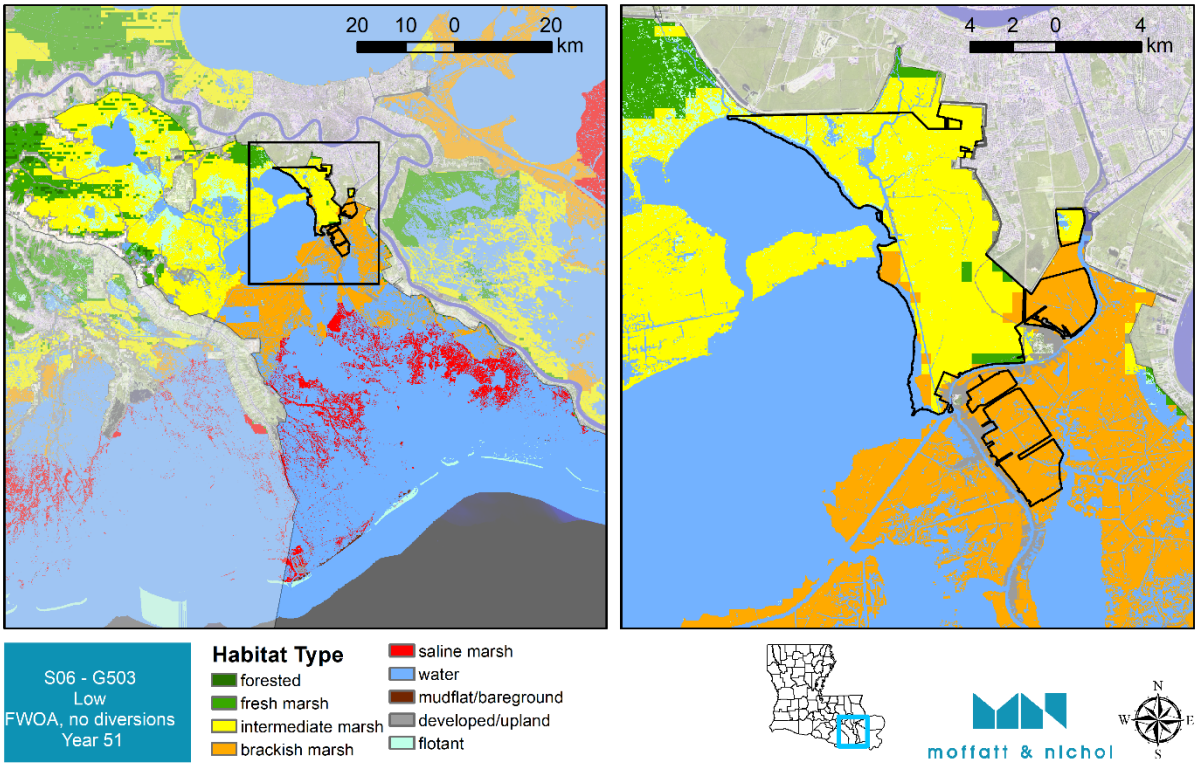


Figure 5-6: Simulated wetland vegetation community for S06.G503 scenario at the end of year 51

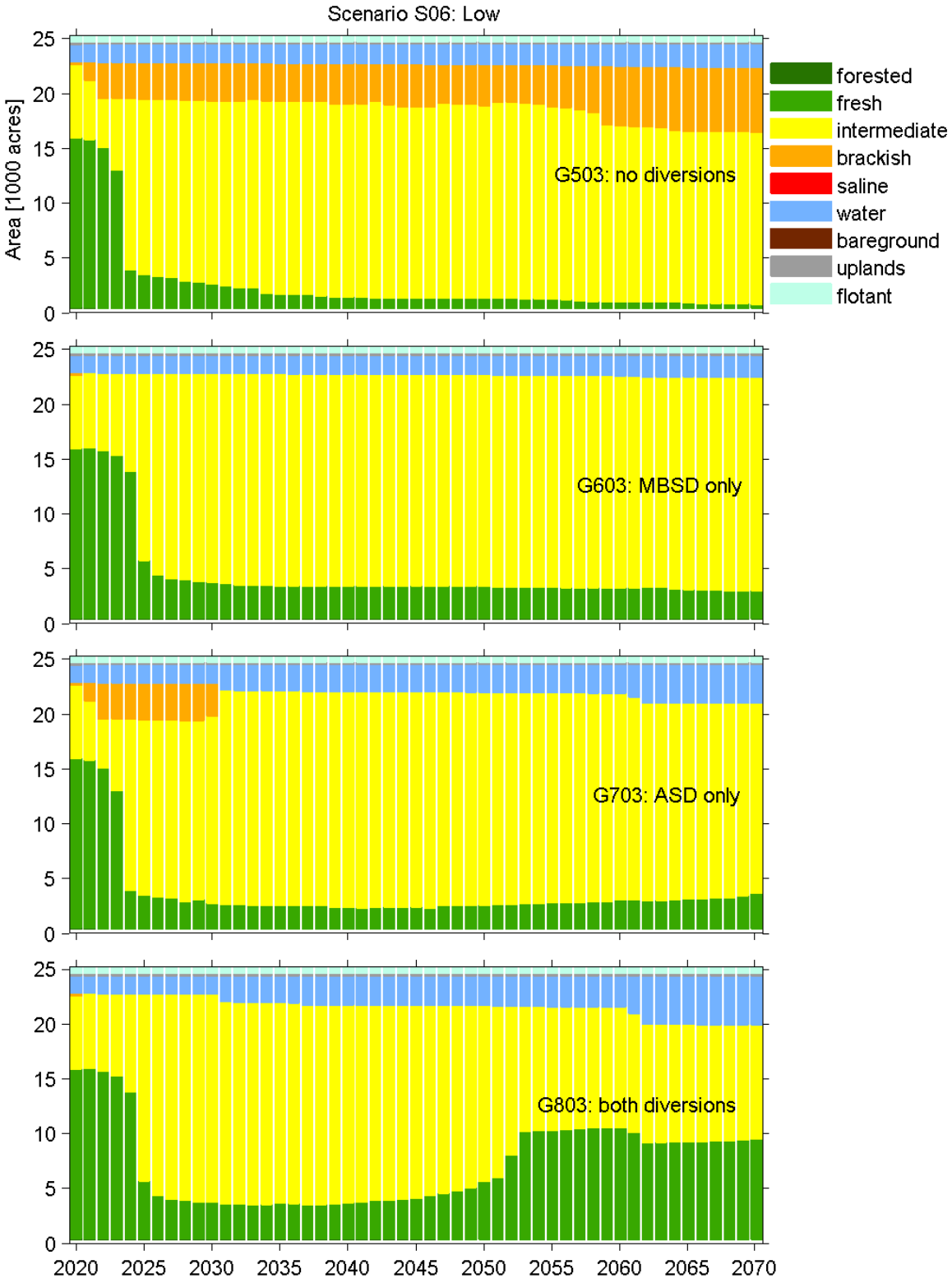


Figure 5-7: Open water and land area by wetland vegetation community type within the preserve boundaries through time for all groups of the S06 (Low) climate scenario

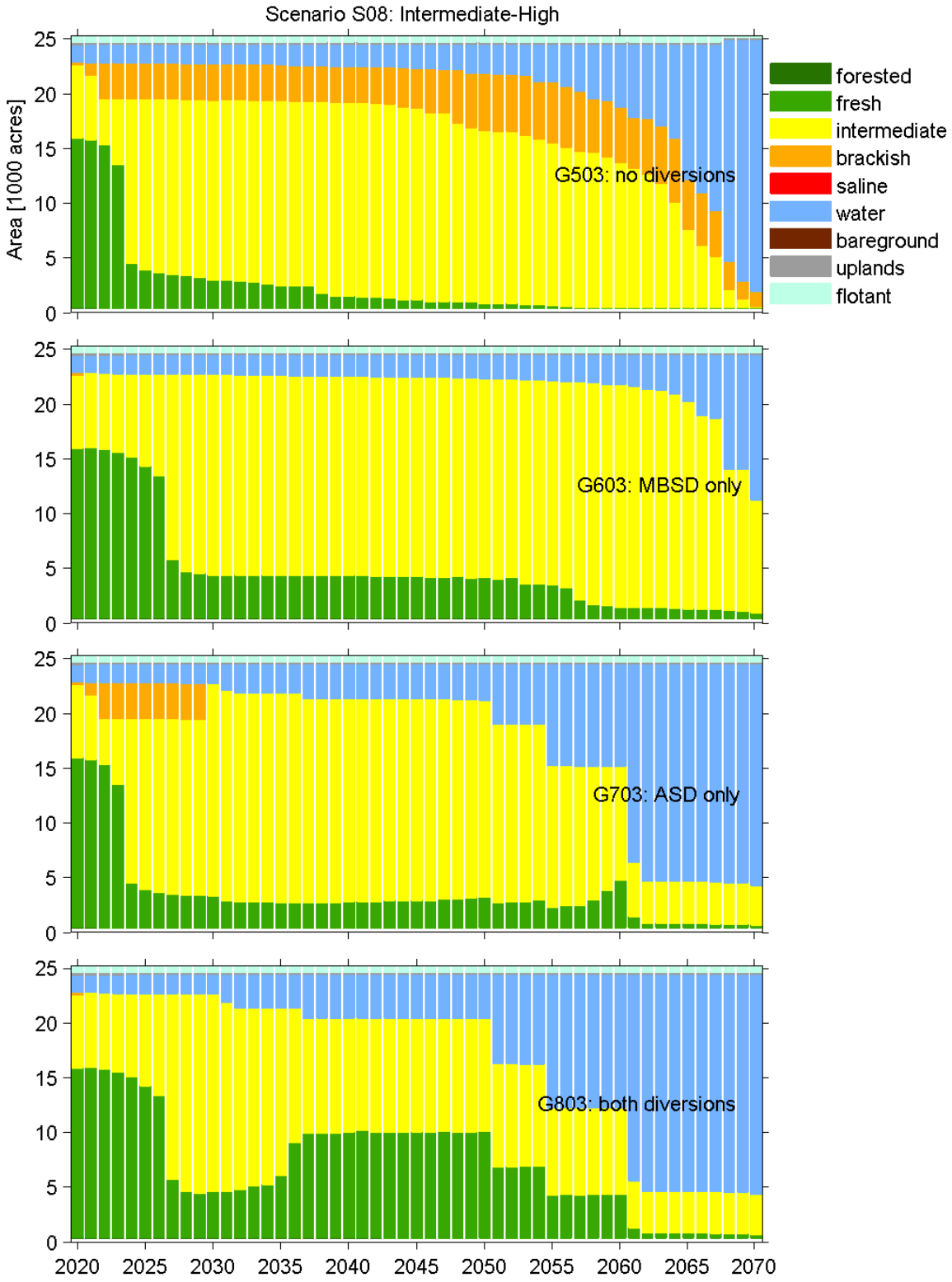


Figure 5-8: Open water and land area by wetland vegetation community type within the preserve boundaries through time for all groups of the S08 (Intermediate-High) climate scenario

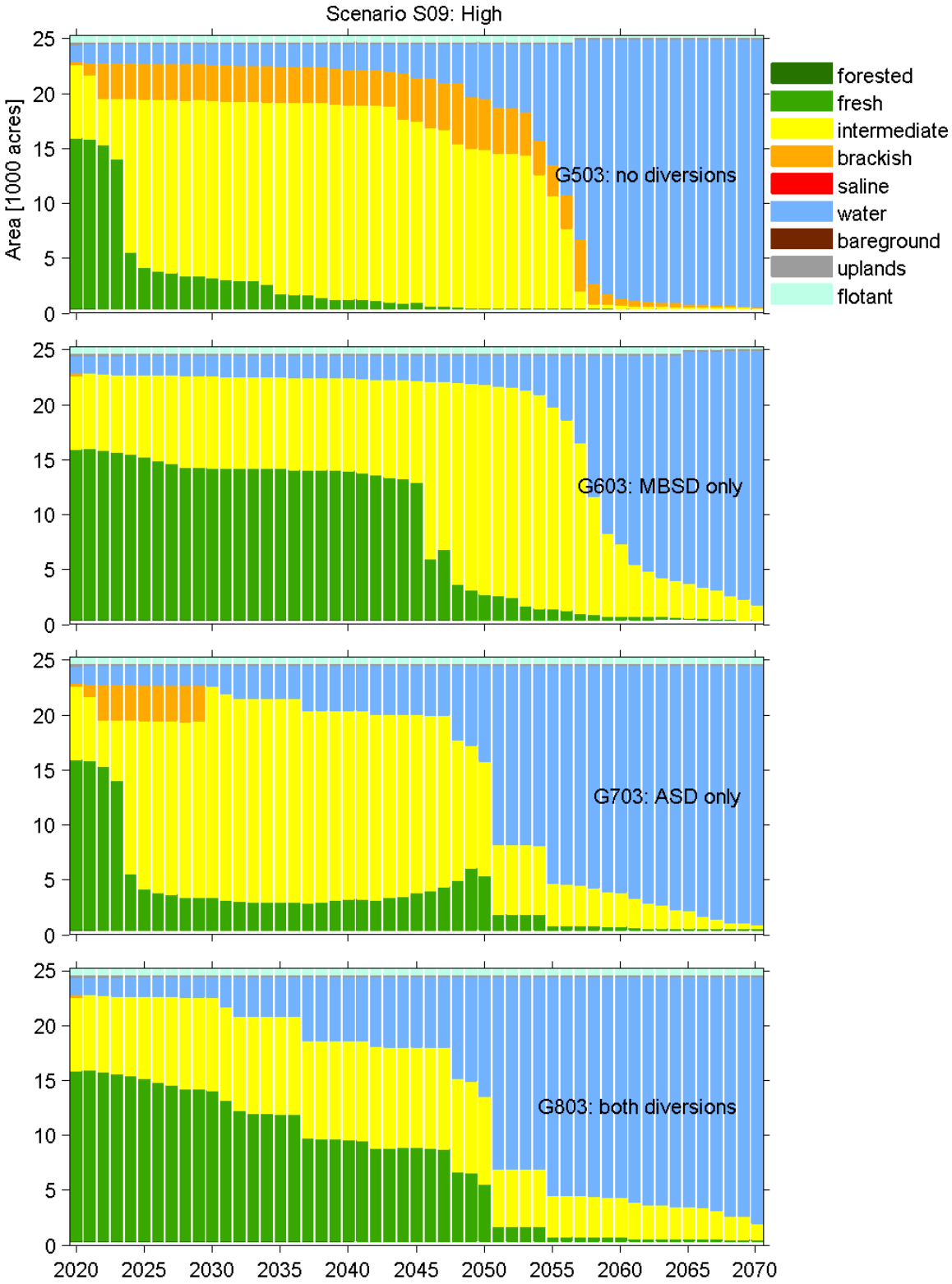


Figure 5-9: Open water and land area by wetland vegetation community type within the preserve boundaries through time for all groups of the S09 (High) climate scenario

Coastal landscape trajectories vary significantly among the three climate scenarios. In the low scenario (S06), nearly all of the land area in the preserve is preserved through 50 years, though with shifting vegetation community dynamics that vary with project scenario. In the Intermediate-High scenario (S08), significant land loss does not occur until the later decades of the simulation, and total land loss at the end of the simulation as well as vegetation community composition is heavily influenced by project implementation. Finally, in the High scenario (S09), nearly all preserve land area is lost by year 50 regardless of project scenario. The coastal landscape trajectories of each future conditions scenario run are described in greater detail, informed by the above plots and maps included in Appendix E.

S06.G503 (Low, no diversions)

Results for this scenario show only slight land loss in the lower basin in later years with negligible loss within the preserve. Elevation changes are as anticipated with land areas accreting and open water areas subsiding. After only a few years of simulation, the areas of the preserve north of the GIWW transition to intermediate while areas south of the GIWW transition to brackish, with these patters persisting through the end of the simulation.

S06.G603 (Low, Mid-Barataria Only)

Landscape dynamics in the full basin are similar to those of S06.G503 with the exception of notable land gain from the MBSD operation after year 22. There is pronounced accretion in the direct vicinity of the MBSD outfall, while far field accretion increases elevations in areas to the south of the GIWW and east of the BWW. The preservation of fresh and intermediate marshes in the mid-basin region means that very little brackish habitats remain in the basin. Most of the preserve still transitions to intermediate marsh, though to a lesser extent than in S06.G503. The preserve area south of the GIWW stays intermediate with some fresh marsh remaining due to the MBSD freshwater outflows.

S06.G703 (Low, Ama Only)

Results in early years resemble those of S06.G503 though with initial inundation losses in the upper basin after ASD implementation. This land area mostly builds back by year 32, though there is still greater land loss in the upper basin by year 52 due to additional inundation. The ASD freshwater flows keeps the preserve area north of the GIWW fresh marsh and keeps the area south of GIWW as intermediate marsh (instead of brackish).

S06.G803 (Low, Both Diversions)

Land loss and gain patterns for S06.G803 are as expected, representing a mix of mid-basin results from G603 and upper basin results from G703. With the freshwater impacts from both diversions, most of the mid-basin region converts to intermediate marsh with very little brackish marsh area remaining in the basin. Lower salinities preserve more of the upper basin fresh and flotant marshes, keeping a much large portion of the preserve as fresh marsh.

S08.G503 (Intermediate-High no diversions)

Compared with the low scenario, no diversion results, there is greater land loss in the lower- and mid-basin regions by year 32. By year 42, most of the land area south of the GIWW is lost, with losses extending into the upper basin and northern preserve area by year 52.

S08.G603 (Intermediate-High, Mid-Barataria Only)

Compared with S08.G503 results, more areas of land between the GIWW and MBSD outfall as well as the upper basin is preserved in the later years. The freshwater influence and enhanced far-field accretion associated with the MBSD preserve intermediate marsh south of the GIWW and in portions of the northern preserve area by year 52. Still most of the basin is converted to open water in the final years, with very little fresh and flotant habitat in the far upper basin remaining.

S08.G703 (Intermediate-High, Ama Only)

As in the S06.G703 (low, Ama only) results, there is initial land loss from inundation immediate after ASD implementation, which mostly builds back by year 32. Through years 42 and 52, the ASD operations preserves the Fleming tract and areas south of the GIWW, though with additional inundation loss of fresh marsh systems in the far upper basin and some northern parts of the preserve. Compared with S08.G503, ASD keeps the southern portions of the preserve as intermediate marsh instead of brackish and preserves more of the northern portion fresh and flotant marsh for longer. However, there is additional land loss in the preserve due to ASD implementation.

With updates to the wetland vegetation collapse mechanisms in the 2023 CMP ICM (Baustian, et al., 2020), wetland vegetation is lost if an average inundation threshold is exceeded in two consecutive years, with the inundation threshold varying with average salinity. The freshening of most of the upper basin with ASD implementation would slightly increase inundation thresholds, but with the threshold value for fully fresh conditions still below approximately 0.5 m. The ASD significantly increases water levels in the northern portion of the preserve (see Section 5.1) for all scenarios. For the lower SLR scenario (S06), the increases in average water levels and inundation

depths still do not reach thresholds for significant loss. In the higher SLR scenarios (S08 and S09), the increasing water levels due to both ASD implementation and SLR do more frequently exceed the inundation threshold, resulting in the additional loss seen in the groups including ASD.

S08.G803 (Intermediate-High, Both Diversions)

Compared with S08.G603, there is no significant different in coastal landscape or wetland vegetation communities through year 12. Several decades after ASD implementation, there is increased upper basin inundation loss along with greater preservation of mid-basin marshes. The northern portion of the preserve remains mostly fresh marsh through year 32 while mid-basin marshes remain intermediate with very little brackish marsh remaining. By year 50, the southern portion of the preserve remains as intermediate marsh, while most of the northern portion is lost.

S09.G503 (High no diversions)

For the High climate scenario, no diversion scenario, there is much greater loss of saline marshes in the lower basin by year 22 compared with other scenarios. By year 32, most of the land area south of the GIWW is lost, with losses extending into the upper basin and preserve area by year 42. By year 51, there is nearly complete submergence of the basin.

S09.G603 (High, Mid-Barataria Only)

Operation of the MBSD under this High climate scenario preserves most of the mid-basin marshes by year 32, though only areas south of the GIWW and east of the BWW are preserved by year 42 along with some areas in the far upper basin. By year 52, only some isolated areas near the Fleming tract are preserved, with most of the small areas of remaining land areas as intermediate marsh.

S09.G703 (High, Ama Only)

Compared with the no diversion results for this climate scenario, the ASD preserves more of the land area in the preserve south of the GIWW but with additional losses of fresh marsh in the far northern portions of the preserve. By year 51, the only marshes remaining in the basin are near the GIWW and BWW ridges, the direct ASD outfall, and some far upper basin flotant areas. As in S08.G703, the increased water levels in the northern portions of the preserve due to ASD implementation exceed inundation thresholds earlier in the simulation, resulting in greater land loss compared with G503 until the final 10 years of simulation.

S09.G803 (High, Both Diversions)

Loss patterns for S09.G803 are very similar to those of S09.G703, though with more of the mid-basin marshes north of the MBSD outfall preserved as intermediate marsh through year 40. As in G703, the ASD delays some loss of mid-basin marshes, but appears to accelerate the losses of upper-basin marshes including in the preserve area due to increased inundation.

5.3. Hydrodynamic Model Results - Timeseries

Next, analysis of future conditions results moves on to the Mike-21 FM hydrodynamic model. While high frequency timeseries output is available from the model for a number of pre-defined output points (see Section 4.4.2 and Appendix F), presentation and analyses of these results is limited to results for a point generally representative of the conditions in the southern portion of the northern preserve tract. Figure 5-10 through Figure 5-12 plot timeseries results from the year 33 (2051) simulation for all future conditions scenarios. For water levels (see Figure 5-10), the different climate scenarios shift the water level timeseries higher as a function of SLR, especially in G503 and G603 where the water level impacts from ASD operations are absent. Grouping the results among scenarios as in Figure 5-11 shows the impacts that the two diversions have on water levels in the preserve during the operational periods (winter, spring, and early summer). Here we see that the ASD causes a relatively higher increase in water levels than the MBSD and that both diversions operating simultaneously further increases water levels. Also, diversion impacts on water levels are lower for the Intermediate-High and High climactic scenarios where water levels are already higher.

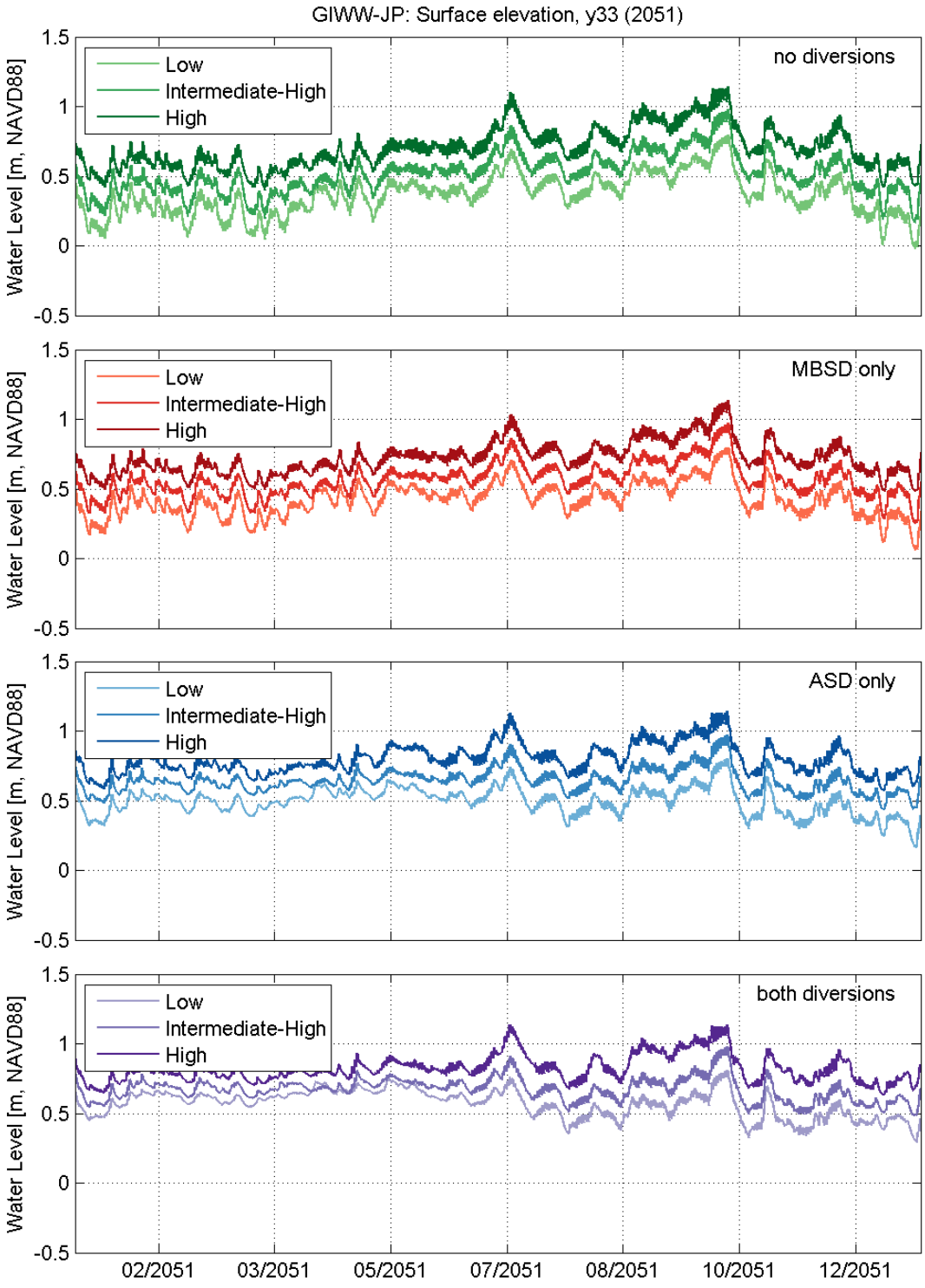


Figure 5-10: Simulated water level results from the hydrodynamic model for year 2051 at GIWW-JP output point (group axes)

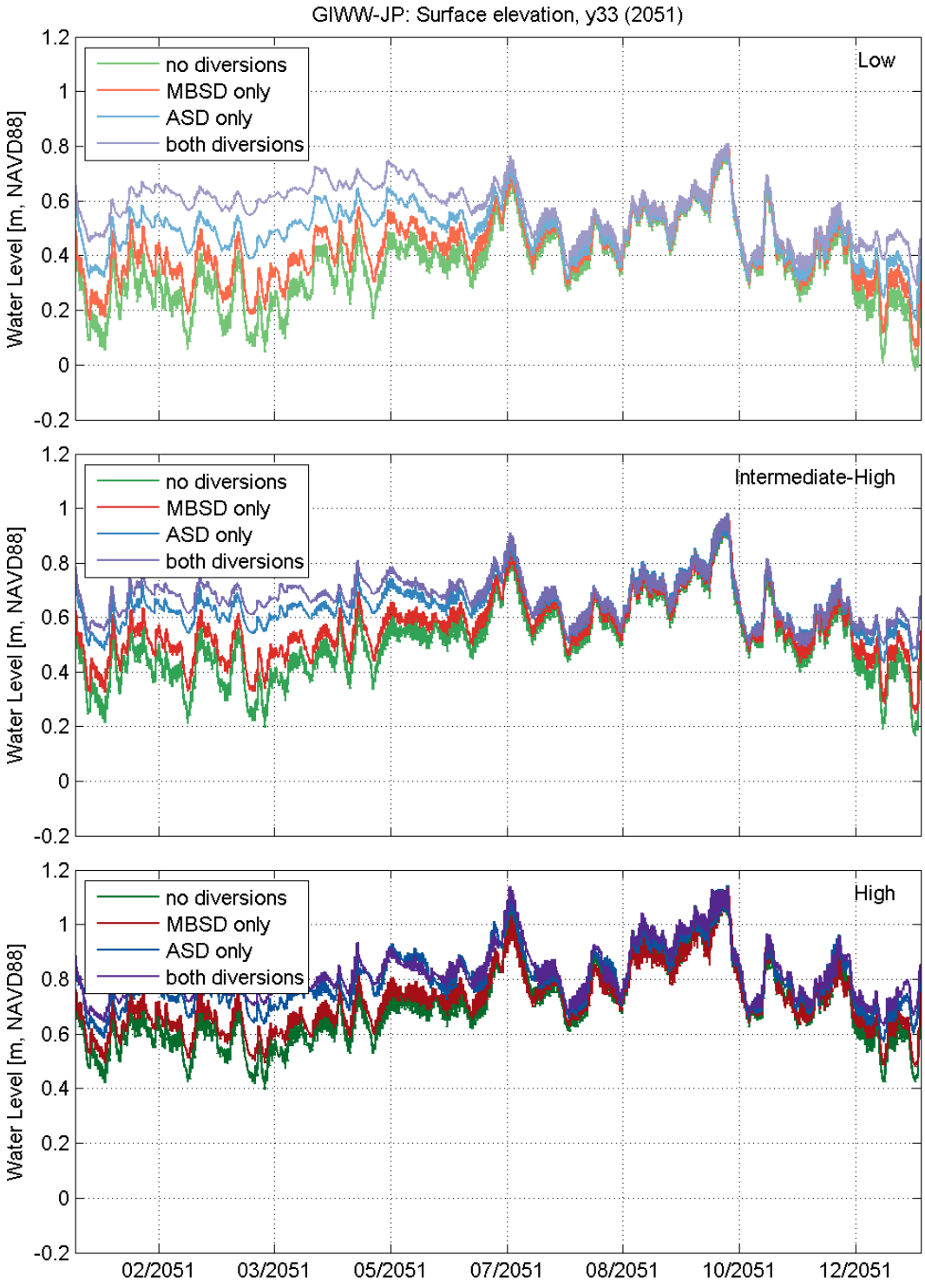


Figure 5-11: Simulated water level results from the hydrodynamic model for year 2051 at GIWW-JP output point (scenario axes)

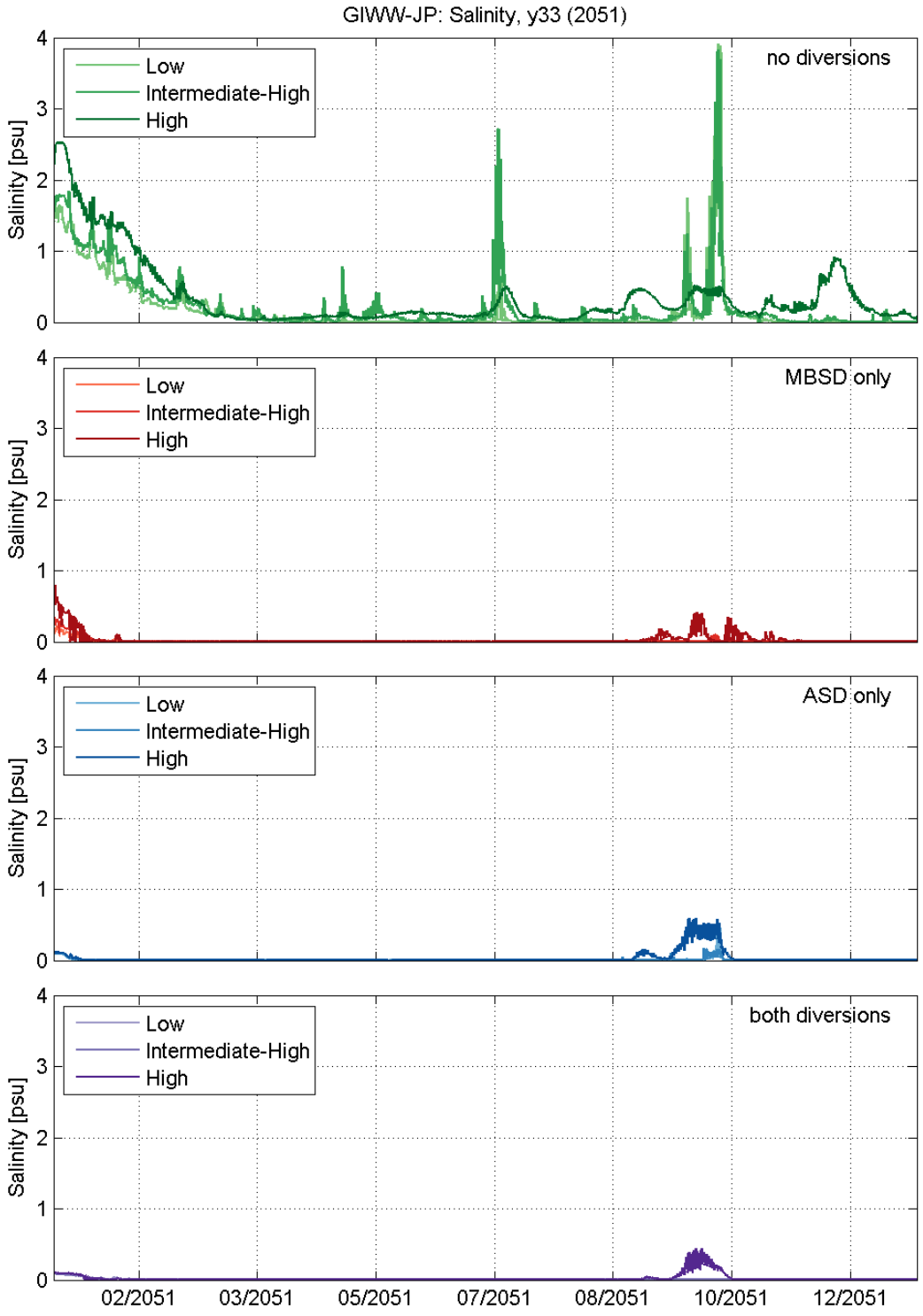


Figure 5-12: Simulated salinity results from the hydrodynamic model for year 2051 at GIWW-JP output point (group axes)

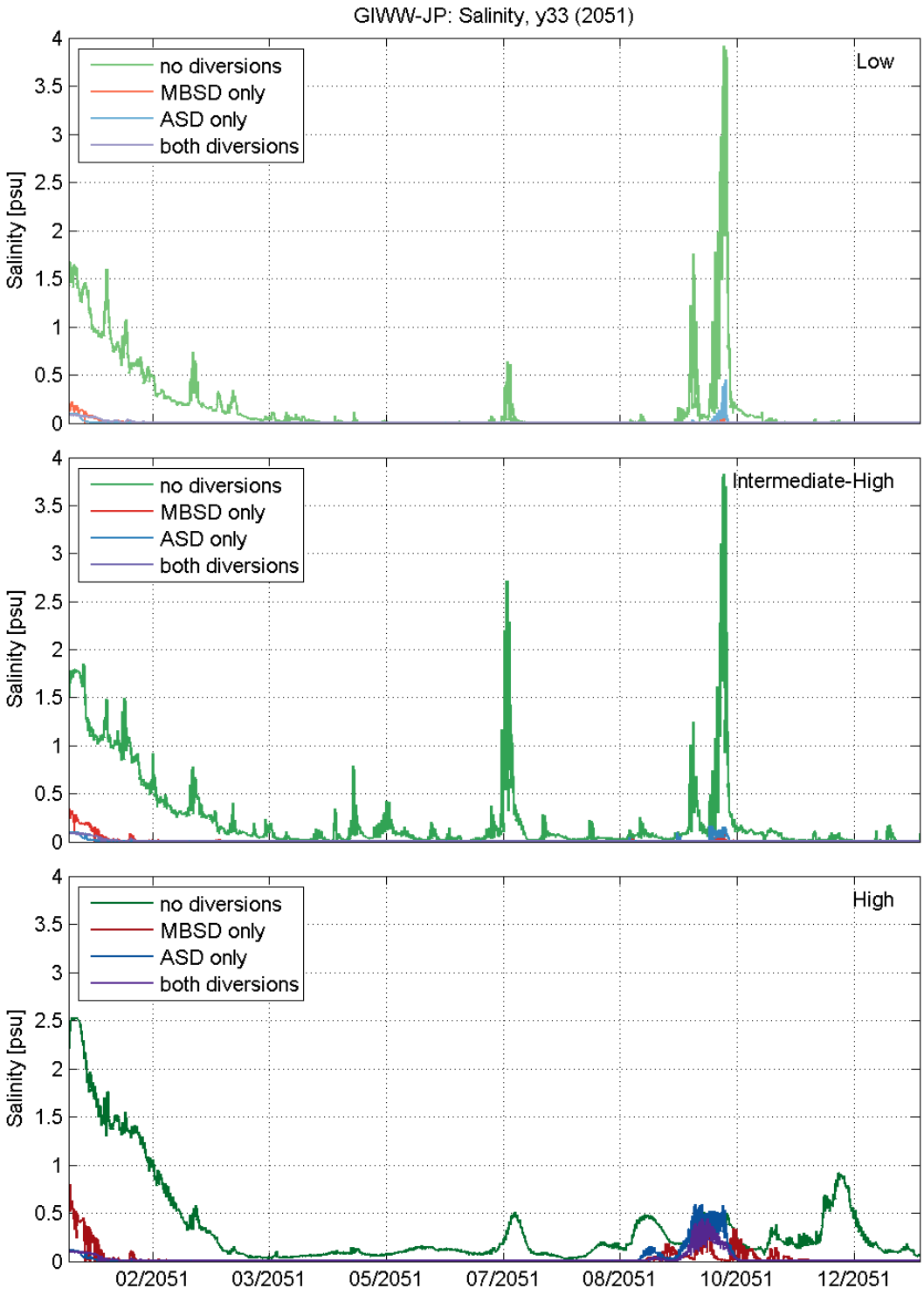


Figure 5-13: Simulated salinity results from the hydrodynamic model for year 2051 at GIWW-JP output point (scenario axes)

Salinity results shown in Figure 5-12 and Figure 5-13 reinforce the results from the JELA ICM showing that operations of either diversion project reduce salinities in the preserve. In G503 with no diversions, separate intrusion events increase salinities by as much as 4 psu from the typically fresh conditions. Notably, the intrusion is higher here for the Low climate scenario, pointing to the influence of urban runoff on salinities in the preserve. The Intermediate and Intermediate-High climate scenarios also have higher precipitation in addition to SLR values, which in this case result in higher runoff discharges that lower preserve salinities during intrusion events. For the cases with diversions, the same intrusion events produce much lower increases in salinities within the preserve.

5.4. Hydrodynamic Model Results – Spatial Statistics

To show the evolution of key hydrodynamic parameters simulated by the model through time and across scenarios, spatial variation in statistics derived from the hydrodynamic results are shown from each simulated year in the following figures. Each figure shows the spatial variation in the annual mean or maximum value in each simulated year for the particular combination of climate and project scenario run. While only selected results are shown and discussed here, all results are included in Appendix G.

Figure 5-14 first plots the annual mean water levels for the S06.G503 (Low, no diversion) scenario, showing the gradually increasing stages through time. Note that the mean water surface elevation is shown, regardless of whether the surface is open water or terrestrial, and that higher elevation, terrestrial locations of the preserve have mean water surface elevations that are approximately equal to the land surface elevations due to infrequent inundation. Figure 5-15 shows the percentage of the year during which the ground is inundated for the same case, where the portion of time where the preserve landscape is inundated increases from the near 0% values in the initial years. Figure 5-16 and Figure 5-17 show the annual mean and annual maximum salinity values. Average conditions in the preserve remain fully fresh for all years for this Low climate scenario, but higher salinities in the surrounding lakes and channels are evident in year 52. Annual maximum salinities show a steady encroaching of salinity closer to the preserve as time progresses, with intrusion into many of the preserve canals and bayous by year 52.

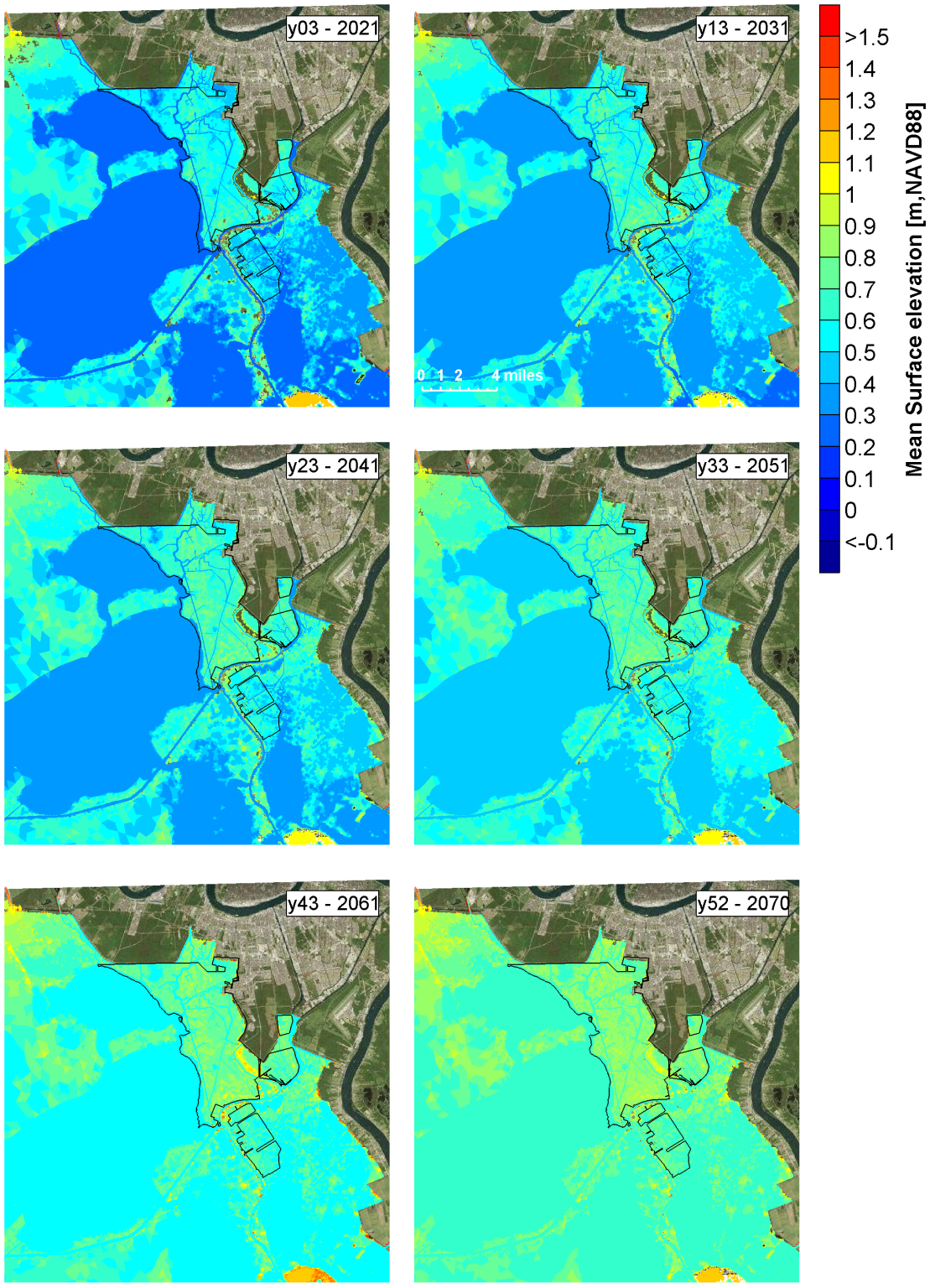


Figure 5-14: Annual mean water surface elevation in the preserve vicinity for the S06.G503 (Low, no diversion scenario) hydrodynamic model runs.

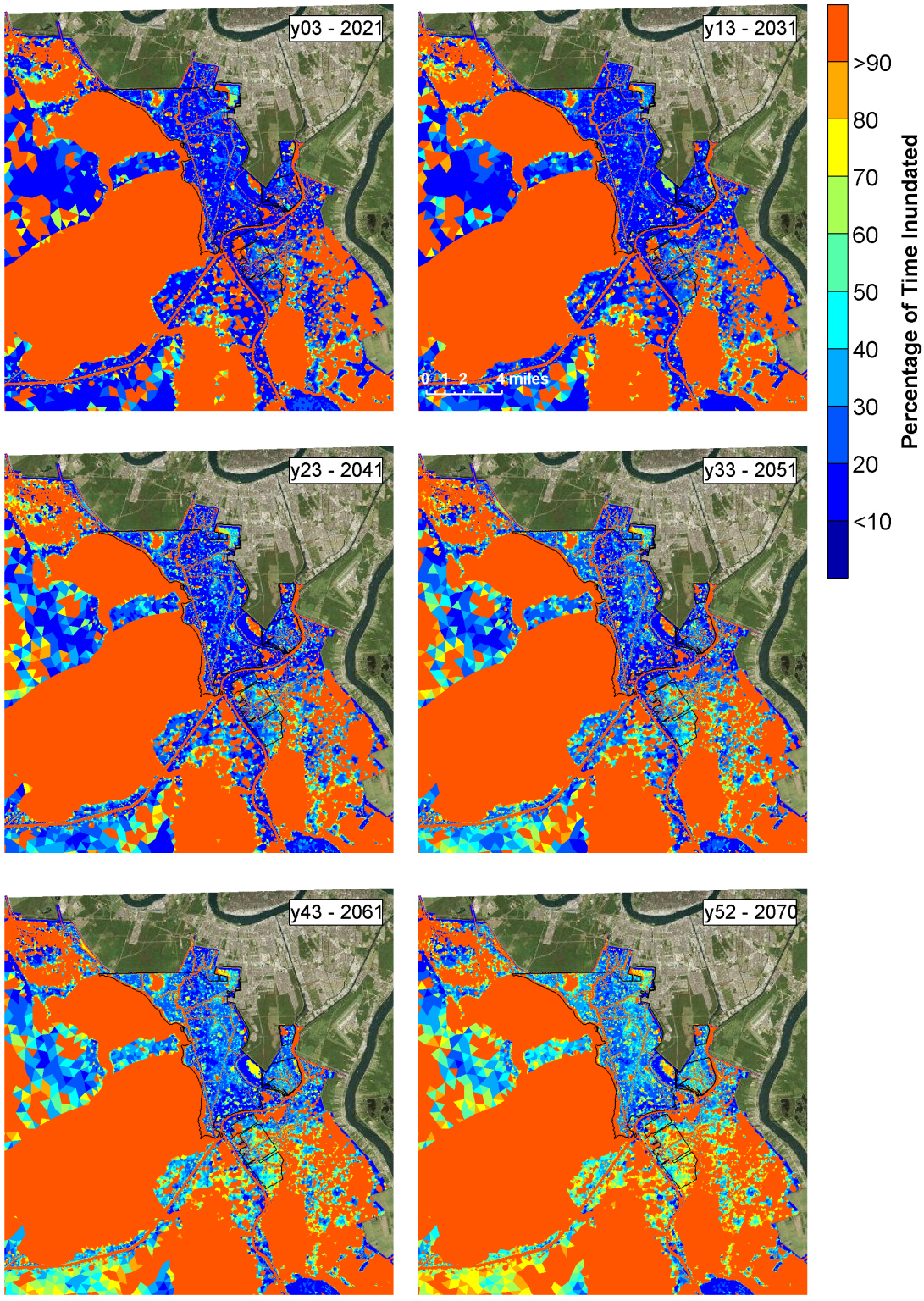


Figure 5-15: Annual inundation percentage in the preserve vicinity for the S06.G503 (Low, no diversion scenario) hydrodynamic model runs.

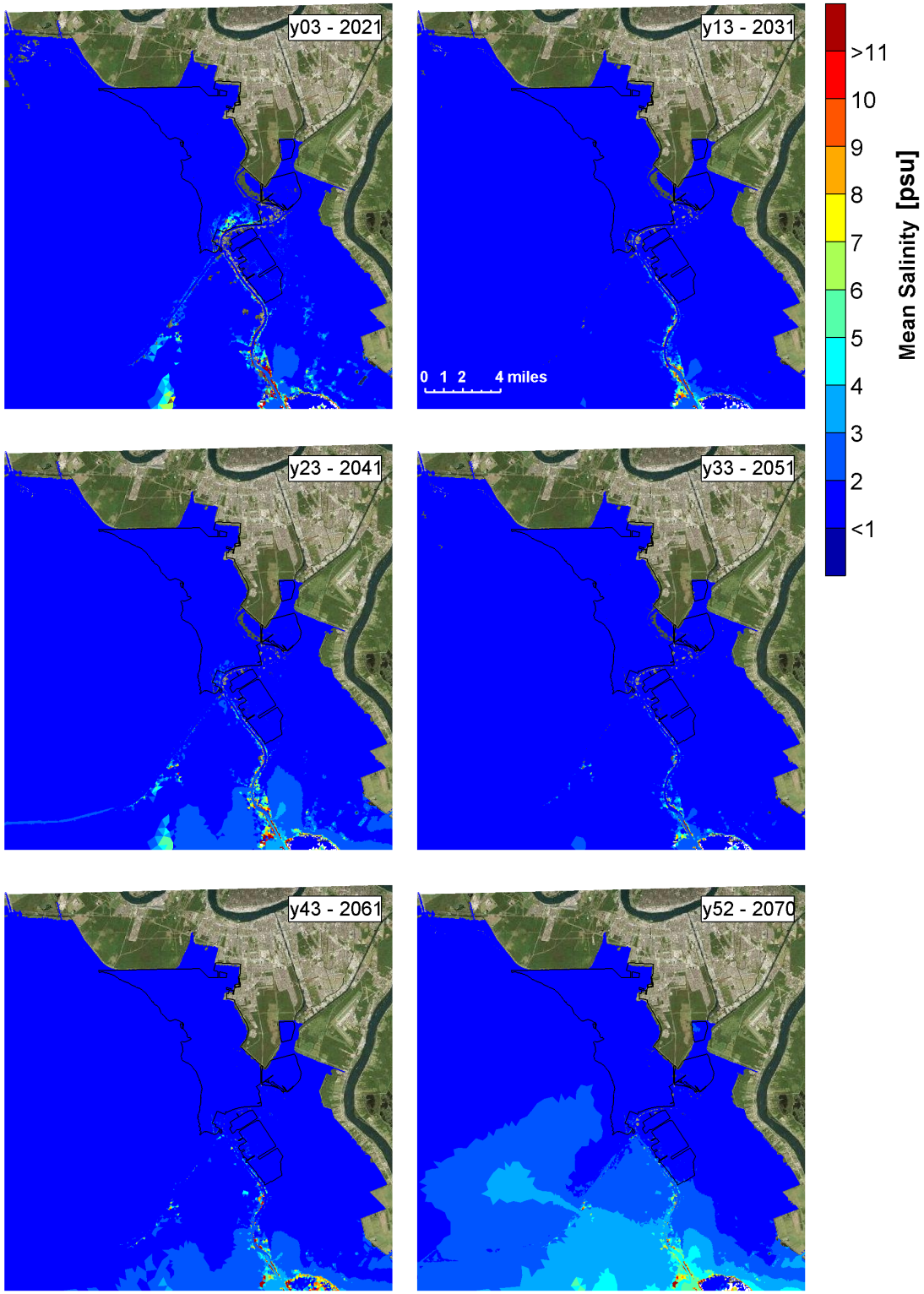


Figure 5-16: Annual mean salinity in the preserve vicinity for the S06.G503 (Low, no diversion scenario) hydrodynamic model runs.

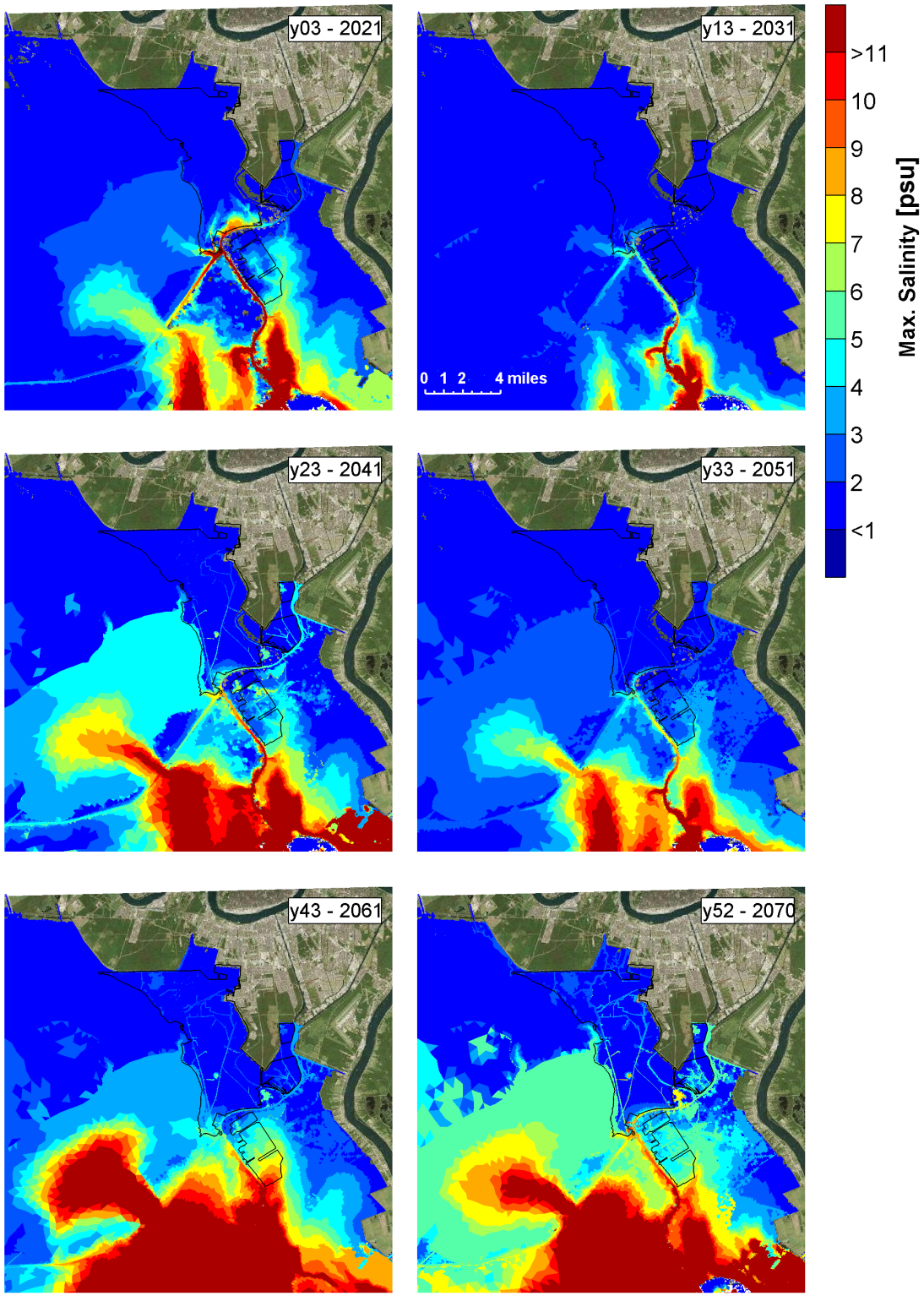


Figure 5-17: Annual maximum salinity in the preserve vicinity for the S06.G503 (Low, no diversion scenario) hydrodynamic model runs.

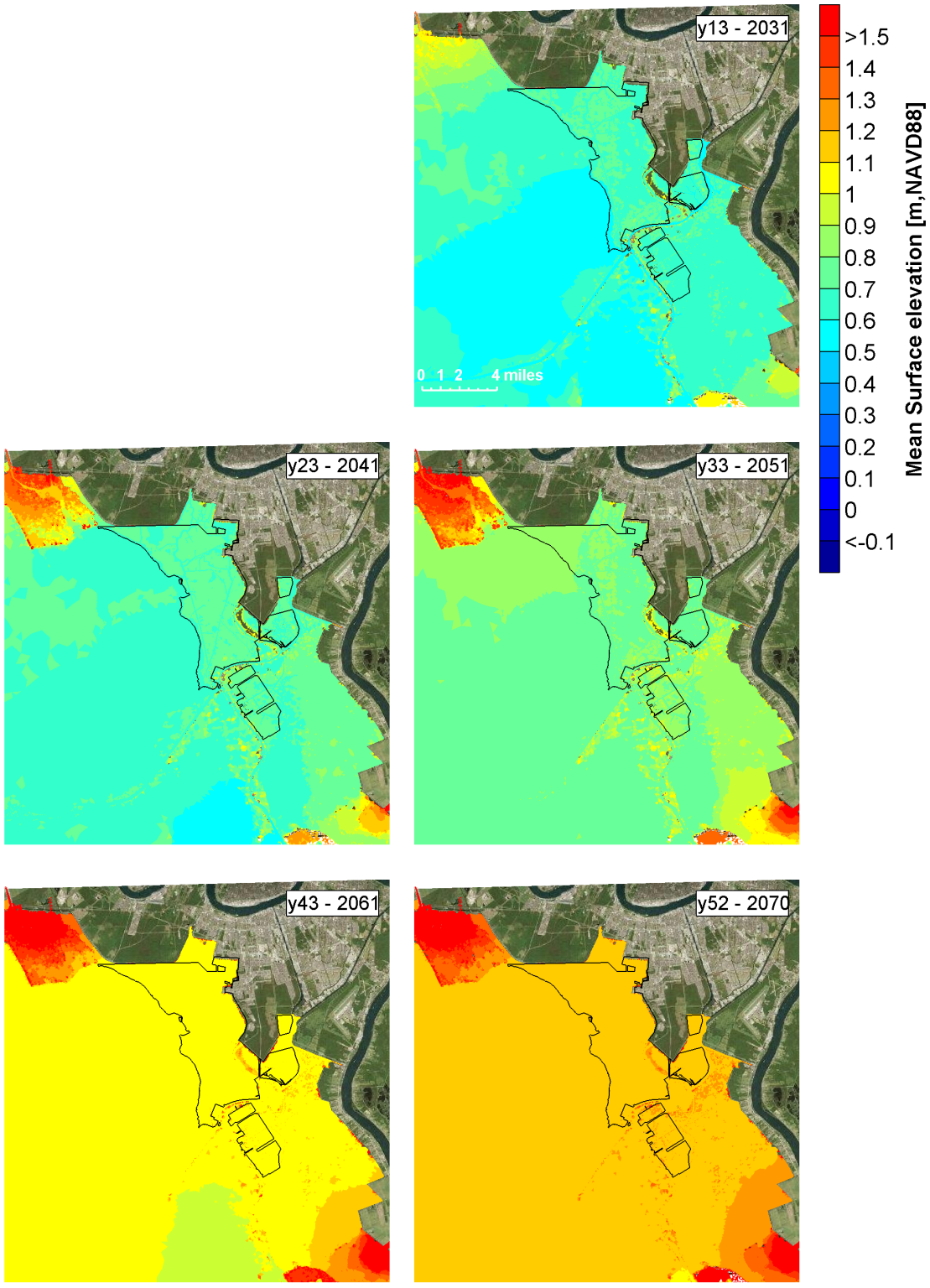


Figure 5-18: Annual mean water levels in the preserve vicinity for the S08.G803 (Intermediate-High, both diversions scenario) hydrodynamic model runs.

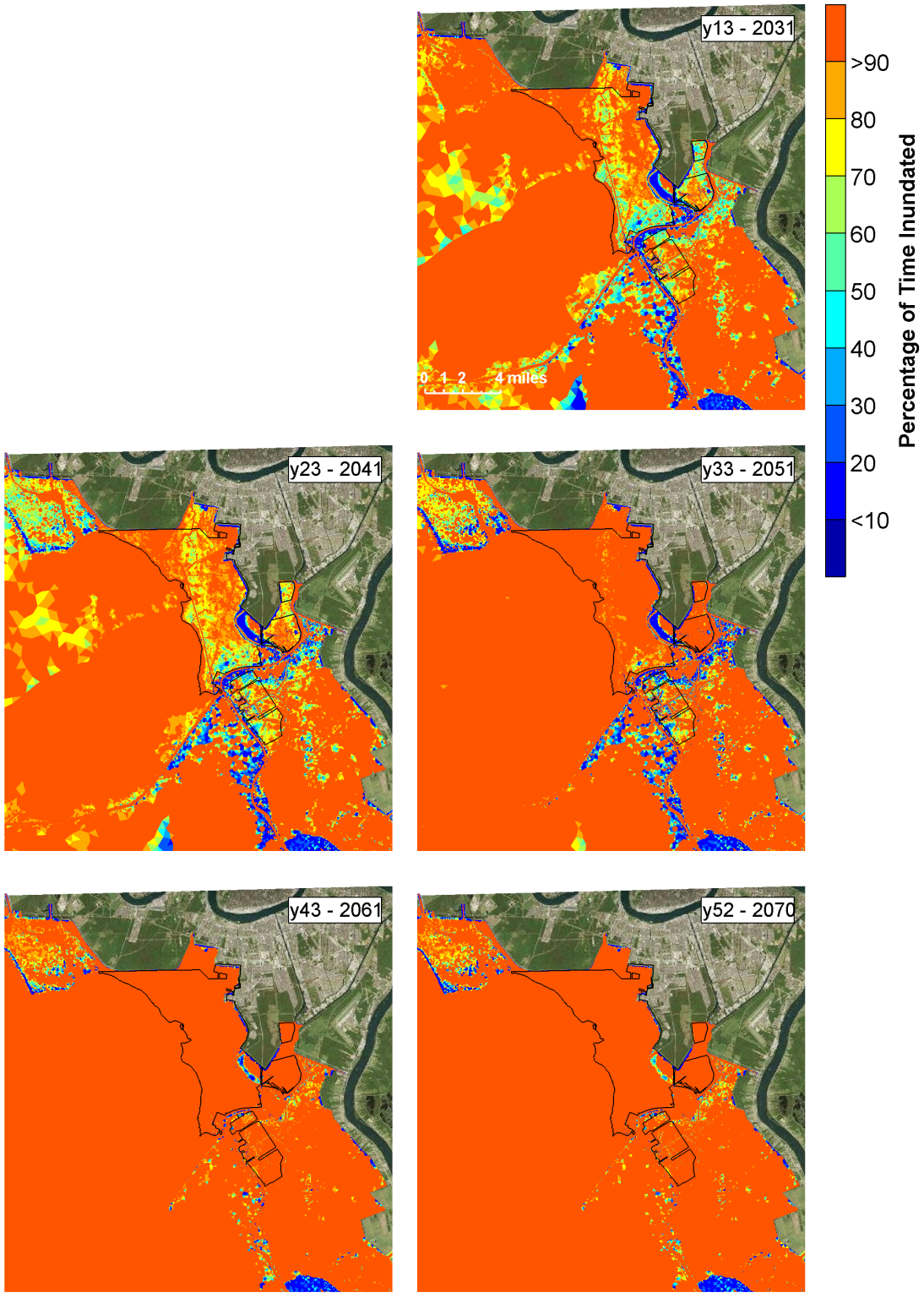


Figure 5-19: Annual inundation percentage in the preserve vicinity for the S08.G803 (Intermediate-High, both diversions scenario) hydrodynamic model runs.

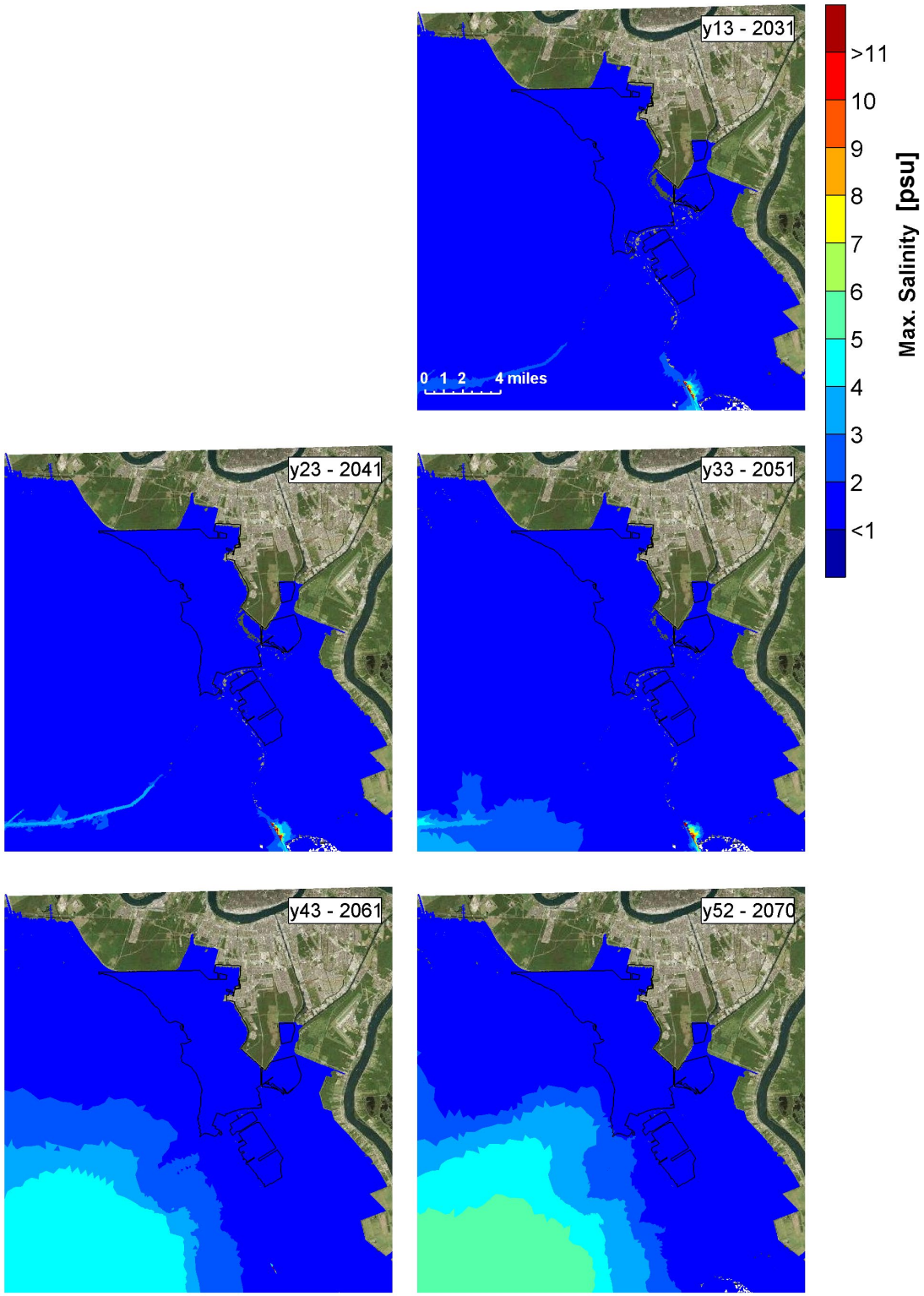


Figure 5-20: Annual maximum salinity in the preserve vicinity for the S08.G803 (Intermediate-High, both diversions scenario) hydrodynamic model runs.

Figure 5-18 through Figure 5-20 plot annual statistics for the s08.G803 (Intermediate-High, both diversions) scenario. With ASD being implemented in year 12, the y03 results would be identical to those of S08.G603 (Intermediate-High, Mid-Barataria only) scenario so are not shown here. The increasing water levels compared to the S06.G503 scenario are evident, especially in the diversion outfall areas and surrounding lakes. With both diversions operating, much of the preserve landscape is inundated for most of the year as early as year 13 (see Figure 5-19), with all of the preserve fully inundated by year 43. The increased freshwater is reflected in the maximum salinities (see Figure 5-20), where intrusion into the preserve is prevented despite the higher SLR rate of this climate scenario. High climate scenario results (included in Appendix G) are similar to those for the Intermediate-High scenario presented here, though with the increasing inundation occurring earlier.

5.5. Discussion

Results from both models show consistent trends for future water level and salinity conditions in the preserve that vary according to climate or project scenario. Water levels for all simulations increase through time along with SLR, and water levels for the Intermediate-High and High scenarios begin to deviate significantly from the Low scenario by approximately 2050. The MBSD influence on water levels is relatively minor in areas of the preserve north of the GIWW, while the ASD significantly increases water levels across the preserve landscape, especially north of the GIWW.

With no diversion project implementation, the salinity regime in the preserve would remain relatively stable for the next 30 to 40 years, then could become significantly saltier under higher SLR climate scenarios. With MBSD implementation, salinities in the preserve are relatively fresher, though could begin to increase in later decades with higher SLR. The ASD would lower salinities in the preserve significantly, keeping the preserve completely fresh for several decades after diversion implementation. JELA ICM simulations with no diversions in early years show high salinities in the preserve compared to the calibration period, potentially due to the rating-curve defined Davis Pond outflows reducing peak discharges compared to measurements. Measured peak Davis Pond discharges in recent years are at least double the peak discharges imposed in the ICM, so future operations that more closely approximate existing peak flows would likely prevent some of the modeled intrusion in early years and may delay the transition from fresher vegetation communities.

Coastal landscape trajectories vary significantly among the three climate scenarios. In the low scenario (S06), most of the wetlands in the preserve persist through year 50; however, there are

different wetland vegetation community dynamics according to project scenario. With no diversions, southern portions of the preserve convert to brackish marsh while northern portions convert to mostly intermediate types. With either diversion, southern portions remain intermediate and more fresh marshes in the northern portion are preserved. In the Intermediate-High scenario (S08), significant land loss in the preserve occurs in later decades of the simulation for all project scenarios. The MBSD delays this collapse and maintains more of the preserve landscape, while the ASD results in greater loss earlier in the simulation by year 30. The scenarios with only the ASD or both diversions in combination have greater loss of the preserve landscape than the no diversions or MBSD only scenario. In the High scenario (S09), nearly all preserve land area is lost by year 50 regardless of project scenario, but the collapse of certain areas is delayed or accelerated with different project implementation. While nearly complete land loss still occurs by year 52 with the MBSD, higher areas of fresh marsh are able to persist through year 32. With ASD implementation, loss of the preserve landscape is accelerated.

As implemented in the model, the ASD increases water levels within the preserve and land loss for all climate scenarios. With updates to the wetland vegetation collapse mechanisms in the 2023 CMP ICM (Baustian, et al., 2020), wetland vegetation is lost if an average inundation threshold is exceeded in two consecutive years, with the inundation threshold varying with average salinity. For the lower SLR scenario (S06), the increases in average water levels and inundation depths still do not reach thresholds that would cause significant loss. In the higher SLR scenarios, the increasing water levels due to both ASD implementation and SLR do more frequently exceed the inundation threshold, resulting in the additional loss.

It should be noted that the ASD project has only been advanced to planning stages as part of 2017 CMP; as the project concept progresses, changes in the design or operational scheme will likely lessen inundation impacts and could still enable the project to achieve land loss prevention benefits in the upper basin without excessive inundation impacts.

The two models generally show consistent trends in the key coastal drivers, with the hydrodynamic model showing more detail on their spatial variation through time. However, the duration of high salinity intrusion events shown in the hydrodynamic model results is generally shorter compared to the JELA ICM results, indicating that the ICM may potentially be overestimating the conversion of fresher to intermediate marsh types. Additionally, the water level increases due to the ASD implementation may be slightly overestimated by the JELA ICM compared with the hydrodynamic model results, potentially overestimating the project's detrimental inundation impacts.

6. CONCLUSIONS

Moffatt & Nichol performed a modeling study based in part on the Louisiana Coastal Master Plan ICM modeling approach to aid the Jean Lafitte National Park (JELA) in understanding potential future conditions within the Barataria Preserve, and to inform management decisions. Two complementary coastal numerical models were developed for this study. One of these models was a detailed hydrodynamic model of the Barataria Basin using the Mike-21 FM HD modeling platform that represented the complex basin and JELA Barataria Preserve landscape with high resolution. The greater understanding of the preserve hydrology gained with the Mike-21 FM HD model then supported the development of a "downscaled" JELA ICM model that offered improved resolution and representation of the hydrology in the upper basin. The ICM platform enabled efficient computation of the water level and salinity parameters that influenced landscape evolution so that simulations projecting future coastal landscapes and wetland vegetation could be performed over decadal timescales for multiple scenarios.

Both models were calibrated using measured water levels and salinities throughout the basin and within the preserve. Both models were shown to be well calibrated and adequately reproduced recent historic conditions in the preserve. The hydrodynamic model provided high fidelity representation of the hydrodynamics in the upper basin and across the preserve.

With both ICM and 2D hydrodynamic models developed and calibrated as representative of conditions within Barataria Basin, the models were then used to provide projections of coastal landscape and hydrologic conditions at the preserve over the next 50 years. To account for uncertainty in the key drivers of future conditions in the Barataria Basin, several future climate and project scenarios were developed to provide a range of plausible outcomes. A total of three climate scenarios, with varying SLR, subsidence, and precipitation boundary conditions, and four project scenarios were developed. The project scenarios analyzed the impacts of two proposed large Mississippi River sediment diversions.

The JELA ICM model was used to simulate the 12 future conditions scenarios each for a 52-year period, providing water level and salinity results at the compartment scale and coastal landscape and wetland vegetation community evolution results on a 30 m by 30 m grid. The hydrodynamic model was coupled with the JELA ICM model using automated *MATLAB* and *Python*-based code to utilize the same changing boundary conditions due to SLR and restoration project implementation as in the ICM and was updated to include the ICM-predicted changes to the coastal landscape and vegetation in future years. Yearlong simulations were then conducted once every decade of the 50-year future conditions analysis period.

Results from both models show consistent trends for future water level and salinity conditions in the preserve that vary according to climate or project scenario. Water levels for all simulations increase through time along with SLR, with water levels for the Intermediate-High and High scenarios deviating significantly from the Low scenario by approximately 2050. The MBSD influence on water levels was relatively minor in areas of the preserve north of the GIWW, while the ASD increased water levels across the preserve landscape.

With no diversion project implementation, the salinity regime in the preserve would remain relatively stable for the next 30 to 40 years, then could become significantly saltier under higher SLR climate scenarios. The MBSD reduces salinities across the preserve, especially areas south of the GIWW until the later decades in high SLR scenarios. The ASD would lower salinities in the preserve significantly, keeping the preserve completely fresh for several decades after diversion implementation.

Coastal landscape trajectories varied significantly among the three climate scenarios. For the low scenario (S06), most of the preserve landscape remained as marsh through 50 years, though with shifting vegetation community dynamics that varied with each project scenario. For the Intermediate-High scenario (S08), significant land loss did not occur until the later decades of the simulation, and both total land loss at the end of the simulation and vegetation community composition were heavily influenced by project implementation. Finally, for the High scenario (S09), nearly all preserve land area was lost by year 50 regardless of project scenario. However, the collapse of various areas were delayed or accelerated depending on which diversion project was implemented. Importantly, loss of the preserve landscape appeared to be accelerated by the ASD with higher inundation.

Coastal landscape and wetland vegetation community projections were based on the state-of-the-art science for modeling these processes over decadal timescales by taking advantage of the latest ICM updates supporting the 2023 CMP. The modeled evolution of the preserve landscape was as anticipated given the varying water levels and salinities due to climate inputs and project impacts. More investigation on the transition of the preserve area wetland vegetation from forested and fresh to intermediate marsh during early years, when stages and salinities do not differ significantly from current conditions, is warranted. Other potential investigations could explore the evolution of future freshwater dynamics of the preserve (e.g., the relative contributions of the Davis Pond Diversion, the proposed sediment diversions, and pumped urban runoff.)

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National Park Service
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Appendix A: Calibration Statistics Calculations



MODEL CALIBRATION STATISTICS

Several statistical parameters were used to assess model calibration and validation results. These include the mean error (*ME*), root mean square (*RMS*) error, normalized *RMS* error, mean absolute error (*MAE*), correlation coefficient (*R*), index of agreement (*d*), and time delay or lag (ΔT). These parameters are briefly described here.

If x and y are the measured and calculated data respectively, then the following statistics can be calculated:

Mean error (*ME*):

$$ME = \bar{y} - \bar{x} \tag{1}$$

where "bar" denotes the sample mean.

Root mean square error (*RMS*):

$$\varepsilon_{RMS} = \sqrt{\overline{(x-y)^2}} \tag{2}$$

To reduce the effect of measurement error and possible outliers, a one-hour low-pass filter was applied to the measured data to compute trend x_f. Then the normalized error is calculated as

$$\varepsilon_{norm} = \frac{\varepsilon_{RMS}}{x_{f,\max} - x_{f,\min}} \cdot 100\% \tag{3}$$

where $x_{f,\max}$ and $x_{f,\min}$ are the maximum and minimum values of the trend x_f. The residual in the denominator defines the range of measured data.

The root mean square error of measured data was estimated as:

$$\varepsilon_{meas} = \sqrt{\overline{(x-x_f)^2}} \tag{4}$$

Mean absolute error (*MAE*):

$$MAE = \overline{|x-y|} \tag{5}$$

The correlation coefficient R was calculated using standard method and represents a non-squared value.

The model prediction capability was estimated with the index of agreement between measured and calculated data (after Willmott, 1982 and Willmott et al., 1985):

$$d = 1 - \frac{\overline{(x-y)^2}}{\overline{\left(|x-\bar{x}| + |y-\bar{x}|\right)^2}}, \; 0 \le d \le 1 \tag{6}$$

The time delay ΔT shows expected time difference between corresponding events in measured and calculated data. To estimate the delay, the cross-correlation function between measured and calculated data is computed and the smallest time lag at which a maximum occurs is found. Because the cross-correlation function is calculated from the discrete data, resulting time resolution may not be sufficient to accurately define the maximum. Therefore, computed values of the cross-correlation function around the maximum were interpolated with a 2^{nd} order polynomial, which was then used to determine the maximum.

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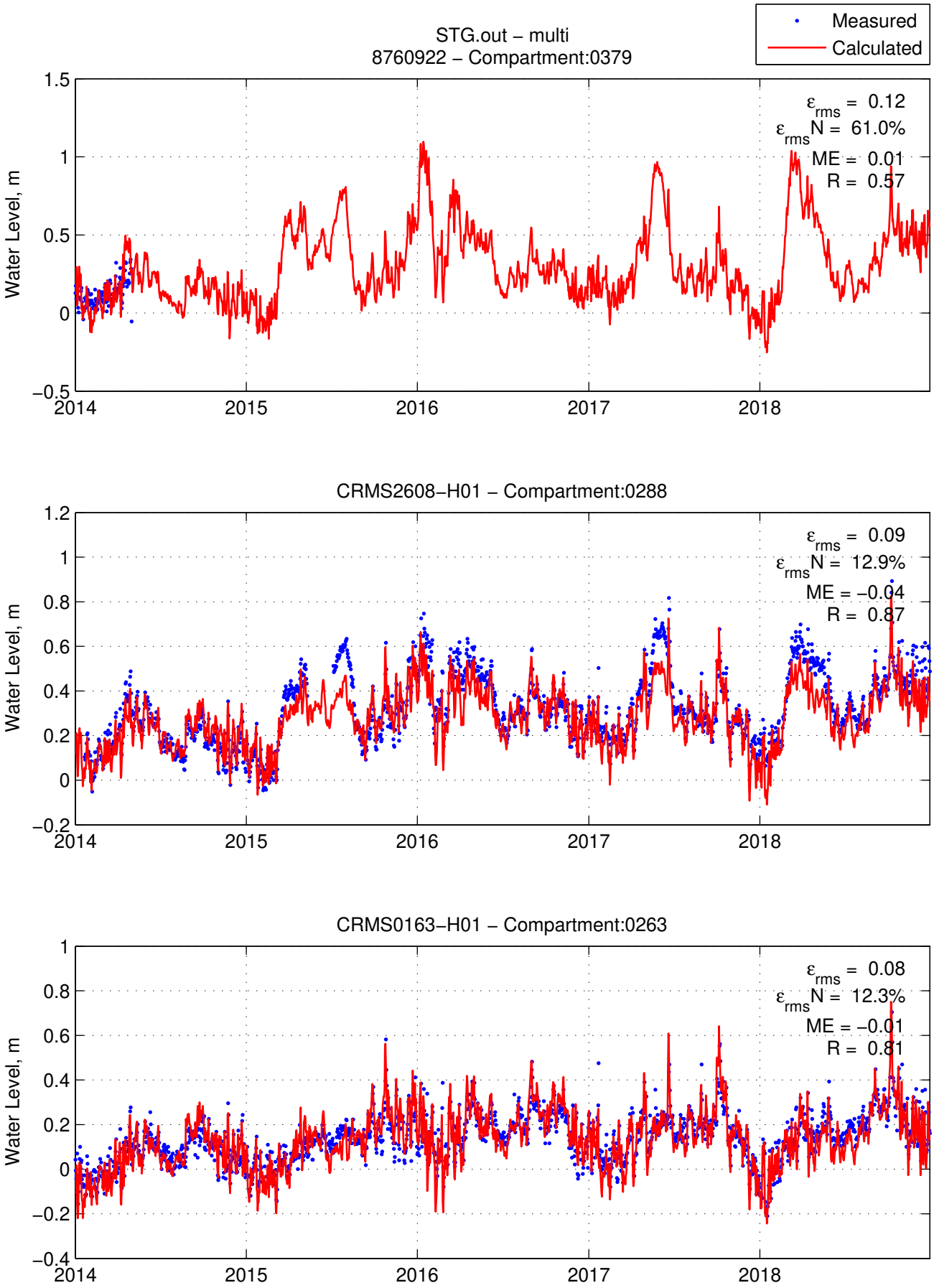
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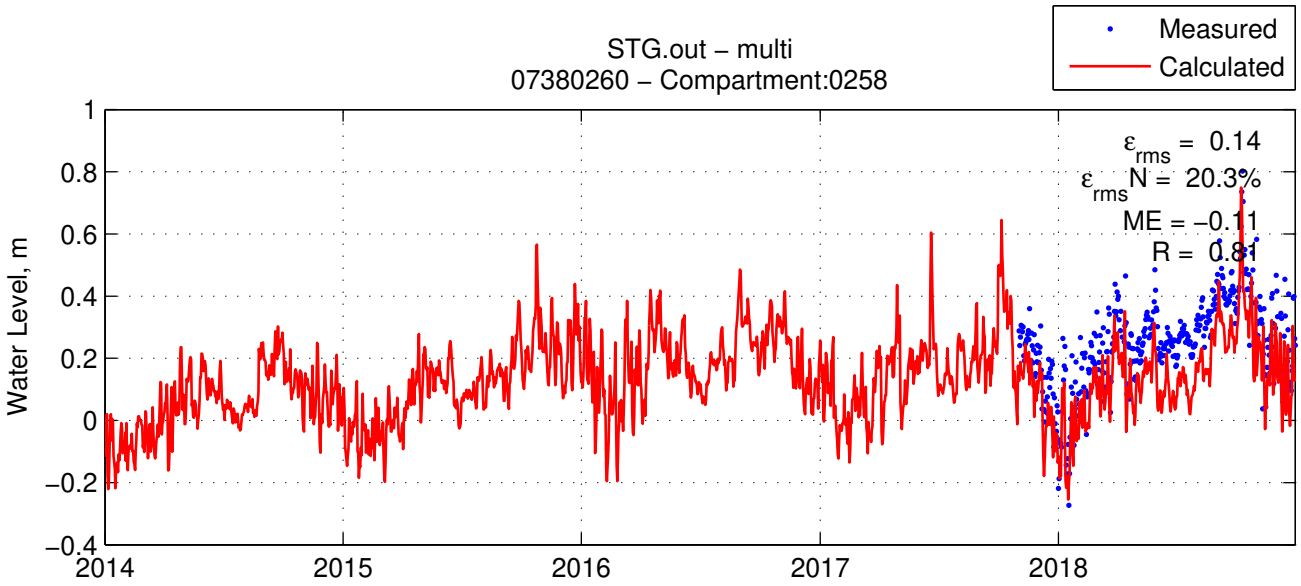
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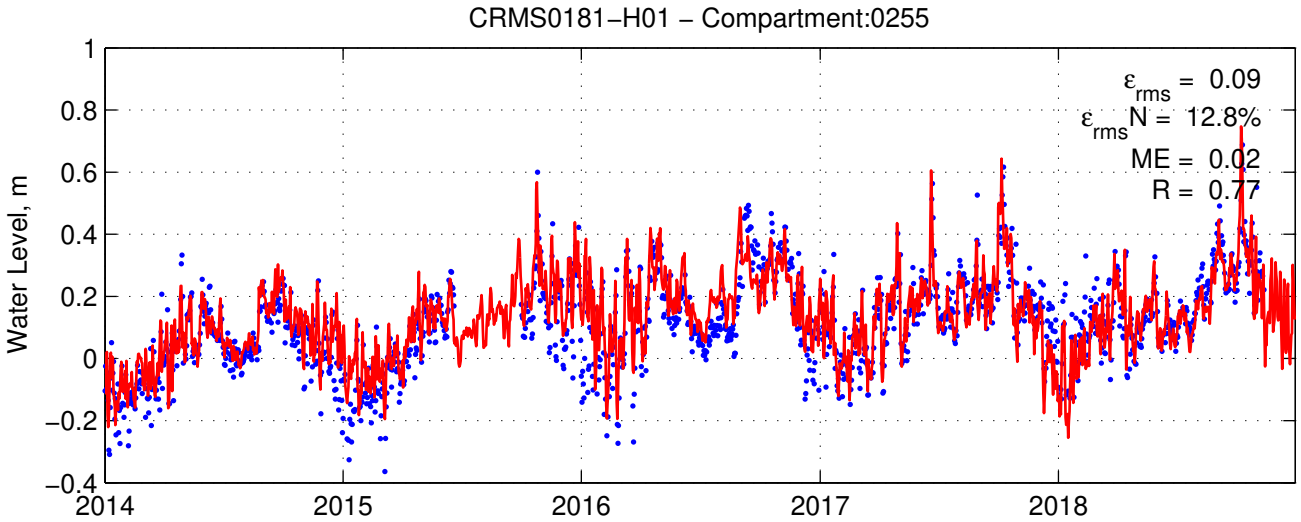
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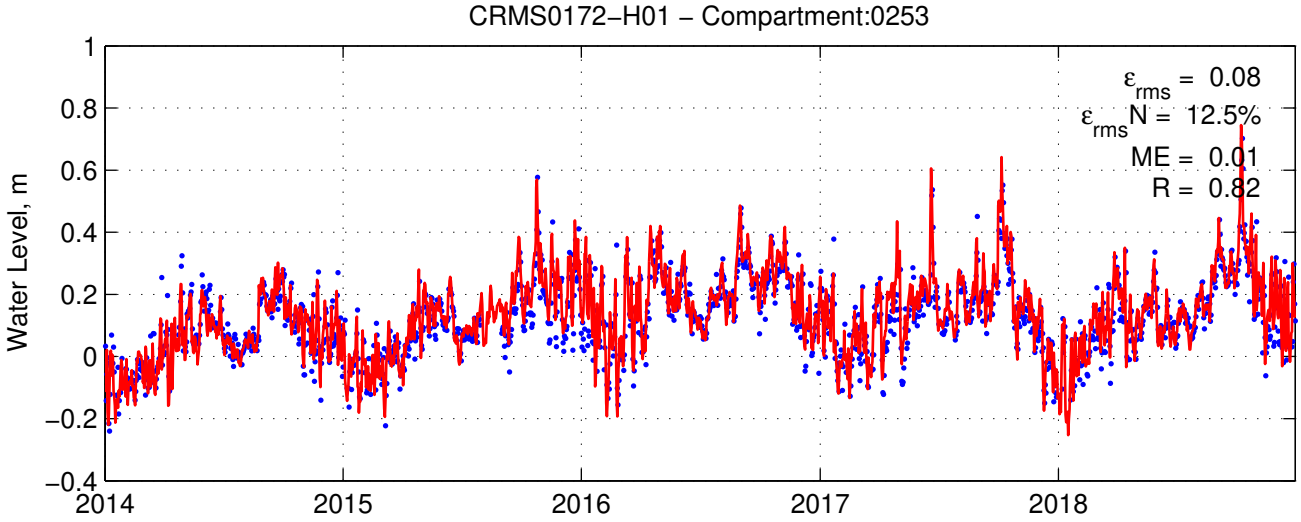
Appendix B: Complete ICM Calibration Results

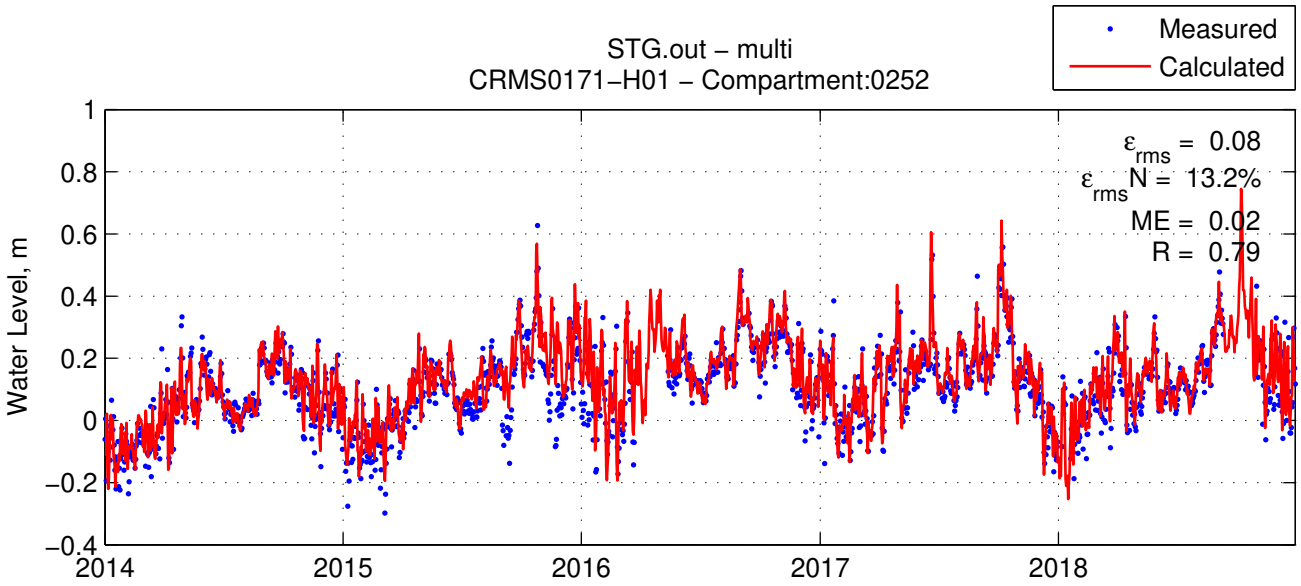


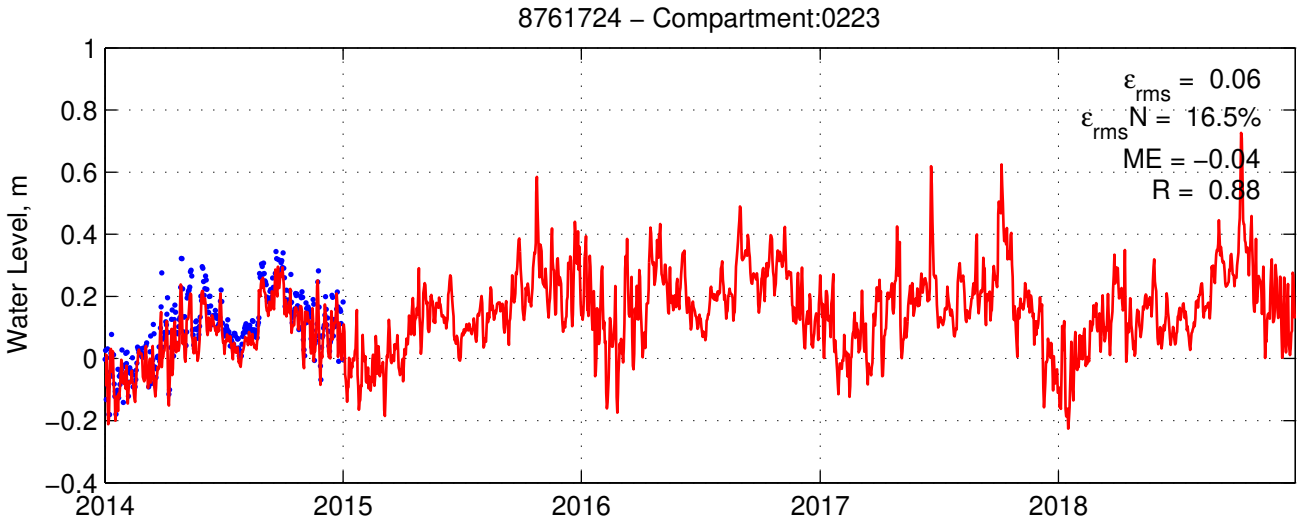

Measured
Calculated
STG.out – multi
8760922 – Compartment:0379
Water Level, m
1.5
1
0.5
0
−0.5
2014
2015
2016
2017
2018
εrms = 0.12
εrmsN = 61.0%
ME = 0.01
R = 0.57
CRMS2608–H01 – Compartment:0288
Water Level, m
1.2
1
0.8
0.6
0.4
0.2
0
−0.2
2014
2015
2016
2017
2018
εrms = 0.09
εrmsN = 12.9%
ME = −0.04
R = 0.87
CRMS0163–H01 – Compartment:0263
Water Level, m
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
2014
2015
2016
2017
2018
εrms = 0.08
εrmsN = 12.3%
ME = −0.01
R = 0.81

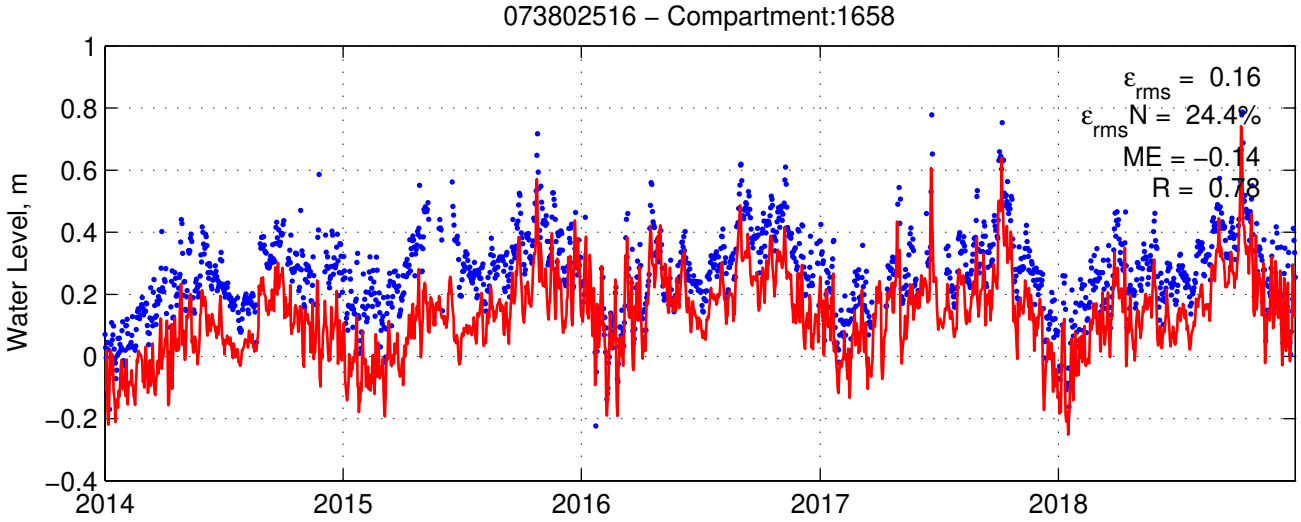

STG.out – multi
07380260 – Compartment:0258
Measured
Calculated
ε_{rms} = 0.14
ε_{rms}N = 20.3%
ME = –0.11
R = 0.81
Water Level, m
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
2014
2015
2016
2017
2018

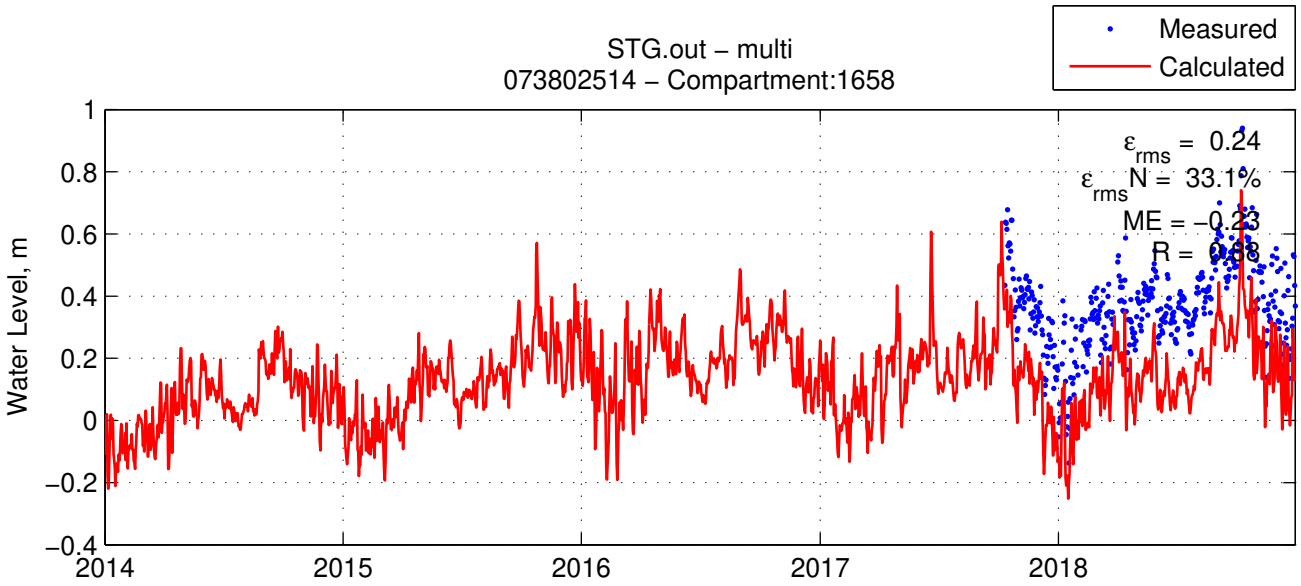

CRMS0181–H01 – Compartment:0255
ε_{rms} = 0.09
ε_{rms}N = 12.8%
ME = 0.02
R = 0.77
Water Level, m
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0.8
0.6
0.4
0.2
0
–0.2
–0.4
2014
2015
2016
2017
2018

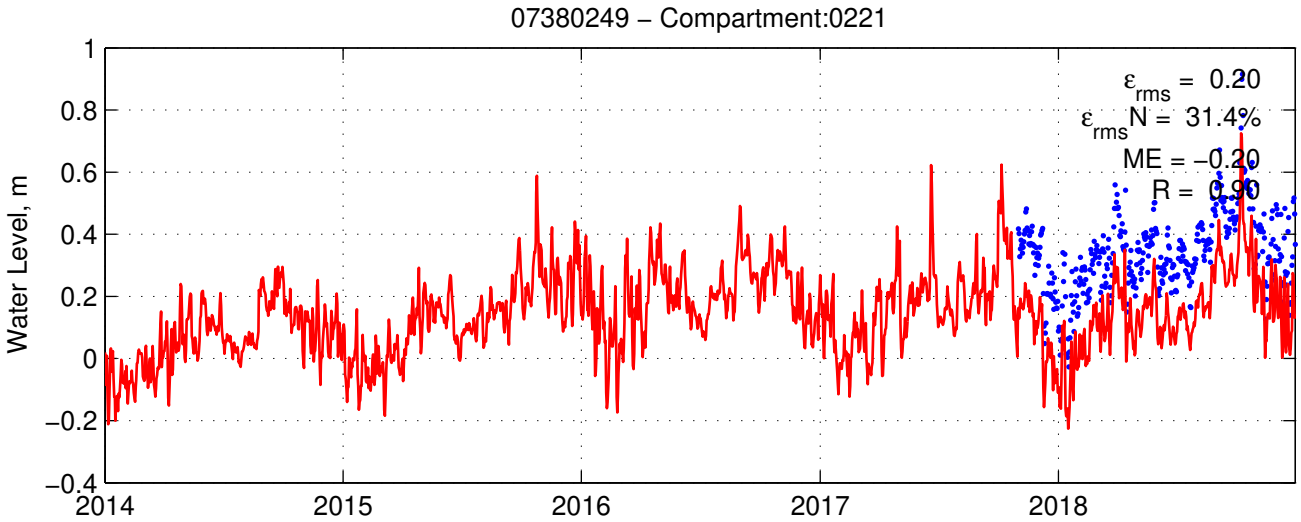

CRMS0172–H01 – Compartment:0253
ε_{rms} = 0.08
ε_{rms}N = 12.5%
ME = 0.01
R = 0.82
Water Level, m
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0.8
0.6
0.4
0.2
0
–0.2
–0.4
2014
2015
2016
2017
2018

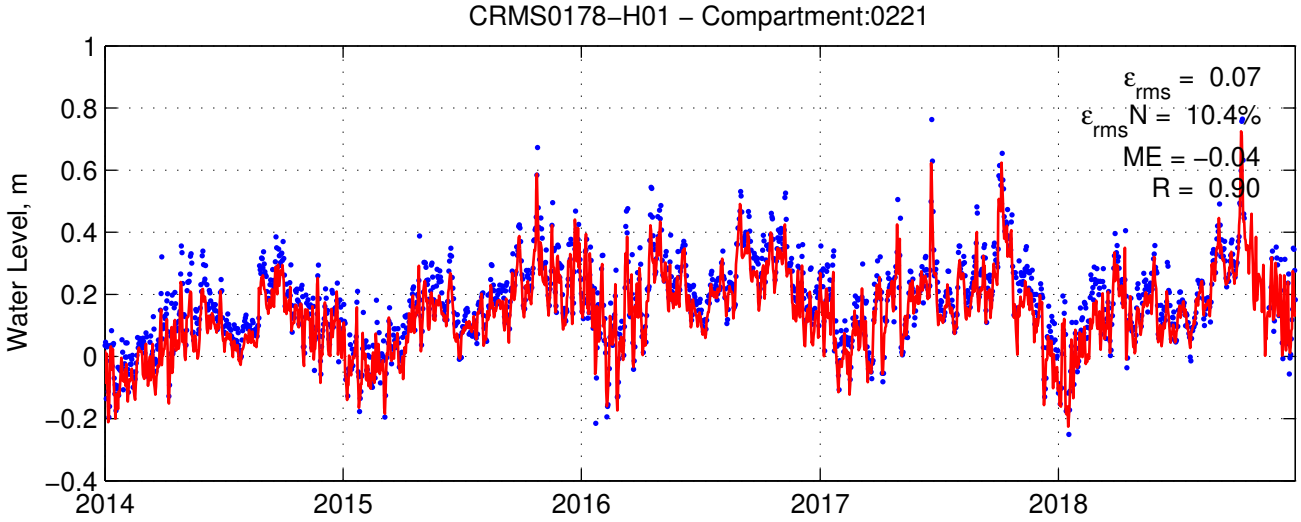

Measured
Calculated
STG.out – multi
CRMS0171–H01 – Compartment:0252
Water Level, m
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
2014
2015
2016
2017
2018
εrms = 0.08
εrmsN = 13.2%
ME = 0.02
R = 0.79

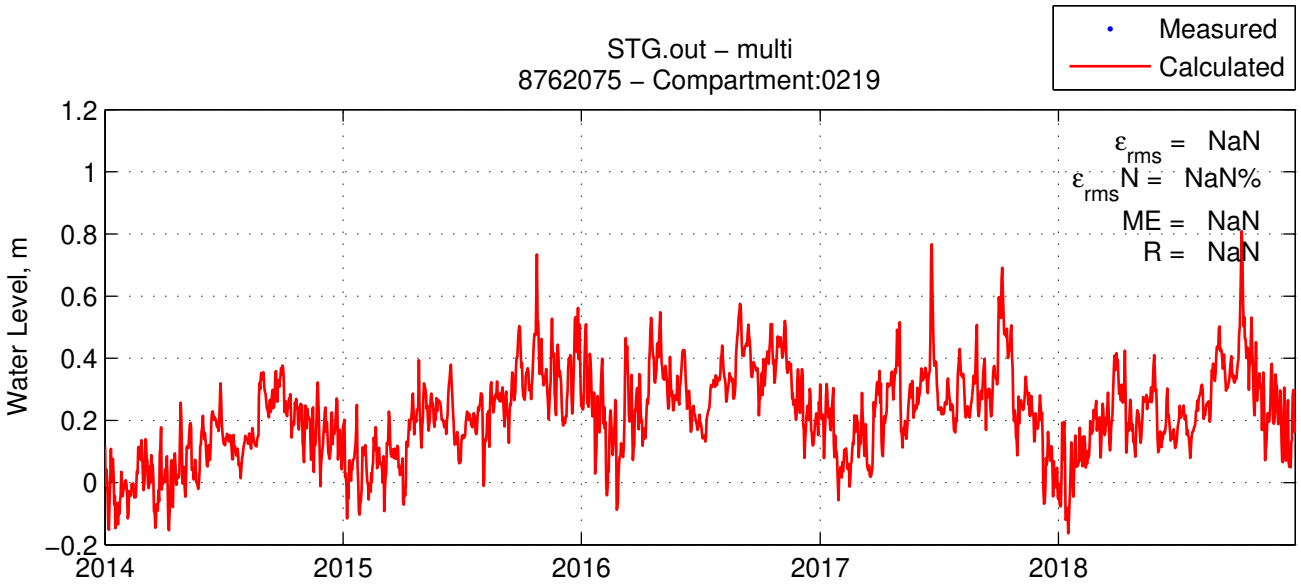

8761724 – Compartment:0223
Water Level, m
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
2014
2015
2016
2017
2018
εrms = 0.06
εrmsN = 16.5%
ME = –0.04
R = 0.88

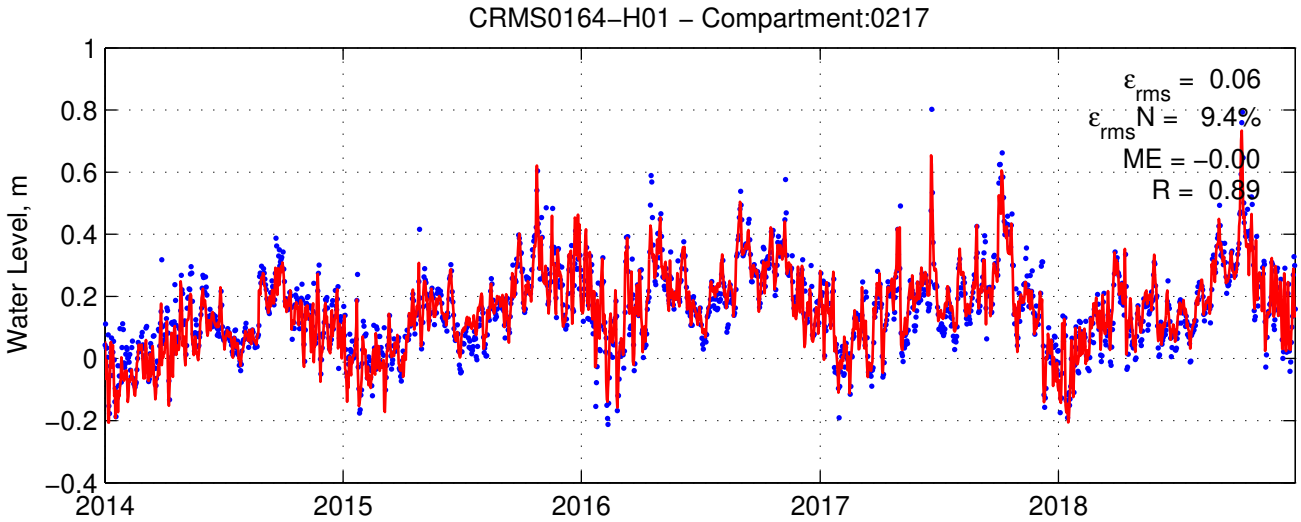

073802516 – Compartment:1658
Water Level, m
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
2014
2015
2016
2017
2018
εrms = 0.16
εrmsN = 24.4%
ME = –0.14
R = 0.78

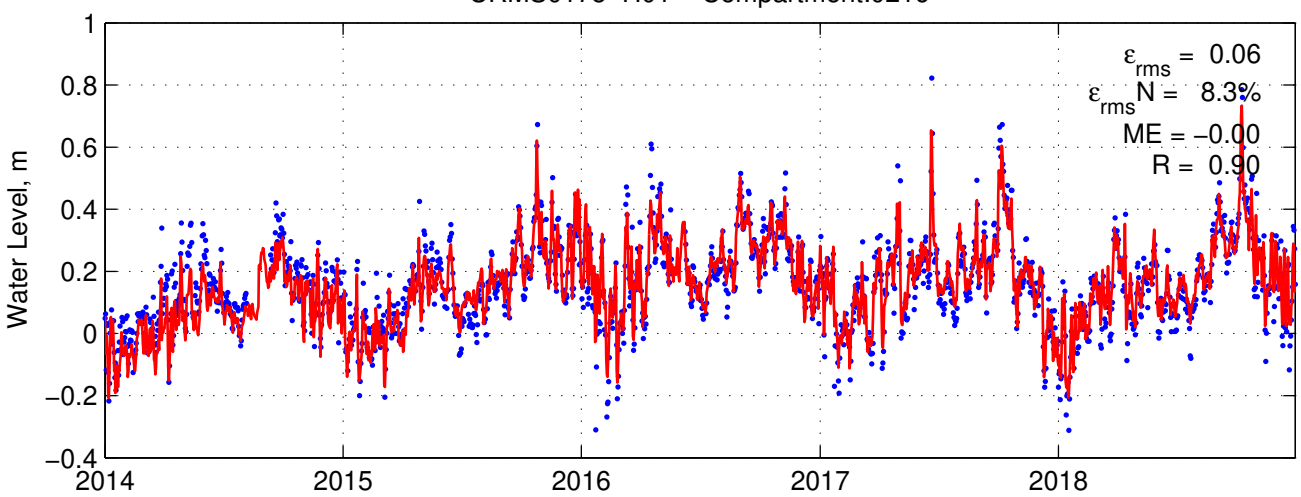

Measured
Calculated
STG.out – multi
073802514 – Compartment:1658
ε_{rms} = 0.24
ε_{rms}N = 33.1%
ME = –0.23
R = 0.88
Water Level, m
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
2014
2015
2016
2017
2018

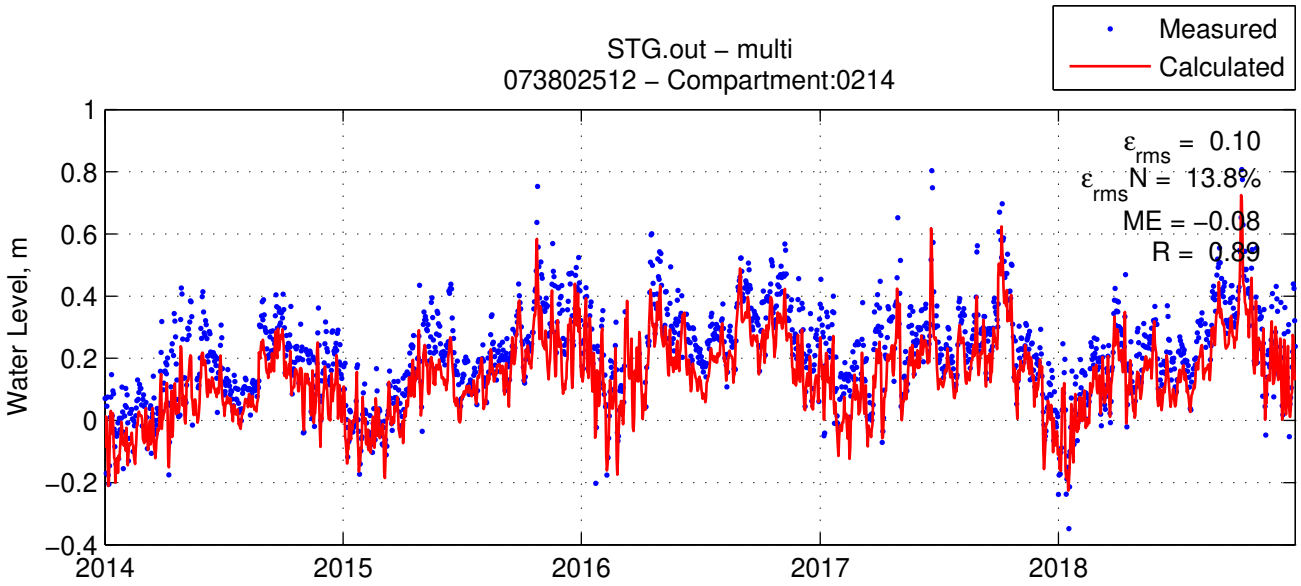

07380249 – Compartment:0221
ε_{rms} = 0.20
ε_{rms}N = 31.4%
ME = –0.20
R = 0.90
Water Level, m
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
2014
2015
2016
2017
2018

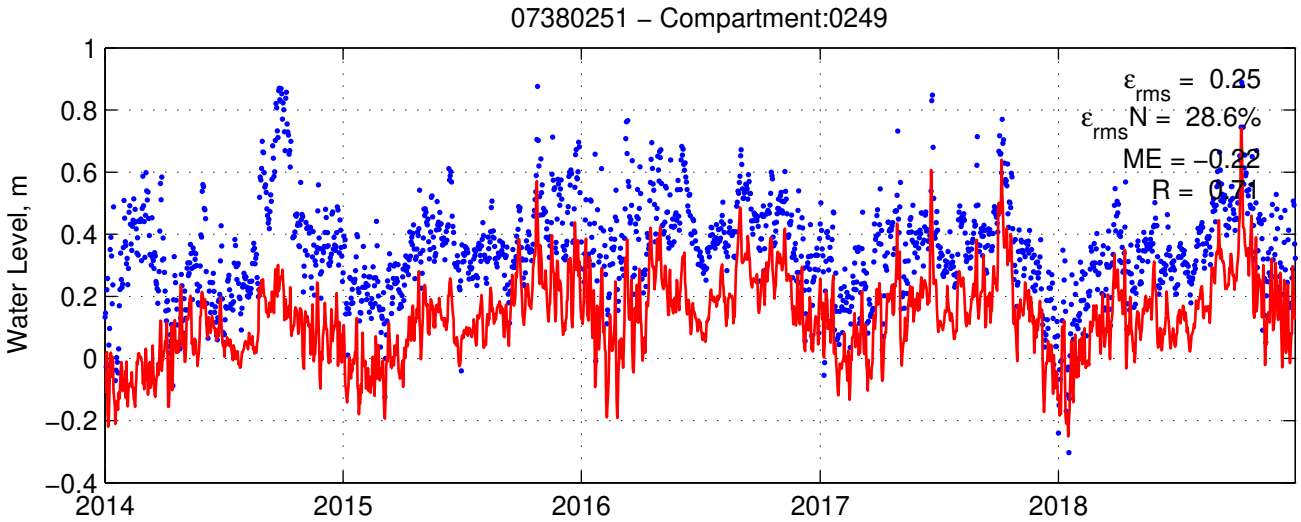

CRMS0178–H01 – Compartment:0221
ε_{rms} = 0.07
ε_{rms}N = 10.4%
ME = –0.04
R = 0.90
Water Level, m
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
2014
2015
2016
2017
2018

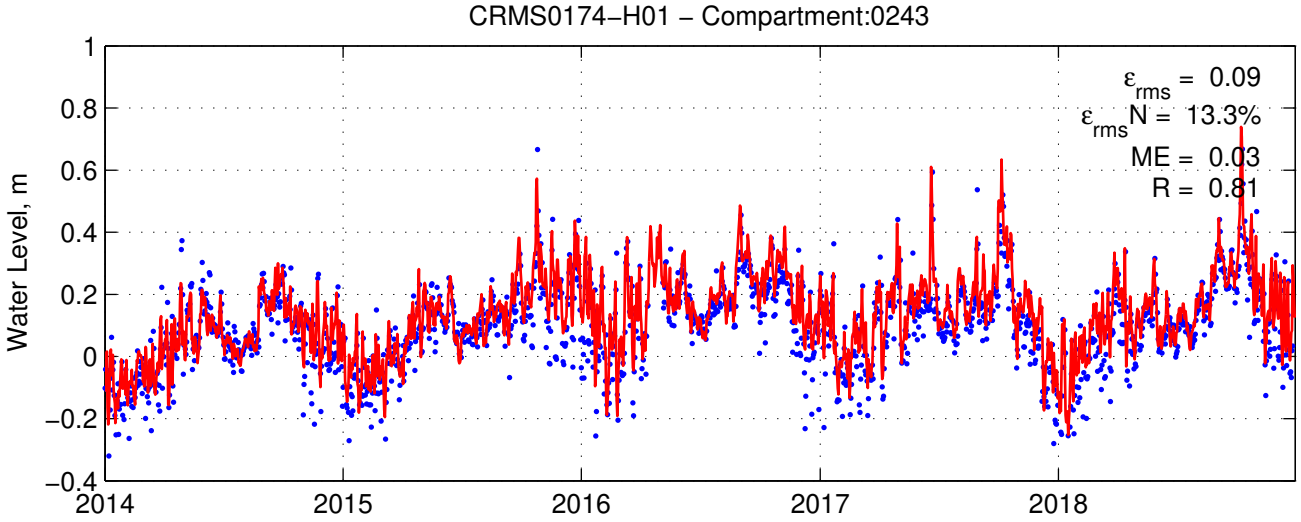

Measured
Calculated
STG.out – multi
8762075 – Compartment:0219
Water Level, m
1.2
1
0.8
0.6
0.4
0.2
0
–0.2
2014
2015
2016
2017
2018
εrms = NaN
εrmsN = NaN%
ME = NaN
R = NaN

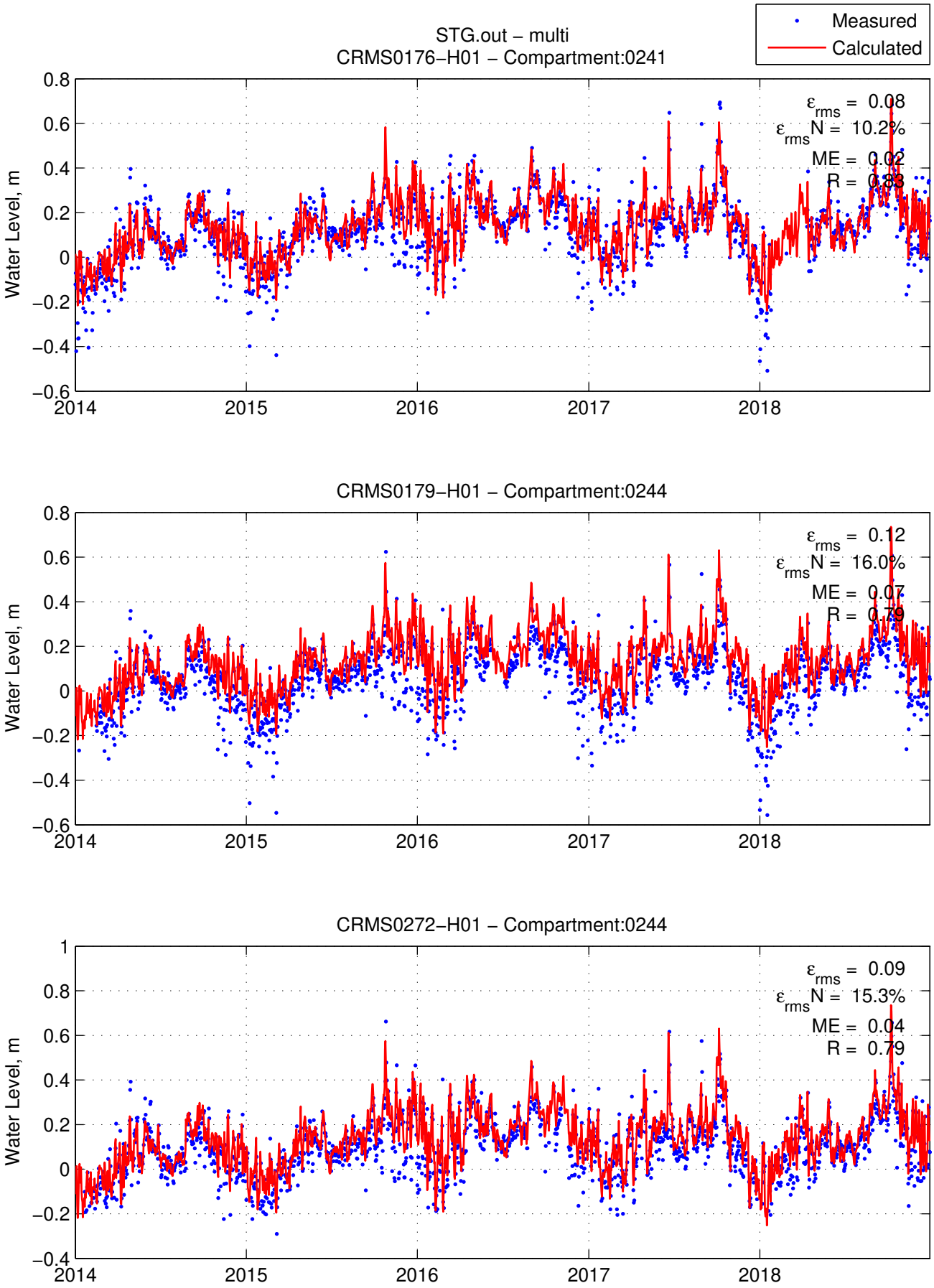

CRMS0164–H01 – Compartment:0217
Water Level, m
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
2014
2015
2016
2017
2018
εrms = 0.06
εrmsN = 9.4%
ME = –0.00
R = 0.89

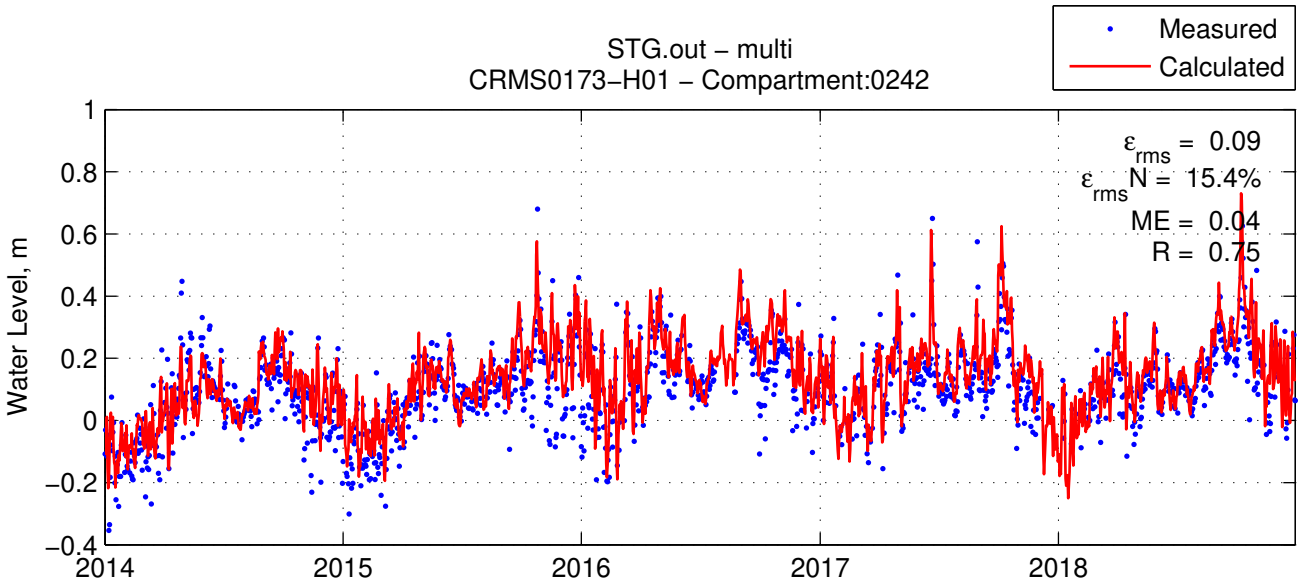

CRMS0175–H01 – Compartment:0216
Water Level, m
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
2014
2015
2016
2017
2018
εrms = 0.06
εrmsN = 8.3%
ME = –0.00
R = 0.90

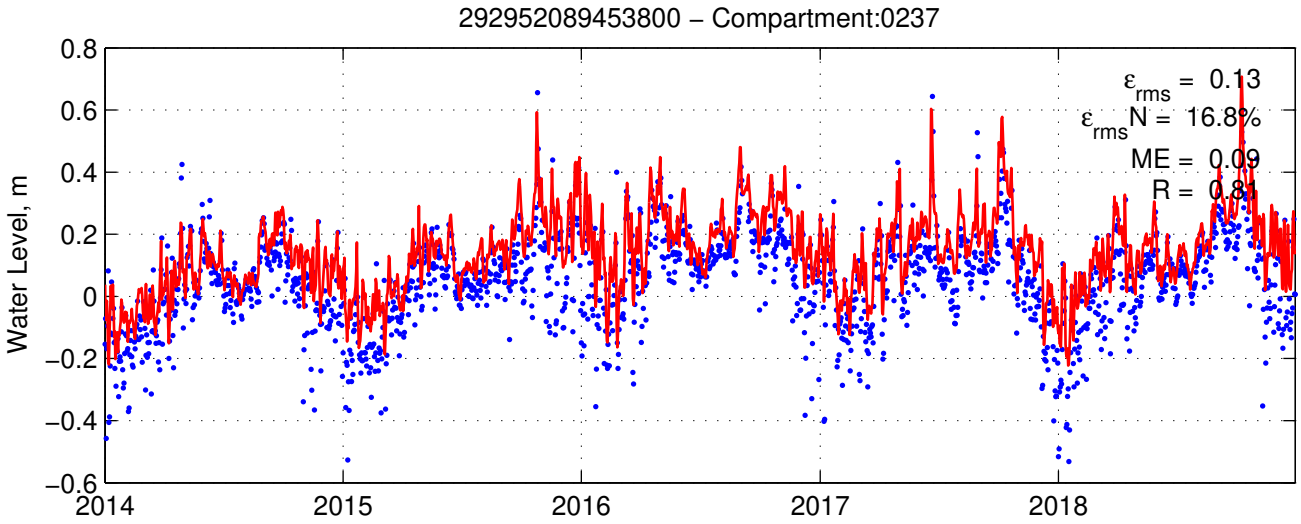

Measured
Calculated
STG.out – multi
073802512 – Compartment:0214
ε_{rms} = 0.10
ε_{rms}N = 13.8%
ME = –0.08
R = 0.89
Water Level, m
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
2014
2015
2016
2017
2018

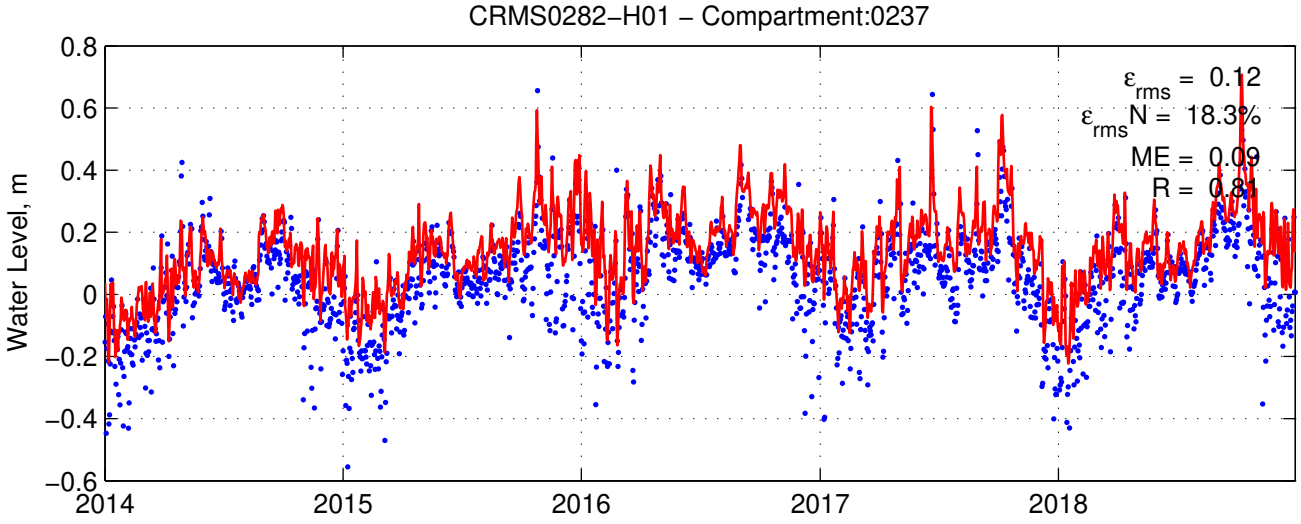

07380251 – Compartment:0249
ε_{rms} = 0.25
ε_{rms}N = 28.6%
ME = –0.22
R = 0.71
Water Level, m
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
2014
2015
2016
2017
2018

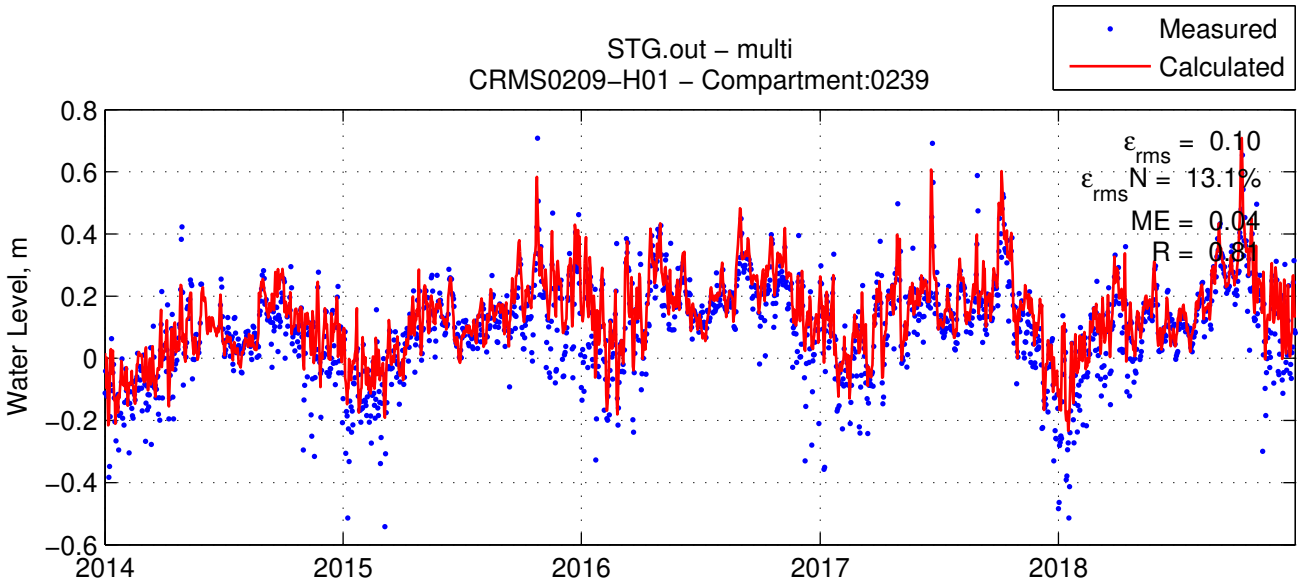

CRMS0174–H01 – Compartment:0243
ε_{rms} = 0.09
ε_{rms}N = 13.3%
ME = 0.03
R = 0.81
Water Level, m
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
2014
2015
2016
2017
2018

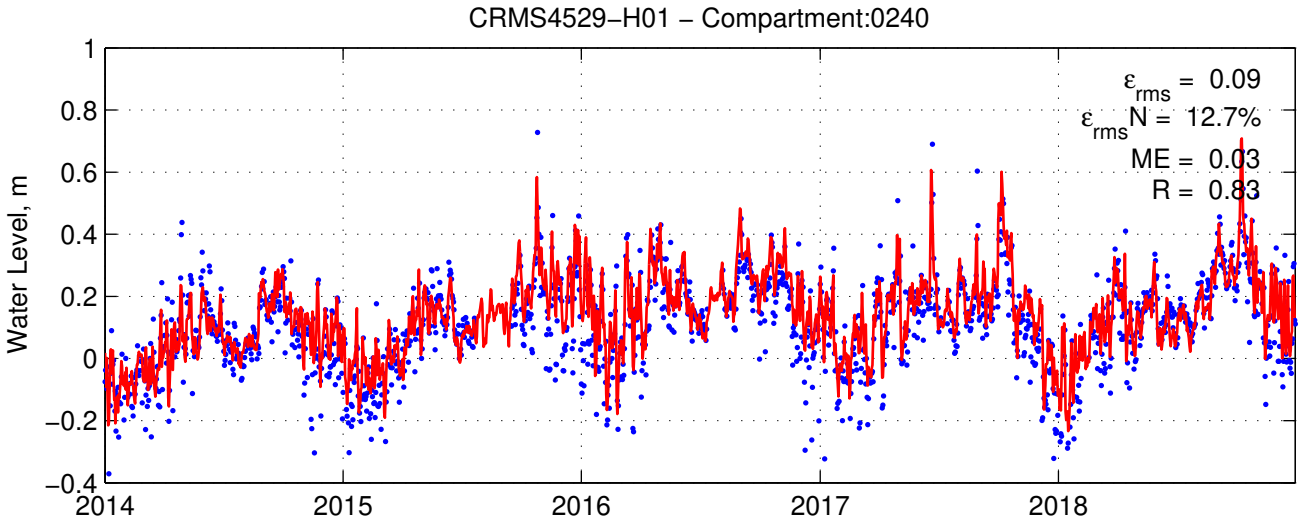

STG.out – multi
CRMS0176–H01 – Compartment:0241
Measured
Calculated
Water Level, m
ε_{rms} = 0.08
ε_{rms}N = 10.2%
ME = 0.02
R = 0.83
CRMS0179–H01 – Compartment:0244
ε_{rms} = 0.12
ε_{rms}N = 16.0%
ME = 0.07
R = 0.79
CRMS0272–H01 – Compartment:0244
ε_{rms} = 0.09
ε_{rms}N = 15.3%
ME = 0.04
R = 0.79
2014
2015
2016
2017
2018

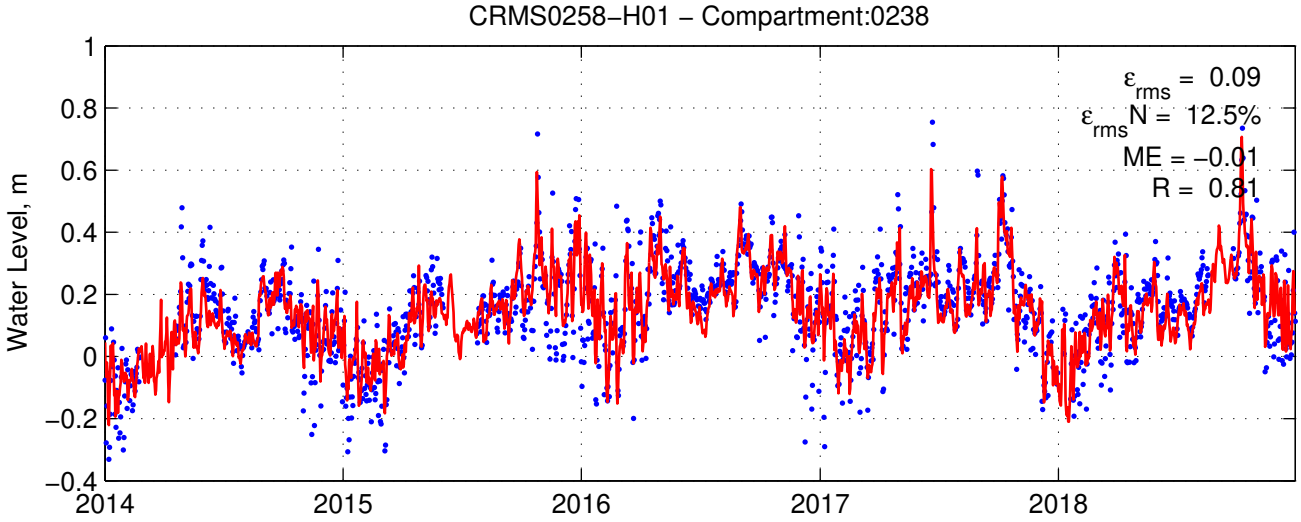

STG.out – multi
CRMS0173–H01 – Compartment:0242
Measured
Calculated
ε_{rms} = 0.09
ε_{rms}N = 15.4%
ME = 0.04
R = 0.75
Water Level, m
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
2014
2015
2016
2017
2018

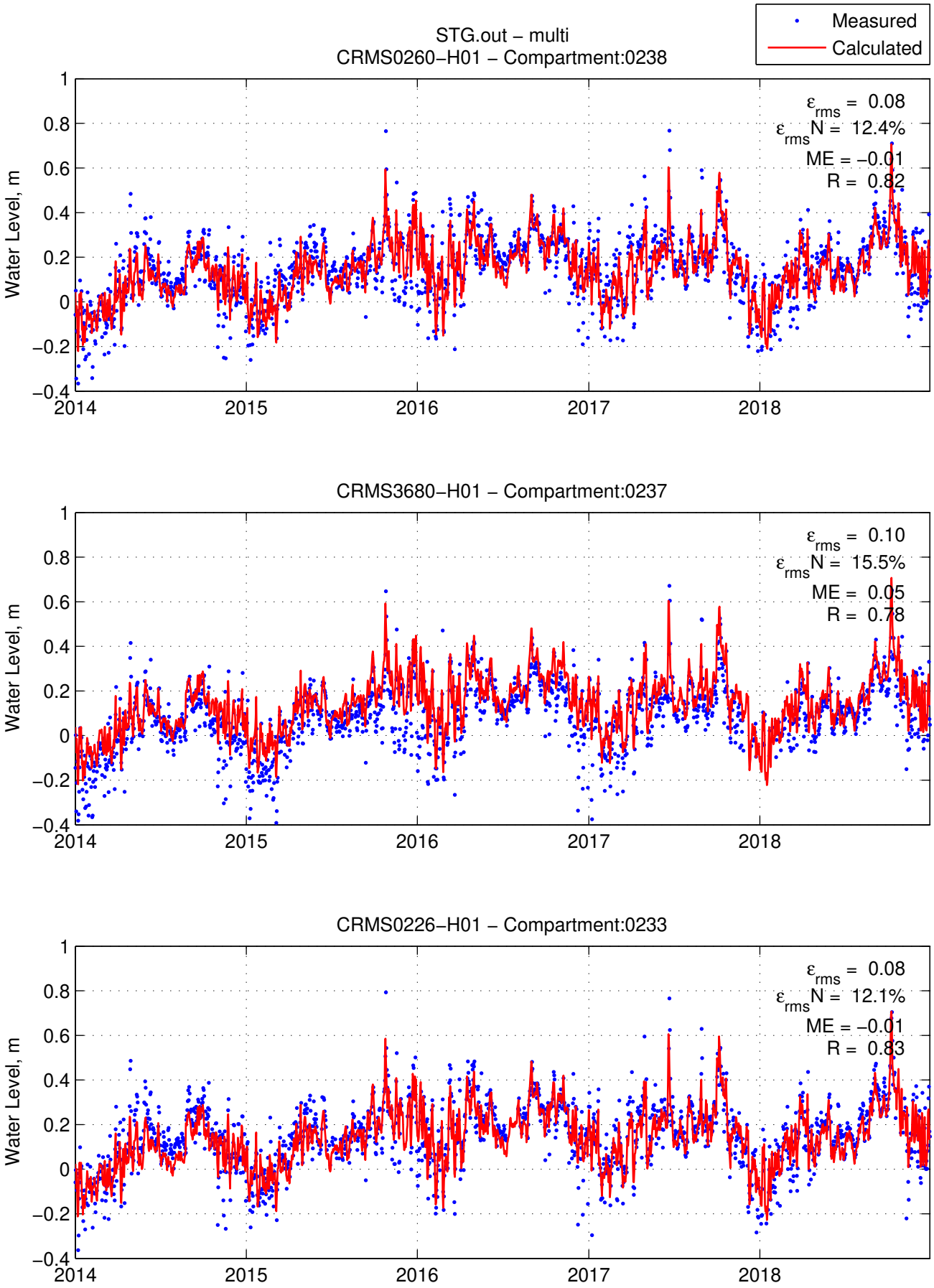

292952089453800 – Compartment:0237
ε_{rms} = 0.13
ε_{rms}N = 16.8%
ME = 0.09
R = 0.81
Water Level, m
0.8
0.6
0.4
0.2
0
–0.2
–0.4
–0.6
2014
2015
2016
2017
2018

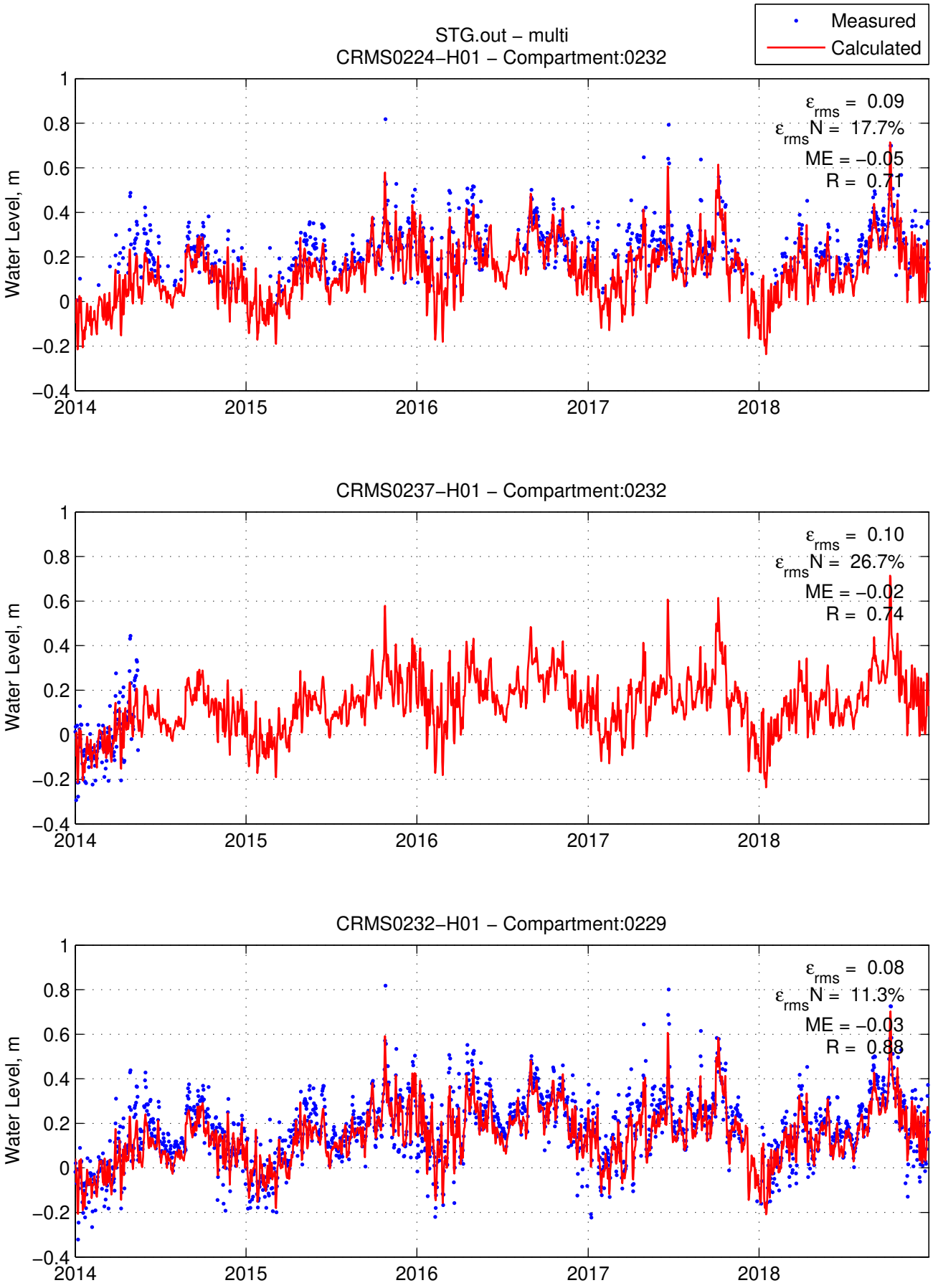

CRMS0282–H01 – Compartment:0237
ε_{rms} = 0.12
ε_{rms}N = 18.3%
ME = 0.09
R = 0.81
Water Level, m
0.8
0.6
0.4
0.2
0
–0.2
–0.4
–0.6
2014
2015
2016
2017
2018

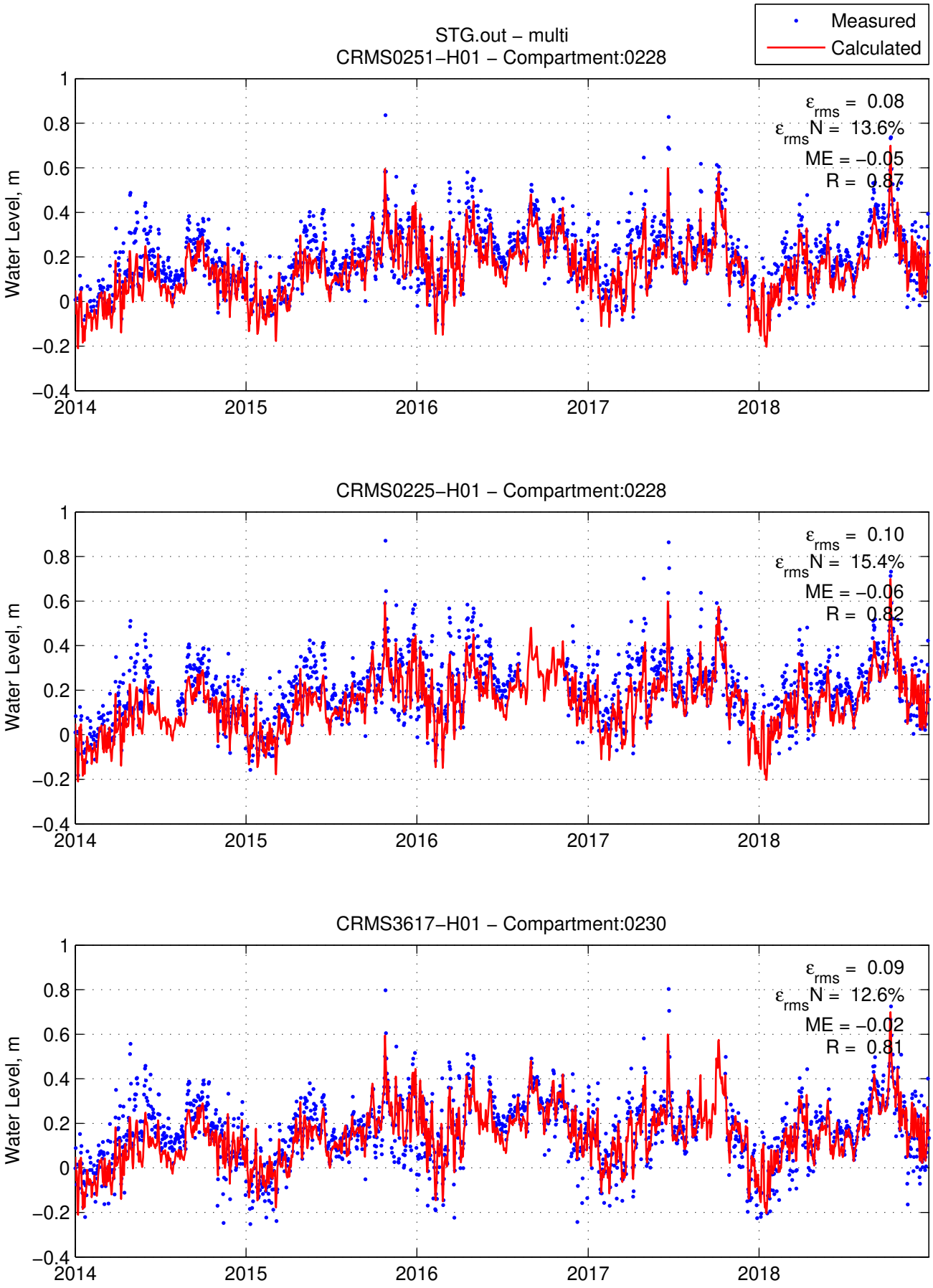

STG.out – multi
CRMS0209–H01 – Compartment:0239
Measured
Calculated
Water Level, m
ε_{rms} = 0.10
ε_{rms}N = 13.1%
ME = 0.04
R = 0.81
0.8
0.6
0.4
0.2
0
–0.2
–0.4
–0.6
2014
2015
2016
2017
2018

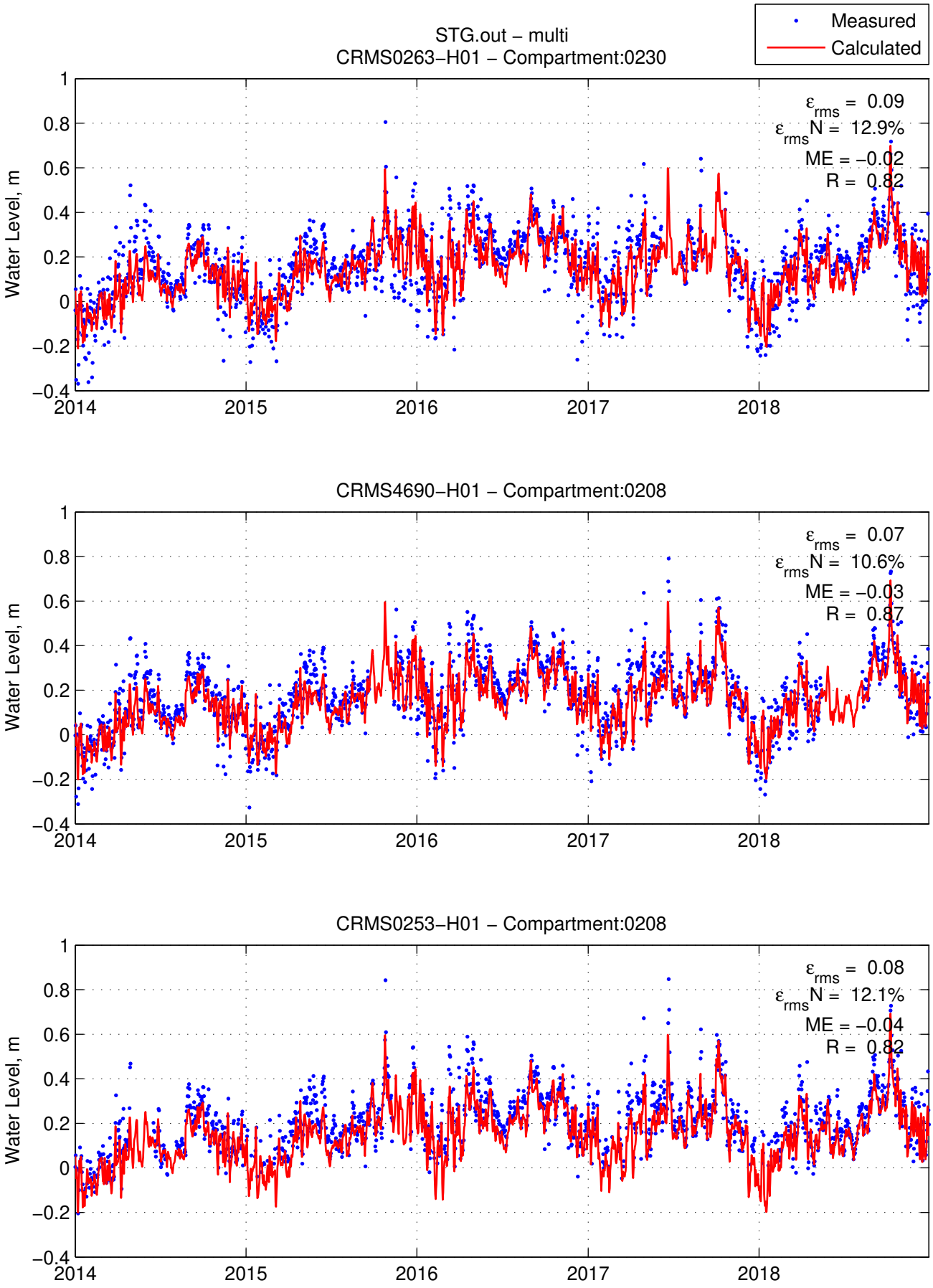

CRMS4529–H01 – Compartment:0240
Water Level, m
ε_{rms} = 0.09
ε_{rms}N = 12.7%
ME = 0.03
R = 0.83
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
2014
2015
2016
2017
2018

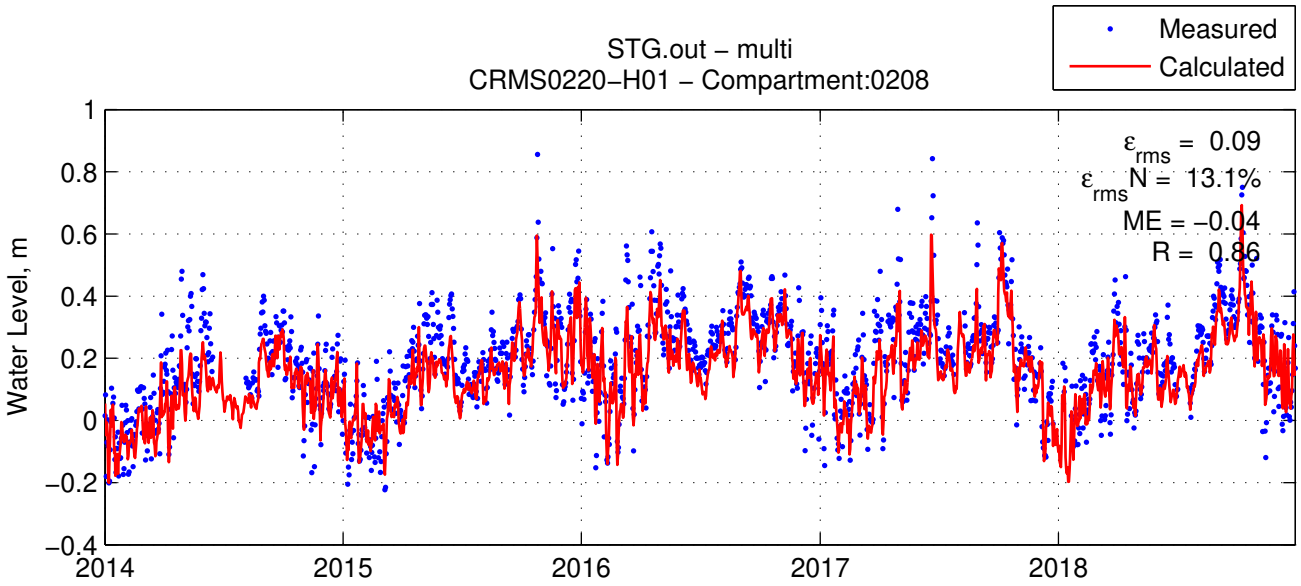

CRMS0258–H01 – Compartment:0238
Water Level, m
ε_{rms} = 0.09
ε_{rms}N = 12.5%
ME = –0.01
R = 0.81
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
2014
2015
2016
2017
2018

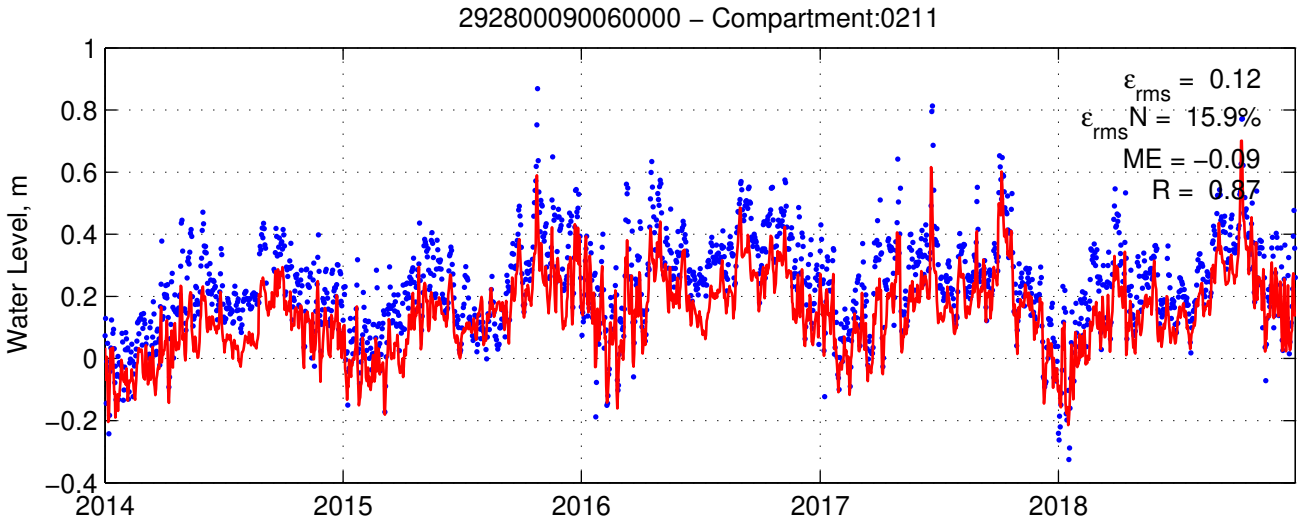

STG.out – multi
CRMS0260–H01 – Compartment:0238
Measured
Calculated
ε_{rms} = 0.08
ε_{rms}N = 12.4%
ME = –0.01
R = 0.82
Water Level, m
CRMS3680–H01 – Compartment:0237
ε_{rms} = 0.10
ε_{rms}N = 15.5%
ME = 0.05
R = 0.78
Water Level, m
CRMS0226–H01 – Compartment:0233
ε_{rms} = 0.08
ε_{rms}N = 12.1%
ME = –0.01
R = 0.83
Water Level, m
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
2014
2015
2016
2017
2018

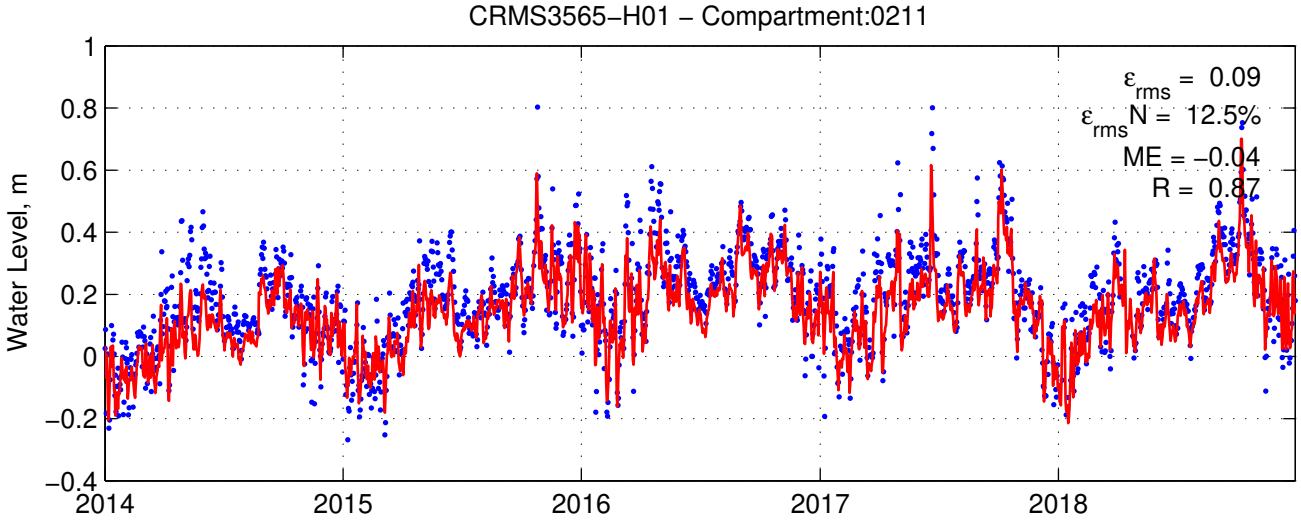

STG.out – multi
CRMS0224–H01 – Compartment:0232
Measured
Calculated
Water Level, m
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
2014
2015
2016
2017
2018
ε_{rms} = 0.09
ε_{rms}N = 17.7%
ME = –0.05
R = 0.71
CRMS0237–H01 – Compartment:0232
Water Level, m
ε_{rms} = 0.10
ε_{rms}N = 26.7%
ME = –0.02
R = 0.74
CRMS0232–H01 – Compartment:0229
Water Level, m
ε_{rms} = 0.08
ε_{rms}N = 11.3%
ME = –0.03
R = 0.88

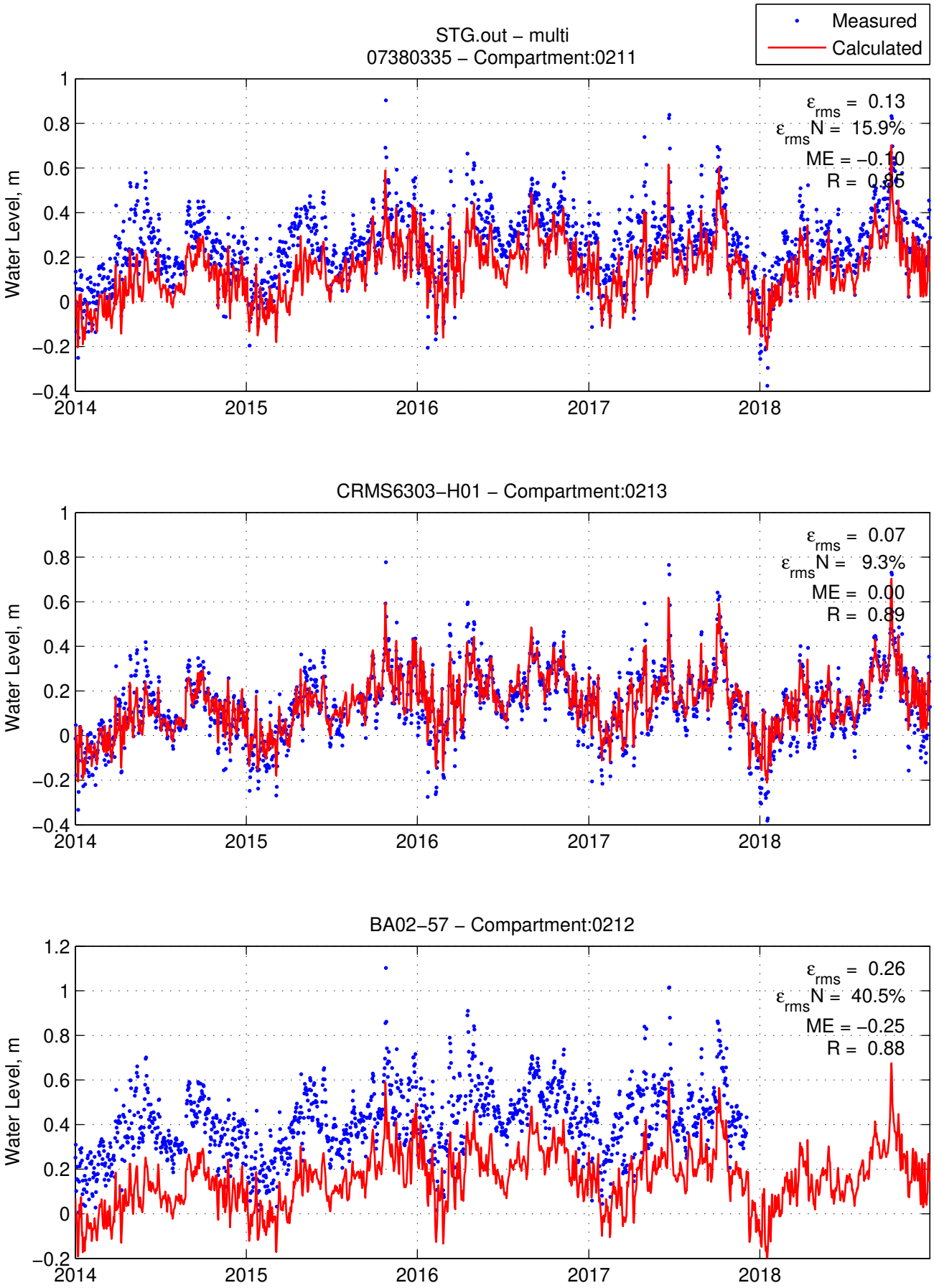

Measured
Calculated
STG.out – multi
CRMS0251–H01 – Compartment:0228
ε_{rms} = 0.08
ε_{rms}N = 13.6%
ME = –0.05
R = 0.87
Water Level, m
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
2014
2015
2016
2017
2018
CRMS0225–H01 – Compartment:0228
ε_{rms} = 0.10
ε_{rms}N = 15.4%
ME = –0.06
R = 0.82
Water Level, m
CRMS3617–H01 – Compartment:0230
ε_{rms} = 0.09
ε_{rms}N = 12.6%
ME = –0.02
R = 0.81
Water Level, m

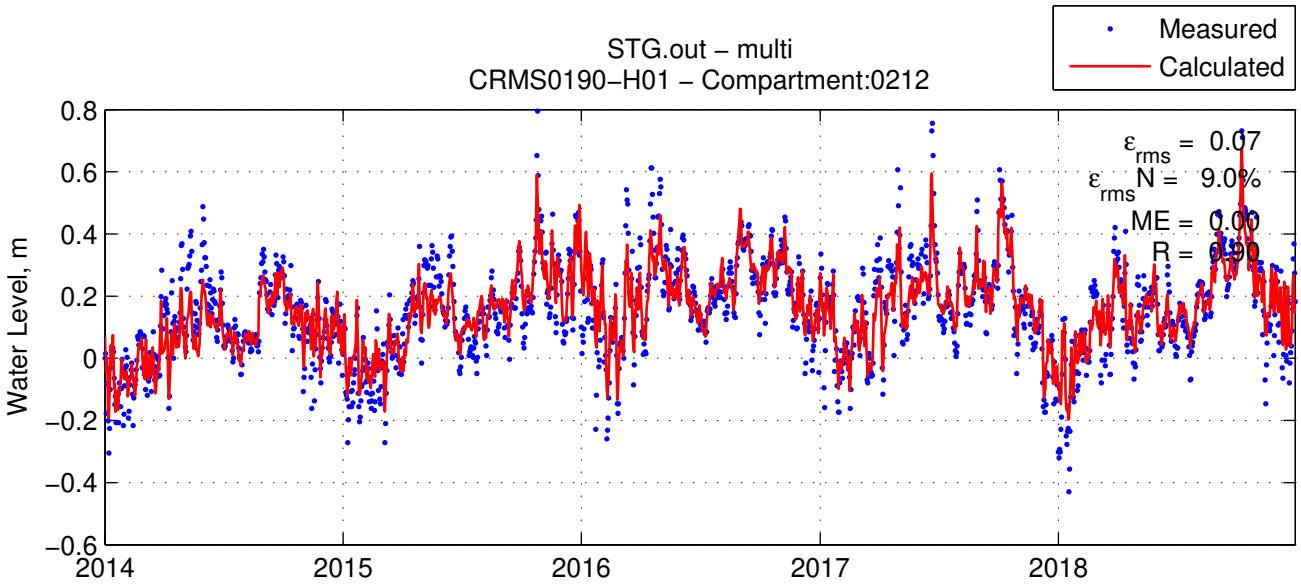

Measured
Calculated
STG.out – multi
CRMS0263–H01 – Compartment:0230
ε_{rms} = 0.09
ε_{rms}N = 12.9%
ME = –0.02
R = 0.82
Water Level, m
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
2014
2015
2016
2017
2018
CRMS4690–H01 – Compartment:0208
ε_{rms} = 0.07
ε_{rms}N = 10.6%
ME = –0.03
R = 0.87
Water Level, m
CRMS0253–H01 – Compartment:0208
ε_{rms} = 0.08
ε_{rms}N = 12.1%
ME = –0.04
R = 0.82
Water Level, m

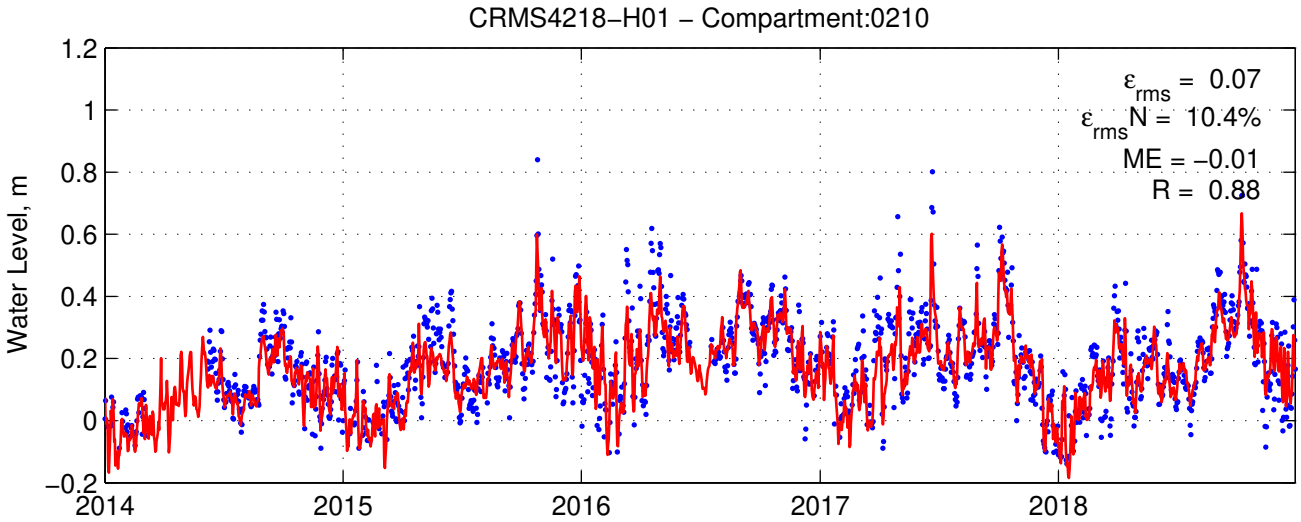

Measured
Calculated
STG.out – multi
CRMS0220–H01 – Compartment:0208
Water Level, m
ε_{rms} = 0.09
ε_{rms}N = 13.1%
ME = –0.04
R = 0.86
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
2014
2015
2016
2017
2018

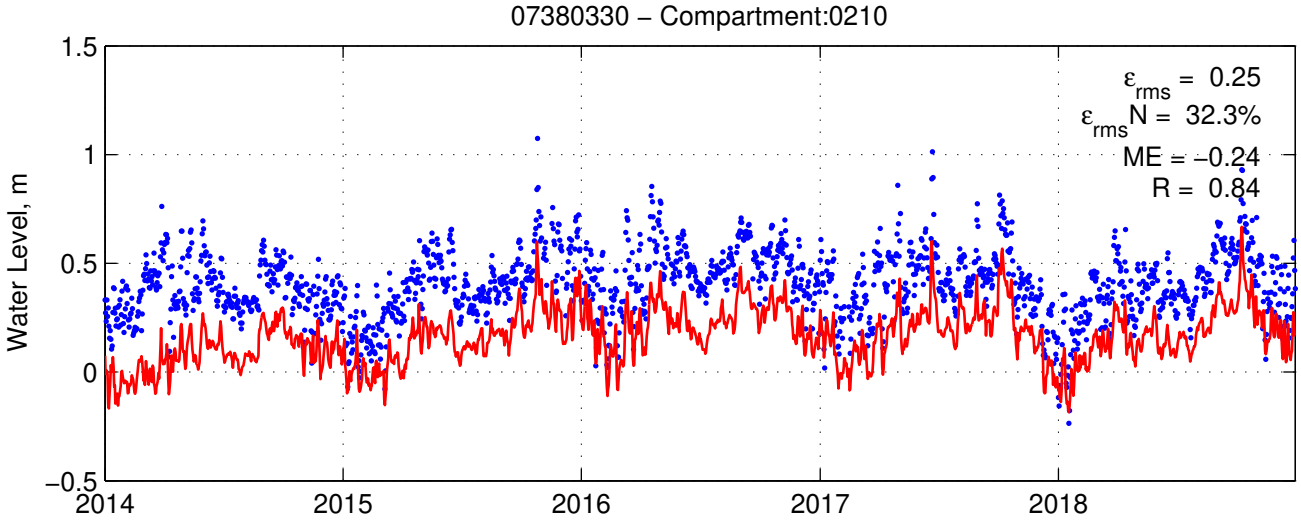

292800090060000 – Compartment:0211
Water Level, m
ε_{rms} = 0.12
ε_{rms}N = 15.9%
ME = –0.09
R = 0.87
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
2014
2015
2016
2017
2018

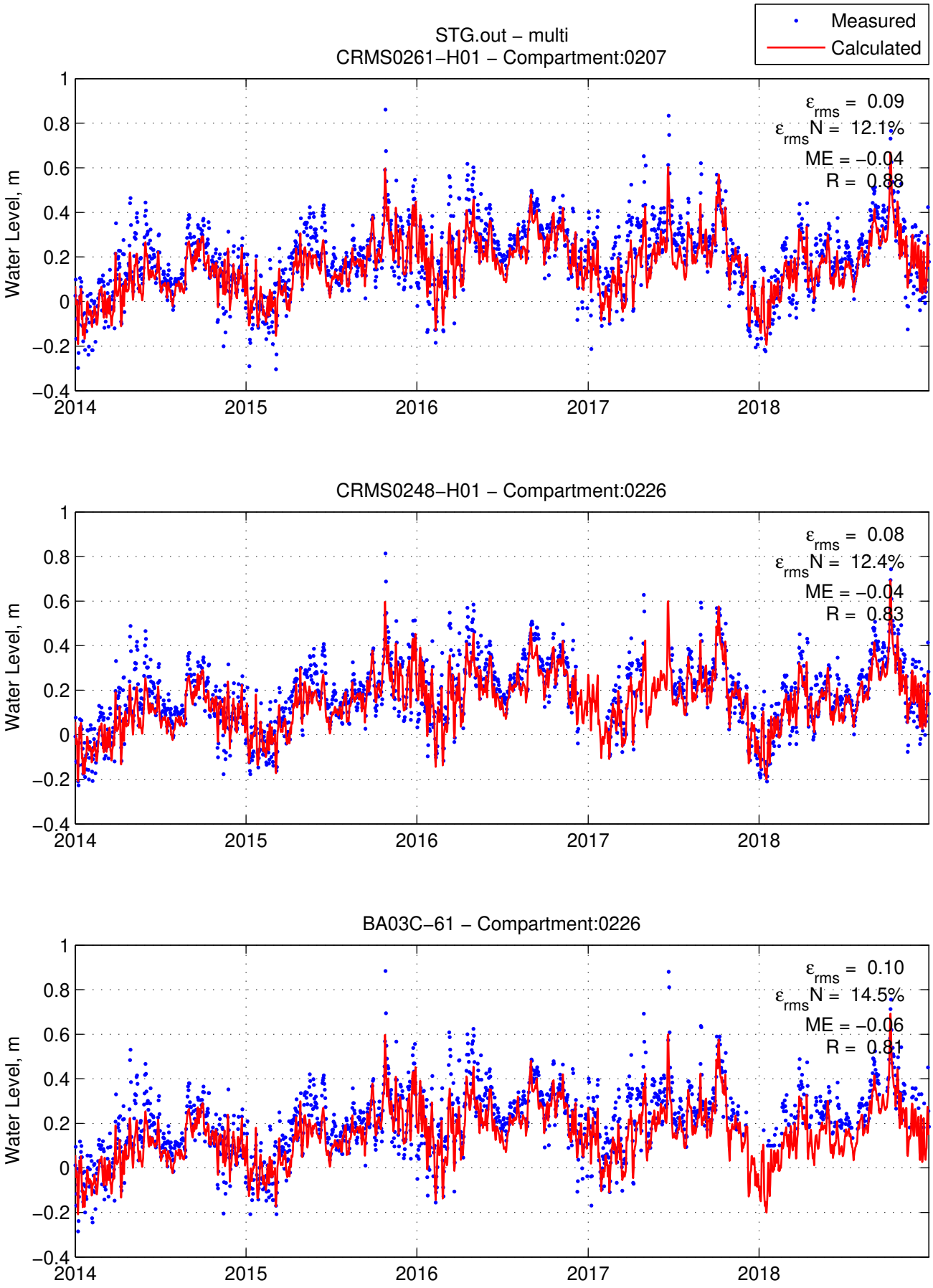

CRMS3565–H01 – Compartment:0211
Water Level, m
ε_{rms} = 0.09
ε_{rms}N = 12.5%
ME = –0.04
R = 0.87
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
2014
2015
2016
2017
2018

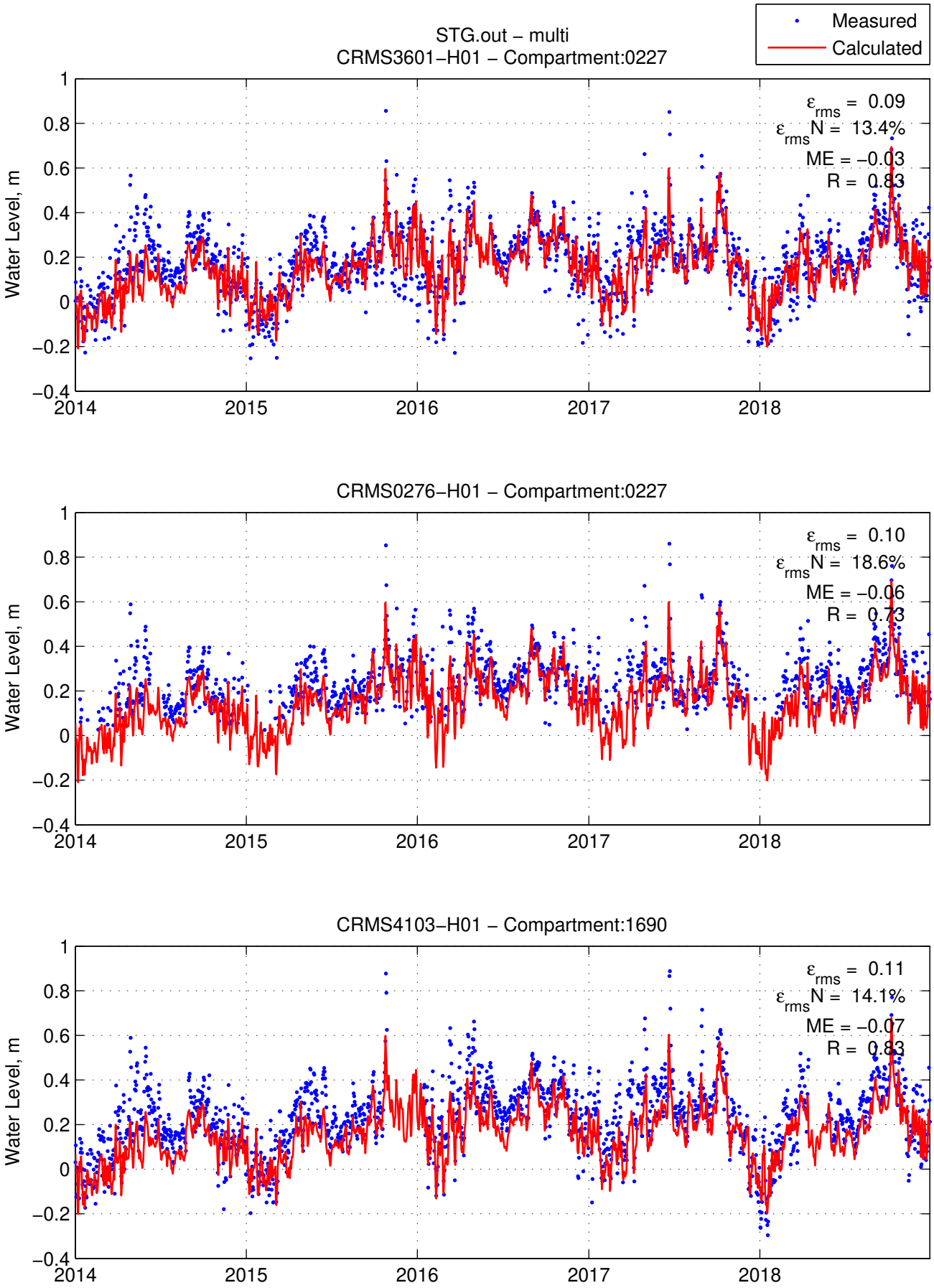

Measured
Calculated
STG.out – multi
07380335 – Compartment:0211
ε_{rms} = 0.13
ε_{rms}N = 15.9%
ME = –0.10
R = 0.86
Water Level, m
CRMS6303–H01 – Compartment:0213
ε_{rms} = 0.07
ε_{rms}N = 9.3%
ME = 0.00
R = 0.89
Water Level, m
BA02–57 – Compartment:0212
ε_{rms} = 0.26
ε_{rms}N = 40.5%
ME = –0.25
R = 0.88
Water Level, m
2014
2015
2016
2017
2018

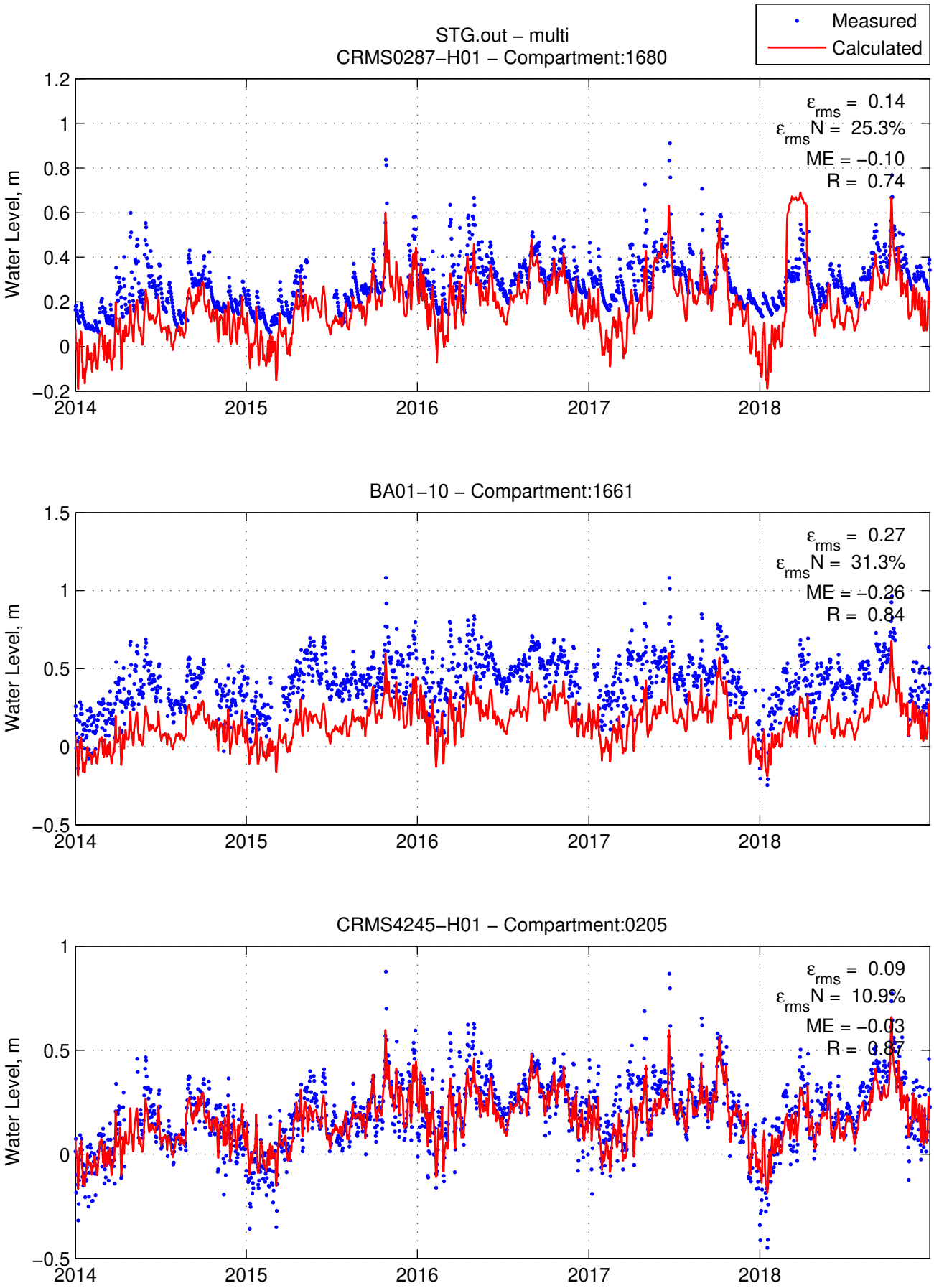

STG.out – multi
CRMS0190–H01 – Compartment:0212
Measured
Calculated
Water Level, m
0.8
0.6
0.4
0.2
0
–0.2
–0.4
–0.6
2014
2015
2016
2017
2018
εrms = 0.07
εrmsN = 9.0%
ME = 0.00
R = 0.90

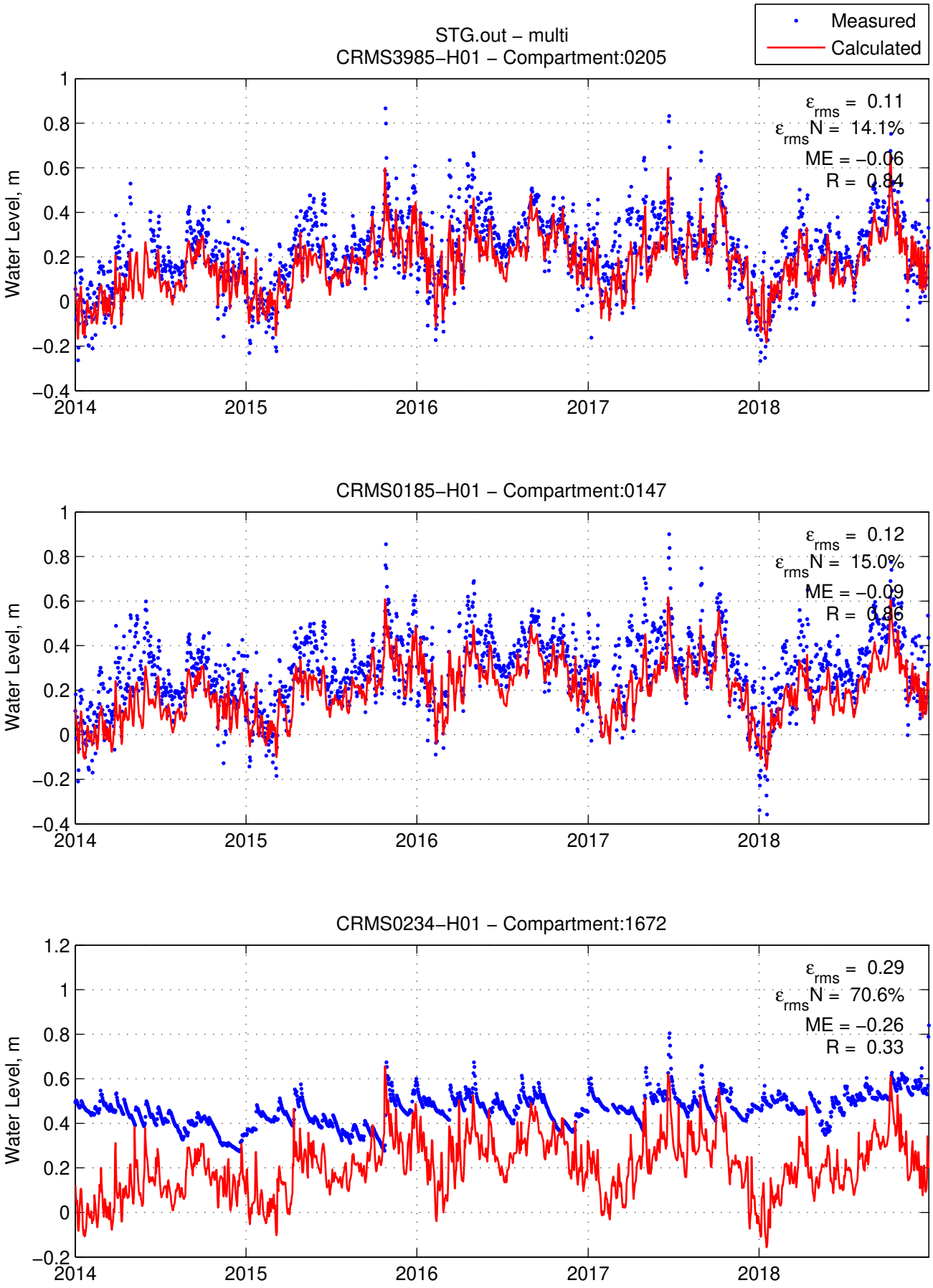

CRMS4218–H01 – Compartment:0210
Water Level, m
1.2
1
0.8
0.6
0.4
0.2
0
–0.2
2014
2015
2016
2017
2018
εrms = 0.07
εrmsN = 10.4%
ME = –0.01
R = 0.88

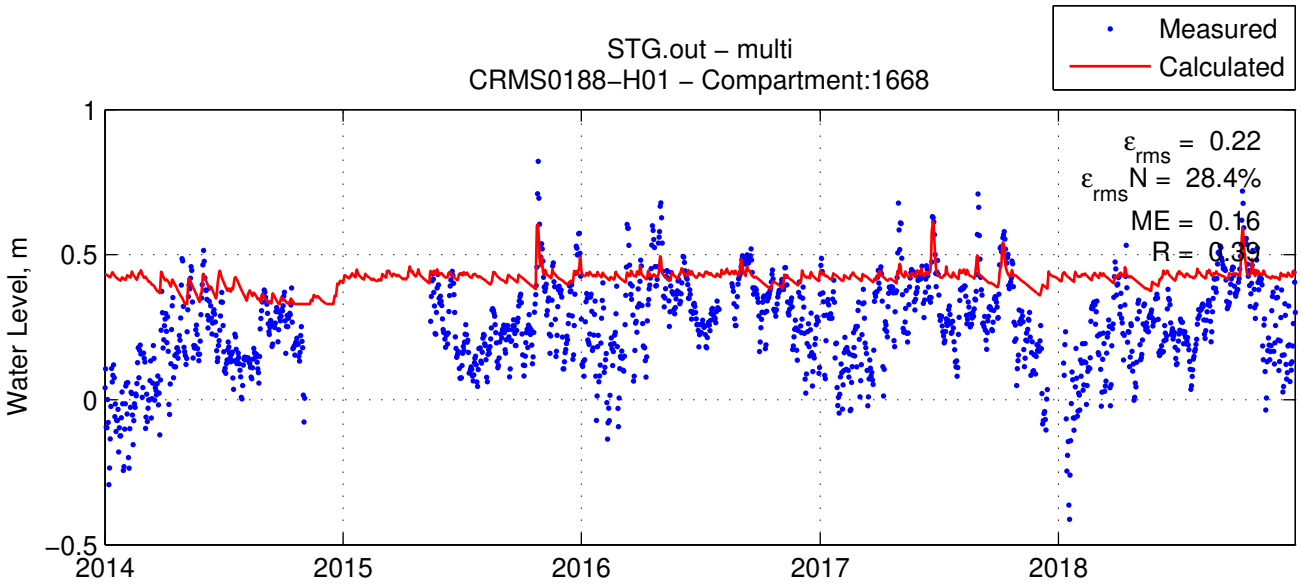

07380330 – Compartment:0210
Water Level, m
1.5
1
0.5
0
–0.5
2014
2015
2016
2017
2018
εrms = 0.25
εrmsN = 32.3%
ME = –0.24
R = 0.84

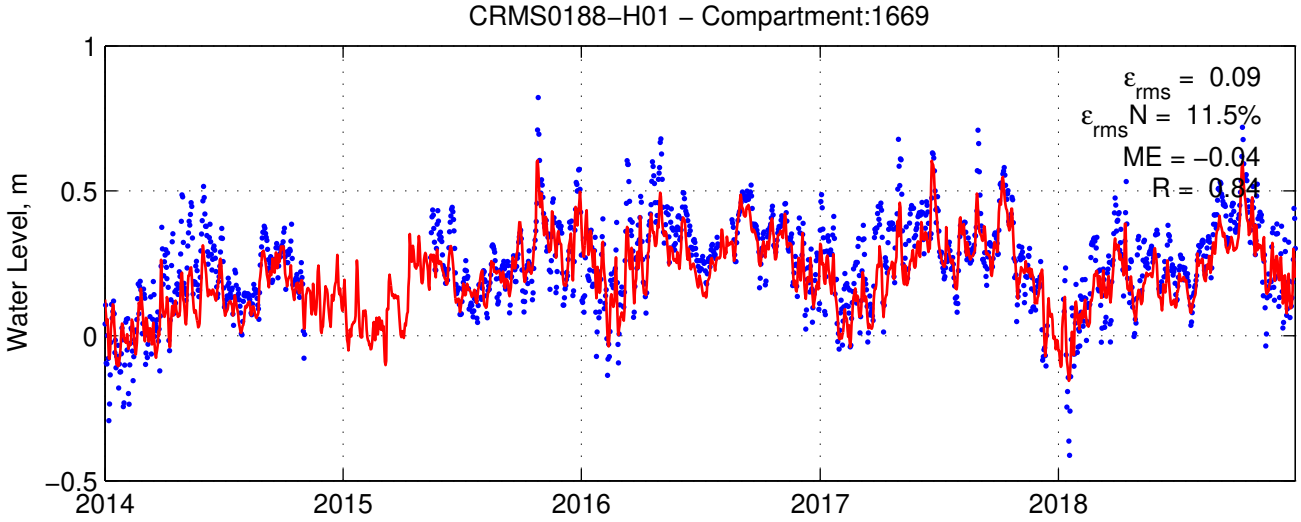

Measured
Calculated
STG.out – multi
CRMS0261–H01 – Compartment:0207
ε_{rms} = 0.09
ε_{rms}N = 12.1%
ME = –0.04
R = 0.88
Water Level, m
CRMS0248–H01 – Compartment:0226
ε_{rms} = 0.08
ε_{rms}N = 12.4%
ME = –0.04
R = 0.83
Water Level, m
BA03C–61 – Compartment:0226
ε_{rms} = 0.10
ε_{rms}N = 14.5%
ME = –0.06
R = 0.81
Water Level, m
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
2014
2015
2016
2017
2018

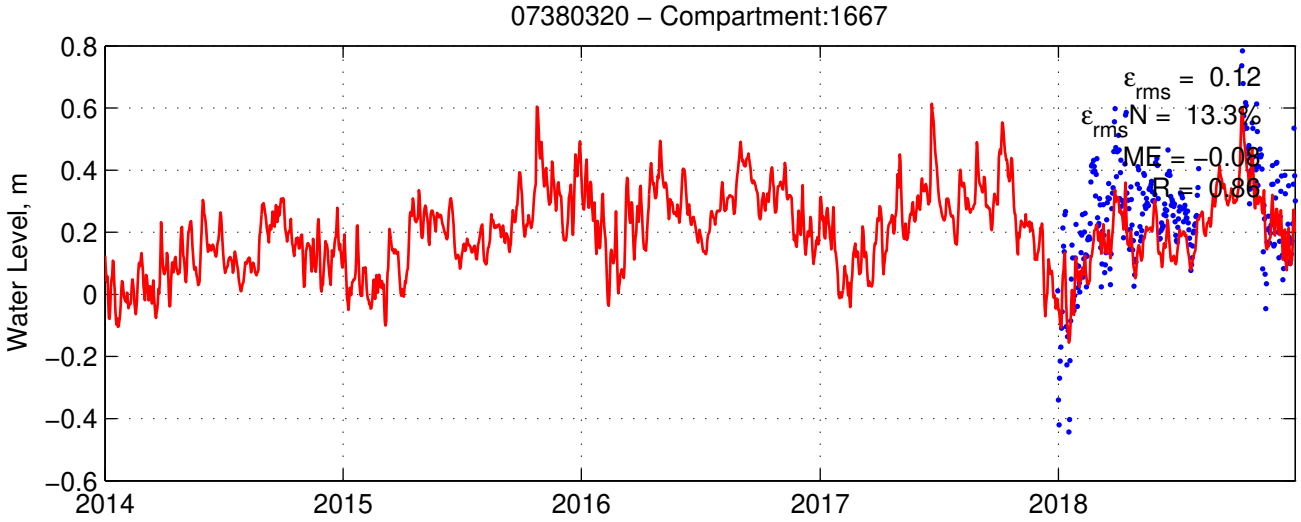

STG.out – multi
CRMS3601–H01 – Compartment:0227
Measured
Calculated
Water Level, m
ε_{rms} = 0.09
ε_{rms}N = 13.4%
ME = –0.03
R = 0.83
CRMS0276–H01 – Compartment:0227
ε_{rms} = 0.10
ε_{rms}N = 18.6%
ME = –0.06
R = 0.73
CRMS4103–H01 – Compartment:1690
ε_{rms} = 0.11
ε_{rms}N = 14.1%
ME = –0.07
R = 0.83
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
2014
2015
2016
2017
2018

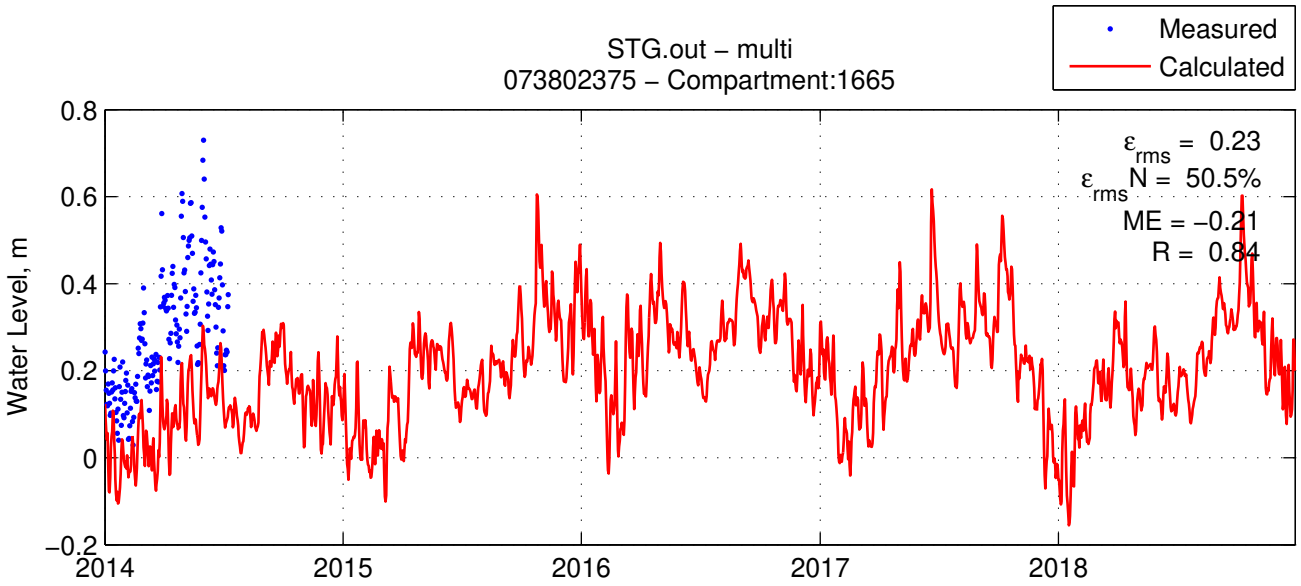

STG.out – multi
CRMS0287–H01 – Compartment:1680
Measured
Calculated
Water Level, m
1.2
1
0.8
0.6
0.4
0.2
0
–0.2
2014
2015
2016
2017
2018
ε_{rms} = 0.14
ε_{rms}N = 25.3%
ME = –0.10
R = 0.74
BA01–10 – Compartment:1661
Water Level, m
1.5
1
0.5
0
–0.5
2014
2015
2016
2017
2018
ε_{rms} = 0.27
ε_{rms}N = 31.3%
ME = –0.26
R = 0.84
CRMS4245–H01 – Compartment:0205
Water Level, m
1
0.5
0
–0.5
2014
2015
2016
2017
2018
ε_{rms} = 0.09
ε_{rms}N = 10.9%
ME = –0.03
R = 0.87

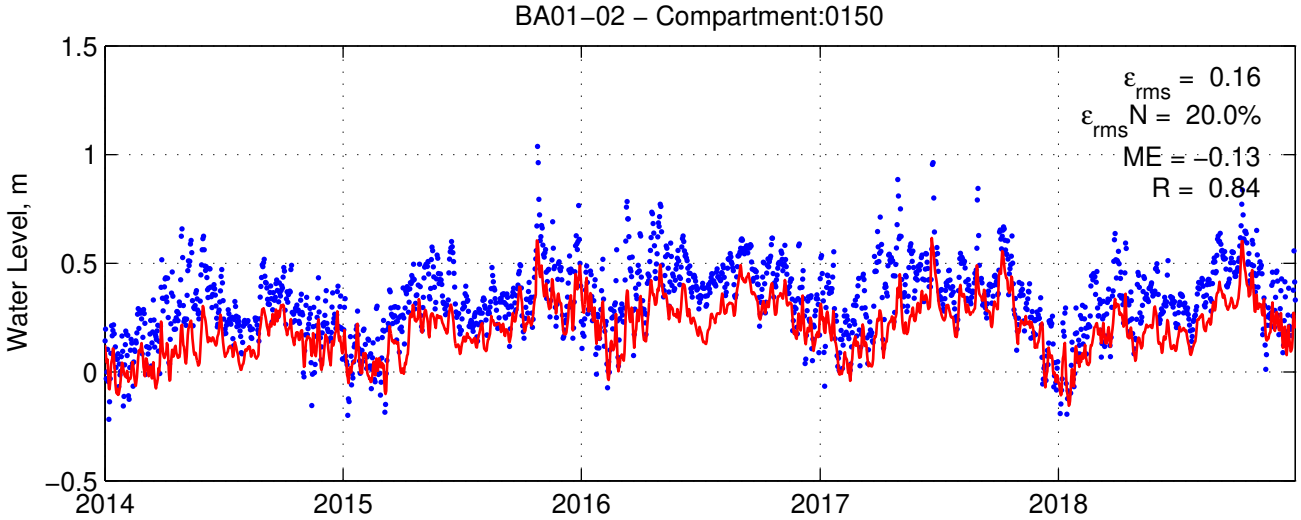

STG.out – multi
CRMS3985–H01 – Compartment:0205
Measured
Calculated
ε_{rms} = 0.11
ε_{rms}N = 14.1%
ME = –0.06
R = 0.84
Water Level, m
CRMS0185–H01 – Compartment:0147
ε_{rms} = 0.12
ε_{rms}N = 15.0%
ME = –0.09
R = 0.86
Water Level, m
CRMS0234–H01 – Compartment:1672
ε_{rms} = 0.29
ε_{rms}N = 70.6%
ME = –0.26
R = 0.33
Water Level, m
2014
2015
2016
2017
2018

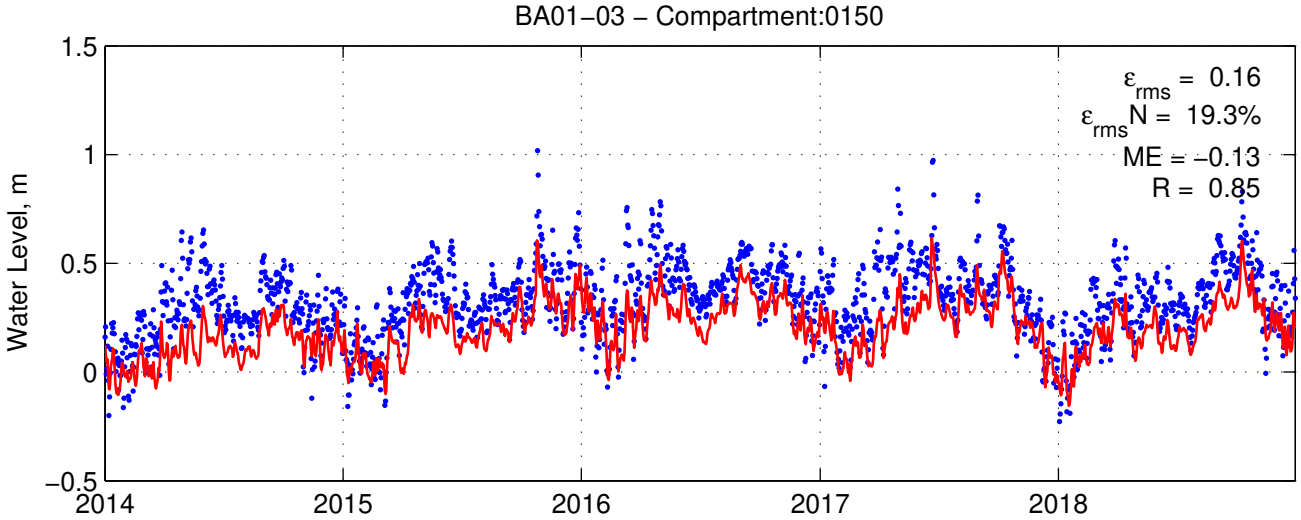

STG.out – multi
CRMS0188–H01 – Compartment:1668
Measured
Calculated
Water Level, m
1
0.5
0
–0.5
2014
2015
2016
2017
2018
ε_{rms} = 0.22
ε_{rms}N = 28.4%
ME = 0.16
R = 0.39

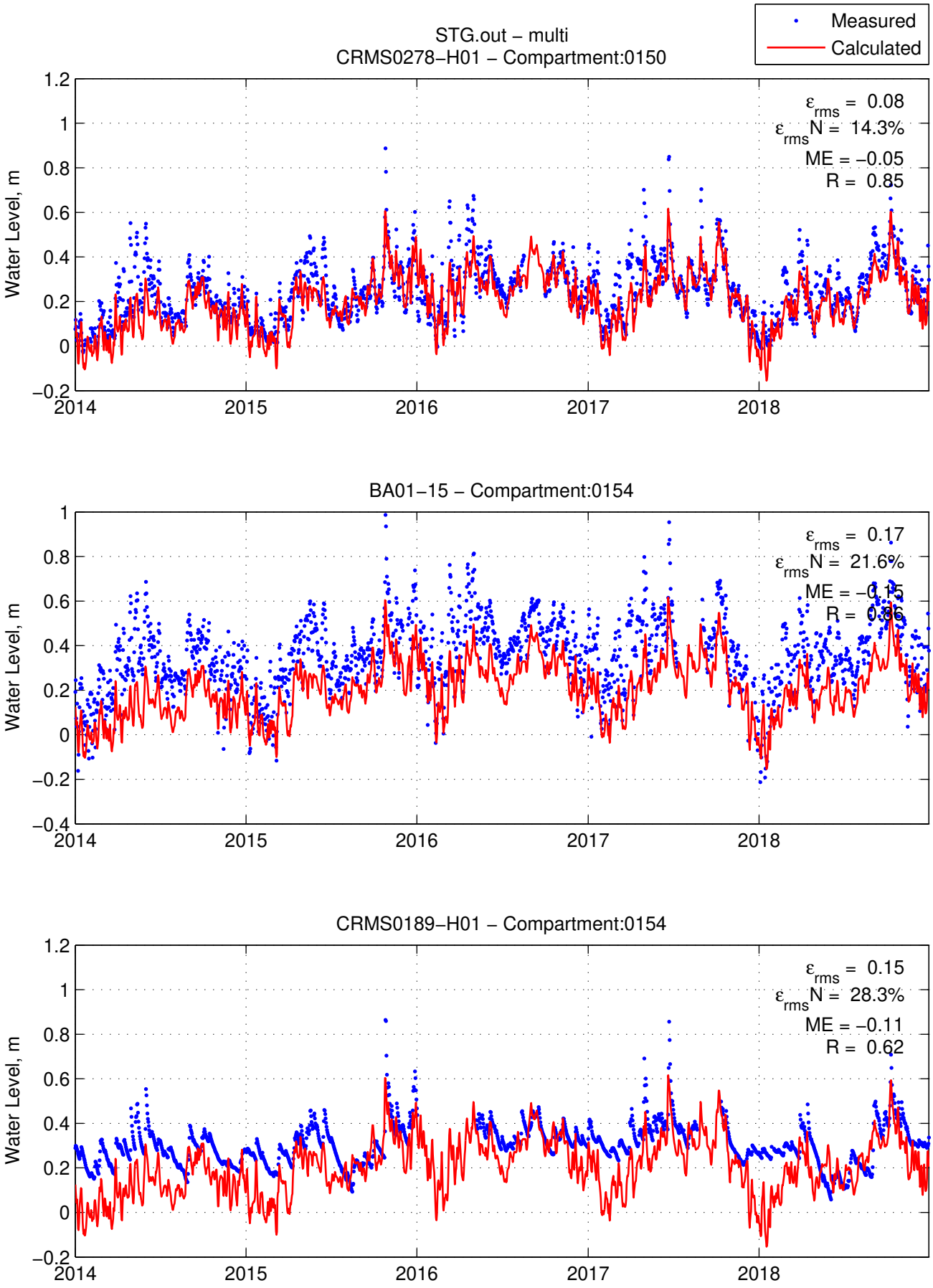

CRMS0188–H01 – Compartment:1669
Water Level, m
1
0.5
0
–0.5
2014
2015
2016
2017
2018
ε_{rms} = 0.09
ε_{rms}N = 11.5%
ME = –0.04
R = 0.84

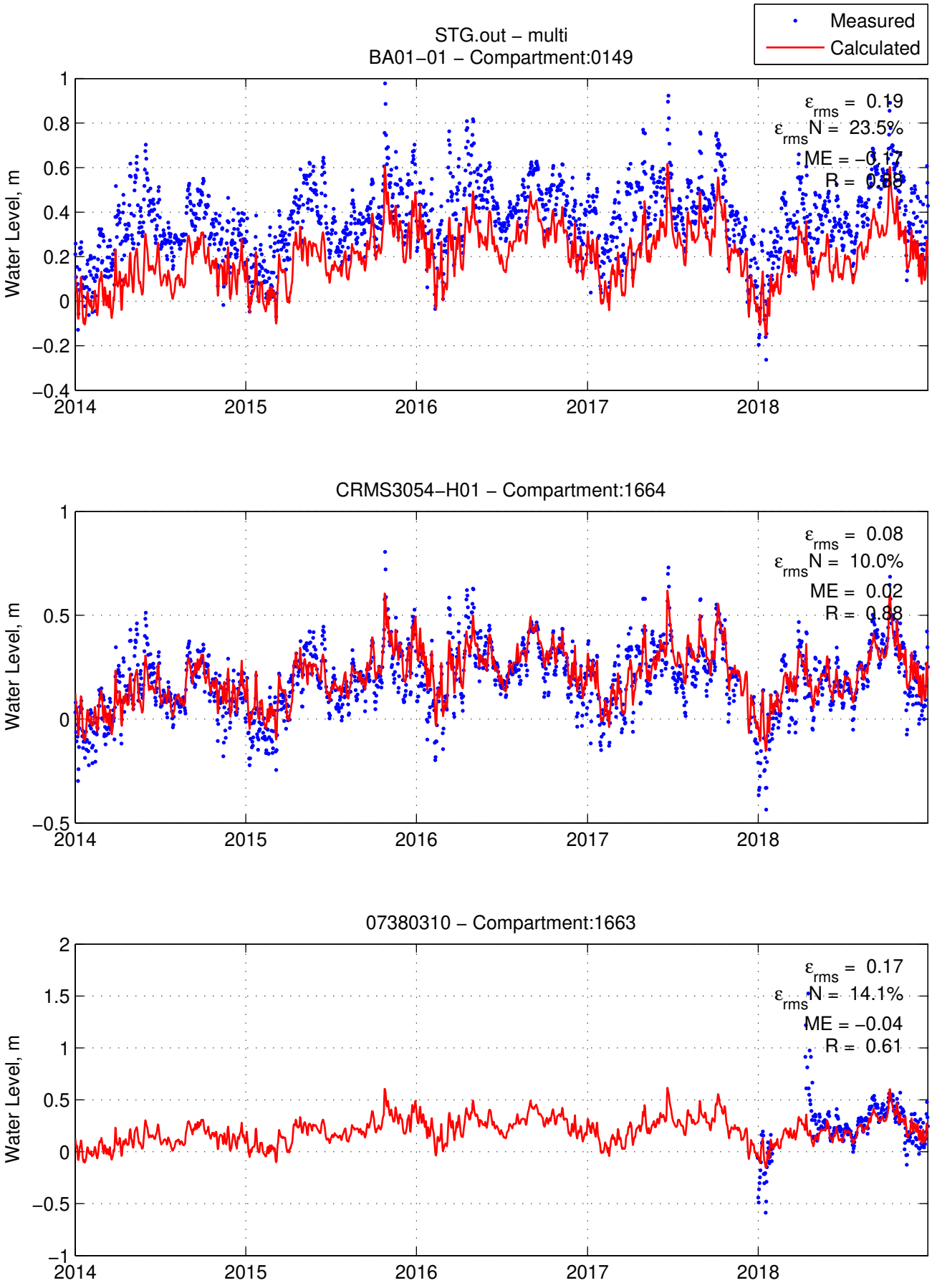

07380320 – Compartment:1667
Water Level, m
0.8
0.6
0.4
0.2
0
–0.2
–0.4
–0.6
2014
2015
2016
2017
2018
ε_{rms} = 0.12
ε_{rms}N = 13.3%
ME = –0.08
R = 0.86

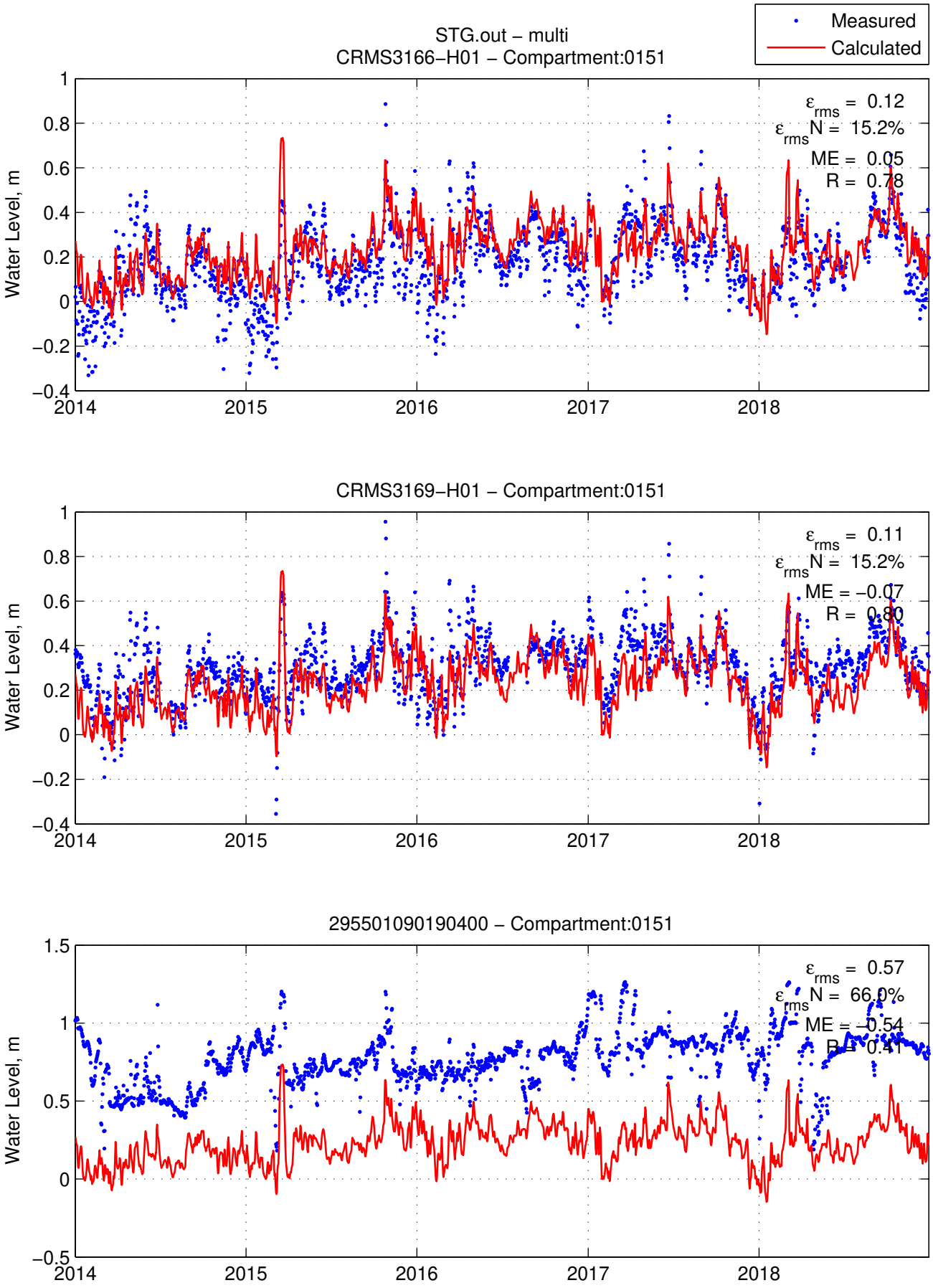

STG.out – multi
073802375 – Compartment:1665
Measured
Calculated
Water Level, m
0.8
0.6
0.4
0.2
0
−0.2
2014
2015
2016
2017
2018
ε rms = 0.23
ε rms N = 50.5%
ME = −0.21
R = 0.84

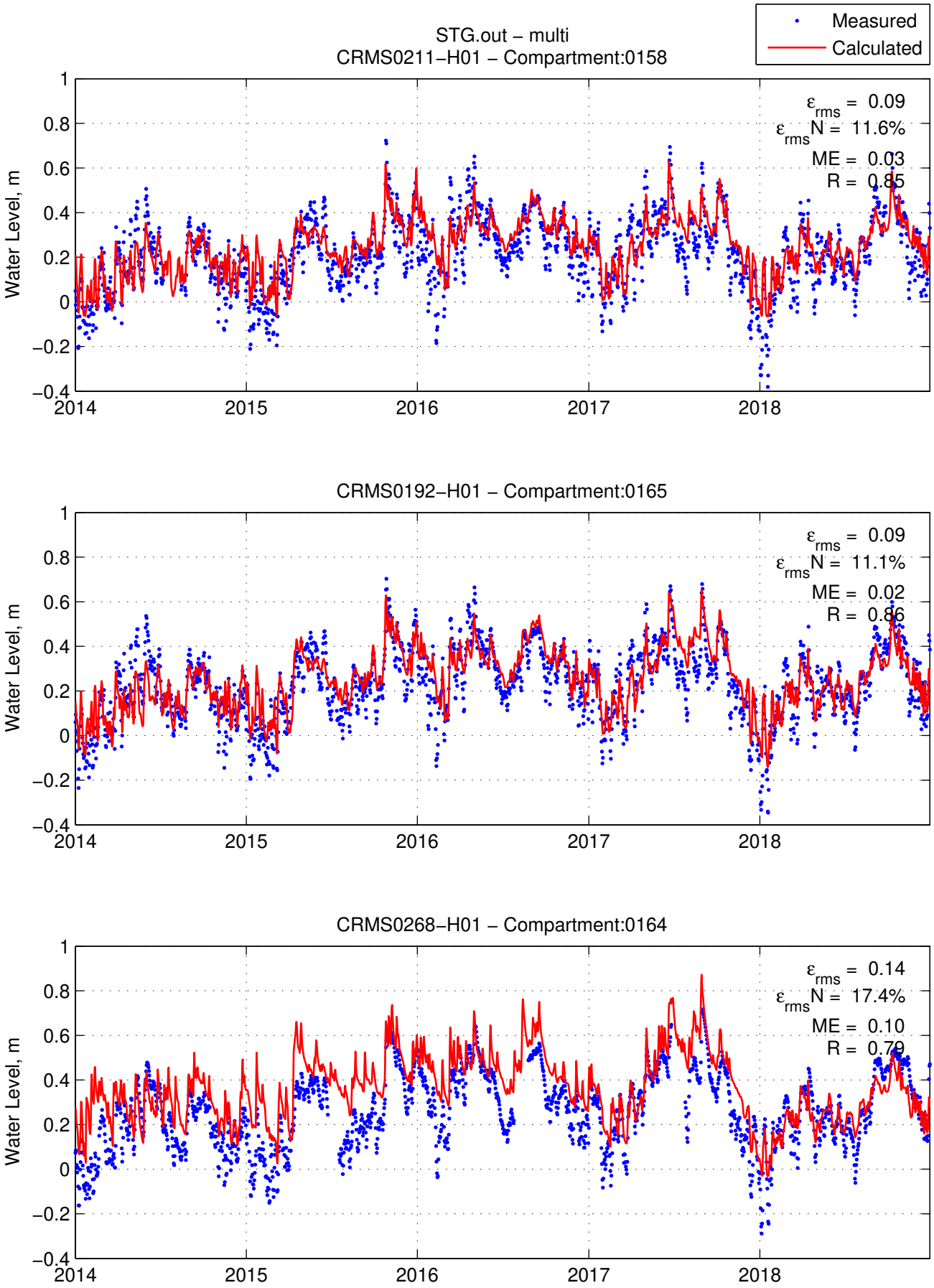

BA01−02 – Compartment:0150
Water Level, m
1.5
1
0.5
0
−0.5
2014
2015
2016
2017
2018
ε rms = 0.16
ε rms N = 20.0%
ME = −0.13
R = 0.84

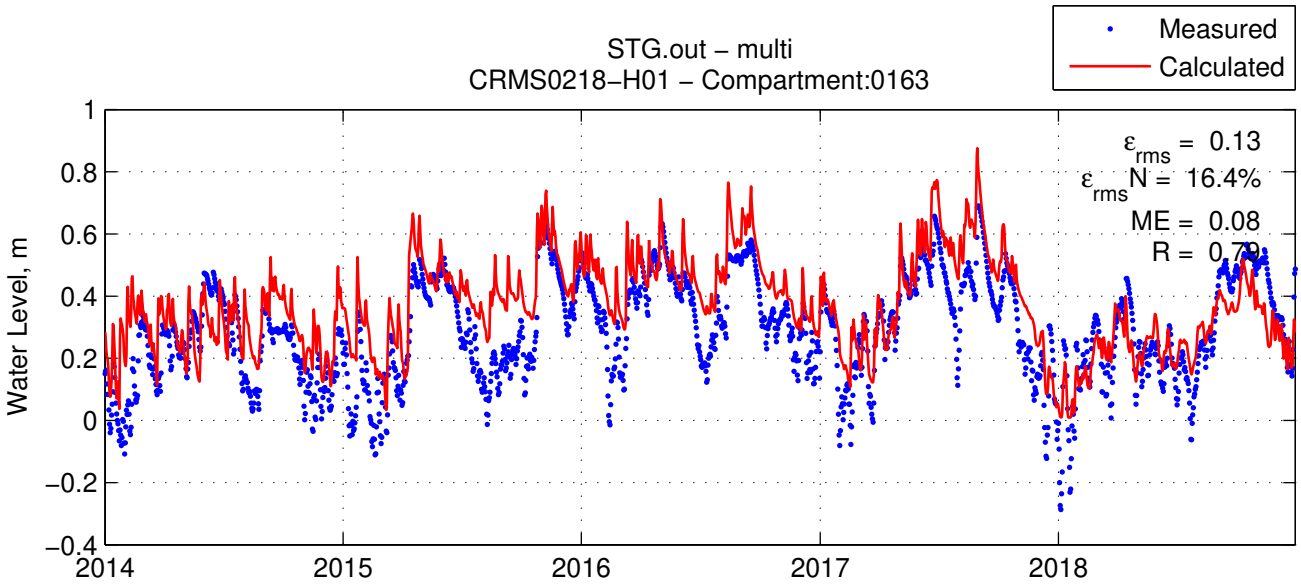

BA01−03 – Compartment:0150
Water Level, m
1.5
1
0.5
0
−0.5
2014
2015
2016
2017
2018
ε rms = 0.16
ε rms N = 19.3%
ME = −0.13
R = 0.85

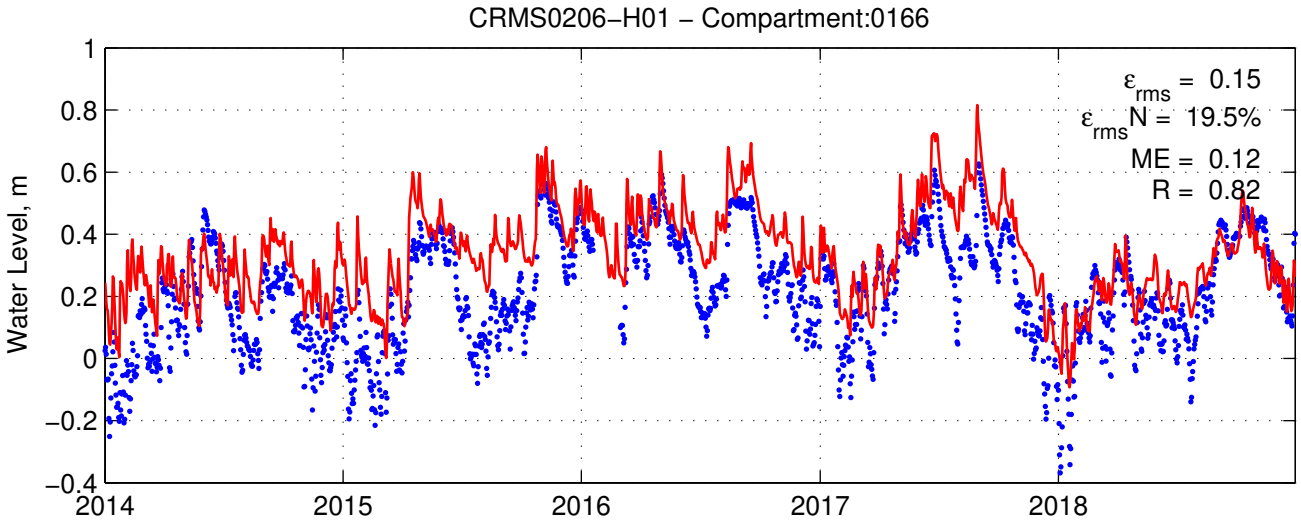

Measured
Calculated
STG.out – multi
CRMS0278–H01 – Compartment:0150
Water Level, m
1.2
1
0.8
0.6
0.4
0.2
0
–0.2
2014
2015
2016
2017
2018
εrms = 0.08
εrmsN = 14.3%
ME = –0.05
R = 0.85
BA01–15 – Compartment:0154
Water Level, m
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
2014
2015
2016
2017
2018
εrms = 0.17
εrmsN = 21.6%
ME = –0.15
R = 0.86
CRMS0189–H01 – Compartment:0154
Water Level, m
1.2
1
0.8
0.6
0.4
0.2
0
–0.2
2014
2015
2016
2017
2018
εrms = 0.15
εrmsN = 28.3%
ME = –0.11
R = 0.62

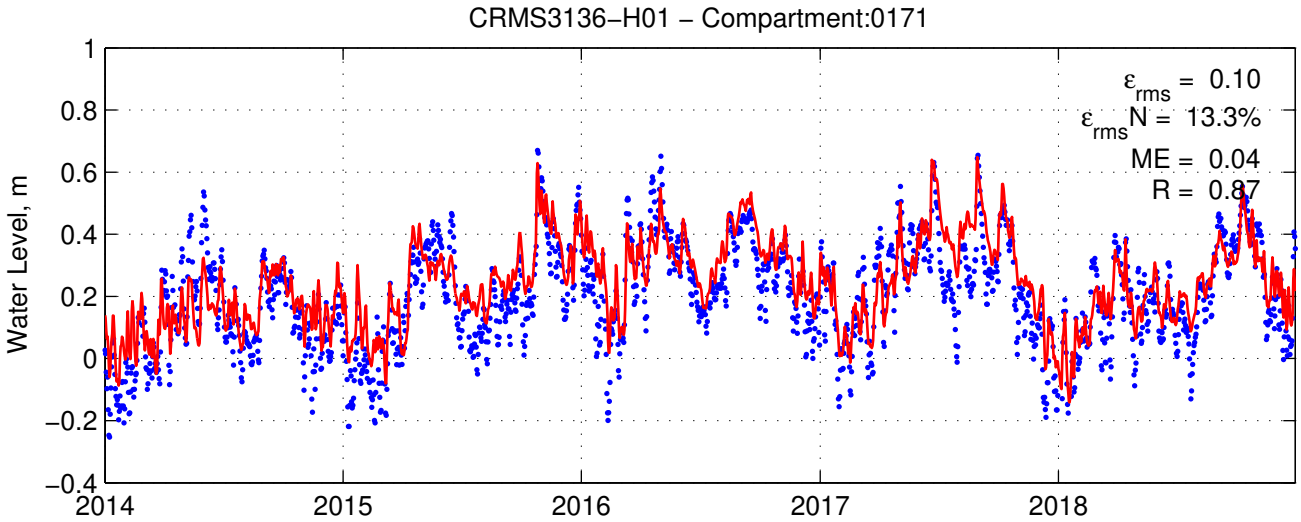

Measured
Calculated
STG.out – multi
BA01–01 – Compartment:0149
Water Level, m
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
2014
2015
2016
2017
2018
εrms = 0.19
εrmsN = 23.5%
ME = –0.17
R = 0.88
CRMS3054–H01 – Compartment:1664
Water Level, m
1
0.5
0
–0.5
2014
2015
2016
2017
2018
εrms = 0.08
εrmsN = 10.0%
ME = 0.02
R = 0.88
07380310 – Compartment:1663
Water Level, m
2
1.5
1
0.5
0
–0.5
–1
2014
2015
2016
2017
2018
εrms = 0.17
εrmsN = 14.1%
ME = –0.04
R = 0.61

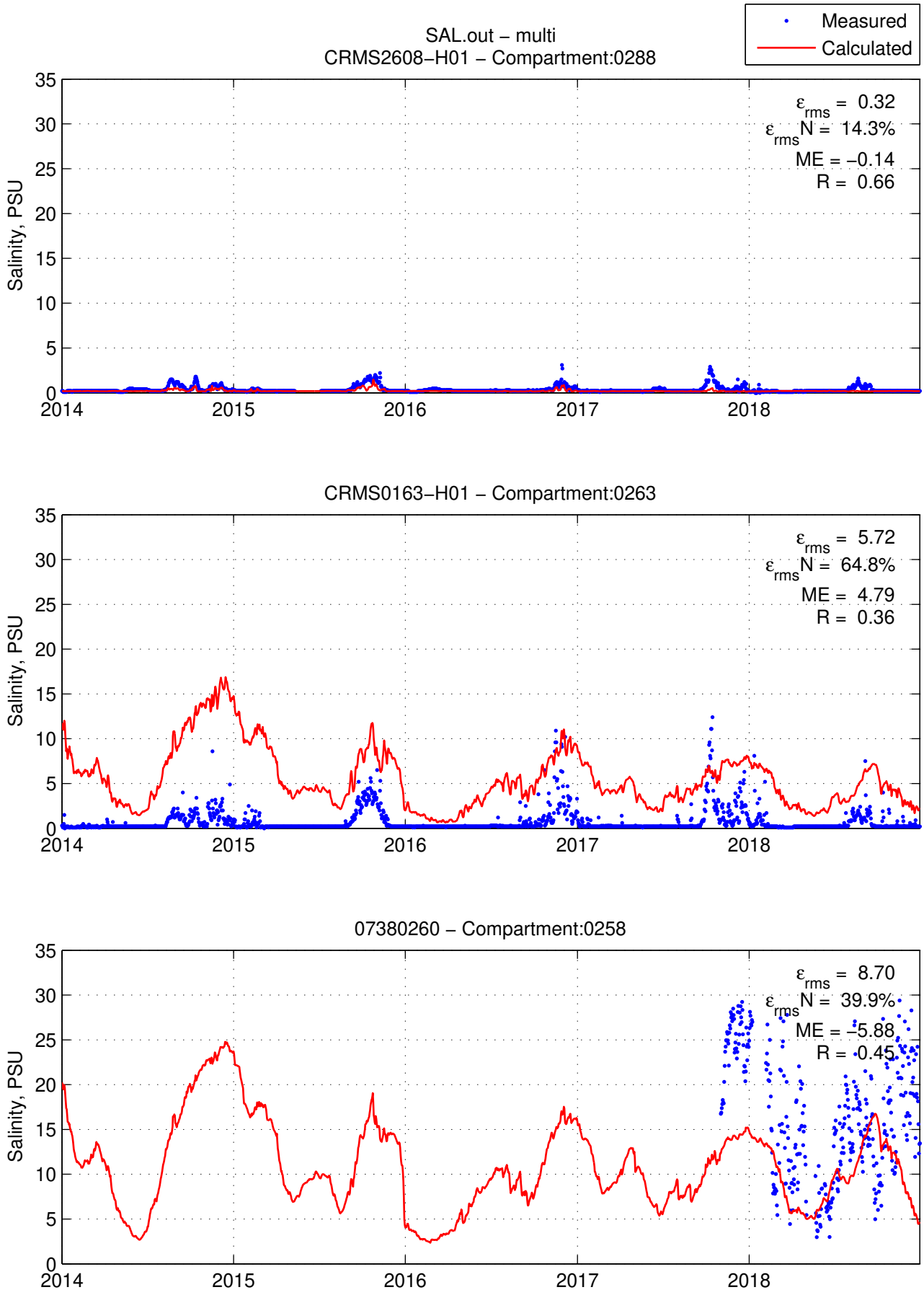

Measured
Calculated
STG.out – multi
CRMS3166–H01 – Compartment:0151
Water Level, m
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
2014
2015
2016
2017
2018
ε rms = 0.12
ε rms N = 15.2%
ME = 0.05
R = 0.78
CRMS3169–H01 – Compartment:0151
Water Level, m
ε rms = 0.11
ε rms N = 15.2%
ME = –0.07
R = 0.80
295501090190400 – Compartment:0151
Water Level, m
1.5
1
0.5
0
–0.5
ε rms = 0.57
ε rms N = 66.0%
ME = –0.54
R = 0.41

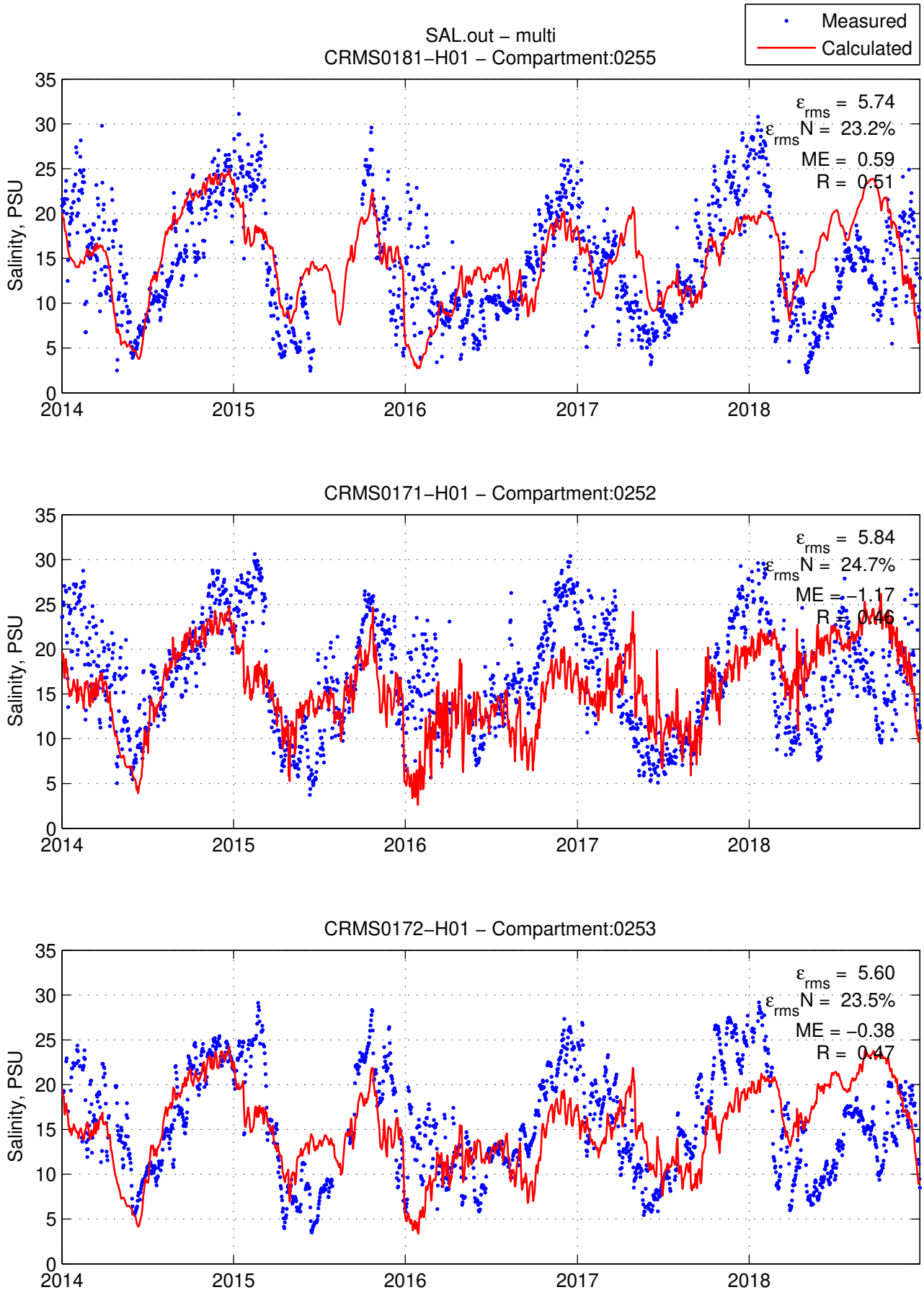

STG.out – multi
CRMS0211–H01 – Compartment:0158
Measured
Calculated
ε_{rms} = 0.09
ε_{rms}N = 11.6%
ME = 0.03
R = 0.85
Water Level, m
CRMS0192–H01 – Compartment:0165
ε_{rms} = 0.09
ε_{rms}N = 11.1%
ME = 0.02
R = 0.86
Water Level, m
CRMS0268–H01 – Compartment:0164
ε_{rms} = 0.14
ε_{rms}N = 17.4%
ME = 0.10
R = 0.79
Water Level, m
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
2014
2015
2016
2017
2018

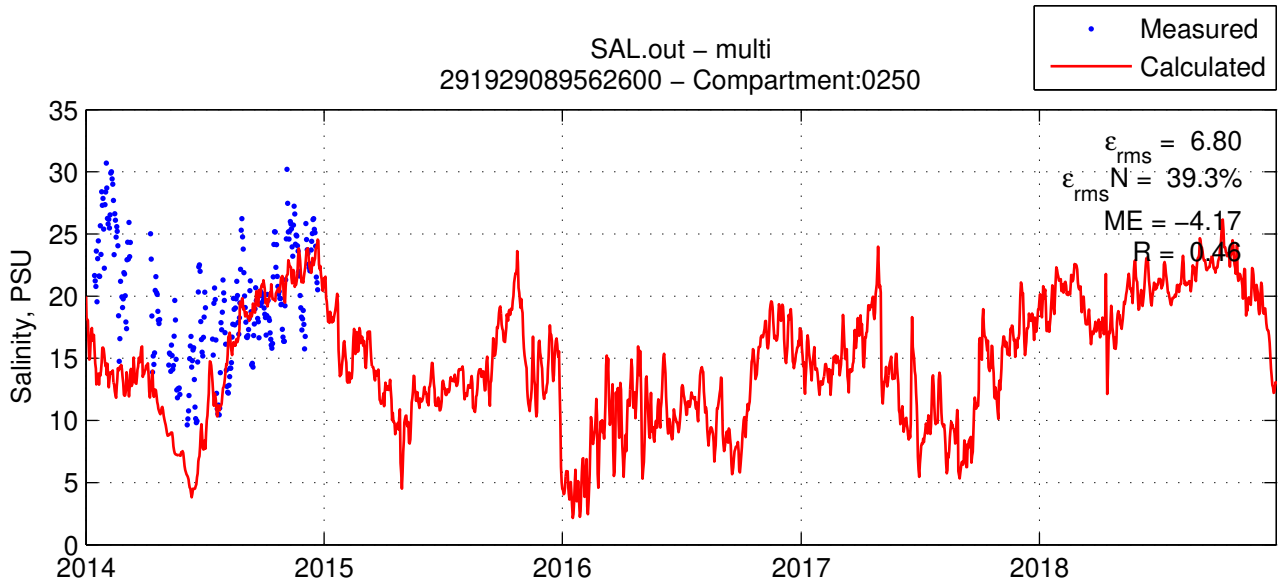

Measured
Calculated
STG.out – multi
CRMS0218–H01 – Compartment:0163
Water Level, m
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
2014
2015
2016
2017
2018
εrms = 0.13
εrmsN = 16.4%
ME = 0.08
R = 0.79

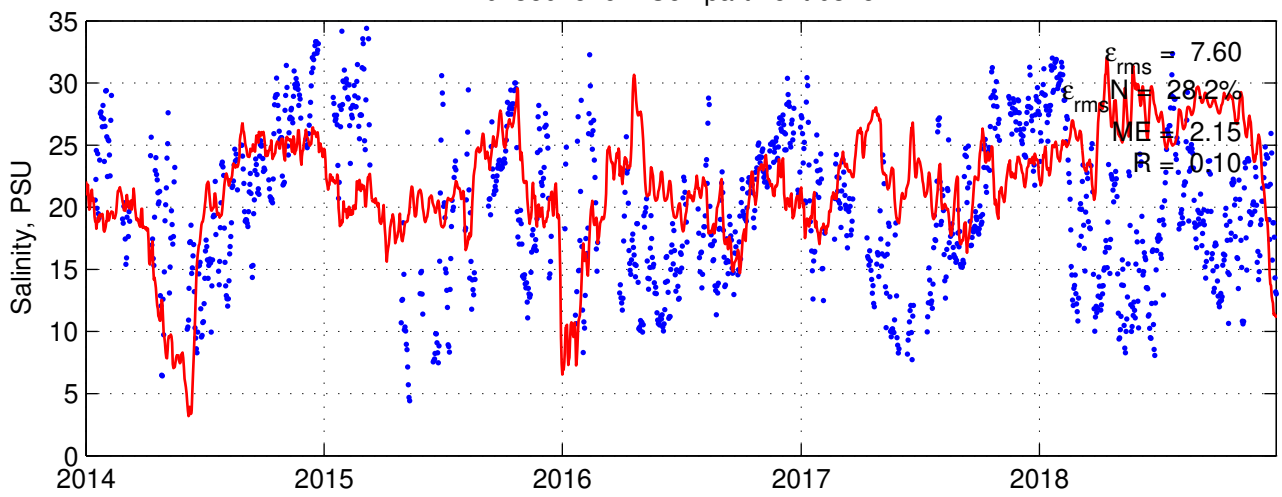

CRMS0206–H01 – Compartment:0166
Water Level, m
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
2014
2015
2016
2017
2018
εrms = 0.15
εrmsN = 19.5%
ME = 0.12
R = 0.82

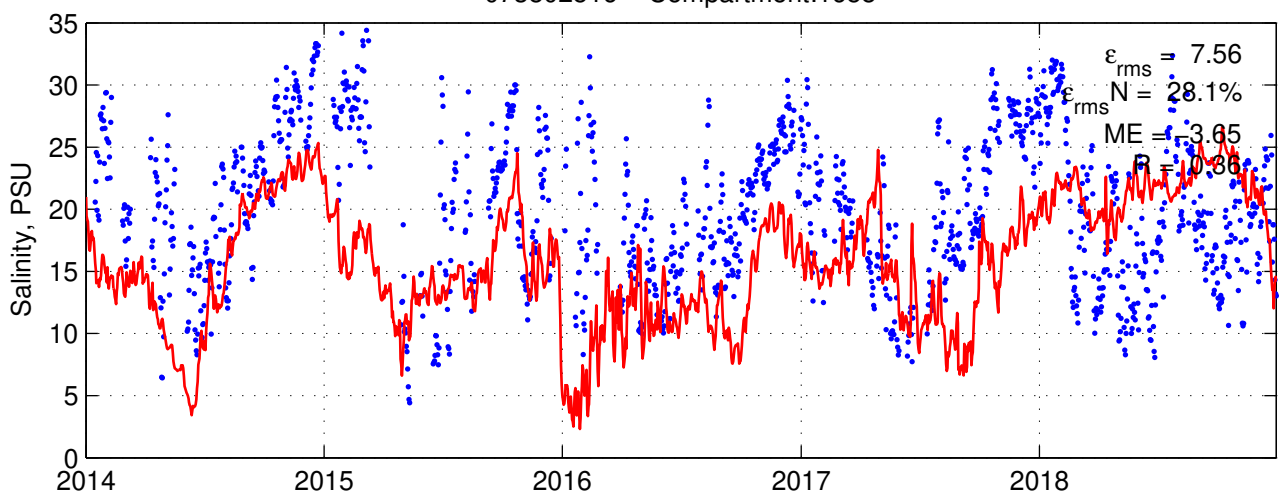

CRMS3136–H01 – Compartment:0171
Water Level, m
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
2014
2015
2016
2017
2018
εrms = 0.10
εrmsN = 13.3%
ME = 0.04
R = 0.87

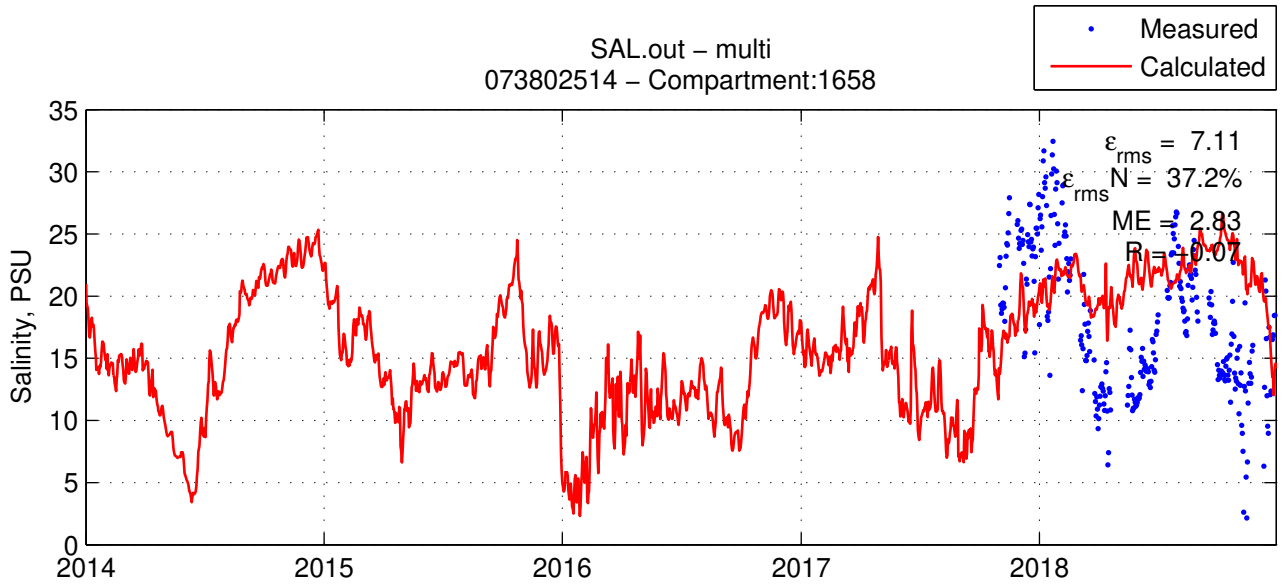

Measured
Calculated
SAL.out – multi
CRMS2608–H01 – Compartment:0288
Salinity, PSU
ε_{rms} = 0.32
ε_{rms}N = 14.3%
ME = –0.14
R = 0.66
CRMS0163–H01 – Compartment:0263
ε_{rms} = 5.72
ε_{rms}N = 64.8%
ME = 4.79
R = 0.36
07380260 – Compartment:0258
ε_{rms} = 8.70
ε_{rms}N = 39.9%
ME = –5.88
R = 0.45
0
5
10
15
20
25
30
35
2014
2015
2016
2017
2018

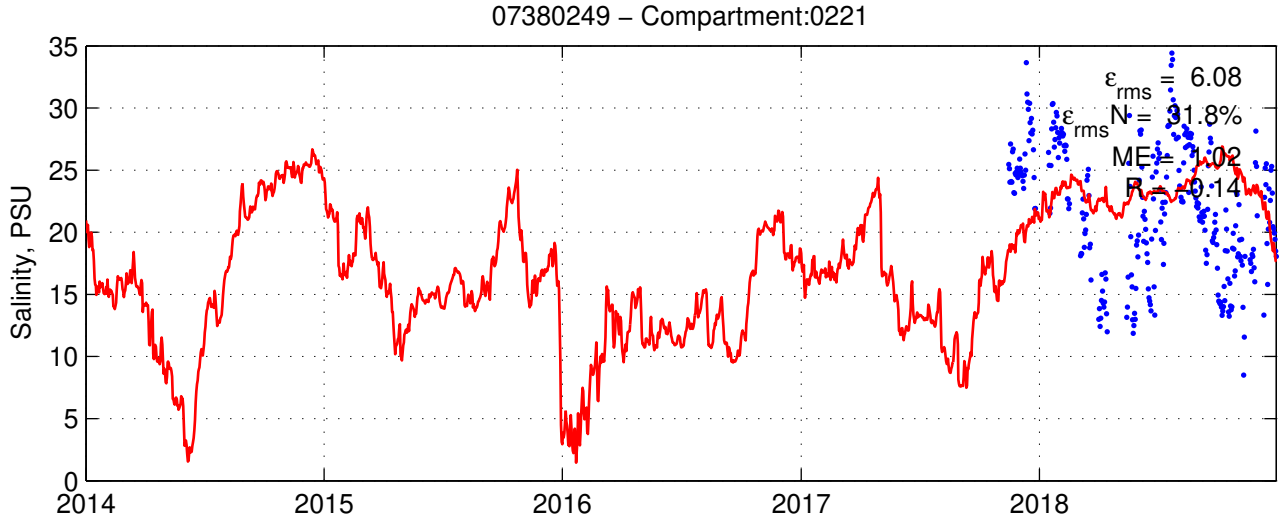

SAL.out – multi
CRMS0181–H01 – Compartment:0255
Measured
Calculated
ε_{rms} = 5.74
ε_{rms} N = 23.2%
ME = 0.59
R = 0.51
Salinity, PSU
CRMS0171–H01 – Compartment:0252
ε_{rms} = 5.84
ε_{rms} N = 24.7%
ME = –1.17
R = 0.46
Salinity, PSU
CRMS0172–H01 – Compartment:0253
ε_{rms} = 5.60
ε_{rms} N = 23.5%
ME = –0.38
R = 0.47
Salinity, PSU
0
5
10
15
20
25
30
35
2014
2015
2016
2017
2018

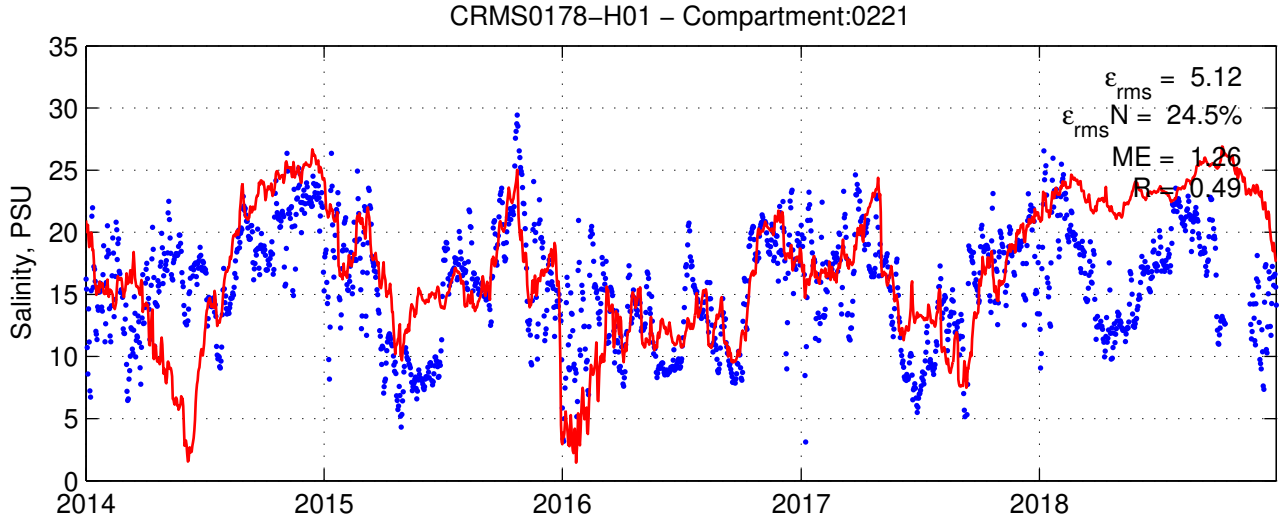

Measured
Calculated
SAL.out – multi
291929089562600 – Compartment:0250
ε_{rms} = 6.80
ε_{rms}N = 39.3%
ME = –4.17
R = 0.46
Salinity, PSU
0
5
10
15
20
25
30
35
2014
2015
2016
2017
2018

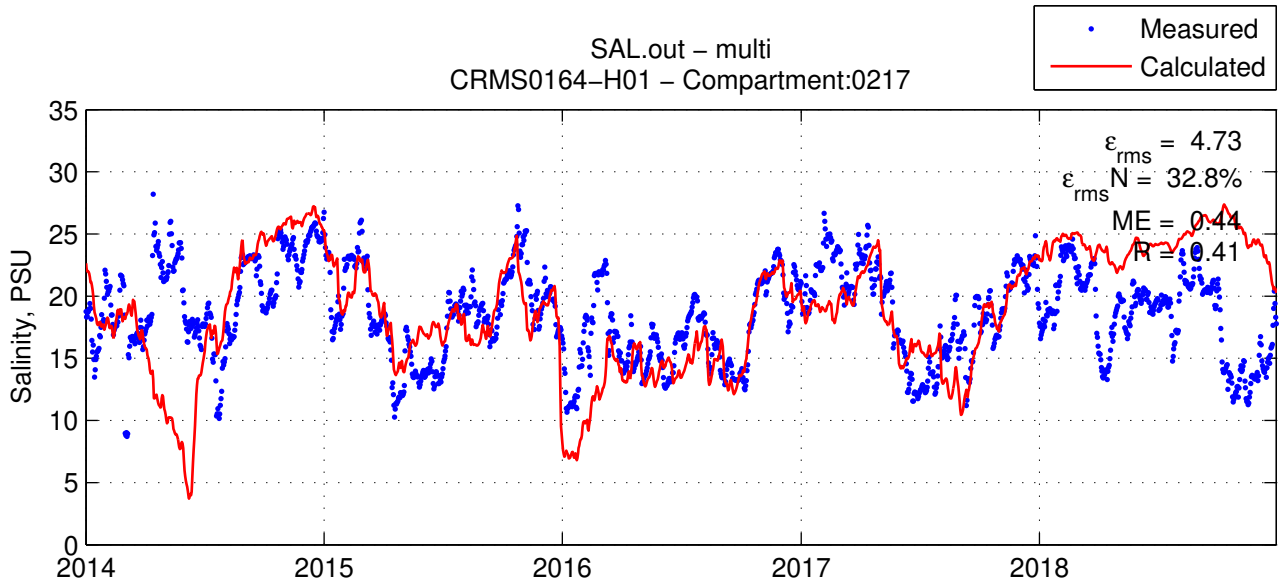

073802516 – Compartment:0315
ε_{rms} = 7.60
ε_{rms}N = 28.2%
ME = 2.15
R = 0.10
Salinity, PSU
0
5
10
15
20
25
30
35
2014
2015
2016
2017
2018

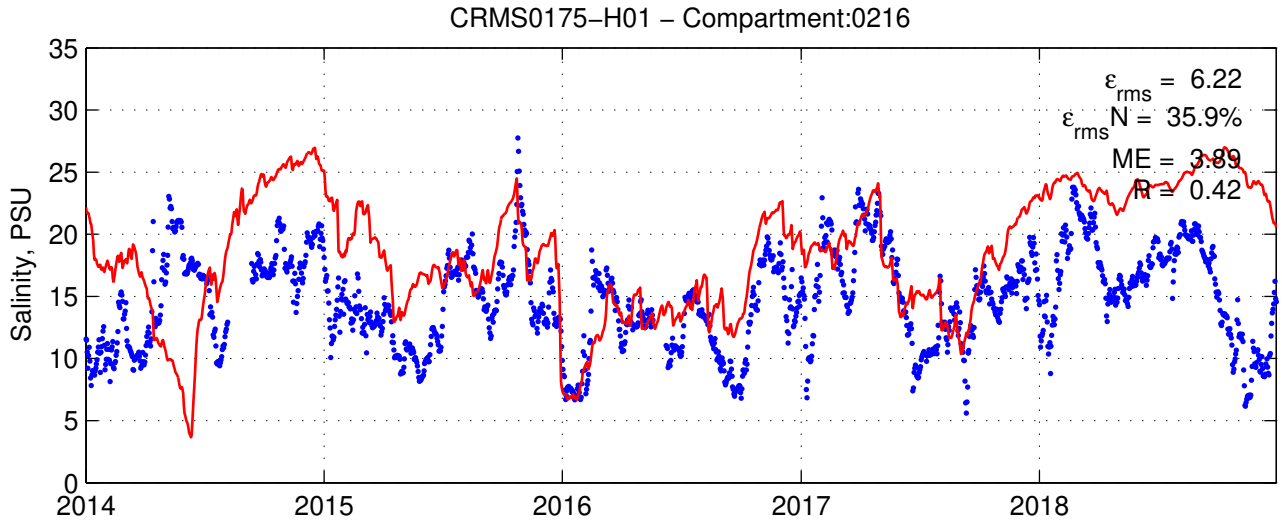

073802516 – Compartment:1658
ε_{rms} = 7.56
ε_{rms}N = 28.1%
ME = –3.65
R = 0.36
Salinity, PSU
0
5
10
15
20
25
30
35
2014
2015
2016
2017
2018

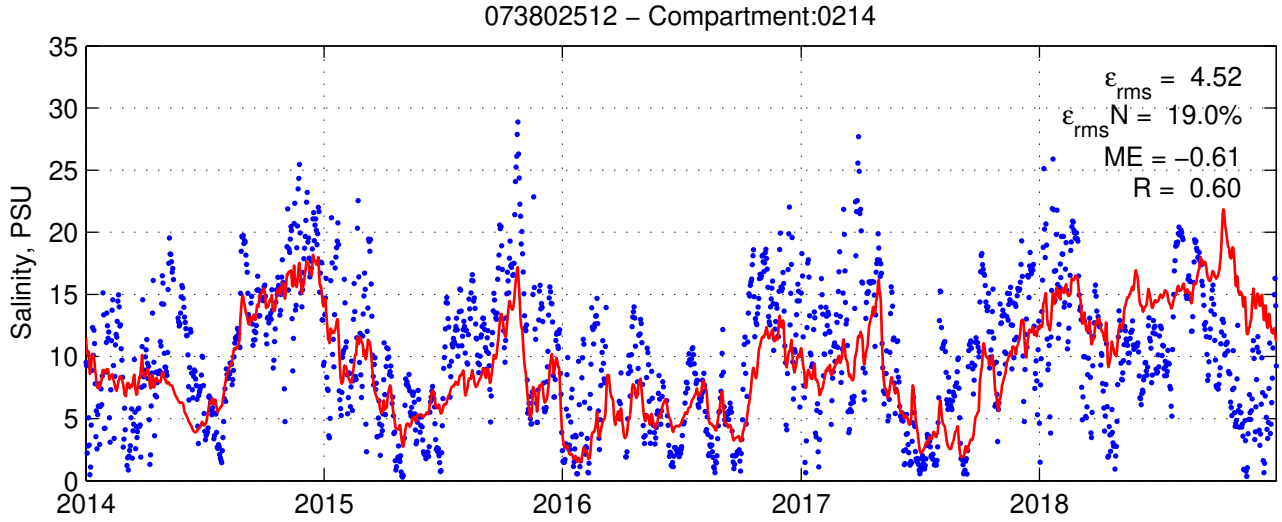

SAL.out – multi
073802514 – Compartment:1658
Measured
Calculated
ε_{rms} = 7.11
ε_{rms} N = 37.2%
ME = 2.83
R = 0.07
Salinity, PSU
0
5
10
15
20
25
30
35
2014
2015
2016
2017
2018

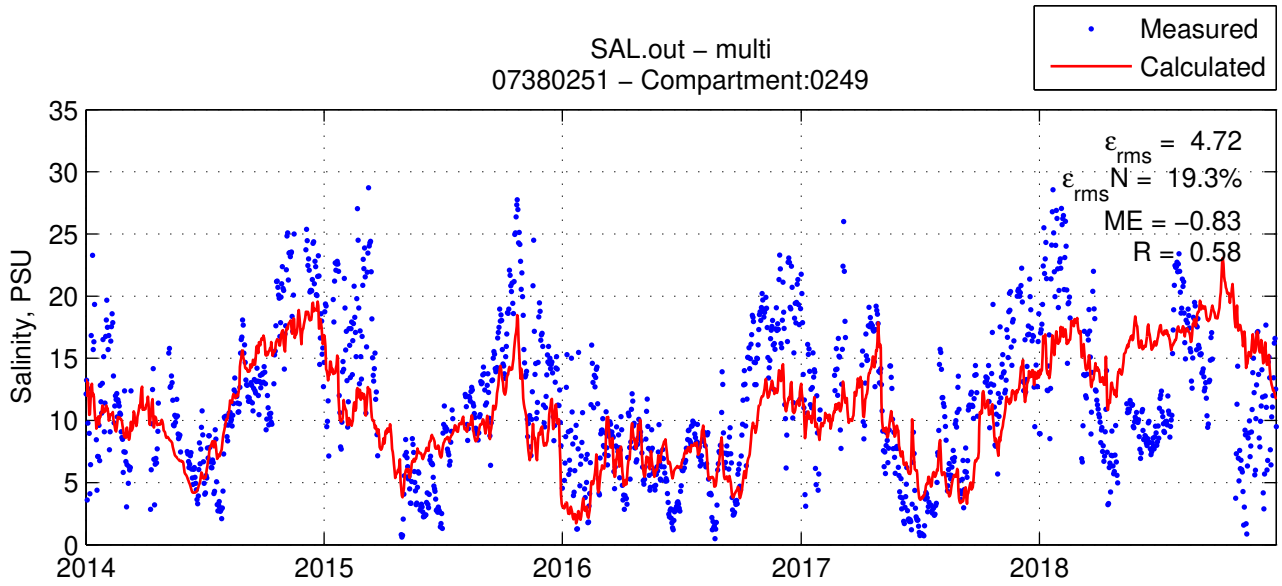

07380249 – Compartment:0221
ε_{rms} = 6.08
ε_{rms} N = 31.8%
ME = 1.02
R = 0.14
Salinity, PSU
0
5
10
15
20
25
30
35
2014
2015
2016
2017
2018

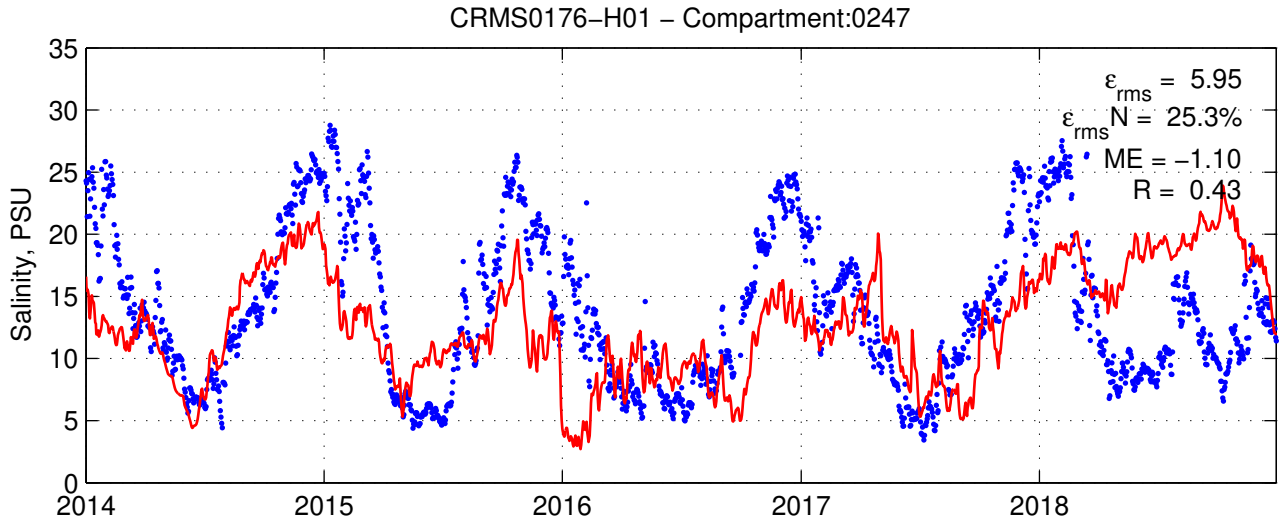

CRMS0178–H01 – Compartment:0221
ε_{rms} = 5.12
ε_{rms} N = 24.5%
ME = 1.26
R = 0.49
Salinity, PSU
0
5
10
15
20
25
30
35
2014
2015
2016
2017
2018

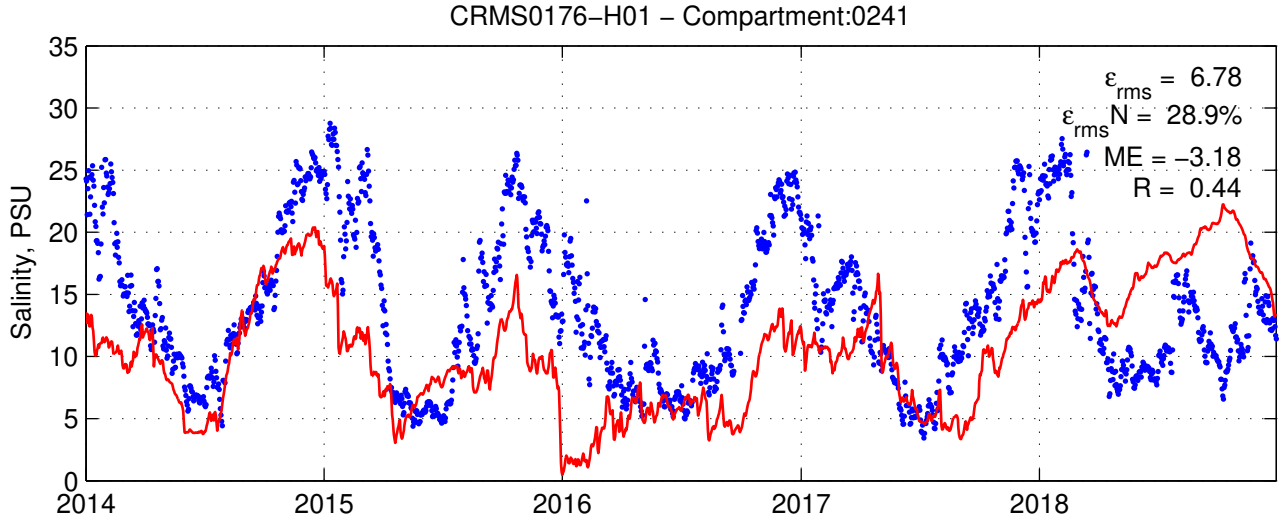

SAL.out – multi
CRMS0164–H01 – Compartment:0217
Measured
Calculated
ε_{rms} = 4.73
ε_{rms}N = 32.8%
ME = 0.44
R = 0.41
Salinity, PSU
0
5
10
15
20
25
30
35
2014
2015
2016
2017
2018

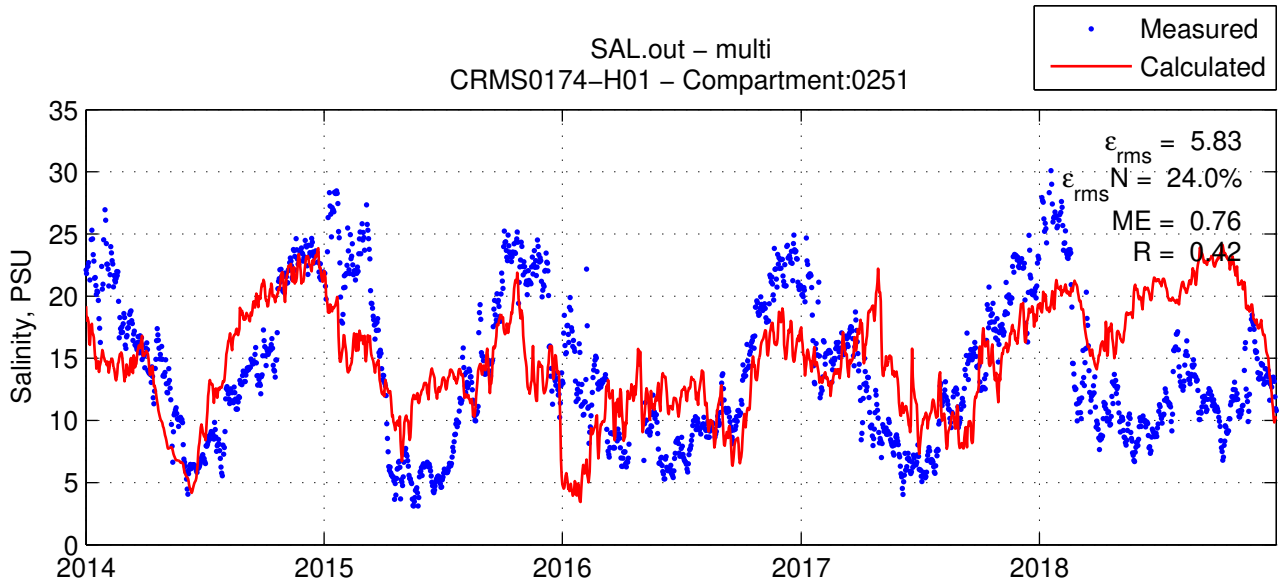

CRMS0175–H01 – Compartment:0216
ε_{rms} = 6.22
ε_{rms}N = 35.9%
ME = 3.89
R = 0.42
Salinity, PSU
0
5
10
15
20
25
30
35
2014
2015
2016
2017
2018

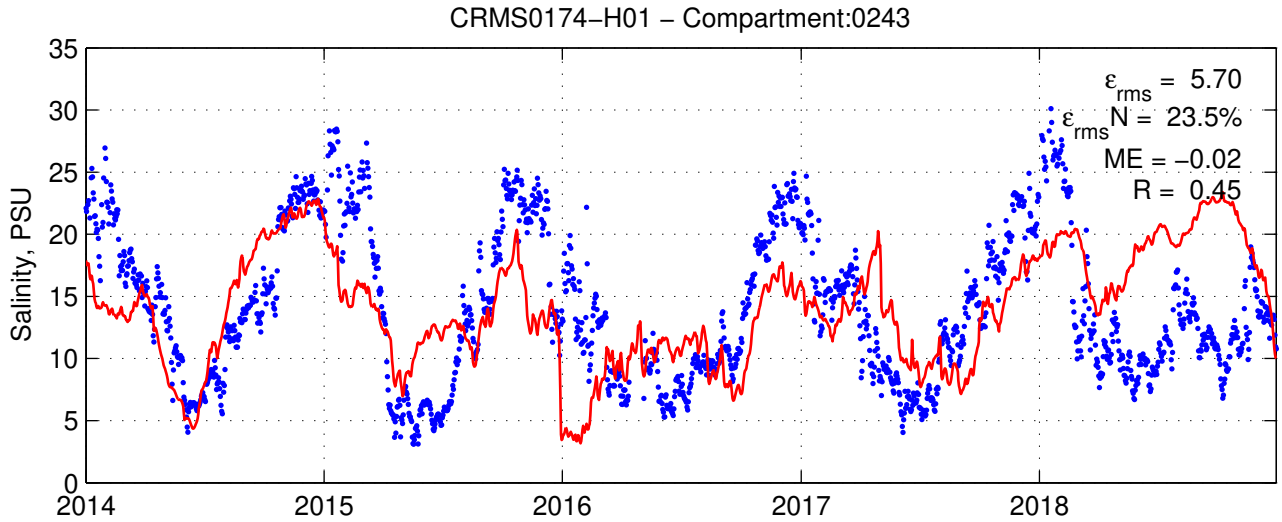

073802512 – Compartment:0214
ε_{rms} = 4.52
ε_{rms}N = 19.0%
ME = –0.61
R = 0.60
Salinity, PSU
0
5
10
15
20
25
30
35
2014
2015
2016
2017
2018

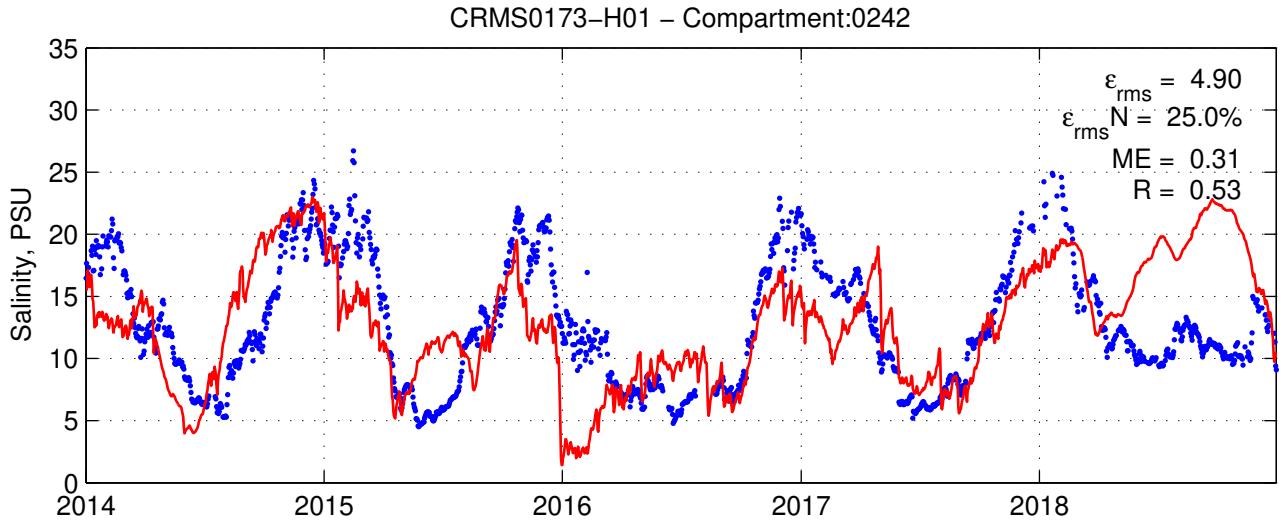

SAL.out – multi
07380251 – Compartment:0249
Measured
Calculated
Salinity, PSU
ε_{rms} = 4.72
ε_{rms}N = 19.3%
ME = –0.83
R = 0.58
0
5
10
15
20
25
30
35
2014
2015
2016
2017
2018

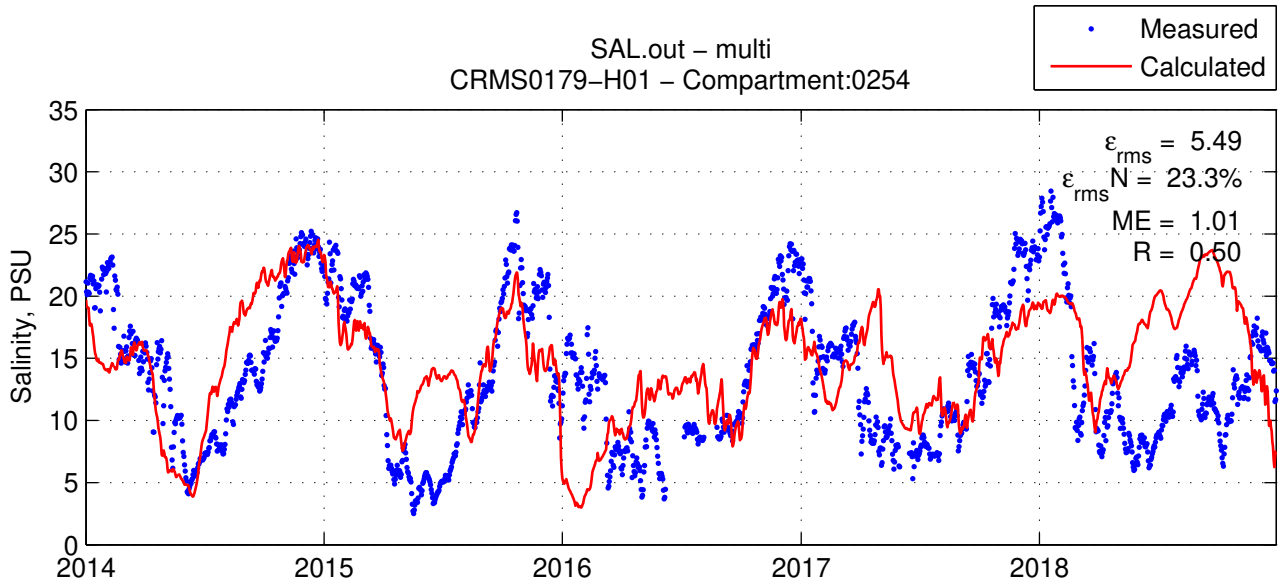

CRMS0176–H01 – Compartment:0247
Salinity, PSU
ε_{rms} = 5.95
ε_{rms}N = 25.3%
ME = –1.10
R = 0.43
0
5
10
15
20
25
30
35
2014
2015
2016
2017
2018

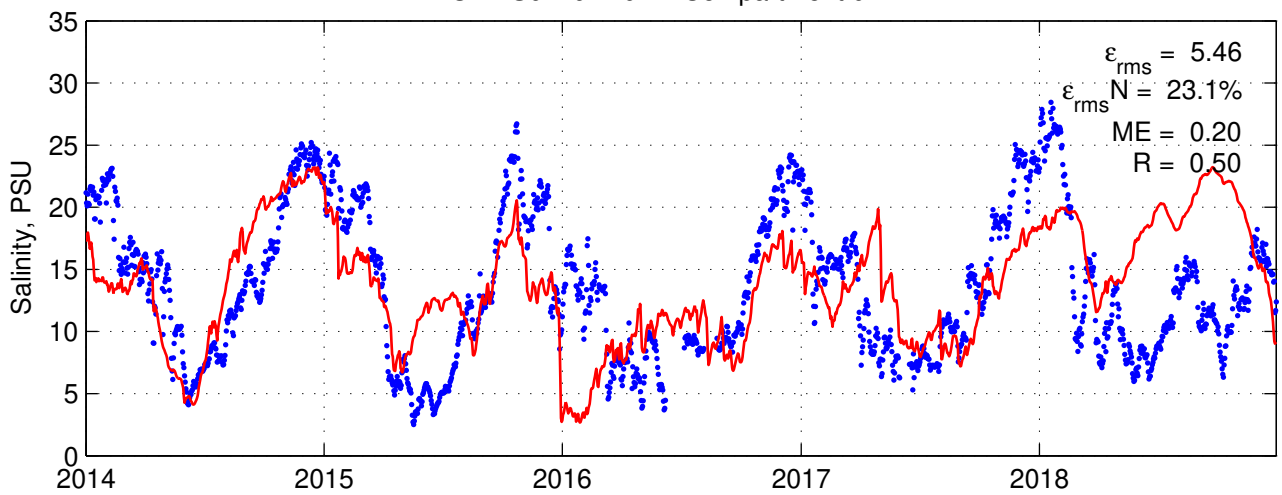

CRMS0176–H01 – Compartment:0241
Salinity, PSU
ε_{rms} = 6.78
ε_{rms}N = 28.9%
ME = –3.18
R = 0.44
0
5
10
15
20
25
30
35
2014
2015
2016
2017
2018

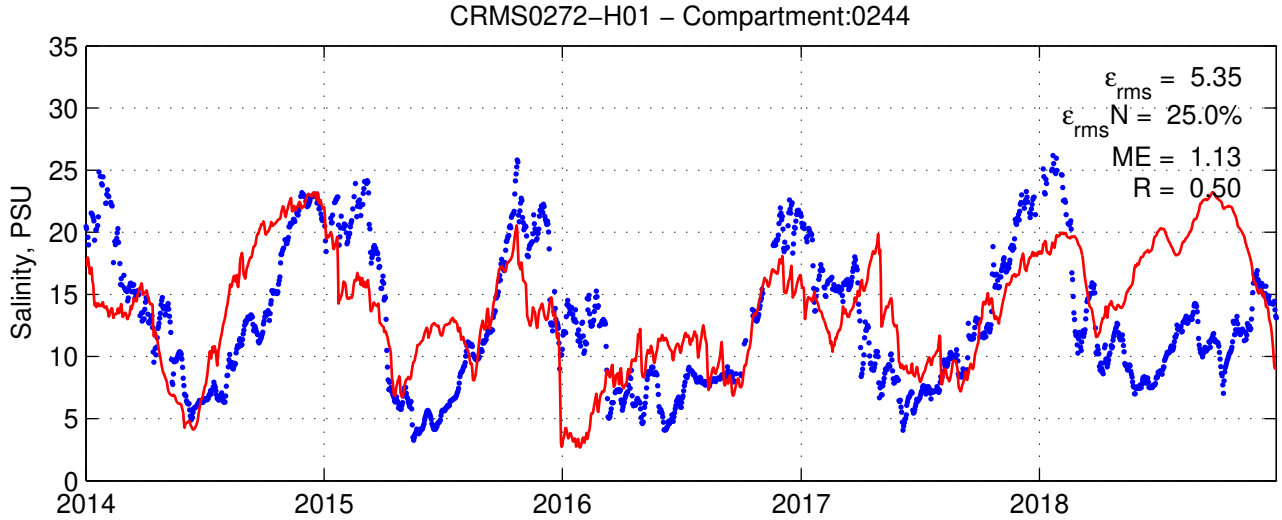

SAL.out – multi
CRMS0174–H01 – Compartment:0251
Measured
Calculated
Salinity, PSU
ε_{rms} = 5.83
ε_{rms}N = 24.0%
ME = 0.76
R = 0.42
0
5
10
15
20
25
30
35
2014
2015
2016
2017
2018

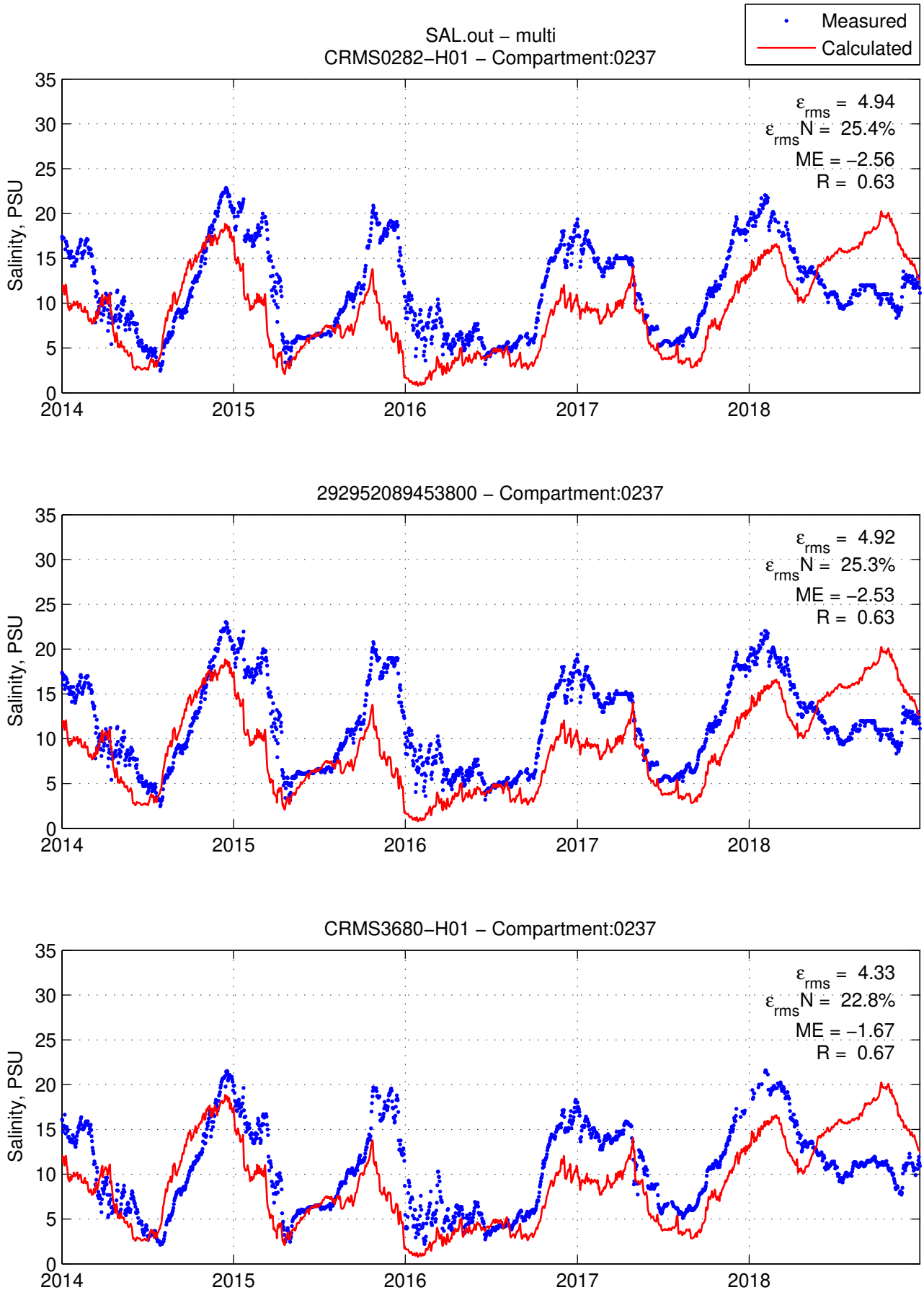

CRMS0174–H01 – Compartment:0243
Salinity, PSU
ε_{rms} = 5.70
ε_{rms}N = 23.5%
ME = –0.02
R = 0.45
0
5
10
15
20
25
30
35
2014
2015
2016
2017
2018

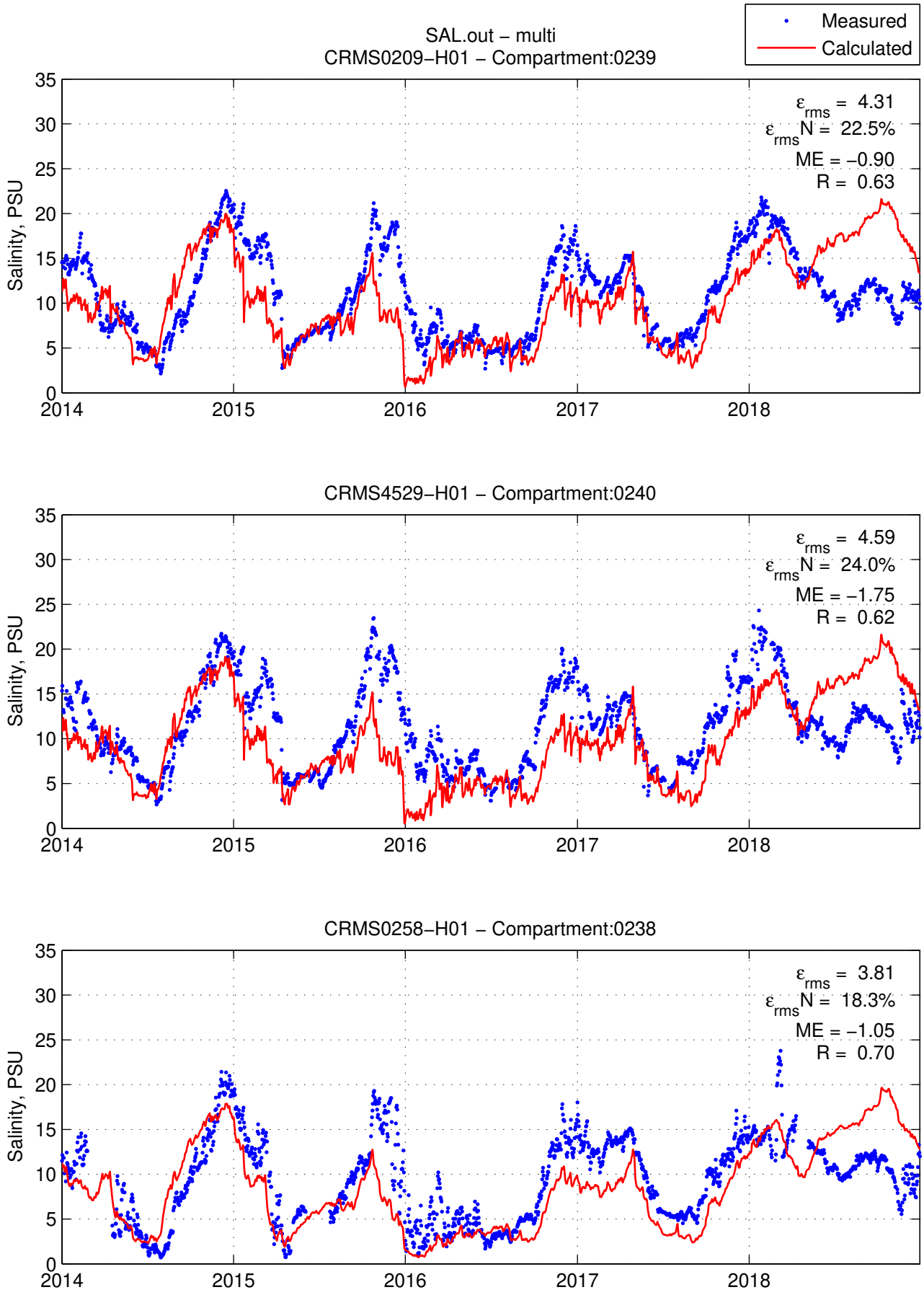

CRMS0173–H01 – Compartment:0242
Salinity, PSU
ε_{rms} = 4.90
ε_{rms}N = 25.0%
ME = 0.31
R = 0.53
0
5
10
15
20
25
30
35
2014
2015
2016
2017
2018

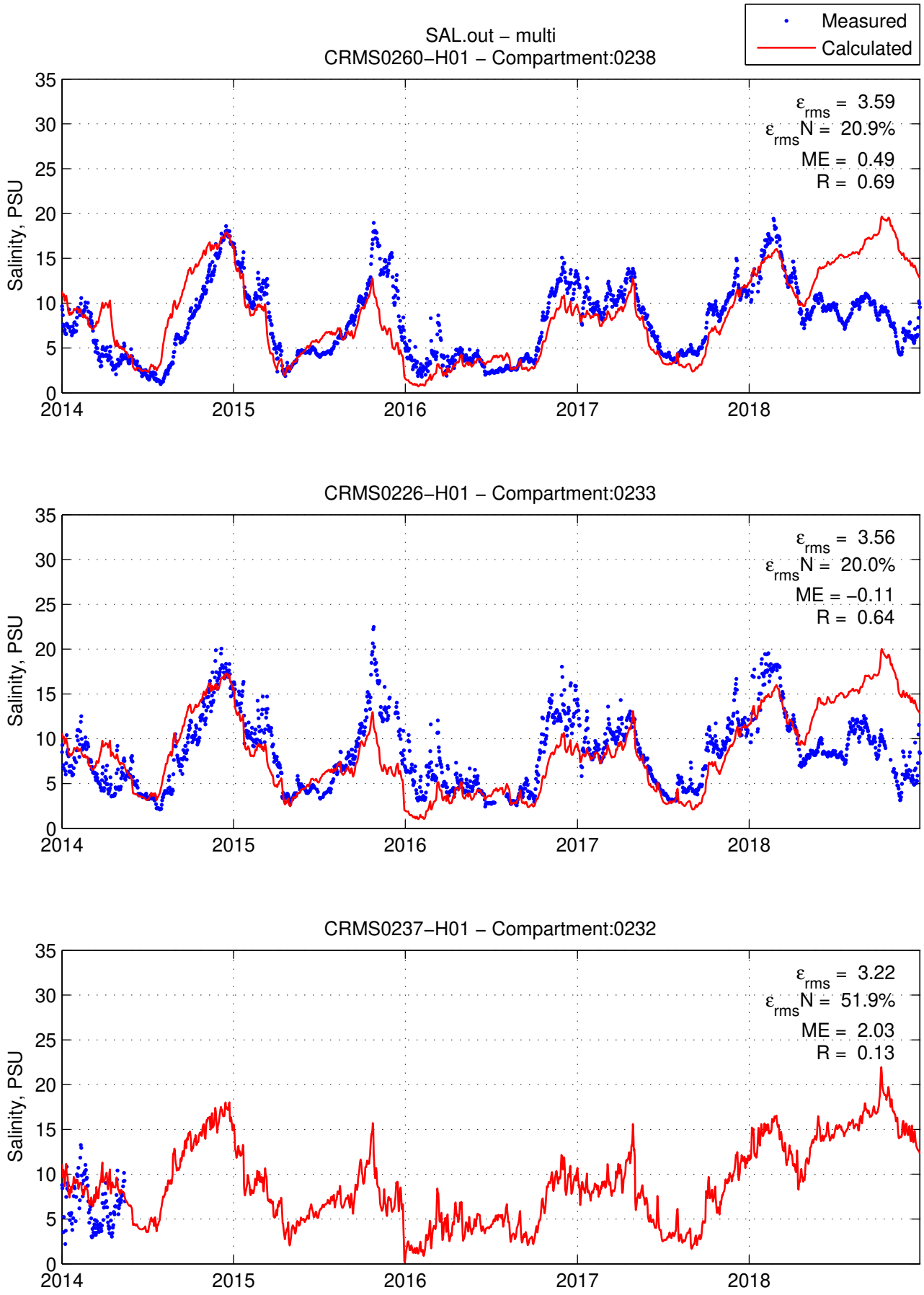

SAL.out – multi
CRMS0179–H01 – Compartment:0254
Measured
Calculated
ε_{rms} = 5.49
ε_{rms}N = 23.3%
ME = 1.01
R = 0.50
Salinity, PSU
0
5
10
15
20
25
30
35
2014
2015
2016
2017
2018

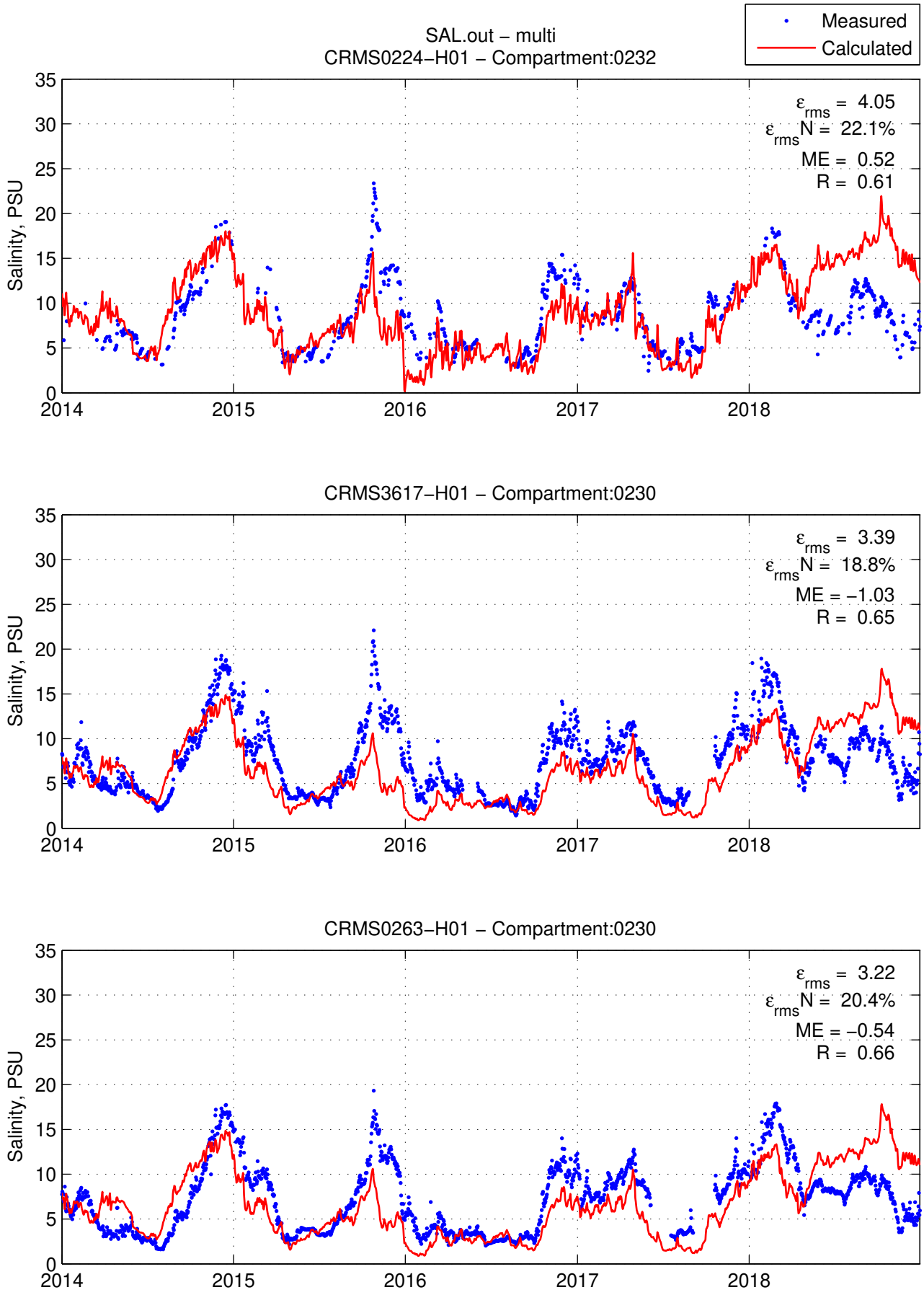

CRMS0179–H01 – Compartment:0244
ε_{rms} = 5.46
ε_{rms}N = 23.1%
ME = 0.20
R = 0.50
Salinity, PSU
0
5
10
15
20
25
30
35
2014
2015
2016
2017
2018

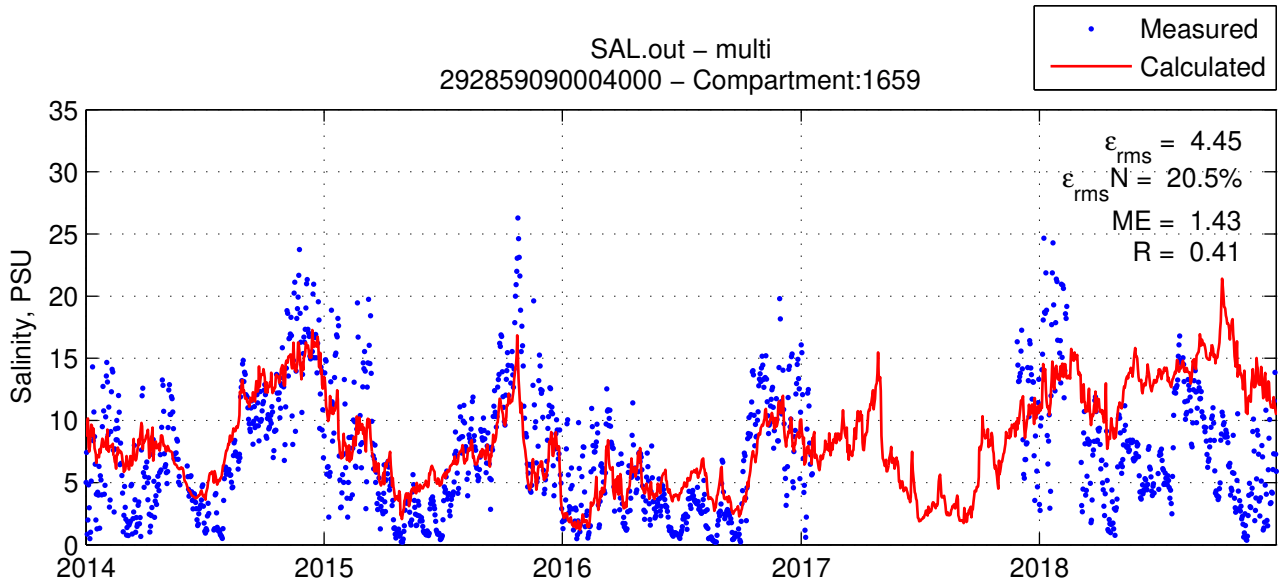

CRMS0272–H01 – Compartment:0244
ε_{rms} = 5.35
ε_{rms}N = 25.0%
ME = 1.13
R = 0.50
Salinity, PSU
0
5
10
15
20
25
30
35
2014
2015
2016
2017
2018

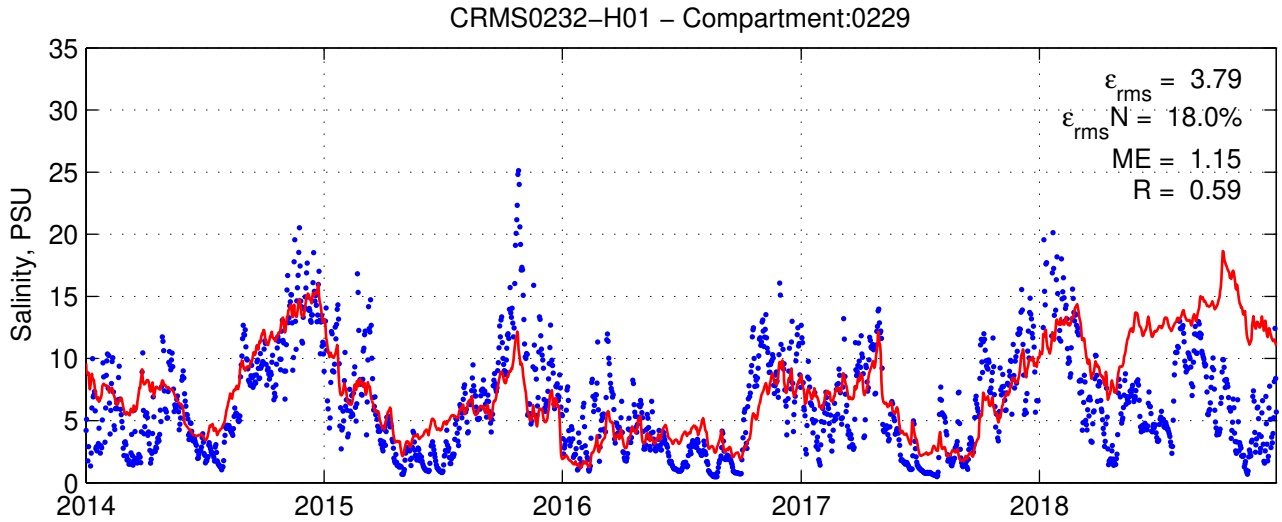

SAL.out – multi
CRMS0282–H01 – Compartment:0237
Measured
Calculated
ε_{rms} = 4.94
ε_{rms}N = 25.4%
ME = –2.56
R = 0.63
Salinity, PSU
292952089453800 – Compartment:0237
ε_{rms} = 4.92
ε_{rms}N = 25.3%
ME = –2.53
R = 0.63
Salinity, PSU
CRMS3680–H01 – Compartment:0237
ε_{rms} = 4.33
ε_{rms}N = 22.8%
ME = –1.67
R = 0.67
Salinity, PSU
0
5
10
15
20
25
30
35
2014
2015
2016
2017
2018

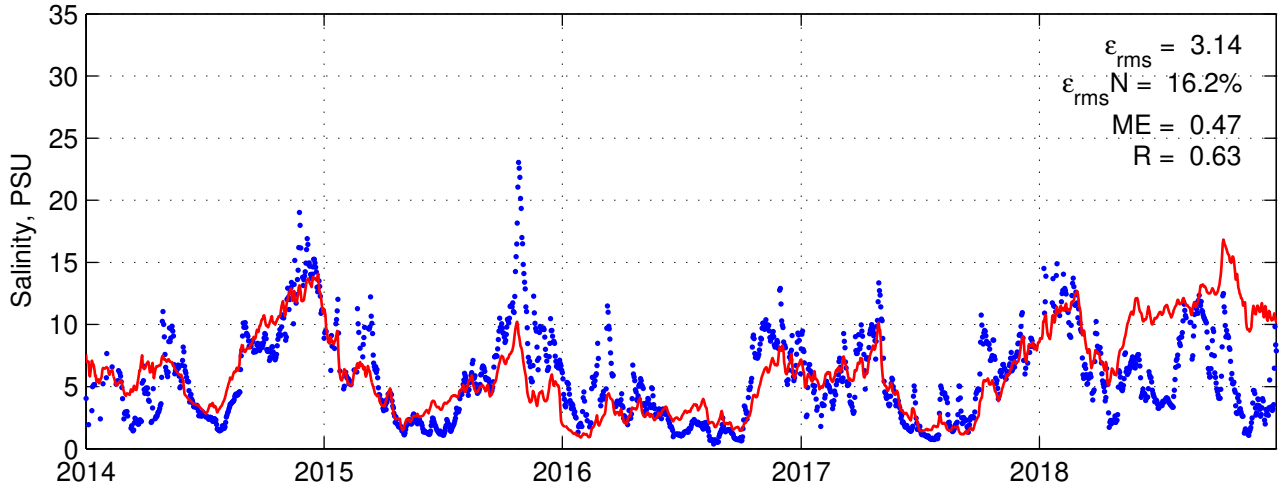

SAL.out – multi
CRMS0209–H01 – Compartment:0239
Measured
Calculated
ε_{rms} = 4.31
ε_{rms}N = 22.5%
ME = –0.90
R = 0.63
Salinity, PSU
CRMS4529–H01 – Compartment:0240
ε_{rms} = 4.59
ε_{rms}N = 24.0%
ME = –1.75
R = 0.62
Salinity, PSU
CRMS0258–H01 – Compartment:0238
ε_{rms} = 3.81
ε_{rms}N = 18.3%
ME = –1.05
R = 0.70
Salinity, PSU
0
5
10
15
20
25
30
35
2014
2015
2016
2017
2018

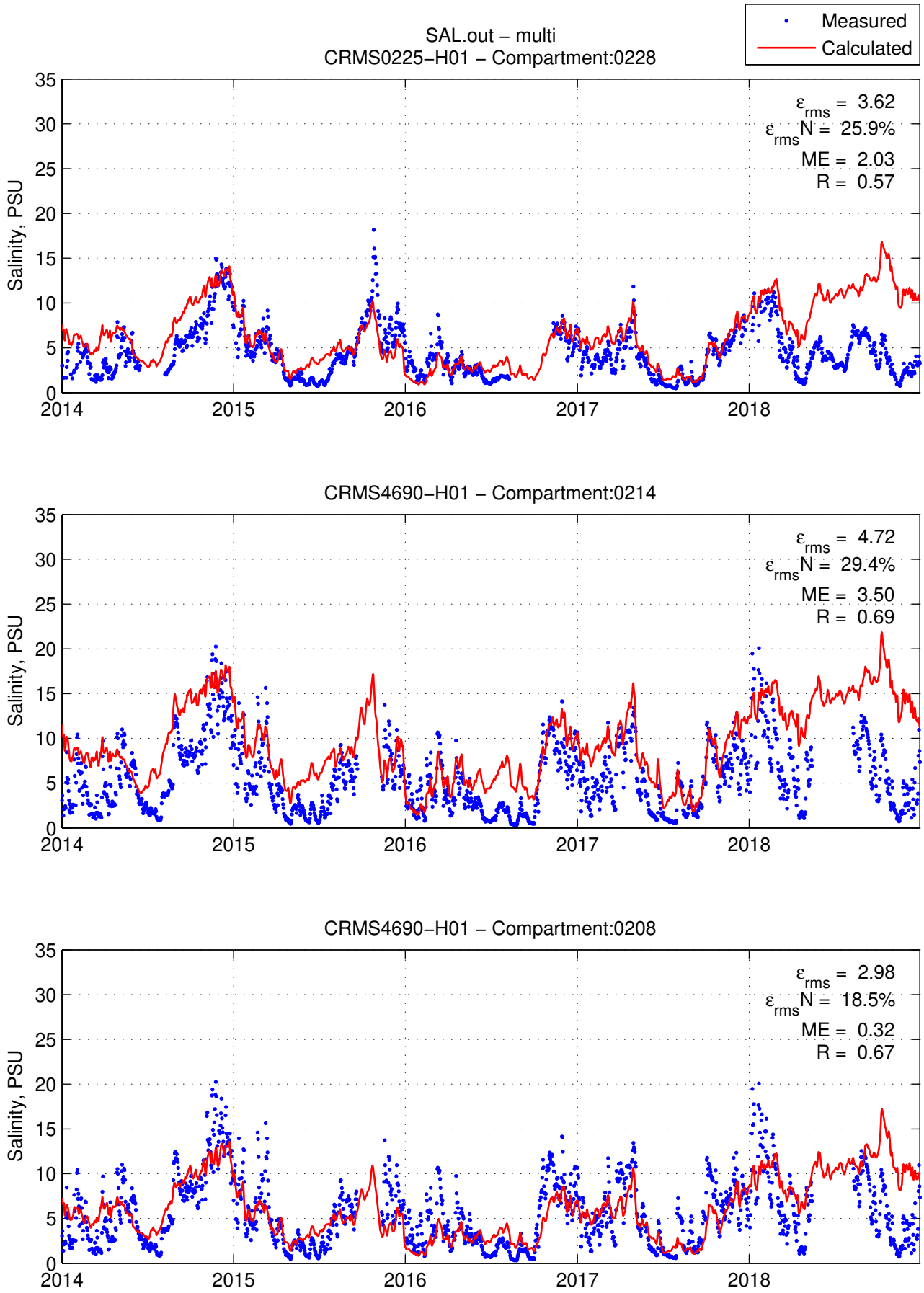

SAL.out – multi
CRMS0260–H01 – Compartment:0238
Measured
Calculated
ε_{rms} = 3.59
ε_{rms}N = 20.9%
ME = 0.49
R = 0.69
Salinity, PSU
CRMS0226–H01 – Compartment:0233
ε_{rms} = 3.56
ε_{rms}N = 20.0%
ME = –0.11
R = 0.64
Salinity, PSU
CRMS0237–H01 – Compartment:0232
ε_{rms} = 3.22
ε_{rms}N = 51.9%
ME = 2.03
R = 0.13
Salinity, PSU
0
5
10
15
20
25
30
35
2014
2015
2016
2017
2018

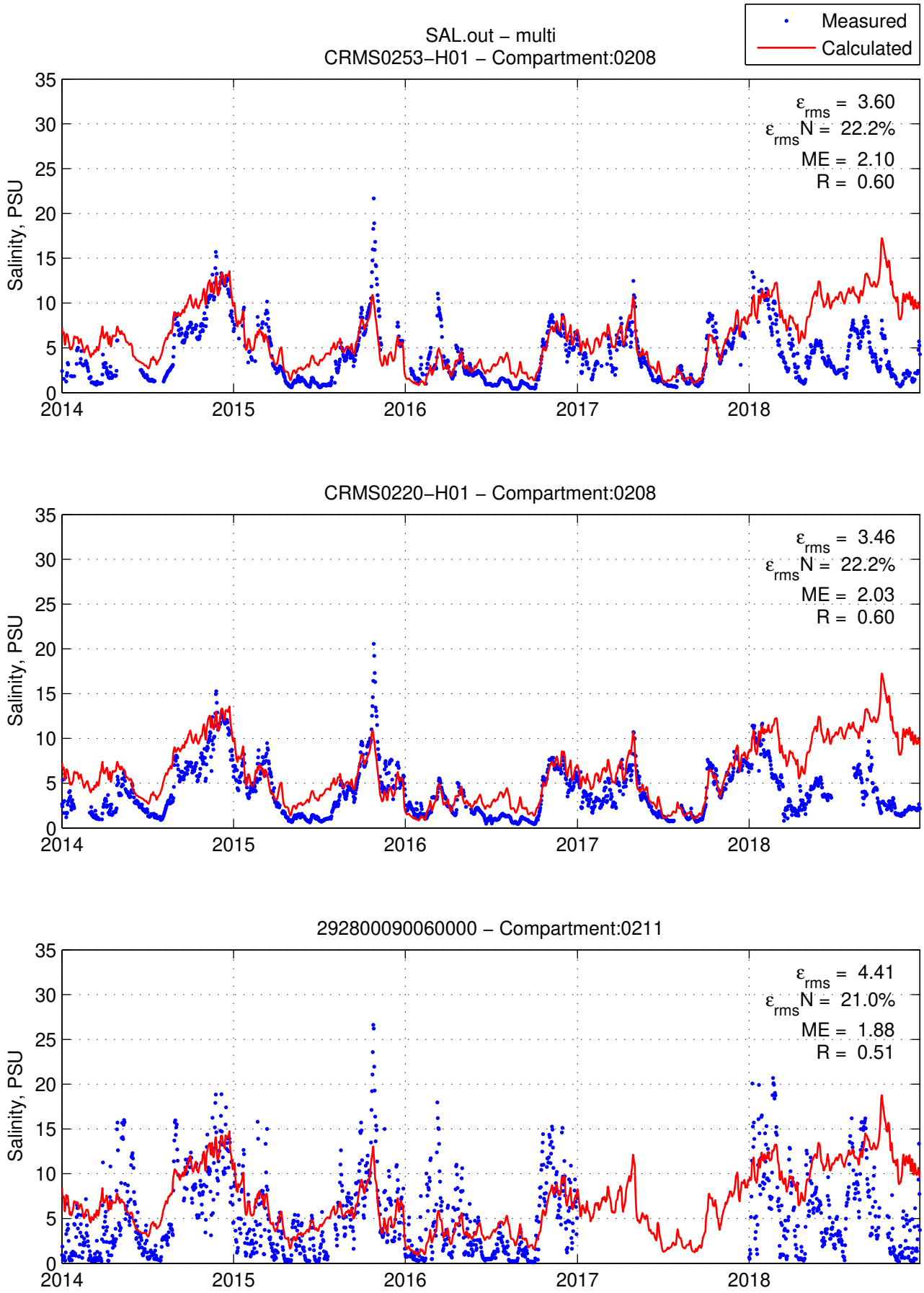

SAL.out – multi
CRMS0224–H01 – Compartment:0232
Measured
Calculated
Salinity, PSU
ε_{rms} = 4.05
ε_{rms}N = 22.1%
ME = 0.52
R = 0.61
CRMS3617–H01 – Compartment:0230
ε_{rms} = 3.39
ε_{rms}N = 18.8%
ME = –1.03
R = 0.65
CRMS0263–H01 – Compartment:0230
ε_{rms} = 3.22
ε_{rms}N = 20.4%
ME = –0.54
R = 0.66
0
5
10
15
20
25
30
35
2014
2015
2016
2017
2018

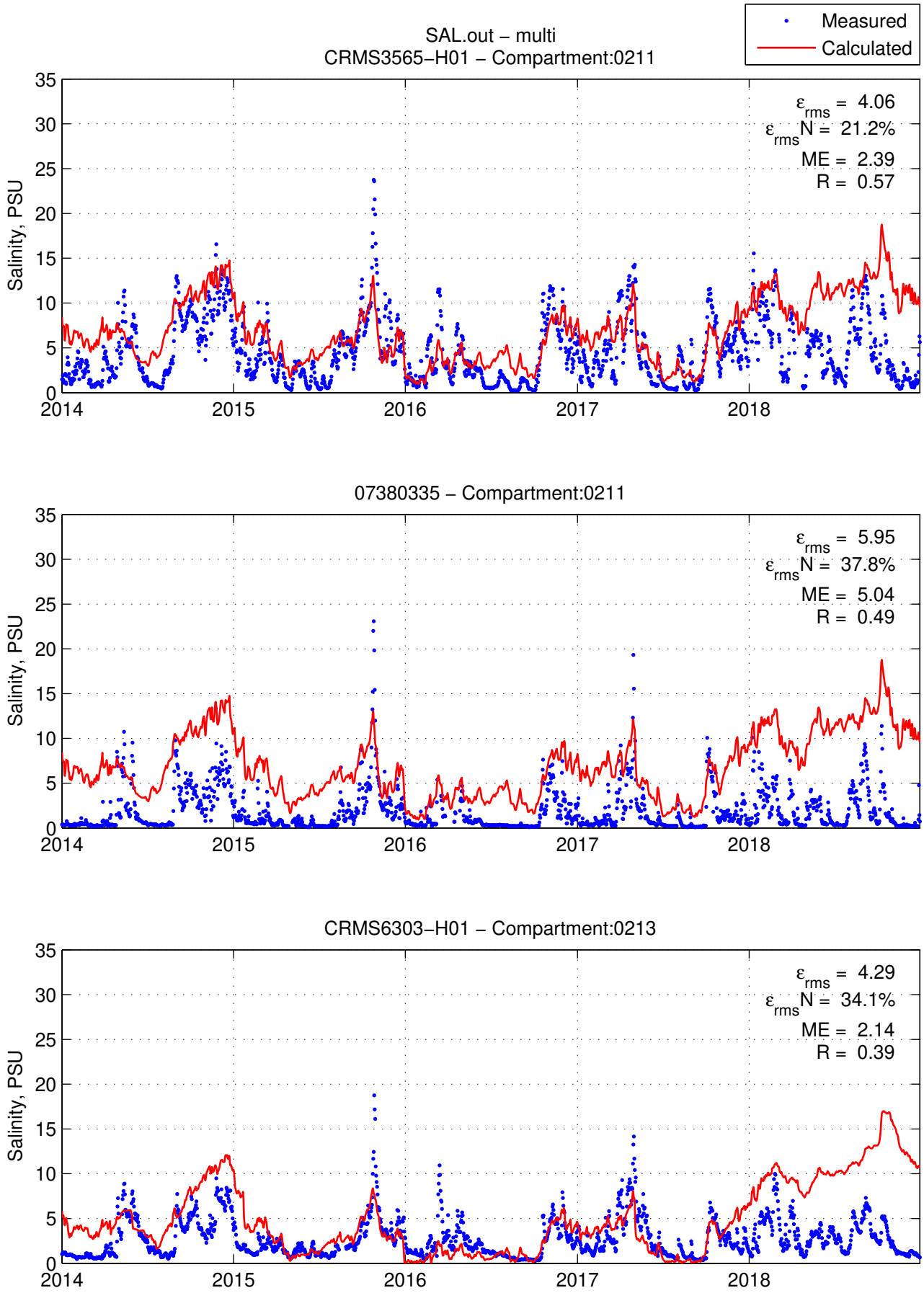

SAL.out – multi
292859090004000 – Compartment:1659
Measured
Calculated
Salinity, PSU
ε_{rms} = 4.45
ε_{rms}N = 20.5%
ME = 1.43
R = 0.41
0
5
10
15
20
25
30
35
2014
2015
2016
2017
2018

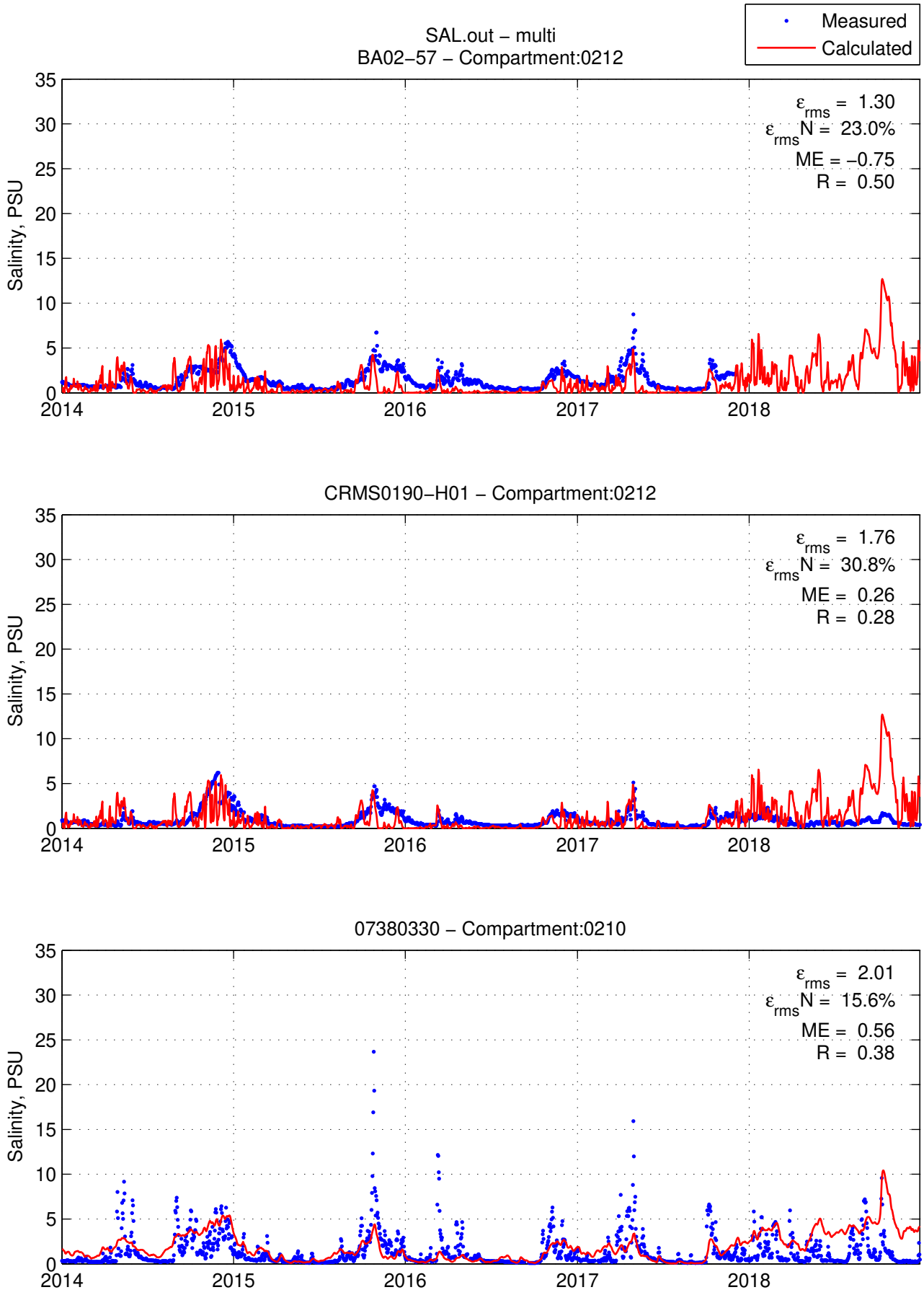

CRMS0232–H01 – Compartment:0229
Salinity, PSU
ε_{rms} = 3.79
ε_{rms}N = 18.0%
ME = 1.15
R = 0.59
0
5
10
15
20
25
30
35
2014
2015
2016
2017
2018

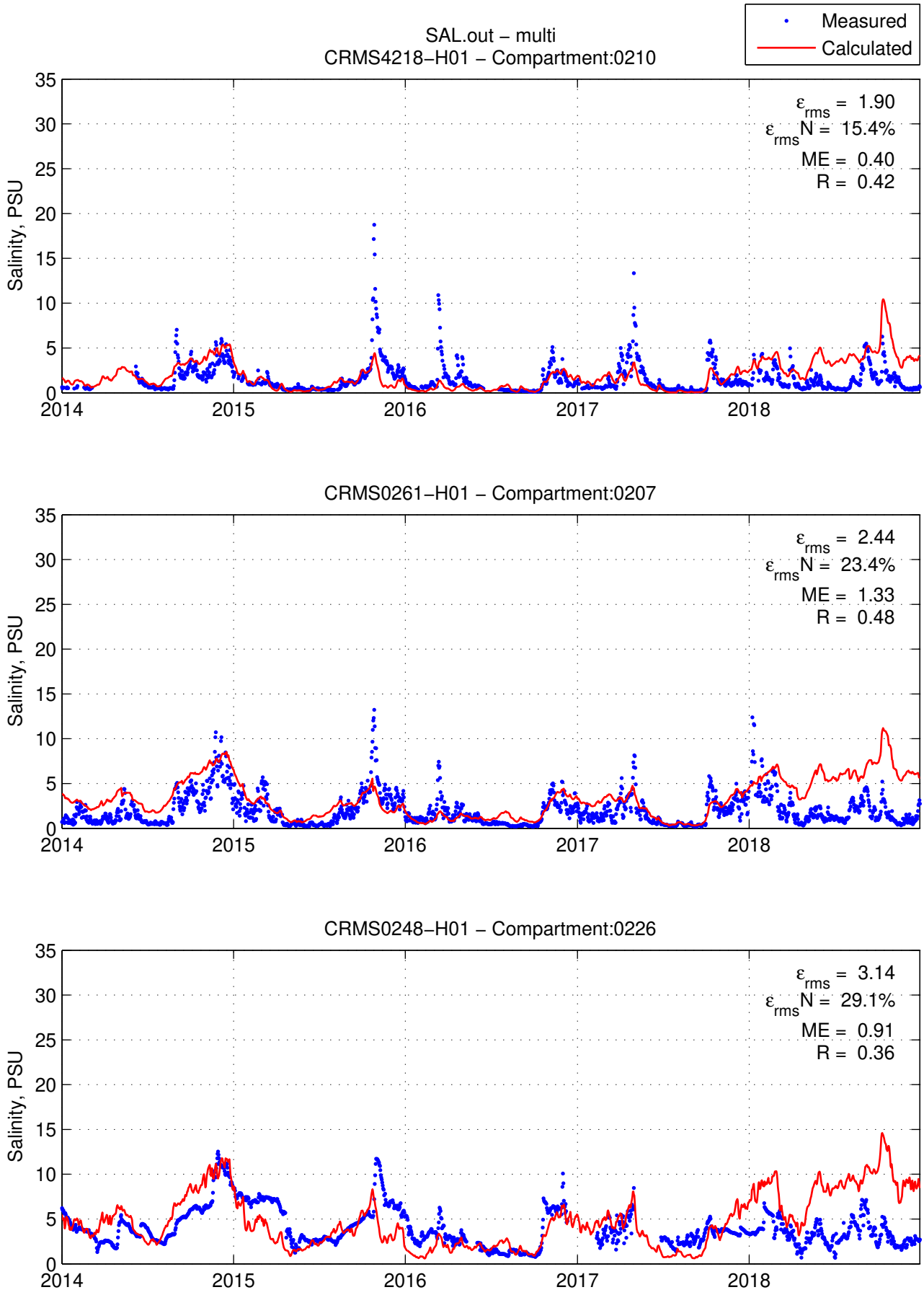

CRMS0251–H01 – Compartment:0228
Salinity, PSU
ε_{rms} = 3.14
ε_{rms}N = 16.2%
ME = 0.47
R = 0.63
0
5
10
15
20
25
30
35
2014
2015
2016
2017
2018

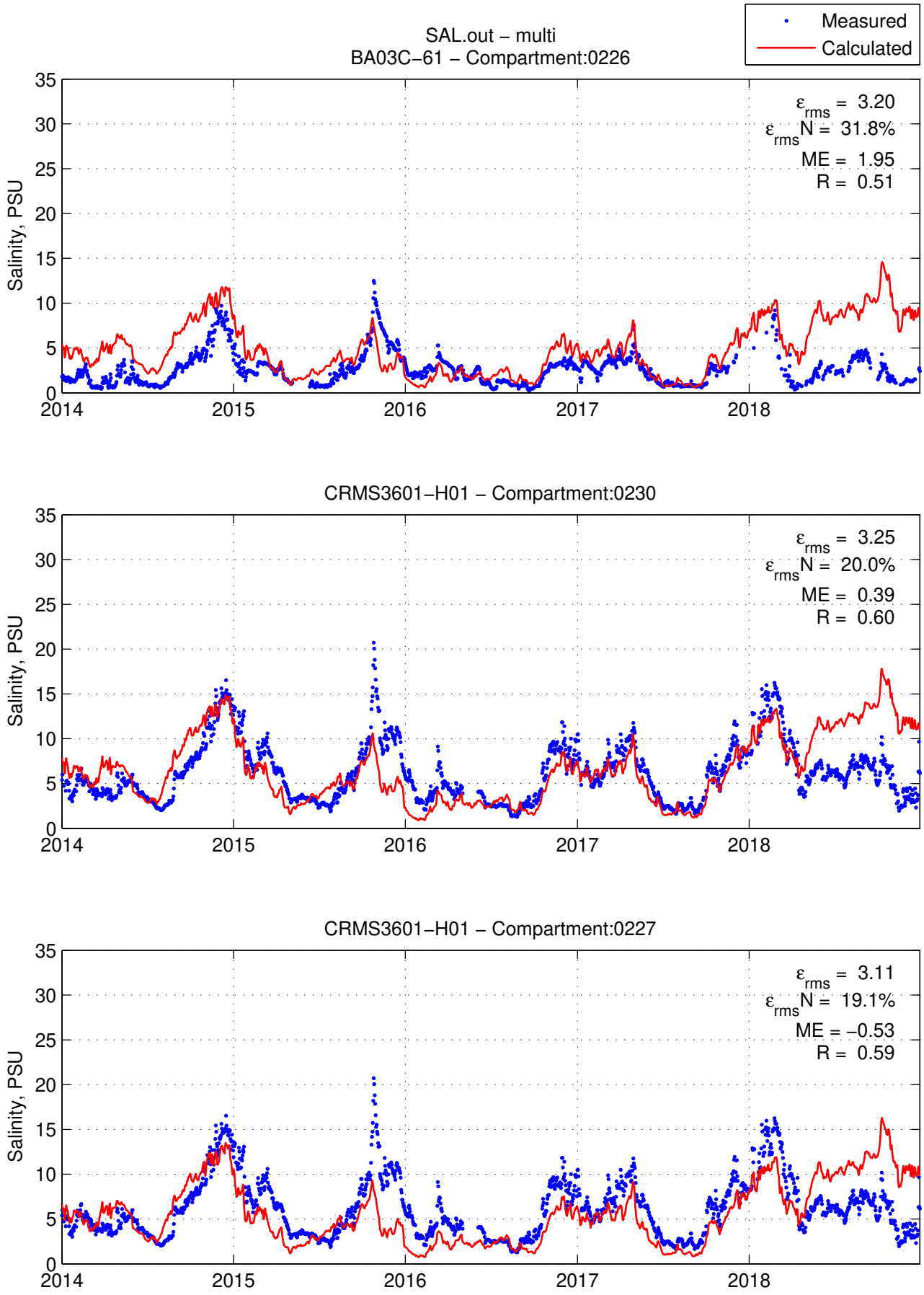

Measured
Calculated
SAL.out – multi
CRMS0225–H01 – Compartment:0228
ε_{rms} = 3.62
ε_{rms}N = 25.9%
ME = 2.03
R = 0.57
Salinity, PSU
CRMS4690–H01 – Compartment:0214
ε_{rms} = 4.72
ε_{rms}N = 29.4%
ME = 3.50
R = 0.69
Salinity, PSU
CRMS4690–H01 – Compartment:0208
ε_{rms} = 2.98
ε_{rms}N = 18.5%
ME = 0.32
R = 0.67
Salinity, PSU
0
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2014
2015
2016
2017
2018

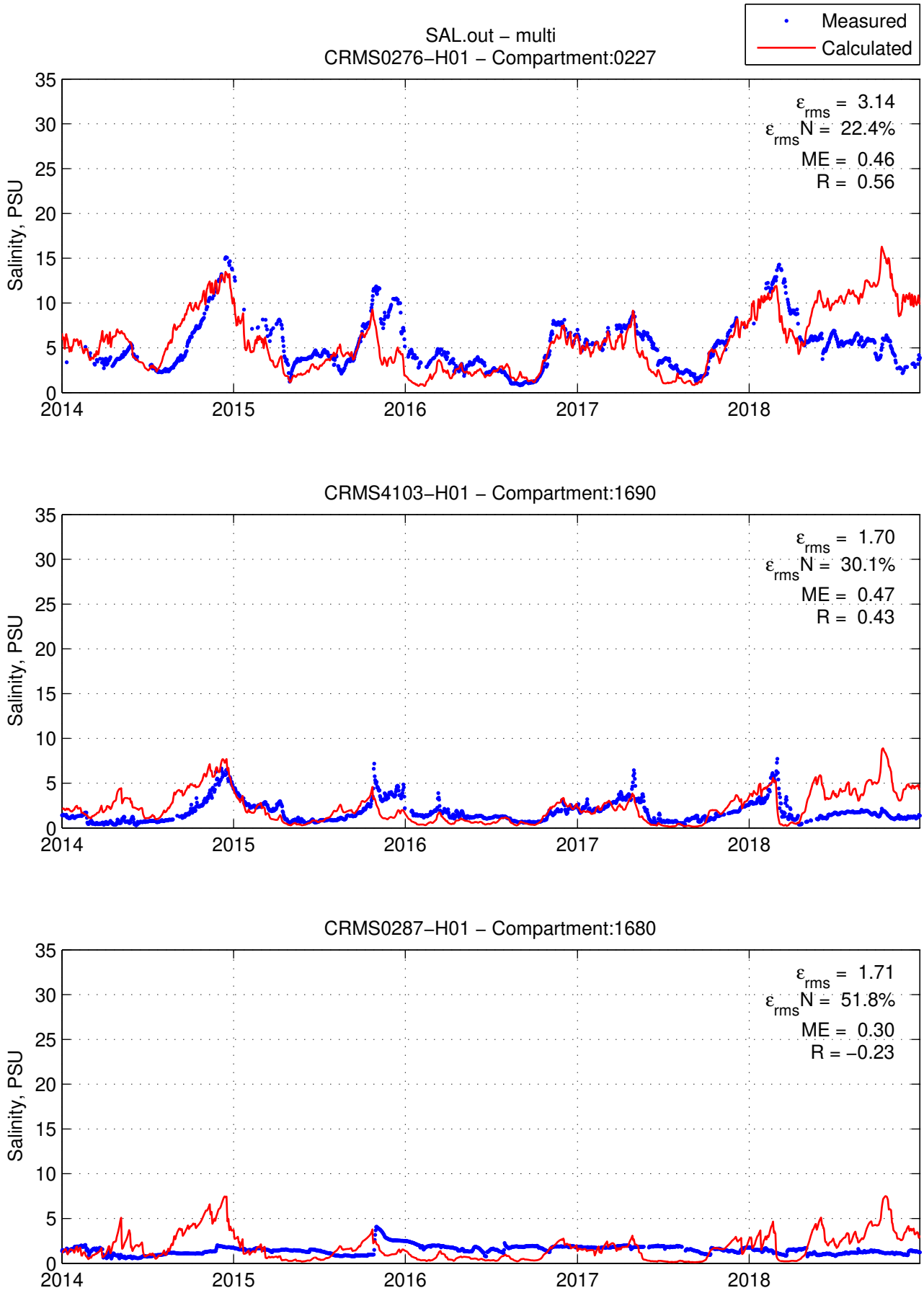

SAL.out – multi
CRMS0253–H01 – Compartment:0208
Measured
Calculated
ε_{rms} = 3.60
ε_{rms}N = 22.2%
ME = 2.10
R = 0.60
Salinity, PSU
CRMS0220–H01 – Compartment:0208
ε_{rms} = 3.46
ε_{rms}N = 22.2%
ME = 2.03
R = 0.60
Salinity, PSU
292800090060000 – Compartment:0211
ε_{rms} = 4.41
ε_{rms}N = 21.0%
ME = 1.88
R = 0.51
Salinity, PSU
0
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2014
2015
2016
2017
2018

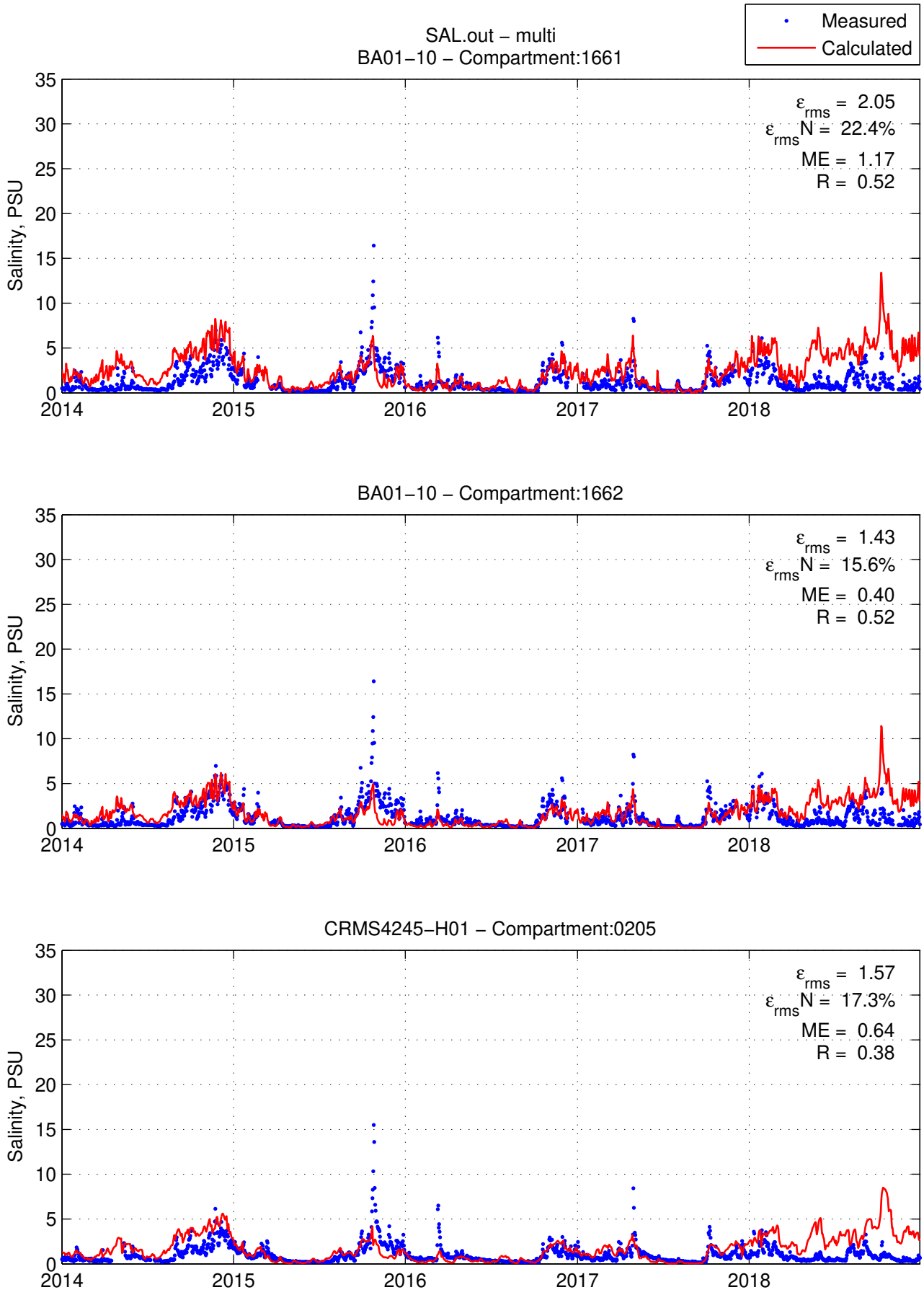

SAL.out – multi
CRMS3565–H01 – Compartment:0211
Measured
Calculated
ε_{rms} = 4.06
ε_{rms}N = 21.2%
ME = 2.39
R = 0.57
Salinity, PSU
07380335 – Compartment:0211
ε_{rms} = 5.95
ε_{rms}N = 37.8%
ME = 5.04
R = 0.49
Salinity, PSU
CRMS6303–H01 – Compartment:0213
ε_{rms} = 4.29
ε_{rms}N = 34.1%
ME = 2.14
R = 0.39
Salinity, PSU
0
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2014
2015
2016
2017
2018

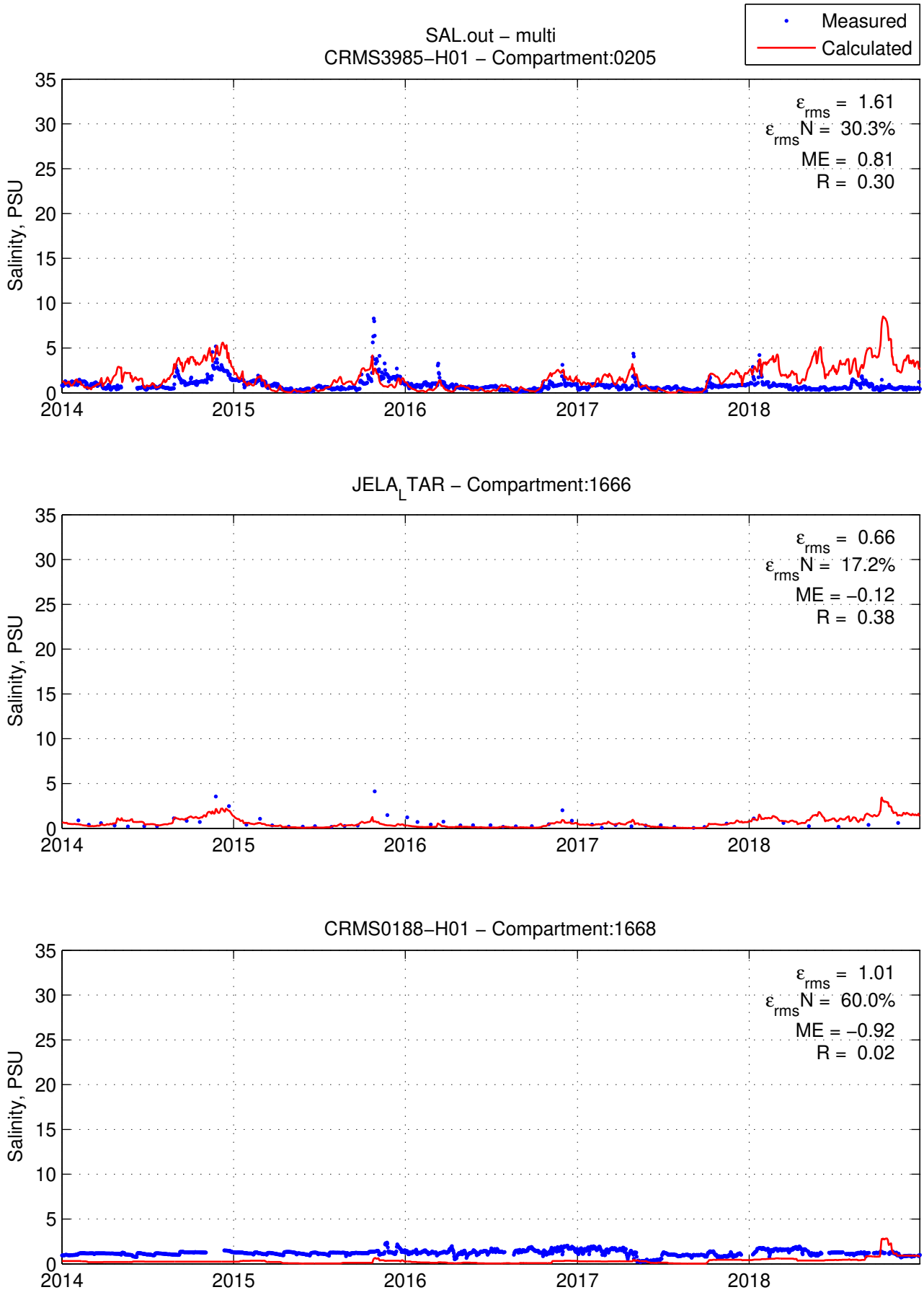

Measured
Calculated
SAL.out – multi
BA02–57 – Compartment:0212
ε_{rms} = 1.30
ε_{rms}N = 23.0%
ME = –0.75
R = 0.50
Salinity, PSU
CRMS0190–H01 – Compartment:0212
ε_{rms} = 1.76
ε_{rms}N = 30.8%
ME = 0.26
R = 0.28
Salinity, PSU
07380330 – Compartment:0210
ε_{rms} = 2.01
ε_{rms}N = 15.6%
ME = 0.56
R = 0.38
Salinity, PSU
0
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2014
2015
2016
2017
2018

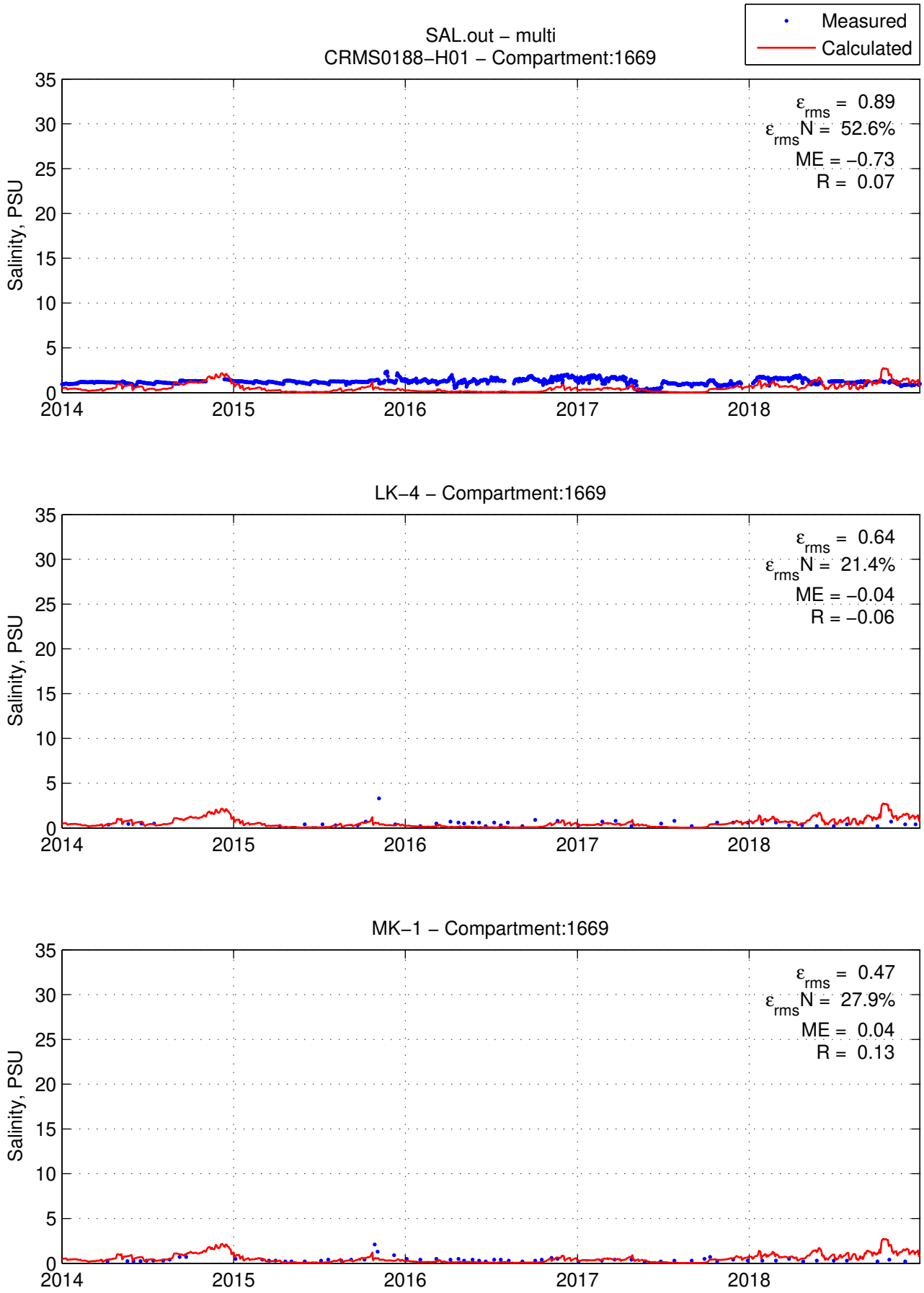

Measured
Calculated
SAL.out – multi
CRMS4218–H01 – Compartment:0210
ε_{rms} = 1.90
ε_{rms}N = 15.4%
ME = 0.40
R = 0.42
Salinity, PSU
CRMS0261–H01 – Compartment:0207
ε_{rms} = 2.44
ε_{rms}N = 23.4%
ME = 1.33
R = 0.48
Salinity, PSU
CRMS0248–H01 – Compartment:0226
ε_{rms} = 3.14
ε_{rms}N = 29.1%
ME = 0.91
R = 0.36
Salinity, PSU
0
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2014
2015
2016
2017
2018

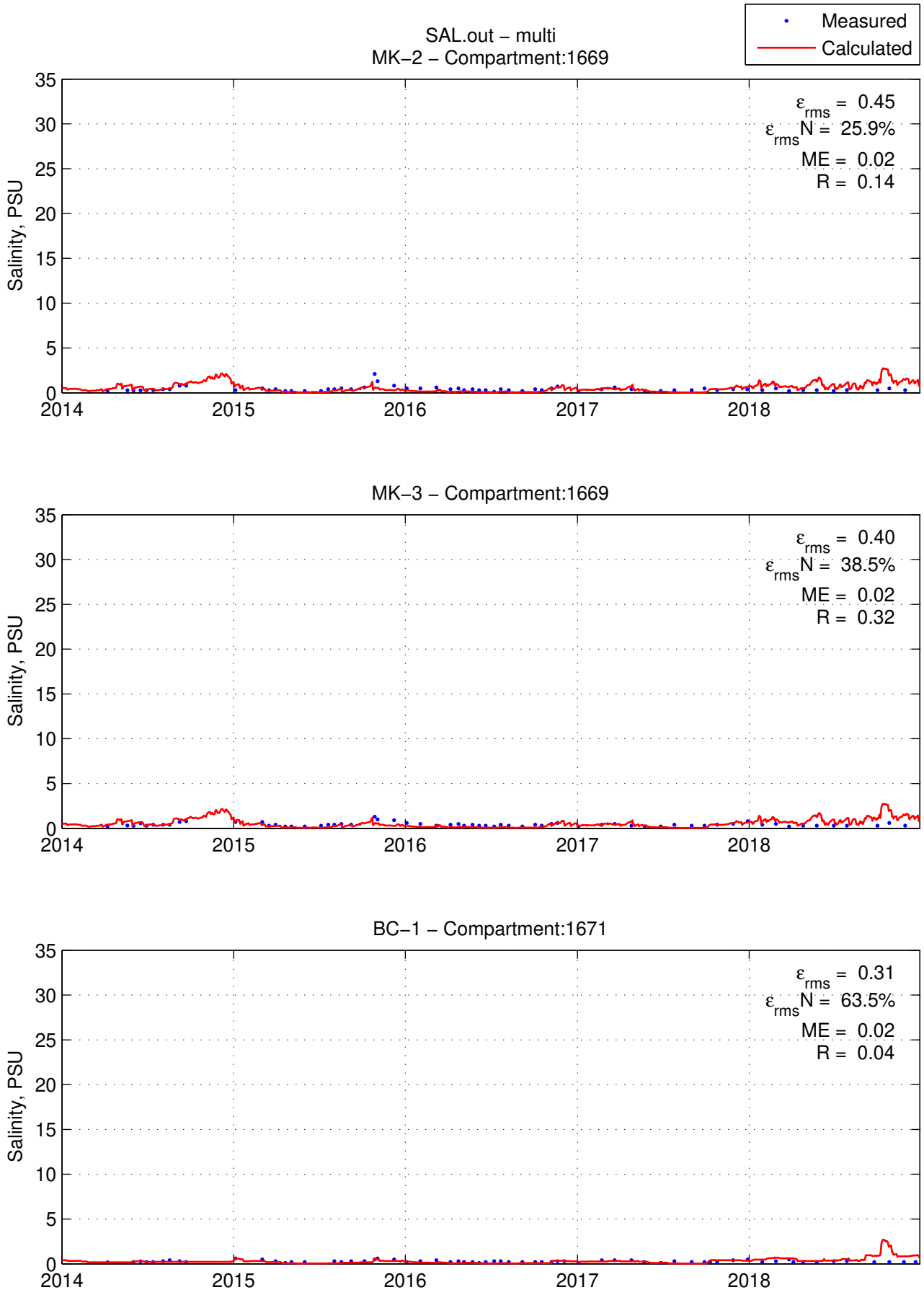

Measured
Calculated
SAL.out – multi
BA03C–61 – Compartment:0226
ε_{rms} = 3.20
ε_{rms}N = 31.8%
ME = 1.95
R = 0.51
Salinity, PSU
0
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15
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25
30
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2014
2015
2016
2017
2018
CRMS3601–H01 – Compartment:0230
ε_{rms} = 3.25
ε_{rms}N = 20.0%
ME = 0.39
R = 0.60
Salinity, PSU
CRMS3601–H01 – Compartment:0227
ε_{rms} = 3.11
ε_{rms}N = 19.1%
ME = –0.53
R = 0.59
Salinity, PSU

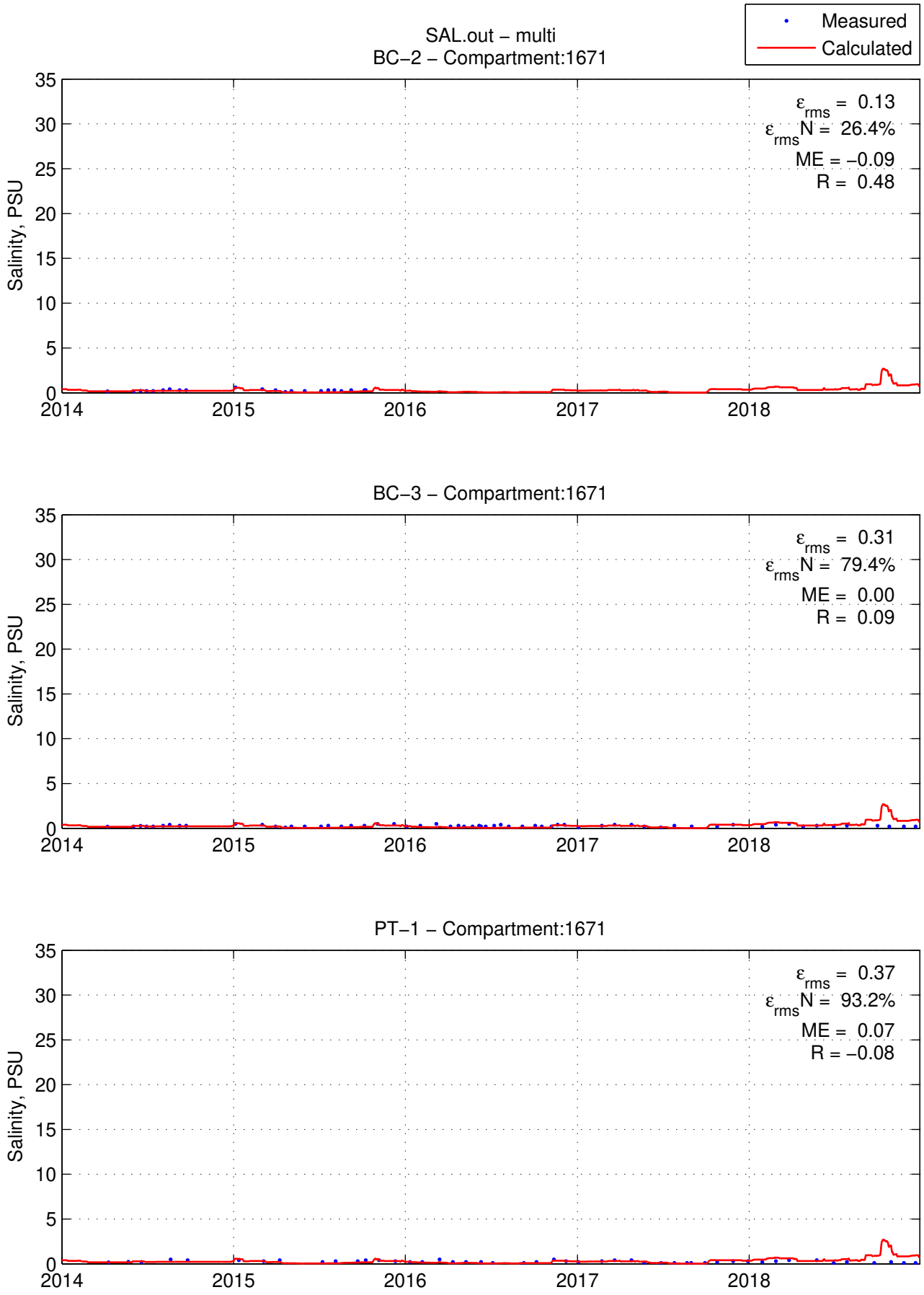

SAL.out – multi
CRMS0276–H01 – Compartment:0227
Measured
Calculated
ε_{rms} = 3.14
ε_{rms}N = 22.4%
ME = 0.46
R = 0.56
Salinity, PSU
CRMS4103–H01 – Compartment:1690
ε_{rms} = 1.70
ε_{rms}N = 30.1%
ME = 0.47
R = 0.43
Salinity, PSU
CRMS0287–H01 – Compartment:1680
ε_{rms} = 1.71
ε_{rms}N = 51.8%
ME = 0.30
R = –0.23
Salinity, PSU
0
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2014
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2016
2017
2018

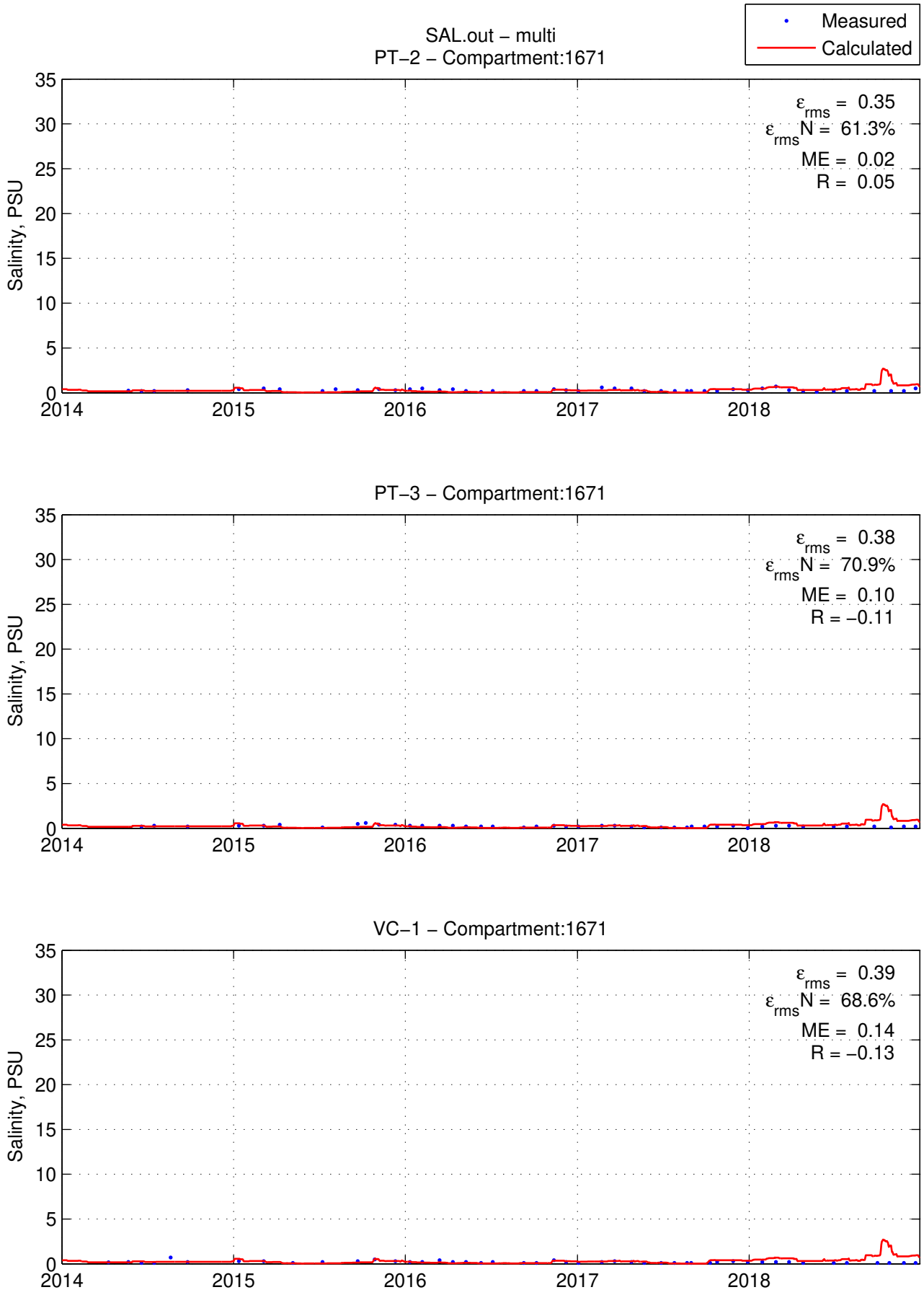

Measured
Calculated
SAL.out – multi
BA01–10 – Compartment:1661
ε_{rms} = 2.05
ε_{rms}N = 22.4%
ME = 1.17
R = 0.52
Salinity, PSU
BA01–10 – Compartment:1662
ε_{rms} = 1.43
ε_{rms}N = 15.6%
ME = 0.40
R = 0.52
Salinity, PSU
CRMS4245–H01 – Compartment:0205
ε_{rms} = 1.57
ε_{rms}N = 17.3%
ME = 0.64
R = 0.38
Salinity, PSU
0
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2014
2015
2016
2017
2018

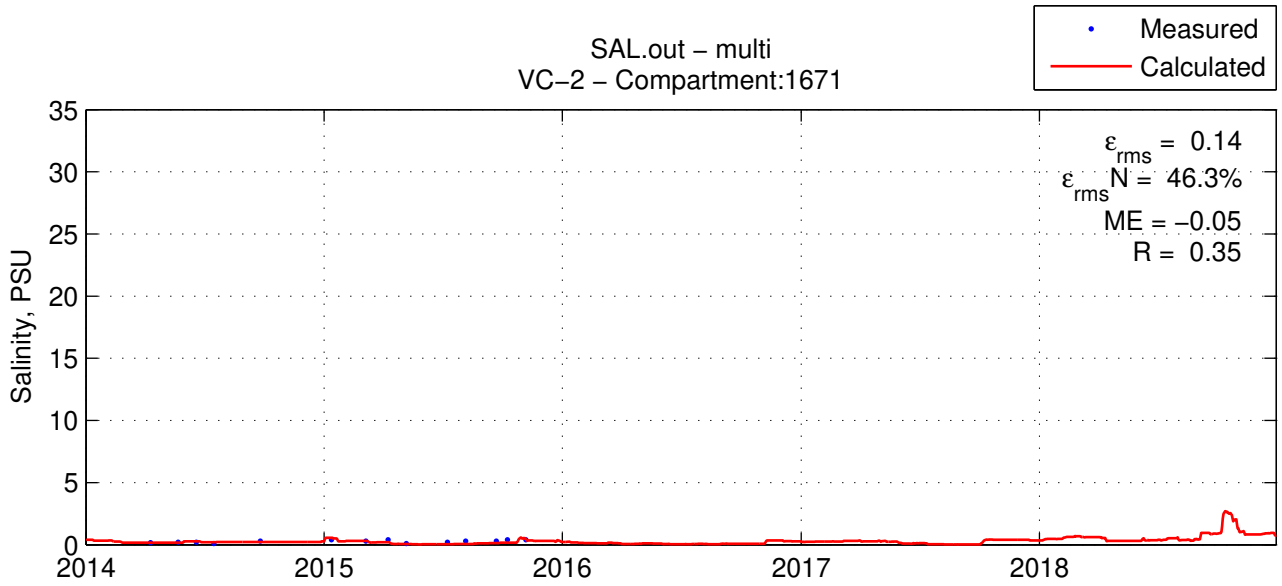

Measured
Calculated
SAL.out – multi
CRMS3985–H01 – Compartment:0205
ε_{rms} = 1.61
ε_{rms}N = 30.3%
ME = 0.81
R = 0.30
Salinity, PSU
JELA$_L$TAR – Compartment:1666
ε_{rms} = 0.66
ε_{rms}N = 17.2%
ME = –0.12
R = 0.38
Salinity, PSU
CRMS0188–H01 – Compartment:1668
ε_{rms} = 1.01
ε_{rms}N = 60.0%
ME = –0.92
R = 0.02
Salinity, PSU
0
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2014
2015
2016
2017
2018

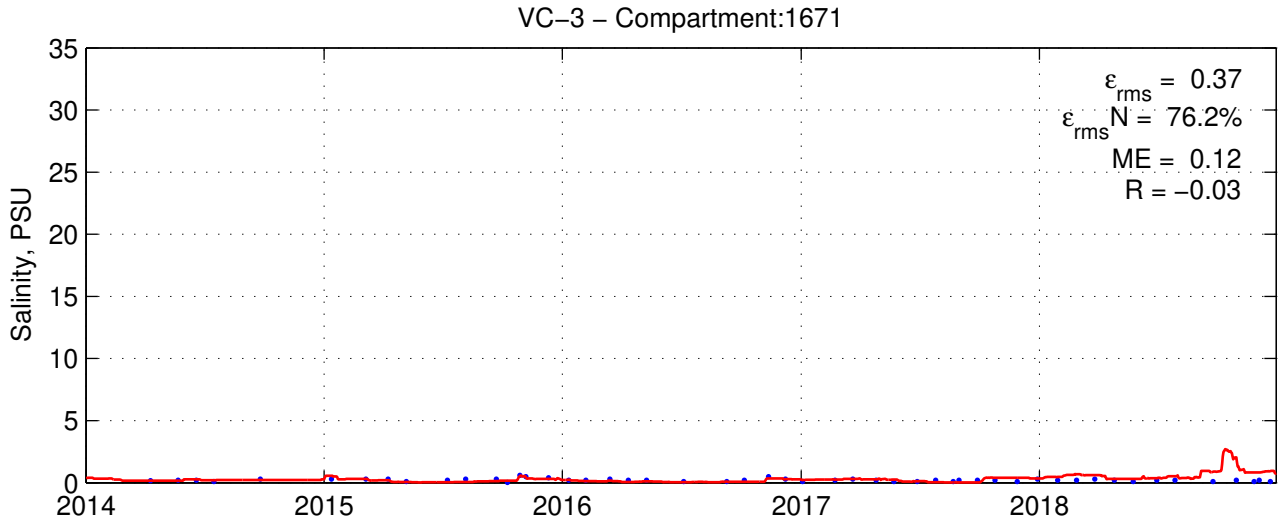

SAL.out – multi
CRMS0188–H01 – Compartment:1669
Measured
Calculated
ε_{rms} = 0.89
ε_{rms}N = 52.6%
ME = –0.73
R = 0.07
Salinity, PSU
0
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2014
2015
2016
2017
2018
LK–4 – Compartment:1669
ε_{rms} = 0.64
ε_{rms}N = 21.4%
ME = –0.04
R = –0.06
Salinity, PSU
MK–1 – Compartment:1669
ε_{rms} = 0.47
ε_{rms}N = 27.9%
ME = 0.04
R = 0.13
Salinity, PSU

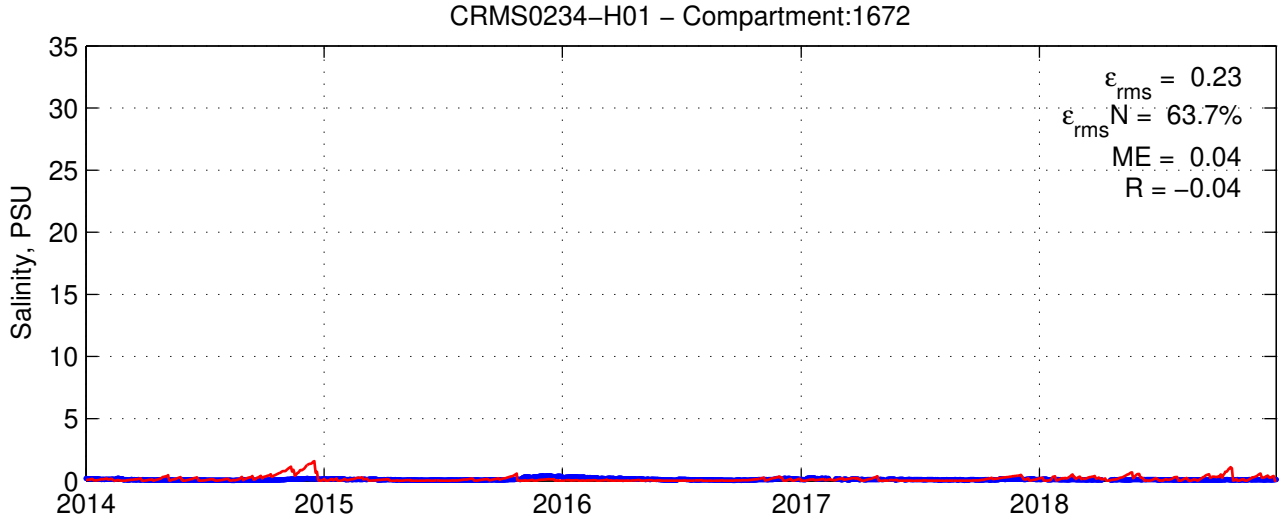

SAL.out – multi
MK–2 – Compartment:1669
Measured
Calculated
ε_{rms} = 0.45
ε_{rms}N = 25.9%
ME = 0.02
R = 0.14
Salinity, PSU
0
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10
15
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25
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35
2014
2015
2016
2017
2018
MK–3 – Compartment:1669
ε_{rms} = 0.40
ε_{rms}N = 38.5%
ME = 0.02
R = 0.32
Salinity, PSU
BC–1 – Compartment:1671
ε_{rms} = 0.31
ε_{rms}N = 63.5%
ME = 0.02
R = 0.04
Salinity, PSU

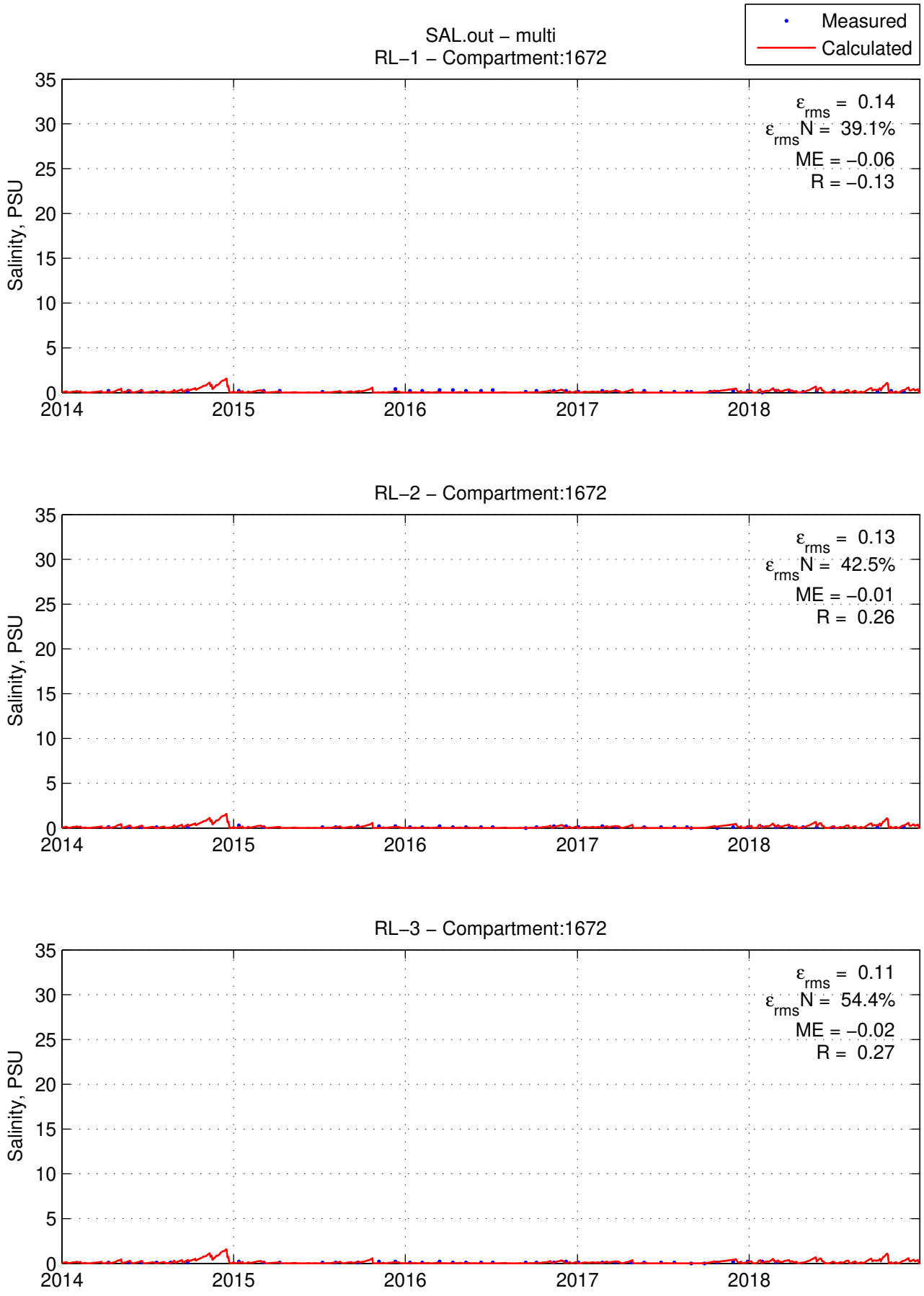

SAL.out – multi
BC–2 – Compartment:1671
Measured
Calculated
ε_{rms} = 0.13
ε_{rms}N = 26.4%
ME = –0.09
R = 0.48
Salinity, PSU
BC–3 – Compartment:1671
ε_{rms} = 0.31
ε_{rms}N = 79.4%
ME = 0.00
R = 0.09
Salinity, PSU
PT–1 – Compartment:1671
ε_{rms} = 0.37
ε_{rms}N = 93.2%
ME = 0.07
R = –0.08
Salinity, PSU
0
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2014
2015
2016
2017
2018

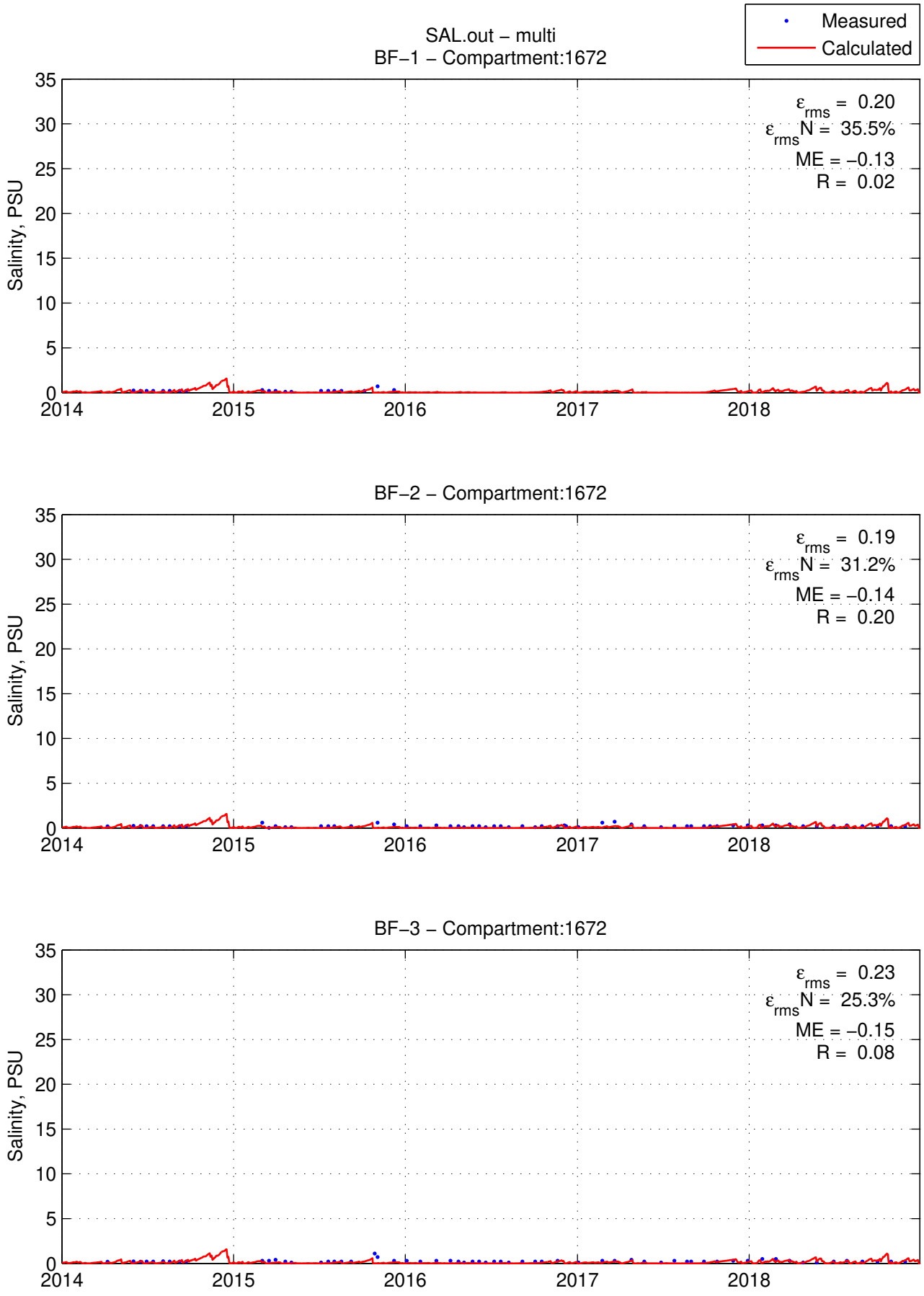

SAL.out – multi
PT–2 – Compartment:1671
Measured
Calculated
ε_{rms} = 0.35
ε_{rms}N = 61.3%
ME = 0.02
R = 0.05
Salinity, PSU
PT–3 – Compartment:1671
ε_{rms} = 0.38
ε_{rms}N = 70.9%
ME = 0.10
R = –0.11
Salinity, PSU
VC–1 – Compartment:1671
ε_{rms} = 0.39
ε_{rms}N = 68.6%
ME = 0.14
R = –0.13
Salinity, PSU
0
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2014
2015
2016
2017
2018

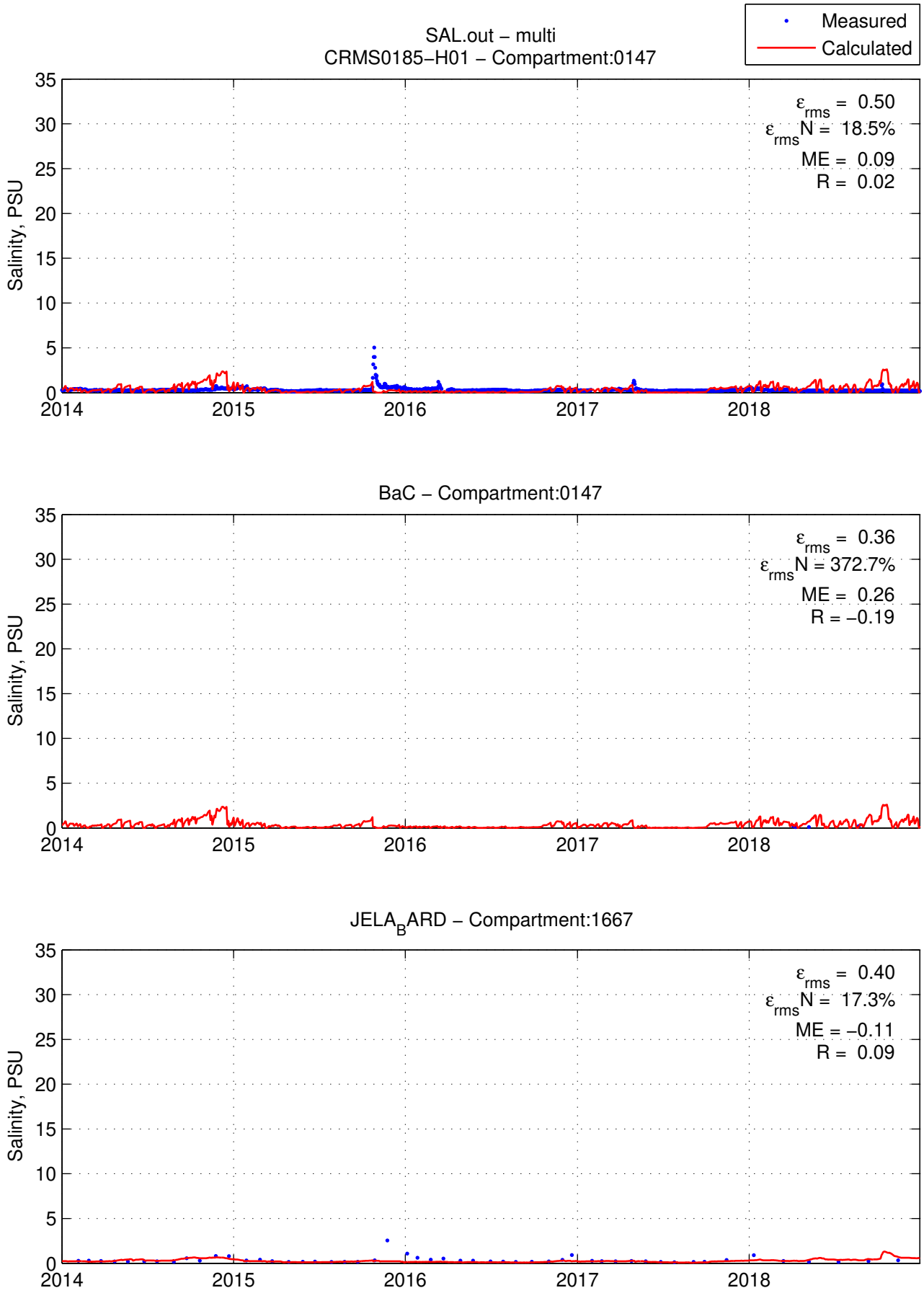

SAL.out – multi
VC–2 – Compartment:1671
Measured
Calculated
ε_{rms} = 0.14
ε_{rms}N = 46.3%
ME = –0.05
R = 0.35
Salinity, PSU
0
5
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2014
2015
2016
2017
2018

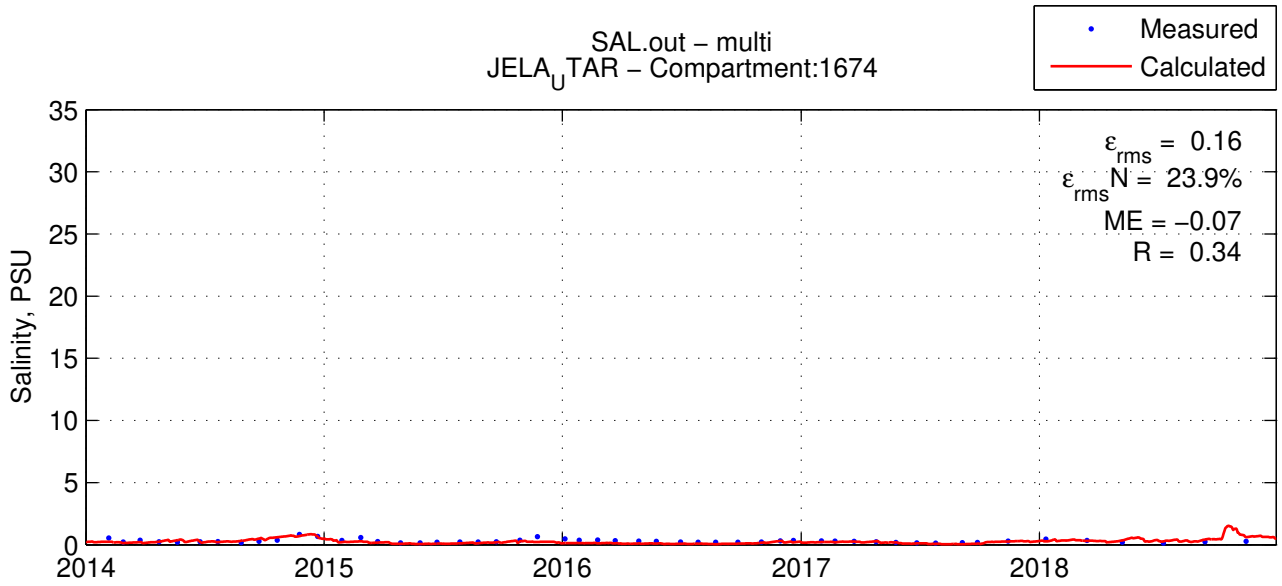

VC–3 – Compartment:1671
ε_{rms} = 0.37
ε_{rms}N = 76.2%
ME = 0.12
R = –0.03
Salinity, PSU
0
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2014
2015
2016
2017
2018

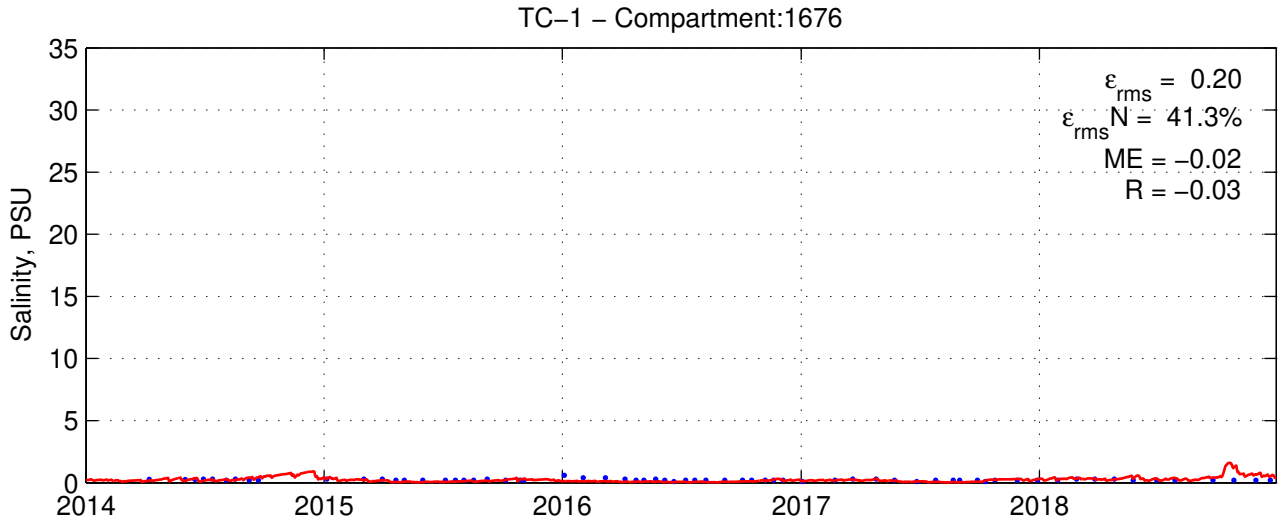

CRMS0234–H01 – Compartment:1672
ε_{rms} = 0.23
ε_{rms}N = 63.7%
ME = 0.04
R = –0.04
Salinity, PSU
0
5
10
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2014
2015
2016
2017
2018

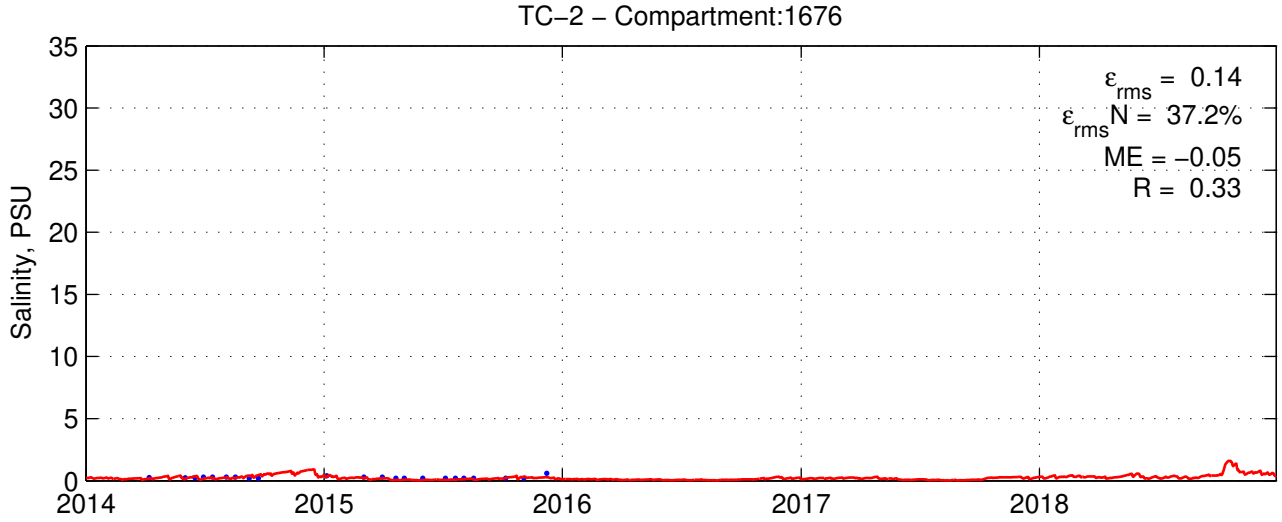

SAL.out – multi
RL–1 – Compartment:1672
Measured
Calculated
ε_{rms} = 0.14
ε_{rms}N = 39.1%
ME = –0.06
R = –0.13
Salinity, PSU
RL–2 – Compartment:1672
ε_{rms} = 0.13
ε_{rms}N = 42.5%
ME = –0.01
R = 0.26
Salinity, PSU
RL–3 – Compartment:1672
ε_{rms} = 0.11
ε_{rms}N = 54.4%
ME = –0.02
R = 0.27
Salinity, PSU
0
5
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2014
2015
2016
2017
2018

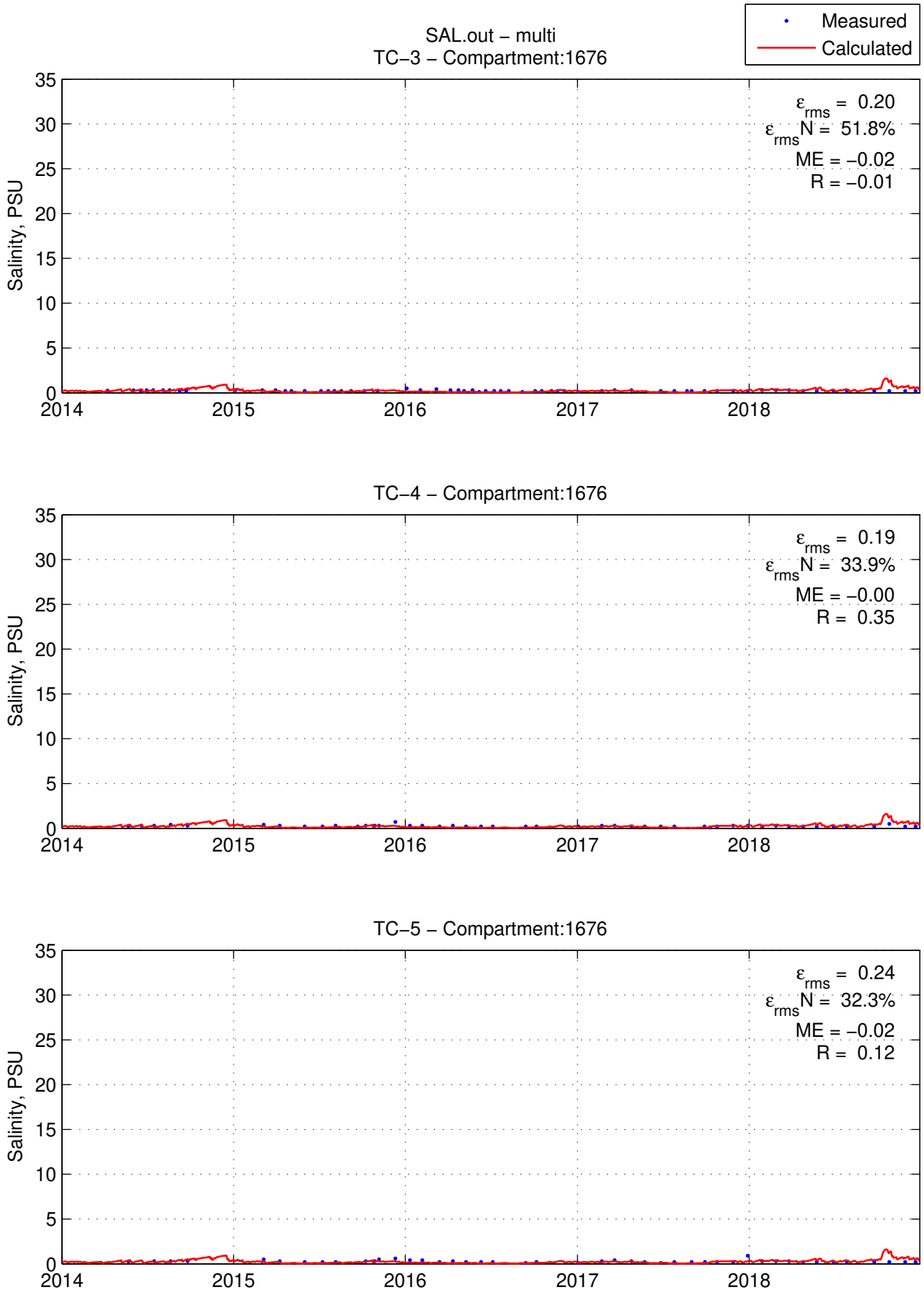

SAL.out – multi
BF–1 – Compartment:1672
Measured
Calculated
ε_{rms} = 0.20
ε_{rms}N = 35.5%
ME = –0.13
R = 0.02
Salinity, PSU
0
5
10
15
20
25
30
35
2014
2015
2016
2017
2018
BF–2 – Compartment:1672
ε_{rms} = 0.19
ε_{rms}N = 31.2%
ME = –0.14
R = 0.20
Salinity, PSU
BF–3 – Compartment:1672
ε_{rms} = 0.23
ε_{rms}N = 25.3%
ME = –0.15
R = 0.08
Salinity, PSU

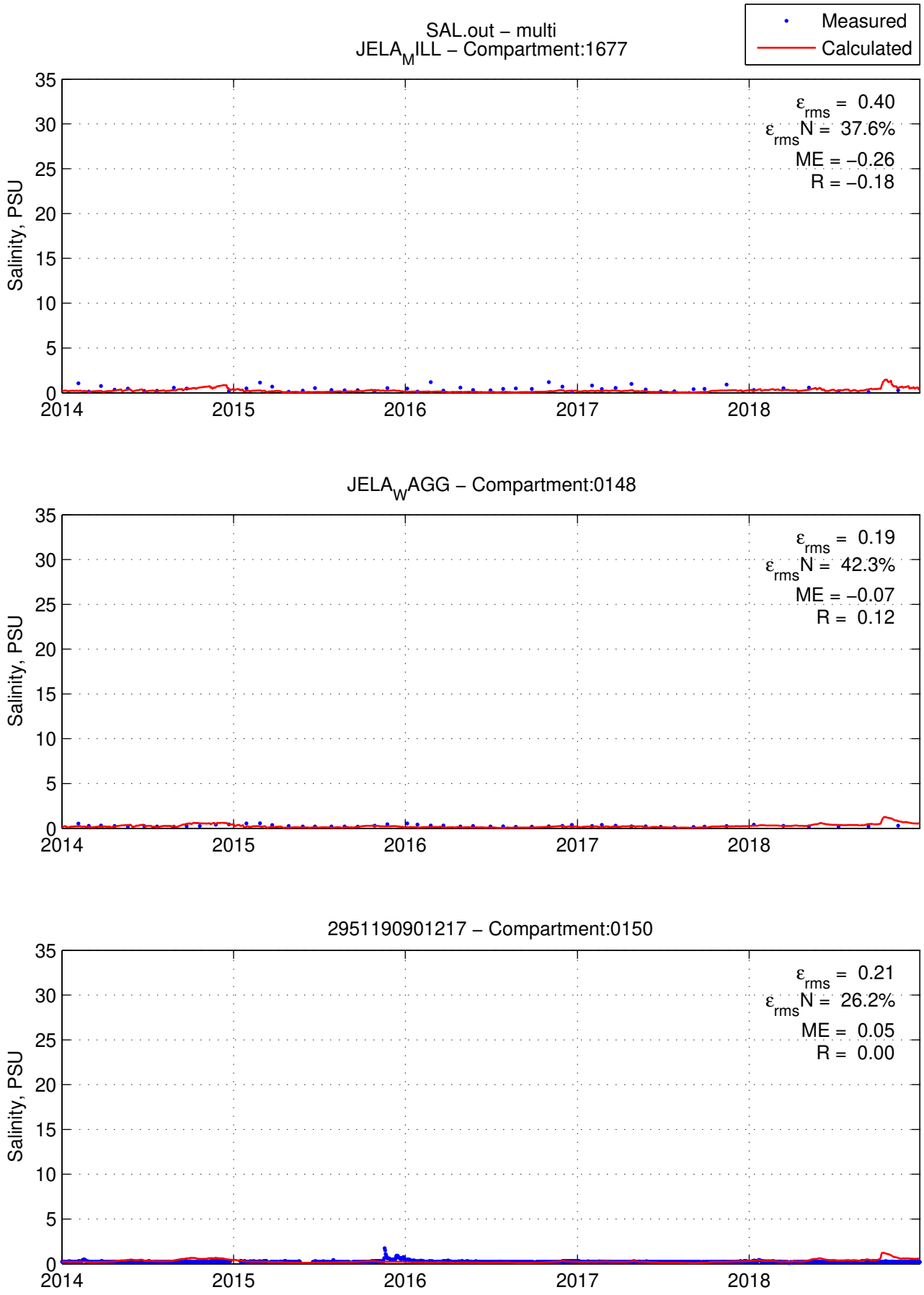

SAL.out – multi
CRMS0185–H01 – Compartment:0147
Measured
Calculated
Salinity, PSU
ε_{rms} = 0.50
ε_{rms}N = 18.5%
ME = 0.09
R = 0.02
BaC – Compartment:0147
ε_{rms} = 0.36
ε_{rms}N = 372.7%
ME = 0.26
R = –0.19
JELA$_B$ARD – Compartment:1667
ε_{rms} = 0.40
ε_{rms}N = 17.3%
ME = –0.11
R = 0.09
0
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2014
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2017
2018

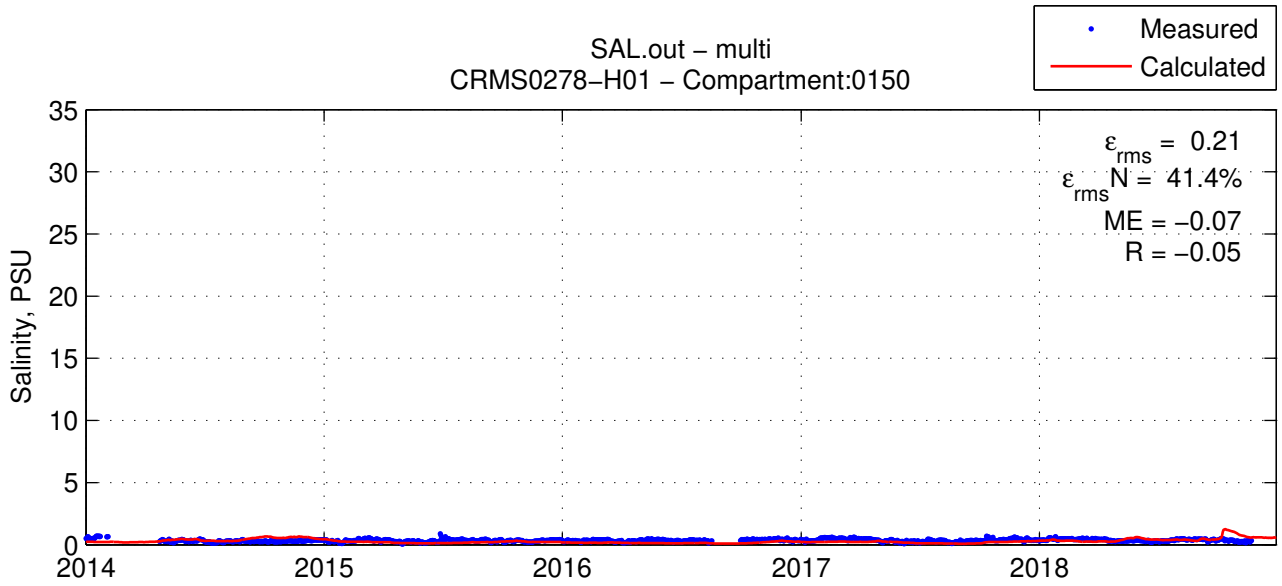

SAL.out – multi
JELA_UTAR – Compartment:1674
Measured
Calculated
ε_rms = 0.16
ε_rmsN = 23.9%
ME = –0.07
R = 0.34
Salinity, PSU
0
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2014
2015
2016
2017
2018

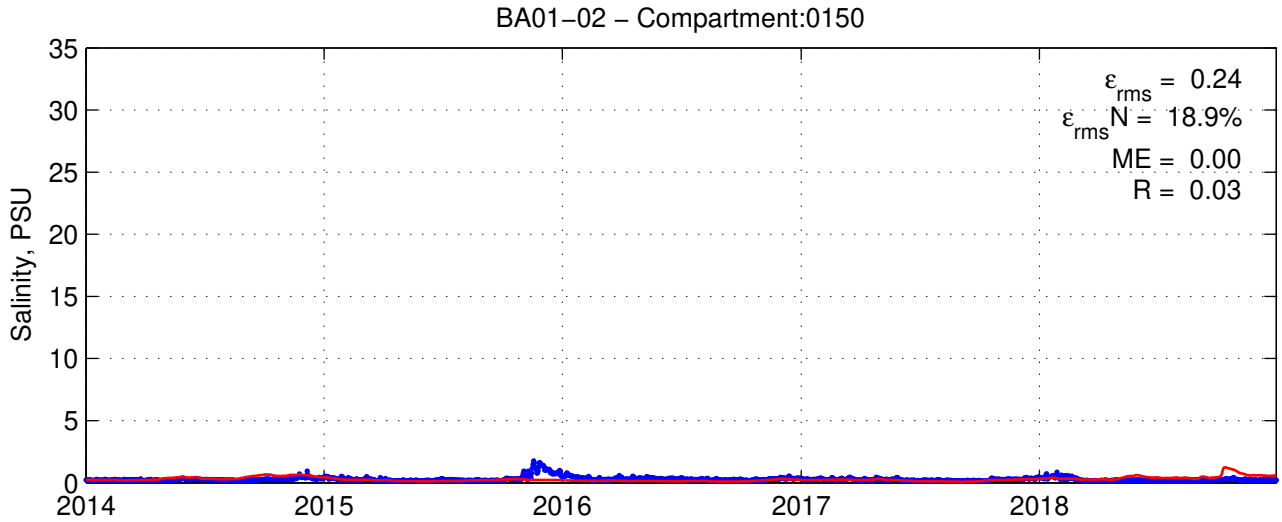

TC–1 – Compartment:1676
ε_rms = 0.20
ε_rmsN = 41.3%
ME = –0.02
R = –0.03
Salinity, PSU
0
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2014
2015
2016
2017
2018

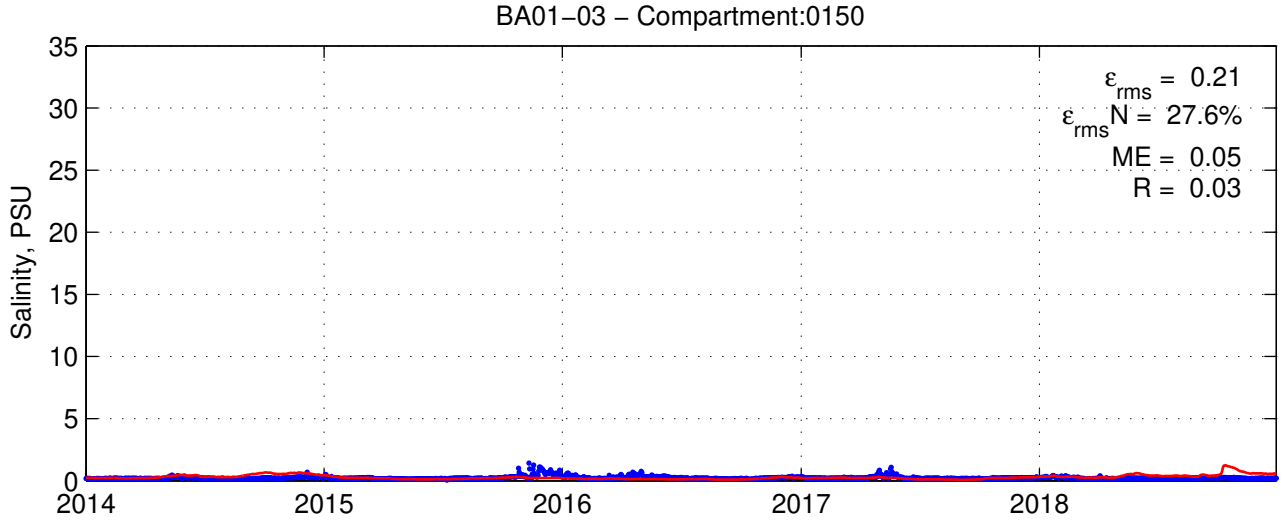

TC–2 – Compartment:1676
ε_rms = 0.14
ε_rmsN = 37.2%
ME = –0.05
R = 0.33
Salinity, PSU
0
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2014
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2016
2017
2018

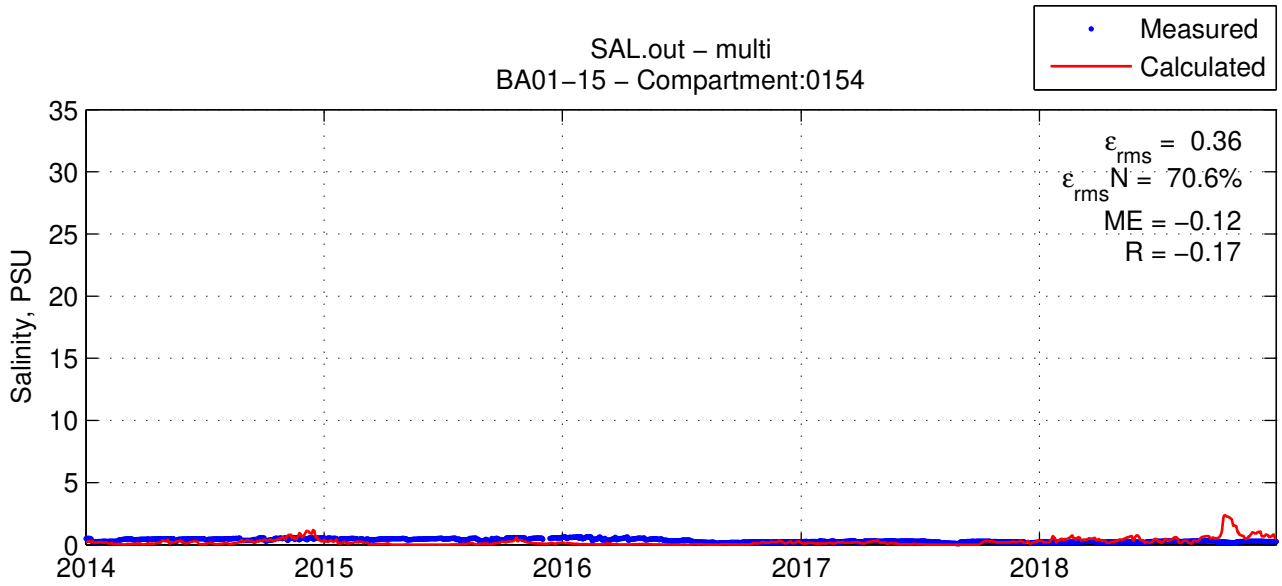

SAL.out – multi
TC–3 – Compartment:1676
Measured
Calculated
ε_{rms} = 0.20
ε_{rms}N = 51.8%
ME = –0.02
R = –0.01
Salinity, PSU
TC–4 – Compartment:1676
ε_{rms} = 0.19
ε_{rms}N = 33.9%
ME = –0.00
R = 0.35
Salinity, PSU
TC–5 – Compartment:1676
ε_{rms} = 0.24
ε_{rms}N = 32.3%
ME = –0.02
R = 0.12
Salinity, PSU
0
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2014
2015
2016
2017
2018

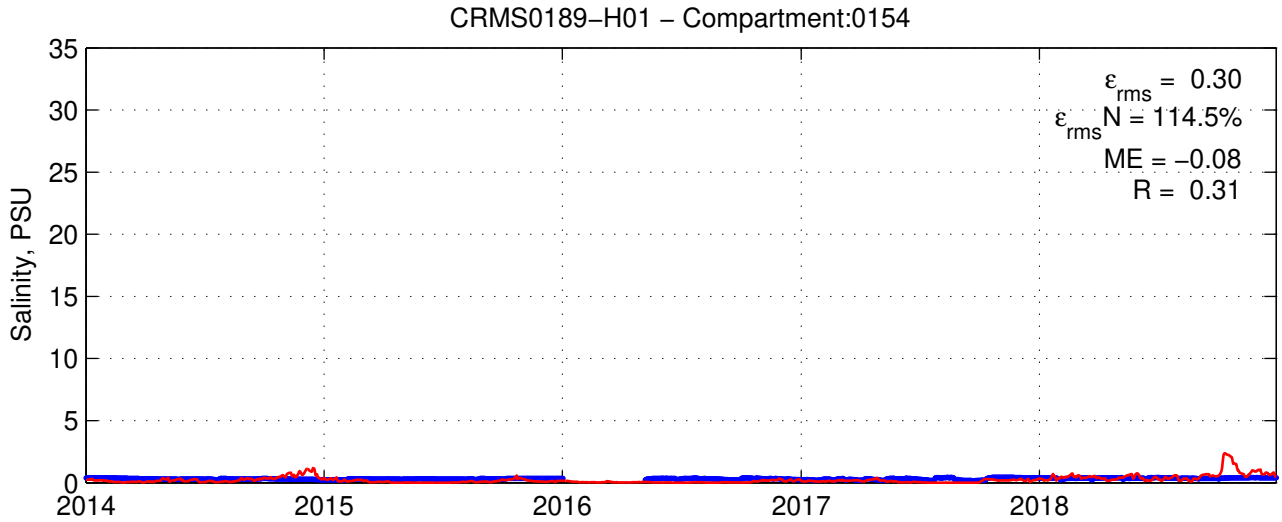

SAL.out – multi
JELA_MILL – Compartment:1677
Measured
Calculated
ε_rms = 0.40
ε_rmsN = 37.6%
ME = –0.26
R = –0.18
Salinity, PSU
JELA_WAGG – Compartment:0148
ε_rms = 0.19
ε_rmsN = 42.3%
ME = –0.07
R = 0.12
Salinity, PSU
2951190901217 – Compartment:0150
ε_rms = 0.21
ε_rmsN = 26.2%
ME = 0.05
R = 0.00
Salinity, PSU
0
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2014
2015
2016
2017
2018

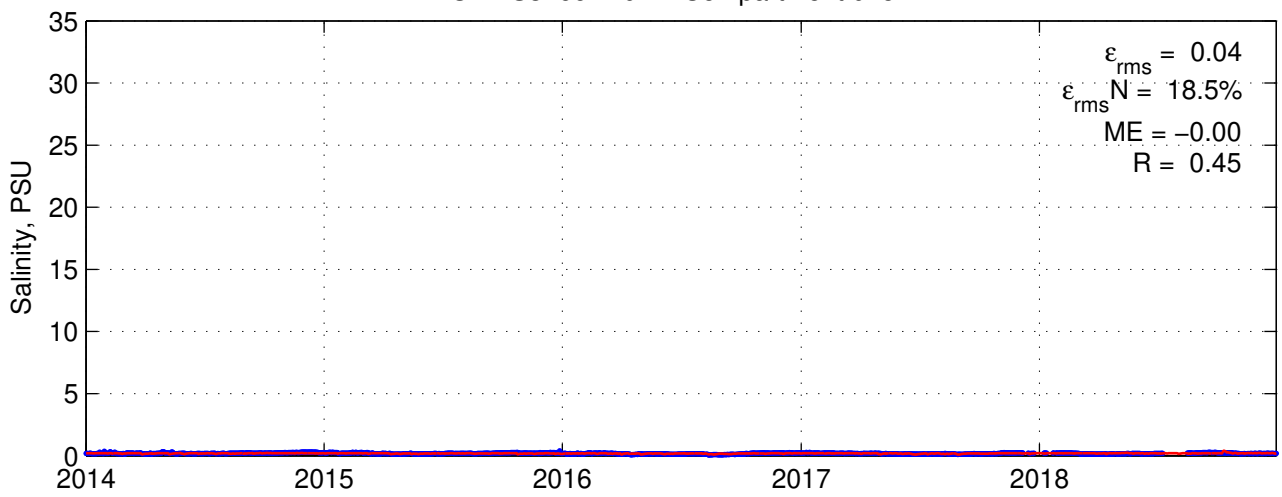

SAL.out – multi
CRMS0278–H01 – Compartment:0150
Measured
Calculated
Salinity, PSU
ε_{rms} = 0.21
ε_{rms}N = 41.4%
ME = –0.07
R = –0.05
0
5
10
15
20
25
30
35
2014
2015
2016
2017
2018

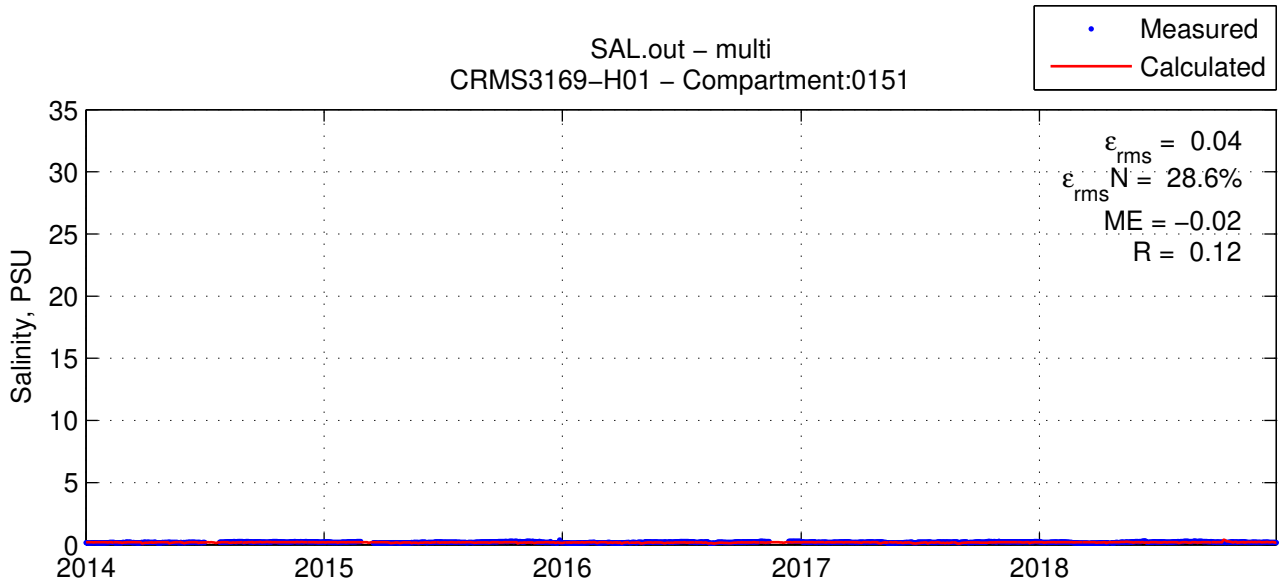

BA01–02 – Compartment:0150
Salinity, PSU
ε_{rms} = 0.24
ε_{rms}N = 18.9%
ME = 0.00
R = 0.03
0
5
10
15
20
25
30
35
2014
2015
2016
2017
2018

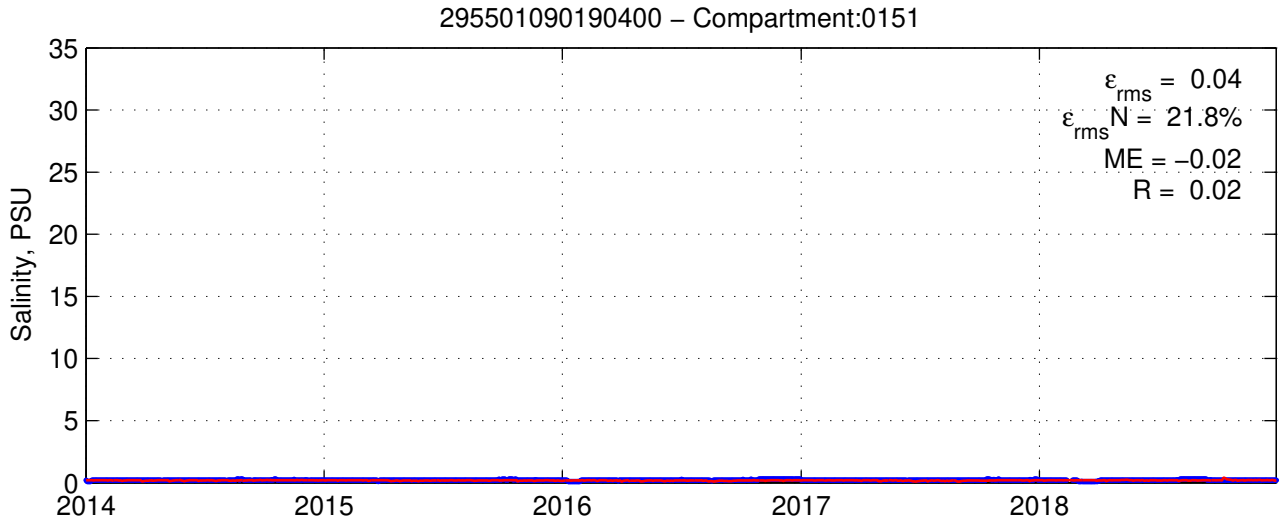

BA01–03 – Compartment:0150
Salinity, PSU
ε_{rms} = 0.21
ε_{rms}N = 27.6%
ME = 0.05
R = 0.03
0
5
10
15
20
25
30
35
2014
2015
2016
2017
2018

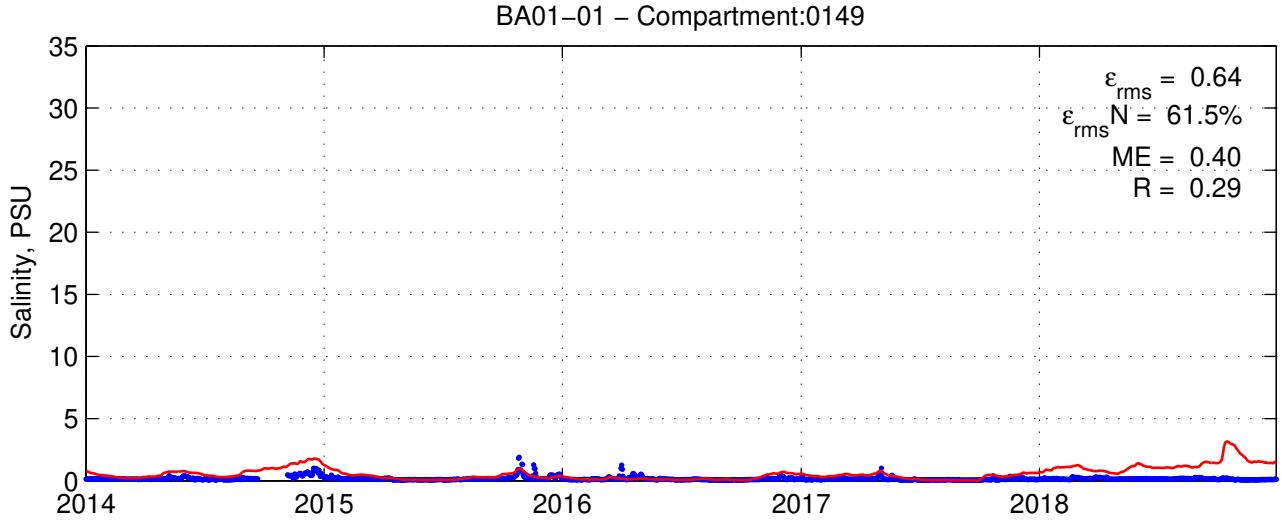

SAL.out – multi
BA01–15 – Compartment:0154
Measured
Calculated
Salinity, PSU
ε_{rms} = 0.36
ε_{rms}N = 70.6%
ME = –0.12
R = –0.17
0
5
10
15
20
25
30
35
2014
2015
2016
2017
2018

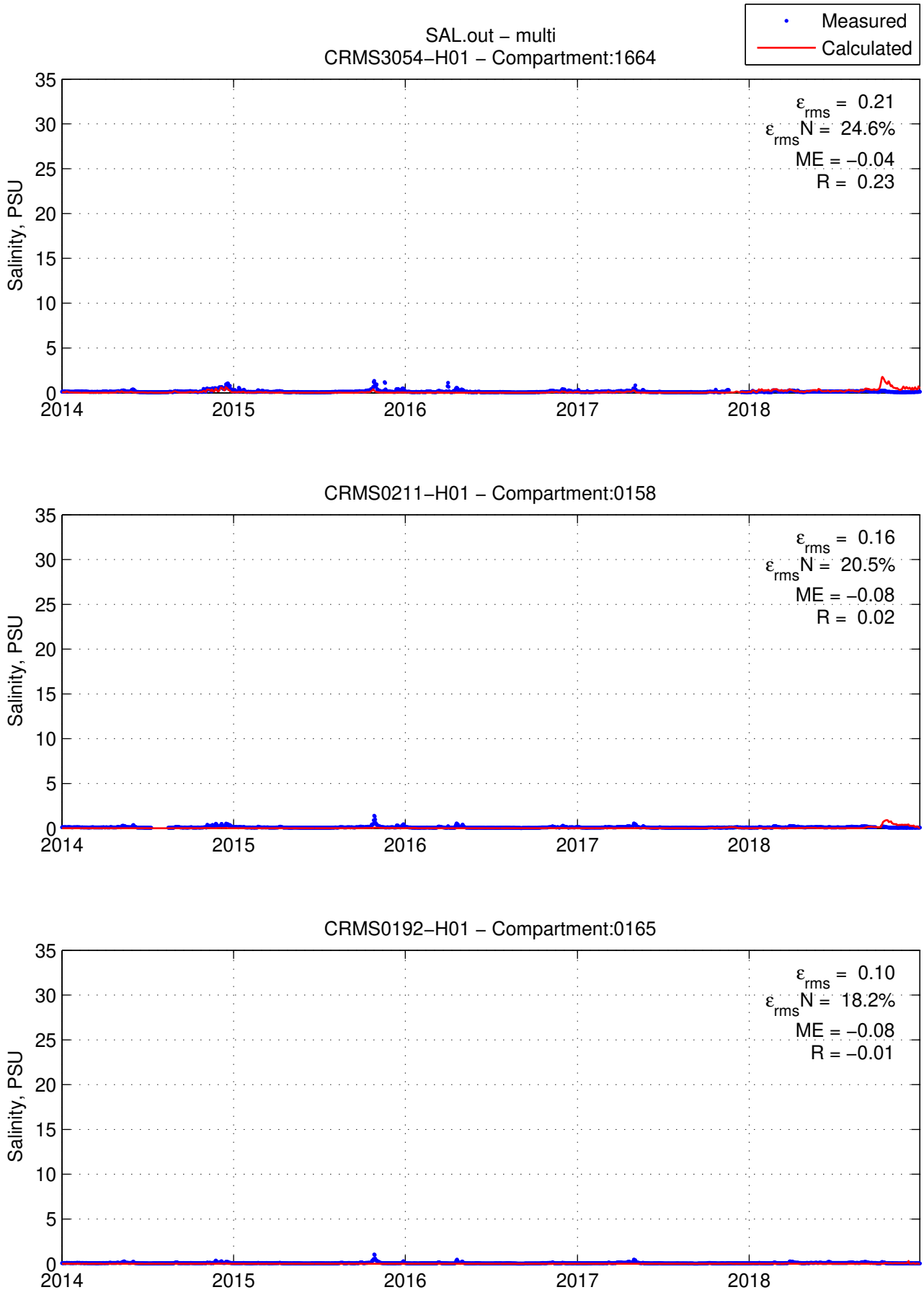

CRMS0189–H01 – Compartment:0154
Salinity, PSU
ε_{rms} = 0.30
ε_{rms}N = 114.5%
ME = –0.08
R = 0.31
0
5
10
15
20
25
30
35
2014
2015
2016
2017
2018

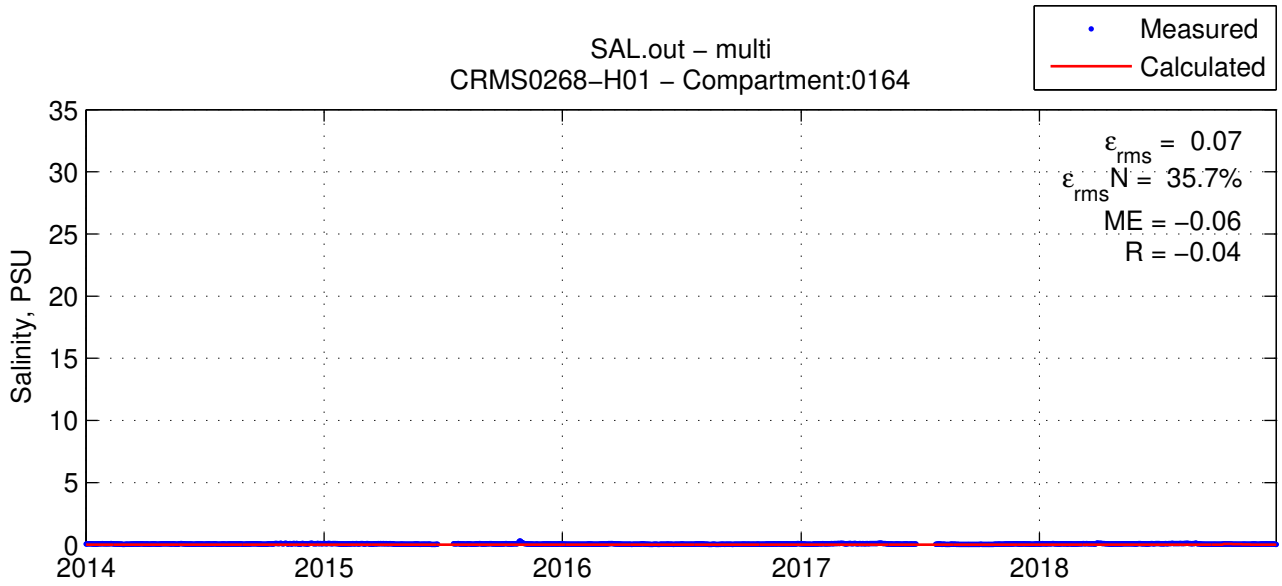

CRMS3166–H01 – Compartment:0151
Salinity, PSU
ε_{rms} = 0.04
ε_{rms}N = 18.5%
ME = –0.00
R = 0.45
0
5
10
15
20
25
30
35
2014
2015
2016
2017
2018

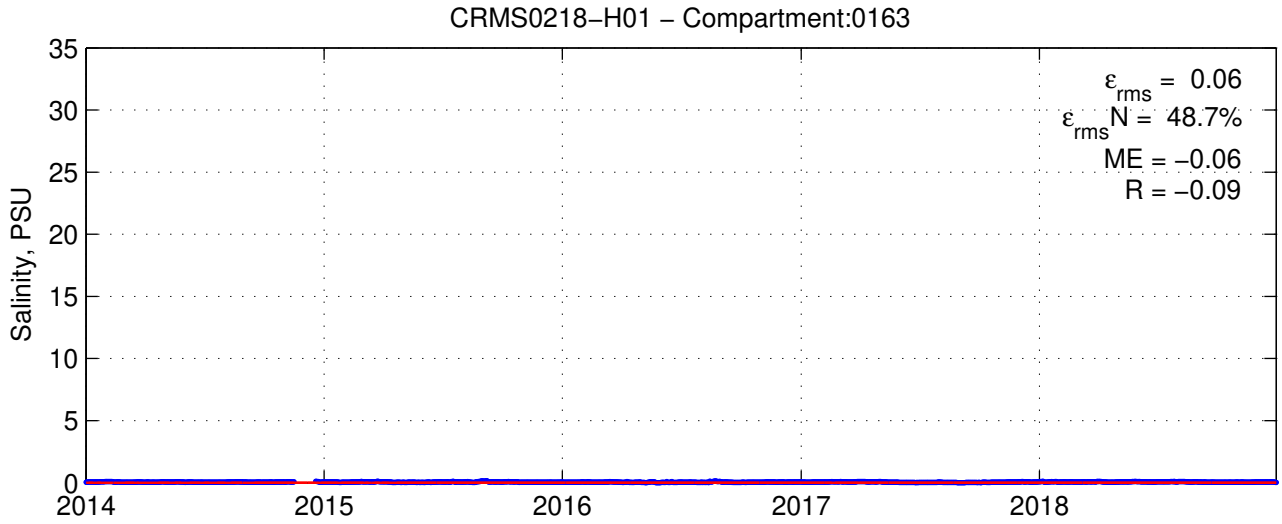

SAL.out – multi
CRMS3169–H01 – Compartment:0151
Measured
Calculated
Salinity, PSU
ε_{rms} = 0.04
ε_{rms}N = 28.6%
ME = –0.02
R = 0.12
0
5
10
15
20
25
30
35
2014
2015
2016
2017
2018

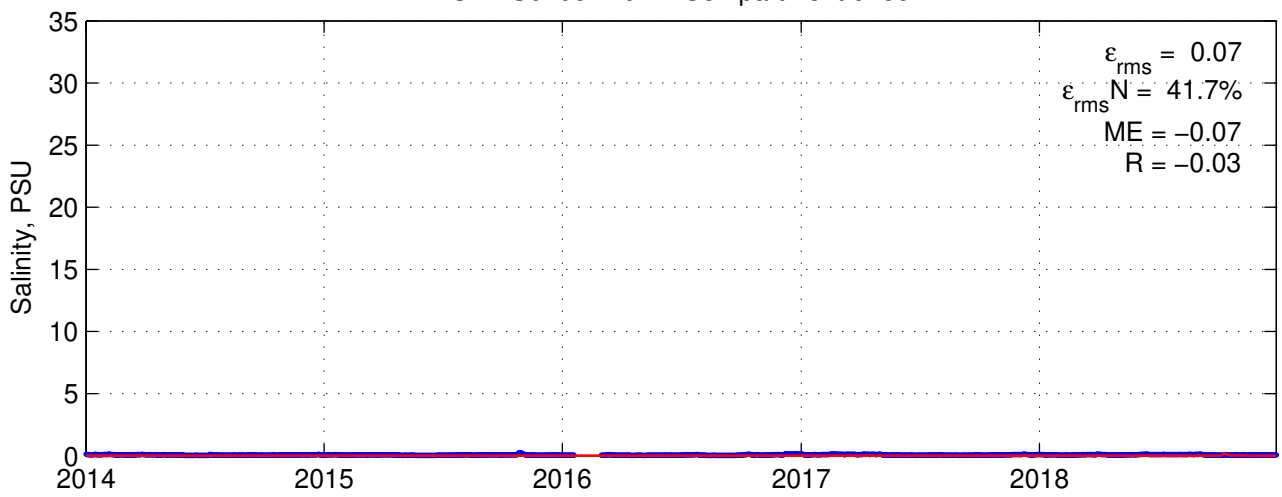

295501090190400 – Compartment:0151
Salinity, PSU
ε_{rms} = 0.04
ε_{rms}N = 21.8%
ME = –0.02
R = 0.02
0
5
10
15
20
25
30
35
2014
2015
2016
2017
2018

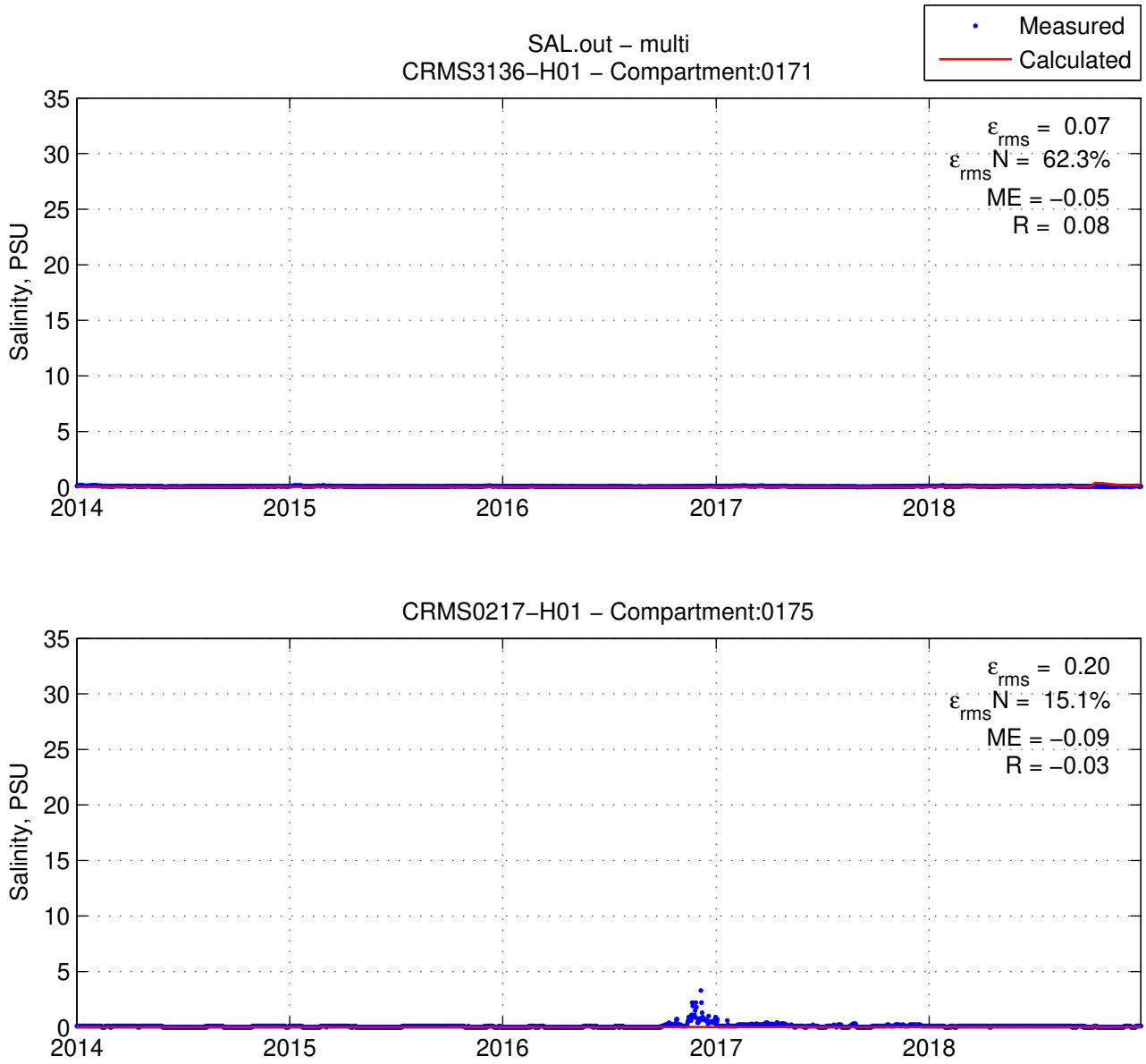

BA01–01 – Compartment:0149
Salinity, PSU
ε_{rms} = 0.64
ε_{rms}N = 61.5%
ME = 0.40
R = 0.29
0
5
10
15
20
25
30
35
2014
2015
2016
2017
2018


SAL.out – multi
CRMS3054–H01 – Compartment:1664
Measured
Calculated
εrms = 0.21
εrmsN = 24.6%
ME = –0.04
R = 0.23
Salinity, PSU
CRMS0211–H01 – Compartment:0158
εrms = 0.16
εrmsN = 20.5%
ME = –0.08
R = 0.02
Salinity, PSU
CRMS0192–H01 – Compartment:0165
εrms = 0.10
εrmsN = 18.2%
ME = –0.08
R = –0.01
Salinity, PSU
0
5
10
15
20
25
30
35
2014
2015
2016
2017
2018


SAL.out – multi
CRMS0268–H01 – Compartment:0164
Measured
Calculated
ε_{rms} = 0.07
ε_{rms}N = 35.7%
ME = –0.06
R = –0.04
Salinity, PSU
0
5
10
15
20
25
30
35
2014
2015
2016
2017
2018


CRMS0218–H01 – Compartment:0163
ε_{rms} = 0.06
ε_{rms}N = 48.7%
ME = –0.06
R = –0.09
Salinity, PSU
0
5
10
15
20
25
30
35
2014
2015
2016
2017
2018

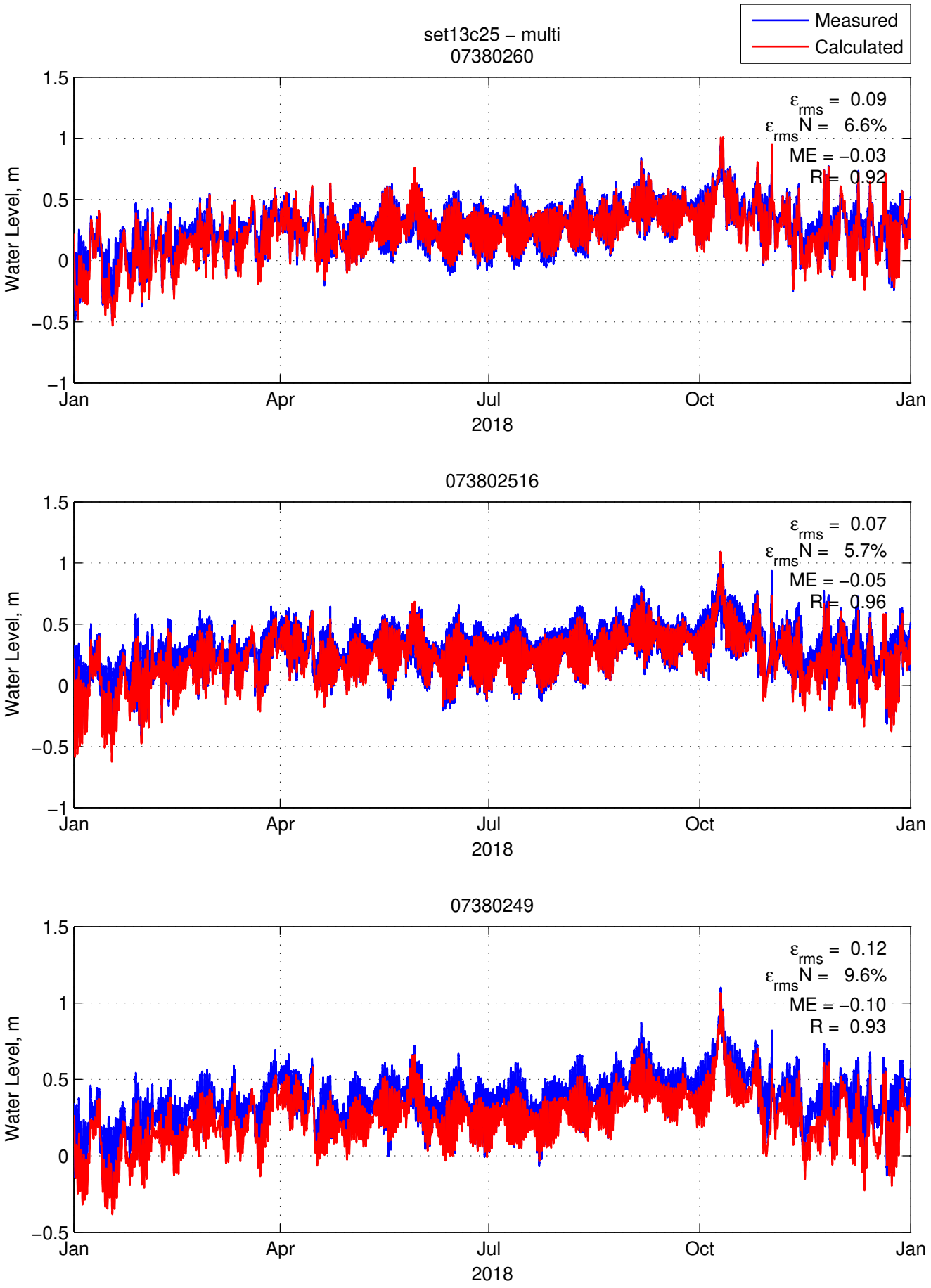

CRMS0206–H01 – Compartment:0166
ε_{rms} = 0.07
ε_{rms}N = 41.7%
ME = –0.07
R = –0.03
Salinity, PSU
0
5
10
15
20
25
30
35
2014
2015
2016
2017
2018

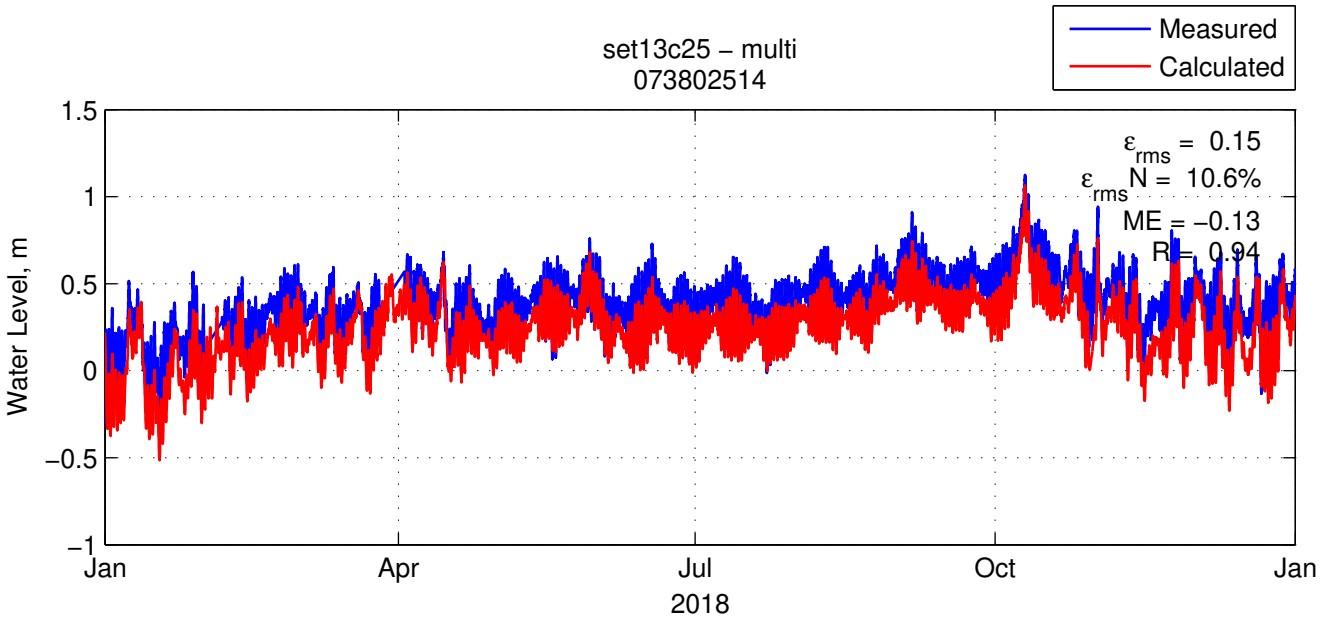

SAL.out – multi
CRMS3136–H01 – Compartment:0171
Measured
Calculated
ε_{rms} = 0.07
ε_{rms}N = 62.3%
ME = –0.05
R = 0.08
Salinity, PSU
35
30
25
20
15
10
5
0
2014
2015
2016
2017
2018
CRMS0217–H01 – Compartment:0175
ε_{rms} = 0.20
ε_{rms}N = 15.1%
ME = –0.09
R = –0.03
Salinity, PSU
35
30
25
20
15
10
5
0
2014
2015
2016
2017
2018

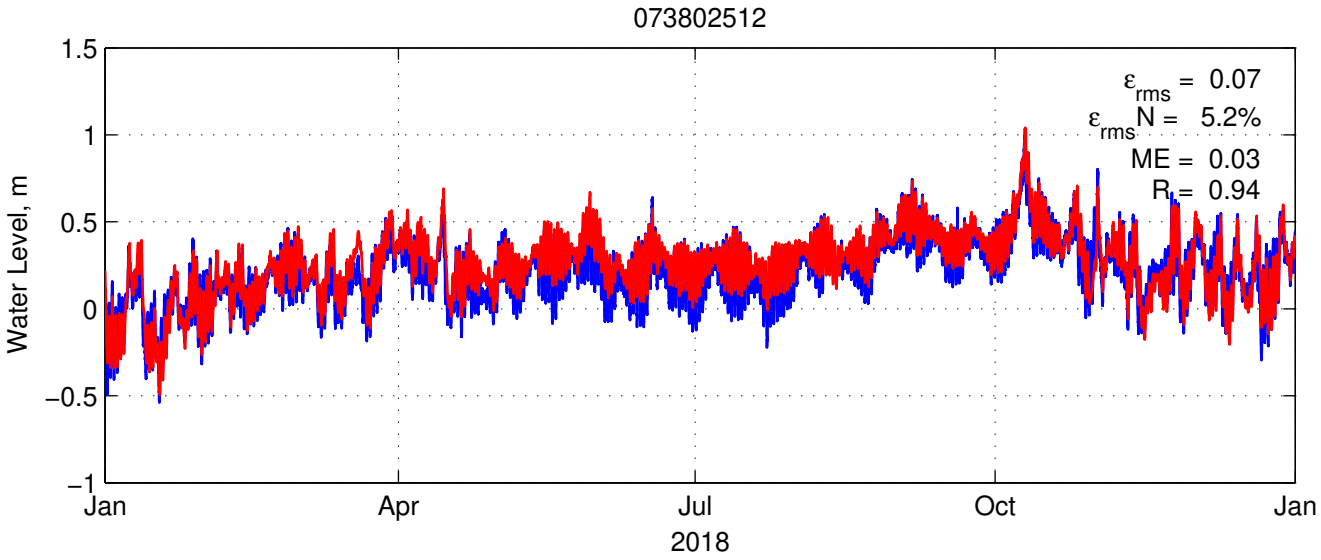
National Park Service
JELA Barataria Preserve Future Conditions Modeling

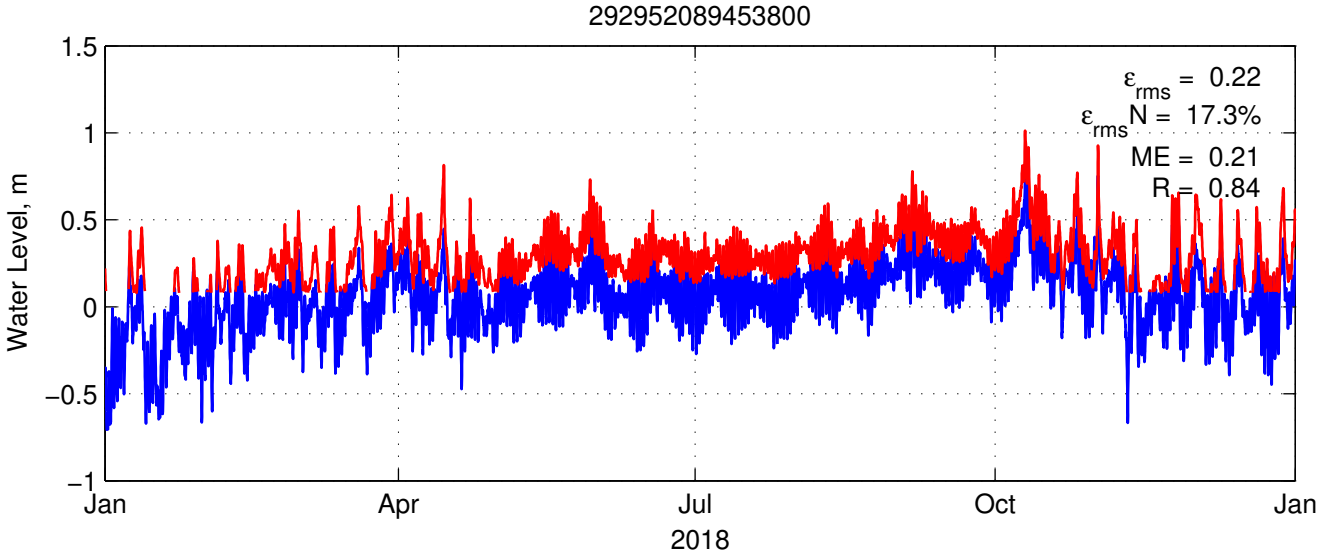
Appendix C: Complete Hydrodynamic Model Calibration Results

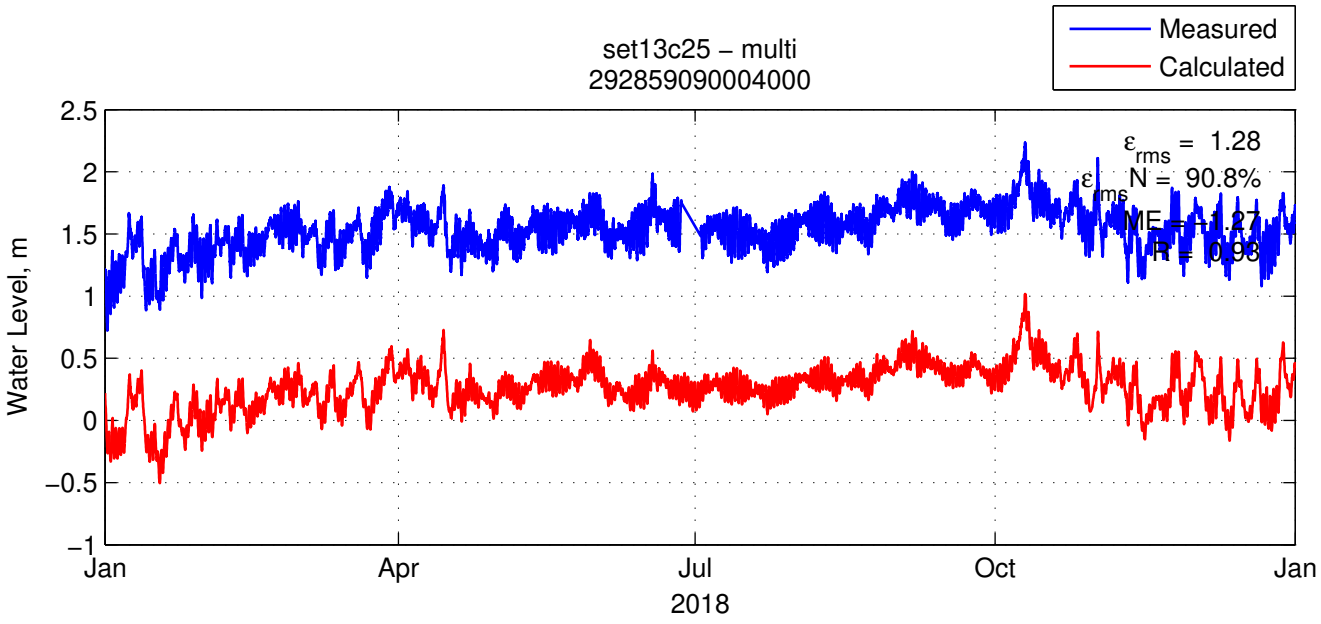


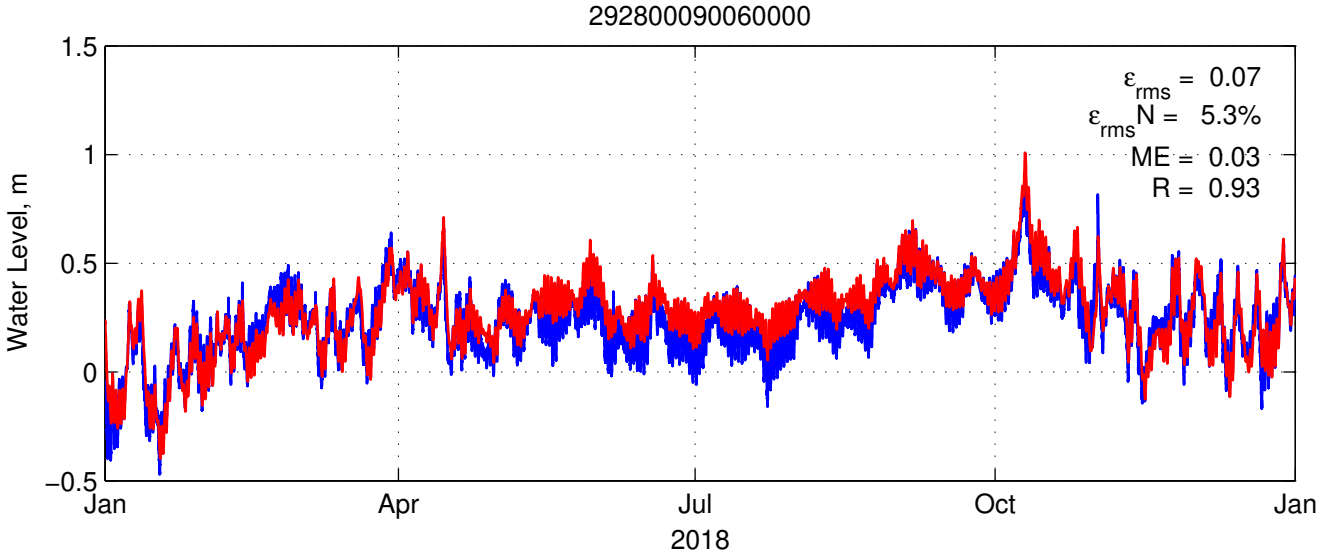

Measured
Calculated
set13c25 – multi
07380260
ε_{rms} = 0.09
ε_{rms}N = 6.6%
ME = –0.03
R = 0.92
Water Level, m
1.5
1
0.5
0
–0.5
–1
Jan
Apr
Jul
Oct
Jan
2018
073802516
ε_{rms} = 0.07
ε_{rms}N = 5.7%
ME = –0.05
R = 0.96
Water Level, m
1.5
1
0.5
0
–0.5
–1
Jan
Apr
Jul
Oct
Jan
2018
07380249
ε_{rms} = 0.12
ε_{rms}N = 9.6%
ME = –0.10
R = 0.93
Water Level, m
1.5
1
0.5
0
–0.5
Jan
Apr
Jul
Oct
Jan
2018

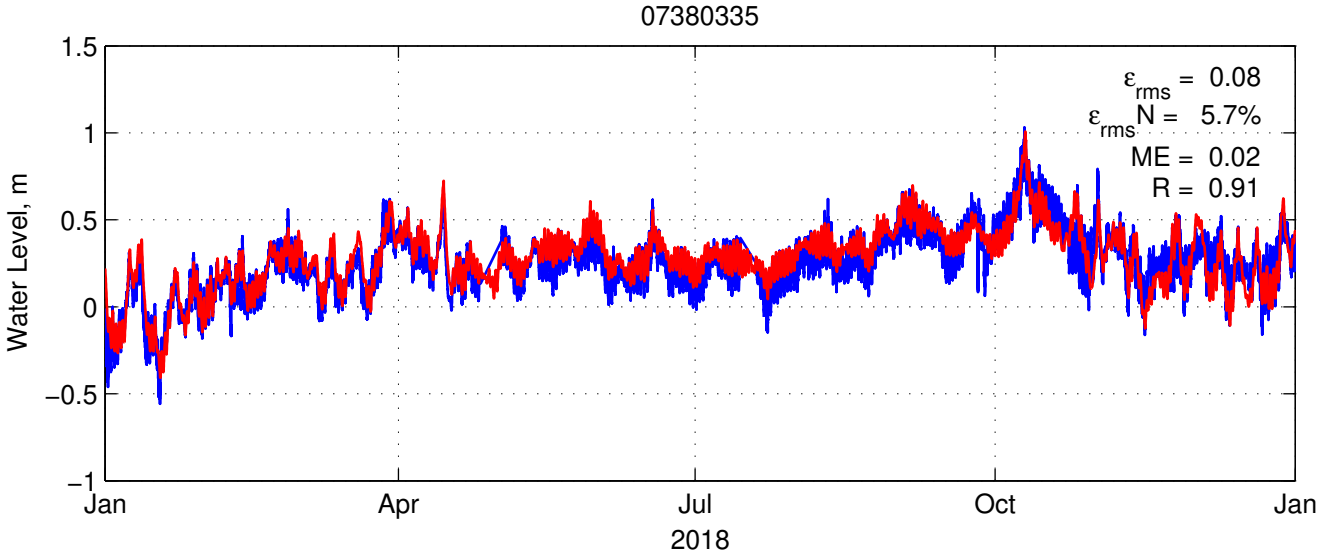

Measured
Calculated
set13c25 – multi
073802514
ε_{rms} = 0.15
ε_{rms}N = 10.6%
ME = –0.13
R = 0.94
Water Level, m
1.5
1
0.5
0
–0.5
–1
Jan
Apr
Jul
Oct
Jan
2018

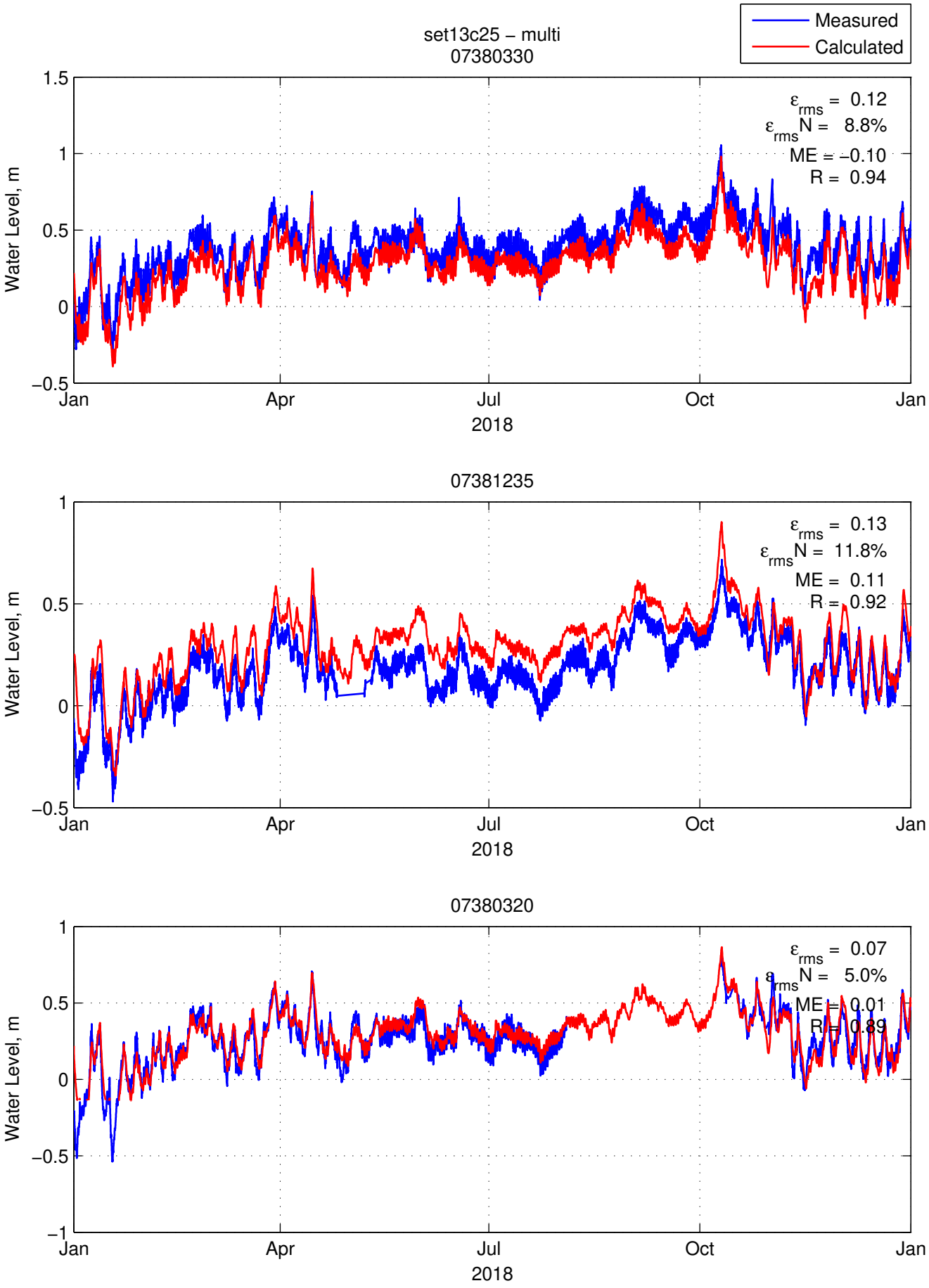

073802512
ε_{rms} = 0.07
ε_{rms}N = 5.2%
ME = 0.03
R = 0.94
Water Level, m
1.5
1
0.5
0
–0.5
–1
Jan
Apr
Jul
Oct
Jan
2018

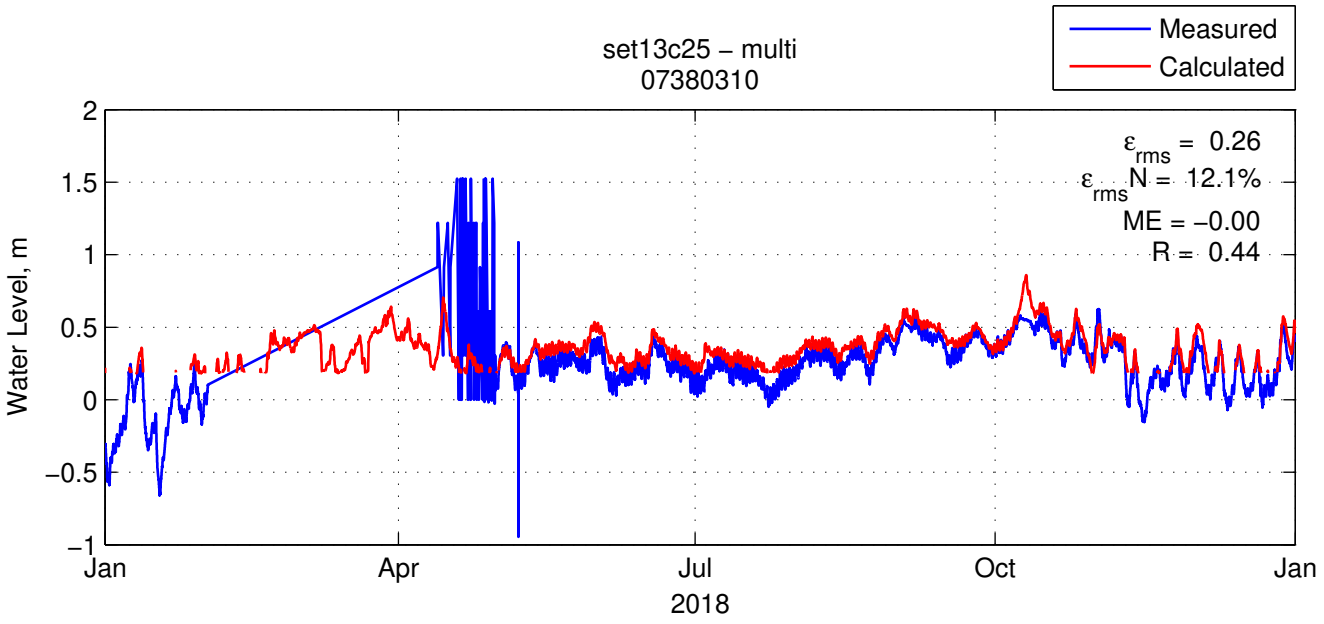

292952089453800
ε_{rms} = 0.22
ε_{rms}N = 17.3%
ME = 0.21
R = 0.84
Water Level, m
1.5
1
0.5
0
–0.5
–1
Jan
Apr
Jul
Oct
Jan
2018

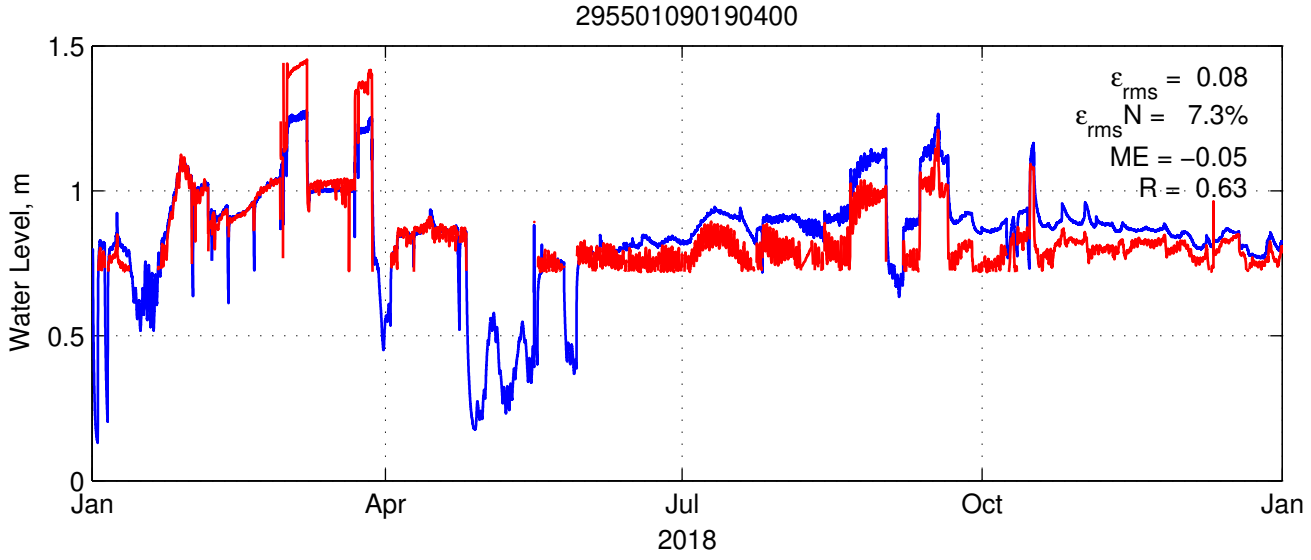

set13c25 – multi
292859090004000
Measured
Calculated
ε_{rms} = 1.28
ε_{rms}N = 90.8%
ME = 1.27
R = 0.98
Water Level, m
2.5
2
1.5
1
0.5
0
−0.5
−1
Jan
Apr
Jul
Oct
Jan
2018

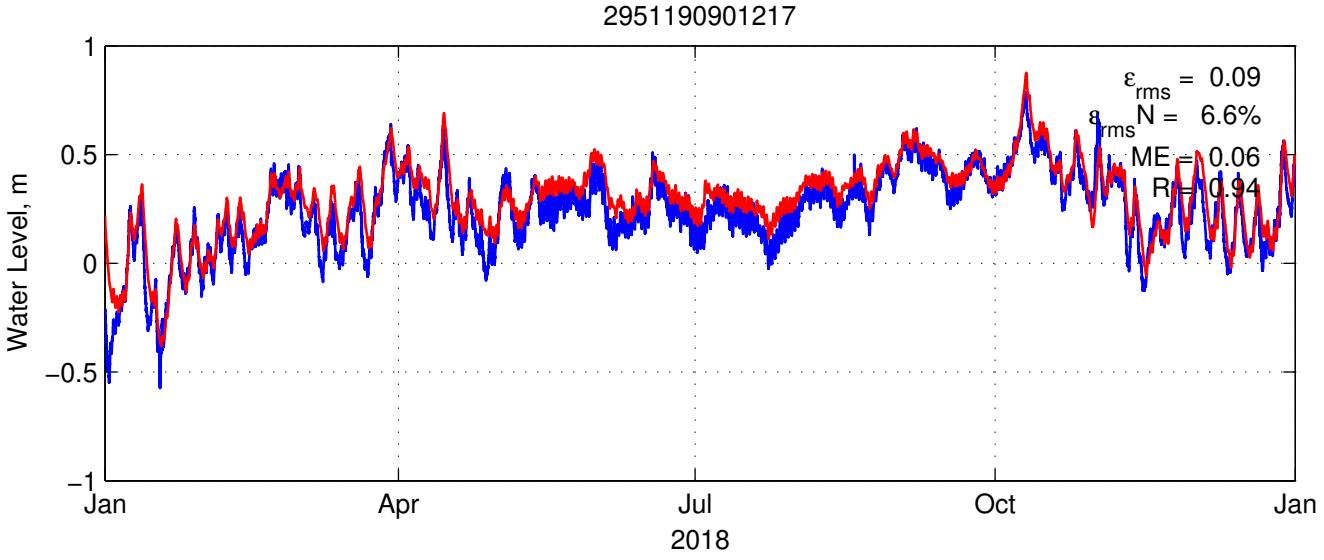

292800090060000
ε_{rms} = 0.07
ε_{rms}N = 5.3%
ME = 0.03
R = 0.93
Water Level, m
1.5
1
0.5
0
−0.5
Jan
Apr
Jul
Oct
Jan
2018

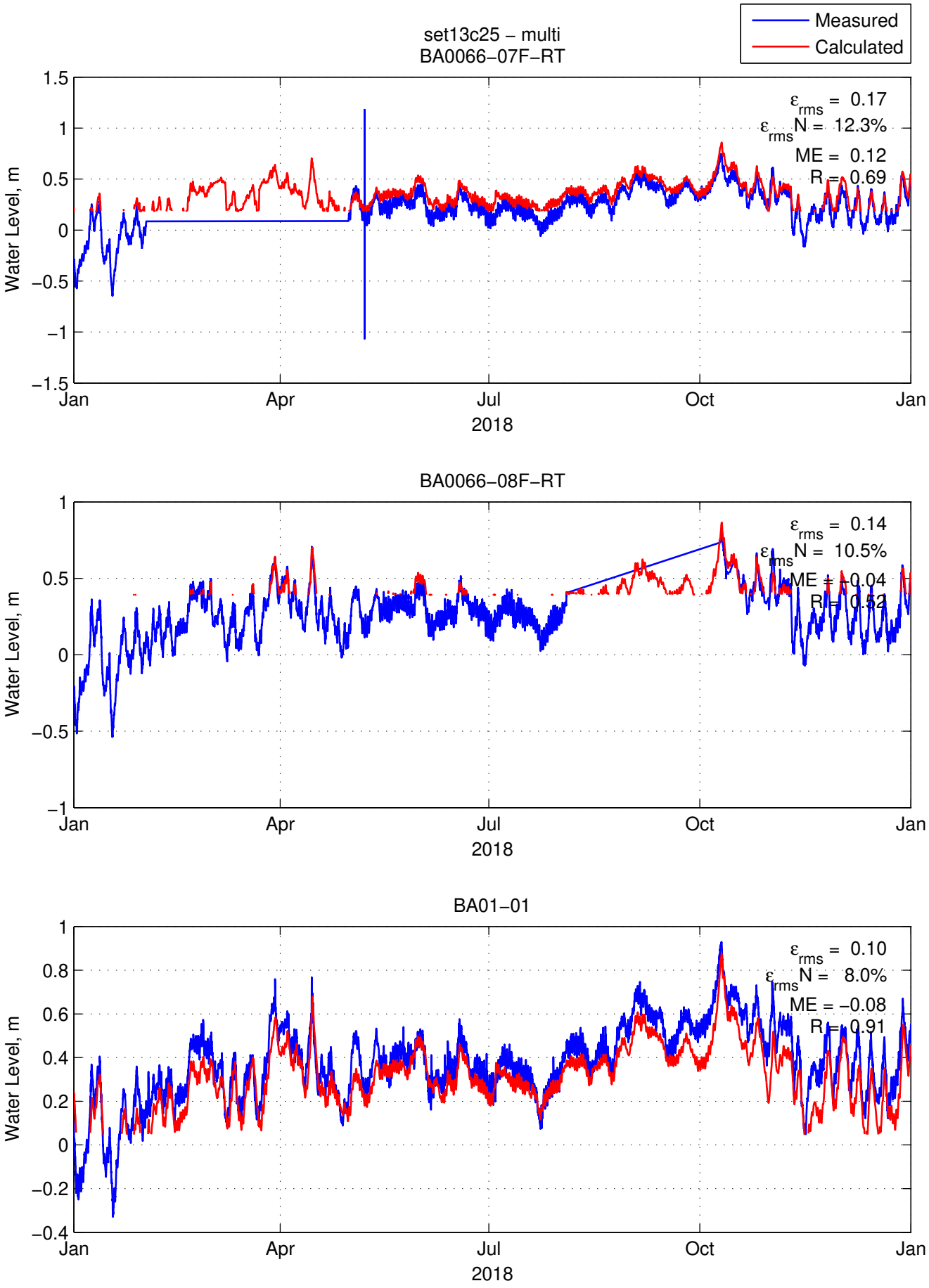

07380335
ε_{rms} = 0.08
ε_{rms}N = 5.7%
ME = 0.02
R = 0.91
Water Level, m
1.5
1
0.5
0
−0.5
−1
Jan
Apr
Jul
Oct
Jan
2018

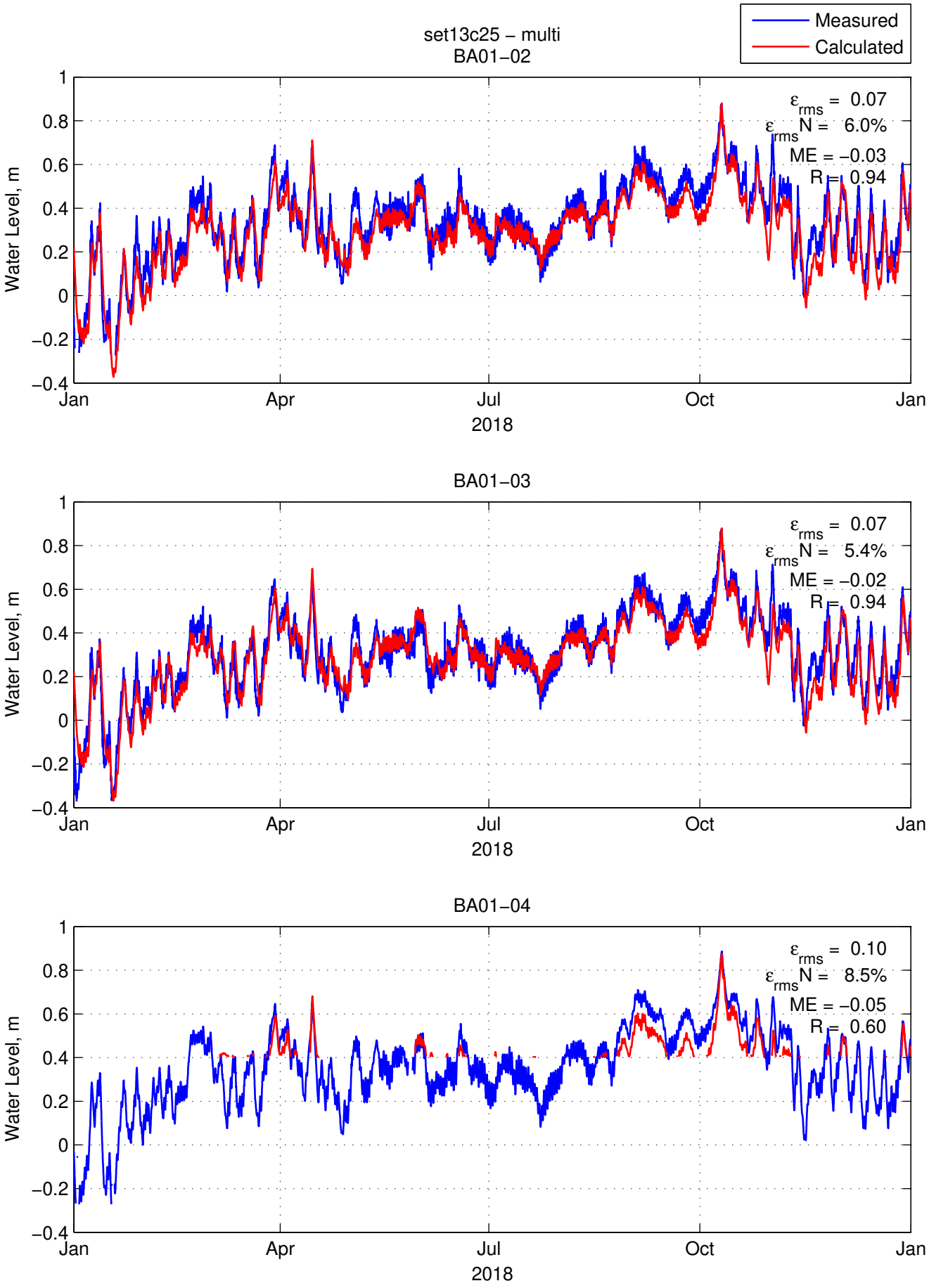

Measured
Calculated
set13c25 – multi
07380330
ε_{rms} = 0.12
ε_{rms}N = 8.8%
ME = −0.10
R = 0.94
Water Level, m
1.5
1
0.5
0
−0.5
Jan
Apr
Jul
Oct
Jan
2018
07381235
ε_{rms} = 0.13
ε_{rms}N = 11.8%
ME = 0.11
R = 0.92
Water Level, m
1
0.5
0
−0.5
Jan
Apr
Jul
Oct
Jan
2018
07380320
ε_{rms} = 0.07
ε_{rms}N = 5.0%
ME = 0.01
R = 0.89
Water Level, m
1
0.5
0
−0.5
−1
Jan
Apr
Jul
Oct
Jan
2018

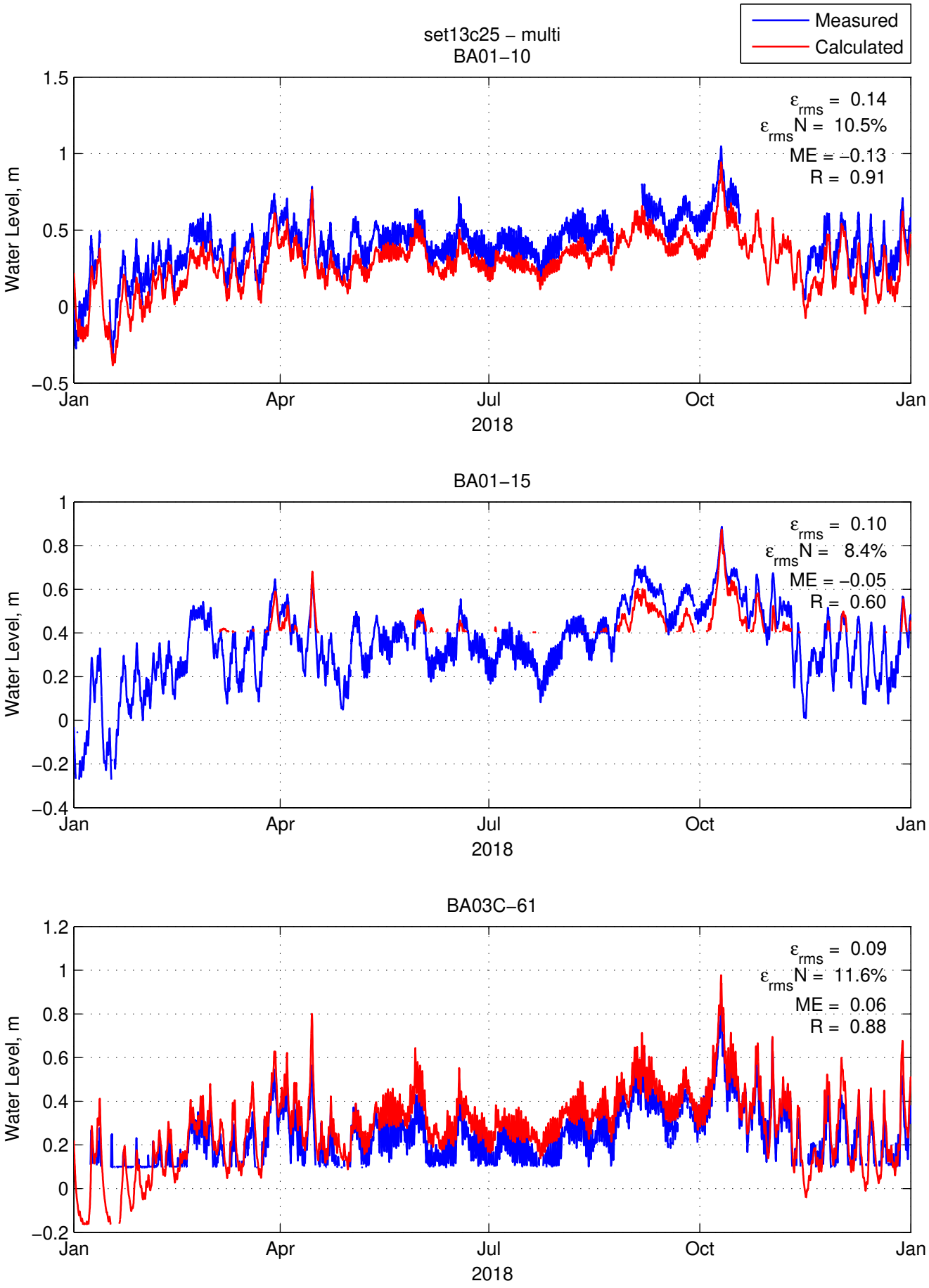

Measured
Calculated
set13c25 – multi
07380310
ε_{rms} = 0.26
ε_{rms}N = 12.1%
ME = –0.00
R = 0.44
Water Level, m
2
1.5
1
0.5
0
–0.5
–1
Jan
Apr
Jul
Oct
Jan
2018

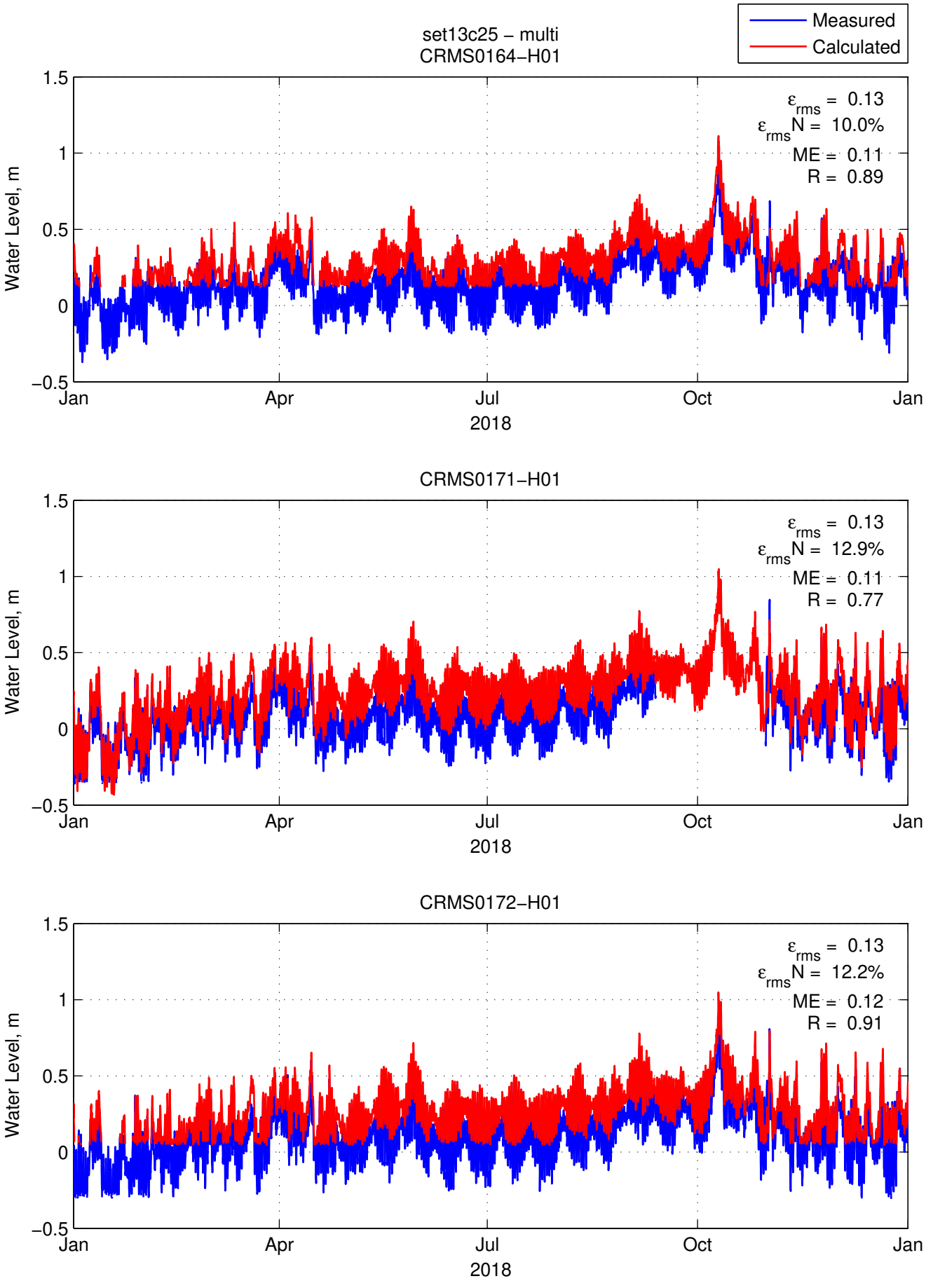

295501090190400
ε_{rms} = 0.08
ε_{rms}N = 7.3%
ME = –0.05
R = 0.63
Water Level, m
1.5
1
0.5
0
Jan
Apr
Jul
Oct
Jan
2018

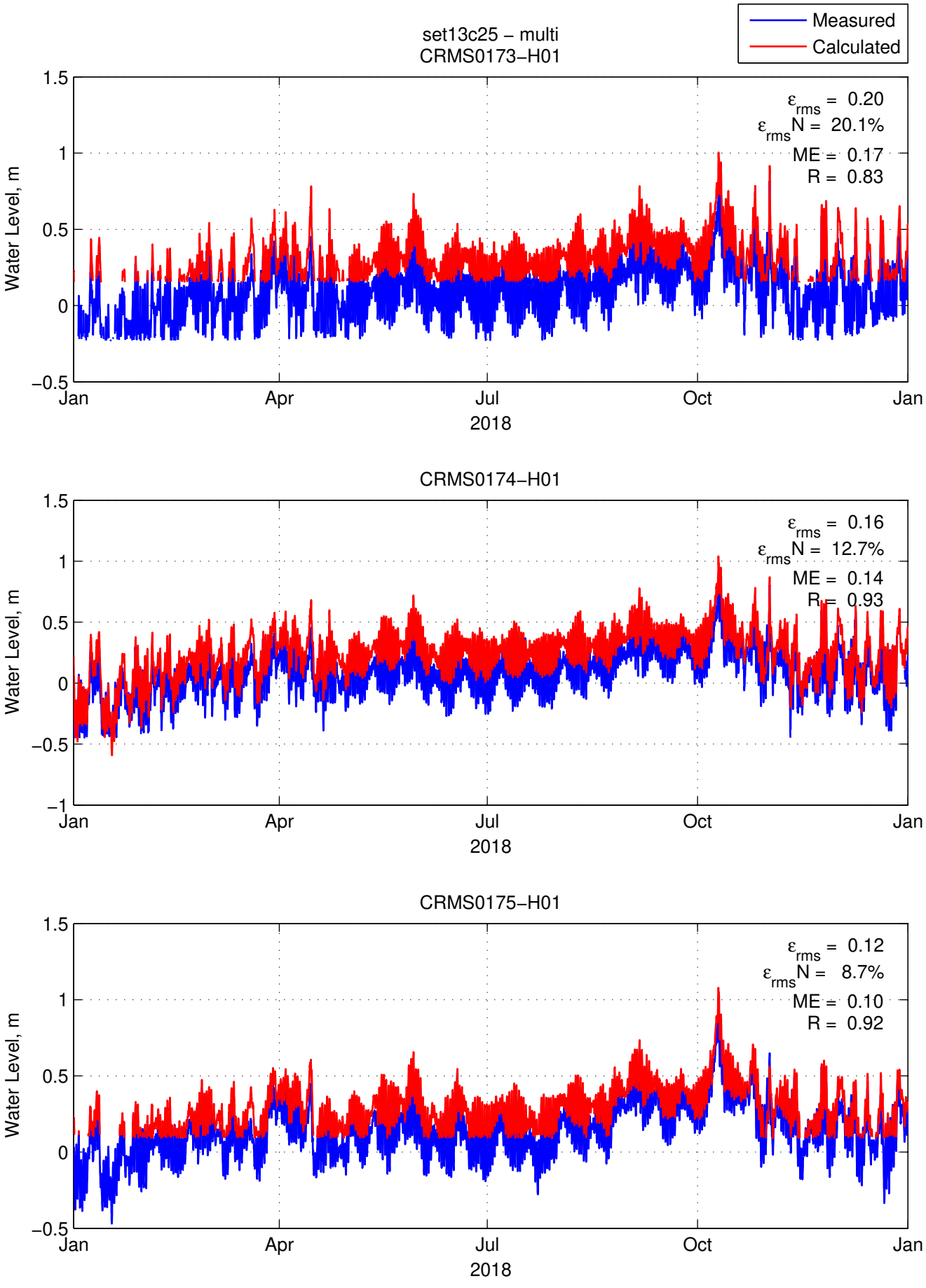

2951190901217
ε_{rms} = 0.09
ε_{rms}N = 6.6%
ME = 0.06
R = 0.94
Water Level, m
1
0.5
0
–0.5
–1
Jan
Apr
Jul
Oct
Jan
2018

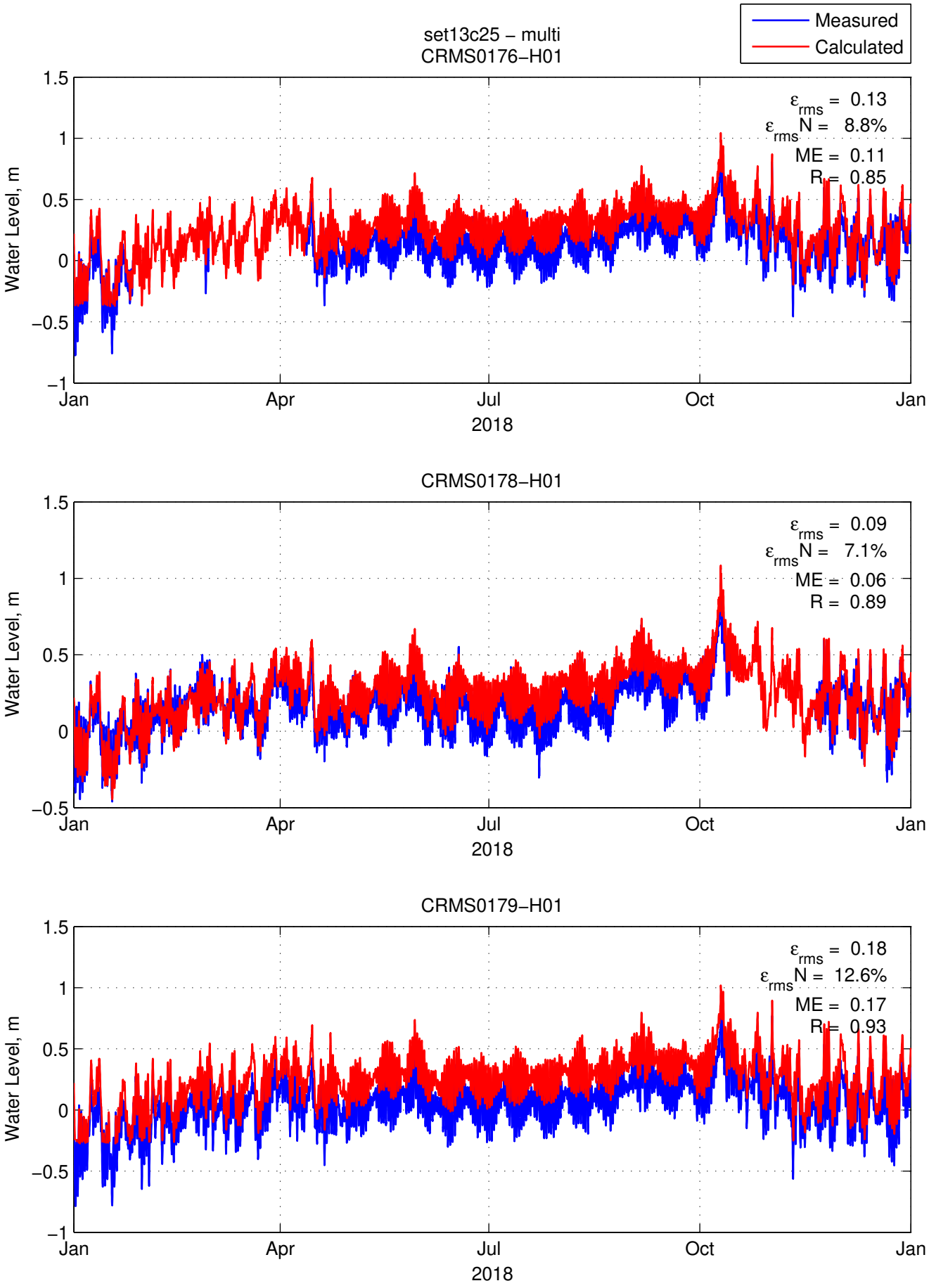

Measured
Calculated
set13c25 – multi
BA0066–07F–RT
ε_{rms} = 0.17
ε_{rms}N = 12.3%
ME = 0.12
R = 0.69
Water Level, m
1.5
1
0.5
0
–0.5
–1
–1.5
Jan
Apr
Jul
Oct
Jan
2018
BA0066–08F–RT
ε_{rms} = 0.14
ε_{rms}N = 10.5%
ME = –0.04
R = 0.52
Water Level, m
1
0.5
0
–0.5
–1
Jan
Apr
Jul
Oct
Jan
2018
BA01–01
ε_{rms} = 0.10
ε_{rms}N = 8.0%
ME = –0.08
R = 0.91
Water Level, m
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
Jan
Apr
Jul
Oct
Jan
2018

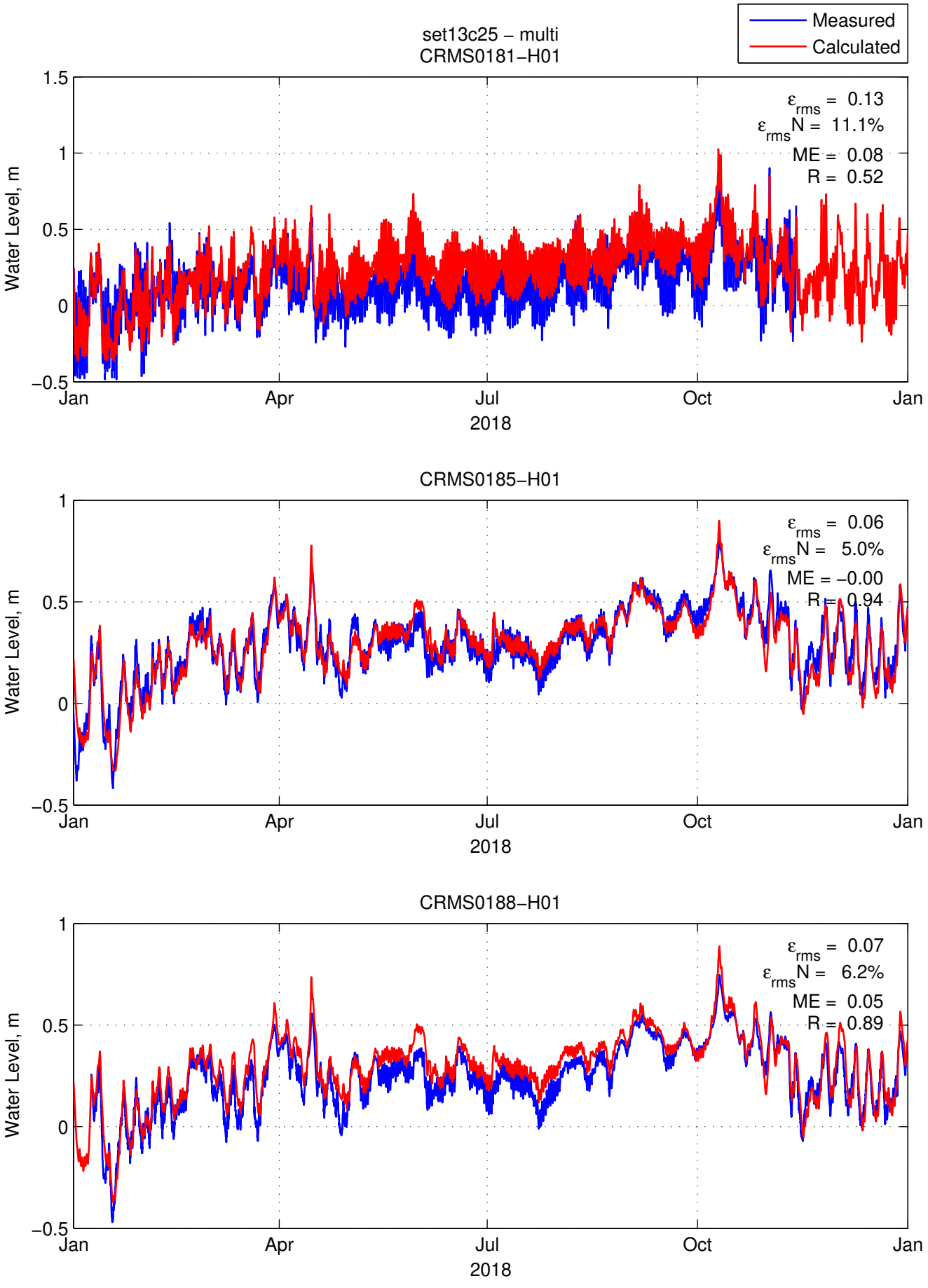

set13c25 – multi
BA01–02
Measured
Calculated
ε_{rms} = 0.07
ε_{rms}N = 6.0%
ME = –0.03
R = 0.94
Water Level, m
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
Jan
Apr
Jul
Oct
Jan
2018
BA01–03
ε_{rms} = 0.07
ε_{rms}N = 5.4%
ME = –0.02
R = 0.94
Water Level, m
2018
BA01–04
ε_{rms} = 0.10
ε_{rms}N = 8.5%
ME = –0.05
R = 0.60
Water Level, m
2018

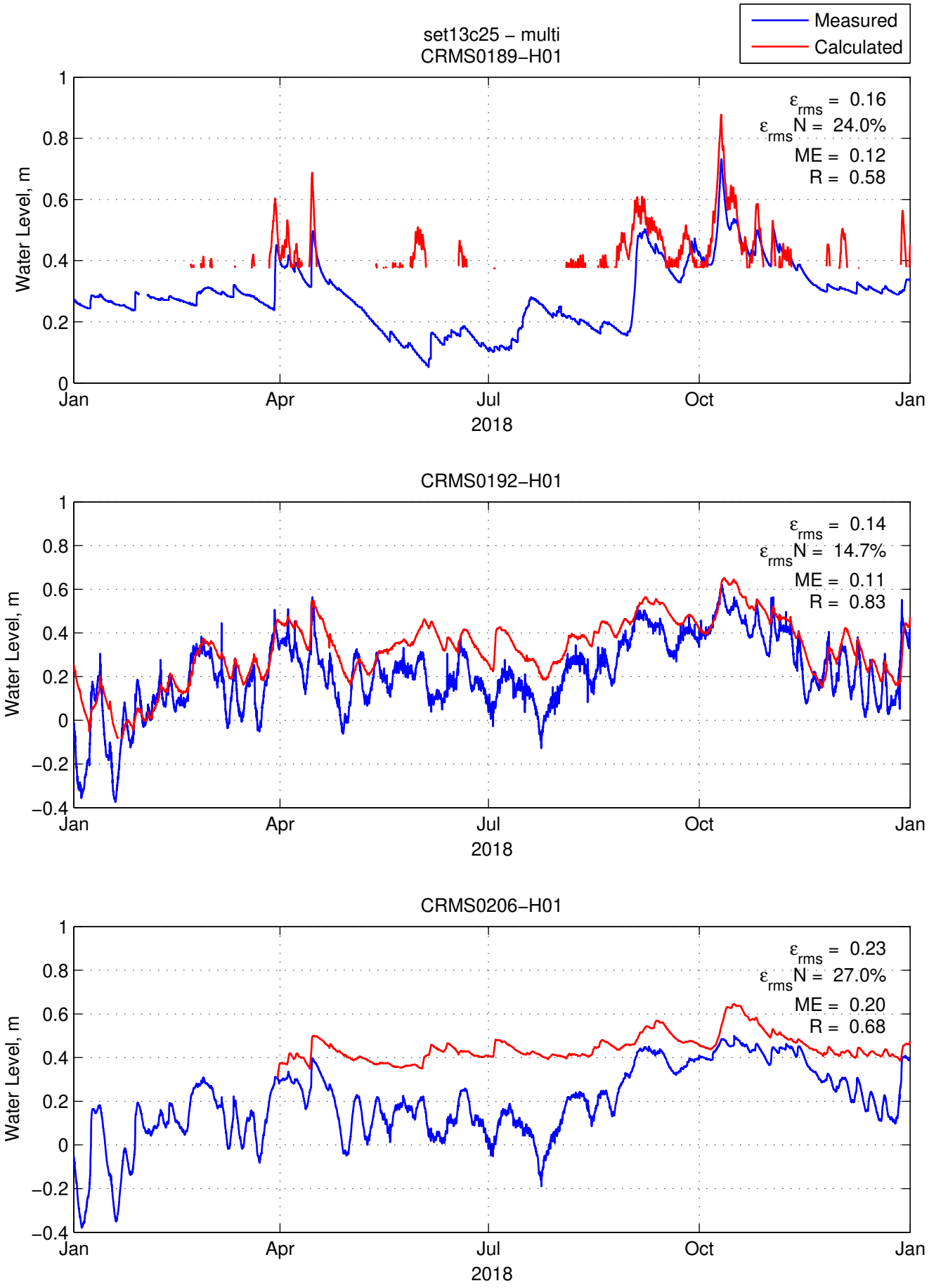

Measured
Calculated
set13c25 – multi
BA01–10
ε_{rms} = 0.14
ε_{rms}N = 10.5%
ME = –0.13
R = 0.91
Water Level, m
1.5
1
0.5
0
–0.5
Jan
Apr
Jul
Oct
Jan
2018
BA01–15
ε_{rms} = 0.10
ε_{rms}N = 8.4%
ME = –0.05
R = 0.60
Water Level, m
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
Jan
Apr
Jul
Oct
Jan
2018
BA03C–61
ε_{rms} = 0.09
ε_{rms}N = 11.6%
ME = 0.06
R = 0.88
Water Level, m
1.2
1
0.8
0.6
0.4
0.2
0
–0.2
Jan
Apr
Jul
Oct
Jan
2018

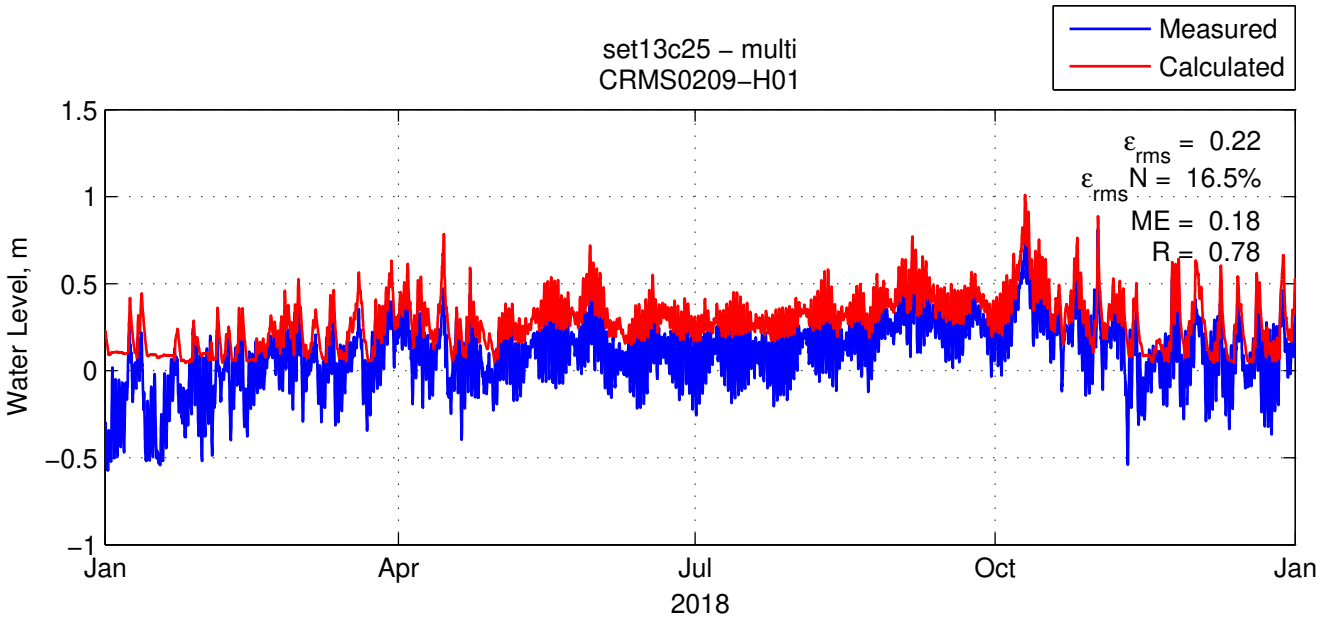

Measured
Calculated
set13c25 – multi
CRMS0164–H01
ε_{rms} = 0.13
ε_{rms}N = 10.0%
ME = 0.11
R = 0.89
Water Level, m
1.5
1
0.5
0
−0.5
Jan
Apr
Jul
Oct
Jan
2018
CRMS0171–H01
ε_{rms} = 0.13
ε_{rms}N = 12.9%
ME = 0.11
R = 0.77
Water Level, m
CRMS0172–H01
ε_{rms} = 0.13
ε_{rms}N = 12.2%
ME = 0.12
R = 0.91
Water Level, m

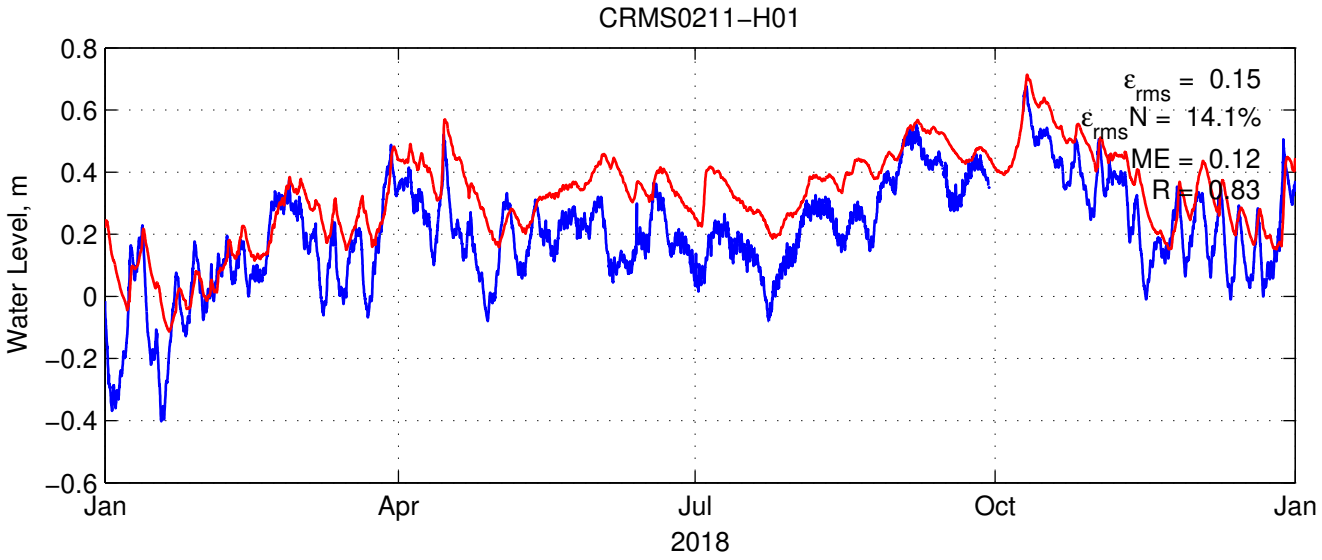

set13c25 – multi
CRMS0173–H01
Measured
Calculated
ε_{rms} = 0.20
ε_{rms}N = 20.1%
ME = 0.17
R = 0.83
Water Level, m
1.5
1
0.5
0
−0.5
Jan
Apr
Jul
Oct
Jan
2018
CRMS0174–H01
ε_{rms} = 0.16
ε_{rms}N = 12.7%
ME = 0.14
R = 0.93
Water Level, m
1.5
1
0.5
0
−0.5
−1
Jan
Apr
Jul
Oct
Jan
2018
CRMS0175–H01
ε_{rms} = 0.12
ε_{rms}N = 8.7%
ME = 0.10
R = 0.92
Water Level, m
1.5
1
0.5
0
−0.5
Jan
Apr
Jul
Oct
Jan
2018

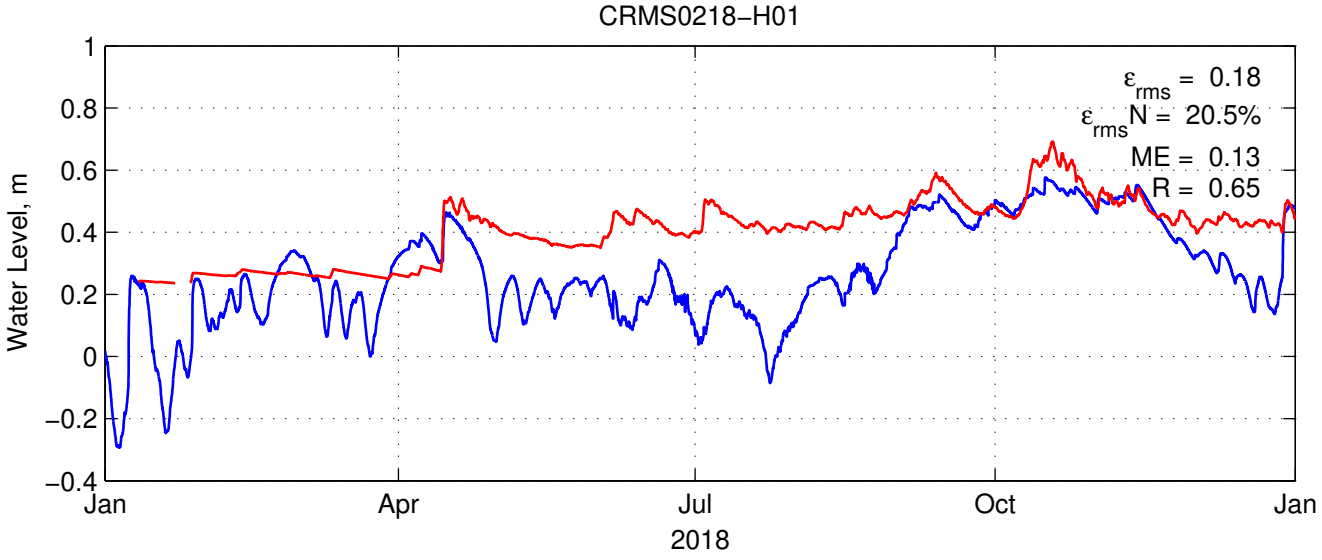

Measured
Calculated
set13c25 – multi
CRMS0176–H01
ε_{rms} = 0.13
ε_{rms}N = 8.8%
ME = 0.11
R = 0.85
Water Level, m
1.5
1
0.5
0
−0.5
−1
Jan
Apr
Jul
Oct
Jan
2018
CRMS0178–H01
ε_{rms} = 0.09
ε_{rms}N = 7.1%
ME = 0.06
R = 0.89
Water Level, m
1.5
1
0.5
0
−0.5
Jan
Apr
Jul
Oct
Jan
2018
CRMS0179–H01
ε_{rms} = 0.18
ε_{rms}N = 12.6%
ME = 0.17
R = 0.93
Water Level, m
1.5
1
0.5
0
−0.5
−1
Jan
Apr
Jul
Oct
Jan
2018

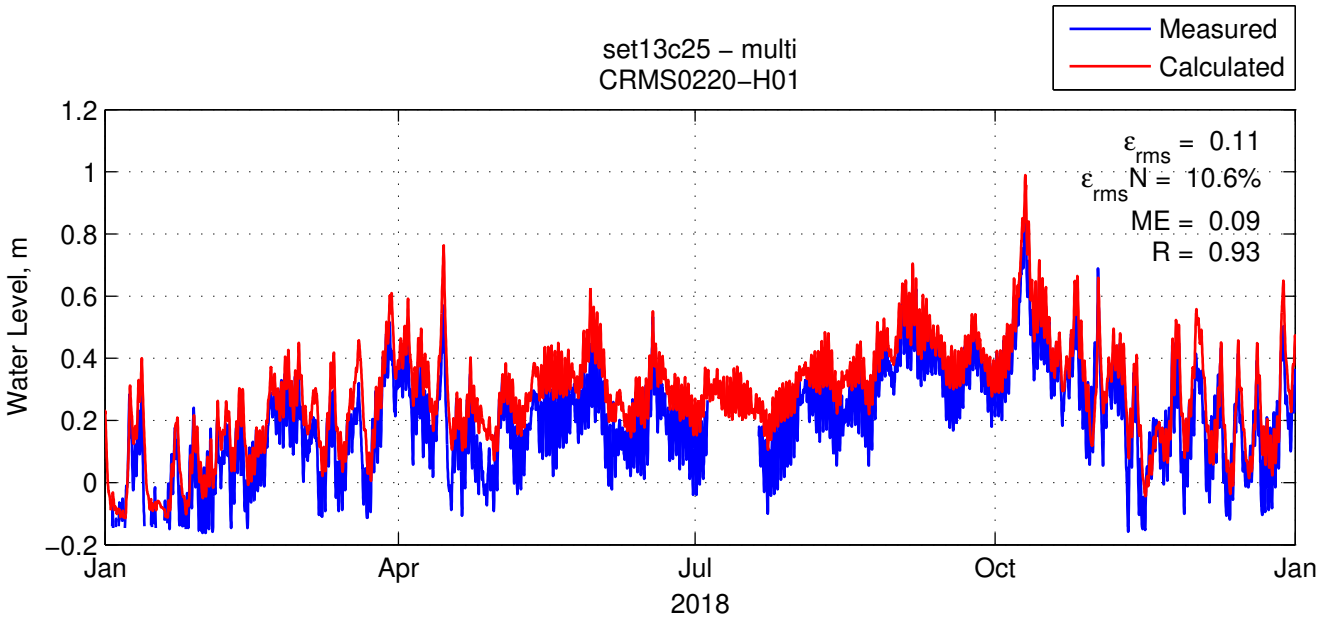

Measured
Calculated
set13c25 – multi
CRMS0181–H01
ε_{rms} = 0.13
ε_{rms}N = 11.1%
ME = 0.08
R = 0.52
Water Level, m
1.5
1
0.5
0
–0.5
Jan
Apr
Jul
Oct
Jan
2018
CRMS0185–H01
ε_{rms} = 0.06
ε_{rms}N = 5.0%
ME = –0.00
R = 0.94
Water Level, m
1
0.5
0
–0.5
Jan
Apr
Jul
Oct
Jan
2018
CRMS0188–H01
ε_{rms} = 0.07
ε_{rms}N = 6.2%
ME = 0.05
R = 0.89
Water Level, m
1
0.5
0
–0.5
Jan
Apr
Jul
Oct
Jan
2018

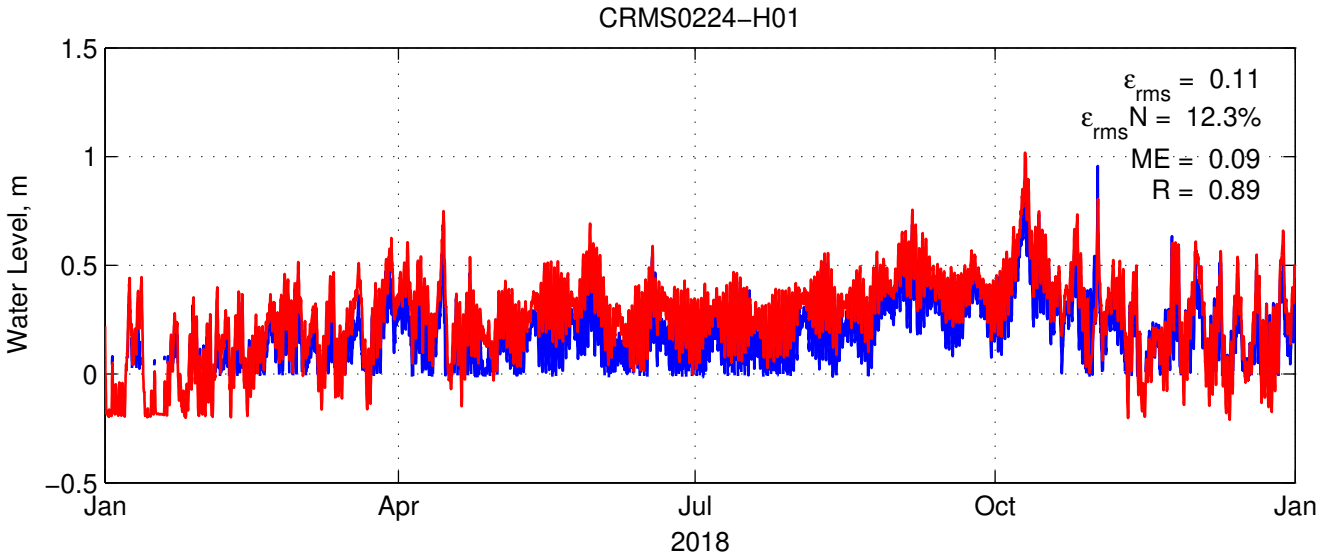

set13c25 – multi
CRMS0189–H01
Measured
Calculated
ε_{rms} = 0.16
ε_{rms}N = 24.0%
ME = 0.12
R = 0.58
Water Level, m
1
0.8
0.6
0.4
0.2
0
Jan
Apr
Jul
Oct
Jan
2018
CRMS0192–H01
ε_{rms} = 0.14
ε_{rms}N = 14.7%
ME = 0.11
R = 0.83
Water Level, m
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
Jan
Apr
Jul
Oct
Jan
2018
CRMS0206–H01
ε_{rms} = 0.23
ε_{rms}N = 27.0%
ME = 0.20
R = 0.68
Water Level, m
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
Jan
Apr
Jul
Oct
Jan
2018

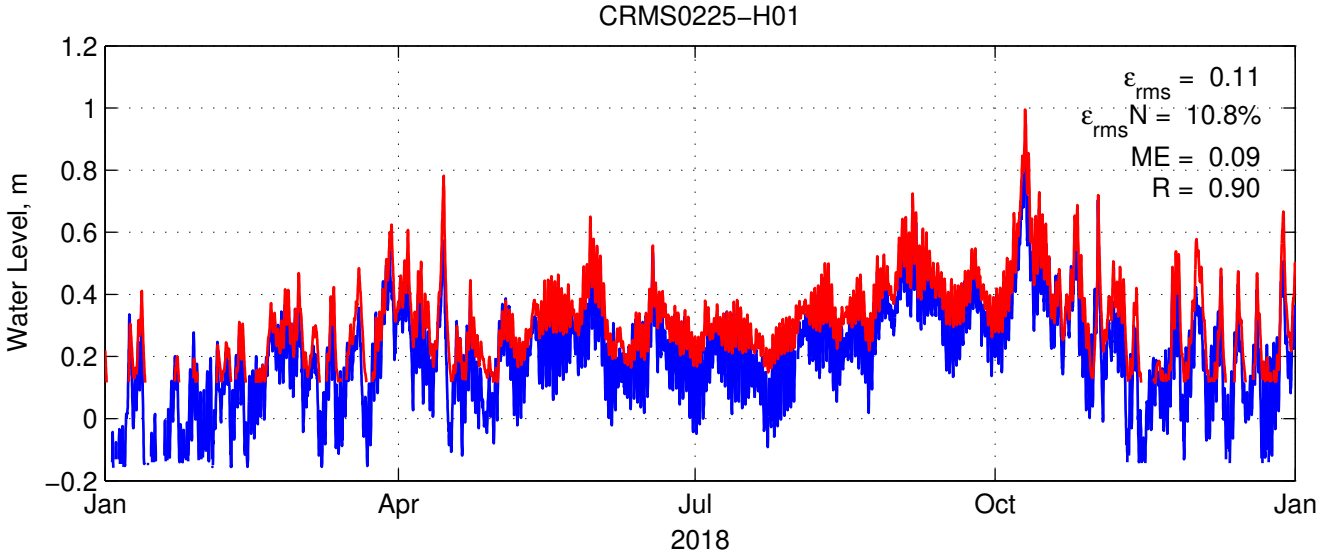

set13c25 – multi
CRMS0209–H01
Measured
Calculated
ε_{rms} = 0.22
ε_{rms} N = 16.5%
ME = 0.18
R = 0.78
Water Level, m
1.5
1
0.5
0
−0.5
−1
Jan
Apr
Jul
Oct
Jan
2018

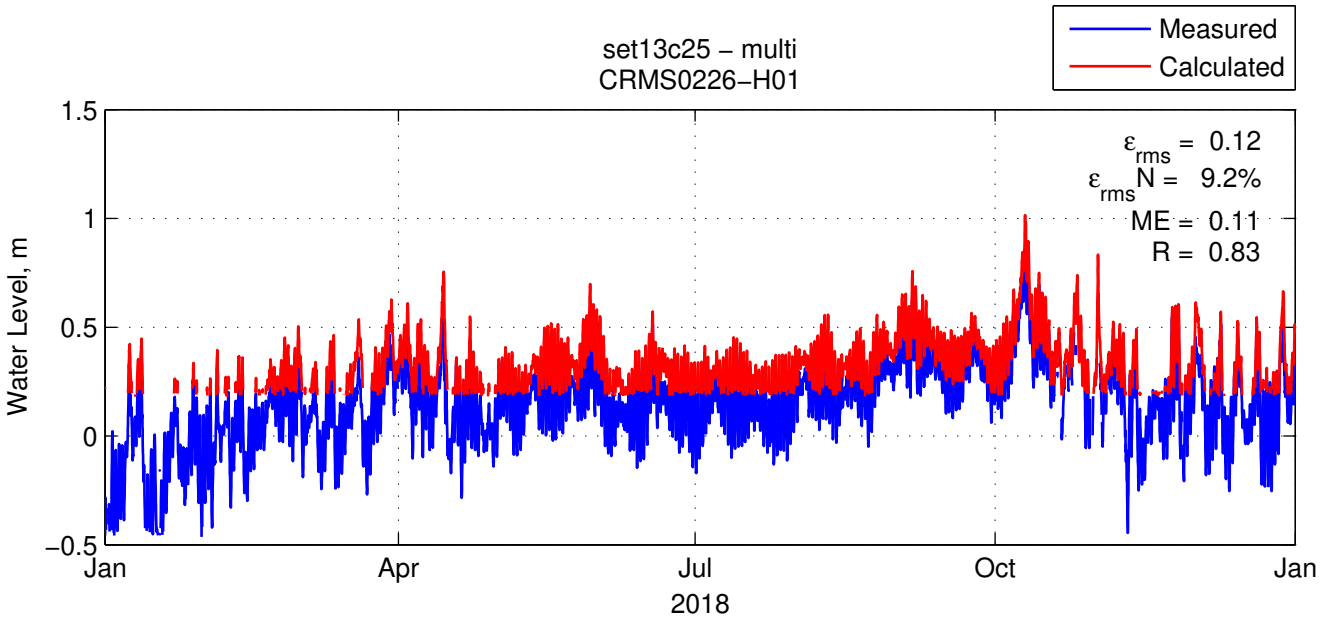

CRMS0211–H01
ε_{rms} = 0.15
ε_{rms} N = 14.1%
ME = 0.12
R = 0.83
Water Level, m
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
Jan
Apr
Jul
Oct
Jan
2018

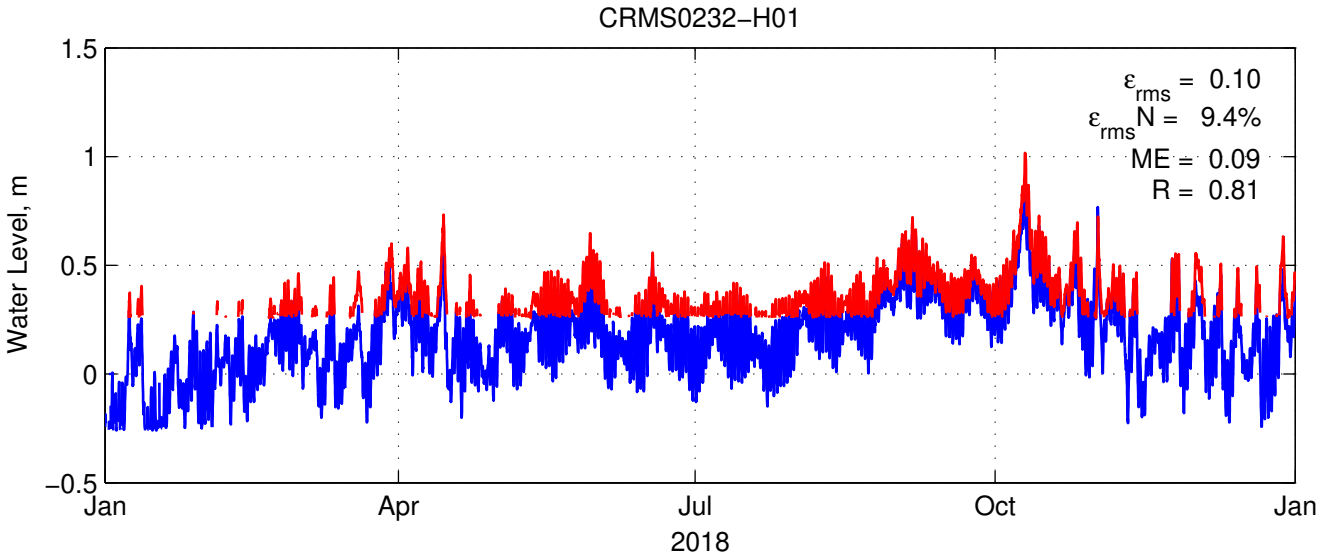

CRMS0218–H01
ε_{rms} = 0.18
ε_{rms} N = 20.5%
ME = 0.13
R = 0.65
Water Level, m
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
Jan
Apr
Jul
Oct
Jan
2018

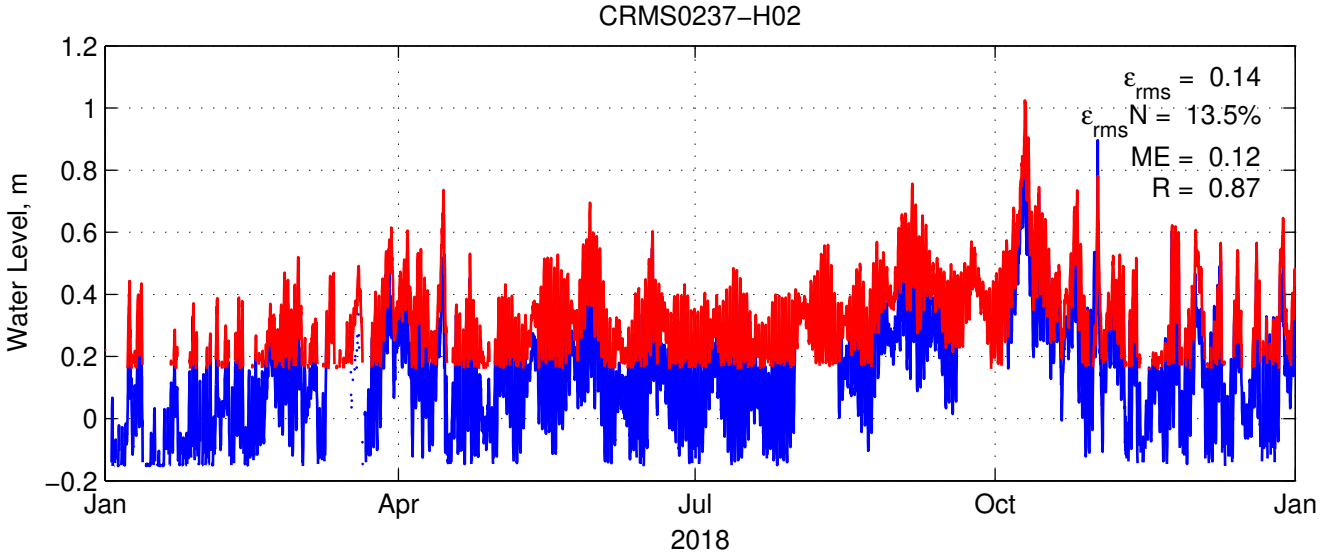

set13c25 – multi
CRMS0220–H01
Measured
Calculated
ε_{rms} = 0.11
ε_{rms}N = 10.6%
ME = 0.09
R = 0.93
Water Level, m
1.2
1
0.8
0.6
0.4
0.2
0
–0.2
Jan
Apr
Jul
Oct
Jan
2018

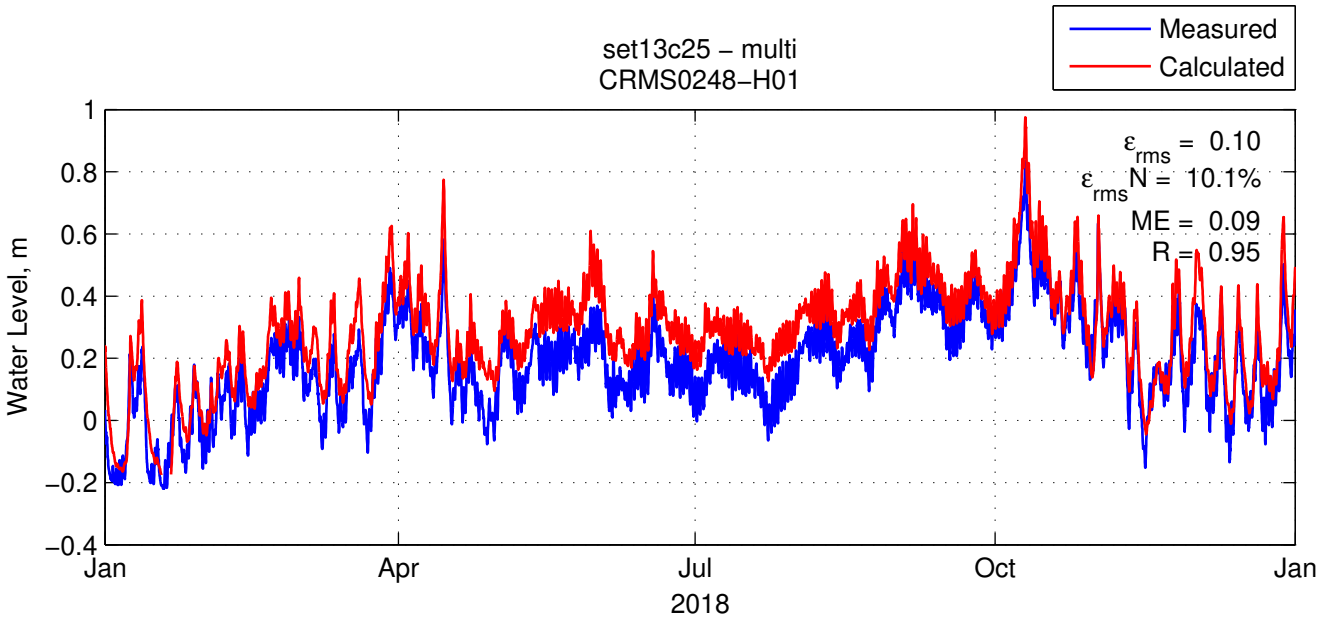

CRMS0224–H01
ε_{rms} = 0.11
ε_{rms}N = 12.3%
ME = 0.09
R = 0.89
Water Level, m
1.5
1
0.5
0
–0.5
Jan
Apr
Jul
Oct
Jan
2018

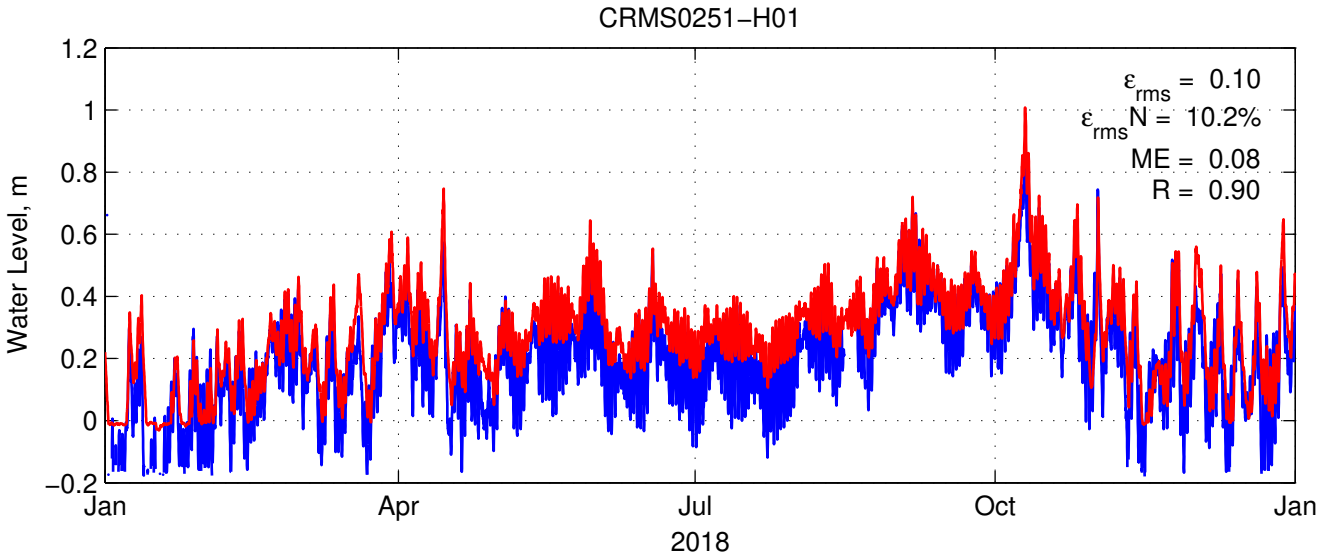

CRMS0225–H01
ε_{rms} = 0.11
ε_{rms}N = 10.8%
ME = 0.09
R = 0.90
Water Level, m
1.2
1
0.8
0.6
0.4
0.2
0
–0.2
Jan
Apr
Jul
Oct
Jan
2018

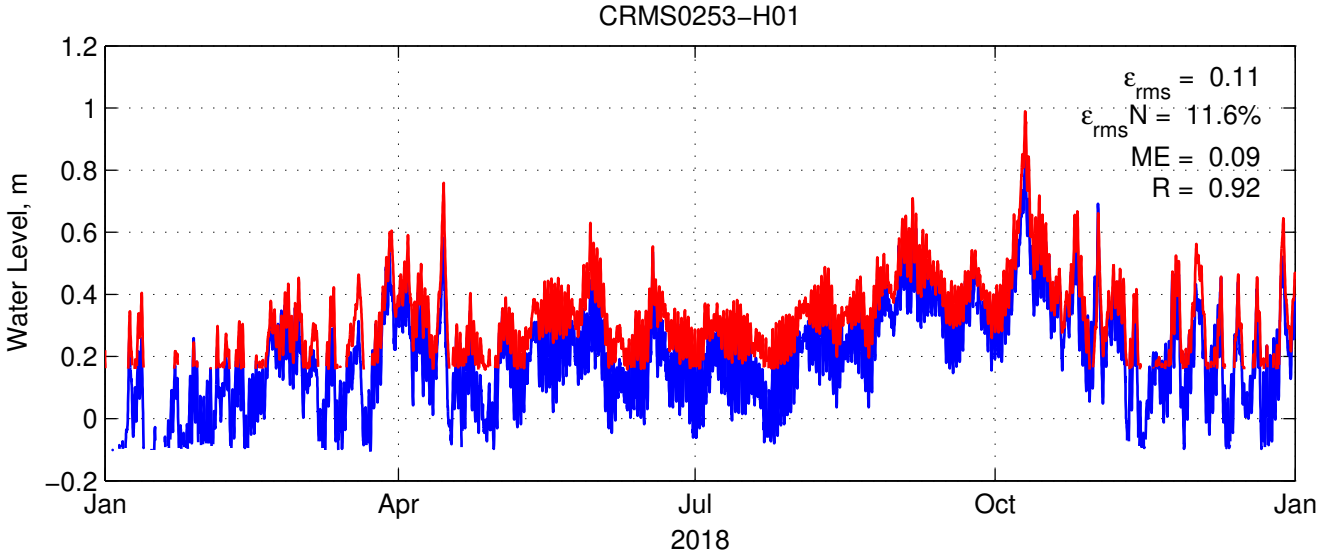

set13c25 – multi
CRMS0226–H01
Measured
Calculated
ε_{rms} = 0.12
ε_{rms}N = 9.2%
ME = 0.11
R = 0.83
Water Level, m
1.5
1
0.5
0
−0.5
Jan
Apr
Jul
Oct
Jan
2018

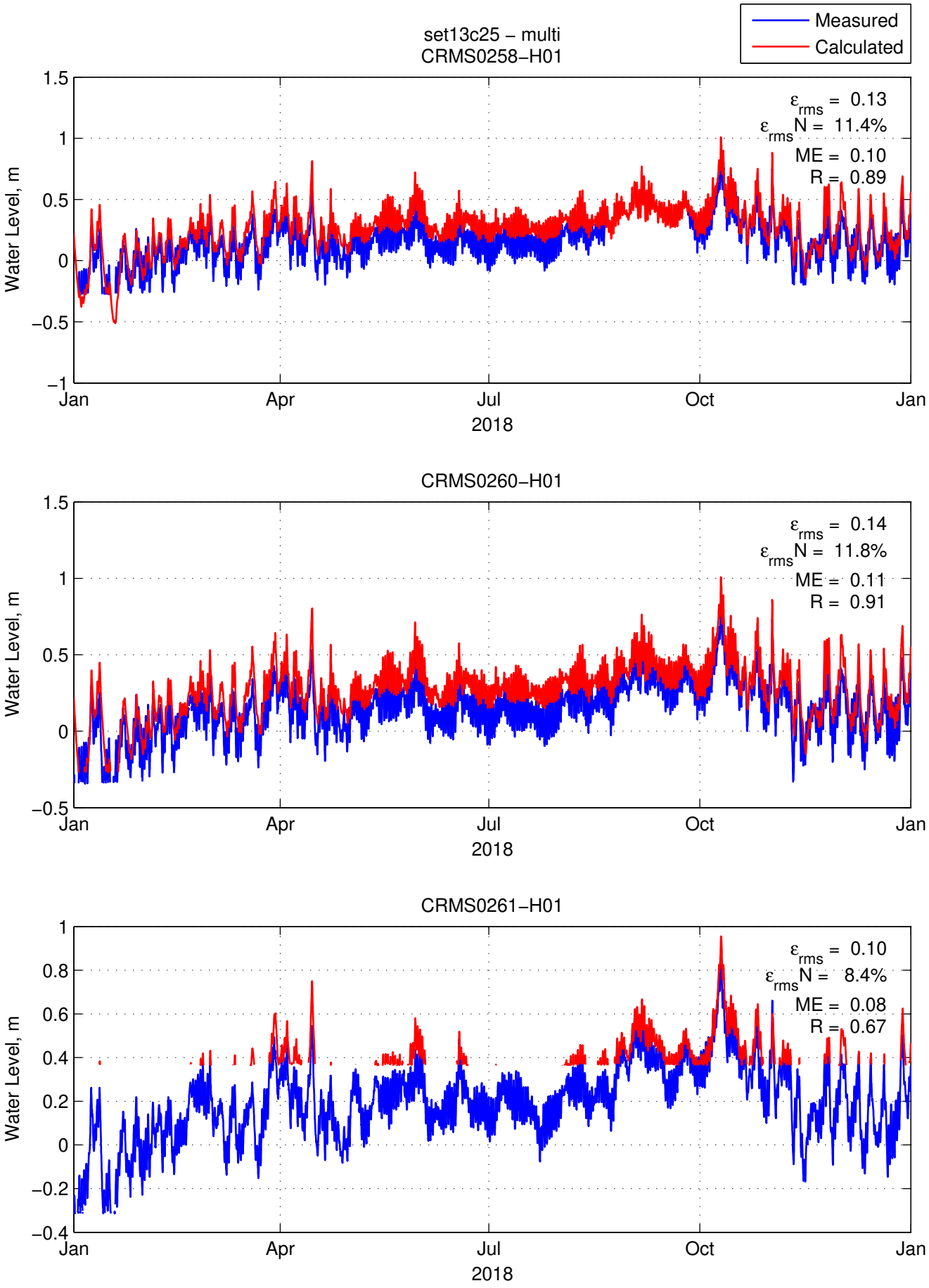

CRMS0232–H01
ε_{rms} = 0.10
ε_{rms}N = 9.4%
ME = 0.09
R = 0.81
Water Level, m
1.5
1
0.5
0
−0.5
Jan
Apr
Jul
Oct
Jan
2018

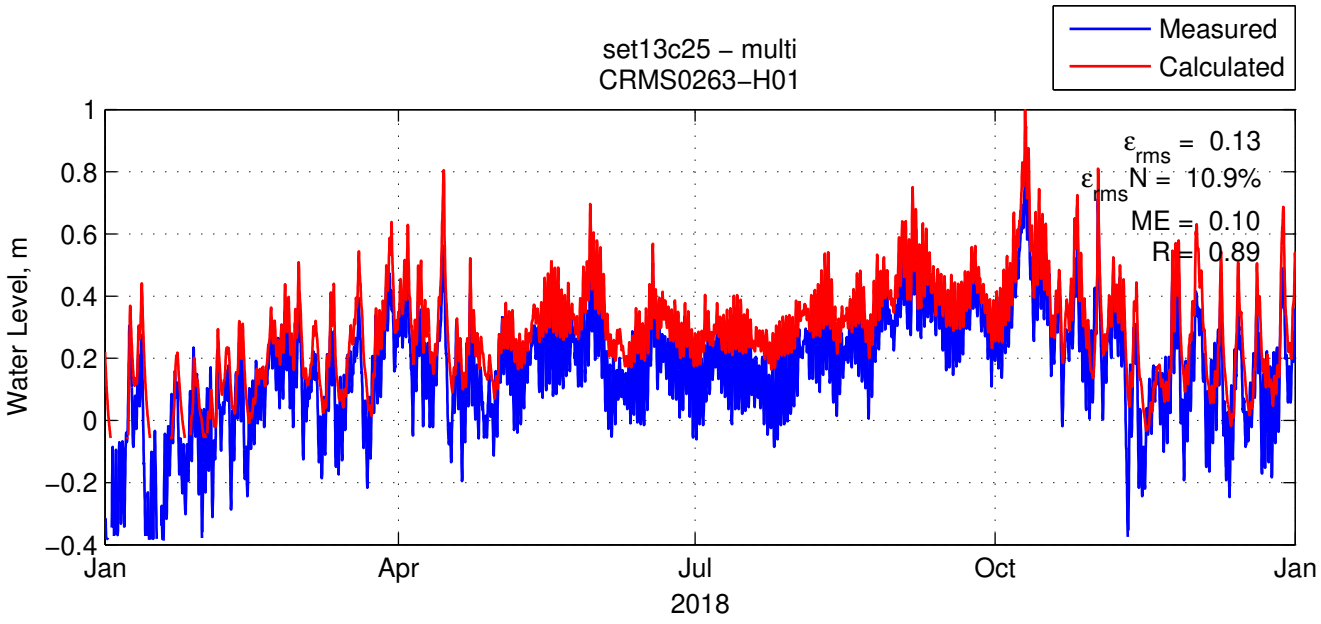

CRMS0237–H02
ε_{rms} = 0.14
ε_{rms}N = 13.5%
ME = 0.12
R = 0.87
Water Level, m
1.2
1
0.8
0.6
0.4
0.2
0
−0.2
Jan
Apr
Jul
Oct
Jan
2018

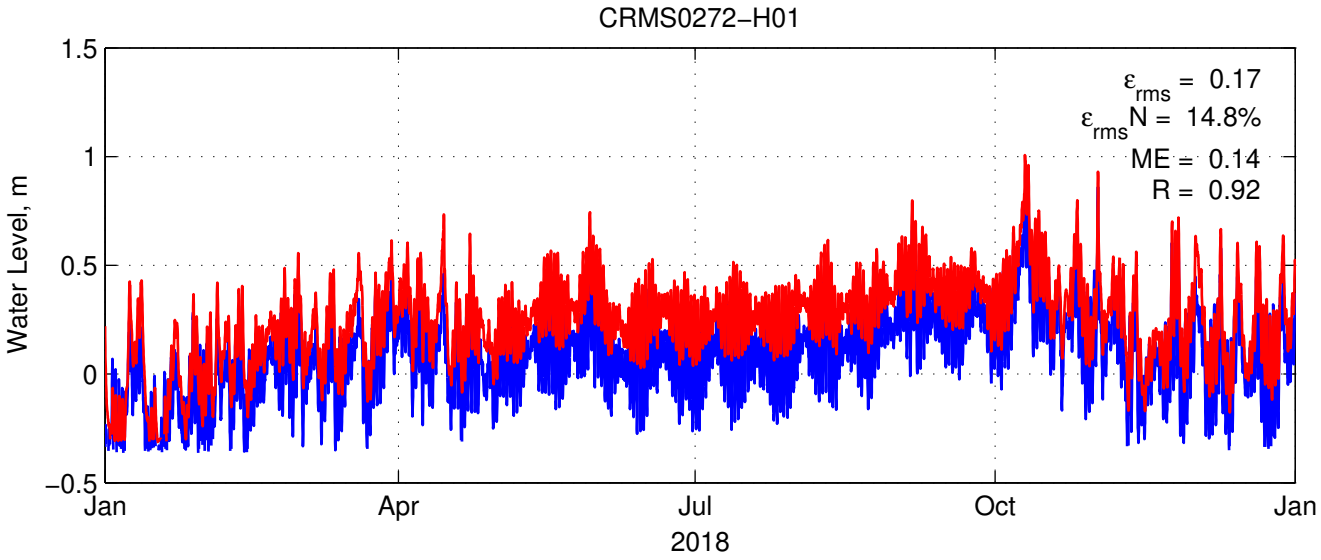

set13c25 – multi
CRMS0248–H01
Measured
Calculated
ε_{rms} = 0.10
ε_{rms}N = 10.1%
ME = 0.09
R = 0.95
Water Level, m
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
Jan
Apr
Jul
Oct
Jan
2018

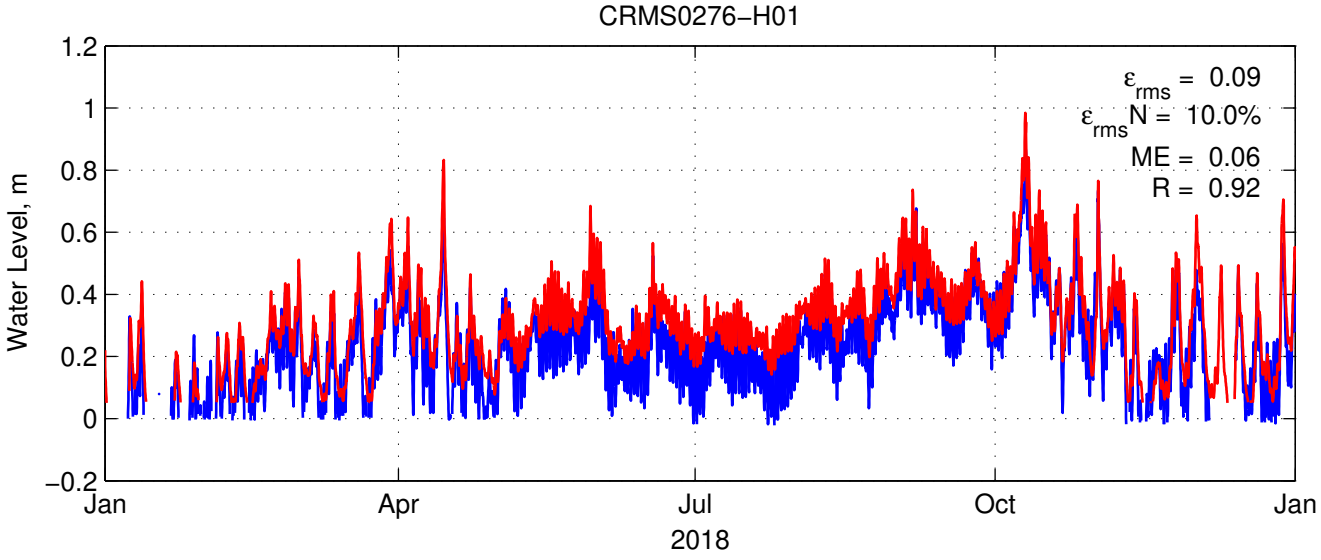

CRMS0251–H01
ε_{rms} = 0.10
ε_{rms}N = 10.2%
ME = 0.08
R = 0.90
Water Level, m
1.2
1
0.8
0.6
0.4
0.2
0
–0.2
Jan
Apr
Jul
Oct
Jan
2018

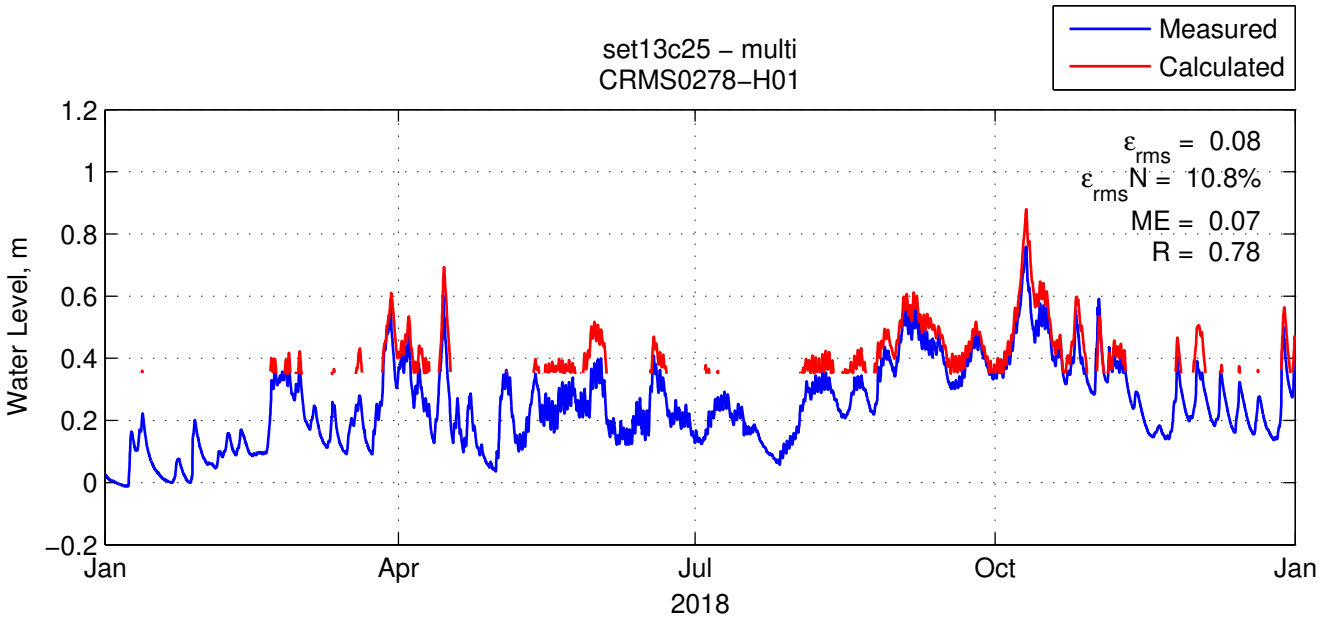

CRMS0253–H01
ε_{rms} = 0.11
ε_{rms}N = 11.6%
ME = 0.09
R = 0.92
Water Level, m
1.2
1
0.8
0.6
0.4
0.2
0
–0.2
Jan
Apr
Jul
Oct
Jan
2018

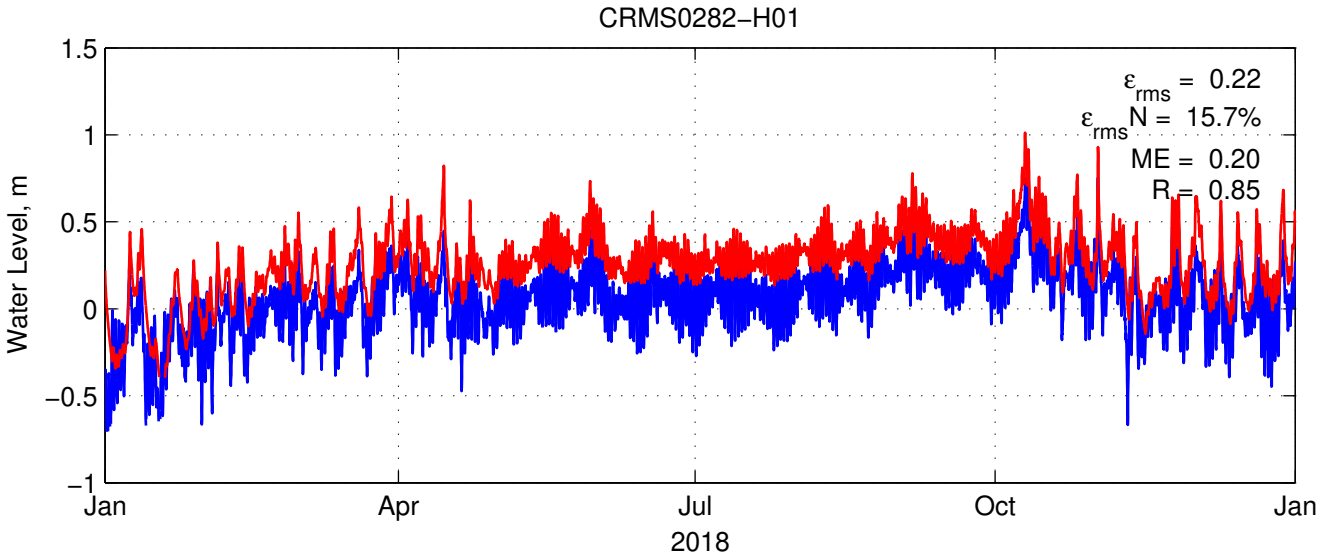

Measured
Calculated
set13c25 – multi
CRMS0258–H01
ε_{rms} = 0.13
ε_{rms}N = 11.4%
ME = 0.10
R = 0.89
Water Level, m
1.5
1
0.5
0
−0.5
−1
Jan
Apr
Jul
Oct
Jan
2018
CRMS0260–H01
ε_{rms} = 0.14
ε_{rms}N = 11.8%
ME = 0.11
R = 0.91
Water Level, m
1.5
1
0.5
0
−0.5
Jan
Apr
Jul
Oct
Jan
2018
CRMS0261–H01
ε_{rms} = 0.10
ε_{rms}N = 8.4%
ME = 0.08
R = 0.67
Water Level, m
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
Jan
Apr
Jul
Oct
Jan
2018

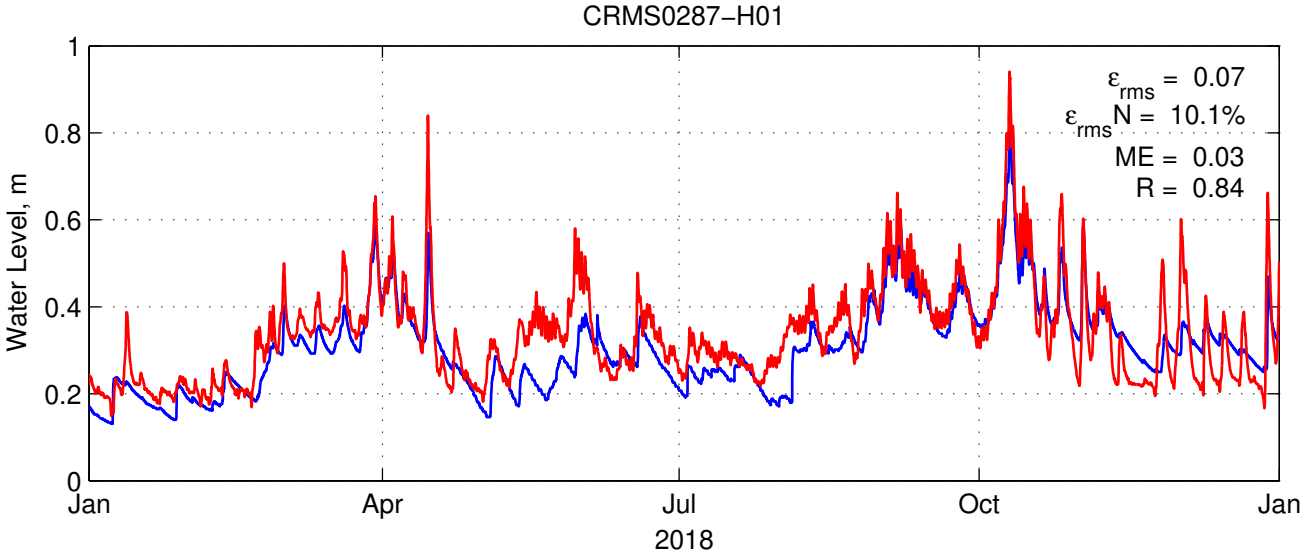

set13c25 – multi
CRMS0263–H01
Measured
Calculated
ε_{rms} = 0.13
ε_{rms}N = 10.9%
ME = 0.10
R = 0.89
Water Level, m
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
Jan
Apr
Jul
Oct
Jan
2018

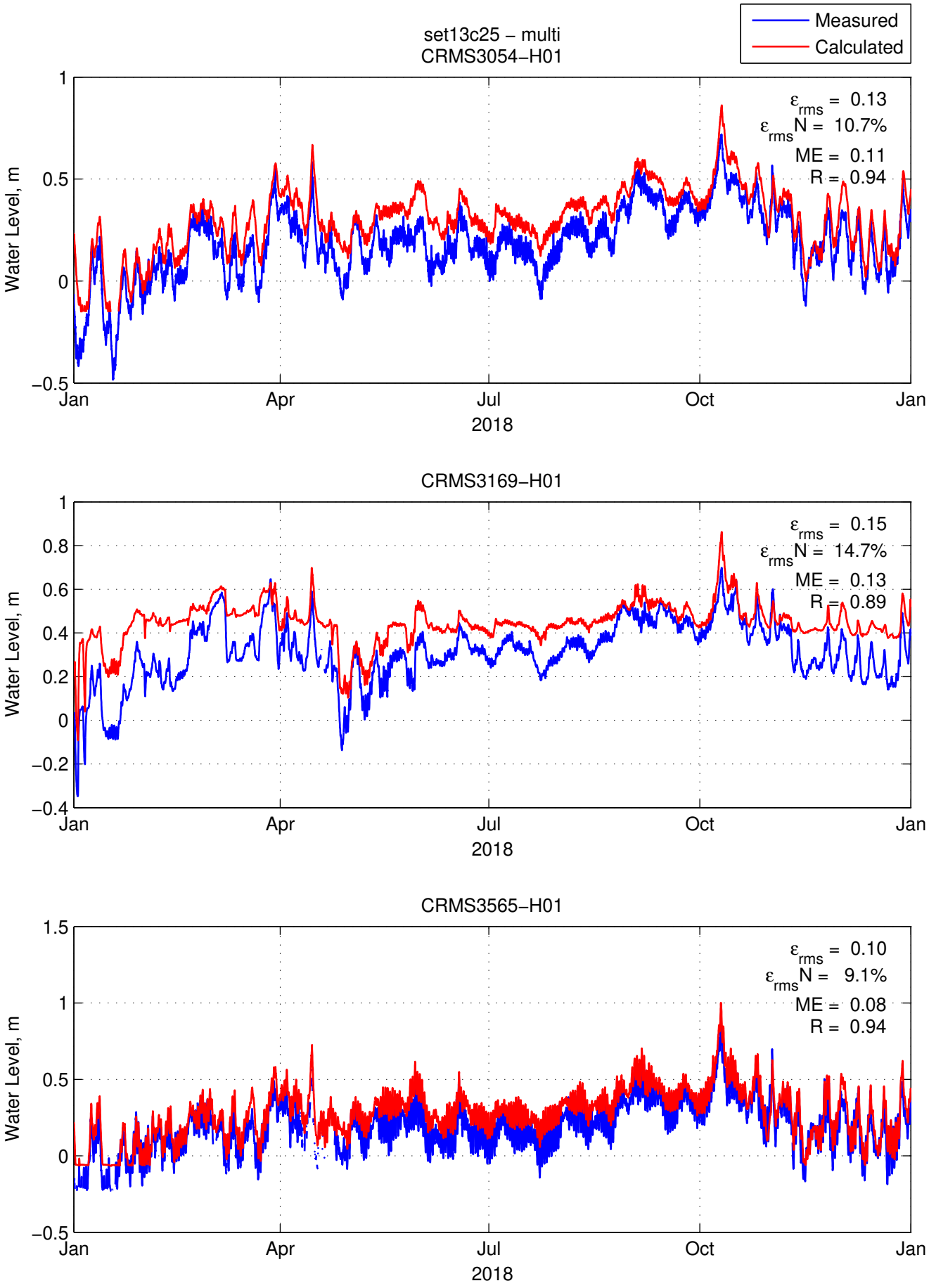

CRMS0272–H01
ε_{rms} = 0.17
ε_{rms}N = 14.8%
ME = 0.14
R = 0.92
Water Level, m
1.5
1
0.5
0
–0.5
Jan
Apr
Jul
Oct
Jan
2018

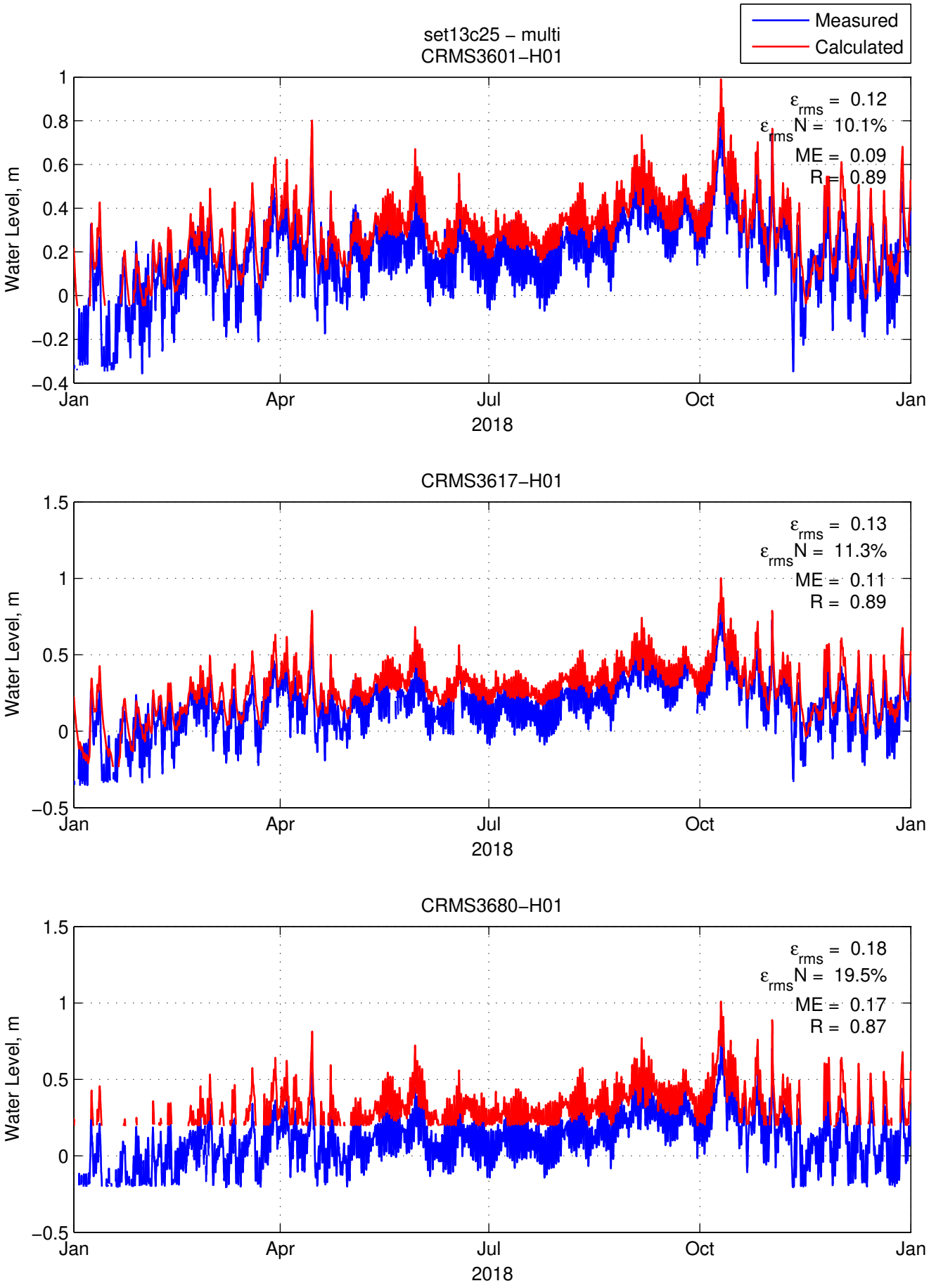

CRMS0276–H01
ε_{rms} = 0.09
ε_{rms}N = 10.0%
ME = 0.06
R = 0.92
Water Level, m
1.2
1
0.8
0.6
0.4
0.2
0
–0.2
Jan
Apr
Jul
Oct
Jan
2018

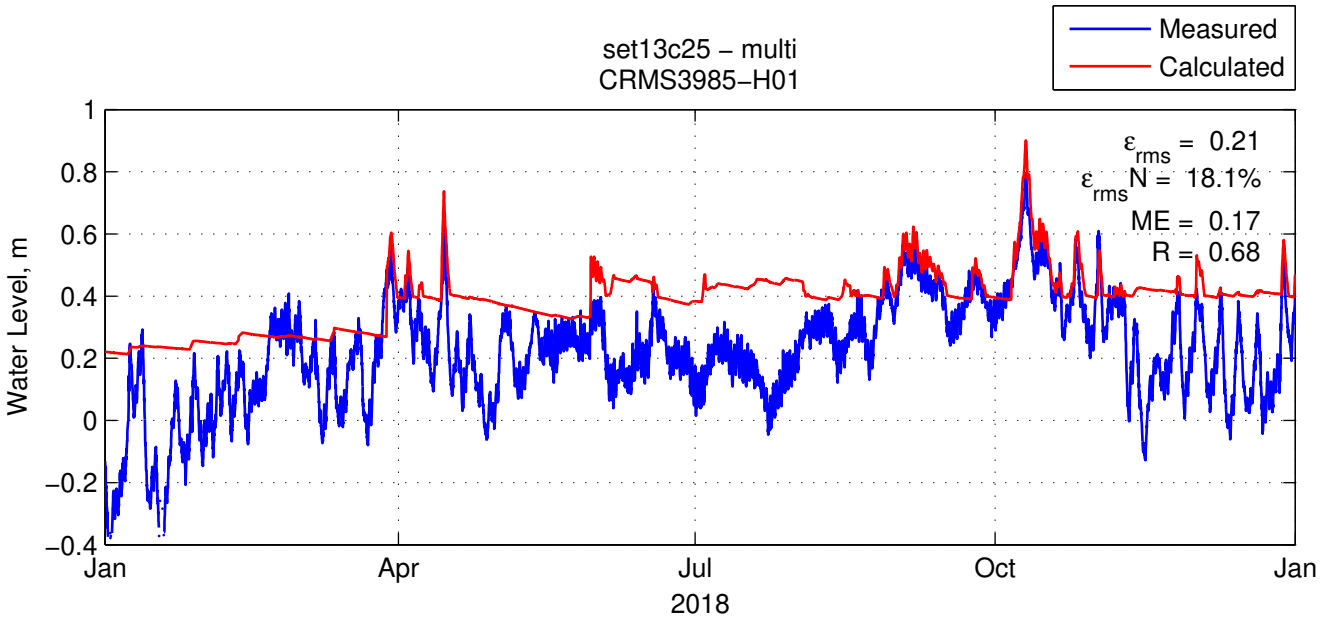

set13c25 – multi
CRMS0278–H01
Measured
Calculated
ε_{rms} = 0.08
ε_{rms}N = 10.8%
ME = 0.07
R = 0.78
Water Level, m
1.2
1
0.8
0.6
0.4
0.2
0
–0.2
Jan
Apr
Jul
Oct
Jan
2018

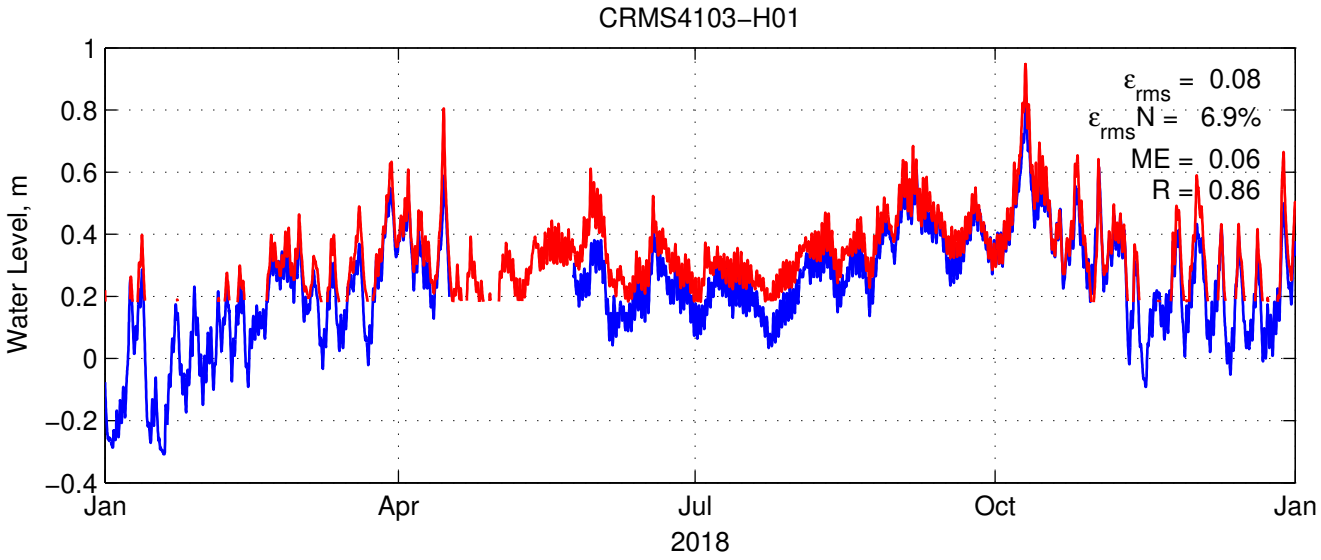

CRMS0282–H01
ε_{rms} = 0.22
ε_{rms}N = 15.7%
ME = 0.20
R = 0.85
Water Level, m
1.5
1
0.5
0
–0.5
–1
Jan
Apr
Jul
Oct
Jan
2018

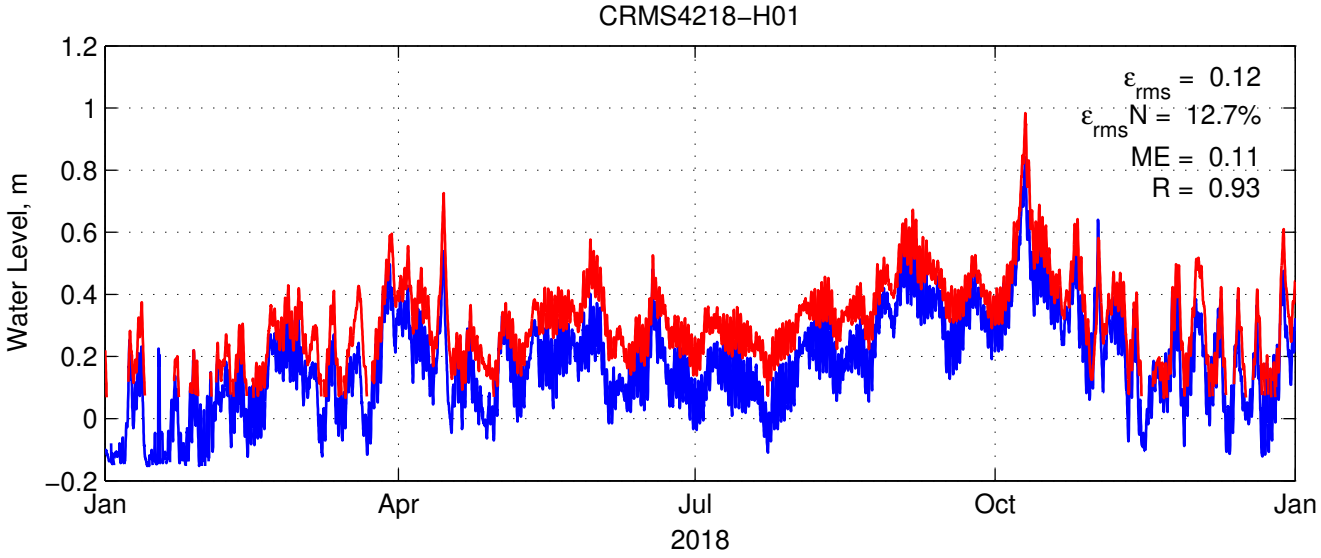

CRMS0287–H01
ε_{rms} = 0.07
ε_{rms}N = 10.1%
ME = 0.03
R = 0.84
Water Level, m
1
0.8
0.6
0.4
0.2
0
Jan
Apr
Jul
Oct
Jan
2018

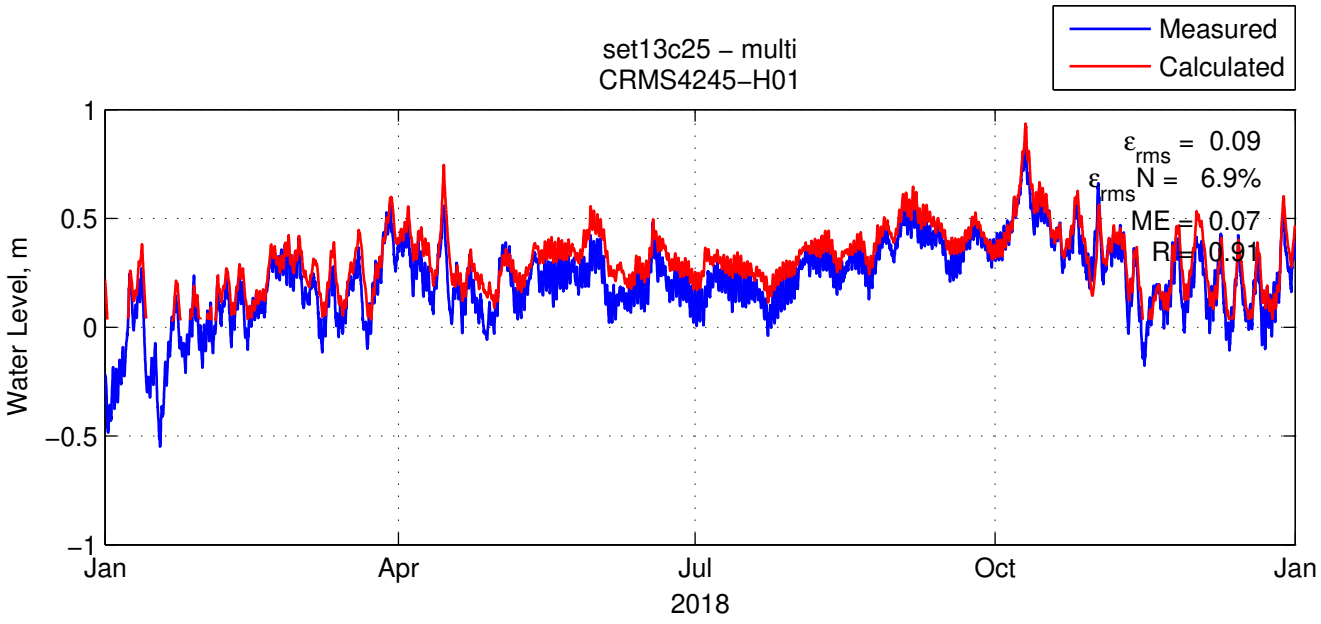

set13c25 – multi
CRMS3054–H01
Measured
Calculated
ε_{rms} = 0.13
ε_{rms}N = 10.7%
ME = 0.11
R = 0.94
Water Level, m
1
0.5
0
–0.5
Jan
Apr
Jul
Oct
Jan
2018
CRMS3169–H01
ε_{rms} = 0.15
ε_{rms}N = 14.7%
ME = 0.13
R = 0.89
Water Level, m
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
Jan
Apr
Jul
Oct
Jan
2018
CRMS3565–H01
ε_{rms} = 0.10
ε_{rms}N = 9.1%
ME = 0.08
R = 0.94
Water Level, m
1.5
1
0.5
0
–0.5
Jan
Apr
Jul
Oct
Jan
2018

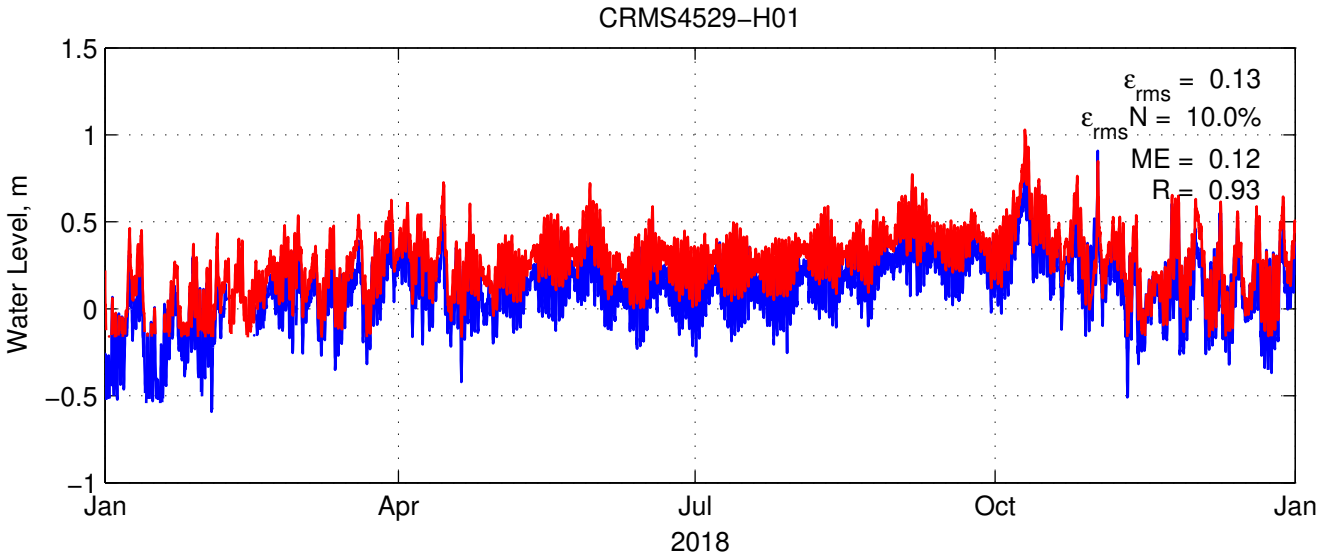

Measured
Calculated
set13c25 – multi
CRMS3601–H01
ε_{rms} = 0.12
ε_{rms}N = 10.1%
ME = 0.09
R = 0.89
Water Level, m
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
Jan
Apr
Jul
Oct
Jan
2018
CRMS3617–H01
ε_{rms} = 0.13
ε_{rms}N = 11.3%
ME = 0.11
R = 0.89
Water Level, m
1.5
1
0.5
0
–0.5
Jan
Apr
Jul
Oct
Jan
2018
CRMS3680–H01
ε_{rms} = 0.18
ε_{rms}N = 19.5%
ME = 0.17
R = 0.87
Water Level, m
1.5
1
0.5
0
–0.5
Jan
Apr
Jul
Oct
Jan
2018

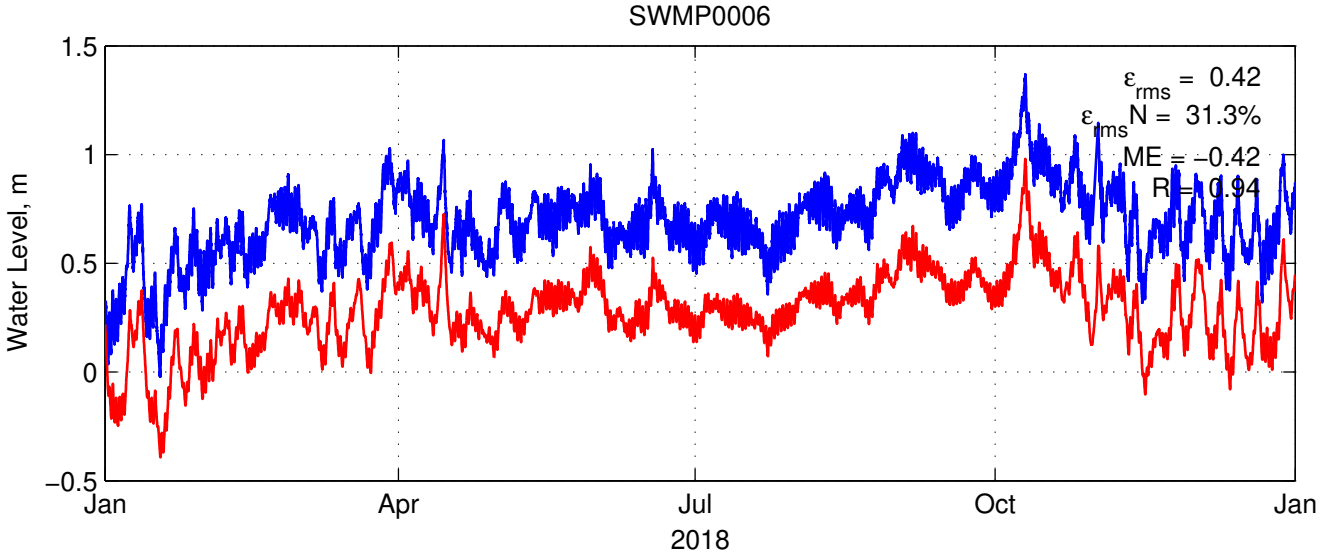

set13c25 – multi
CRMS3985–H01
Measured
Calculated
ε_{rms} = 0.21
ε_{rms}N = 18.1%
ME = 0.17
R = 0.68
Water Level, m
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
Jan
Apr
Jul
Oct
Jan
2018

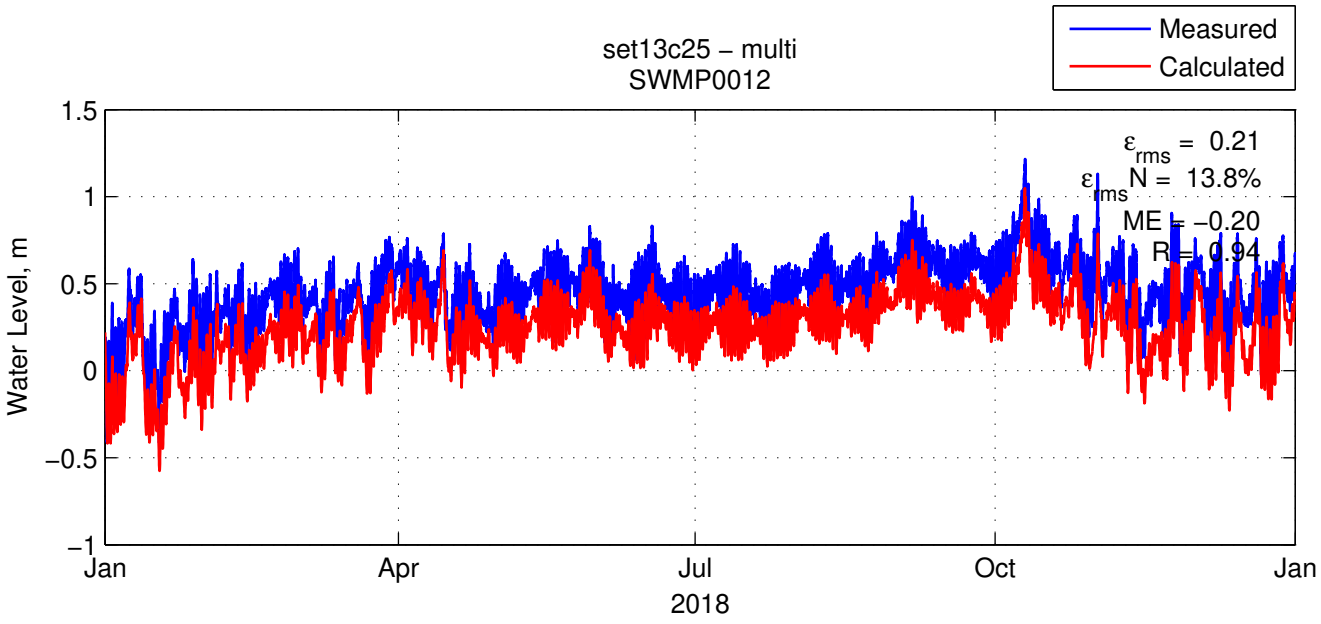

CRMS4103–H01
ε_{rms} = 0.08
ε_{rms}N = 6.9%
ME = 0.06
R = 0.86
Water Level, m
1
0.8
0.6
0.4
0.2
0
–0.2
–0.4
Jan
Apr
Jul
Oct
Jan
2018

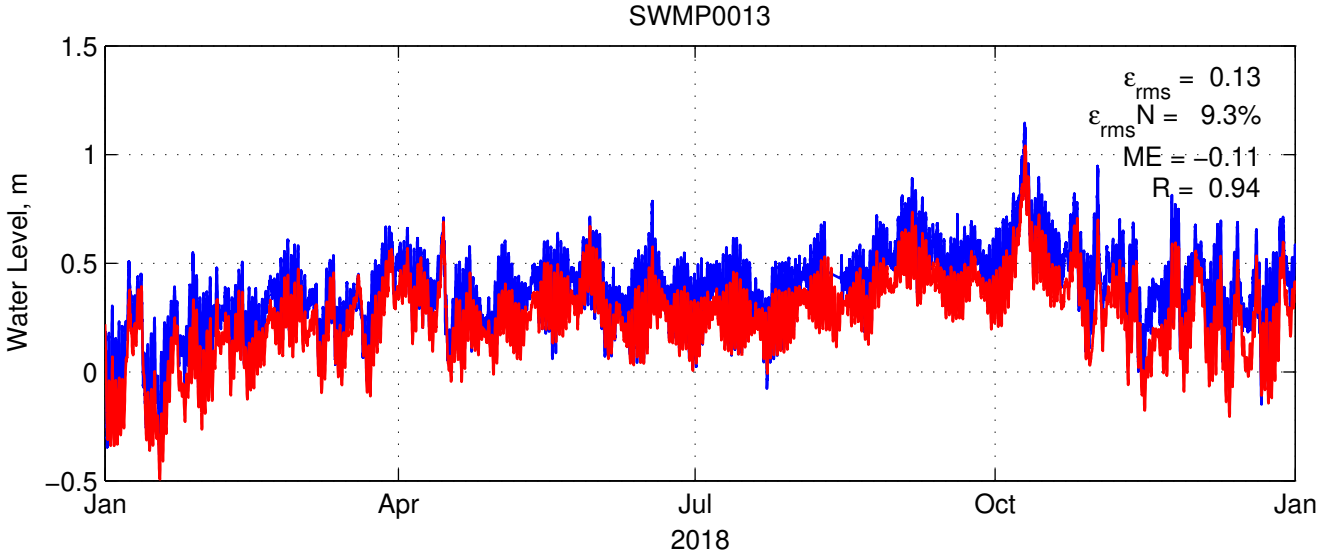

CRMS4218–H01
ε_{rms} = 0.12
ε_{rms}N = 12.7%
ME = 0.11
R = 0.93
Water Level, m
1.2
1
0.8
0.6
0.4
0.2
0
–0.2
Jan
Apr
Jul
Oct
Jan
2018

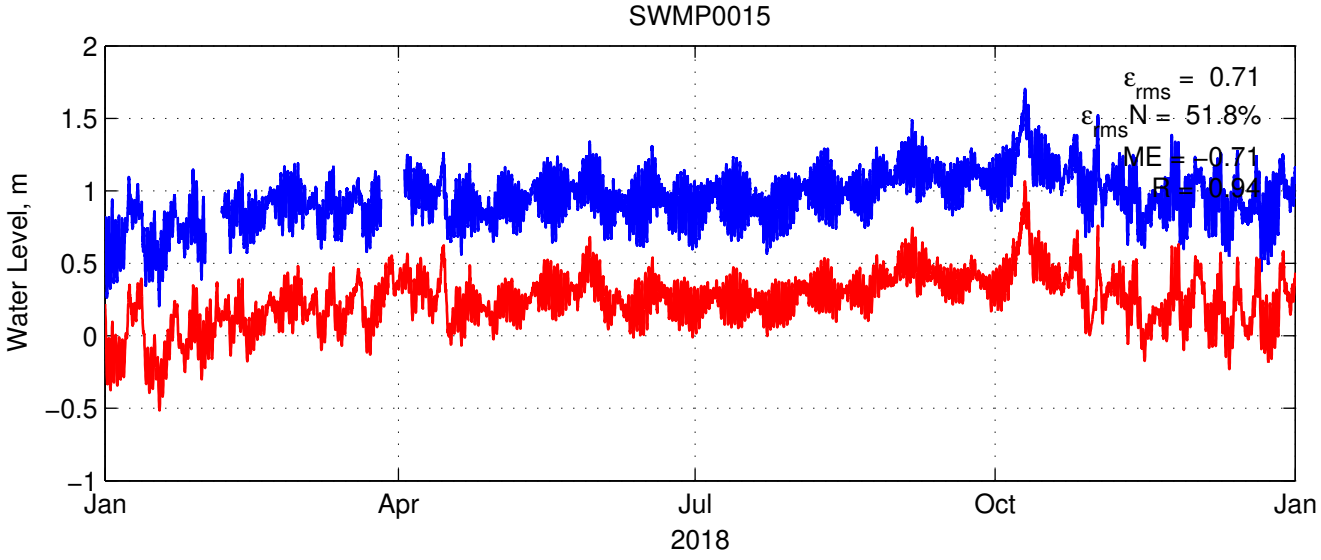

Measured
Calculated
set13c25 – multi
CRMS4245–H01
ε_{rms} = 0.09
ε_{rms}N = 6.9%
ME = 0.07
R = 0.91
Water Level, m
1
0.5
0
−0.5
−1
Jan
Apr
Jul
Oct
Jan
2018

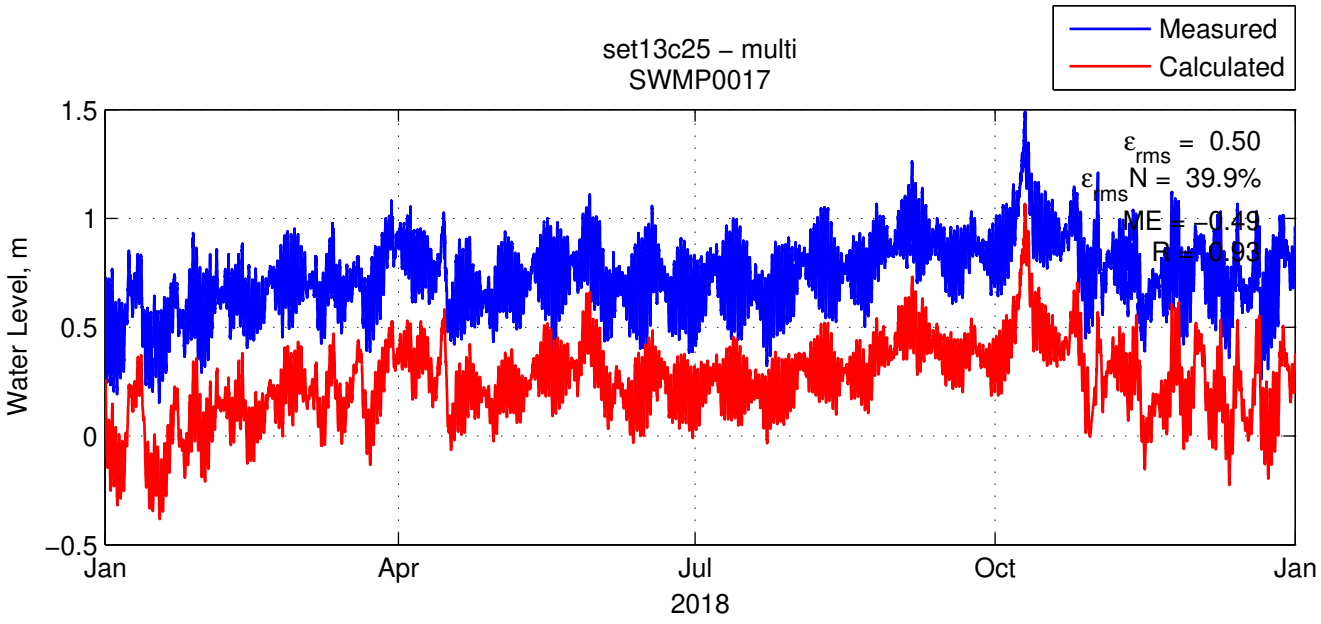

CRMS4529–H01
ε_{rms} = 0.13
ε_{rms}N = 10.0%
ME = 0.12
R = 0.93
Water Level, m
1.5
1
0.5
0
−0.5
−1
Jan
Apr
Jul
Oct
Jan
2018

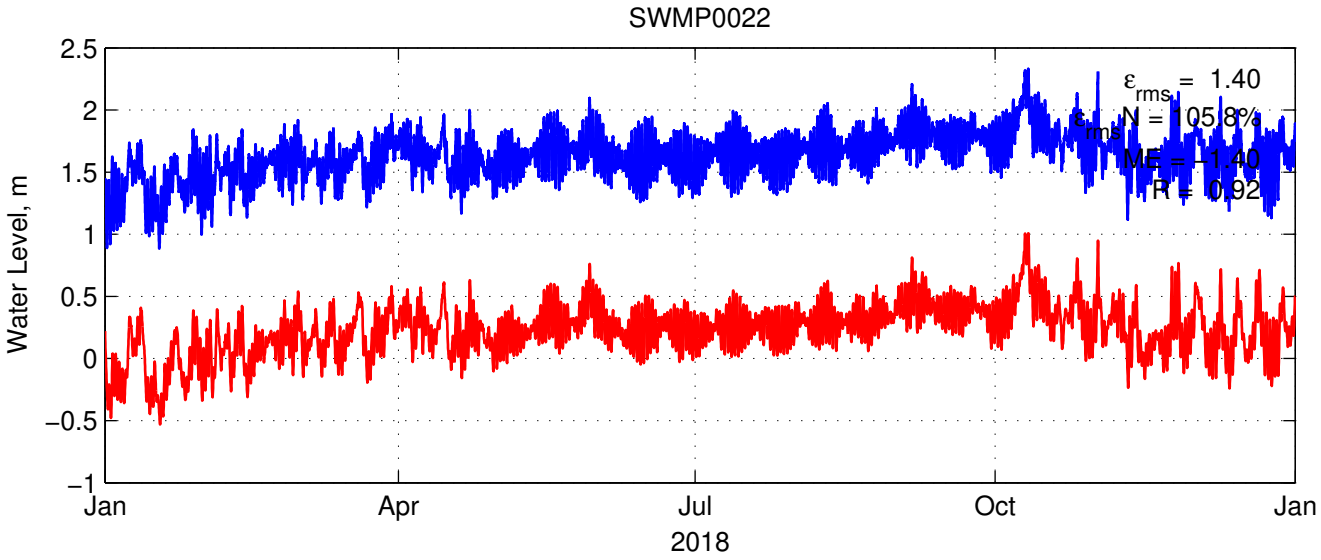

SWMP0006
ε_{rms} = 0.42
ε_{rms}N = 31.3%
ME = −0.42
R = 0.94
Water Level, m
1.5
1
0.5
0
−0.5
Jan
Apr
Jul
Oct
Jan
2018

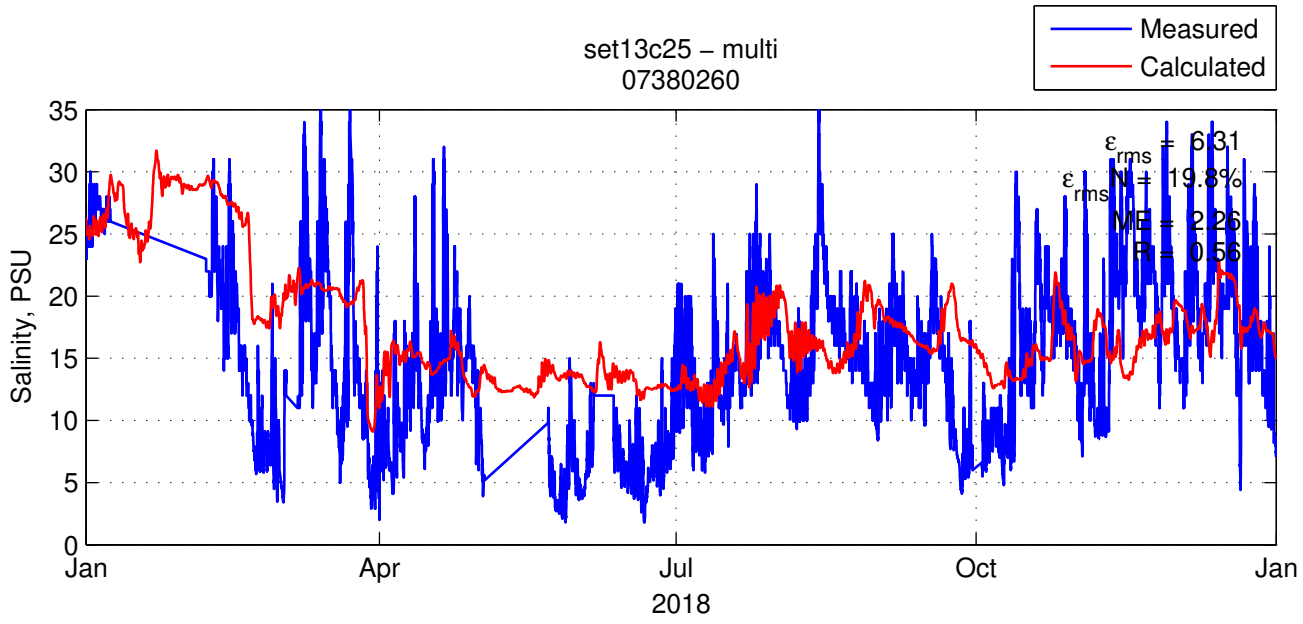

set13c25 – multi
SWMP0012
Measured
Calculated
ε_{rms} = 0.21
ε_{rms}N = 13.8%
ME = –0.20
R = 0.94
Water Level, m
1.5
1
0.5
0
–0.5
–1
Jan
Apr
Jul
Oct
Jan
2018

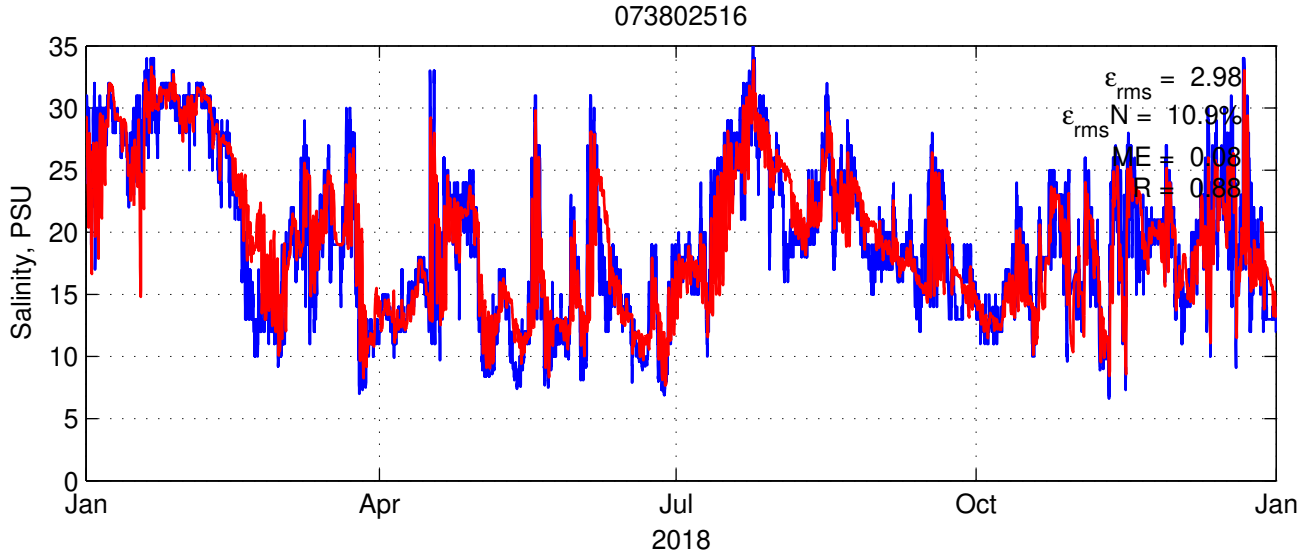

SWMP0013
ε_{rms} = 0.13
ε_{rms}N = 9.3%
ME = –0.11
R = 0.94
Water Level, m
1.5
1
0.5
0
–0.5
Jan
Apr
Jul
Oct
Jan
2018

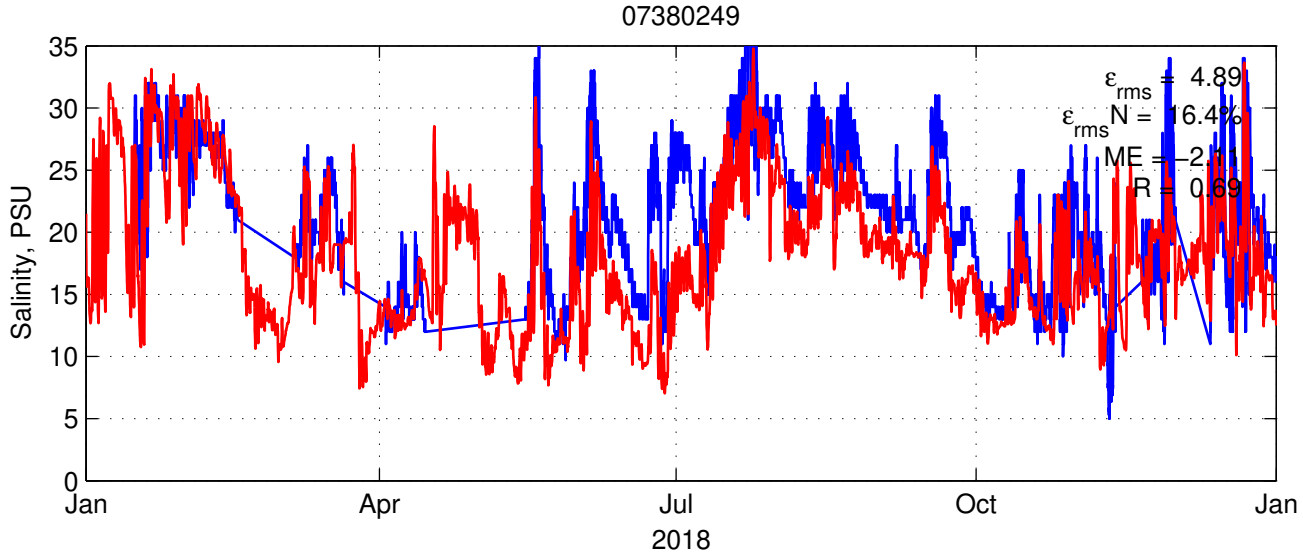

SWMP0015
ε_{rms} = 0.71
ε_{rms}N = 51.8%
ME = –0.71
R = 0.94
Water Level, m
2
1.5
1
0.5
0
–0.5
–1
Jan
Apr
Jul
Oct
Jan
2018

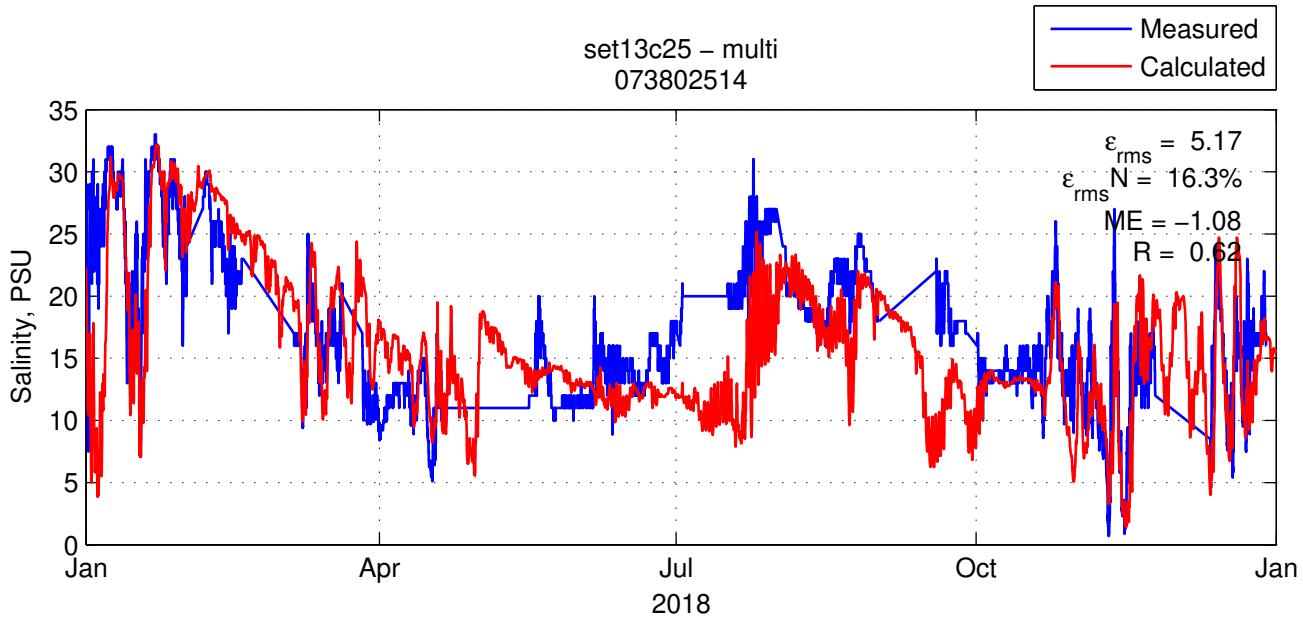

set13c25 – multi
SWMP0017
Measured
Calculated
ε_{rms} = 0.50
ε_{rms} N = 39.9%
ME = -0.49
R = 0.93
Water Level, m
1.5
1
0.5
0
−0.5
Jan
Apr
Jul
Oct
Jan
2018

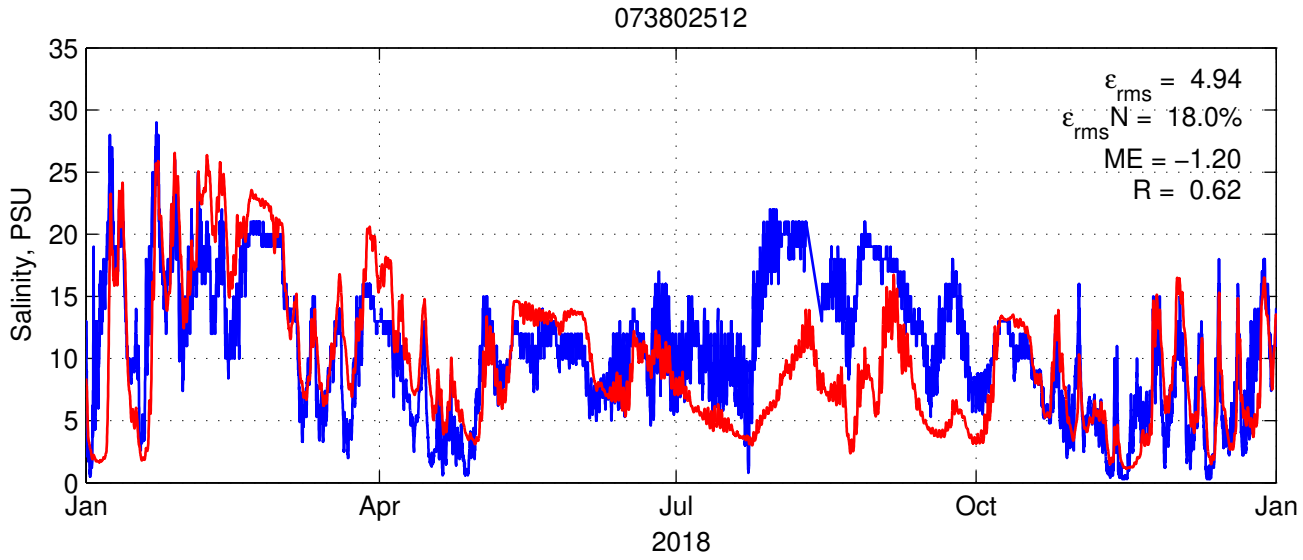

SWMP0022
ε_{rms} = 1.40
ε_{rms} N = 105.8%
ME = -1.40
R = 0.92
Water Level, m
2.5
2
1.5
1
0.5
0
−0.5
−1
Jan
Apr
Jul
Oct
Jan
2018

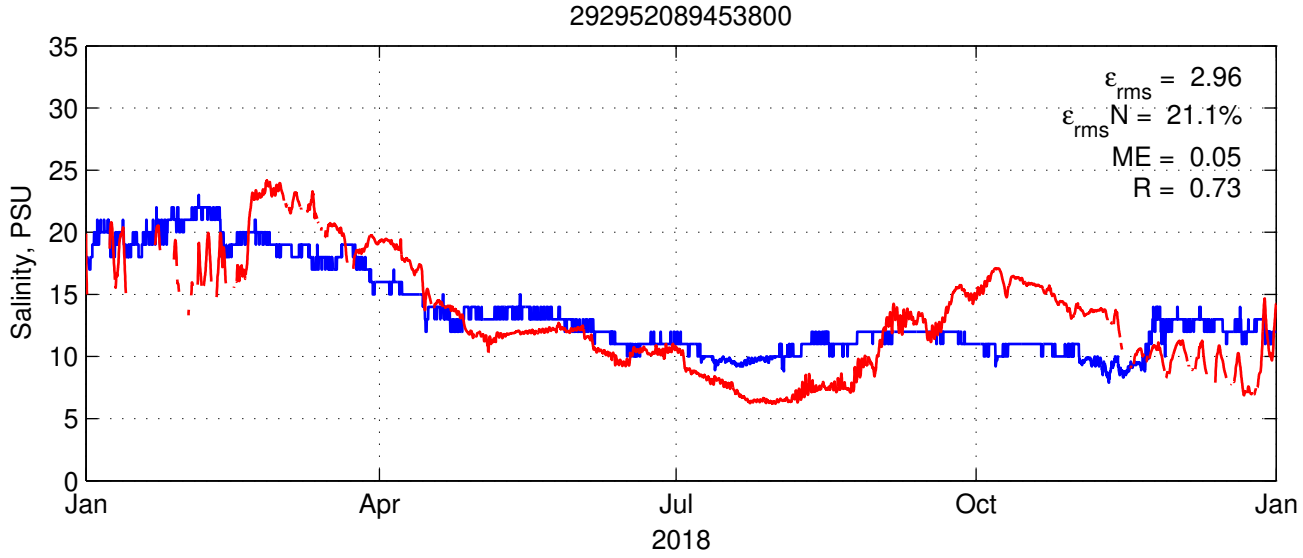

set13c25 – multi
07380260
Measured
Calculated
Salinity, PSU
Jan
Apr
Jul
Oct
Jan
2018

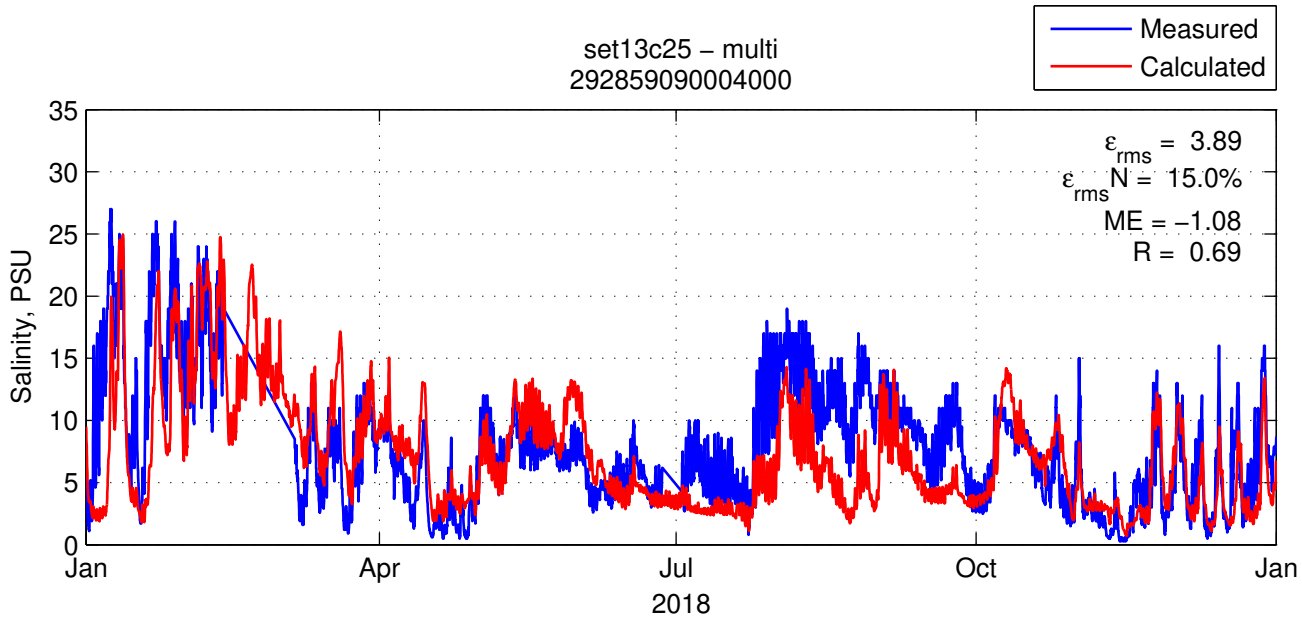

073802516
Salinity, PSU
Jan
Apr
Jul
Oct
Jan
2018

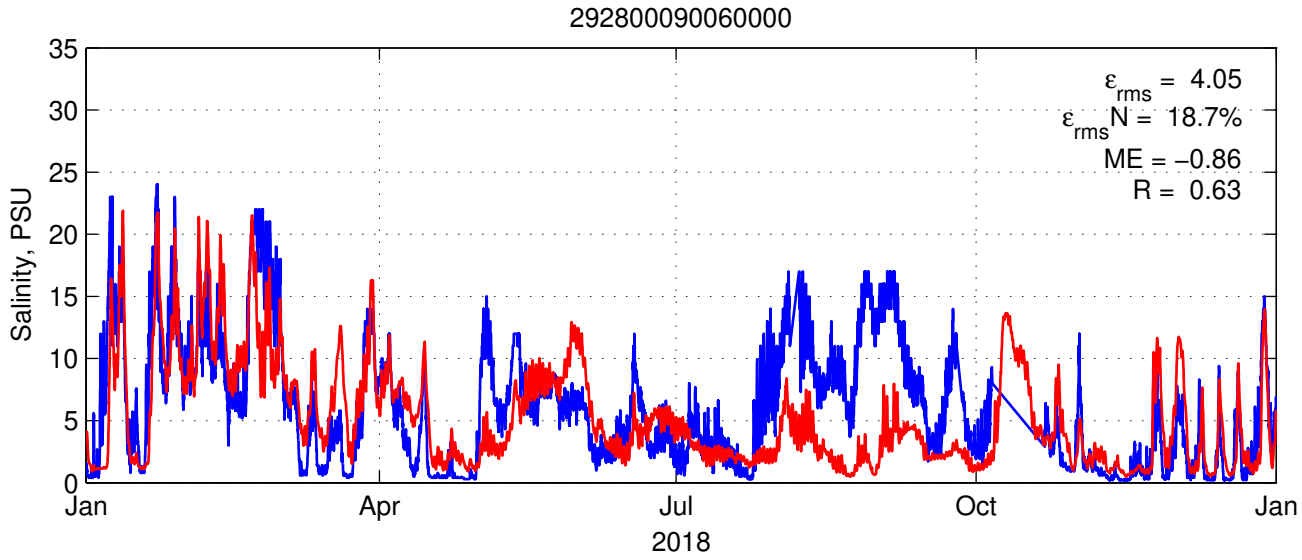

07380249
Salinity, PSU
Jan
Apr
Jul
Oct
Jan
2018

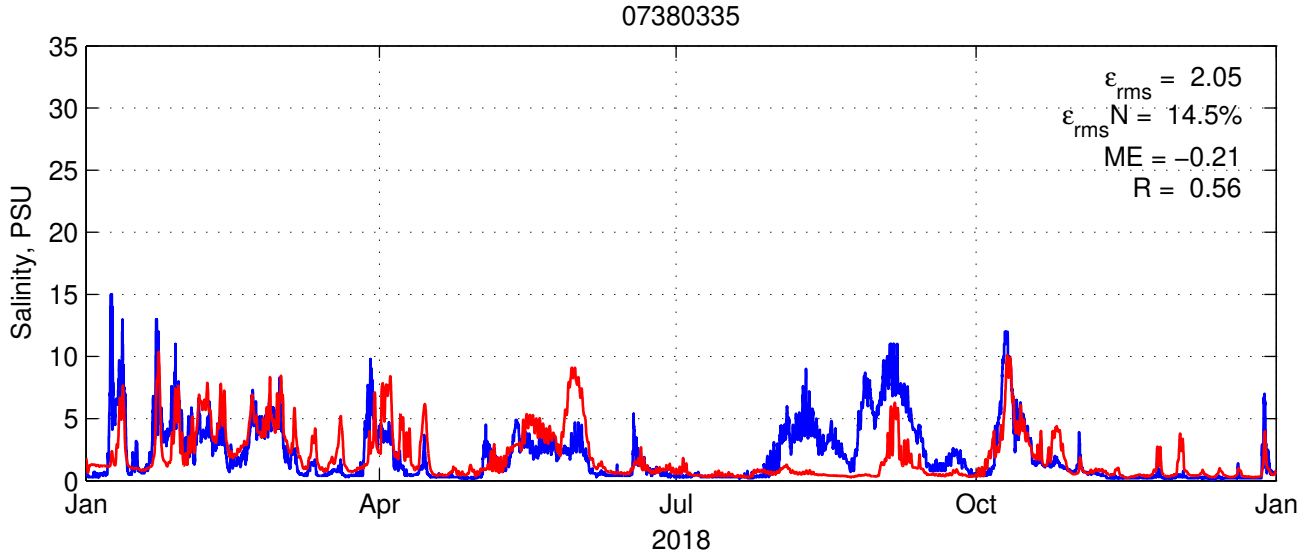

set13c25 – multi
073802514
Measured
Calculated
ε_{rms} = 5.17
ε_{rms}N = 16.3%
ME = –1.08
R = 0.62
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

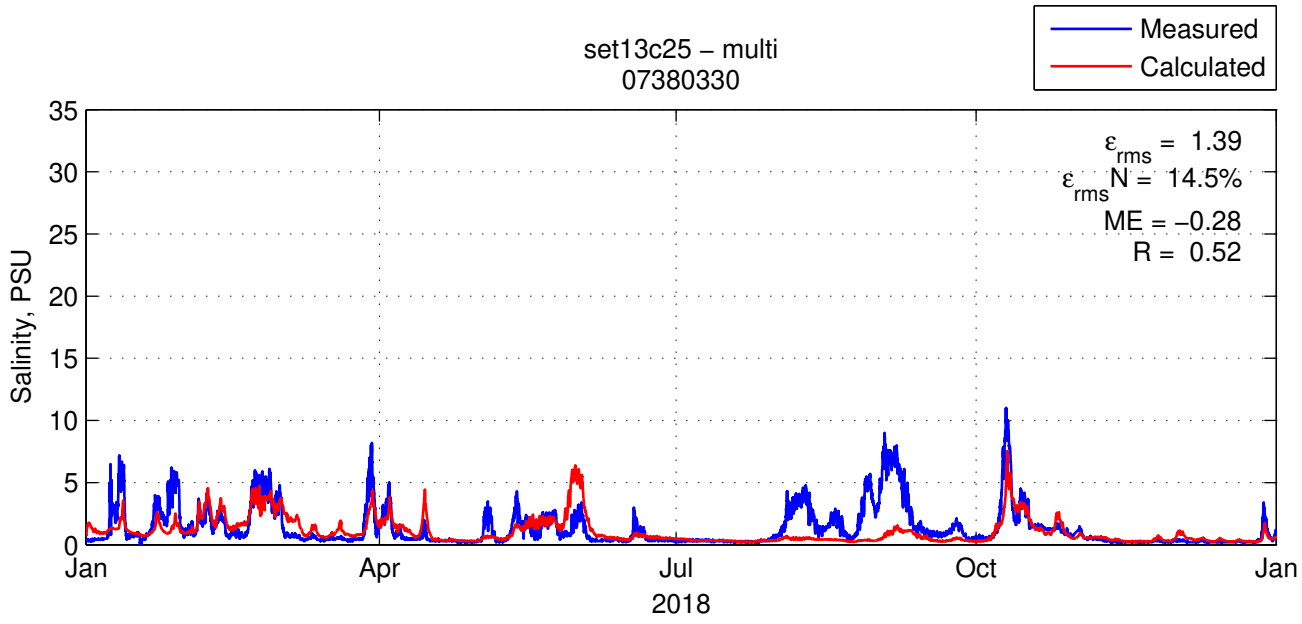

073802512
ε_{rms} = 4.94
ε_{rms}N = 18.0%
ME = –1.20
R = 0.62
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

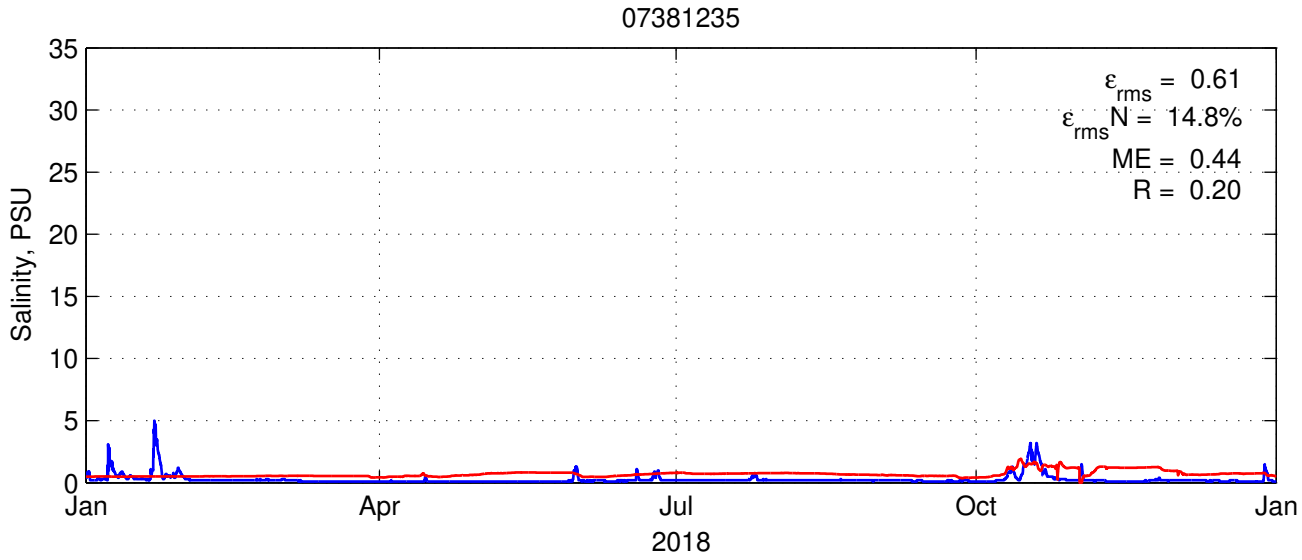

292952089453800
ε_{rms} = 2.96
ε_{rms}N = 21.1%
ME = 0.05
R = 0.73
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

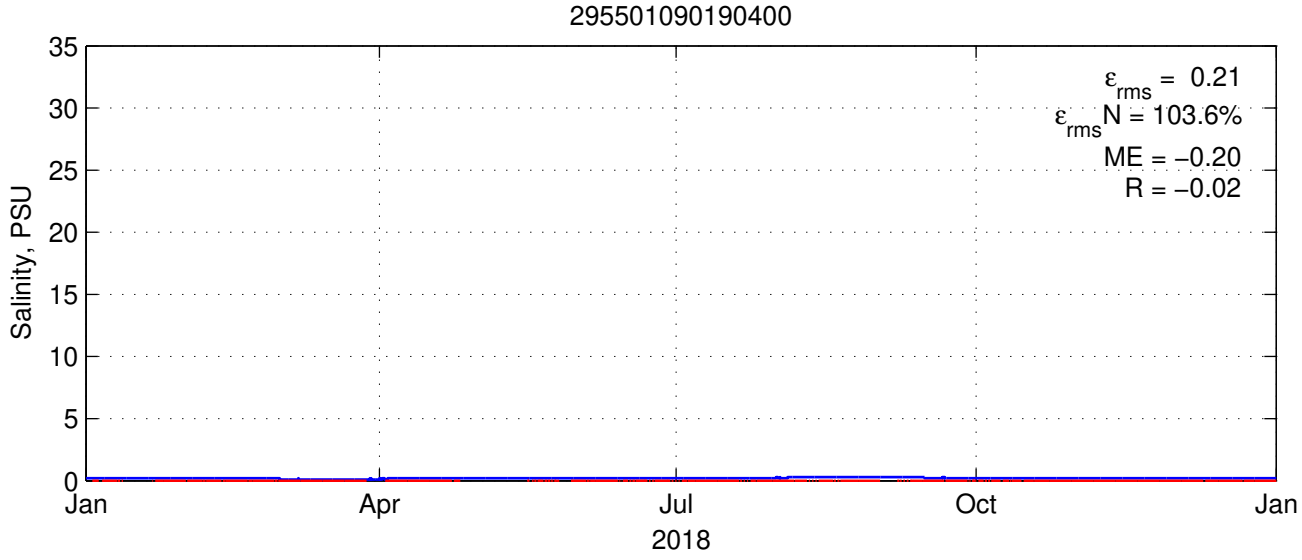

set13c25 – multi
292859090004000
Measured
Calculated
ε_{rms} = 3.89
ε_{rms}N = 15.0%
ME = –1.08
R = 0.69
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

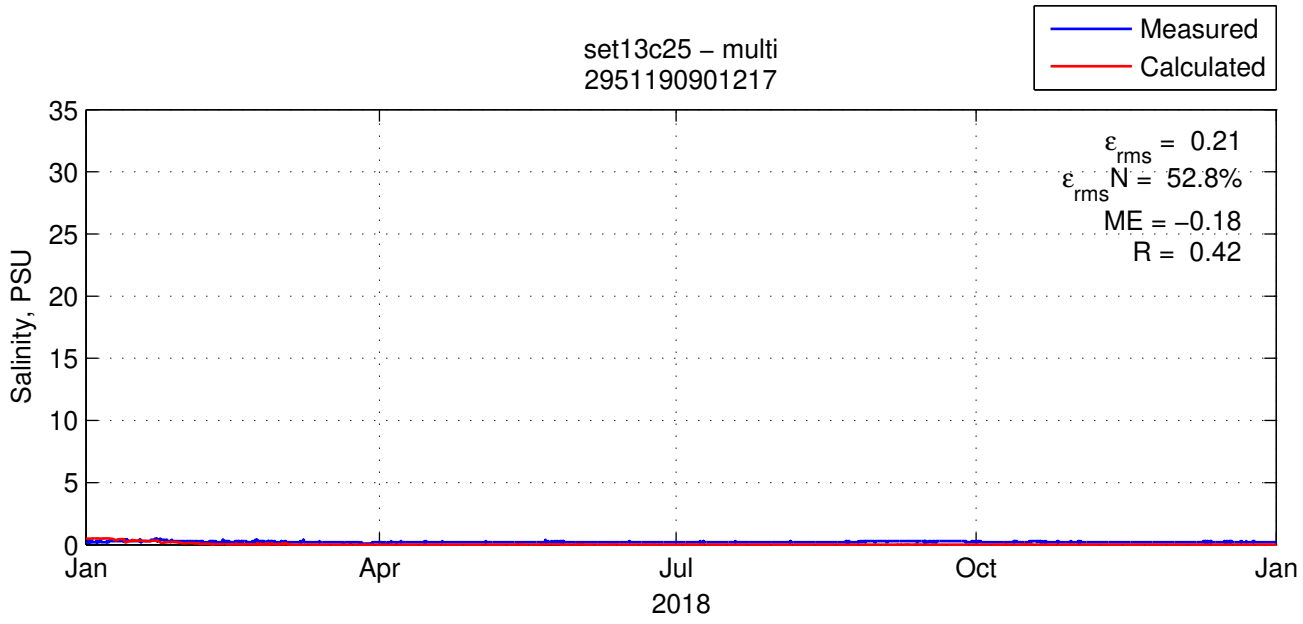

292800090060000
ε_{rms} = 4.05
ε_{rms}N = 18.7%
ME = –0.86
R = 0.63
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

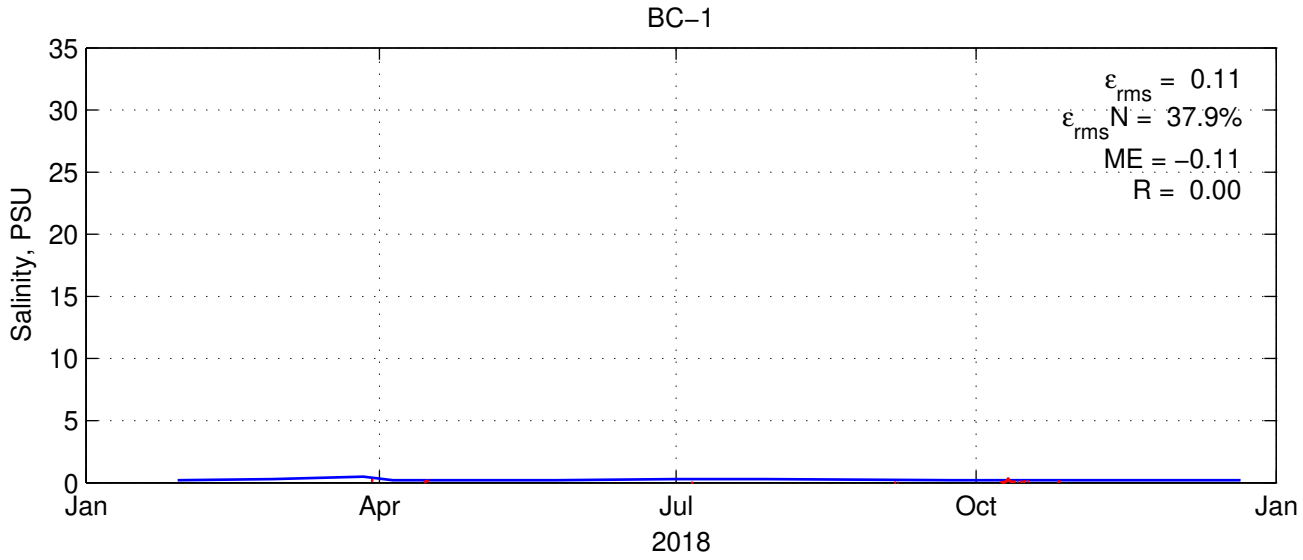

07380335
ε_{rms} = 2.05
ε_{rms}N = 14.5%
ME = –0.21
R = 0.56
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

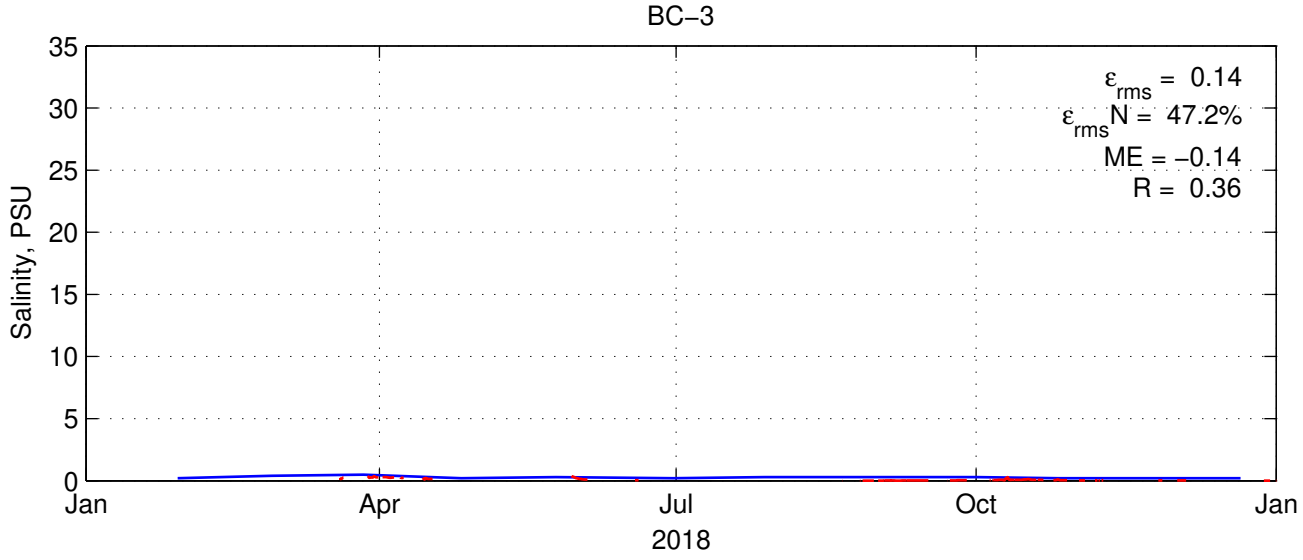

Measured
Calculated
set13c25 – multi
07380330
ε_{rms} = 1.39
ε_{rms}N = 14.5%
ME = –0.28
R = 0.52
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

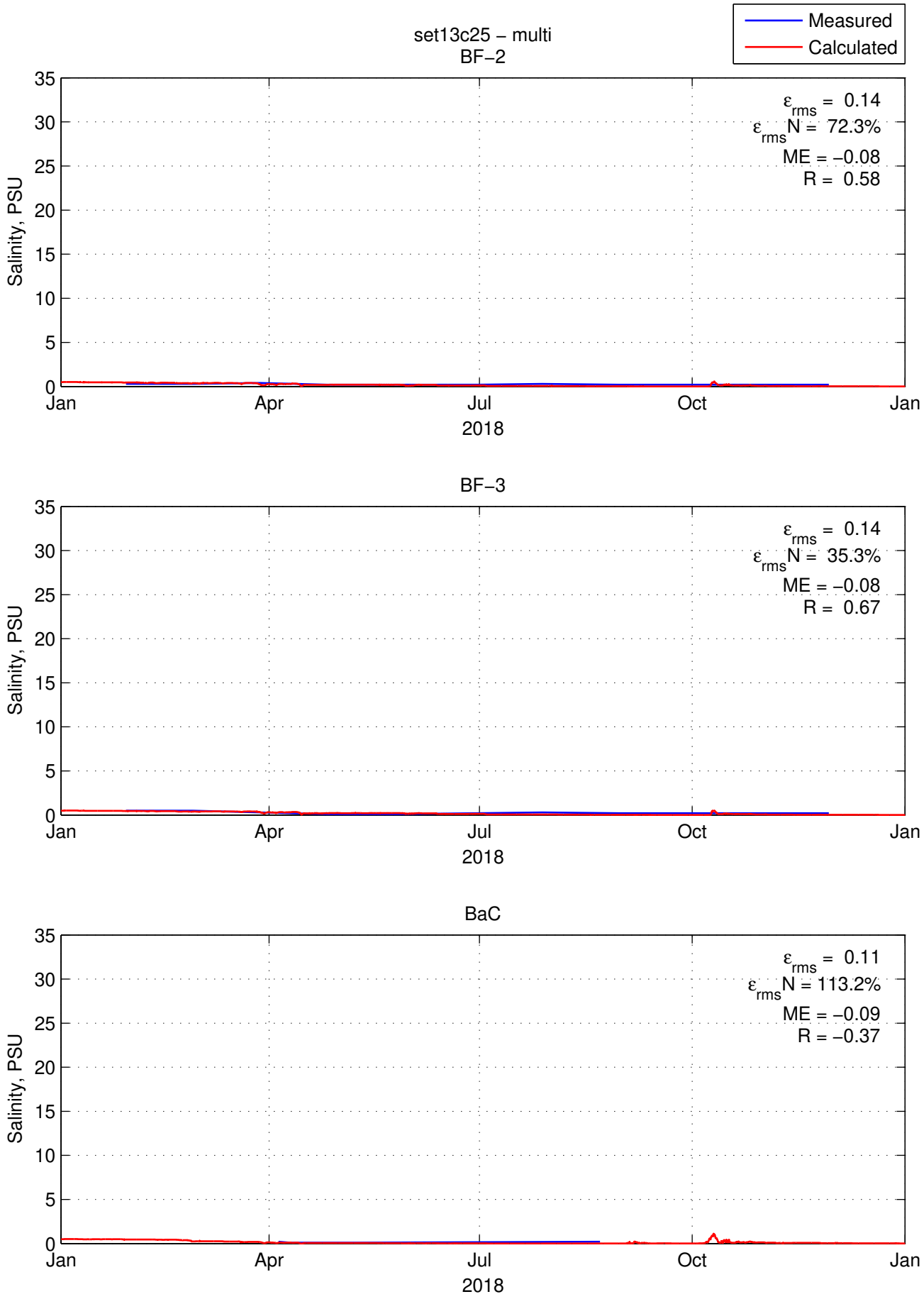

07381235
ε_{rms} = 0.61
ε_{rms}N = 14.8%
ME = 0.44
R = 0.20
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

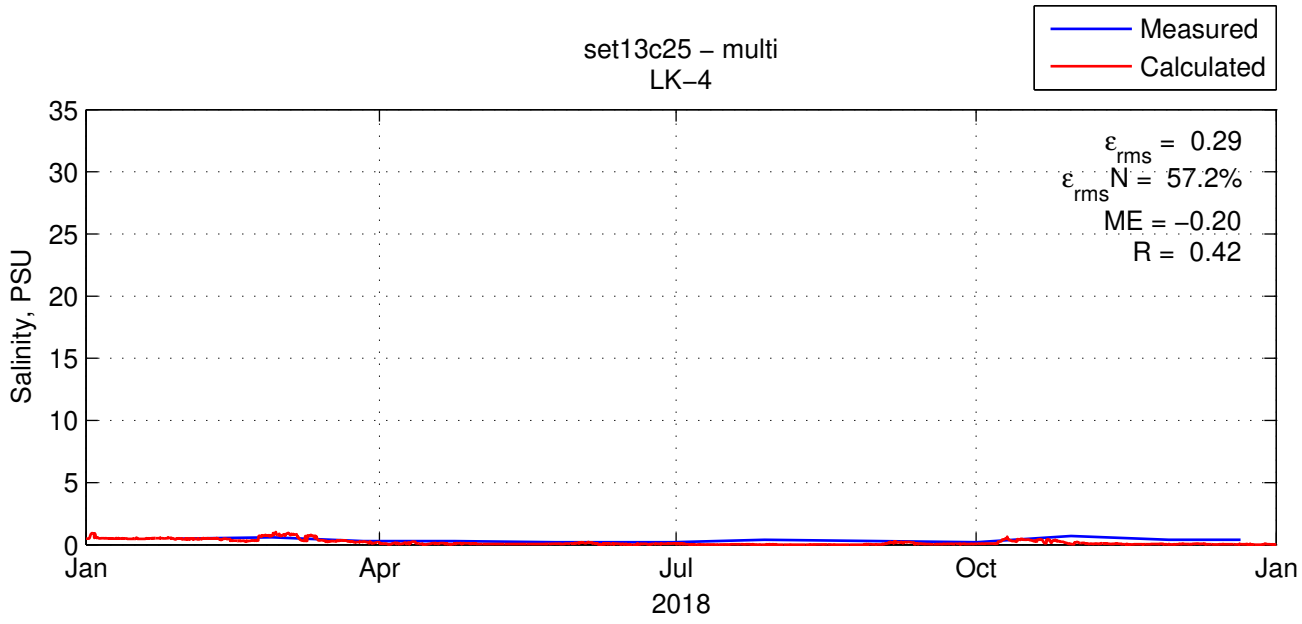

295501090190400
ε_{rms} = 0.21
ε_{rms}N = 103.6%
ME = –0.20
R = –0.02
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

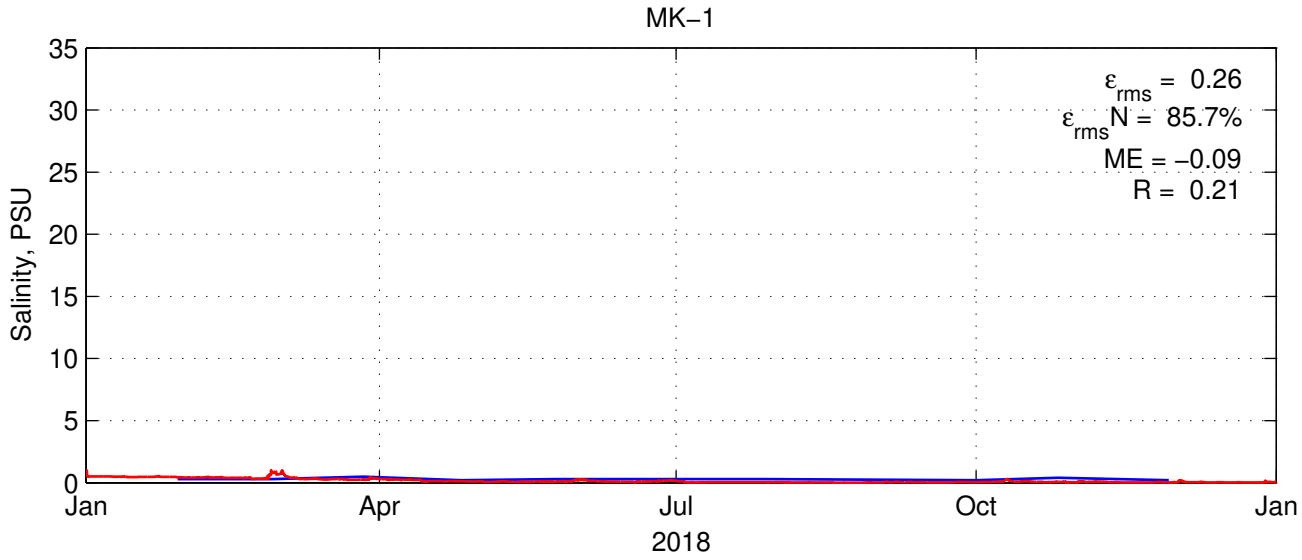

set13c25 – multi
2951190901217
Measured
Calculated
ε_{rms} = 0.21
ε_{rms}N = 52.8%
ME = –0.18
R = 0.42
Salinity, PSU
35
30
25
20
15
10
5
0
Jan
Apr
Jul
Oct
Jan
2018

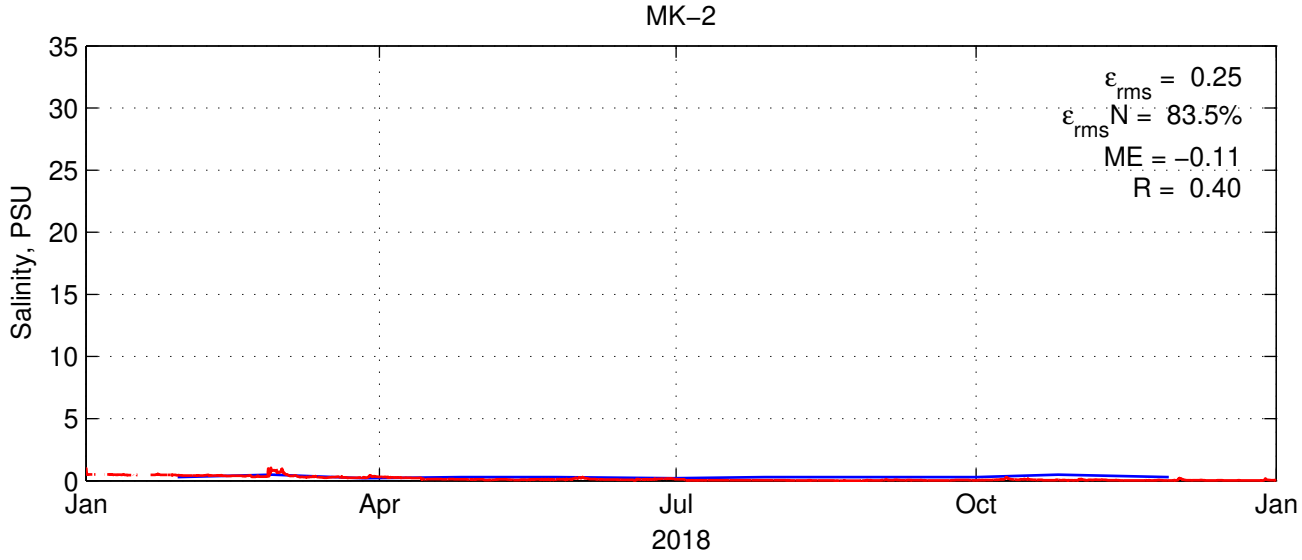

BC–1
ε_{rms} = 0.11
ε_{rms}N = 37.9%
ME = –0.11
R = 0.00
Salinity, PSU
35
30
25
20
15
10
5
0
Jan
Apr
Jul
Oct
Jan
2018

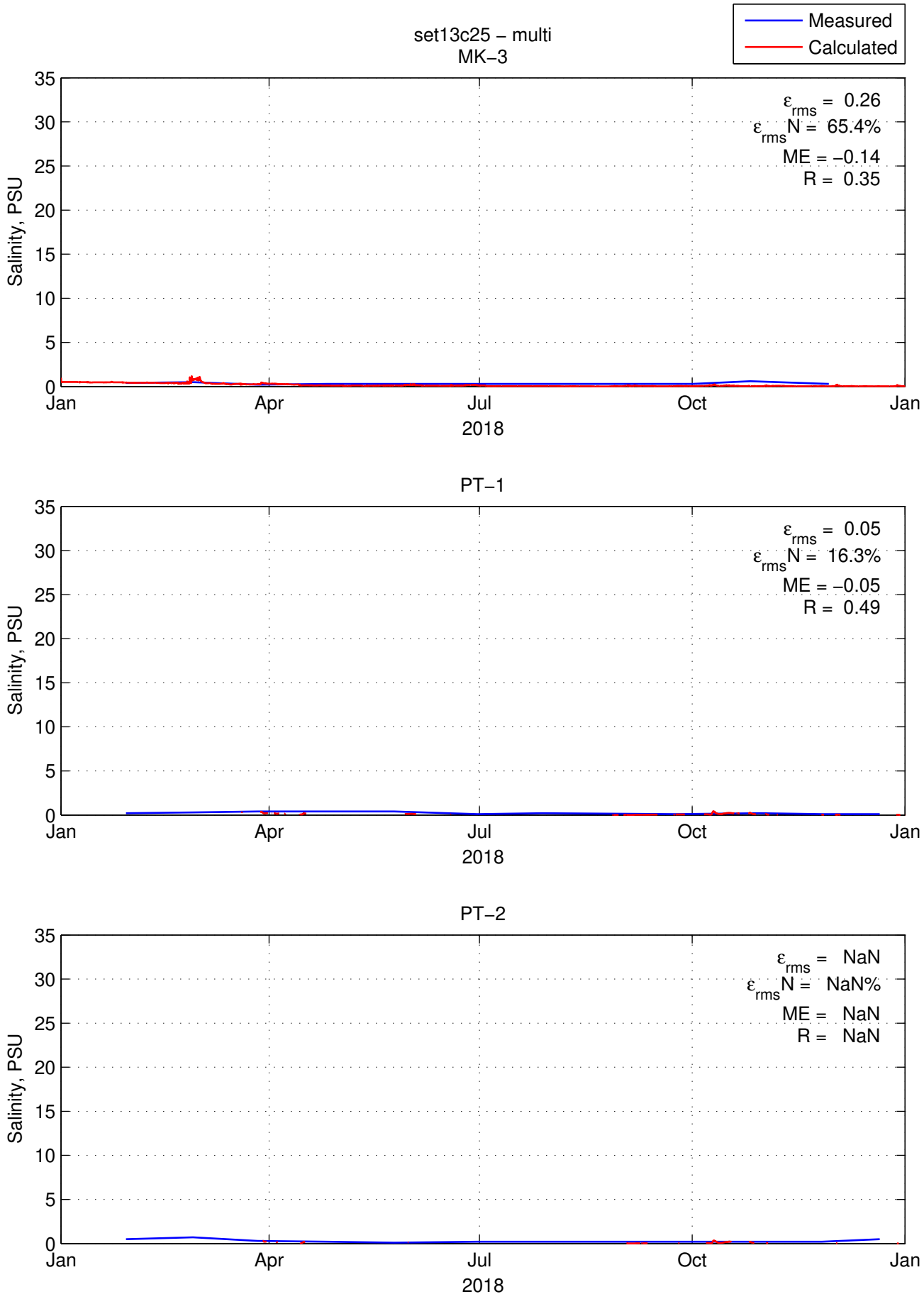

BC–3
ε_{rms} = 0.14
ε_{rms}N = 47.2%
ME = –0.14
R = 0.36
Salinity, PSU
35
30
25
20
15
10
5
0
Jan
Apr
Jul
Oct
Jan
2018

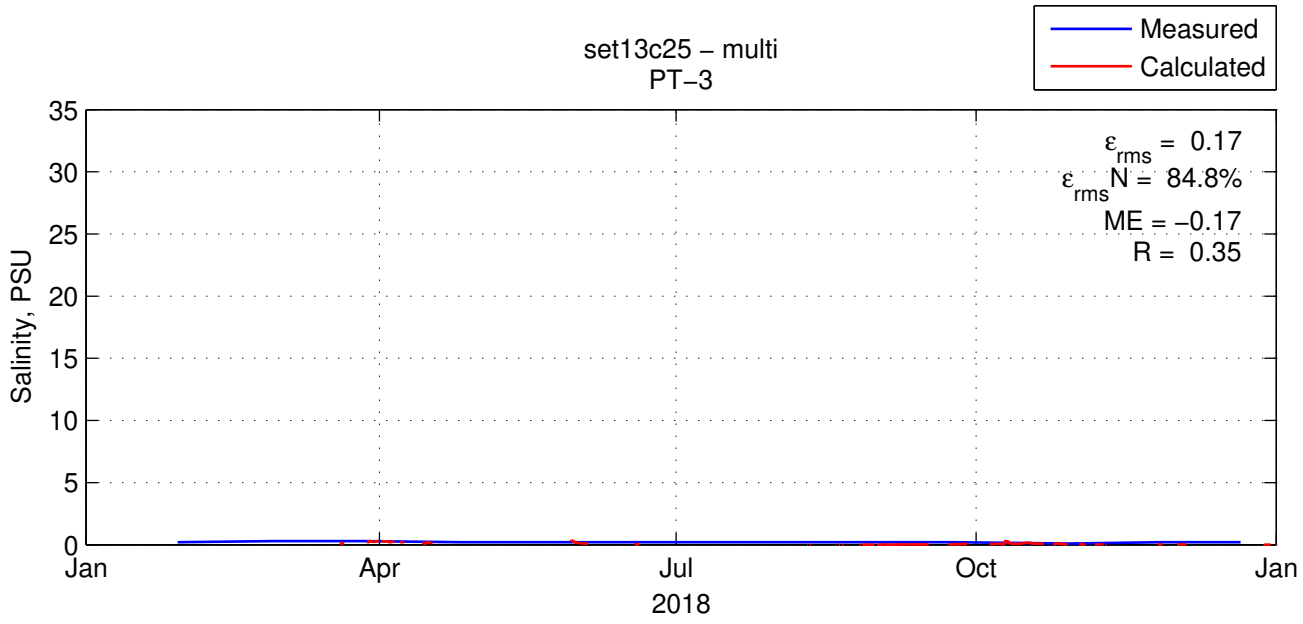

set13c25 – multi
BF–2
Measured
Calculated
ε_{rms} = 0.14
ε_{rms}N = 72.3%
ME = –0.08
R = 0.58
Salinity, PSU
35
30
25
20
15
10
5
0
Jan
Apr
Jul
Oct
Jan
2018
BF–3
ε_{rms} = 0.14
ε_{rms}N = 35.3%
ME = –0.08
R = 0.67
Salinity, PSU
Jan
Apr
Jul
Oct
Jan
2018
BaC
ε_{rms} = 0.11
ε_{rms}N = 113.2%
ME = –0.09
R = –0.37
Salinity, PSU
Jan
Apr
Jul
Oct
Jan
2018

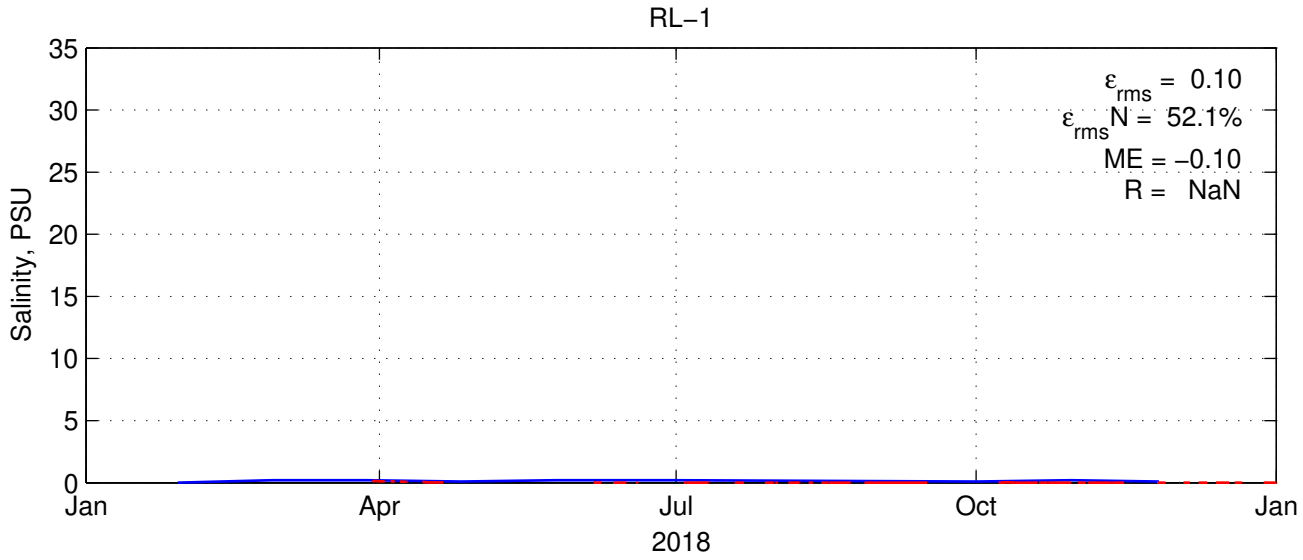

set13c25 – multi
LK–4
Measured
Calculated
ε_{rms} = 0.29
ε_{rms}N = 57.2%
ME = –0.20
R = 0.42
Salinity, PSU
35
30
25
20
15
10
5
0
Jan
Apr
Jul
Oct
Jan
2018

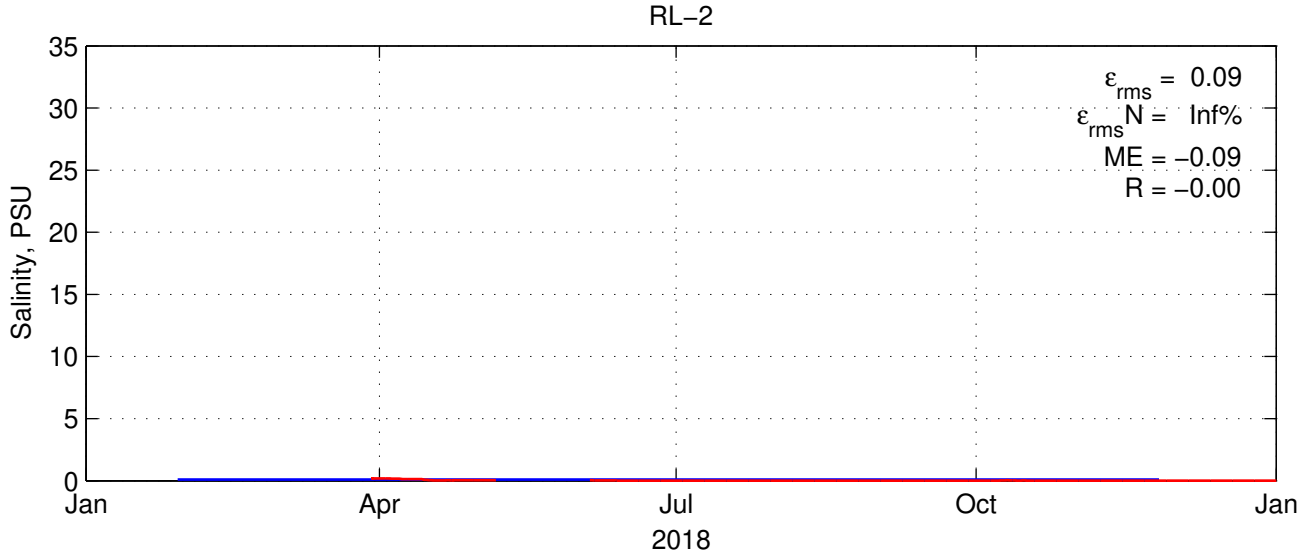

MK–1
ε_{rms} = 0.26
ε_{rms}N = 85.7%
ME = –0.09
R = 0.21
Salinity, PSU
35
30
25
20
15
10
5
0
Jan
Apr
Jul
Oct
Jan
2018

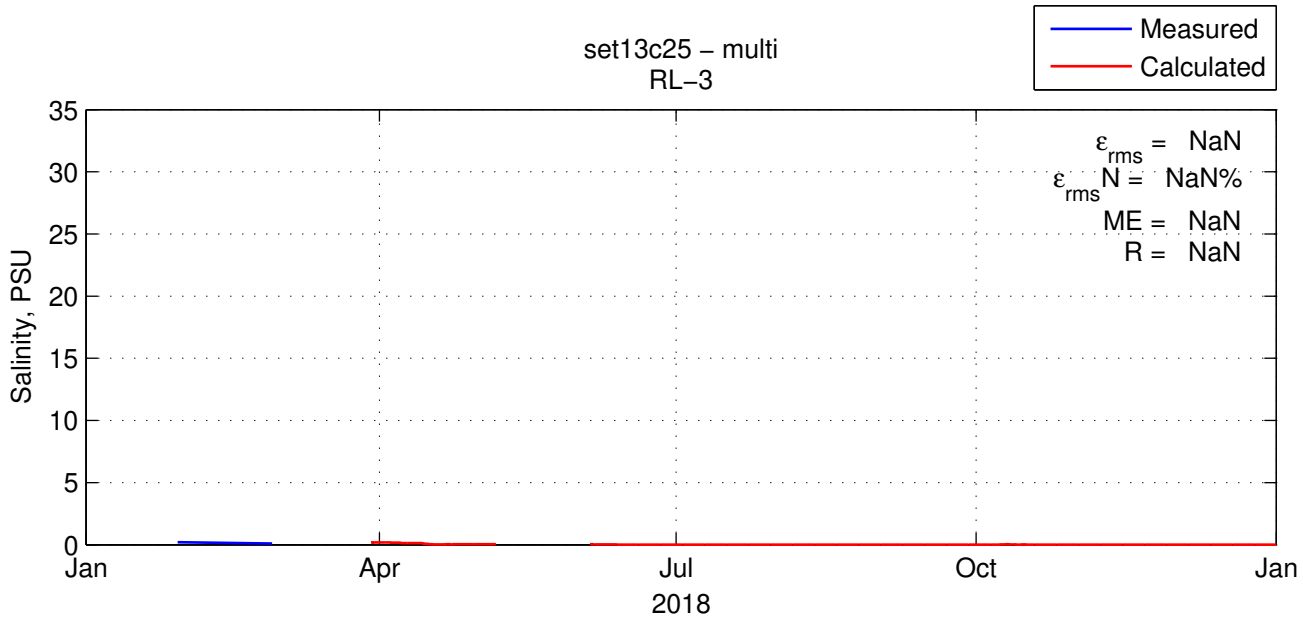

MK–2
ε_{rms} = 0.25
ε_{rms}N = 83.5%
ME = –0.11
R = 0.40
Salinity, PSU
35
30
25
20
15
10
5
0
Jan
Apr
Jul
Oct
Jan
2018

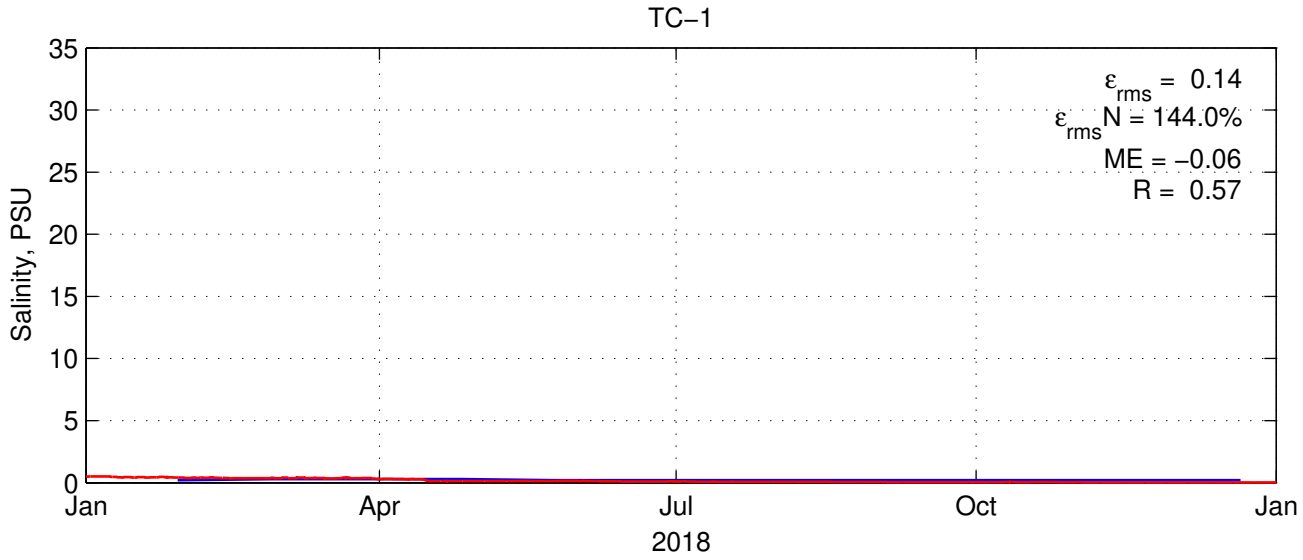

Measured
Calculated
set13c25 – multi
MK–3
ε_{rms} = 0.26
ε_{rms}N = 65.4%
ME = –0.14
R = 0.35
Salinity, PSU
35
30
25
20
15
10
5
0
Jan
Apr
Jul
Oct
Jan
2018
PT–1
ε_{rms} = 0.05
ε_{rms}N = 16.3%
ME = –0.05
R = 0.49
Salinity, PSU
Jan
Apr
Jul
Oct
Jan
2018
PT–2
ε_{rms} = NaN
ε_{rms}N = NaN%
ME = NaN
R = NaN
Salinity, PSU
Jan
Apr
Jul
Oct
Jan
2018

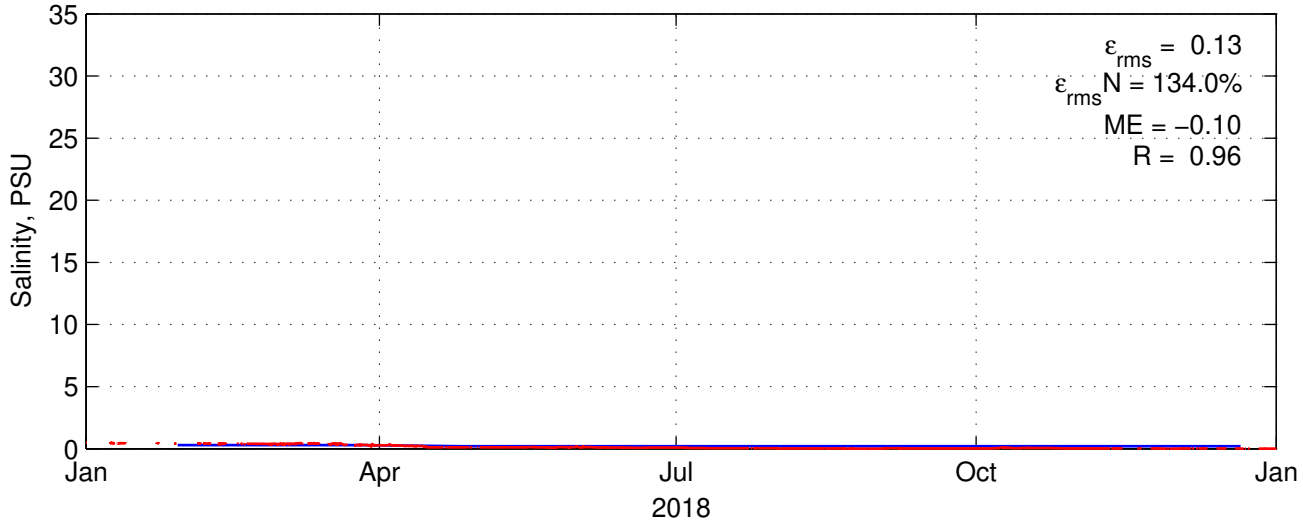

set13c25 – multi
PT–3
Measured
Calculated
ε_{rms} = 0.17
ε_{rms}N = 84.8%
ME = –0.17
R = 0.35
Salinity, PSU
35
30
25
20
15
10
5
0
Jan
Apr
Jul
Oct
Jan
2018

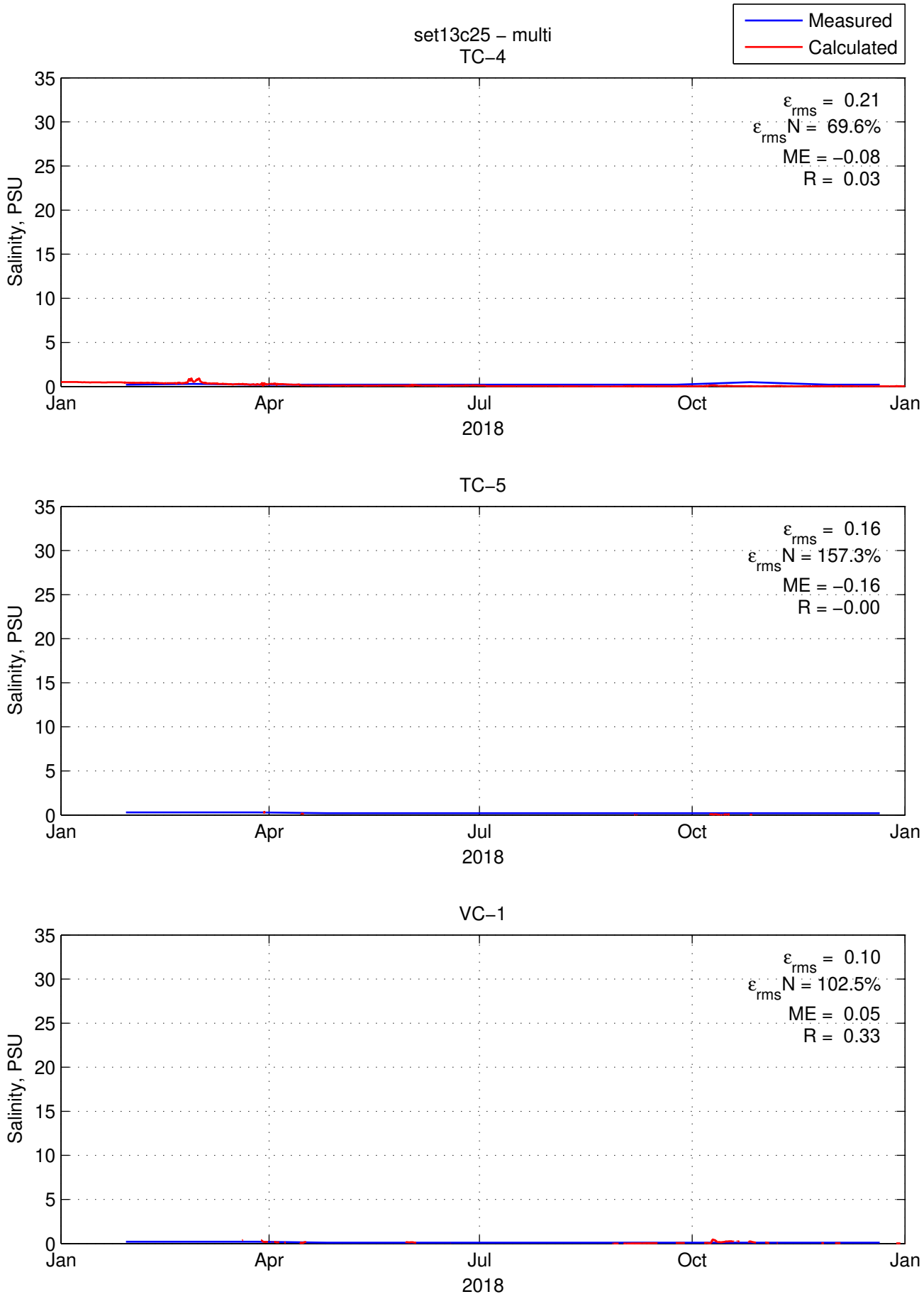

RL–1
ε_{rms} = 0.10
ε_{rms}N = 52.1%
ME = –0.10
R = NaN
Salinity, PSU
35
30
25
20
15
10
5
0
Jan
Apr
Jul
Oct
Jan
2018

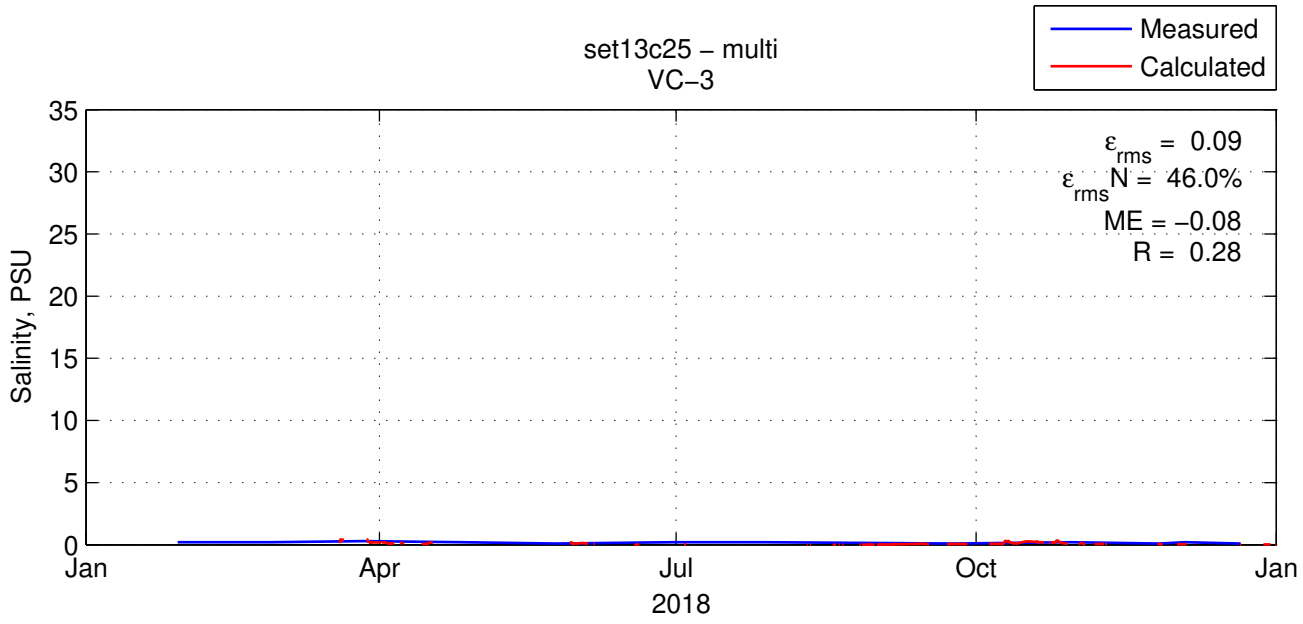

RL–2
ε_{rms} = 0.09
ε_{rms}N = Inf%
ME = –0.09
R = –0.00
Salinity, PSU
35
30
25
20
15
10
5
0
Jan
Apr
Jul
Oct
Jan
2018

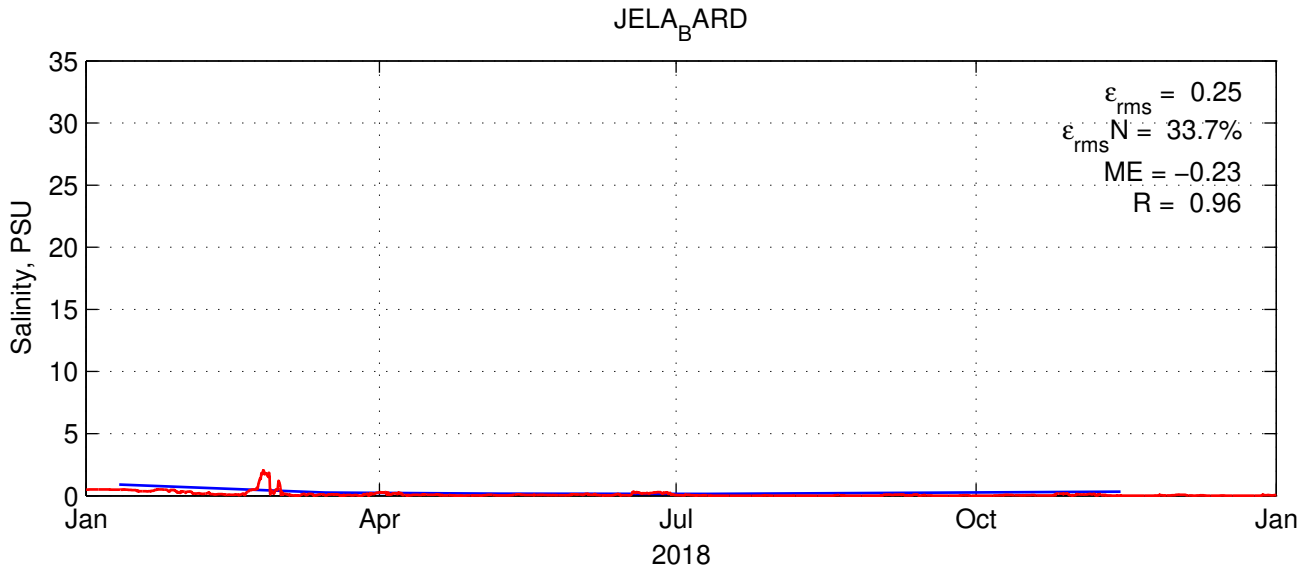

set13c25 – multi
RL–3
Measured
Calculated
εrms = NaN
εrmsN = NaN%
ME = NaN
R = NaN
Salinity, PSU
35
30
25
20
15
10
5
0
Jan
Apr
Jul
Oct
Jan
2018

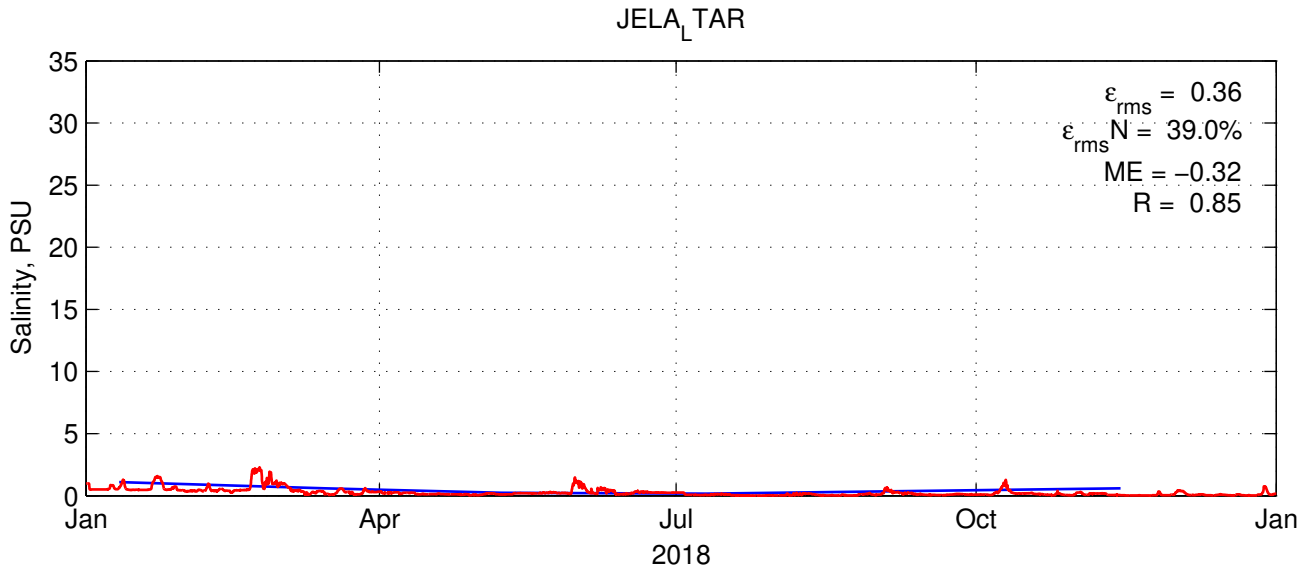

TC–1
εrms = 0.14
εrmsN = 144.0%
ME = –0.06
R = 0.57
Salinity, PSU
35
30
25
20
15
10
5
0
Jan
Apr
Jul
Oct
Jan
2018

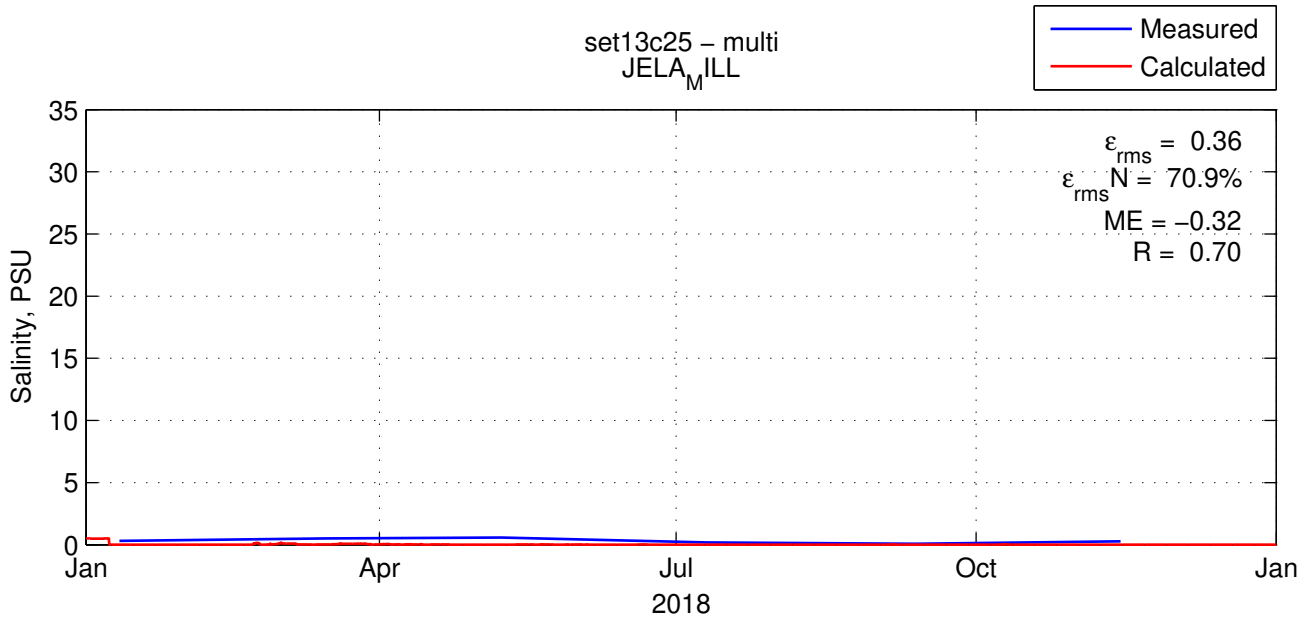

TC–3
εrms = 0.13
εrmsN = 134.0%
ME = –0.10
R = 0.96
Salinity, PSU
35
30
25
20
15
10
5
0
Jan
Apr
Jul
Oct
Jan
2018

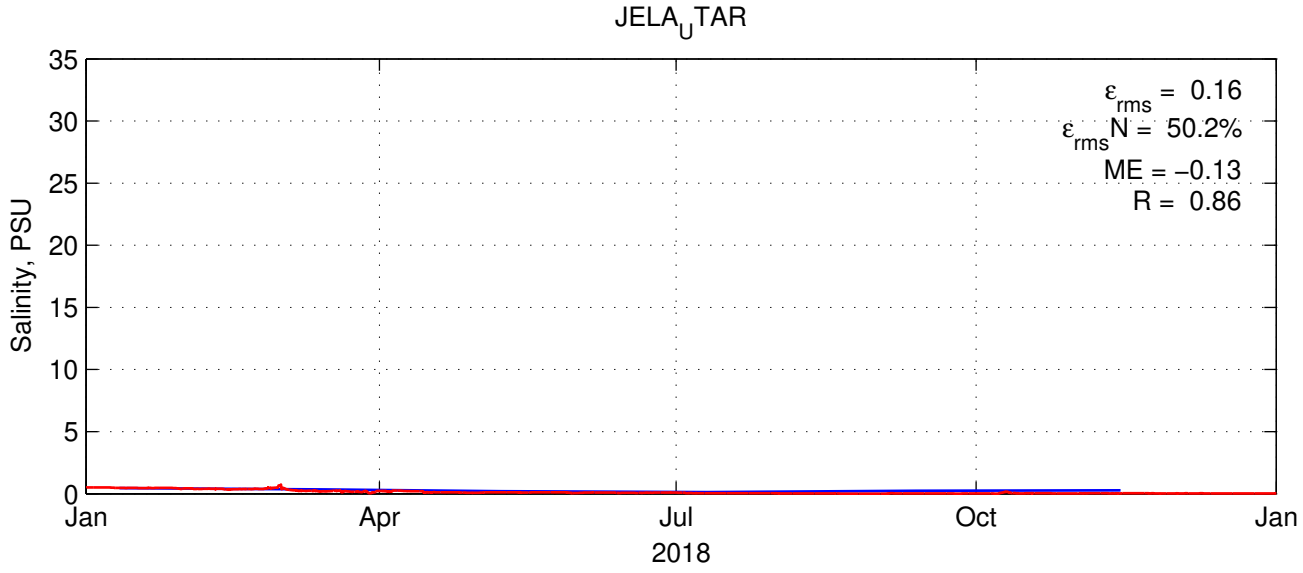

set13c25 – multi
TC–4
Measured
Calculated
ε_{rms} = 0.21
ε_{rms}N = 69.6%
ME = –0.08
R = 0.03
Salinity, PSU
35
30
25
20
15
10
5
0
Jan
Apr
Jul
Oct
Jan
2018
TC–5
ε_{rms} = 0.16
ε_{rms}N = 157.3%
ME = –0.16
R = –0.00
Salinity, PSU
VC–1
ε_{rms} = 0.10
ε_{rms}N = 102.5%
ME = 0.05
R = 0.33
Salinity, PSU

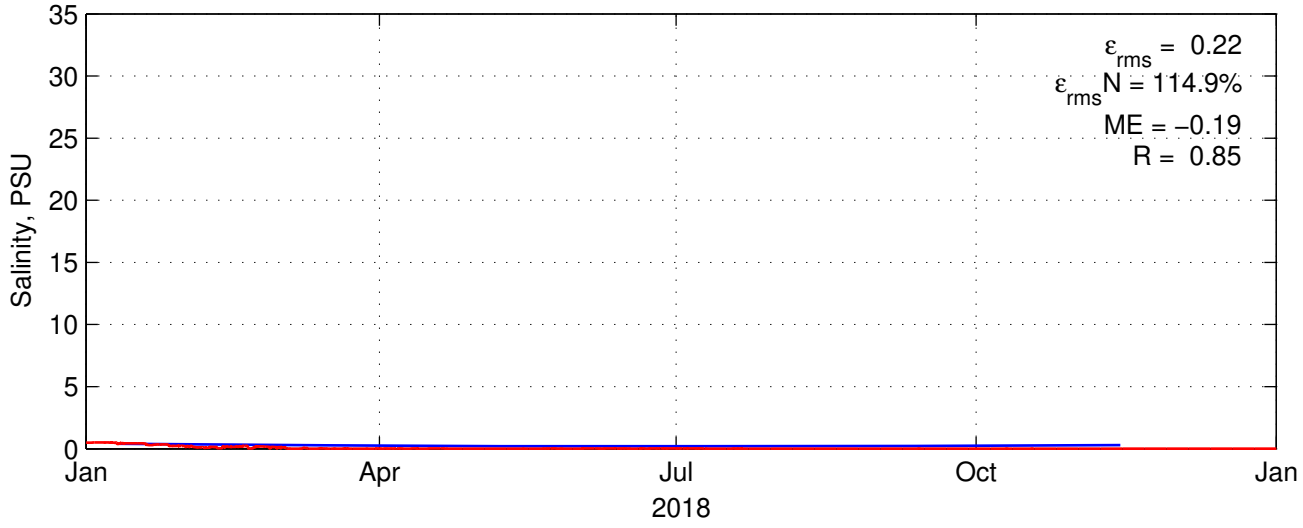

Measured
Calculated
set13c25 – multi
VC–3
ε_{rms} = 0.09
ε_{rms}N = 46.0%
ME = –0.08
R = 0.28
Salinity, PSU
35
30
25
20
15
10
5
0
Jan
Apr
Jul
Oct
Jan
2018

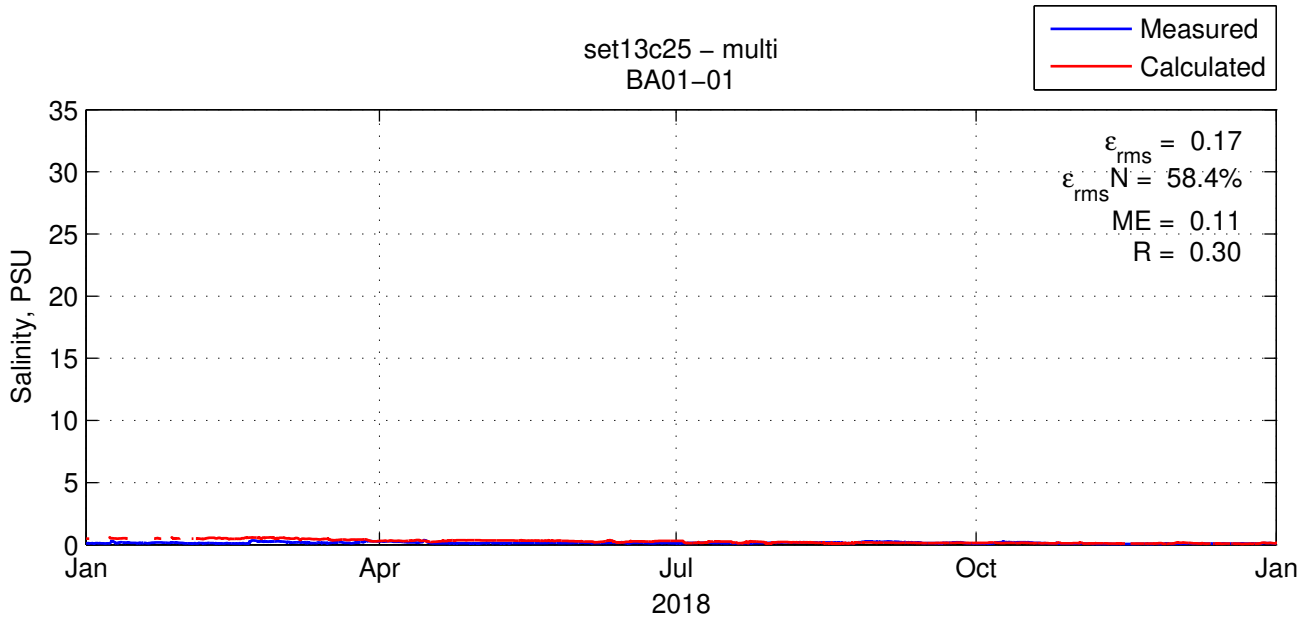

JELA$_B$ARD
ε_{rms} = 0.25
ε_{rms}N = 33.7%
ME = –0.23
R = 0.96
Salinity, PSU
35
30
25
20
15
10
5
0
Jan
Apr
Jul
Oct
Jan
2018

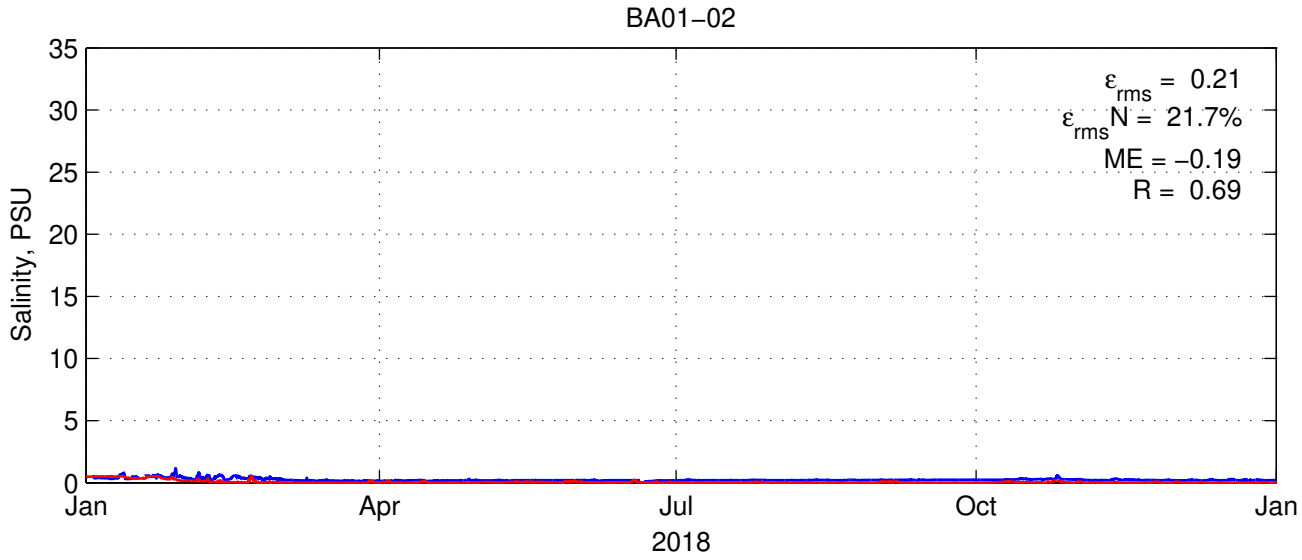

JELA$_L$TAR
ε_{rms} = 0.36
ε_{rms}N = 39.0%
ME = –0.32
R = 0.85
Salinity, PSU
35
30
25
20
15
10
5
0
Jan
Apr
Jul
Oct
Jan
2018

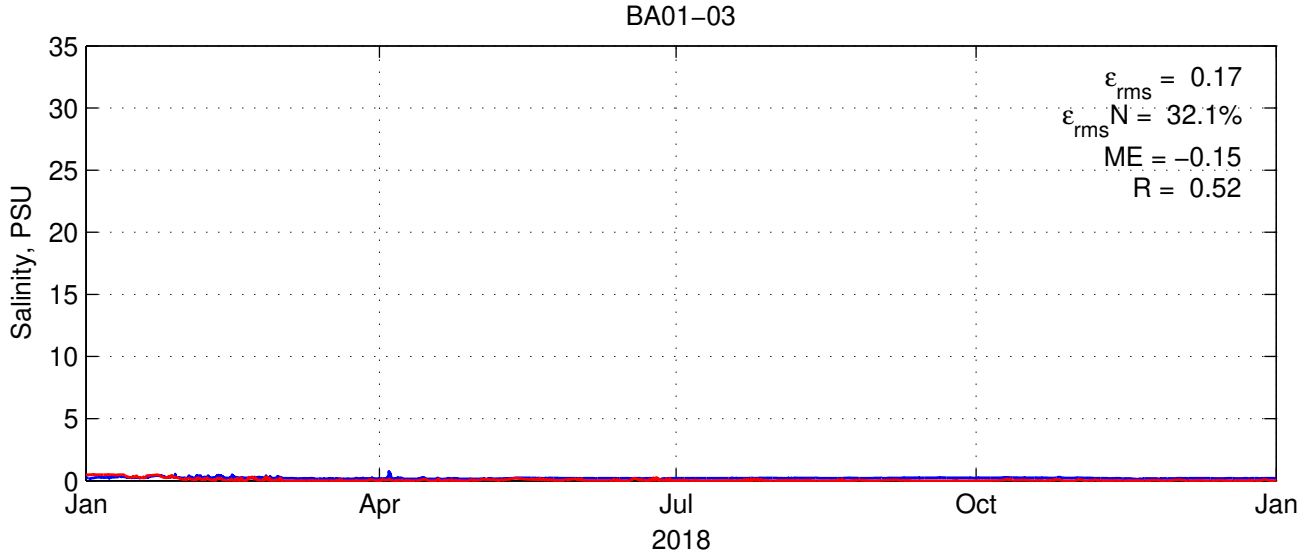

set13c25 – multi
JELA_MILL
Measured
Calculated
ε_rms = 0.36
ε_rmsN = 70.9%
ME = −0.32
R = 0.70
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

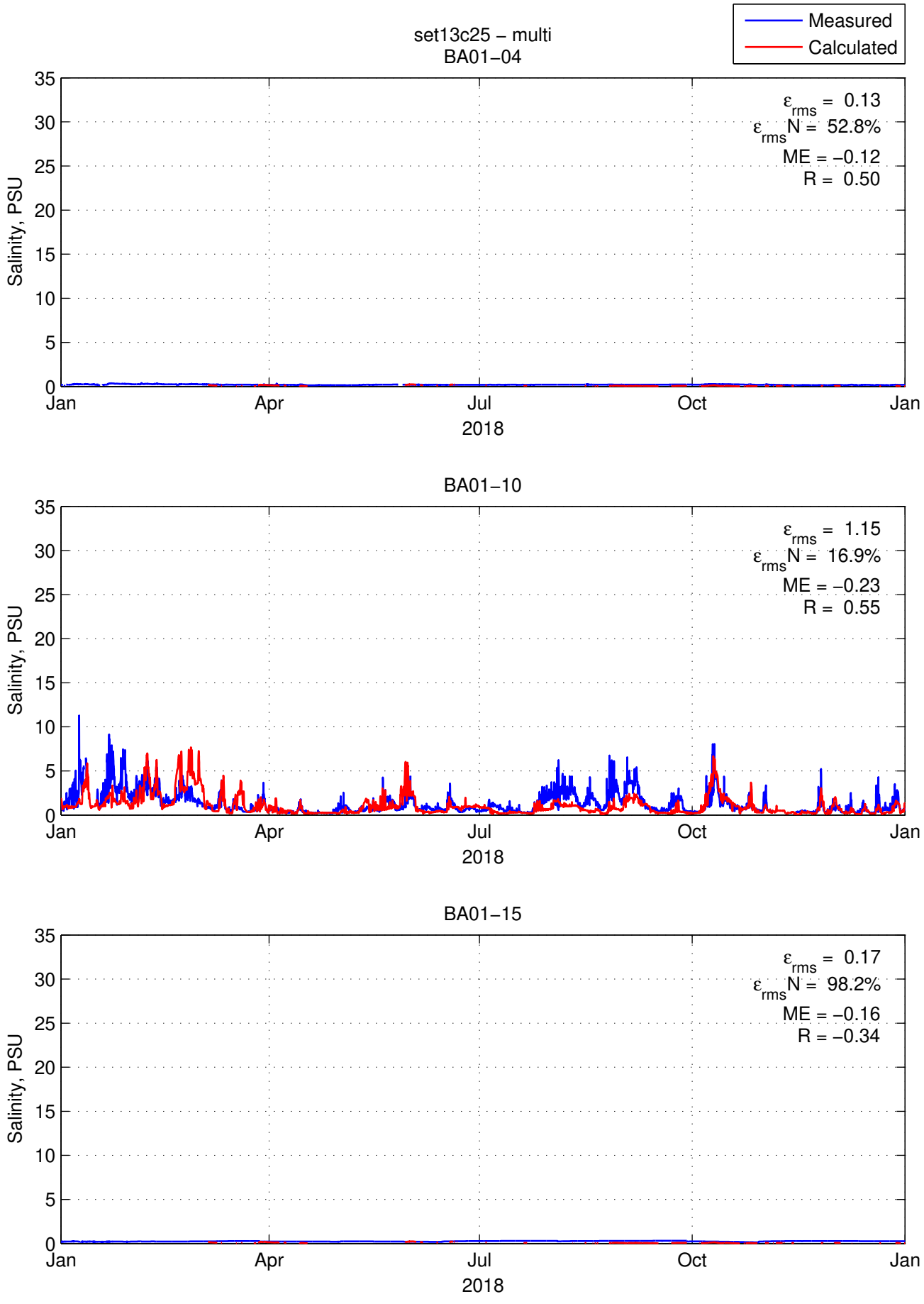

JELA_UTAR
ε_rms = 0.16
ε_rmsN = 50.2%
ME = −0.13
R = 0.86
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

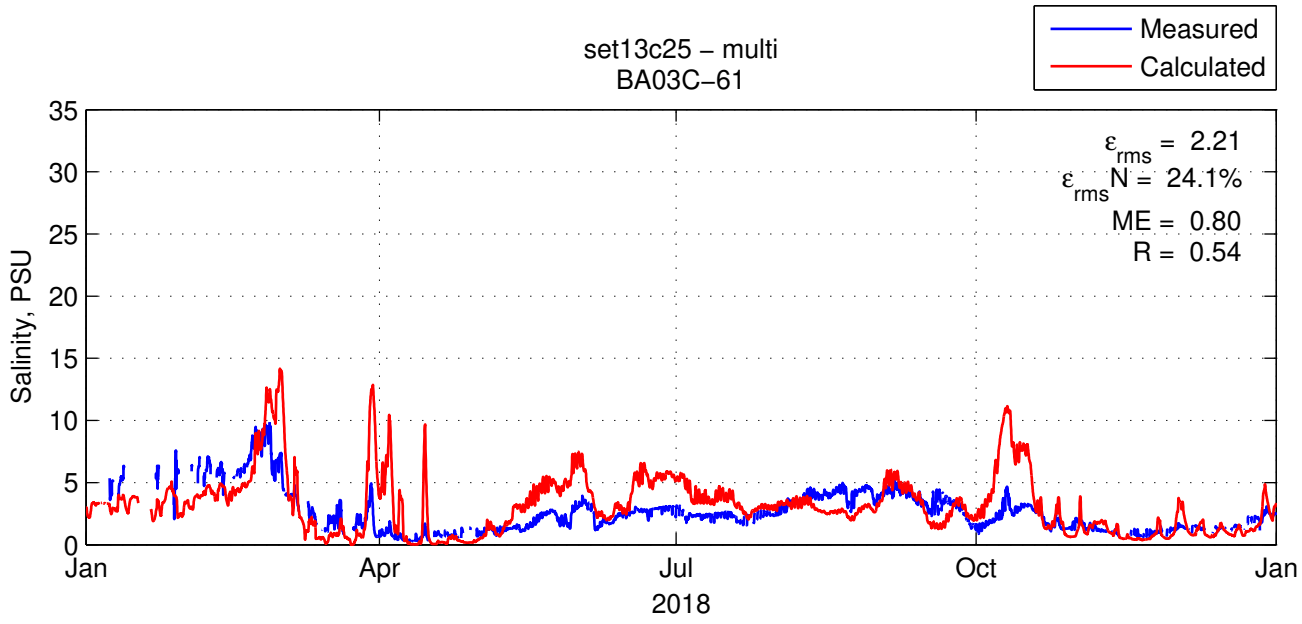

JELA_WAGG
ε_rms = 0.22
ε_rmsN = 114.9%
ME = −0.19
R = 0.85
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

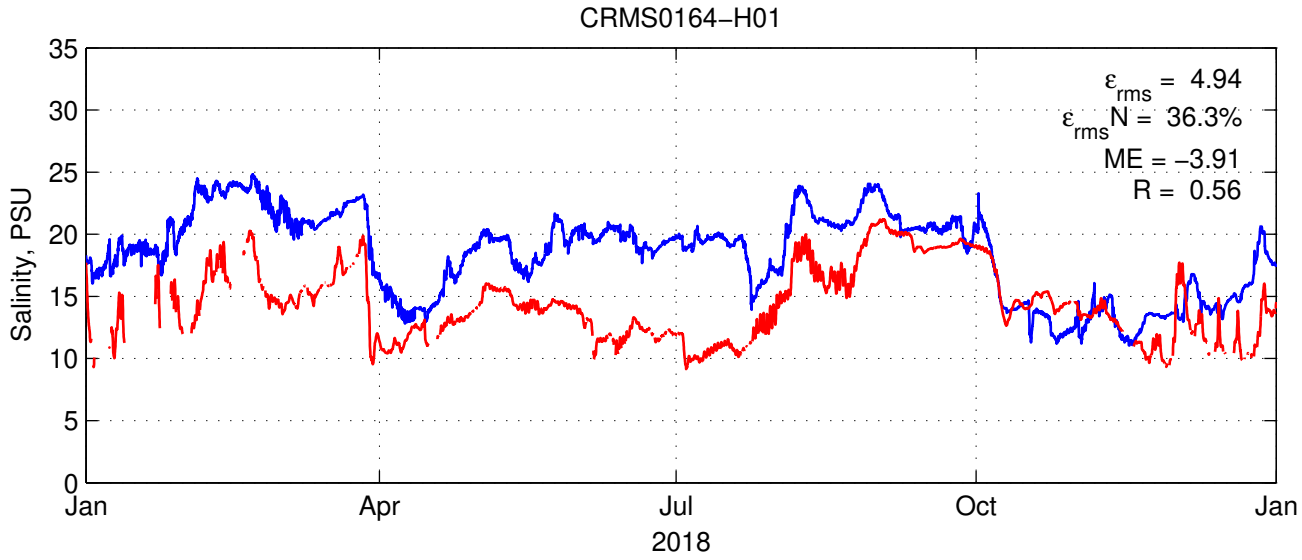

set13c25 – multi
BA01–01
Measured
Calculated
ε_{rms} = 0.17
ε_{rms}N = 58.4%
ME = 0.11
R = 0.30
Salinity, PSU
35
30
25
20
15
10
5
0
Jan
Apr
Jul
Oct
Jan
2018

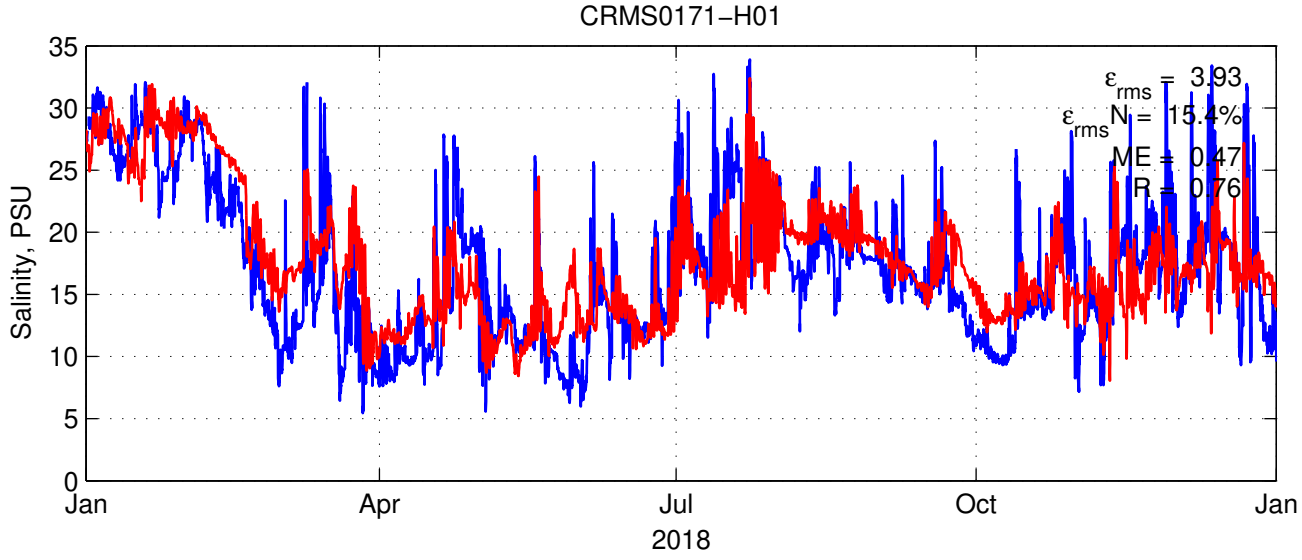

BA01–02
ε_{rms} = 0.21
ε_{rms}N = 21.7%
ME = –0.19
R = 0.69
Salinity, PSU
35
30
25
20
15
10
5
0
Jan
Apr
Jul
Oct
Jan
2018

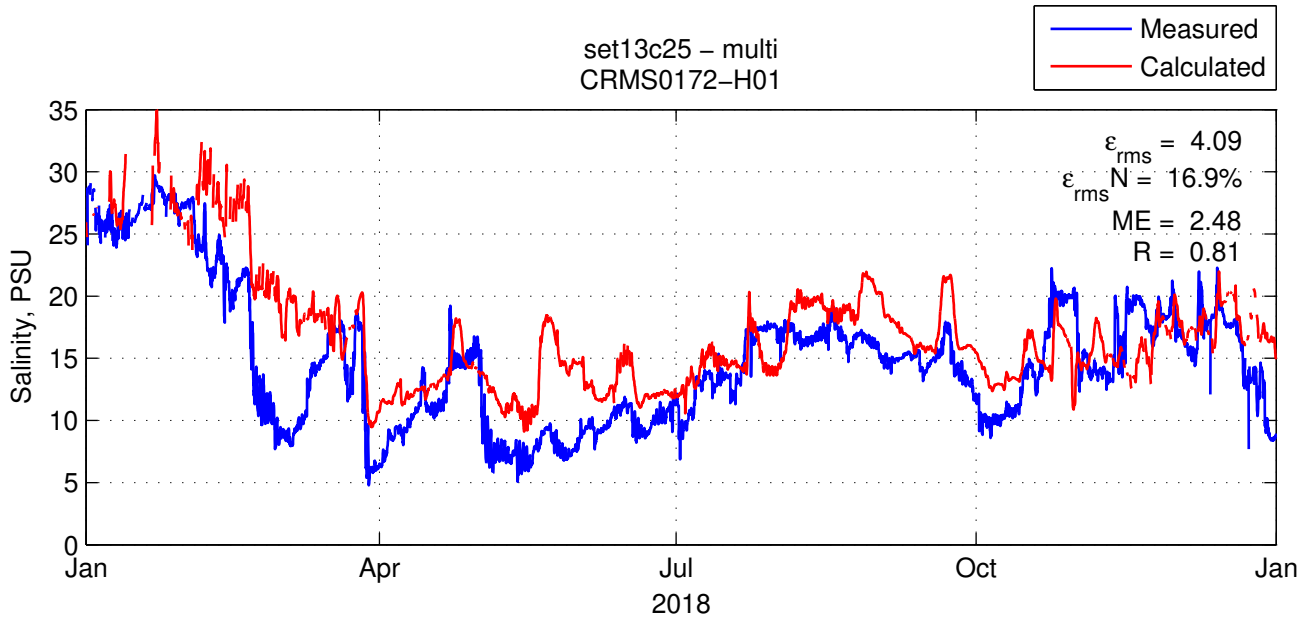

BA01–03
ε_{rms} = 0.17
ε_{rms}N = 32.1%
ME = –0.15
R = 0.52
Salinity, PSU
35
30
25
20
15
10
5
0
Jan
Apr
Jul
Oct
Jan
2018

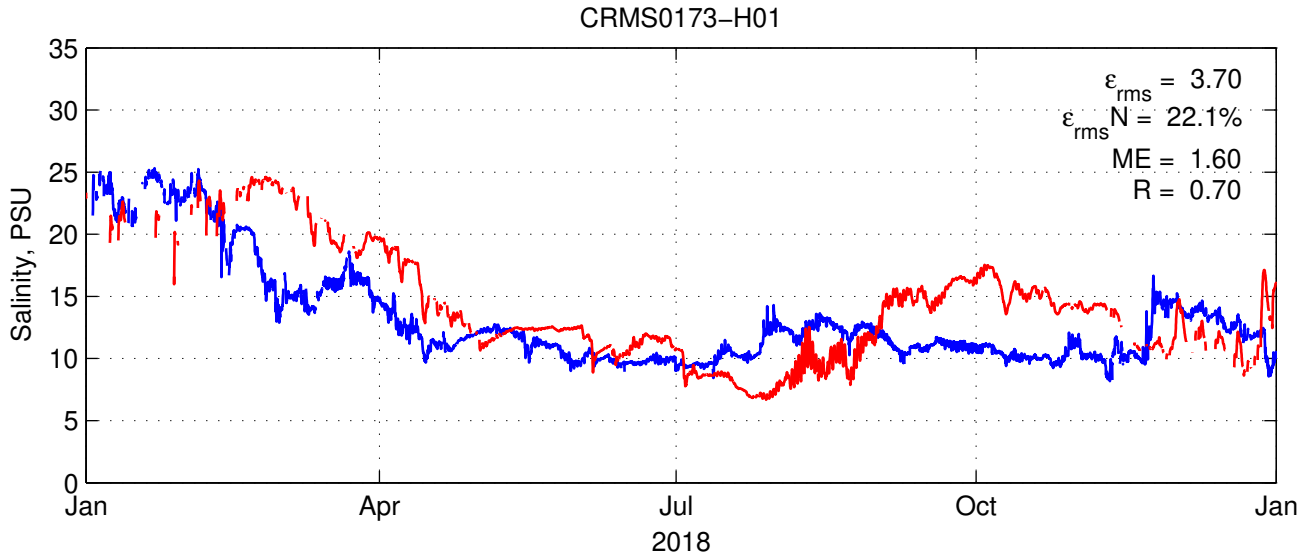

Measured
Calculated
set13c25 – multi
BA01–04
ε_{rms} = 0.13
ε_{rms}N = 52.8%
ME = –0.12
R = 0.50
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018
BA01–10
ε_{rms} = 1.15
ε_{rms}N = 16.9%
ME = –0.23
R = 0.55
Salinity, PSU
Jan
Apr
Jul
Oct
Jan
2018
BA01–15
ε_{rms} = 0.17
ε_{rms}N = 98.2%
ME = –0.16
R = –0.34
Salinity, PSU
Jan
Apr
Jul
Oct
Jan
2018

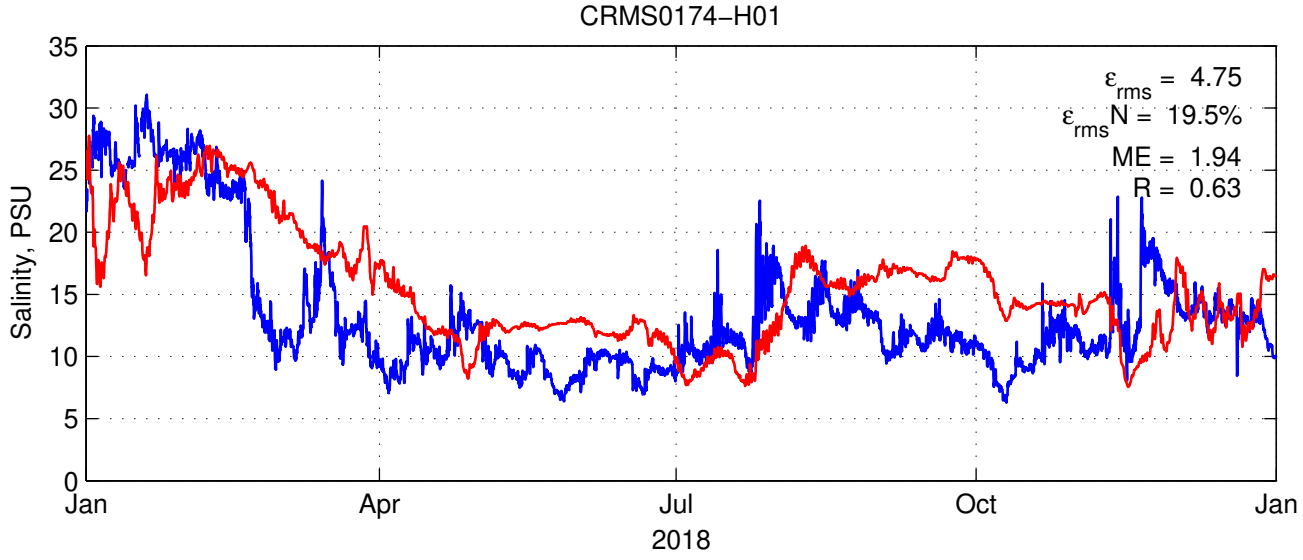

Measured
Calculated
set13c25 – multi
BA03C–61
ε_{rms} = 2.21
ε_{rms}N = 24.1%
ME = 0.80
R = 0.54
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

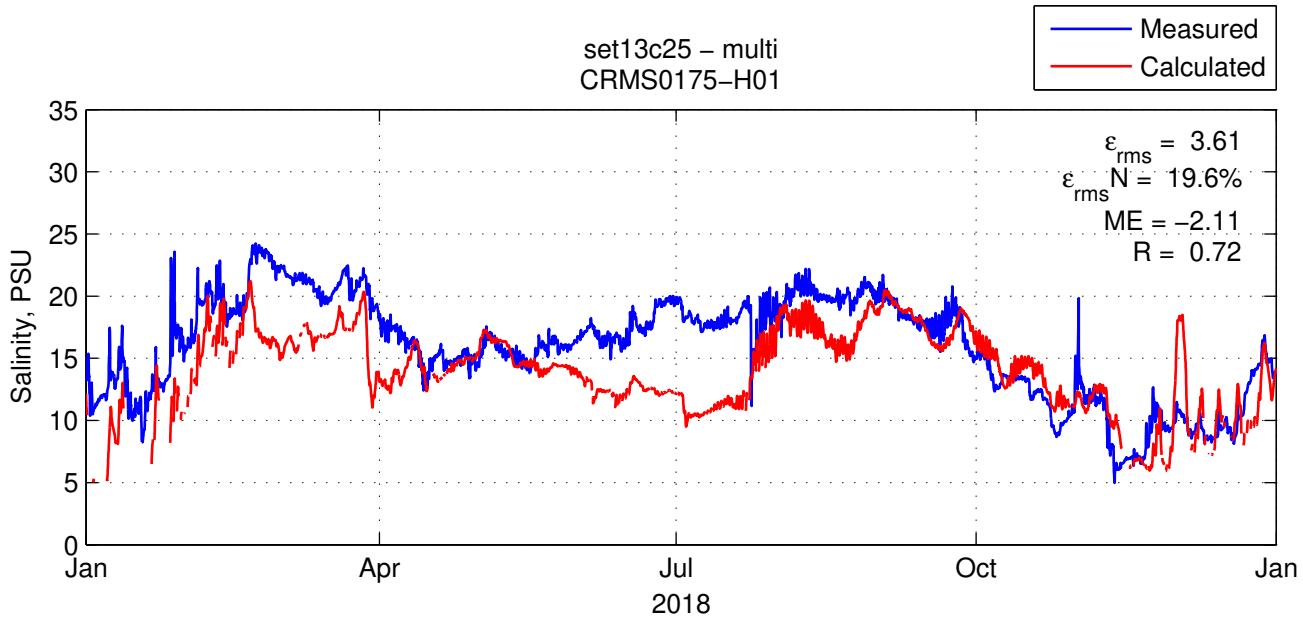

CRMS0164–H01
ε_{rms} = 4.94
ε_{rms}N = 36.3%
ME = –3.91
R = 0.56
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

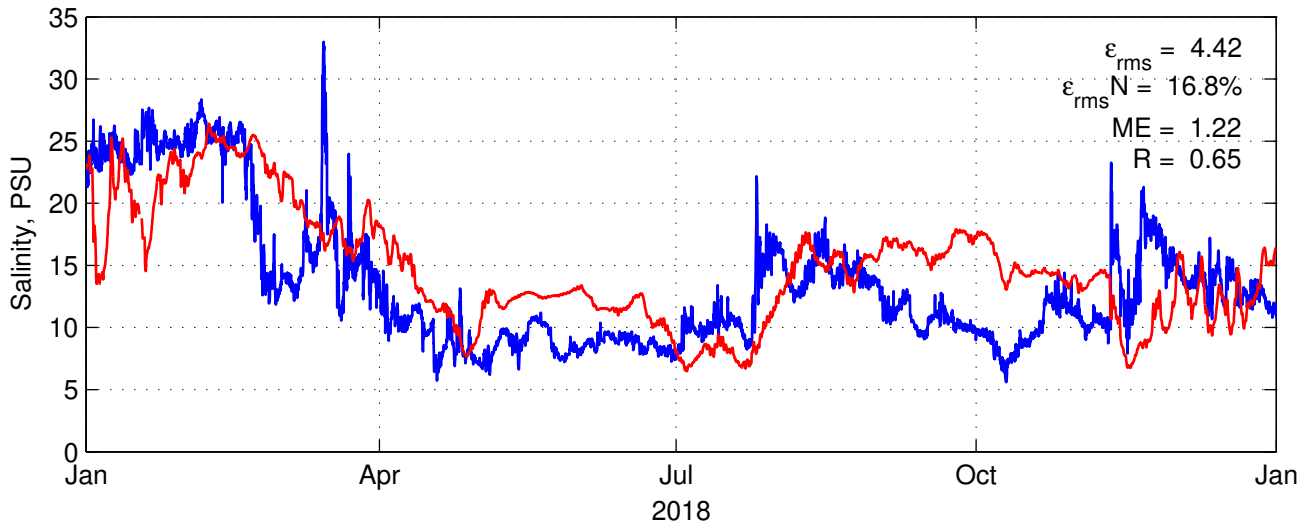

CRMS0171–H01
ε_{rms} = 3.93
ε_{rms}N = 15.4%
ME = 0.47
R = 0.76
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

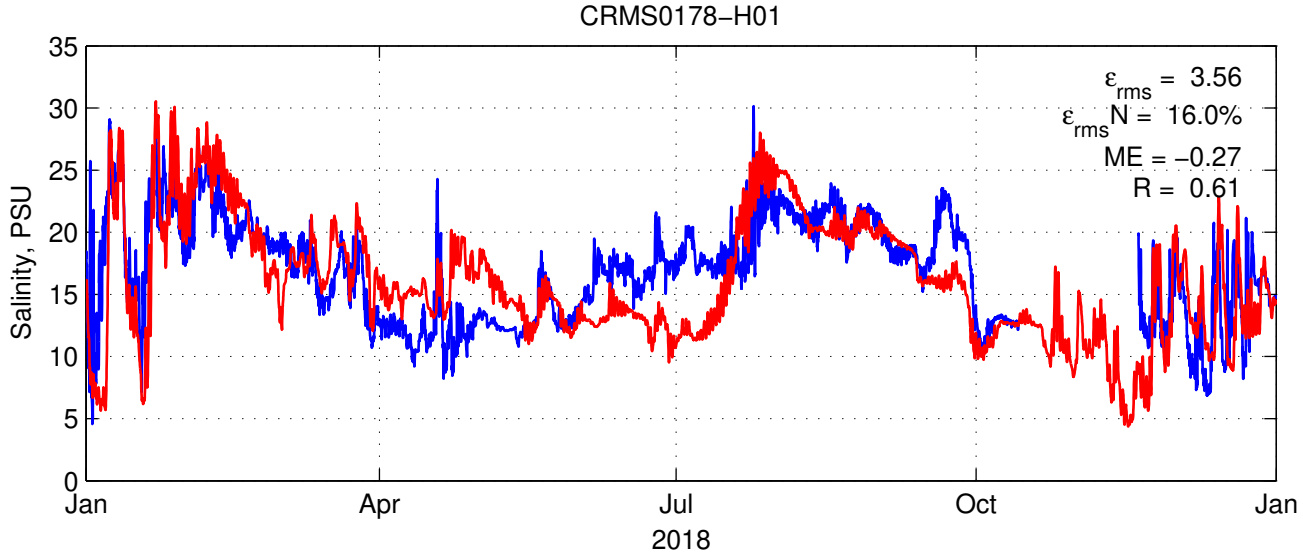

set13c25 – multi
CRMS0172–H01
Measured
Calculated
ε_{rms} = 4.09
ε_{rms}N = 16.9%
ME = 2.48
R = 0.81
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

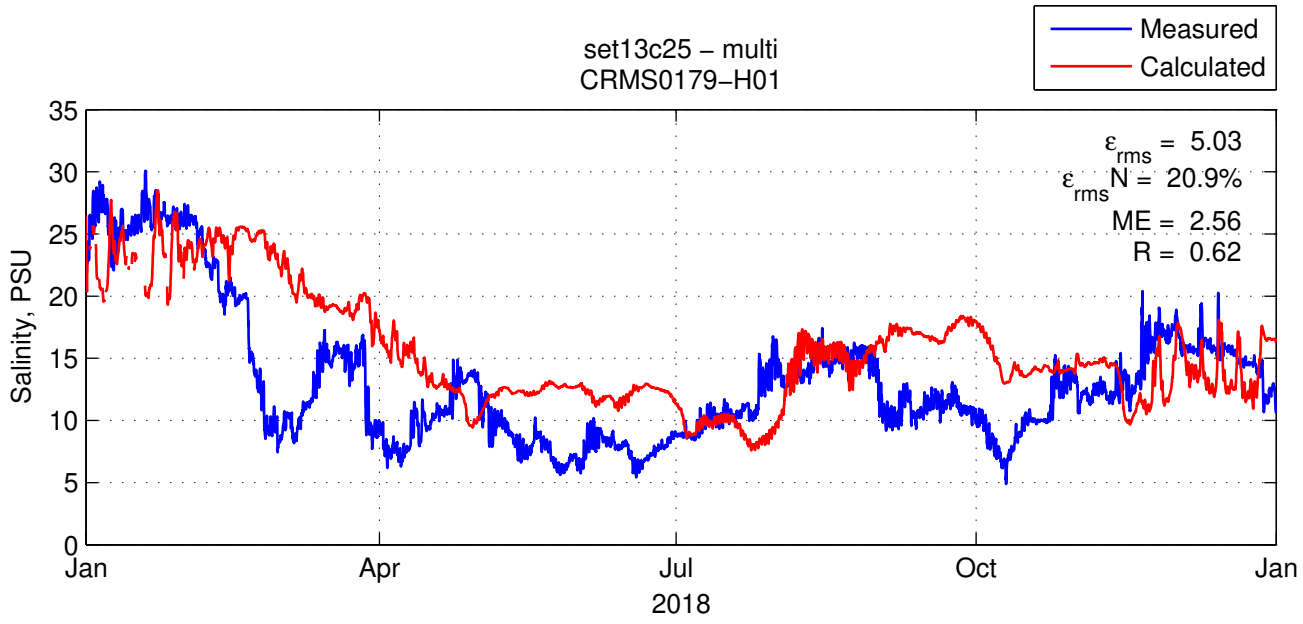

CRMS0173–H01
ε_{rms} = 3.70
ε_{rms}N = 22.1%
ME = 1.60
R = 0.70
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

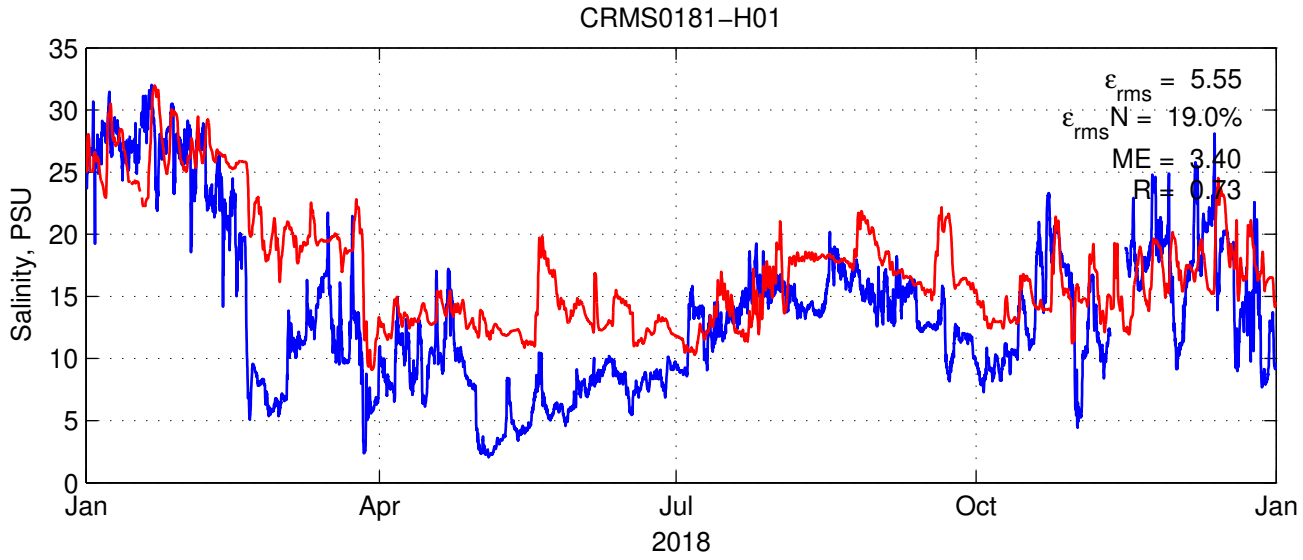

CRMS0174–H01
ε_{rms} = 4.75
ε_{rms}N = 19.5%
ME = 1.94
R = 0.63
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

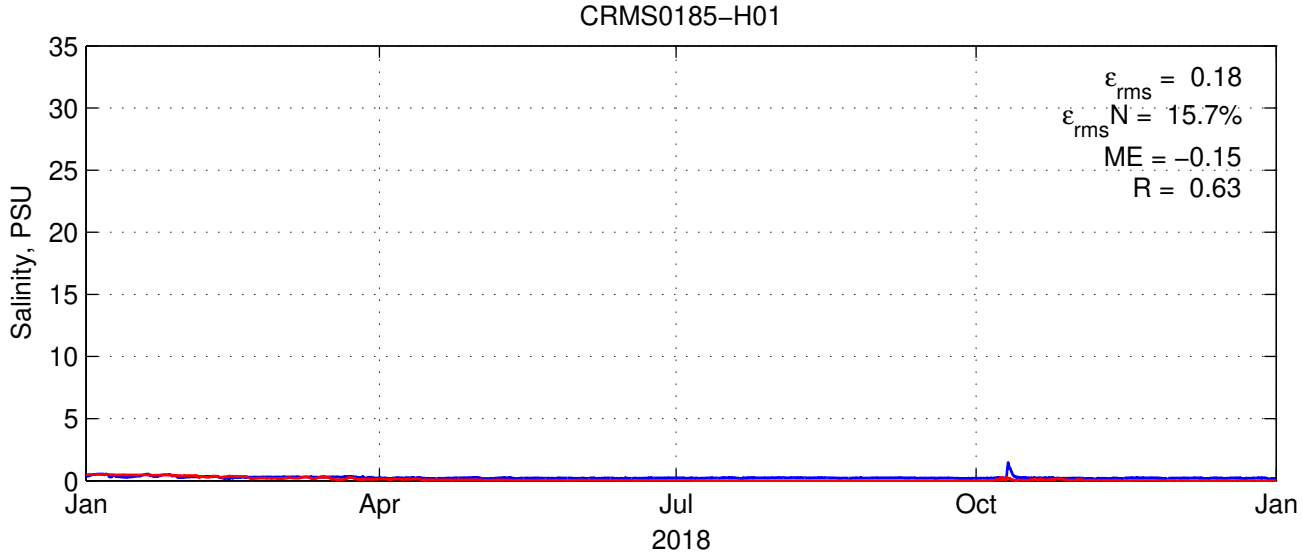

set13c25 – multi
CRMS0175–H01
Measured
Calculated
ε_{rms} = 3.61
ε_{rms}N = 19.6%
ME = –2.11
R = 0.72
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

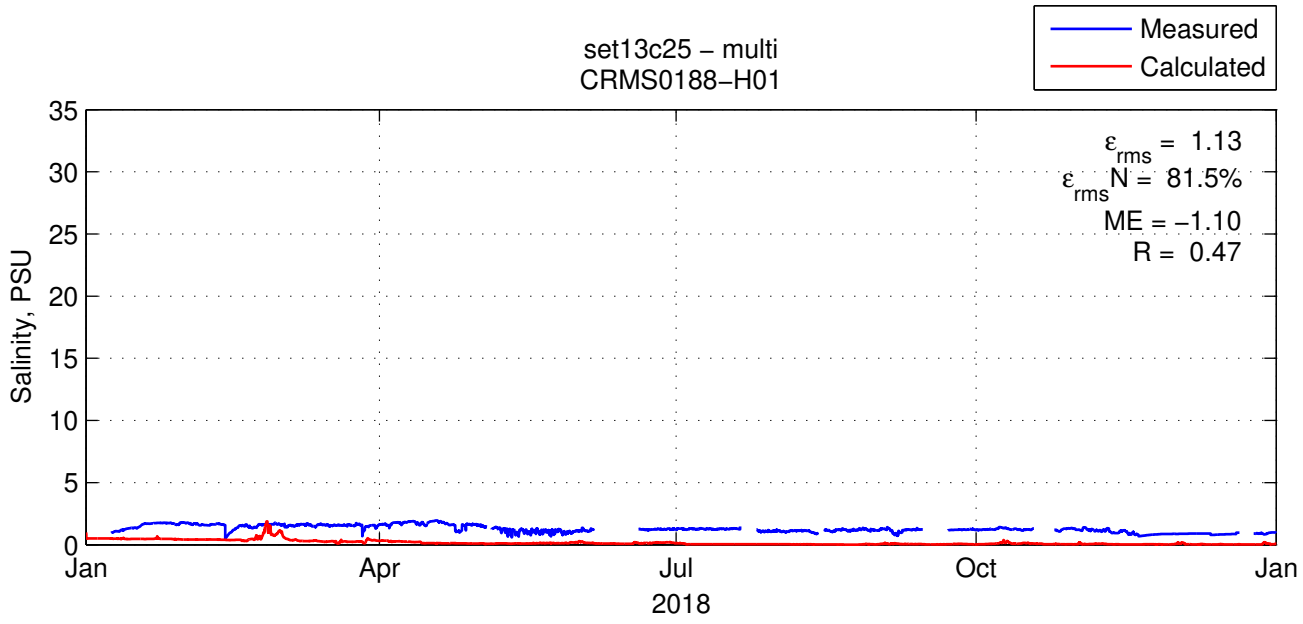

CRMS0176–H01
ε_{rms} = 4.42
ε_{rms}N = 16.8%
ME = 1.22
R = 0.65
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

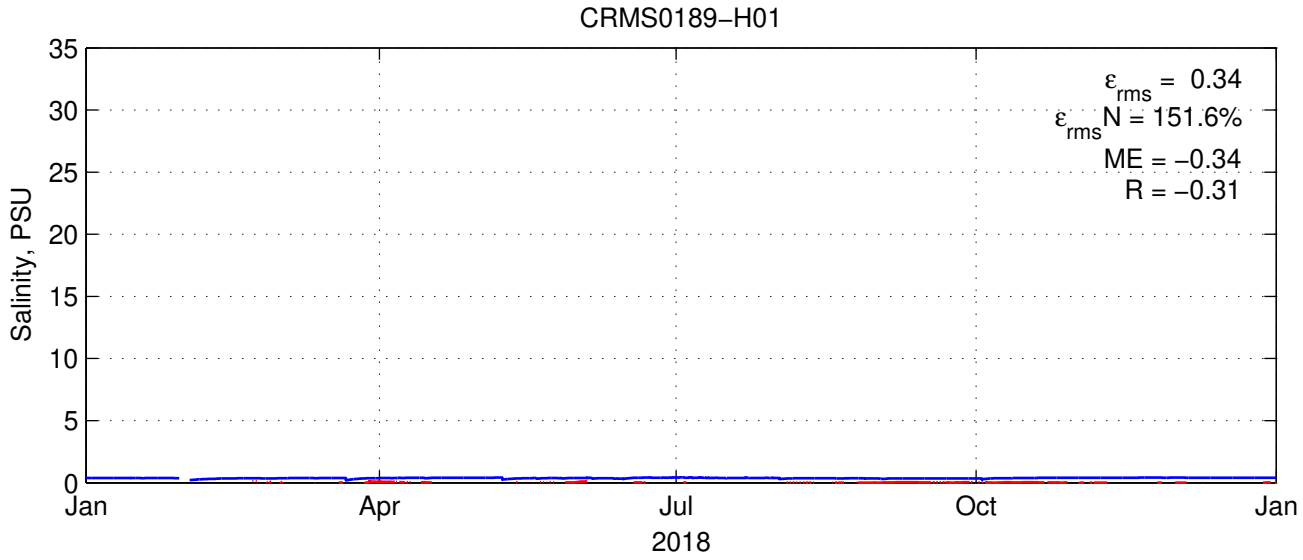

CRMS0178–H01
ε_{rms} = 3.56
ε_{rms}N = 16.0%
ME = –0.27
R = 0.61
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

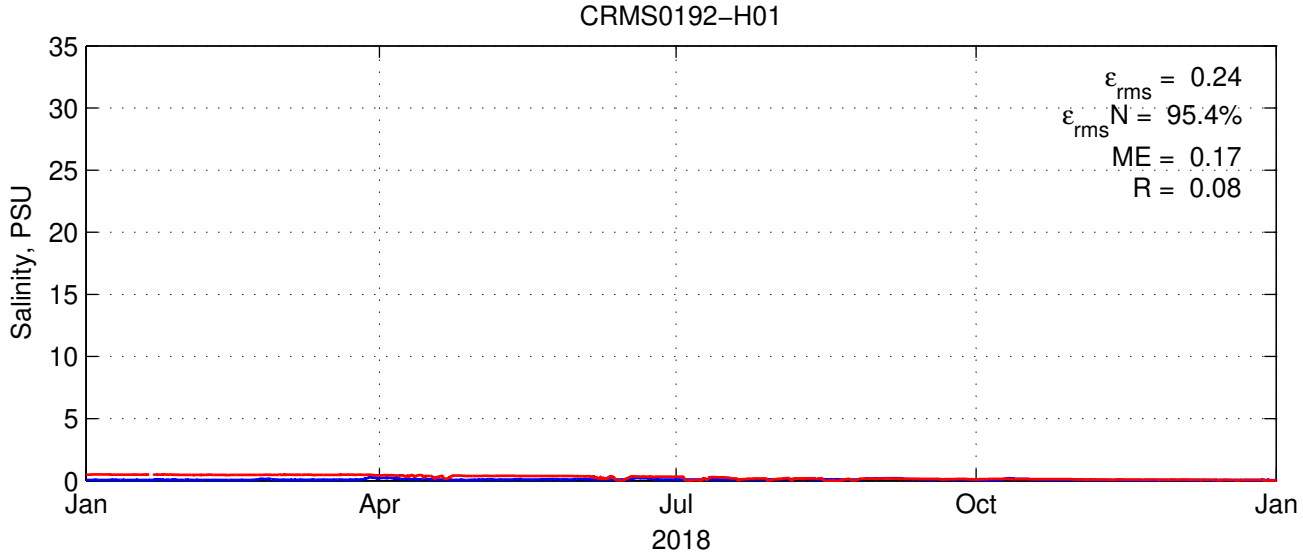

set13c25 – multi
CRMS0179–H01
Measured
Calculated
ε_{rms} = 5.03
ε_{rms}N = 20.9%
ME = 2.56
R = 0.62
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

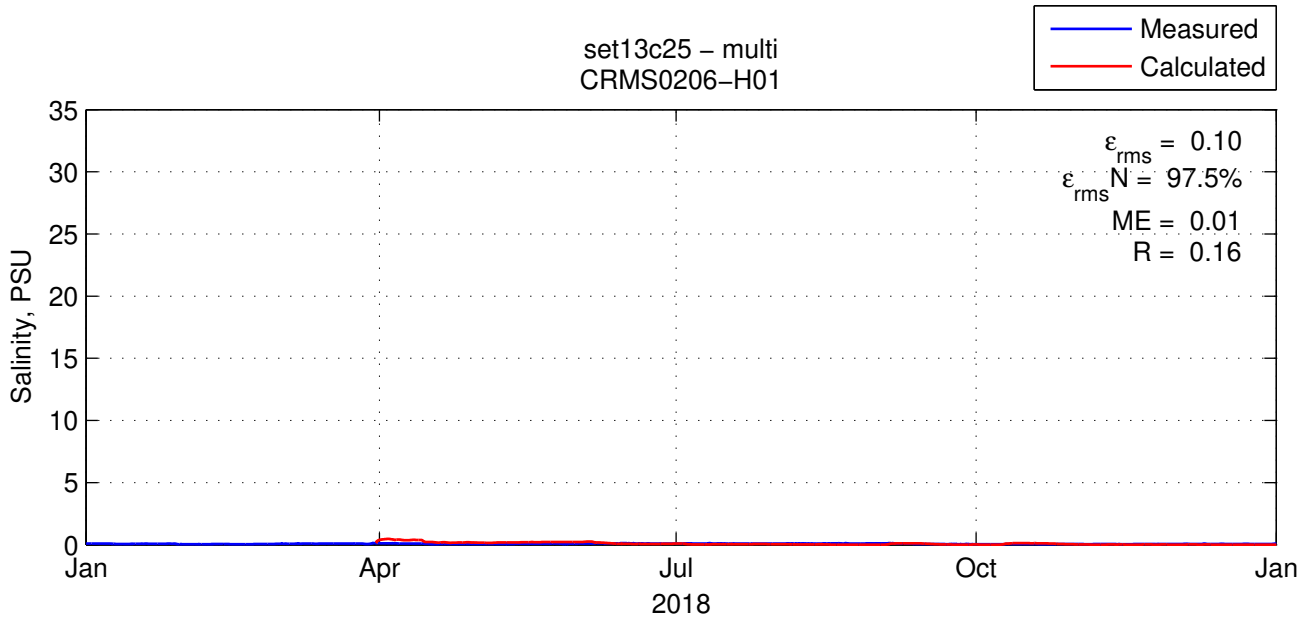

CRMS0181–H01
ε_{rms} = 5.55
ε_{rms}N = 19.0%
ME = 3.40
R = 0.73
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

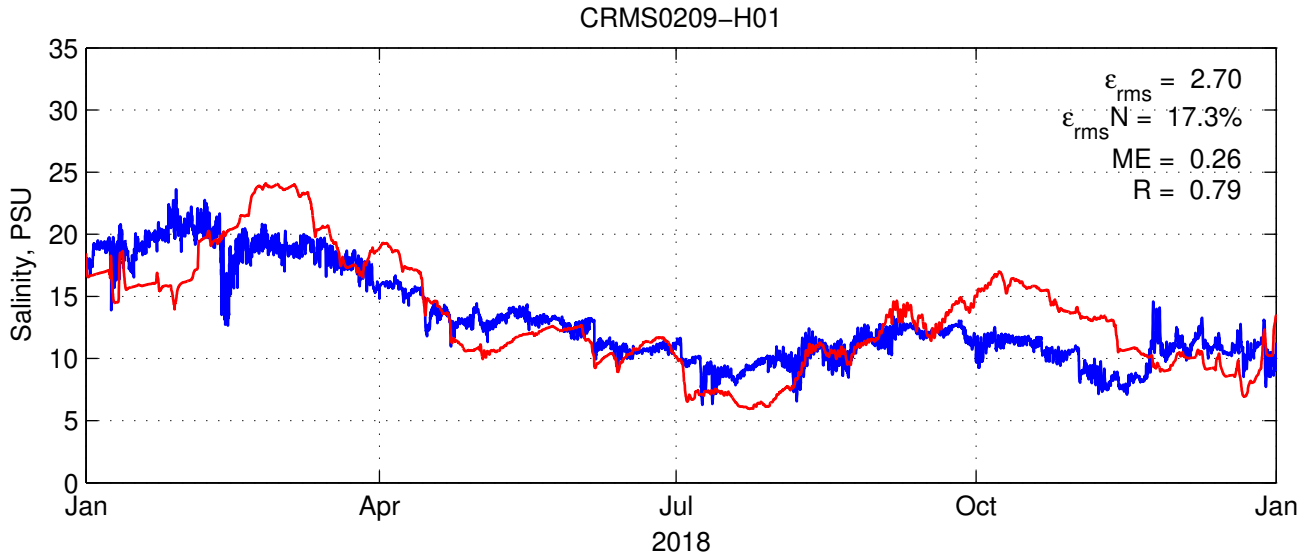

CRMS0185–H01
ε_{rms} = 0.18
ε_{rms}N = 15.7%
ME = –0.15
R = 0.63
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

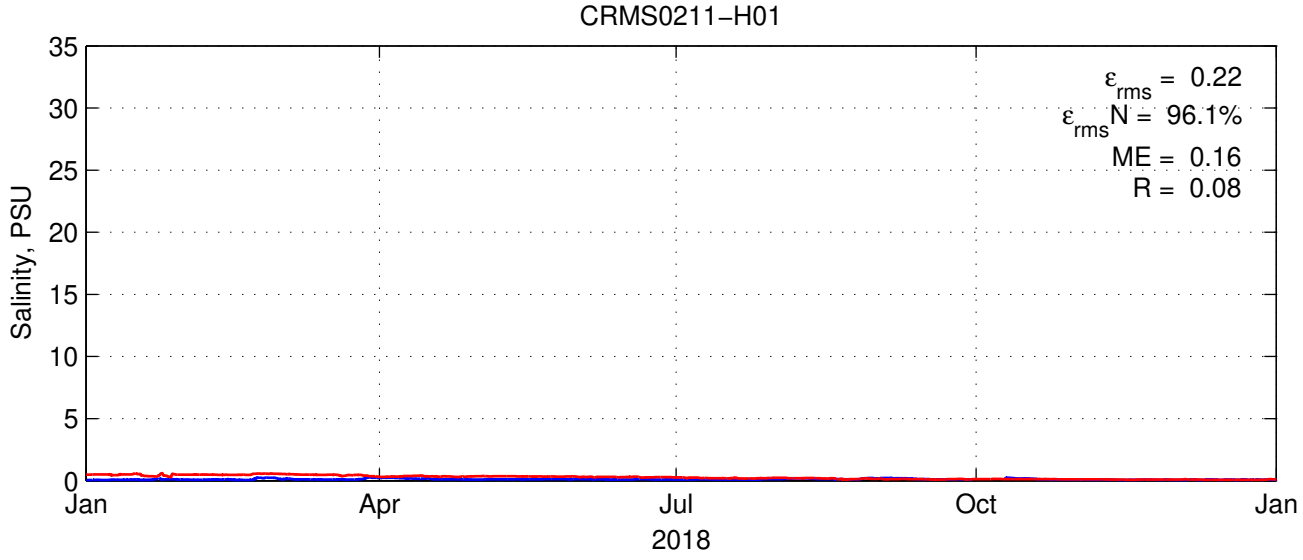

set13c25 – multi
CRMS0188–H01
Measured
Calculated
ε_{rms} = 1.13
ε_{rms}N = 81.5%
ME = –1.10
R = 0.47
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

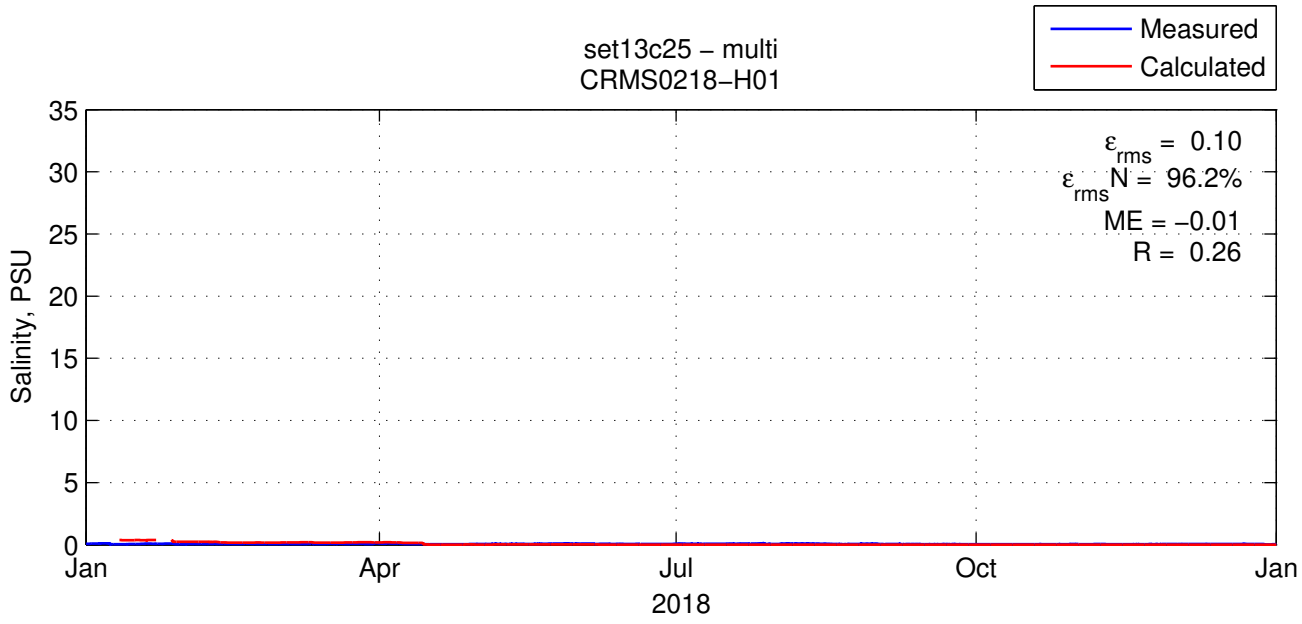

CRMS0189–H01
ε_{rms} = 0.34
ε_{rms}N = 151.6%
ME = –0.34
R = –0.31
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

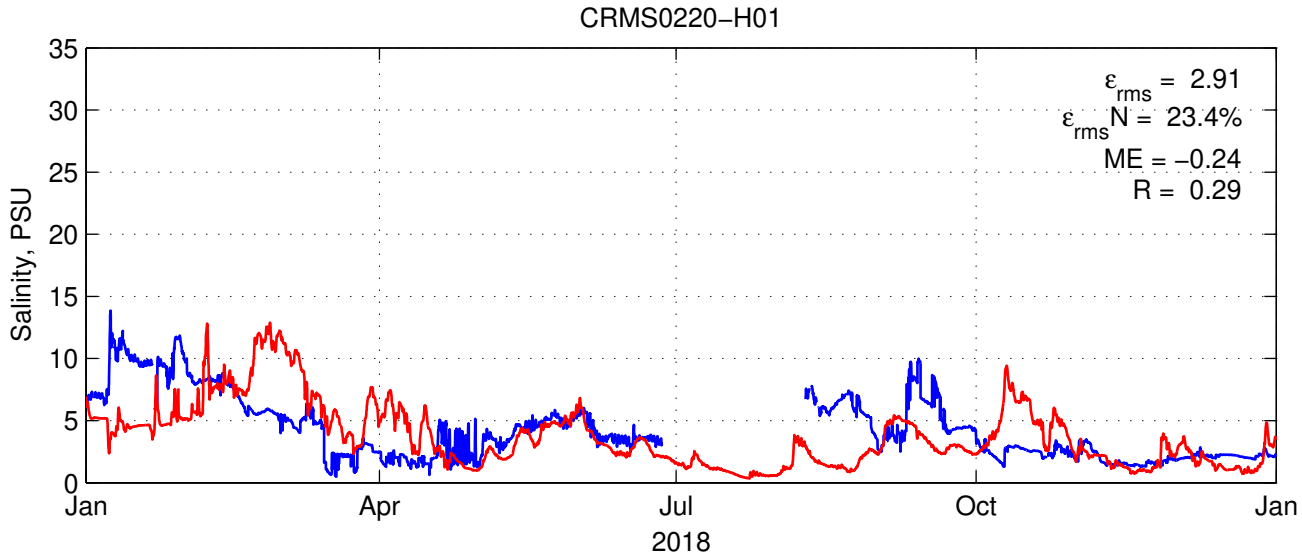

CRMS0192–H01
ε_{rms} = 0.24
ε_{rms}N = 95.4%
ME = 0.17
R = 0.08
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

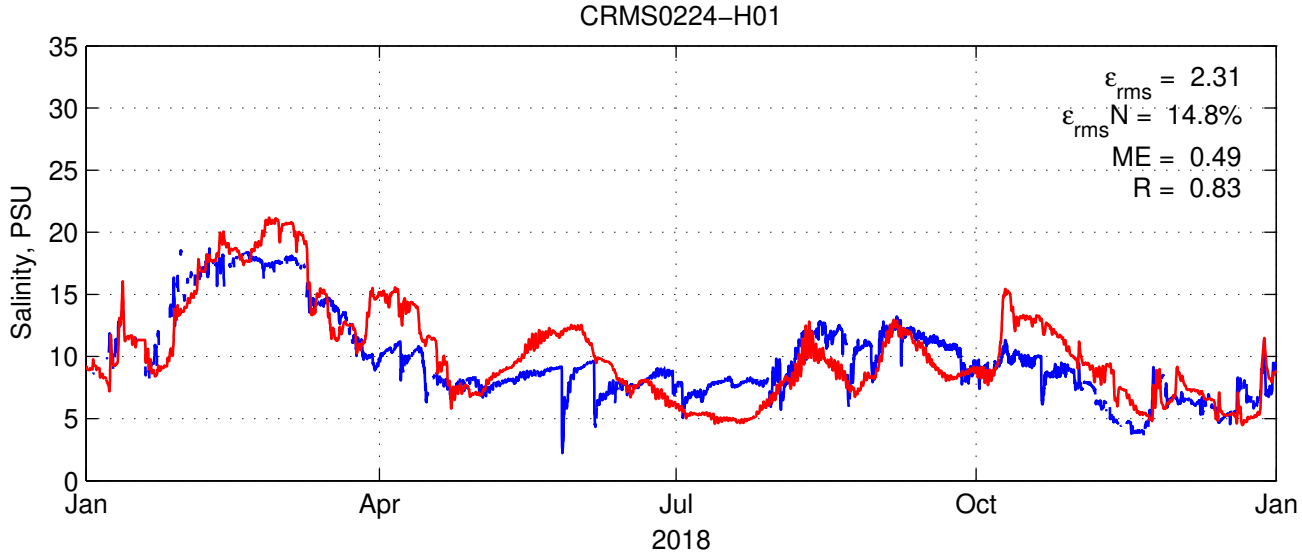

set13c25 – multi
CRMS0206–H01
Measured
Calculated
ε_{rms} = 0.10
ε_{rms}N = 97.5%
ME = 0.01
R = 0.16
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

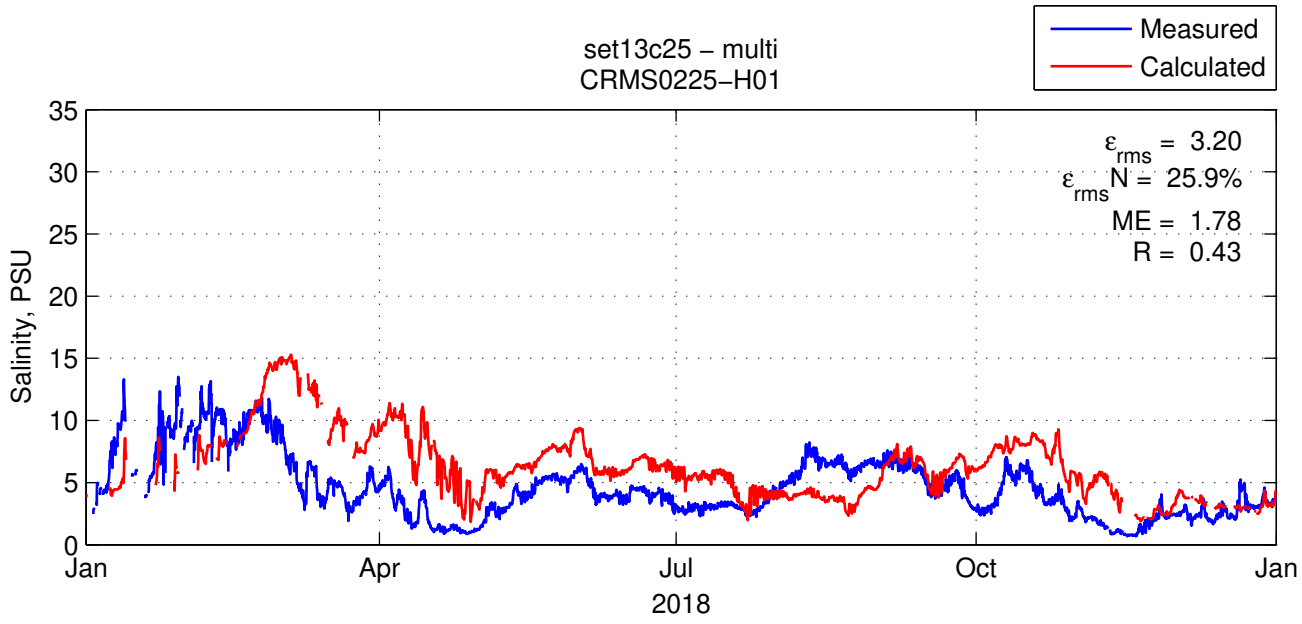

CRMS0209–H01
ε_{rms} = 2.70
ε_{rms}N = 17.3%
ME = 0.26
R = 0.79
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

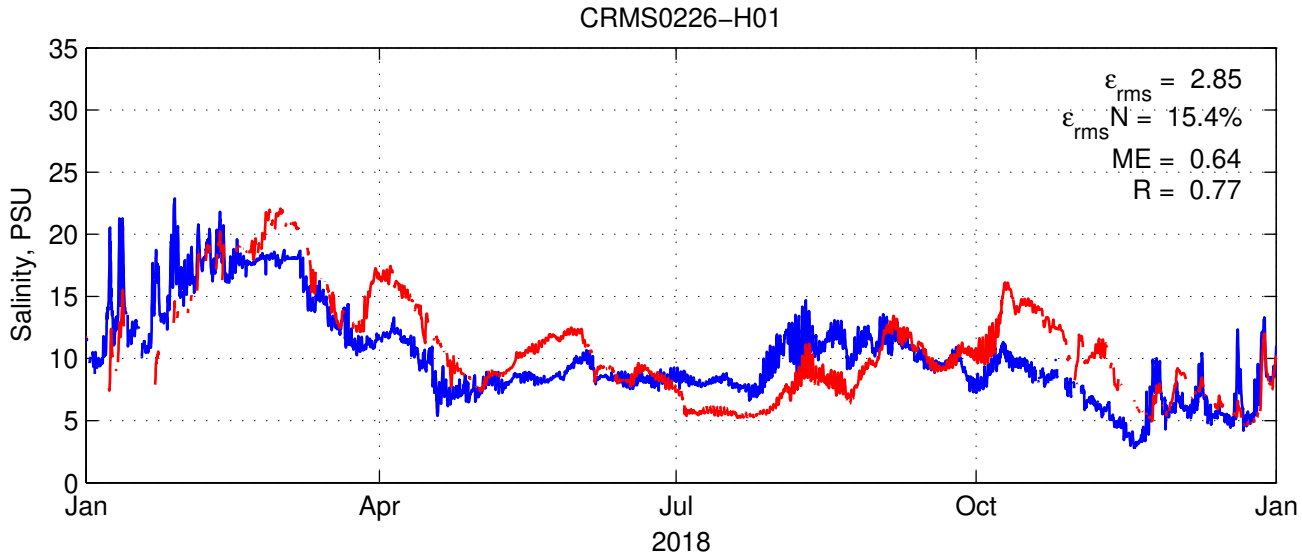

CRMS0211–H01
ε_{rms} = 0.22
ε_{rms}N = 96.1%
ME = 0.16
R = 0.08
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

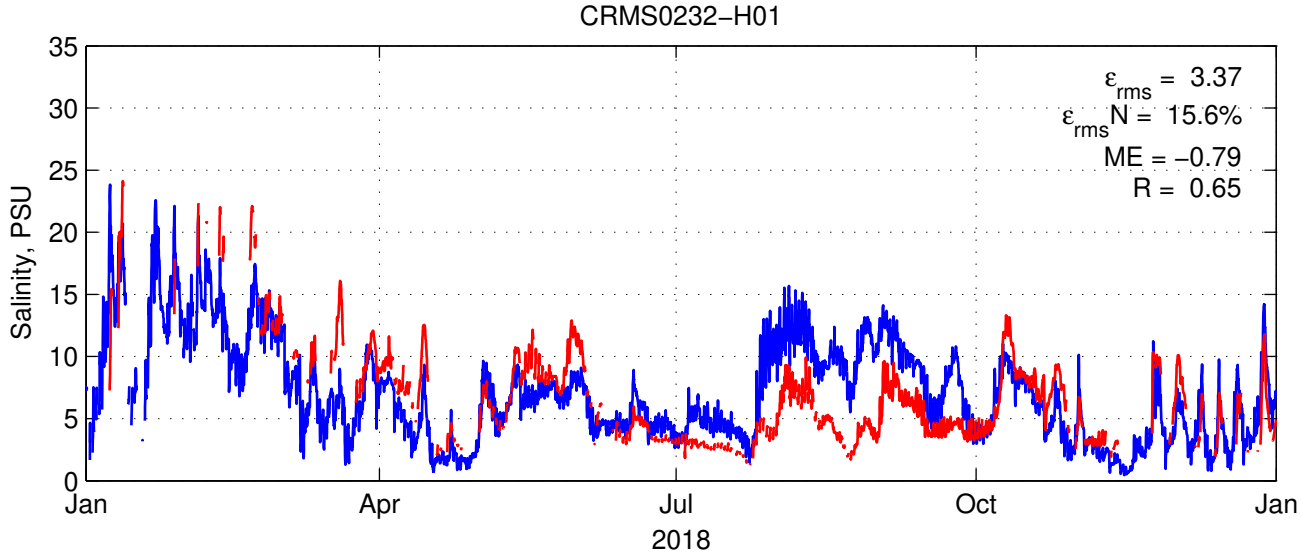

set13c25 – multi
CRMS0218–H01
Measured
Calculated
ε_{rms} = 0.10
ε_{rms}N = 96.2%
ME = –0.01
R = 0.26
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

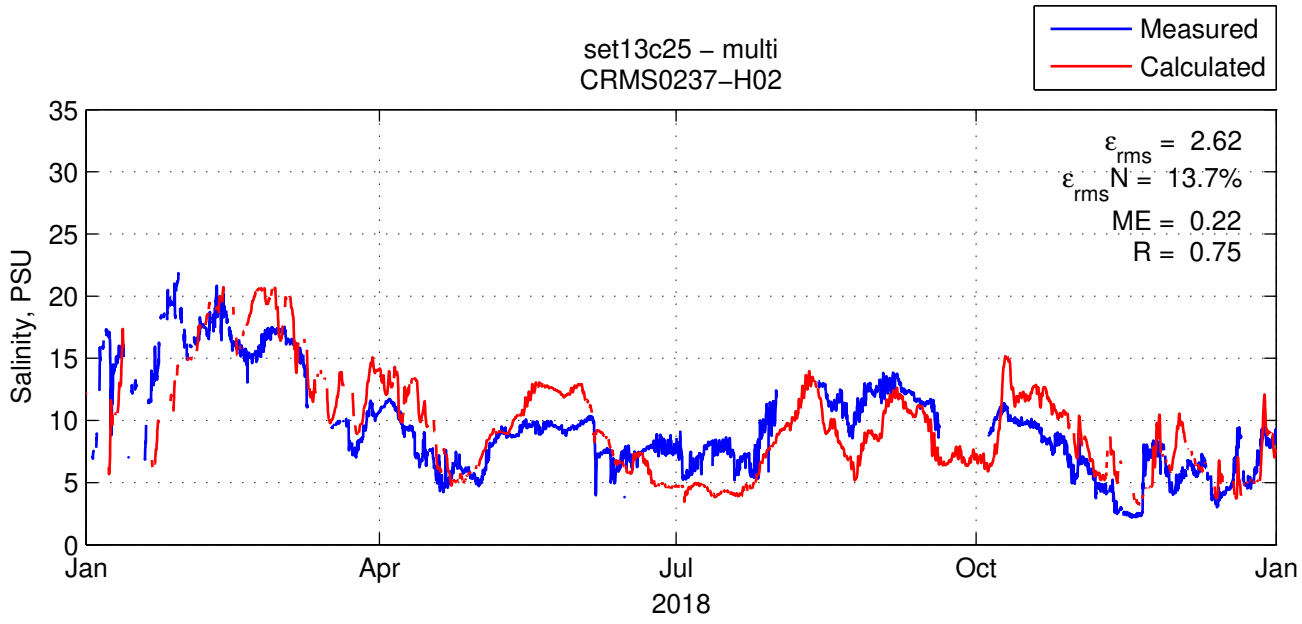

CRMS0220–H01
ε_{rms} = 2.91
ε_{rms}N = 23.4%
ME = –0.24
R = 0.29
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

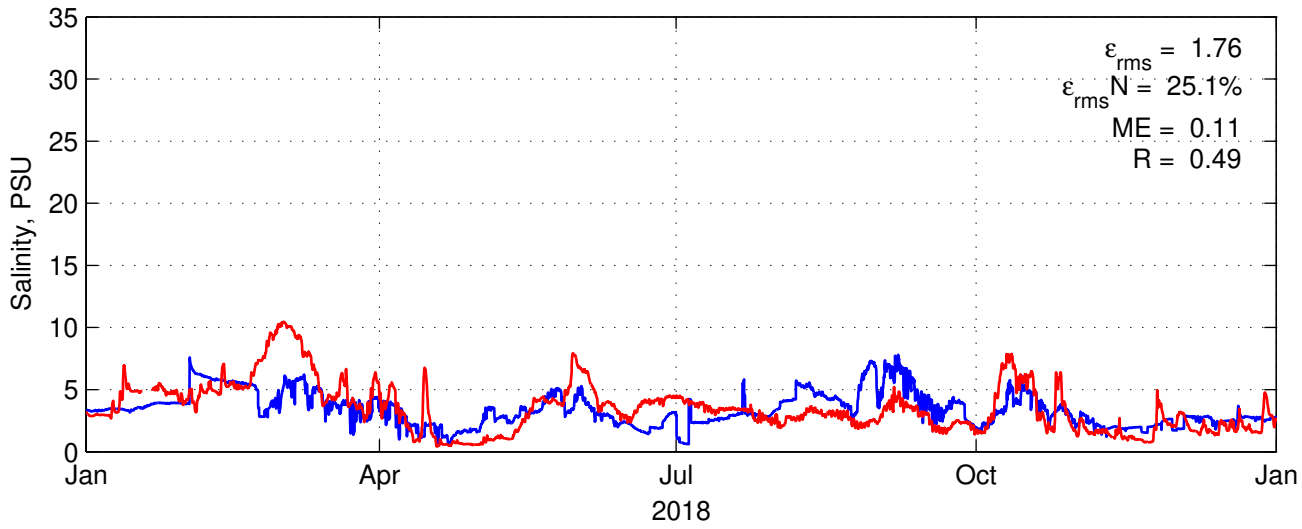

CRMS0224–H01
ε_{rms} = 2.31
ε_{rms}N = 14.8%
ME = 0.49
R = 0.83
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

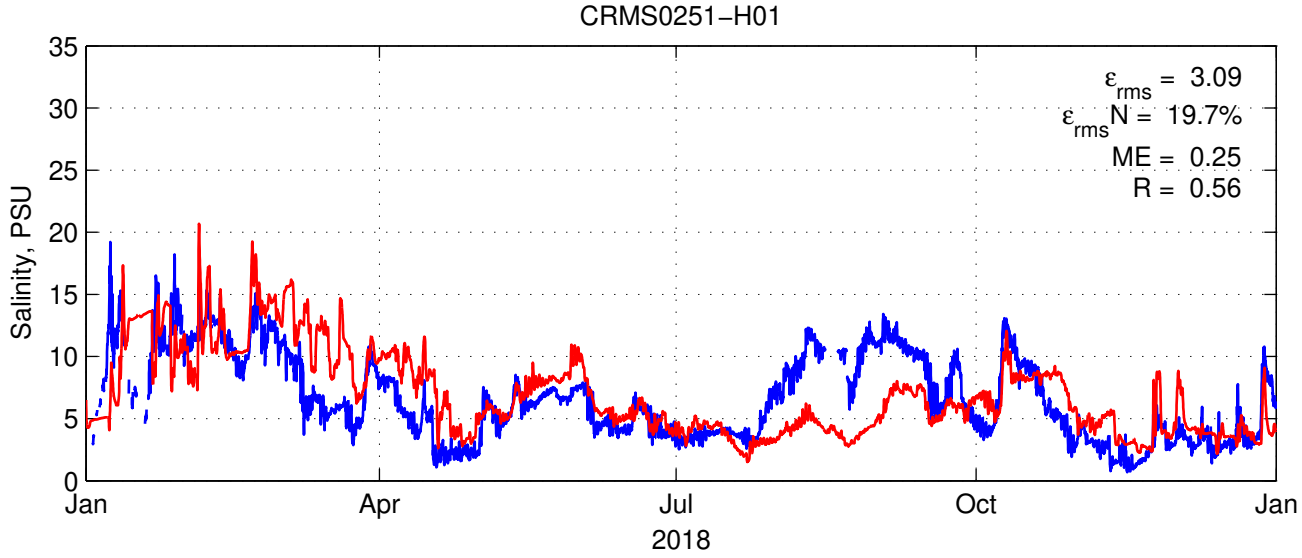

set13c25 – multi
CRMS0225–H01
Measured
Calculated
ε_{rms} = 3.20
ε_{rms}N = 25.9%
ME = 1.78
R = 0.43
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

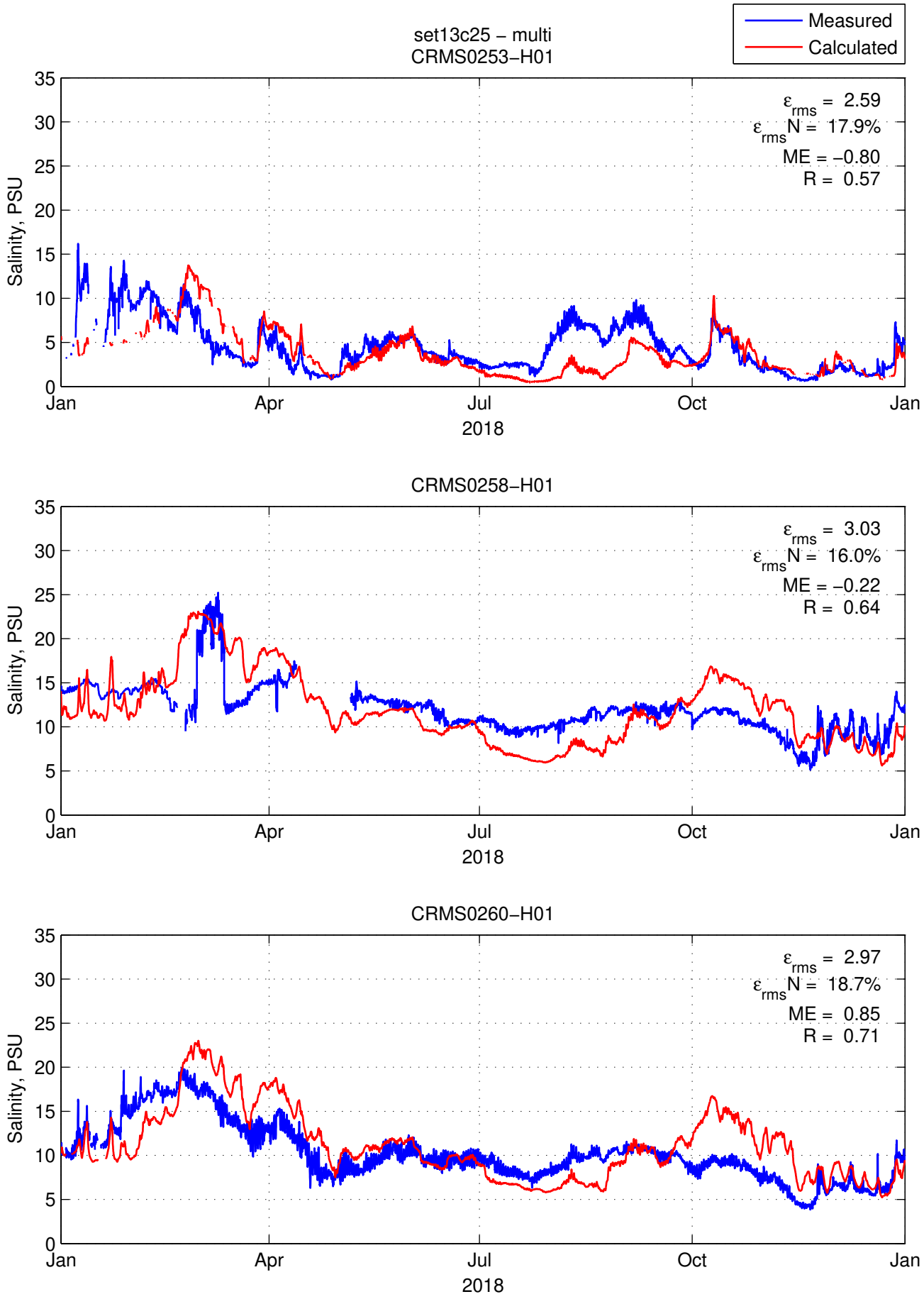

CRMS0226–H01
ε_{rms} = 2.85
ε_{rms}N = 15.4%
ME = 0.64
R = 0.77
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

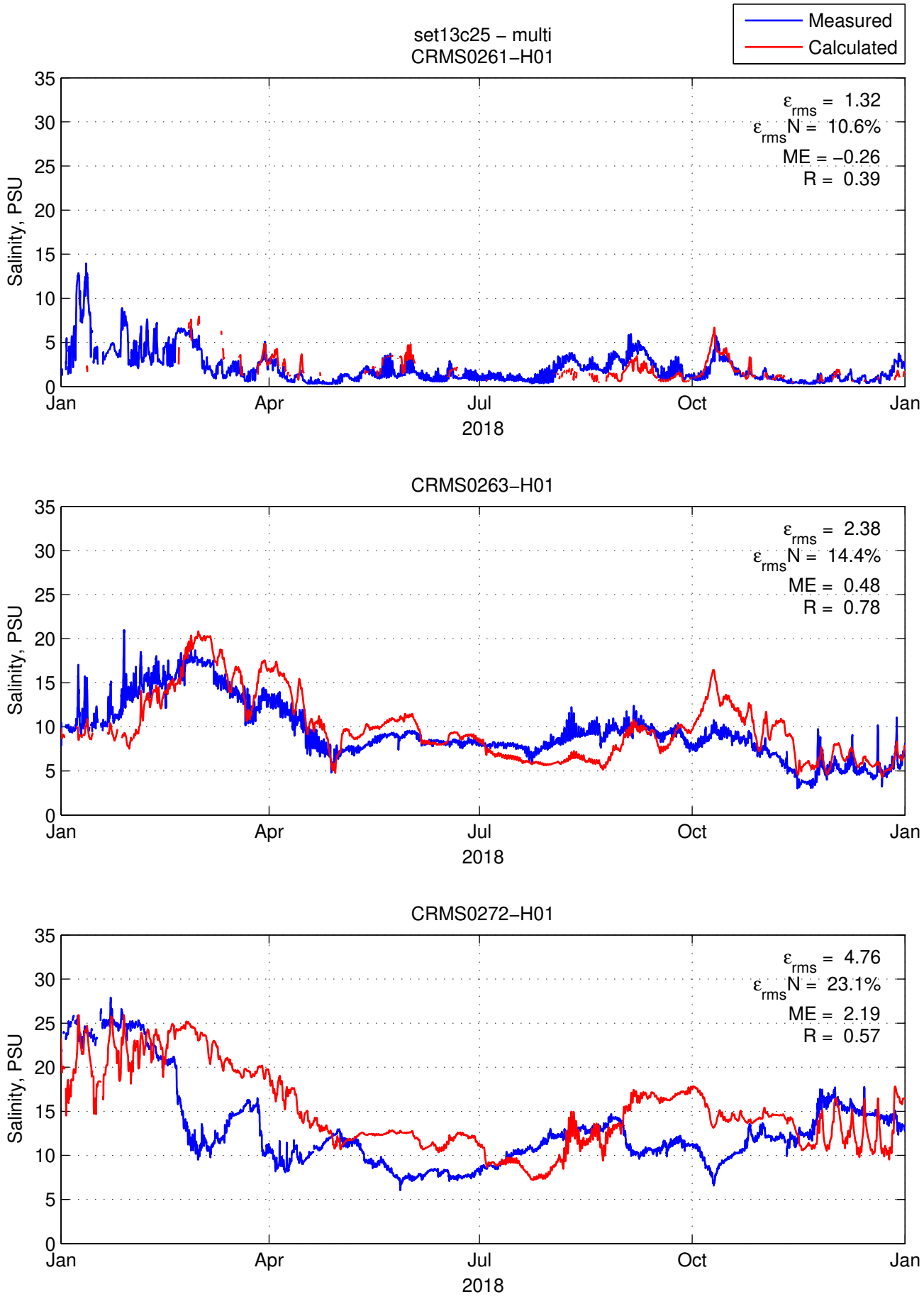

CRMS0232–H01
ε_{rms} = 3.37
ε_{rms}N = 15.6%
ME = –0.79
R = 0.65
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

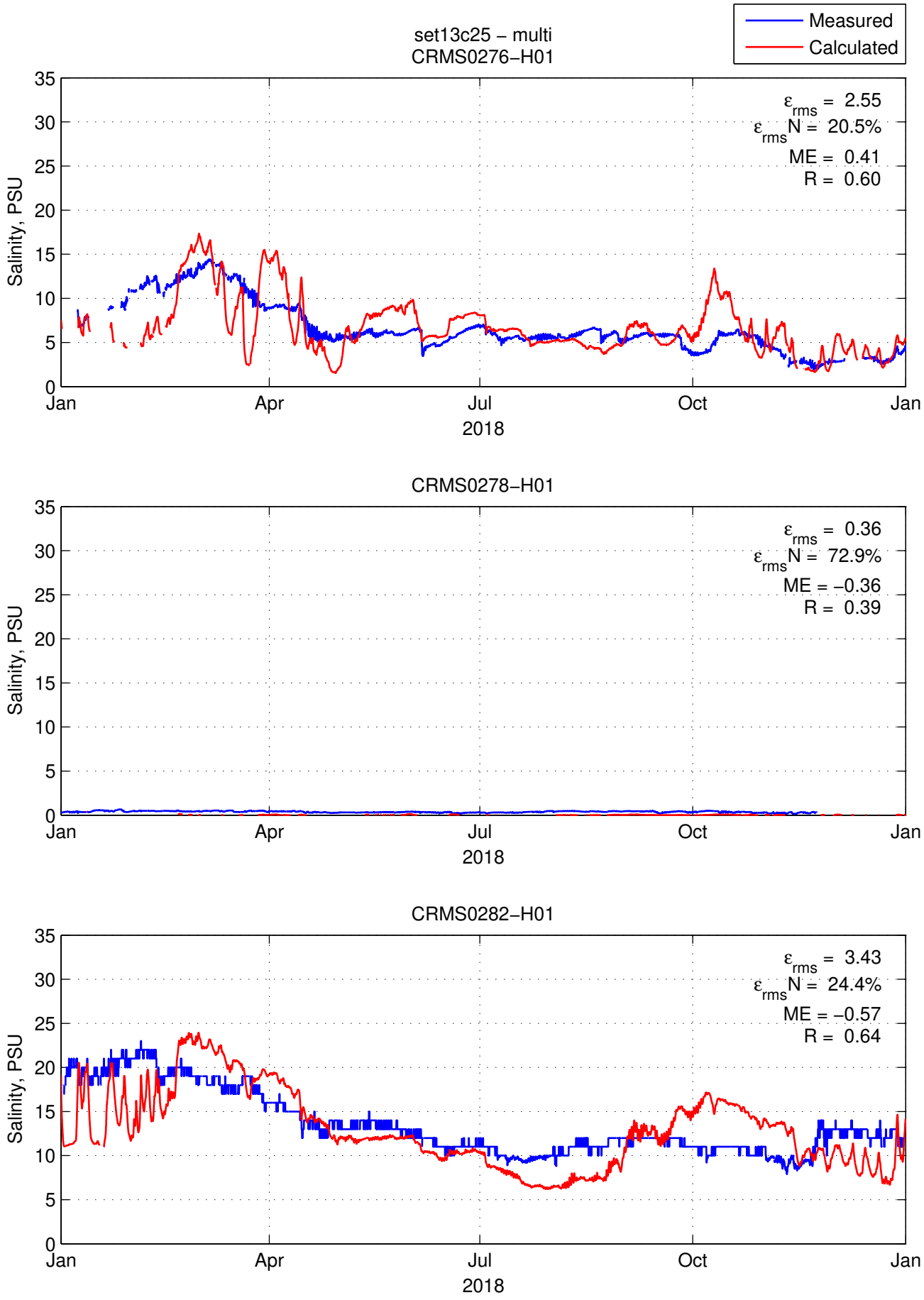

set13c25 – multi
CRMS0237–H02
Measured
Calculated
ε_{rms} = 2.62
ε_{rms}N = 13.7%
ME = 0.22
R = 0.75
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

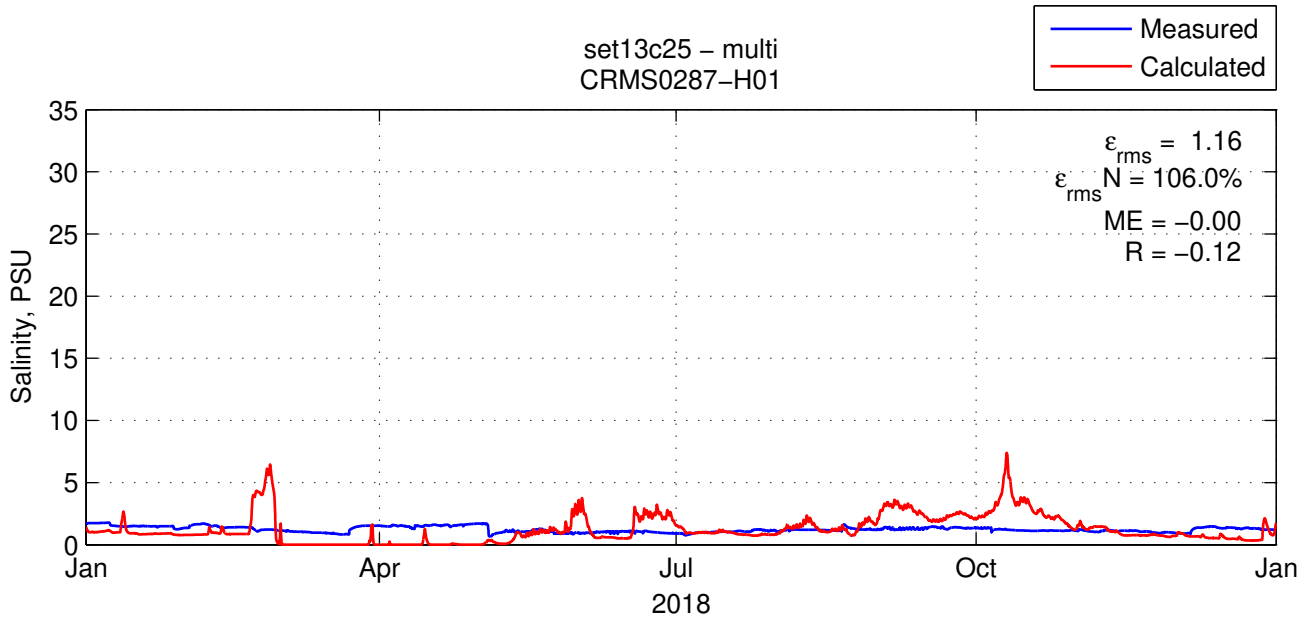

CRMS0248–H01
ε_{rms} = 1.76
ε_{rms}N = 25.1%
ME = 0.11
R = 0.49
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

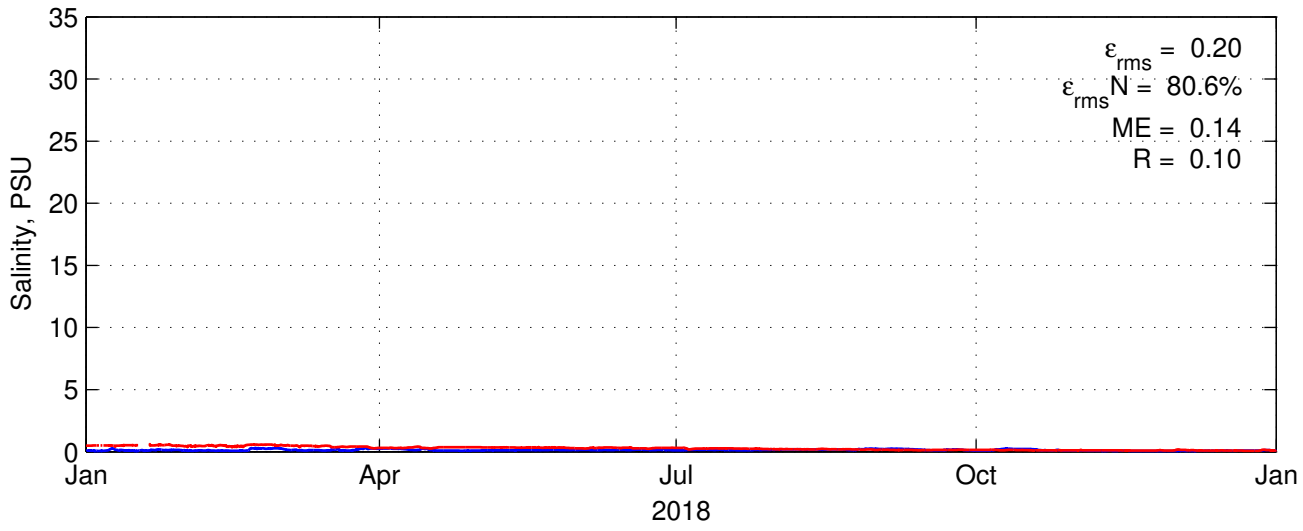

CRMS0251–H01
ε_{rms} = 3.09
ε_{rms}N = 19.7%
ME = 0.25
R = 0.56
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

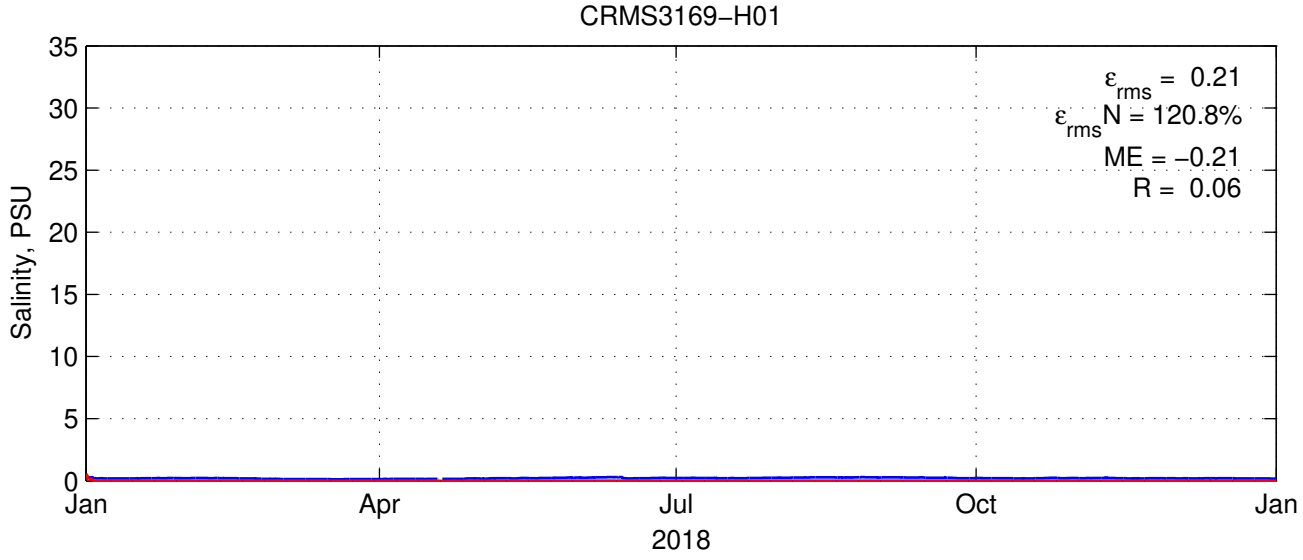

Measured
Calculated
set13c25 – multi
CRMS0253–H01
ε_{rms} = 2.59
ε_{rms}N = 17.9%
ME = –0.80
R = 0.57
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018
CRMS0258–H01
ε_{rms} = 3.03
ε_{rms}N = 16.0%
ME = –0.22
R = 0.64
Salinity, PSU
Jan
Apr
Jul
Oct
Jan
2018
CRMS0260–H01
ε_{rms} = 2.97
ε_{rms}N = 18.7%
ME = 0.85
R = 0.71
Salinity, PSU
Jan
Apr
Jul
Oct
Jan
2018

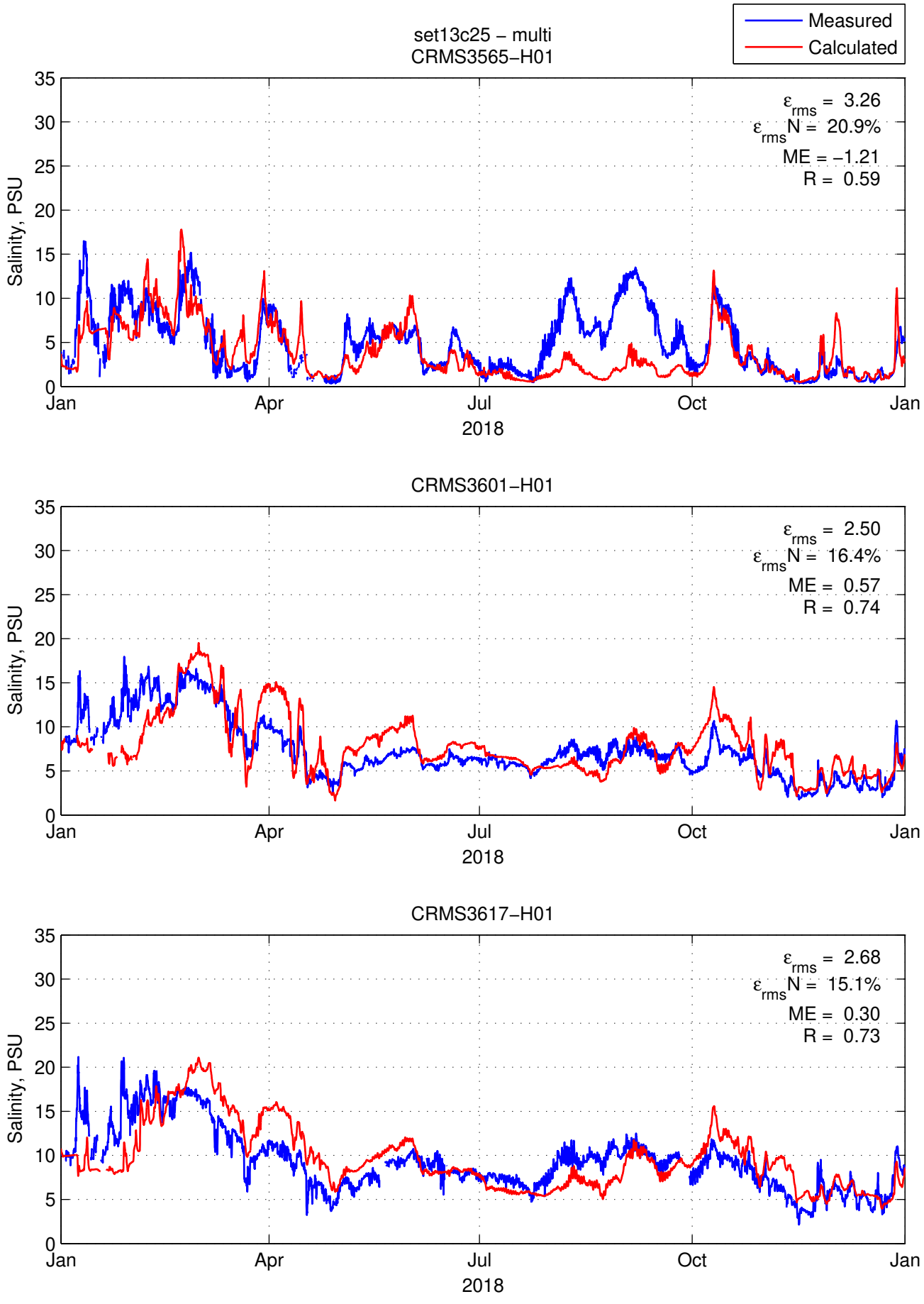

set13c25 – multi
CRMS0261–H01
Measured
Calculated
ε_{rms} = 1.32
ε_{rms}N = 10.6%
ME = –0.26
R = 0.39
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018
CRMS0263–H01
ε_{rms} = 2.38
ε_{rms}N = 14.4%
ME = 0.48
R = 0.78
Salinity, PSU
Jan
Apr
Jul
Oct
Jan
2018
CRMS0272–H01
ε_{rms} = 4.76
ε_{rms}N = 23.1%
ME = 2.19
R = 0.57
Salinity, PSU
Jan
Apr
Jul
Oct
Jan
2018

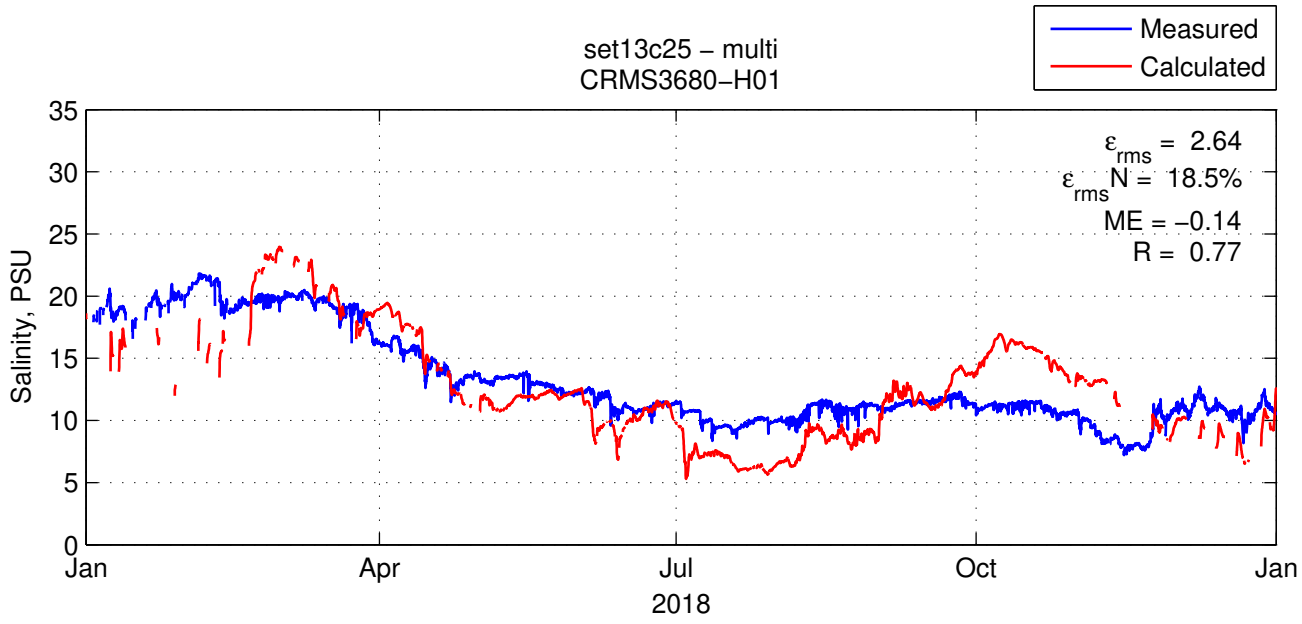

set13c25 – multi
CRMS0276–H01
Measured
Calculated
ε_{rms} = 2.55
ε_{rms}N = 20.5%
ME = 0.41
R = 0.60
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018
CRMS0278–H01
ε_{rms} = 0.36
ε_{rms}N = 72.9%
ME = –0.36
R = 0.39
Salinity, PSU
Jan
Apr
Jul
Oct
Jan
2018
CRMS0282–H01
ε_{rms} = 3.43
ε_{rms}N = 24.4%
ME = –0.57
R = 0.64
Salinity, PSU
Jan
Apr
Jul
Oct
Jan
2018

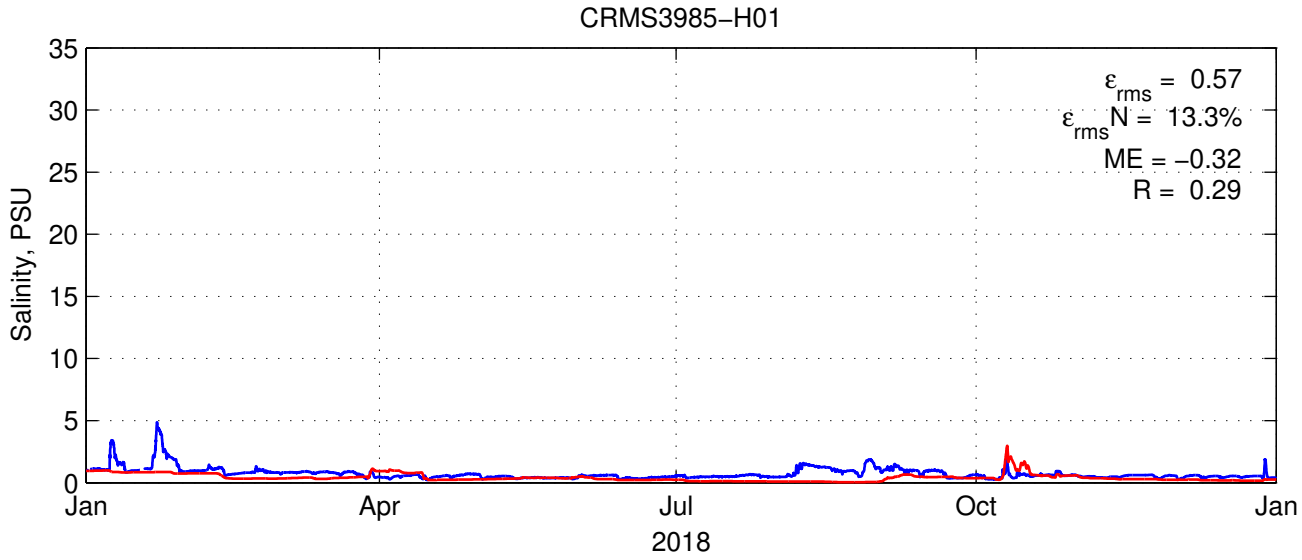

set13c25 – multi
CRMS0287–H01
Measured
Calculated
ε_{rms} = 1.16
ε_{rms}N = 106.0%
ME = –0.00
R = –0.12
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

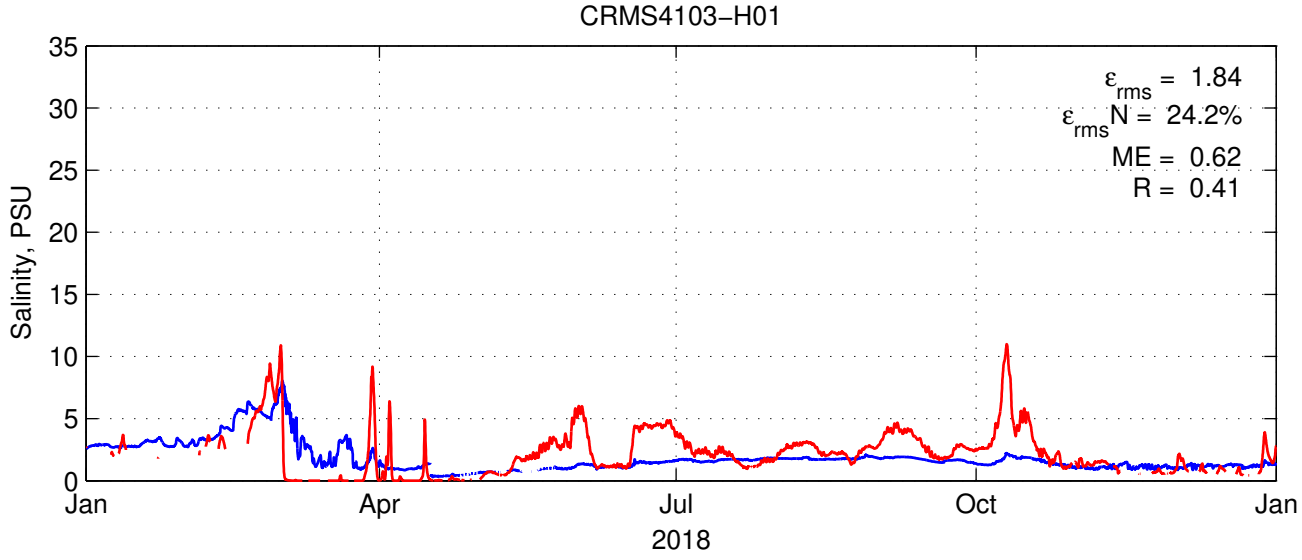

CRMS3054–H01
ε_{rms} = 0.20
ε_{rms}N = 80.6%
ME = 0.14
R = 0.10
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

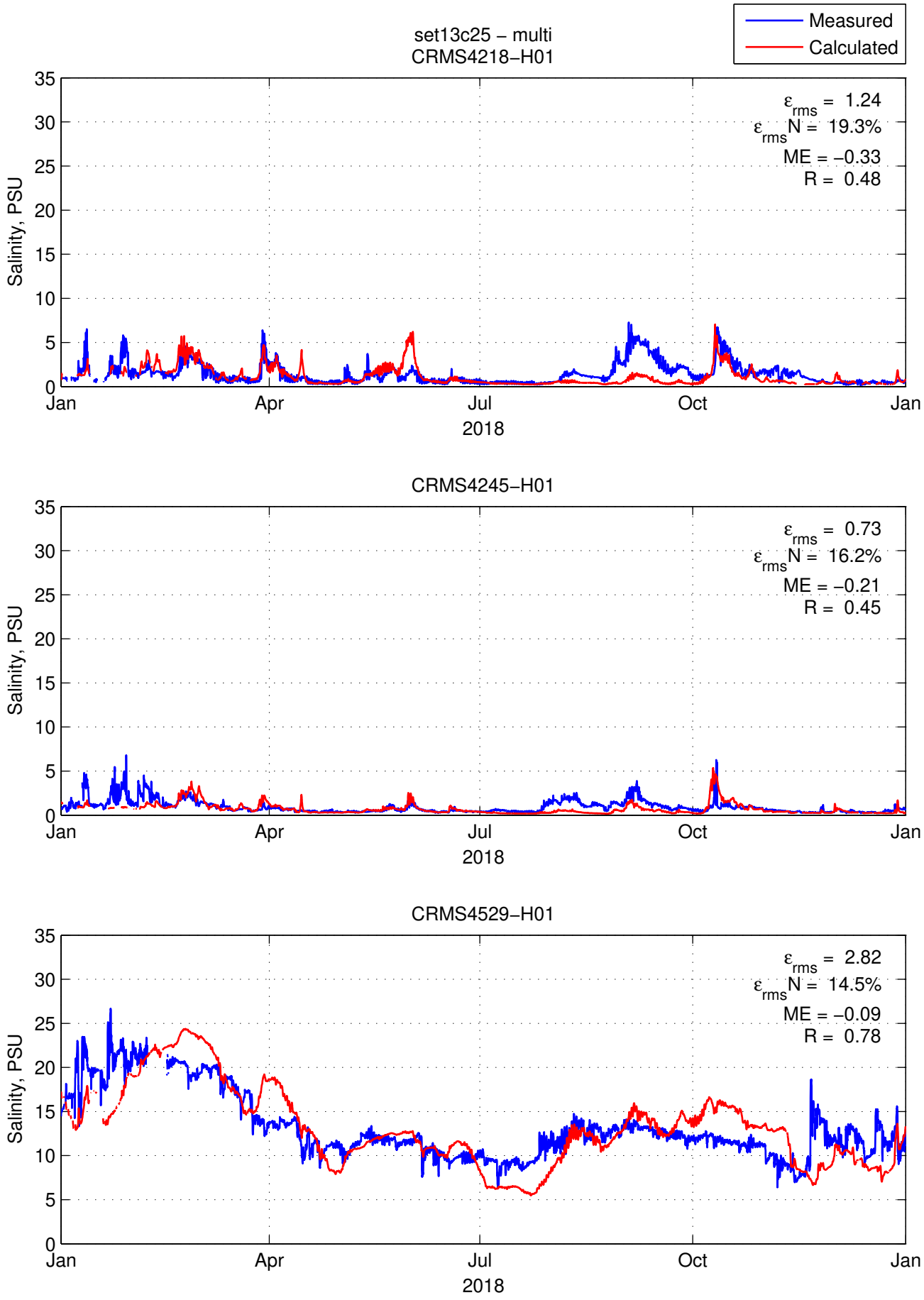

CRMS3169–H01
ε_{rms} = 0.21
ε_{rms}N = 120.8%
ME = –0.21
R = 0.06
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

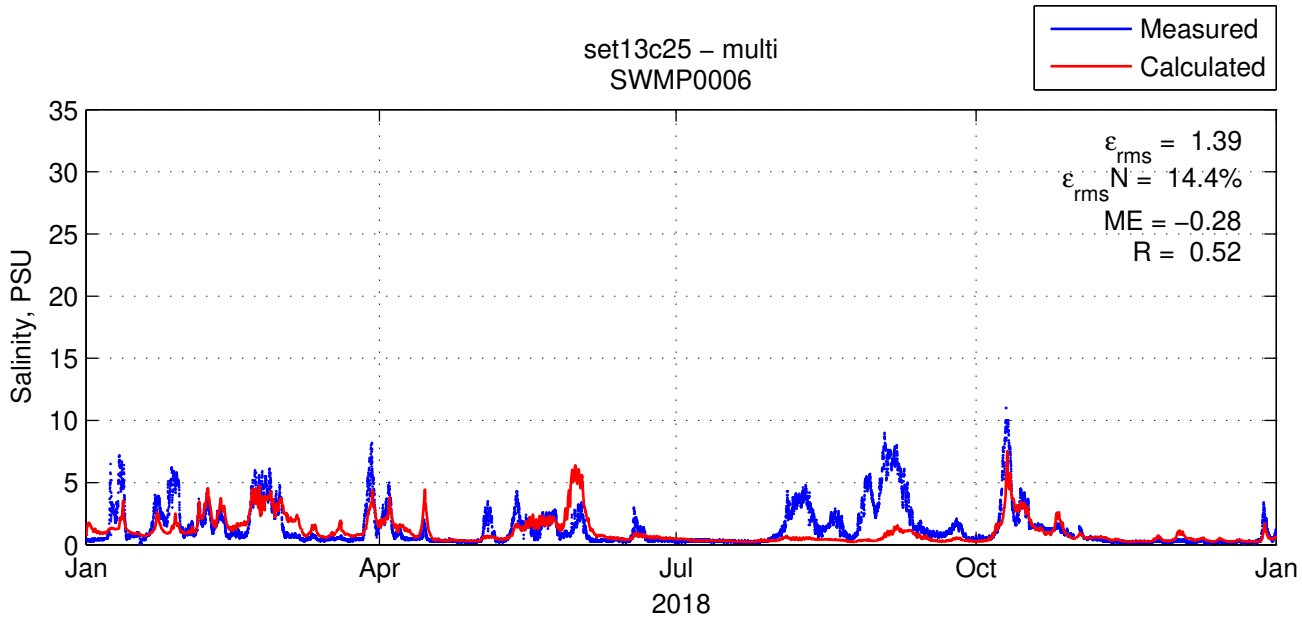

set13c25 – multi
CRMS3565–H01
Measured
Calculated
ε_{rms} = 3.26
ε_{rms}N = 20.9%
ME = –1.21
R = 0.59
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018
CRMS3601–H01
ε_{rms} = 2.50
ε_{rms}N = 16.4%
ME = 0.57
R = 0.74
Salinity, PSU
Jan
Apr
Jul
Oct
Jan
2018
CRMS3617–H01
ε_{rms} = 2.68
ε_{rms}N = 15.1%
ME = 0.30
R = 0.73
Salinity, PSU
Jan
Apr
Jul
Oct
Jan
2018

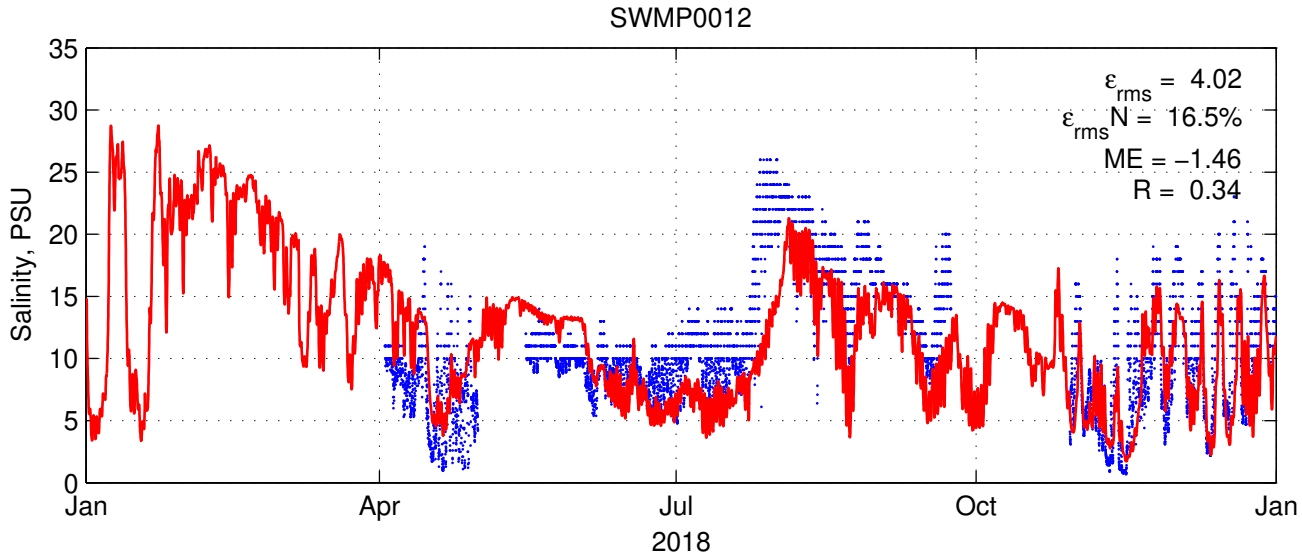

set13c25 – multi
CRMS3680–H01
Measured
Calculated
ε_{rms} = 2.64
ε_{rms}N = 18.5%
ME = –0.14
R = 0.77
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

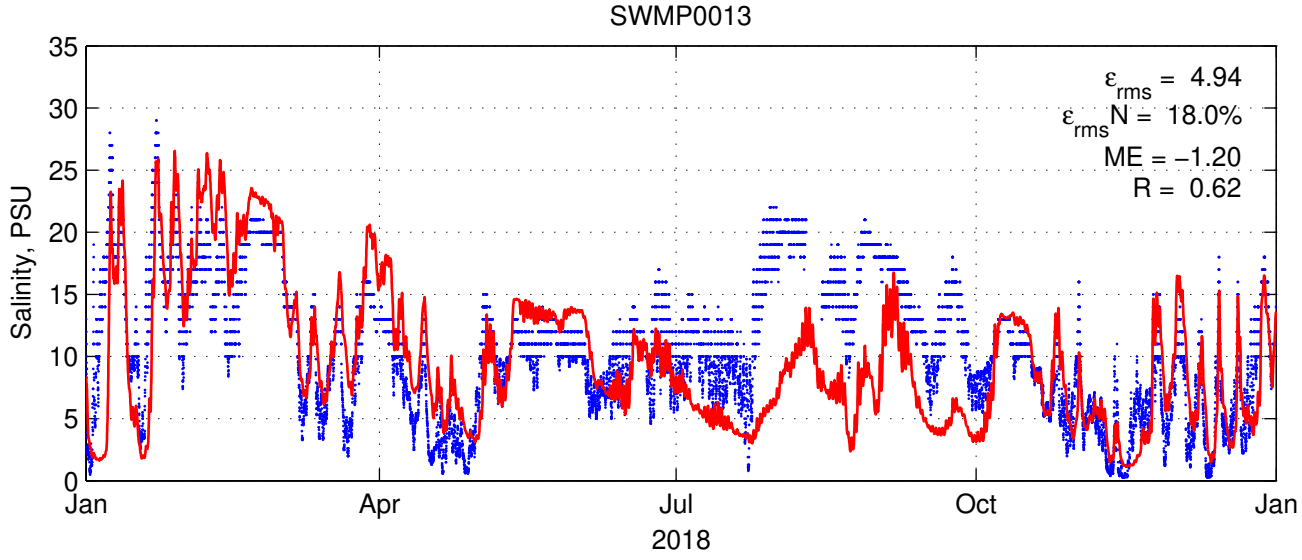

CRMS3985–H01
ε_{rms} = 0.57
ε_{rms}N = 13.3%
ME = –0.32
R = 0.29
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

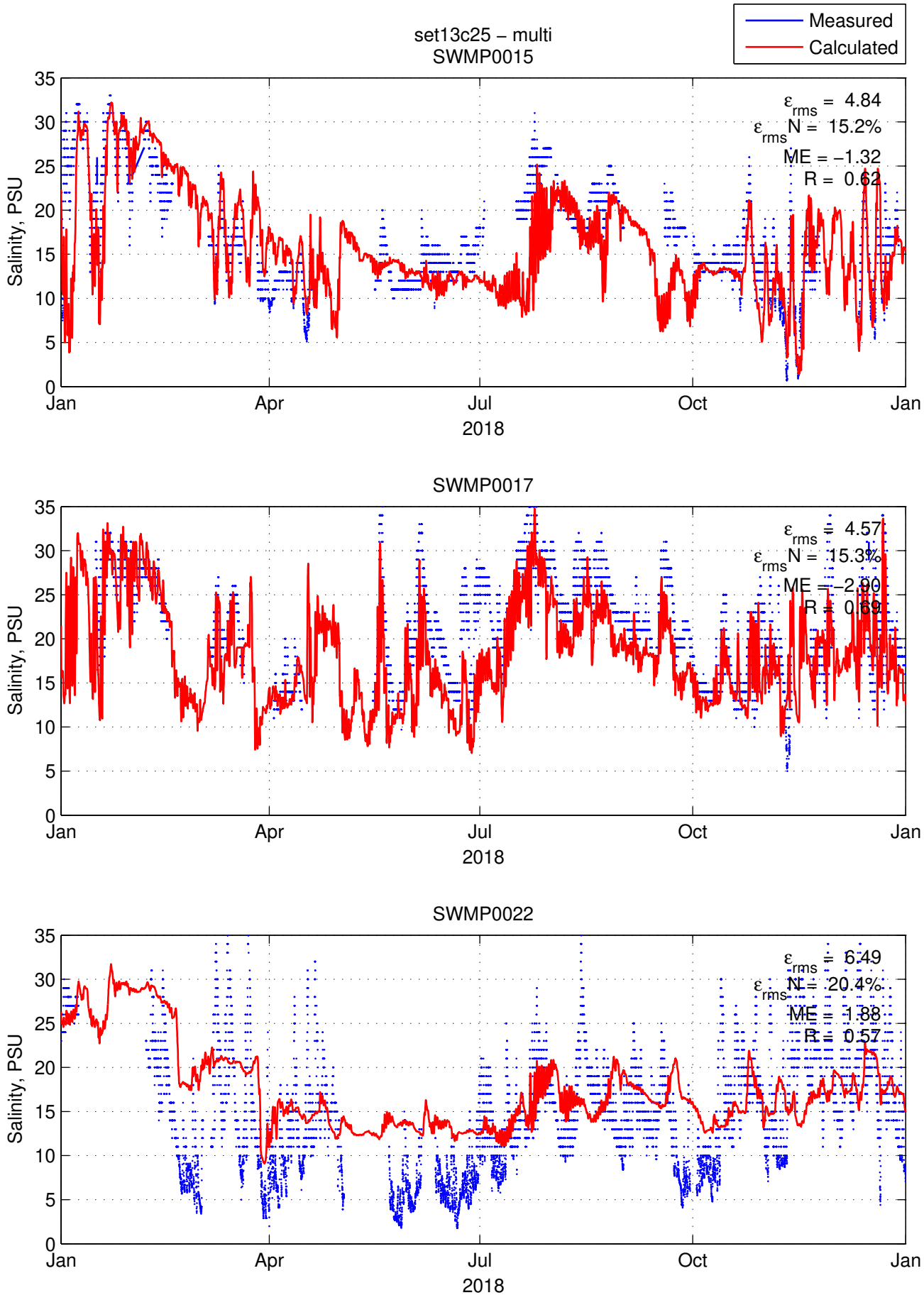

CRMS4103–H01
ε_{rms} = 1.84
ε_{rms}N = 24.2%
ME = 0.62
R = 0.41
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018


set13c25 – multi
CRMS4218–H01
Measured
Calculated
ε_{rms} = 1.24
ε_{rms}N = 19.3%
ME = –0.33
R = 0.48
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018
CRMS4245–H01
ε_{rms} = 0.73
ε_{rms}N = 16.2%
ME = –0.21
R = 0.45
Salinity, PSU
Jan
Apr
Jul
Oct
Jan
2018
CRMS4529–H01
ε_{rms} = 2.82
ε_{rms}N = 14.5%
ME = –0.09
R = 0.78
Salinity, PSU
Jan
Apr
Jul
Oct
Jan
2018


set13c25 – multi
SWMP0006
Measured
Calculated
ε_{rms} = 1.39
ε_{rms}N = 14.4%
ME = –0.28
R = 0.52
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018


SWMP0012
ε_{rms} = 4.02
ε_{rms}N = 16.5%
ME = –1.46
R = 0.34
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

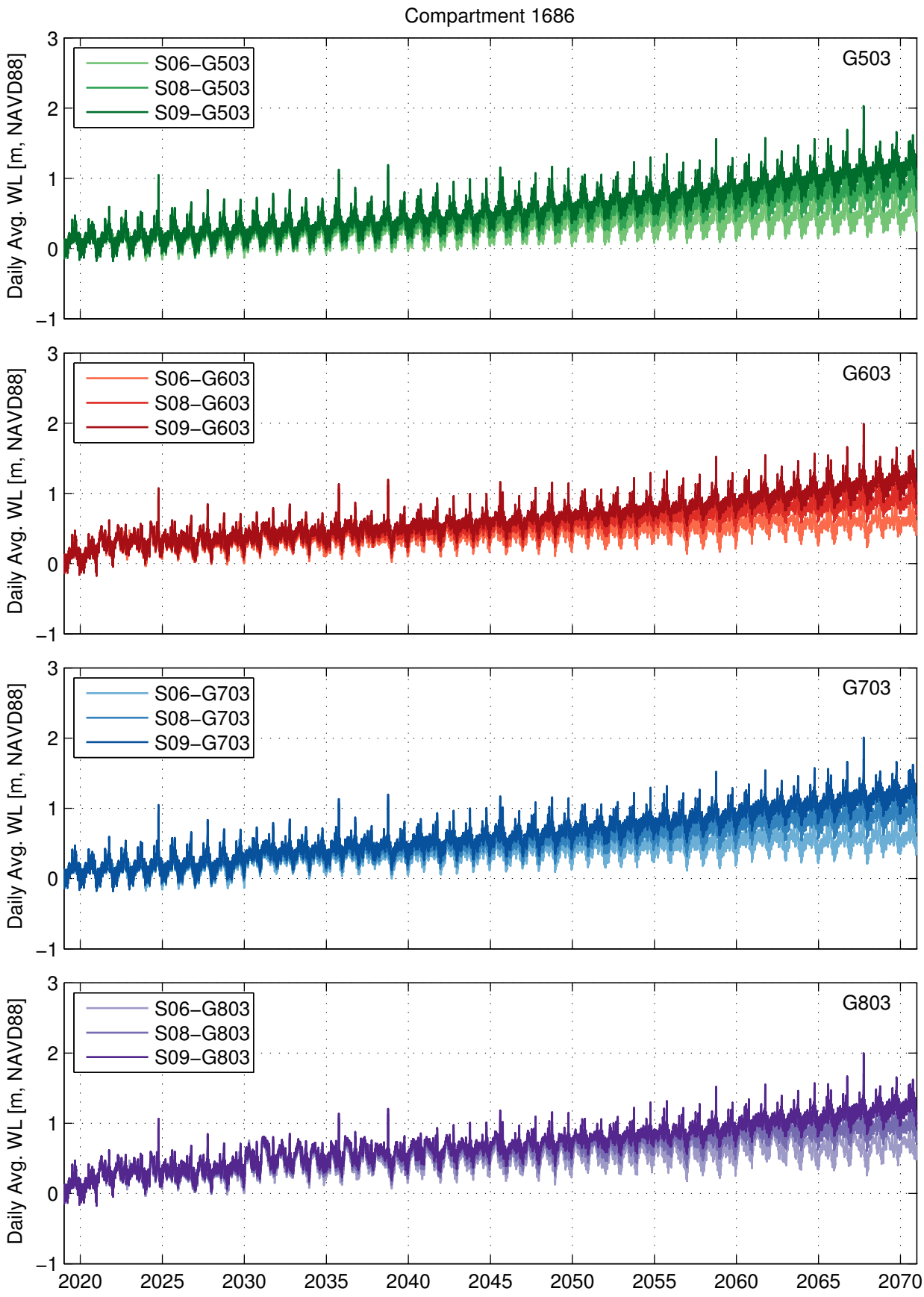

SWMP0013
ε_{rms} = 4.94
ε_{rms}N = 18.0%
ME = –1.20
R = 0.62
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018

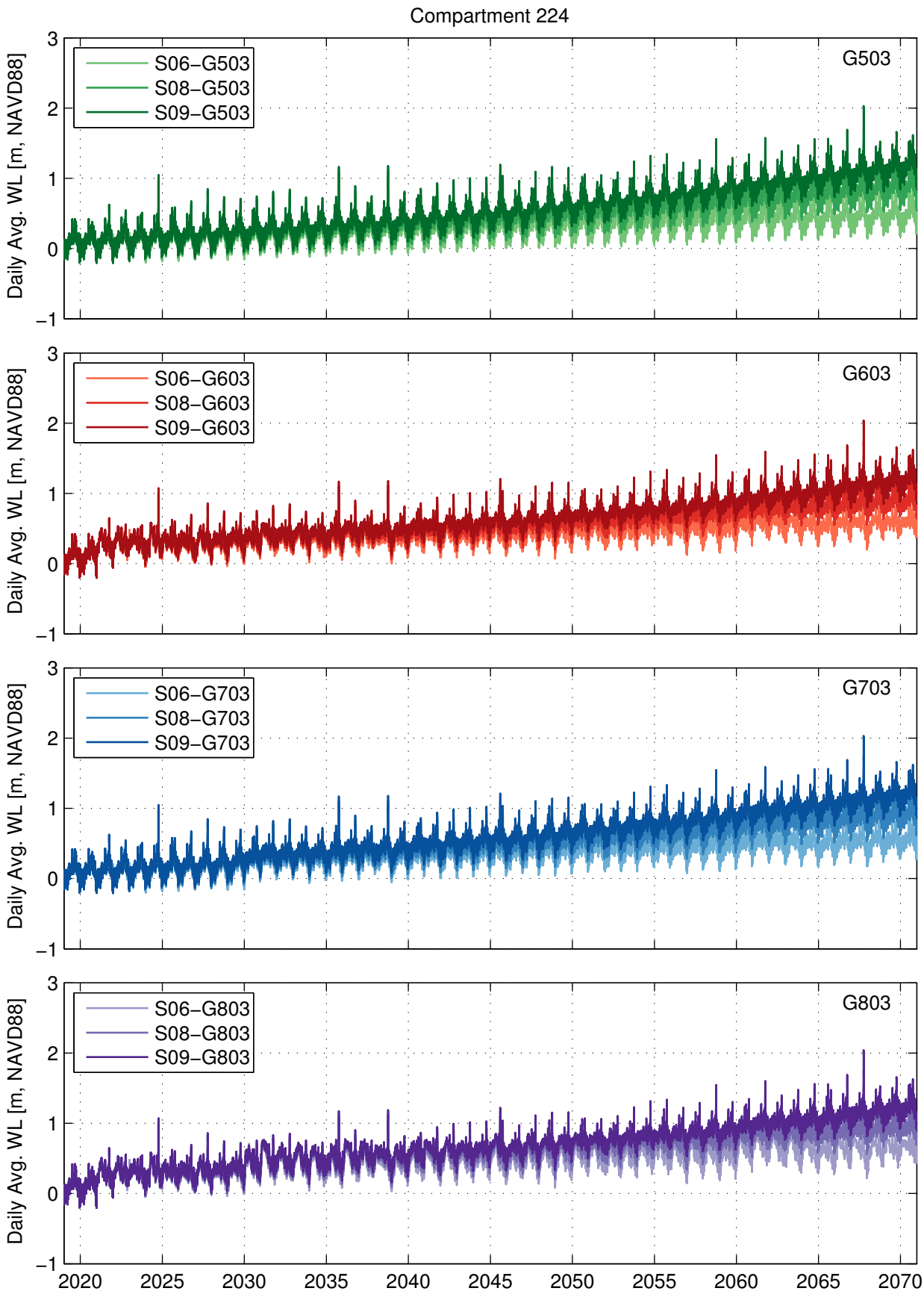

set13c25 – multi
SWMP0015
Measured
Calculated
ε_{rms} = 4.84
ε_{rms} N = 15.2%
ME = −1.32
R = 0.62
Salinity, PSU
0
5
10
15
20
25
30
35
Jan
Apr
Jul
Oct
Jan
2018
SWMP0017
ε_{rms} = 4.57
ε_{rms} N = 15.3%
ME = −2.90
R = 0.69
Salinity, PSU
Jan
Apr
Jul
Oct
Jan
2018
SWMP0022
ε_{rms} = 6.49
ε_{rms} N = 20.4%
ME = 1.88
R = 0.57
Salinity, PSU
Jan
Apr
Jul
Oct
Jan
2018

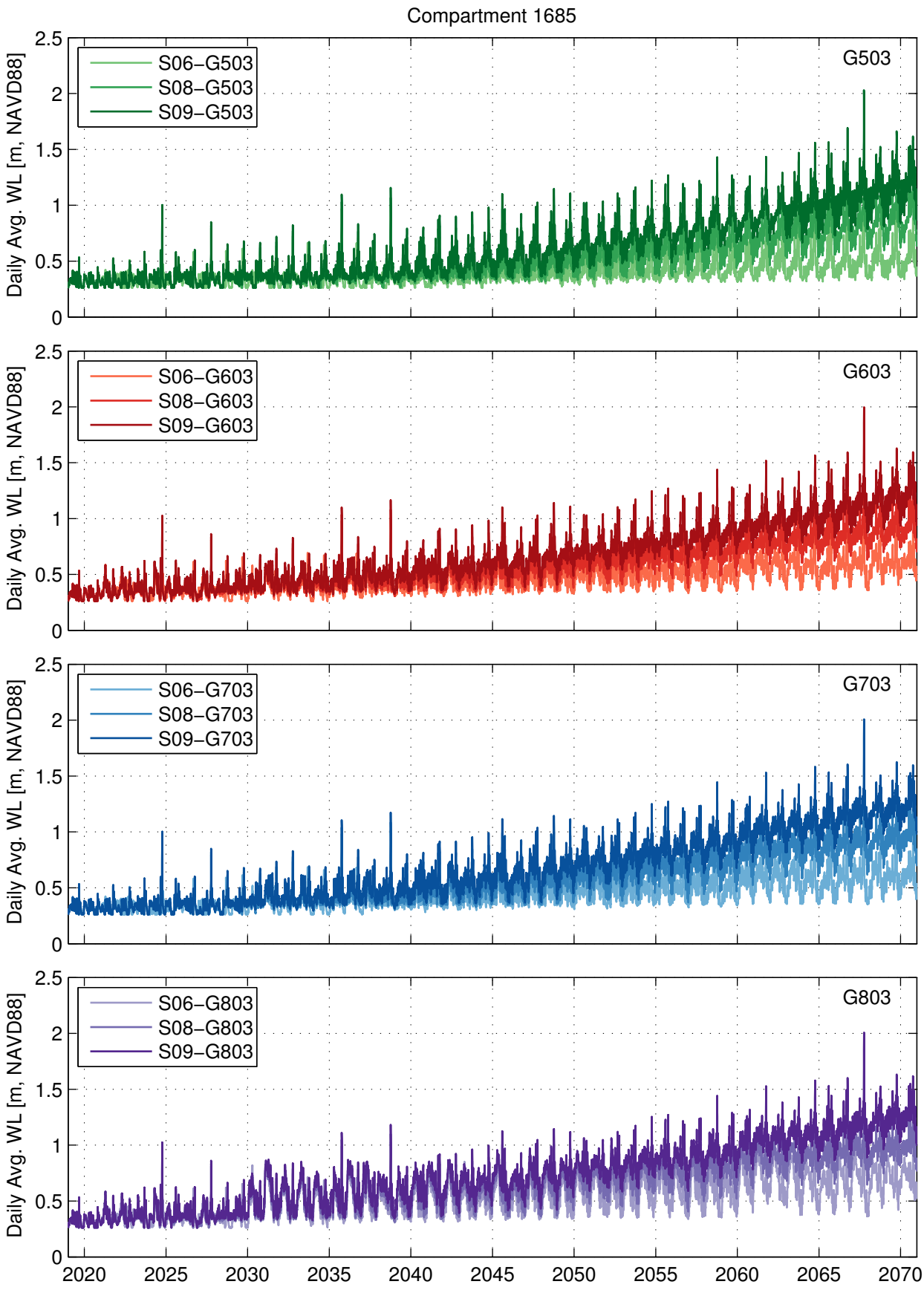
National Park Service
JELA Barataria Preserve Future Conditions Modeling

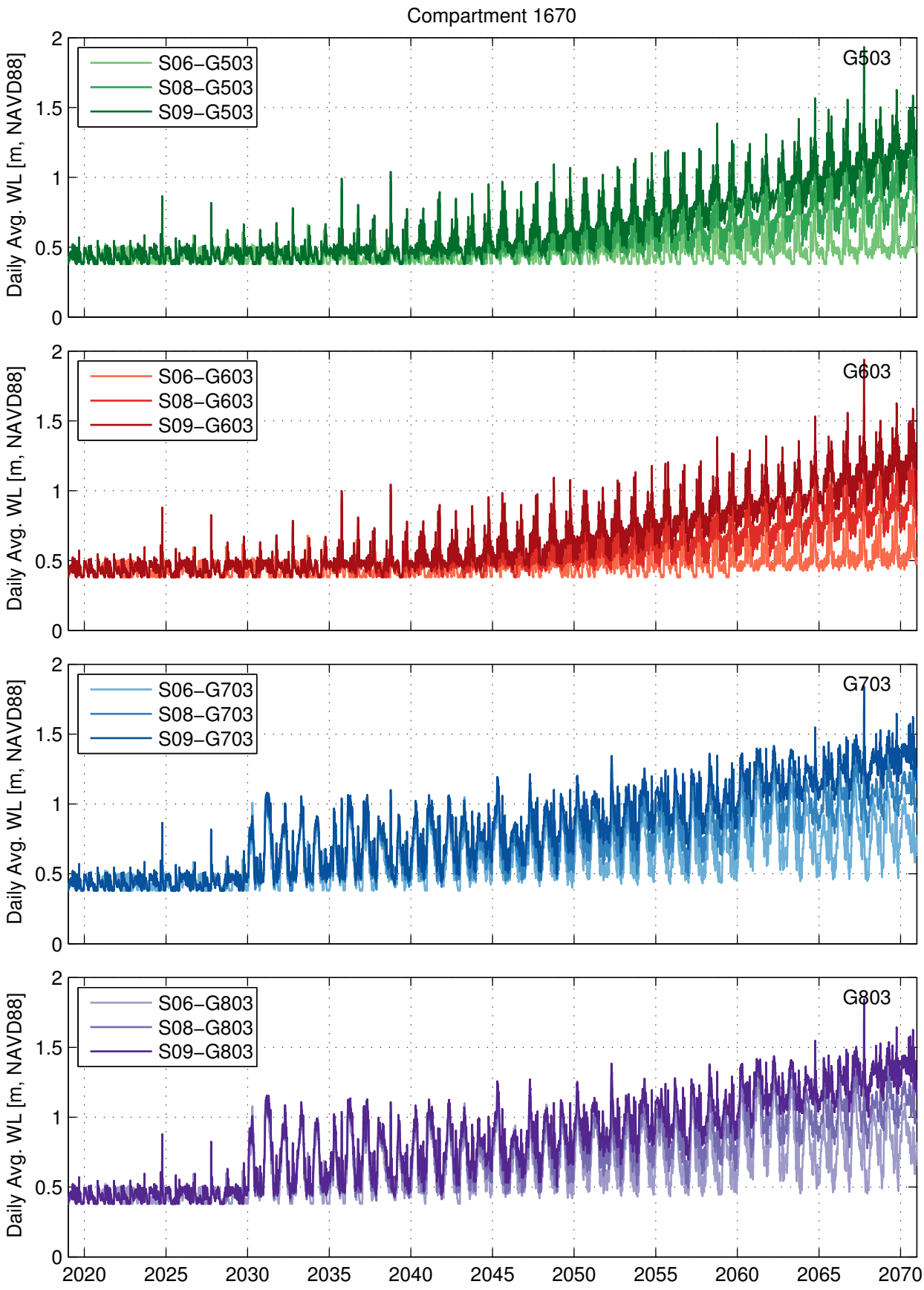
Appendix D: ICM Future Conditions Hydro Timeseries Results

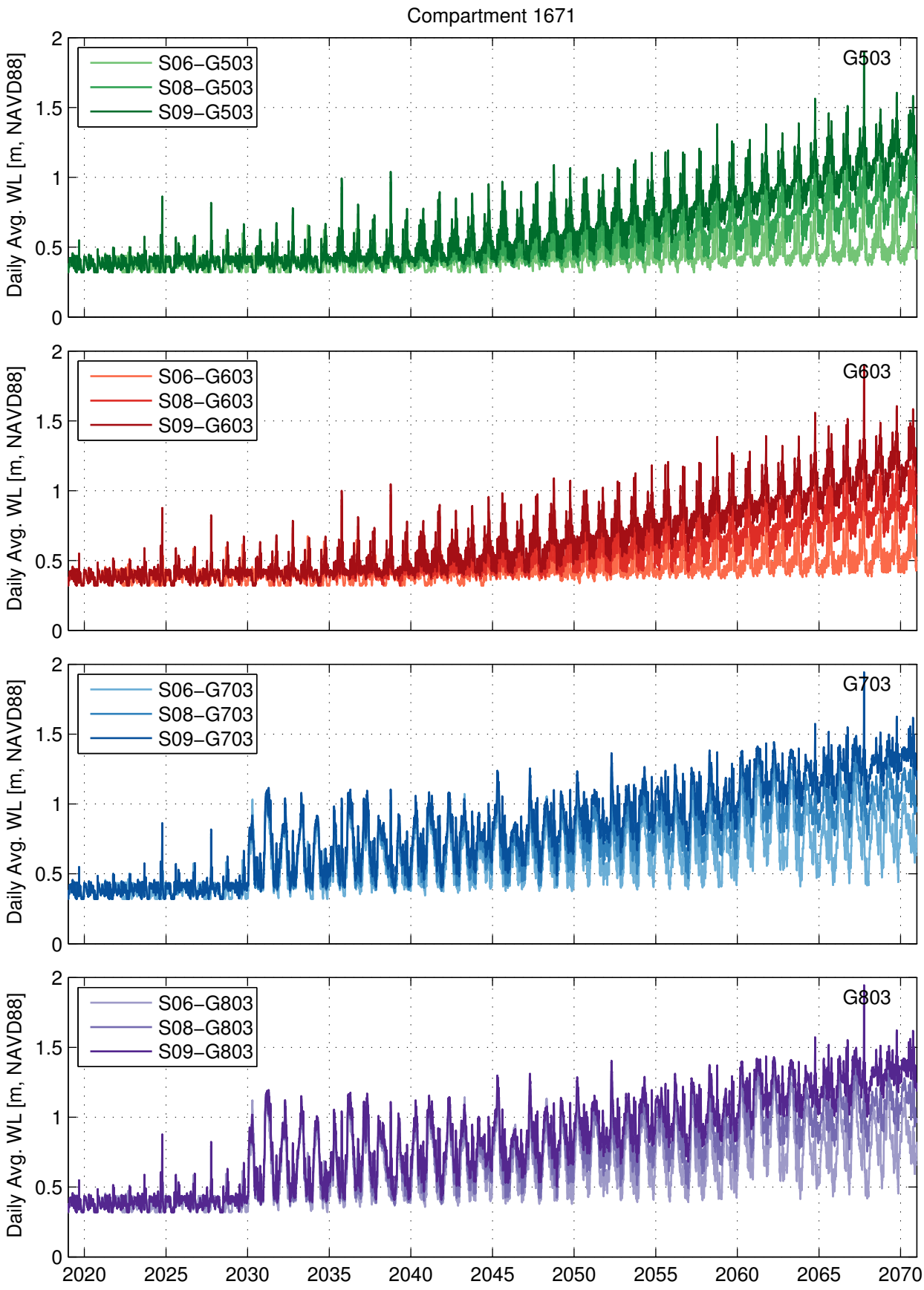


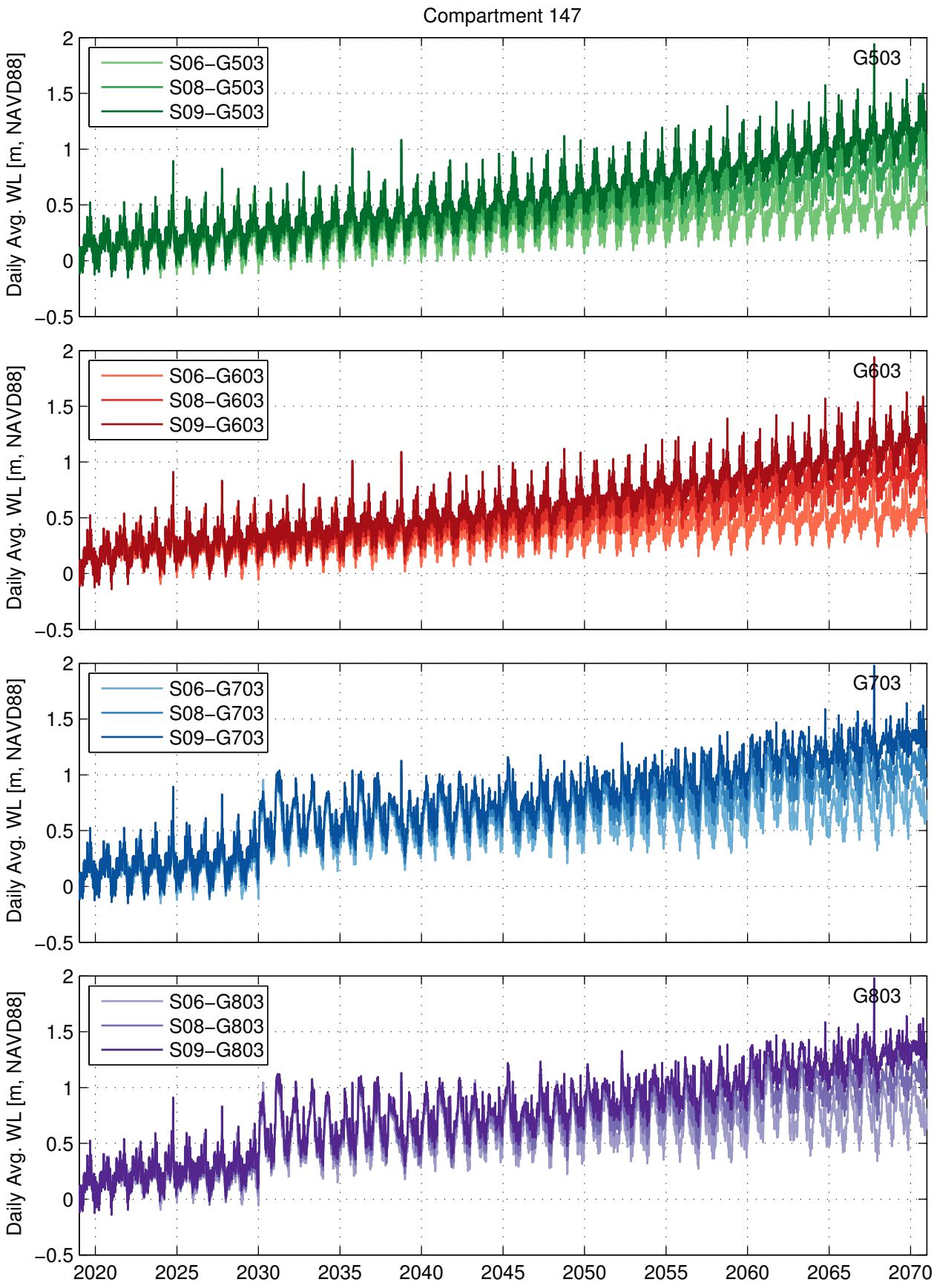

Compartment 1686
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Daily Avg. WL [m, NAVD88]
3
2
1
0
−1
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

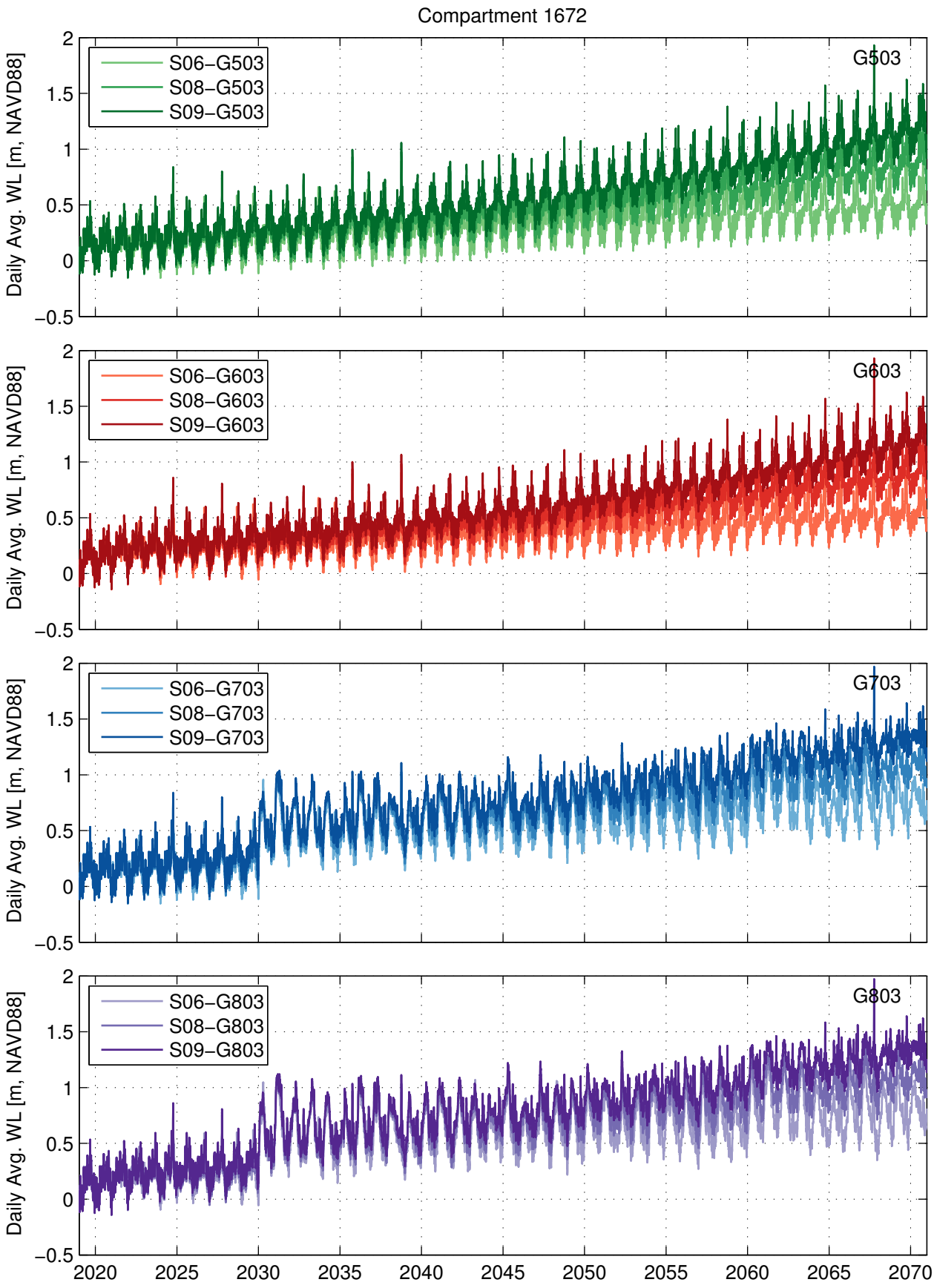

Compartment 224
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Daily Avg. WL [m, NAVD88]
3
2
1
0
−1
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

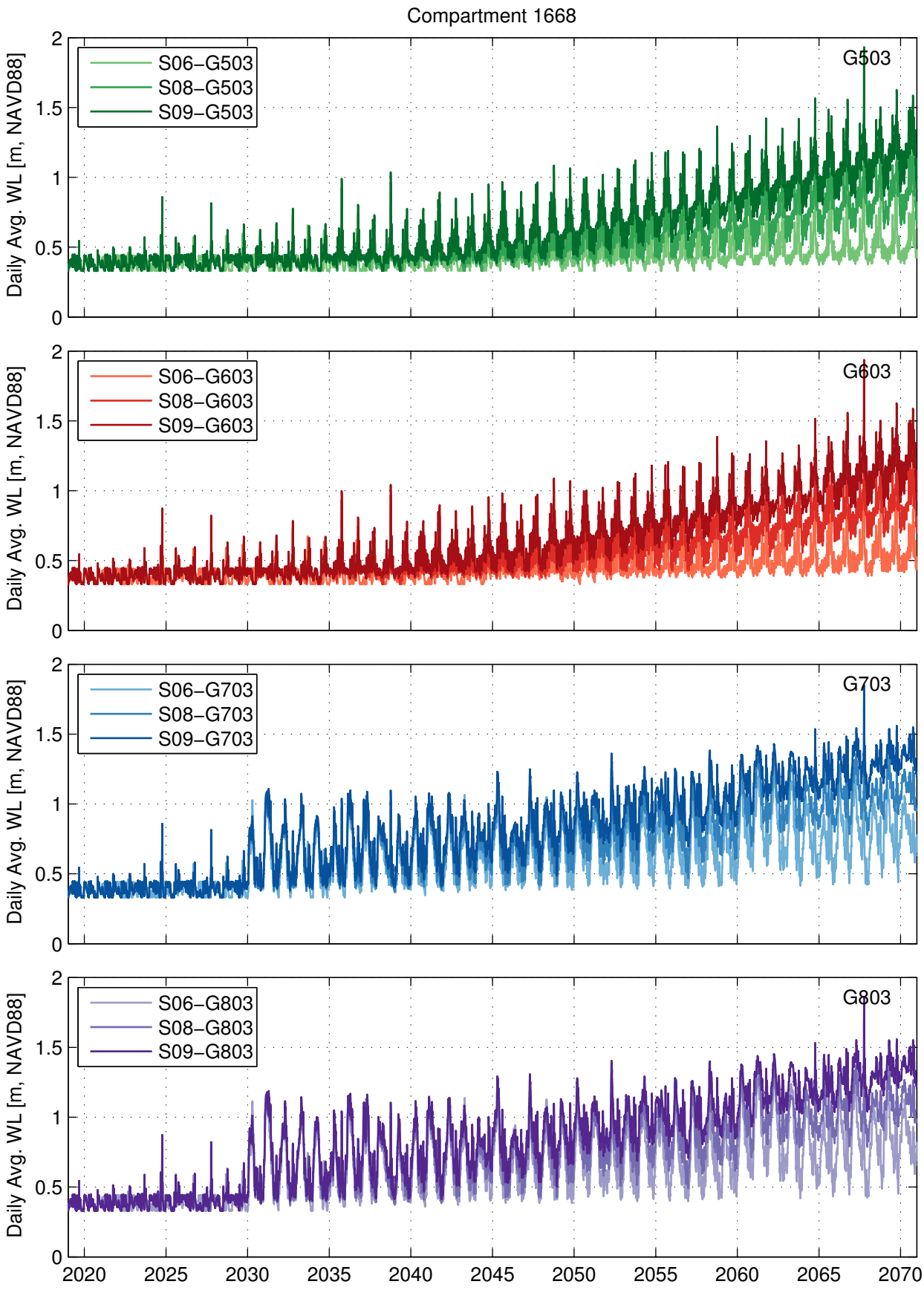

Compartment 1685
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Daily Avg. WL [m, NAVD88]
0
0.5
1
1.5
2
2.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

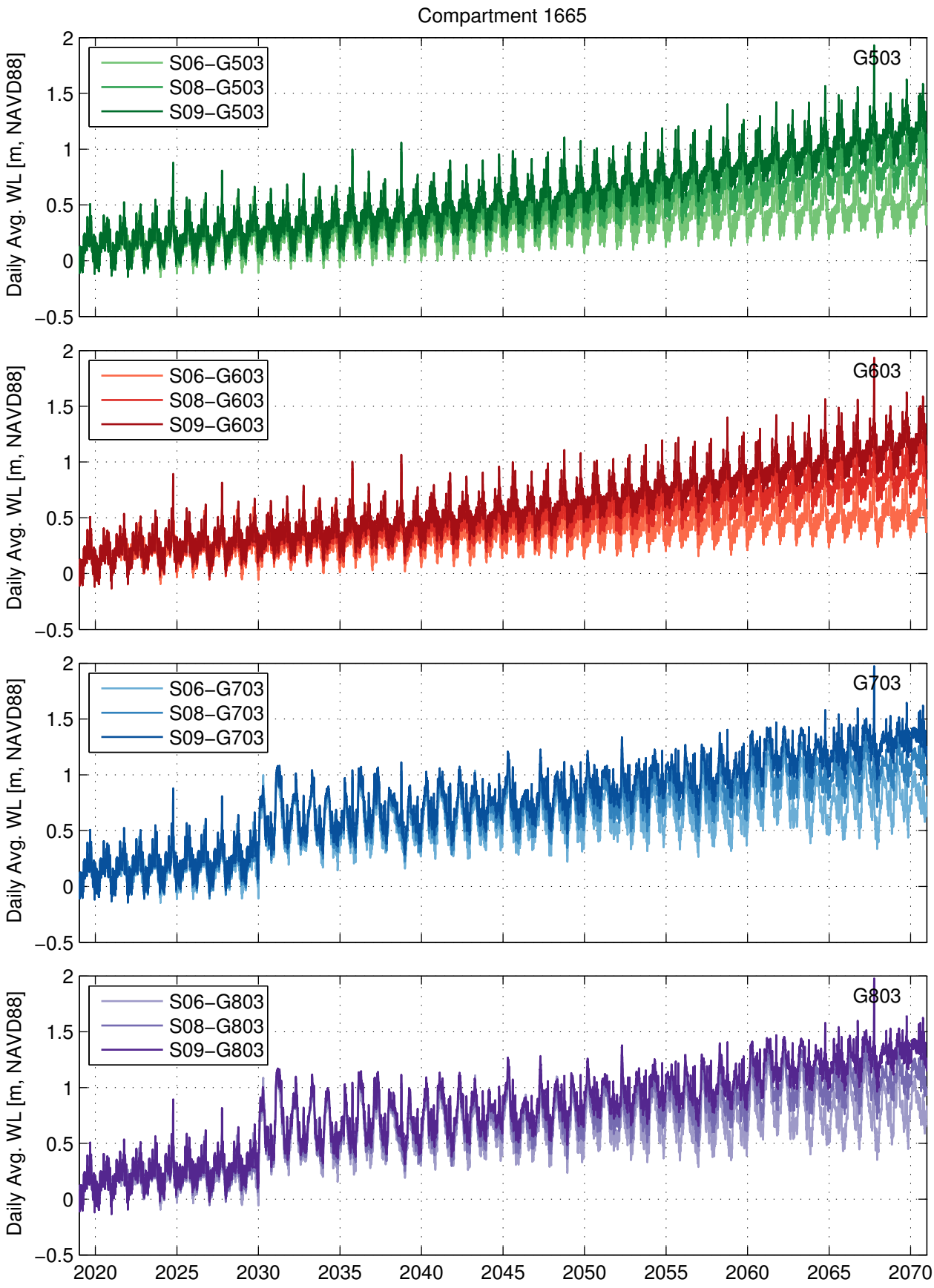

Compartment 1670
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Daily Avg. WL [m, NAVD88]
0
0.5
1
1.5
2
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

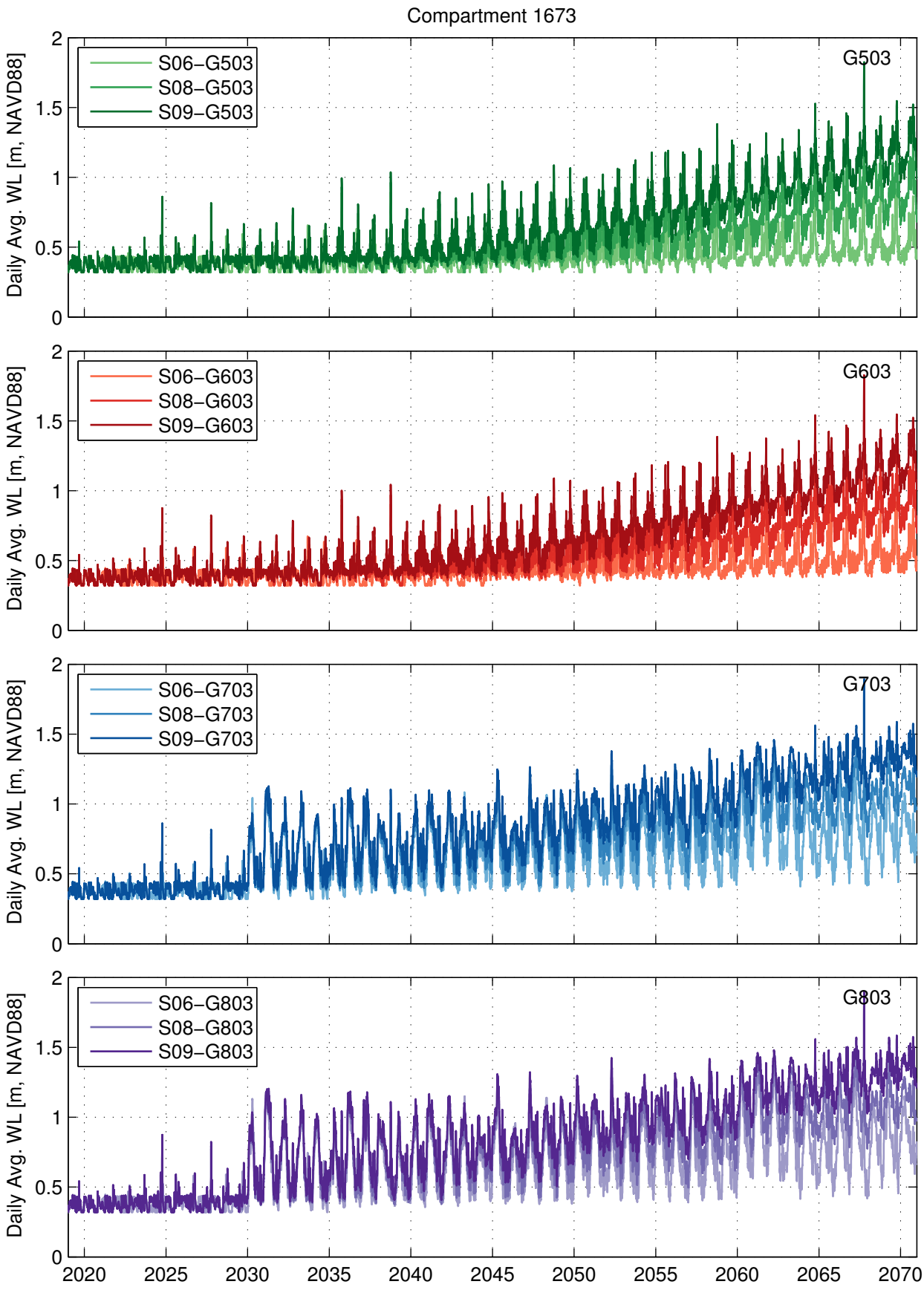

Compartment 1671
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Daily Avg. WL [m, NAVD88]
0
0.5
1
1.5
2
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

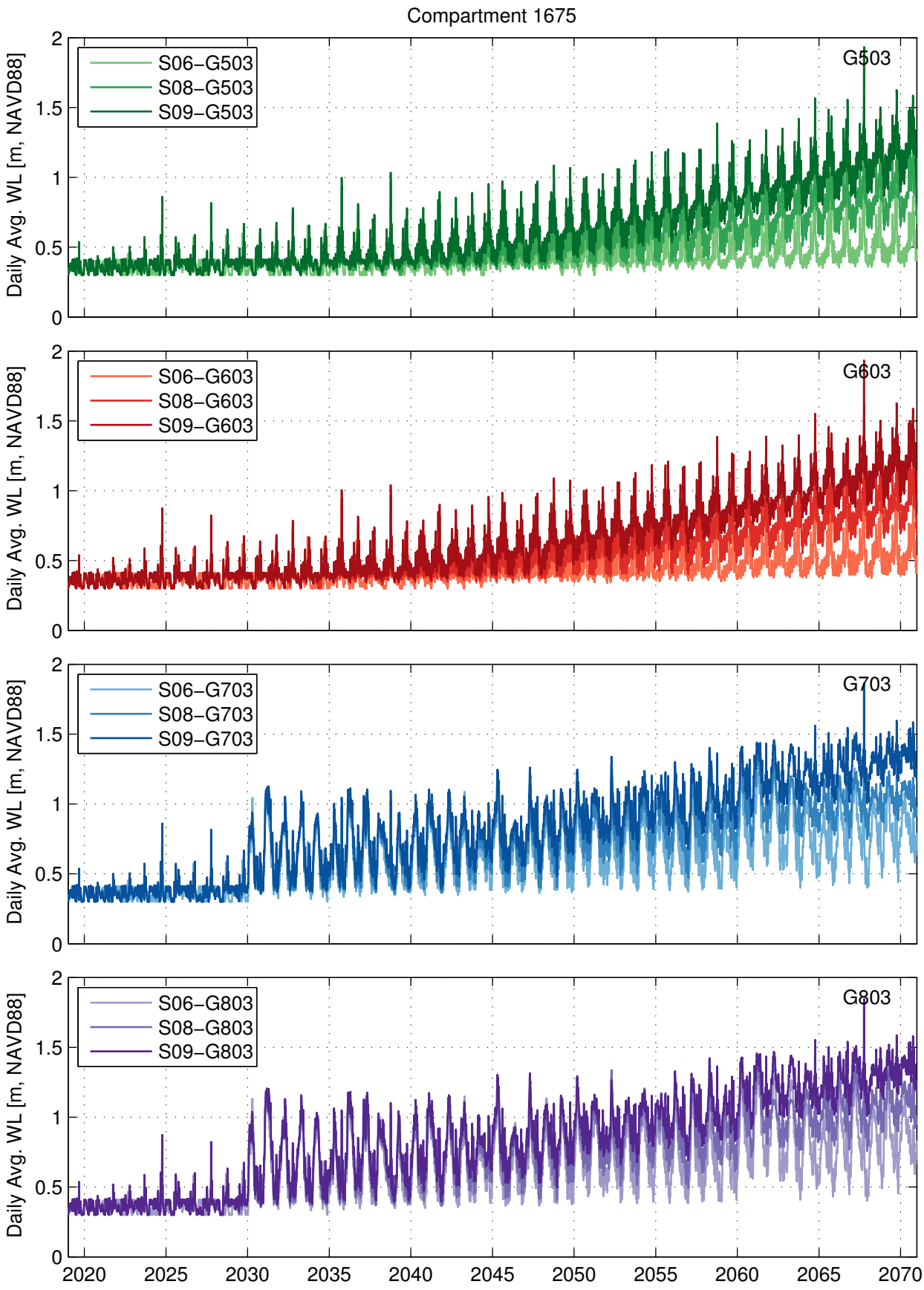

Compartment 147
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Daily Avg. WL [m, NAVD88]
2
1.5
1
0.5
0
−0.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

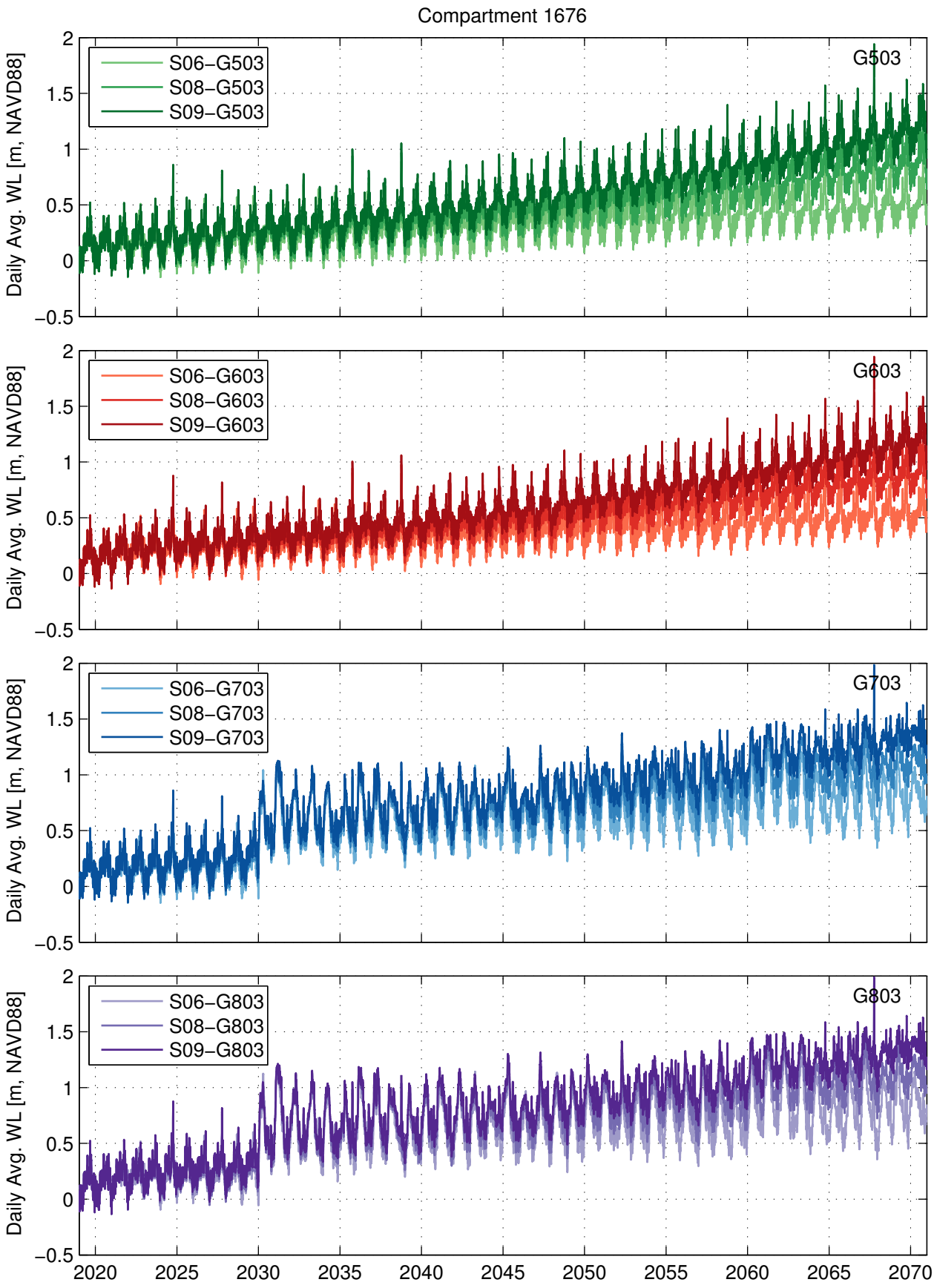

Compartment 1672
Daily Avg. WL [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
2
1.5
1
0.5
0
−0.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

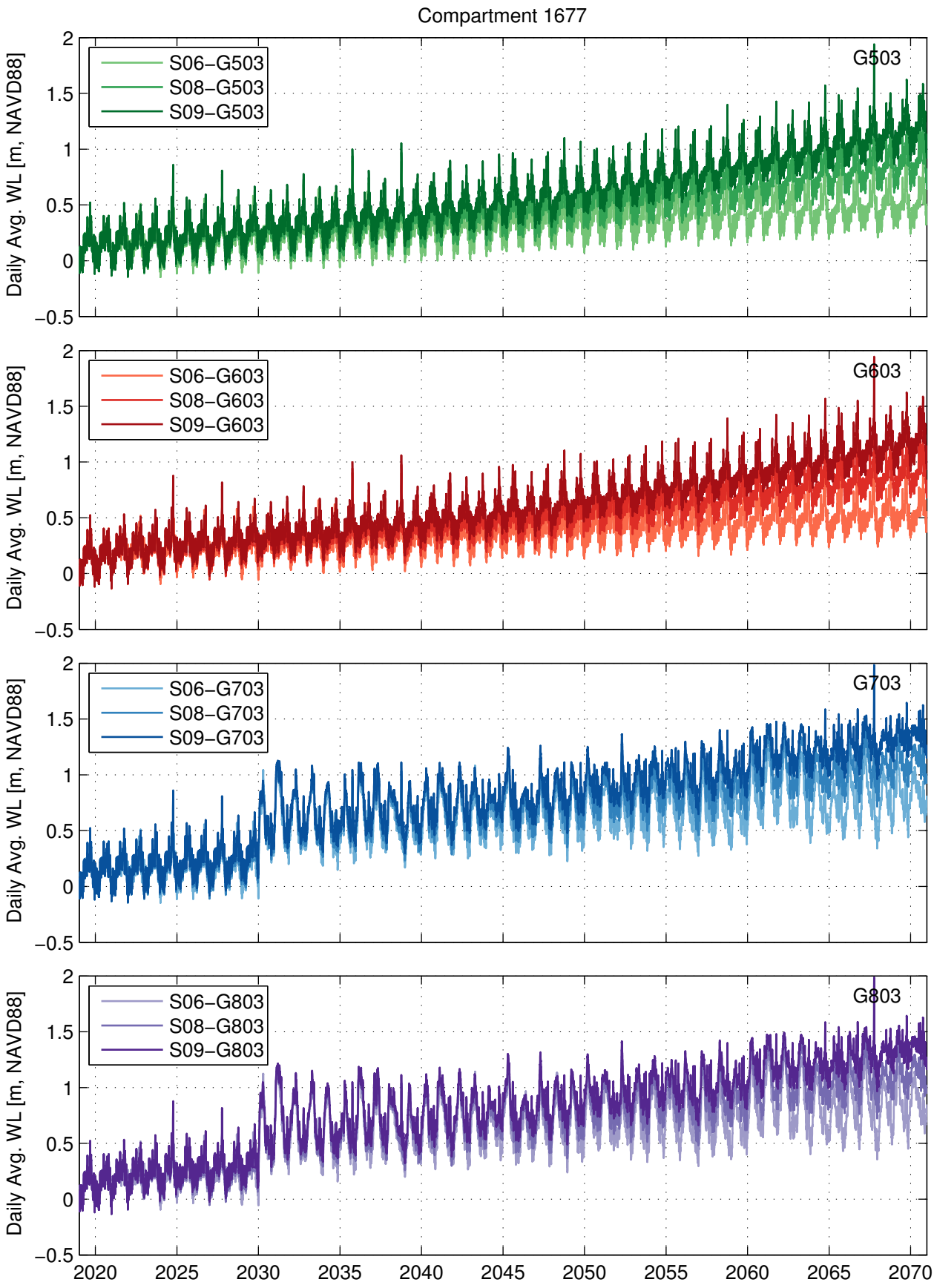

Compartment 1668
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Daily Avg. WL [m, NAVD88]
0
0.5
1
1.5
2
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

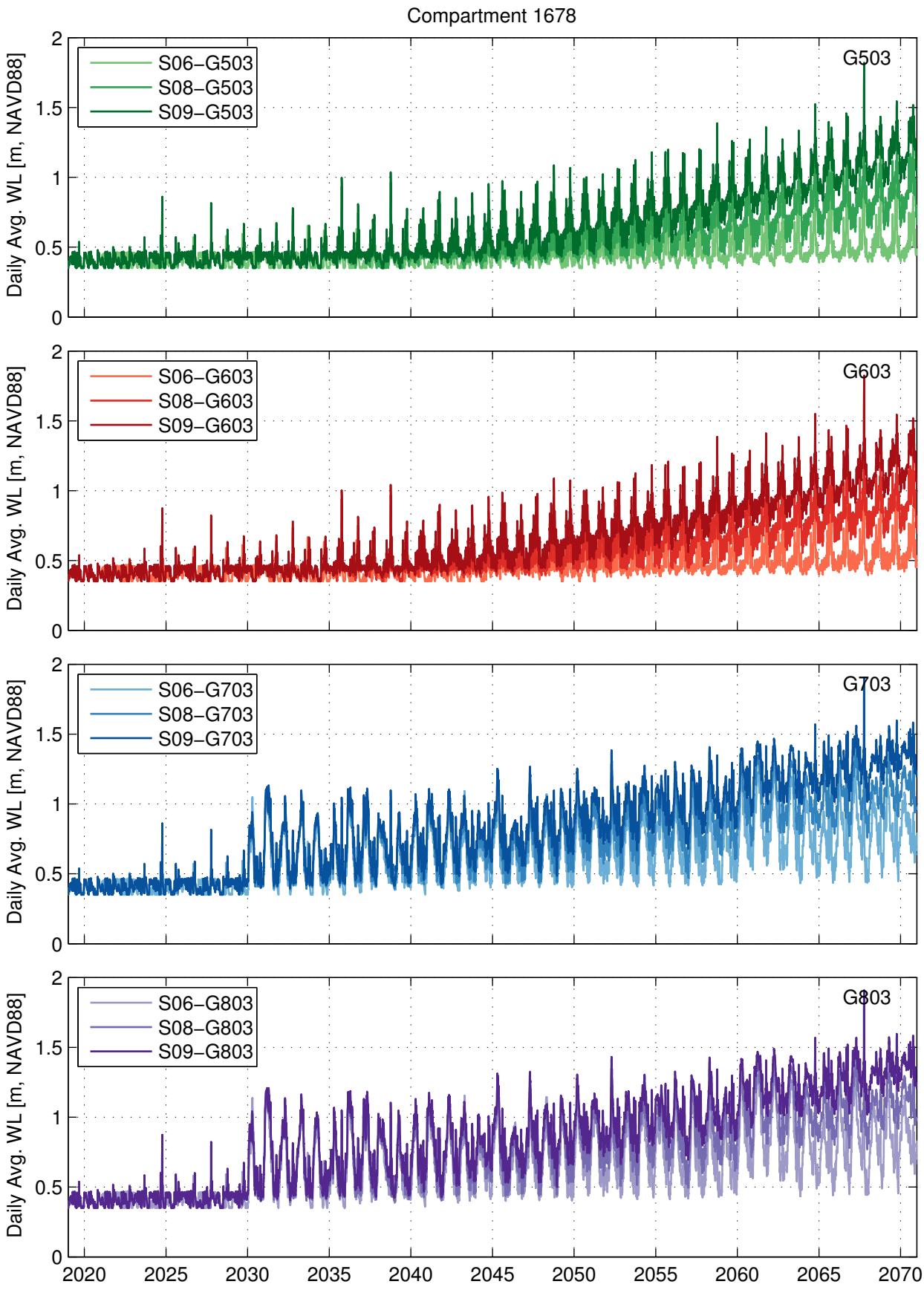

Compartment 1665
Daily Avg. WL [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
2
1.5
1
0.5
0
−0.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

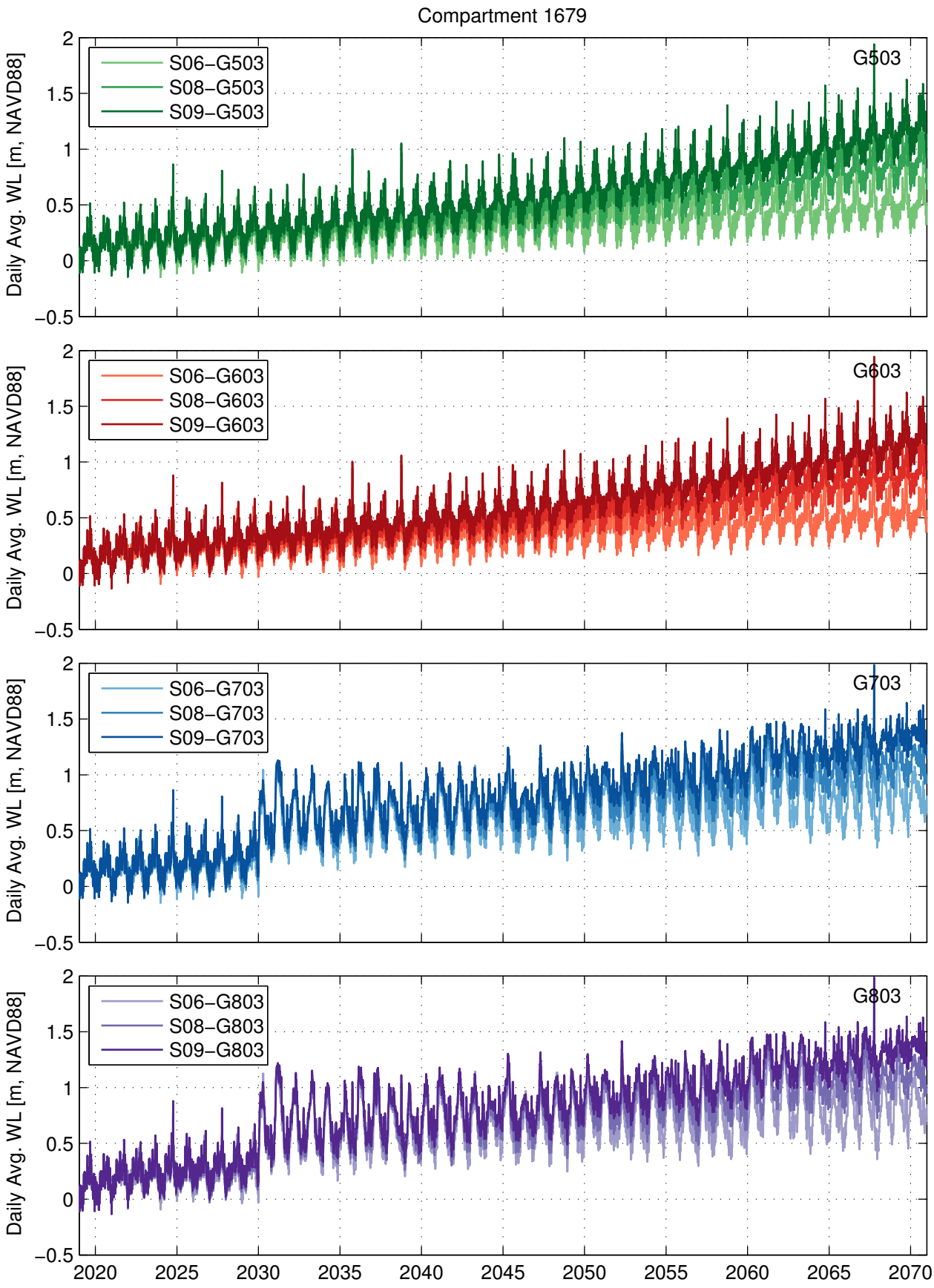

Compartment 1673
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Daily Avg. WL [m, NAVD88]
0
0.5
1
1.5
2
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

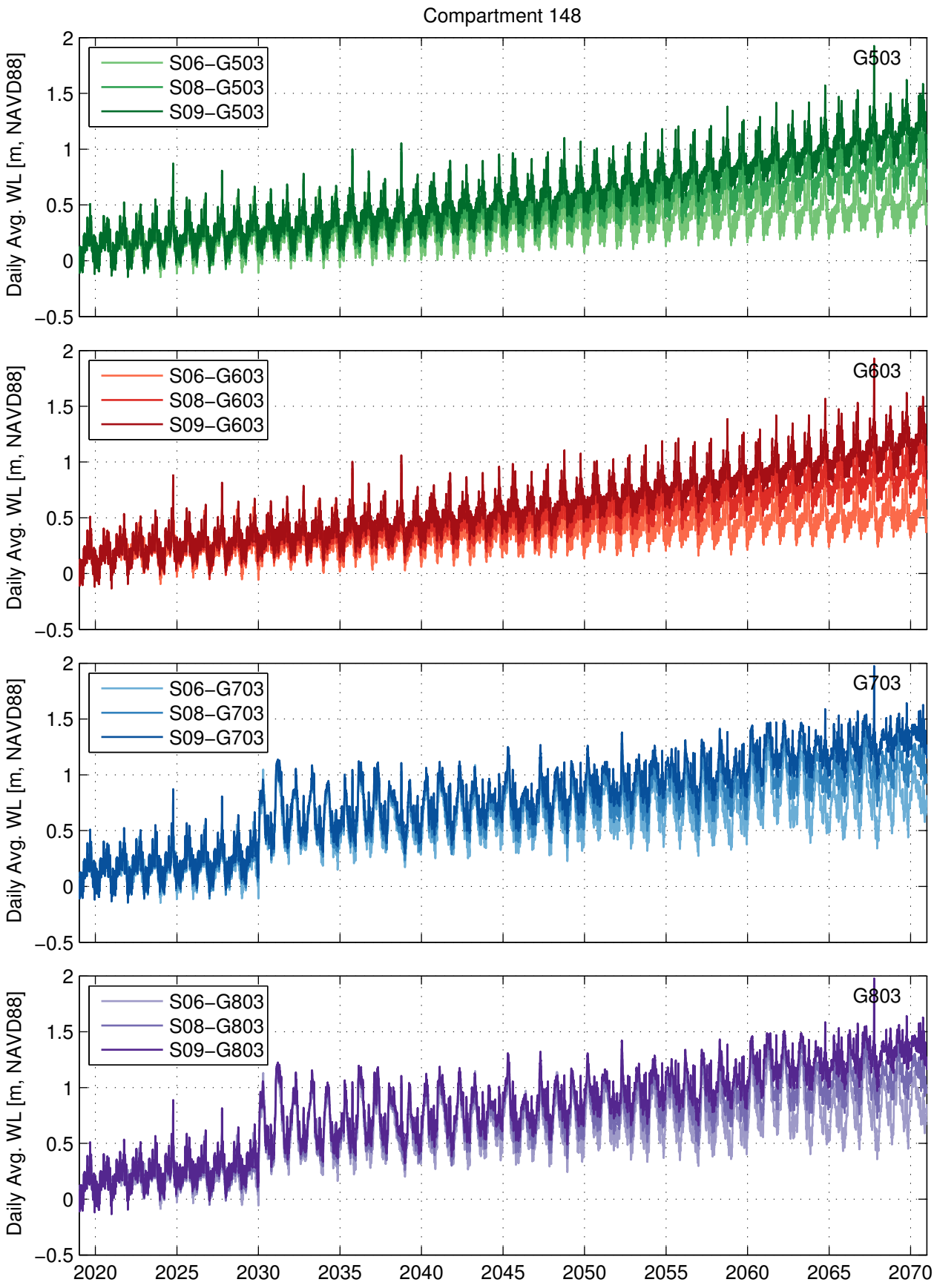

Compartment 1675
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Daily Avg. WL [m, NAVD88]
0
0.5
1
1.5
2
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

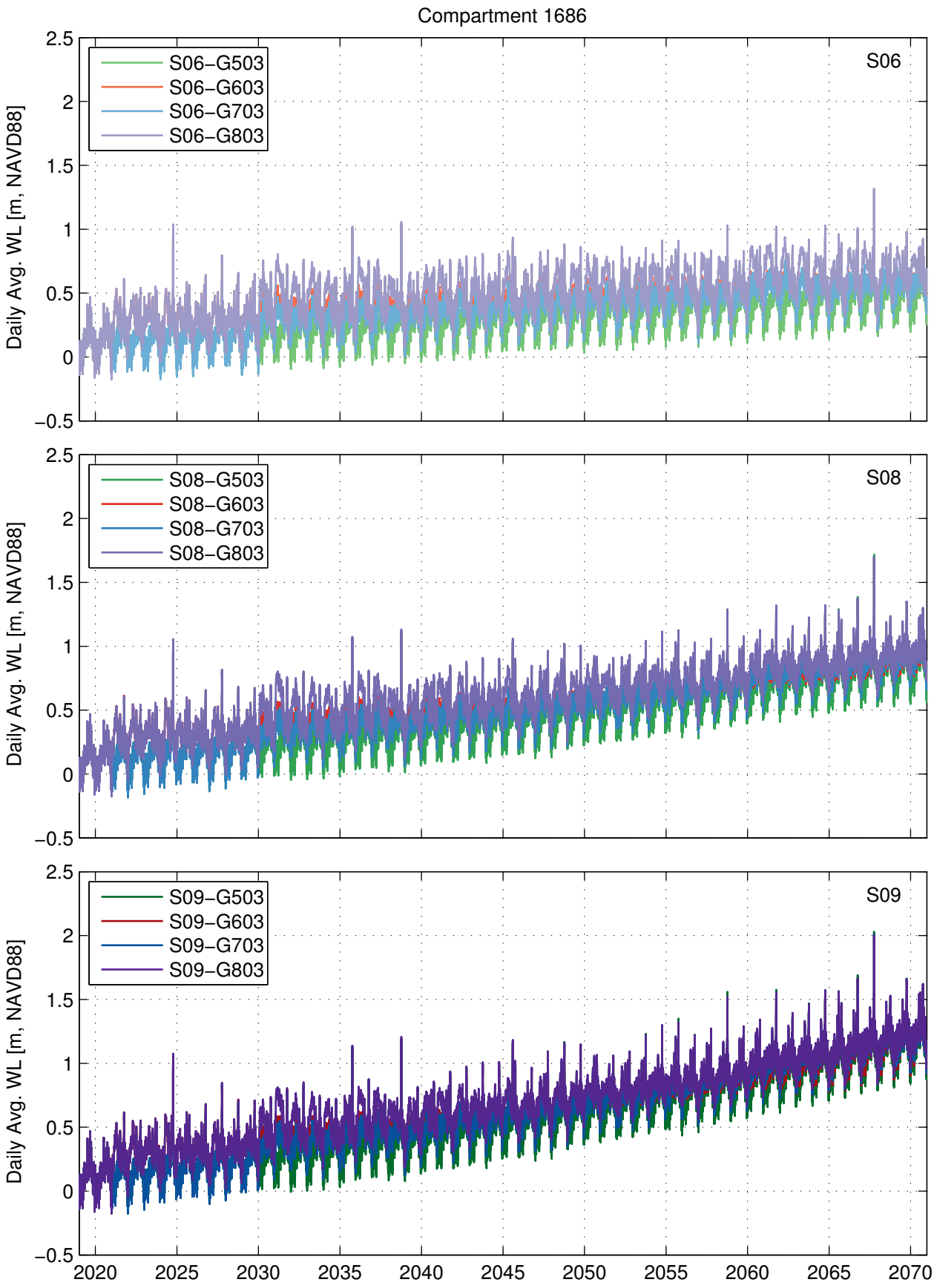

Compartment 1676
Daily Avg. WL [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
2
1.5
1
0.5
0
−0.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

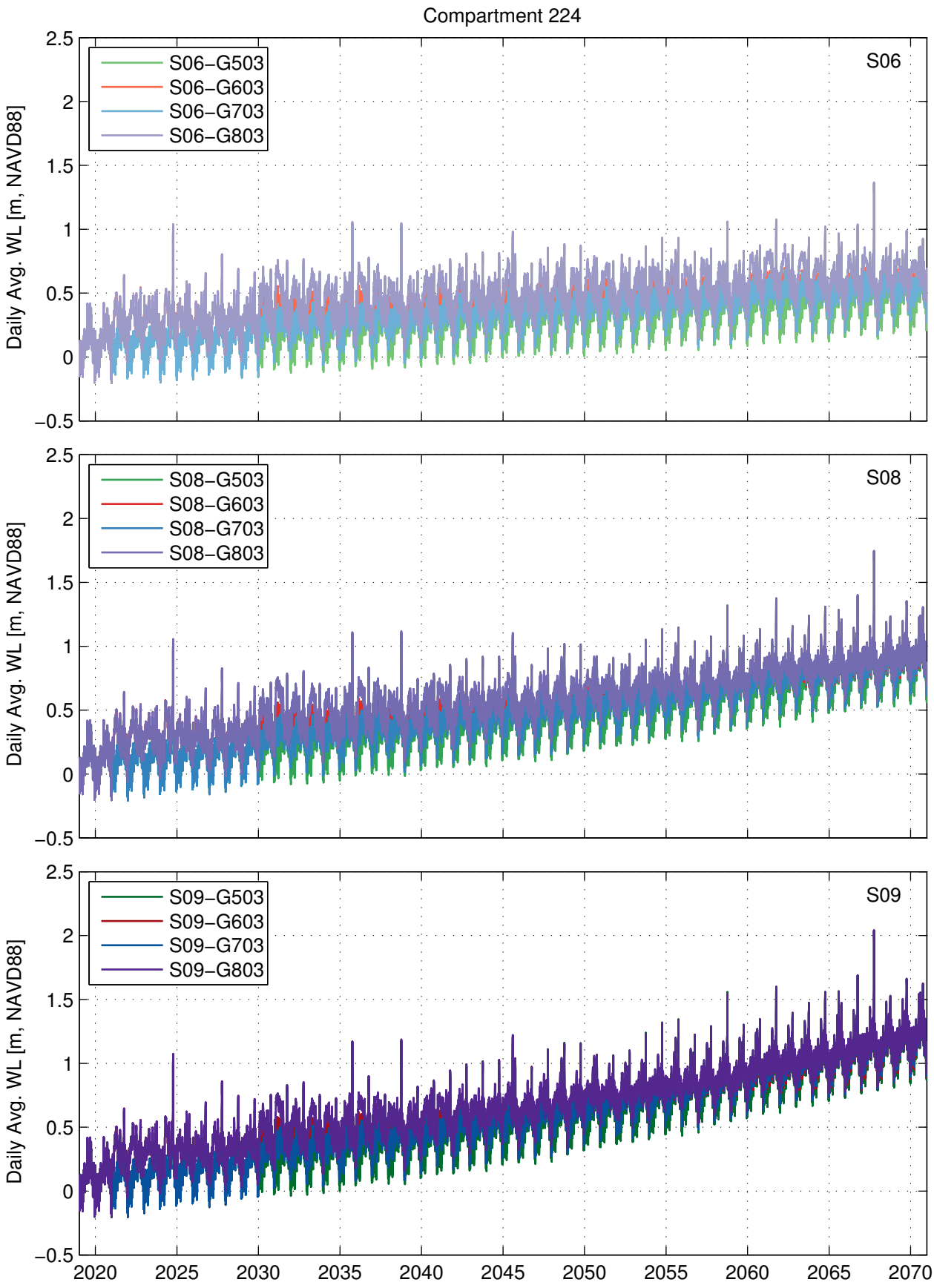

Compartment 1677
Daily Avg. WL [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
2
1.5
1
0.5
0
−0.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

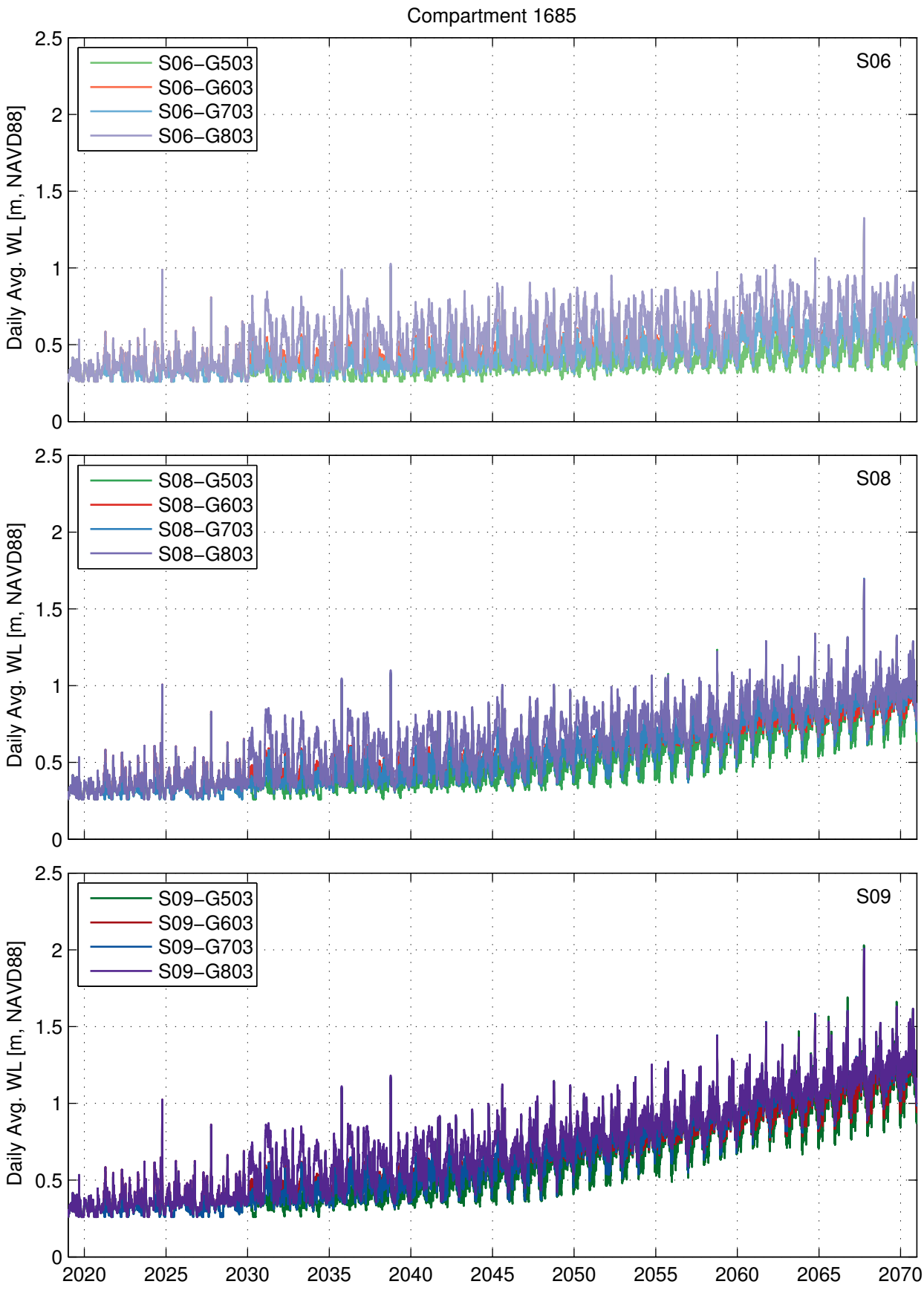

Compartment 1678
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Daily Avg. WL [m, NAVD88]
0
0.5
1
1.5
2
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

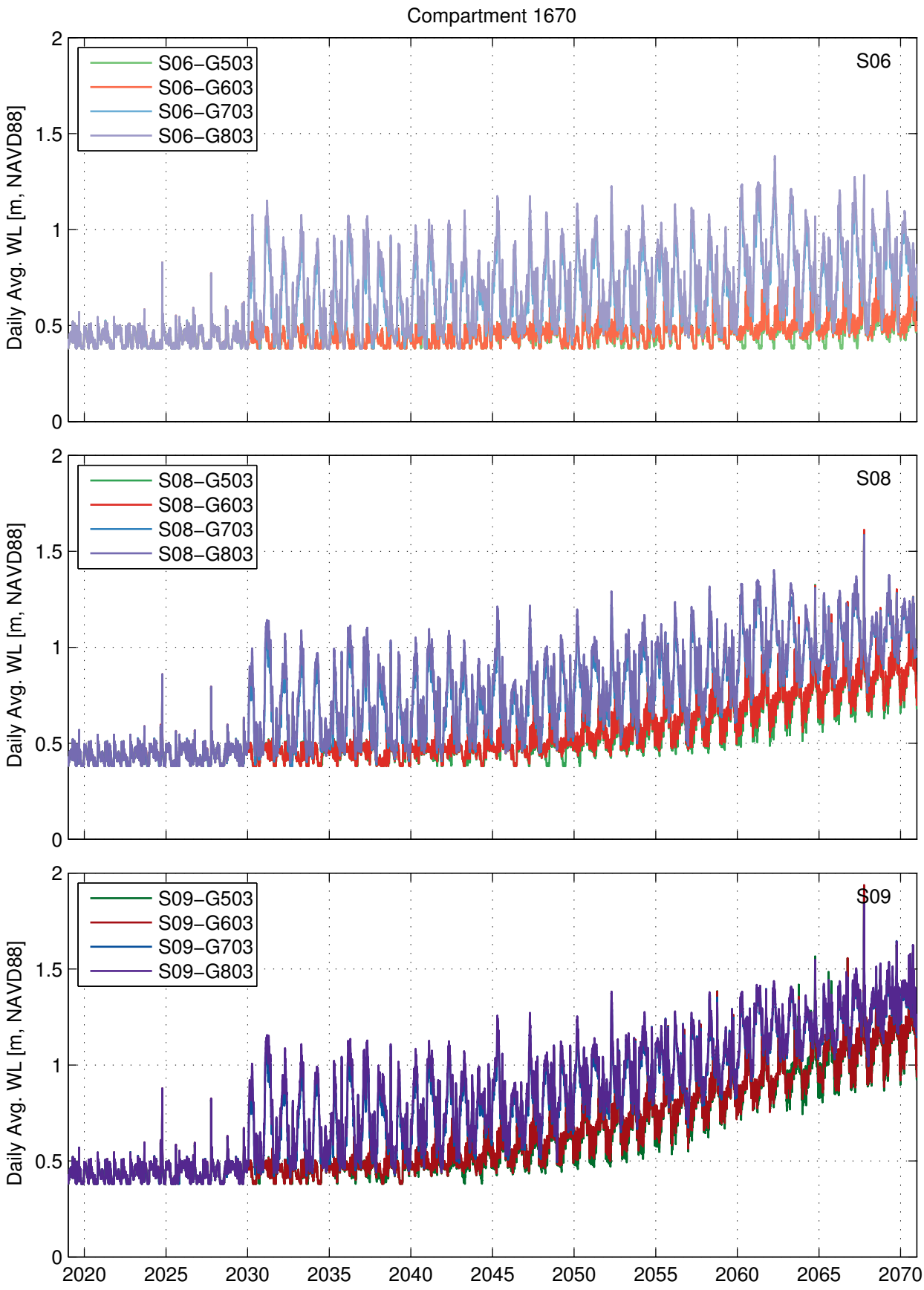

Compartment 1679
Daily Avg. WL [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
2
1.5
1
0.5
0
−0.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

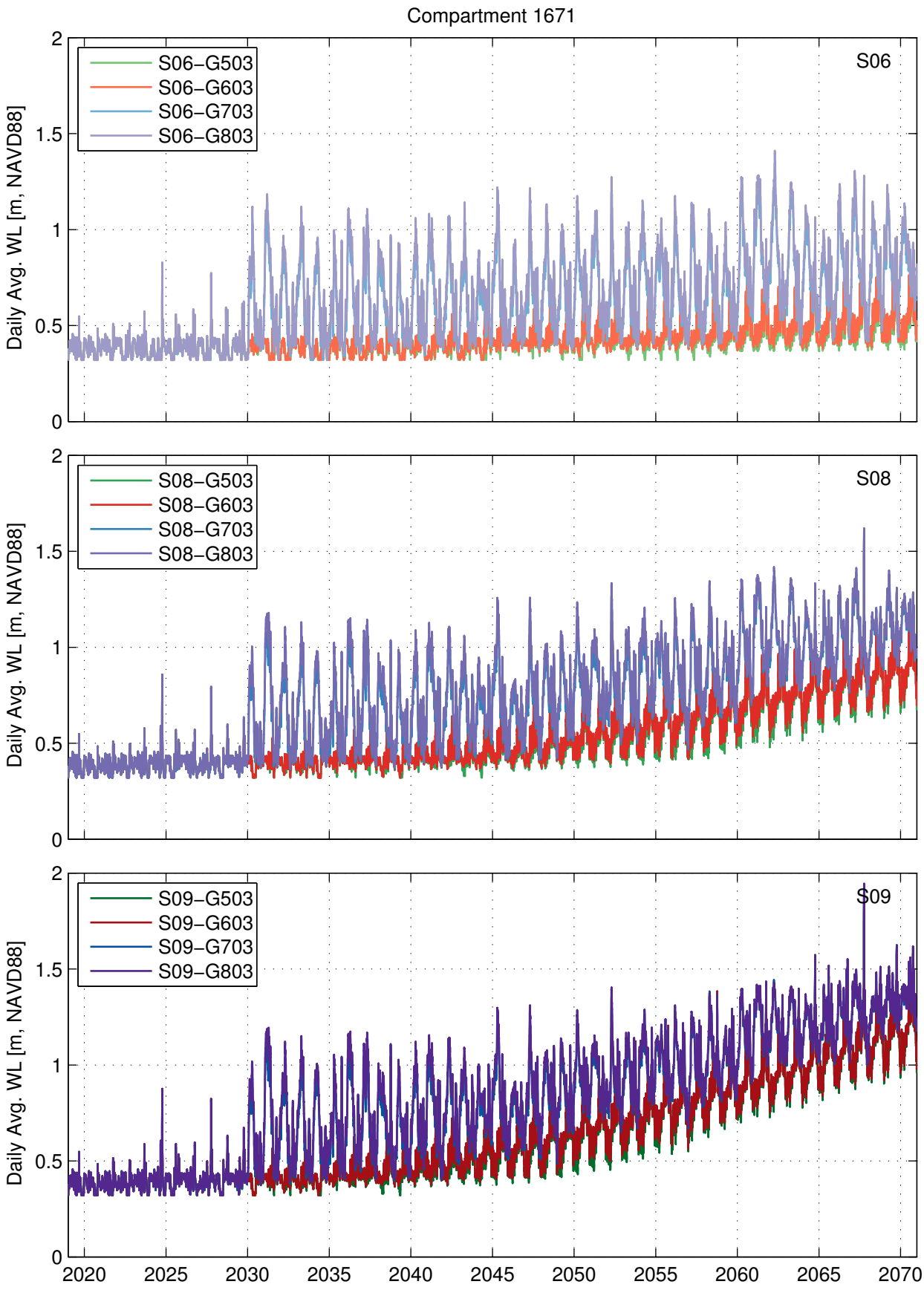

Compartment 148
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Daily Avg. WL [m, NAVD88]
2
1.5
1
0.5
0
−0.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

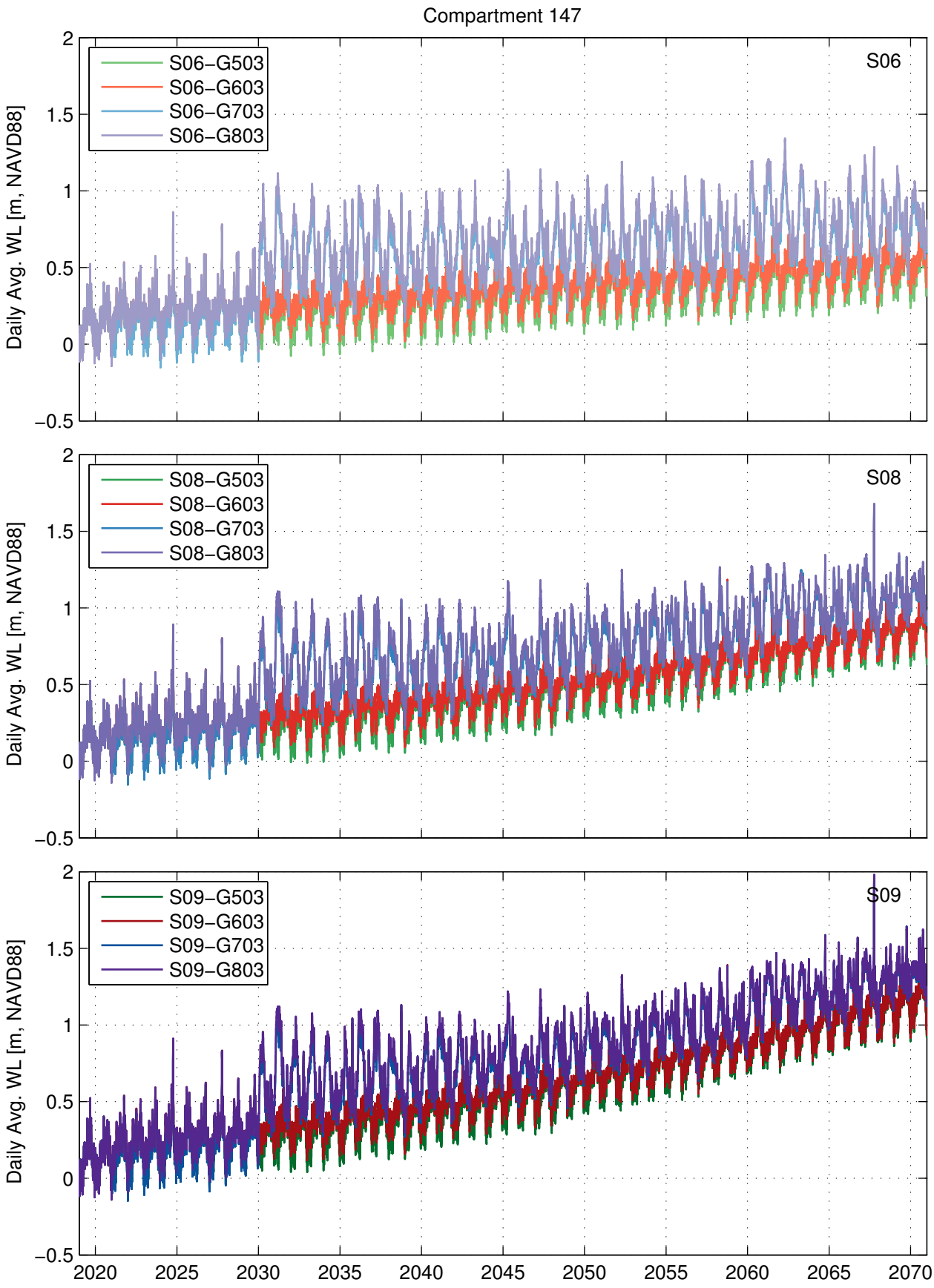

Compartment 1686
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Daily Avg. WL [m, NAVD88]
2.5
2
1.5
1
0.5
0
−0.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

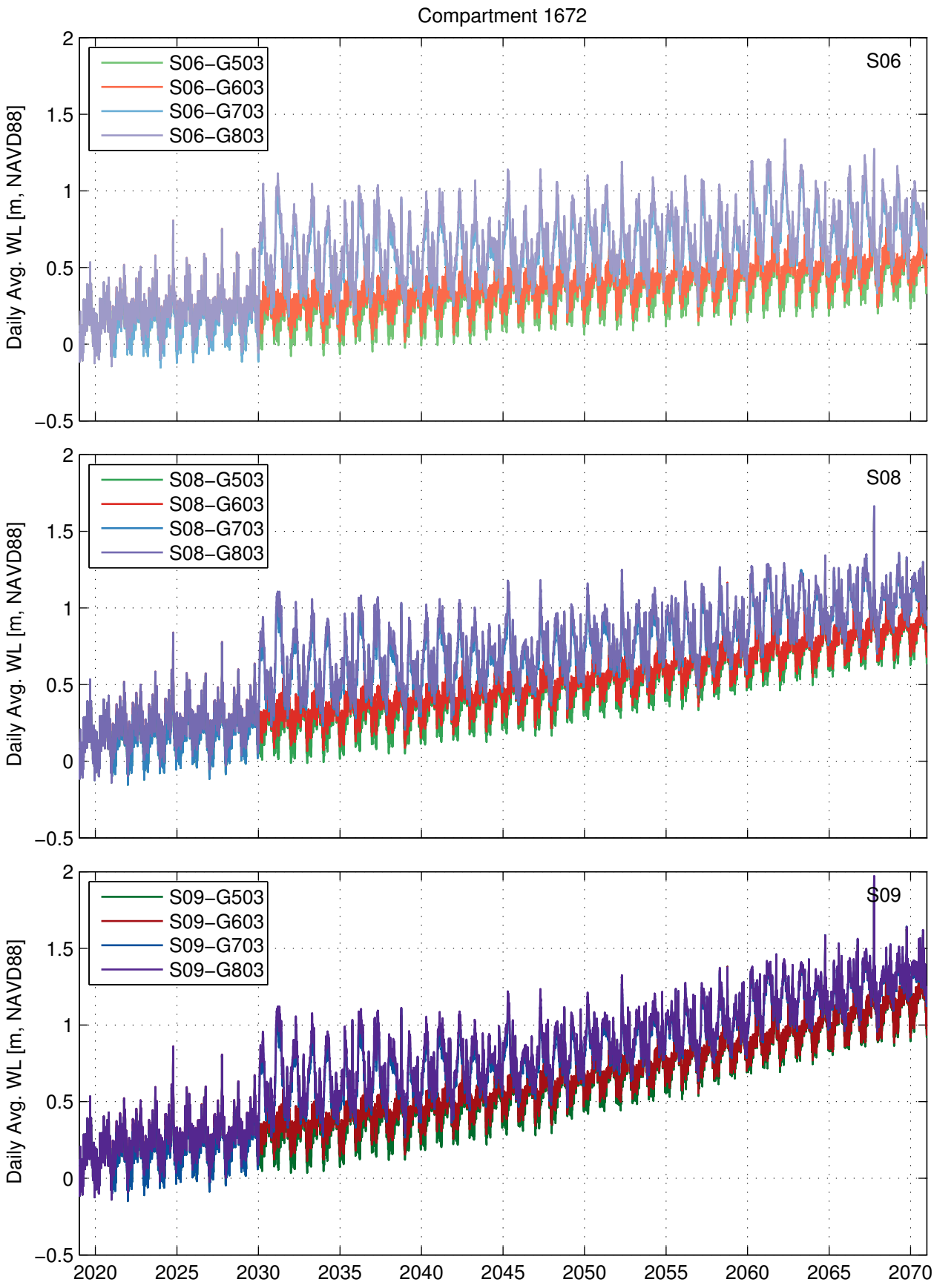

Compartment 224
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Daily Avg. WL [m, NAVD88]
2.5
2
1.5
1
0.5
0
−0.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

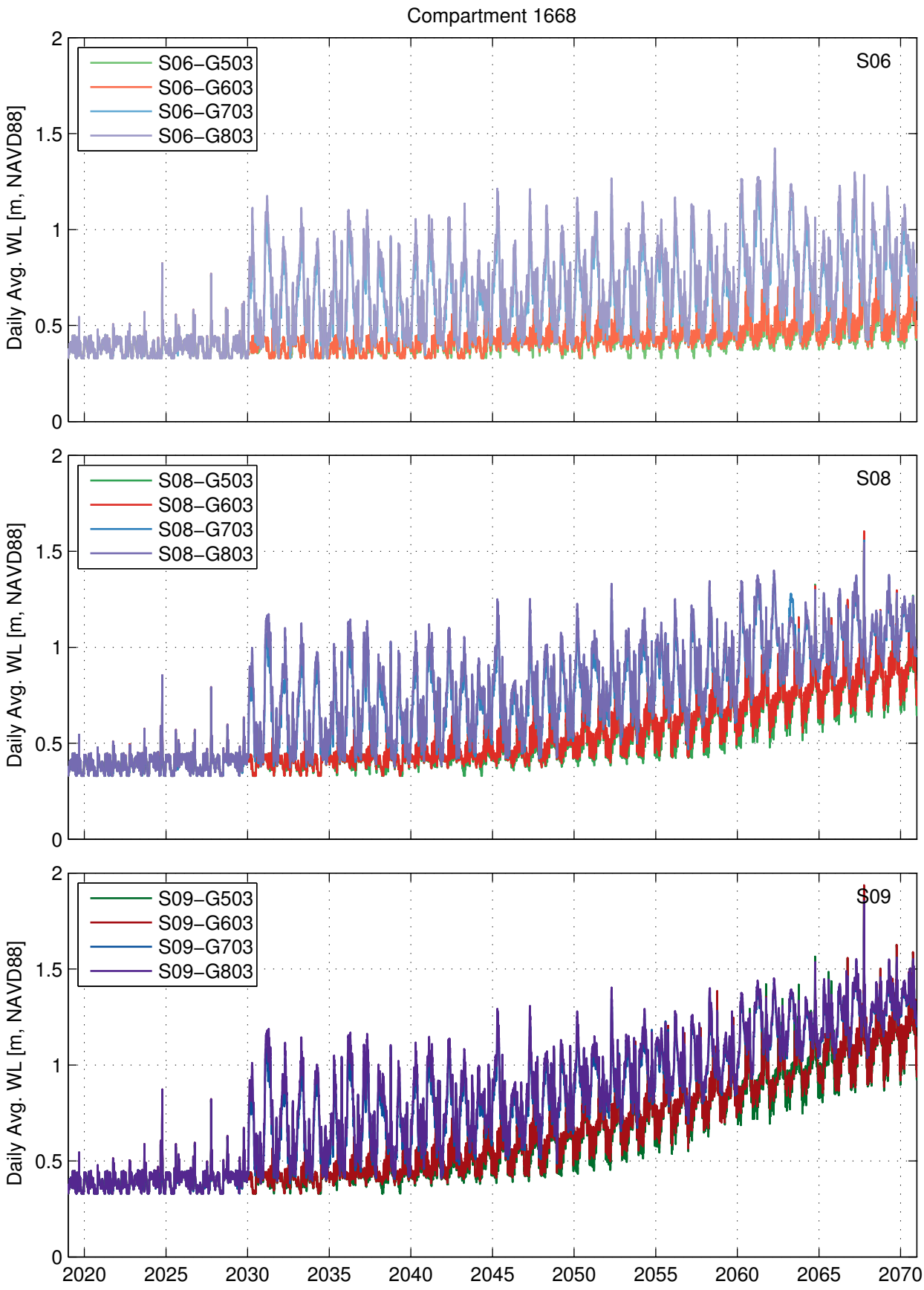

Compartment 1685
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Daily Avg. WL [m, NAVD88]
0
0.5
1
1.5
2
2.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

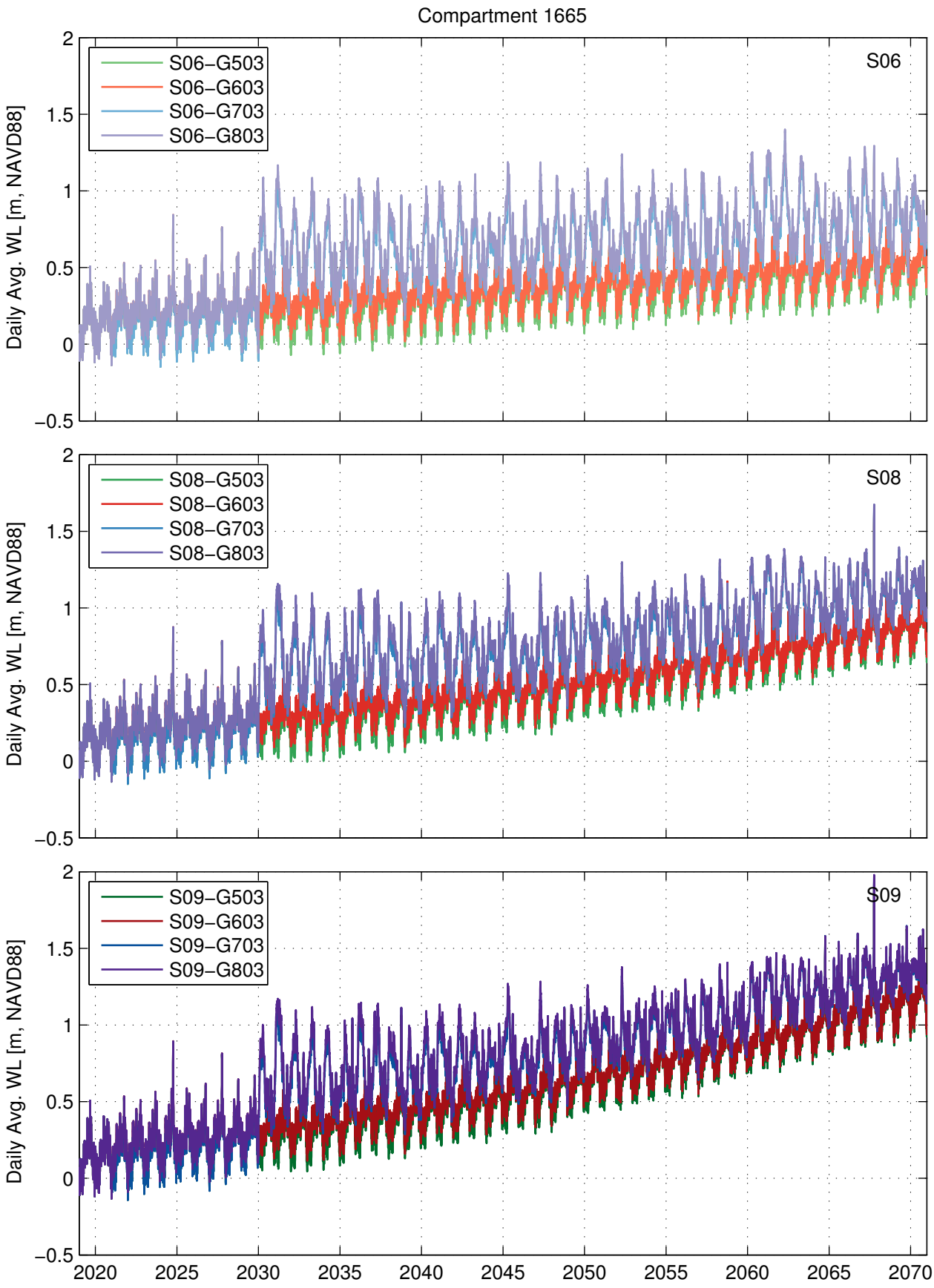

Compartment 1670
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Daily Avg. WL [m, NAVD88]
0
0.5
1
1.5
2
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

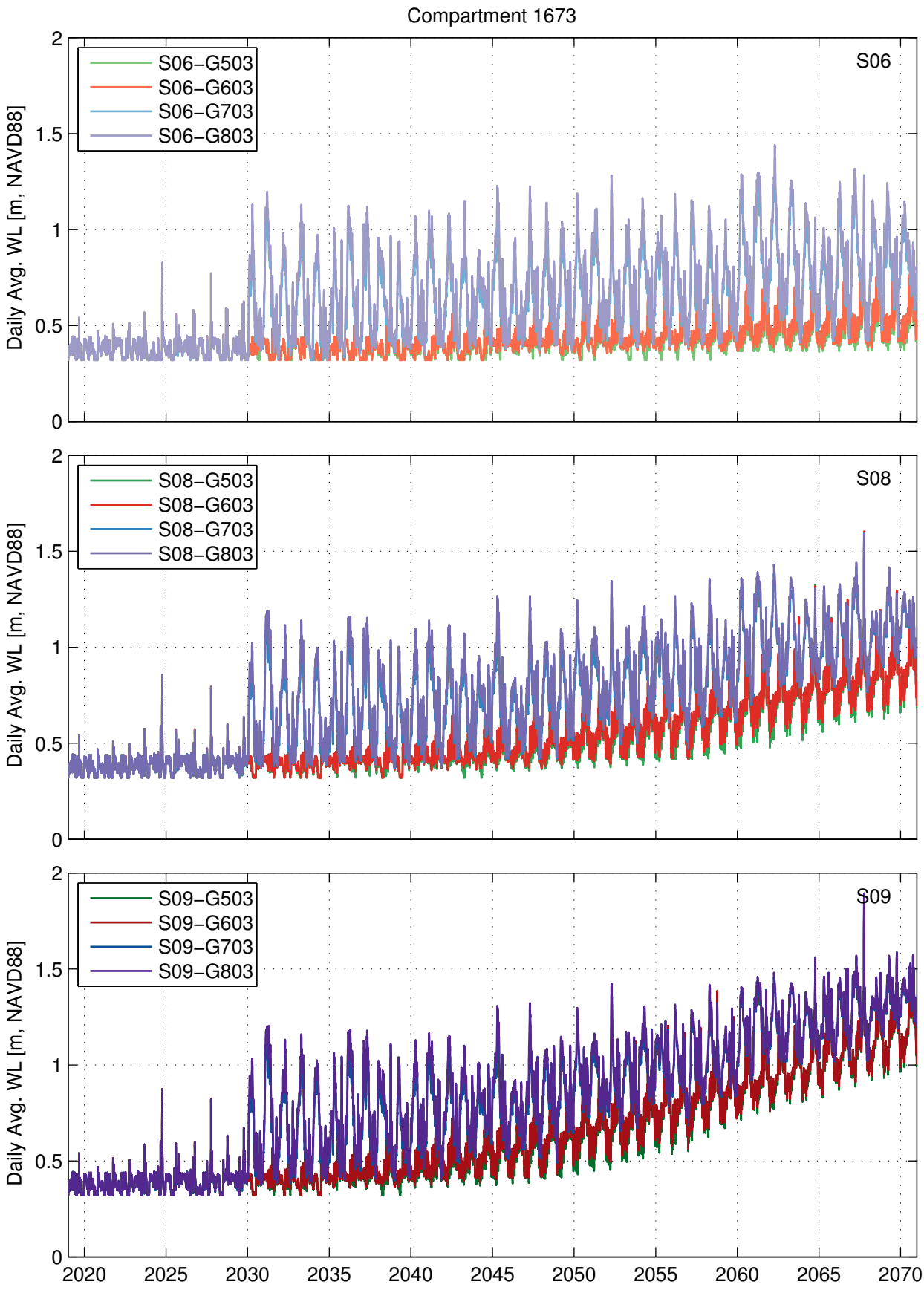

Compartment 1671
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Daily Avg. WL [m, NAVD88]
0
0.5
1
1.5
2
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

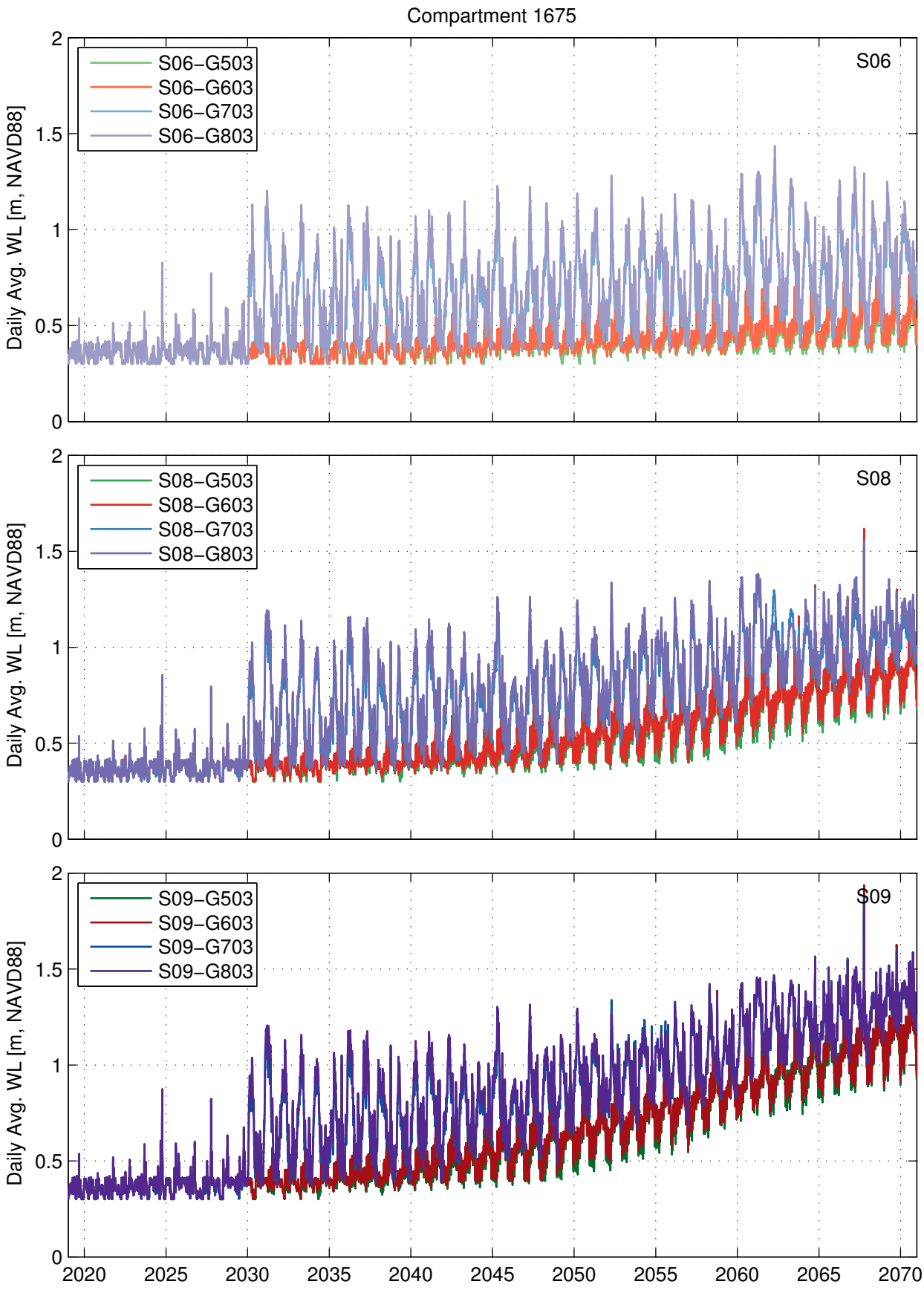

Compartment 147
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Daily Avg. WL [m, NAVD88]
2
1.5
1
0.5
0
−0.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

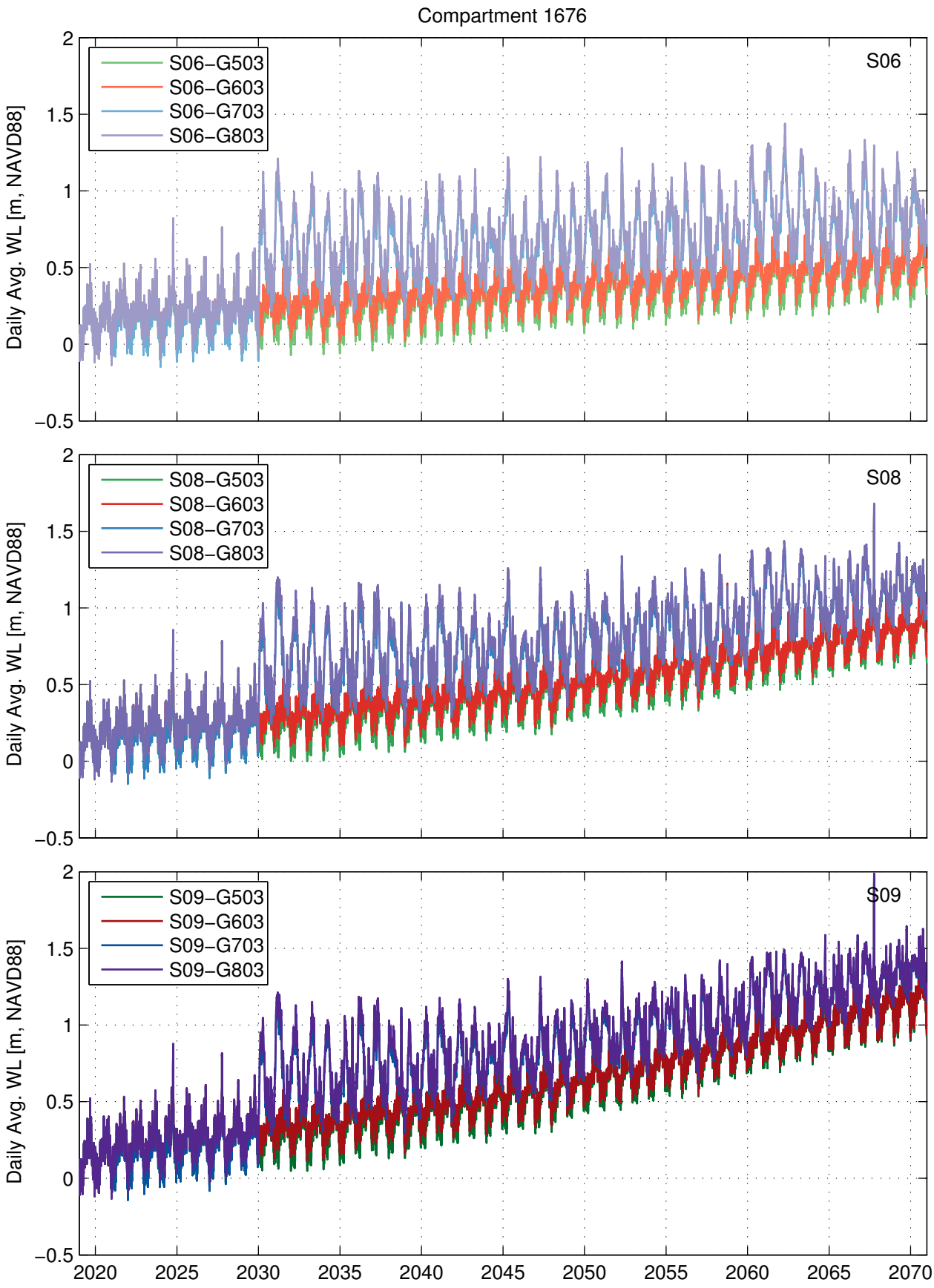

Compartment 1672
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Daily Avg. WL [m, NAVD88]
2
1.5
1
0.5
0
−0.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

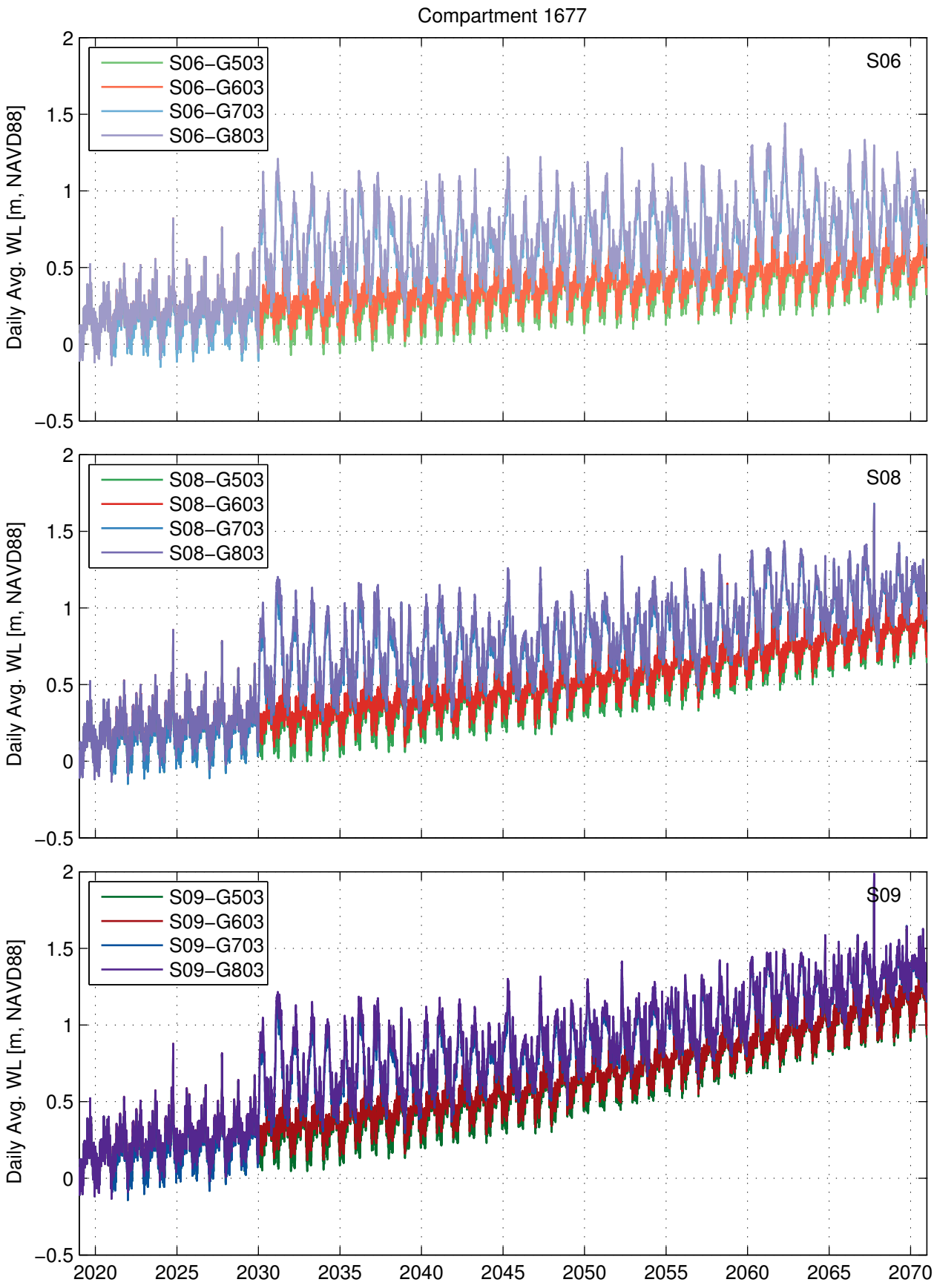

Compartment 1668
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Daily Avg. WL [m, NAVD88]
0
0.5
1
1.5
2
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

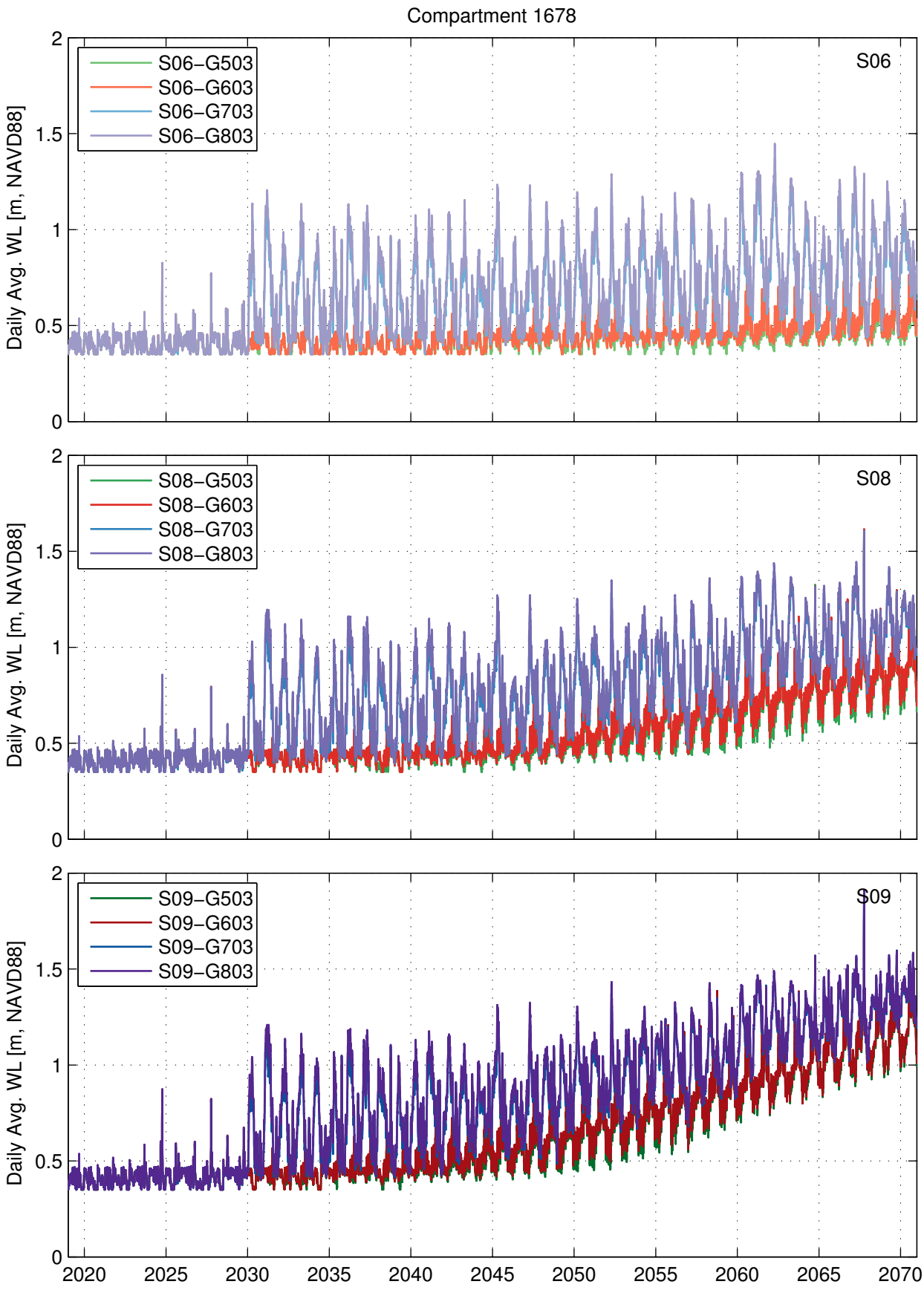

Compartment 1665
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Daily Avg. WL [m, NAVD88]
2
1.5
1
0.5
0
−0.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

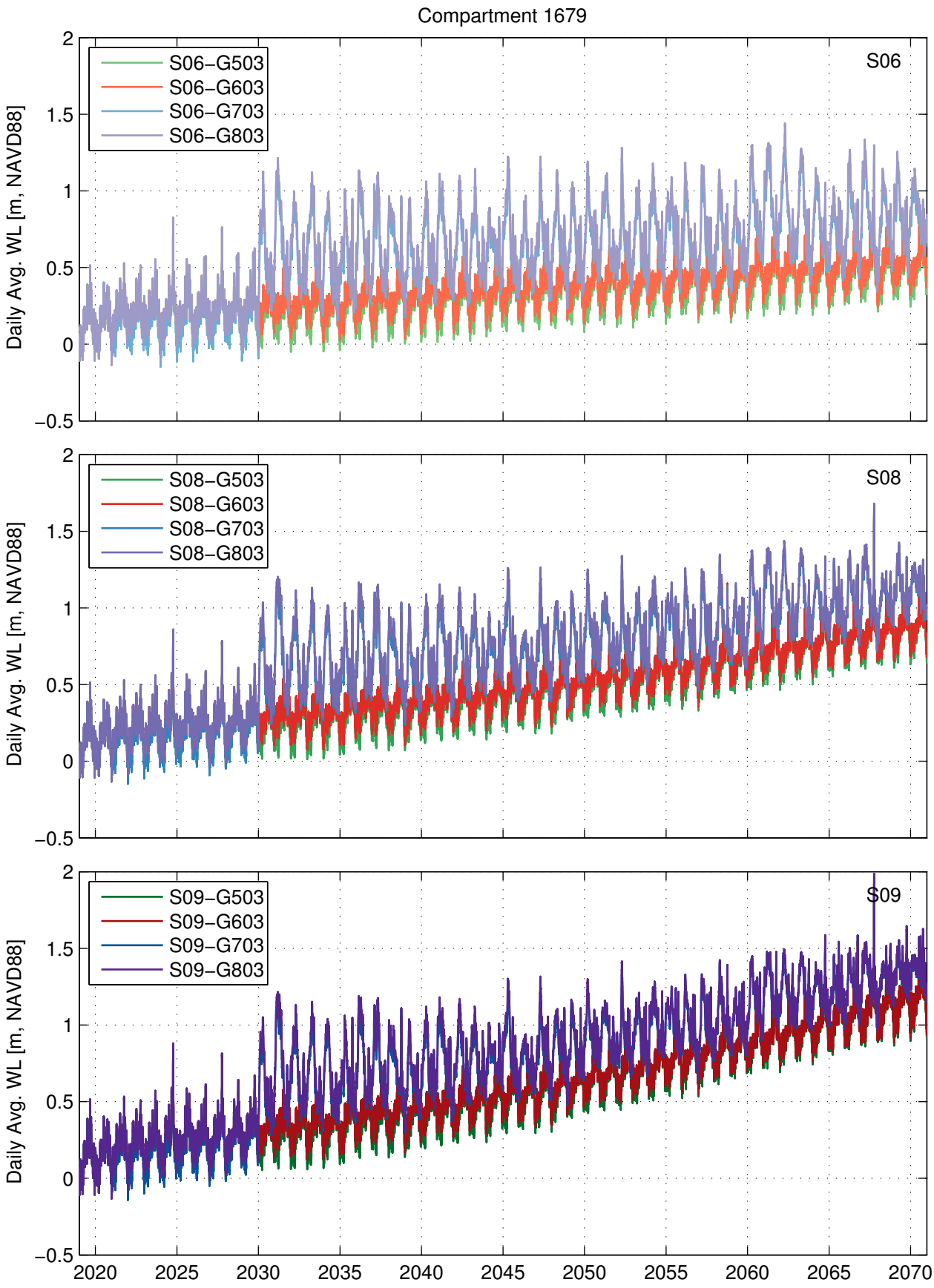

Compartment 1673
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Daily Avg. WL [m, NAVD88]
0
0.5
1
1.5
2
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

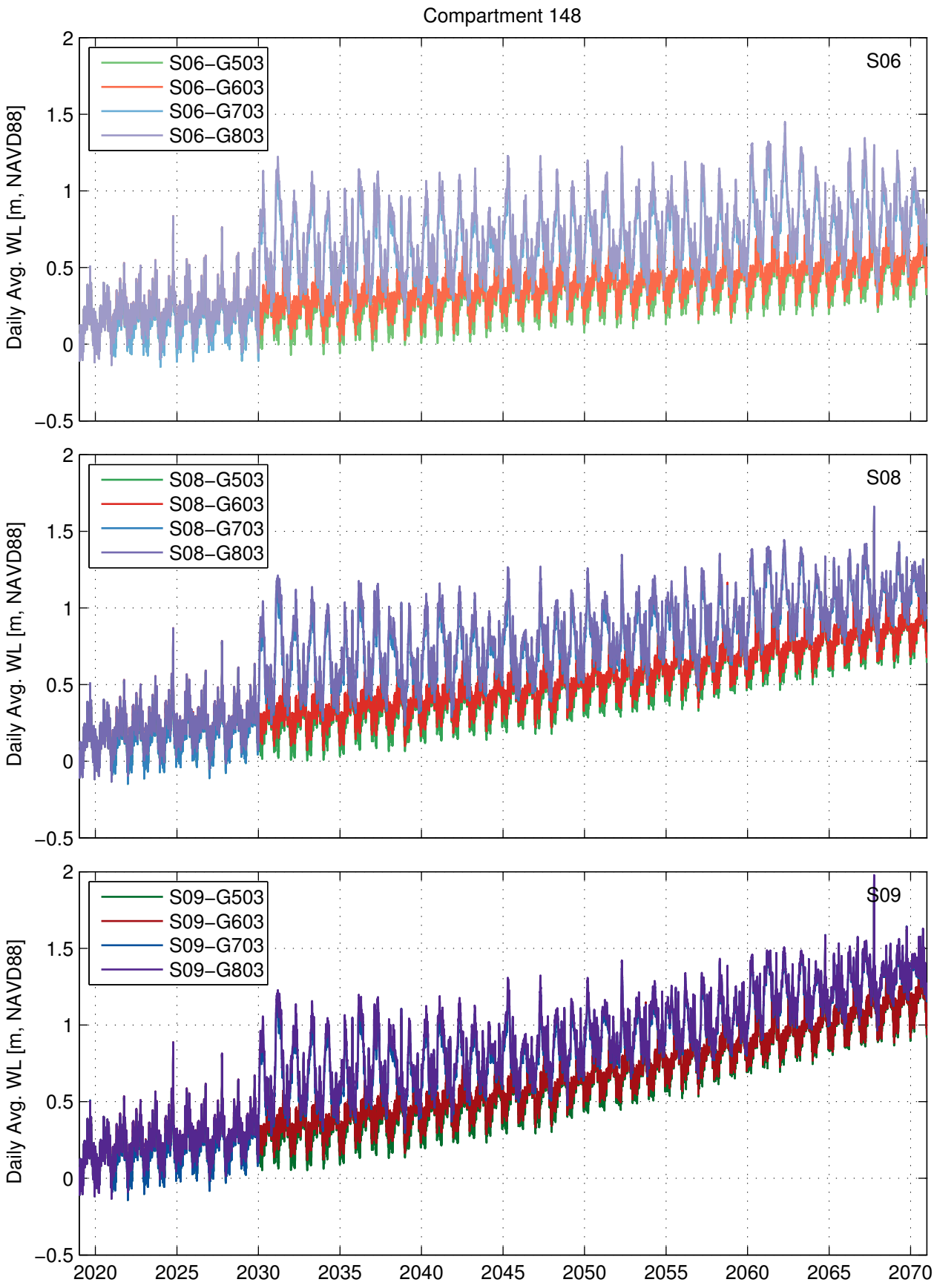

Compartment 1675
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Daily Avg. WL [m, NAVD88]
0
0.5
1
1.5
2
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

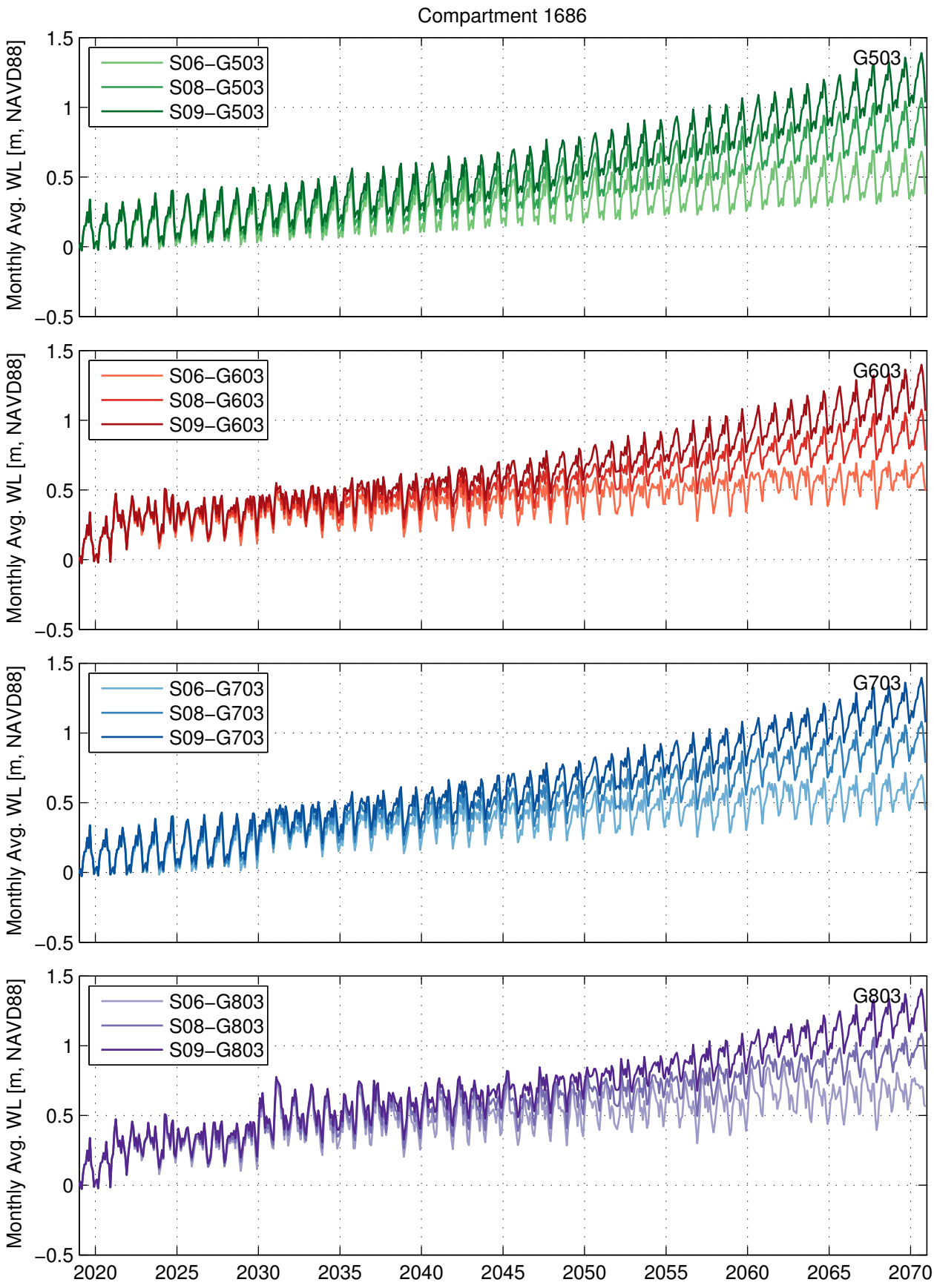

Compartment 1676
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Daily Avg. WL [m, NAVD88]
2
1.5
1
0.5
0
−0.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

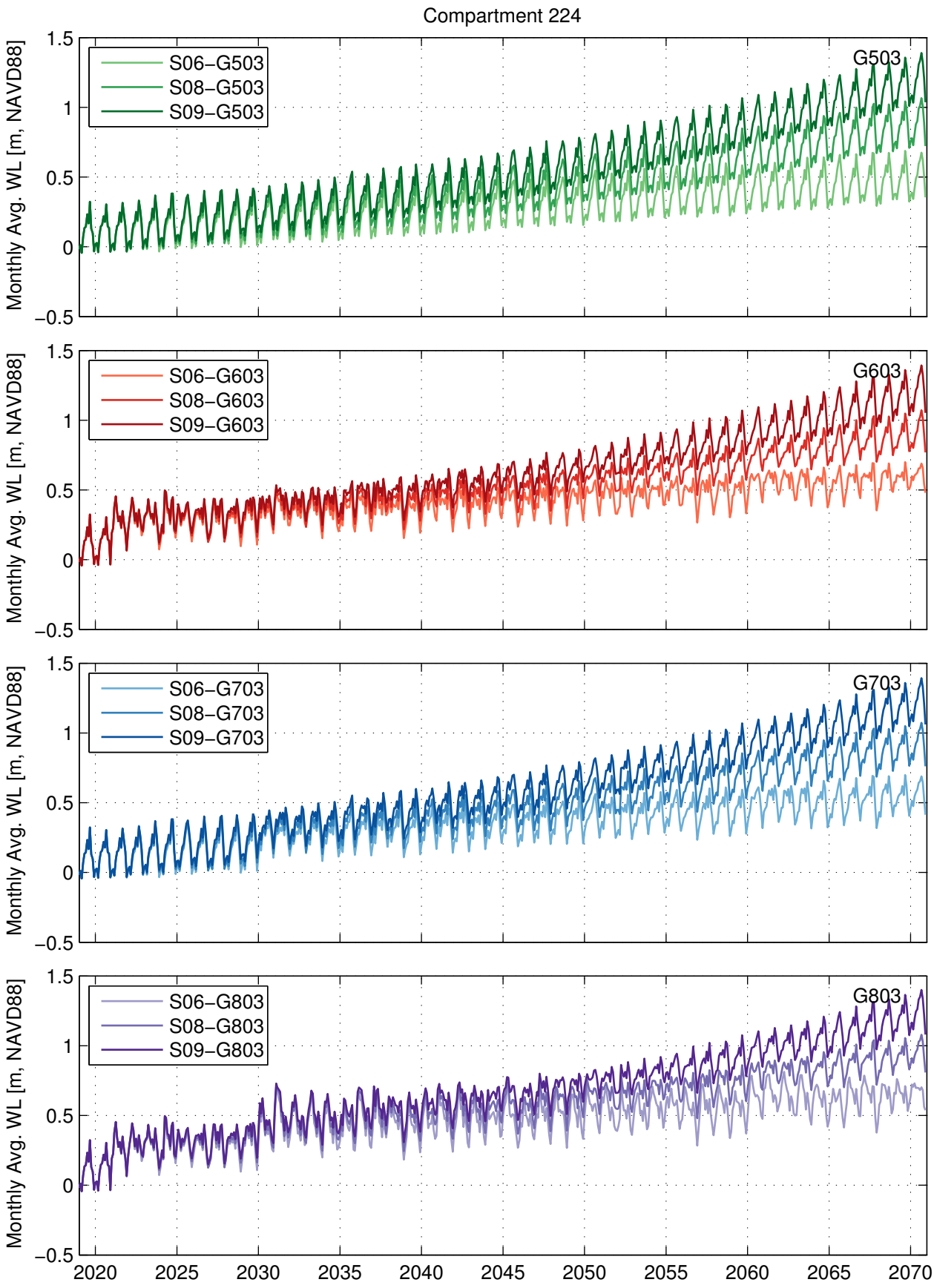

Compartment 1677
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Daily Avg. WL [m, NAVD88]
2
1.5
1
0.5
0
−0.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

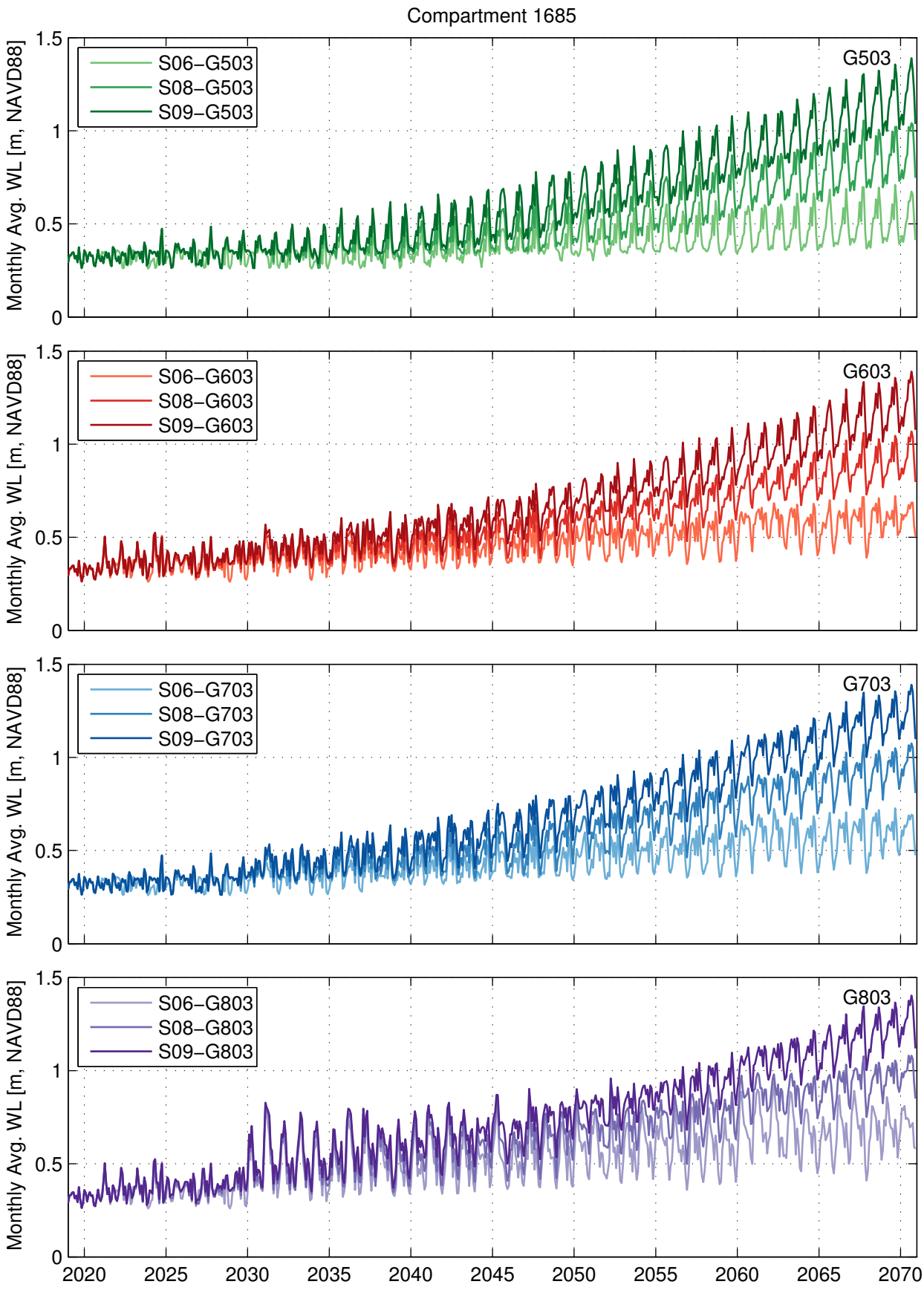

Compartment 1678
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Daily Avg. WL [m, NAVD88]
0
0.5
1
1.5
2
2020
2025
2030
2035
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2045
2050
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2060
2065
2070

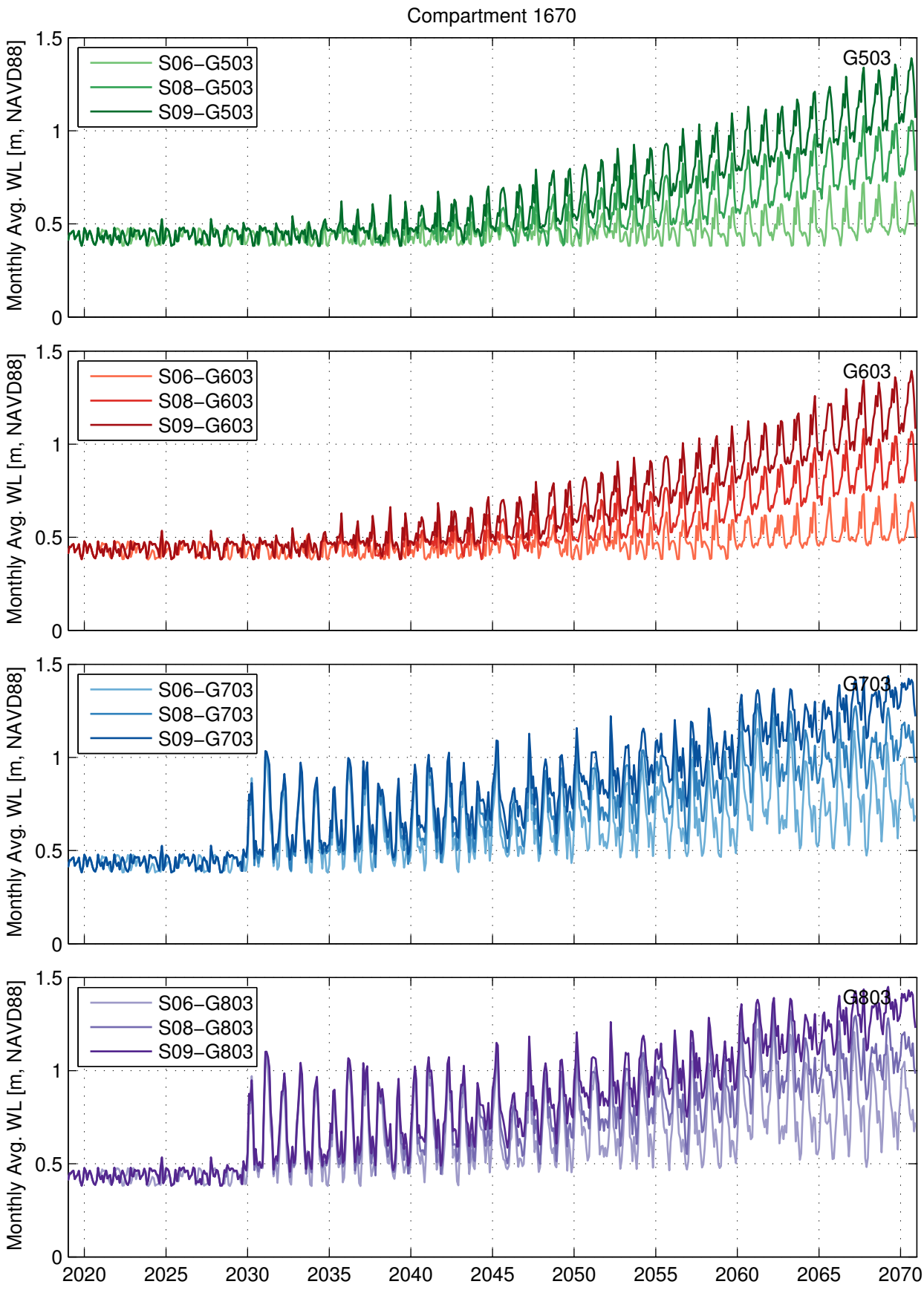

Compartment 1679
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Daily Avg. WL [m, NAVD88]
2
1.5
1
0.5
0
−0.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

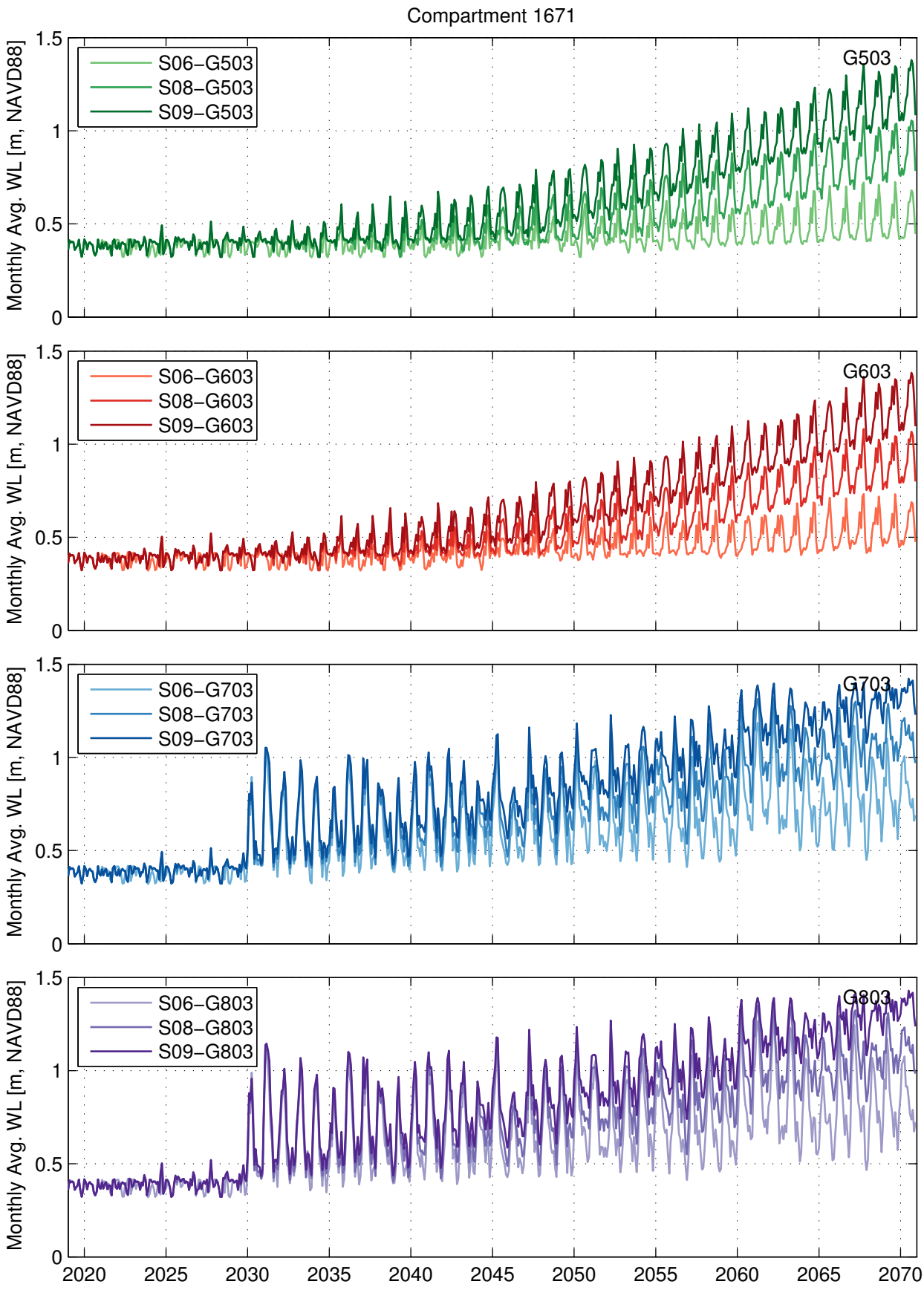

Compartment 148
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Daily Avg. WL [m, NAVD88]
2
1.5
1
0.5
0
−0.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

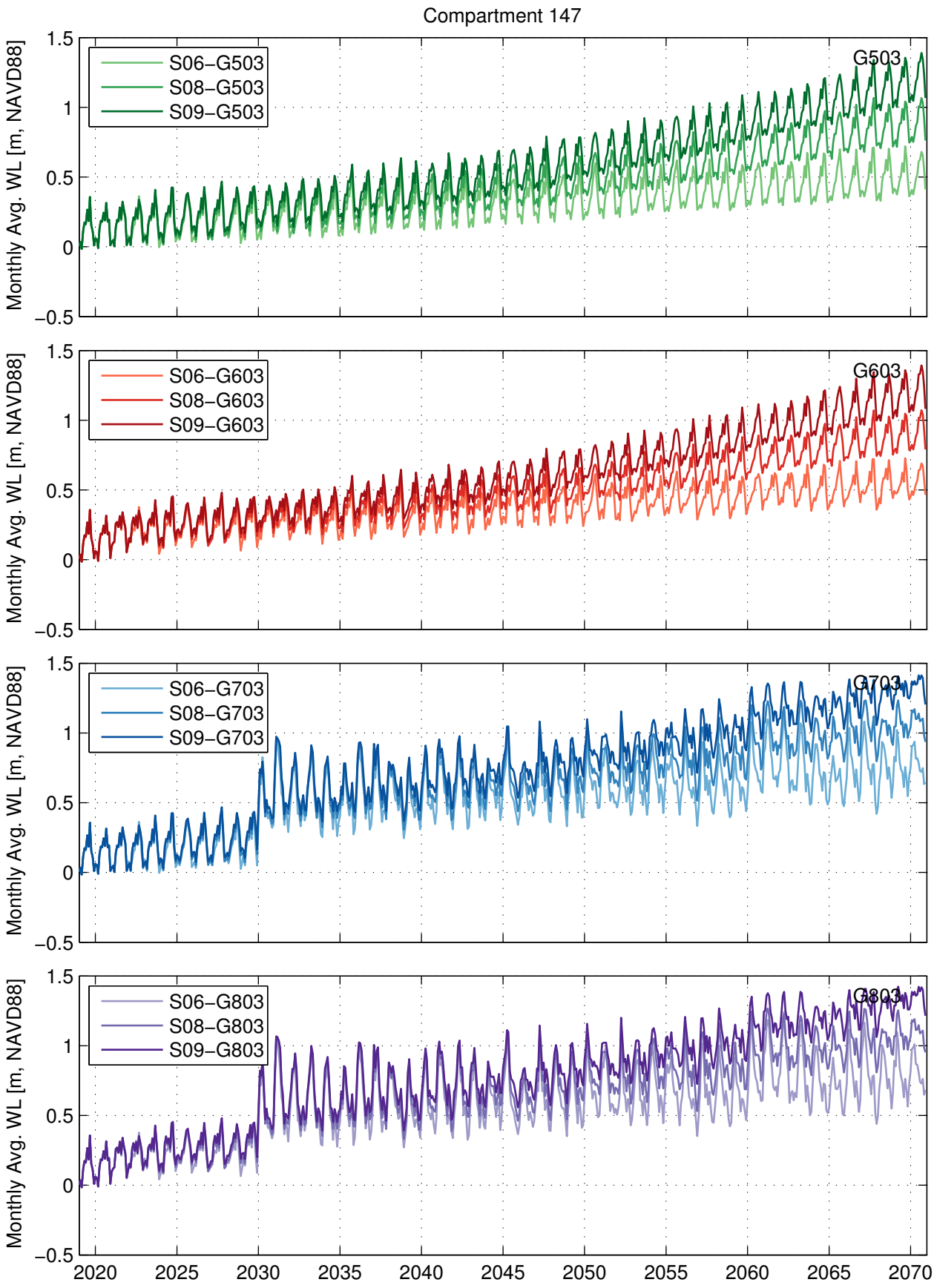

Compartment 1686
Monthly Avg. WL [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
1.5
1
0.5
0
−0.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

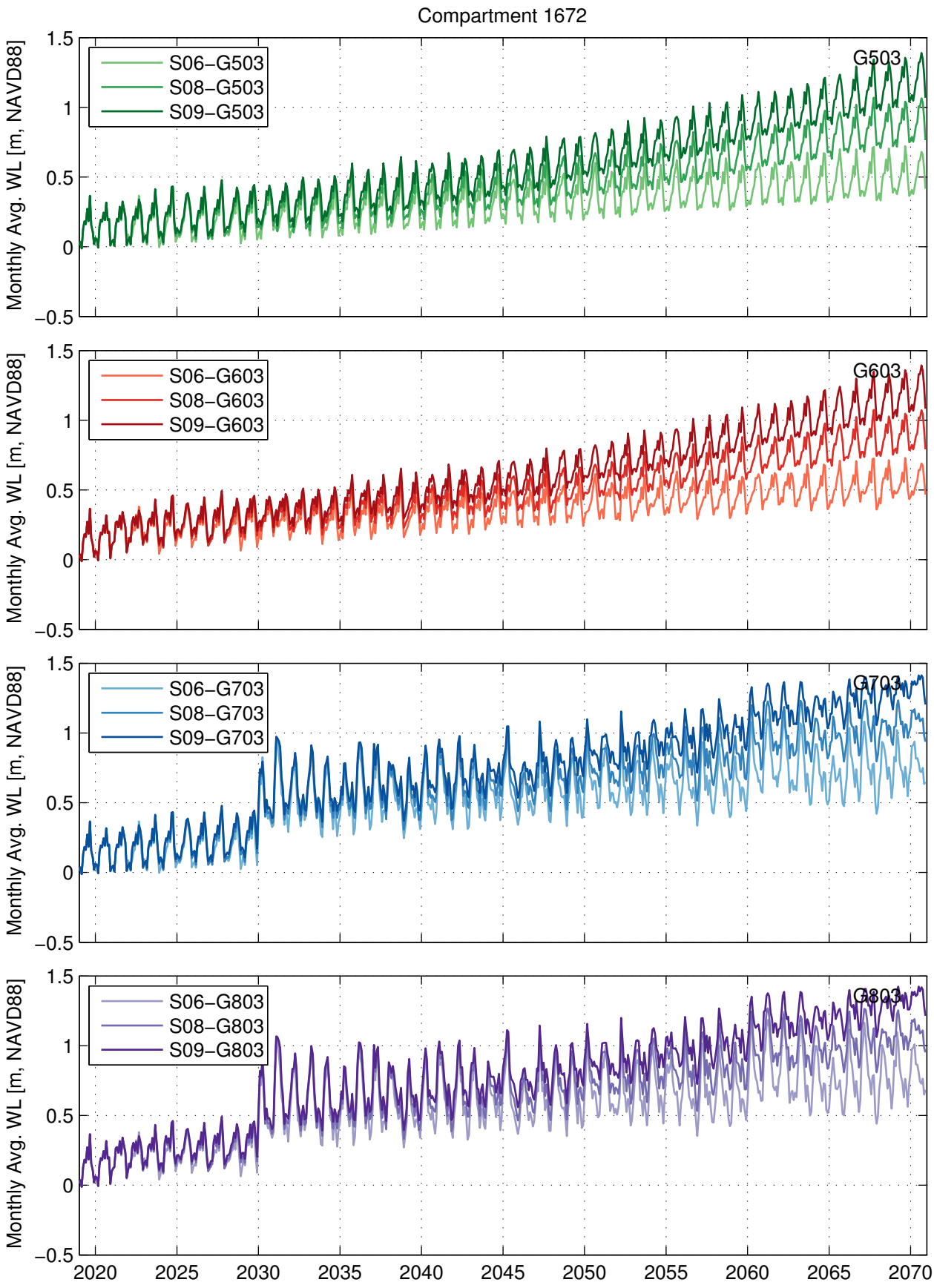

Compartment 224
Monthly Avg. WL [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
1.5
1
0.5
0
−0.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

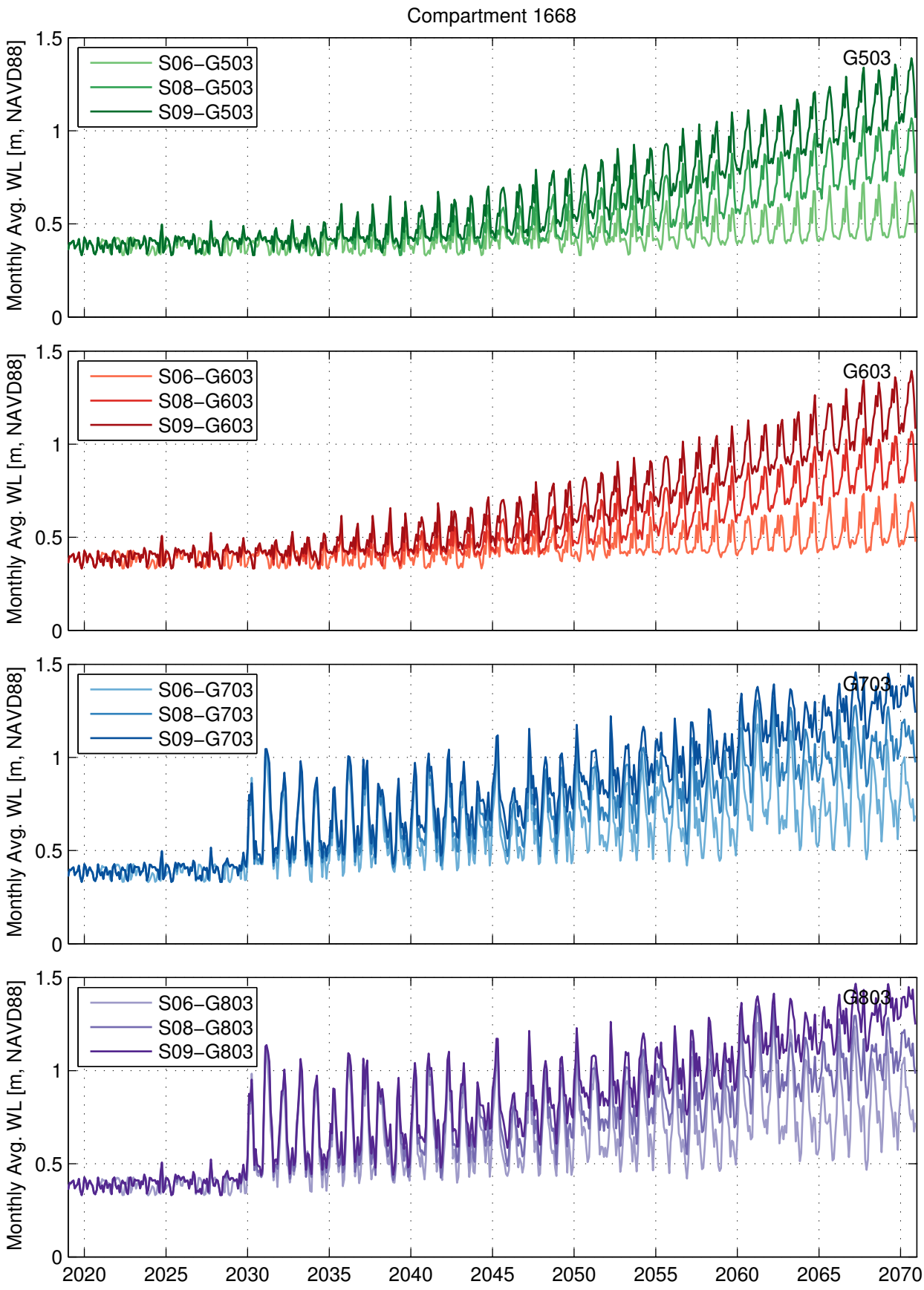

Compartment 1685
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Monthly Avg. WL [m, NAVD88]
0
0.5
1
1.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

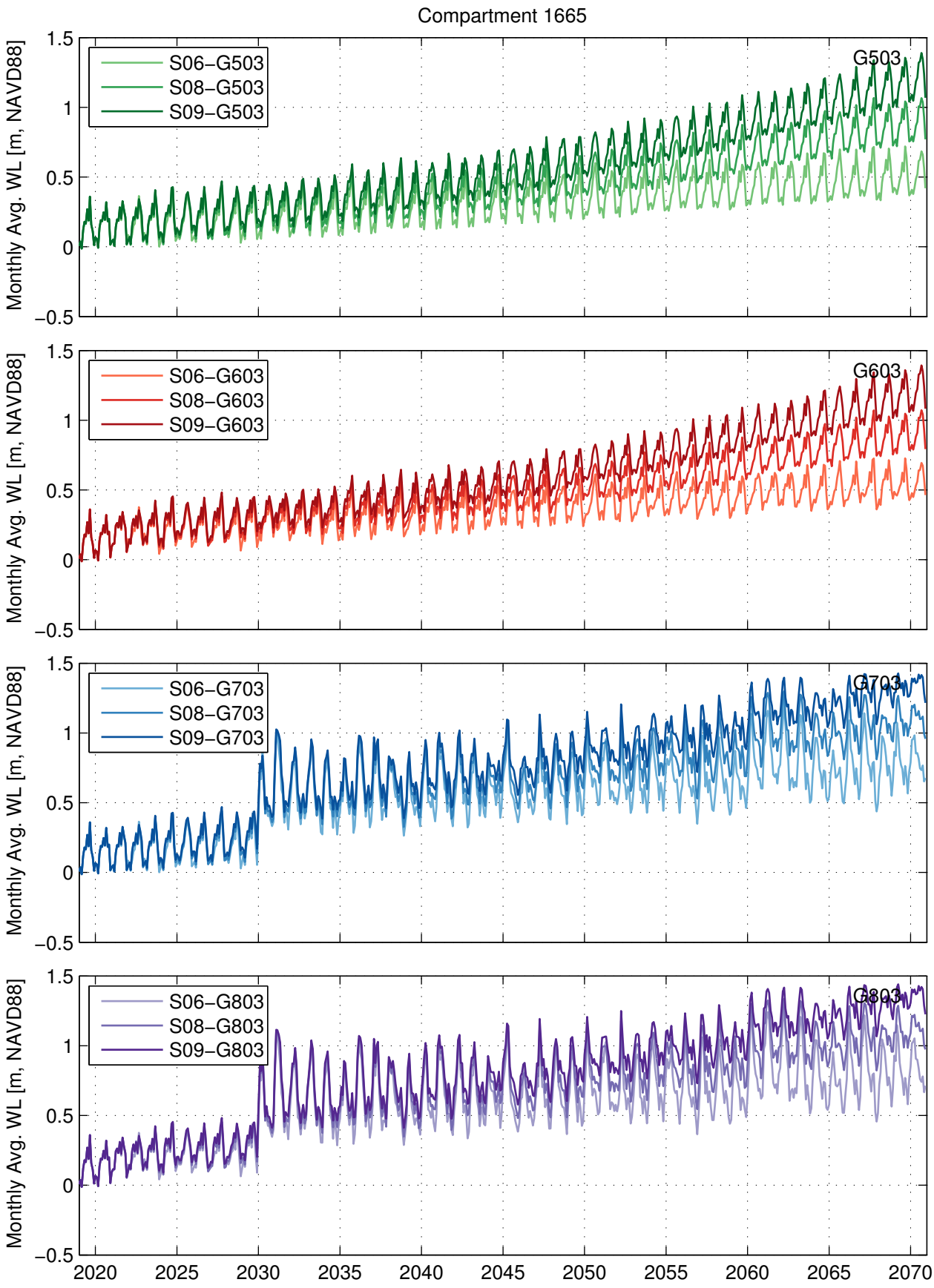

Compartment 1670
Monthly Avg. WL [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
0
0.5
1
1.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

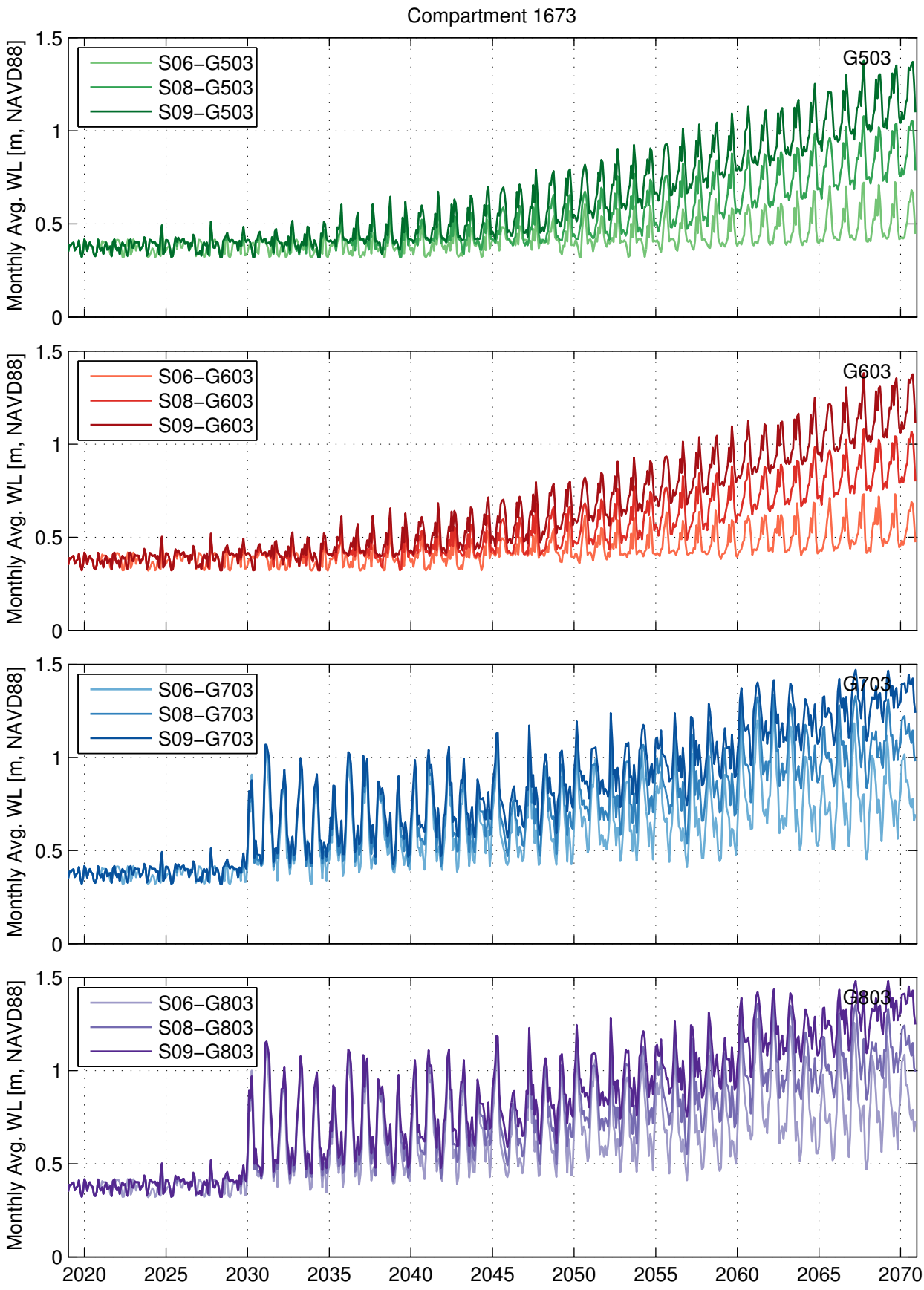

Compartment 1671
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Monthly Avg. WL [m, NAVD88]
0
0.5
1
1.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

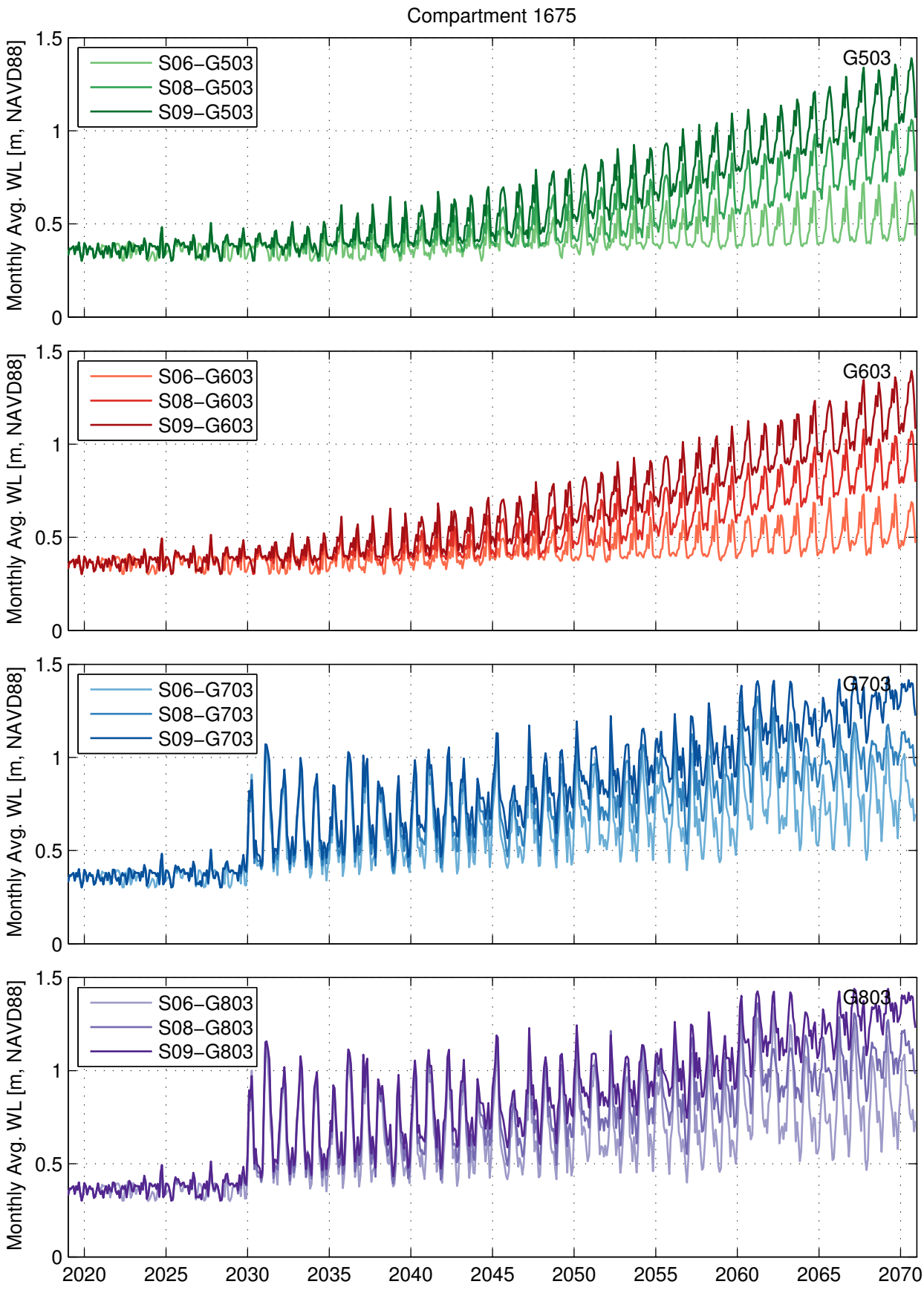

Compartment 147
Monthly Avg. WL [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
1.5
1
0.5
0
−0.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

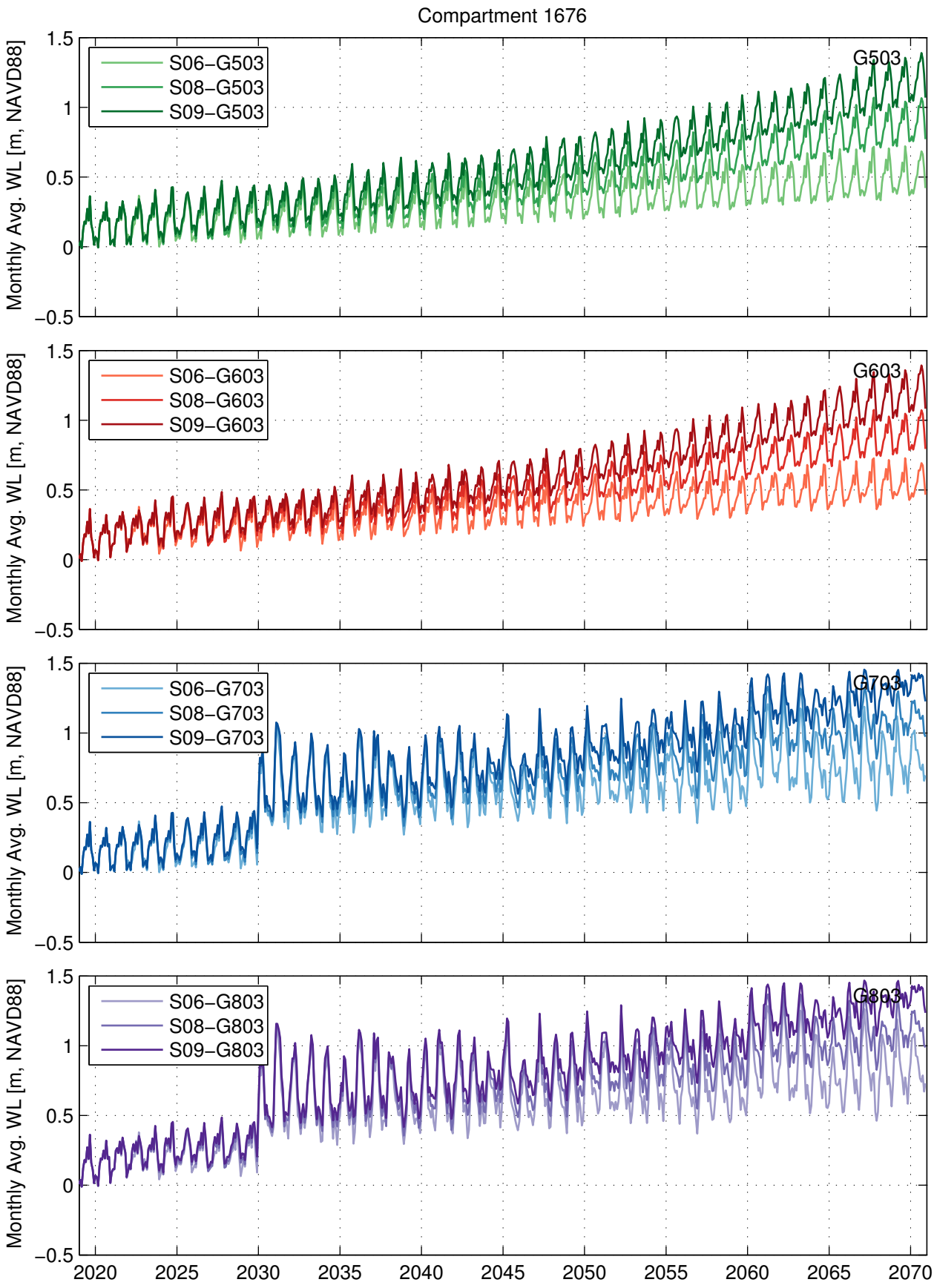

Compartment 1672
Monthly Avg. WL [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
1.5
1
0.5
0
−0.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

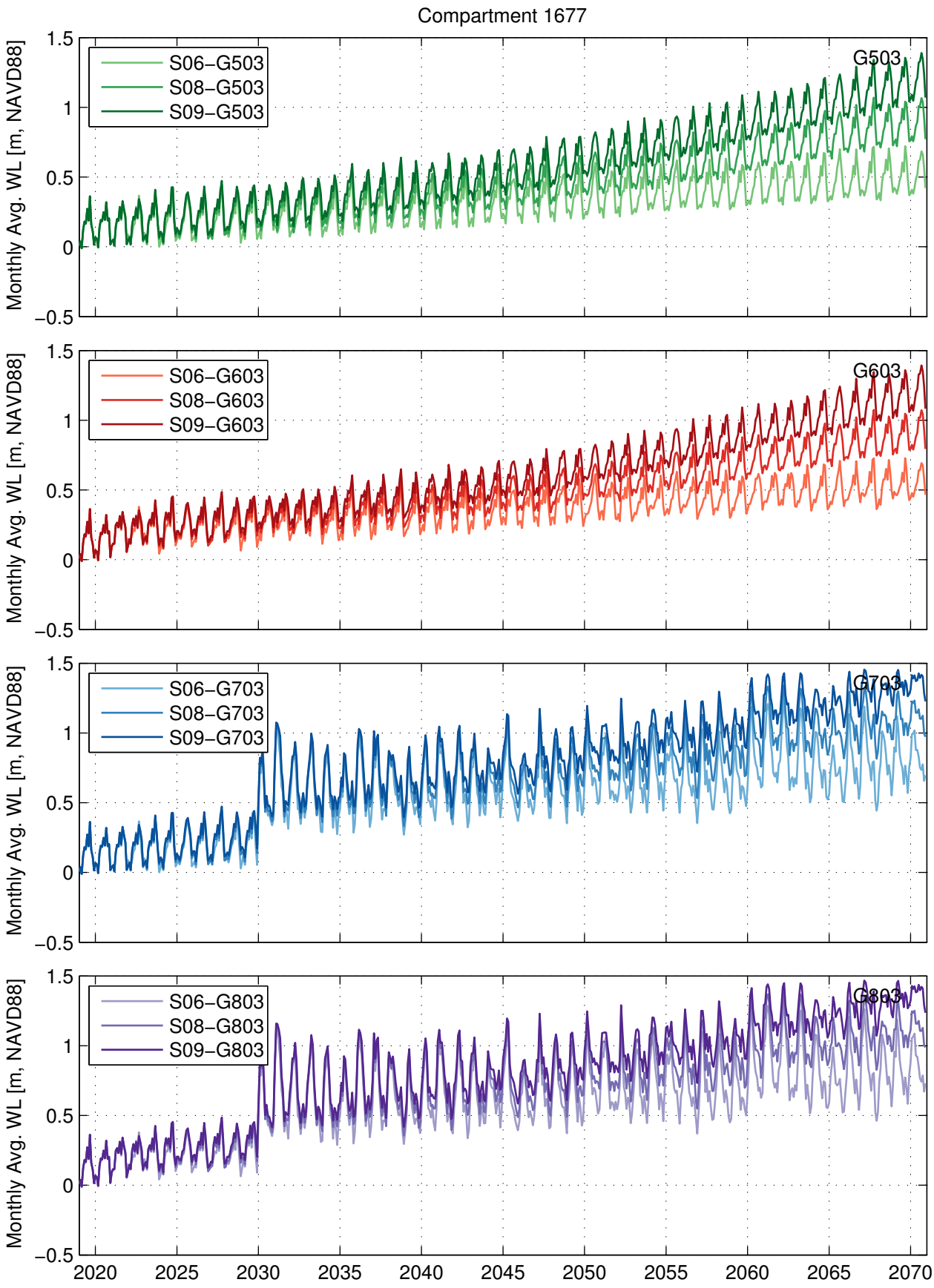

Compartment 1668
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Monthly Avg. WL [m, NAVD88]
0
0.5
1
1.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

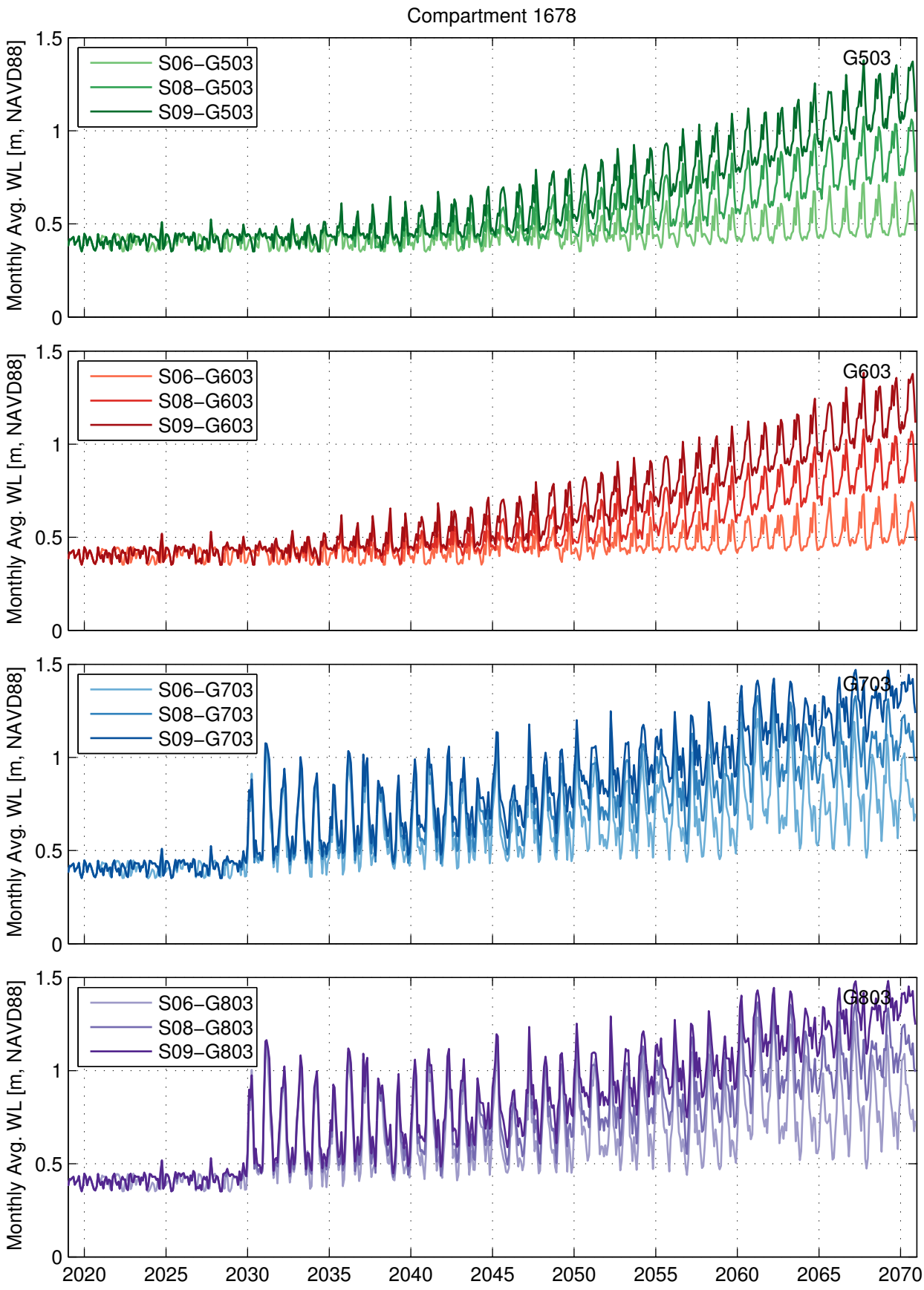

Compartment 1665
Monthly Avg. WL [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
1.5
1
0.5
0
−0.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

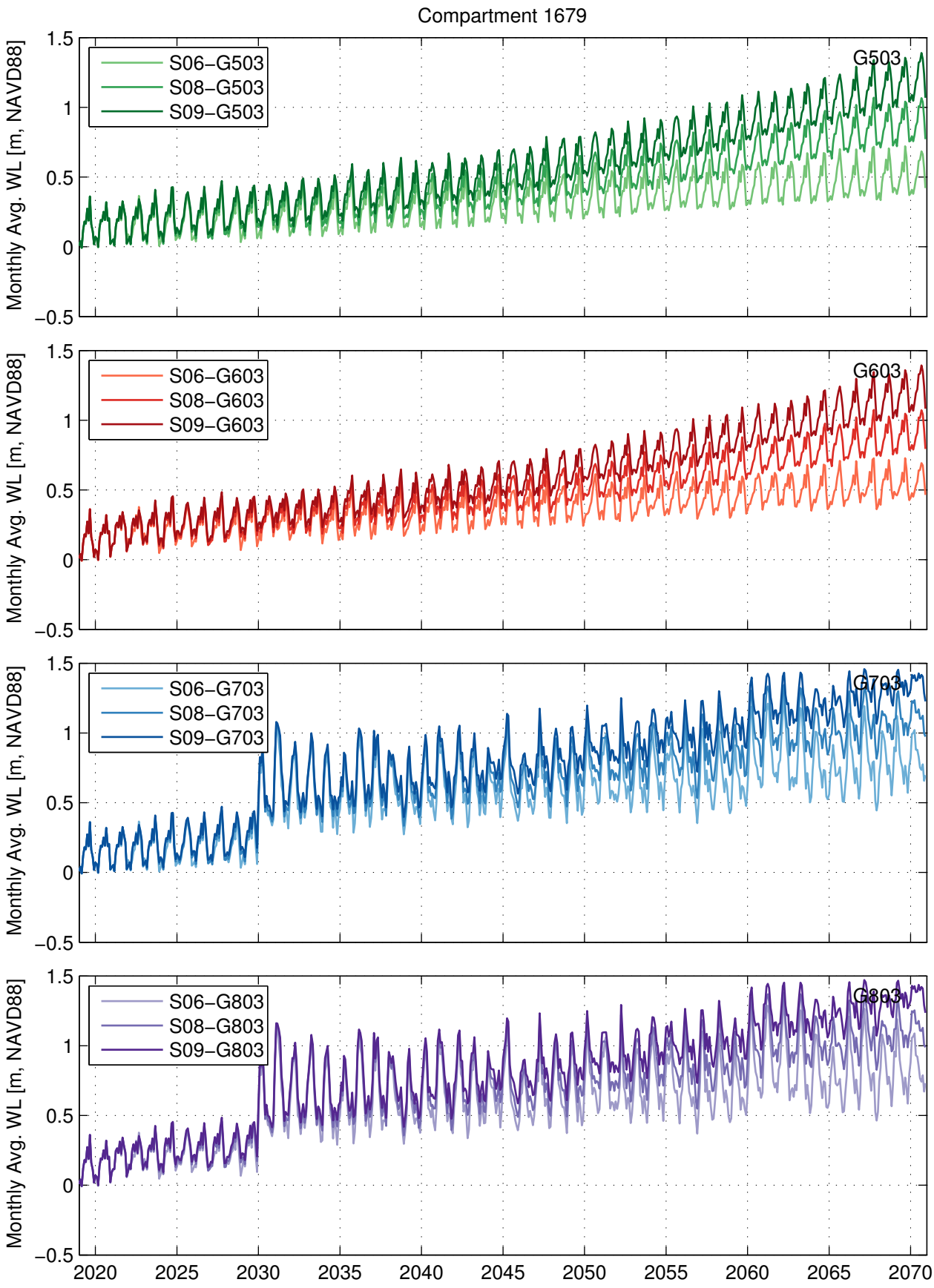

Compartment 1673
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Monthly Avg. WL [m, NAVD88]
0
0.5
1
1.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

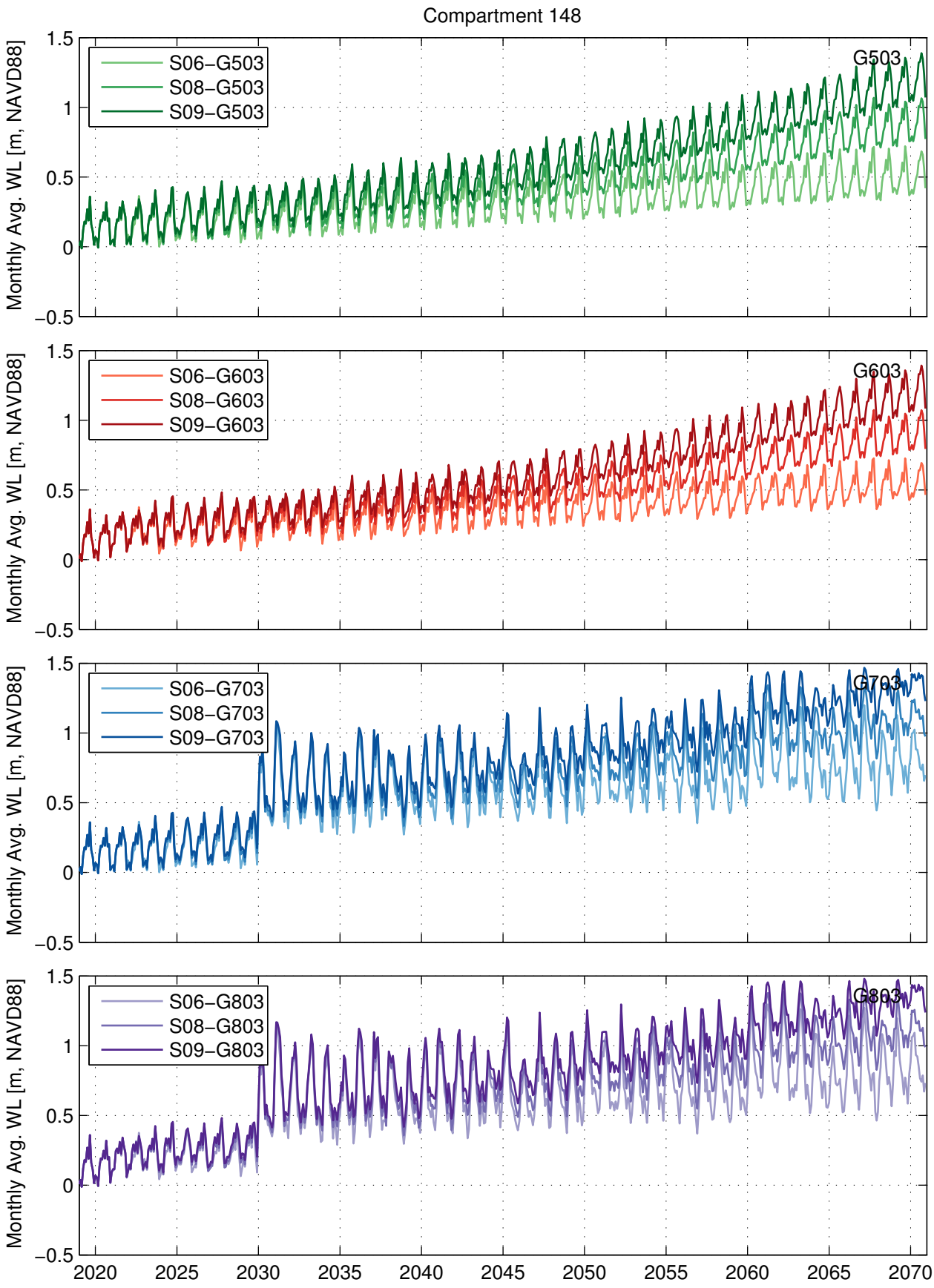

Compartment 1675
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Monthly Avg. WL [m, NAVD88]
0
0.5
1
1.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

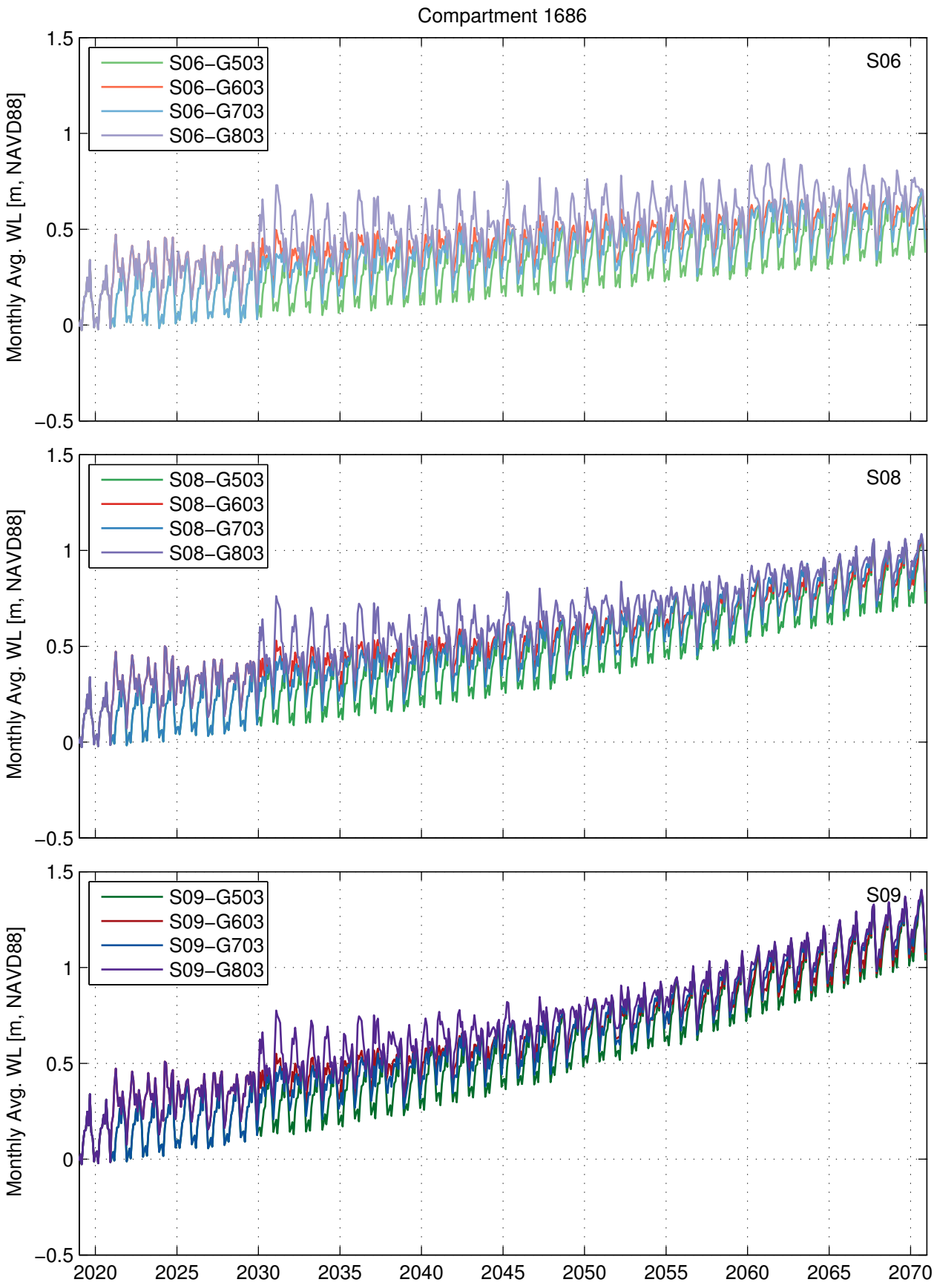

Compartment 1676
Monthly Avg. WL [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
1.5
1
0.5
0
−0.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

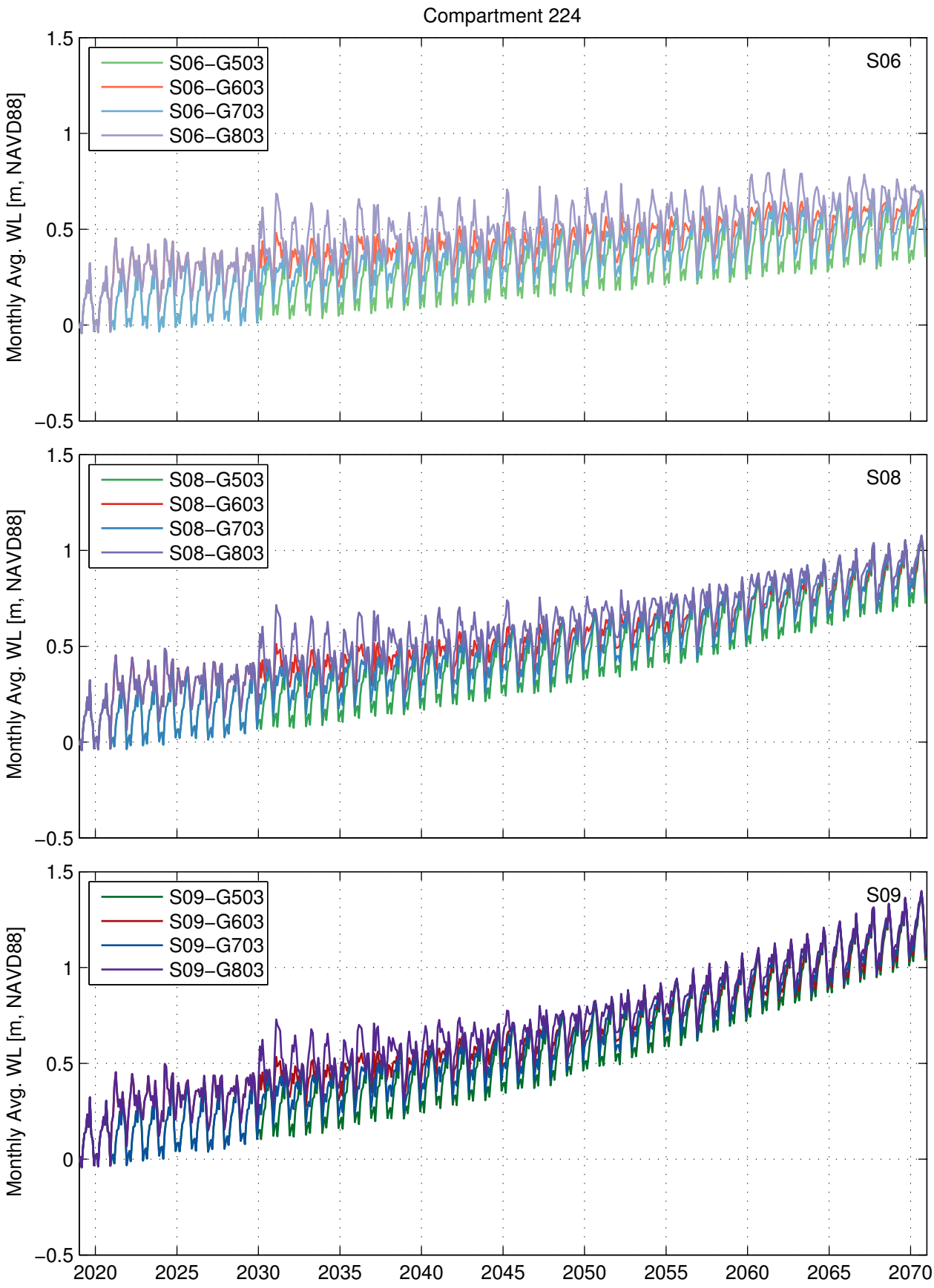

Compartment 1677
Monthly Avg. WL [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
1.5
1
0.5
0
−0.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

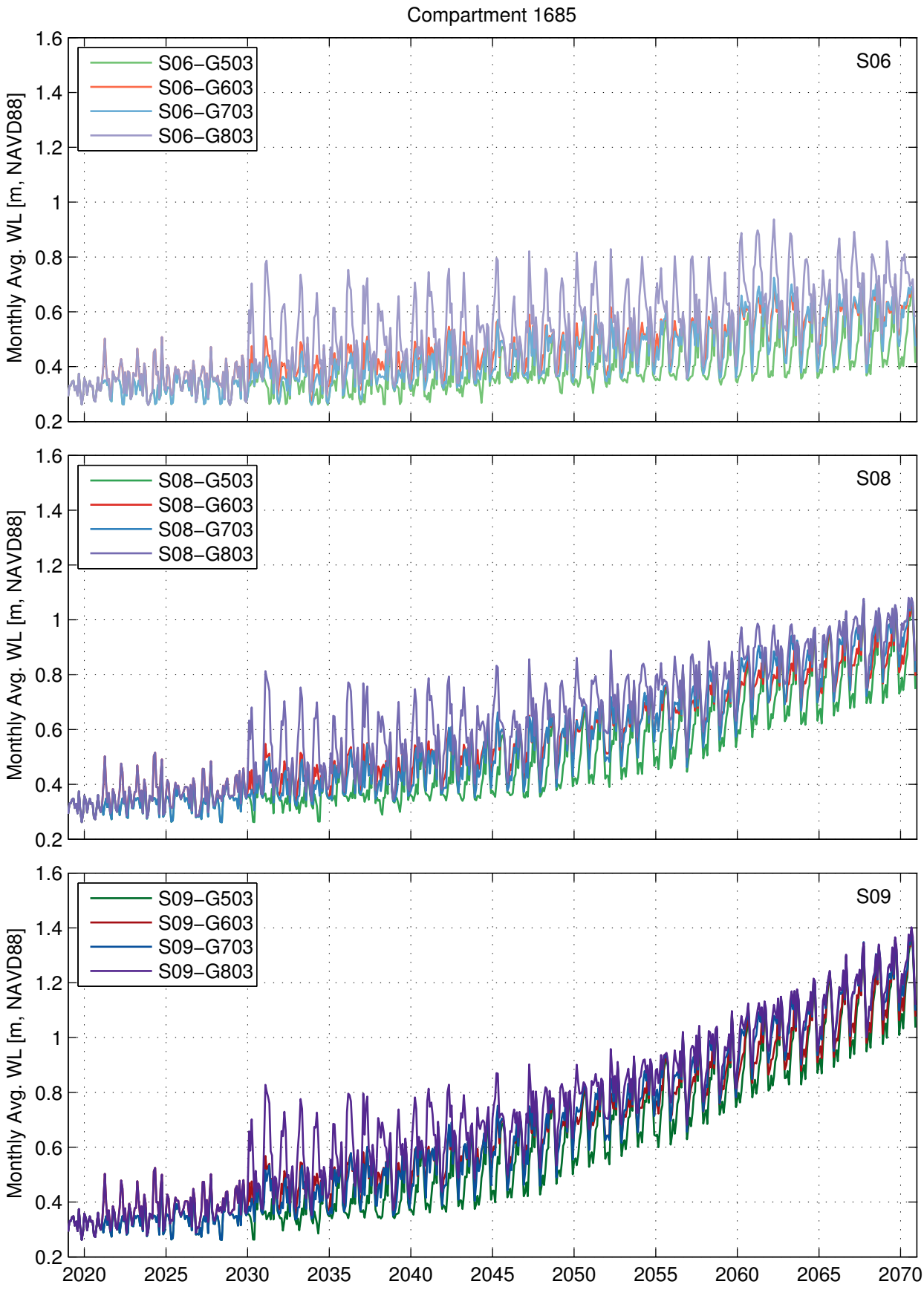

Compartment 1678
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Monthly Avg. WL [m, NAVD88]
0
0.5
1
1.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

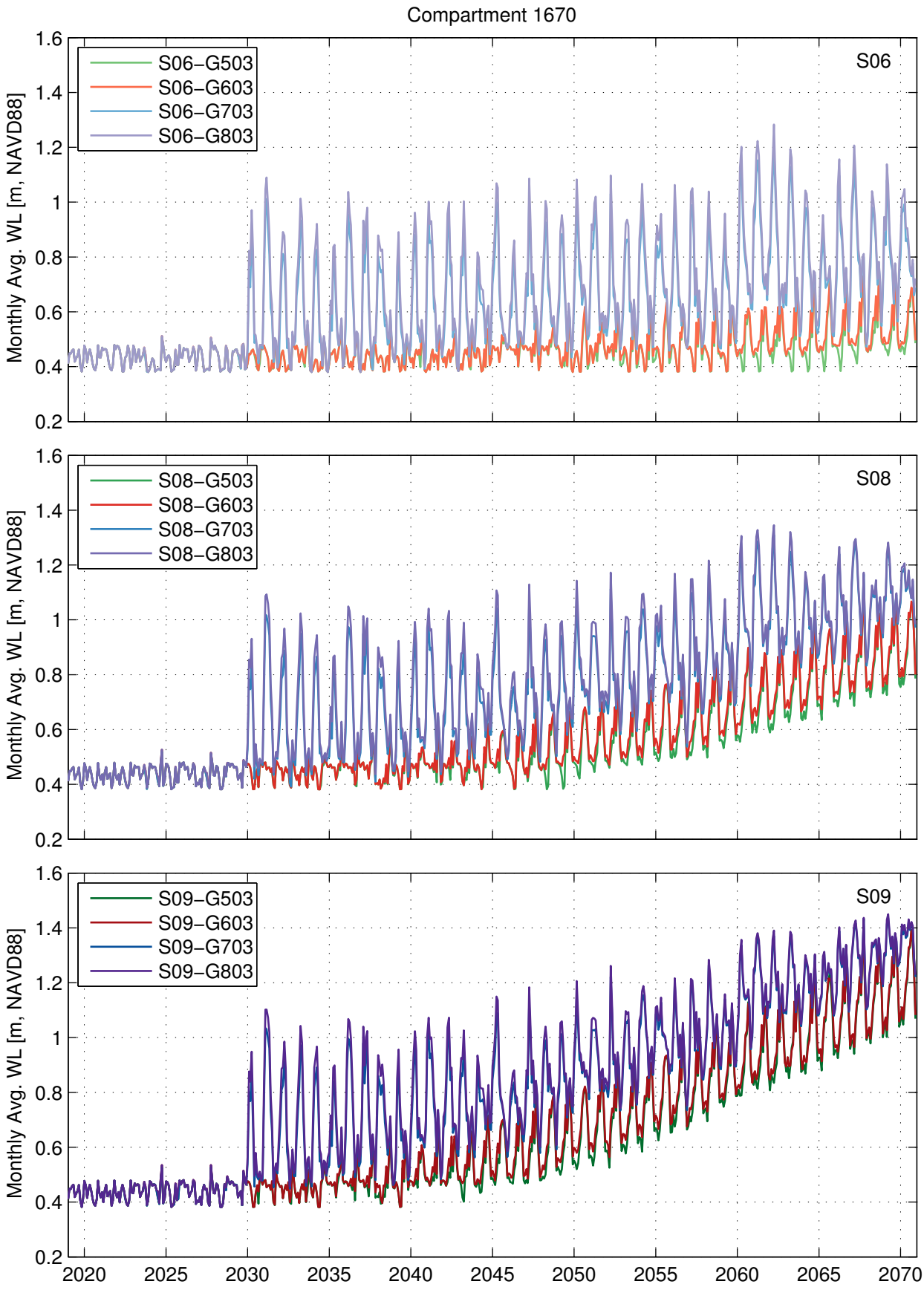

Compartment 1679
Monthly Avg. WL [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
1.5
1
0.5
0
−0.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

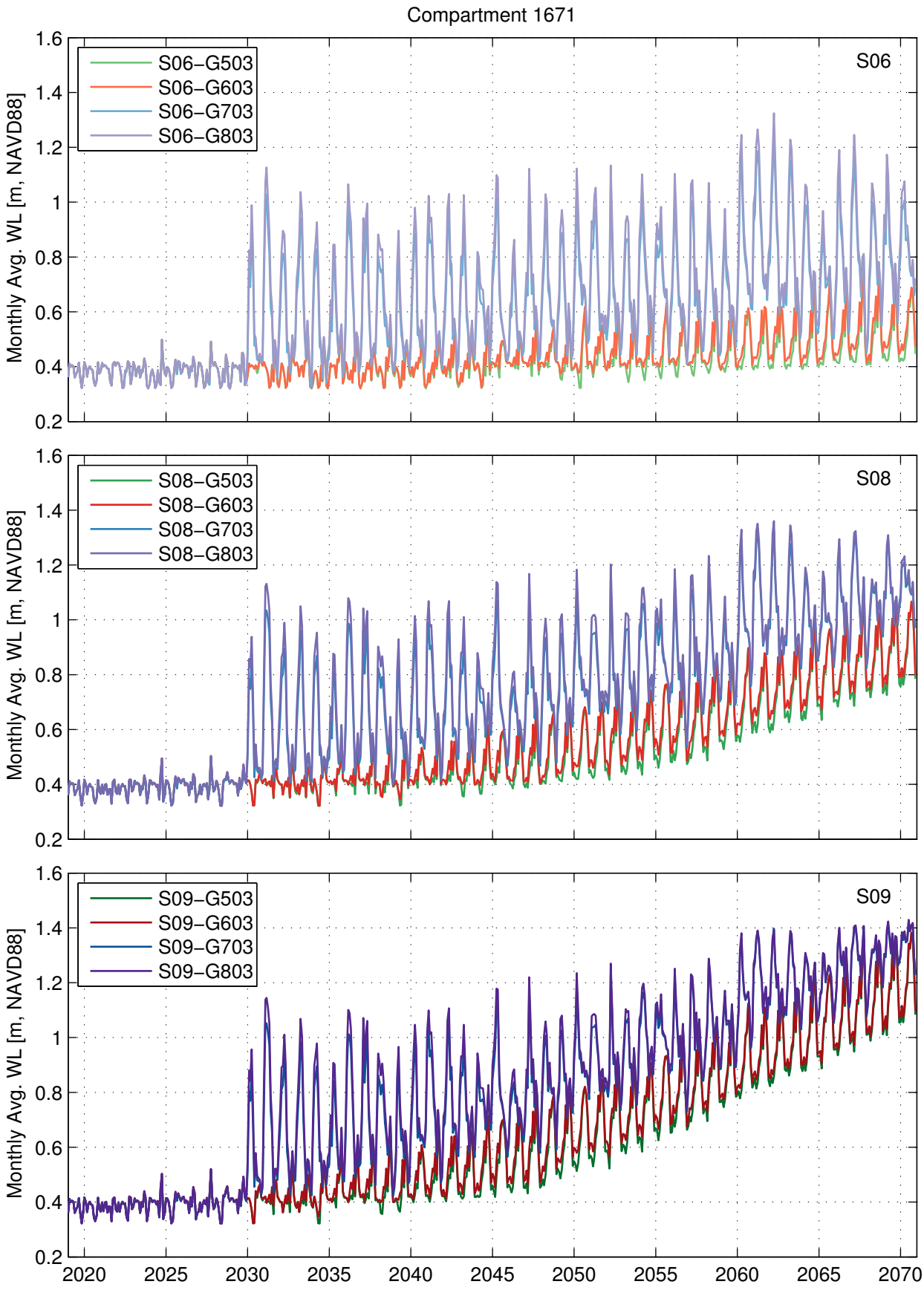

Compartment 148
Monthly Avg. WL [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
1.5
1
0.5
0
−0.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

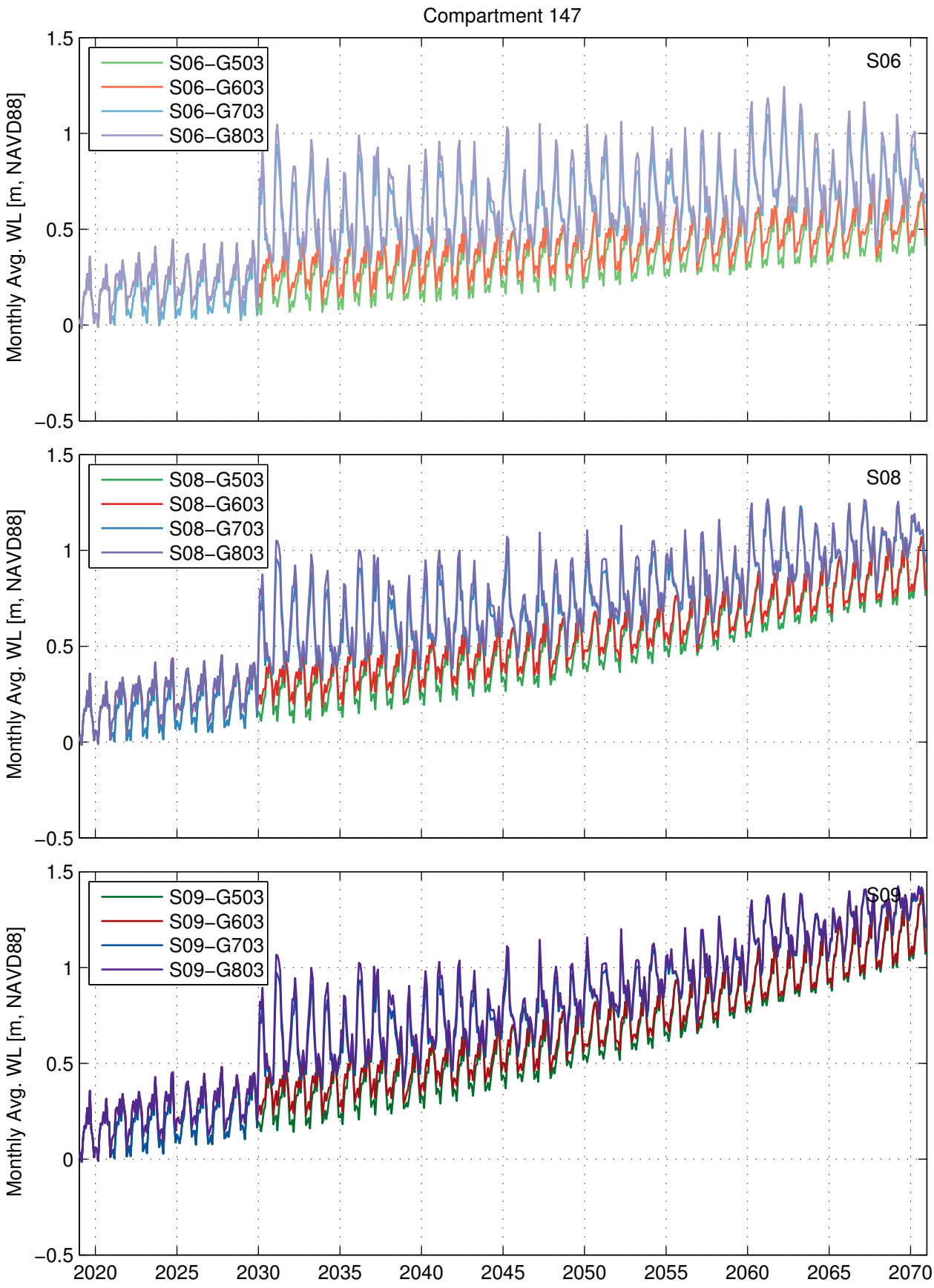

Compartment 1686
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Monthly Avg. WL [m, NAVD88]
1.5
1
0.5
0
−0.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

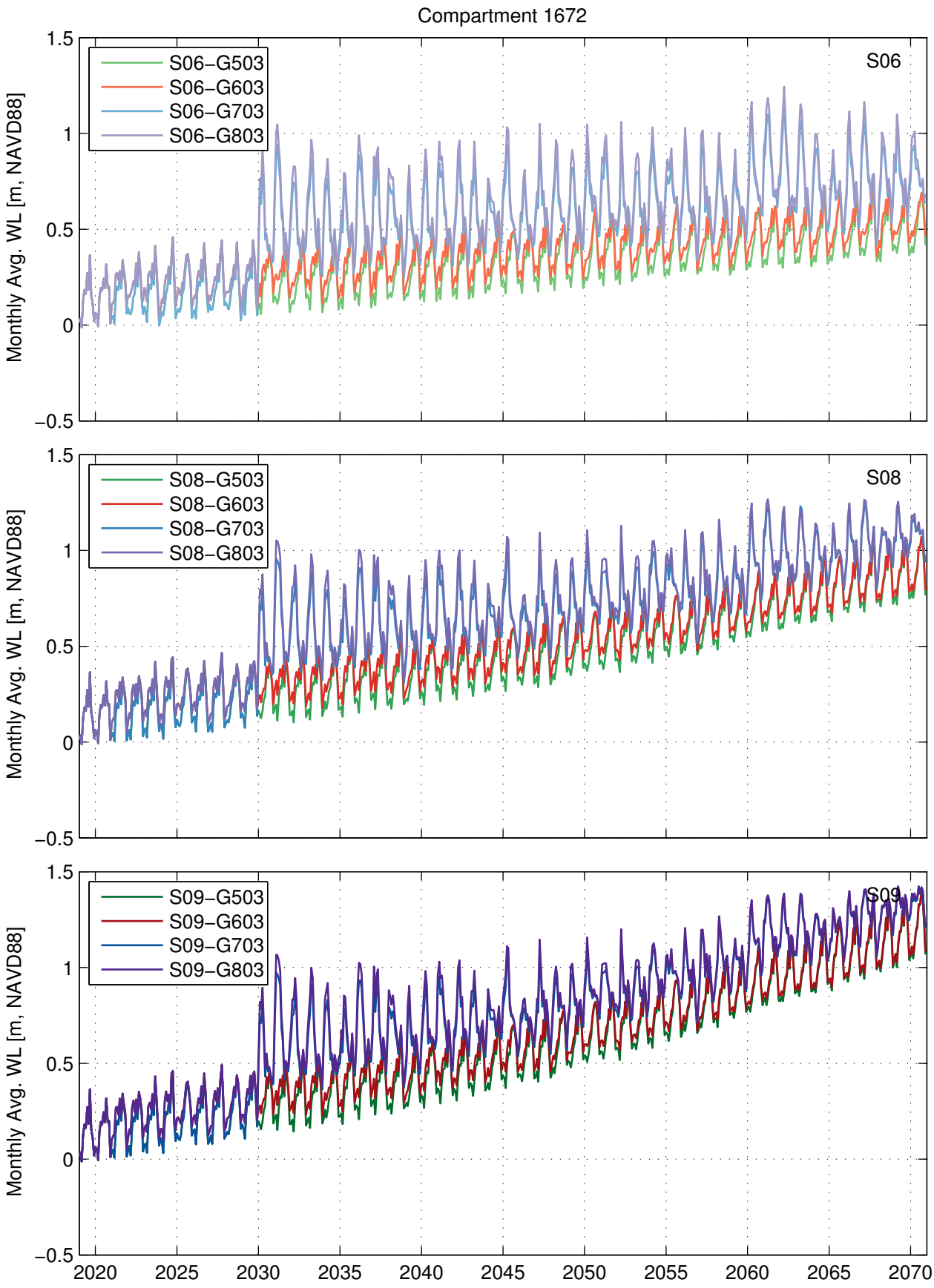

Compartment 224
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Monthly Avg. WL [m, NAVD88]
1.5
1
0.5
0
−0.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

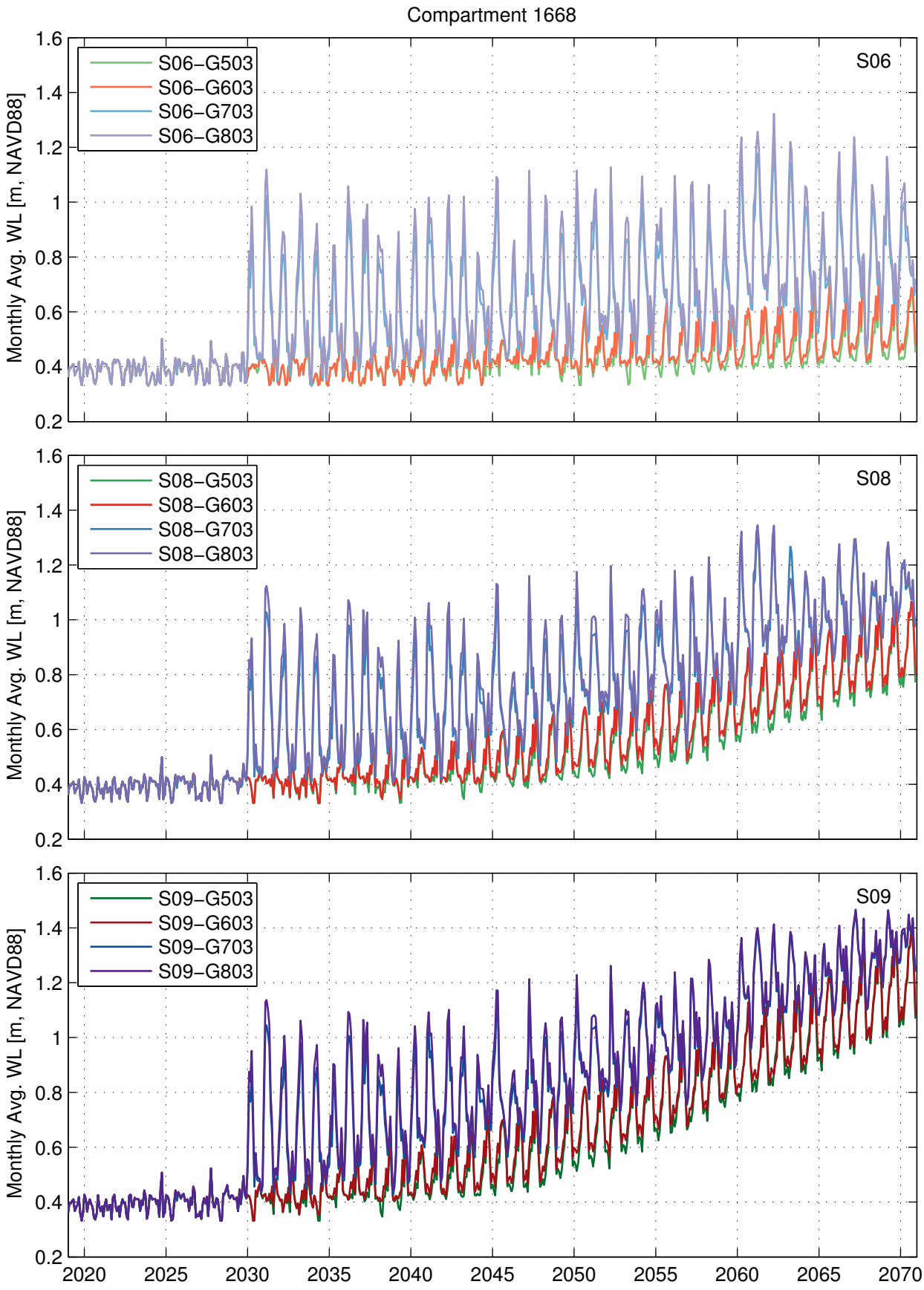

Compartment 1685
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Monthly Avg. WL [m, NAVD88]
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

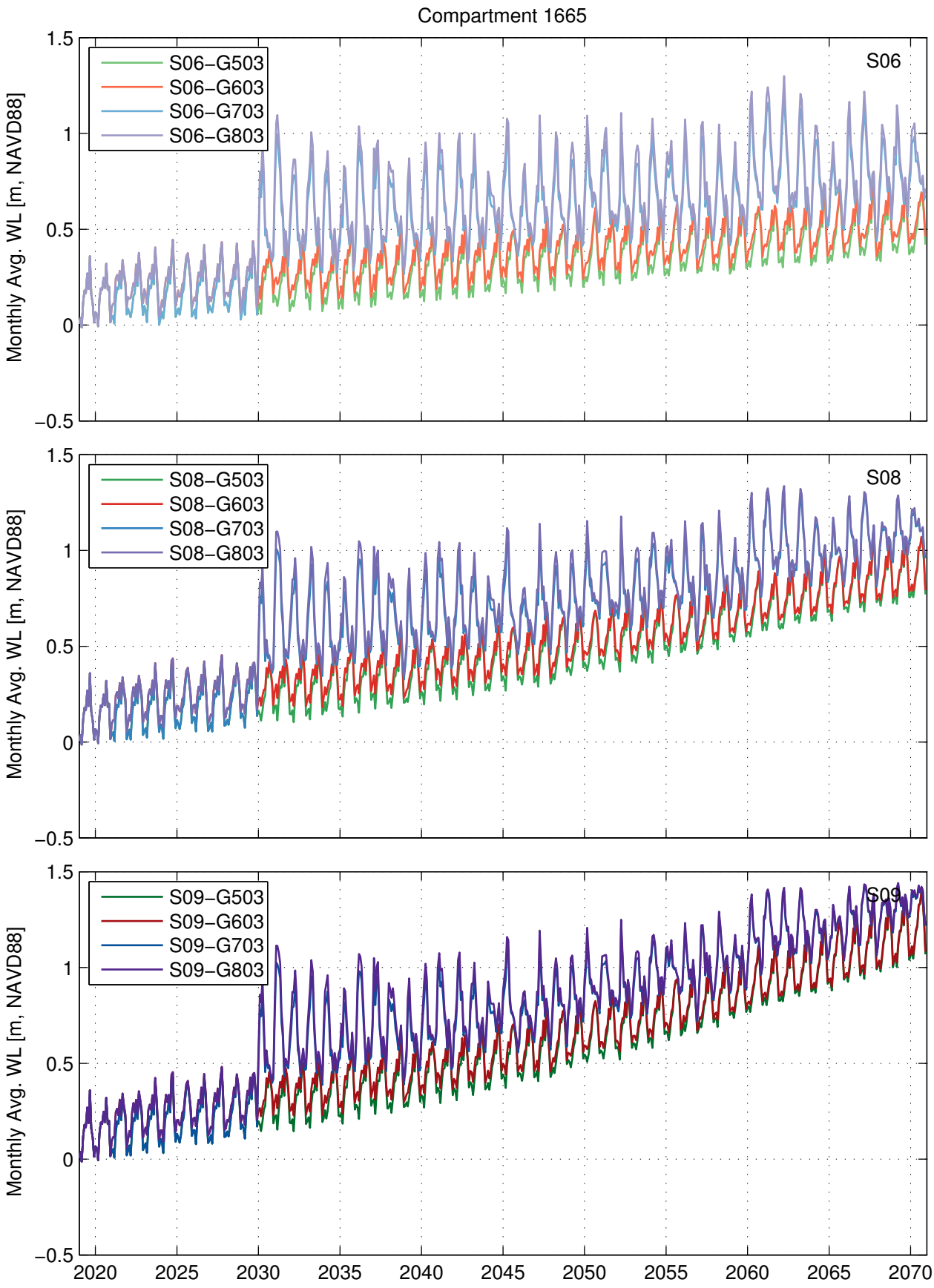

Compartment 1670
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Monthly Avg. WL [m, NAVD88]
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

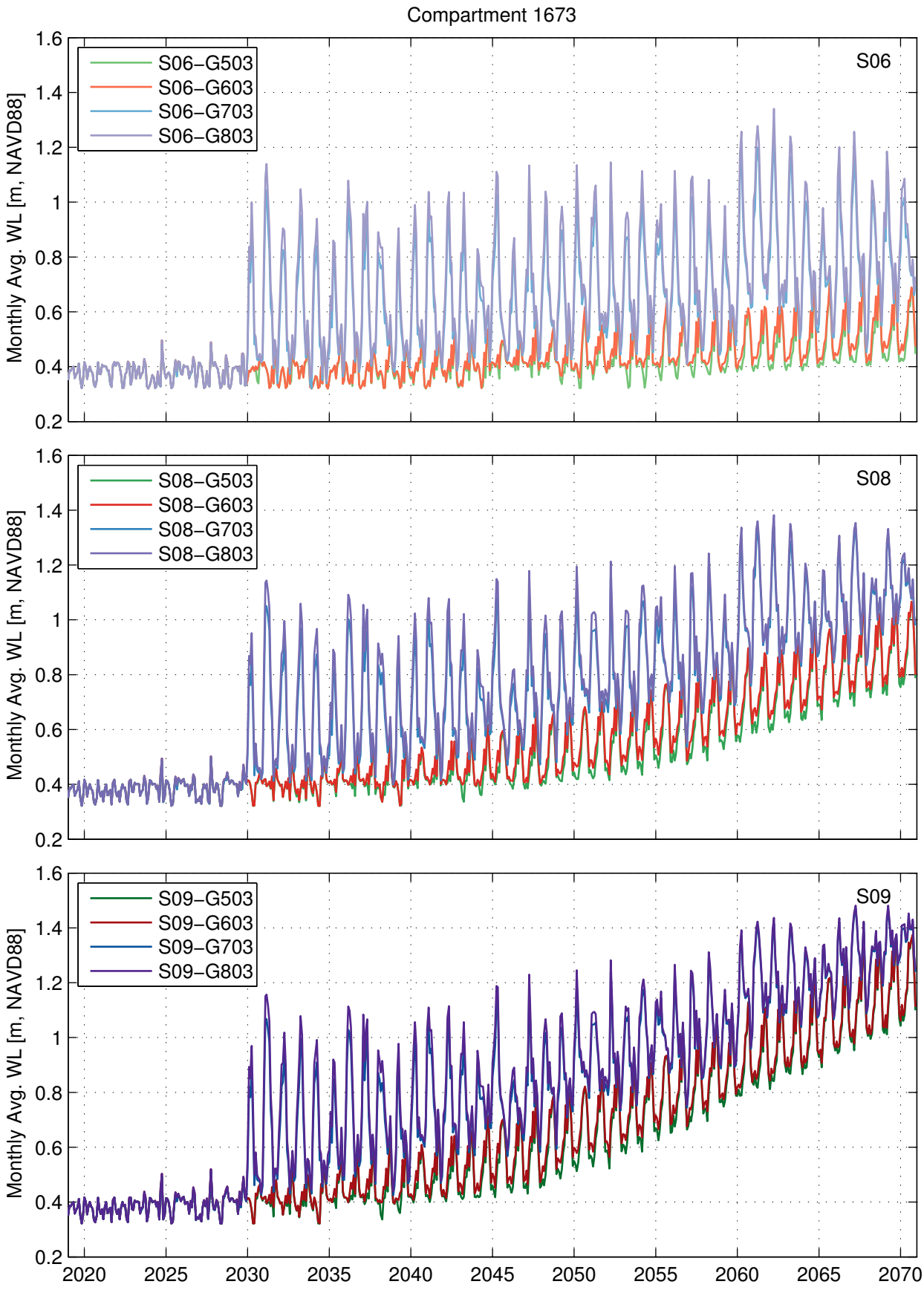

Compartment 1671
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Monthly Avg. WL [m, NAVD88]
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

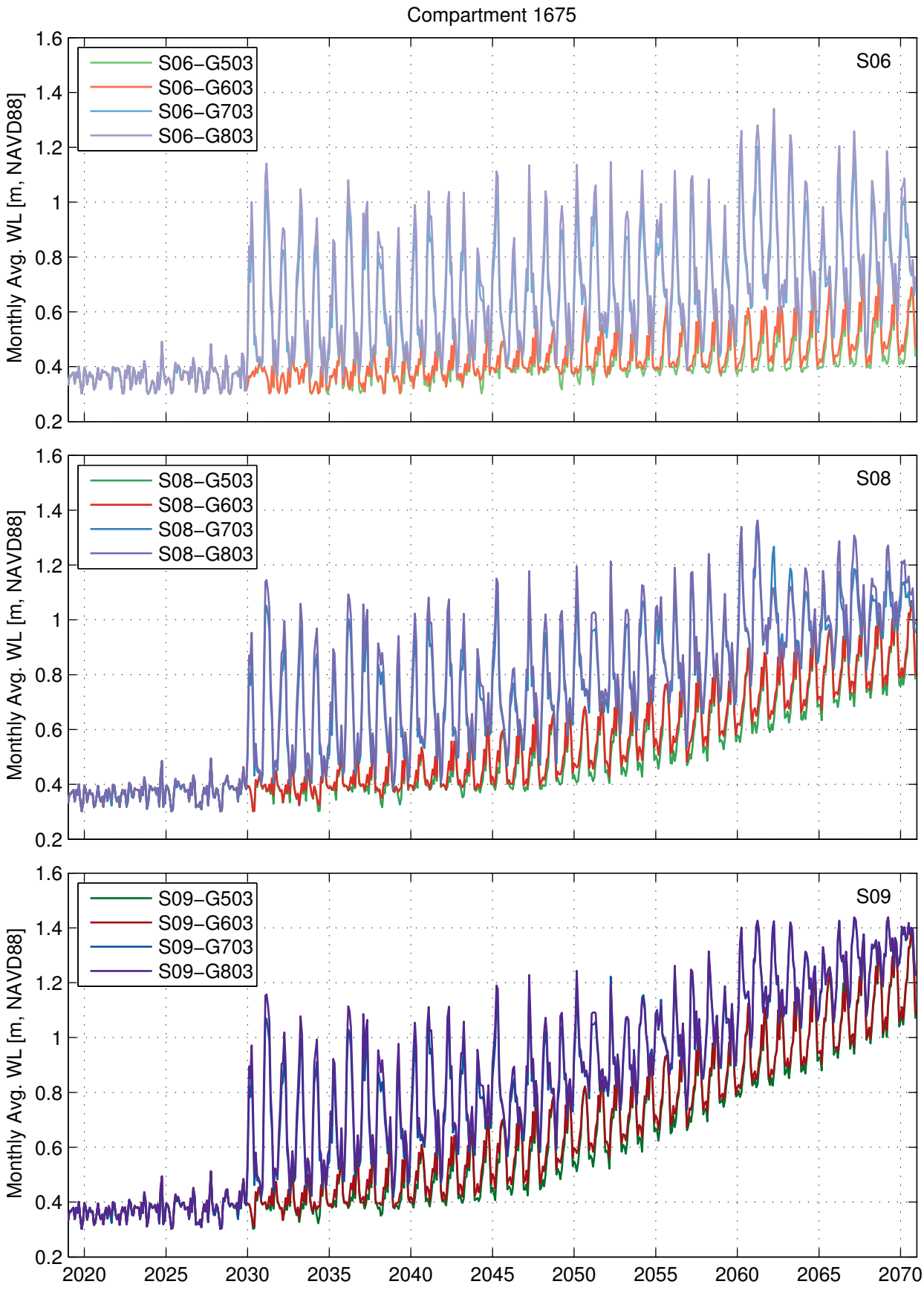

Compartment 147
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Monthly Avg. WL [m, NAVD88]
1.5
1
0.5
0
−0.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

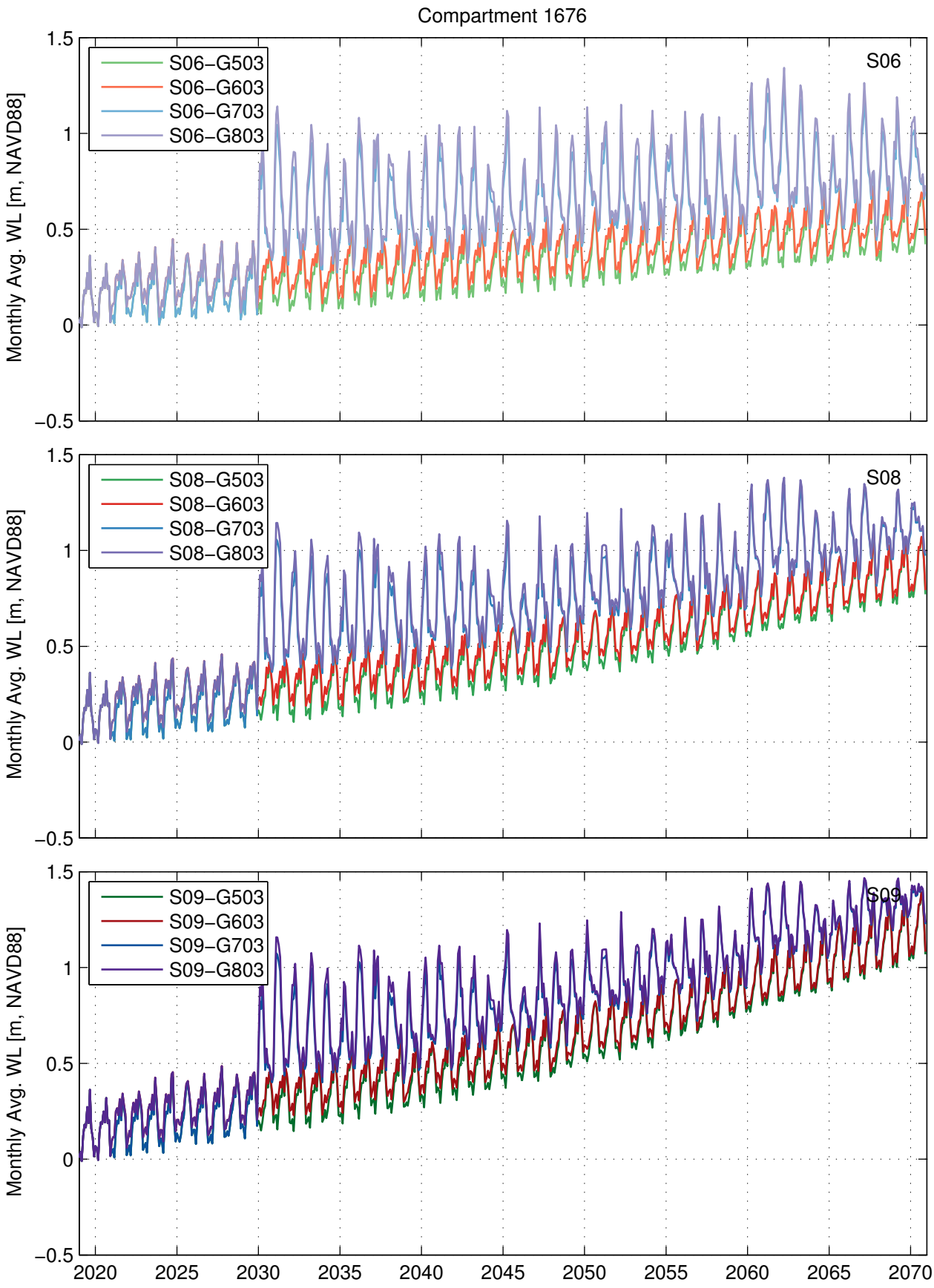

Compartment 1672
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Monthly Avg. WL [m, NAVD88]
1.5
1
0.5
0
−0.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

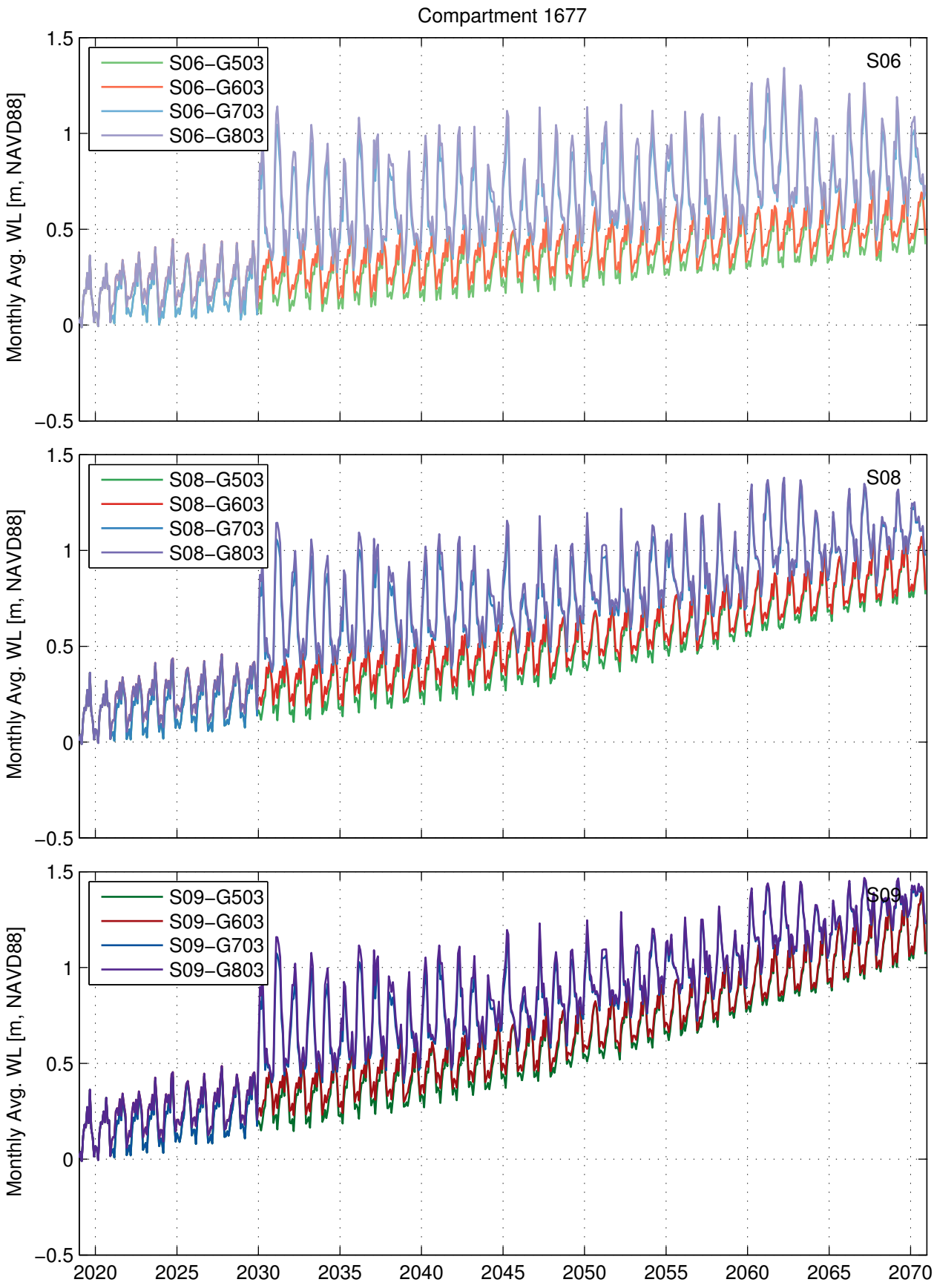

Compartment 1668
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Monthly Avg. WL [m, NAVD88]
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

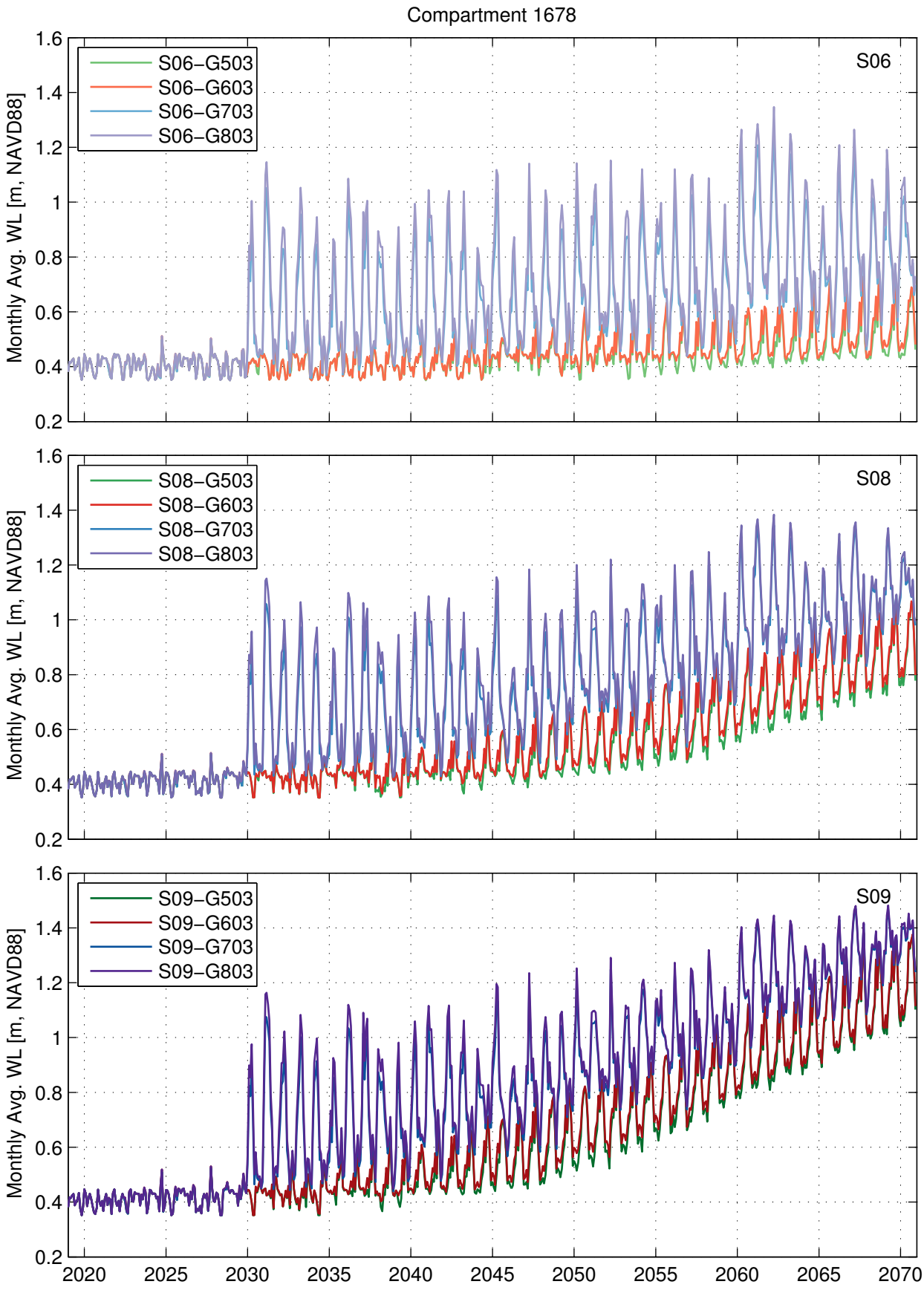

Compartment 1665
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Monthly Avg. WL [m, NAVD88]
1.5
1
0.5
0
−0.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

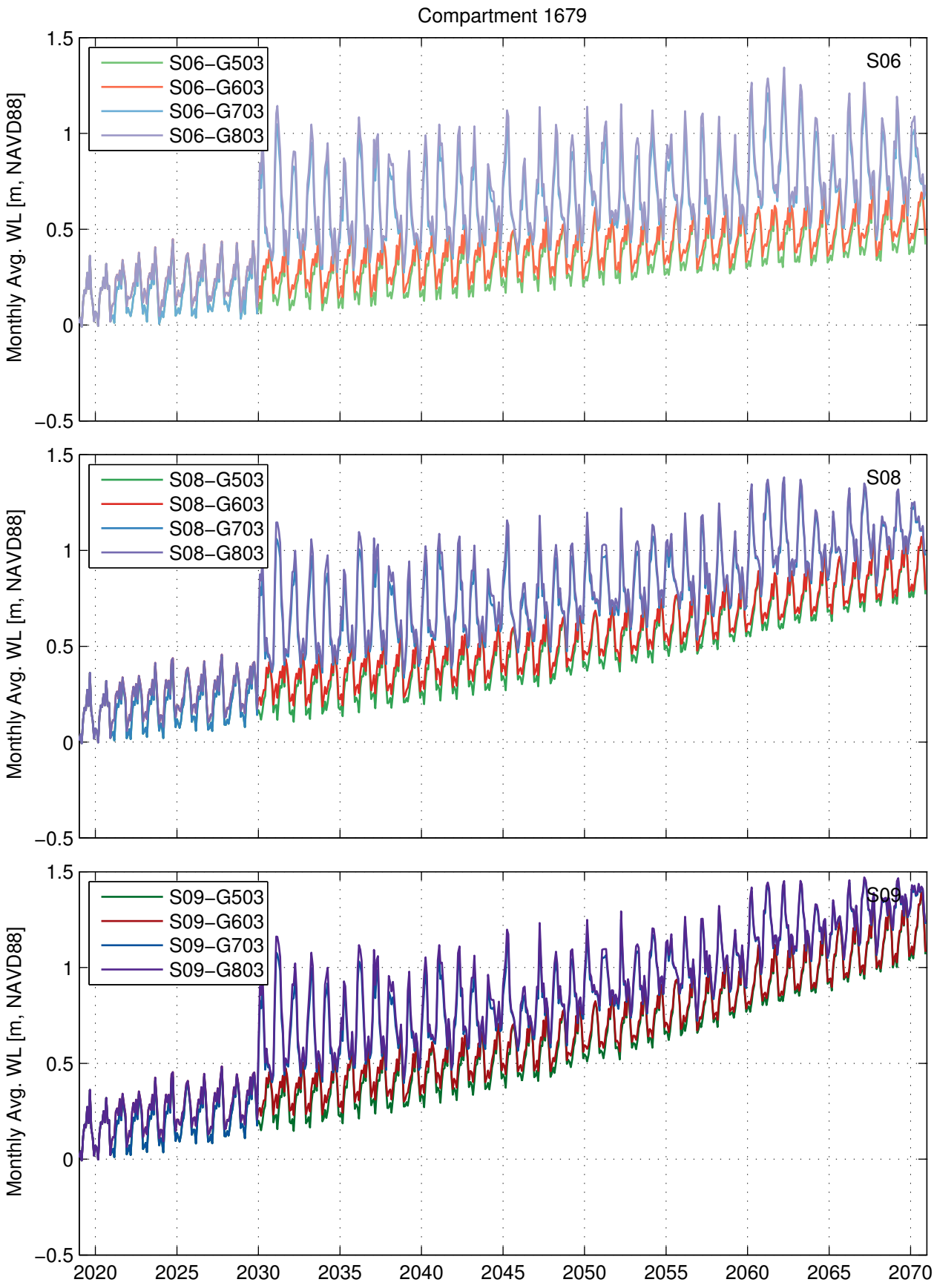

Compartment 1673
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Monthly Avg. WL [m, NAVD88]
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

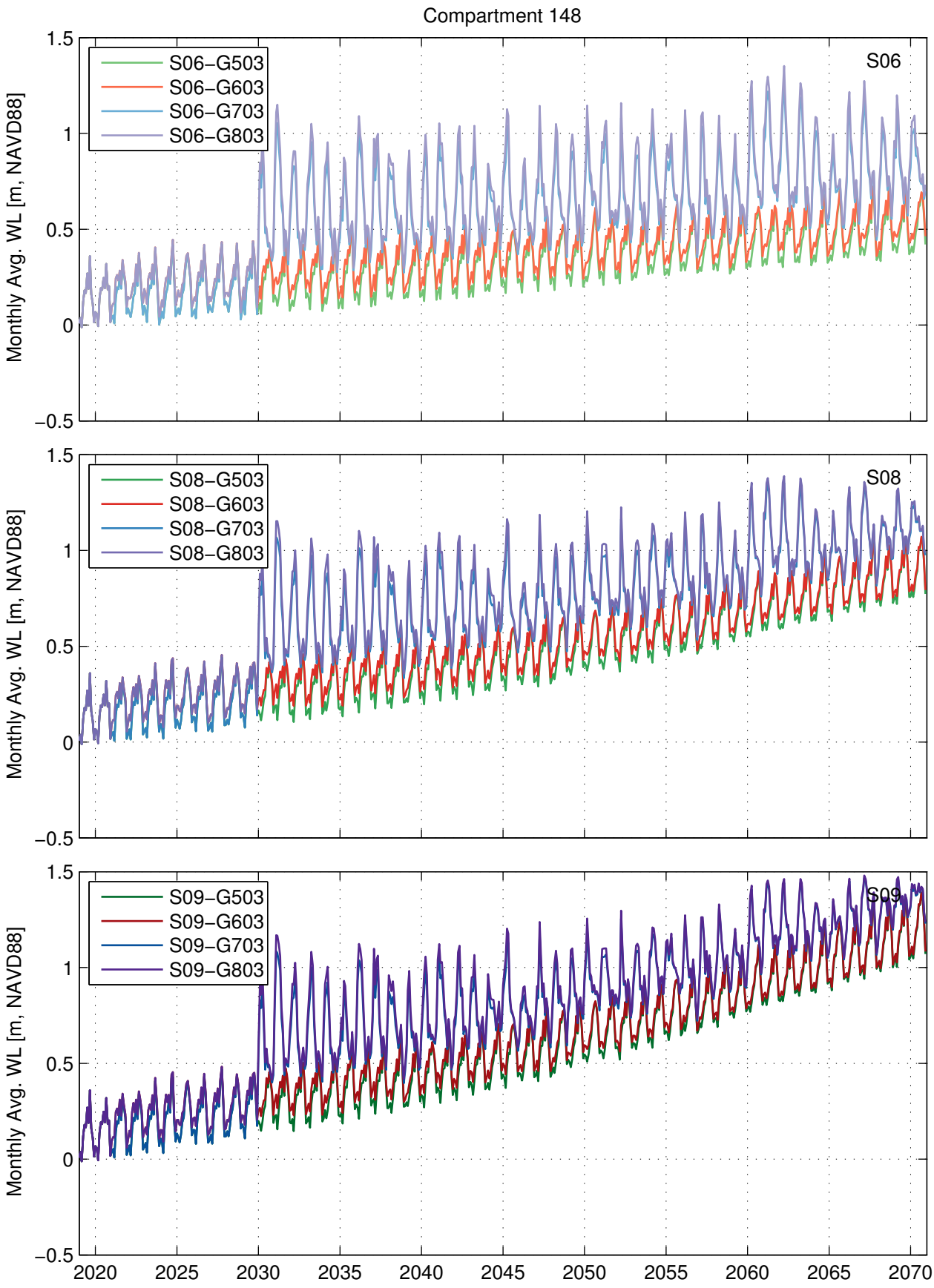

Compartment 1675
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Monthly Avg. WL [m, NAVD88]
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

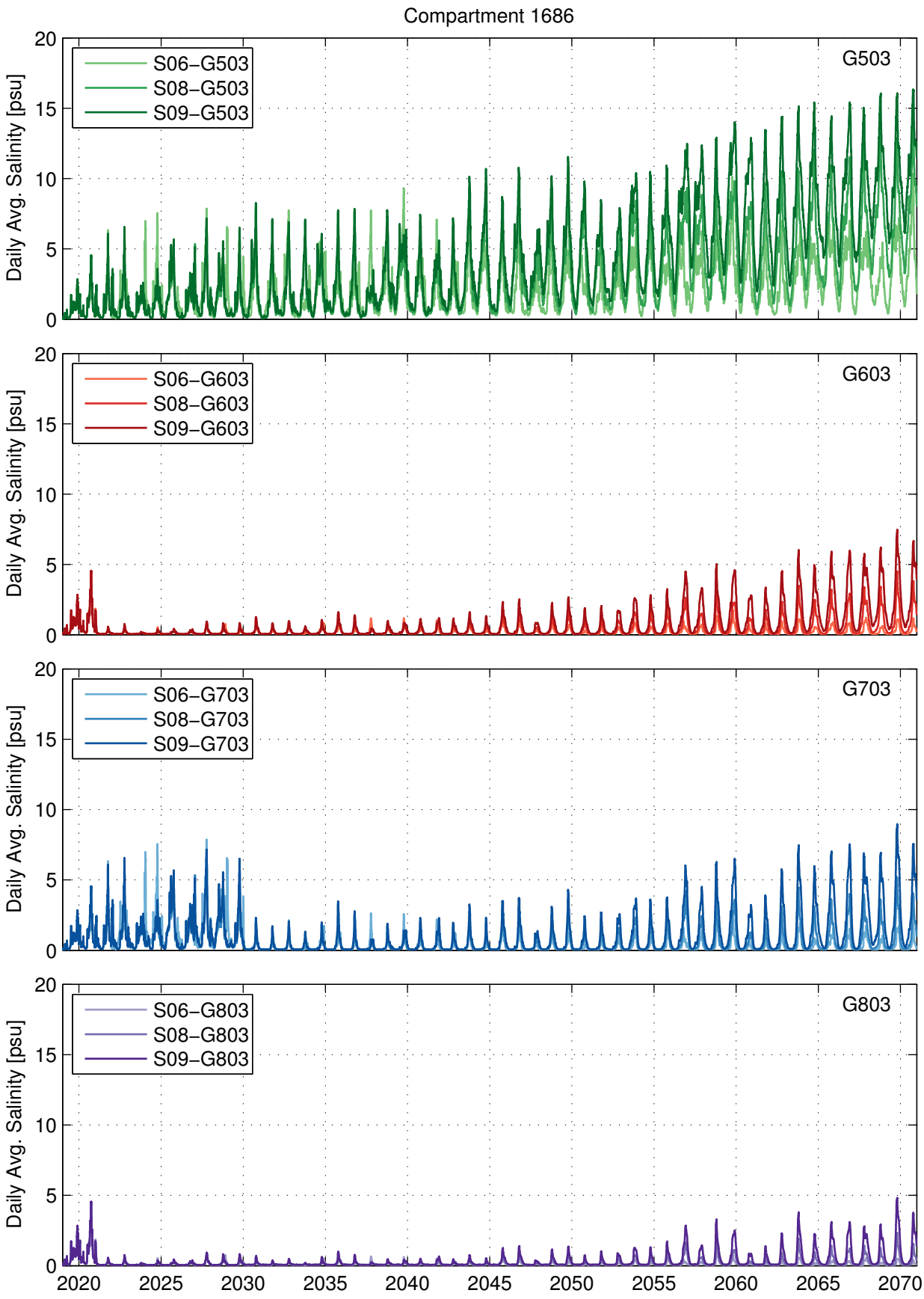

Compartment 1676
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Monthly Avg. WL [m, NAVD88]
1.5
1
0.5
0
−0.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

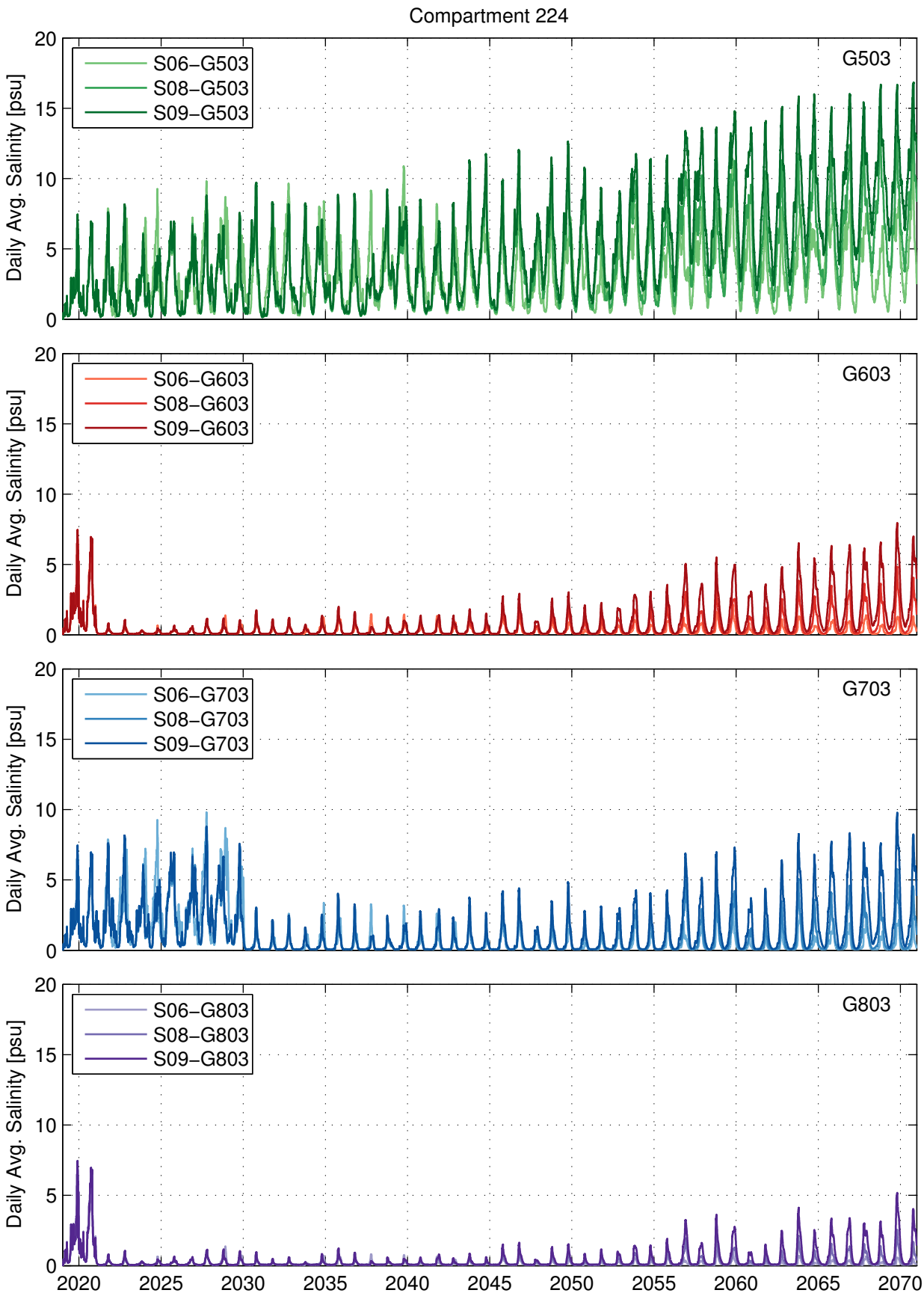

Compartment 1677
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Monthly Avg. WL [m, NAVD88]
1.5
1
0.5
0
−0.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

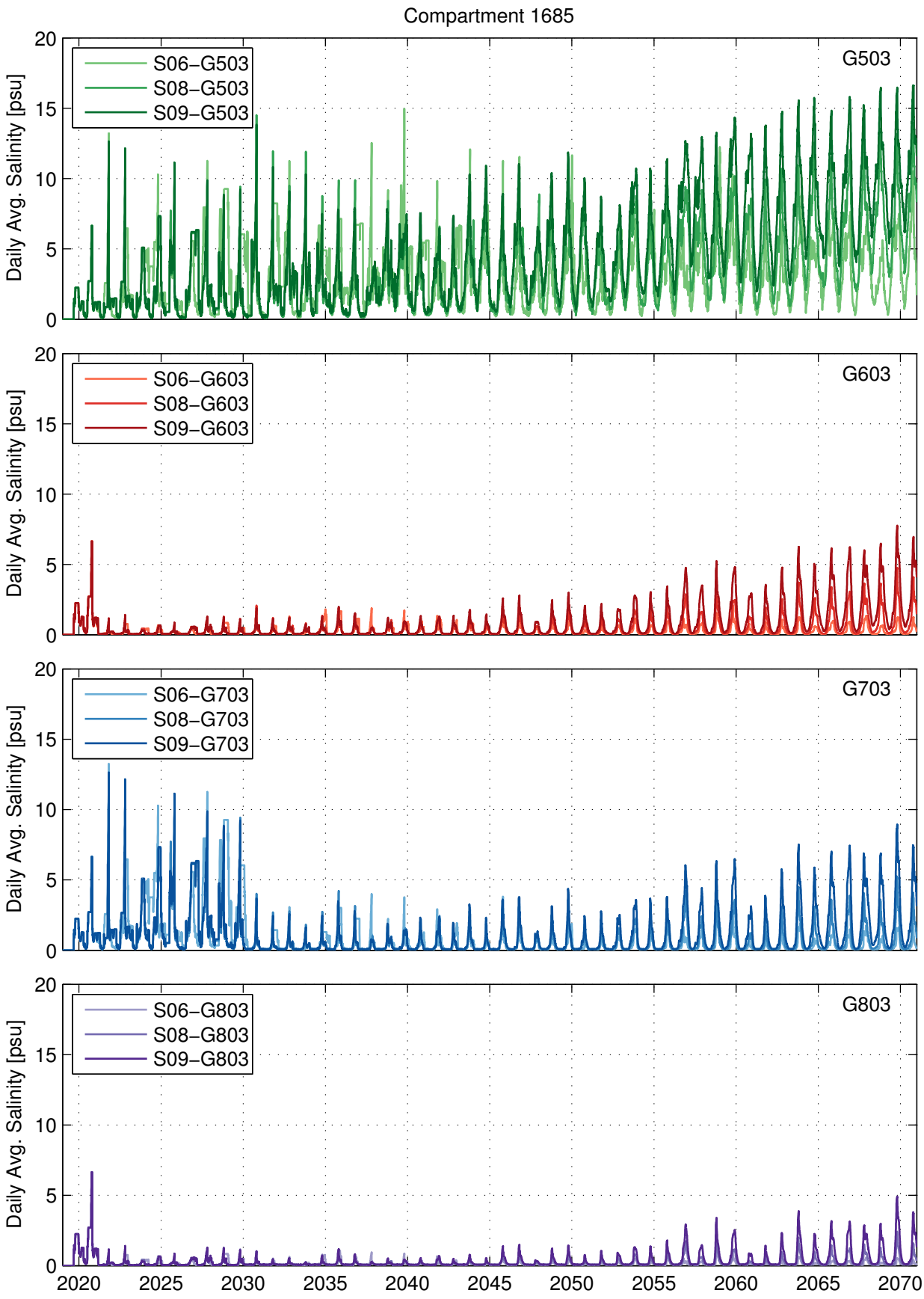

Compartment 1678
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Monthly Avg. WL [m, NAVD88]
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

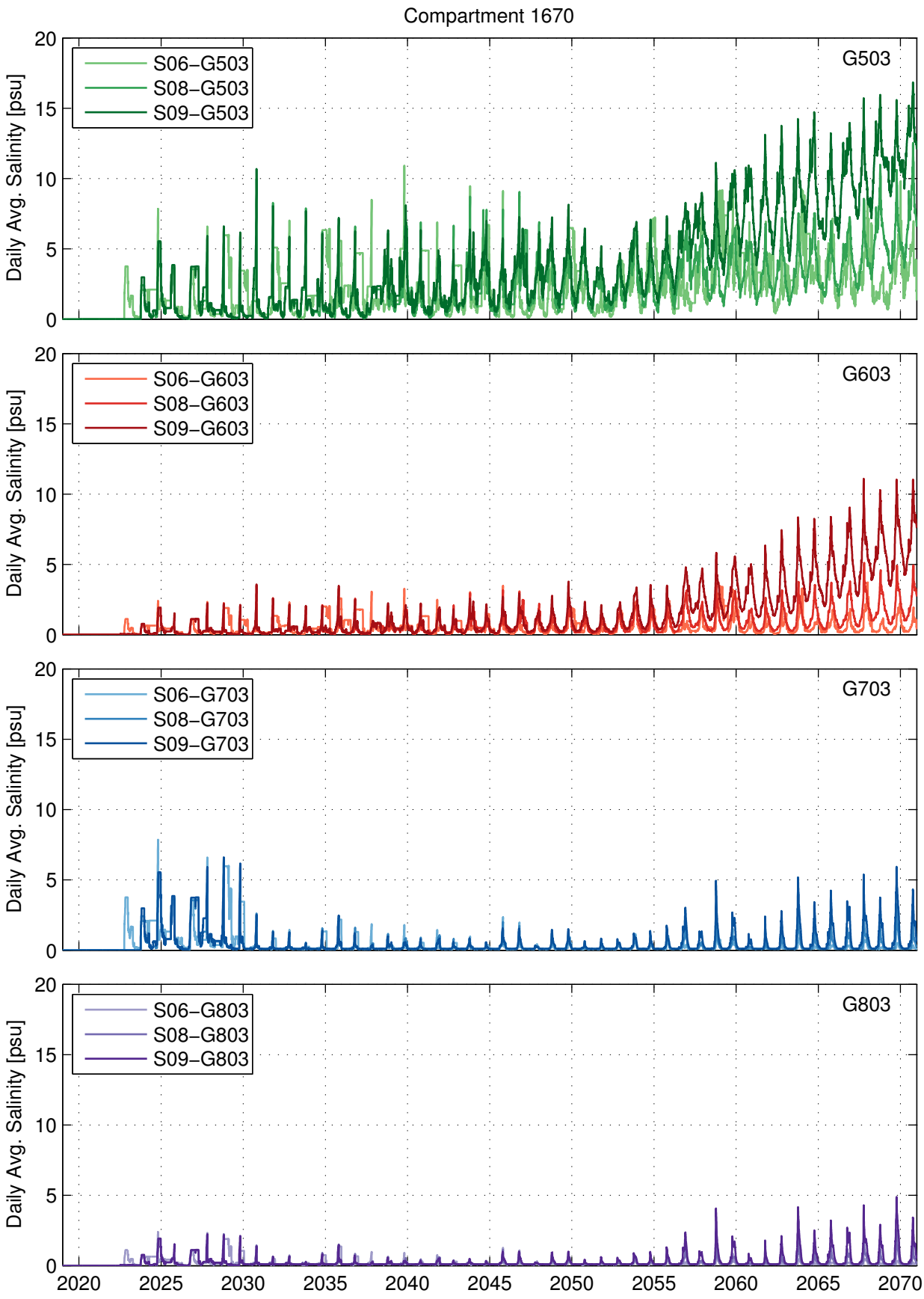

Compartment 1679
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Monthly Avg. WL [m, NAVD88]
1.5
1
0.5
0
−0.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

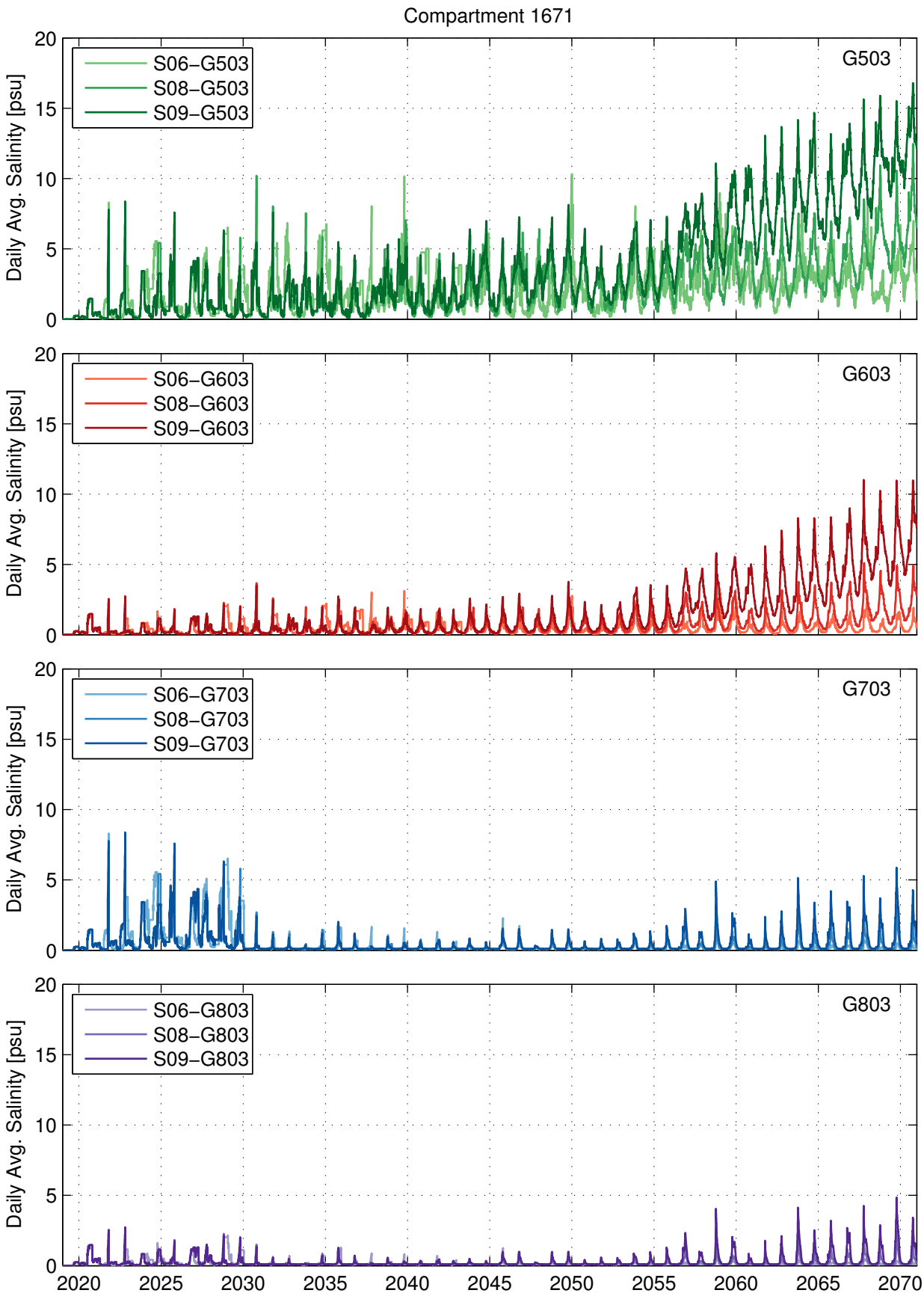

Compartment 148
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Monthly Avg. WL [m, NAVD88]
1.5
1
0.5
0
−0.5
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

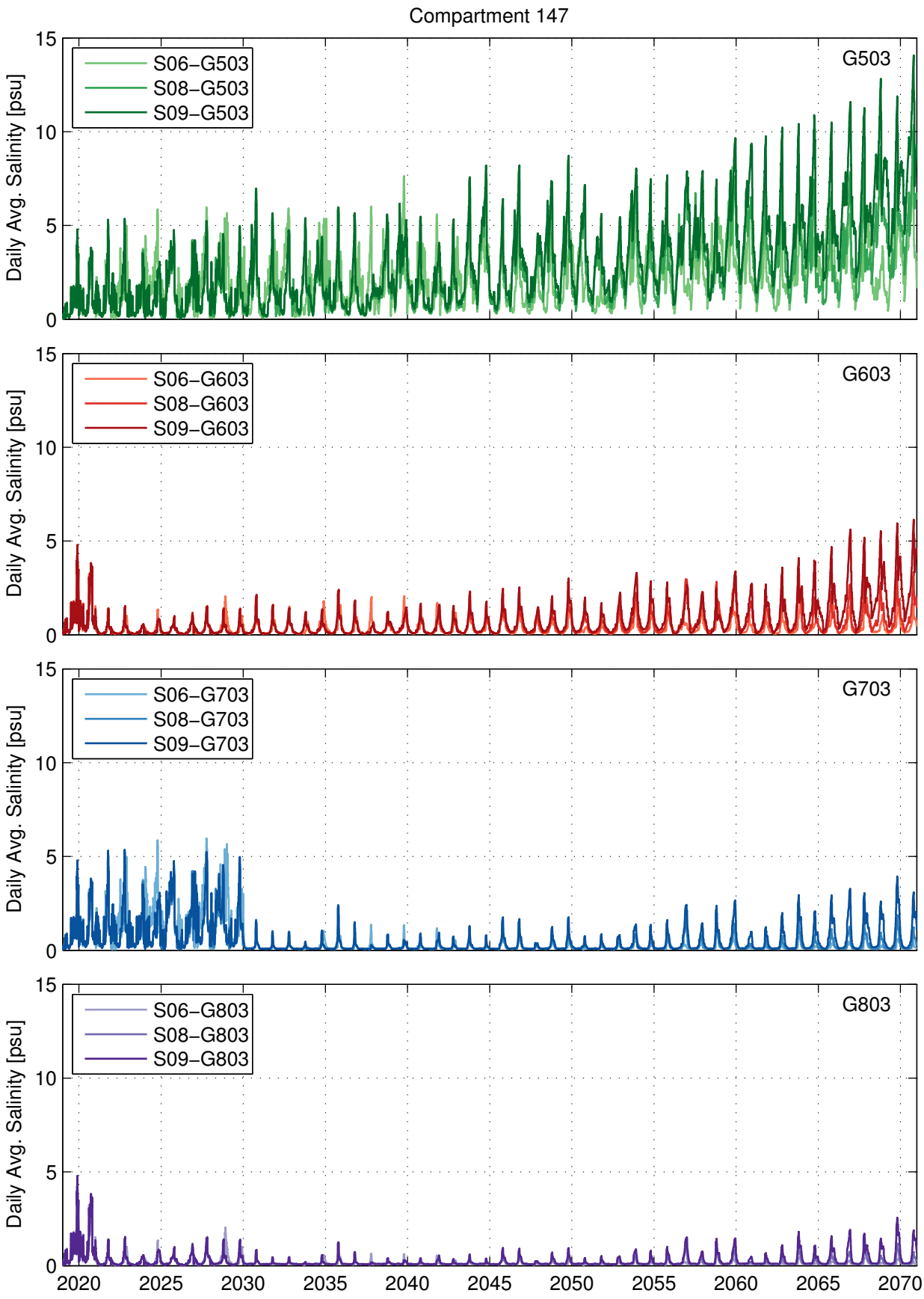

Compartment 1686
Daily Avg. Salinity [psu]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
0
5
10
15
20
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

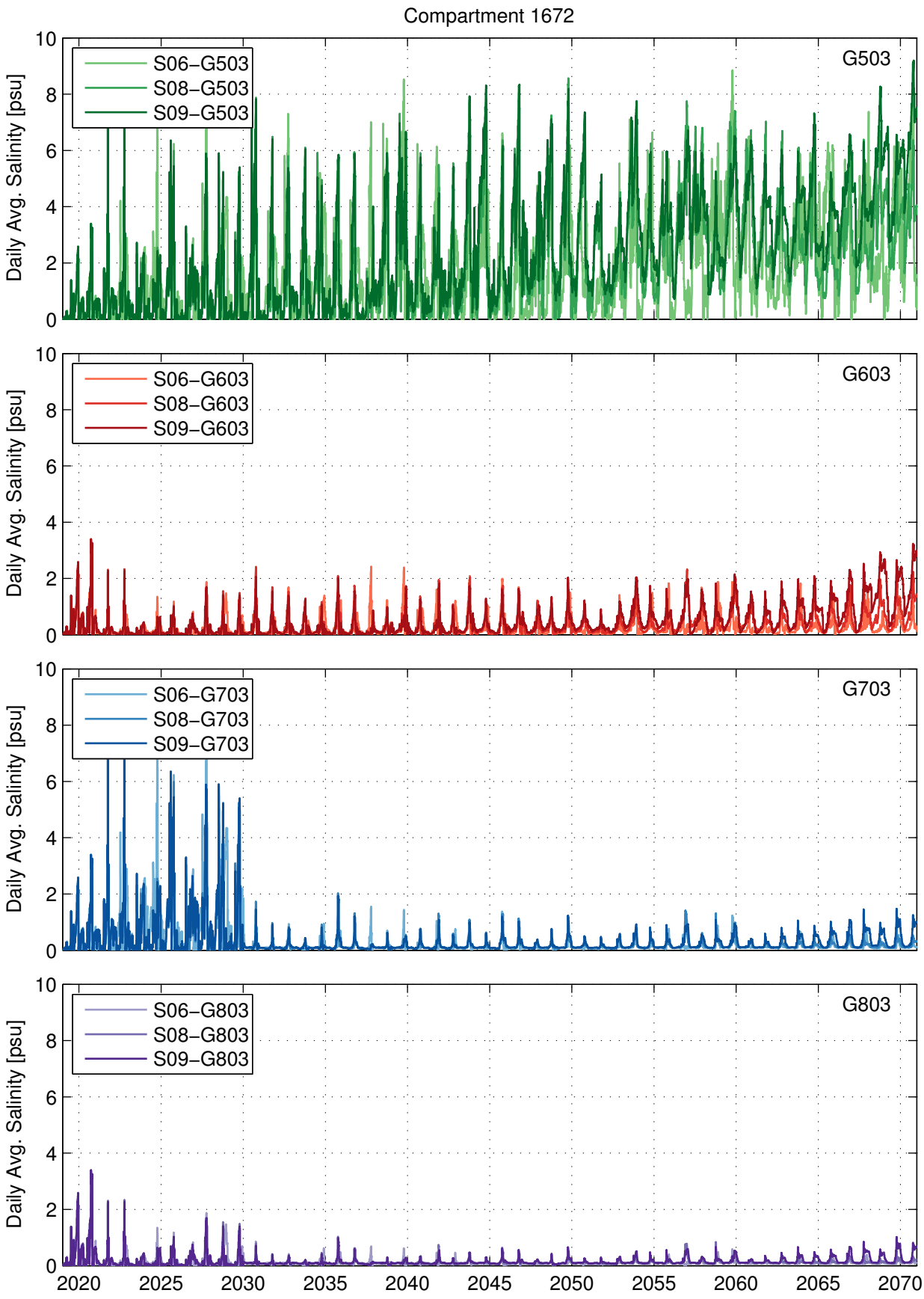

Compartment 224
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Daily Avg. Salinity [psu]
0
5
10
15
20
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

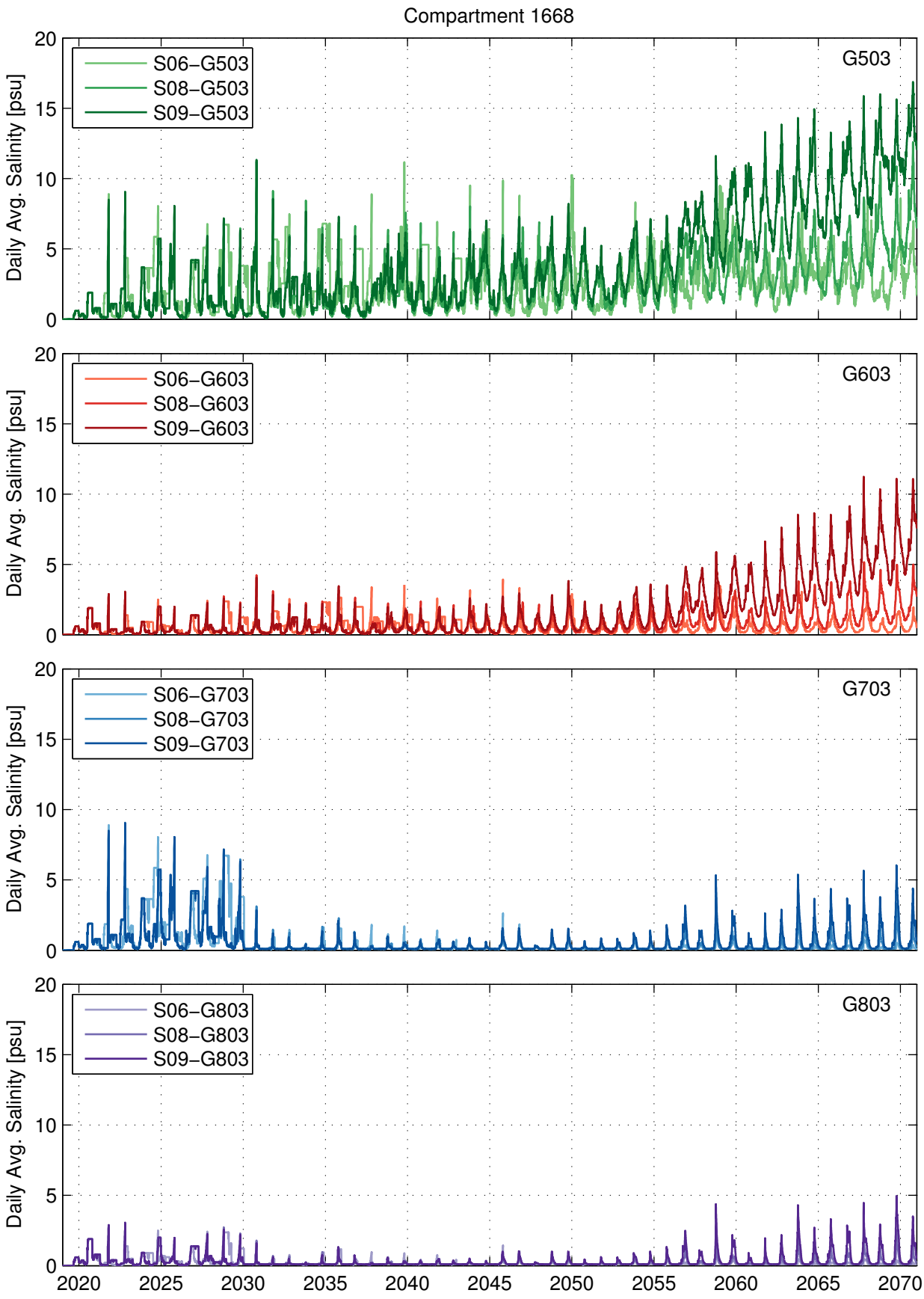

Compartment 1685
Daily Avg. Salinity [psu]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
0
5
10
15
20
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

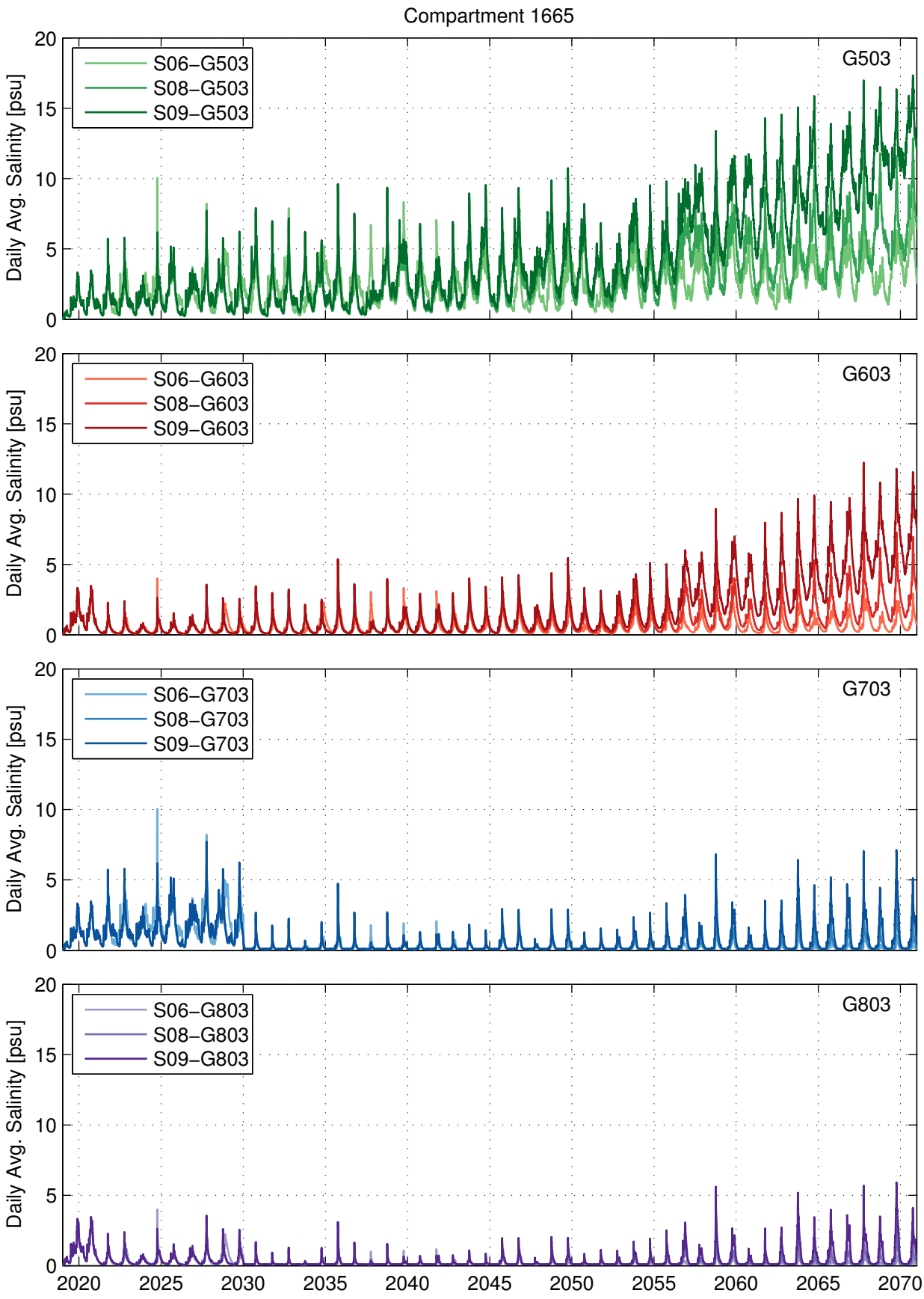

Compartment 1670
Daily Avg. Salinity [psu]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
0
5
10
15
20
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

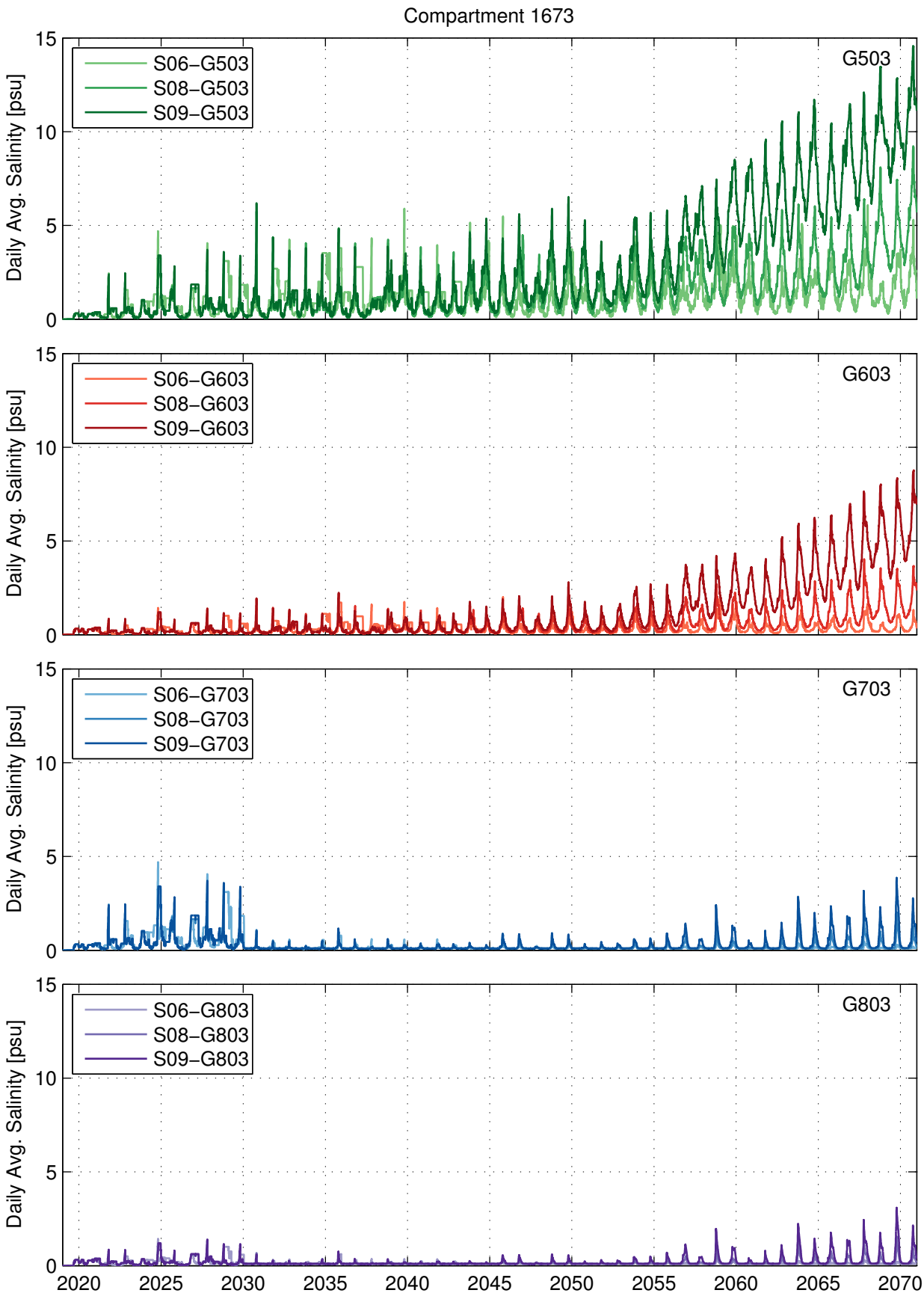

Compartment 1671
Daily Avg. Salinity [psu]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
0
5
10
15
20
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

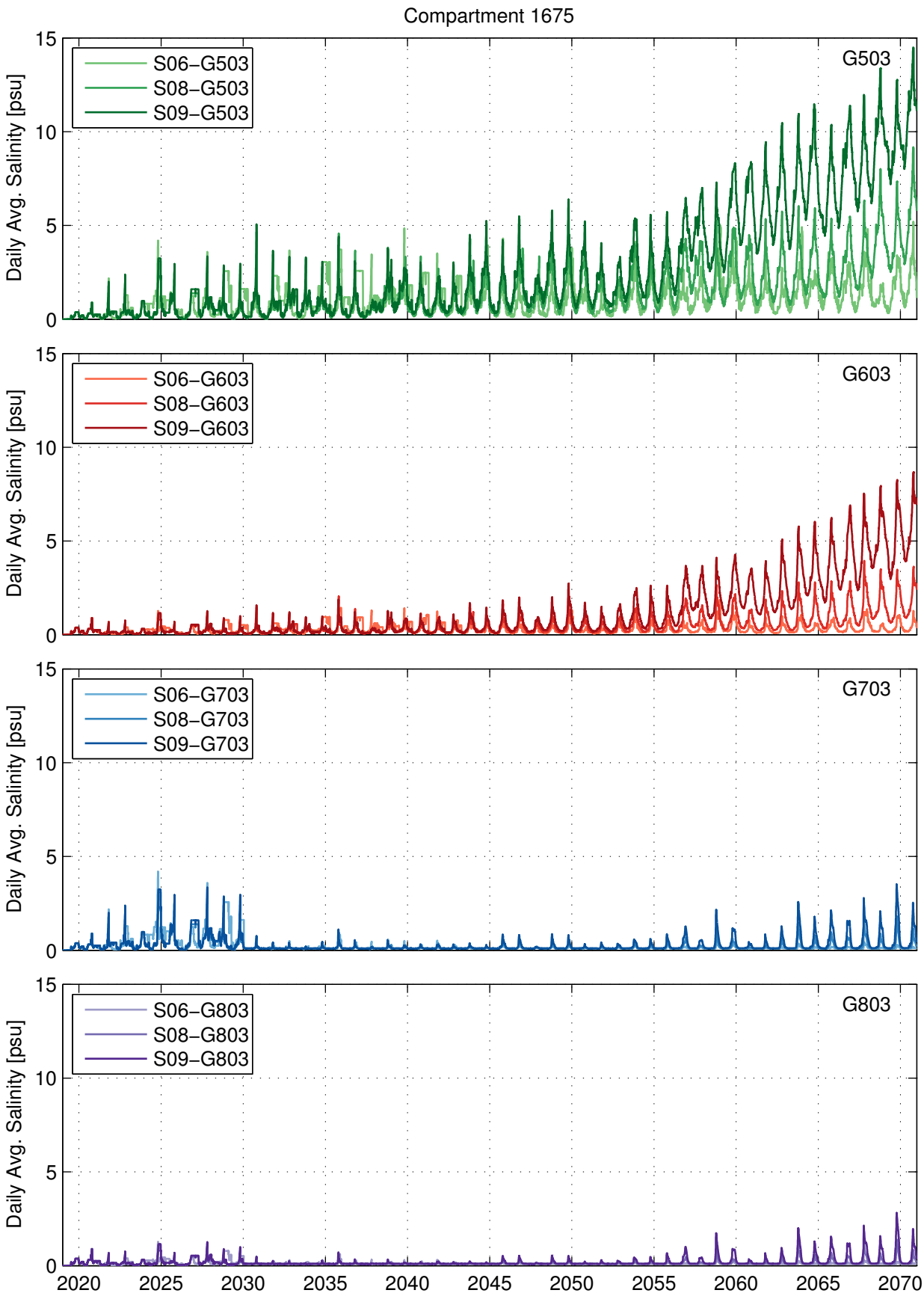

Compartment 147
Daily Avg. Salinity [psu]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
0
5
10
15
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

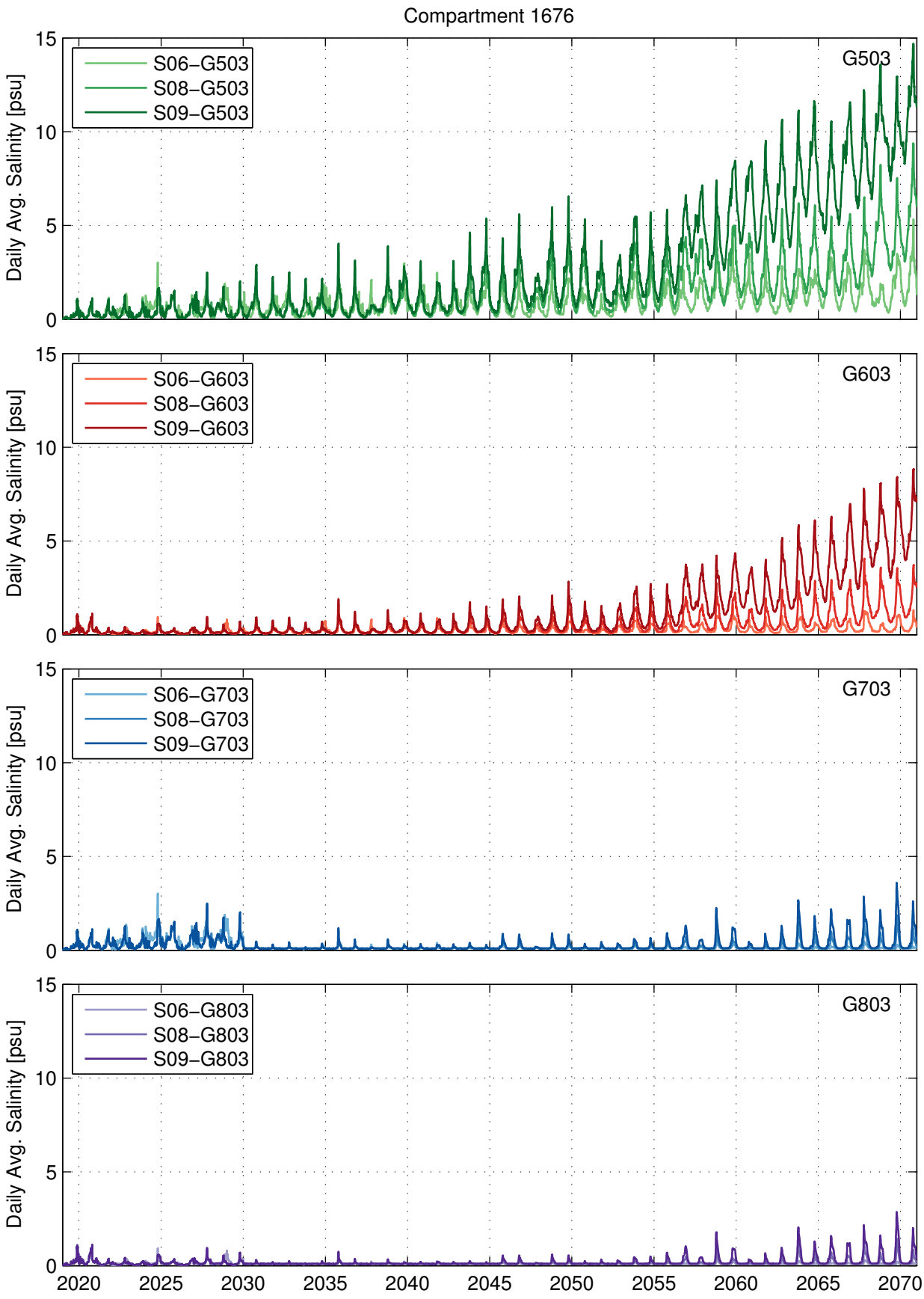

Compartment 1672
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Daily Avg. Salinity [psu]
0
2
4
6
8
10
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

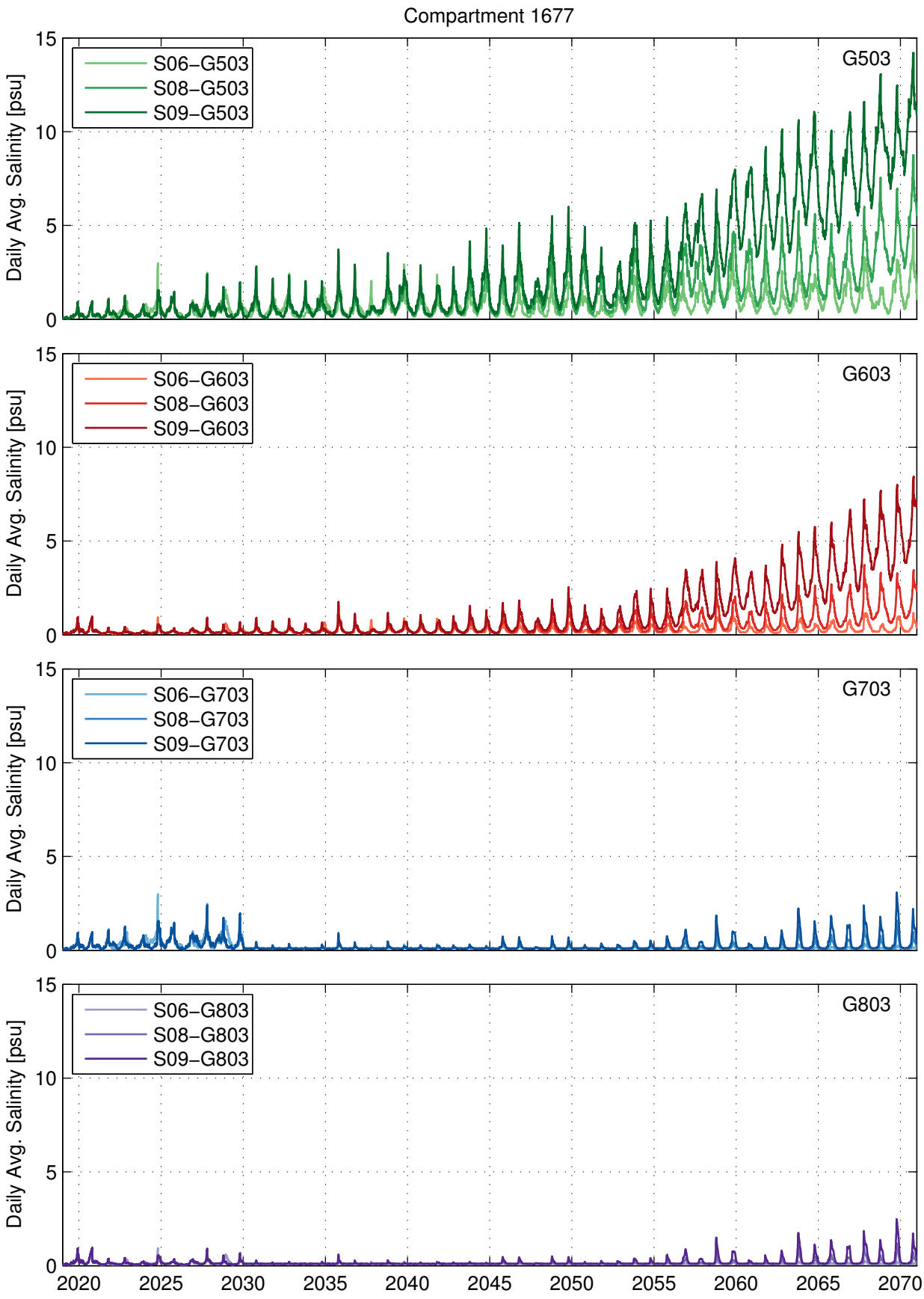

Compartment 1668
Daily Avg. Salinity [psu]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
0
5
10
15
20
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

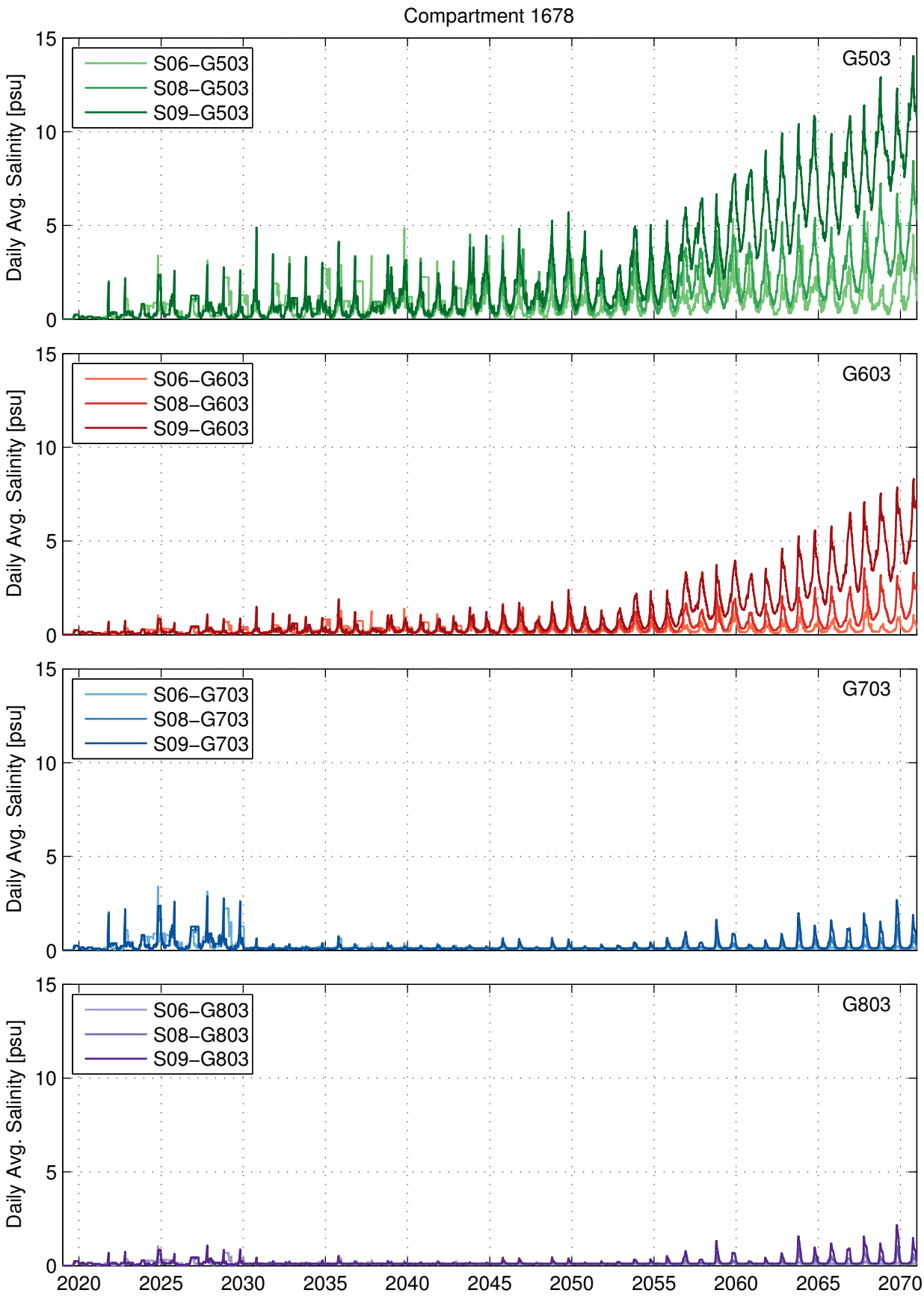

Compartment 1665
Daily Avg. Salinity [psu]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
0
5
10
15
20
2020
2025
2030
2035
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2045
2050
2055
2060
2065
2070

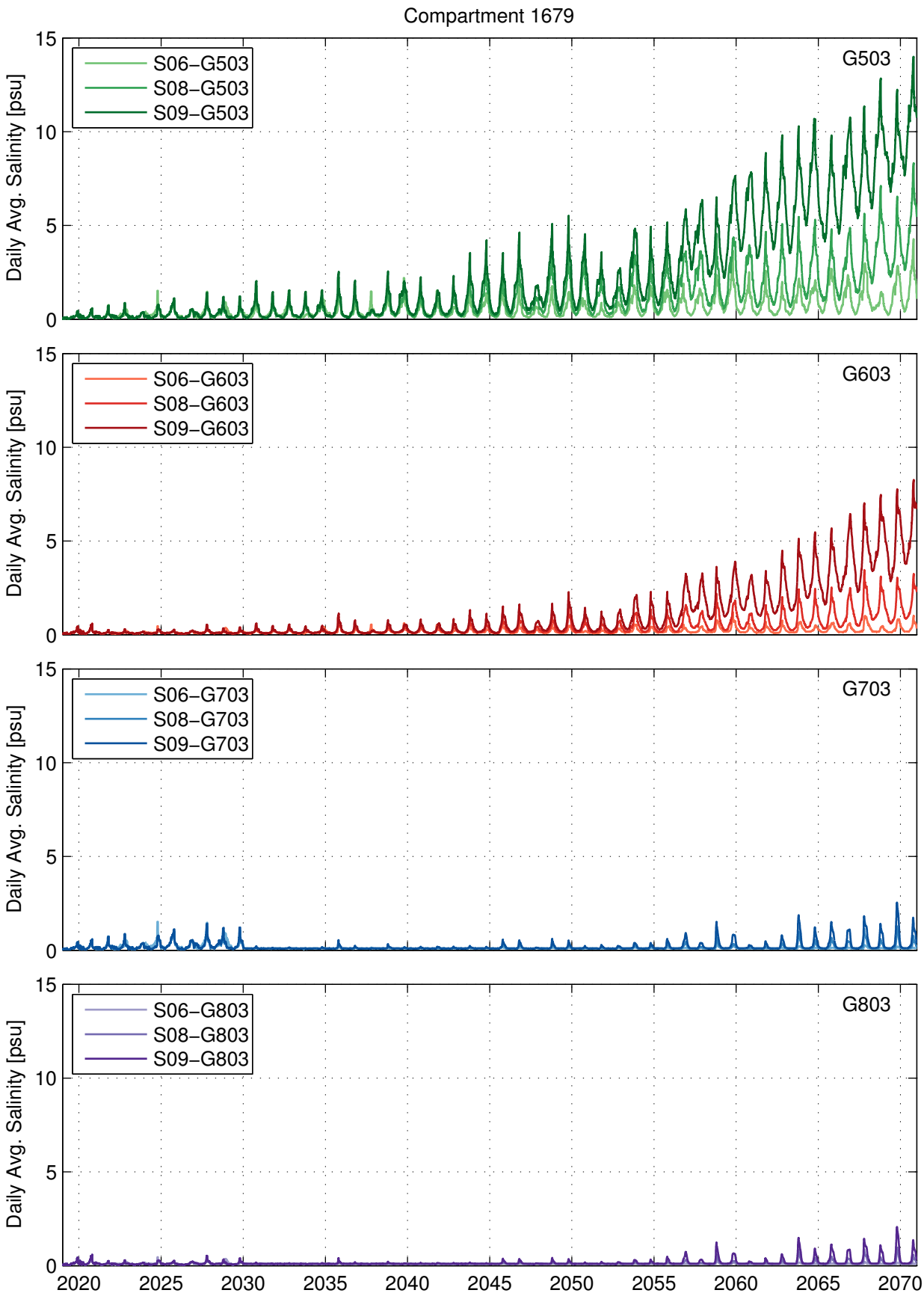

Compartment 1673
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Daily Avg. Salinity [psu]
0
5
10
15
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

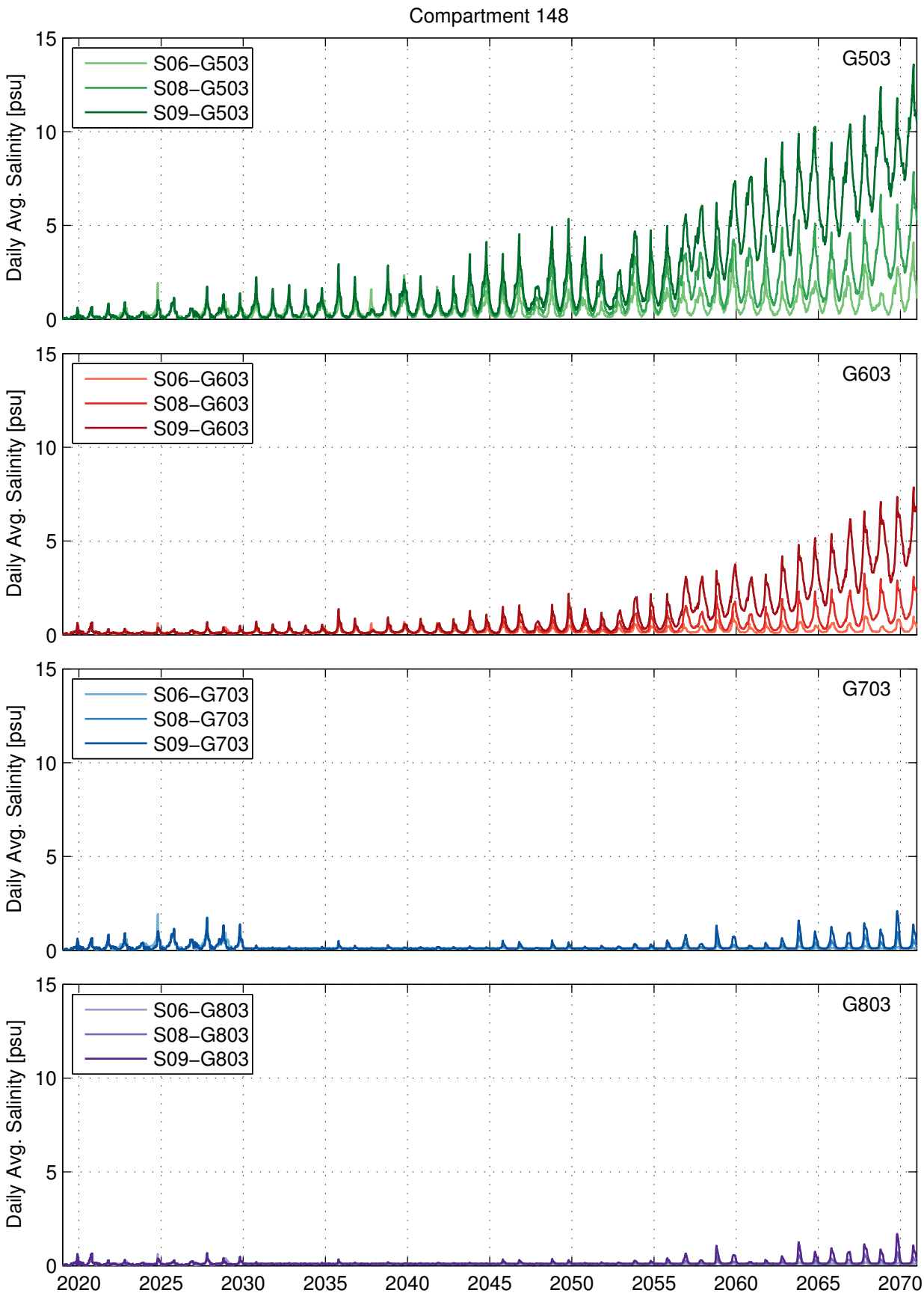

Compartment 1675
Daily Avg. Salinity [psu]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
0
5
10
15
2020
2025
2030
2035
2040
2045
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2055
2060
2065
2070

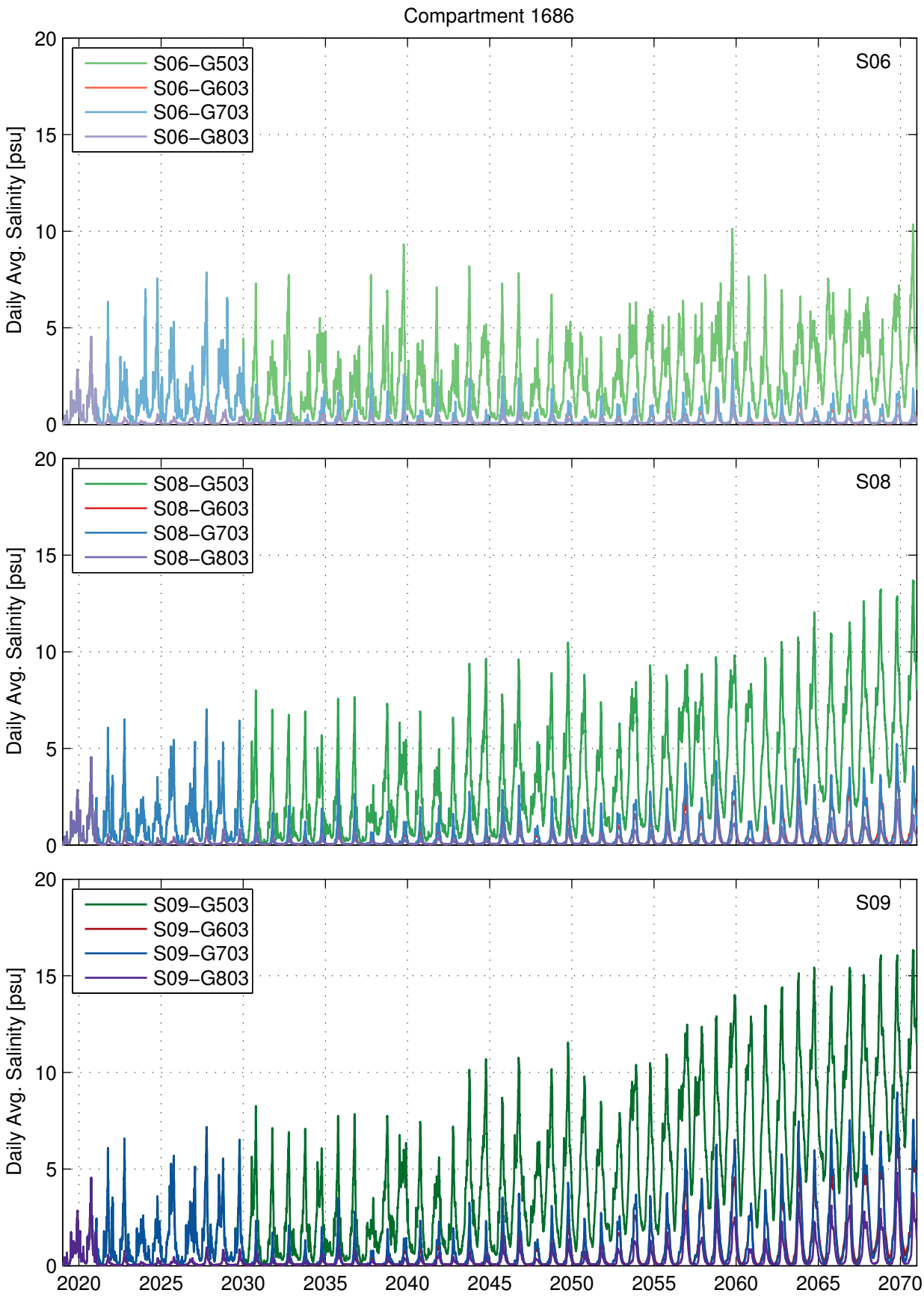

Compartment 1676
Daily Avg. Salinity [psu]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
0
5
10
15
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

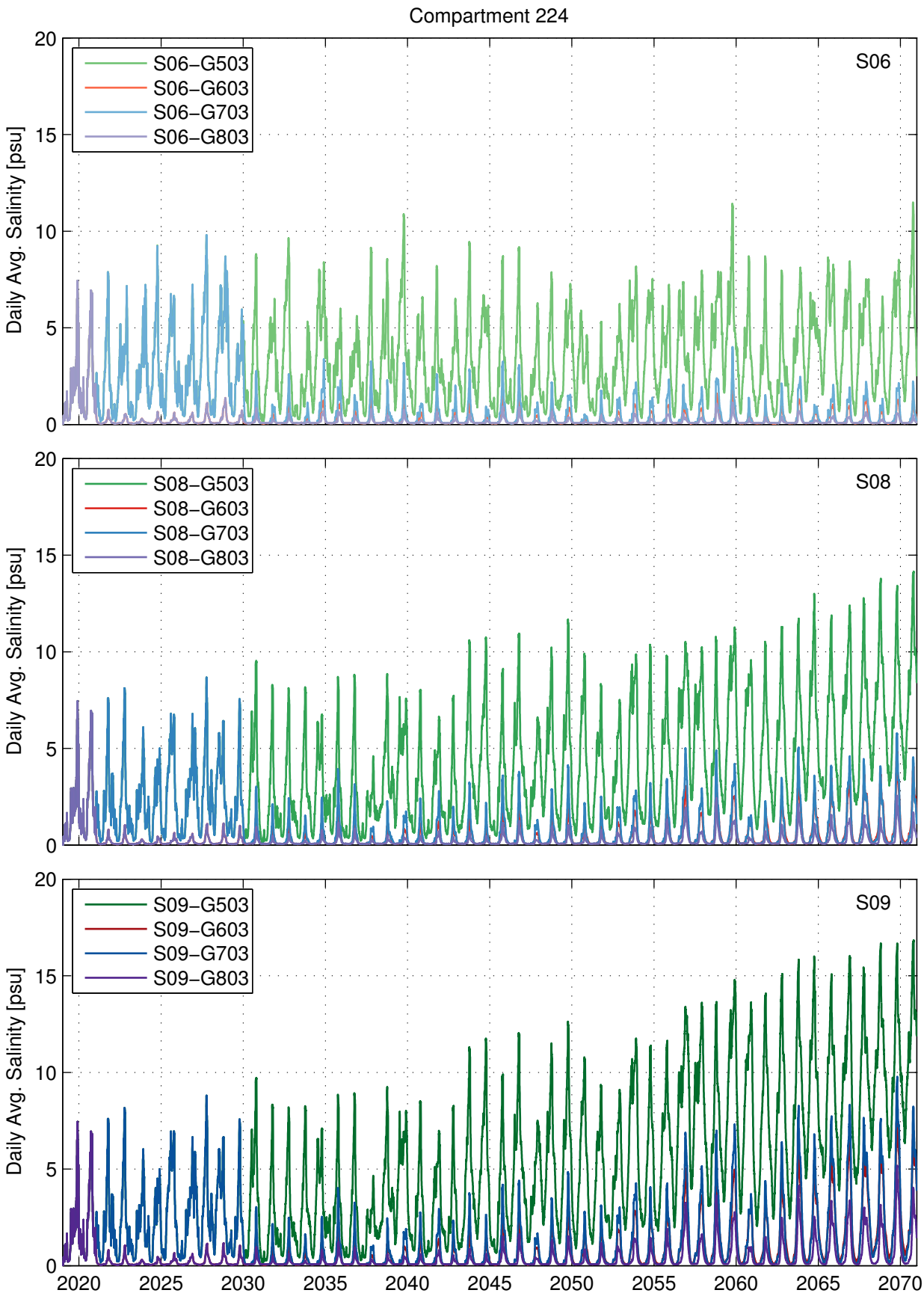

Compartment 1677
Daily Avg. Salinity [psu]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
0
5
10
15
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

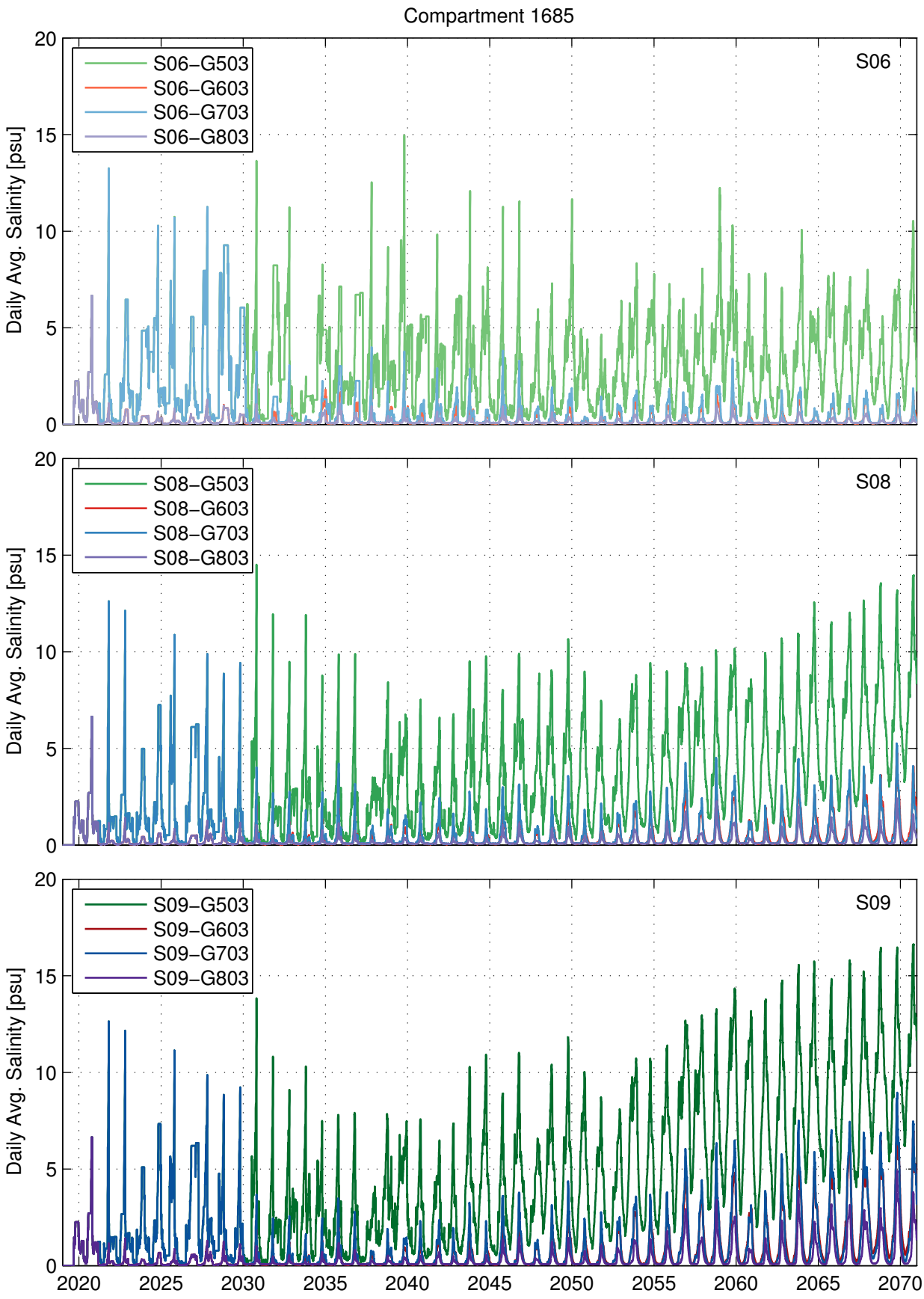

Compartment 1678
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Daily Avg. Salinity [psu]
0
5
10
15
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

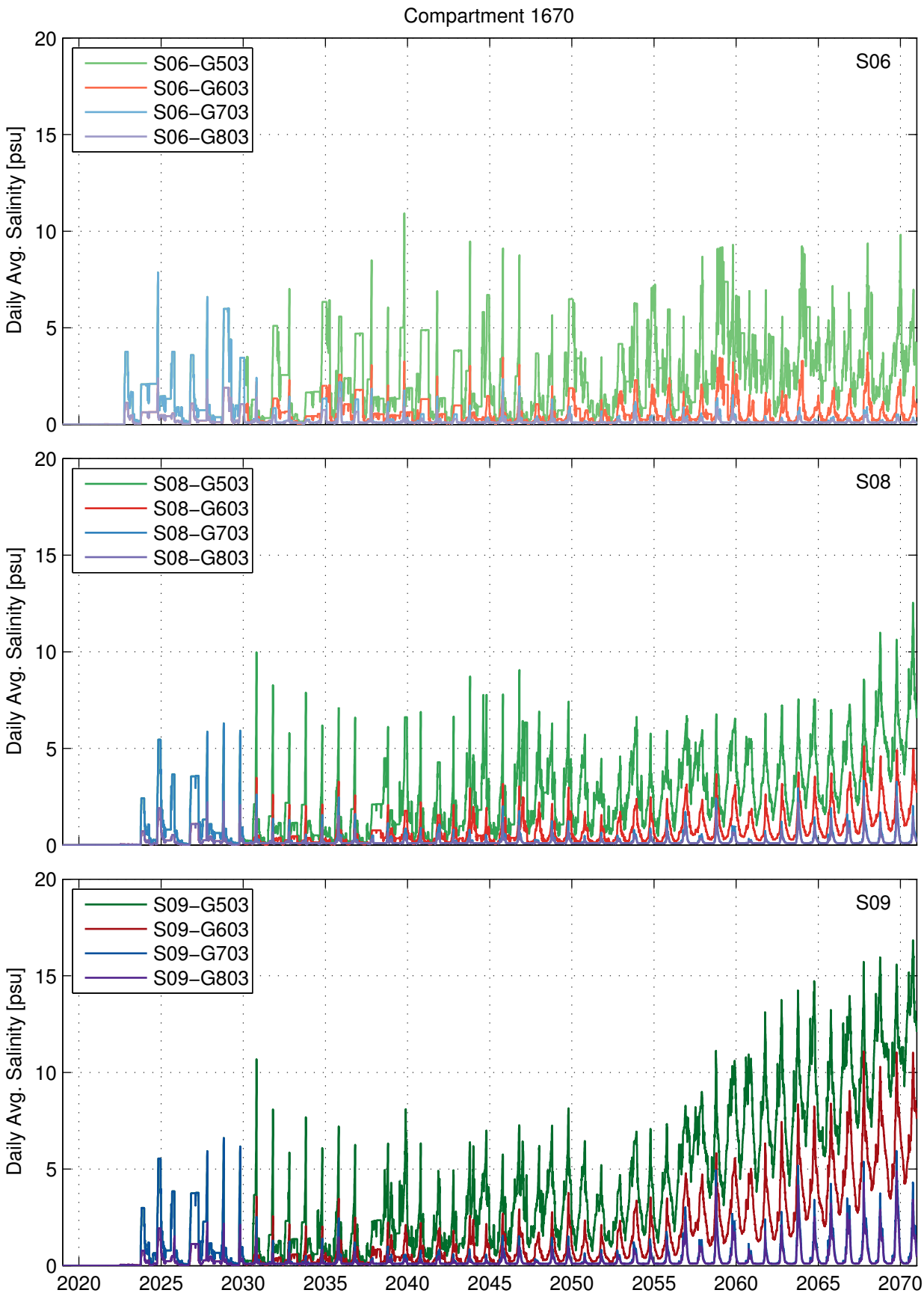

Compartment 1679
Daily Avg. Salinity [psu]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
0
5
10
15
2020
2025
2030
2035
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2045
2050
2055
2060
2065
2070

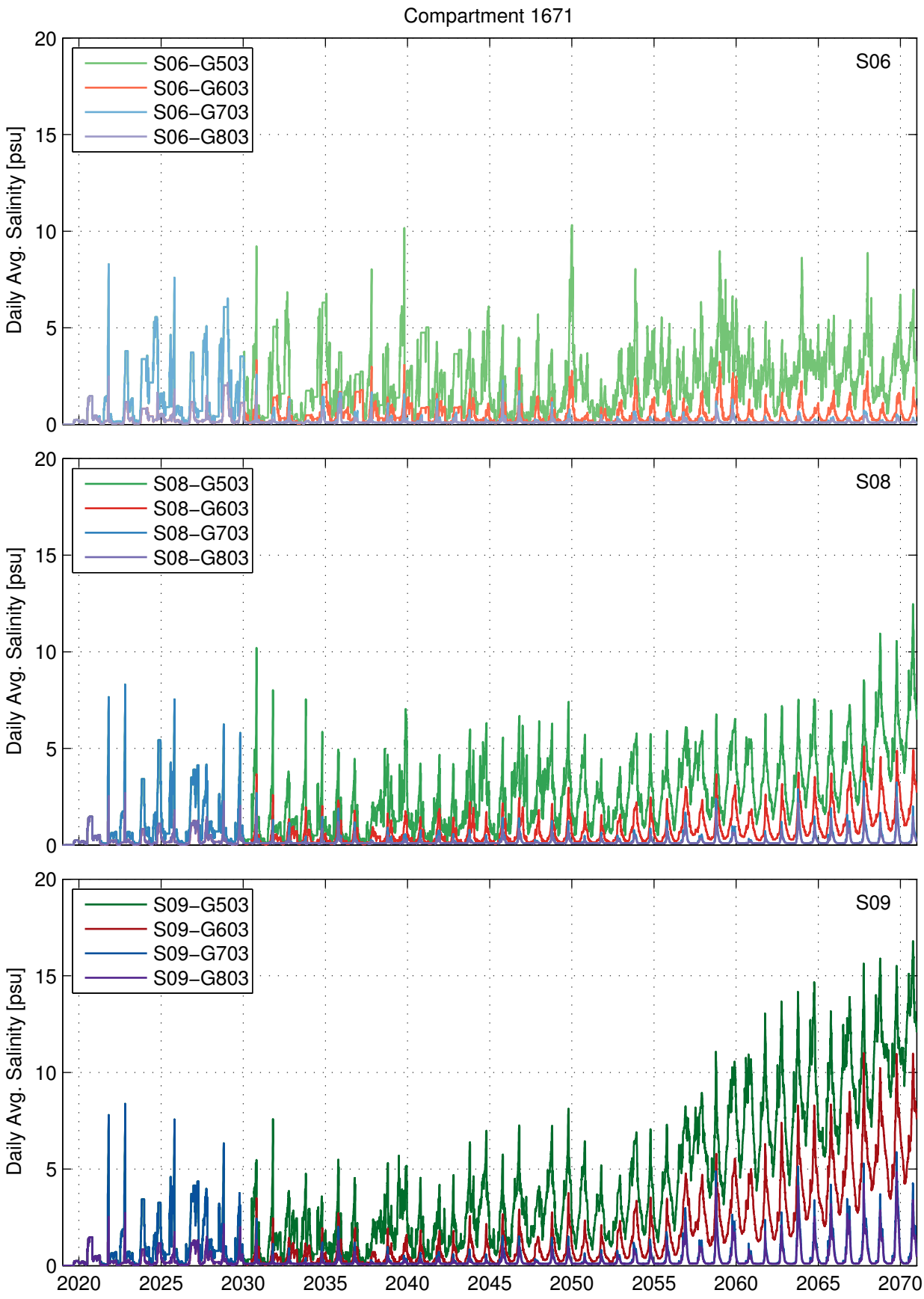

Compartment 148
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Daily Avg. Salinity [psu]
0
5
10
15
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

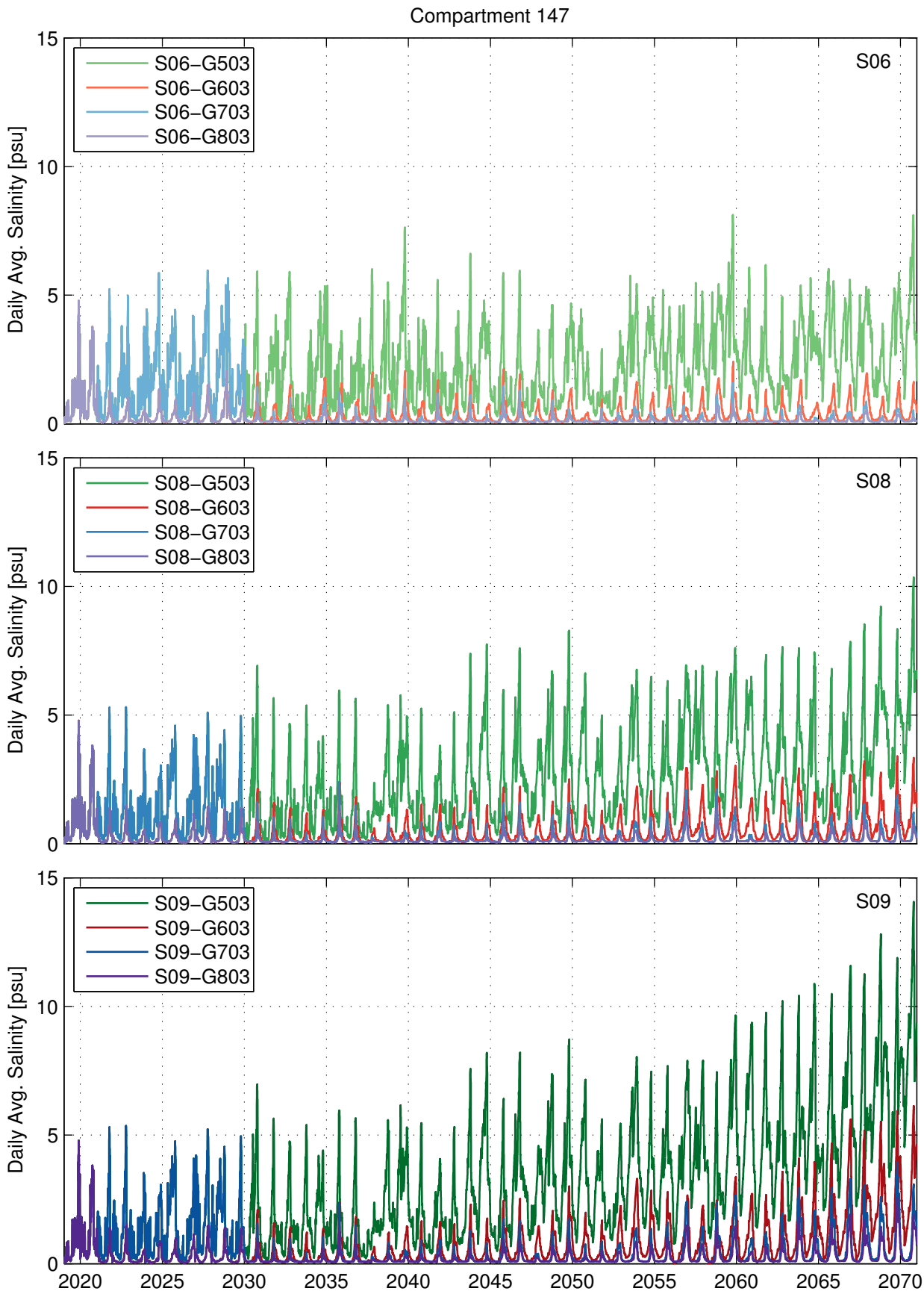

Compartment 1686
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Daily Avg. Salinity [psu]
0
5
10
15
20
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

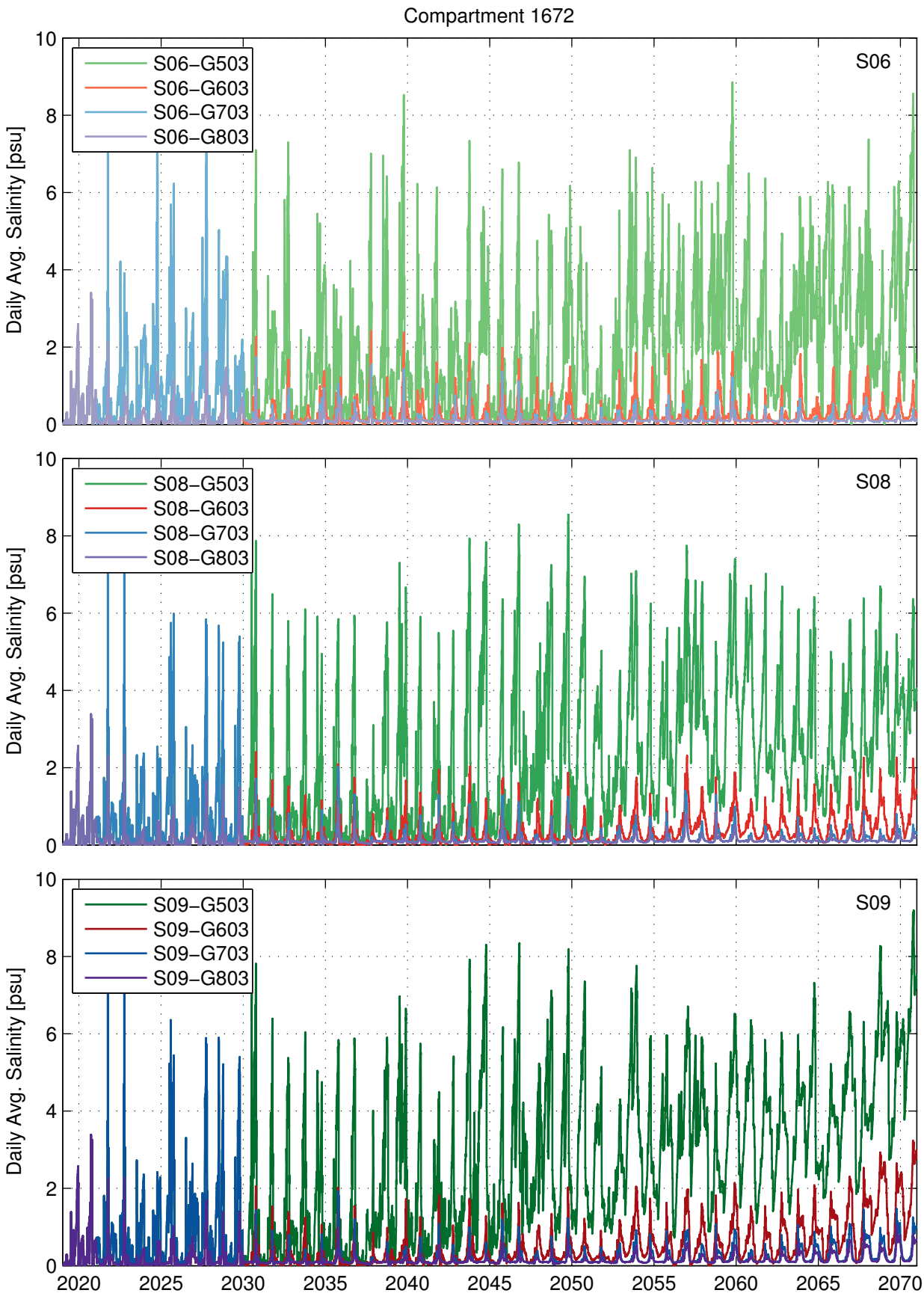

Compartment 224
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Daily Avg. Salinity [psu]
0
5
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2020
2025
2030
2035
2040
2045
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2060
2065
2070

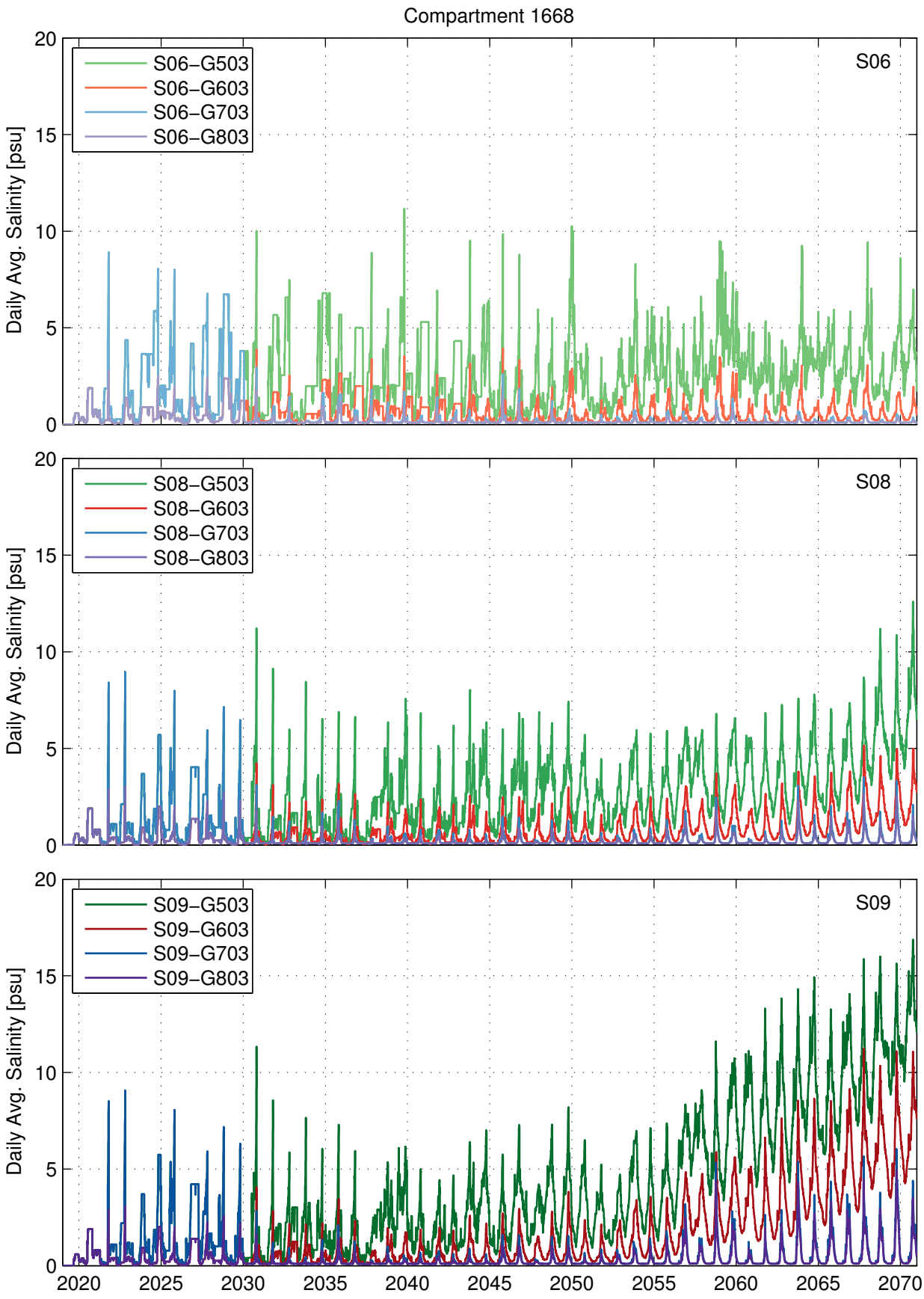

Compartment 1685
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Daily Avg. Salinity [psu]
0
5
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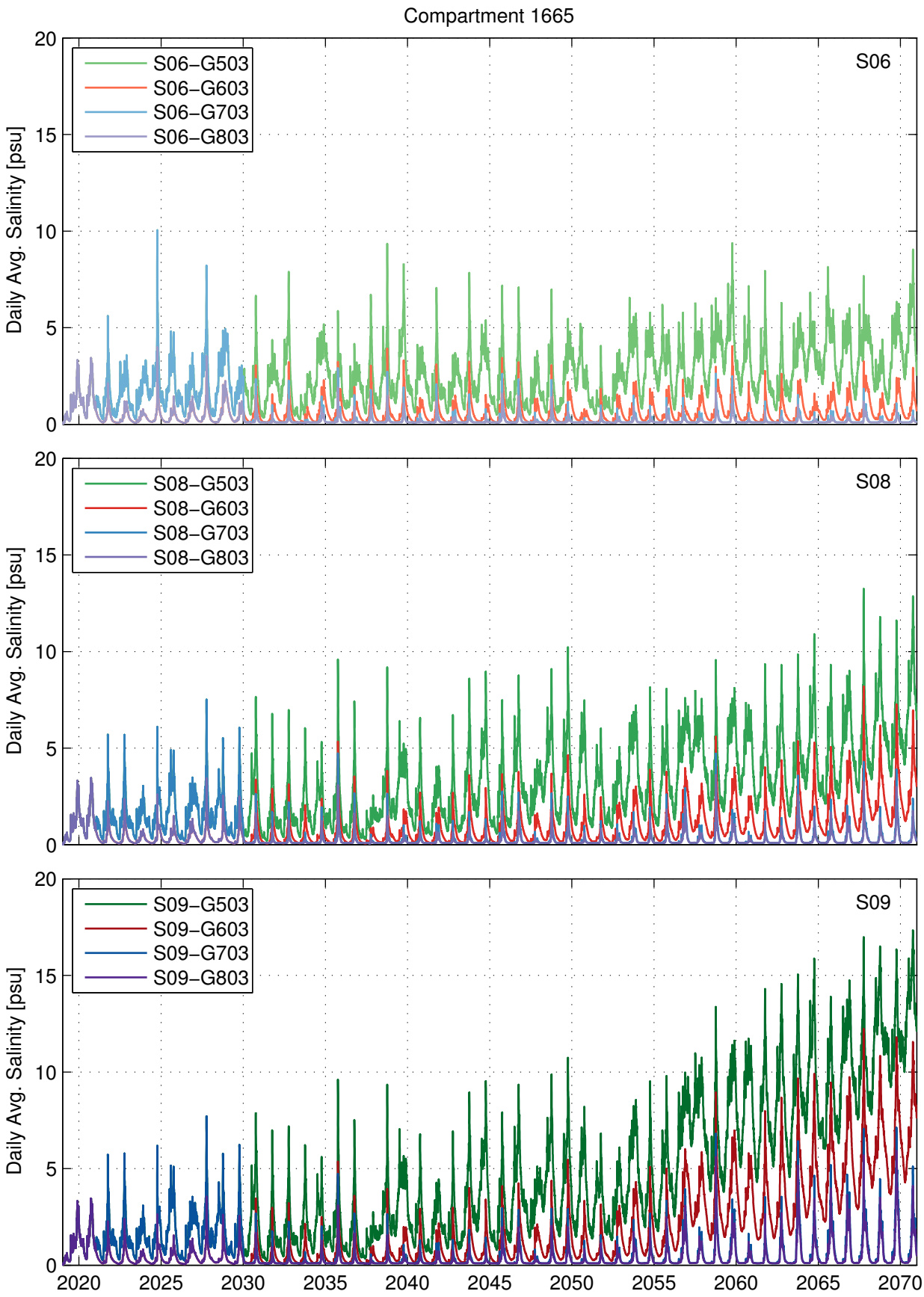

Compartment 1670
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Daily Avg. Salinity [psu]
0
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2020
2025
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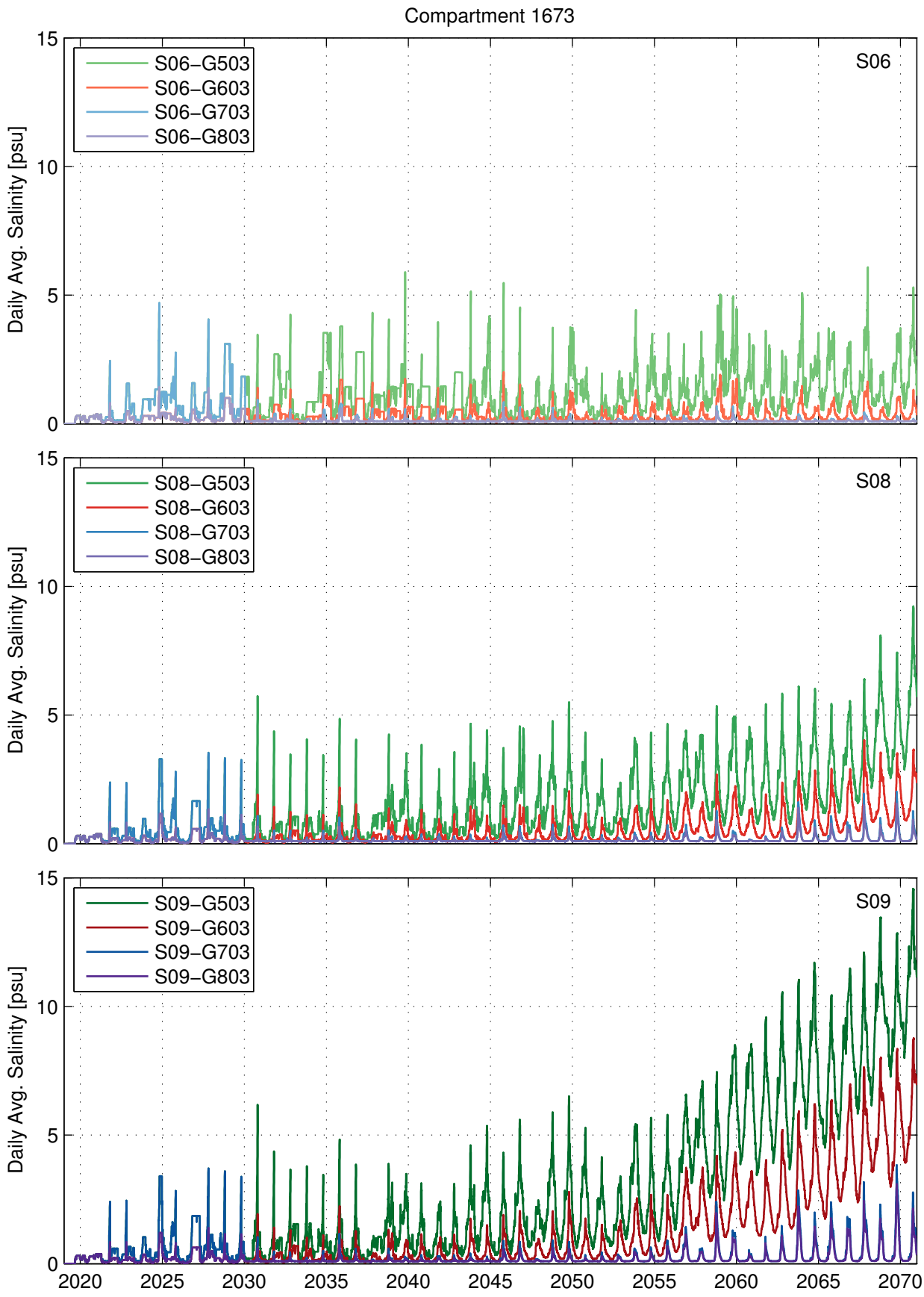

Compartment 1671
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S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Daily Avg. Salinity [psu]
0
5
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2020
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2070

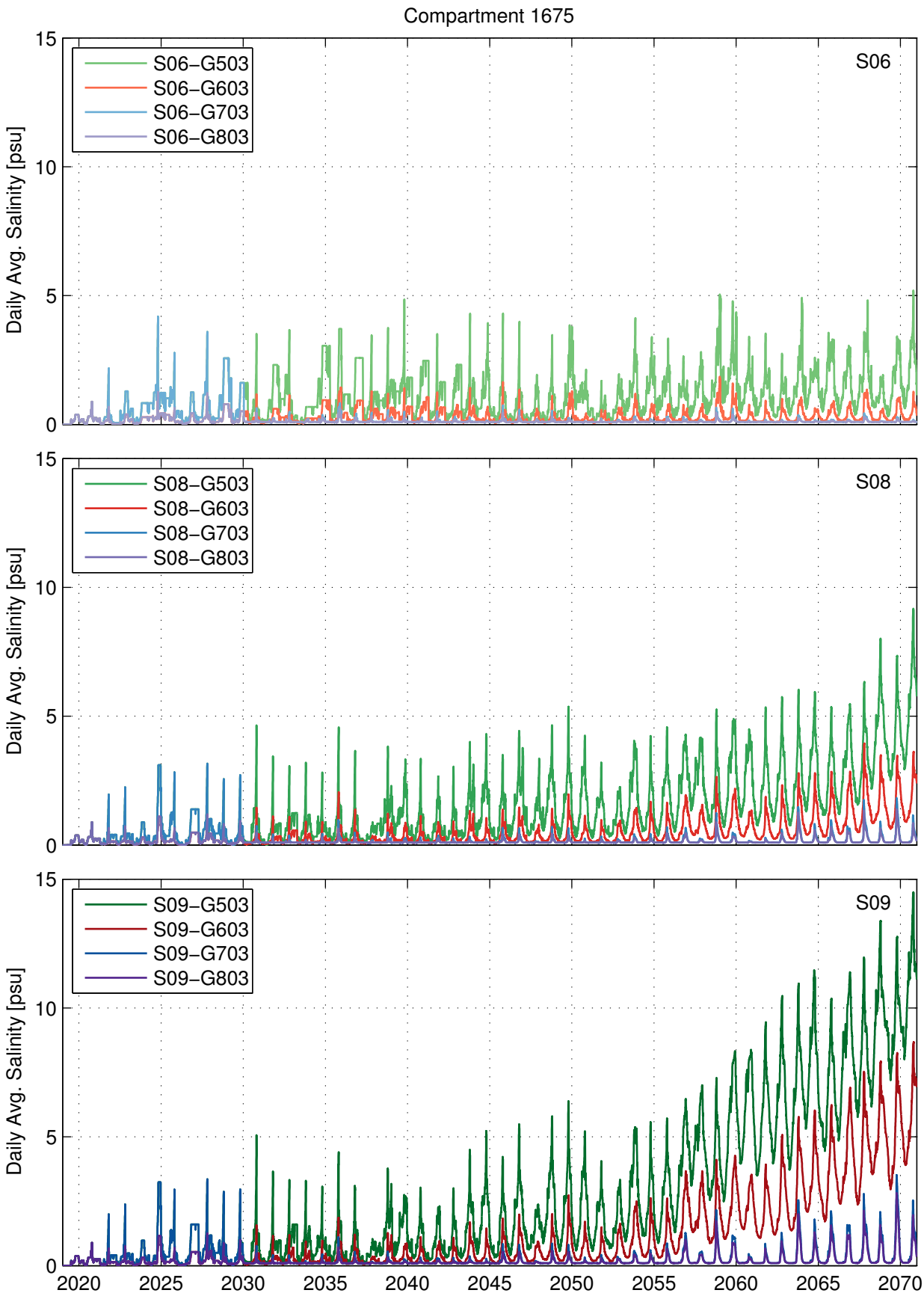

Compartment 147
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Daily Avg. Salinity [psu]
0
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10
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2020
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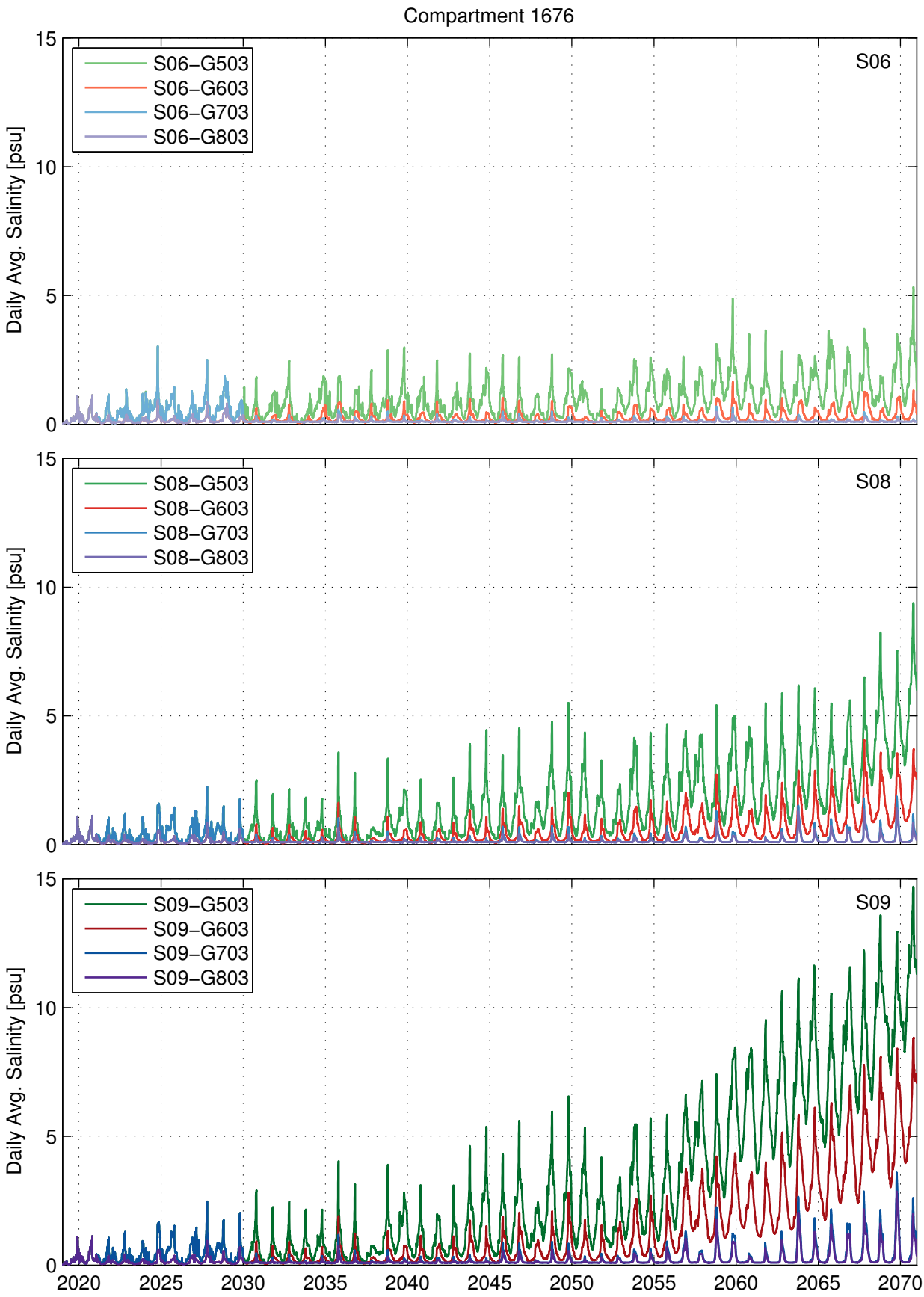

Compartment 1672
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Daily Avg. Salinity [psu]
0
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4
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8
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2020
2025
2030
2035
2040
2045
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2055
2060
2065
2070

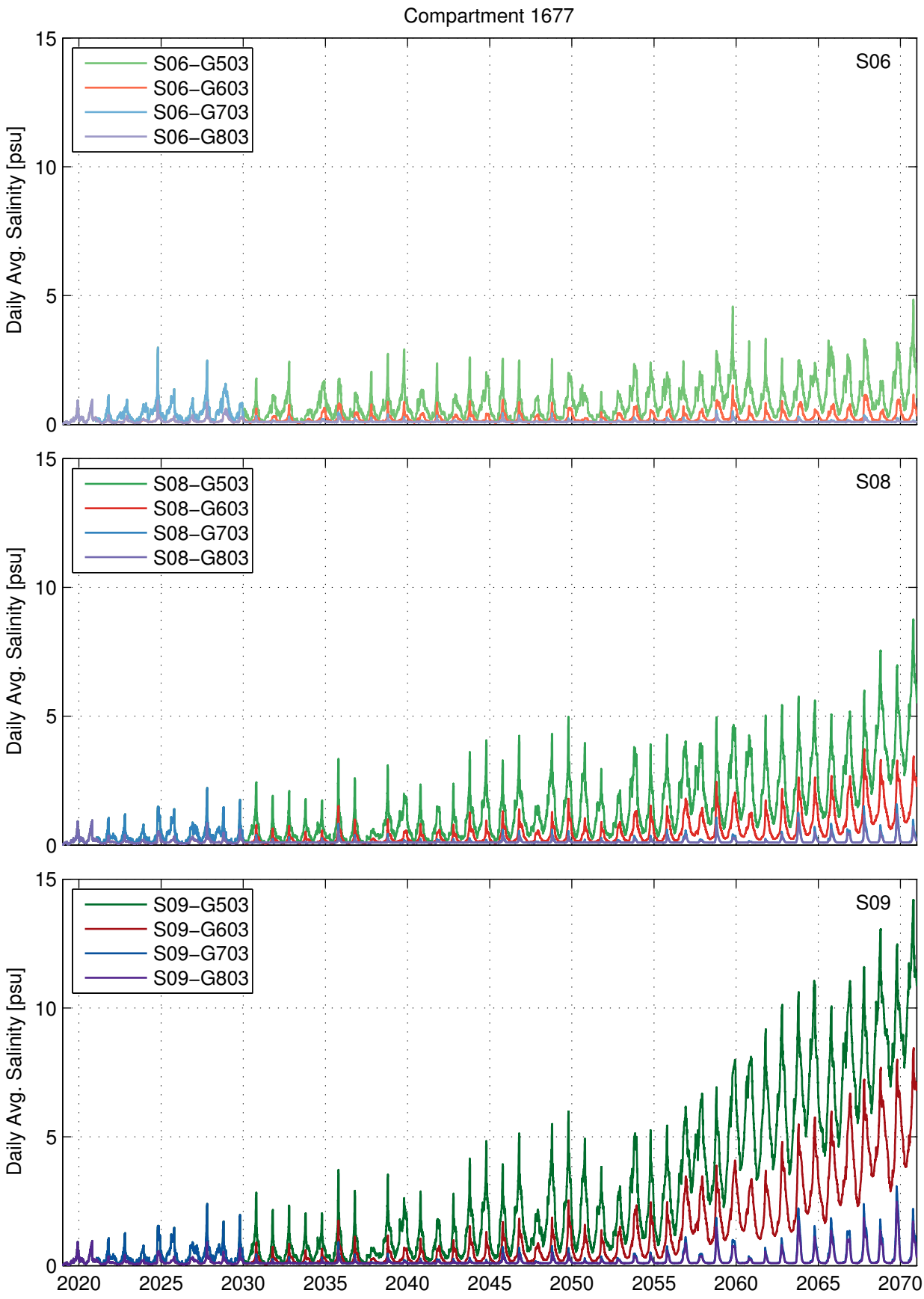

Compartment 1668
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Daily Avg. Salinity [psu]
0
5
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2020
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2070

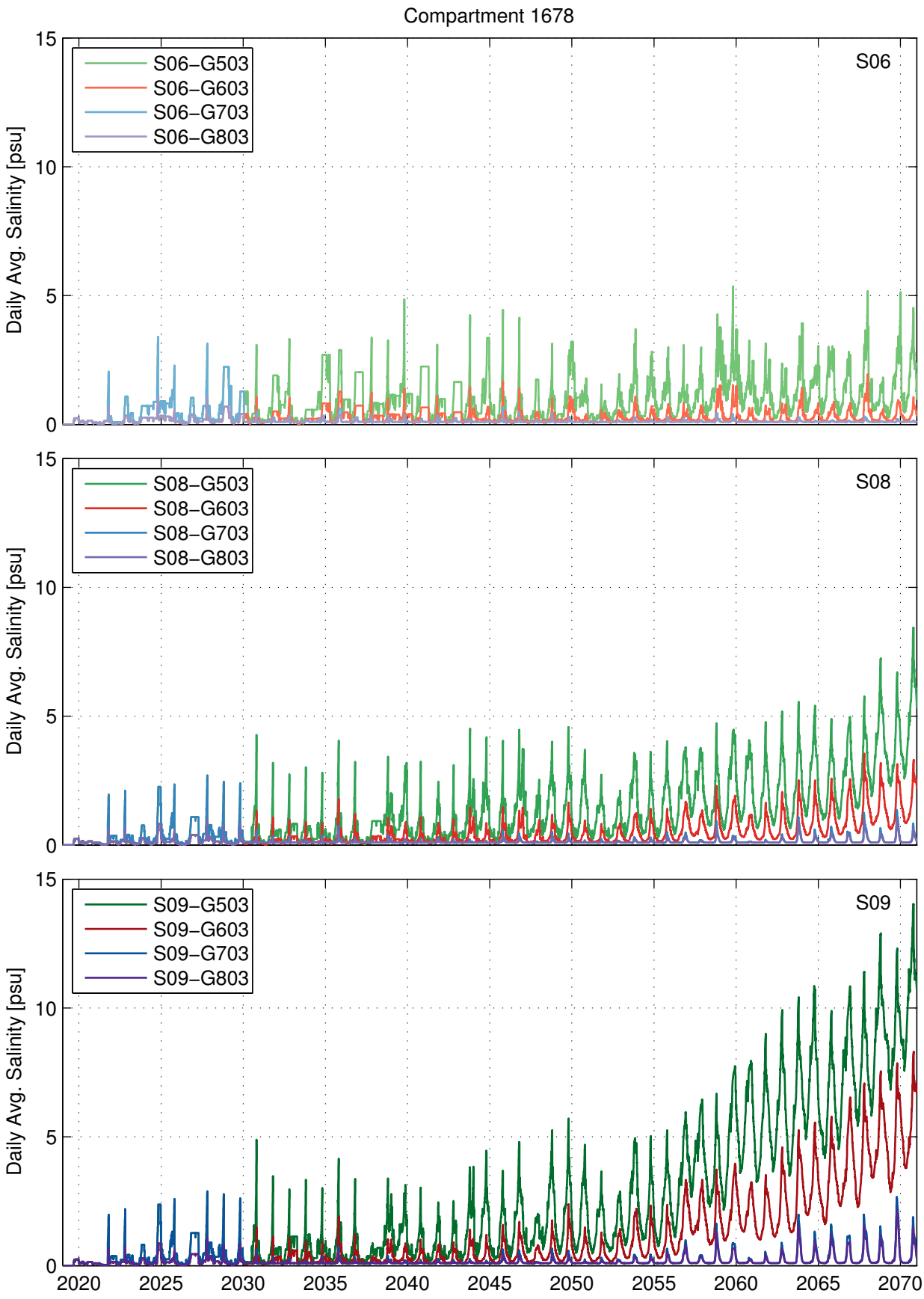

Compartment 1665
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Daily Avg. Salinity [psu]
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2070

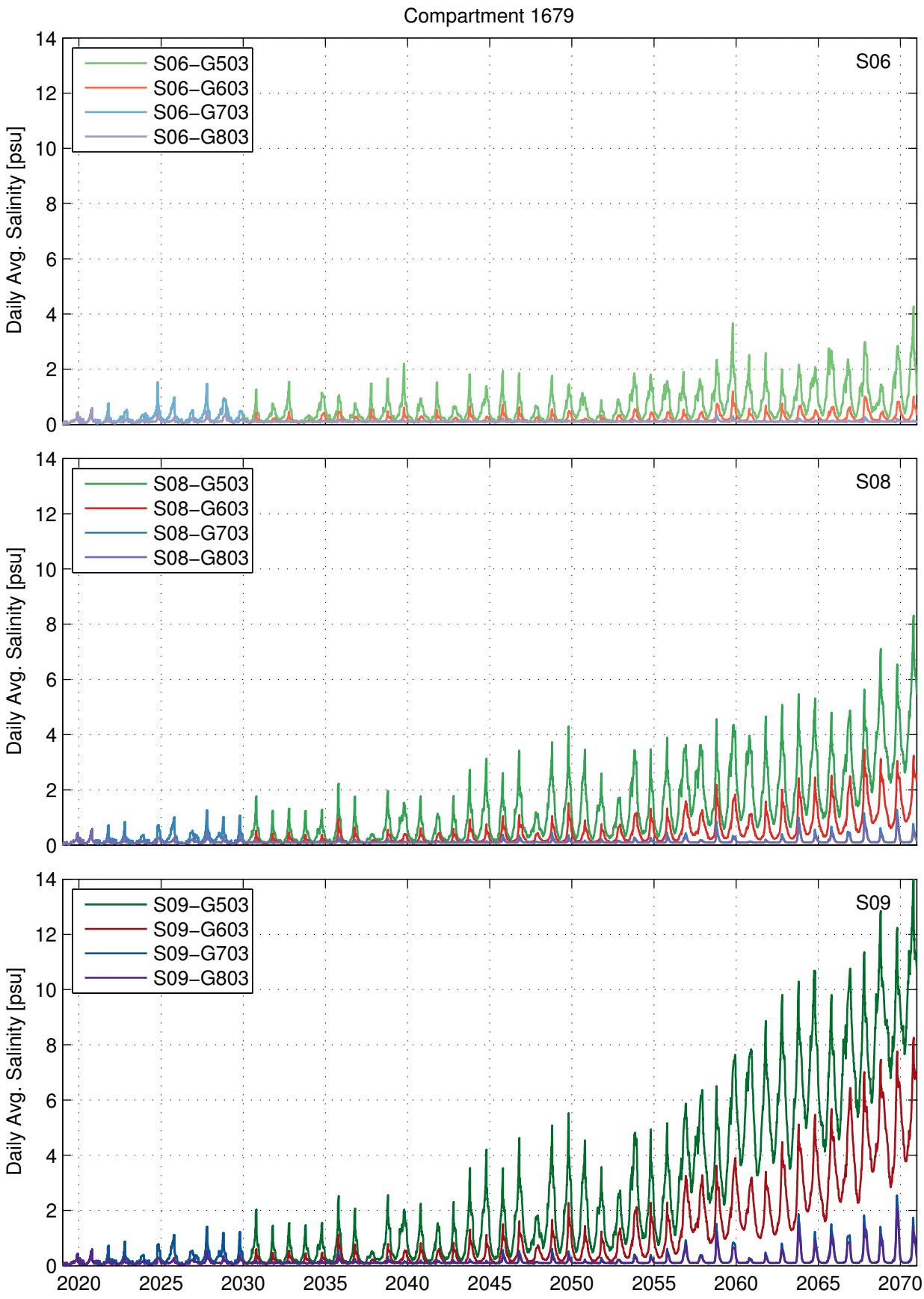

Compartment 1673
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Daily Avg. Salinity [psu]
0
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2070

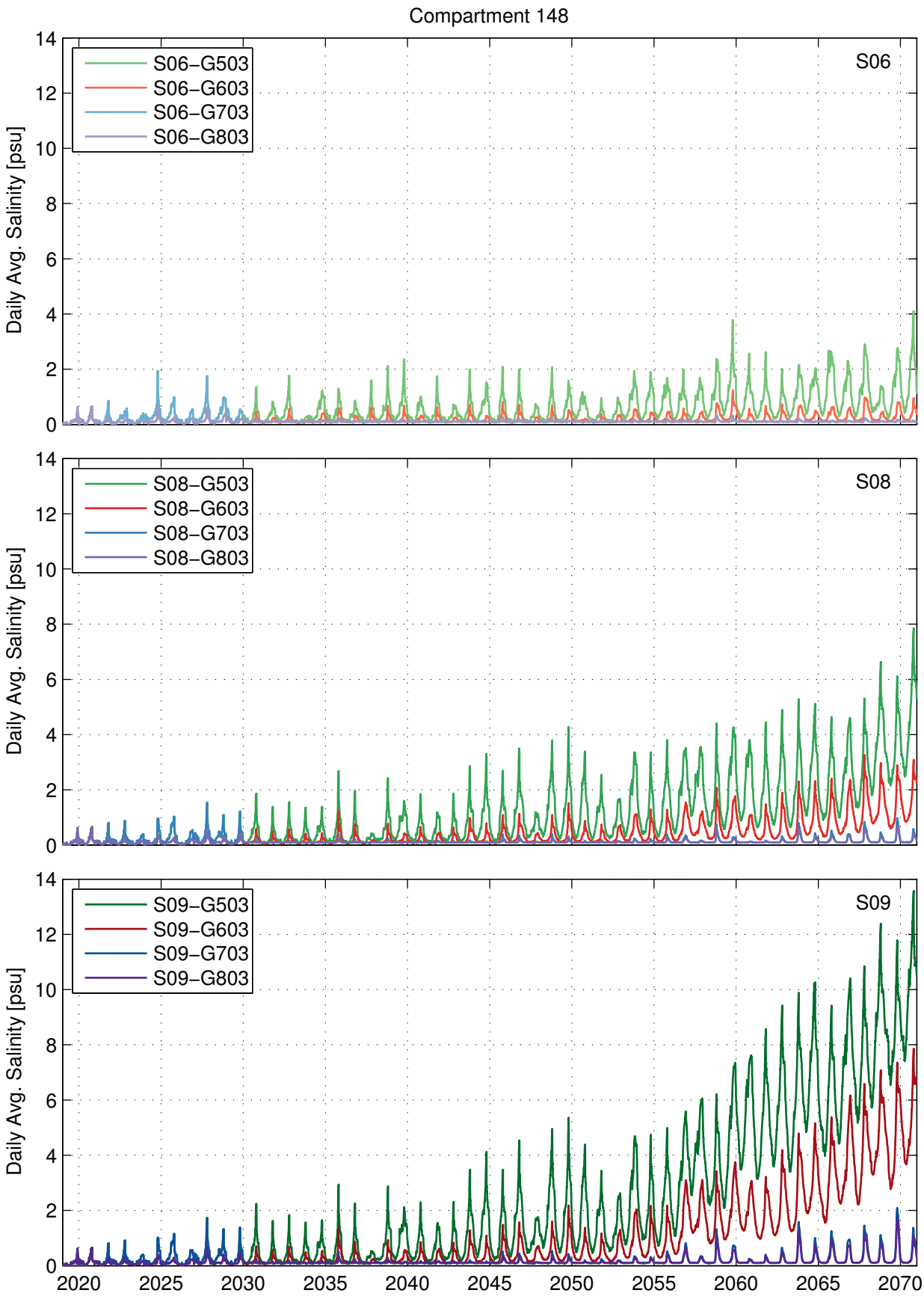

Compartment 1675
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Daily Avg. Salinity [psu]
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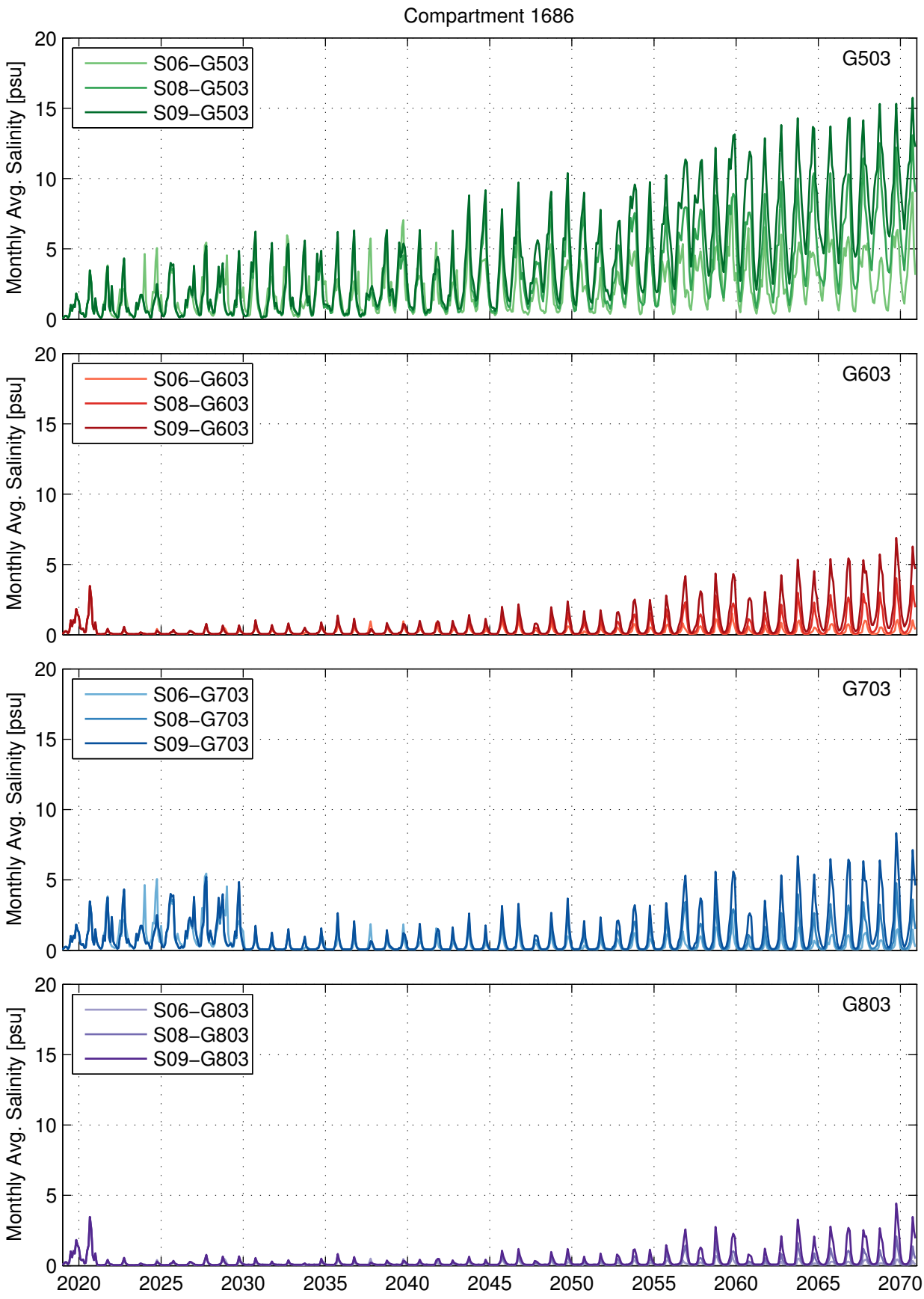

Compartment 1676
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Daily Avg. Salinity [psu]
0
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2020
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2070

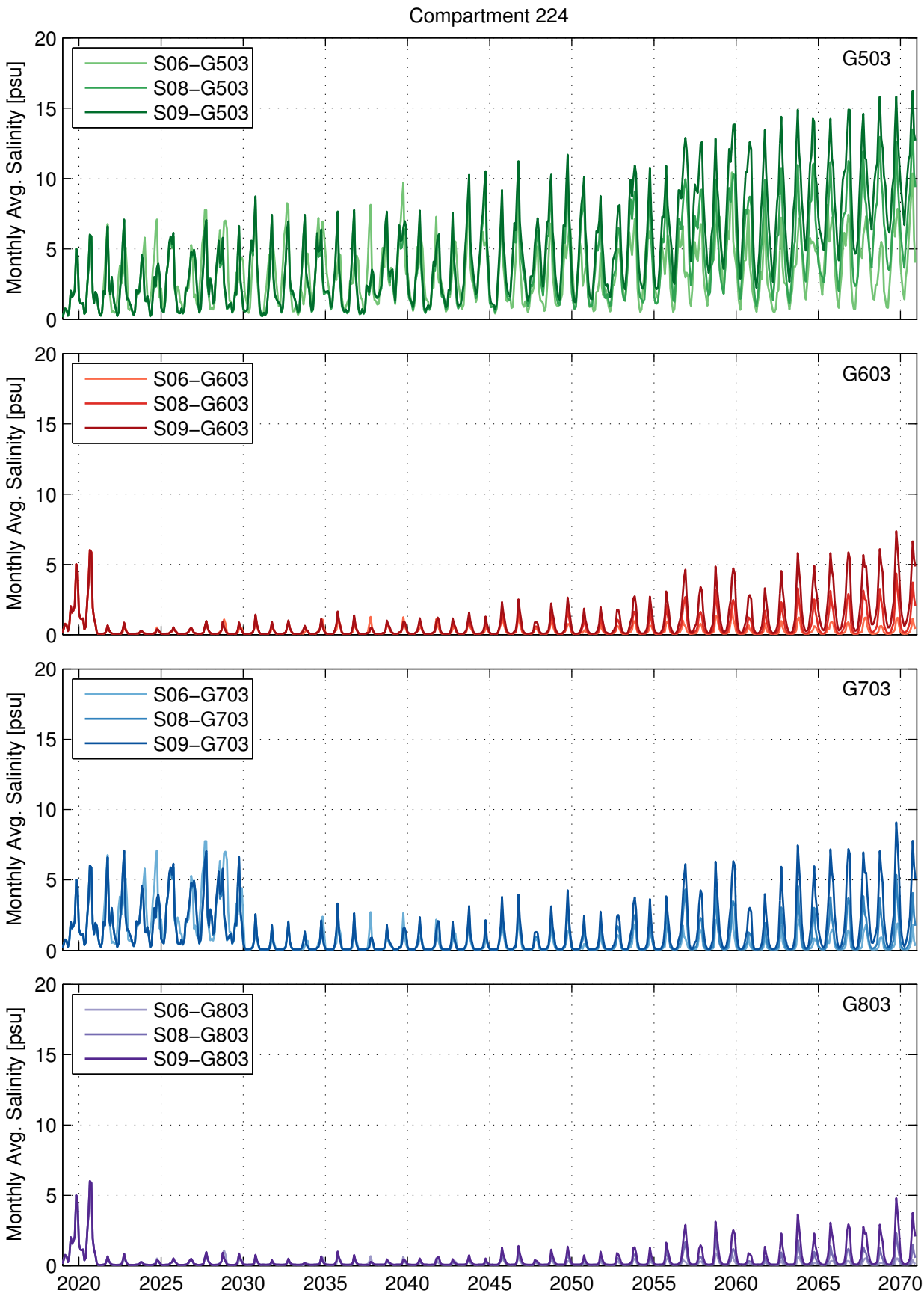

Compartment 1677
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Daily Avg. Salinity [psu]
0
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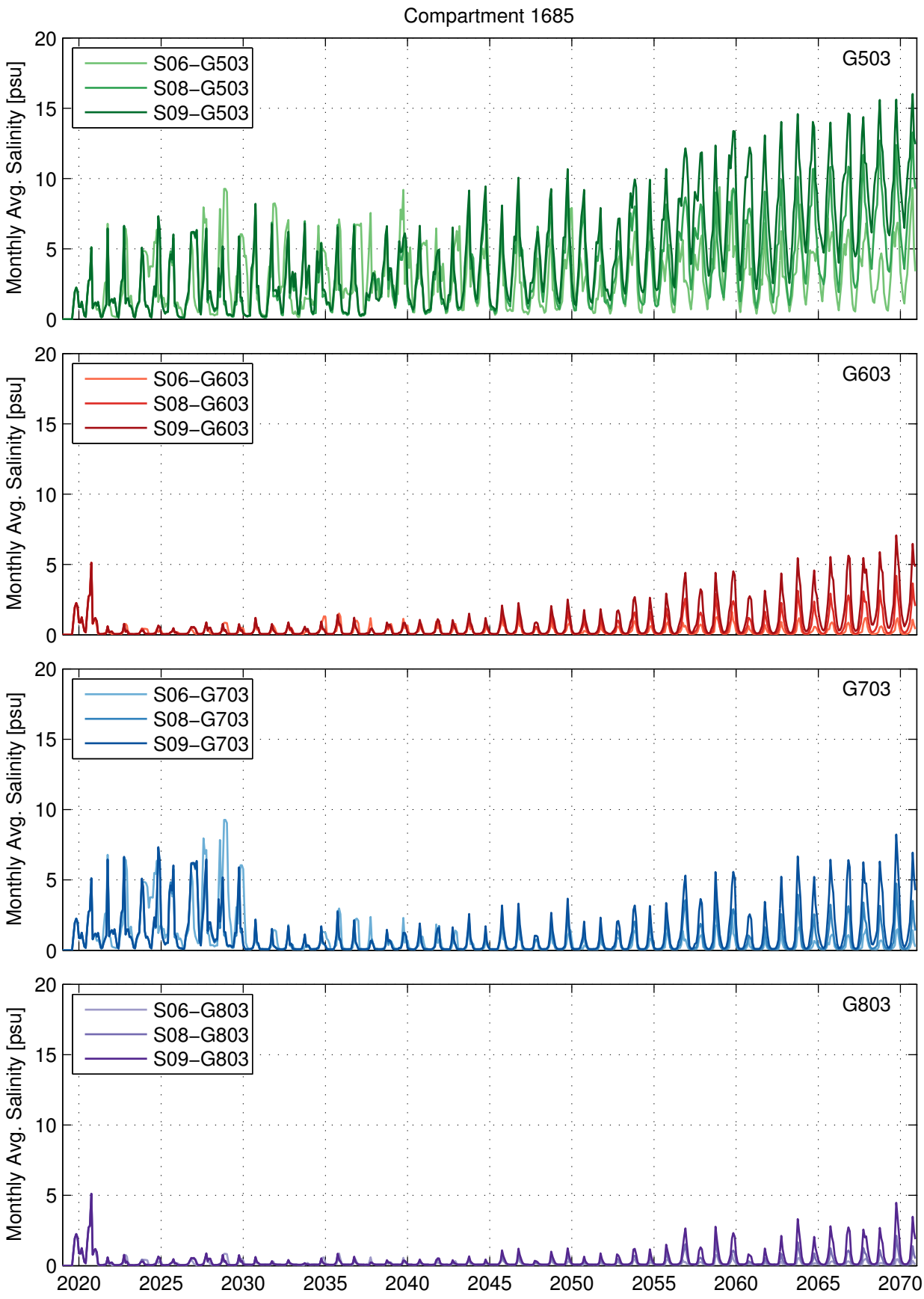

Compartment 1678
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Daily Avg. Salinity [psu]
0
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2065
2070

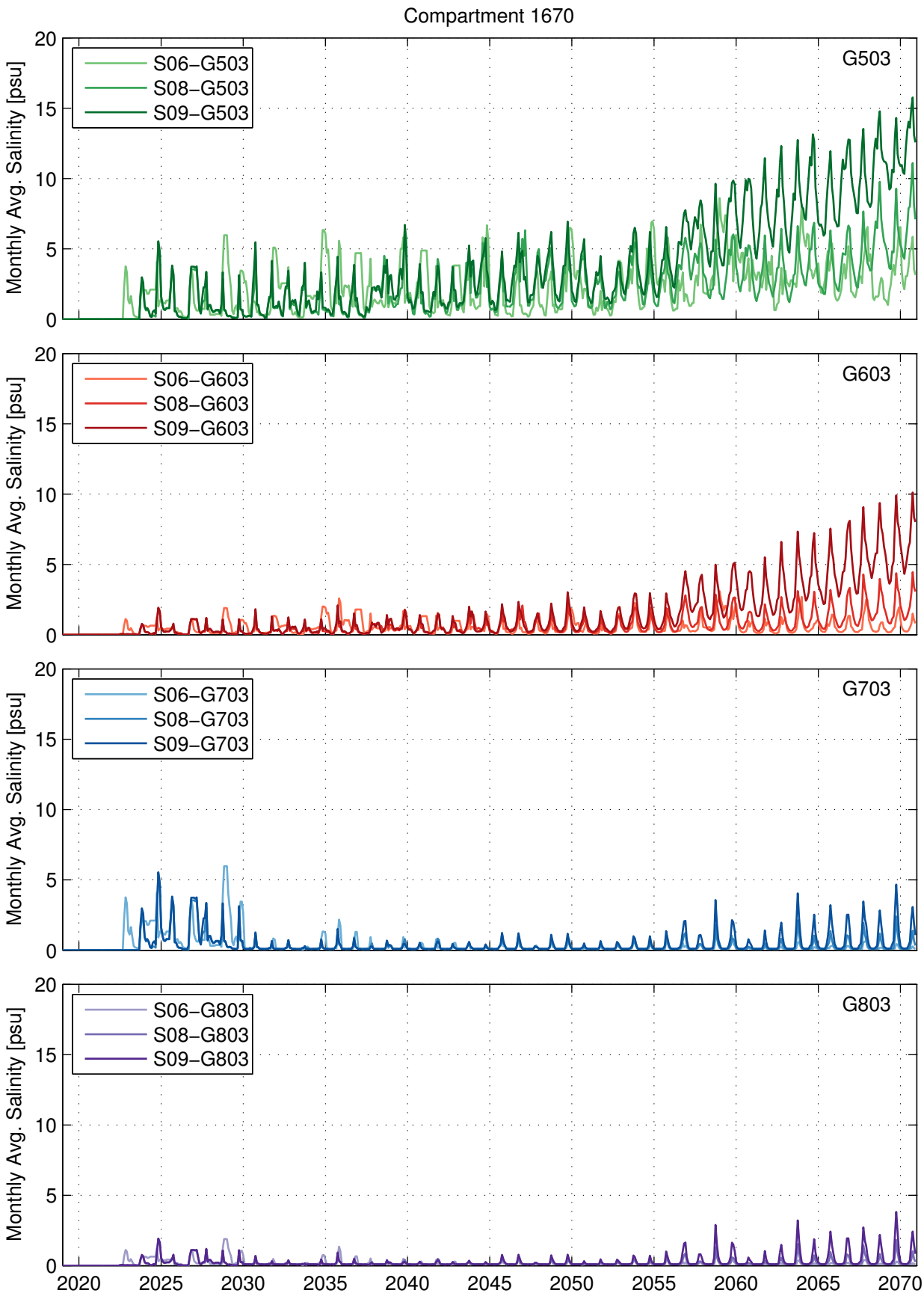

Compartment 1679
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Daily Avg. Salinity [psu]
0
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2020
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2045
2050
2055
2060
2065
2070

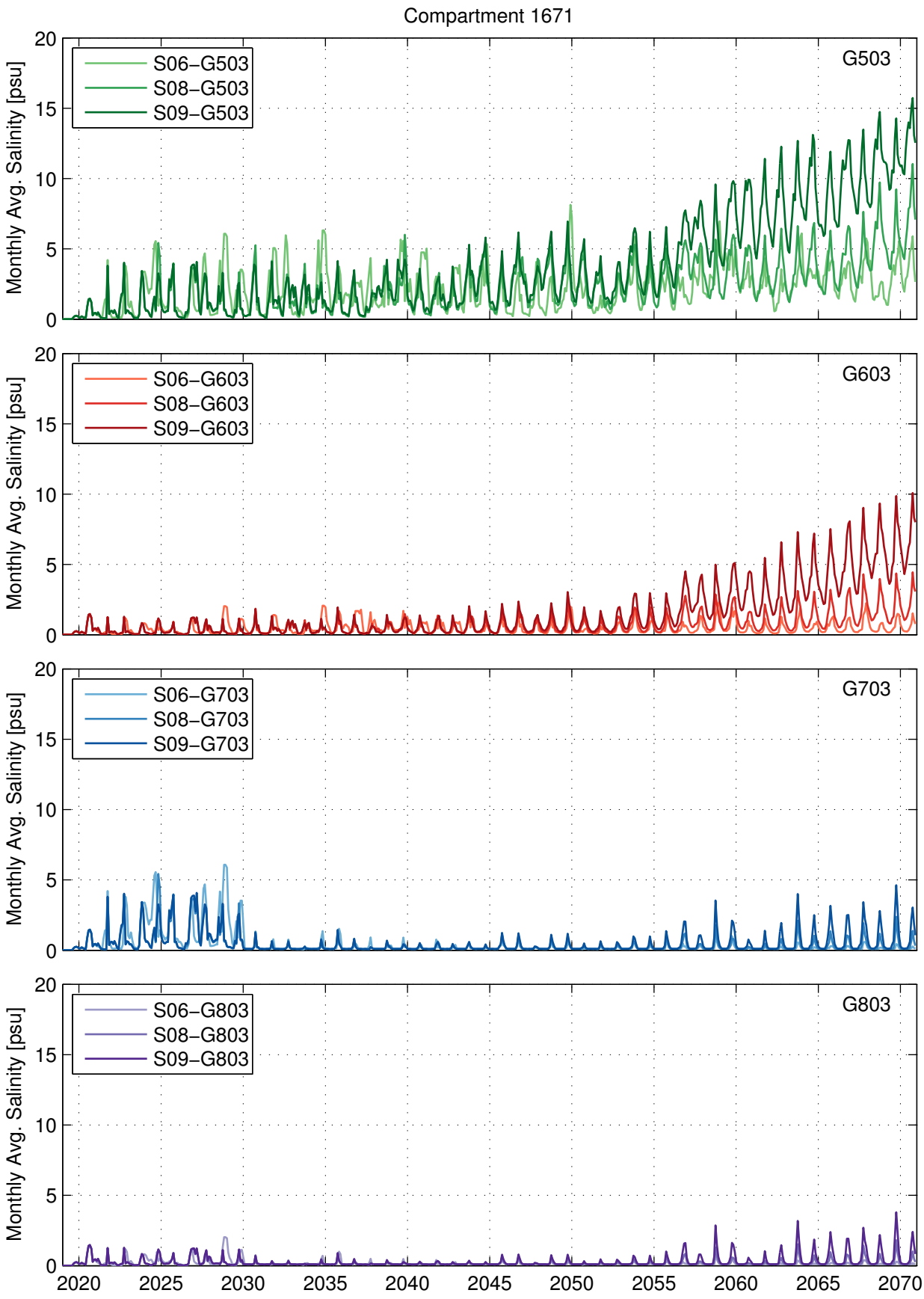

Compartment 148
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Daily Avg. Salinity [psu]
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2065
2070

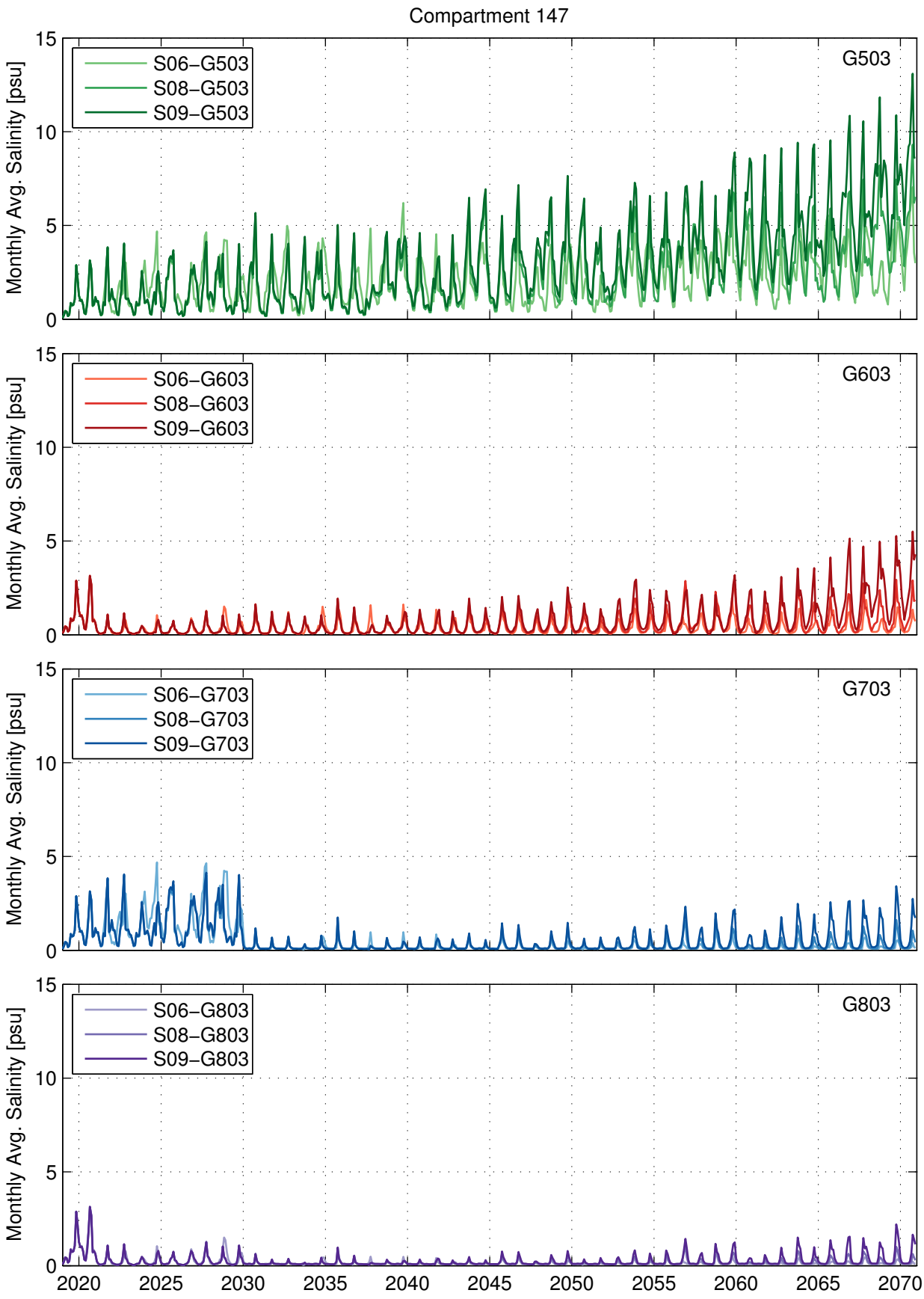

Compartment 1686
Monthly Avg. Salinity [psu]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
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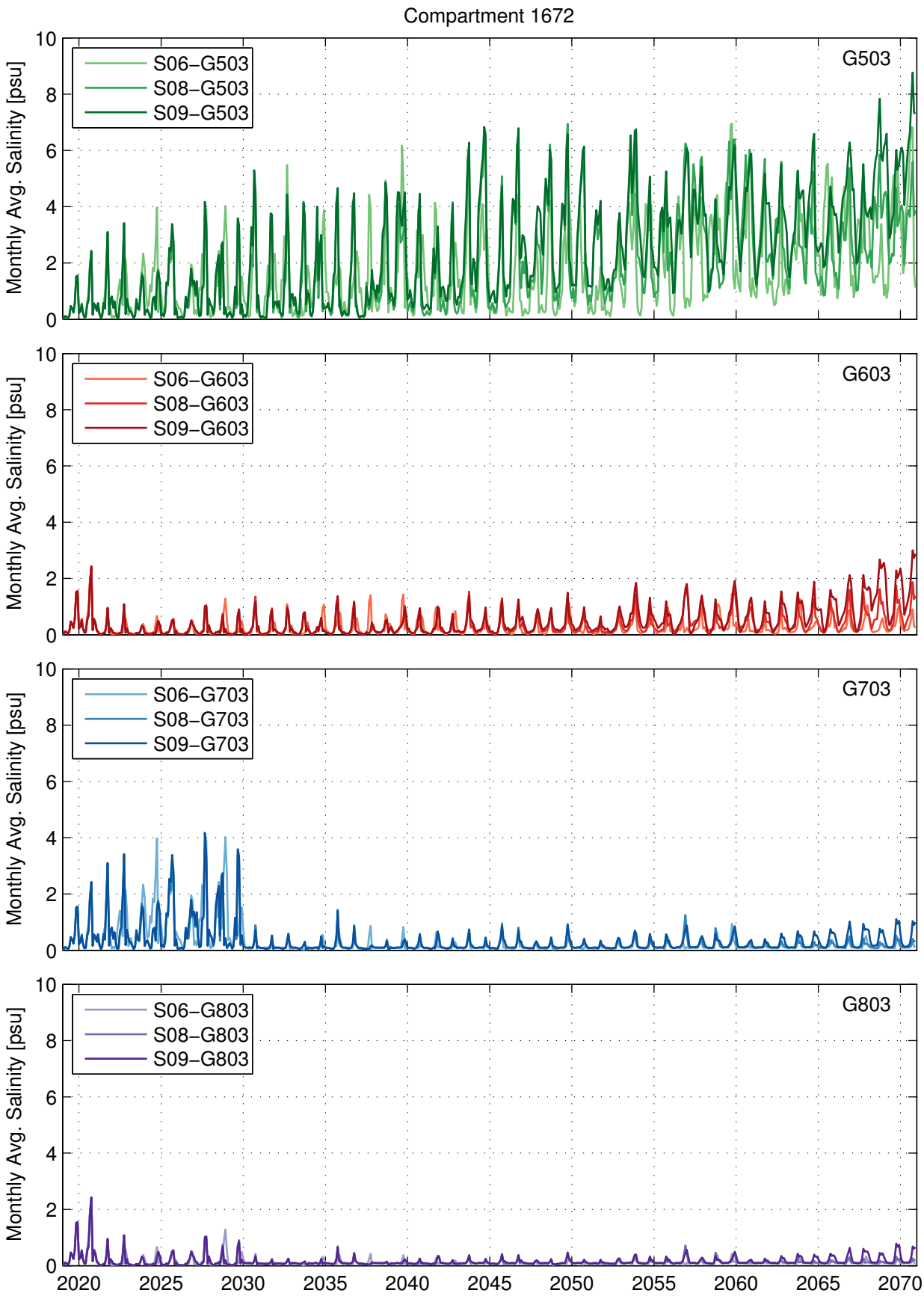

Compartment 224
Monthly Avg. Salinity [psu]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
0
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2070

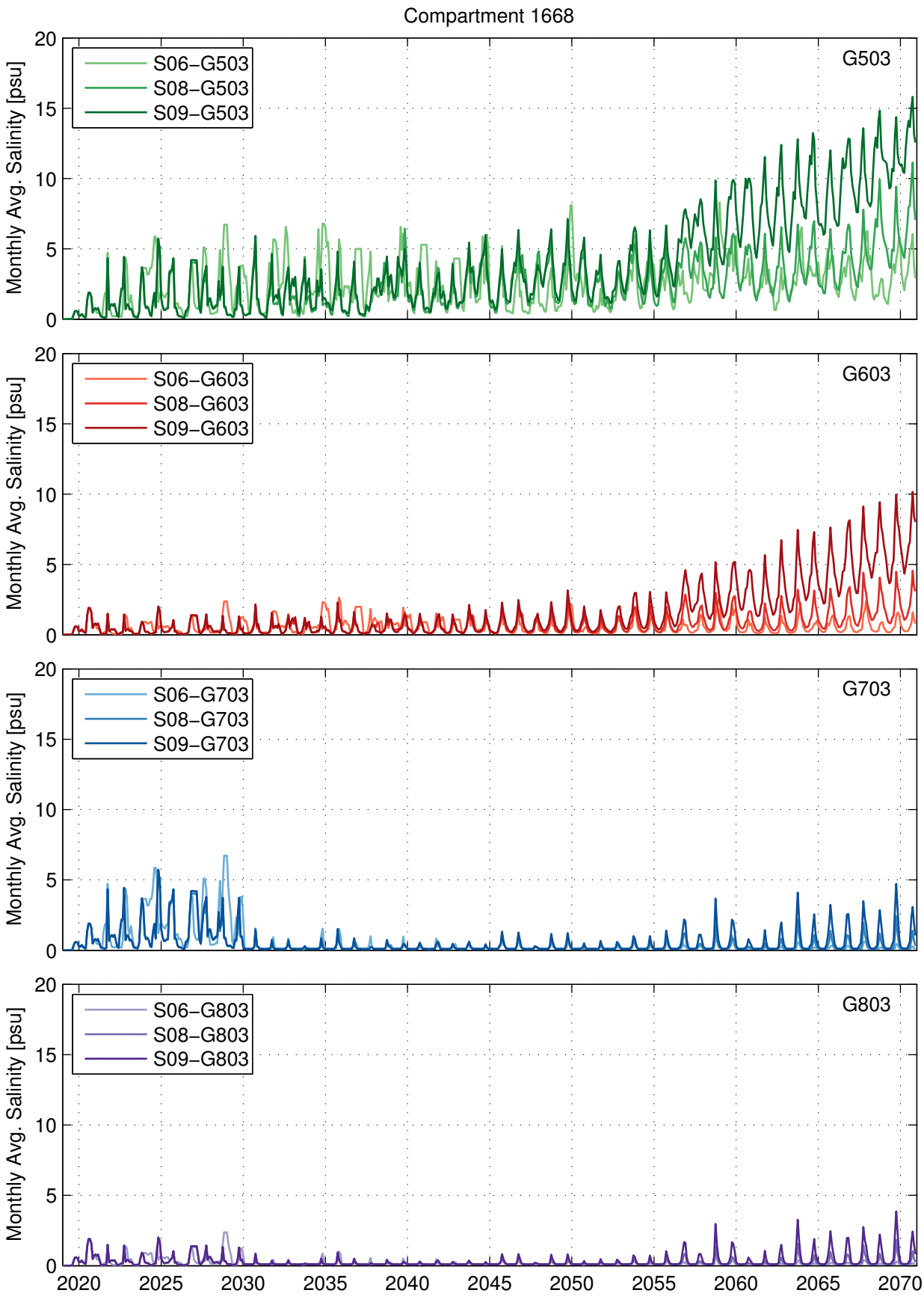

Compartment 1685
Monthly Avg. Salinity [psu]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
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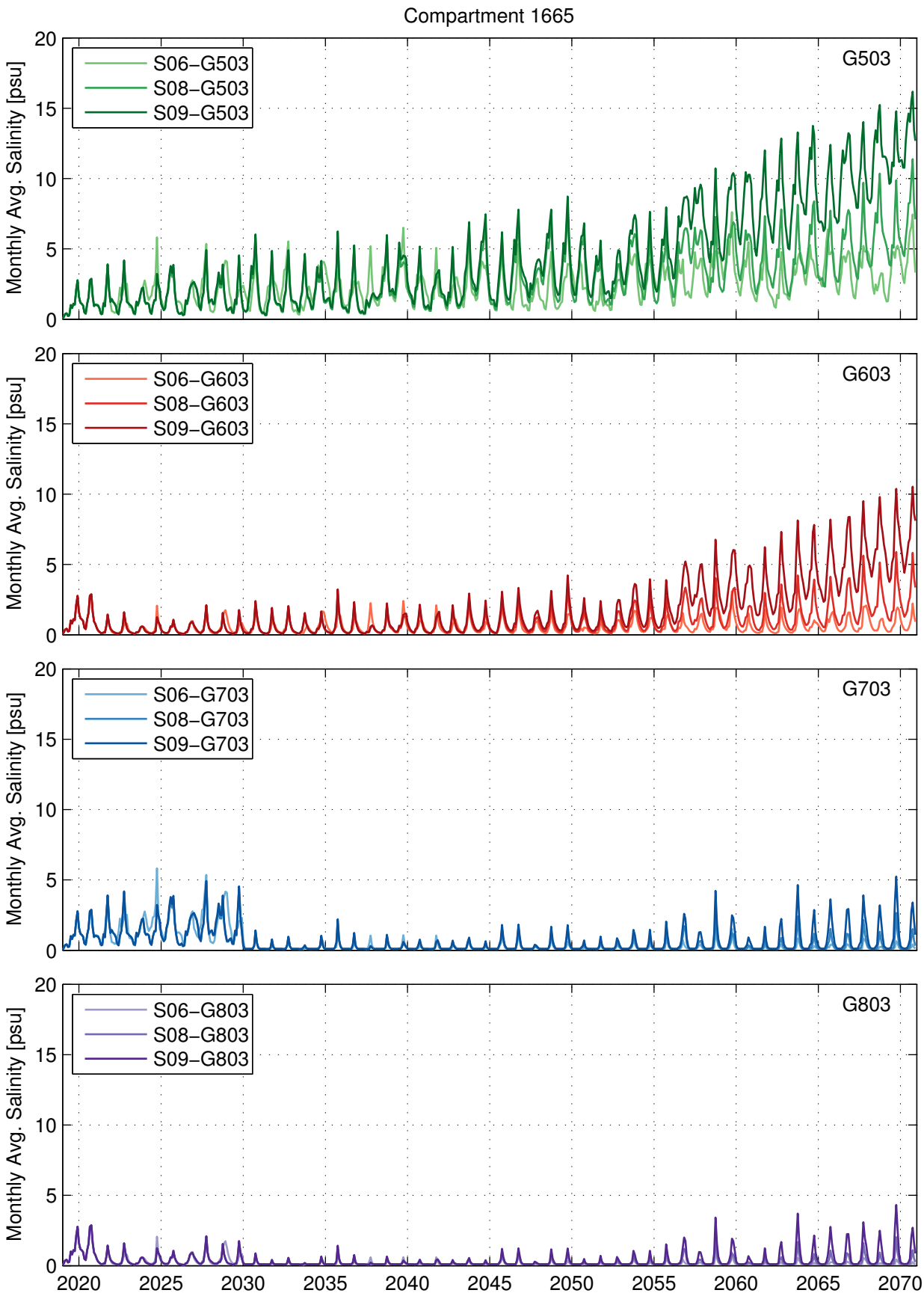

Compartment 1670
Monthly Avg. Salinity [psu]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
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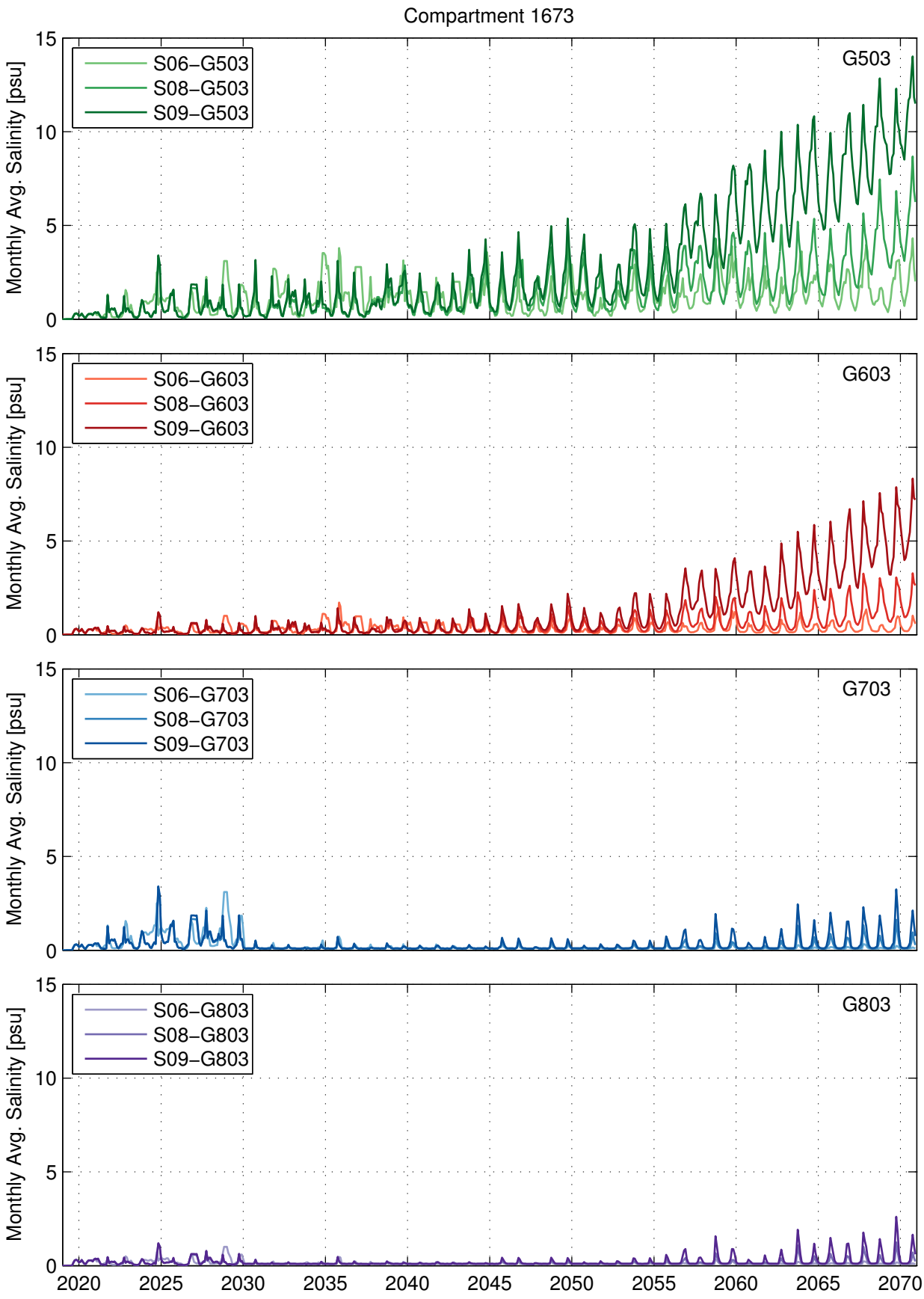

Compartment 1671
Monthly Avg. Salinity [psu]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
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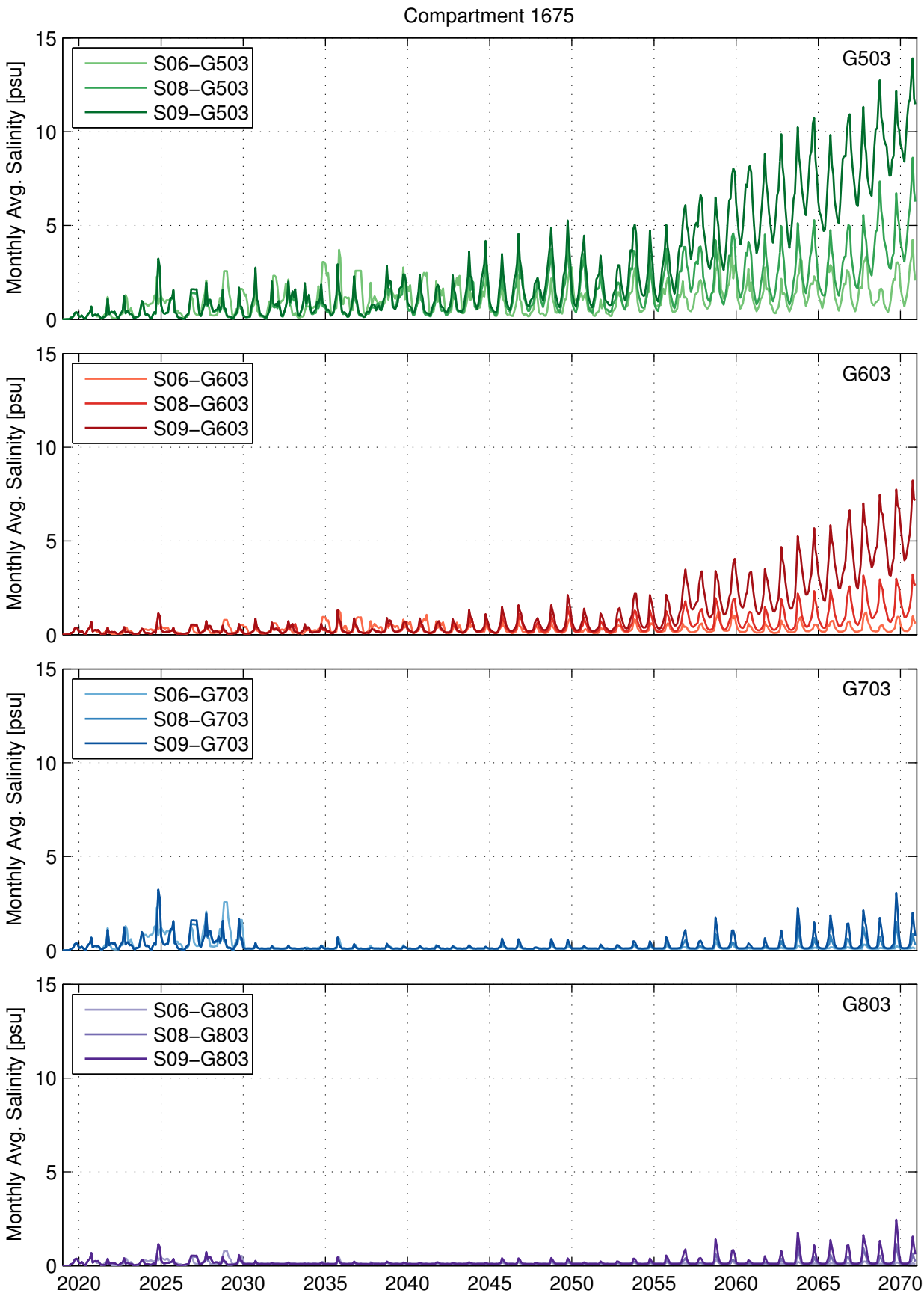

Compartment 147
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Monthly Avg. Salinity [psu]
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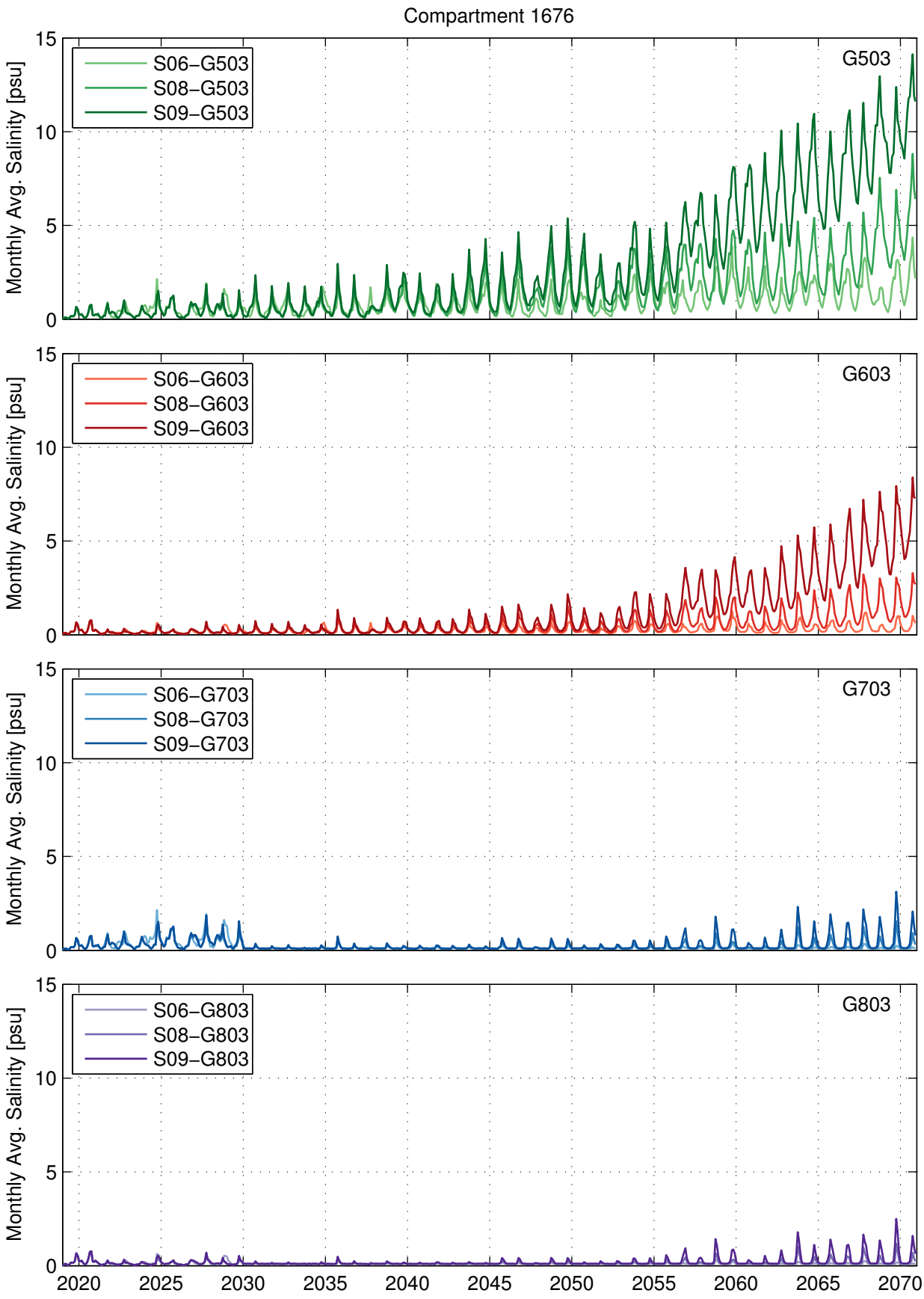

Compartment 1672
Monthly Avg. Salinity [psu]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
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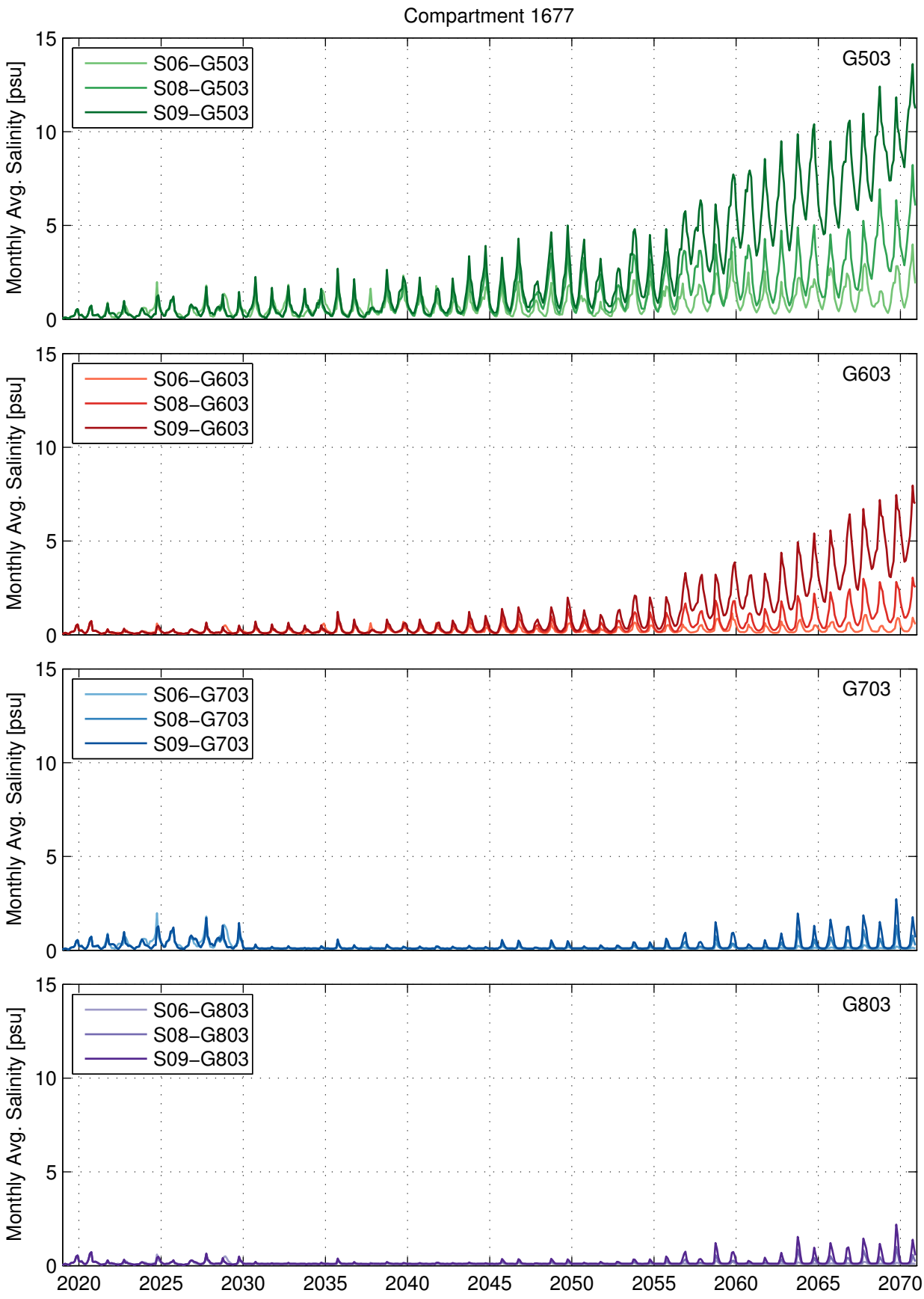

Compartment 1668
Monthly Avg. Salinity [psu]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
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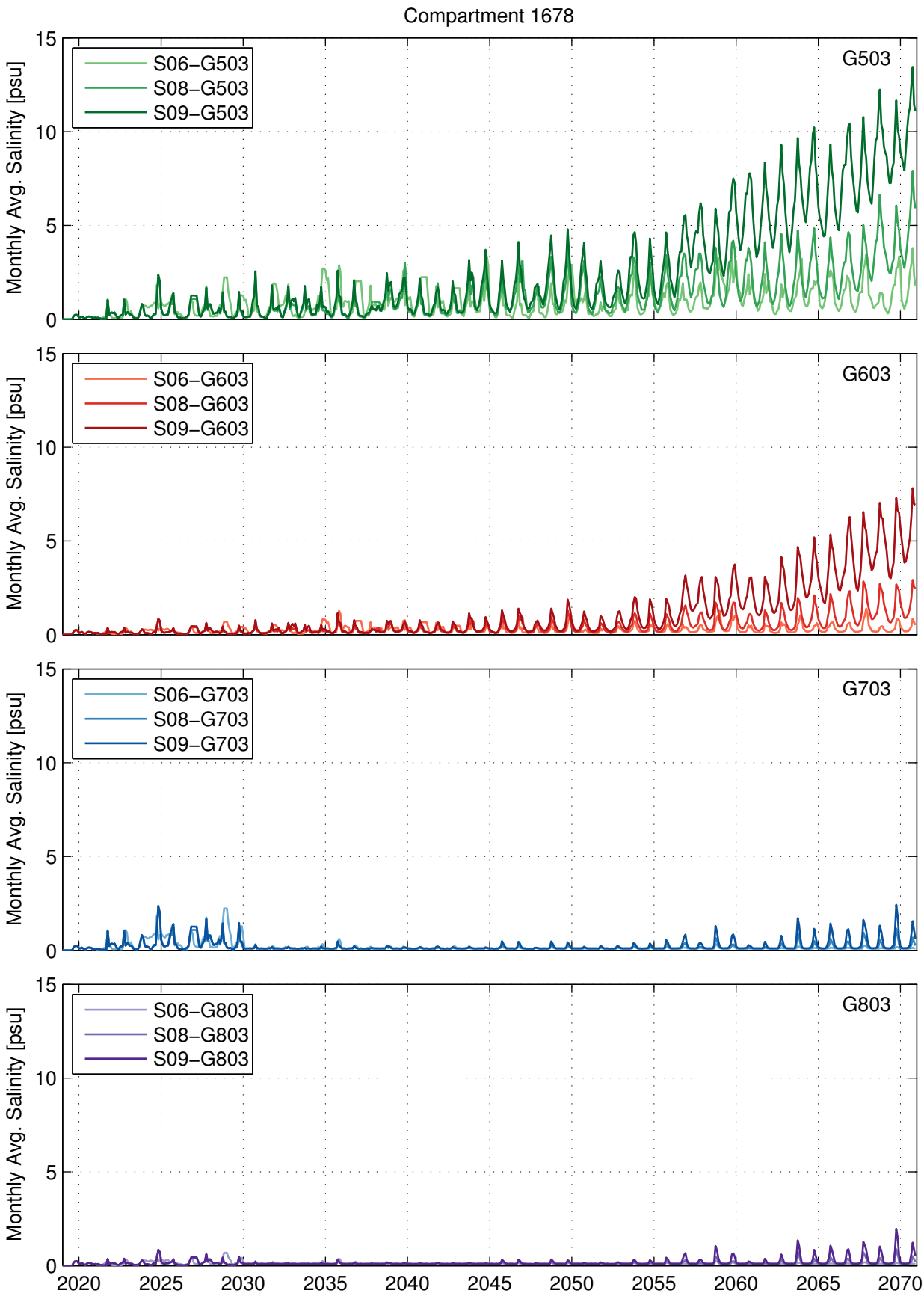

Compartment 1665
Monthly Avg. Salinity [psu]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
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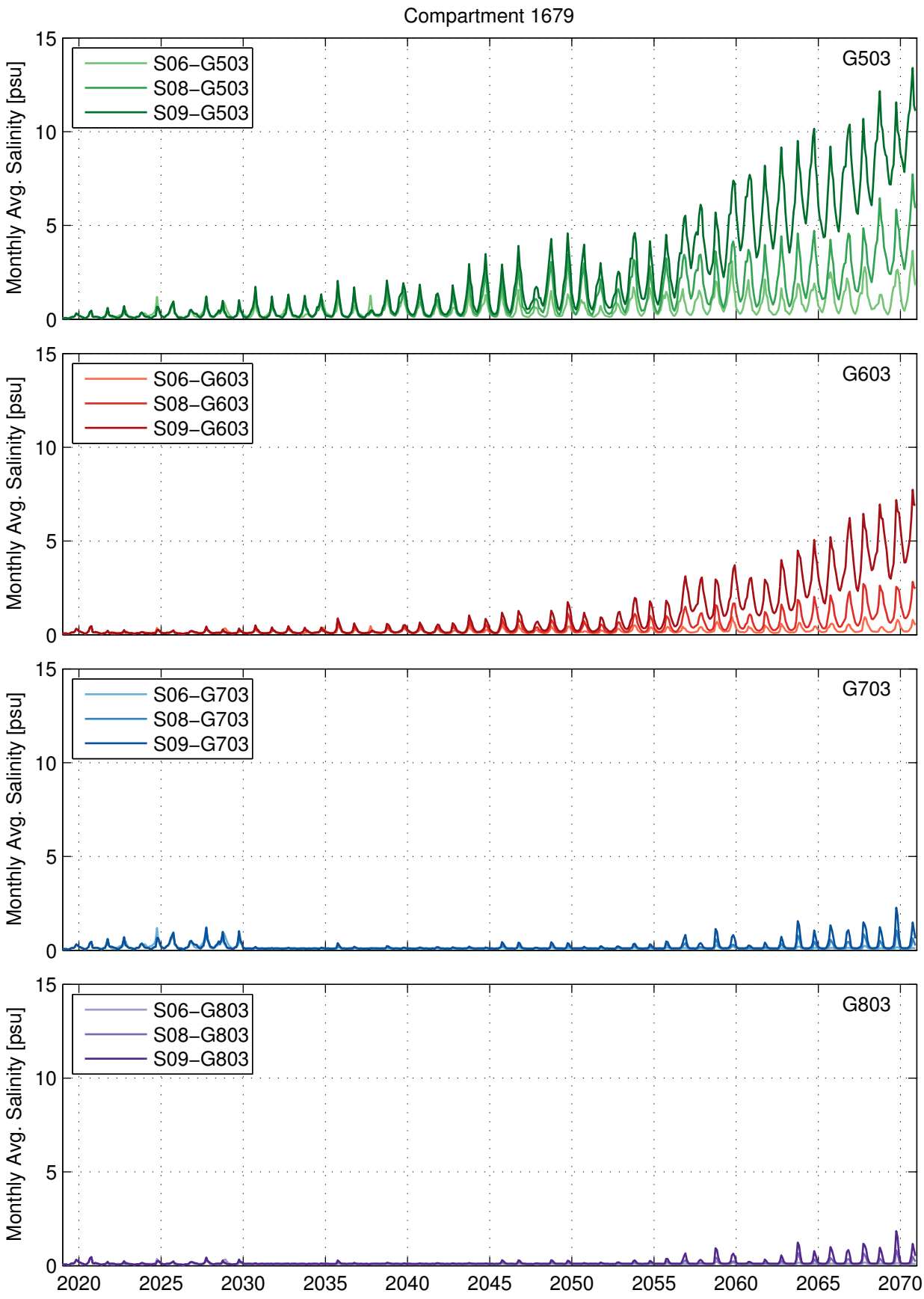

Compartment 1673
Monthly Avg. Salinity [psu]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
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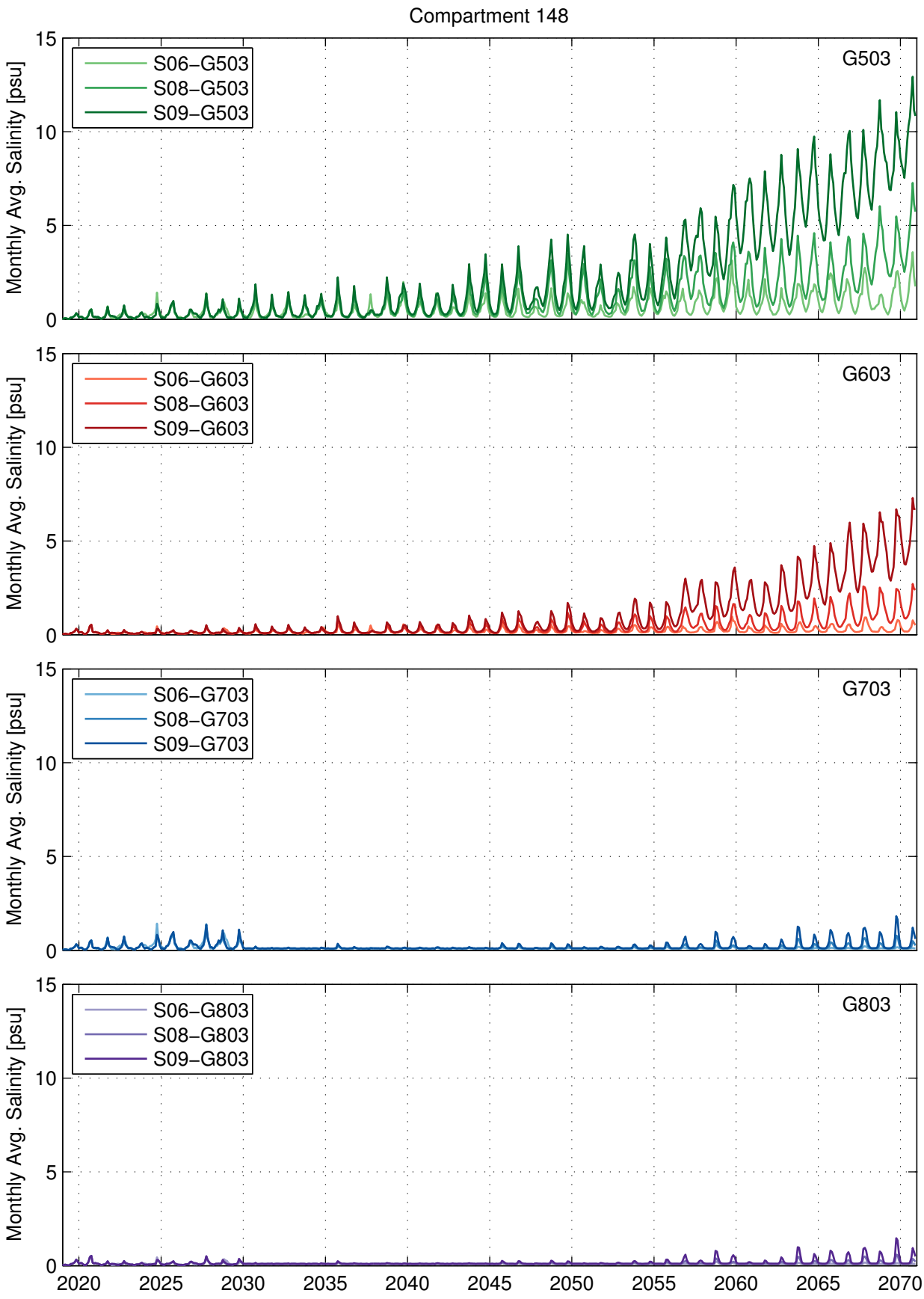

Compartment 1675
Monthly Avg. Salinity [psu]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
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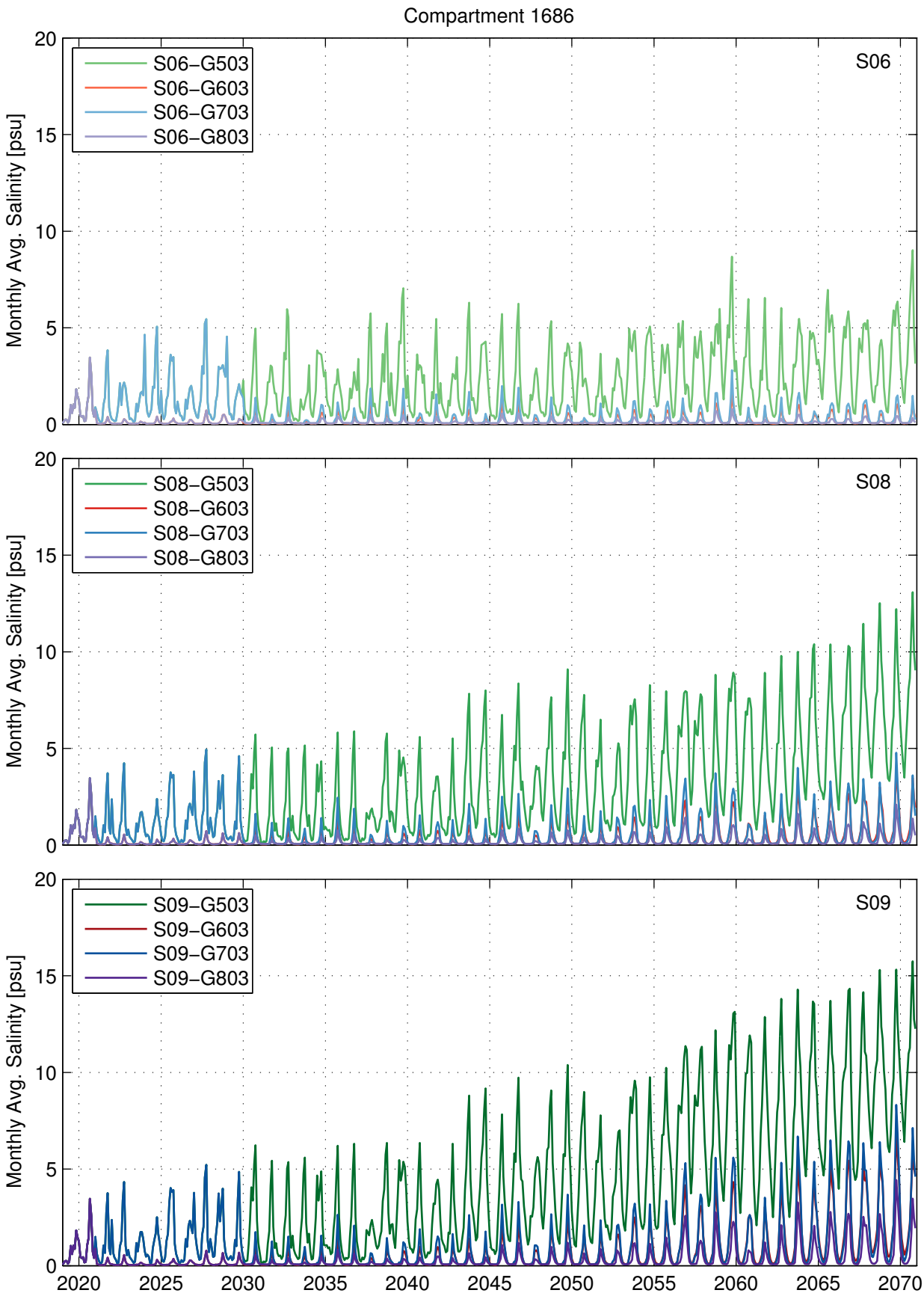

Compartment 1676
Monthly Avg. Salinity [psu]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
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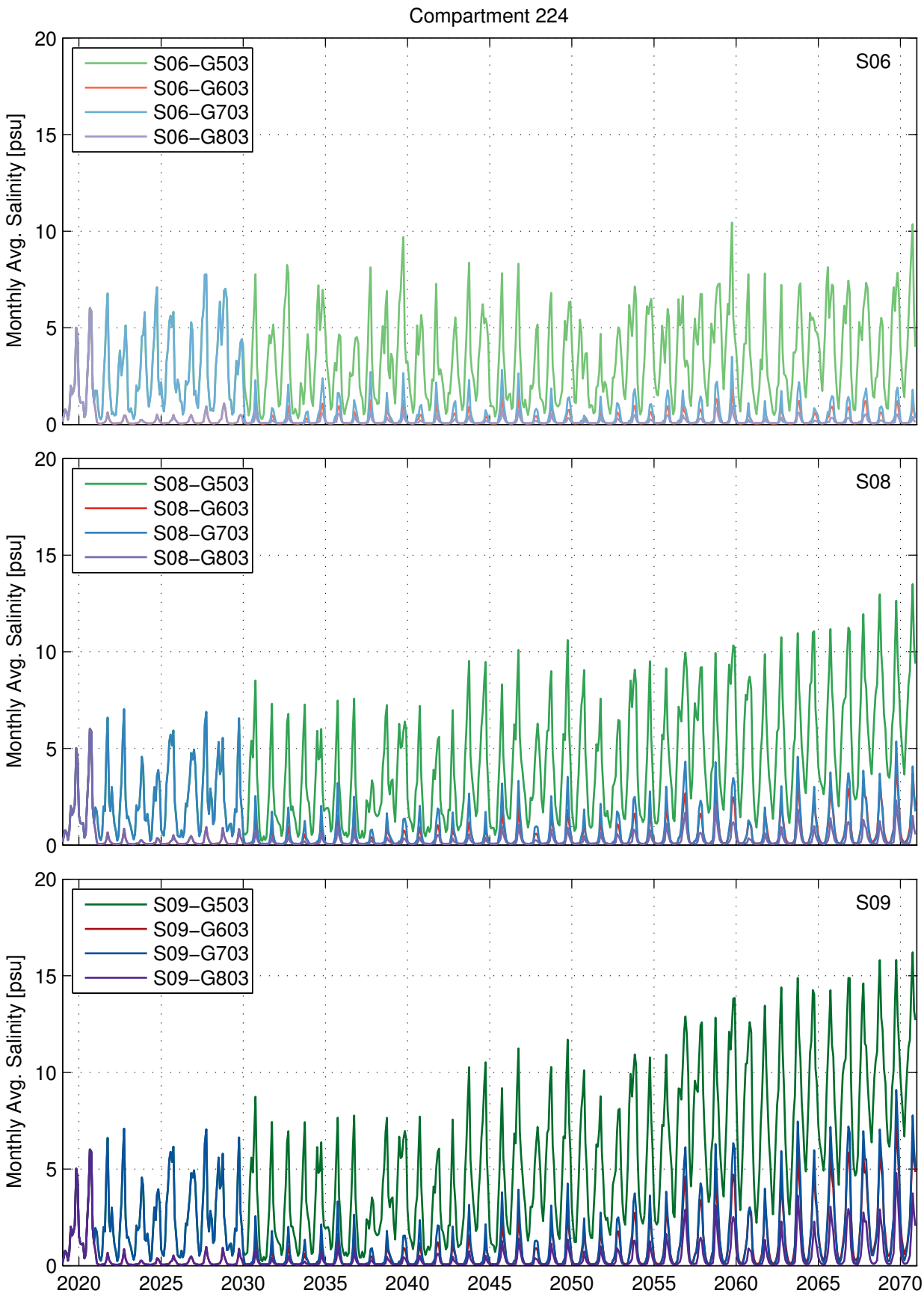

Compartment 1677
Monthly Avg. Salinity [psu]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
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2055
2060
2065
2070

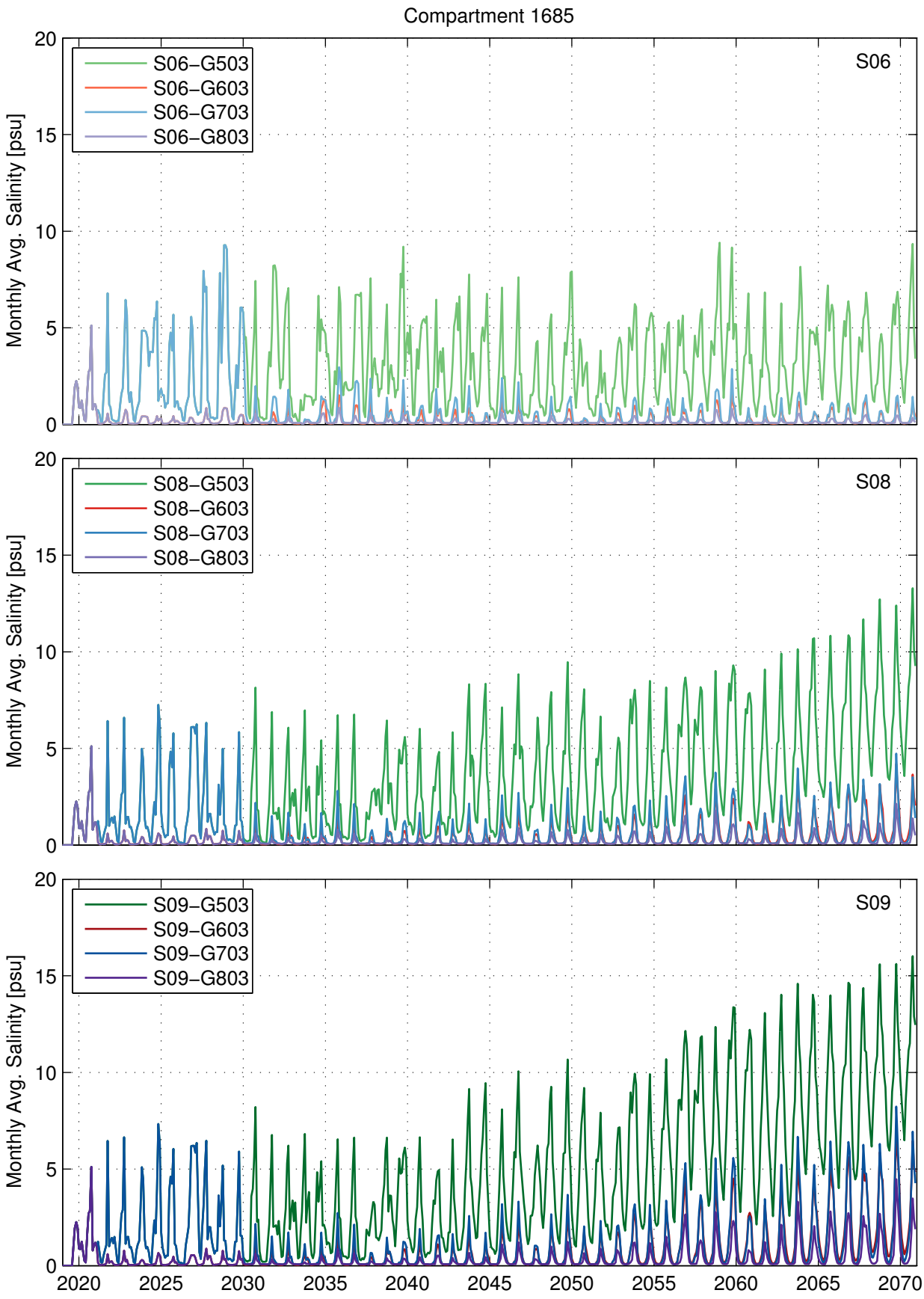

Compartment 1678
Monthly Avg. Salinity [psu]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
0
5
10
15
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

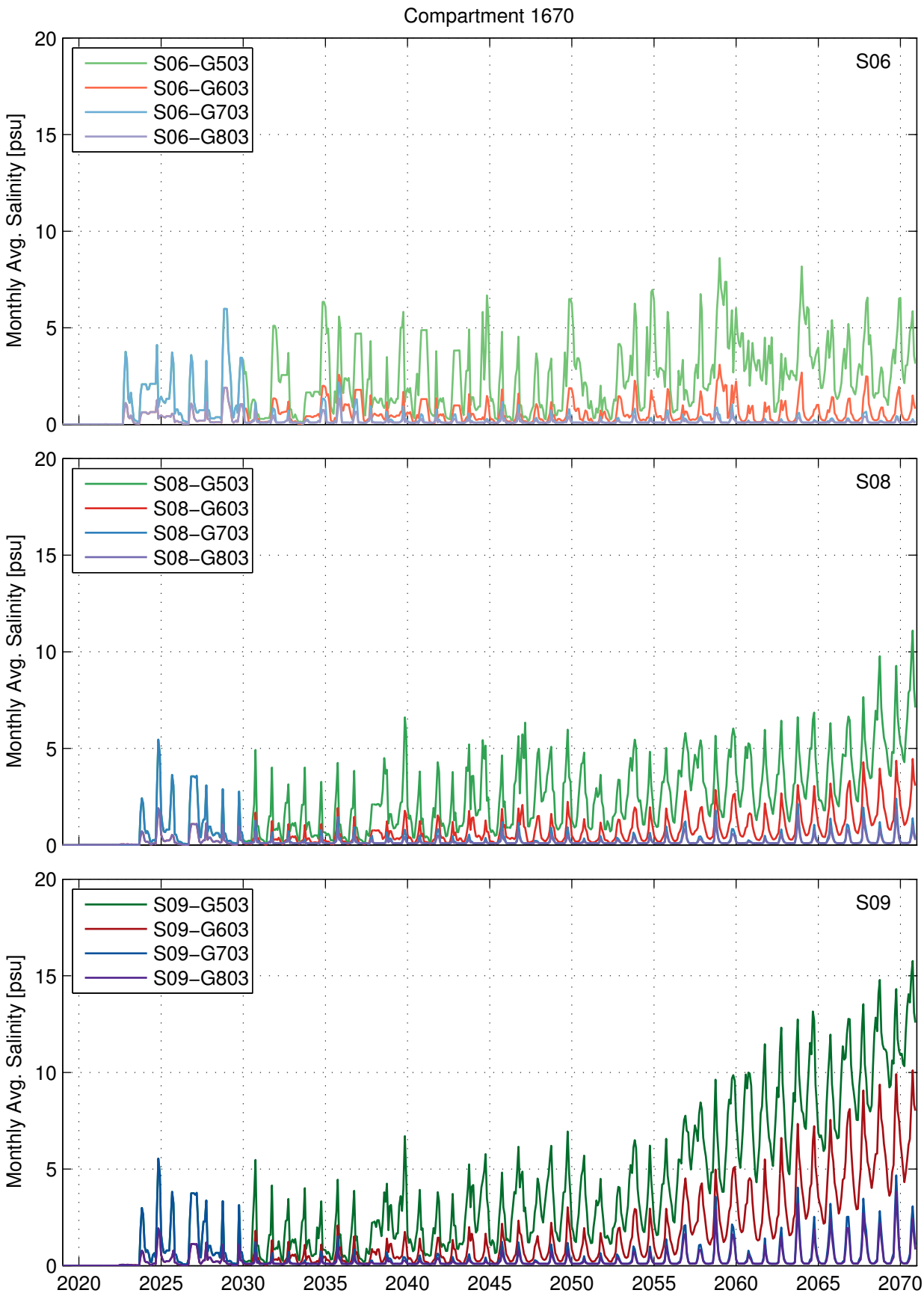

Compartment 1679
Monthly Avg. Salinity [psu]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
0
5
10
15
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

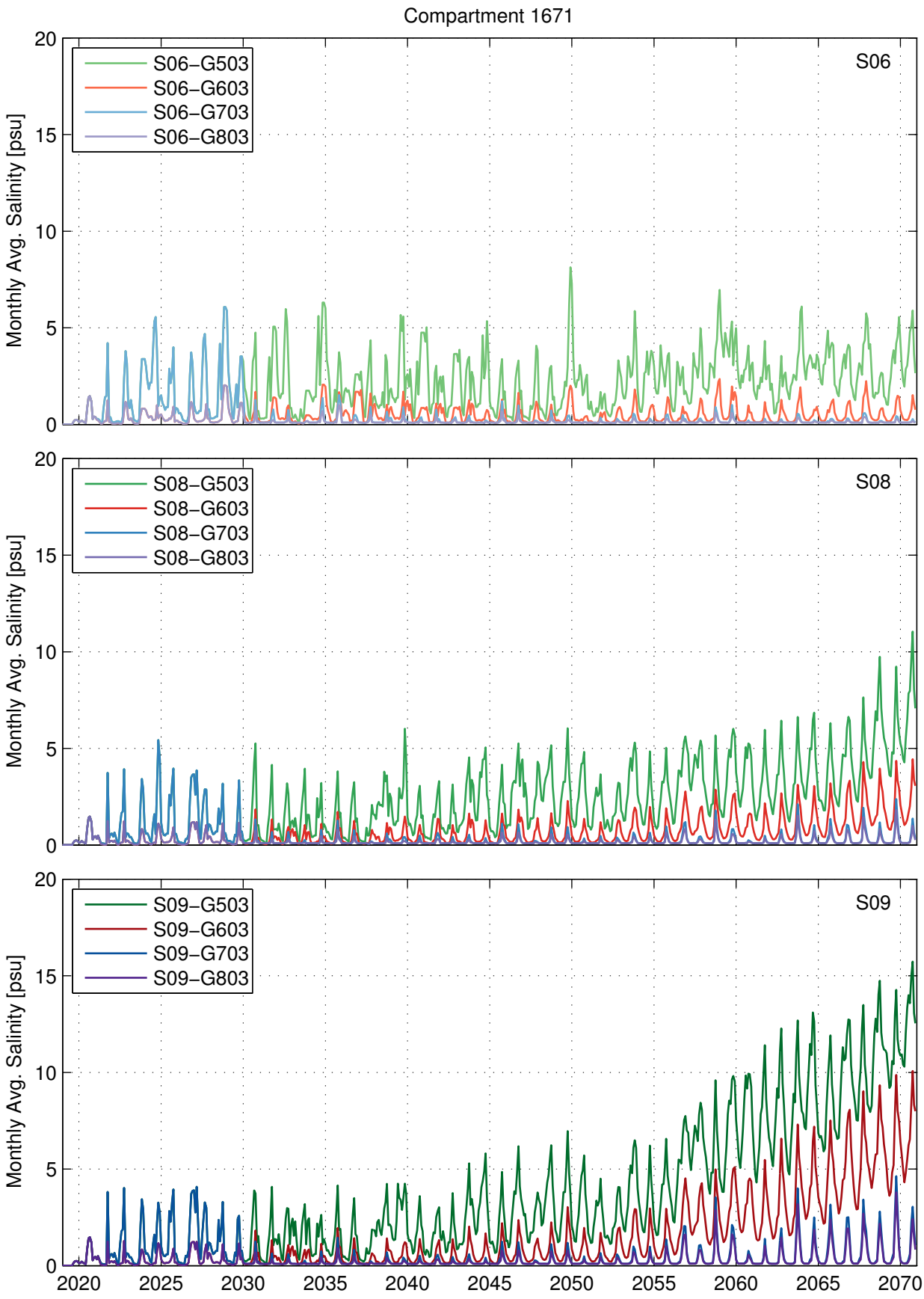

Compartment 148
Monthly Avg. Salinity [psu]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
0
5
10
15
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

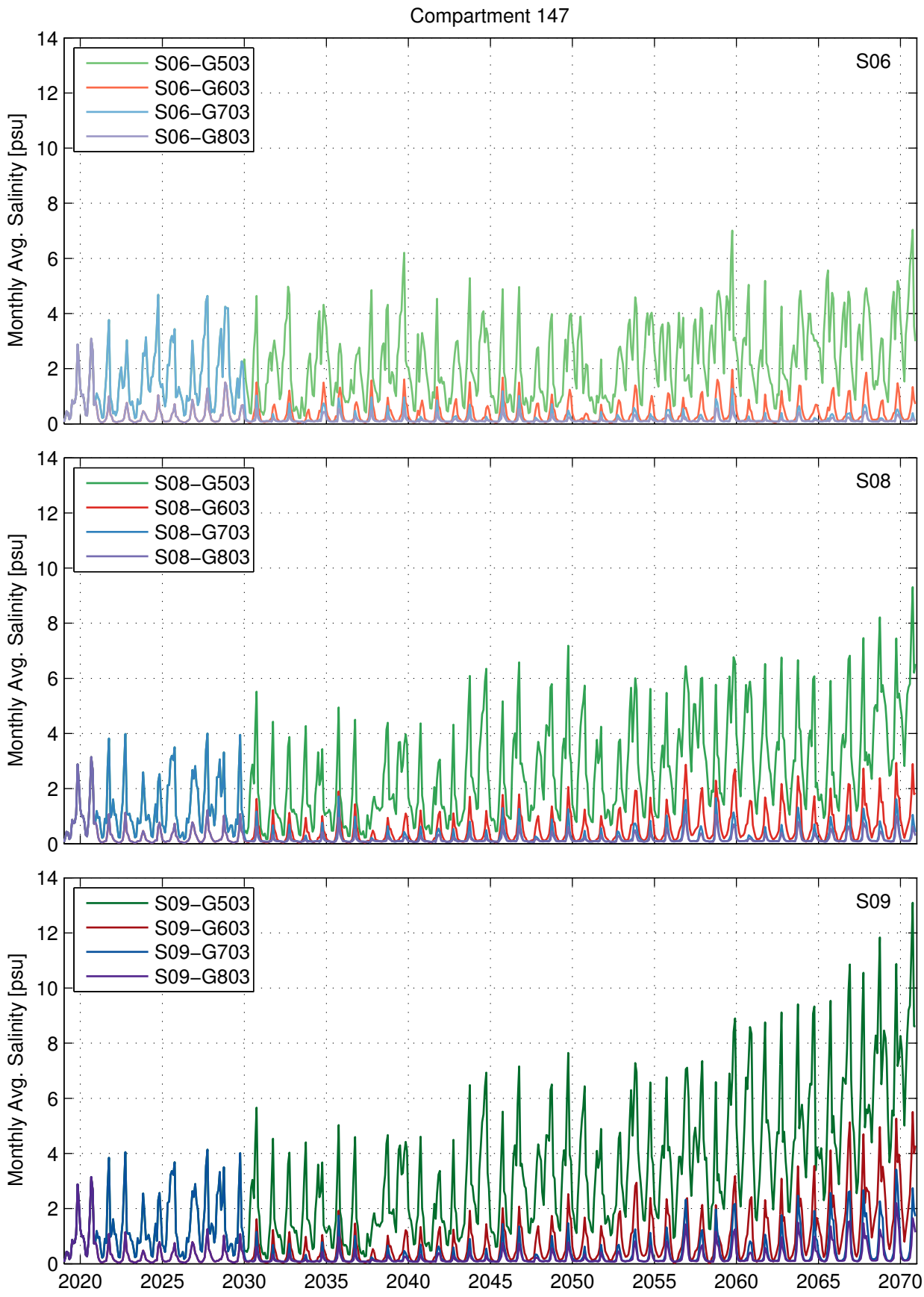

Compartment 1686
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Monthly Avg. Salinity [psu]
0
5
10
15
20
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

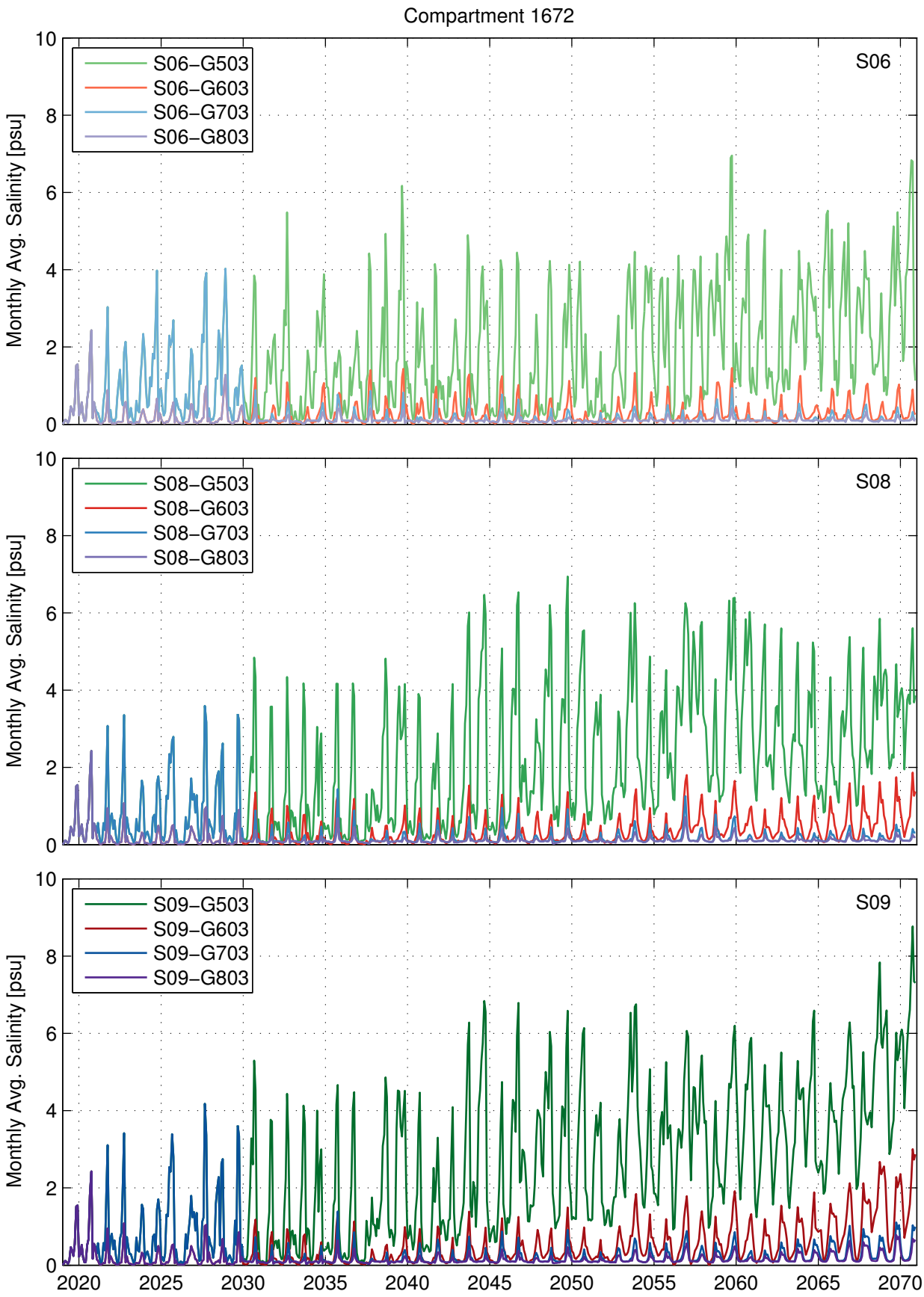

Compartment 224
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Monthly Avg. Salinity [psu]
0
5
10
15
20
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

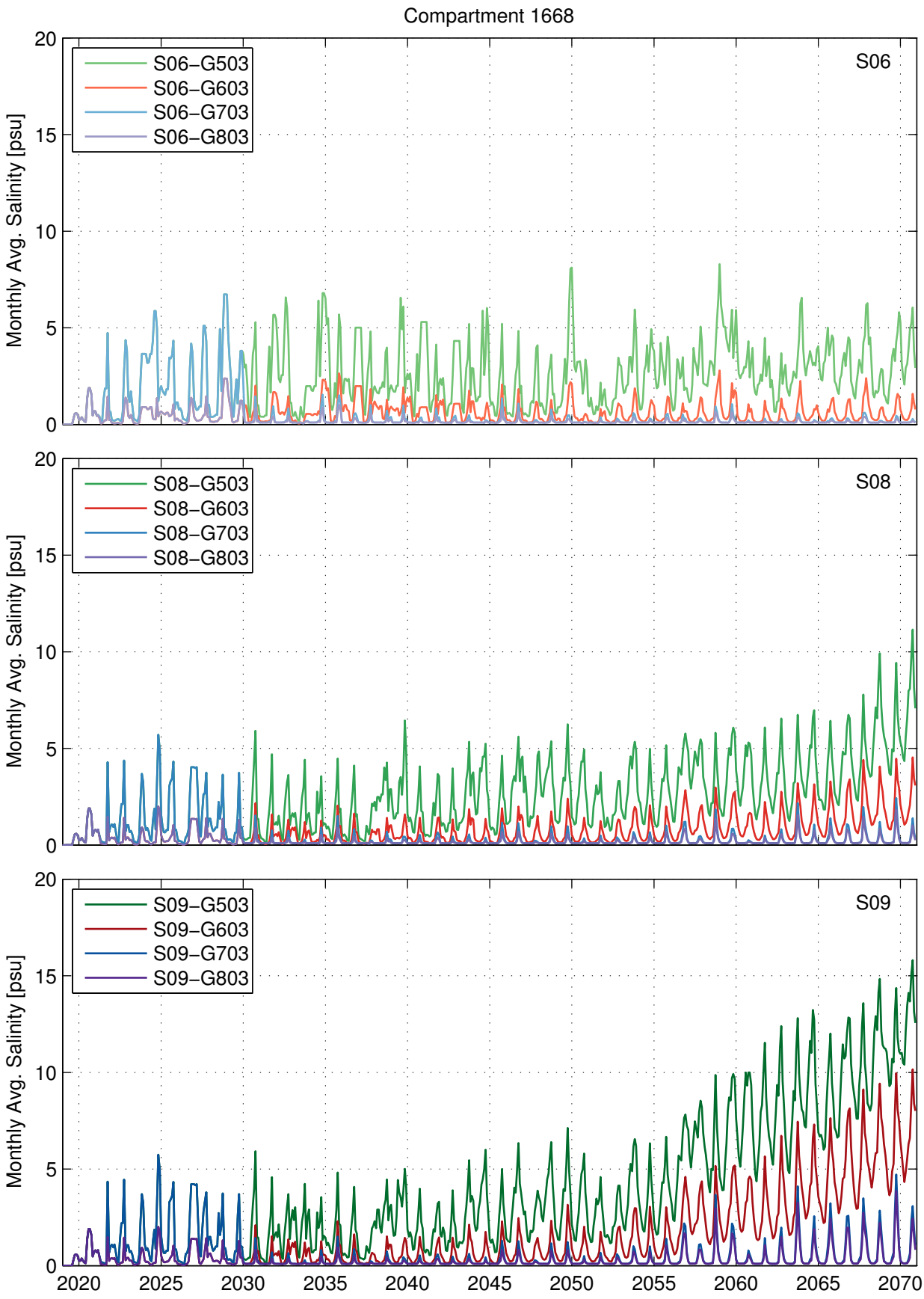

Compartment 1685
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Monthly Avg. Salinity [psu]
0
5
10
15
20
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

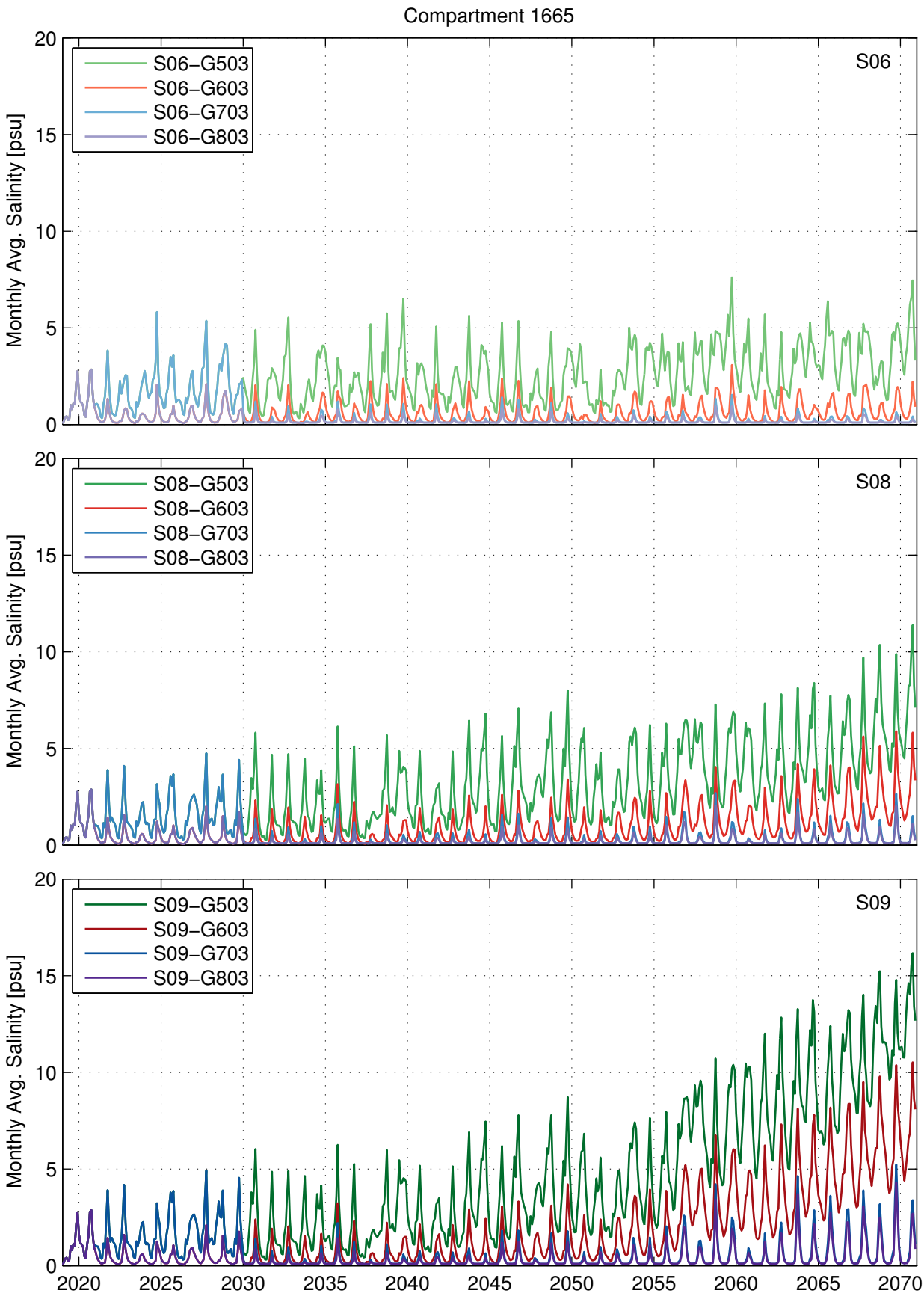

Compartment 1670
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Monthly Avg. Salinity [psu]
0
5
10
15
20
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

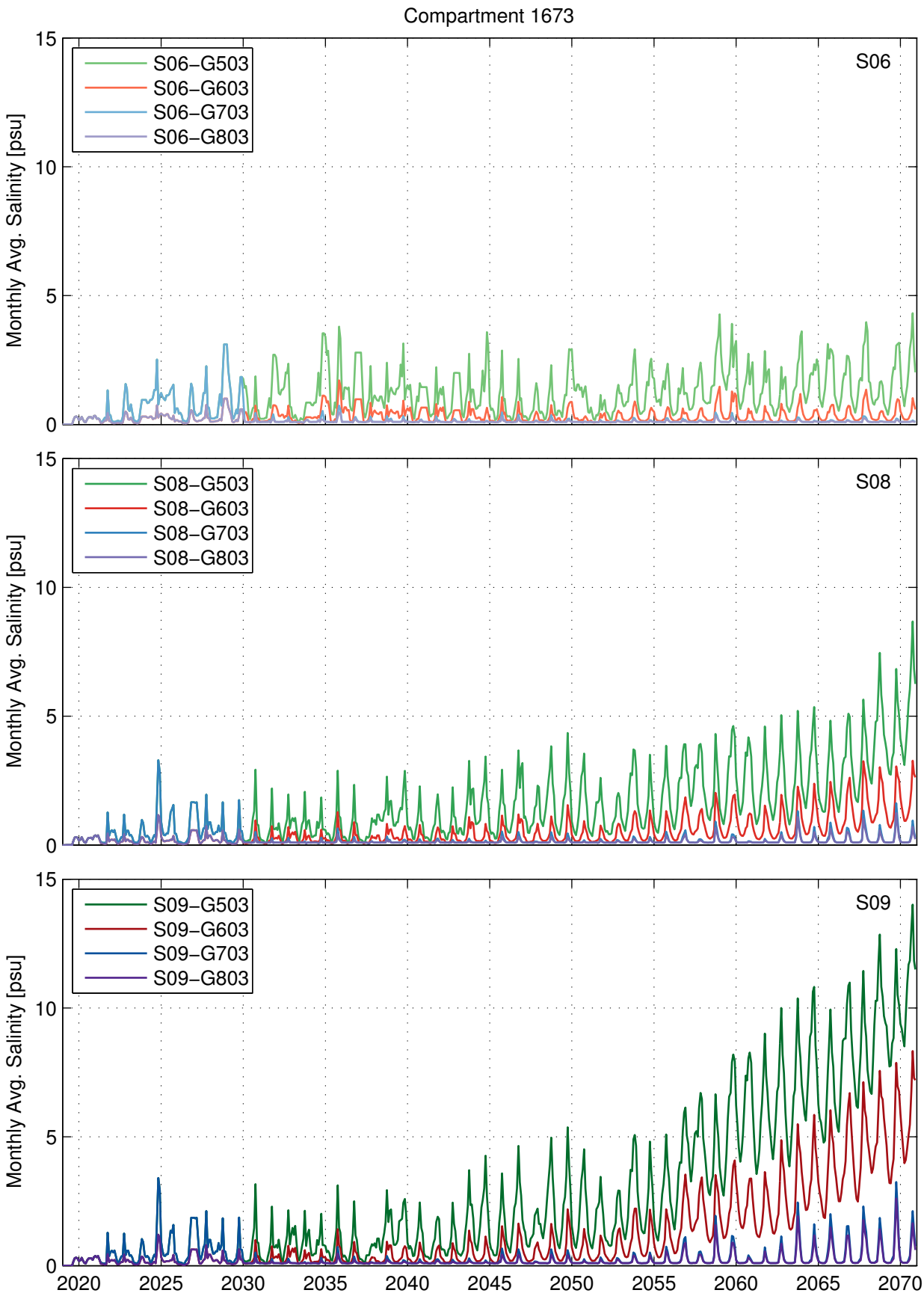

Compartment 1671
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Monthly Avg. Salinity [psu]
0
5
10
15
20
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

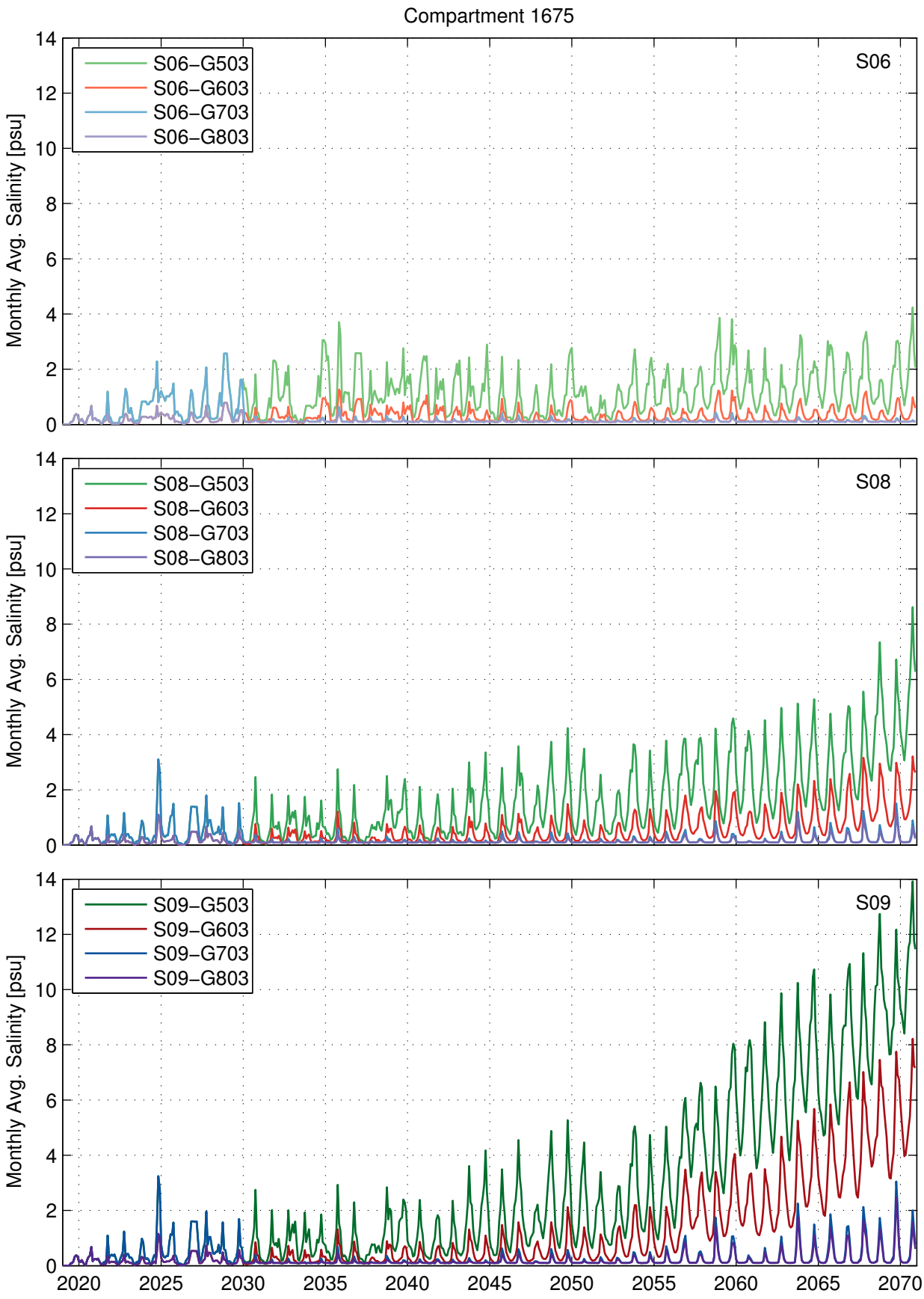

Compartment 147
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Monthly Avg. Salinity [psu]
0
2
4
6
8
10
12
14
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

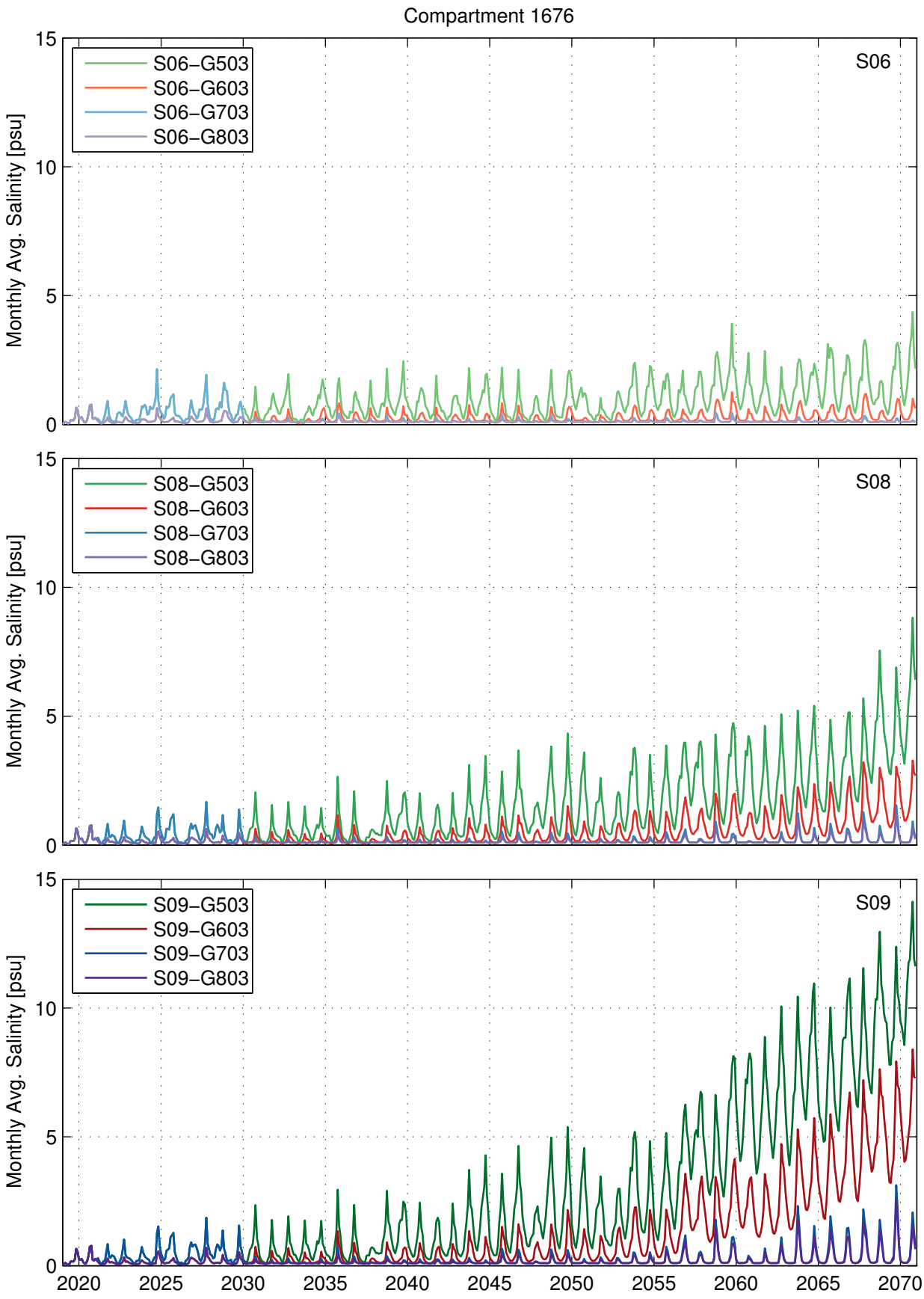

Compartment 1672
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Monthly Avg. Salinity [psu]
0
2
4
6
8
10
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

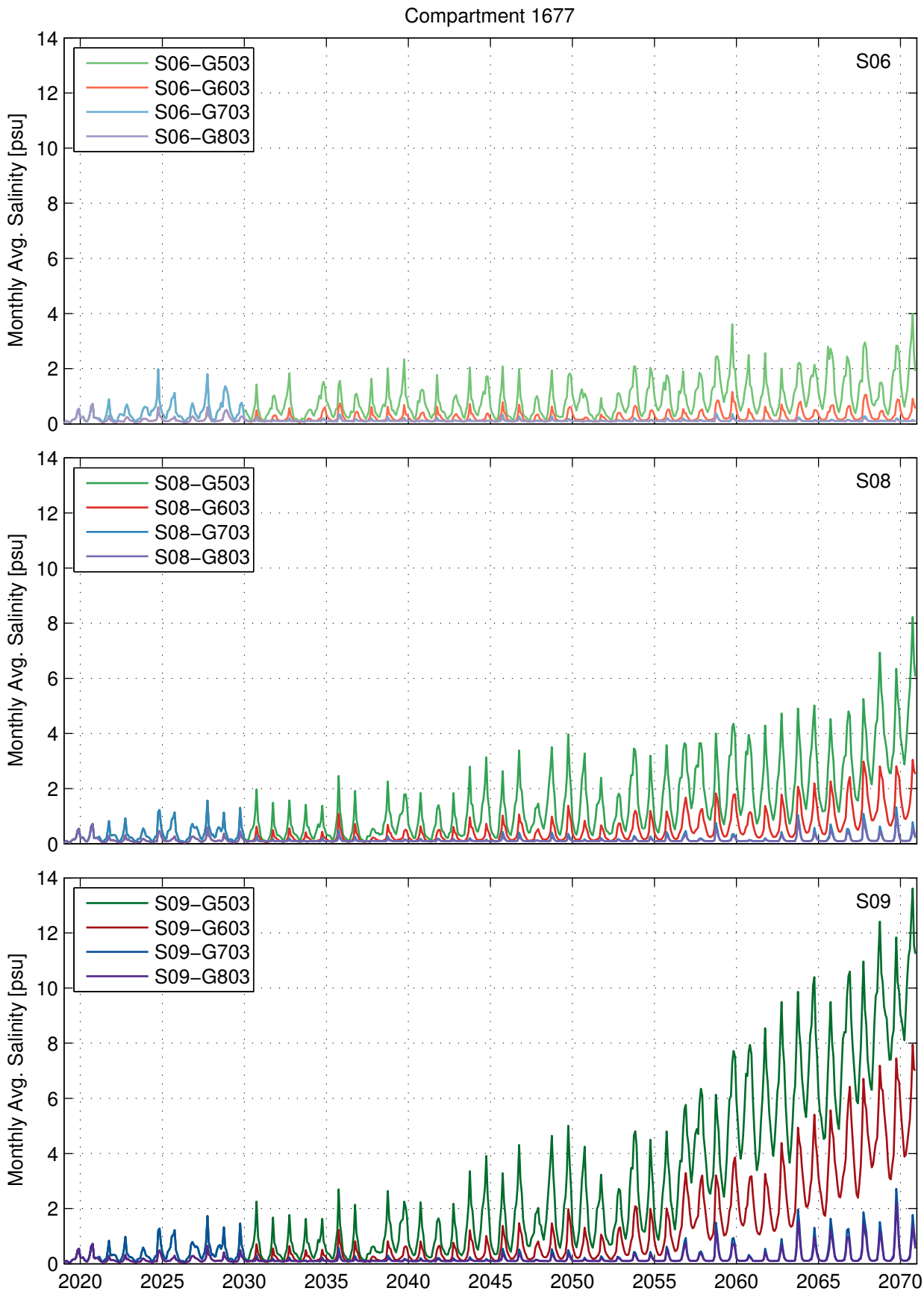

Compartment 1668
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Monthly Avg. Salinity [psu]
0
5
10
15
20
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

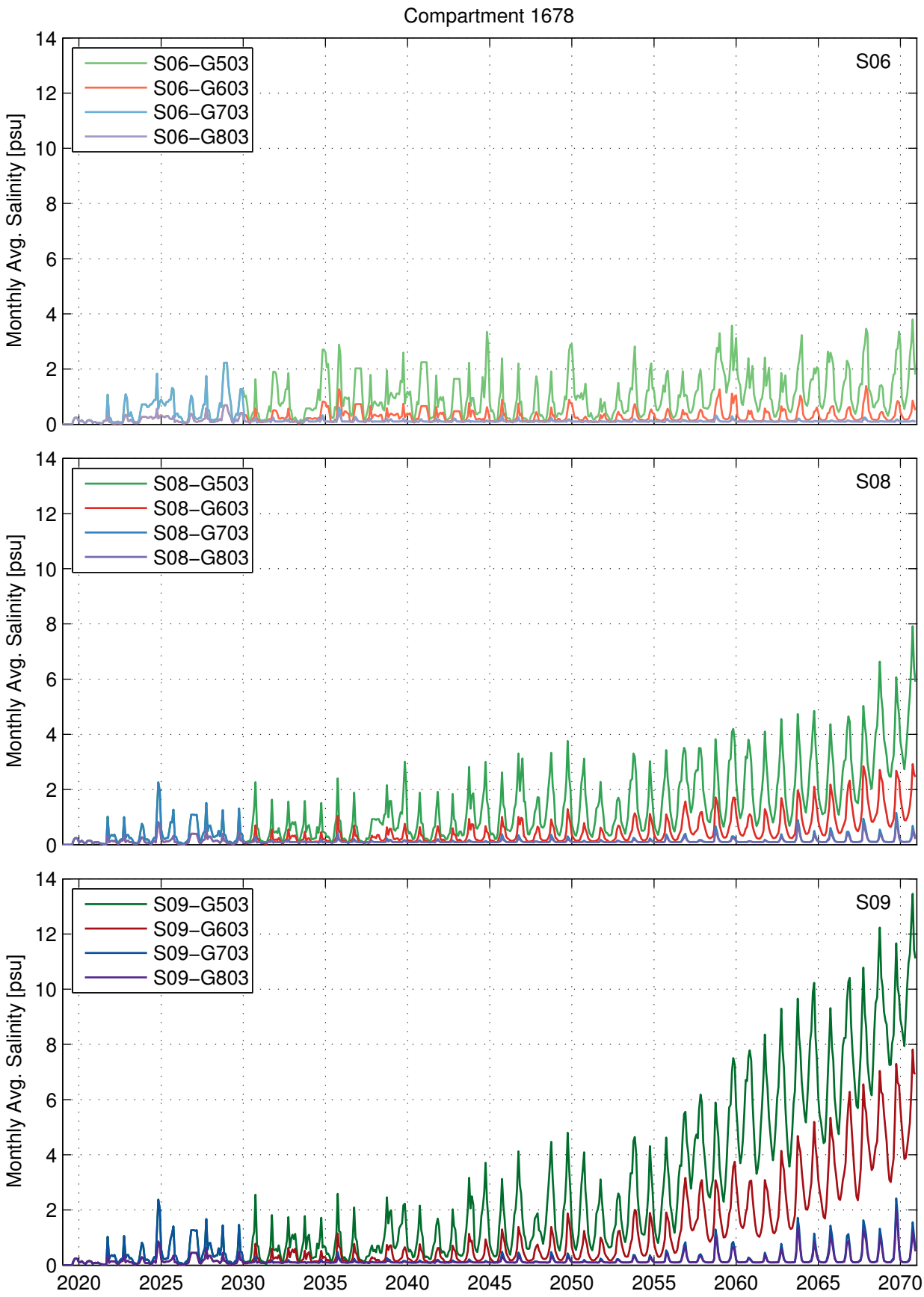

Compartment 1665
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Monthly Avg. Salinity [psu]
0
5
10
15
20
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

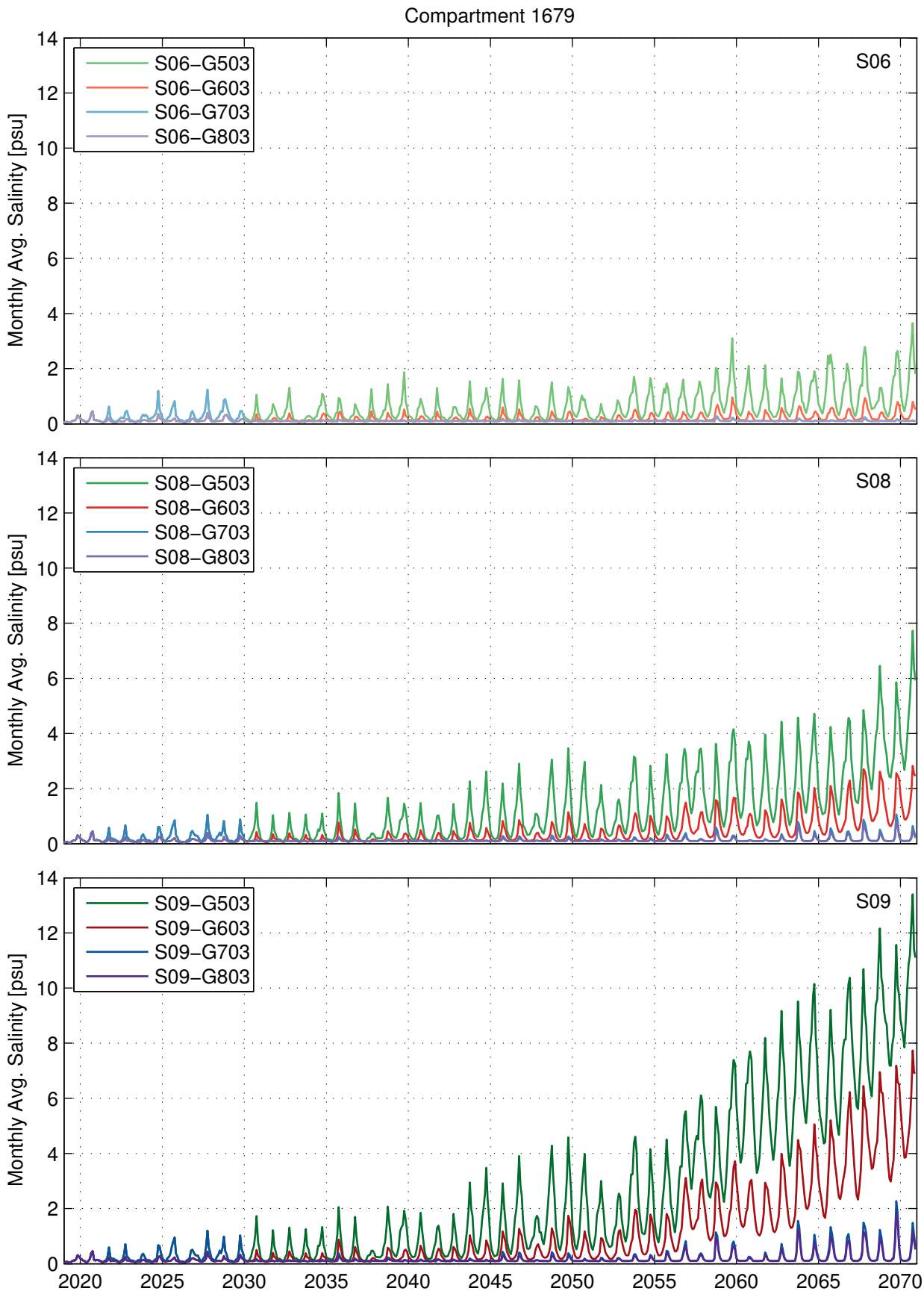

Compartment 1673
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Monthly Avg. Salinity [psu]
0
5
10
15
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

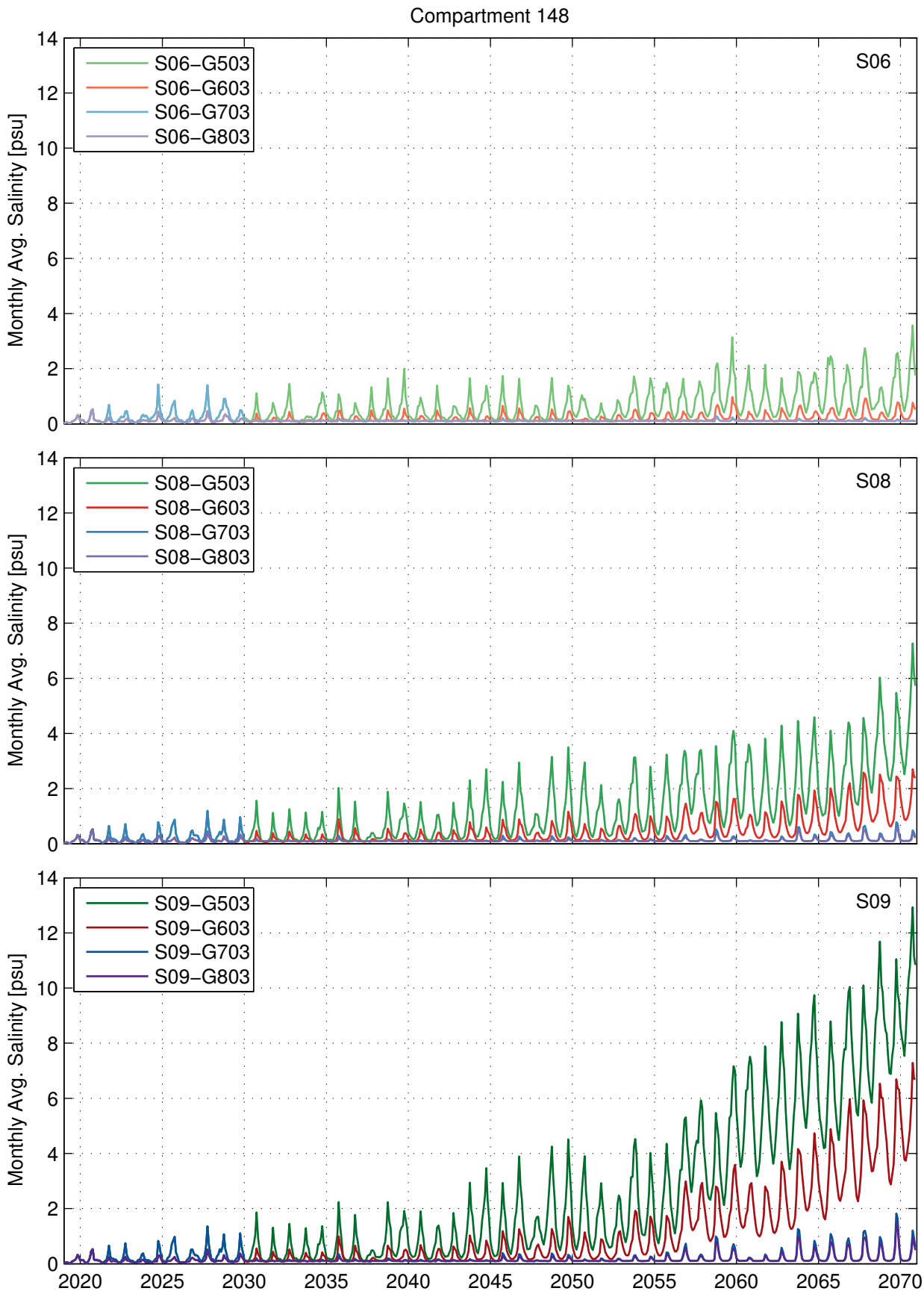

Compartment 1675
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Monthly Avg. Salinity [psu]
0
2
4
6
8
10
12
14
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070


Compartment 1676
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Monthly Avg. Salinity [psu]
0
5
10
15
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070


Compartment 1677
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Monthly Avg. Salinity [psu]
0
2
4
6
8
10
12
14
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070


Compartment 1678
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Monthly Avg. Salinity [psu]
0
2
4
6
8
10
12
14
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

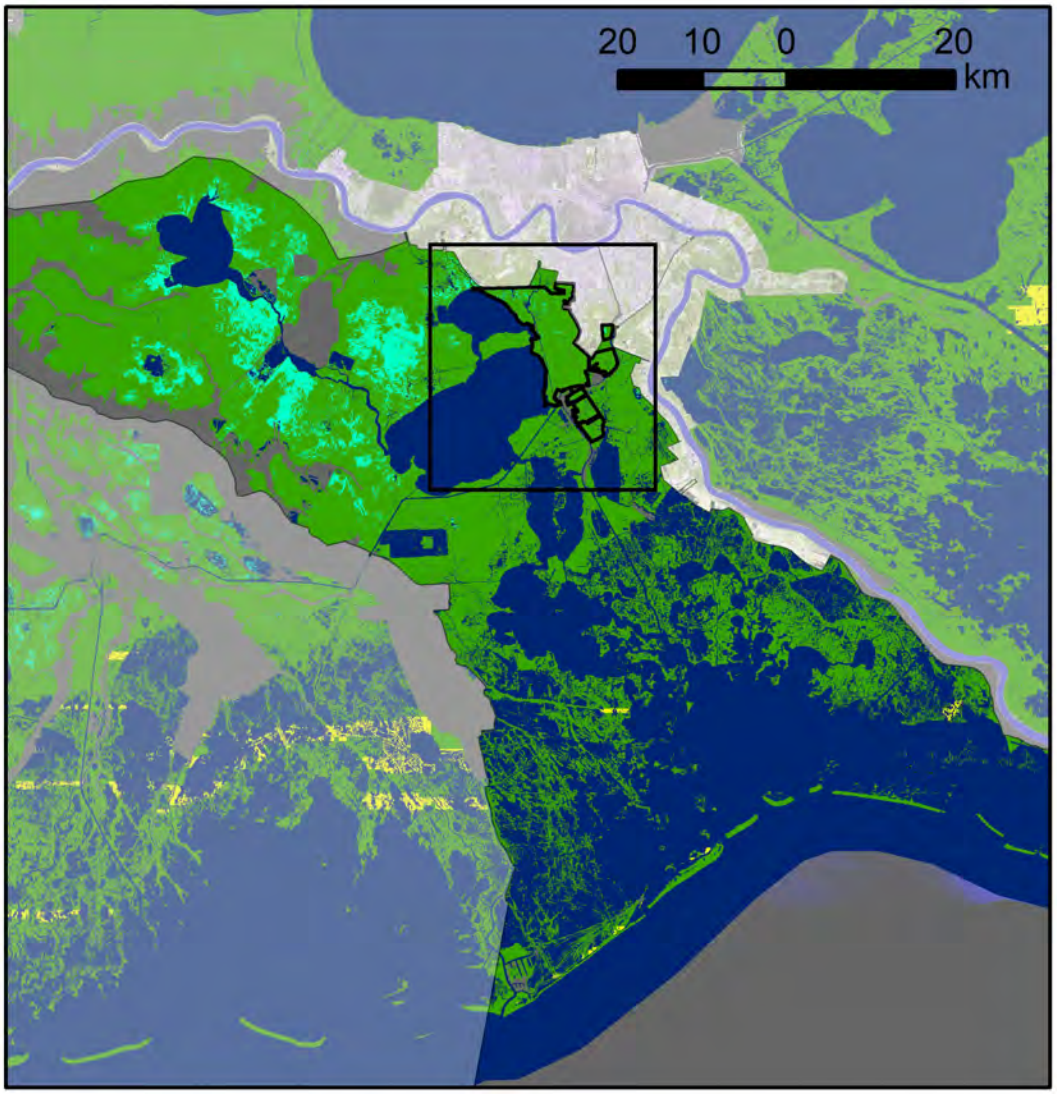

Compartment 1679
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Monthly Avg. Salinity [psu]
0
2
4
6
8
10
12
14
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

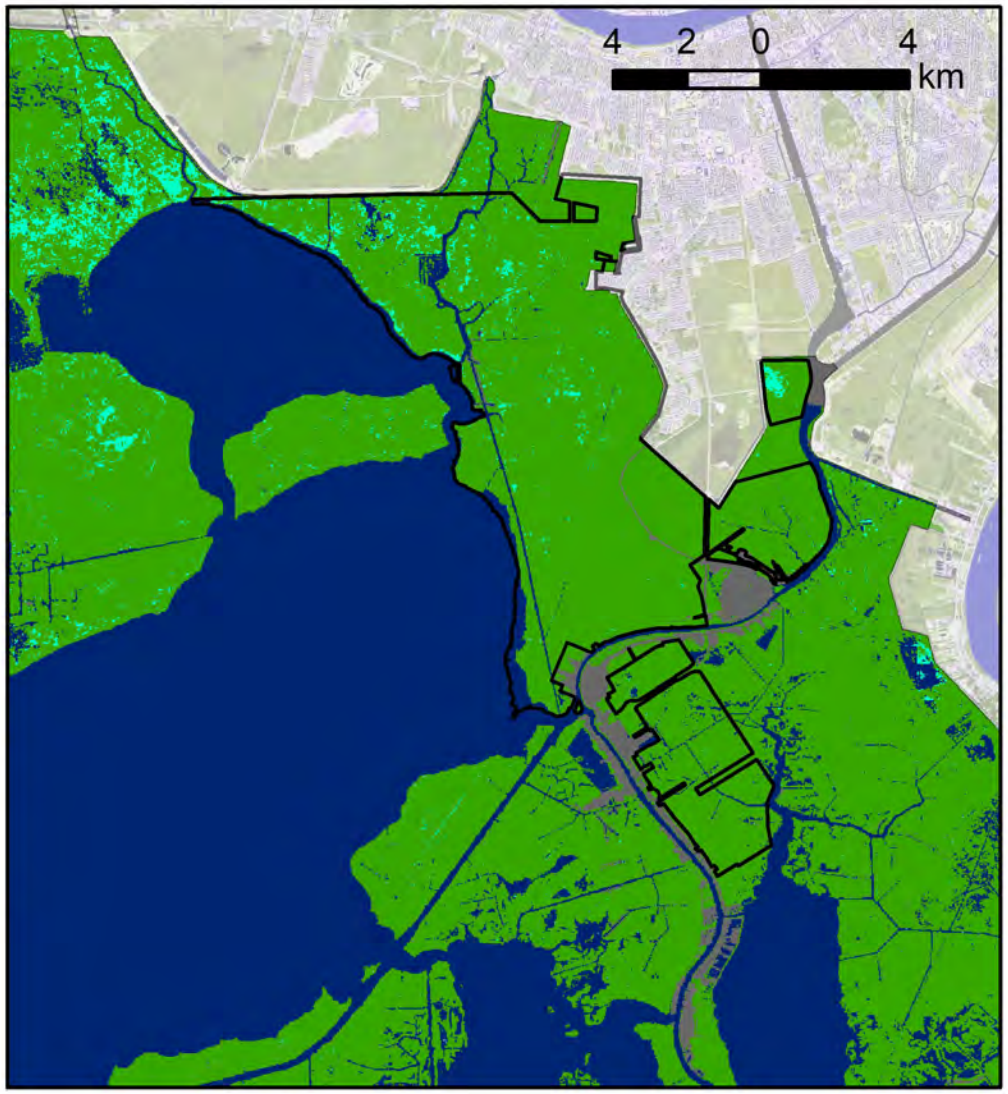

Compartment 148
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Monthly Avg. Salinity [psu]
0
2
4
6
8
10
12
14
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070

National Park Service
JELA Barataria Preserve Future Conditions Modeling

Appendix E: ICM Future Conditions Landscape Results Maps







S06 - G503
Low
FWOA, no diversions
Year 02

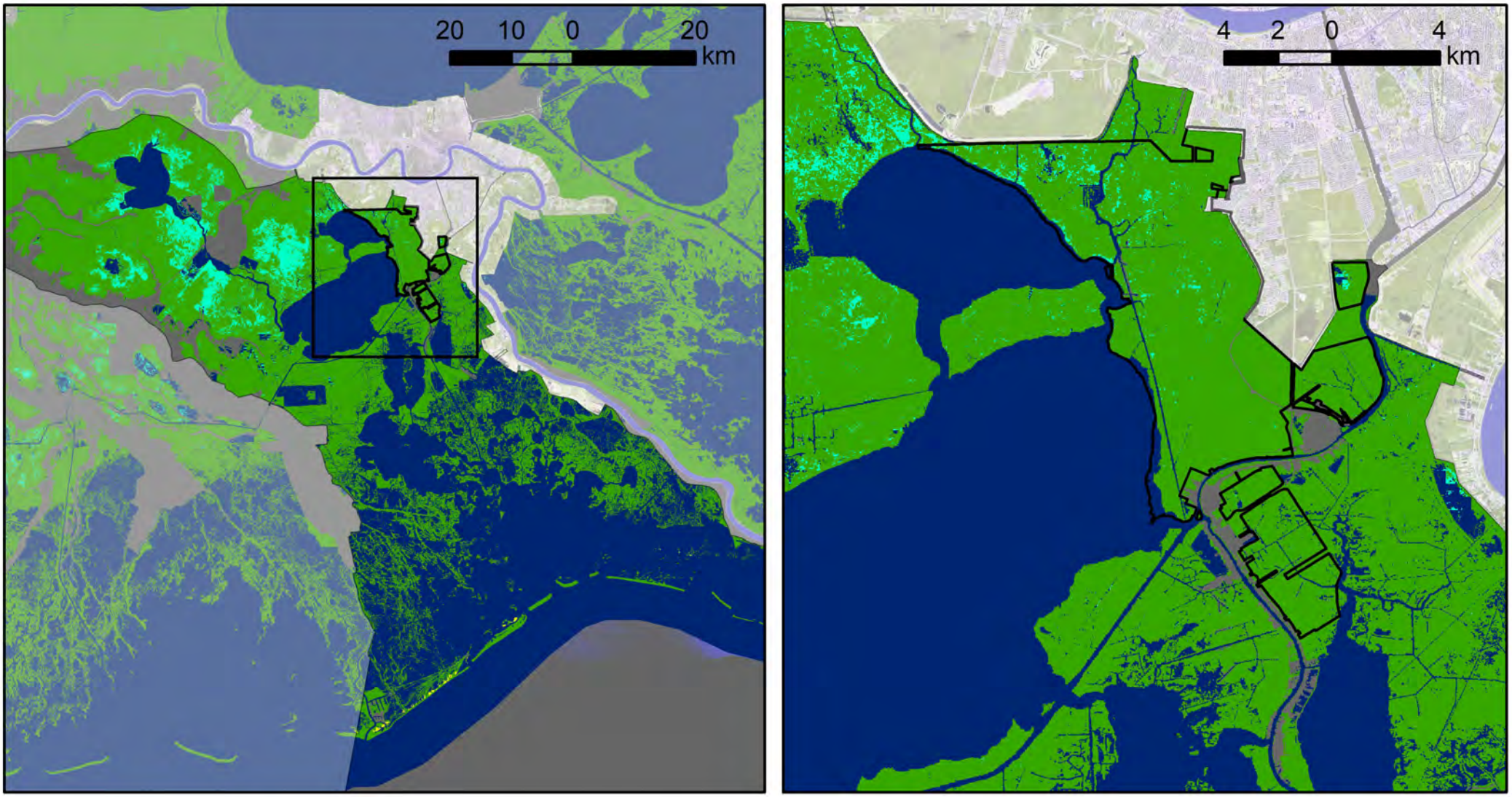
Land Type

- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



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S06 - G503
Low
FWOA, no diversions
Year 12

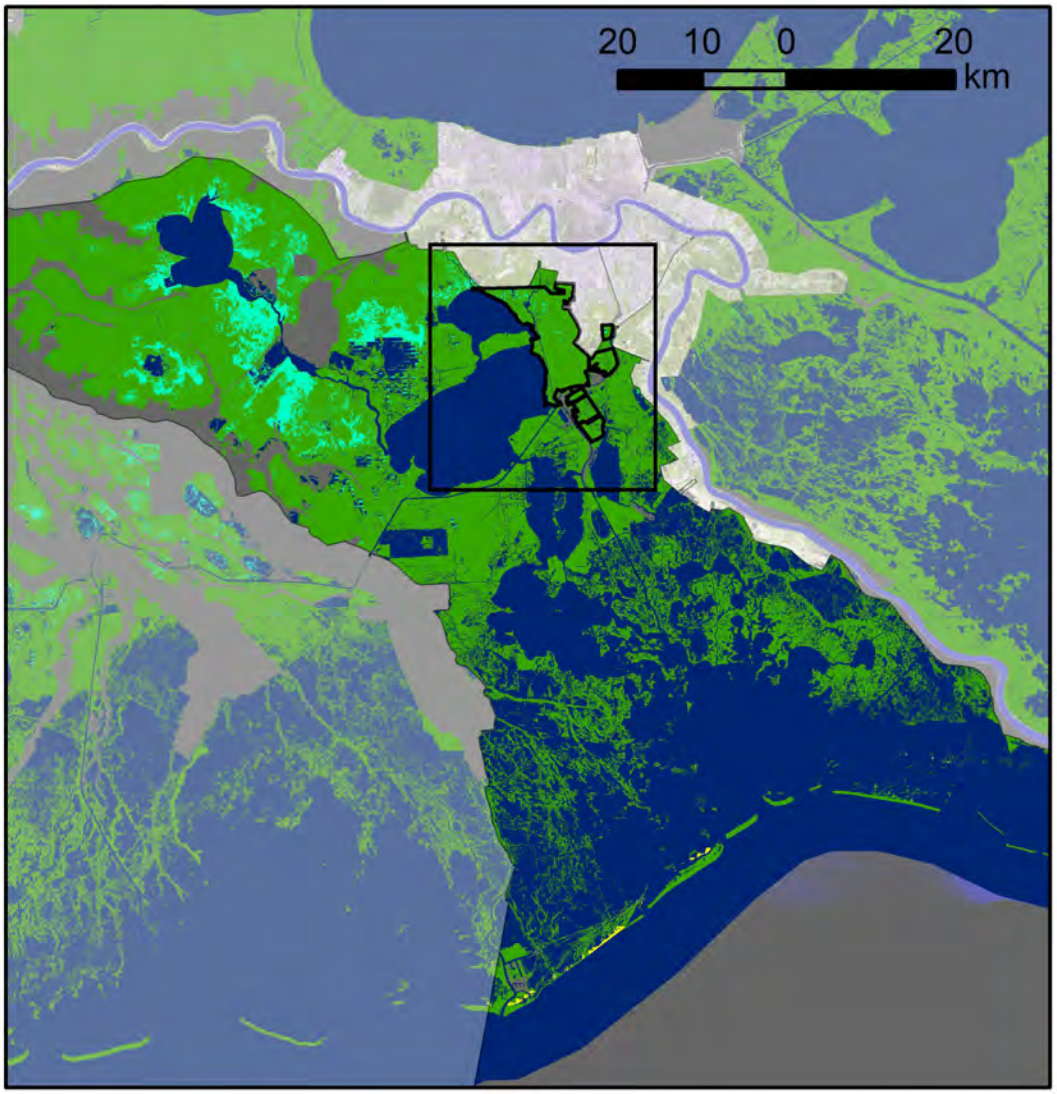
Land Type

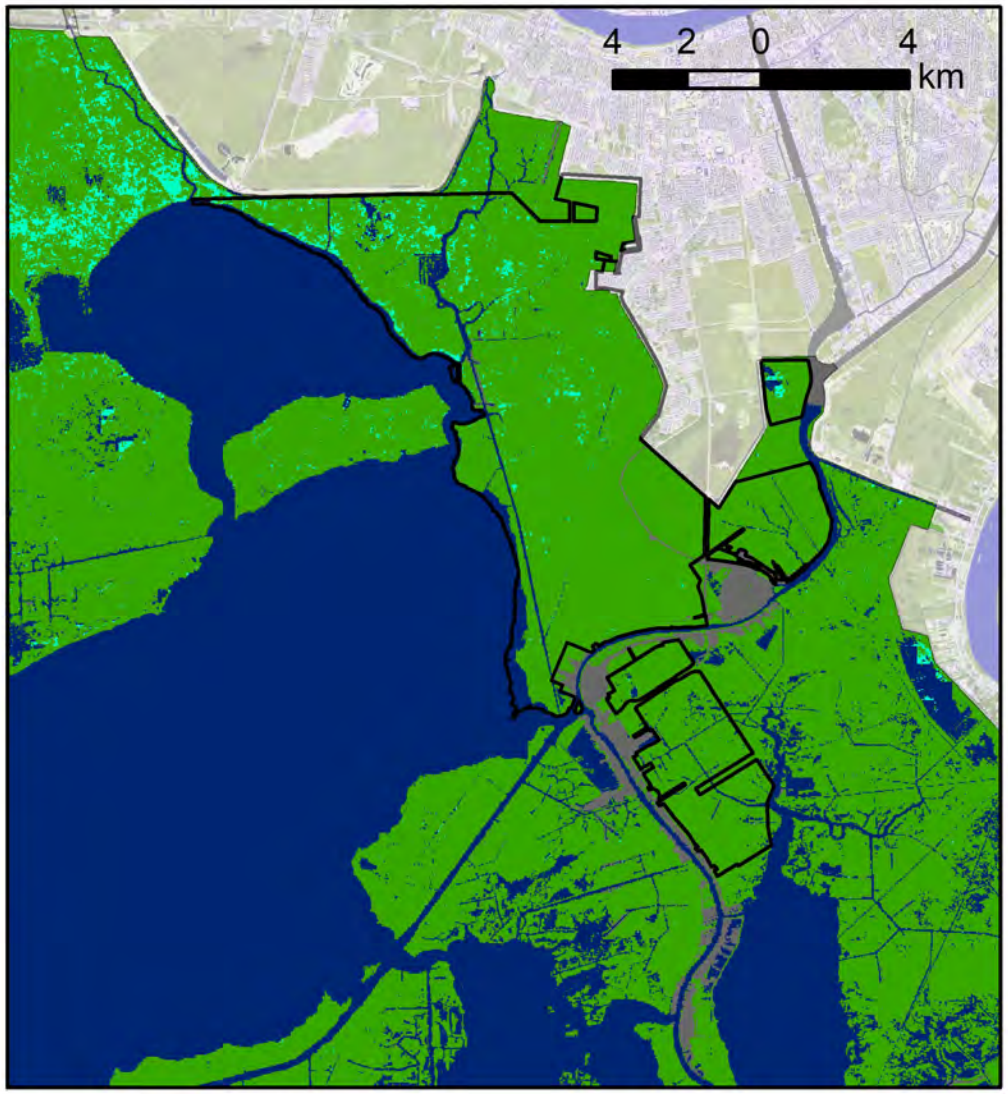
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



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S06 - G503
Low
FWOA, no diversions
Year 22

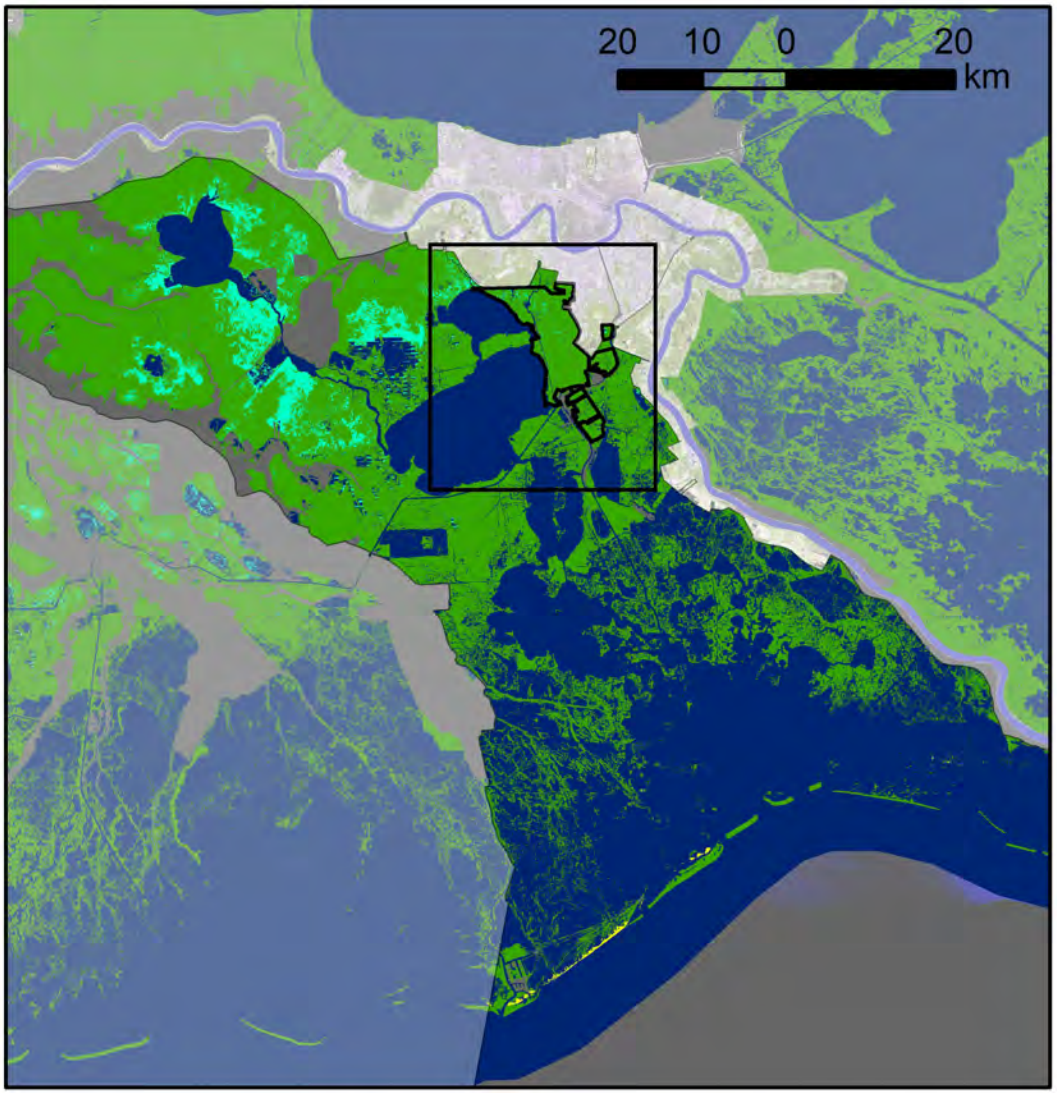
Land Type

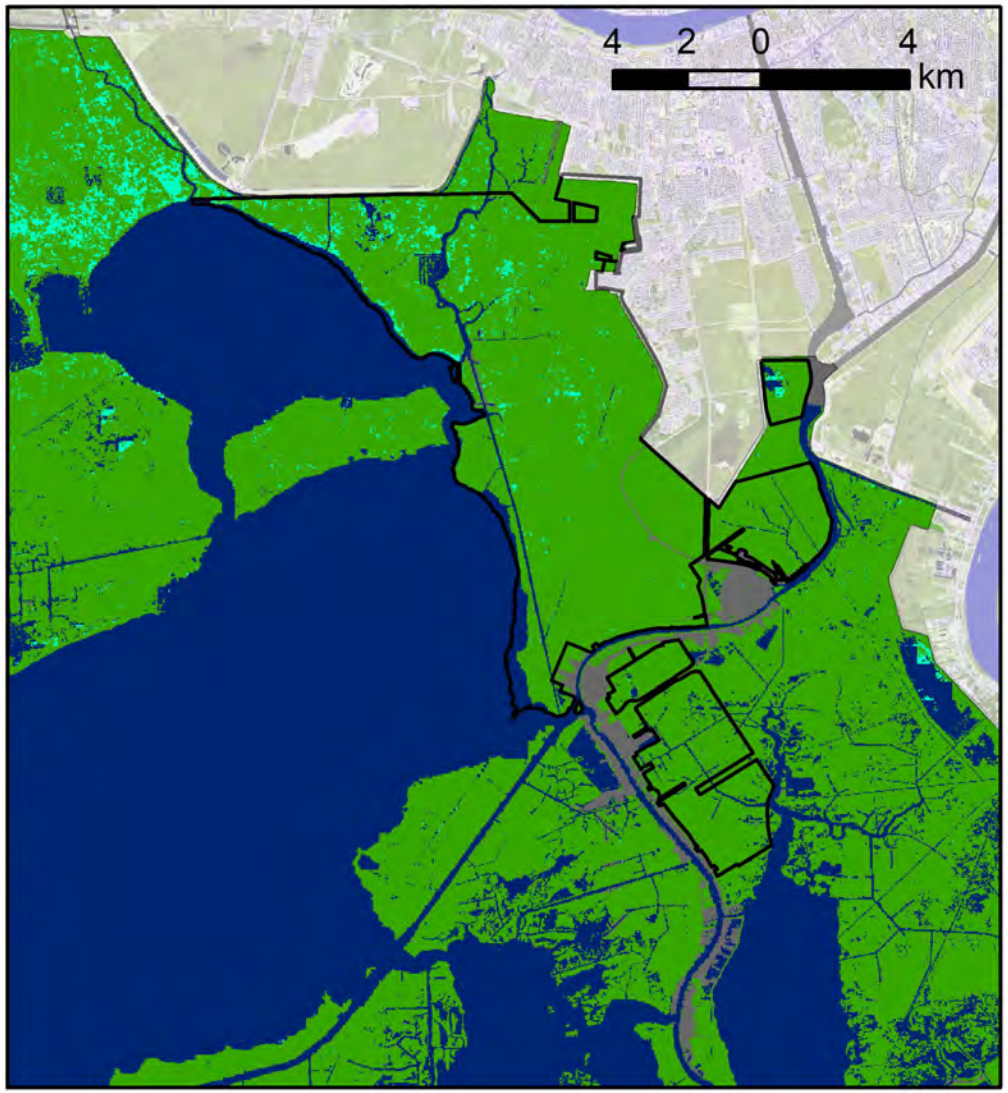
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



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S06 - G503
Low
FWOA, no diversions
Year 32

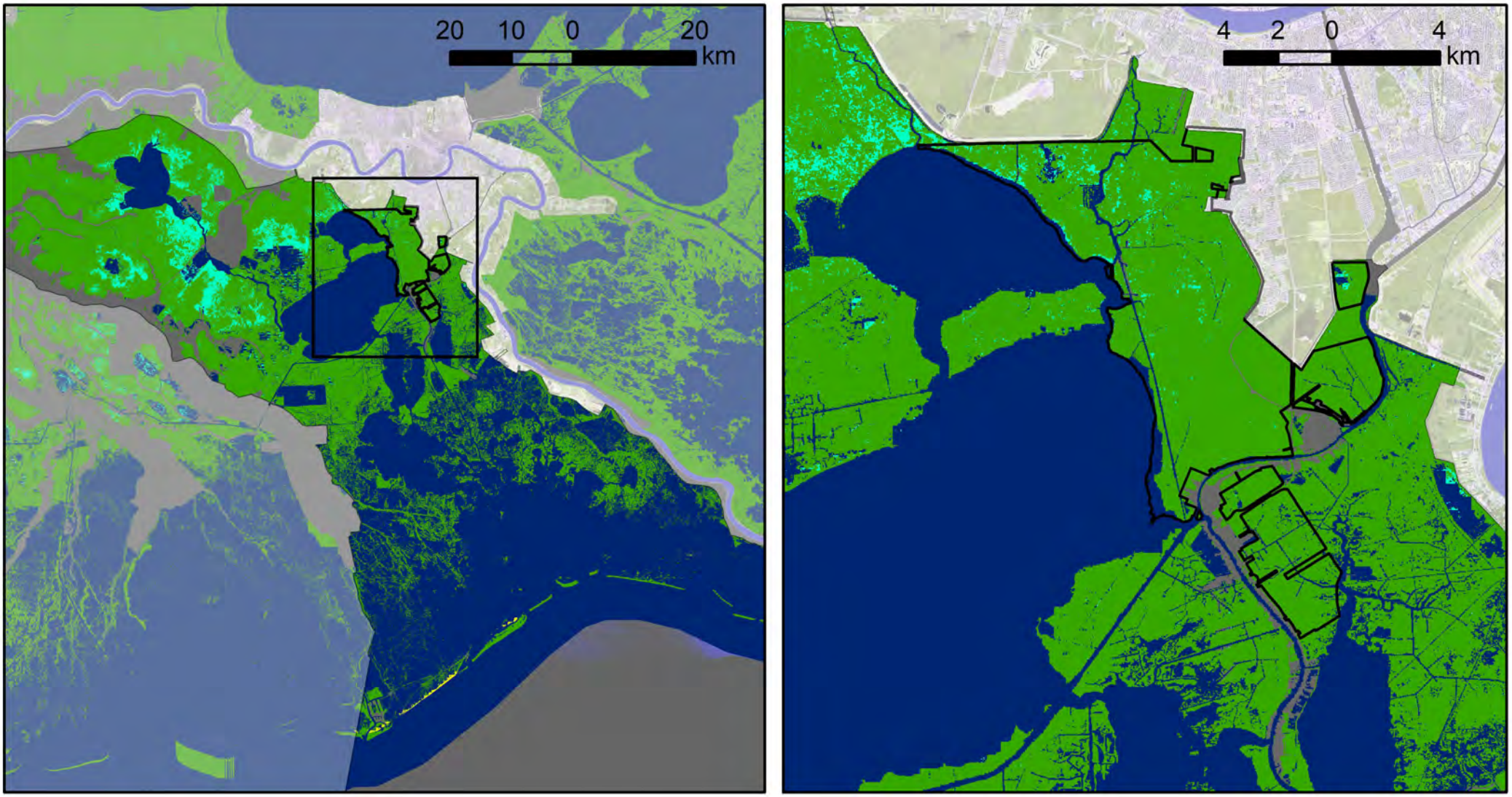
Land Type

- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



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S06 - G503
Low
FWOA, no diversions
Year 42

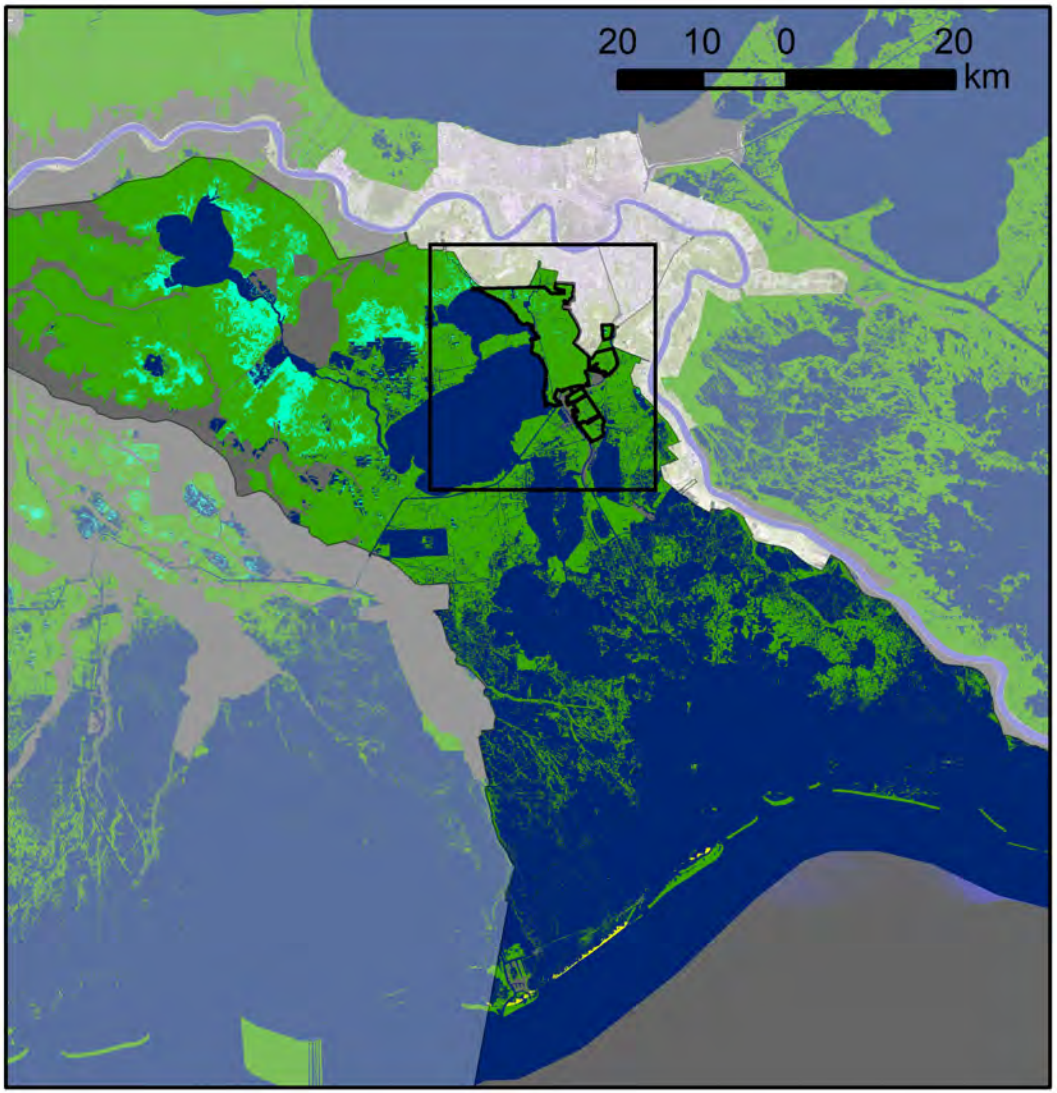
Land Type

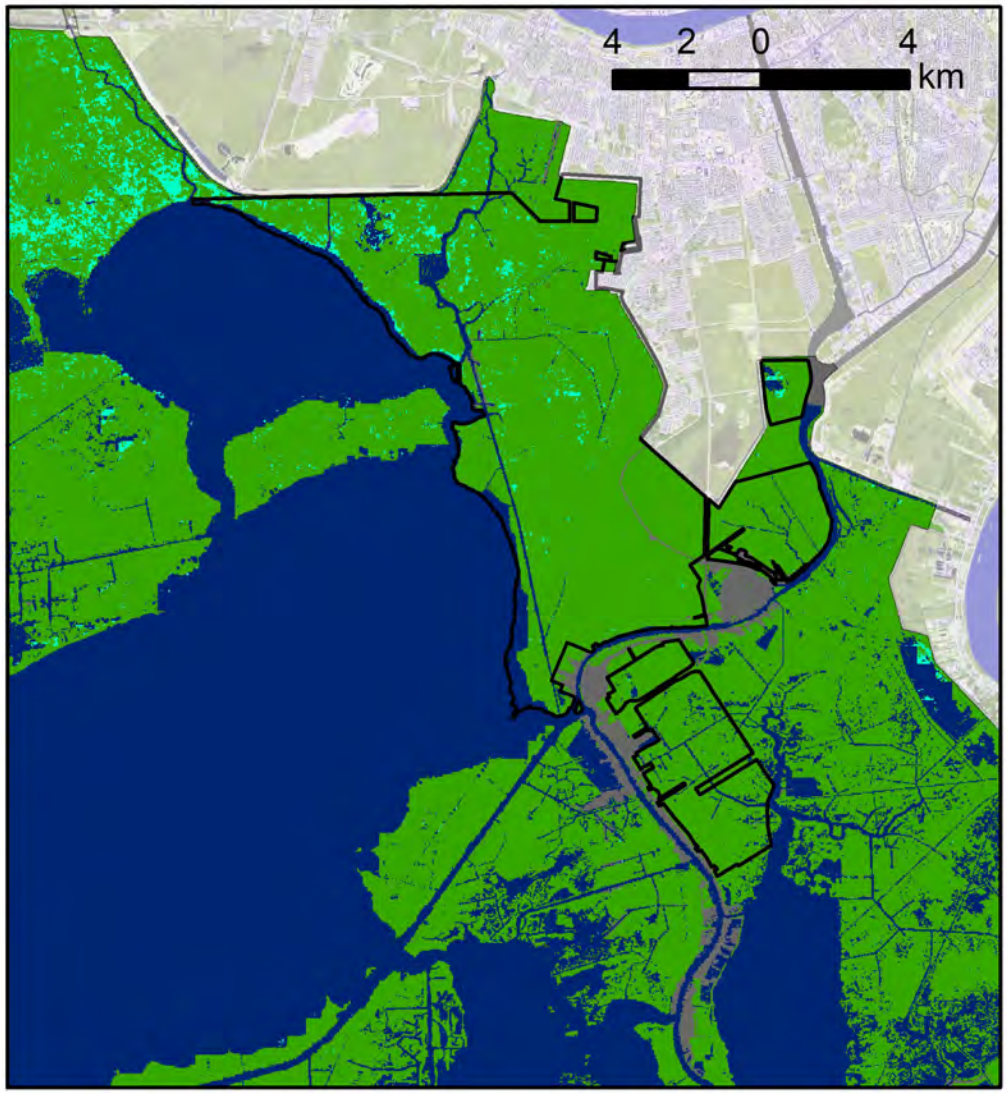
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



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N
W E
S





S06 - G503
Low
FWOA, no diversions
Year 51

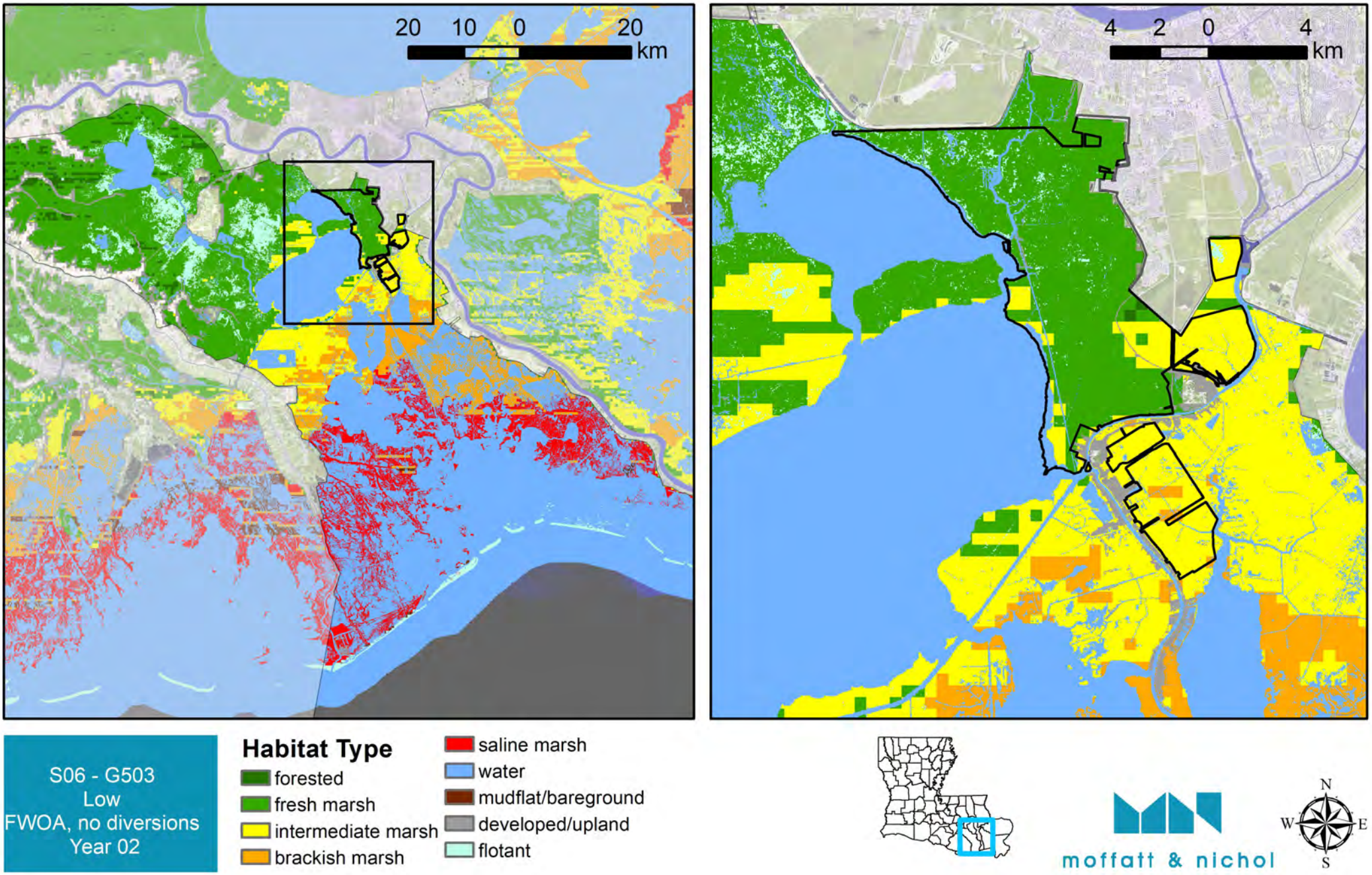
Land Type

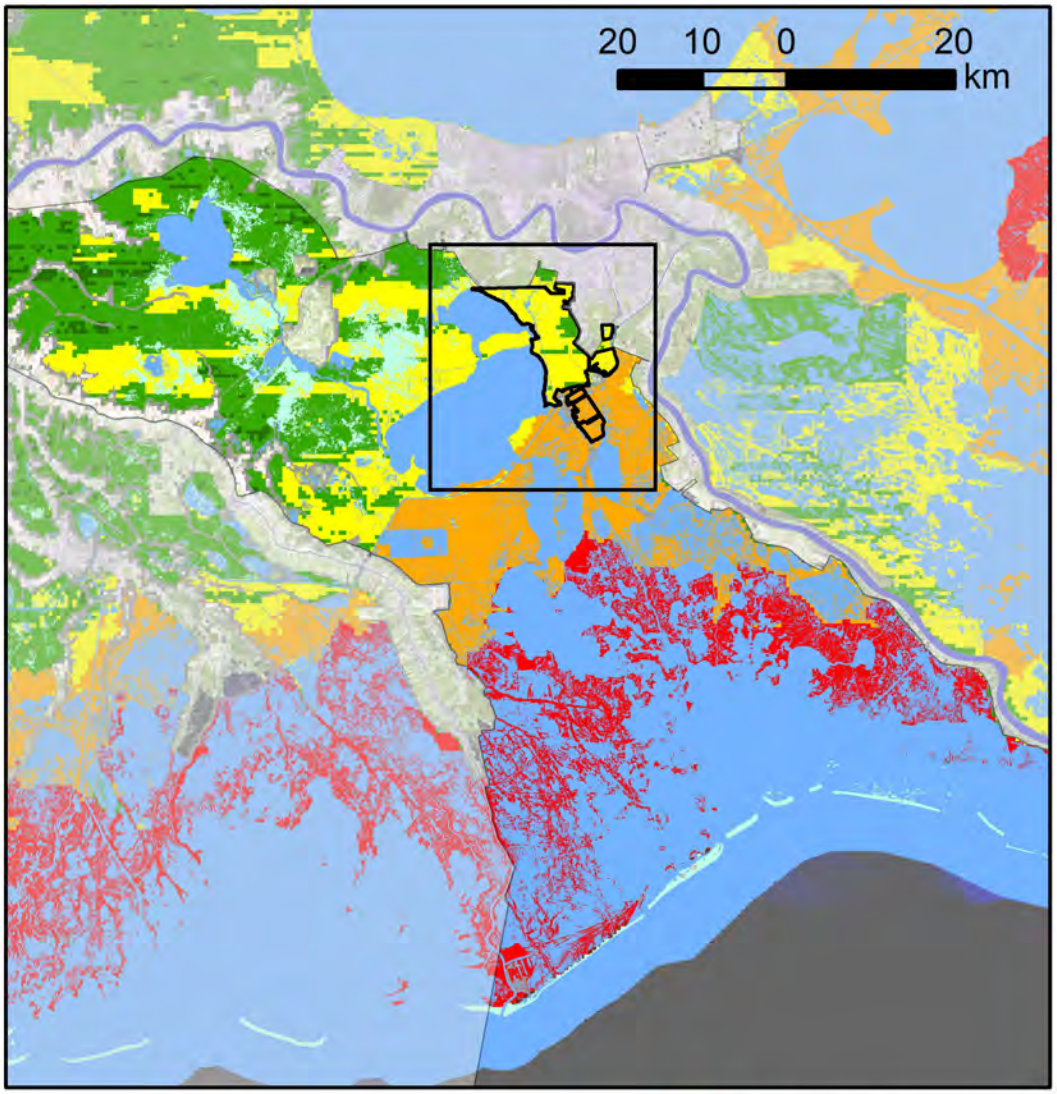
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh

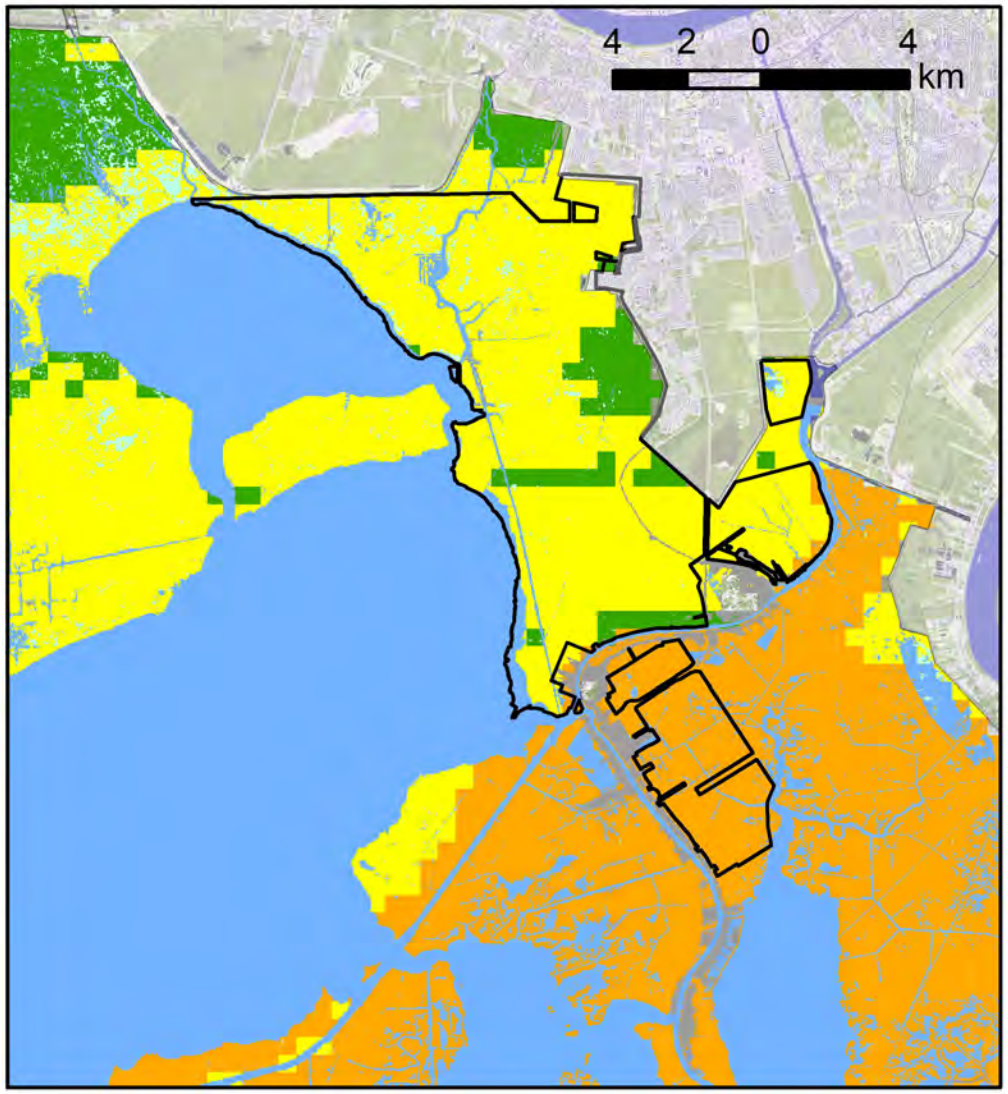


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20 10 0 20
km
4 2 0 4
km
S06 - G503
Low
FWOA, no diversions
Year 02
Habitat Type
forested
fresh marsh
intermediate marsh
brackish marsh
saline marsh
water
mudflat/bareground
developed/upland
flotant
moffatt & nichol
N
W
E
S





S06 - G503
Low
FWOA, no diversions
Year 12

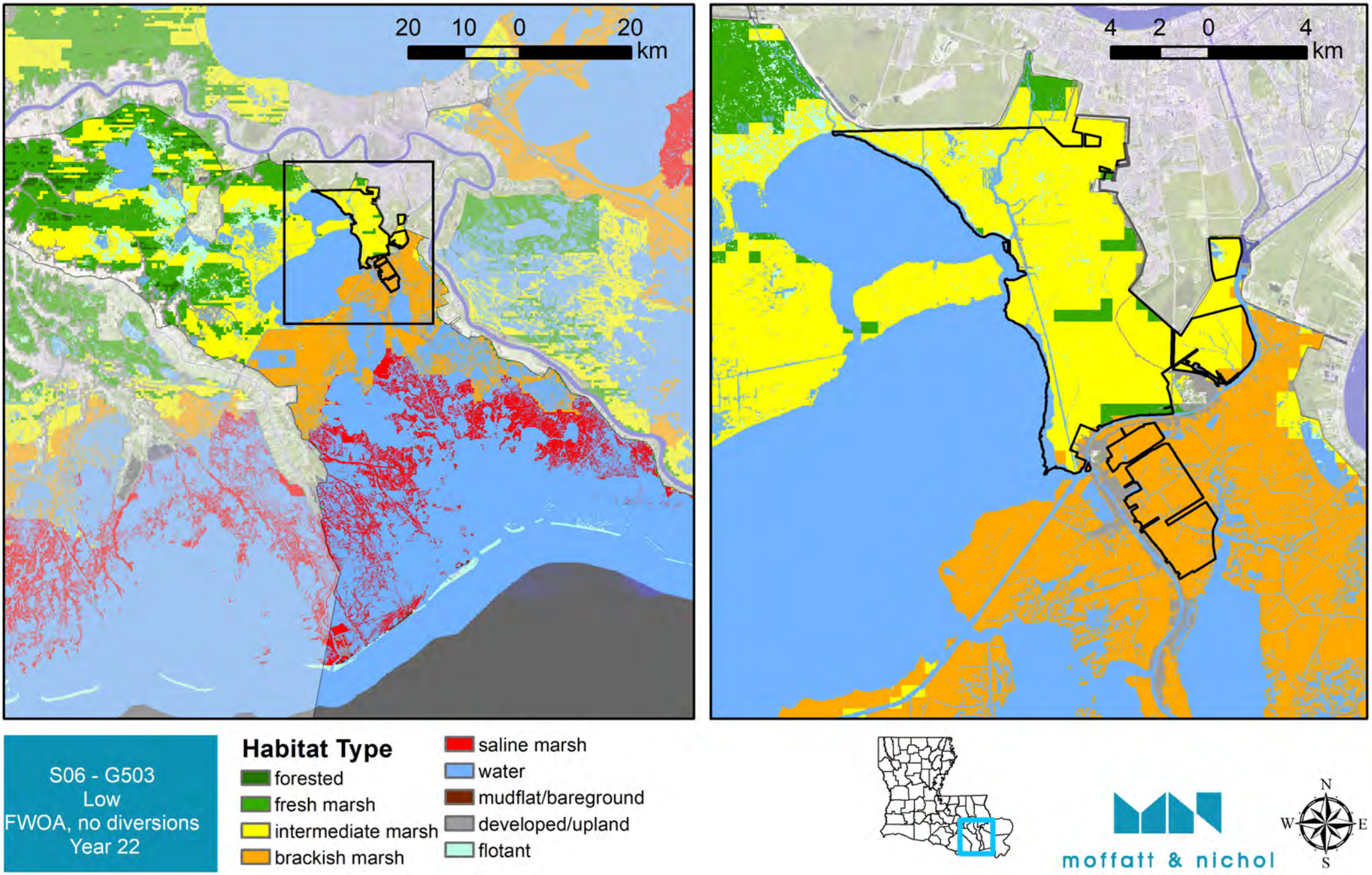
Habitat Type

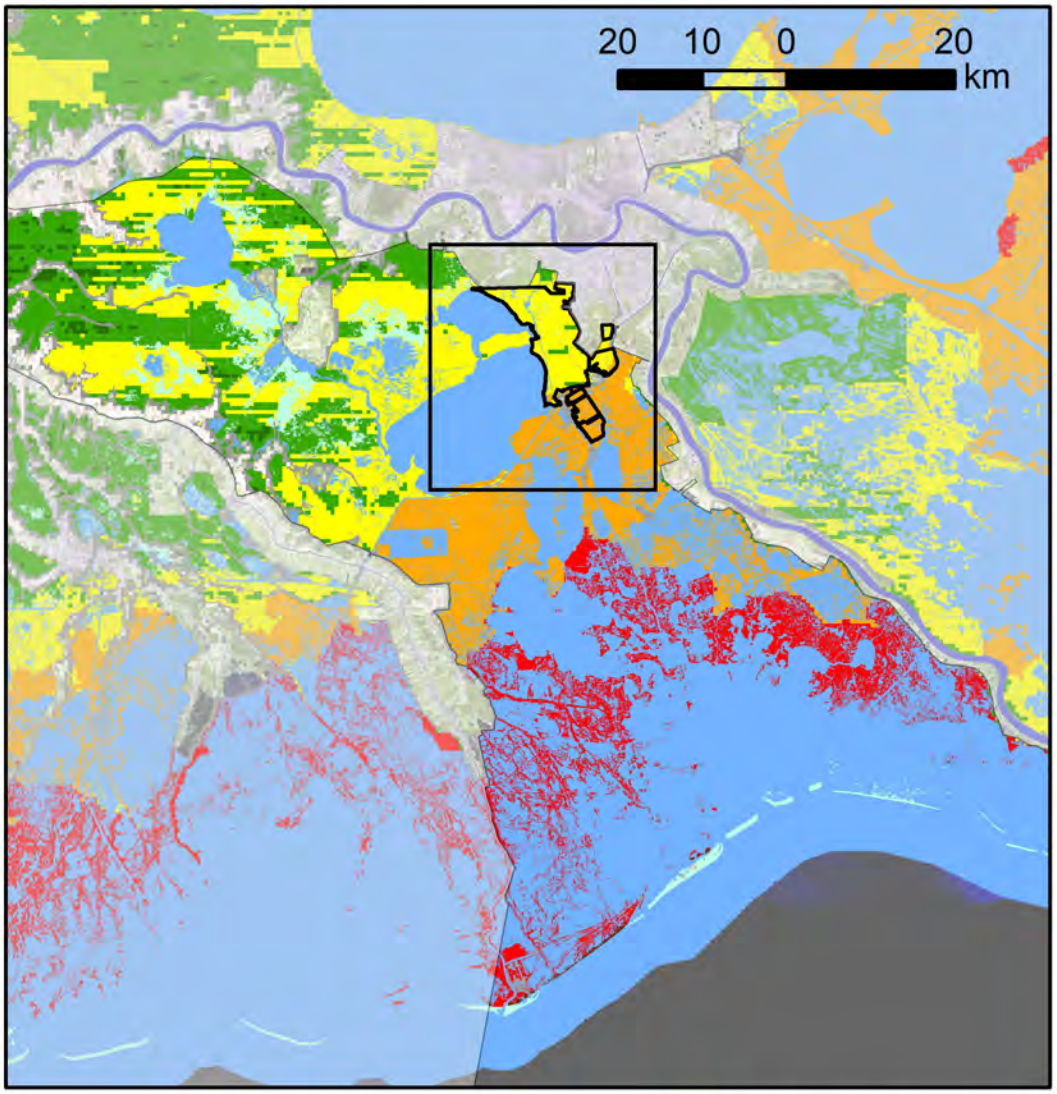
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant

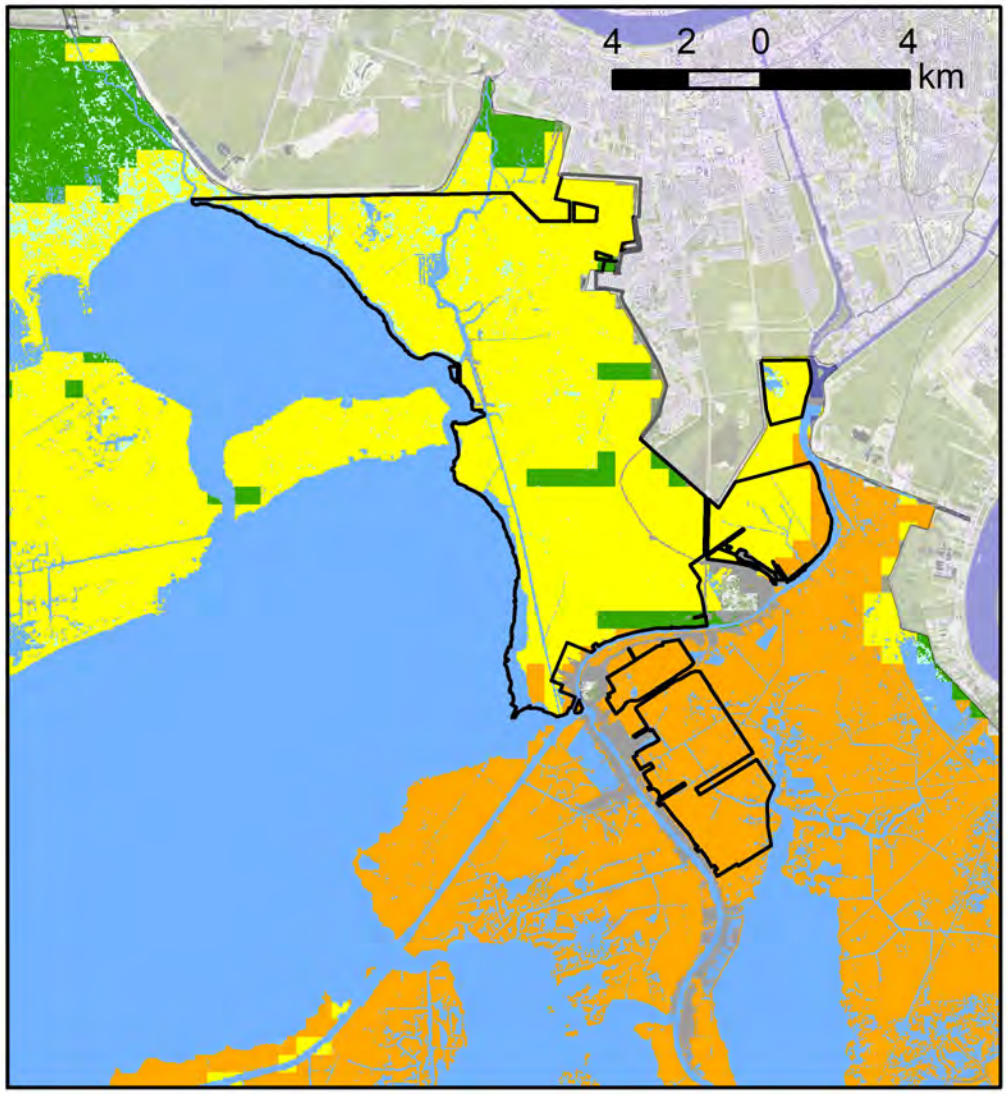


moffatt & nichol




20 10 0 20
km
4 2 0 4
km
S06 - G503
Low
FWOA, no diversions
Year 22
Habitat Type
forested
fresh marsh
intermediate marsh
brackish marsh
saline marsh
water
mudflat/bareground
developed/upland
flotant
moffatt & nichol
N
W
E
S





S06 - G503
Low
FWOA, no diversions
Year 32

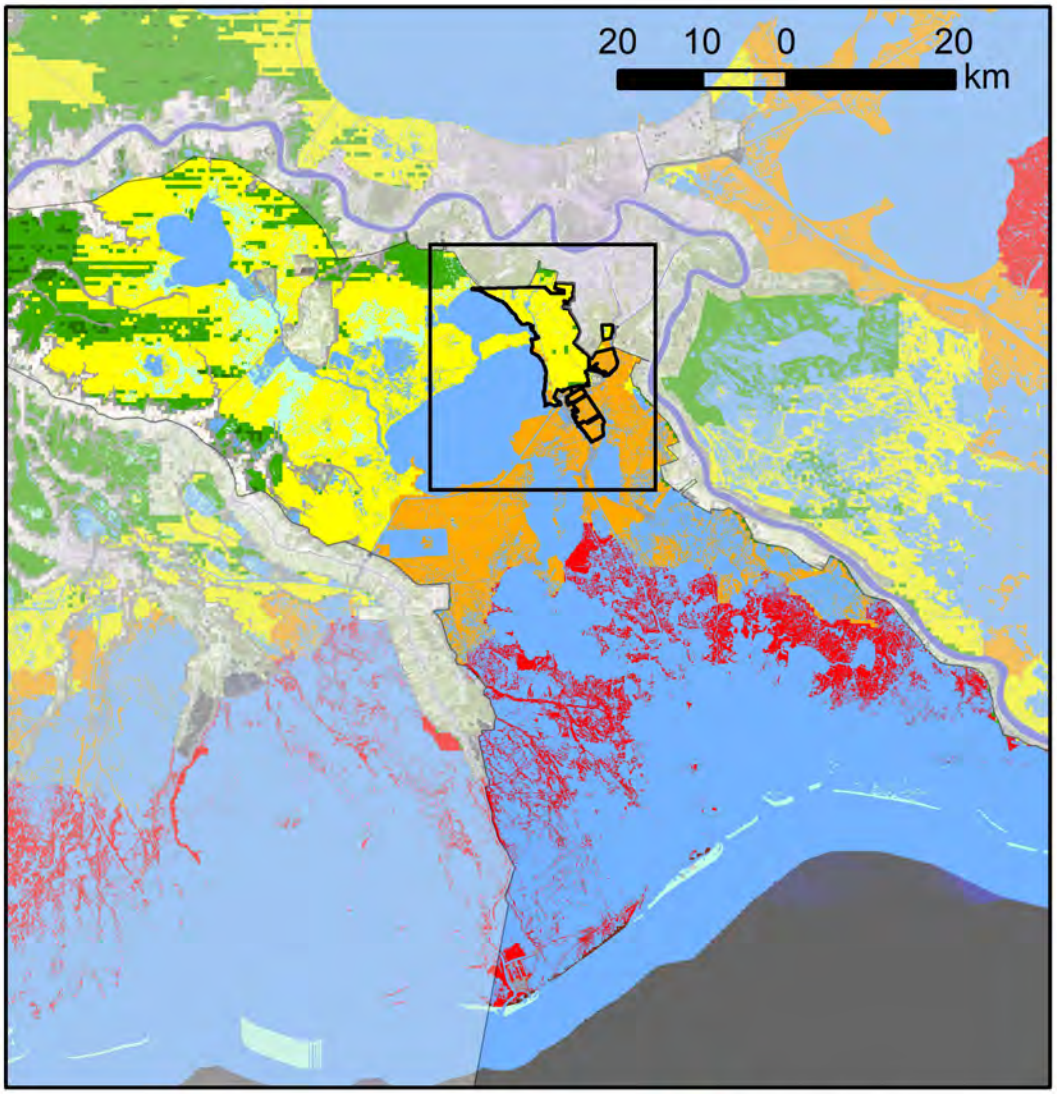
Habitat Type

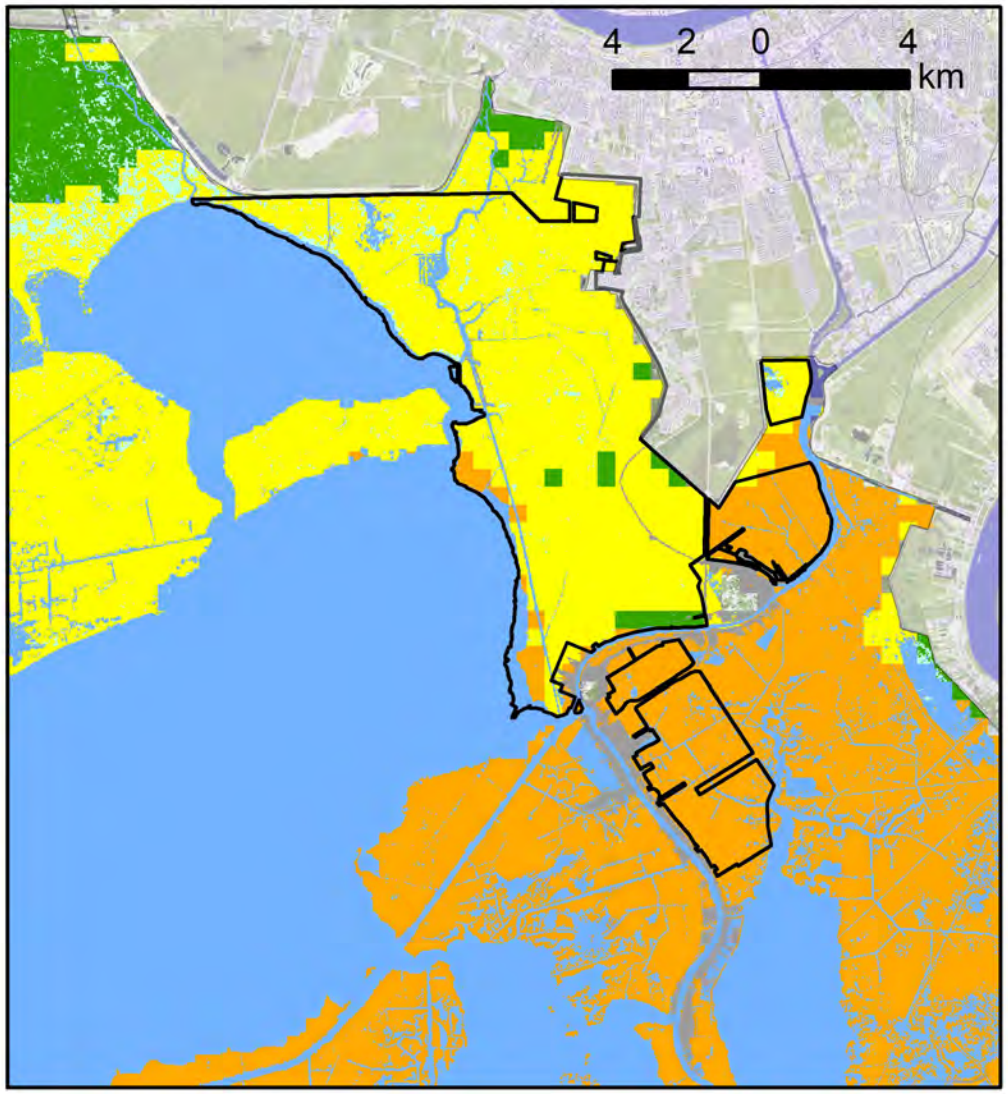
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S06 - G503
Low
FWOA, no diversions
Year 42

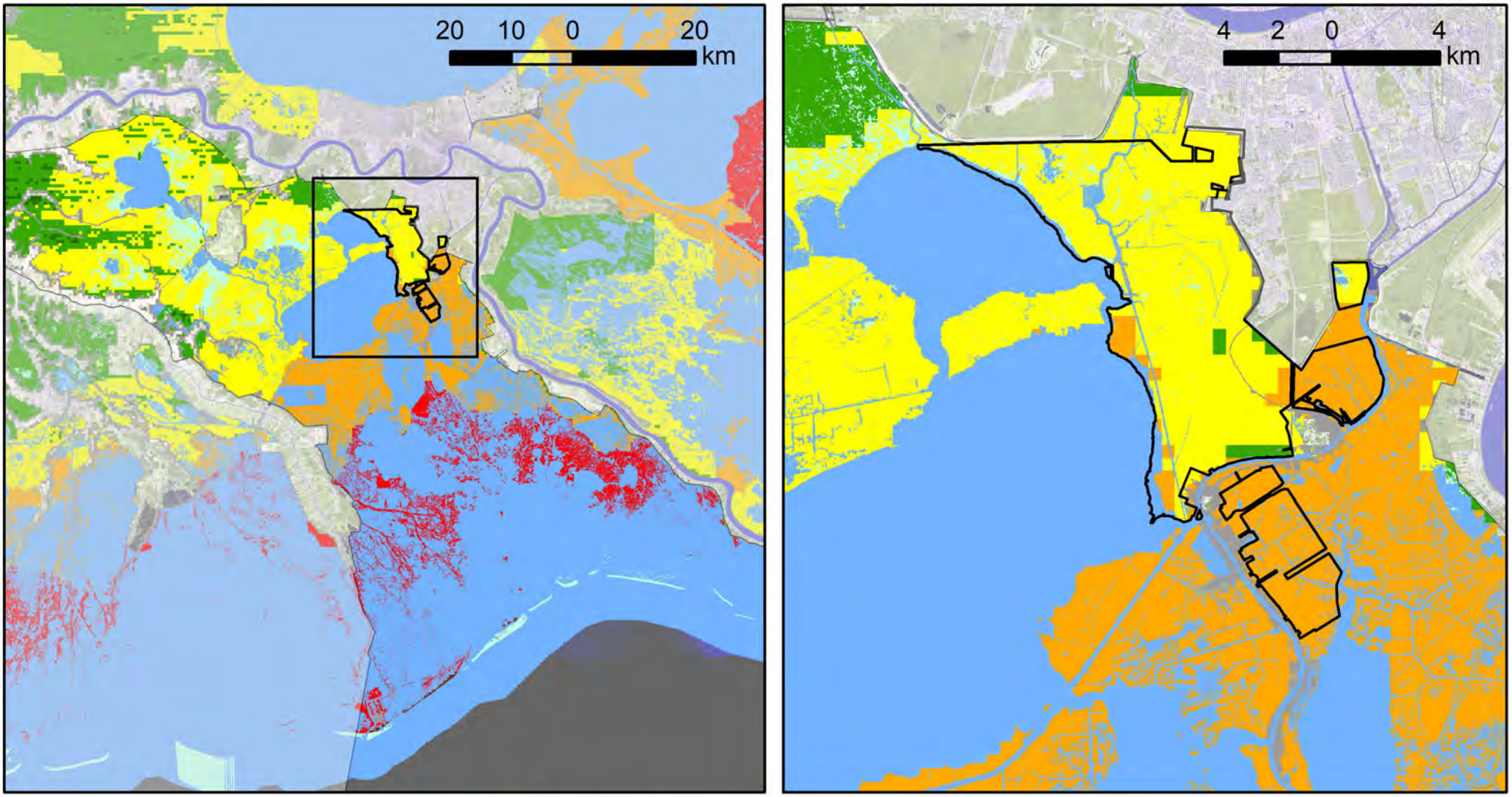
Habitat Type

- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol





S06 - G503
Low
FWOA, no diversions
Year 51

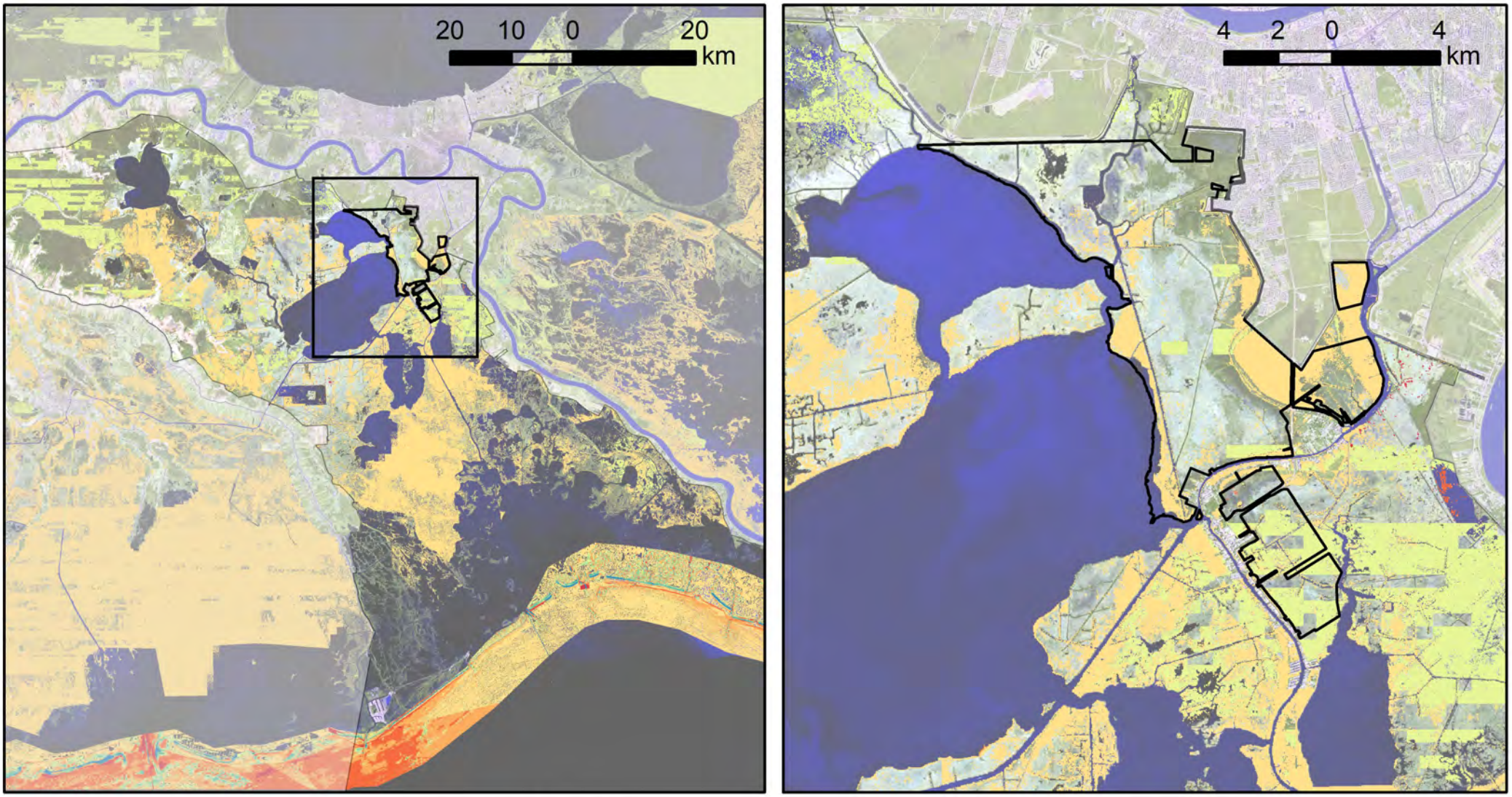
Habitat Type

- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol





S06 - G503
Low
FWOA, no diversions
Year 02

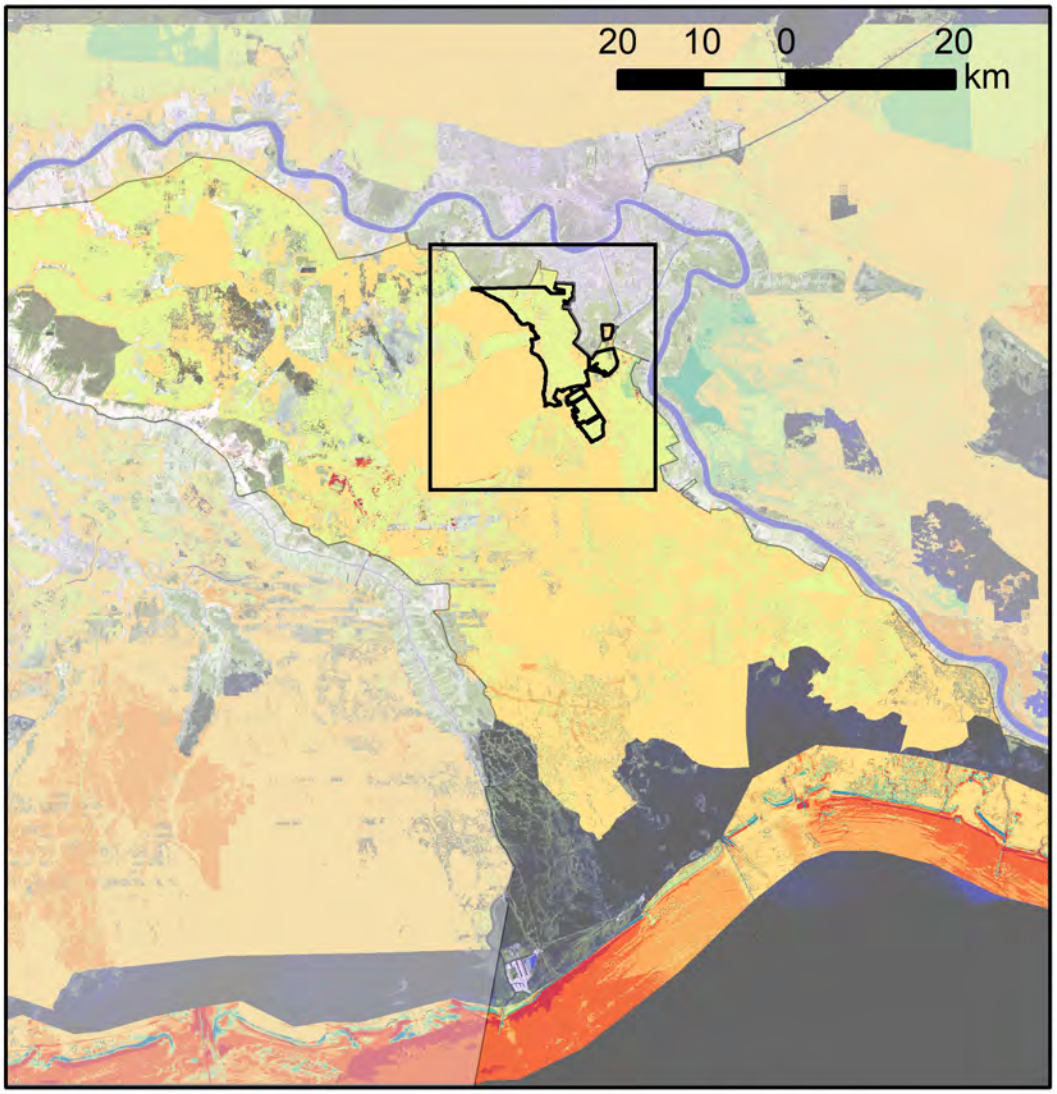
Elev. Change [m]

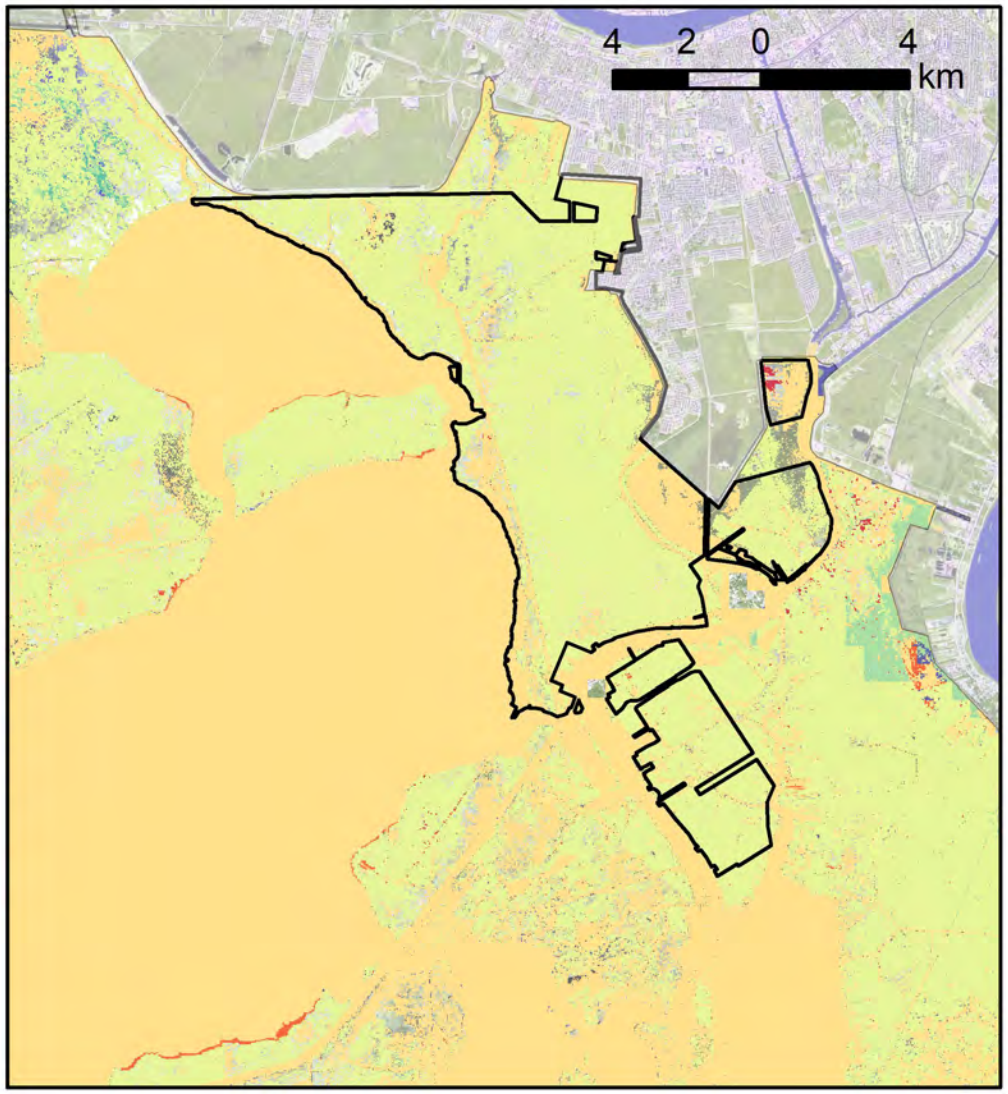
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol







S06 - G503
Low
FWOA, no diversions
Year 12

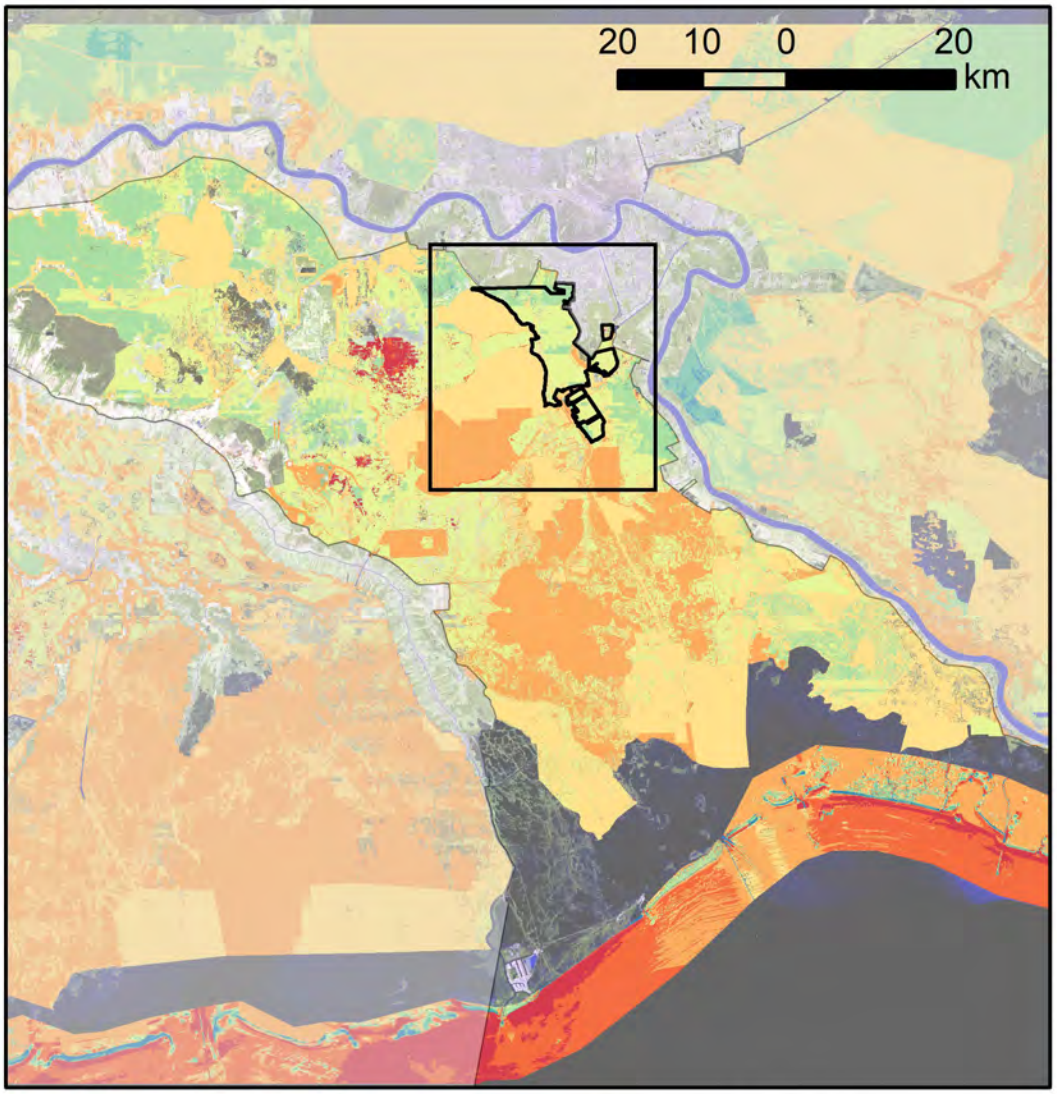
Elev. Change [m]

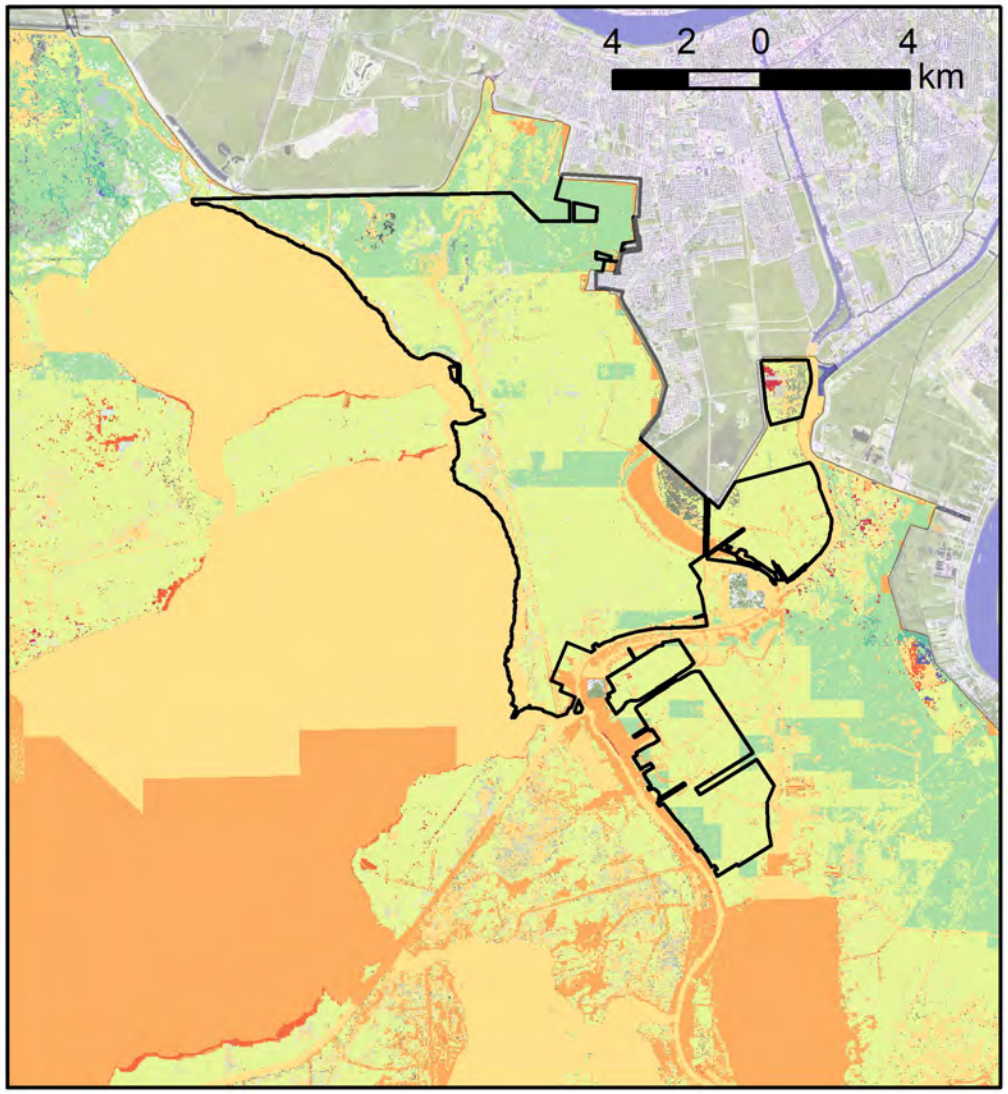
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
W E
S





S06 - G503
Low
FWOA, no diversions
Year 22

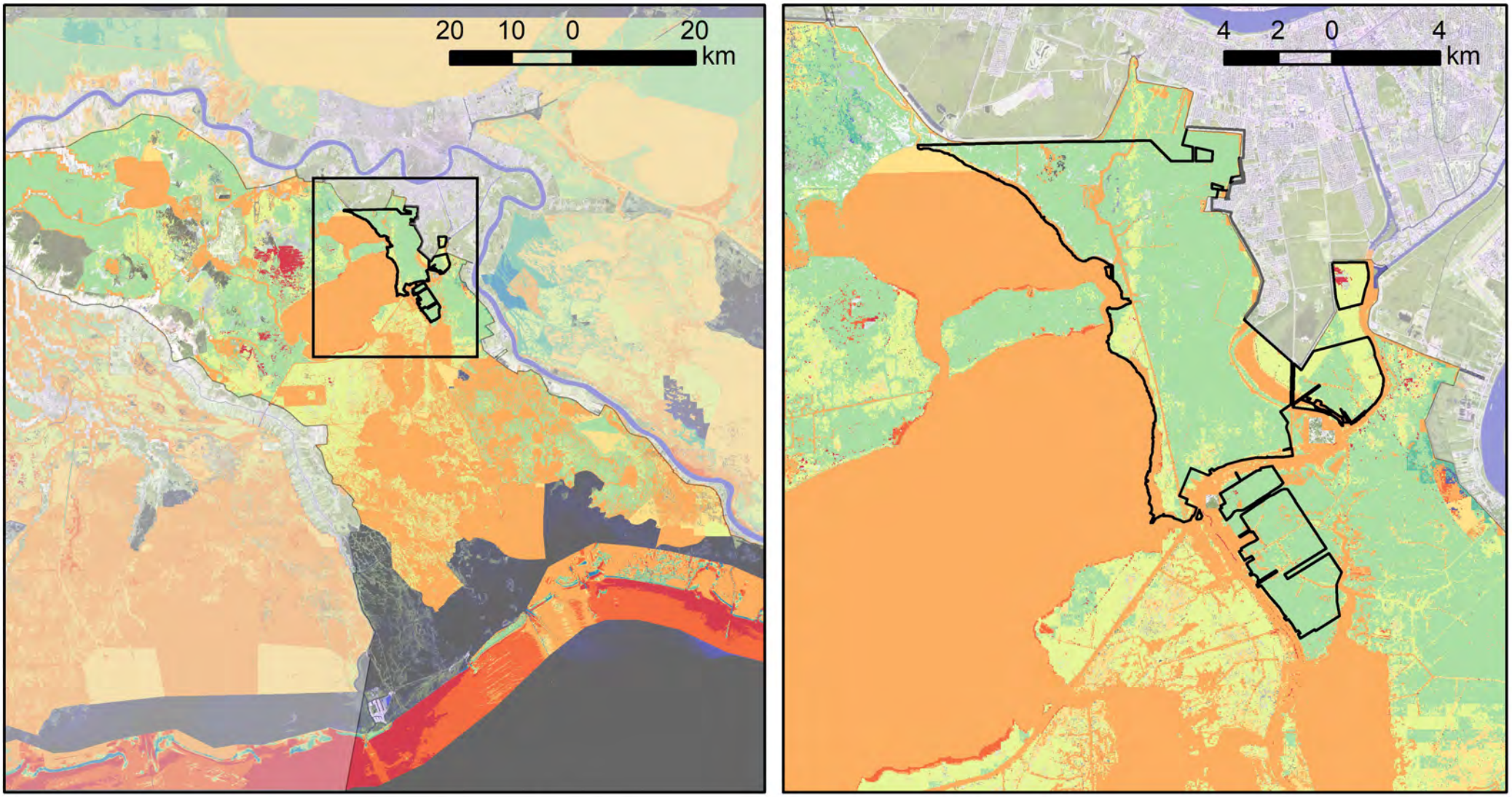
Elev. Change [m]

- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
W E
S



S06 - G503
Low
FWOA, no diversions
Year 32

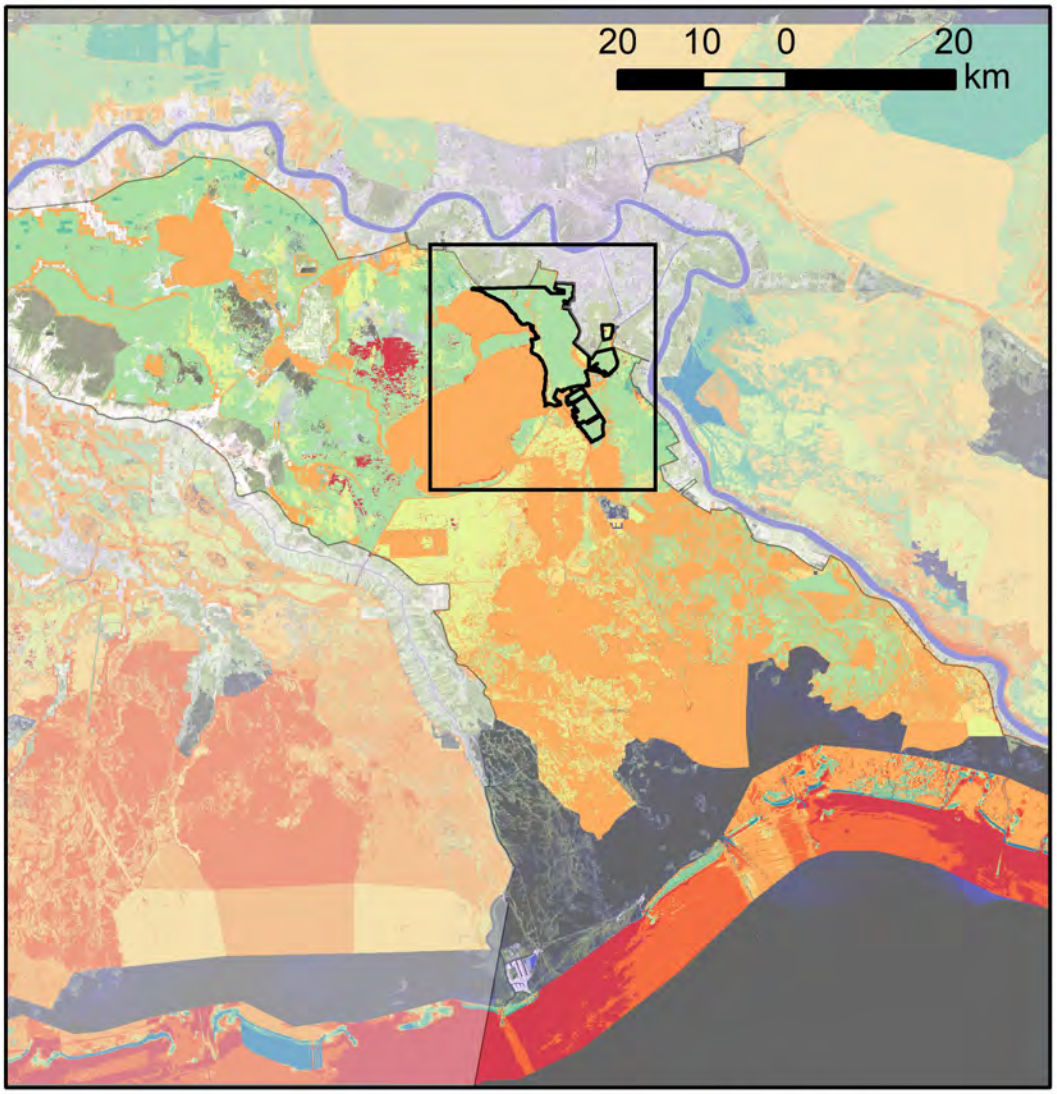
Elev. Change [m]

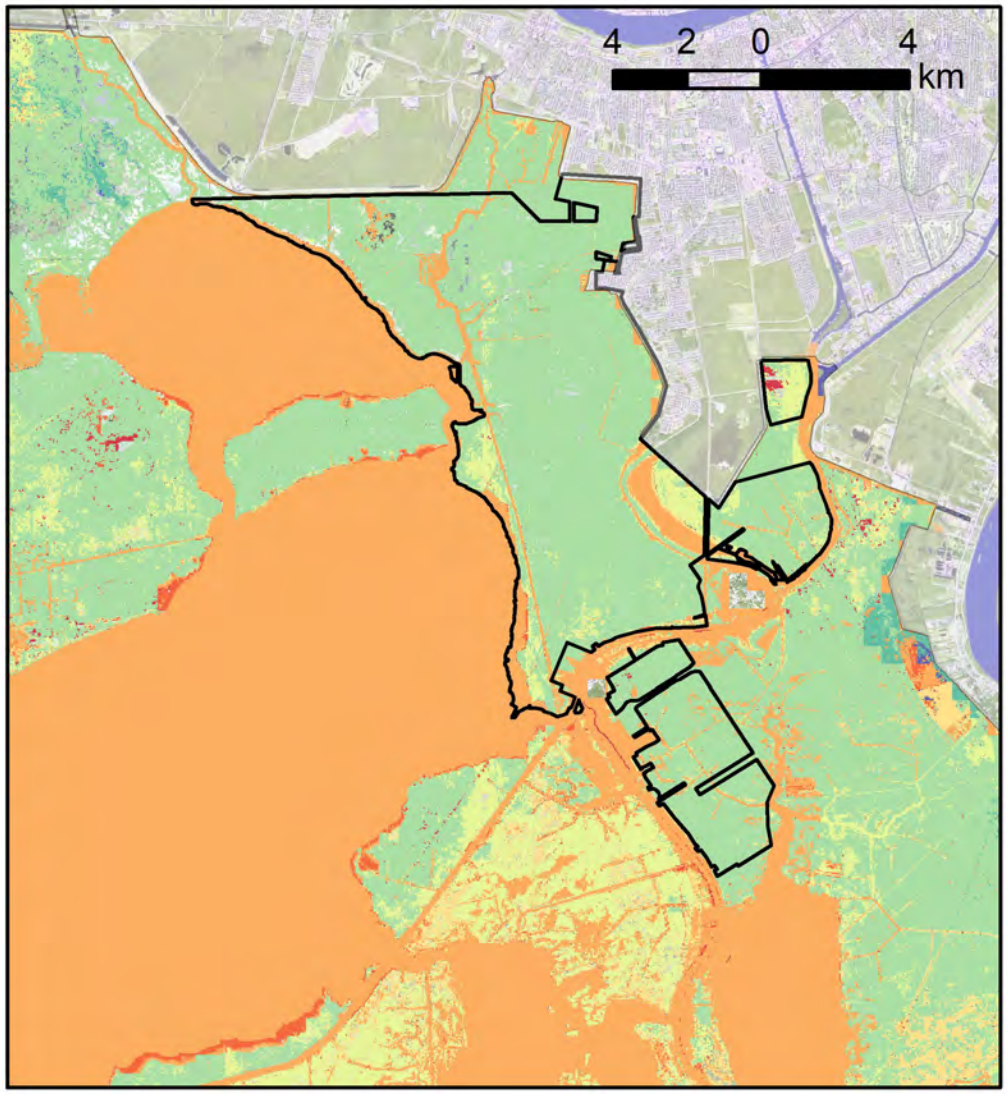
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol







S06 - G503
Low
FWOA, no diversions
Year 42

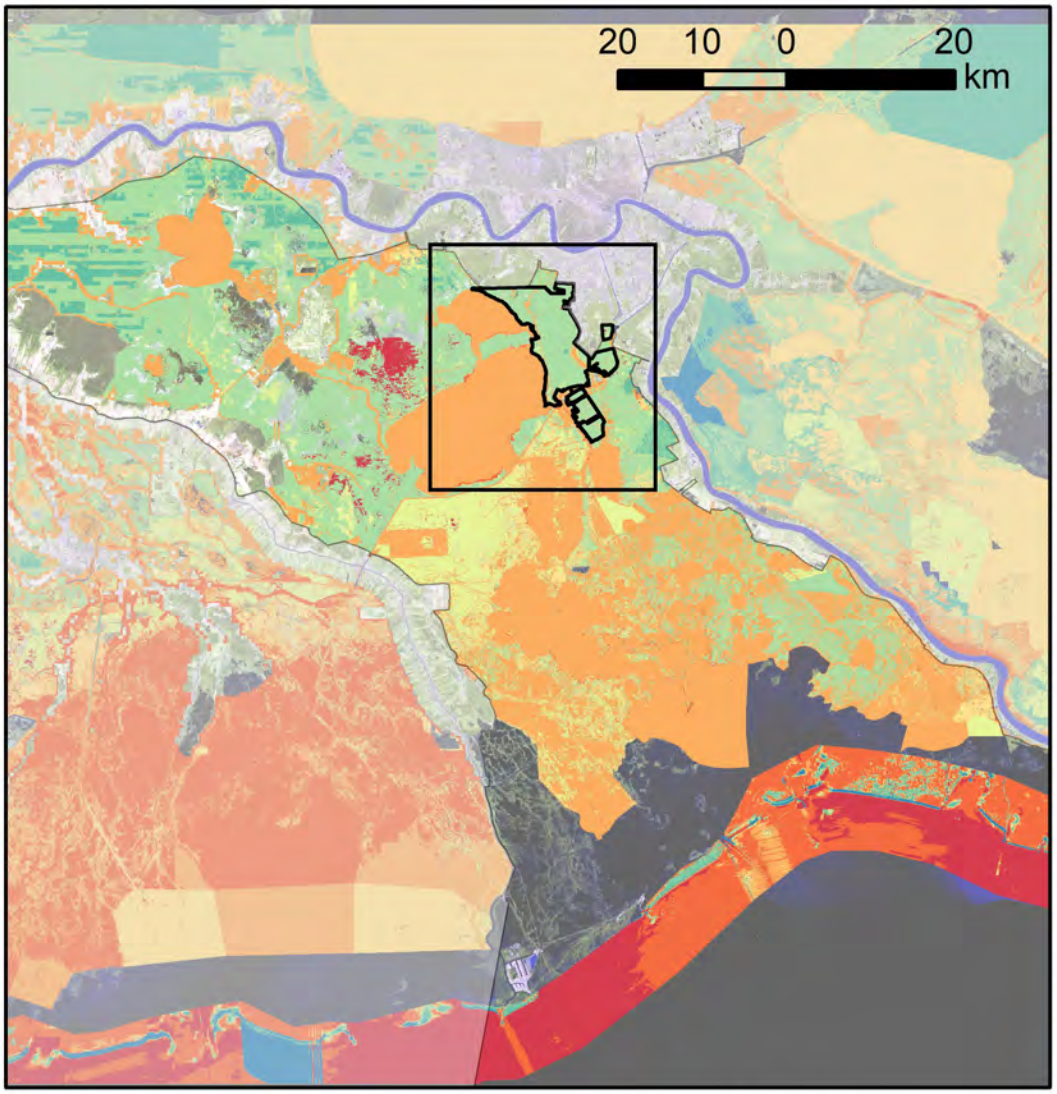
Elev. Change [m]

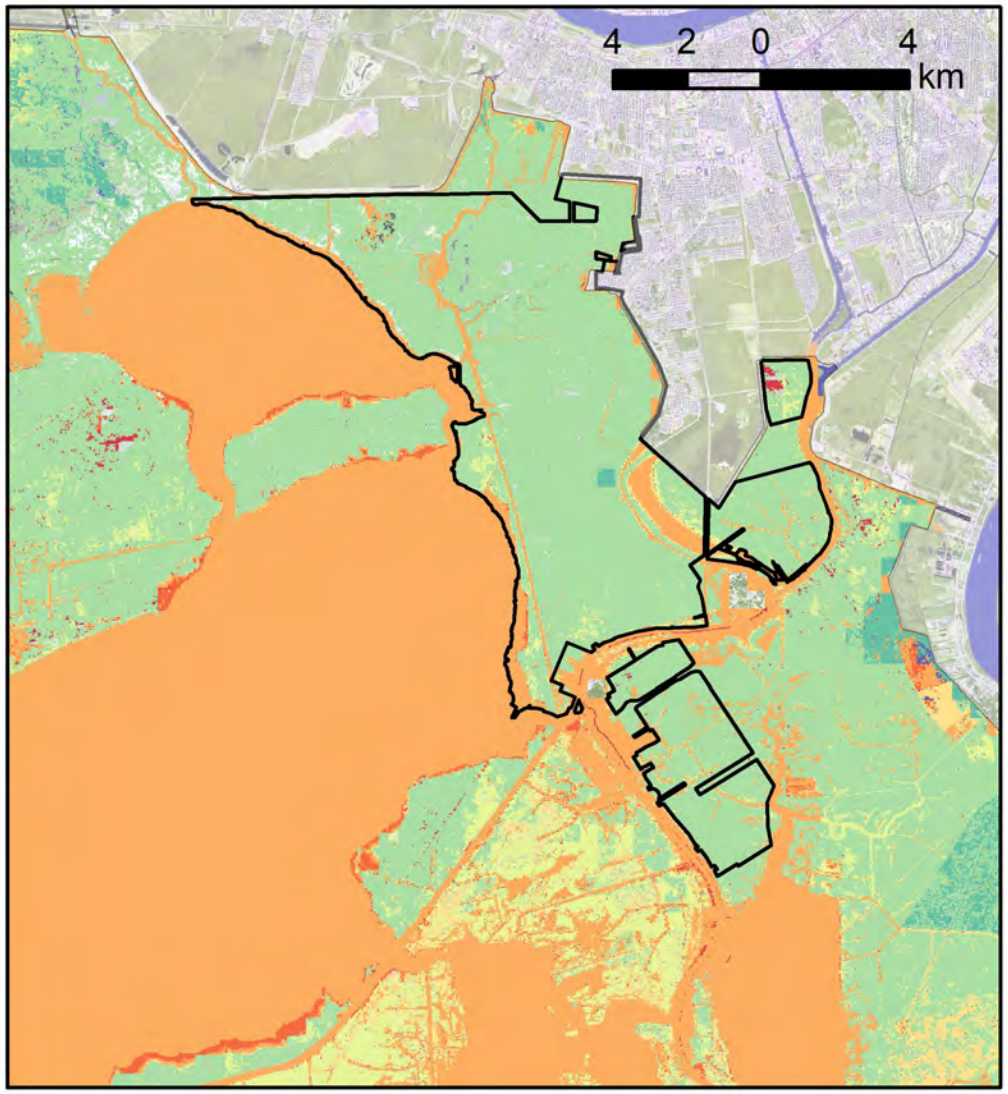
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
W E
S





S06 - G503
Low
FWOA, no diversions
Year 51

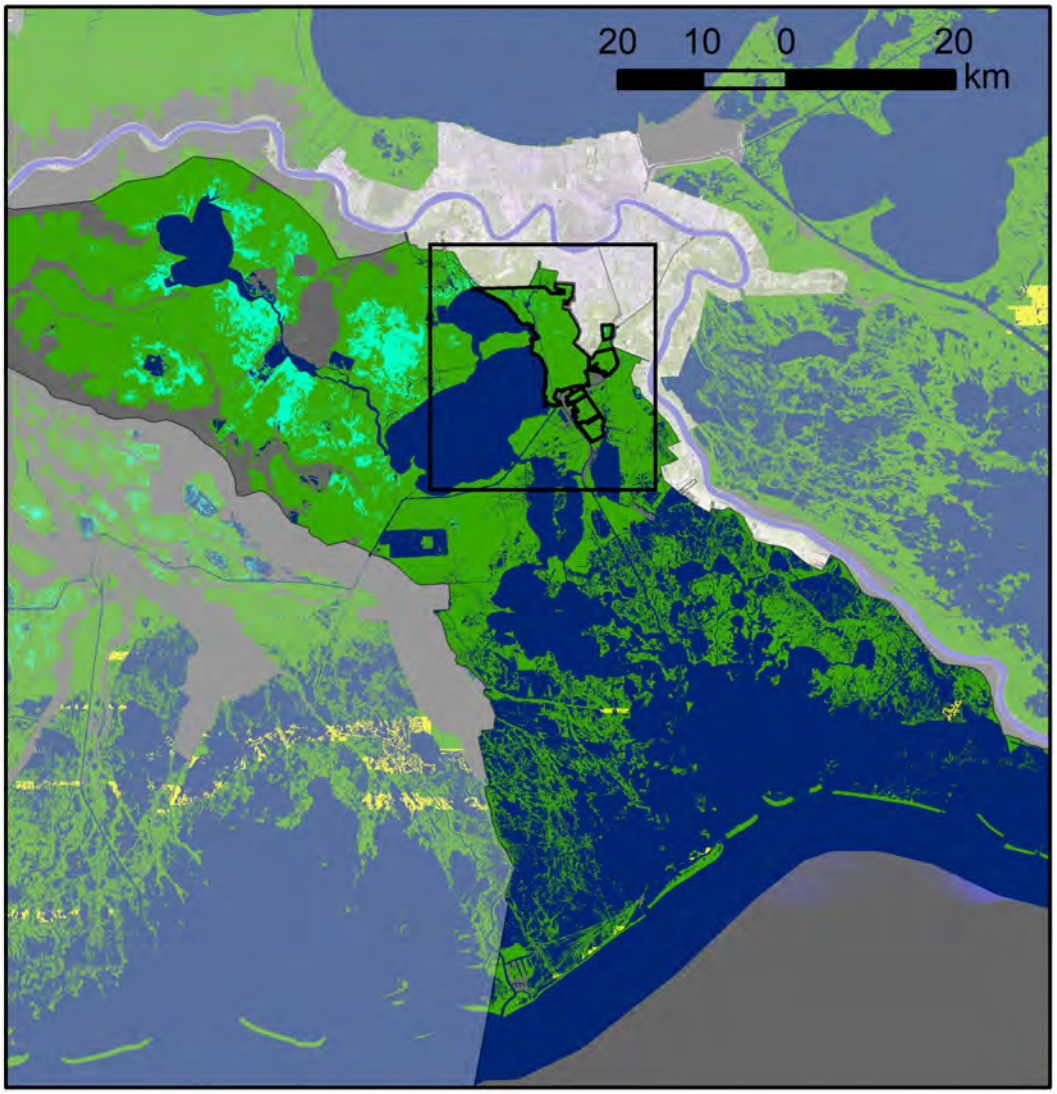
Elev. Change [m]

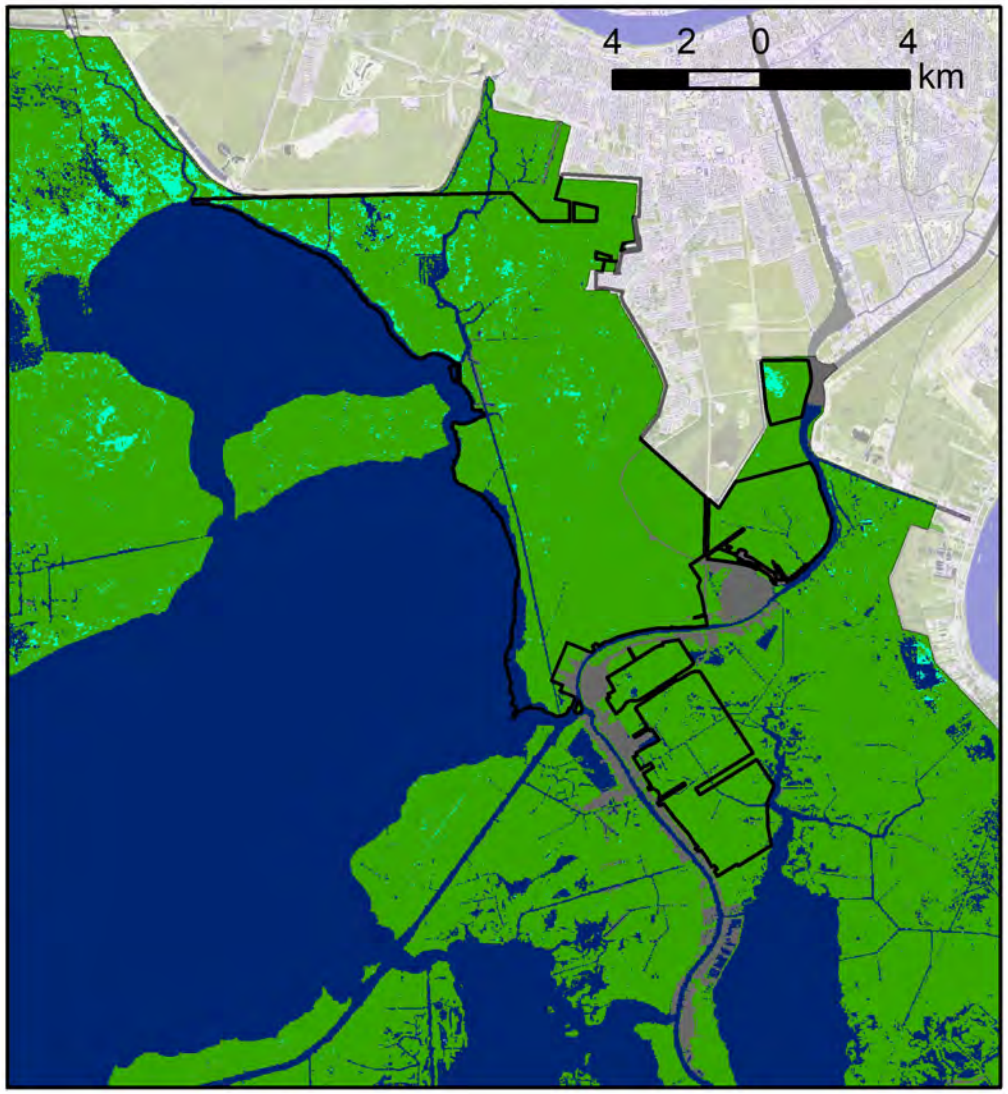
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol







S06 - G603
Low
Mid-Barataria Only
Year 02

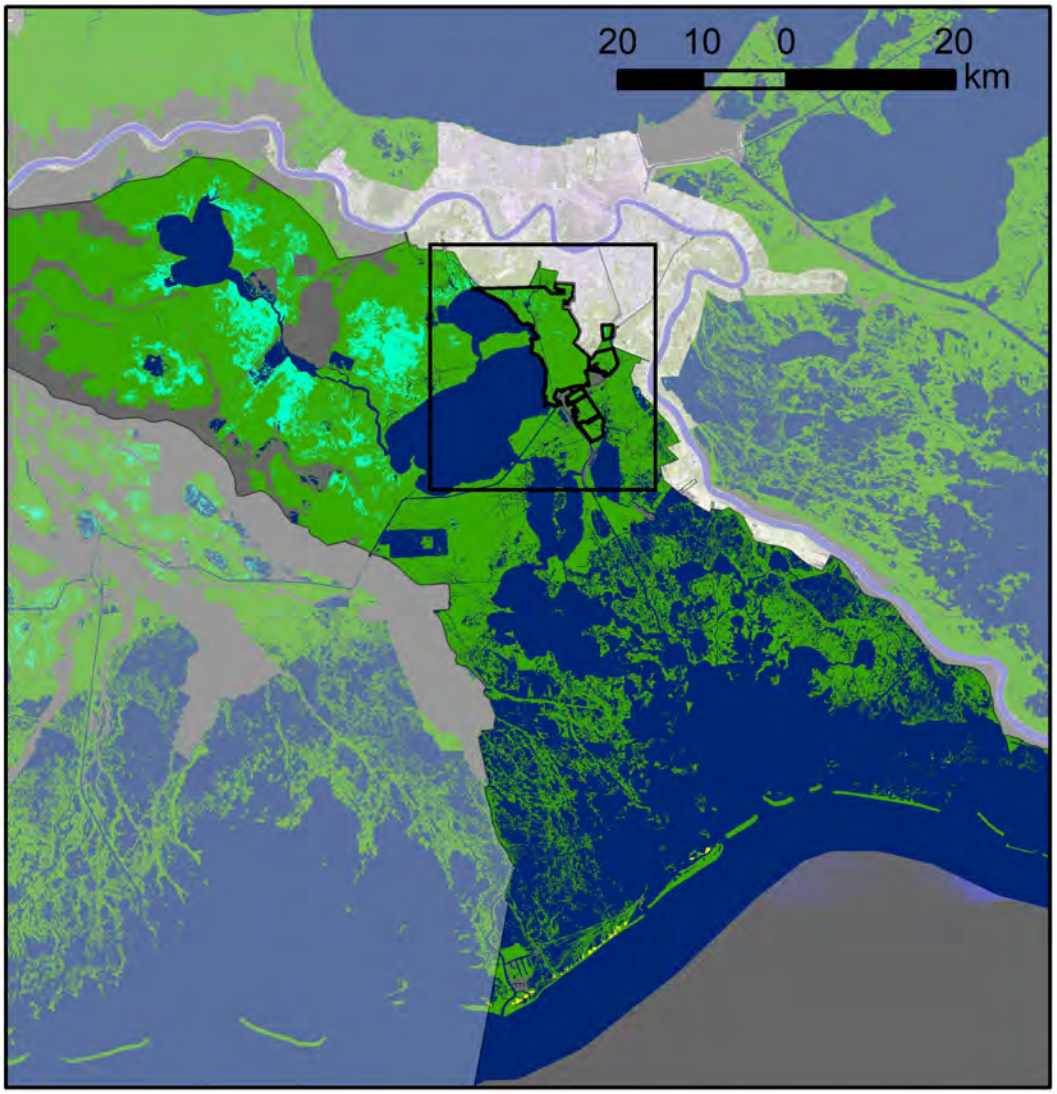
Land Type

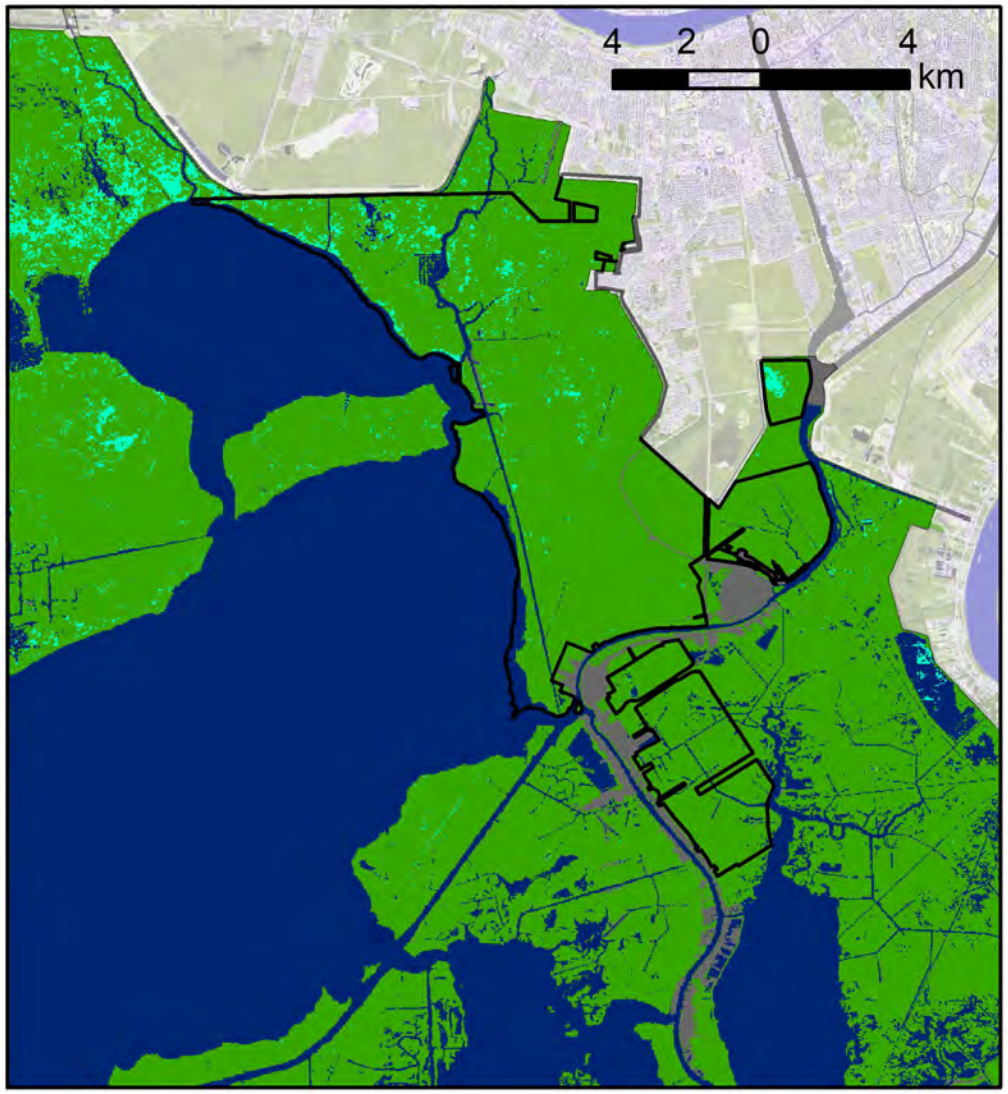
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S06 - G603
Low
Mid-Barataria Only
Year 12

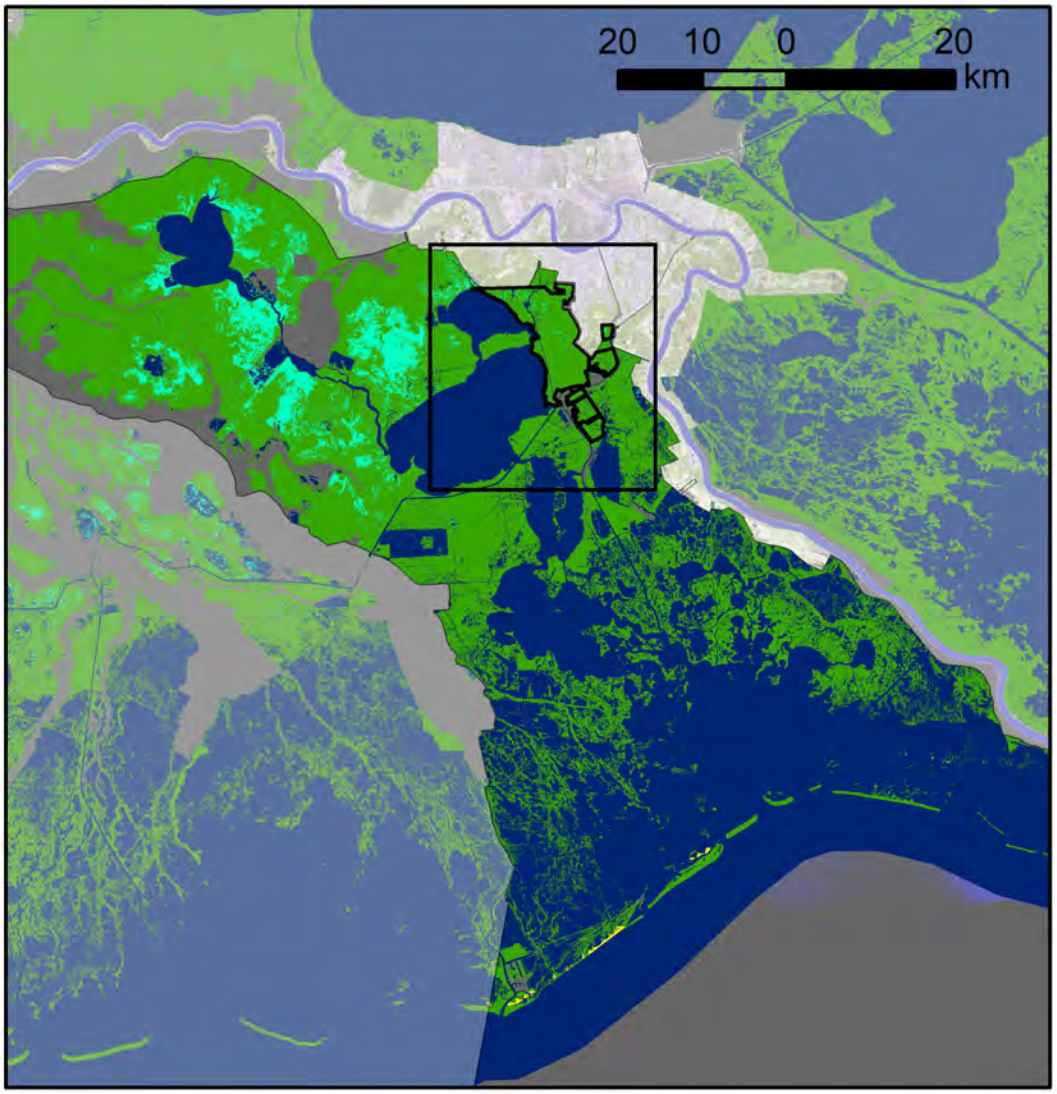
Land Type

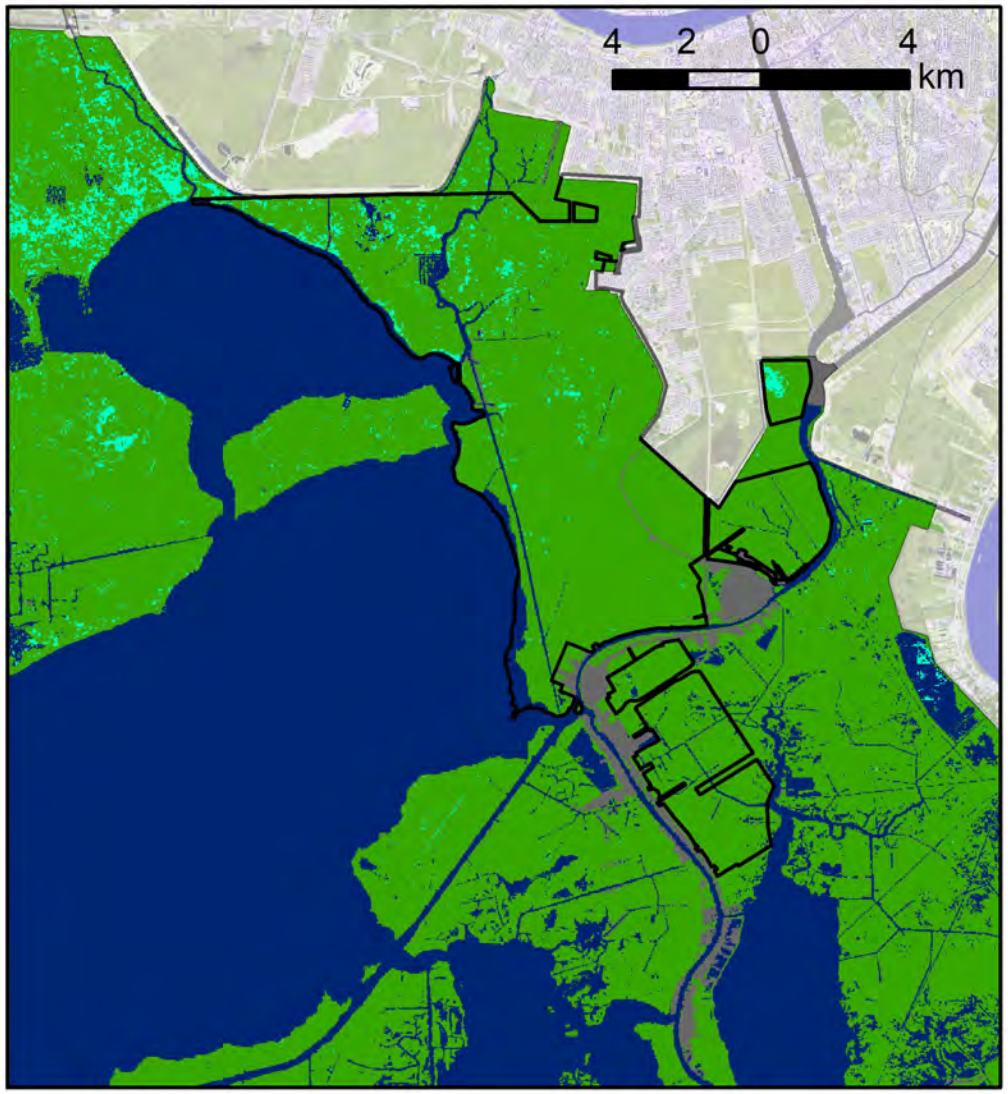
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S06 - G603
Low
Mid-Barataria Only
Year 22

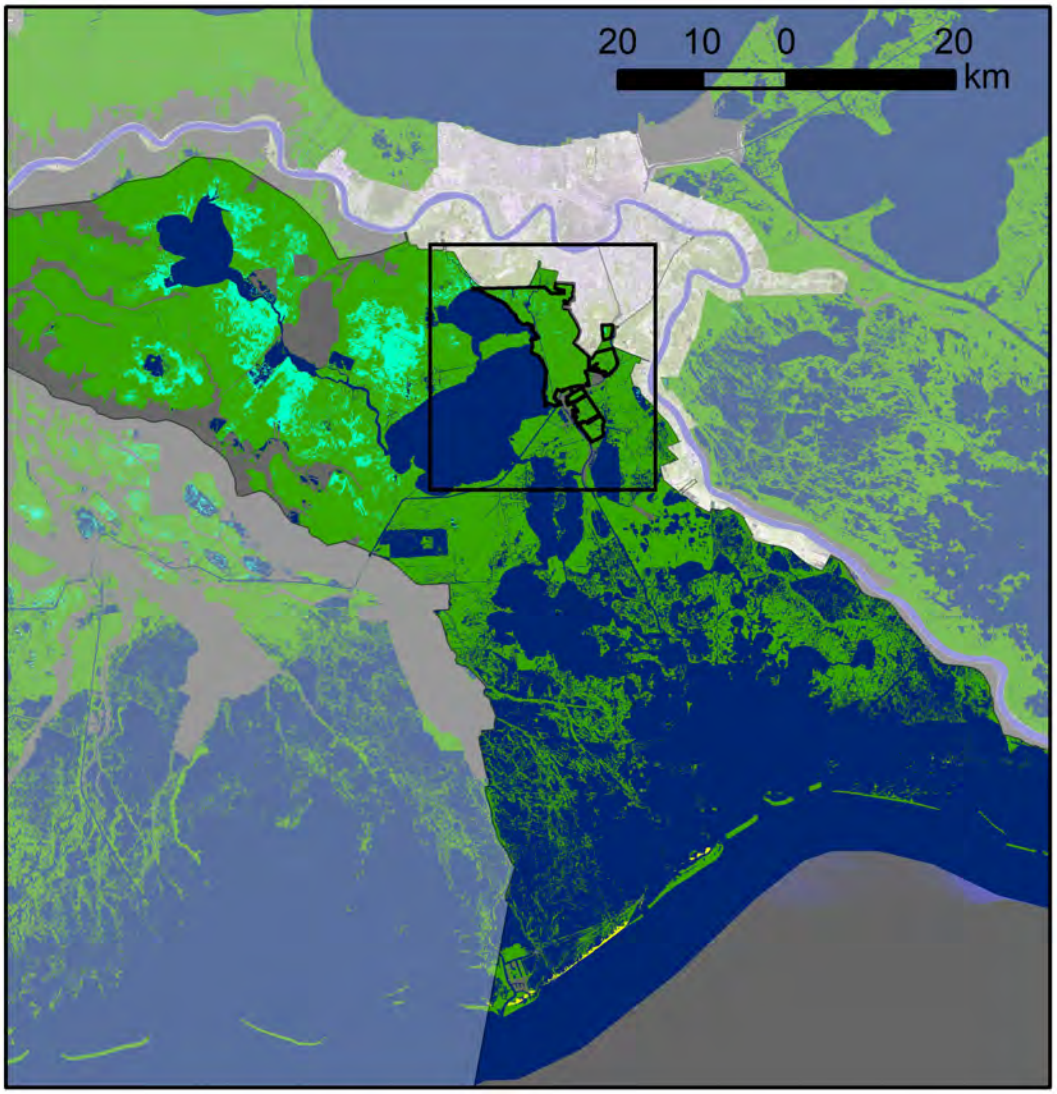
Land Type

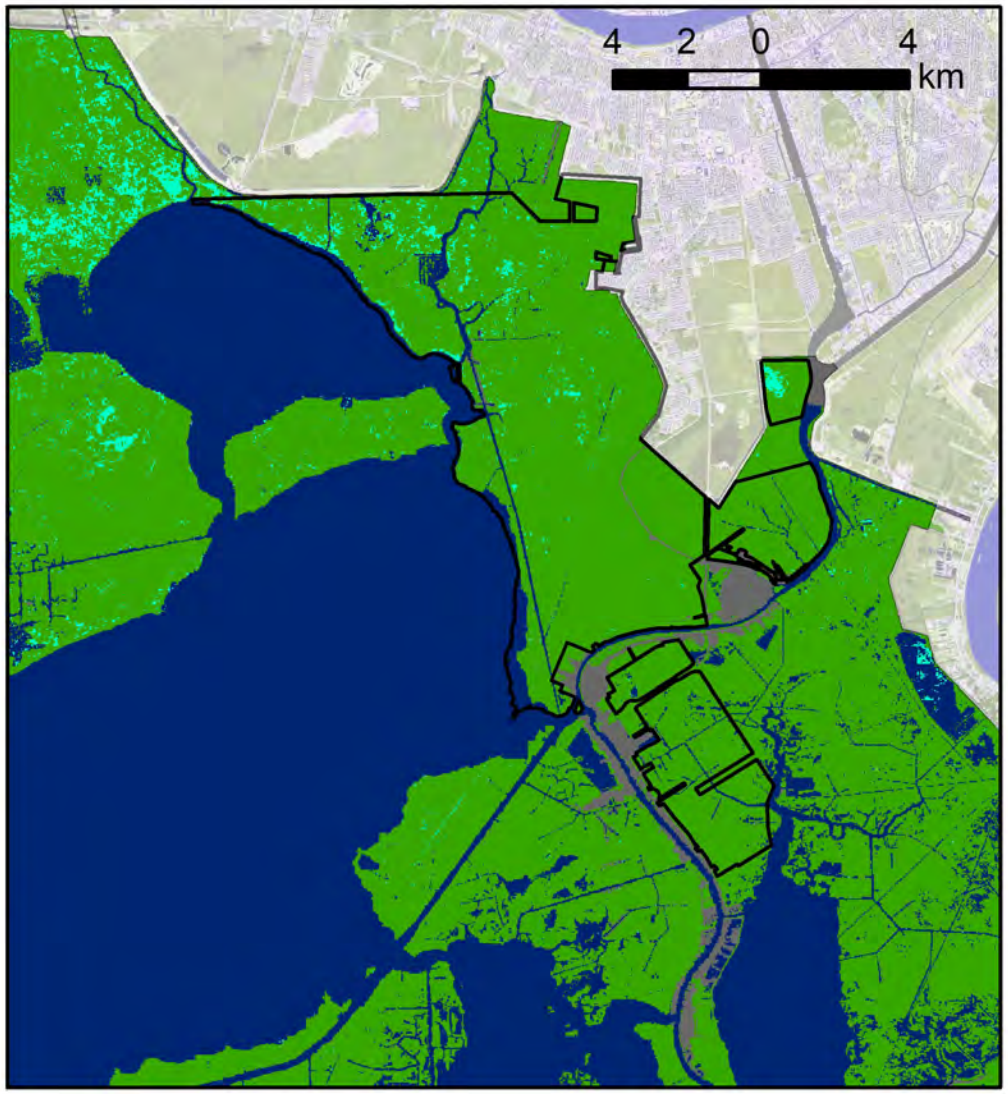
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S06 - G603
Low
Mid-Barataria Only
Year 32

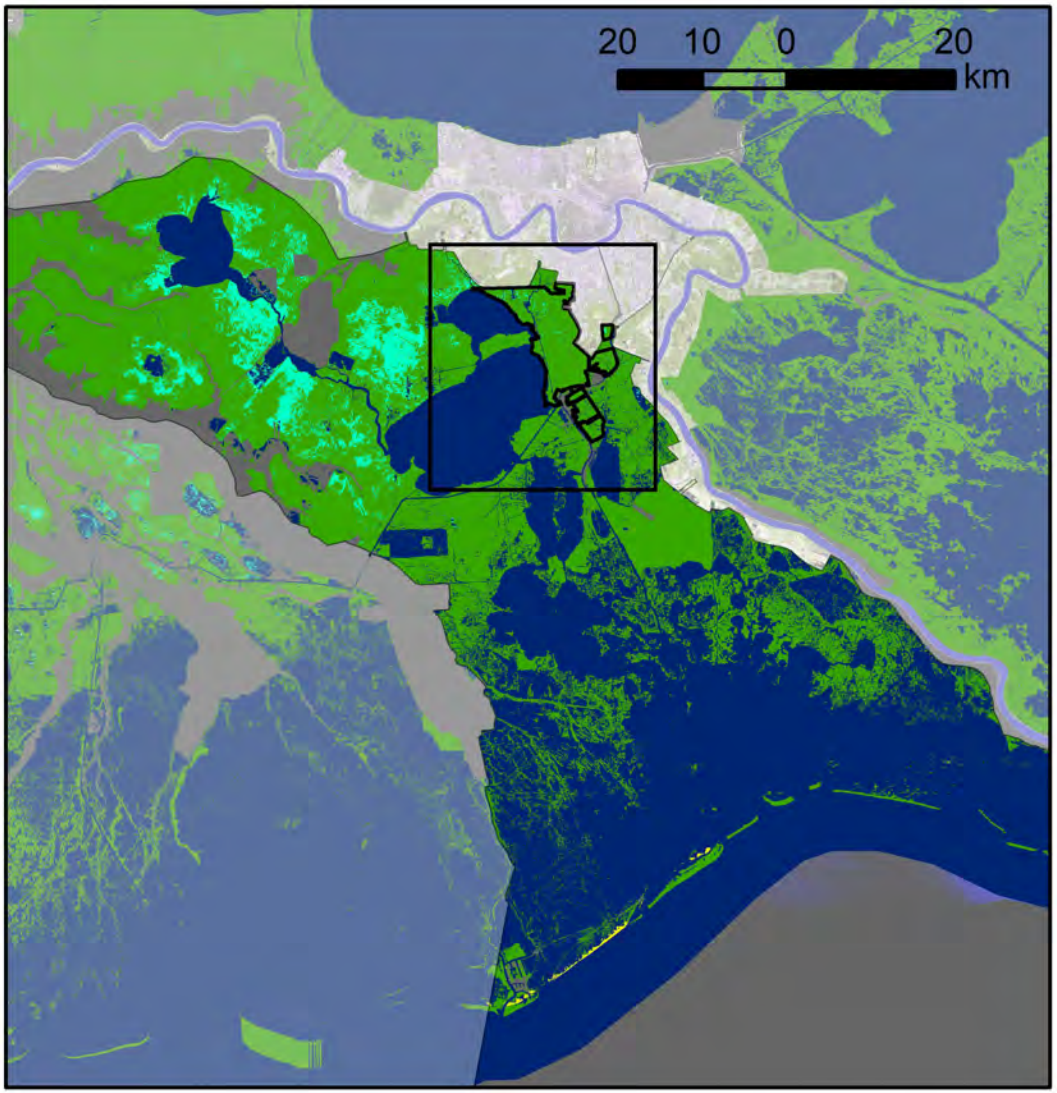
Land Type

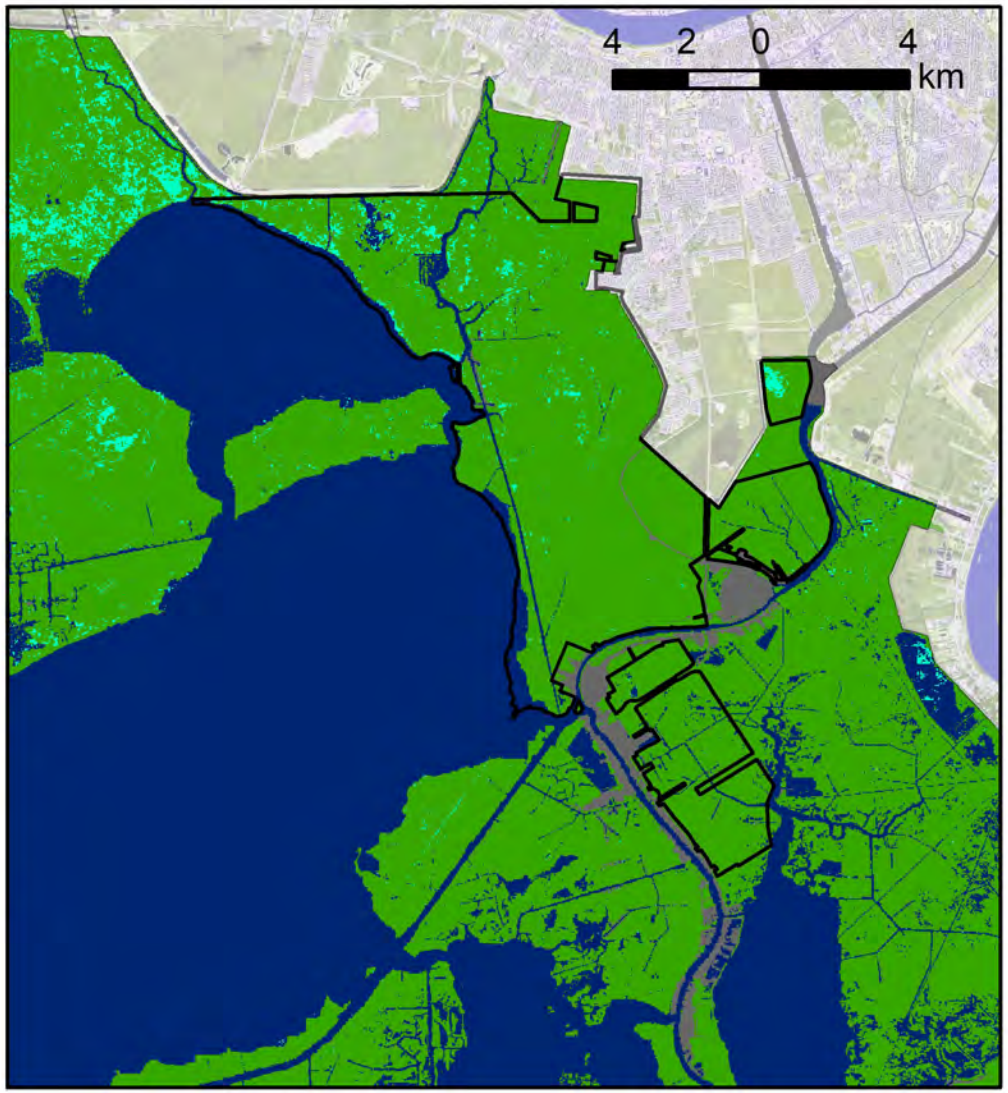
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S06 - G603
Low
Mid-Barataria Only
Year 42

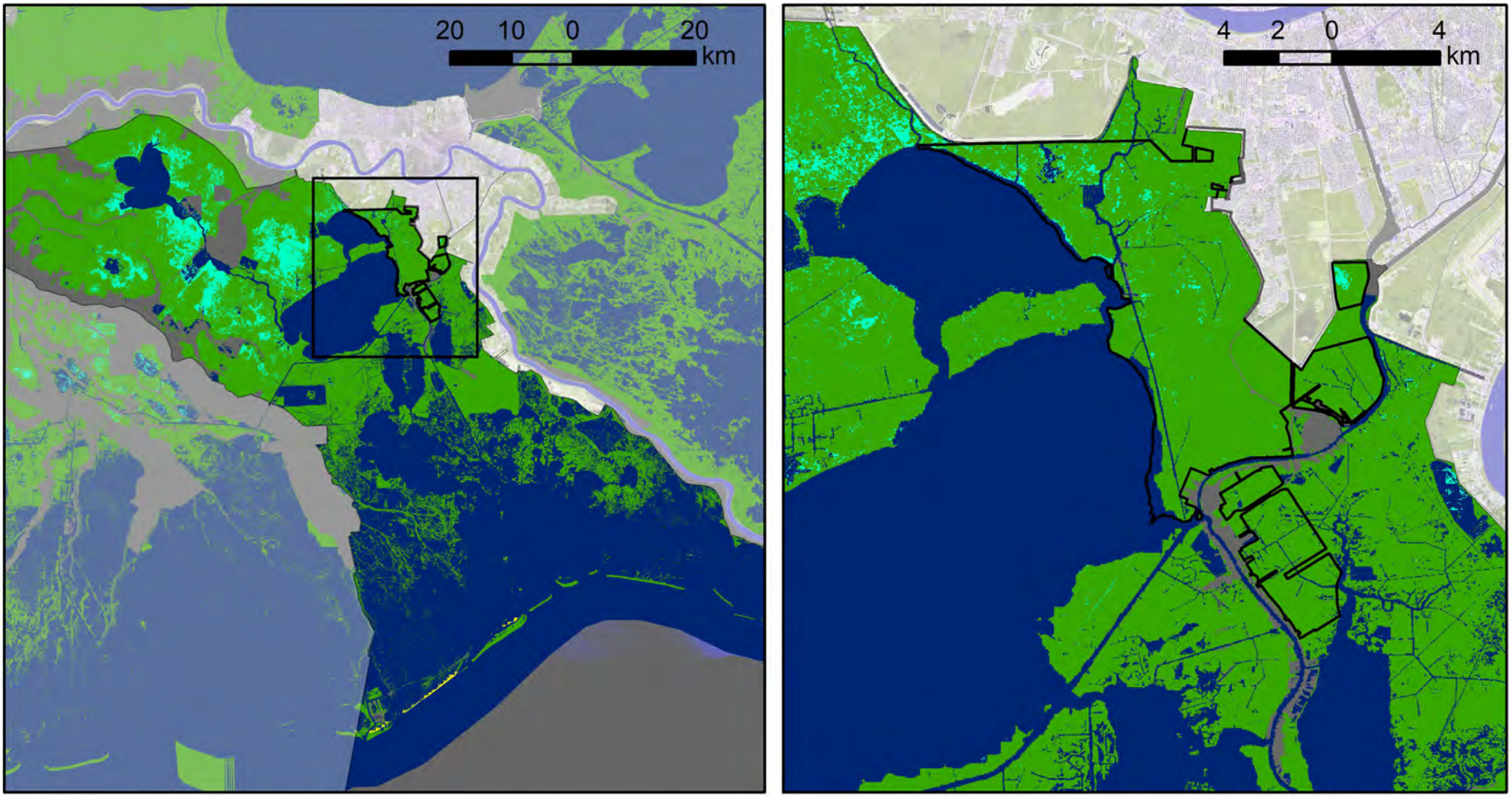
Land Type

- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol





S06 - G603
Low
Mid-Barataria Only
Year 51

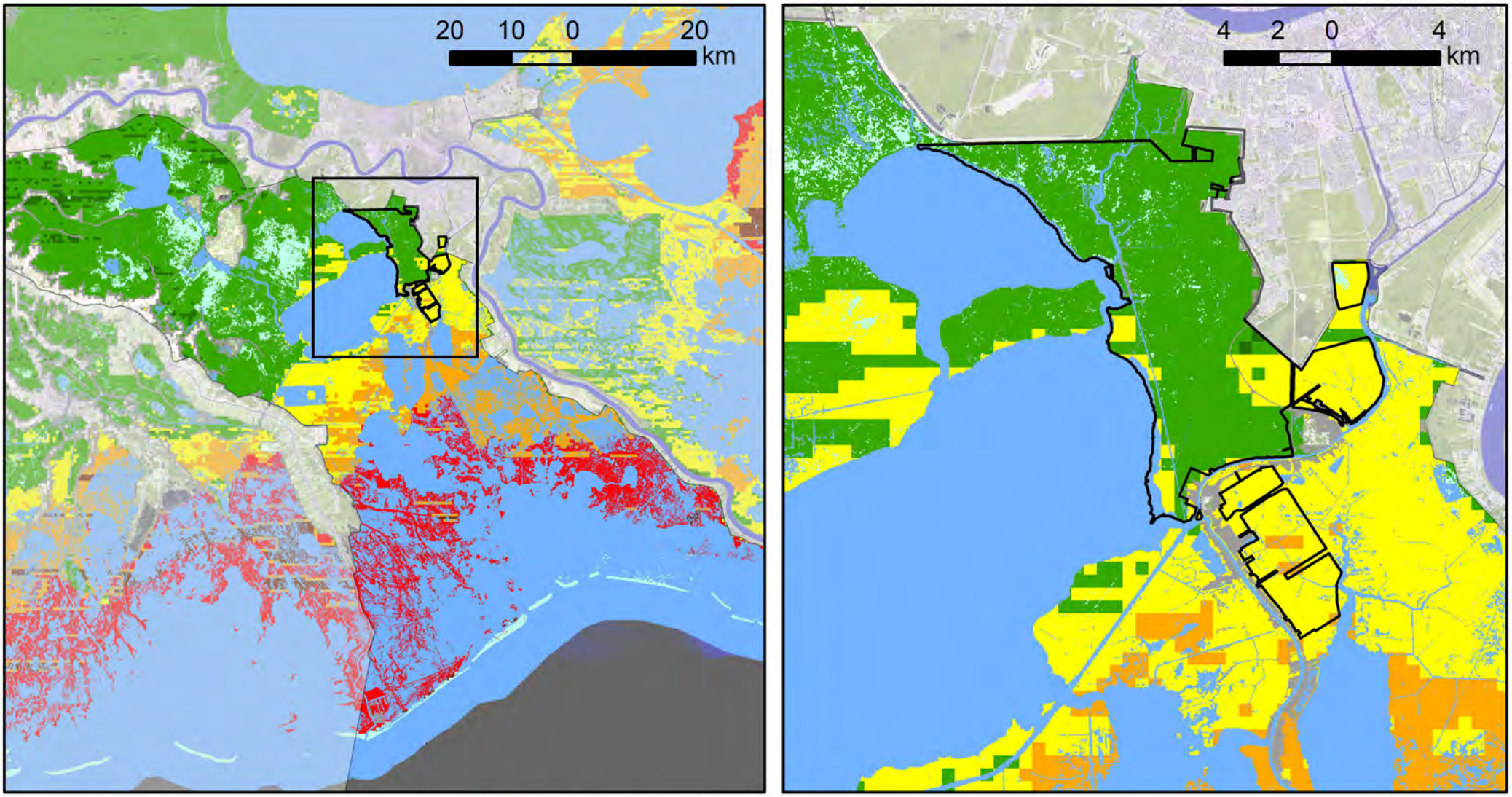
Land Type

- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol





S06 - G603
Low
Mid-Barataria Only
Year 02

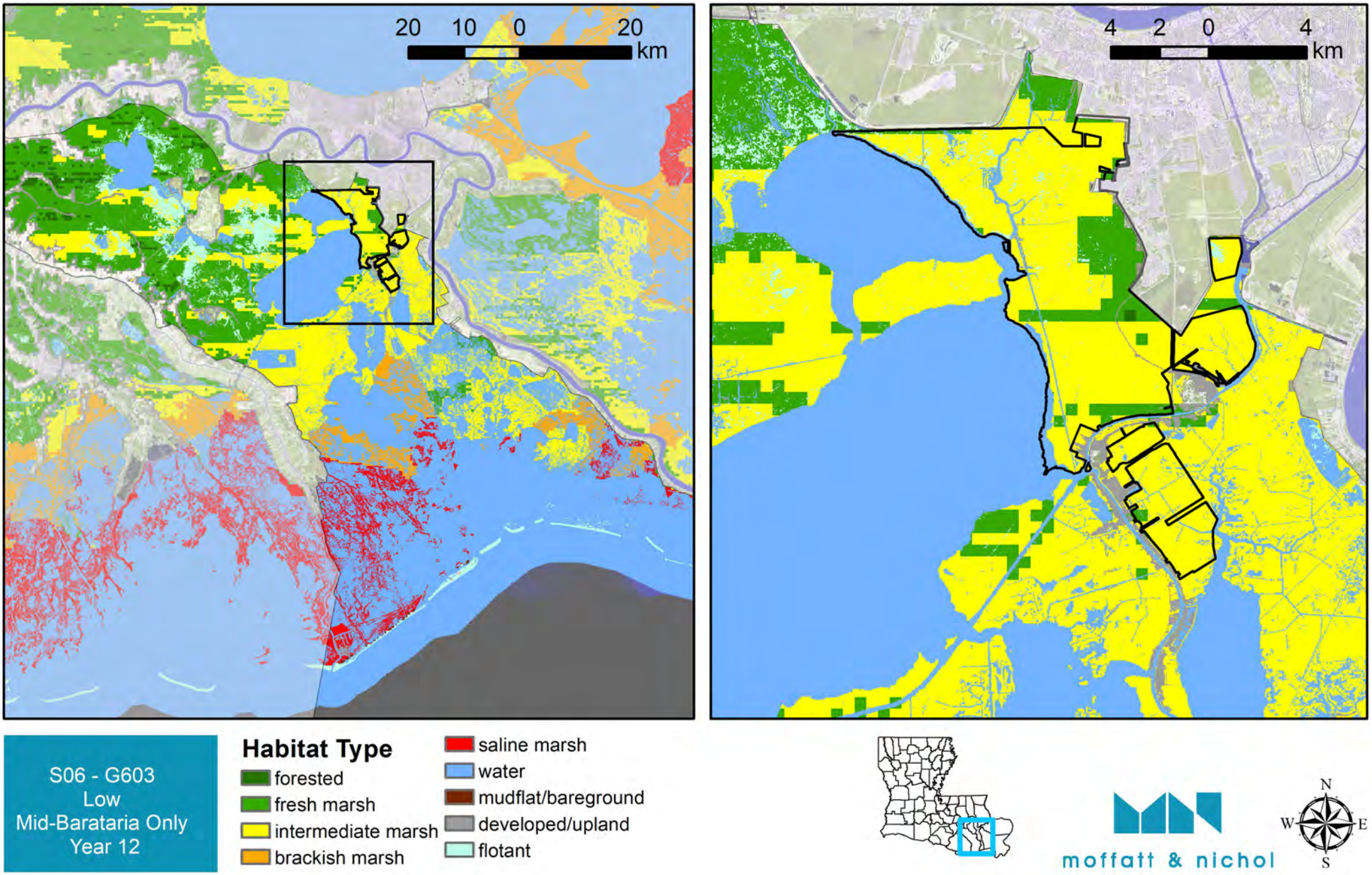
Habitat Type

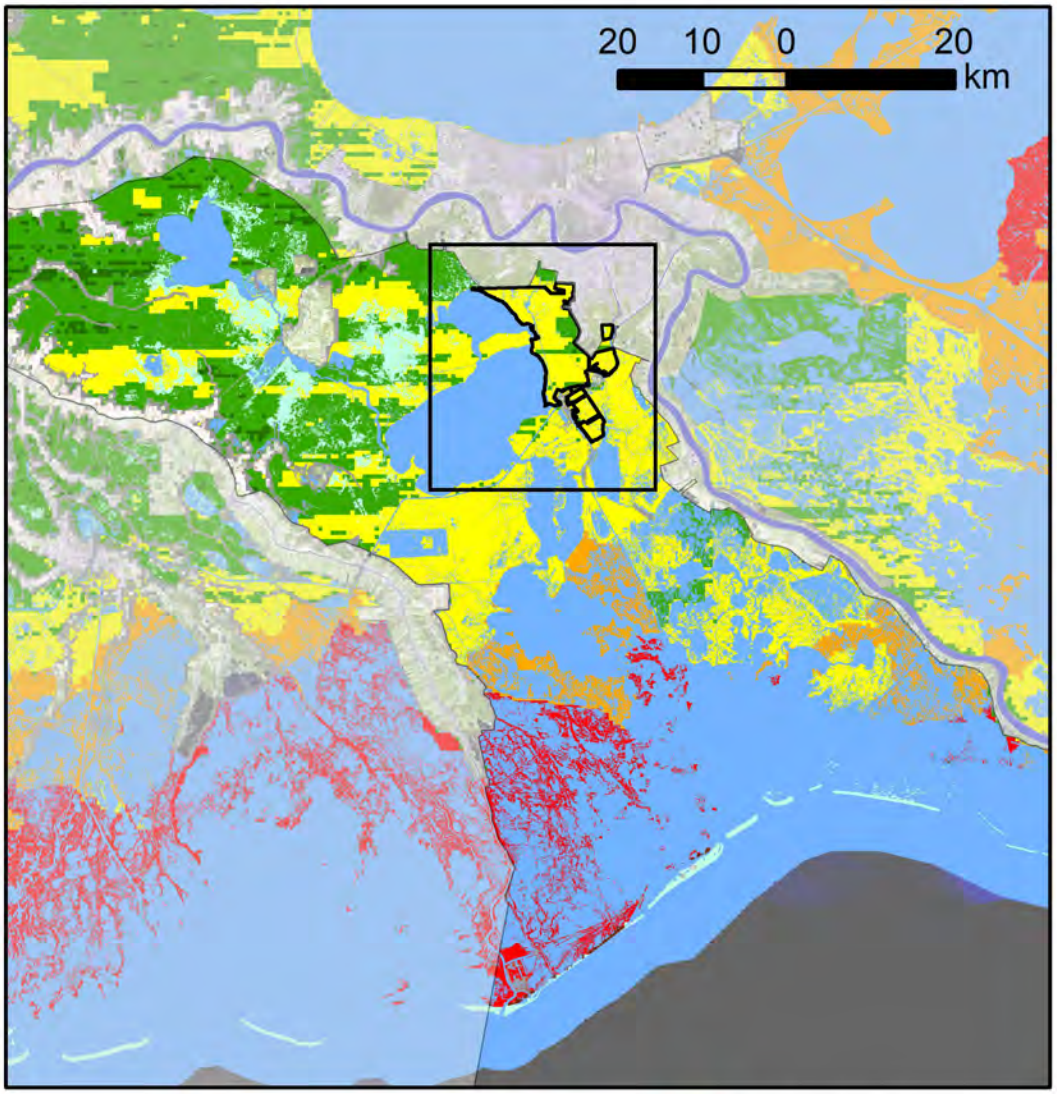
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant

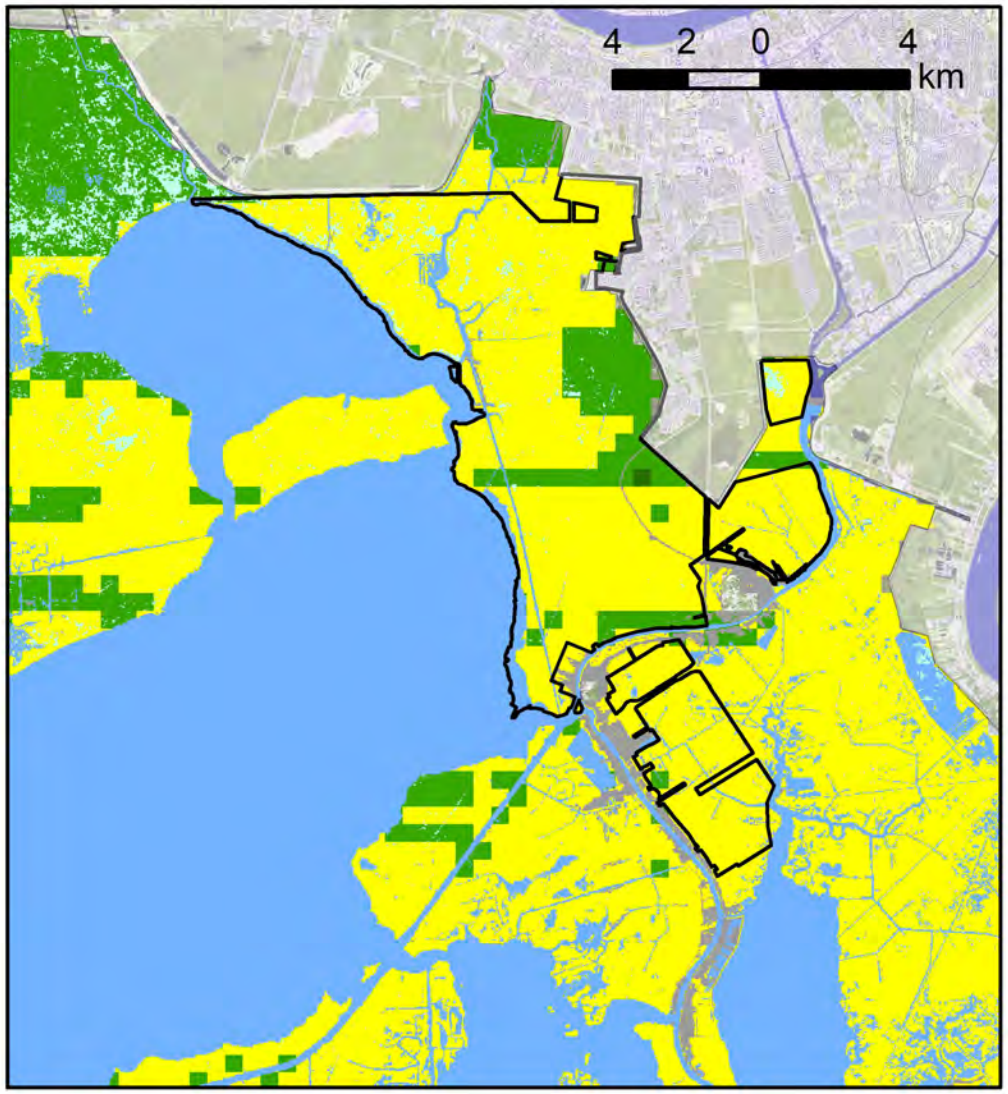


moffatt & nichol

N
W E
S


20 10 0 20
km
4 2 0 4
km
S06 - G603
Low
Mid-Barataria Only
Year 12
Habitat Type
forested
fresh marsh
intermediate marsh
brackish marsh
saline marsh
water
mudflat/bareground
developed/upland
flotant
moffatt & nichol
N
W
E
S





S06 - G603
Low
Mid-Barataria Only
Year 22

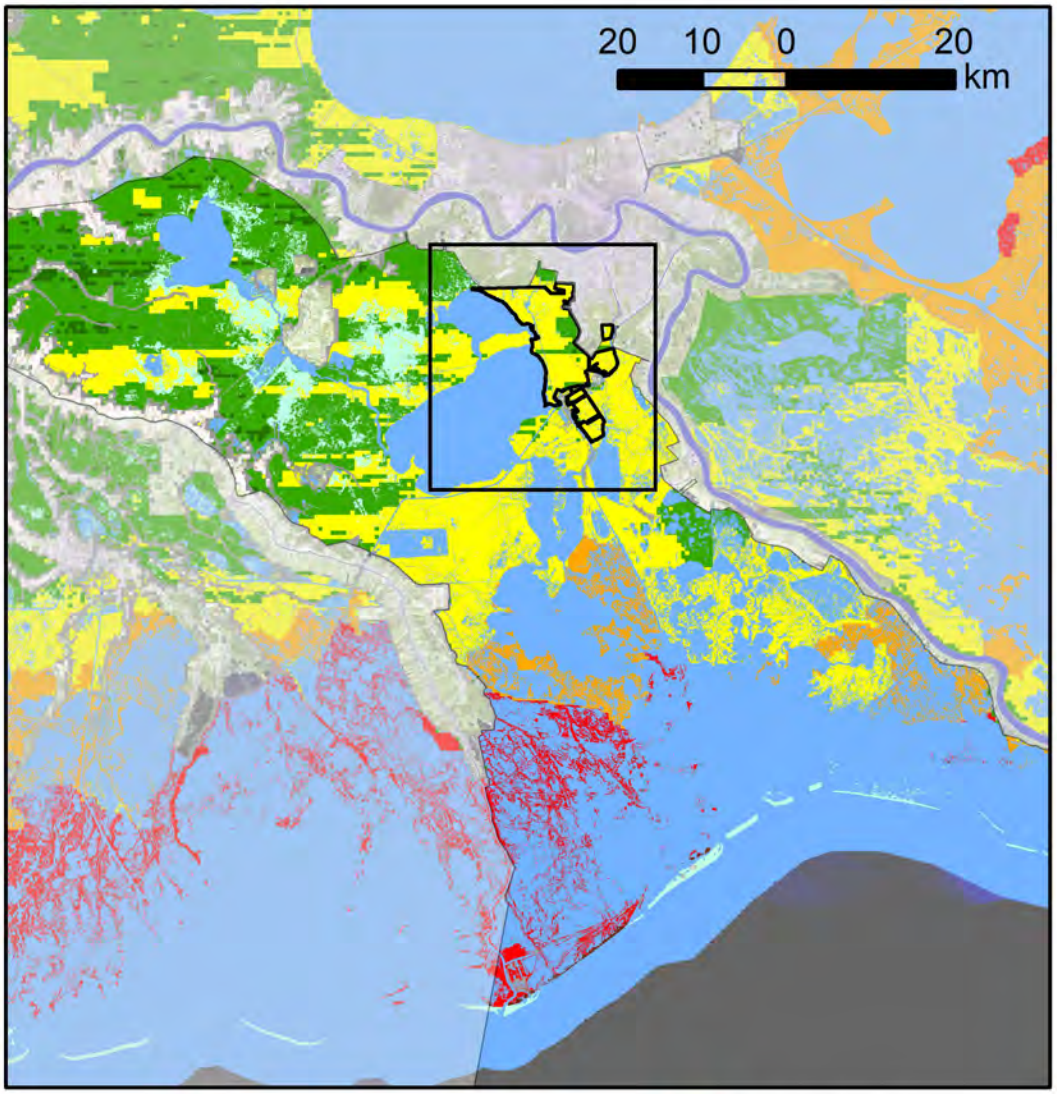
Habitat Type

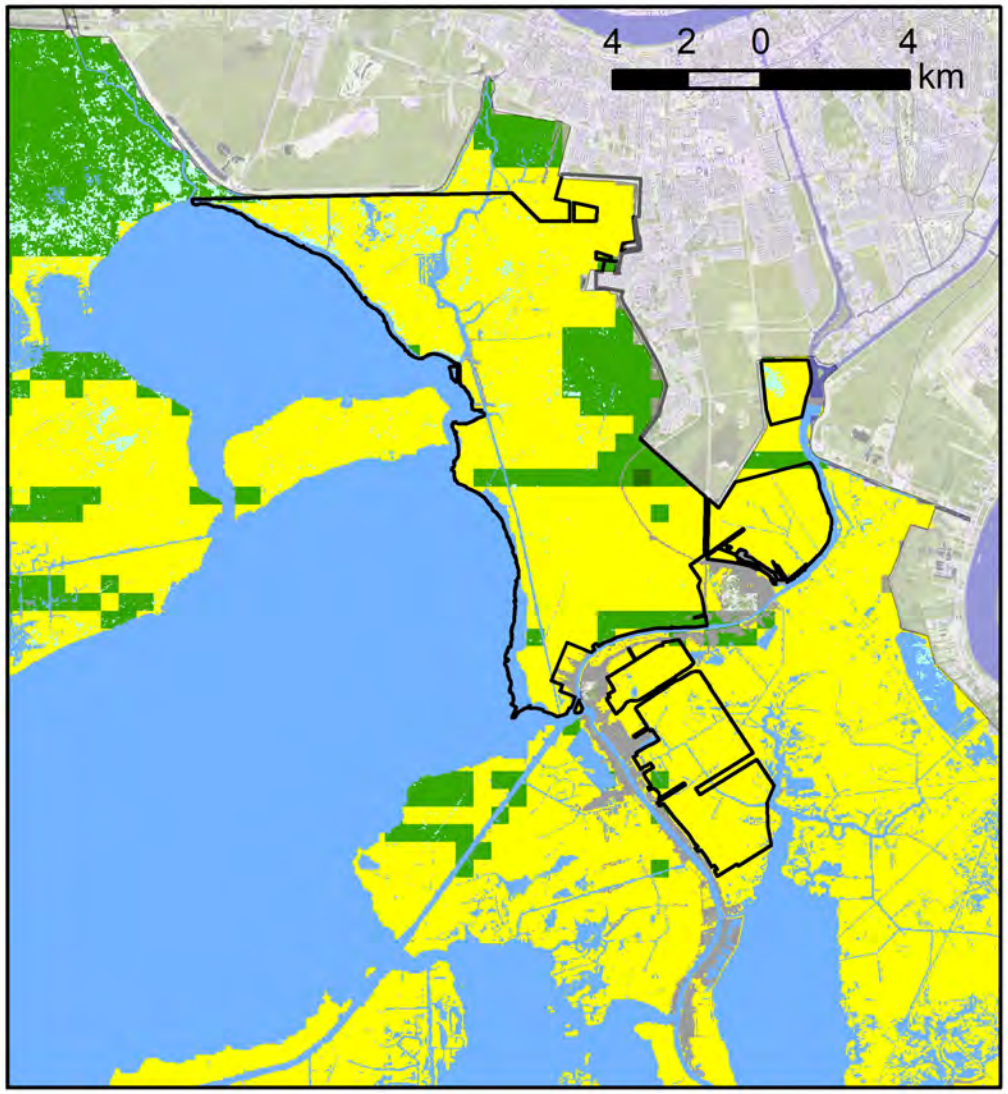
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S06 - G603
Low
Mid-Barataria Only
Year 32

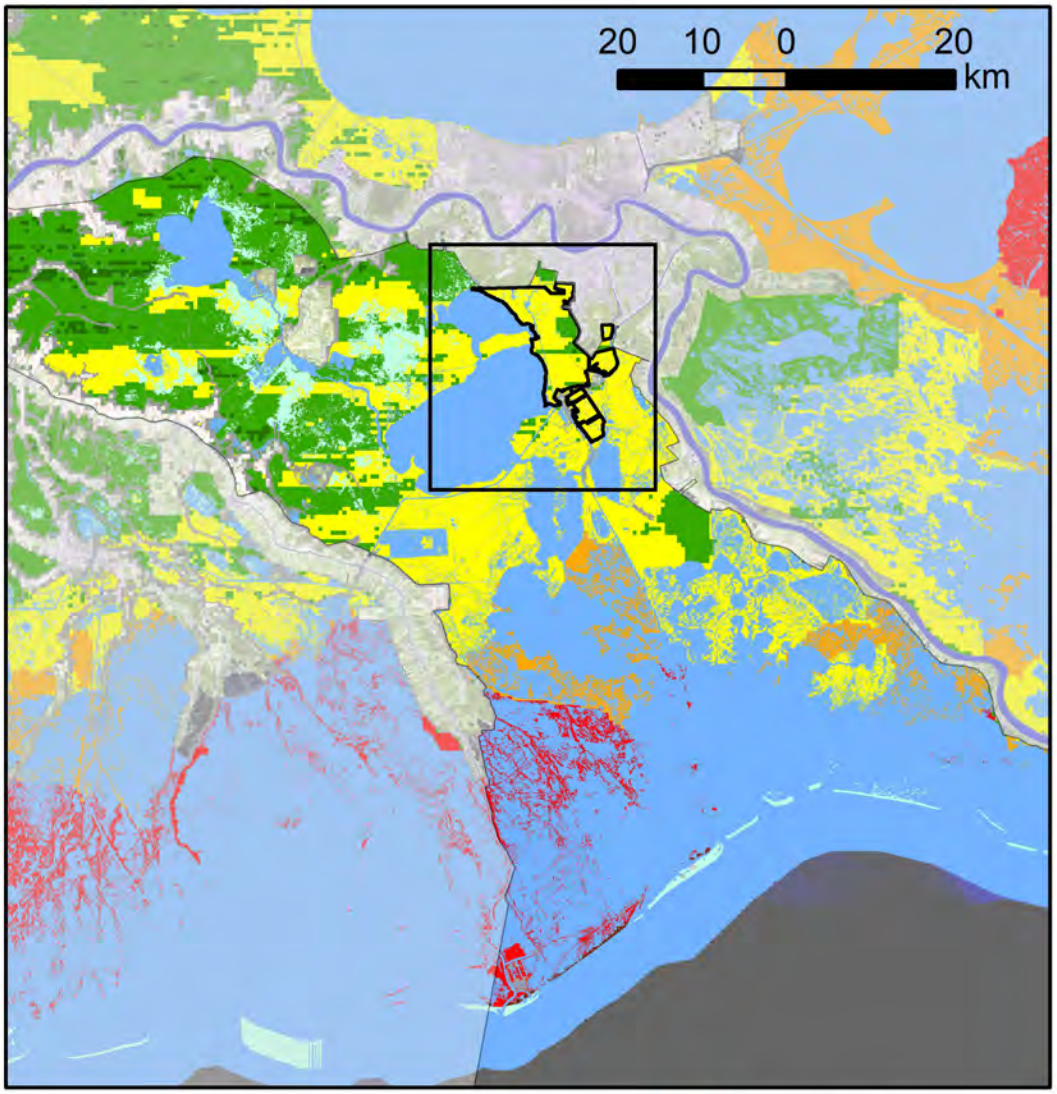
Habitat Type

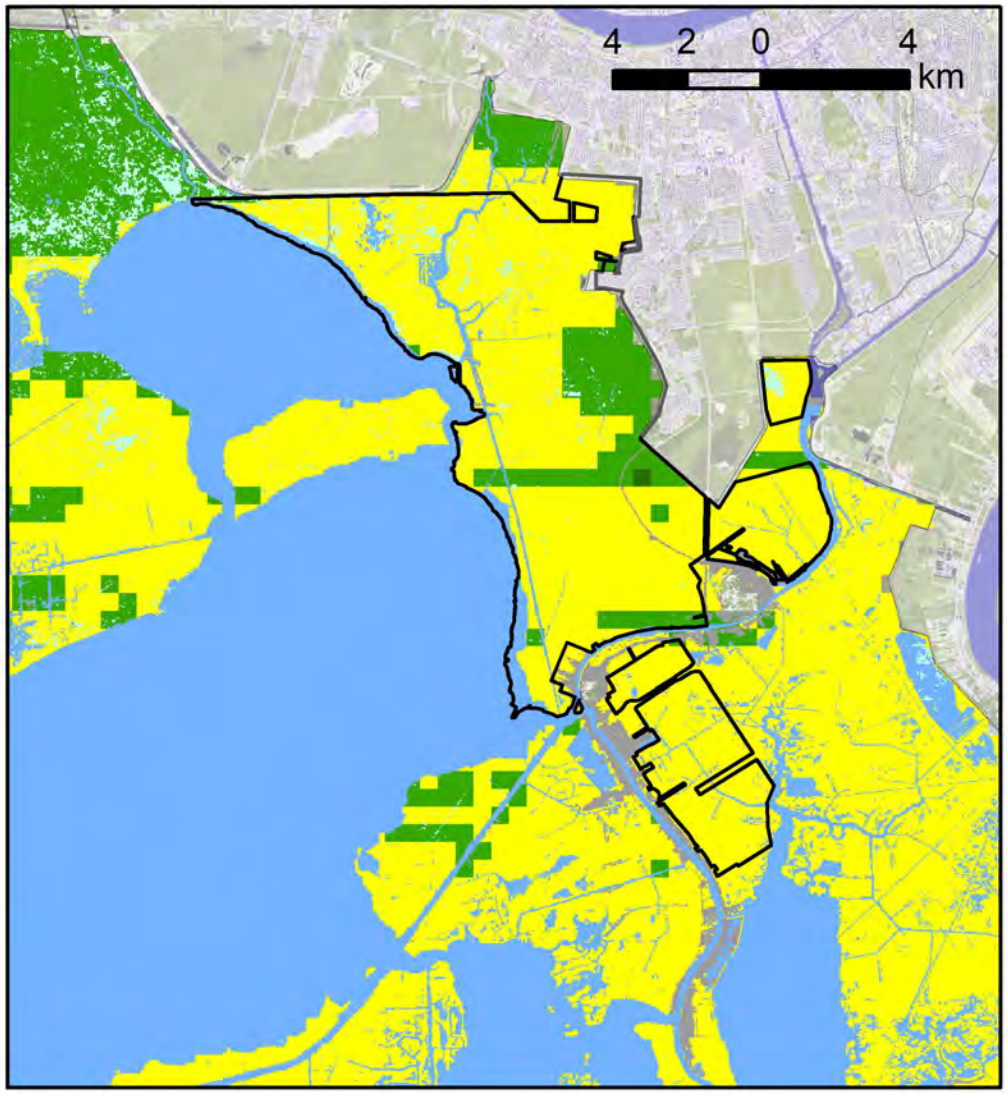
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S06 - G603
Low
Mid-Barataria Only
Year 42

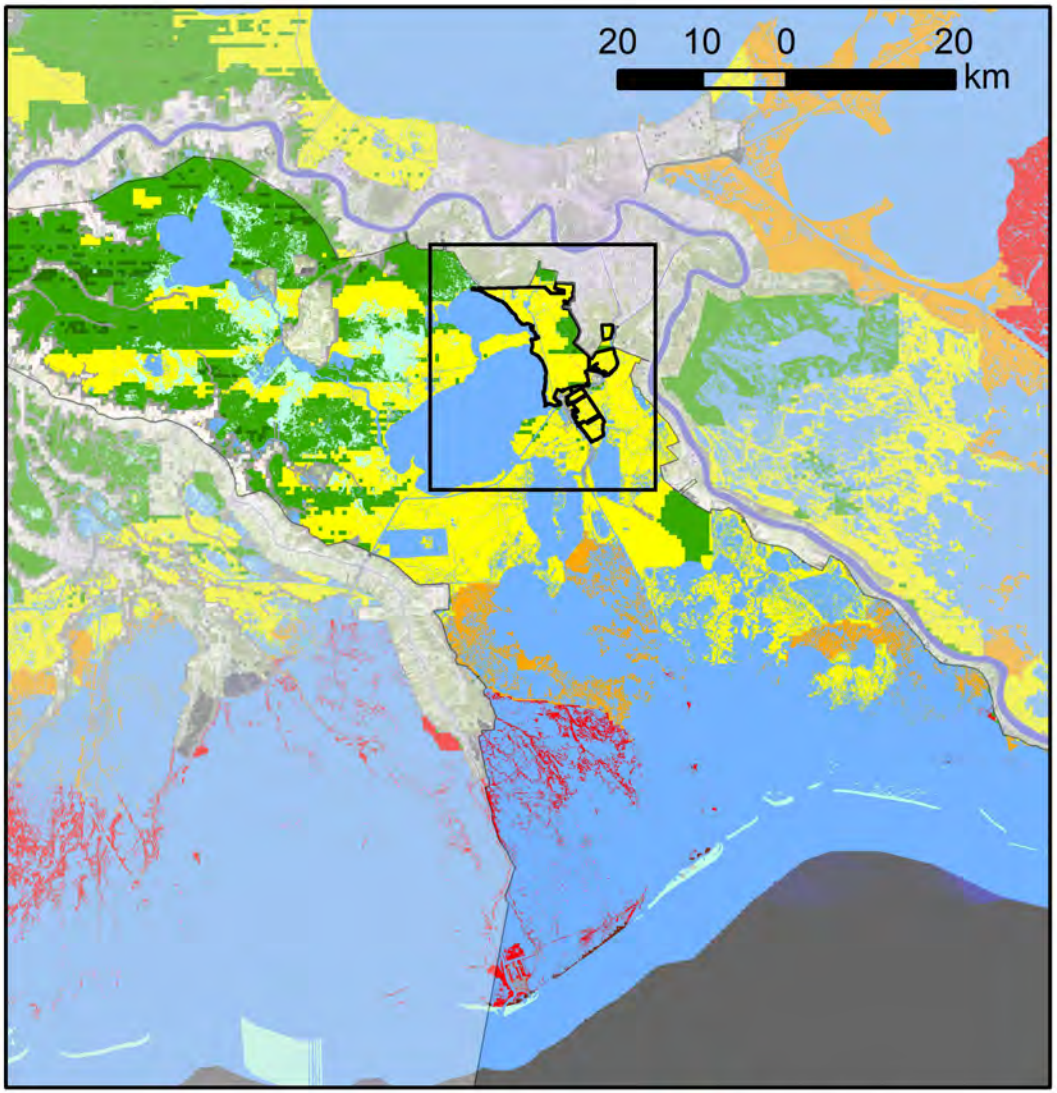
Habitat Type

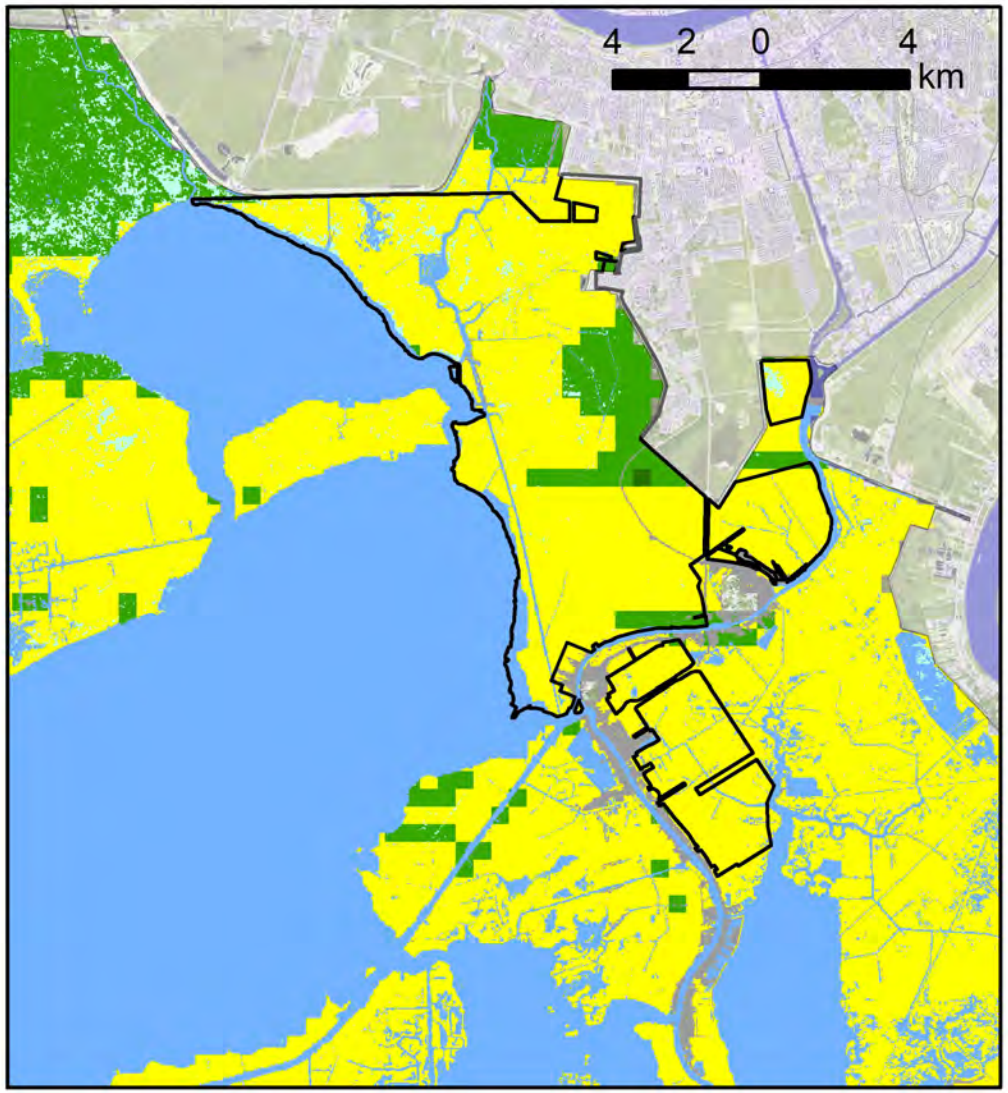
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S06 - G603
Low
Mid-Barataria Only
Year 51

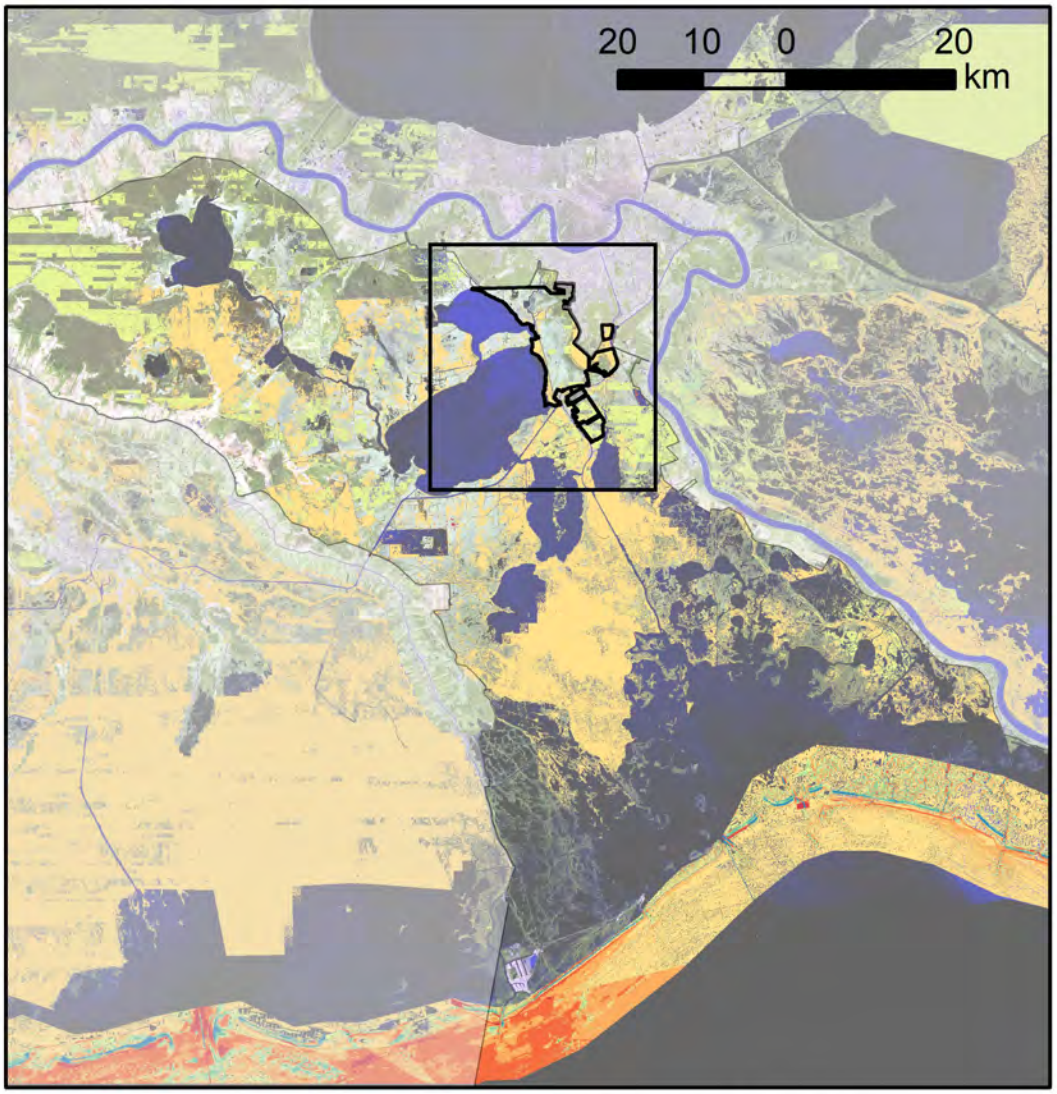
Habitat Type

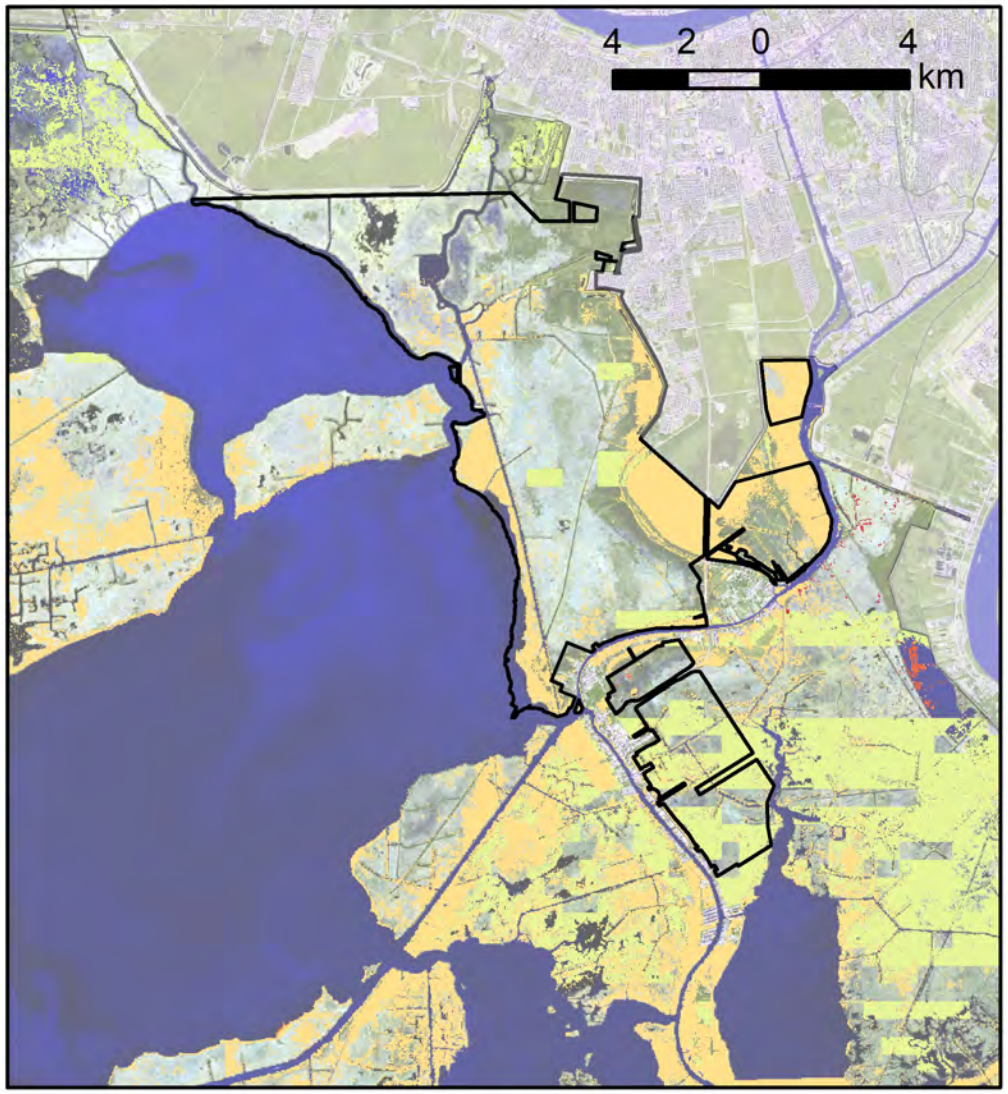
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S06 - G603
Low
Mid-Barataria Only
Year 02

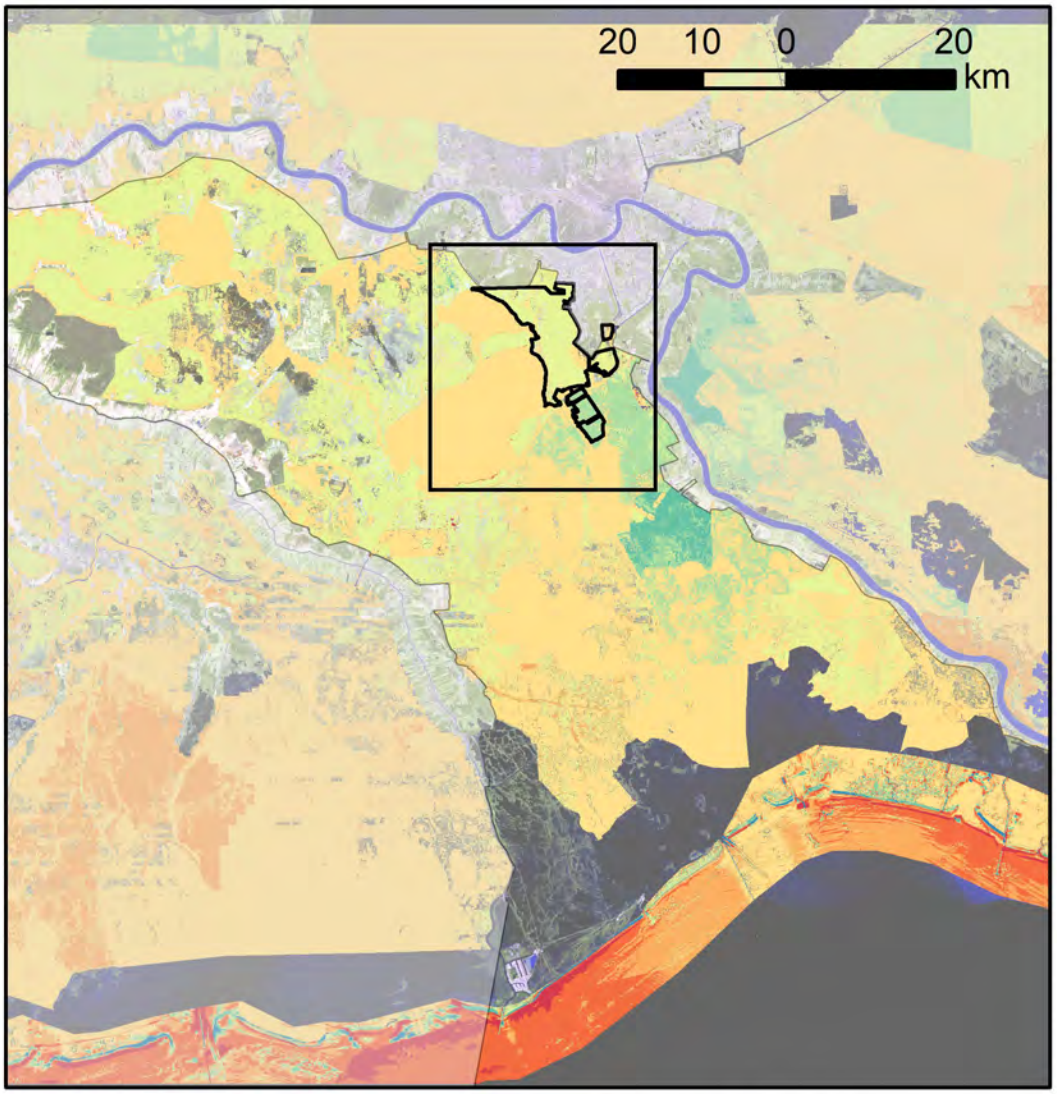
Elev. Change [m]

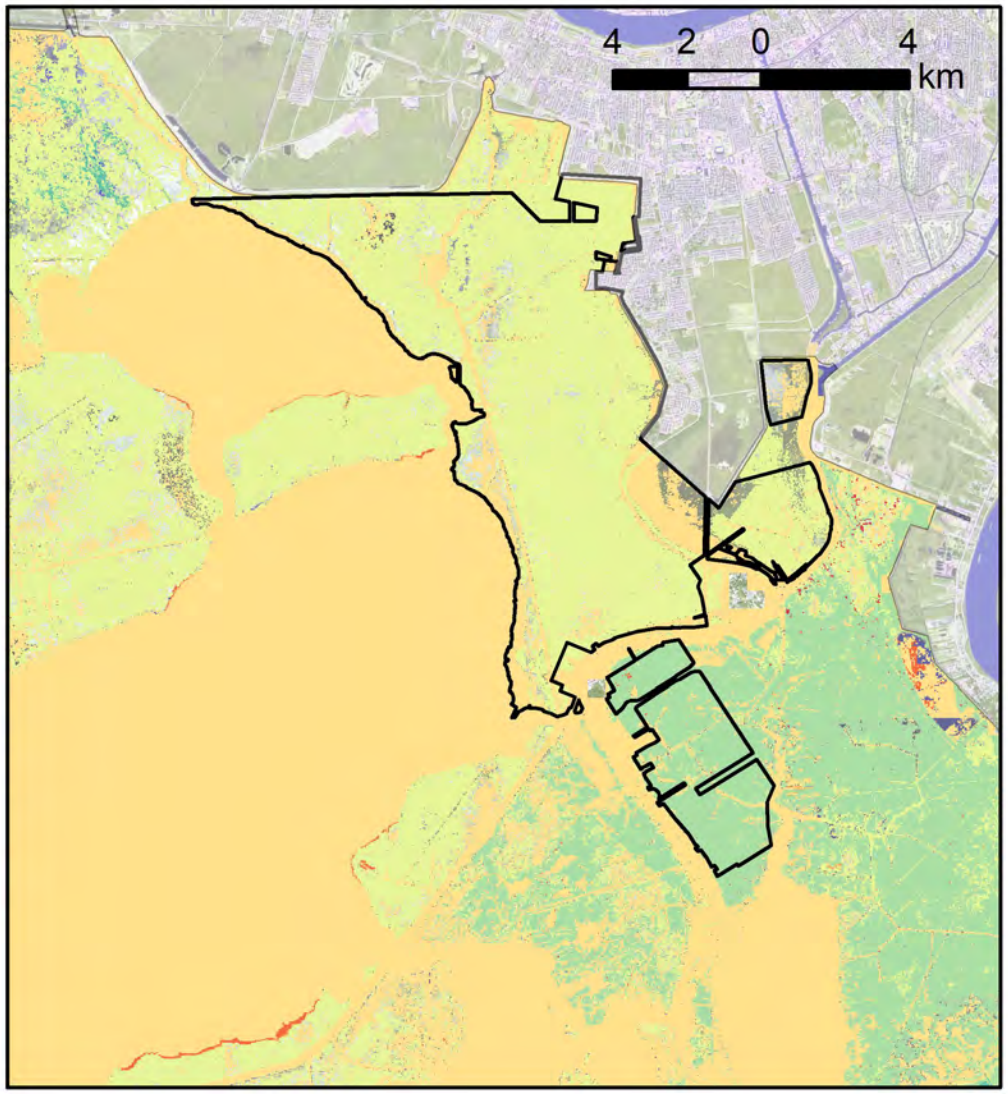
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
W E
S





S06 - G603
Low
Mid-Barataria Only
Year 12

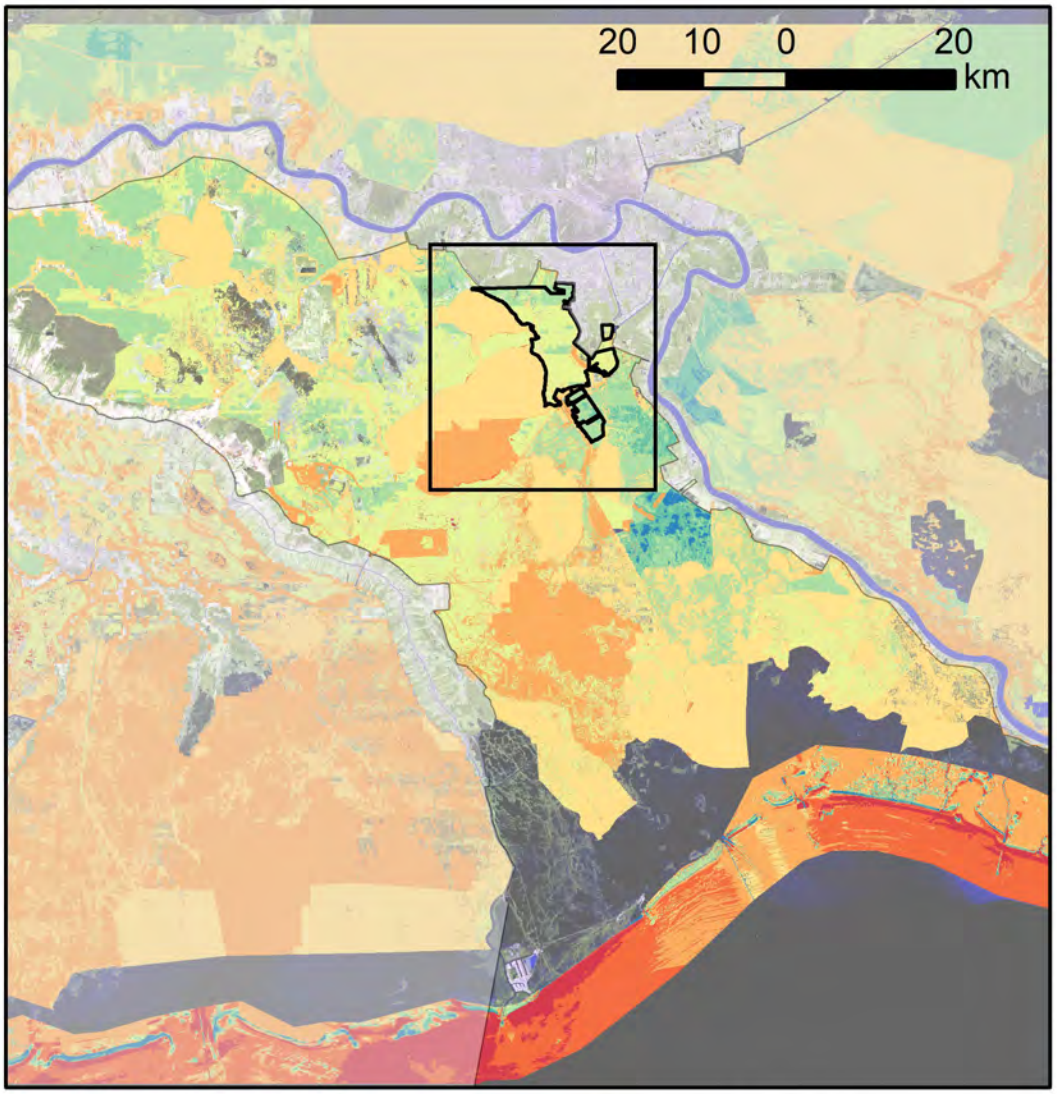
Elev. Change [m]

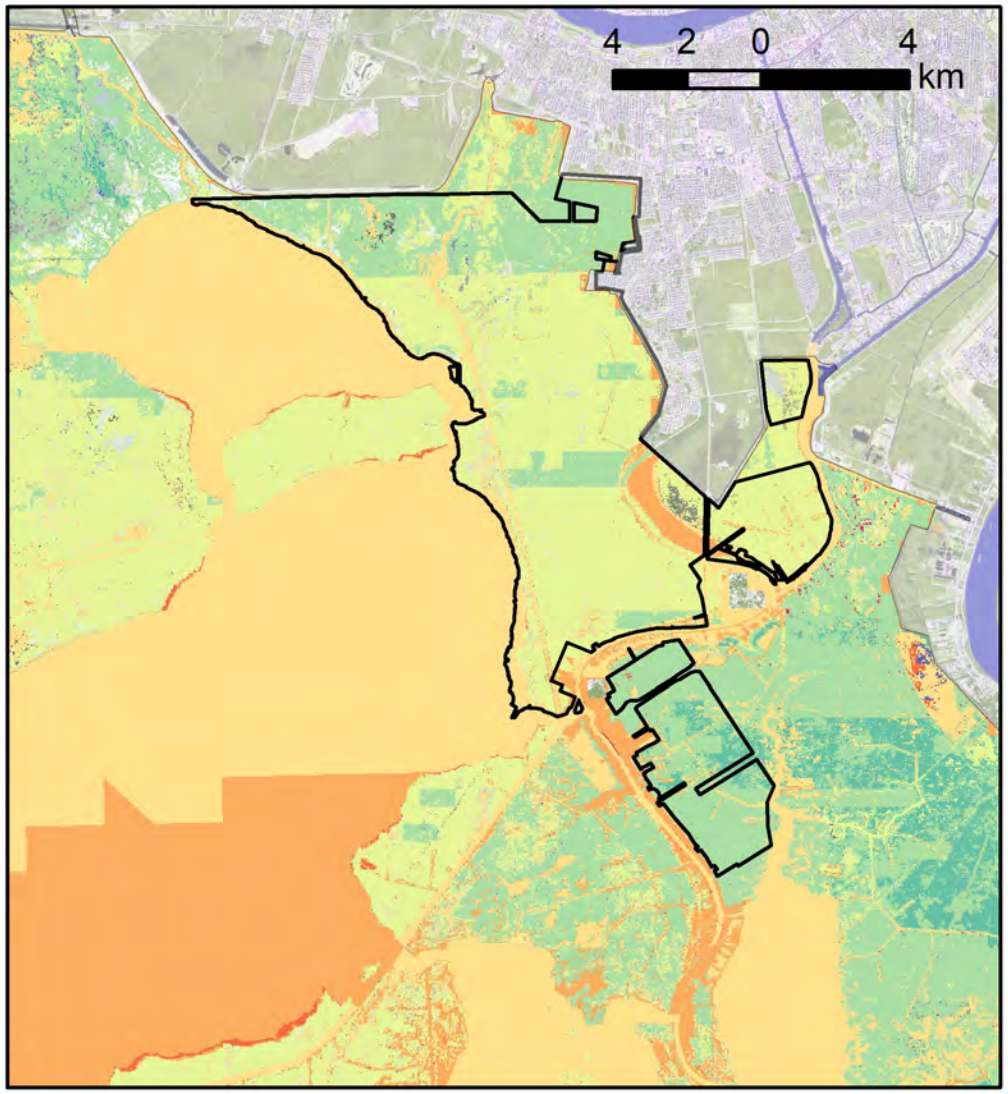
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
W E
S





S06 - G603
Low
Mid-Barataria Only
Year 22

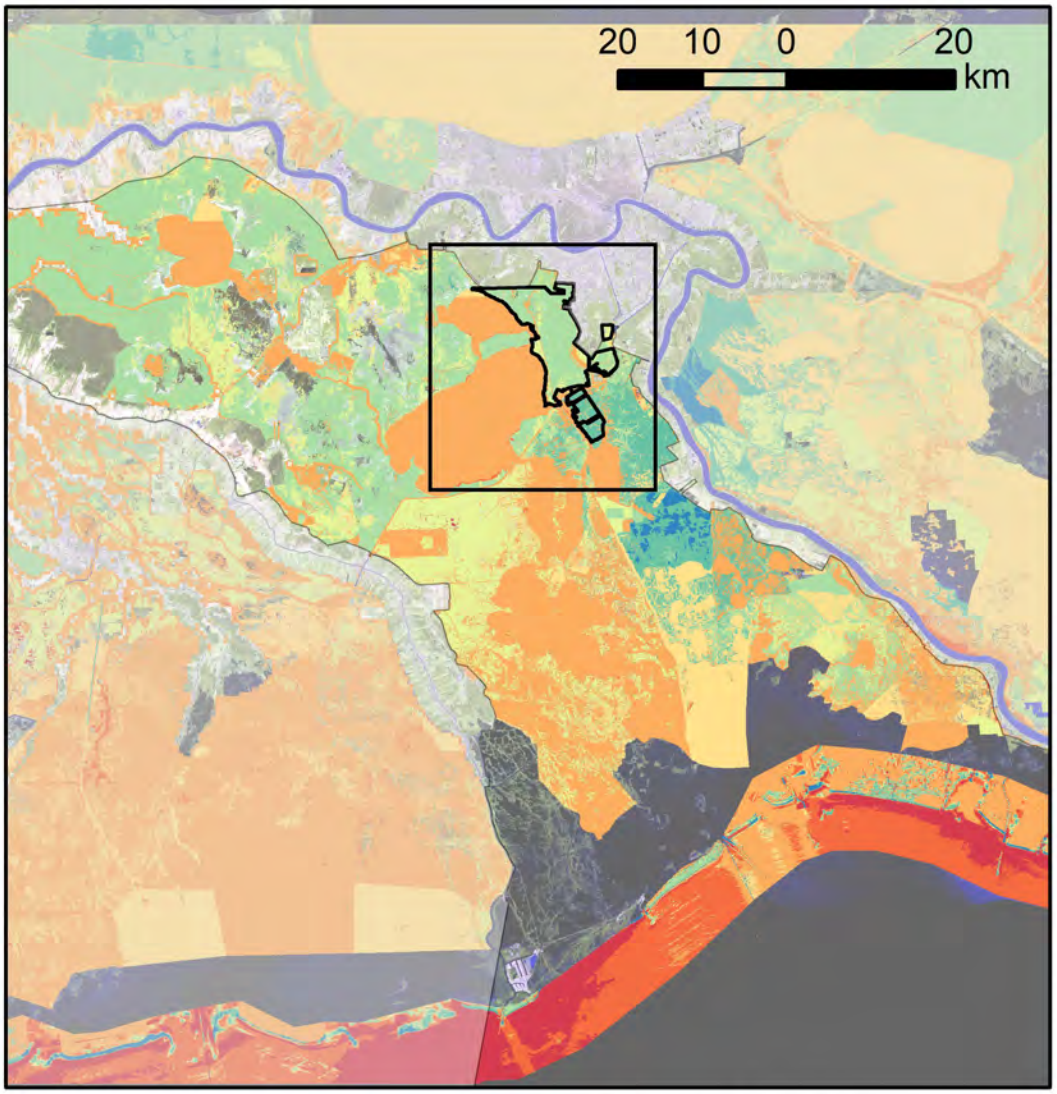
Elev. Change [m]

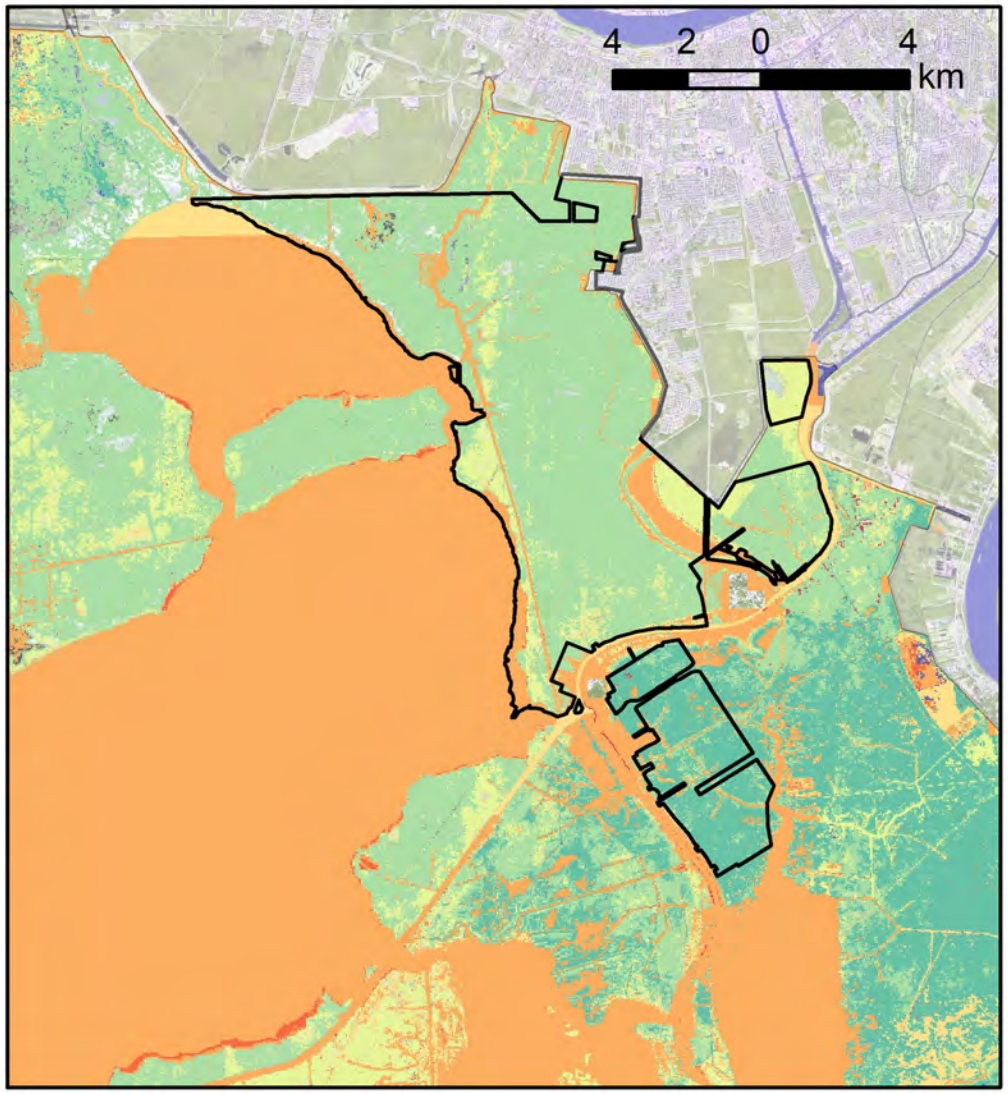
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
W E
S





S06 - G603
Low
Mid-Barataria Only
Year 32

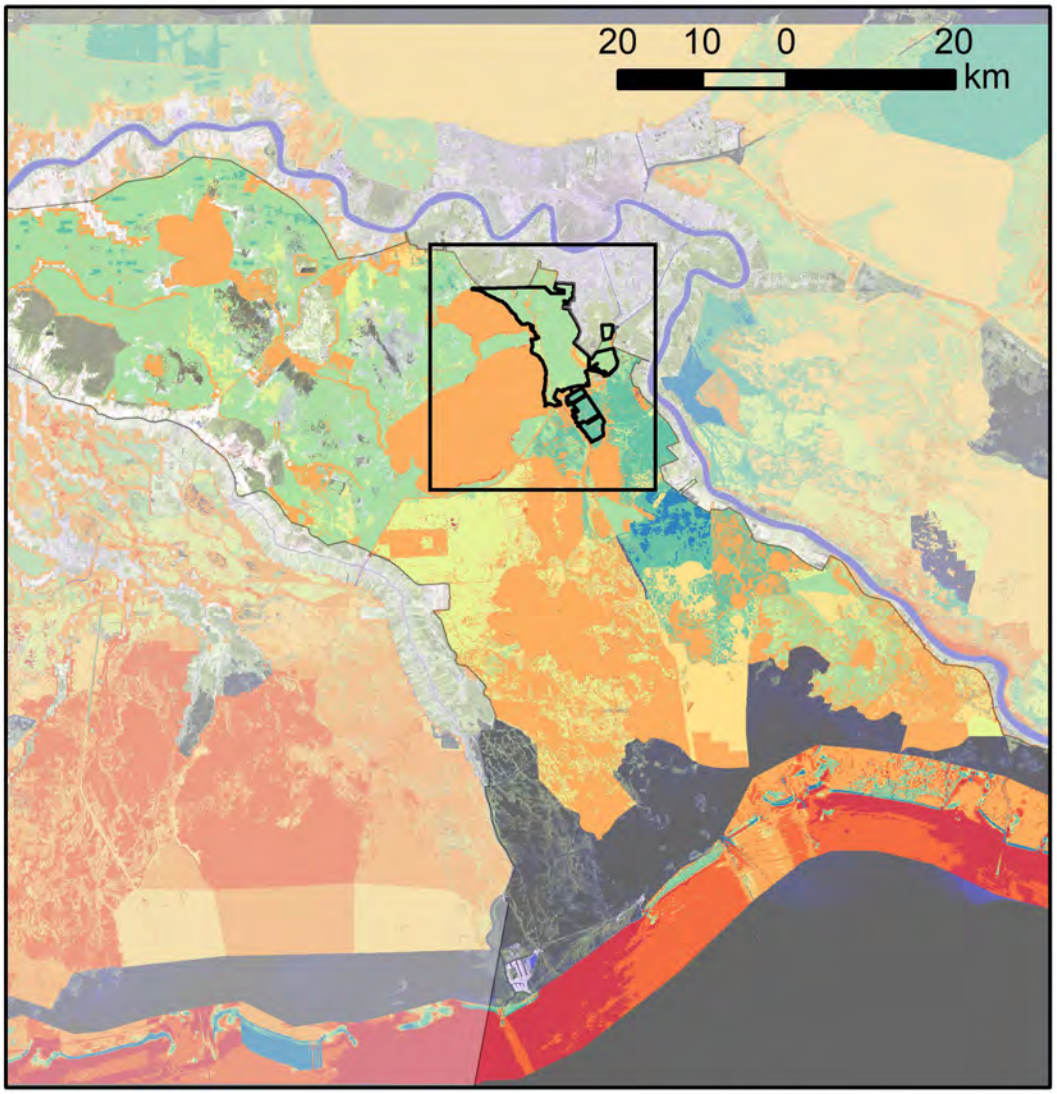
Elev. Change [m]

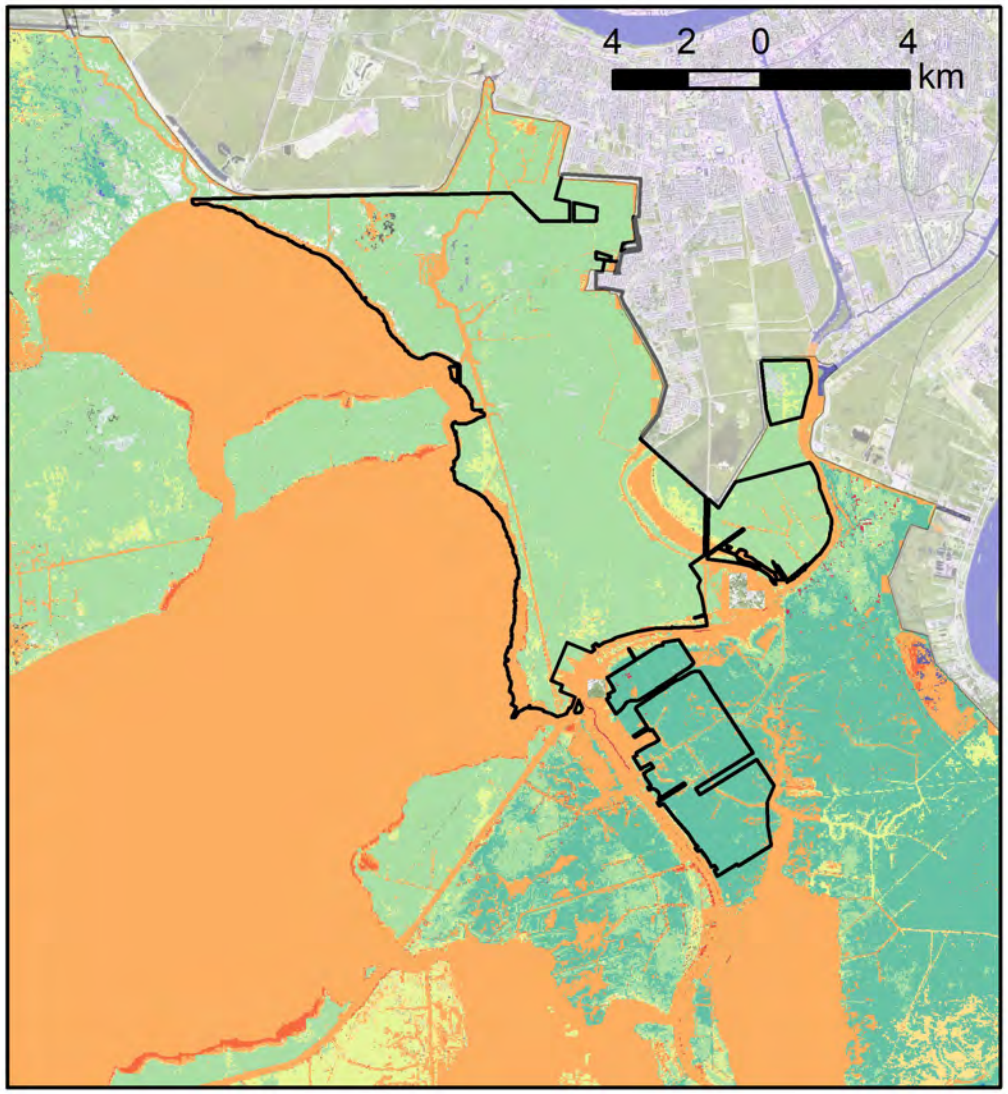
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
W E
S





S06 - G603
Low
Mid-Barataria Only
Year 42

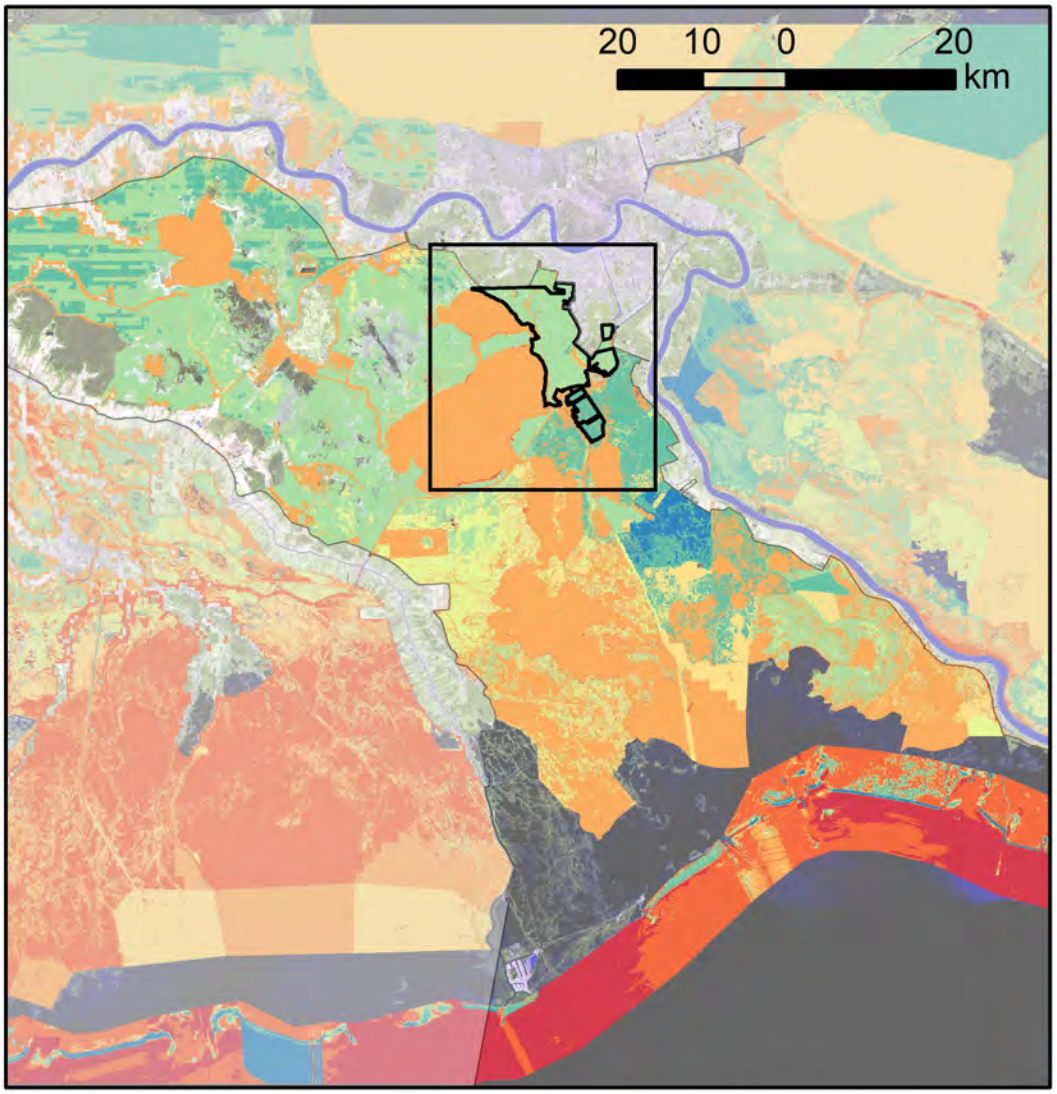
Elev. Change [m]

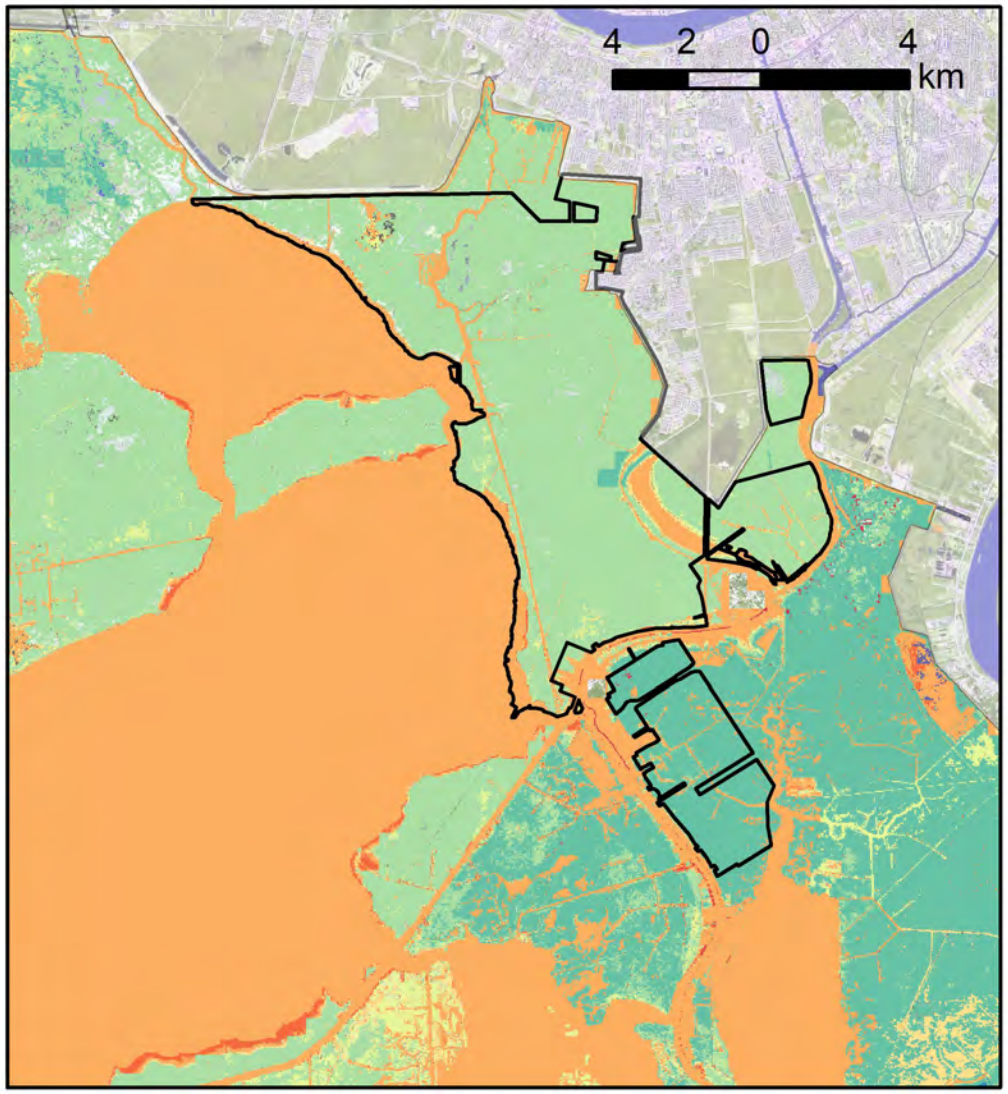
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol







S06 - G603
Low
Mid-Barataria Only
Year 51

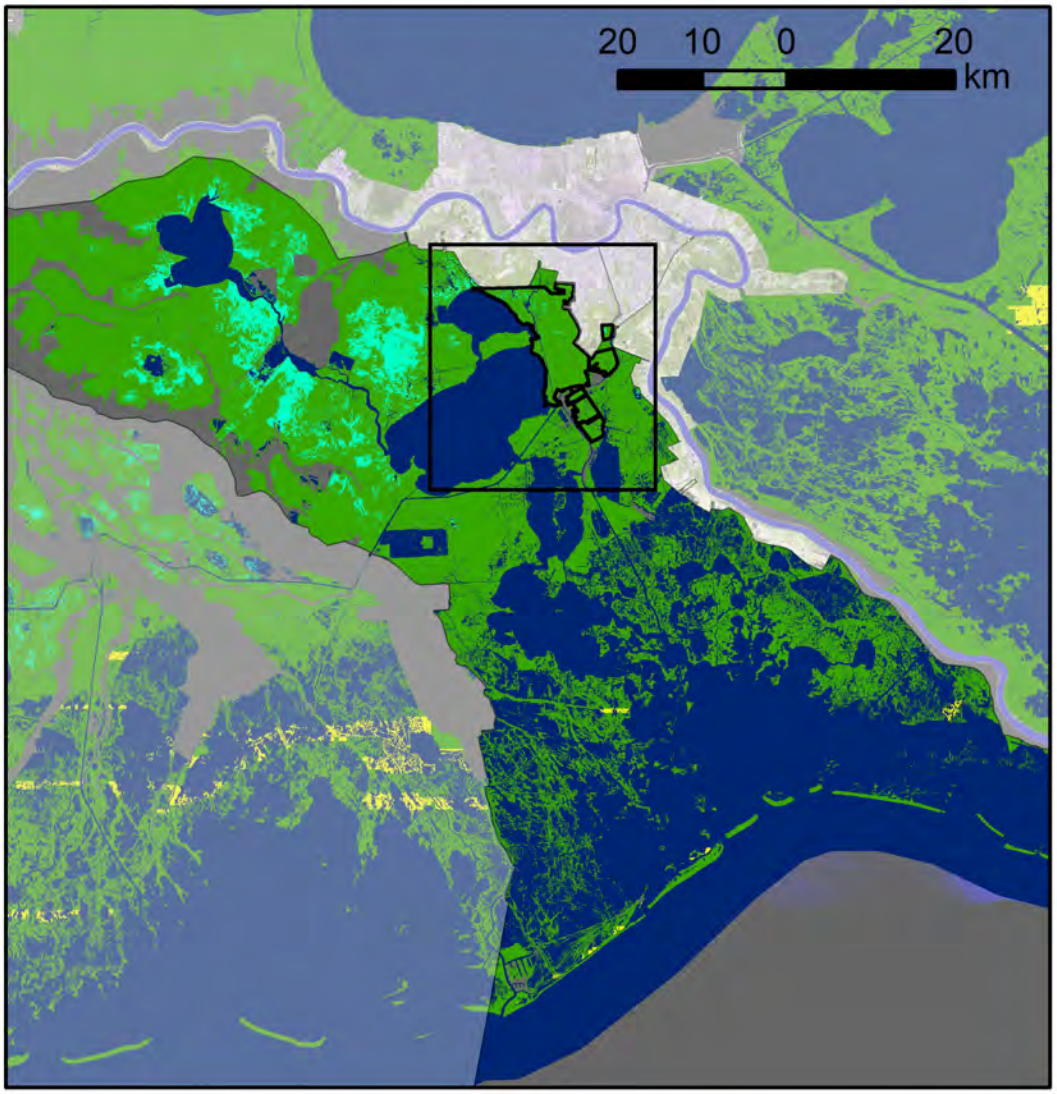
Elev. Change [m]

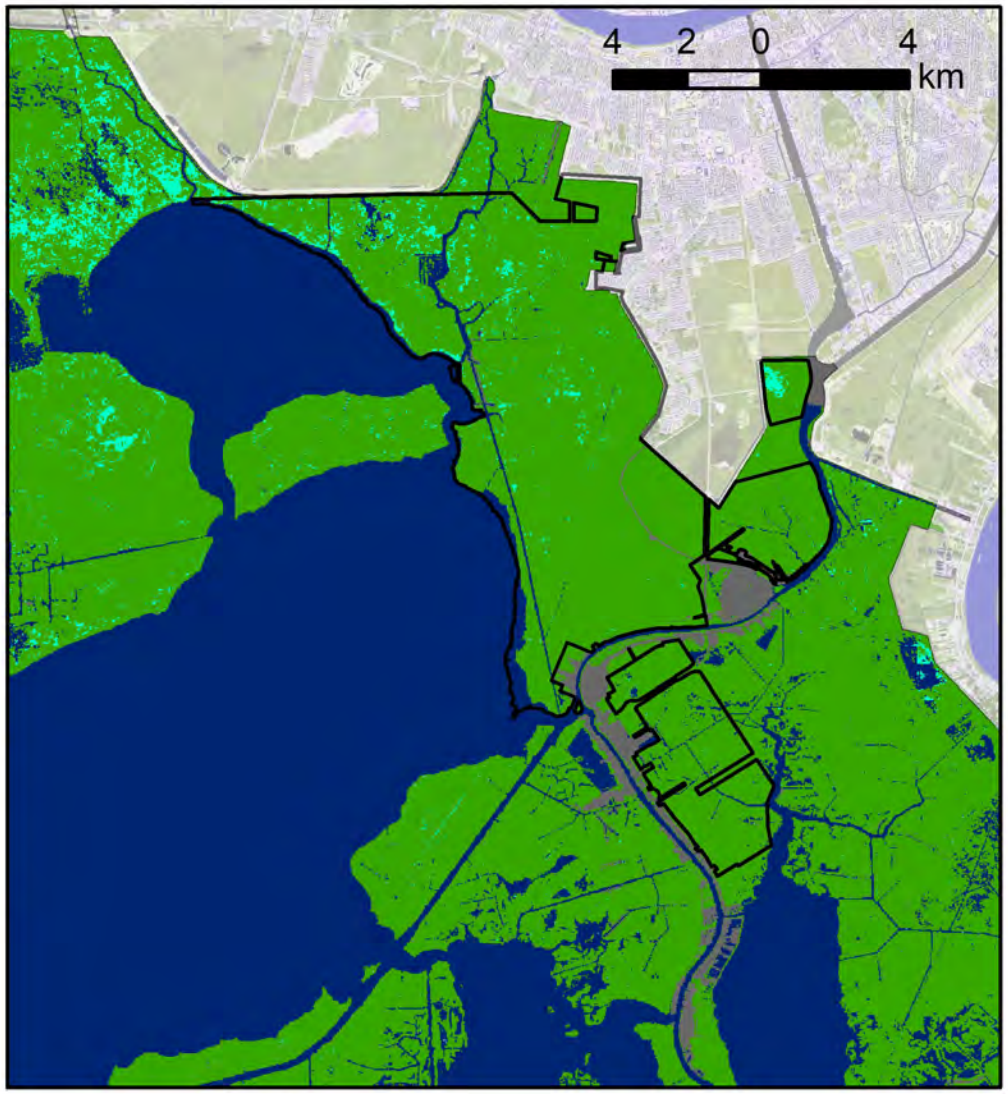
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
W E
S





S06 - G703
Low
Ama Only
Year 02

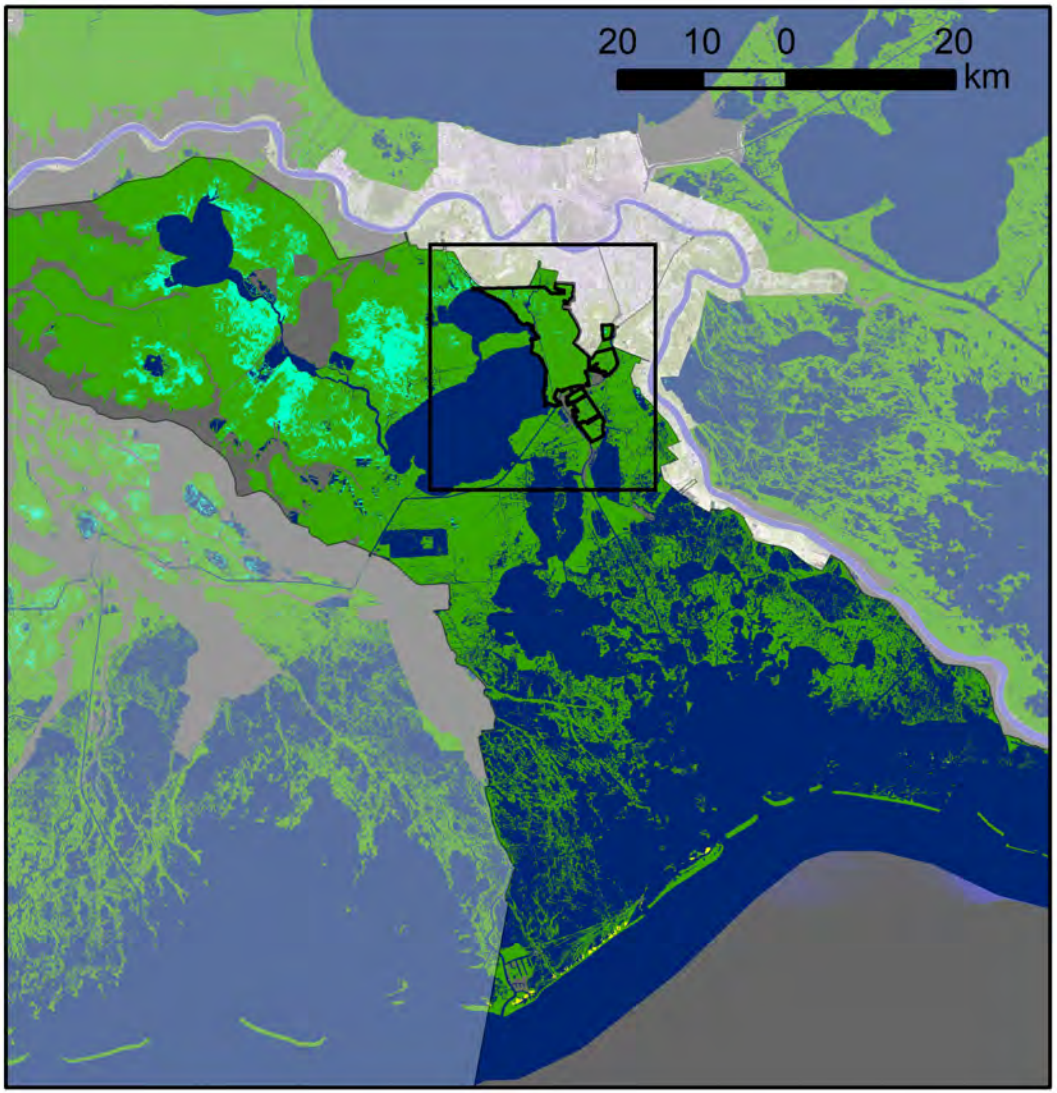
Land Type

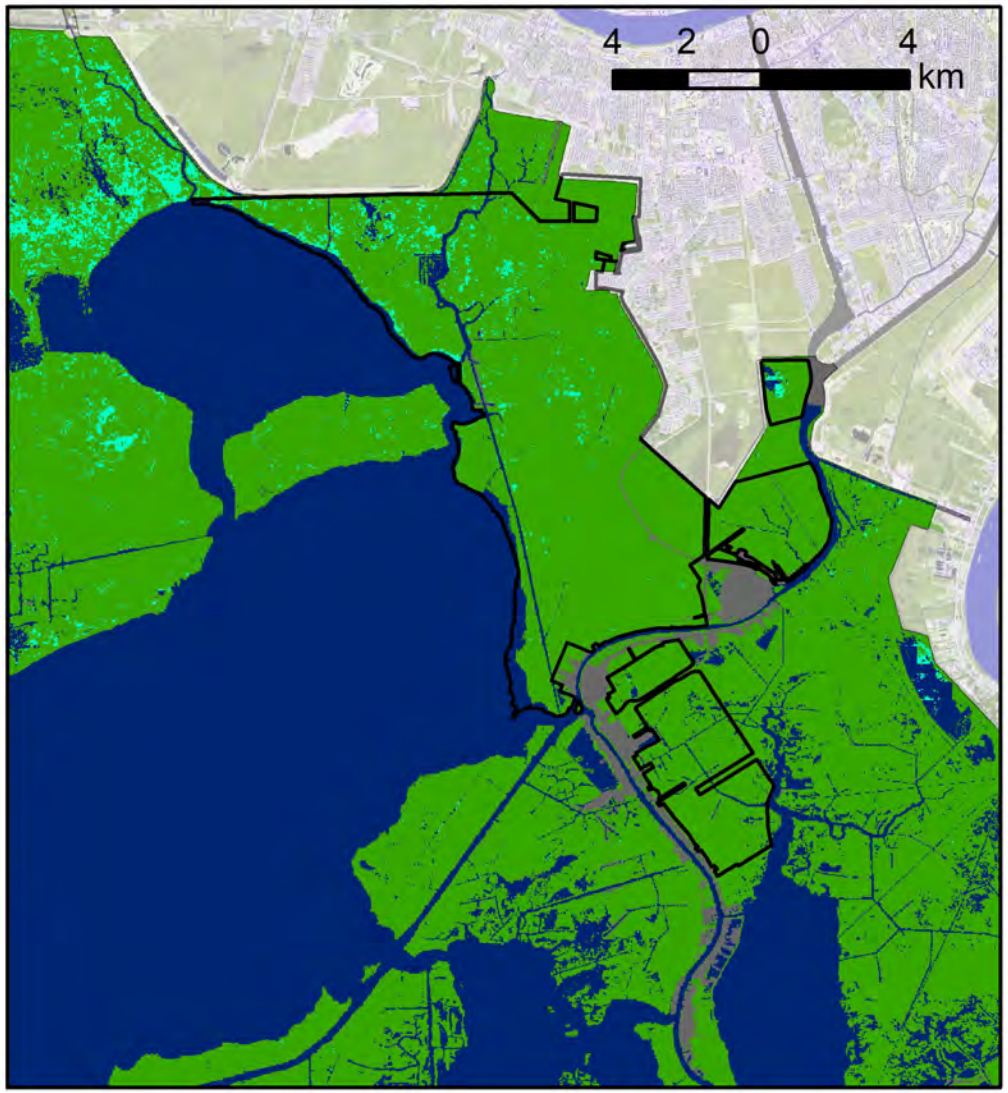
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S06 - G703
Low
Ama Only
Year 12

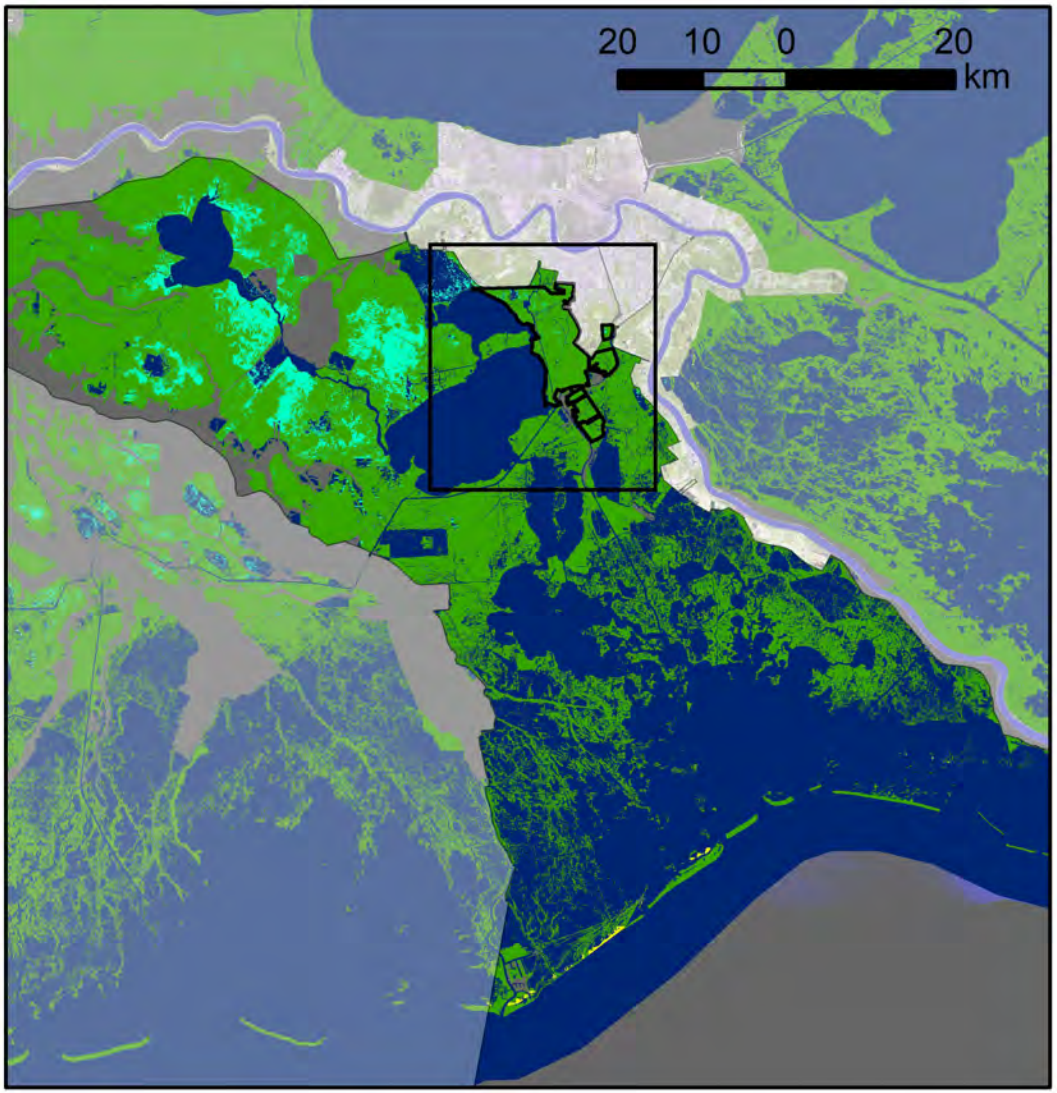
Land Type

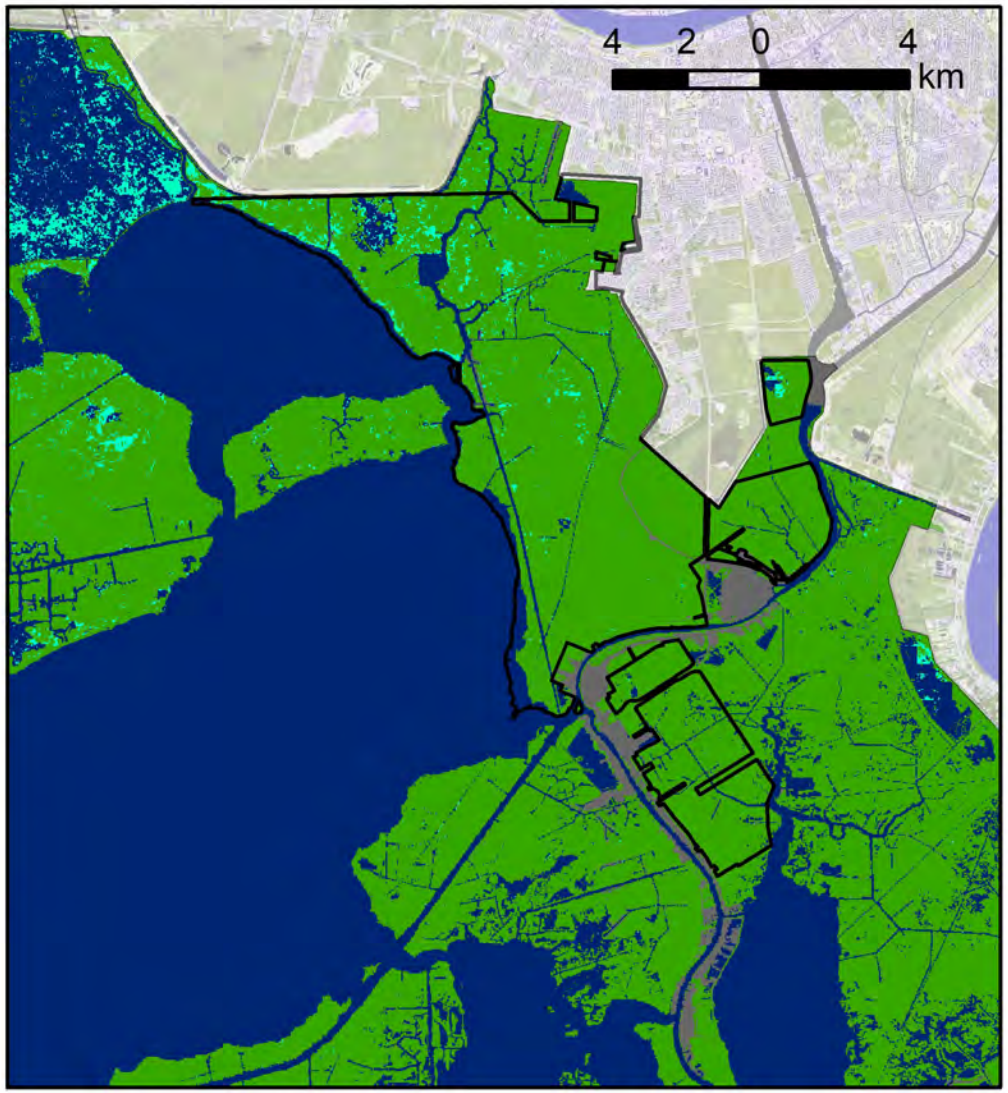
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S06 - G703
Low
Ama Only
Year 22

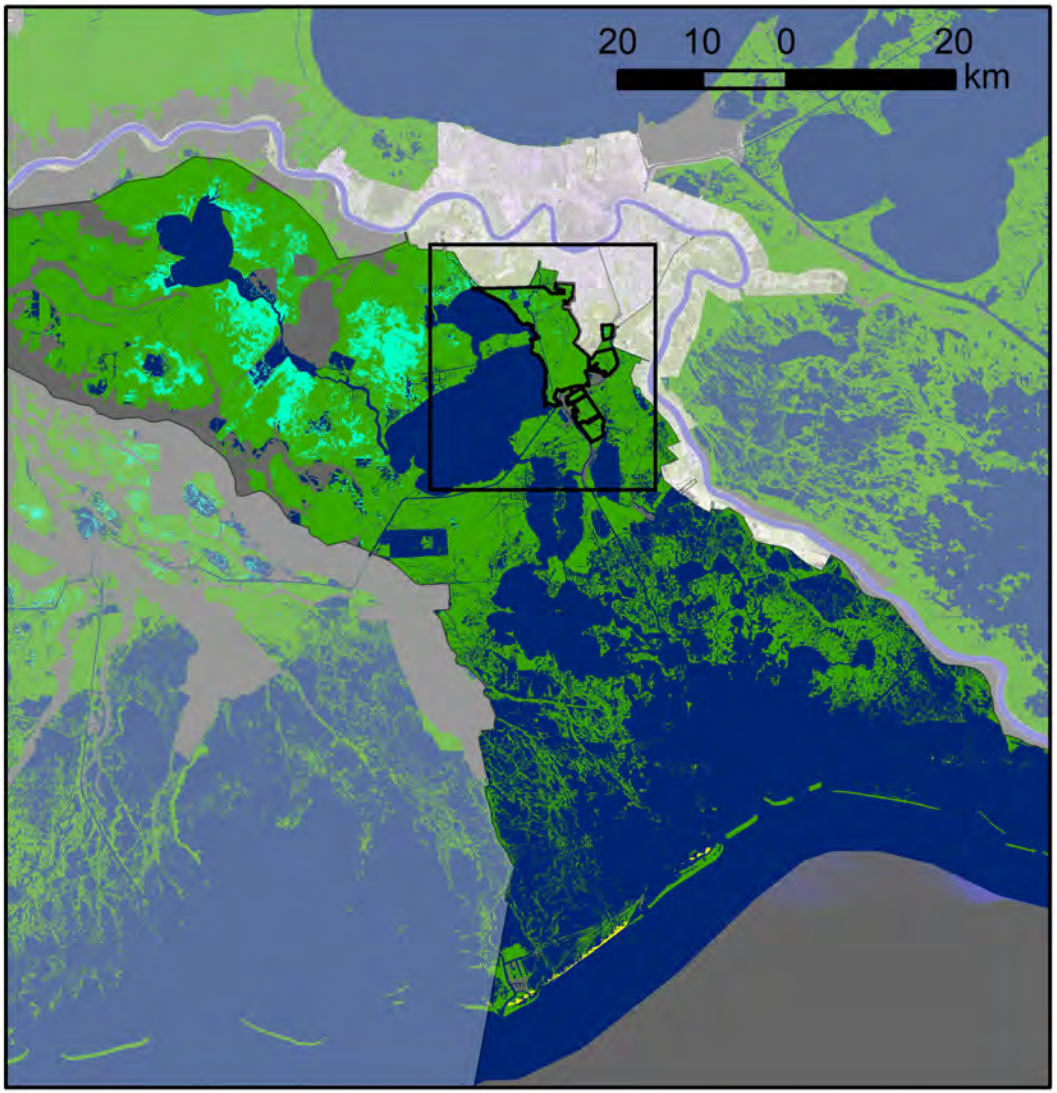
Land Type

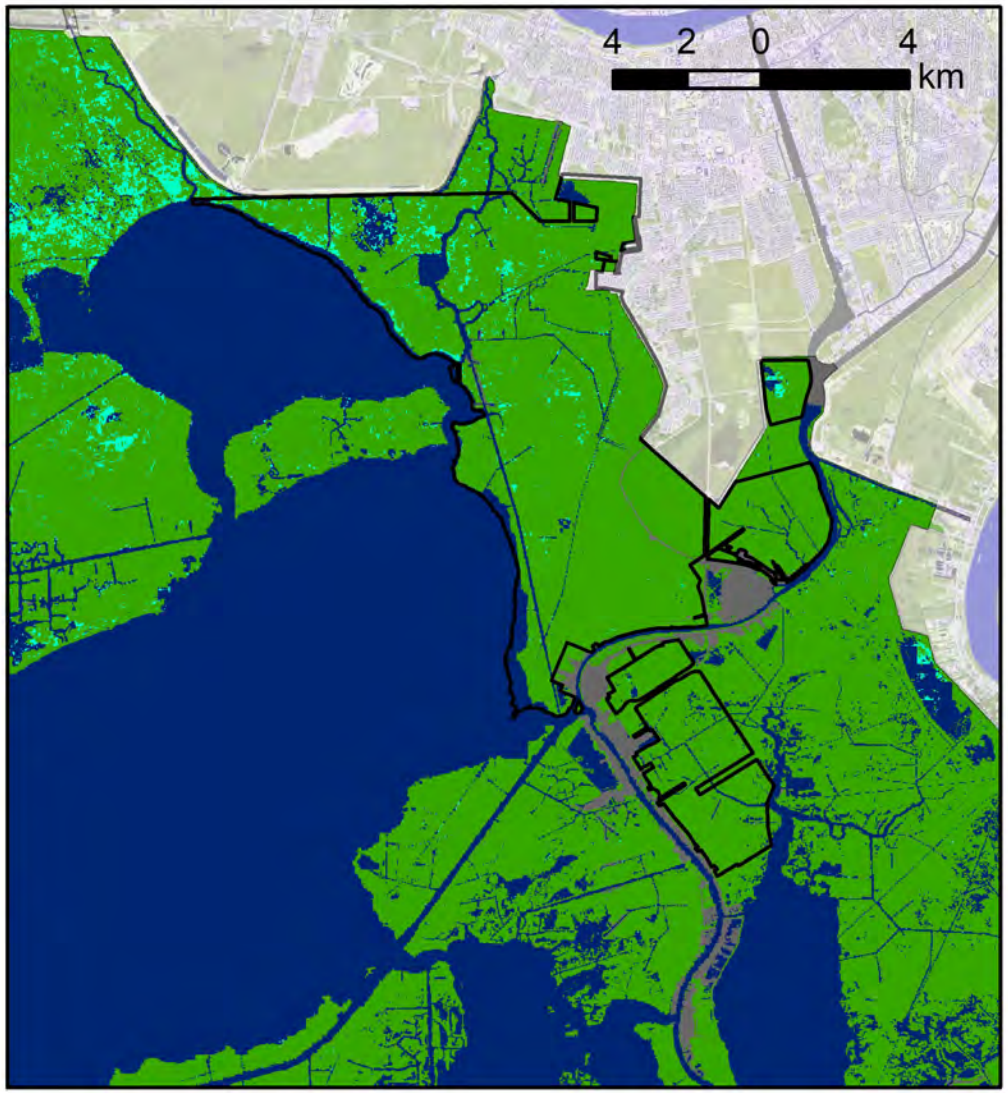
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S06 - G703
Low
Ama Only
Year 32

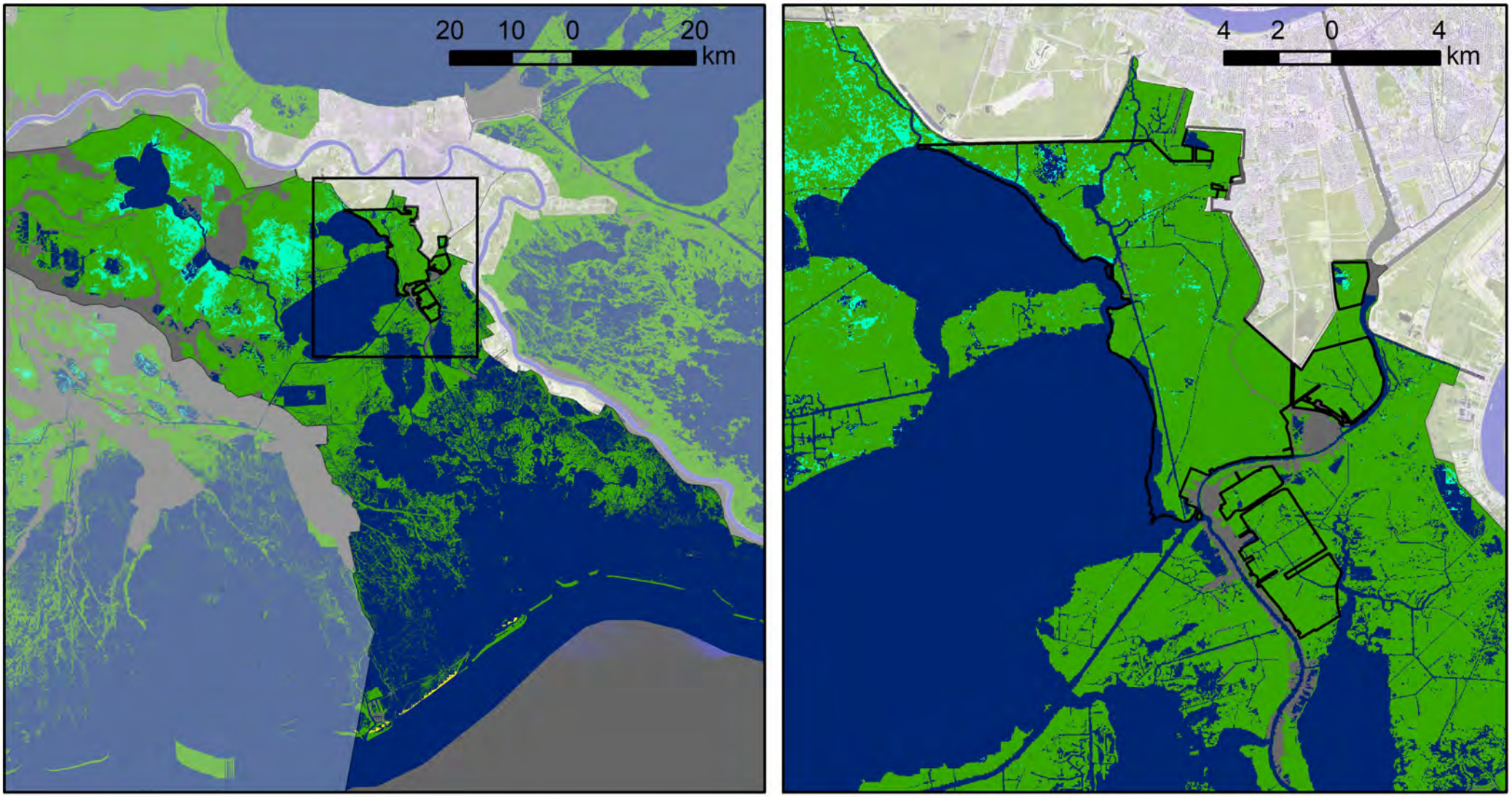
Land Type

- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol





S06 - G703
Low
Ama Only
Year 42

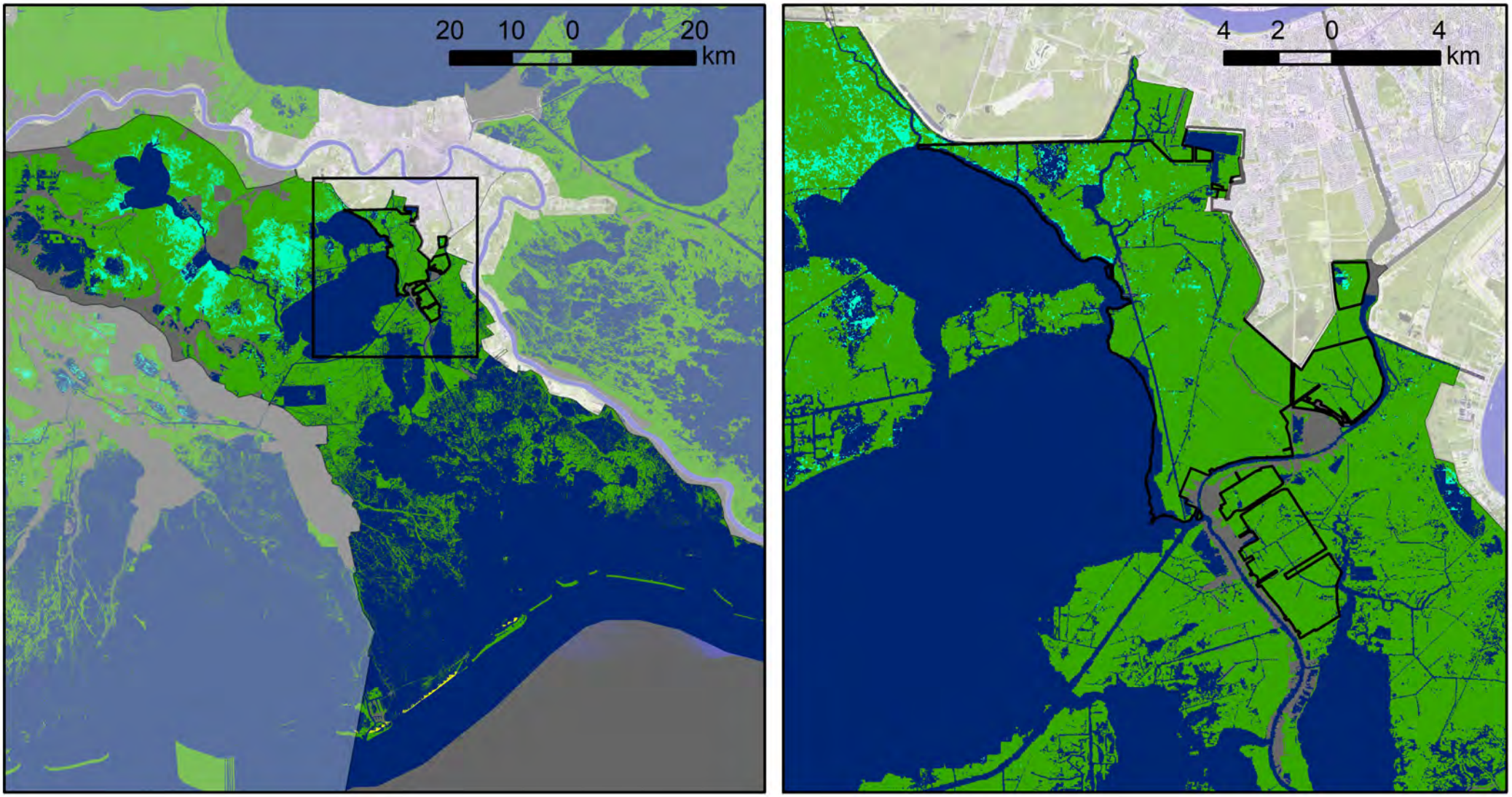
Land Type

- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol





S06 - G703
Low
Ama Only
Year 51

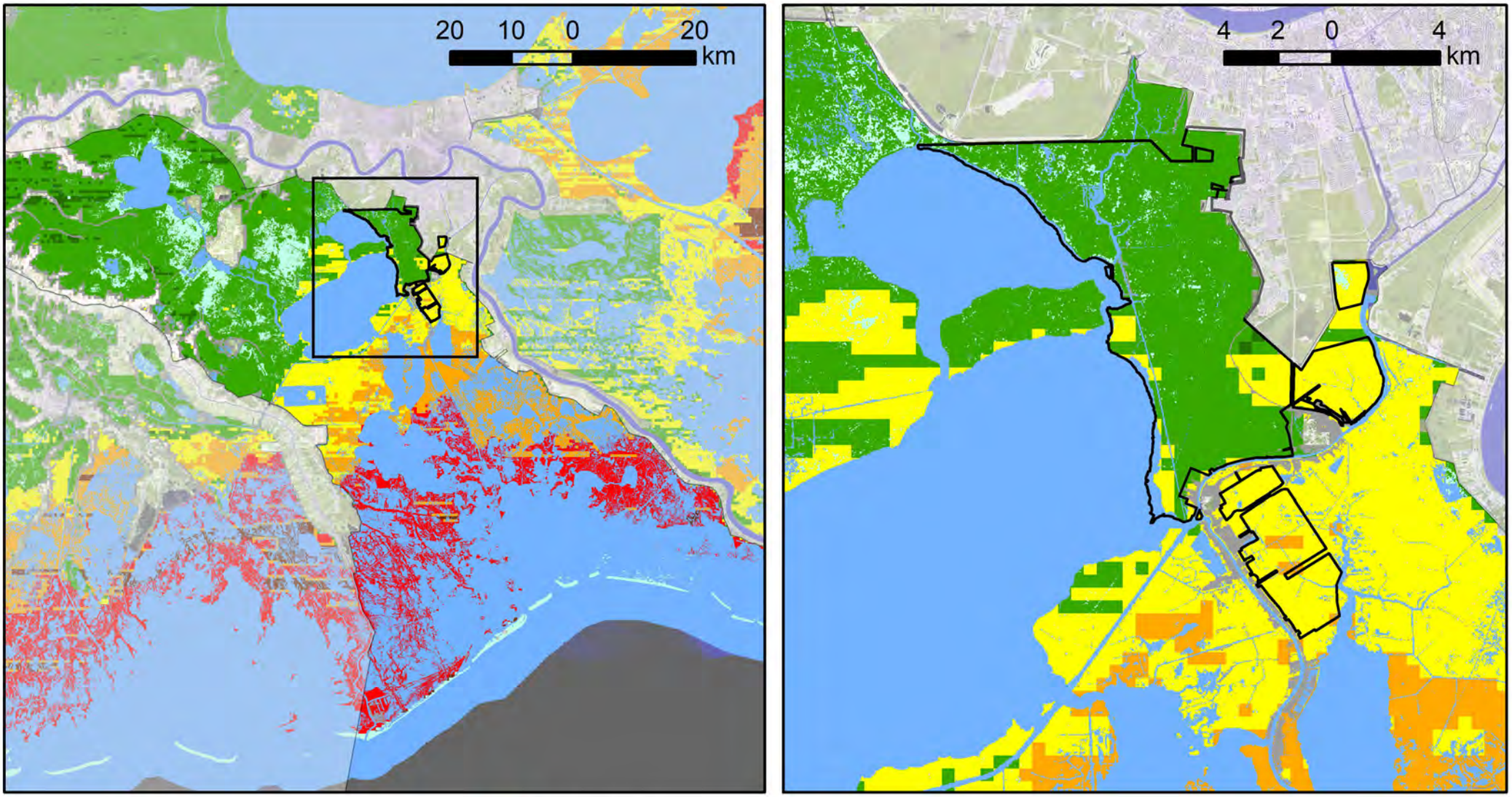
Land Type

- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol





S06 - G703
Low
Ama Only
Year 02

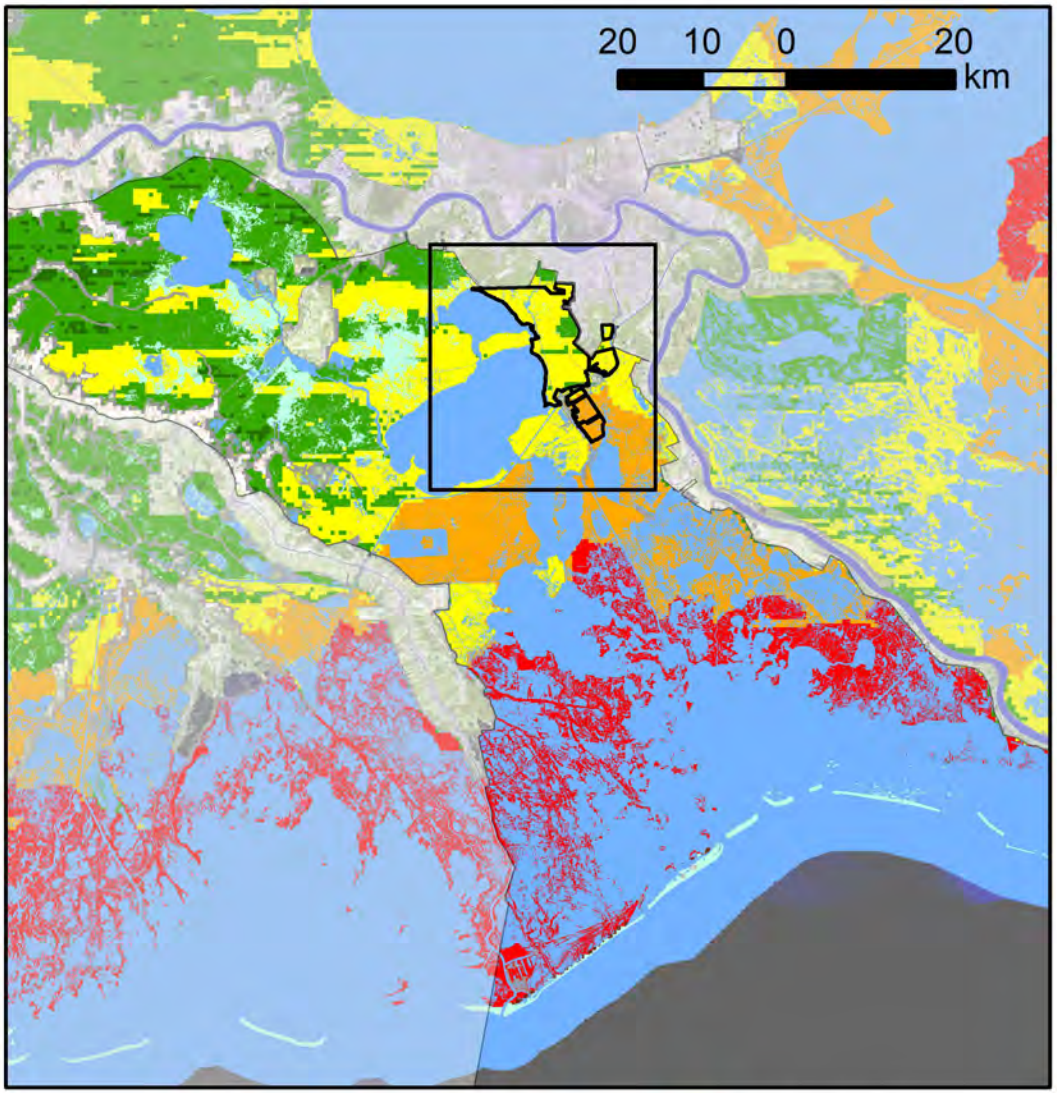
Habitat Type

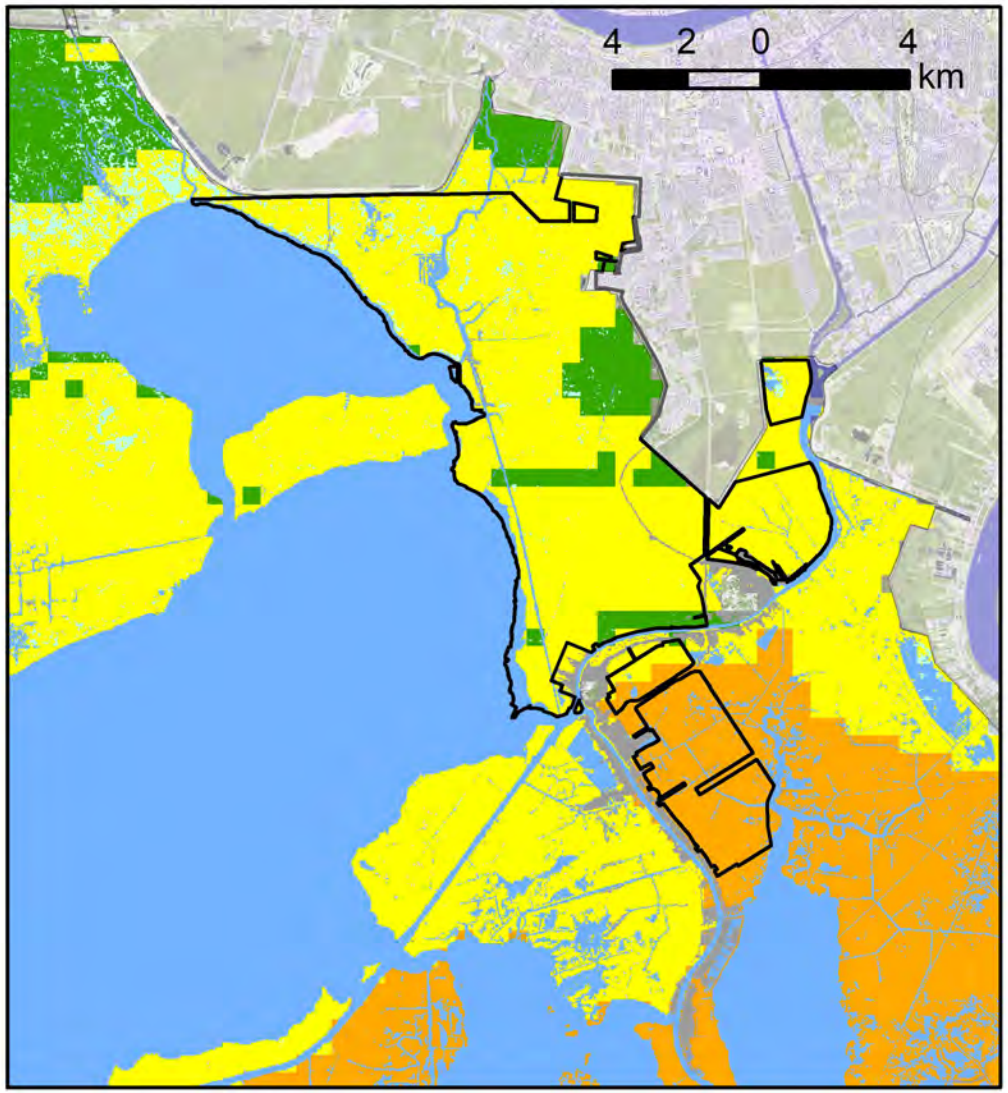
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S06 - G703
Low
Ama Only
Year 12

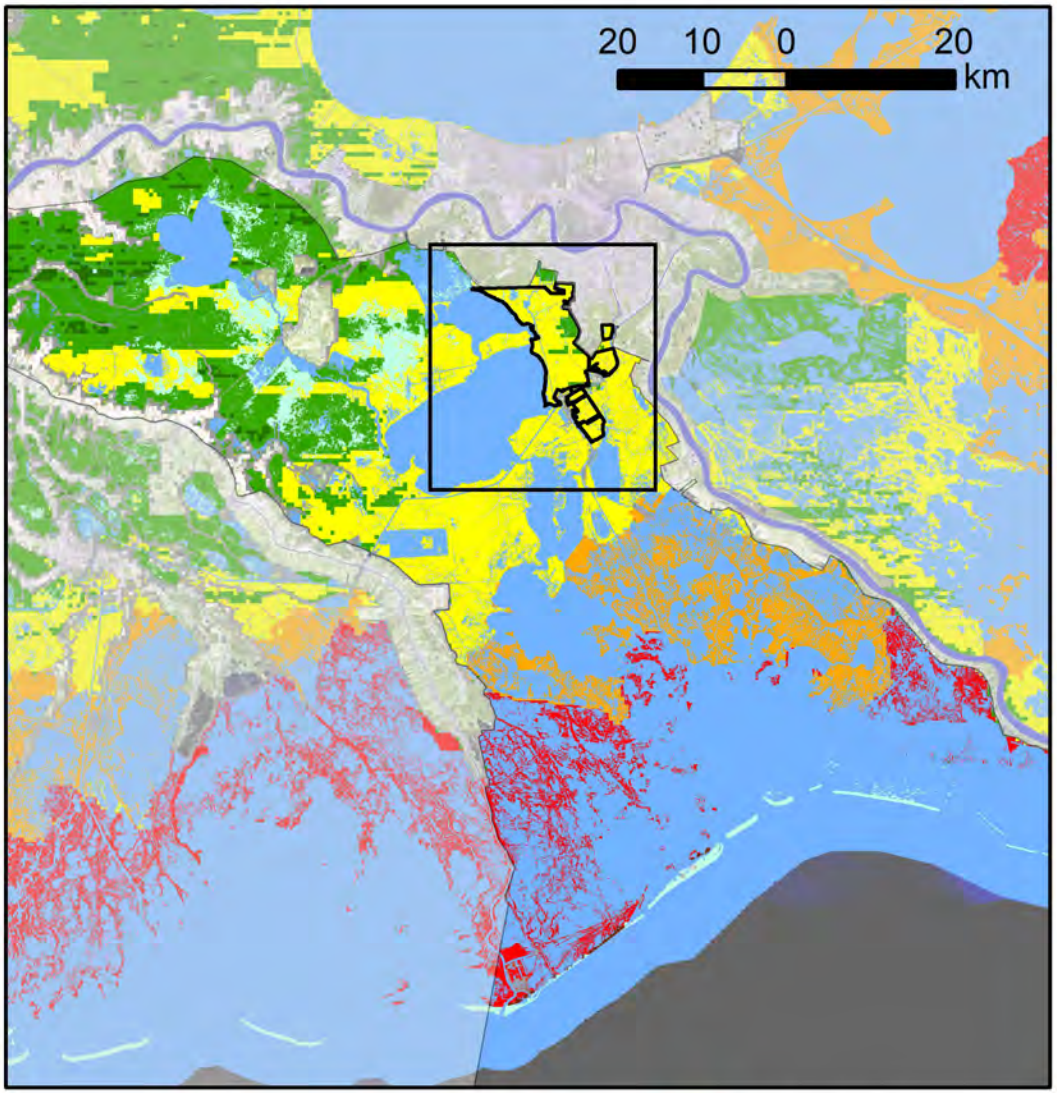
Habitat Type

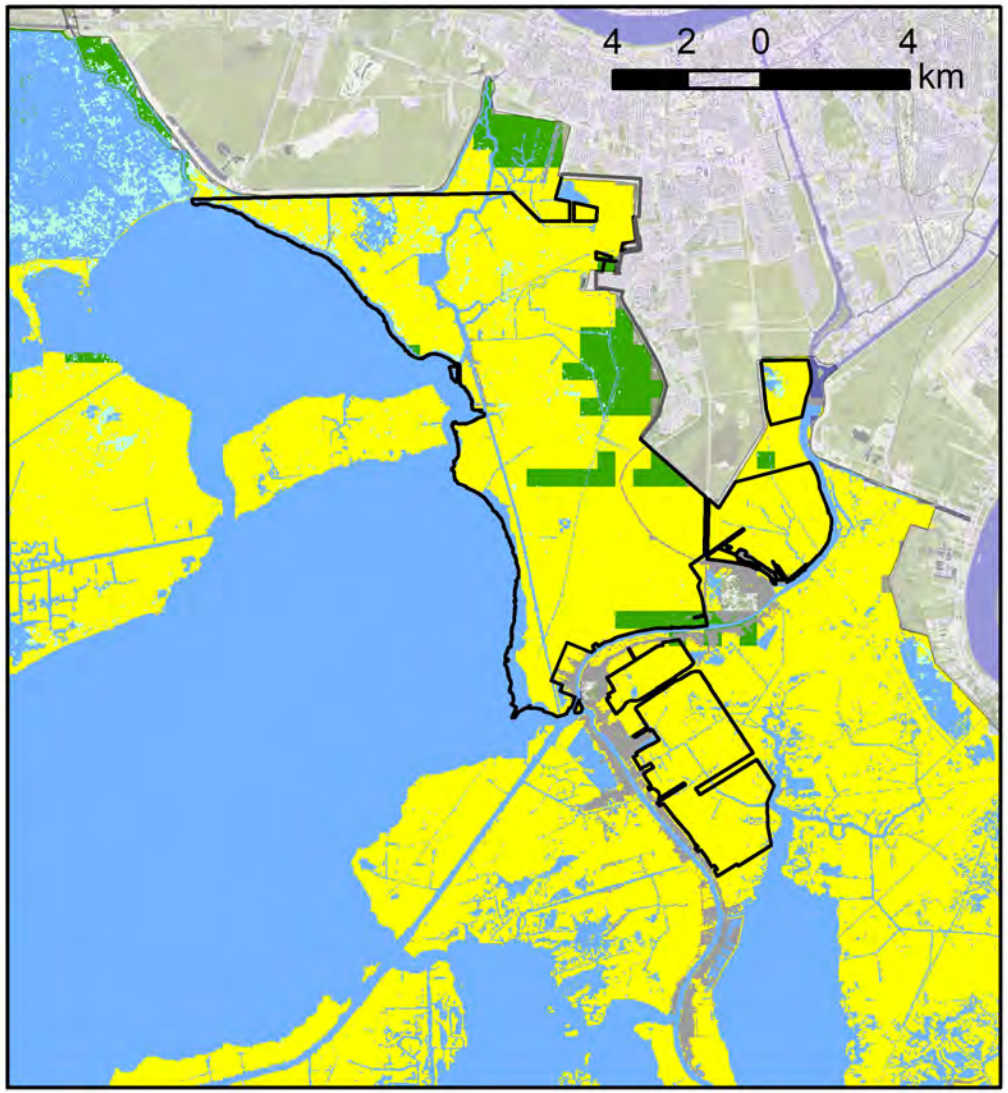
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S06 - G703
Low
Ama Only
Year 22

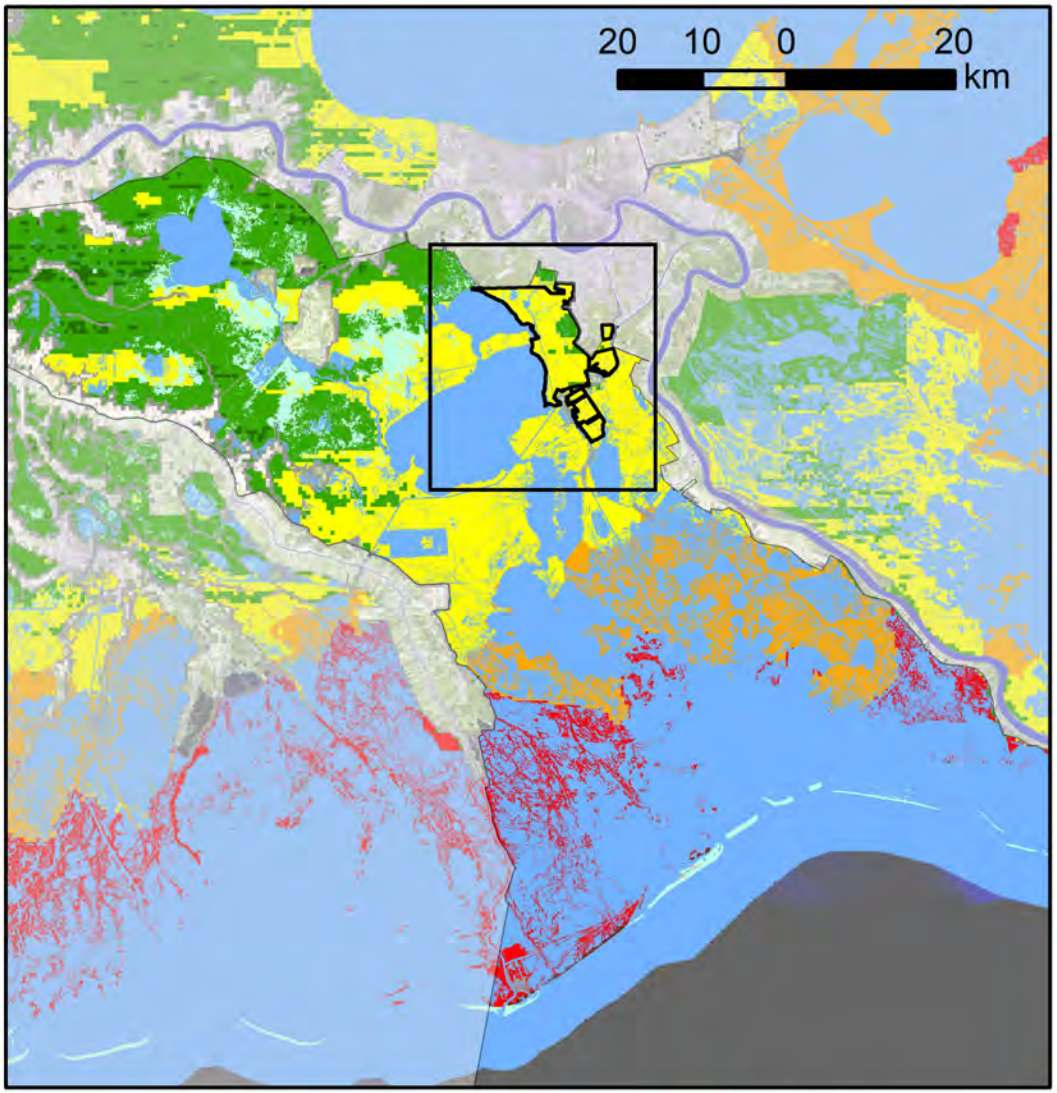
Habitat Type

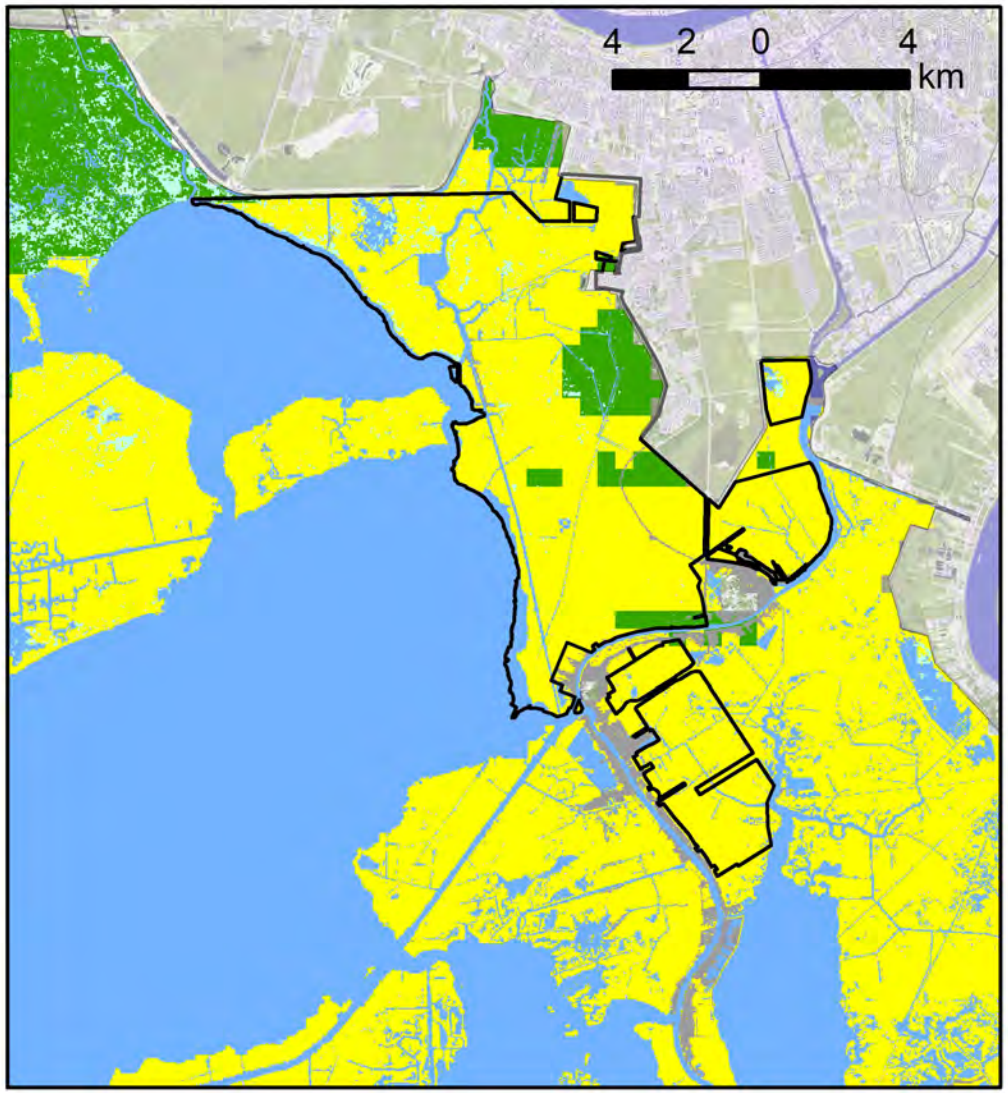
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S06 - G703
Low
Ama Only
Year 32

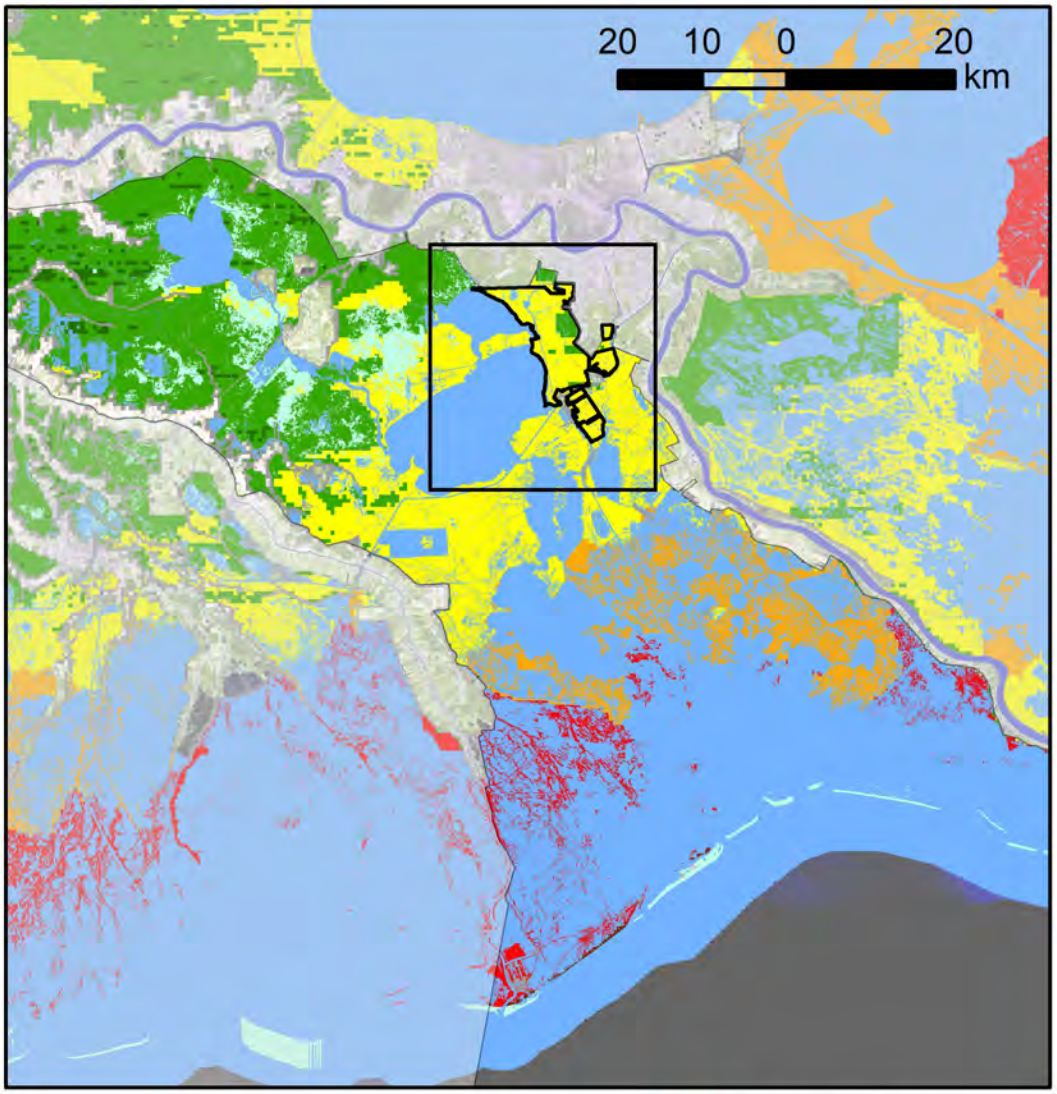
Habitat Type

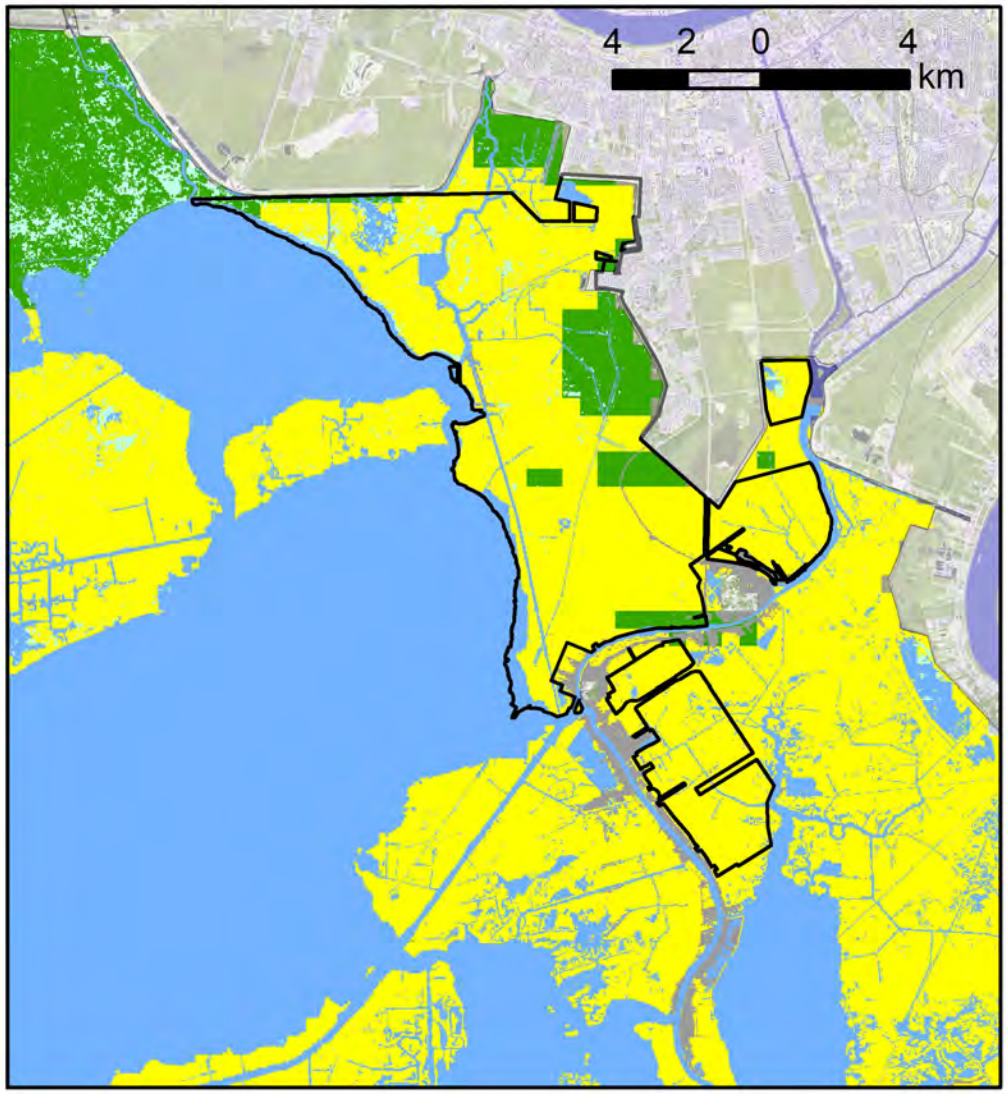
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S06 - G703
Low
Ama Only
Year 42

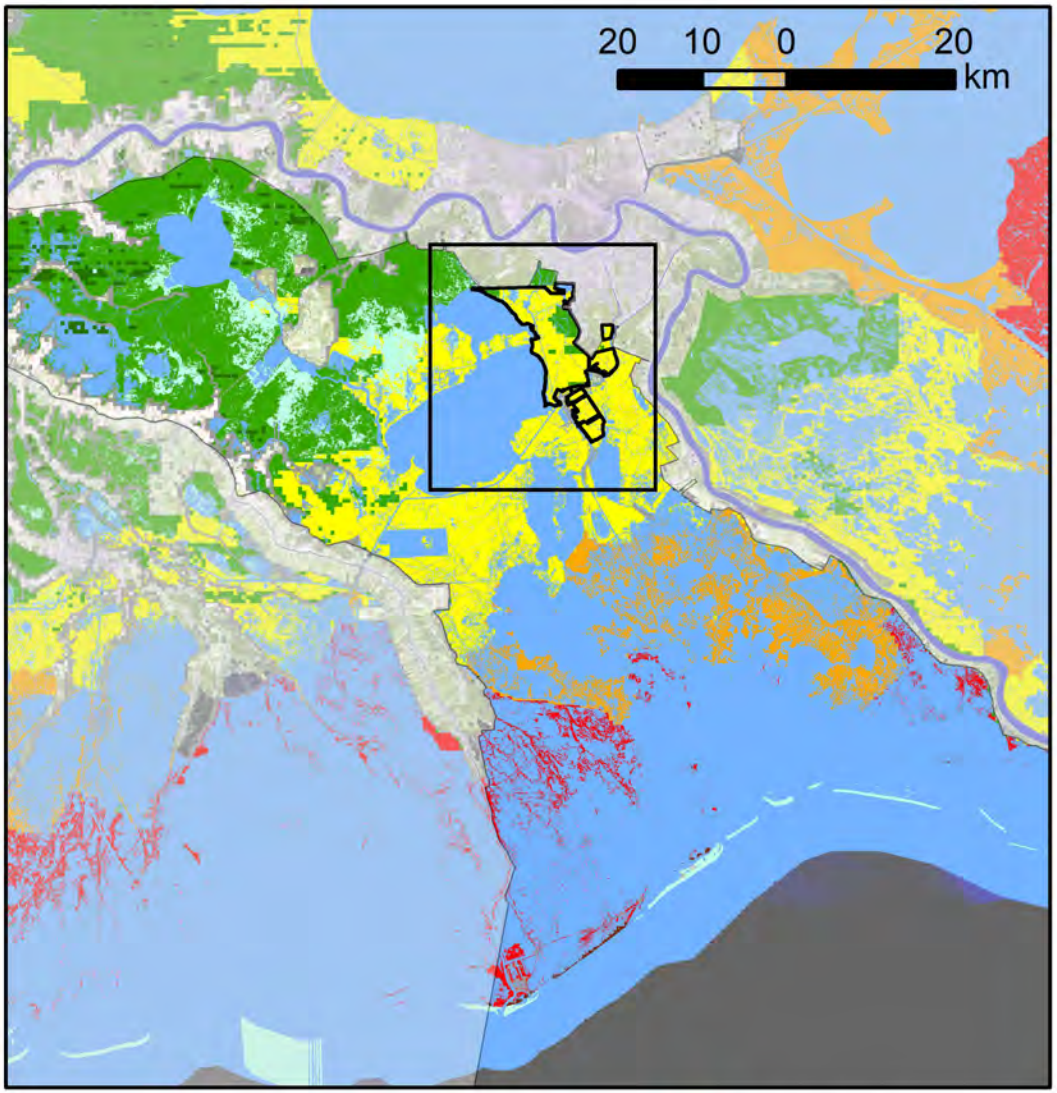
Habitat Type

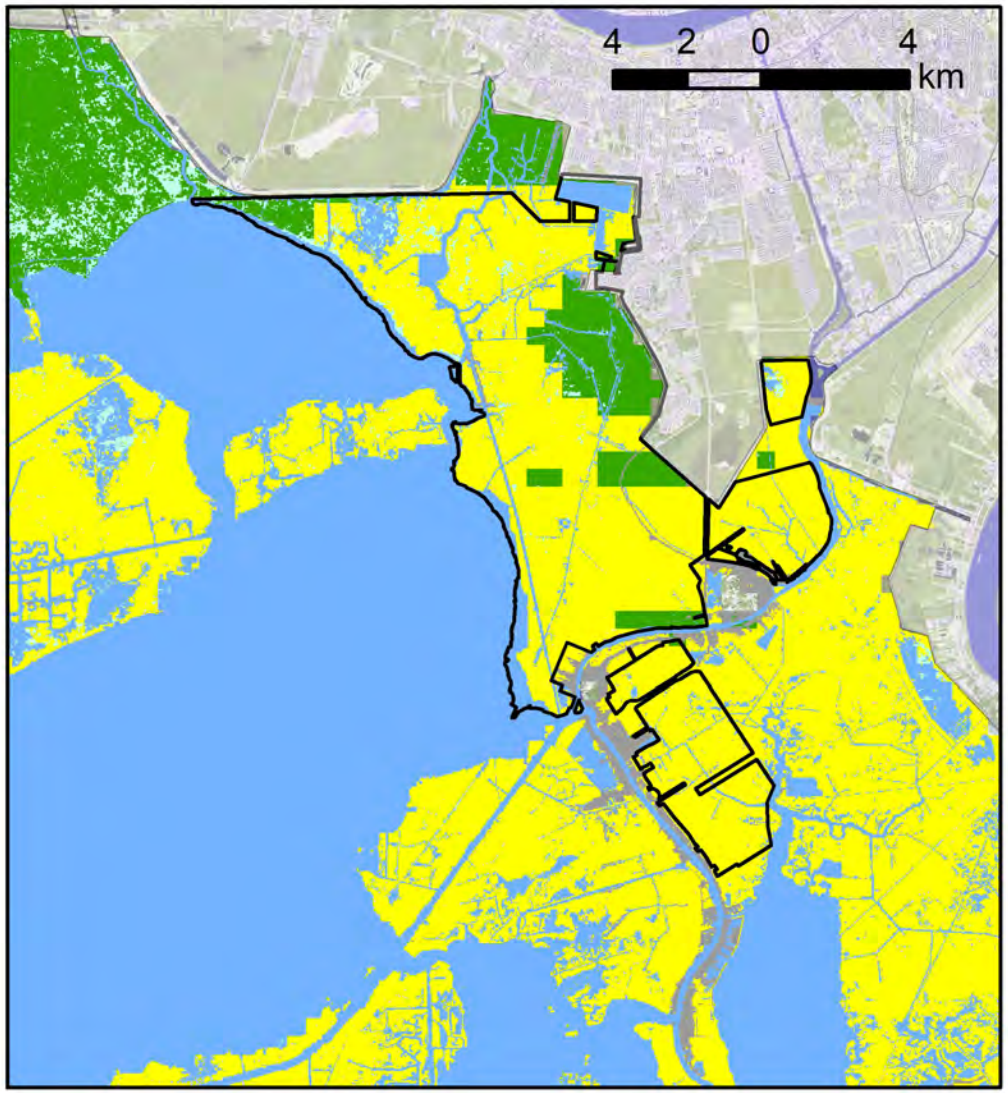
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S06 - G703
Low
Ama Only
Year 51

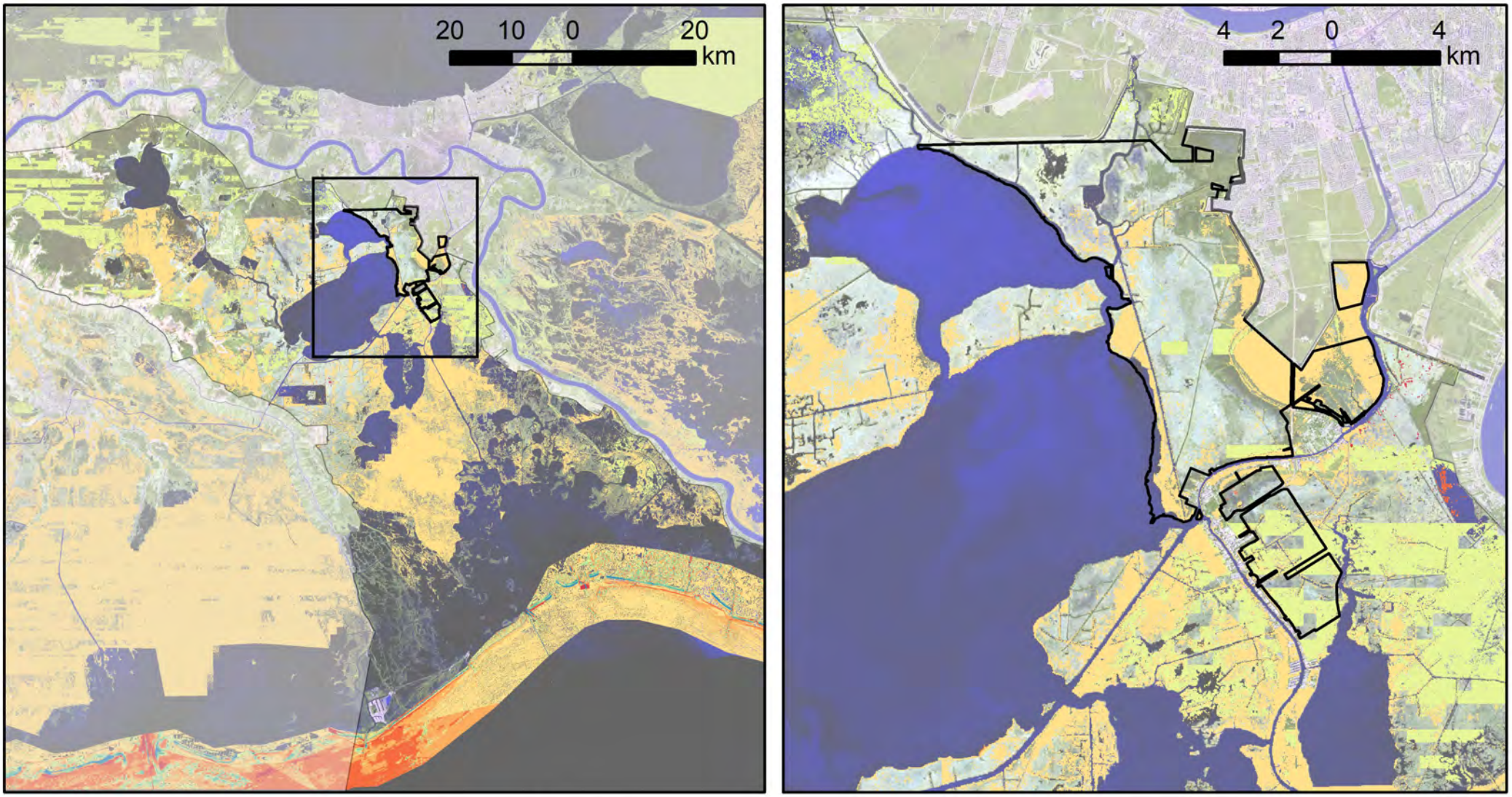
Habitat Type

- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol





S06 - G703
Low
Ama Only
Year 02

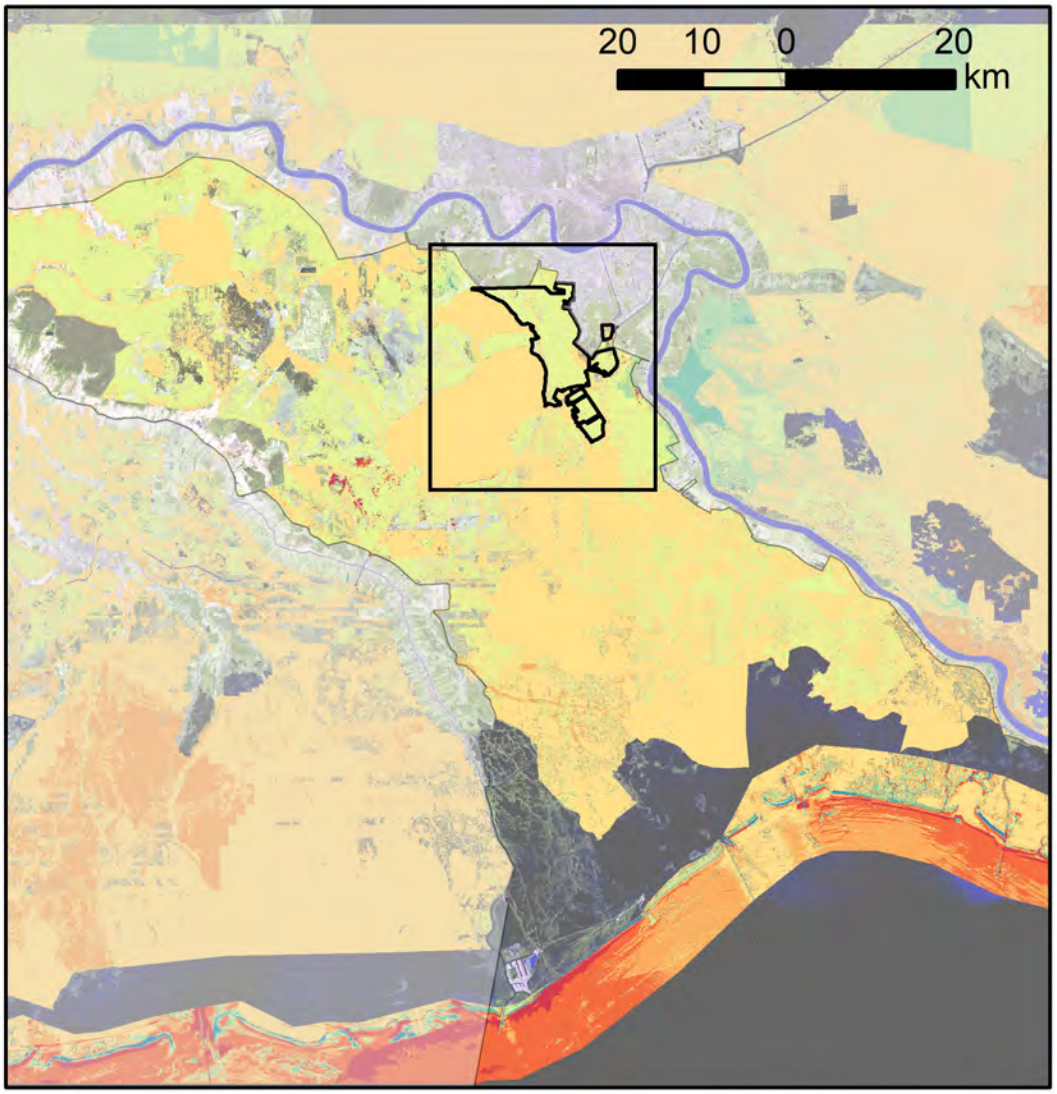
Elev. Change [m]

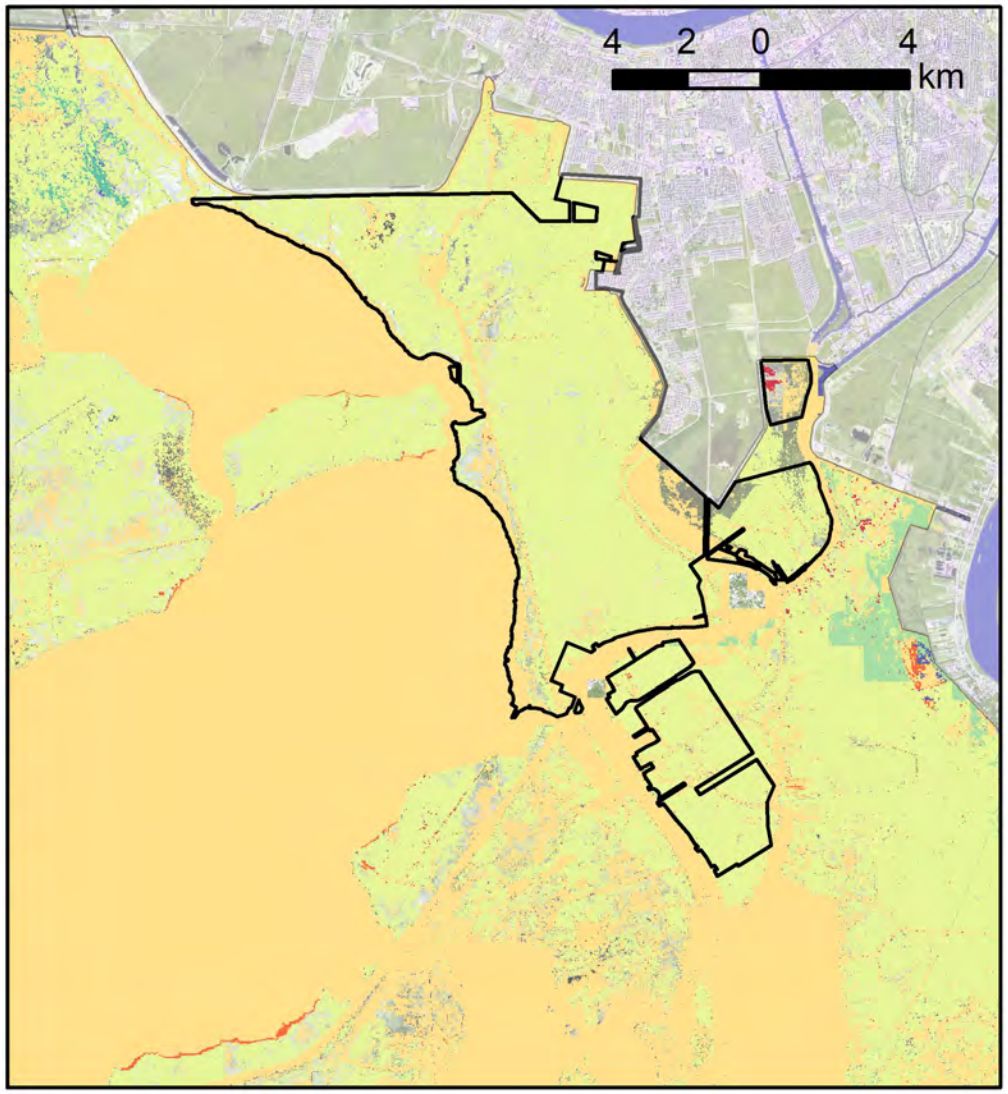
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol







S06 - G703
Low
Ama Only
Year 12

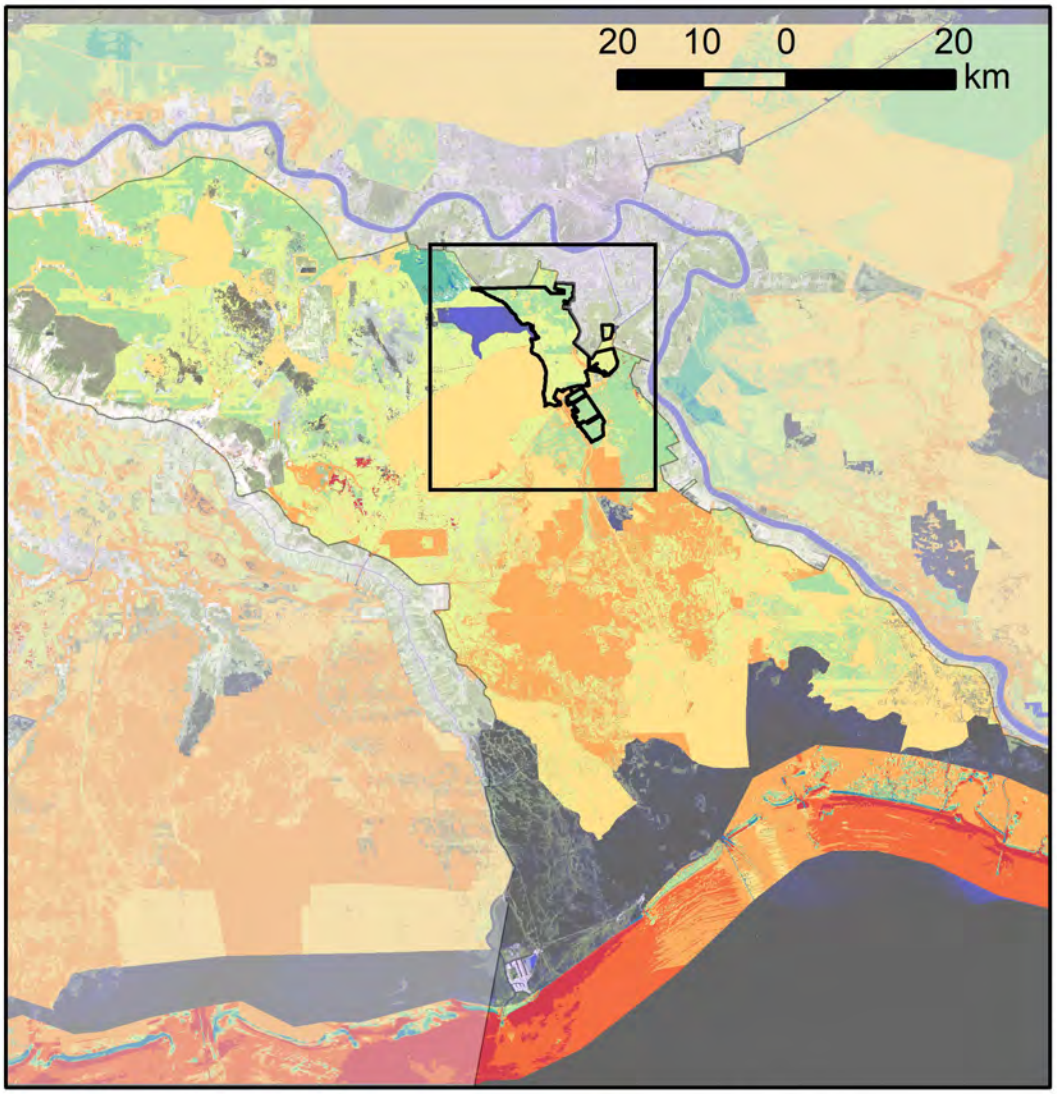
Elev. Change [m]

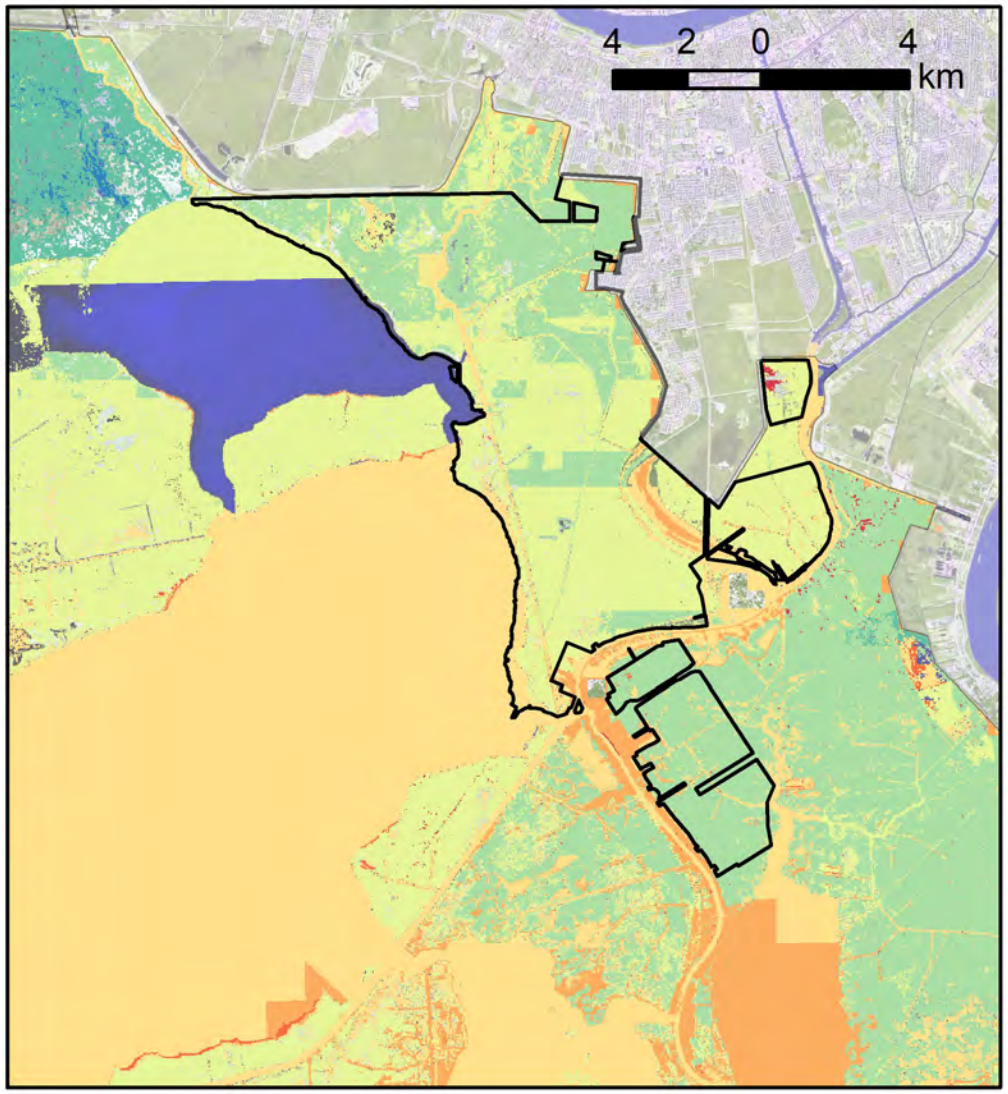
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol







S06 - G703
Low
Ama Only
Year 22

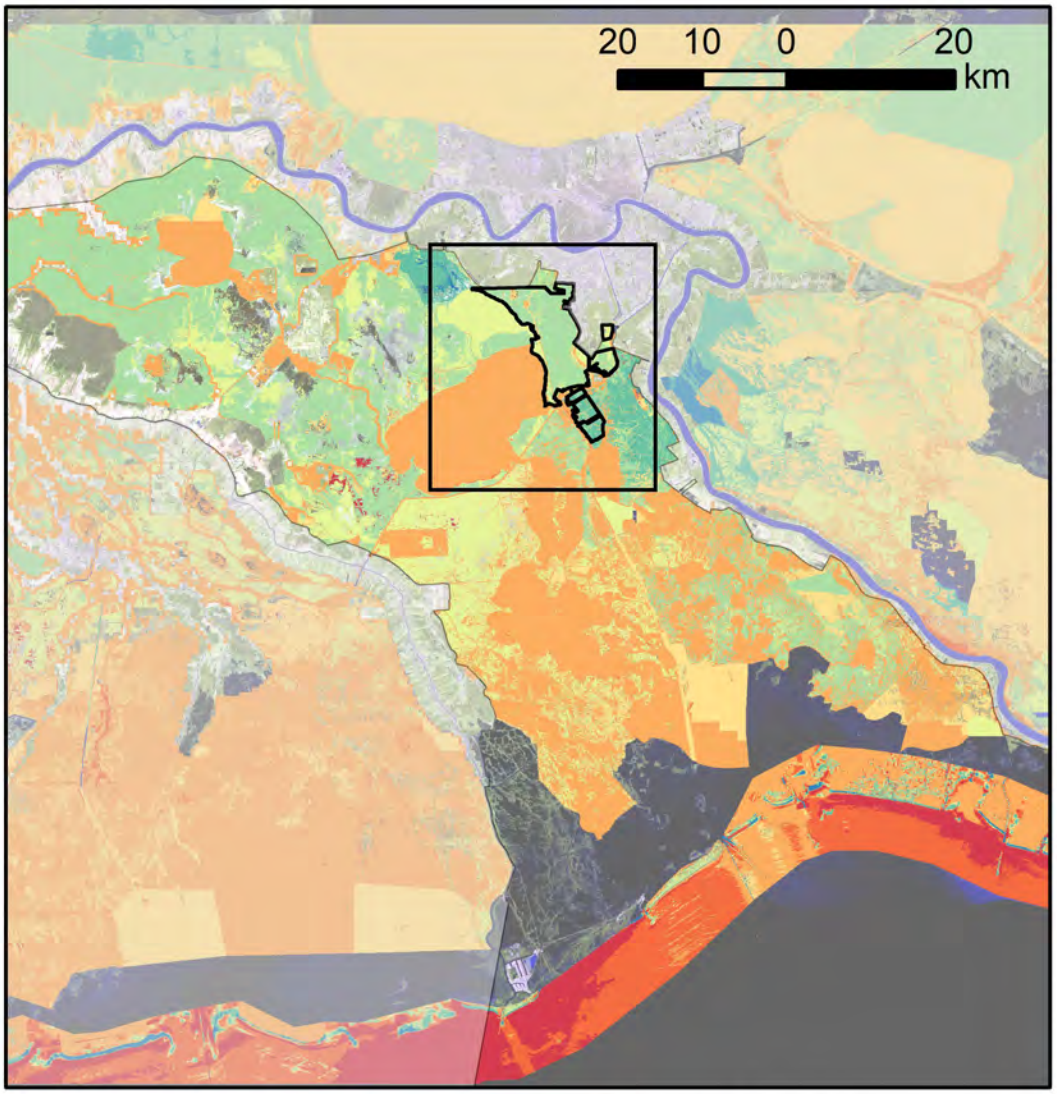
Elev. Change [m]

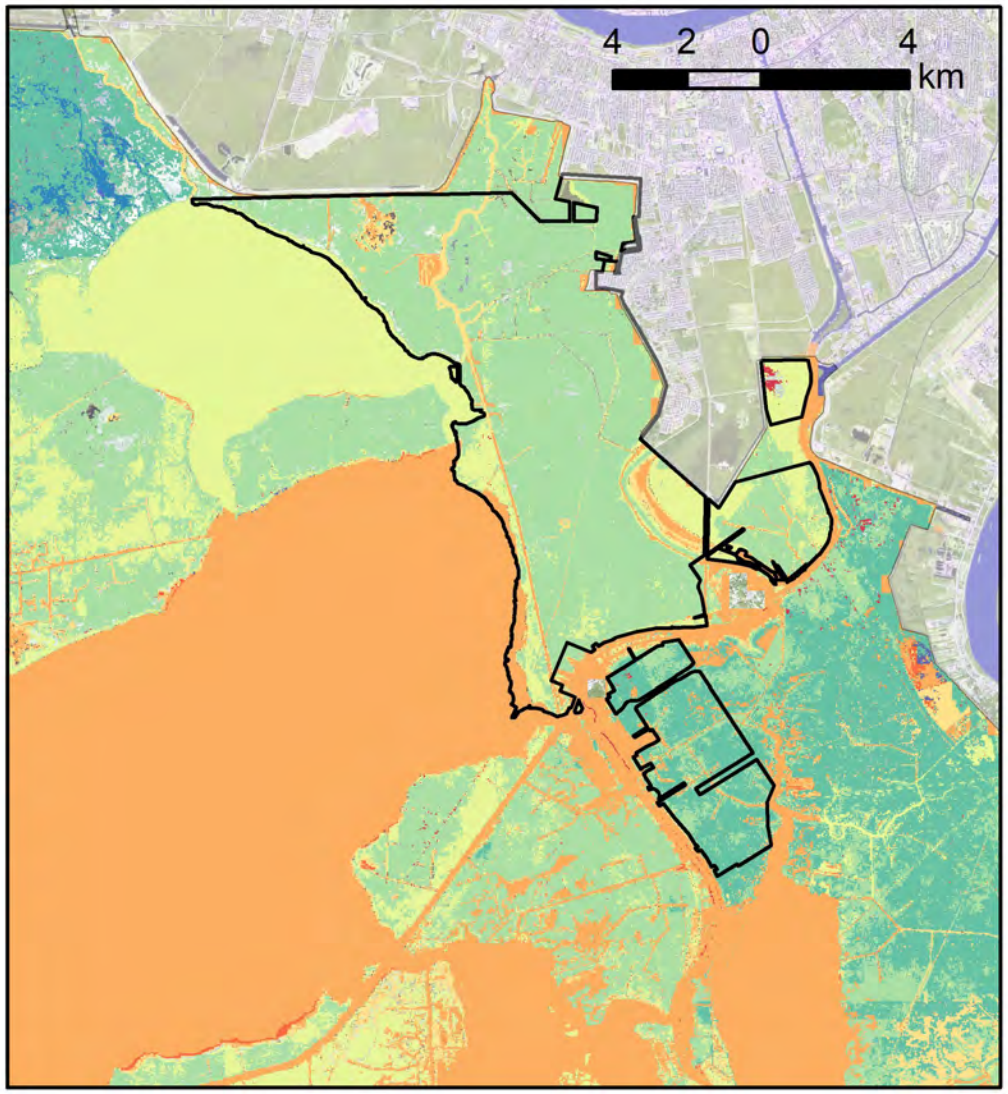
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
W E
S





S06 - G703
Low
Ama Only
Year 32

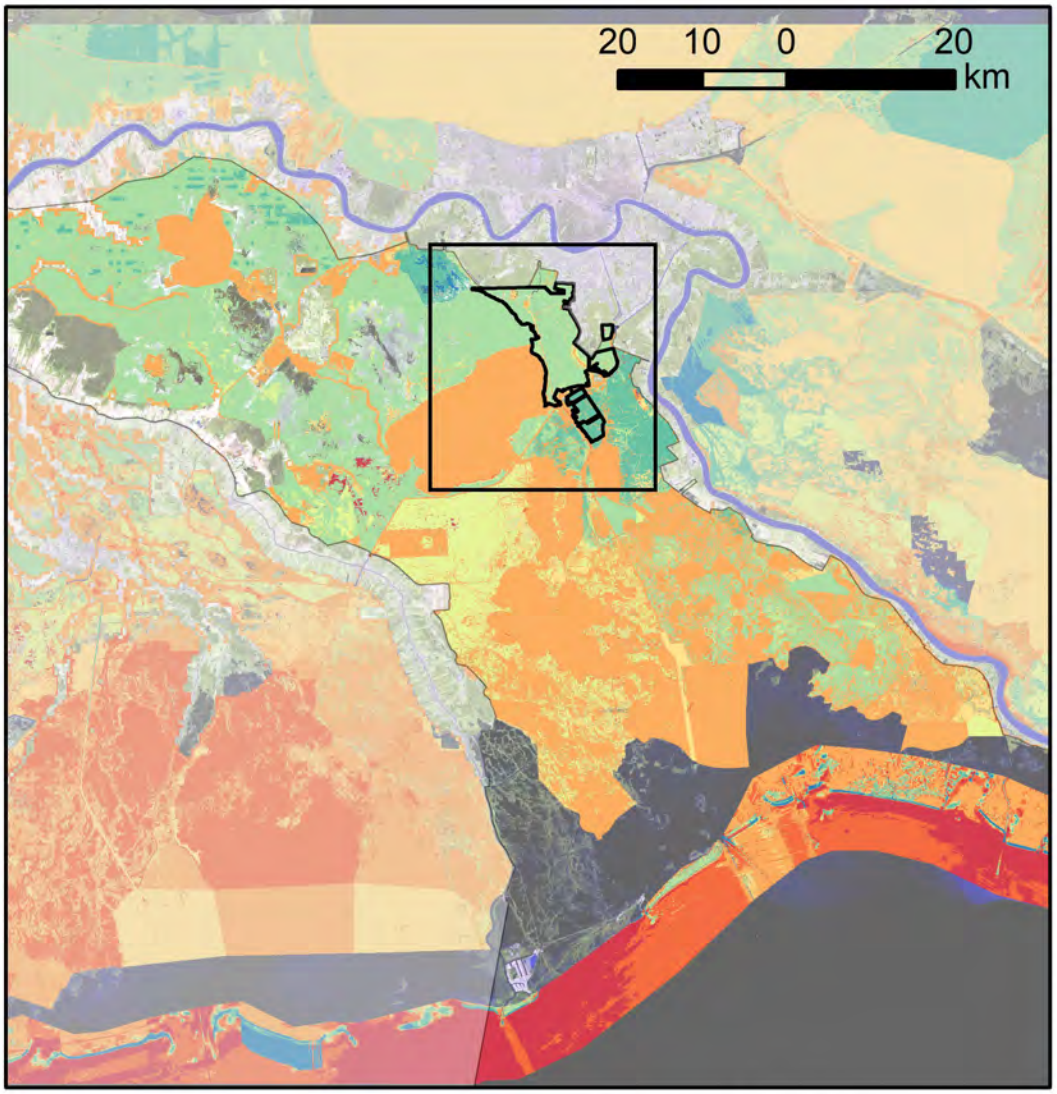
Elev. Change [m]

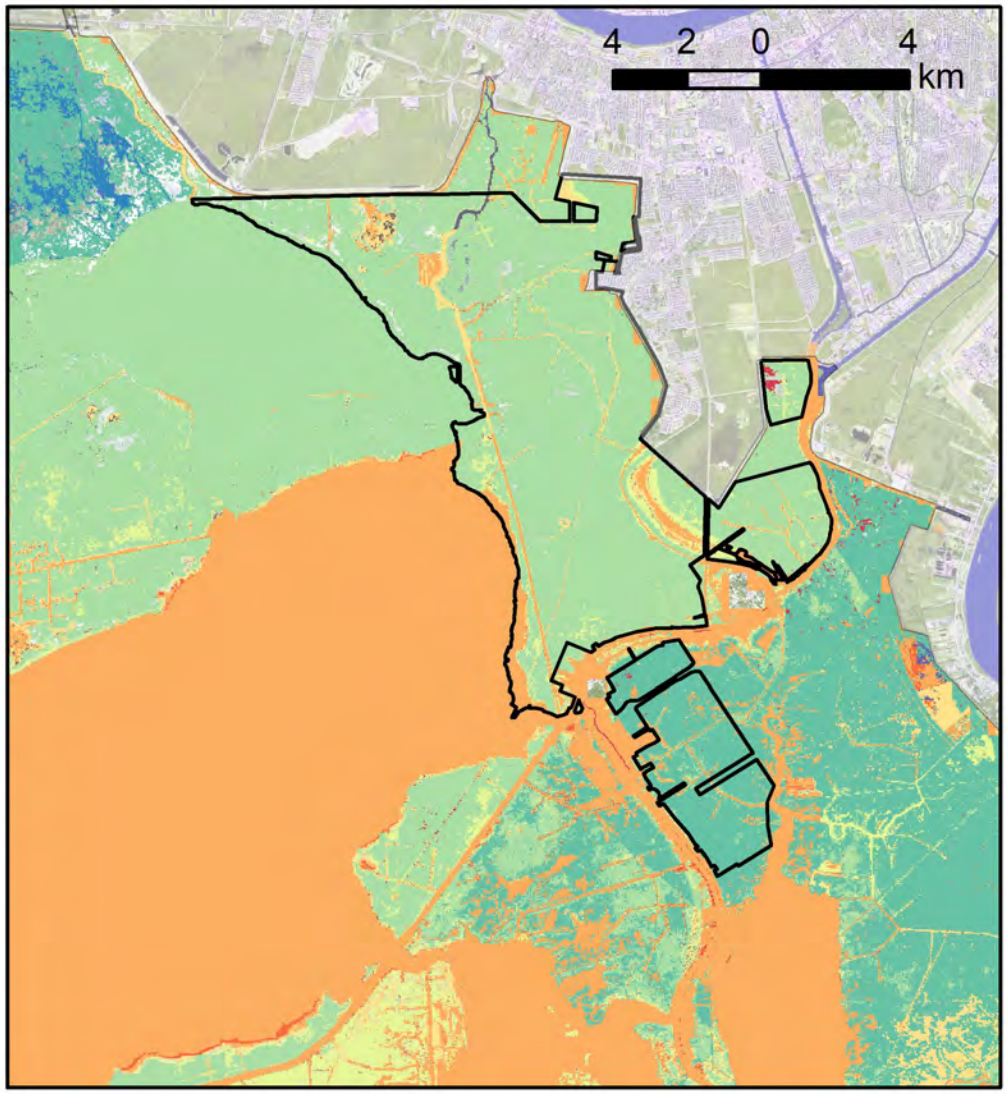
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
W E
S





S06 - G703
Low
Ama Only
Year 42

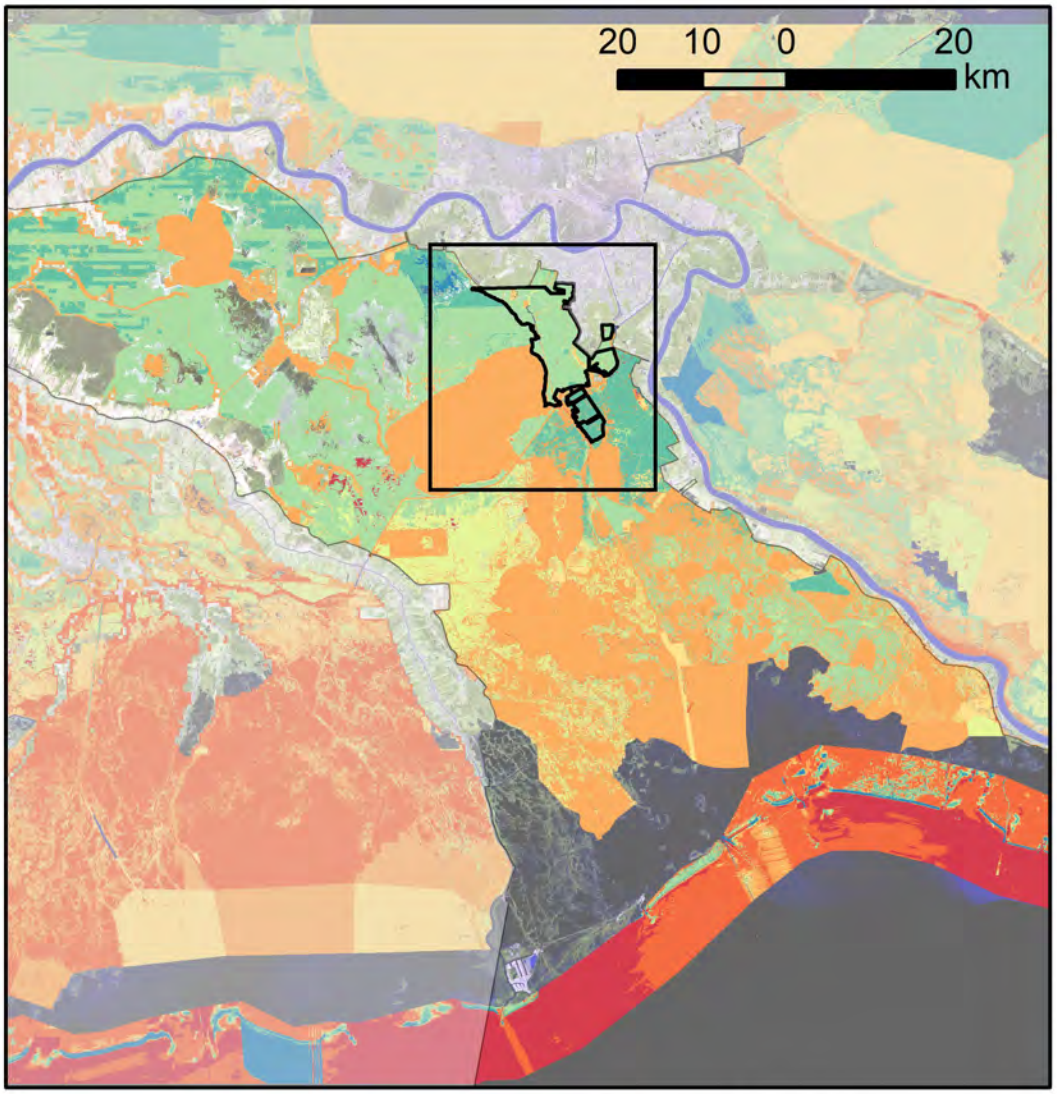
Elev. Change [m]

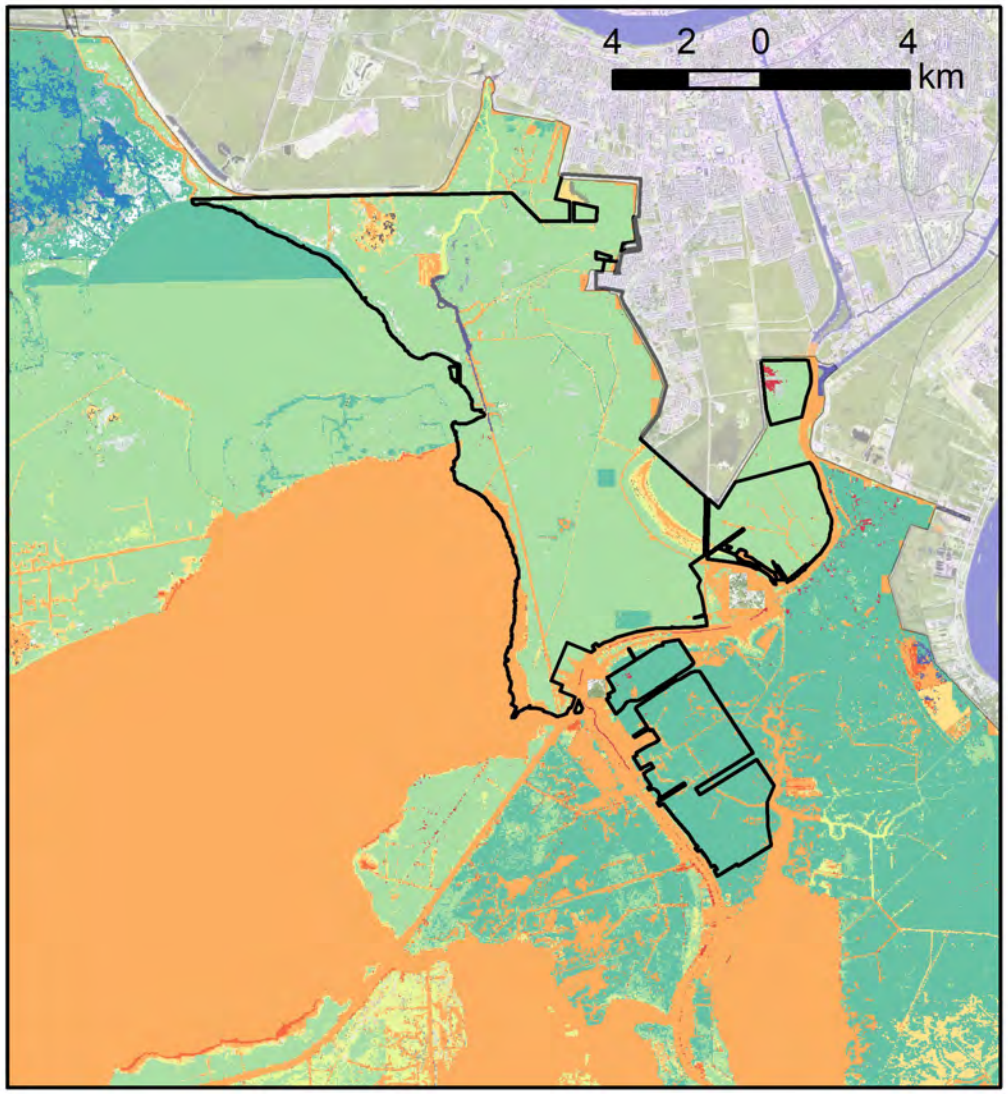
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
W E
S





S06 - G703
Low
Ama Only
Year 51

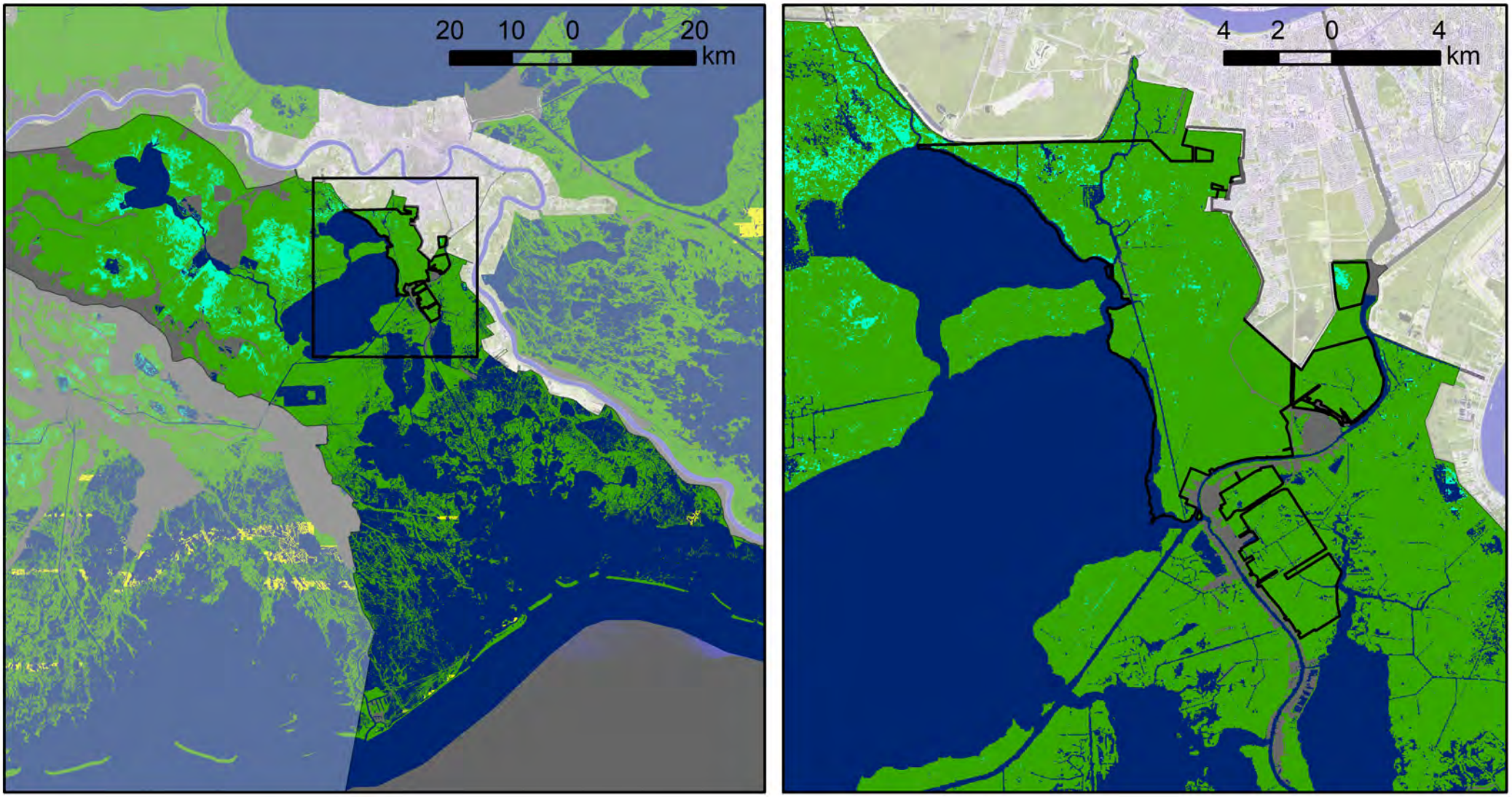
Elev. Change [m]

- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
W E
S



S06 - G803
Low
Both Diversions
Year 02

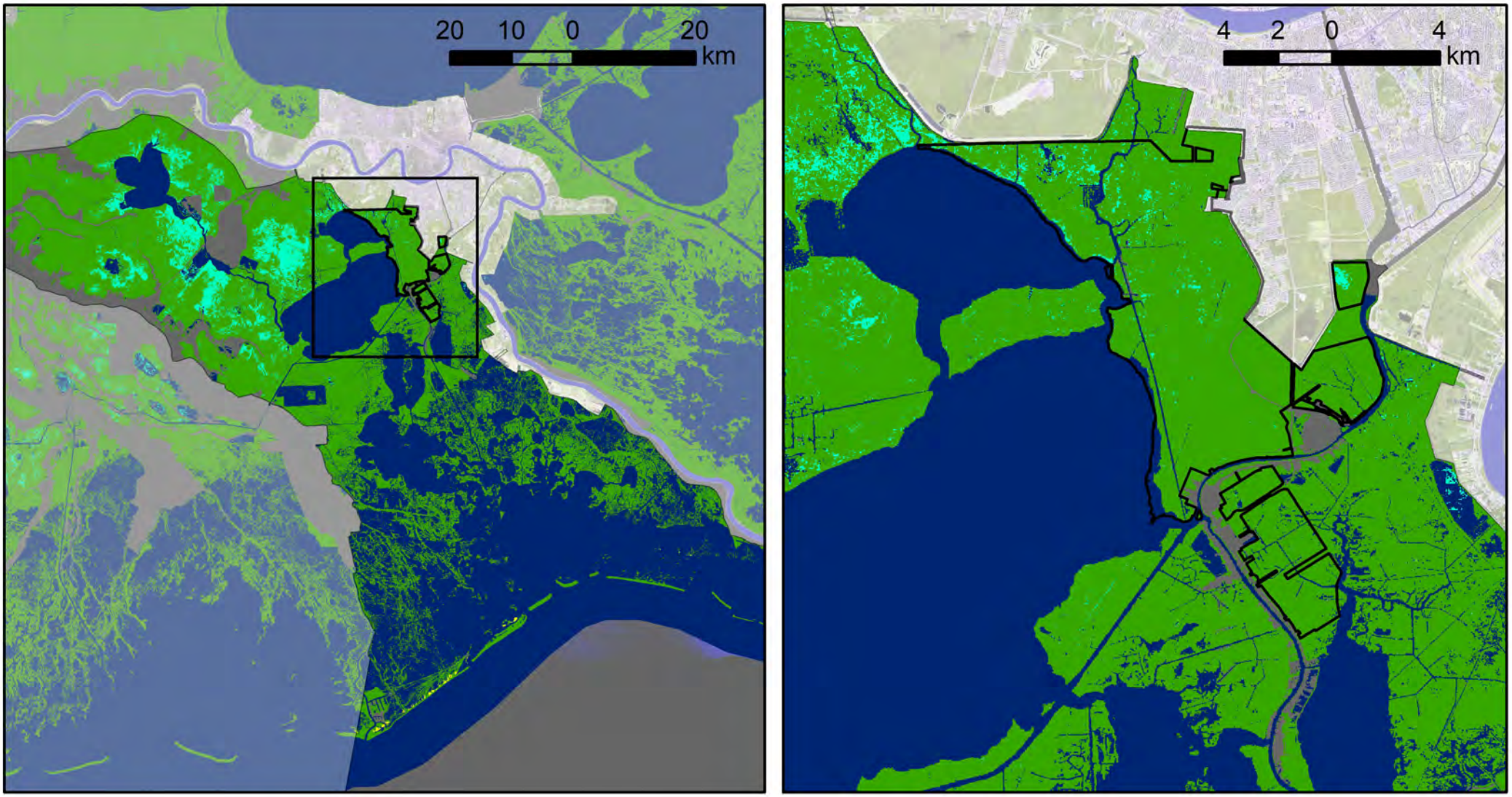
Land Type

- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol





S06 - G803
Low
Both Diversions
Year 12

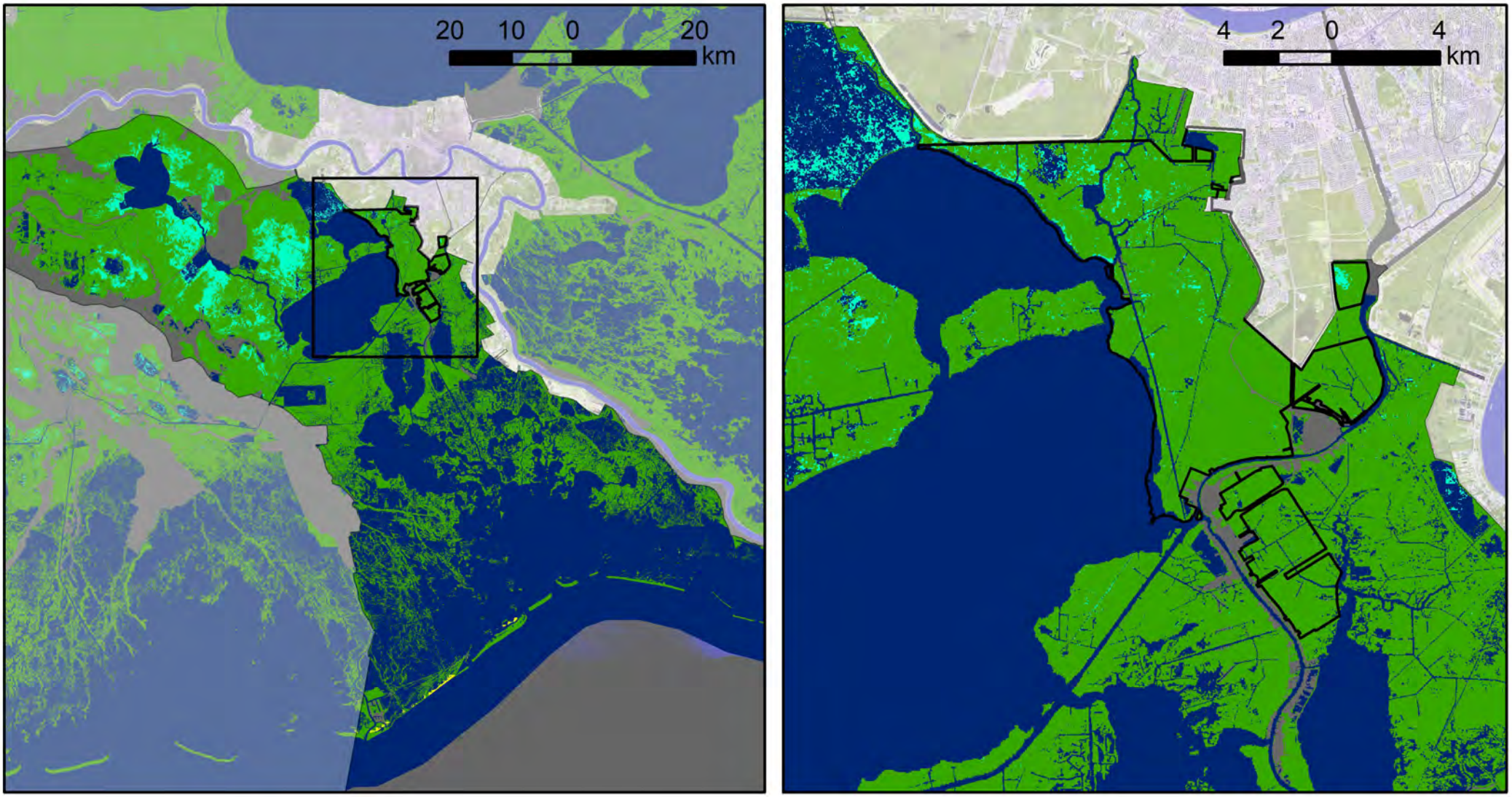
Land Type

- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol

N
W E
S



S06 - G803
Low
Both Diversions
Year 22

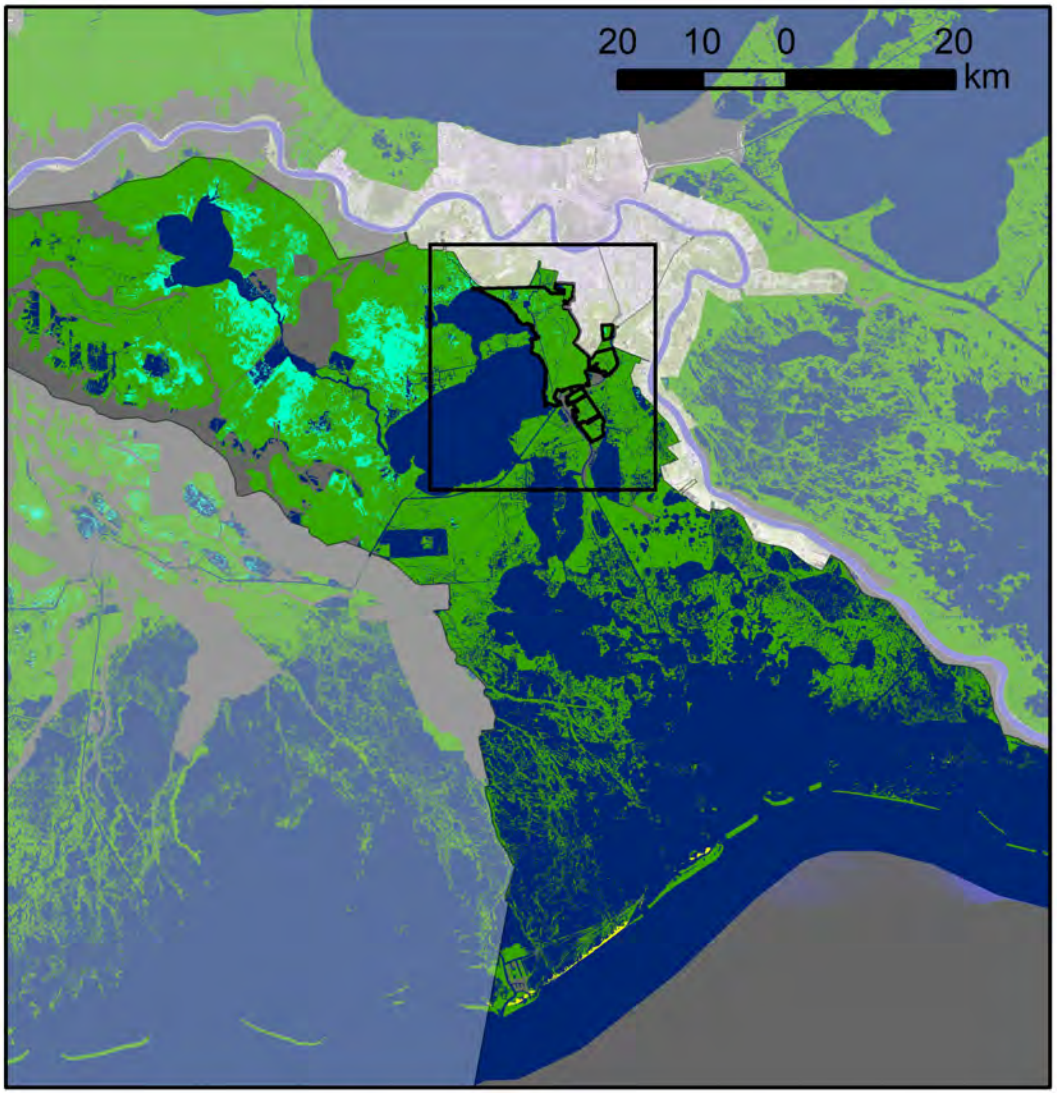
Land Type

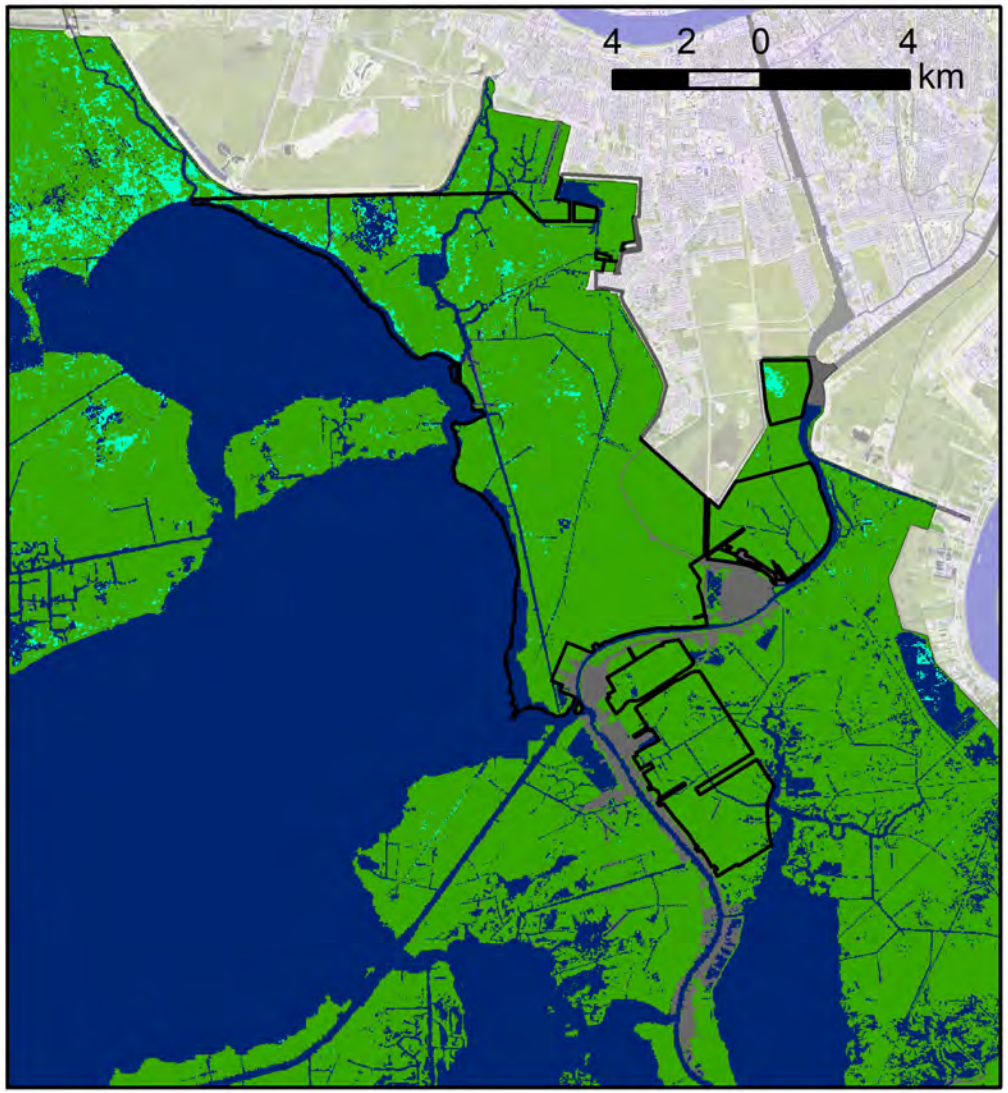
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S06 - G803
Low
Both Diversions
Year 32

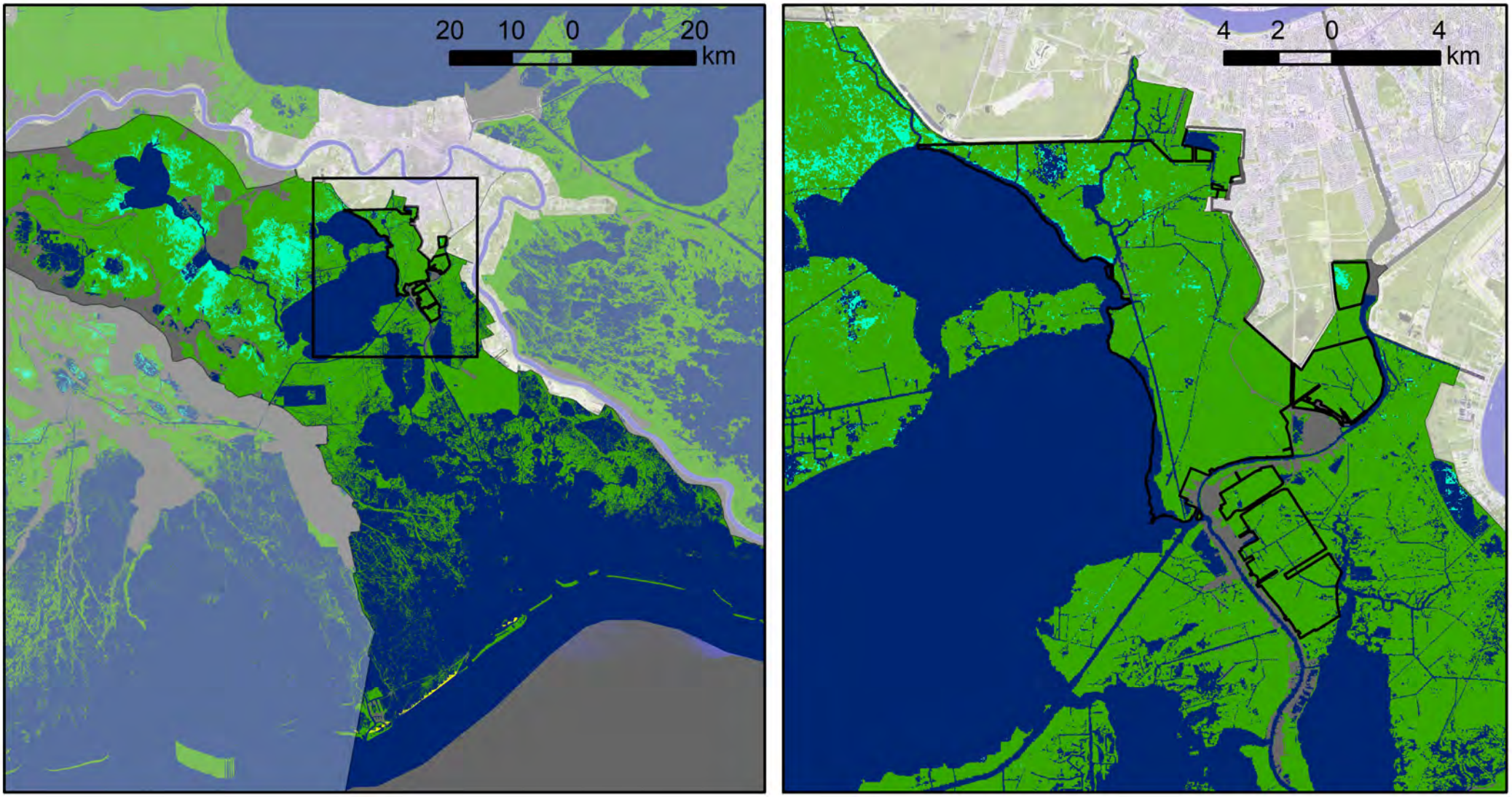
Land Type

- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol





S06 - G803
Low
Both Diversions
Year 42

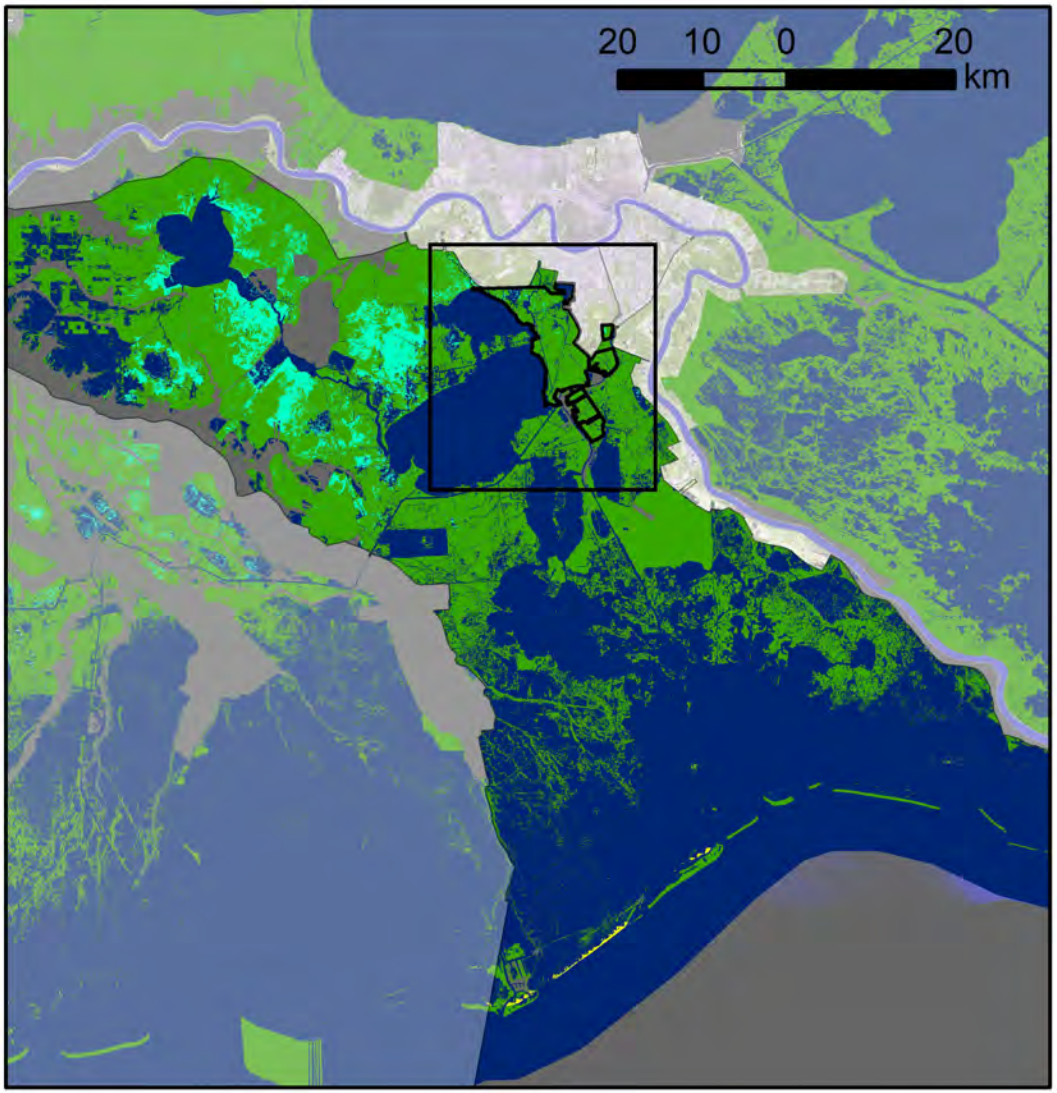
Land Type

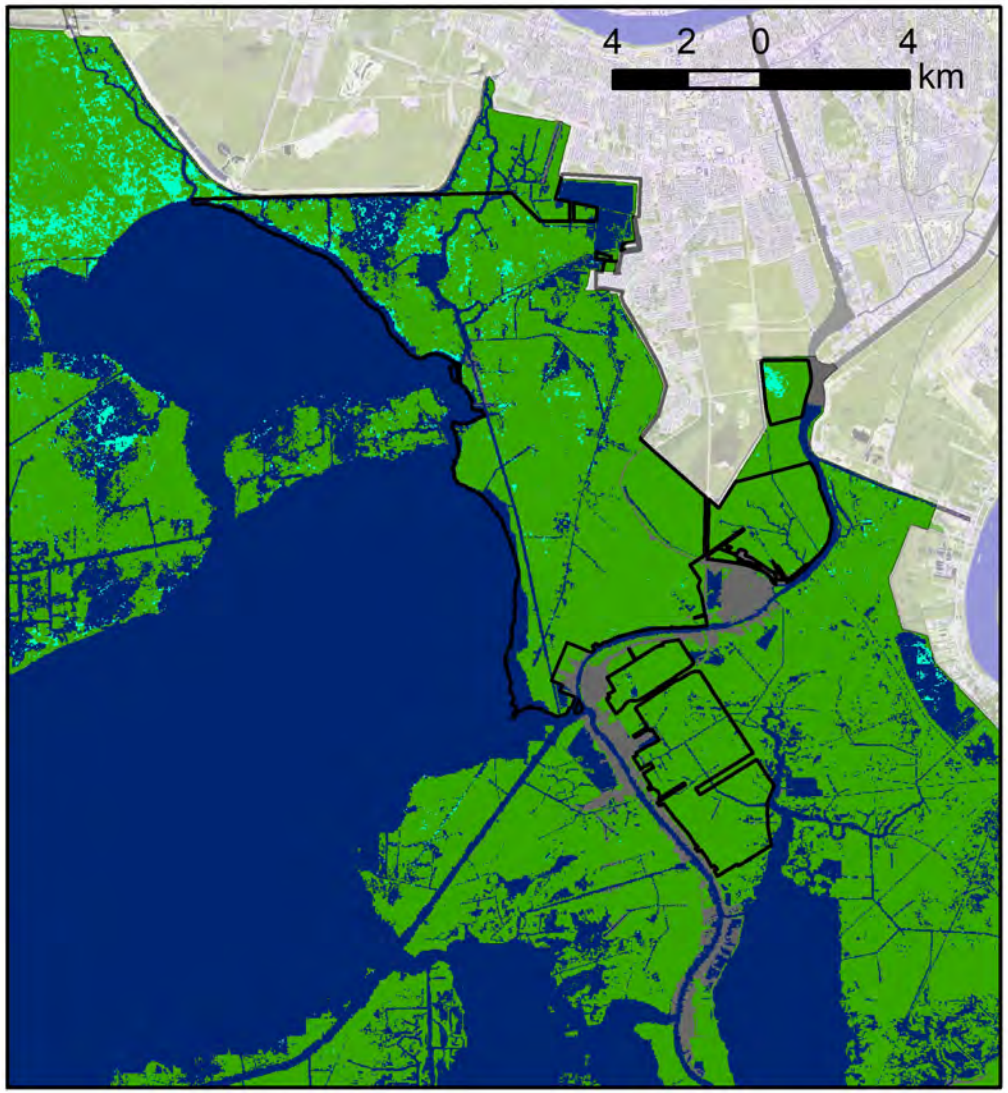
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol

N
W E
S





S06 - G803
Low
Both Diversions
Year 51

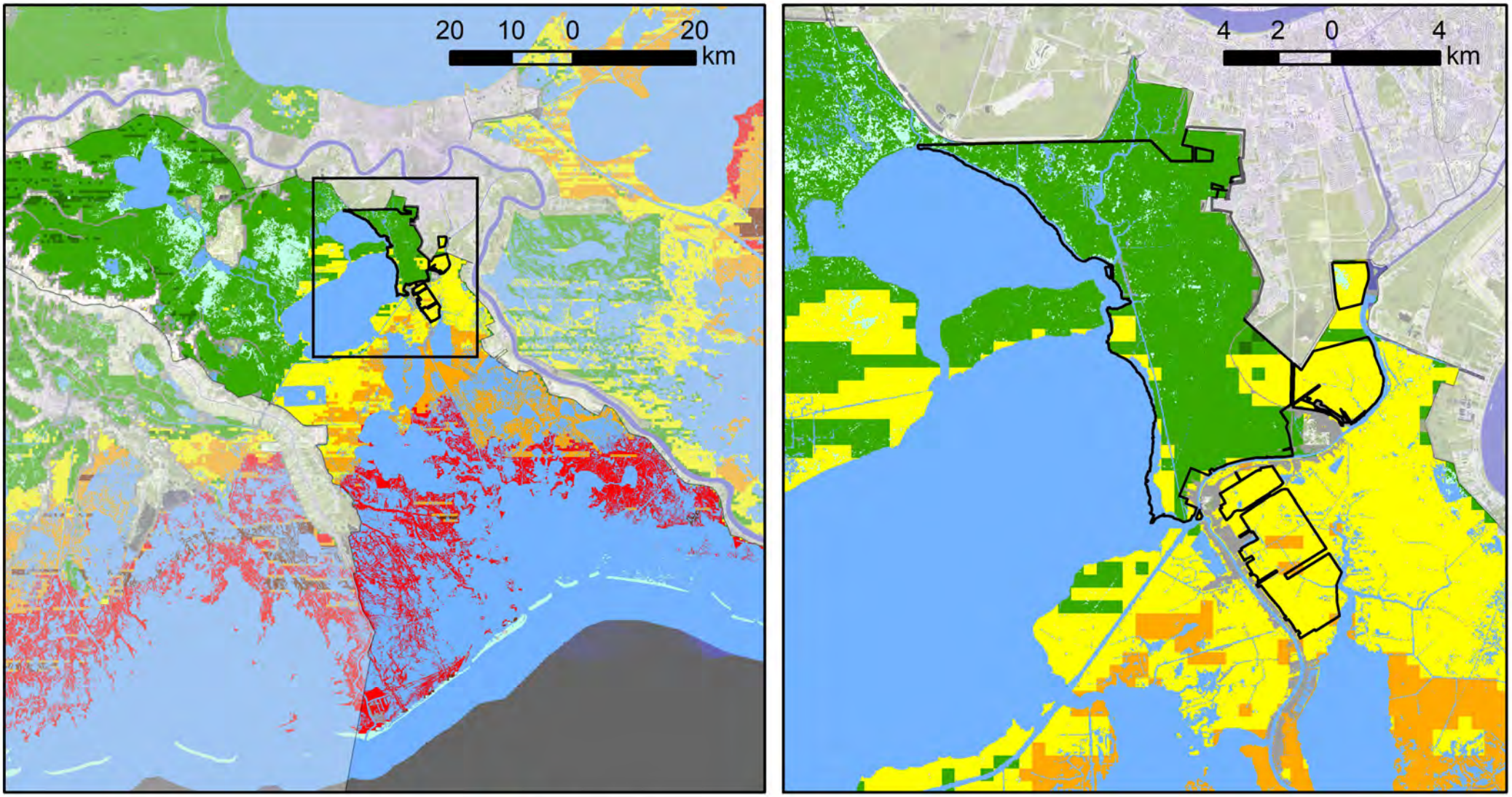
Land Type

- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol





S06 - G803
Low
Both Diversions
Year 02

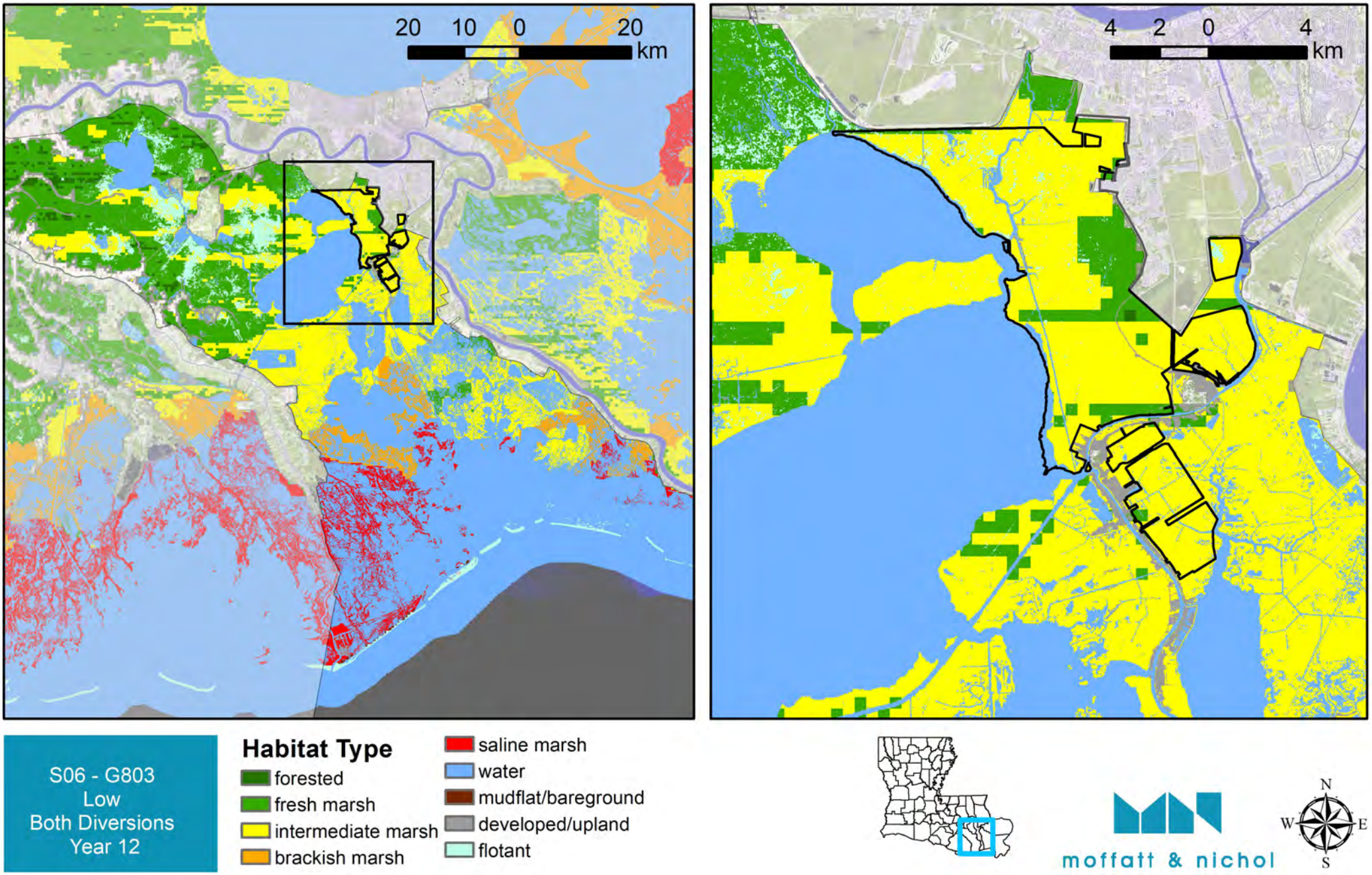
Habitat Type

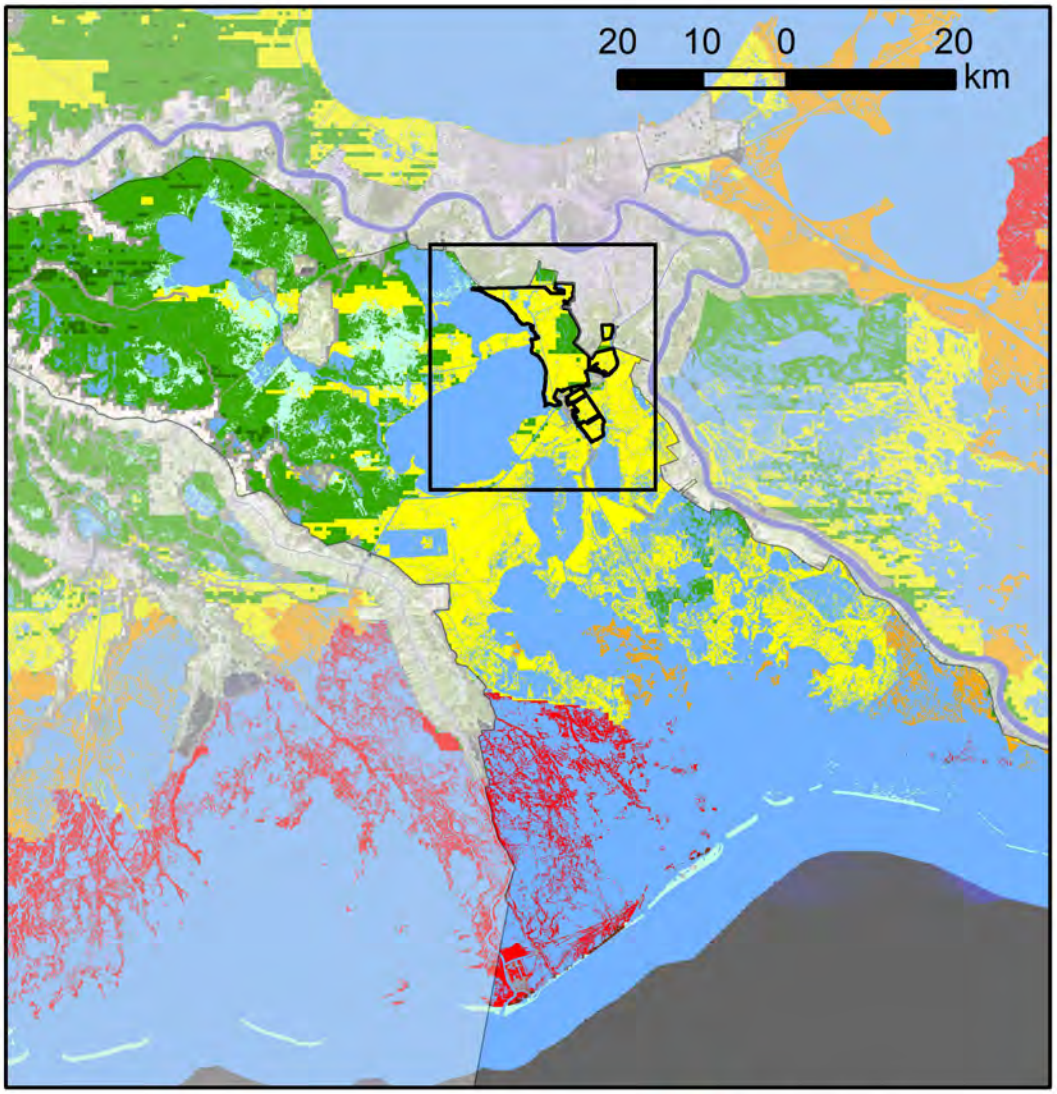
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant

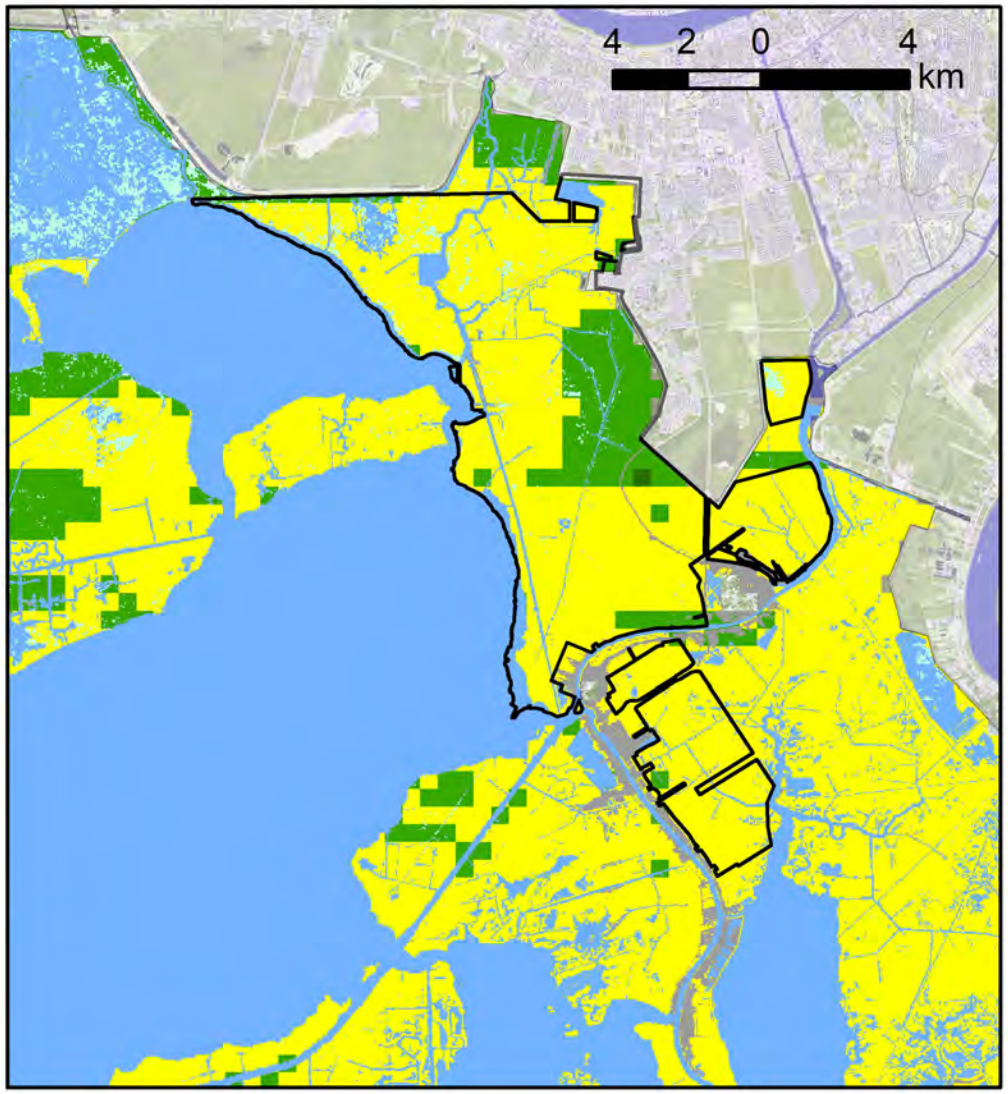


moffatt & nichol

N
W E
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20 10 0 20
km
4 2 0 4
km
S06 - G803
Low
Both Diversions
Year 12
Habitat Type
forested
fresh marsh
intermediate marsh
brackish marsh
saline marsh
water
mudflat/bareground
developed/upland
flotant
moffatt & nichol
N
W
E
S





S06 - G803
Low
Both Diversions
Year 22

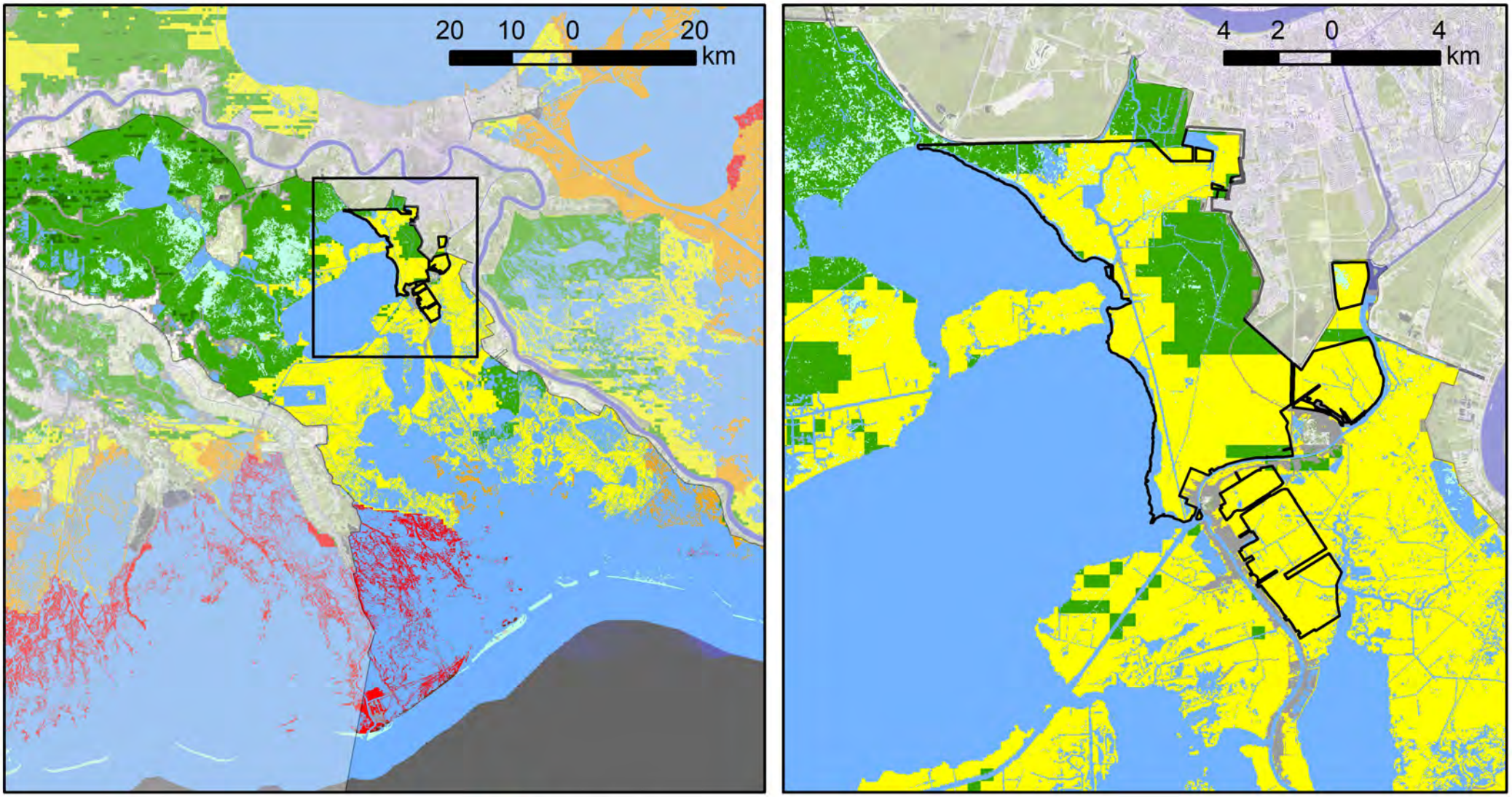
Habitat Type

- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol





S06 - G803
Low
Both Diversions
Year 32

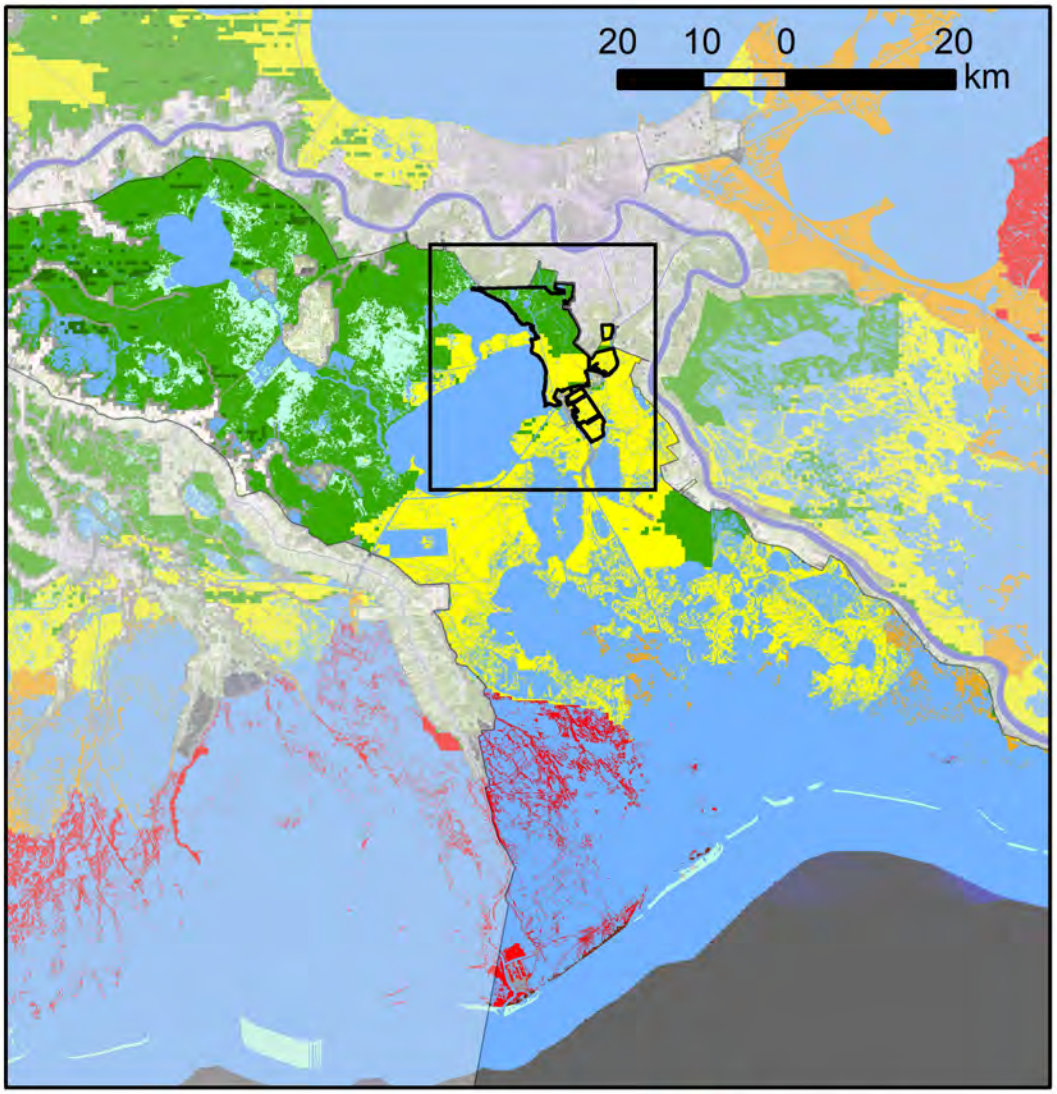
Habitat Type

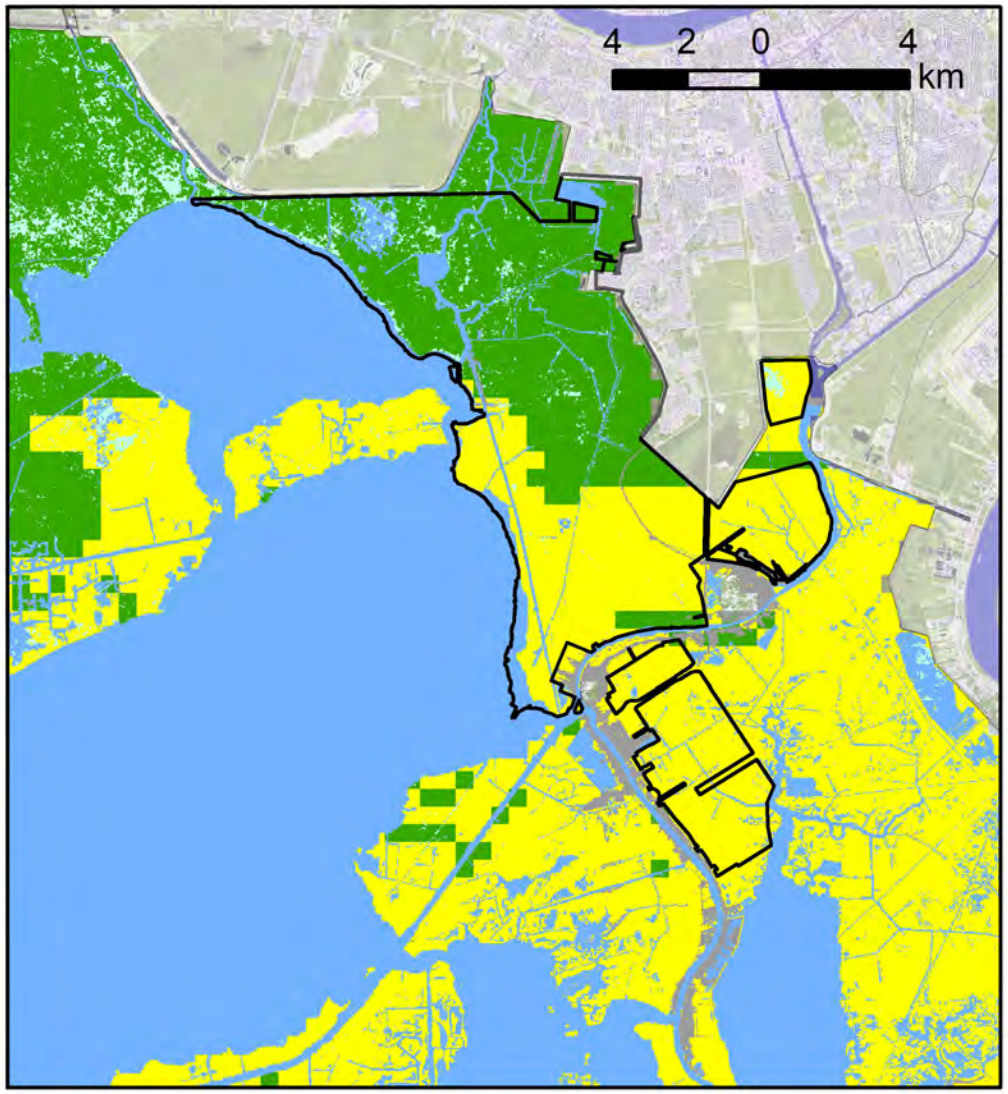
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S06 - G803
Low
Both Diversions
Year 42

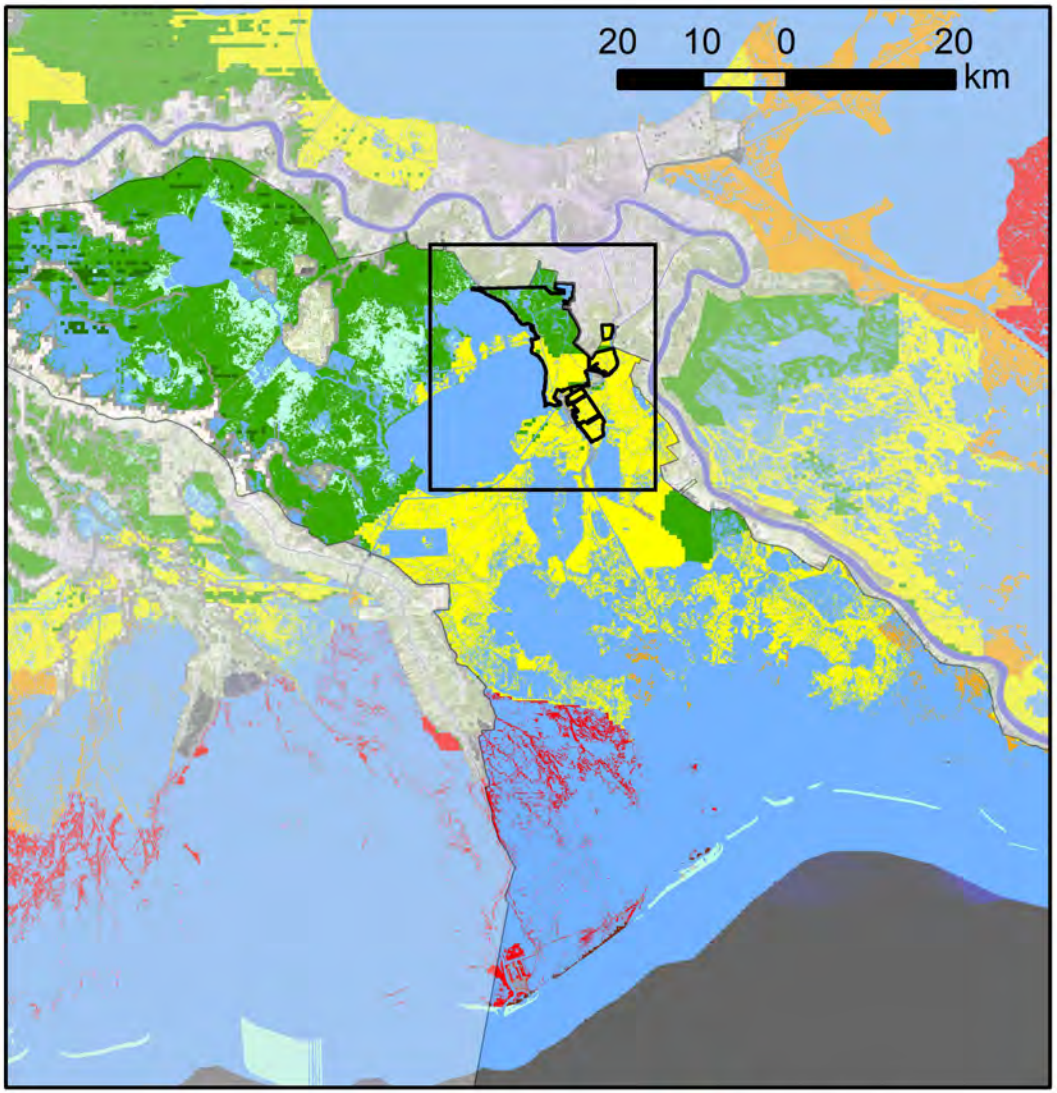
Habitat Type

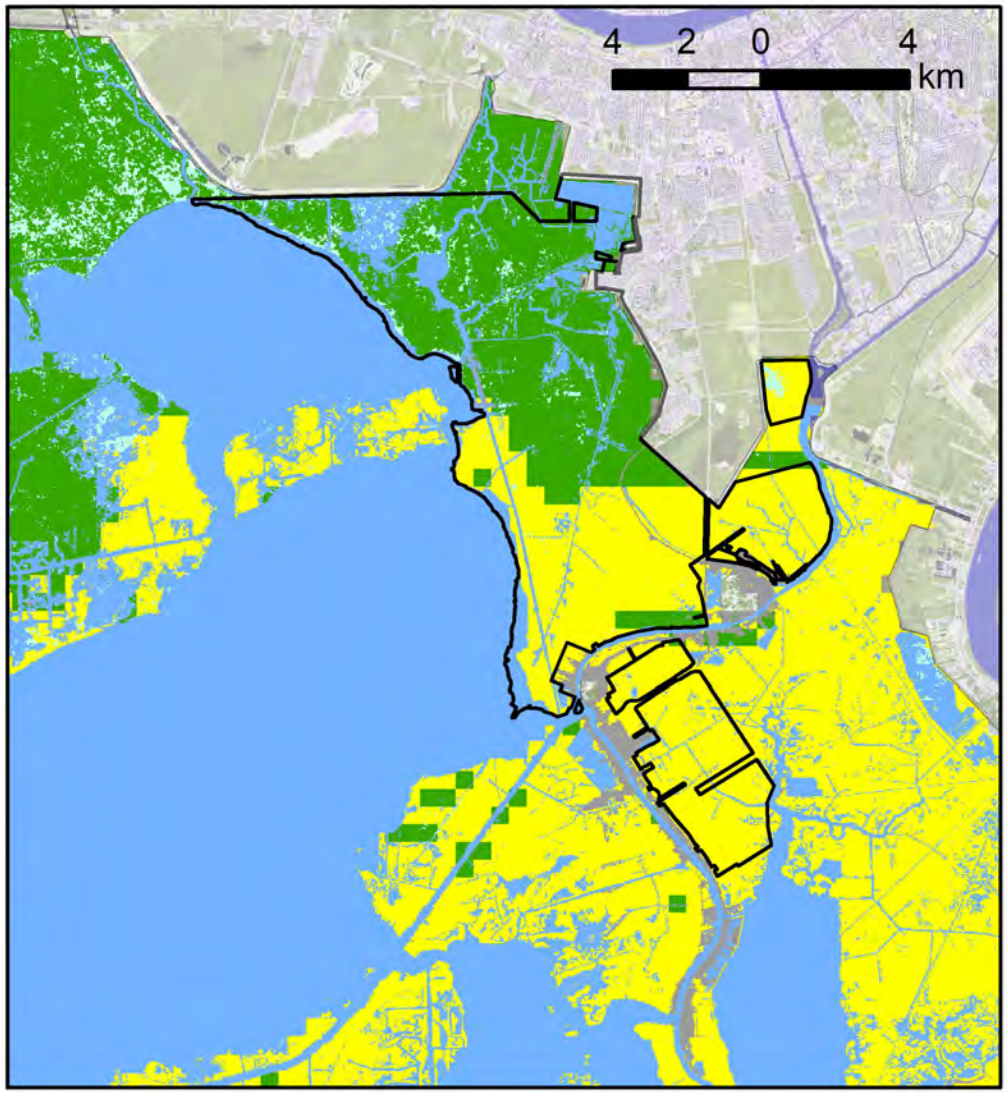
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S06 - G803
Low
Both Diversions
Year 51

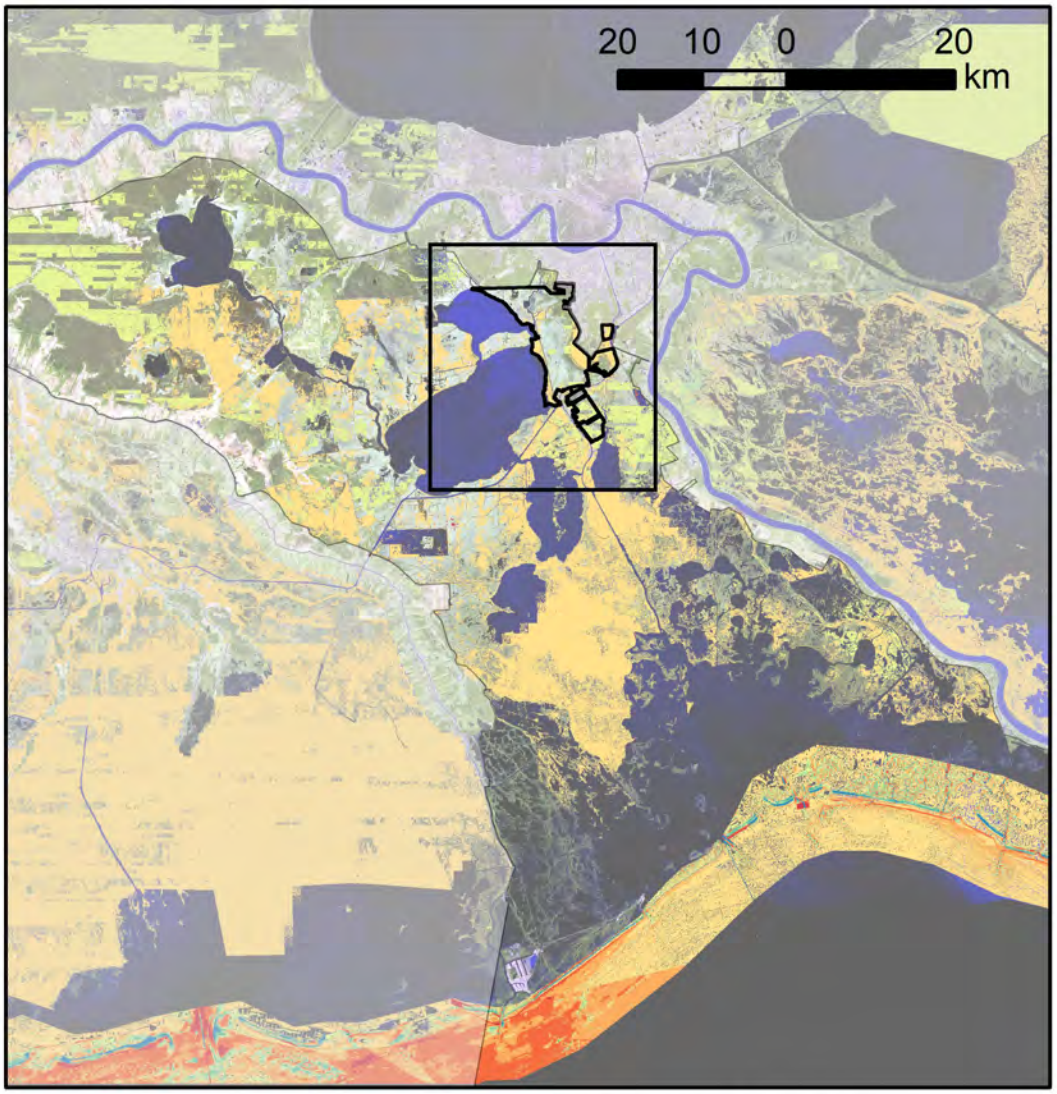
Habitat Type

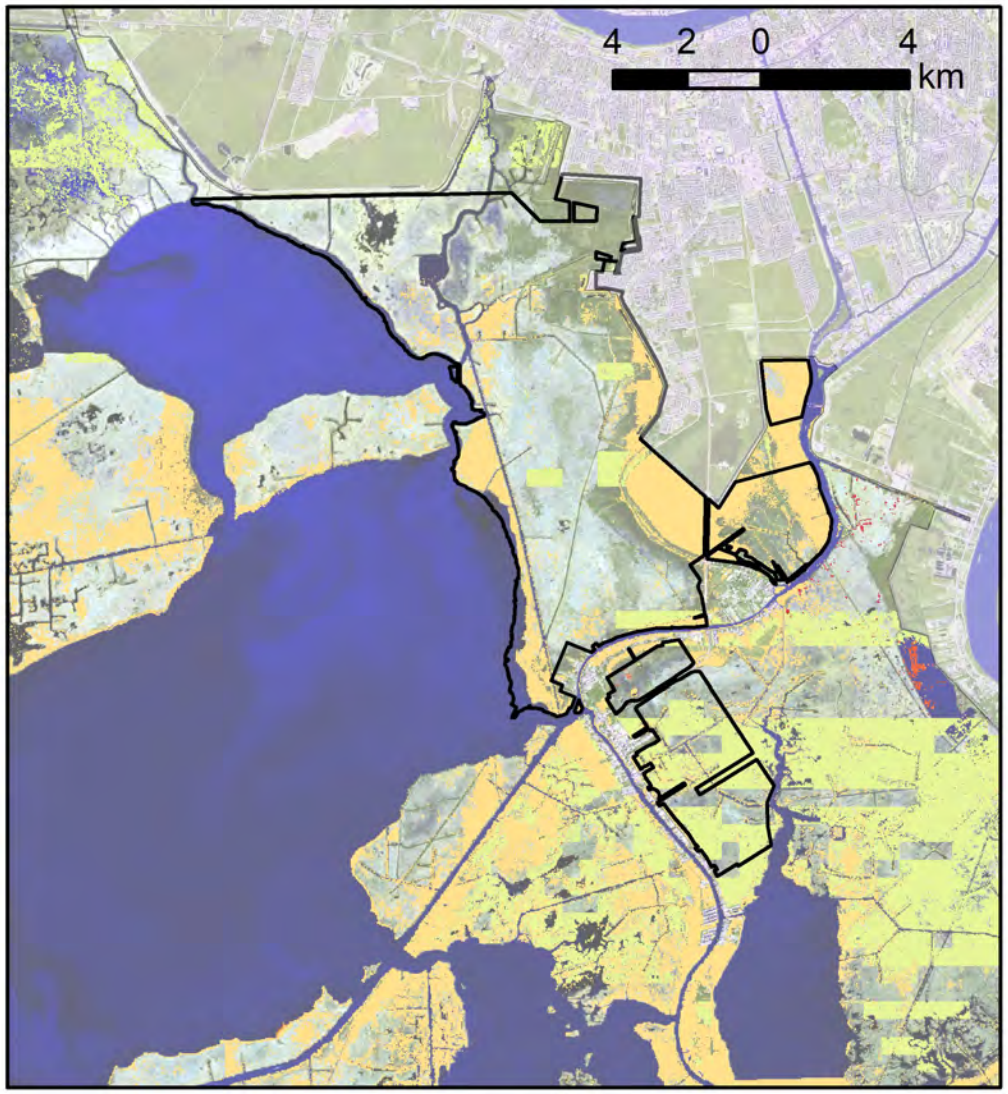
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S06 - G803
Low
Both Diversions
Year 02

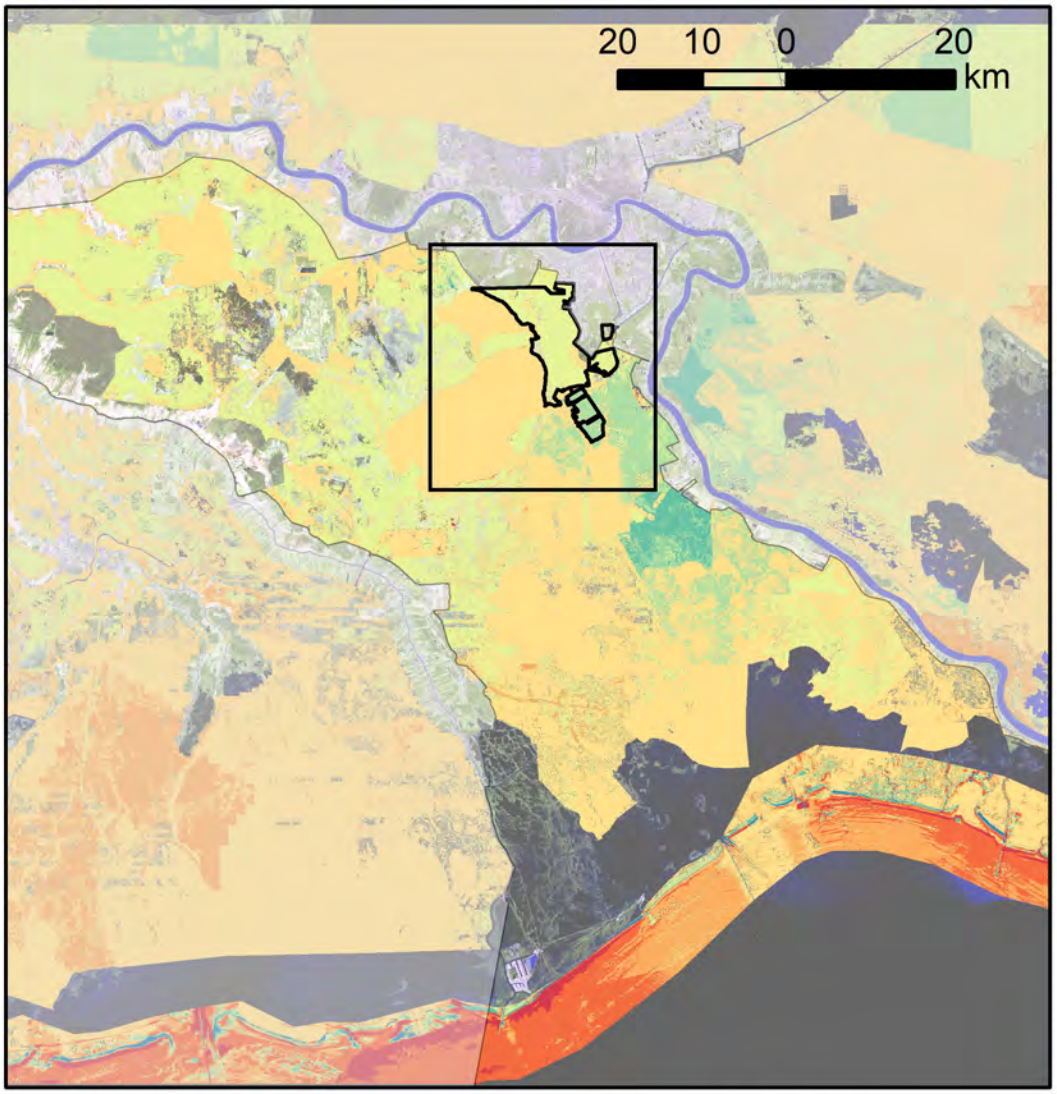
Elev. Change [m]

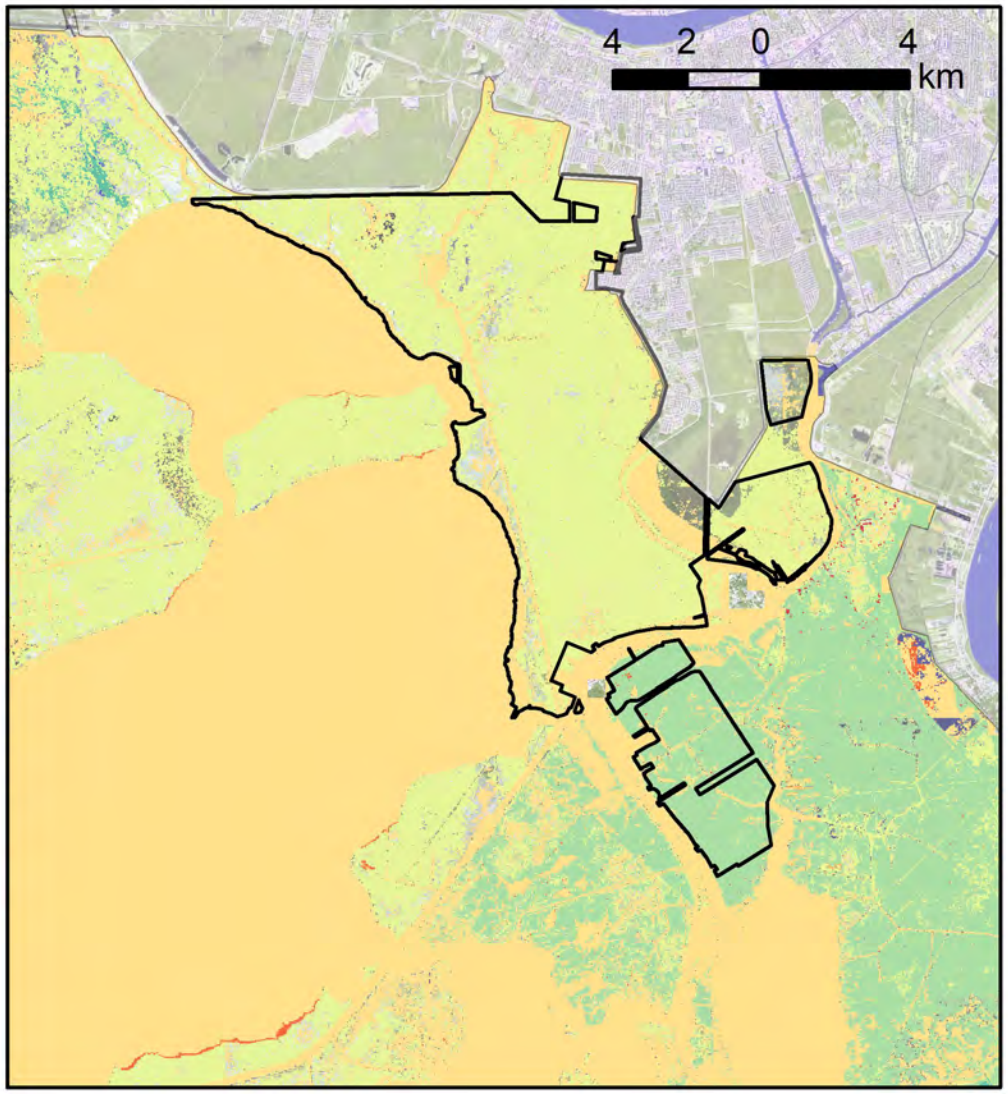
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
W E
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S06 - G803
Low
Both Diversions
Year 12

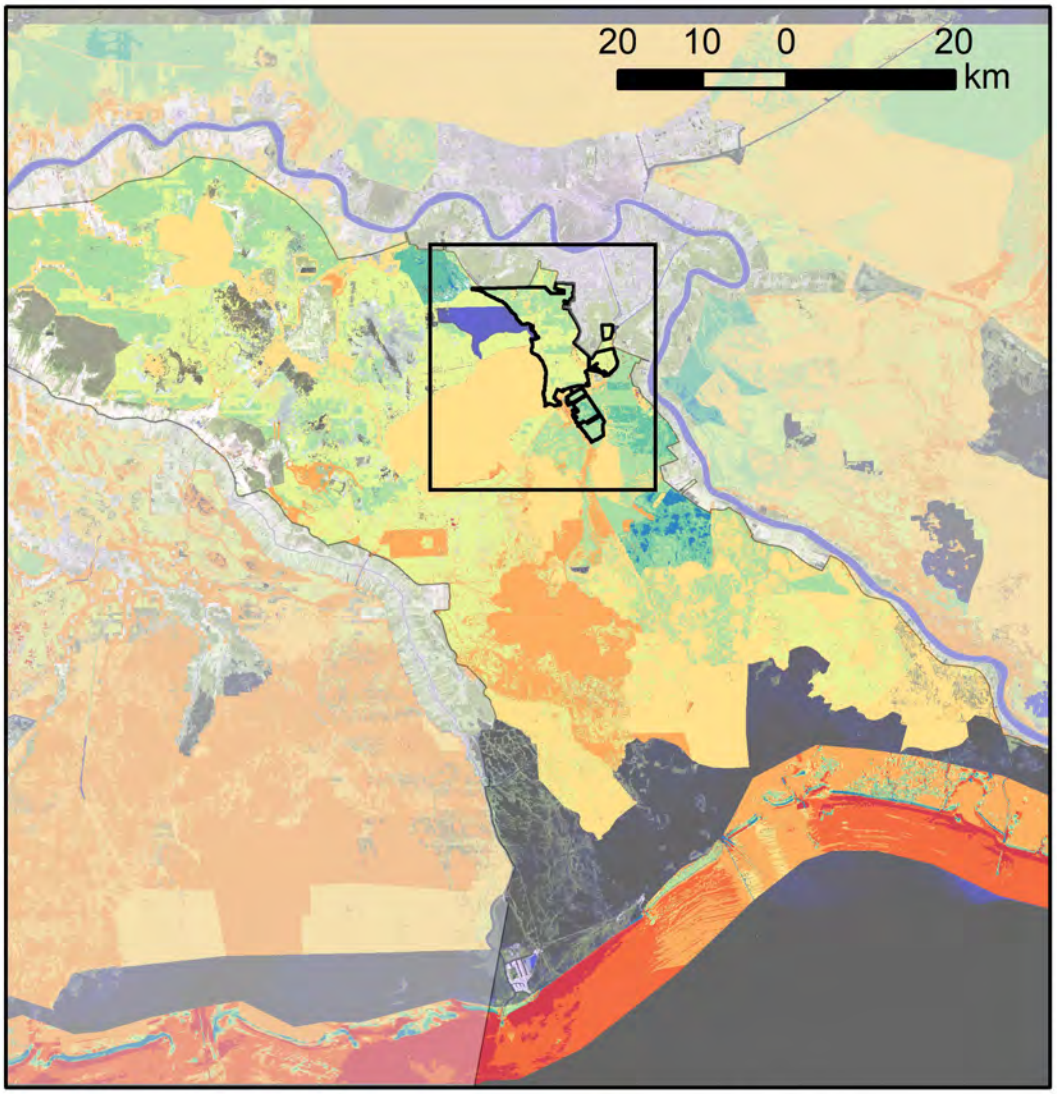
Elev. Change [m]

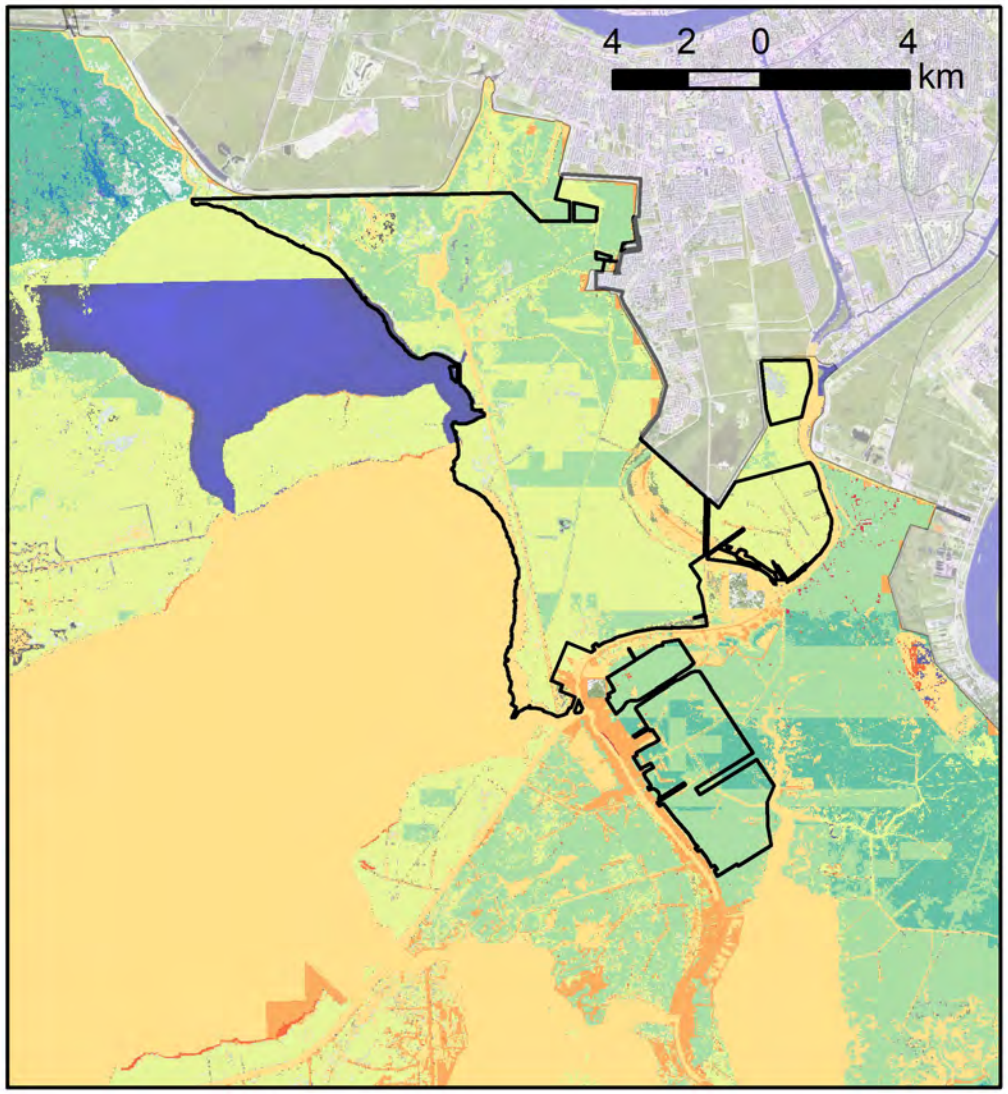
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
W E
S





S06 - G803
Low
Both Diversions
Year 22

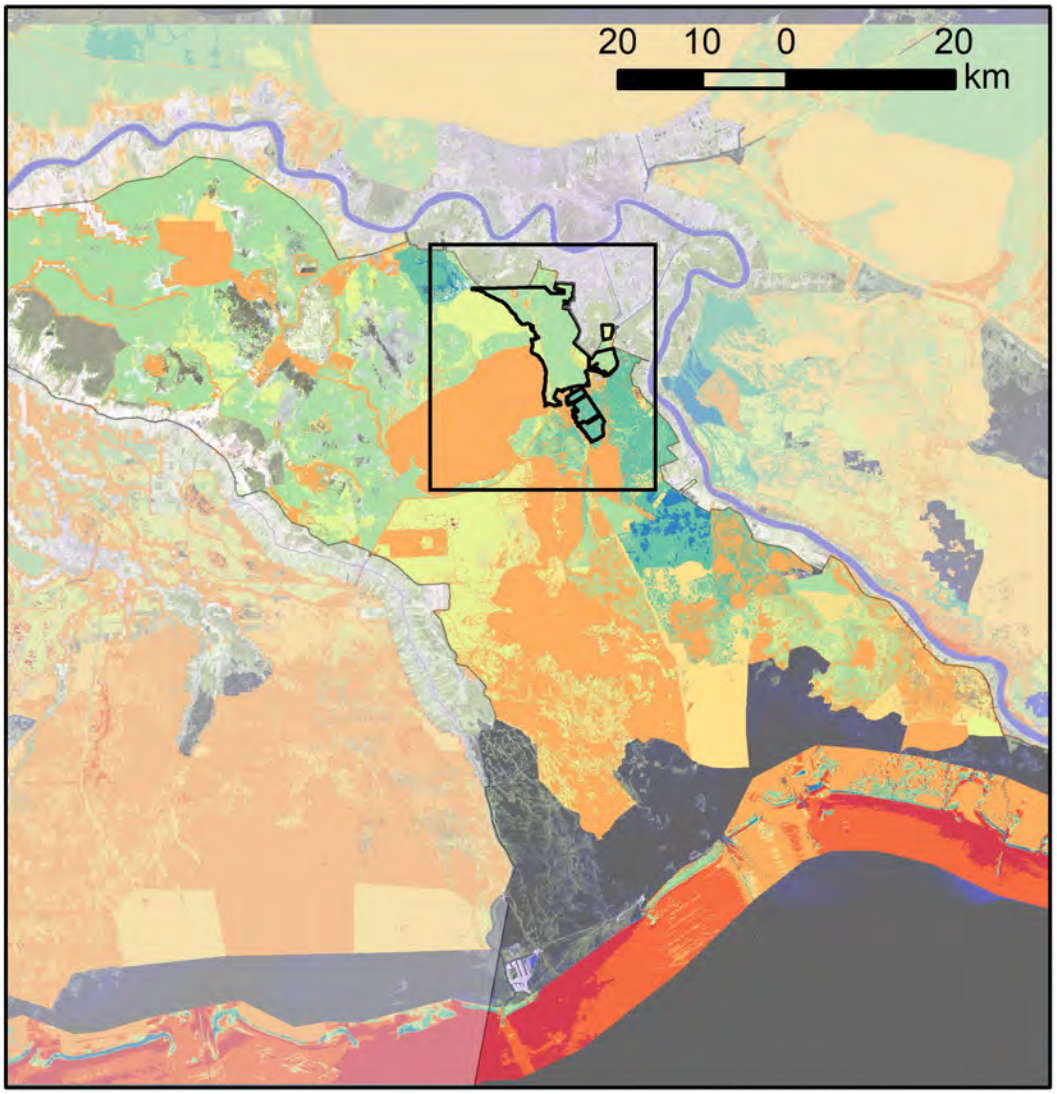
Elev. Change [m]

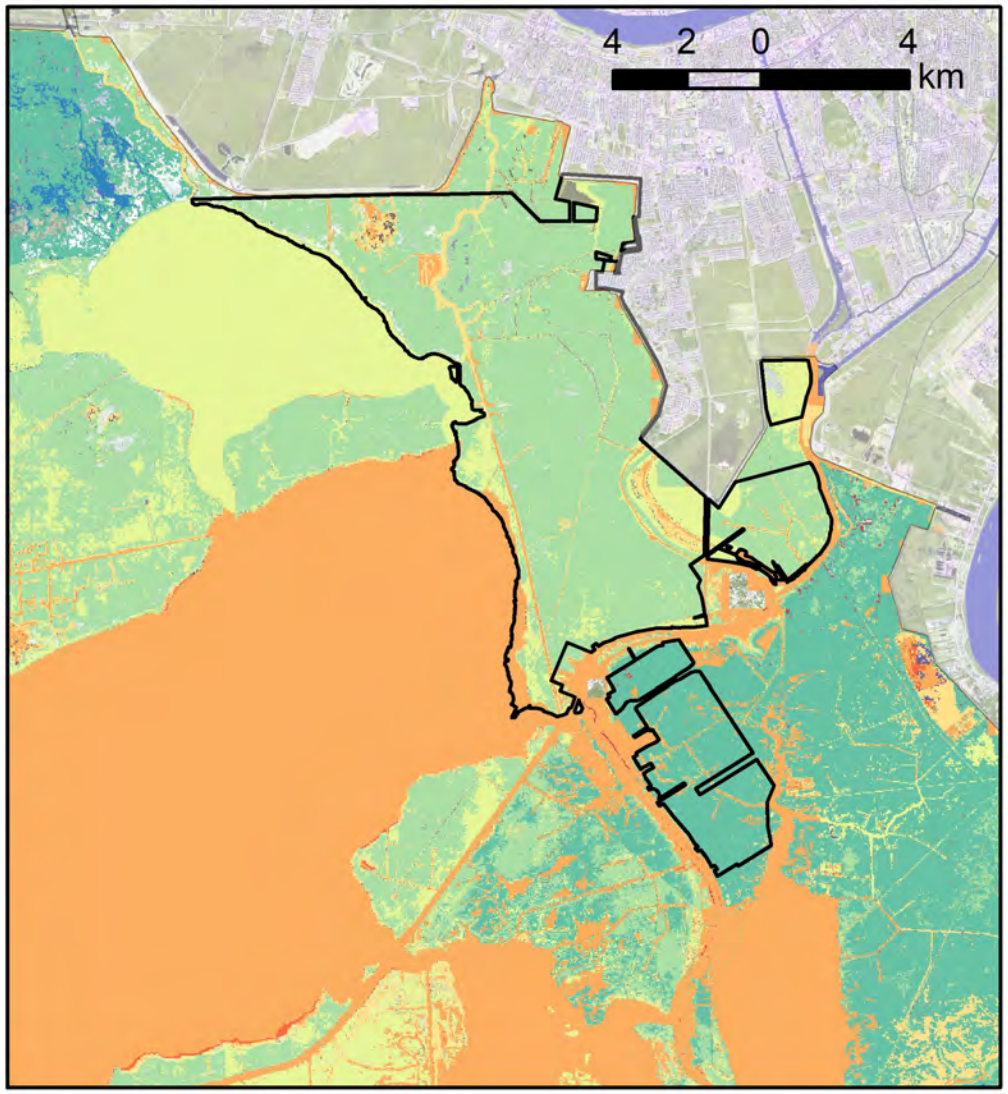
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
W E
S





S06 - G803
Low
Both Diversions
Year 32

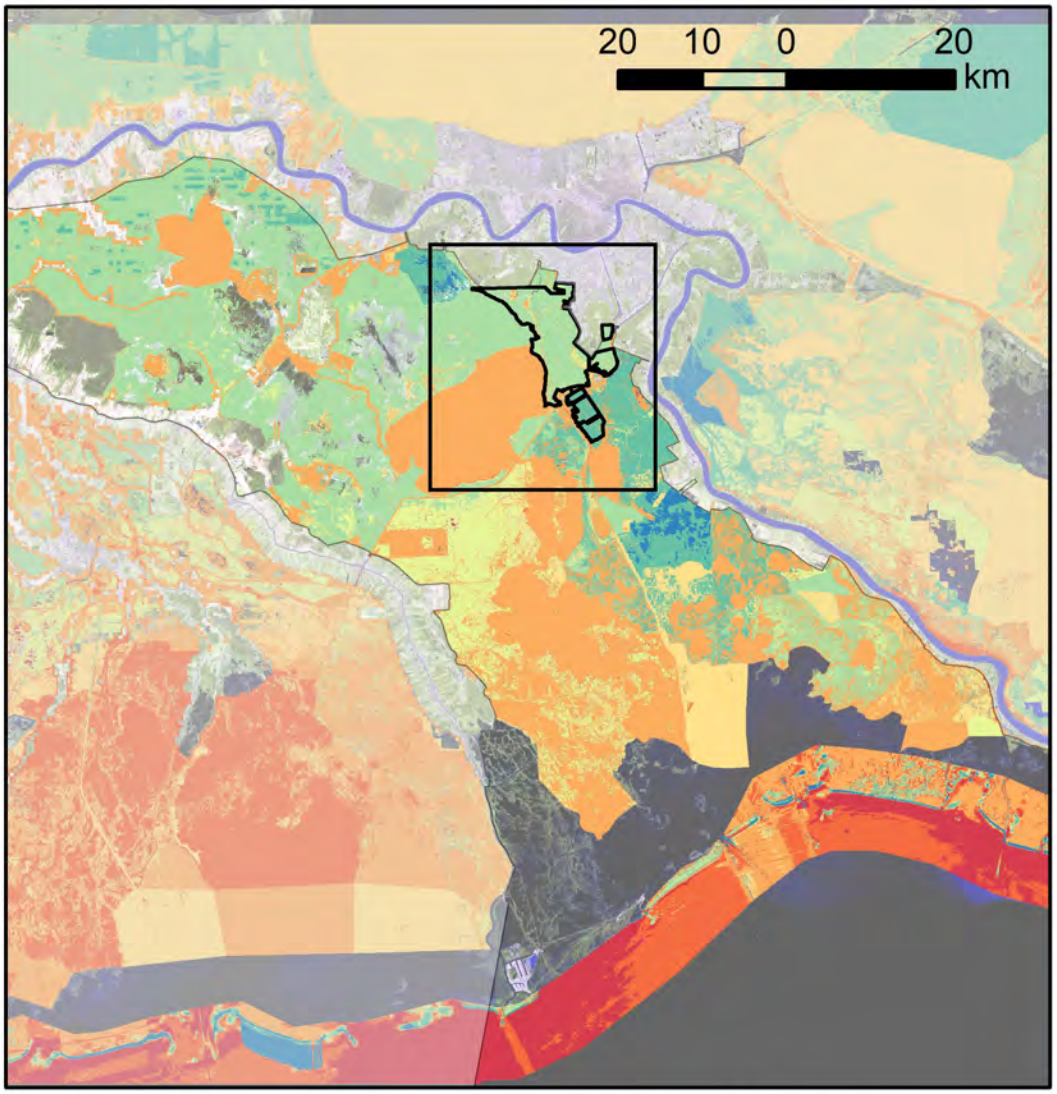
Elev. Change [m]

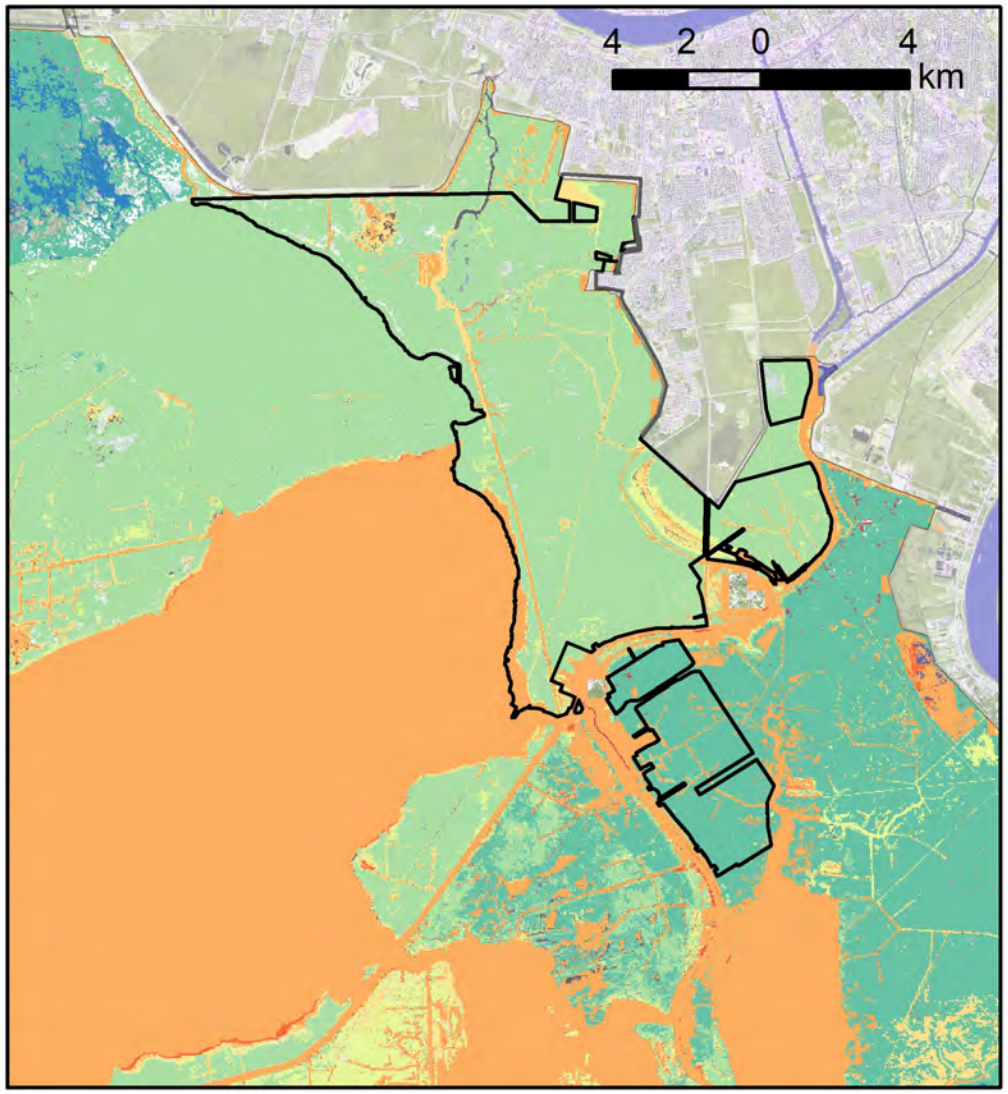
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
W E
S





S06 - G803
Low
Both Diversions
Year 42

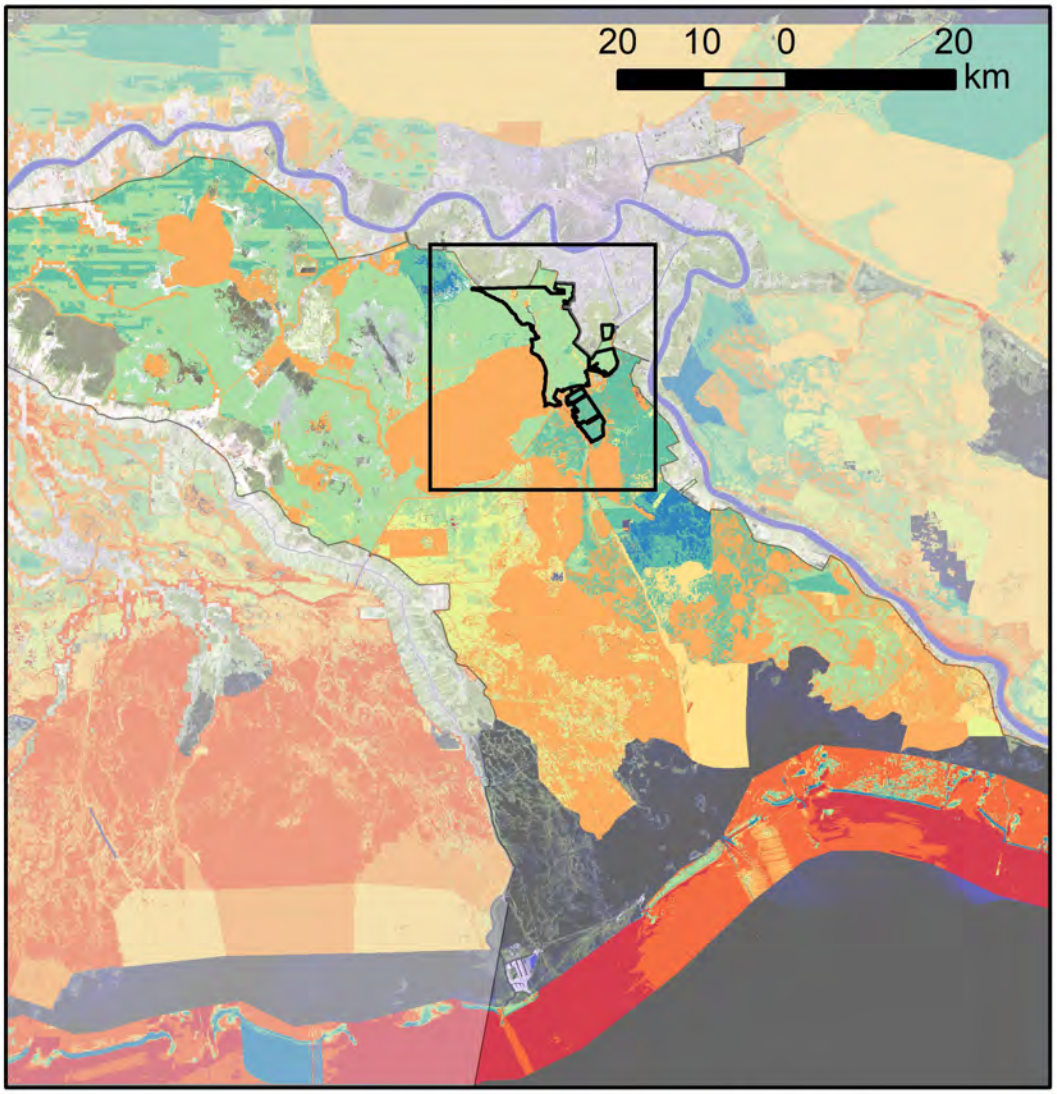
Elev. Change [m]

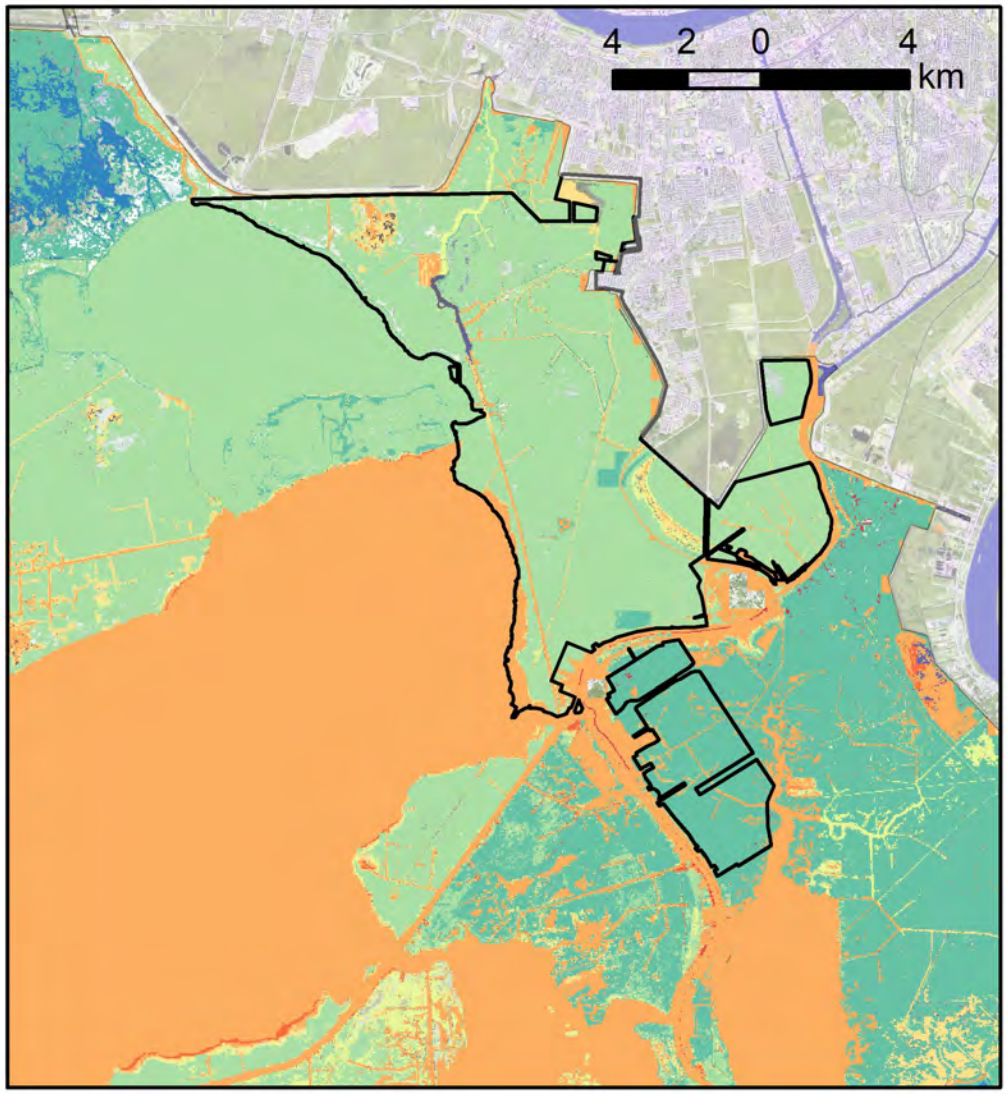
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
W E
S





S06 - G803
Low
Both Diversions
Year 51

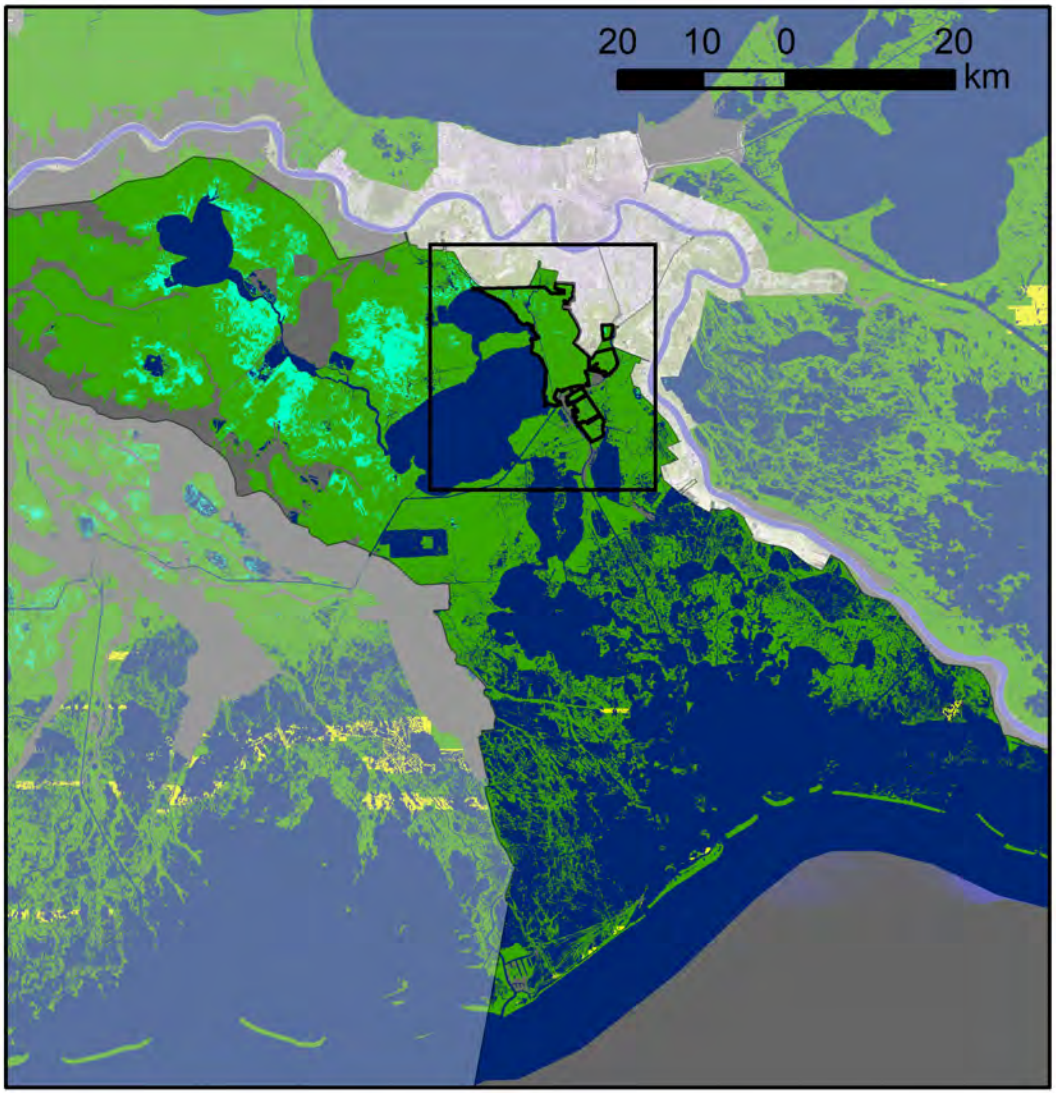
Elev. Change [m]

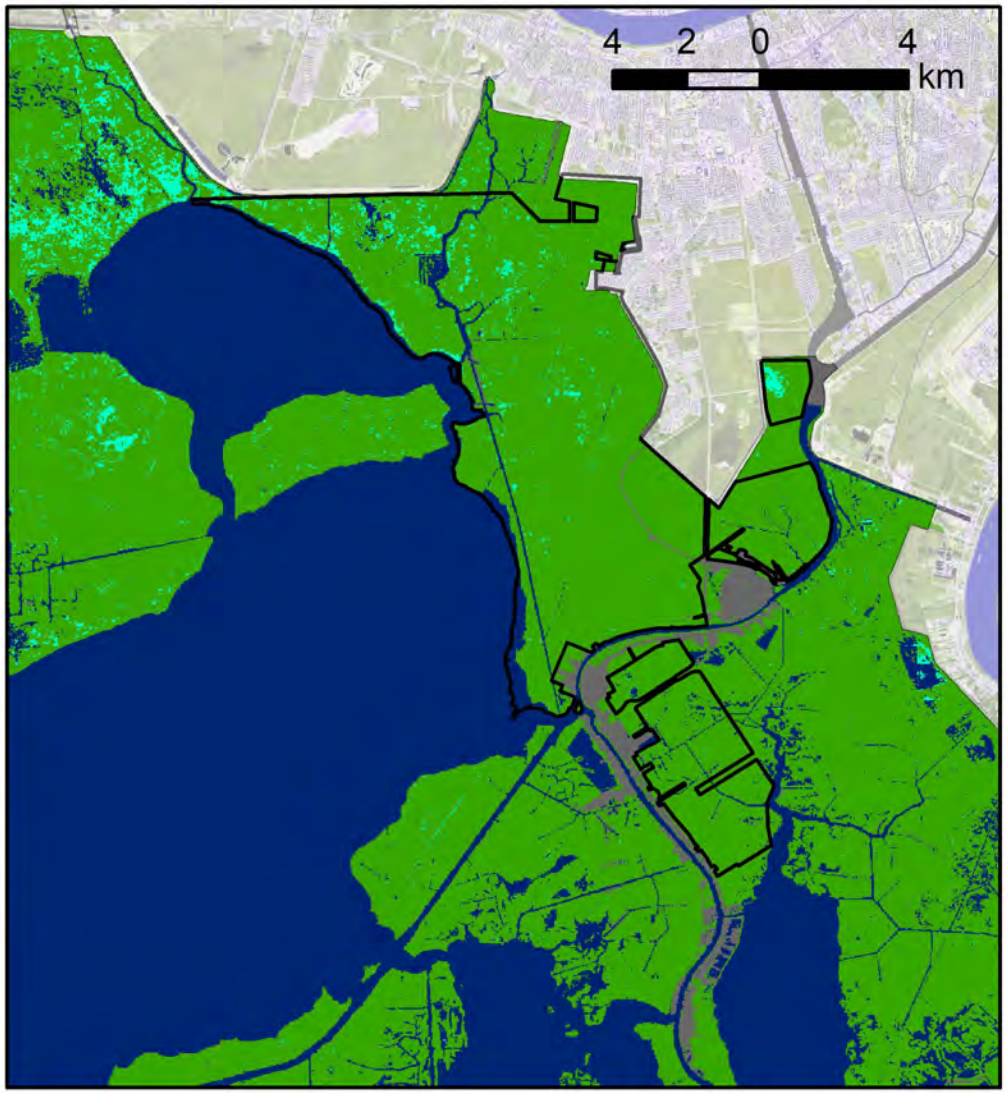
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
W E
S





S08 - G503
Inter.-High
FWOA, no diversions
Year 02

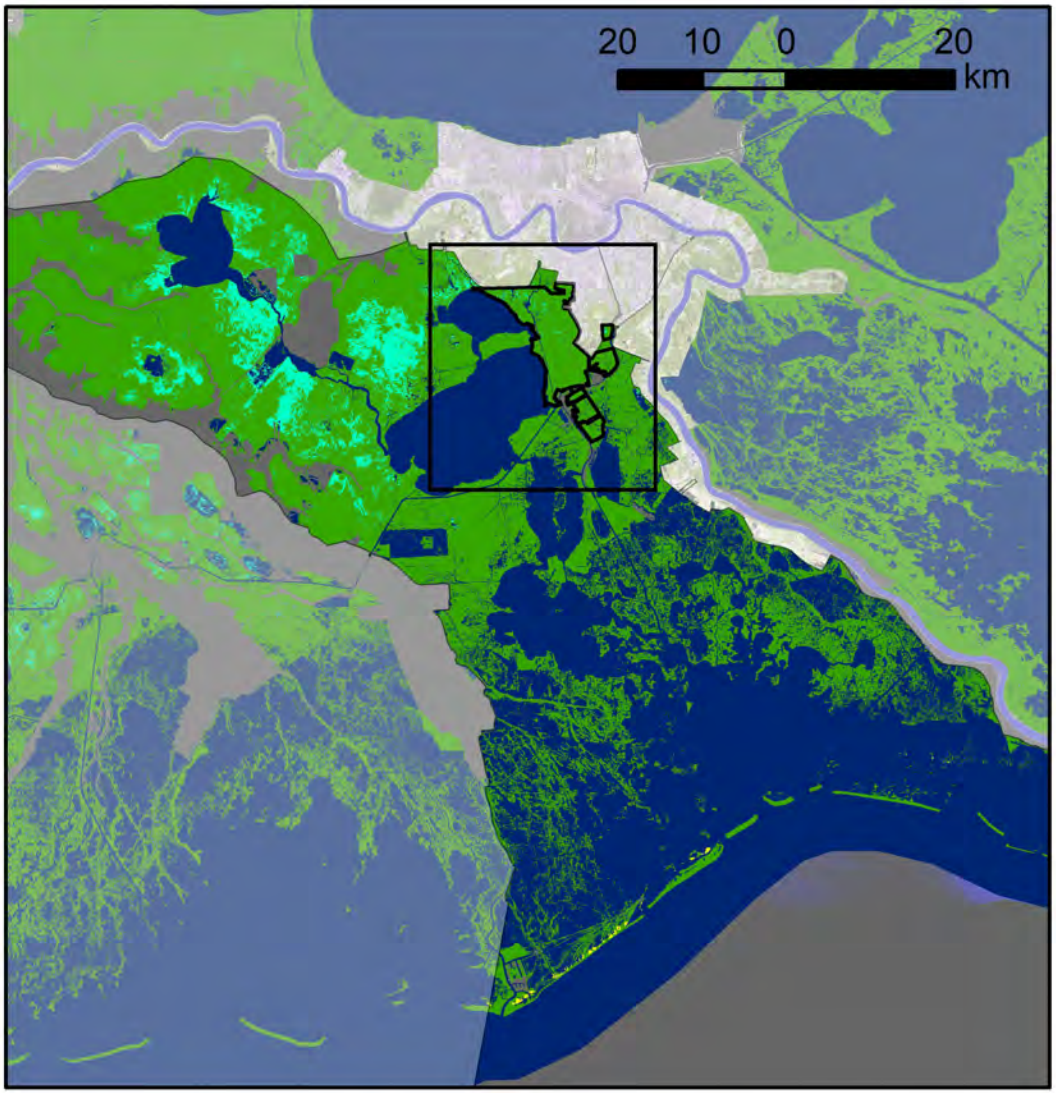
Land Type

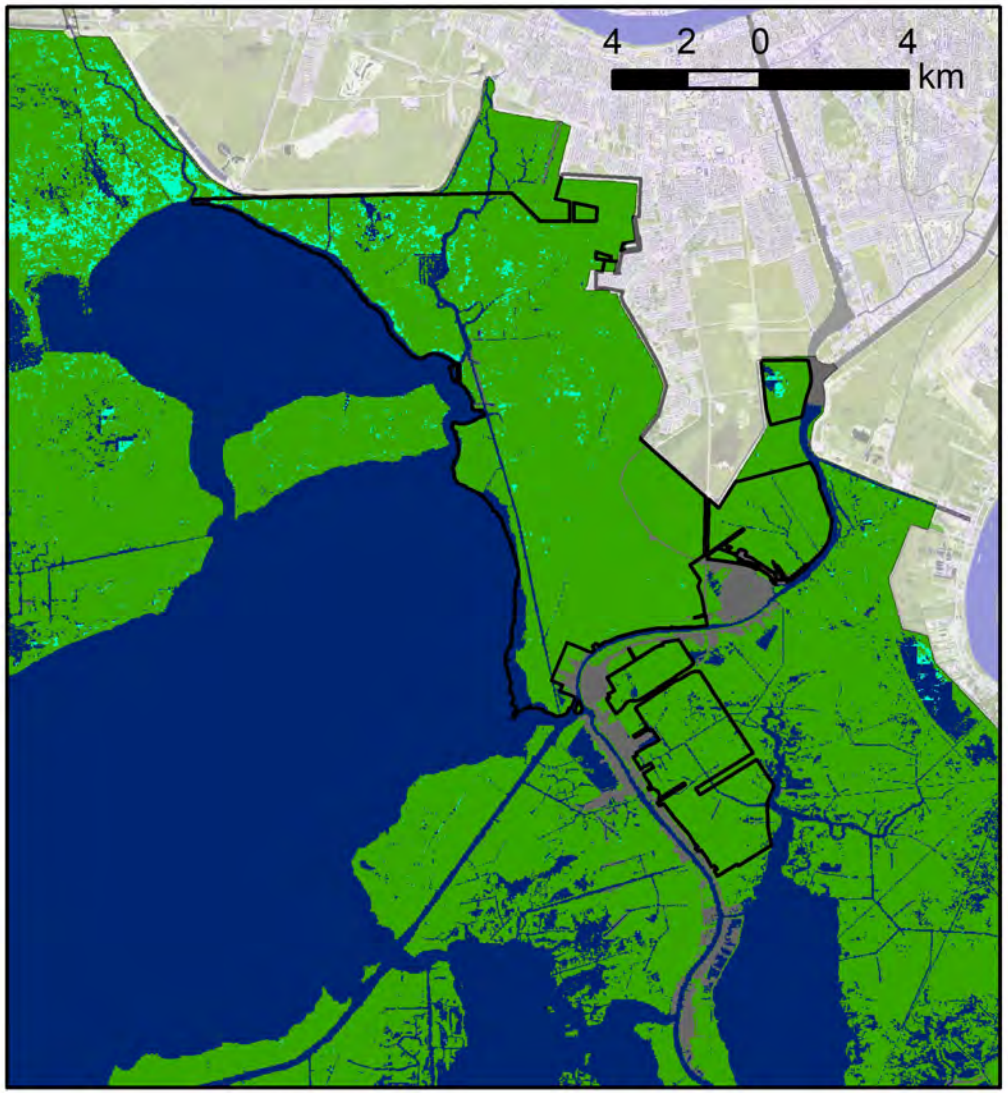
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S08 - G503
Inter.-High
FWOA, no diversions
Year 12

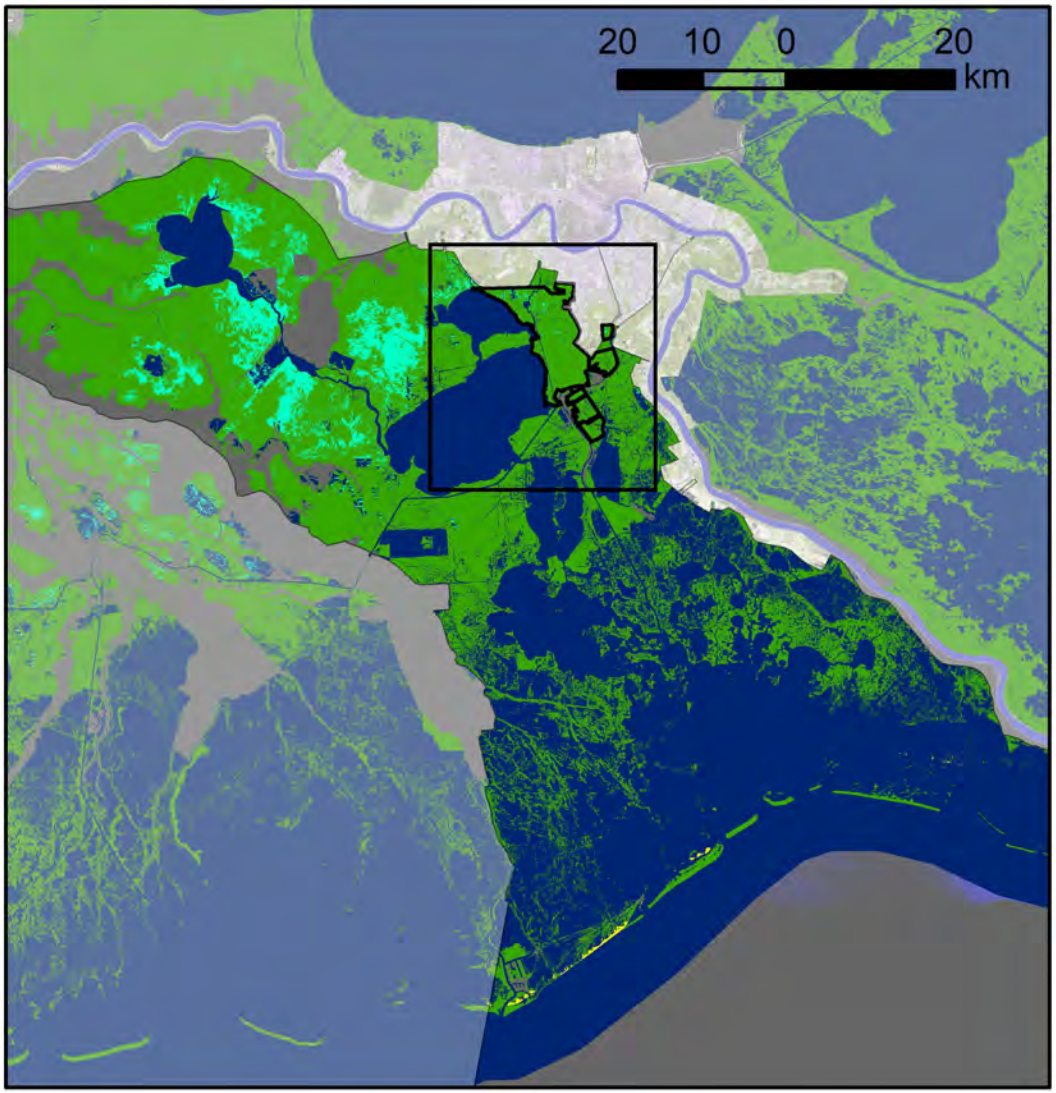
Land Type

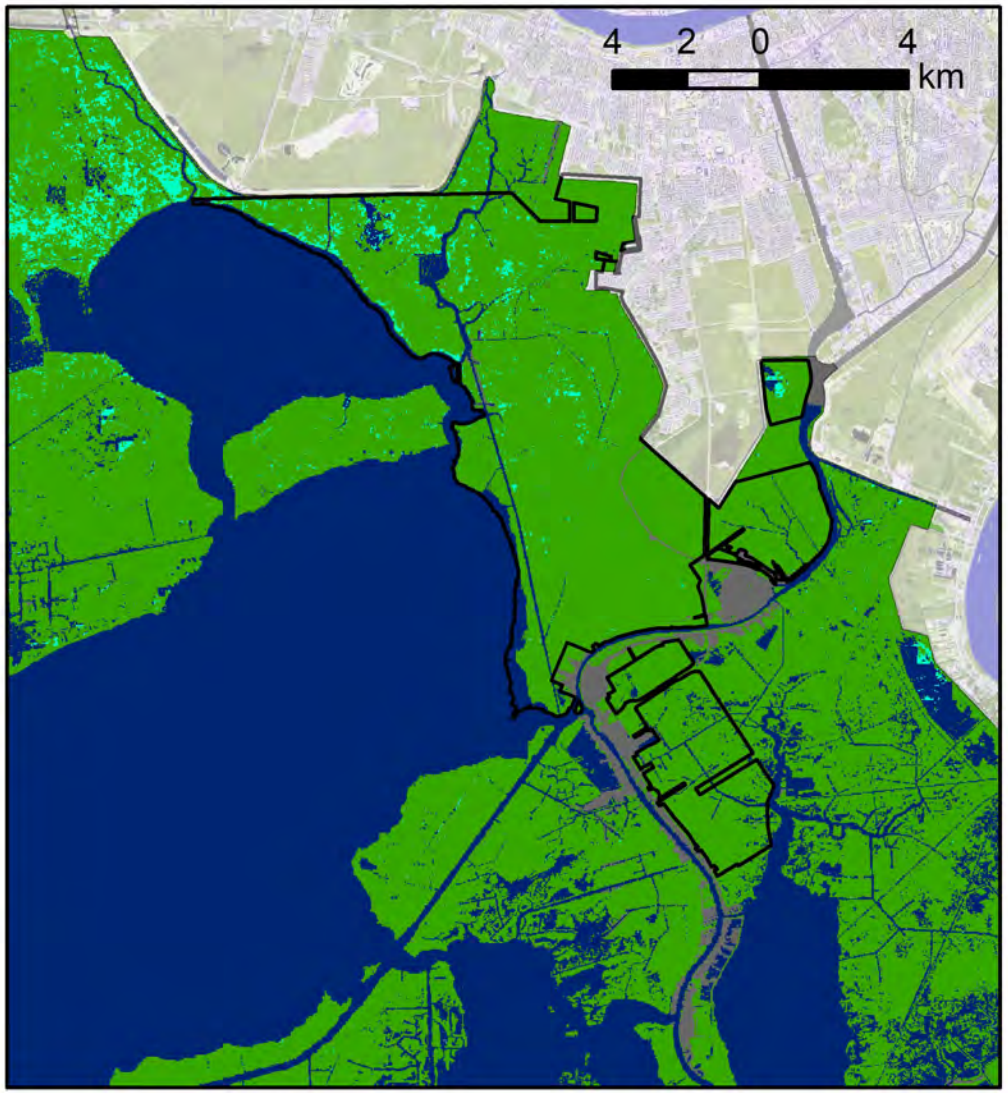
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S08 - G503
Inter.-High
FWOA, no diversions
Year 22

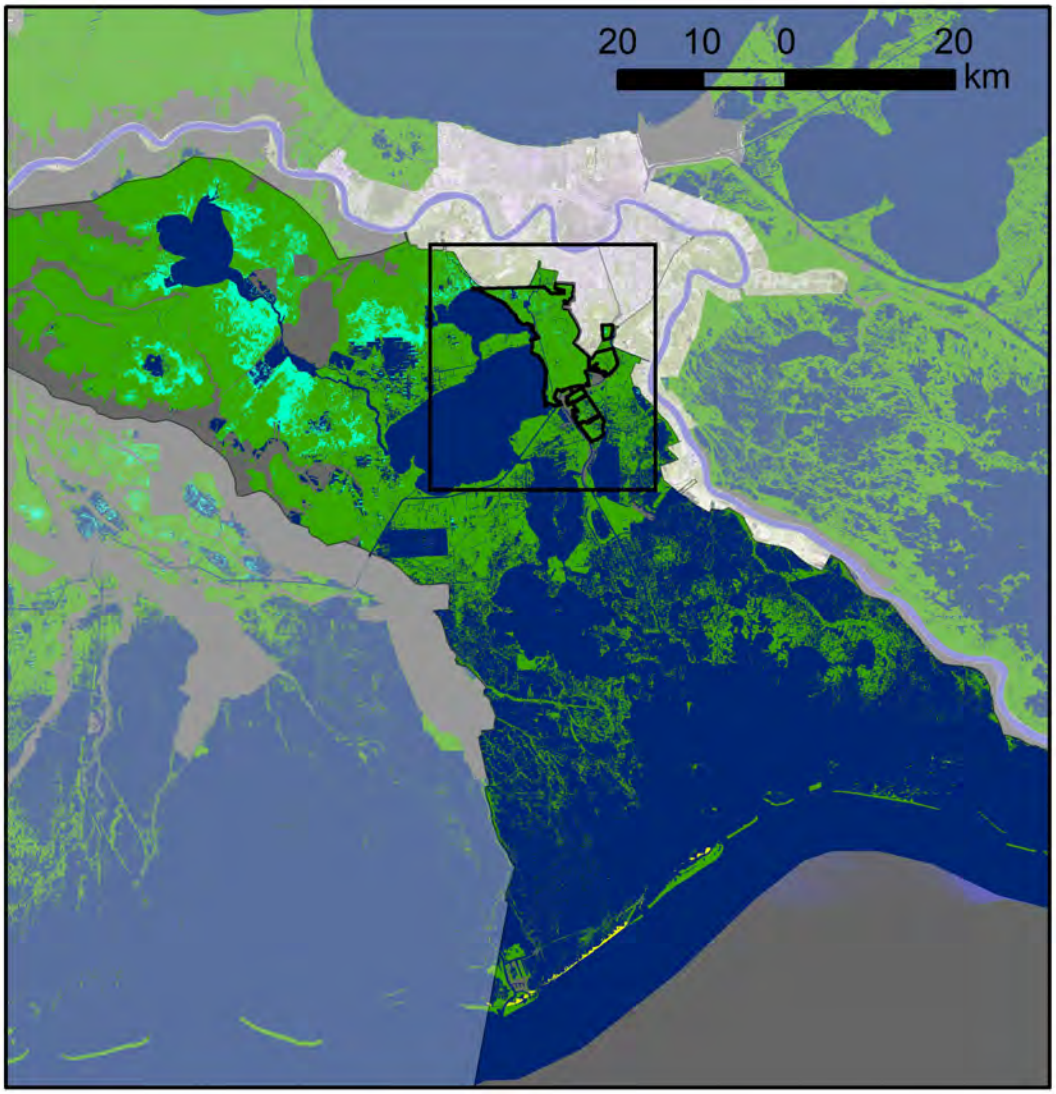
Land Type

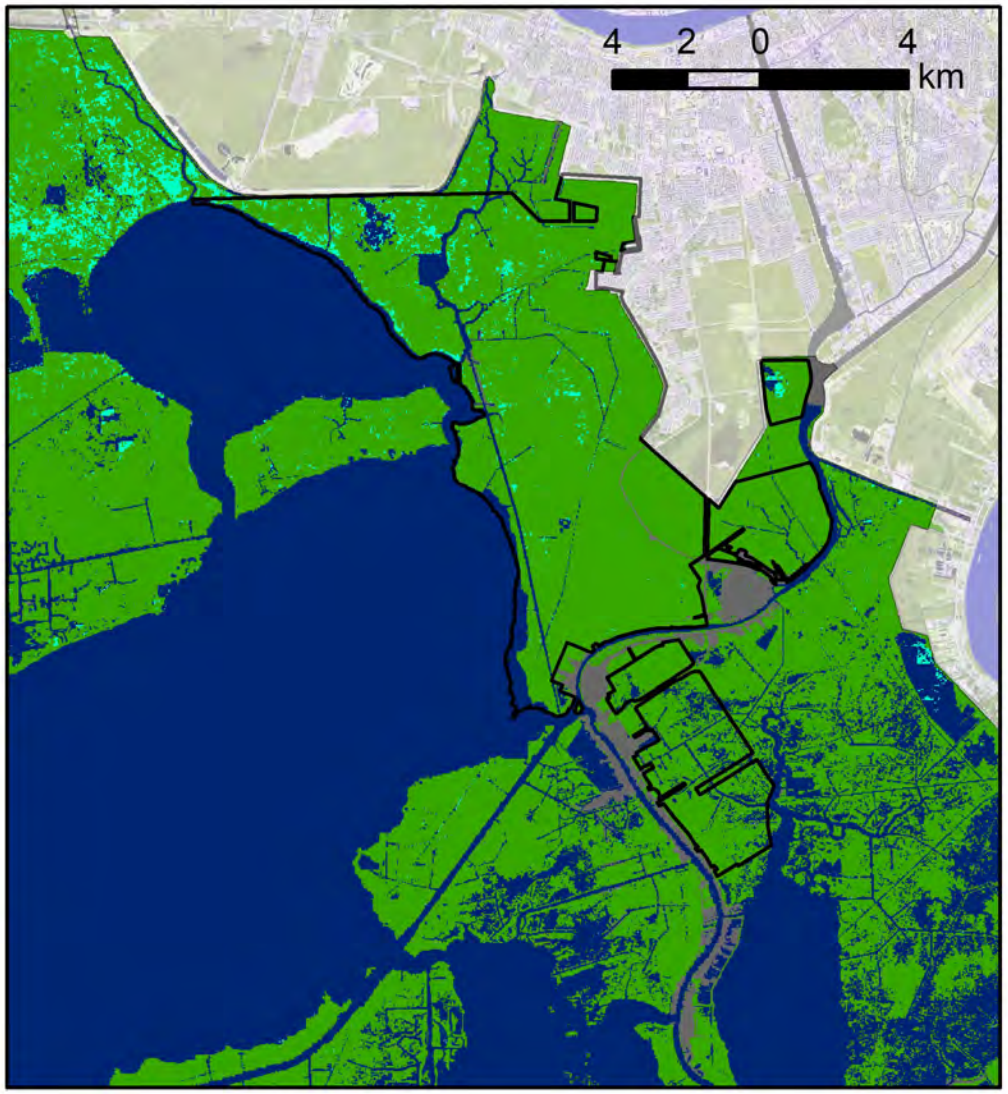
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S08 - G503
Inter.-High
FWOA, no diversions
Year 32

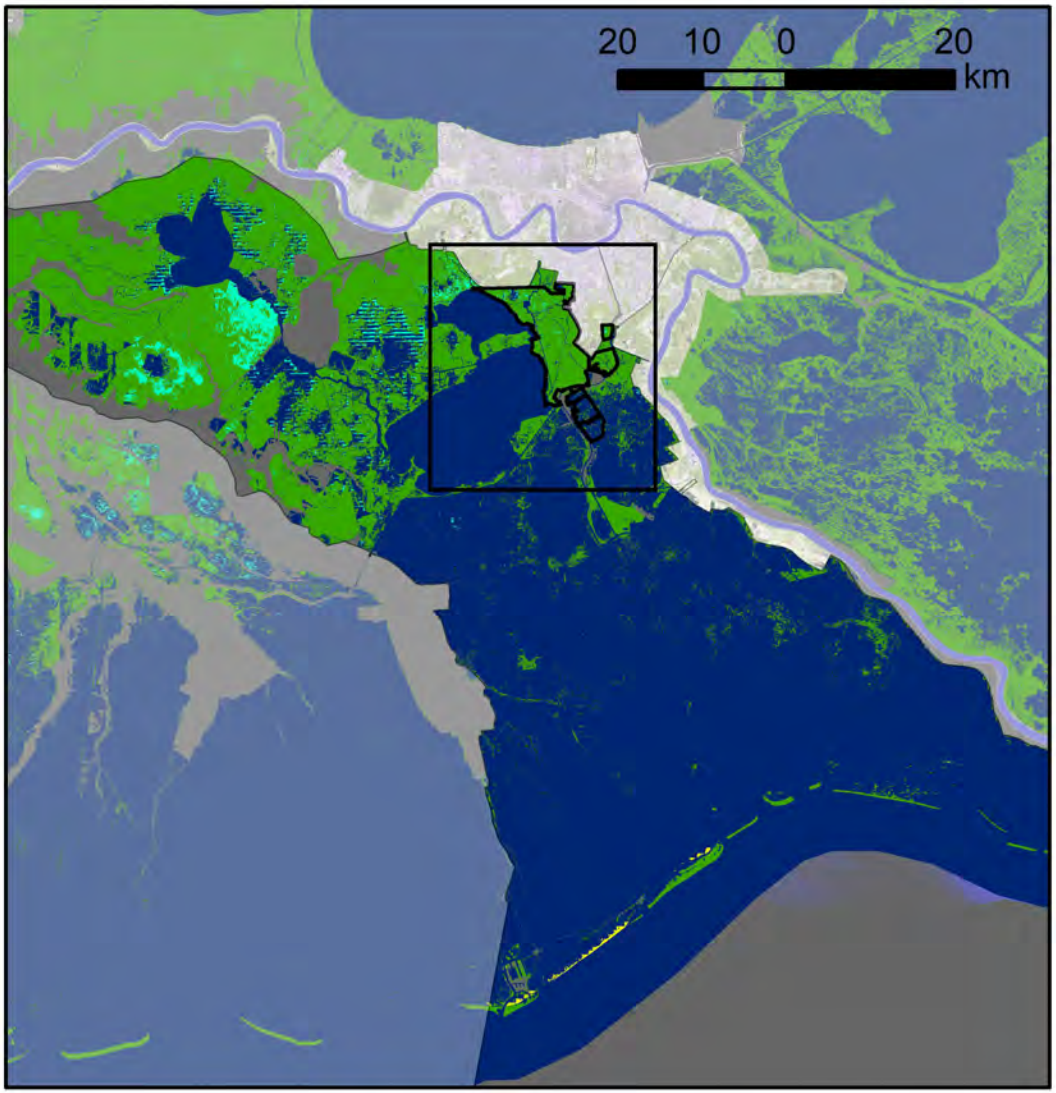
Land Type

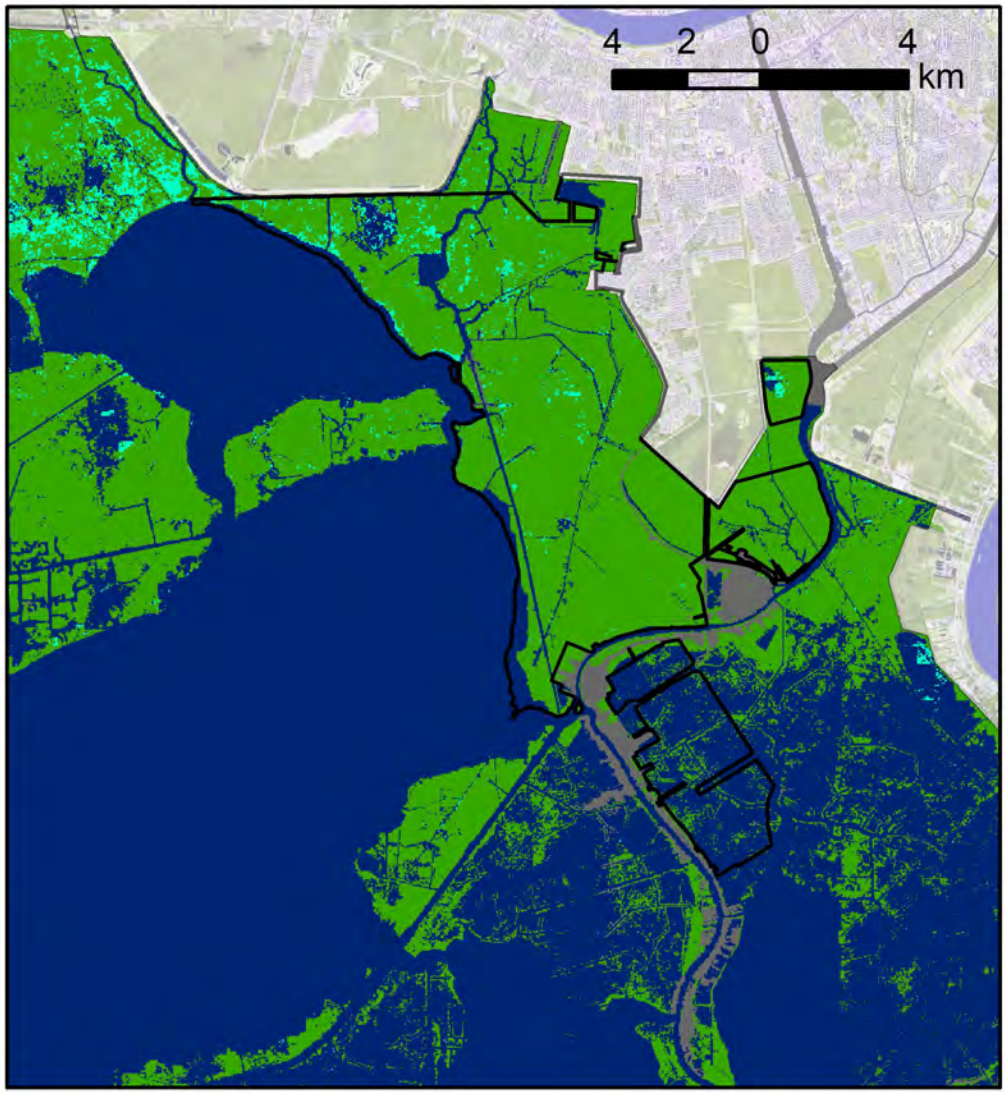
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S08 - G503
Inter.-High
FWOA, no diversions
Year 42

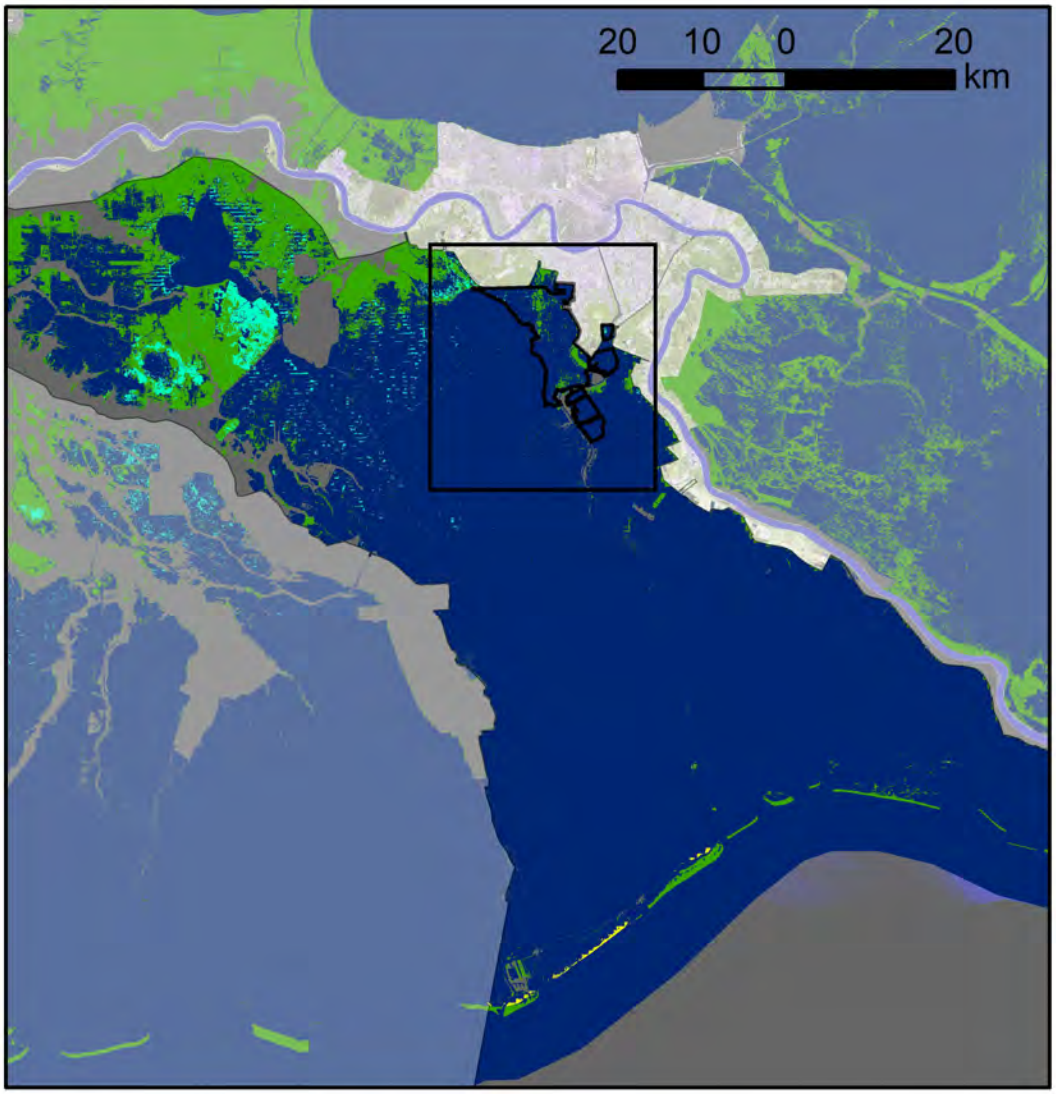
Land Type

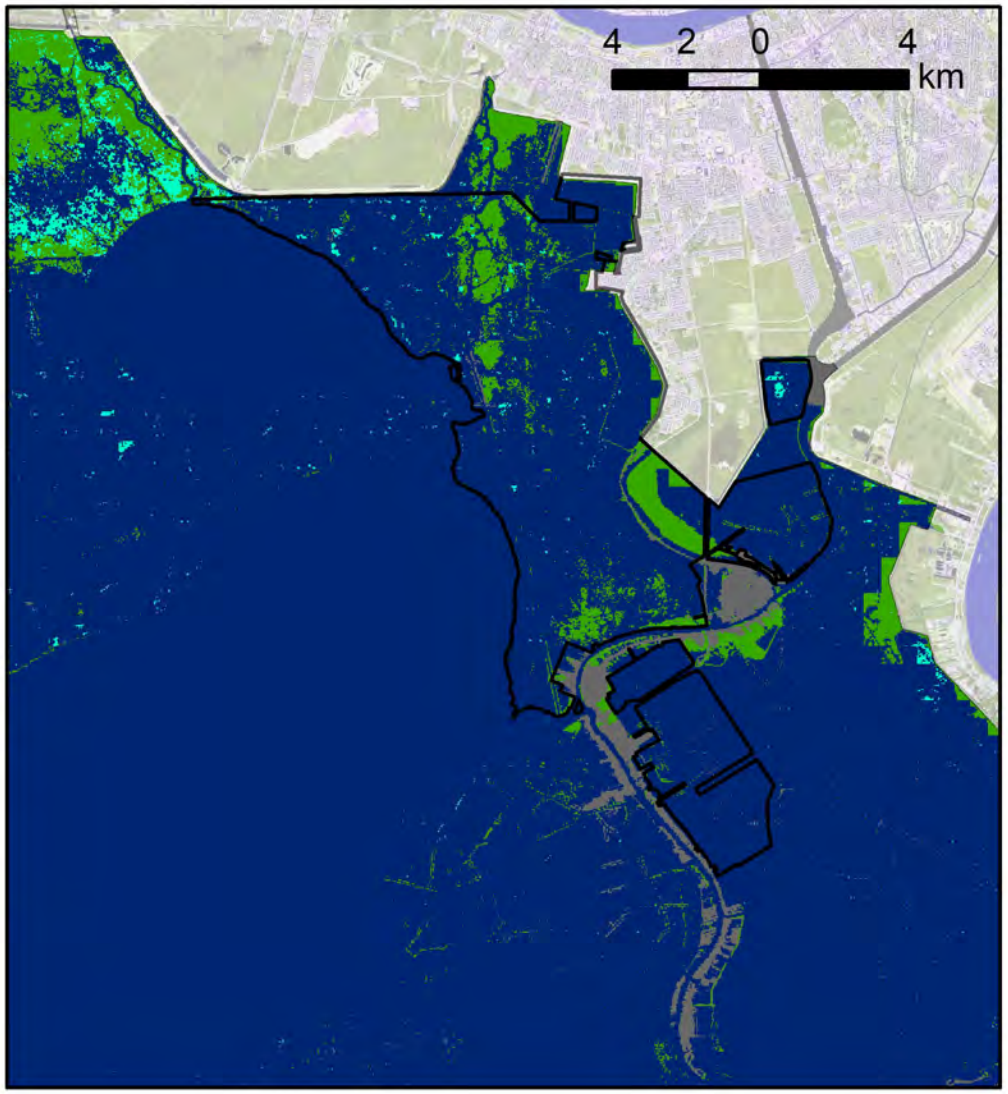
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S08 - G503
Inter.-High
FWOA, no diversions
Year 51

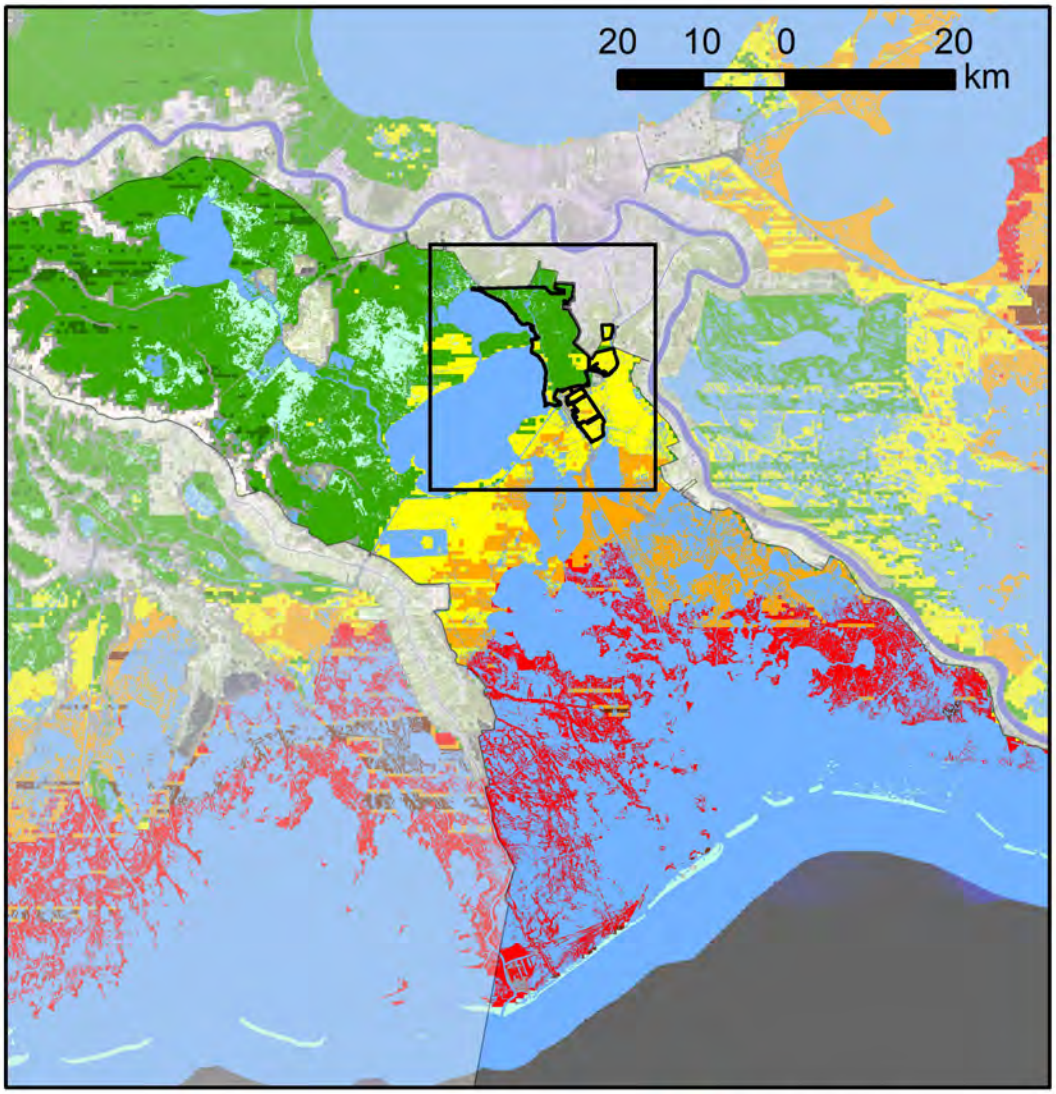
Land Type

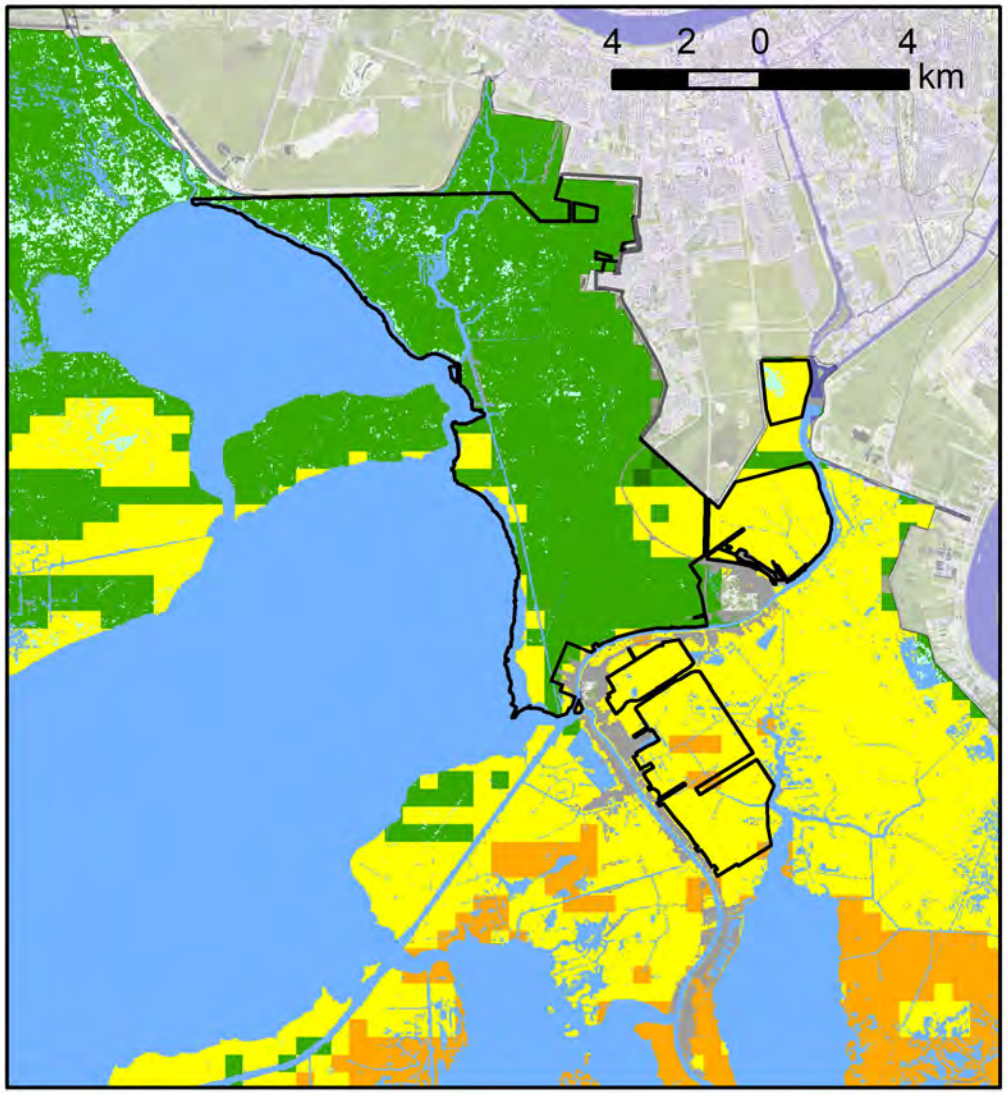
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S08 - G503
Inter.-High
FWOA, no diversions
Year 02

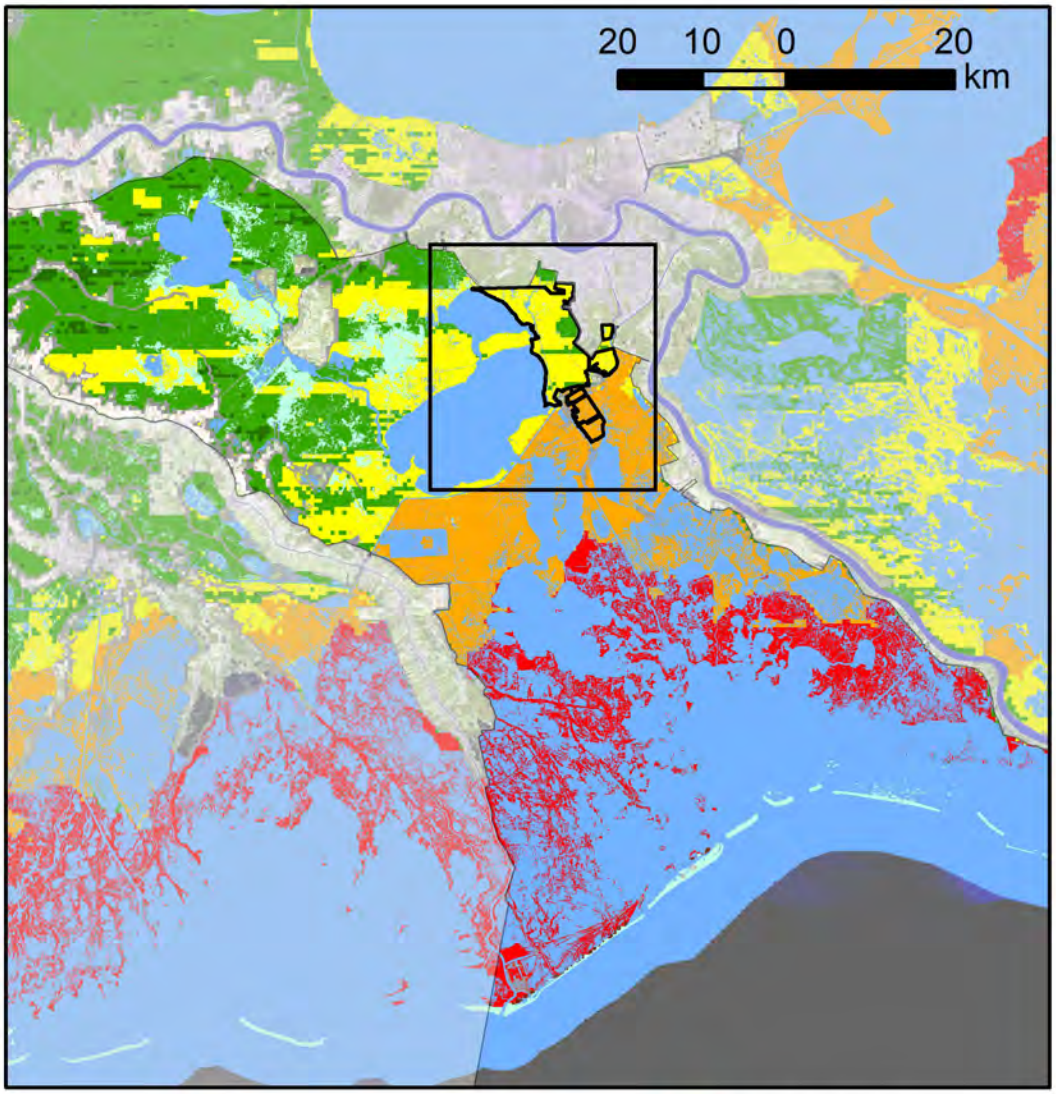
Habitat Type

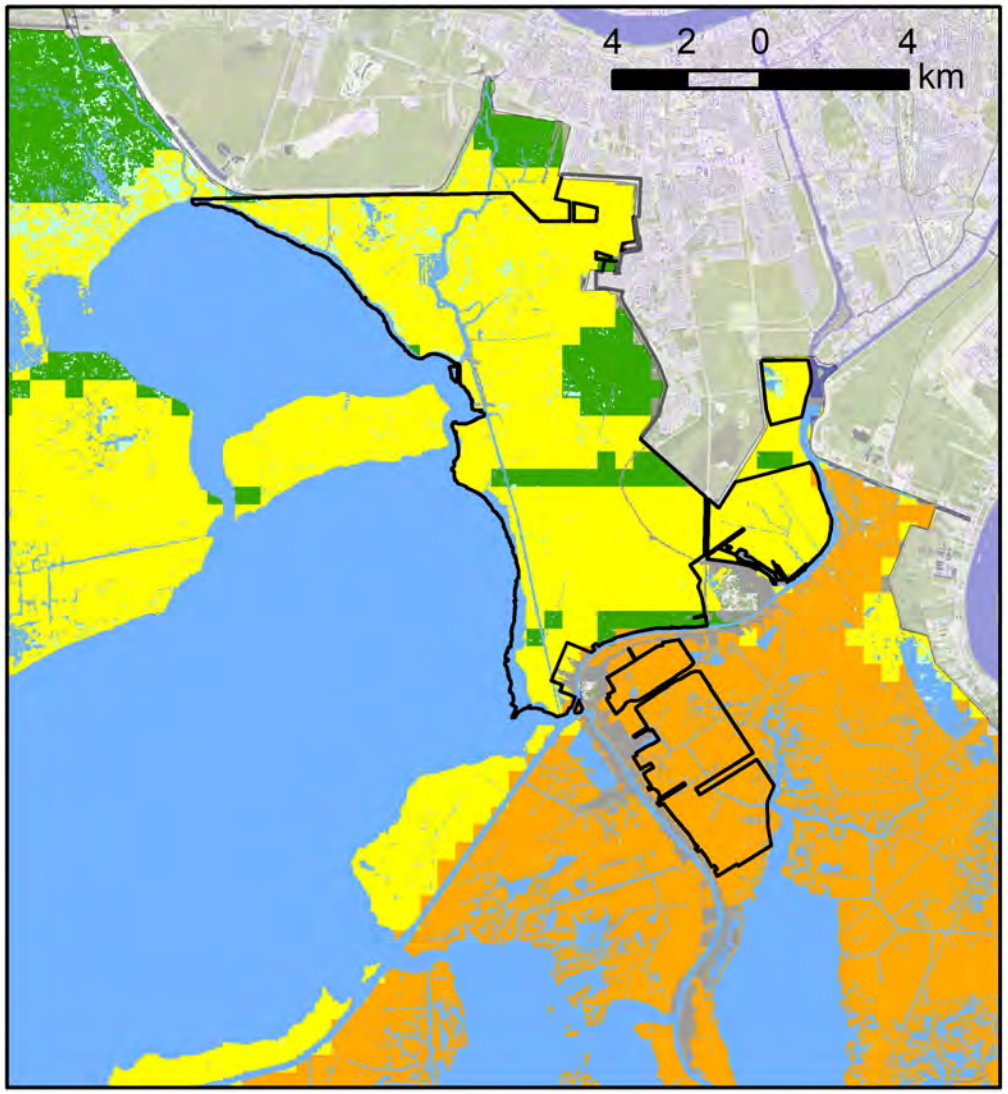
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S08 - G503
Inter.-High
FWOA, no diversions
Year 12

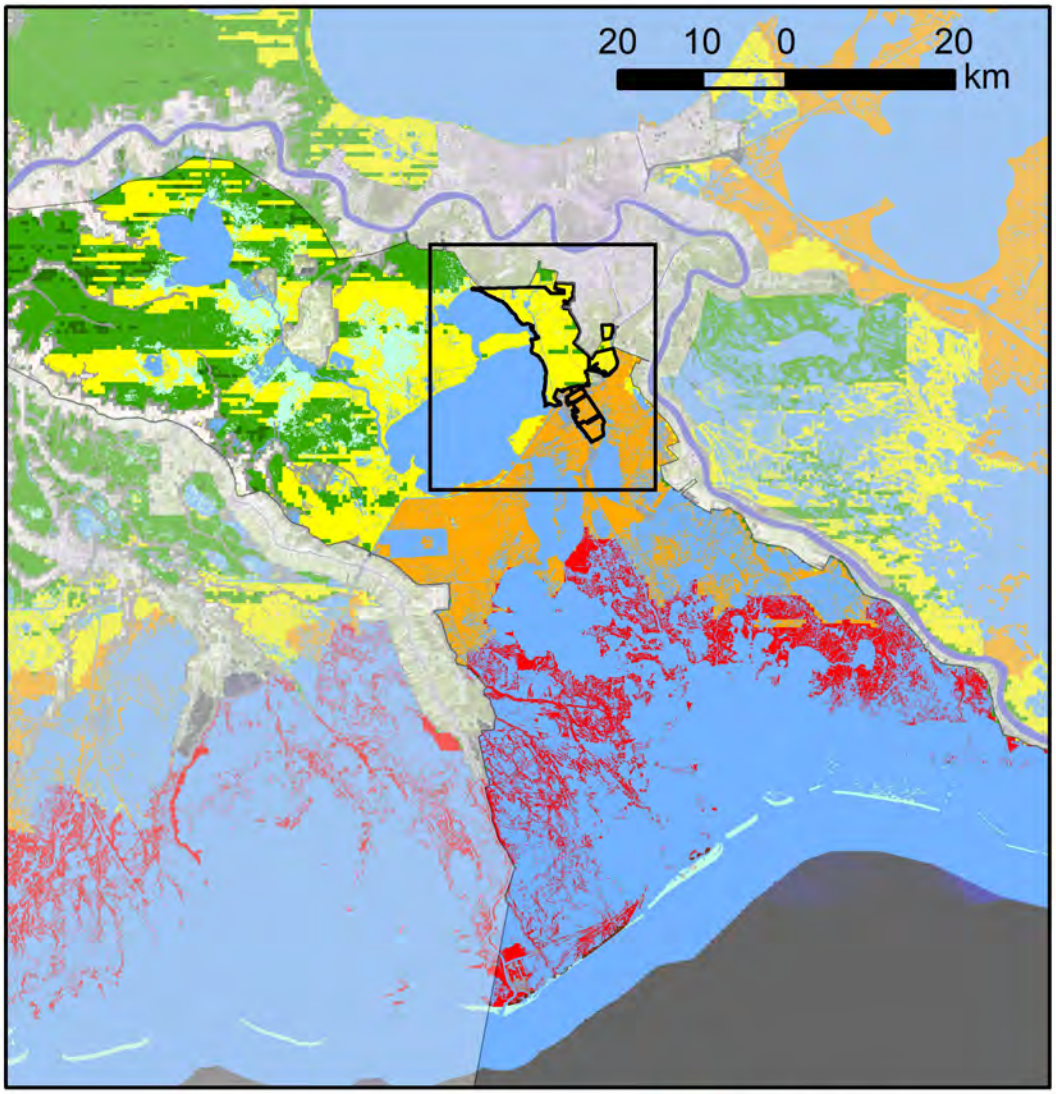
Habitat Type

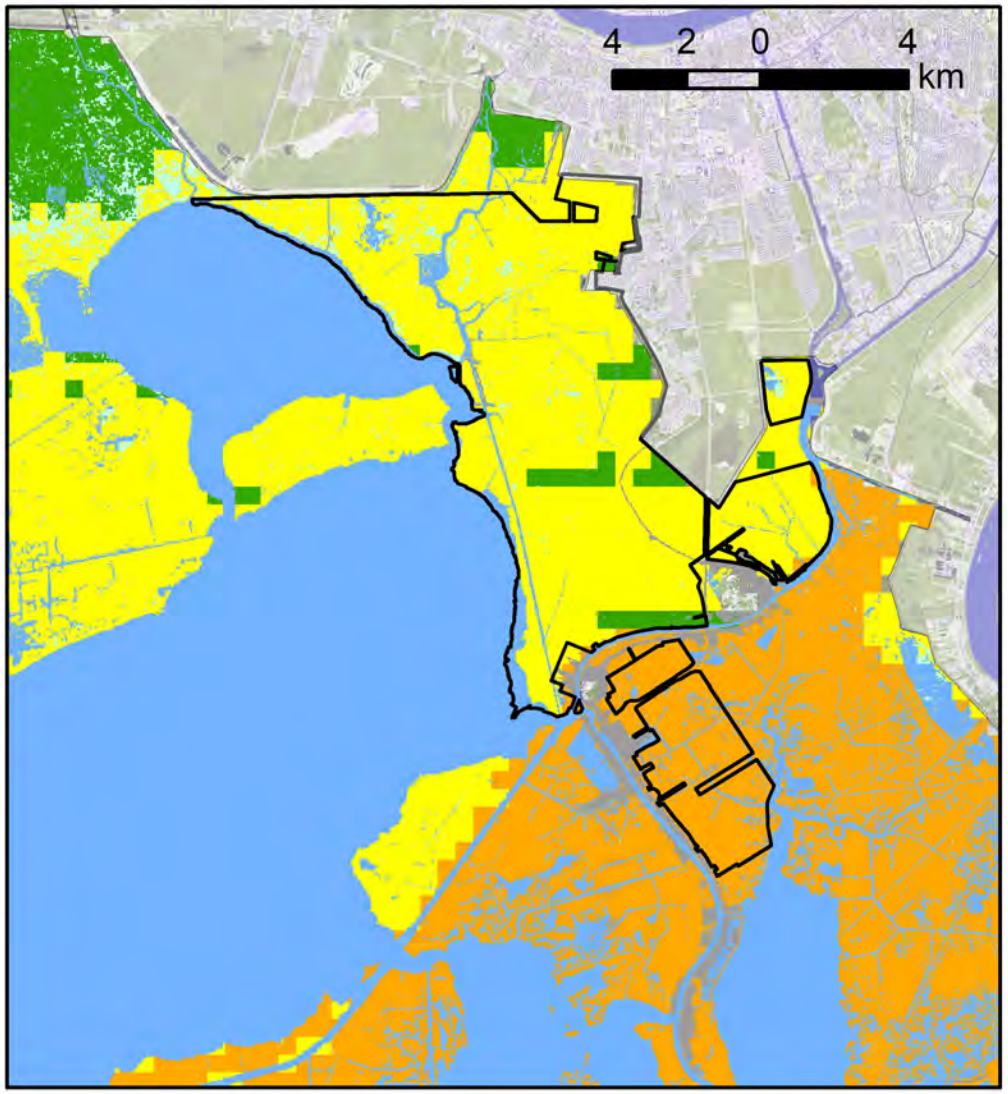
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S08 - G503
Inter.-High
FWOA, no diversions
Year 22

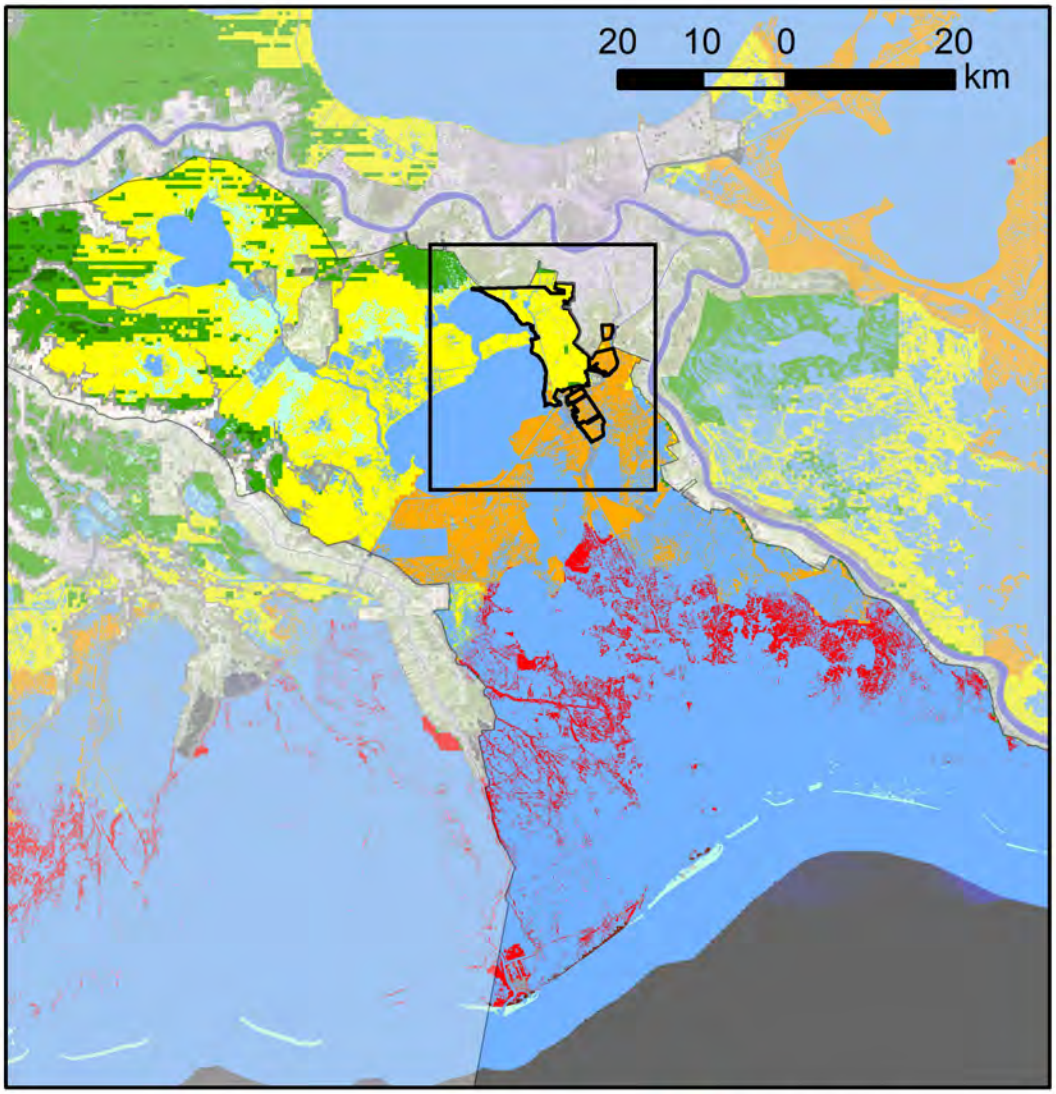
Habitat Type

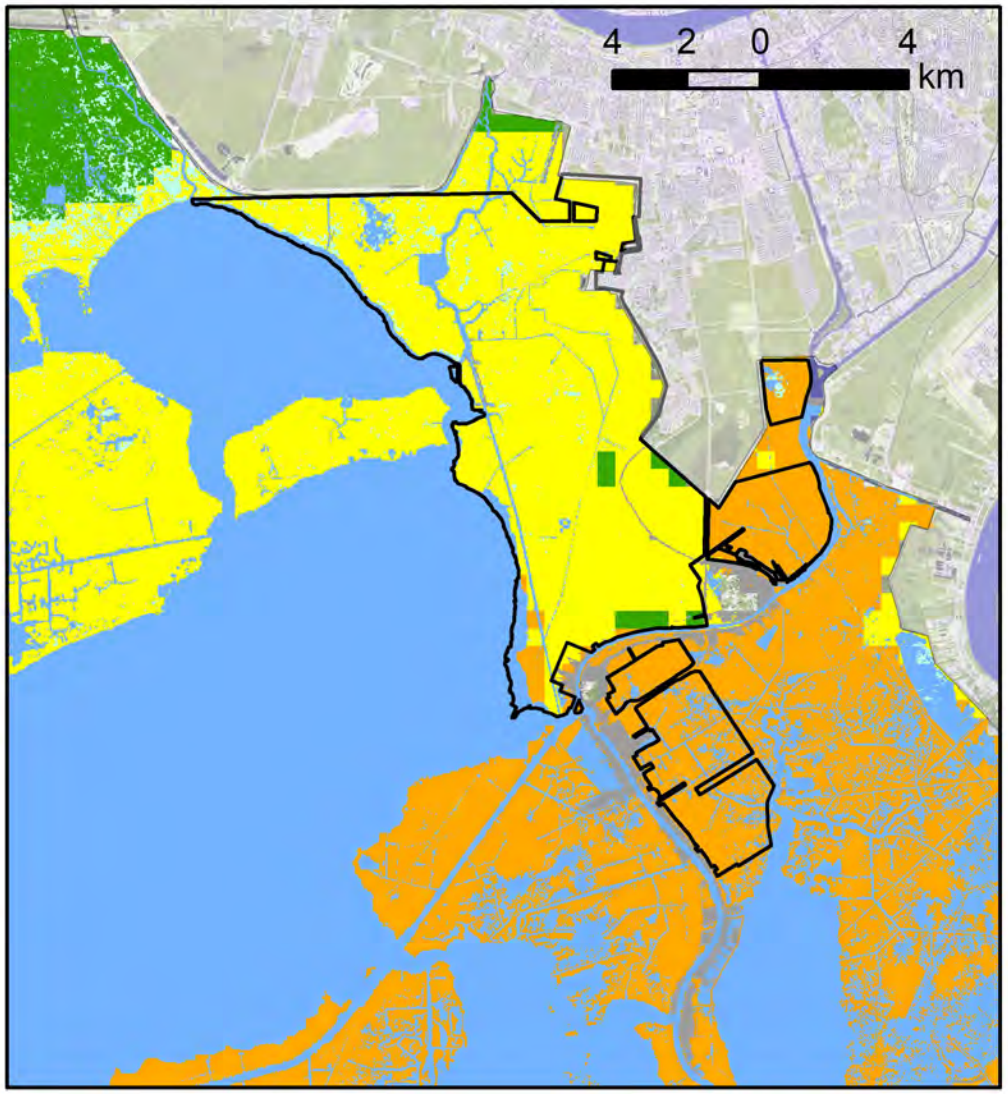
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S08 - G503
Inter.-High
FWOA, no diversions
Year 32

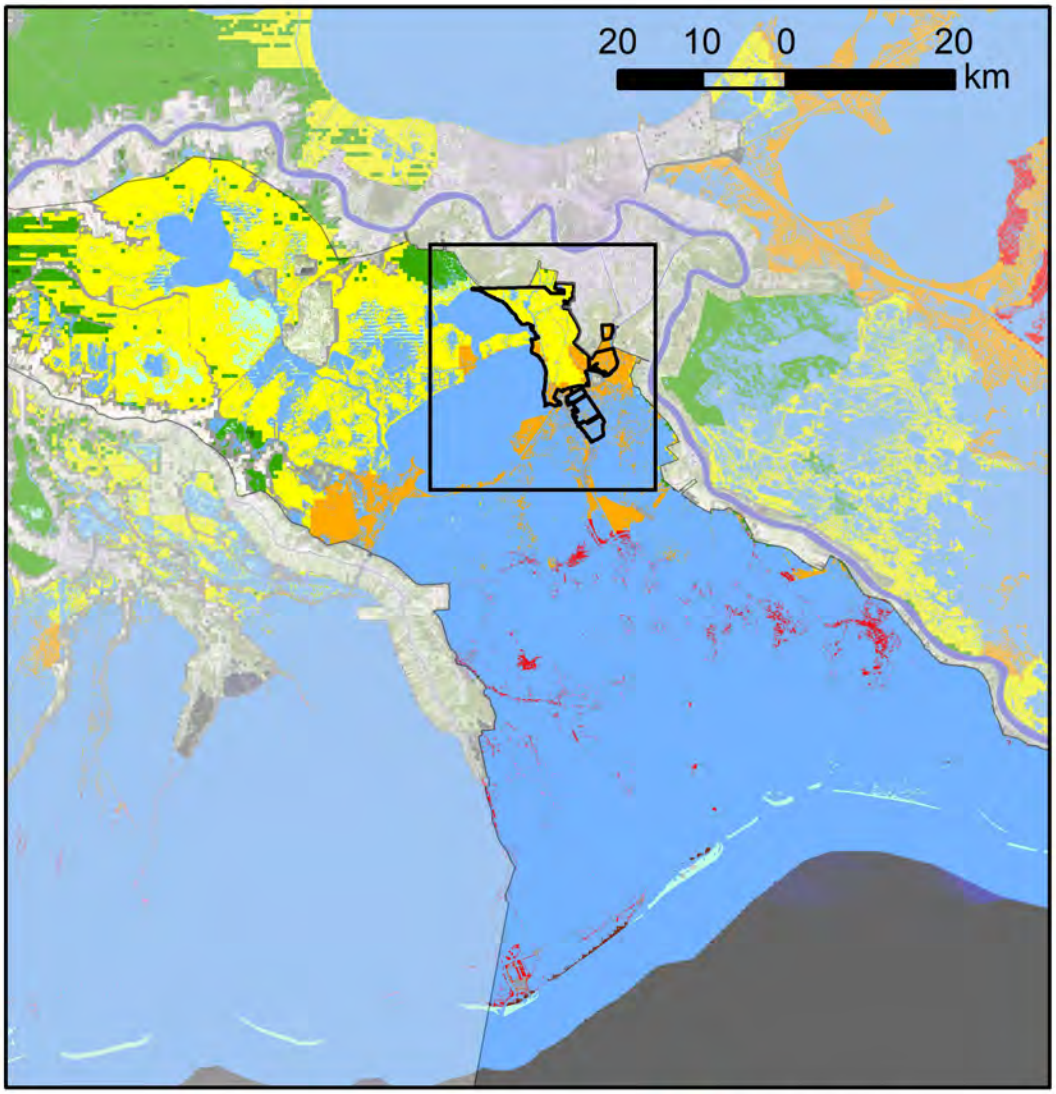
Habitat Type

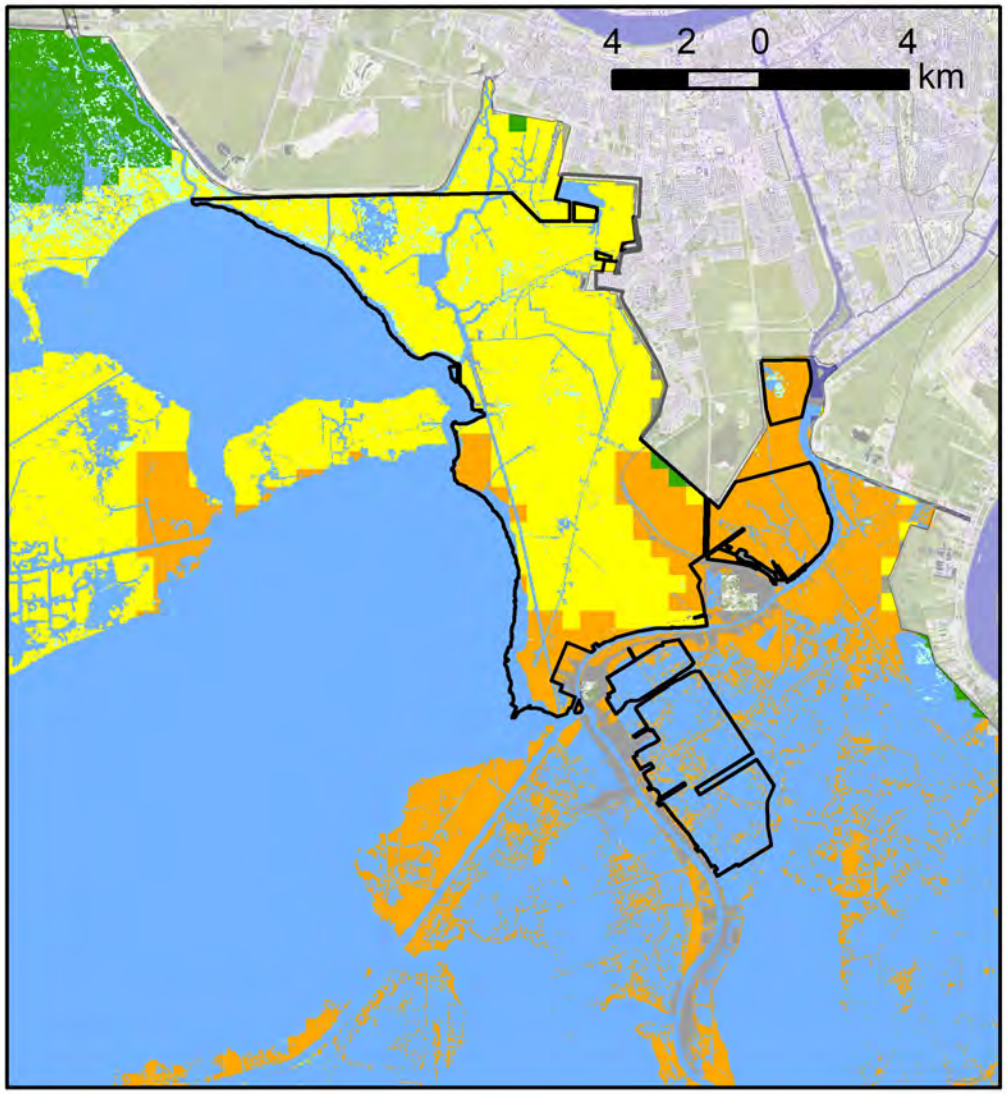
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S08 - G503
Inter.-High
FWOA, no diversions
Year 42

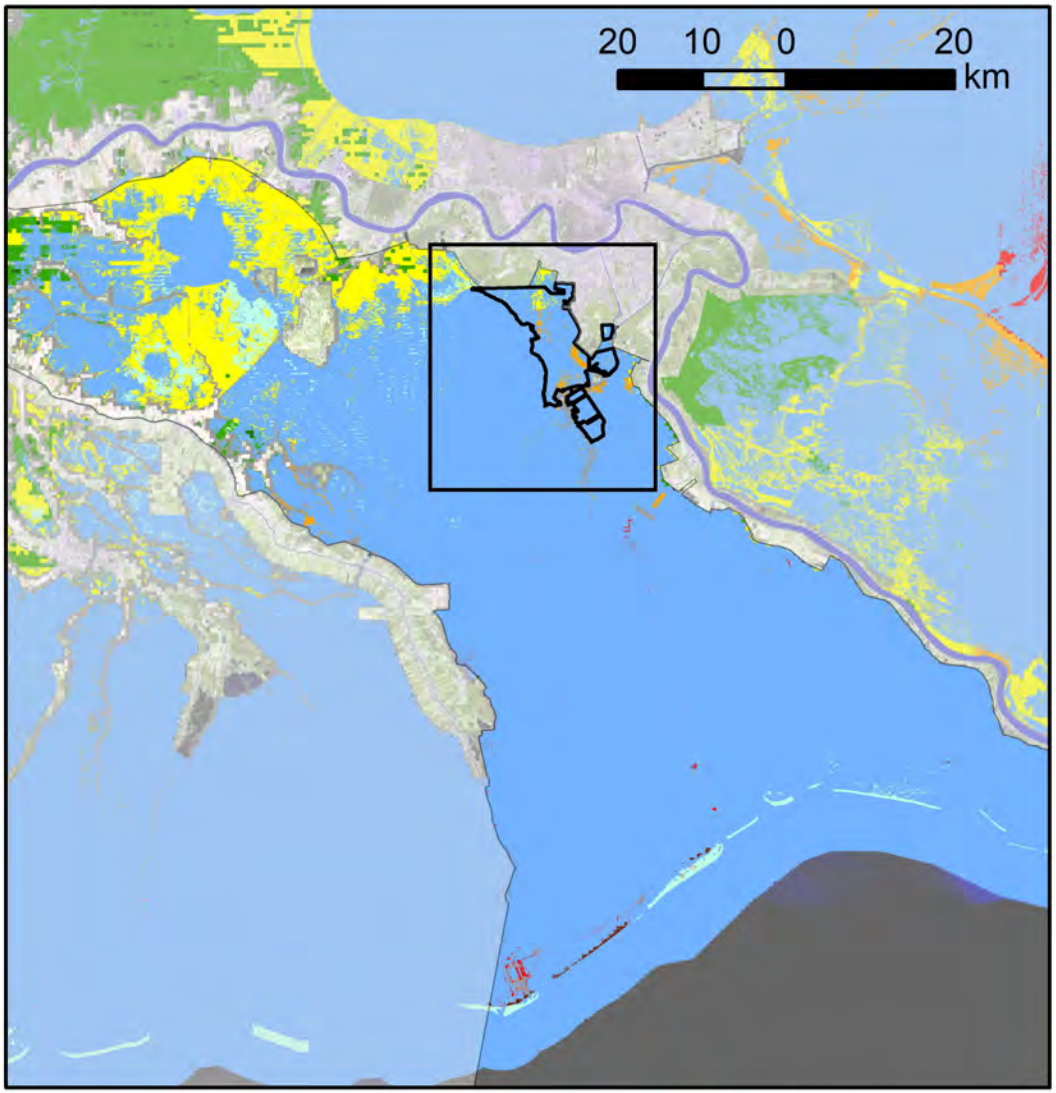
Habitat Type

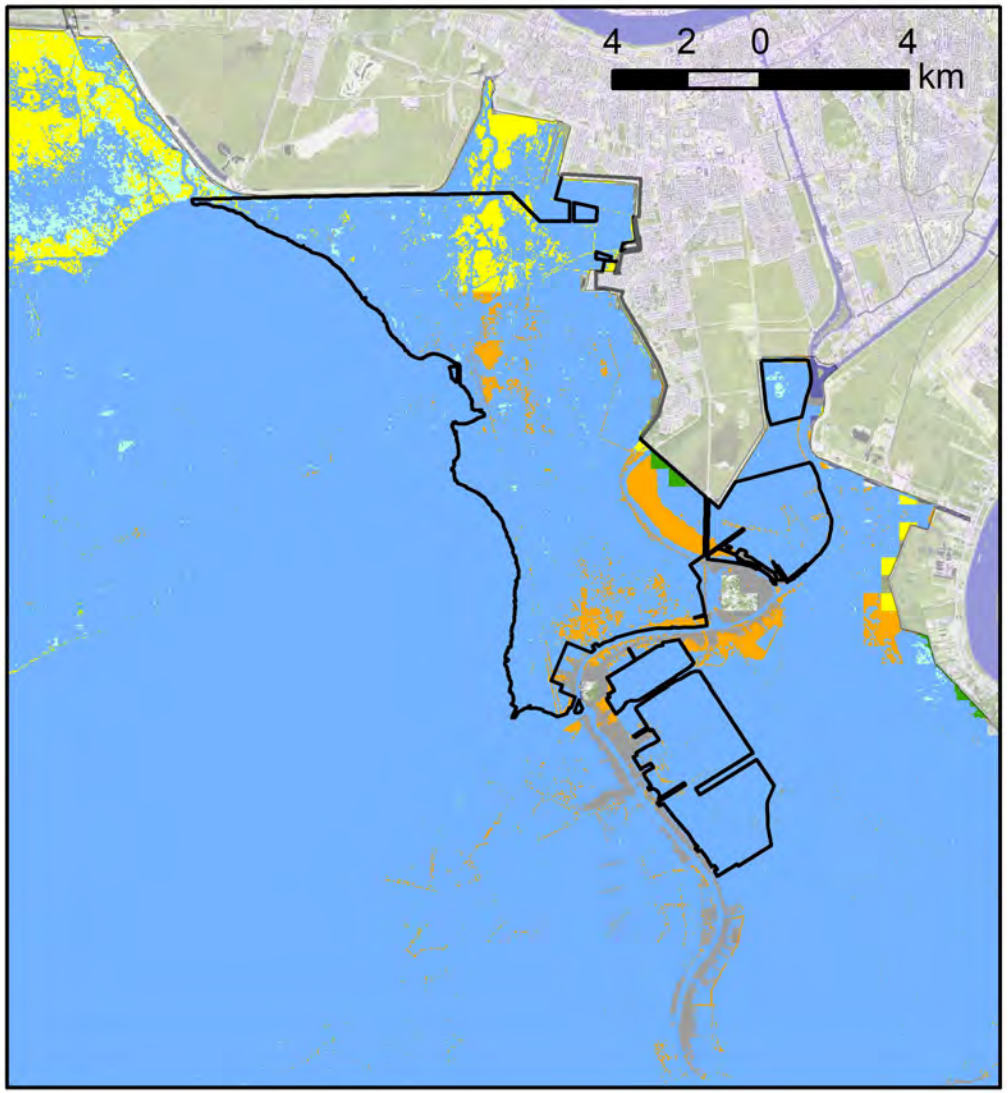
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S08 - G503
Inter.-High
FWOA, no diversions
Year 51

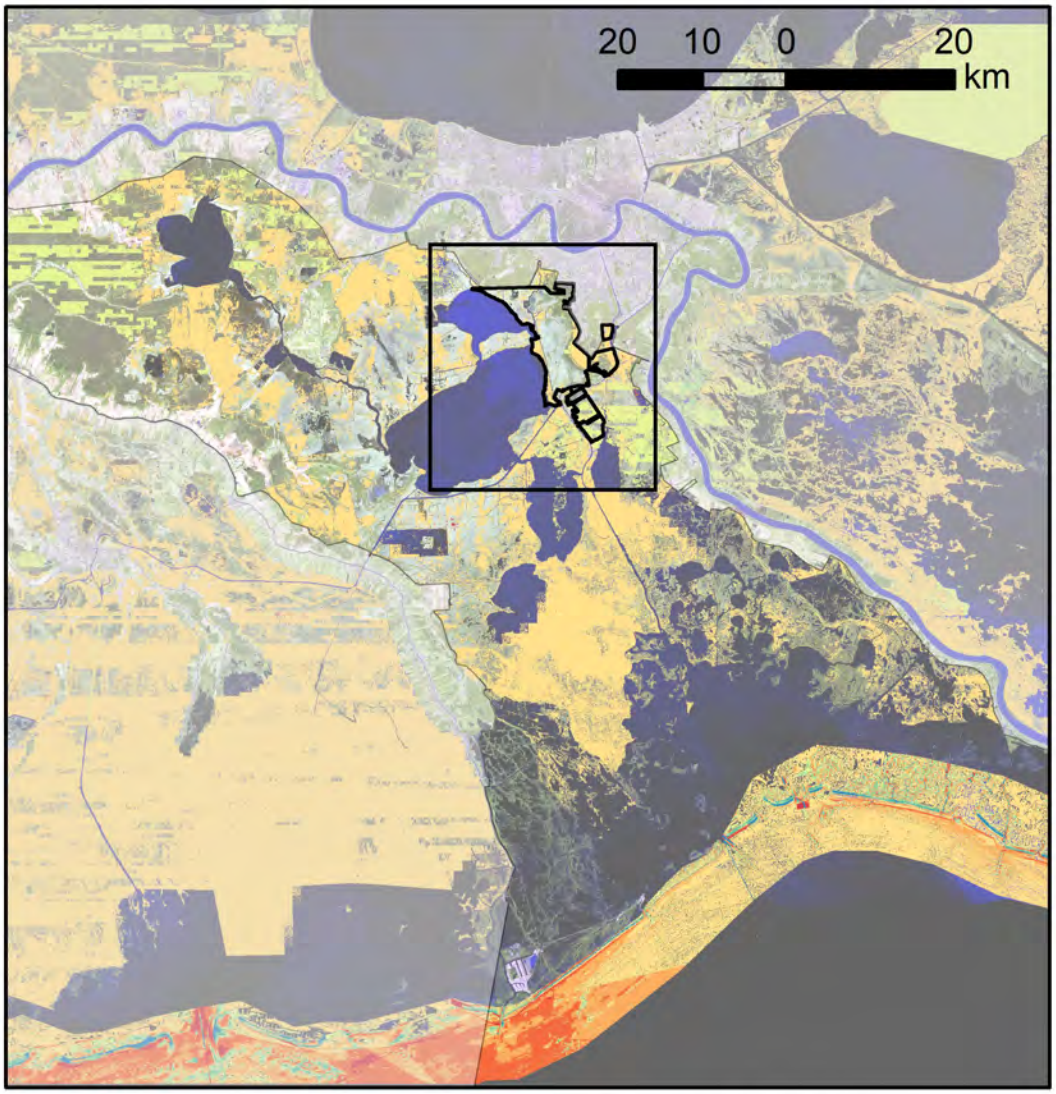
Habitat Type

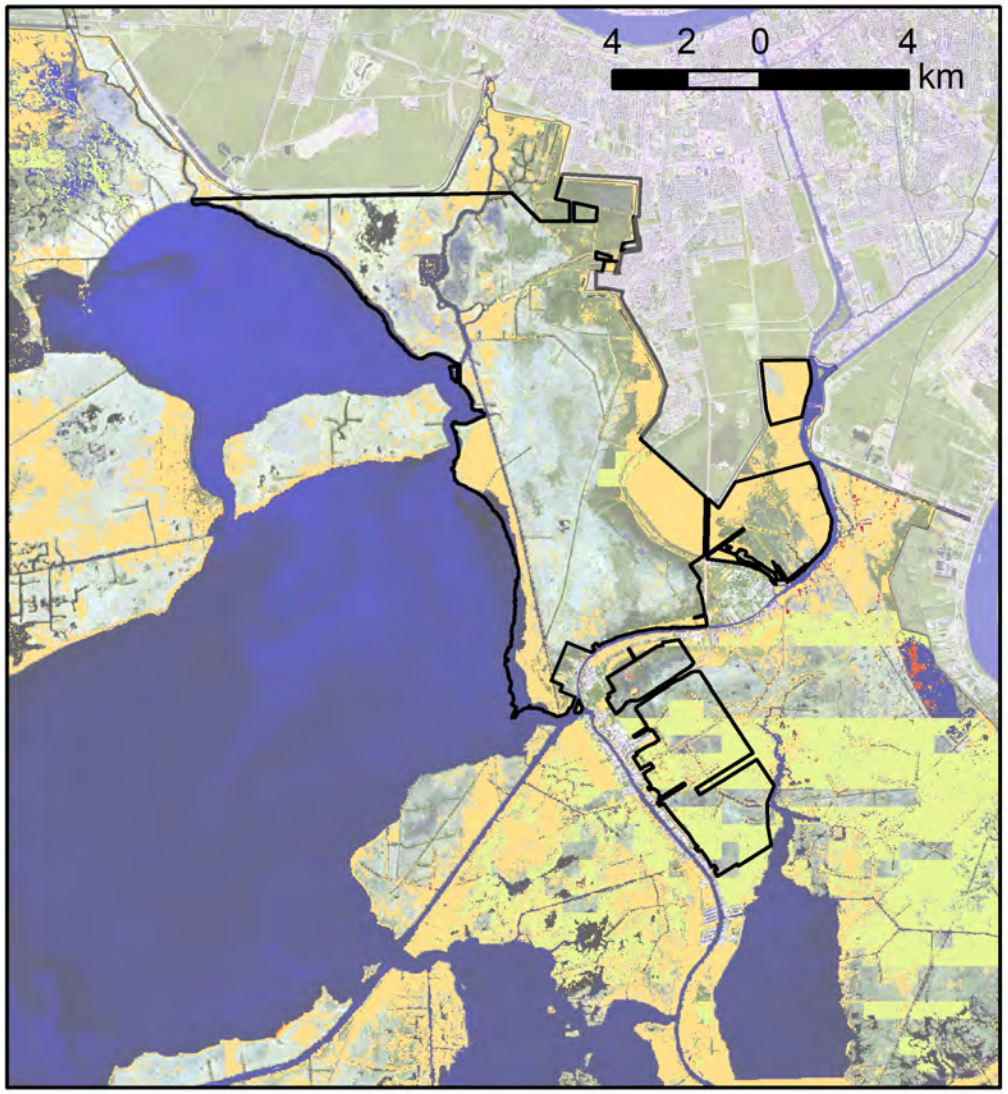
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S08 - G503
Inter.-High
FWOA, no diversions
Year 02

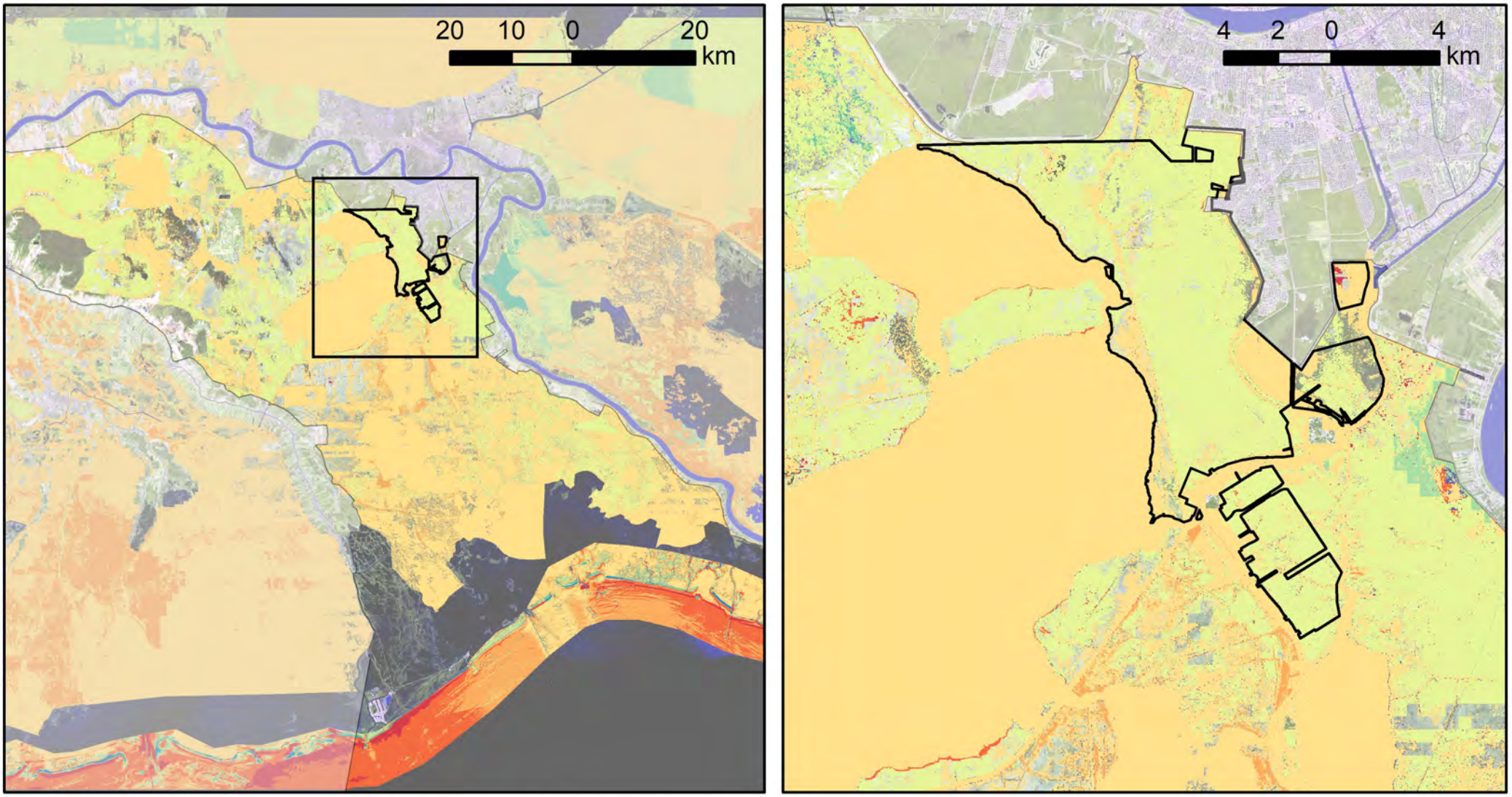
Elev. Change [m]

- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
W E
S



S08 - G503
Inter.-High
FWOA, no diversions
Year 12

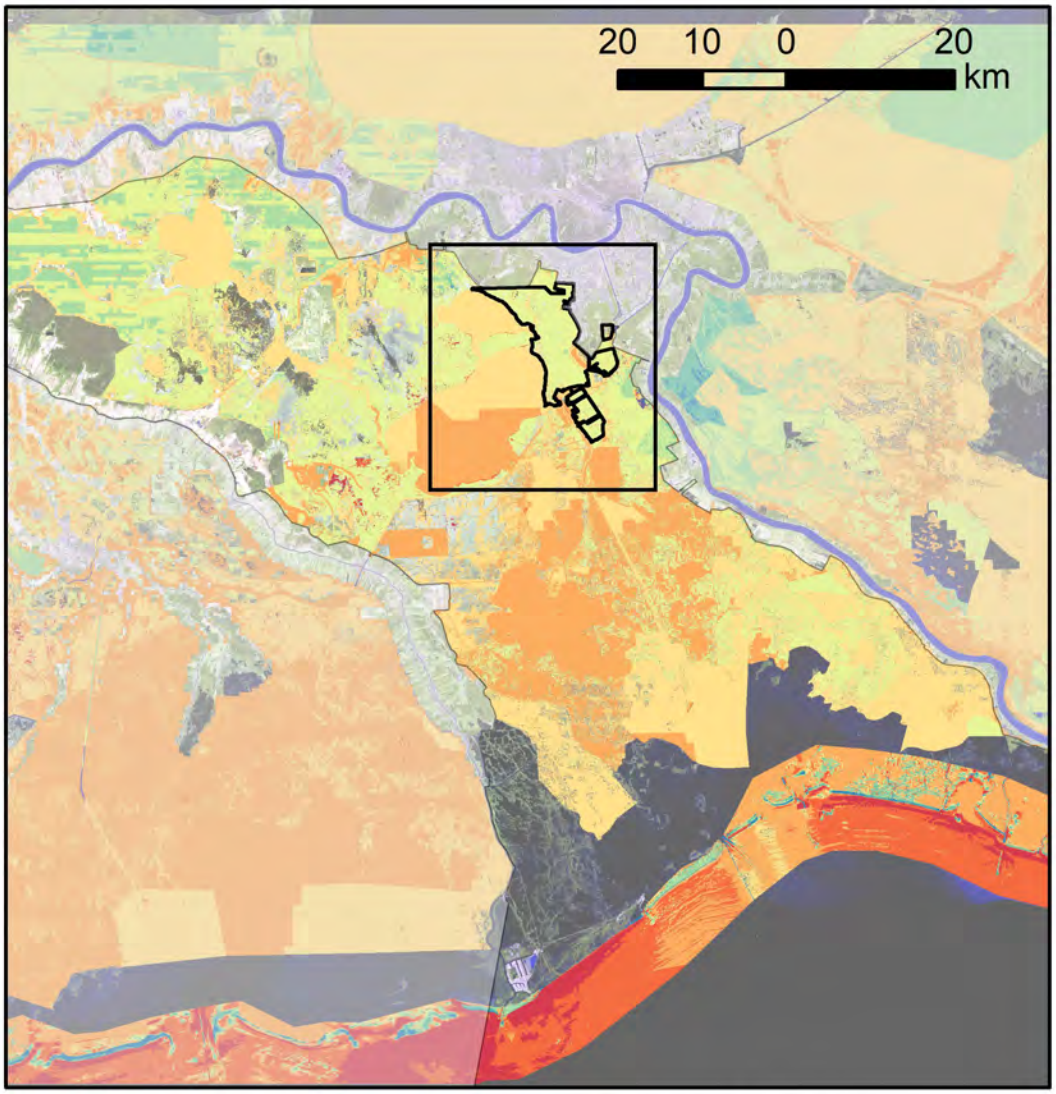
Elev. Change [m]

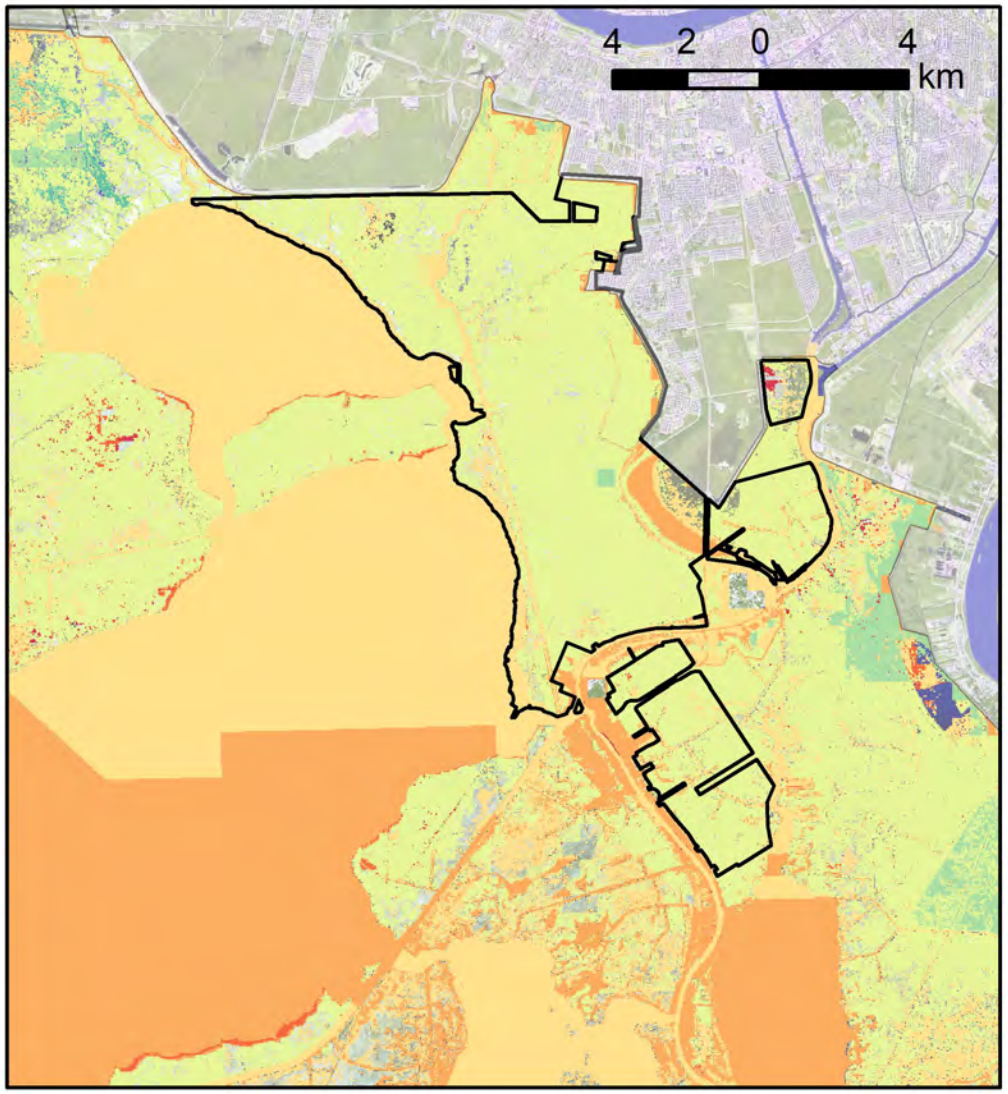
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
W E
S





S08 - G503
Inter.-High
FWOA, no diversions
Year 22

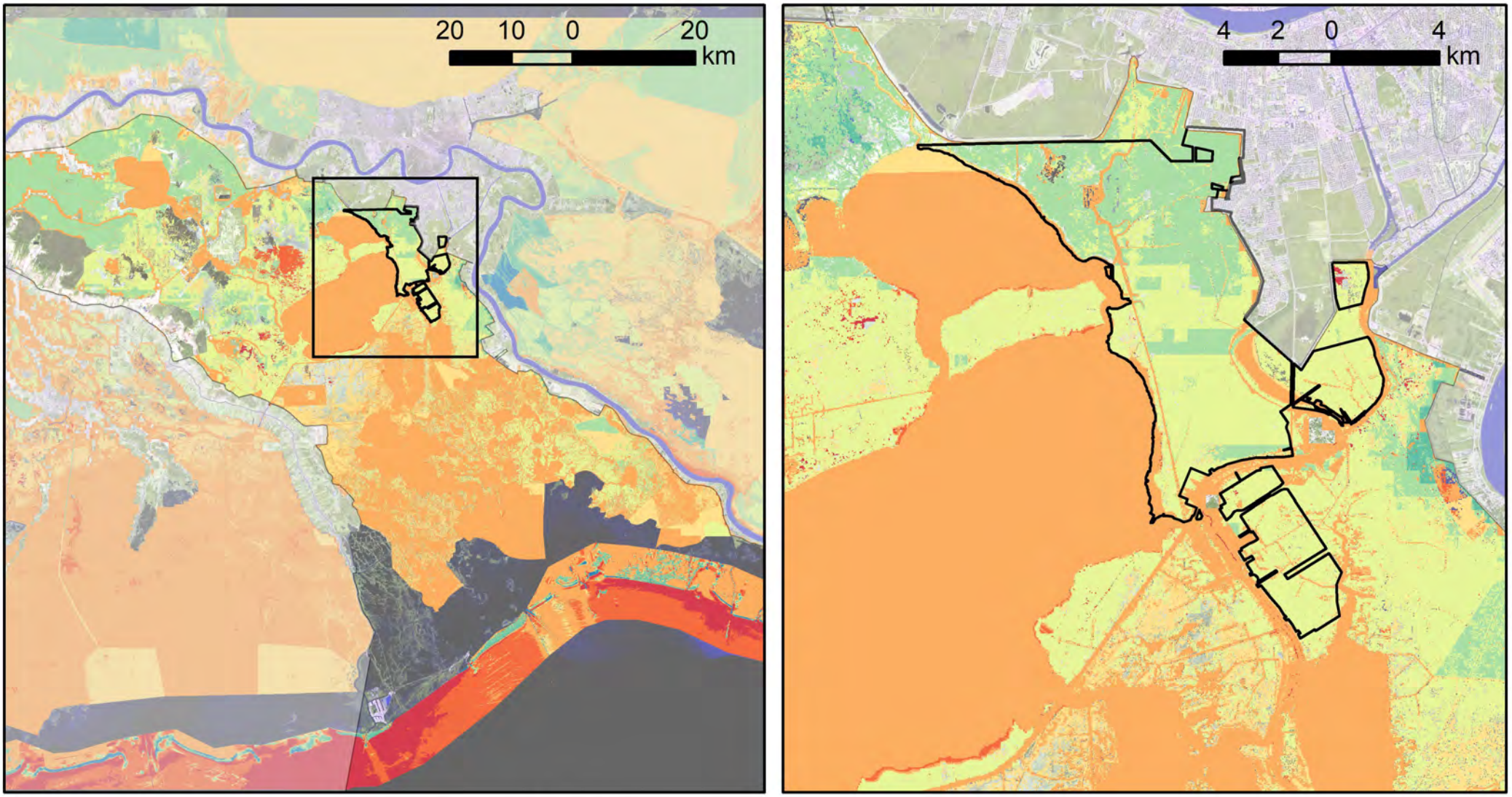
Elev. Change [m]

- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
W E
S



S08 - G503
Inter.-High
FWOA, no diversions
Year 32

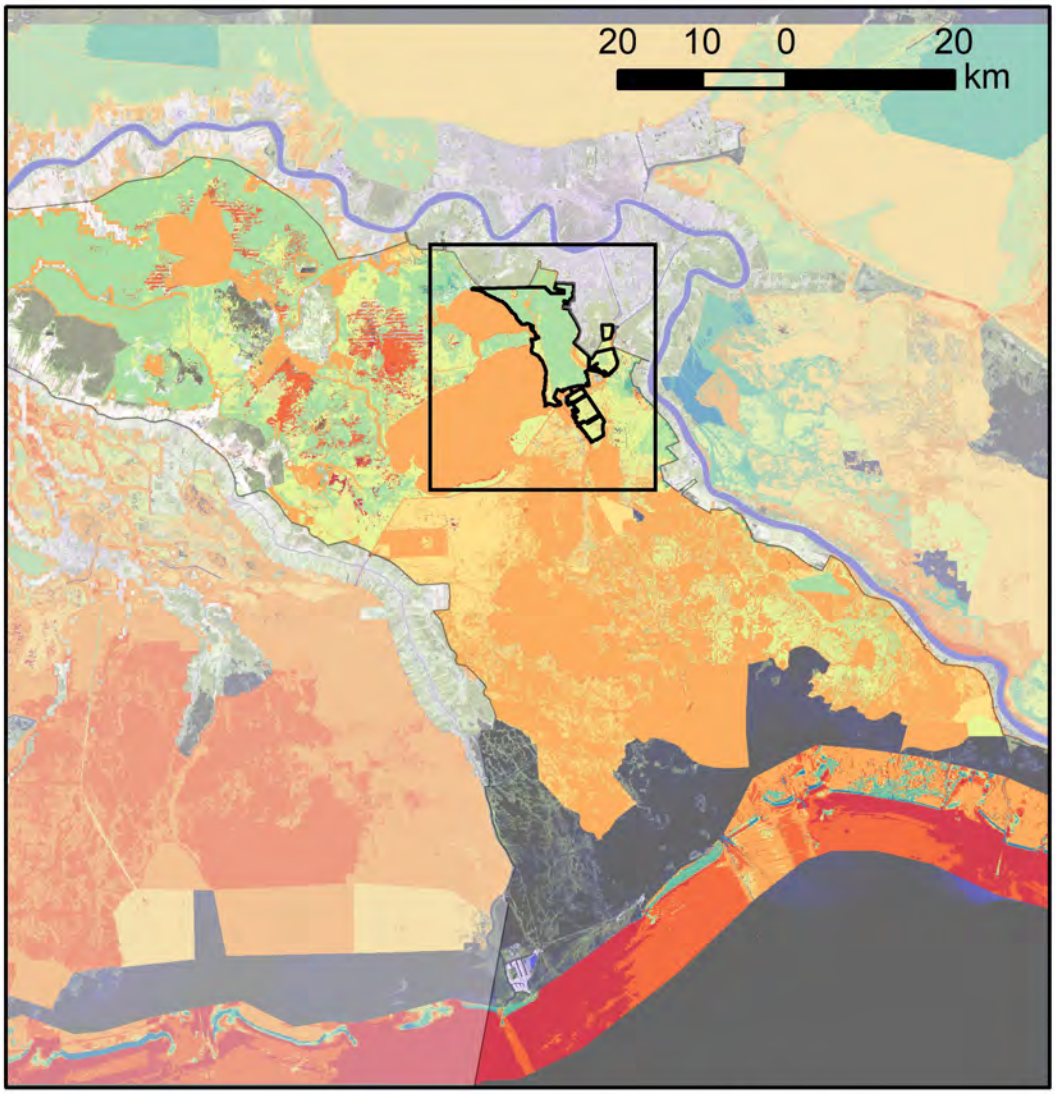
Elev. Change [m]

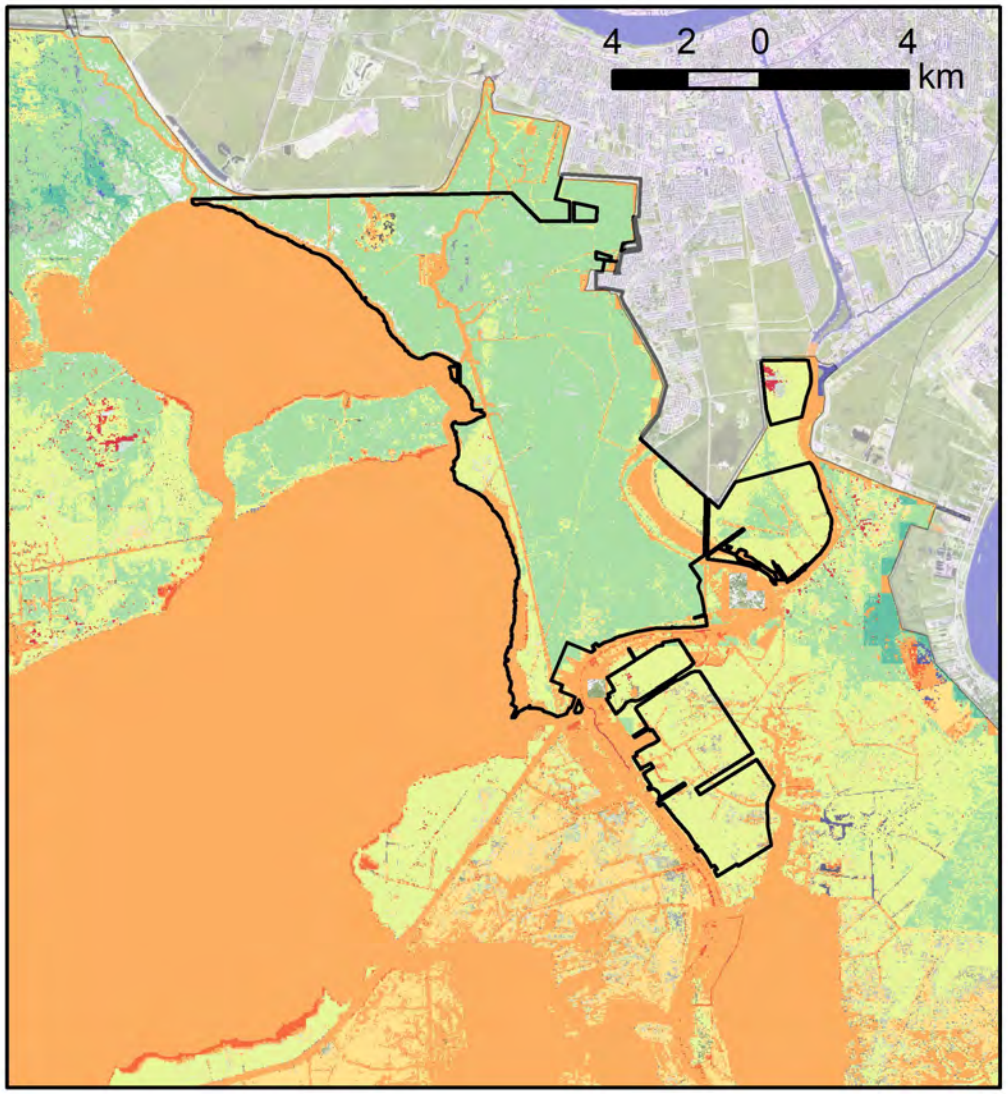
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol







S08 - G503
Inter.-High
FWOA, no diversions
Year 42

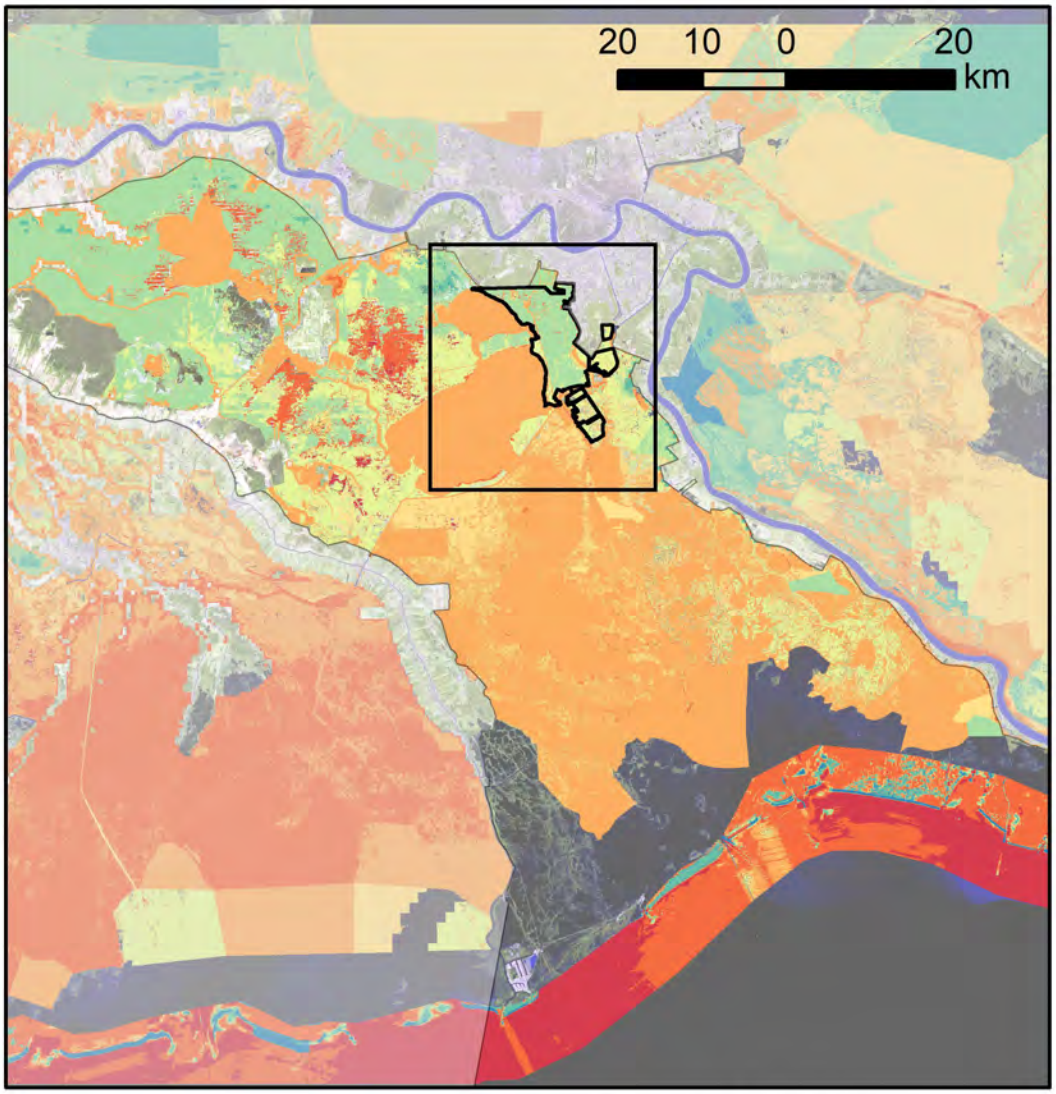
Elev. Change [m]

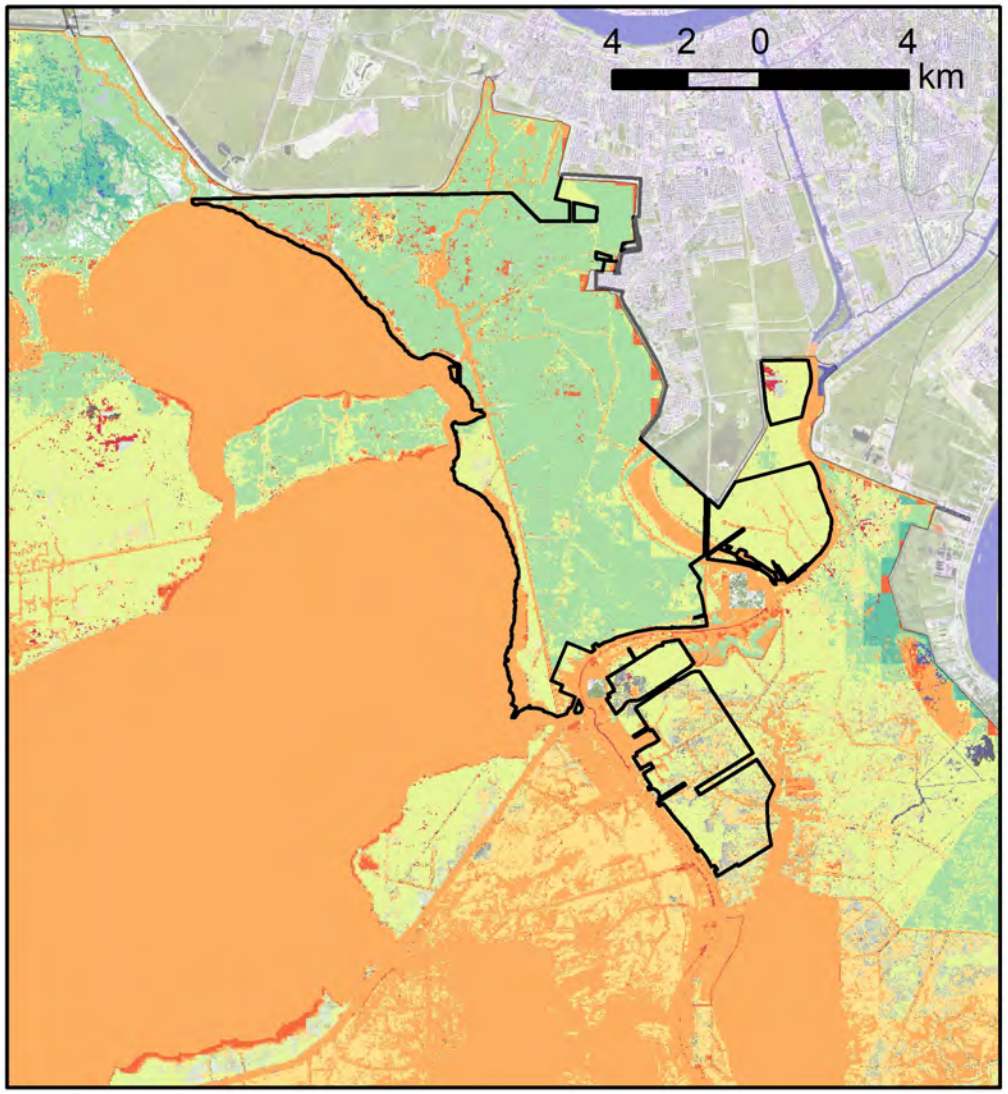
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
W E
S





S08 - G503
Inter.-High
FWOA, no diversions
Year 51

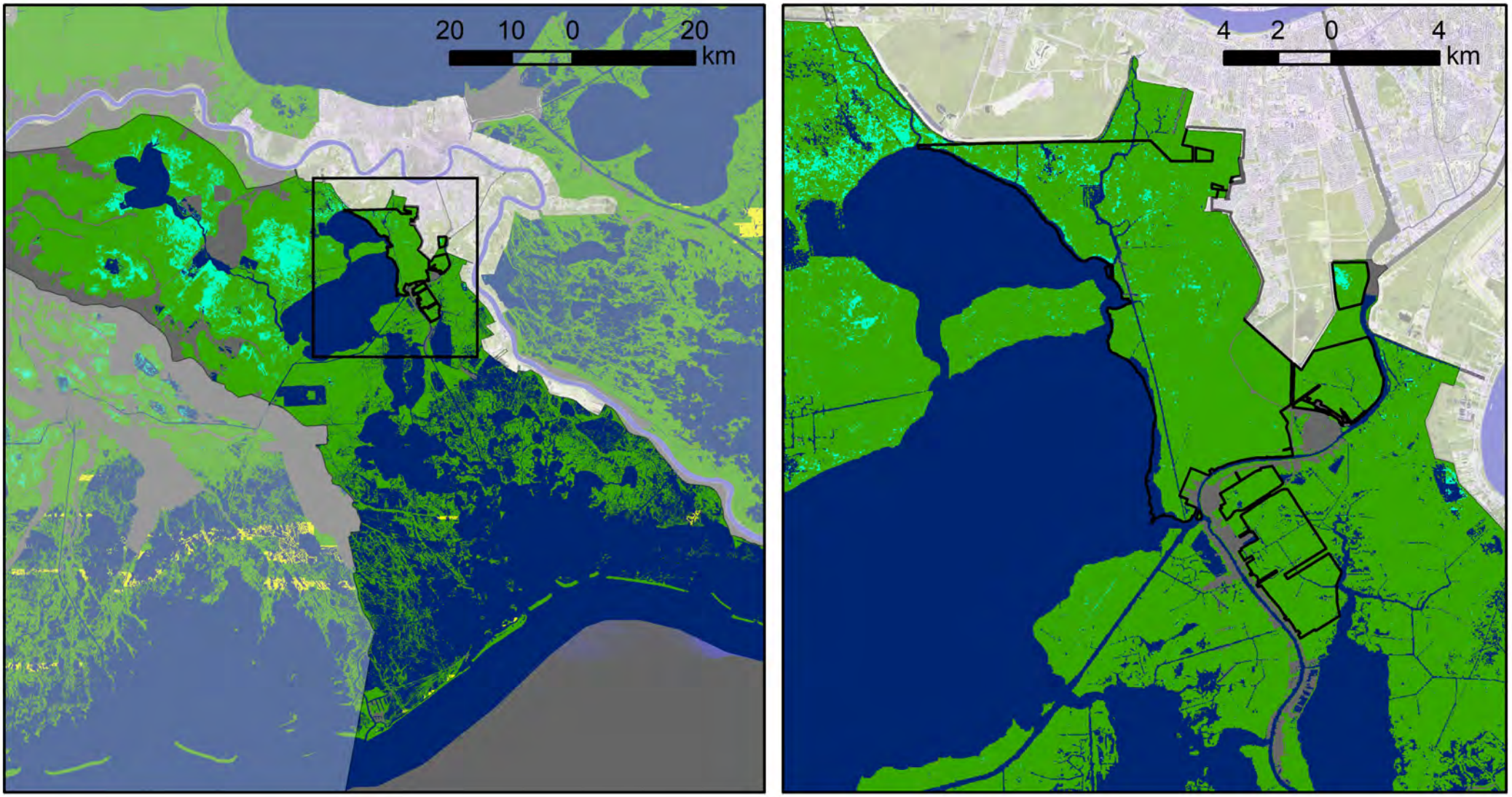
Elev. Change [m]

- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
W E
S



S08 - G603
Inter.-High
Mid-Barataria Only
Year 02

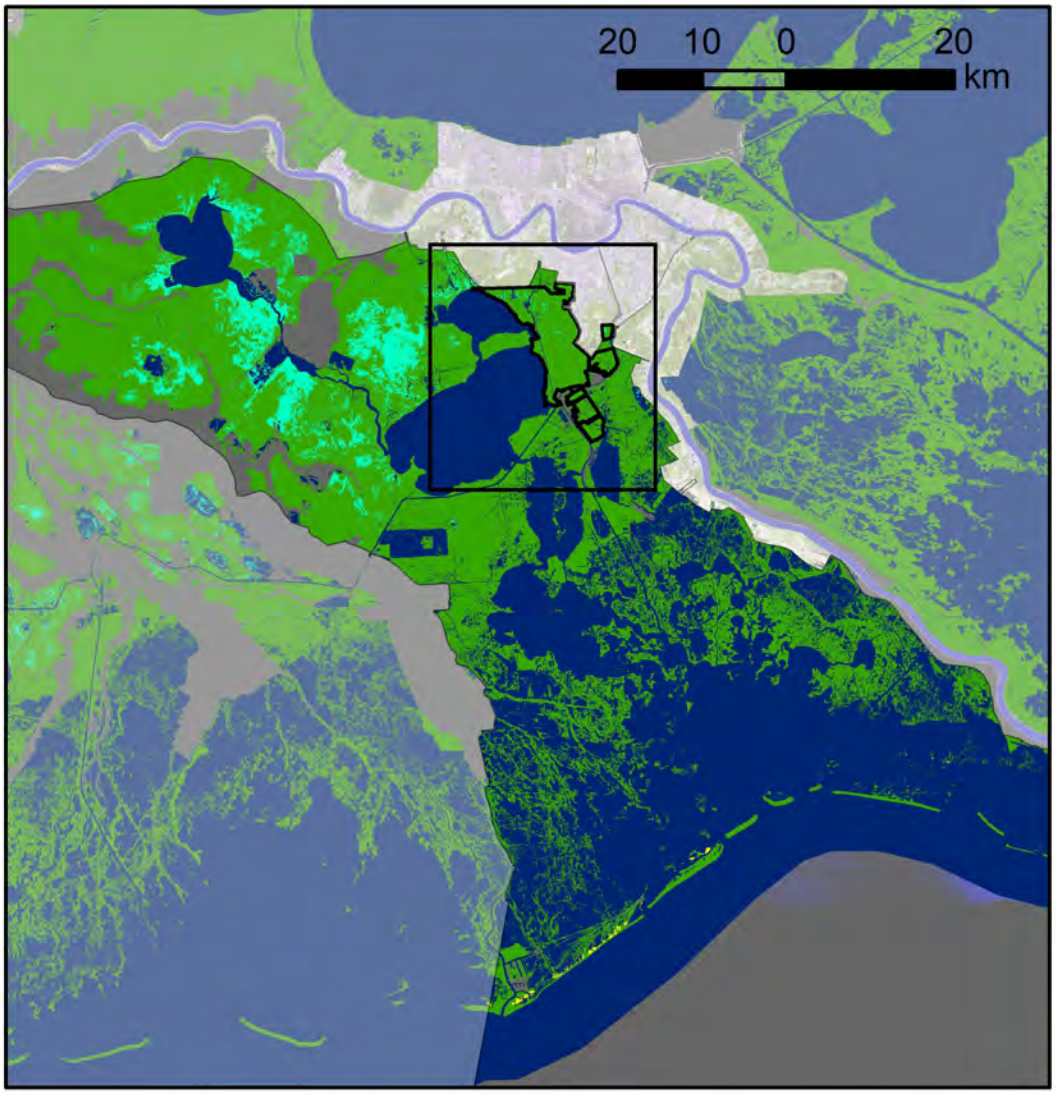
Land Type

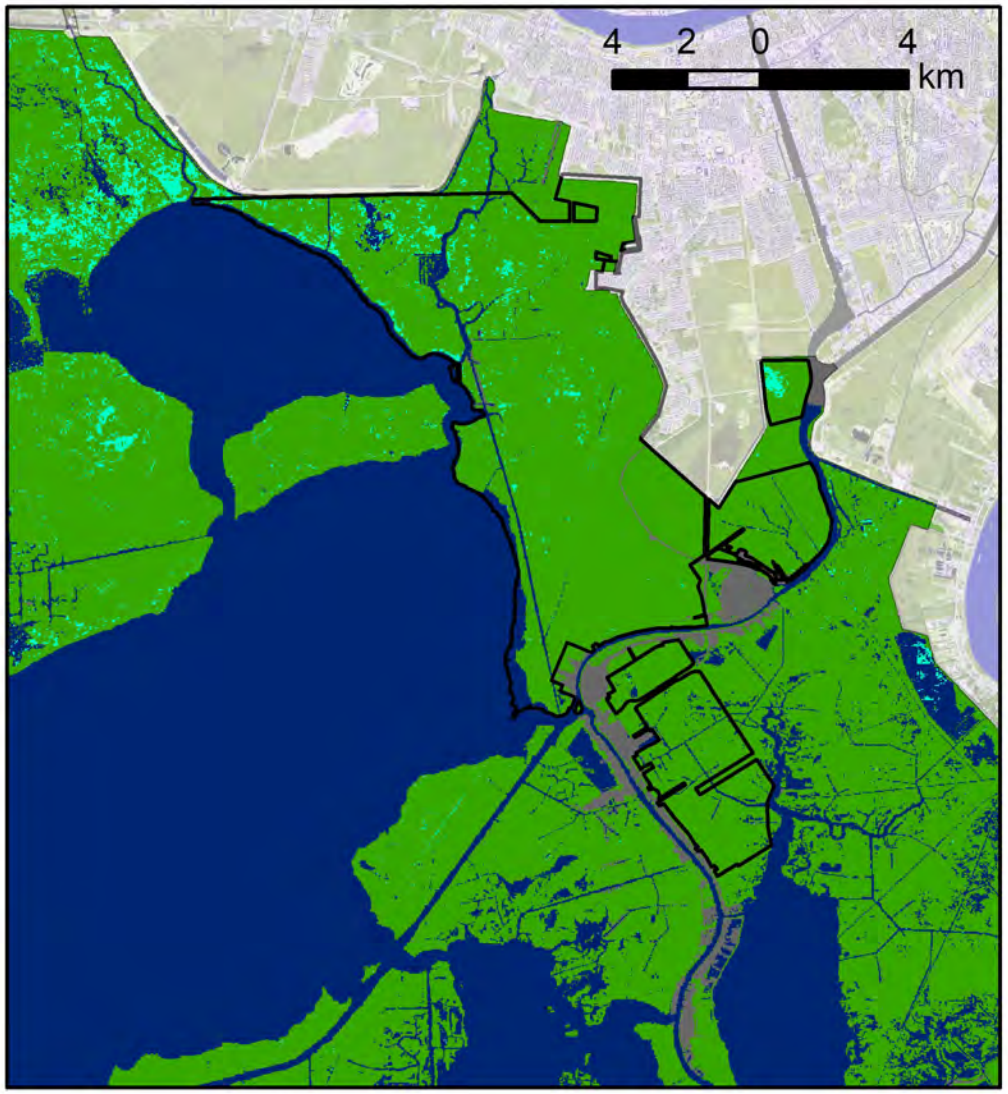
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S08 - G603
Inter.-High
Mid-Barataria Only
Year 12

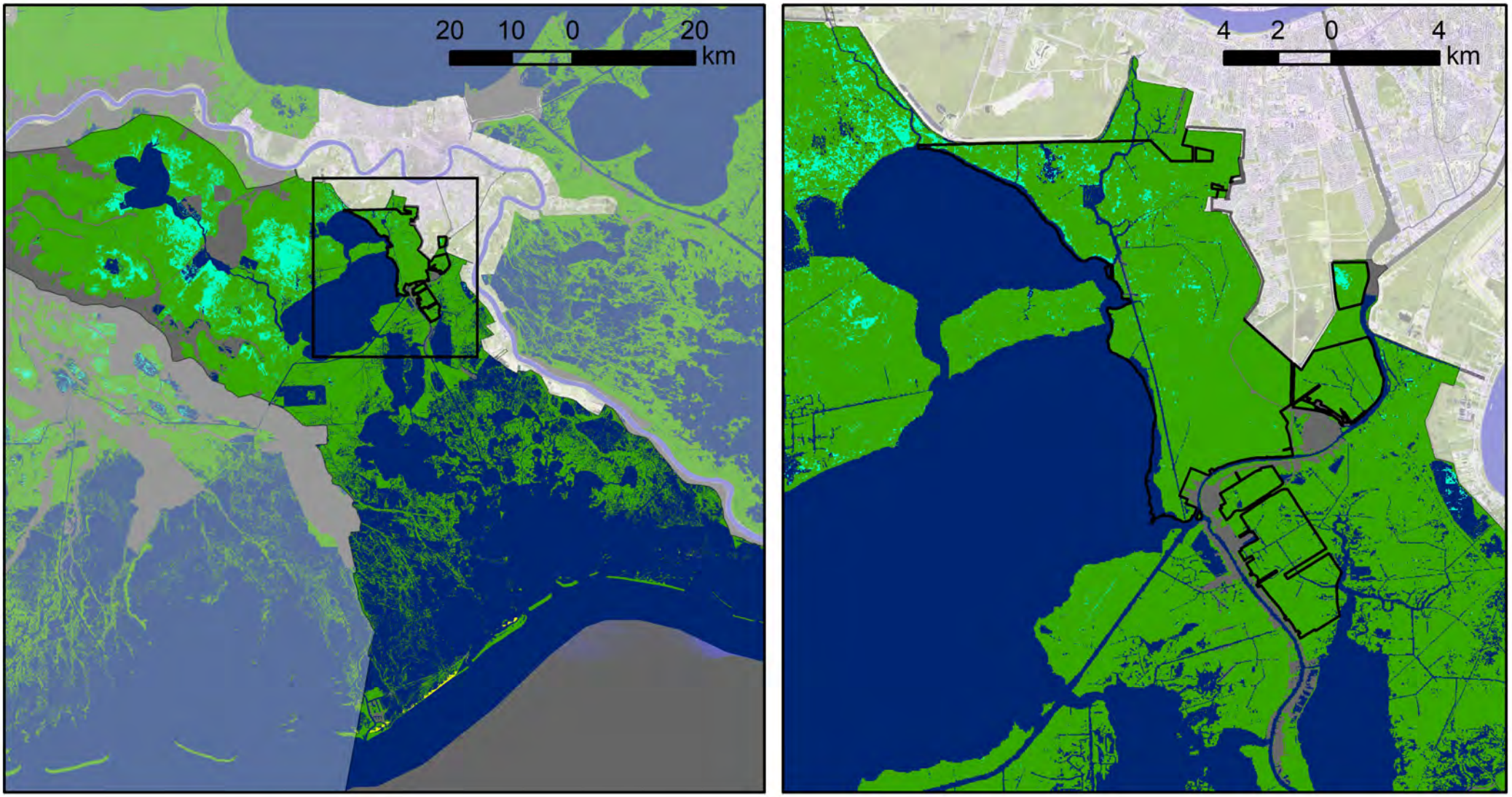
Land Type

- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol





S08 - G603
Inter.-High
Mid-Barataria Only
Year 22

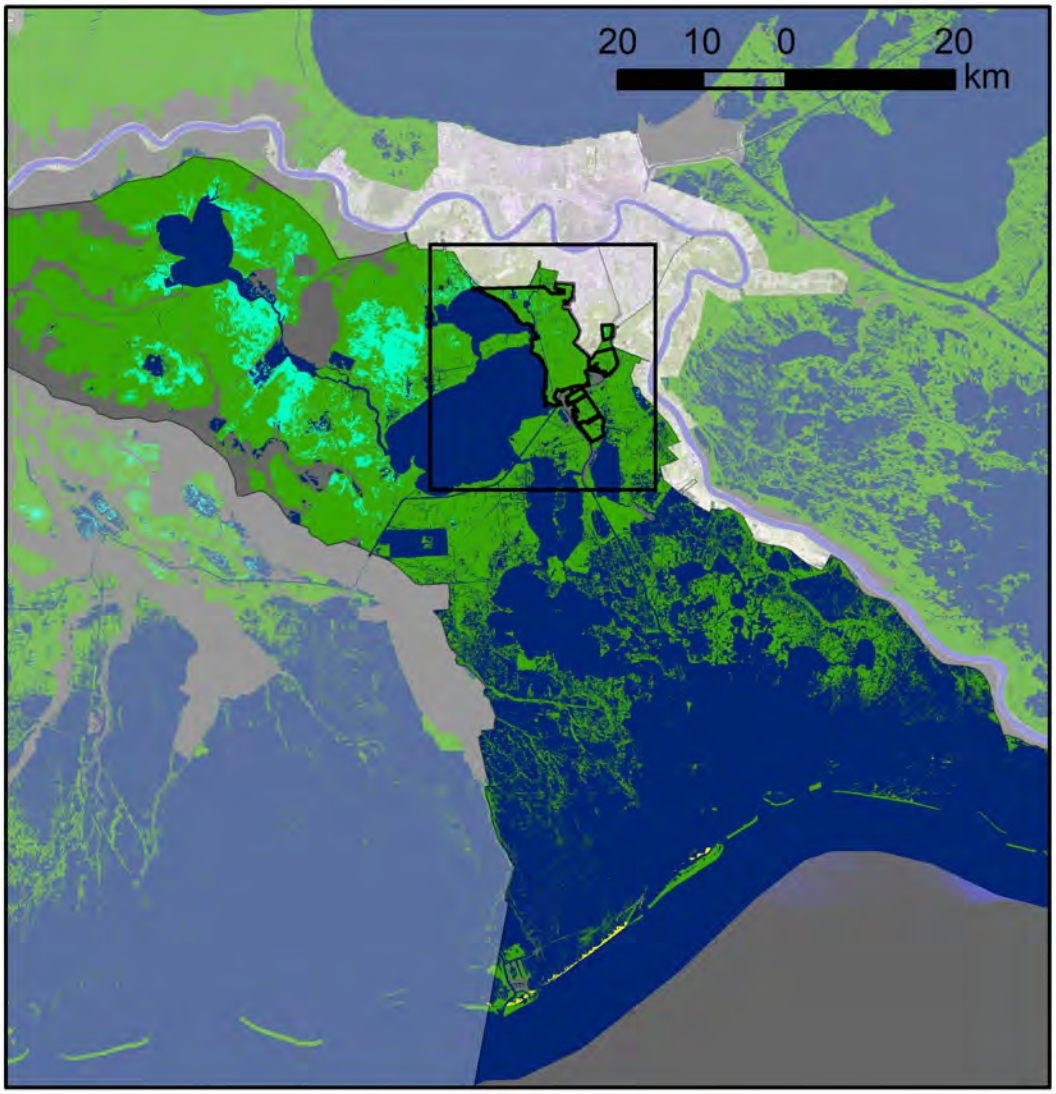
Land Type

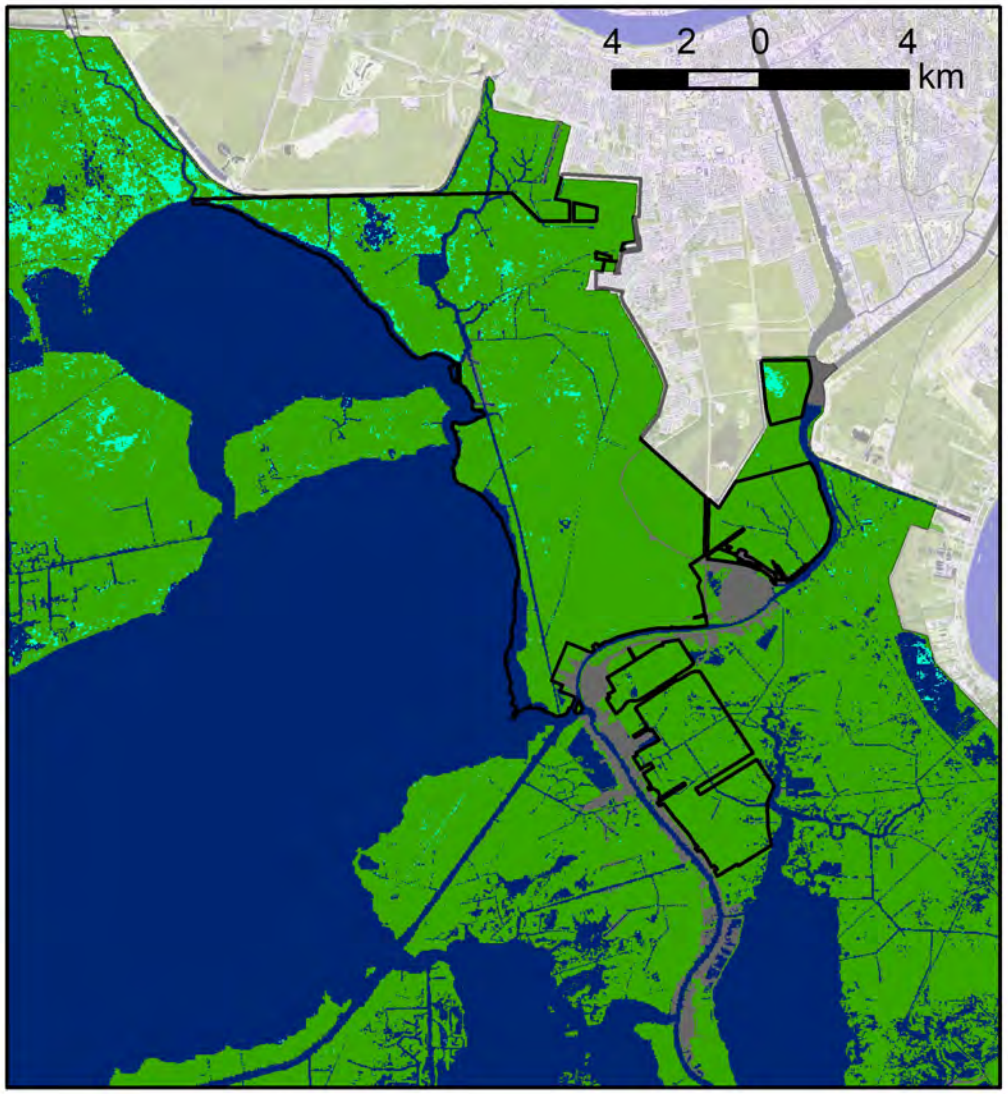
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S08 - G603
Inter.-High
Mid-Barataria Only
Year 32

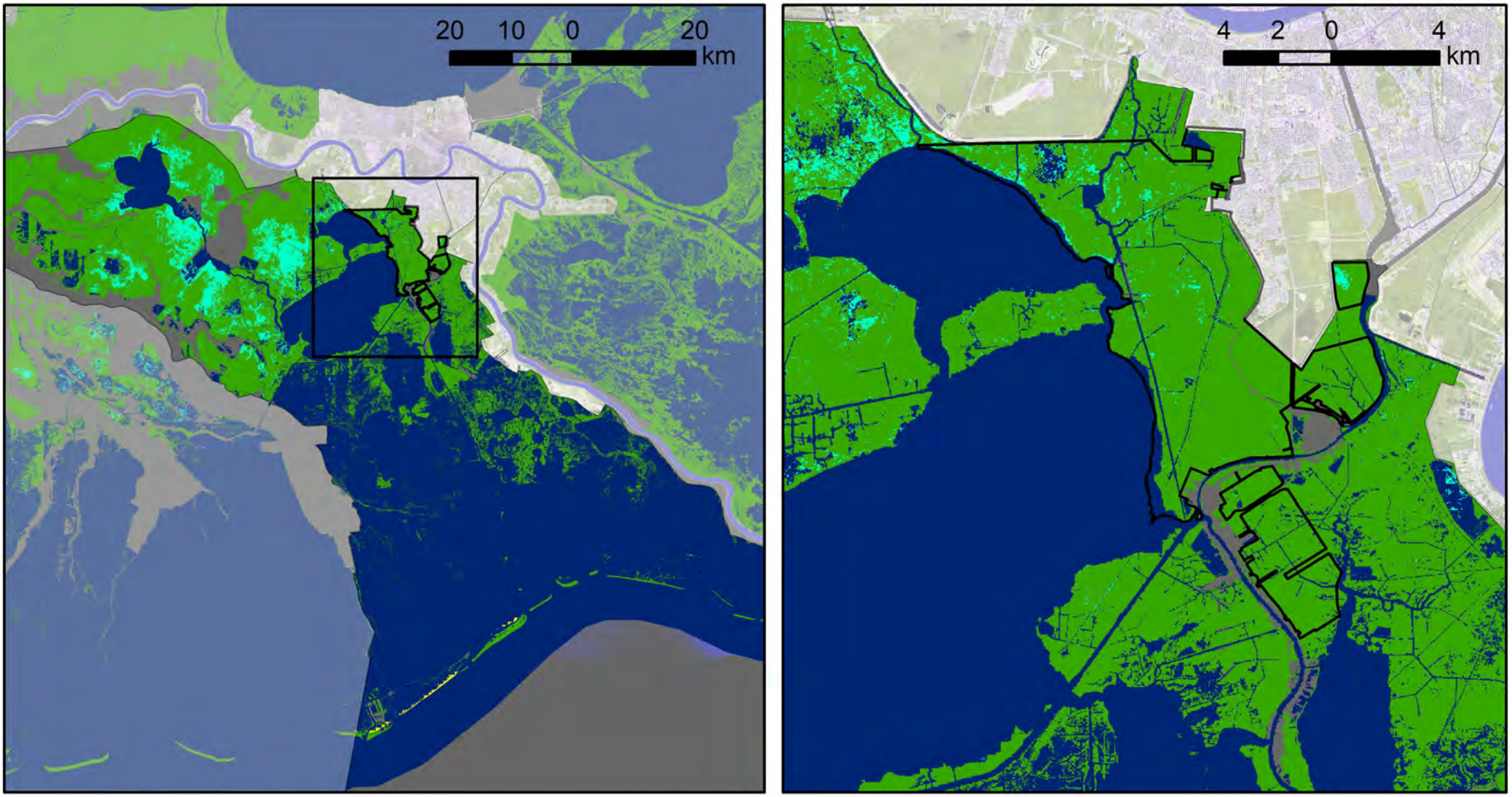
Land Type

- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol





S08 - G603
Inter.-High
Mid-Barataria Only
Year 42

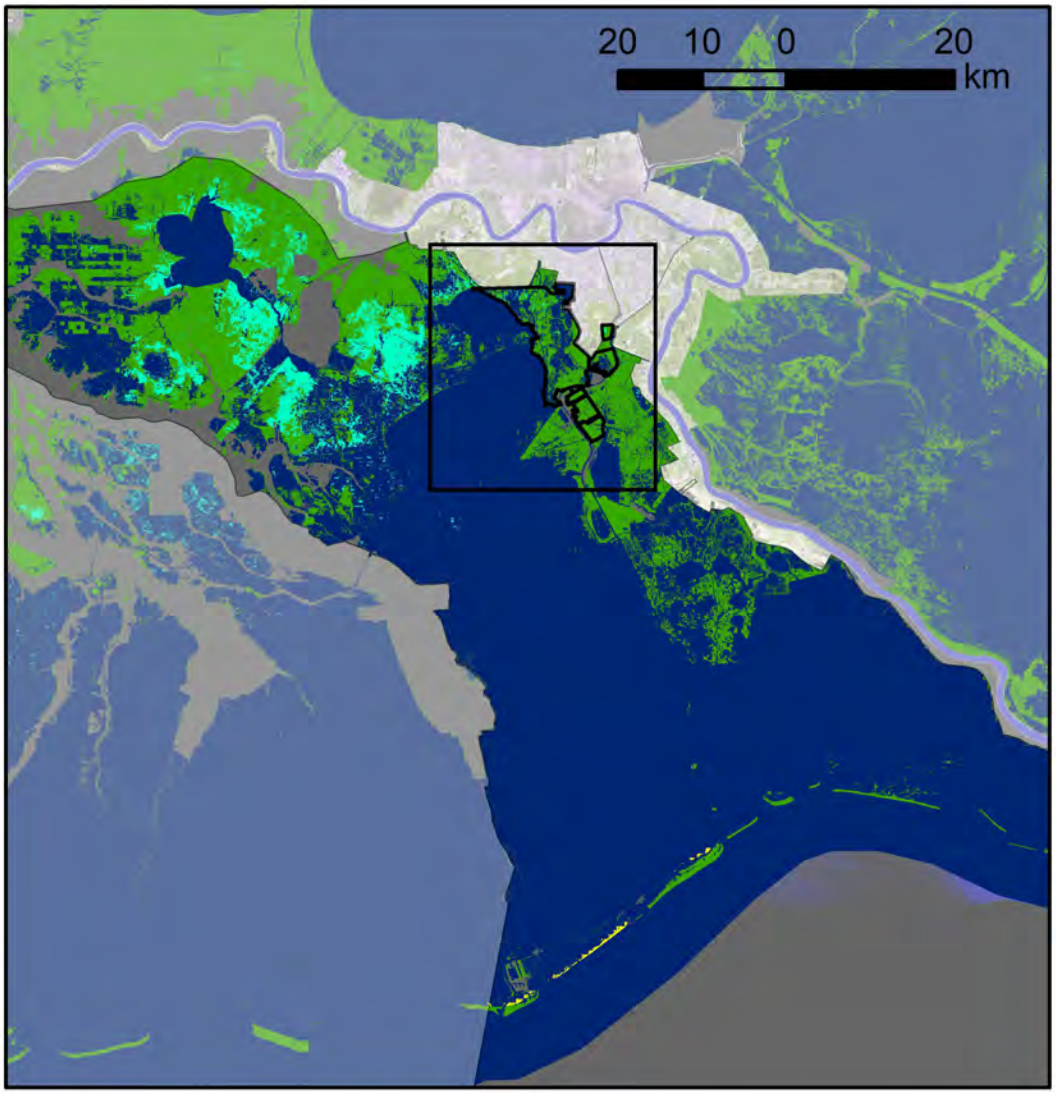
Land Type

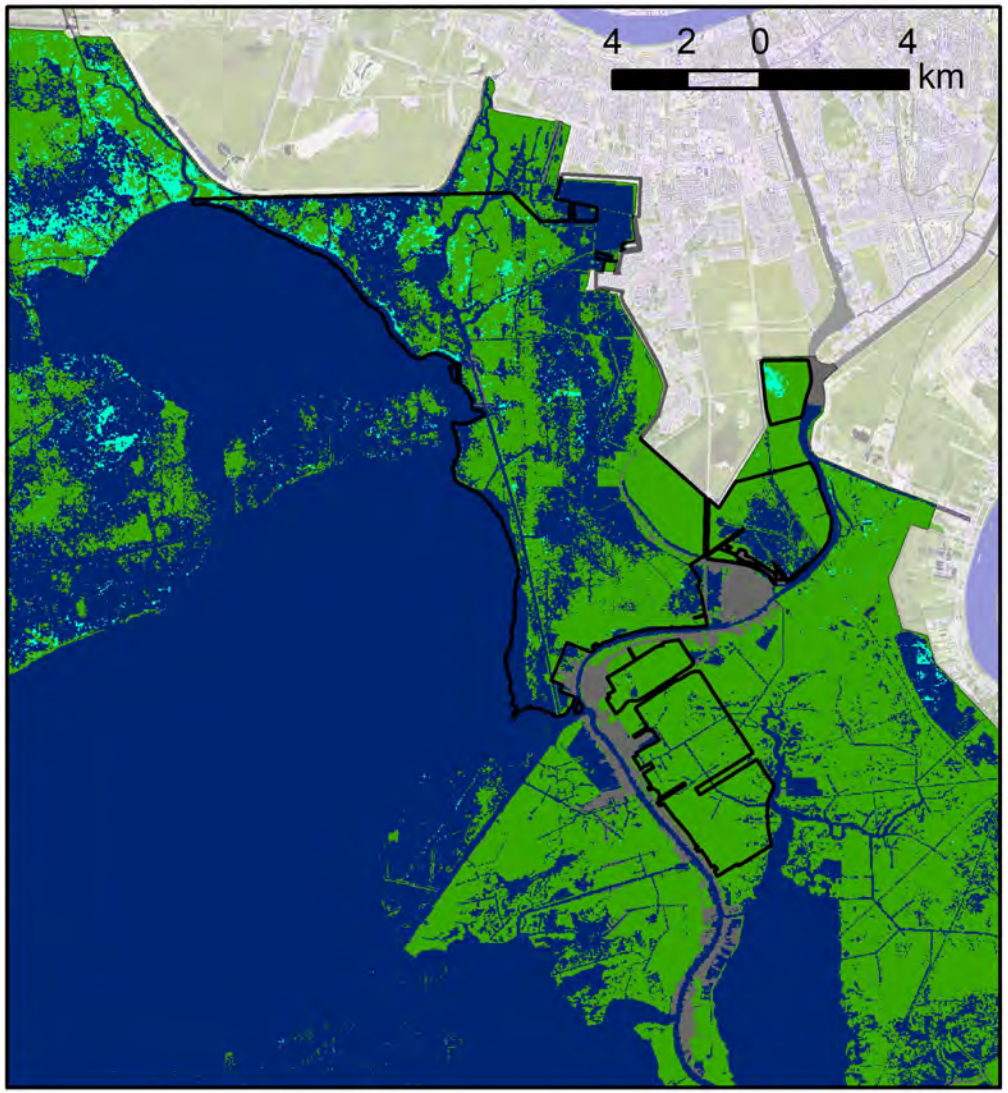
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S08 - G603
Inter.-High
Mid-Barataria Only
Year 51

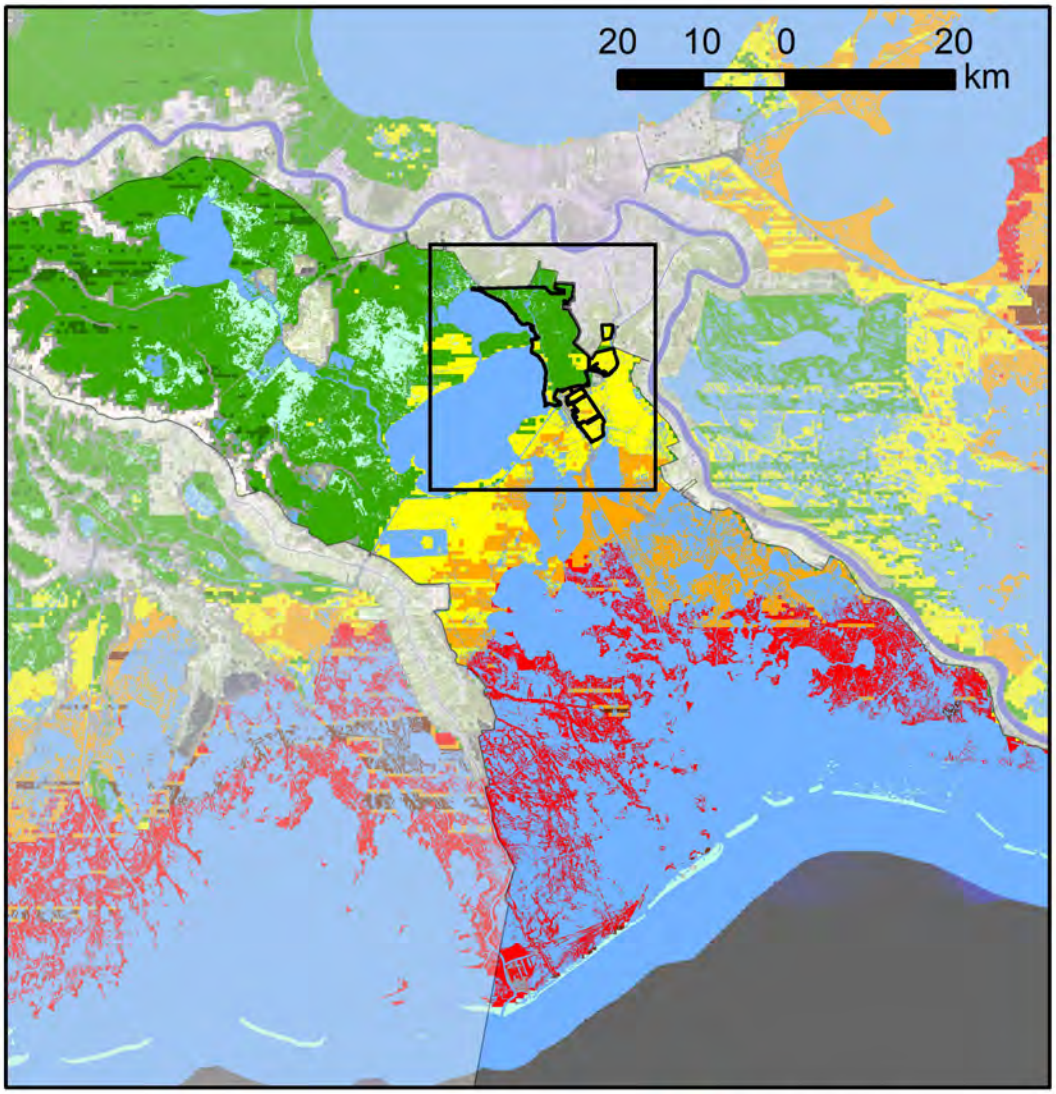
Land Type

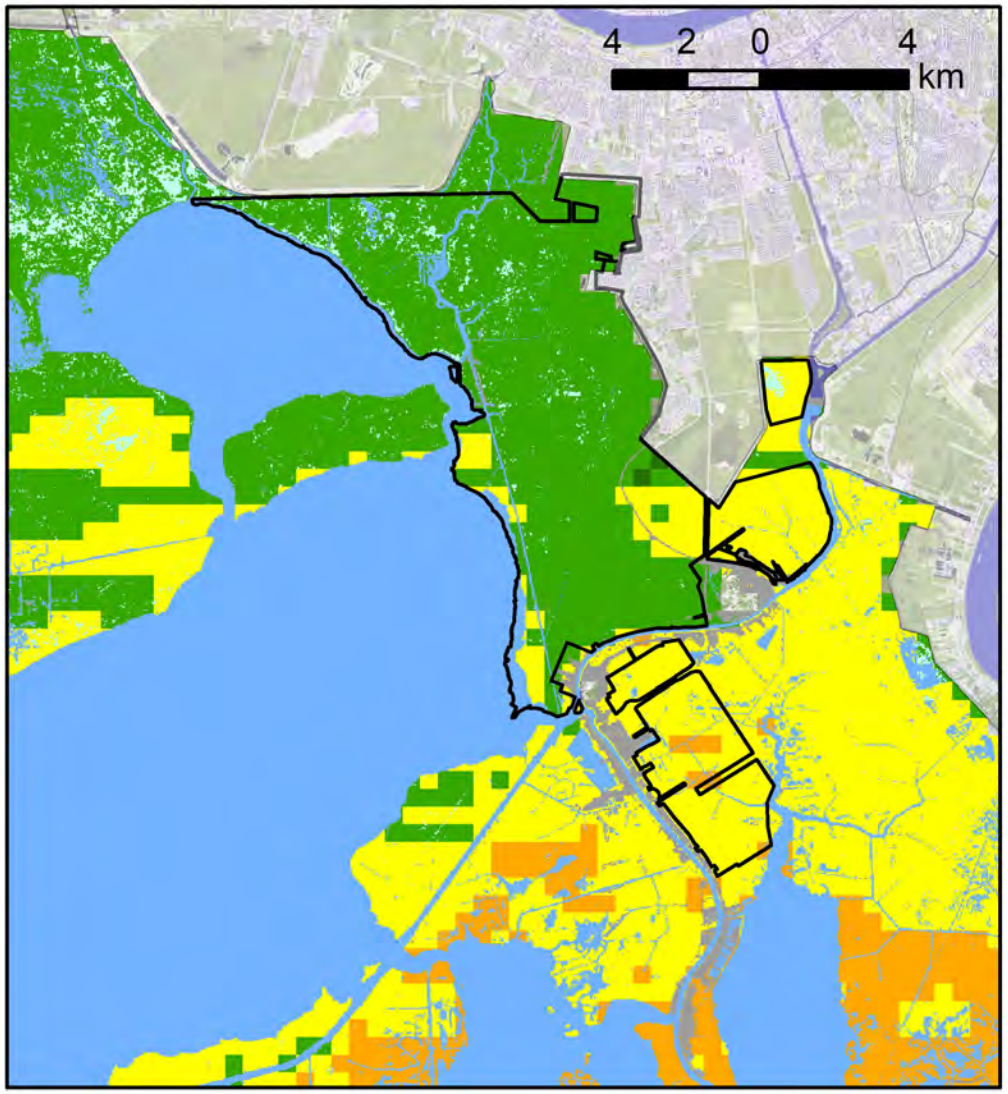
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S08 - G603
Inter.-High
Mid-Barataria Only
Year 02

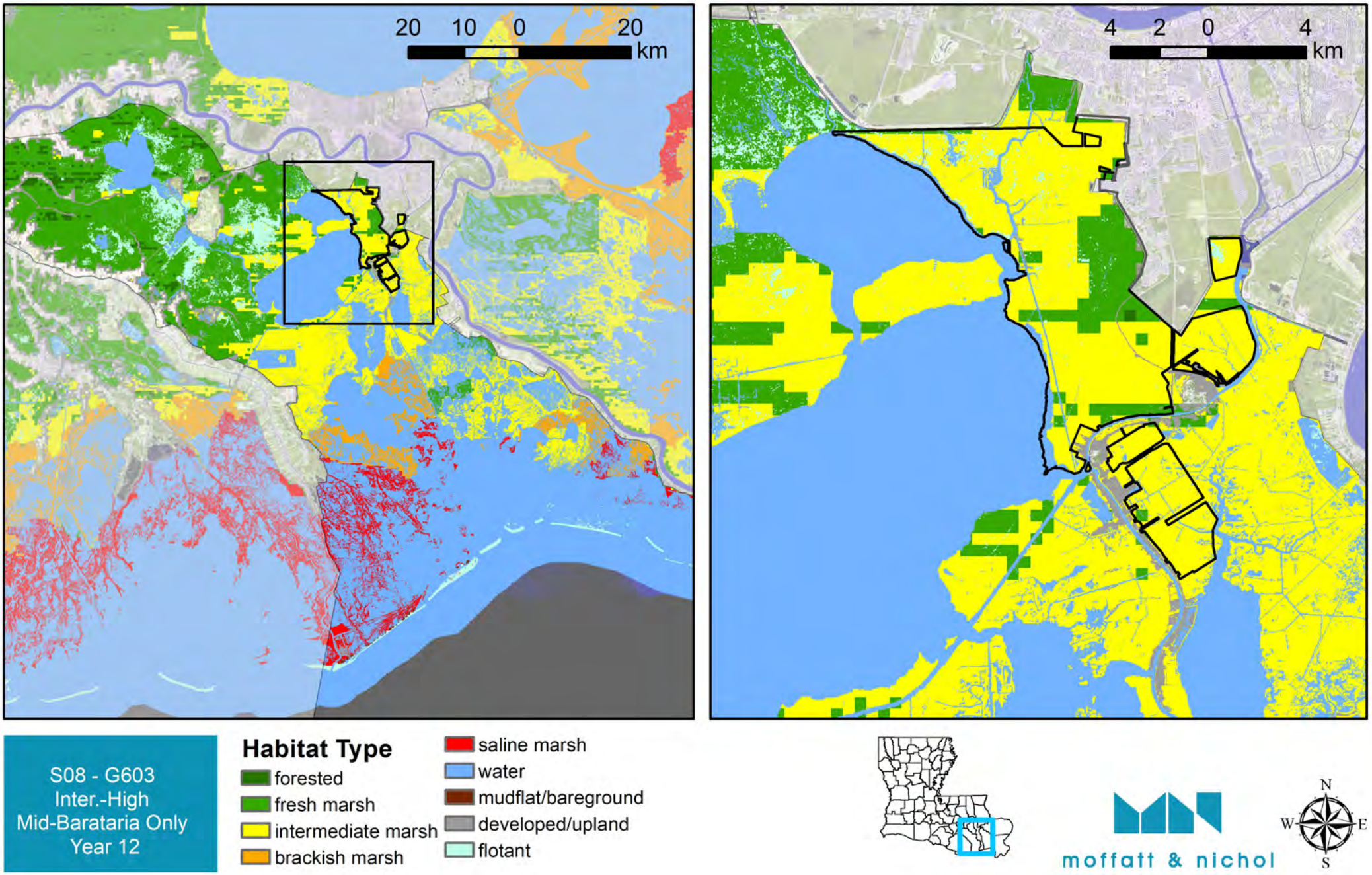
Habitat Type

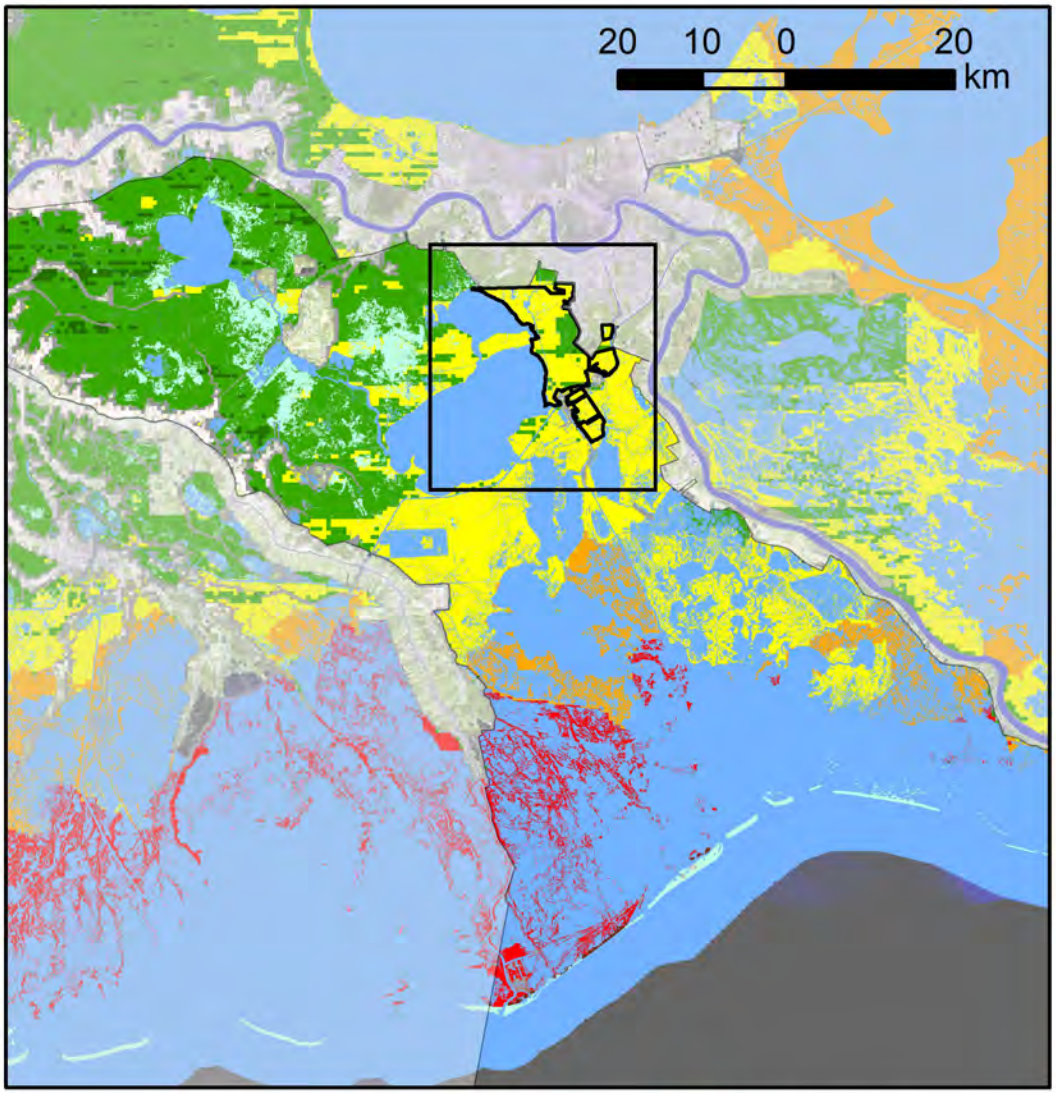
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant

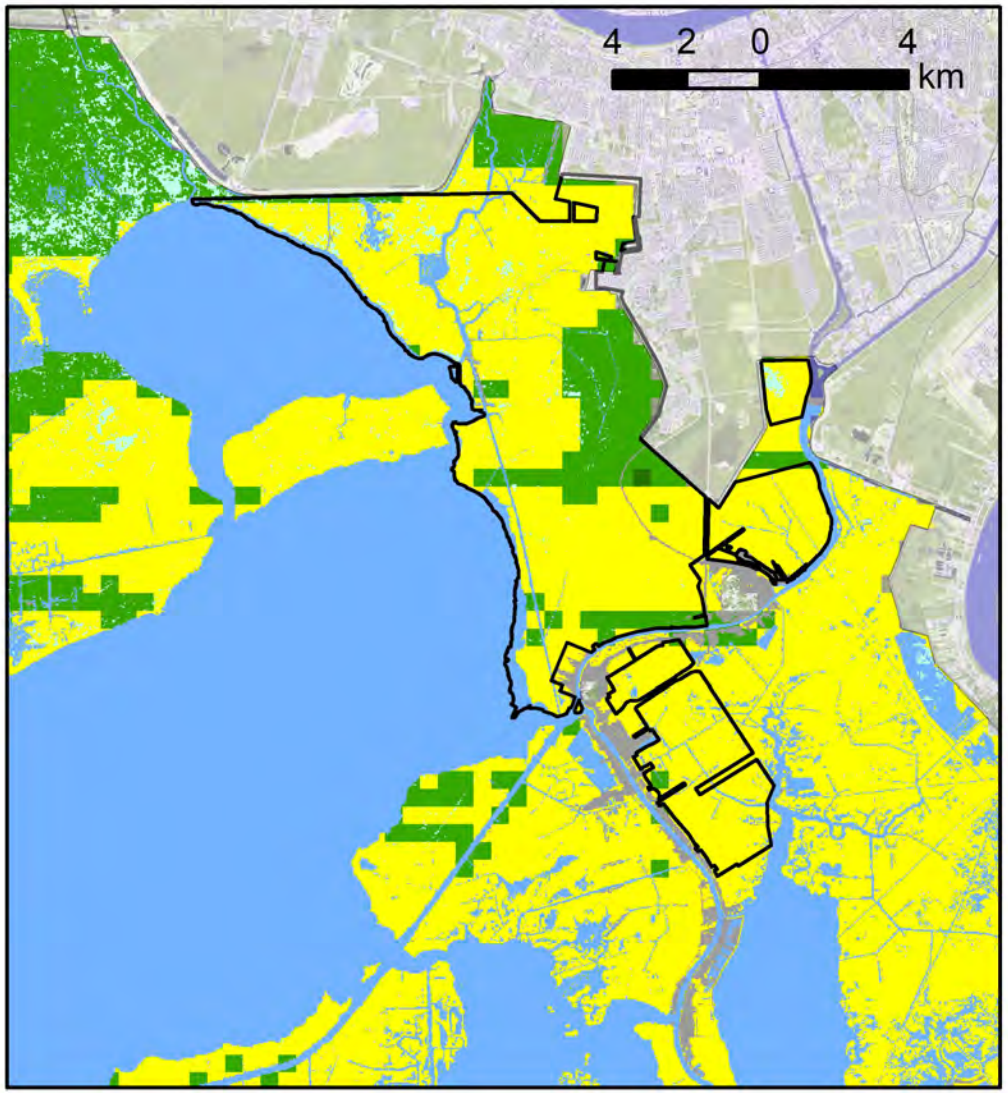


moffatt & nichol




20 10 0 20
km
4 2 0 4
km
S08 - G603
Inter.-High
Mid-Barataria Only
Year 12
Habitat Type
forested
fresh marsh
intermediate marsh
brackish marsh
saline marsh
water
mudflat/bareground
developed/upland
flotant
moffatt & nichol
N
W
E
S





S08 - G603
Inter.-High
Mid-Barataria Only
Year 22

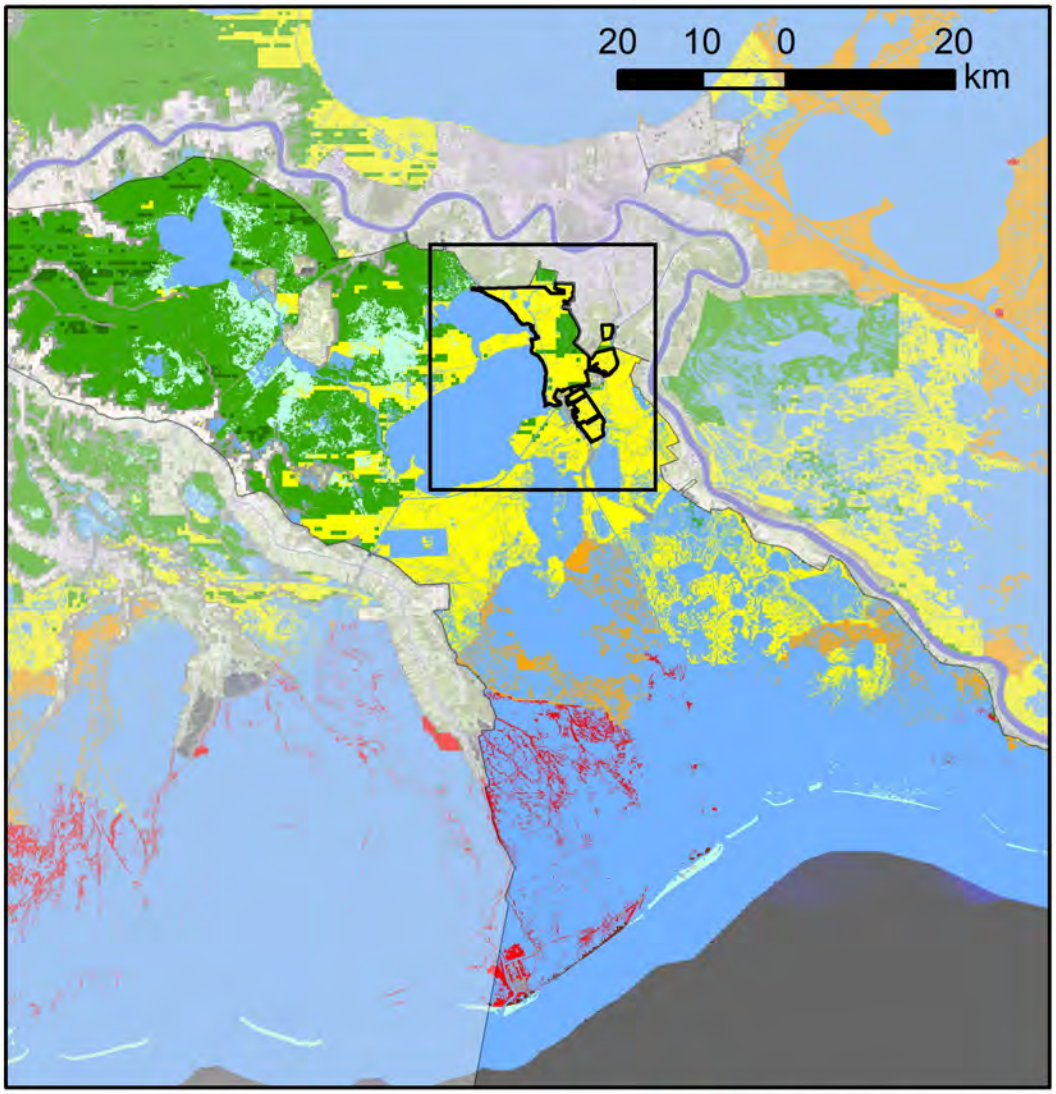
Habitat Type

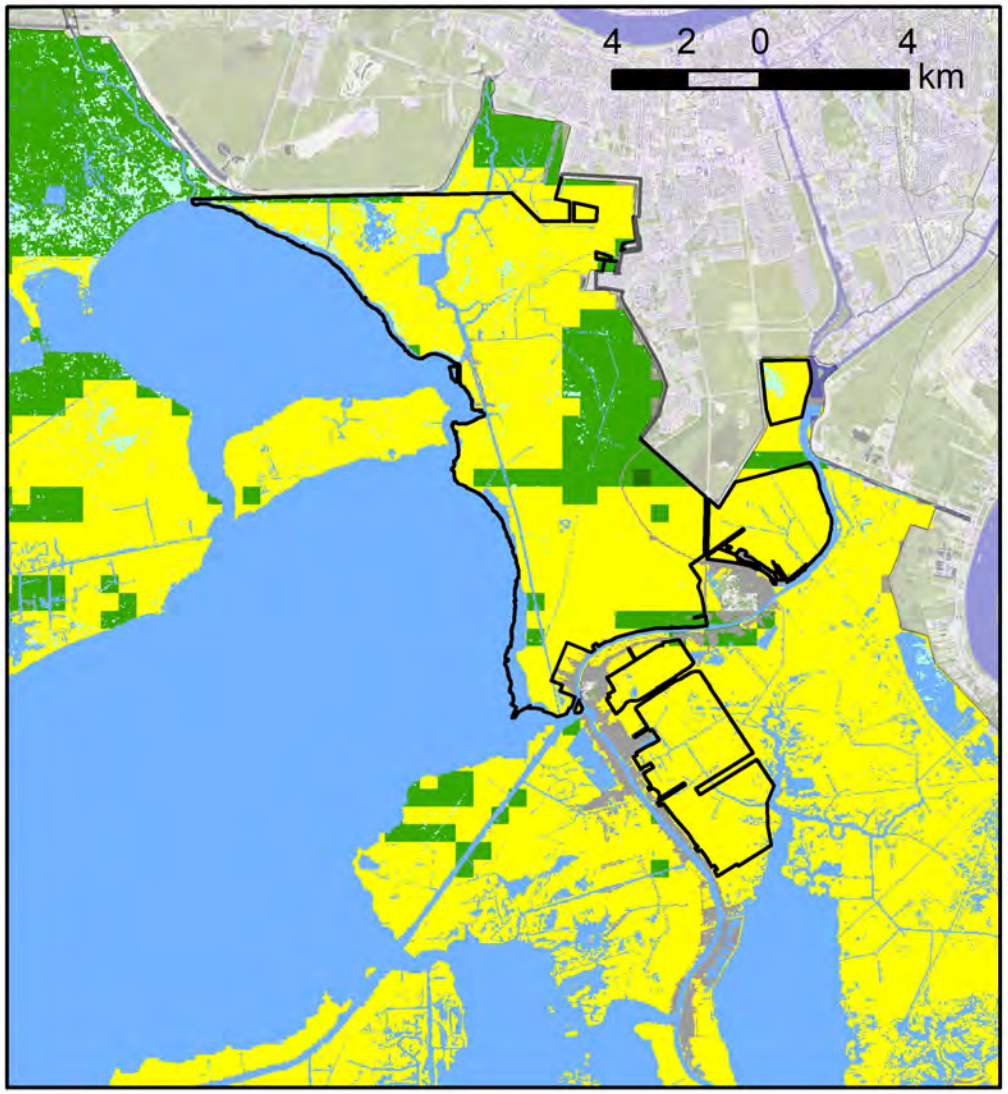
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S08 - G603
Inter.-High
Mid-Barataria Only
Year 32

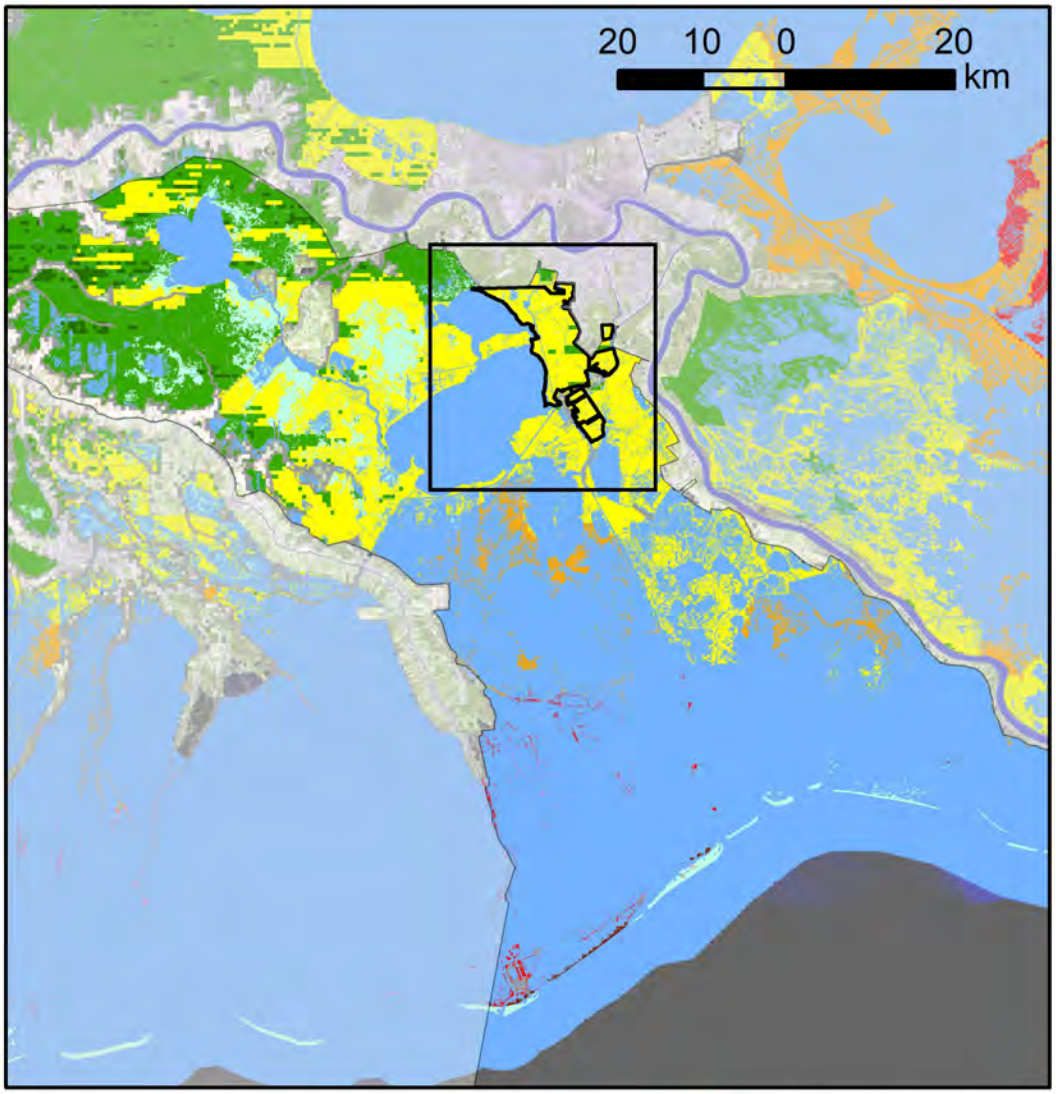
Habitat Type

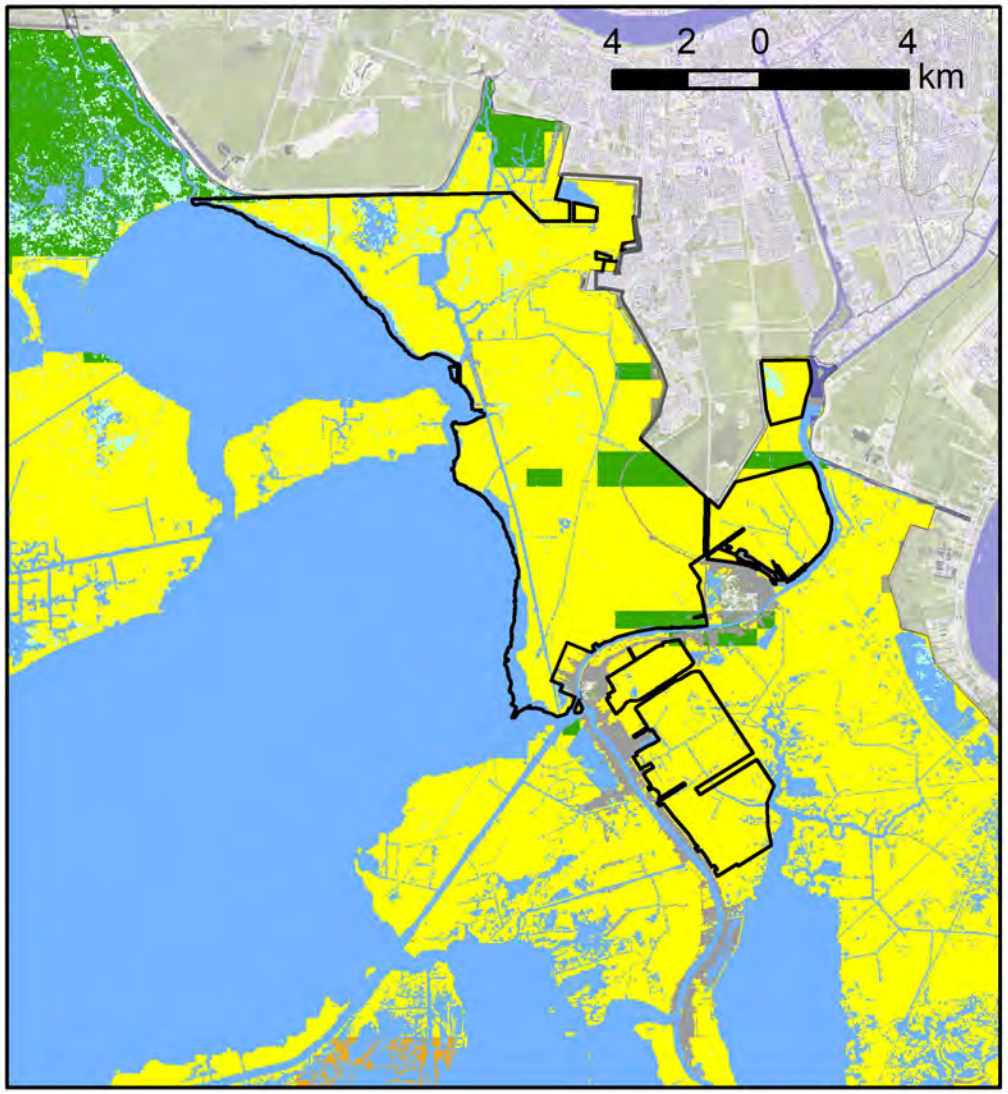
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S08 - G603
Inter.-High
Mid-Barataria Only
Year 42

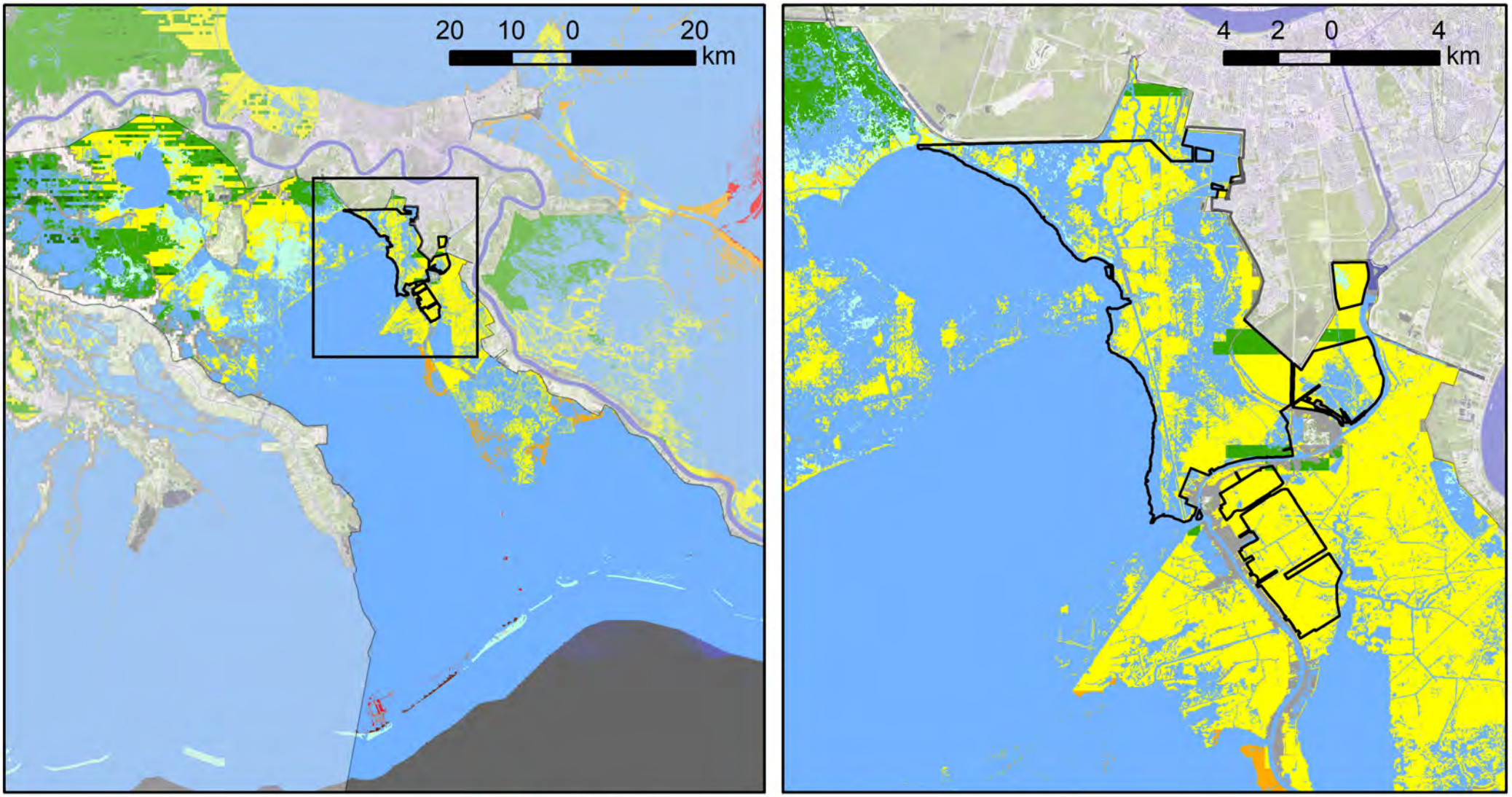
Habitat Type

- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol





S08 - G603
Inter.-High
Mid-Barataria Only
Year 51

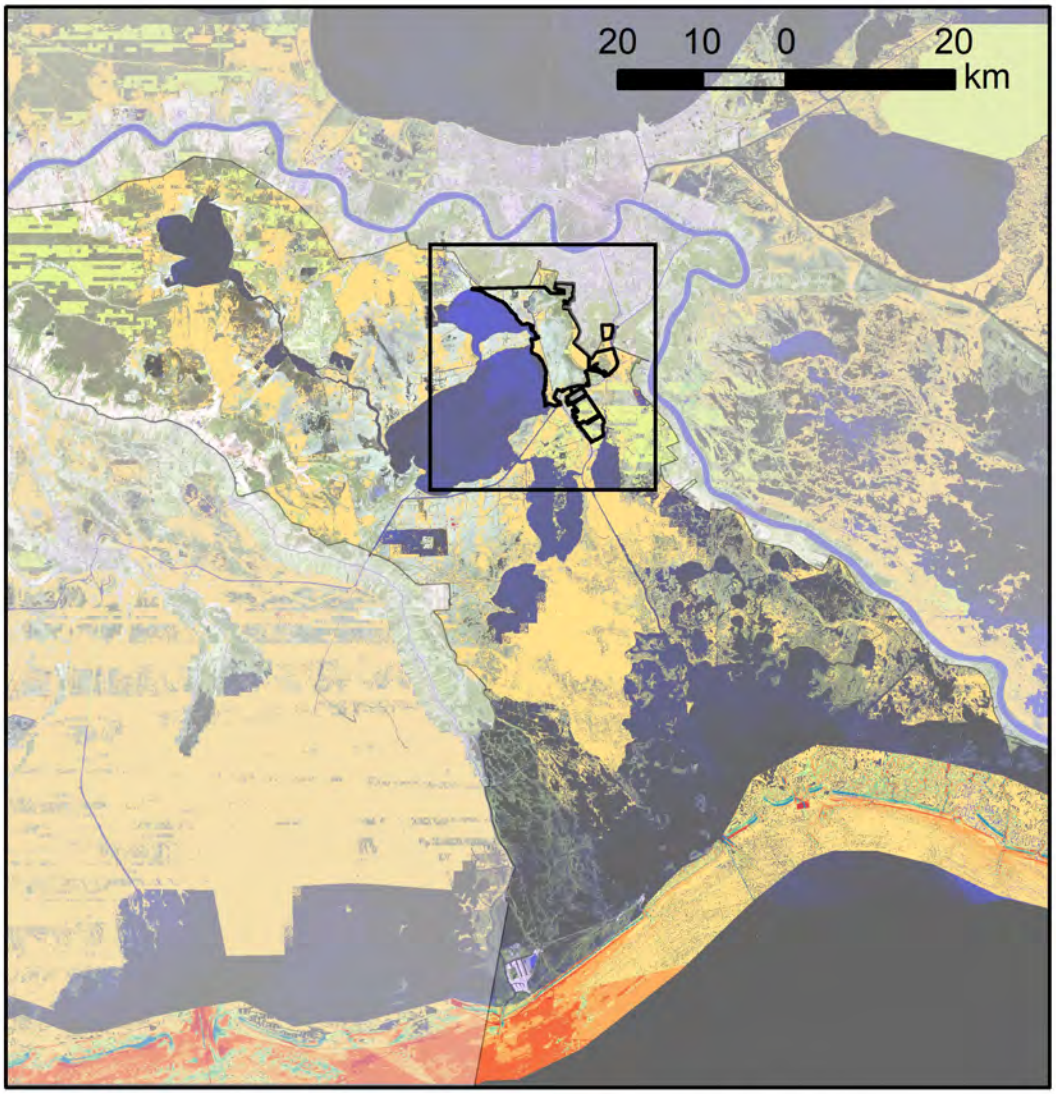
Habitat Type

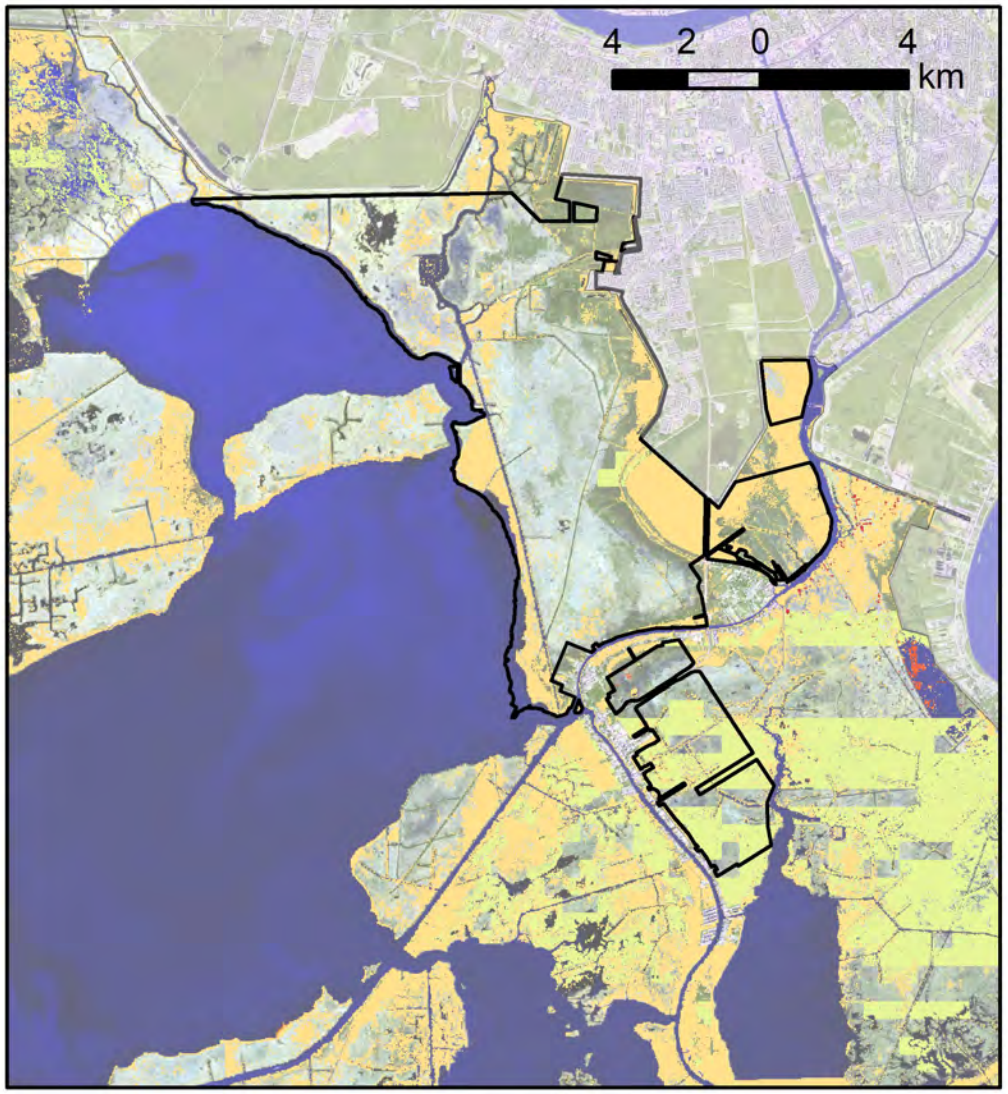
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S08 - G603
Inter.-High
Mid-Barataria Only
Year 02

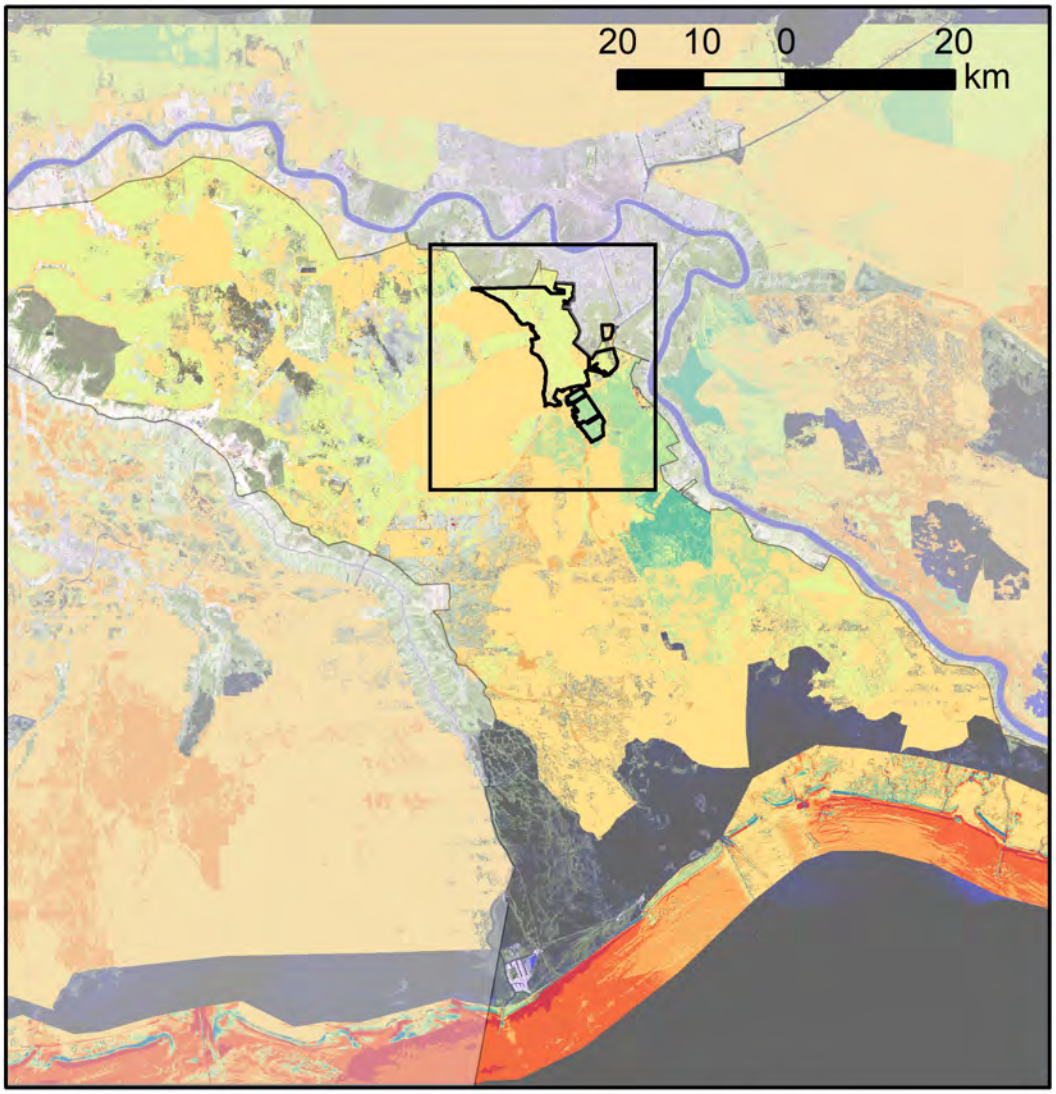
Elev. Change [m]

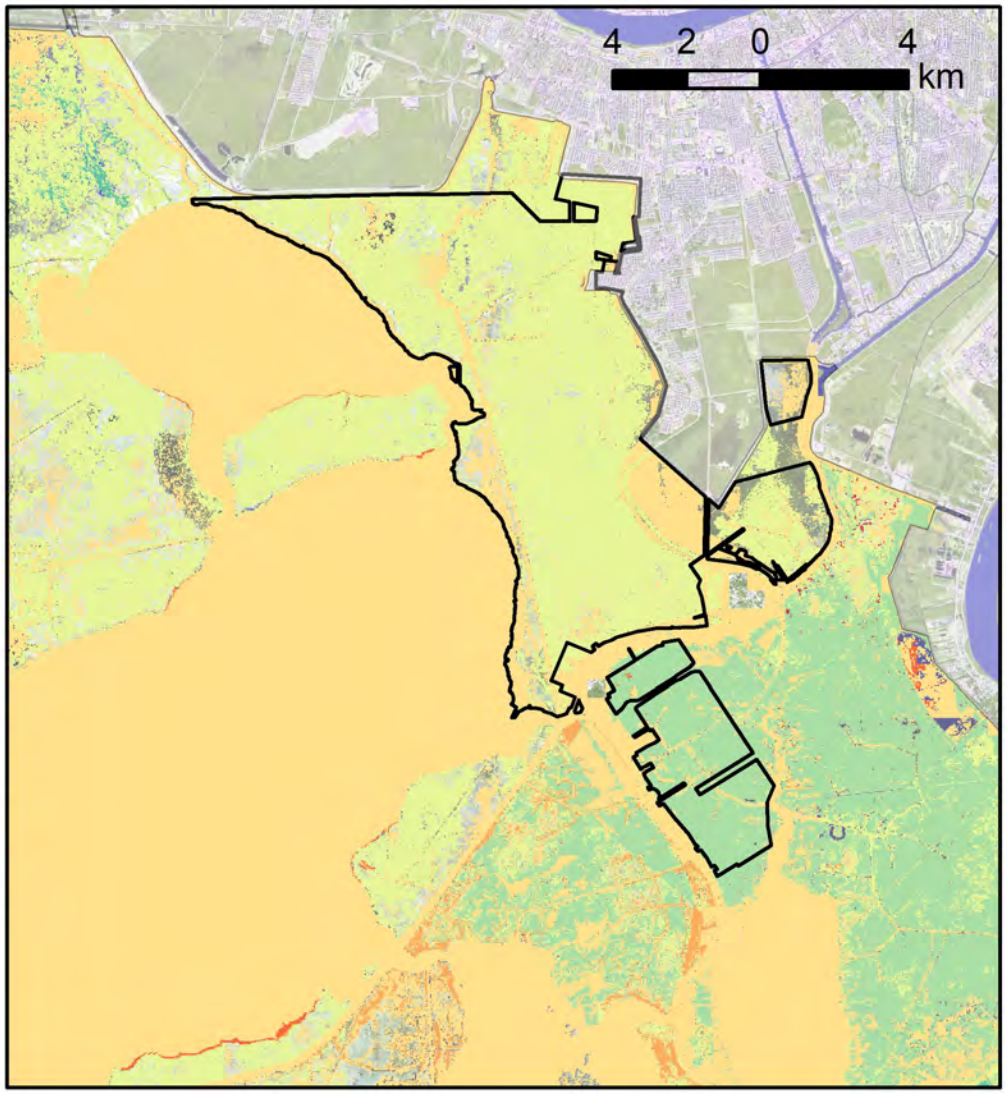
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol







S08 - G603
Inter.-High
Mid-Barataria Only
Year 12

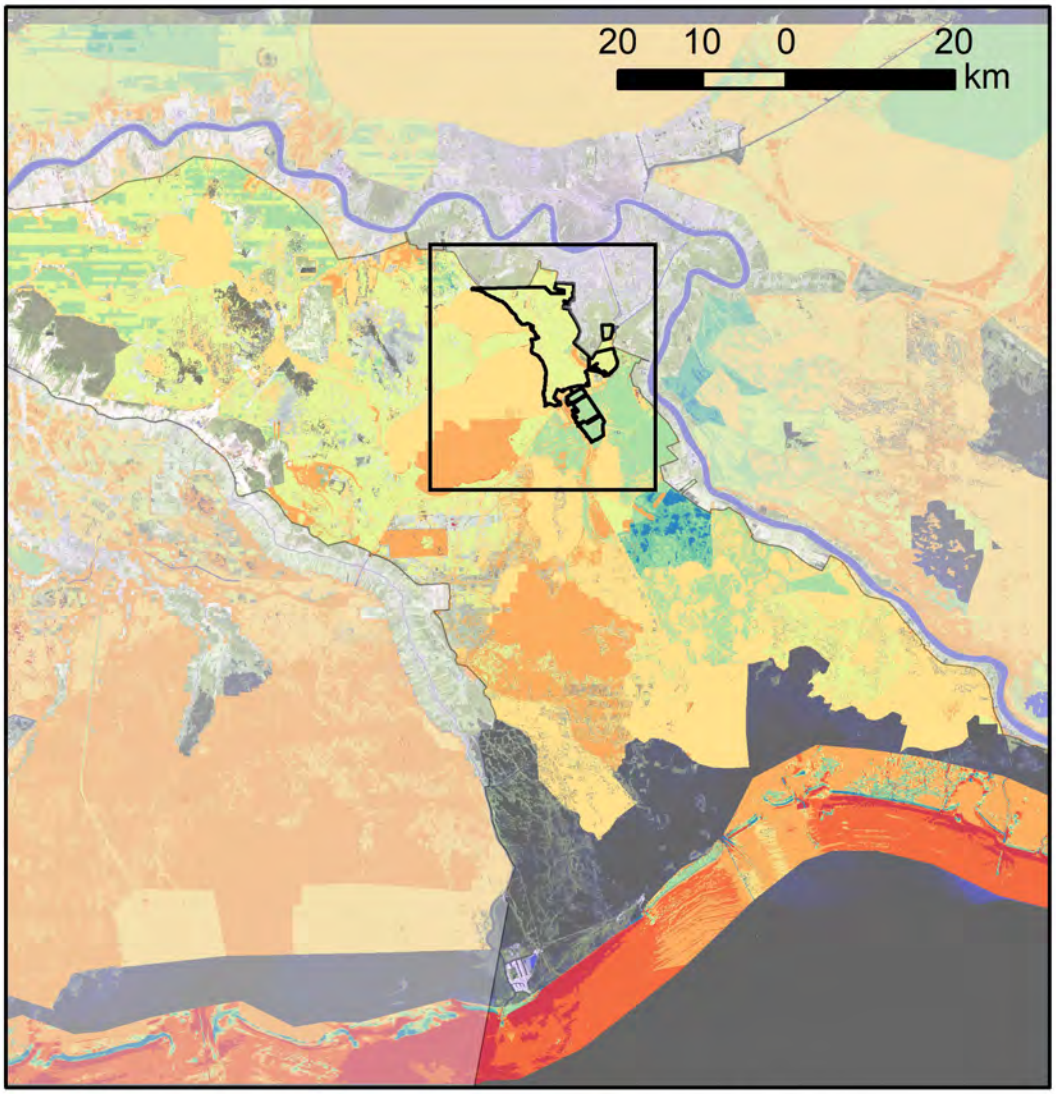
Elev. Change [m]

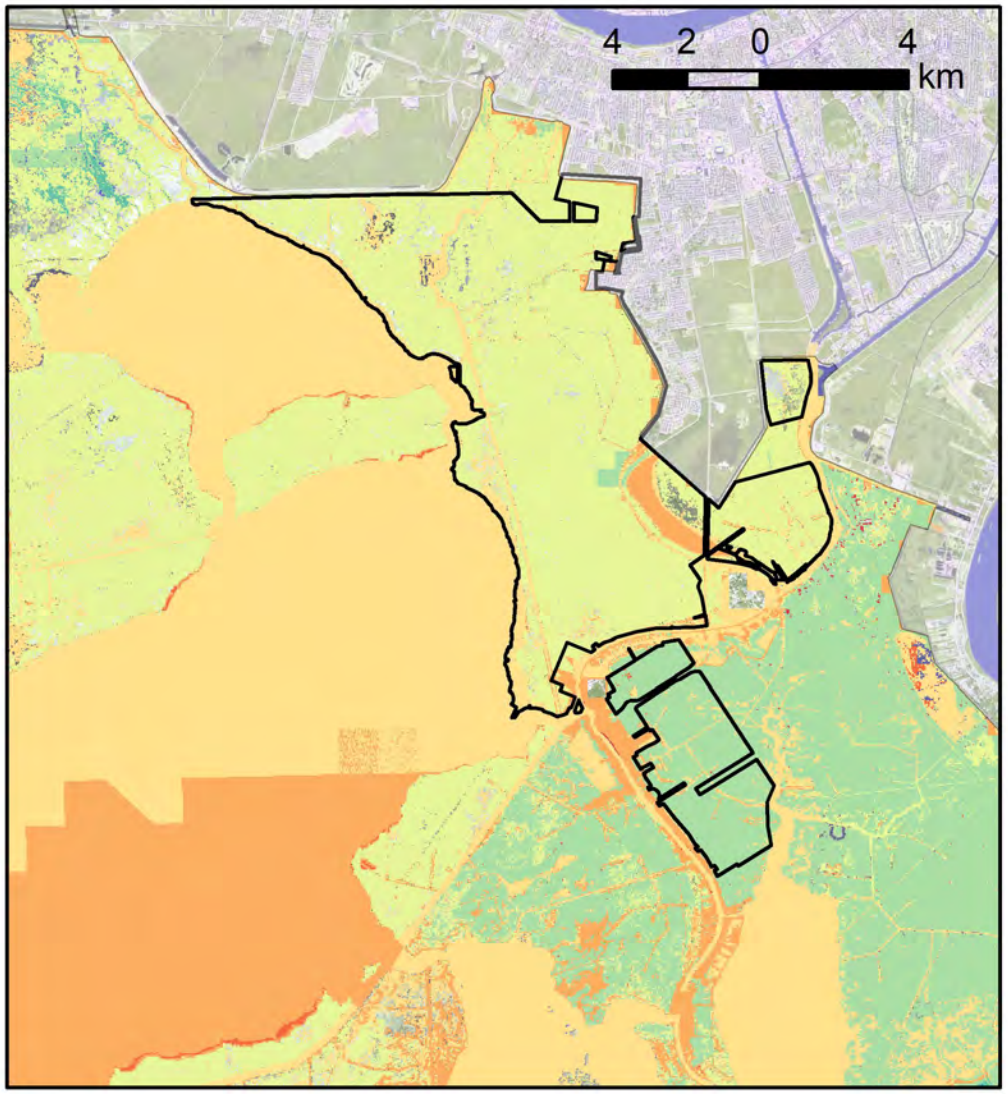
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
W E
S





S08 - G603
Inter.-High
Mid-Barataria Only
Year 22

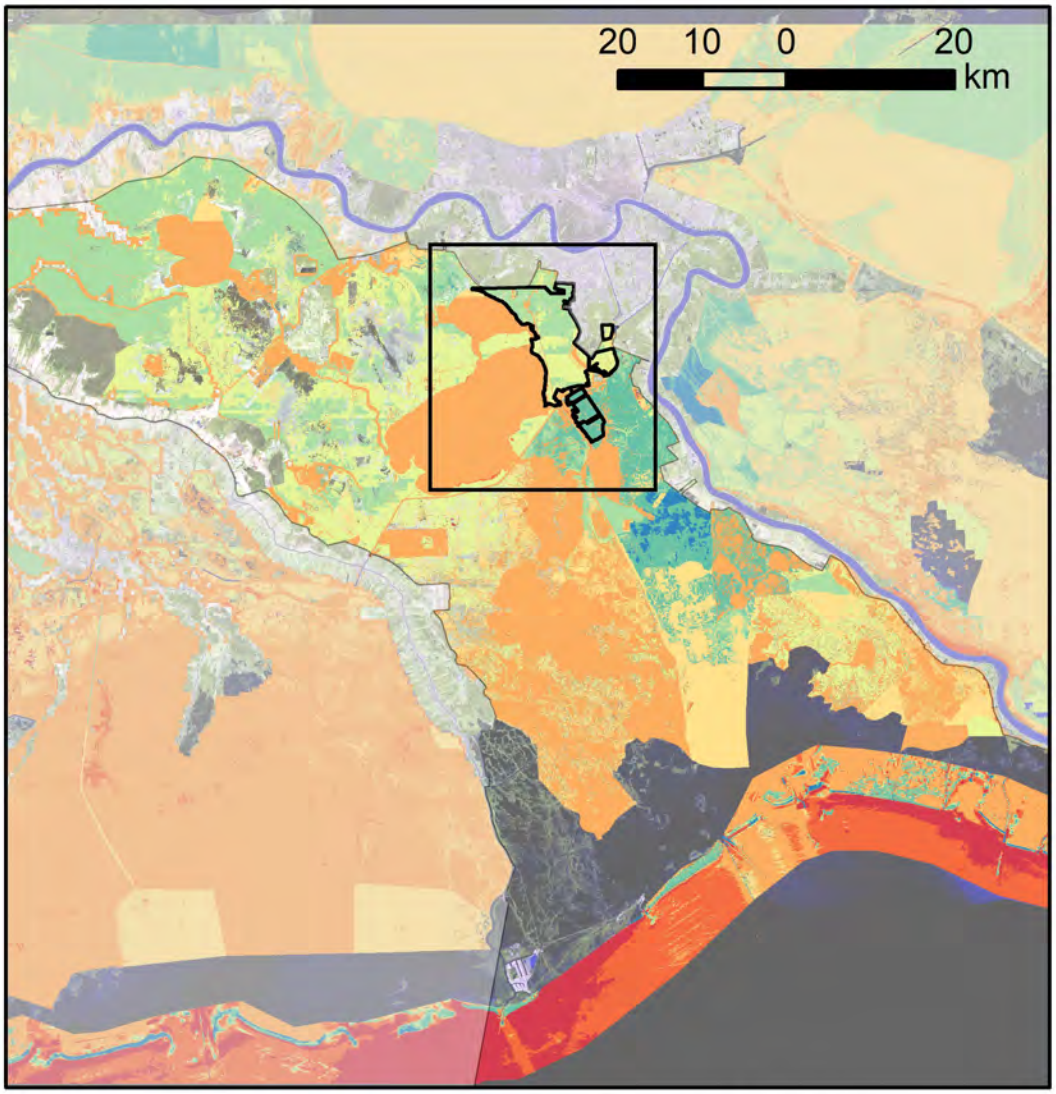
Elev. Change [m]

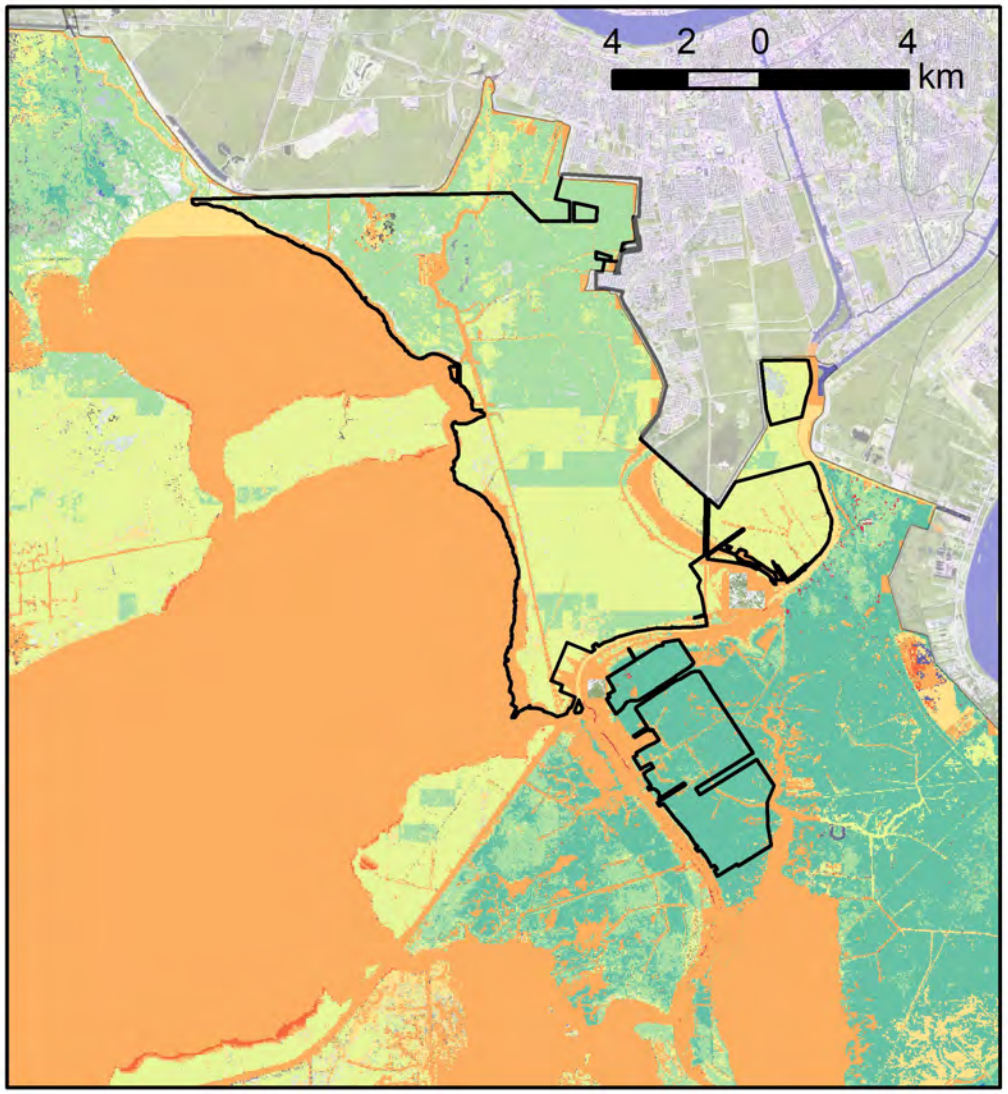
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
W E
S





S08 - G603
Inter.-High
Mid-Barataria Only
Year 32

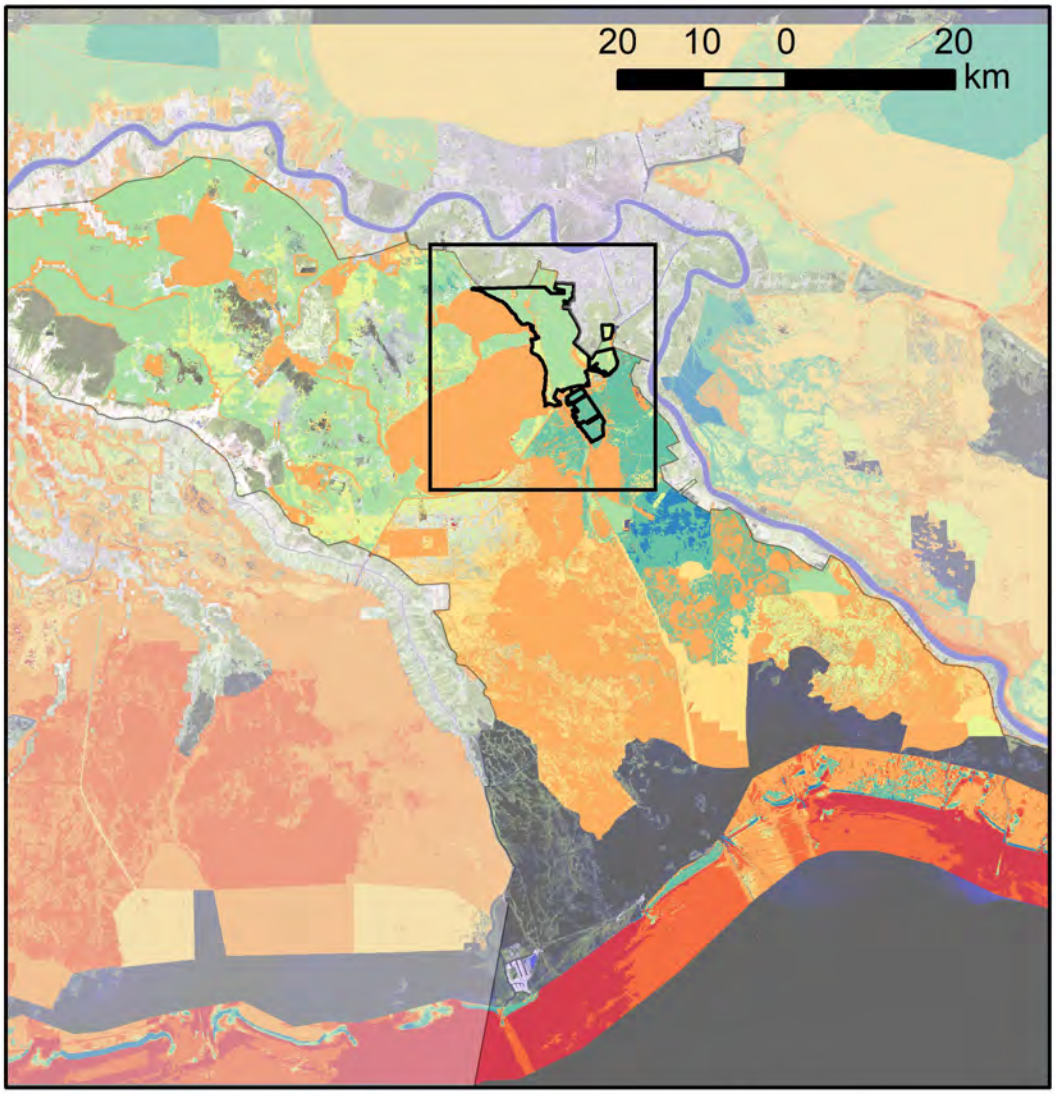
Elev. Change [m]

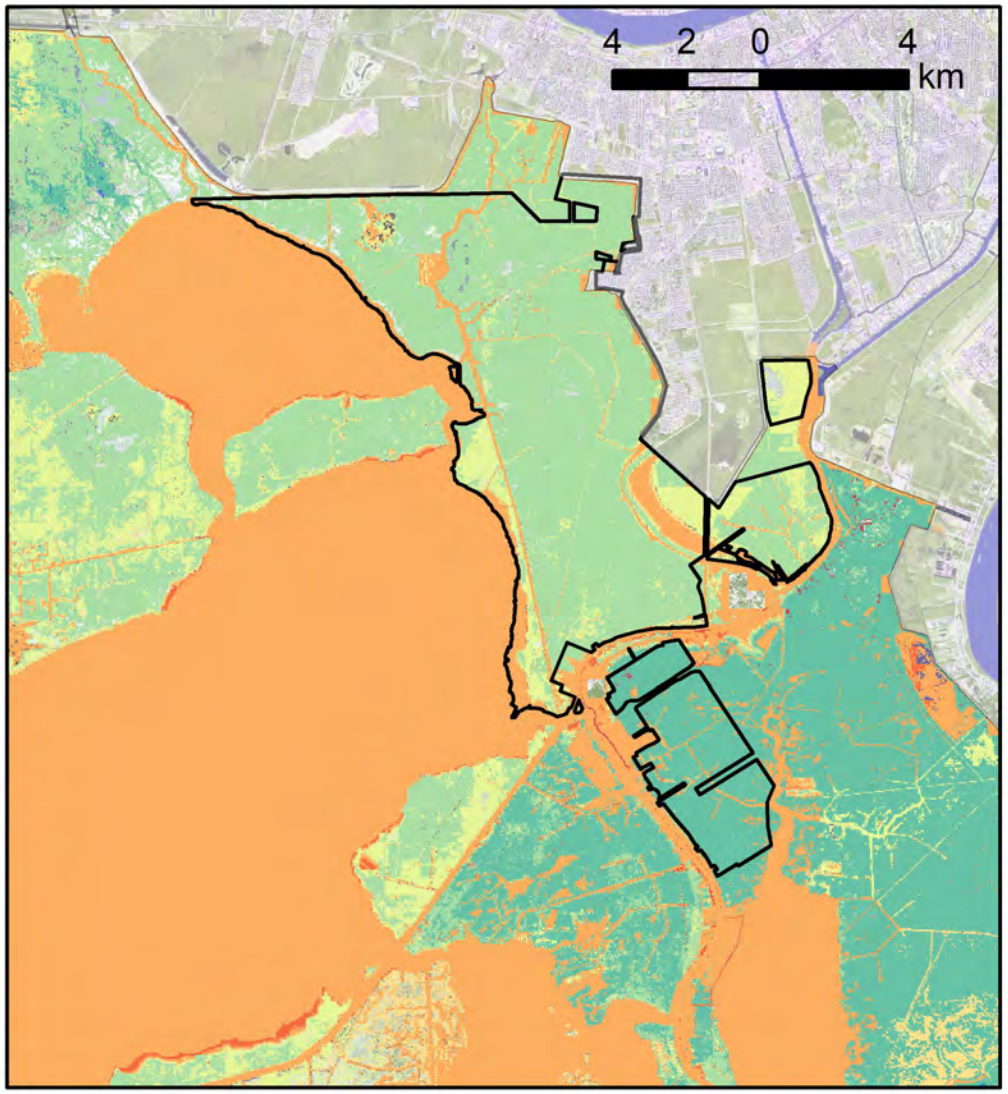
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
W E
S





S08 - G603
Inter.-High
Mid-Barataria Only
Year 42

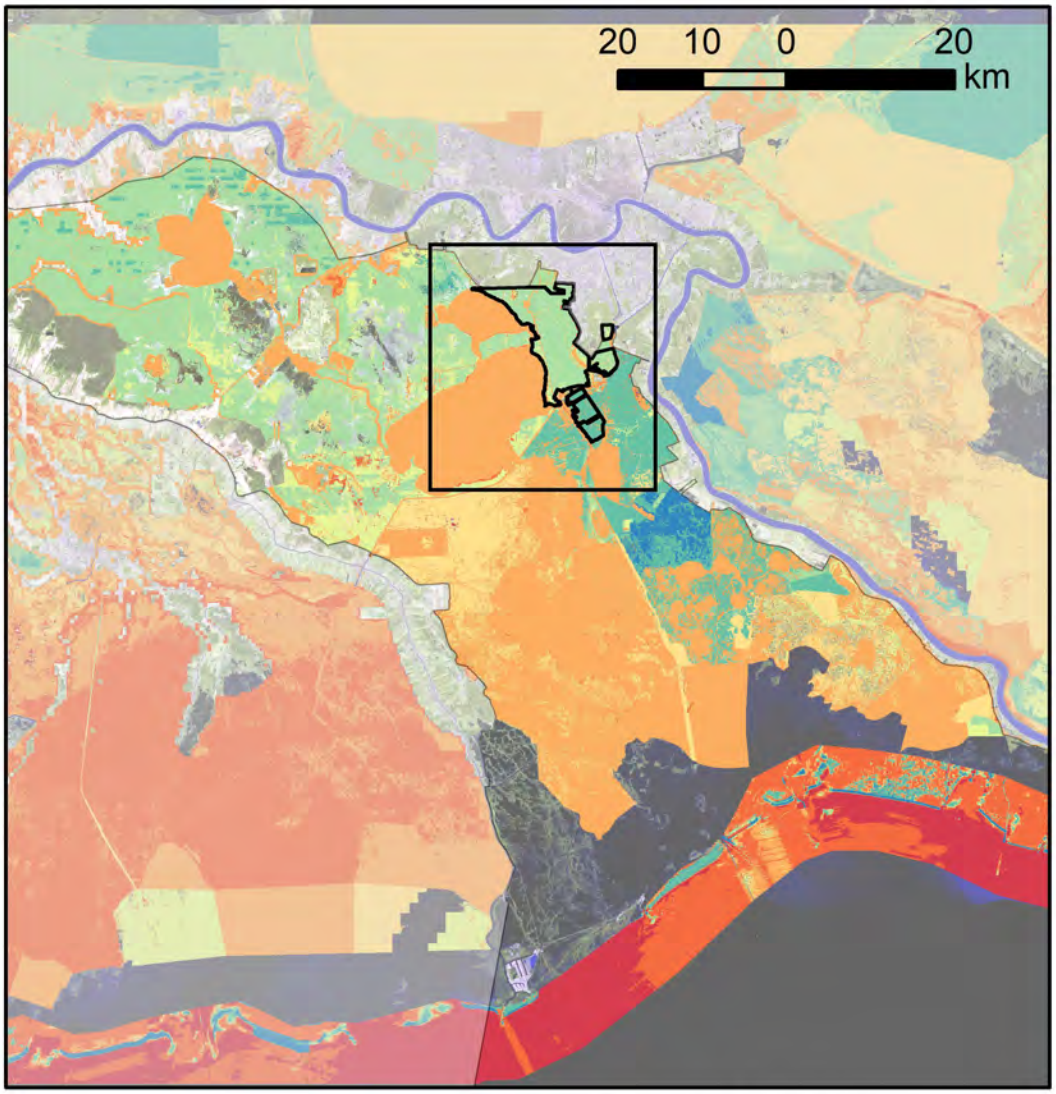
Elev. Change [m]

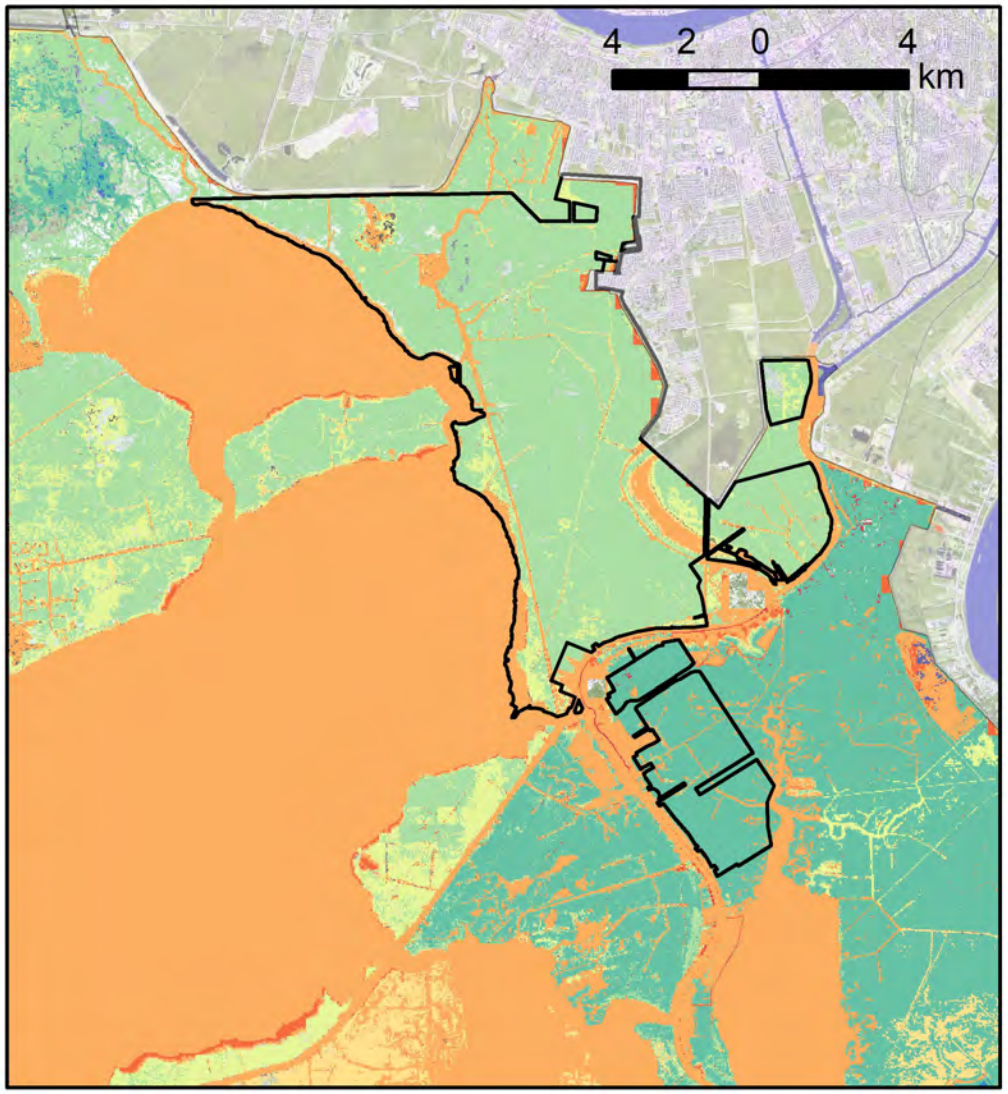
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
W E
S





S08 - G603
Inter.-High
Mid-Barataria Only
Year 51

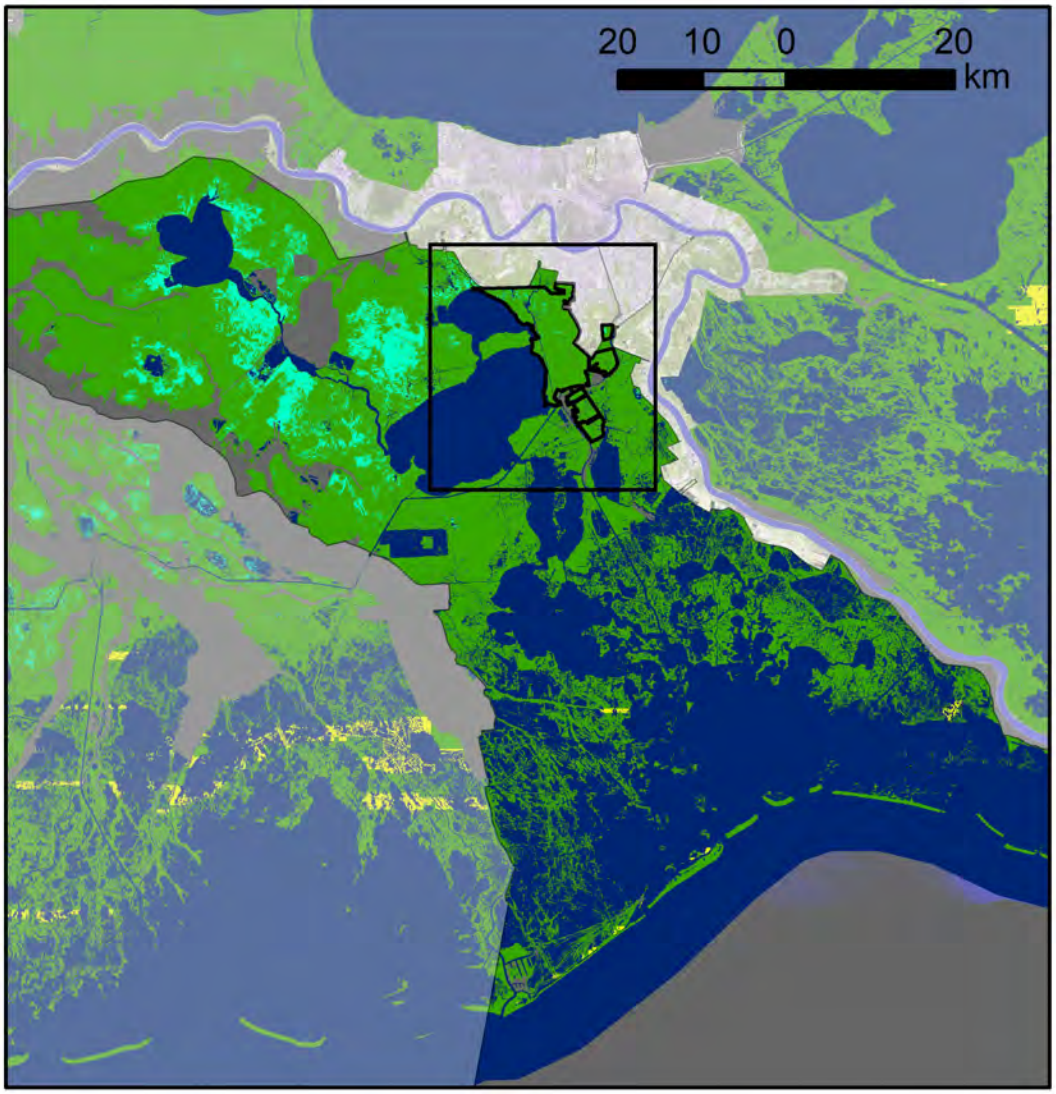
Elev. Change [m]

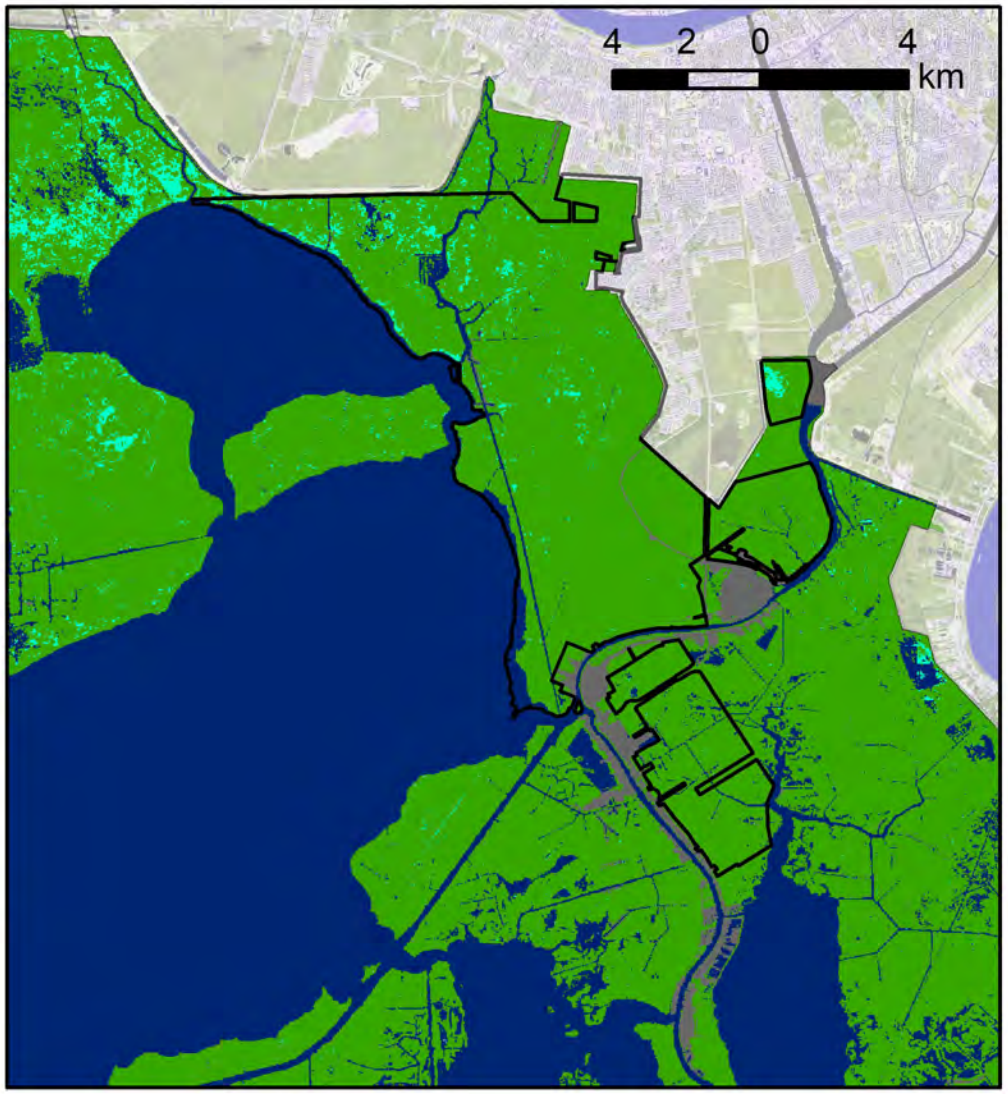
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
W E
S





S08 - G703
Inter.-High
Ama Only
Year 02

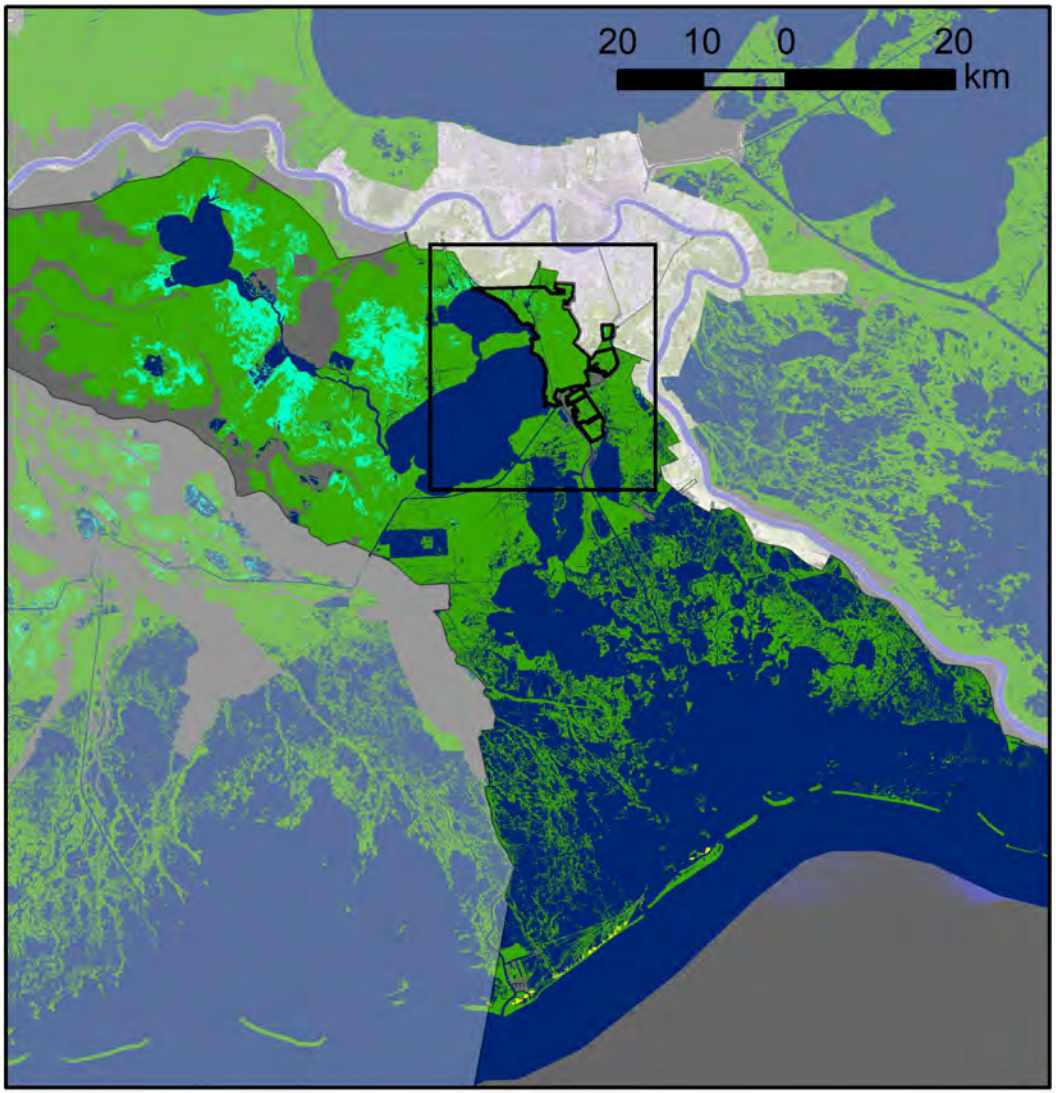
Land Type

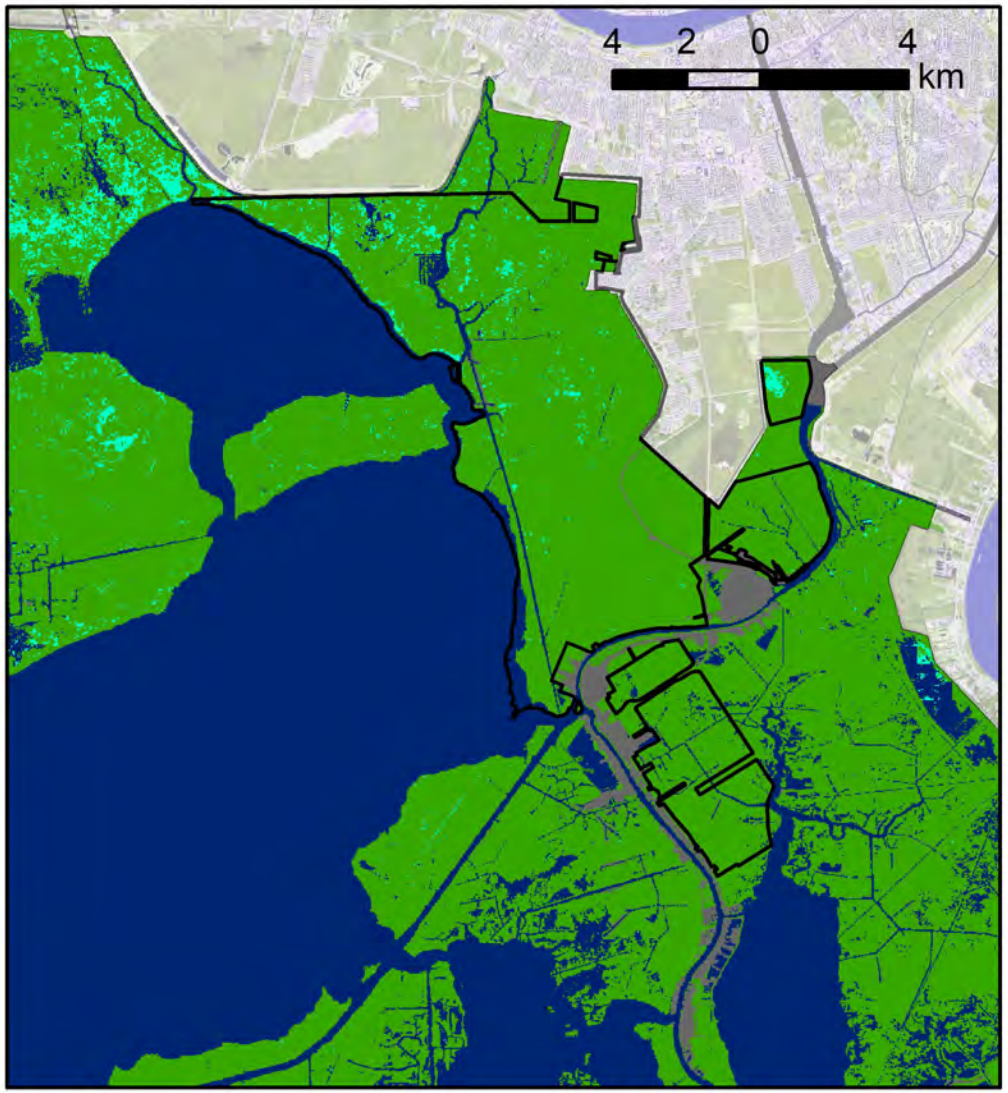
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S08 - G703
Inter.-High
Ama Only
Year 12

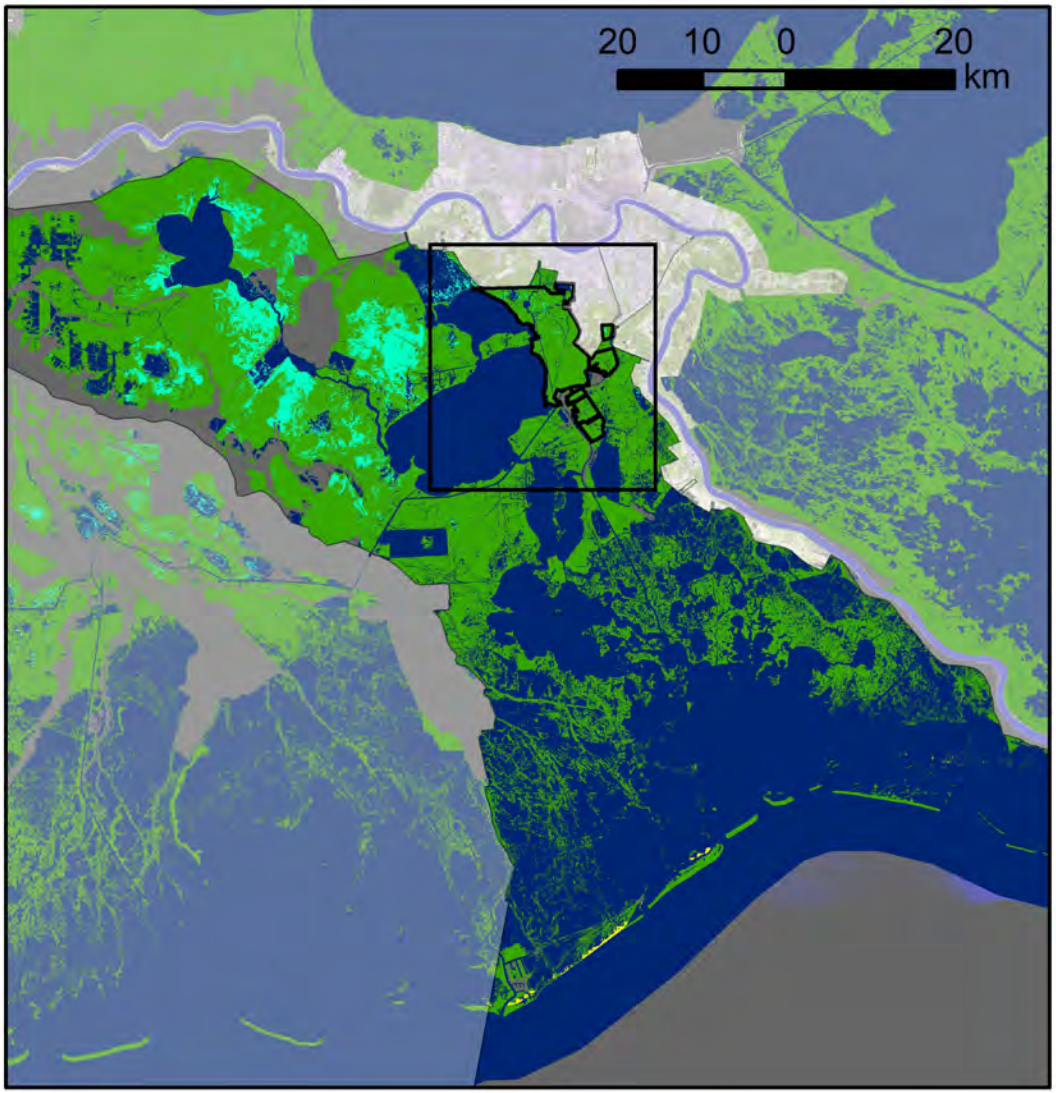
Land Type

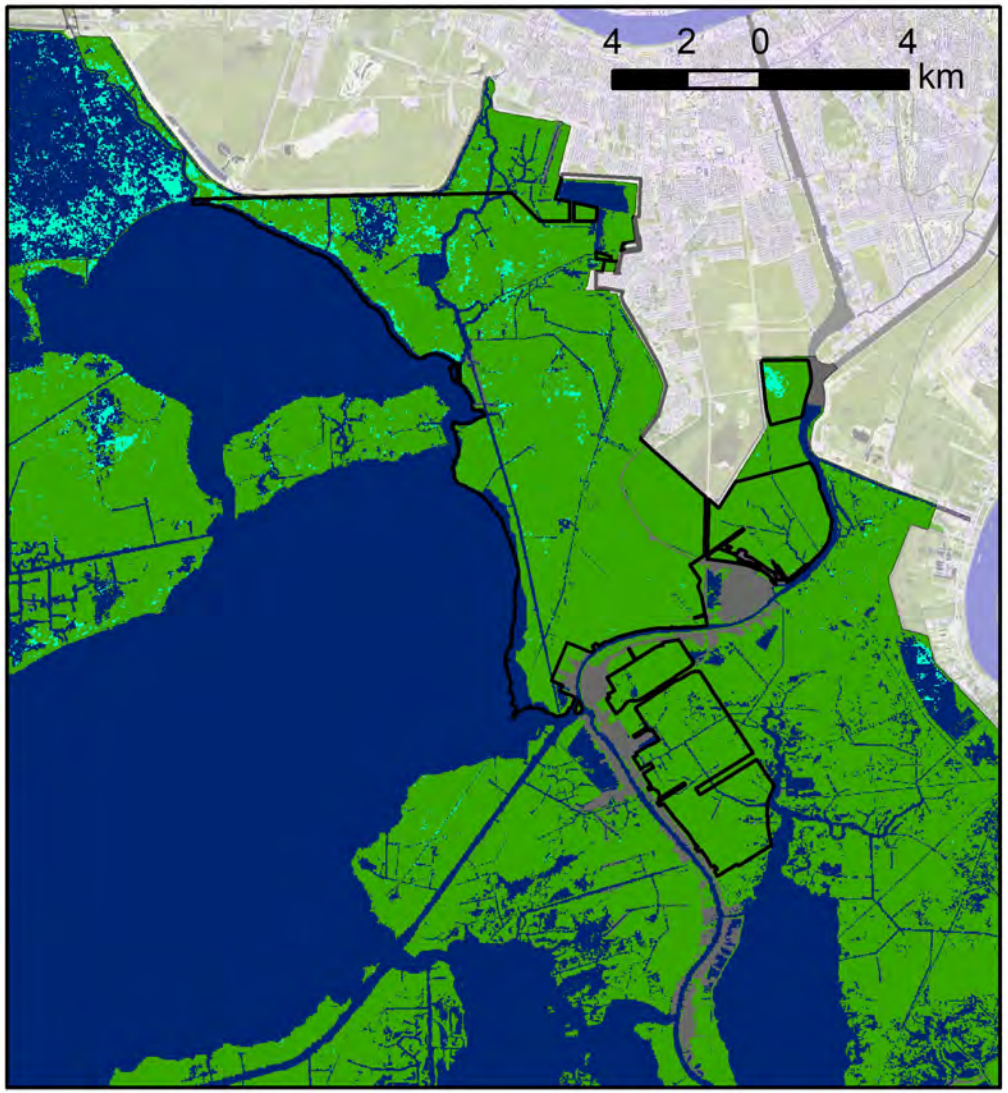
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S08 - G703
Inter.-High
Ama Only
Year 22

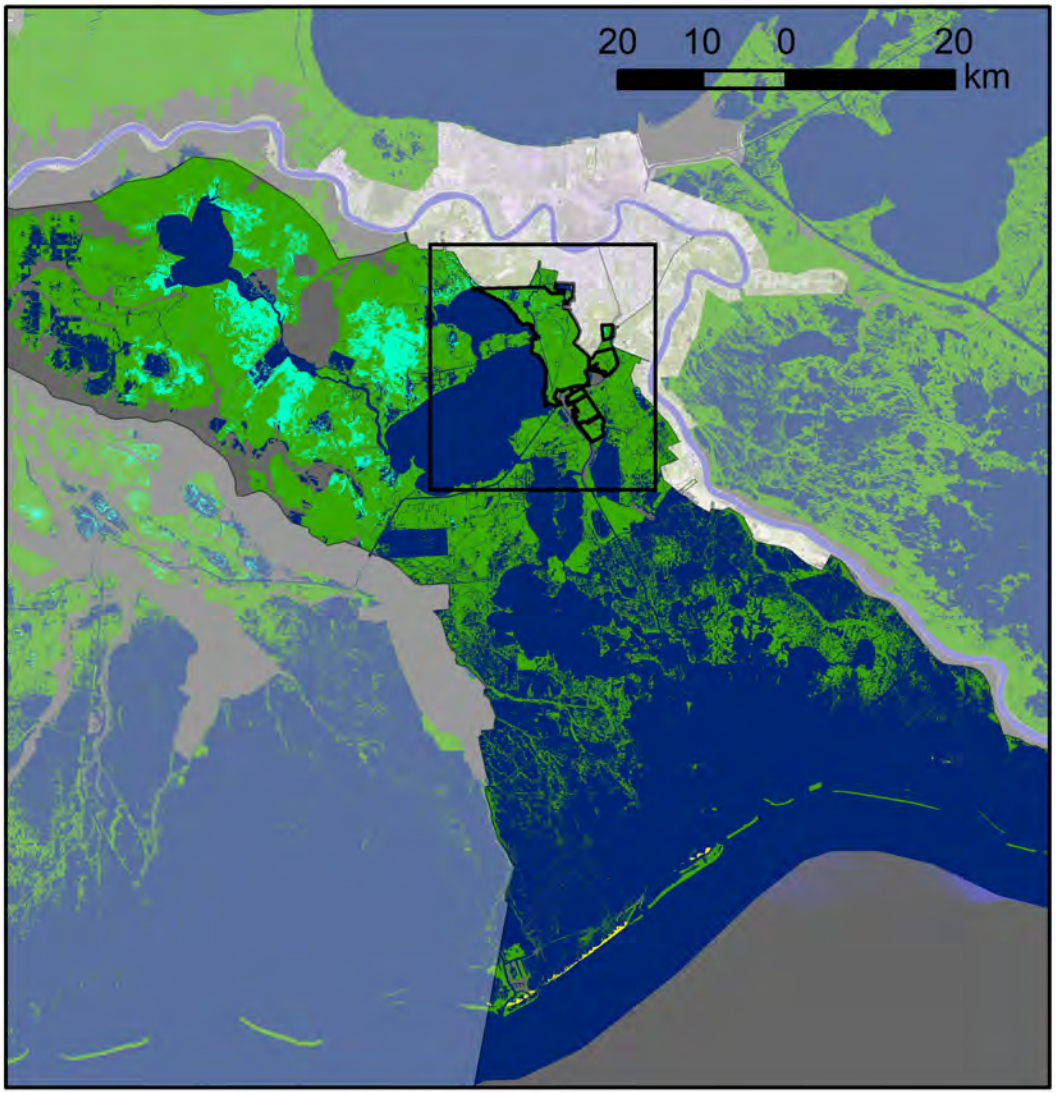
Land Type

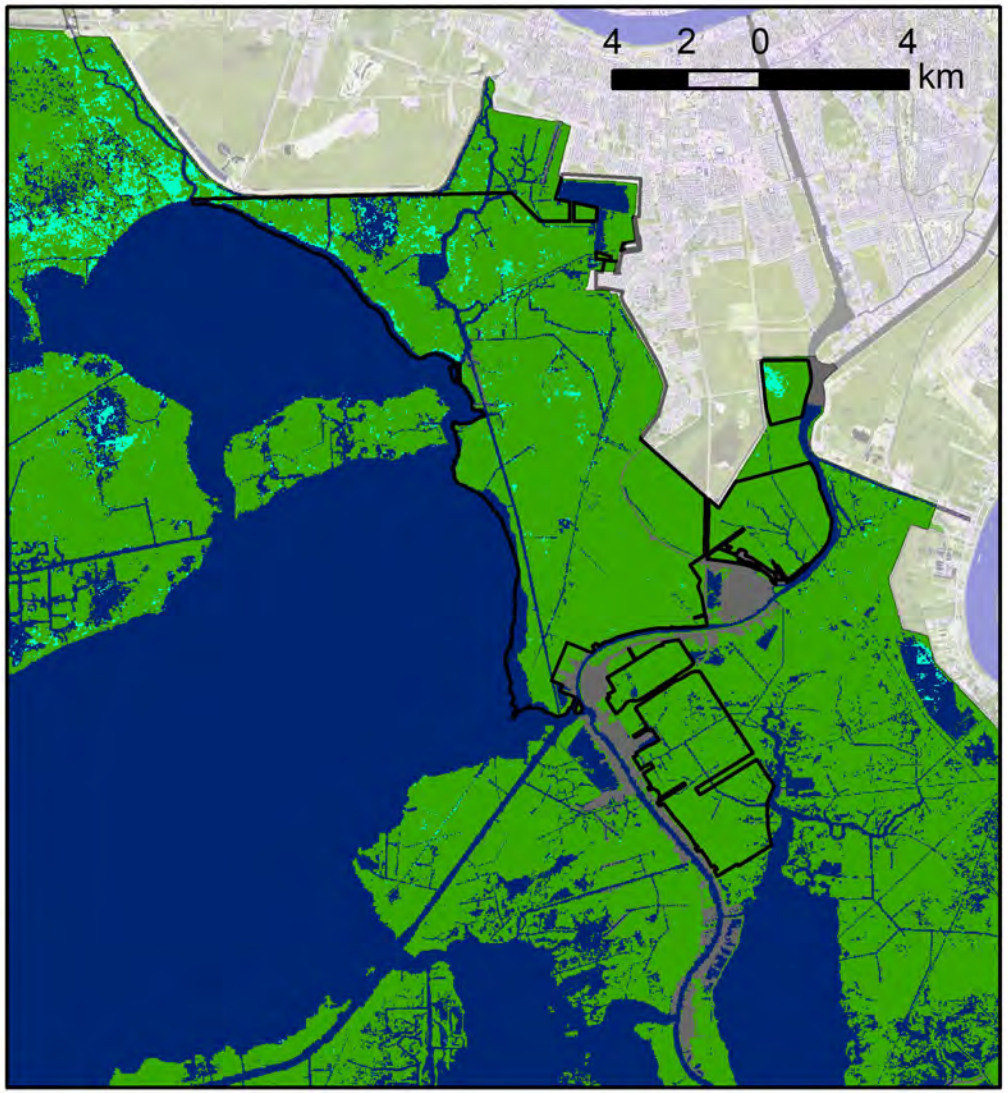
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S08 - G703
Inter.-High
Ama Only
Year 32

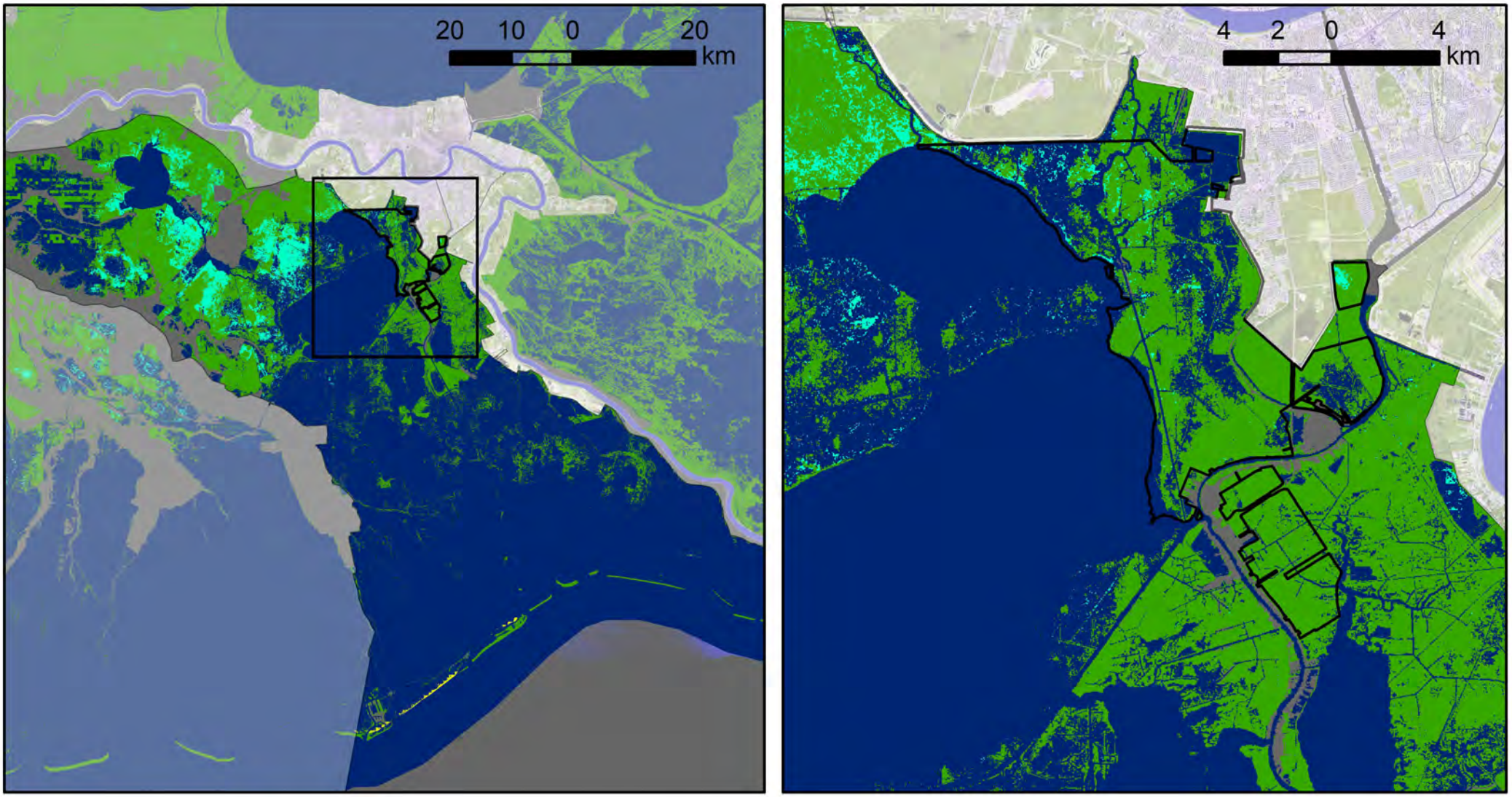
Land Type

- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol





S08 - G703
Inter.-High
Ama Only
Year 42

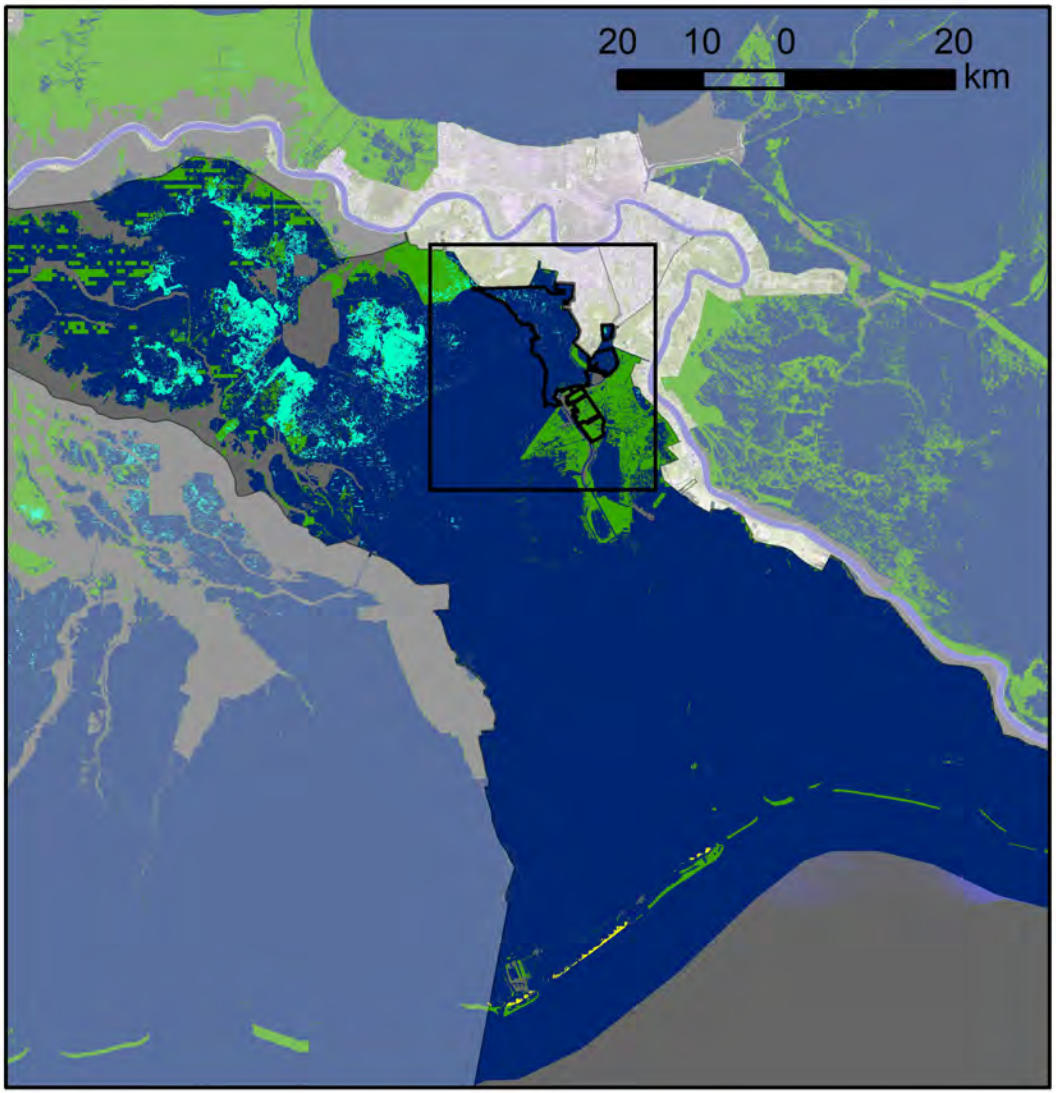
Land Type

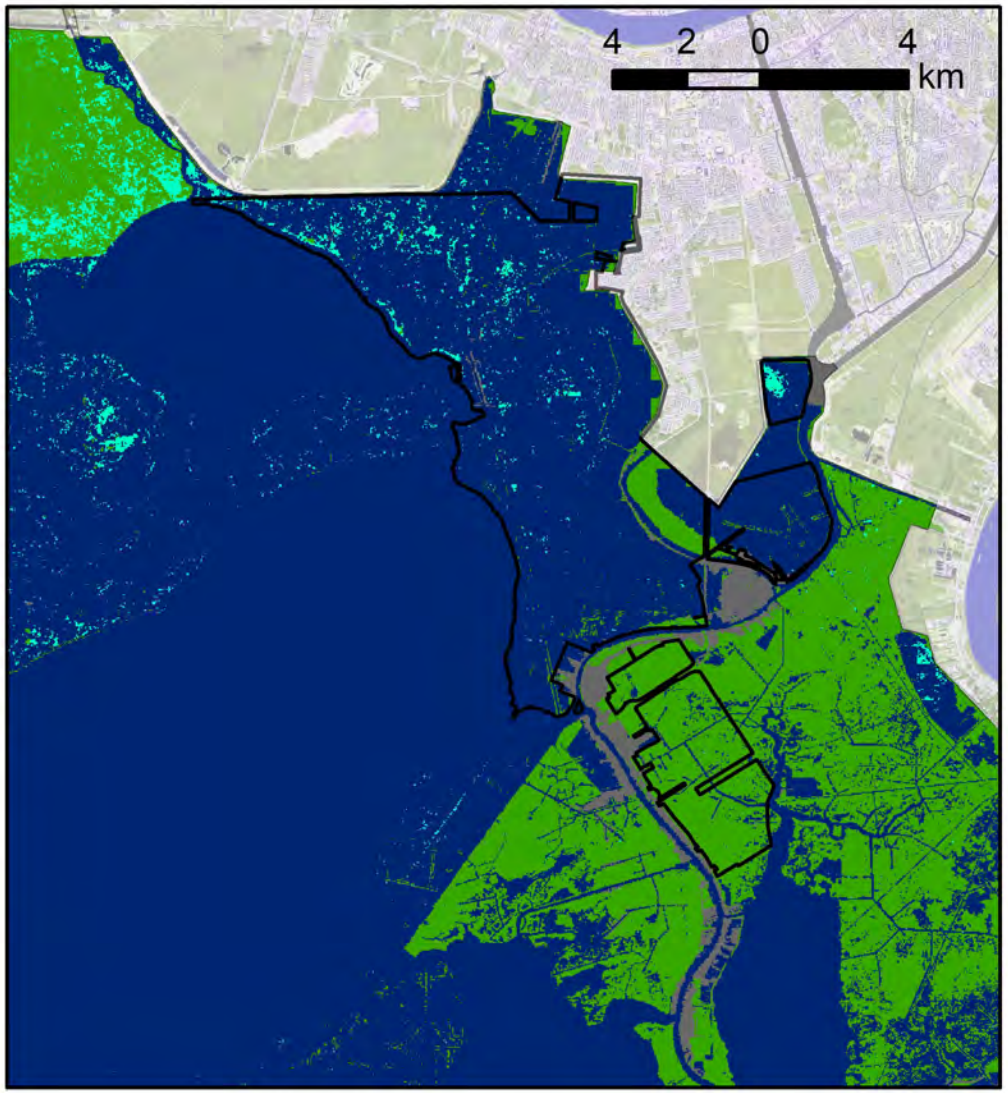
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S08 - G703
Inter.-High
Ama Only
Year 51

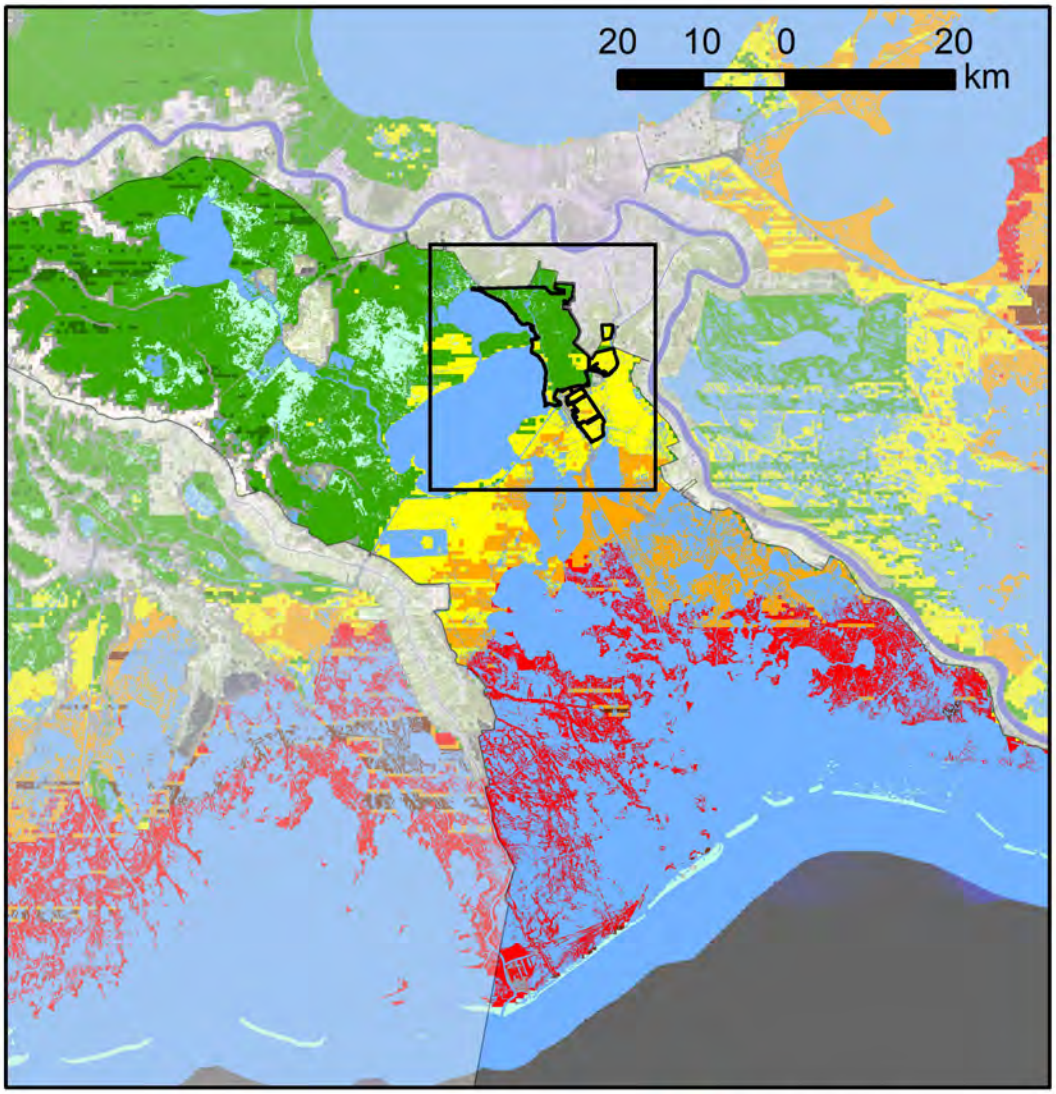
Land Type

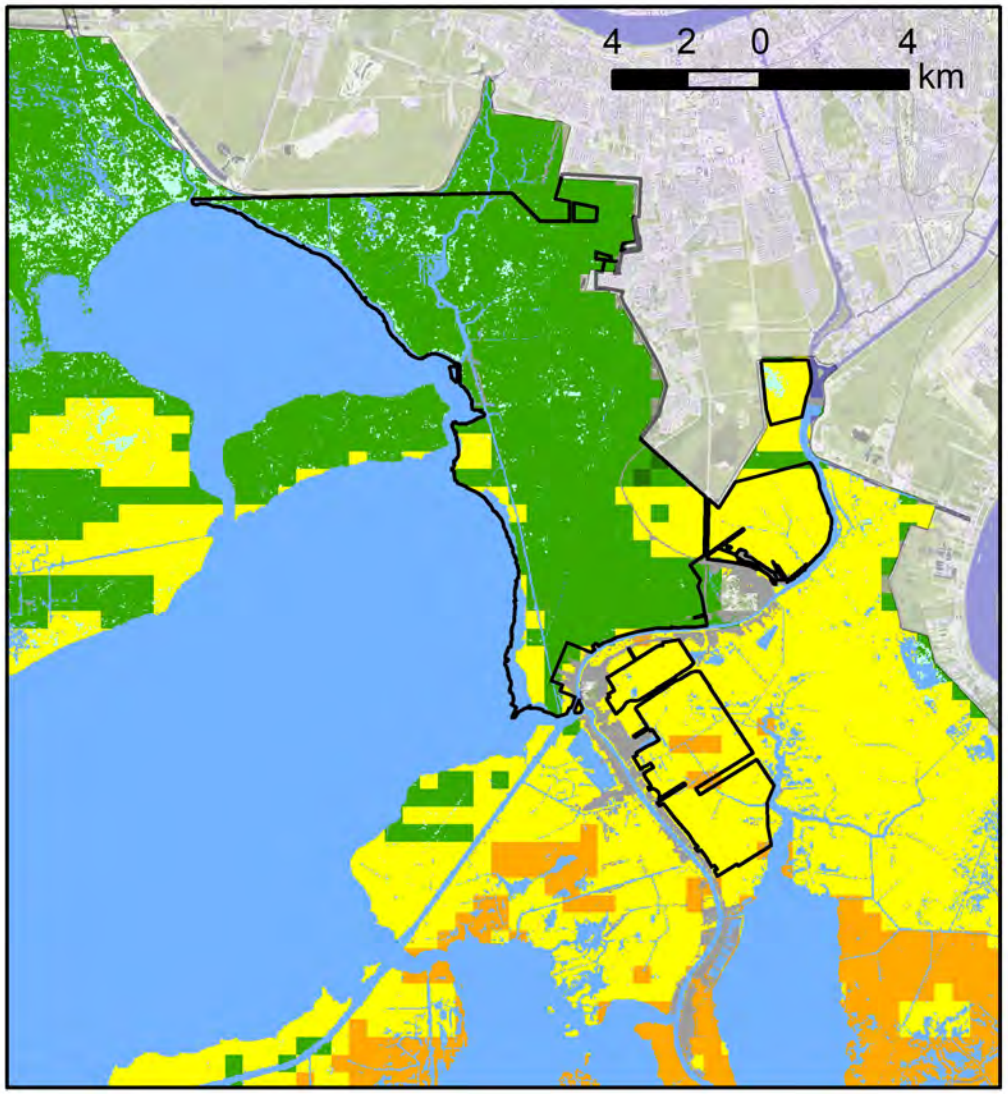
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S08 - G703
Inter.-High
Ama Only
Year 02

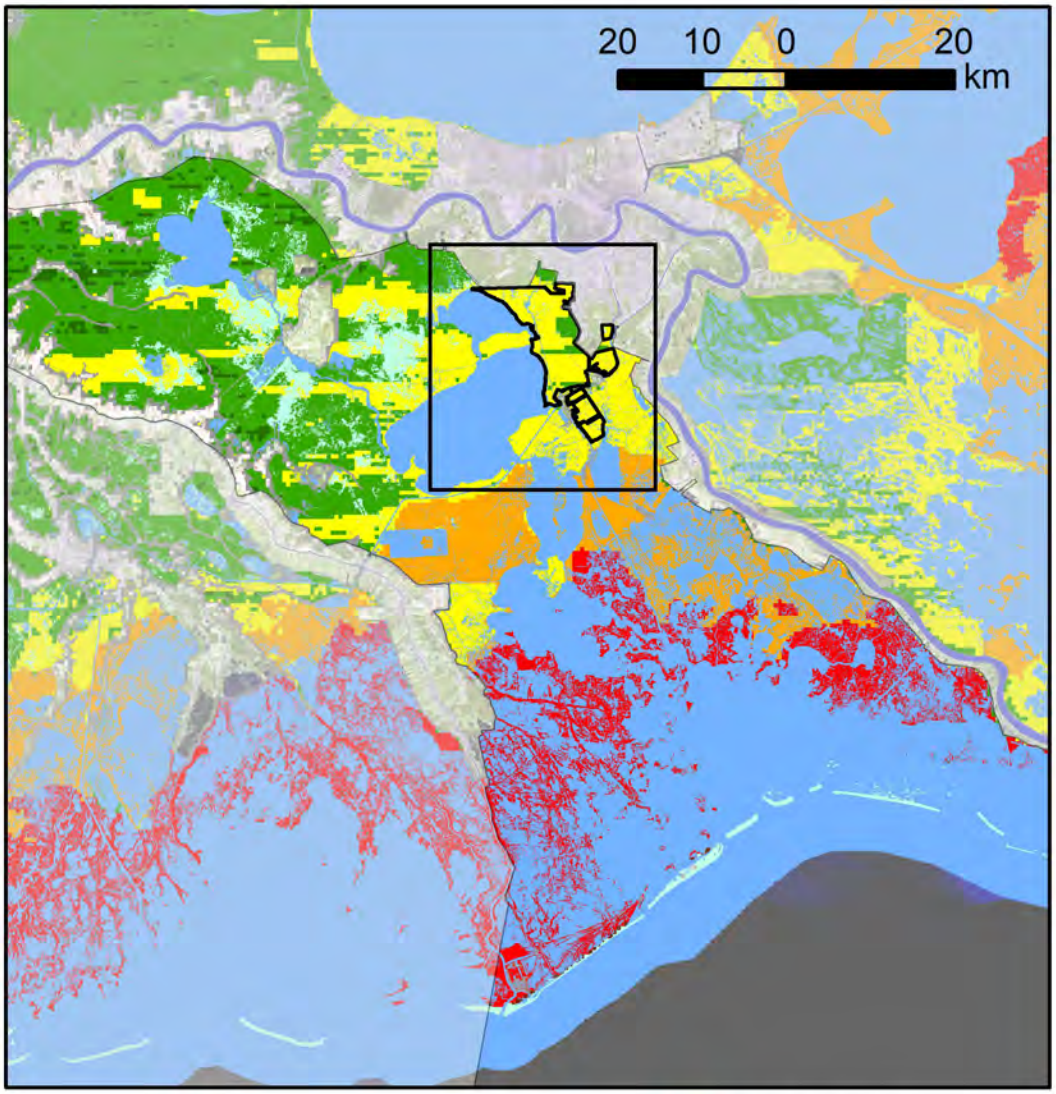
Habitat Type

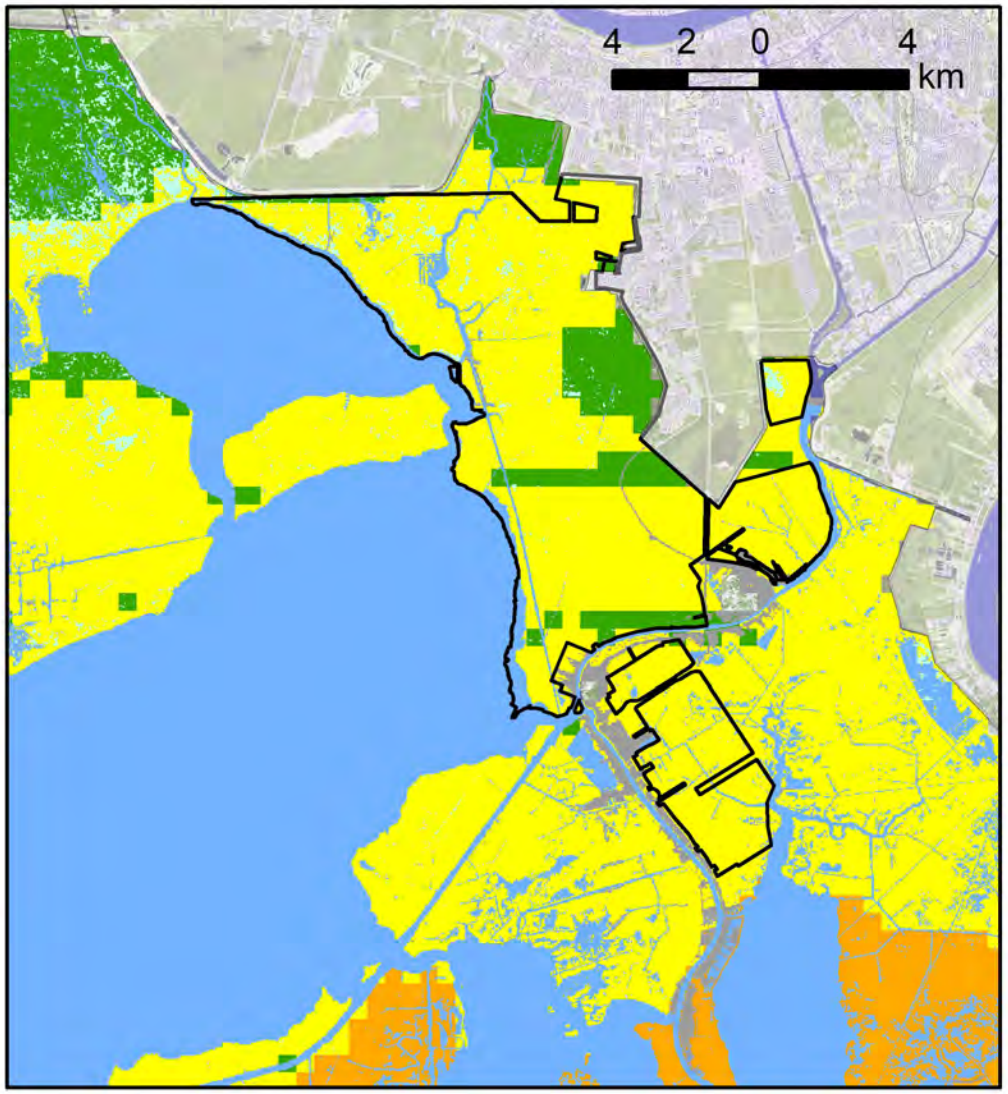
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S08 - G703
Inter.-High
Ama Only
Year 12

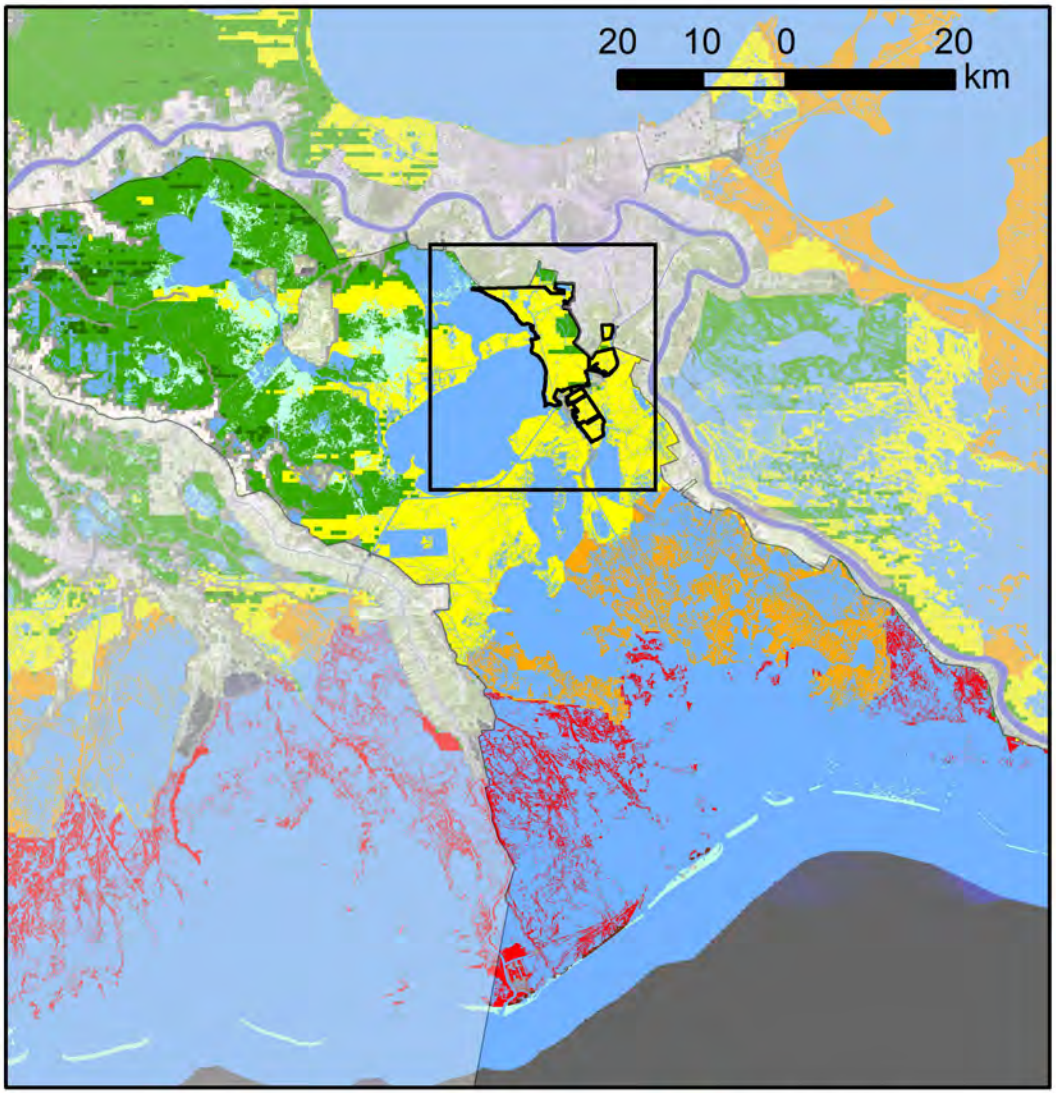
Habitat Type

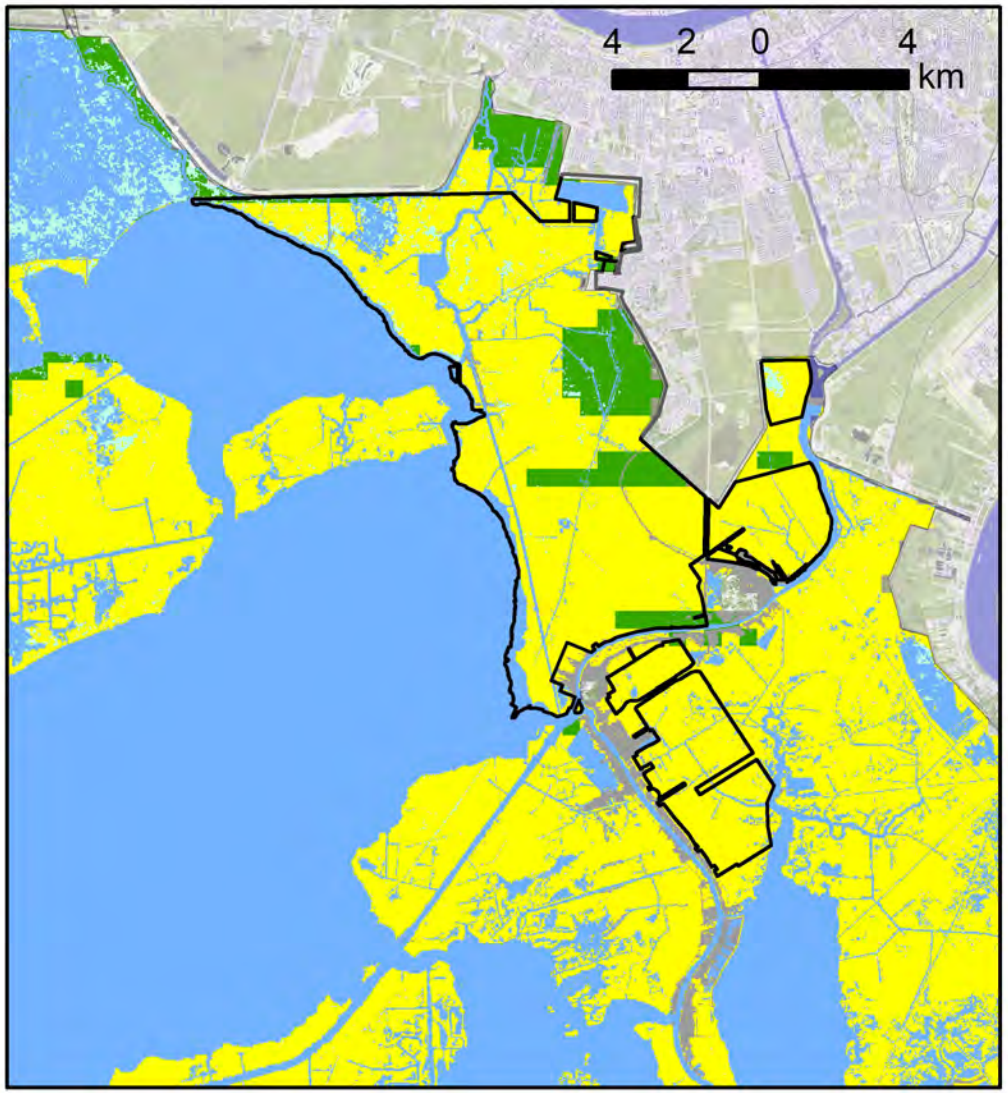
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S08 - G703
Inter.-High
Ama Only
Year 22

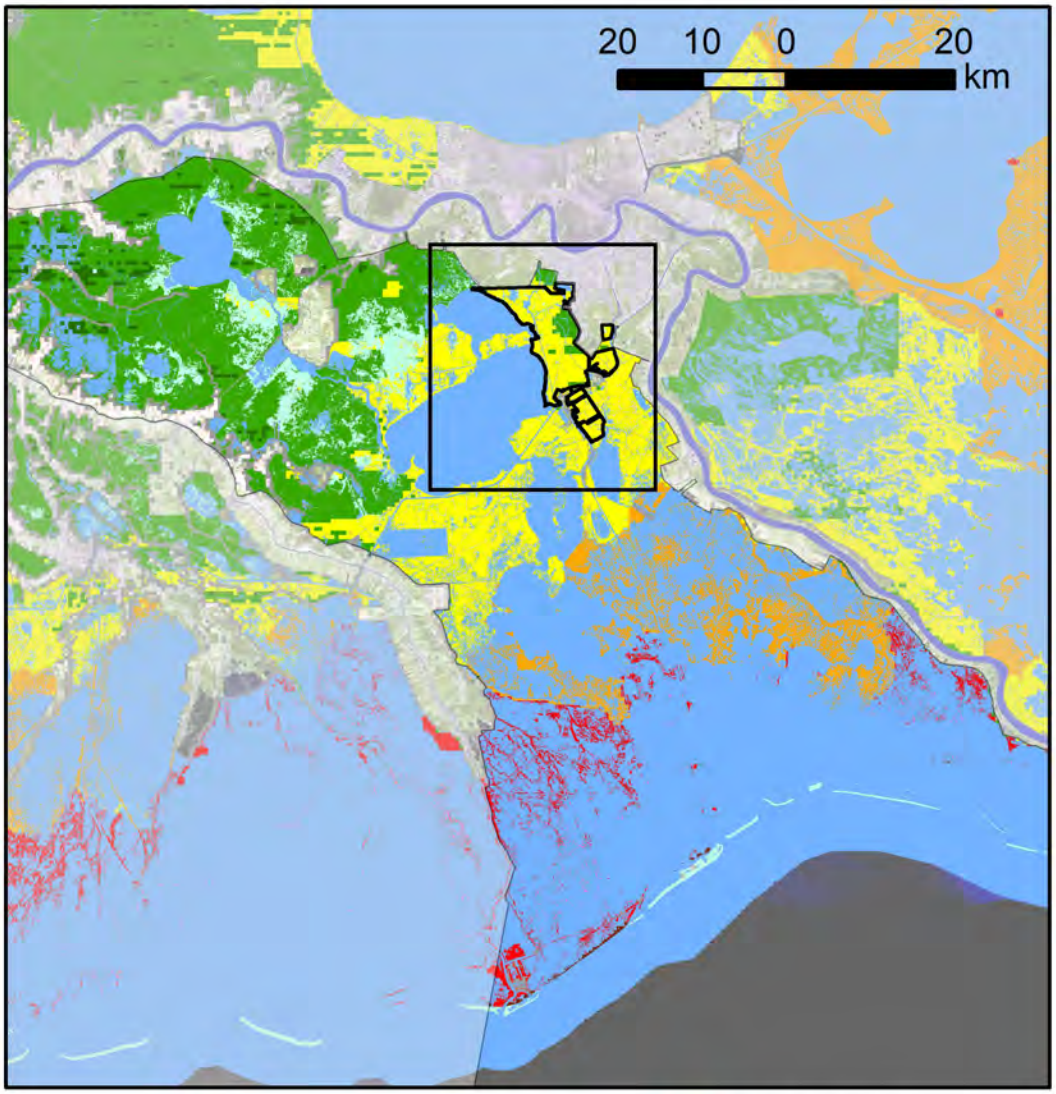
Habitat Type

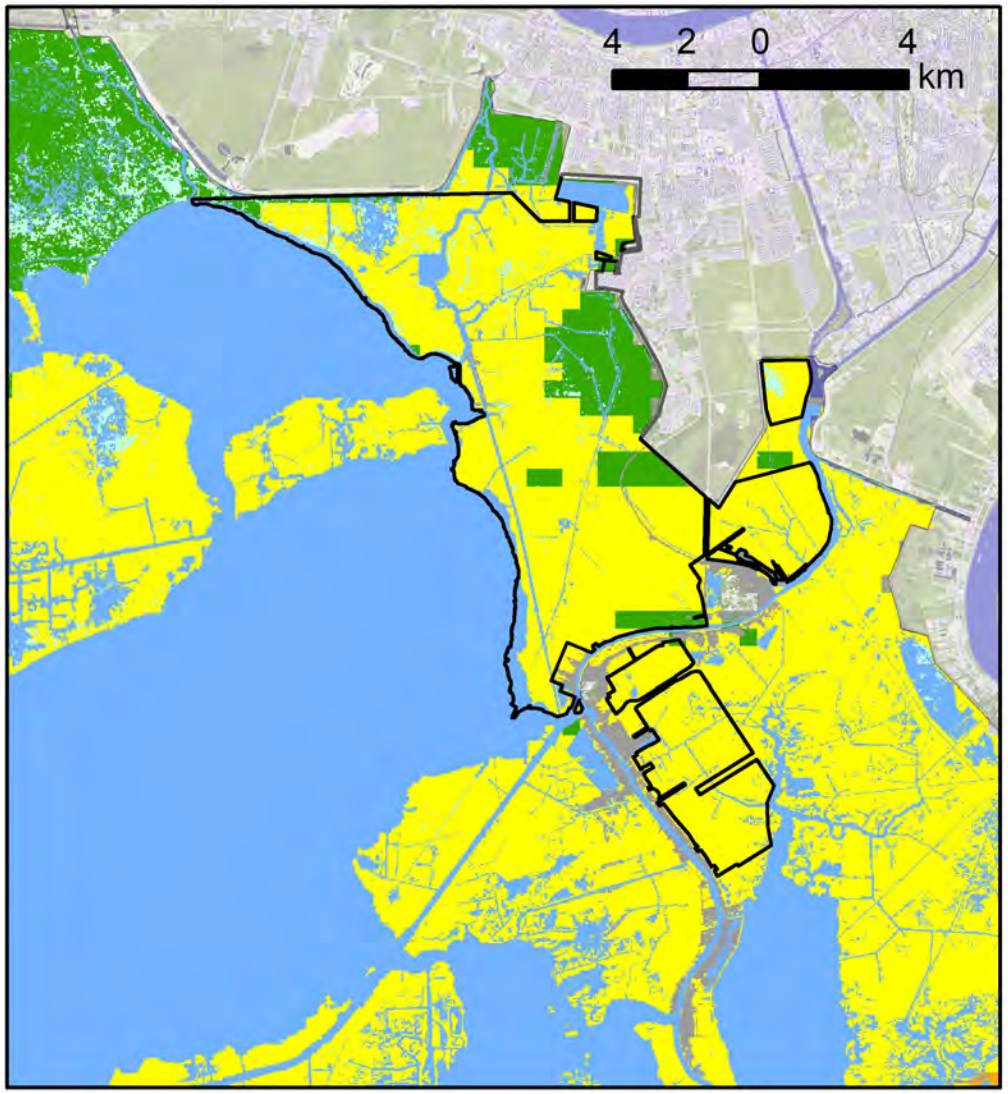
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S08 - G703
Inter.-High
Ama Only
Year 32

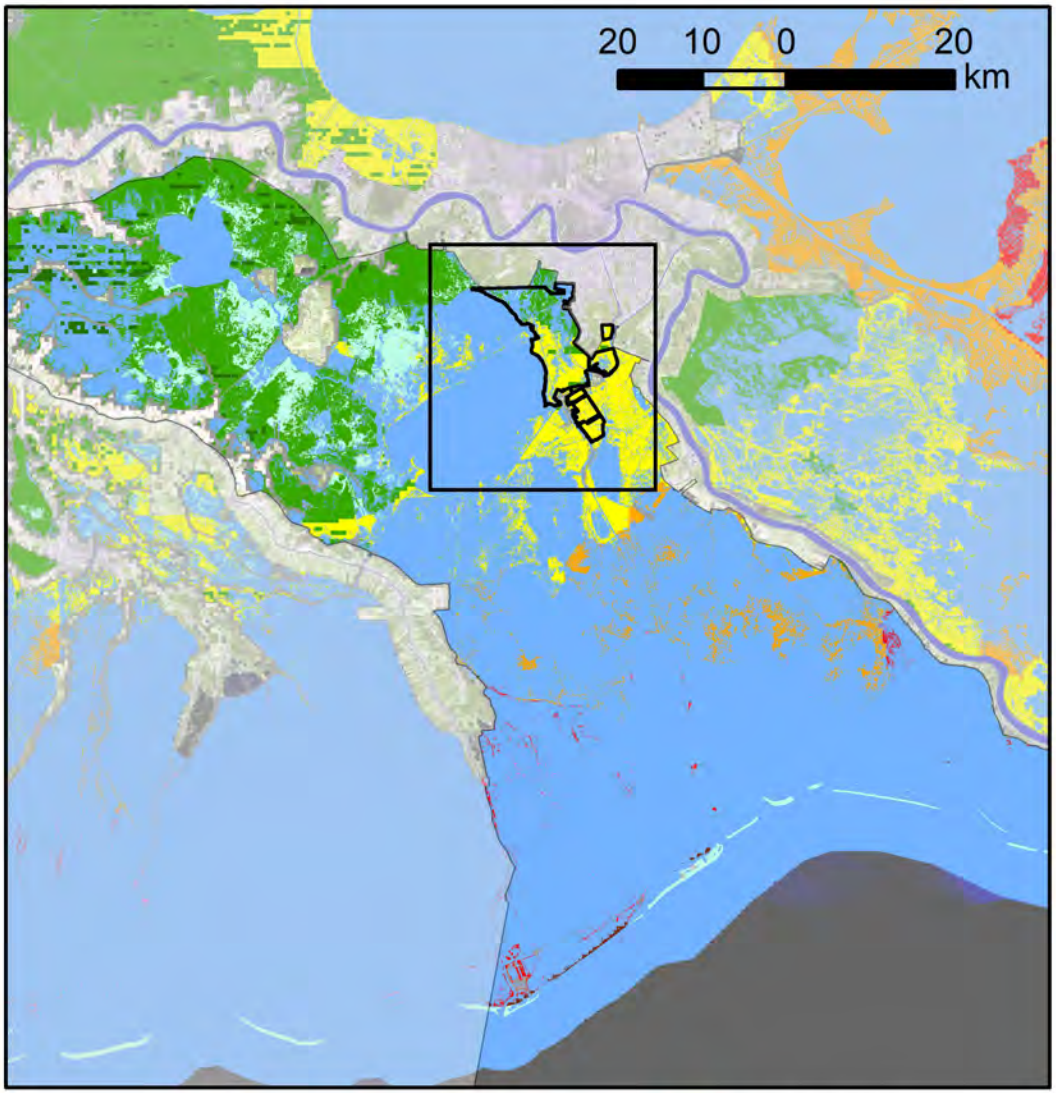
Habitat Type

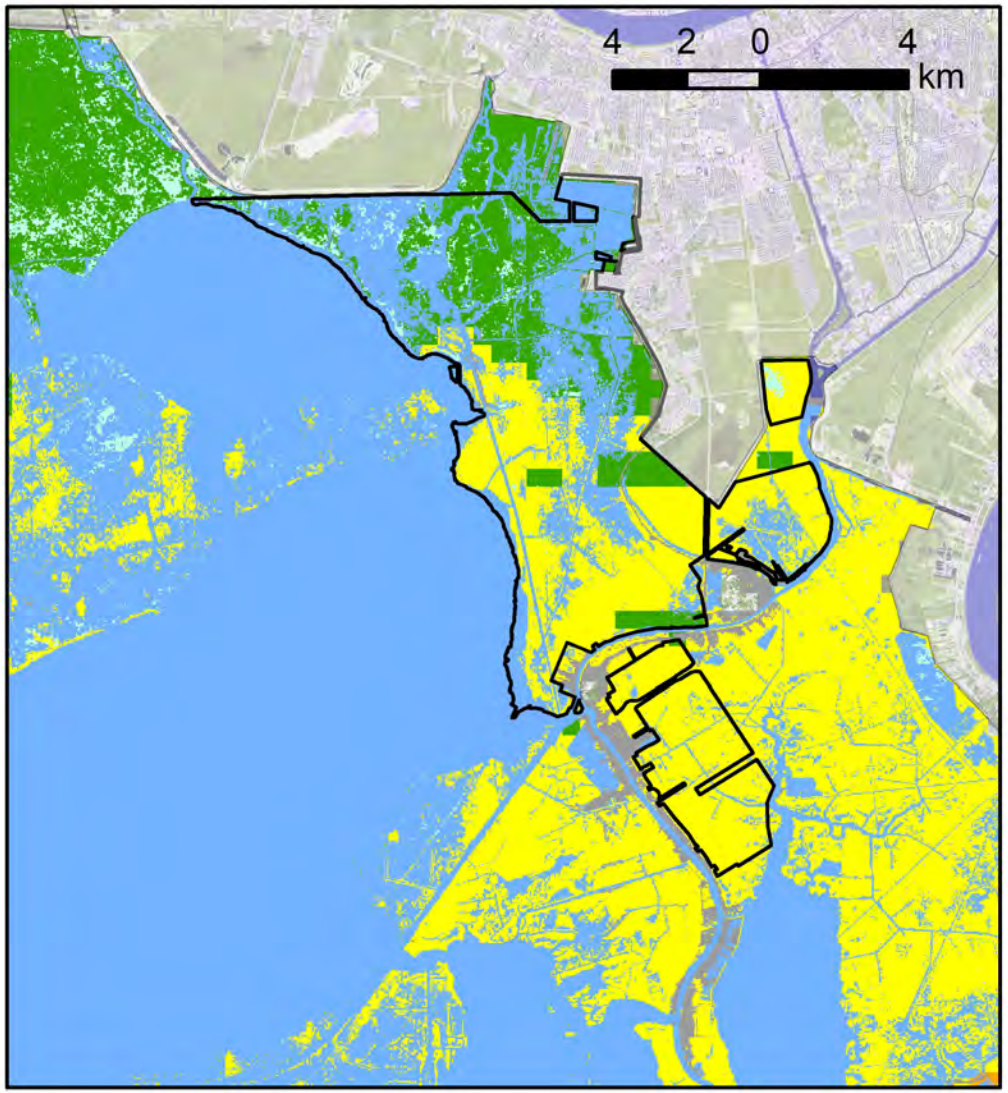
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S08 - G703
Inter.-High
Ama Only
Year 42

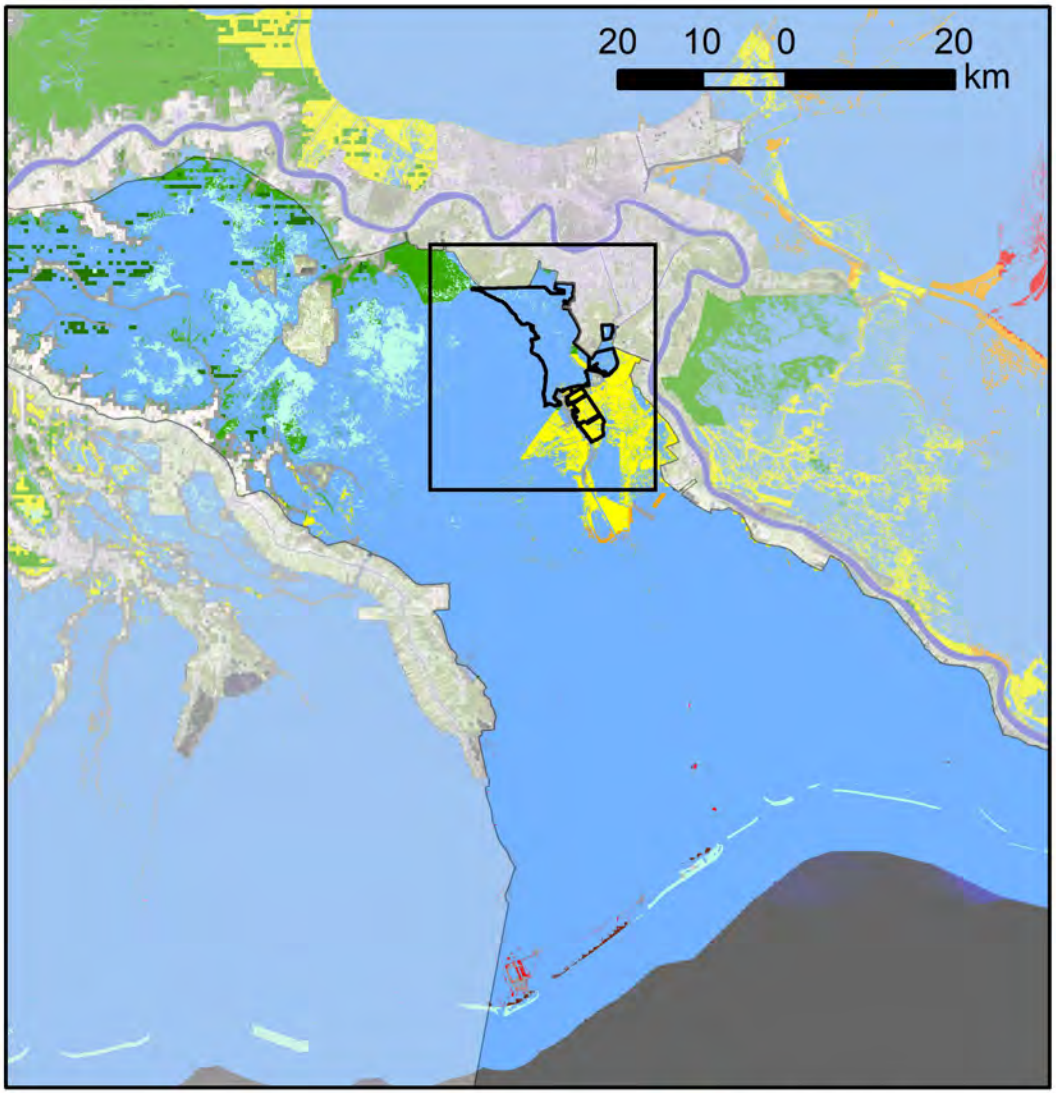
Habitat Type

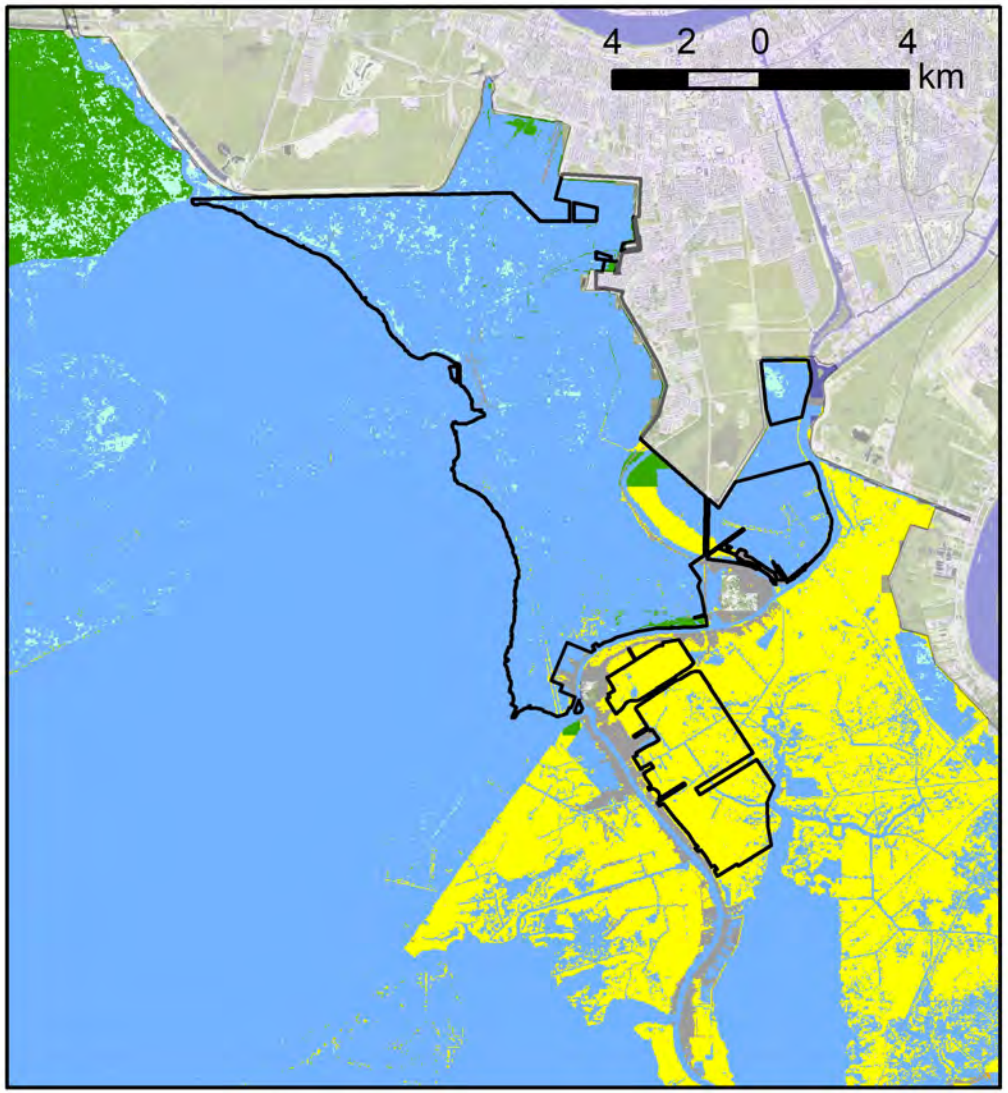
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



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S08 - G703
Inter.-High
Ama Only
Year 51

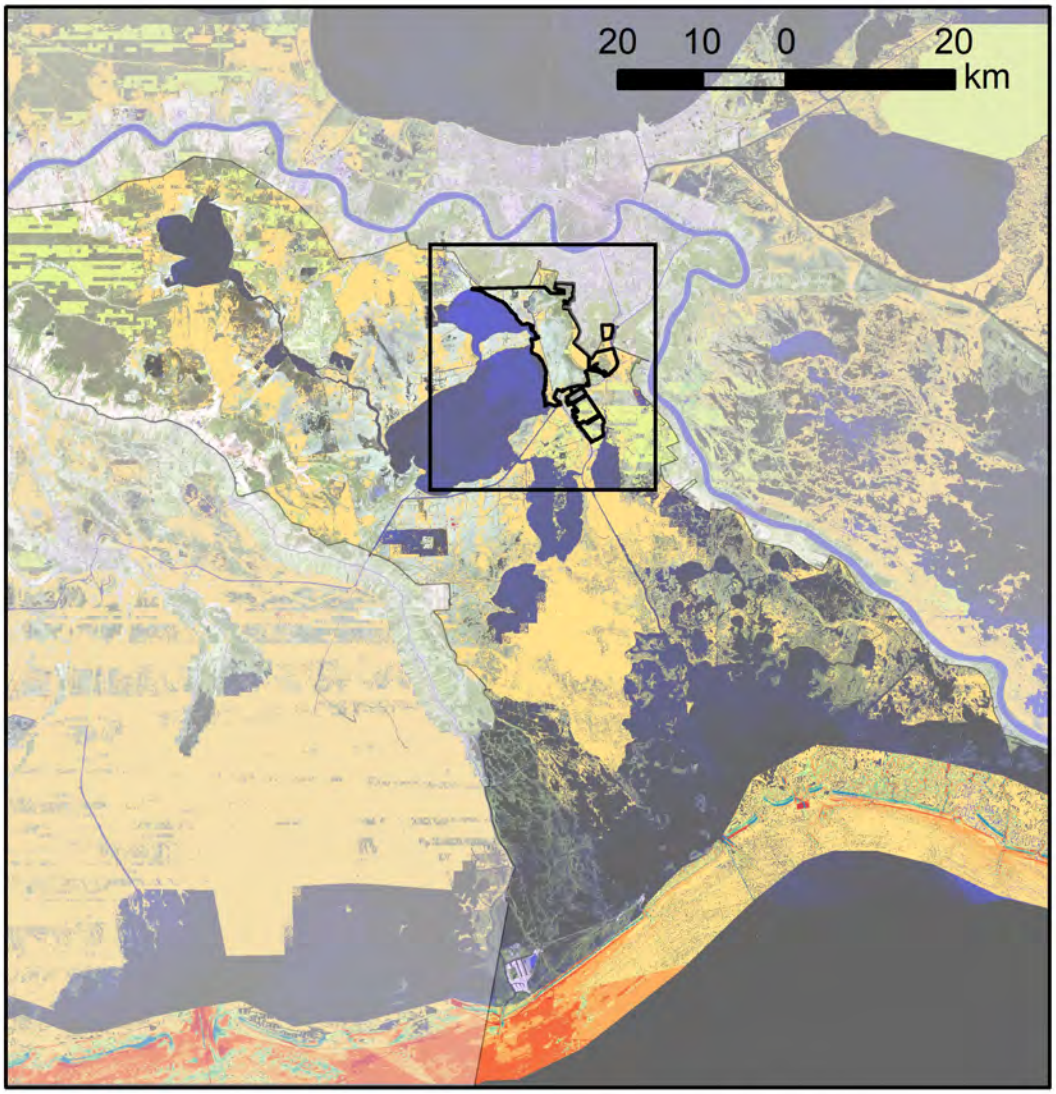
Habitat Type

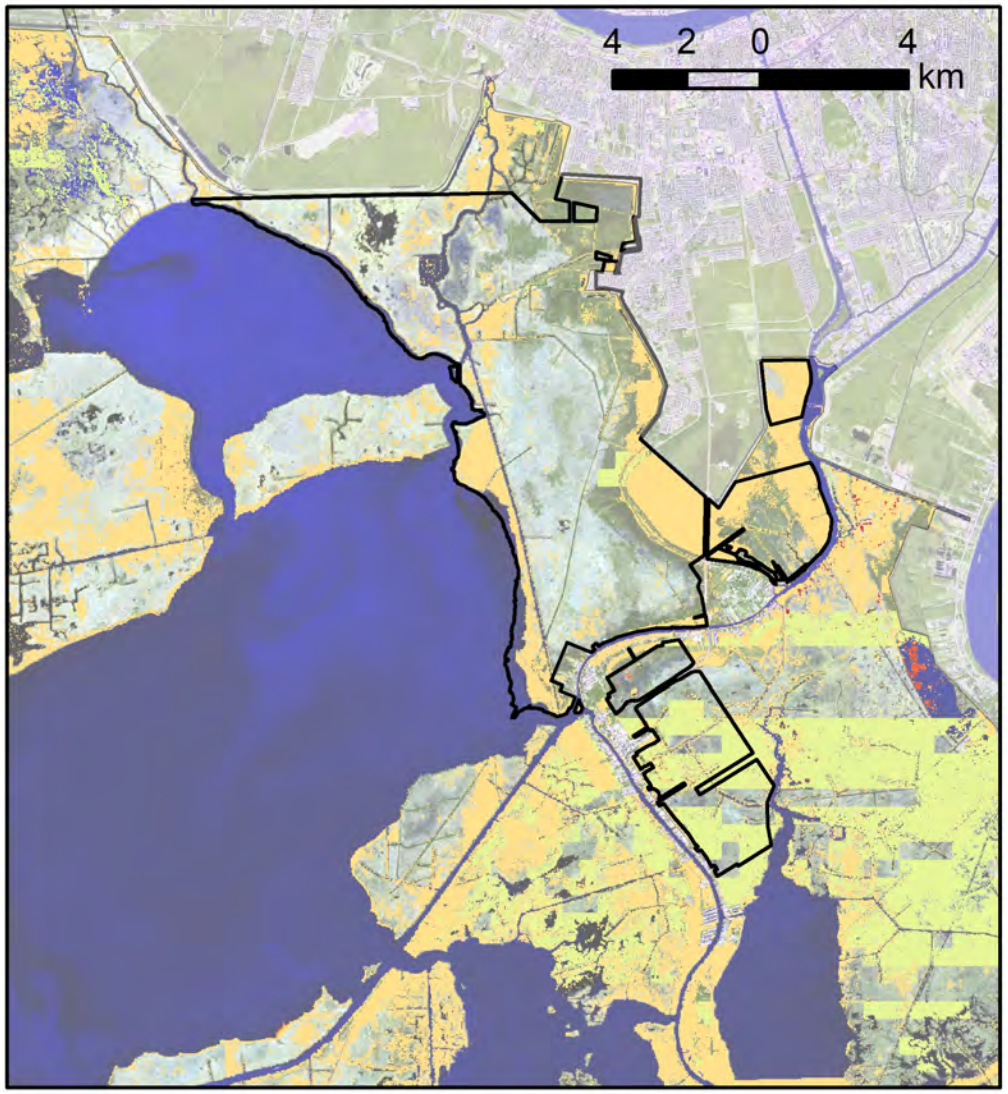
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



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S08 - G703
Inter.-High
Ama Only
Year 02

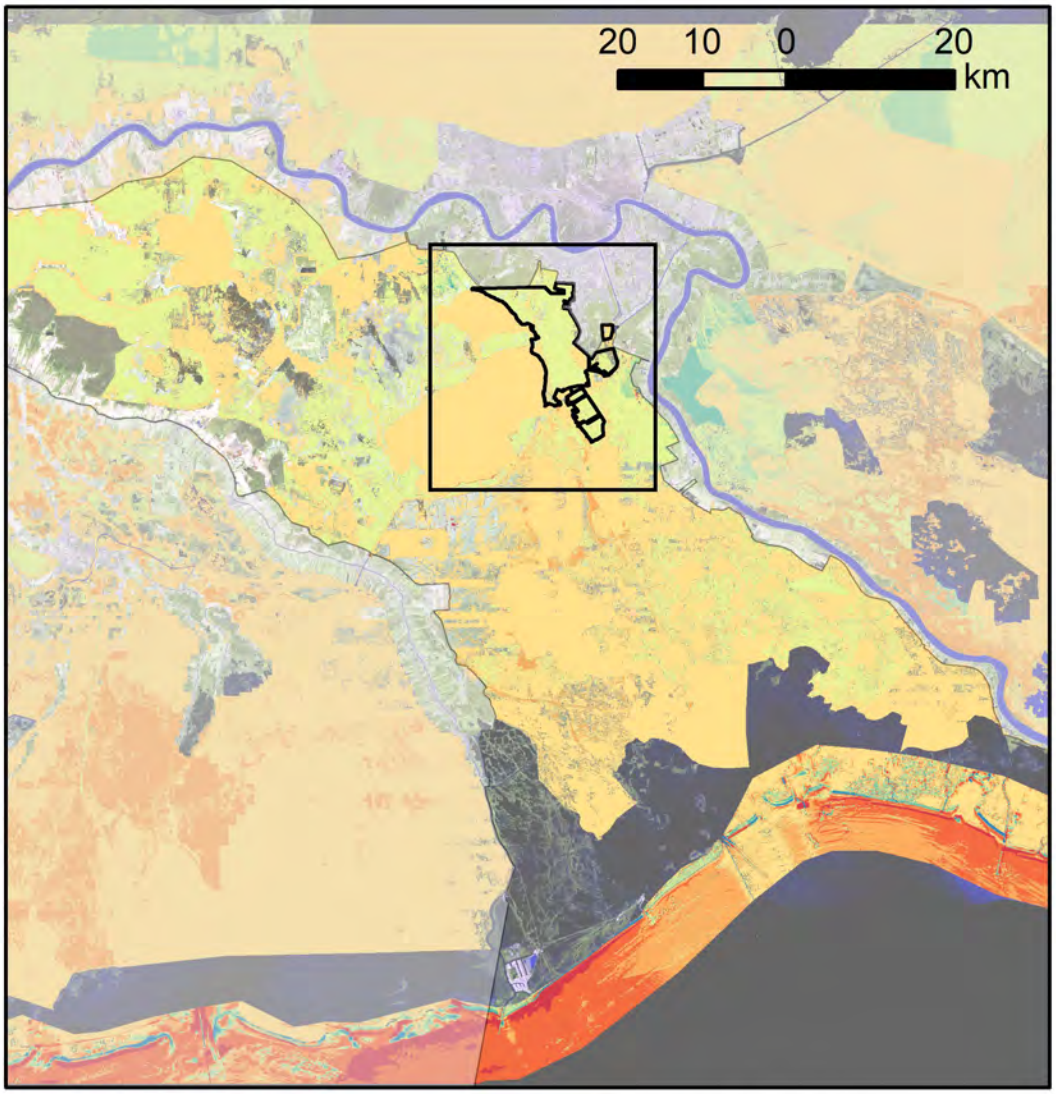
Elev. Change [m]

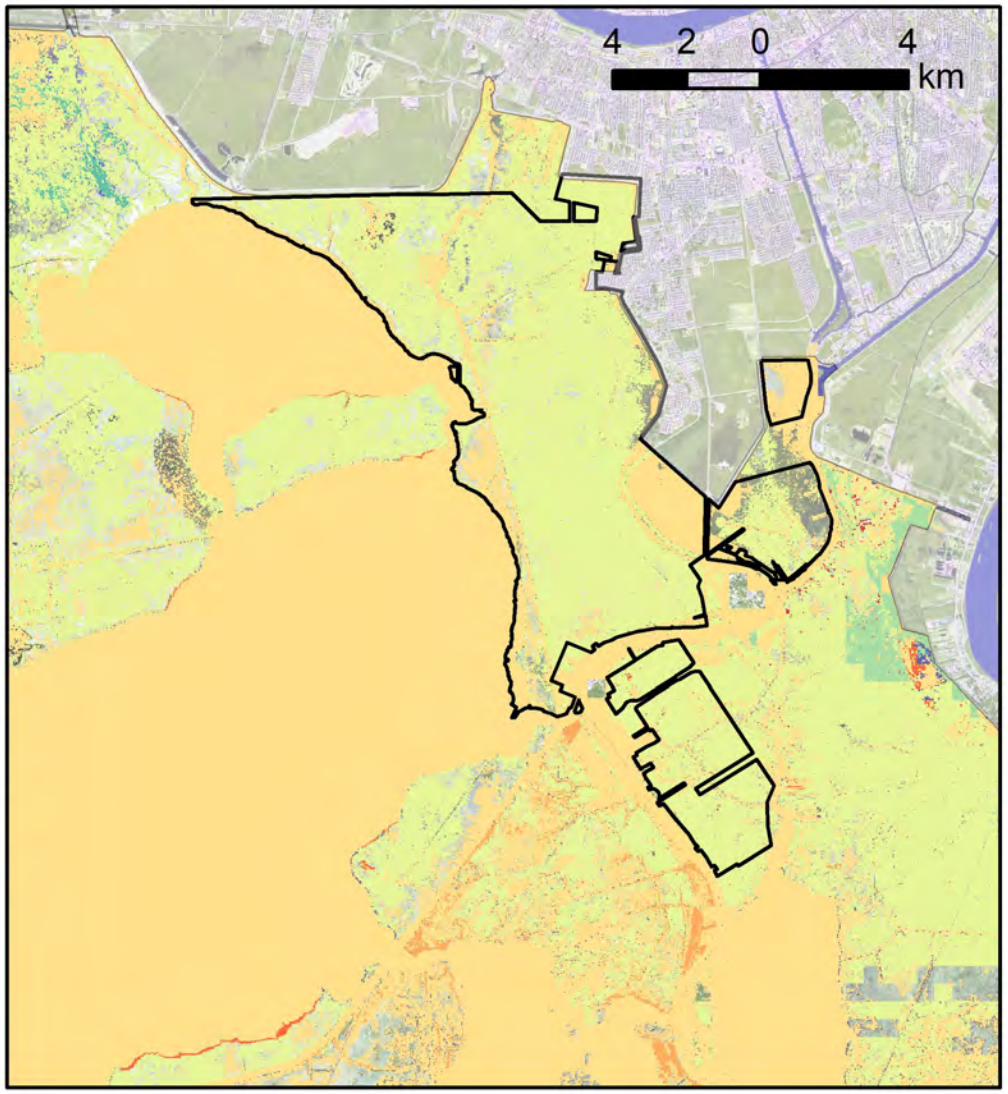
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol







S08 - G703
Inter.-High
Ama Only
Year 12

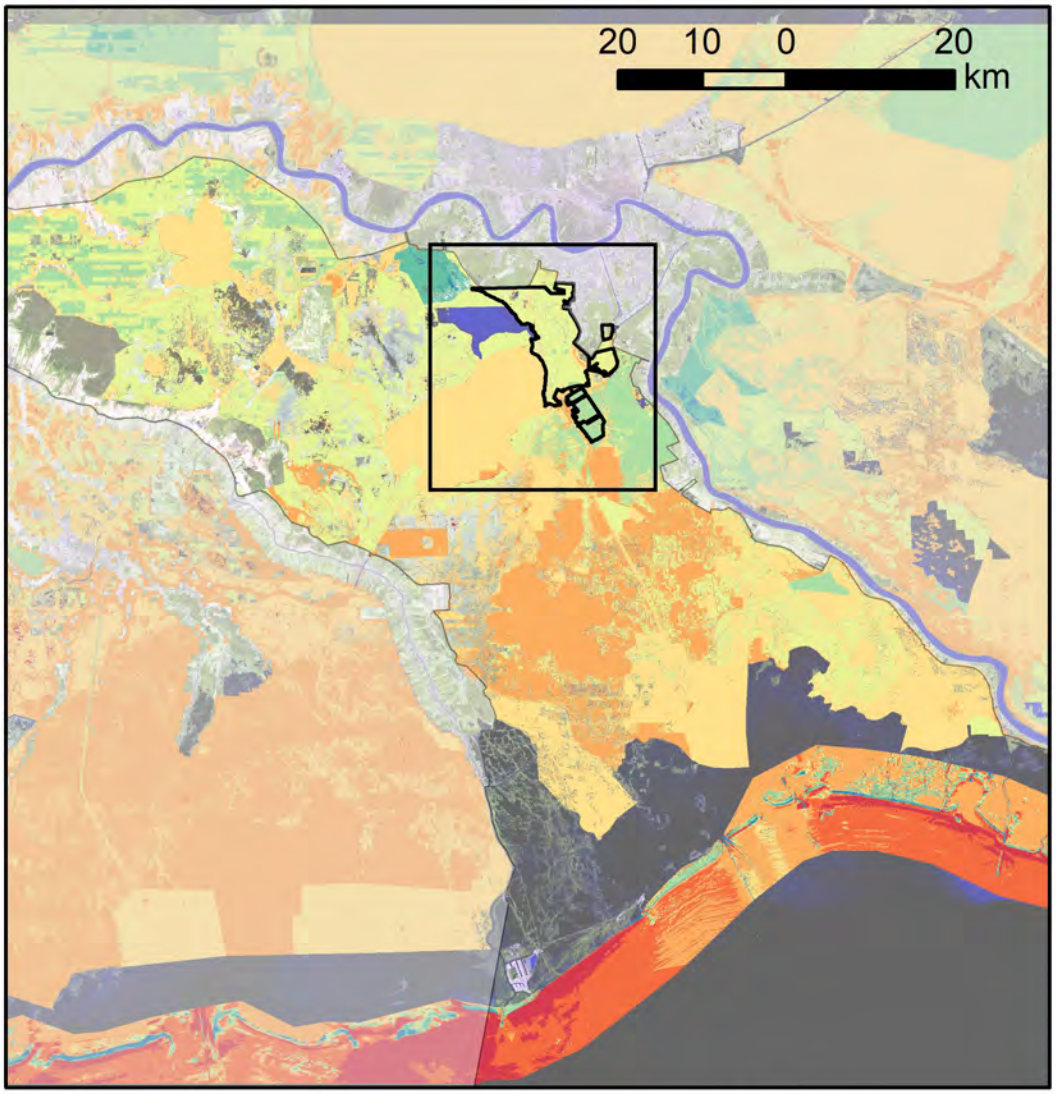
Elev. Change [m]

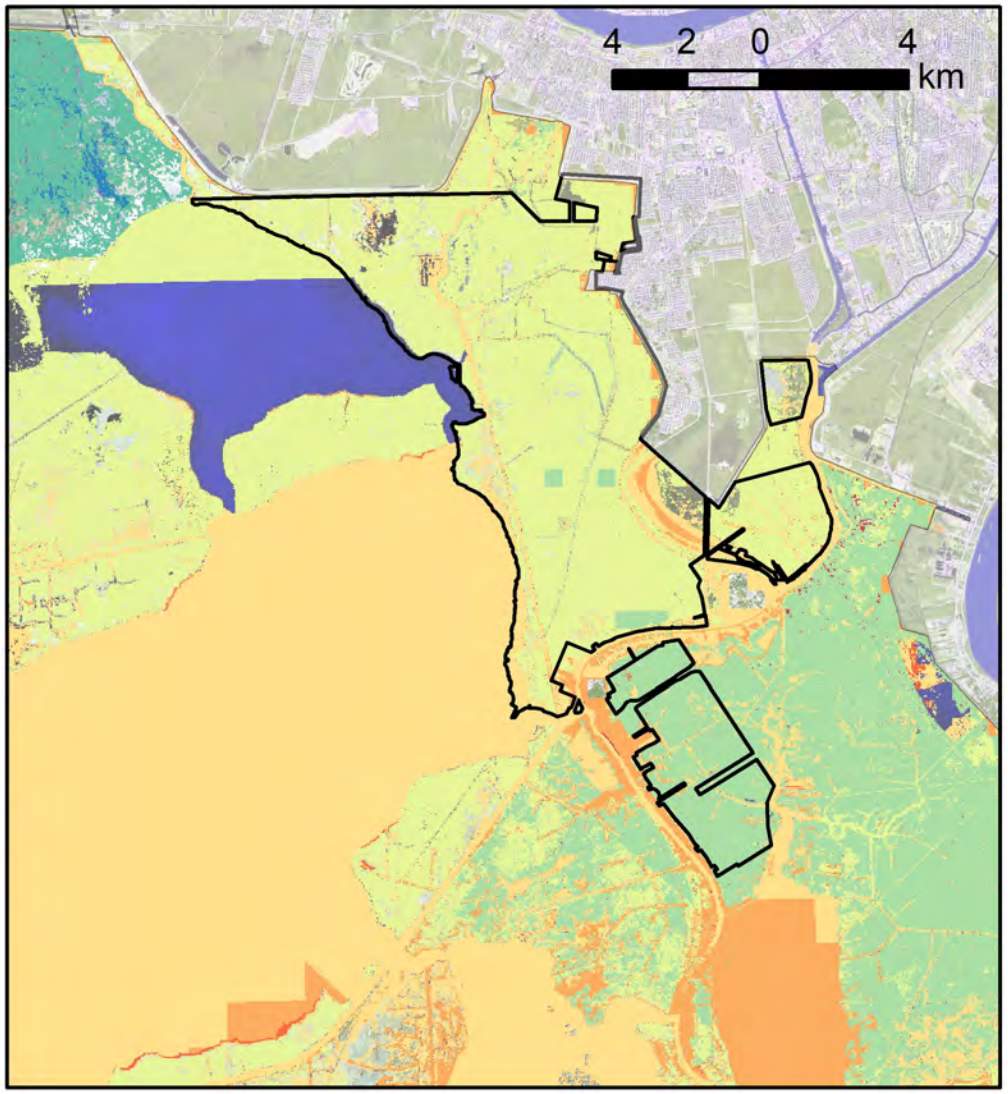
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

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S08 - G703
Inter.-High
Ama Only
Year 22

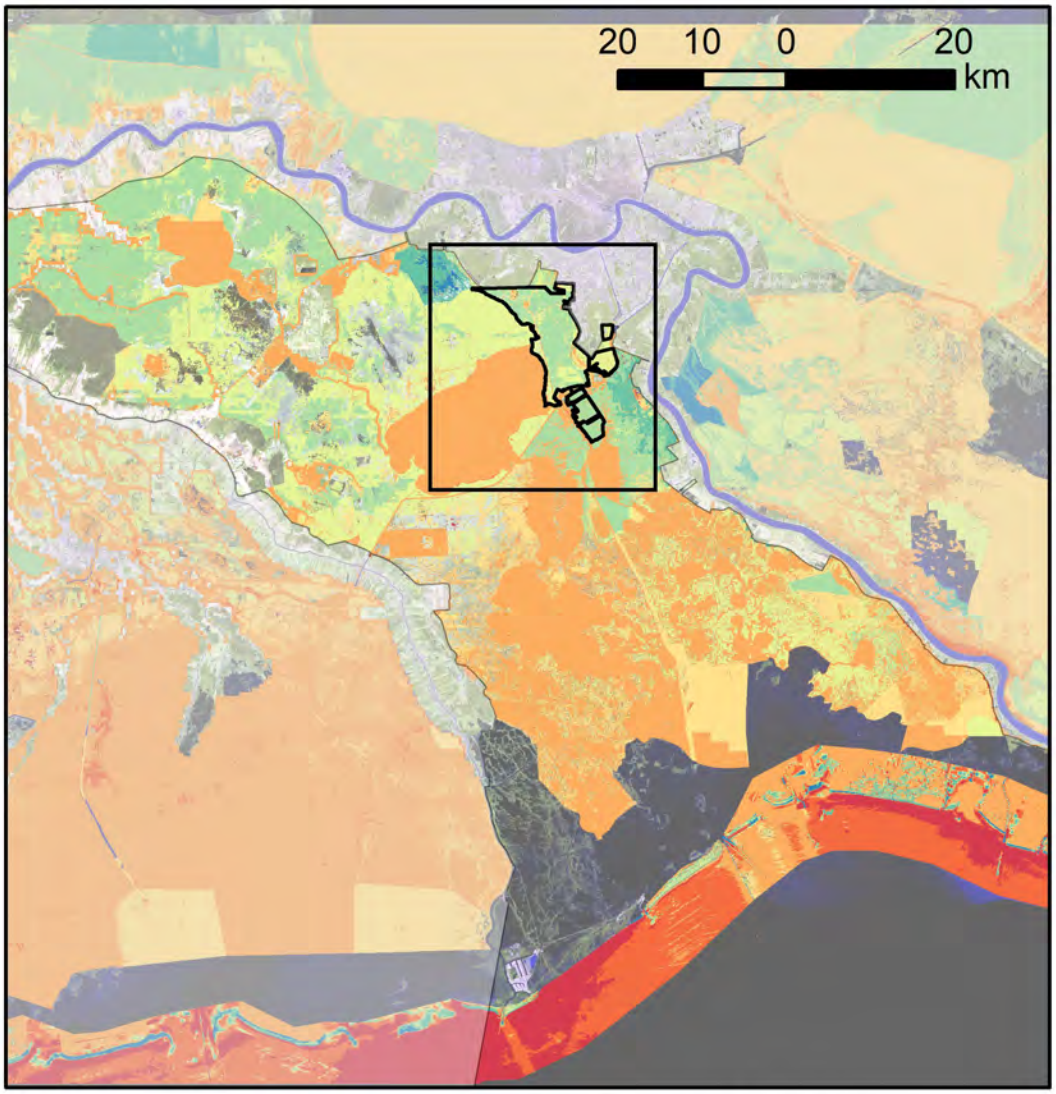
Elev. Change [m]

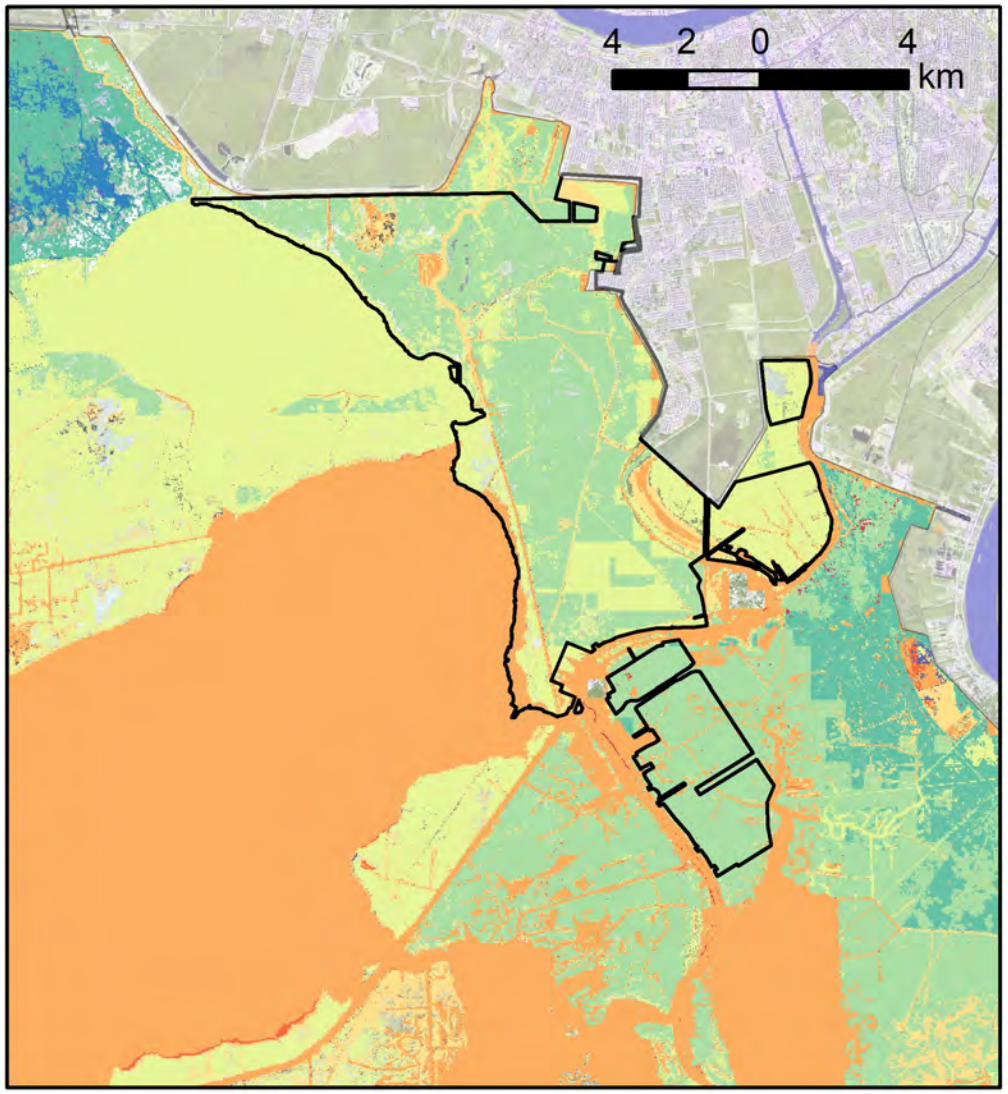
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

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W E
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S08 - G703
Inter.-High
Ama Only
Year 32

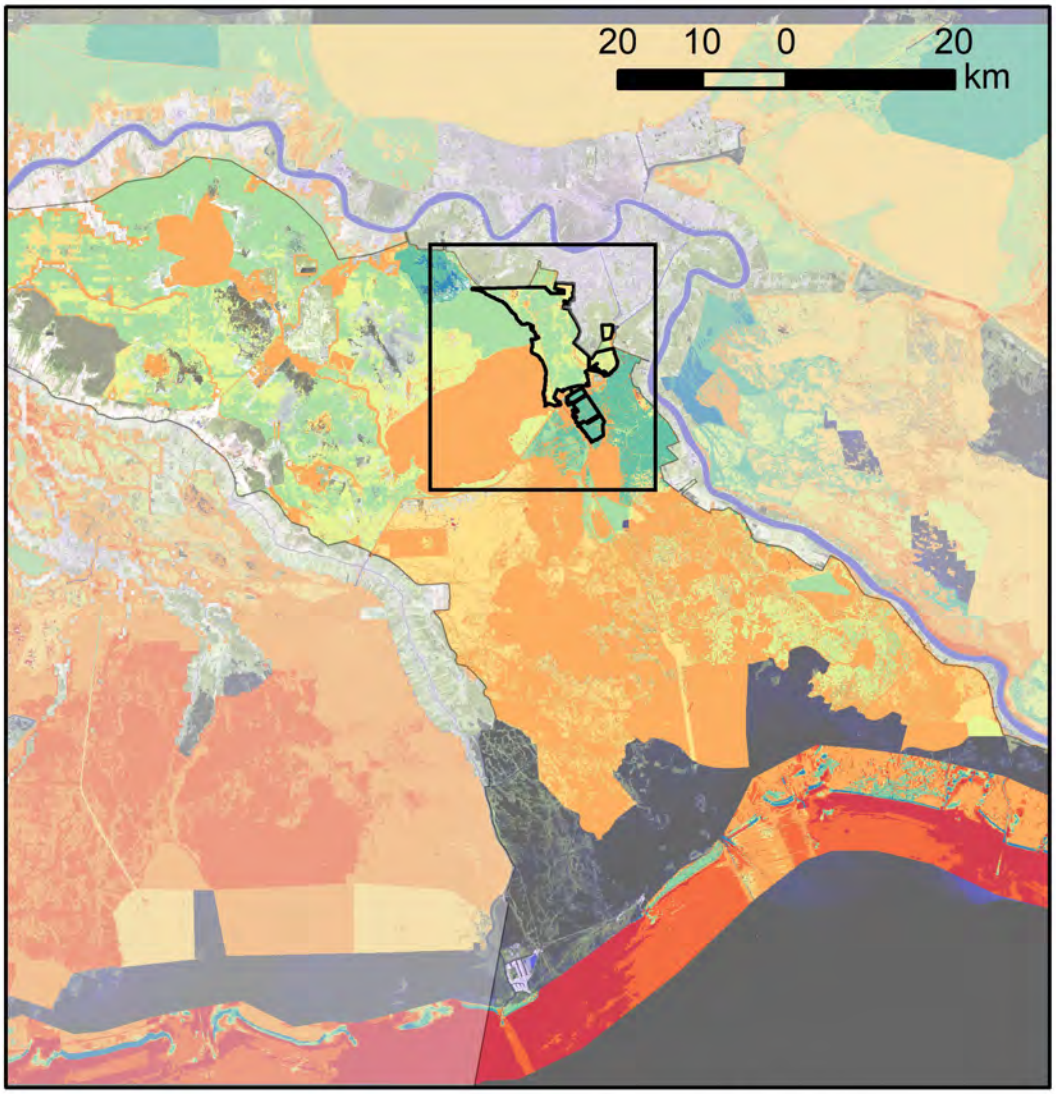
Elev. Change [m]

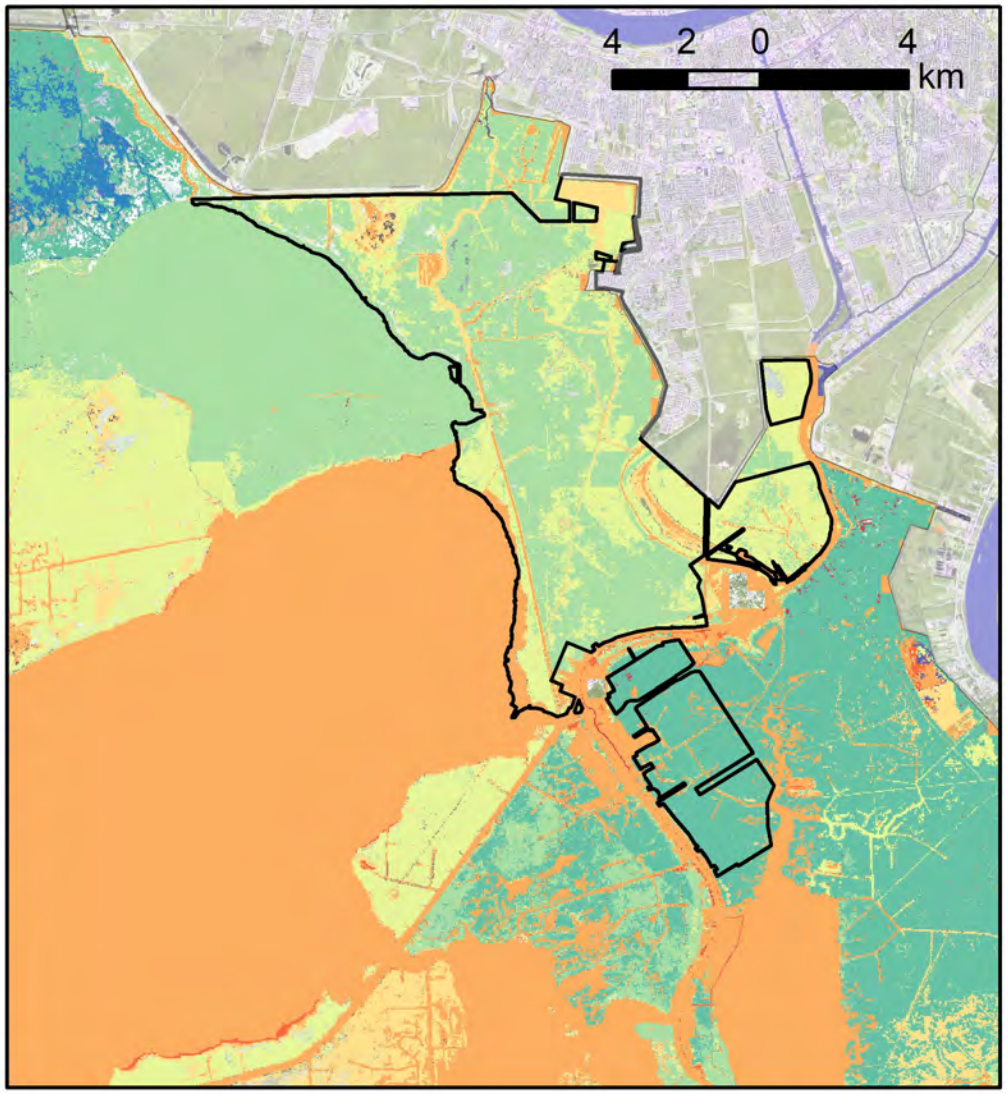
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol







S08 - G703
Inter.-High
Ama Only
Year 42

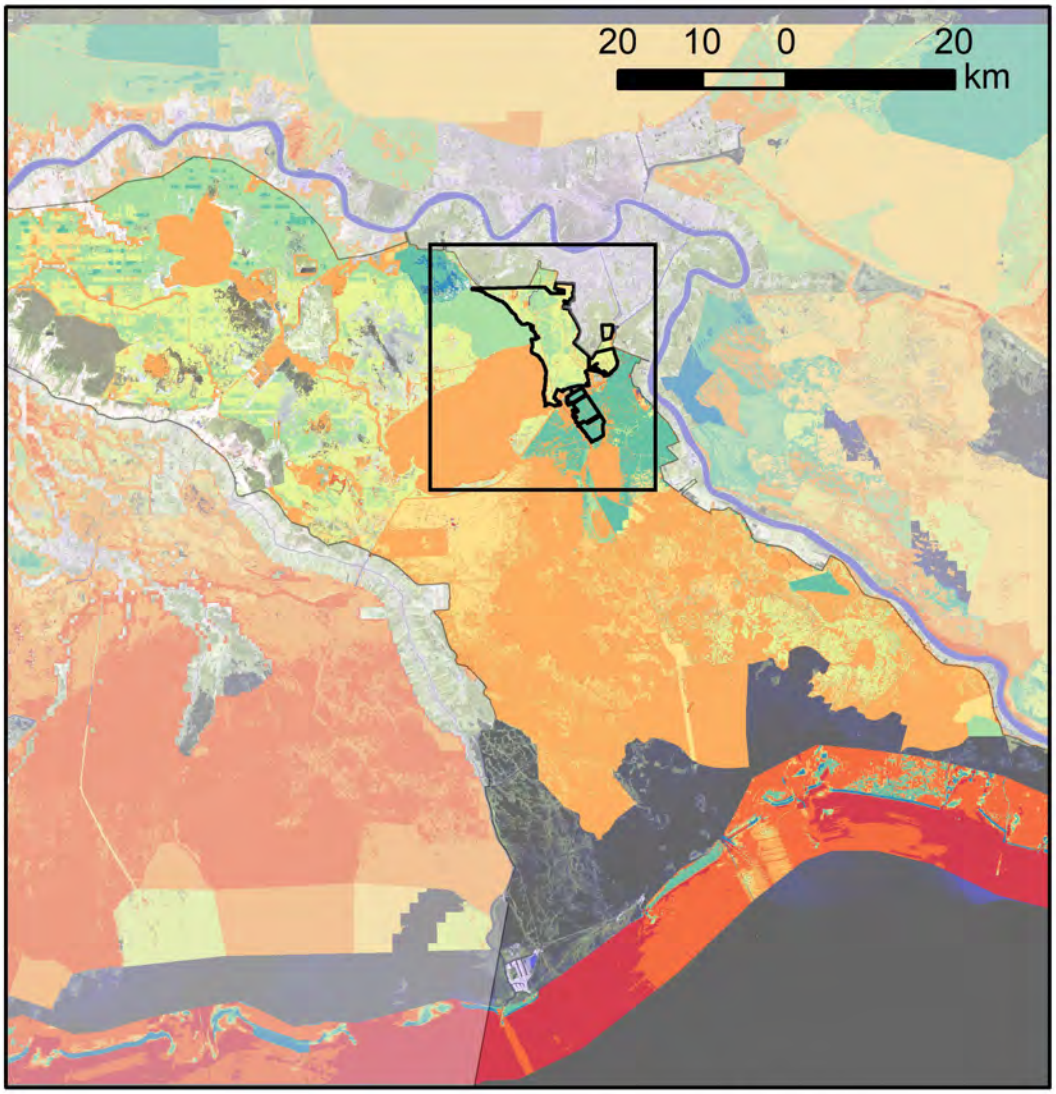
Elev. Change [m]

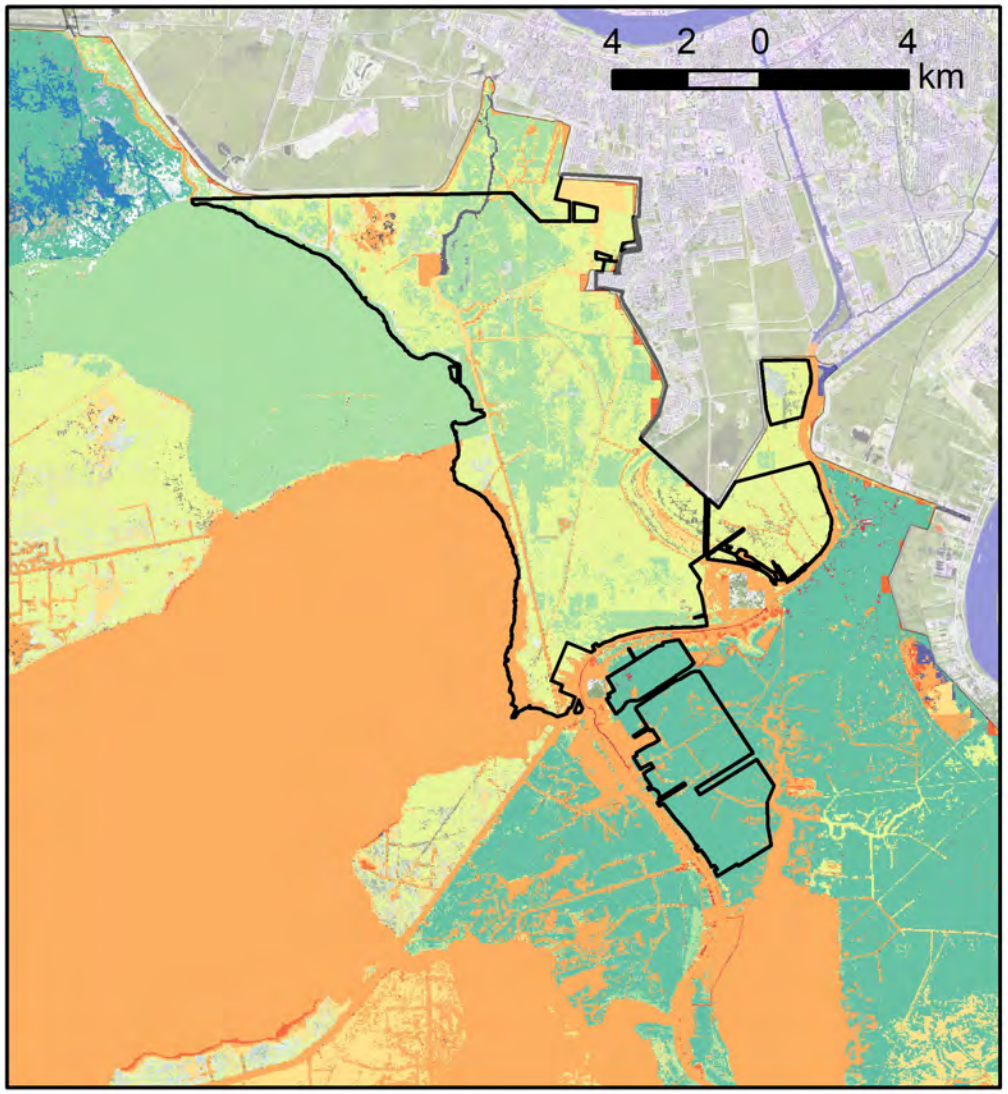
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol







S08 - G703
Inter.-High
Ama Only
Year 51

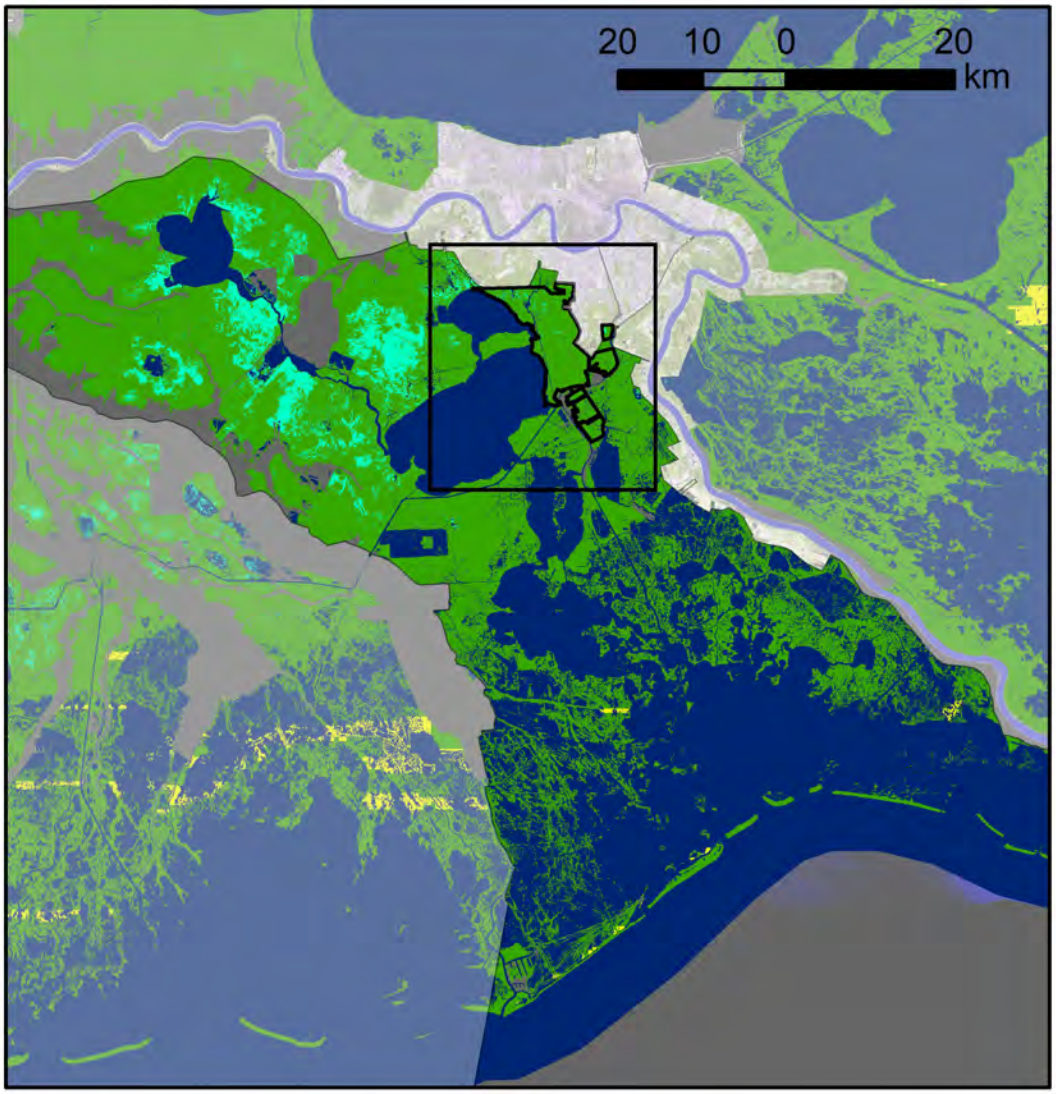
Elev. Change [m]

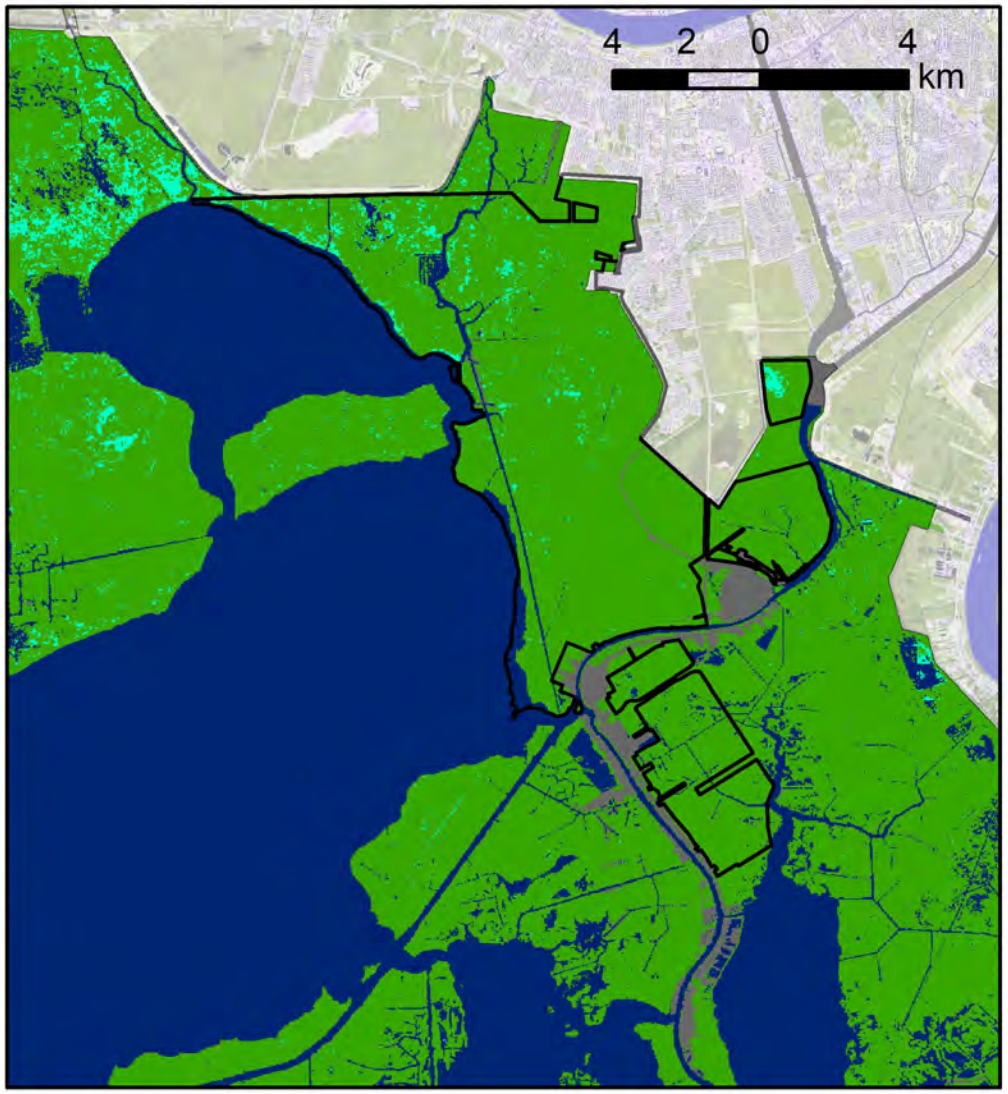
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol







S08 - G803
Inter.-High
Both Diversions
Year 02

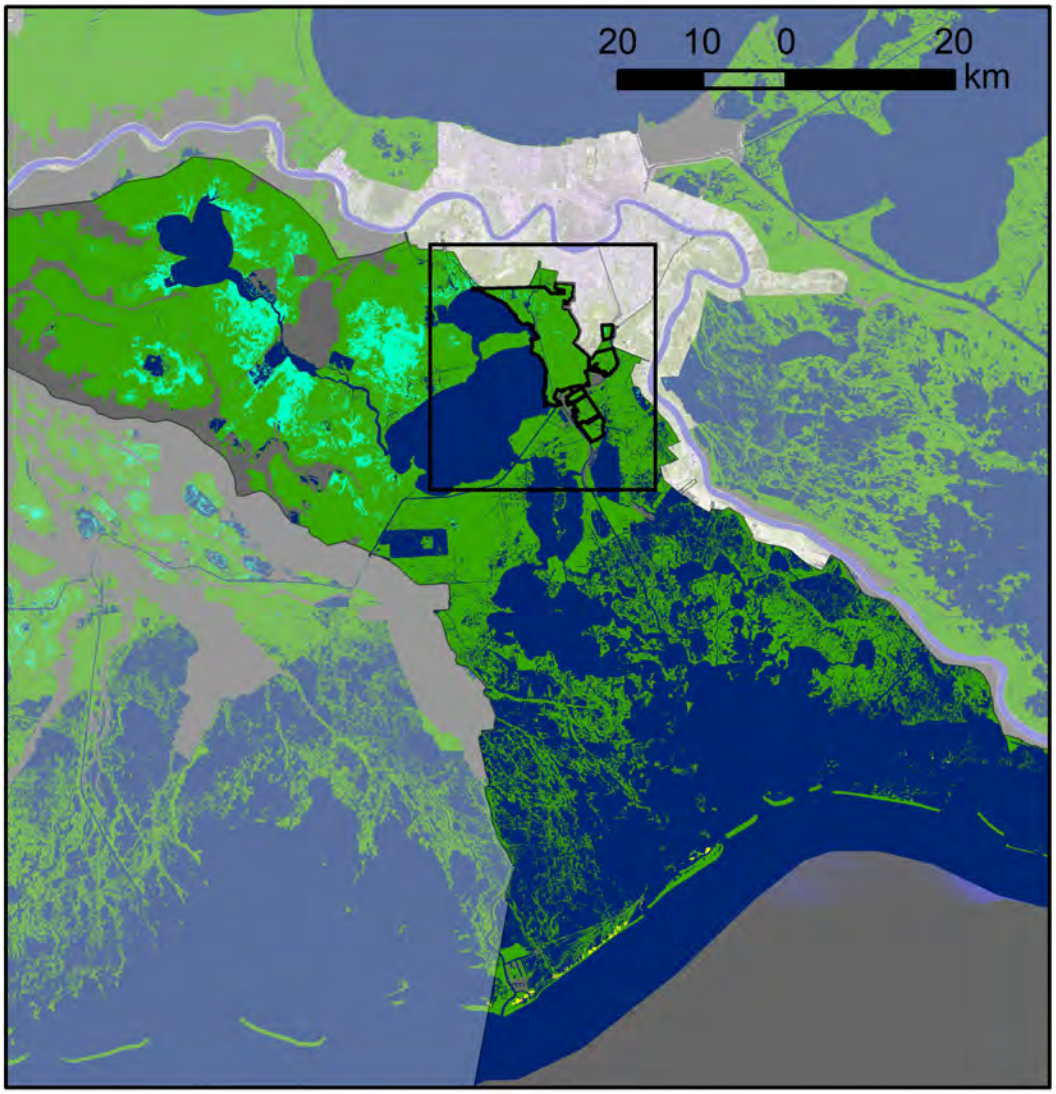
Land Type

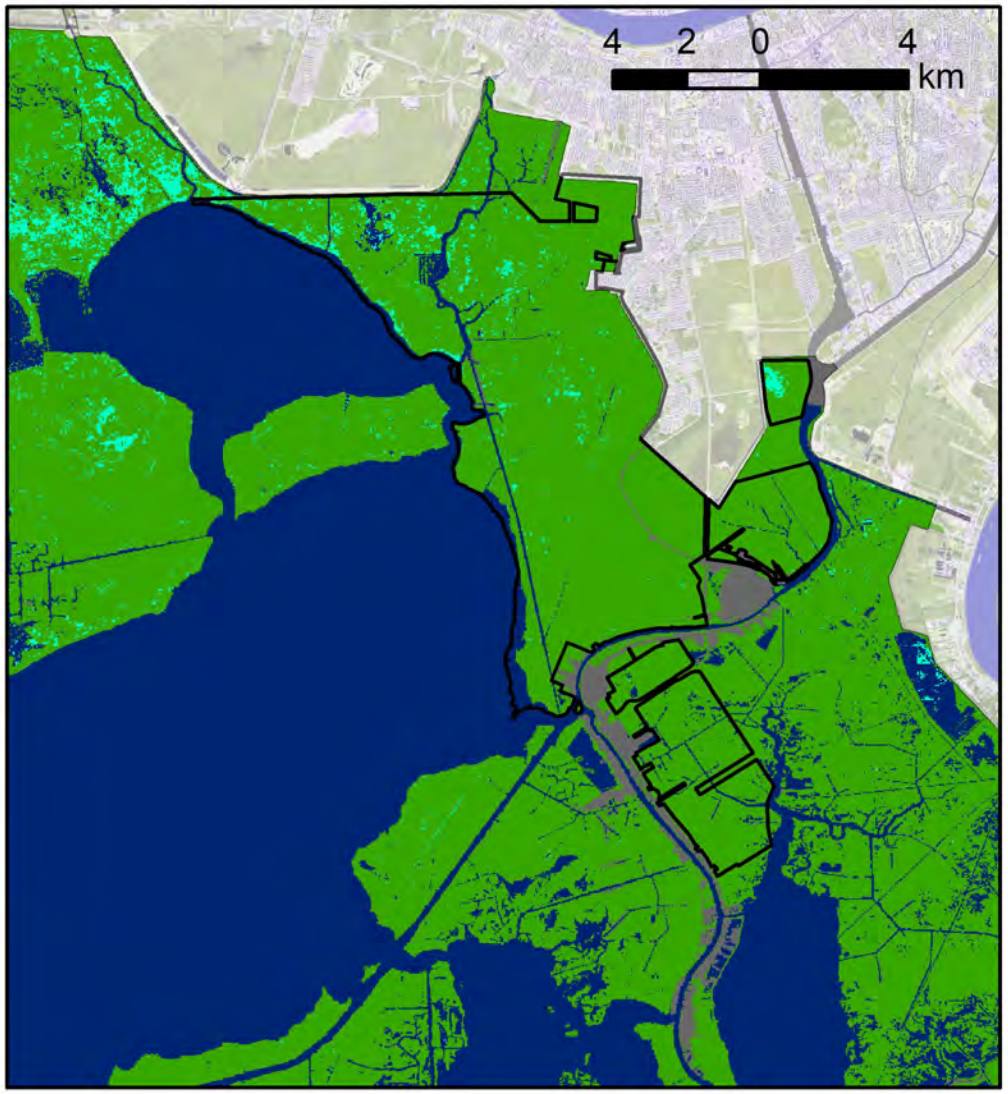
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S08 - G803
Inter.-High
Both Diversions
Year 12

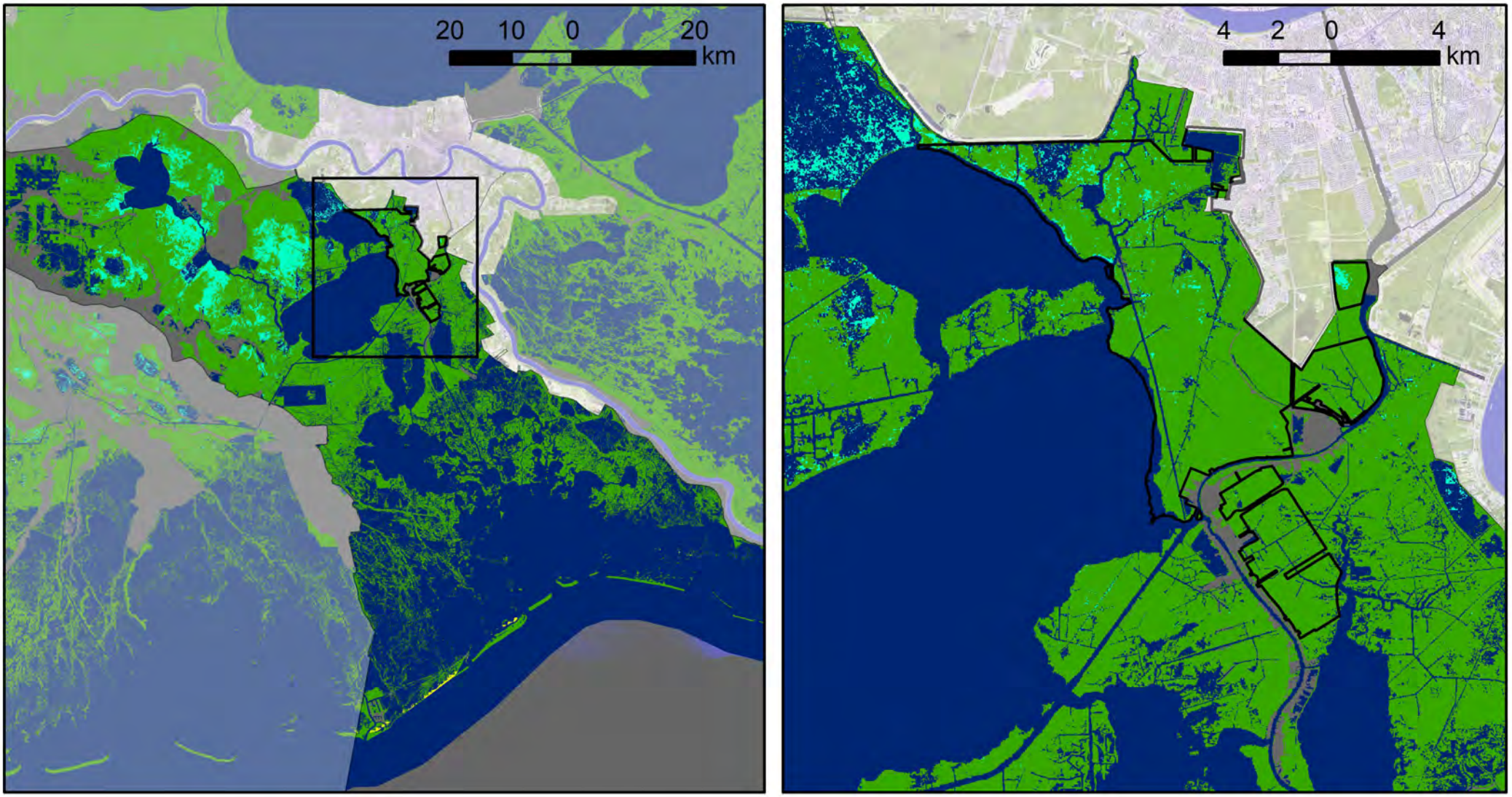
Land Type

- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol





S08 - G803
Inter.-High
Both Diversions
Year 22

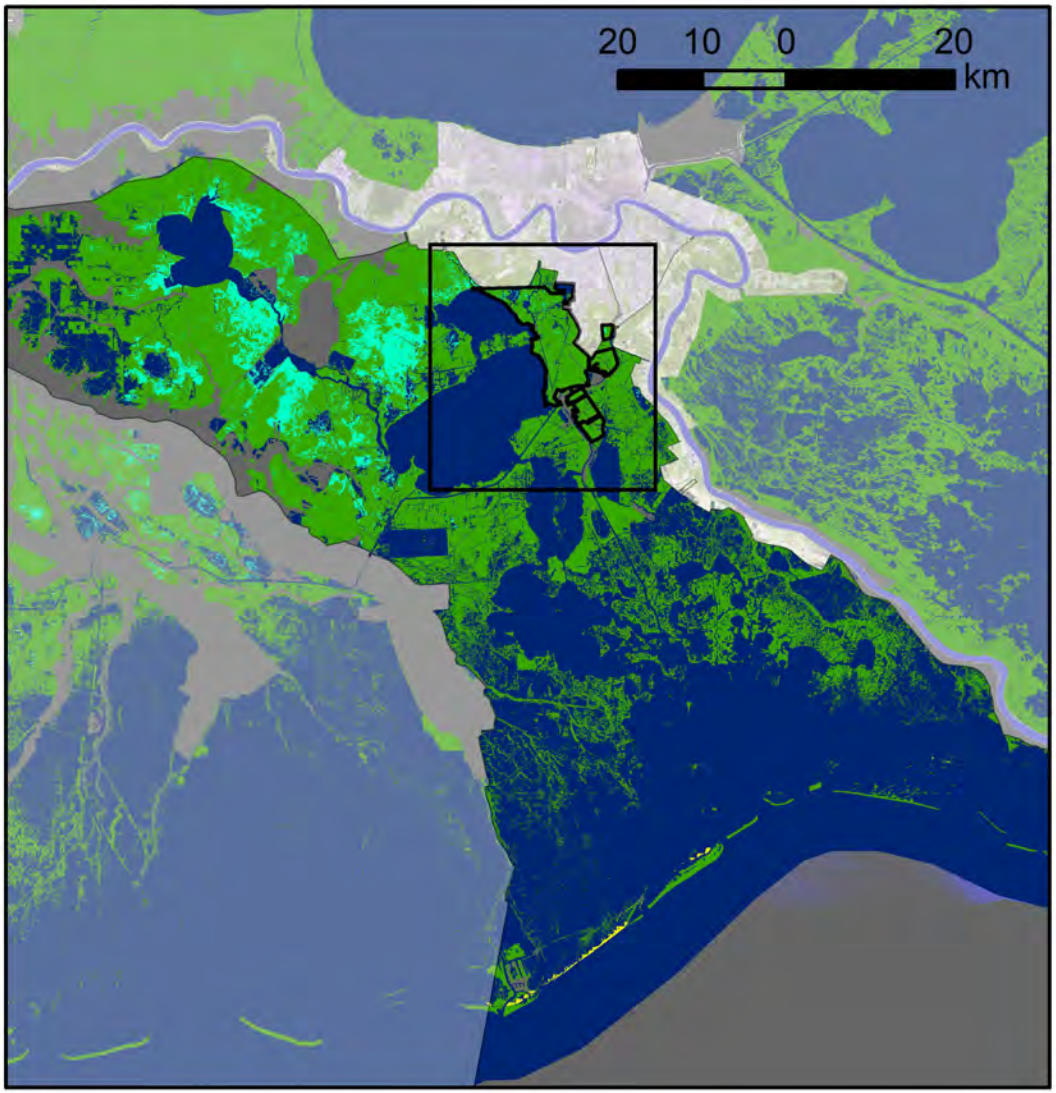
Land Type

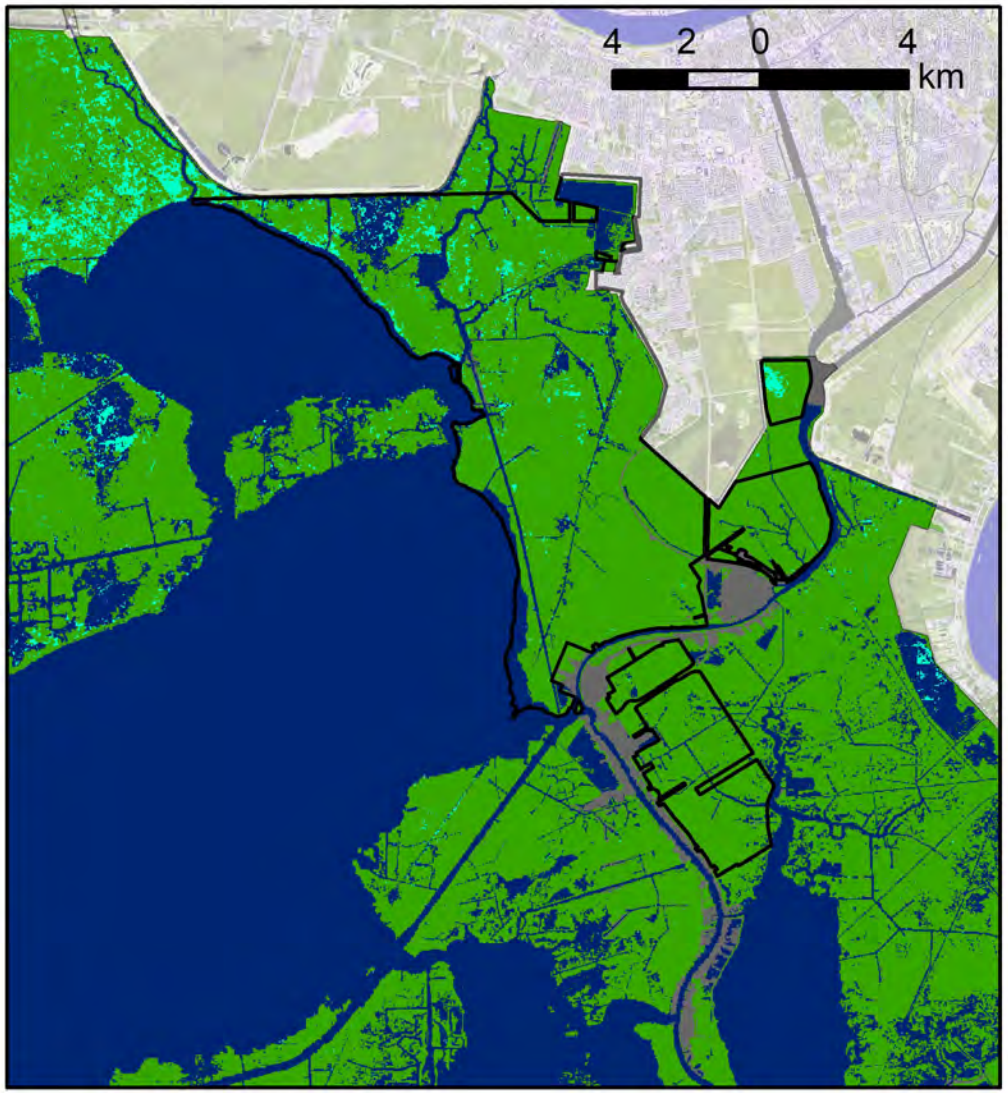
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S08 - G803
Inter.-High
Both Diversions
Year 32

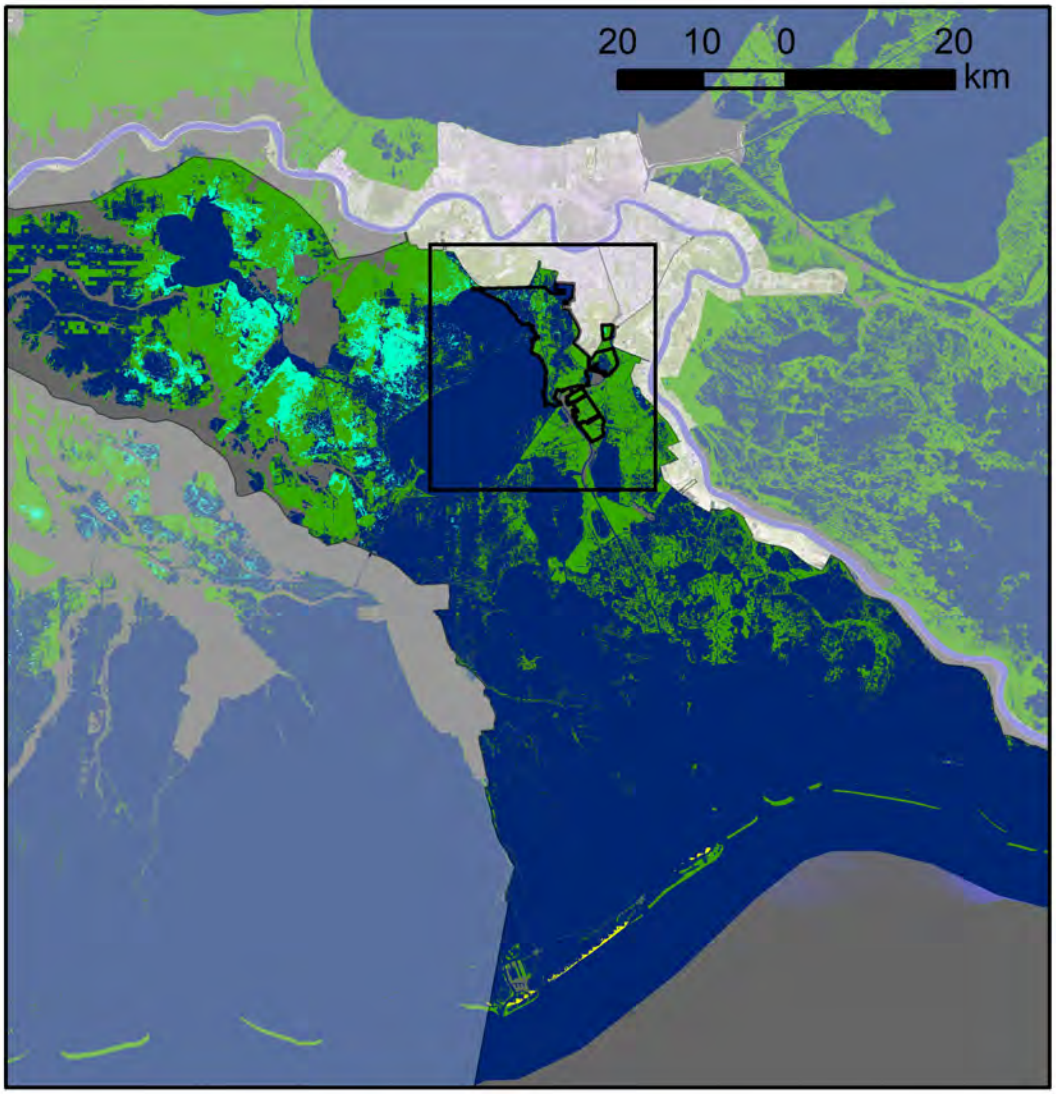
Land Type

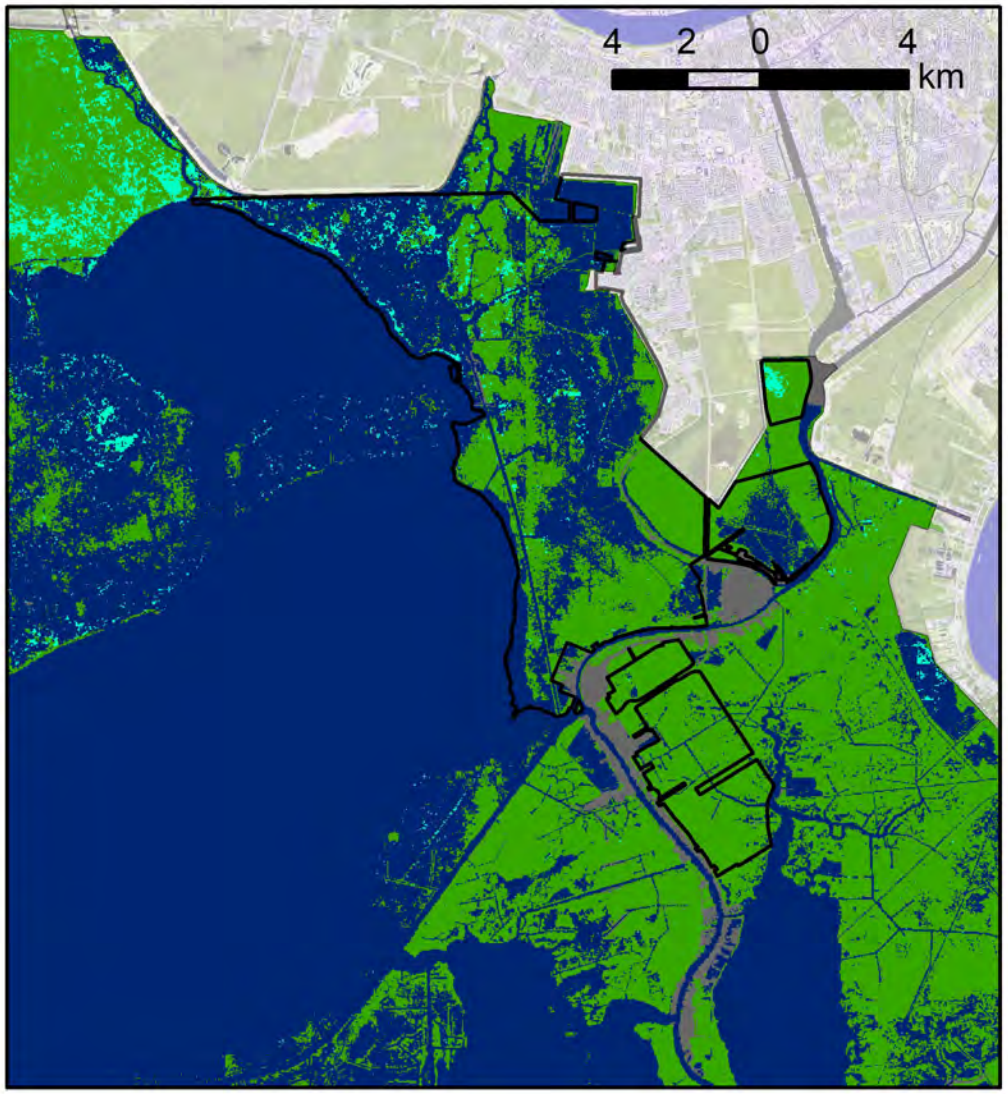
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S08 - G803
Inter.-High
Both Diversions
Year 42

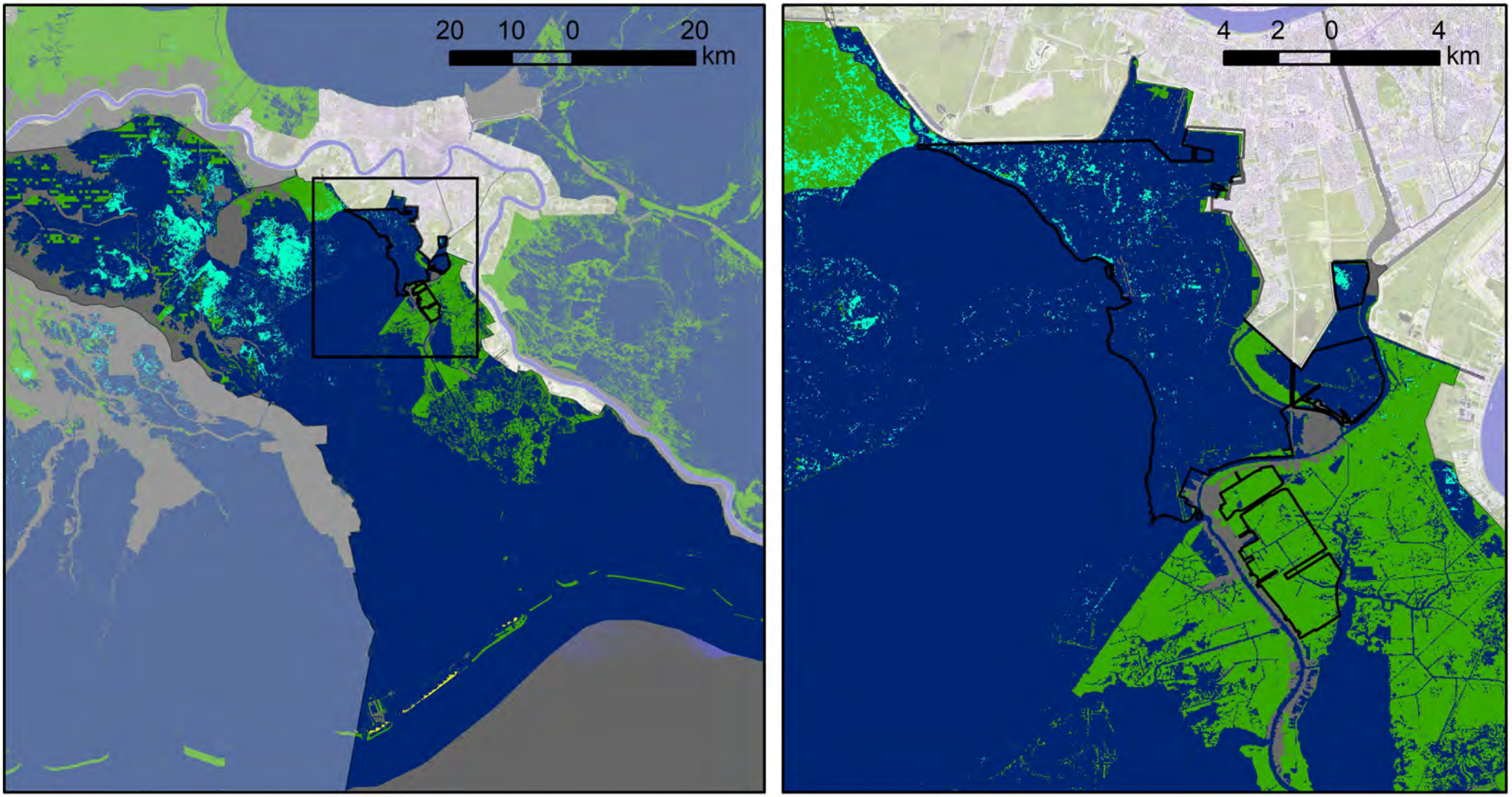
Land Type

- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol





S08 - G803
Inter.-High
Both Diversions
Year 51

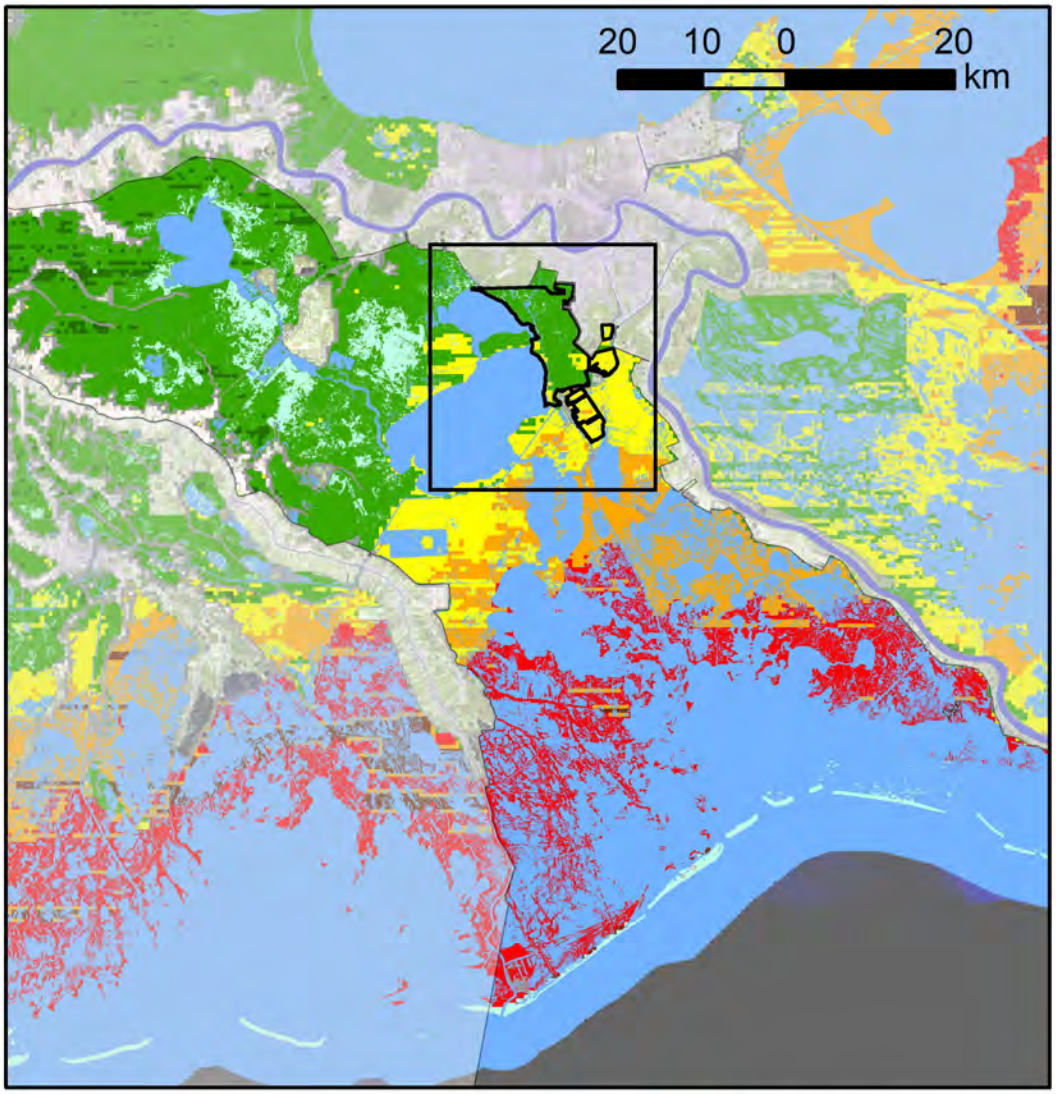
Land Type

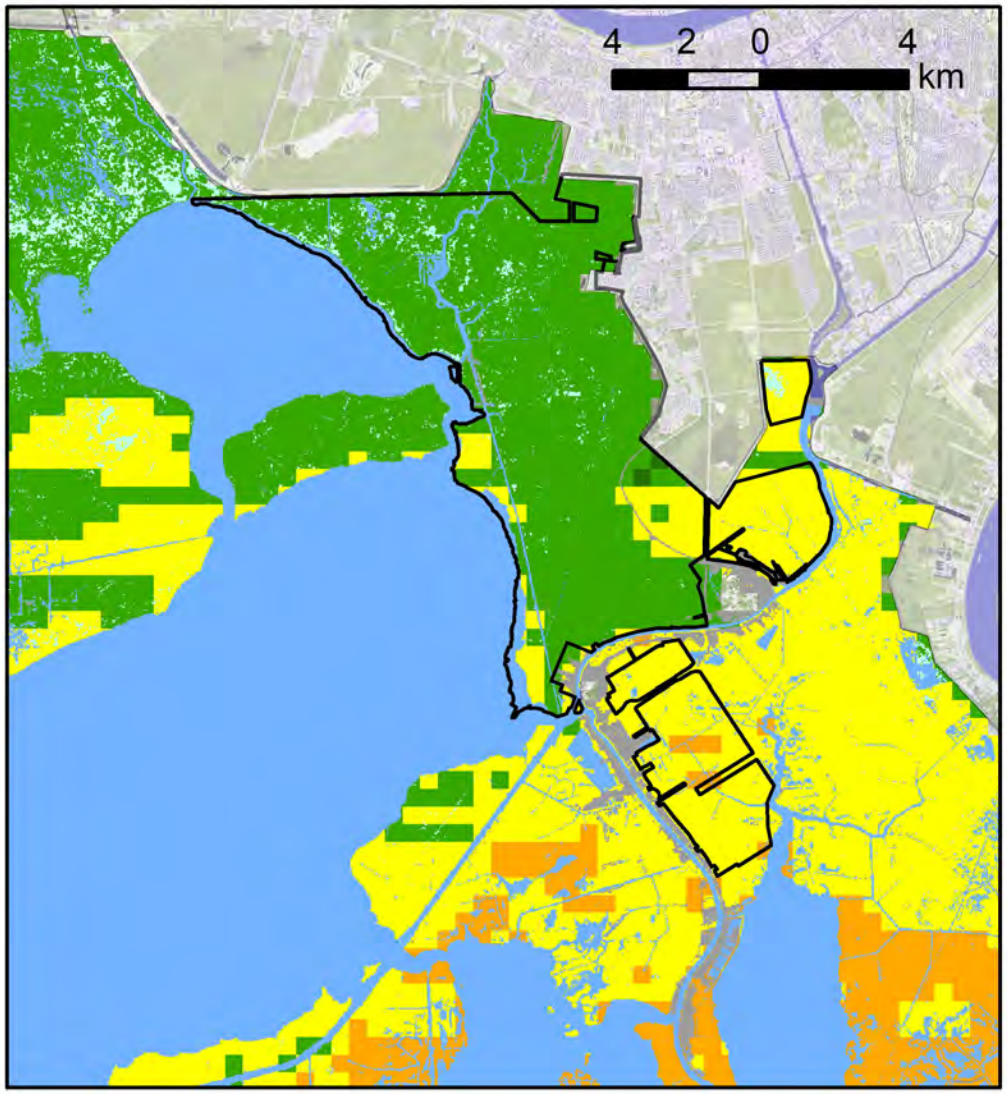
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S08 - G803
Inter.-High
Both Diversions
Year 02

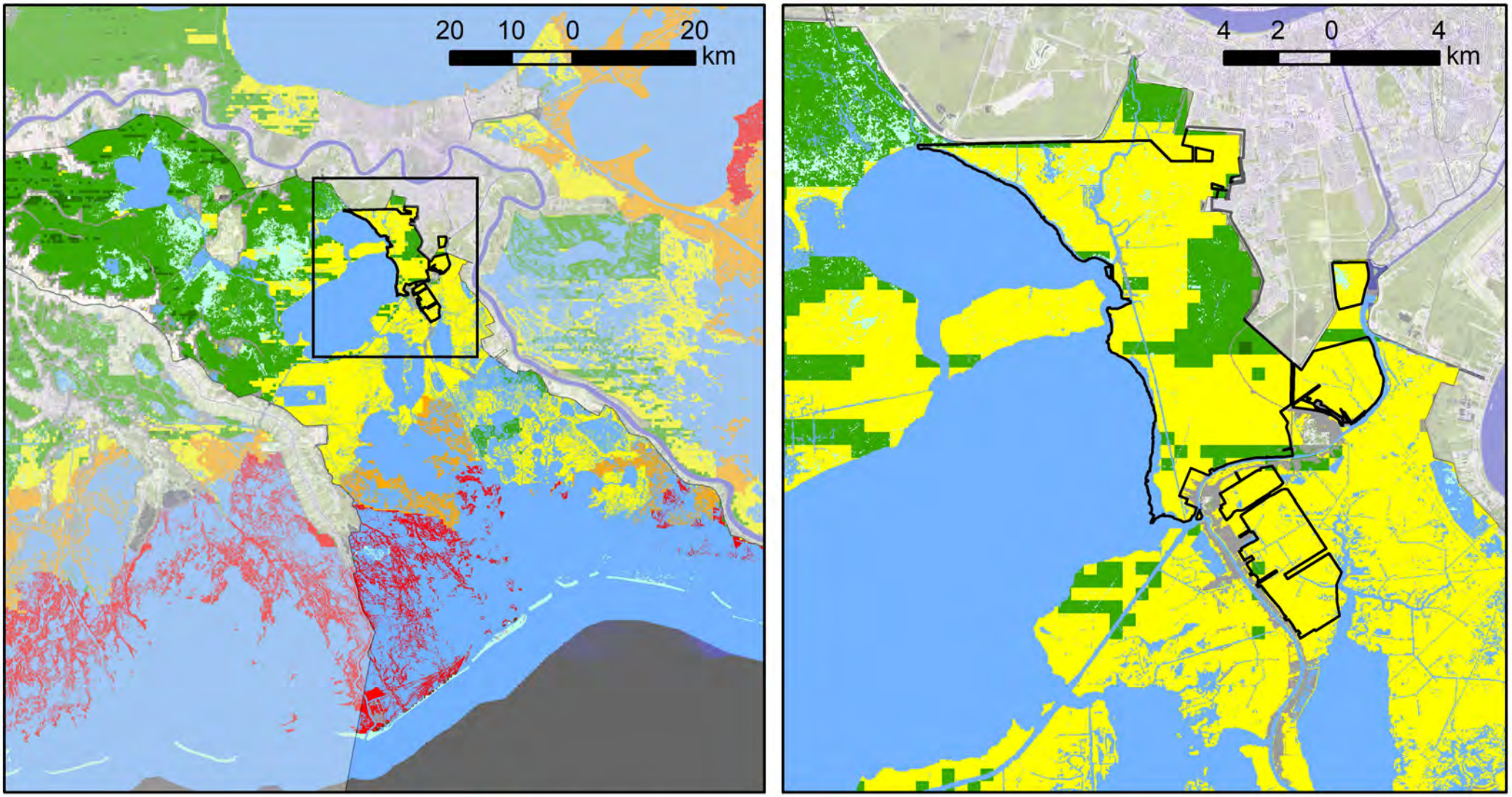
Habitat Type

- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol





S08 - G803
Inter.-High
Both Diversions
Year 12

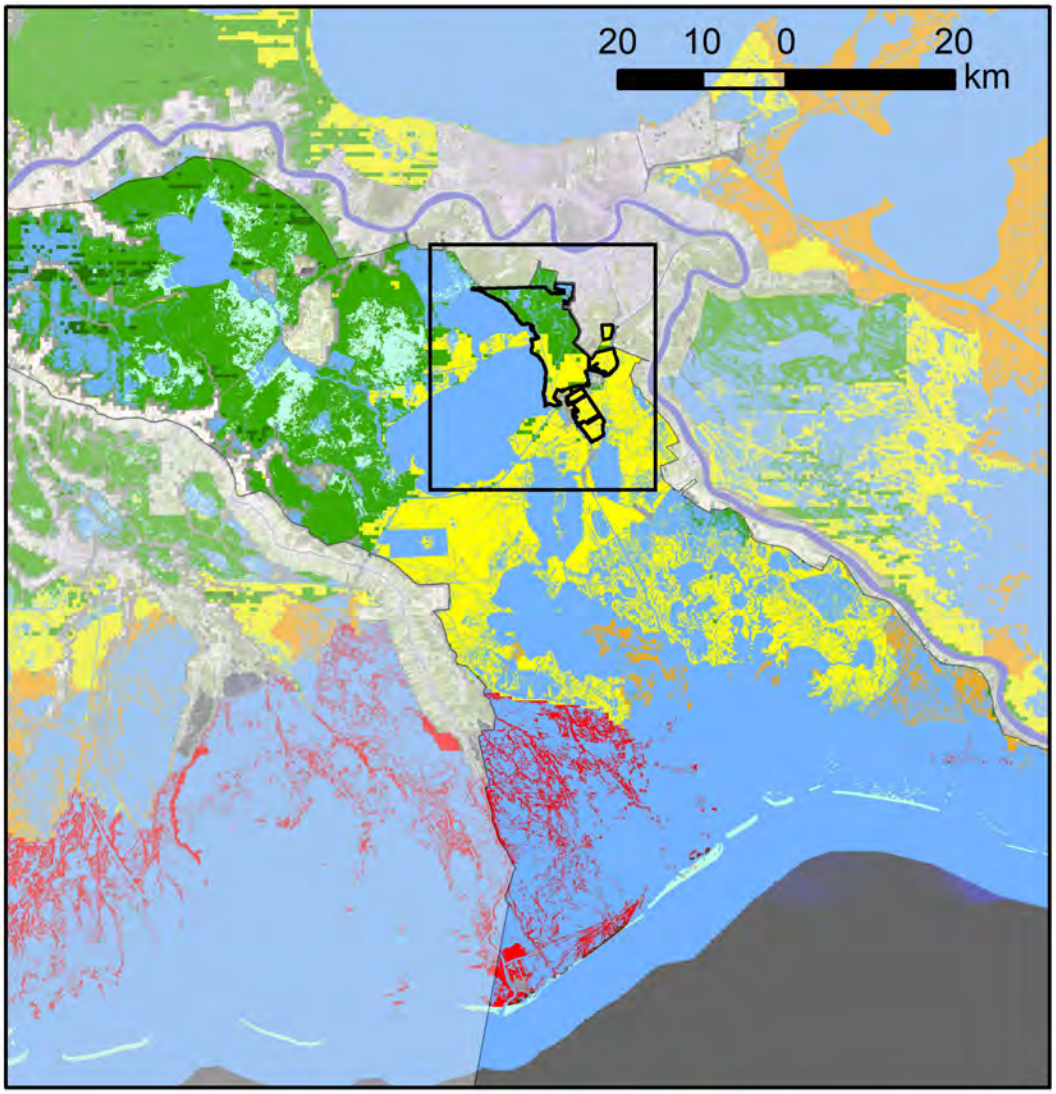
Habitat Type

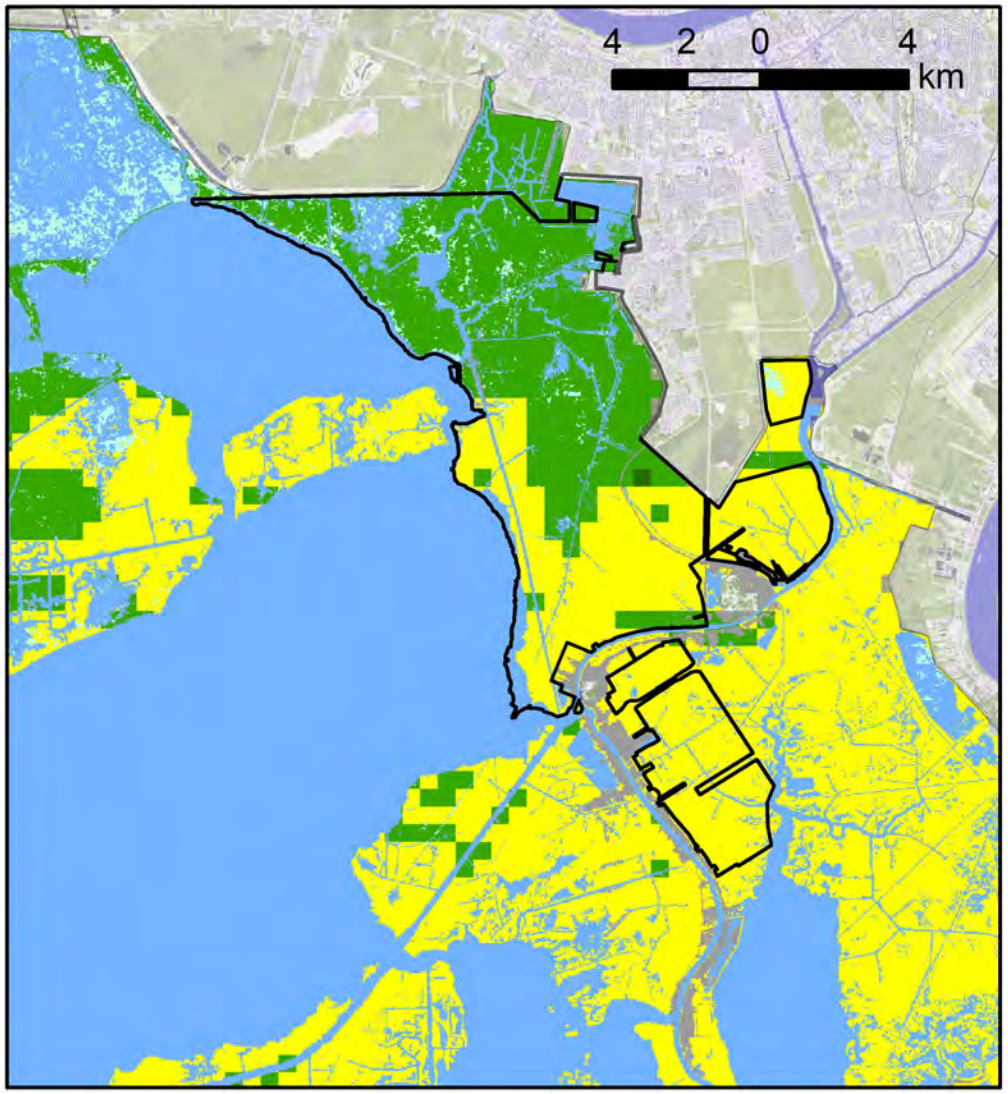
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol

N
W E
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S08 - G803
Inter.-High
Both Diversions
Year 22

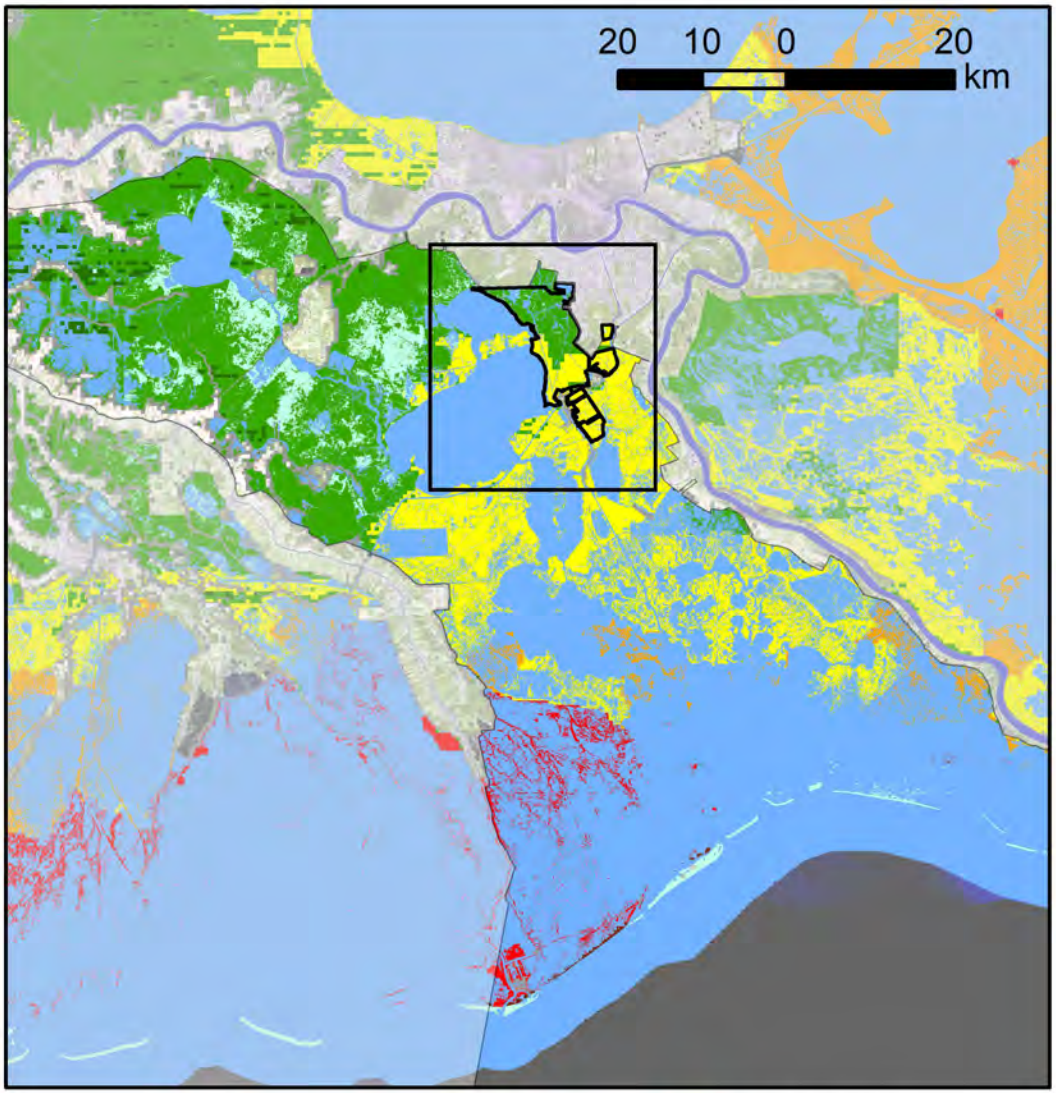
Habitat Type

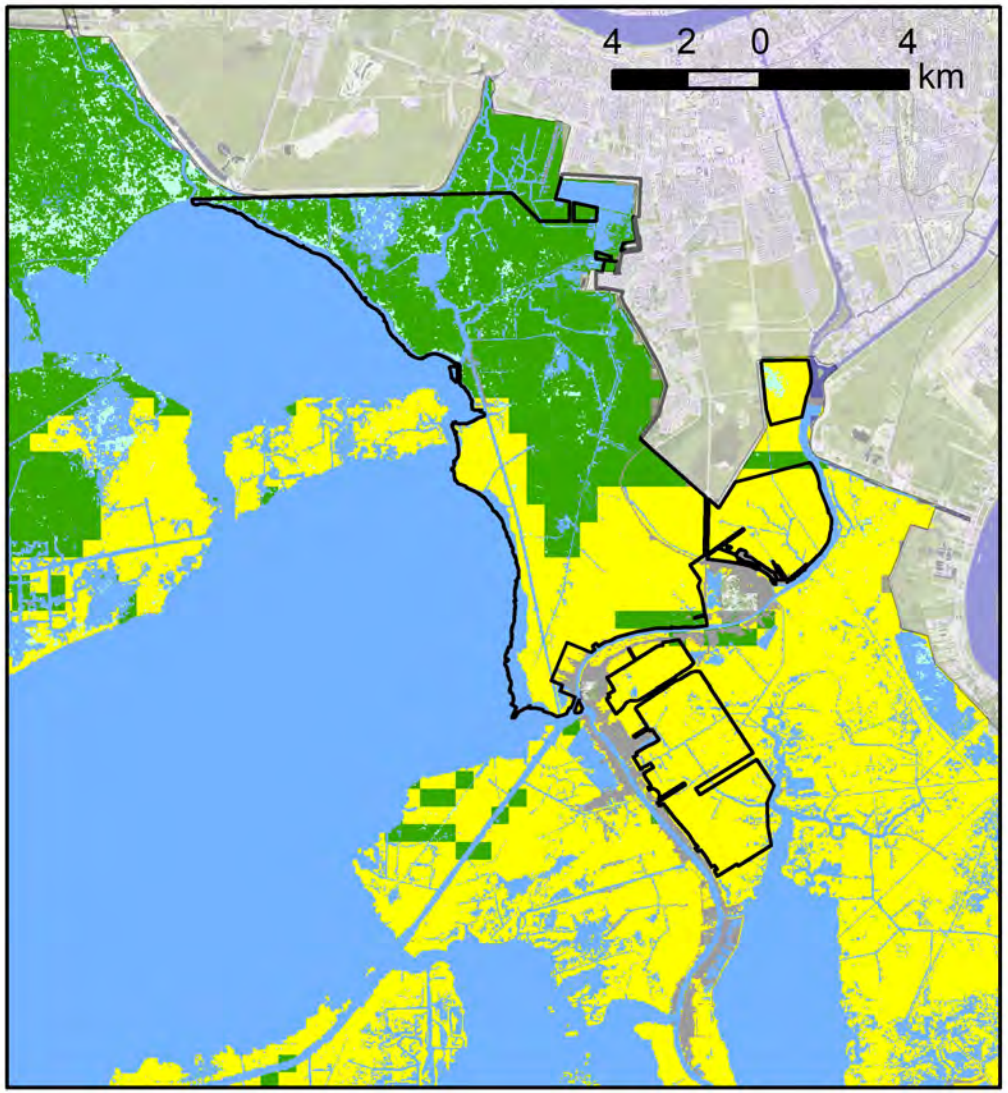
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S08 - G803
Inter.-High
Both Diversions
Year 32

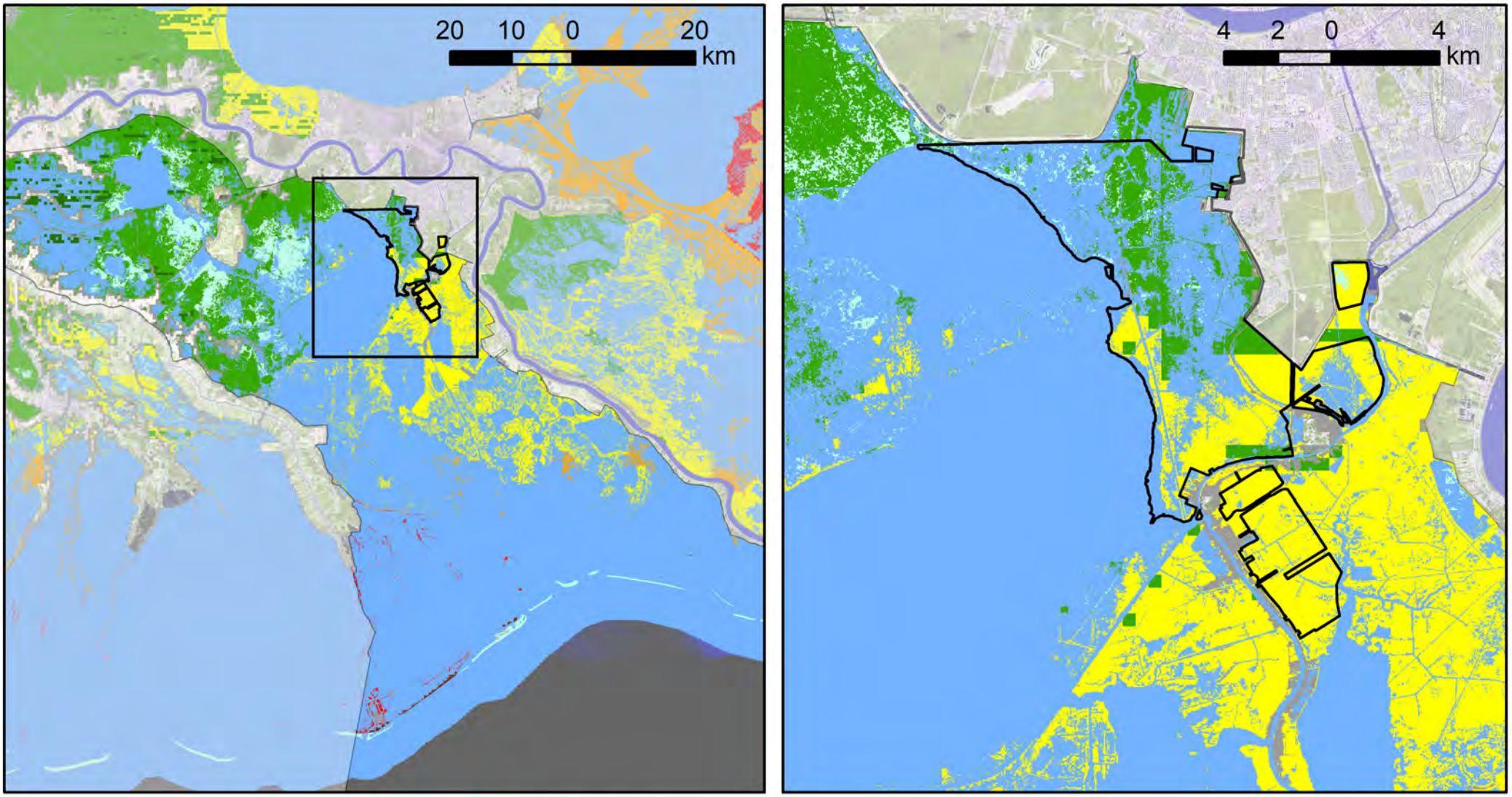
Habitat Type

- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol





S08 - G803
Inter.-High
Both Diversions
Year 42

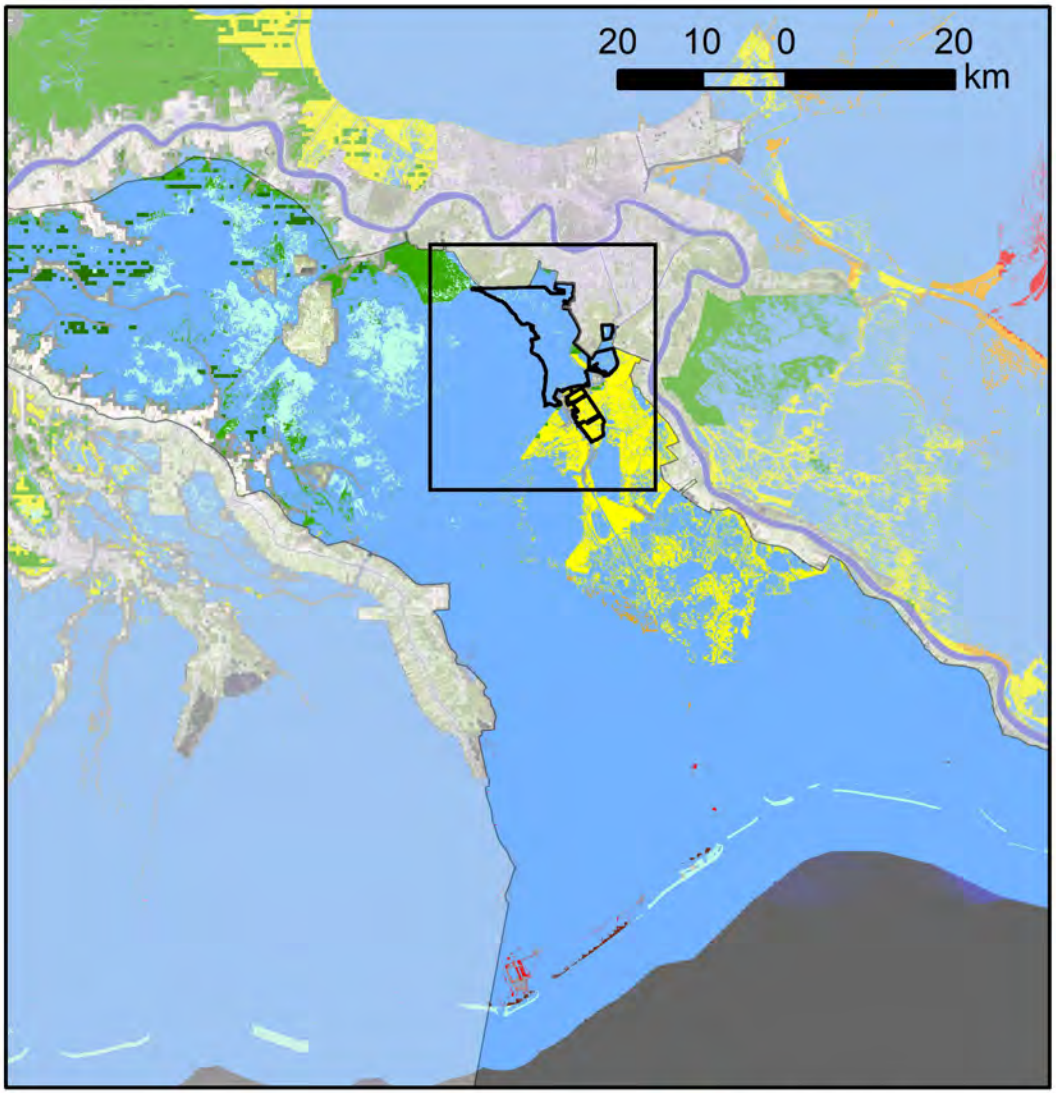
Habitat Type

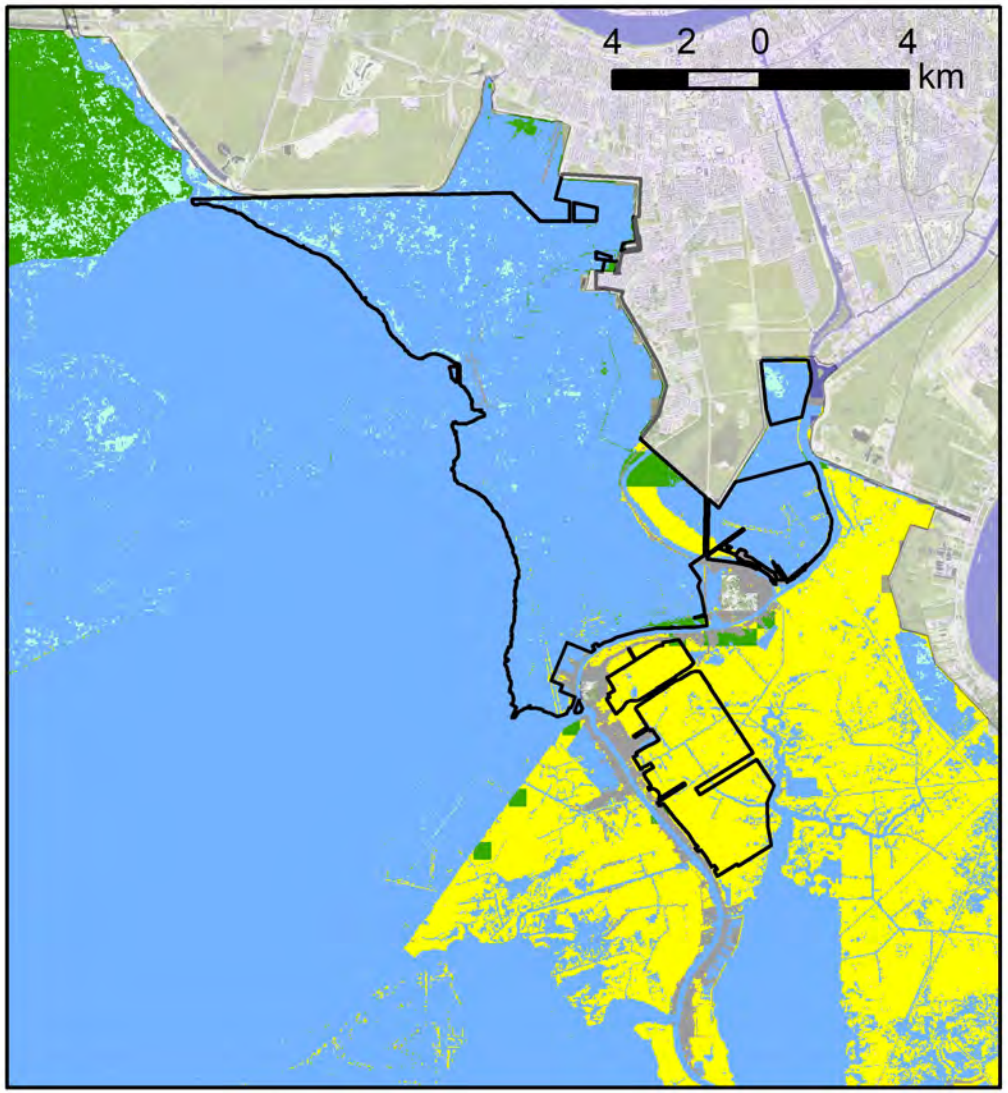
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S08 - G803
Inter.-High
Both Diversions
Year 51

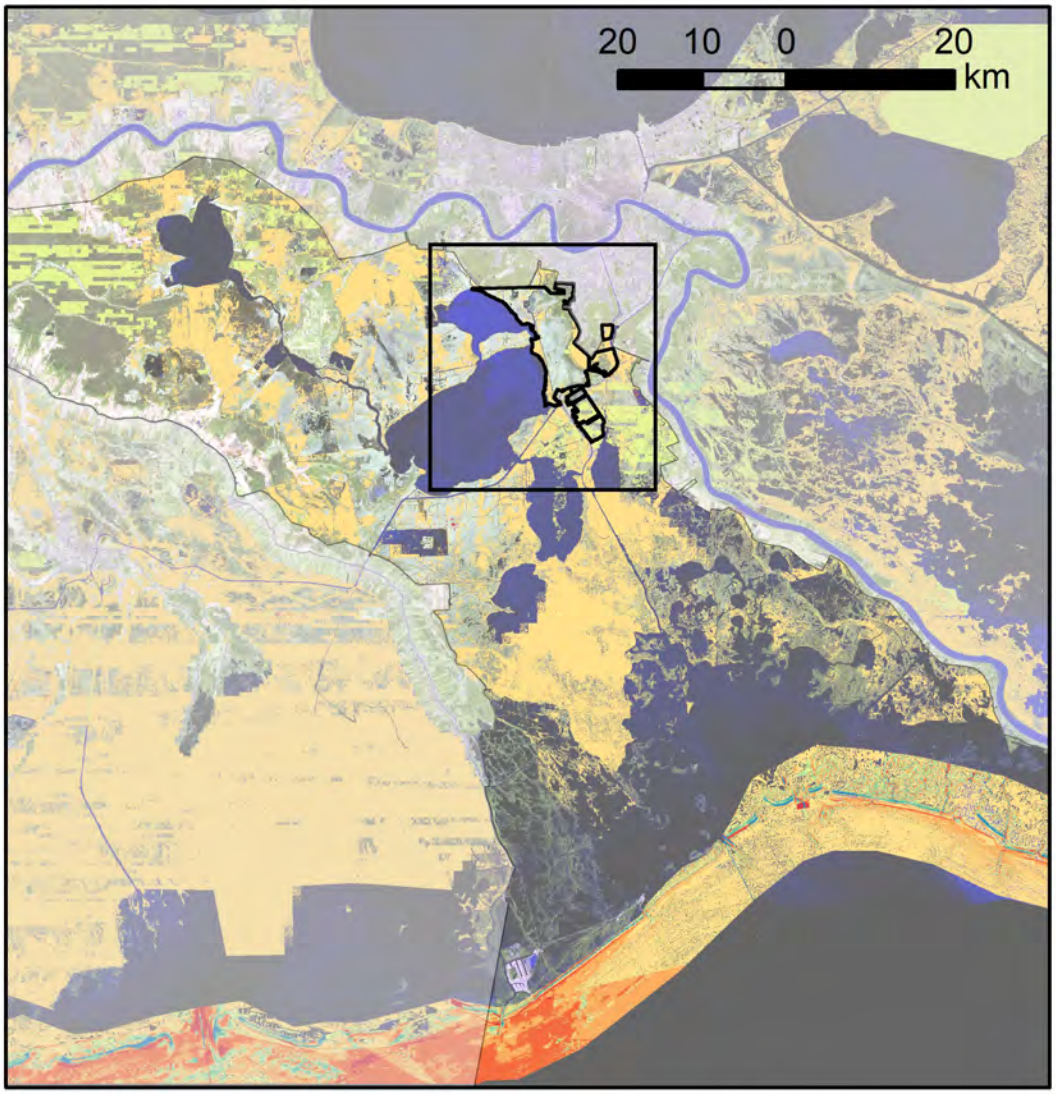
Habitat Type

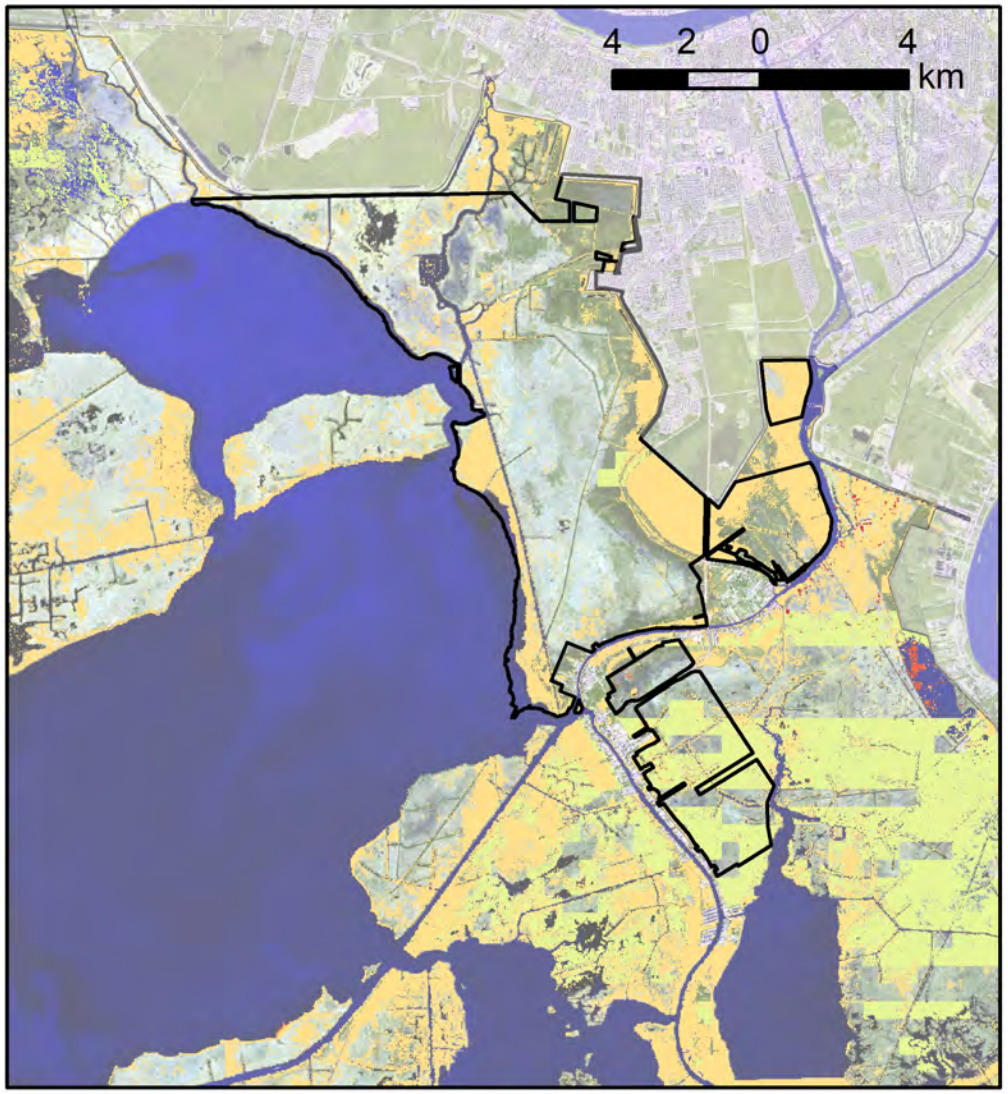
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S08 - G803
Inter.-High
Both Diversions
Year 02

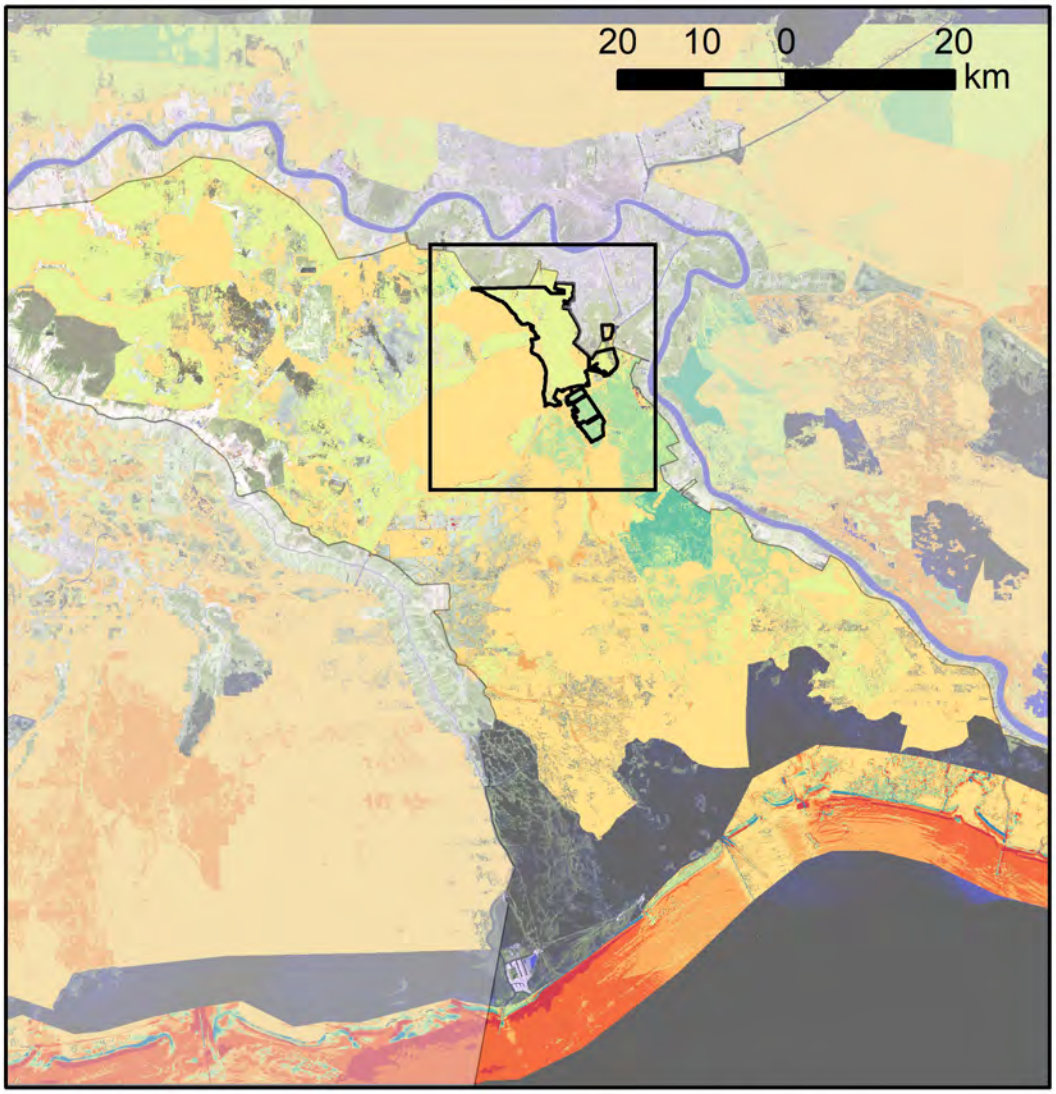
Elev. Change [m]

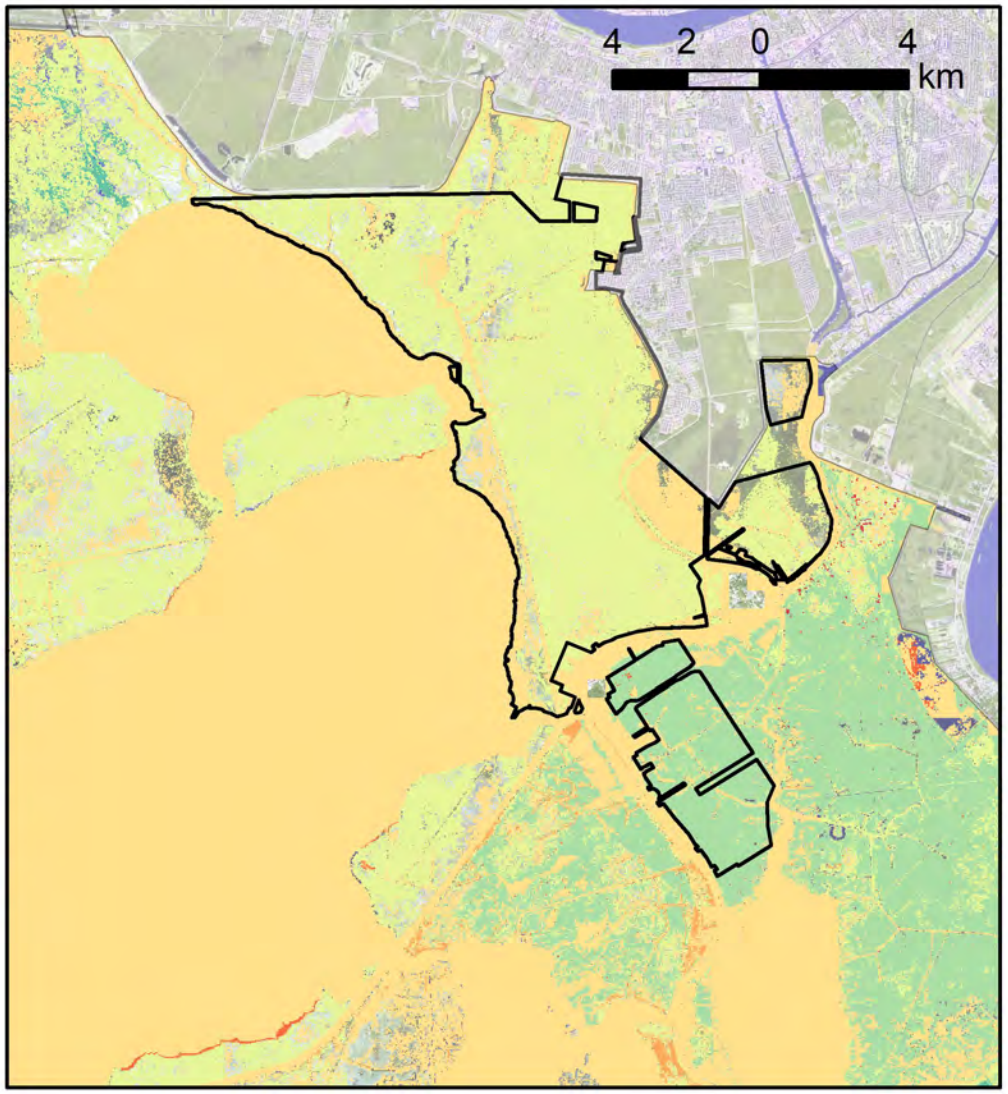
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol







S08 - G803
Inter.-High
Both Diversions
Year 12

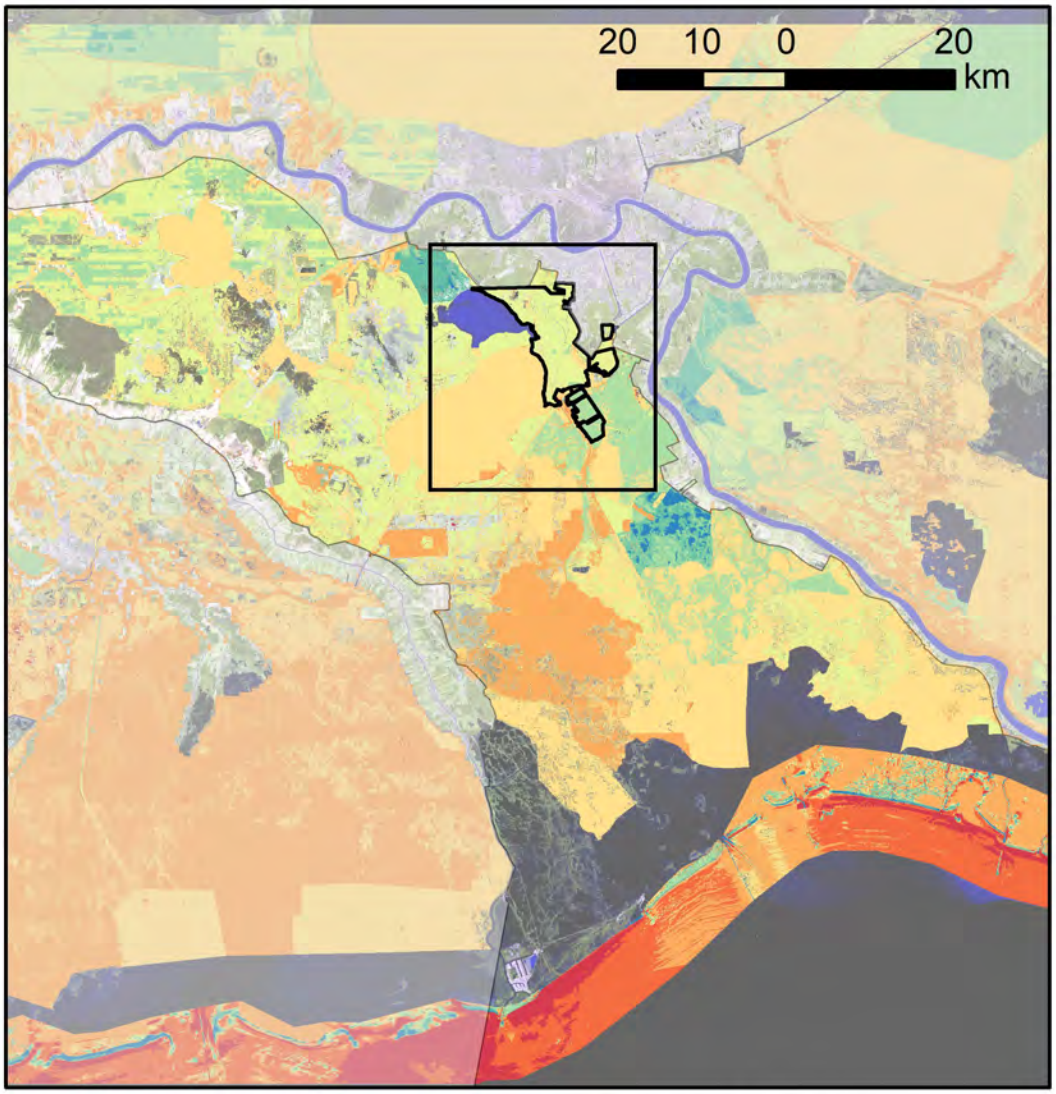
Elev. Change [m]

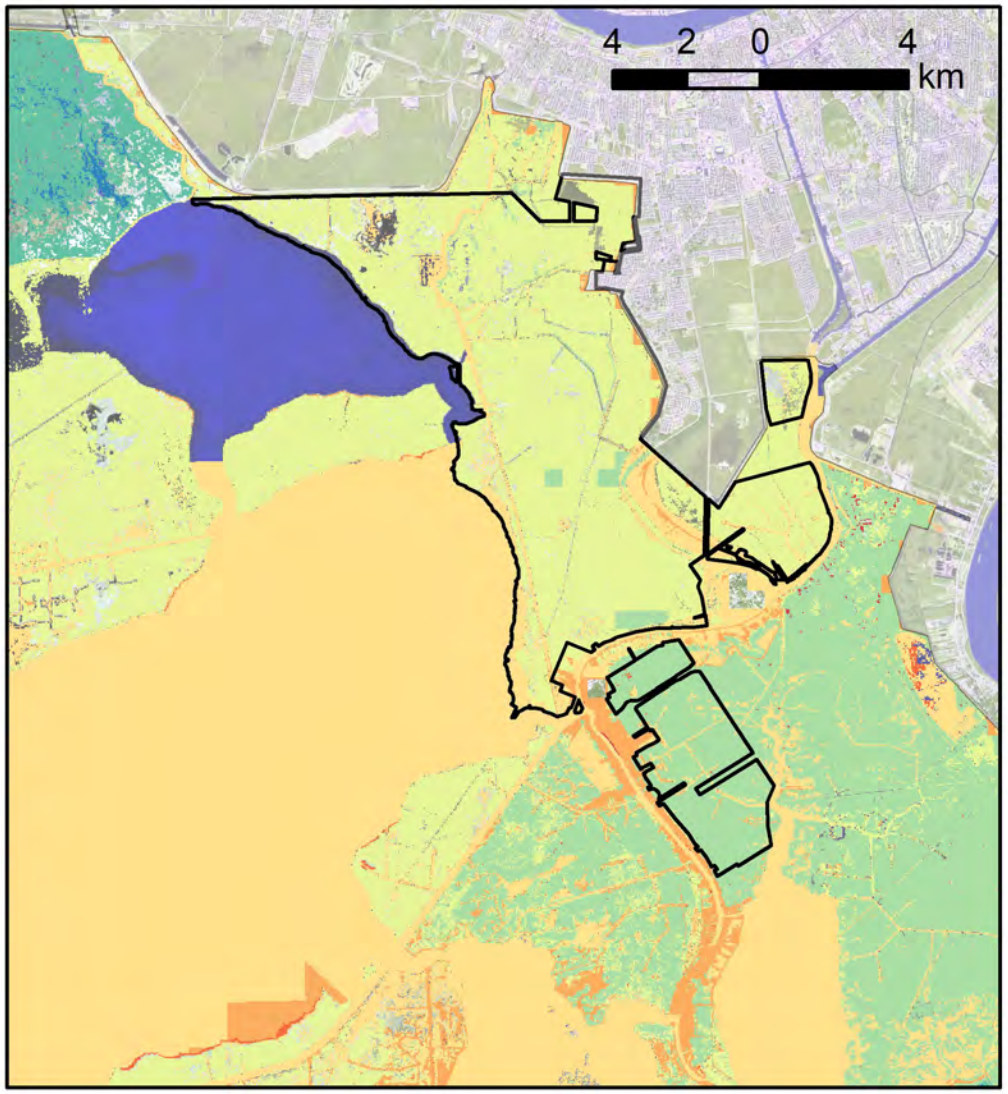
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol







S08 - G803
Inter.-High
Both Diversions
Year 22

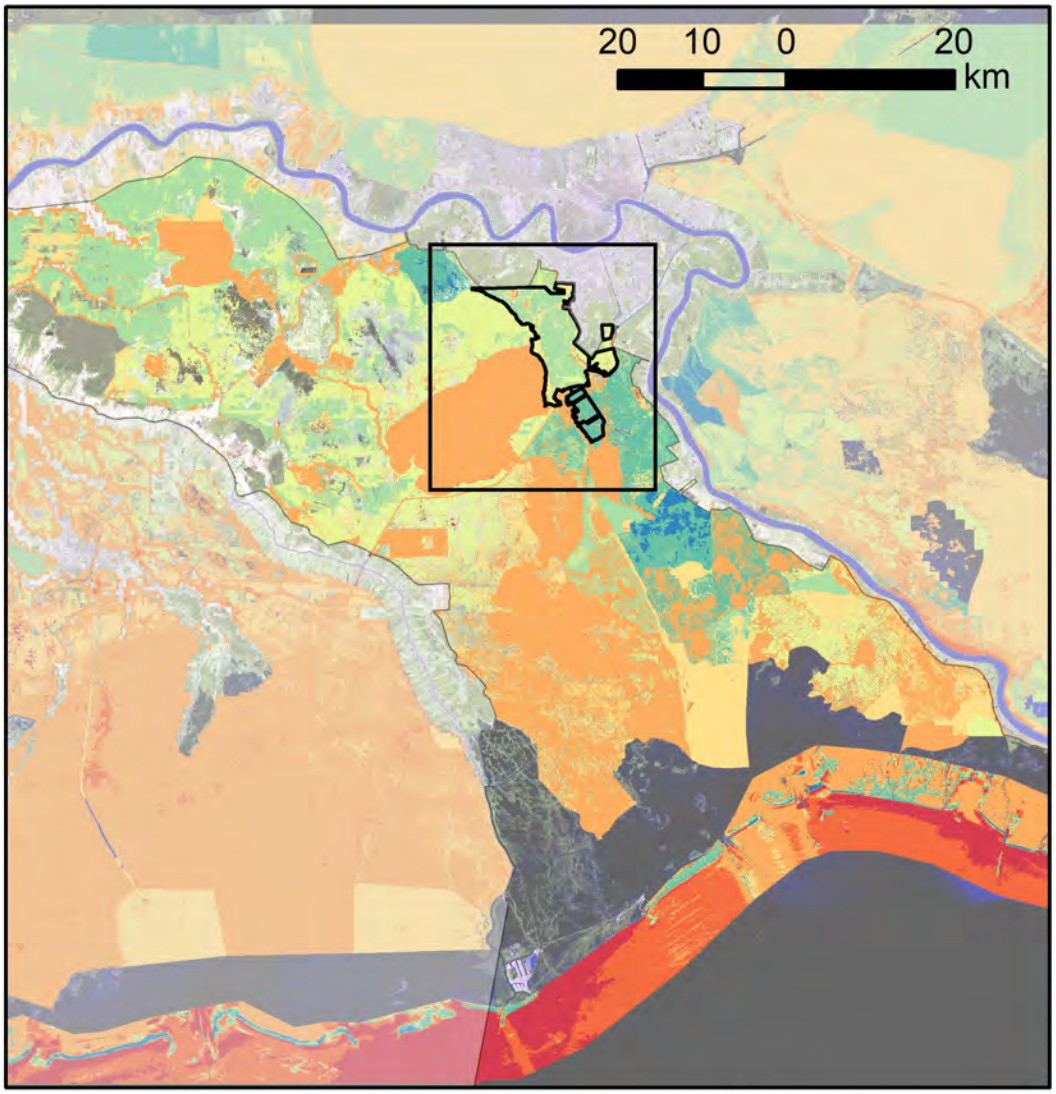
Elev. Change [m]

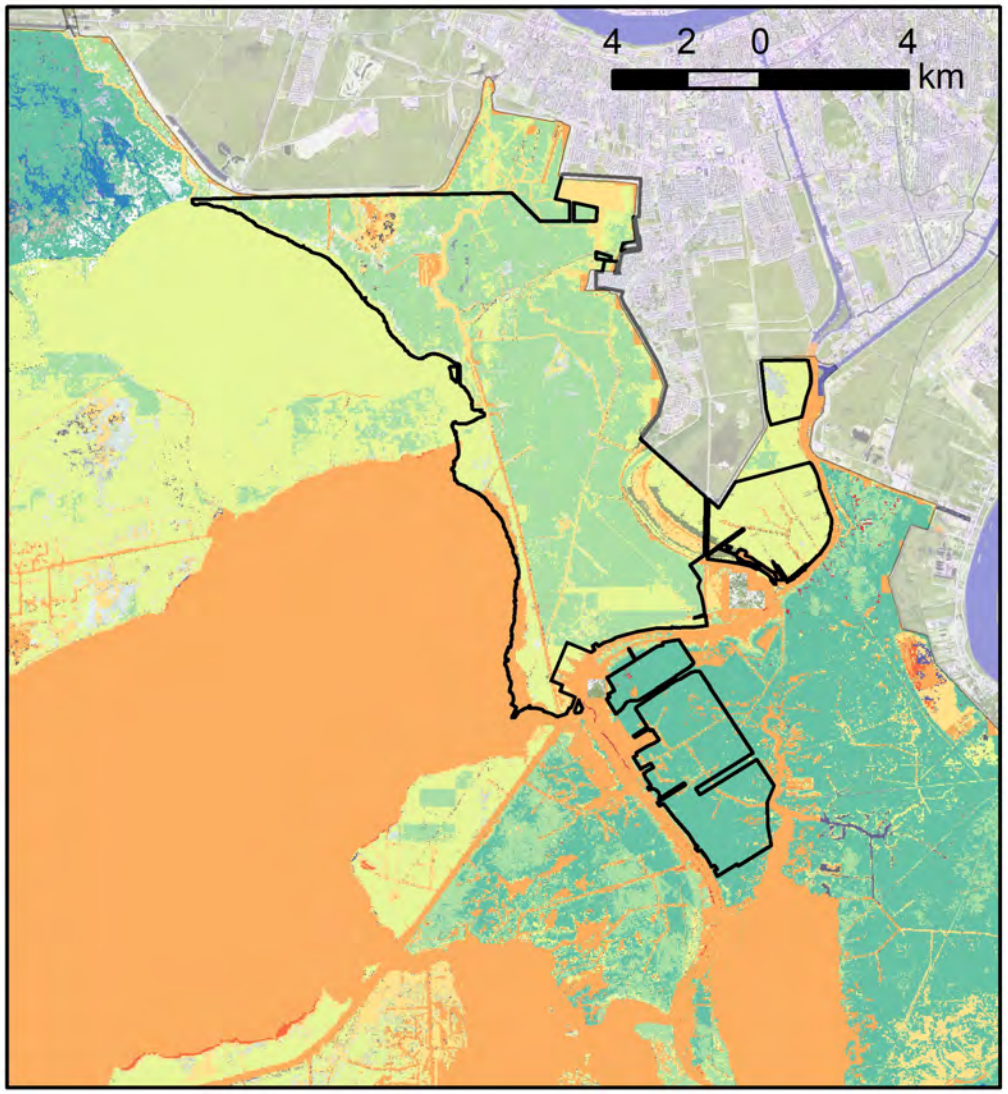
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
W E
S





S08 - G803
Inter.-High
Both Diversions
Year 32

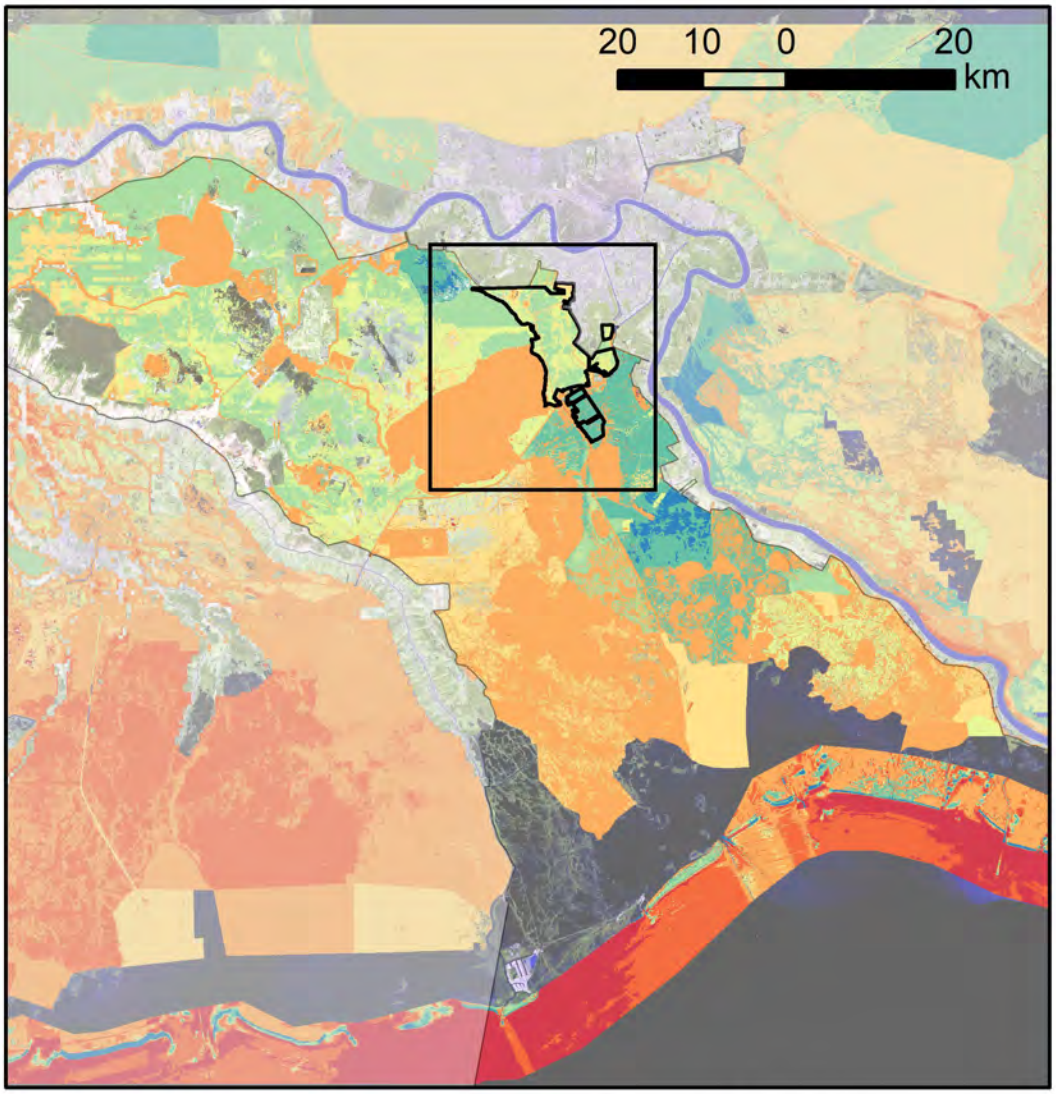
Elev. Change [m]

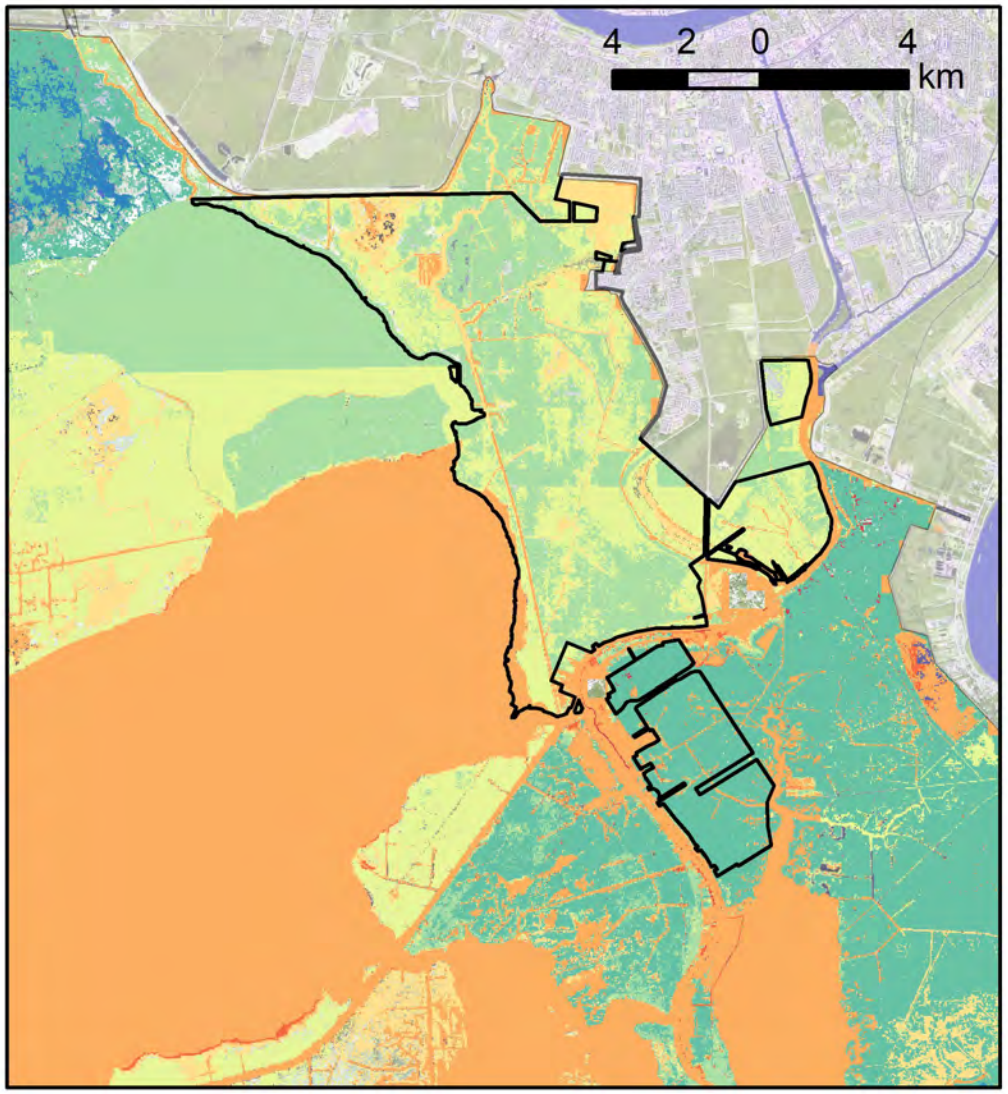
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
W E
S





S08 - G803
Inter.-High
Both Diversions
Year 42

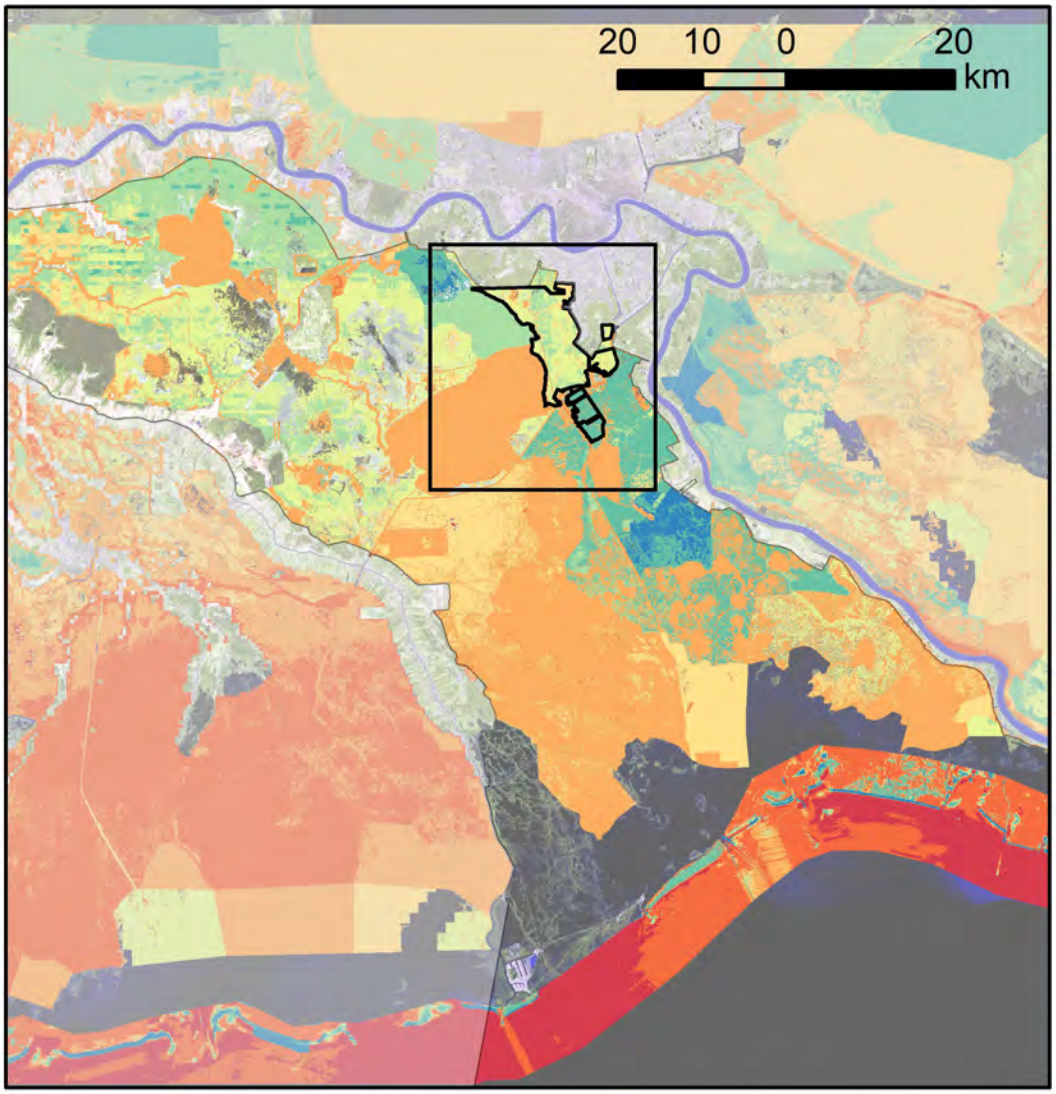
Elev. Change [m]

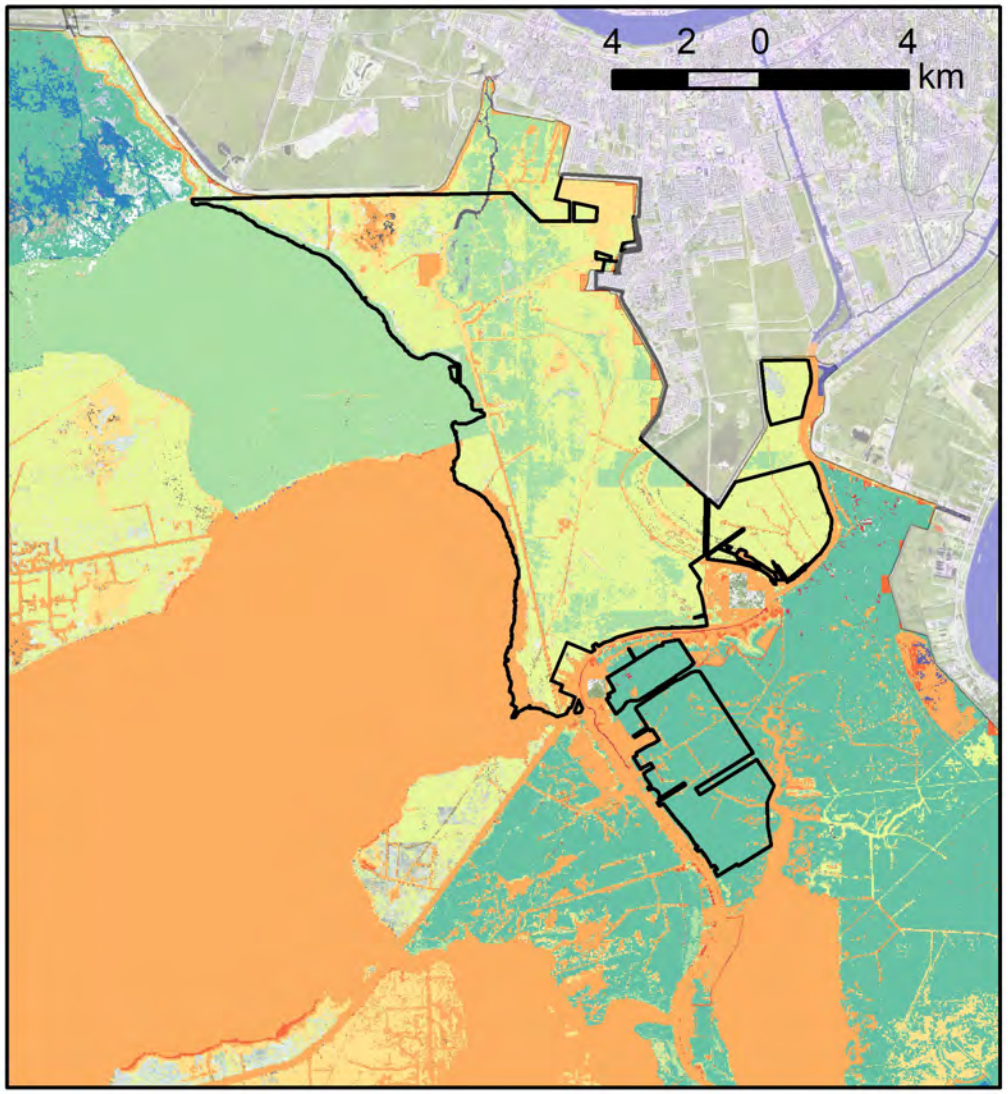
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
W E
S





S08 - G803
Inter.-High
Both Diversions
Year 51

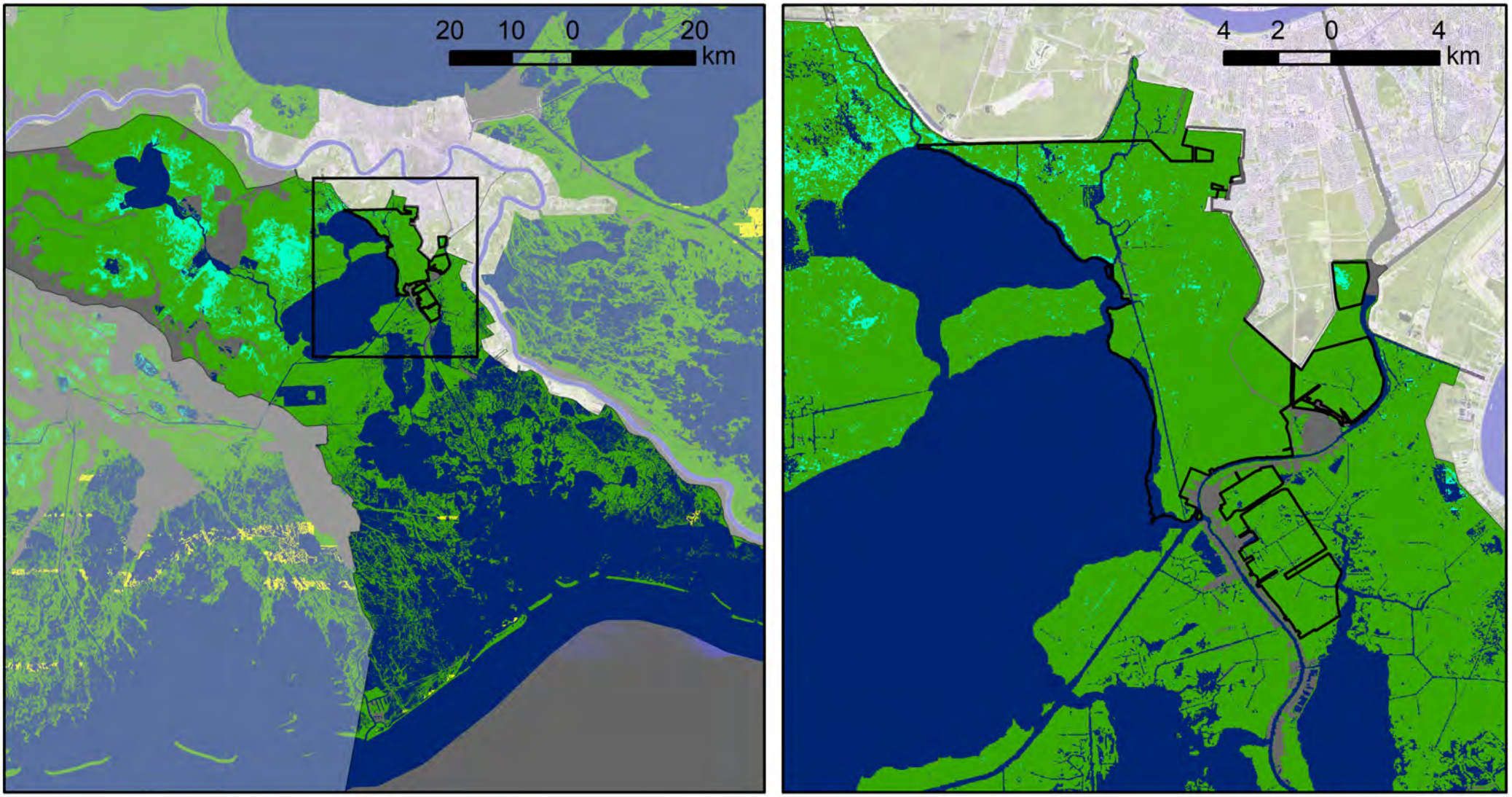
Elev. Change [m]

- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
W E
S



S09 - G503
High
FWOA, no diversions
Year 02

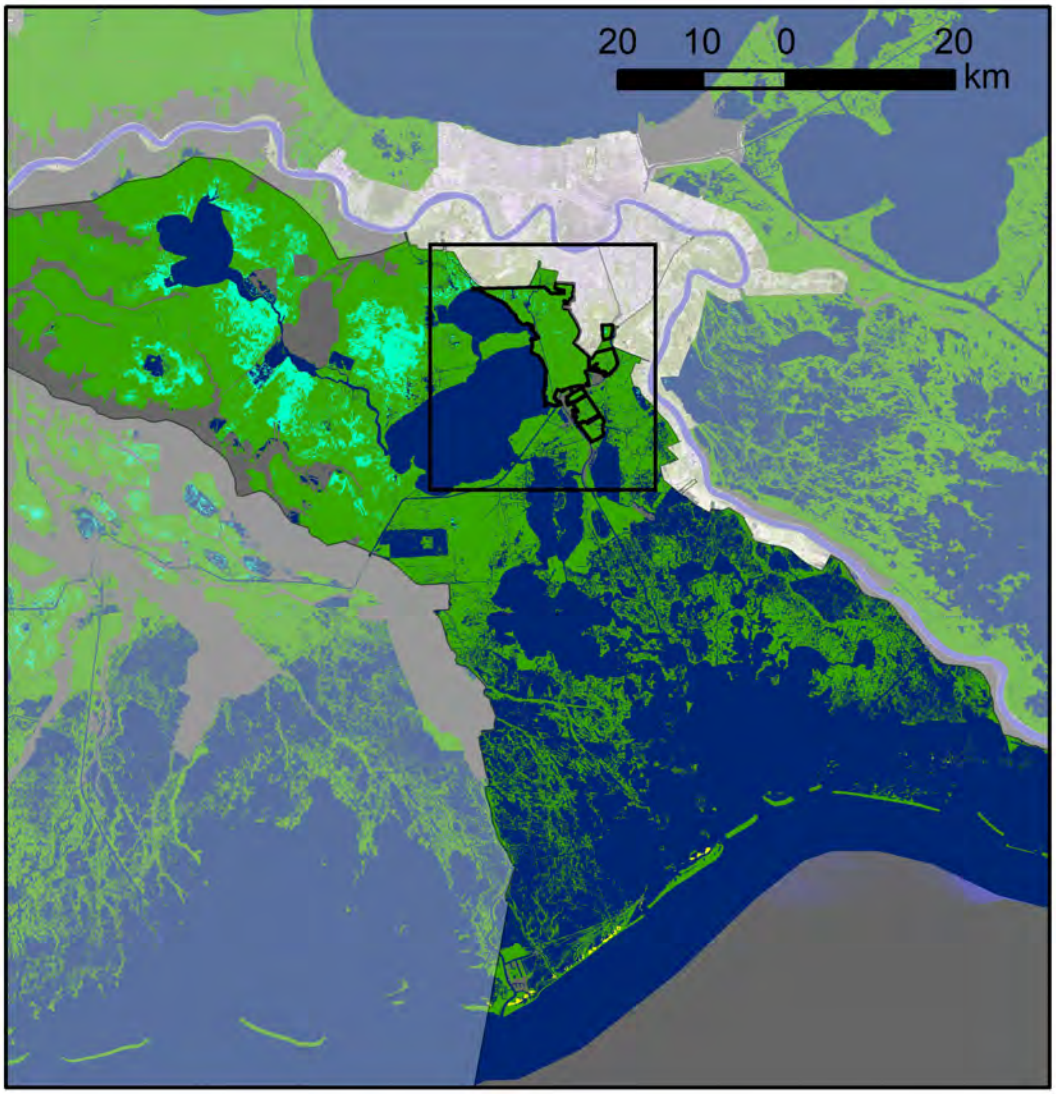
Land Type

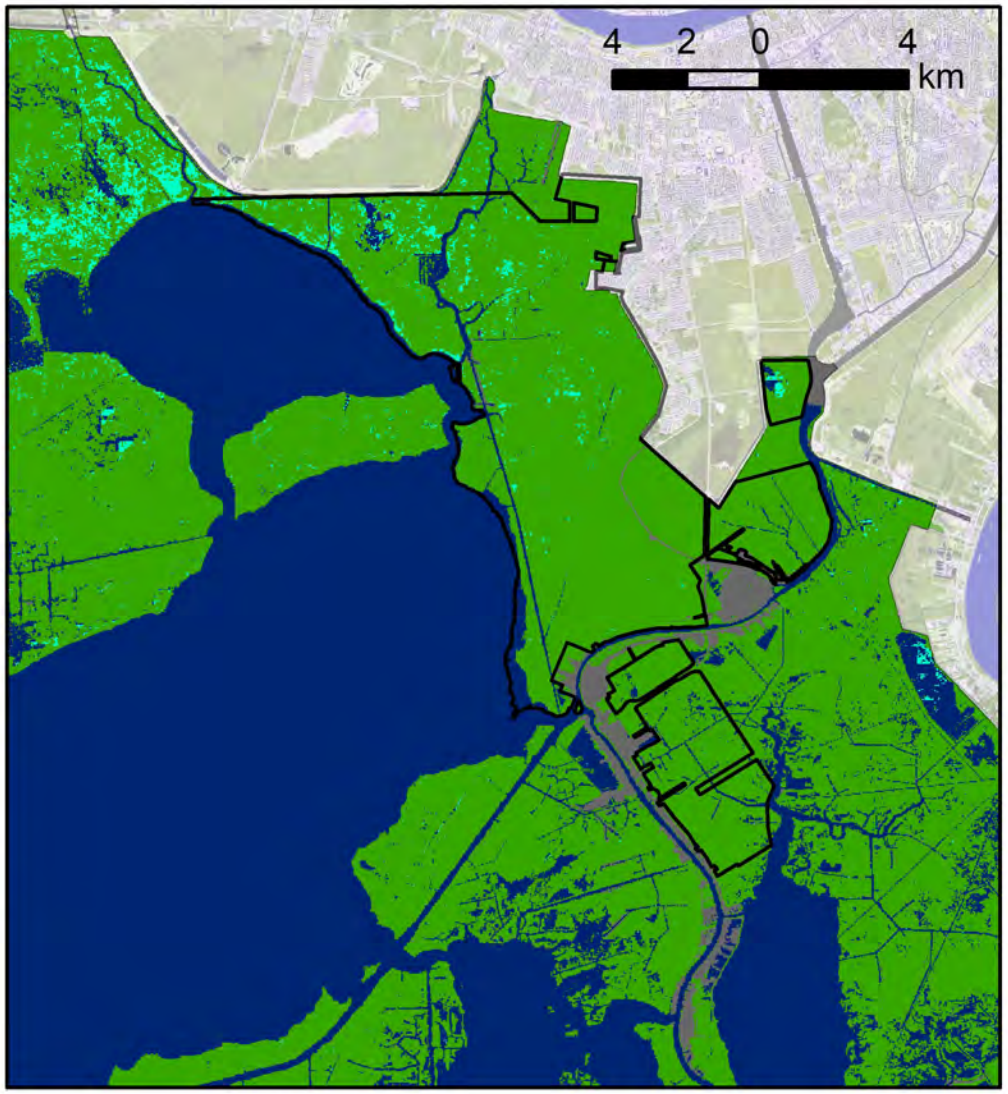
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol

N
W E
S





S09 - G503
High
FWOA, no diversions
Year 12

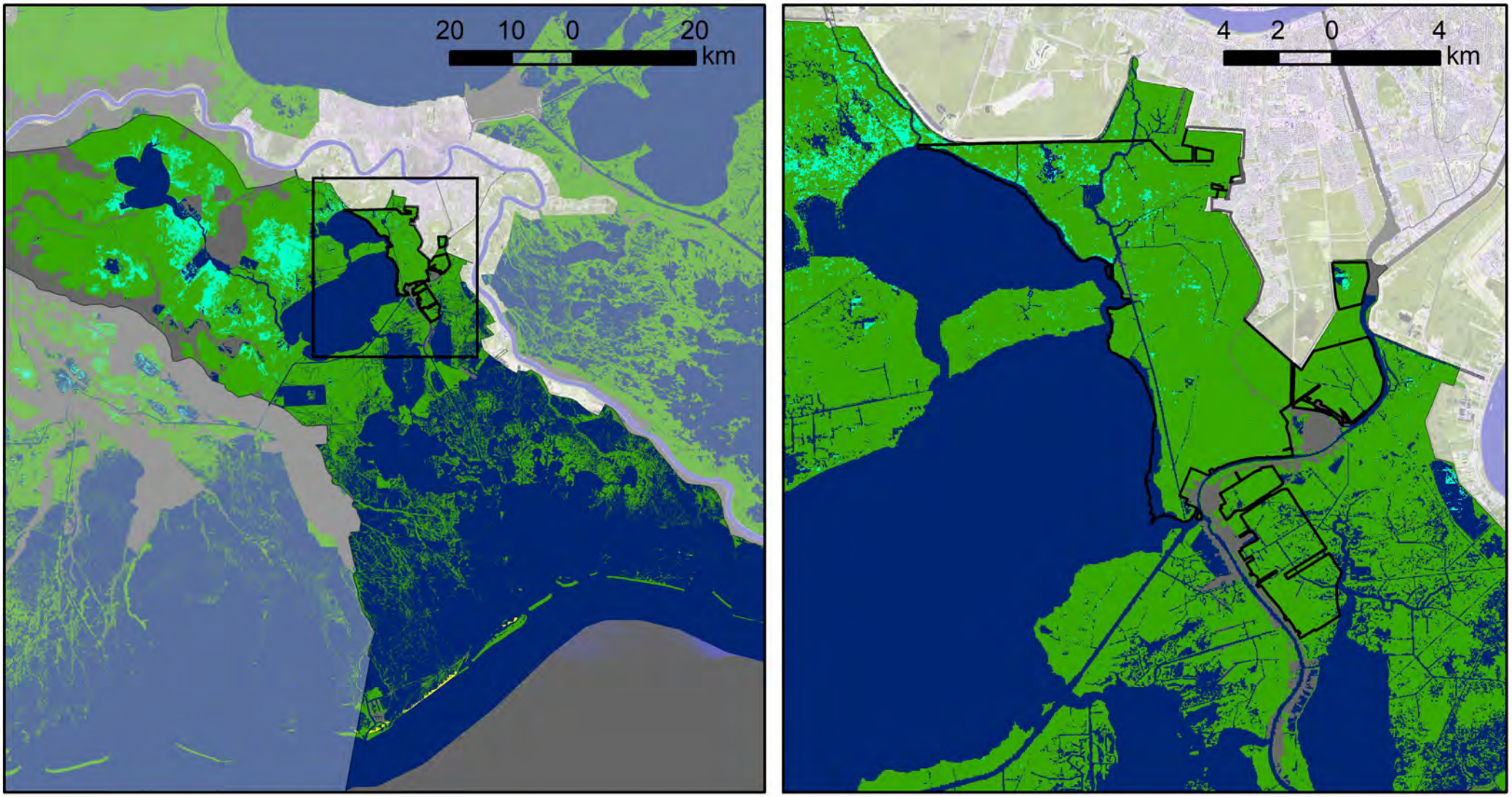
Land Type

- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol





S09 - G503
High
FWOA, no diversions
Year 22

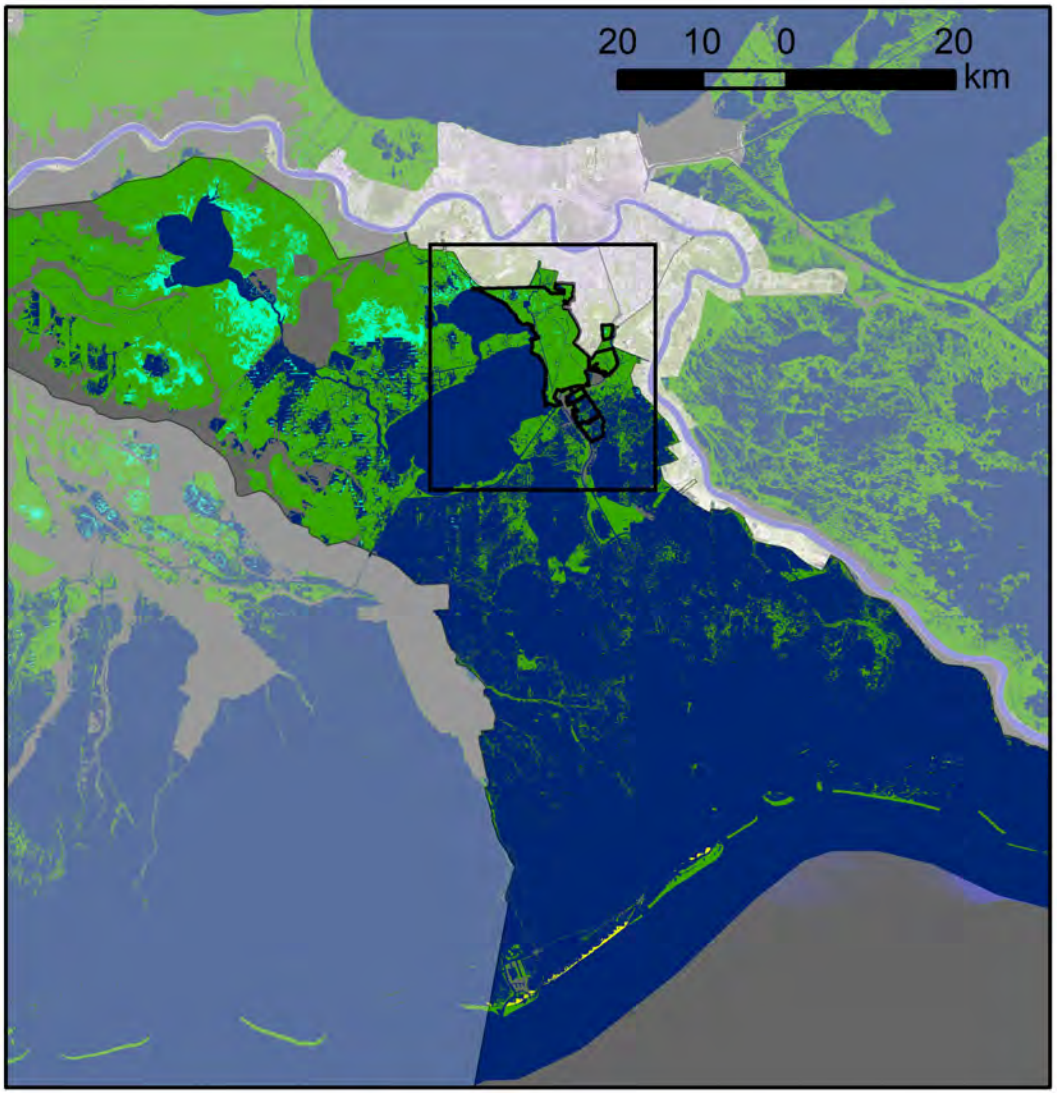
Land Type

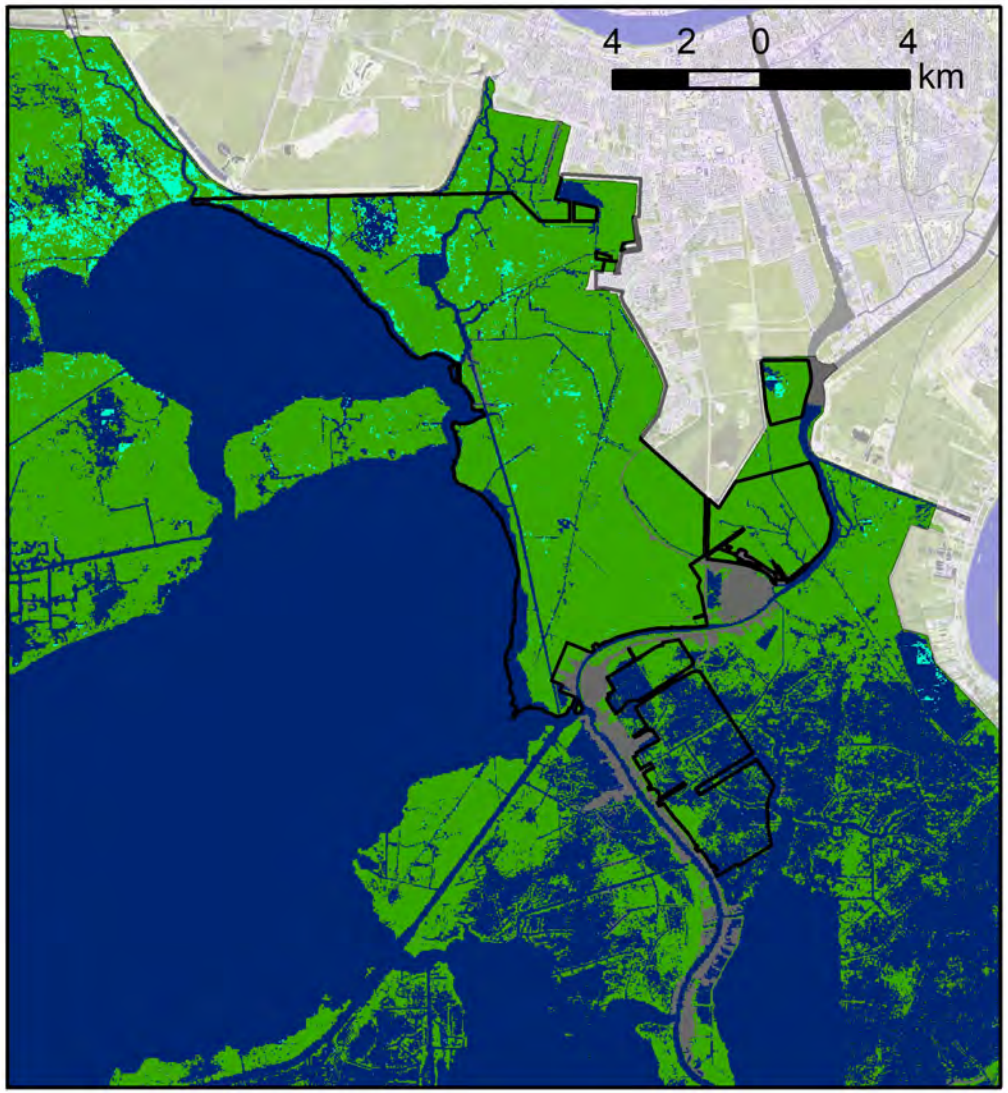
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S09 - G503
High
FWOA, no diversions
Year 32

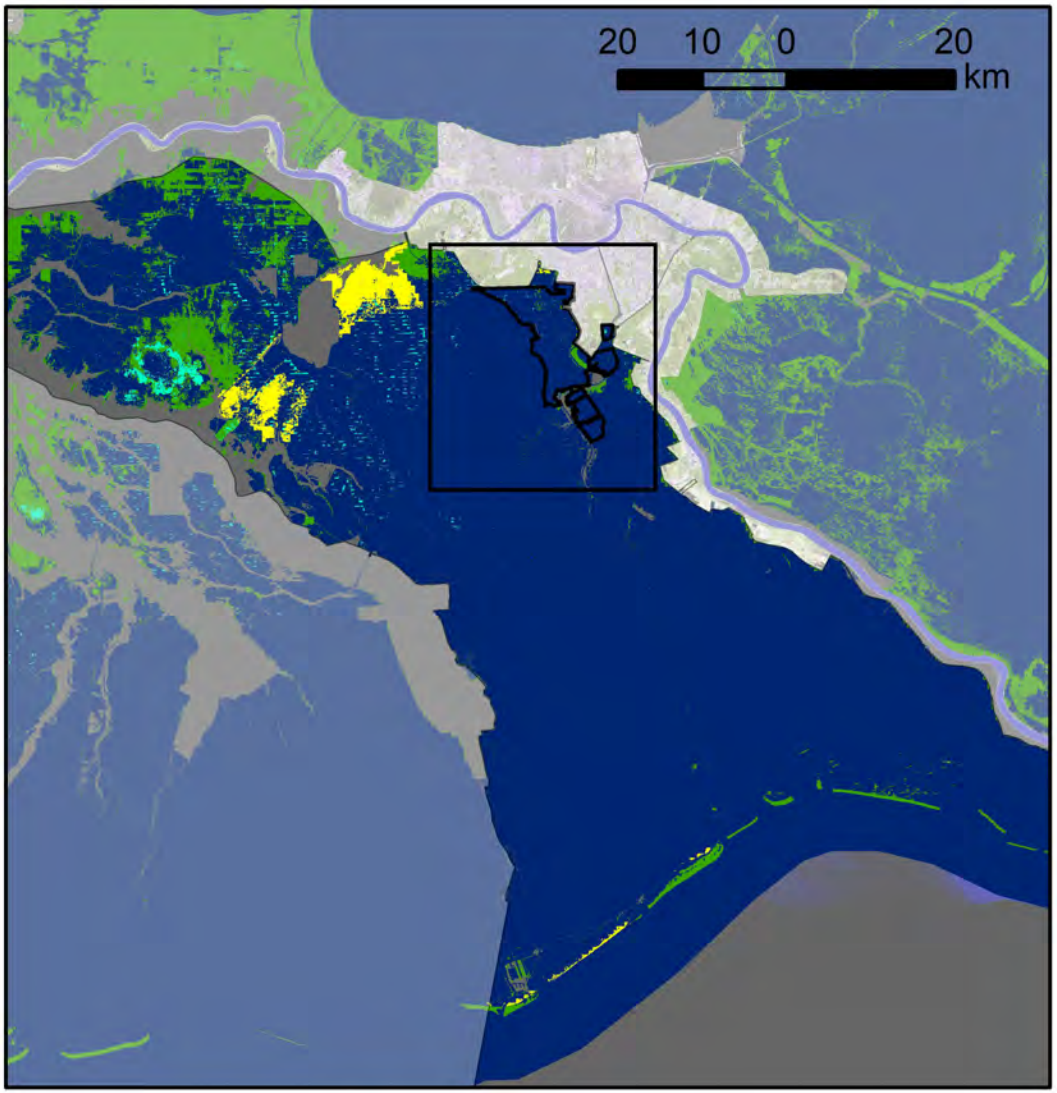
Land Type

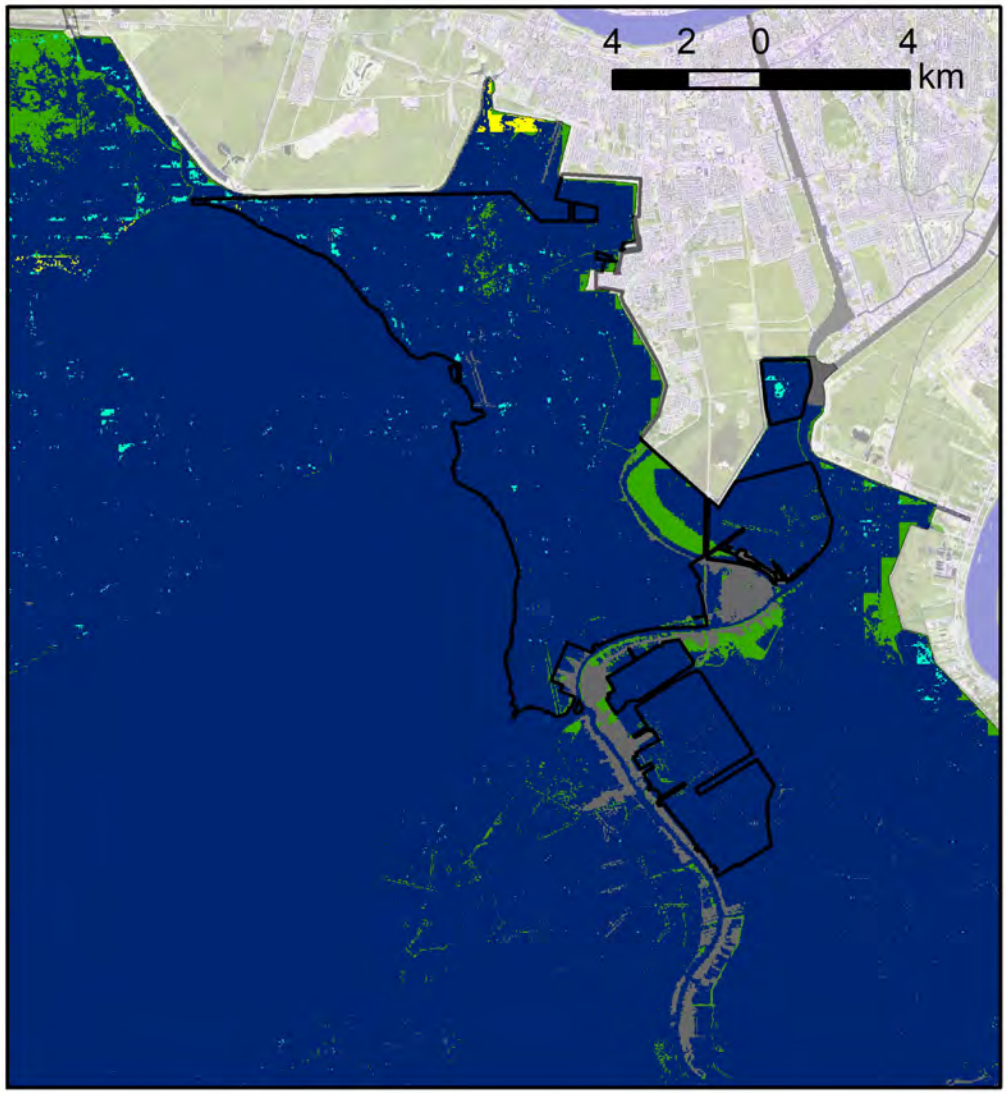
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S09 - G503
High
FWOA, no diversions
Year 42

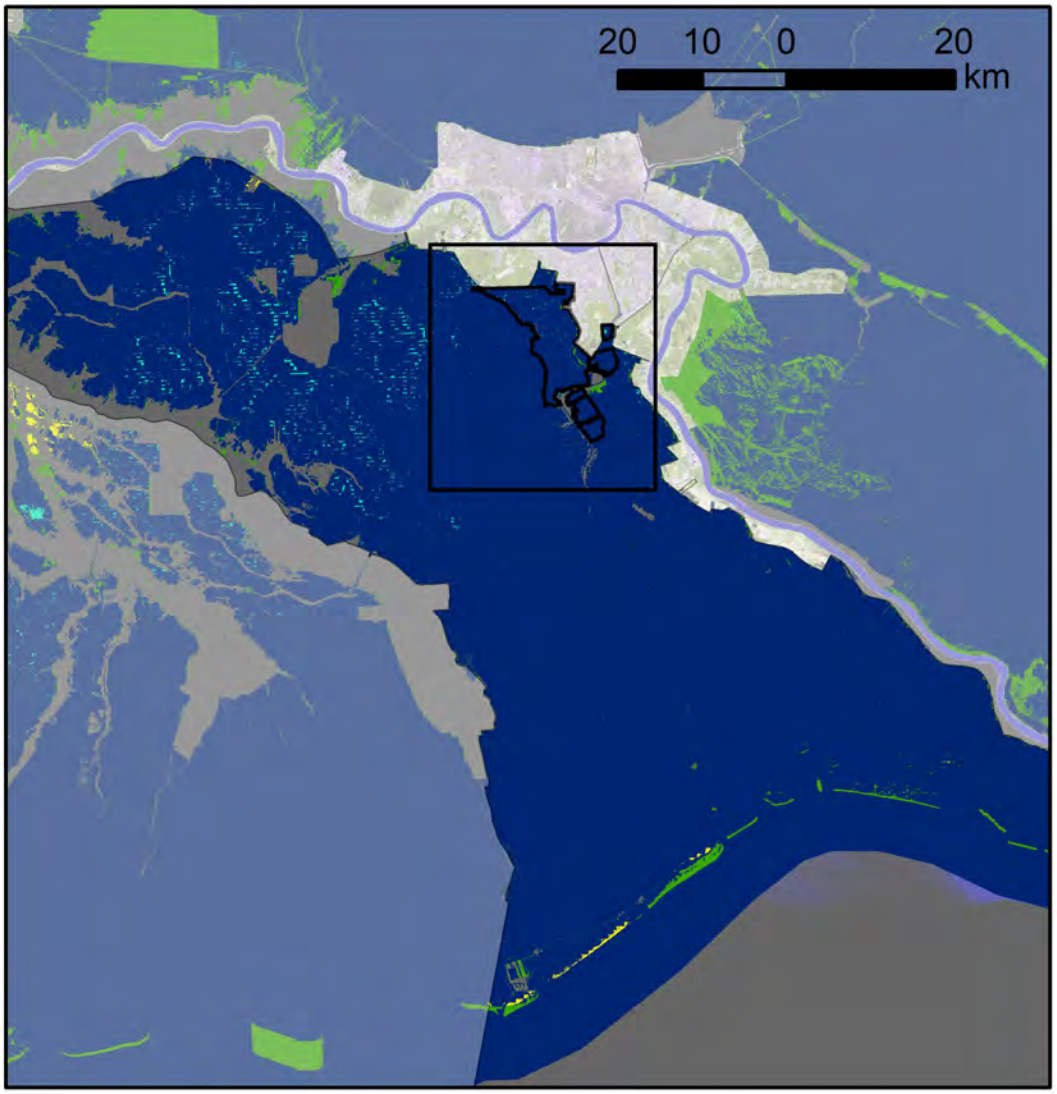
Land Type

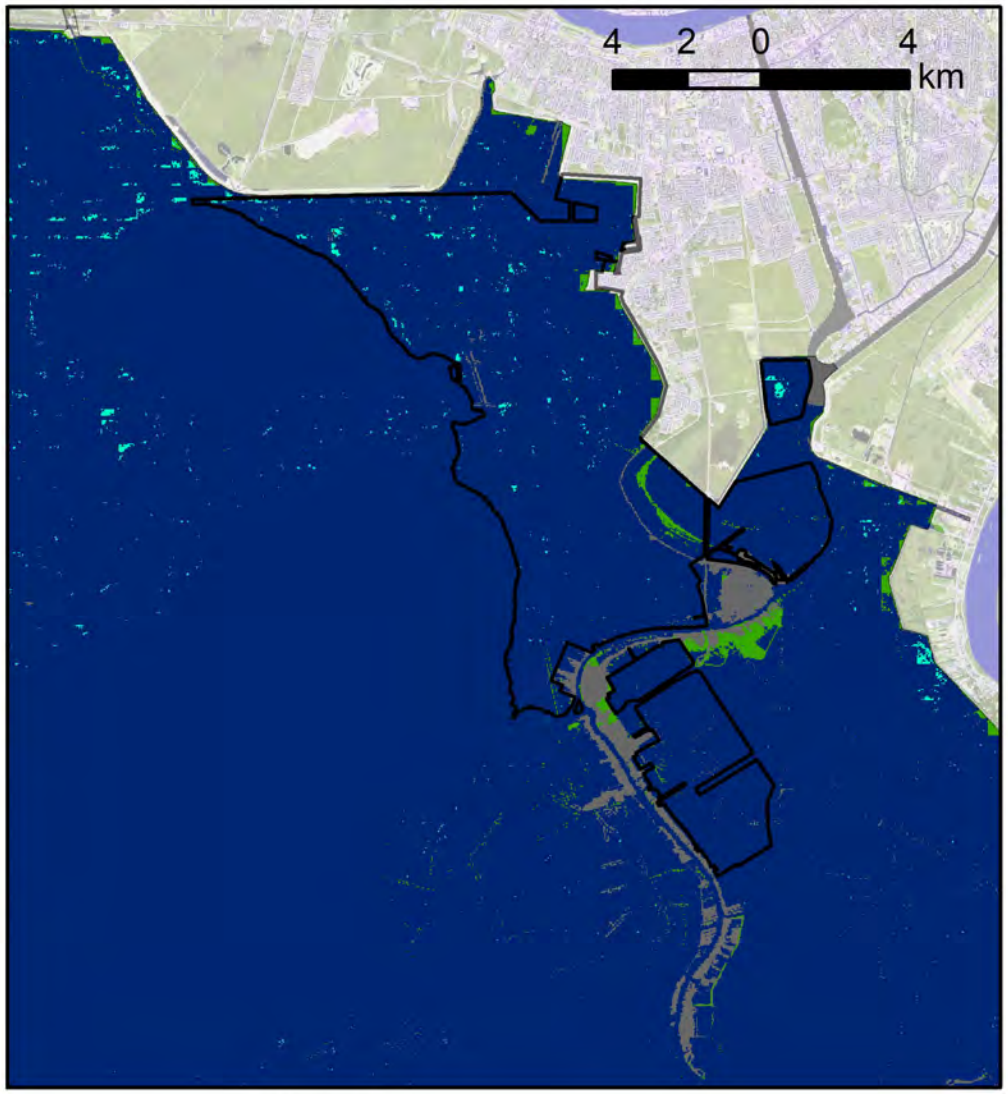
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S09 - G503
High
FWOA, no diversions
Year 51

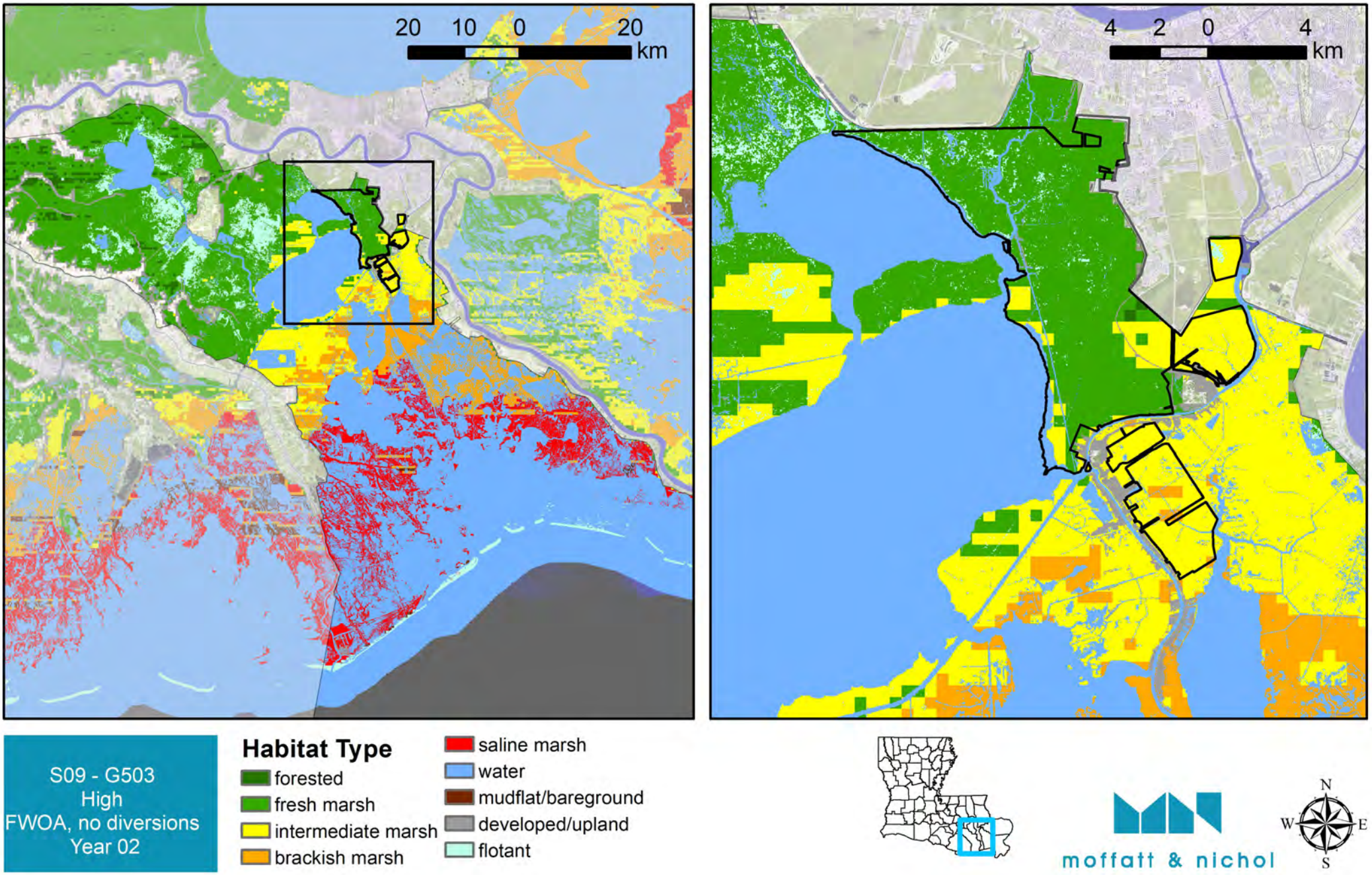
Land Type

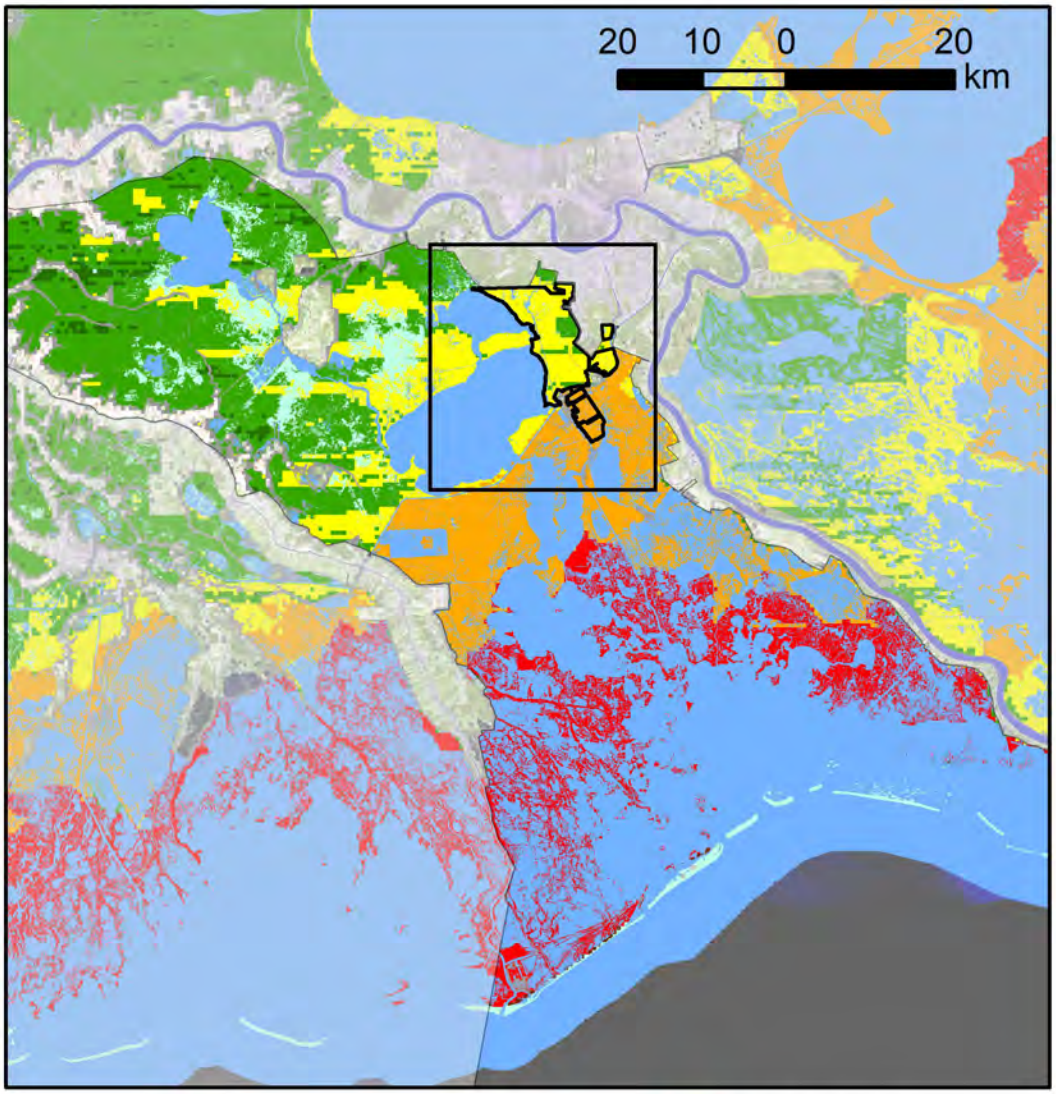
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh

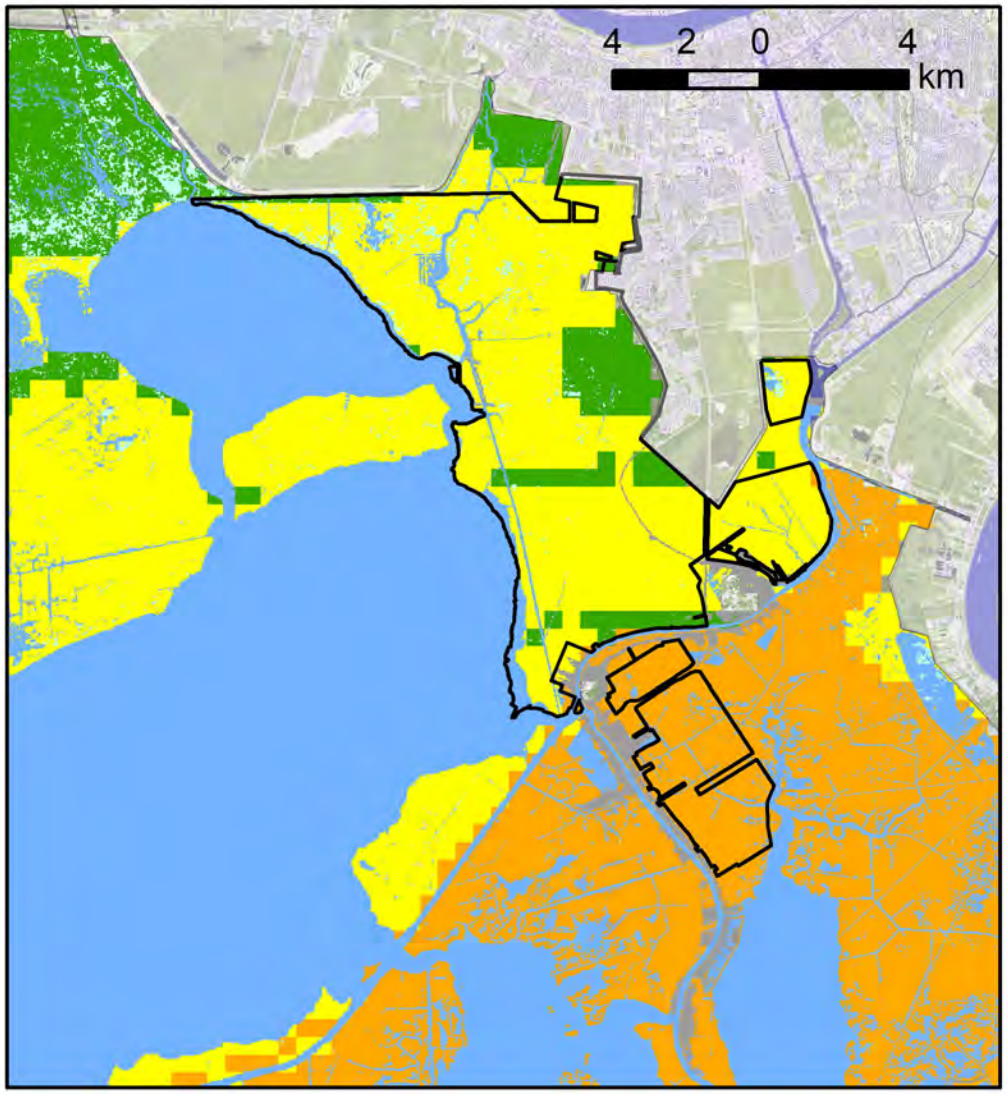


moffatt & nichol




20 10 0 20
km
4 2 0 4
km
S09 - G503
High
FWOA, no diversions
Year 02
Habitat Type
forested
fresh marsh
intermediate marsh
brackish marsh
saline marsh
water
mudflat/bareground
developed/upland
flotant
moffatt & nichol
N
W
E
S





S09 - G503
High
FWOA, no diversions
Year 12

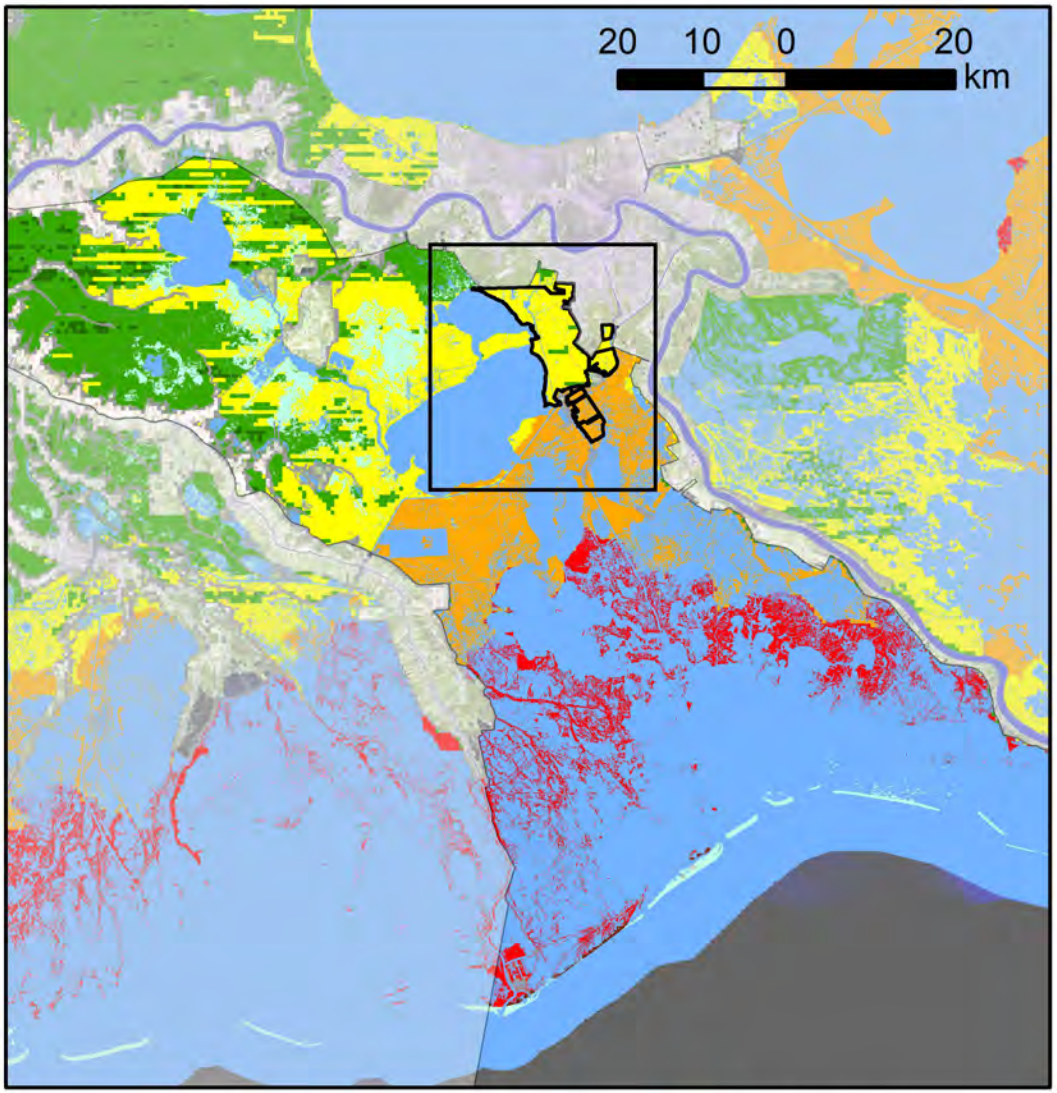
Habitat Type

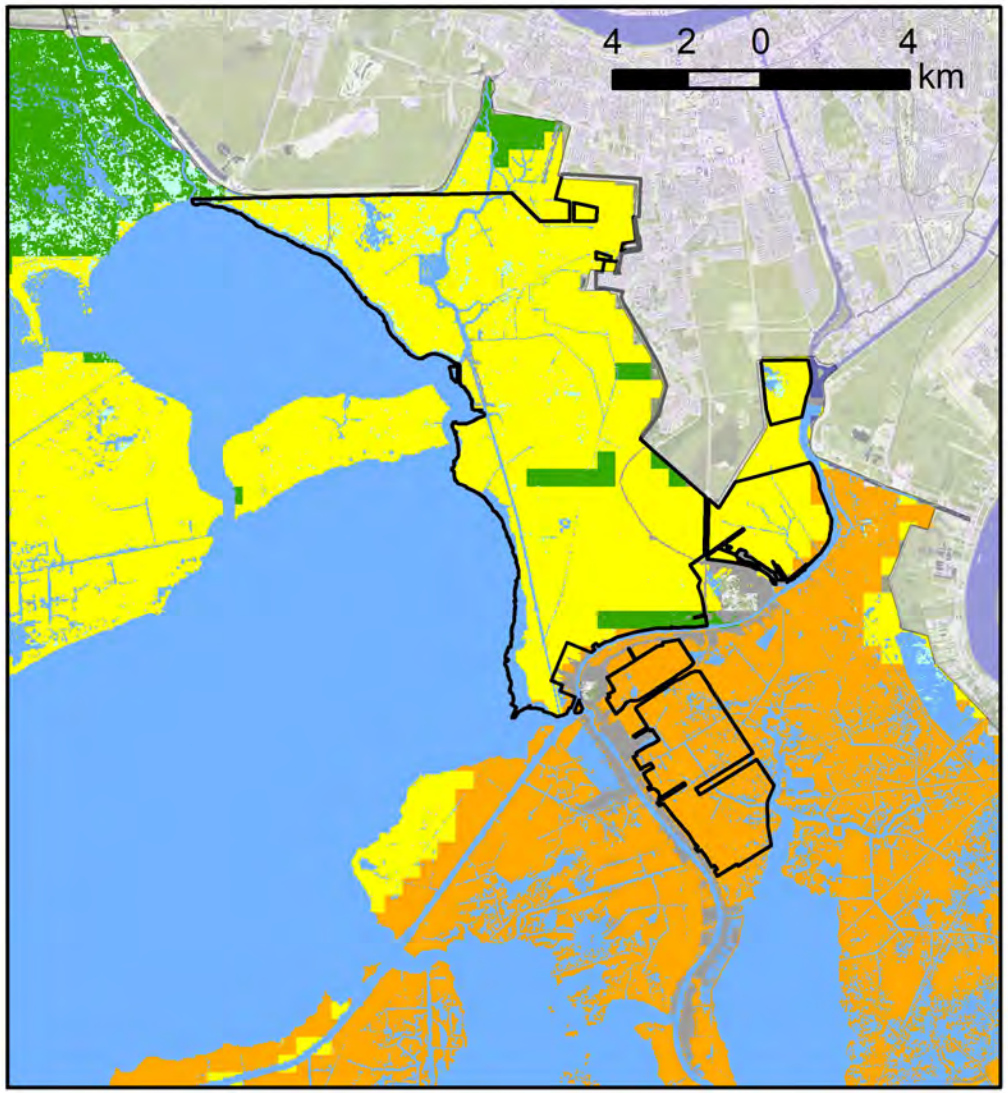
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol

N
W E
S





S09 - G503
High
FWOA, no diversions
Year 22

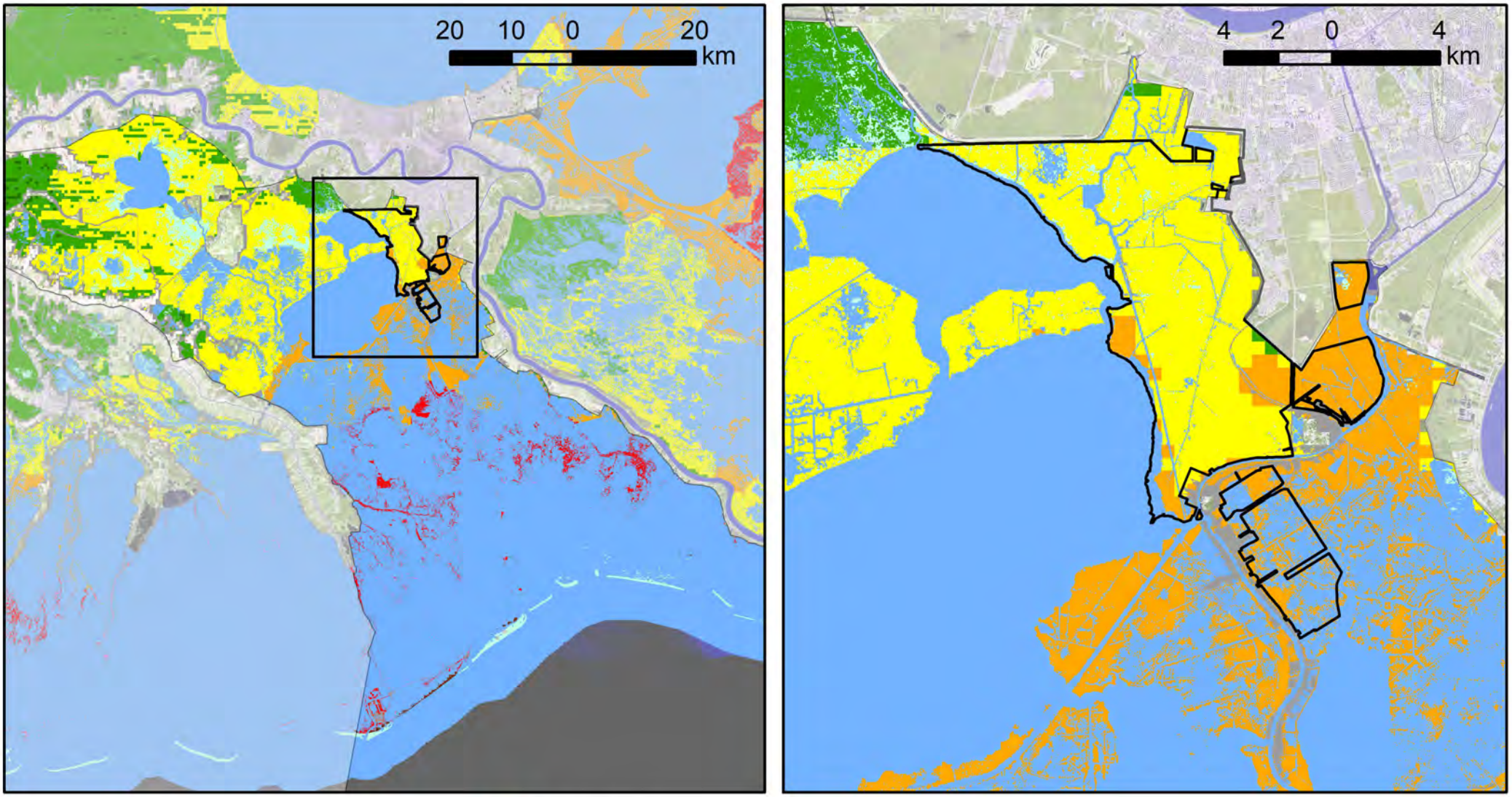
Habitat Type

- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol

N
W E
S



S09 - G503
High
FWOA, no diversions
Year 32

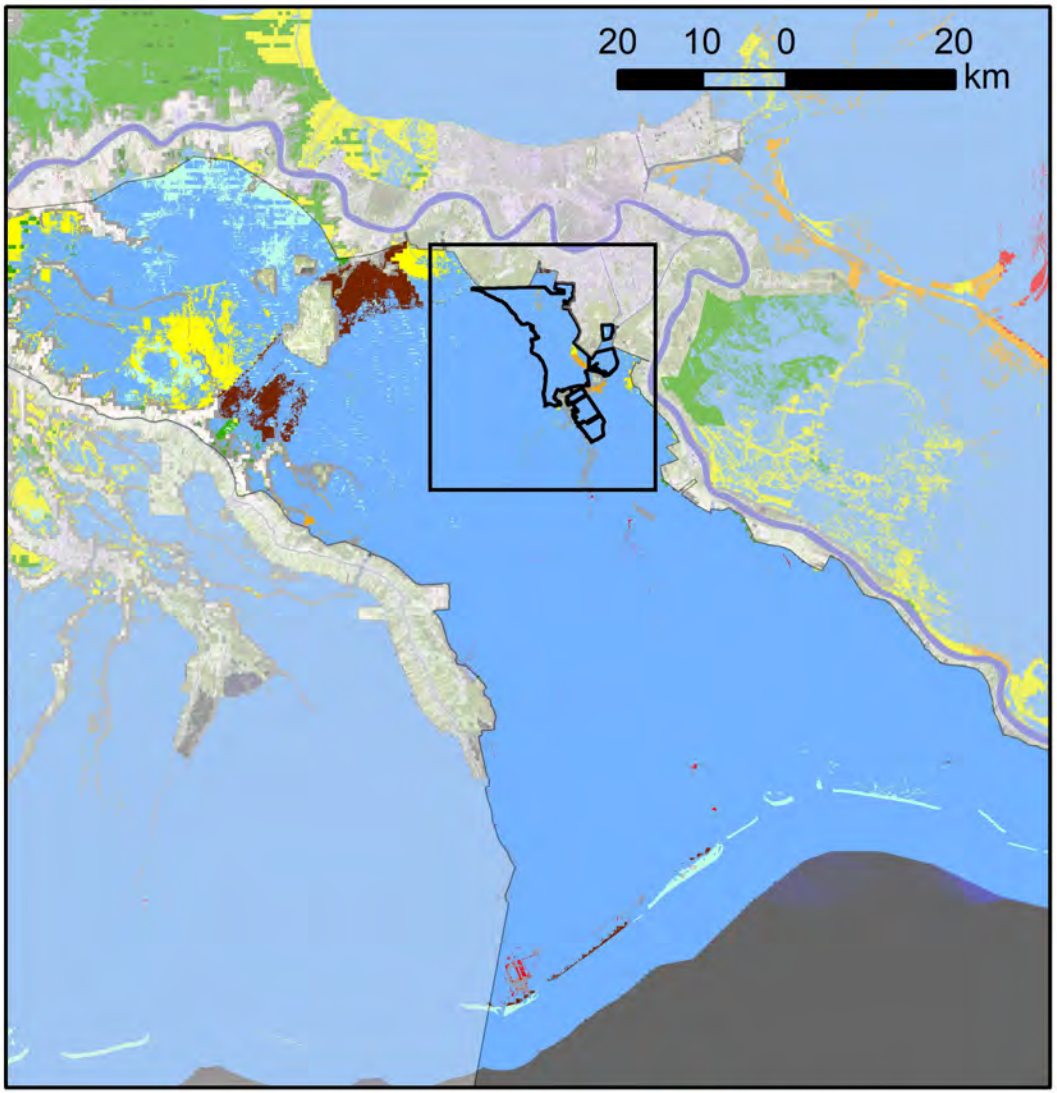
Habitat Type

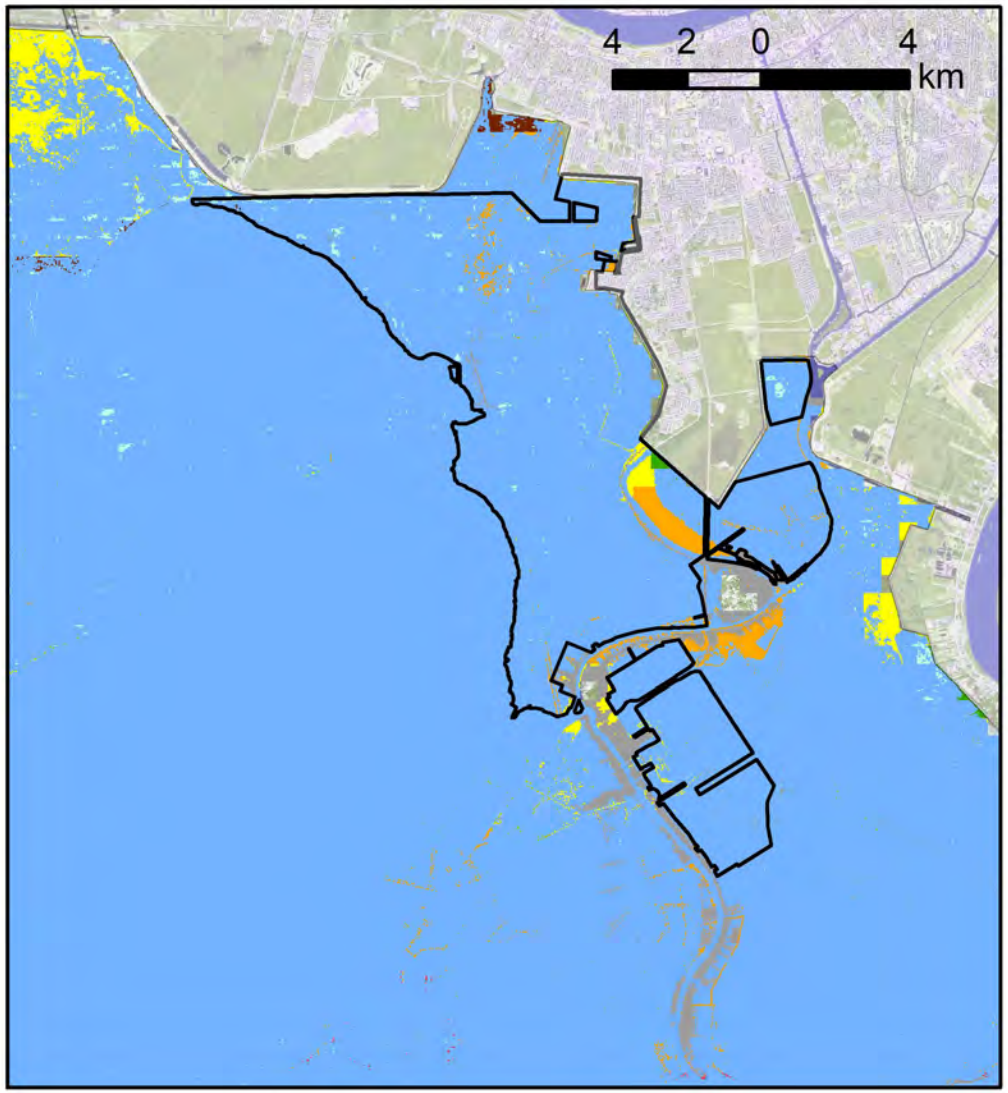
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S09 - G503
High
FWOA, no diversions
Year 42

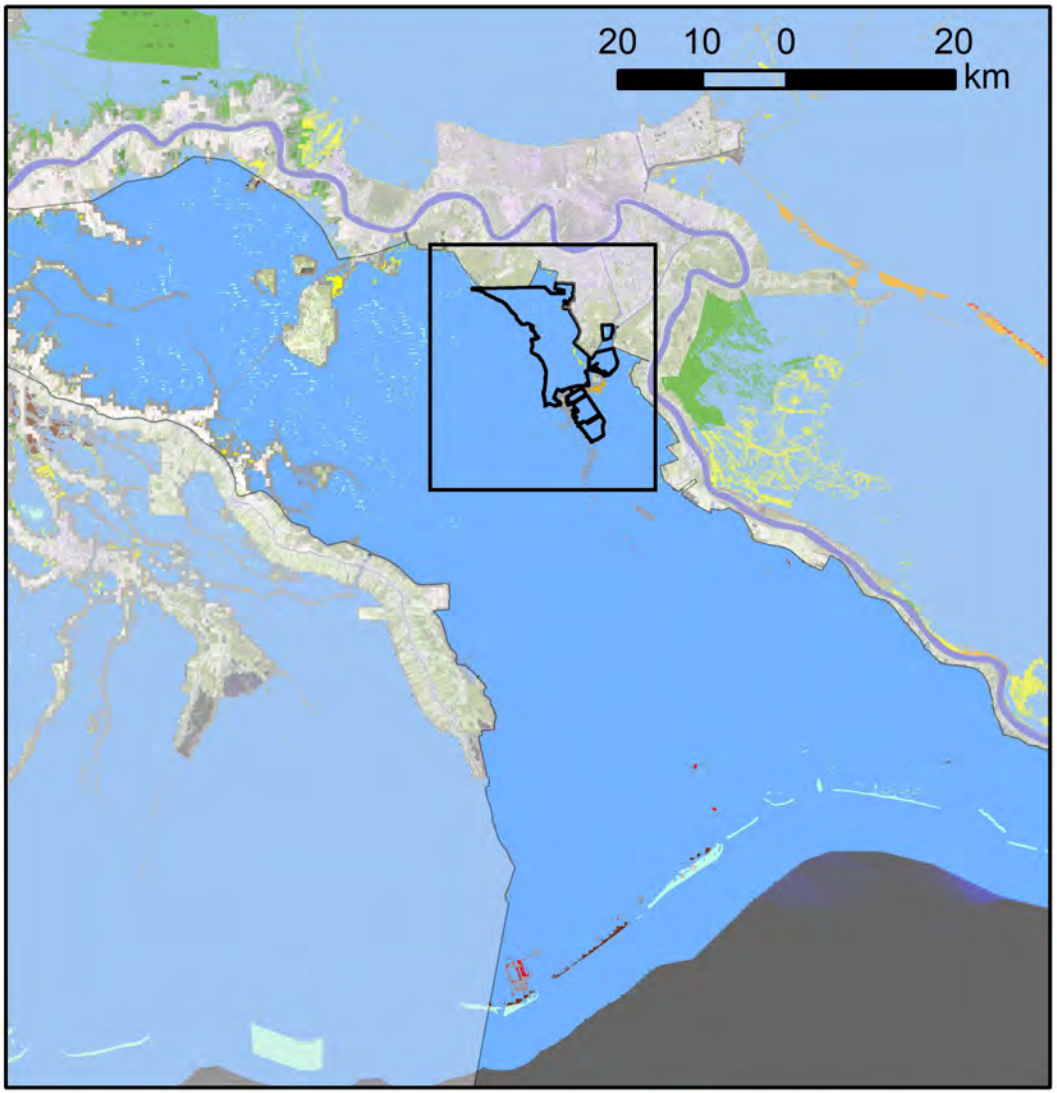
Habitat Type

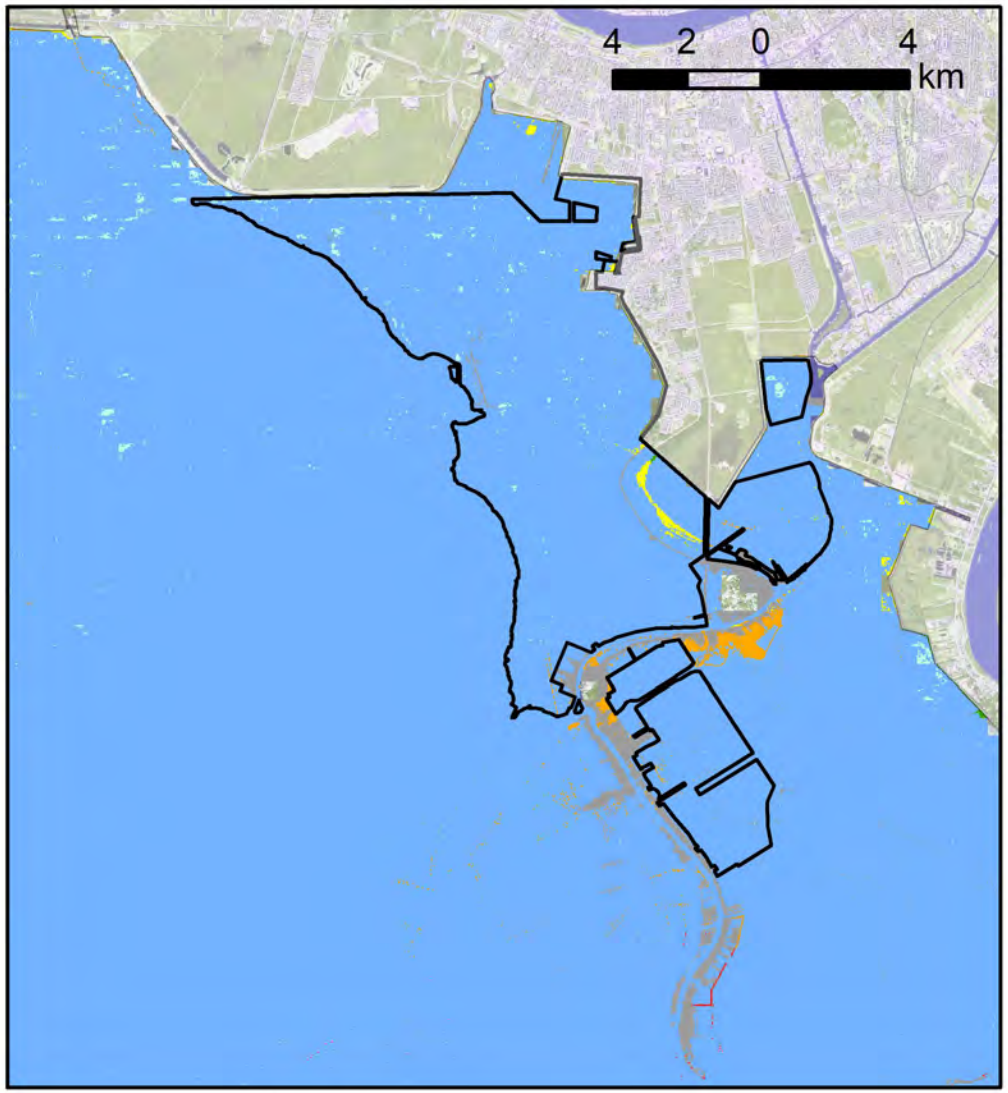
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol

N
W E
S





S09 - G503
High
FWOA, no diversions
Year 51

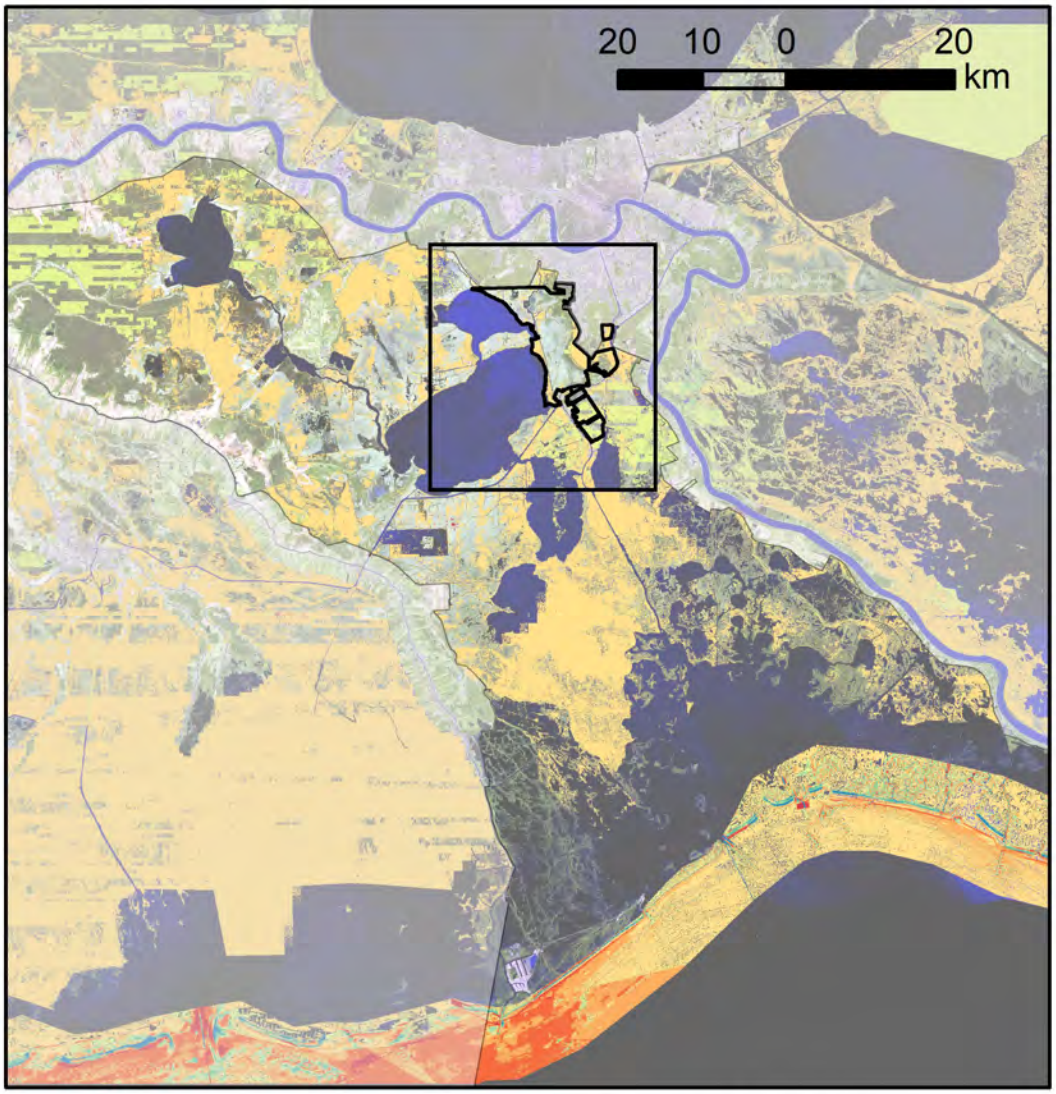
Habitat Type

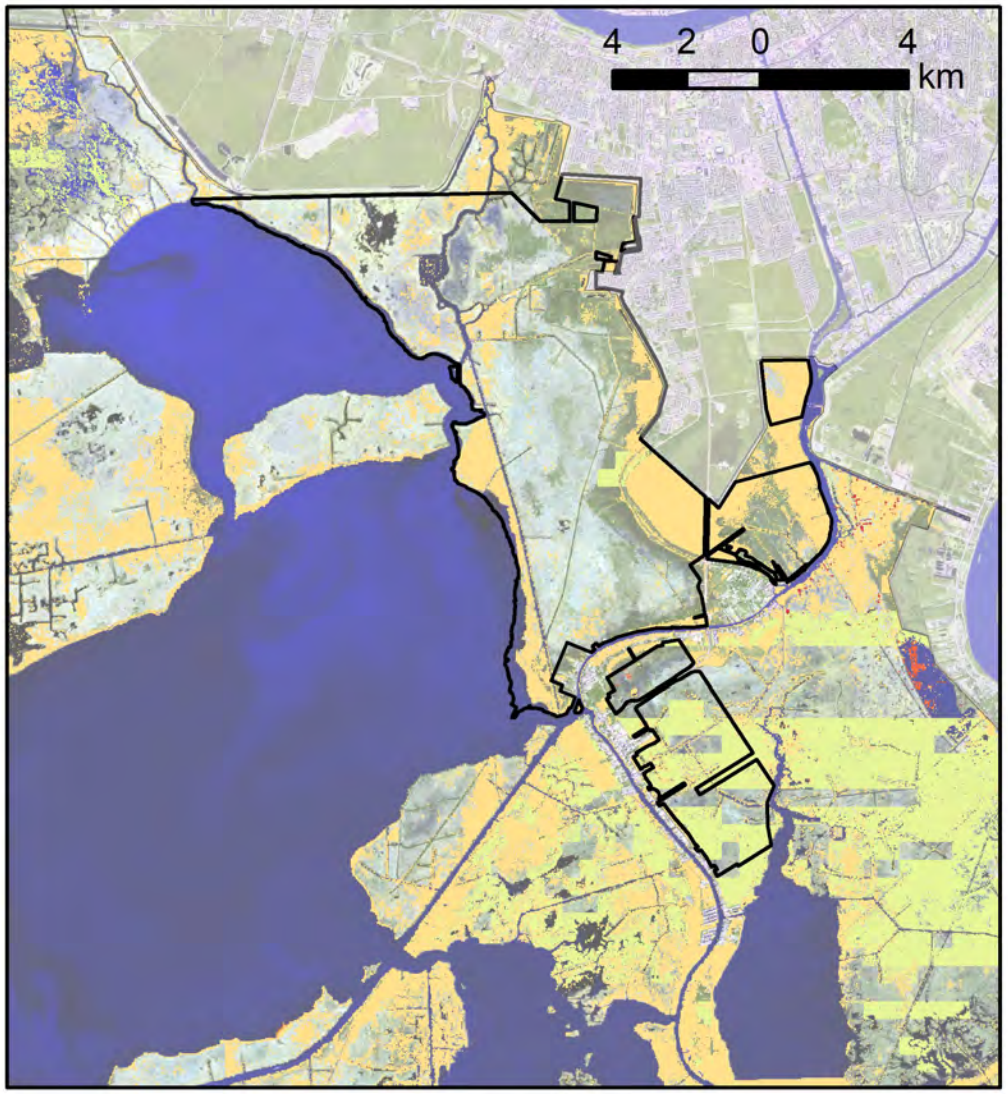
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S09 - G503
High
FWOA, no diversions
Year 02

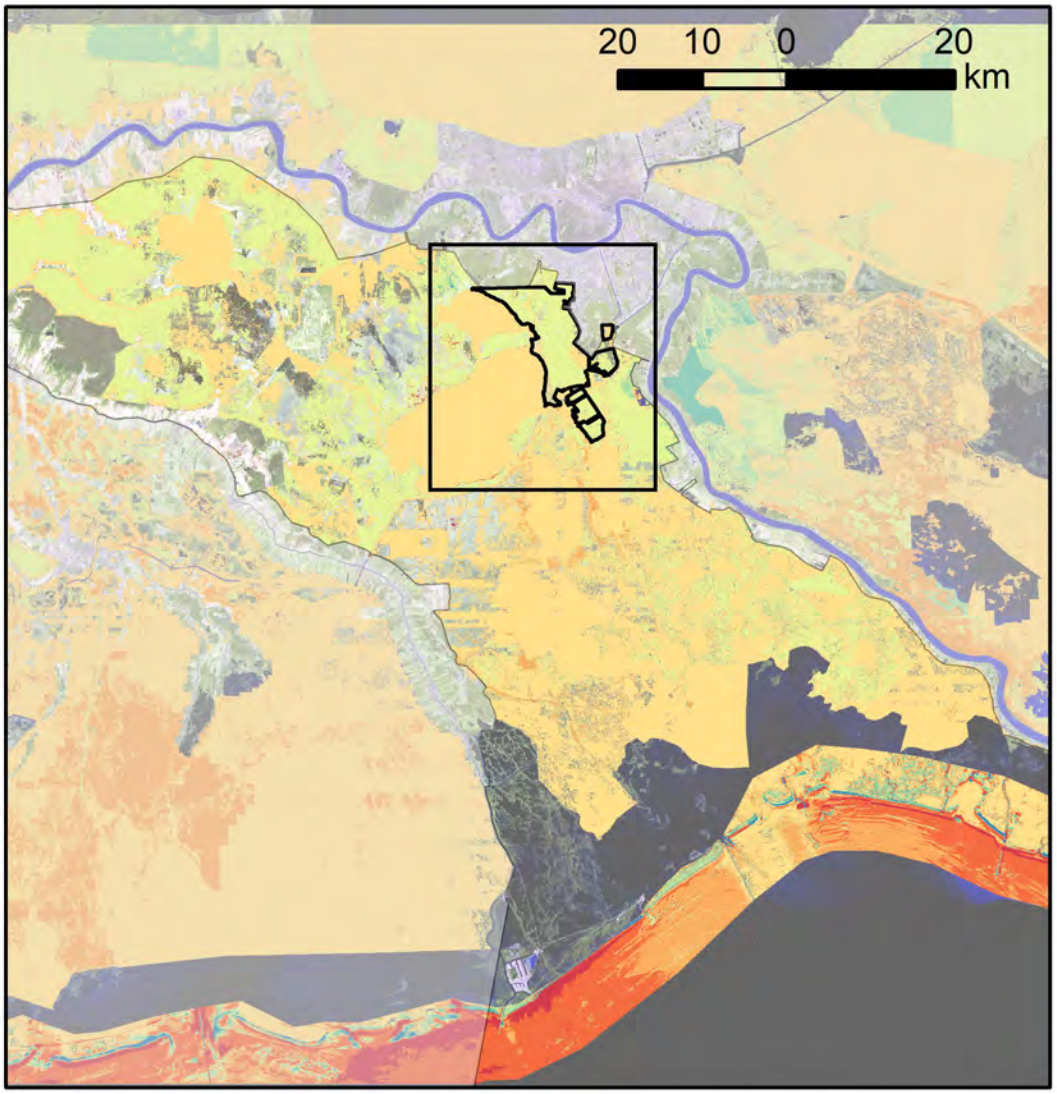
Elev. Change [m]

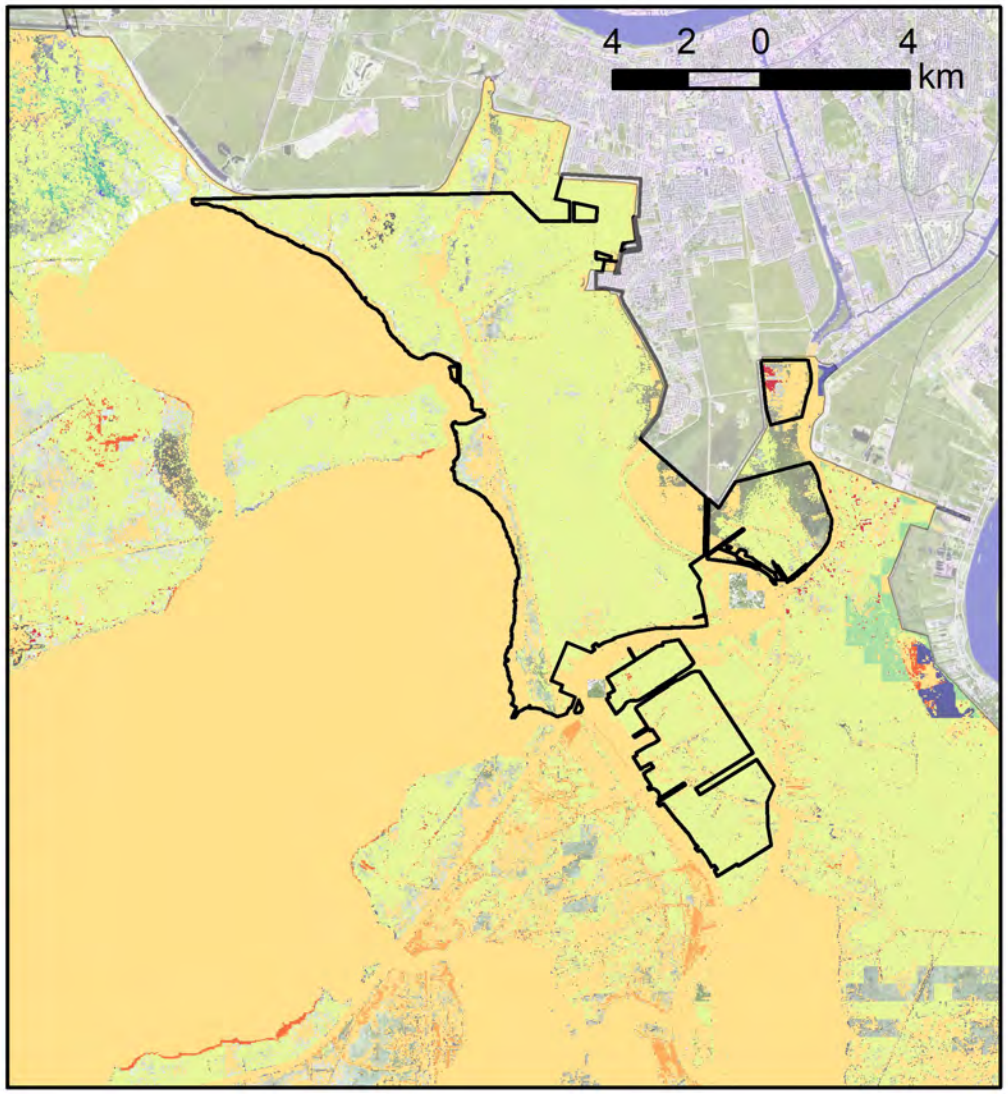
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
W E
S





S09 - G503
High
FWOA, no diversions
Year 12

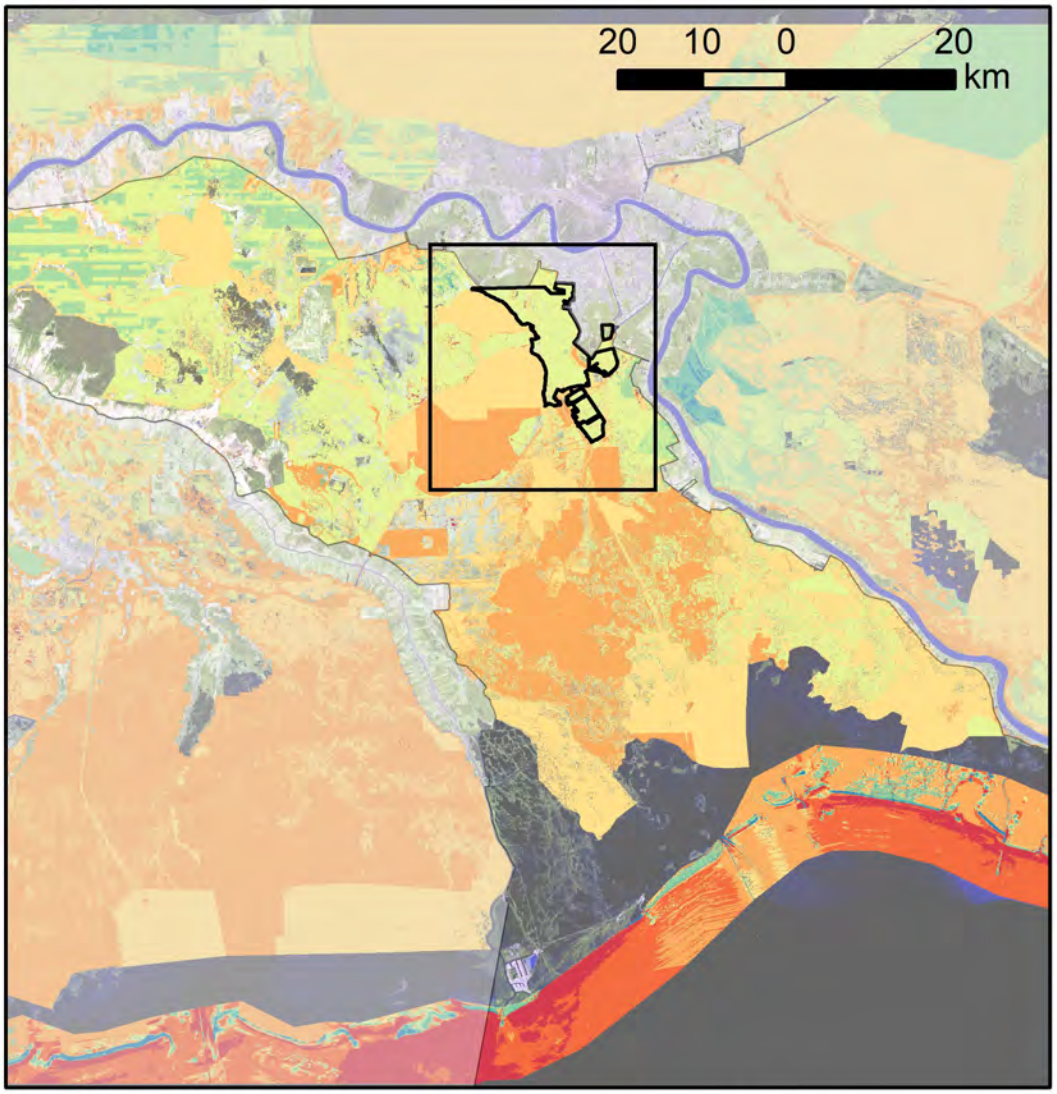
Elev. Change [m]

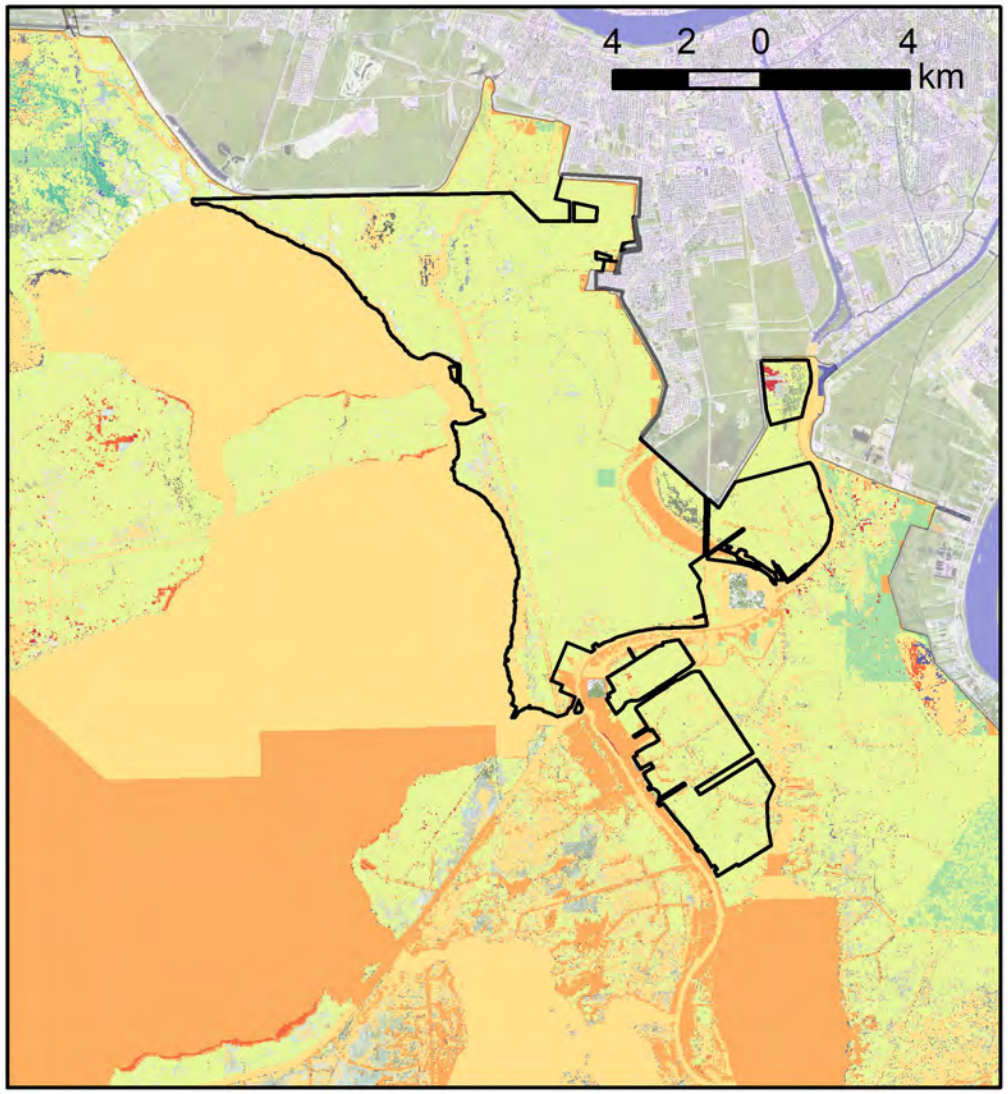
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
W E
S





S09 - G503
High
FWOA, no diversions
Year 22

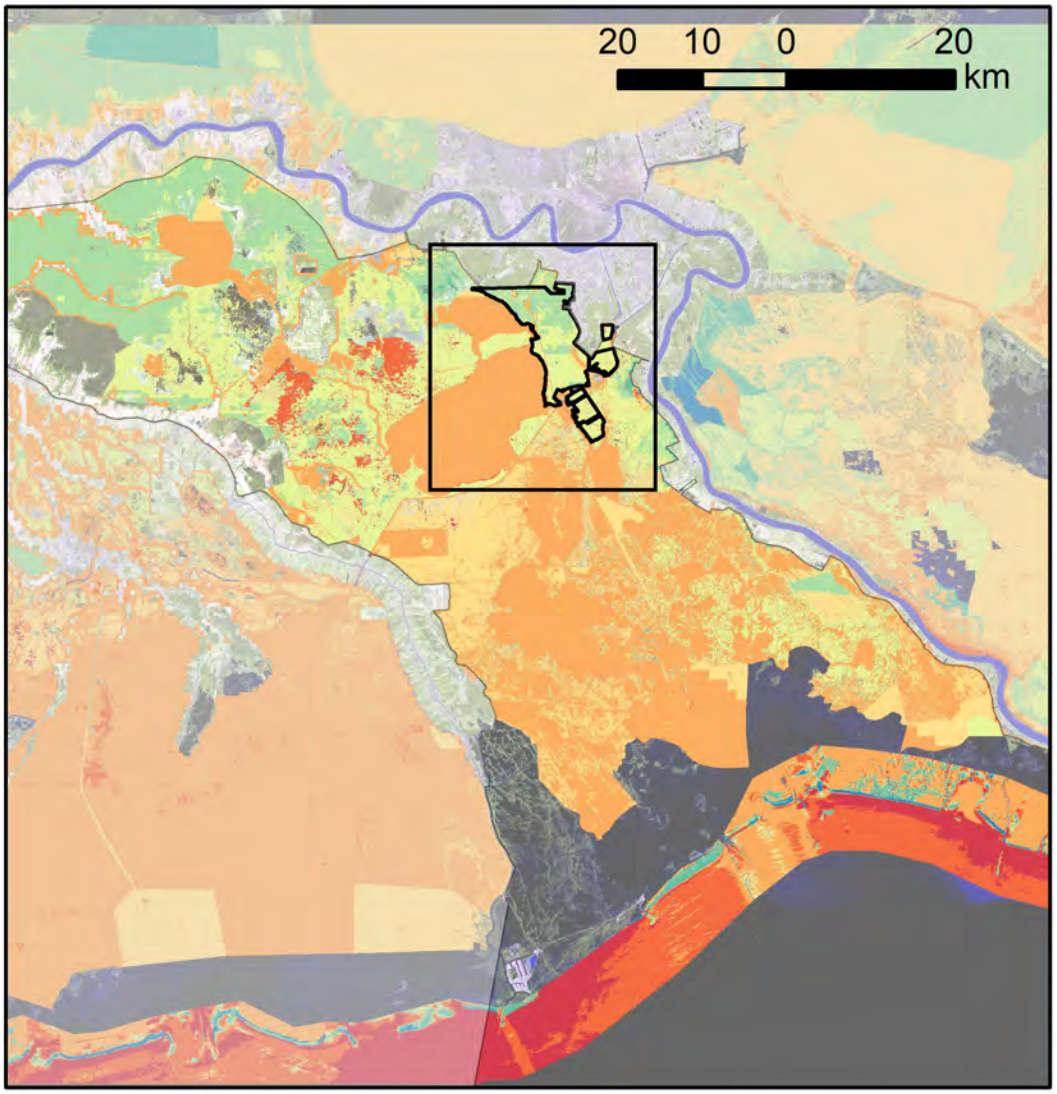
Elev. Change [m]

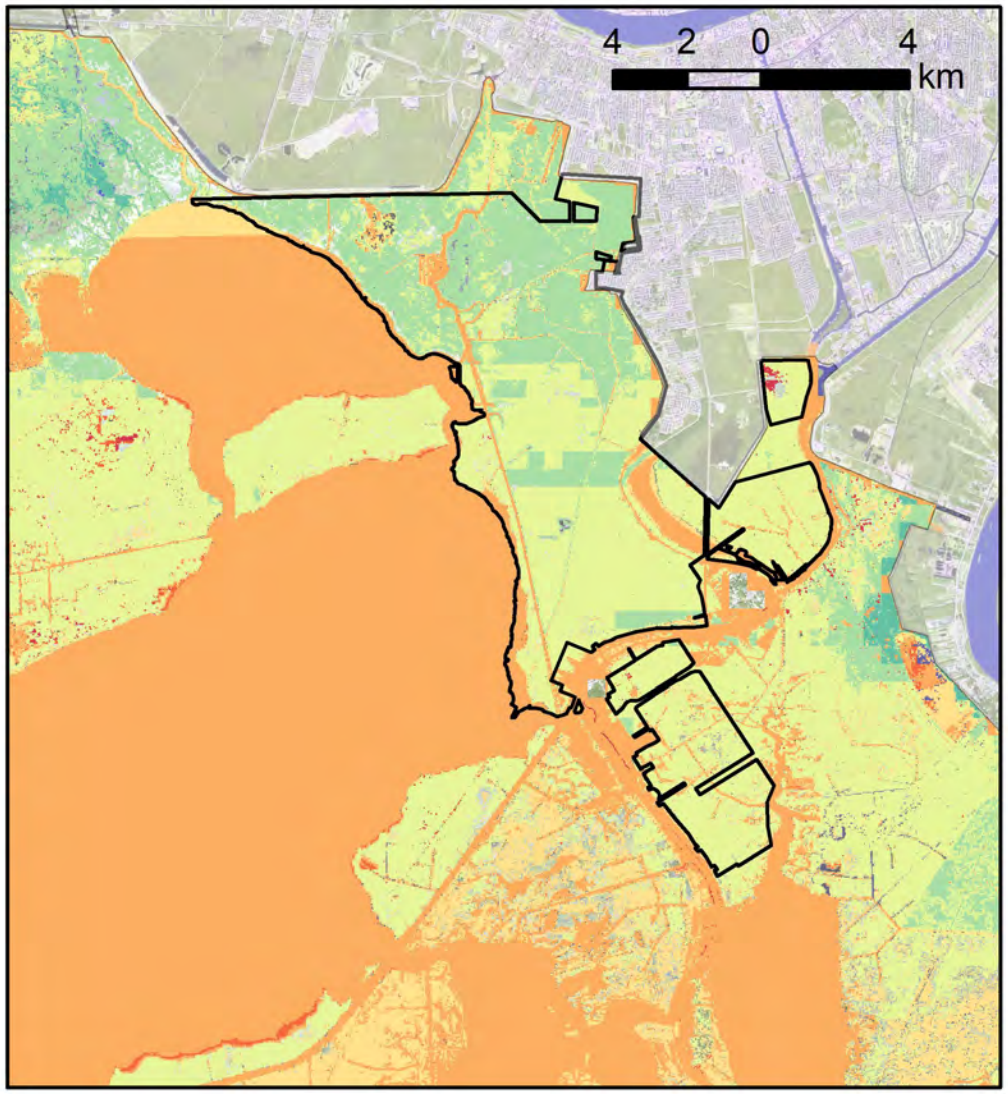
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol







S09 - G503
High
FWOA, no diversions
Year 32

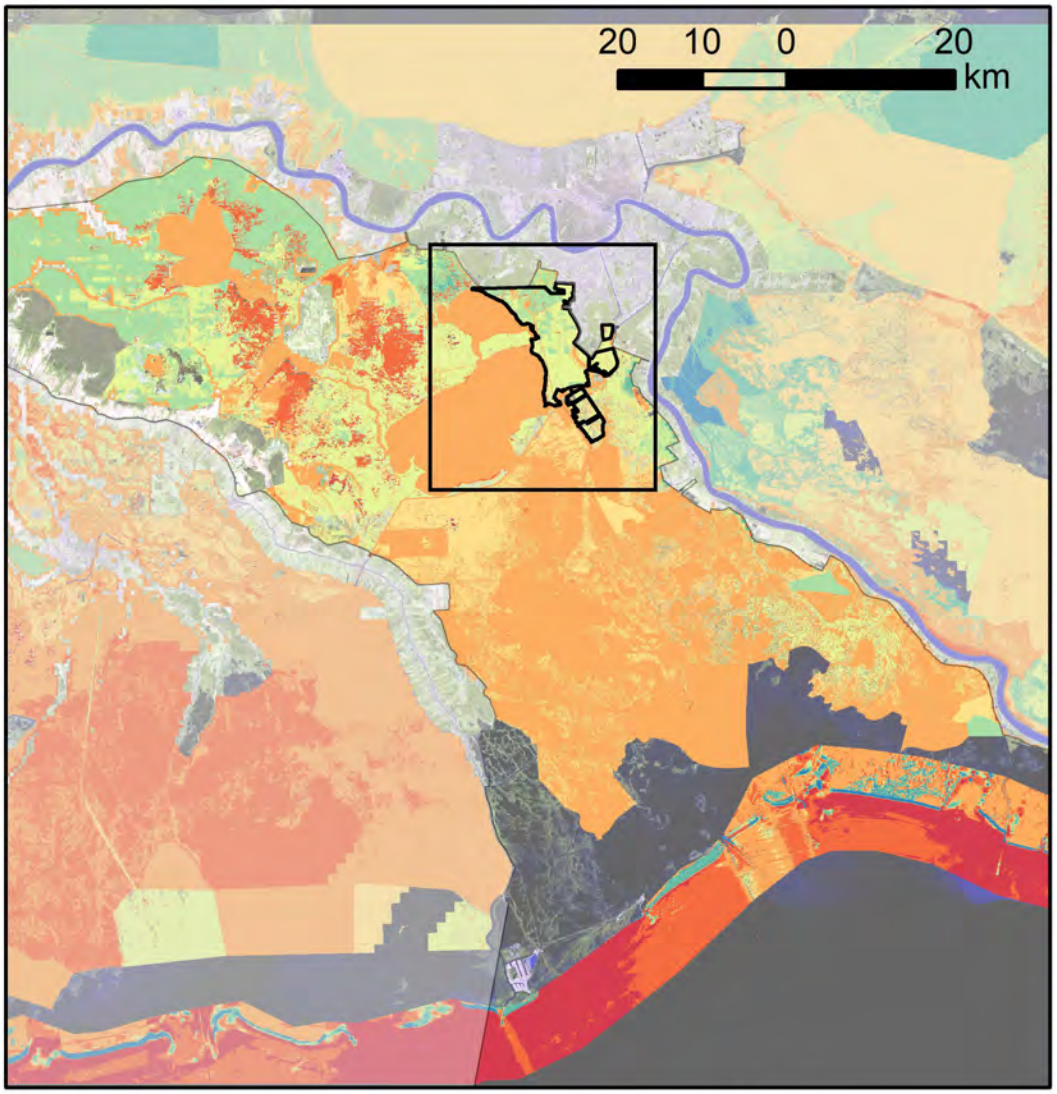
Elev. Change [m]

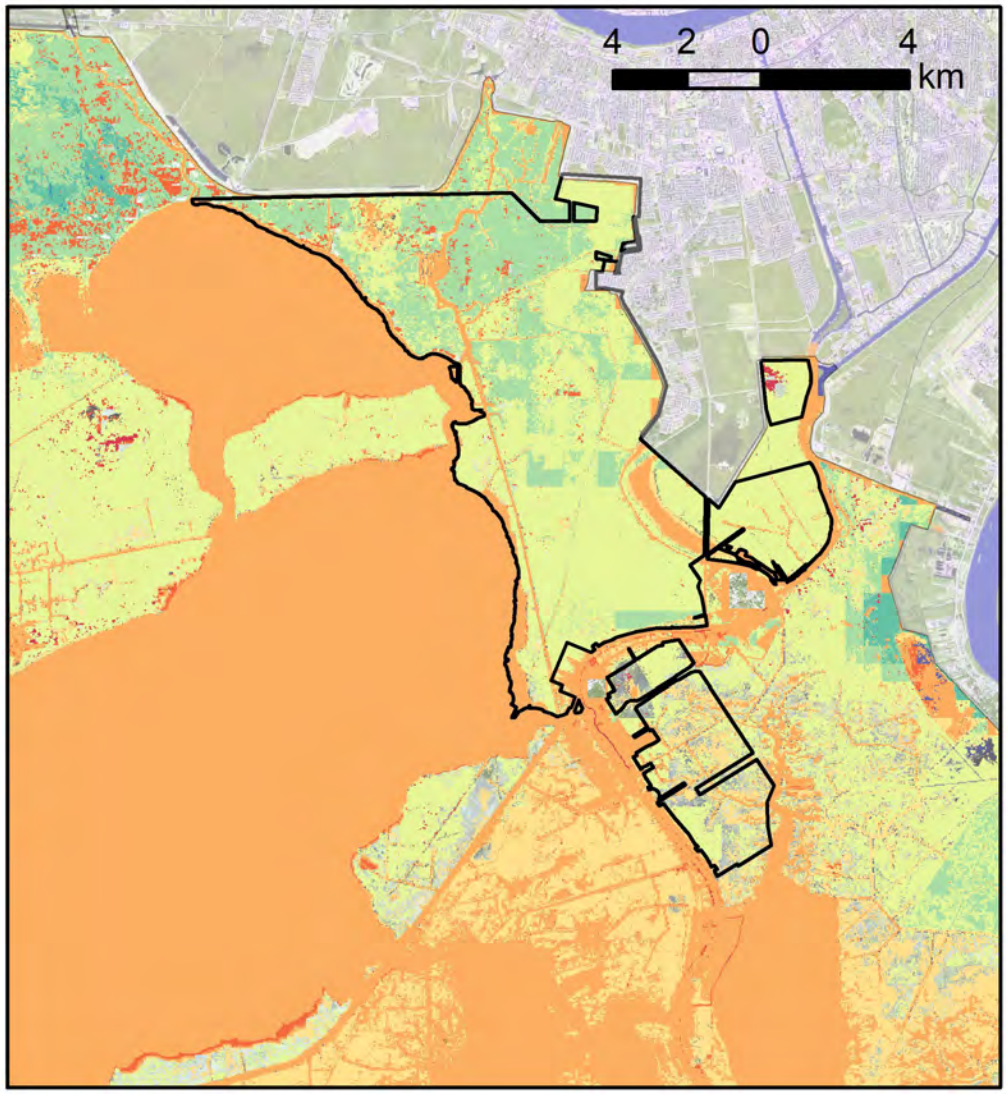
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol







S09 - G503
High
FWOA, no diversions
Year 42

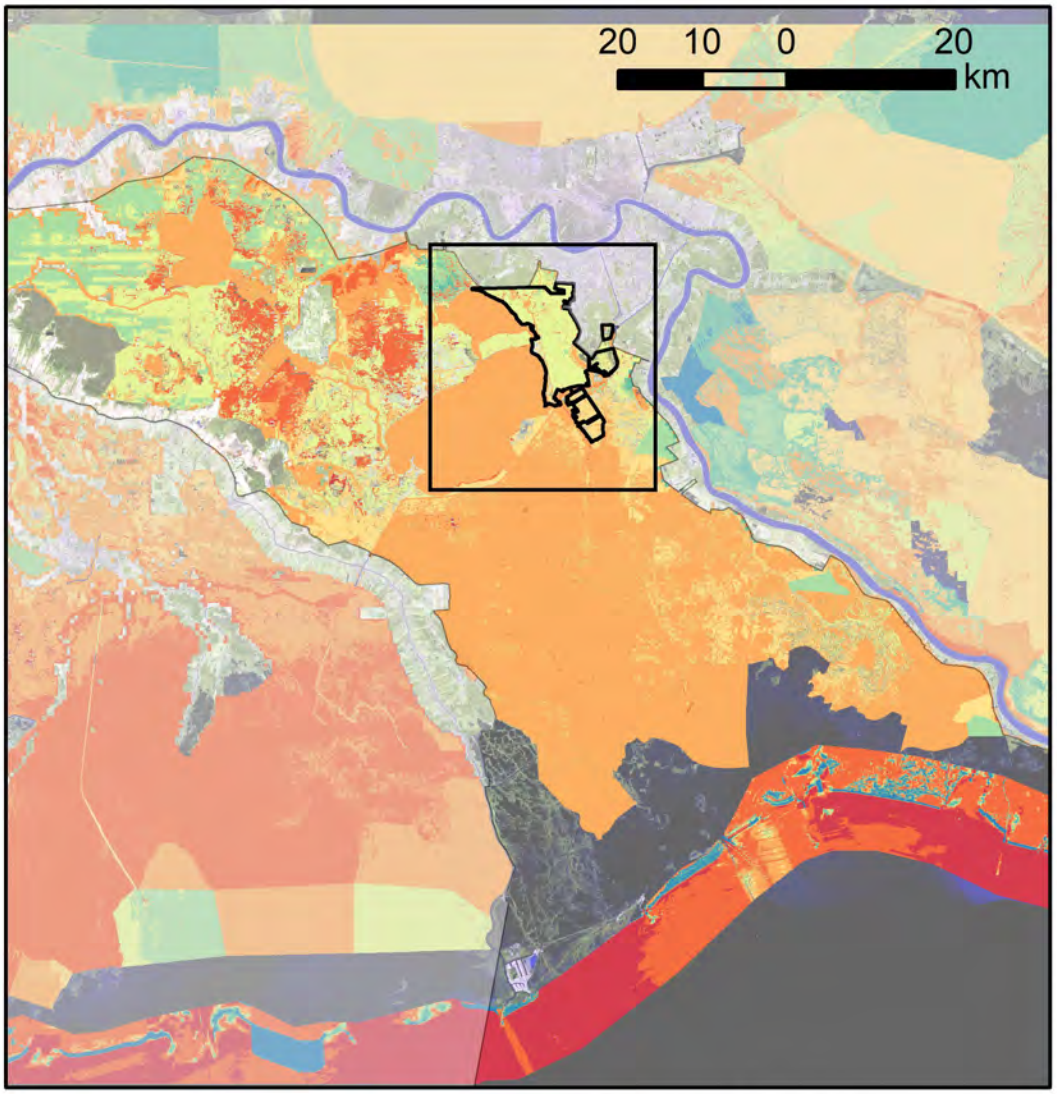
Elev. Change [m]

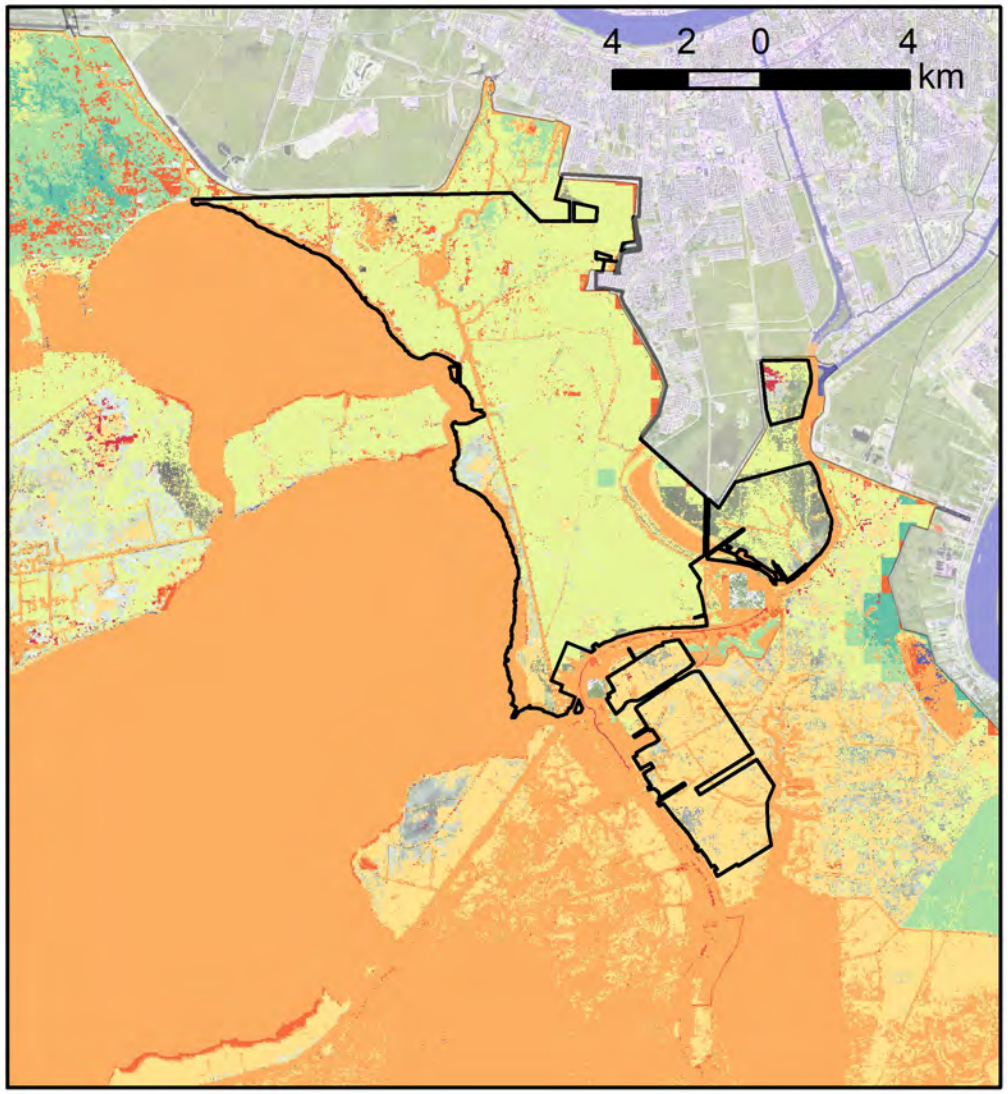
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol







S09 - G503
High
FWOA, no diversions
Year 51

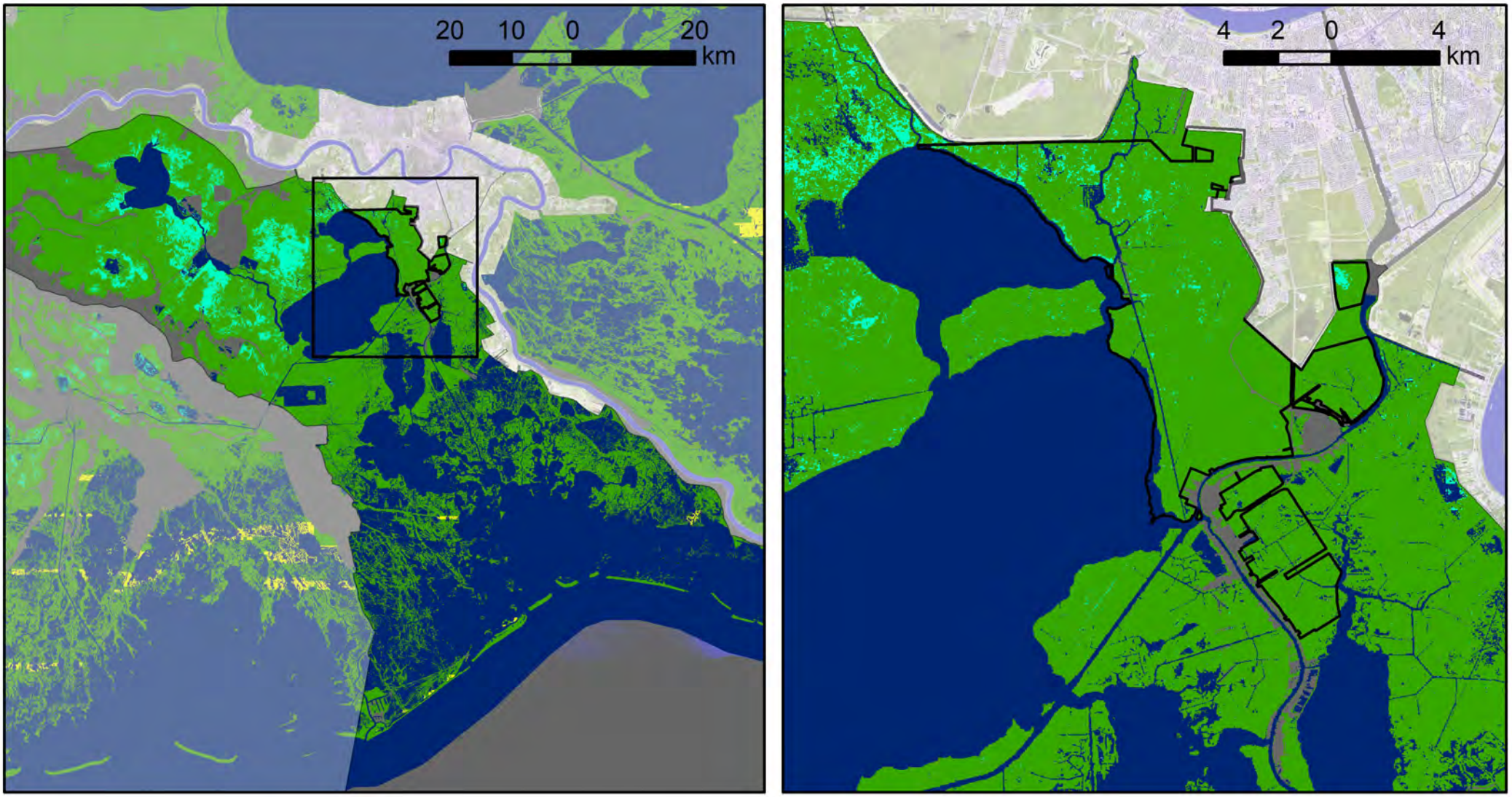
Elev. Change [m]

- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol





S09 - G603
High
Mid-Barataria Only
Year 02

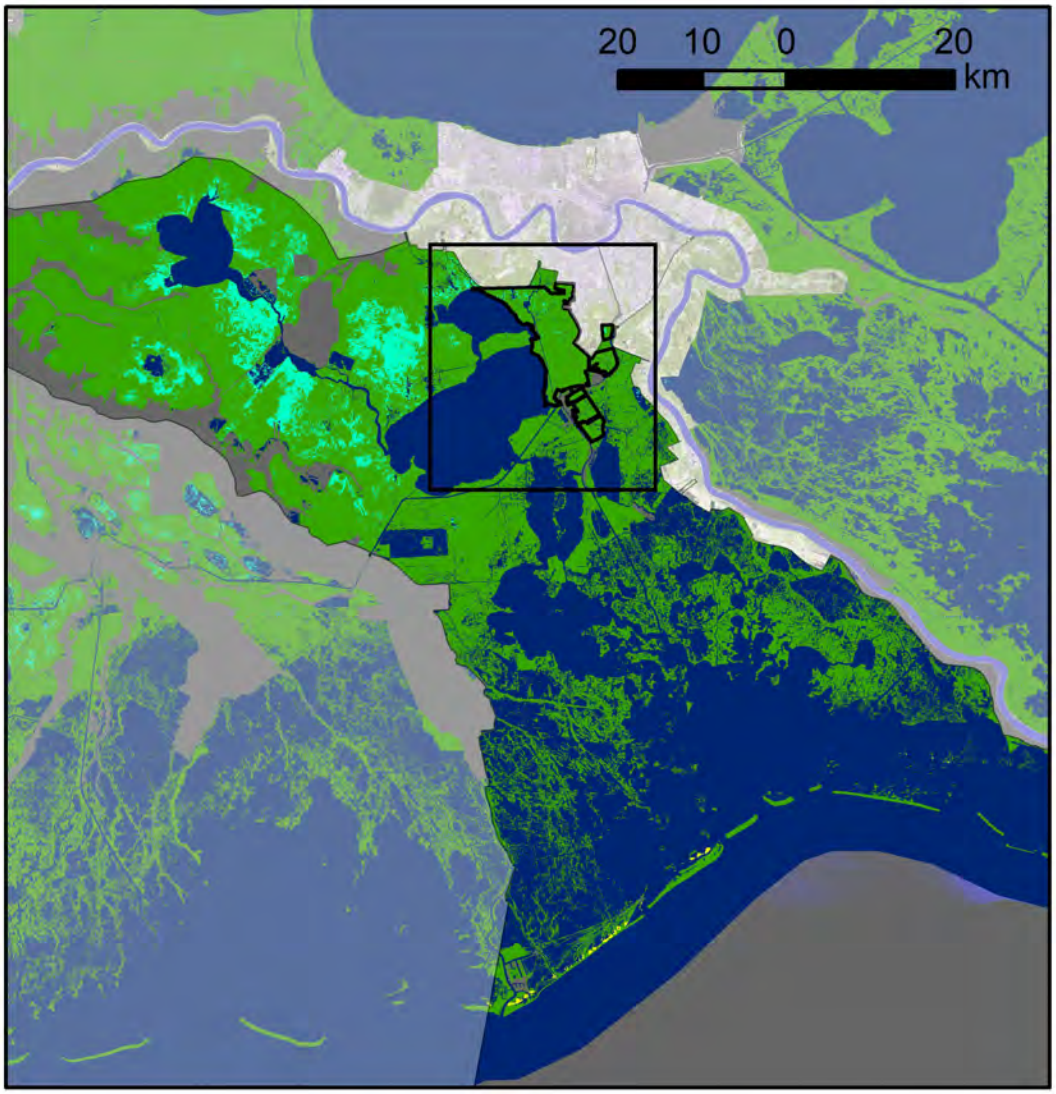
Land Type

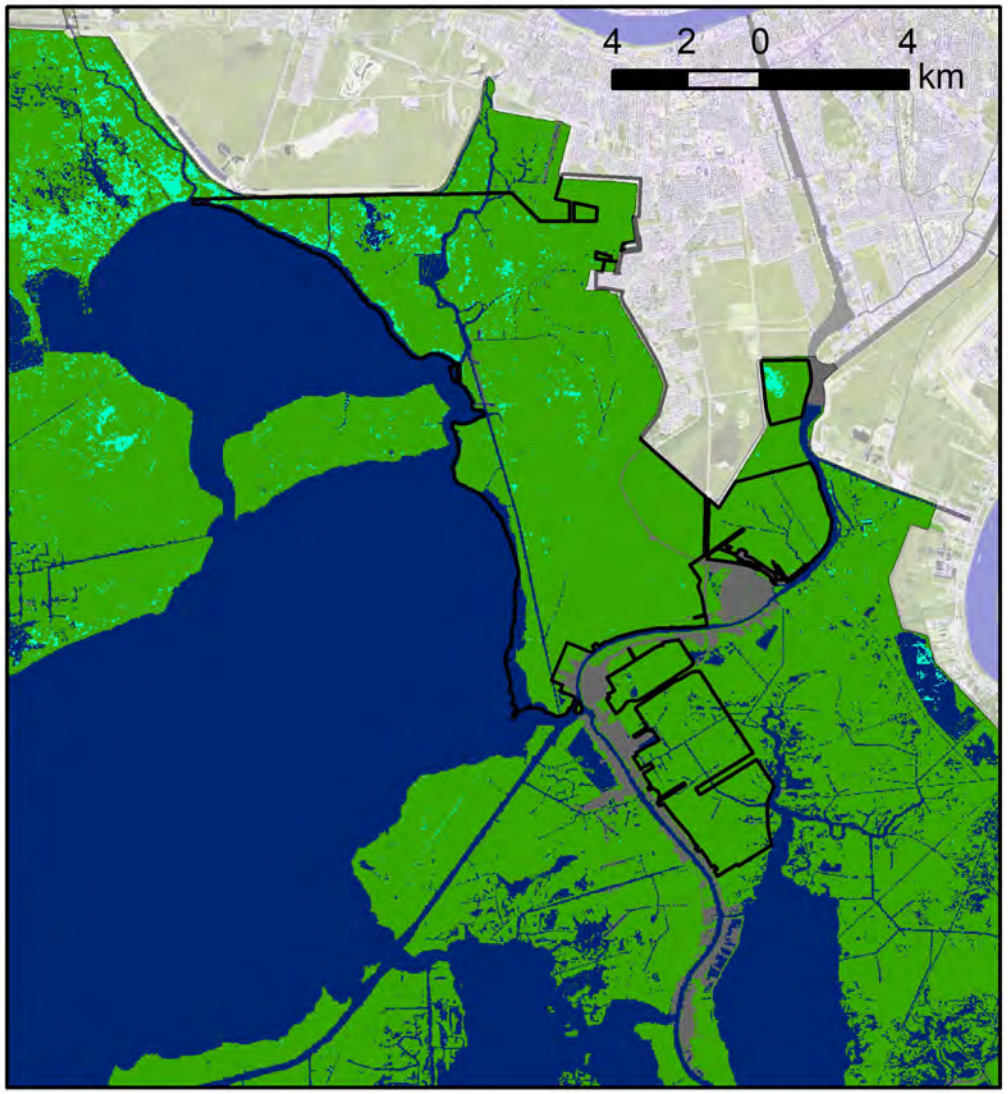
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol

N
W E
S





S09 - G603
High
Mid-Barataria Only
Year 12

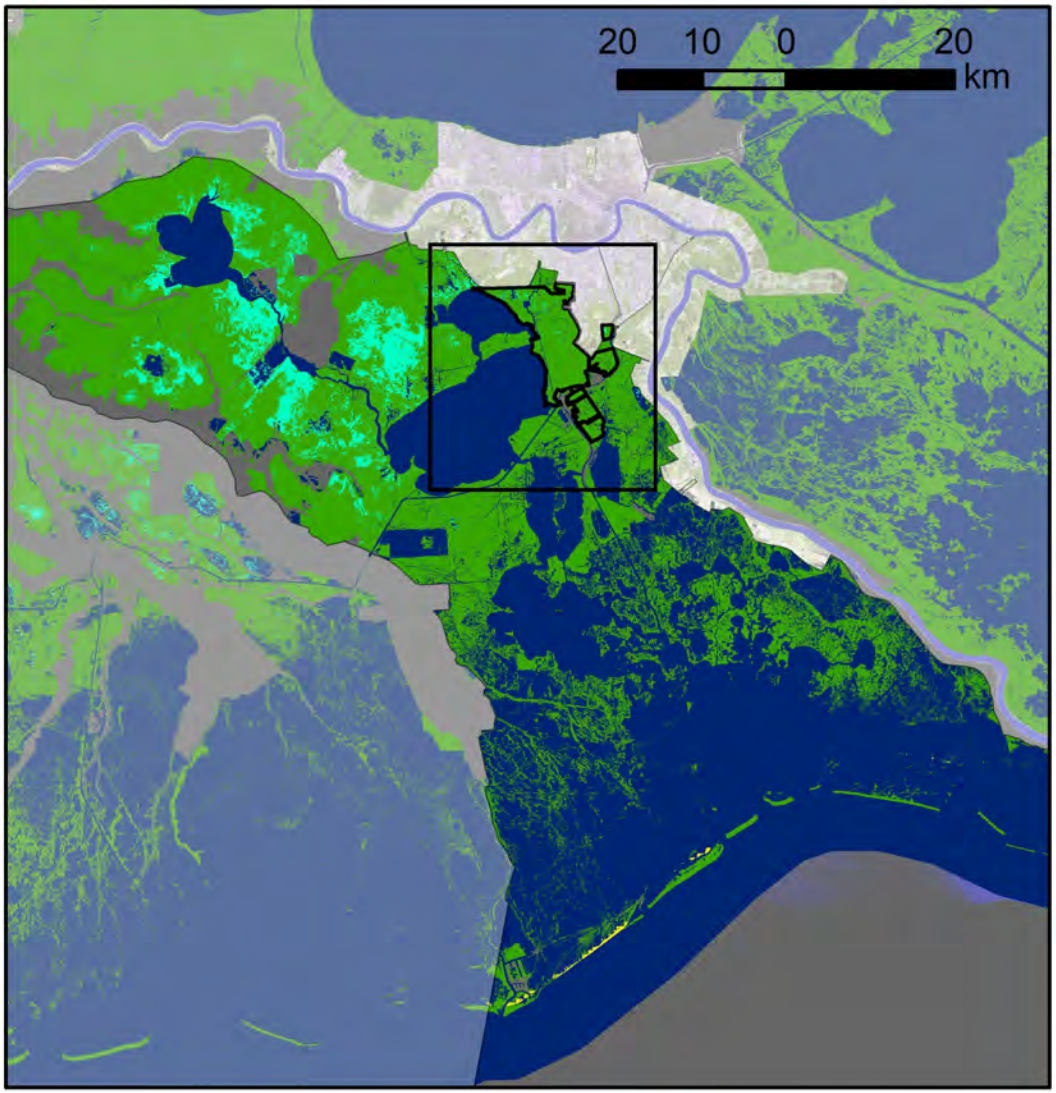
Land Type

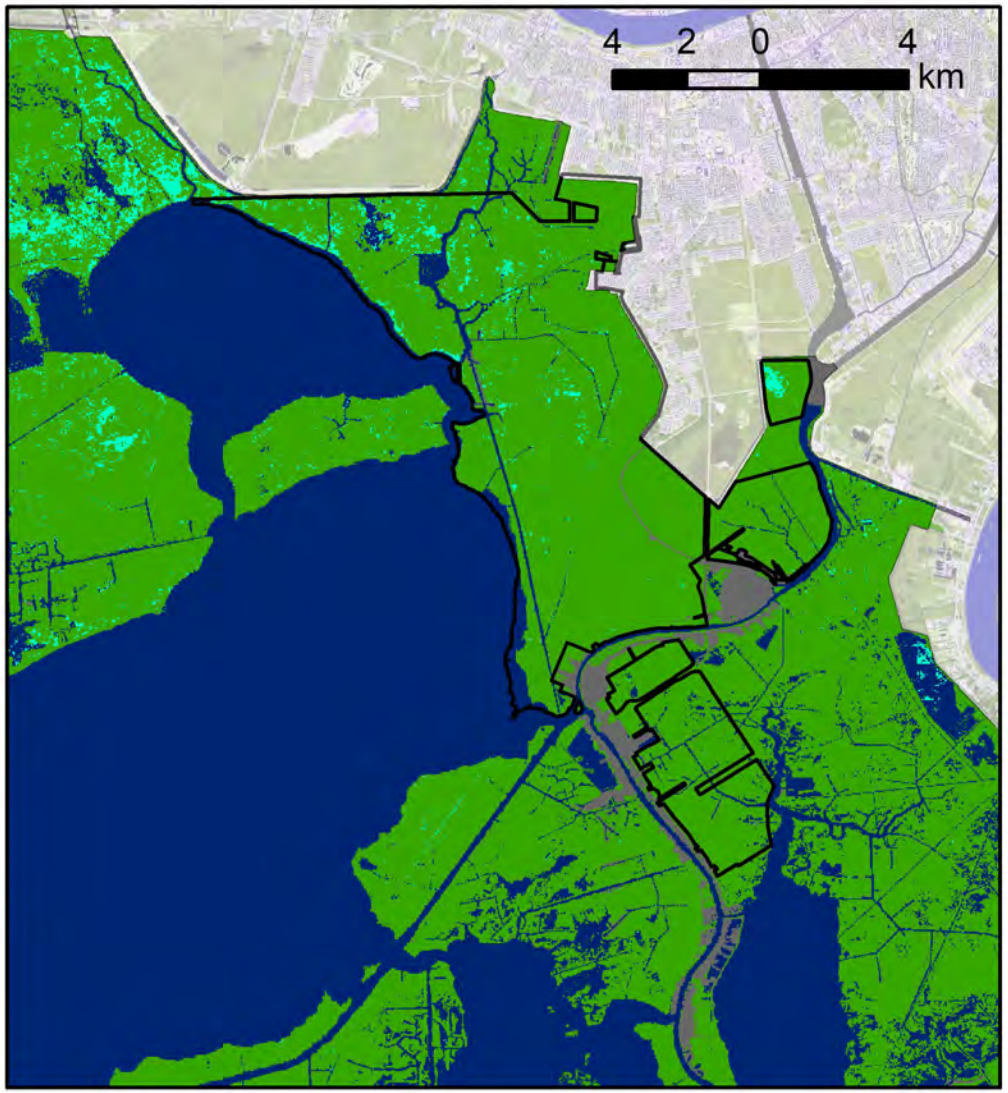
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S09 - G603
High
Mid-Barataria Only
Year 22

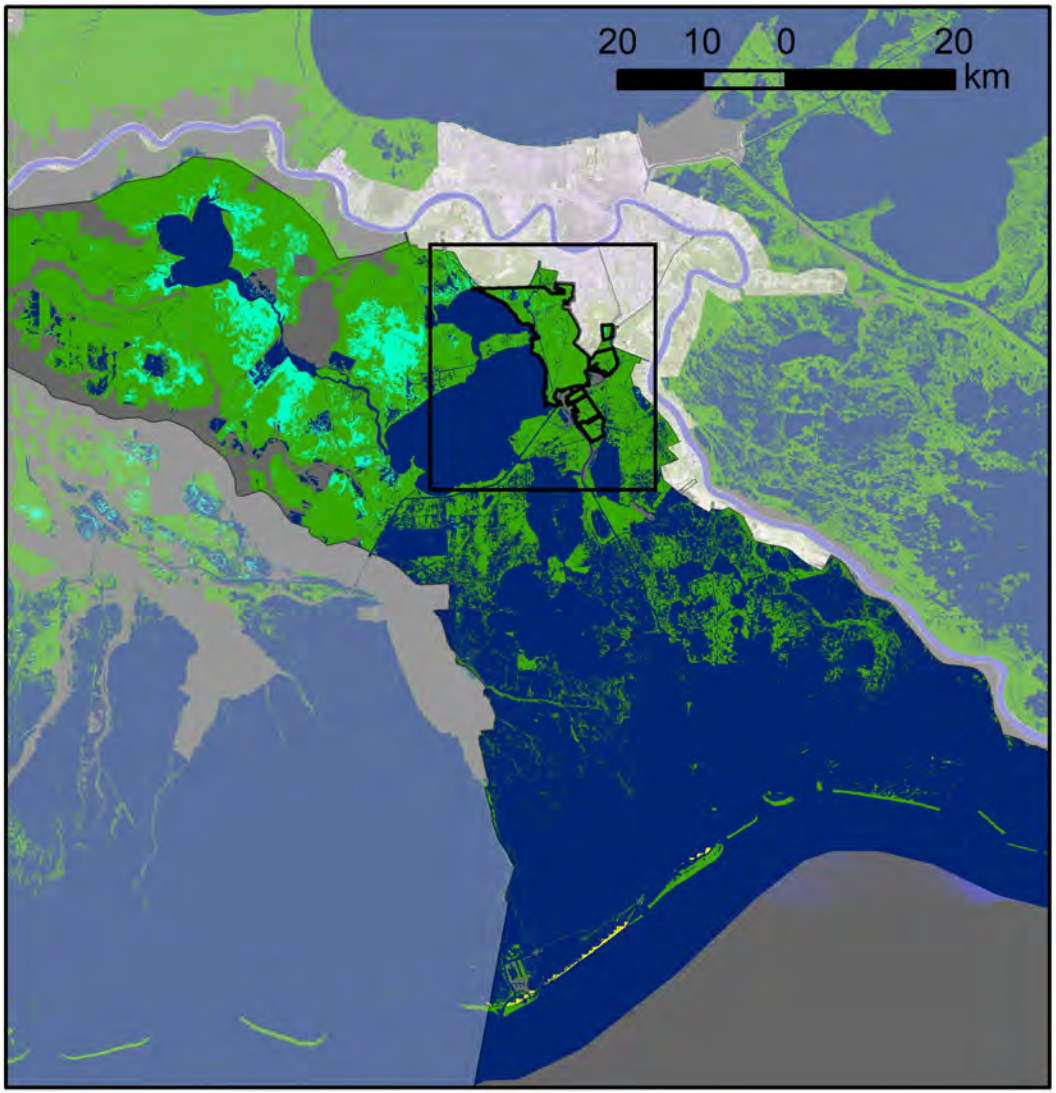
Land Type

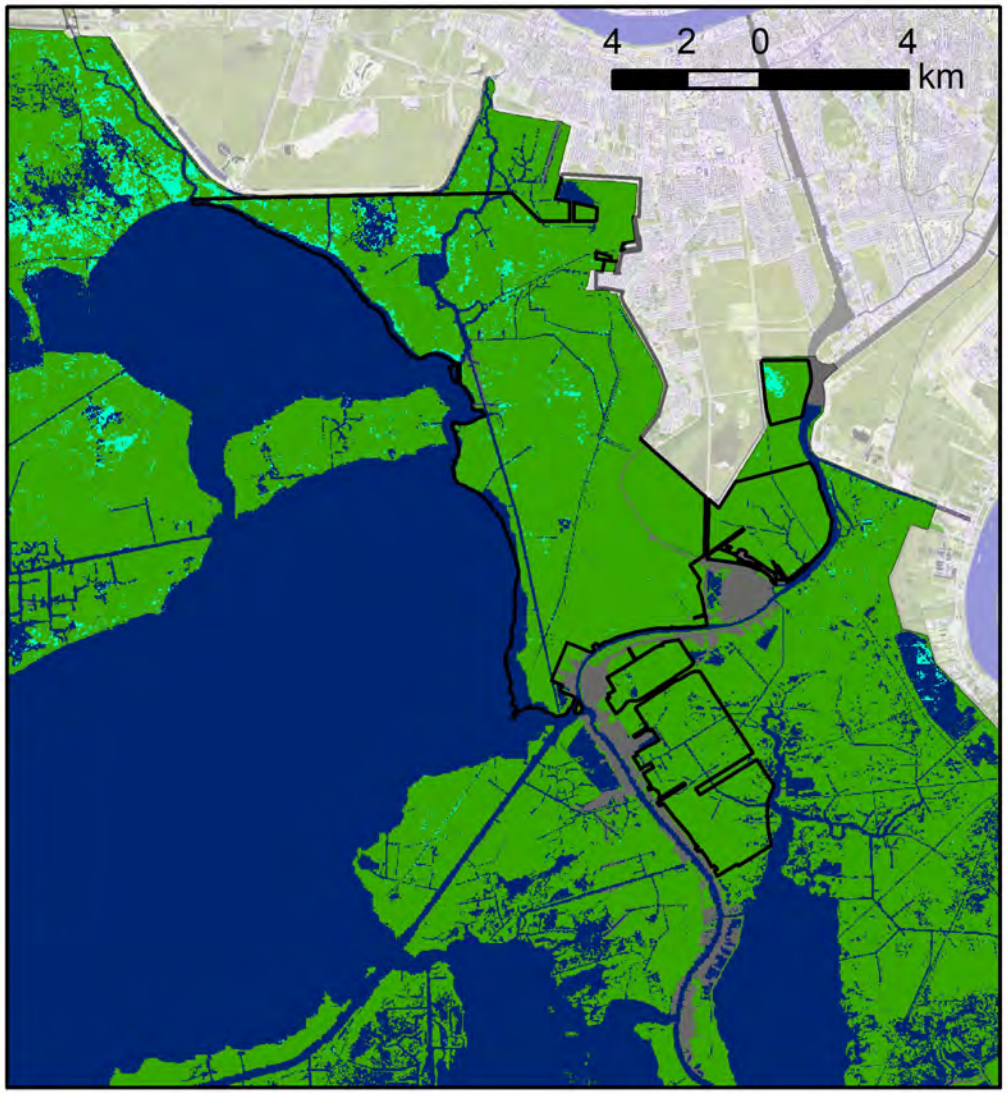
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S09 - G603
High
Mid-Barataria Only
Year 32

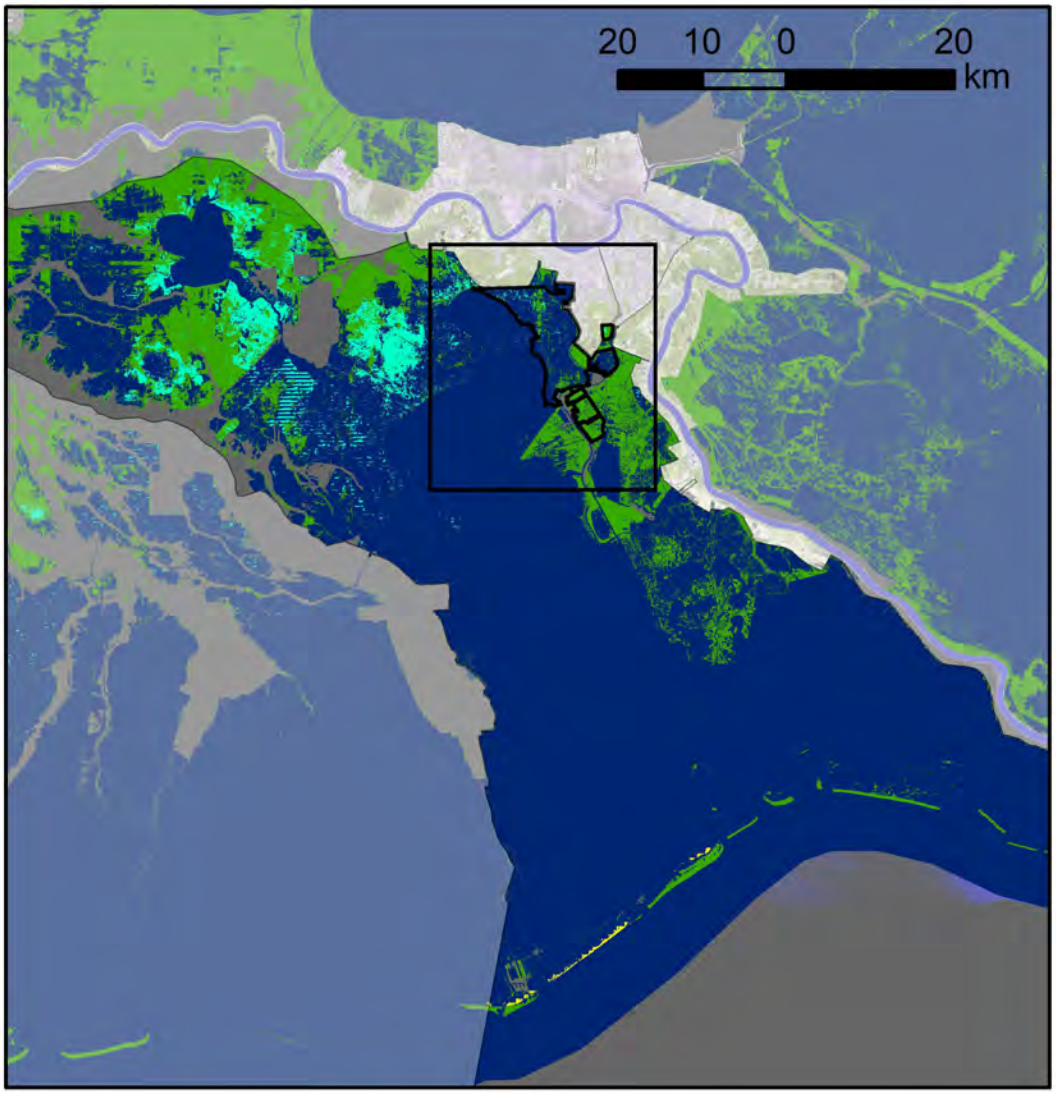
Land Type

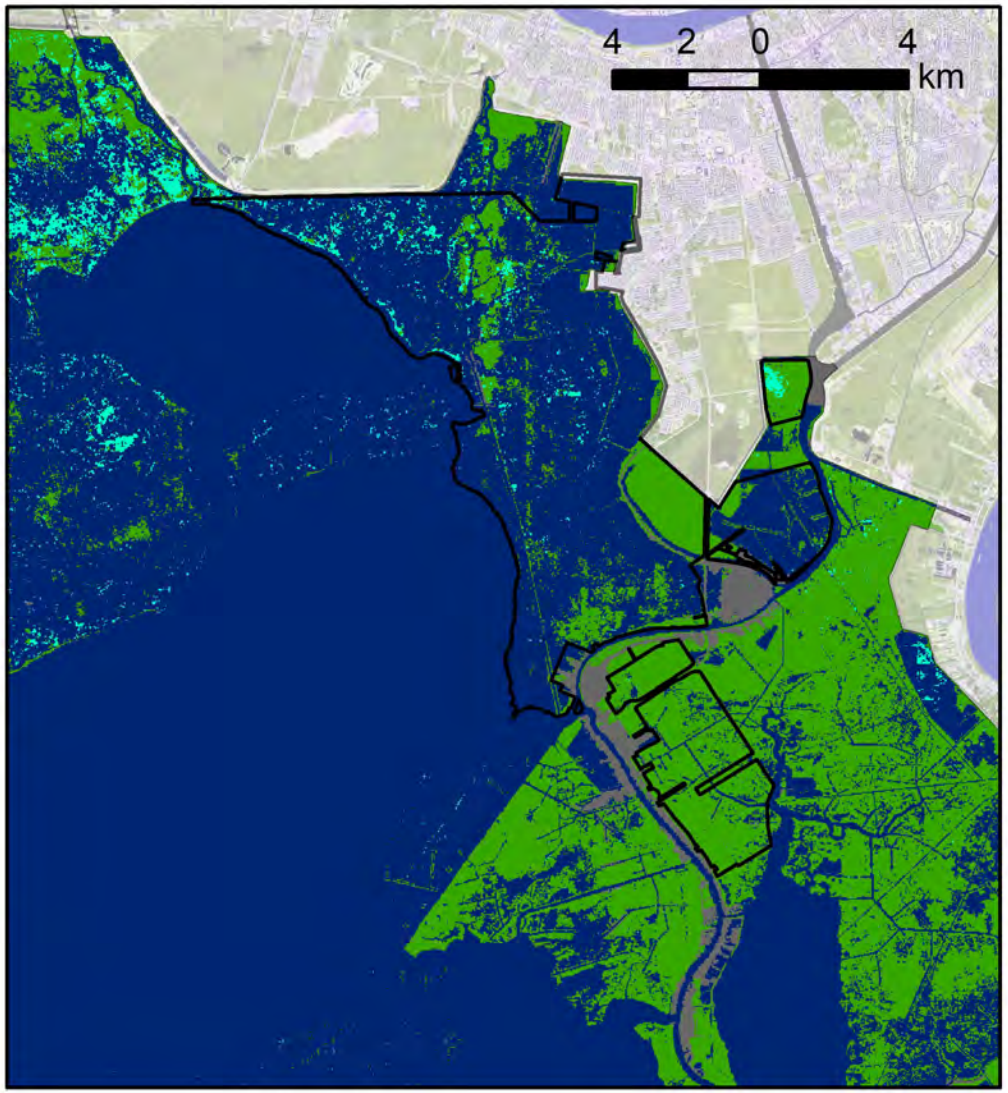
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S09 - G603
High
Mid-Barataria Only
Year 42

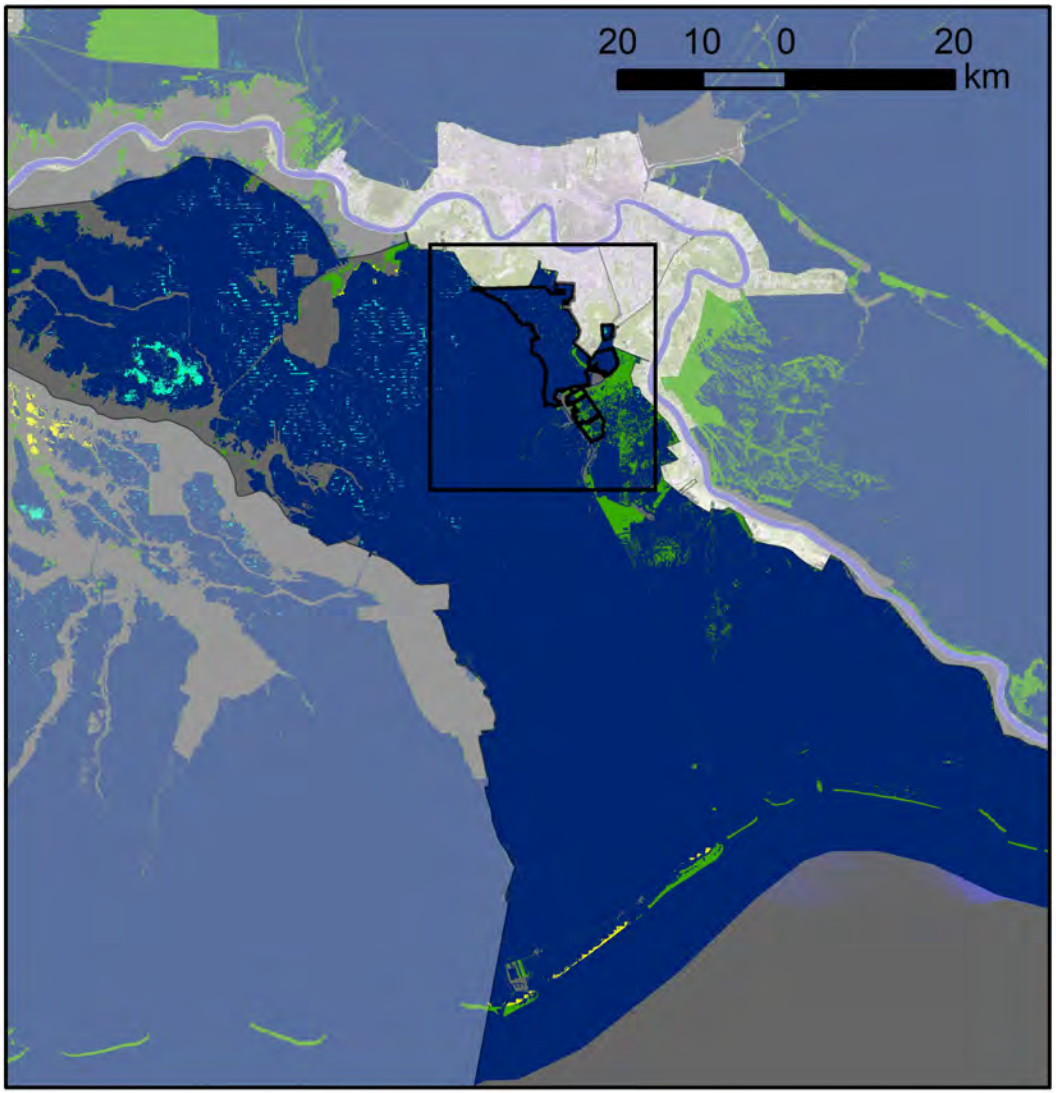
Land Type

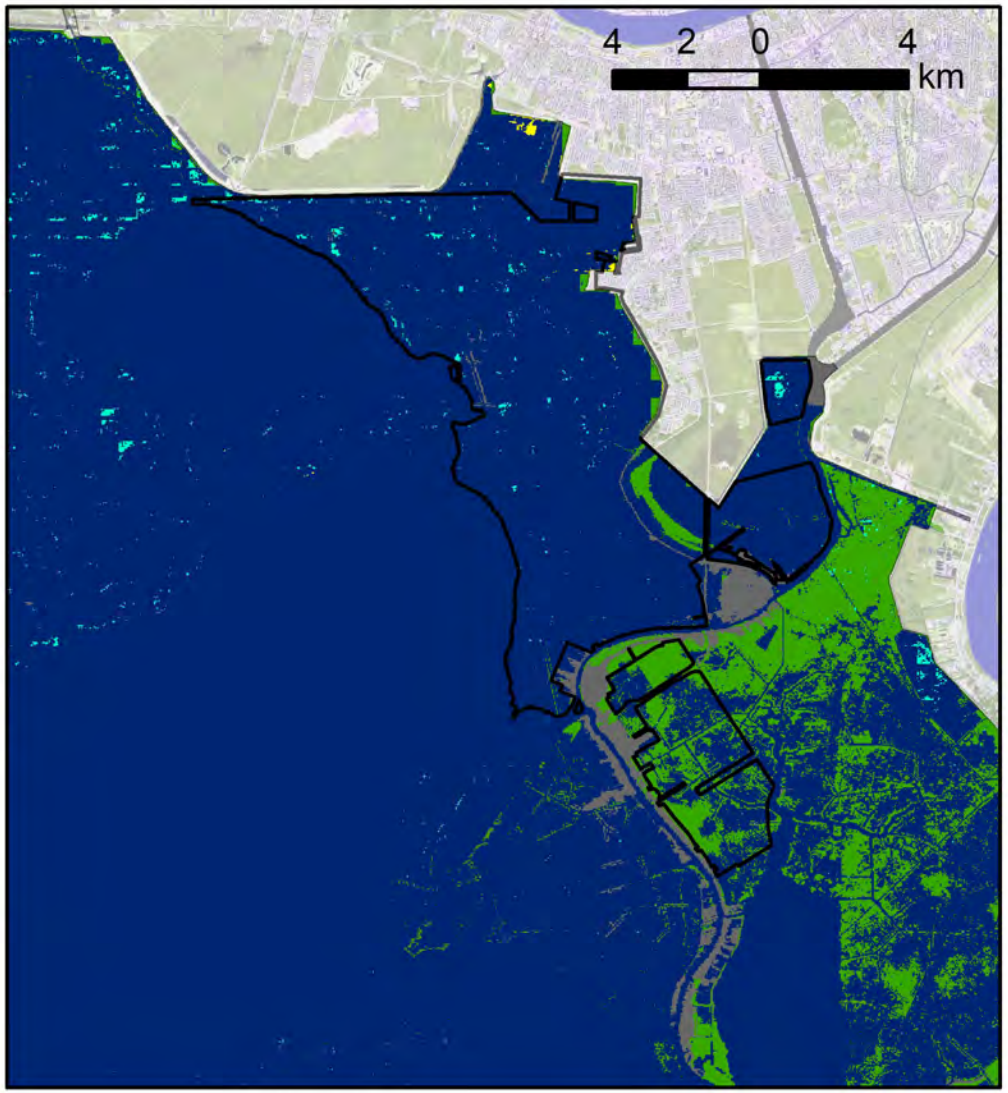
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S09 - G603
High
Mid-Barataria Only
Year 51

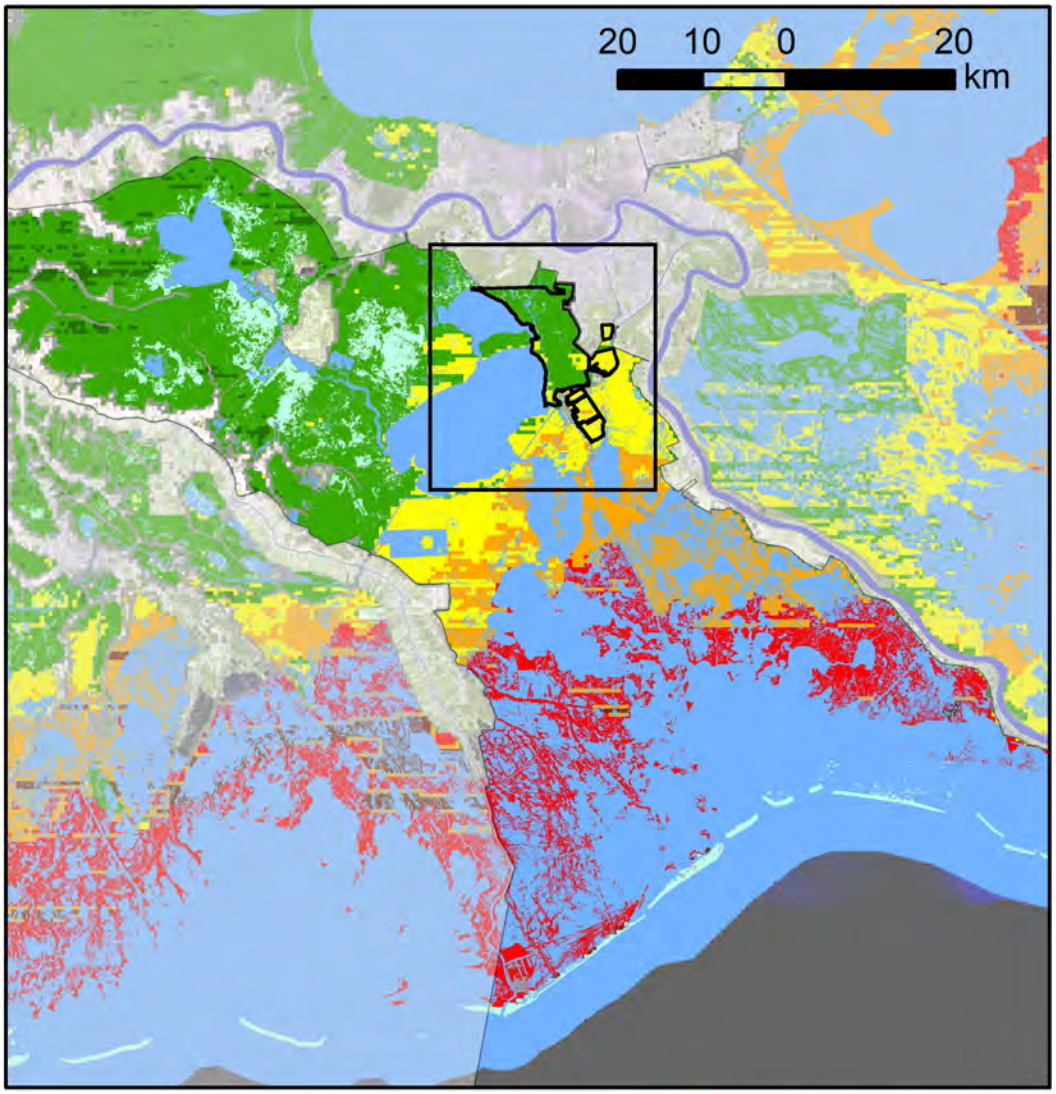
Land Type

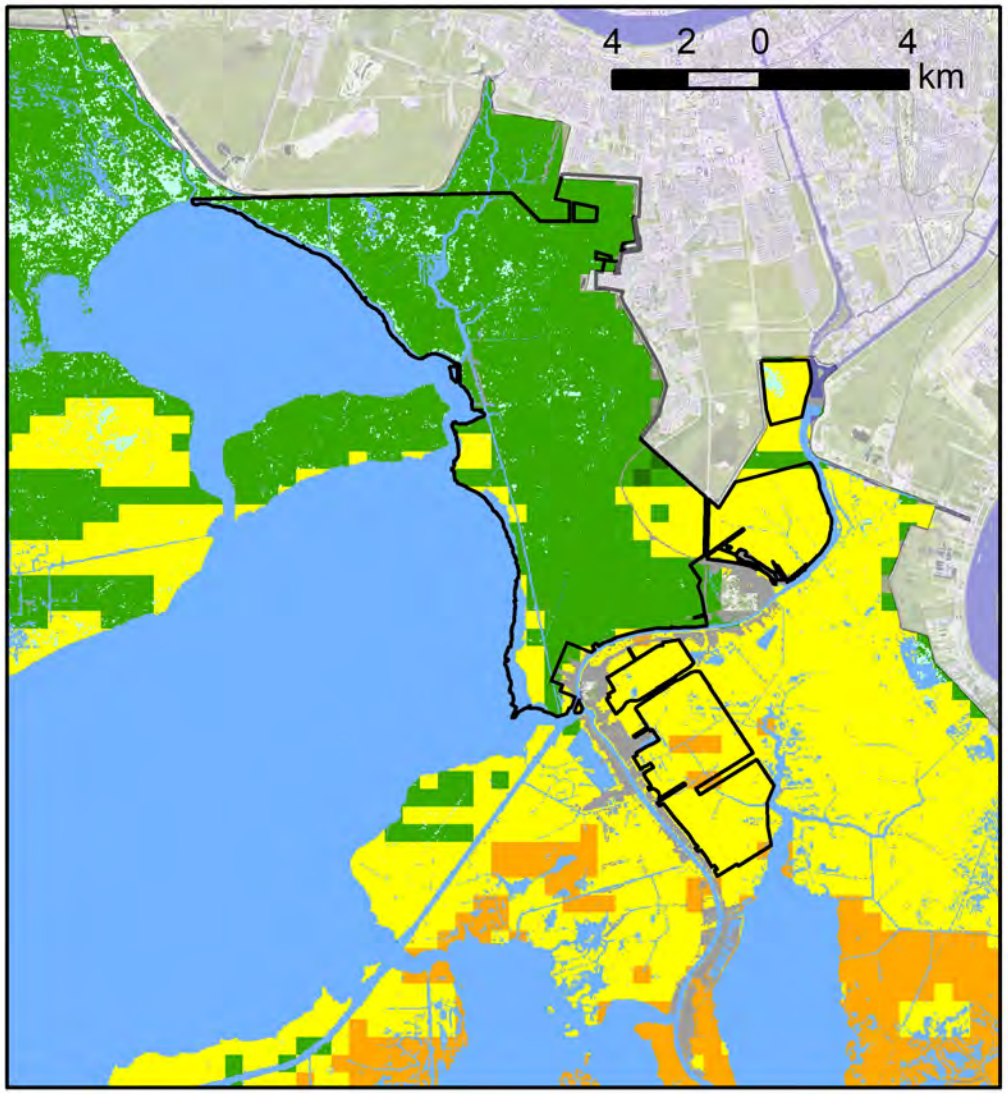
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S09 - G603
High
Mid-Barataria Only
Year 02

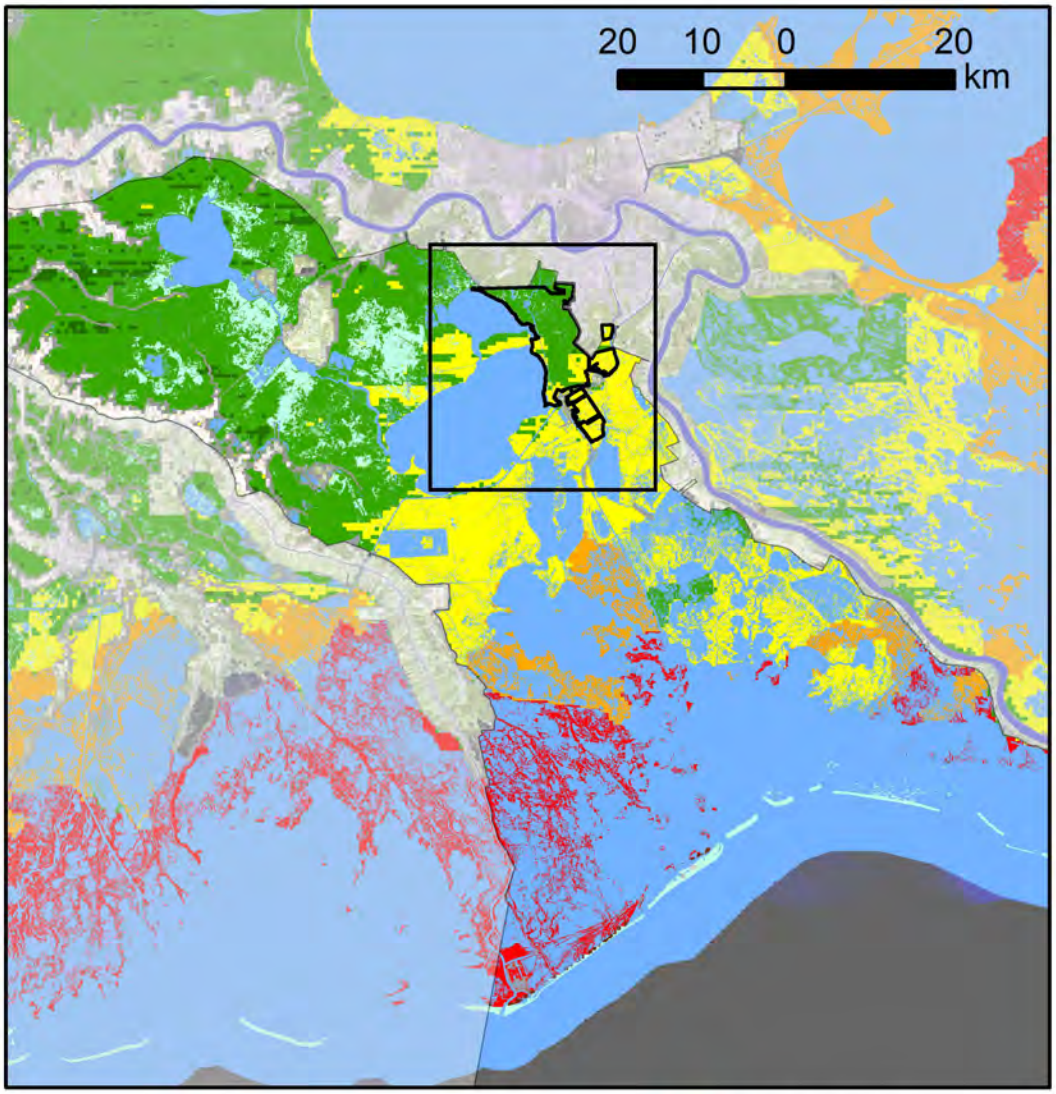
Habitat Type

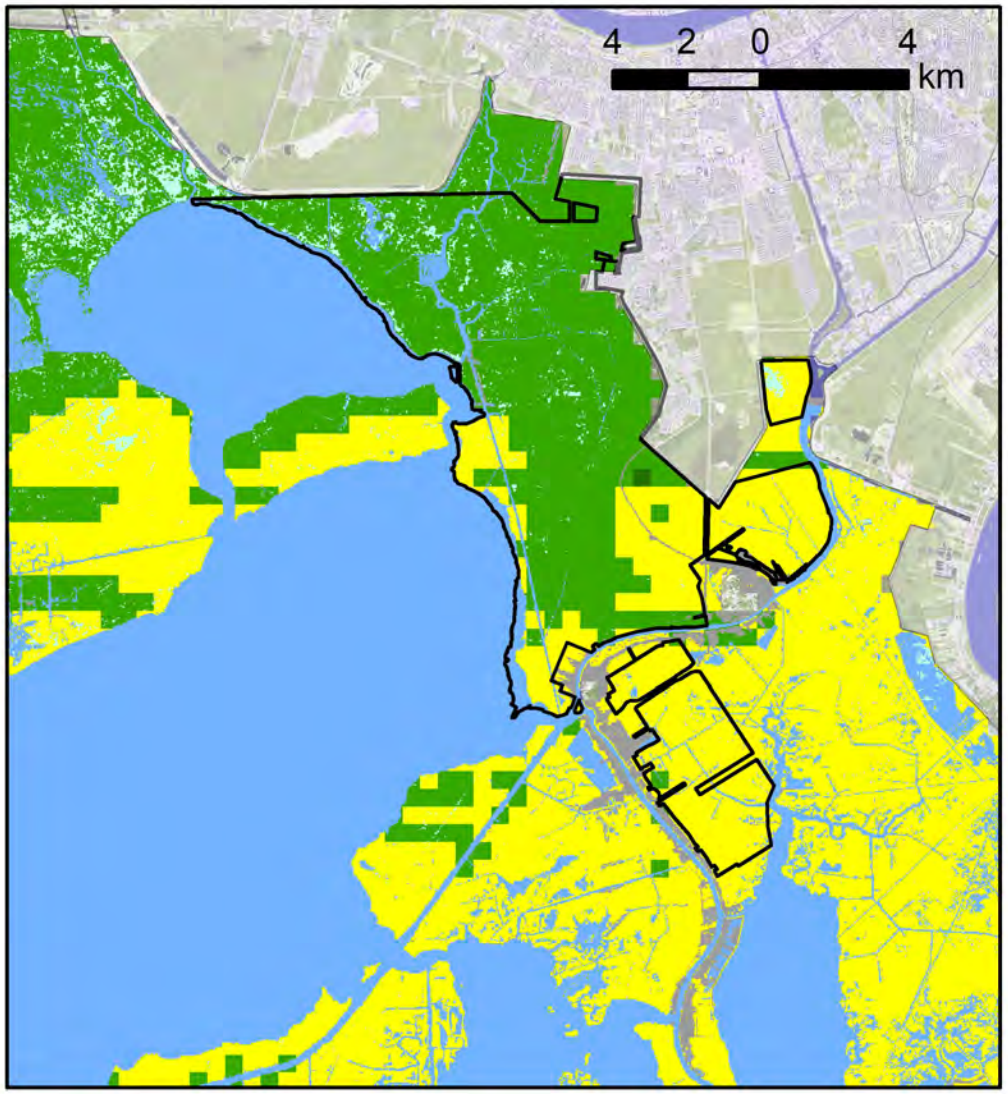
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S09 - G603
High
Mid-Barataria Only
Year 12

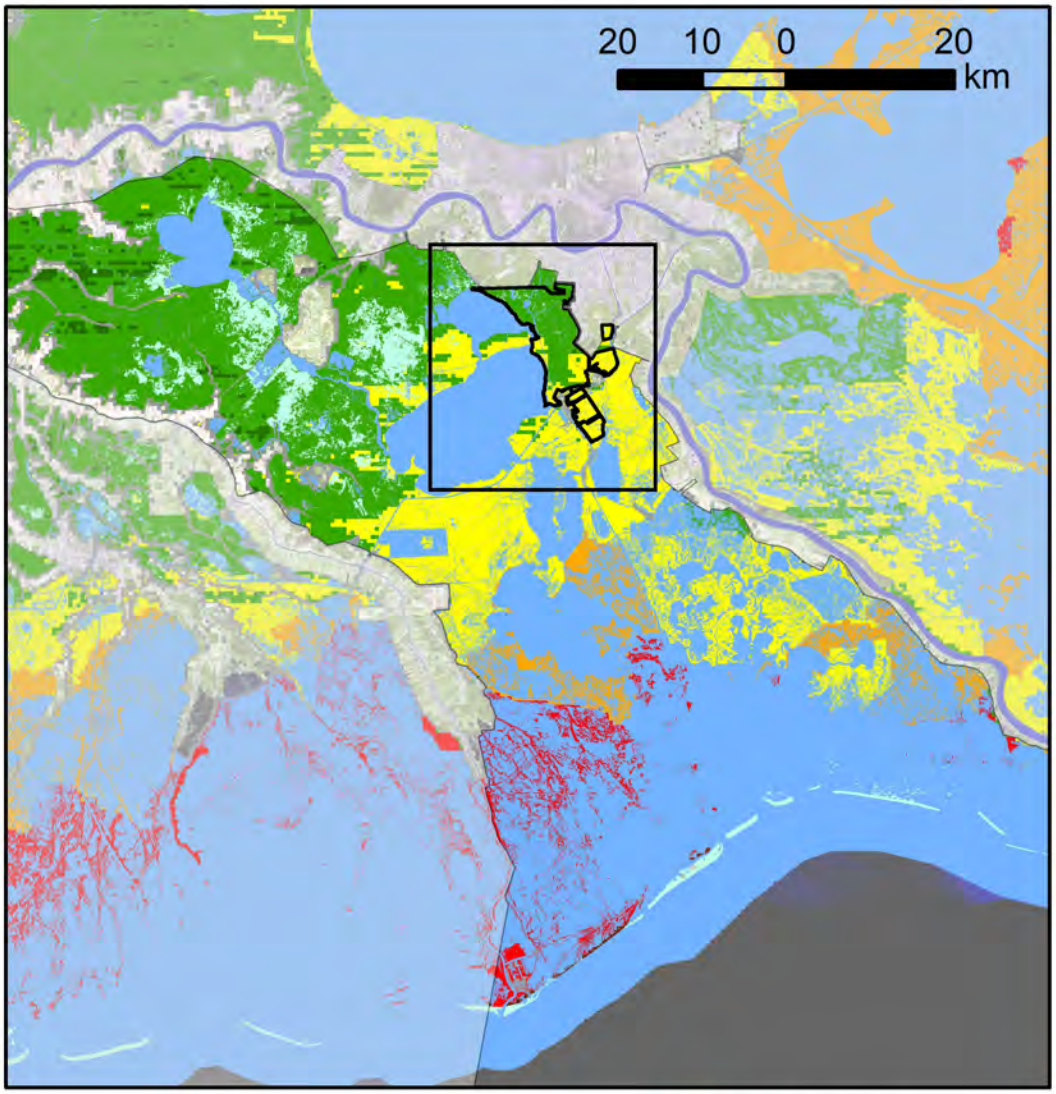
Habitat Type

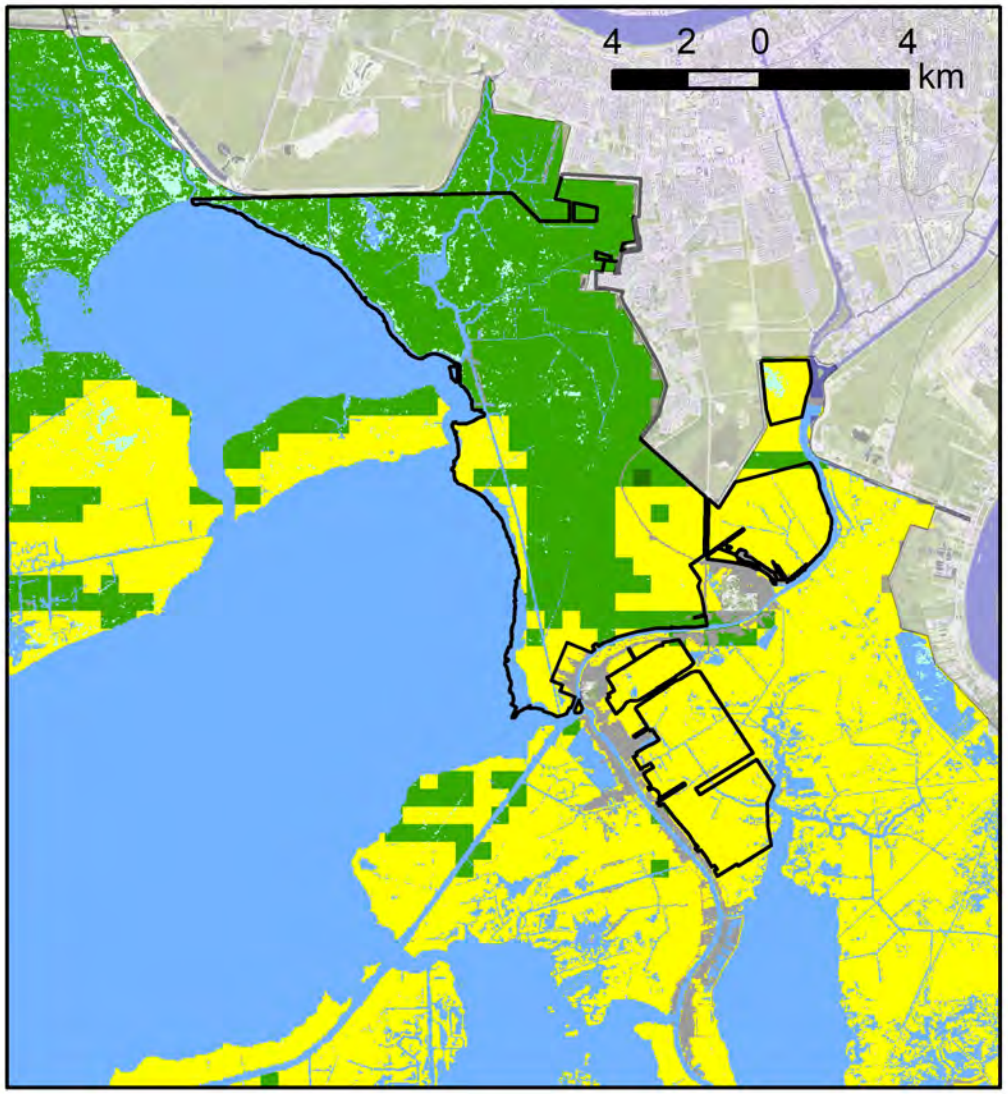
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S09 - G603
High
Mid-Barataria Only
Year 22

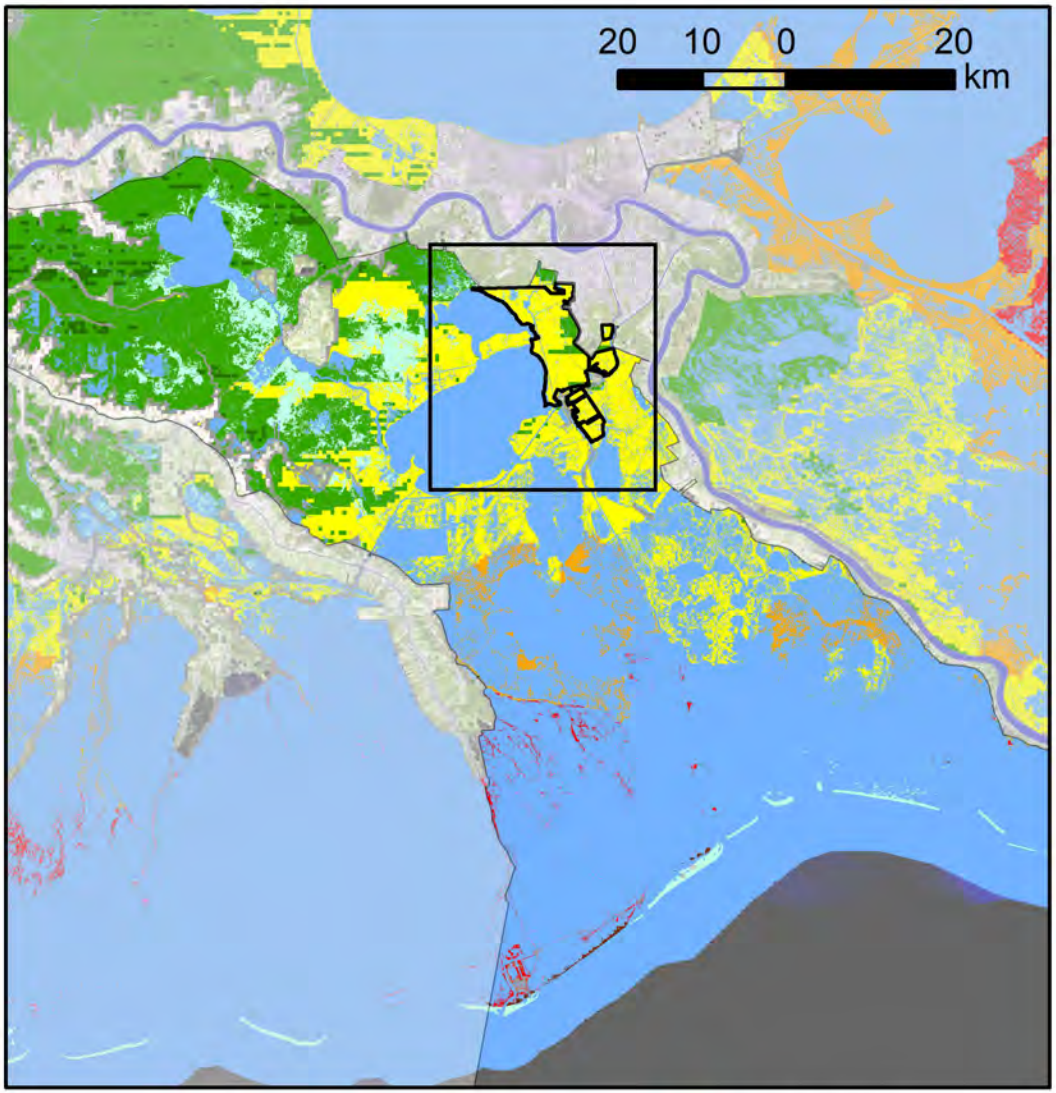
Habitat Type

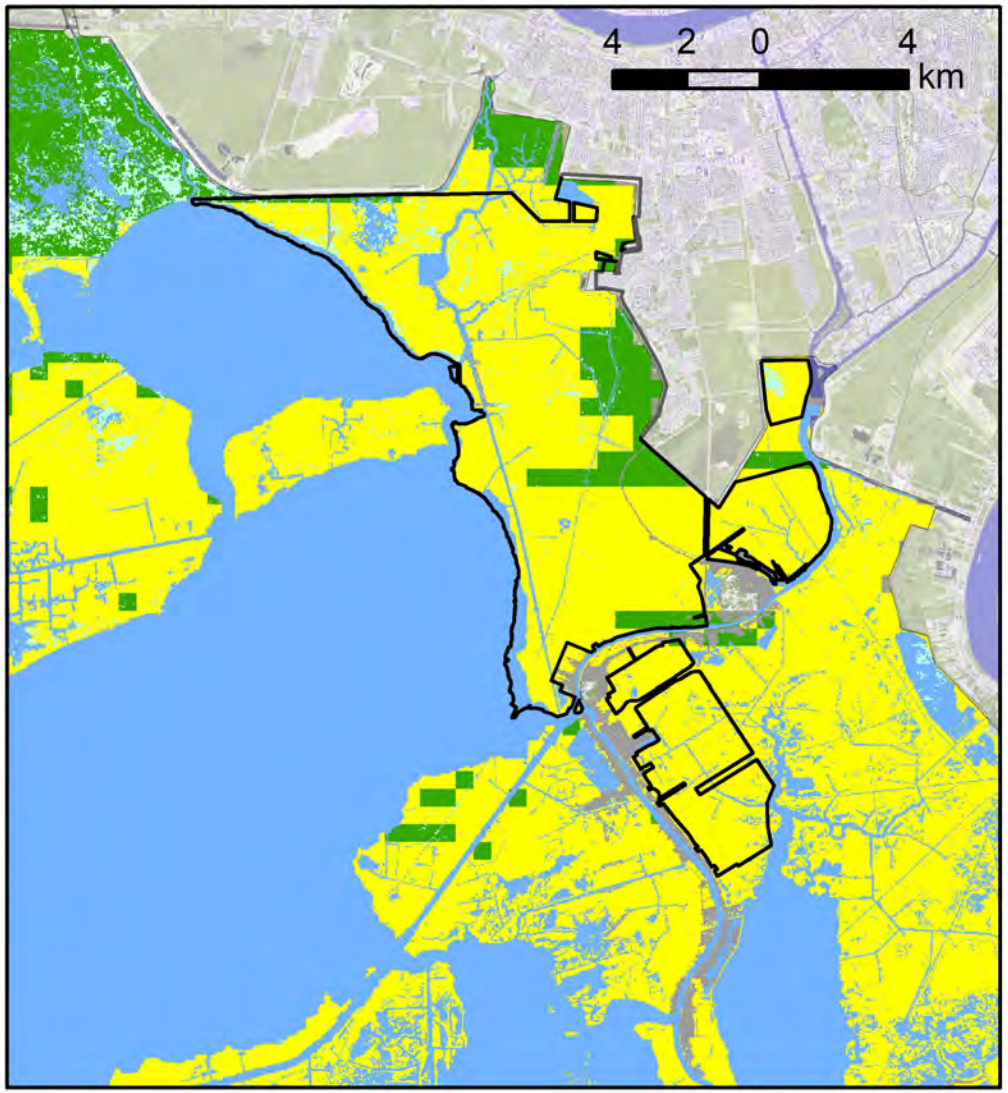
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S09 - G603
High
Mid-Barataria Only
Year 32

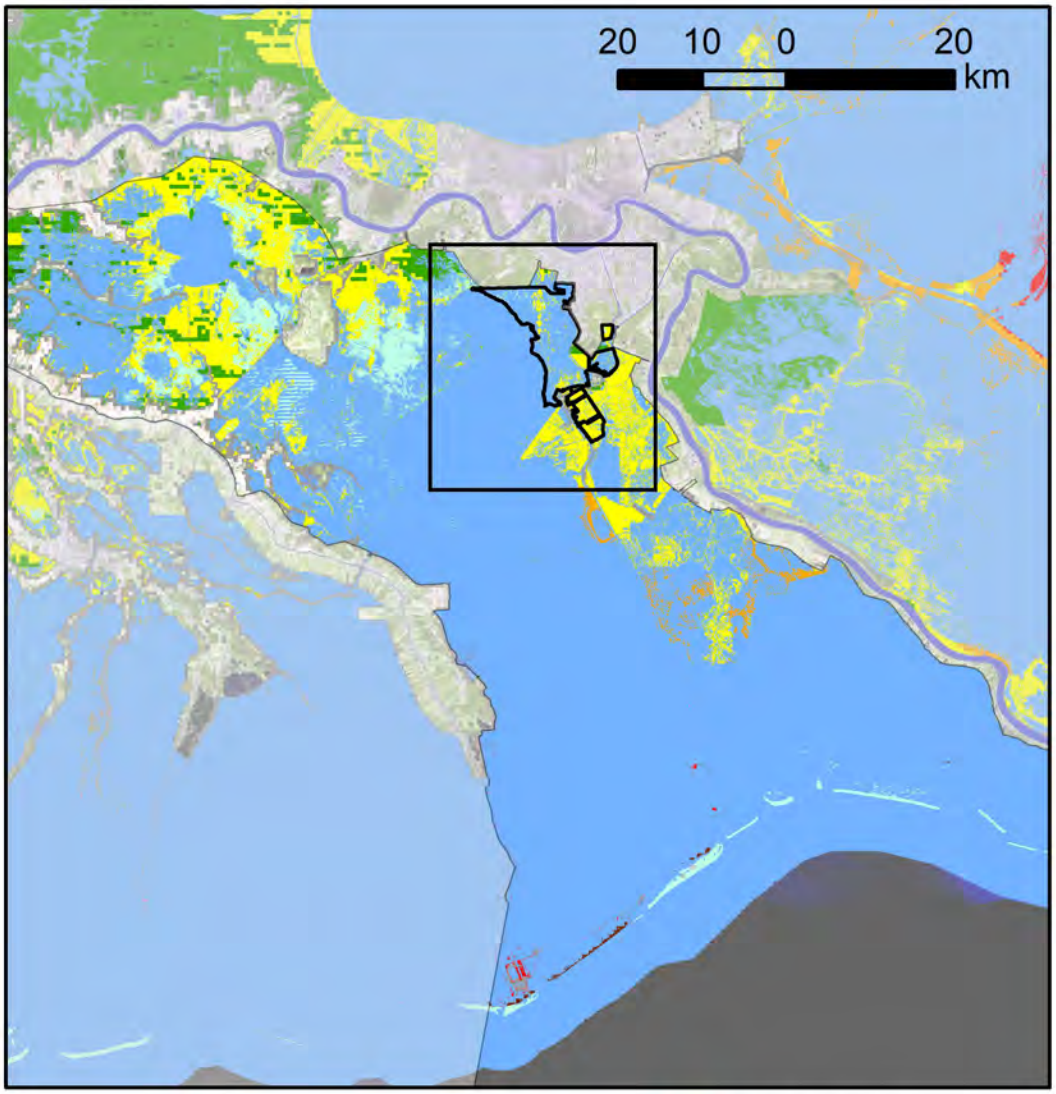
Habitat Type

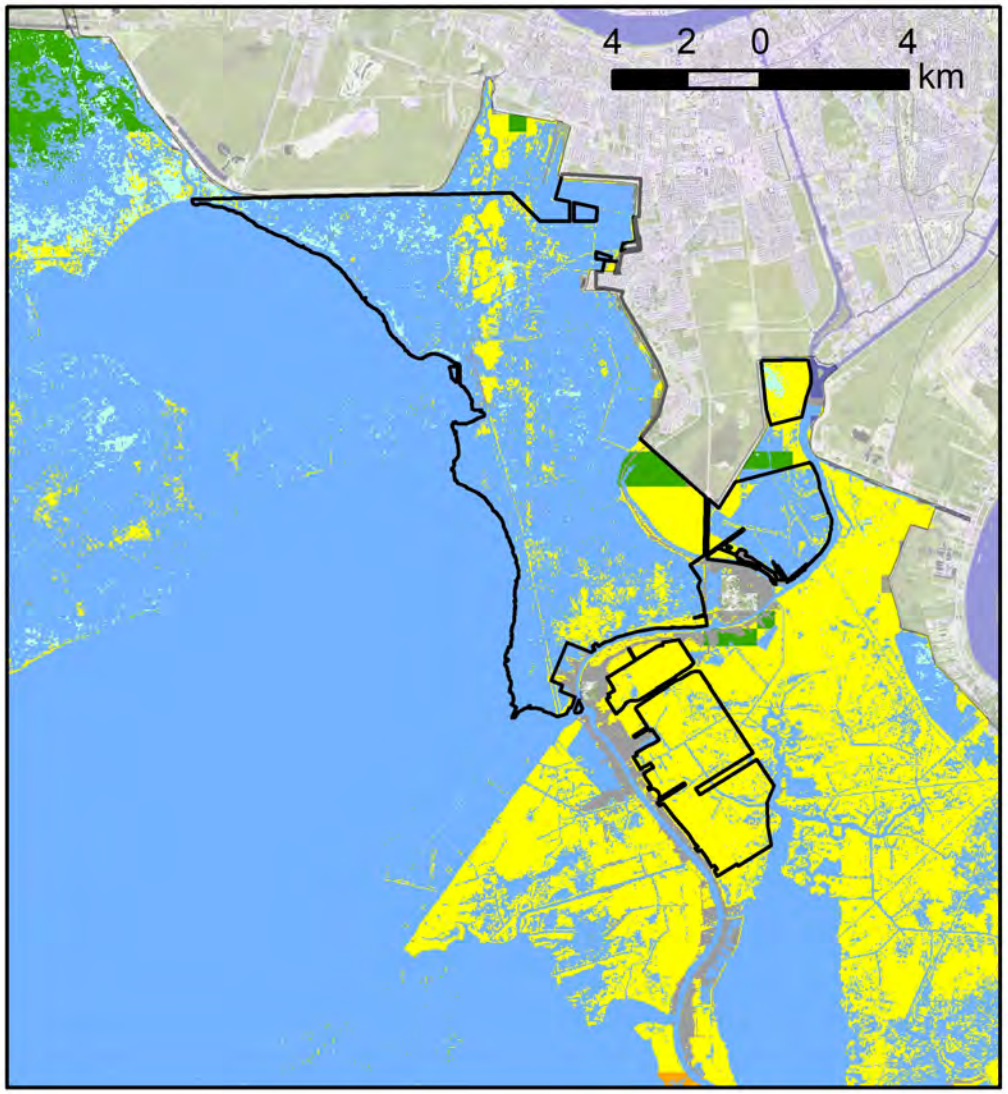
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S09 - G603
High
Mid-Barataria Only
Year 42

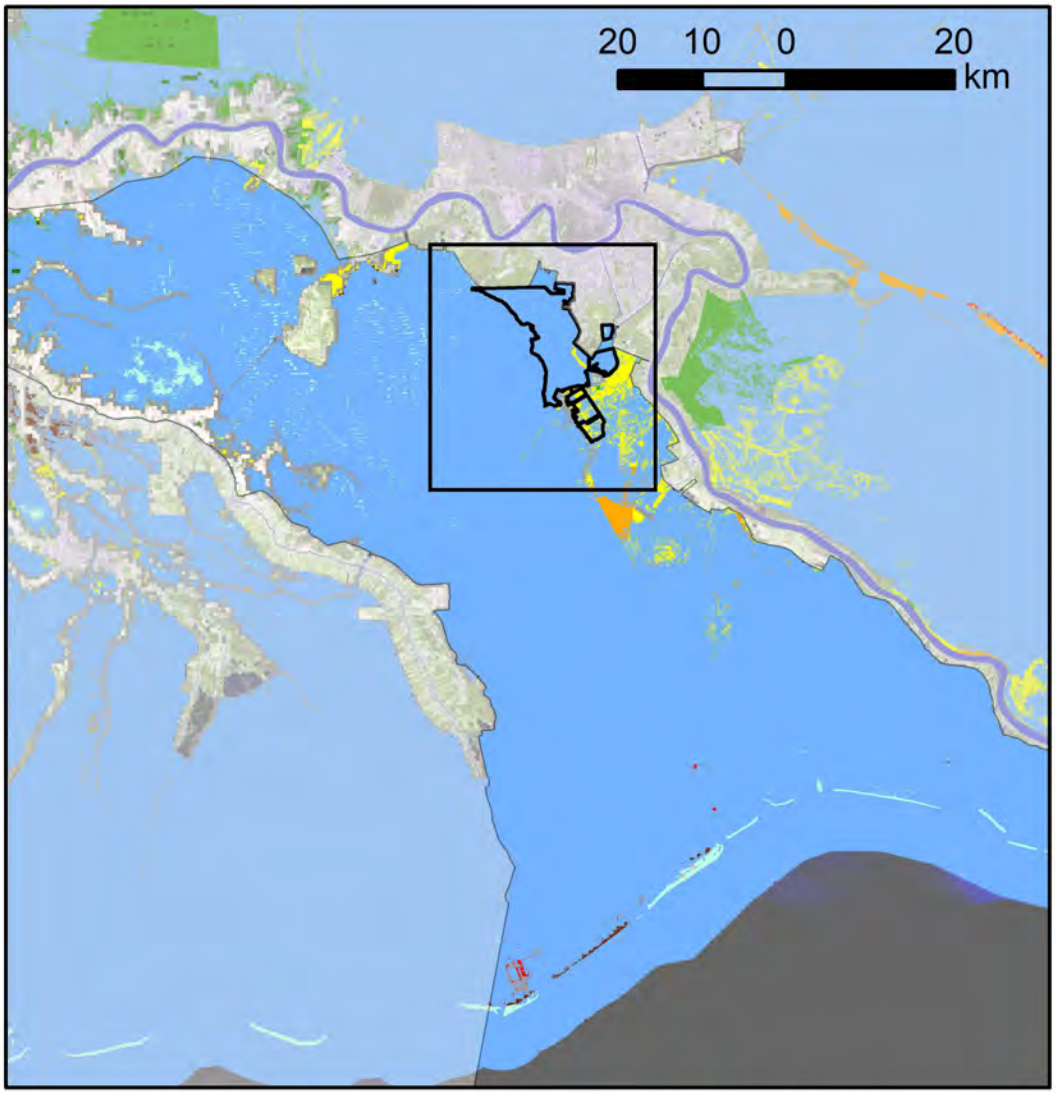
Habitat Type

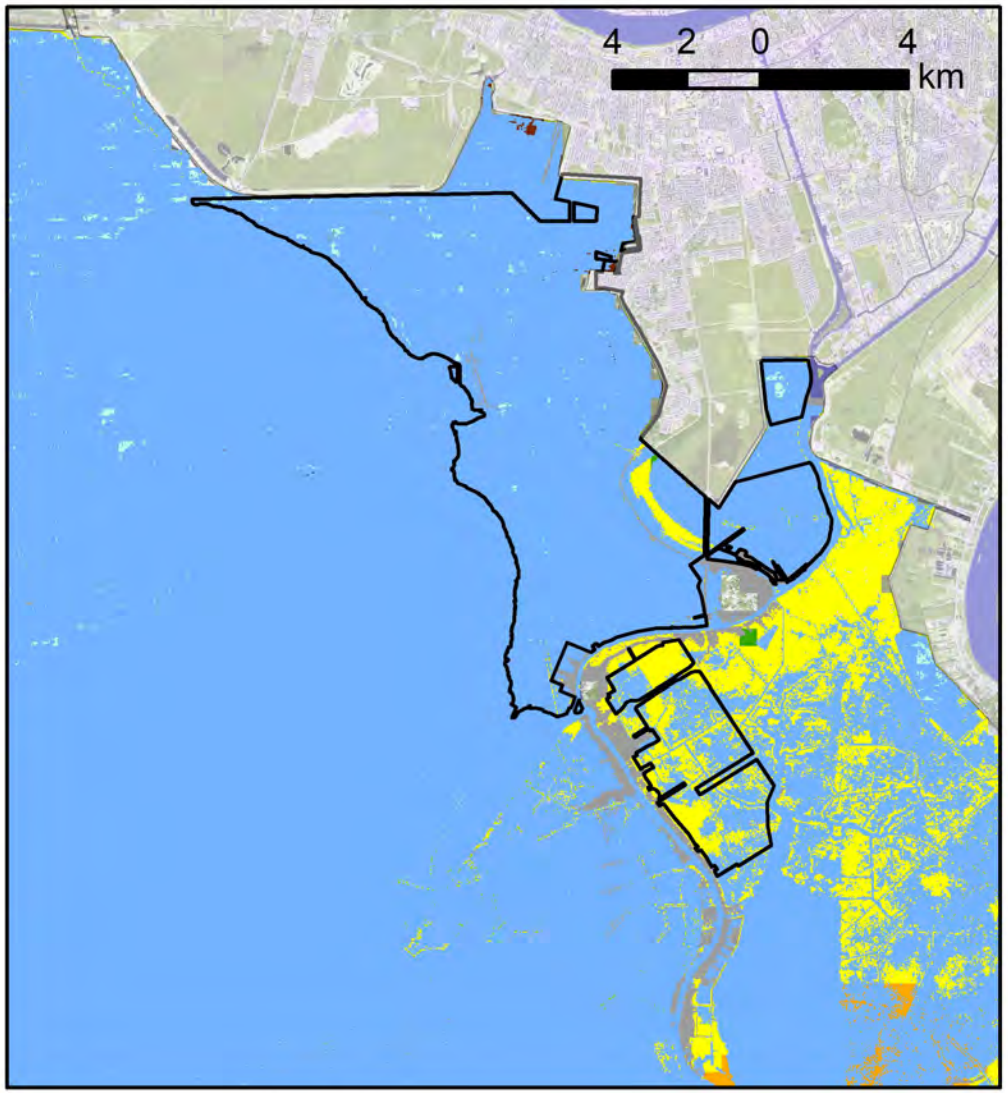
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S09 - G603
High
Mid-Barataria Only
Year 51

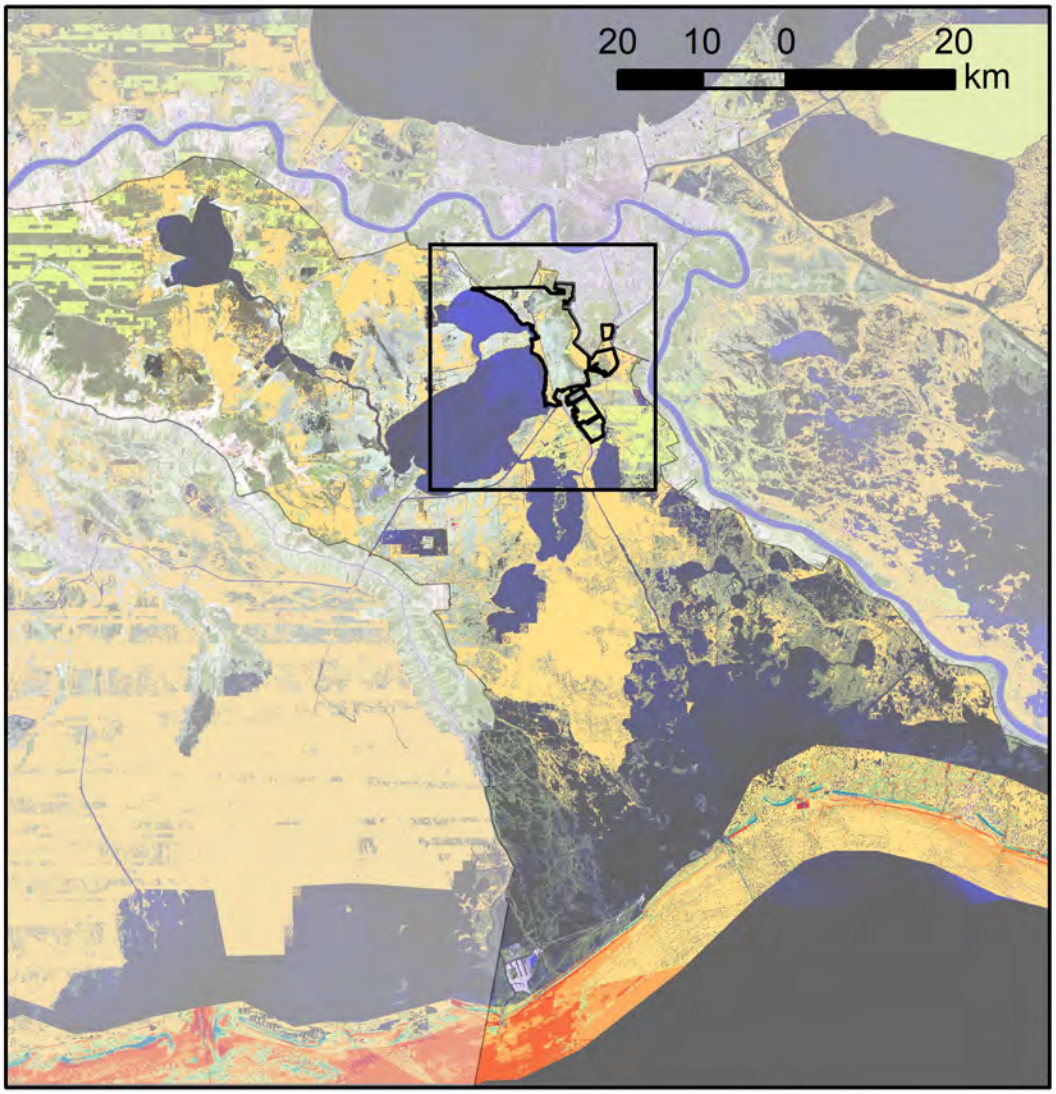
Habitat Type

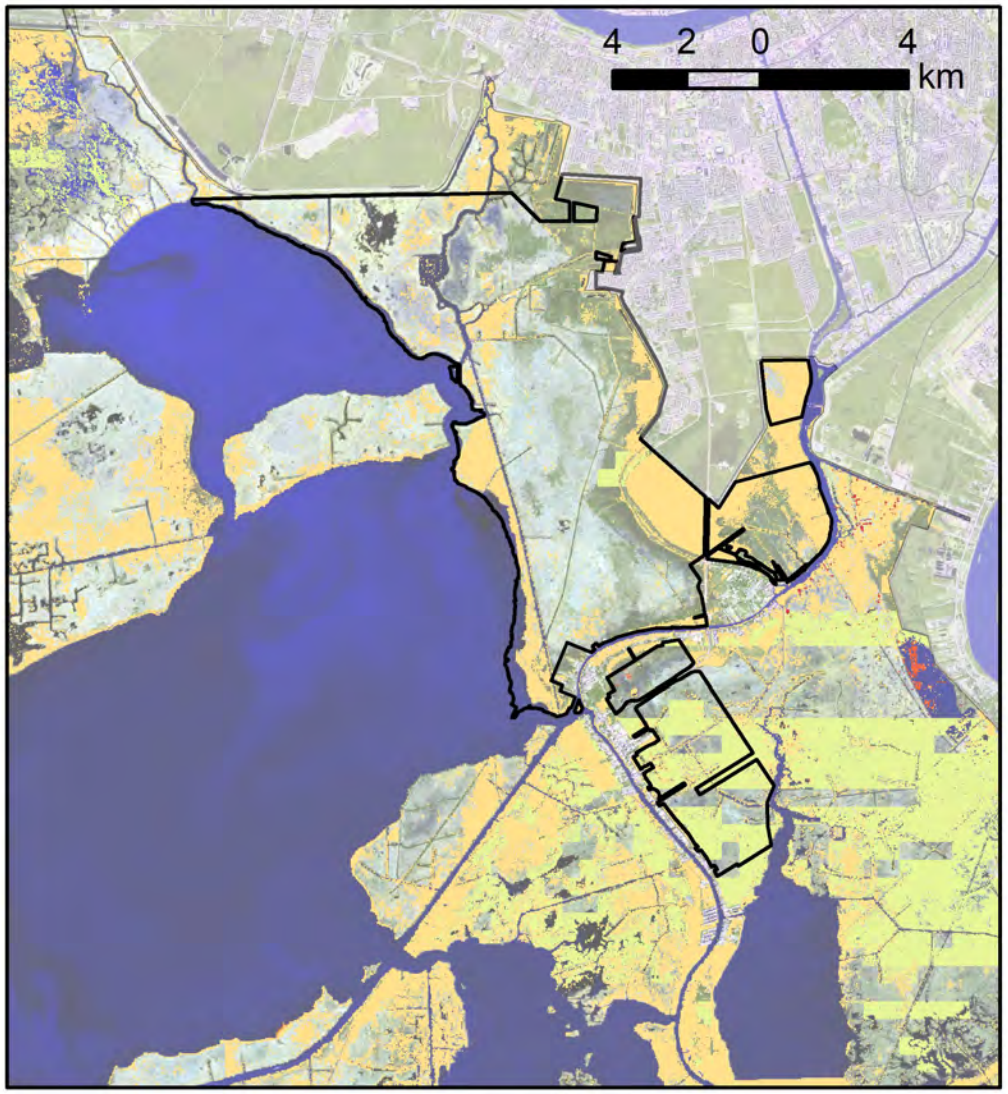
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S09 - G603
High
Mid-Barataria Only
Year 02

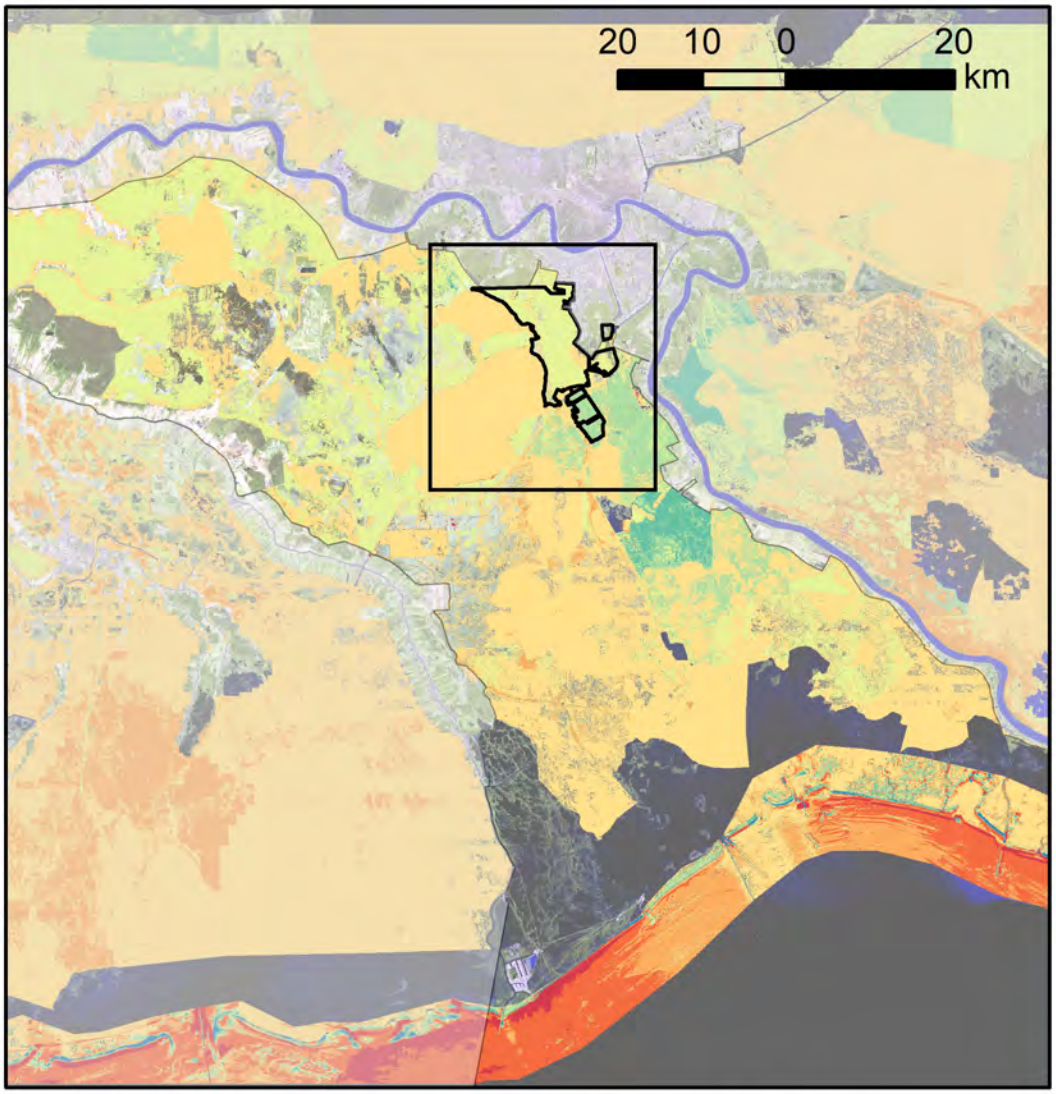
Elev. Change [m]

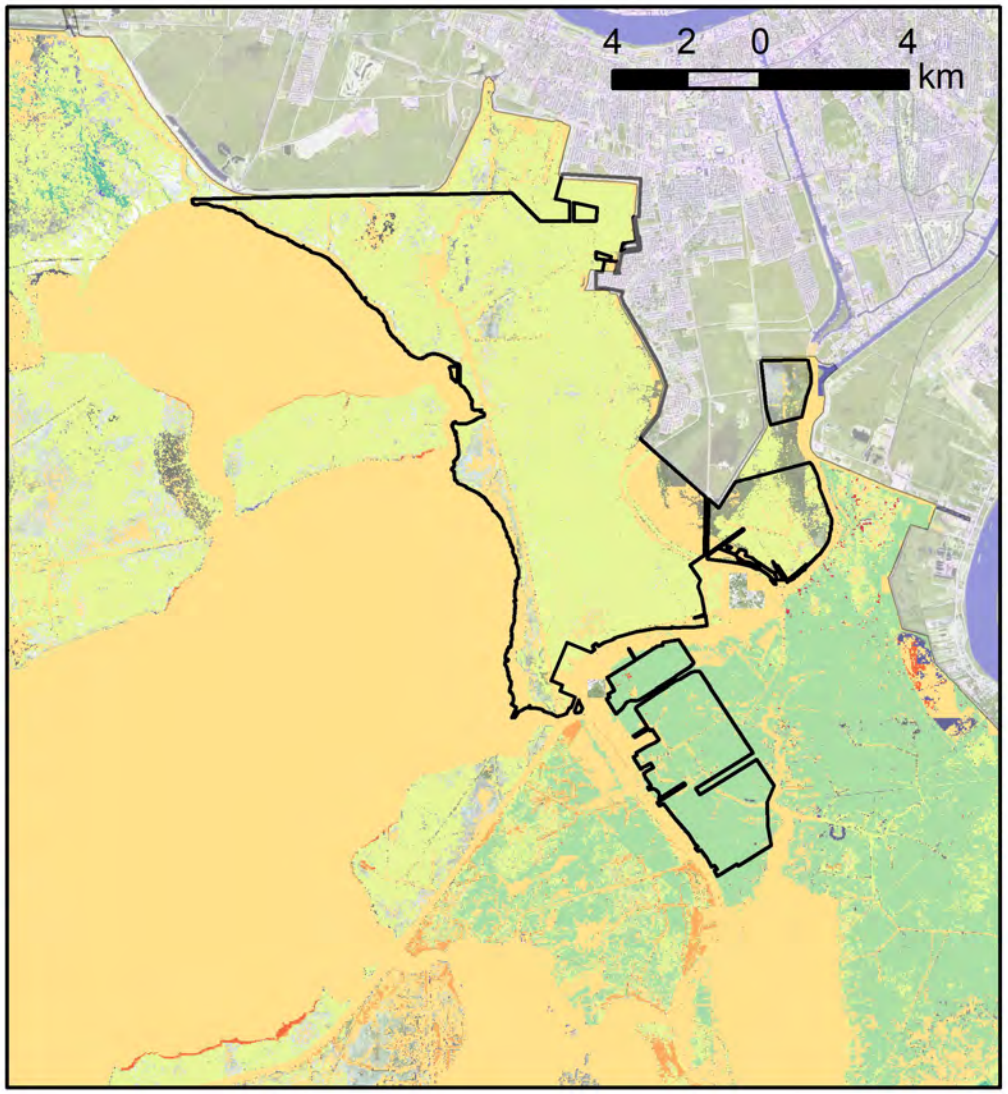
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol







S09 - G603
High
Mid-Barataria Only
Year 12

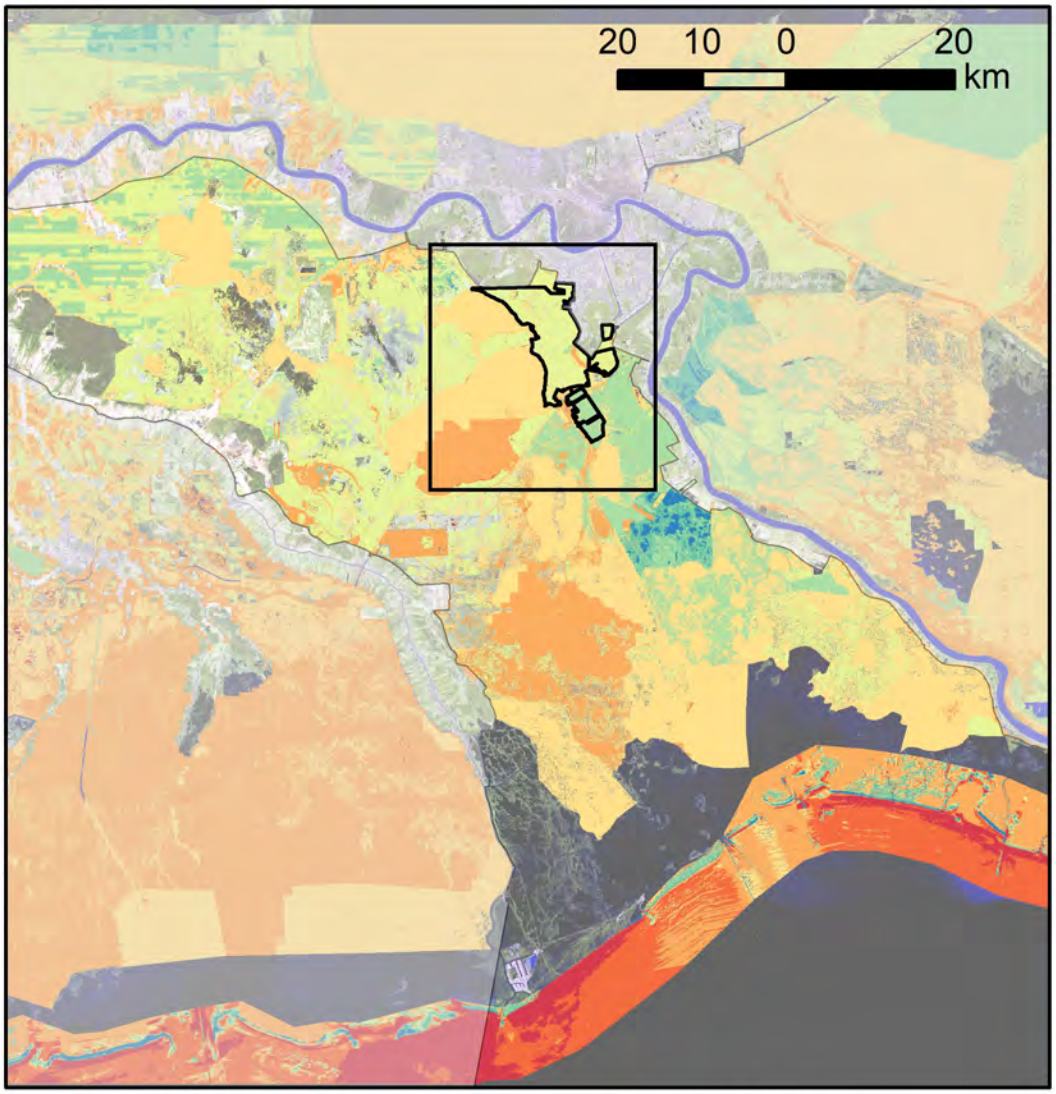
Elev. Change [m]

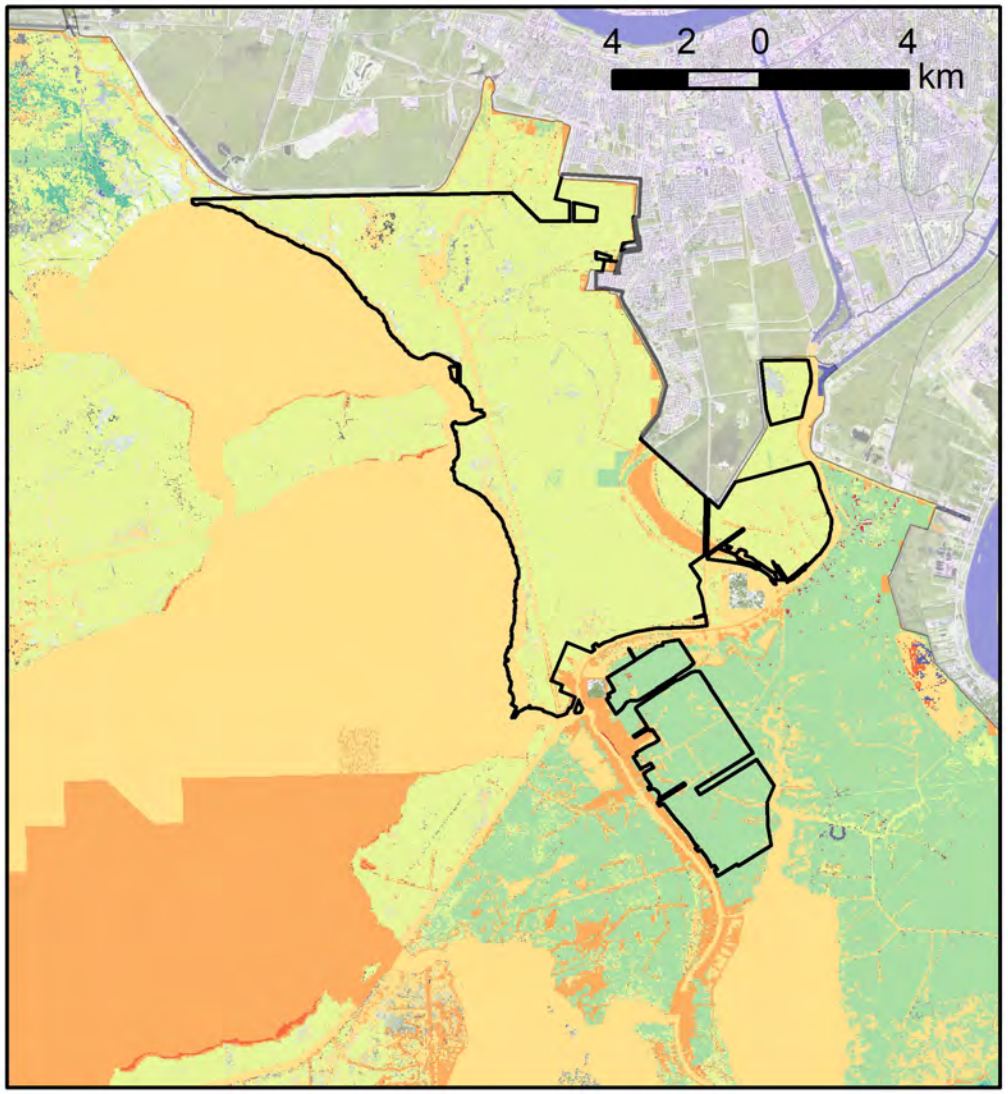
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol







S09 - G603
High
Mid-Barataria Only
Year 22

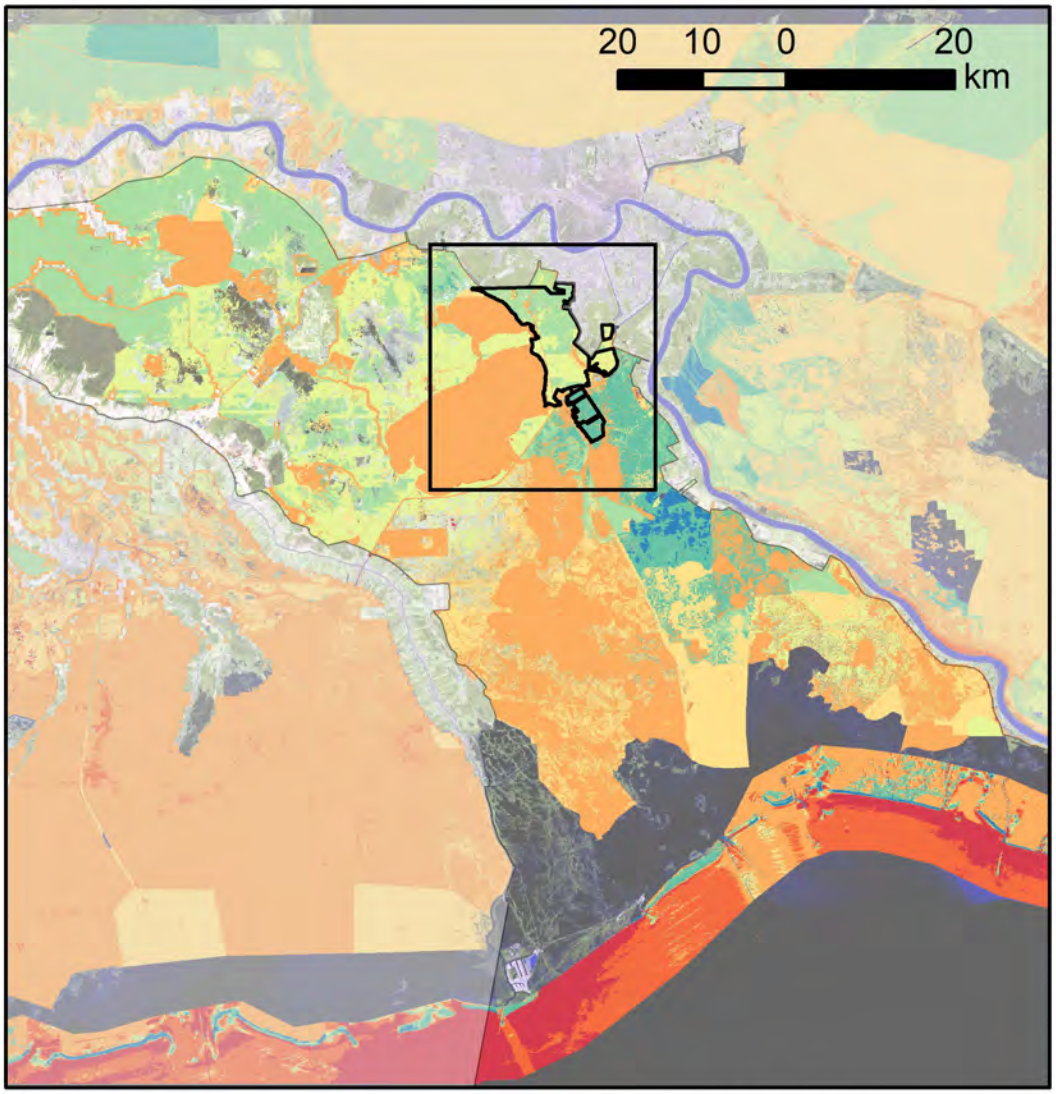
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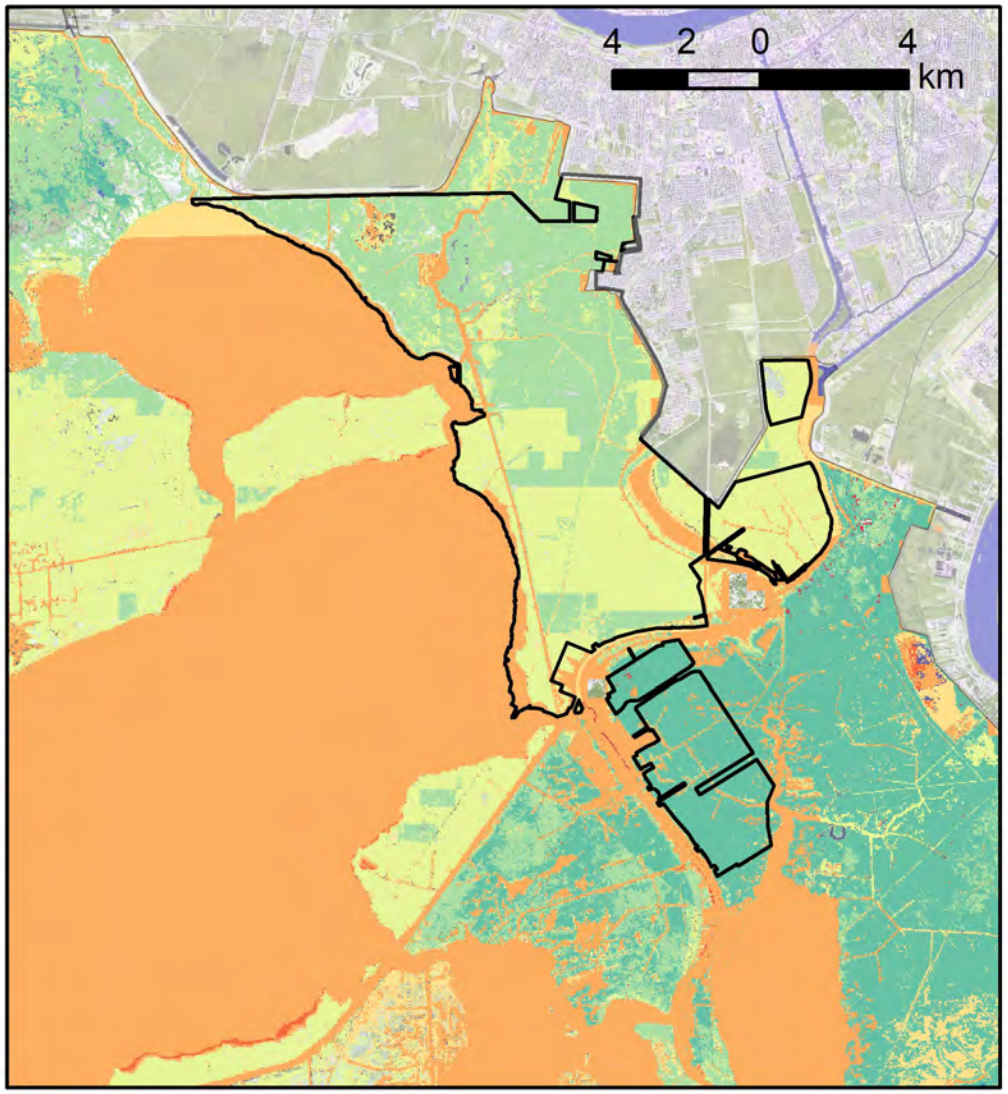
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol







S09 - G603
High
Mid-Barataria Only
Year 32

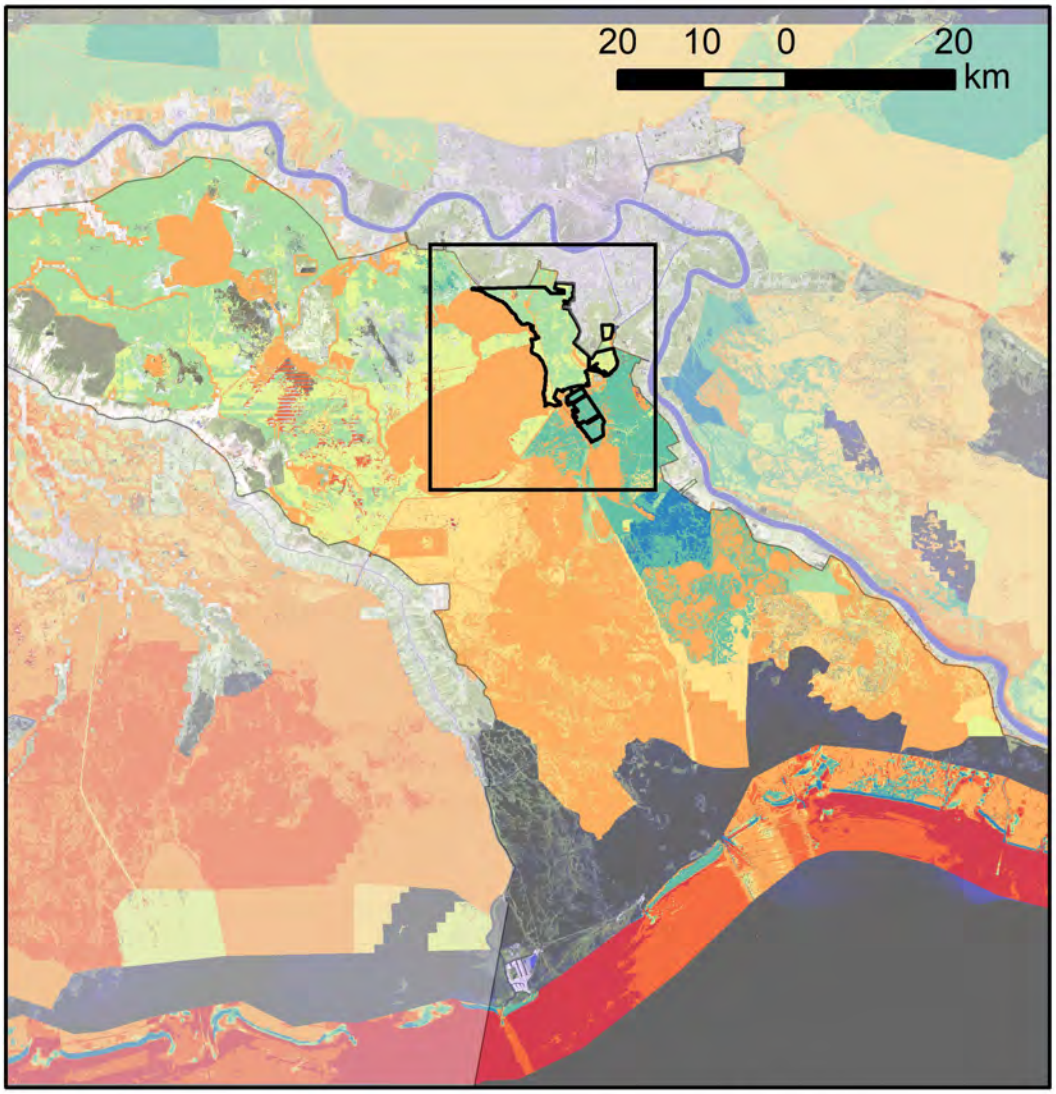
Elev. Change [m]

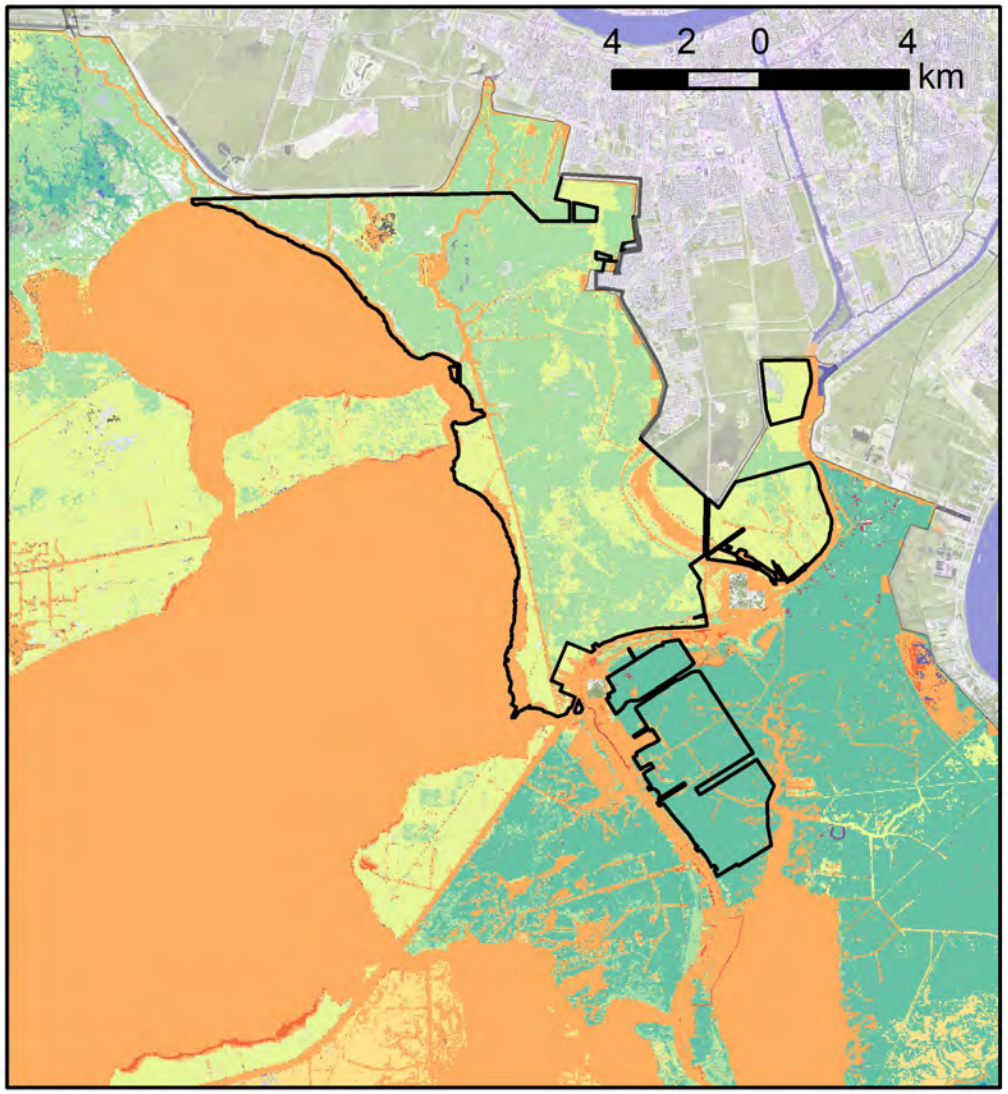
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol







S09 - G603
High
Mid-Barataria Only
Year 42

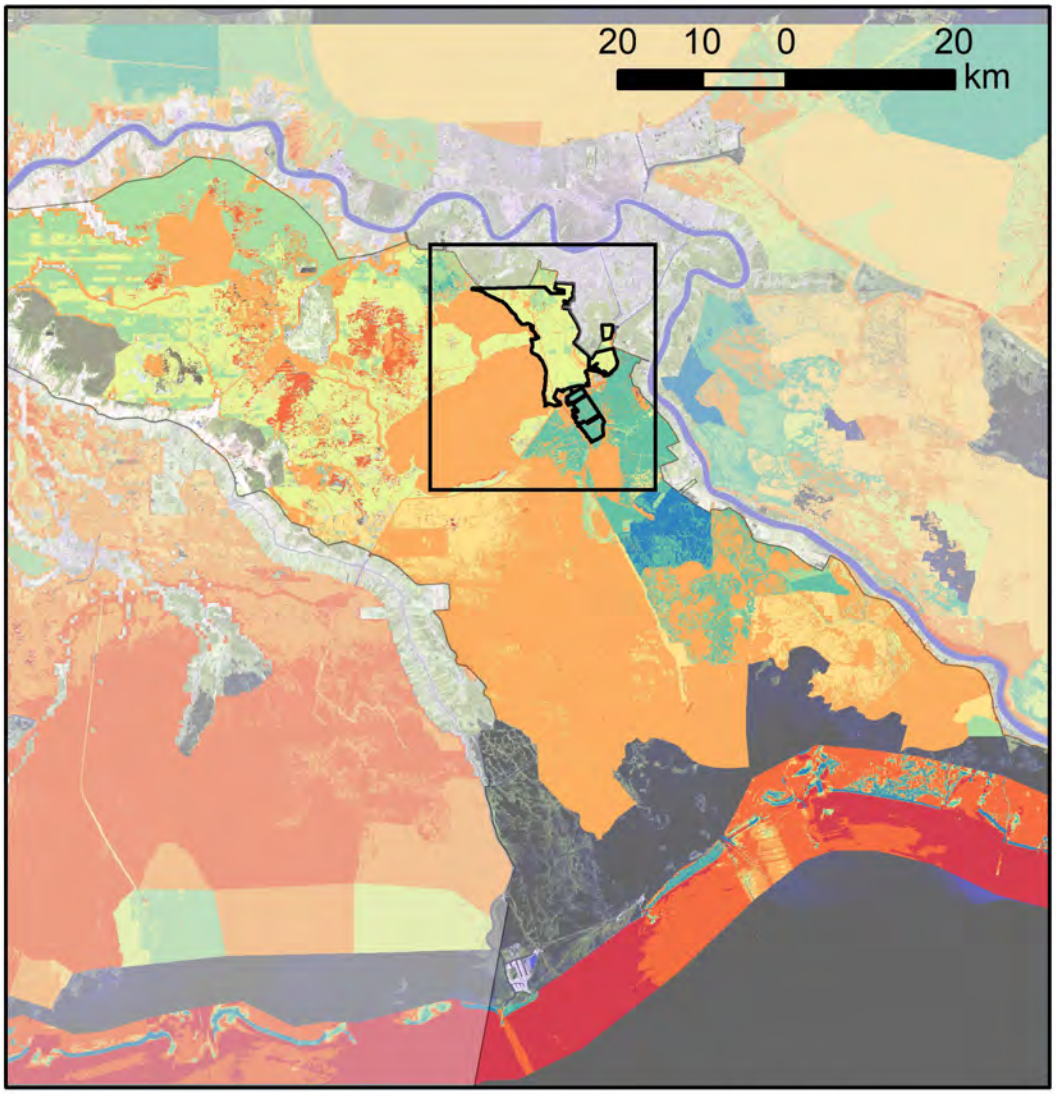
Elev. Change [m]

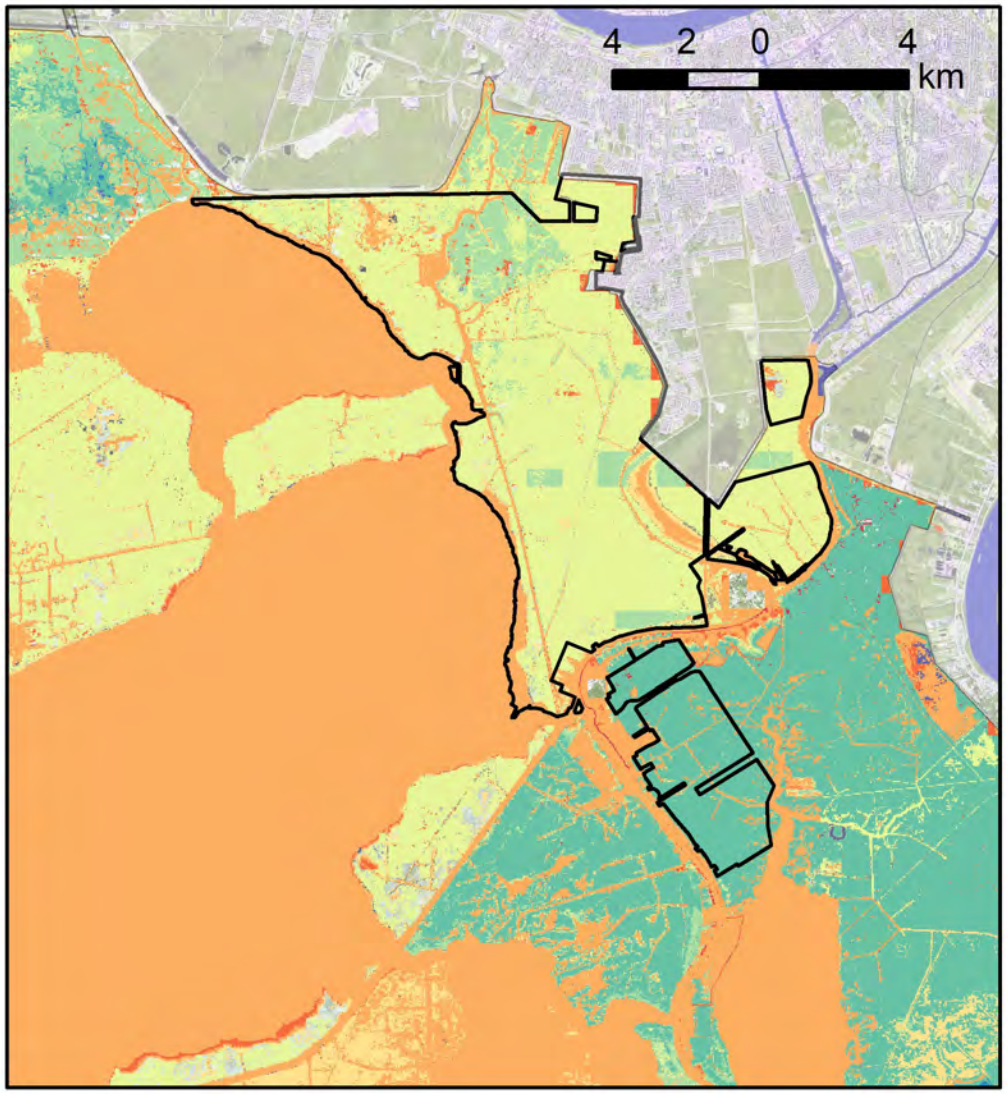
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol







S09 - G603
High
Mid-Barataria Only
Year 51

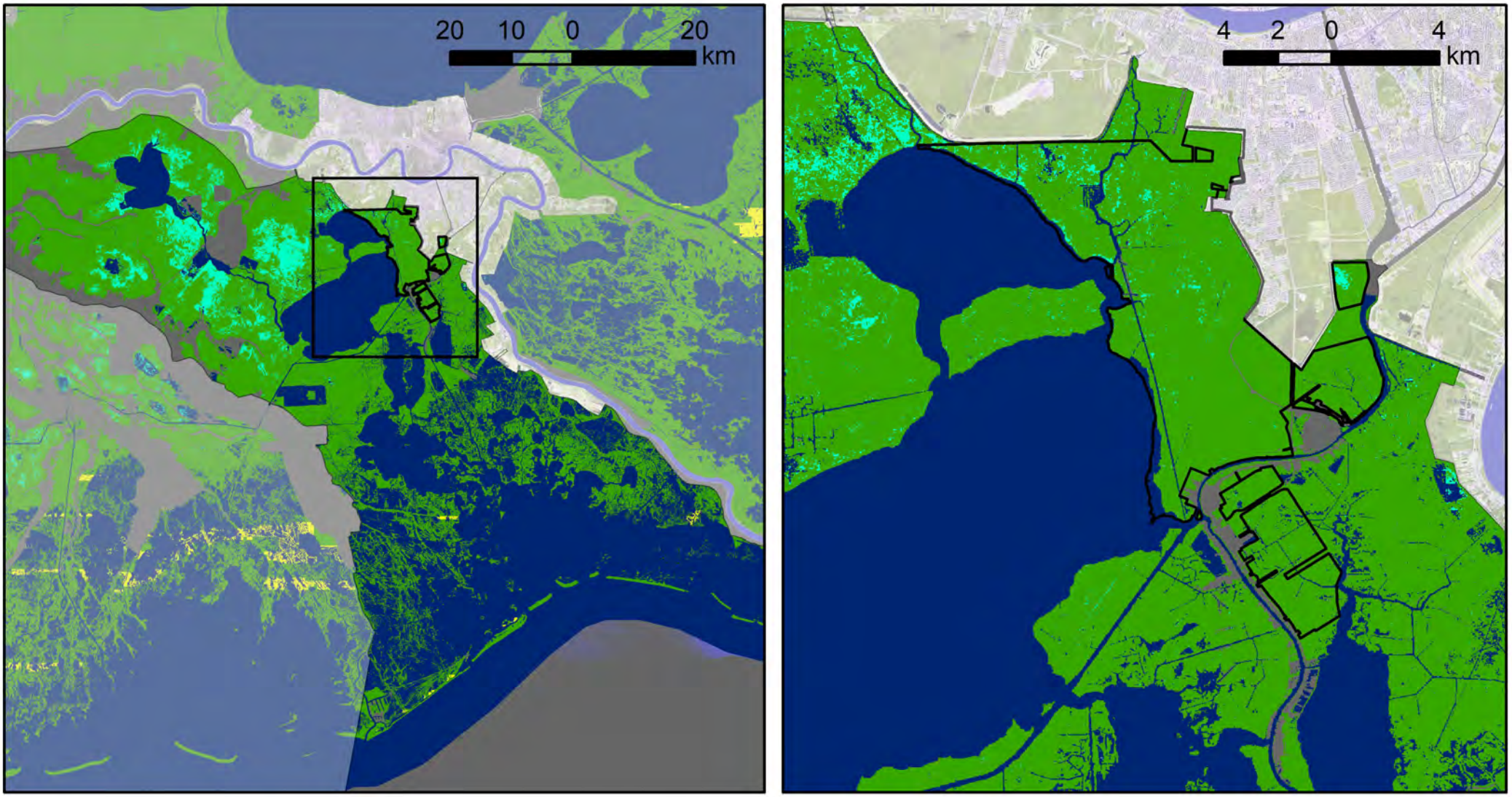
Elev. Change [m]

- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
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S09 - G703
High
Ama Only
Year 02

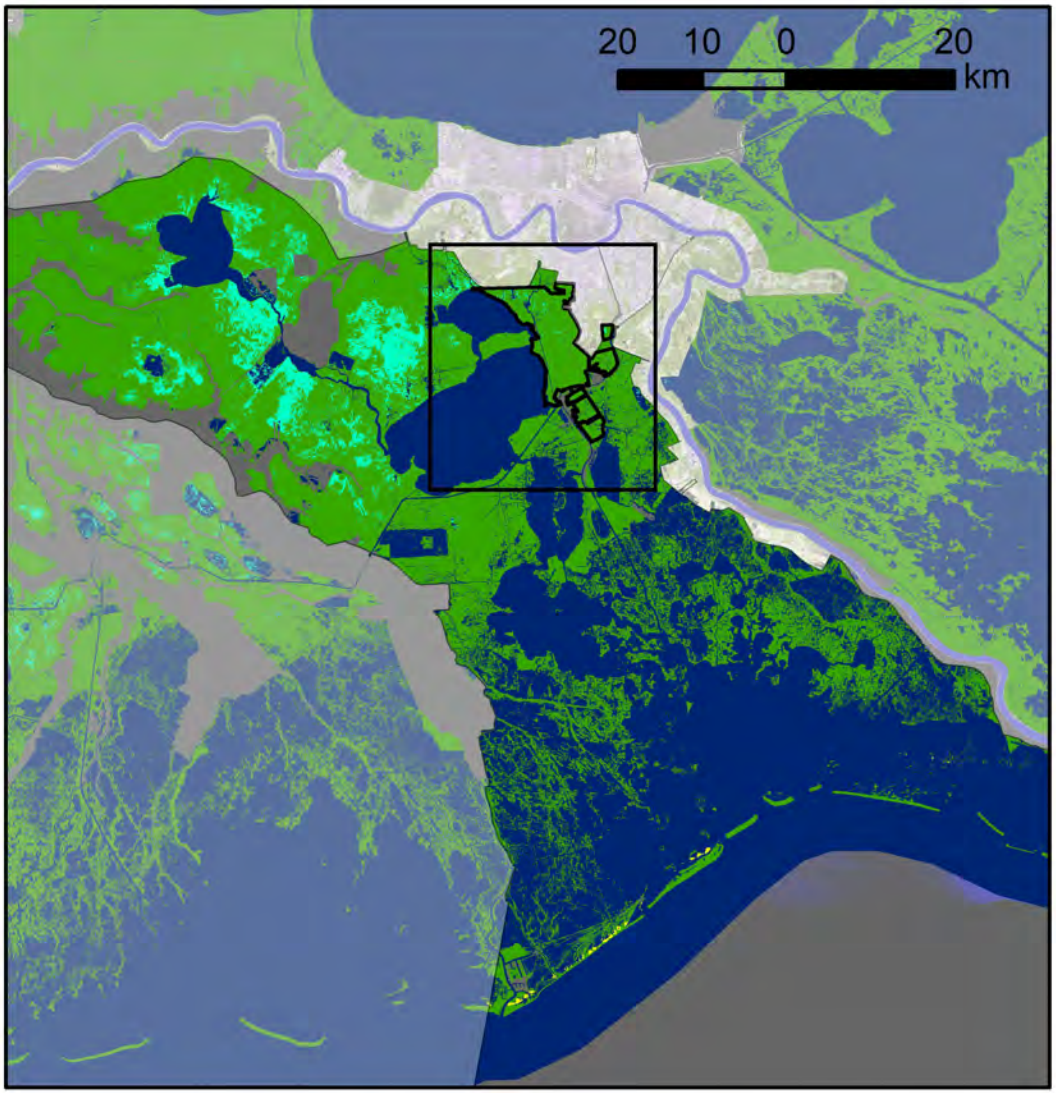
Land Type

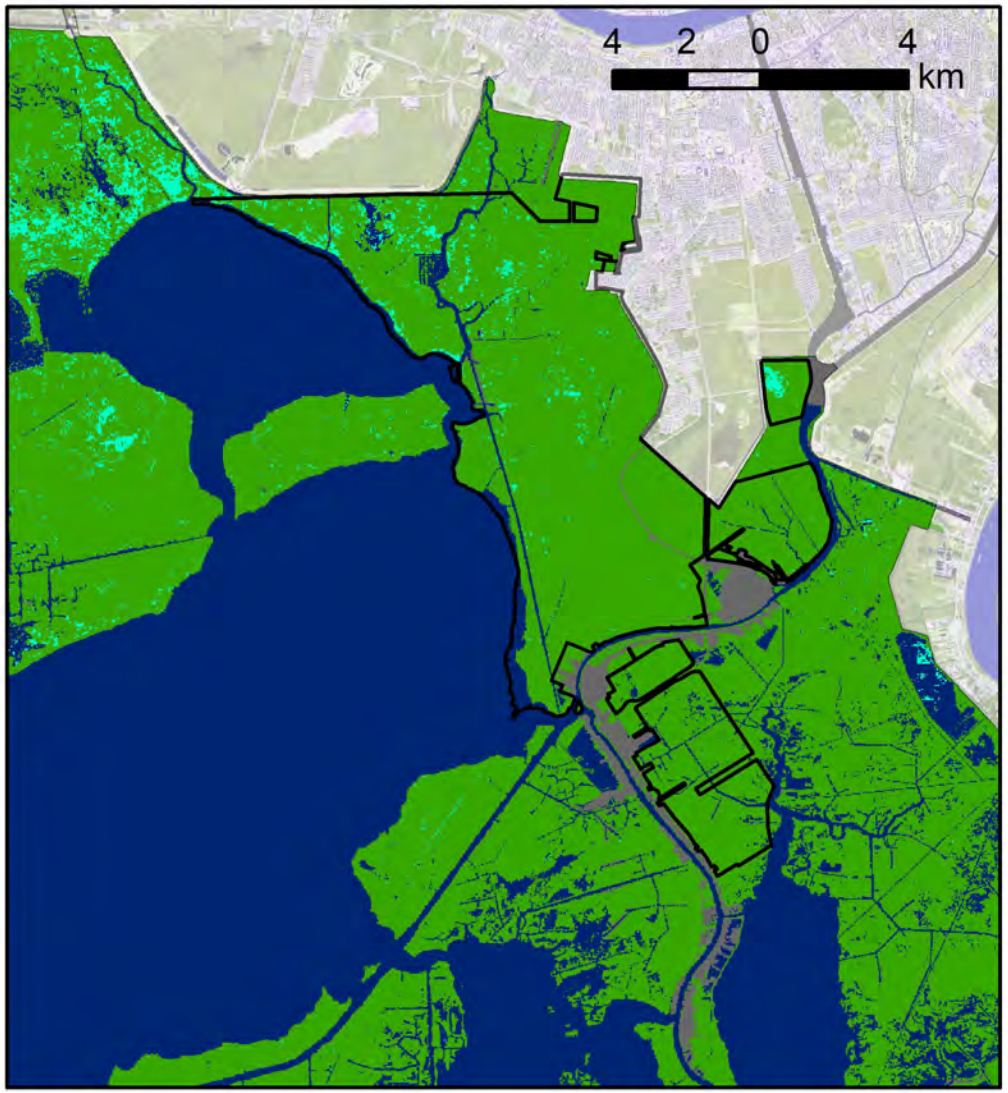
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S09 - G703
High
Ama Only
Year 12

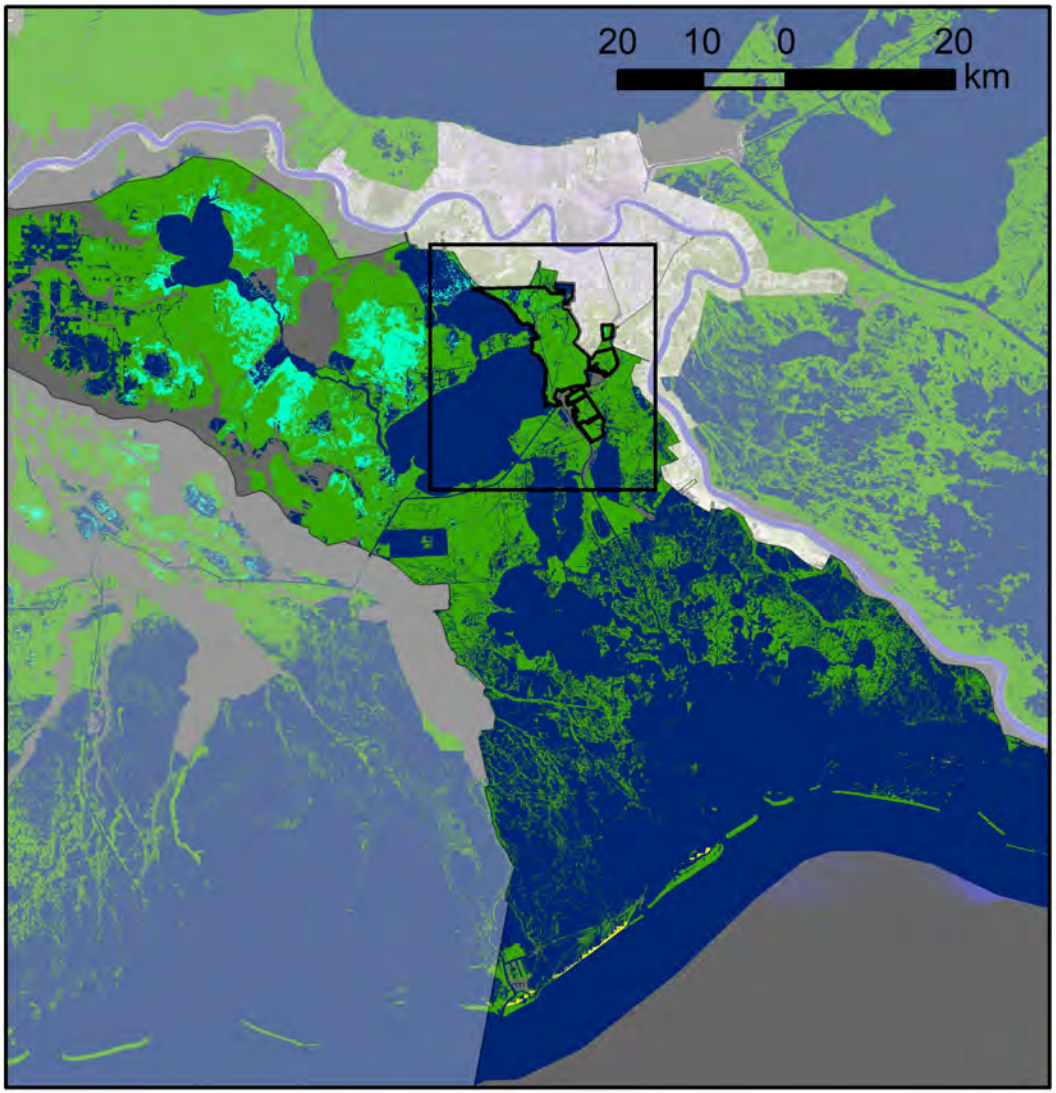
Land Type

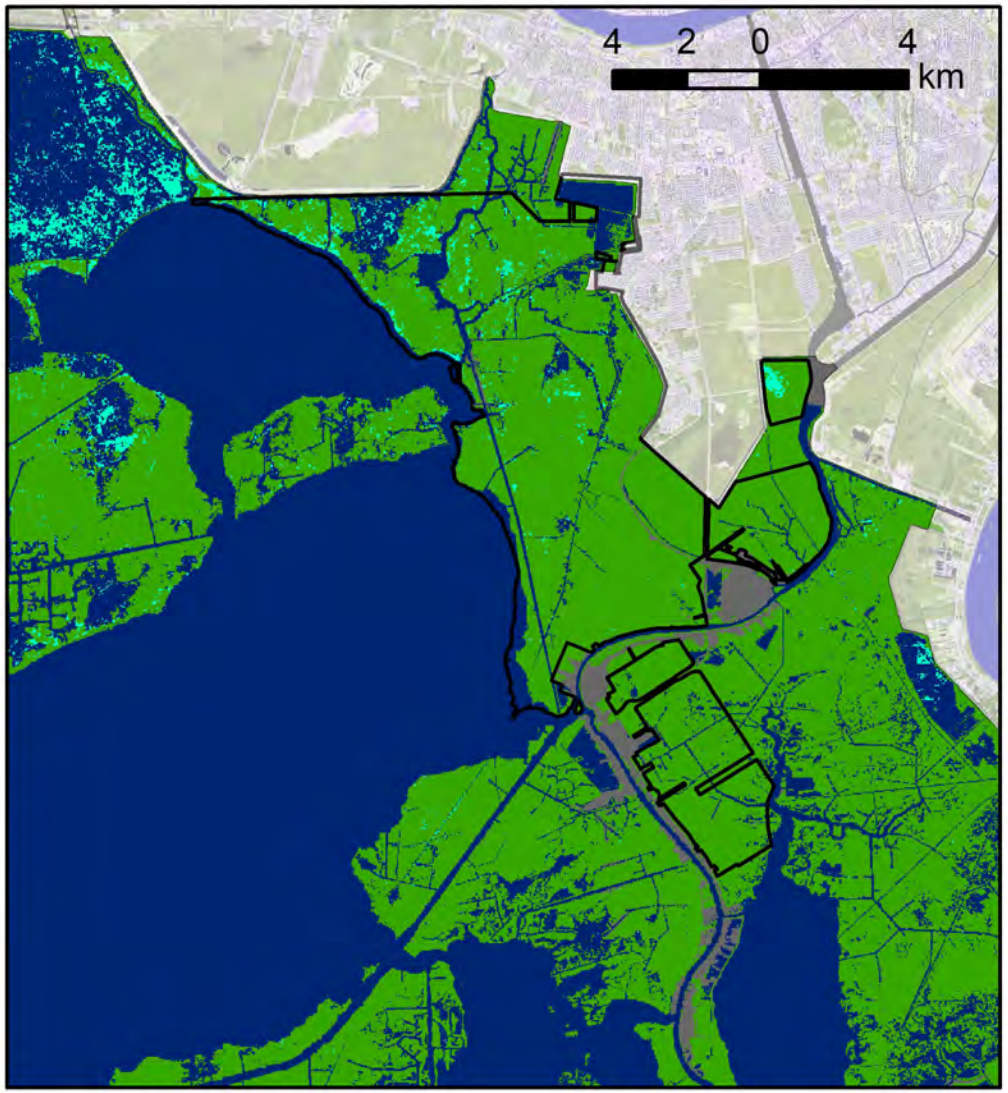
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S09 - G703
High
Ama Only
Year 22

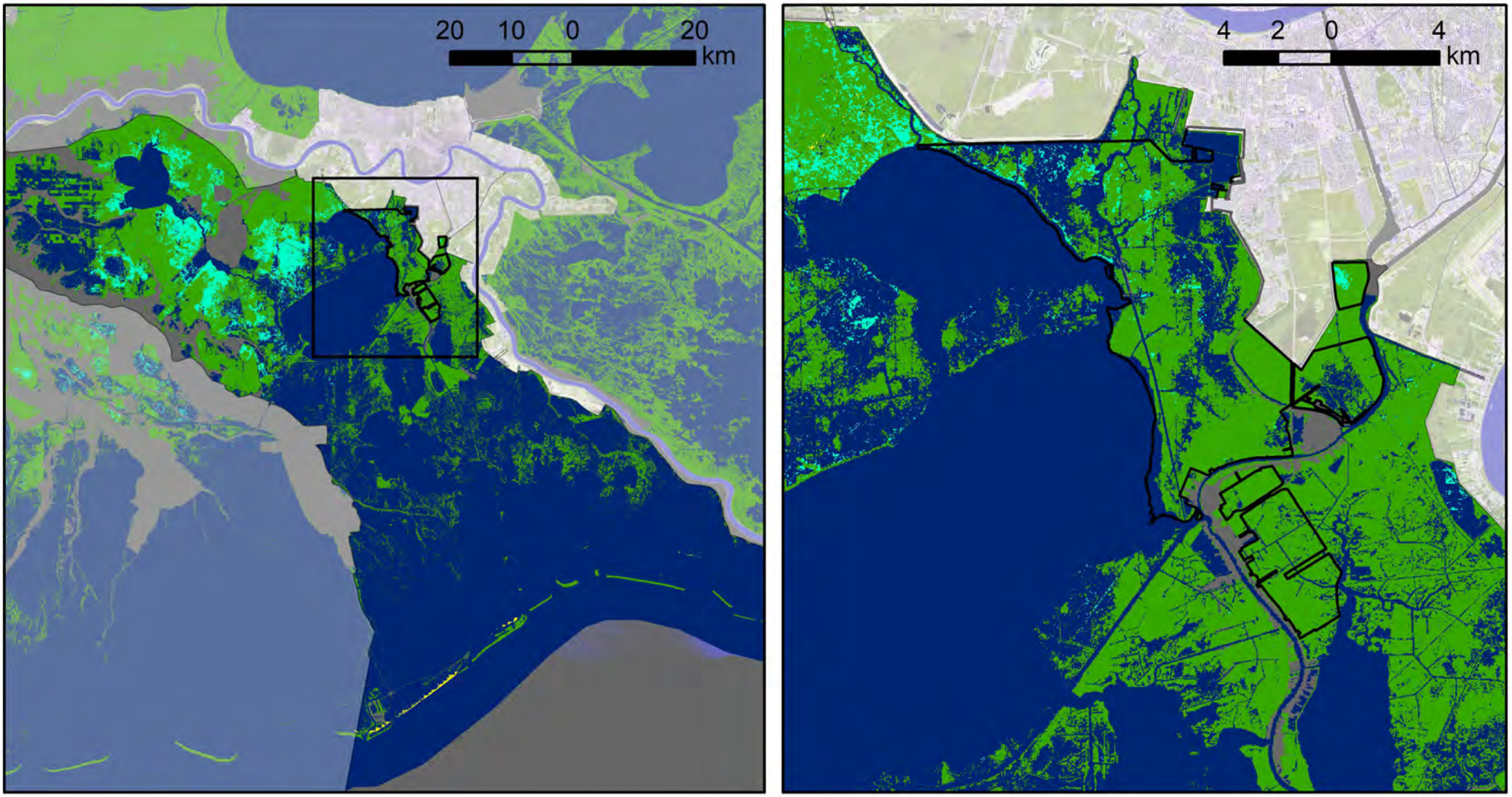
Land Type

- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol





S09 - G703
High
Ama Only
Year 32

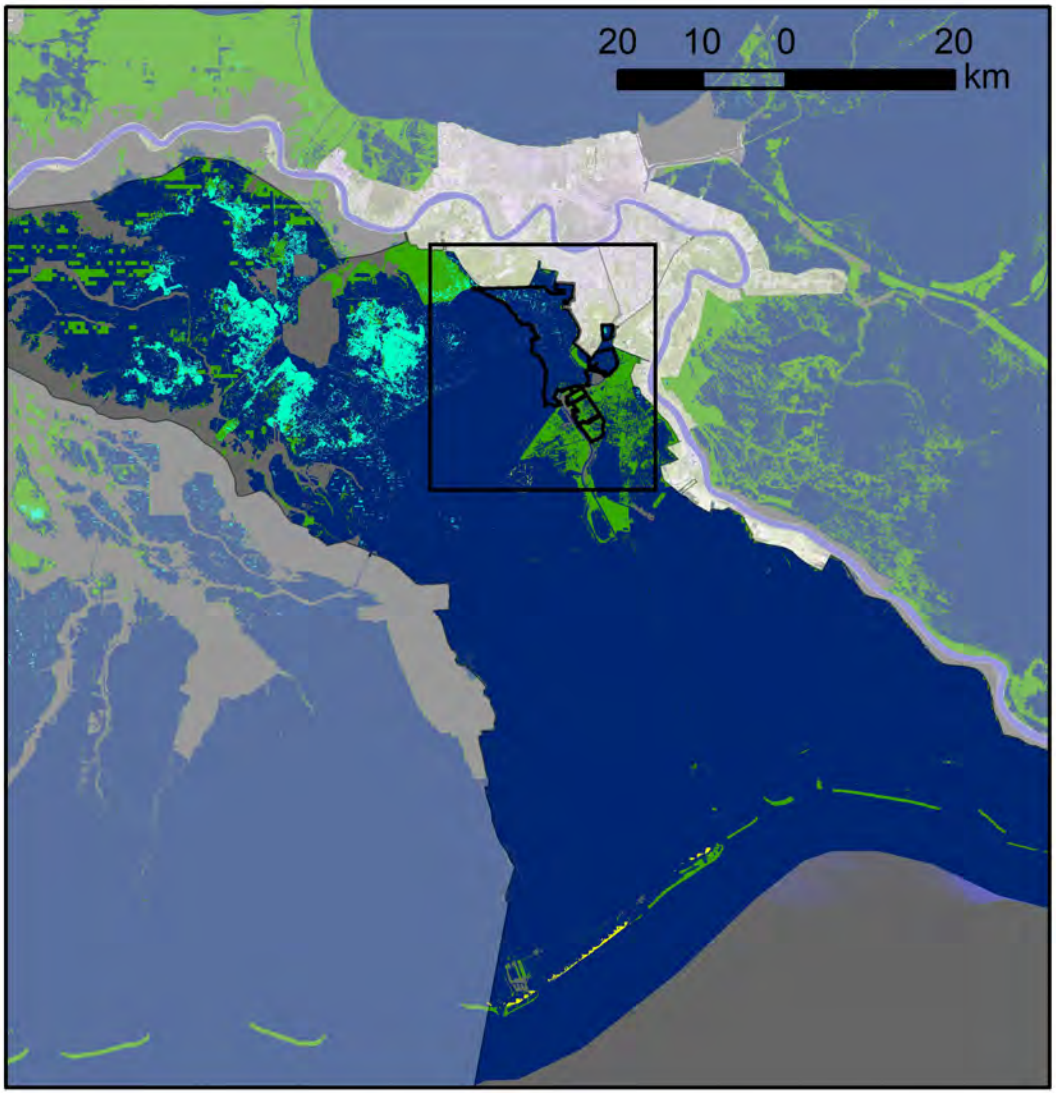
Land Type

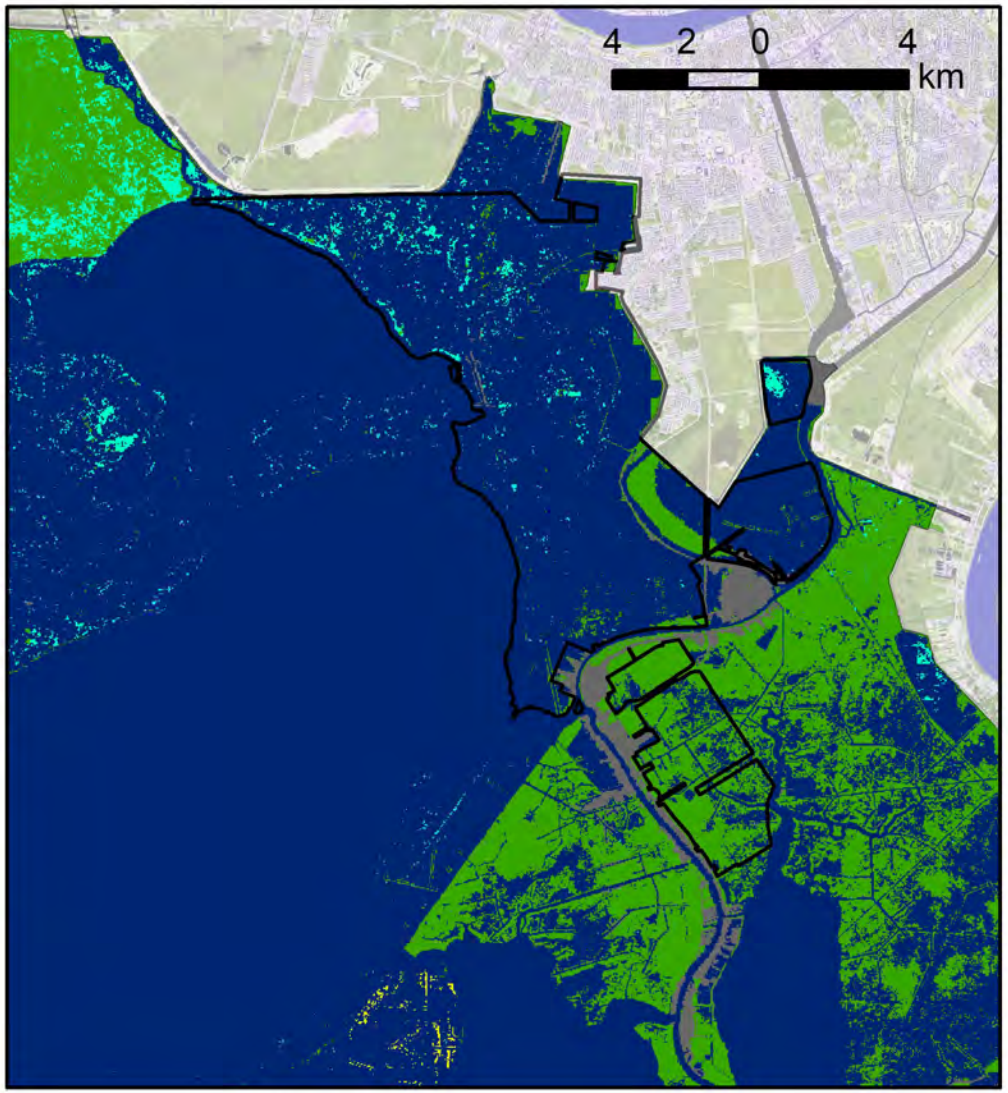
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S09 - G703
High
Ama Only
Year 42

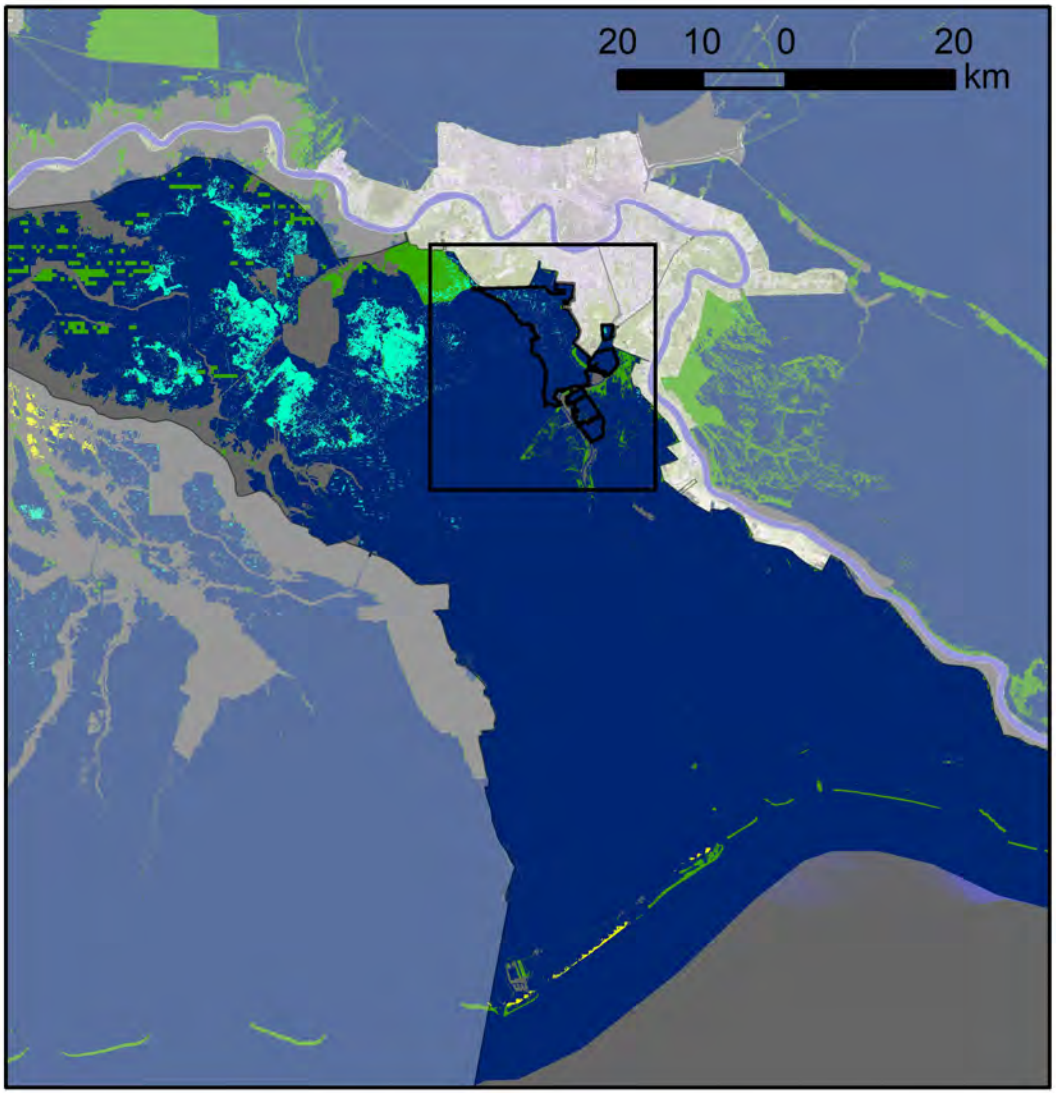
Land Type

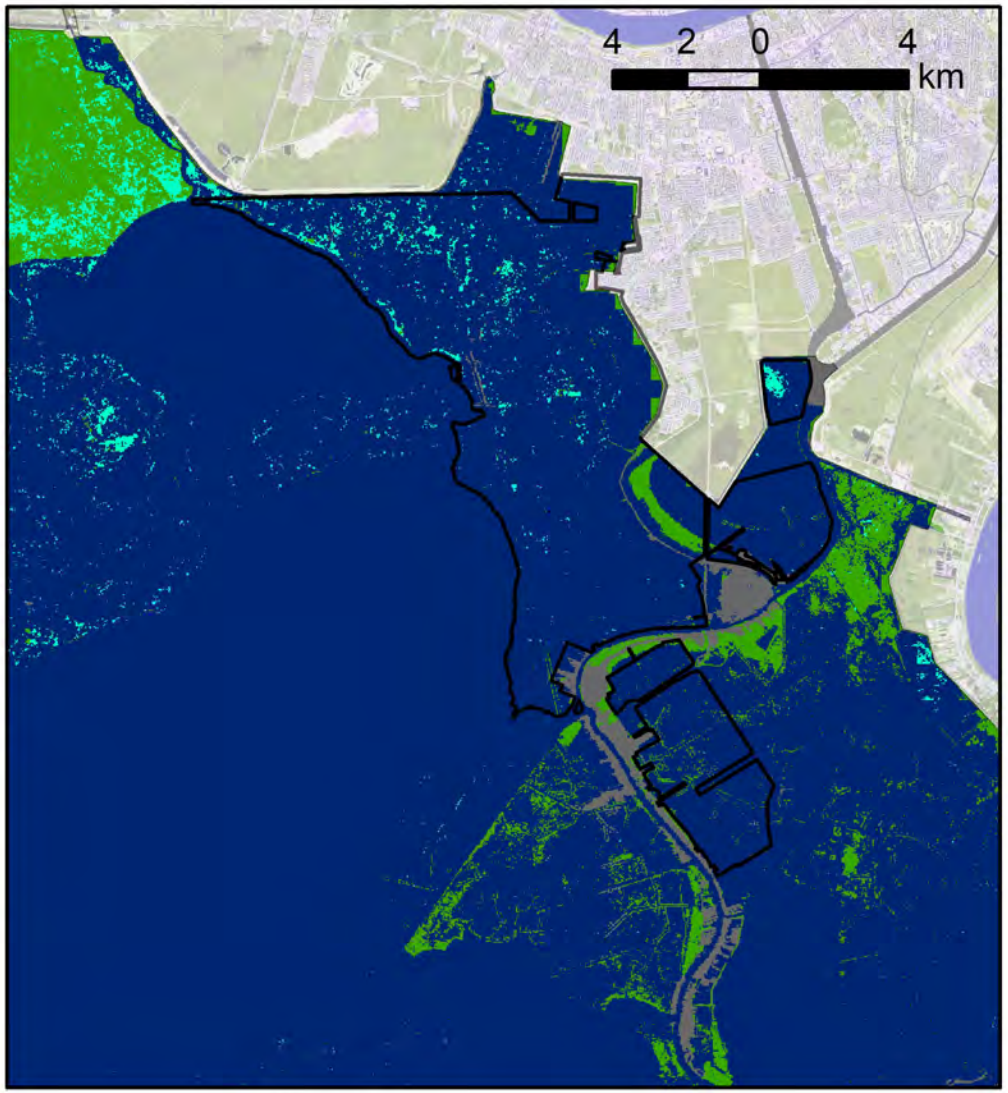
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S09 - G703
High
Ama Only
Year 51

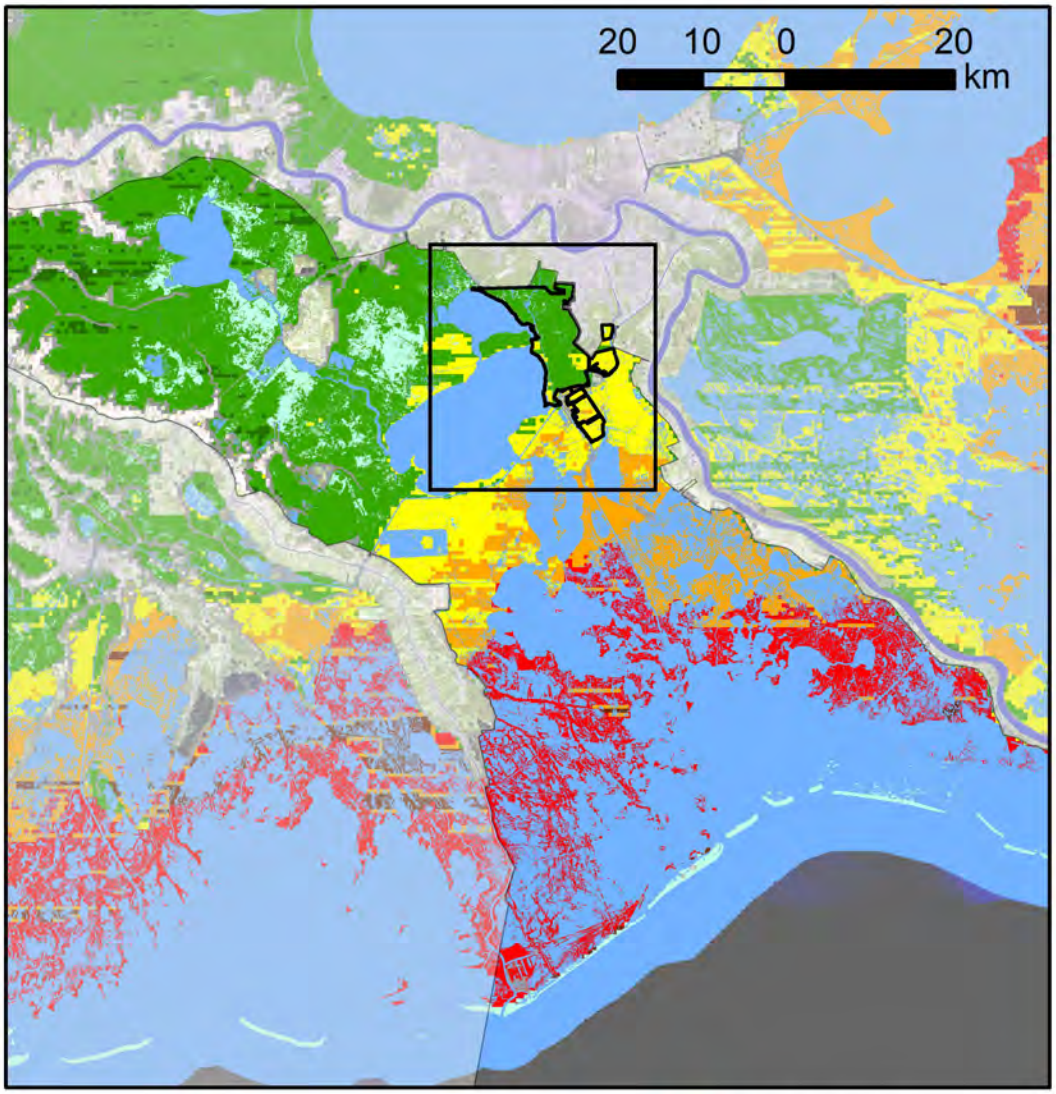
Land Type

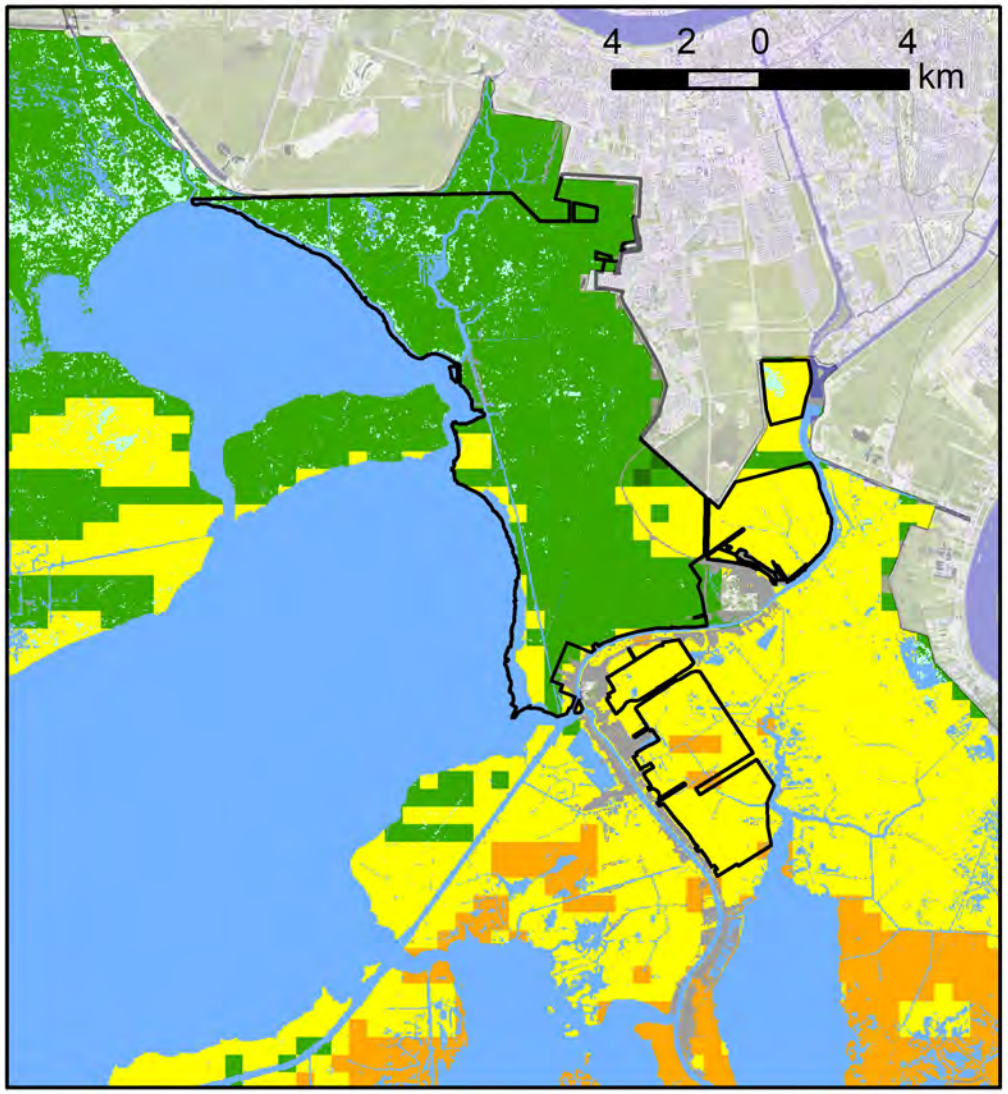
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S09 - G703
High
Ama Only
Year 02

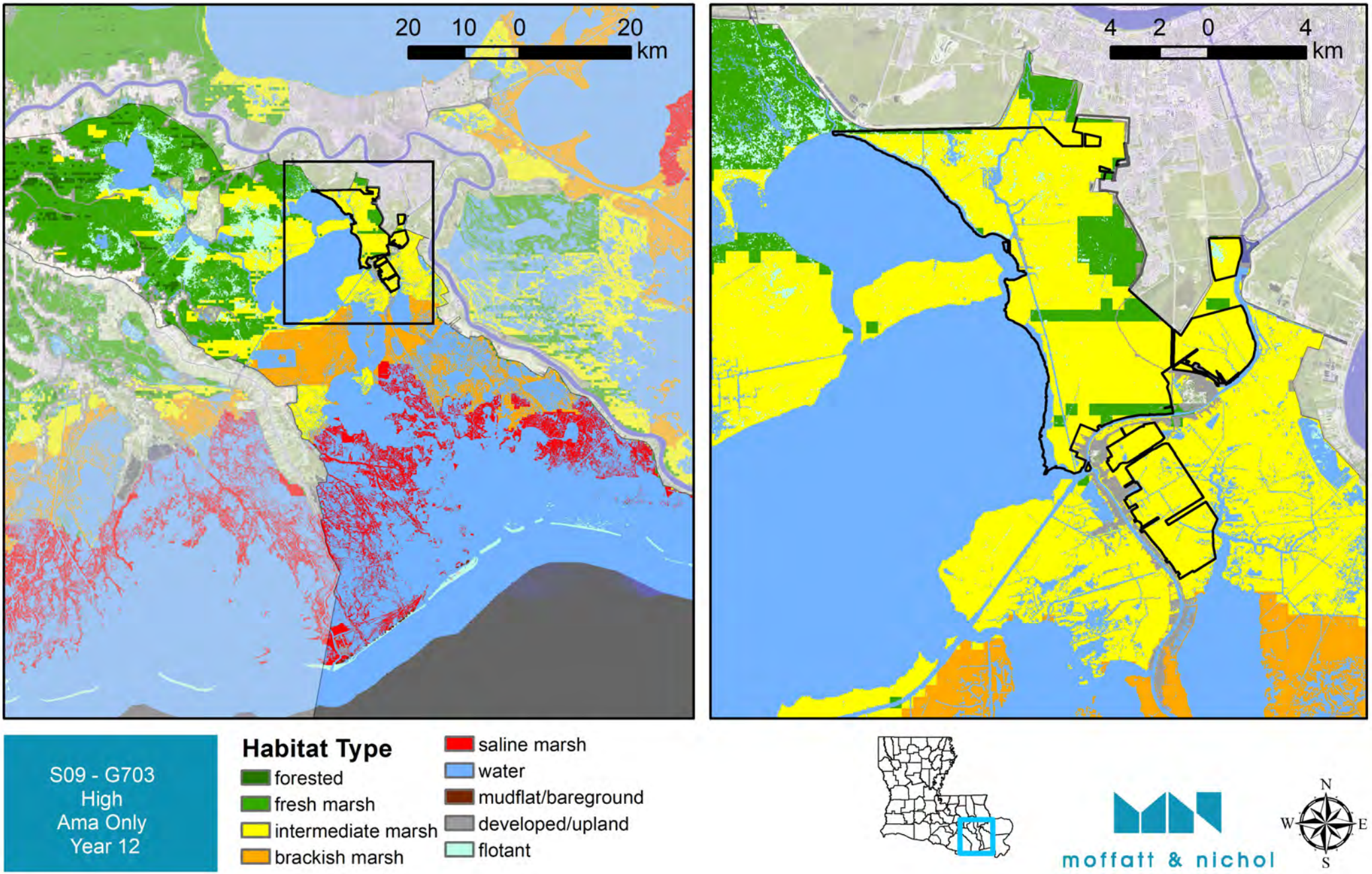
Habitat Type

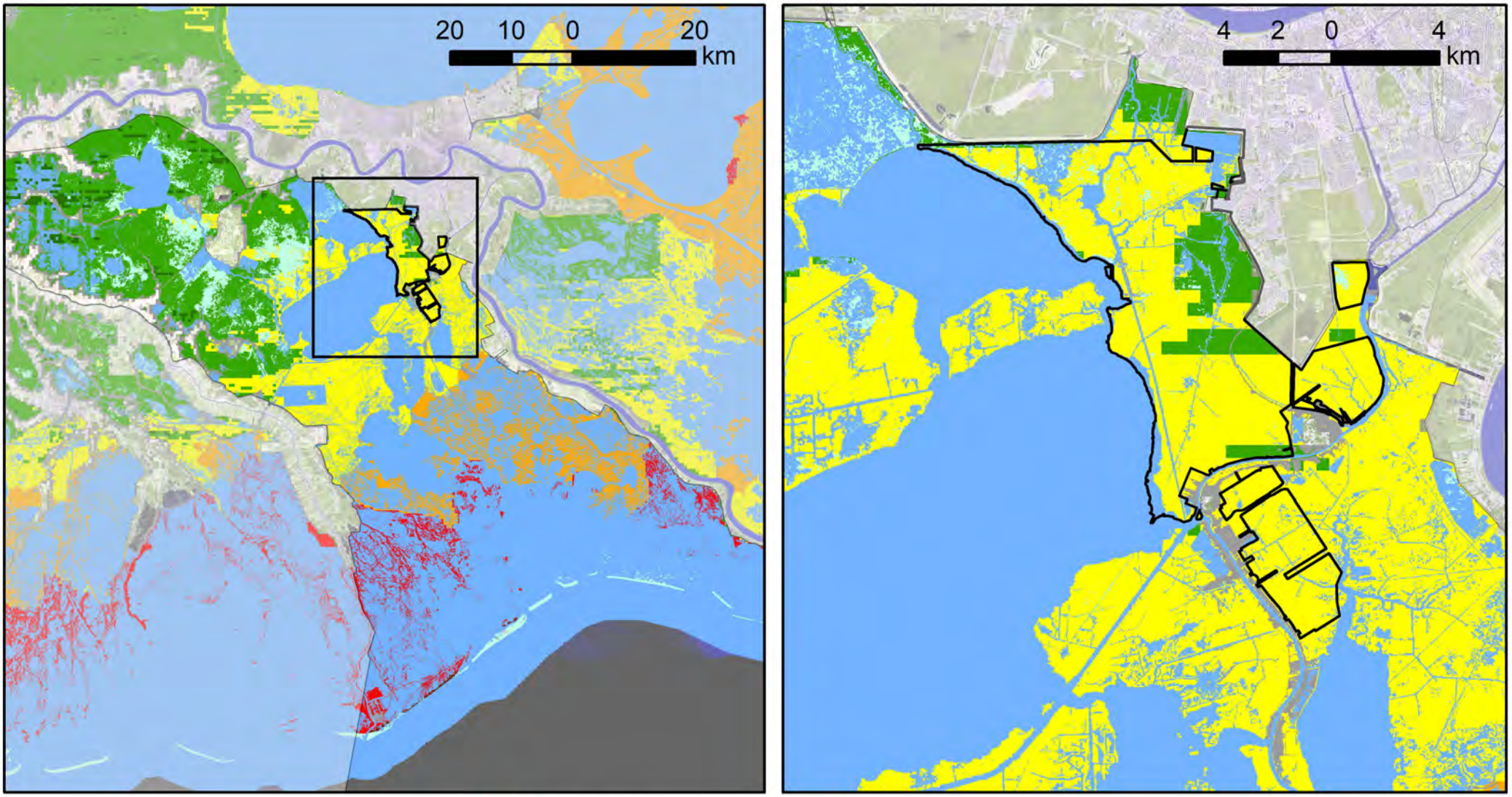
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol

N
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20 10 0 20
km
4 2 0 4
km
S09 - G703
High
Ama Only
Year 12
Habitat Type
forested
fresh marsh
intermediate marsh
brackish marsh
saline marsh
water
mudflat/bareground
developed/upland
flotant
moffatt & nichol
N
W
E
S



S09 - G703
High
Ama Only
Year 22

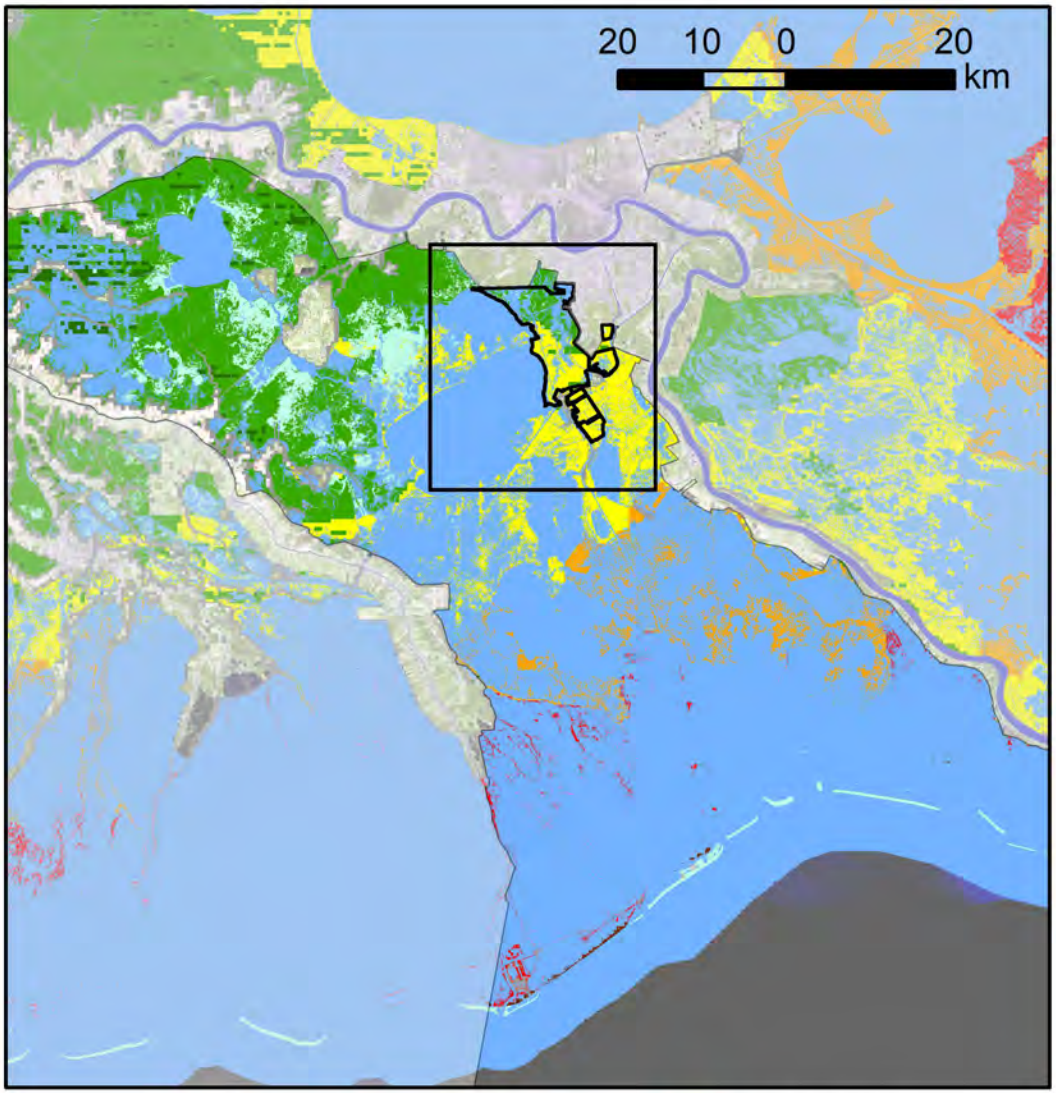
Habitat Type

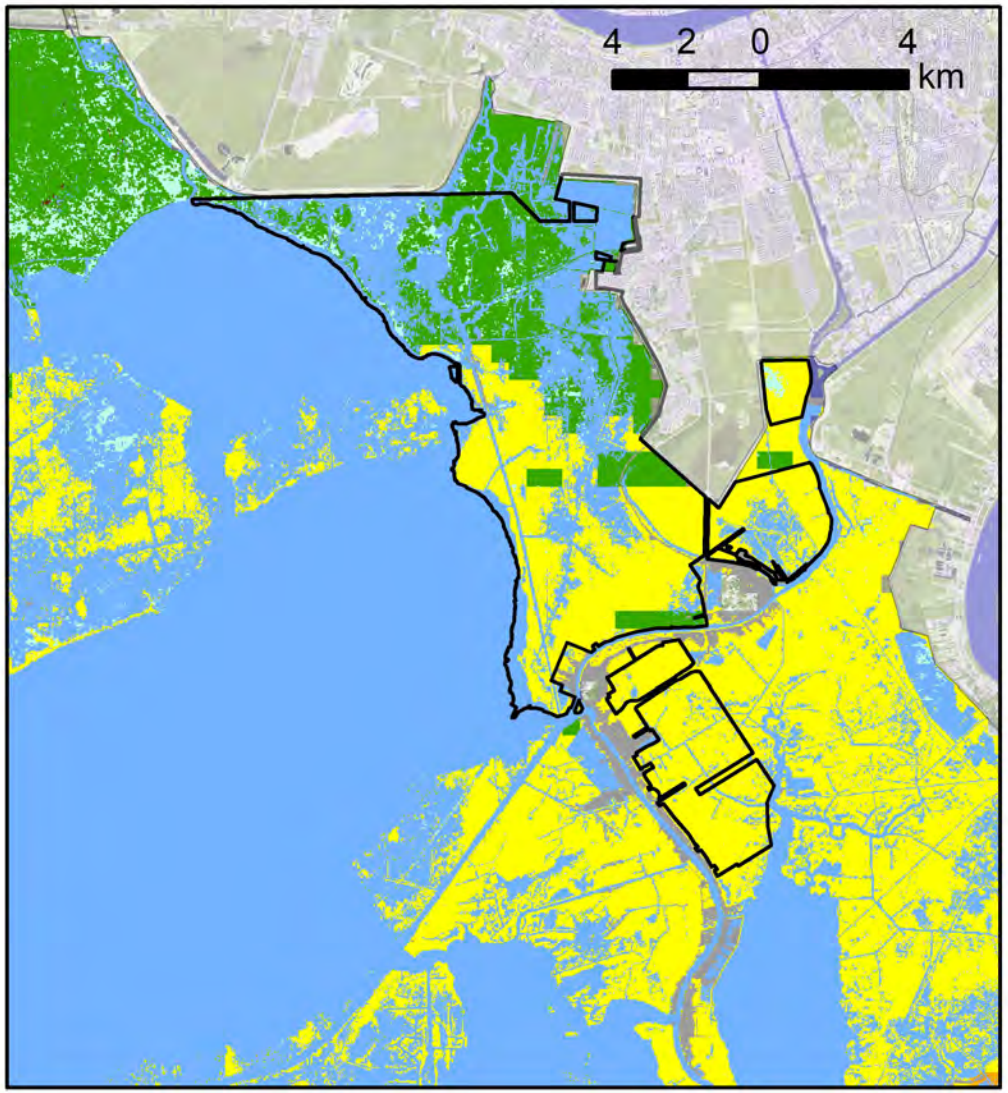
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S09 - G703
High
Ama Only
Year 32

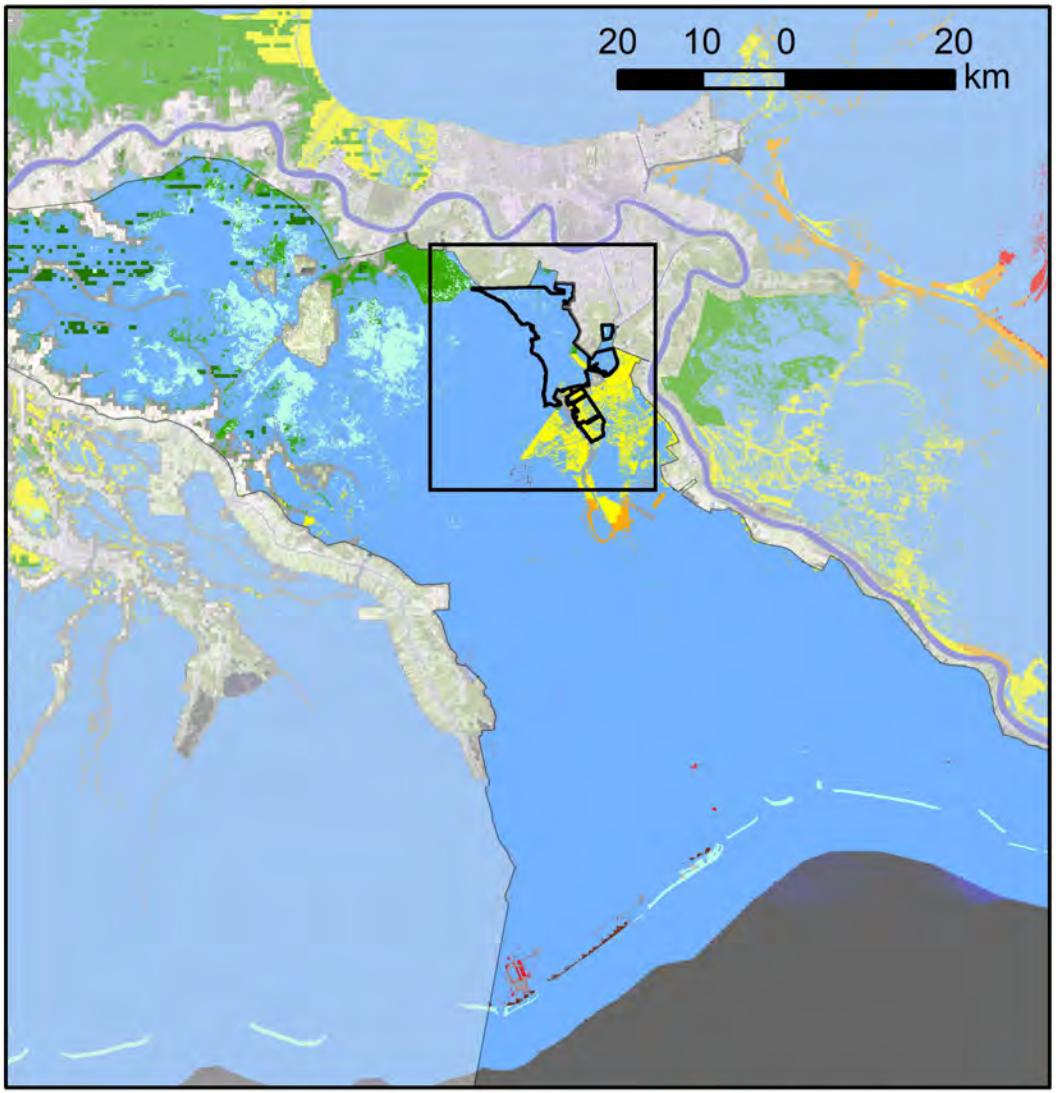
Habitat Type

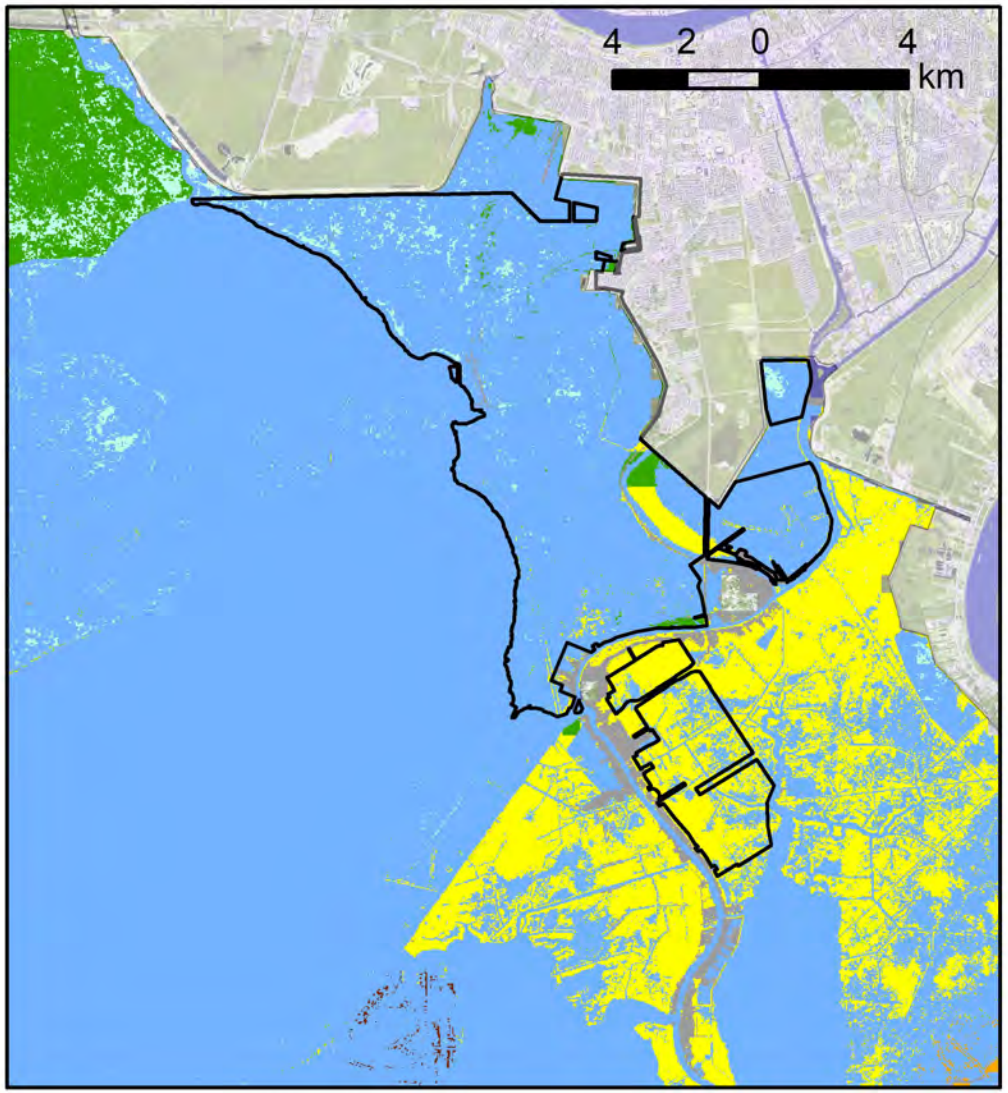
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S09 - G703
High
Ama Only
Year 42

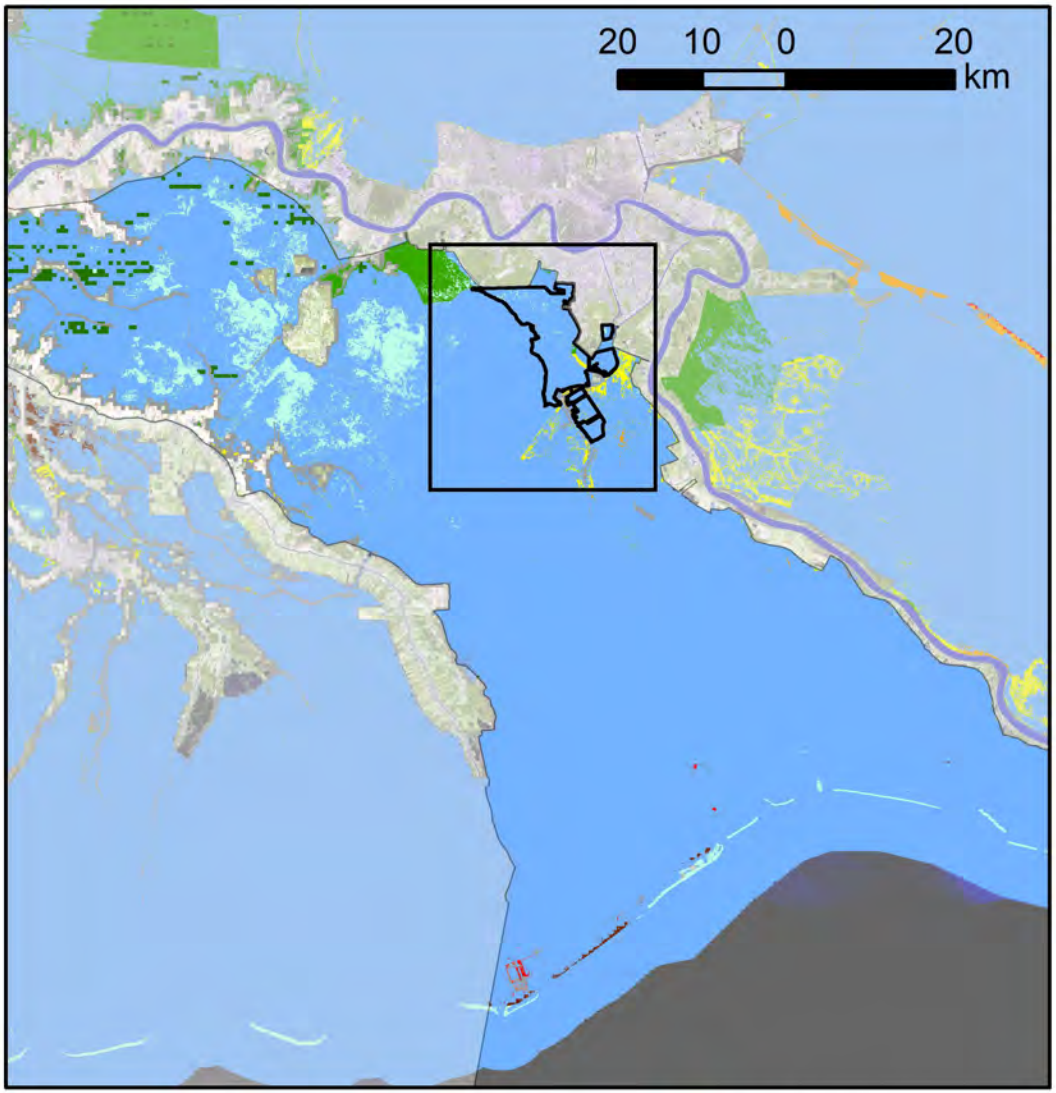
Habitat Type

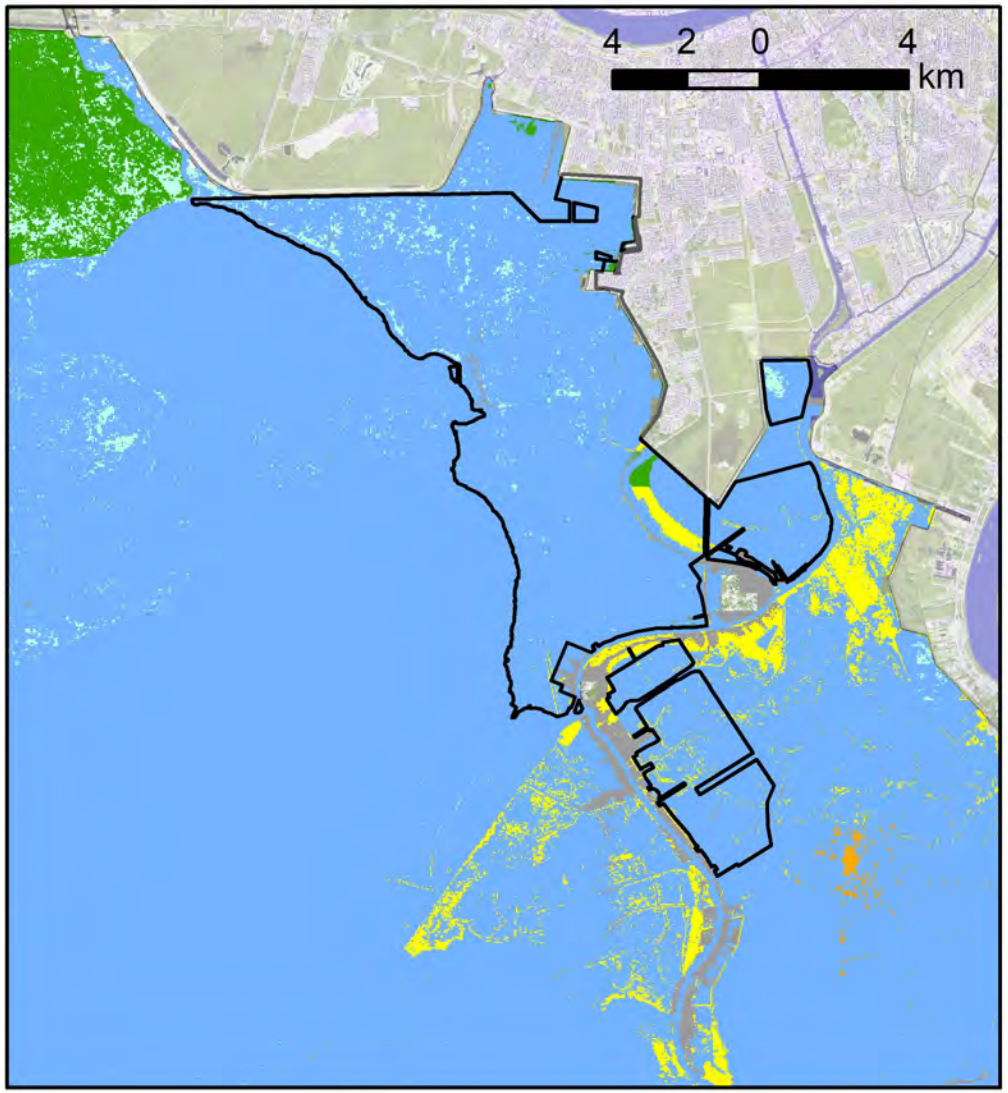
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S09 - G703
High
Ama Only
Year 51

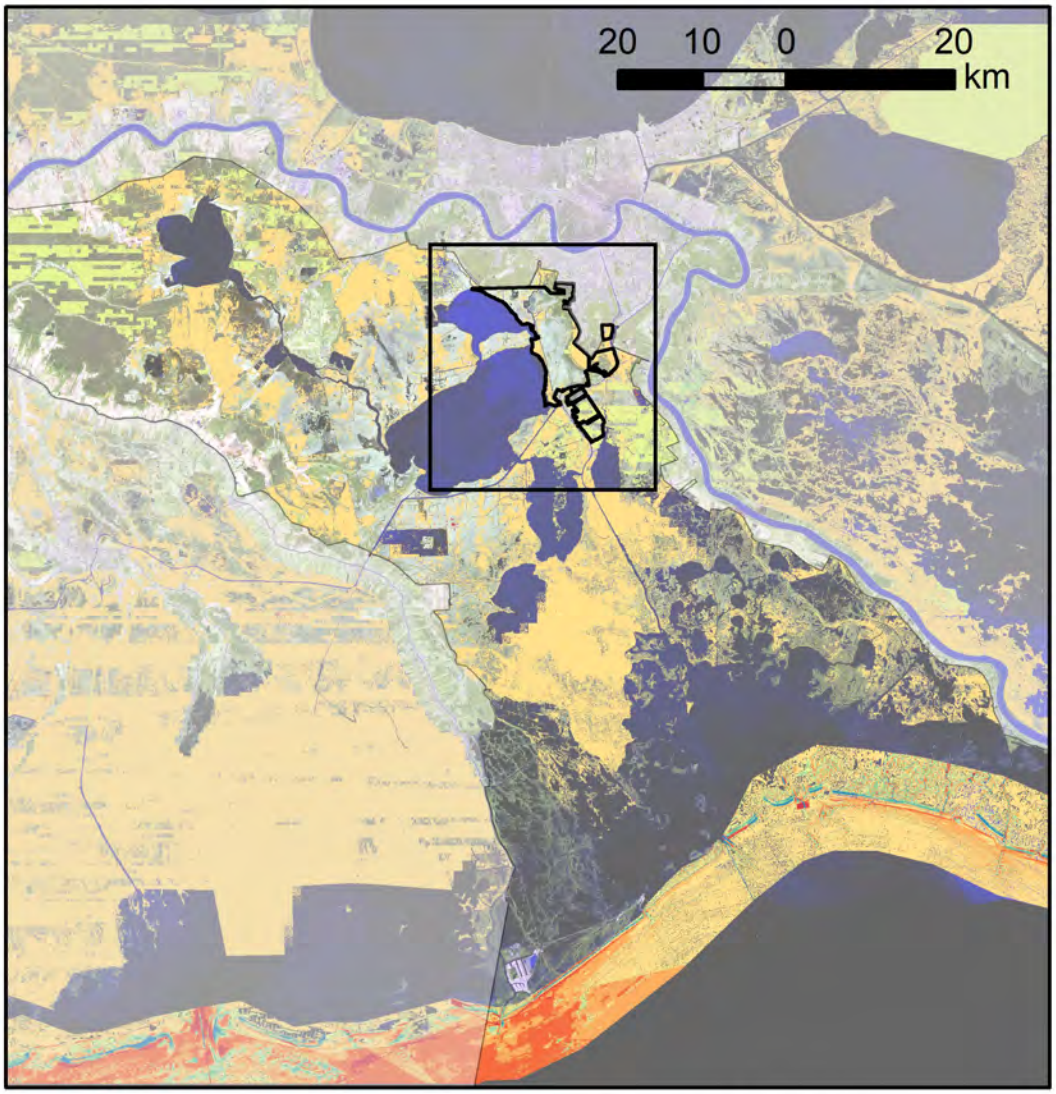
Habitat Type

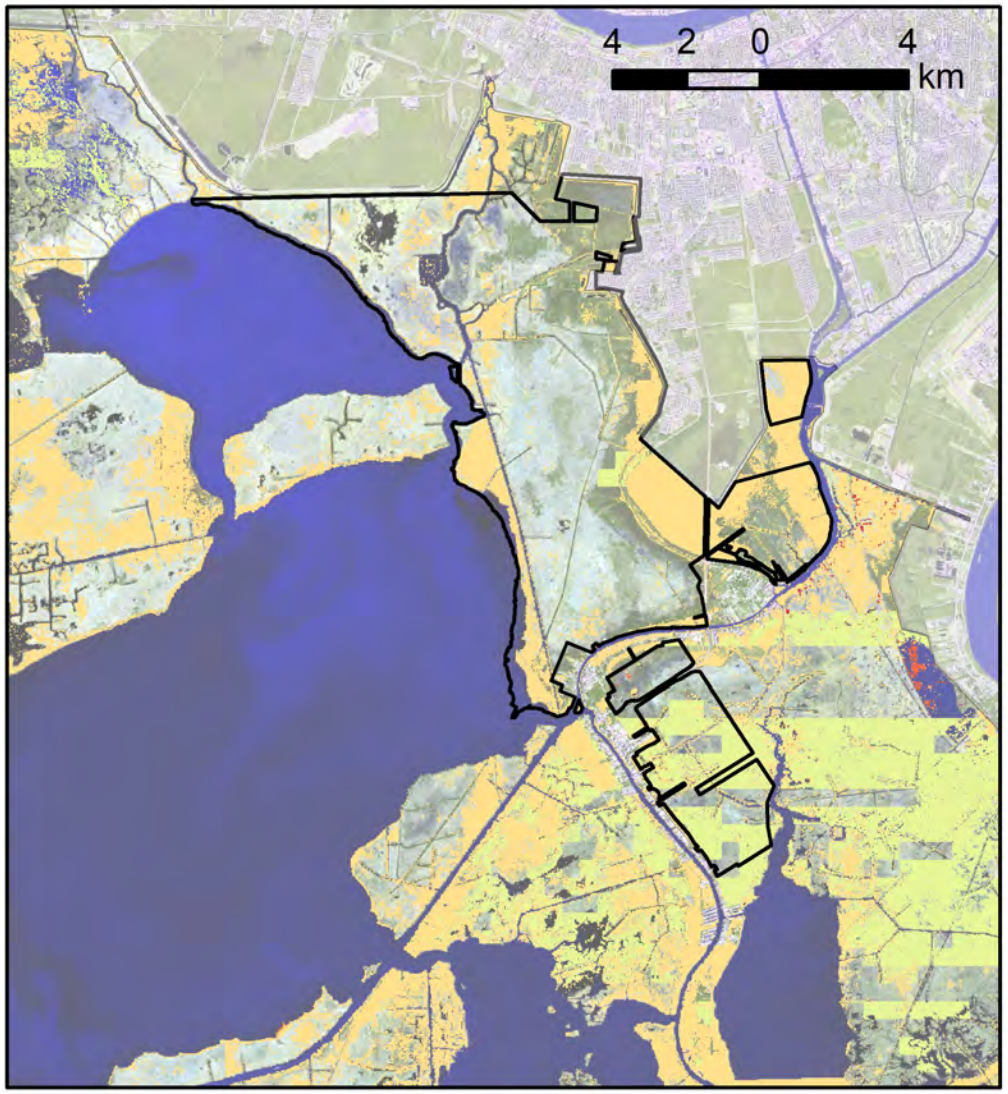
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S09 - G703
High
Ama Only
Year 02

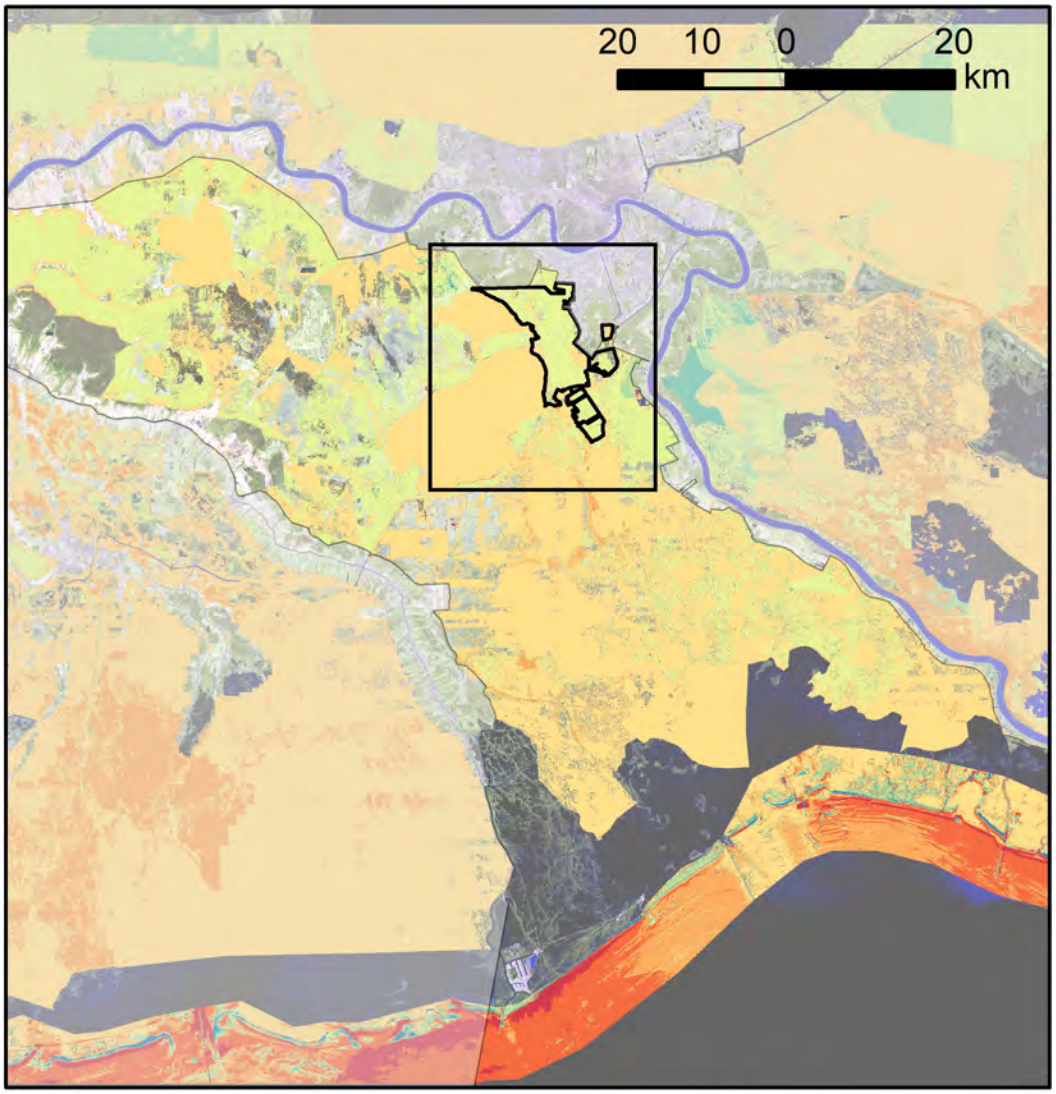
Elev. Change [m]

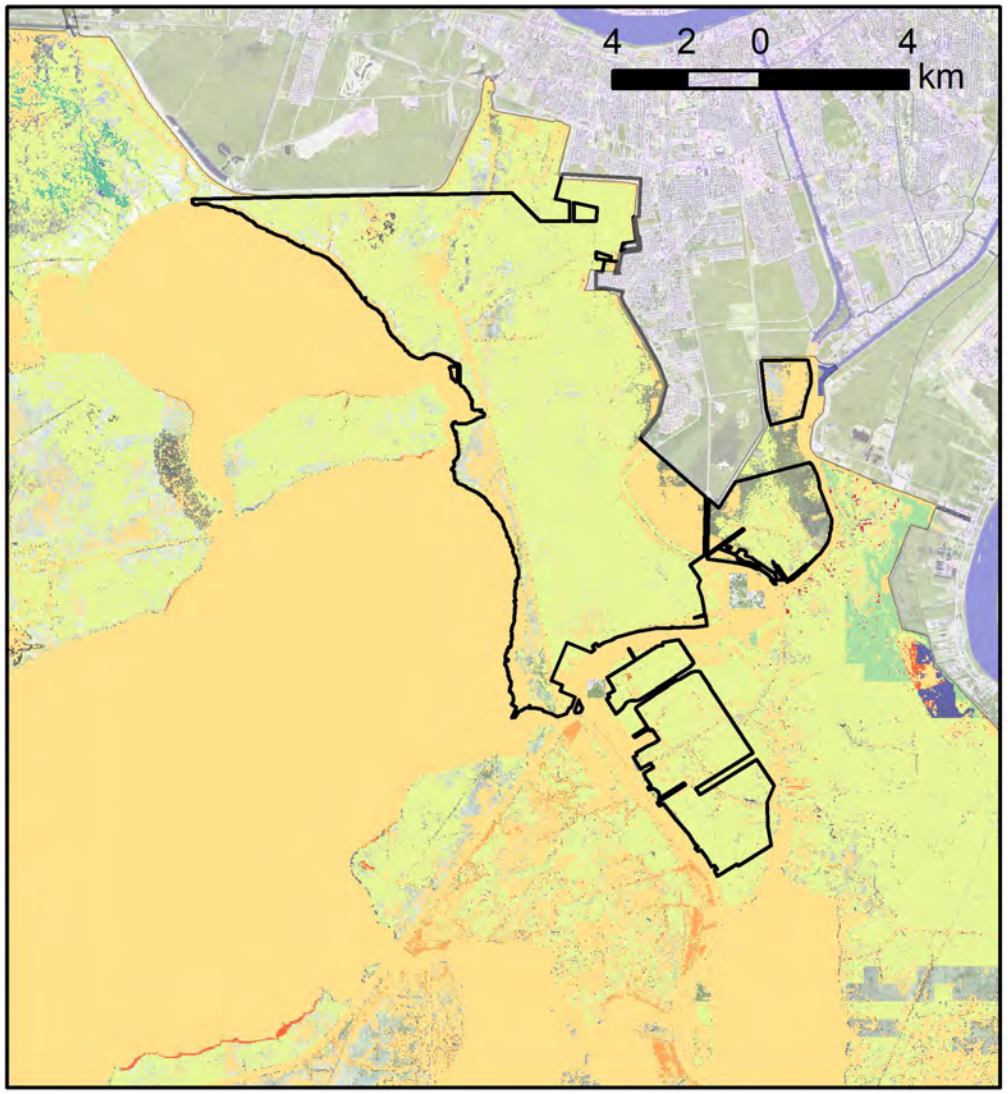
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
W E
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S09 - G703
High
Ama Only
Year 12

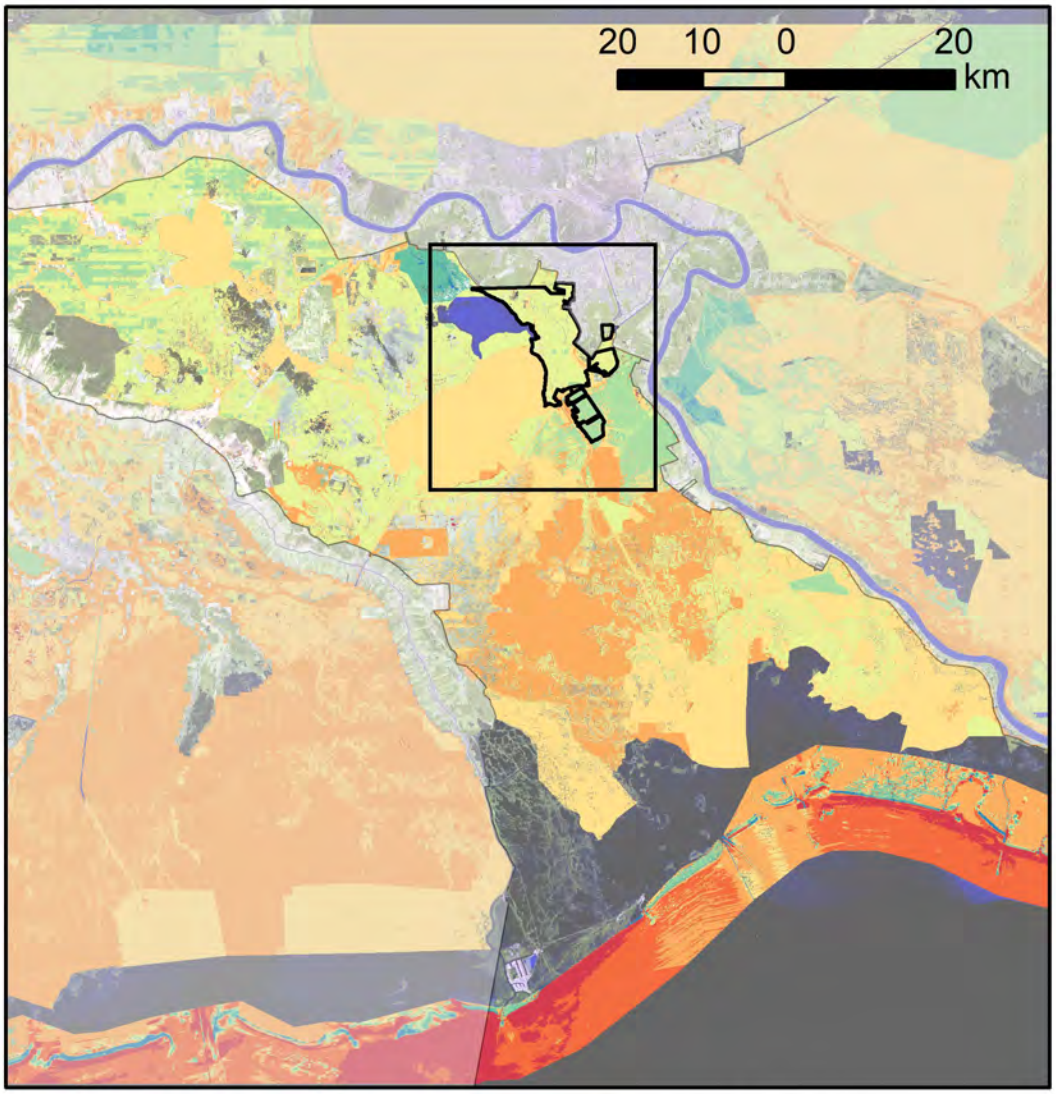
Elev. Change [m]

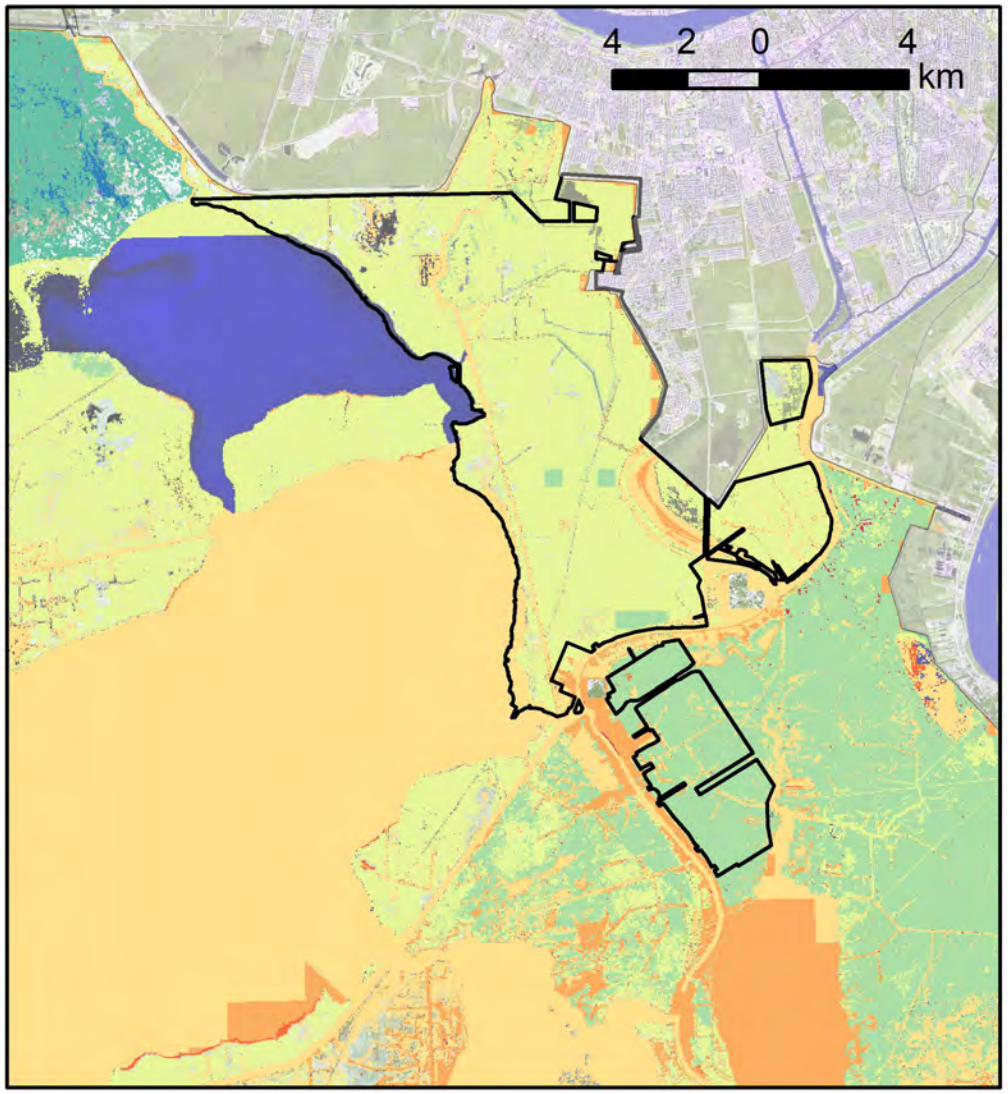
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

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W E
S





S09 - G703
High
Ama Only
Year 22

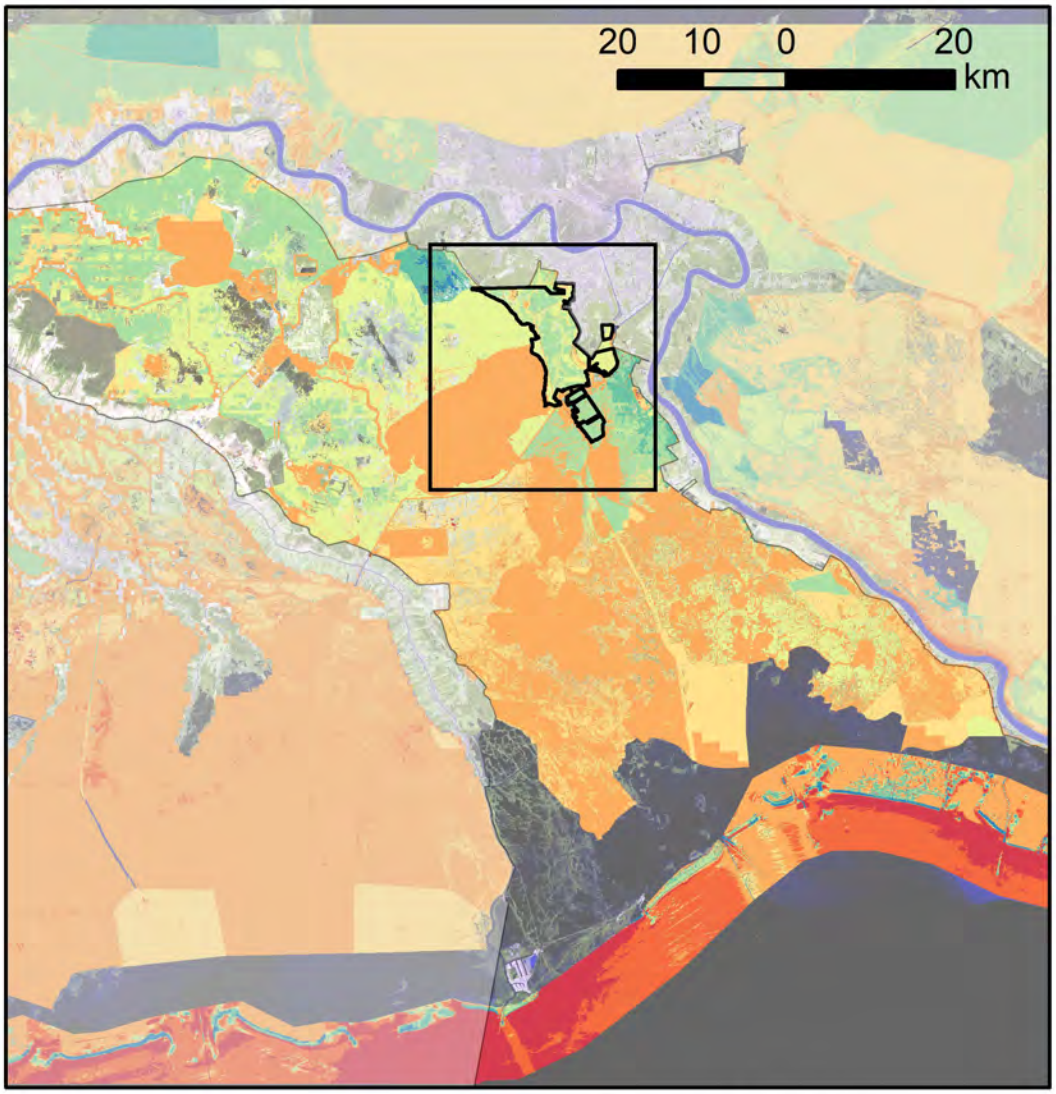
Elev. Change [m]

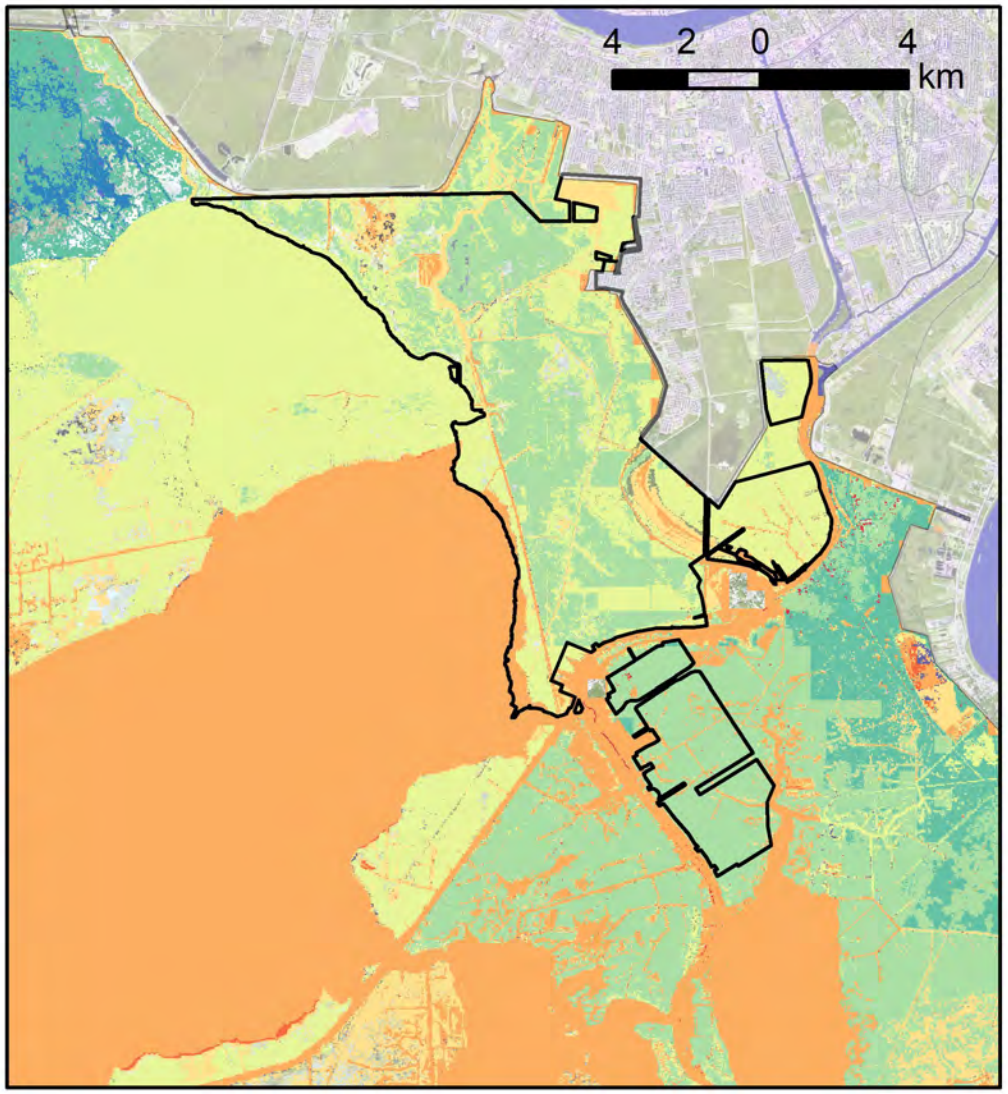
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
W E
S





S09 - G703
High
Ama Only
Year 32

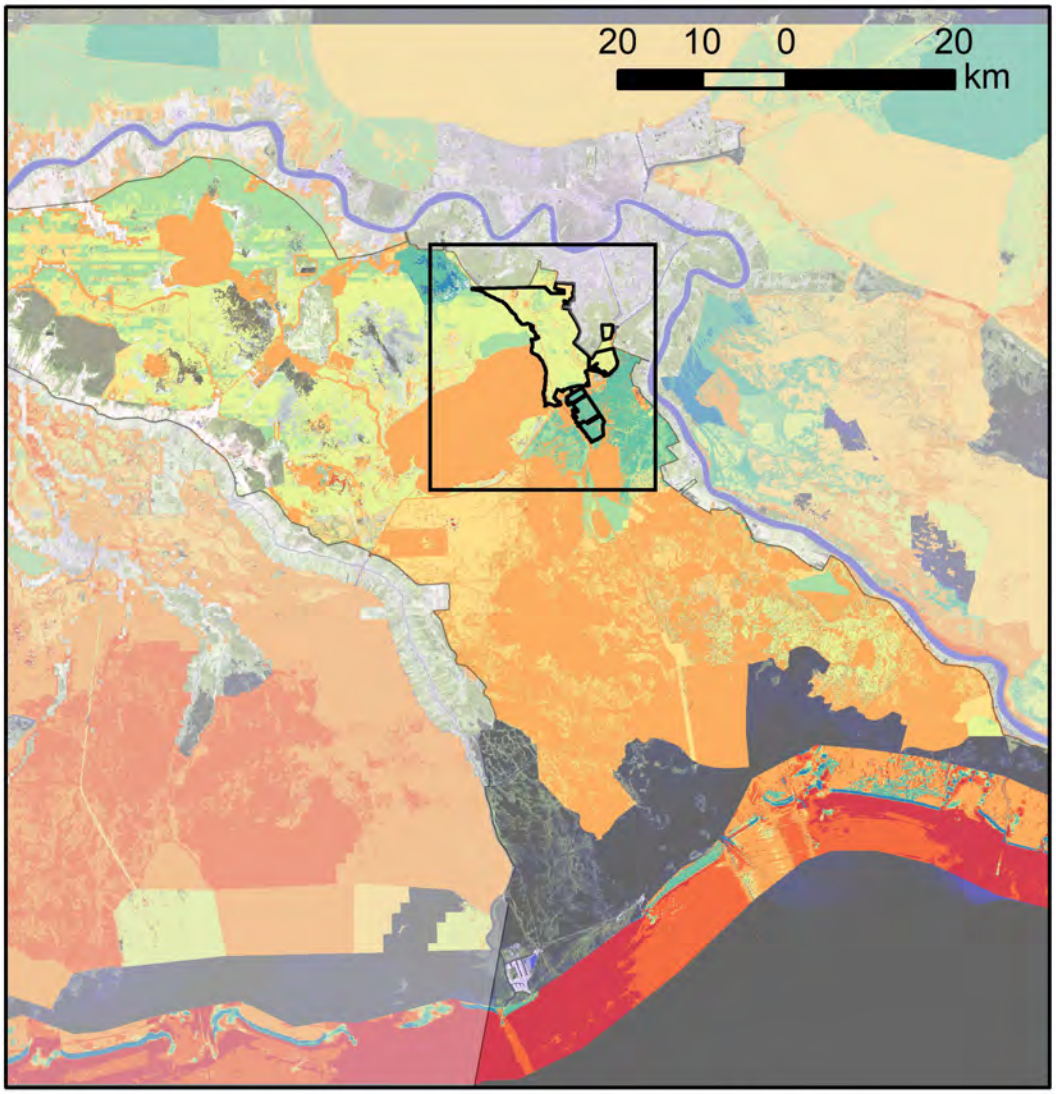
Elev. Change [m]

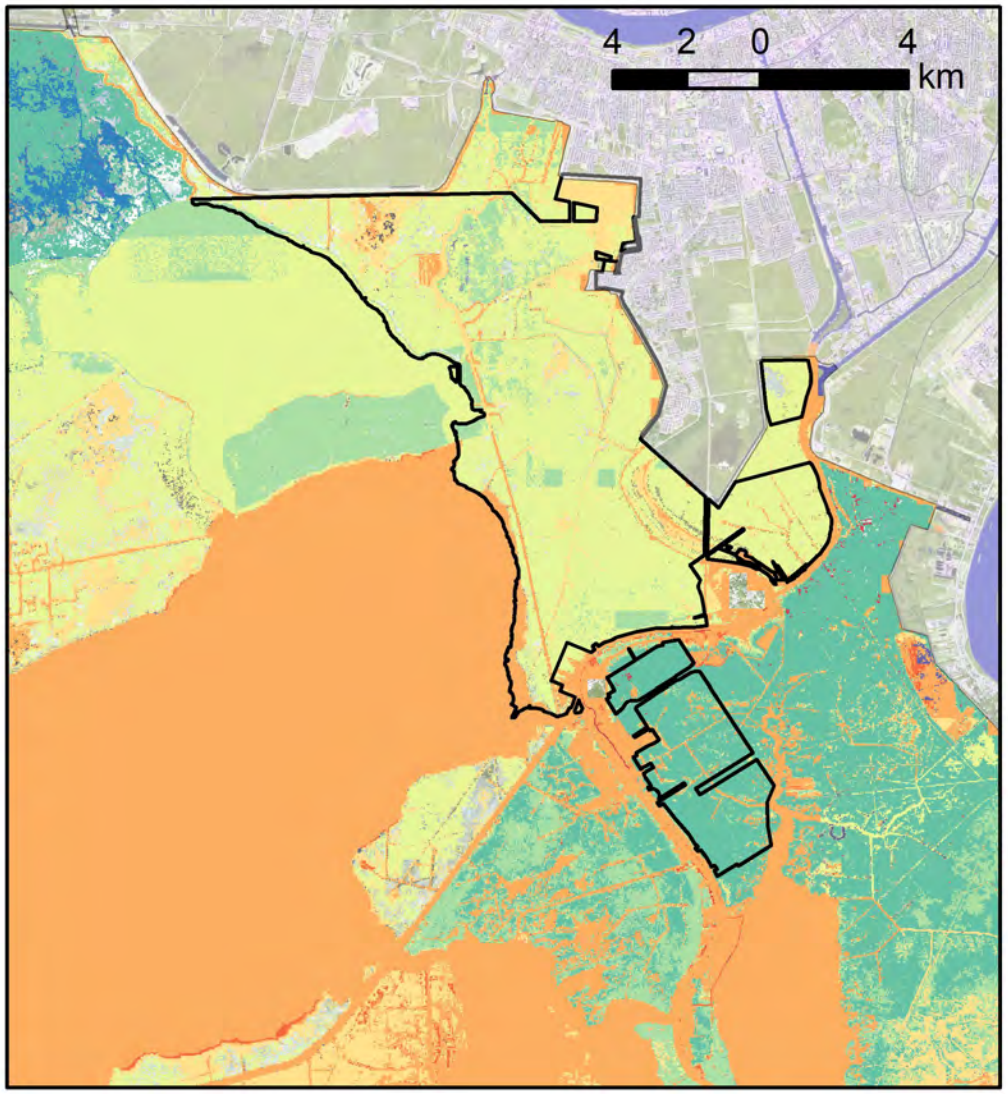
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol







S09 - G703
High
Ama Only
Year 42

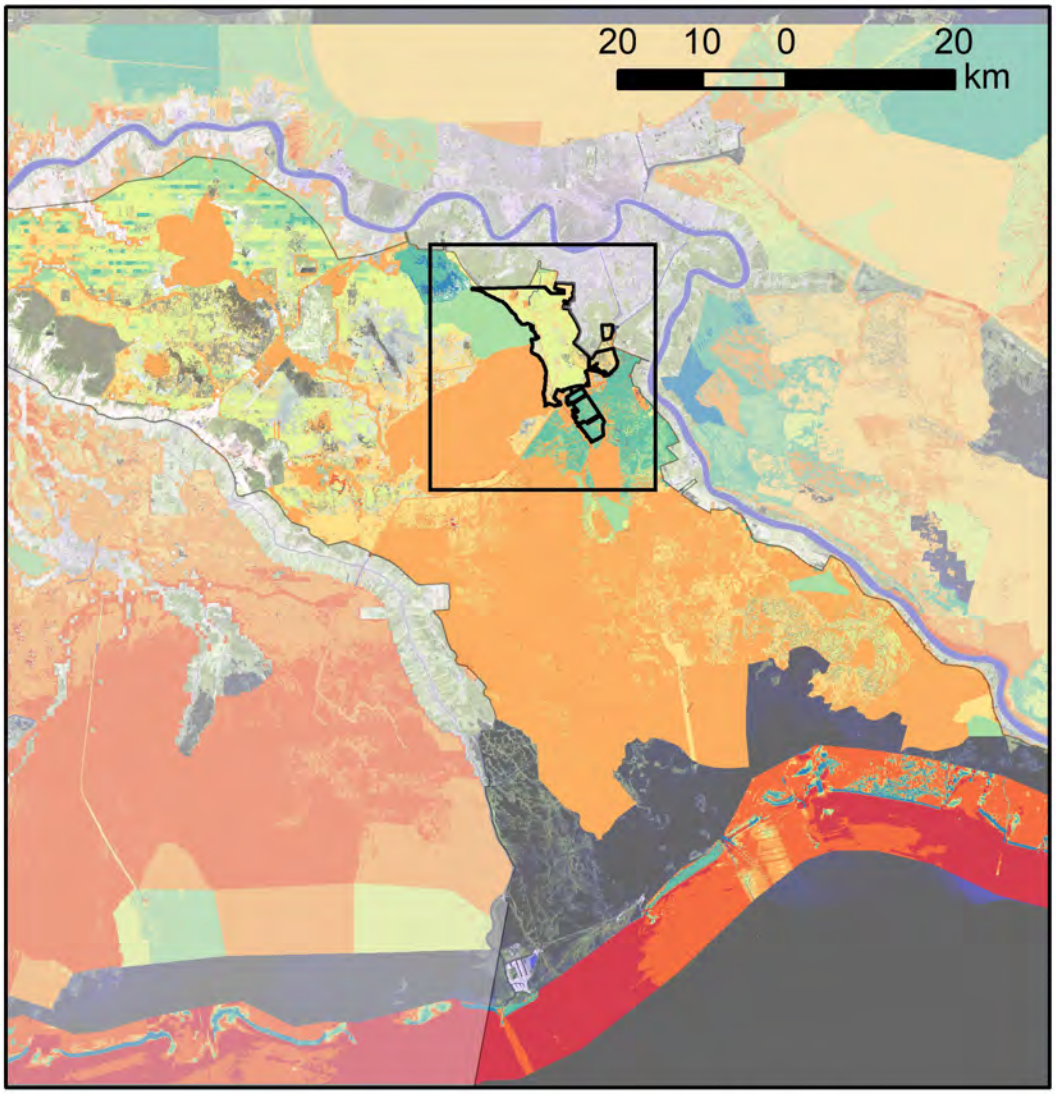
Elev. Change [m]

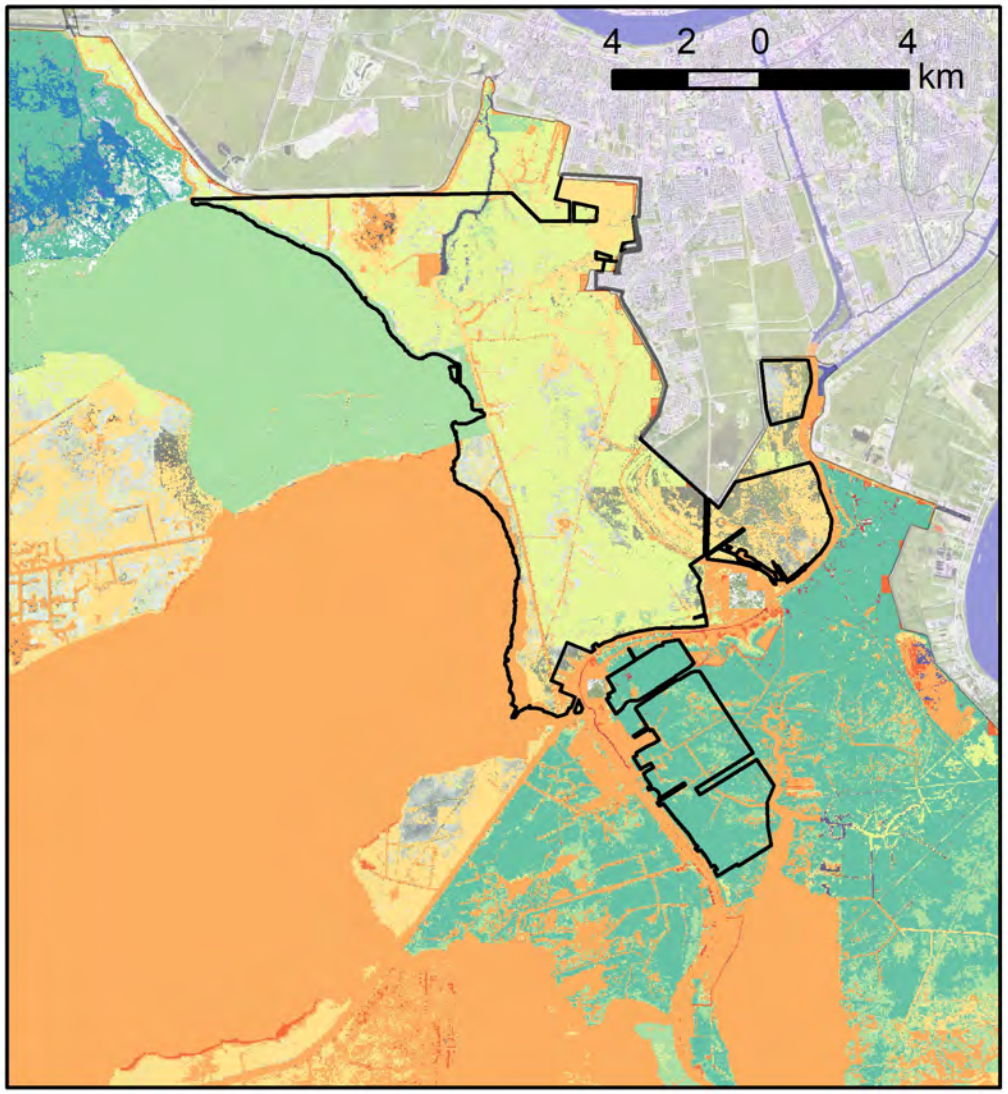
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
W E
S





S09 - G703
High
Ama Only
Year 51

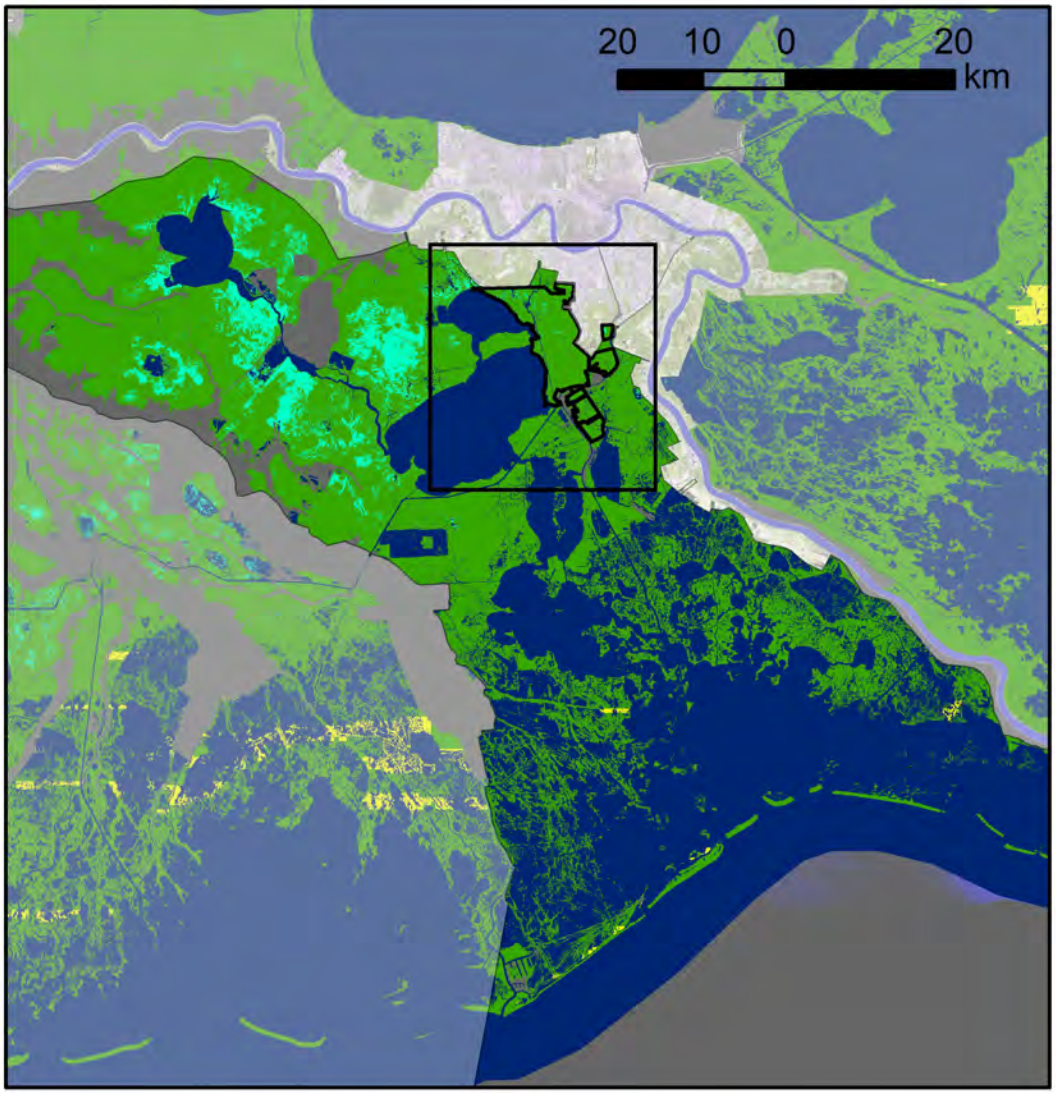
Elev. Change [m]

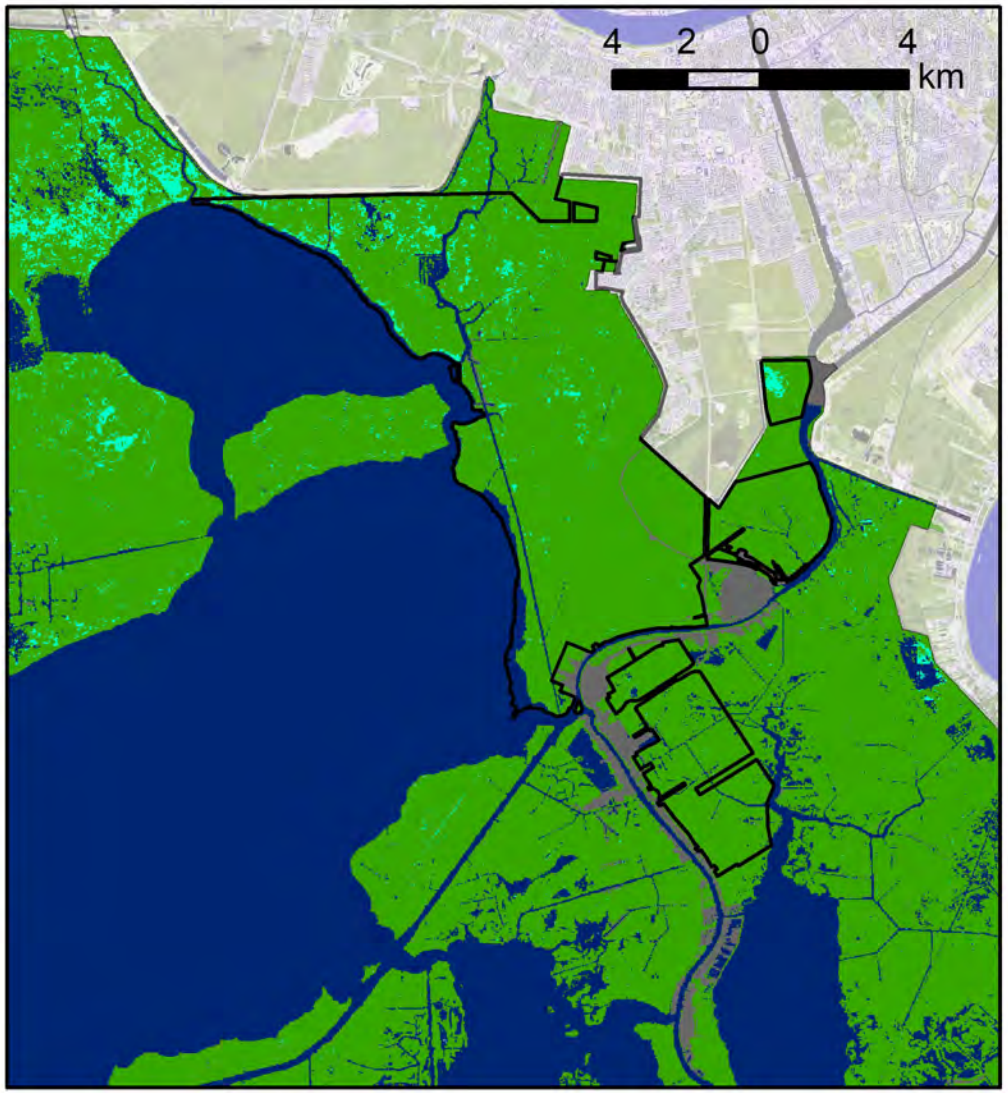
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol







S09 - G803
High
Both Diversions
Year 02

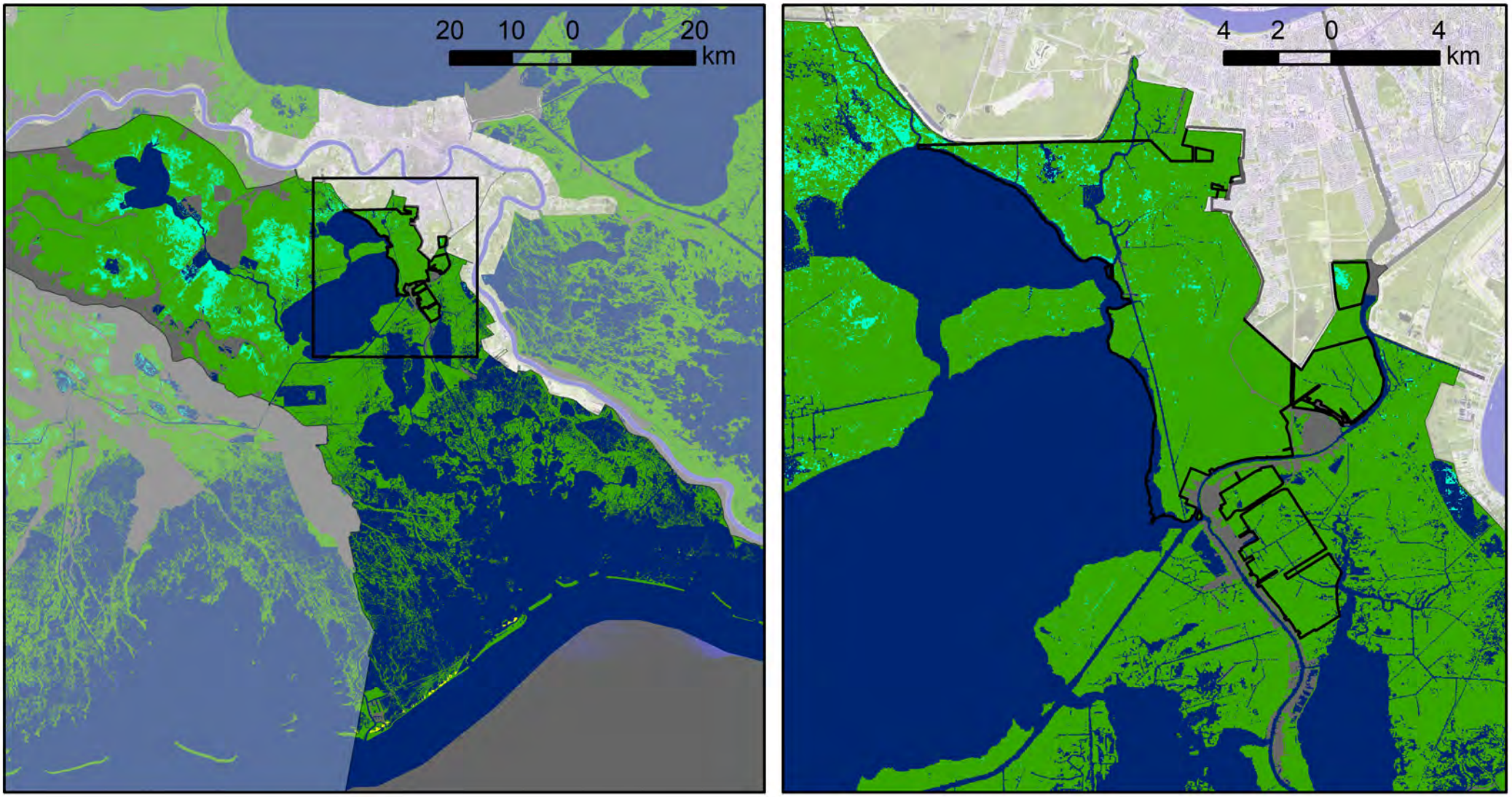
Land Type

- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol





S09 - G803
High
Both Diversions
Year 12

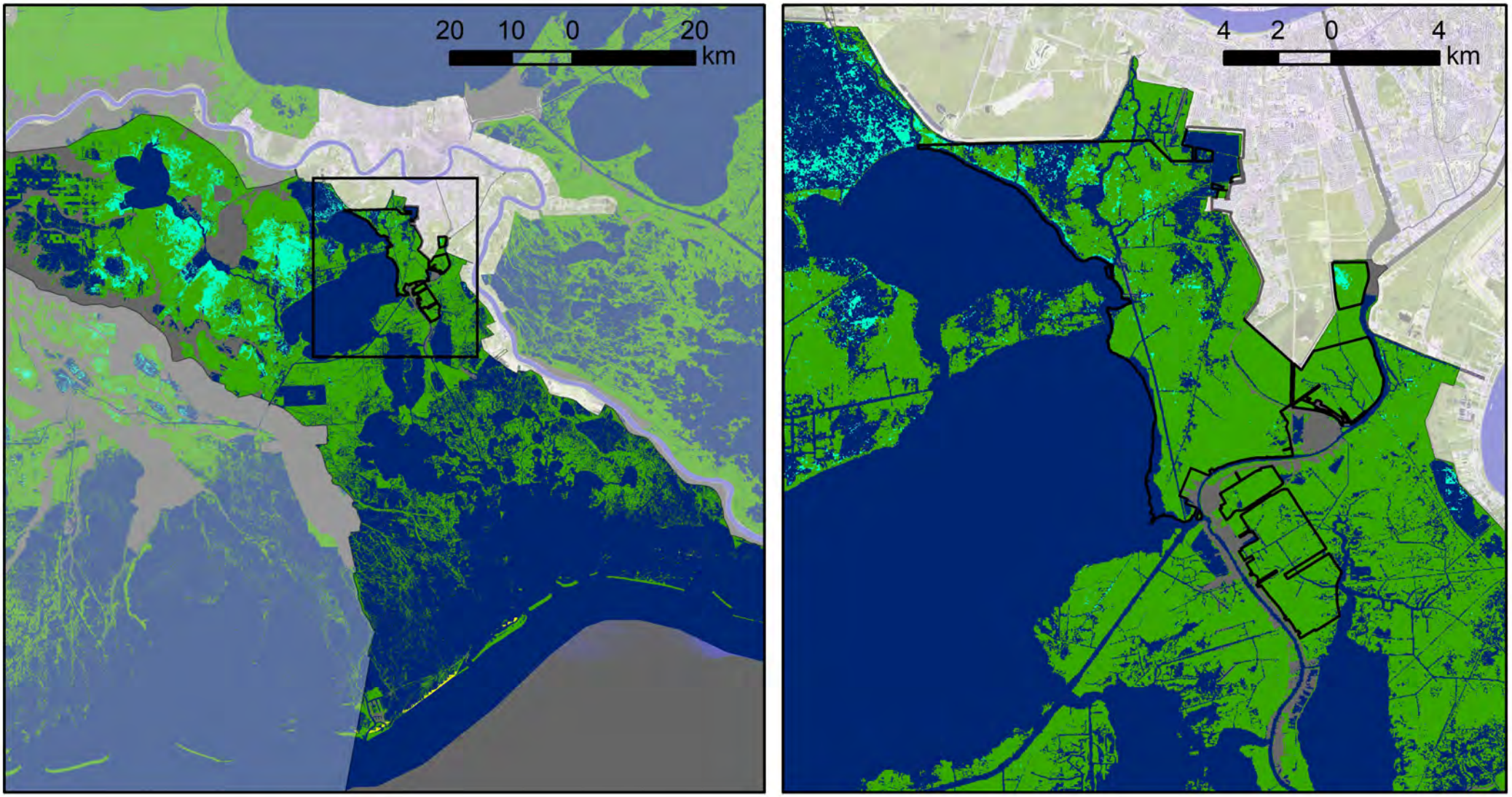
Land Type

- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol





S09 - G803
High
Both Diversions
Year 22

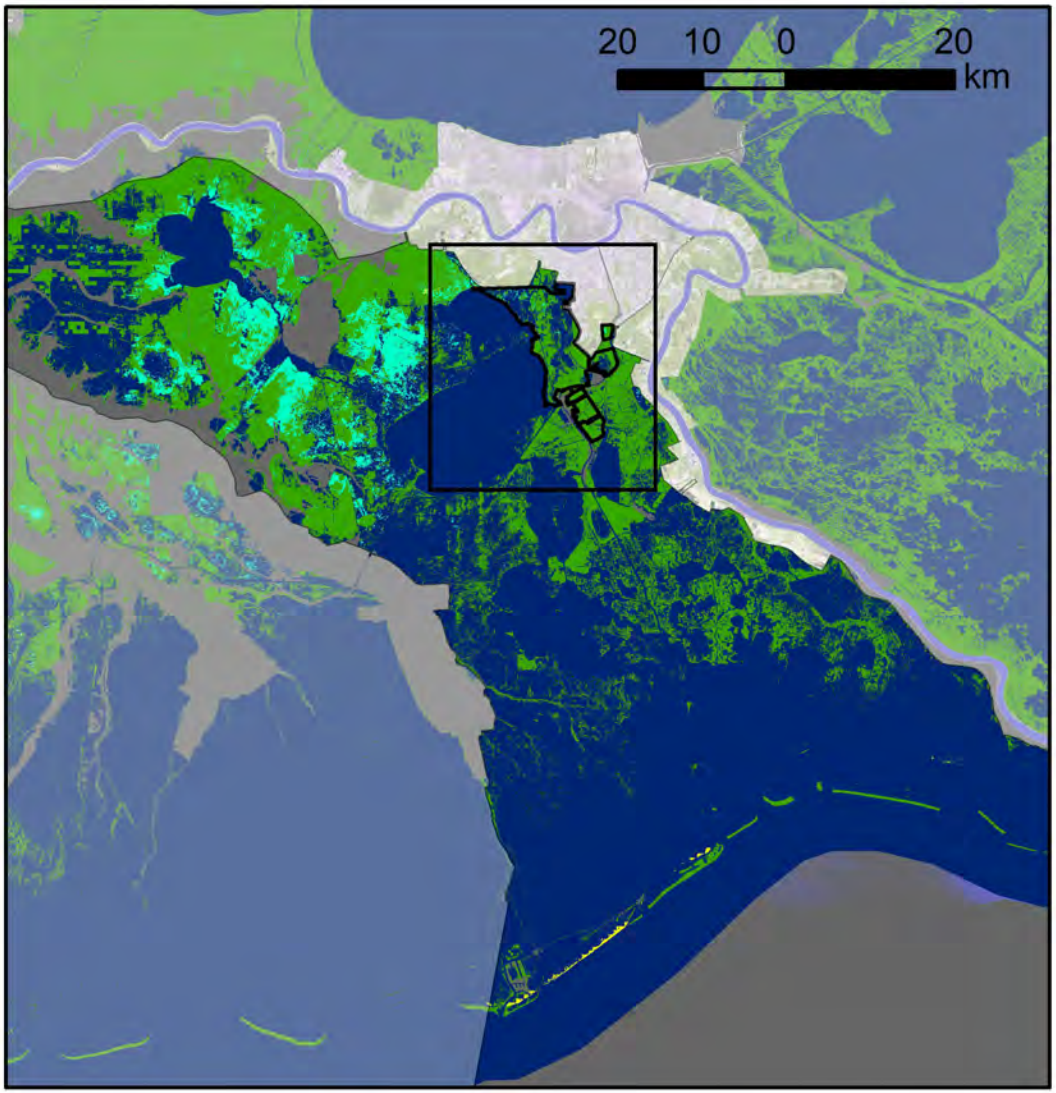
Land Type

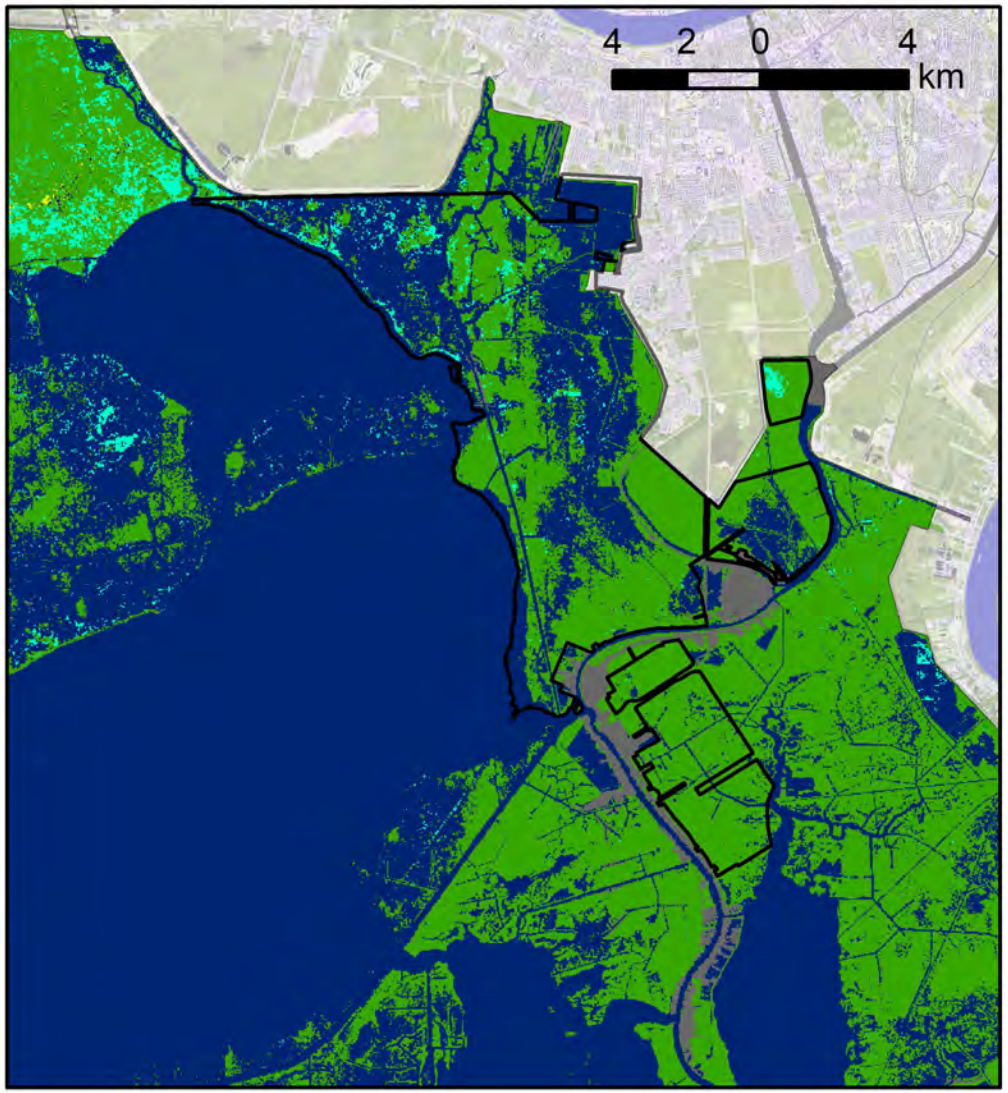
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S09 - G803
High
Both Diversions
Year 32

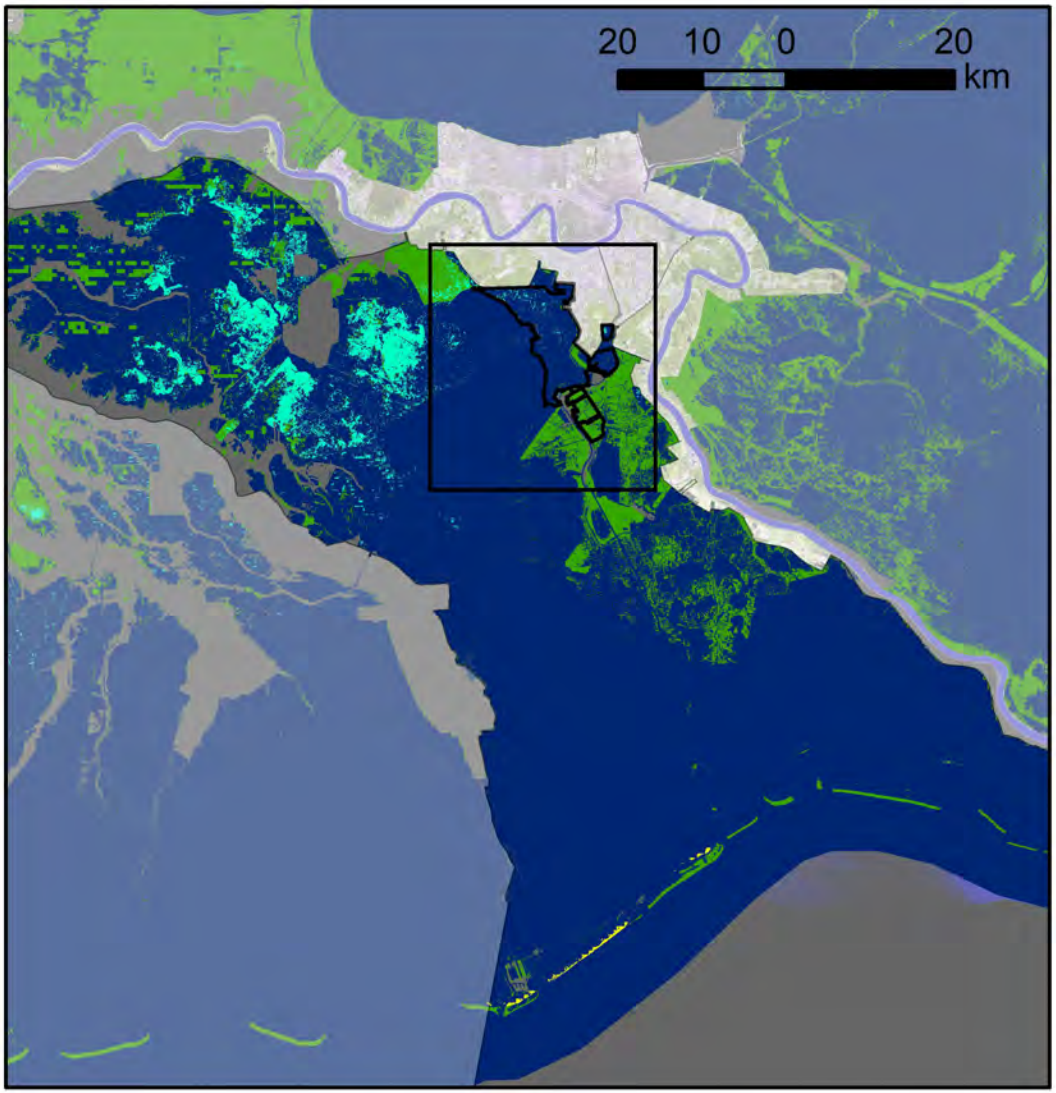
Land Type

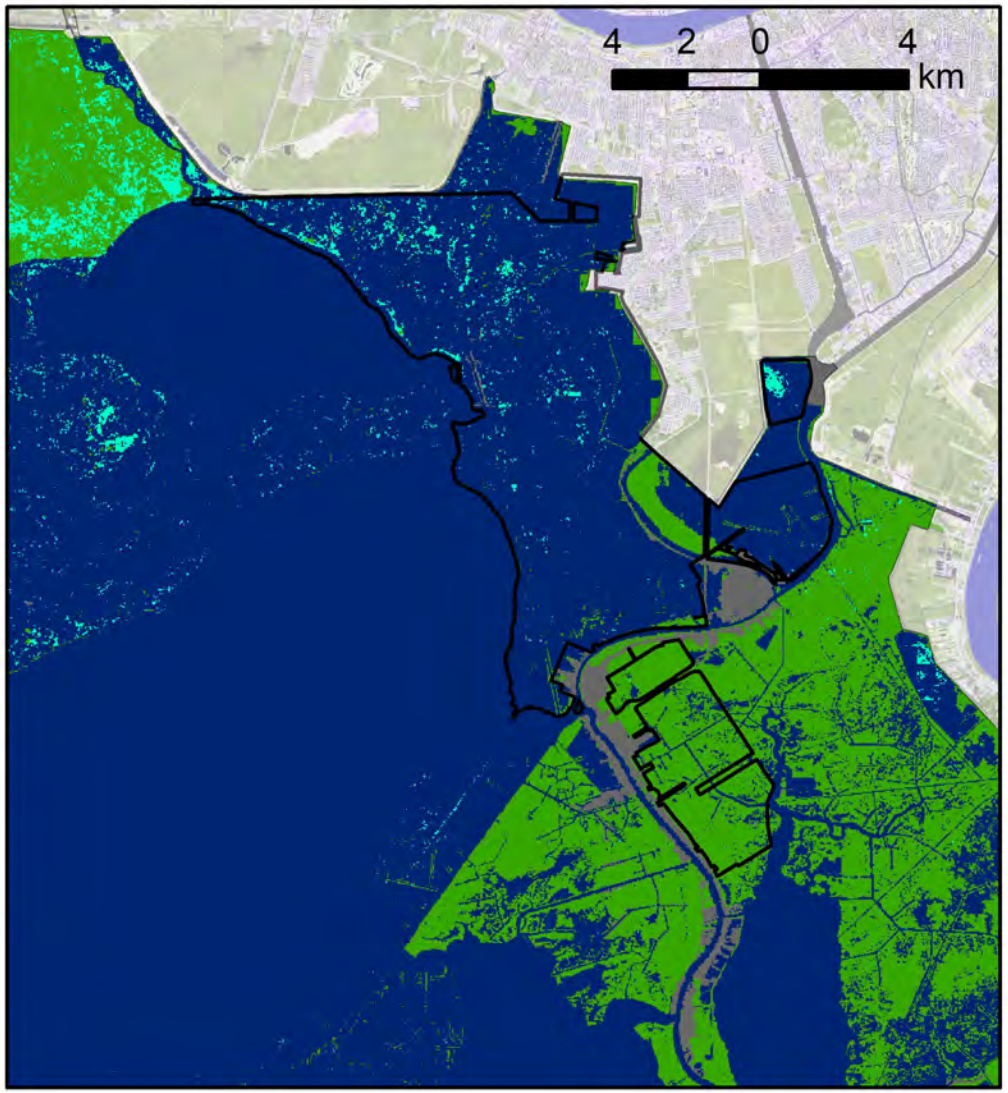
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S09 - G803
High
Both Diversions
Year 42

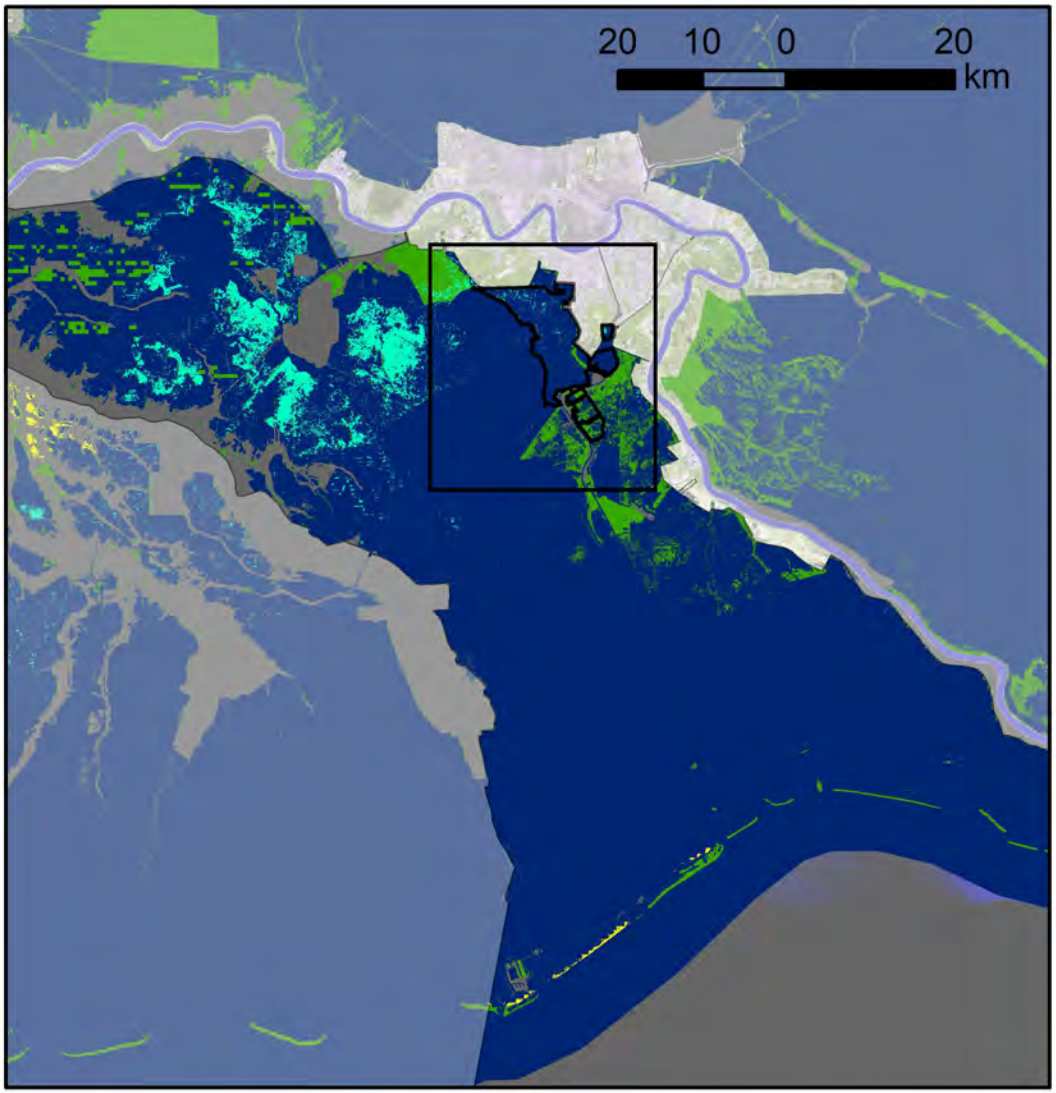
Land Type

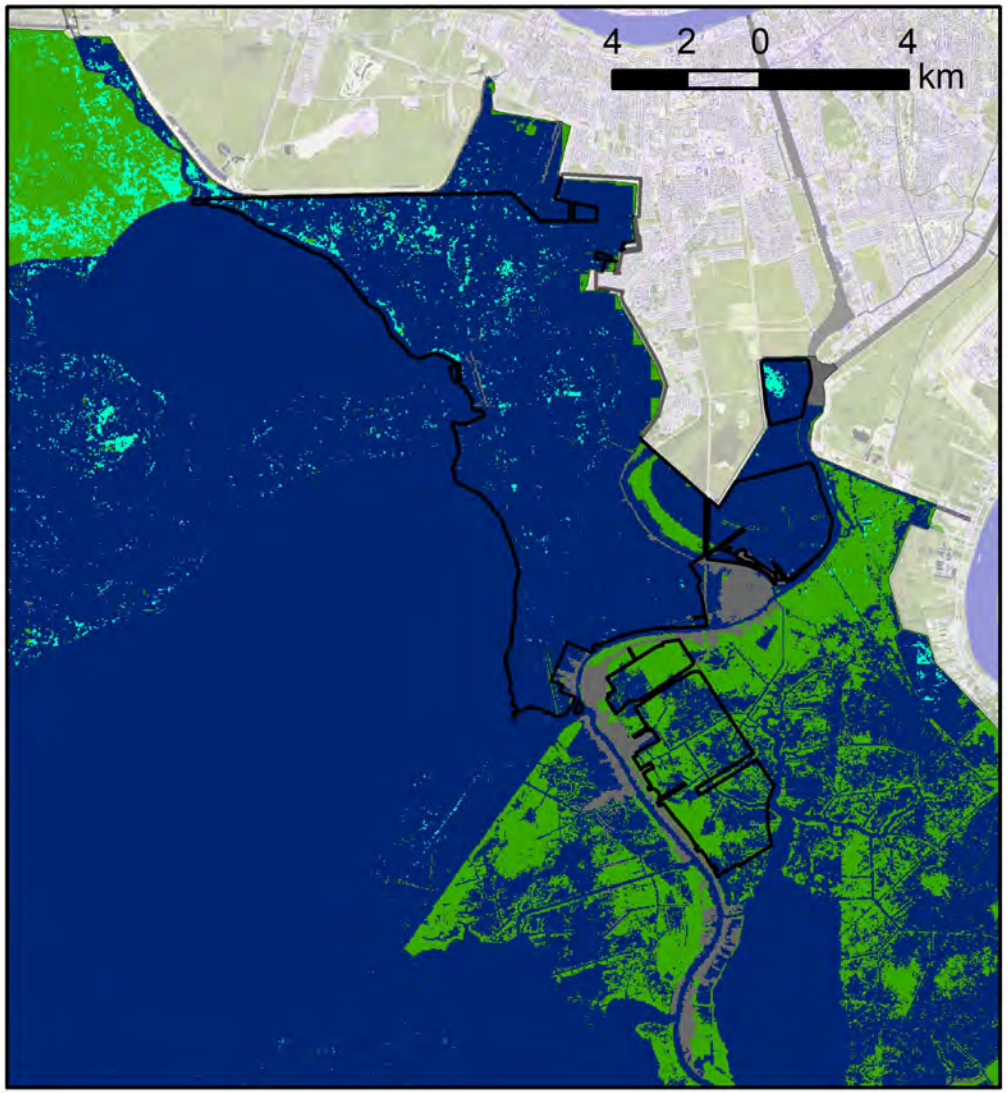
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol







S09 - G803
High
Both Diversions
Year 51

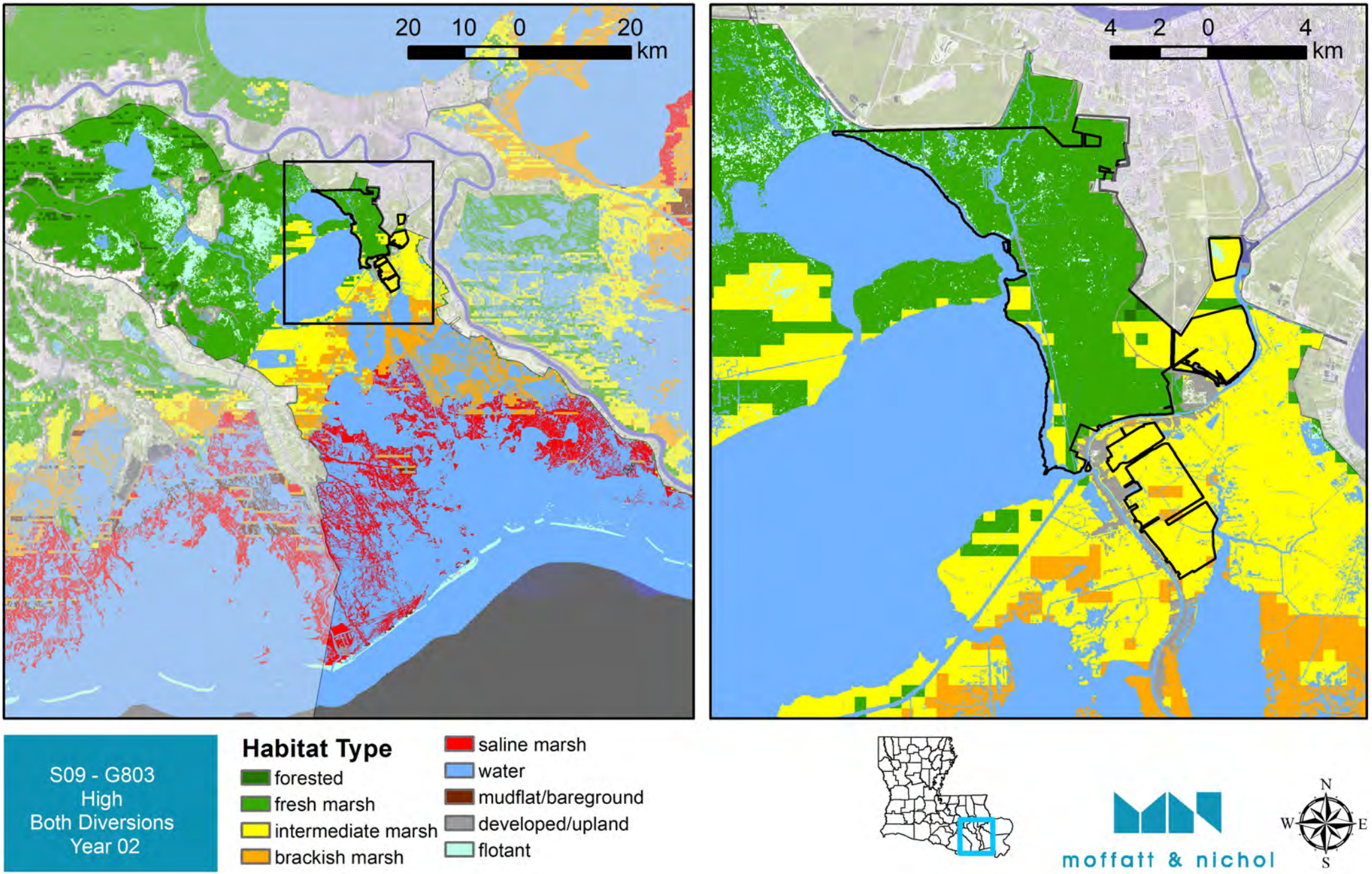
Land Type

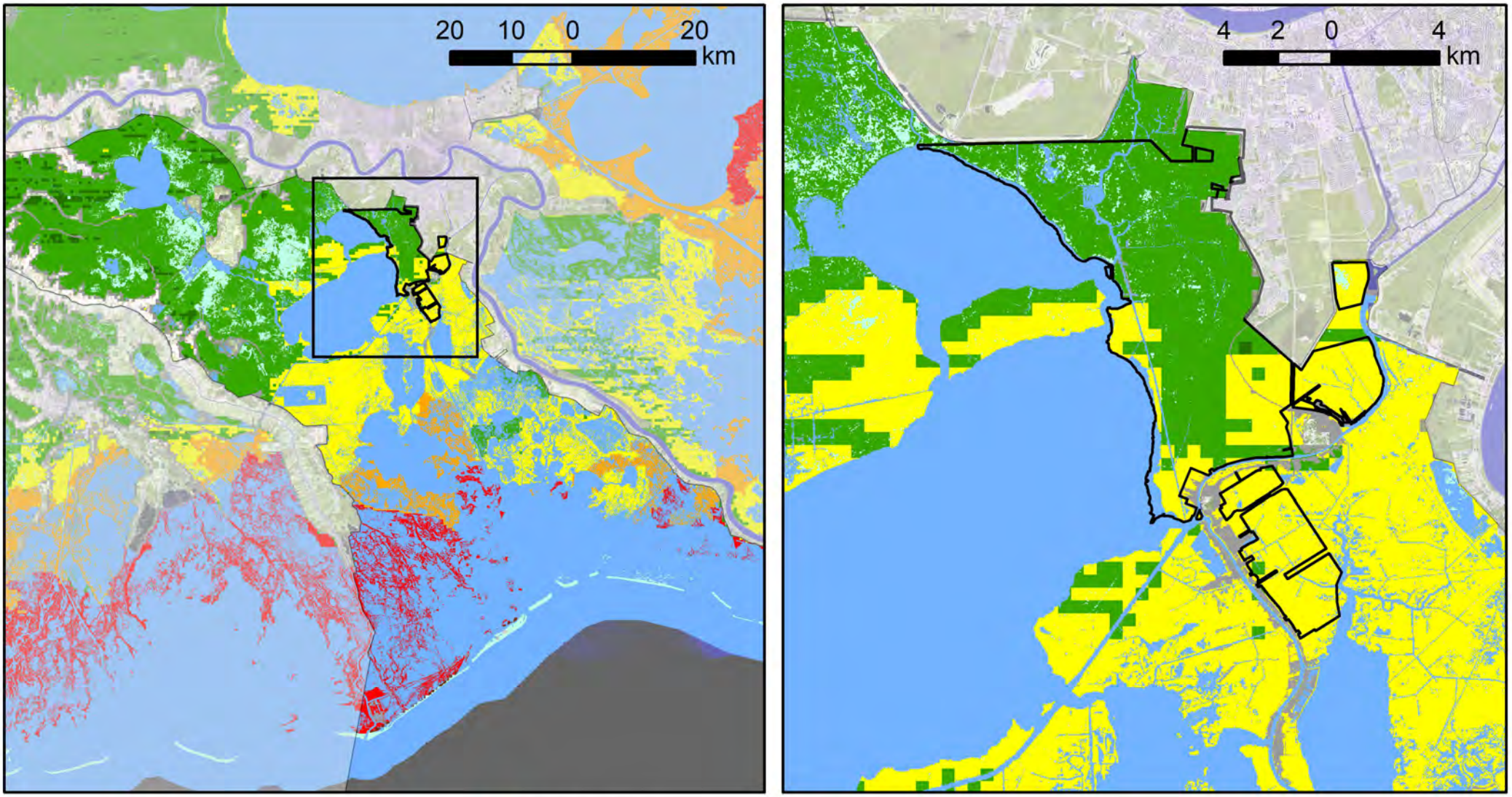
- vegetated land
- water
- unvegetated bare ground
- developed land (not modeled)
- floating marsh



moffatt & nichol




20 10 0 20
km
4 2 0 4
km
S09 - G803
High
Both Diversions
Year 02
Habitat Type
forested
fresh marsh
intermediate marsh
brackish marsh
saline marsh
water
mudflat/bareground
developed/upland
flotant
moffatt & nichol
N
W
E
S



S09 - G803
High
Both Diversions
Year 12

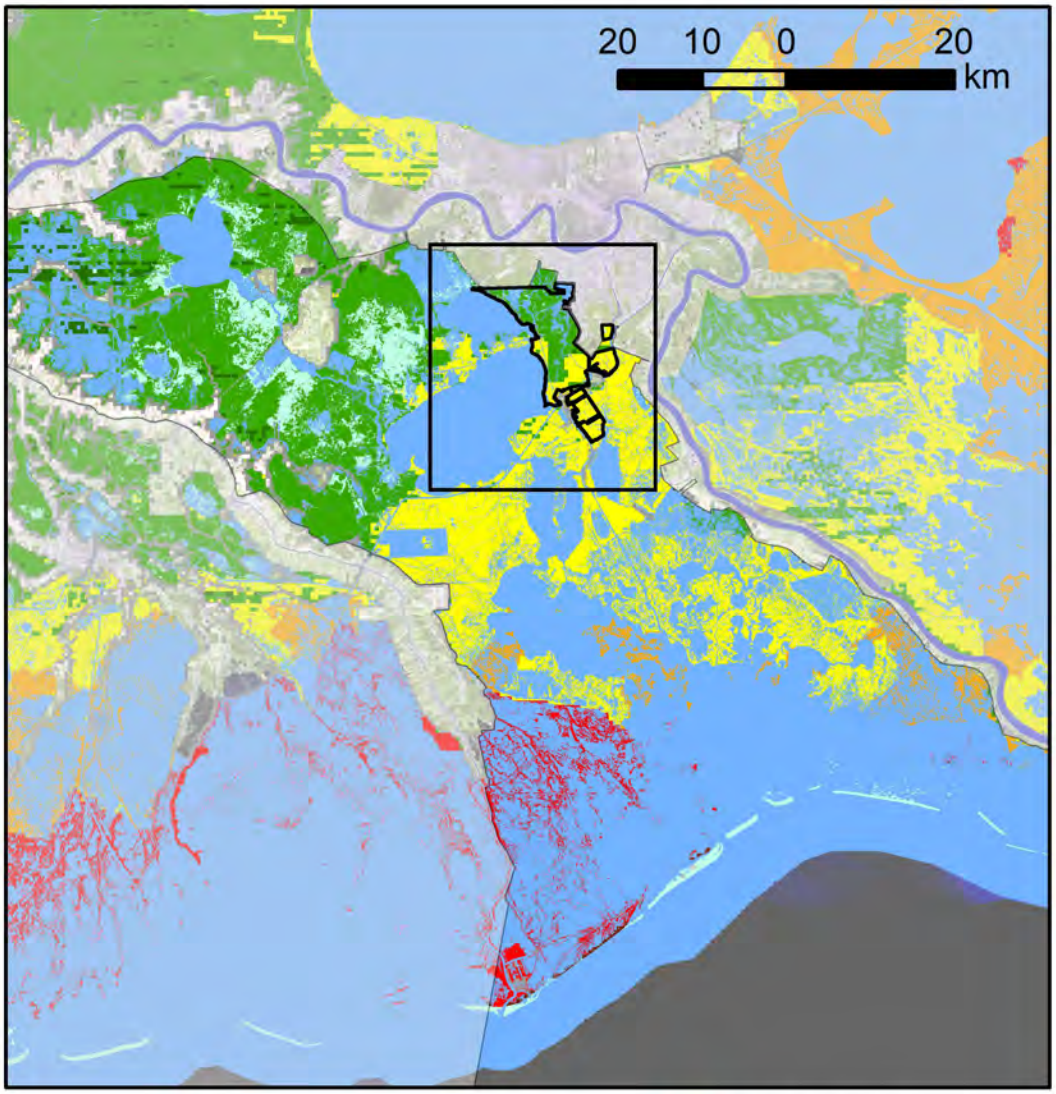
Habitat Type

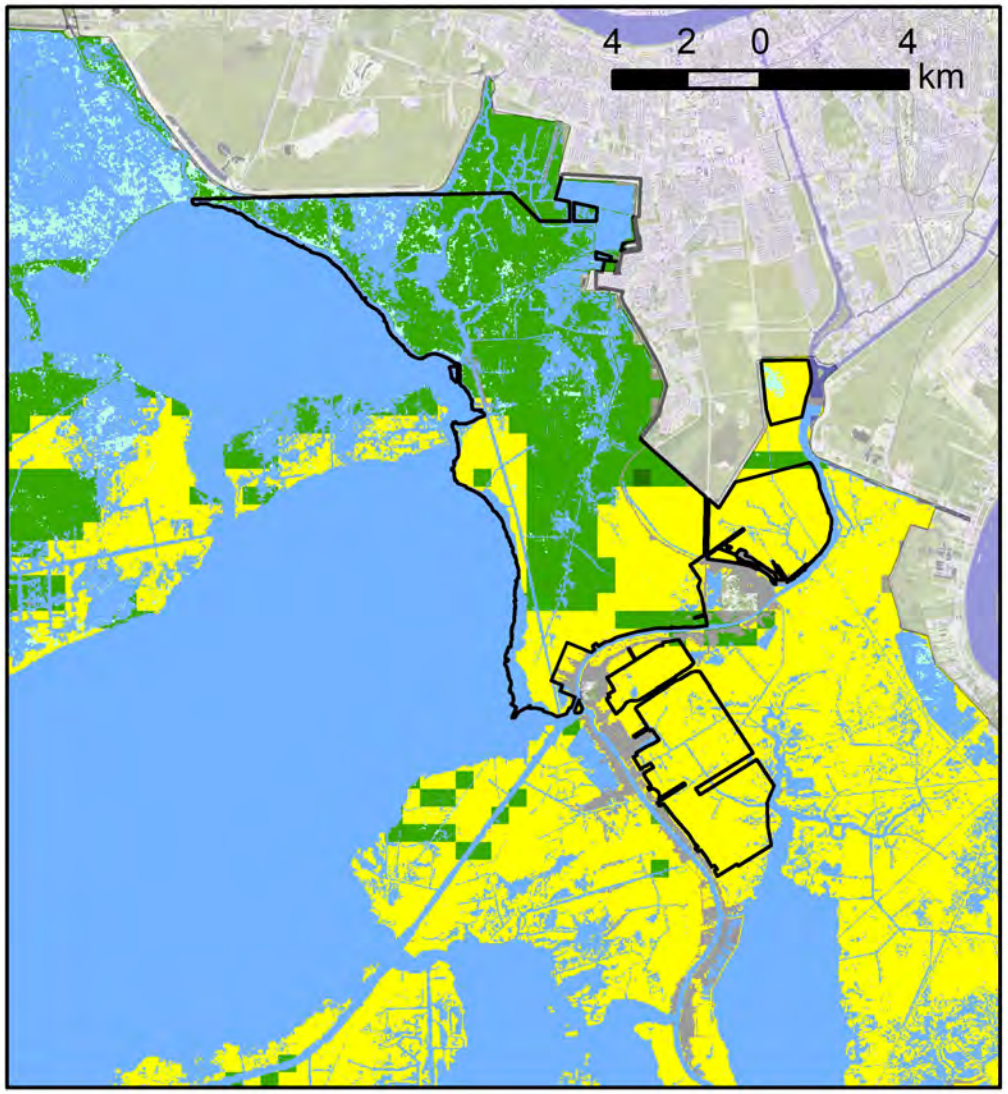
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S09 - G803
High
Both Diversions
Year 22

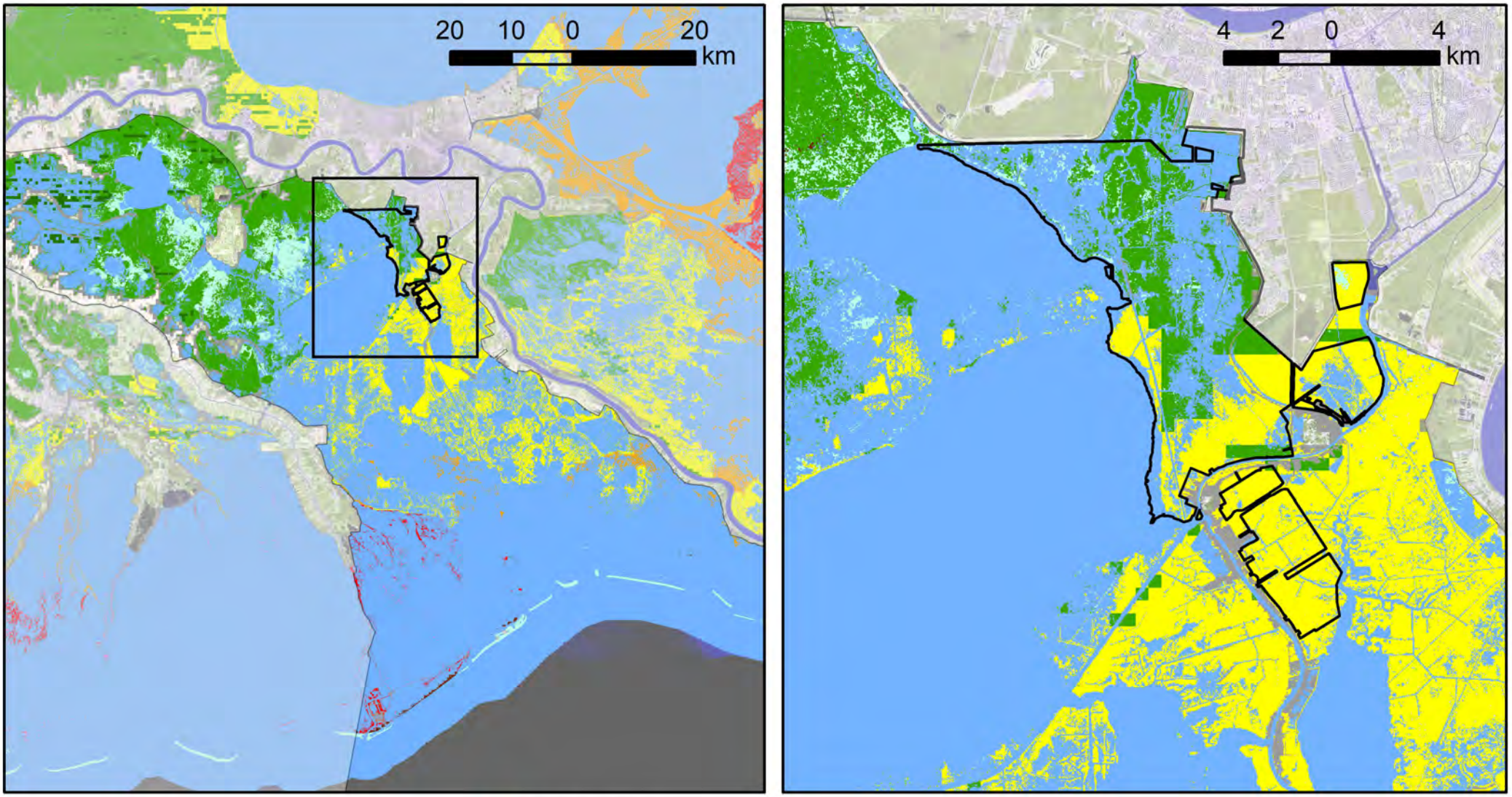
Habitat Type

- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol





S09 - G803
High
Both Diversions
Year 32

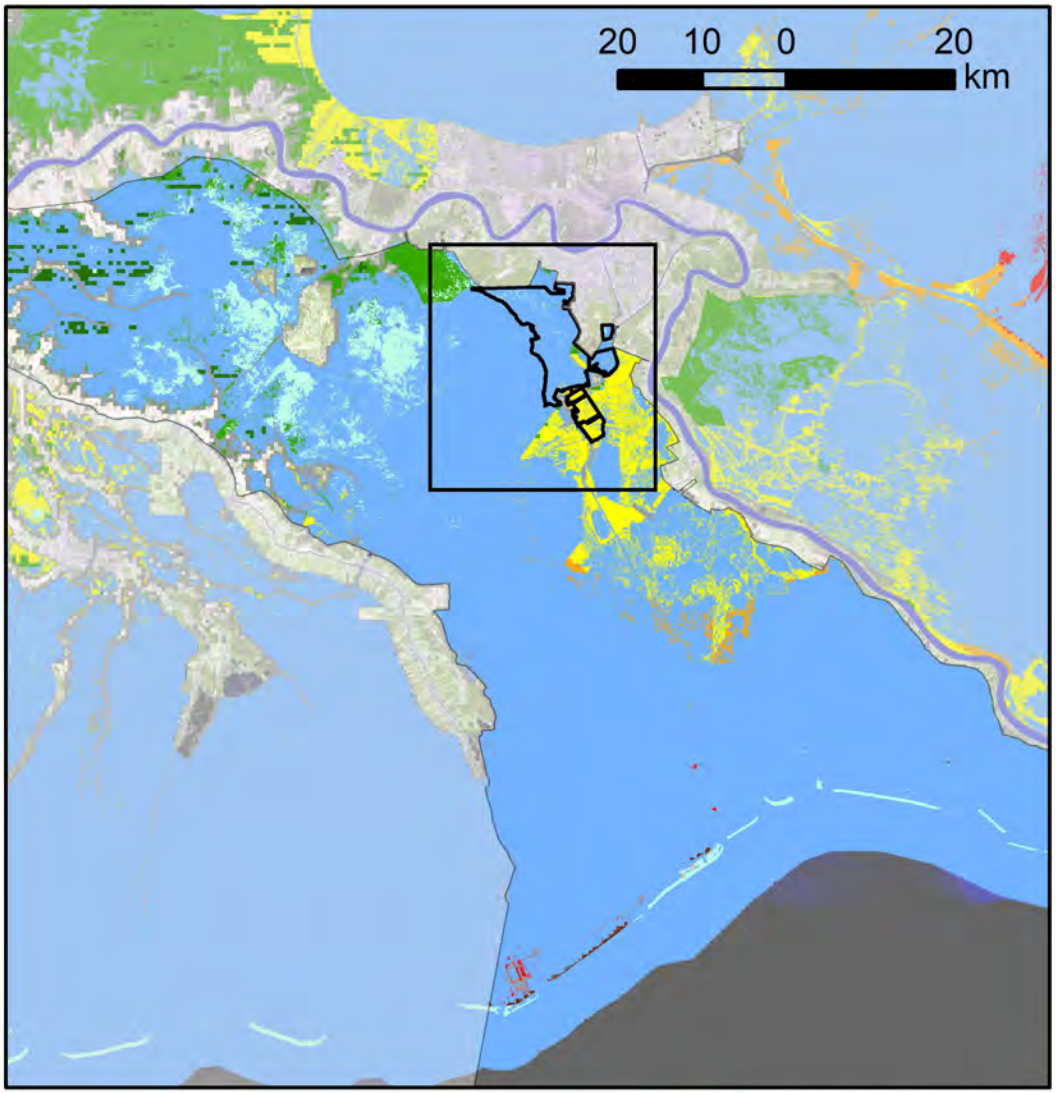
Habitat Type

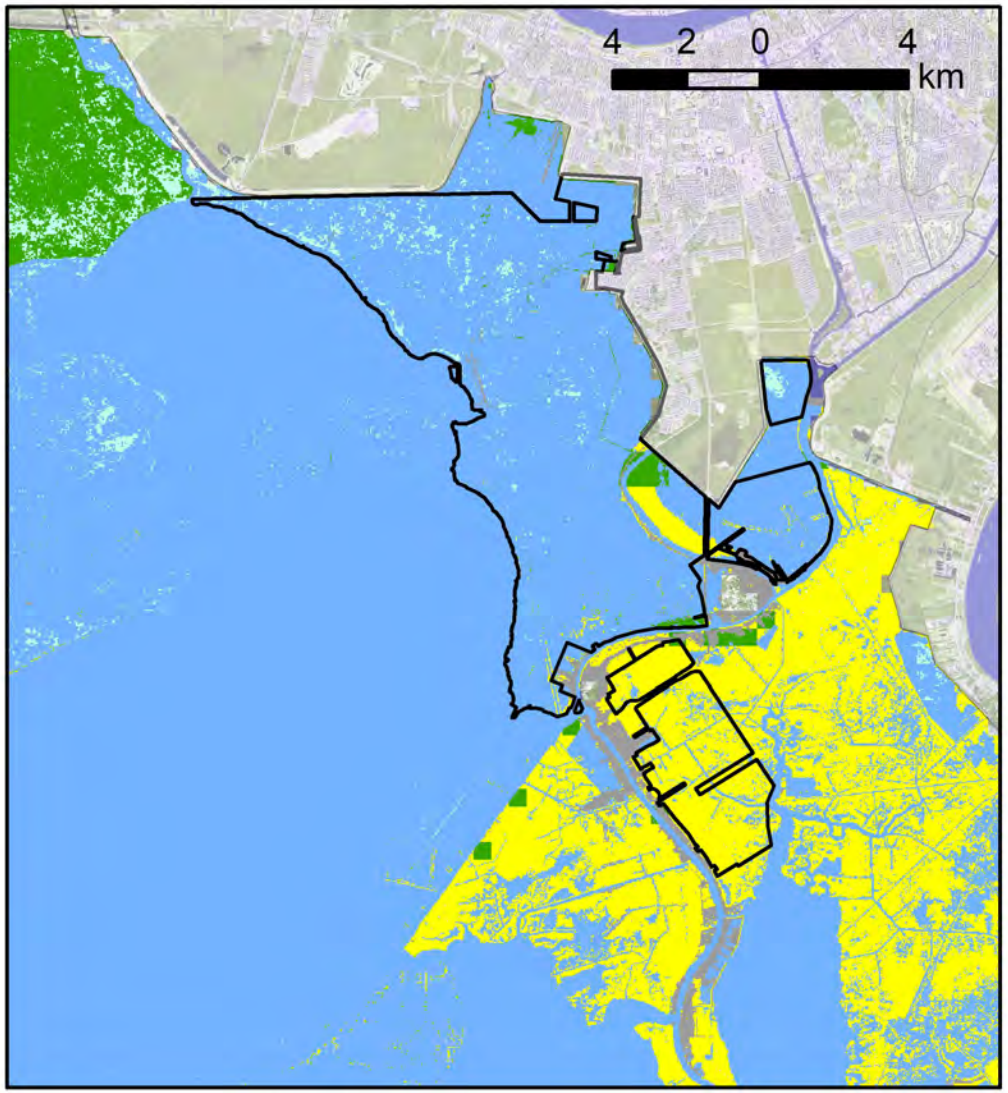
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol

N
W E
S





S09 - G803
High
Both Diversions
Year 42

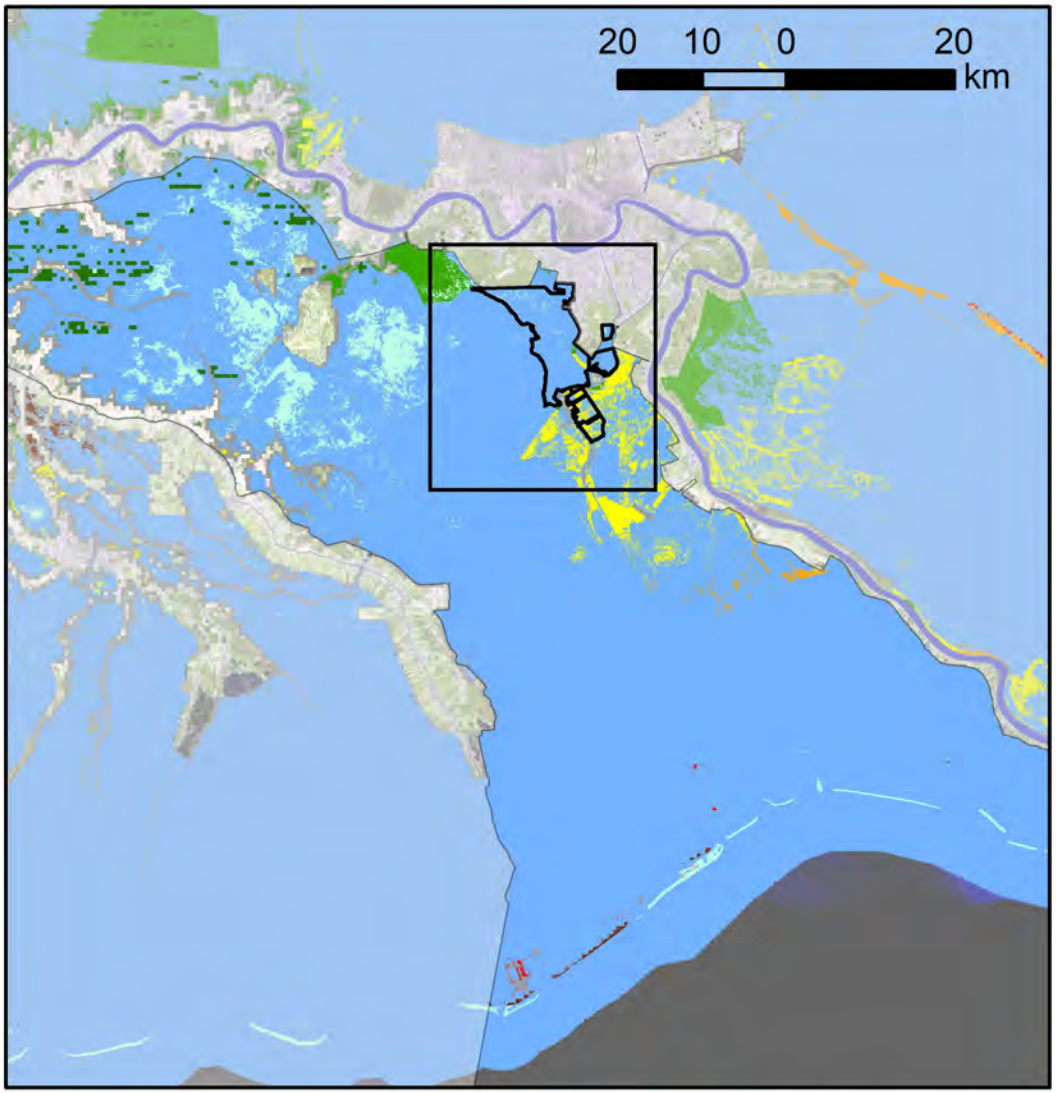
Habitat Type

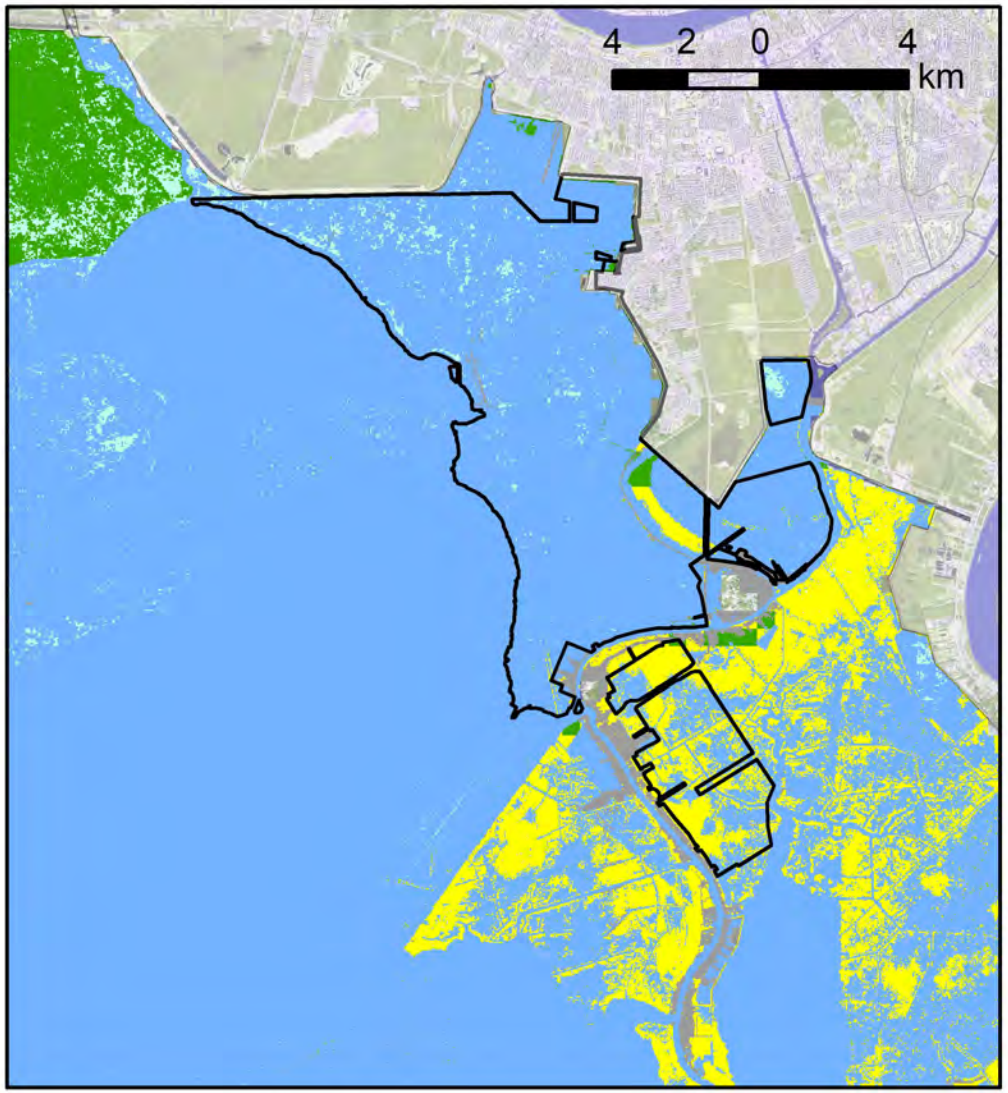
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S09 - G803
High
Both Diversions
Year 51

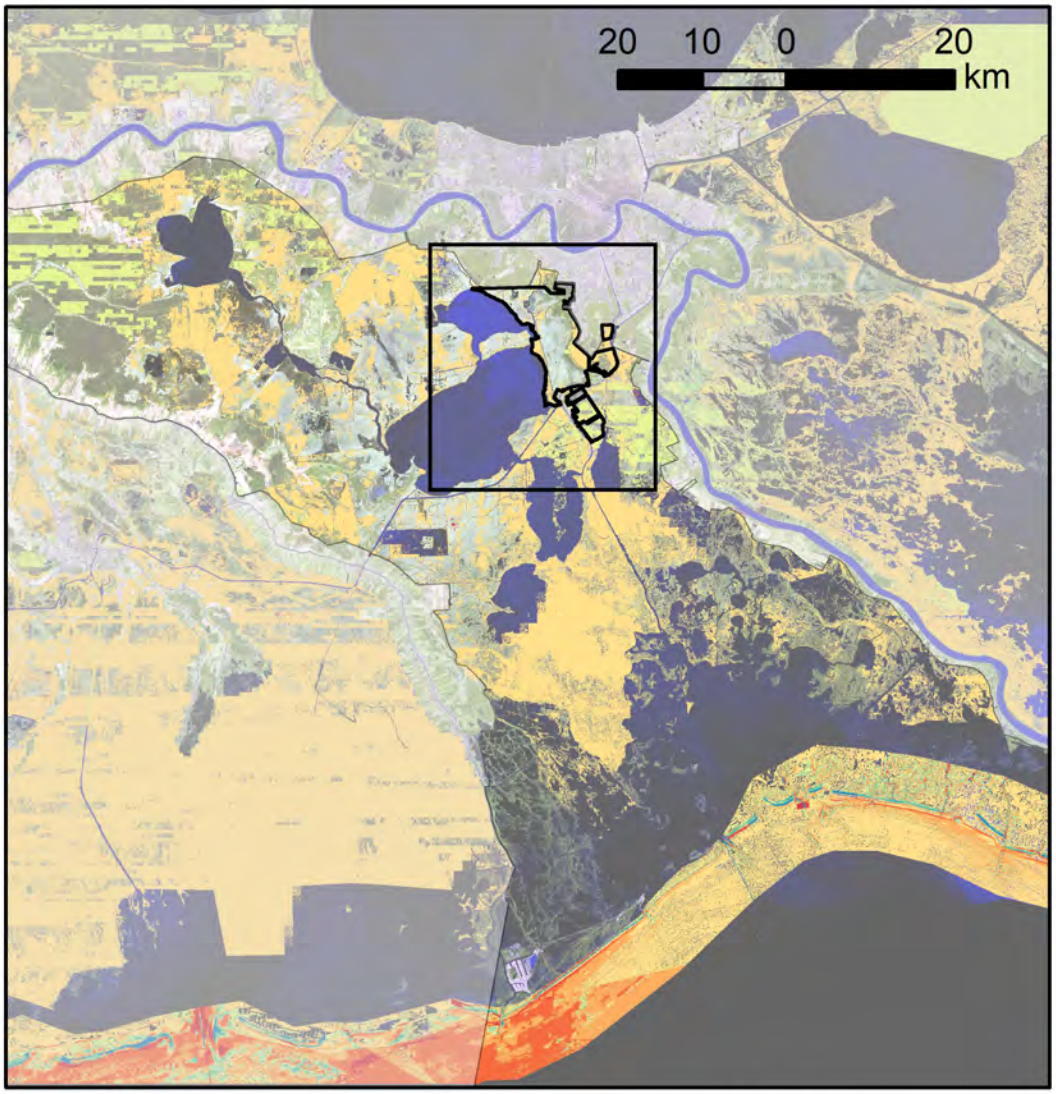
Habitat Type

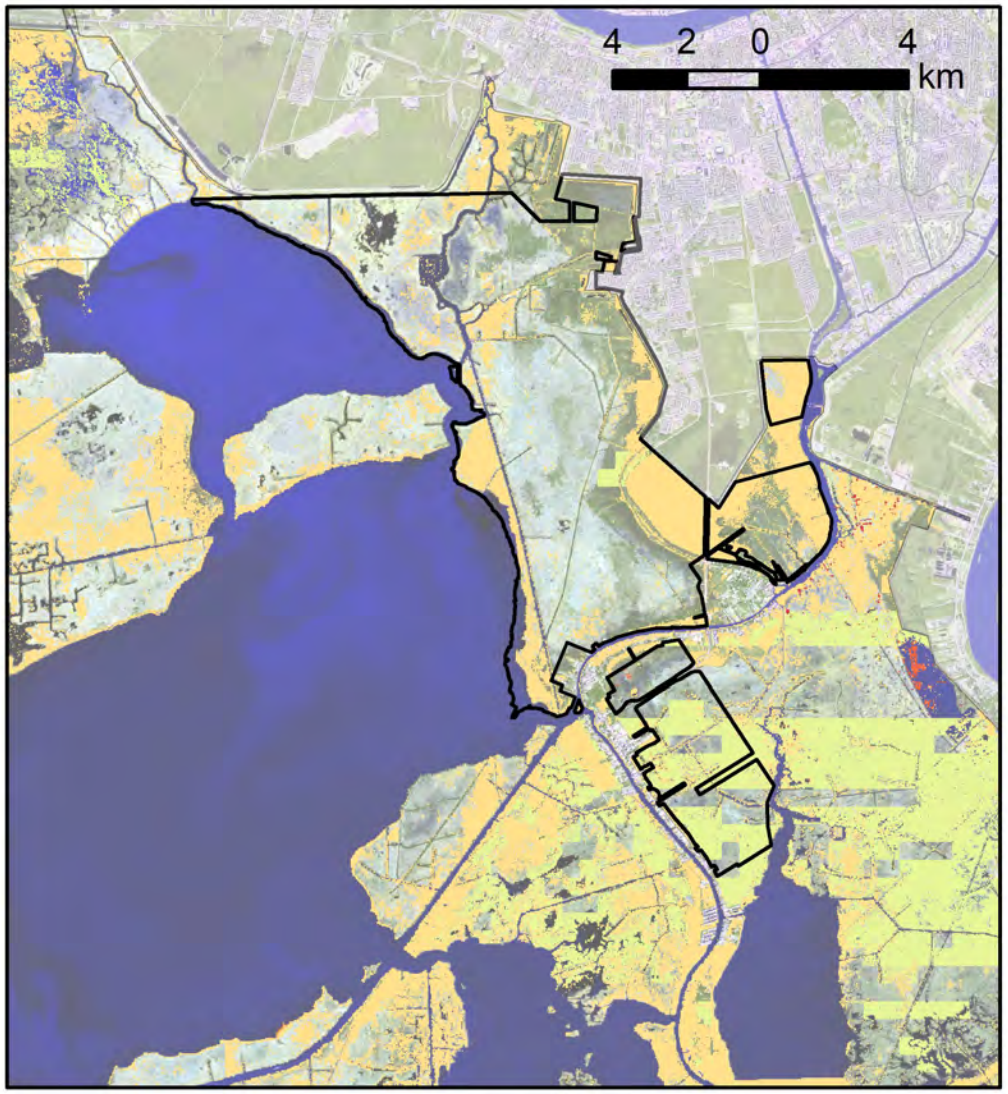
- forested
- fresh marsh
- intermediate marsh
- brackish marsh
- saline marsh
- water
- mudflat/bareground
- developed/upland
- flotant



moffatt & nichol







S09 - G803
High
Both Diversions
Year 02

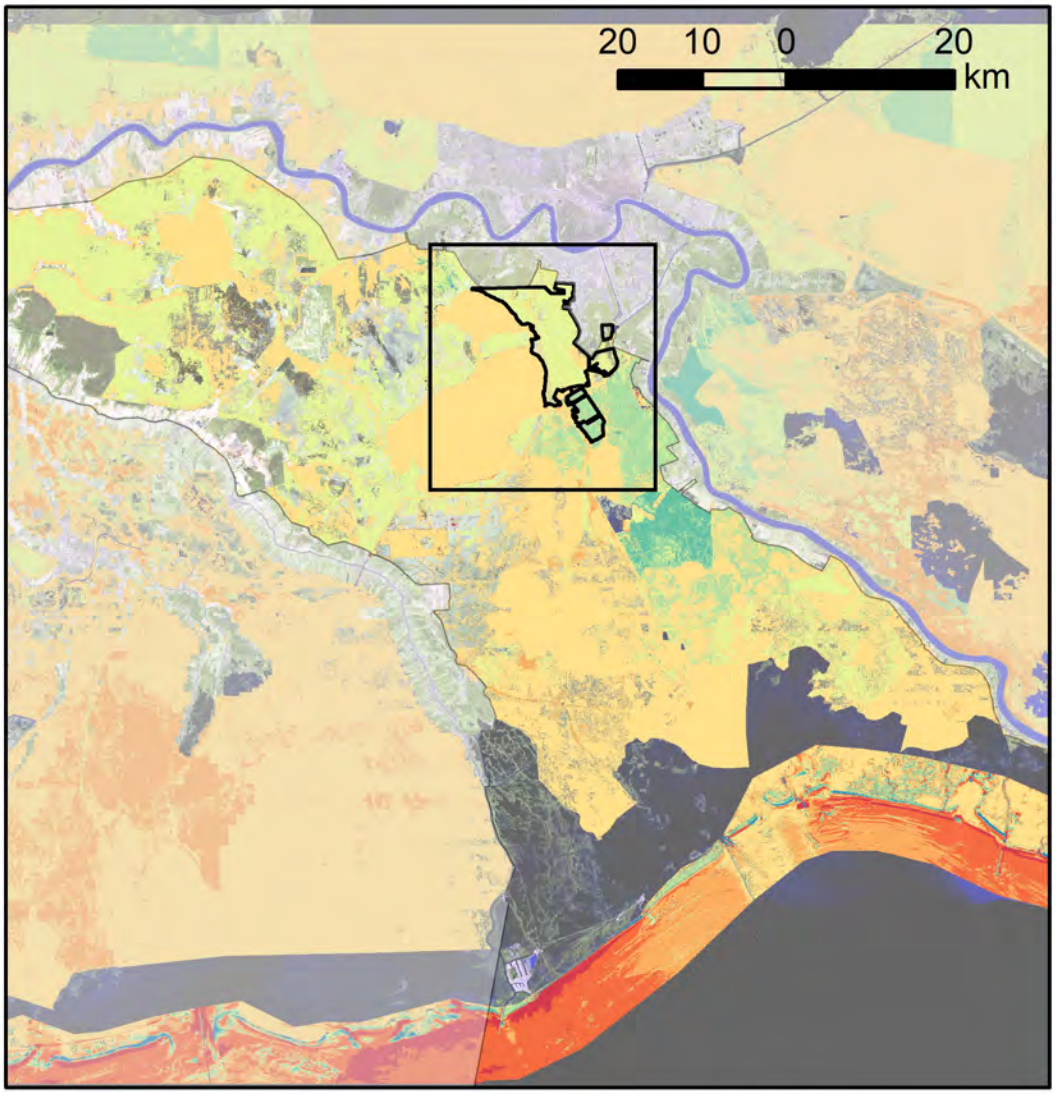
Elev. Change [m]

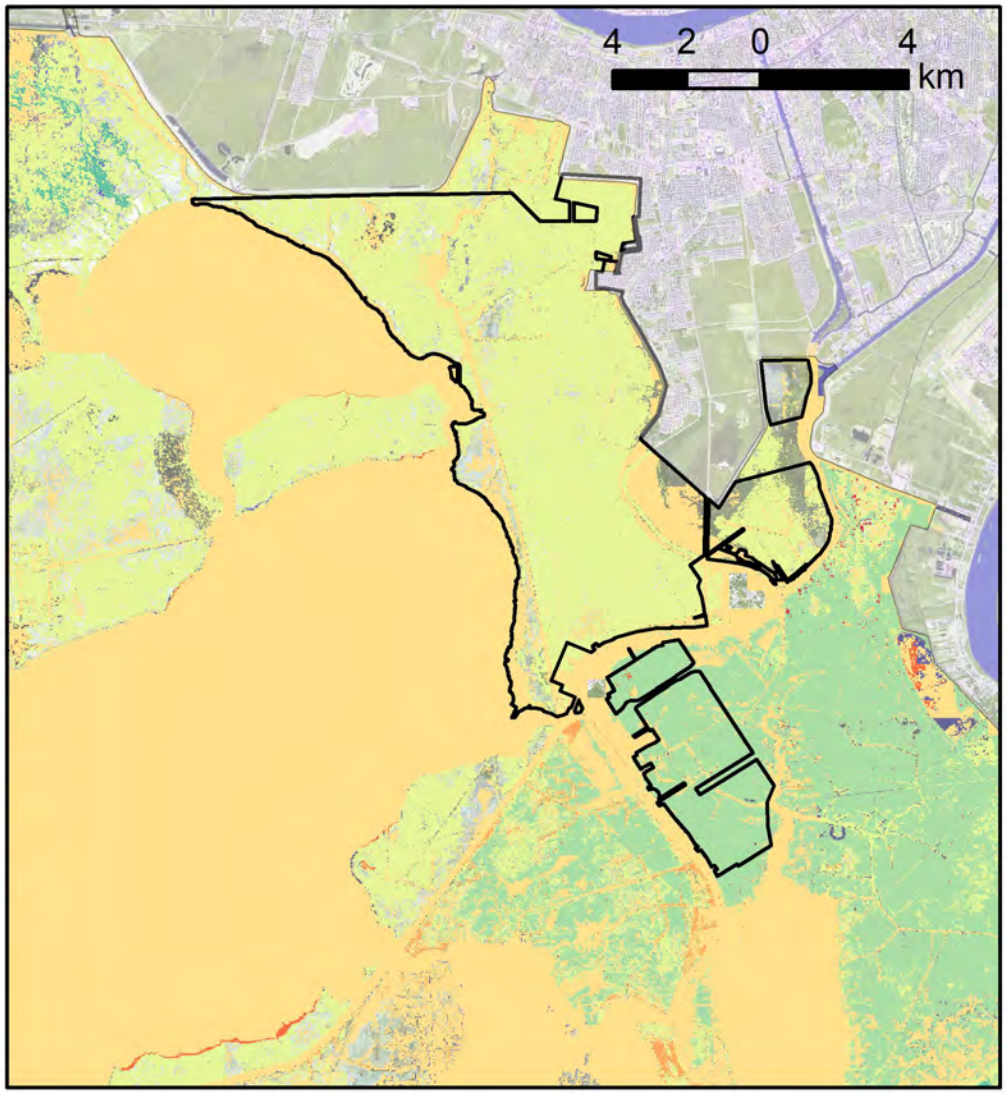
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
W E
S





S09 - G803
High
Both Diversions
Year 12

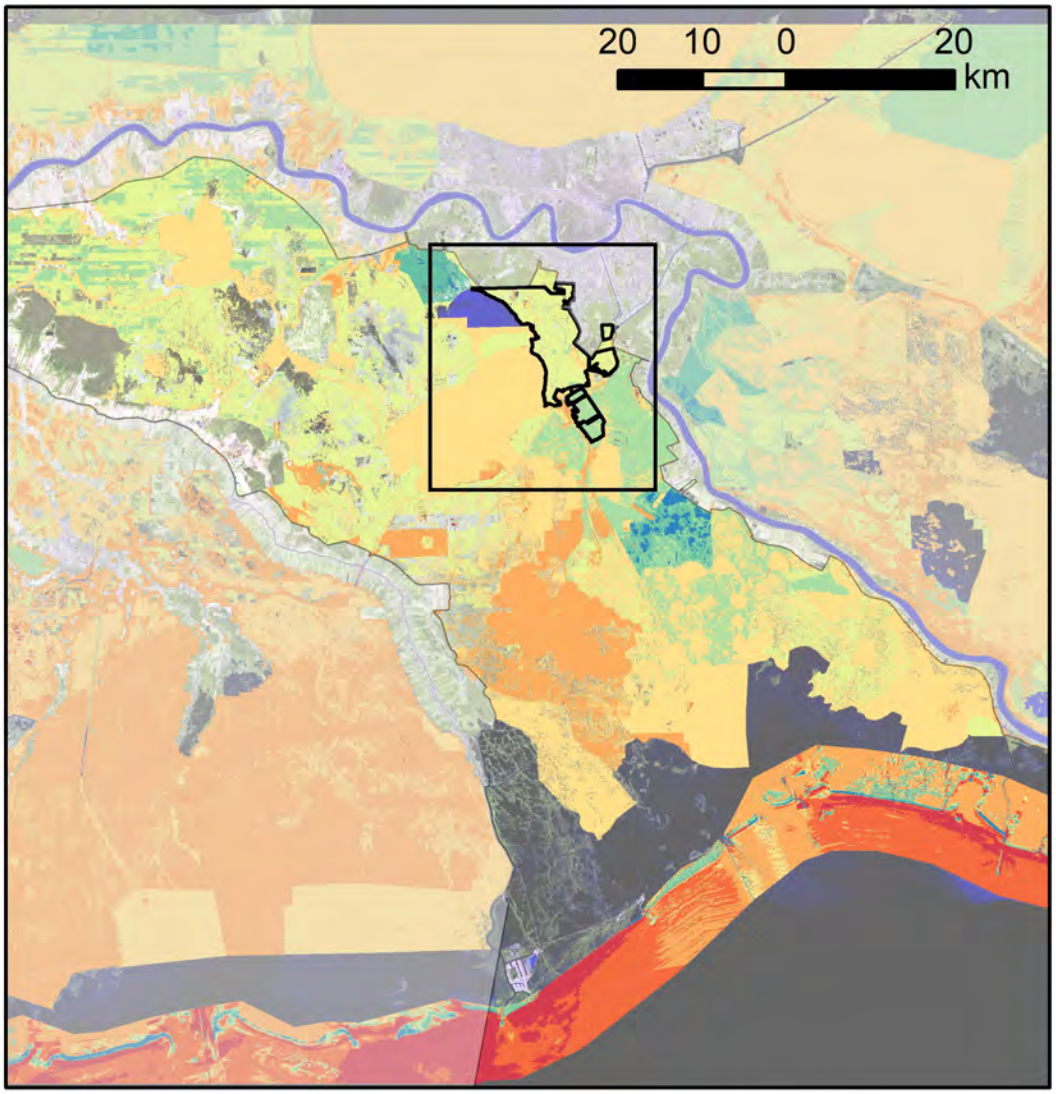
Elev. Change [m]

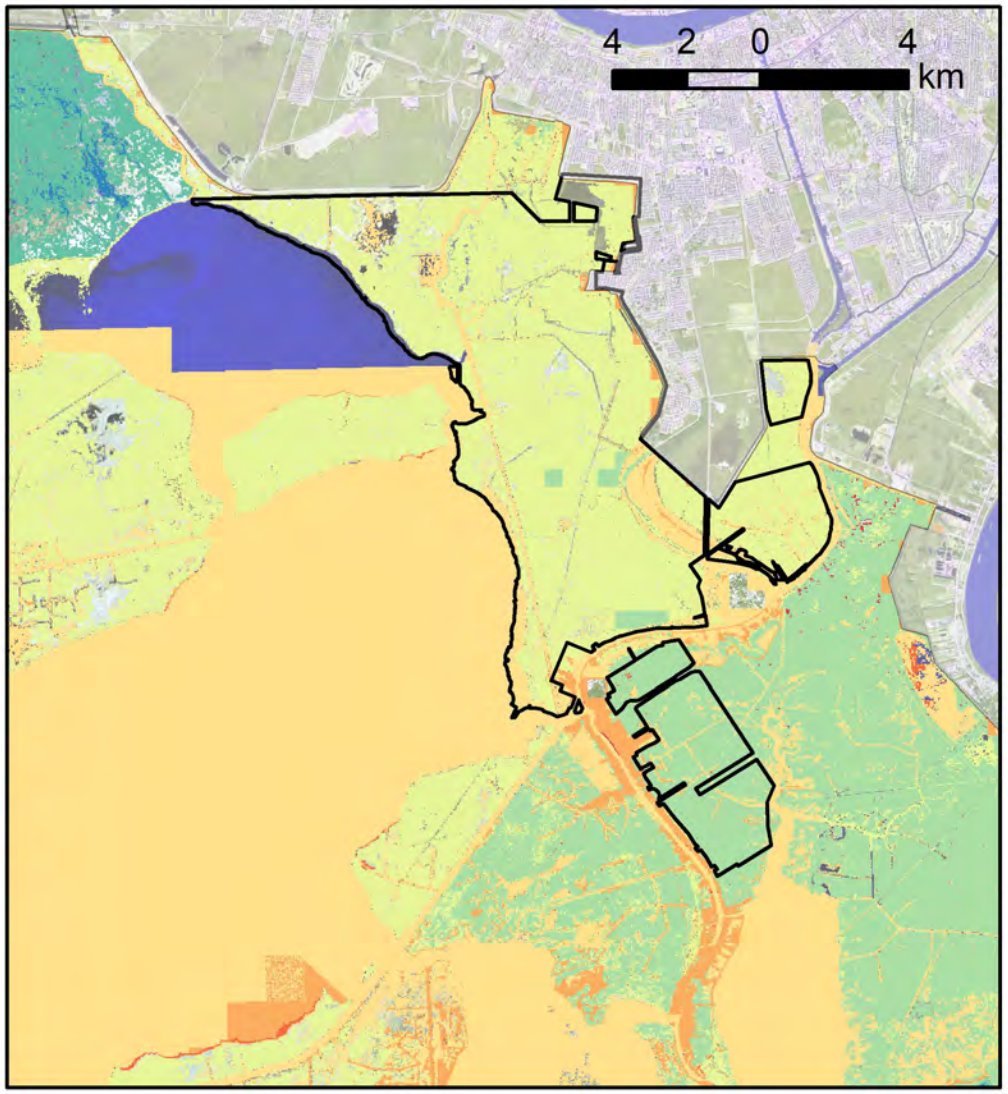
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
W E
S





S09 - G803
High
Both Diversions
Year 22

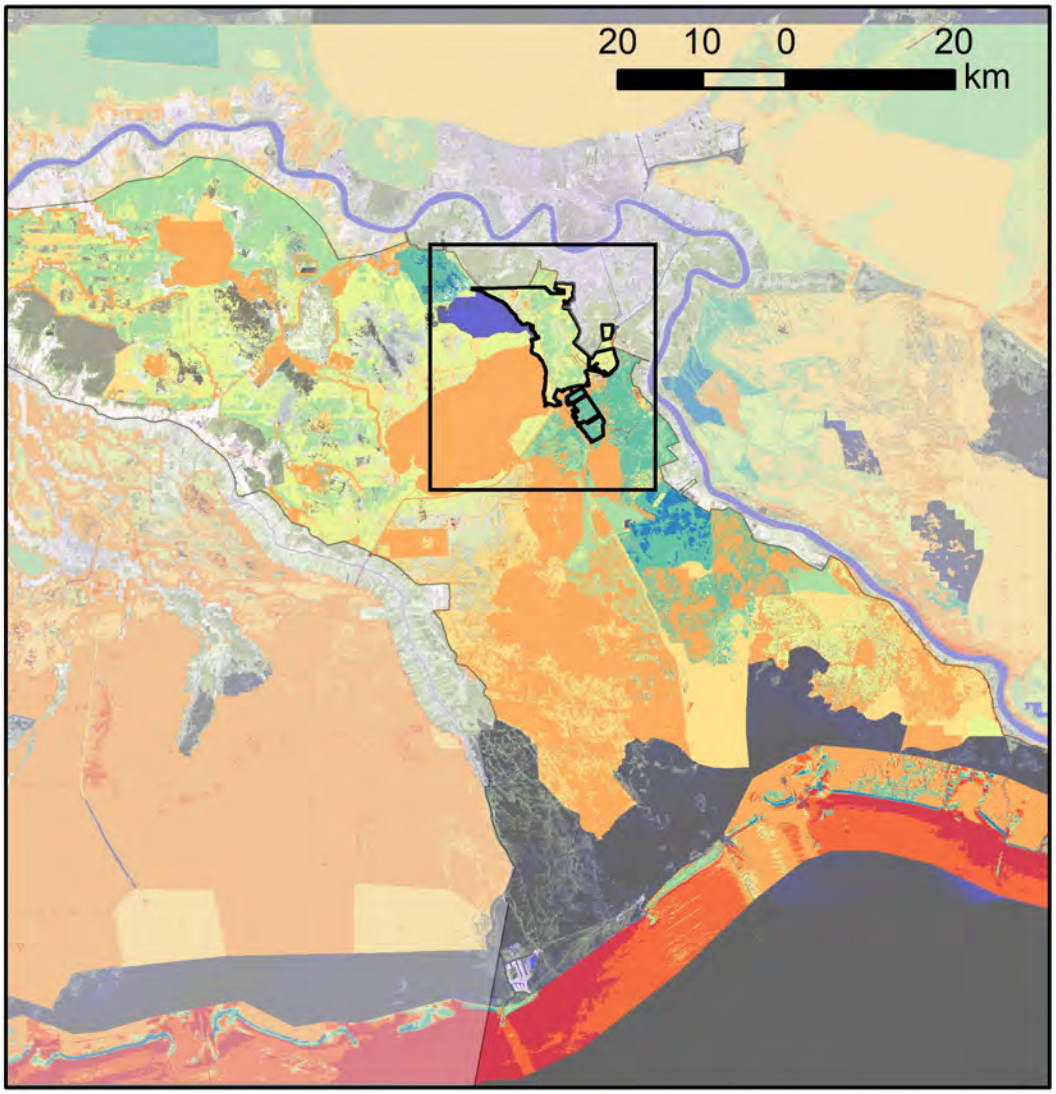
Elev. Change [m]

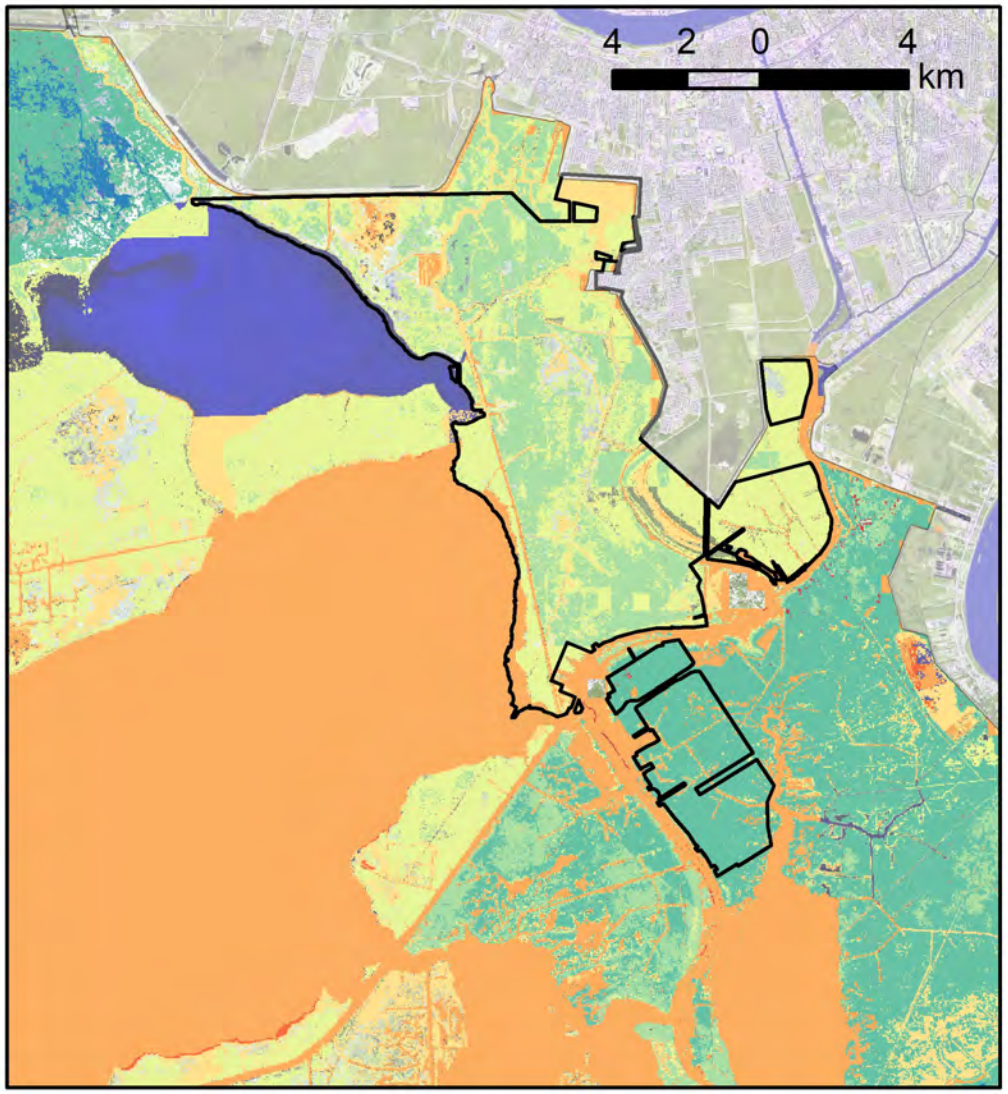
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
W E
S





S09 - G803
High
Both Diversions
Year 32

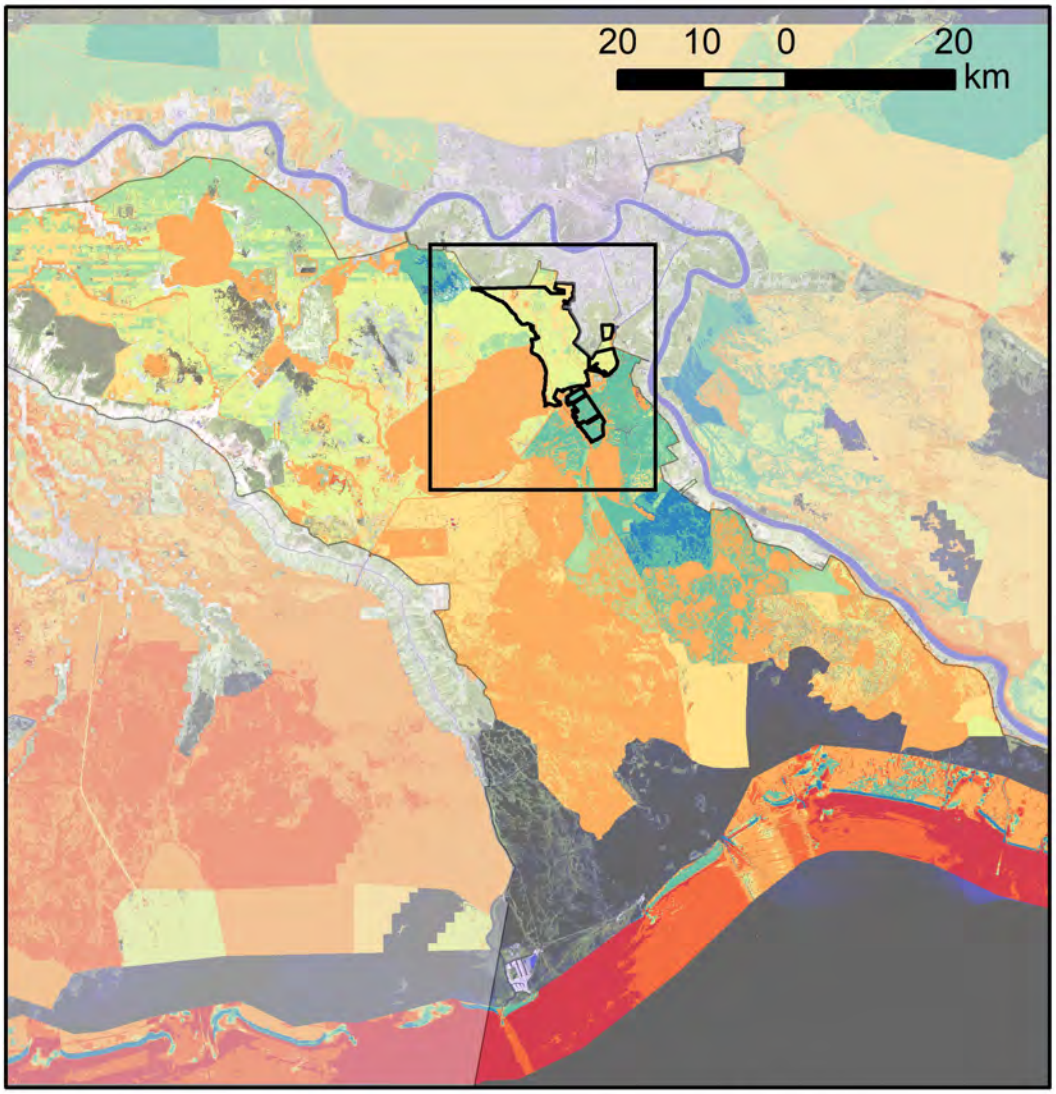
Elev. Change [m]

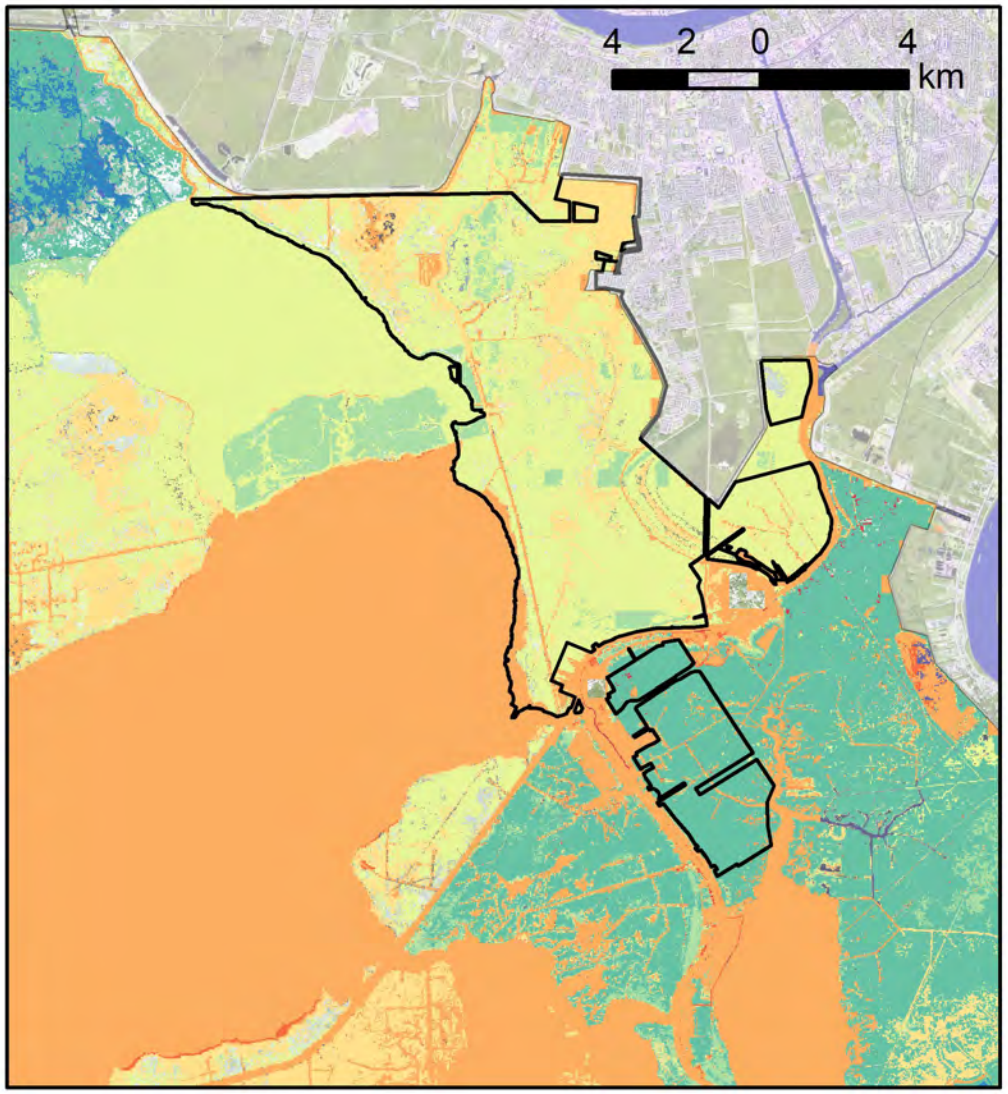
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
W E
S





S09 - G803
High
Both Diversions
Year 42

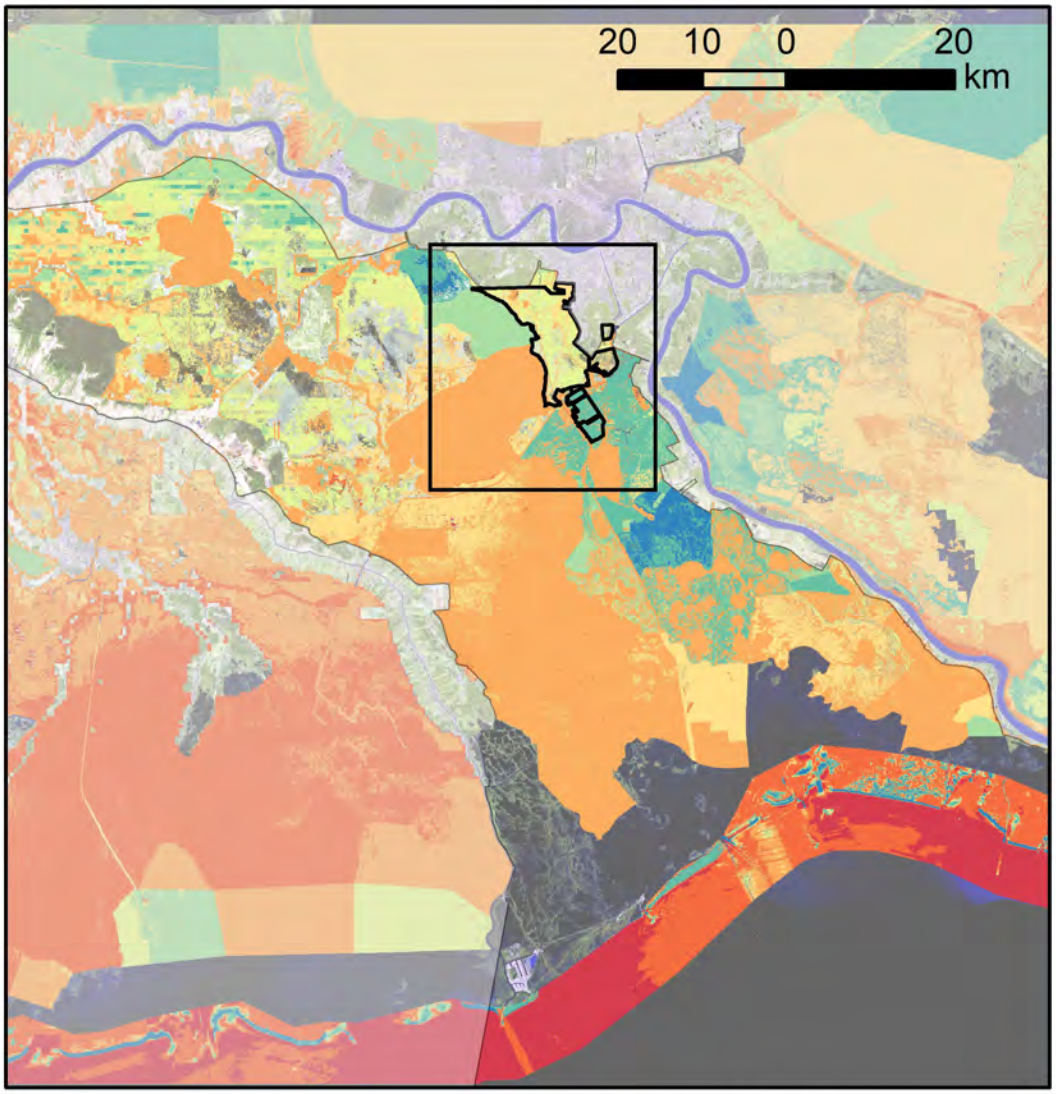
Elev. Change [m]

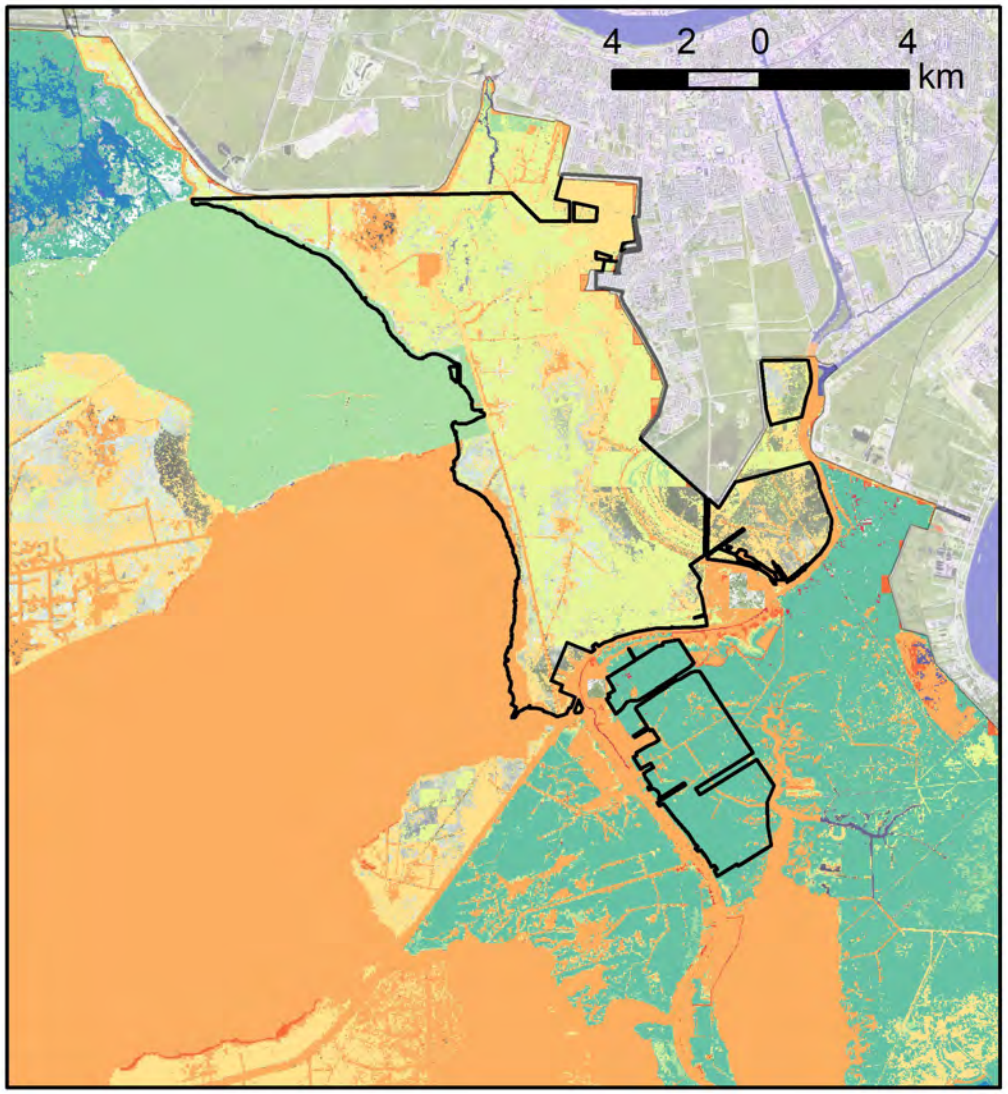
- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



moffatt & nichol

N
W E
S





S09 - G803
High
Both Diversions
Year 51

Elev. Change [m]

- <-1
- -1 - -0.3
- -0.3 - -0.1
- -0.1 - -0.01
- -0.1 - 0.01
- 0.01 - 0.1
- 0.1 - 0.3
- 0.3 - 1
- >1



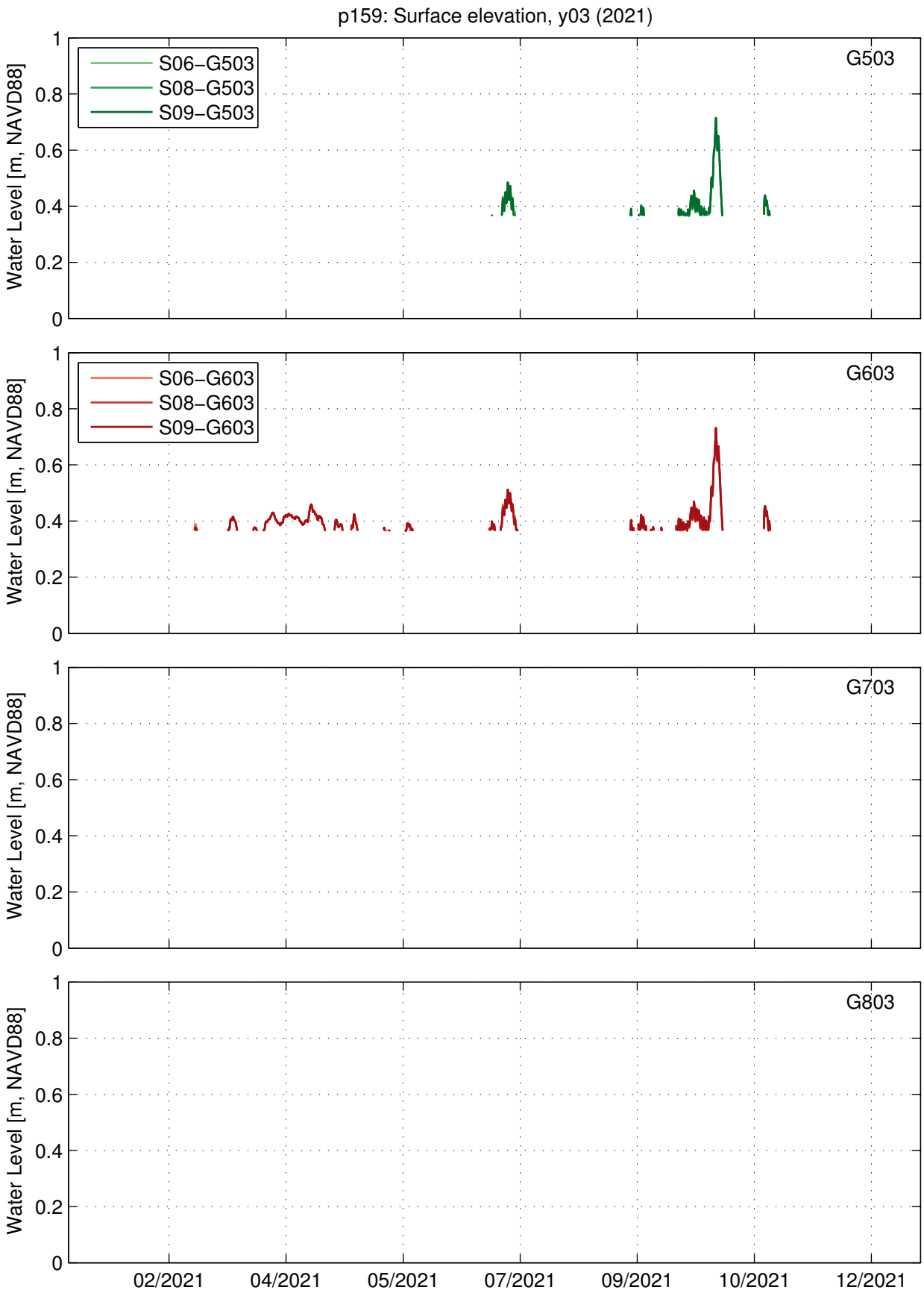
moffatt & nichol

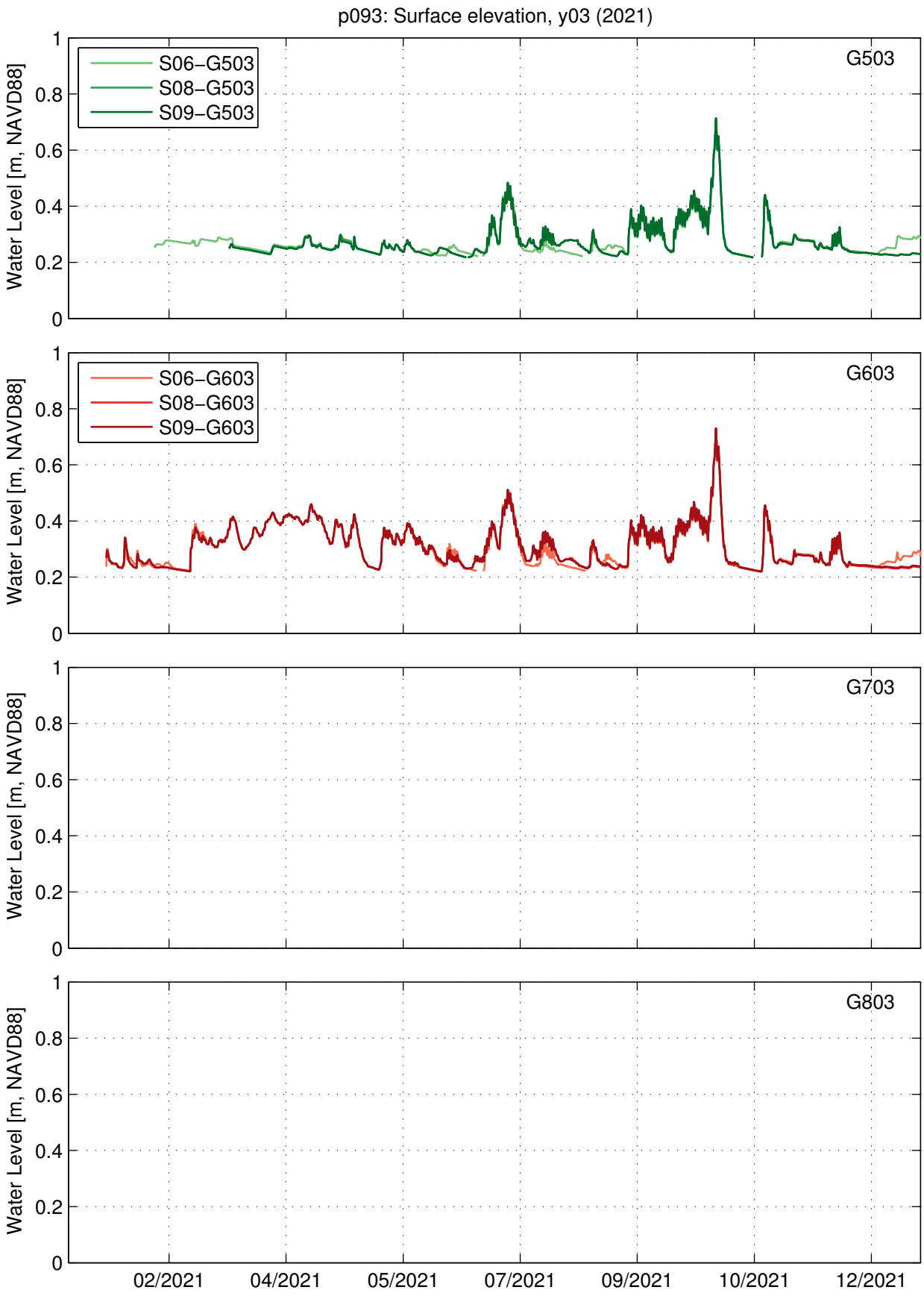
N
W E
S

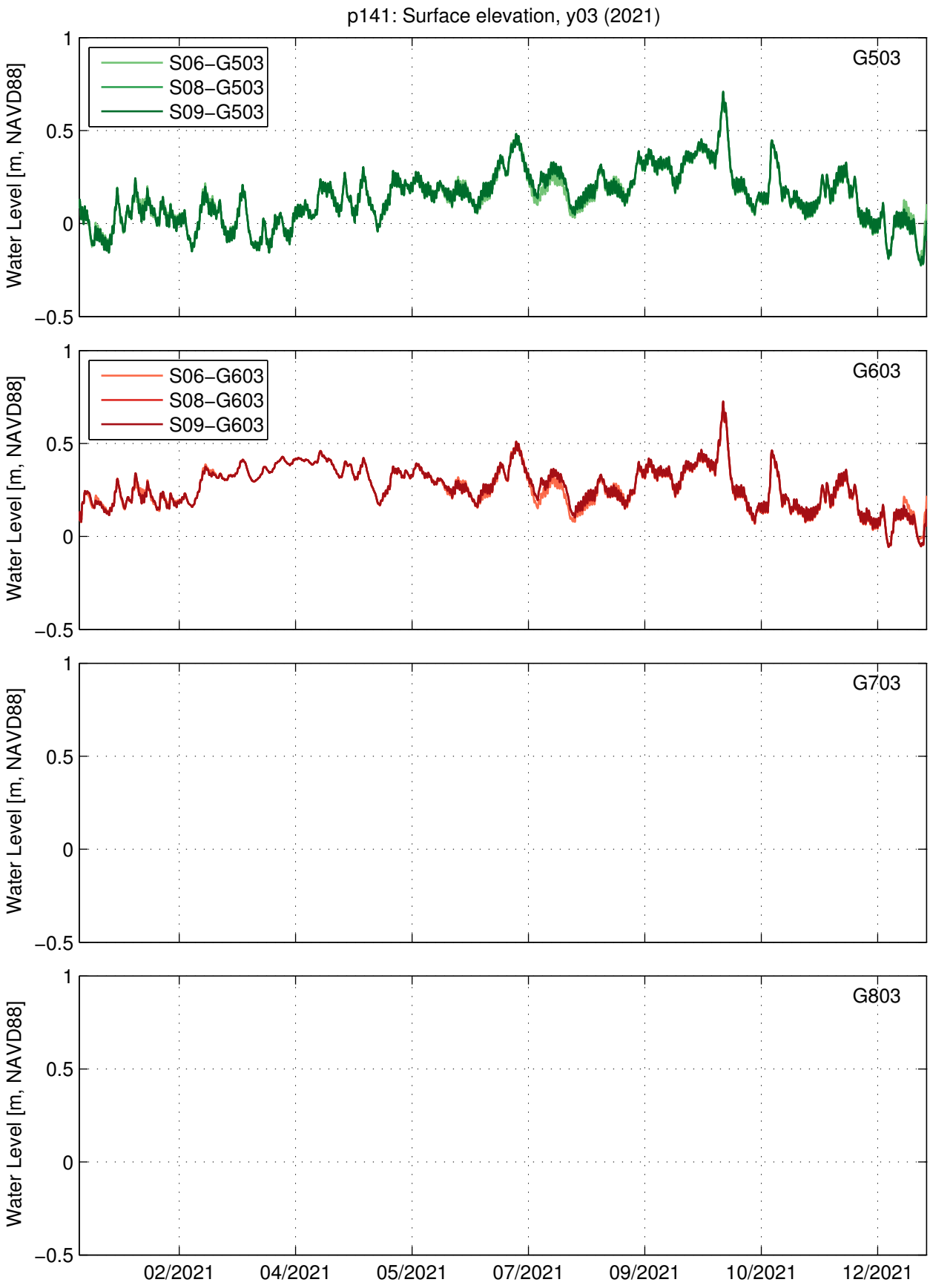
National Park Service
JELA Barataria Preserve Future Conditions Modeling

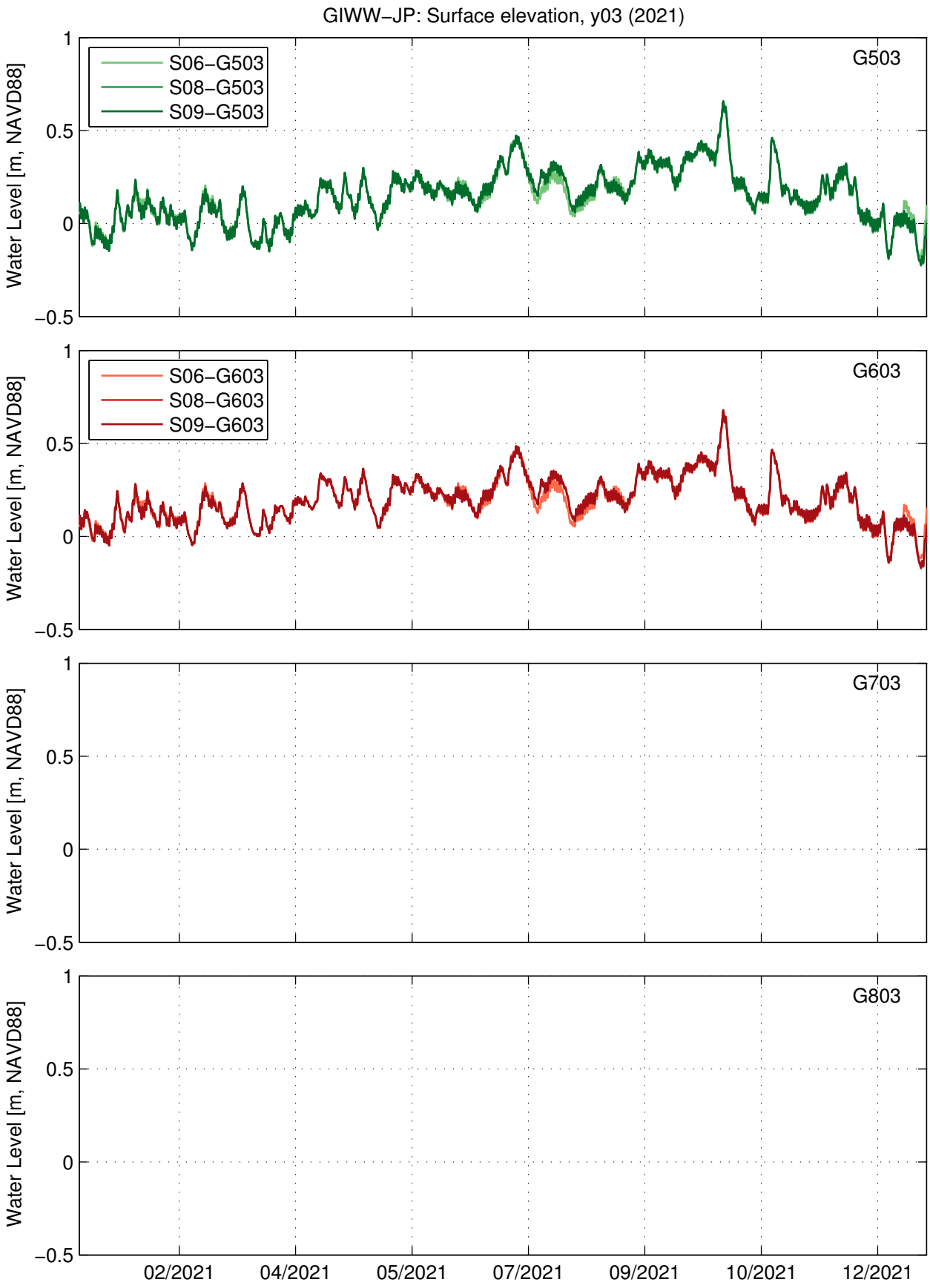
Appendix F: Hydrodynamic Model Timeseries Results

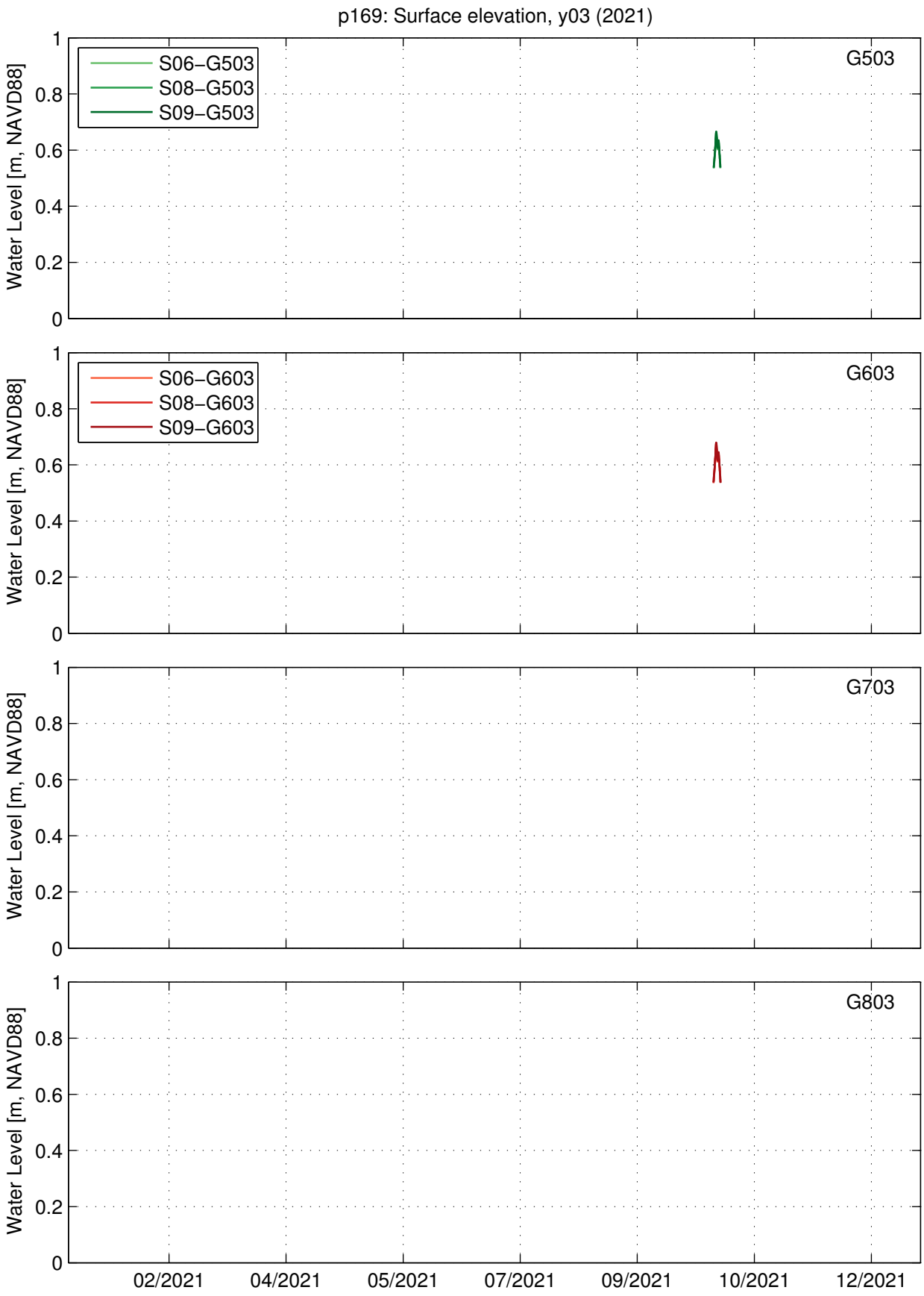


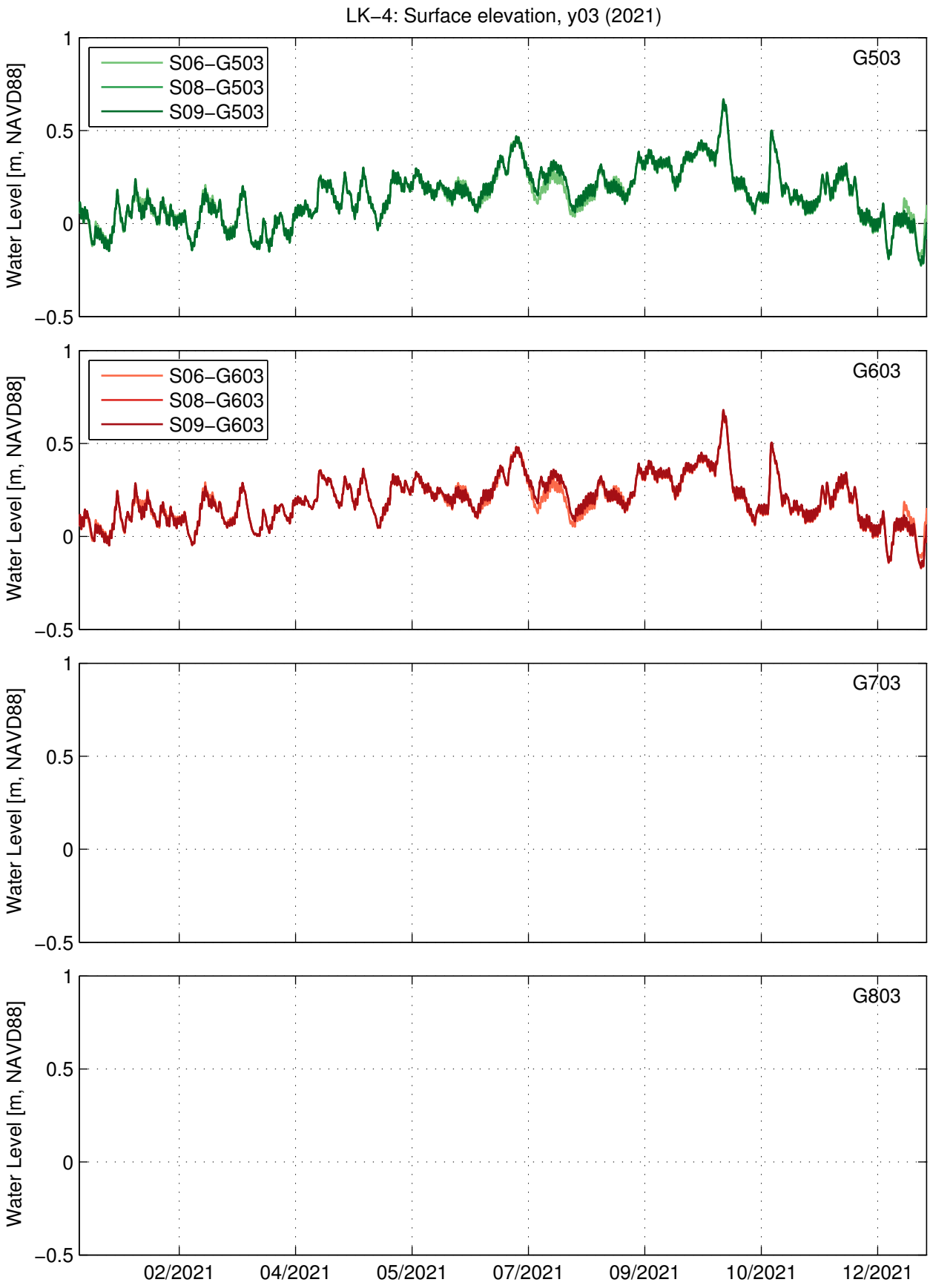

p159: Surface elevation, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Water Level [m, NAVD88]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

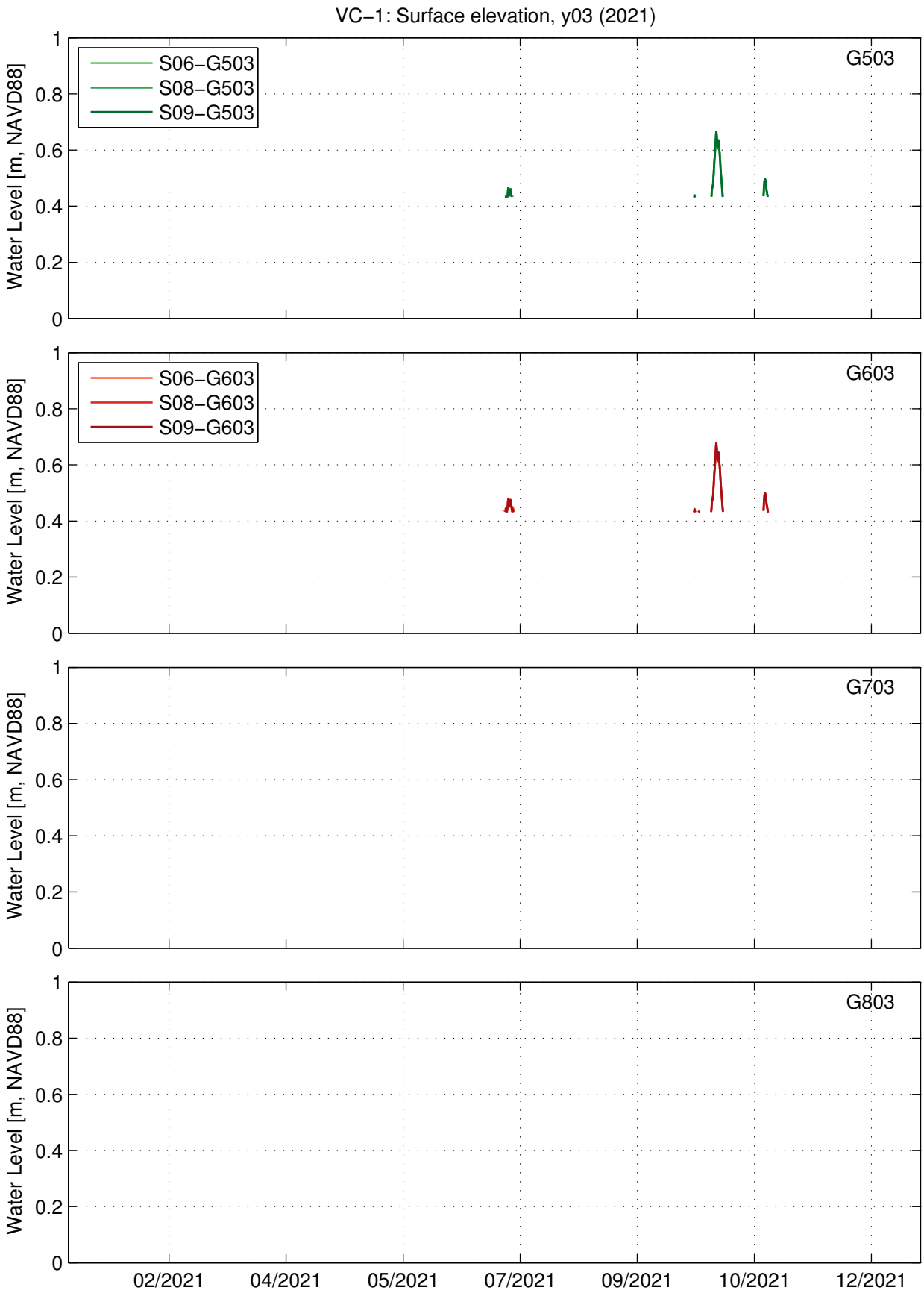

p093: Surface elevation, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Water Level [m, NAVD88]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

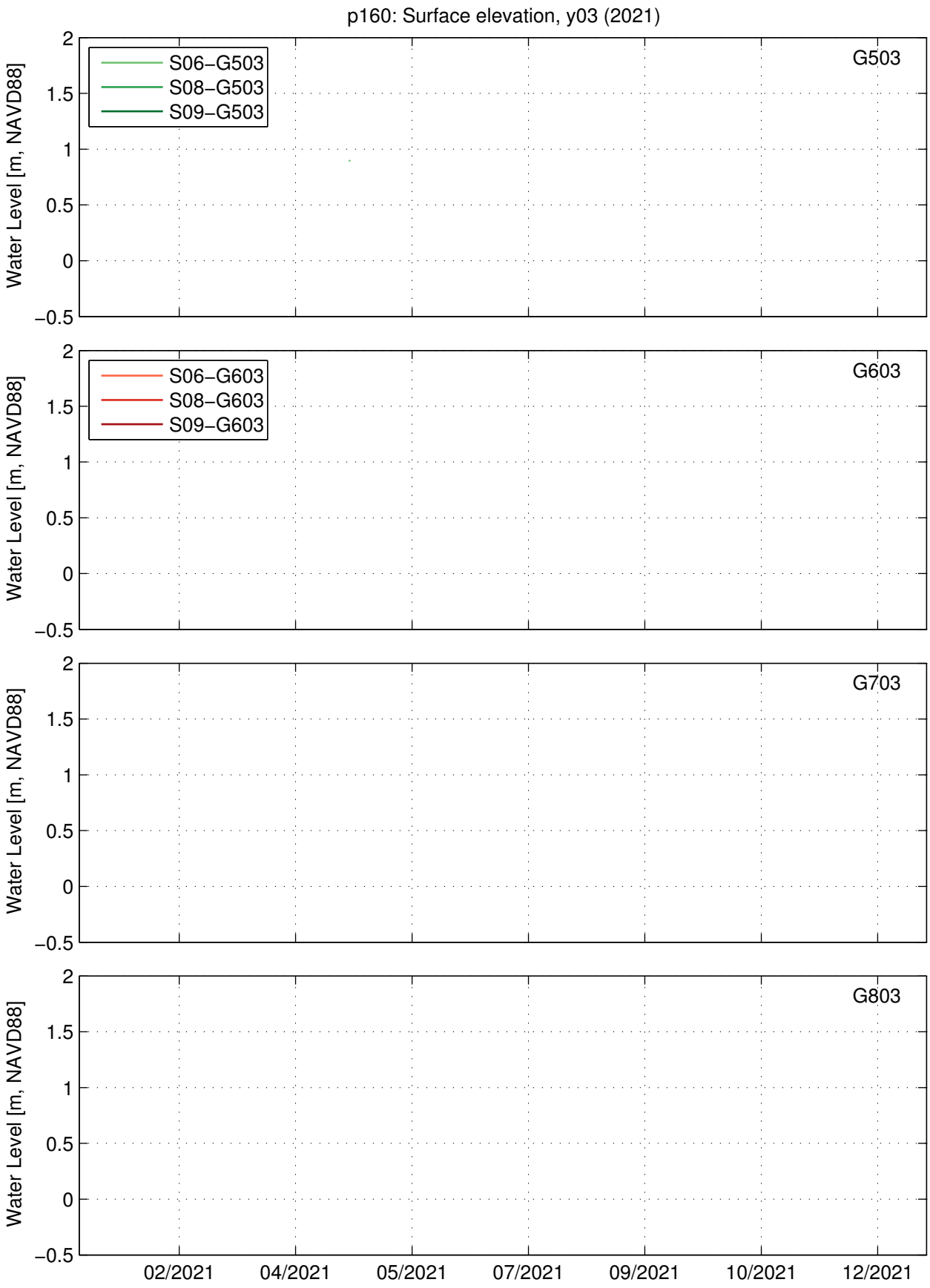

p141: Surface elevation, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Water Level [m, NAVD88]
1
0.5
0
−0.5
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

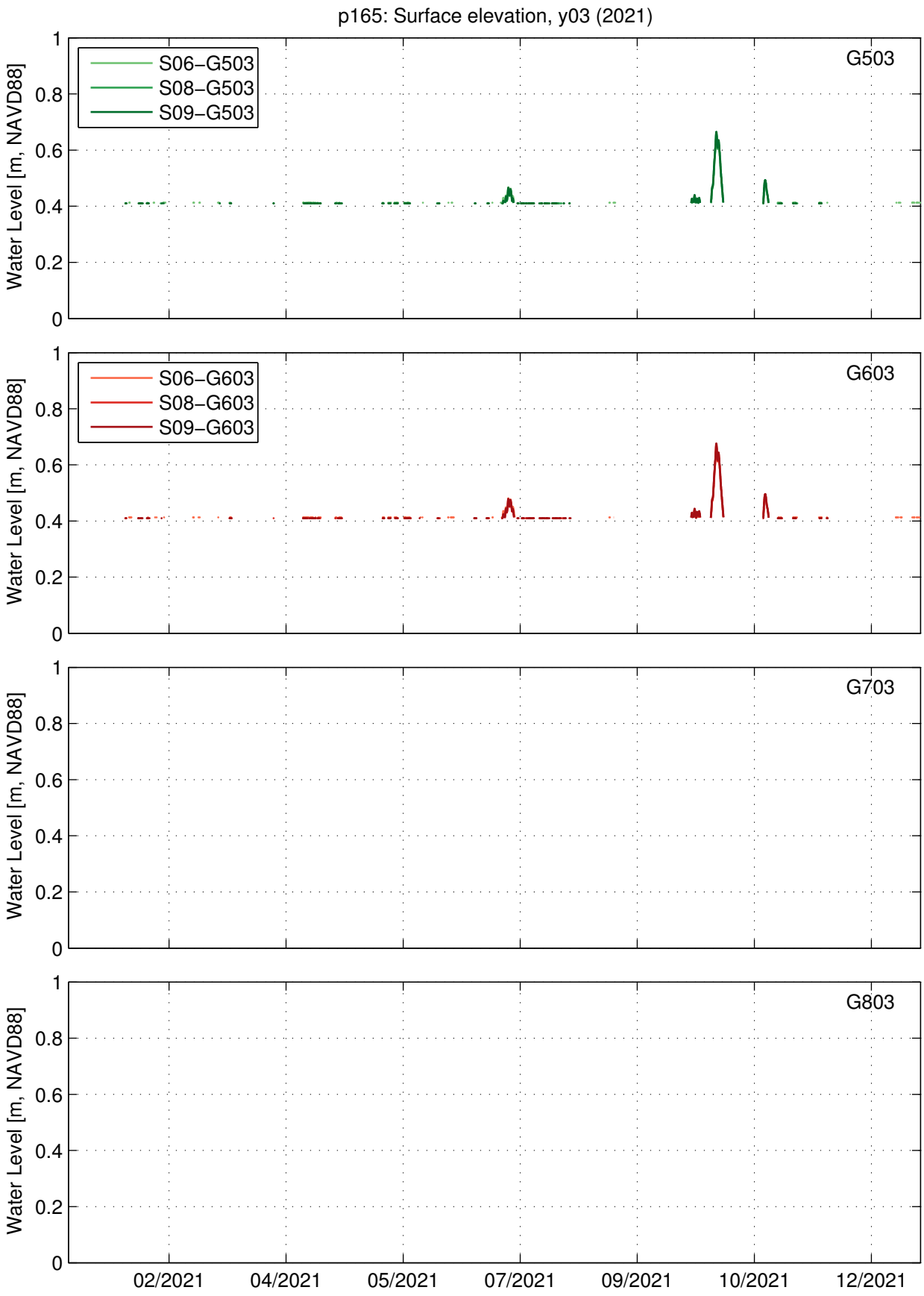

GIWW–JP: Surface elevation, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Water Level [m, NAVD88]
1
0.5
0
−0.5
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

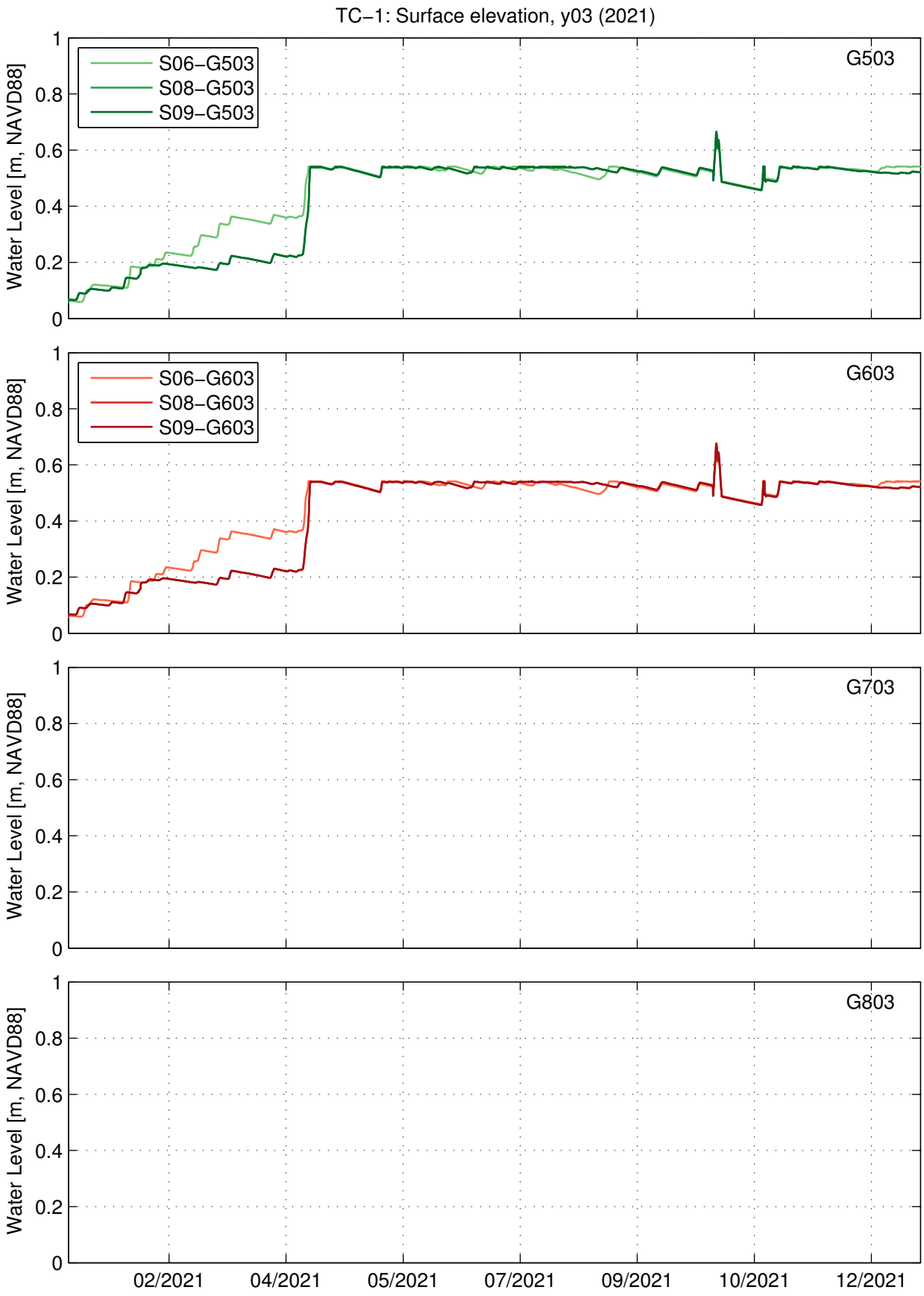

p169: Surface elevation, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Water Level [m, NAVD88]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

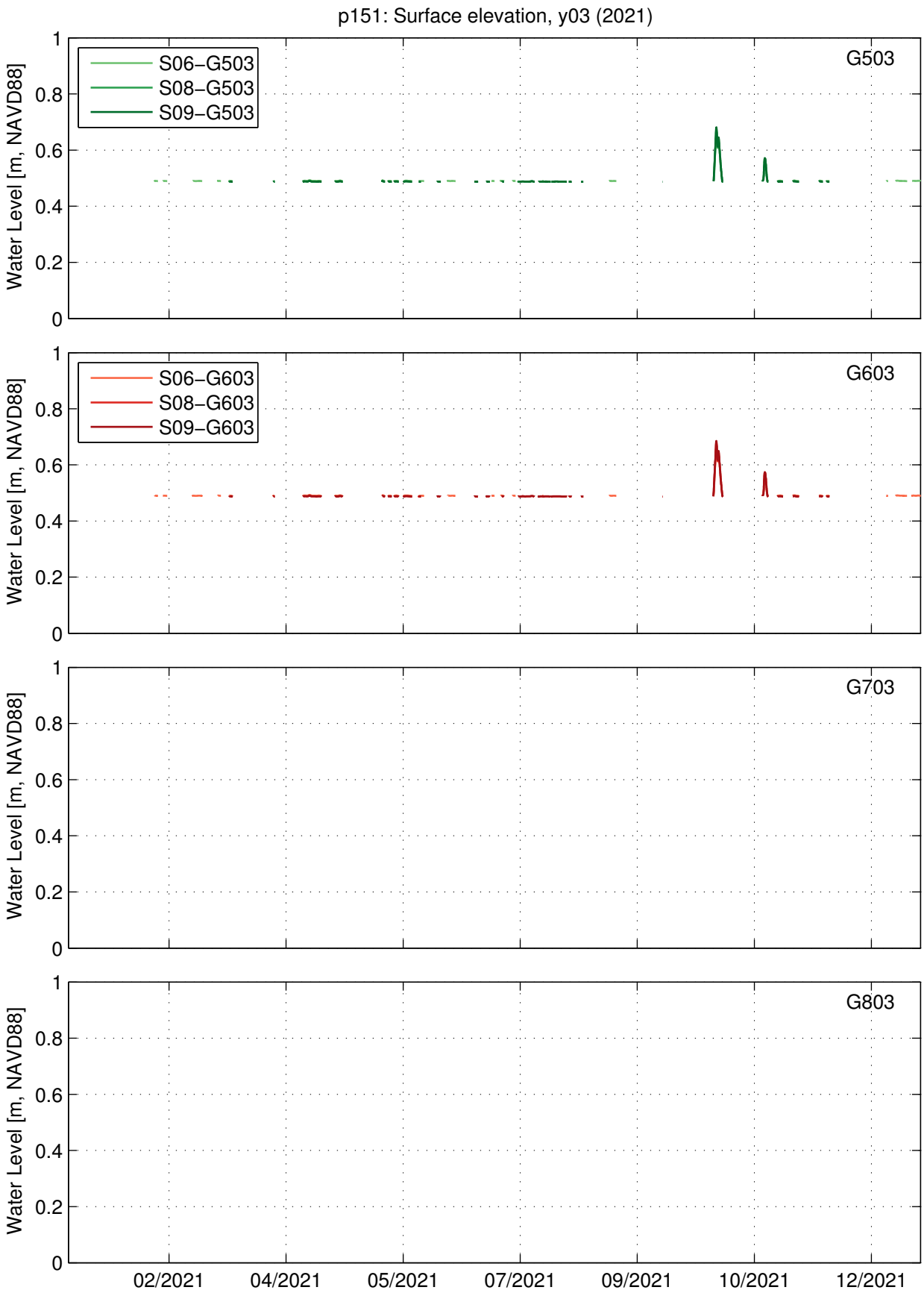

LK−4: Surface elevation, y03 (2021)
Water Level [m, NAVD88]
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
G703
G803
1
0.5
0
−0.5
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

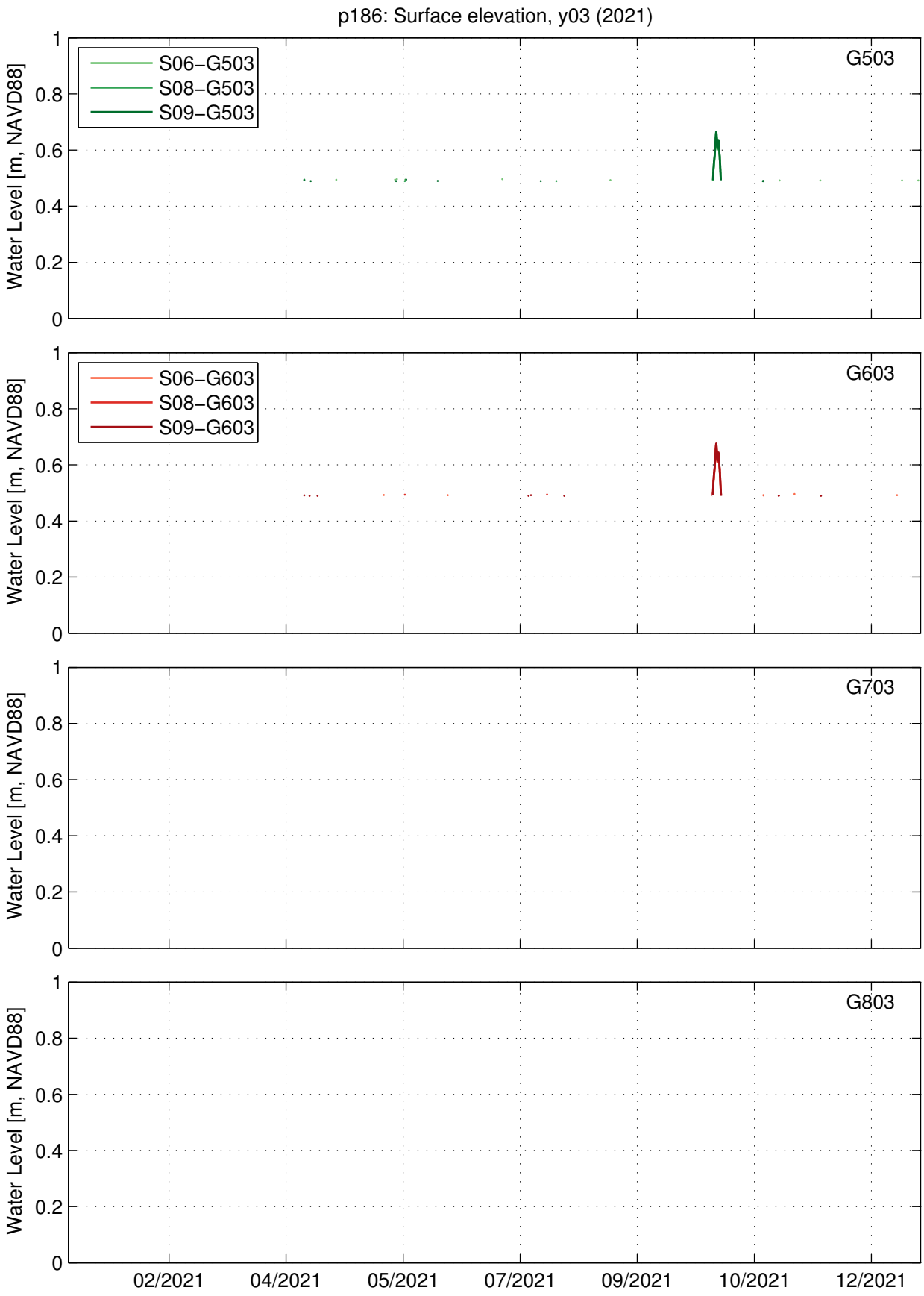

VC−1: Surface elevation, y03 (2021)
Water Level [m, NAVD88]
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
G703
G803
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

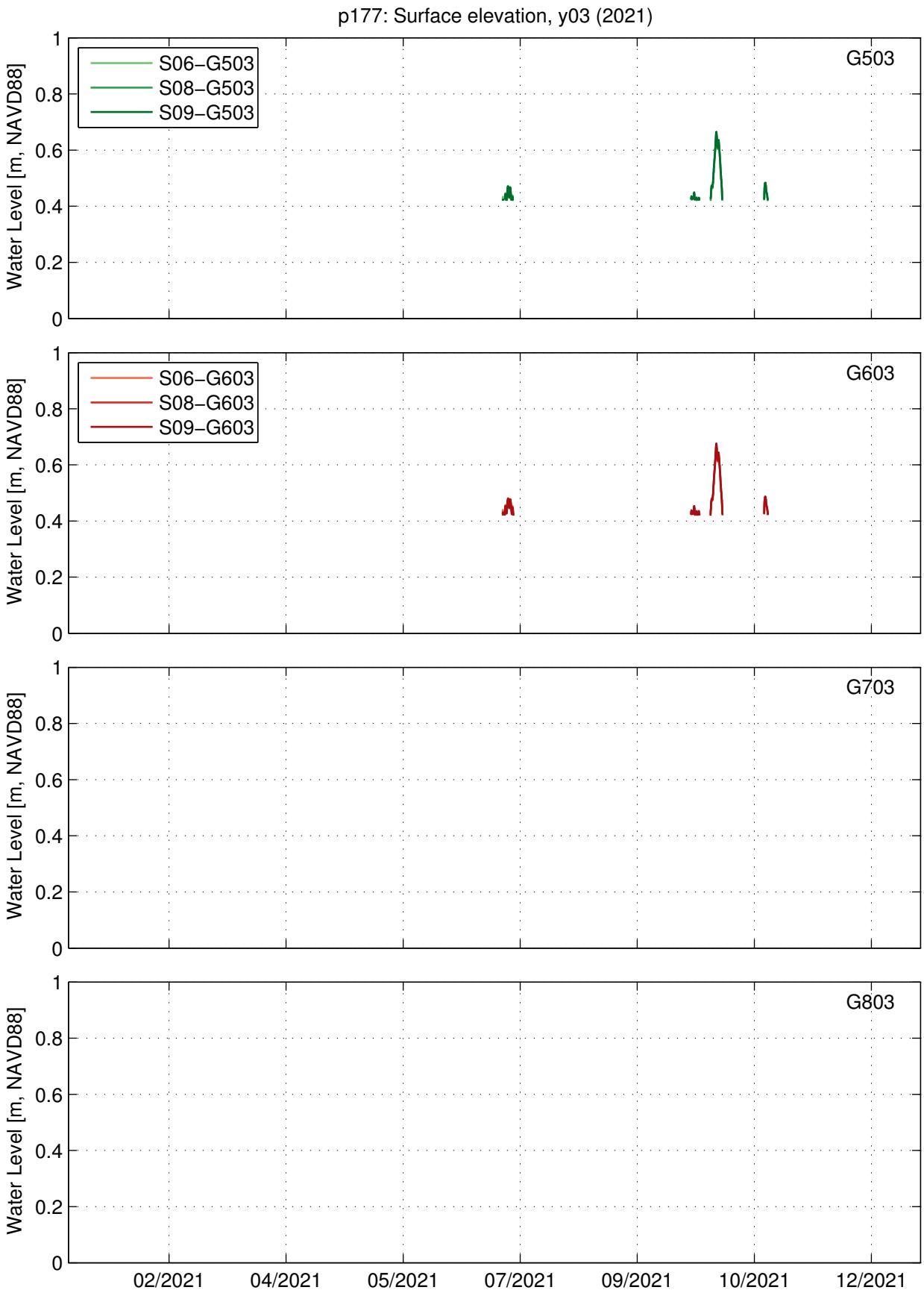

p160: Surface elevation, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Water Level [m, NAVD88]
2
1.5
1
0.5
0
−0.5
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

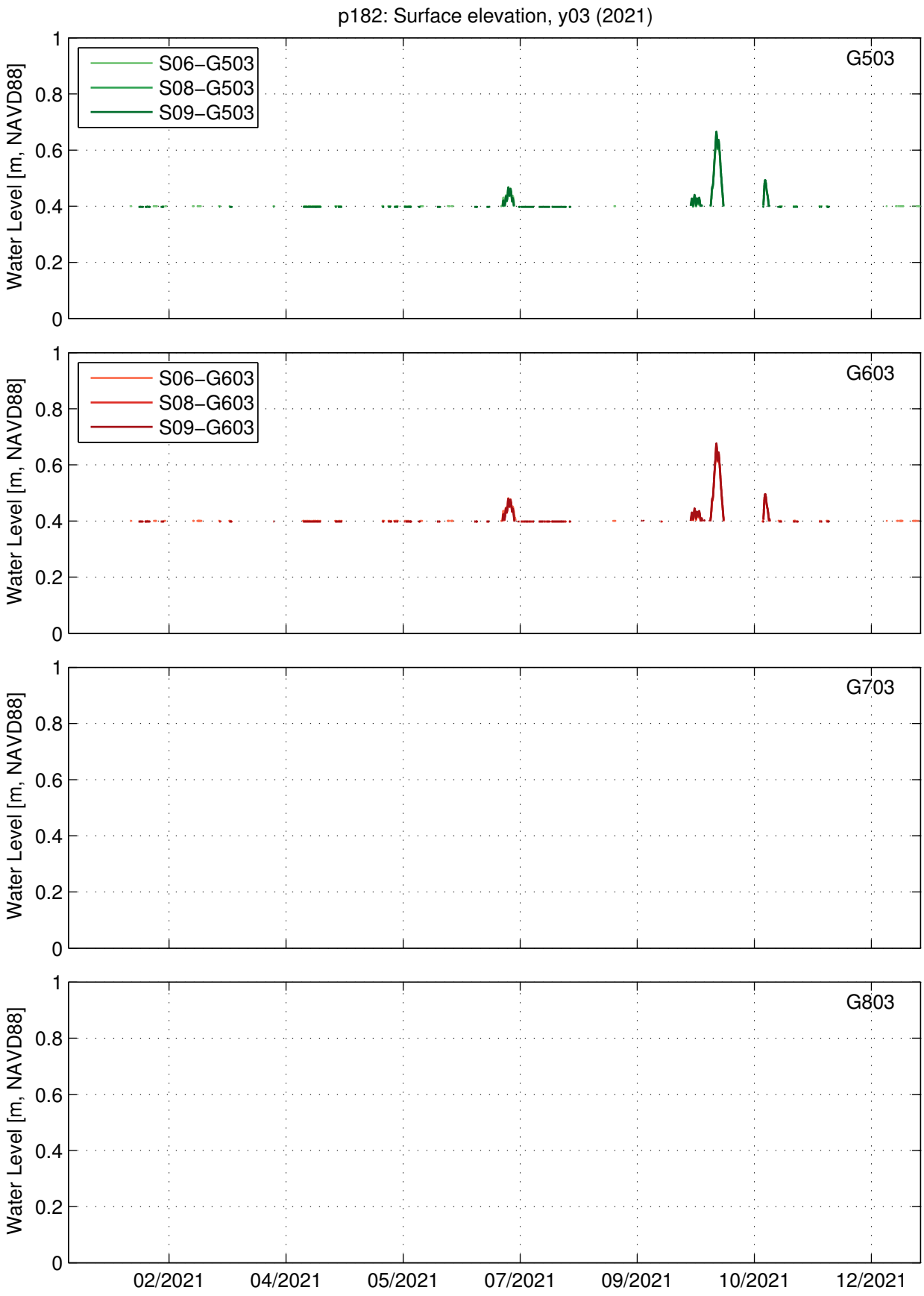

p165: Surface elevation, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Water Level [m, NAVD88]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

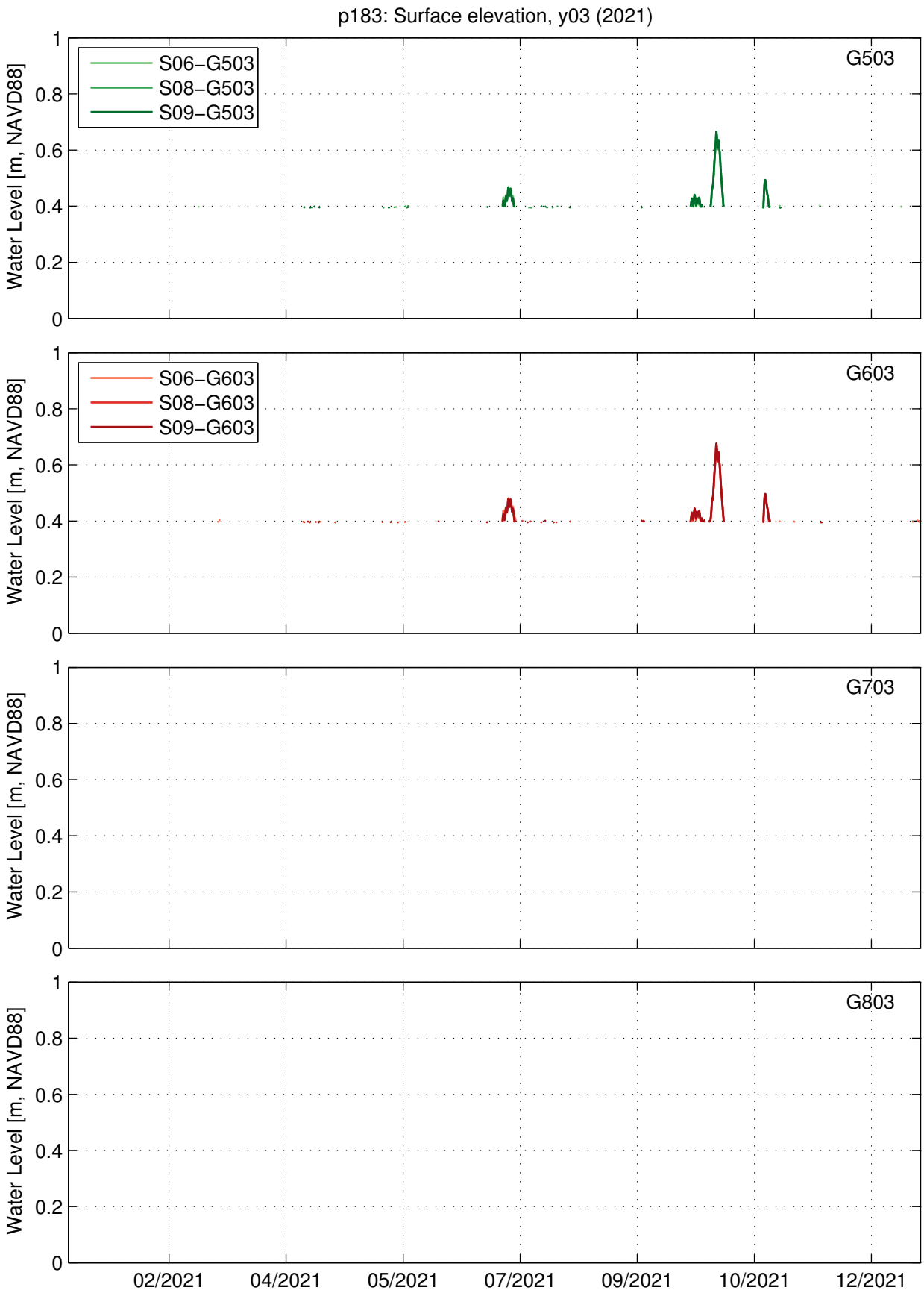

TC−1: Surface elevation, y03 (2021)
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
G703
G803
Water Level [m, NAVD88]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

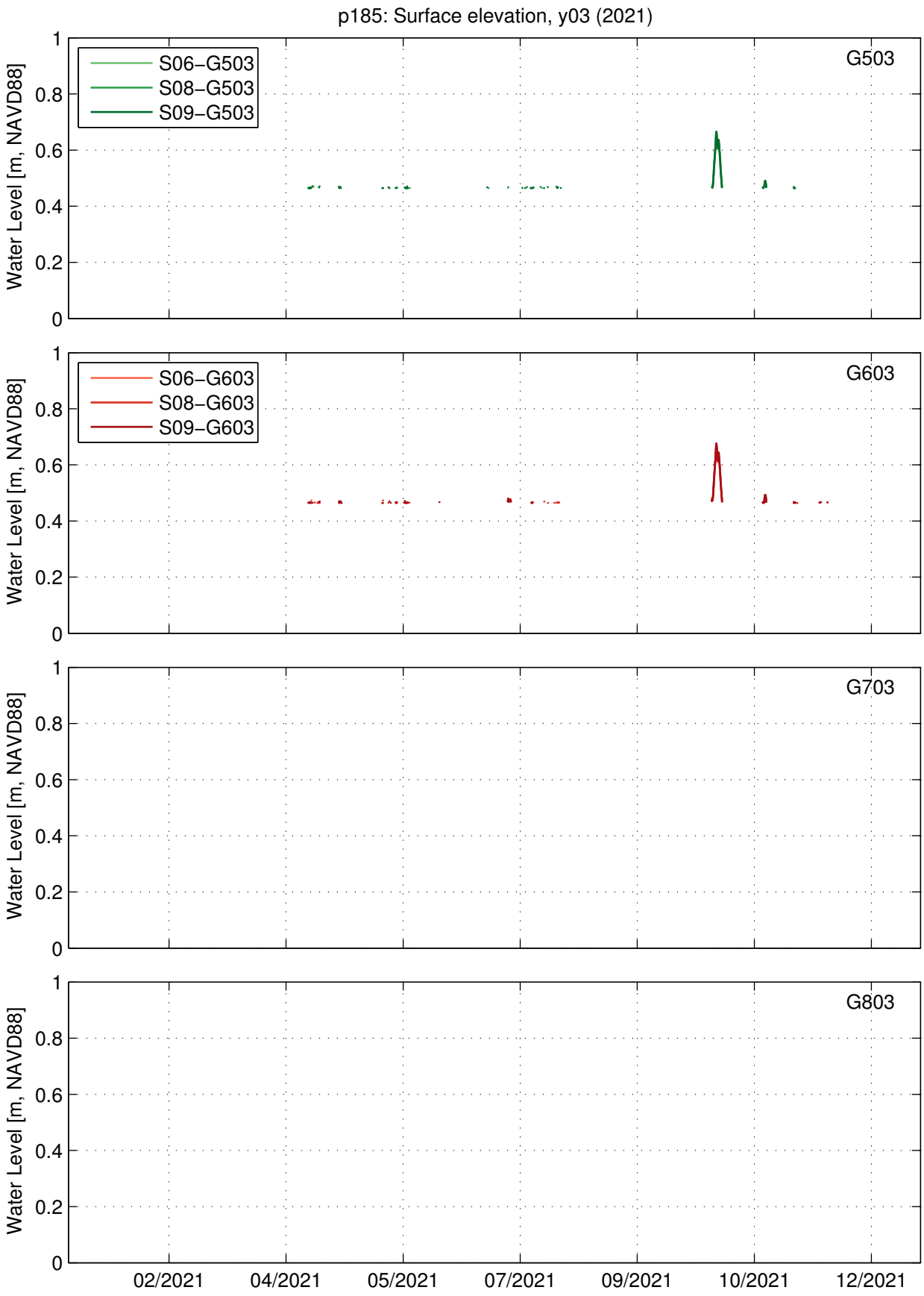

p151: Surface elevation, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Water Level [m, NAVD88]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

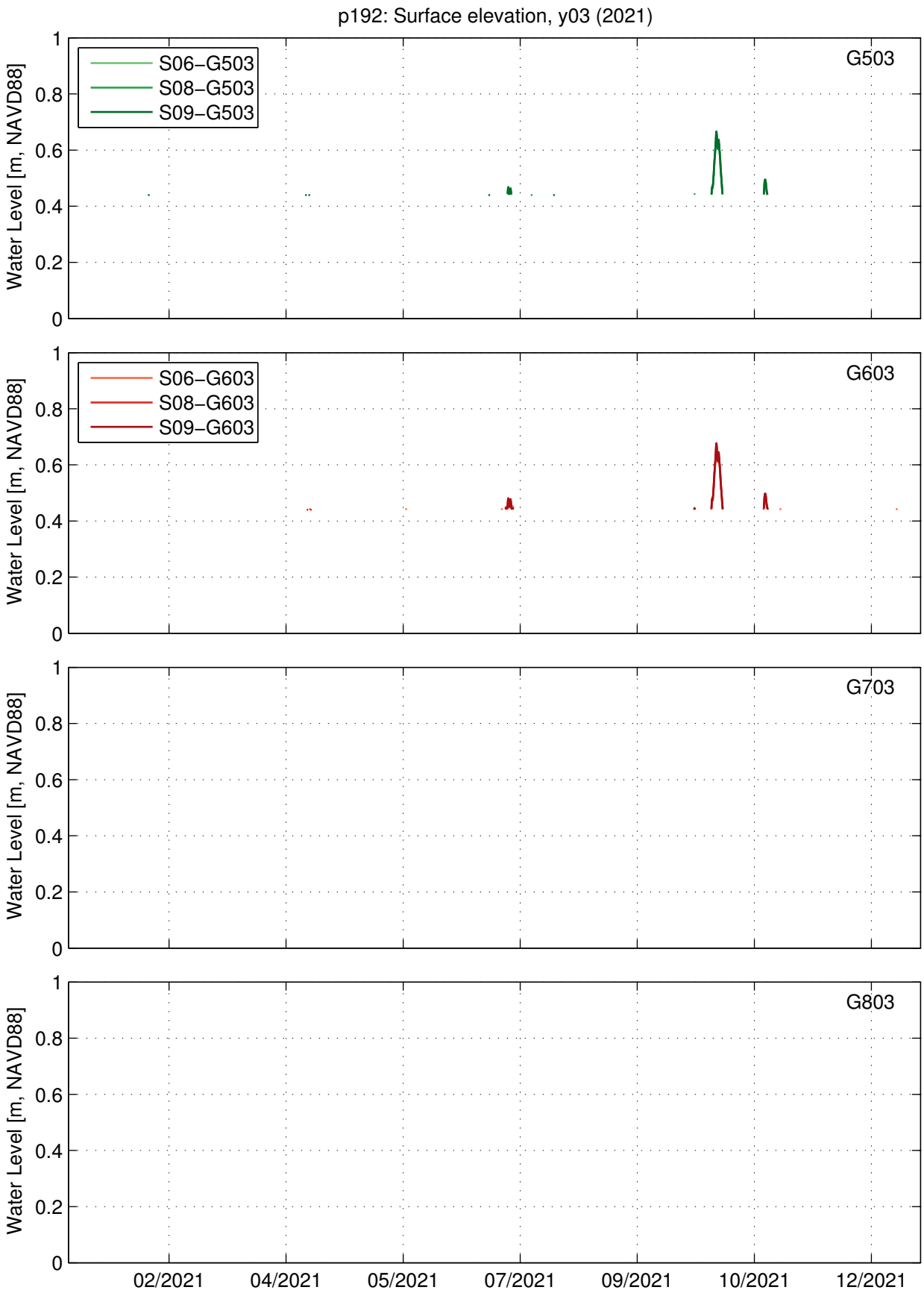

p186: Surface elevation, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Water Level [m, NAVD88]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

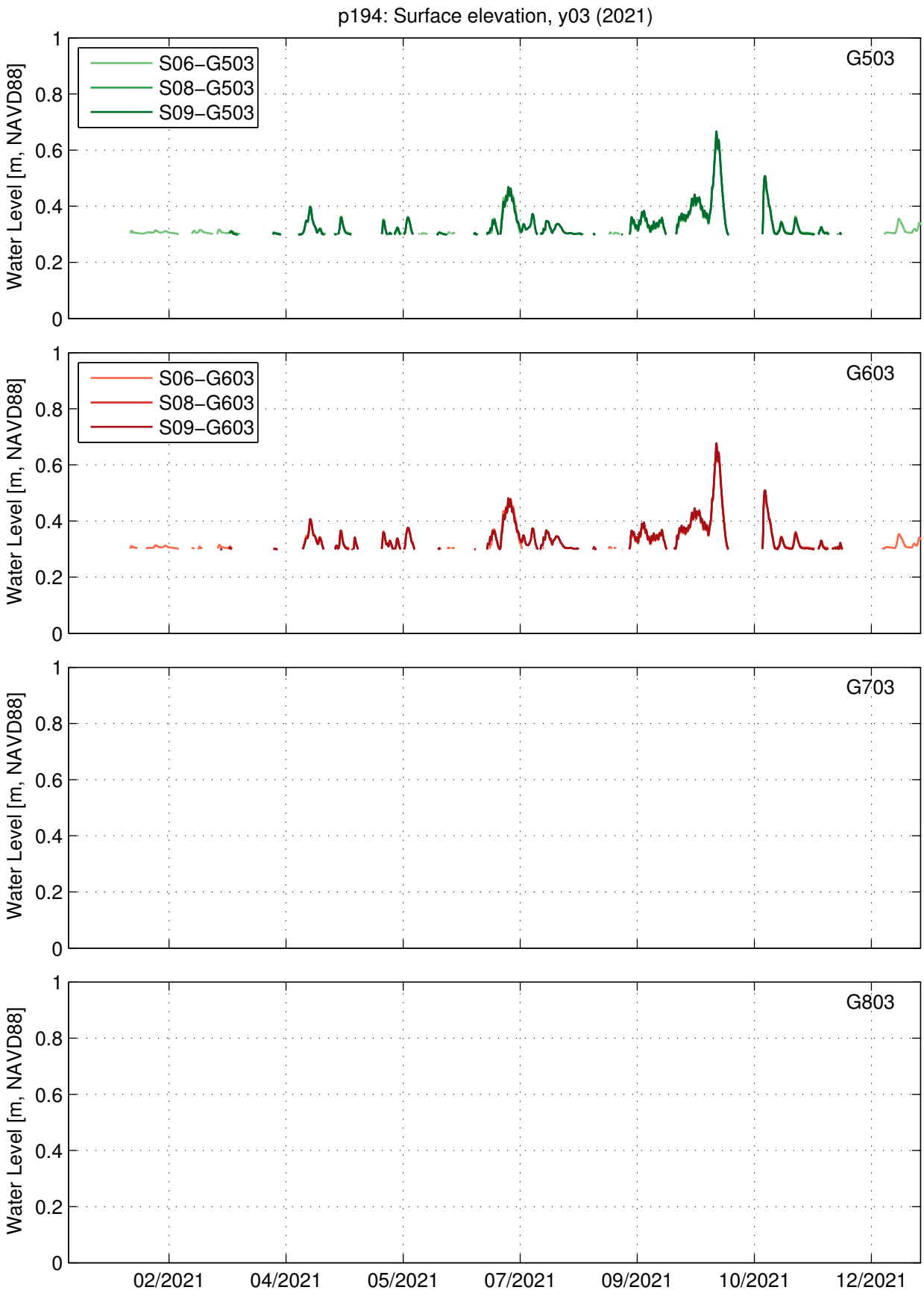

p177: Surface elevation, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Water Level [m, NAVD88]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

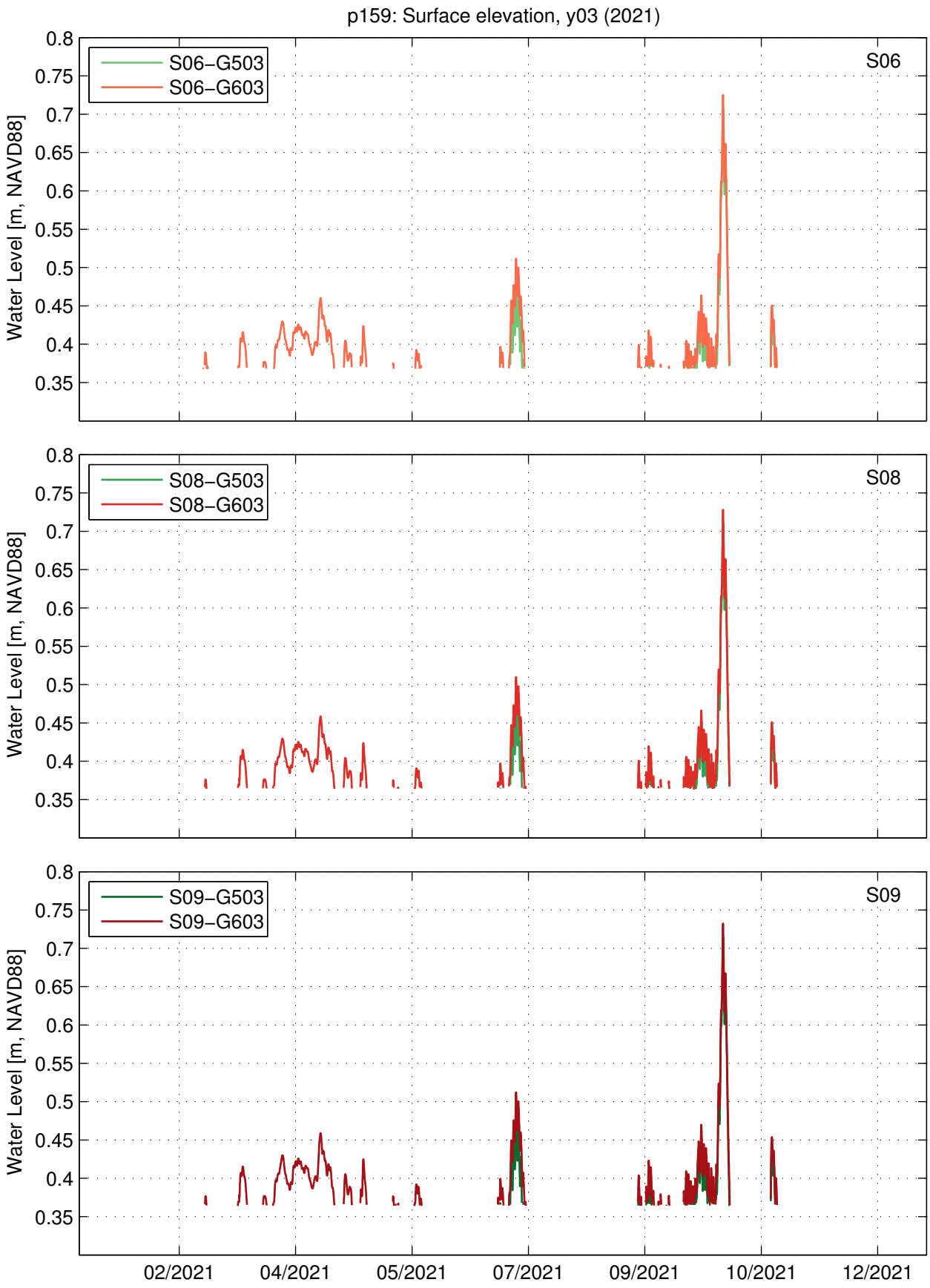

p182: Surface elevation, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Water Level [m, NAVD88]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

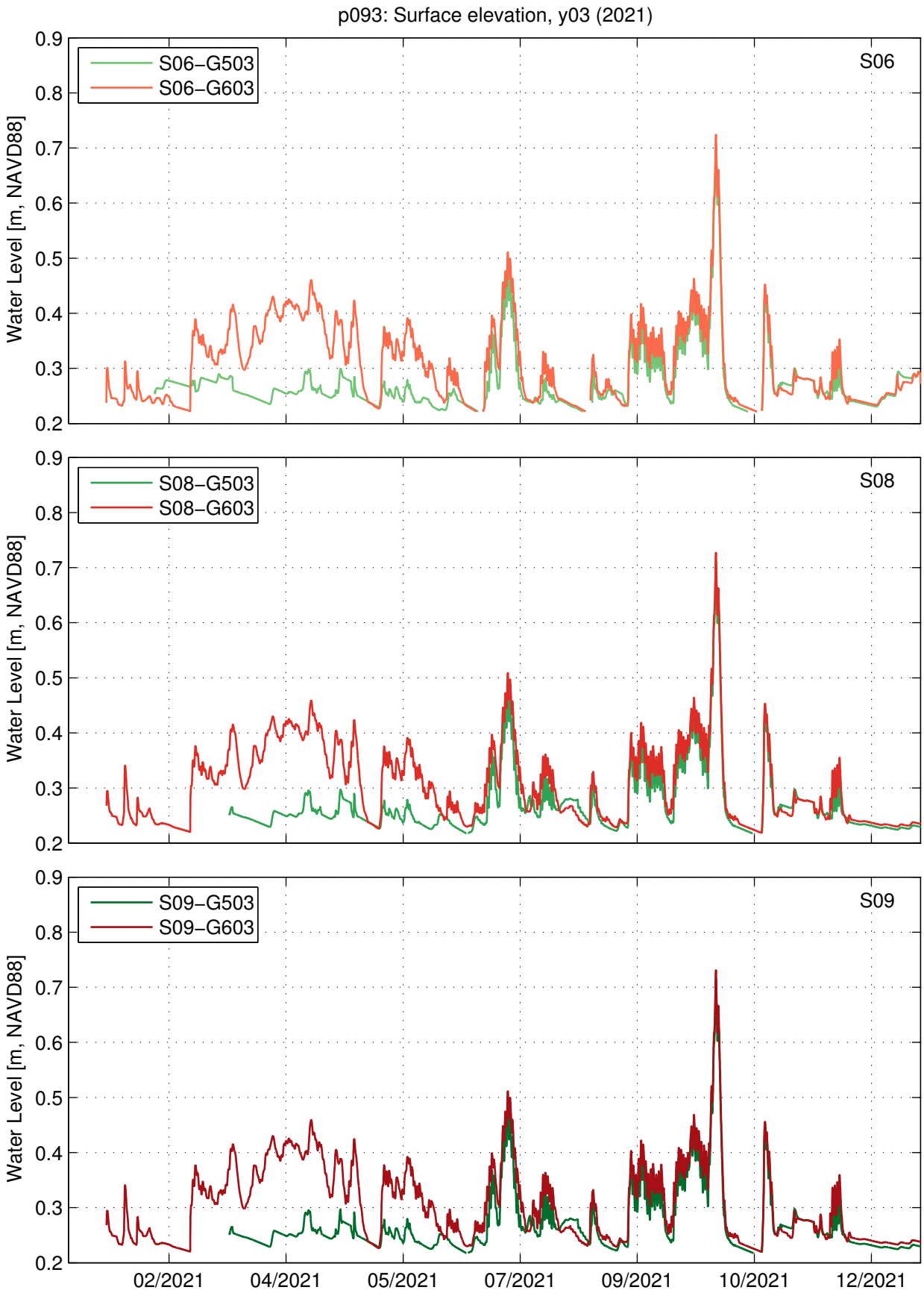

p183: Surface elevation, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Water Level [m, NAVD88]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

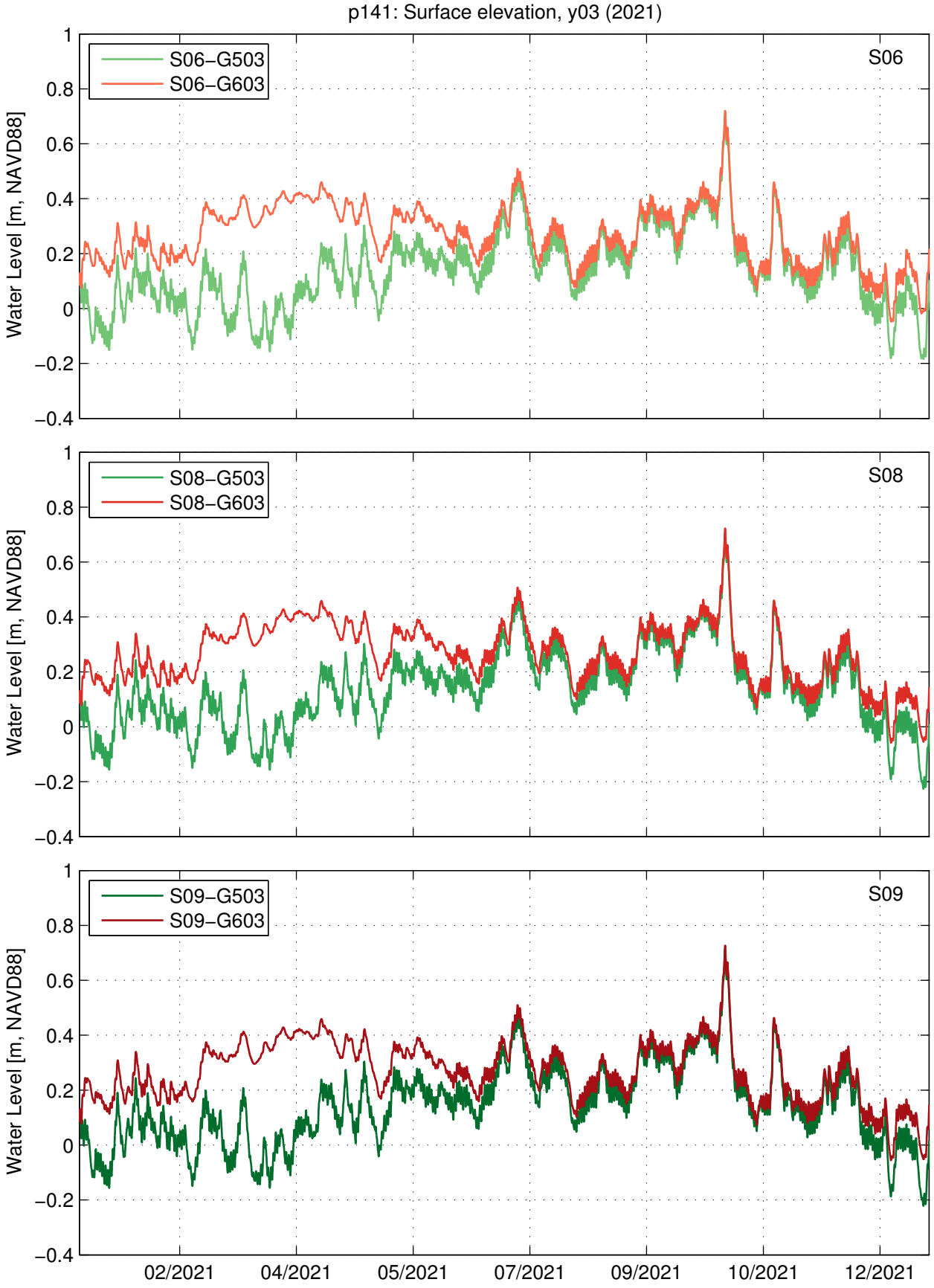

p185: Surface elevation, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Water Level [m, NAVD88]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

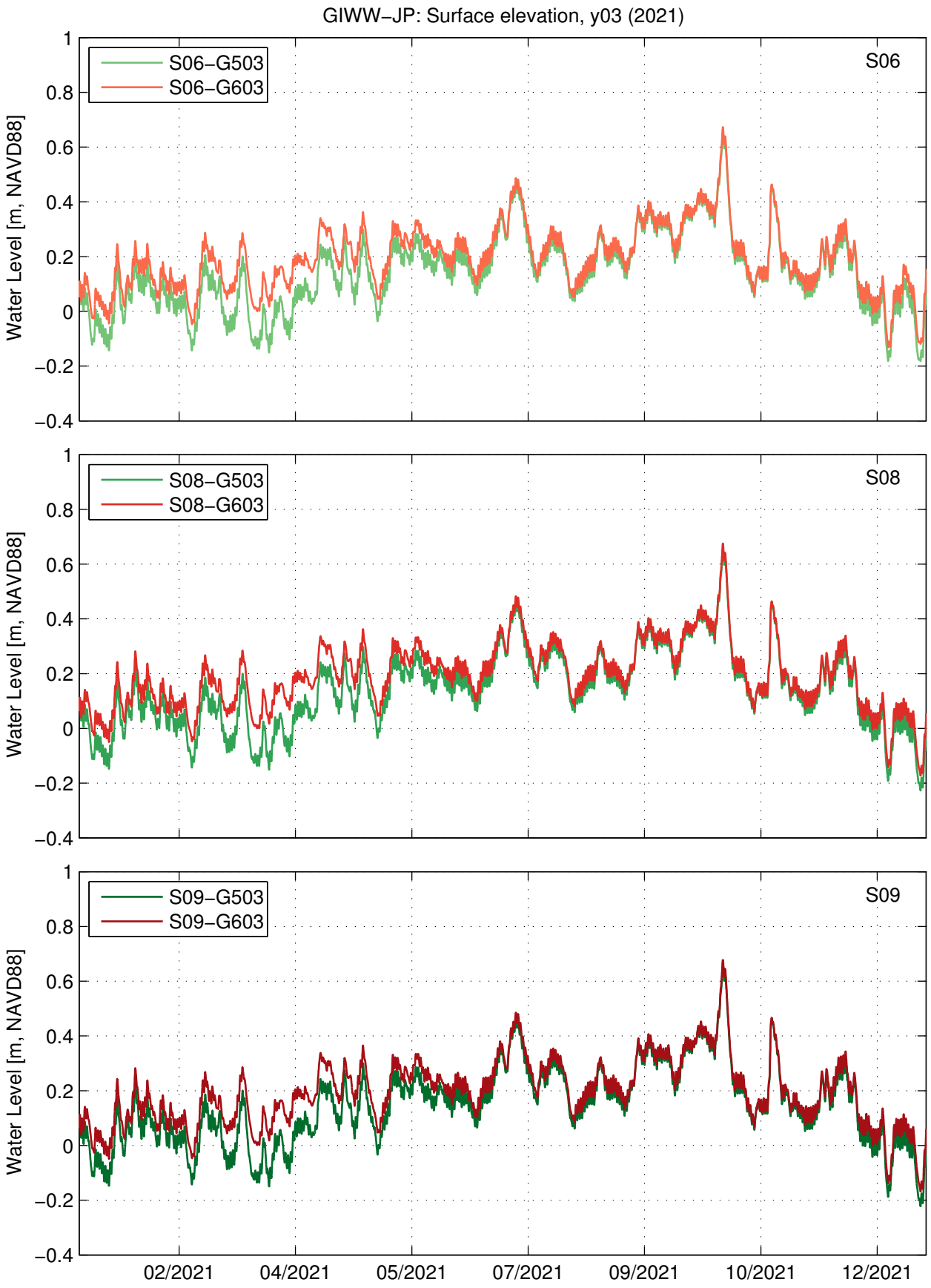

p192: Surface elevation, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Water Level [m, NAVD88]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

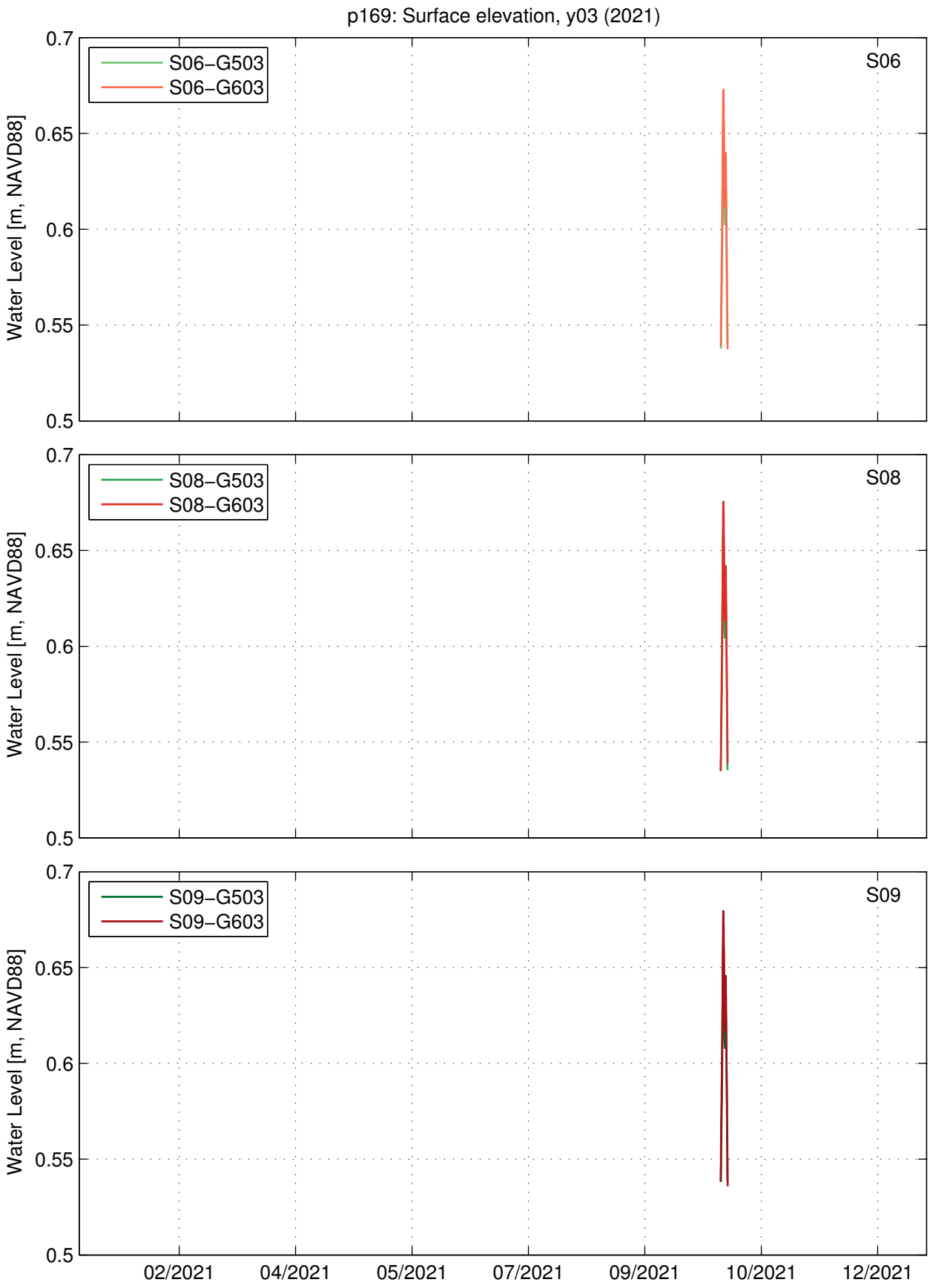

p194: Surface elevation, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Water Level [m, NAVD88]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

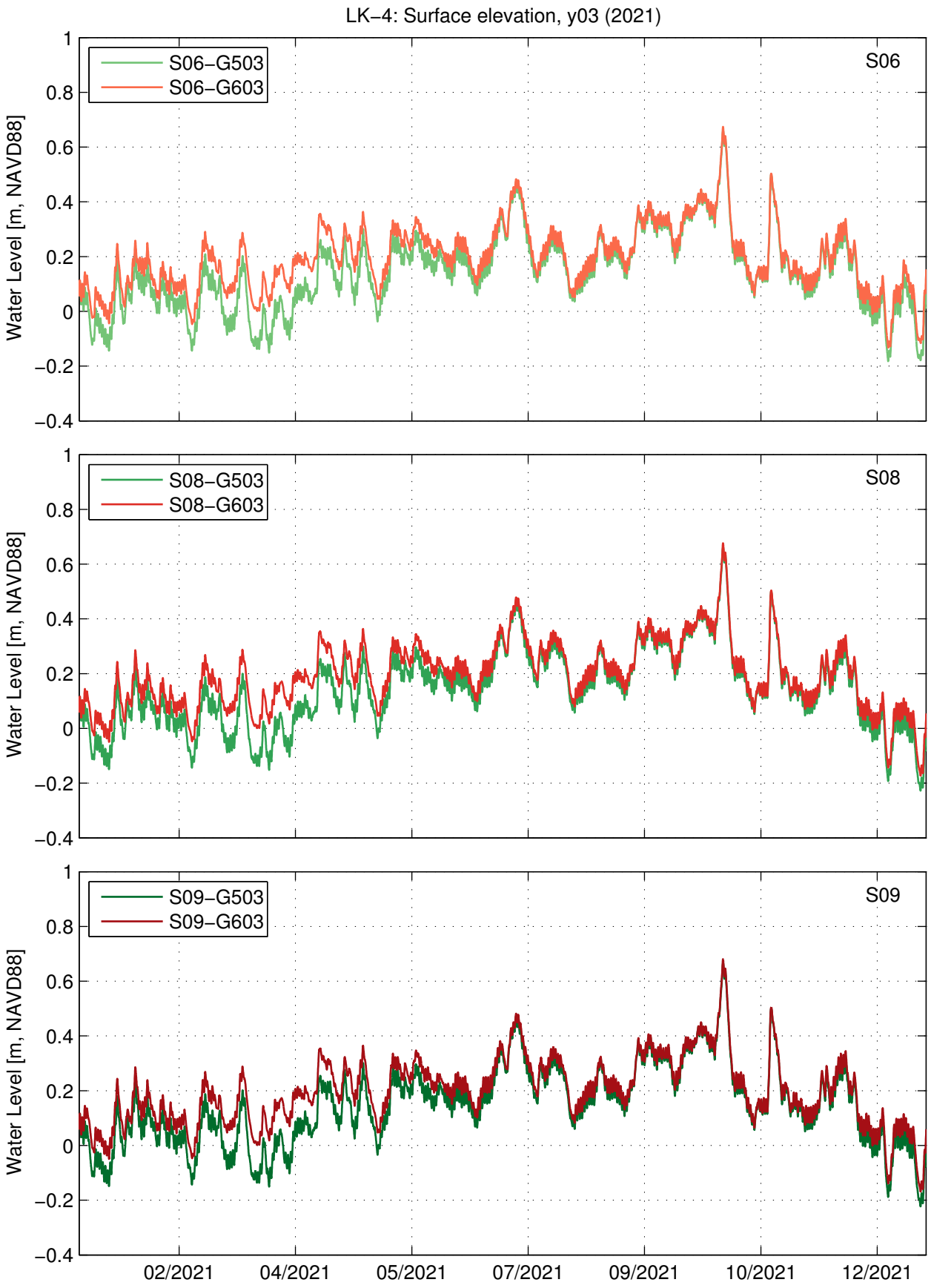

p159: Surface elevation, y03 (2021)
S06–G503
S06–G603
S06
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
Water Level [m, NAVD88]
0.8
0.75
0.7
0.65
0.6
0.55
0.5
0.45
0.4
0.35
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

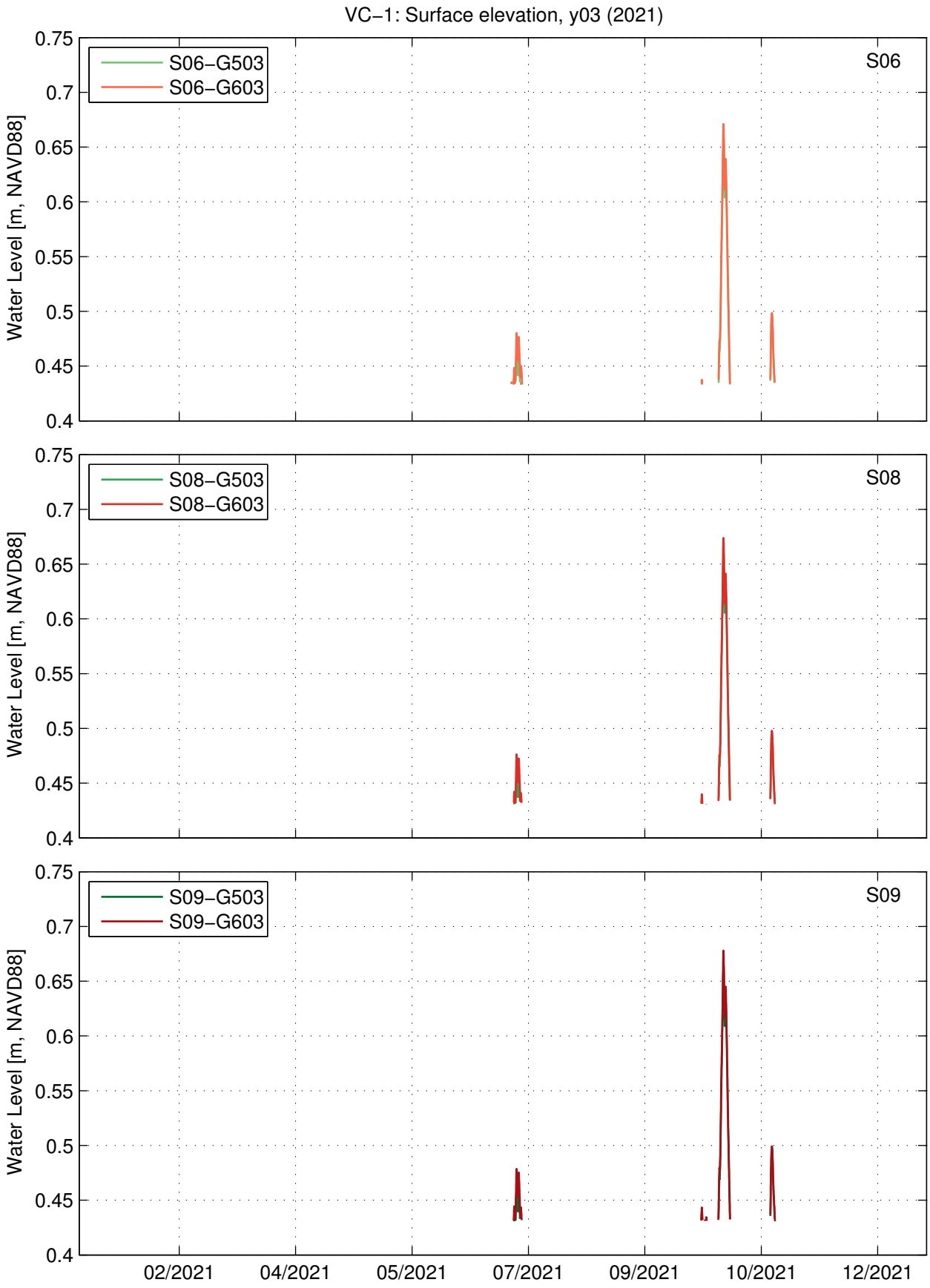

p093: Surface elevation, y03 (2021)
S06–G503
S06–G603
S06
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
Water Level [m, NAVD88]
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

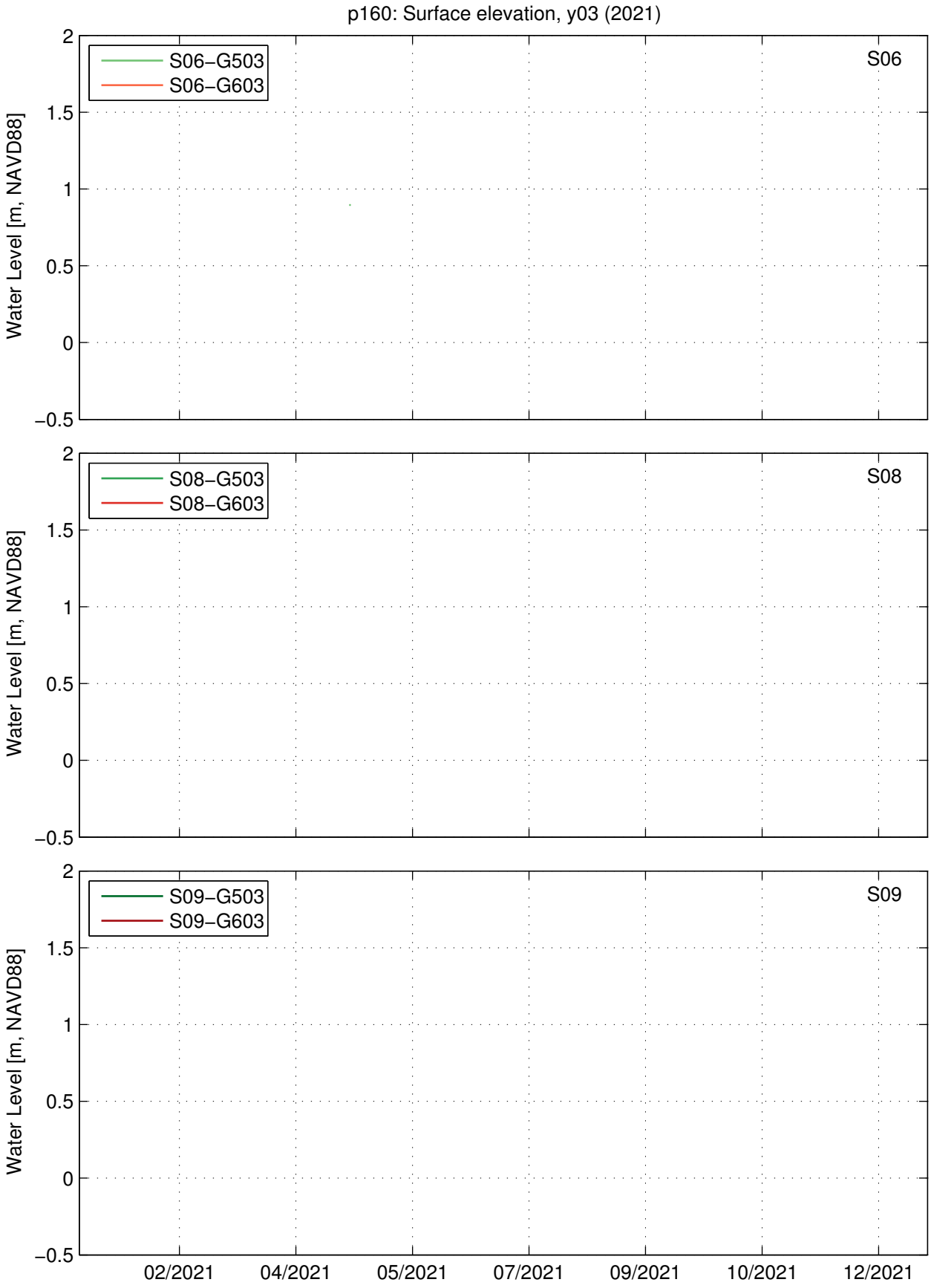

p141: Surface elevation, y03 (2021)
S06–G503
S06–G603
S06
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
Water Level [m, NAVD88]
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

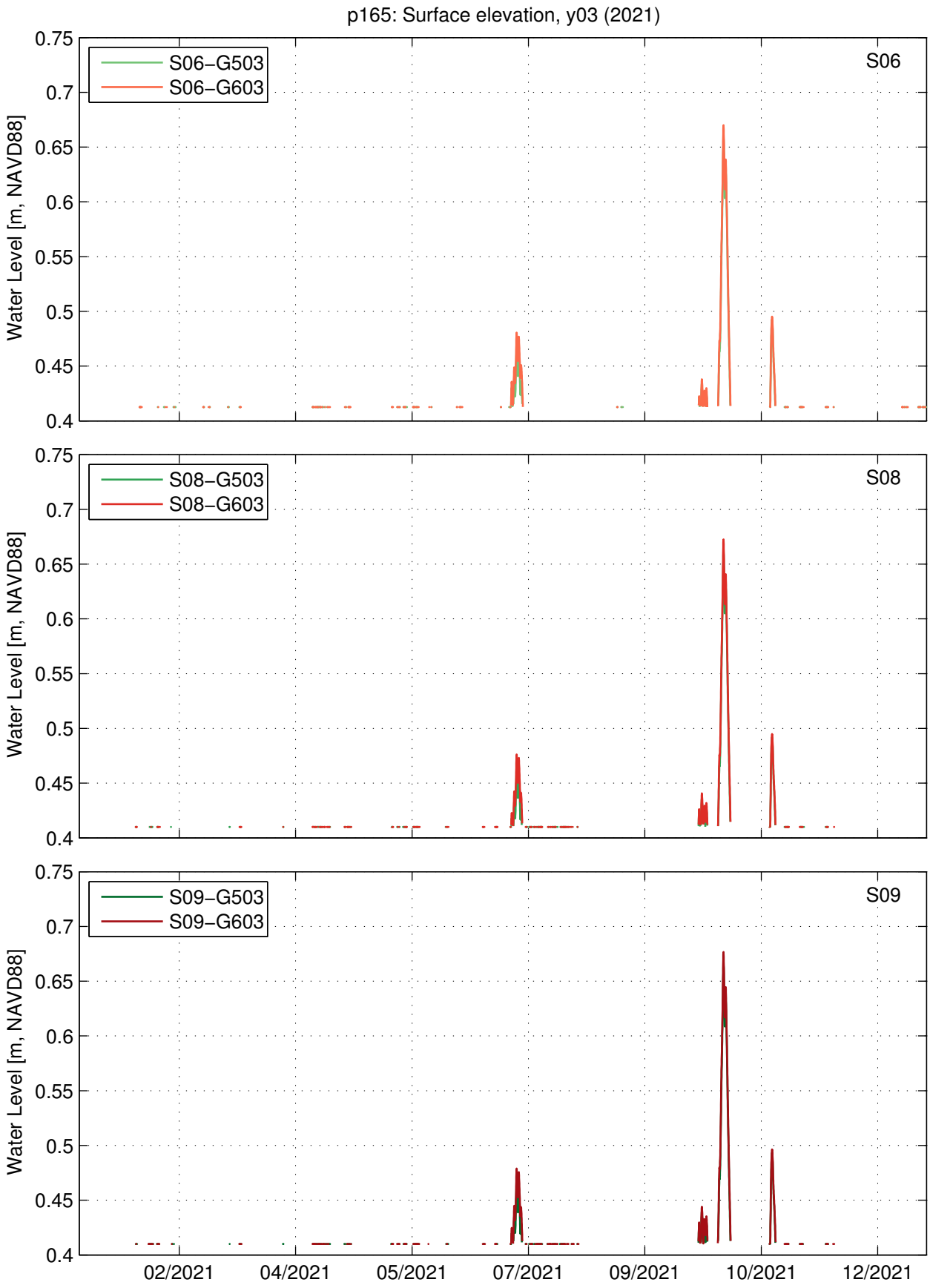

GIWW–JP: Surface elevation, y03 (2021)
S06–G503
S06–G603
S06
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
Water Level [m, NAVD88]
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

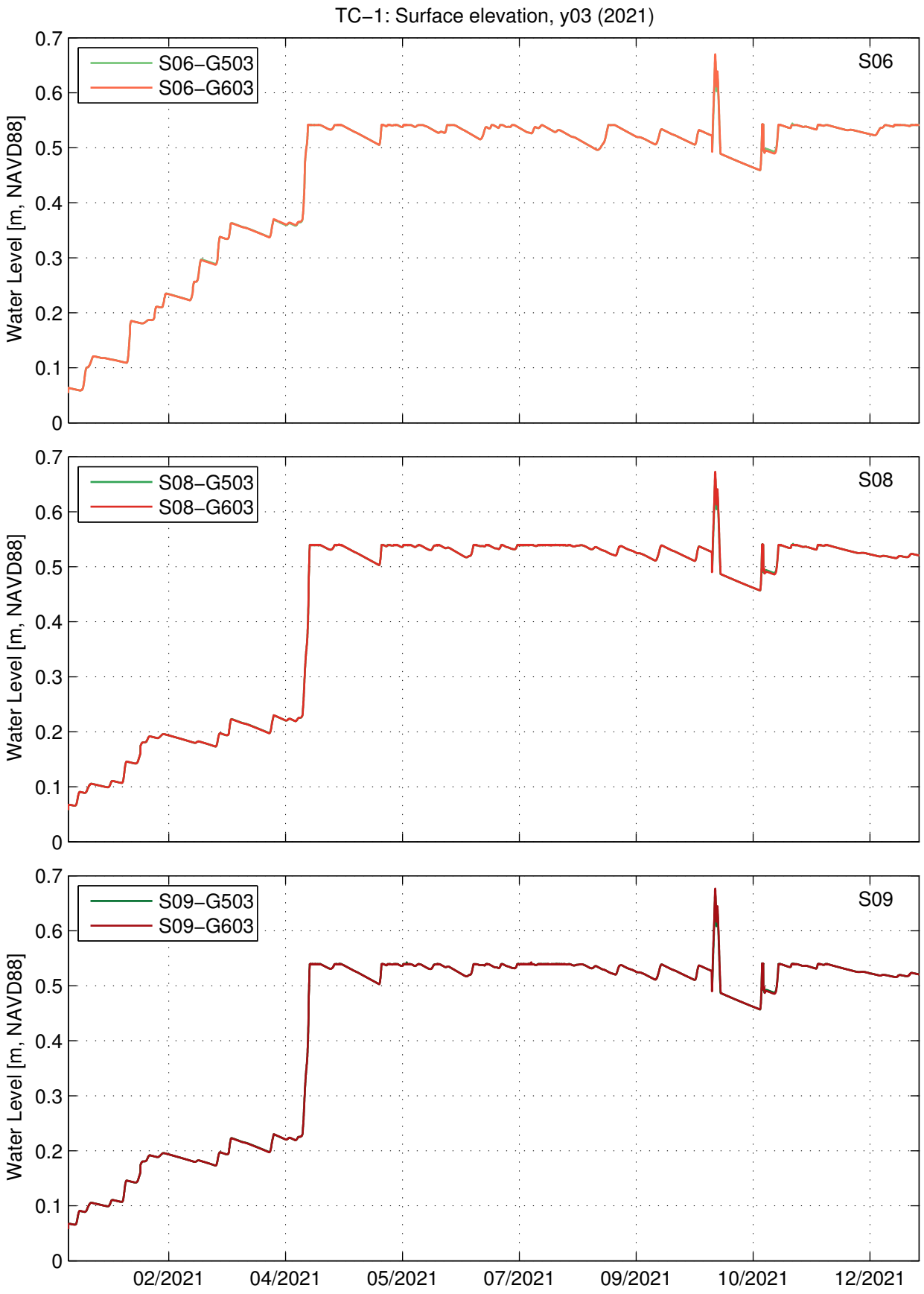

p169: Surface elevation, y03 (2021)
S06–G503
S06–G603
S06
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
Water Level [m, NAVD88]
0.7
0.65
0.6
0.55
0.5
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

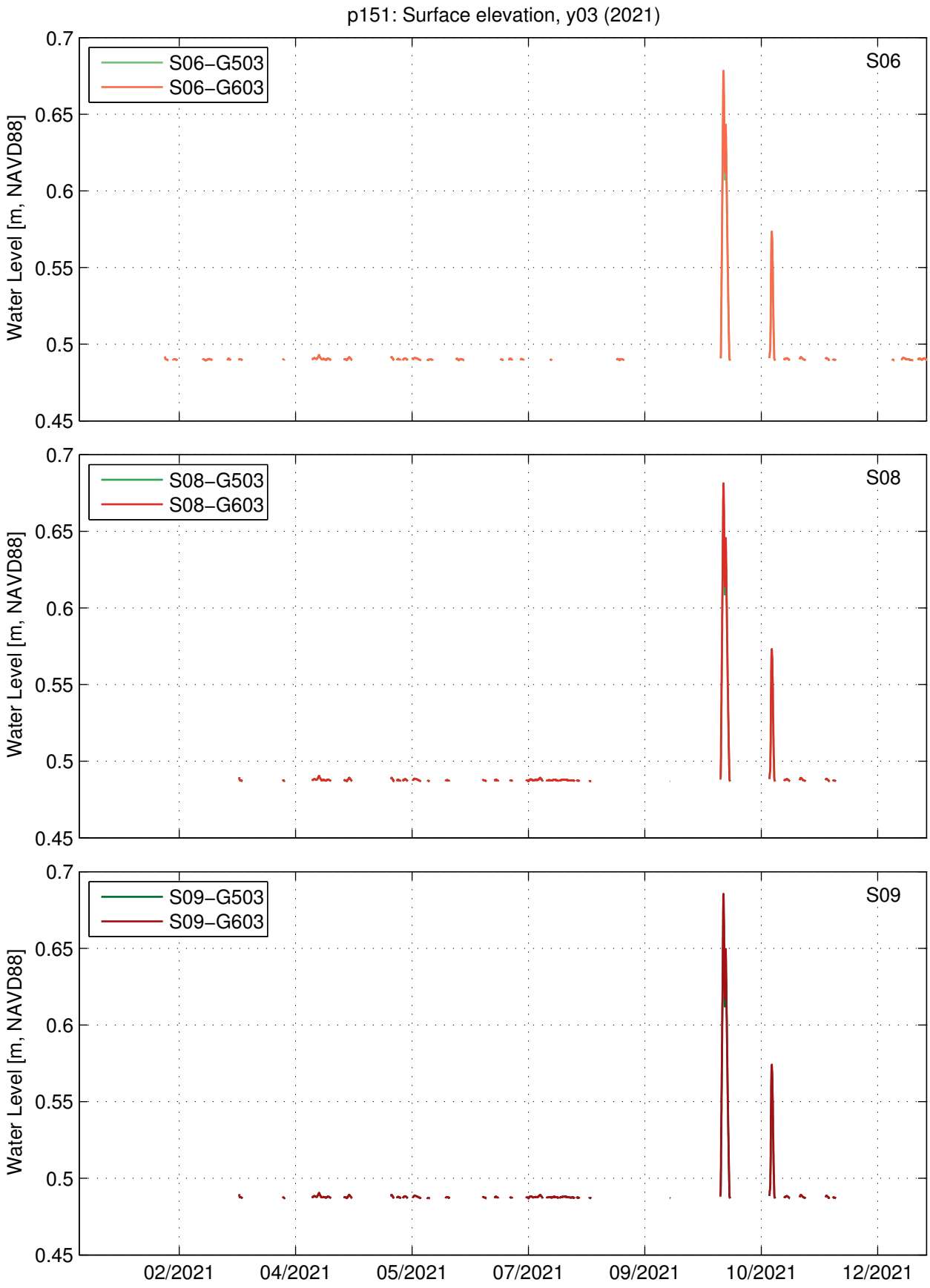

LK−4: Surface elevation, y03 (2021)
S06−G503
S06−G603
S06
S08−G503
S08−G603
S08
S09−G503
S09−G603
S09
Water Level [m, NAVD88]
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

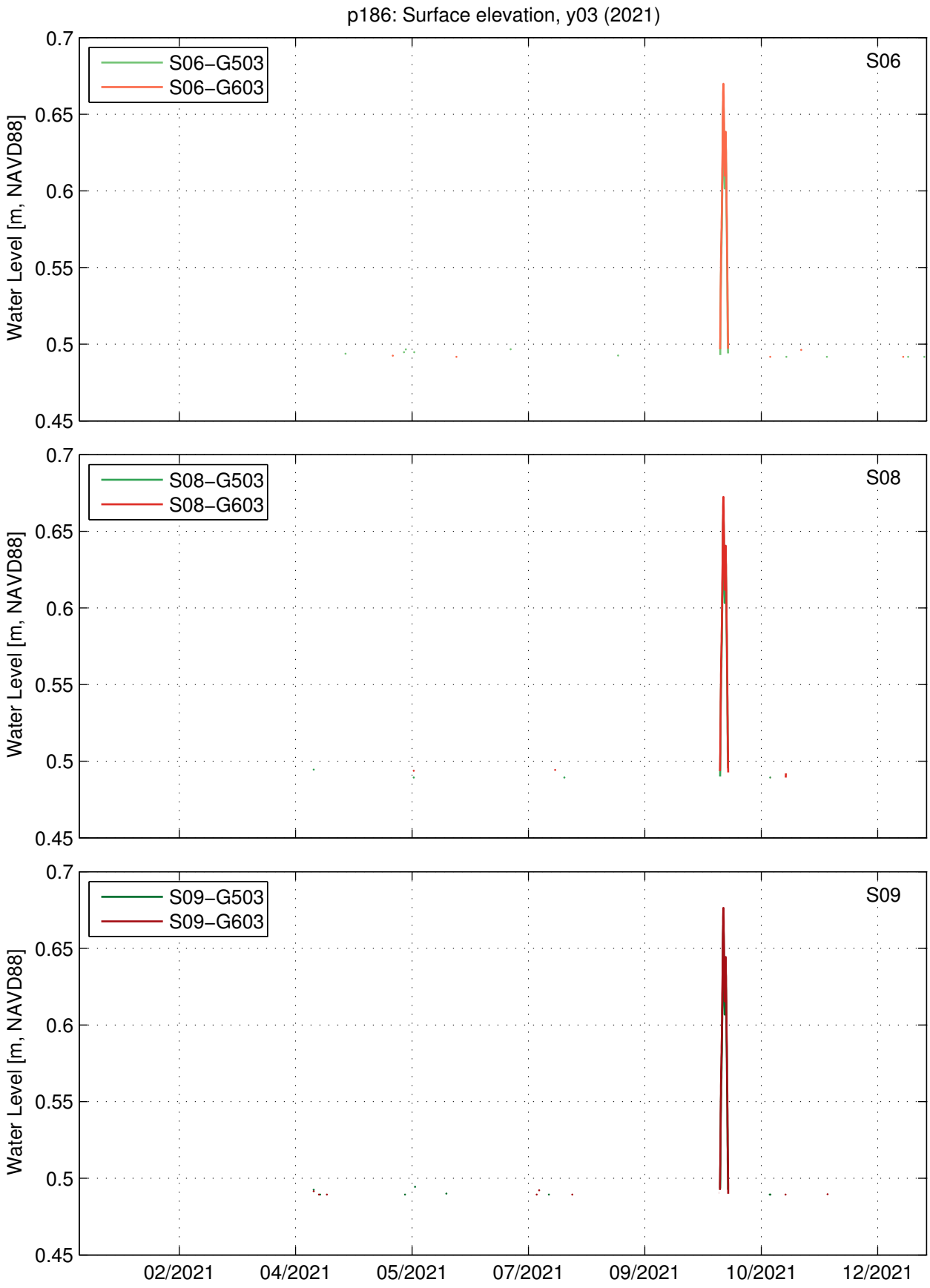

VC−1: Surface elevation, y03 (2021)
S06−G503
S06−G603
S06
S08−G503
S08−G603
S08
S09−G503
S09−G603
S09
Water Level [m, NAVD88]
0.75
0.7
0.65
0.6
0.55
0.5
0.45
0.4
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

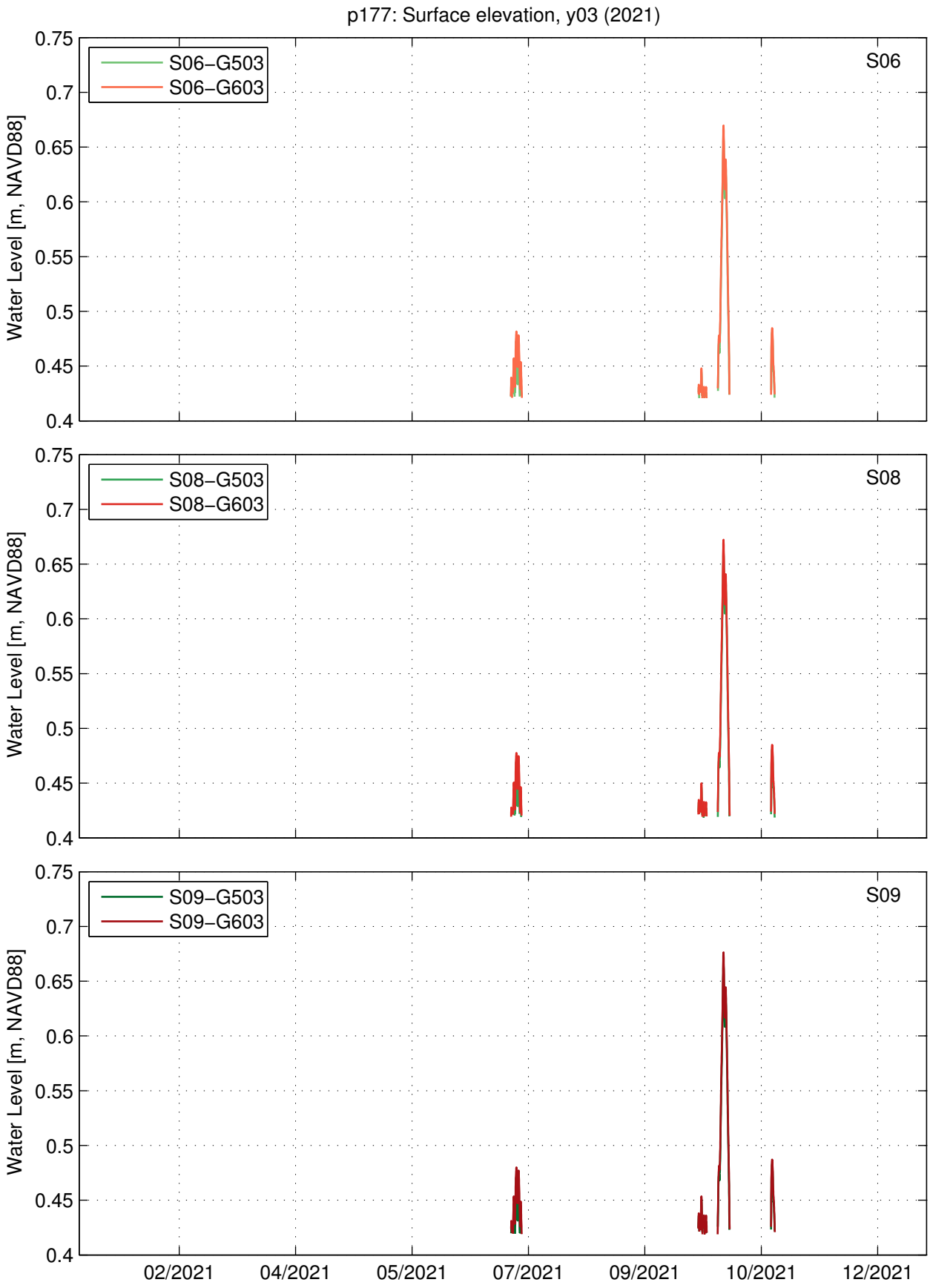

p160: Surface elevation, y03 (2021)
S06–G503
S06–G603
S06
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
Water Level [m, NAVD88]
2
1.5
1
0.5
0
−0.5
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

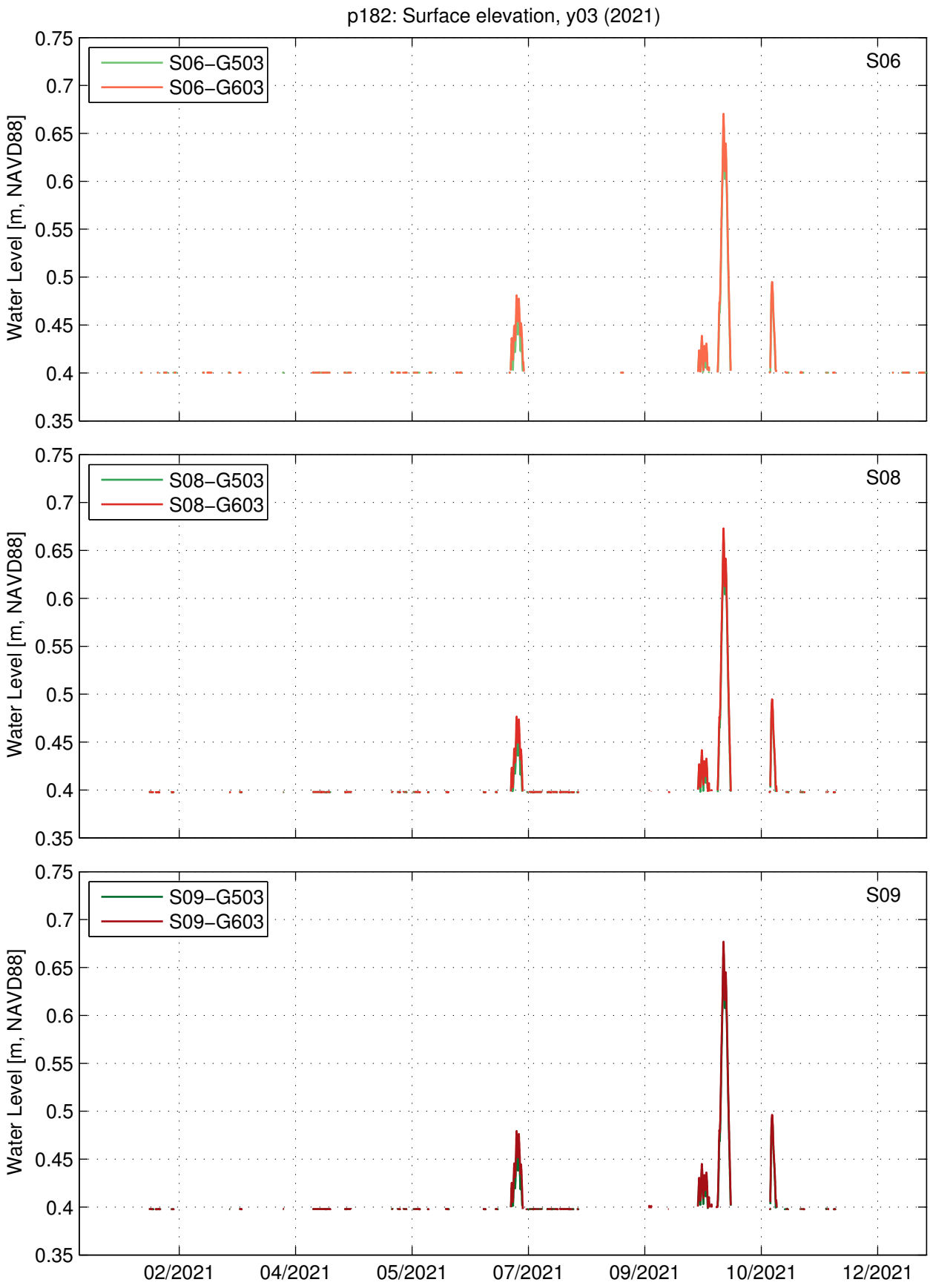

p165: Surface elevation, y03 (2021)
S06–G503
S06–G603
S06
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
Water Level [m, NAVD88]
0.75
0.7
0.65
0.6
0.55
0.5
0.45
0.4
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

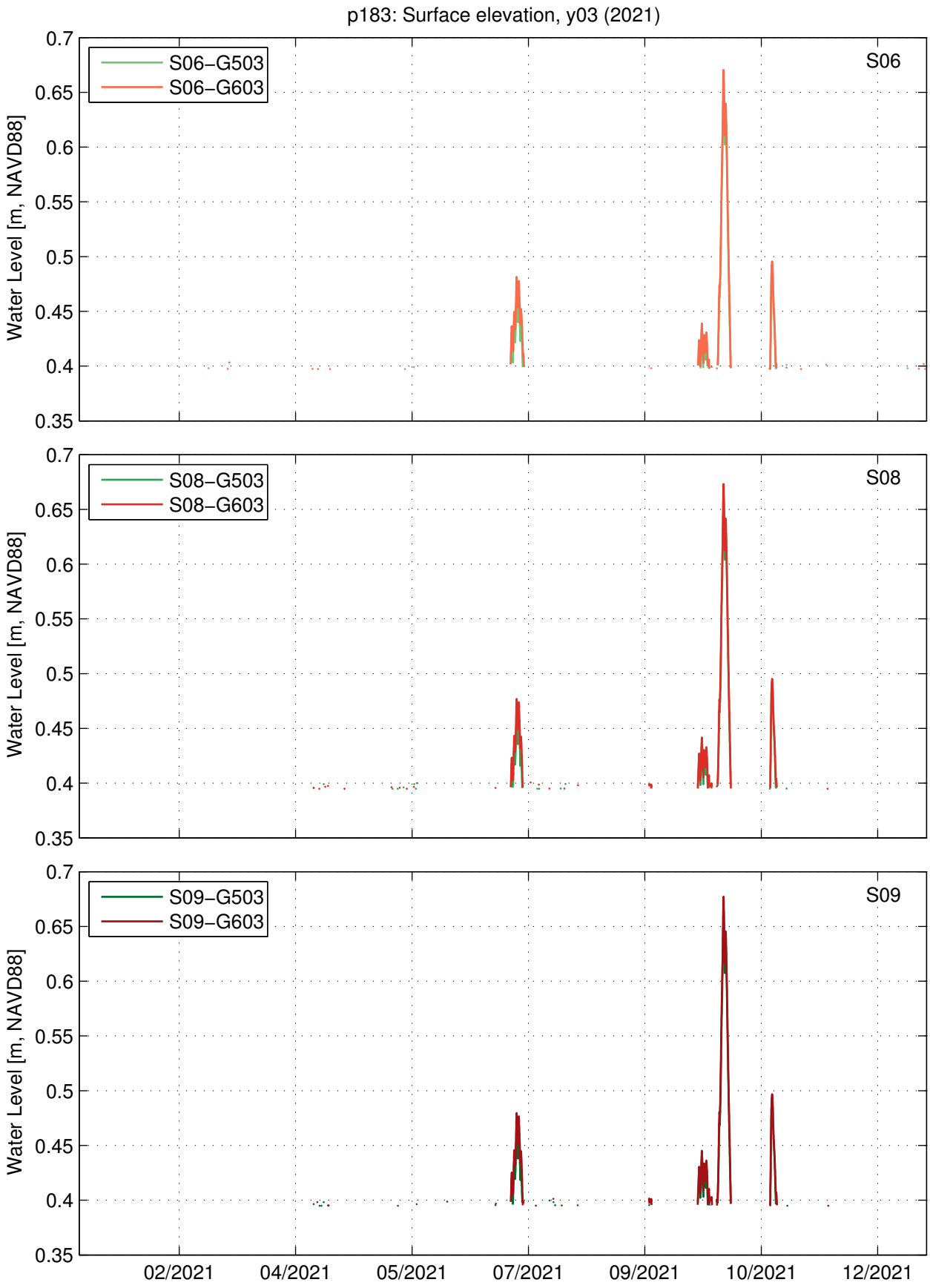

TC−1: Surface elevation, y03 (2021)
S06−G503
S06−G603
S06
S08−G503
S08−G603
S08
S09−G503
S09−G603
S09
Water Level [m, NAVD88]
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

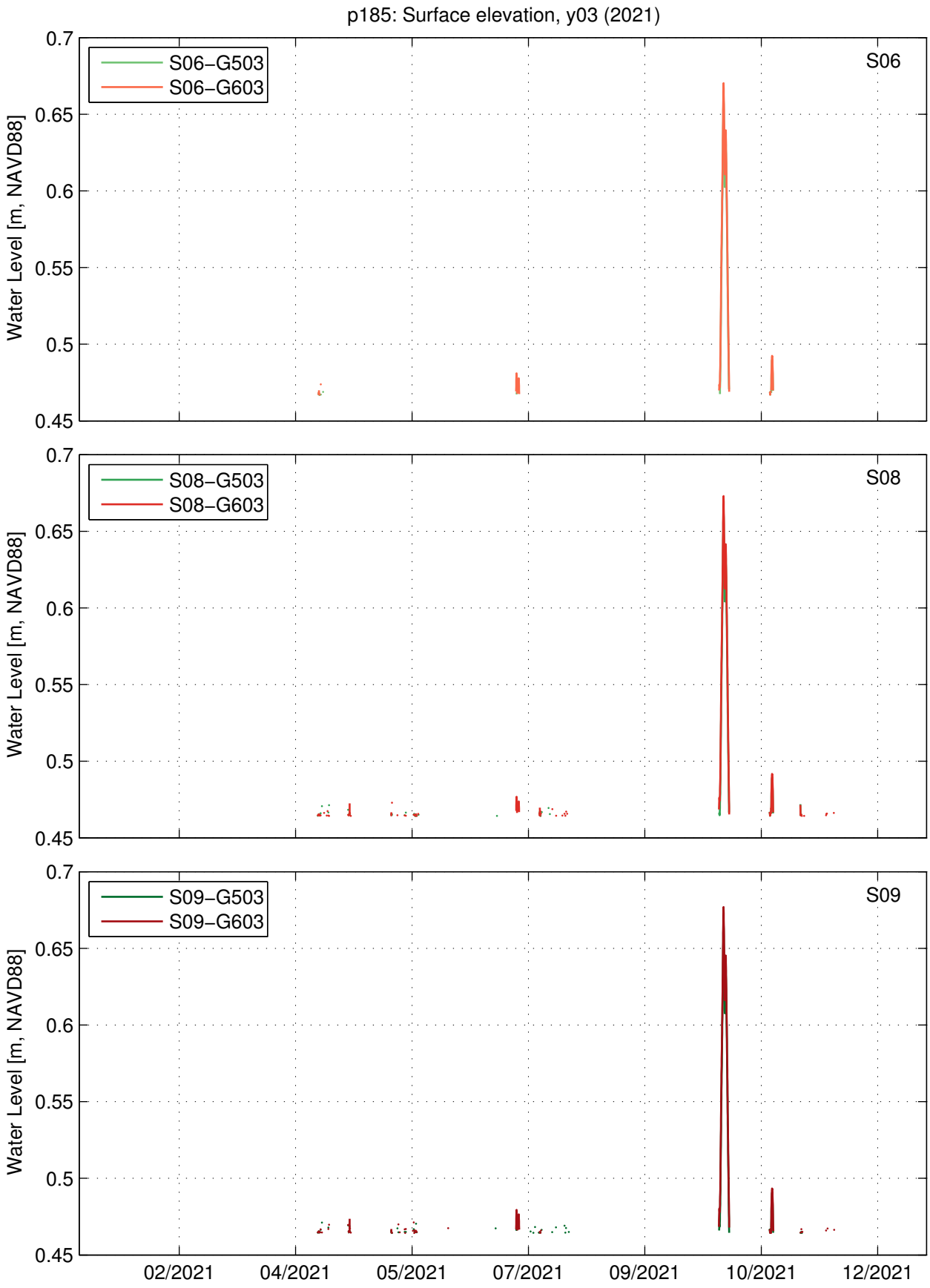

p151: Surface elevation, y03 (2021)
S06–G503
S06–G603
S06
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
Water Level [m, NAVD88]
0.7
0.65
0.6
0.55
0.5
0.45
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

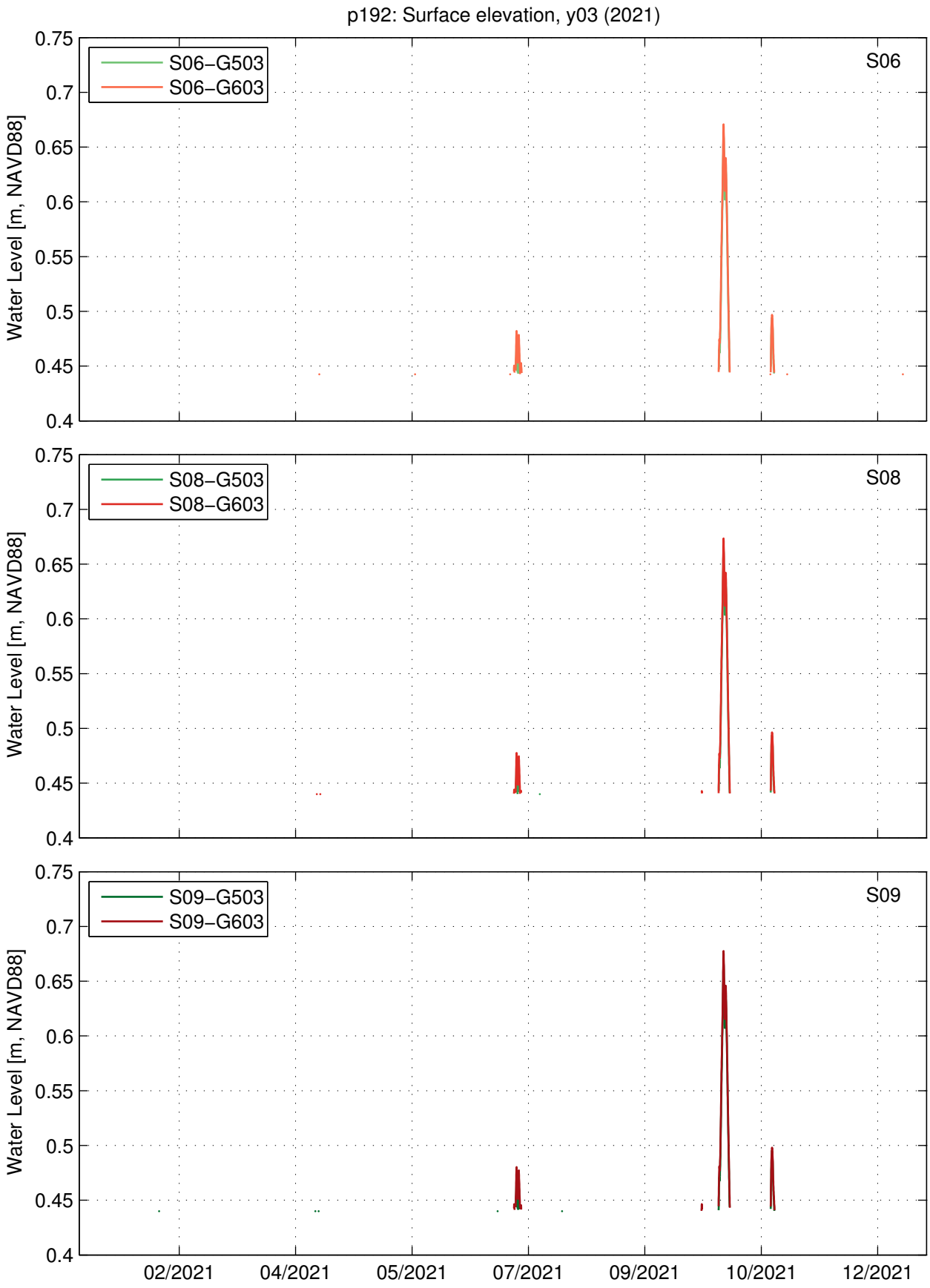

p186: Surface elevation, y03 (2021)
S06–G503
S06–G603
S06
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
Water Level [m, NAVD88]
0.7
0.65
0.6
0.55
0.5
0.45
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

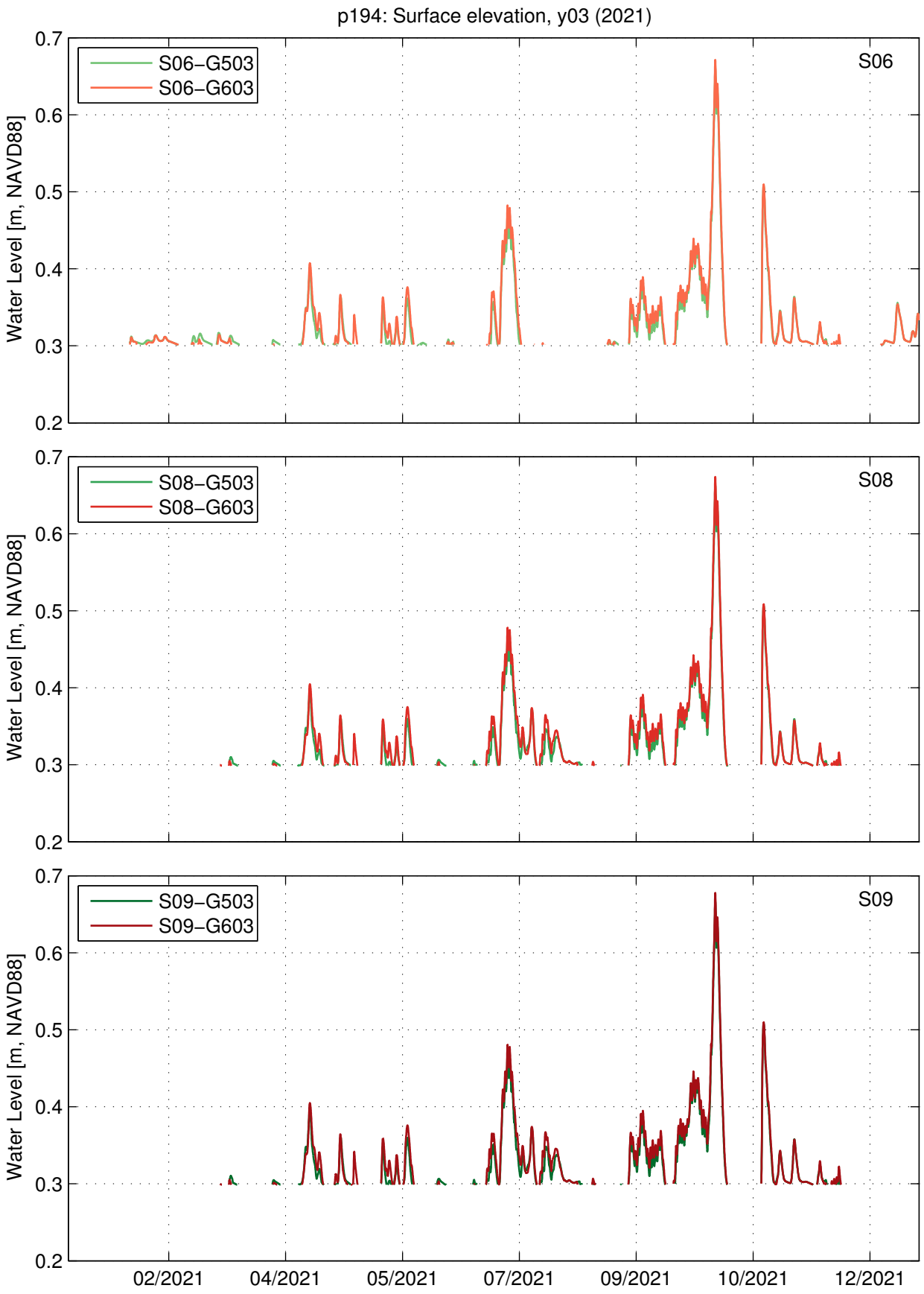

p177: Surface elevation, y03 (2021)
S06–G503
S06–G603
S06
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
Water Level [m, NAVD88]
0.75
0.7
0.65
0.6
0.55
0.5
0.45
0.4
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

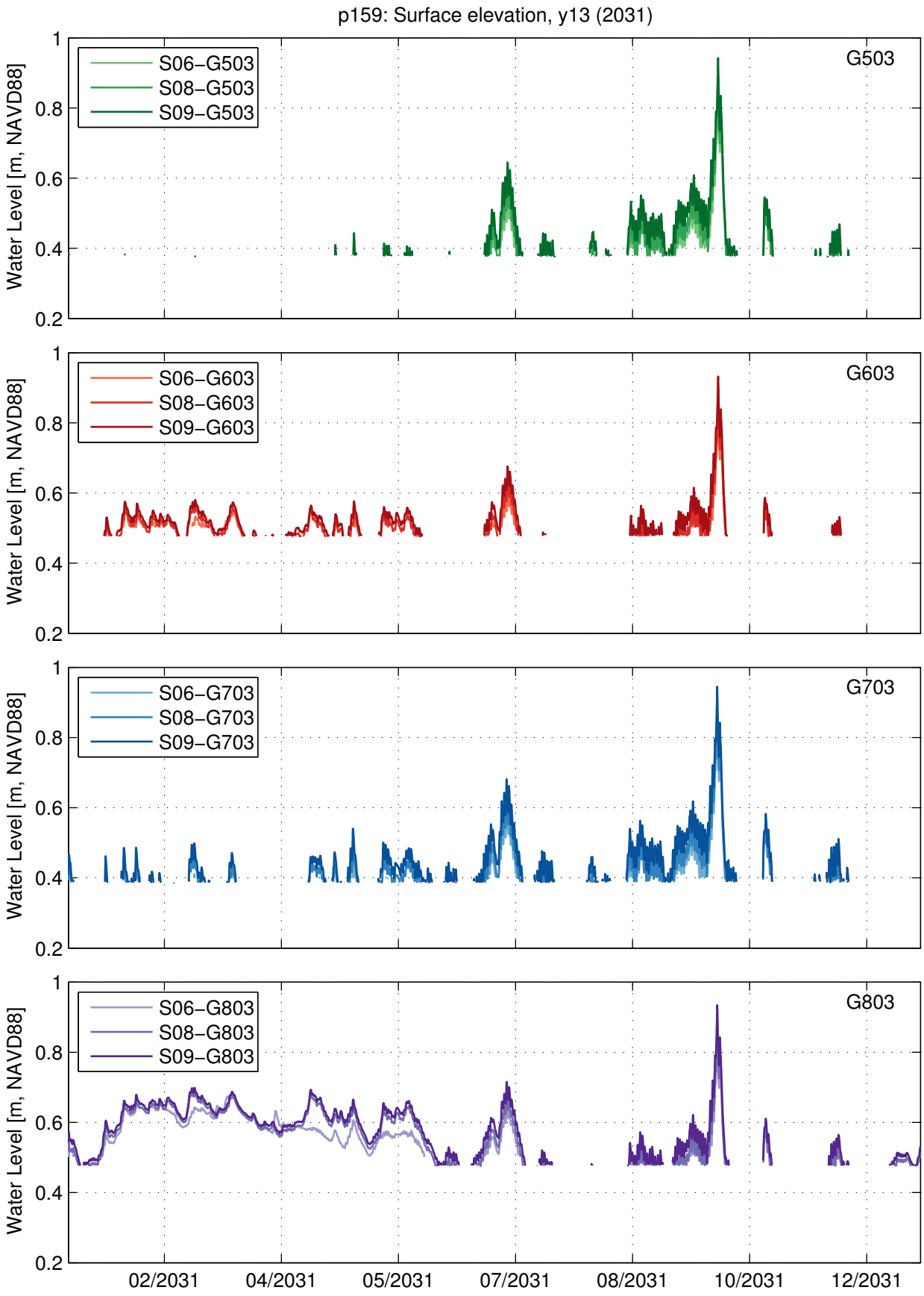

p182: Surface elevation, y03 (2021)
S06–G503
S06–G603
S06
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
Water Level [m, NAVD88]
0.75
0.7
0.65
0.6
0.55
0.5
0.45
0.4
0.35
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

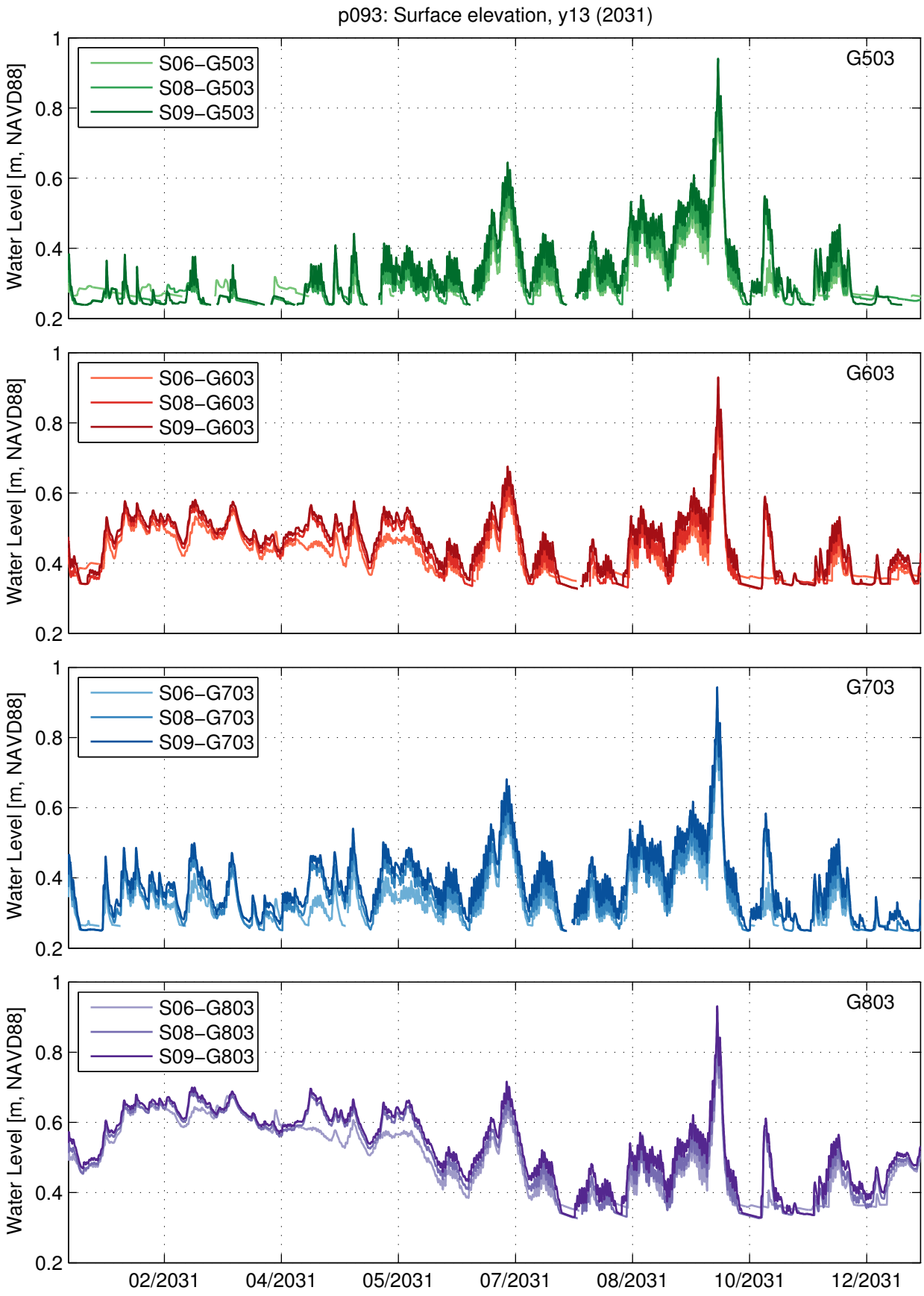

p183: Surface elevation, y03 (2021)
S06–G503
S06–G603
S06
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
Water Level [m, NAVD88]
0.7
0.65
0.6
0.55
0.5
0.45
0.4
0.35
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

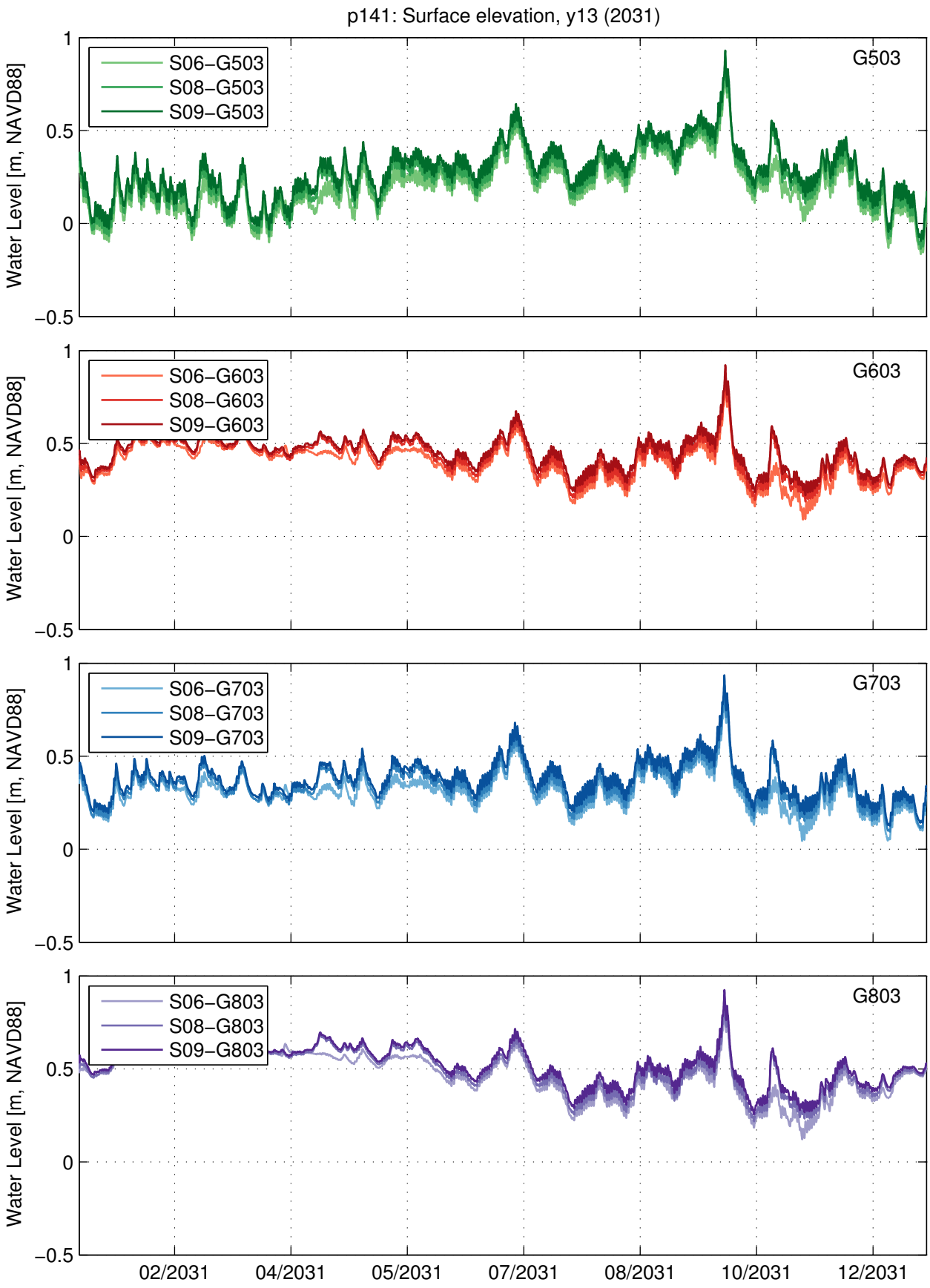

p185: Surface elevation, y03 (2021)
S06–G503
S06–G603
S06
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
Water Level [m, NAVD88]
0.7
0.65
0.6
0.55
0.5
0.45
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

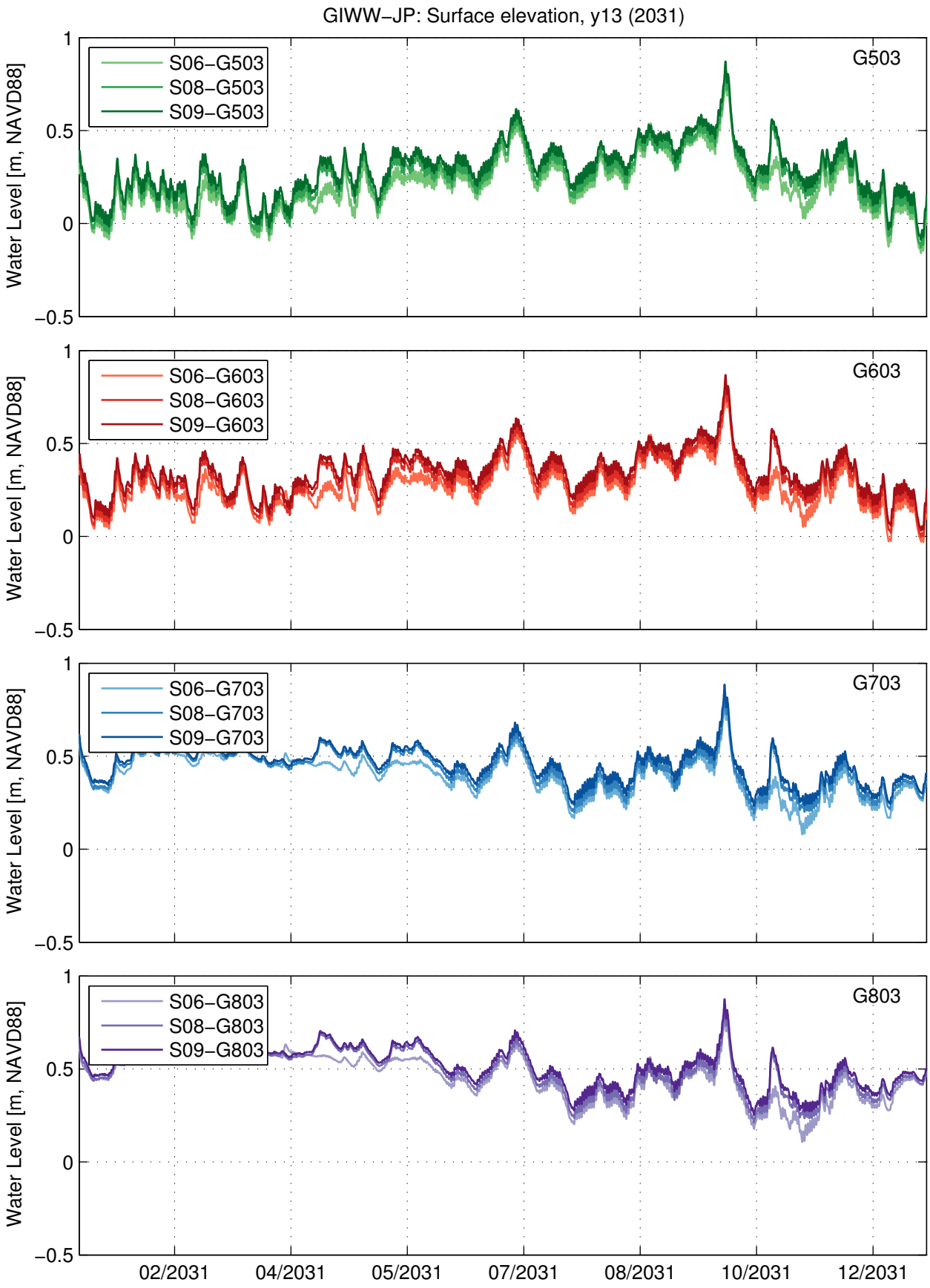

p192: Surface elevation, y03 (2021)
S06–G503
S06–G603
S06
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
Water Level [m, NAVD88]
0.75
0.7
0.65
0.6
0.55
0.5
0.45
0.4
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

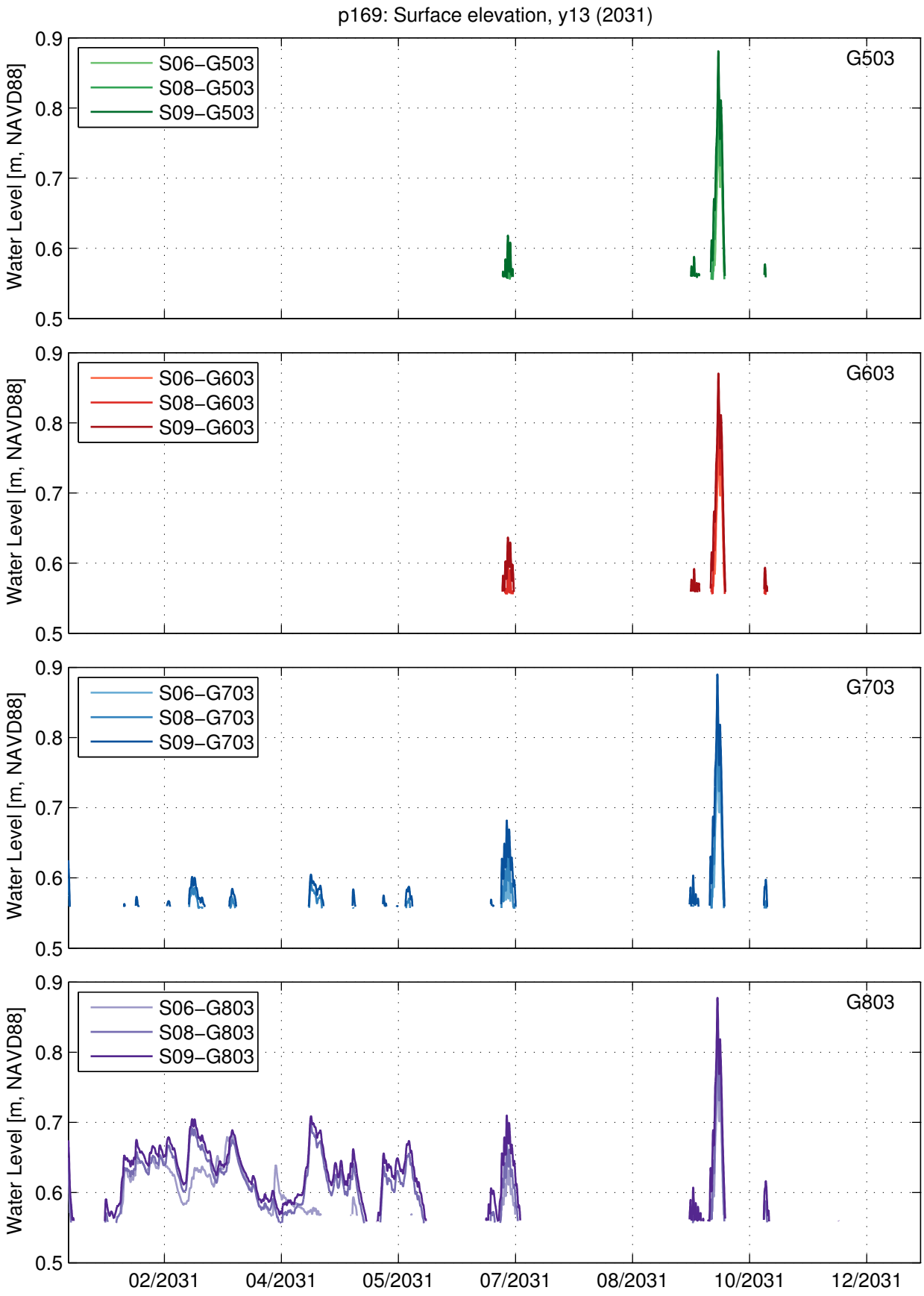

p194: Surface elevation, y03 (2021)
S06–G503
S06–G603
S06
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
Water Level [m, NAVD88]
0.7
0.6
0.5
0.4
0.3
0.2
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

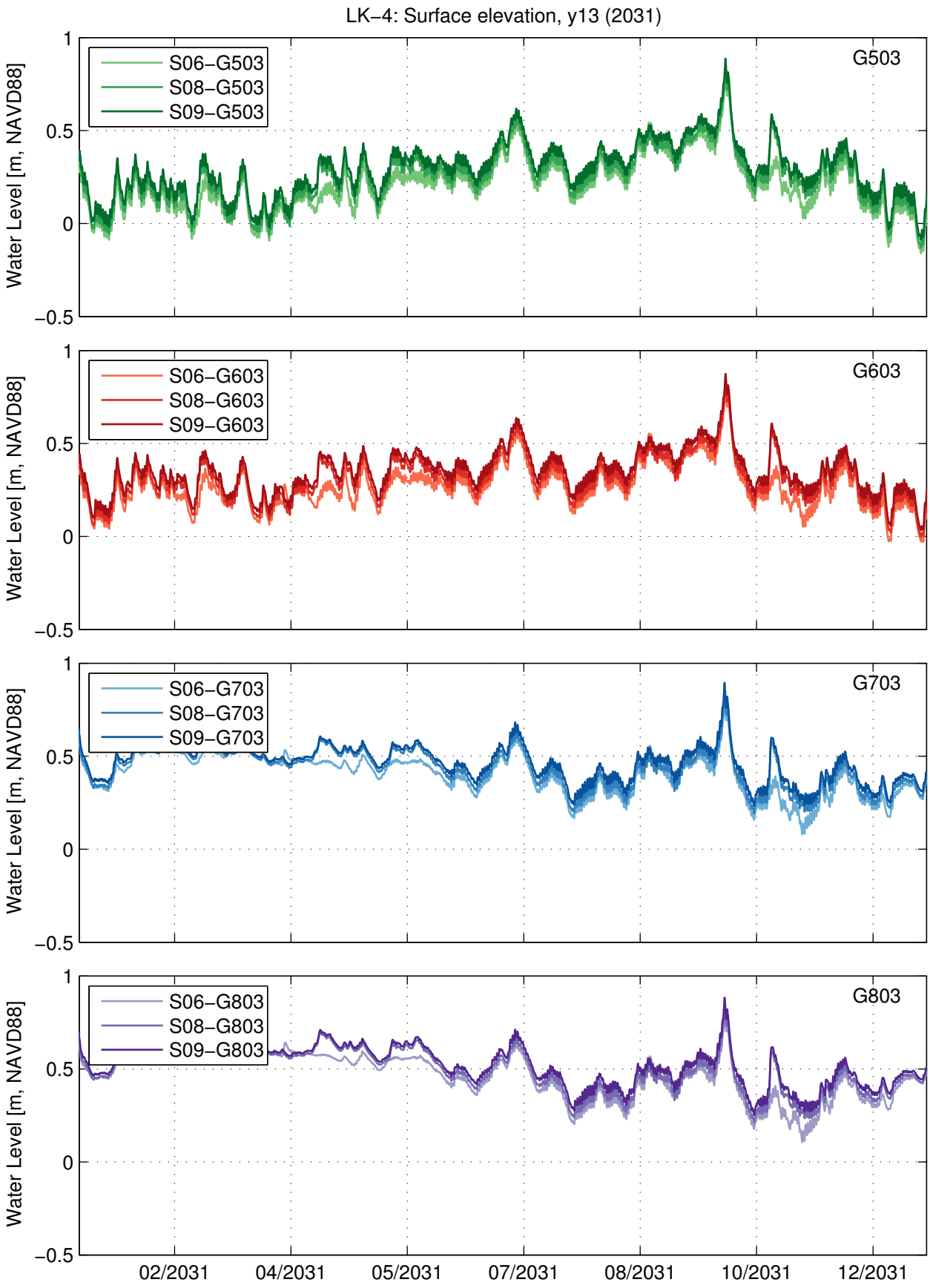

p159: Surface elevation, y13 (2031)
Water Level [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
1
0.8
0.6
0.4
0.2
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

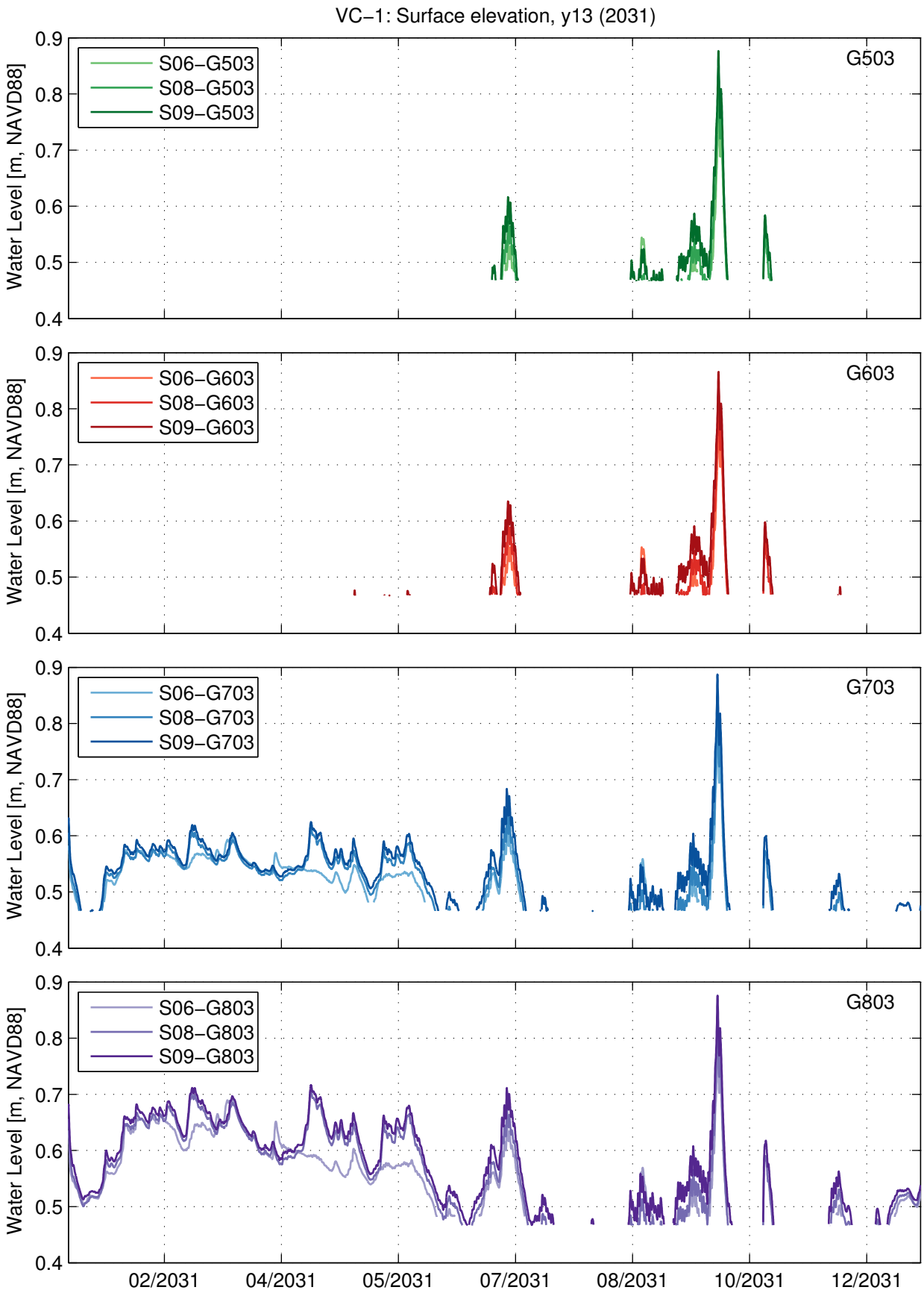

p093: Surface elevation, y13 (2031)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Water Level [m, NAVD88]
1
0.8
0.6
0.4
0.2
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

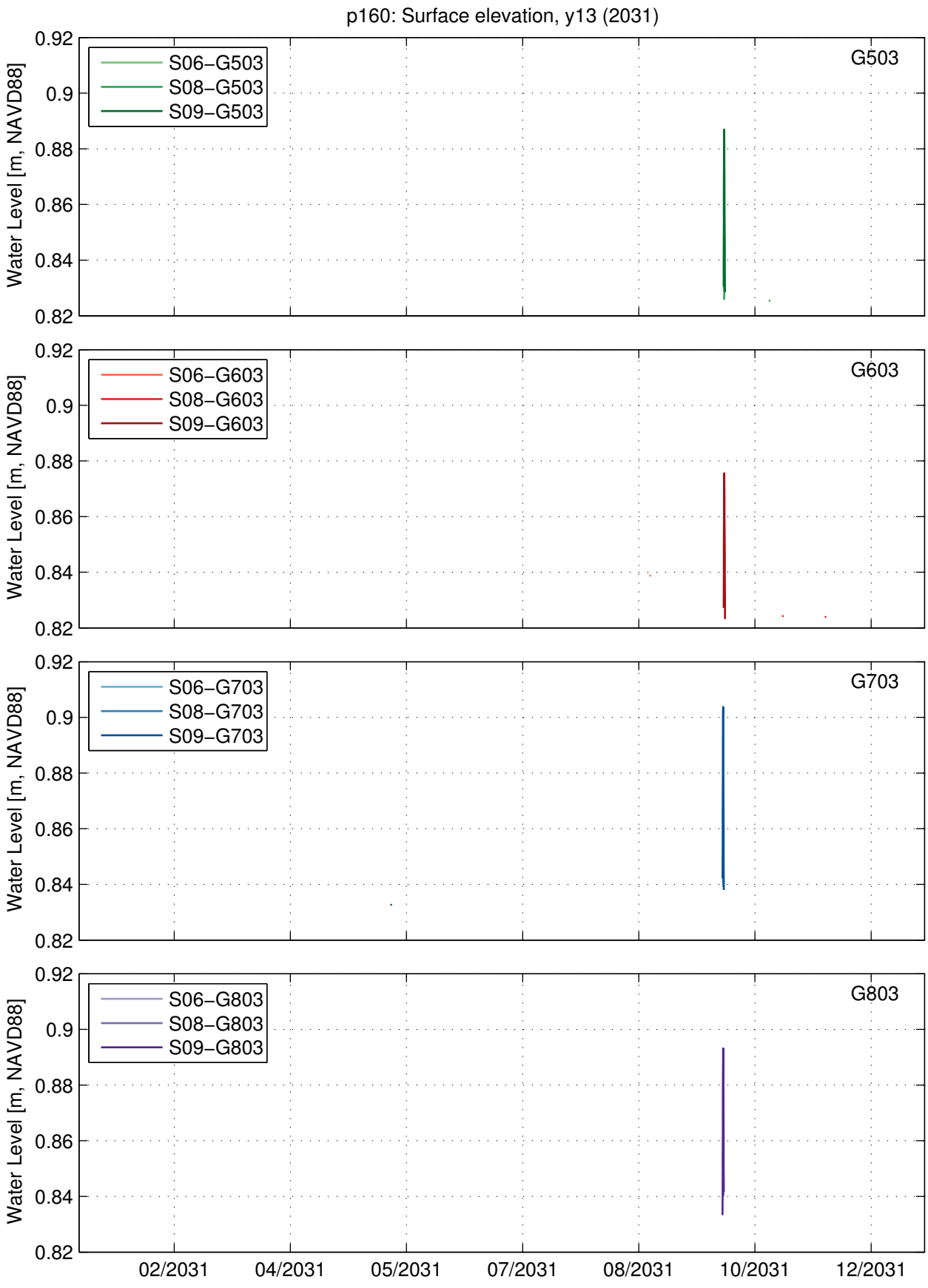

p141: Surface elevation, y13 (2031)
Water Level [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
1
0.5
0
−0.5
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

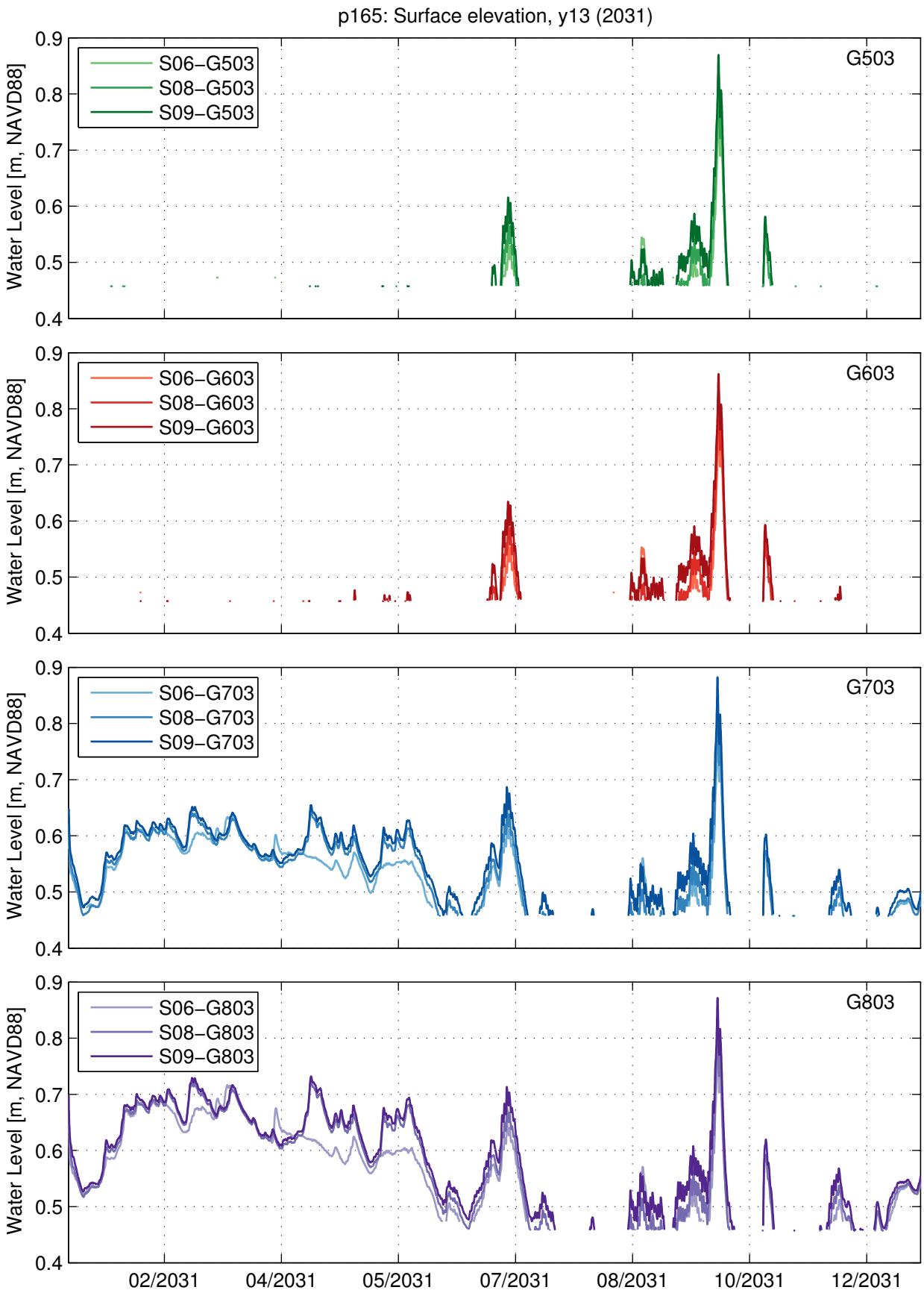

GIWW–JP: Surface elevation, y13 (2031)
Water Level [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
1
0.5
0
–0.5
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

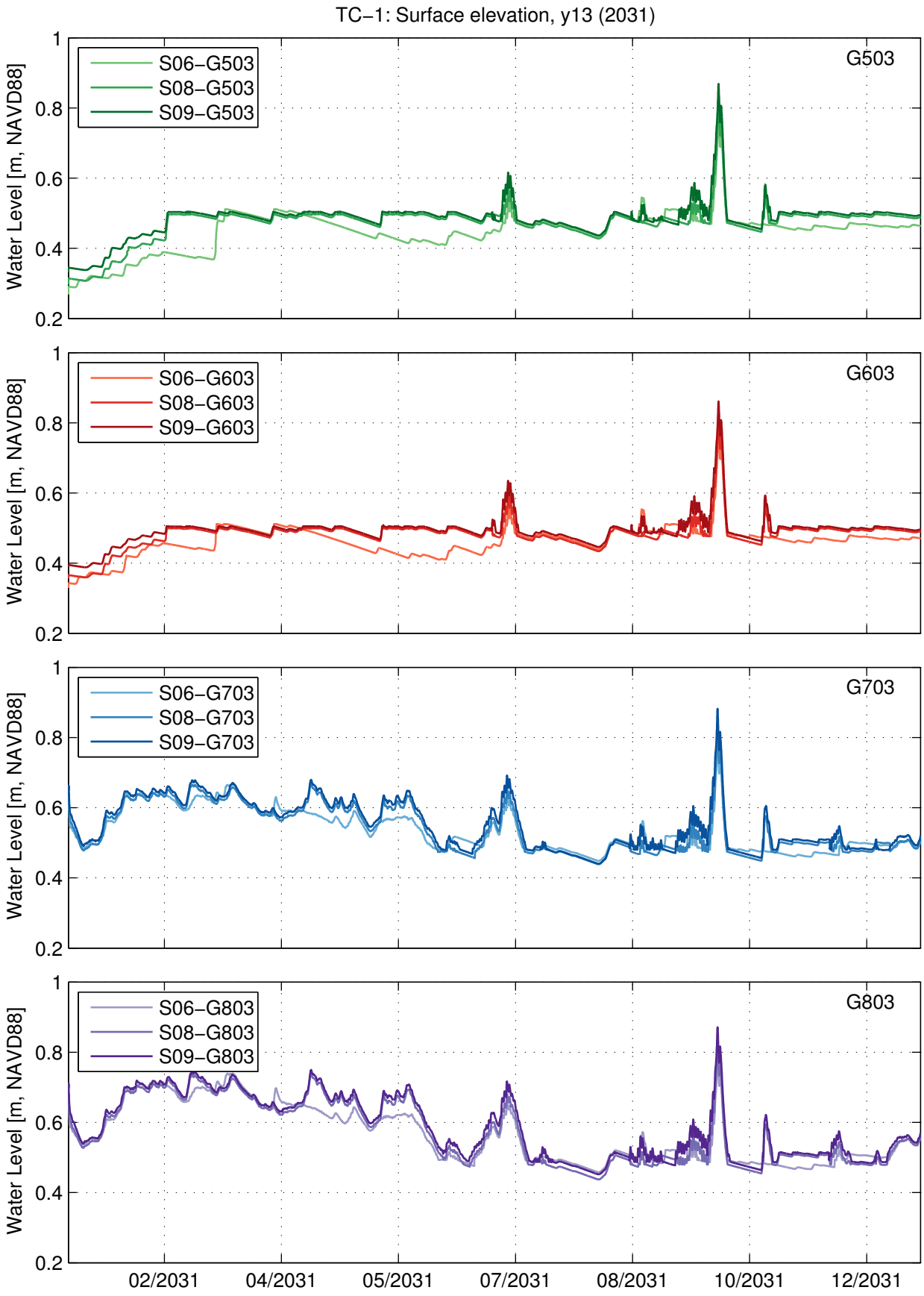

p169: Surface elevation, y13 (2031)
Water Level [m, NAVD88]
0.9
0.8
0.7
0.6
0.5
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

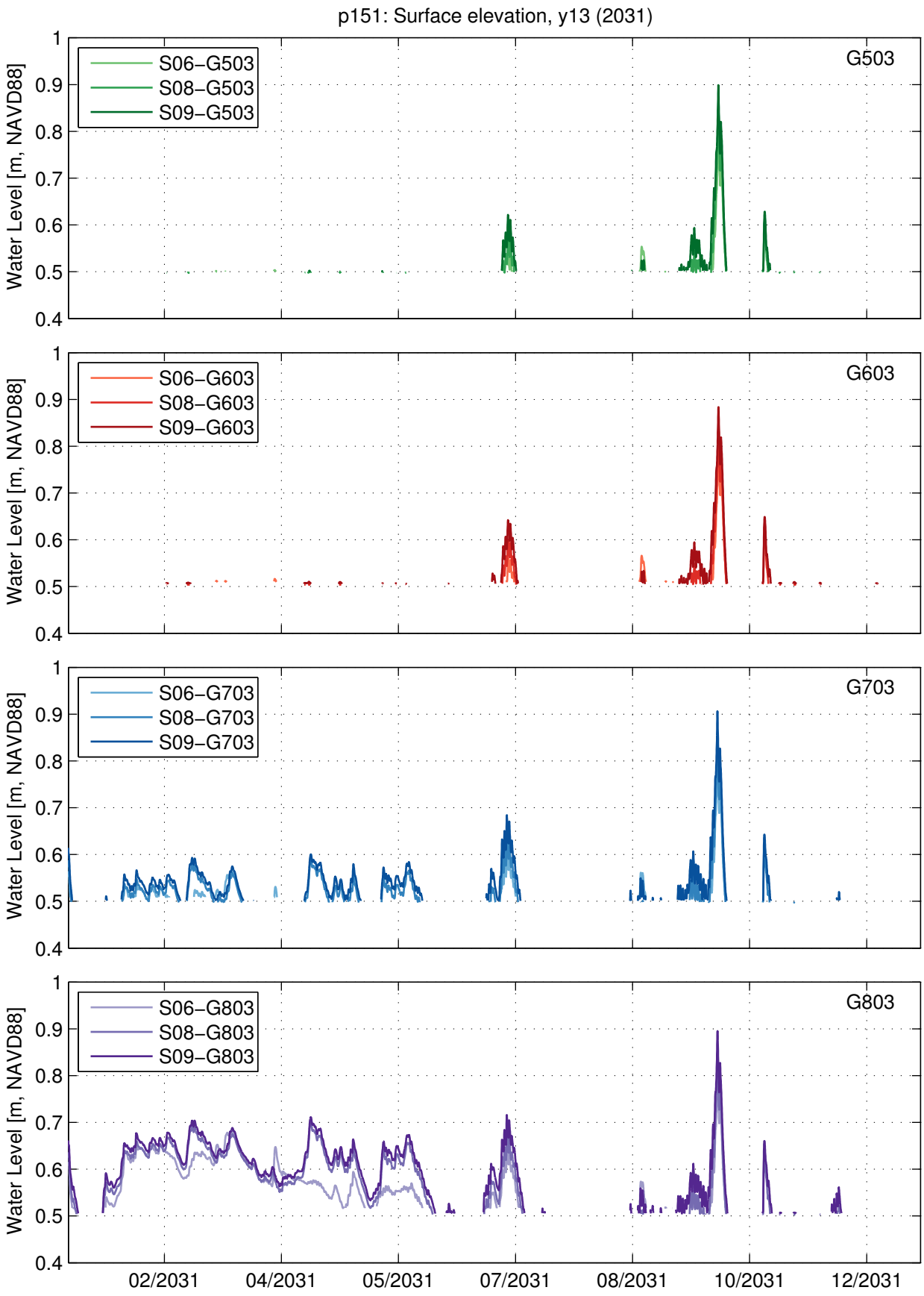

LK−4: Surface elevation, y13 (2031)
Water Level [m, NAVD88]
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
S06−G703
S08−G703
S09−G703
G703
S06−G803
S08−G803
S09−G803
G803
1
0.5
0
−0.5
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

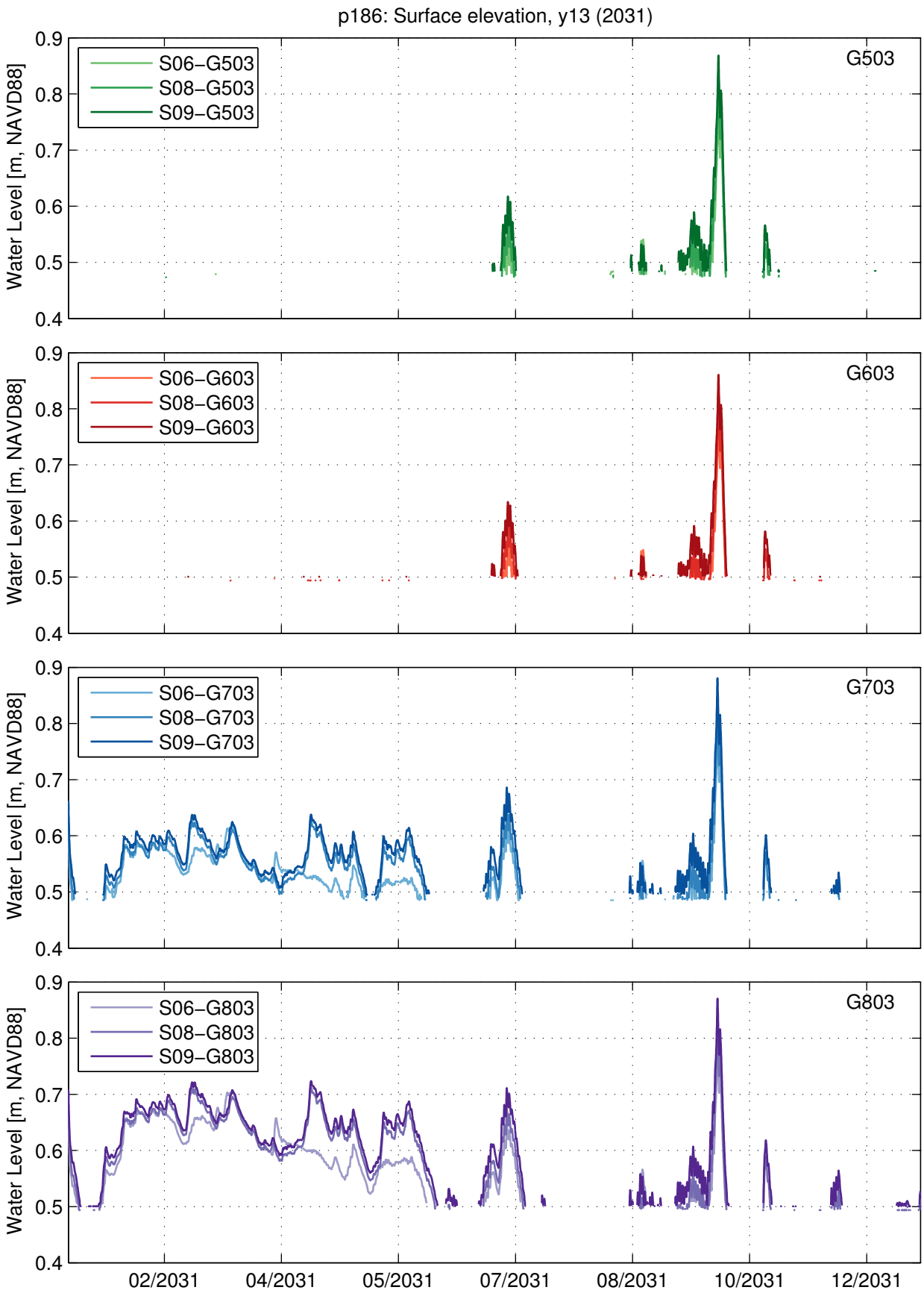

VC−1: Surface elevation, y13 (2031)
Water Level [m, NAVD88]
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
S06−G703
S08−G703
S09−G703
G703
S06−G803
S08−G803
S09−G803
G803
0.9
0.8
0.7
0.6
0.5
0.4
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

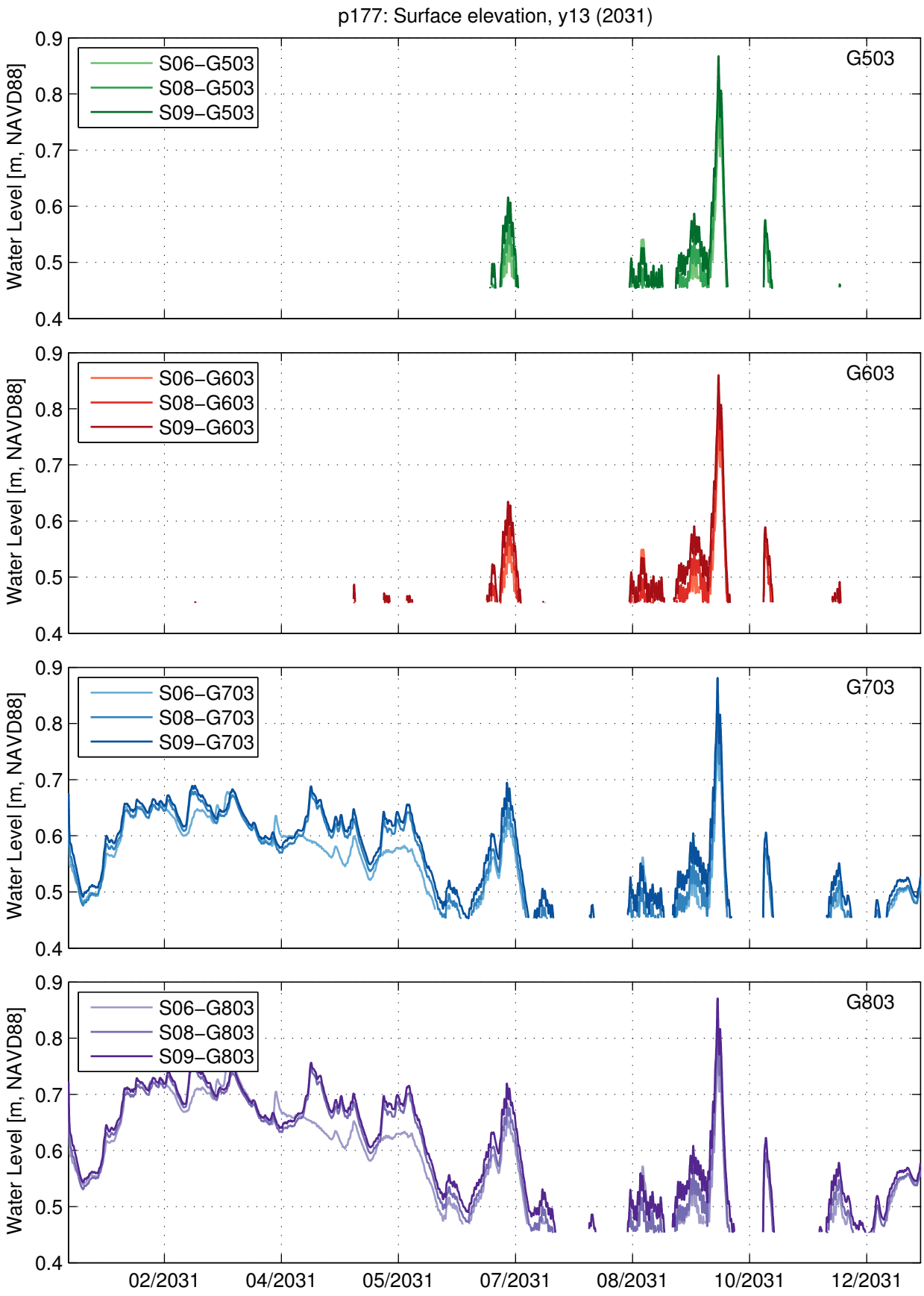

p160: Surface elevation, y13 (2031)
Water Level [m, NAVD88]
0.92
0.9
0.88
0.86
0.84
0.82
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

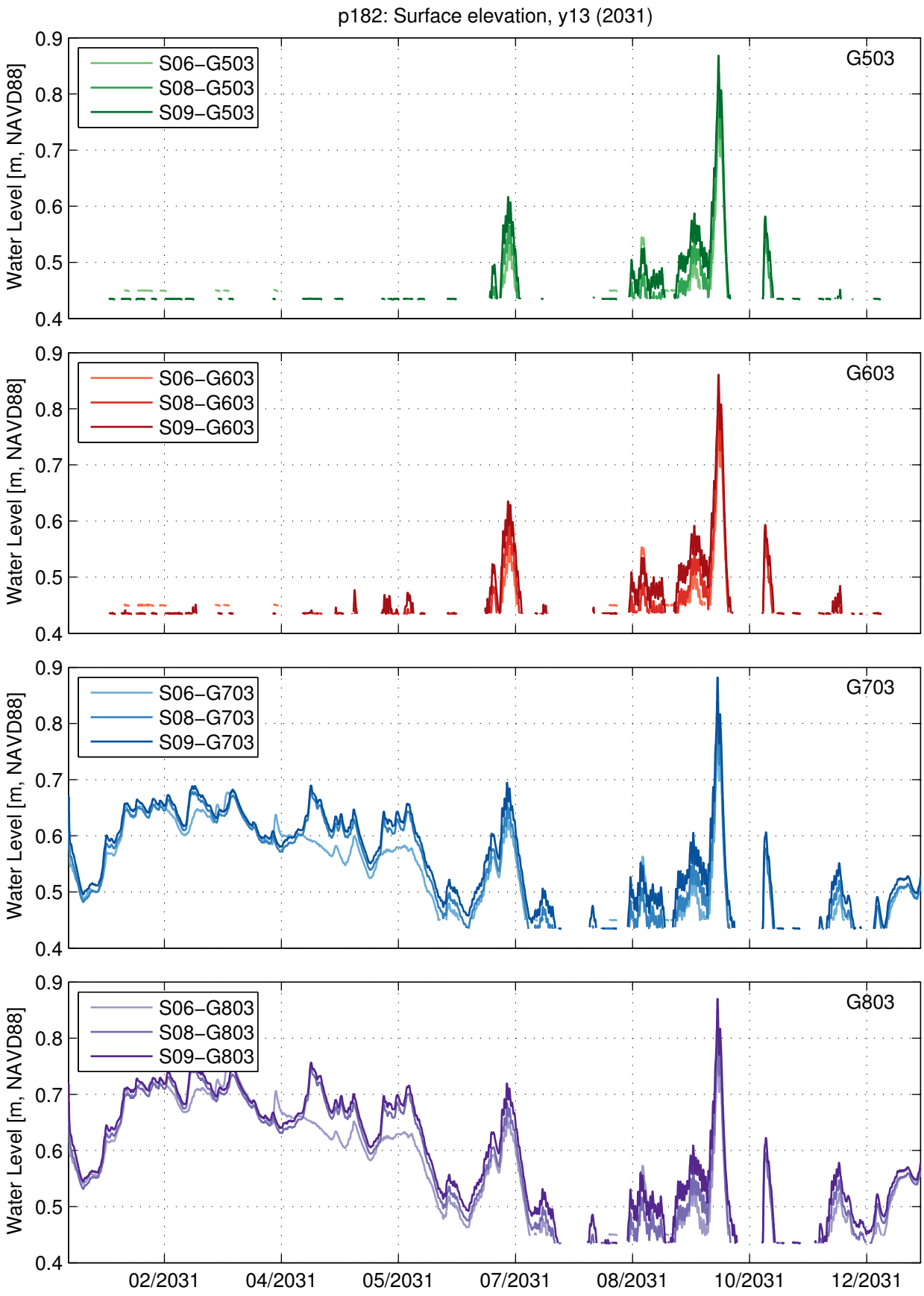

p165: Surface elevation, y13 (2031)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Water Level [m, NAVD88]
0.9
0.8
0.7
0.6
0.5
0.4
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

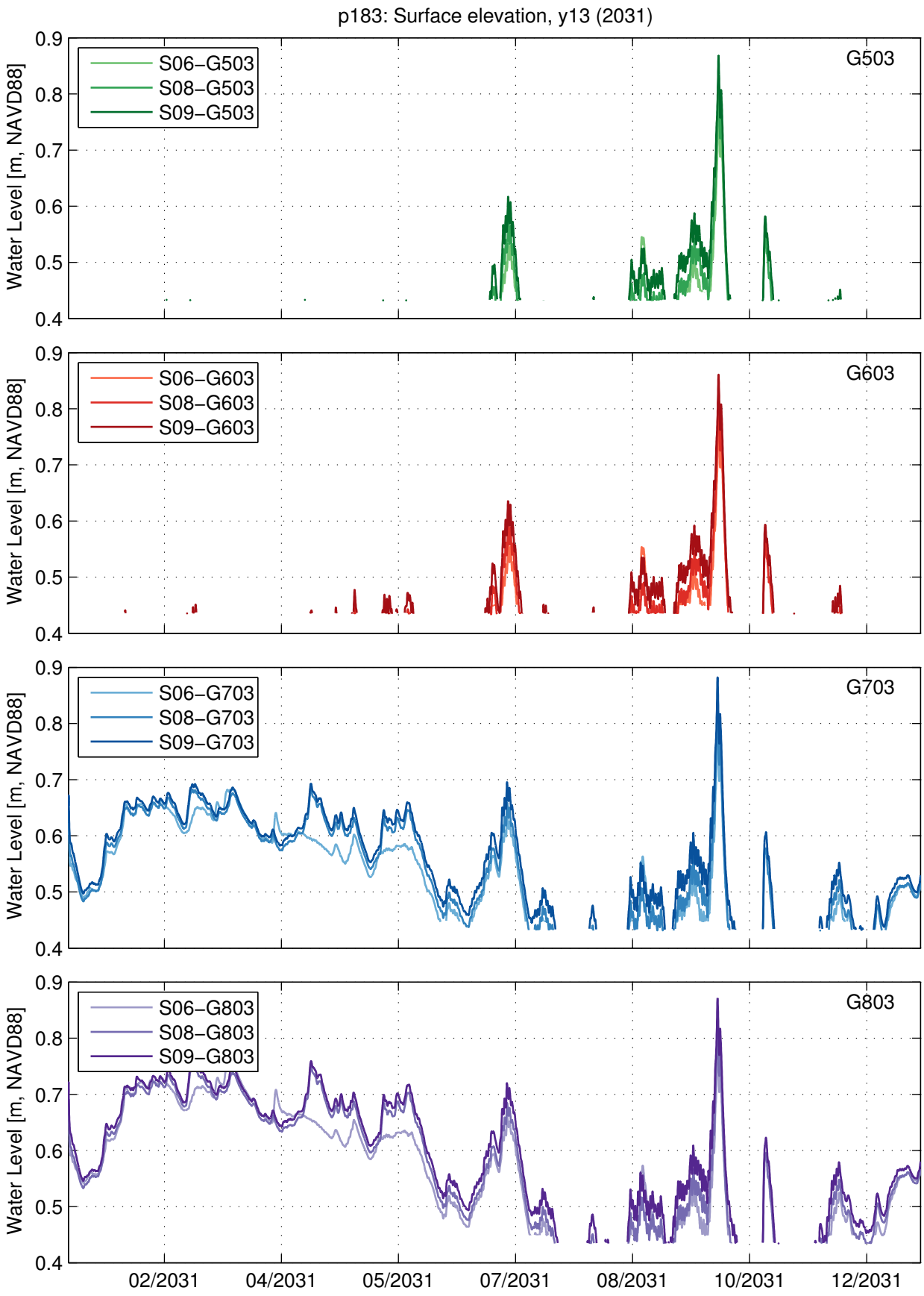

TC−1: Surface elevation, y13 (2031)
Water Level [m, NAVD88]
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
S06−G703
S08−G703
S09−G703
G703
S06−G803
S08−G803
S09−G803
G803
1
0.8
0.6
0.4
0.2
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

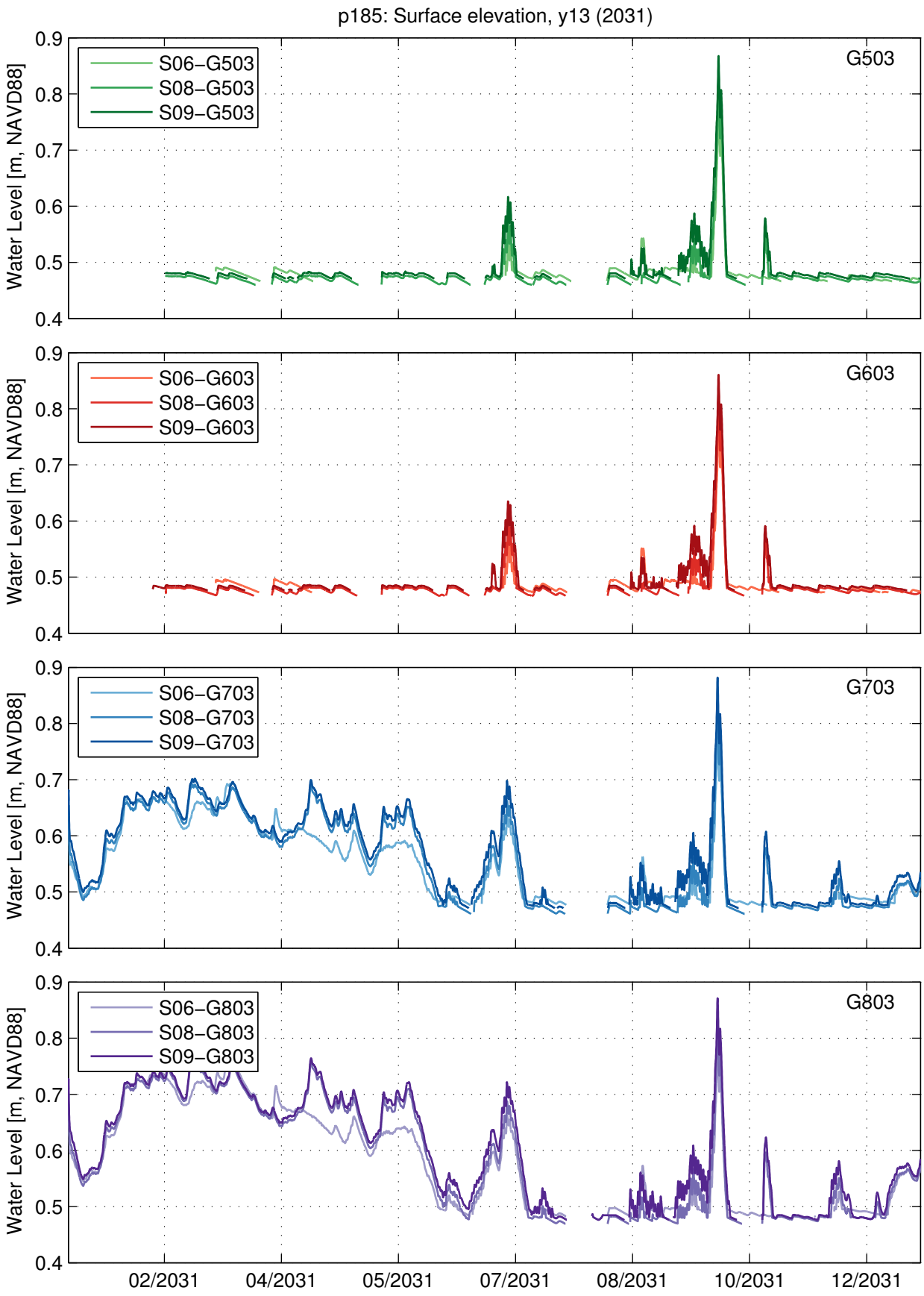

p151: Surface elevation, y13 (2031)
Water Level [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
1
0.9
0.8
0.7
0.6
0.5
0.4
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

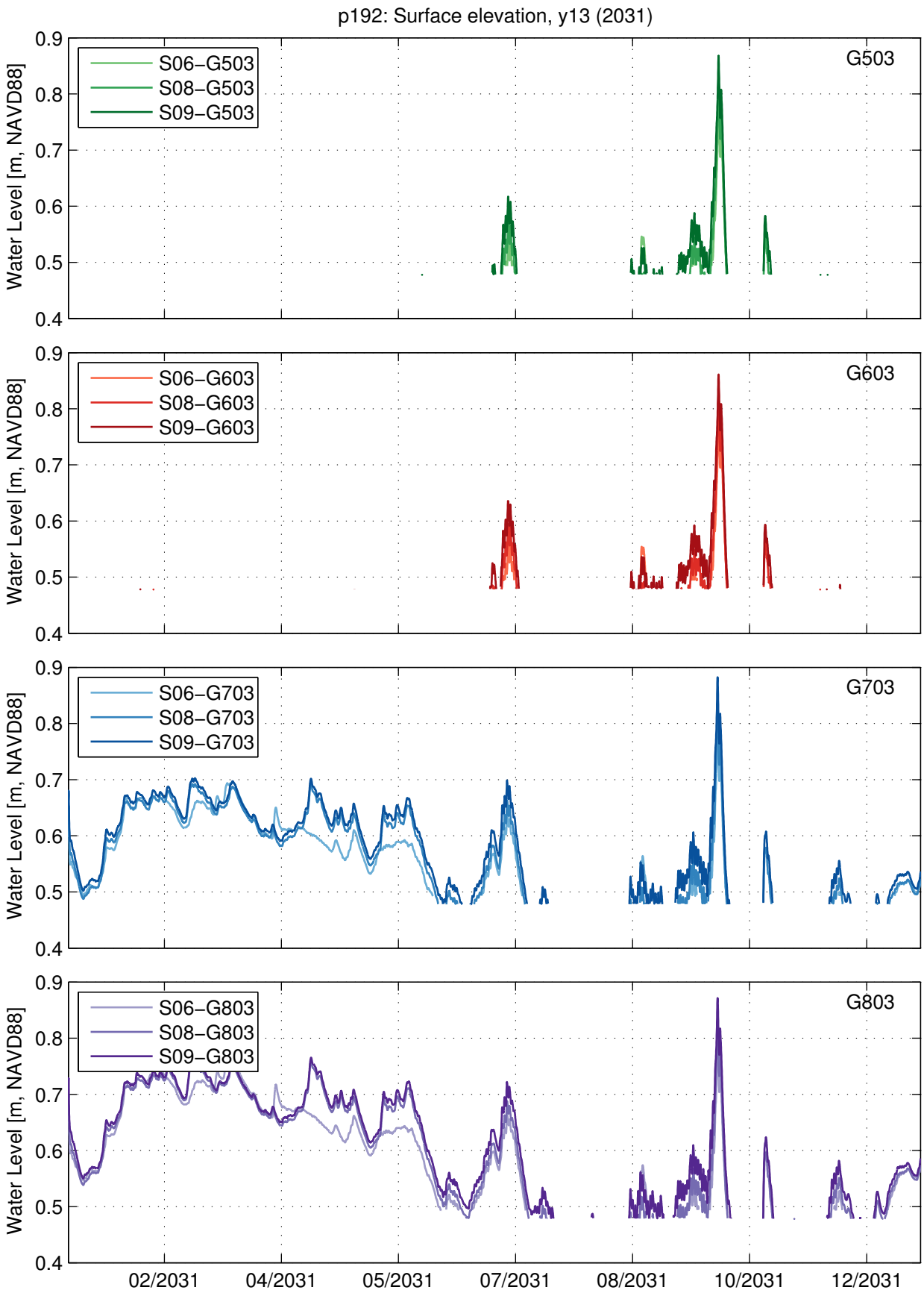

p186: Surface elevation, y13 (2031)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Water Level [m, NAVD88]
0.9
0.8
0.7
0.6
0.5
0.4
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

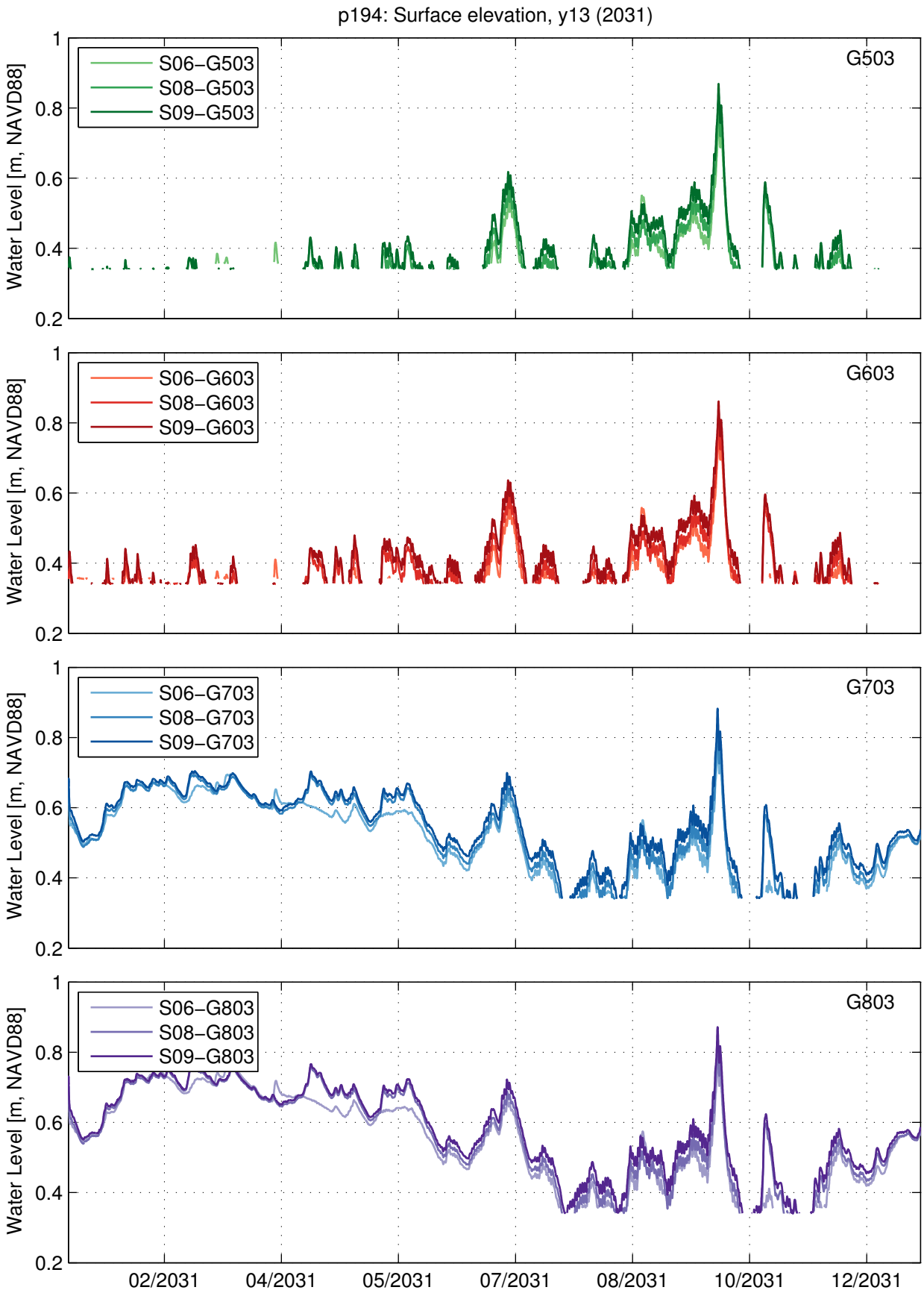

p177: Surface elevation, y13 (2031)
Water Level [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
0.9
0.8
0.7
0.6
0.5
0.4
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

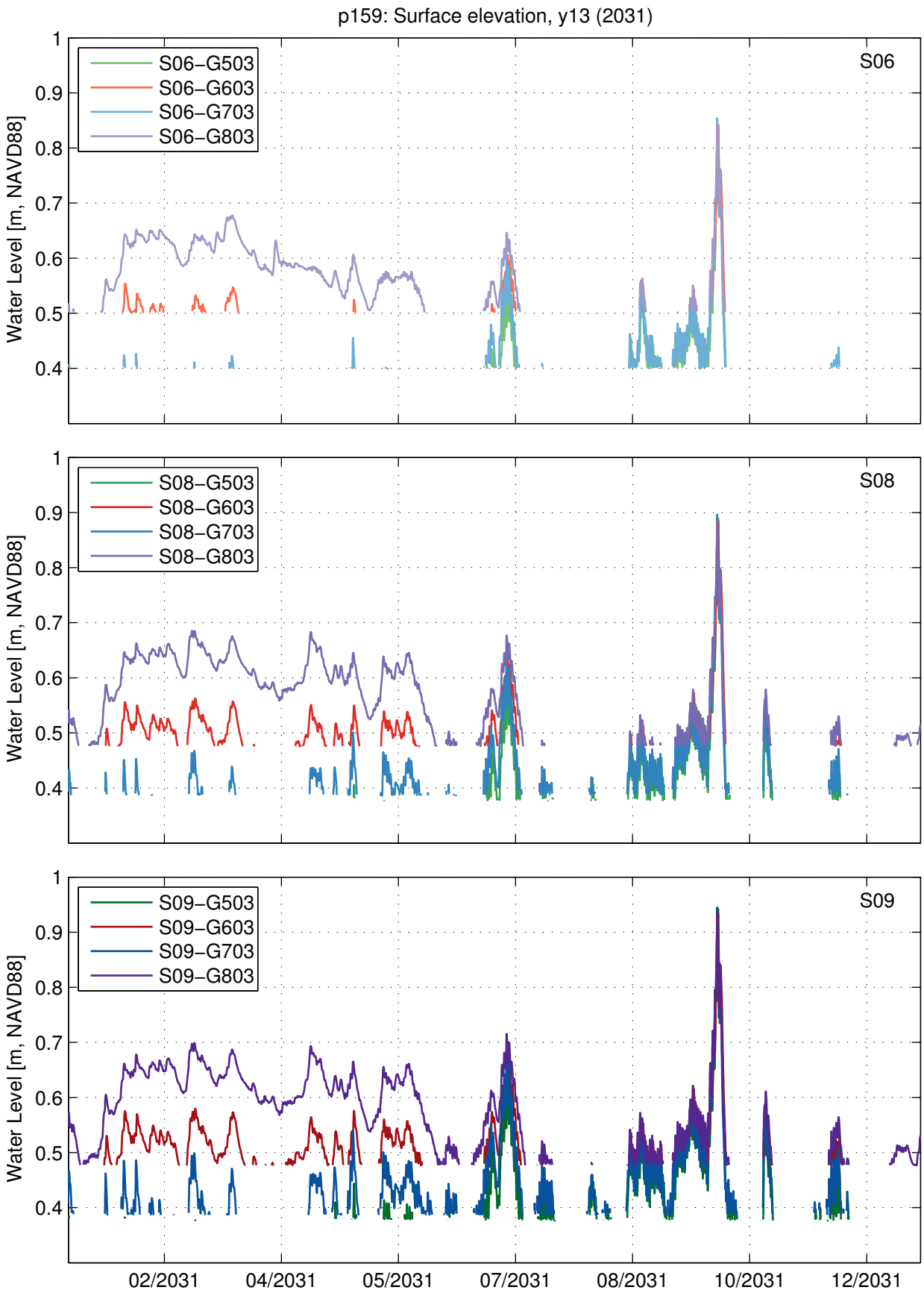

p182: Surface elevation, y13 (2031)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Water Level [m, NAVD88]
0.9
0.8
0.7
0.6
0.5
0.4
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

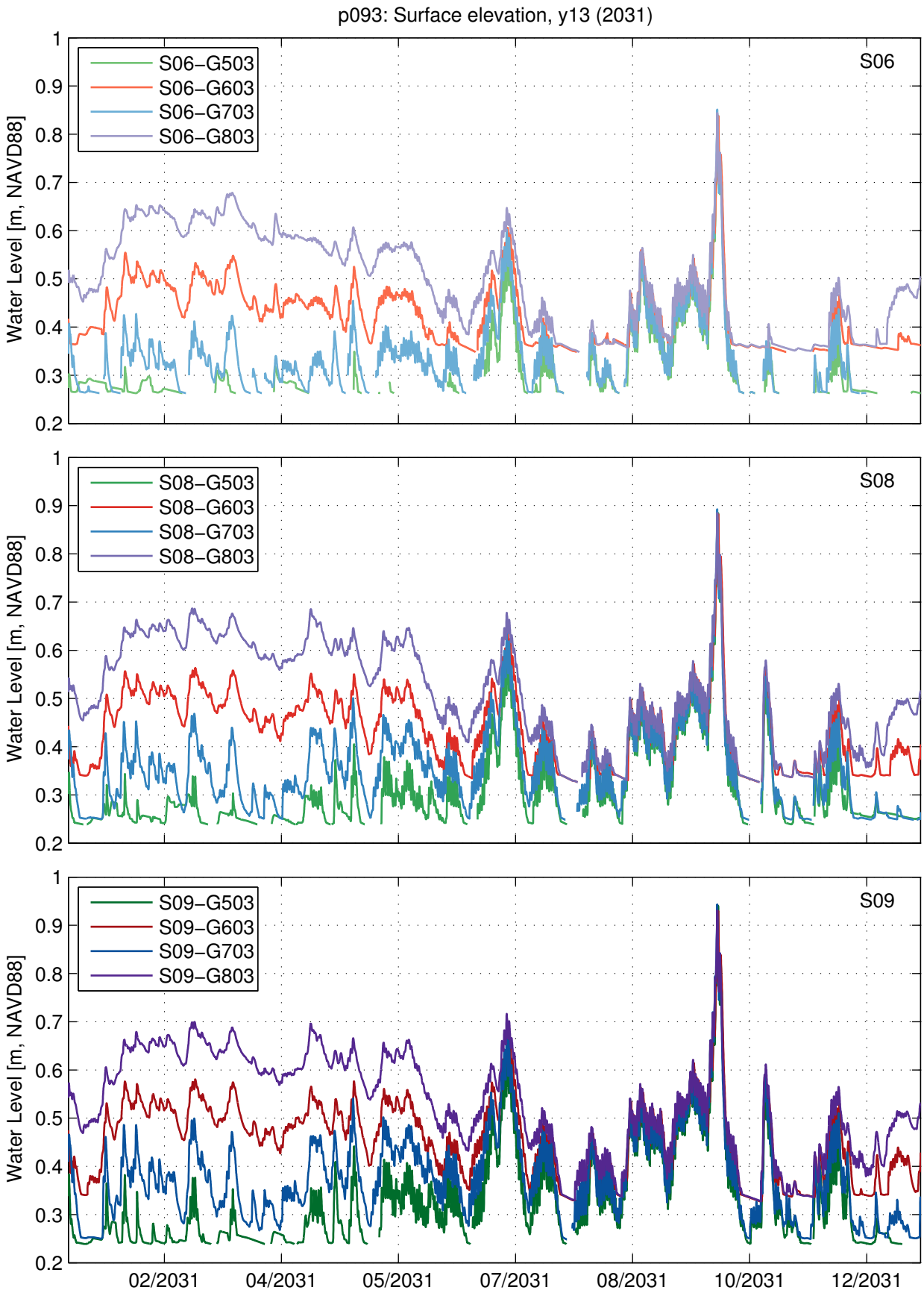

p183: Surface elevation, y13 (2031)
Water Level [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
0.9
0.8
0.7
0.6
0.5
0.4
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

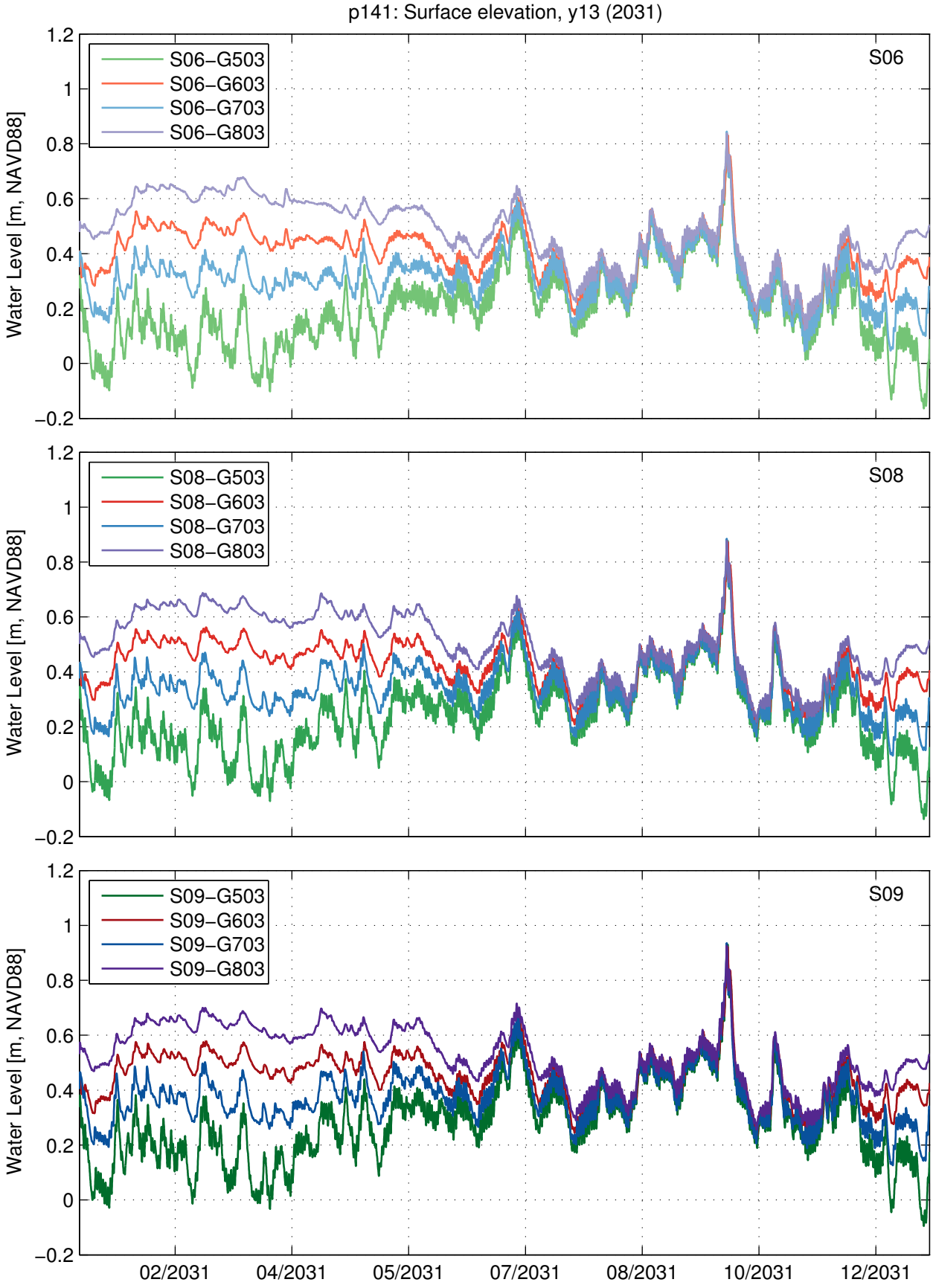

p185: Surface elevation, y13 (2031)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Water Level [m, NAVD88]
0.9
0.8
0.7
0.6
0.5
0.4
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

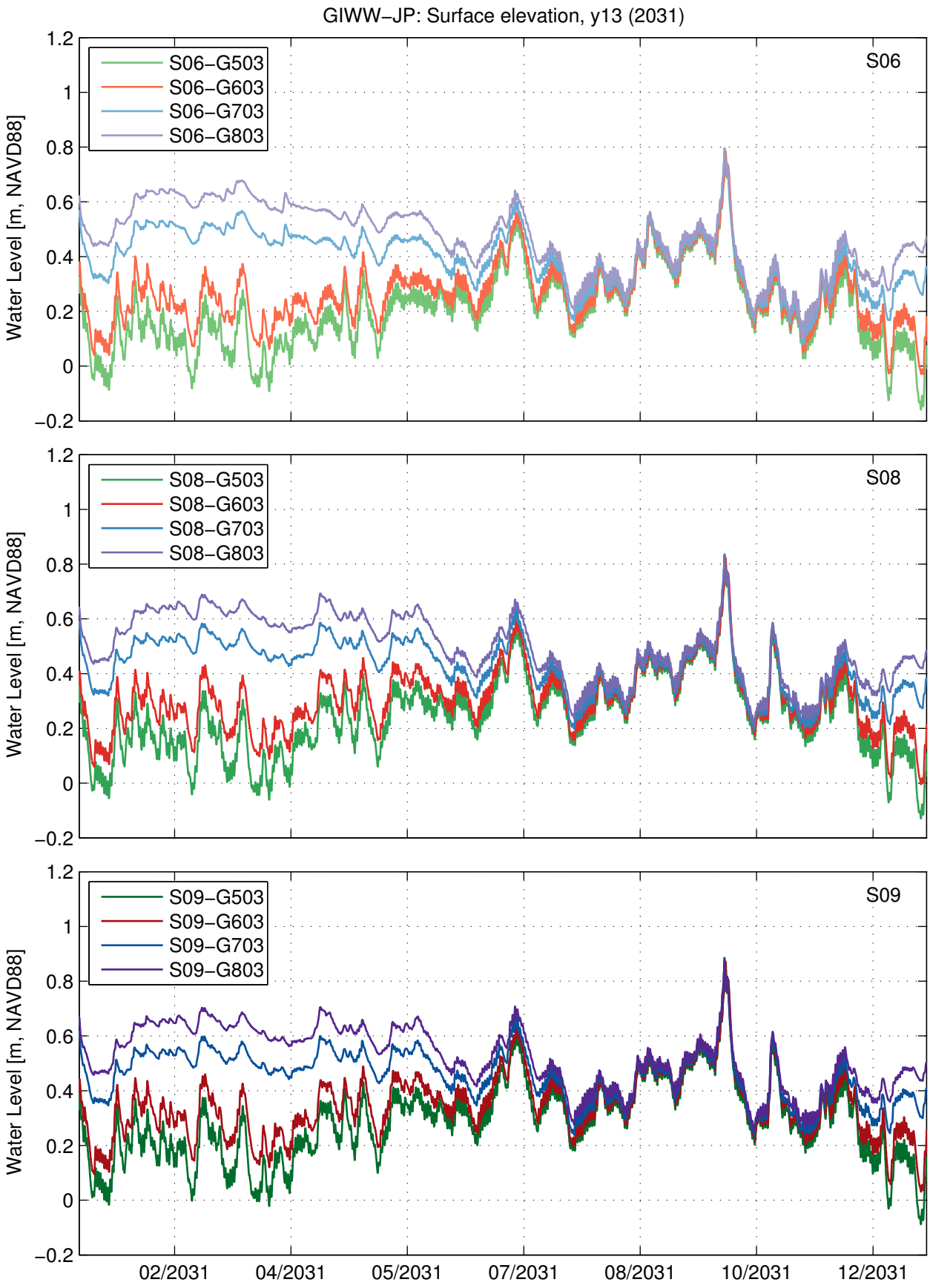

p192: Surface elevation, y13 (2031)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Water Level [m, NAVD88]
0.9
0.8
0.7
0.6
0.5
0.4
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

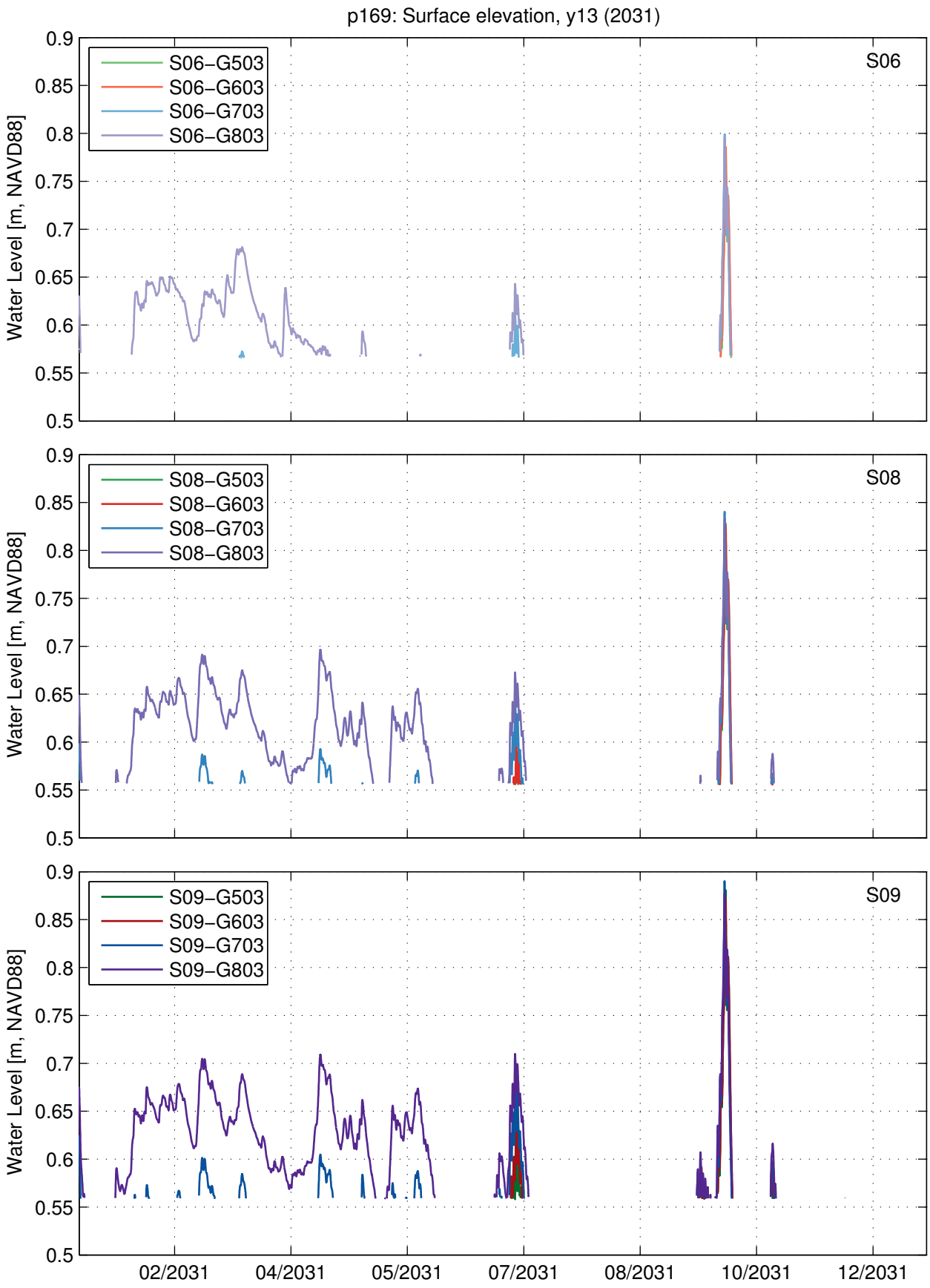

p194: Surface elevation, y13 (2031)
Water Level [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
1
0.8
0.6
0.4
0.2
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

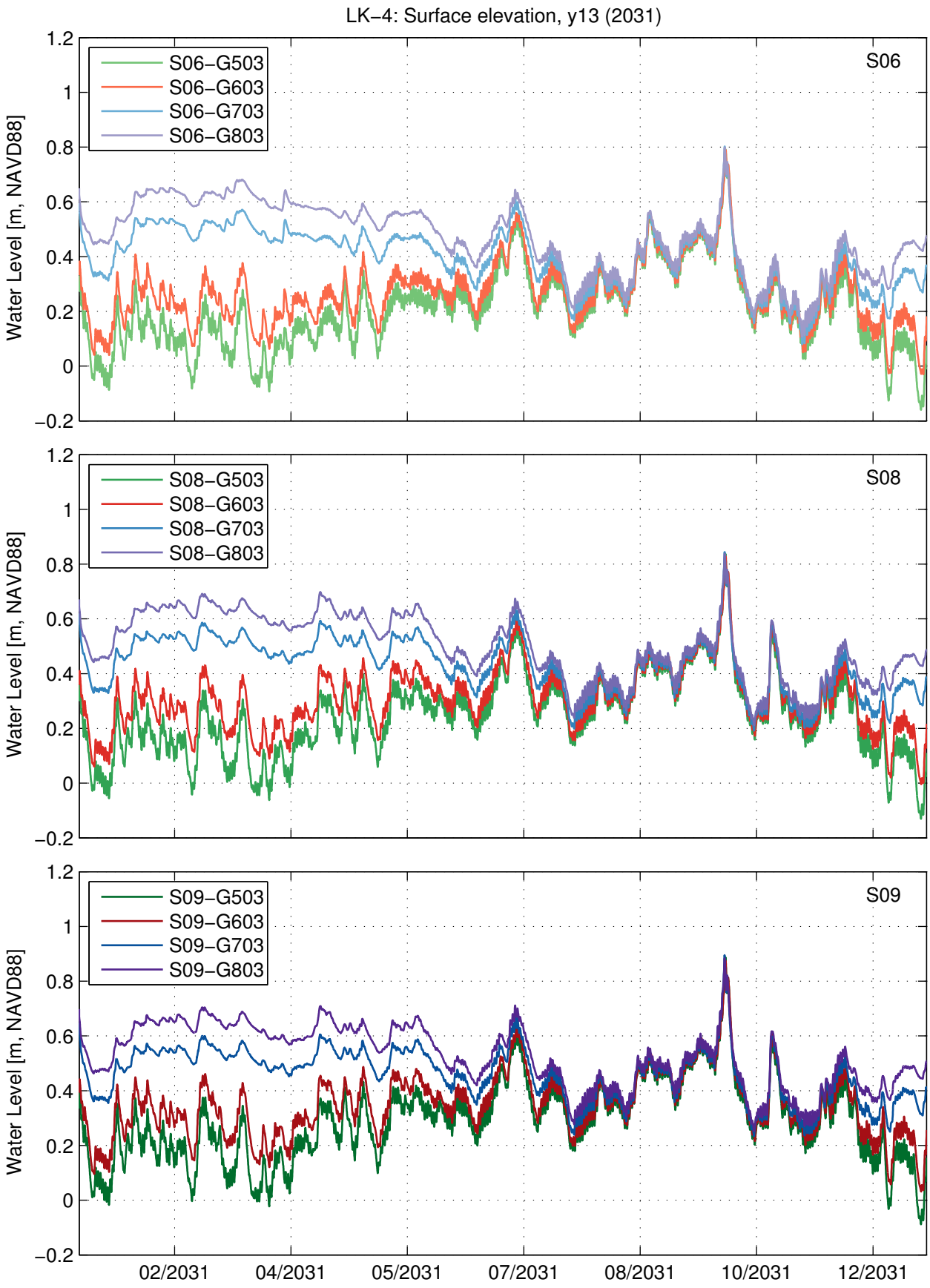

p159: Surface elevation, y13 (2031)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Water Level [m, NAVD88]
1
0.9
0.8
0.7
0.6
0.5
0.4
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

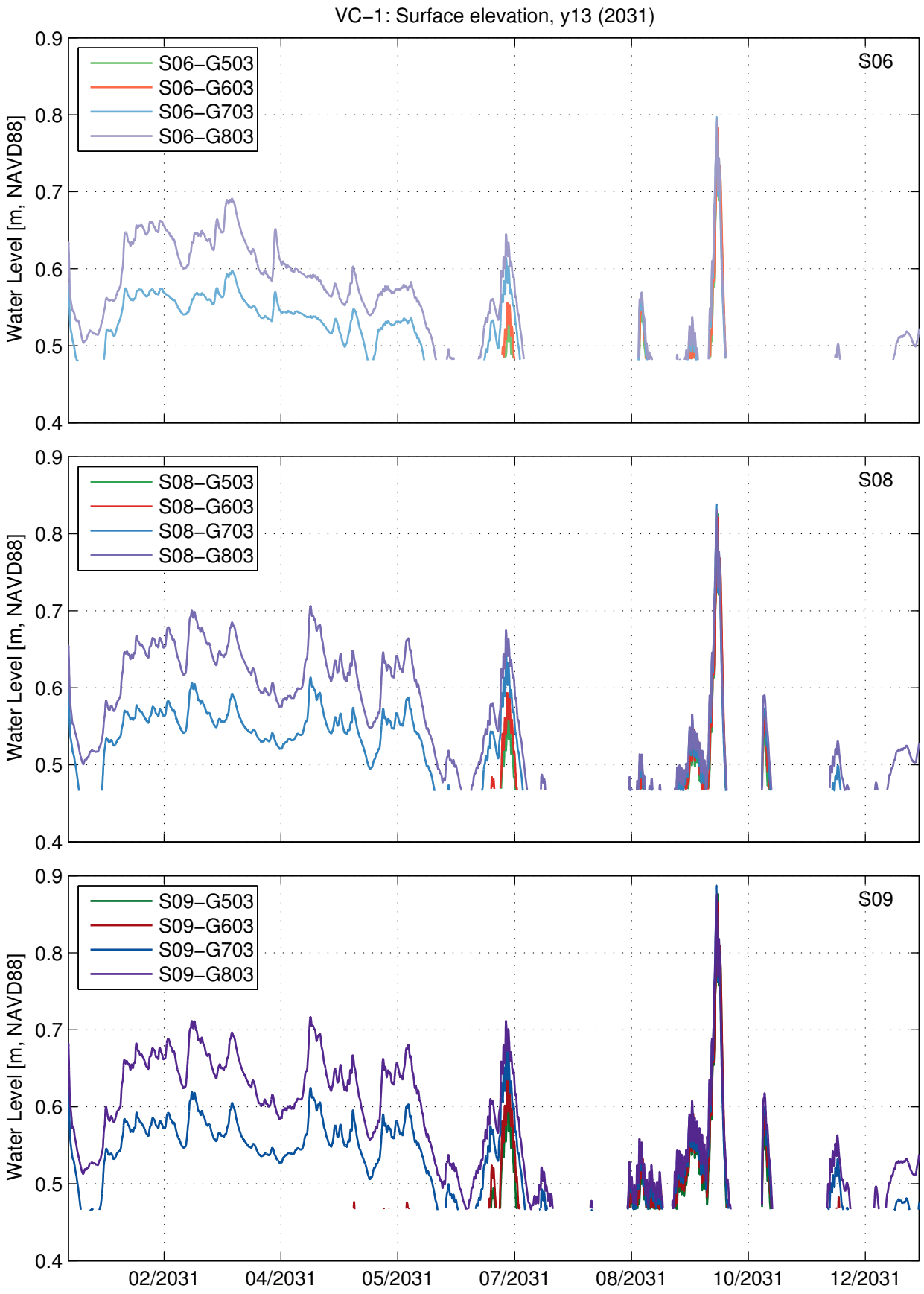

p093: Surface elevation, y13 (2031)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

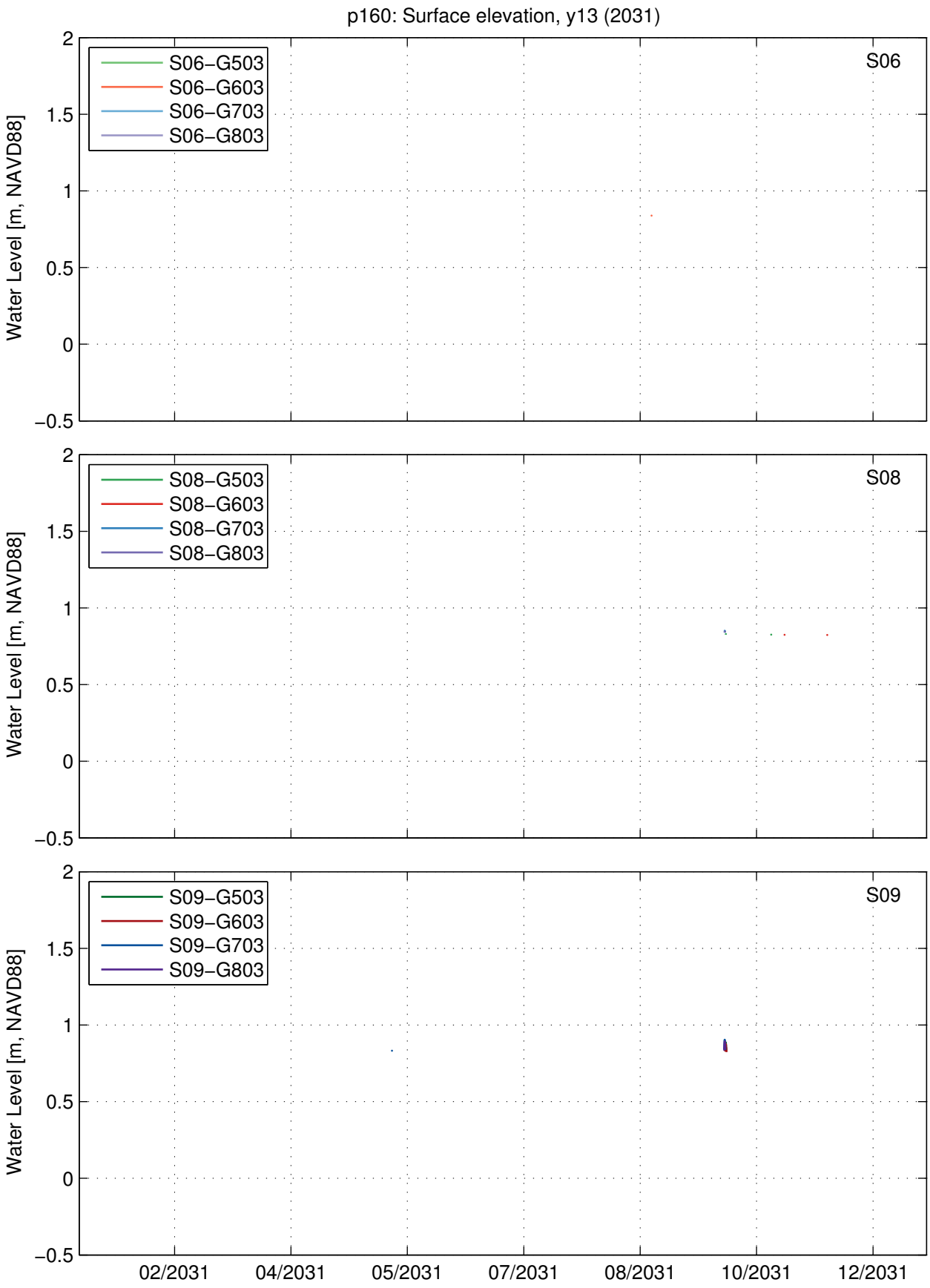

p141: Surface elevation, y13 (2031)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Water Level [m, NAVD88]
1.2
1
0.8
0.6
0.4
0.2
0
−0.2
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

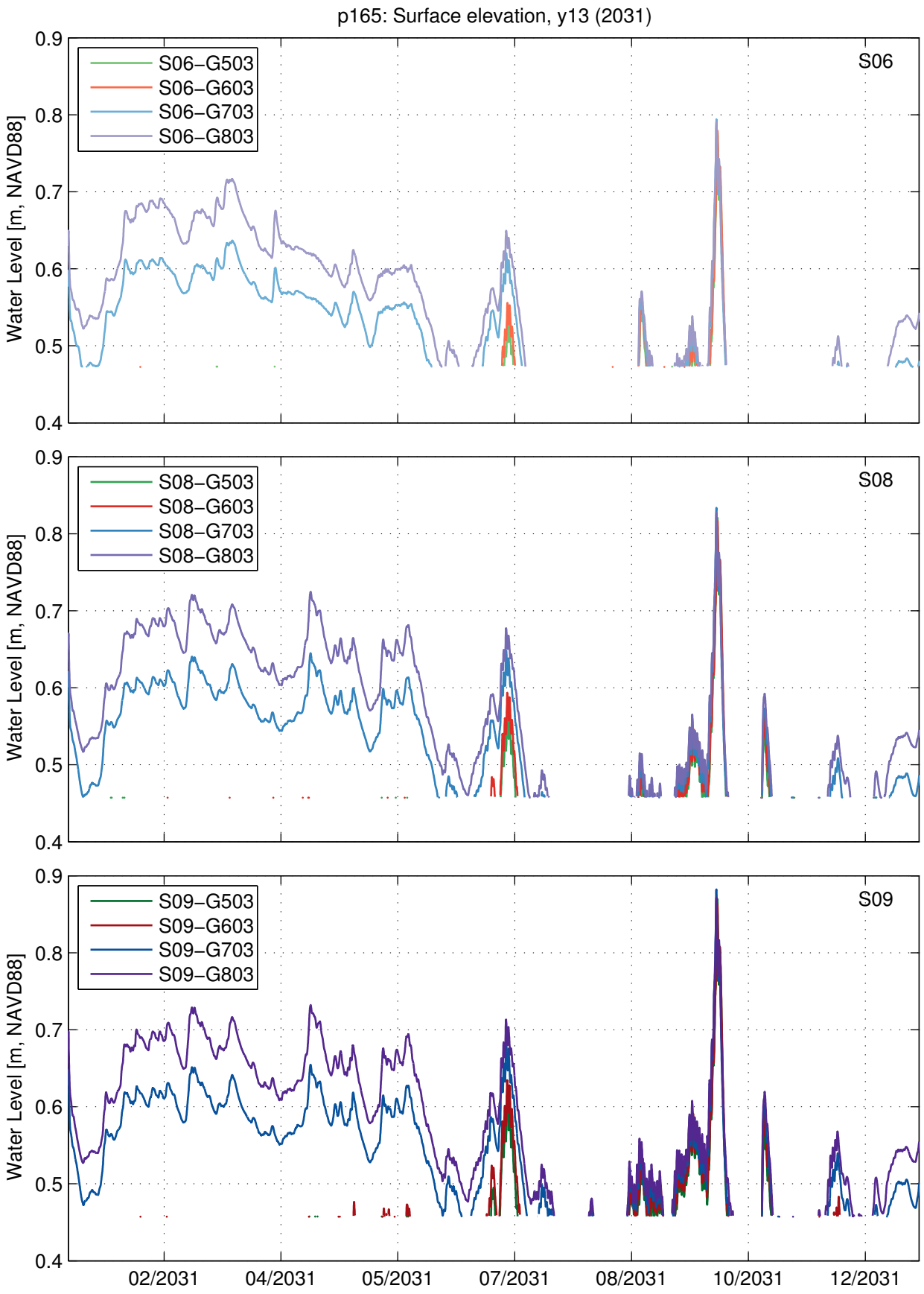

GIWW–JP: Surface elevation, y13 (2031)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Water Level [m, NAVD88]
1.2
1
0.8
0.6
0.4
0.2
0
−0.2
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

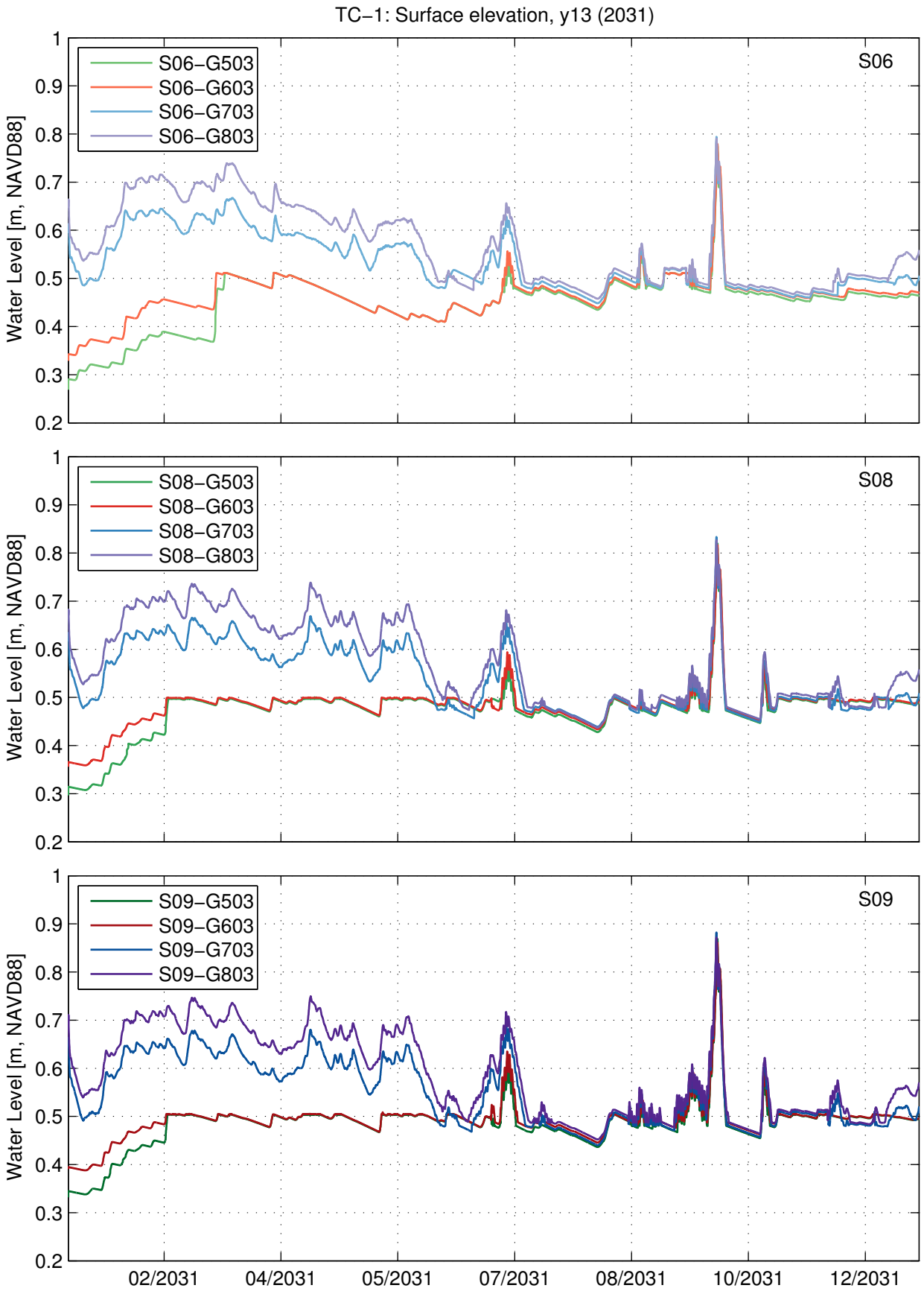

p169: Surface elevation, y13 (2031)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
0.9
0.85
0.8
0.75
0.7
0.65
0.6
0.55
0.5
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

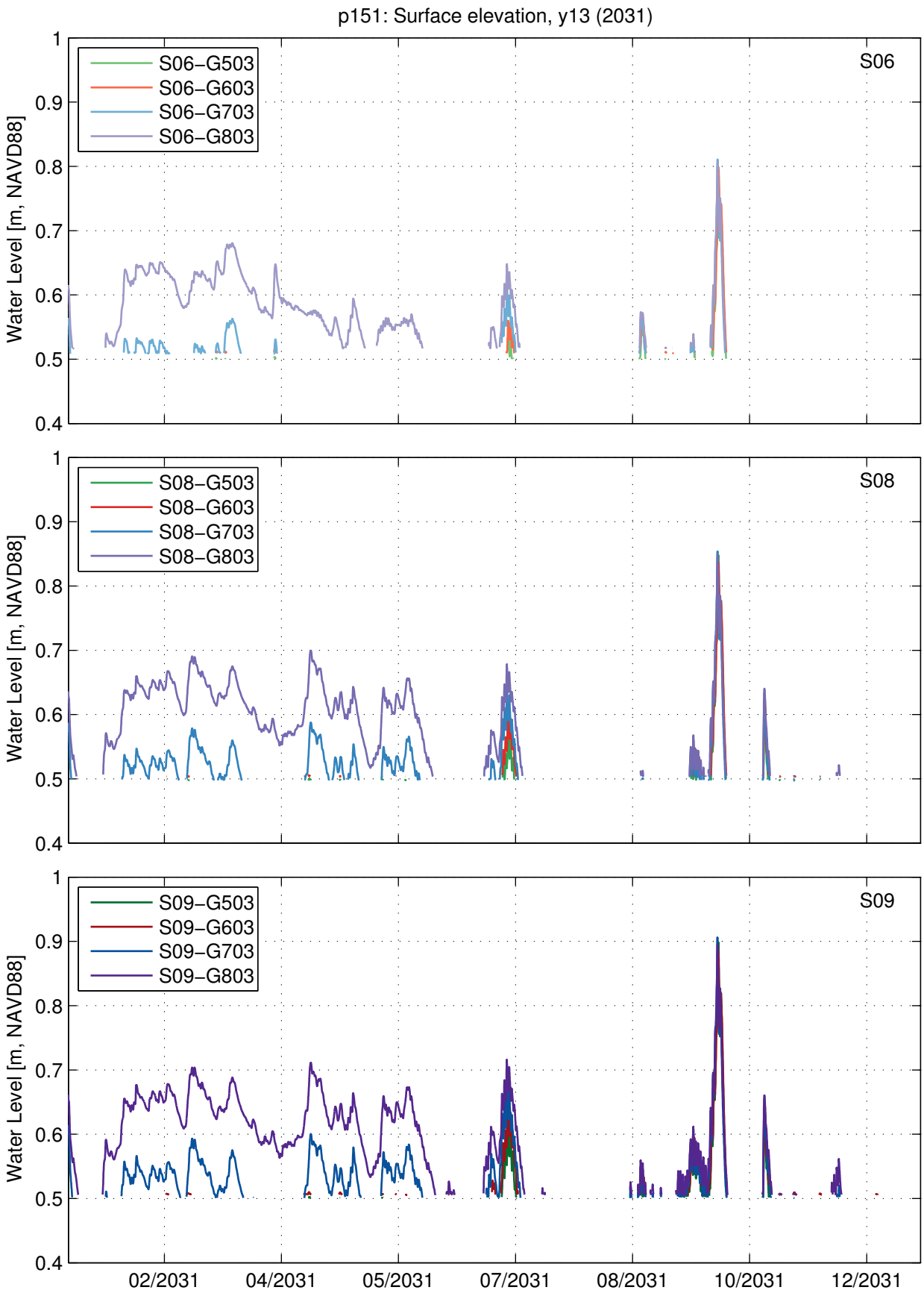

LK−4: Surface elevation, y13 (2031)
S06−G503
S06−G603
S06−G703
S06−G803
S06
S08−G503
S08−G603
S08−G703
S08−G803
S08
S09−G503
S09−G603
S09−G703
S09−G803
S09
Water Level [m, NAVD88]
1.2
1
0.8
0.6
0.4
0.2
0
−0.2
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

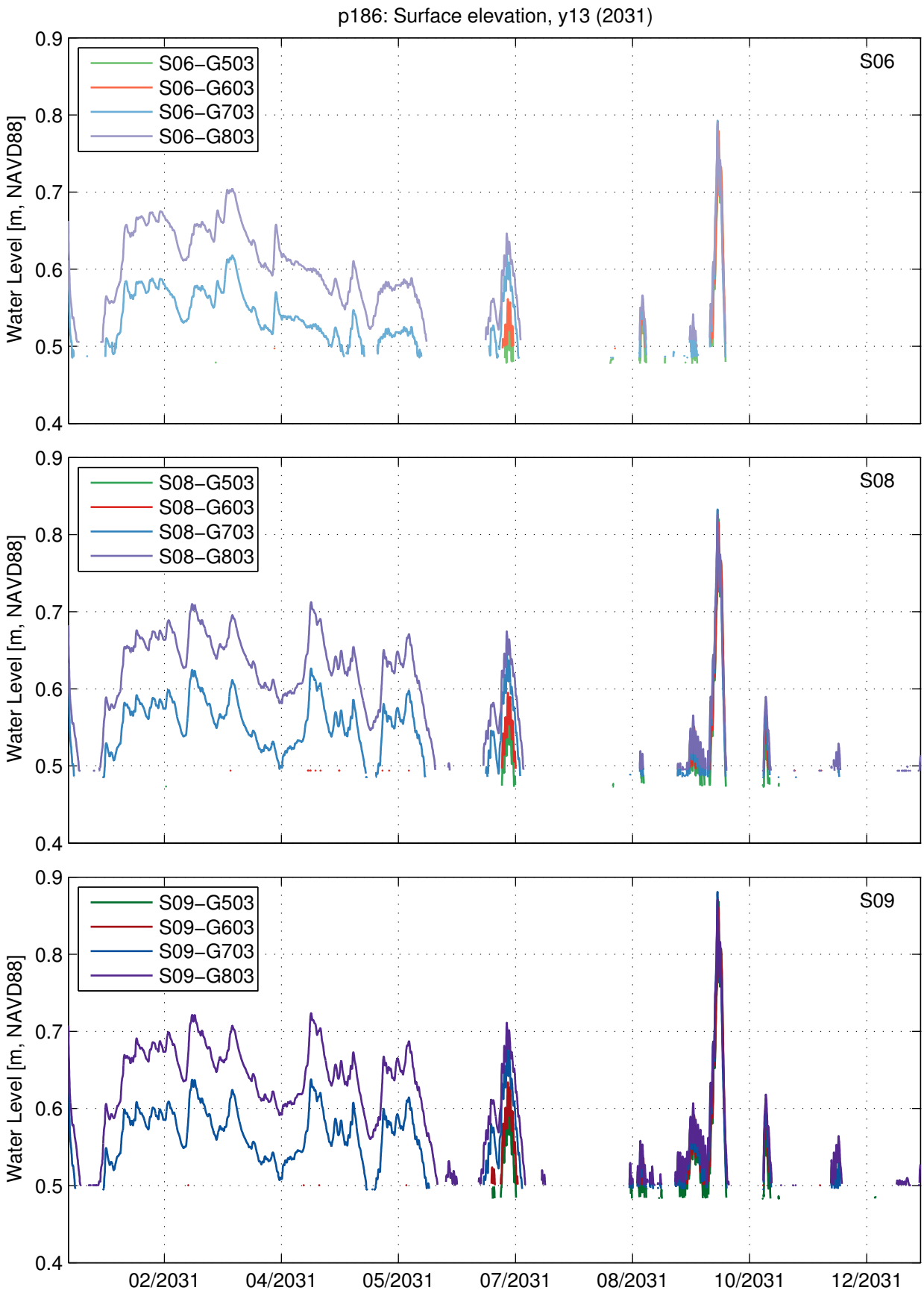

VC−1: Surface elevation, y13 (2031)
Water Level [m, NAVD88]
S06−G503
S06−G603
S06−G703
S06−G803
S06
S08−G503
S08−G603
S08−G703
S08−G803
S08
S09−G503
S09−G603
S09−G703
S09−G803
S09
0.9
0.8
0.7
0.6
0.5
0.4
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

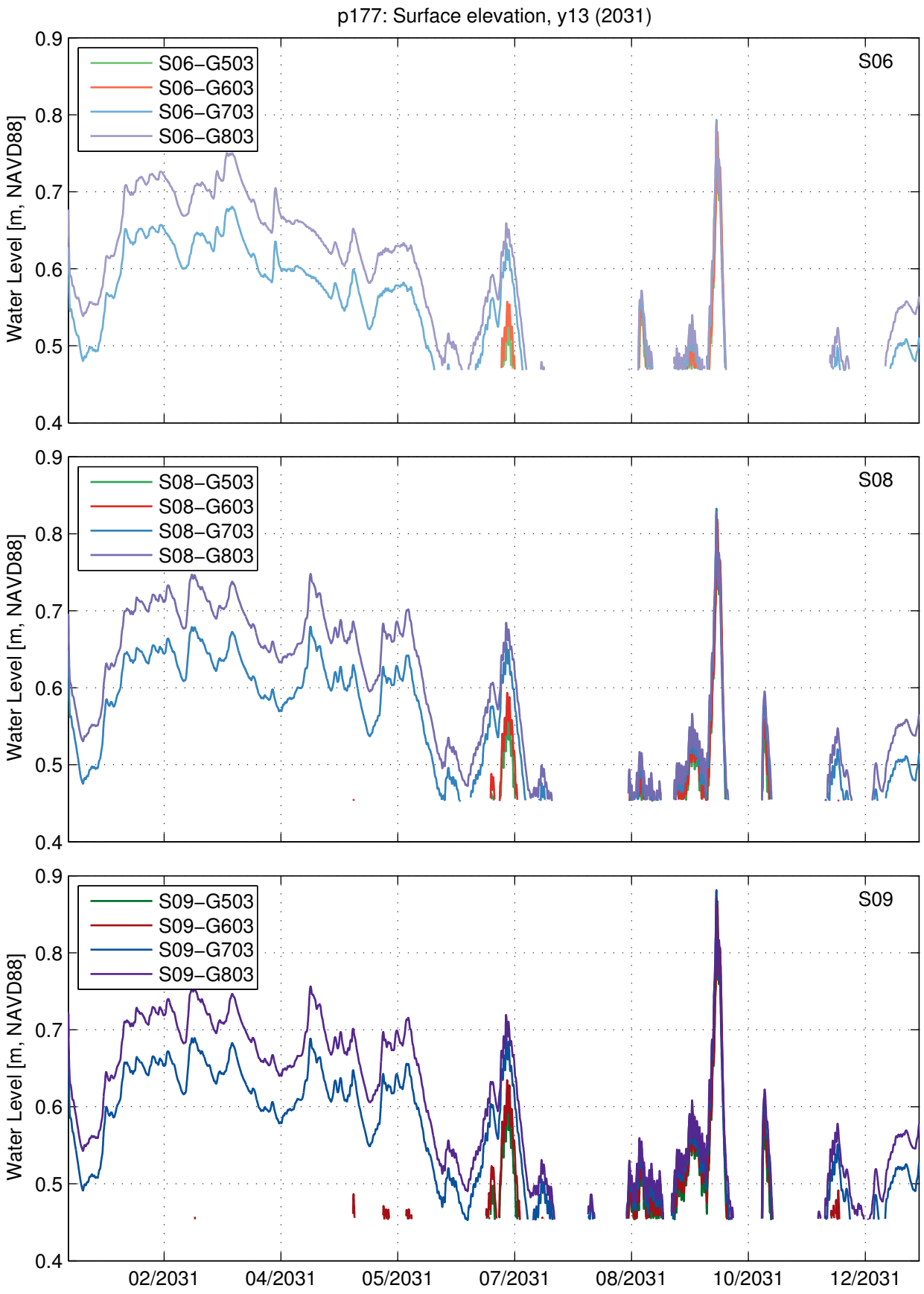

p160: Surface elevation, y13 (2031)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
2
1.5
1
0.5
0
−0.5
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

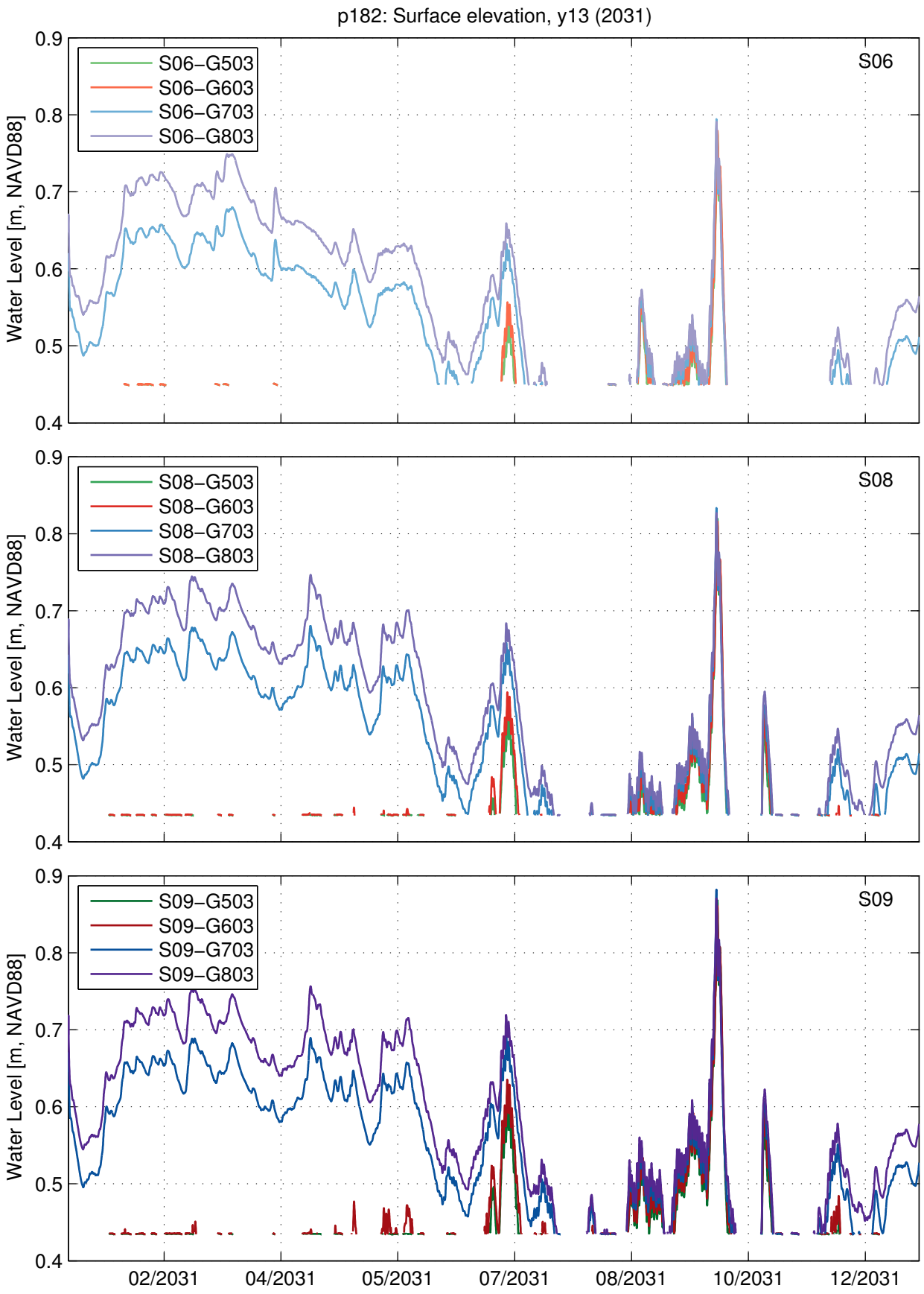

p165: Surface elevation, y13 (2031)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Water Level [m, NAVD88]
0.9
0.8
0.7
0.6
0.5
0.4
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

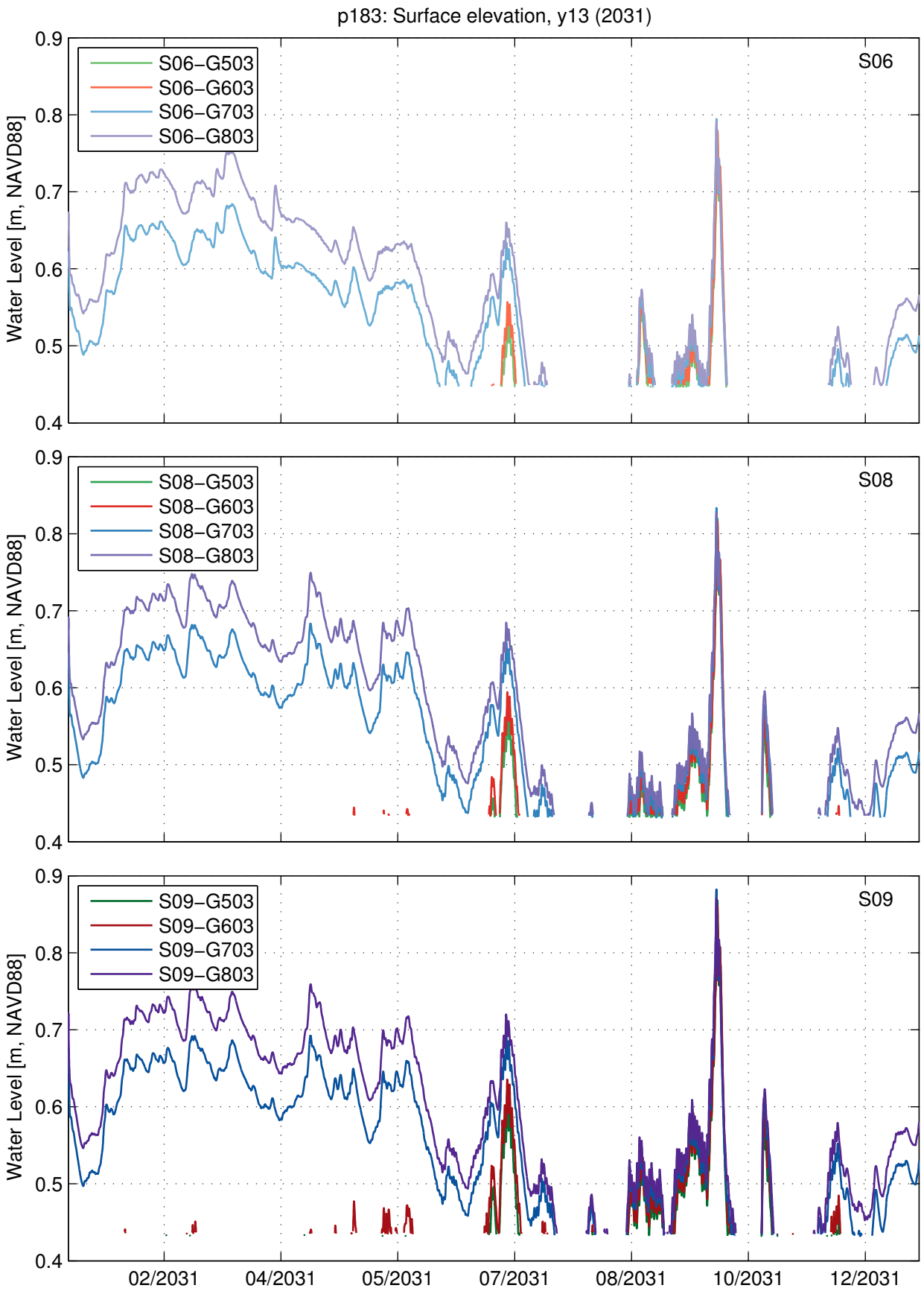

TC−1: Surface elevation, y13 (2031)
S06−G503
S06−G603
S06−G703
S06−G803
S06
S08−G503
S08−G603
S08−G703
S08−G803
S08
S09−G503
S09−G603
S09−G703
S09−G803
S09
Water Level [m, NAVD88]
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

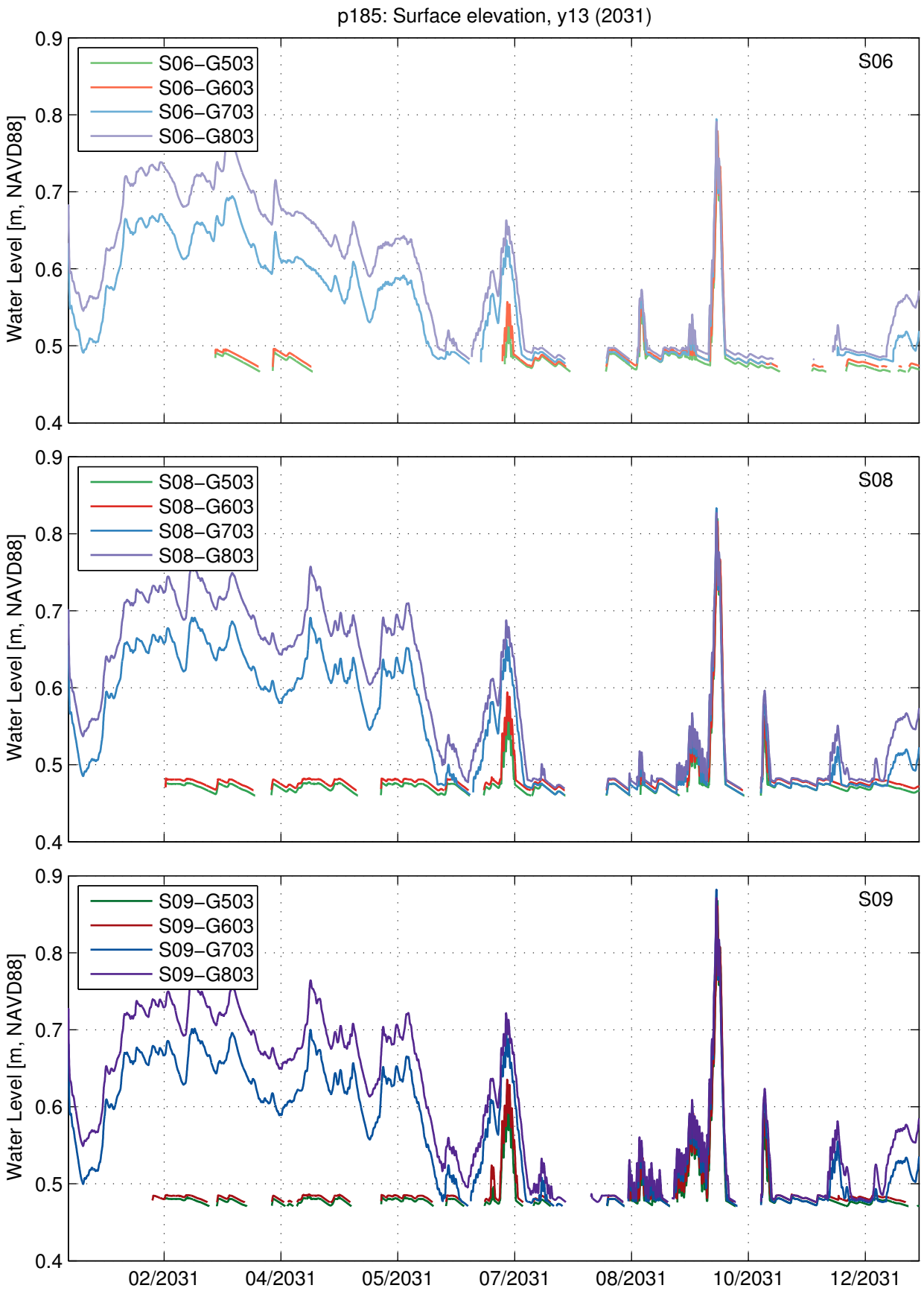

p151: Surface elevation, y13 (2031)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Water Level [m, NAVD88]
1
0.9
0.8
0.7
0.6
0.5
0.4
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

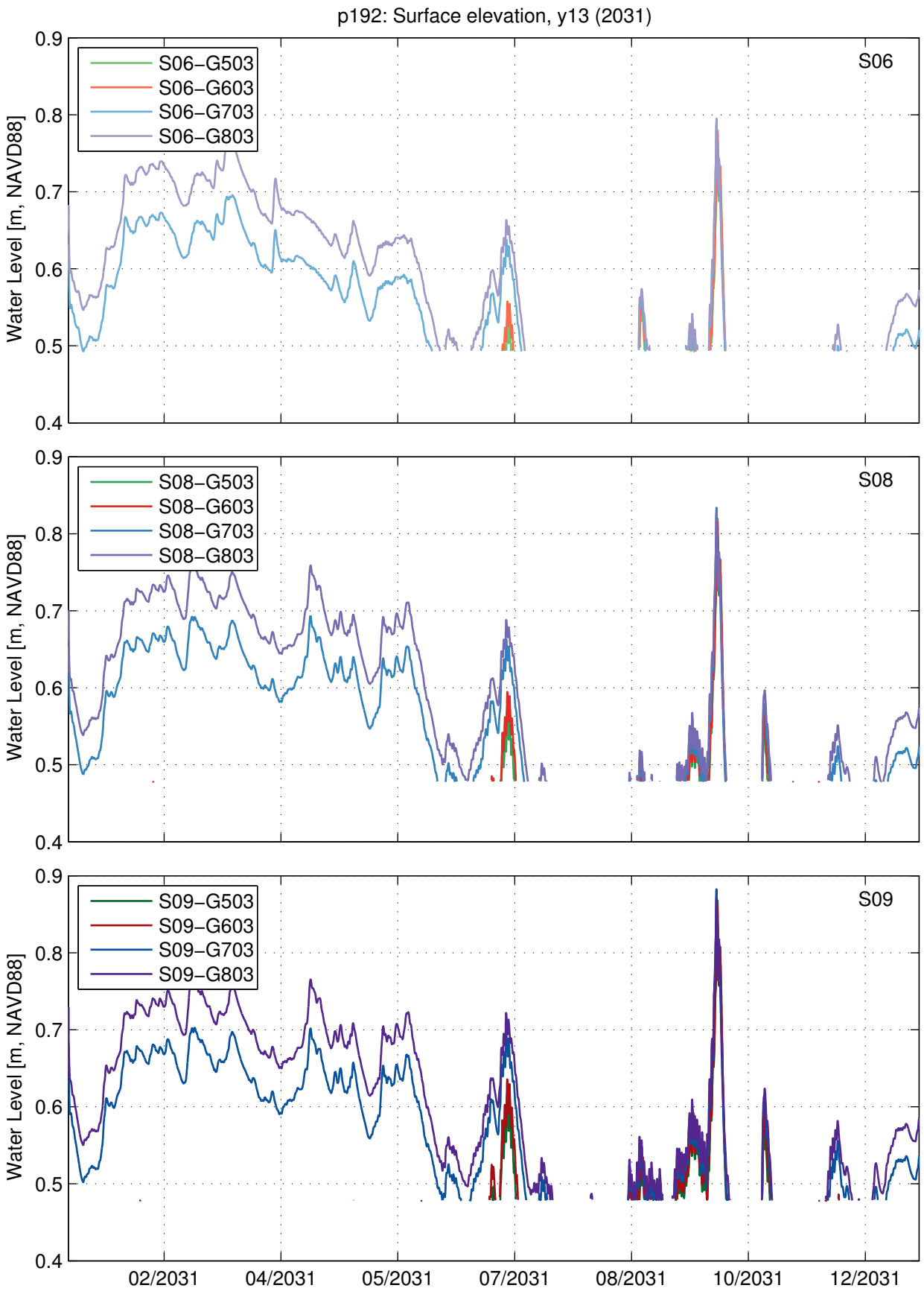

p186: Surface elevation, y13 (2031)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
0.9
0.8
0.7
0.6
0.5
0.4
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

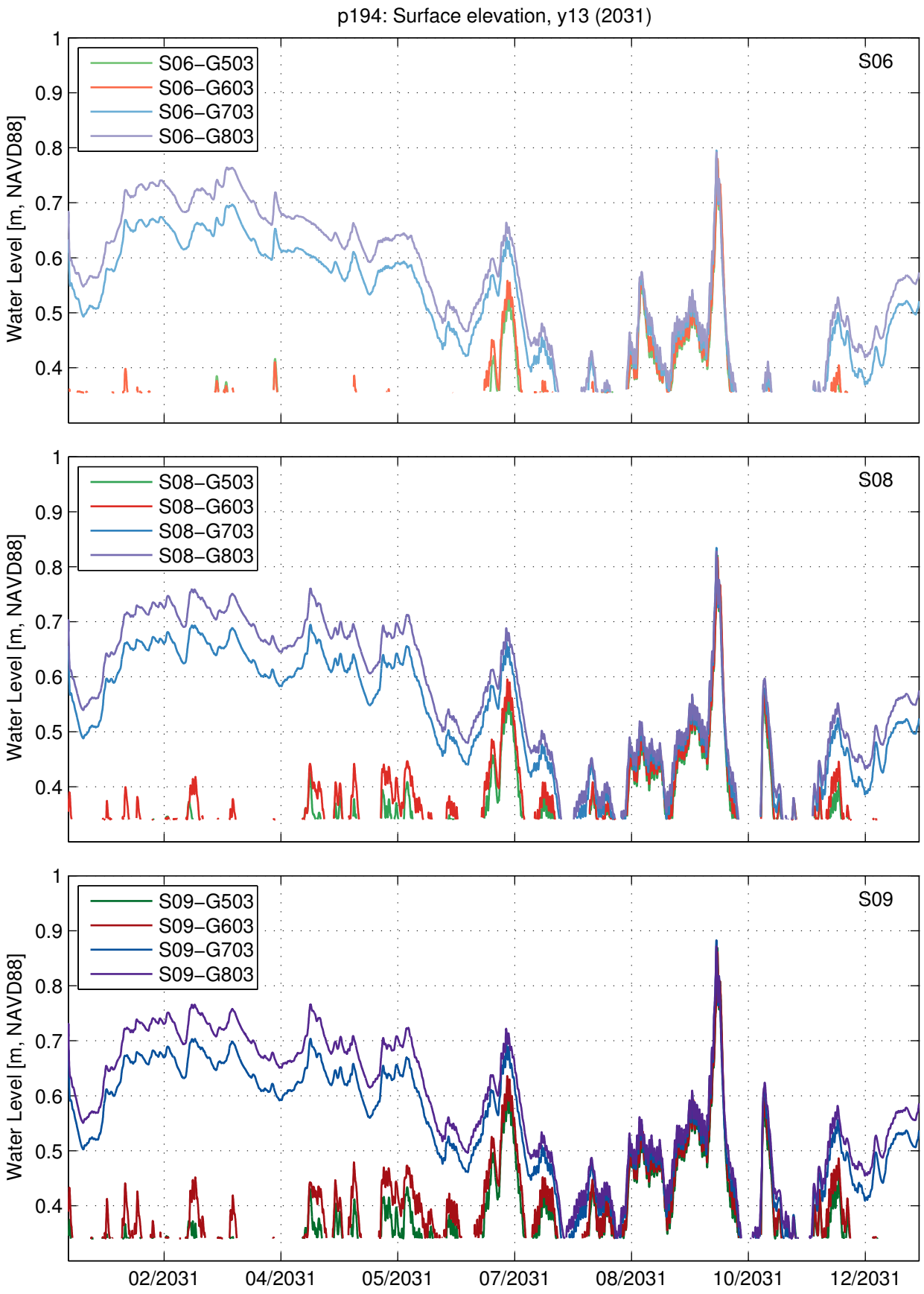

p177: Surface elevation, y13 (2031)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
0.9
0.8
0.7
0.6
0.5
0.4
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

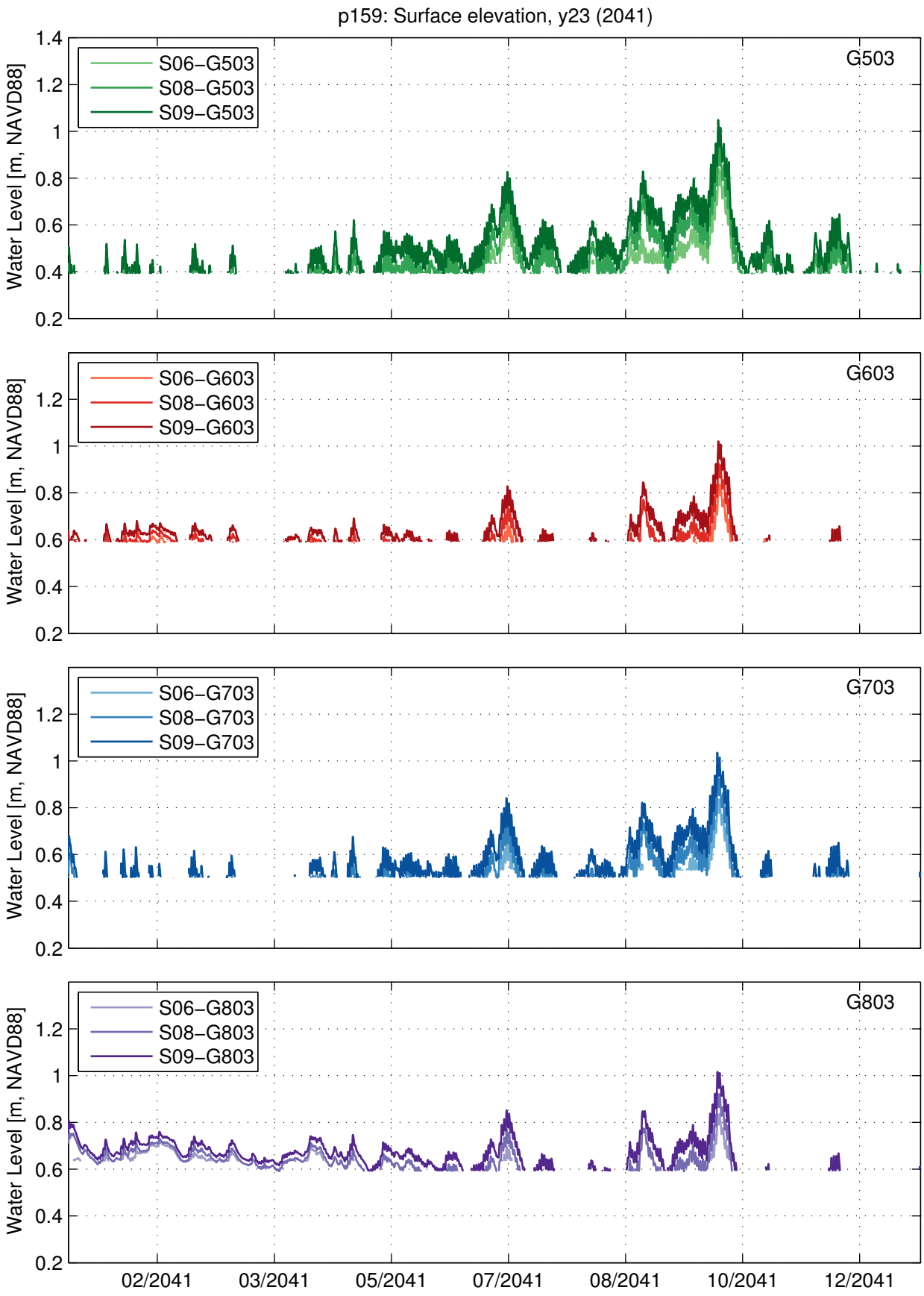

p182: Surface elevation, y13 (2031)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Water Level [m, NAVD88]
0.9
0.8
0.7
0.6
0.5
0.4
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

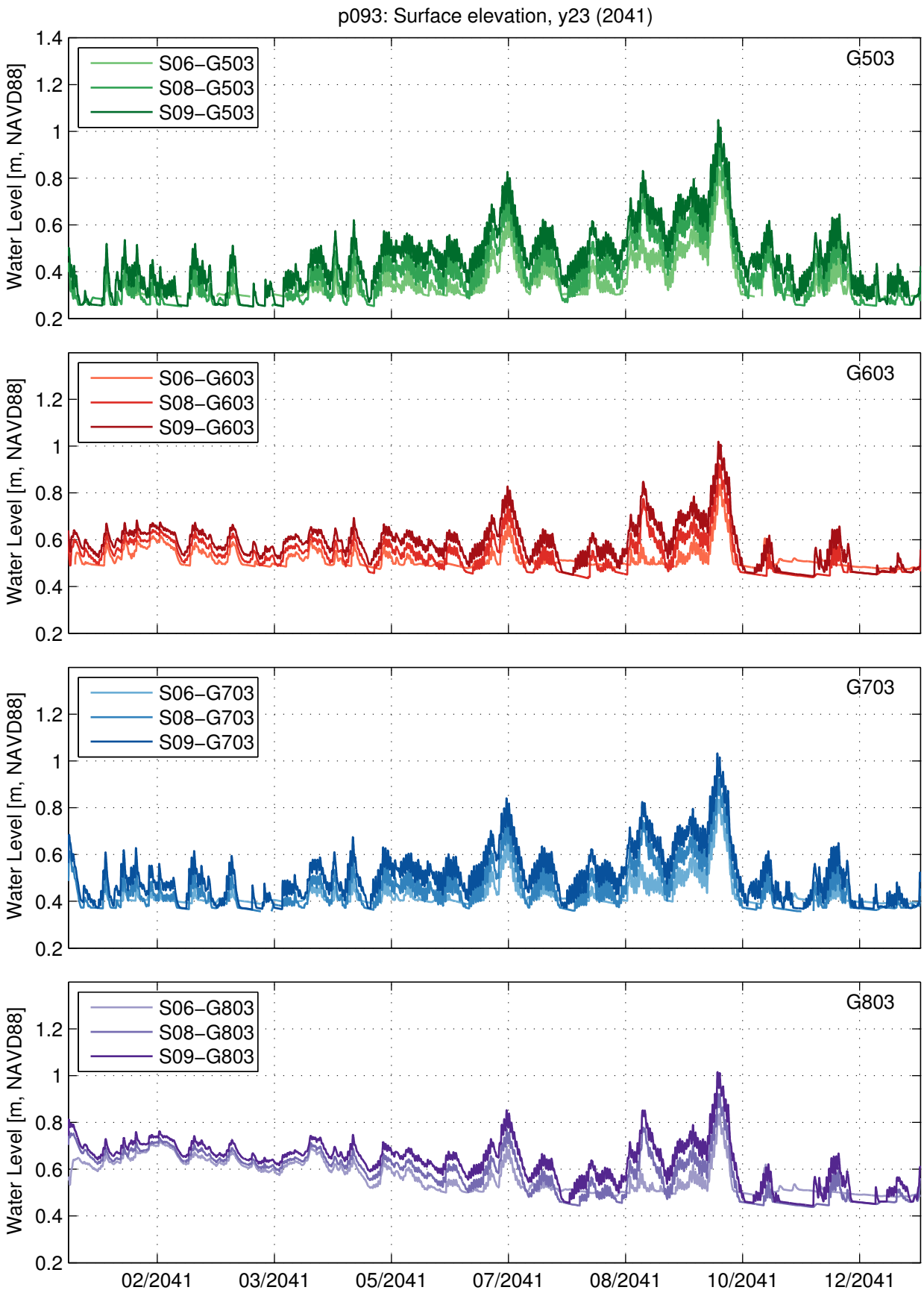

p183: Surface elevation, y13 (2031)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
0.9
0.8
0.7
0.6
0.5
0.4
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

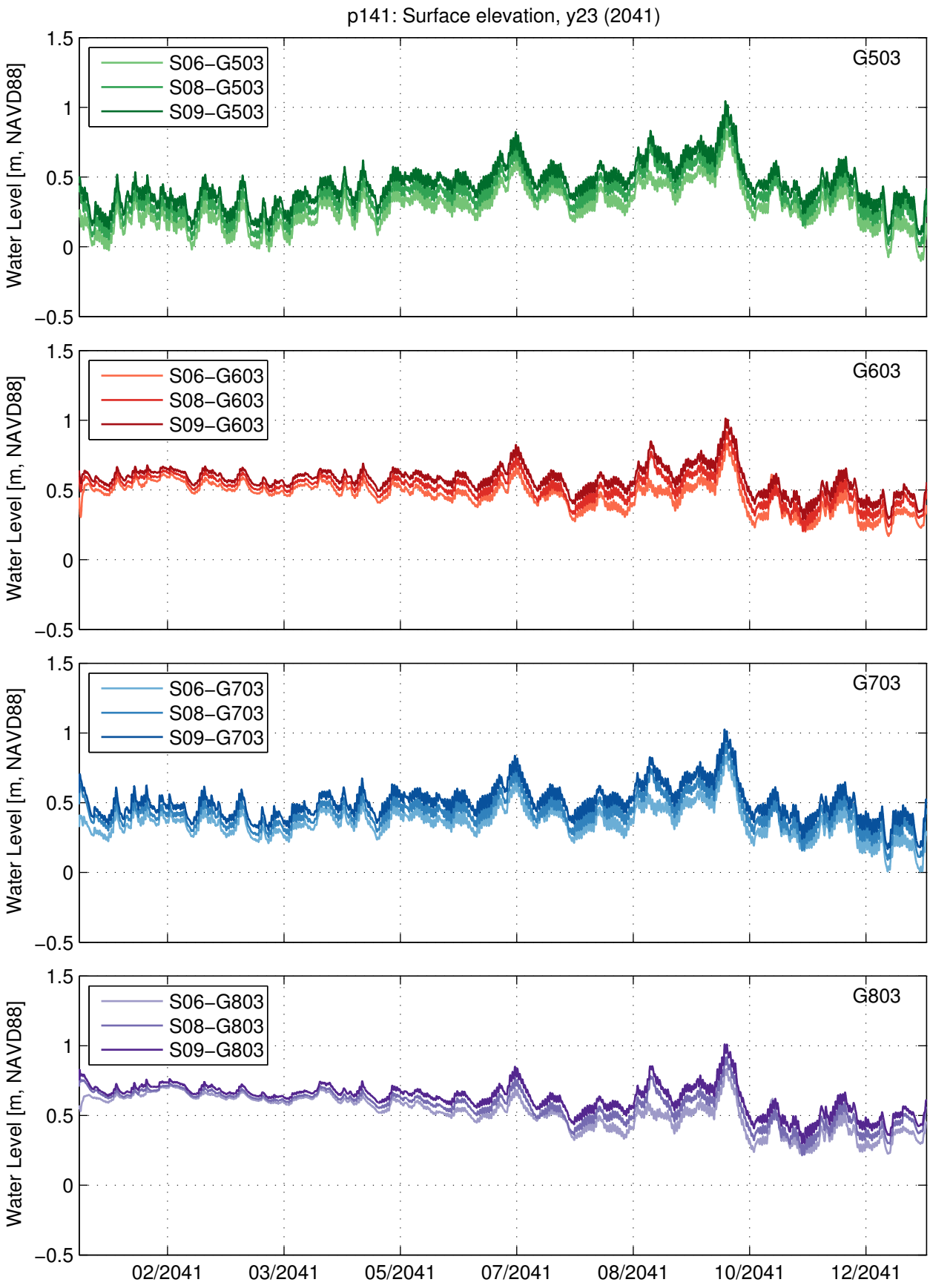

p185: Surface elevation, y13 (2031)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
0.9
0.8
0.7
0.6
0.5
0.4
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

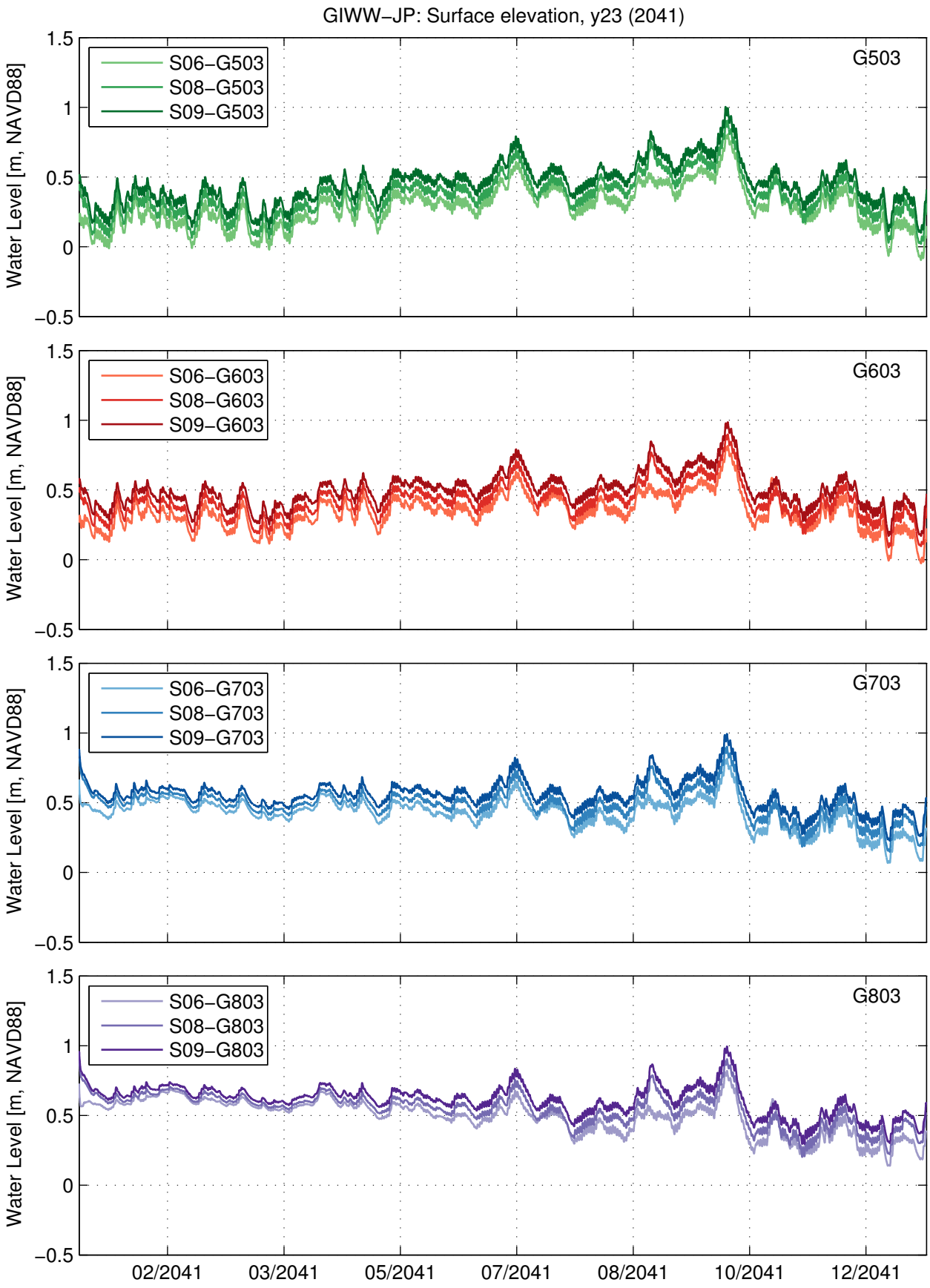

p192: Surface elevation, y13 (2031)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
0.9
0.8
0.7
0.6
0.5
0.4
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

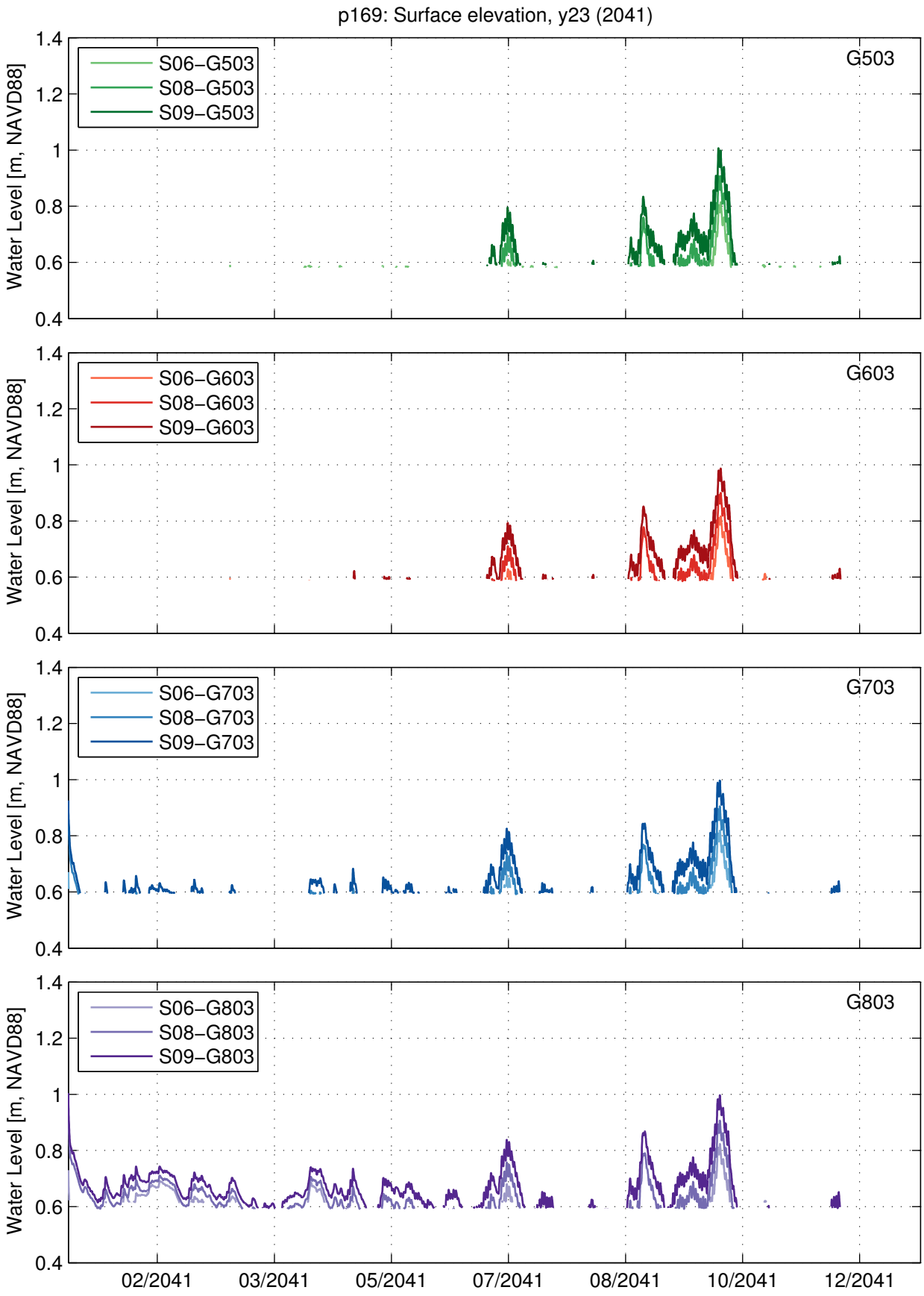

p194: Surface elevation, y13 (2031)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
1
0.9
0.8
0.7
0.6
0.5
0.4
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

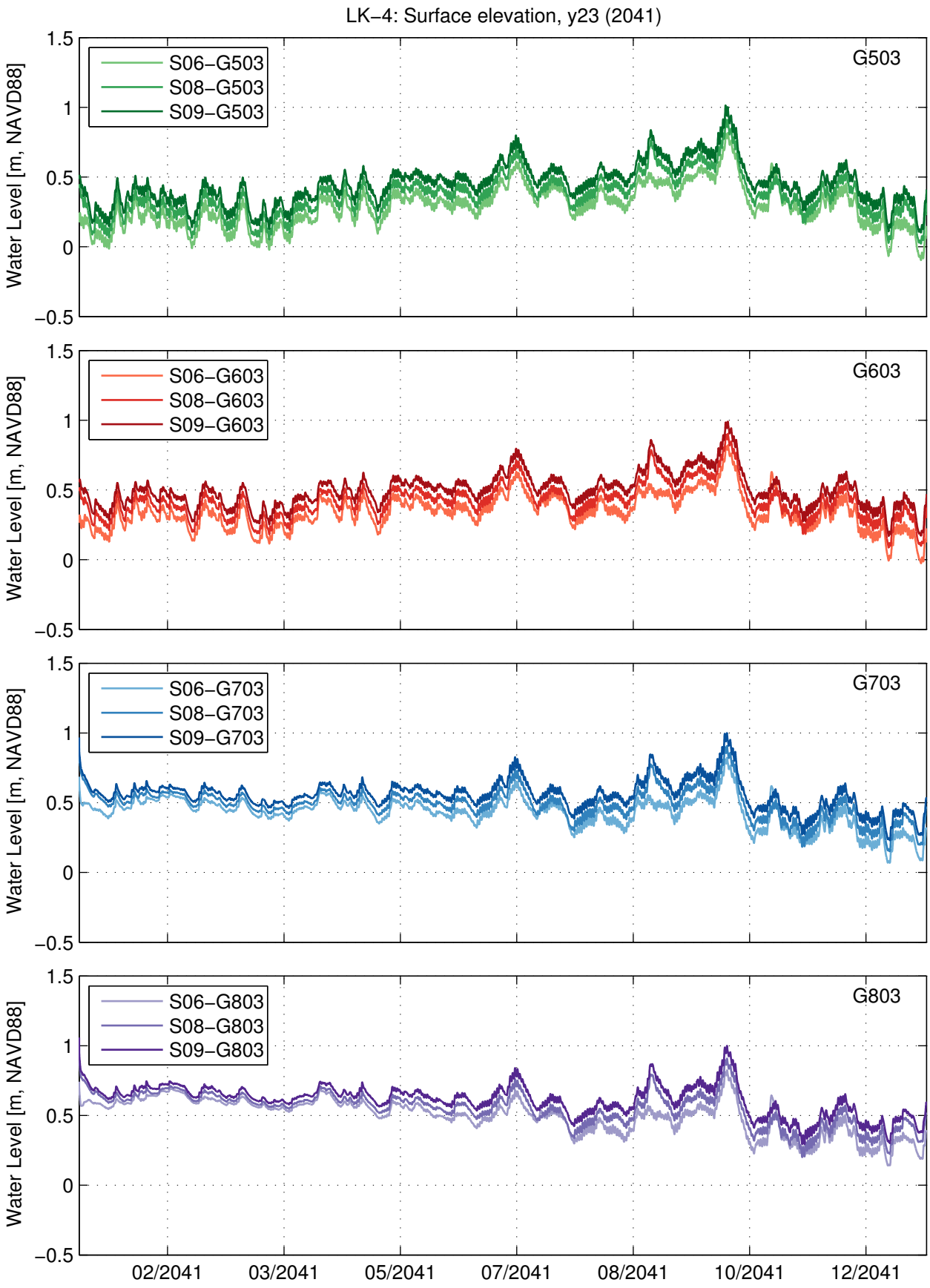

p159: Surface elevation, y23 (2041)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Water Level [m, NAVD88]
1.4
1.2
1
0.8
0.6
0.4
0.2
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

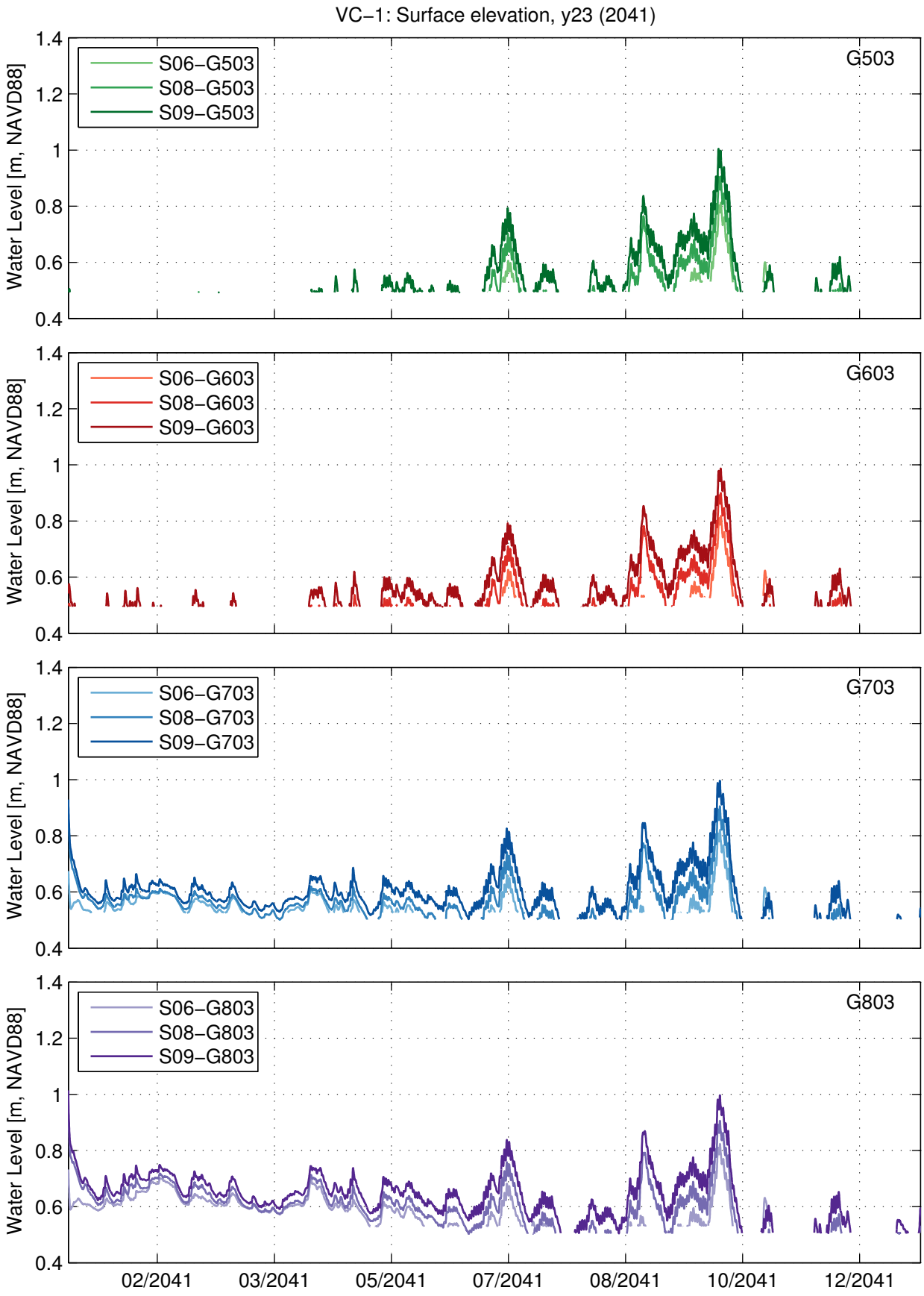

p093: Surface elevation, y23 (2041)
Water Level [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
1.4
1.2
1
0.8
0.6
0.4
0.2
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

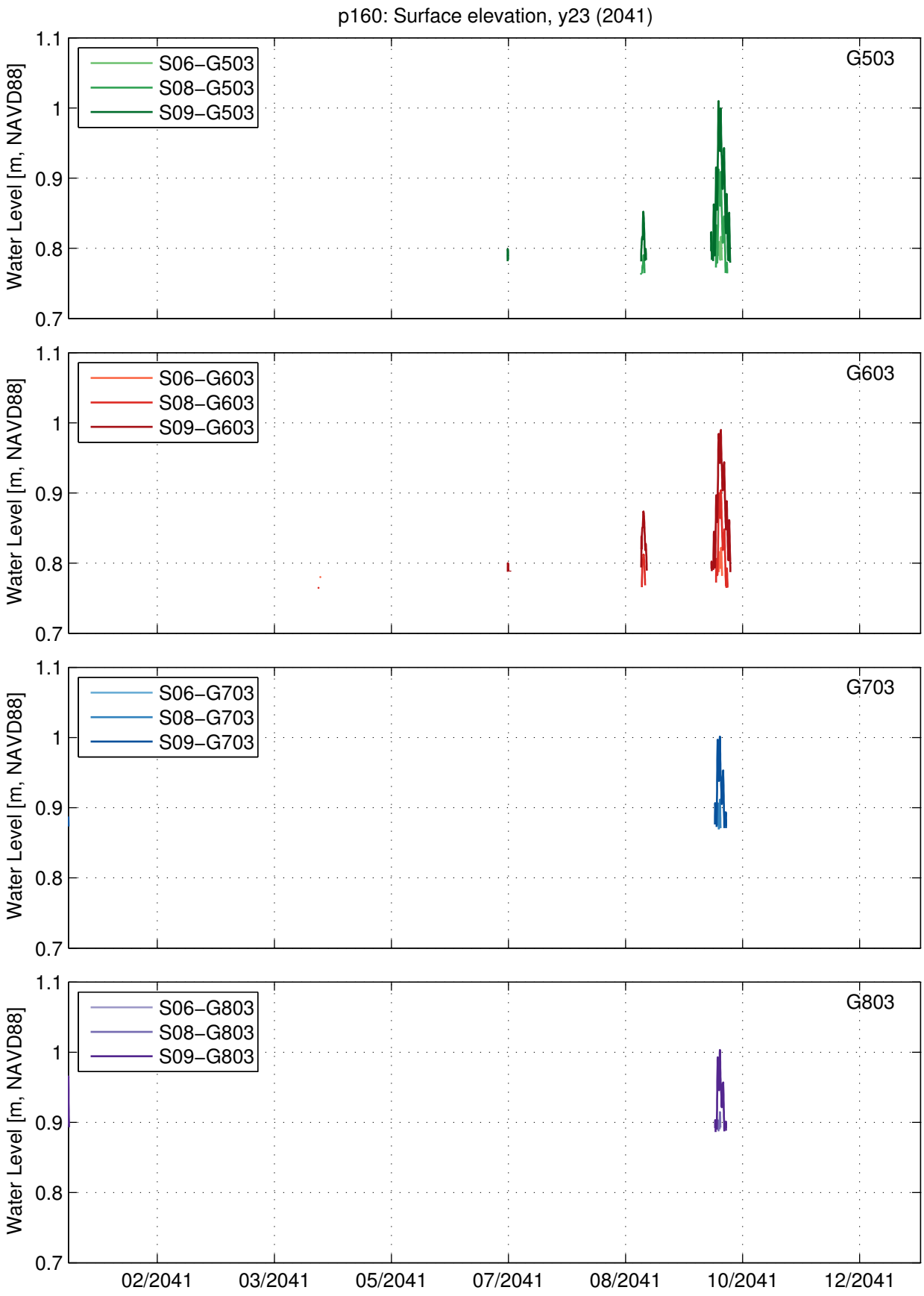

p141: Surface elevation, y23 (2041)
Water Level [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
1.5
1
0.5
0
−0.5
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

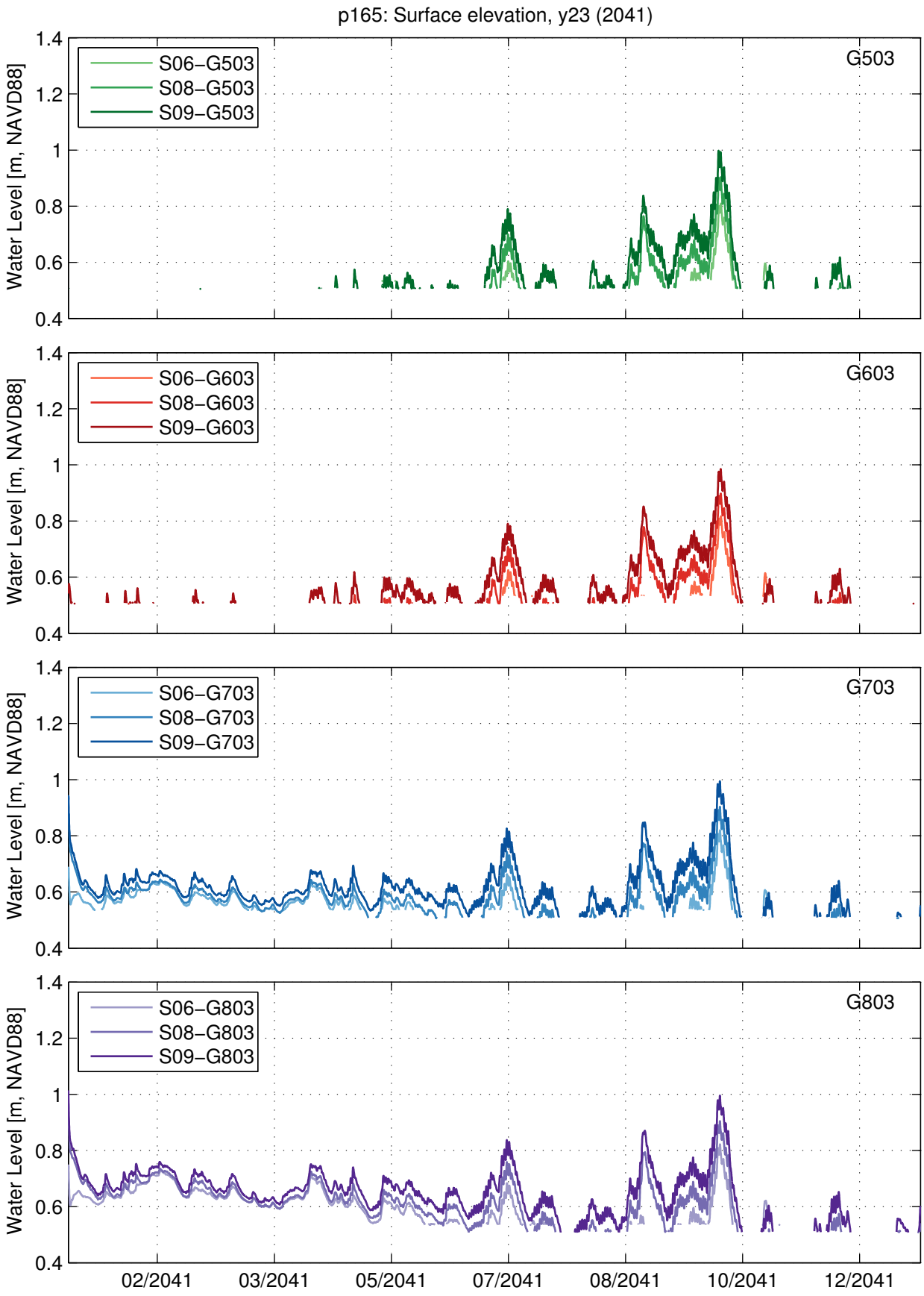

GIWW–JP: Surface elevation, y23 (2041)
Water Level [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
1.5
1
0.5
0
−0.5
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

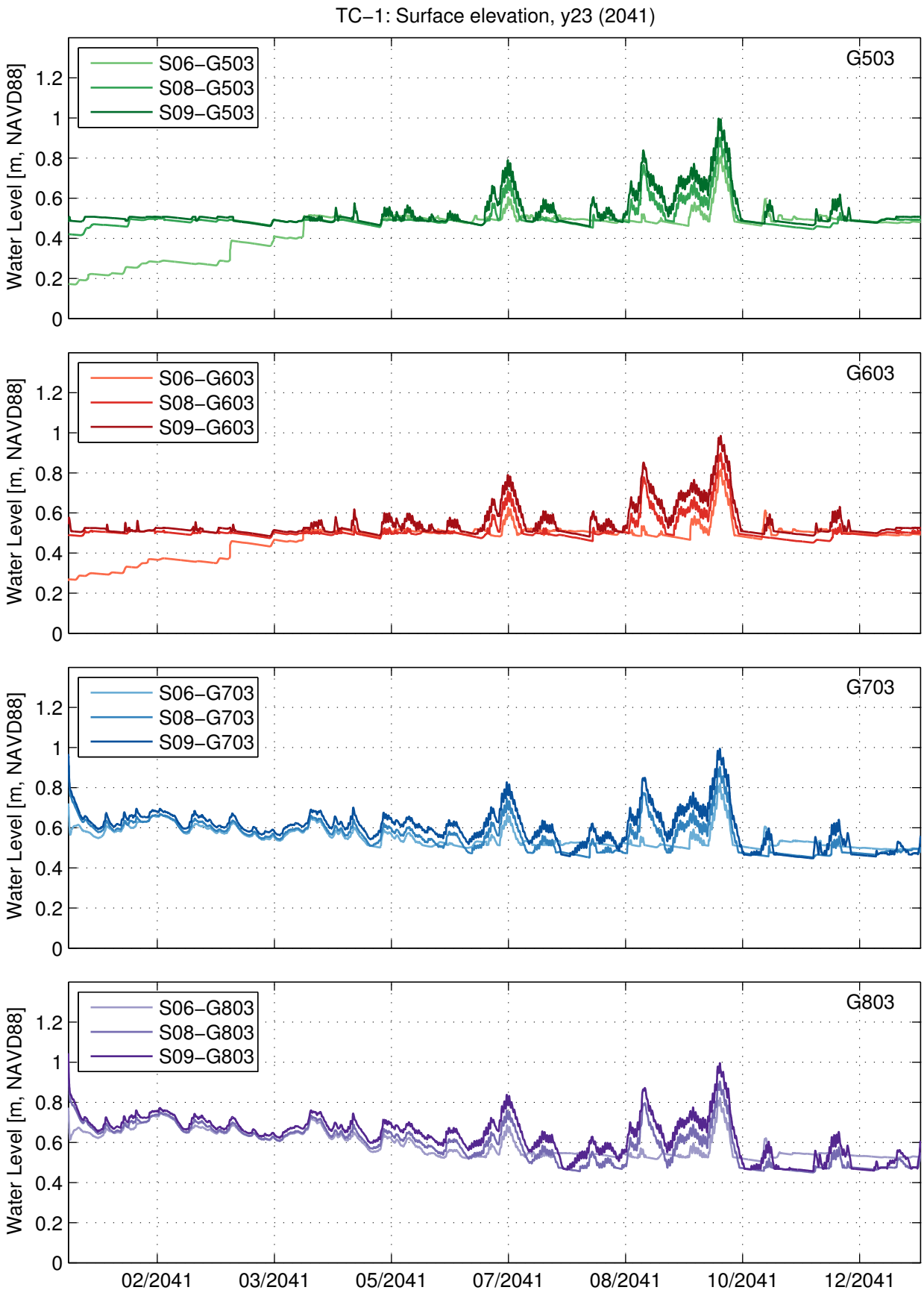

p169: Surface elevation, y23 (2041)
Water Level [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
1.4
1.2
1
0.8
0.6
0.4
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

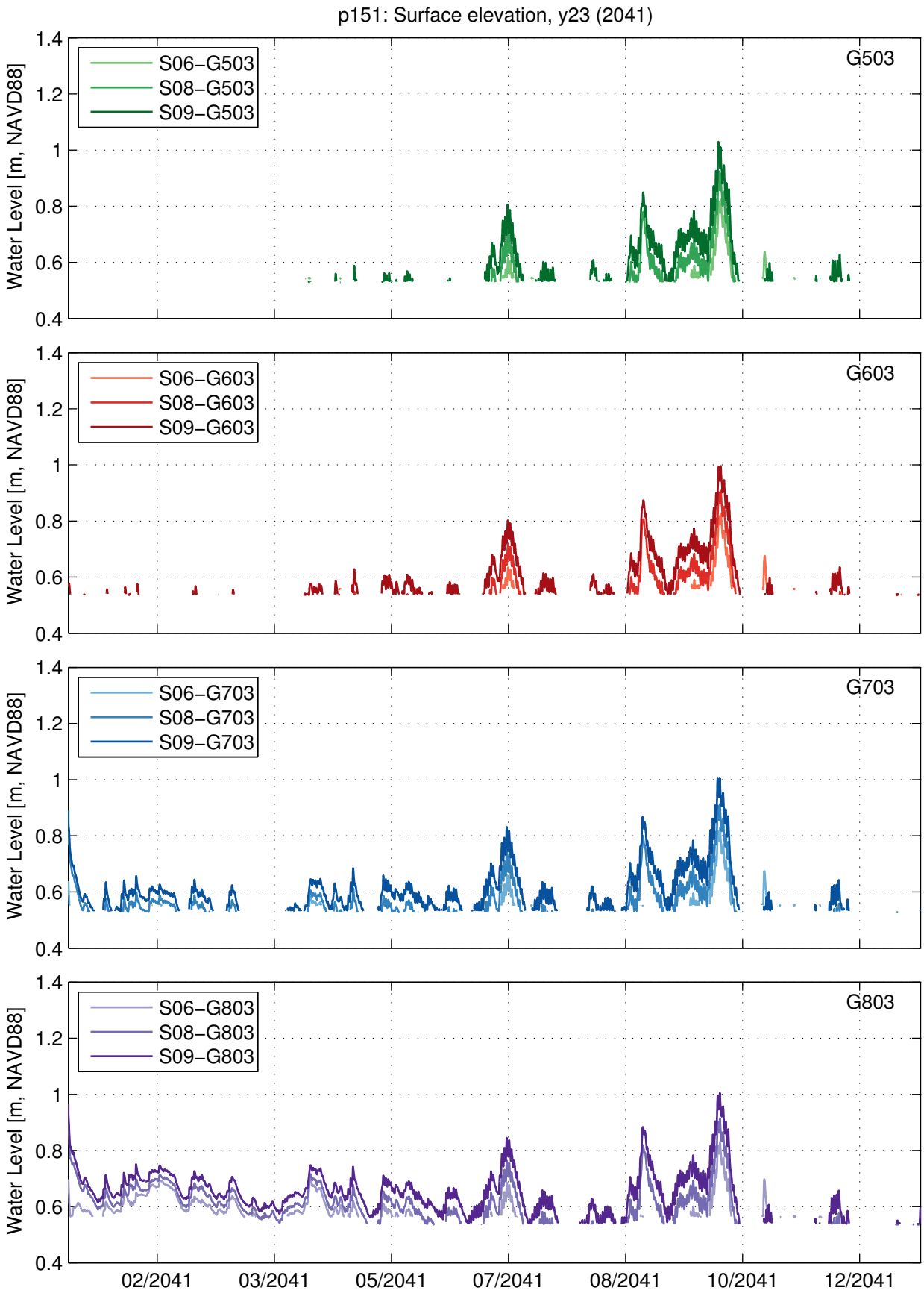

LK−4: Surface elevation, y23 (2041)
Water Level [m, NAVD88]
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
S06−G703
S08−G703
S09−G703
G703
S06−G803
S08−G803
S09−G803
G803
1.5
1
0.5
0
−0.5
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

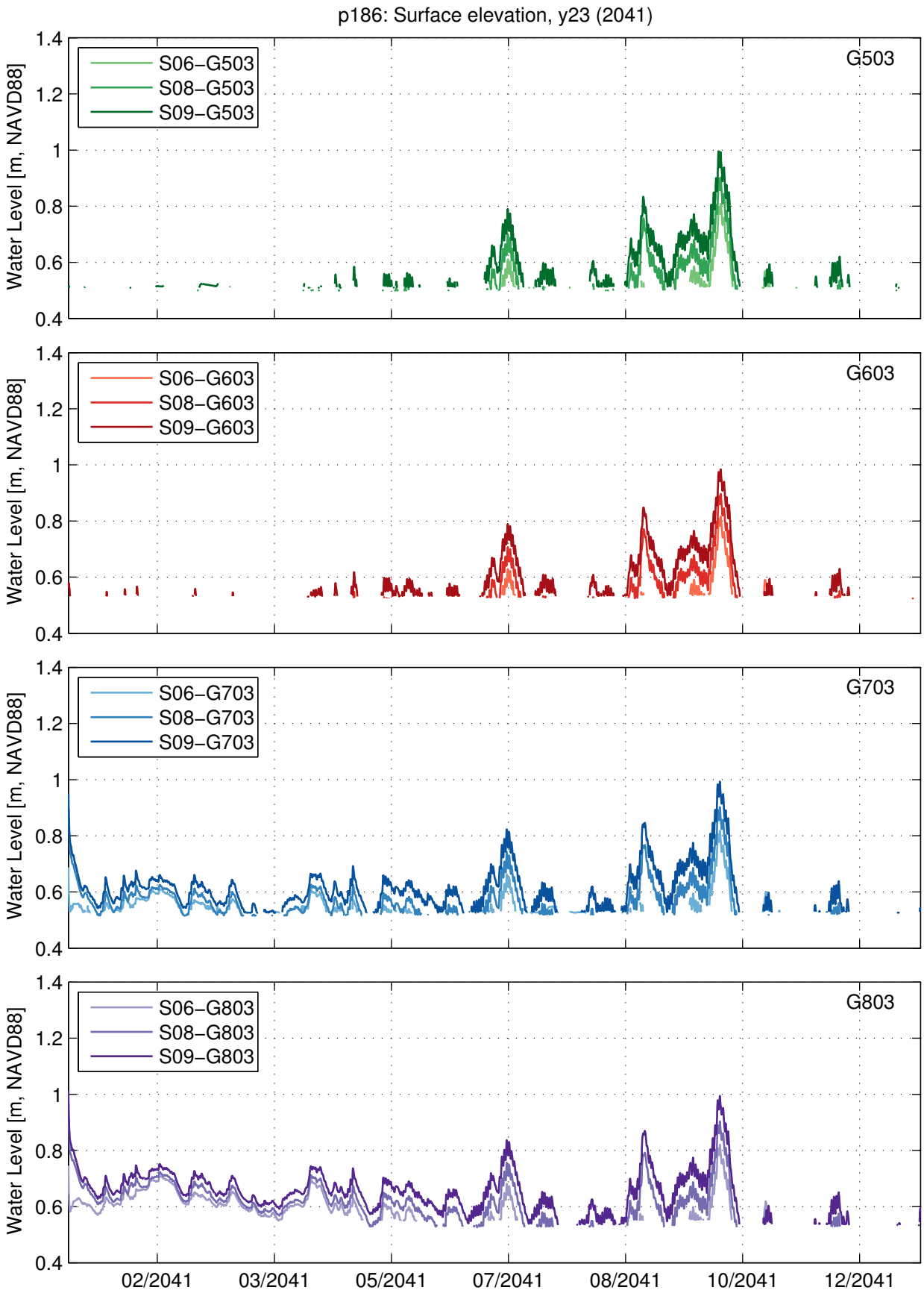

VC−1: Surface elevation, y23 (2041)
Water Level [m, NAVD88]
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
S06−G703
S08−G703
S09−G703
G703
S06−G803
S08−G803
S09−G803
G803
1.4
1.2
1
0.8
0.6
0.4
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

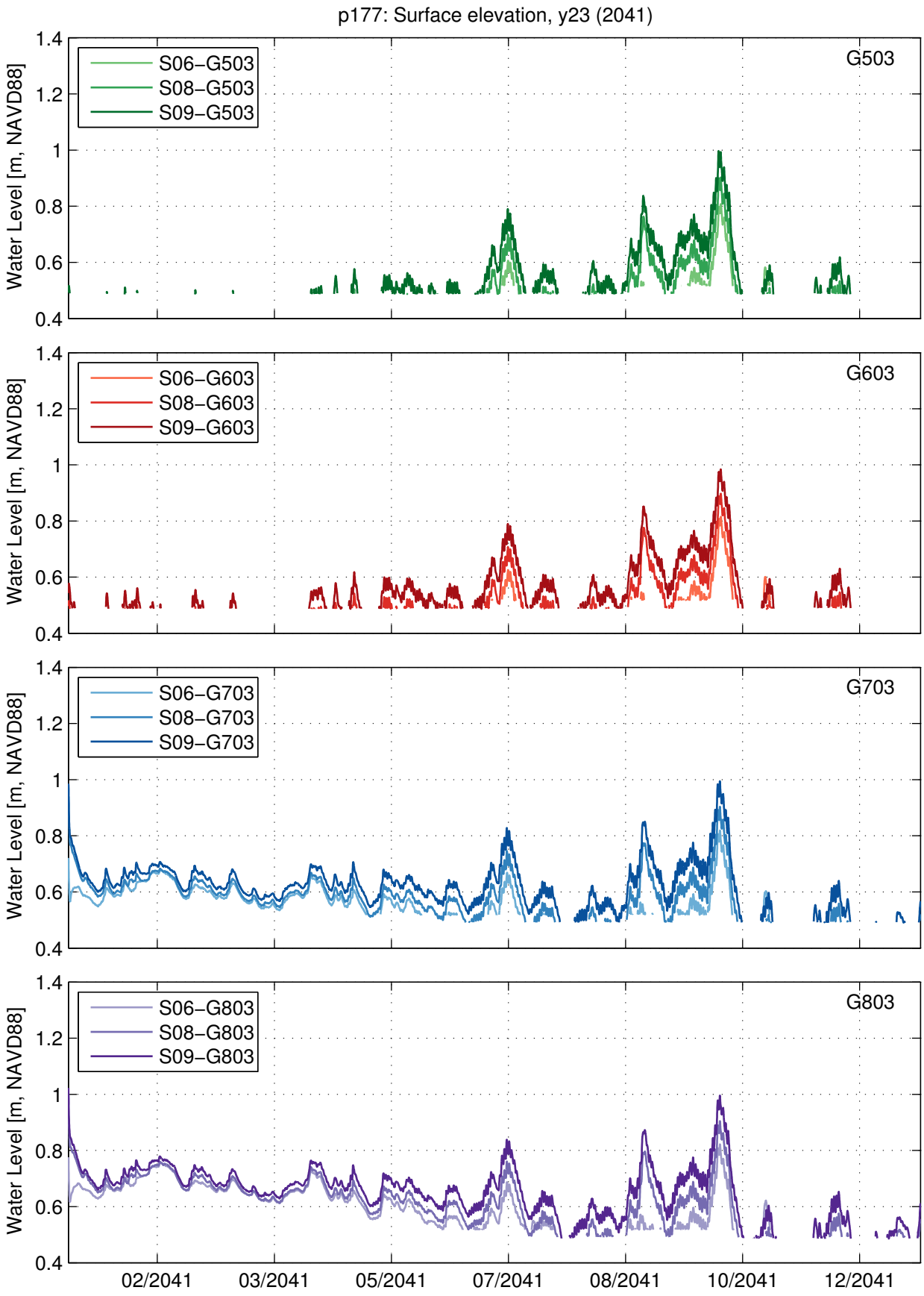

p160: Surface elevation, y23 (2041)
Water Level [m, NAVD88]
1.1
1
0.9
0.8
0.7
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

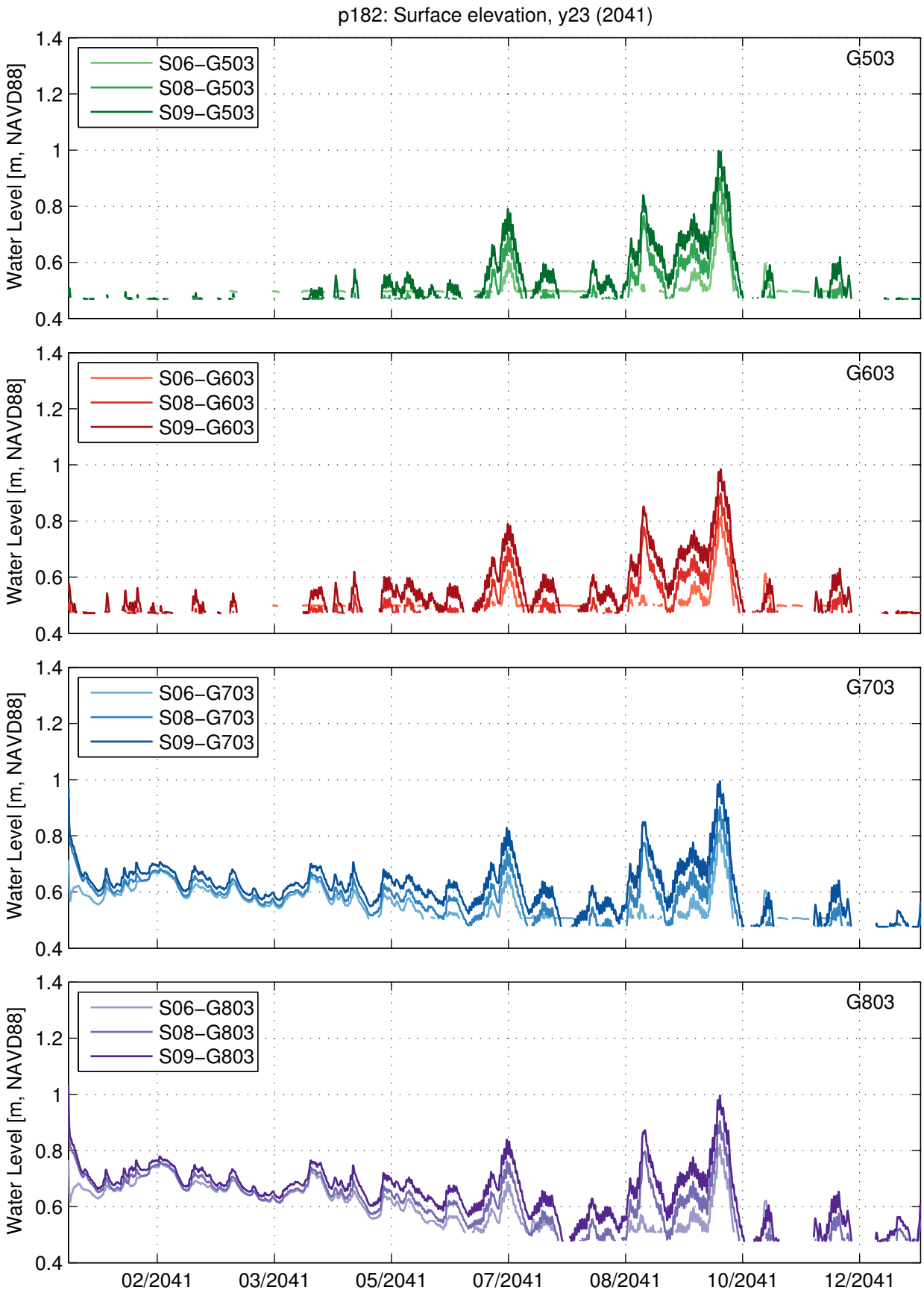

p165: Surface elevation, y23 (2041)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Water Level [m, NAVD88]
1.4
1.2
1
0.8
0.6
0.4
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

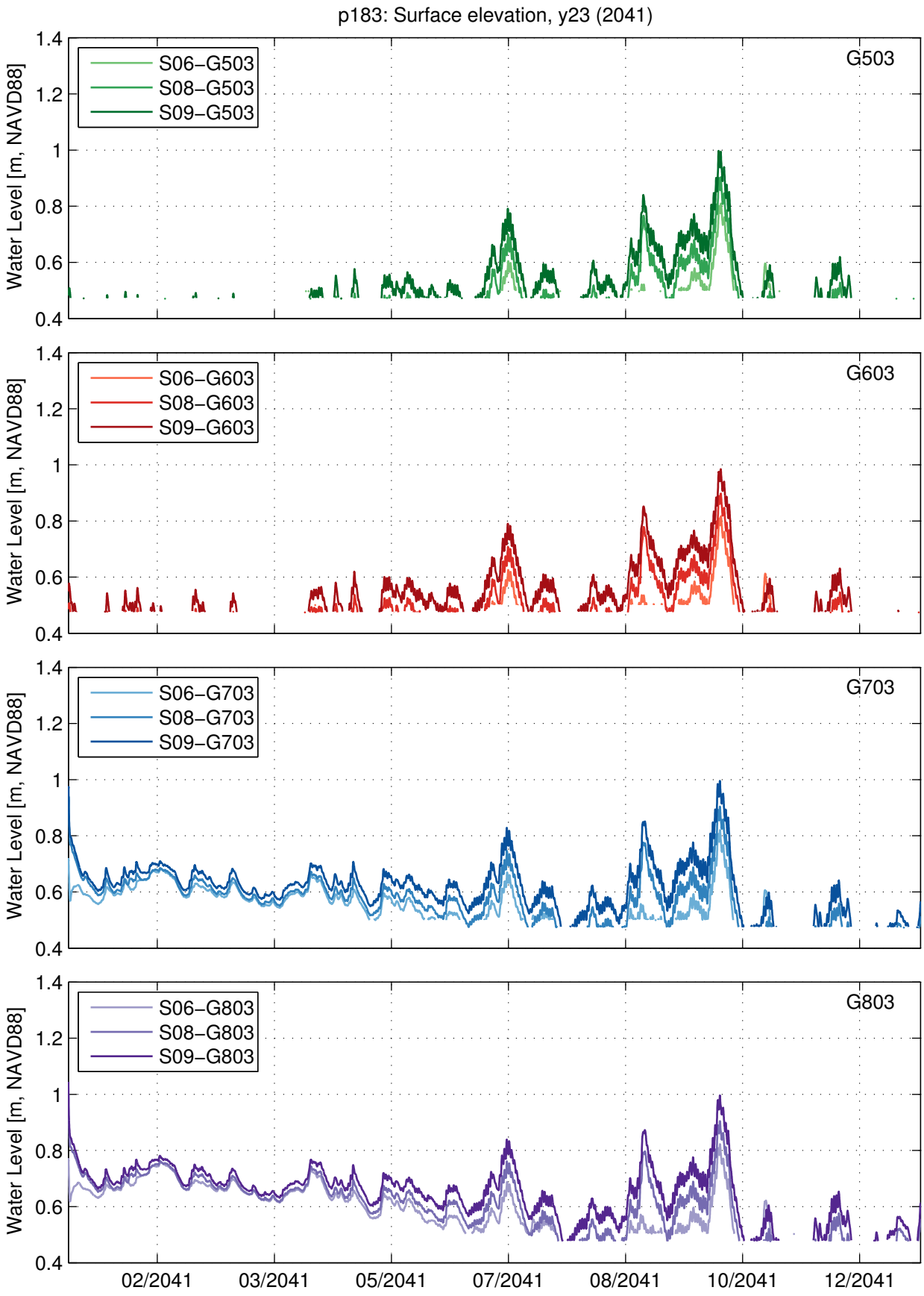

TC−1: Surface elevation, y23 (2041)
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
S06−G703
S08−G703
S09−G703
G703
S06−G803
S08−G803
S09−G803
G803
Water Level [m, NAVD88]
0
0.2
0.4
0.6
0.8
1
1.2
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

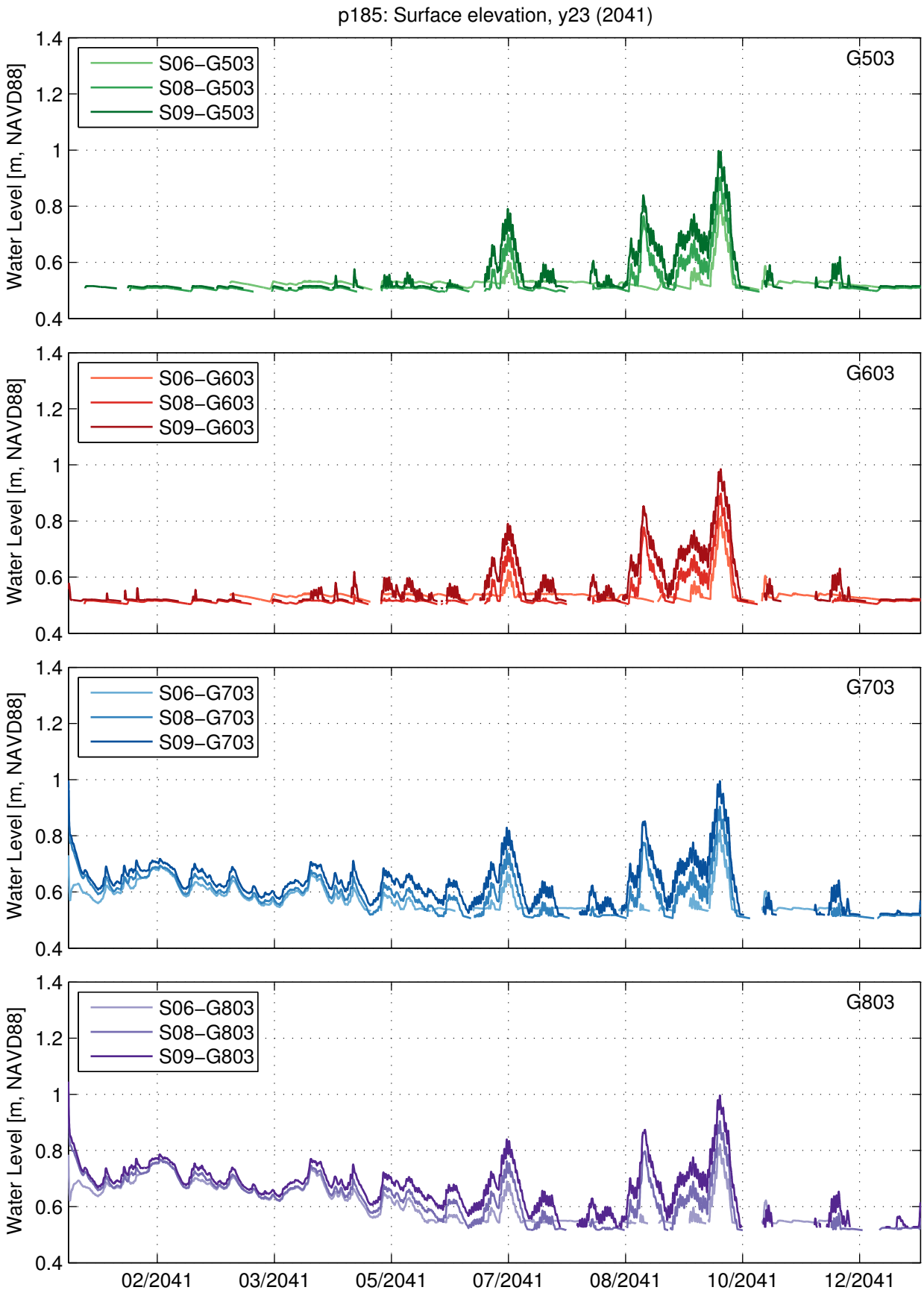

p151: Surface elevation, y23 (2041)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Water Level [m, NAVD88]
1.4
1.2
1
0.8
0.6
0.4
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

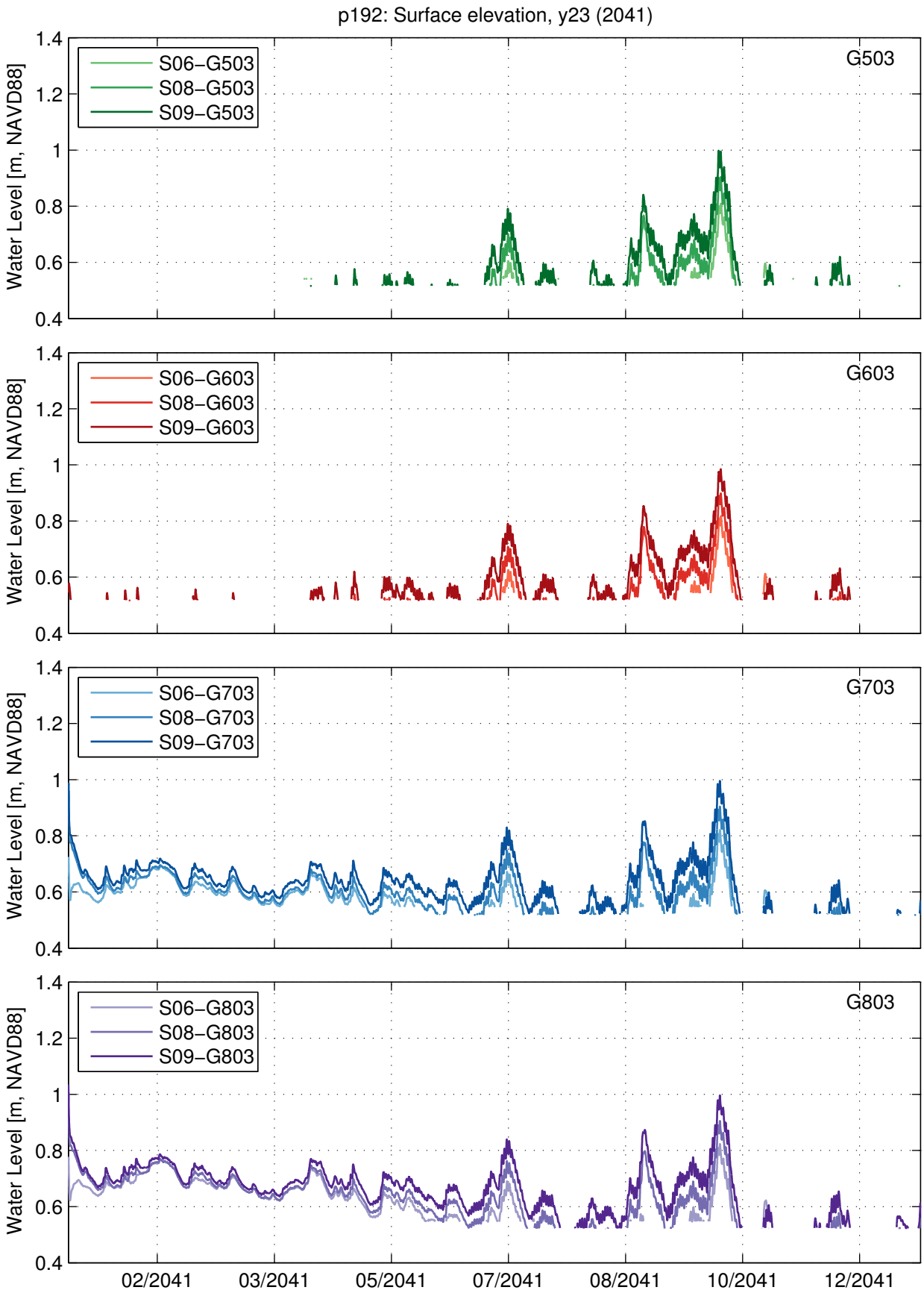

p186: Surface elevation, y23 (2041)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Water Level [m, NAVD88]
1.4
1.2
1
0.8
0.6
0.4
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

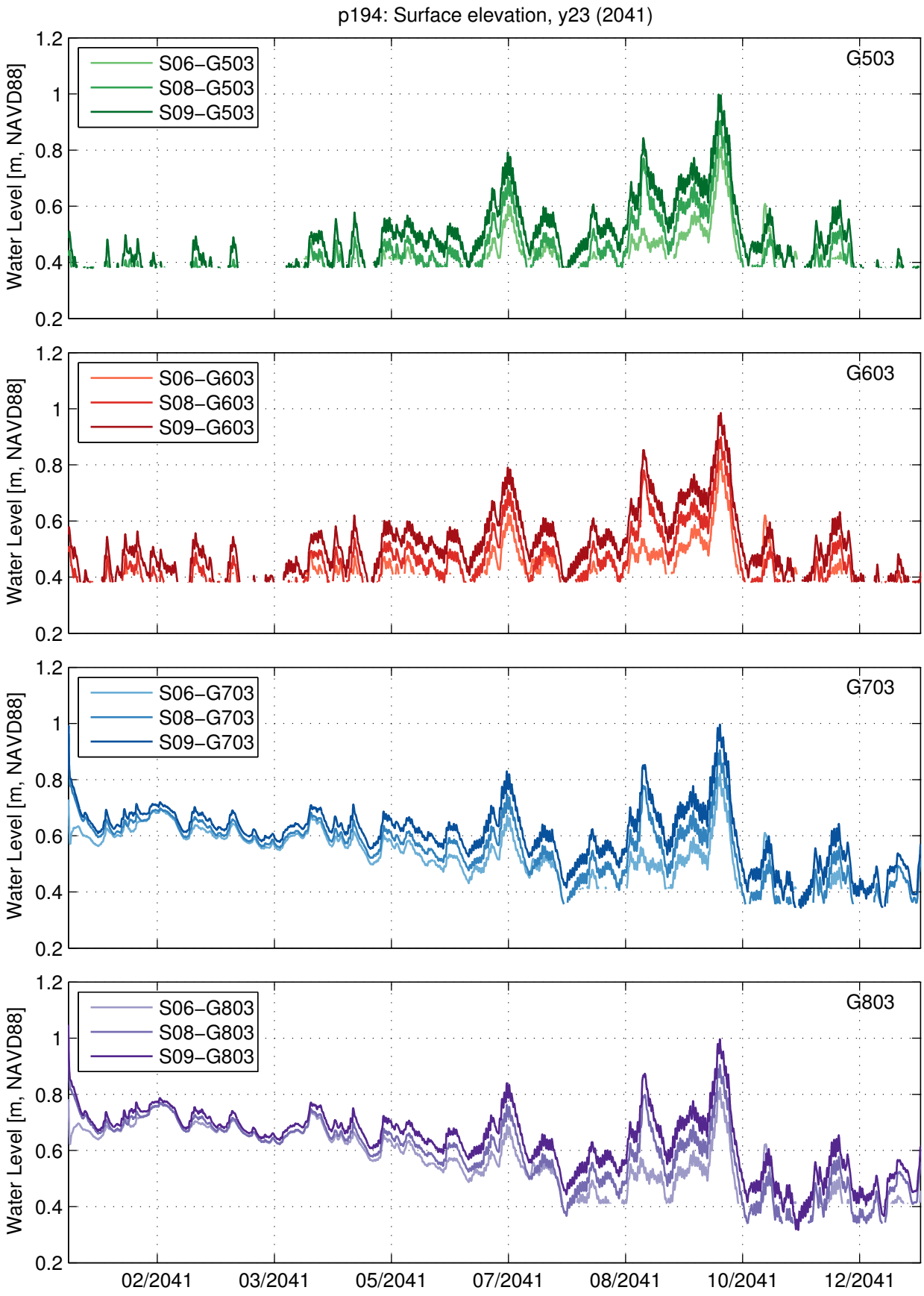

p177: Surface elevation, y23 (2041)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Water Level [m, NAVD88]
1.4
1.2
1
0.8
0.6
0.4
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

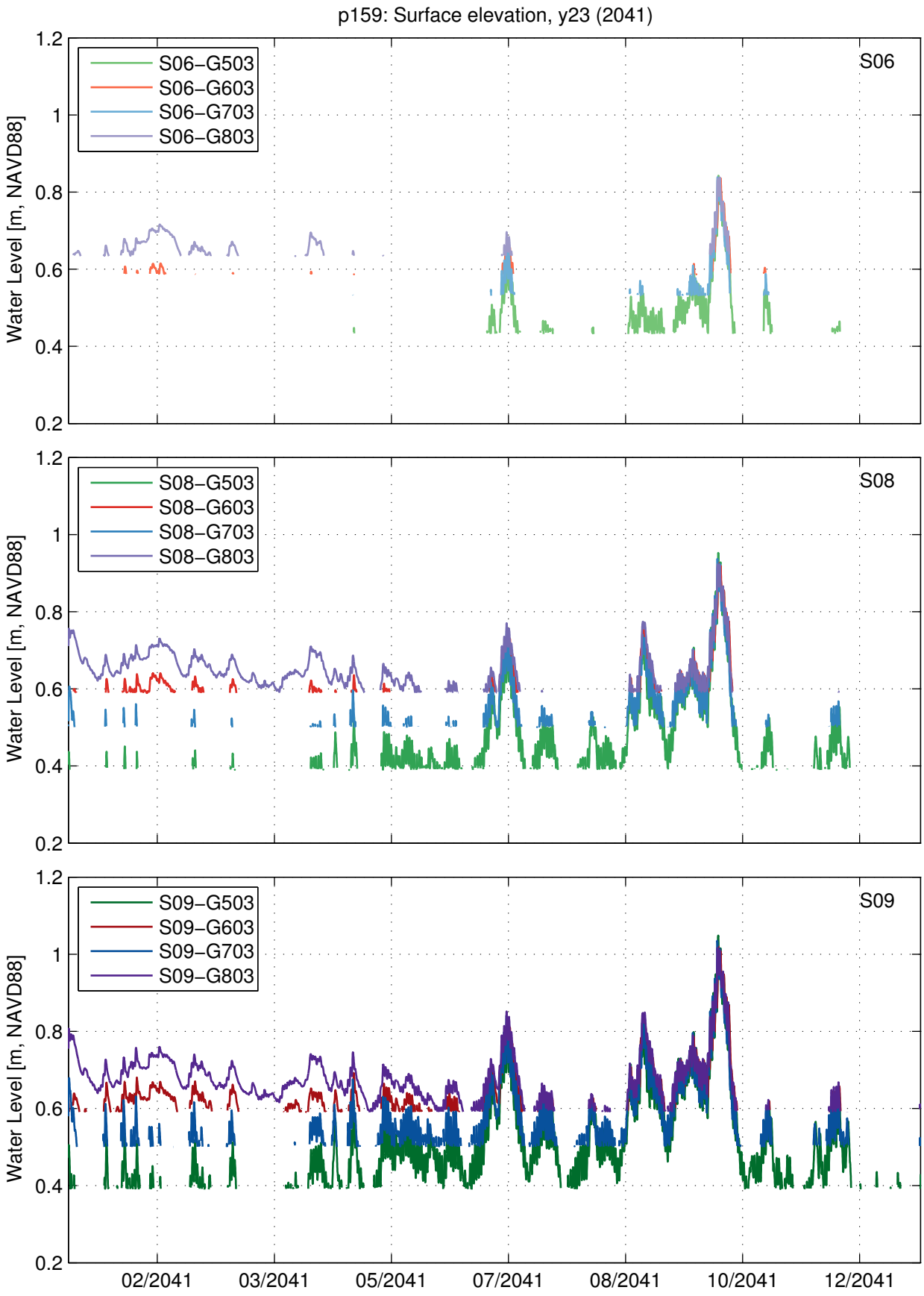

p182: Surface elevation, y23 (2041)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Water Level [m, NAVD88]
1.4
1.2
1
0.8
0.6
0.4
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

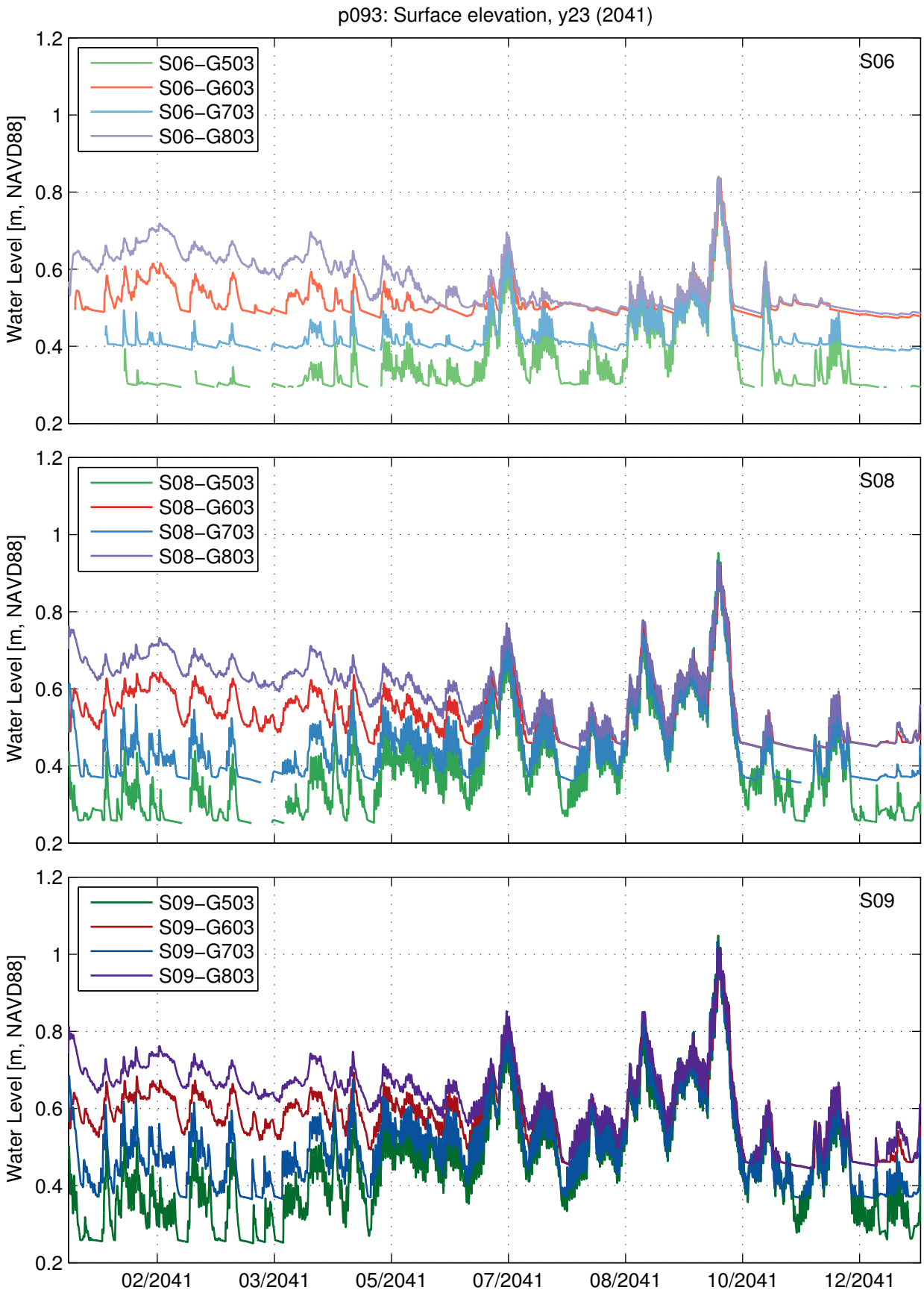

p183: Surface elevation, y23 (2041)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Water Level [m, NAVD88]
1.4
1.2
1
0.8
0.6
0.4
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

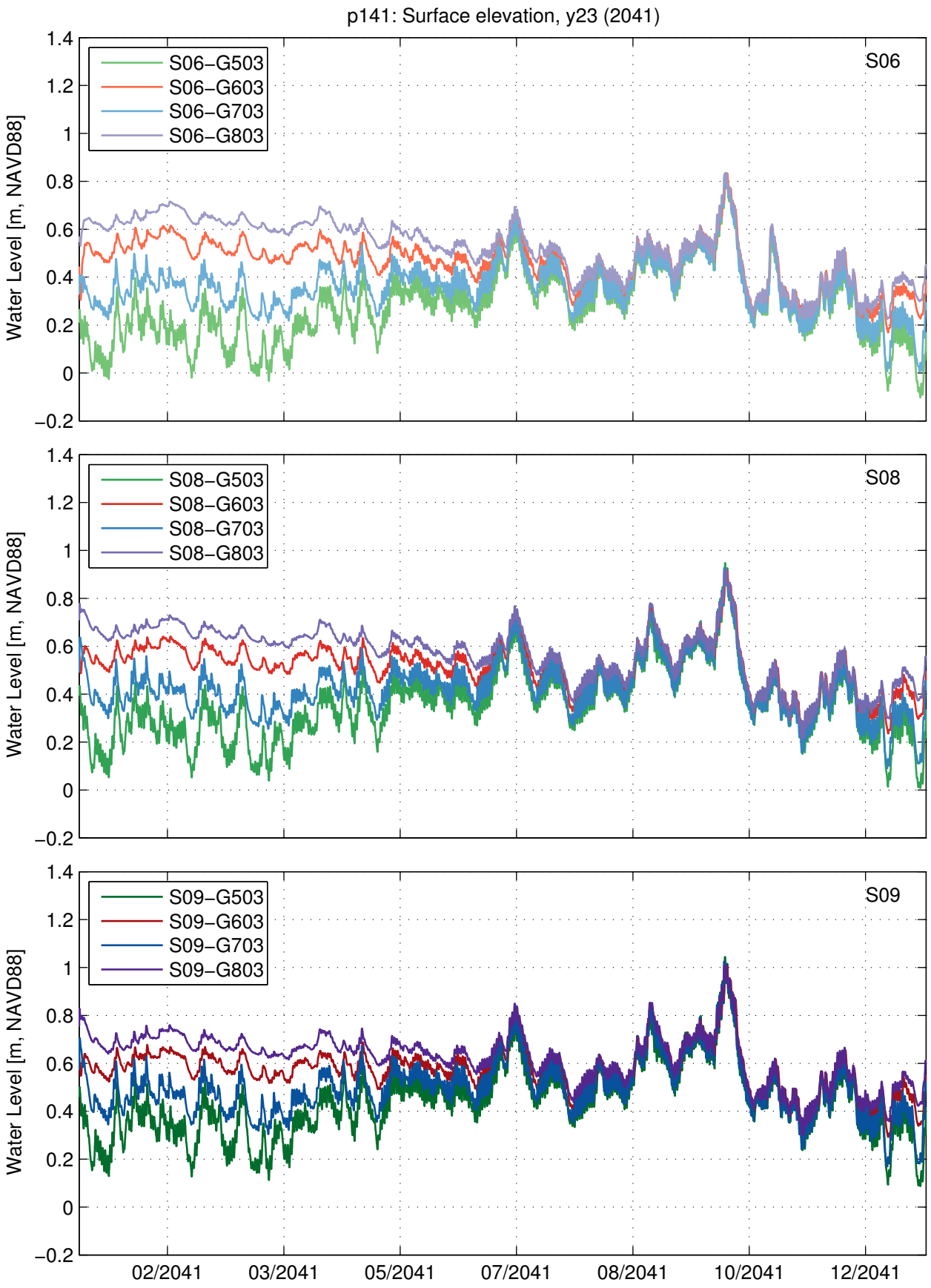

p185: Surface elevation, y23 (2041)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Water Level [m, NAVD88]
1.4
1.2
1
0.8
0.6
0.4
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

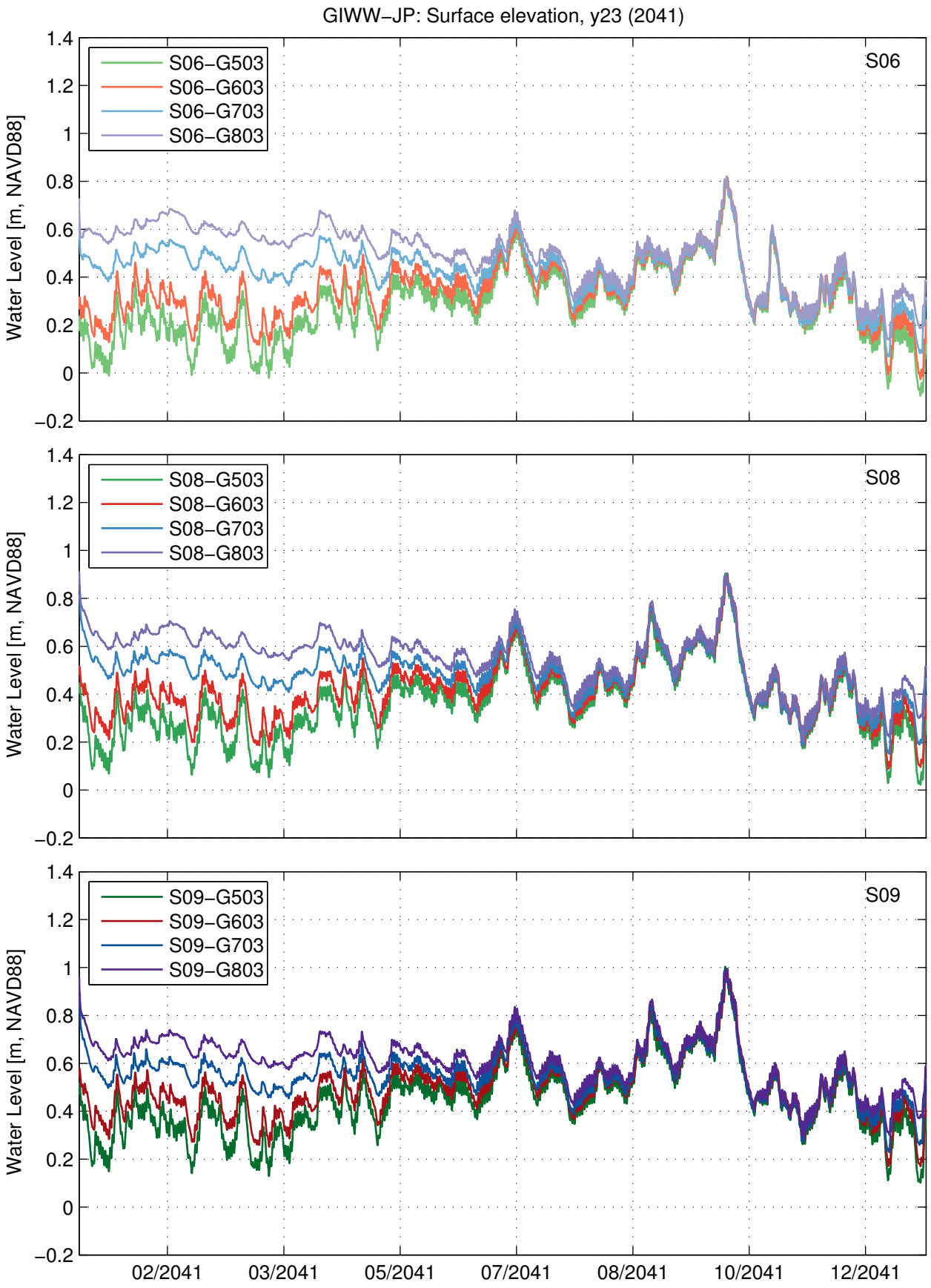

p192: Surface elevation, y23 (2041)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Water Level [m, NAVD88]
1.4
1.2
1
0.8
0.6
0.4
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

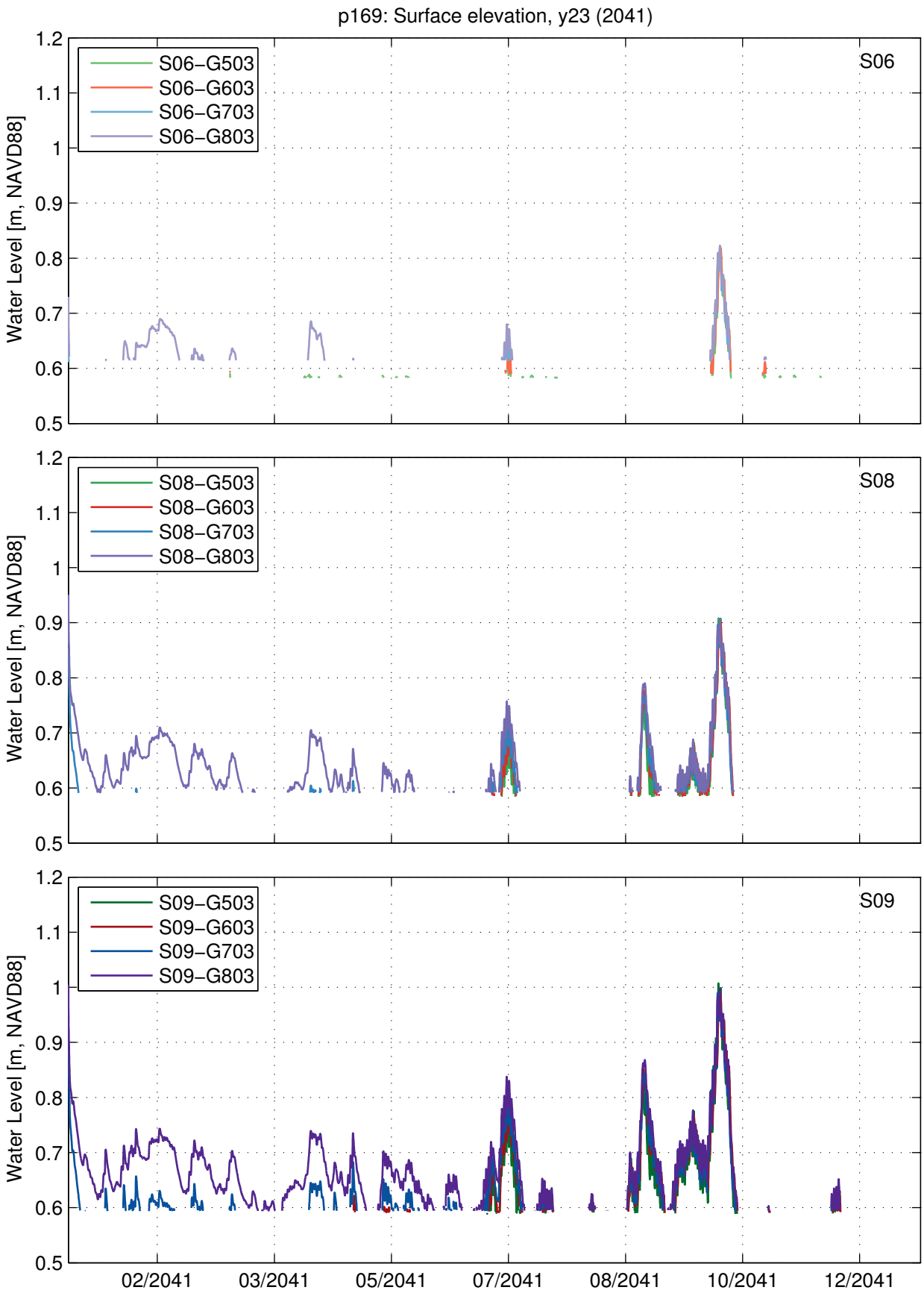

p194: Surface elevation, y23 (2041)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Water Level [m, NAVD88]
1.2
1
0.8
0.6
0.4
0.2
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

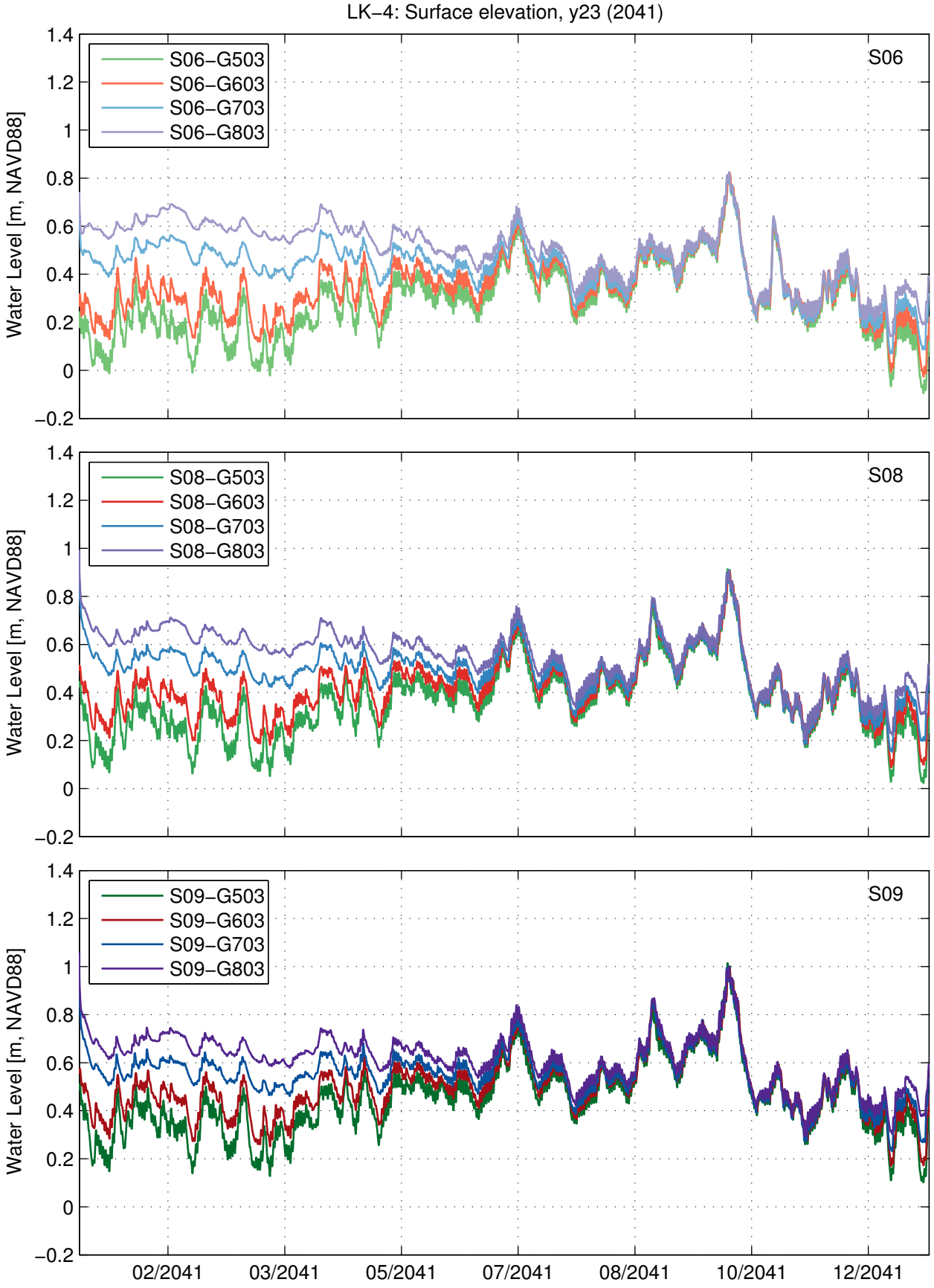

p159: Surface elevation, y23 (2041)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
1.2
1
0.8
0.6
0.4
0.2
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

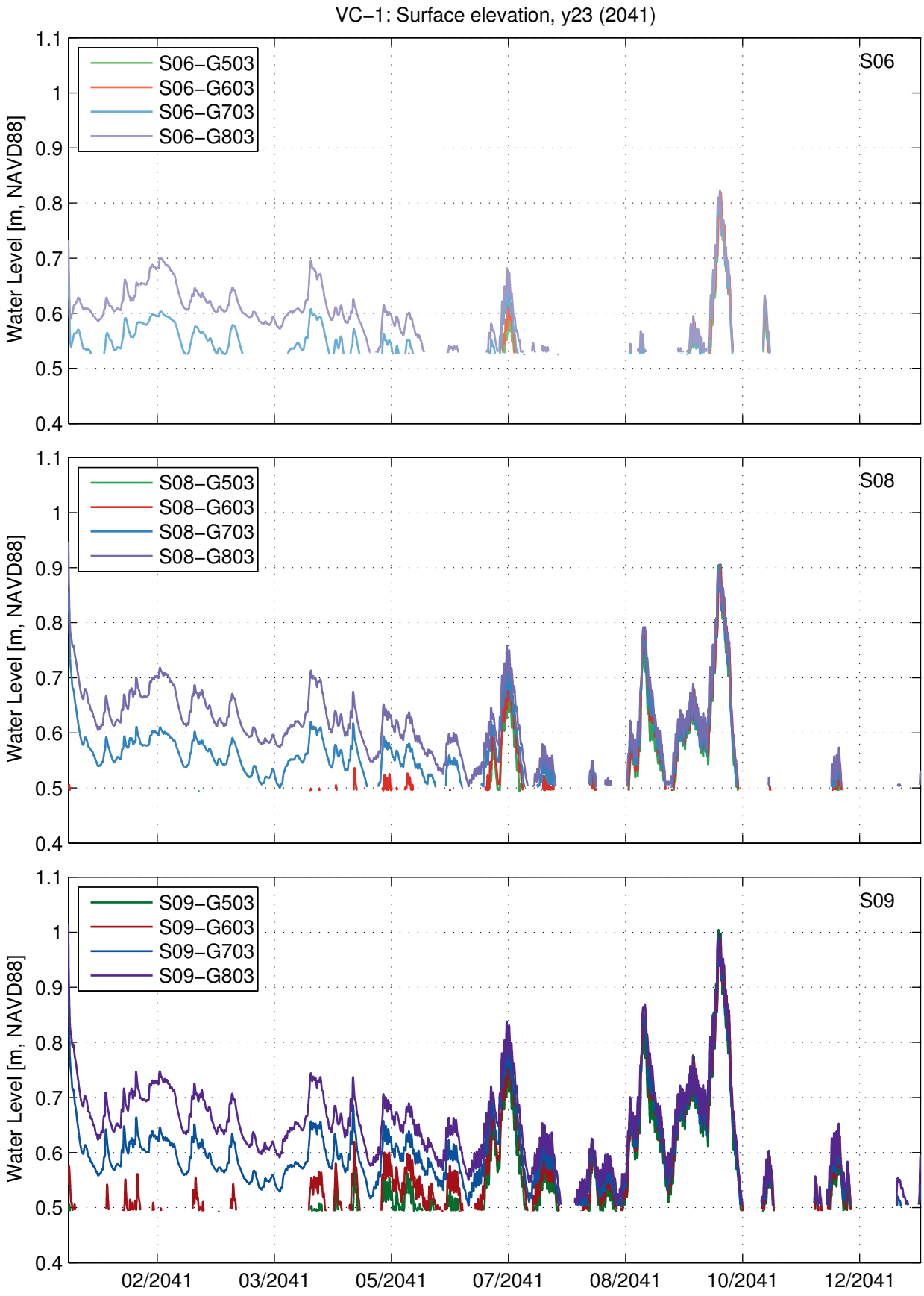

p093: Surface elevation, y23 (2041)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
1.2
1
0.8
0.6
0.4
0.2
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

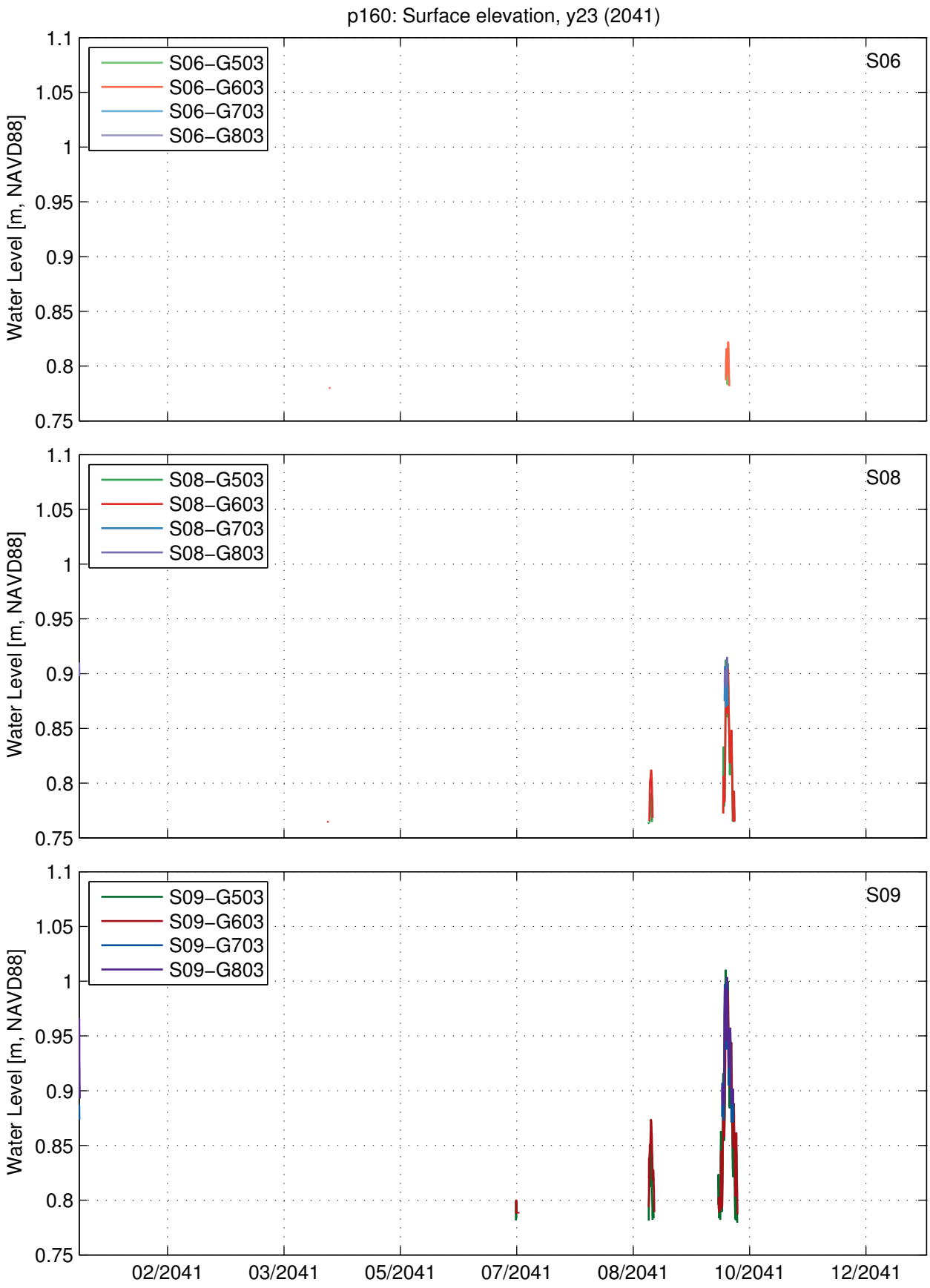

p141: Surface elevation, y23 (2041)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
1.4
1.2
1
0.8
0.6
0.4
0.2
0
−0.2
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

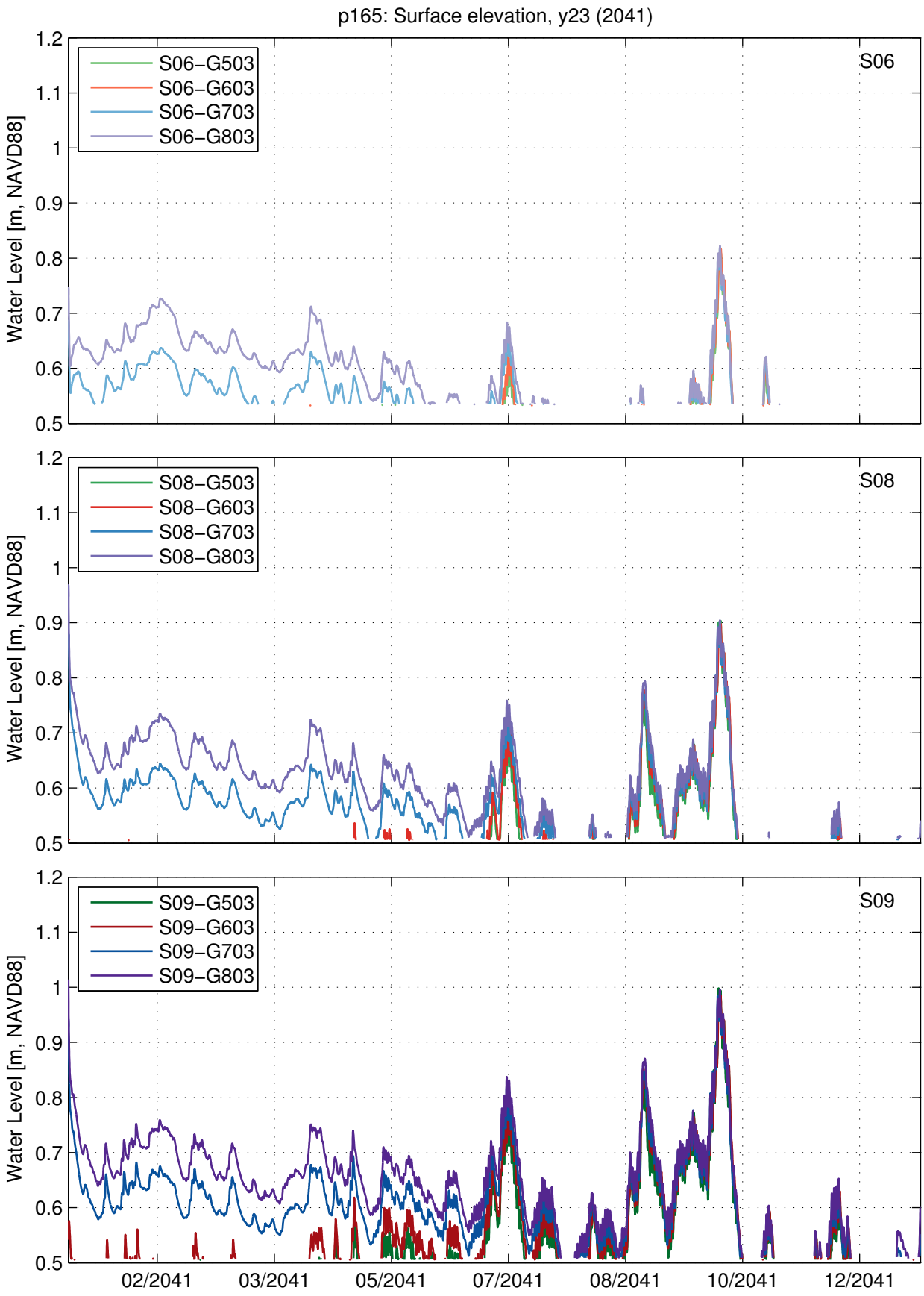

GIWW–JP: Surface elevation, y23 (2041)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
1.4
1.2
1
0.8
0.6
0.4
0.2
0
−0.2
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

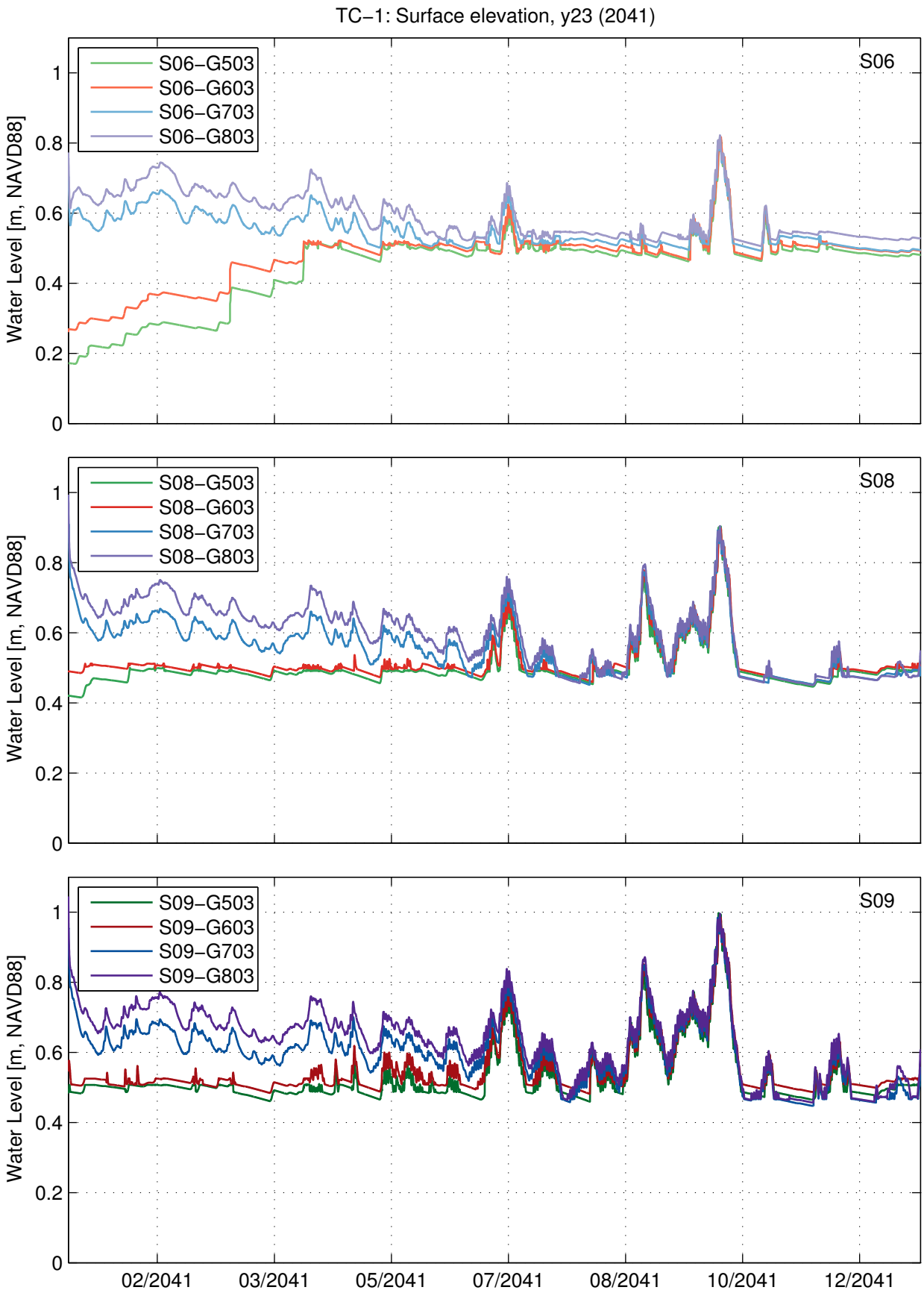

p169: Surface elevation, y23 (2041)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

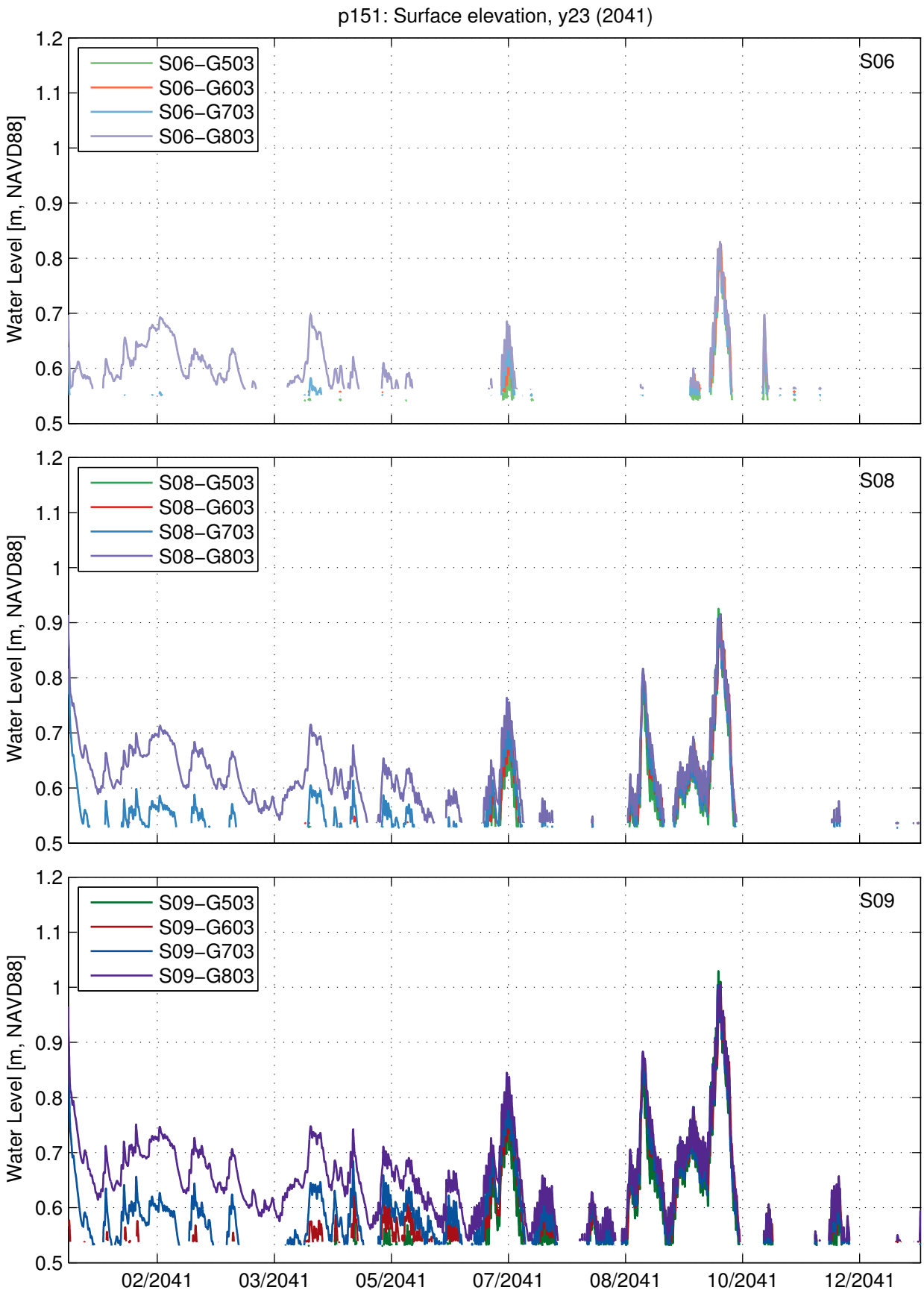

LK−4: Surface elevation, y23 (2041)
S06−G503
S06−G603
S06−G703
S06−G803
S06
S08−G503
S08−G603
S08−G703
S08−G803
S08
S09−G503
S09−G603
S09−G703
S09−G803
S09
Water Level [m, NAVD88]
1.4
1.2
1
0.8
0.6
0.4
0.2
0
−0.2
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

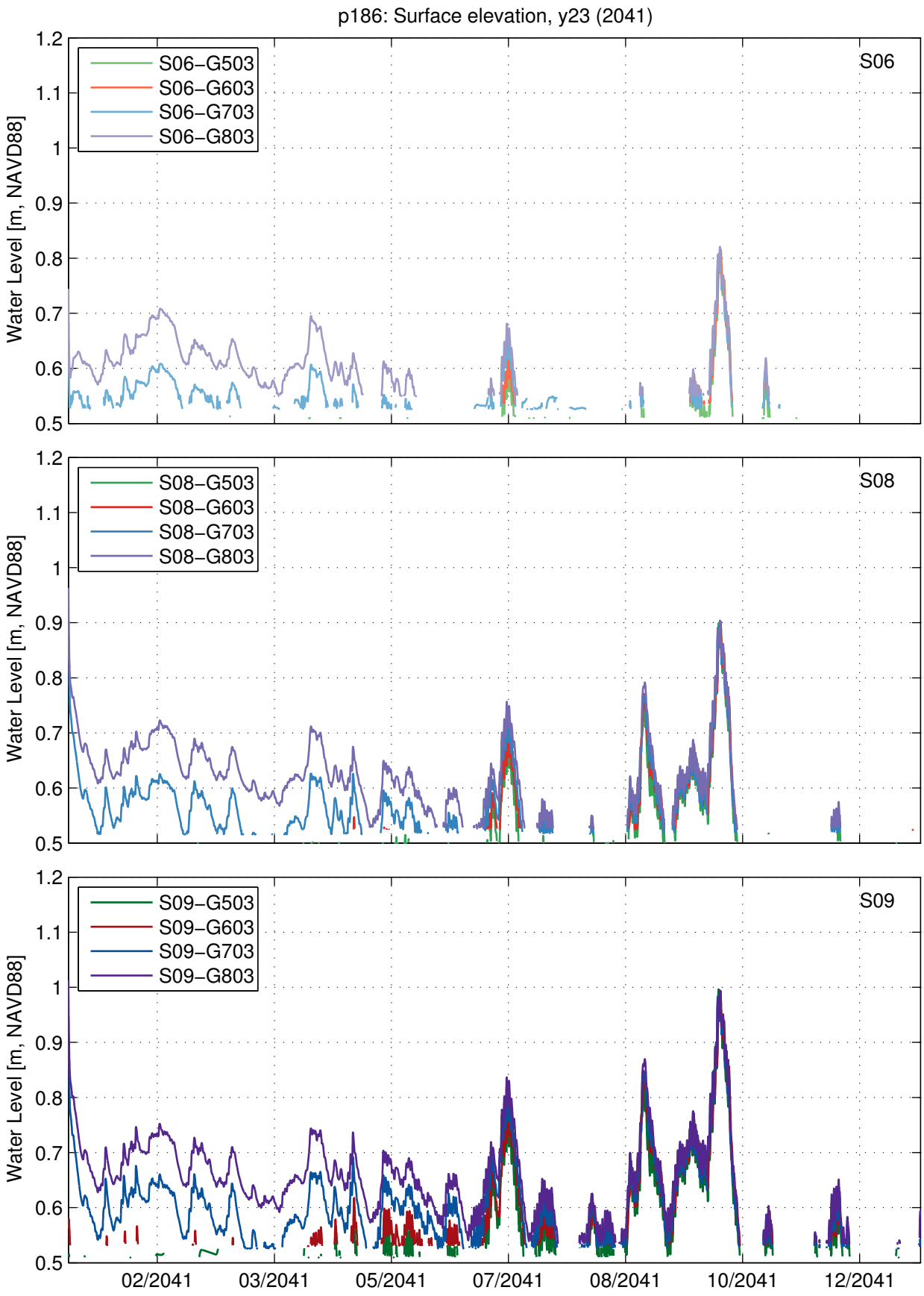

VC−1: Surface elevation, y23 (2041)
S06
S06−G503
S06−G603
S06−G703
S06−G803
S08
S08−G503
S08−G603
S08−G703
S08−G803
S09
S09−G503
S09−G603
S09−G703
S09−G803
Water Level [m, NAVD88]
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

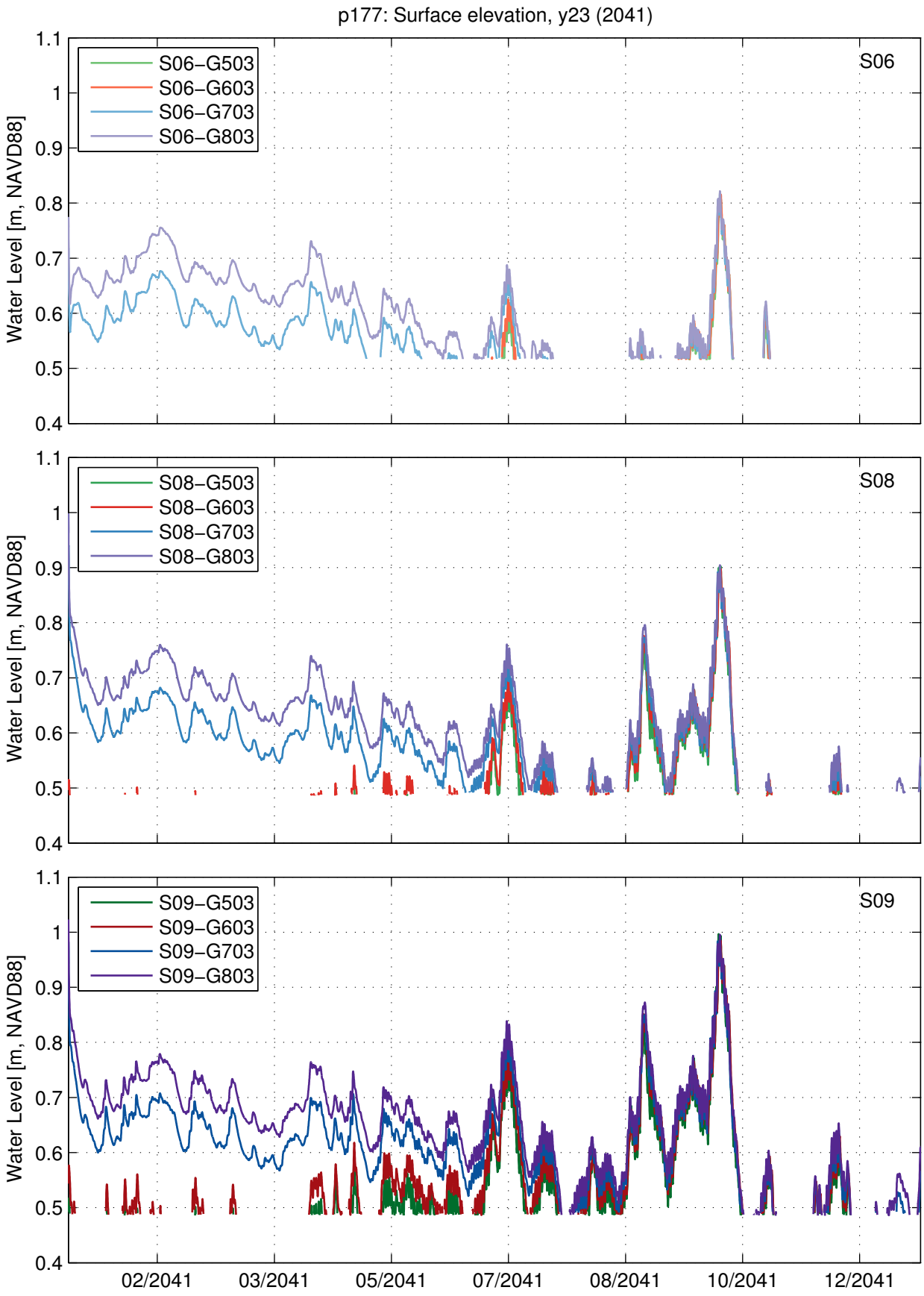

p160: Surface elevation, y23 (2041)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
1.1
1.05
1
0.95
0.9
0.85
0.8
0.75
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

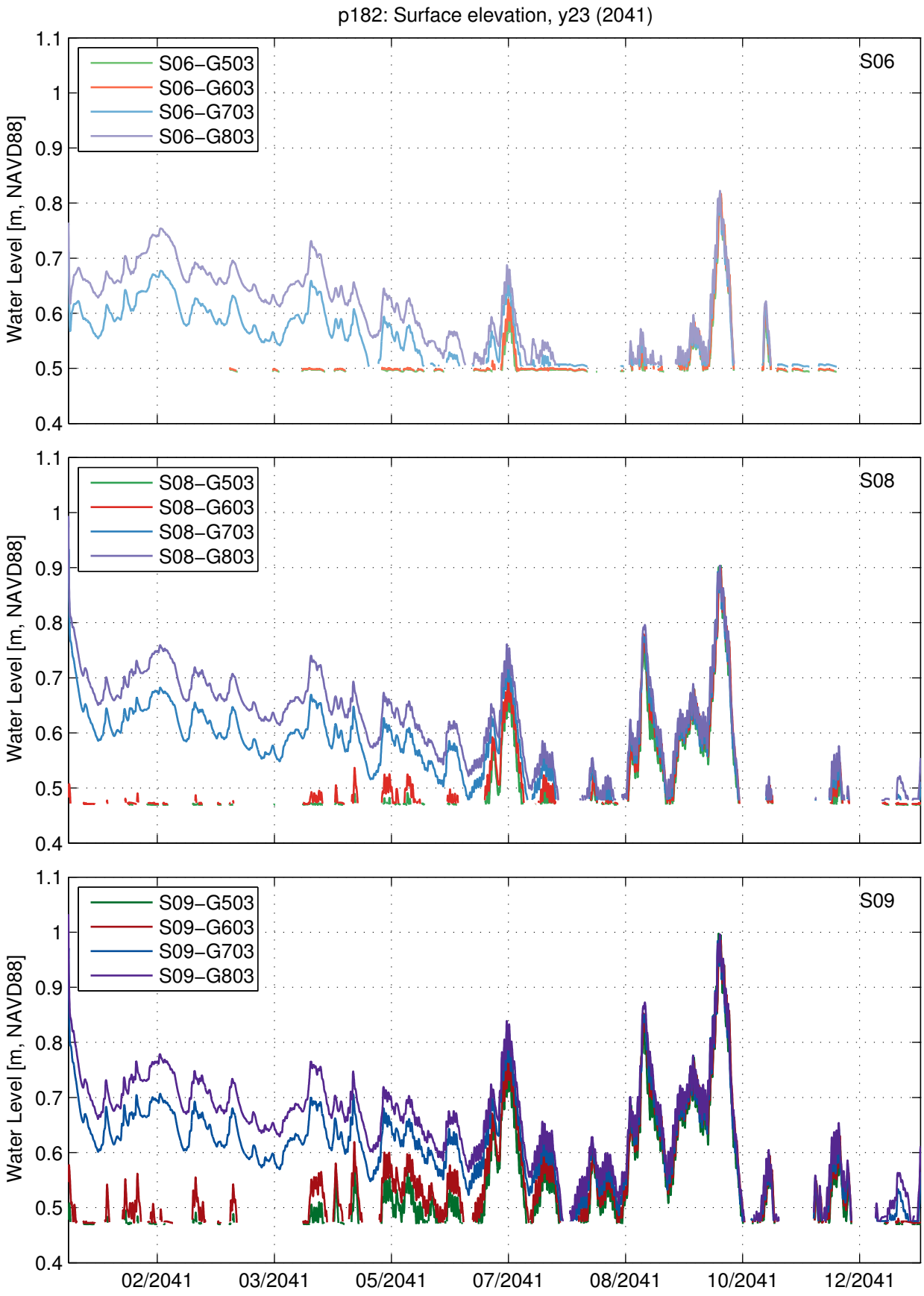

p165: Surface elevation, y23 (2041)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

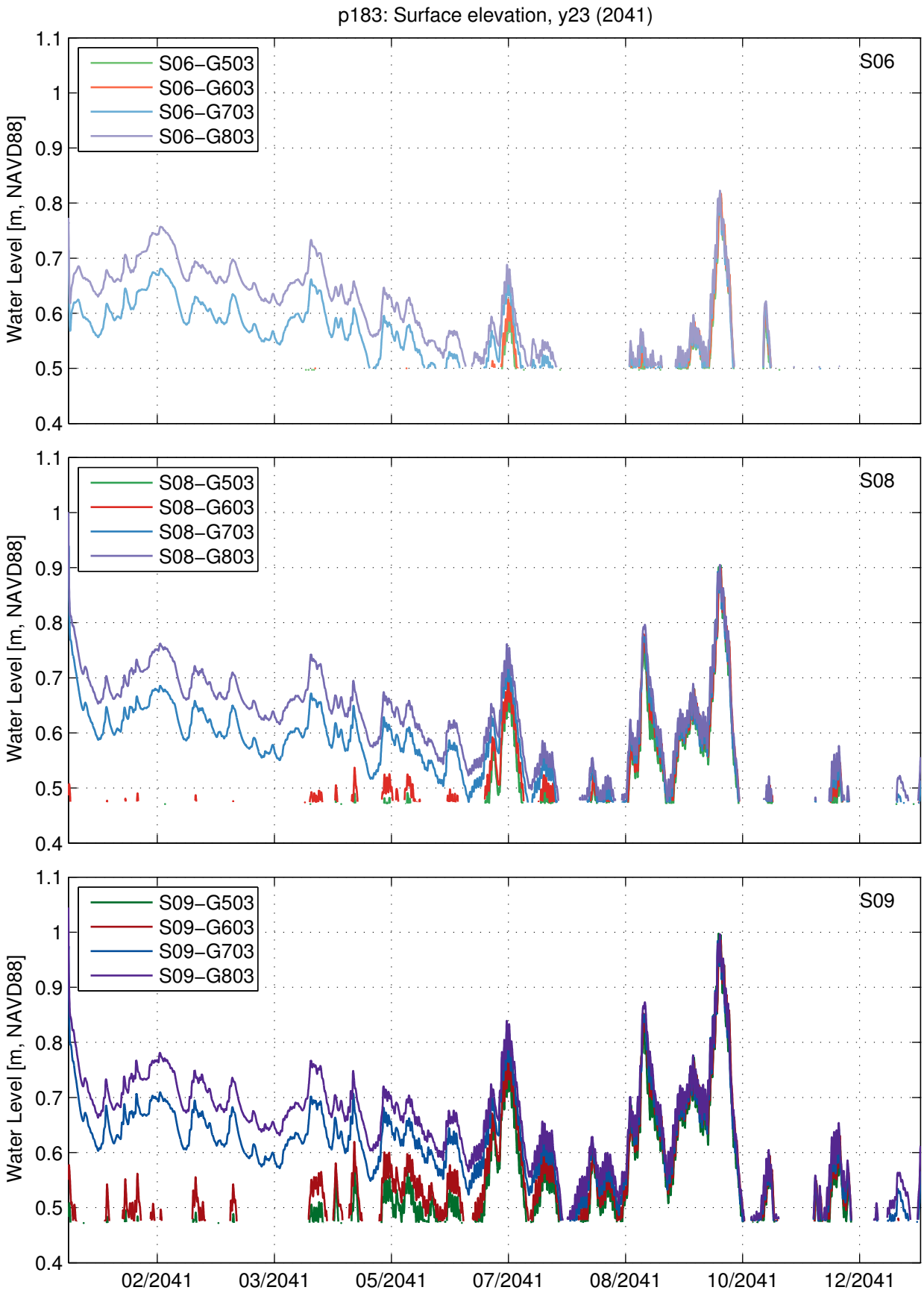

TC−1: Surface elevation, y23 (2041)
S06−G503
S06−G603
S06−G703
S06−G803
S06
S08−G503
S08−G603
S08−G703
S08−G803
S08
S09−G503
S09−G603
S09−G703
S09−G803
S09
Water Level [m, NAVD88]
0
0.2
0.4
0.6
0.8
1
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

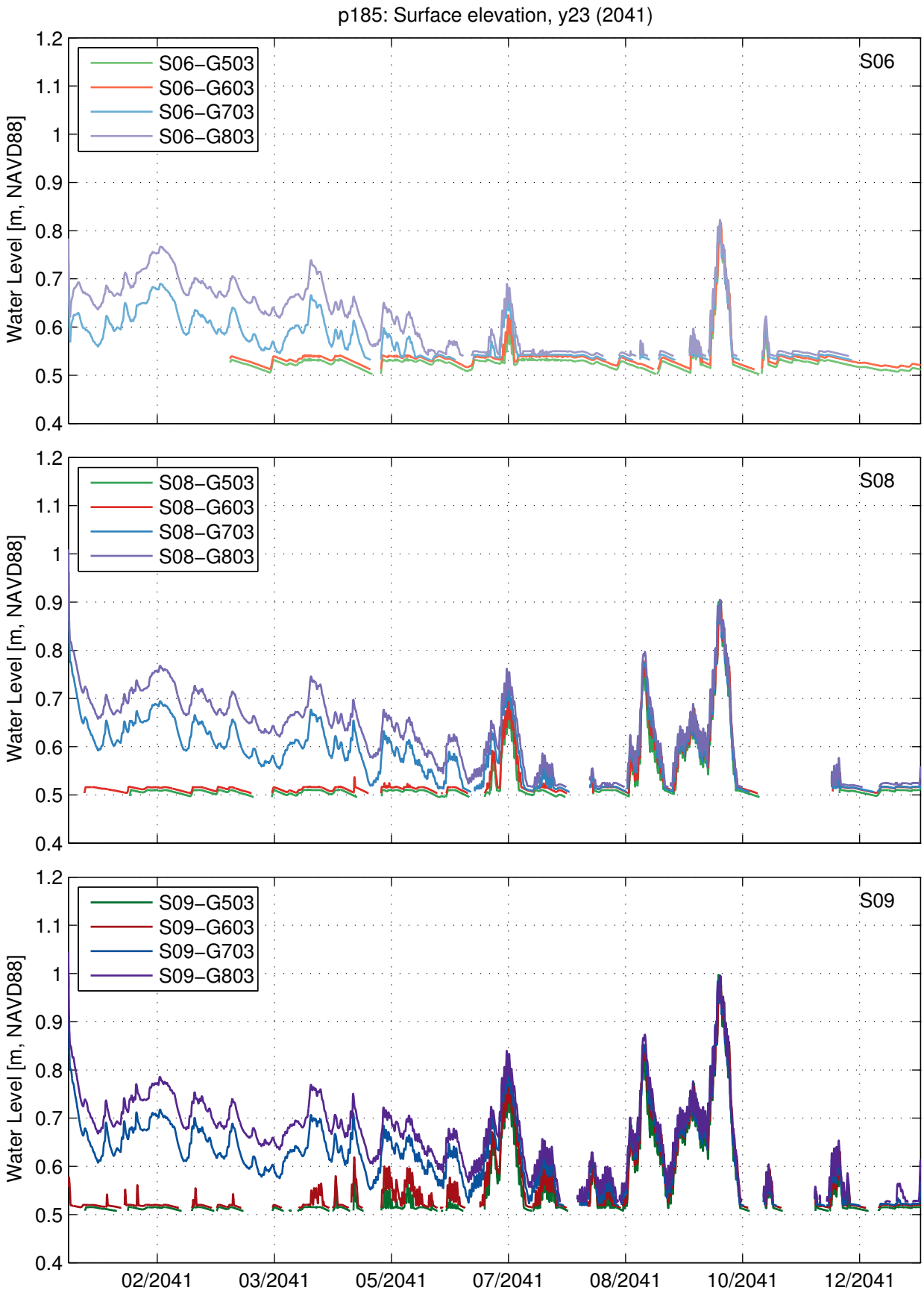

p151: Surface elevation, y23 (2041)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

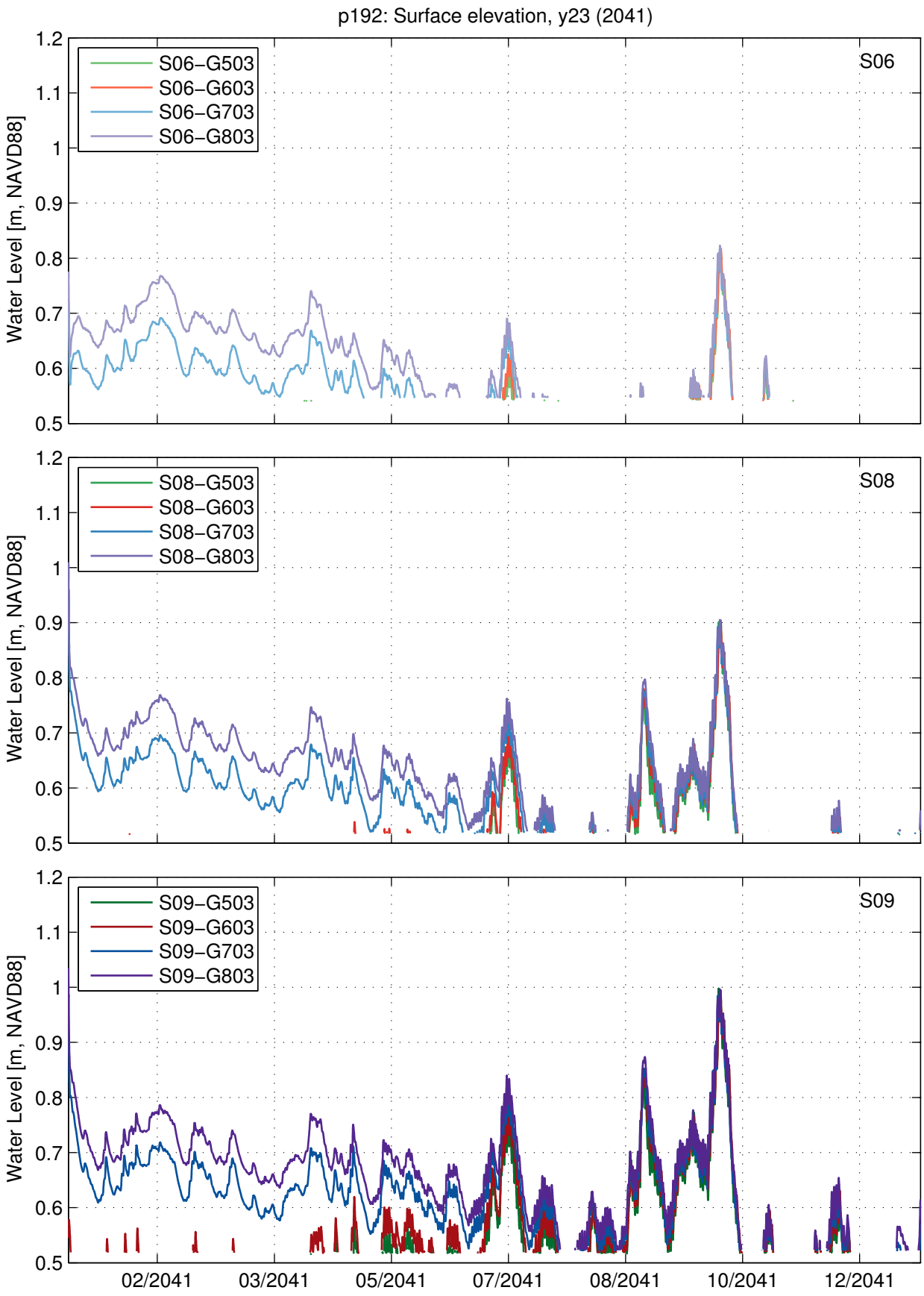

p186: Surface elevation, y23 (2041)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

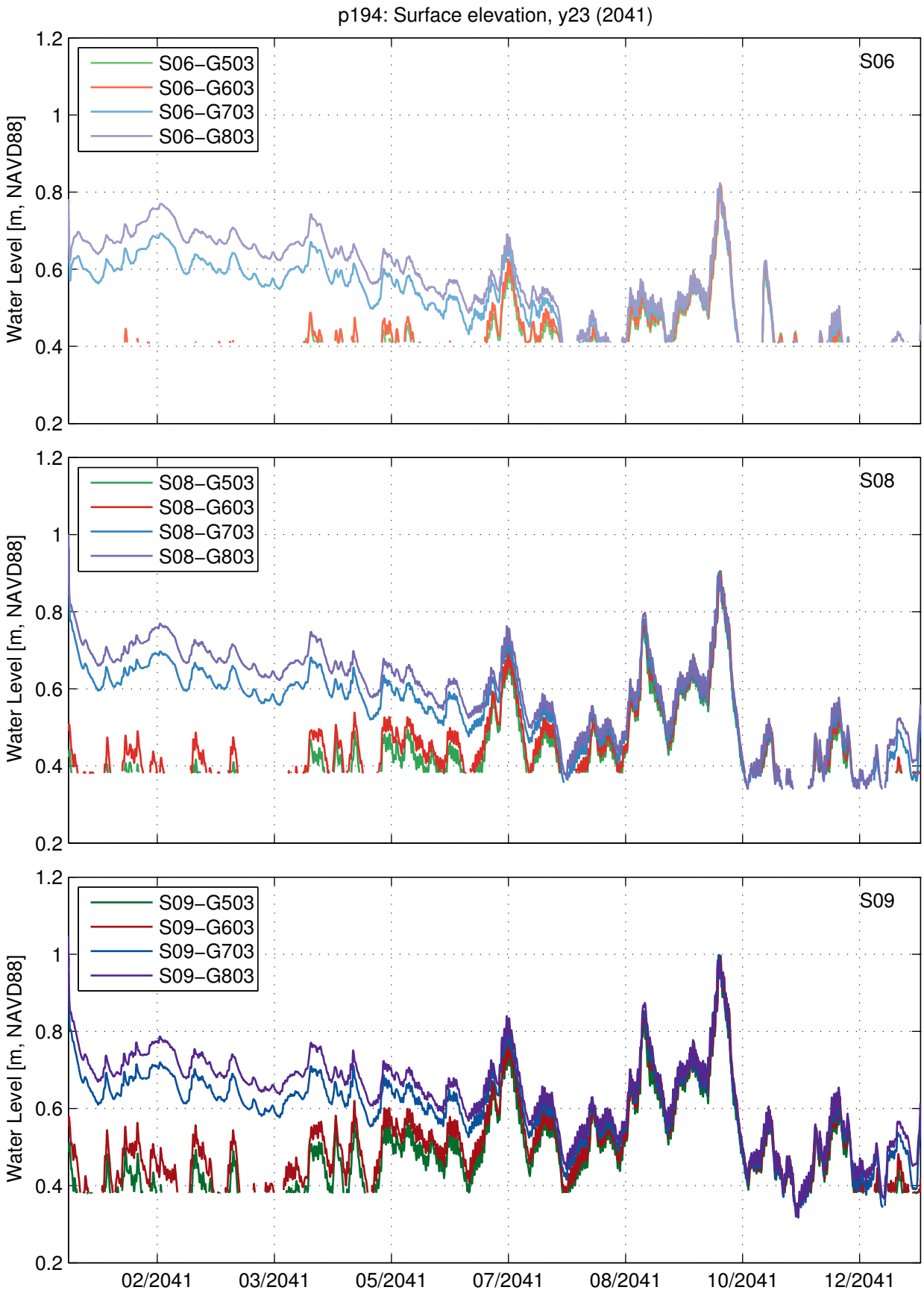

p177: Surface elevation, y23 (2041)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

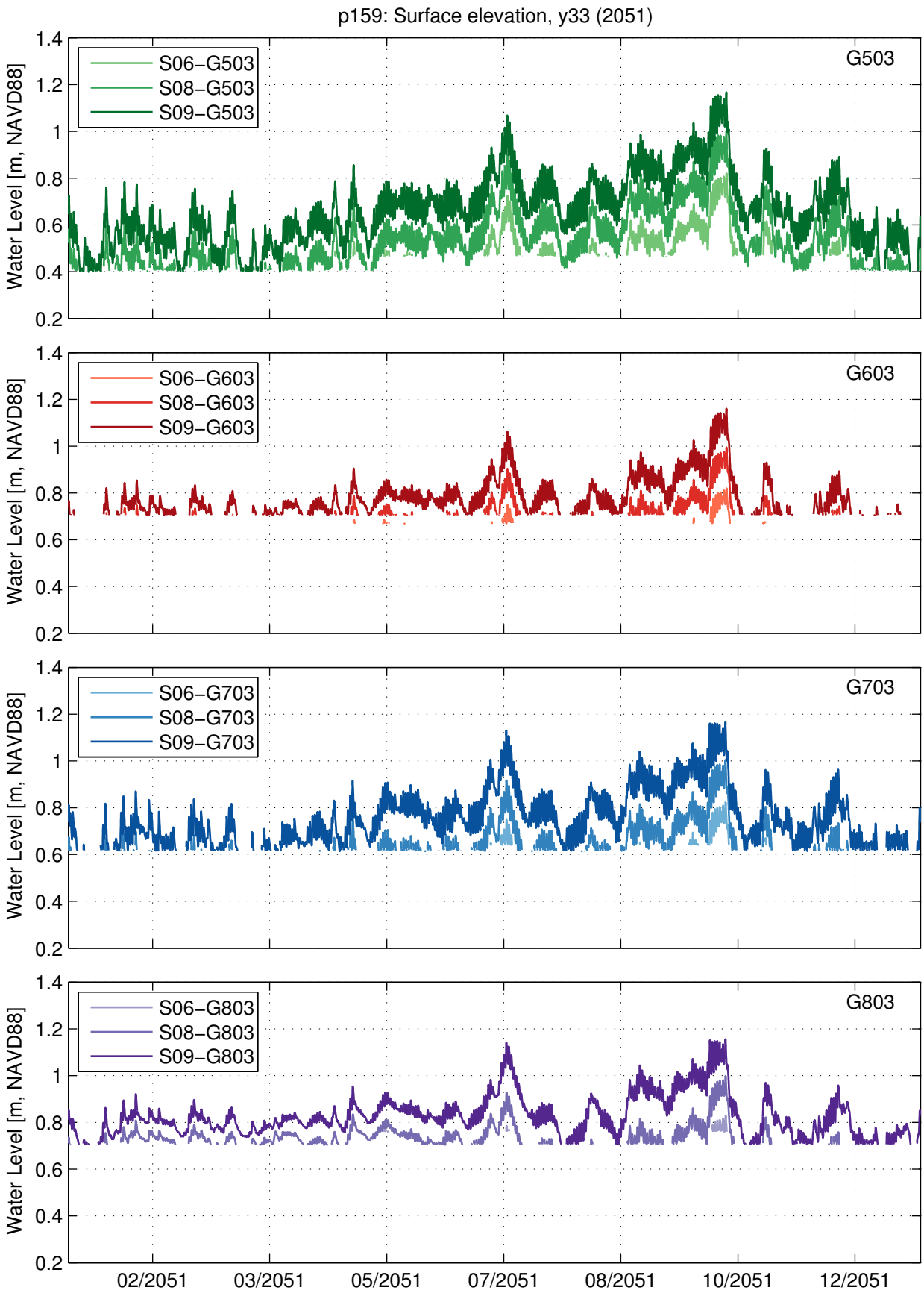

p182: Surface elevation, y23 (2041)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

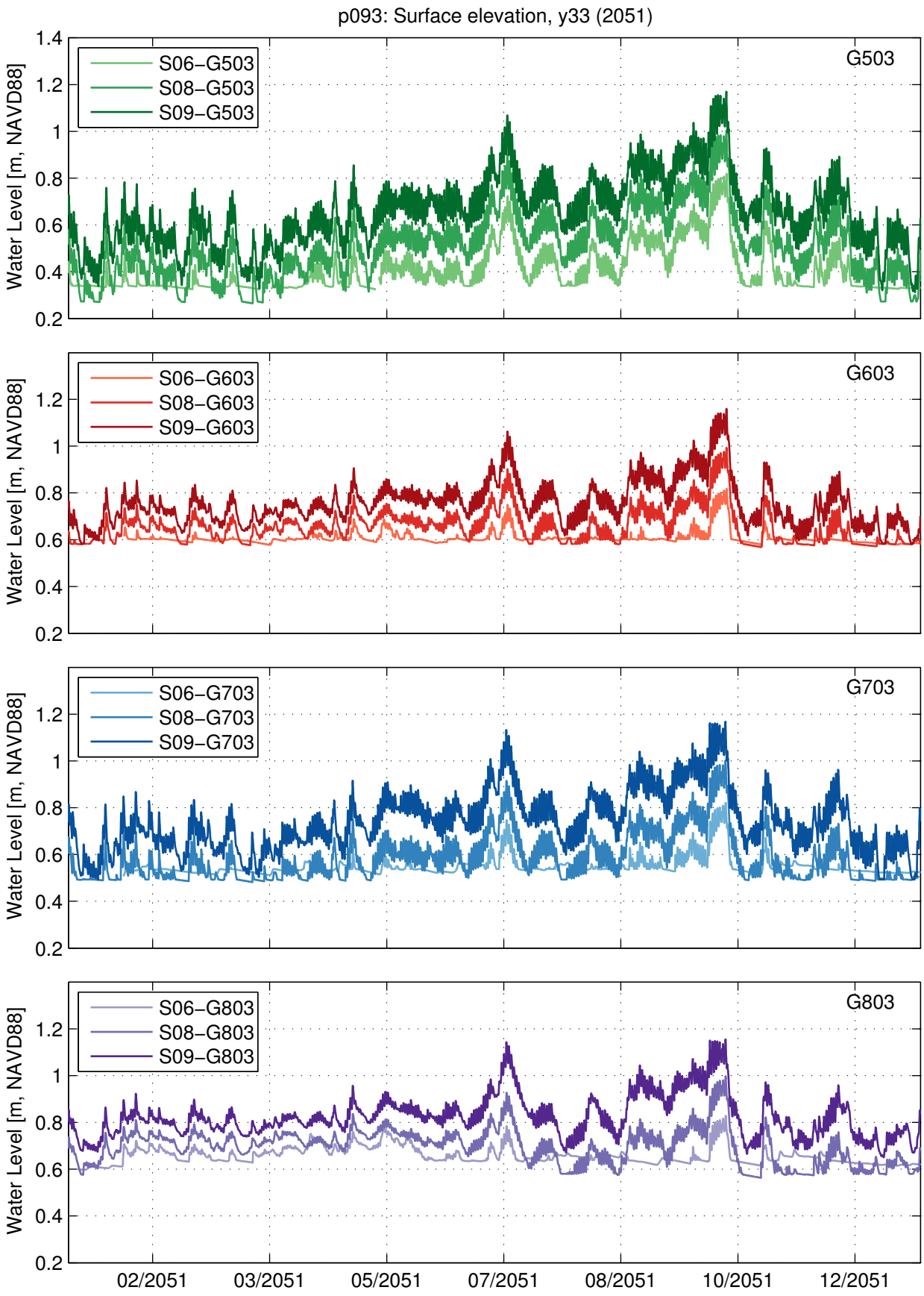

p183: Surface elevation, y23 (2041)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

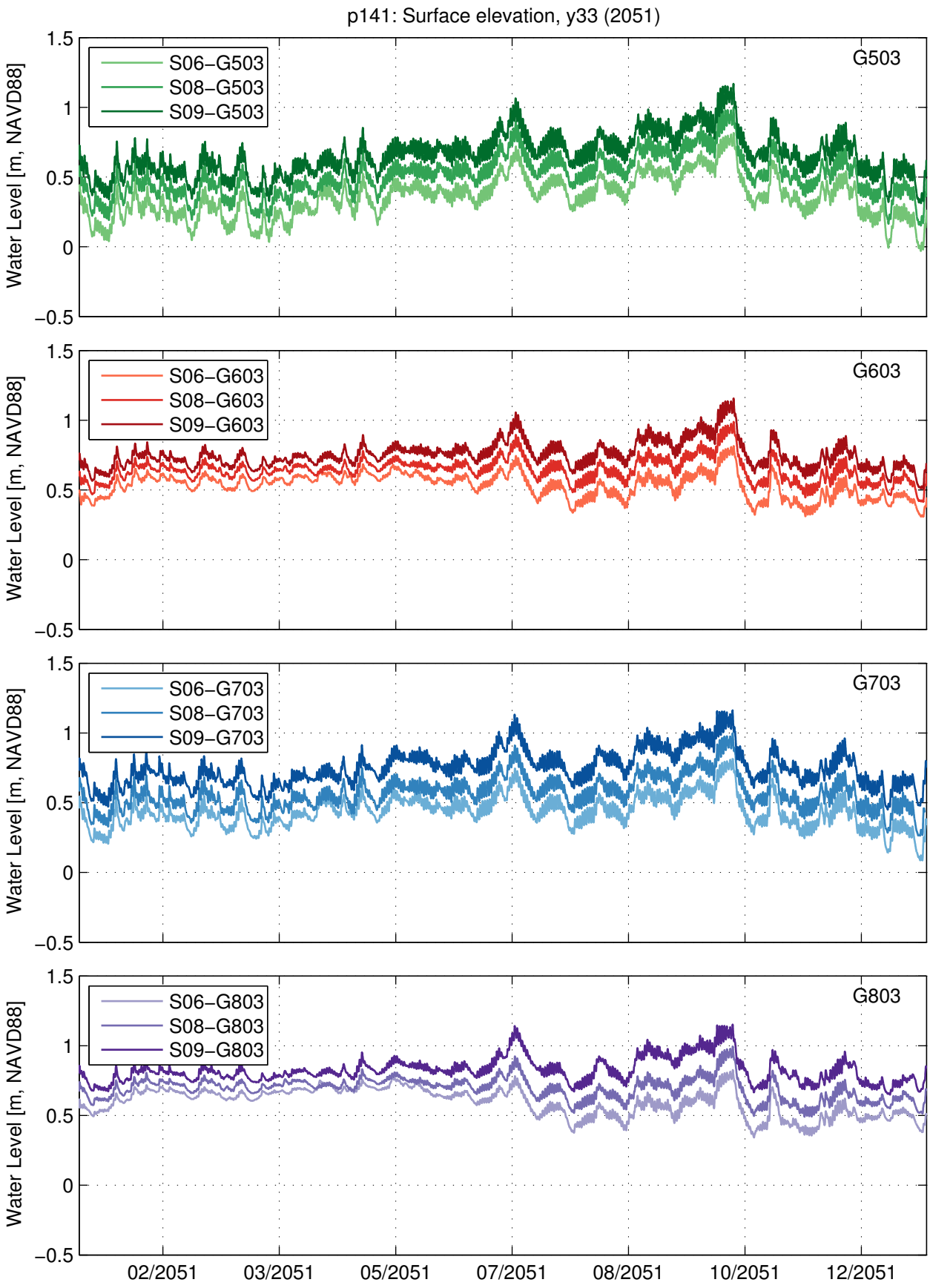

p185: Surface elevation, y23 (2041)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

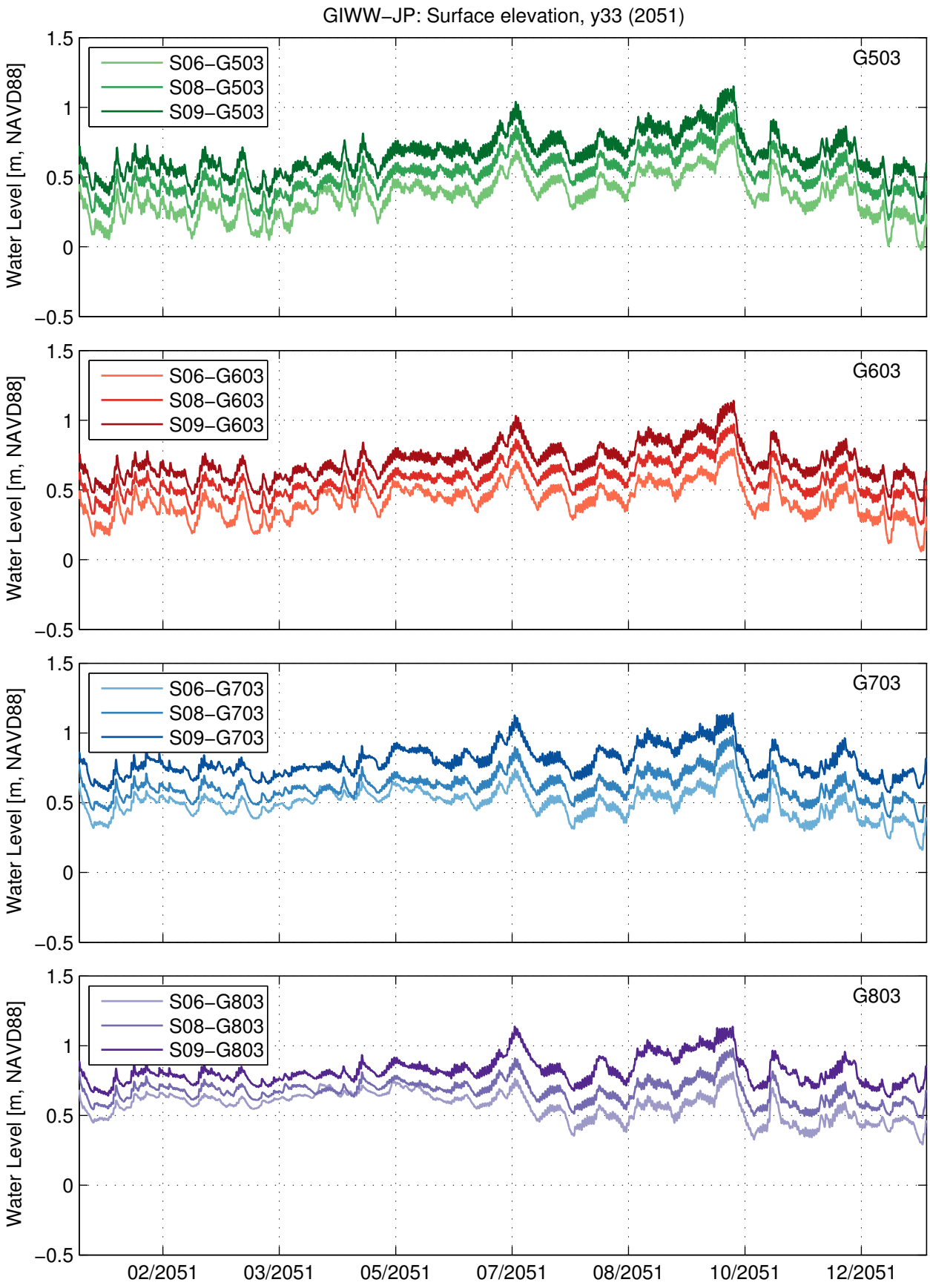

p192: Surface elevation, y23 (2041)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

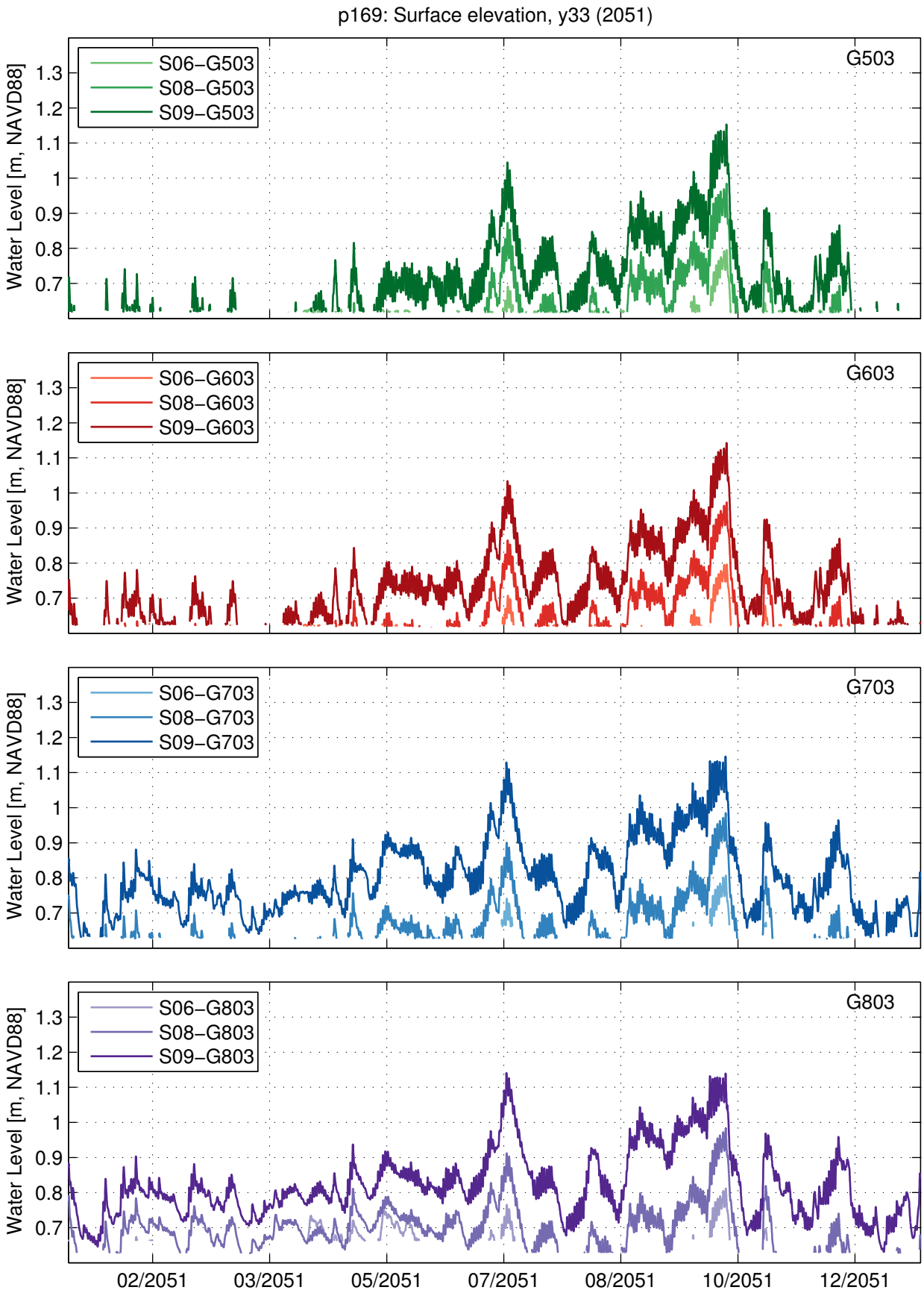

p194: Surface elevation, y23 (2041)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
1.2
1
0.8
0.6
0.4
0.2
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

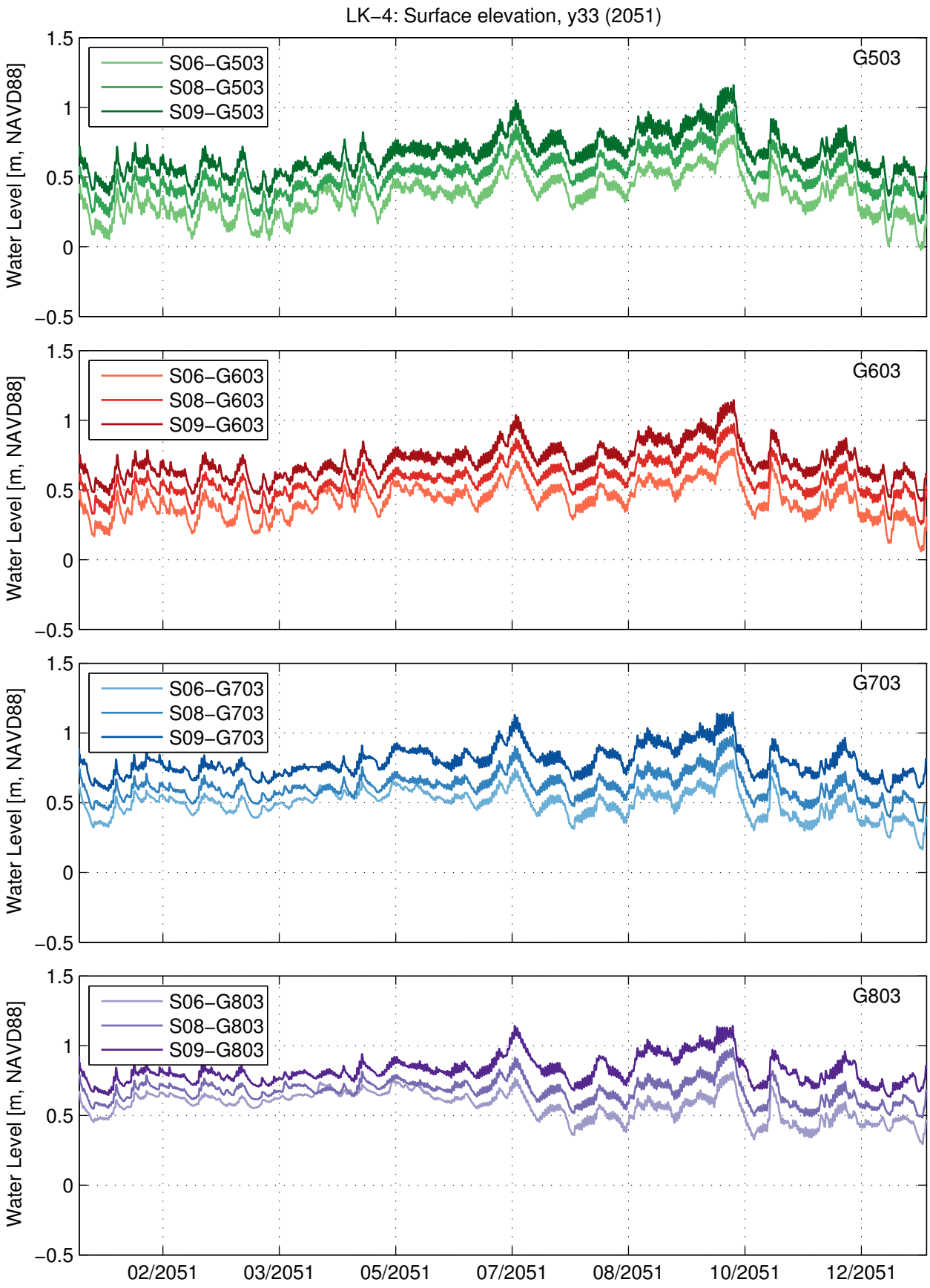

p159: Surface elevation, y33 (2051)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Water Level [m, NAVD88]
1.4
1.2
1
0.8
0.6
0.4
0.2
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

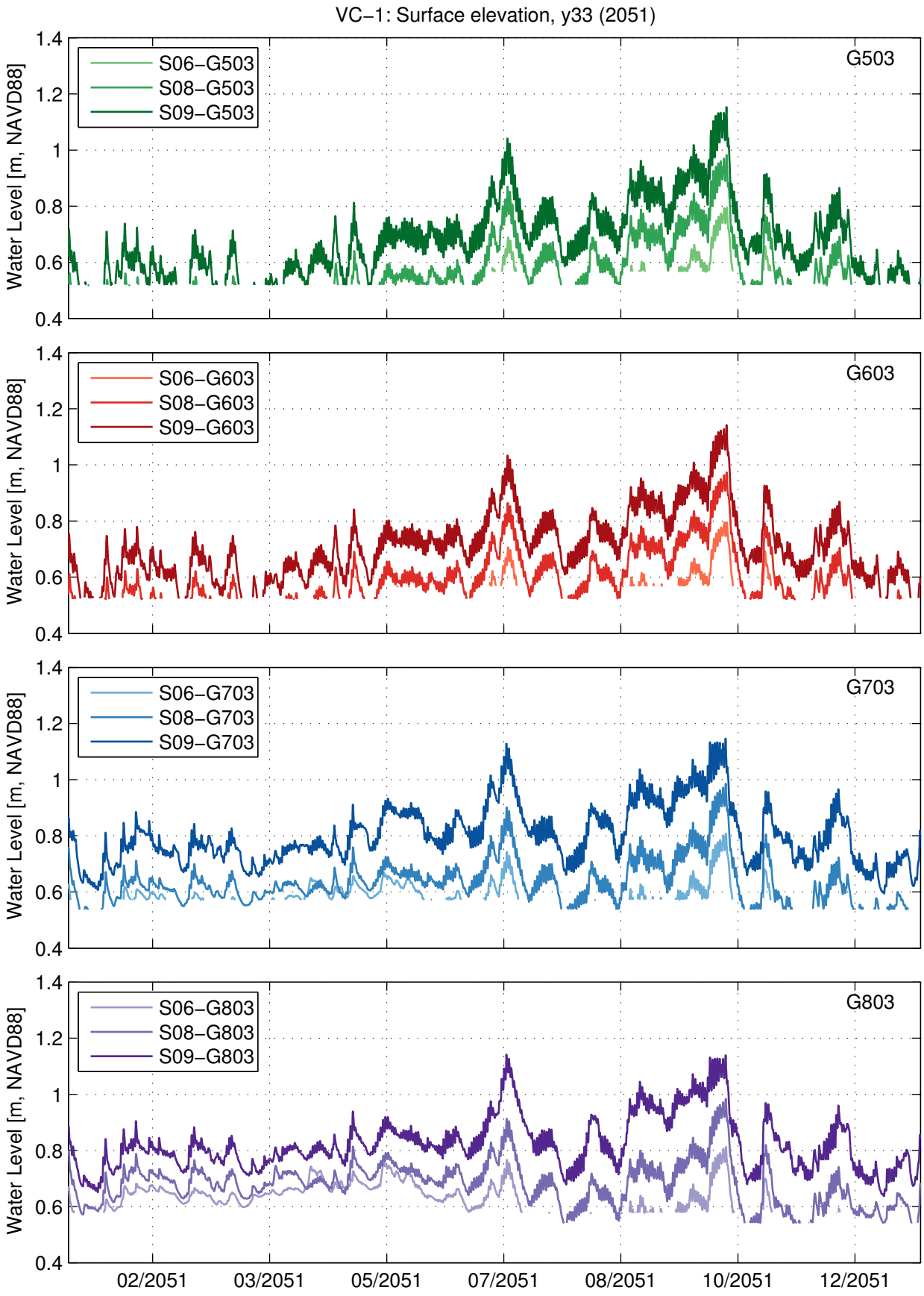

p093: Surface elevation, y33 (2051)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Water Level [m, NAVD88]
1.4
1.2
1
0.8
0.6
0.4
0.2
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

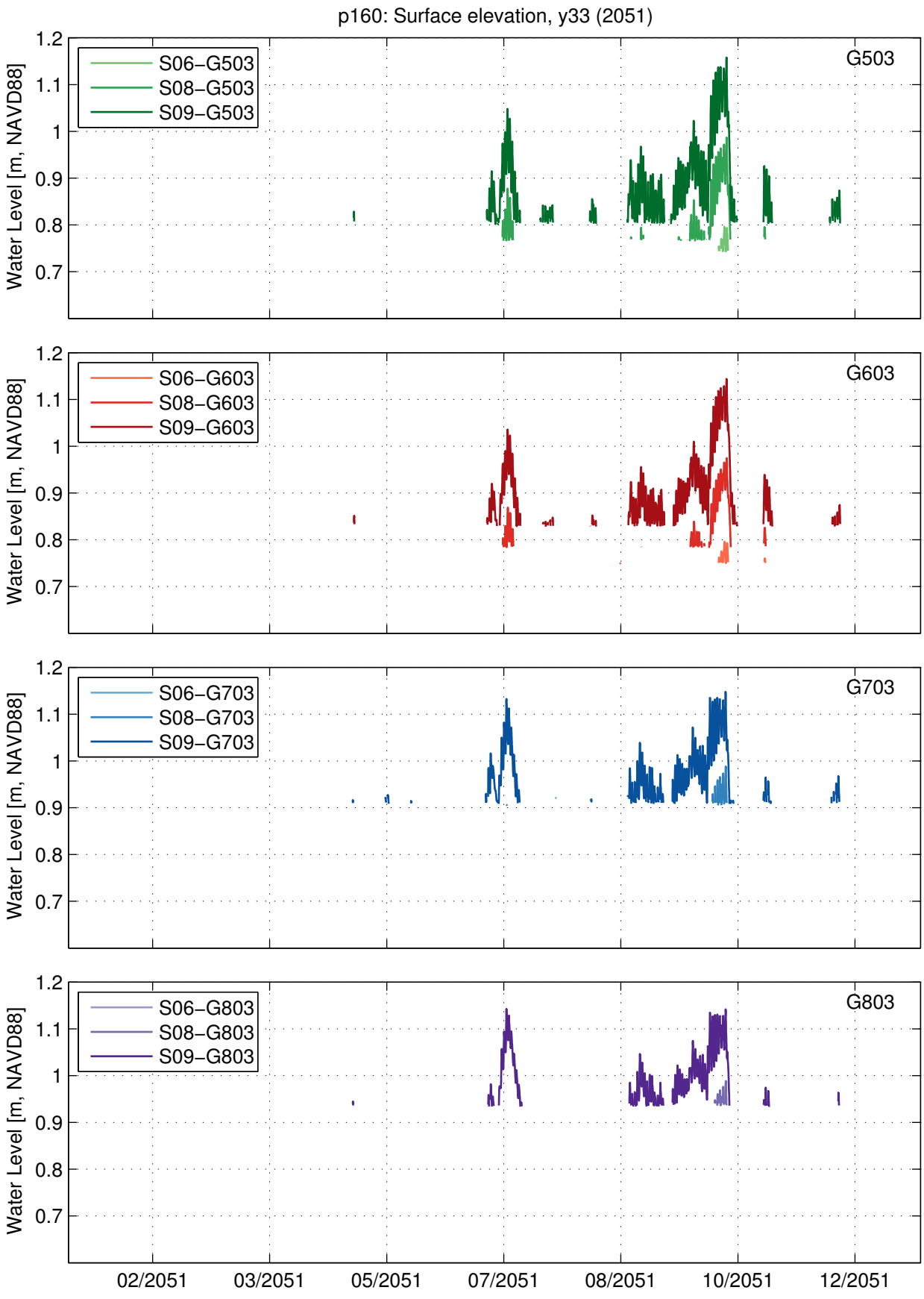

p141: Surface elevation, y33 (2051)
Water Level [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
1.5
1
0.5
0
−0.5
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

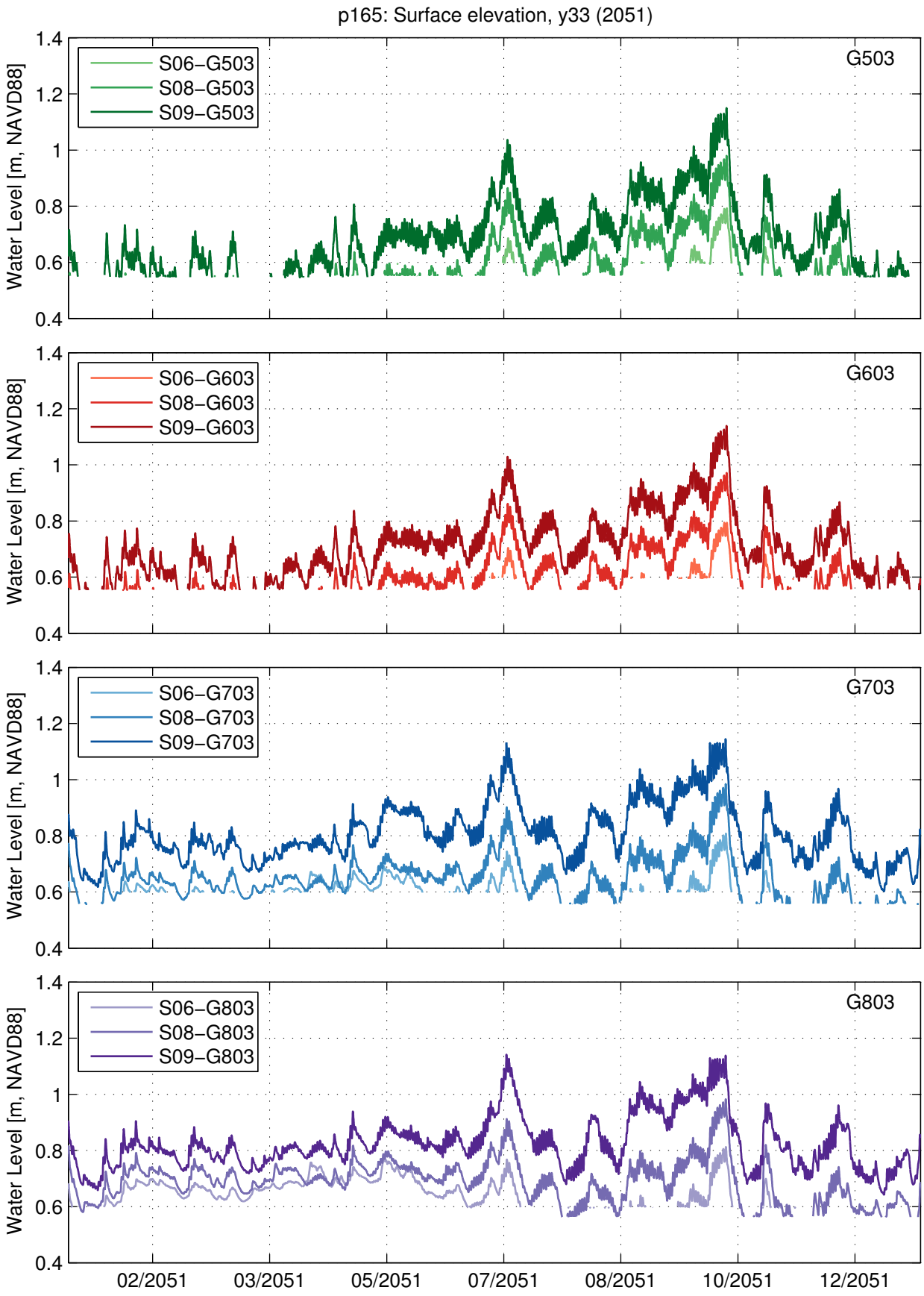

GIWW–JP: Surface elevation, y33 (2051)
Water Level [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
1.5
1
0.5
0
−0.5
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

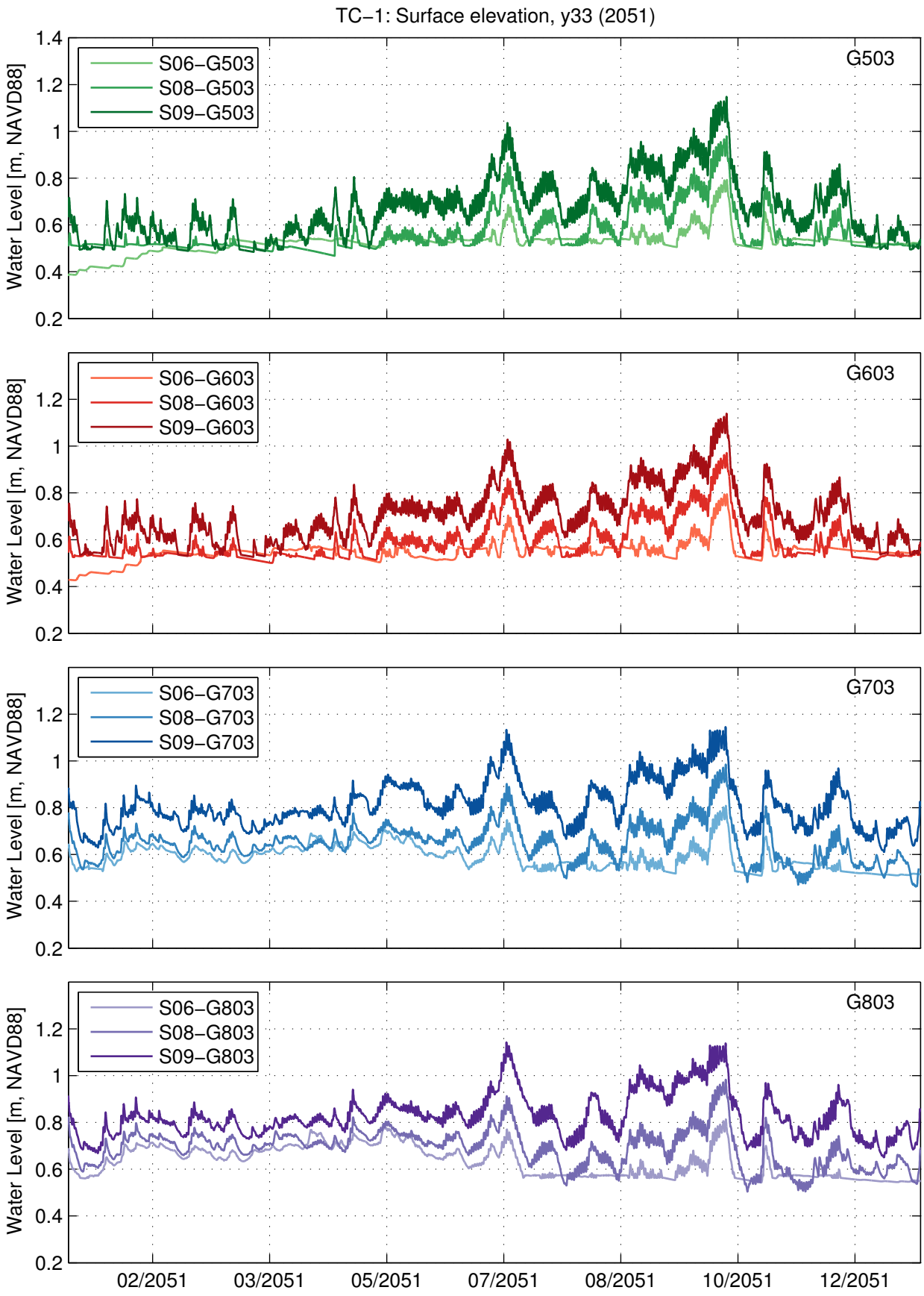

p169: Surface elevation, y33 (2051)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Water Level [m, NAVD88]
1.3
1.2
1.1
1
0.9
0.8
0.7
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

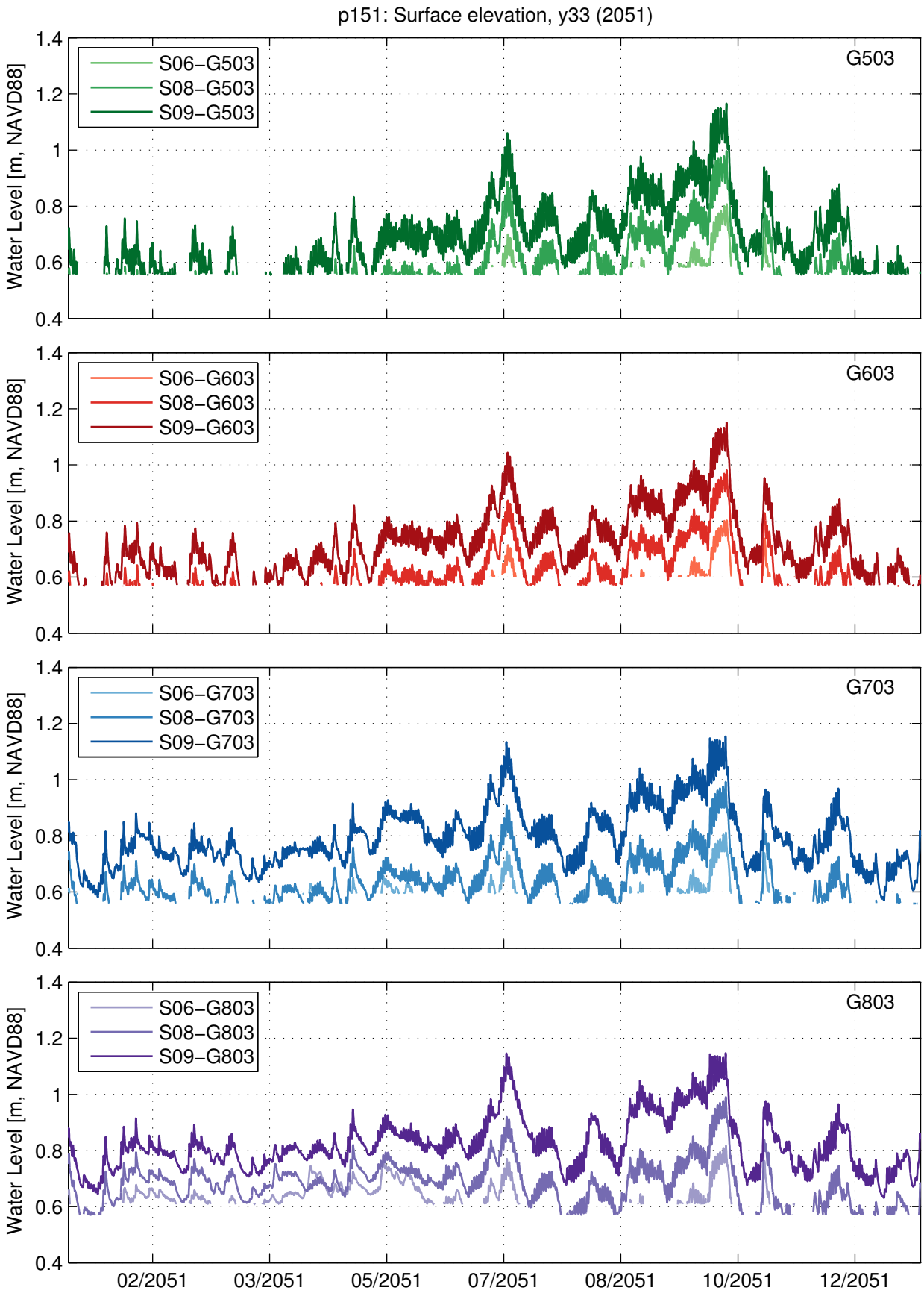

LK−4: Surface elevation, y33 (2051)
Water Level [m, NAVD88]
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
S06−G703
S08−G703
S09−G703
G703
S06−G803
S08−G803
S09−G803
G803
1.5
1
0.5
0
−0.5
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

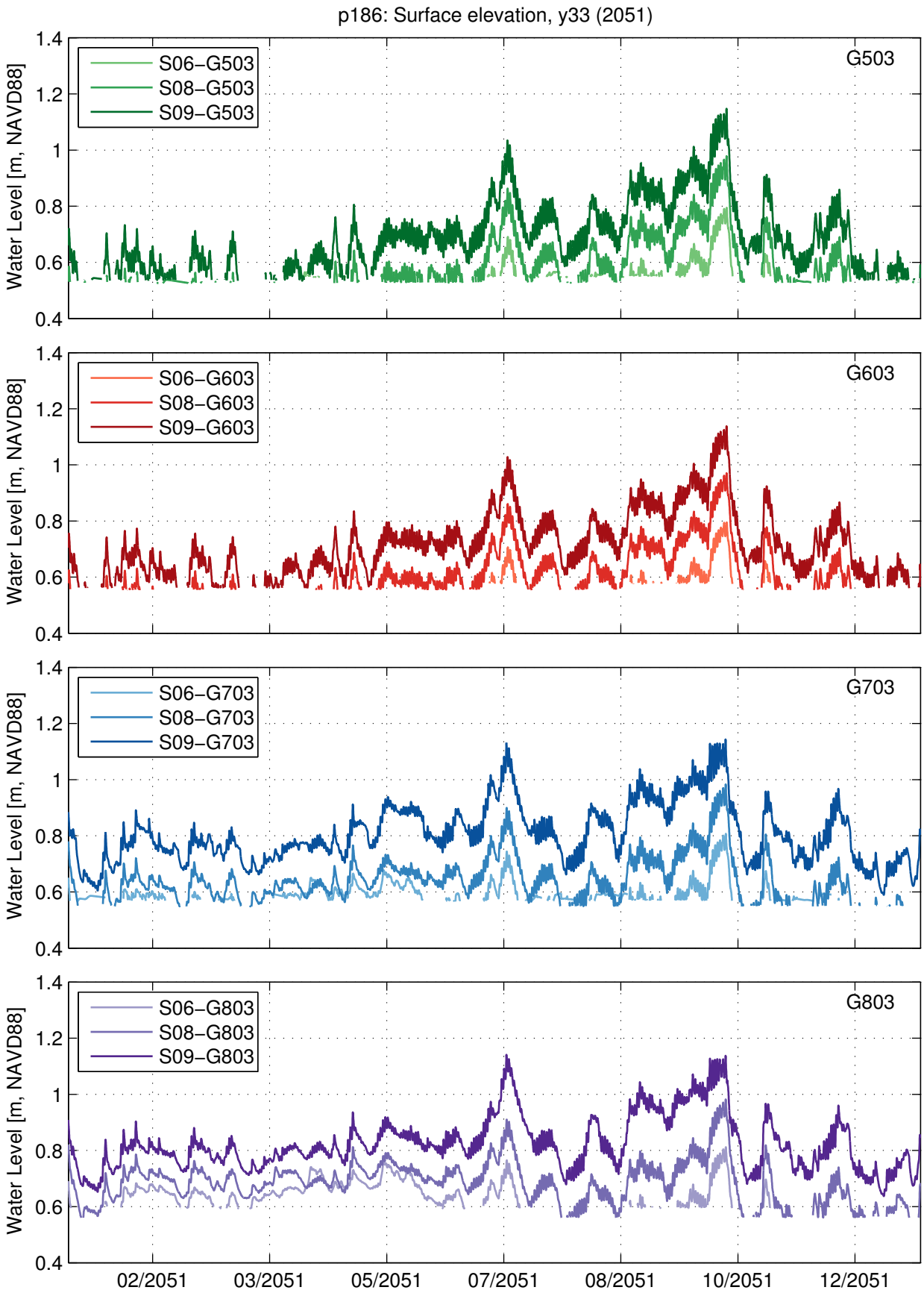

VC−1: Surface elevation, y33 (2051)
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
S06−G703
S08−G703
S09−G703
G703
S06−G803
S08−G803
S09−G803
G803
Water Level [m, NAVD88]
1.4
1.2
1
0.8
0.6
0.4
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

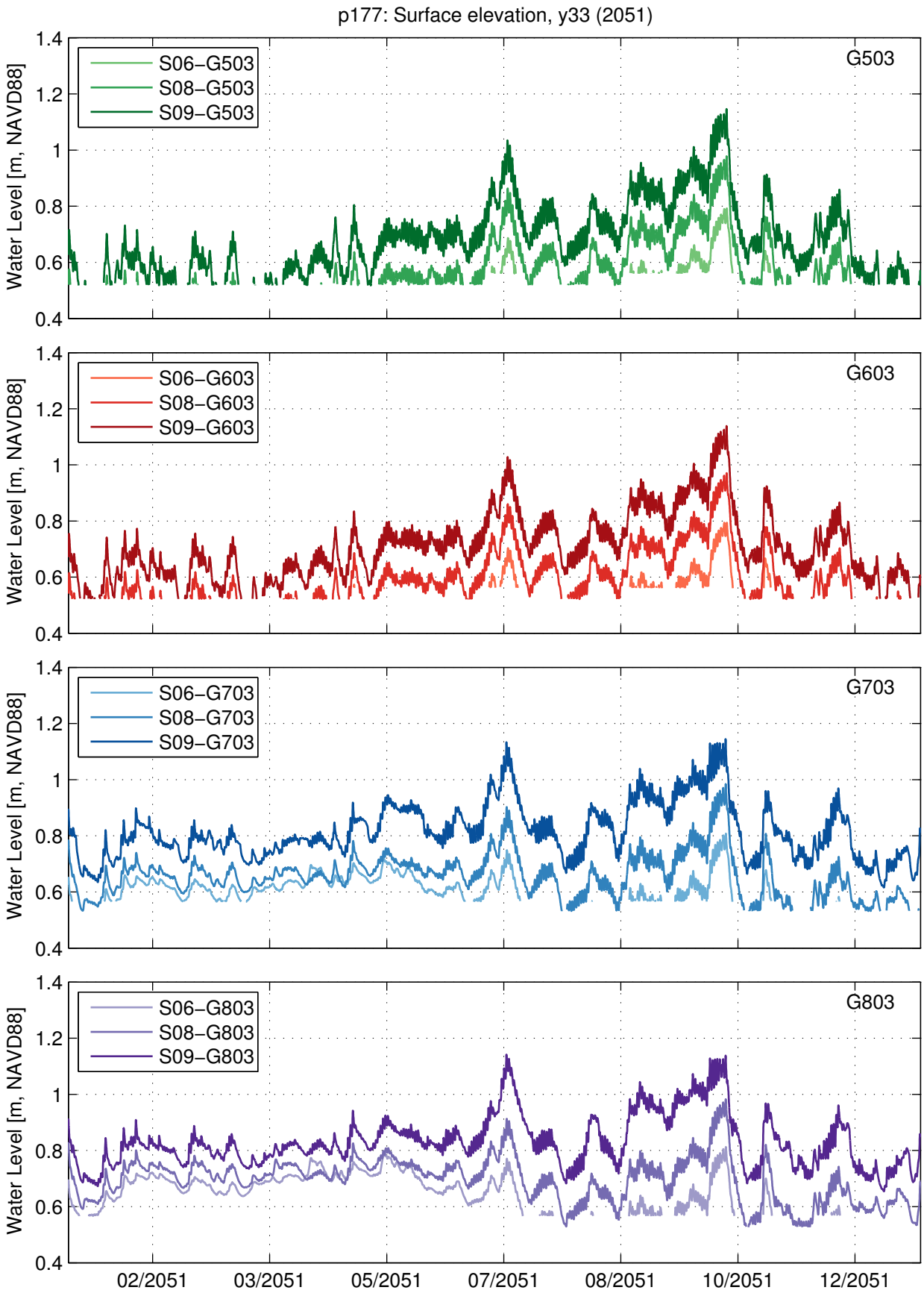

p160: Surface elevation, y33 (2051)
Water Level [m, NAVD88]
1.2
1.1
1
0.9
0.8
0.7
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

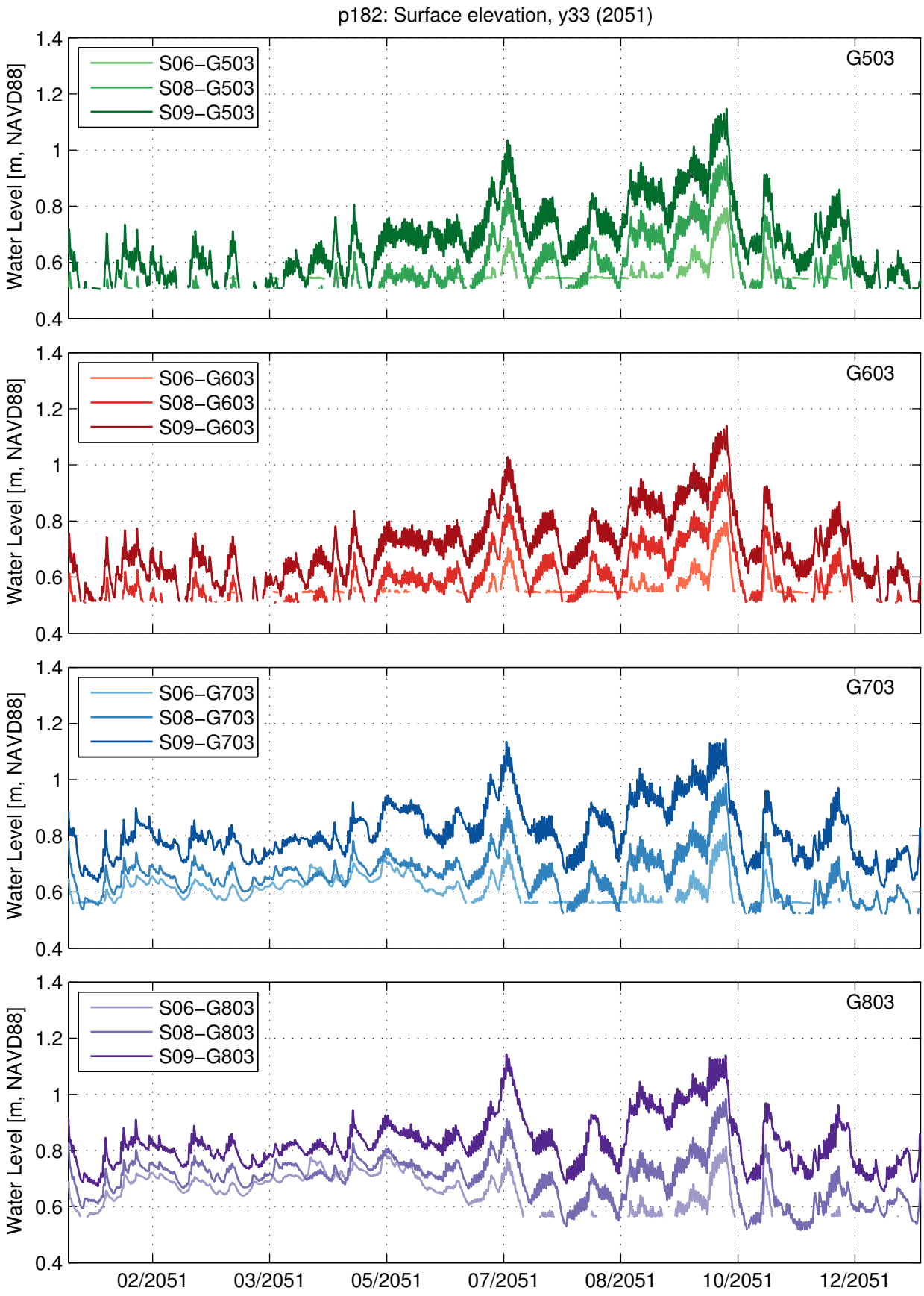

p165: Surface elevation, y33 (2051)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Water Level [m, NAVD88]
1.4
1.2
1
0.8
0.6
0.4
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

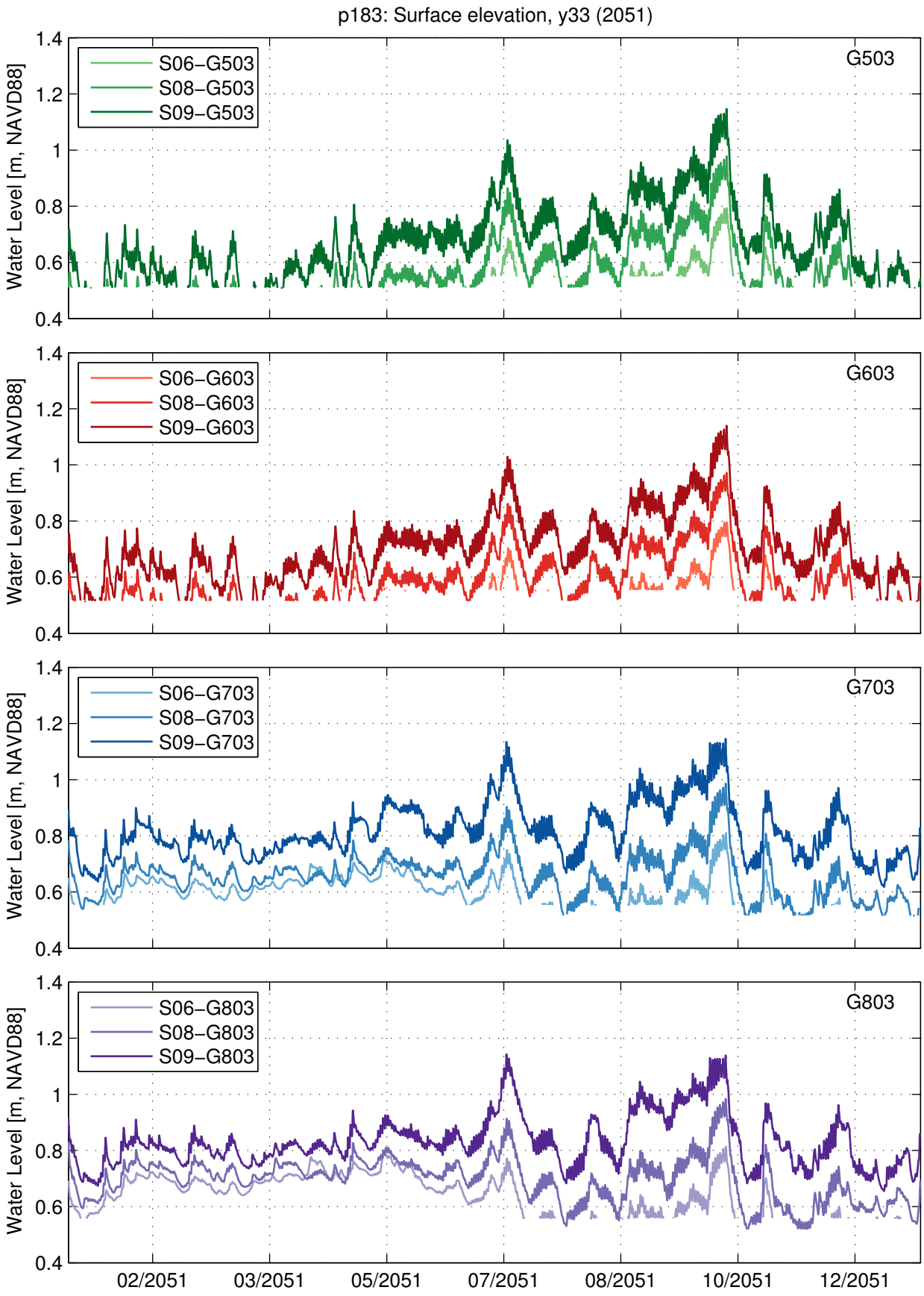

TC−1: Surface elevation, y33 (2051)
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
S06−G703
S08−G703
S09−G703
G703
S06−G803
S08−G803
S09−G803
G803
Water Level [m, NAVD88]
1.4
1.2
1
0.8
0.6
0.4
0.2
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

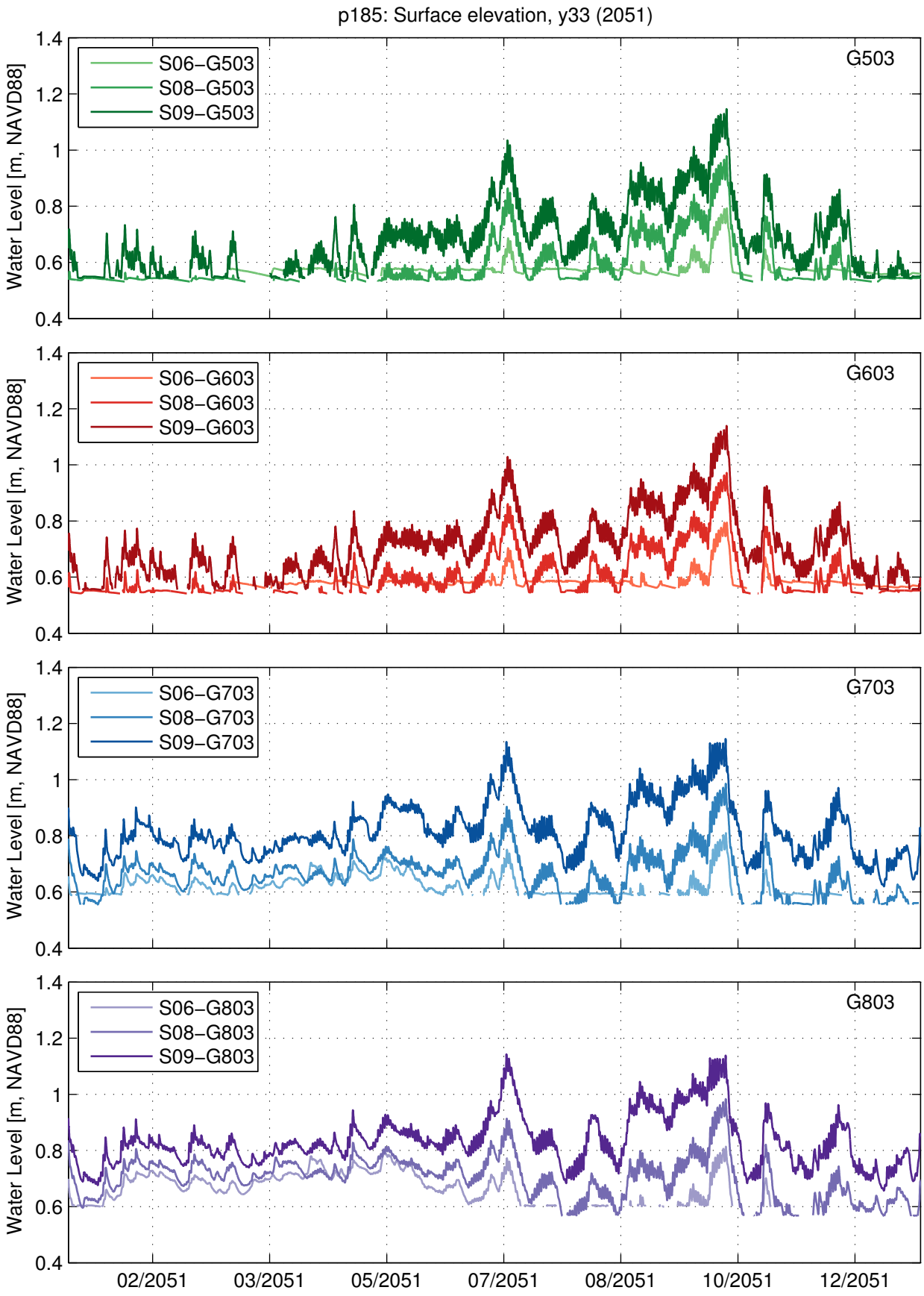

p151: Surface elevation, y33 (2051)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Water Level [m, NAVD88]
1.4
1.2
1
0.8
0.6
0.4
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

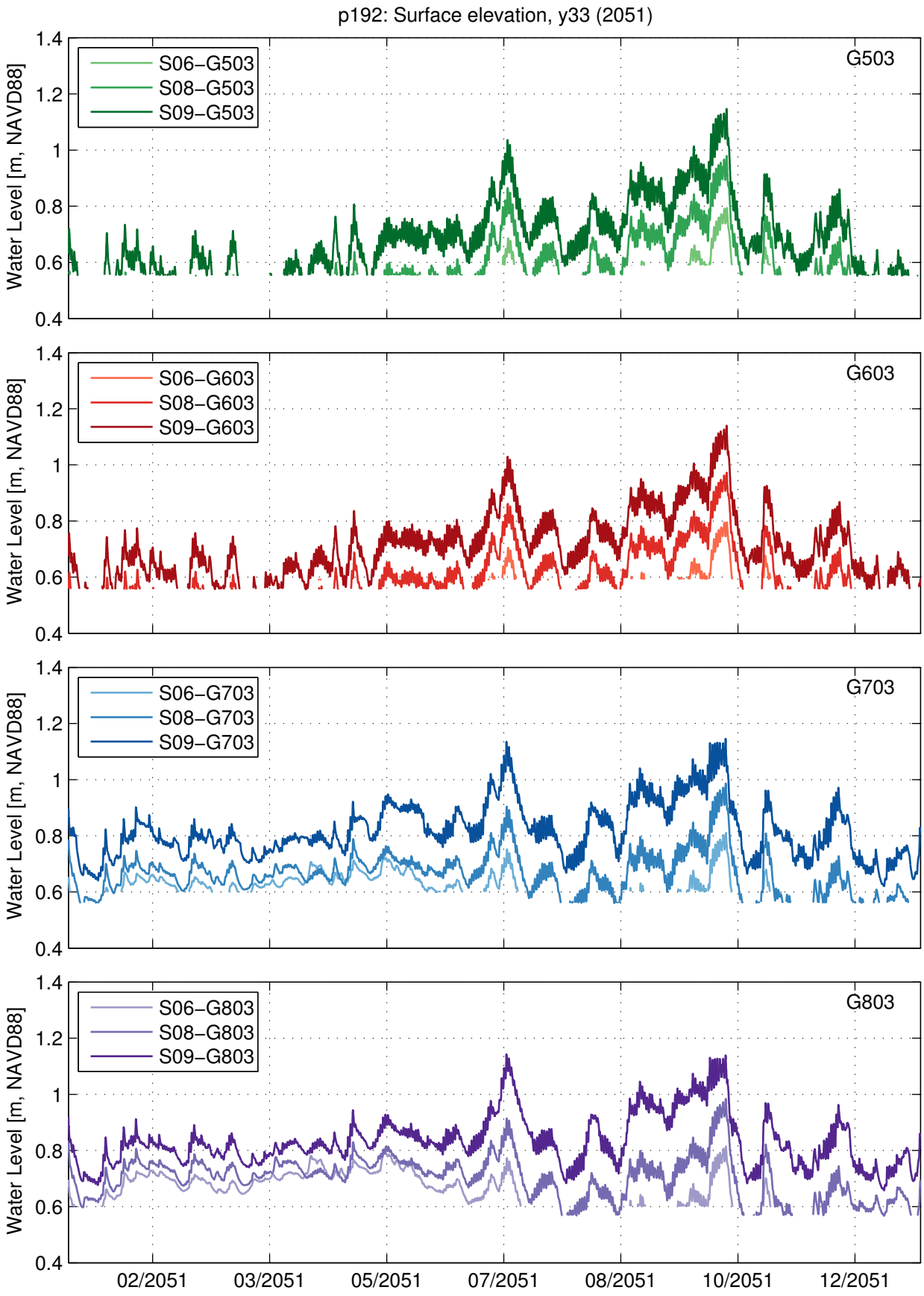

p186: Surface elevation, y33 (2051)
Water Level [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
1.4
1.2
1
0.8
0.6
0.4
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

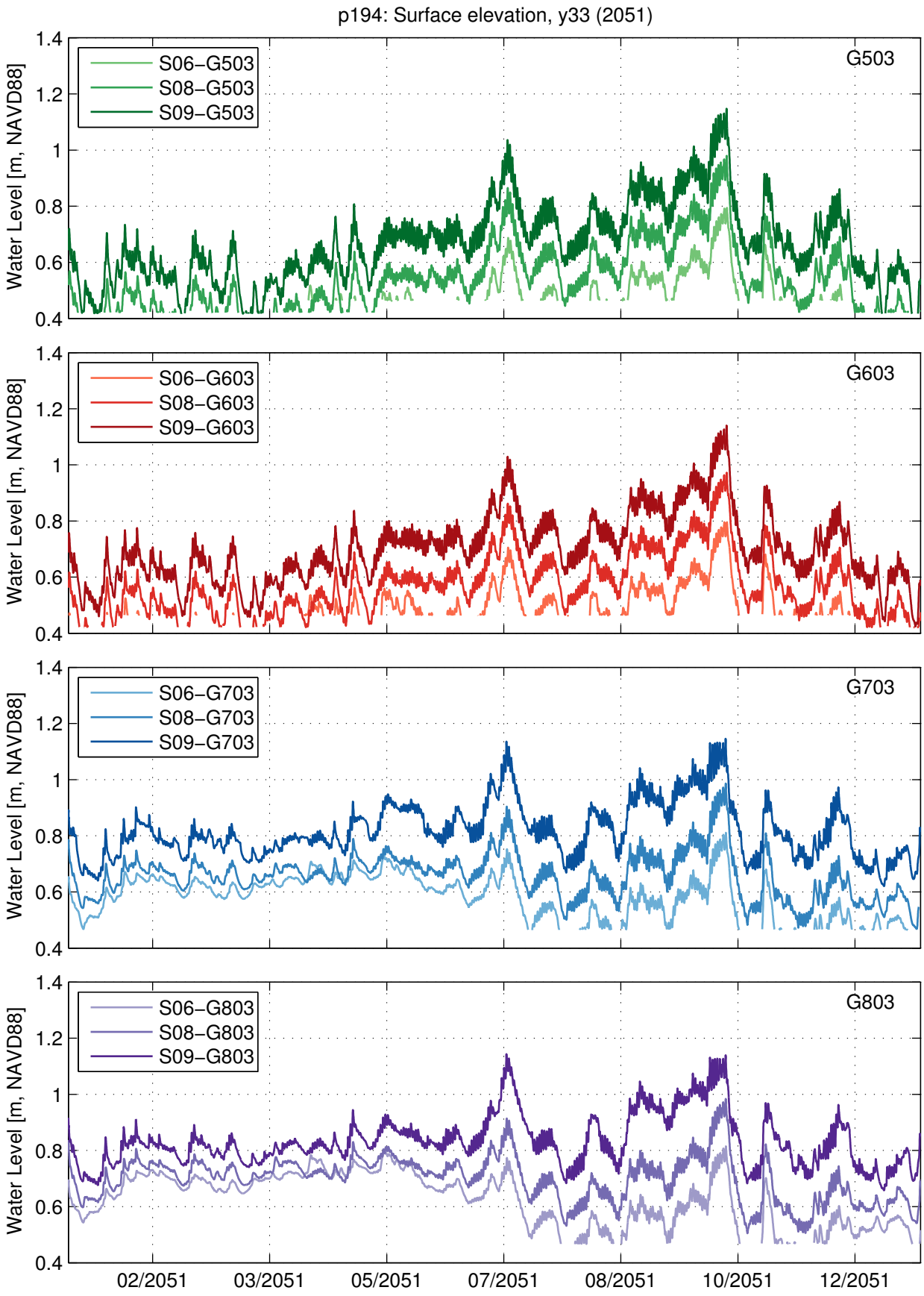

p177: Surface elevation, y33 (2051)
Water Level [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
1.4
1.2
1
0.8
0.6
0.4
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

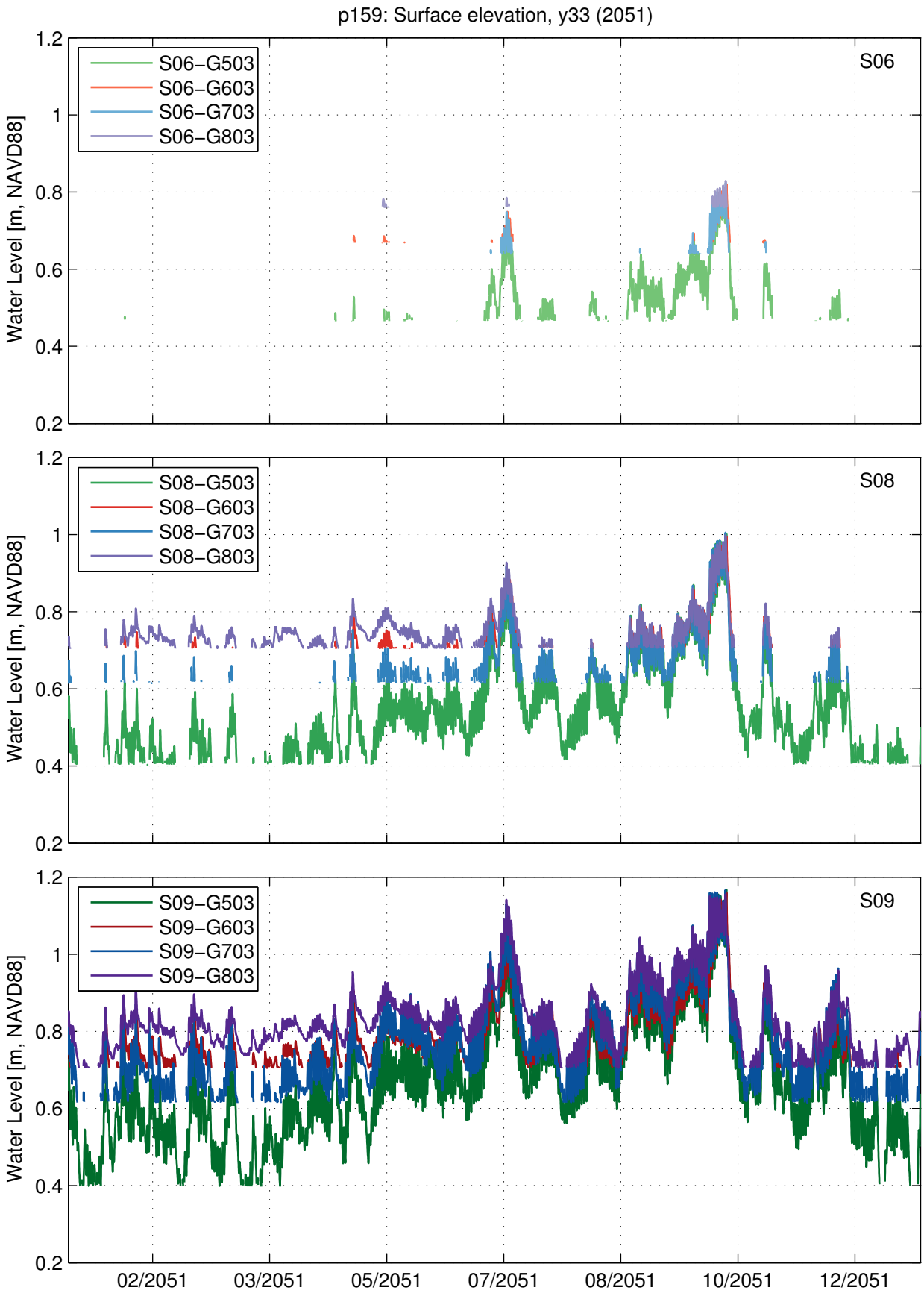

p182: Surface elevation, y33 (2051)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Water Level [m, NAVD88]
1.4
1.2
1
0.8
0.6
0.4
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

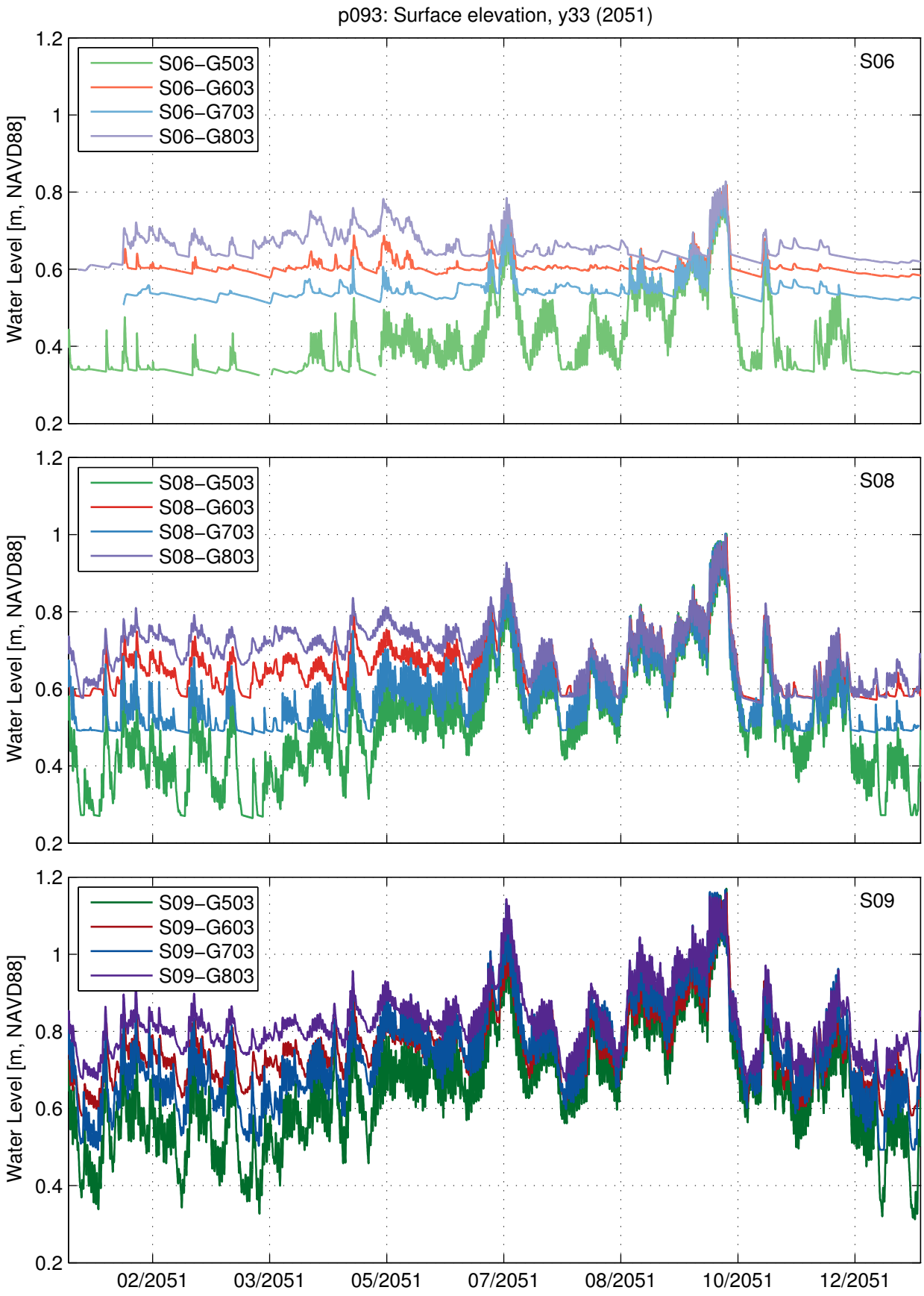

p183: Surface elevation, y33 (2051)
Water Level [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
1.4
1.2
1
0.8
0.6
0.4
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

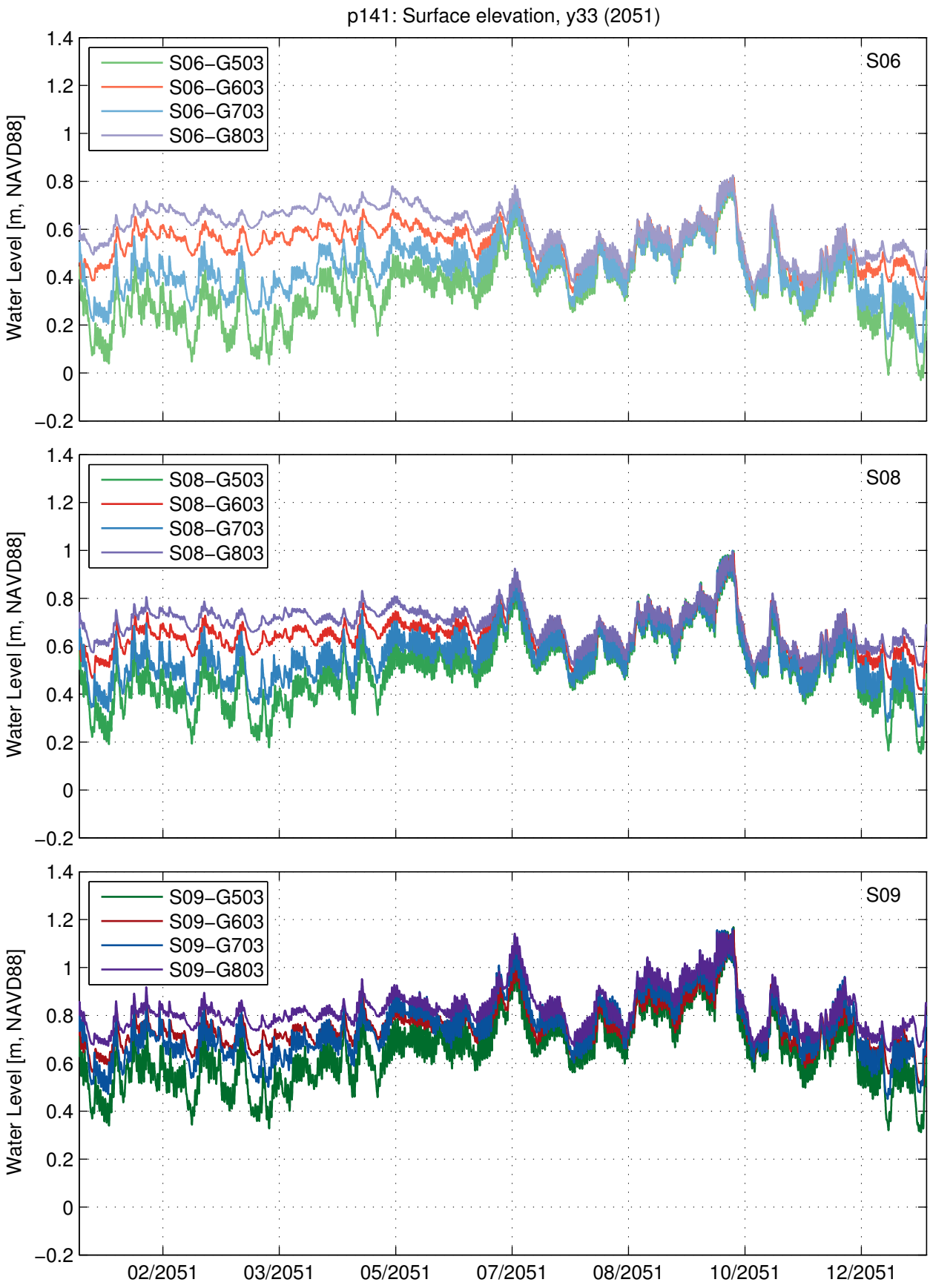

p185: Surface elevation, y33 (2051)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Water Level [m, NAVD88]
1.4
1.2
1
0.8
0.6
0.4
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

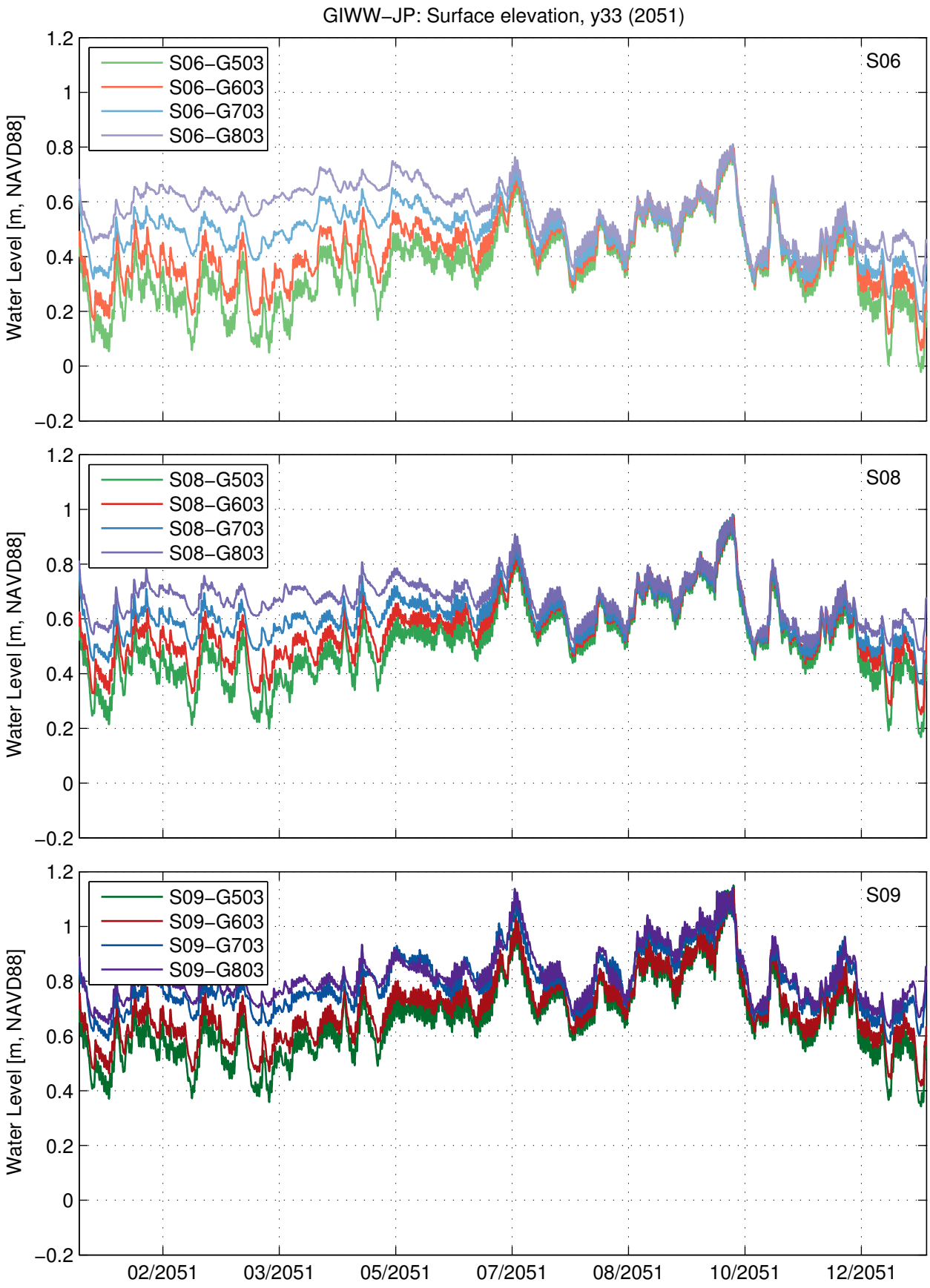

p192: Surface elevation, y33 (2051)
Water Level [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
1.4
1.2
1
0.8
0.6
0.4
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

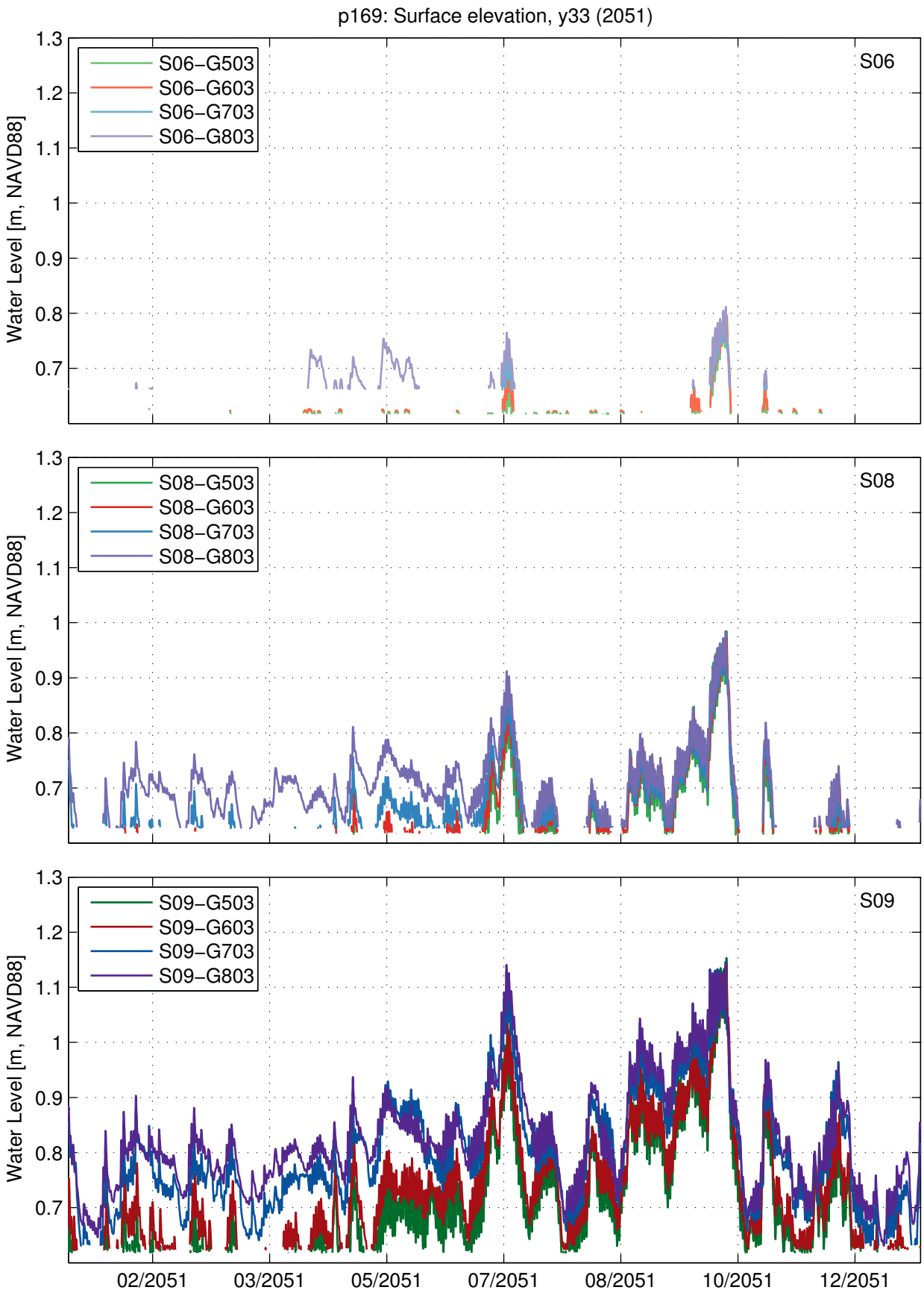

p194: Surface elevation, y33 (2051)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Water Level [m, NAVD88]
1.4
1.2
1
0.8
0.6
0.4
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

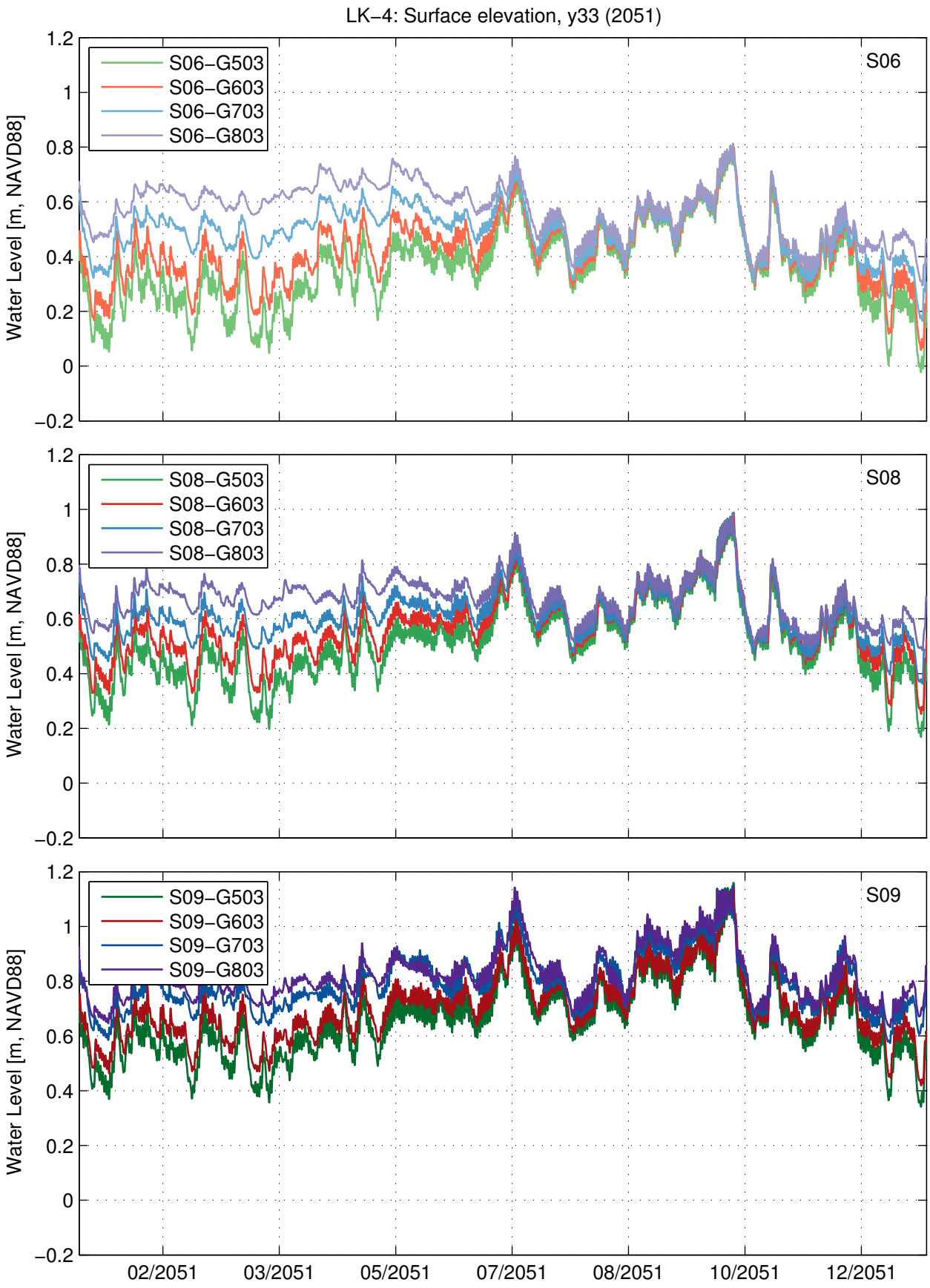

p159: Surface elevation, y33 (2051)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
1.2
1
0.8
0.6
0.4
0.2
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

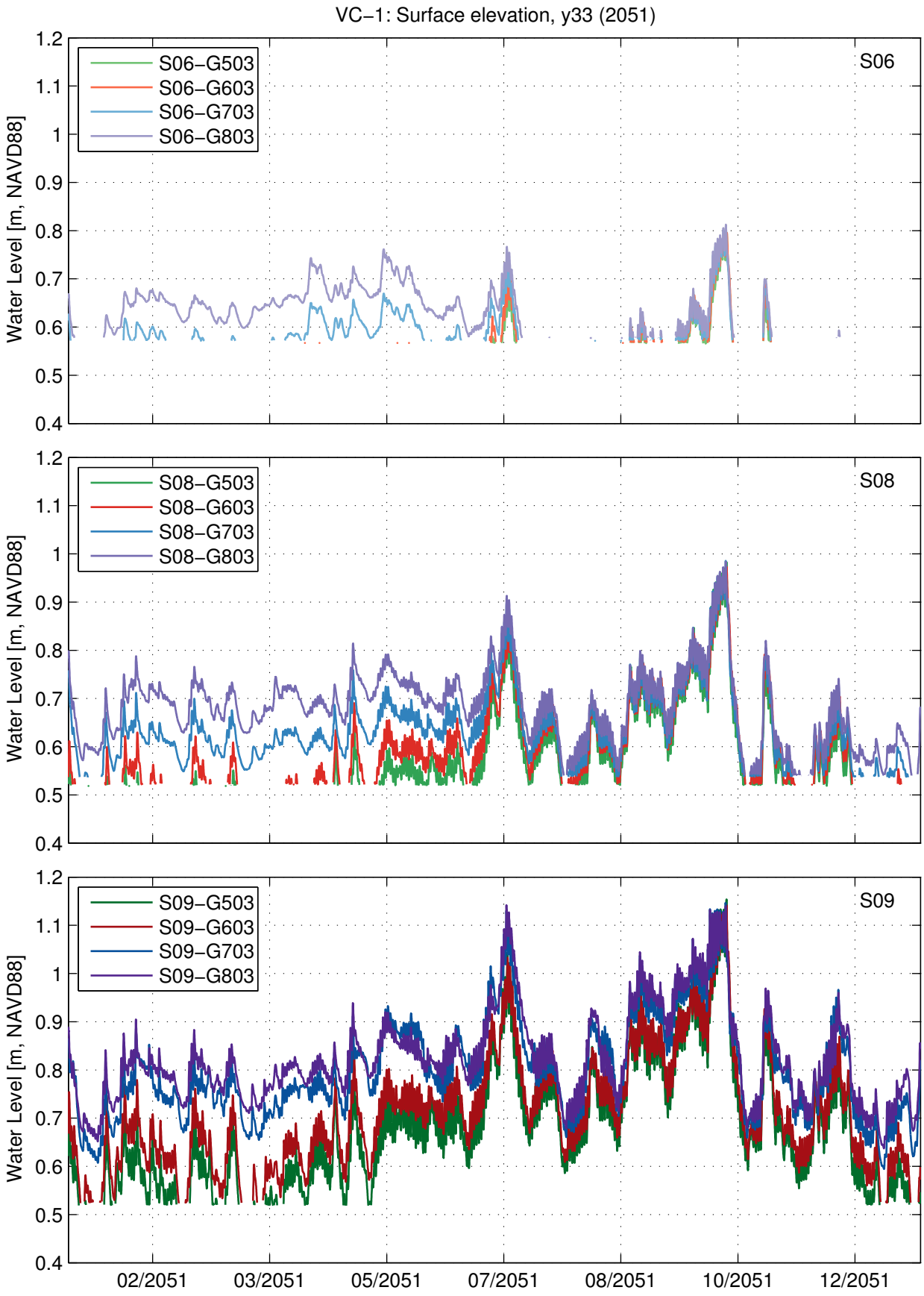

p093: Surface elevation, y33 (2051)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
1.2
1
0.8
0.6
0.4
0.2
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

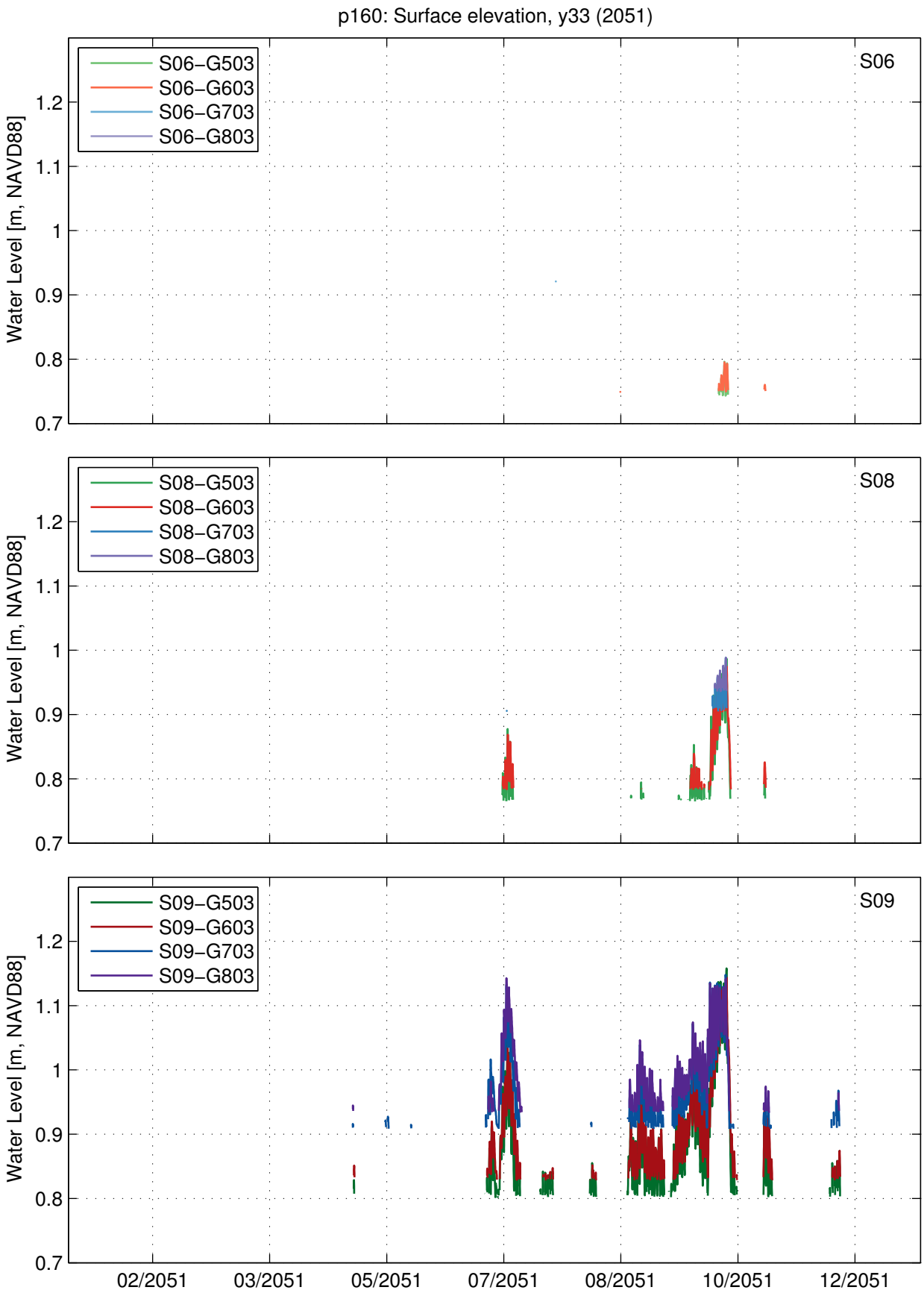

p141: Surface elevation, y33 (2051)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
1.4
1.2
1
0.8
0.6
0.4
0.2
0
−0.2
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

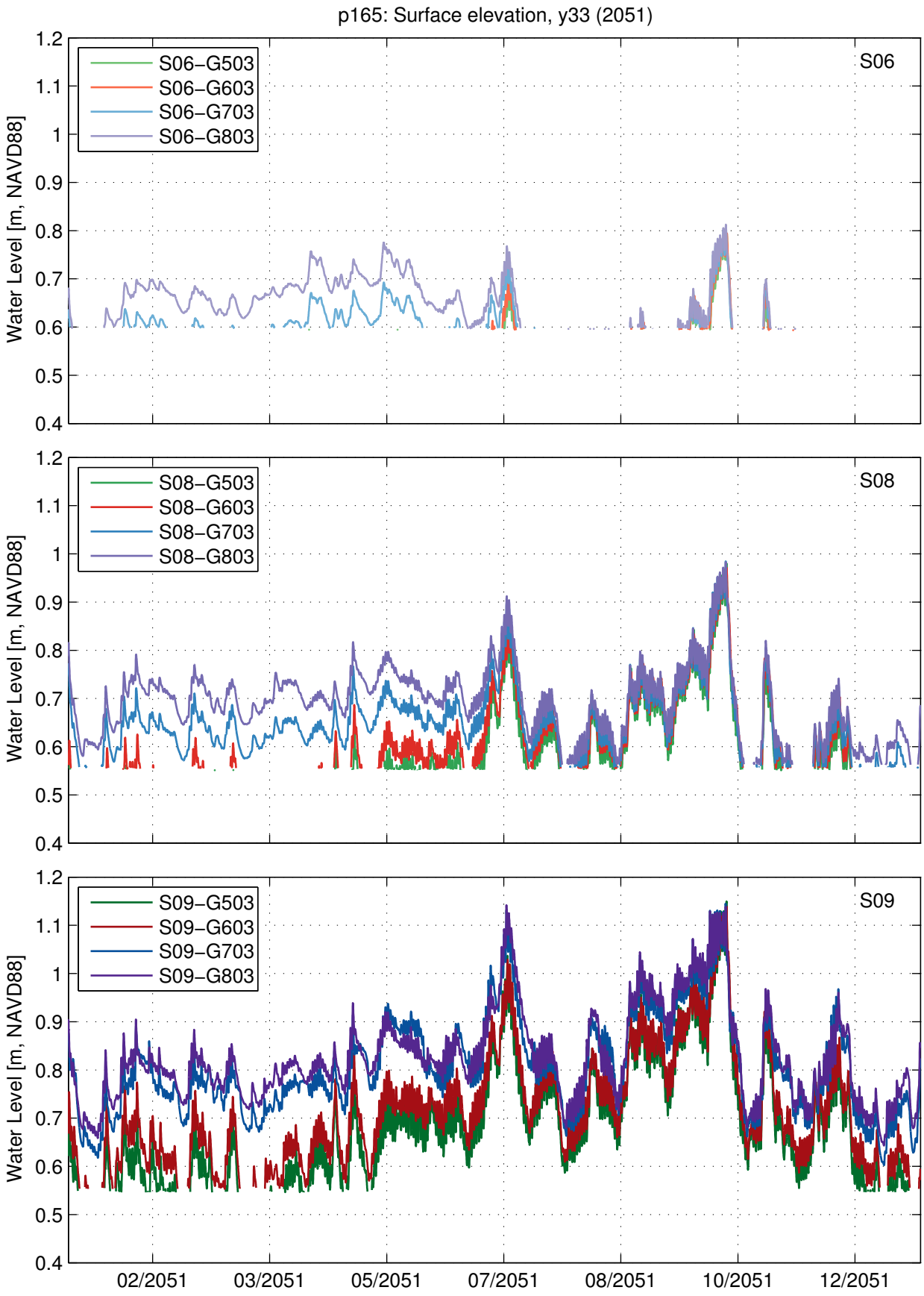

GIWW–JP: Surface elevation, y33 (2051)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Water Level [m, NAVD88]
1.2
1
0.8
0.6
0.4
0.2
0
−0.2
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

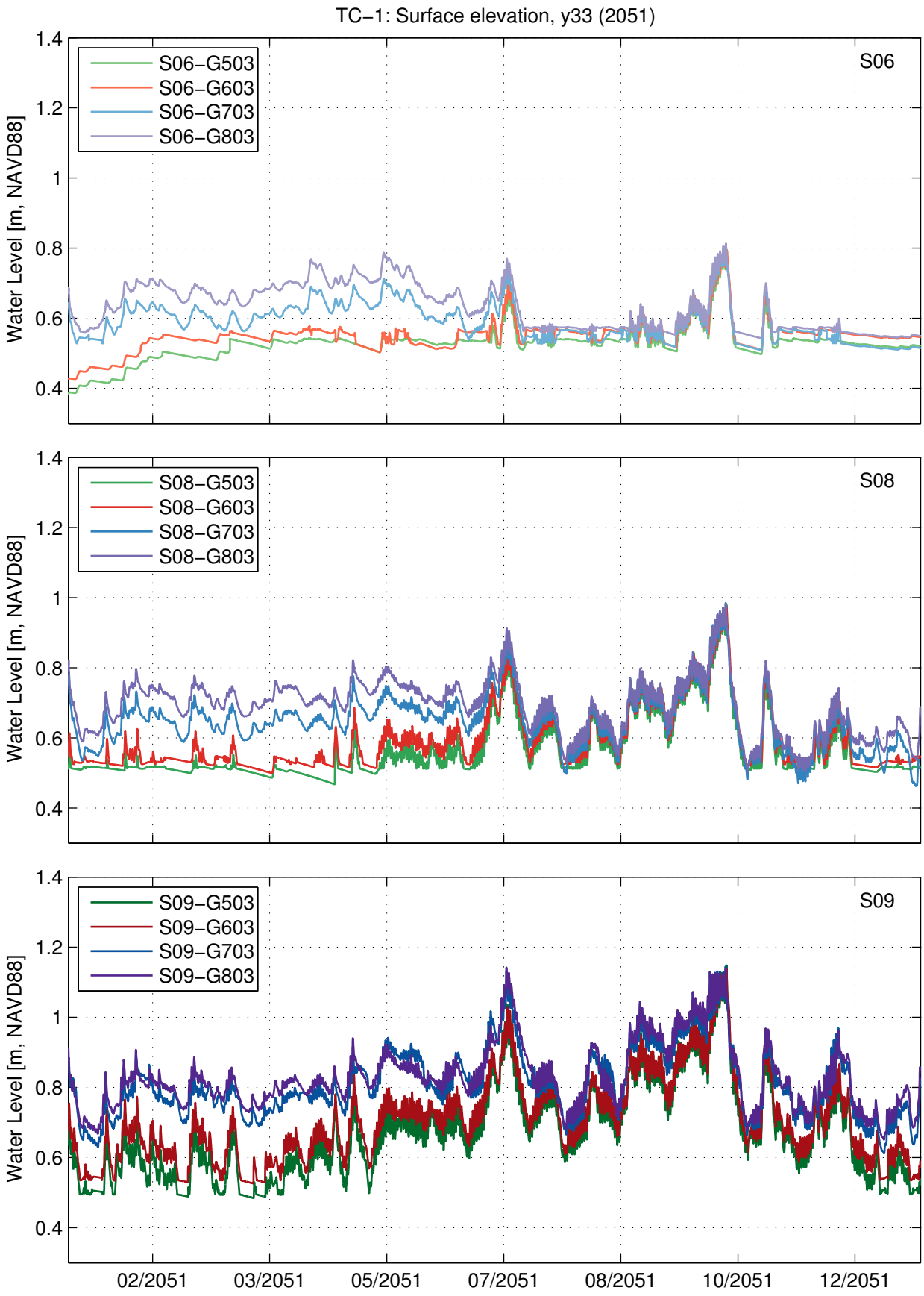

p169: Surface elevation, y33 (2051)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
1.3
1.2
1.1
1
0.9
0.8
0.7
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

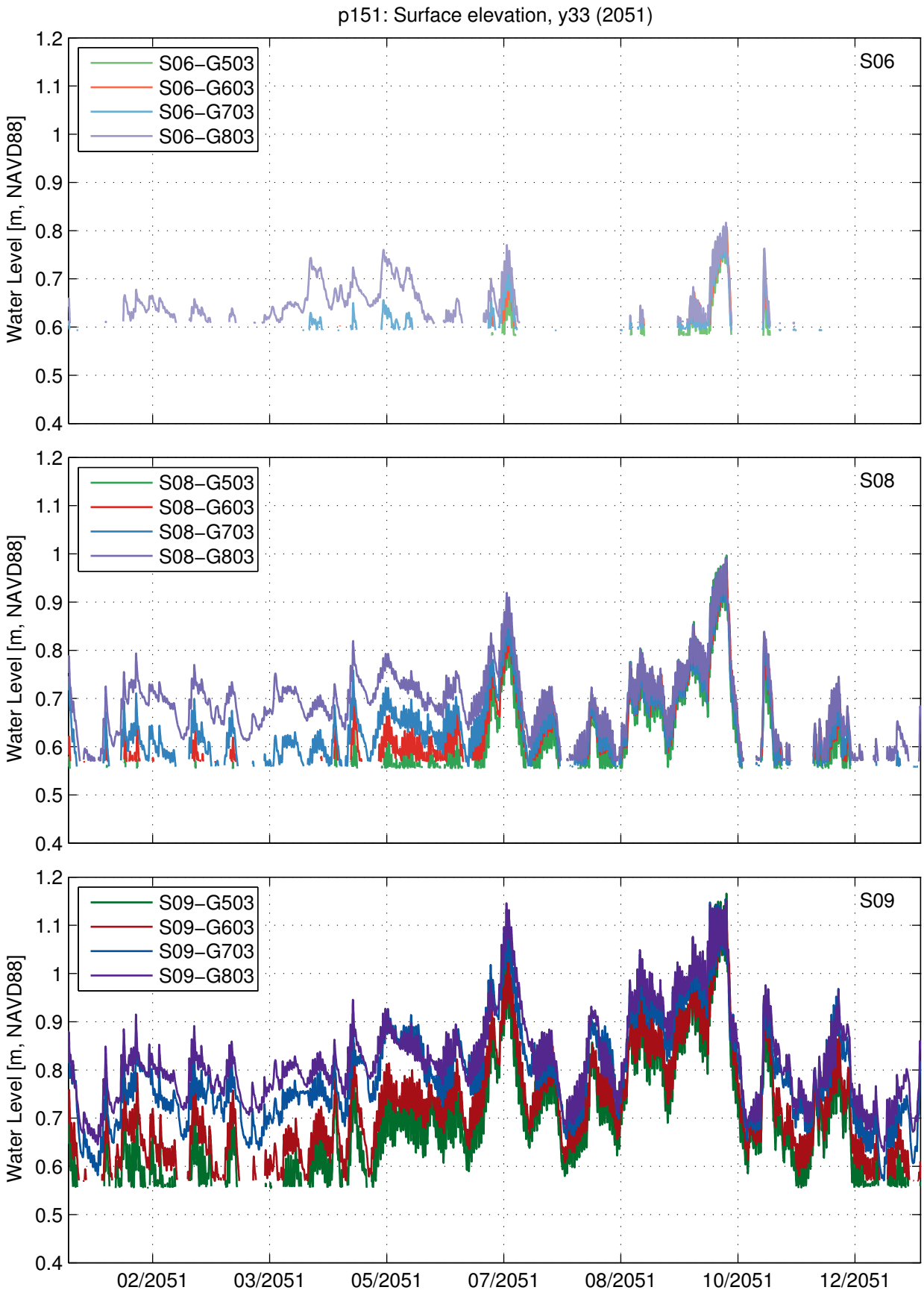

LK−4: Surface elevation, y33 (2051)
S06
S06−G503
S06−G603
S06−G703
S06−G803
S08
S08−G503
S08−G603
S08−G703
S08−G803
S09
S09−G503
S09−G603
S09−G703
S09−G803
Water Level [m, NAVD88]
1.2
1
0.8
0.6
0.4
0.2
0
−0.2
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

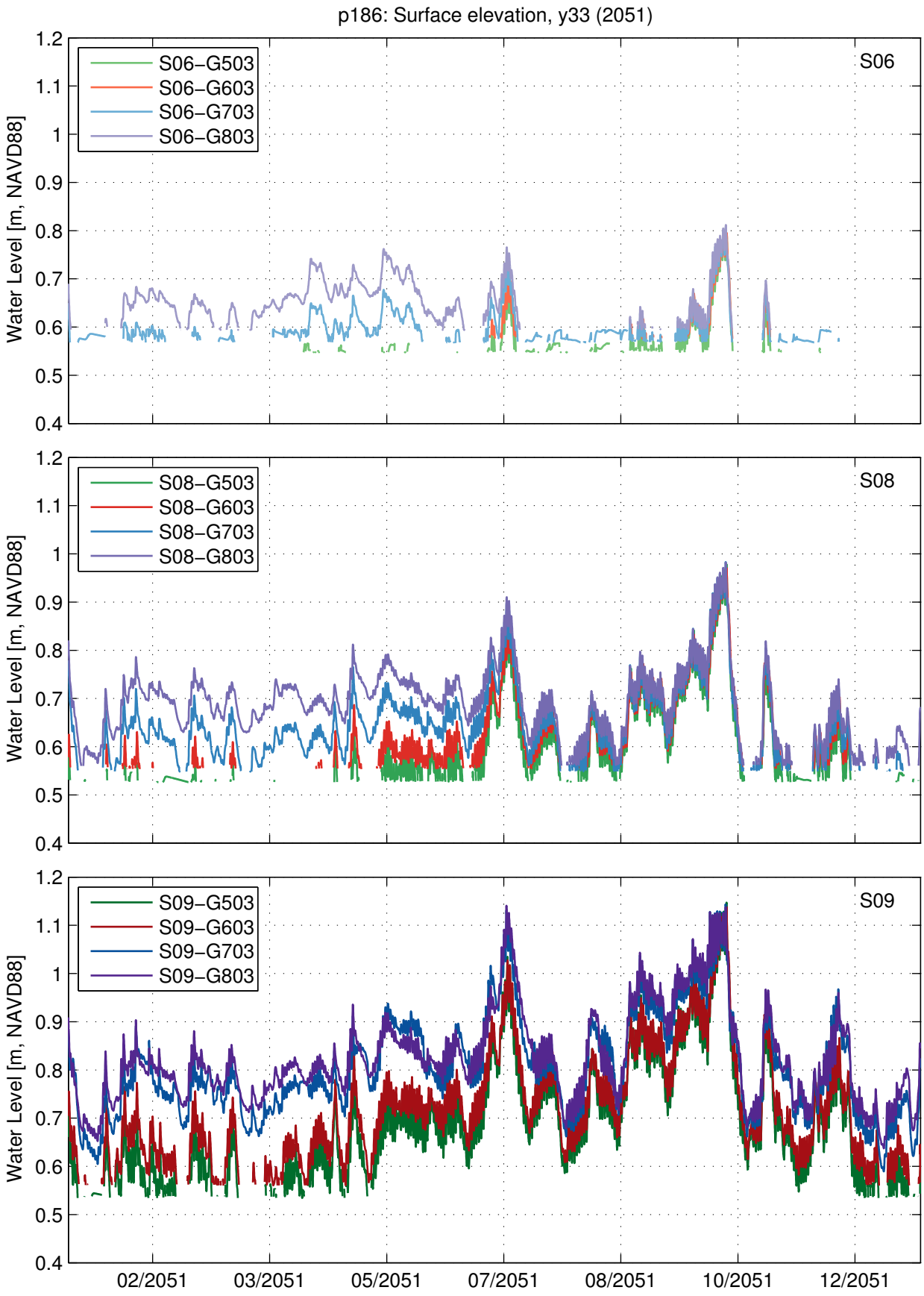

VC−1: Surface elevation, y33 (2051)
S06
S06−G503
S06−G603
S06−G703
S06−G803
S08
S08−G503
S08−G603
S08−G703
S08−G803
S09
S09−G503
S09−G603
S09−G703
S09−G803
Water Level [m, NAVD88]
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

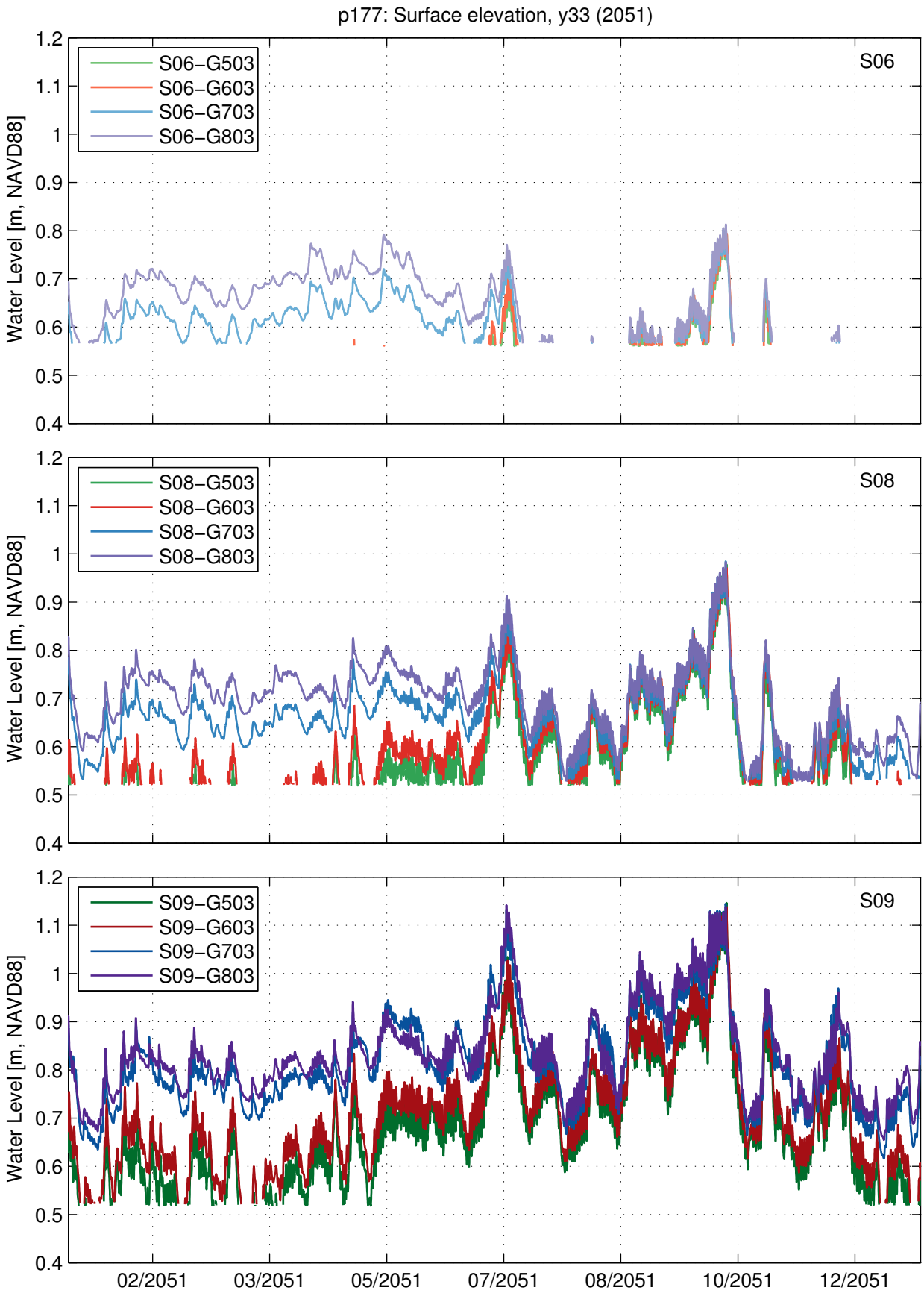

p160: Surface elevation, y33 (2051)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Water Level [m, NAVD88]
1.2
1.1
1
0.9
0.8
0.7
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

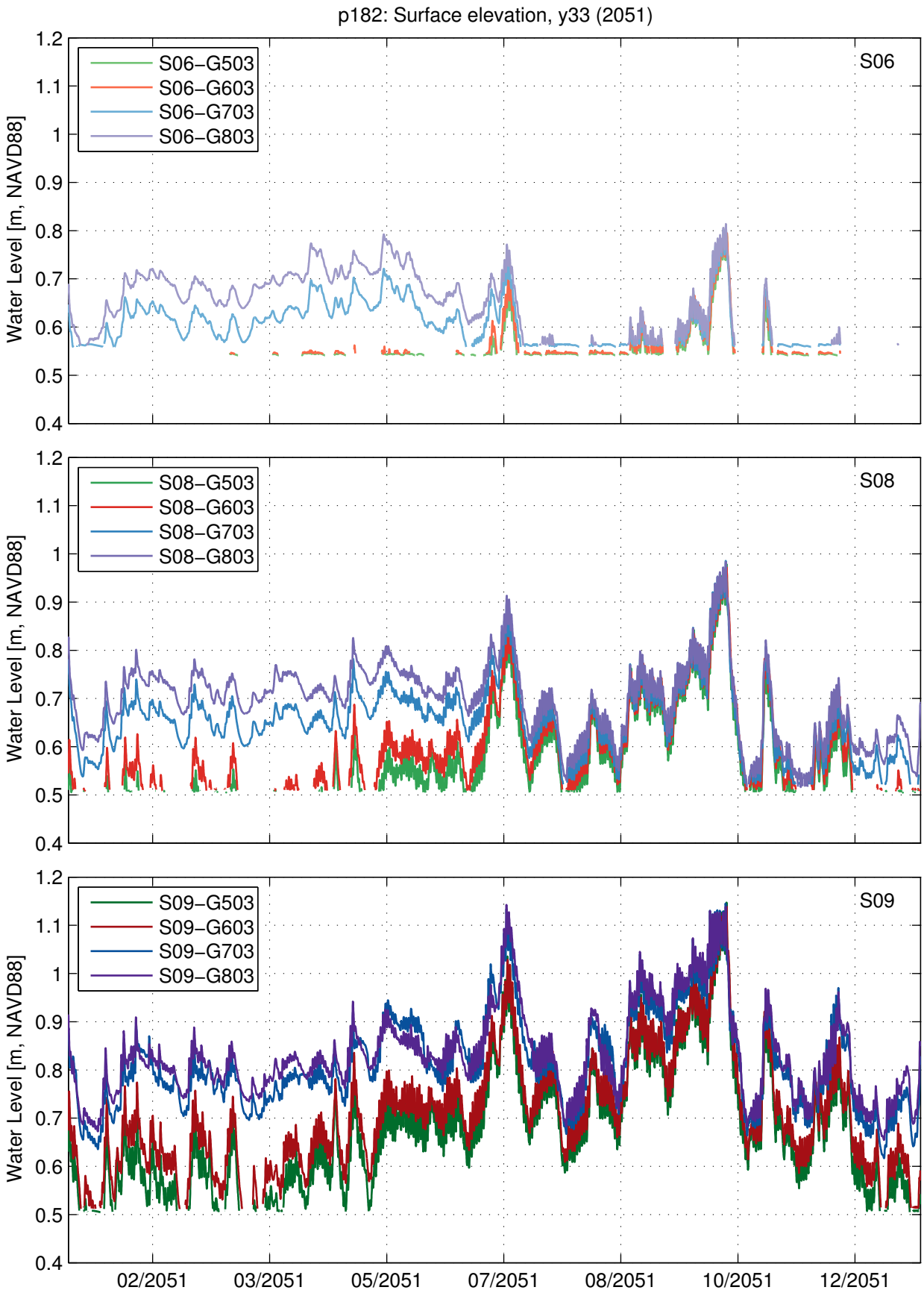

p165: Surface elevation, y33 (2051)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

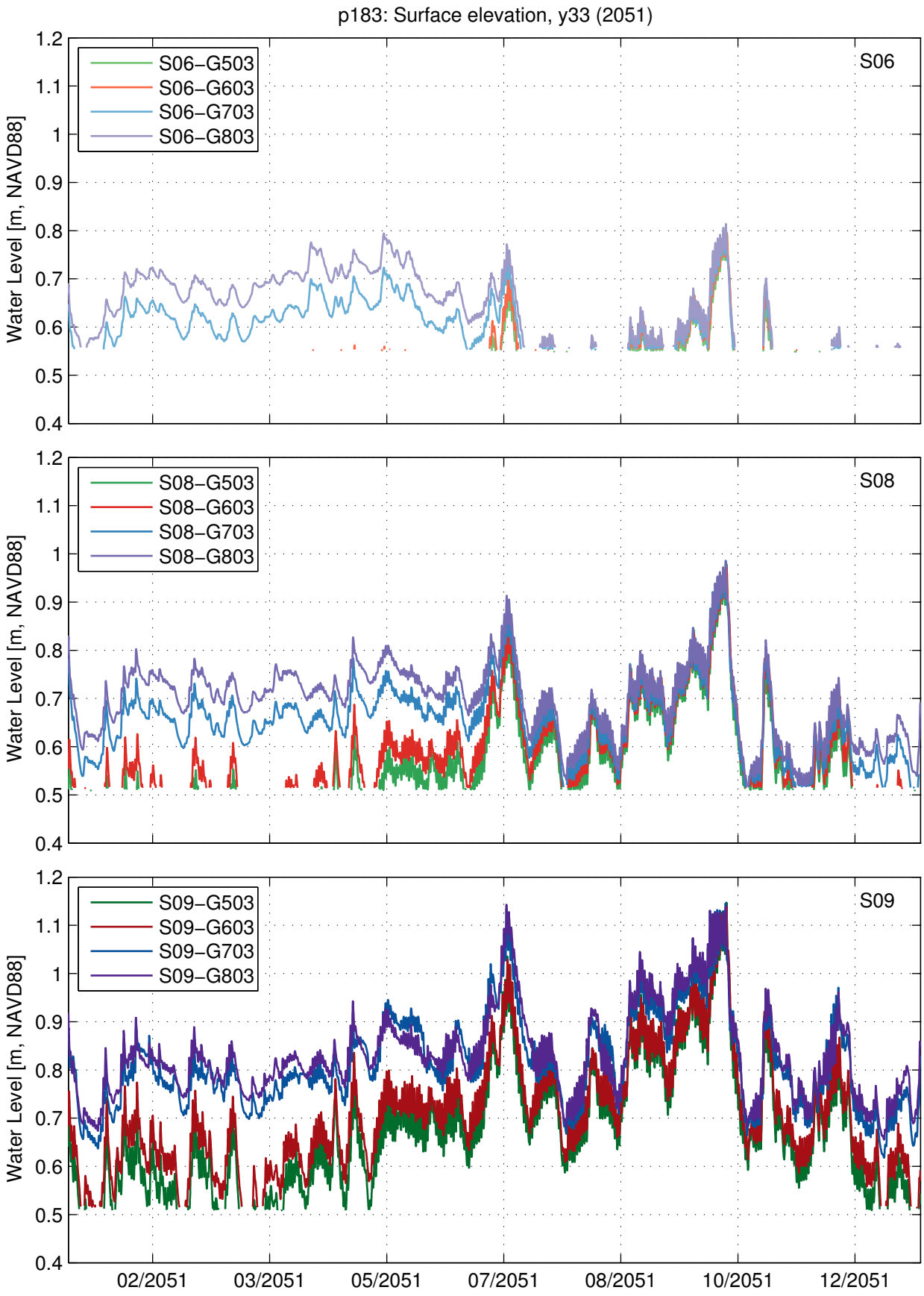

TC−1: Surface elevation, y33 (2051)
S06
S06−G503
S06−G603
S06−G703
S06−G803
S08
S08−G503
S08−G603
S08−G703
S08−G803
S09
S09−G503
S09−G603
S09−G703
S09−G803
Water Level [m, NAVD88]
1.4
1.2
1
0.8
0.6
0.4
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

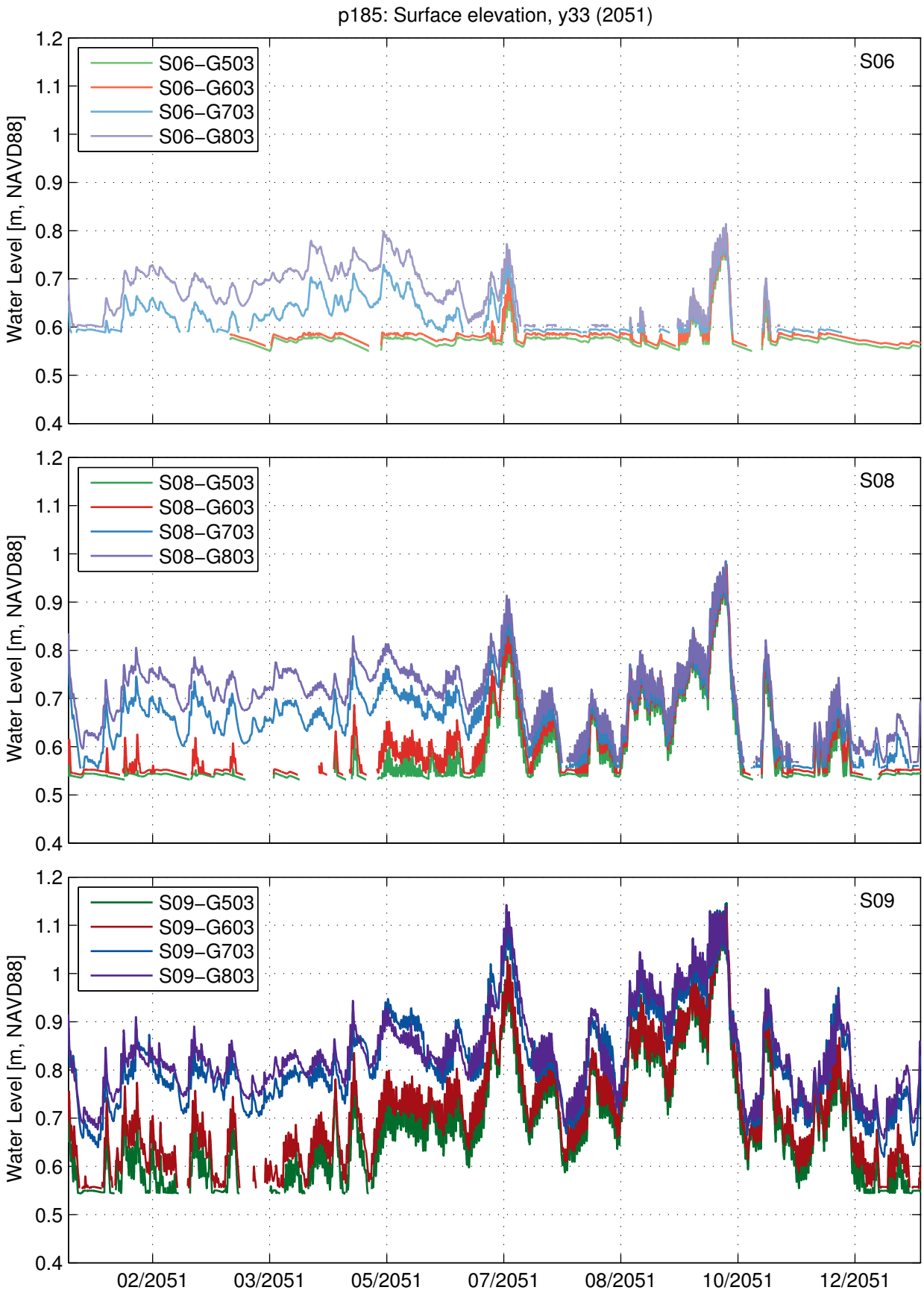

p151: Surface elevation, y33 (2051)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

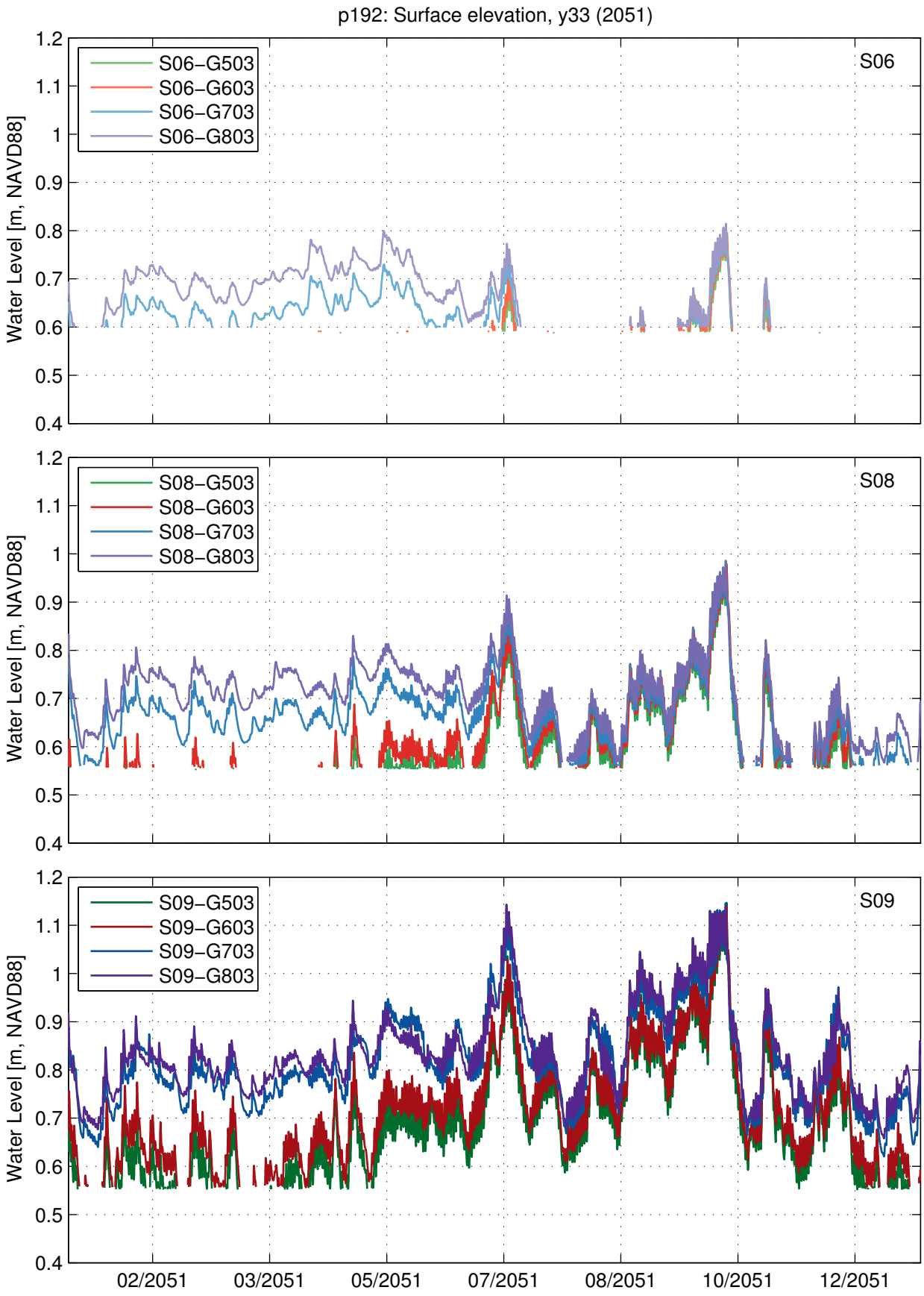

p186: Surface elevation, y33 (2051)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

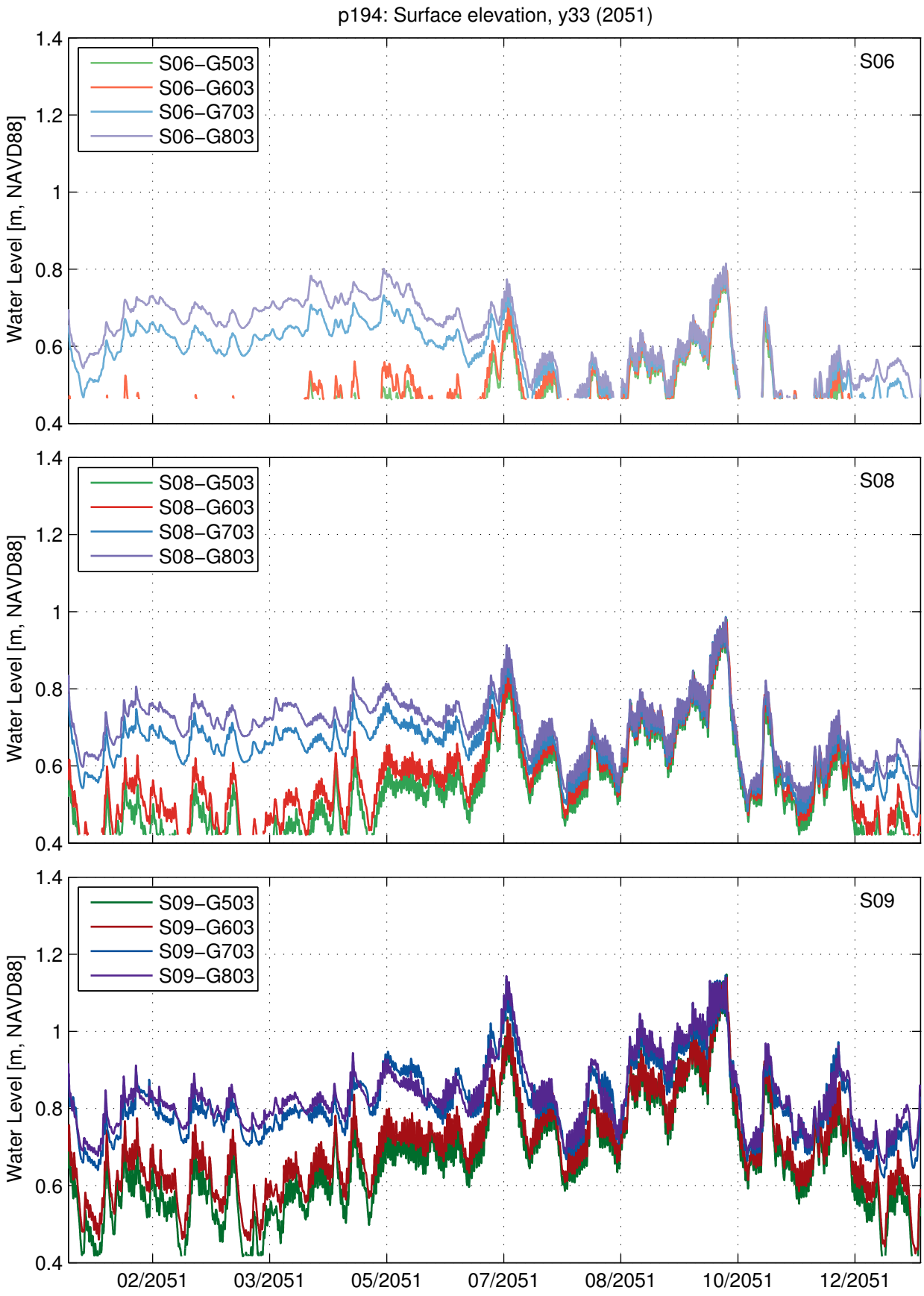

p177: Surface elevation, y33 (2051)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

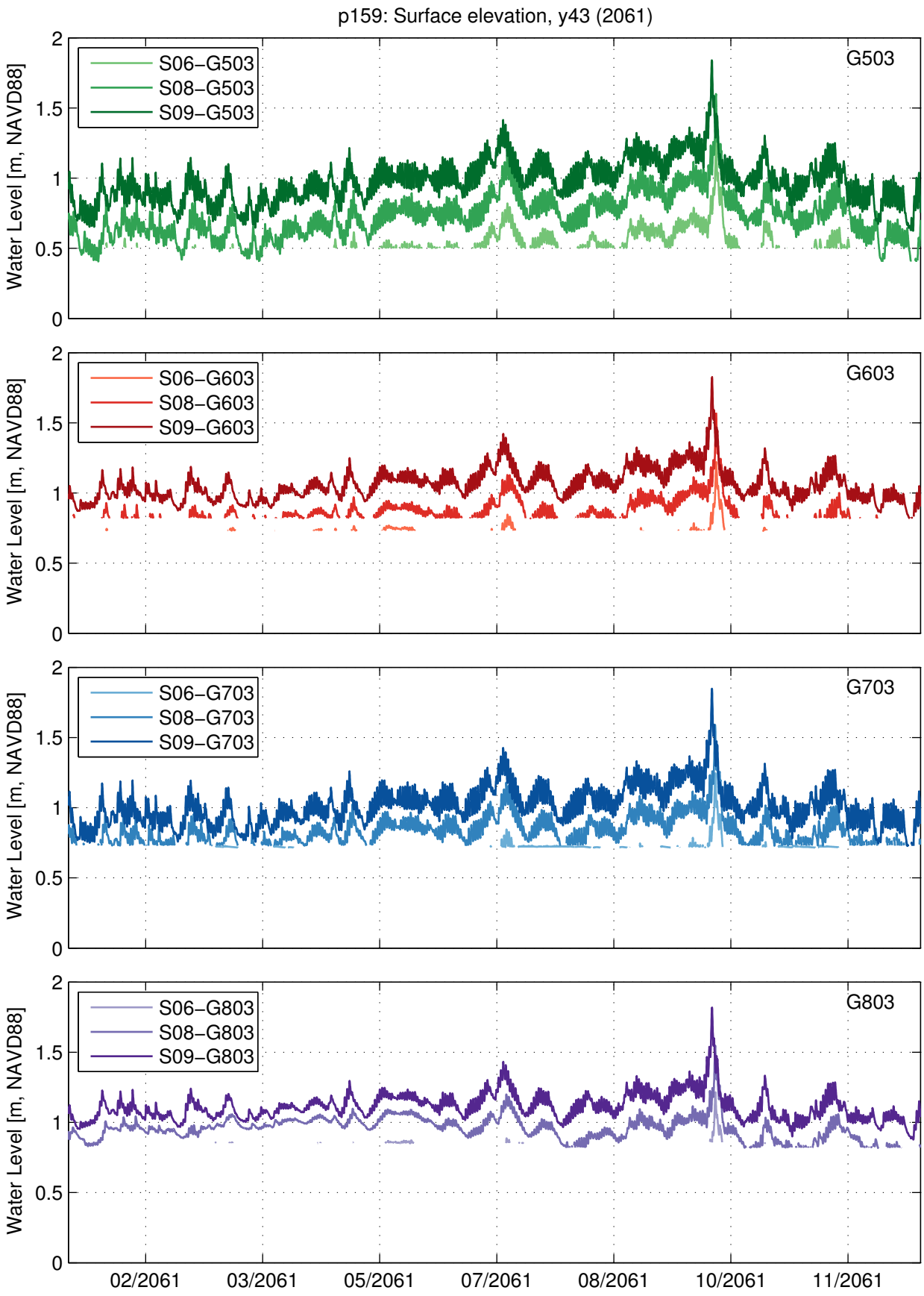

p182: Surface elevation, y33 (2051)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

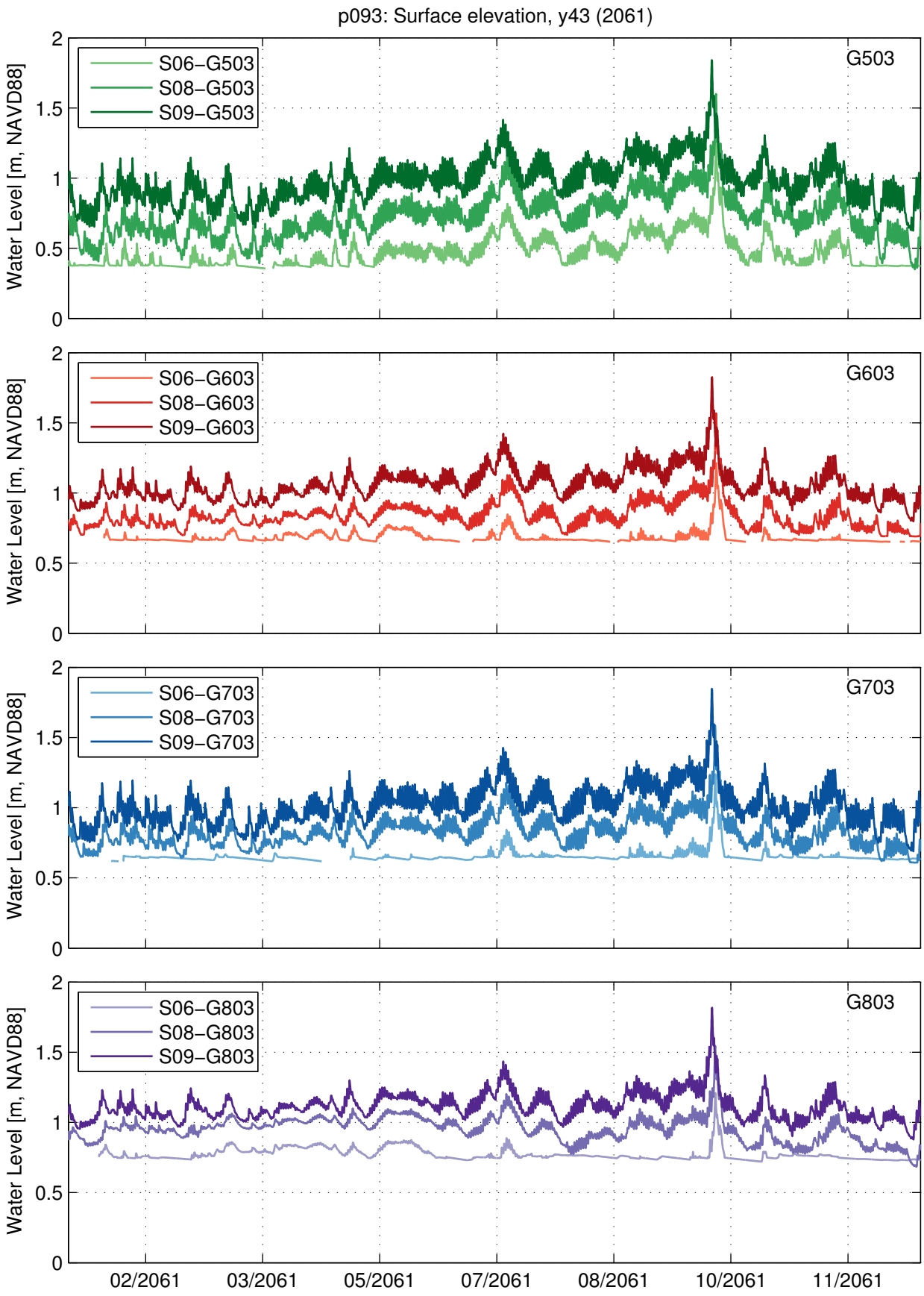

p183: Surface elevation, y33 (2051)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

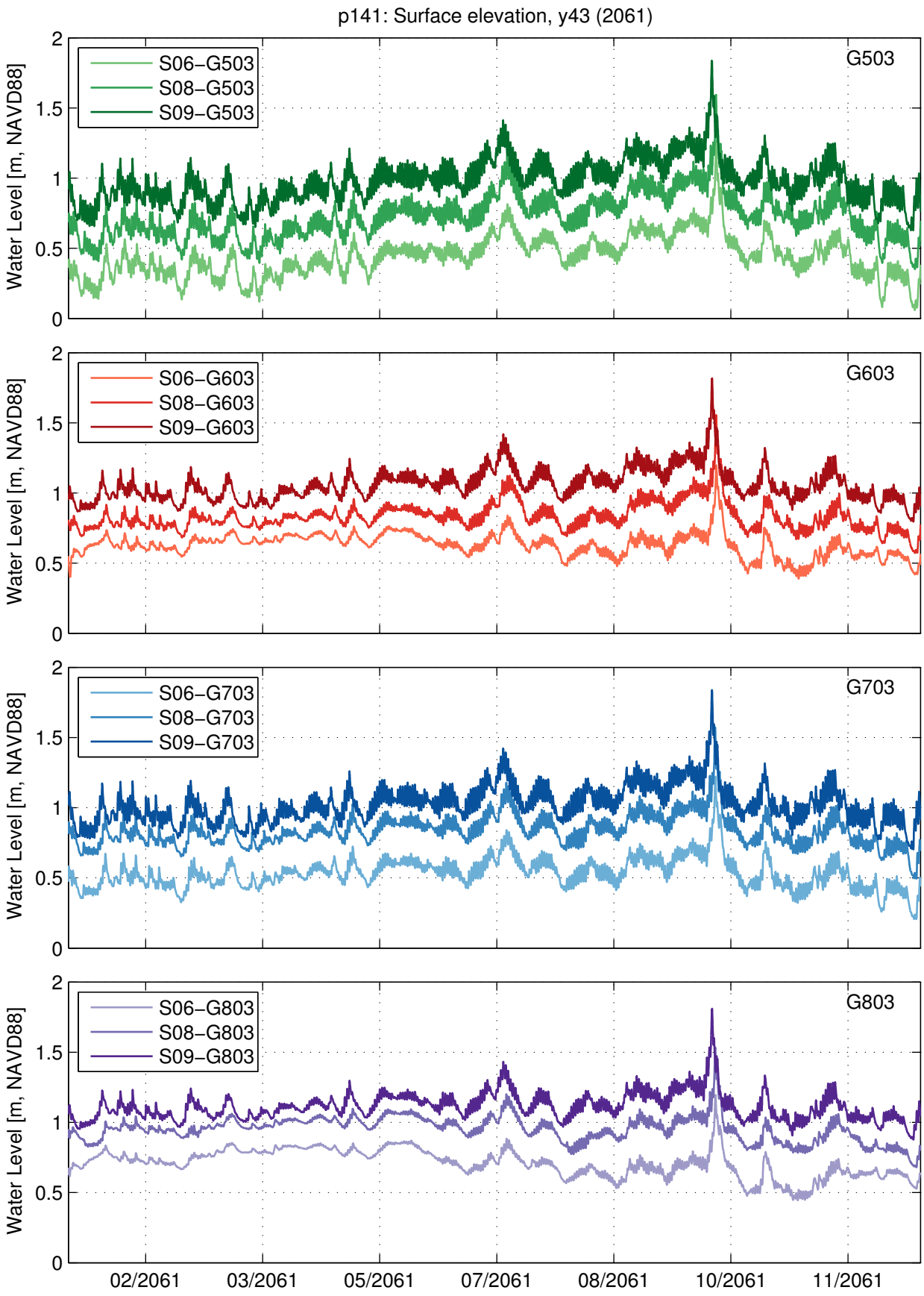

p185: Surface elevation, y33 (2051)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

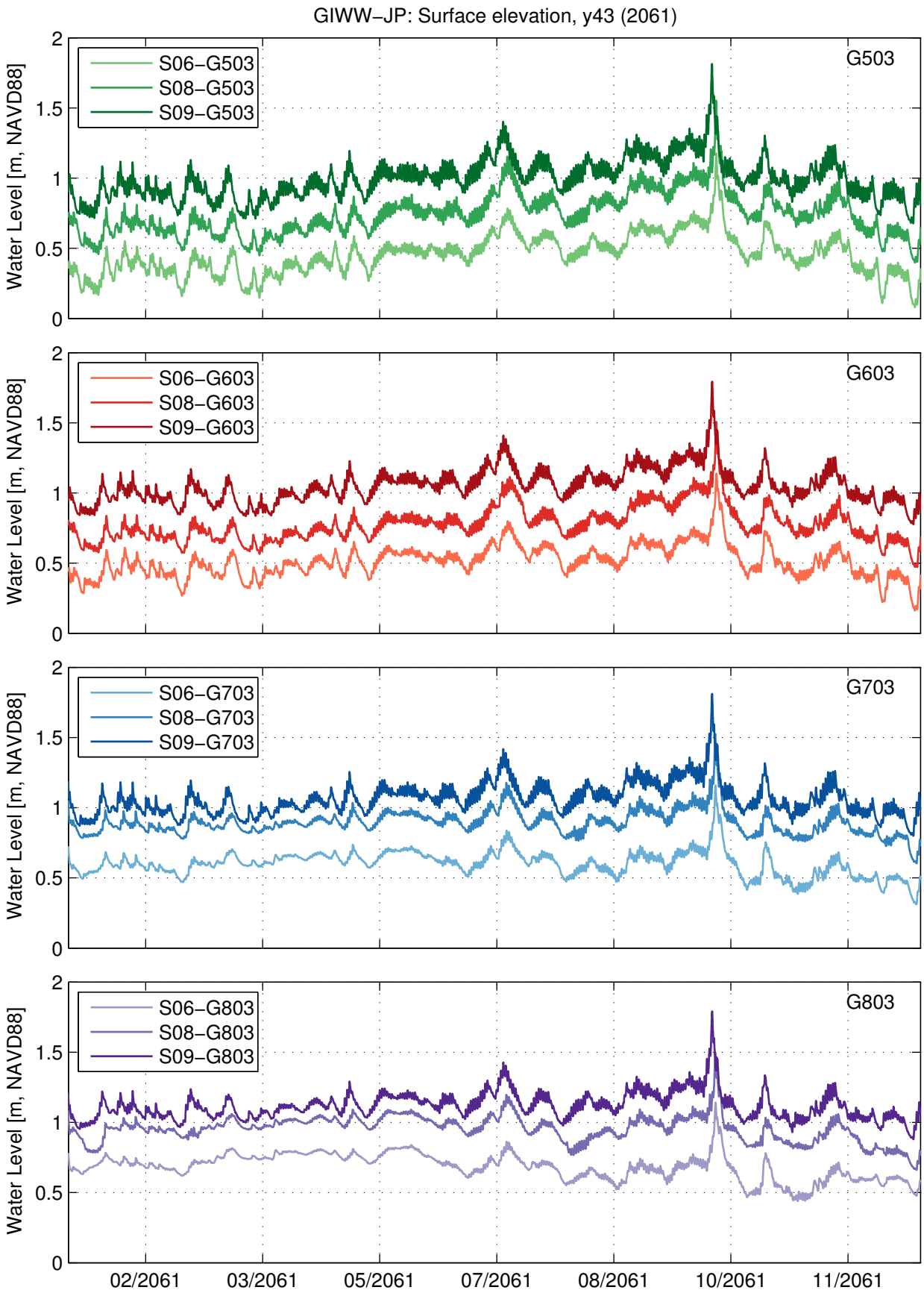

p192: Surface elevation, y33 (2051)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

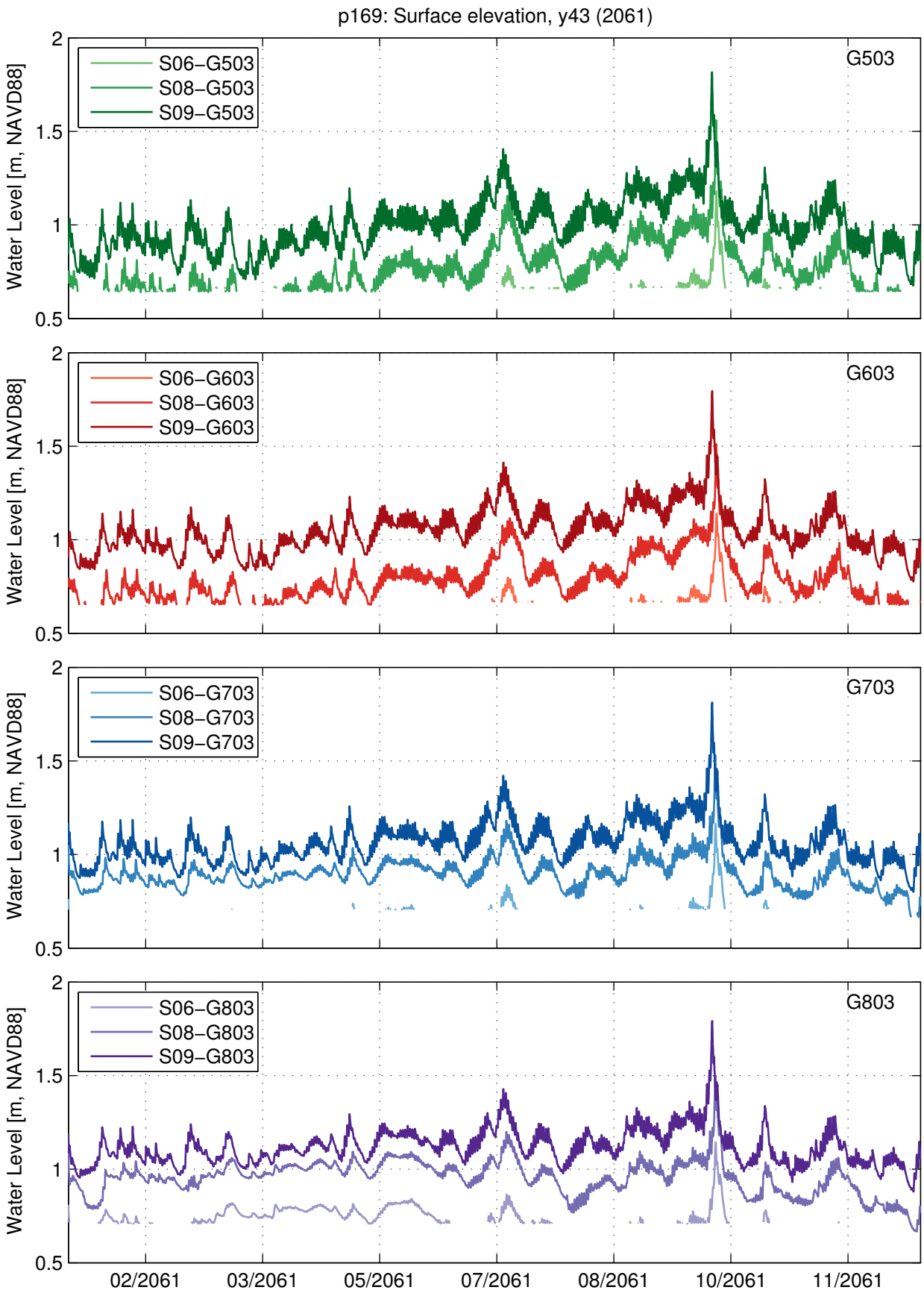

p194: Surface elevation, y33 (2051)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
1.4
1.2
1
0.8
0.6
0.4
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

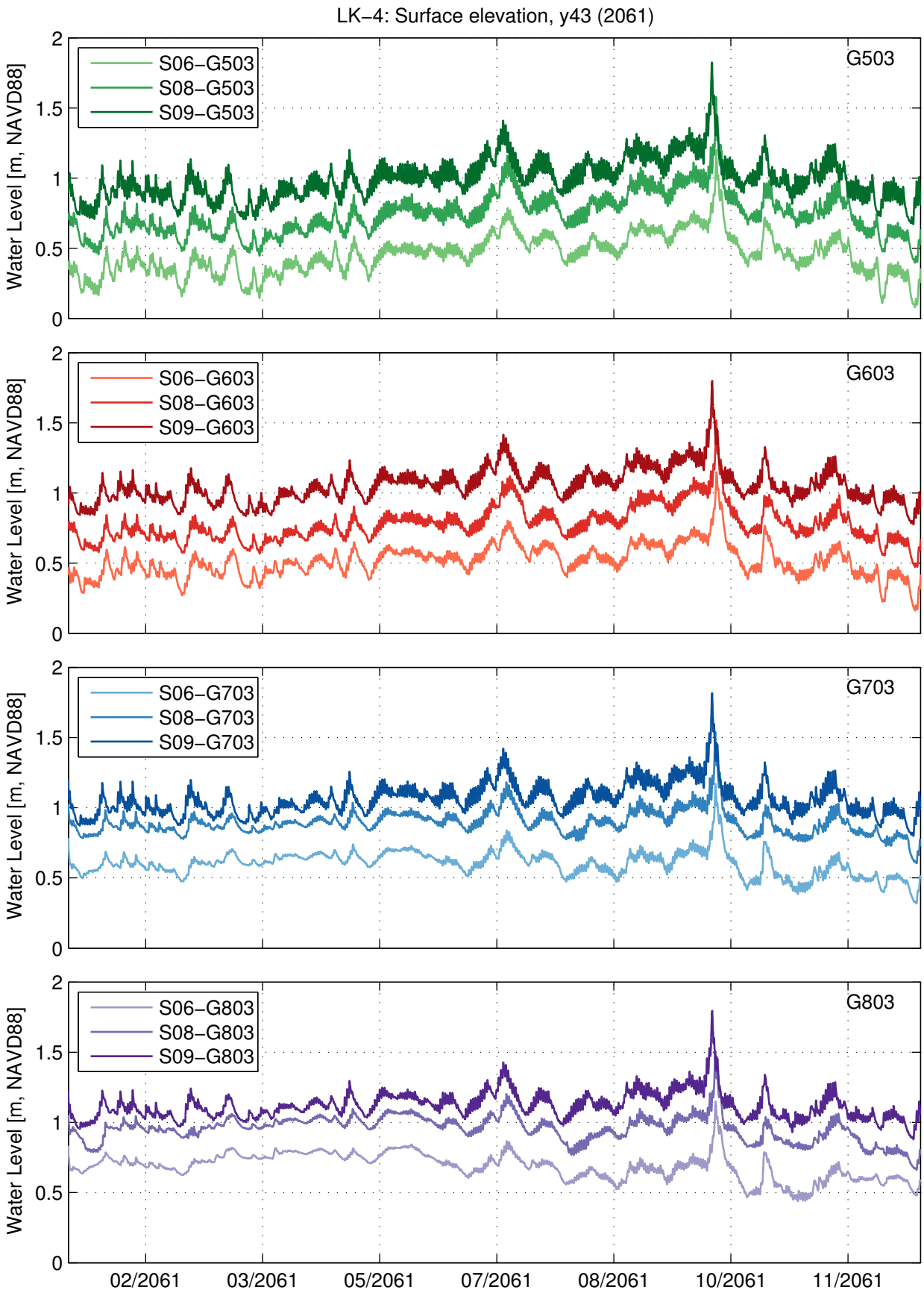

p159: Surface elevation, y43 (2061)
Water Level [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
0
0.5
1
1.5
2
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

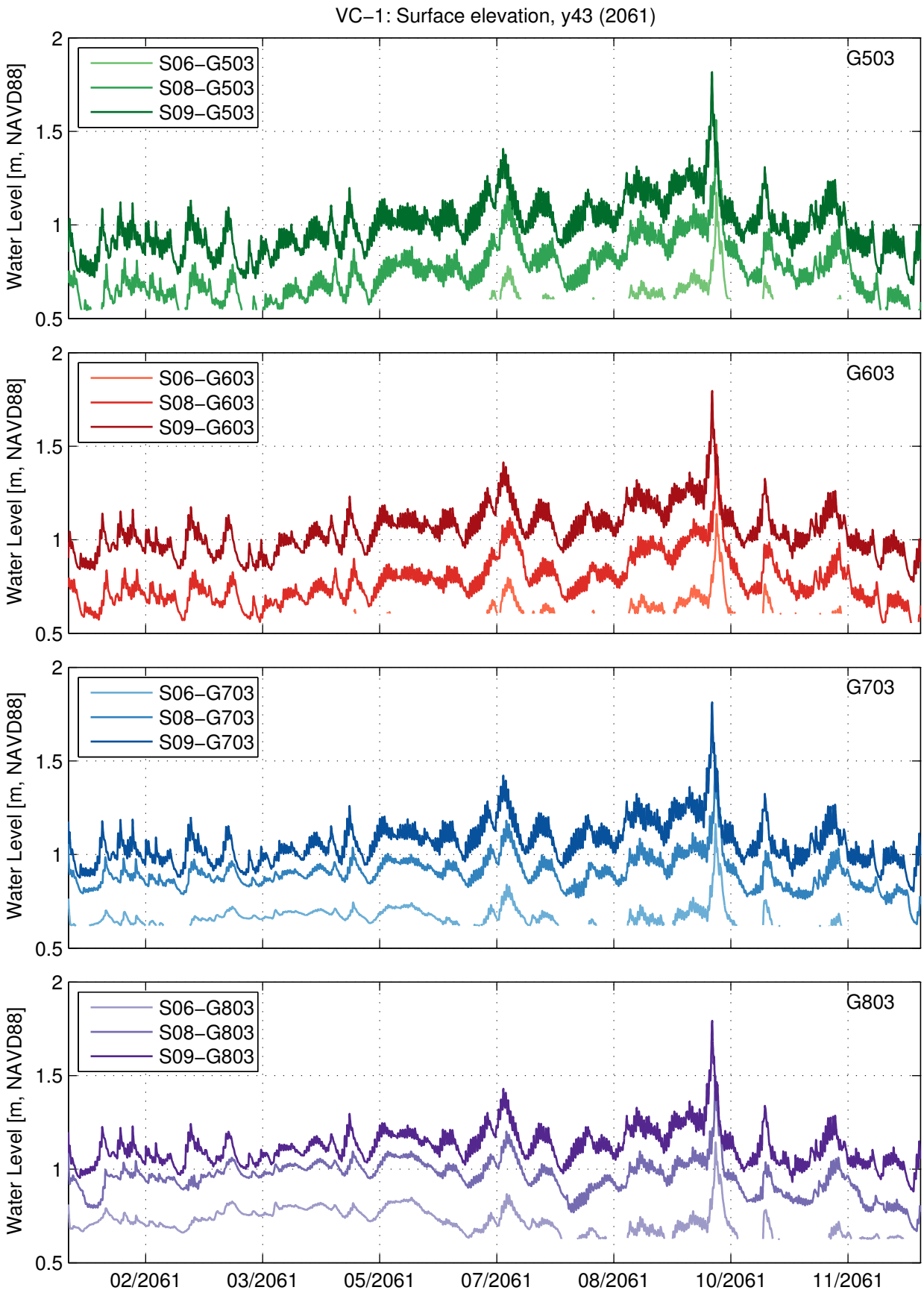

p093: Surface elevation, y43 (2061)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Water Level [m, NAVD88]
0
0.5
1
1.5
2
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

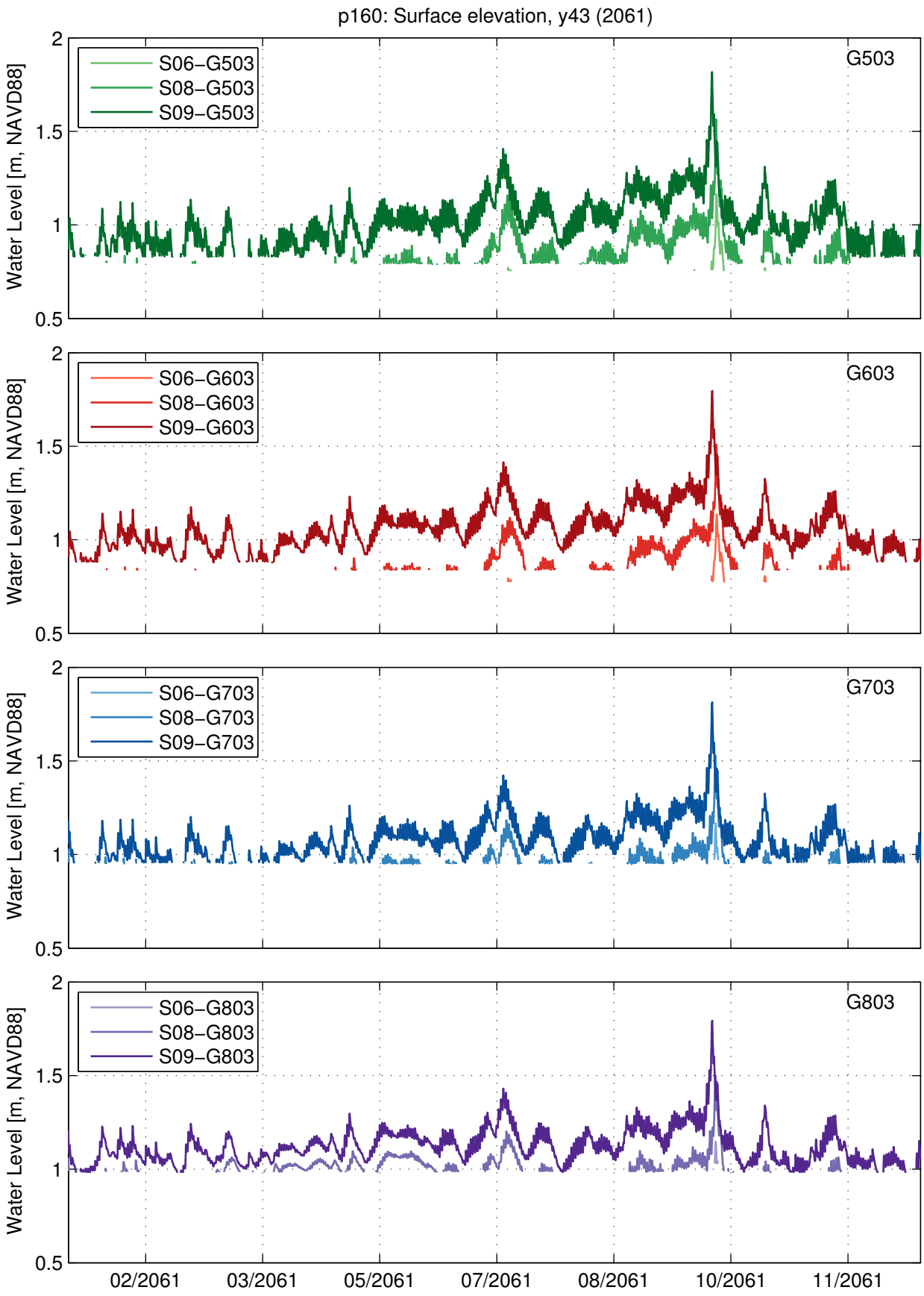

p141: Surface elevation, y43 (2061)
Water Level [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
0
0.5
1
1.5
2
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

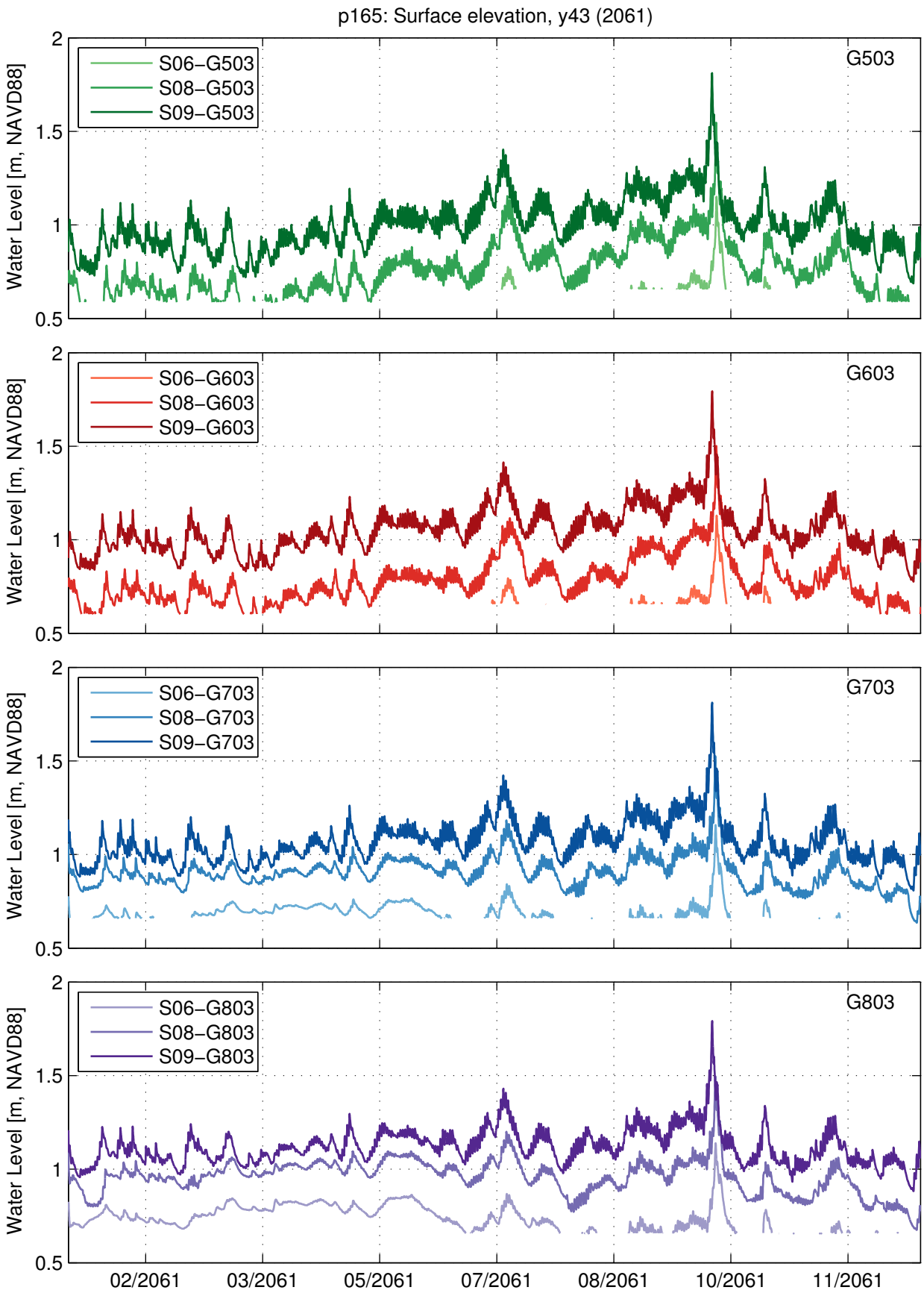

GIWW–JP: Surface elevation, y43 (2061)
Water Level [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
0
0.5
1
1.5
2
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

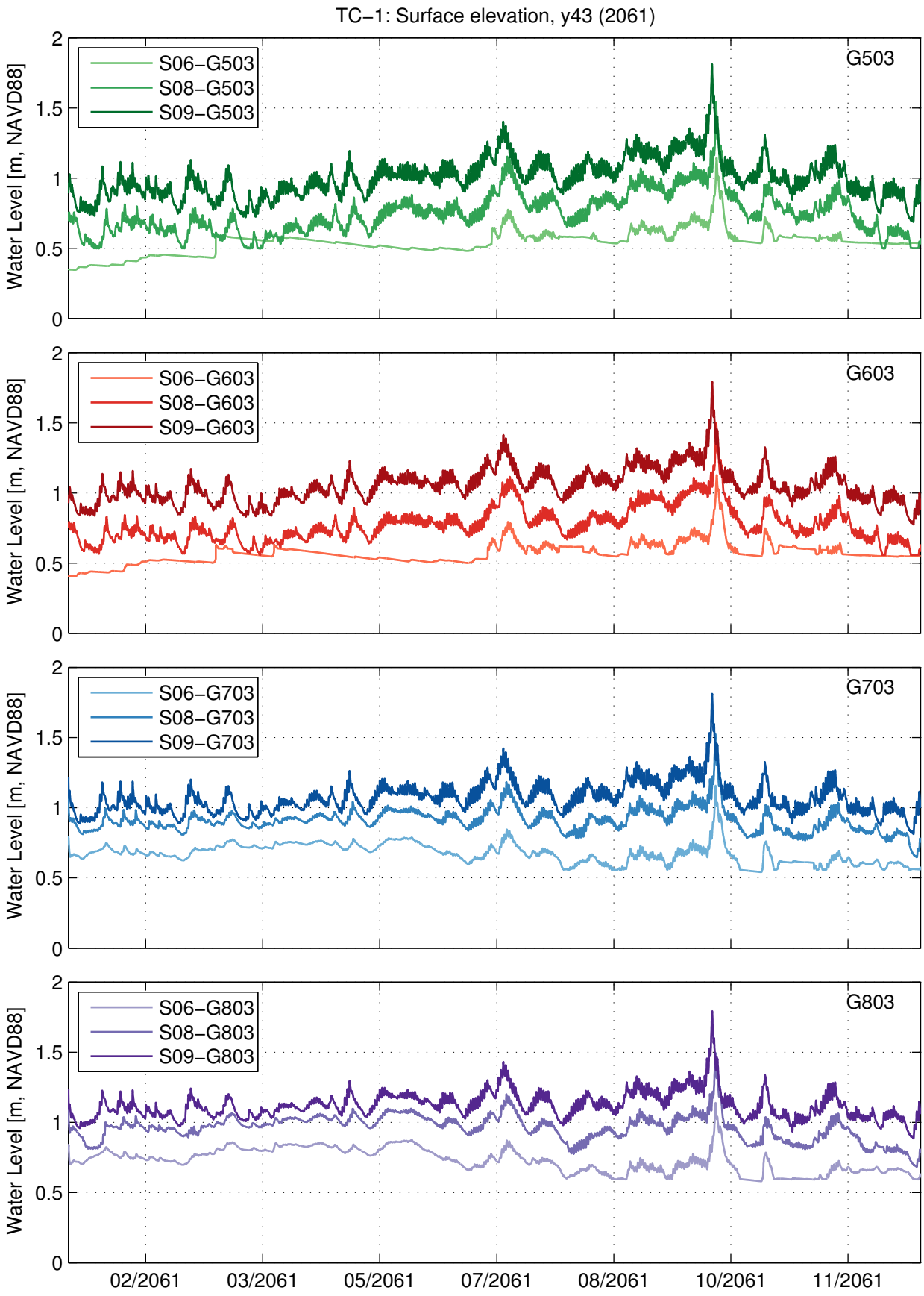

p169: Surface elevation, y43 (2061)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Water Level [m, NAVD88]
2
1.5
1
0.5
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

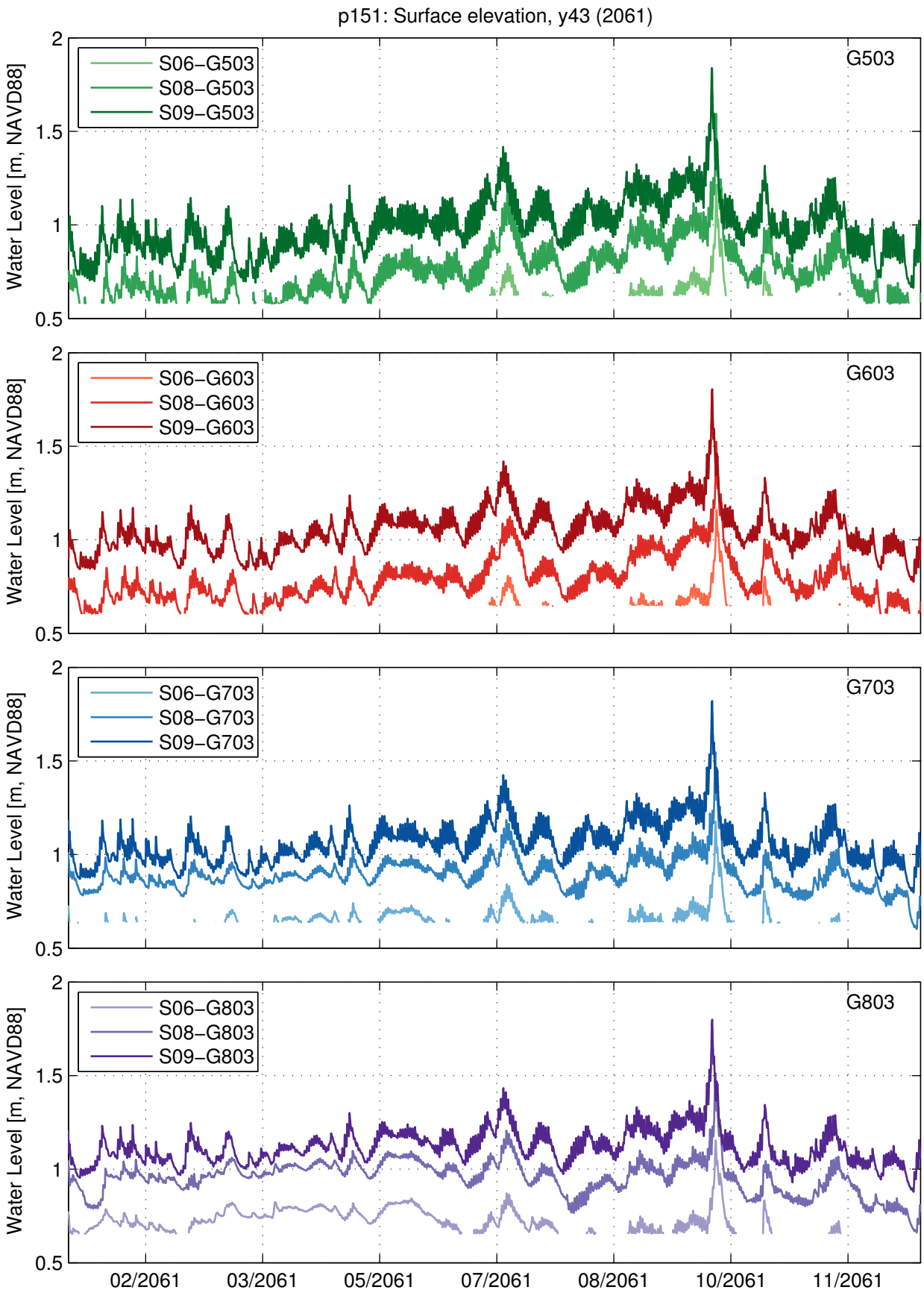

LK−4: Surface elevation, y43 (2061)
Water Level [m, NAVD88]
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
S06−G703
S08−G703
S09−G703
G703
S06−G803
S08−G803
S09−G803
G803
0
0.5
1
1.5
2
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

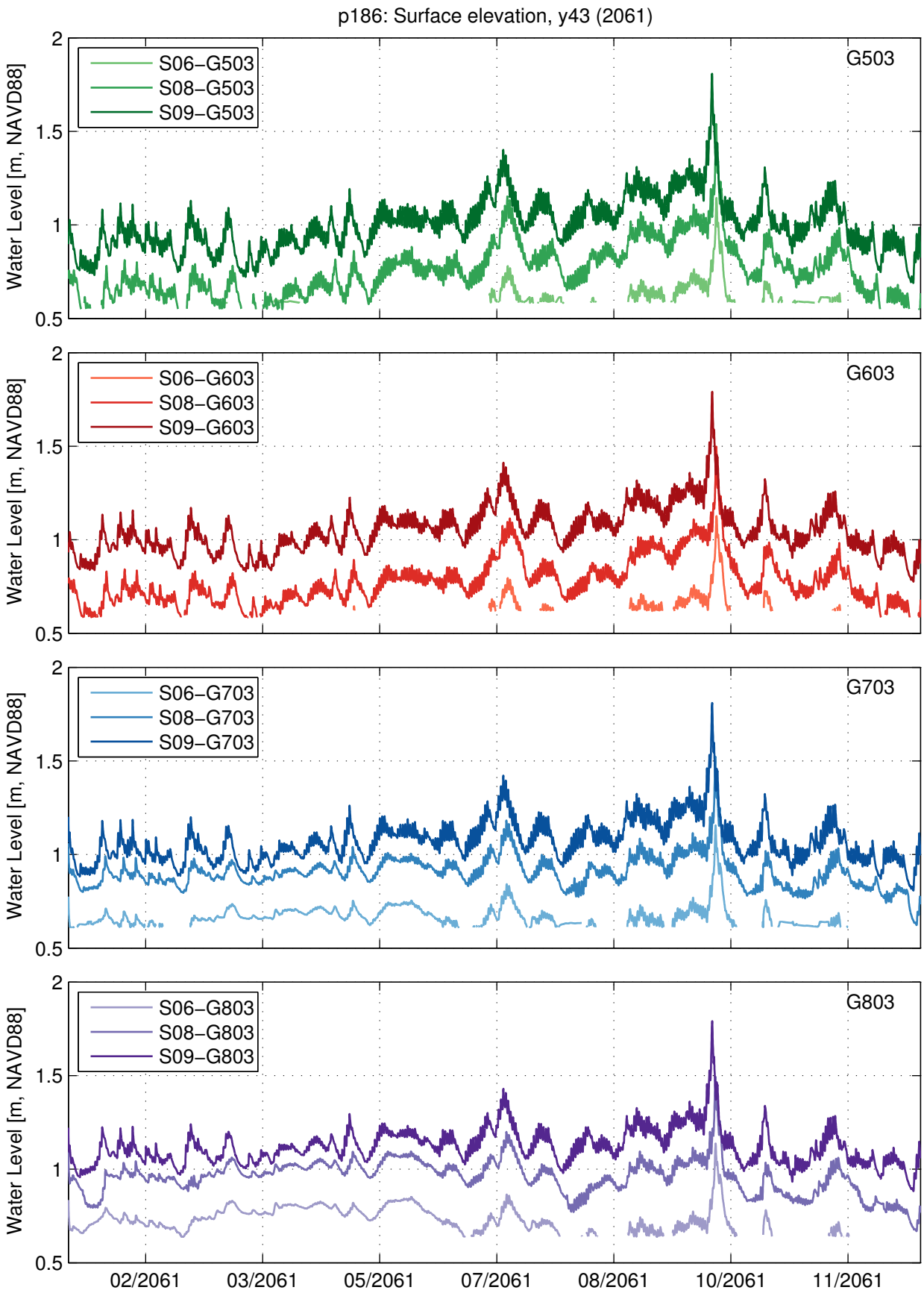

VC−1: Surface elevation, y43 (2061)
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
S06−G703
S08−G703
S09−G703
G703
S06−G803
S08−G803
S09−G803
G803
Water Level [m, NAVD88]
2
1.5
1
0.5
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

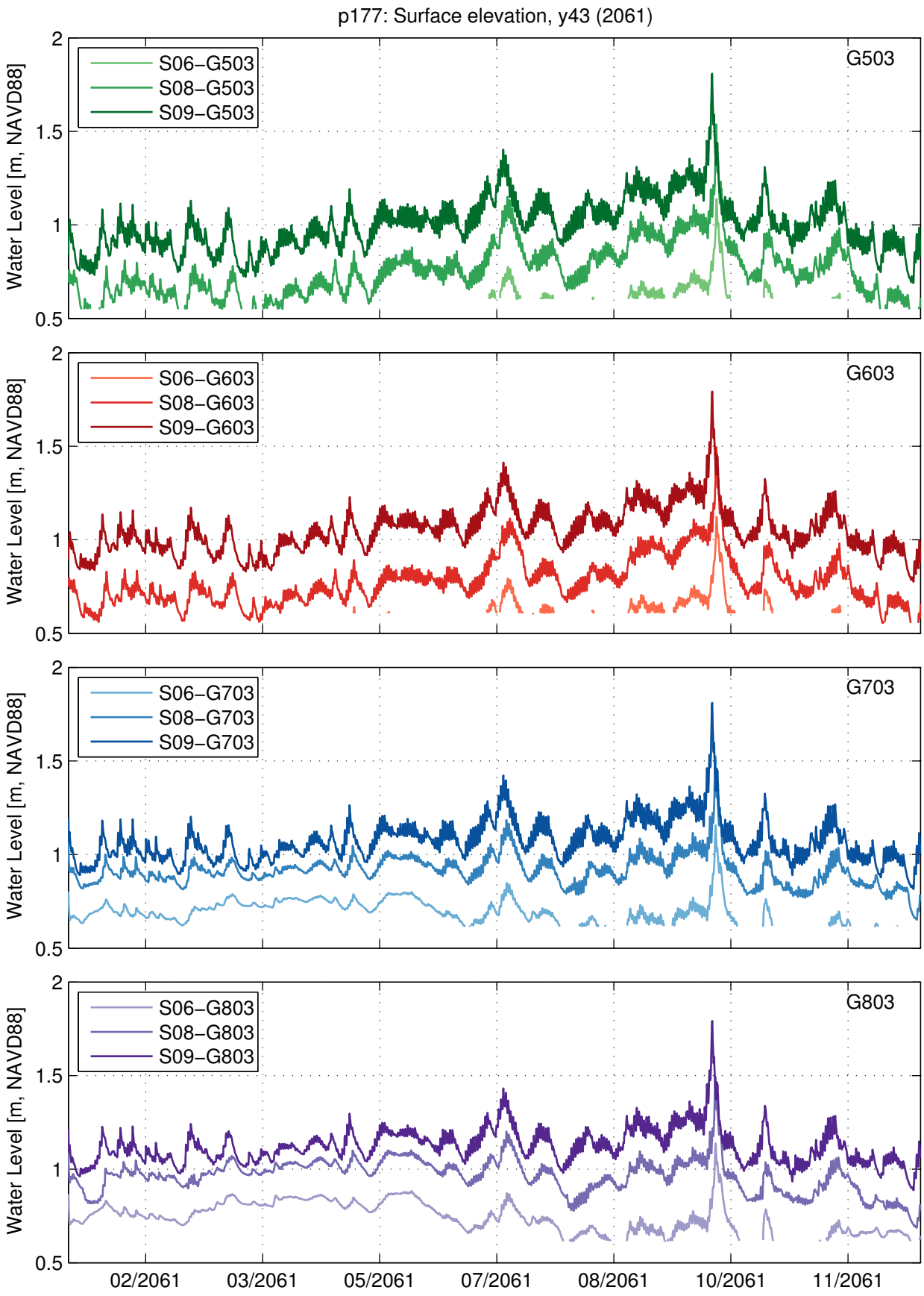

p160: Surface elevation, y43 (2061)
Water Level [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
2
1.5
1
0.5
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

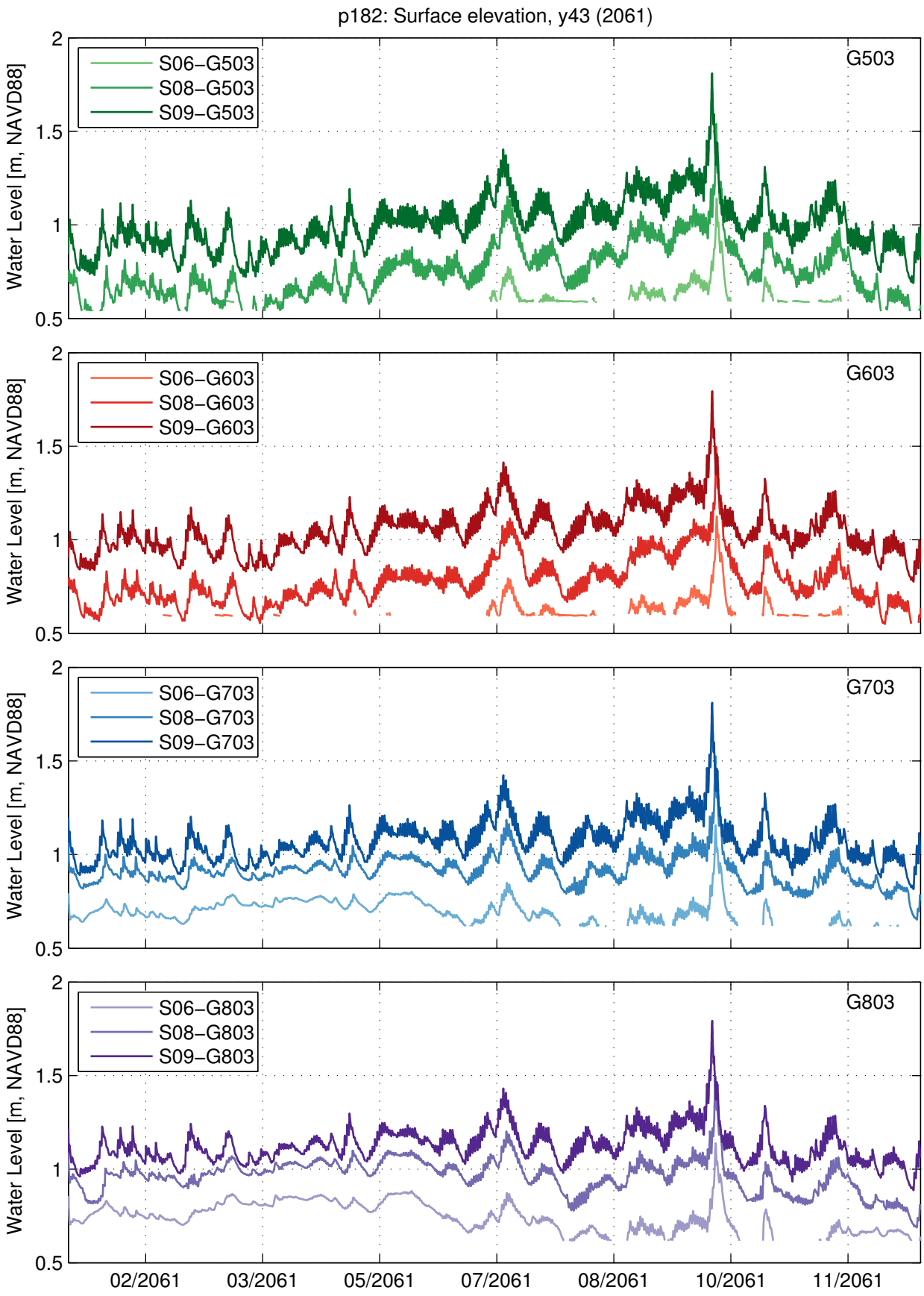

p165: Surface elevation, y43 (2061)
Water Level [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
2
1.5
1
0.5
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

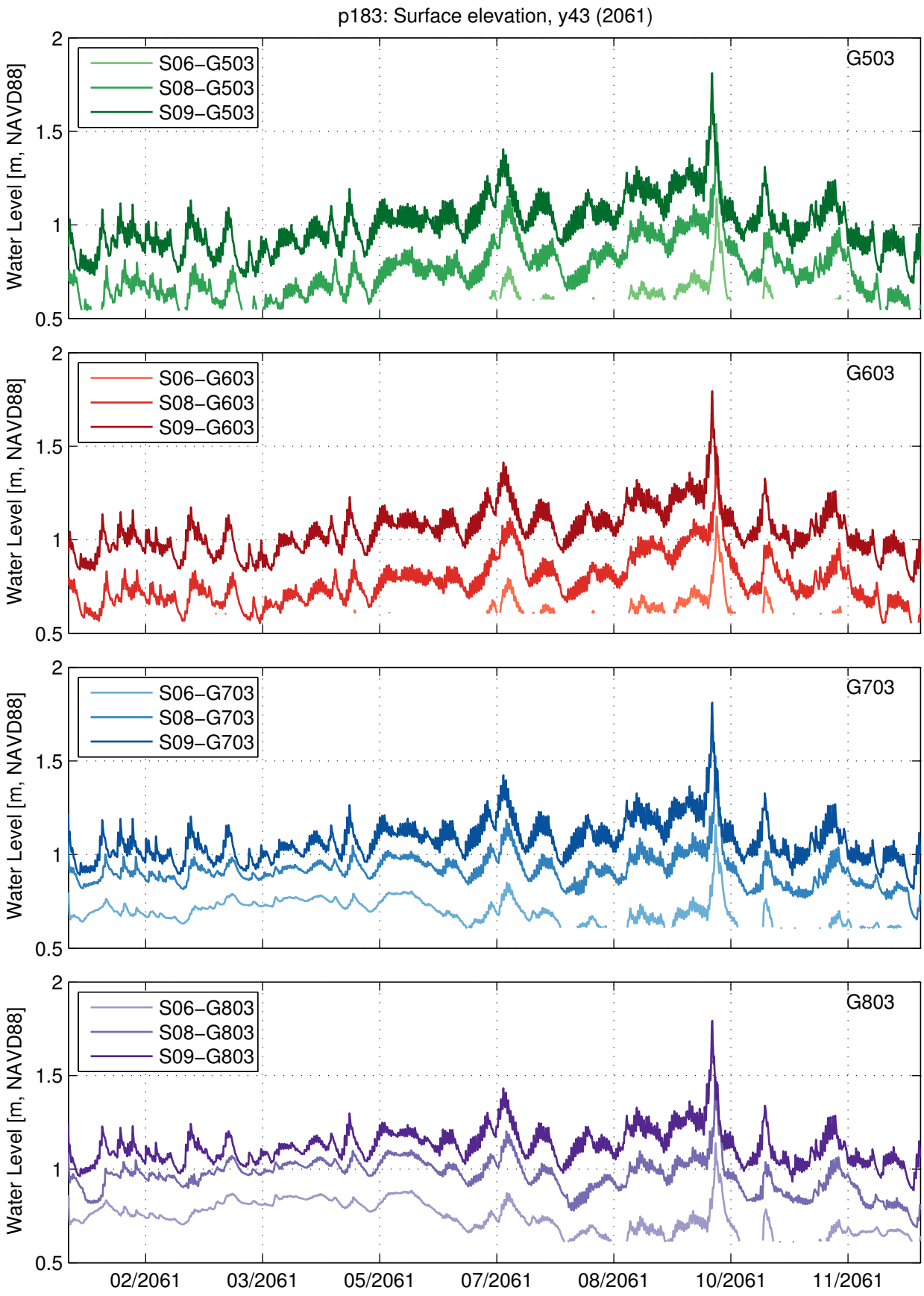

TC−1: Surface elevation, y43 (2061)
Water Level [m, NAVD88]
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
S06−G703
S08−G703
S09−G703
G703
S06−G803
S08−G803
S09−G803
G803
0
0.5
1
1.5
2
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

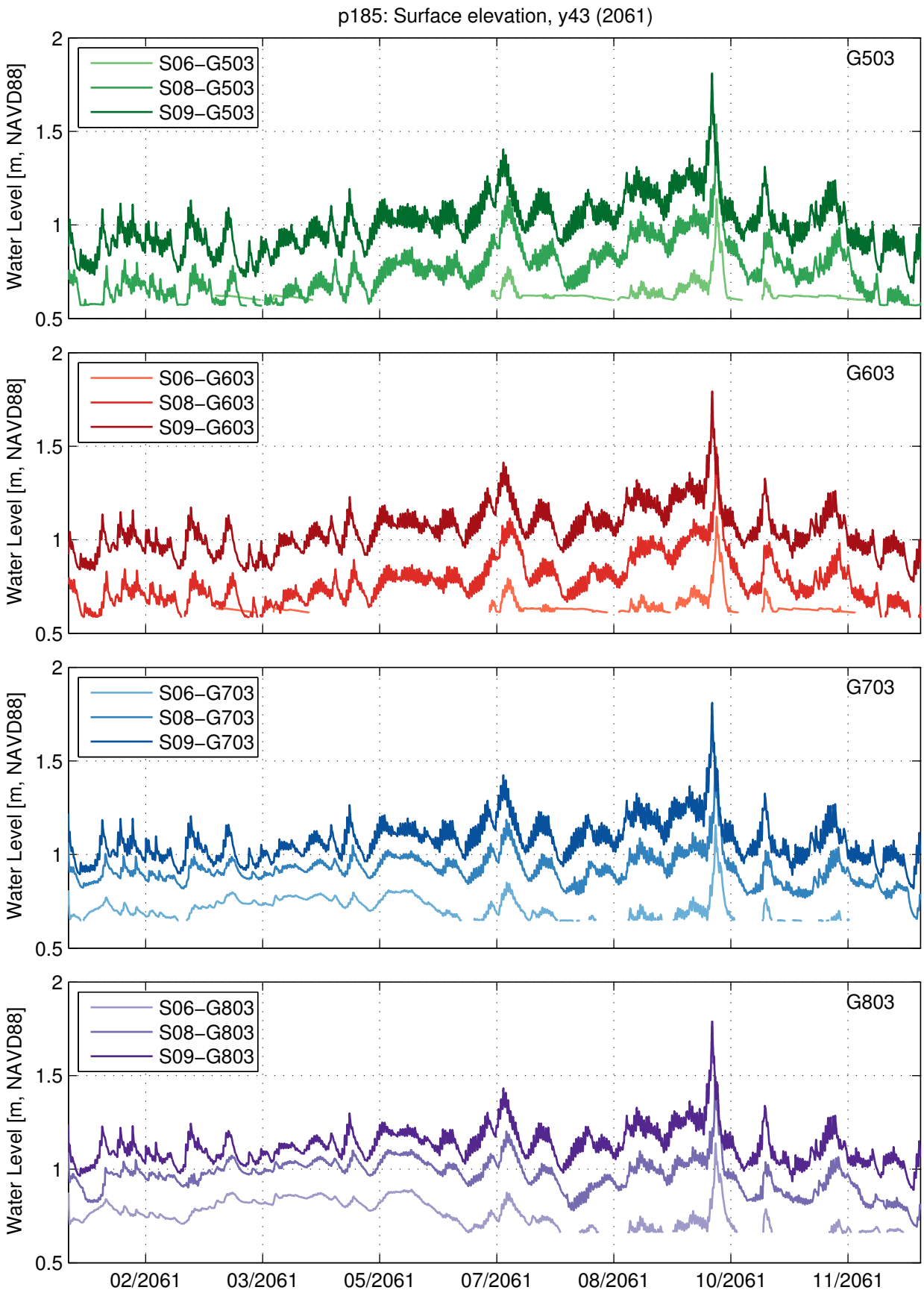

p151: Surface elevation, y43 (2061)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Water Level [m, NAVD88]
2
1.5
1
0.5
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

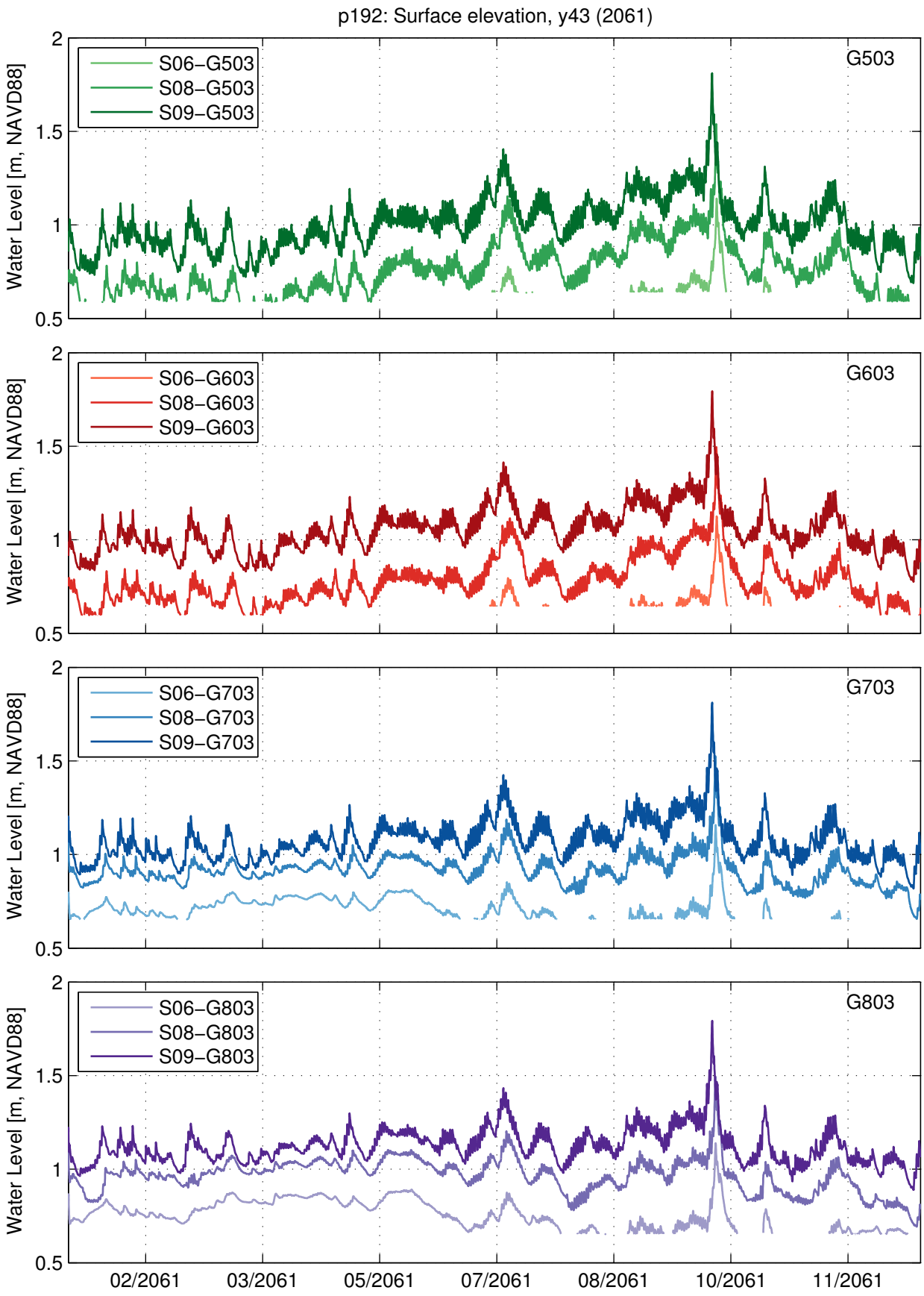

p186: Surface elevation, y43 (2061)
Water Level [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
2
1.5
1
0.5
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

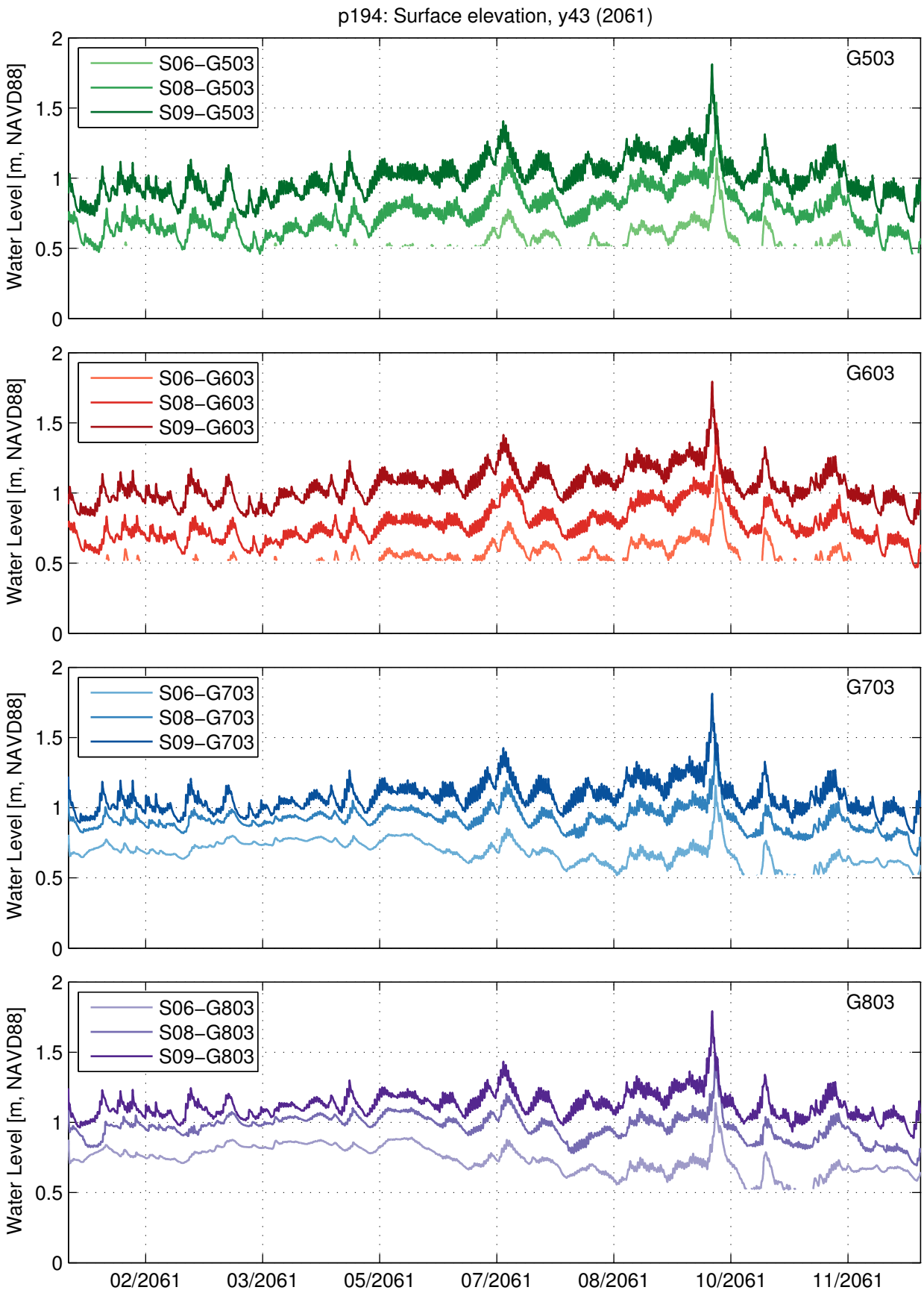

p177: Surface elevation, y43 (2061)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Water Level [m, NAVD88]
2
1.5
1
0.5
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

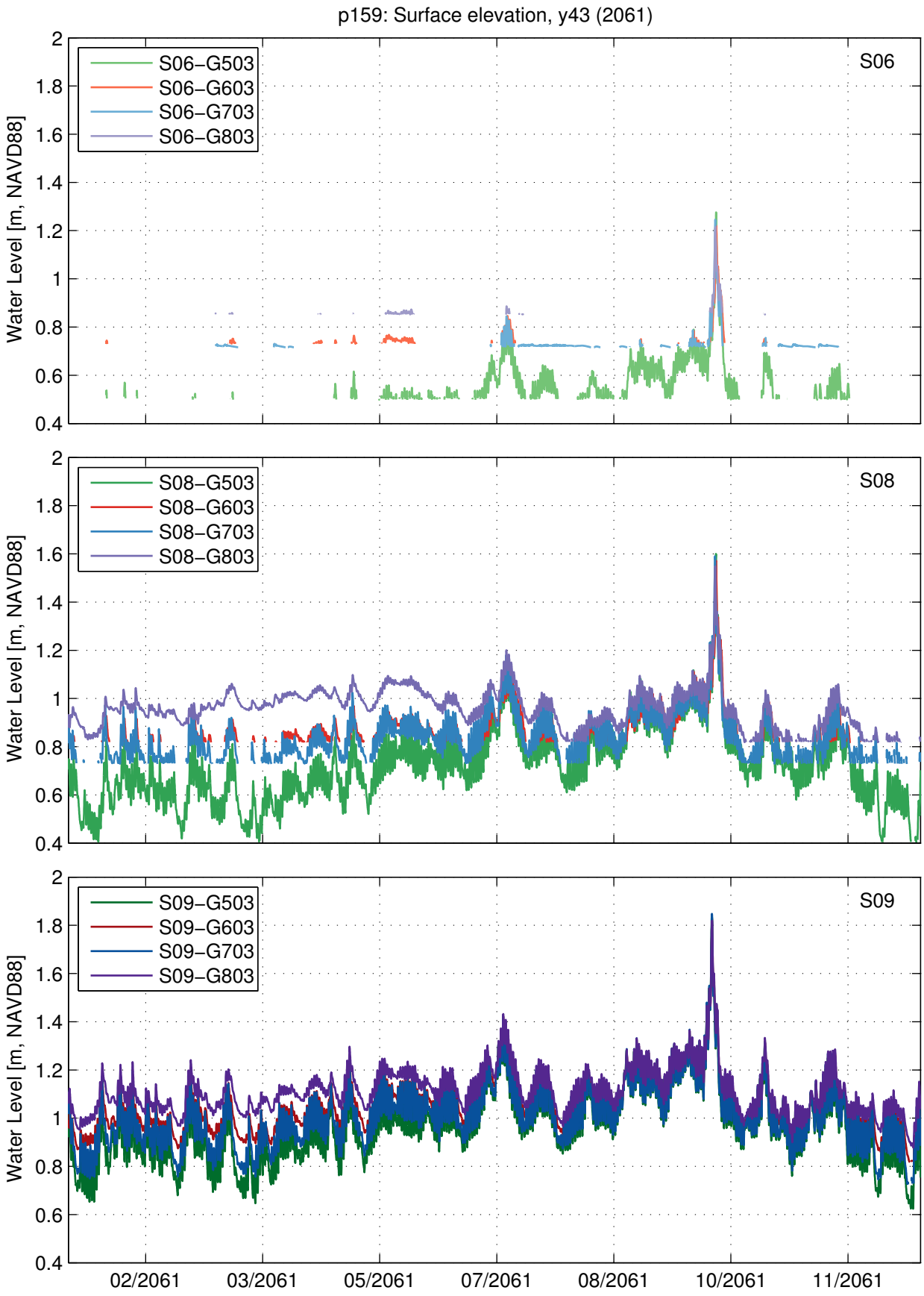

p182: Surface elevation, y43 (2061)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Water Level [m, NAVD88]
2
1.5
1
0.5
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

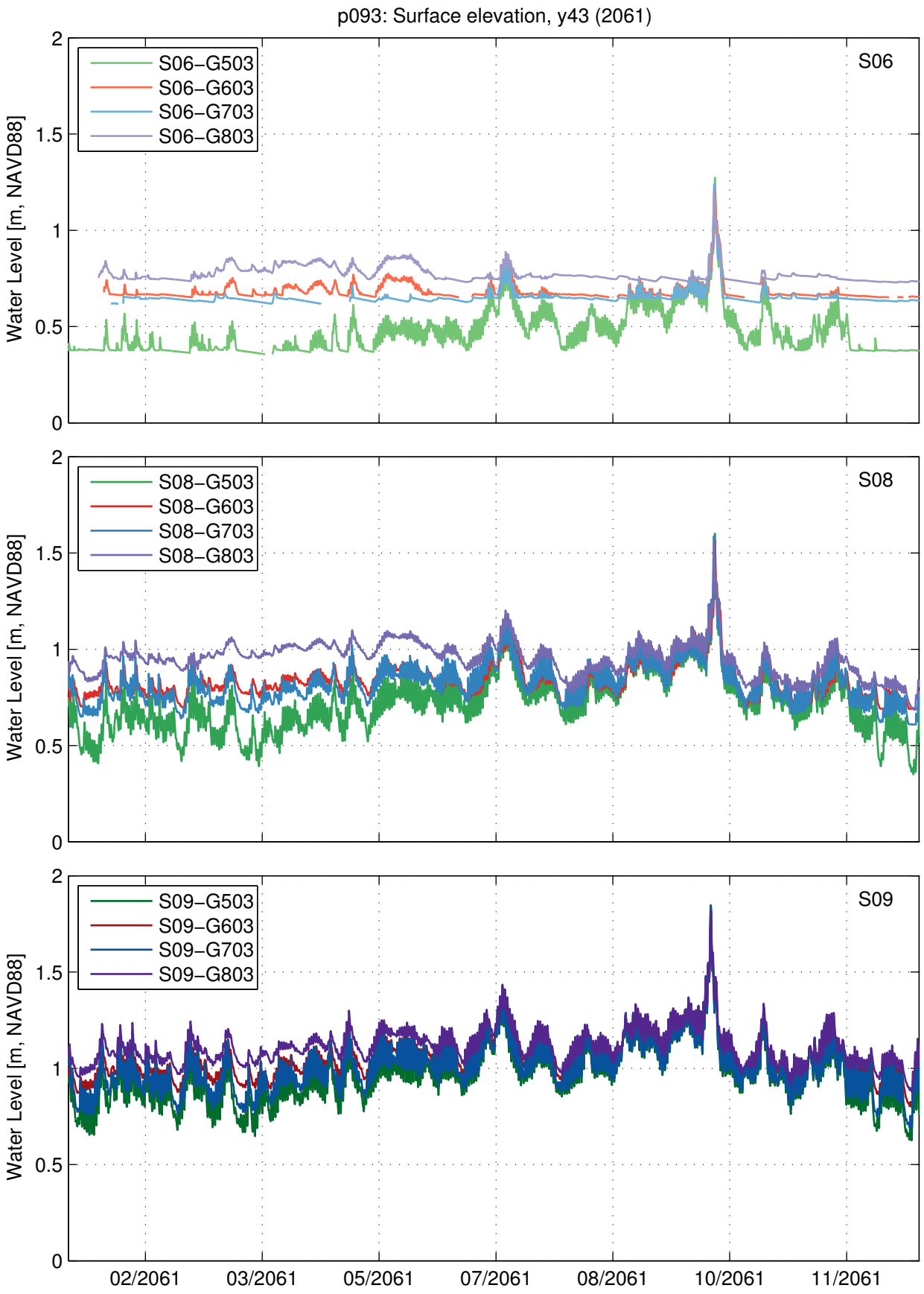

p183: Surface elevation, y43 (2061)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Water Level [m, NAVD88]
2
1.5
1
0.5
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

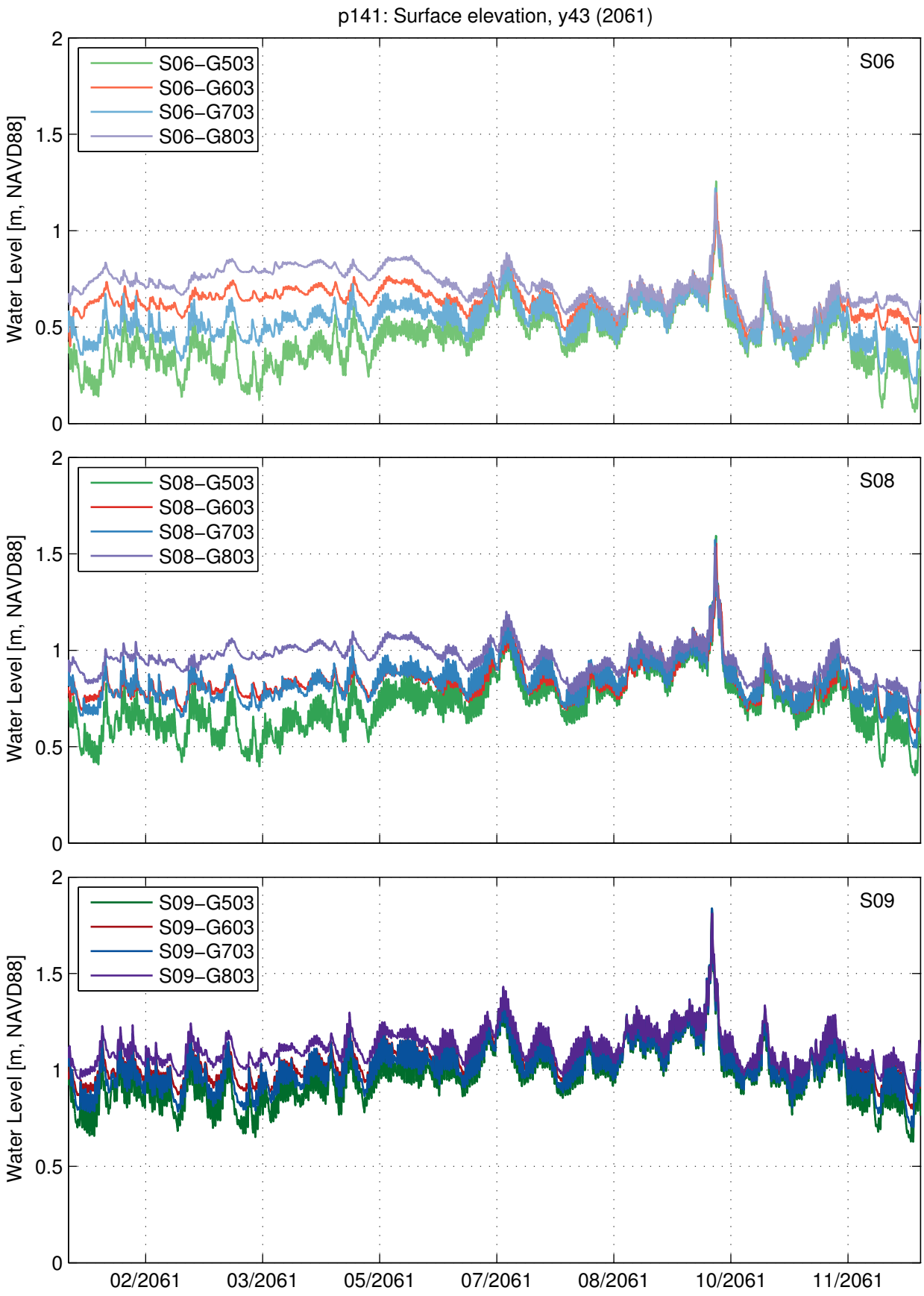

p185: Surface elevation, y43 (2061)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Water Level [m, NAVD88]
2
1.5
1
0.5
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

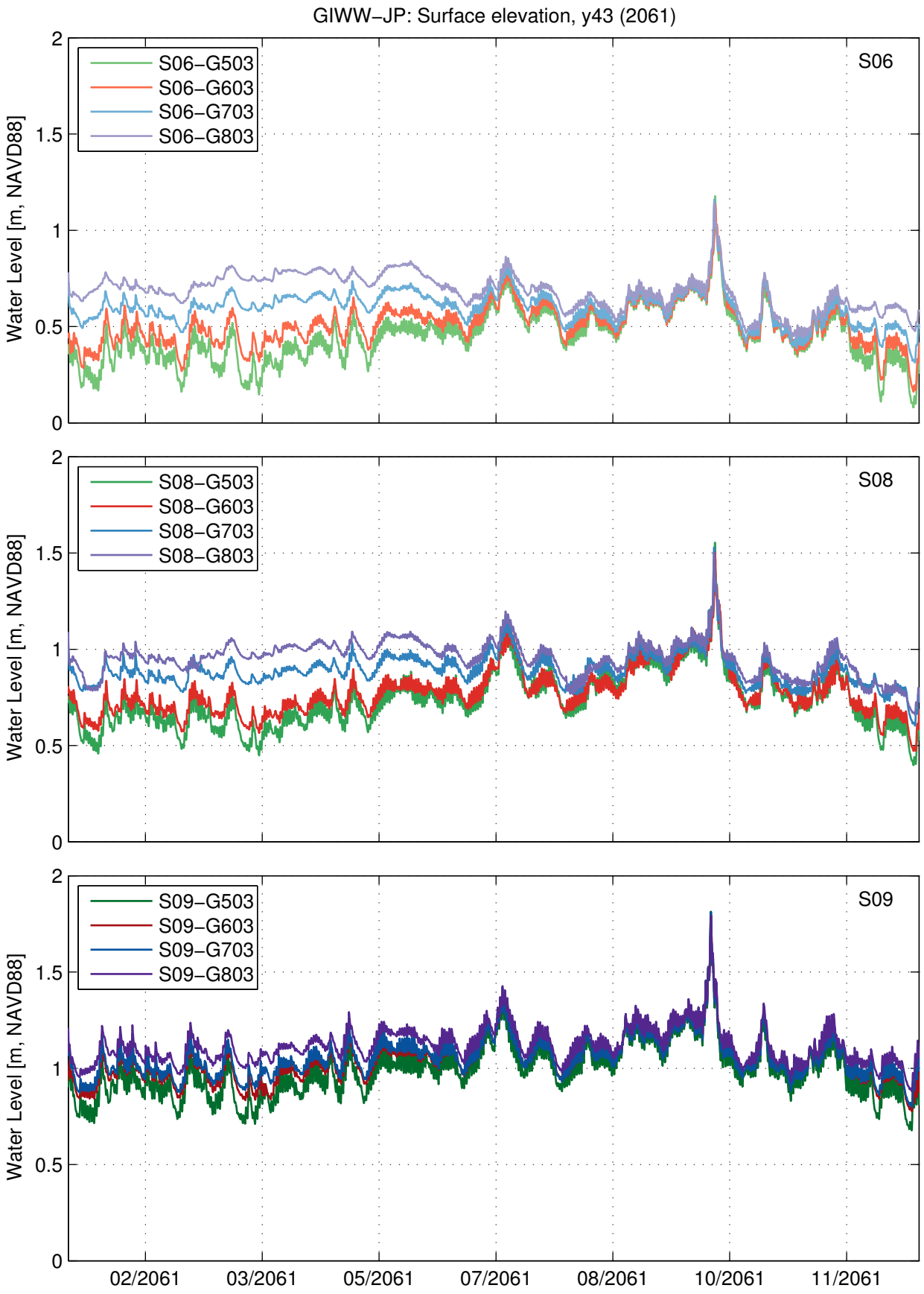

p192: Surface elevation, y43 (2061)
Water Level [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
2
1.5
1
0.5
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

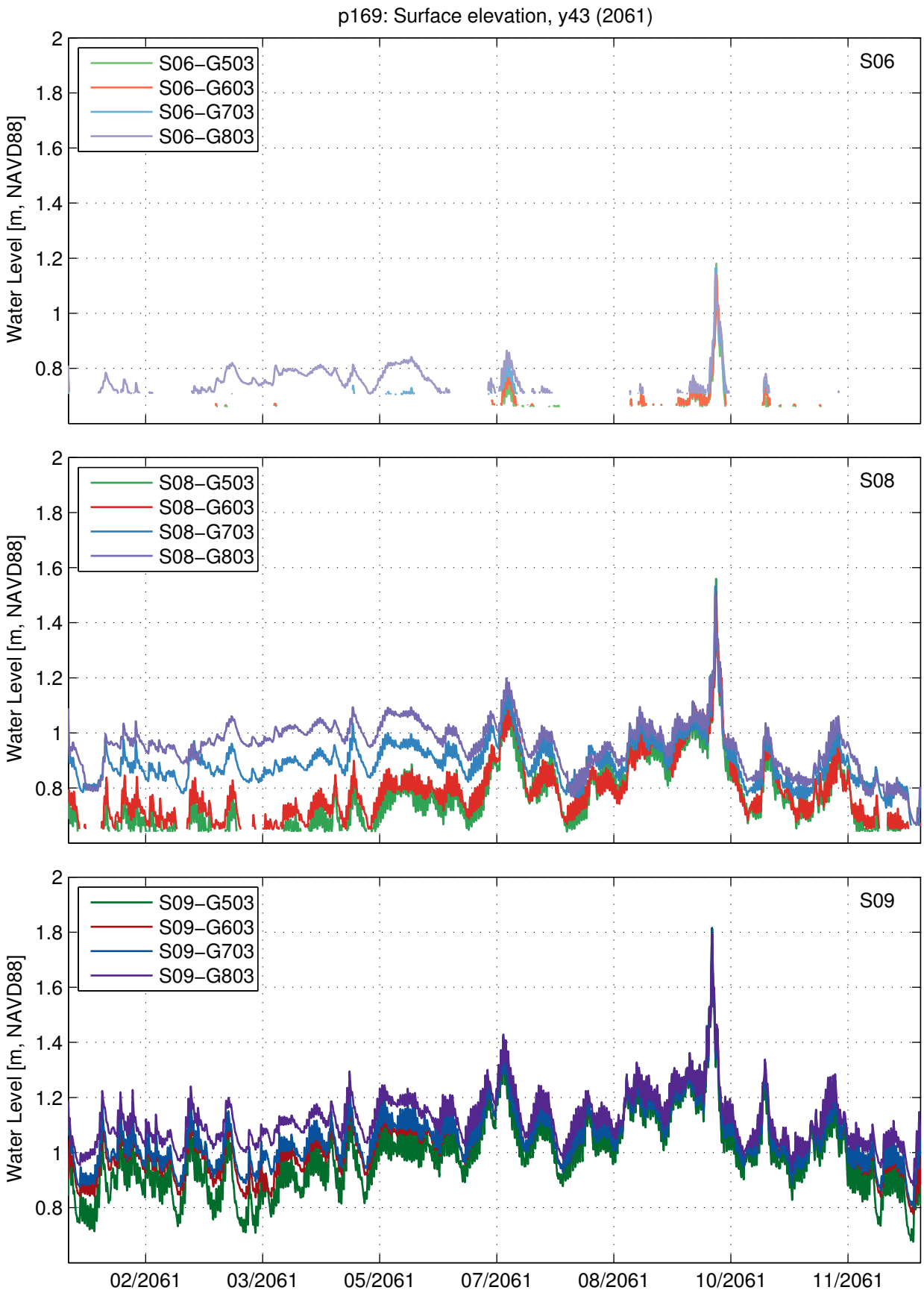

p194: Surface elevation, y43 (2061)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Water Level [m, NAVD88]
0
0.5
1
1.5
2
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

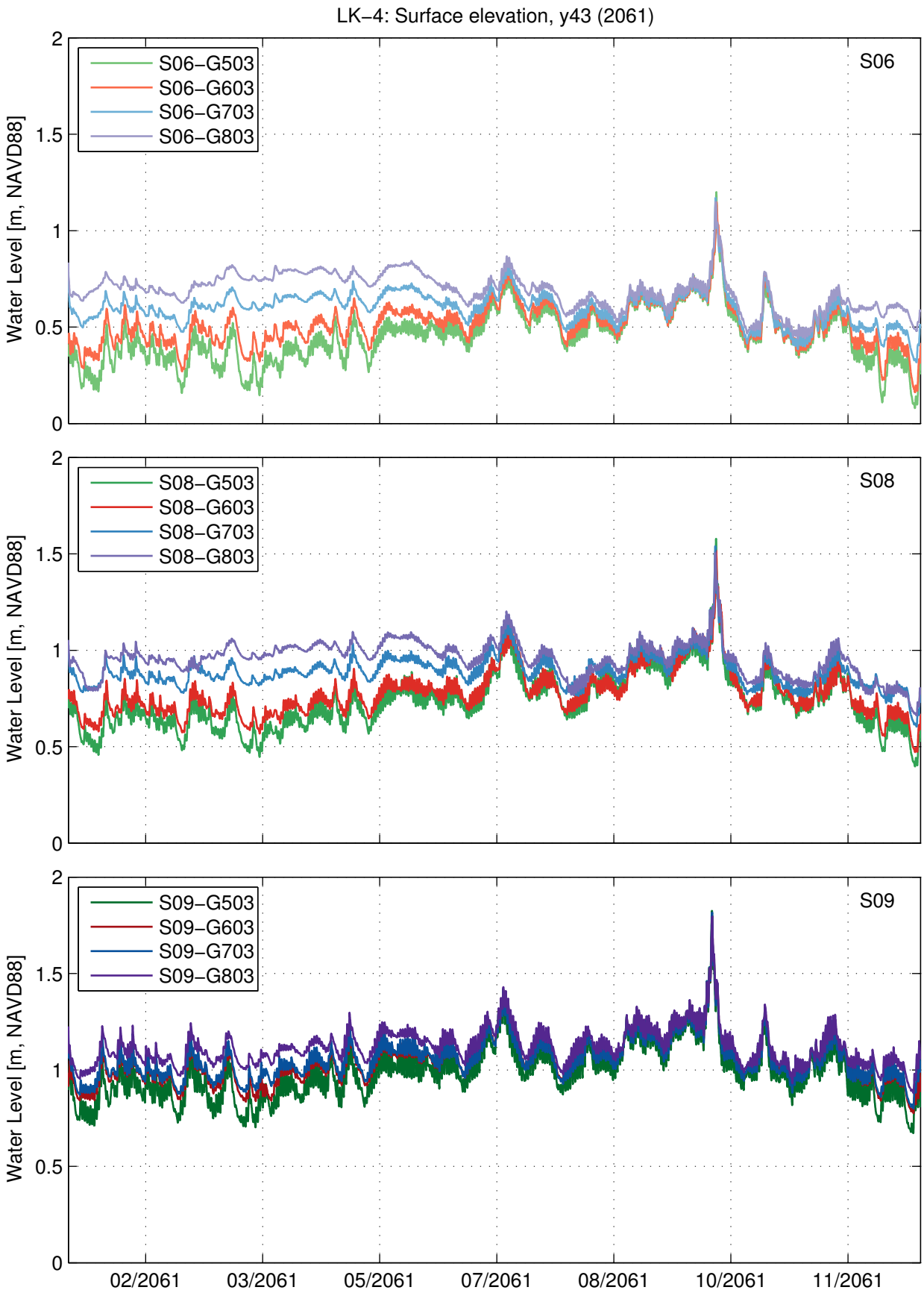

p159: Surface elevation, y43 (2061)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

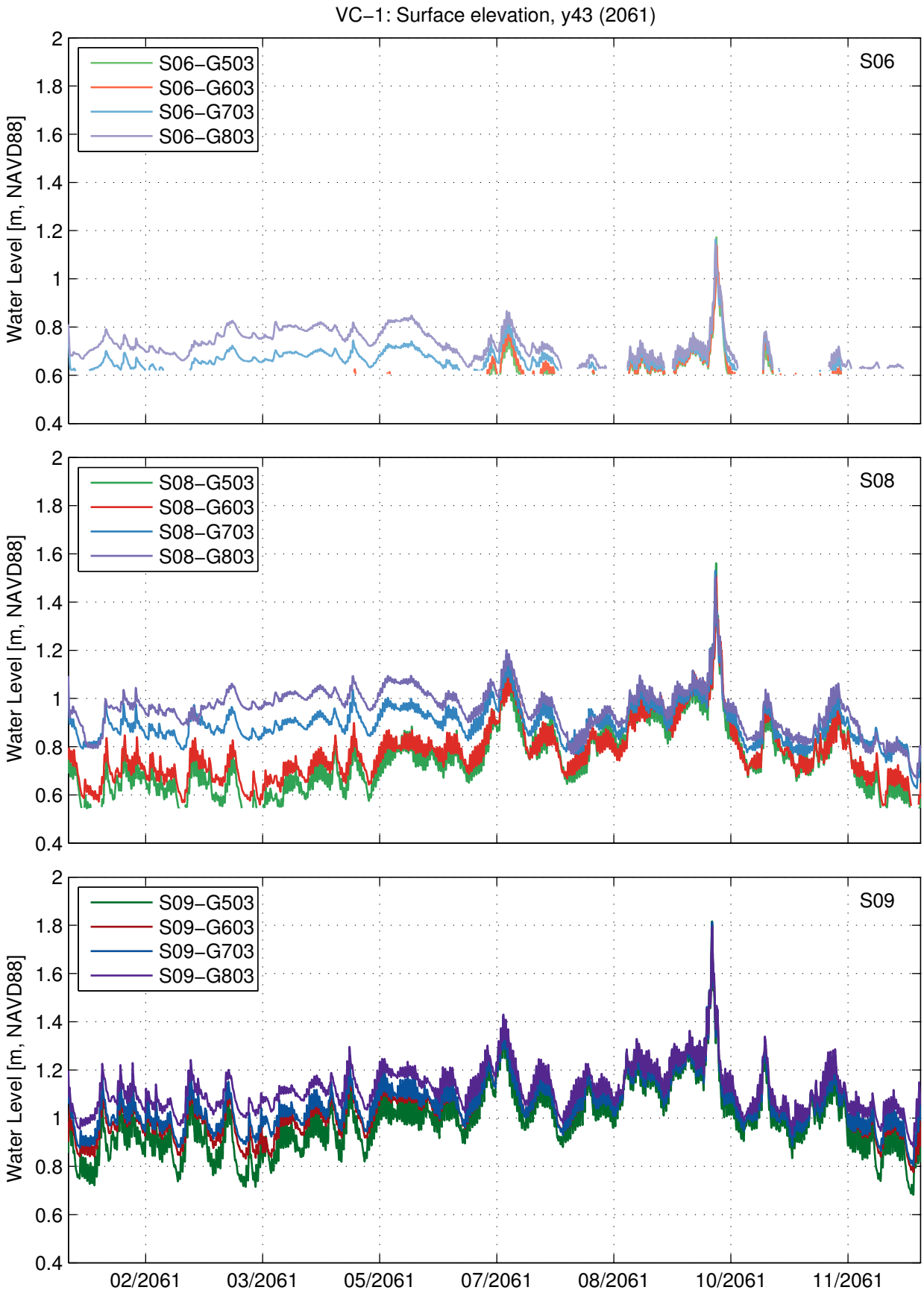

p093: Surface elevation, y43 (2061)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Water Level [m, NAVD88]
0
0.5
1
1.5
2
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

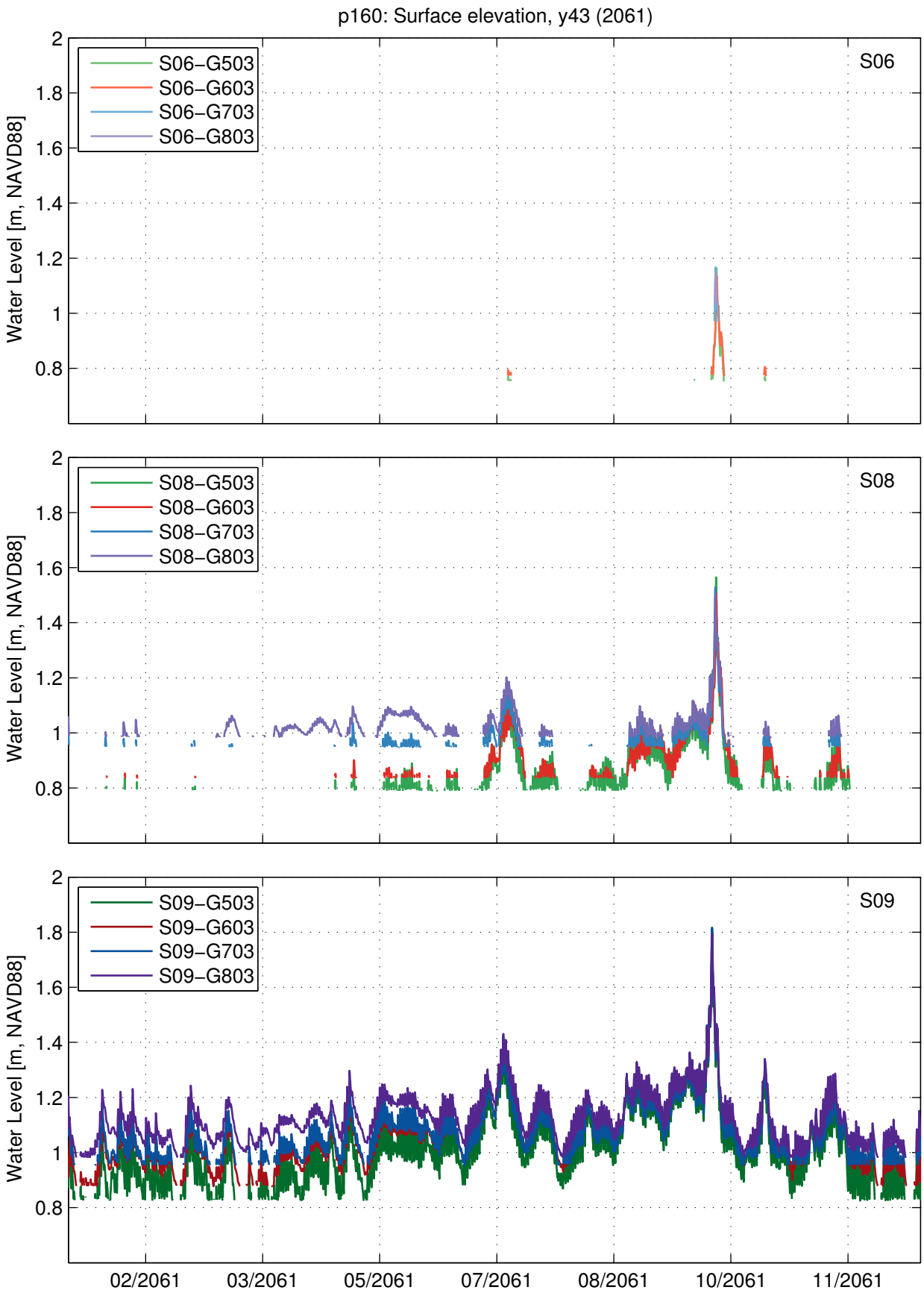

p141: Surface elevation, y43 (2061)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Water Level [m, NAVD88]
0
0.5
1
1.5
2
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

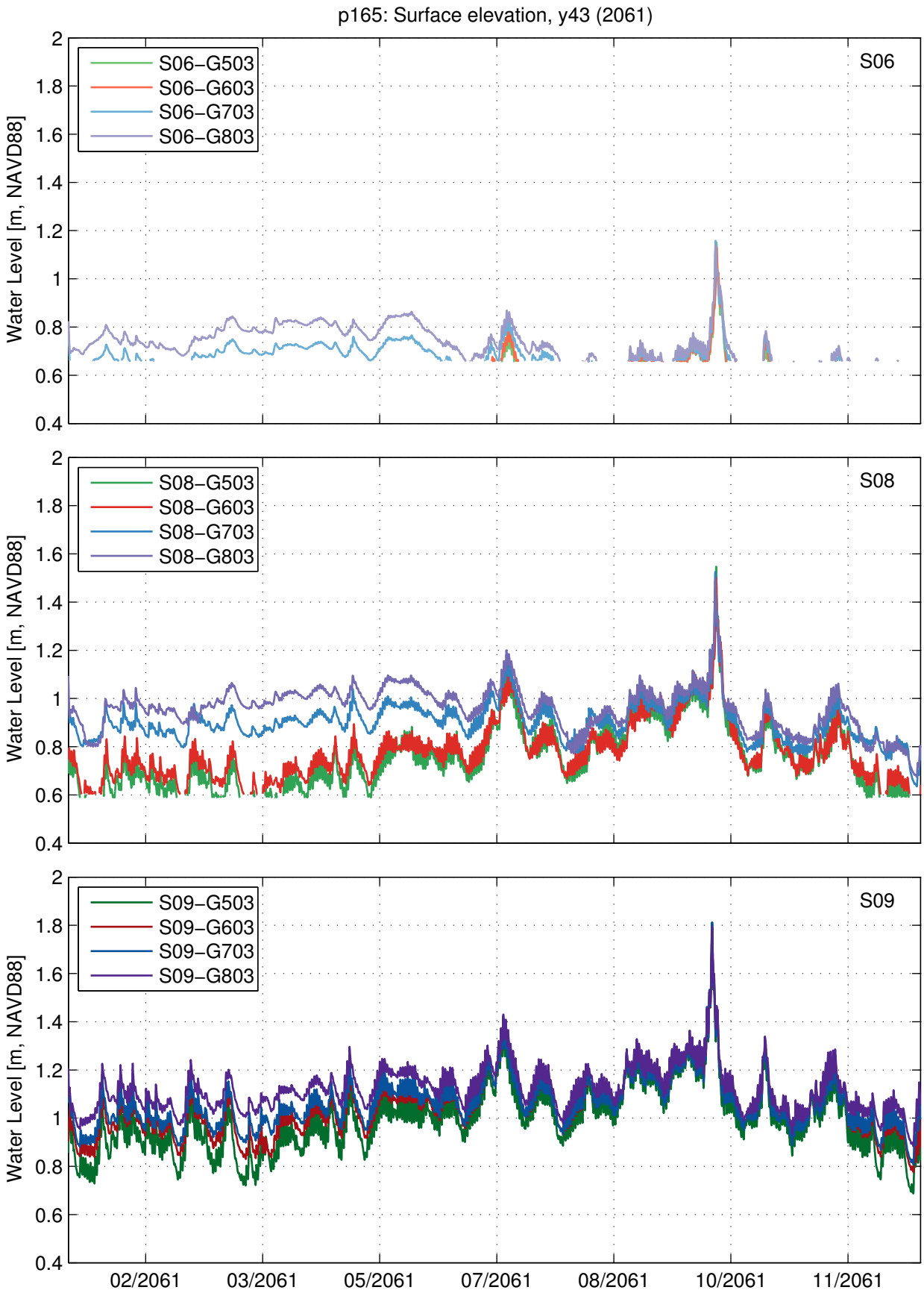

GIWW–JP: Surface elevation, y43 (2061)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Water Level [m, NAVD88]
0
0.5
1
1.5
2
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

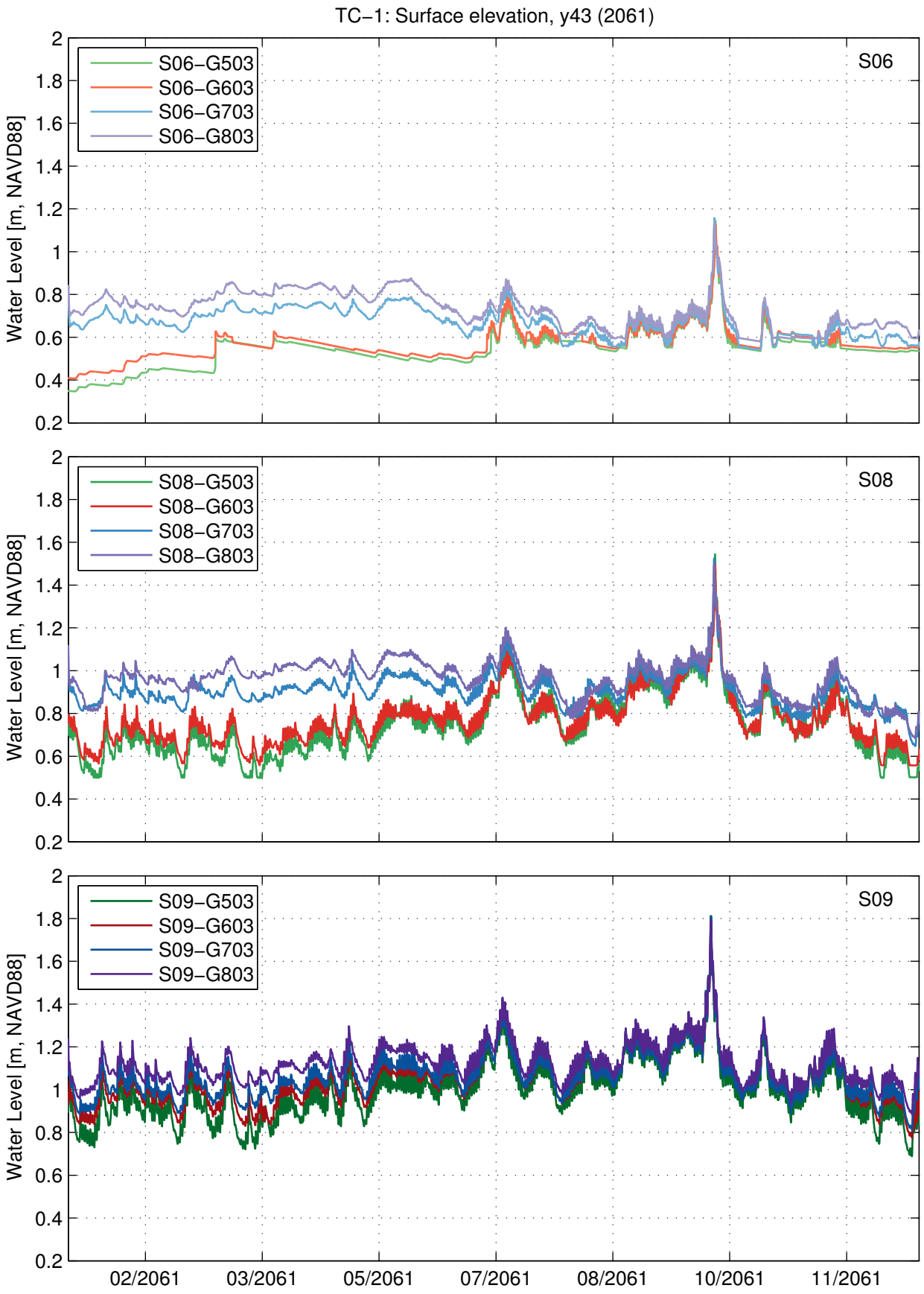

p169: Surface elevation, y43 (2061)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
2
1.8
1.6
1.4
1.2
1
0.8
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

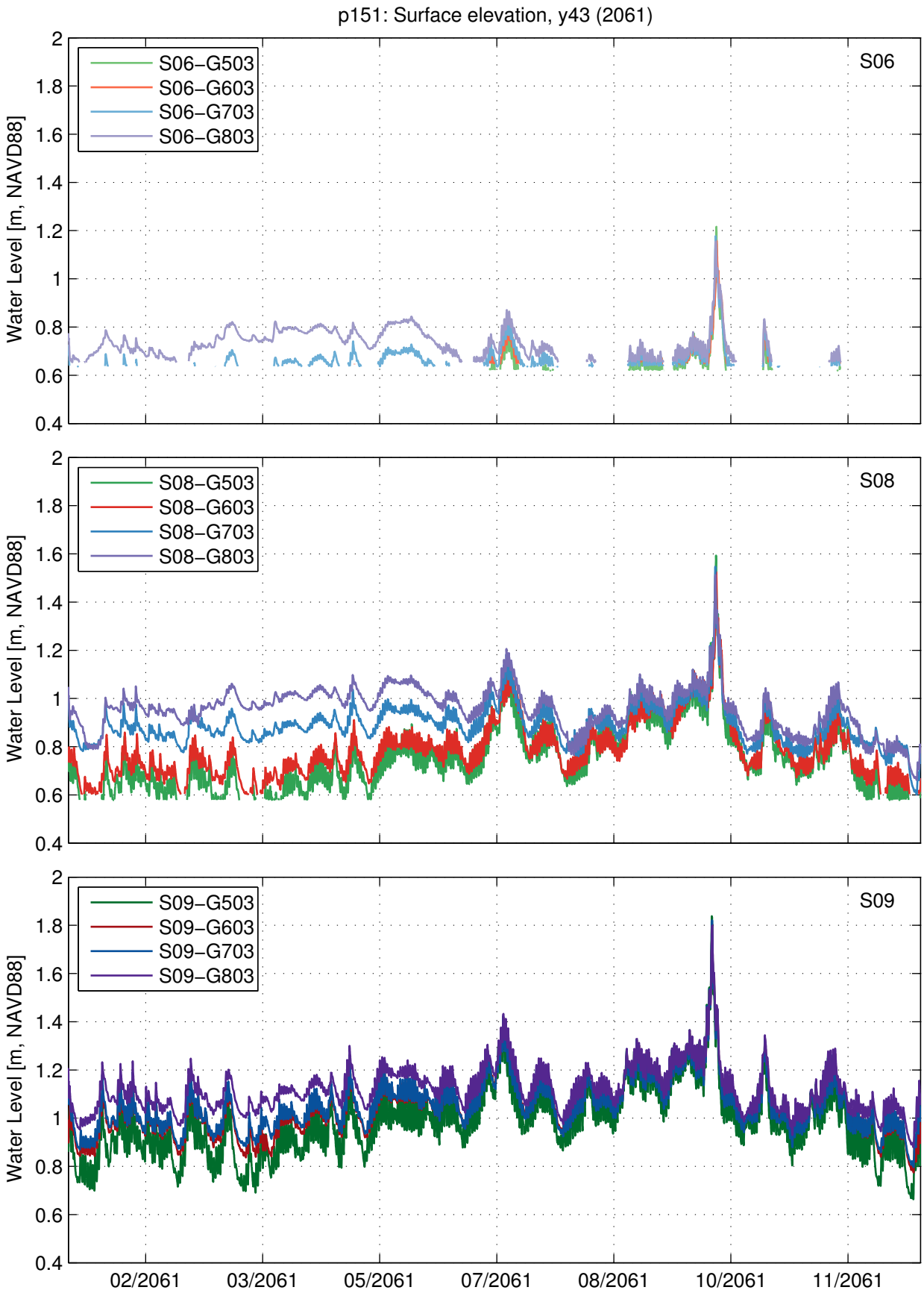

LK−4: Surface elevation, y43 (2061)
S06−G503
S06−G603
S06−G703
S06−G803
S06
S08−G503
S08−G603
S08−G703
S08−G803
S08
S09−G503
S09−G603
S09−G703
S09−G803
S09
Water Level [m, NAVD88]
0
0.5
1
1.5
2
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

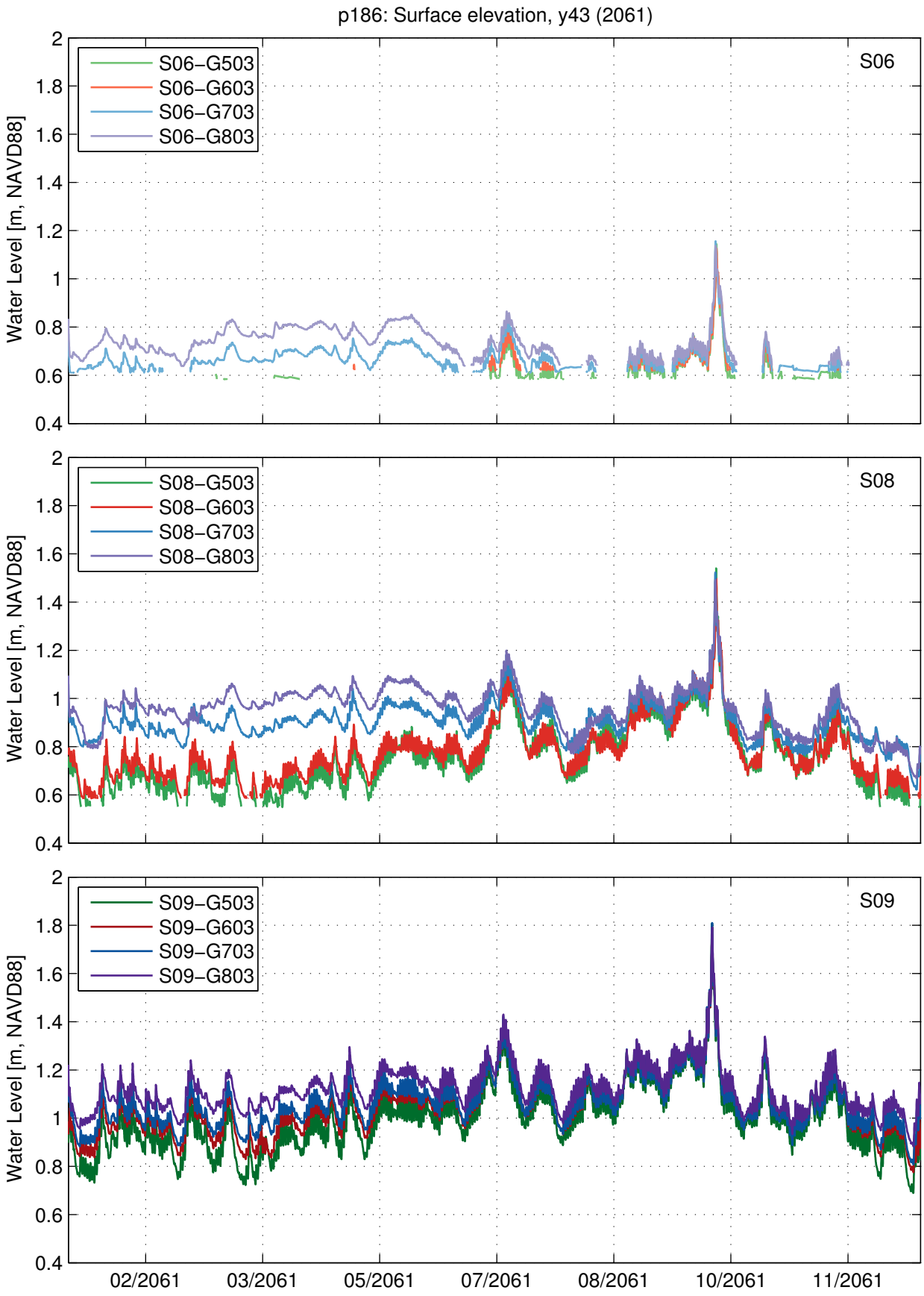

VC−1: Surface elevation, y43 (2061)
S06−G503
S06−G603
S06−G703
S06−G803
S06
S08−G503
S08−G603
S08−G703
S08−G803
S08
S09−G503
S09−G603
S09−G703
S09−G803
S09
Water Level [m, NAVD88]
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

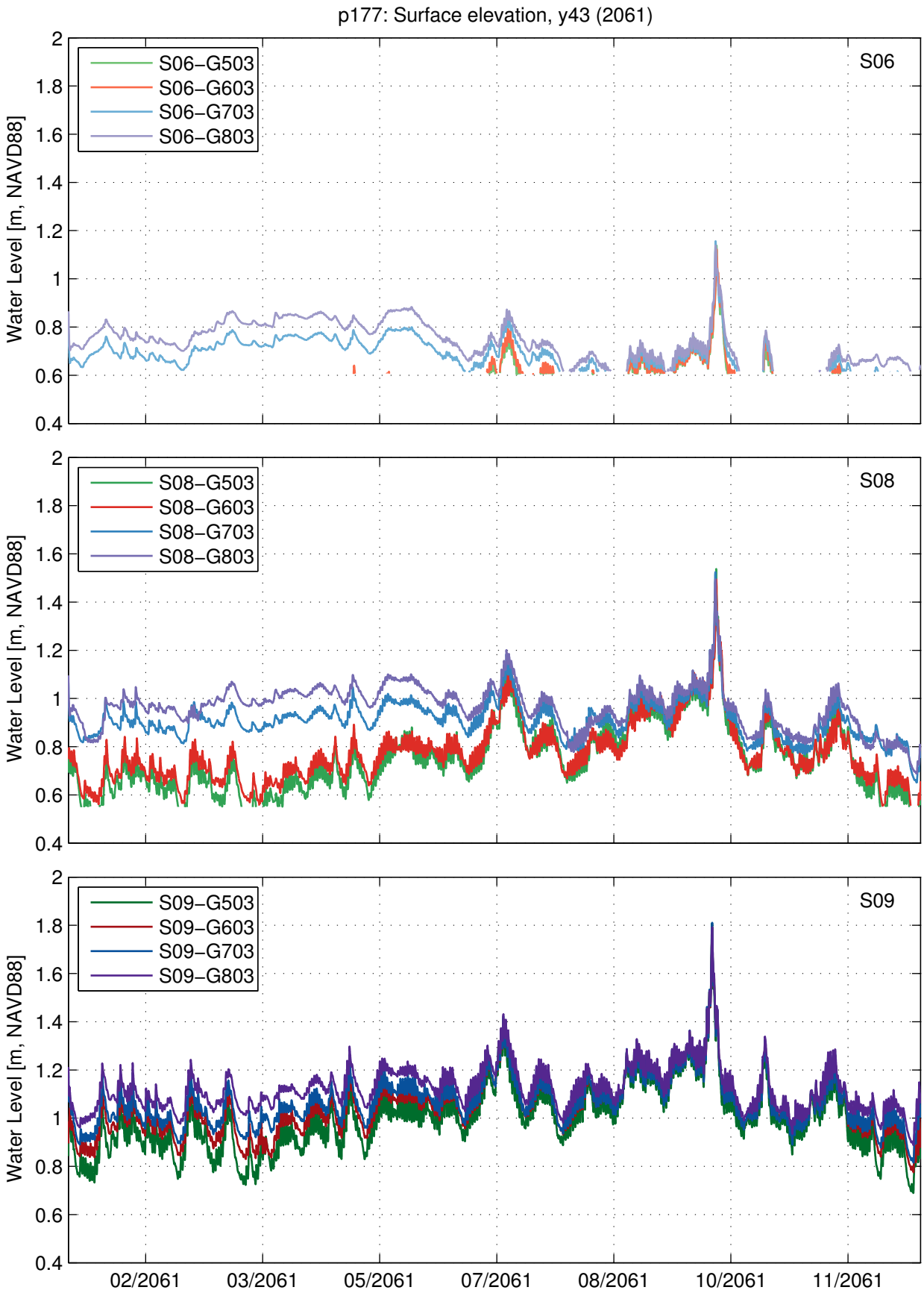

p160: Surface elevation, y43 (2061)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
2
1.8
1.6
1.4
1.2
1
0.8
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

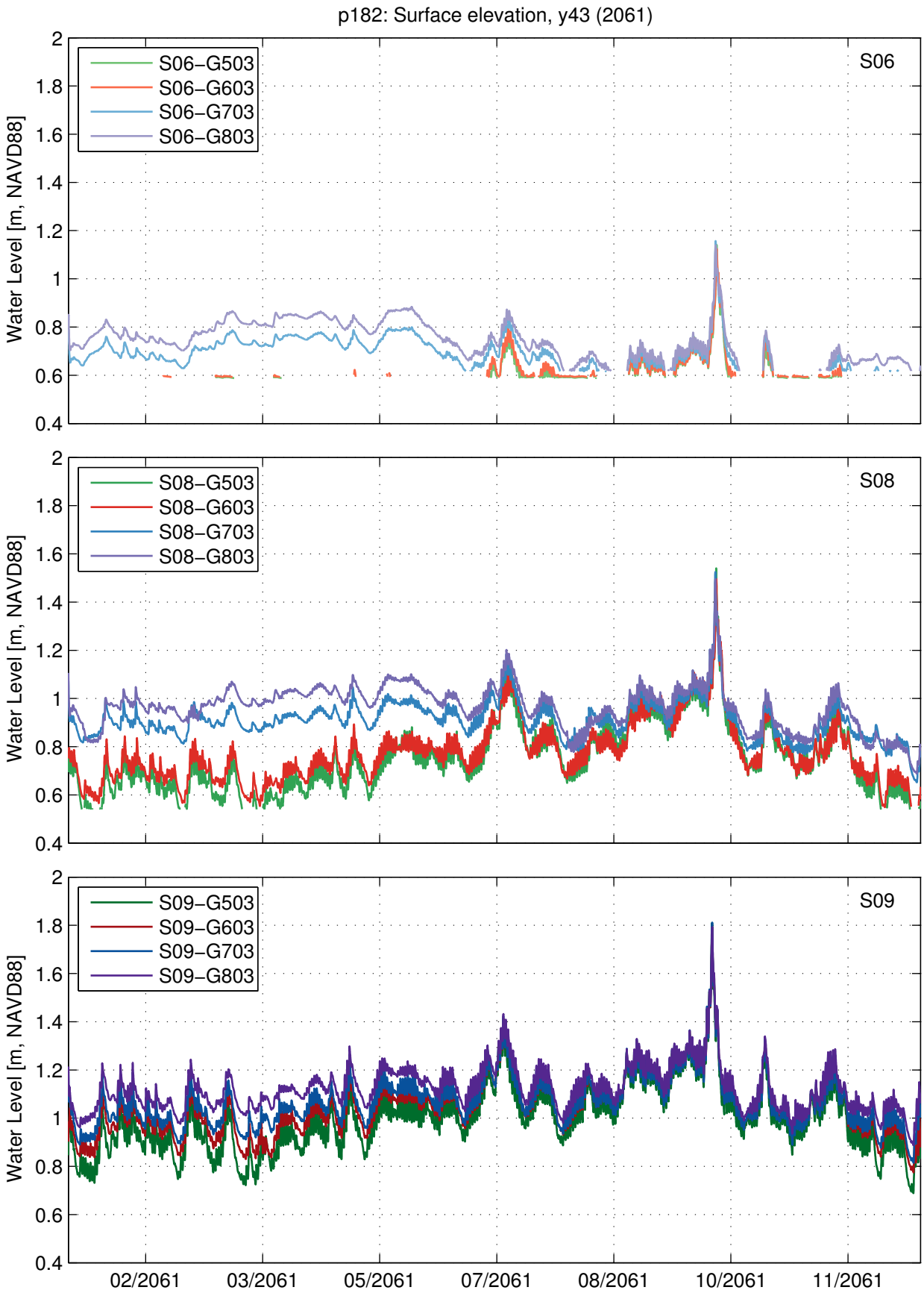

p165: Surface elevation, y43 (2061)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Water Level [m, NAVD88]
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

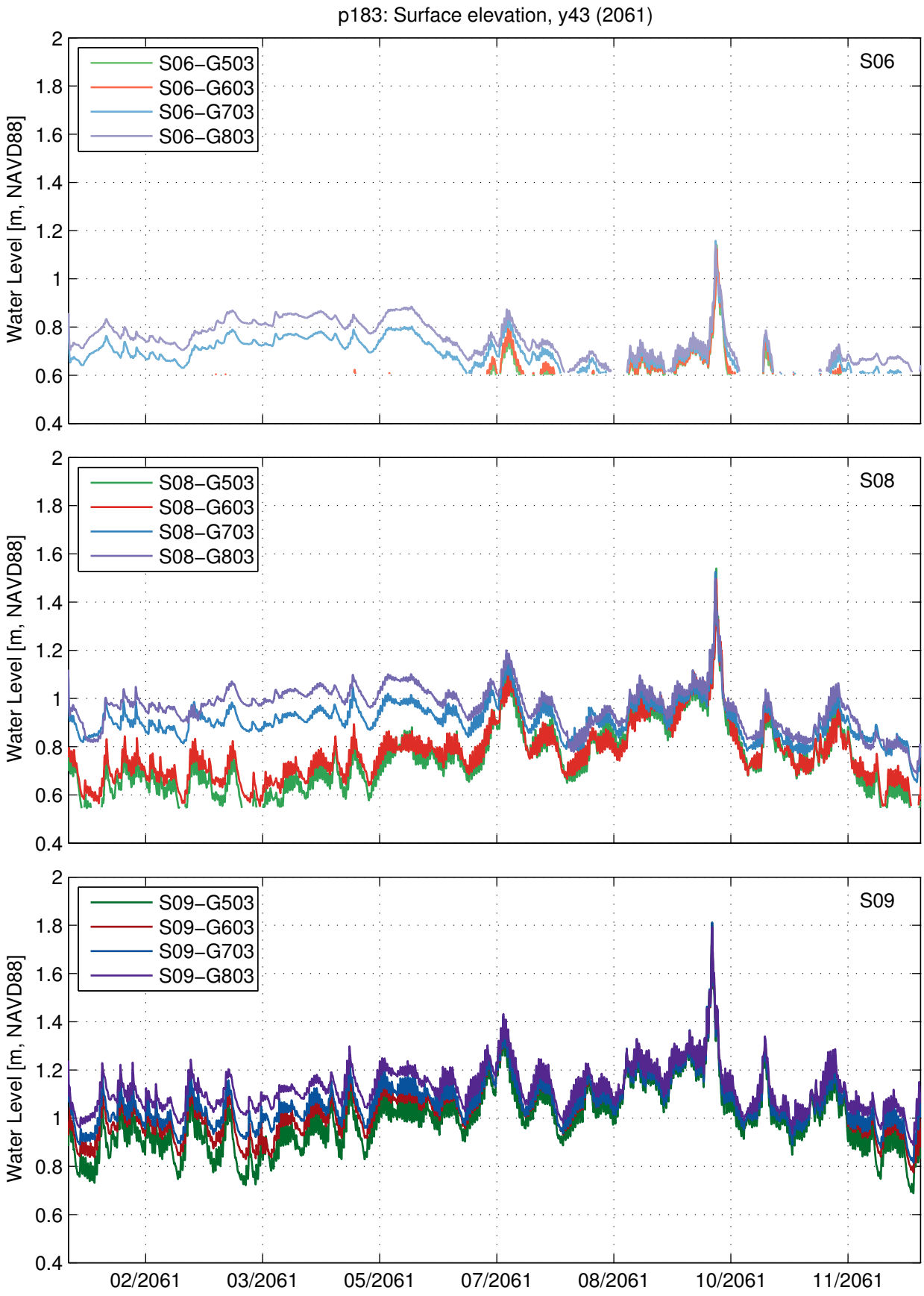

TC−1: Surface elevation, y43 (2061)
S06
S06−G503
S06−G603
S06−G703
S06−G803
S08
S08−G503
S08−G603
S08−G703
S08−G803
S09
S09−G503
S09−G603
S09−G703
S09−G803
Water Level [m, NAVD88]
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

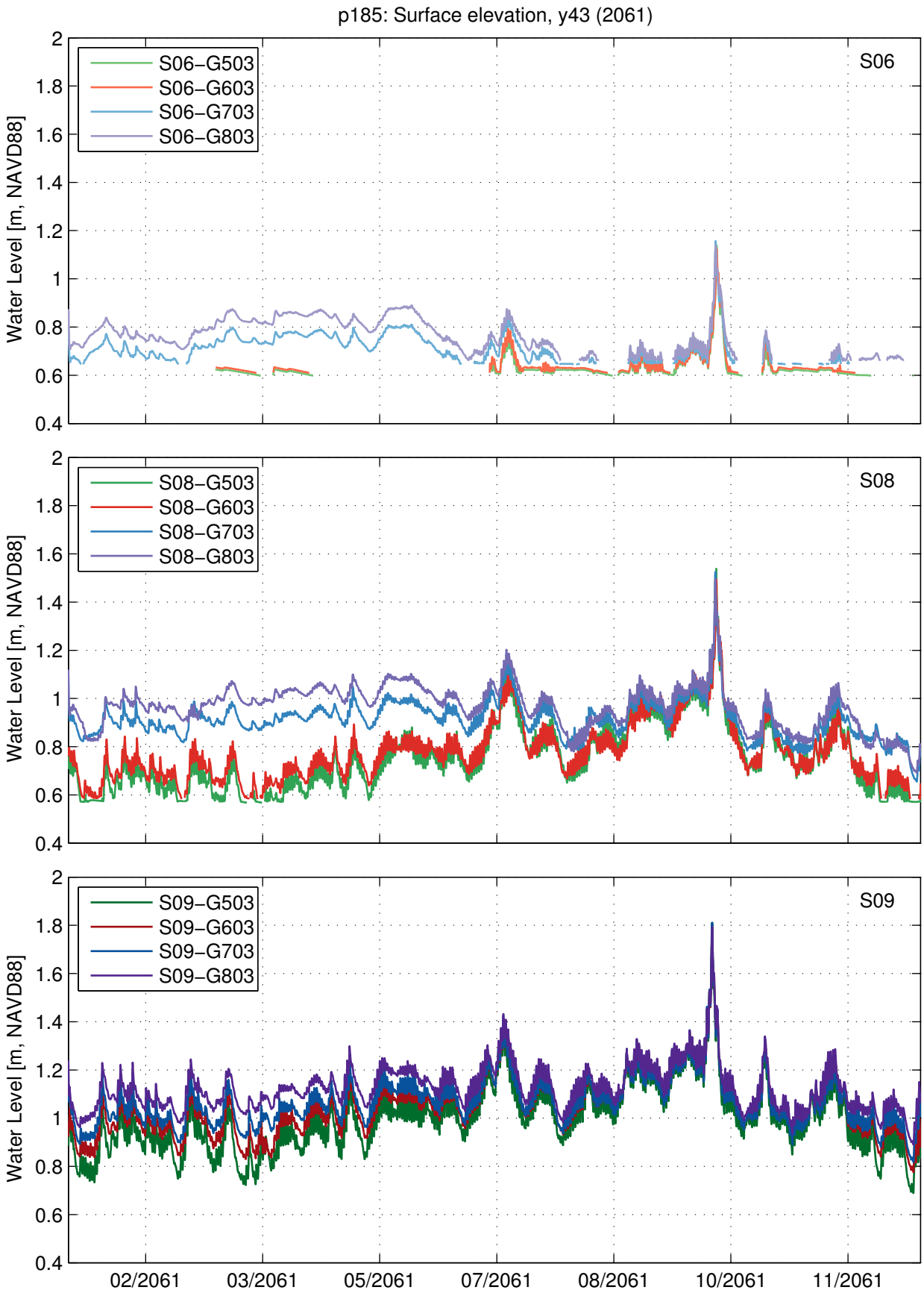

p151: Surface elevation, y43 (2061)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

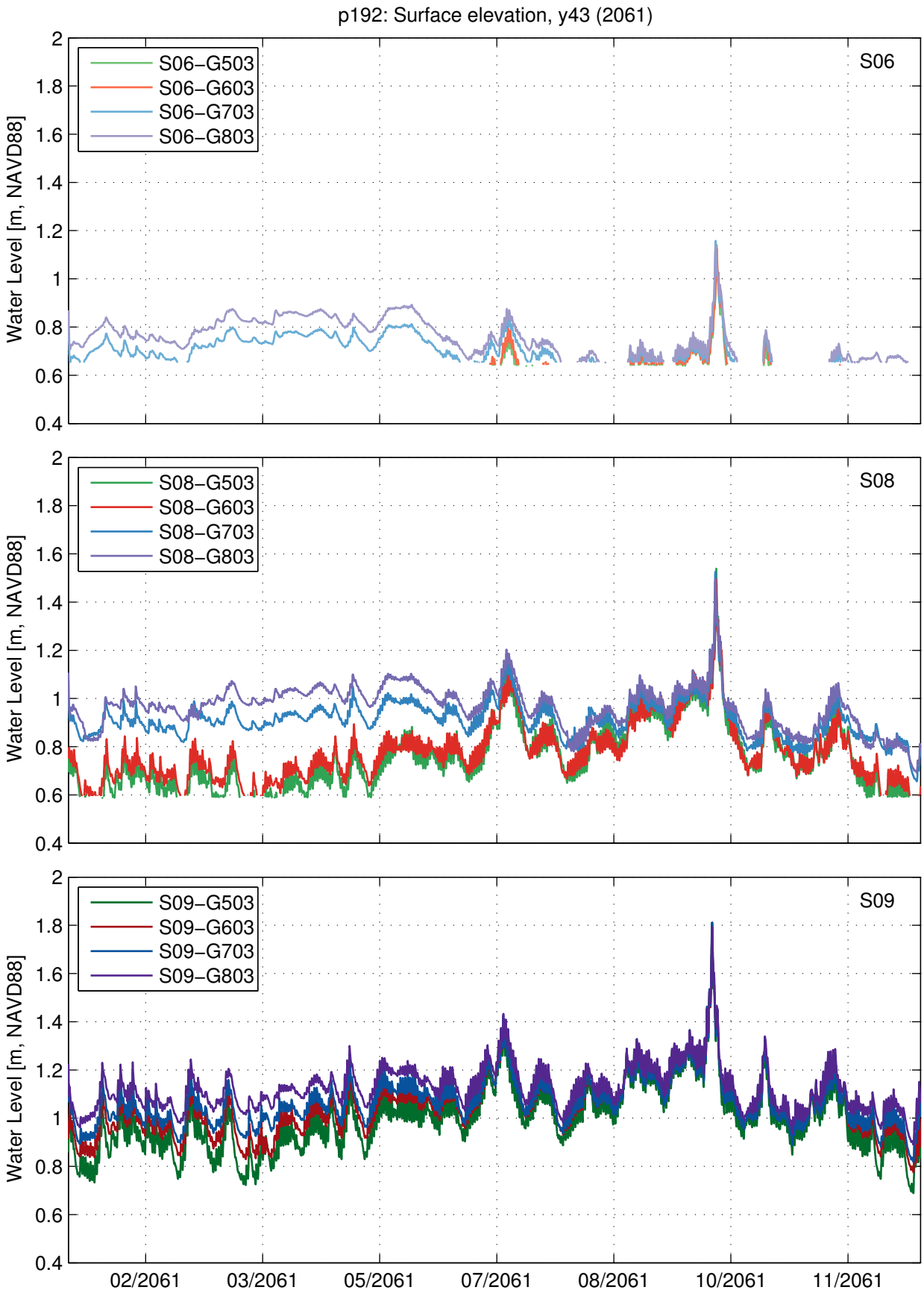

p186: Surface elevation, y43 (2061)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

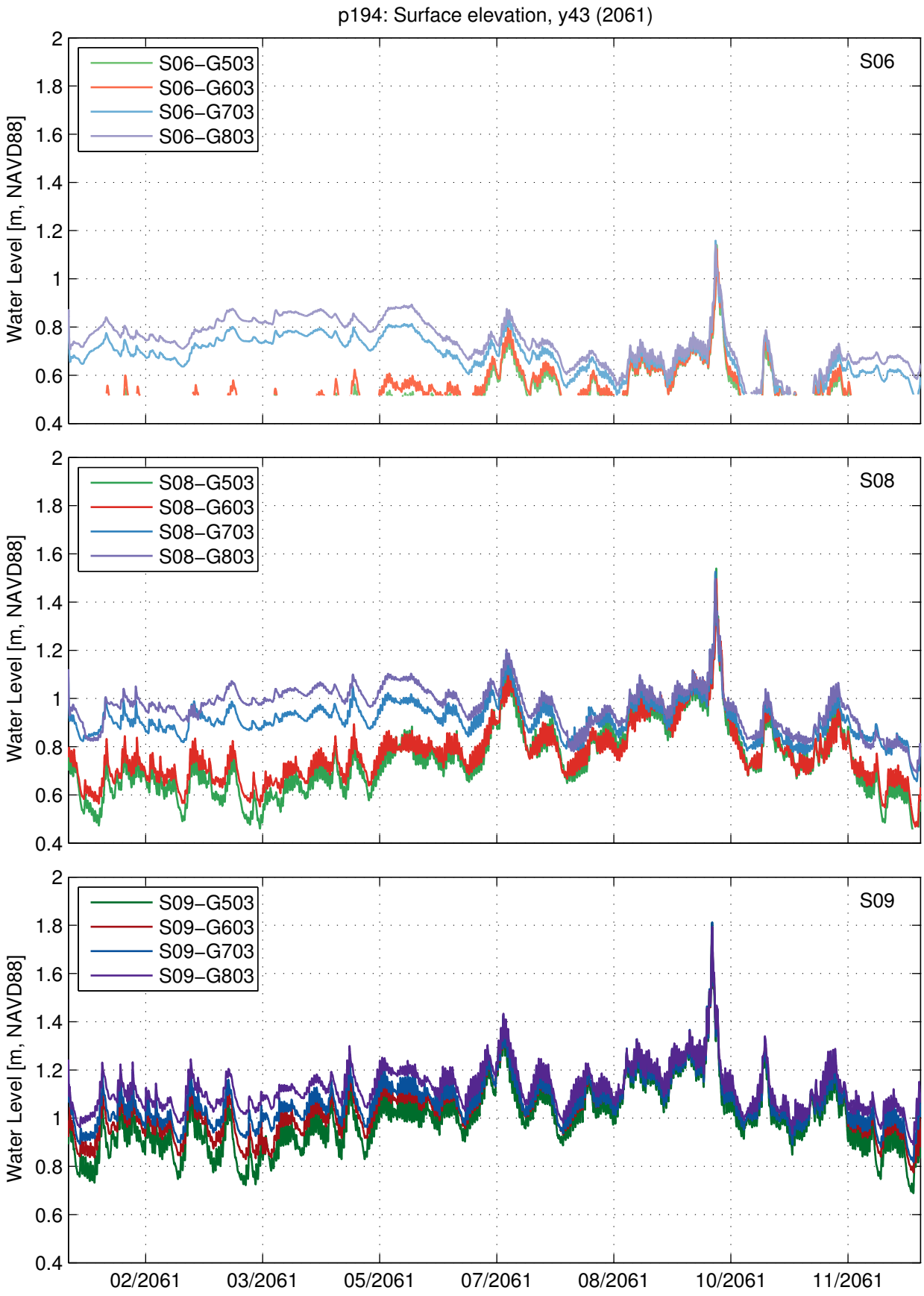

p177: Surface elevation, y43 (2061)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

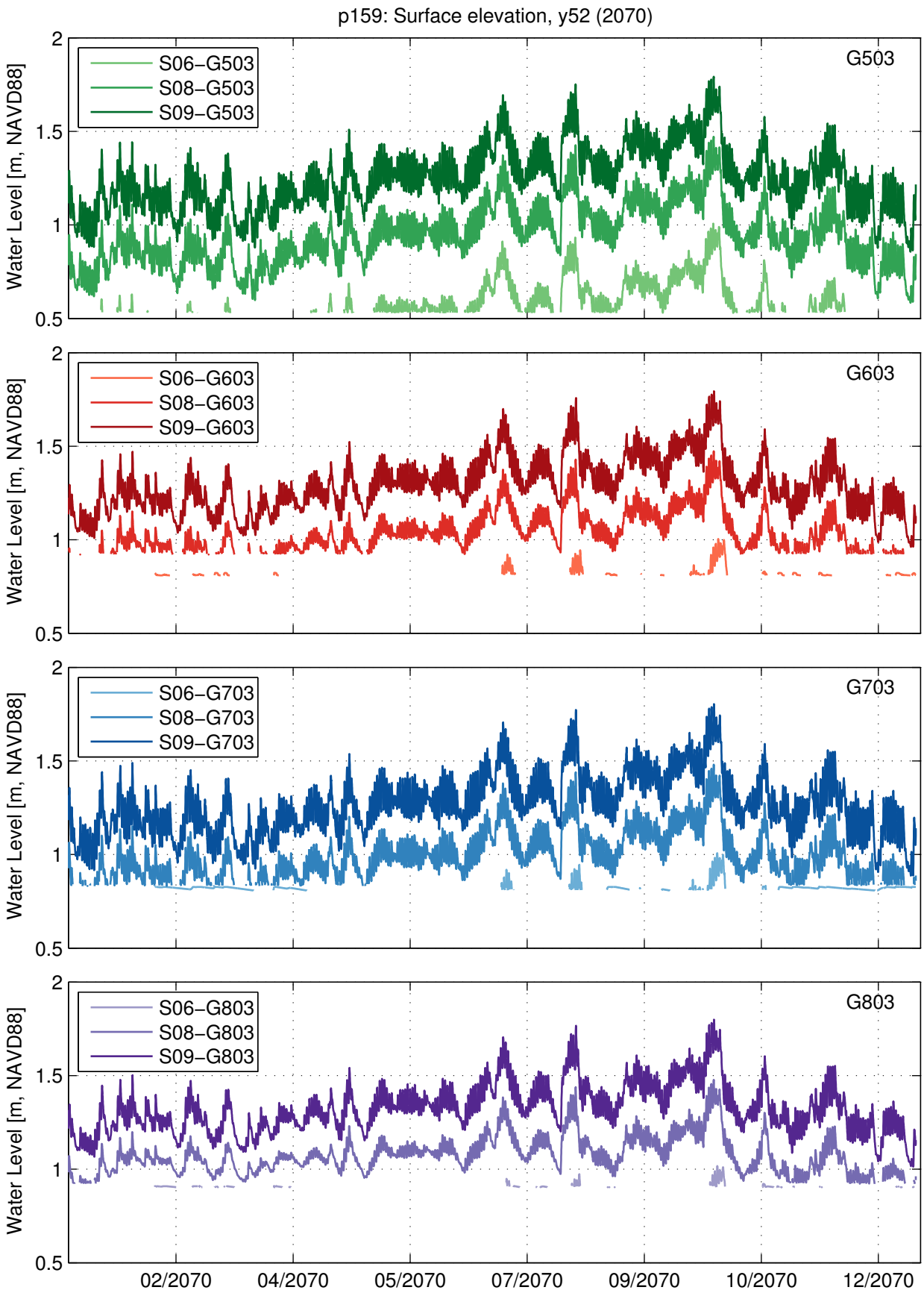

p182: Surface elevation, y43 (2061)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Water Level [m, NAVD88]
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

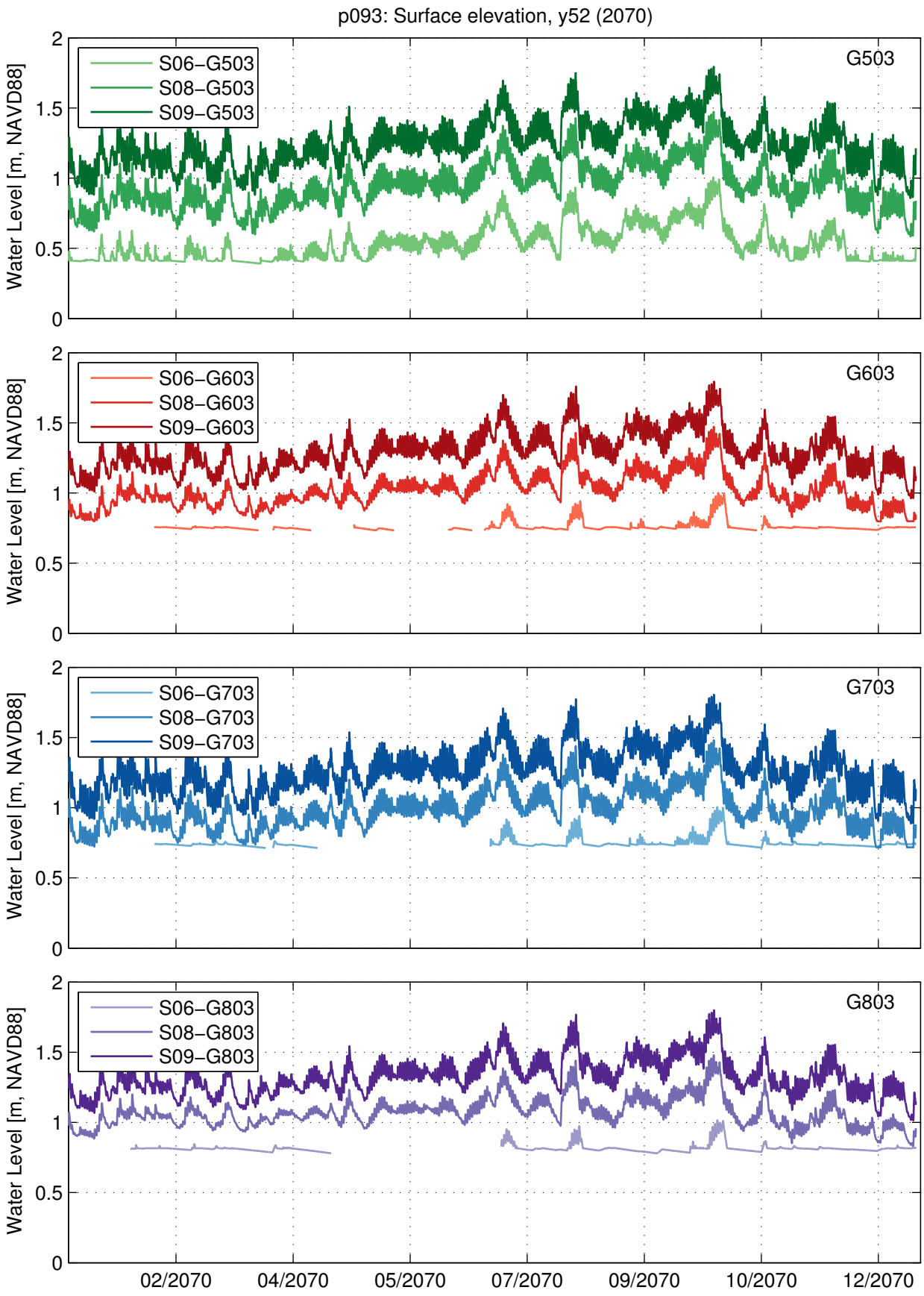

p183: Surface elevation, y43 (2061)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

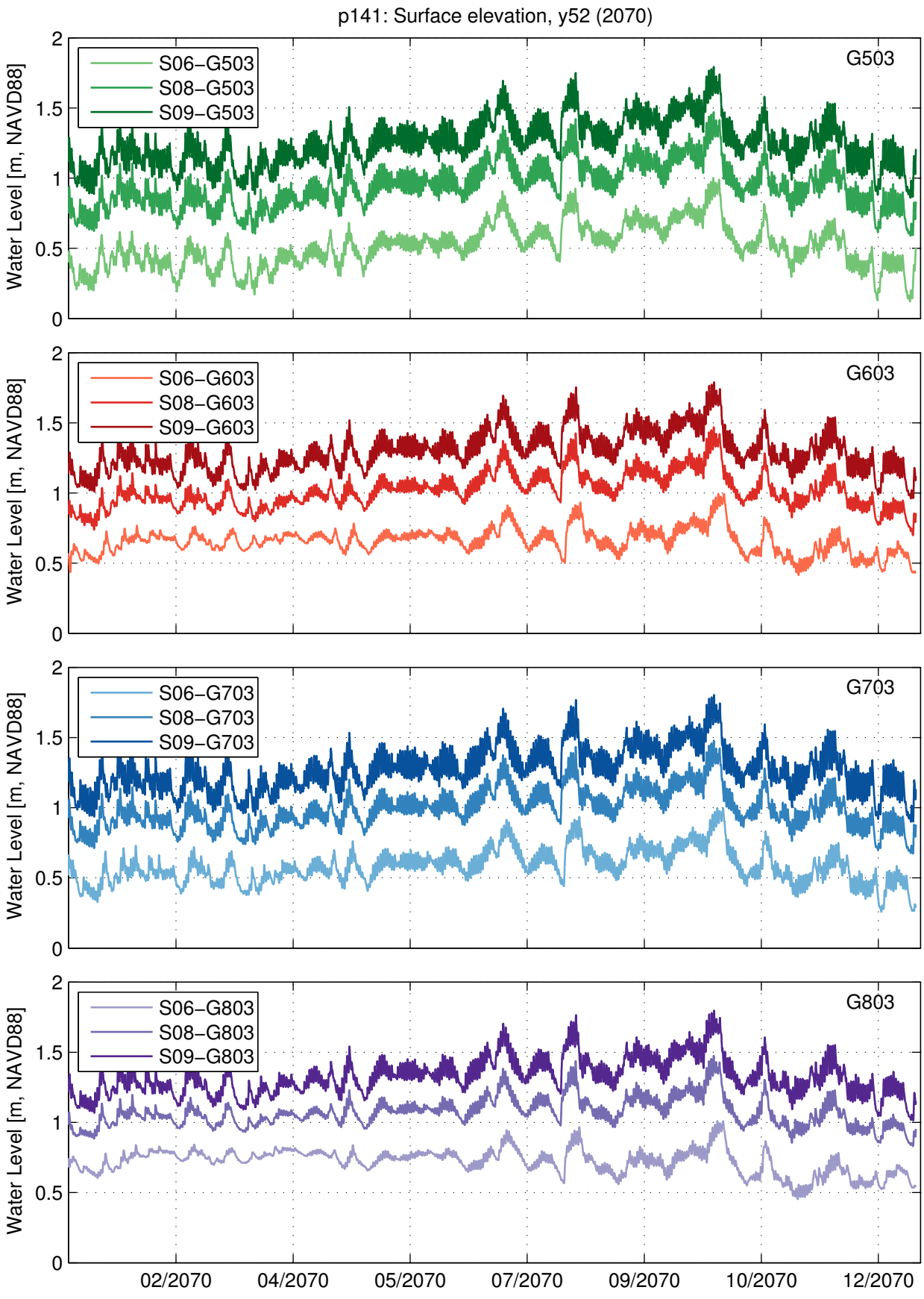

p185: Surface elevation, y43 (2061)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

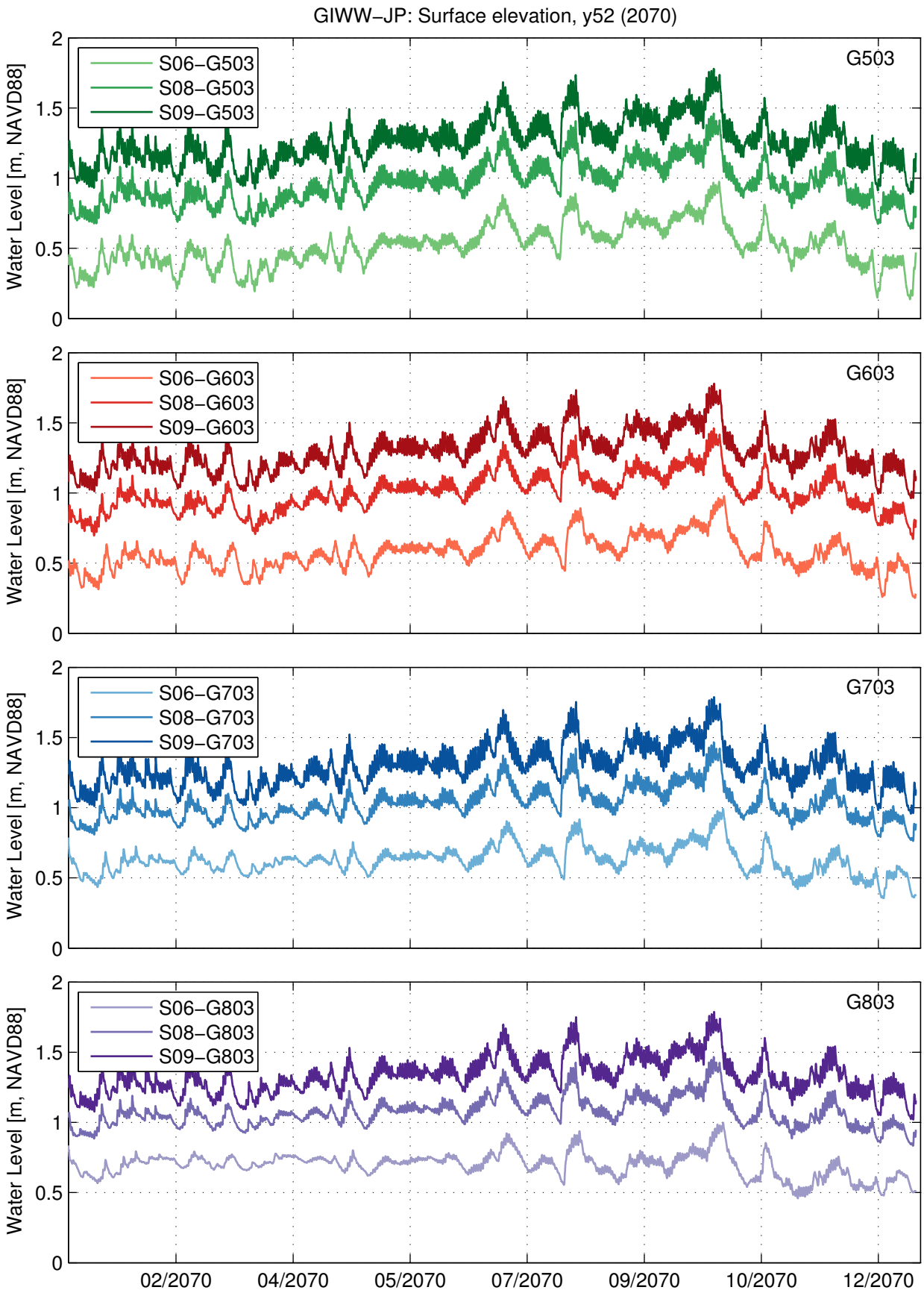

p192: Surface elevation, y43 (2061)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Water Level [m, NAVD88]
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

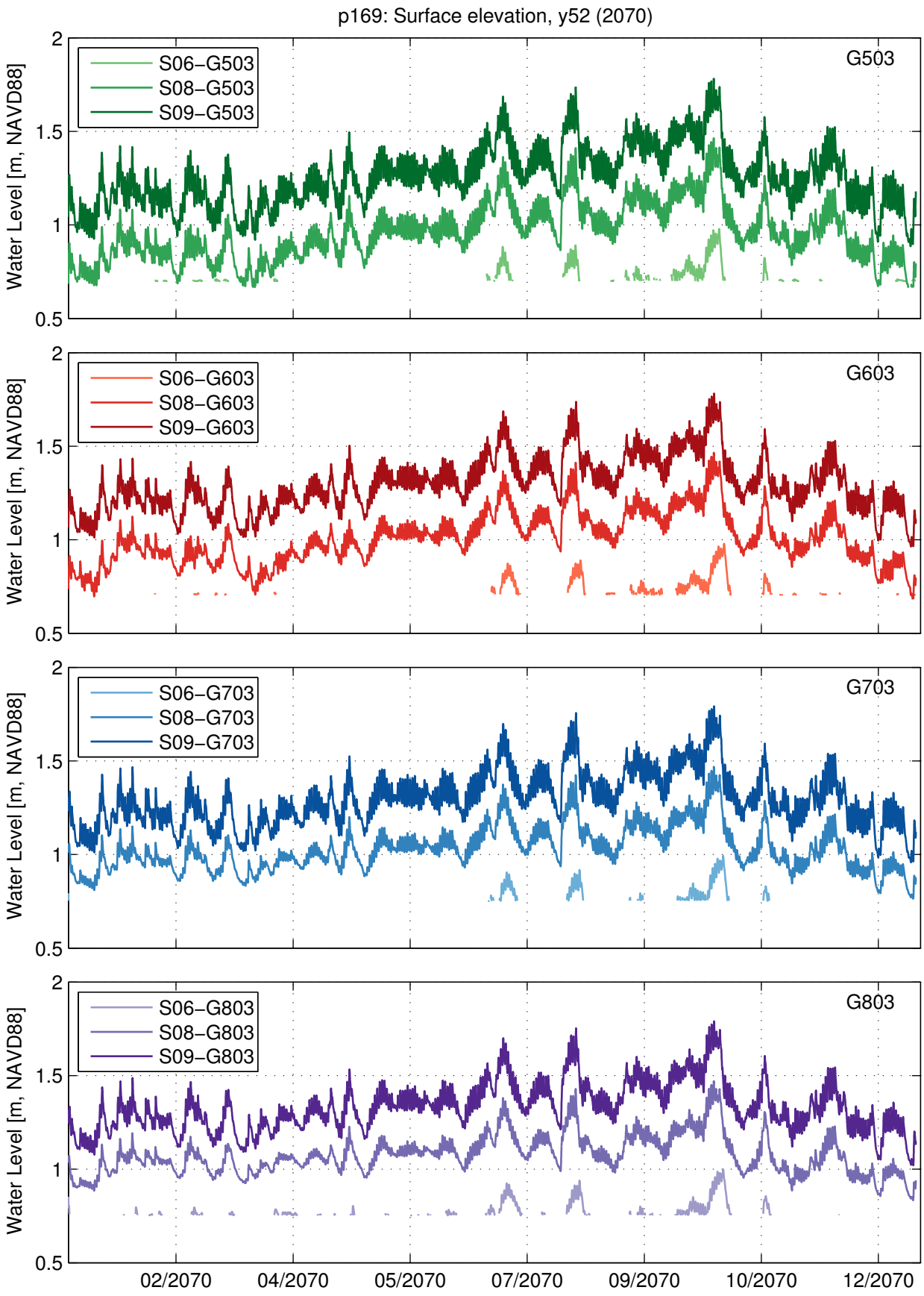

p194: Surface elevation, y43 (2061)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Water Level [m, NAVD88]
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

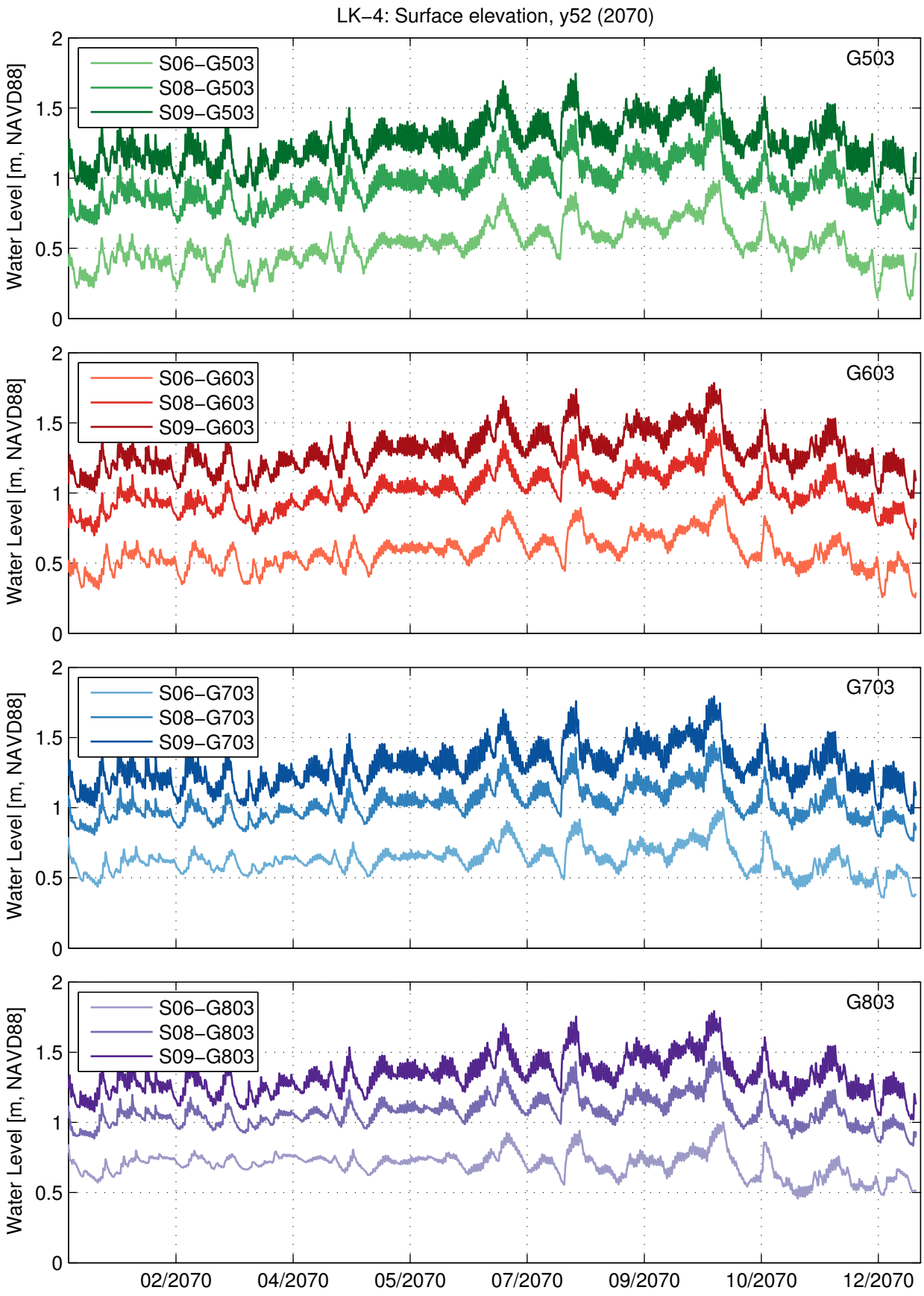

p159: Surface elevation, y52 (2070)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Water Level [m, NAVD88]
2
1.5
1
0.5
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

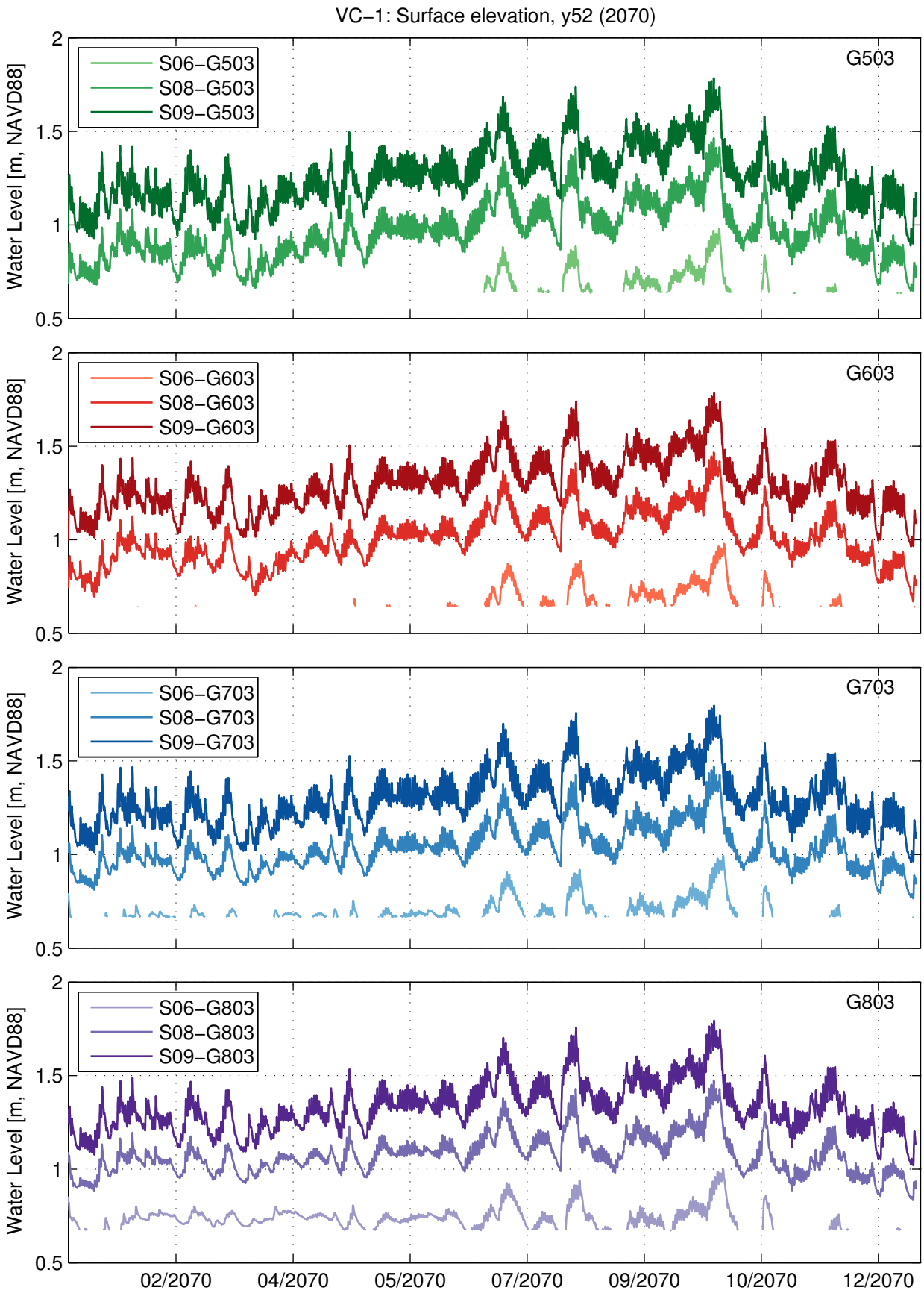

p093: Surface elevation, y52 (2070)
Water Level [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
0
0.5
1
1.5
2
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

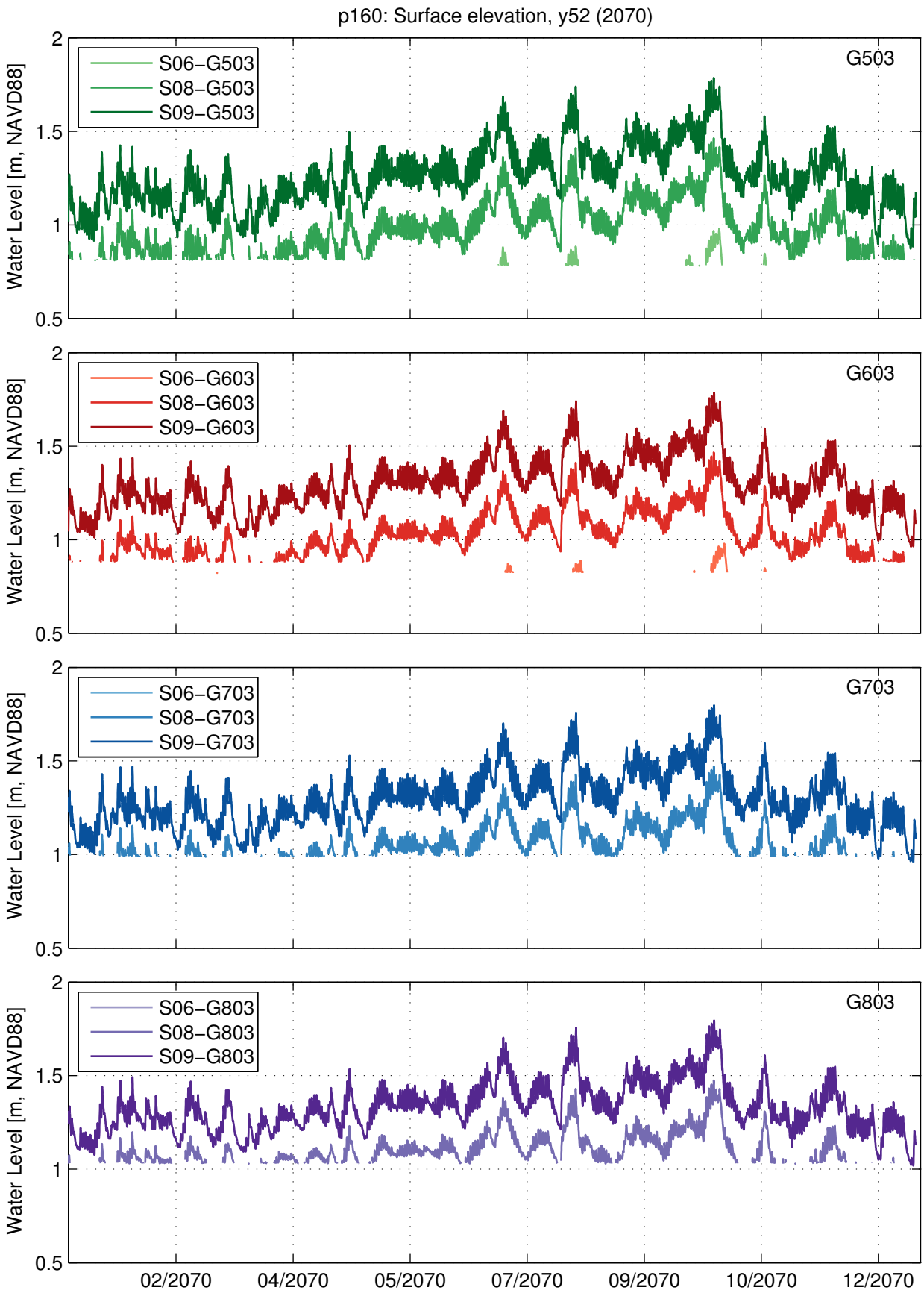

p141: Surface elevation, y52 (2070)
Water Level [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
0
0.5
1
1.5
2
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

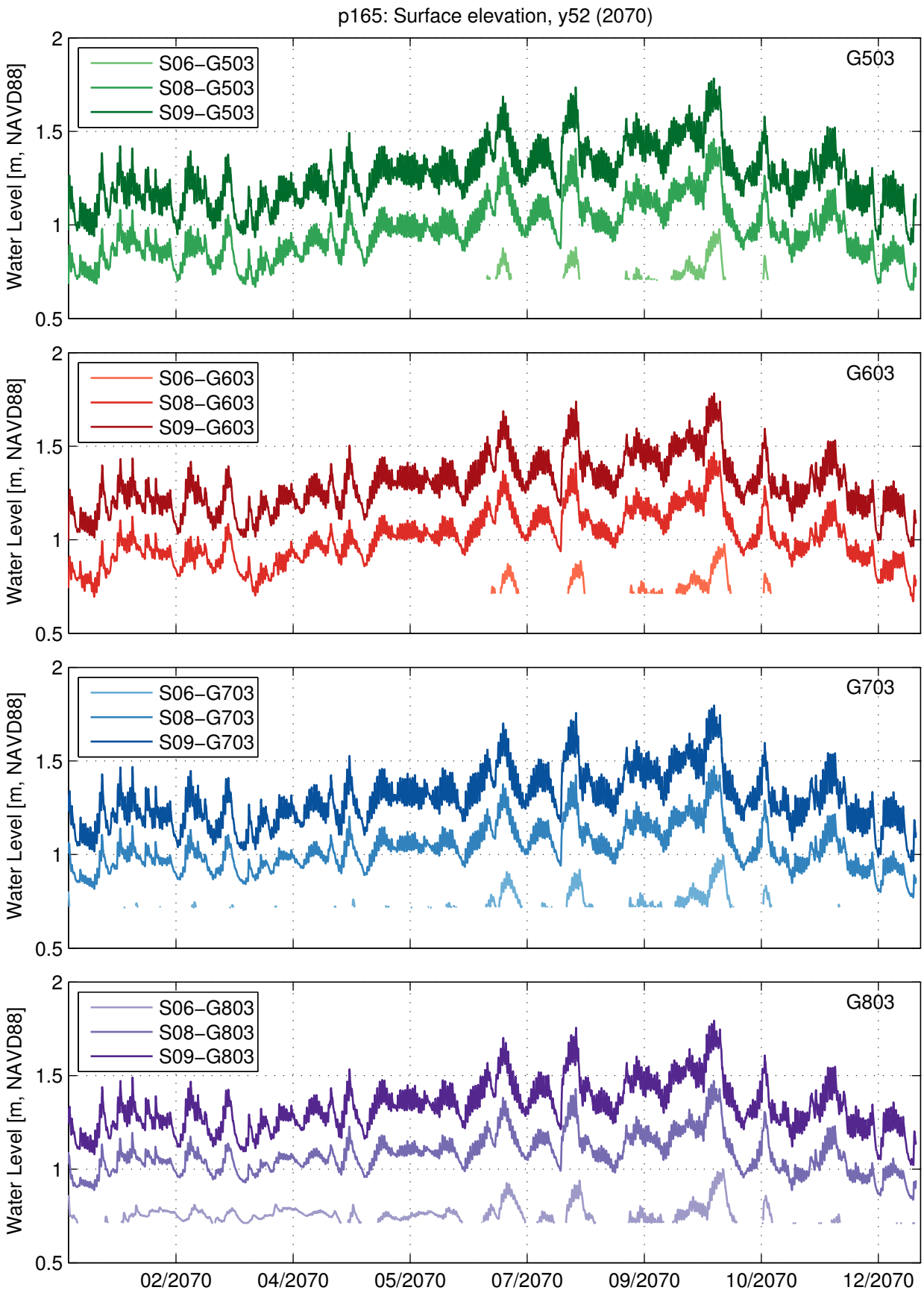

GIWW–JP: Surface elevation, y52 (2070)
Water Level [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
0
0.5
1
1.5
2
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

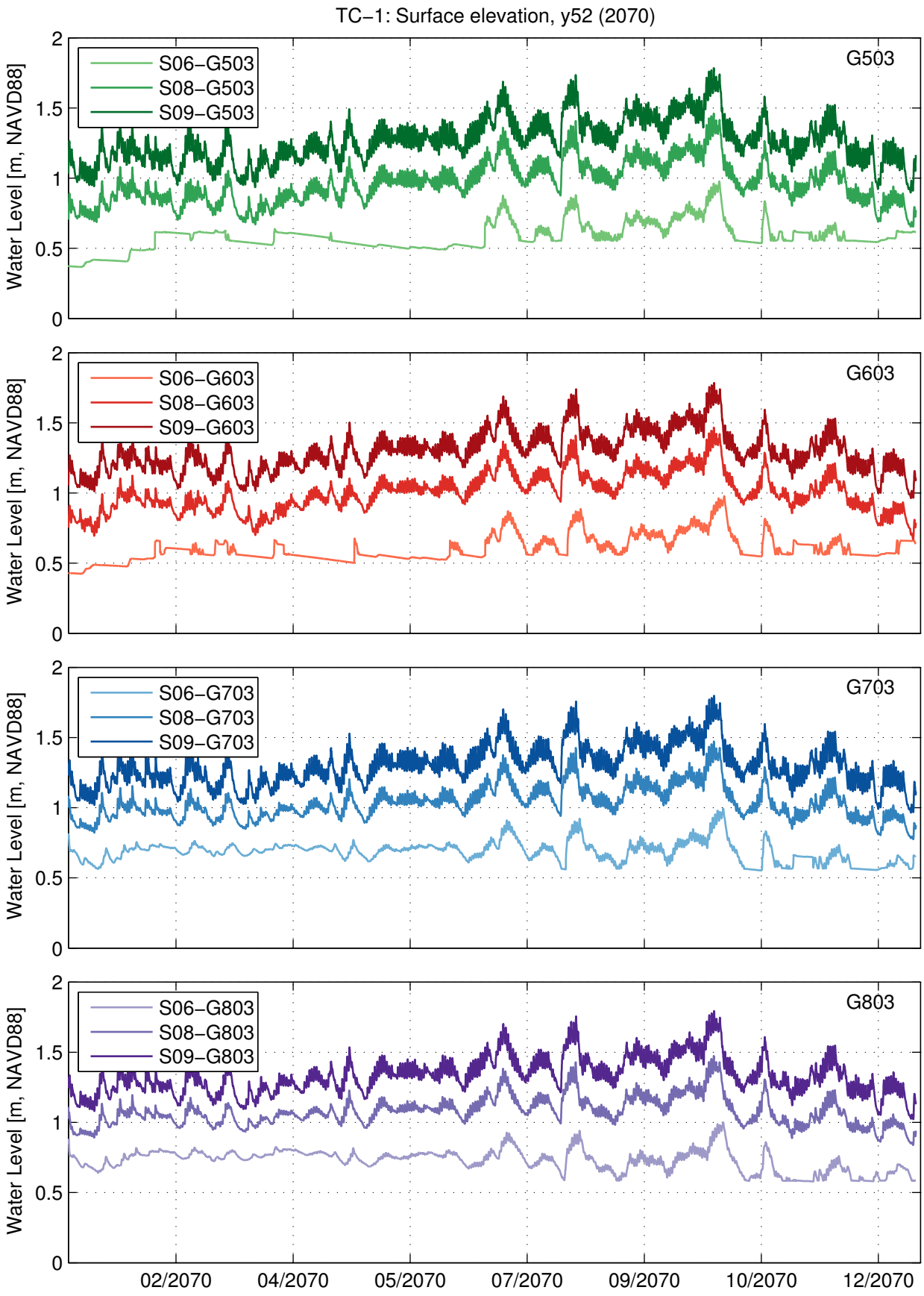

p169: Surface elevation, y52 (2070)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Water Level [m, NAVD88]
2
1.5
1
0.5
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

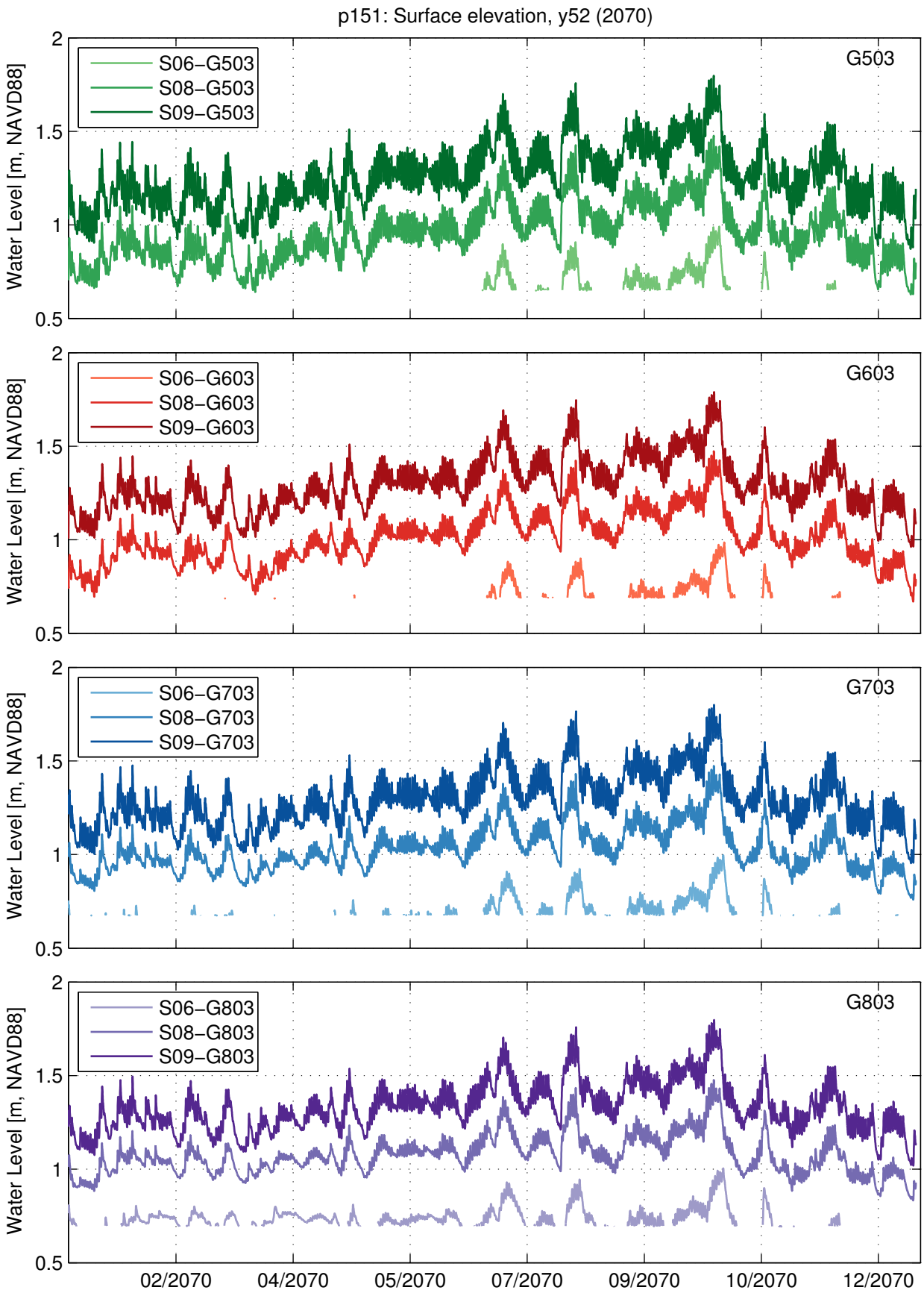

LK−4: Surface elevation, y52 (2070)
Water Level [m, NAVD88]
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
S06−G703
S08−G703
S09−G703
G703
S06−G803
S08−G803
S09−G803
G803
0
0.5
1
1.5
2
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

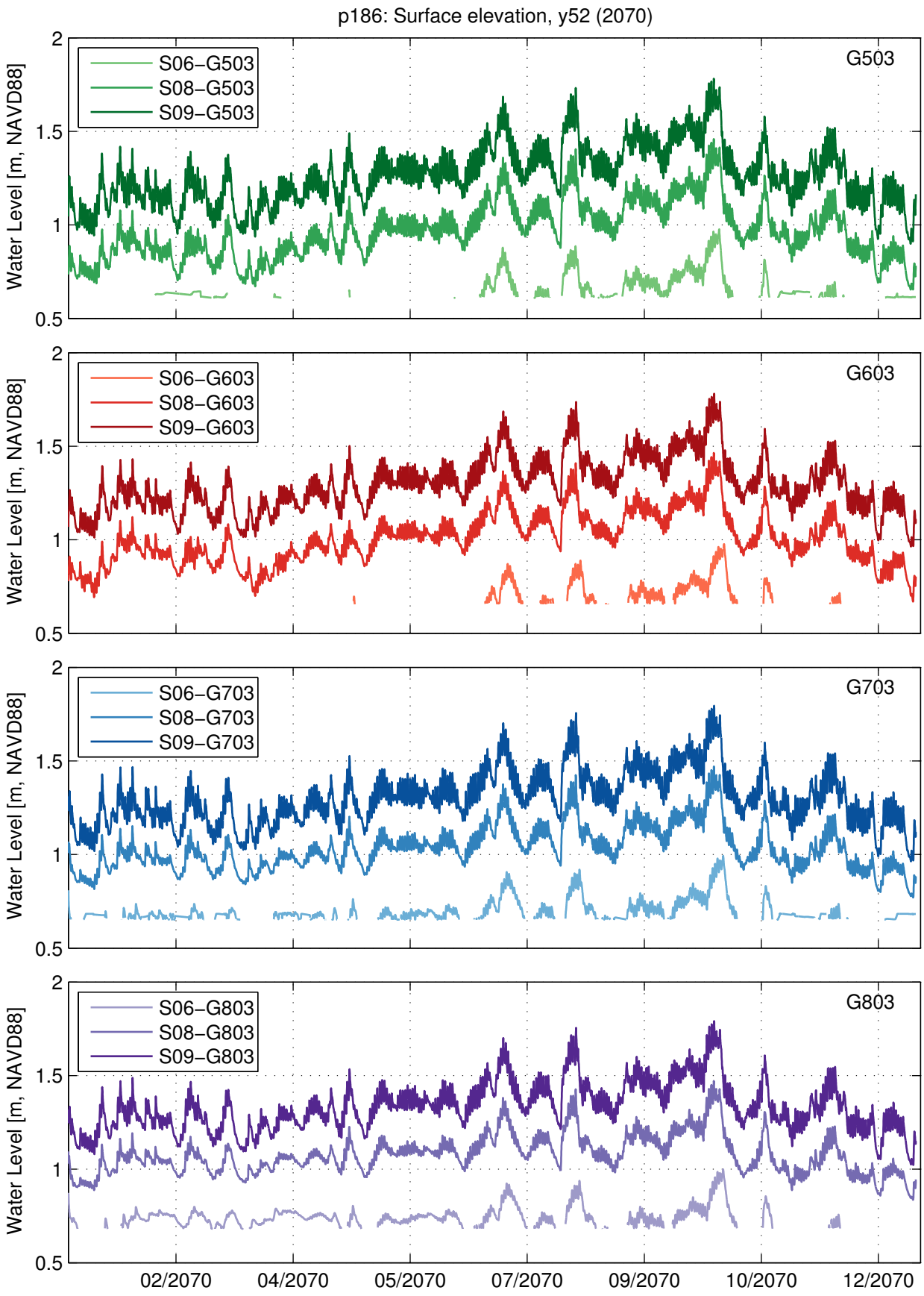

VC−1: Surface elevation, y52 (2070)
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
S06−G703
S08−G703
S09−G703
G703
S06−G803
S08−G803
S09−G803
G803
Water Level [m, NAVD88]
2
1.5
1
0.5
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

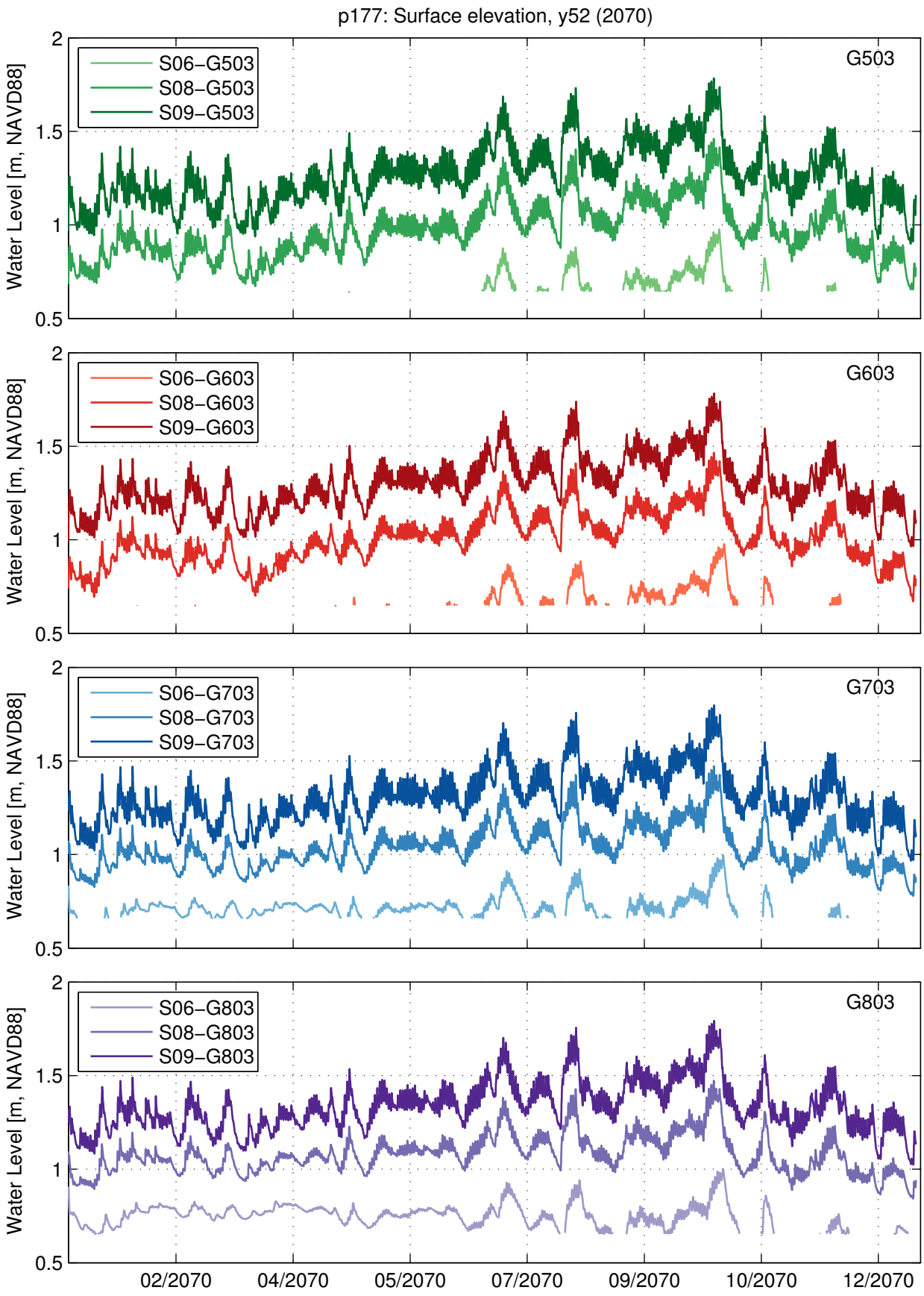

p160: Surface elevation, y52 (2070)
Water Level [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
2
1.5
1
0.5
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

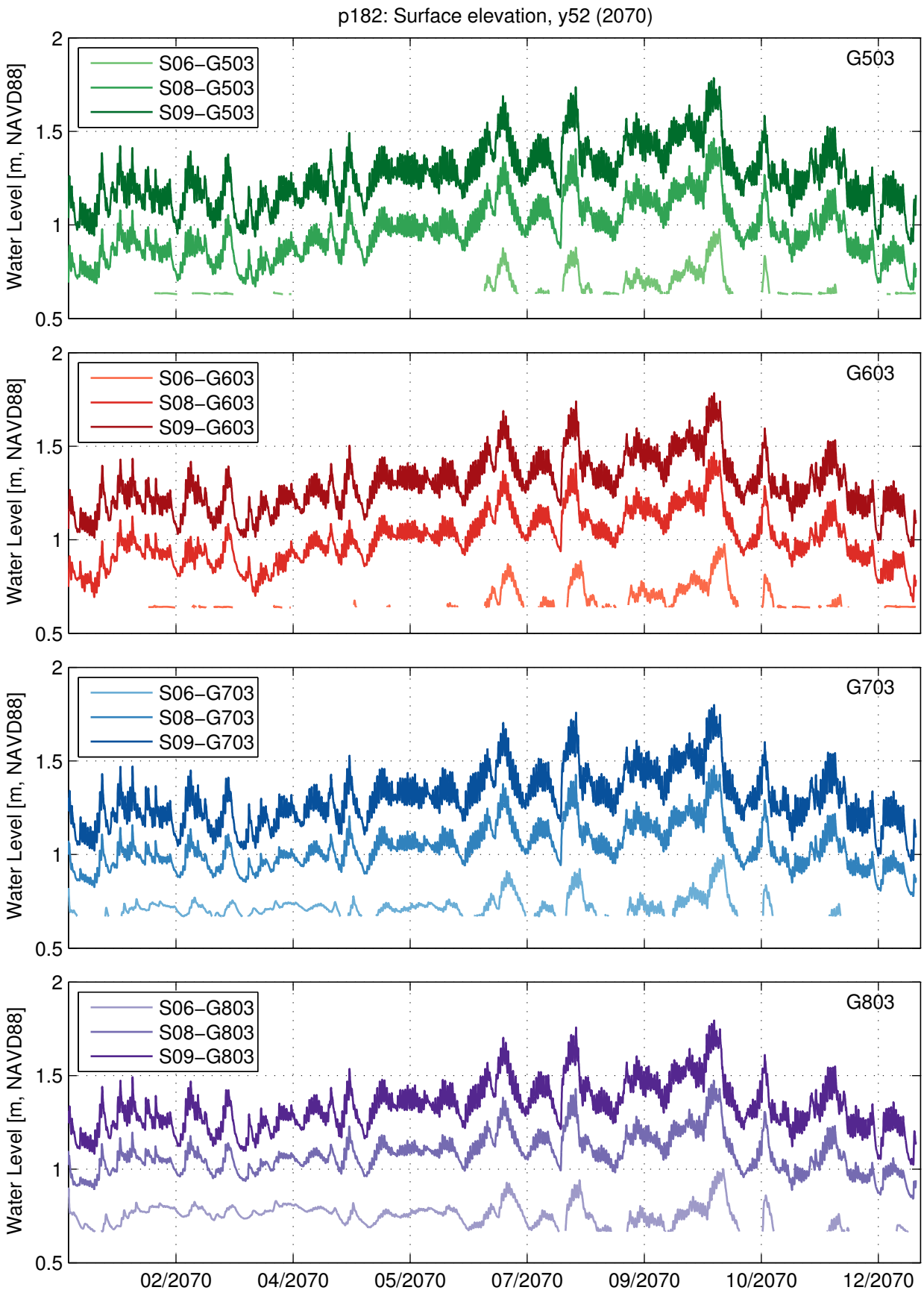

p165: Surface elevation, y52 (2070)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Water Level [m, NAVD88]
2
1.5
1
0.5
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

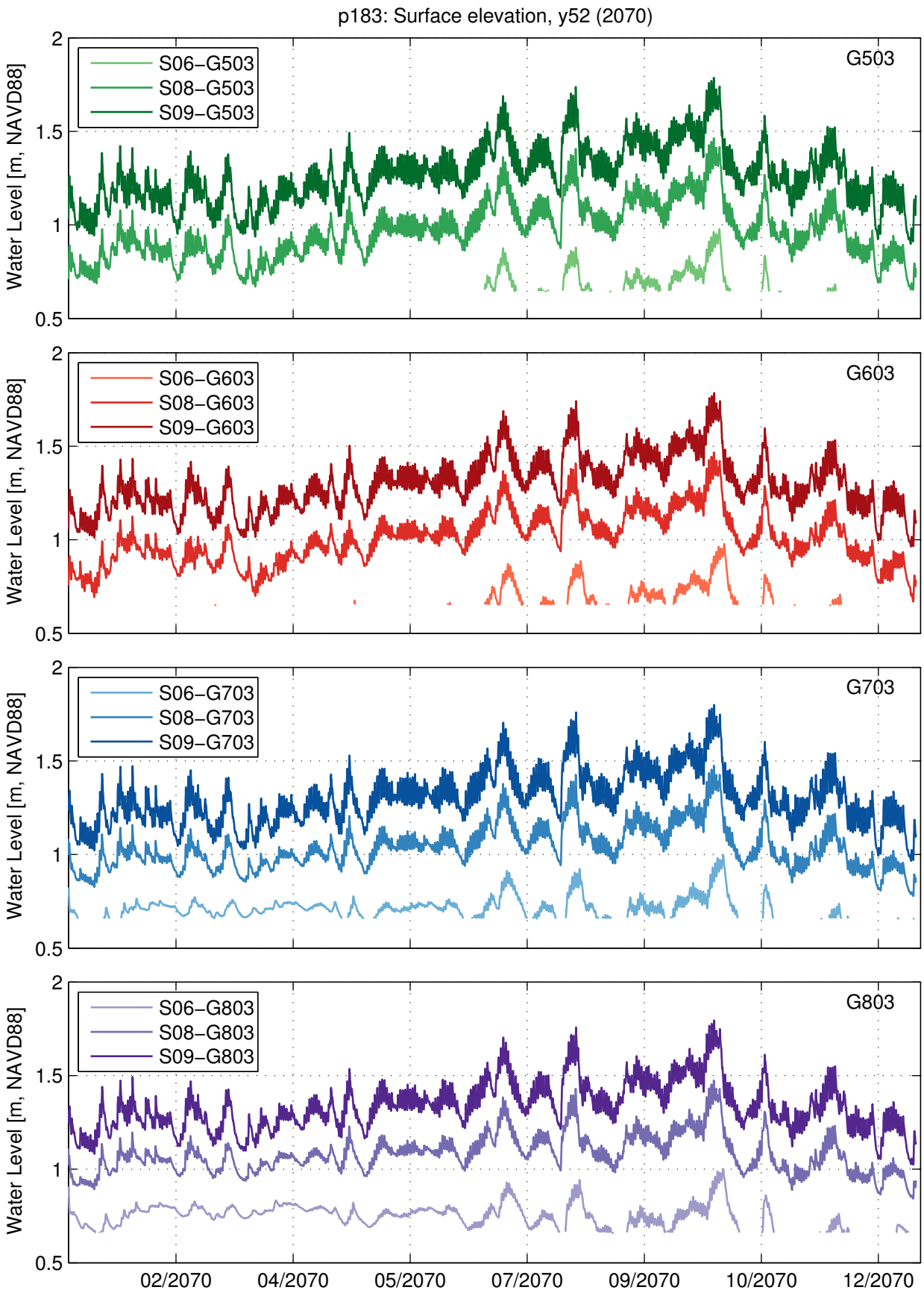

TC−1: Surface elevation, y52 (2070)
Water Level [m, NAVD88]
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
S06−G703
S08−G703
S09−G703
G703
S06−G803
S08−G803
S09−G803
G803
0
0.5
1
1.5
2
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

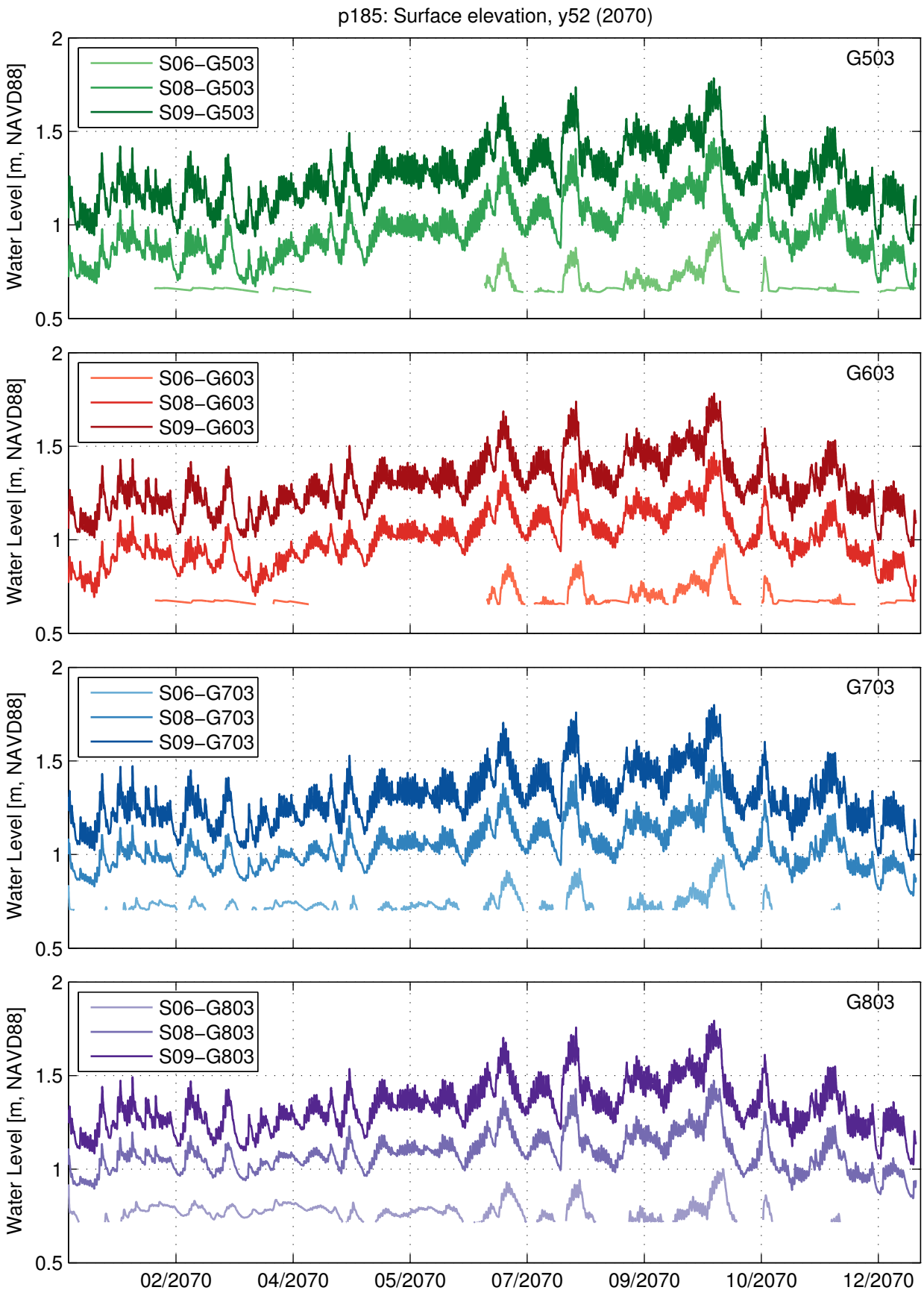

p151: Surface elevation, y52 (2070)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Water Level [m, NAVD88]
2
1.5
1
0.5
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

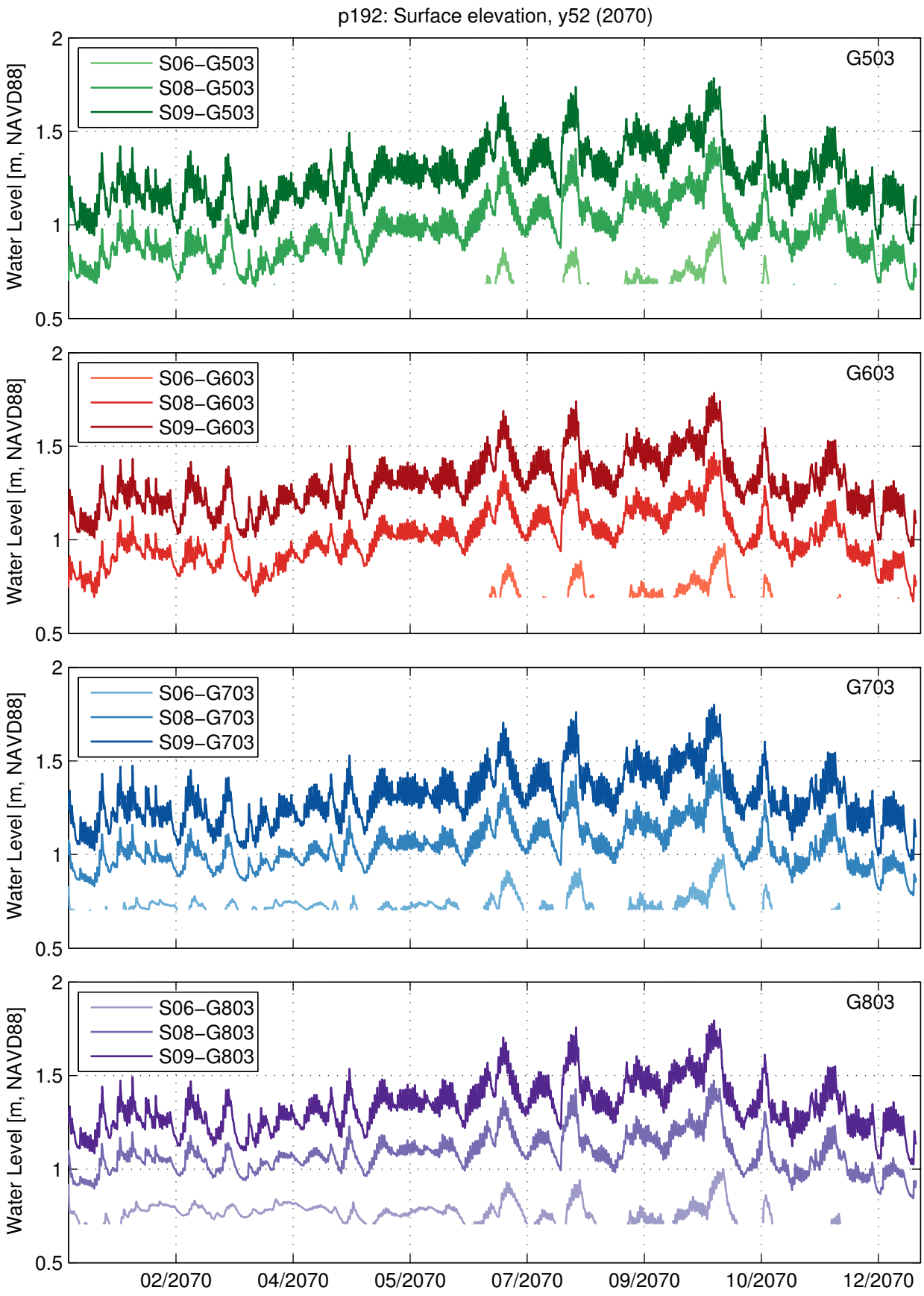

p186: Surface elevation, y52 (2070)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Water Level [m, NAVD88]
2
1.5
1
0.5
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

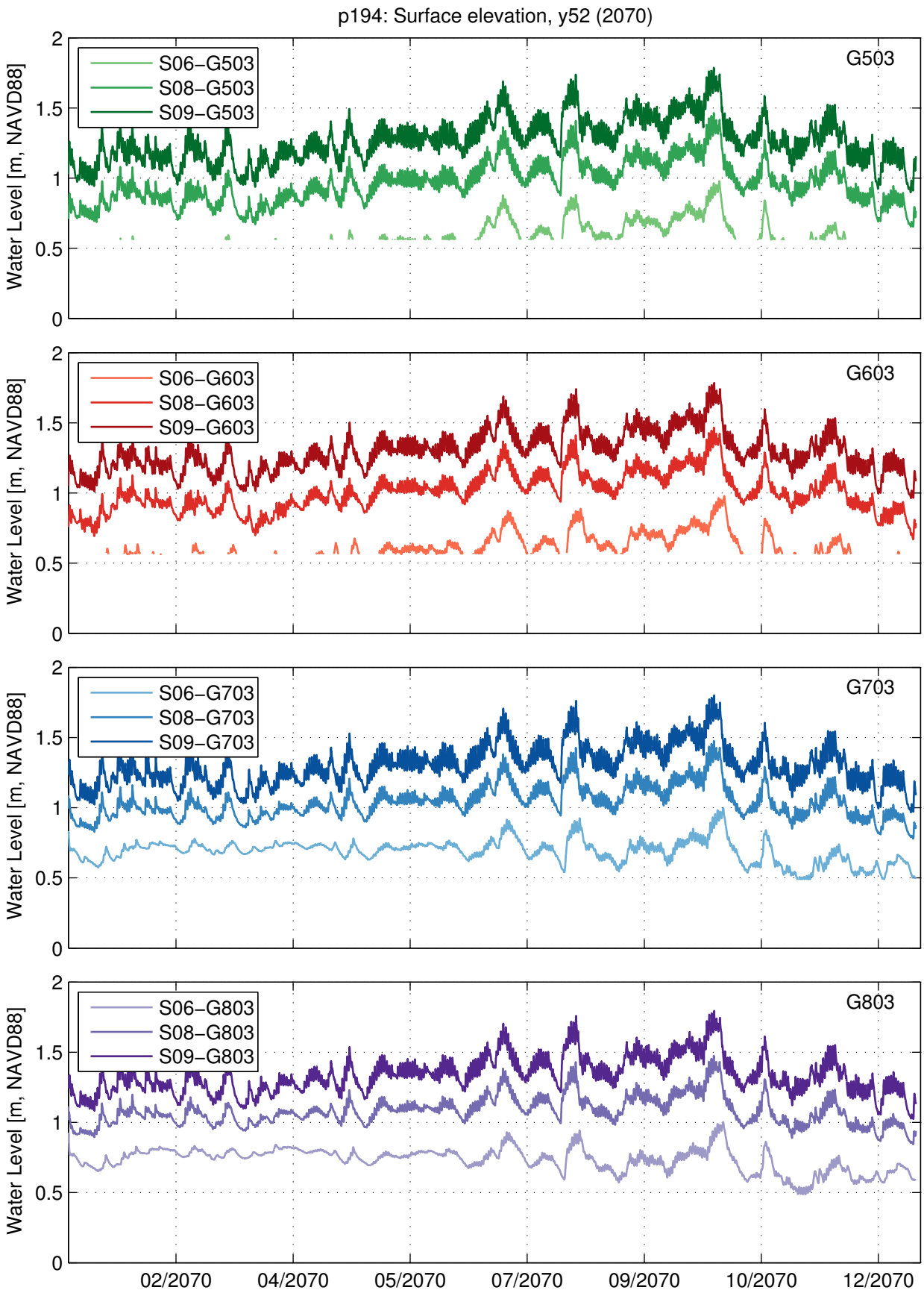

p177: Surface elevation, y52 (2070)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Water Level [m, NAVD88]
2
1.5
1
0.5
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

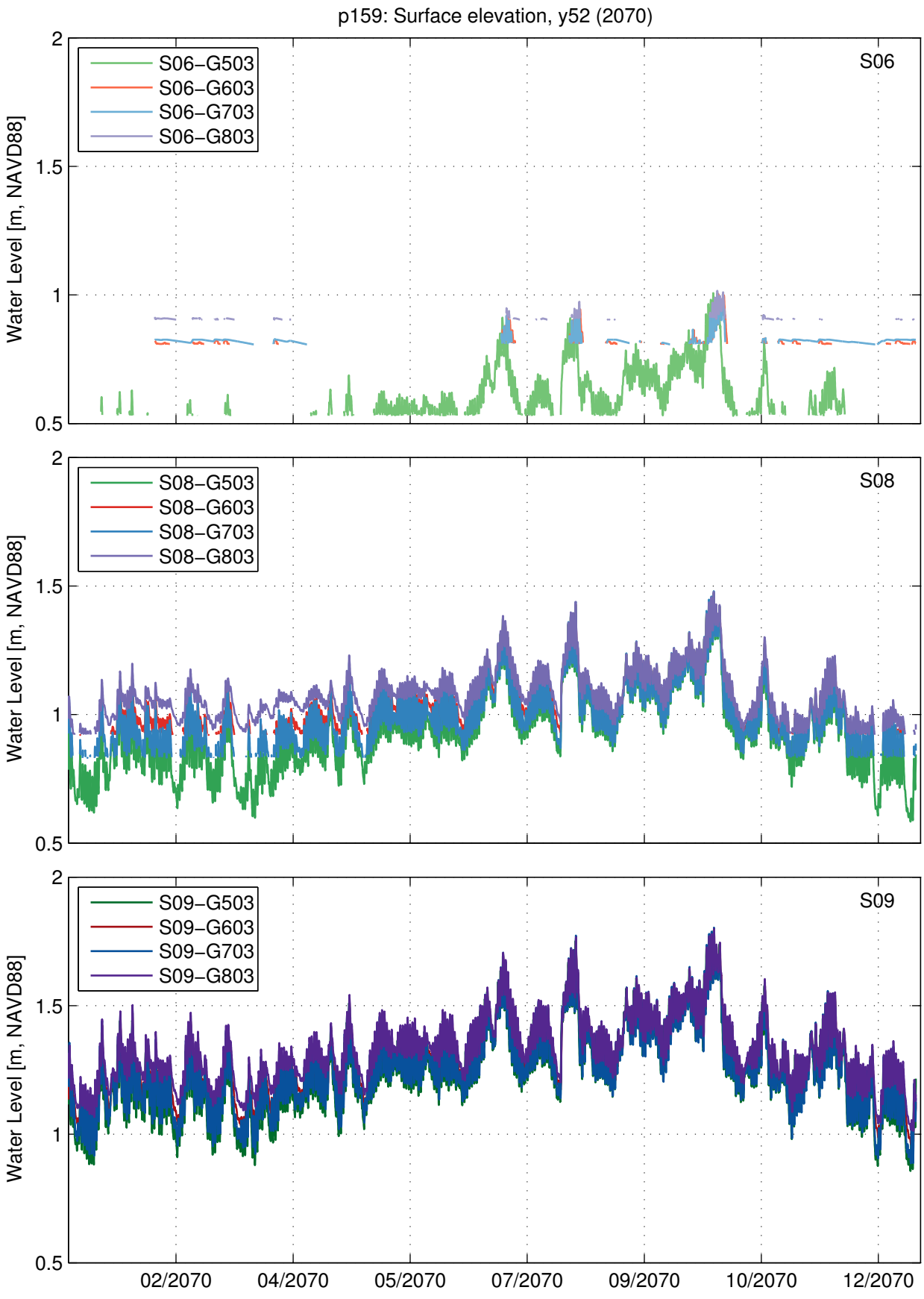

p182: Surface elevation, y52 (2070)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Water Level [m, NAVD88]
2
1.5
1
0.5
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

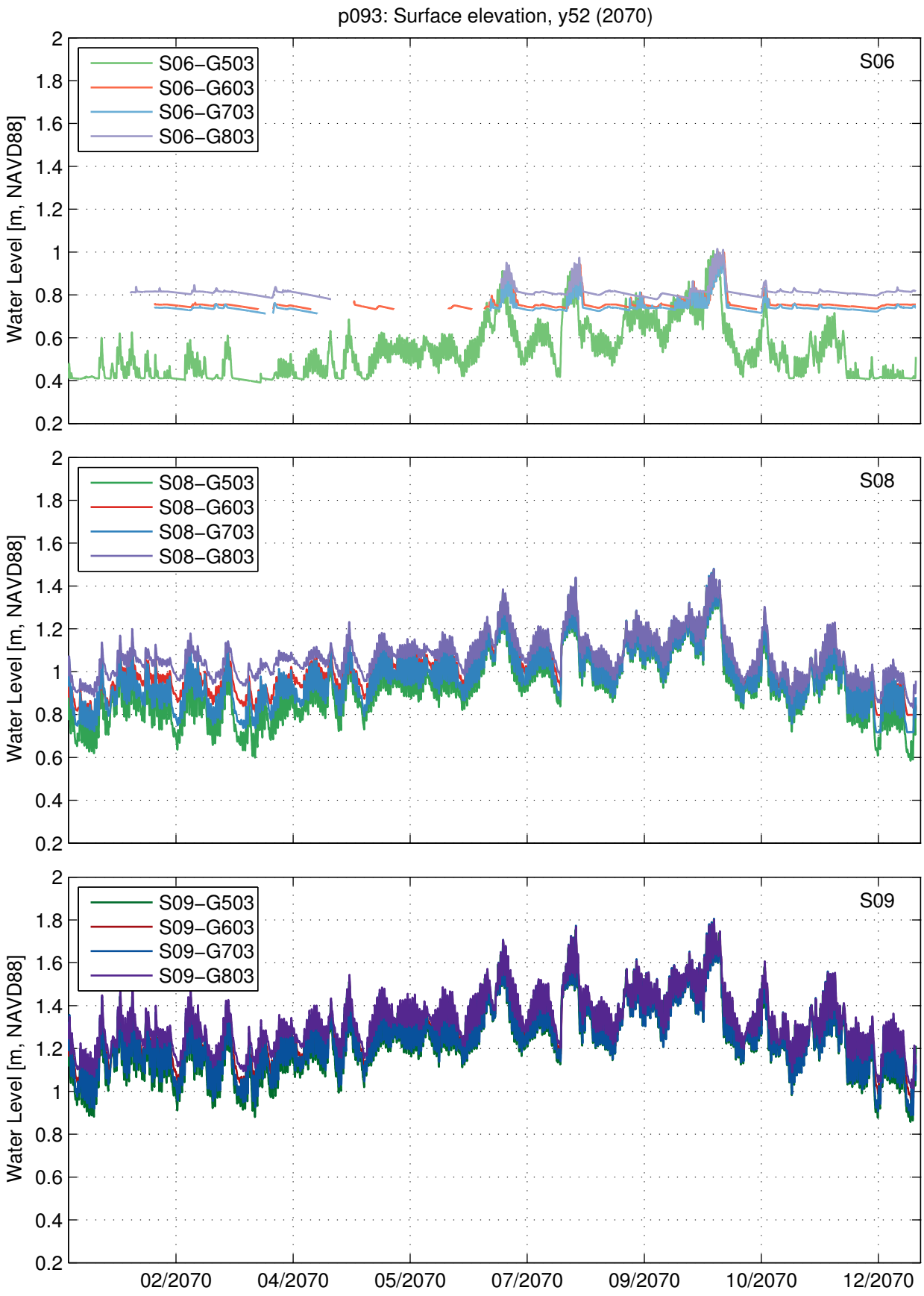

p183: Surface elevation, y52 (2070)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Water Level [m, NAVD88]
2
1.5
1
0.5
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

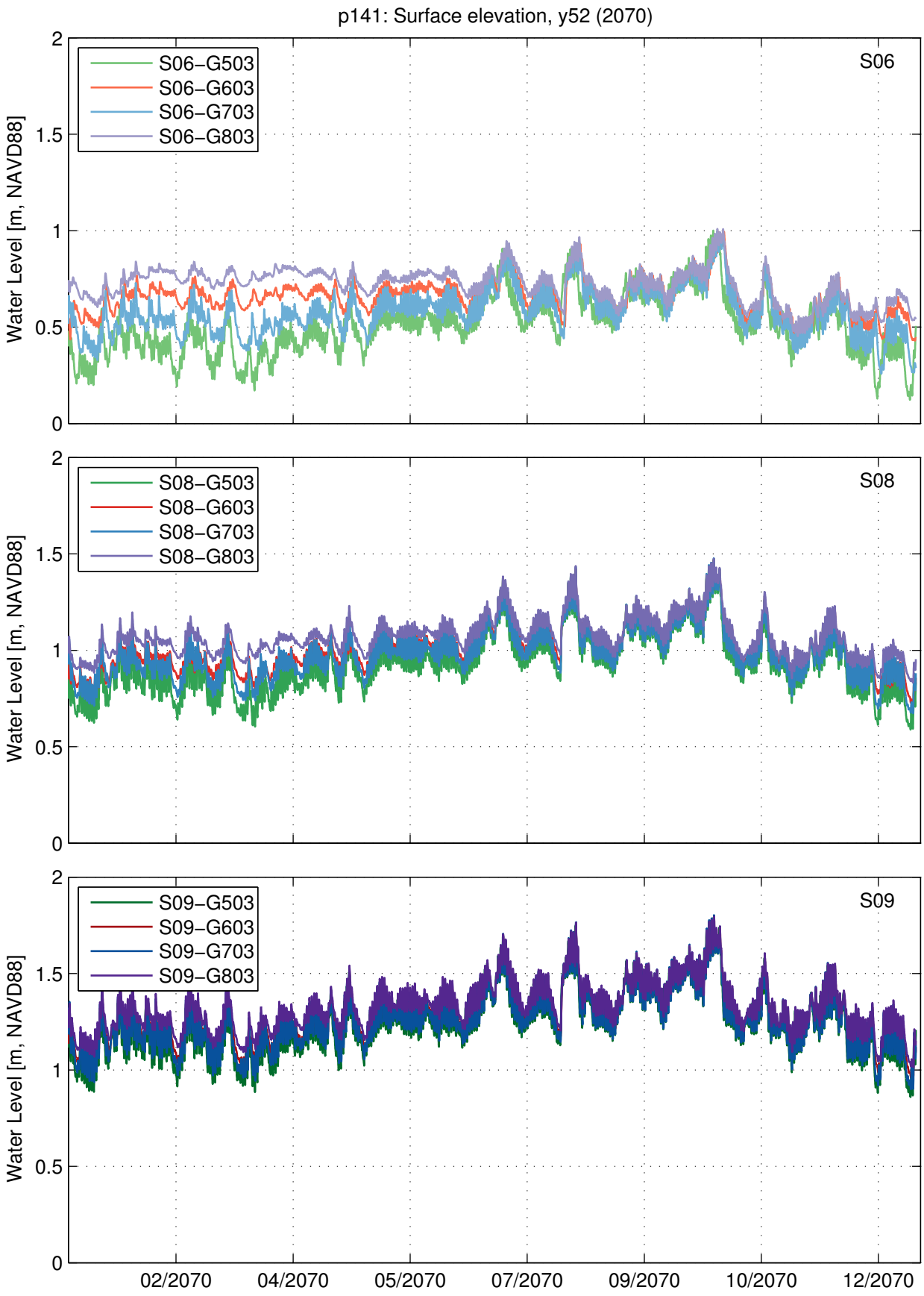

p185: Surface elevation, y52 (2070)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Water Level [m, NAVD88]
2
1.5
1
0.5
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

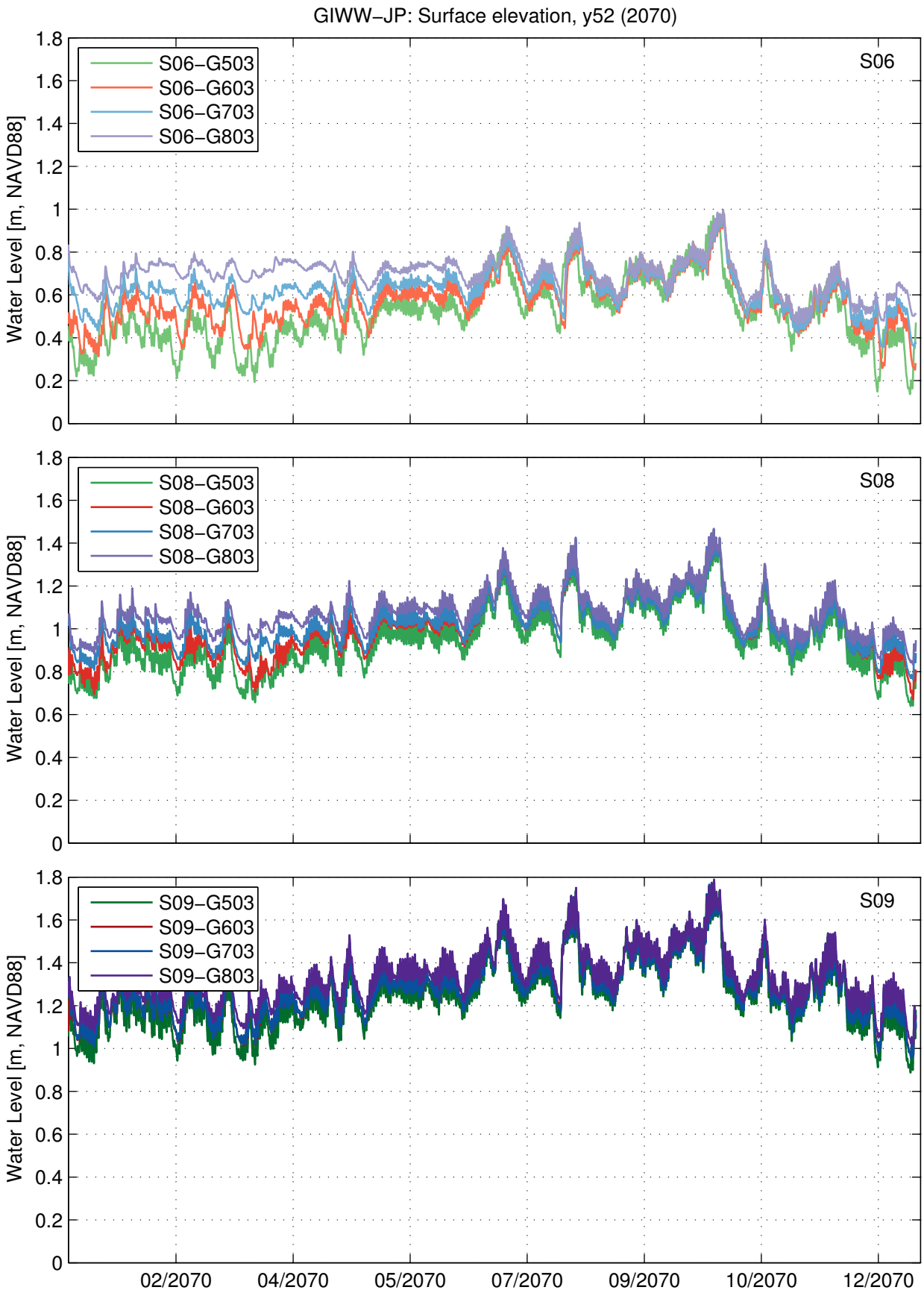

p192: Surface elevation, y52 (2070)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Water Level [m, NAVD88]
2
1.5
1
0.5
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

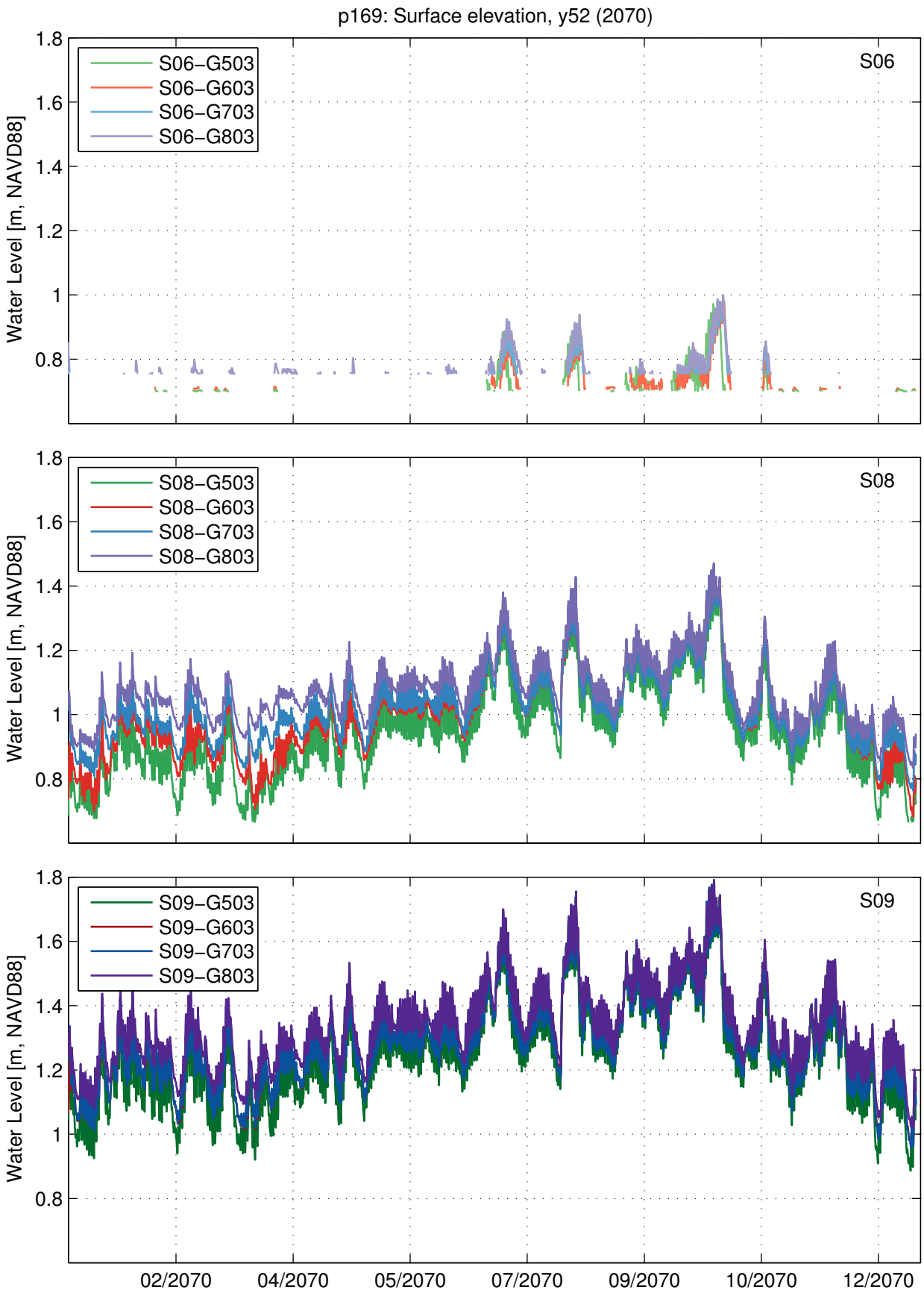

p194: Surface elevation, y52 (2070)
Water Level [m, NAVD88]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
0
0.5
1
1.5
2
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

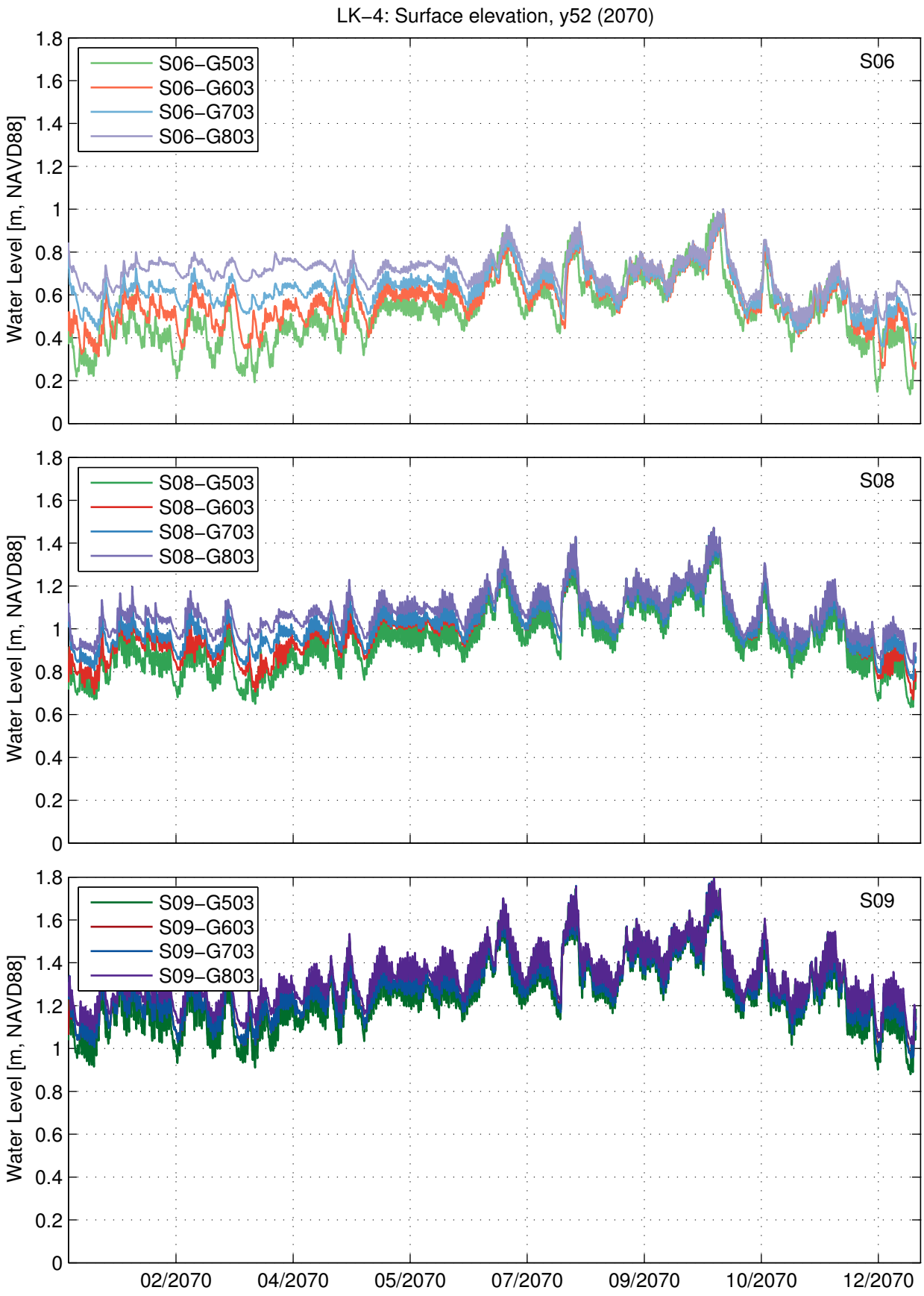

p159: Surface elevation, y52 (2070)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
2
1.5
1
0.5
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

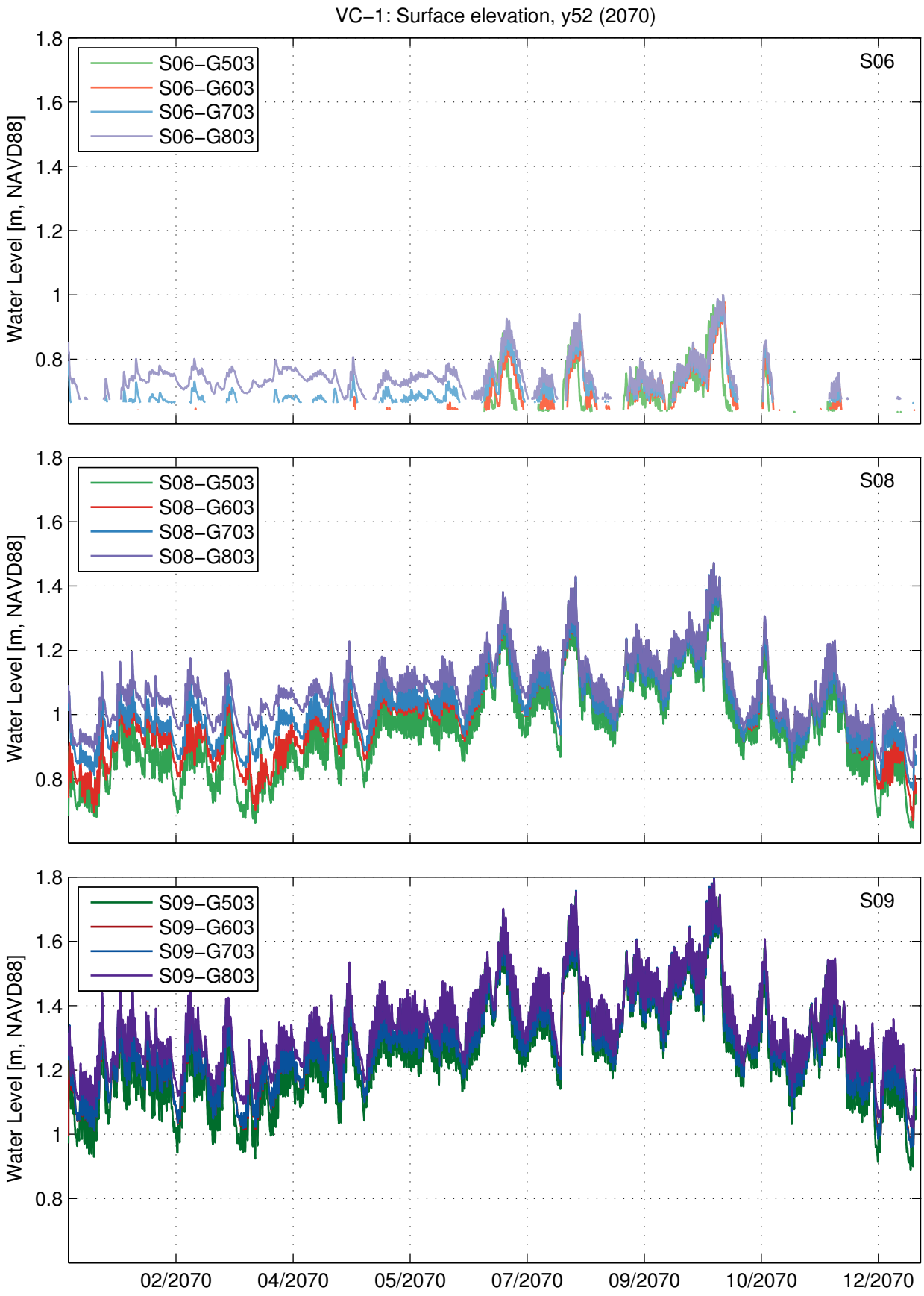

p093: Surface elevation, y52 (2070)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Water Level [m, NAVD88]
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

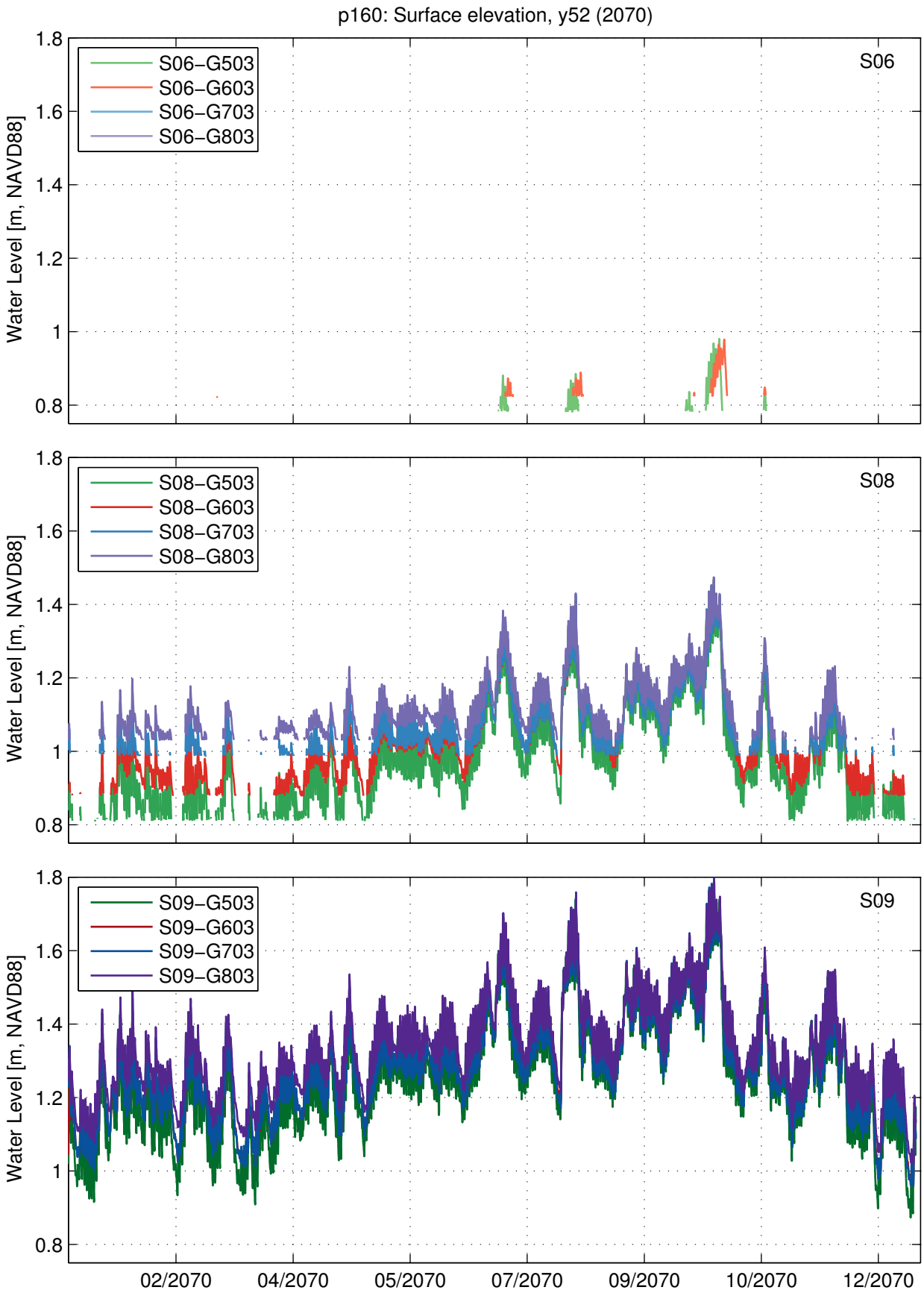

p141: Surface elevation, y52 (2070)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Water Level [m, NAVD88]
0
0.5
1
1.5
2
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

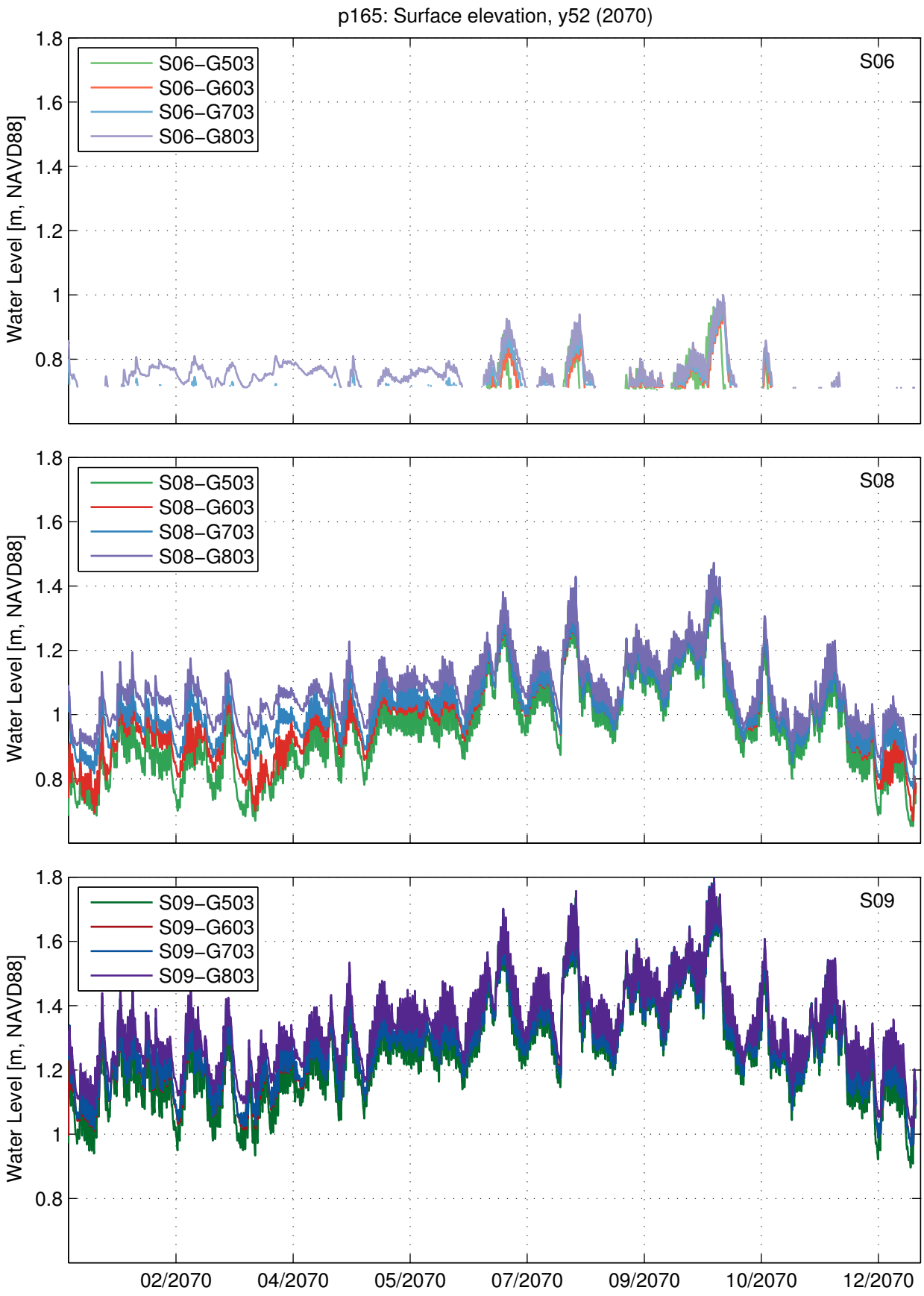

GIWW–JP: Surface elevation, y52 (2070)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Water Level [m, NAVD88]
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

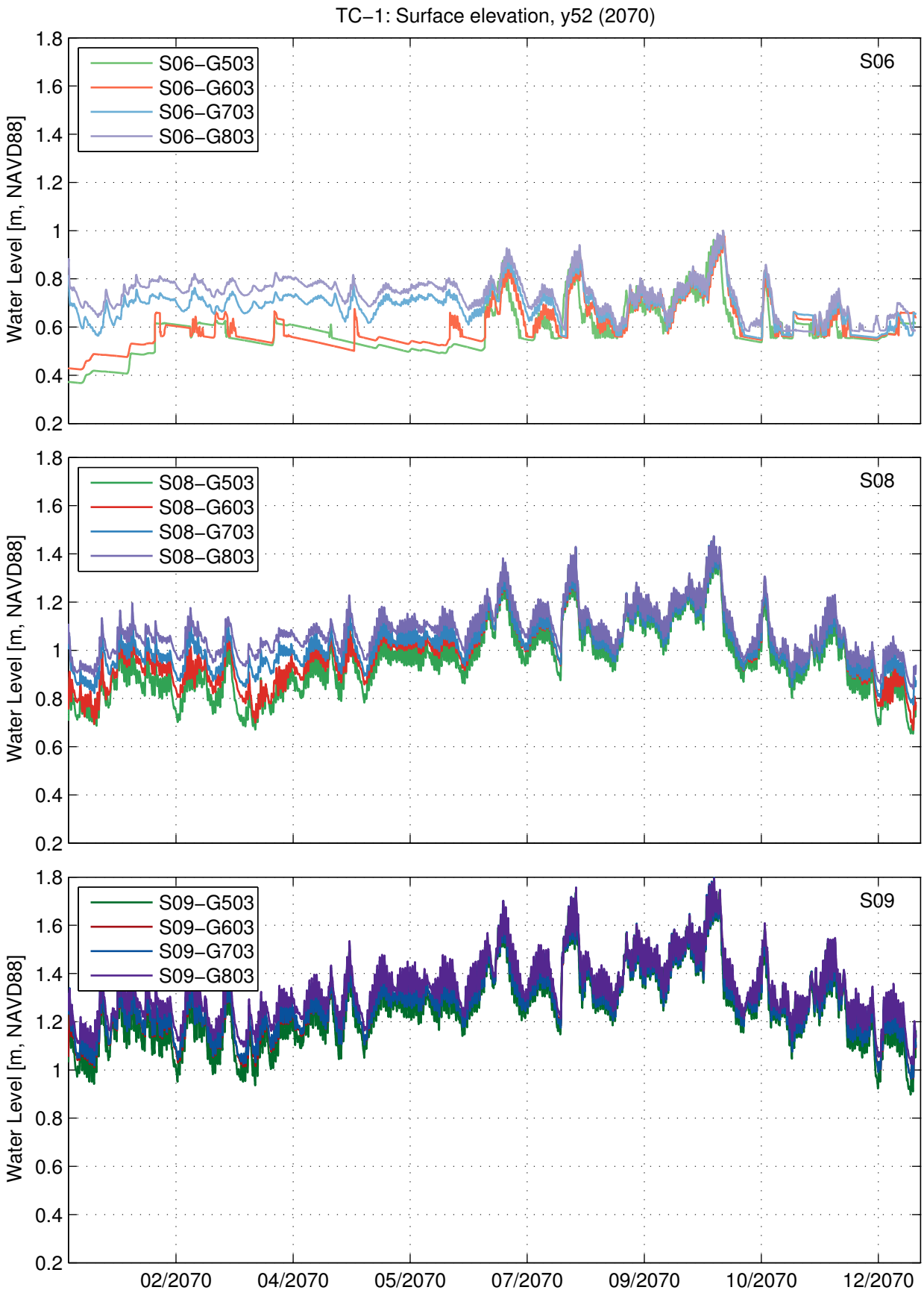

p169: Surface elevation, y52 (2070)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
1.8
1.6
1.4
1.2
1
0.8
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

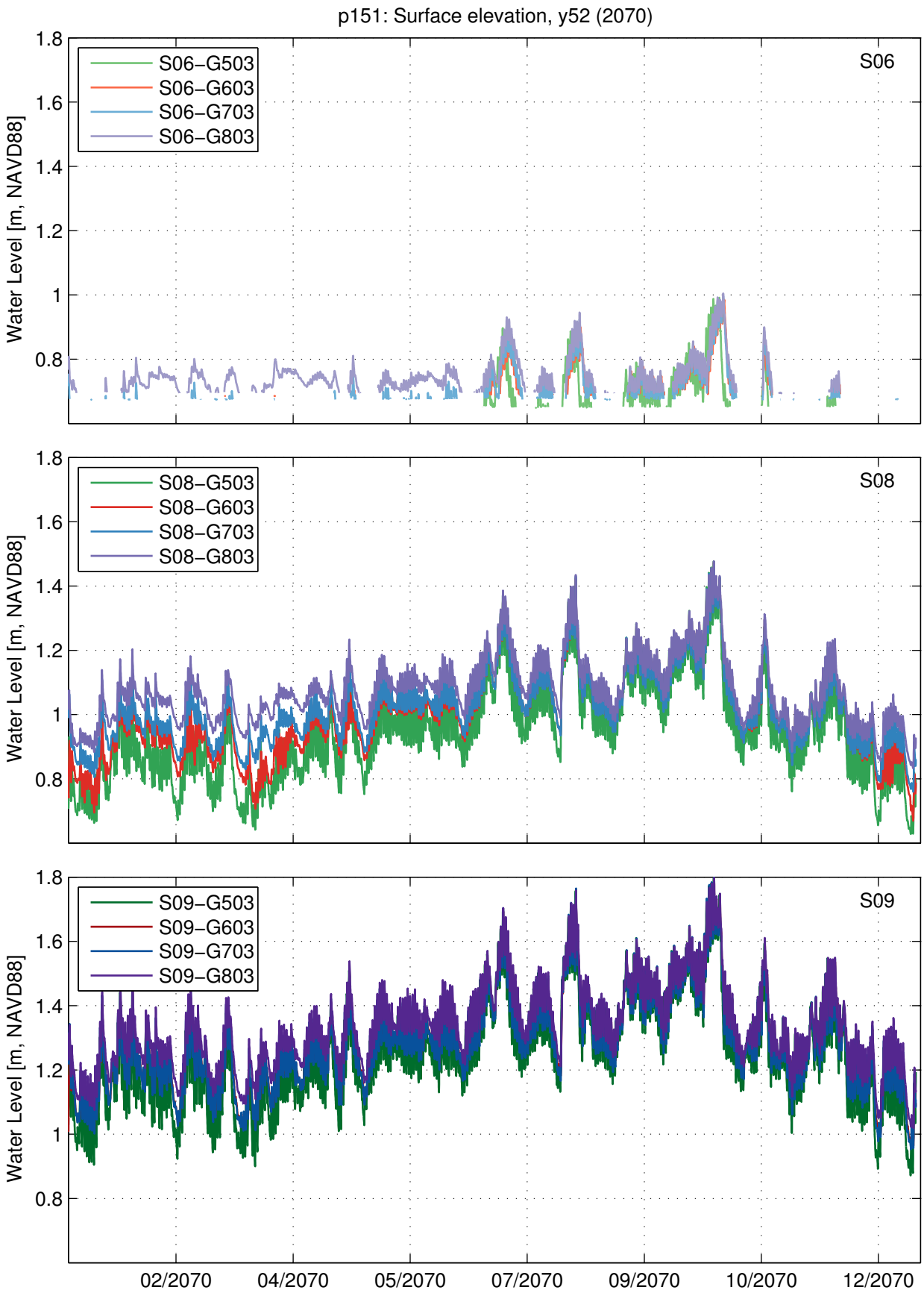

LK−4: Surface elevation, y52 (2070)
S06−G503
S06−G603
S06−G703
S06−G803
S06
S08−G503
S08−G603
S08−G703
S08−G803
S08
S09−G503
S09−G603
S09−G703
S09−G803
S09
Water Level [m, NAVD88]
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

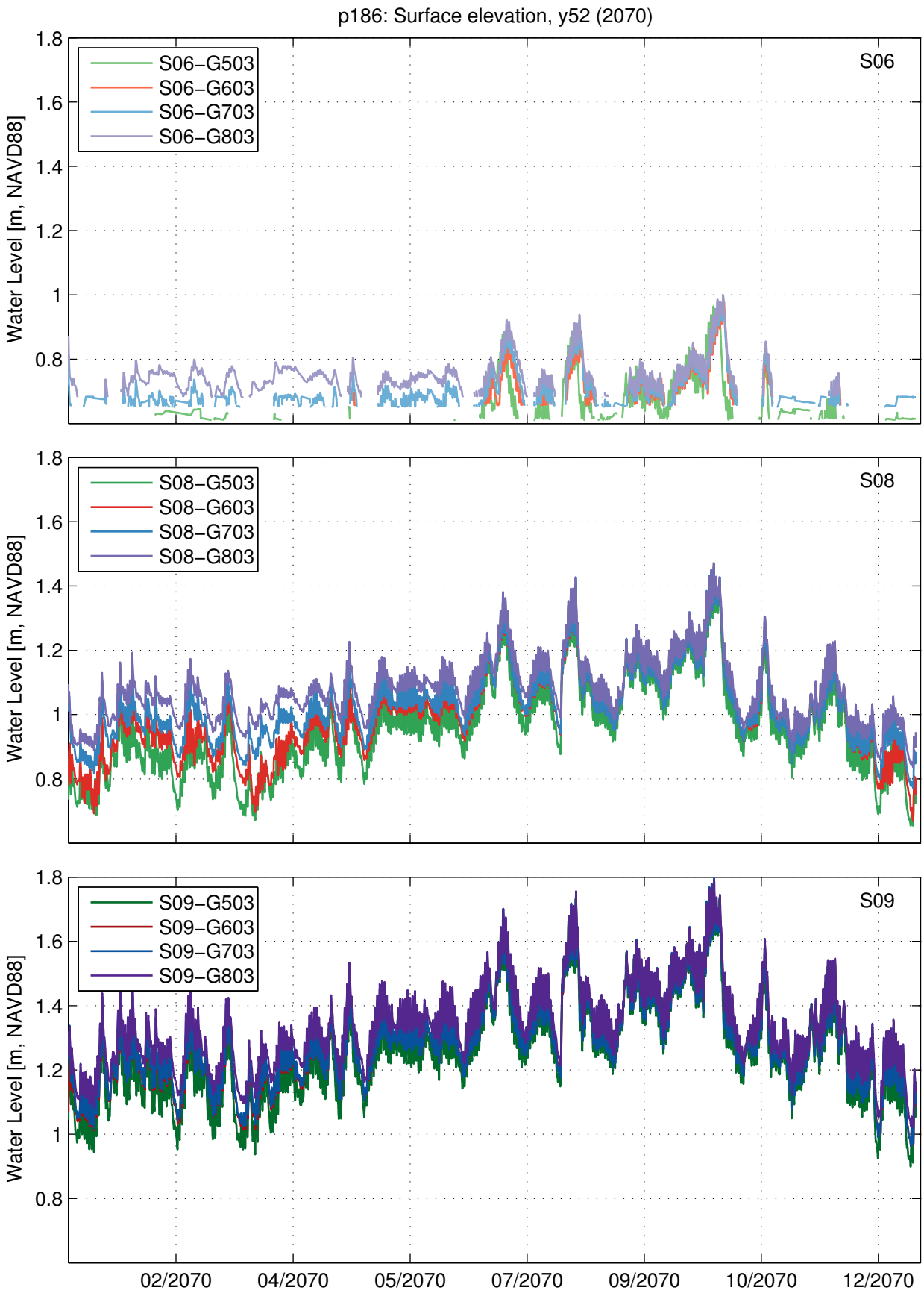

VC−1: Surface elevation, y52 (2070)
S06
S06−G503
S06−G603
S06−G703
S06−G803
S08
S08−G503
S08−G603
S08−G703
S08−G803
S09
S09−G503
S09−G603
S09−G703
S09−G803
Water Level [m, NAVD88]
1.8
1.6
1.4
1.2
1
0.8
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

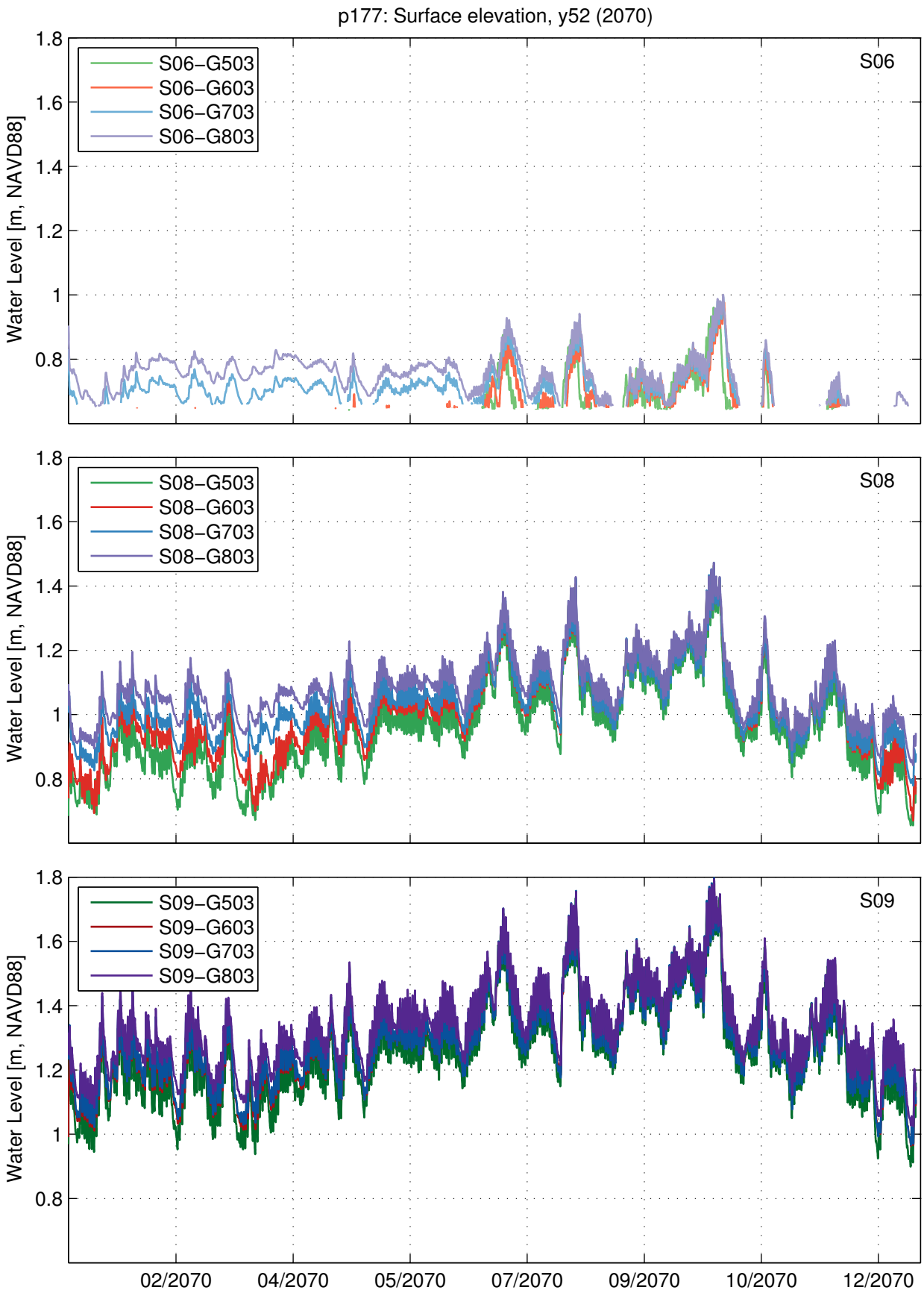

p160: Surface elevation, y52 (2070)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
1.8
1.6
1.4
1.2
1
0.8
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

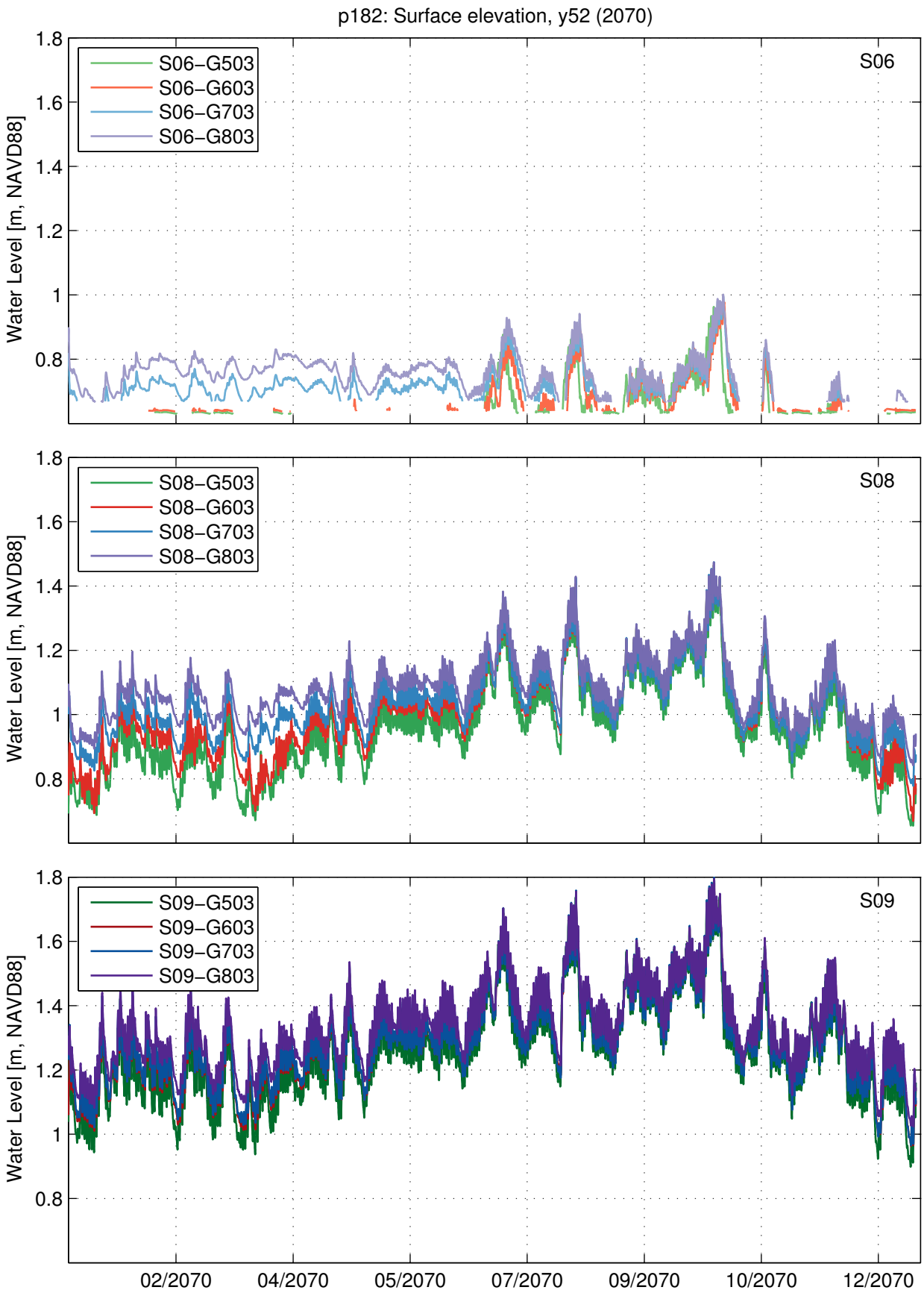

p165: Surface elevation, y52 (2070)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
1.8
1.6
1.4
1.2
1
0.8
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

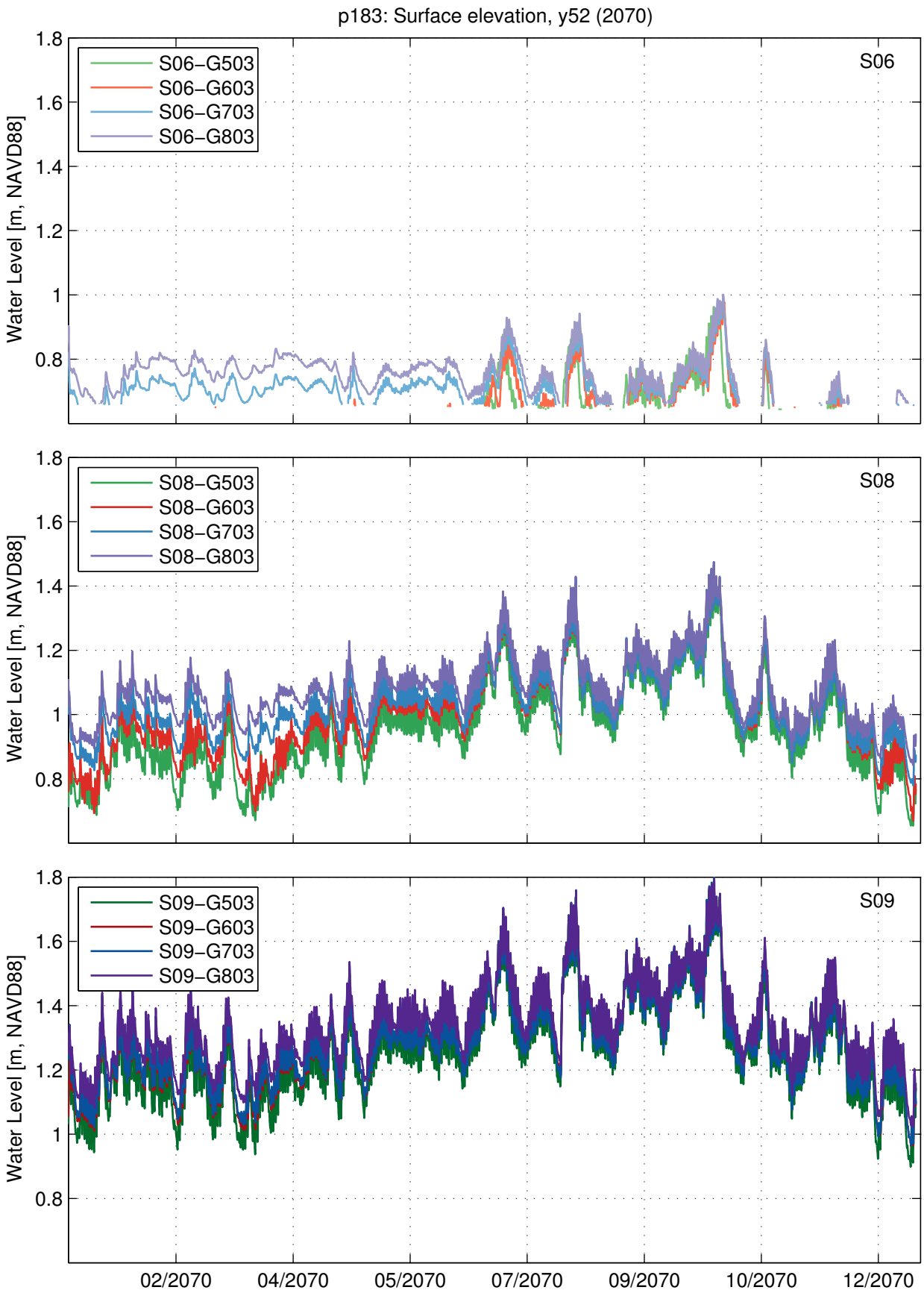

TC−1: Surface elevation, y52 (2070)
S06
S06−G503
S06−G603
S06−G703
S06−G803
S08
S08−G503
S08−G603
S08−G703
S08−G803
S09
S09−G503
S09−G603
S09−G703
S09−G803
Water Level [m, NAVD88]
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

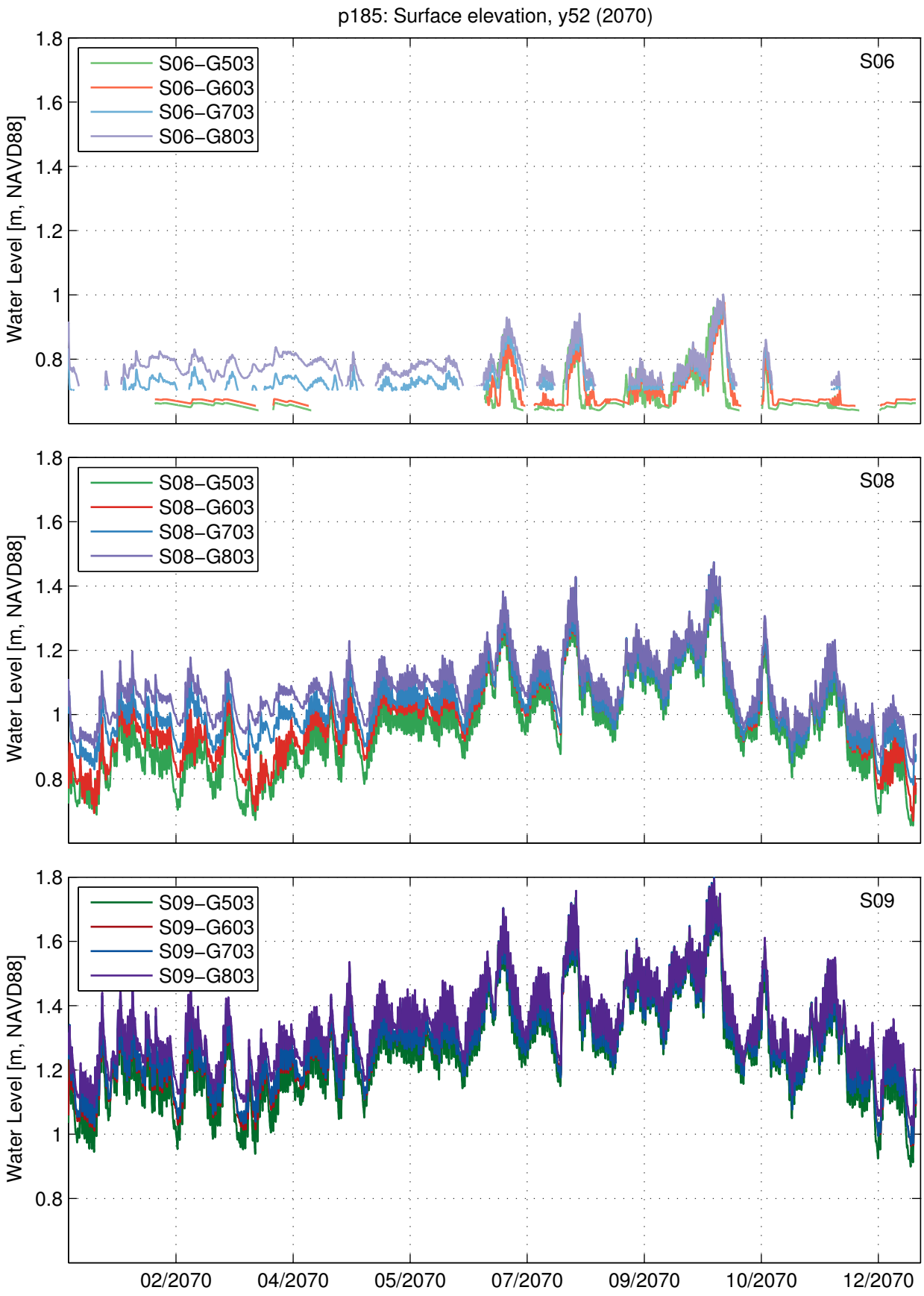

p151: Surface elevation, y52 (2070)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
1.8
1.6
1.4
1.2
1
0.8
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

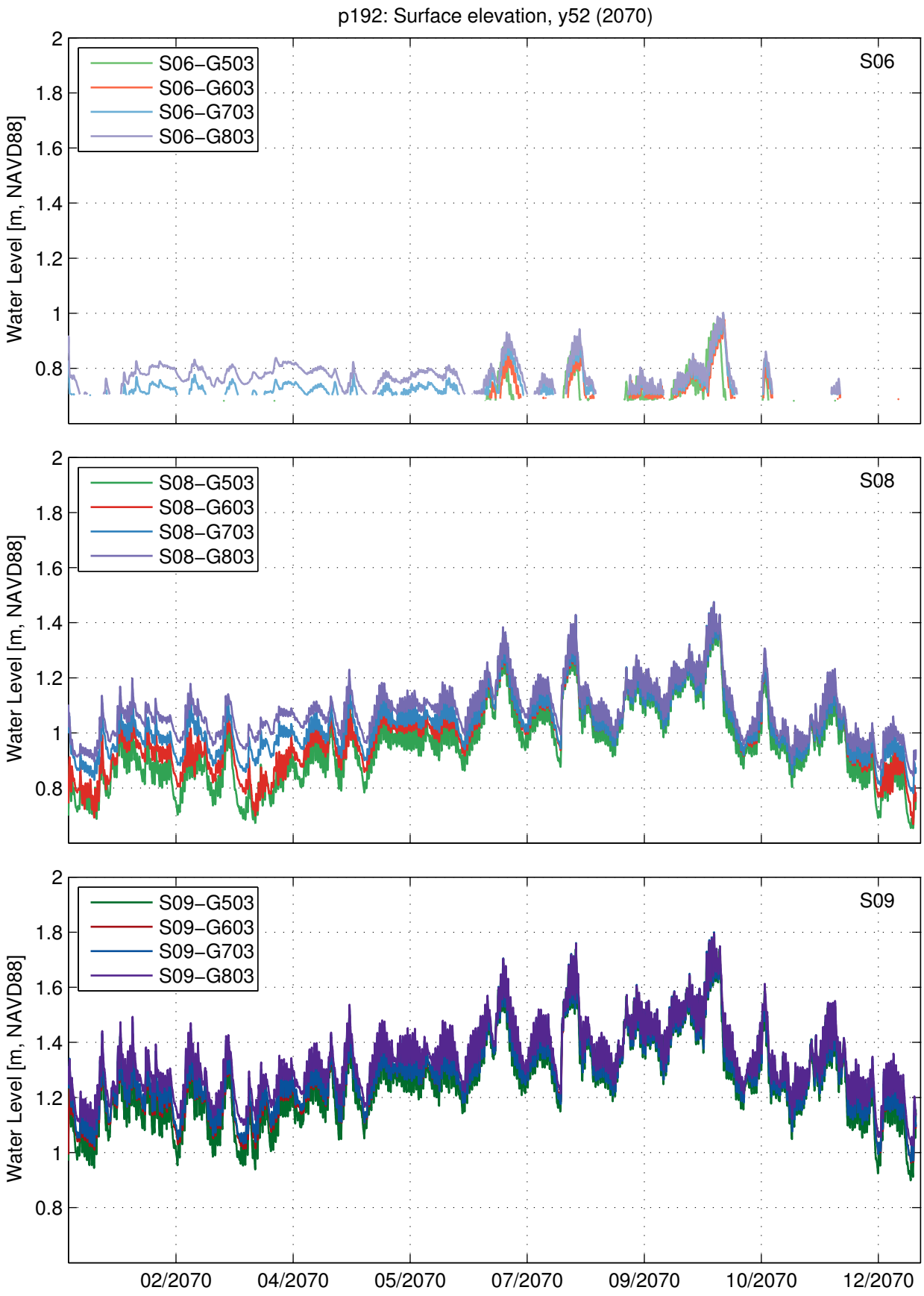

p186: Surface elevation, y52 (2070)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
1.8
1.6
1.4
1.2
1
0.8
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

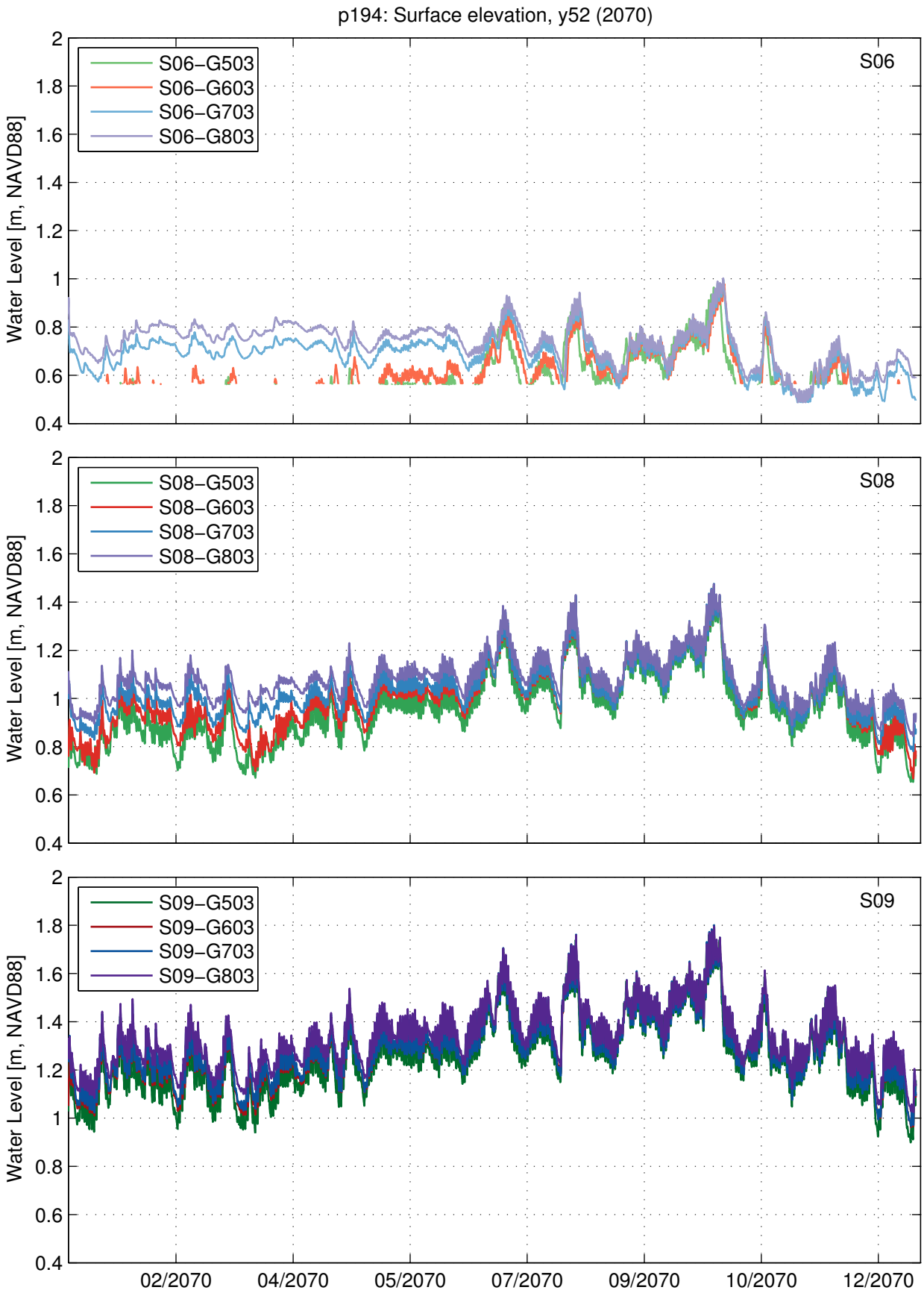

p177: Surface elevation, y52 (2070)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
1.8
1.6
1.4
1.2
1
0.8
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

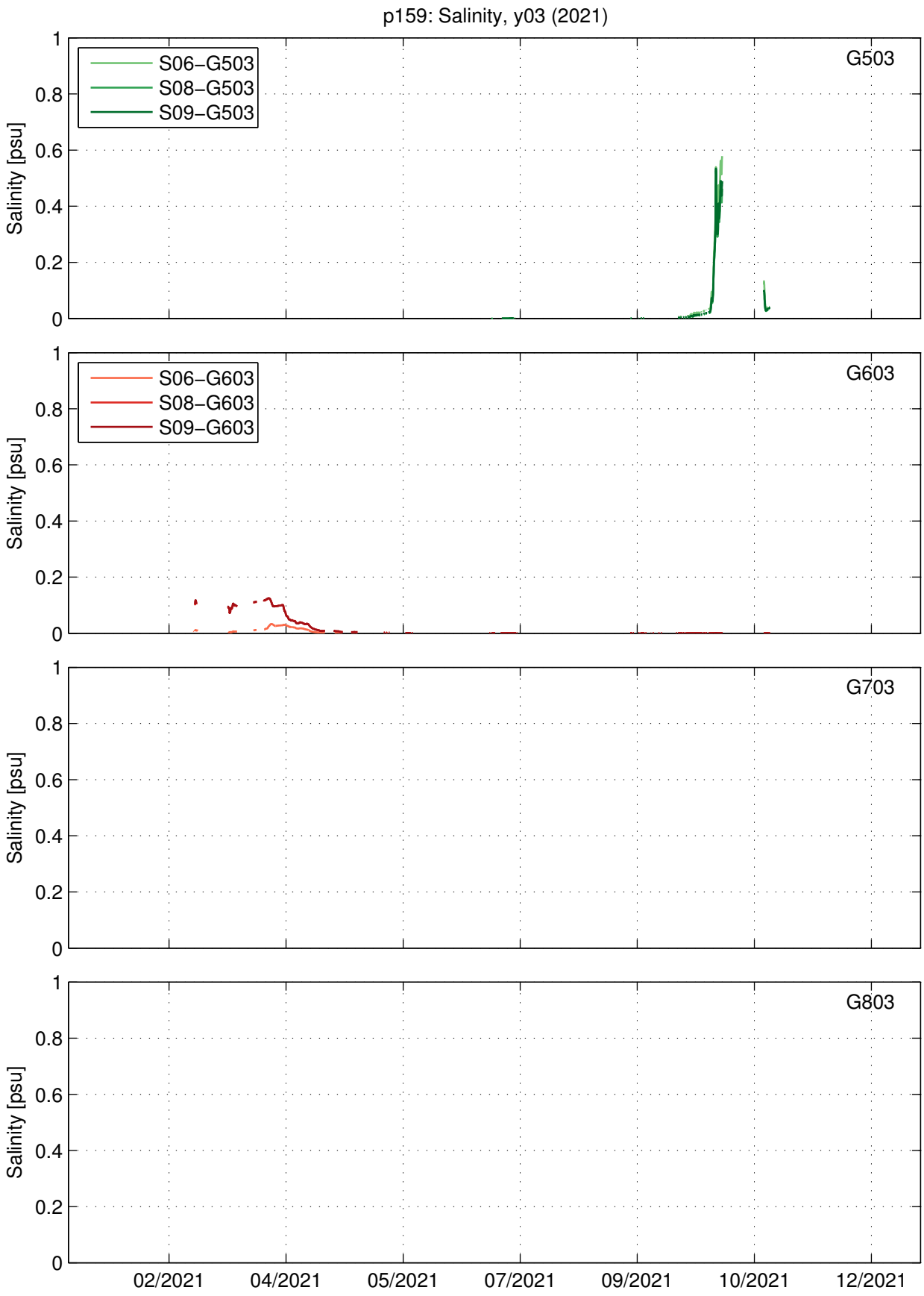

p182: Surface elevation, y52 (2070)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Water Level [m, NAVD88]
1.8
1.6
1.4
1.2
1
0.8
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

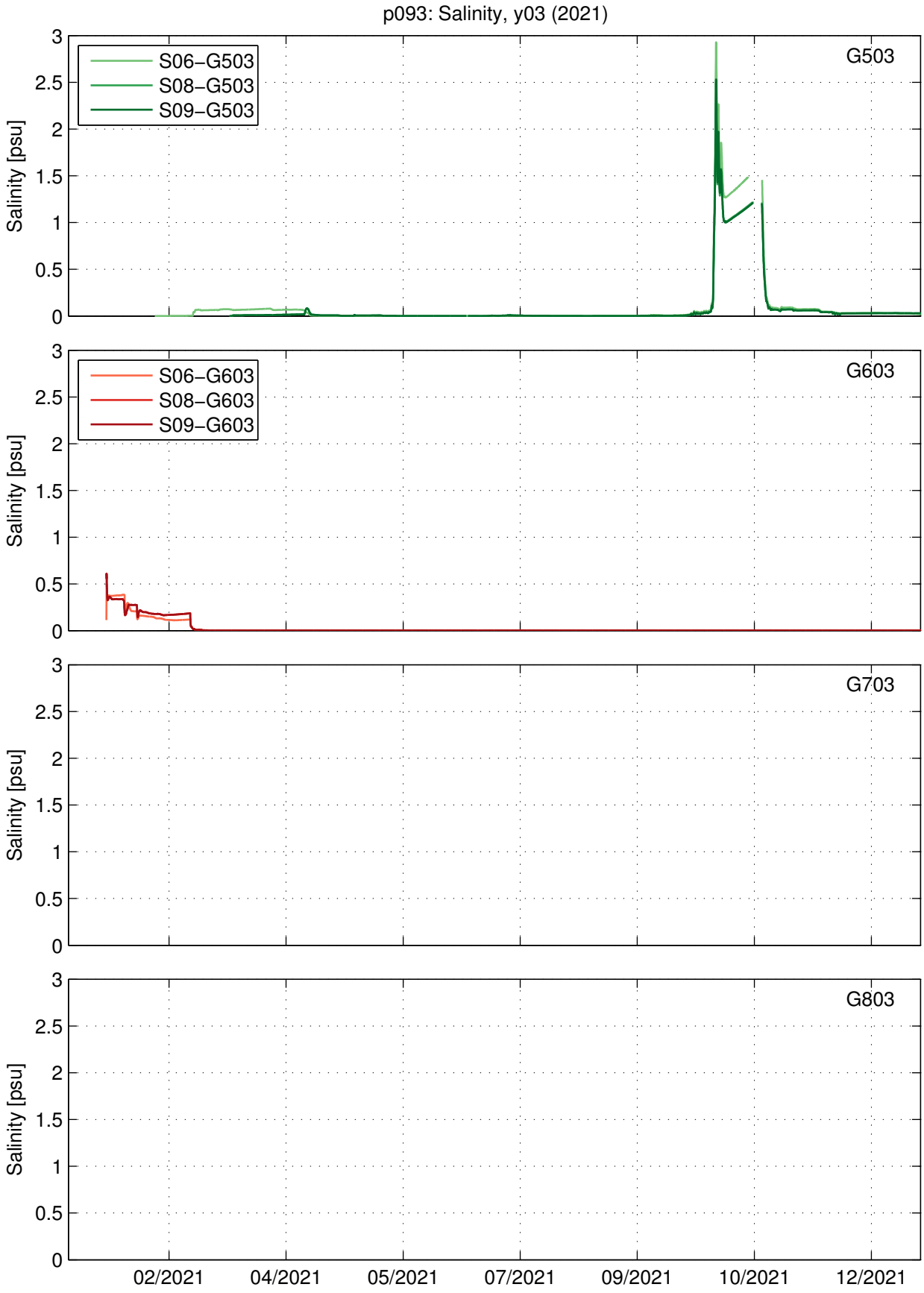

p183: Surface elevation, y52 (2070)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Water Level [m, NAVD88]
1.8
1.6
1.4
1.2
1
0.8
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

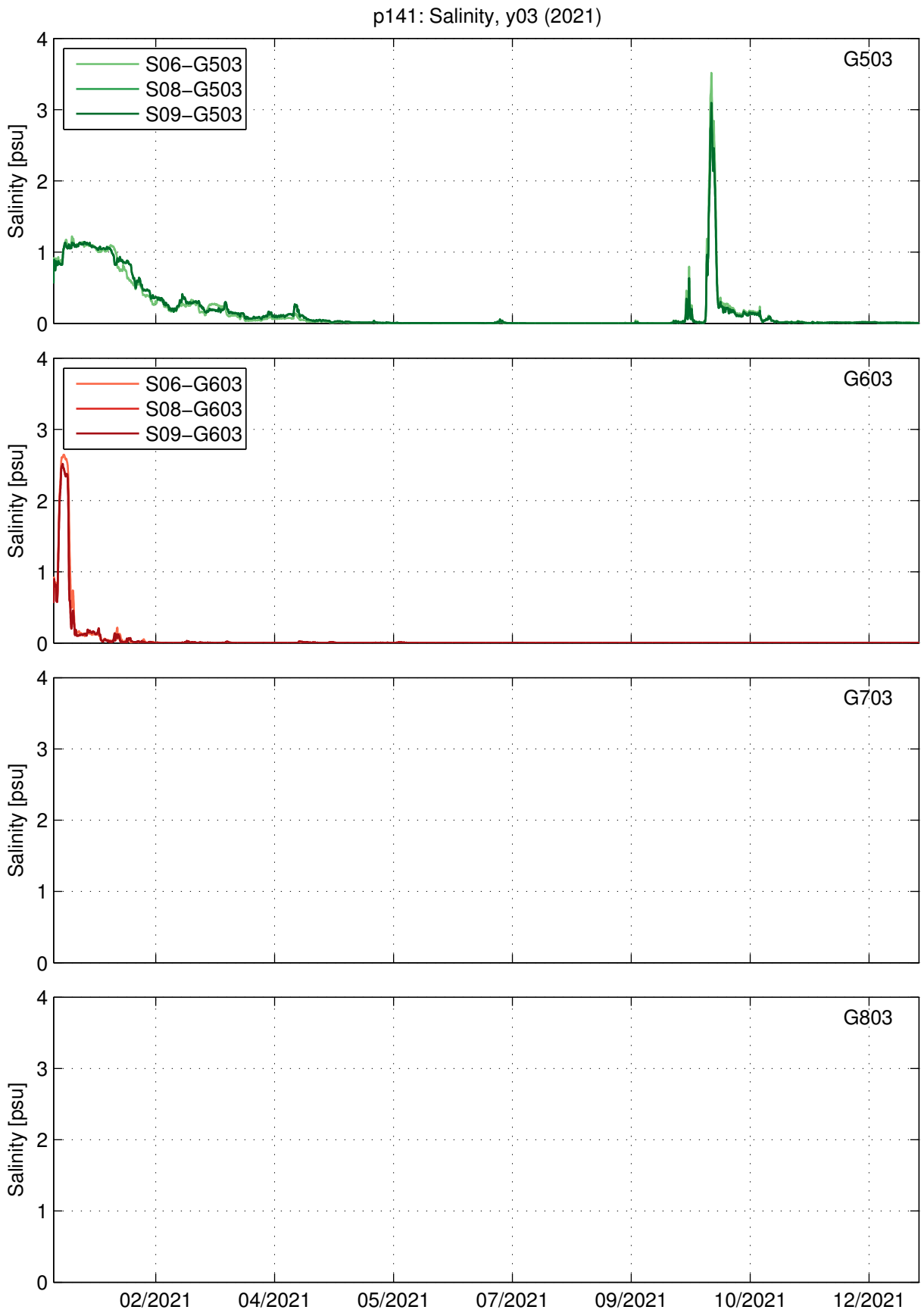

p185: Surface elevation, y52 (2070)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
1.8
1.6
1.4
1.2
1
0.8
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

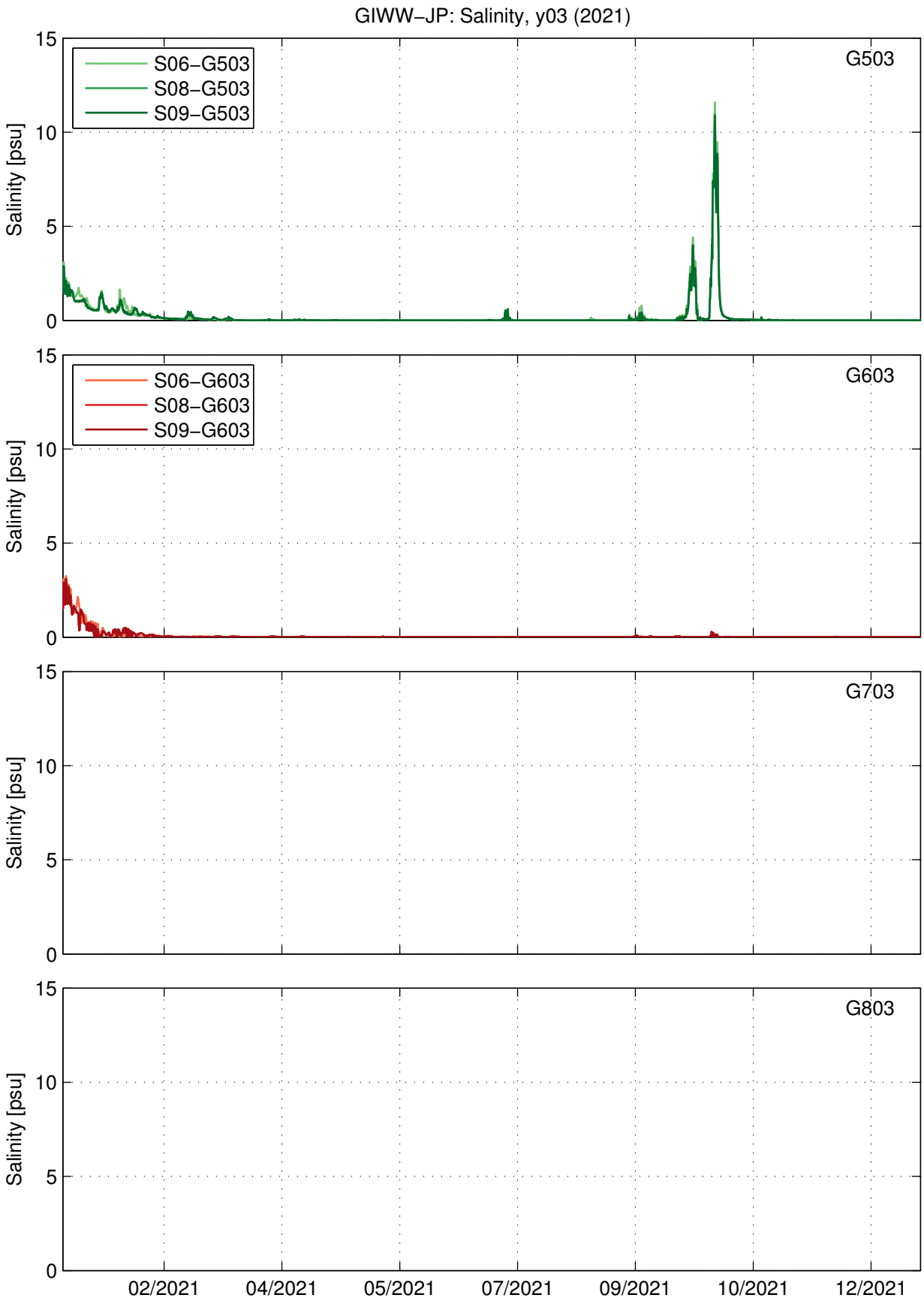

p192: Surface elevation, y52 (2070)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Water Level [m, NAVD88]
2
1.8
1.6
1.4
1.2
1
0.8
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

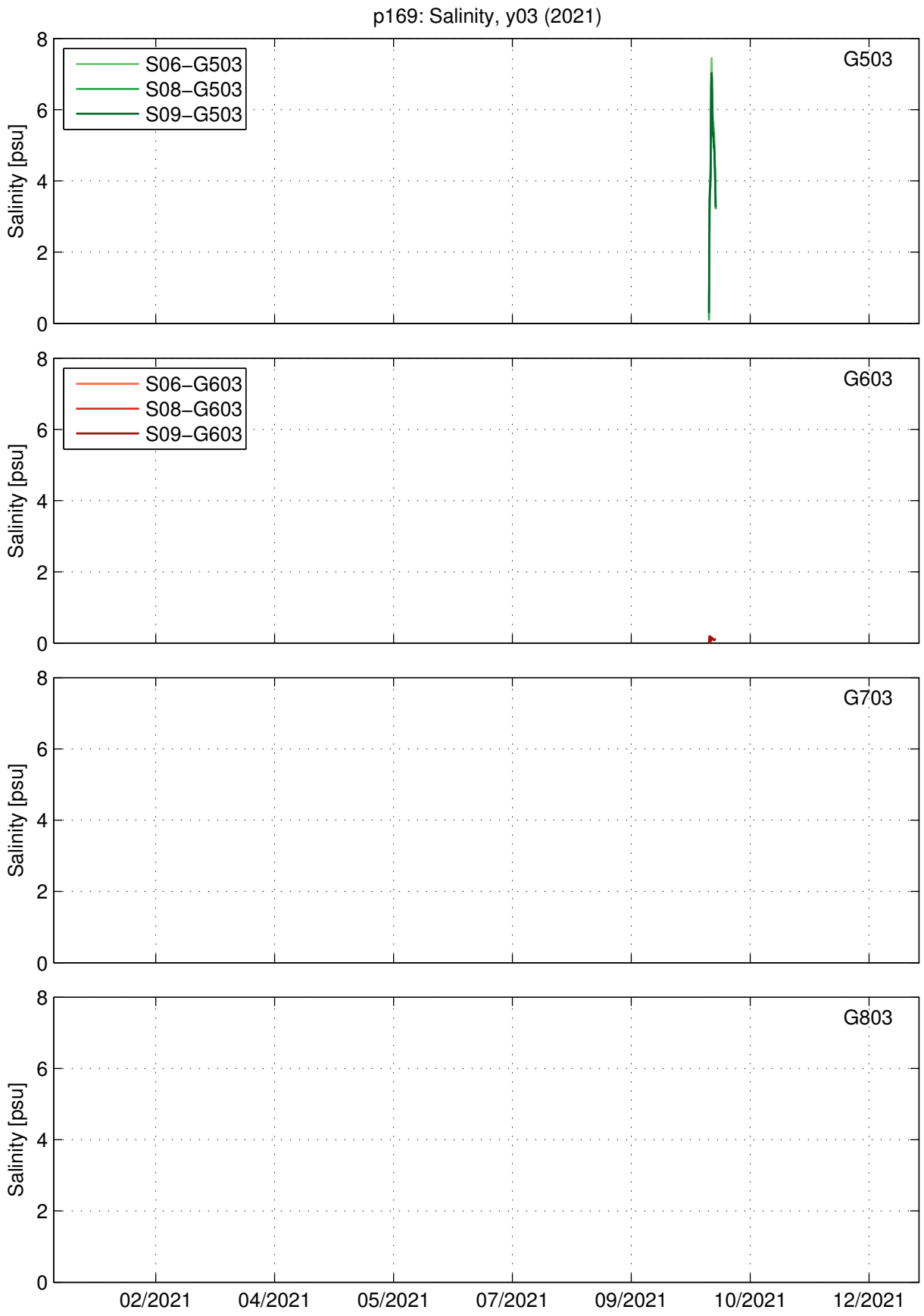

p194: Surface elevation, y52 (2070)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Water Level [m, NAVD88]
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

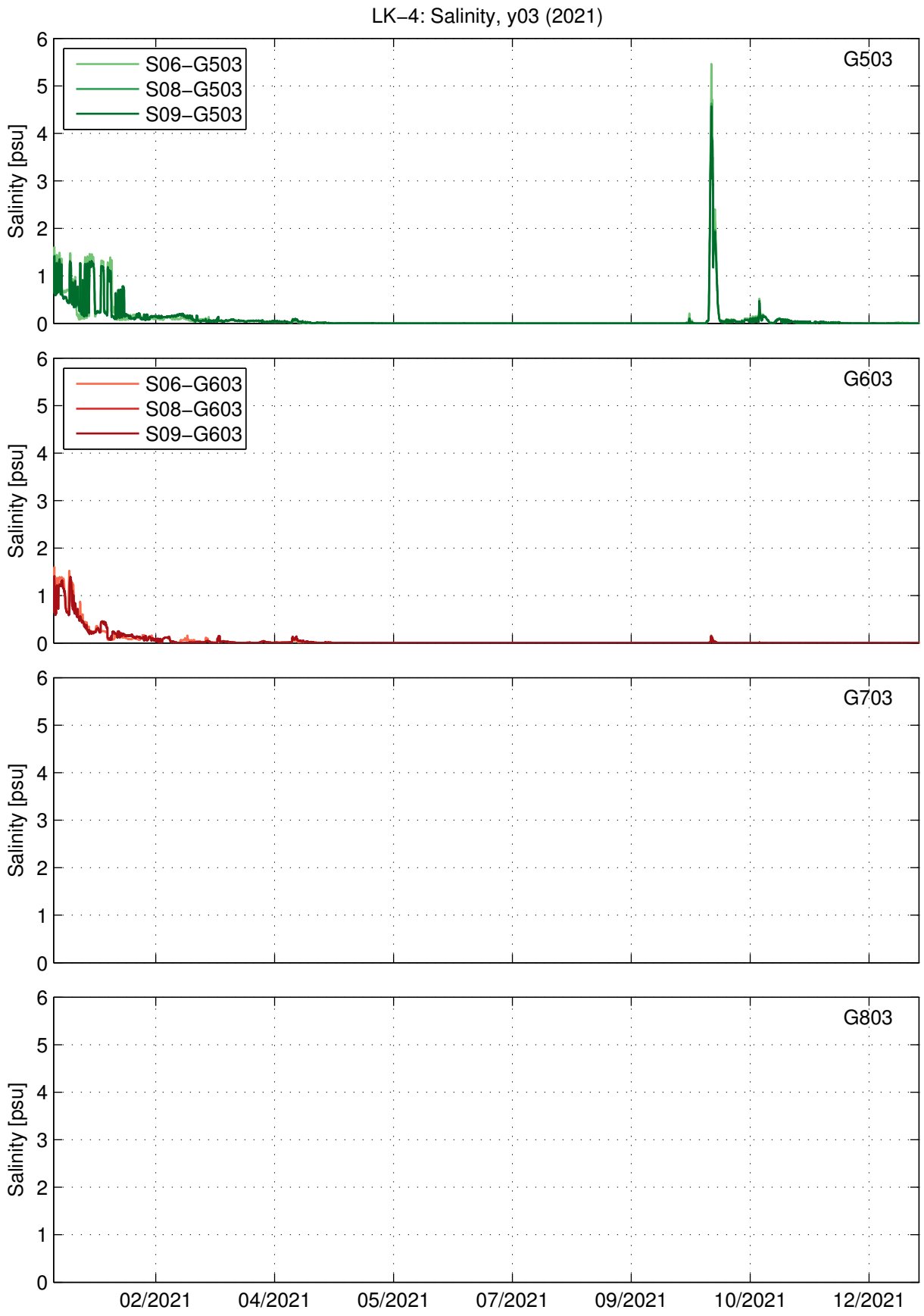

p159: Salinity, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Salinity [psu]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

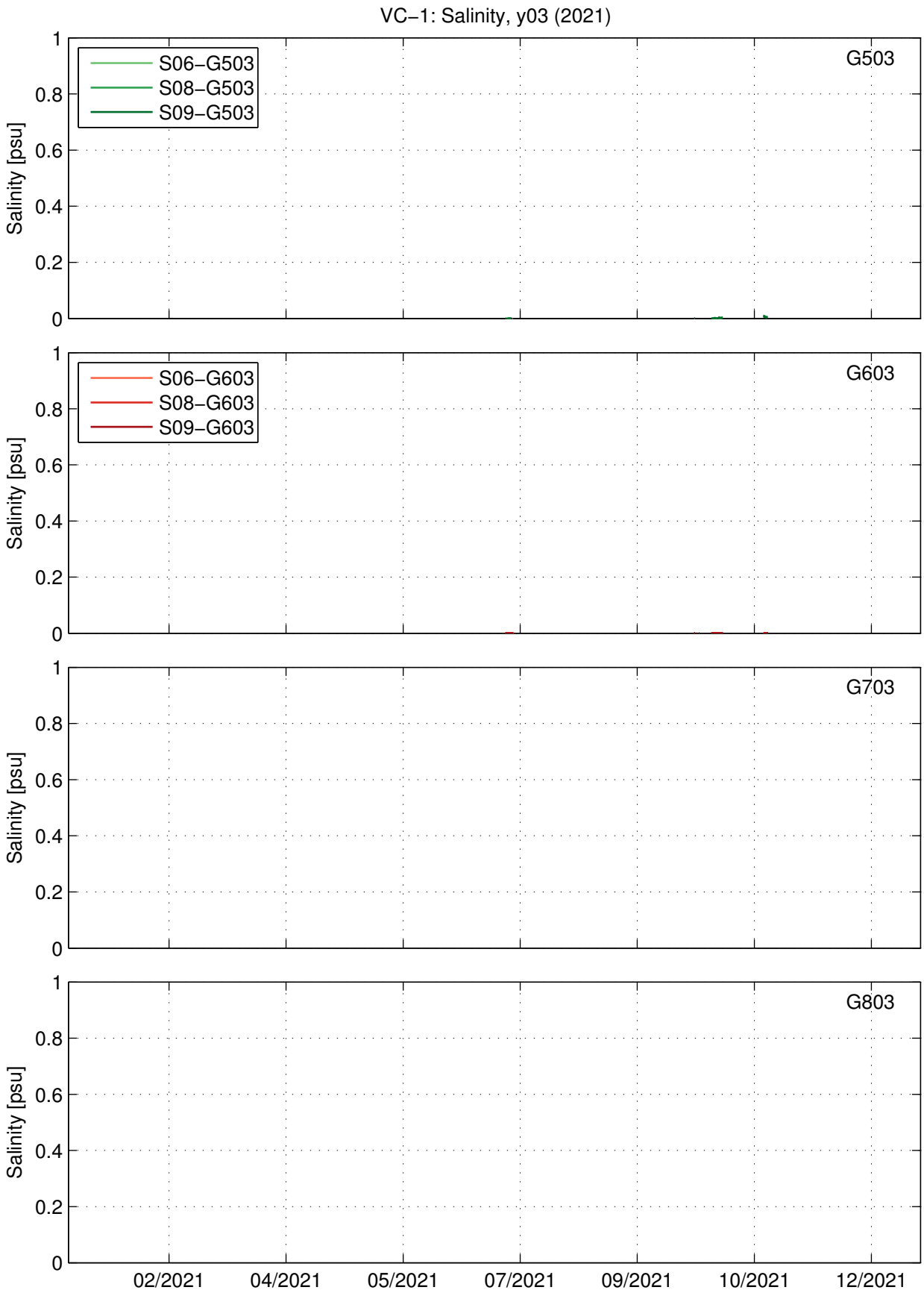

p093: Salinity, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Salinity [psu]
0
0.5
1
1.5
2
2.5
3
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

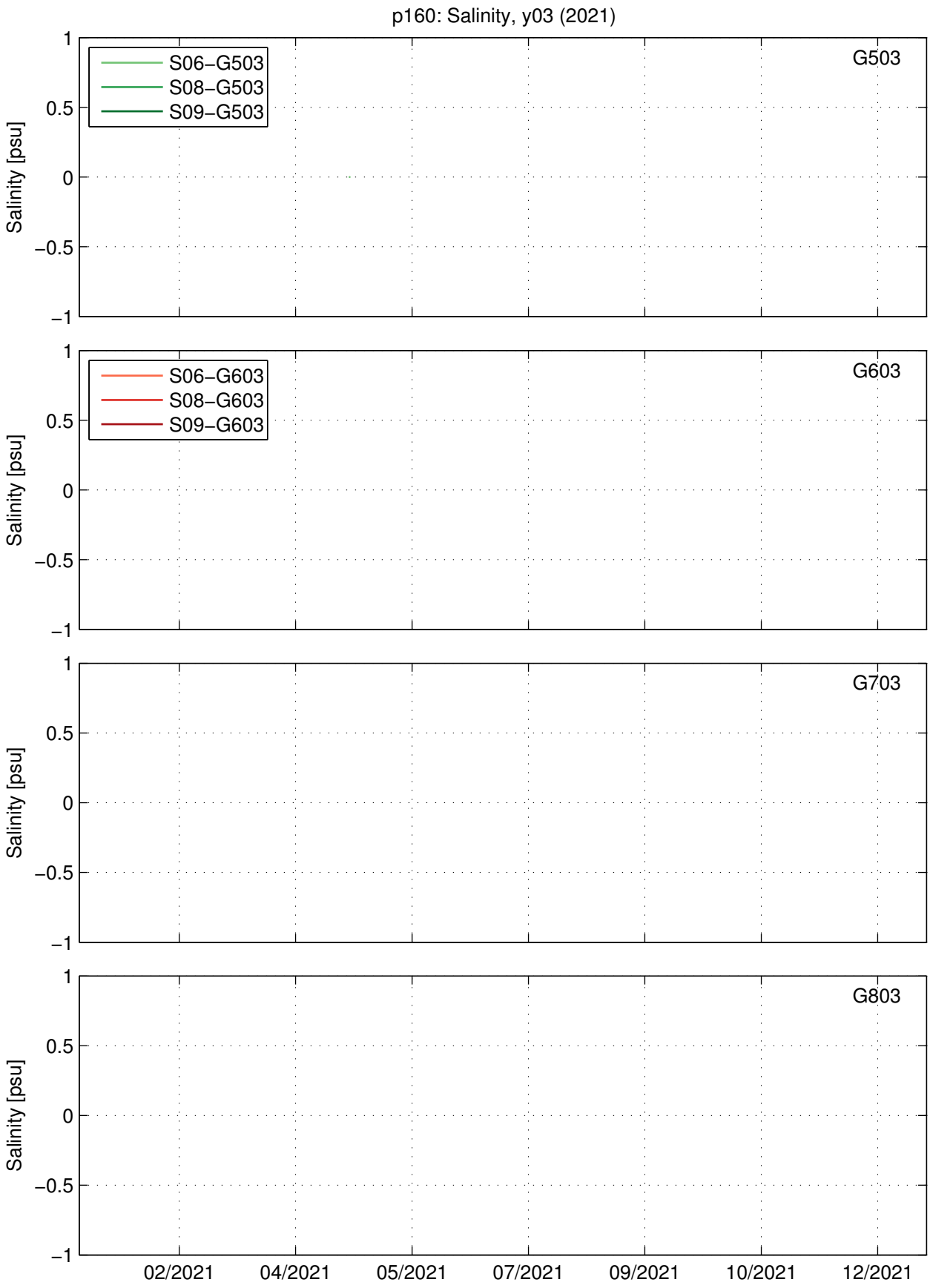

p141: Salinity, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Salinity [psu]
0
1
2
3
4
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

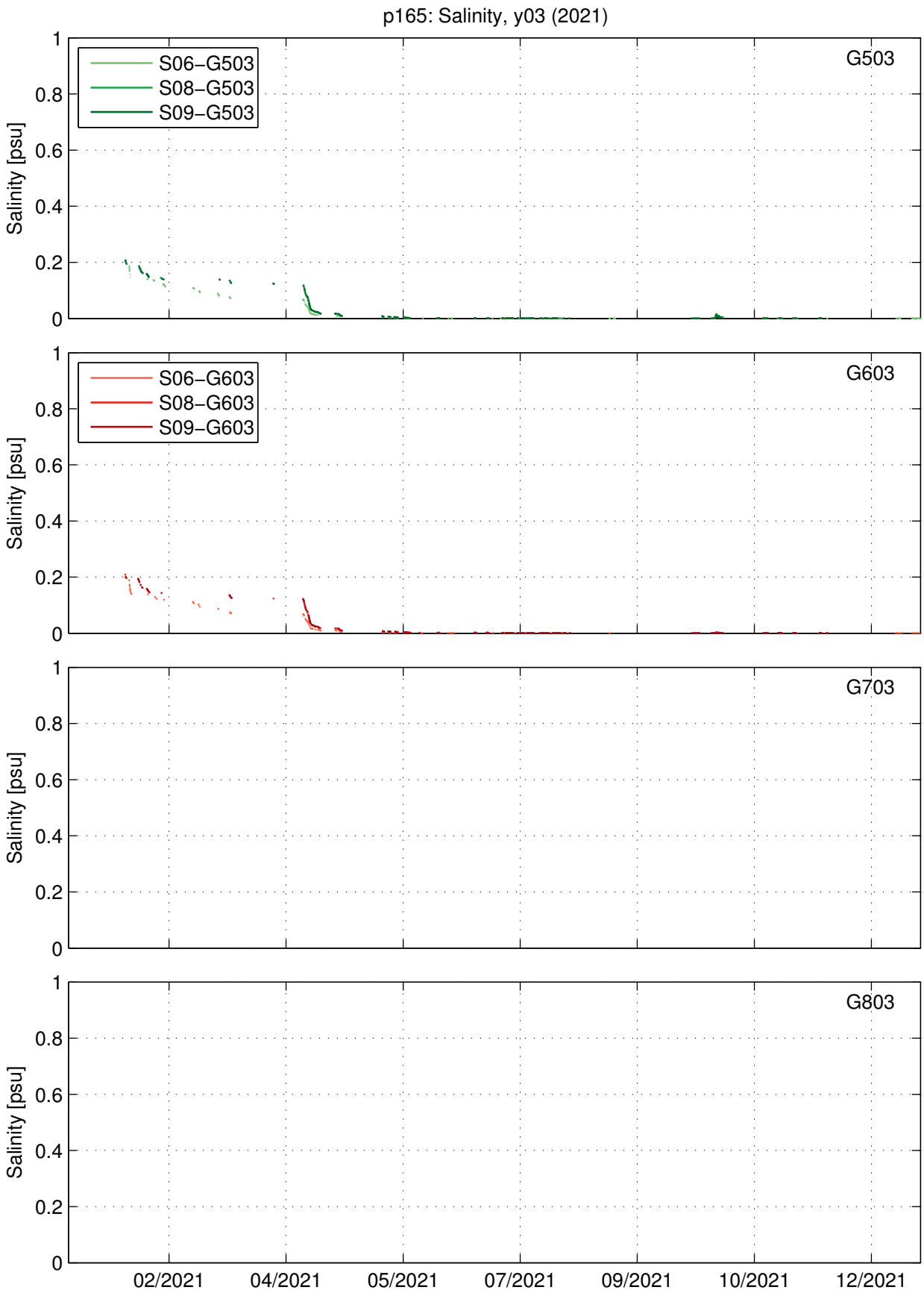

GIWW–JP: Salinity, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Salinity [psu]
0
5
10
15
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

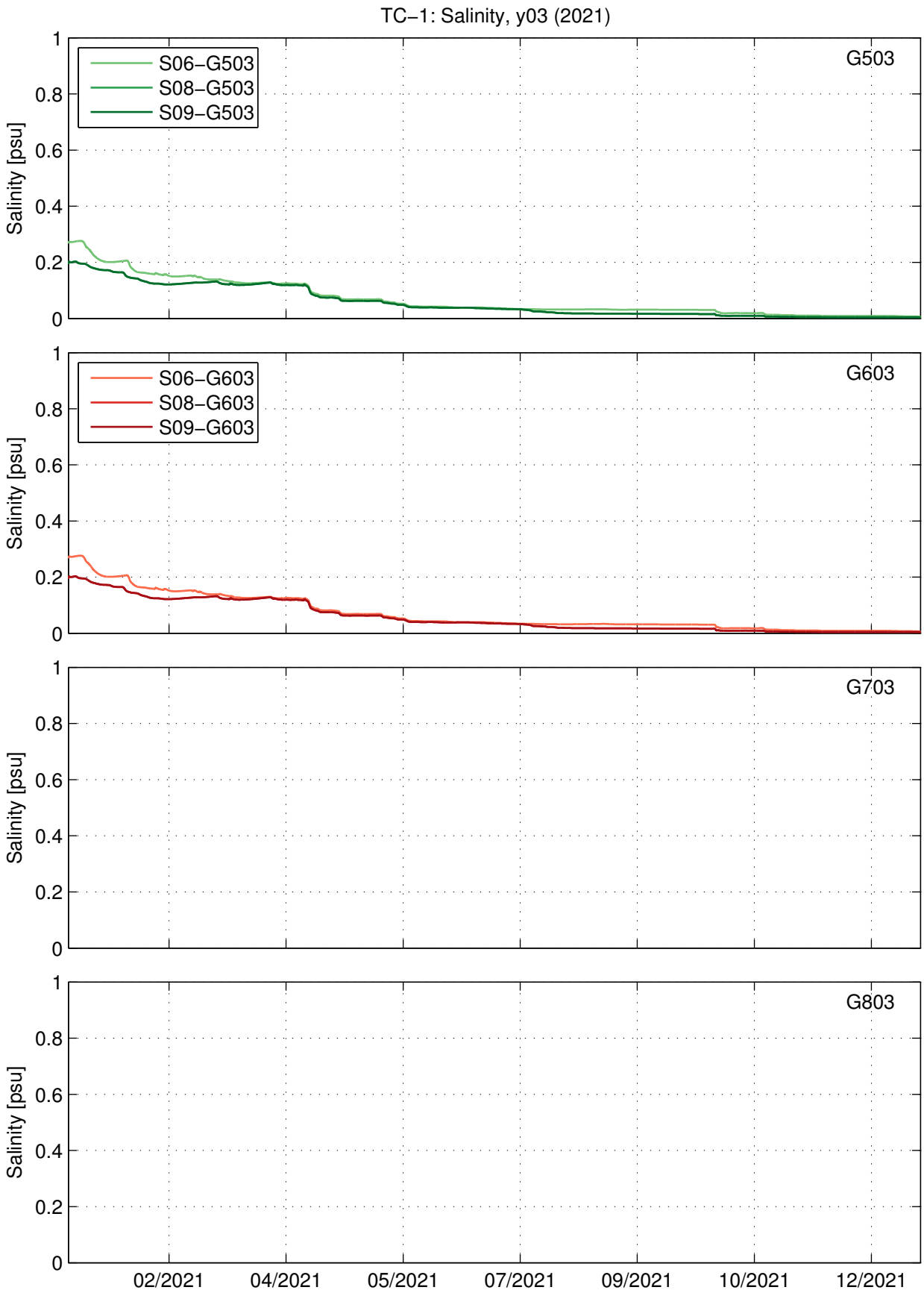

p169: Salinity, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Salinity [psu]
0
2
4
6
8
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

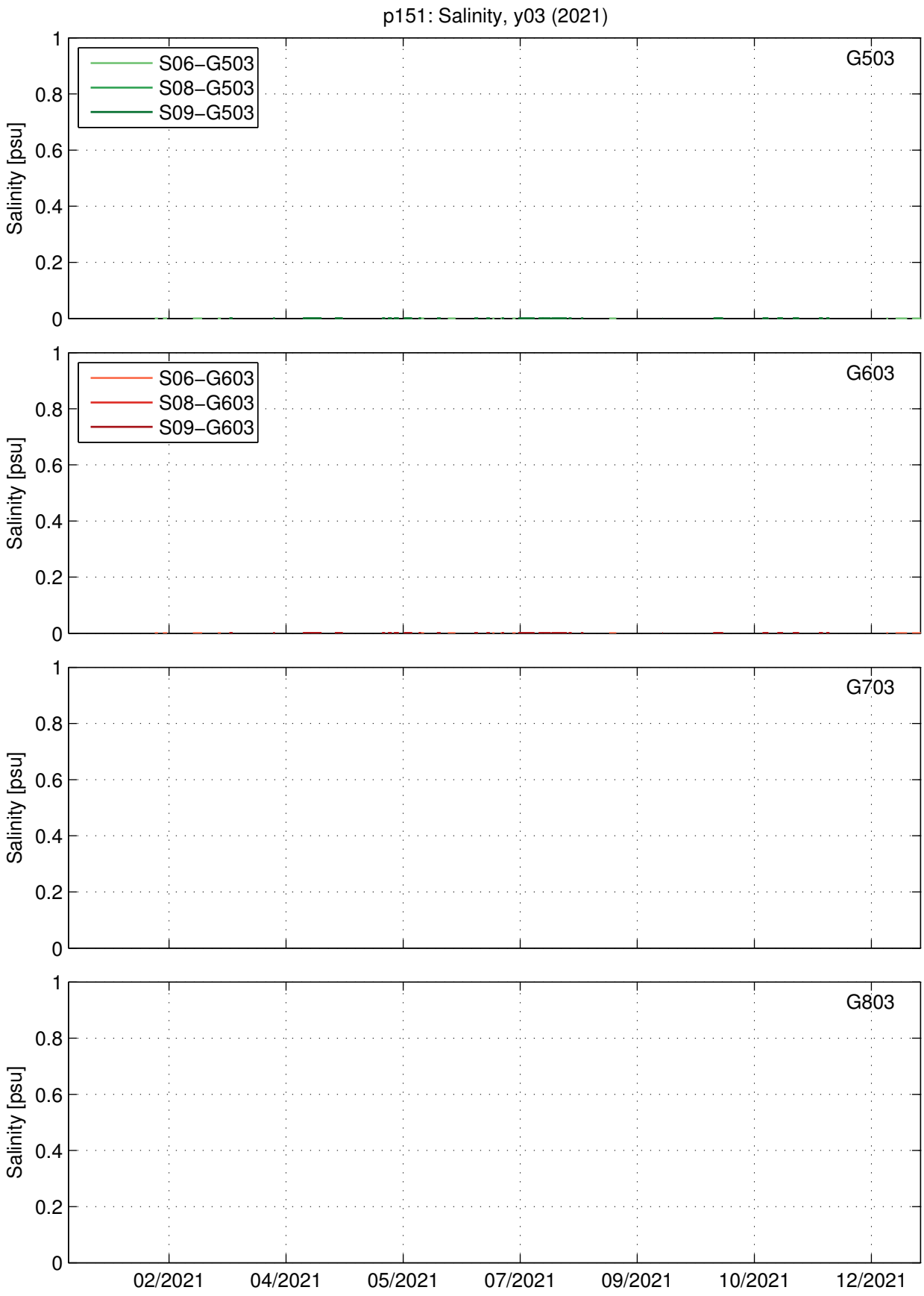

LK−4: Salinity, y03 (2021)
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
G703
G803
Salinity [psu]
0
1
2
3
4
5
6
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

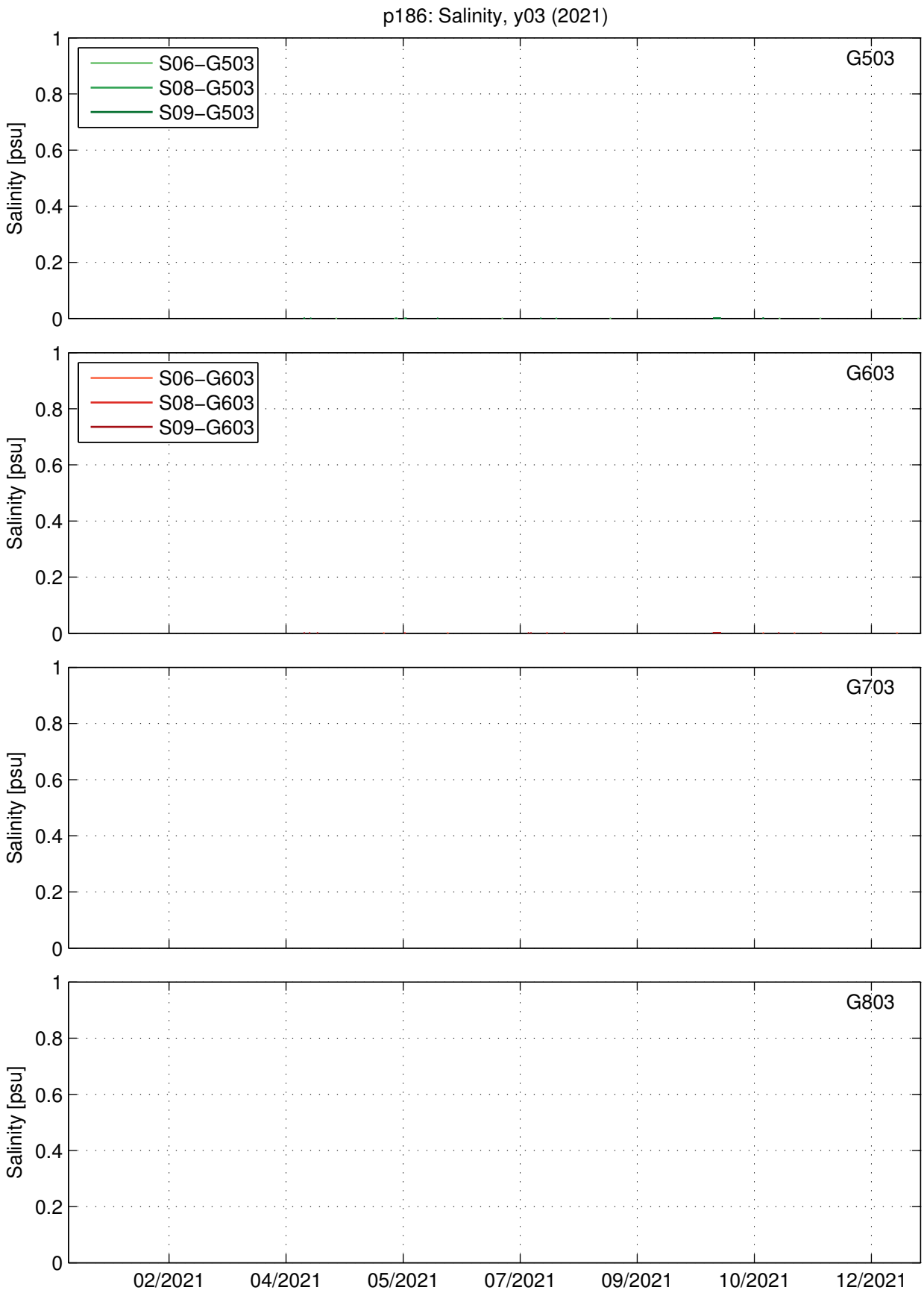

VC−1: Salinity, y03 (2021)
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
G703
G803
Salinity [psu]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

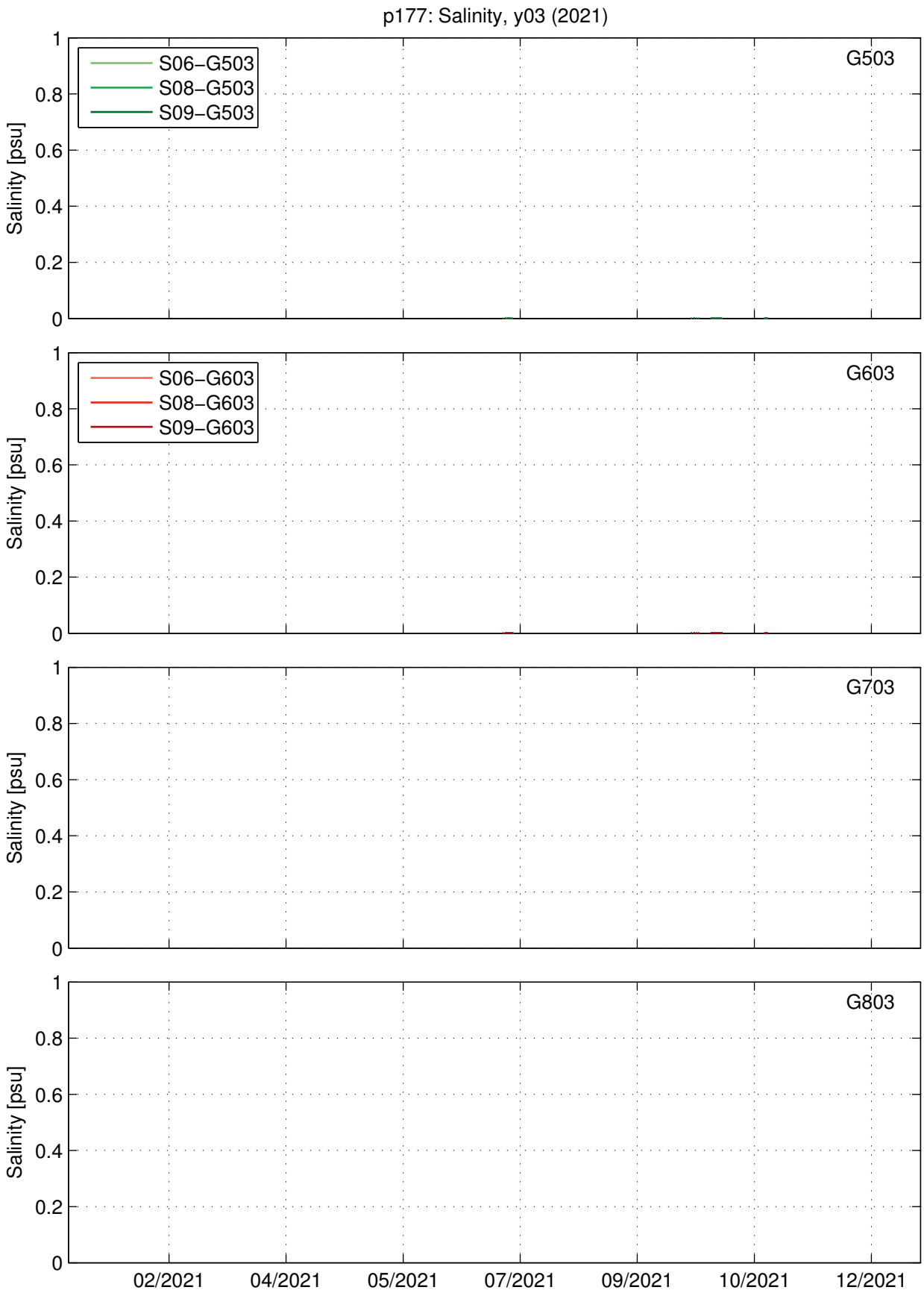

p160: Salinity, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Salinity [psu]
1
0.5
0
−0.5
−1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

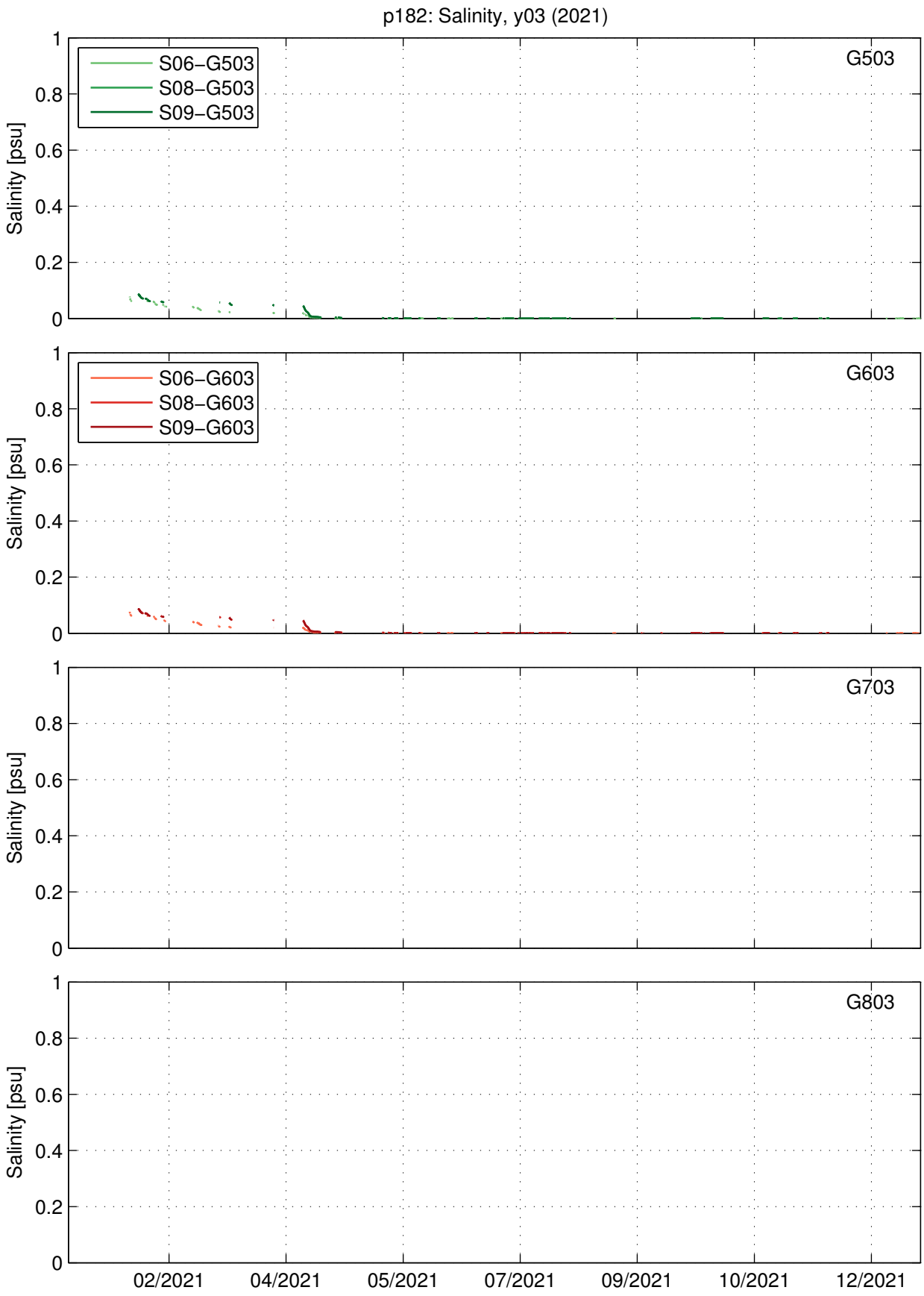

p165: Salinity, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Salinity [psu]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

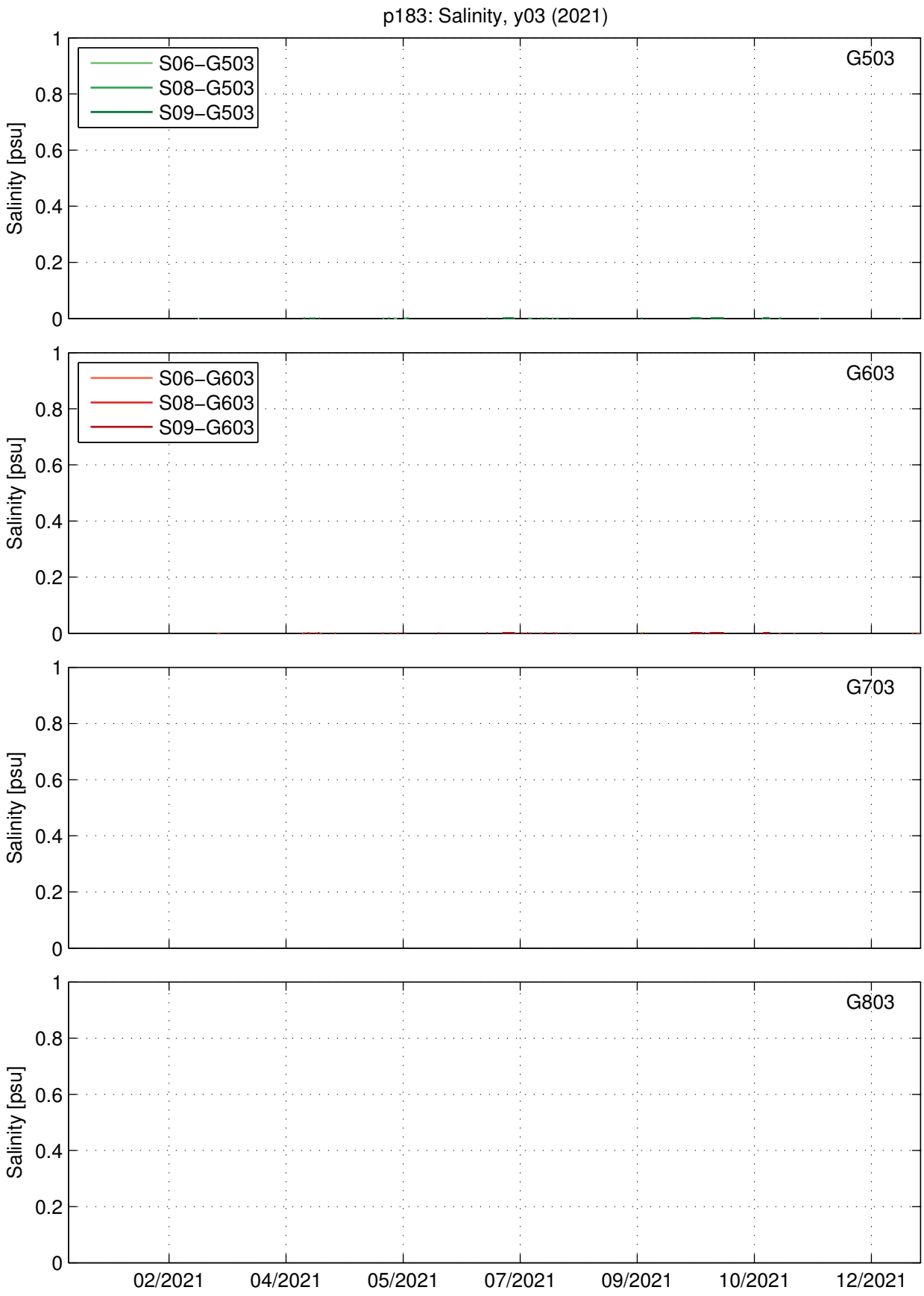

TC−1: Salinity, y03 (2021)
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
G703
G803
Salinity [psu]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

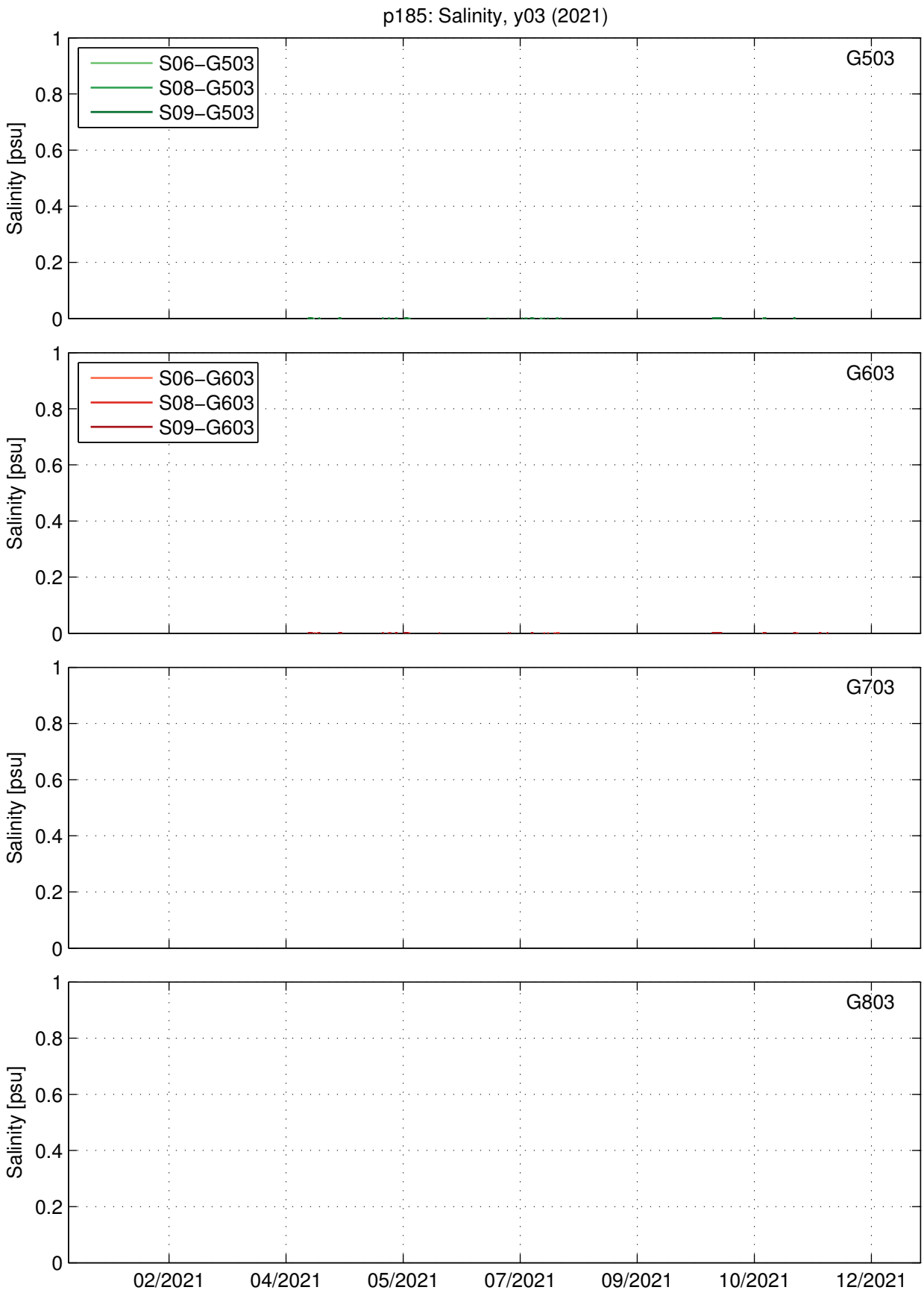

p151: Salinity, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Salinity [psu]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

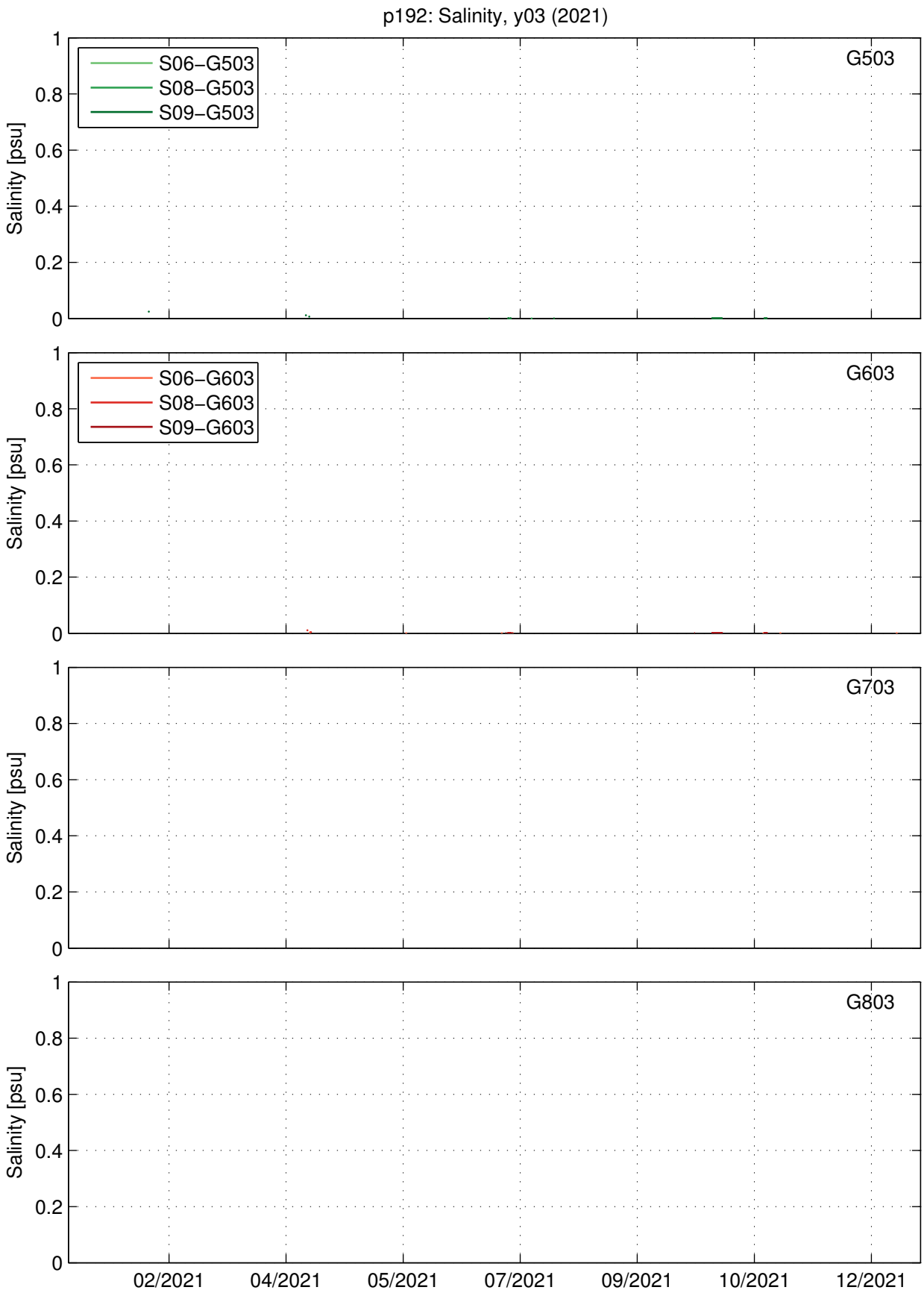

p186: Salinity, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Salinity [psu]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

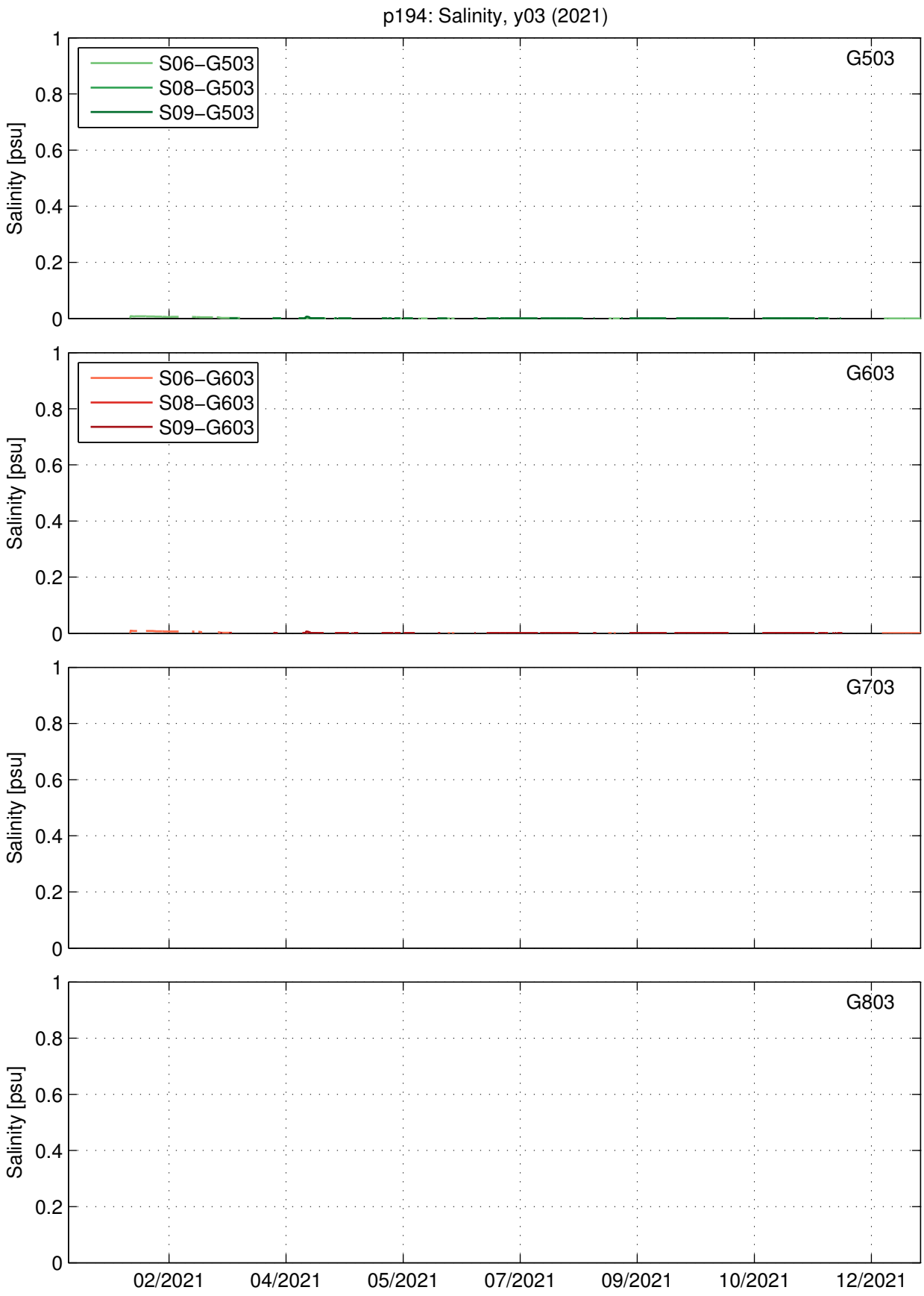

p177: Salinity, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Salinity [psu]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

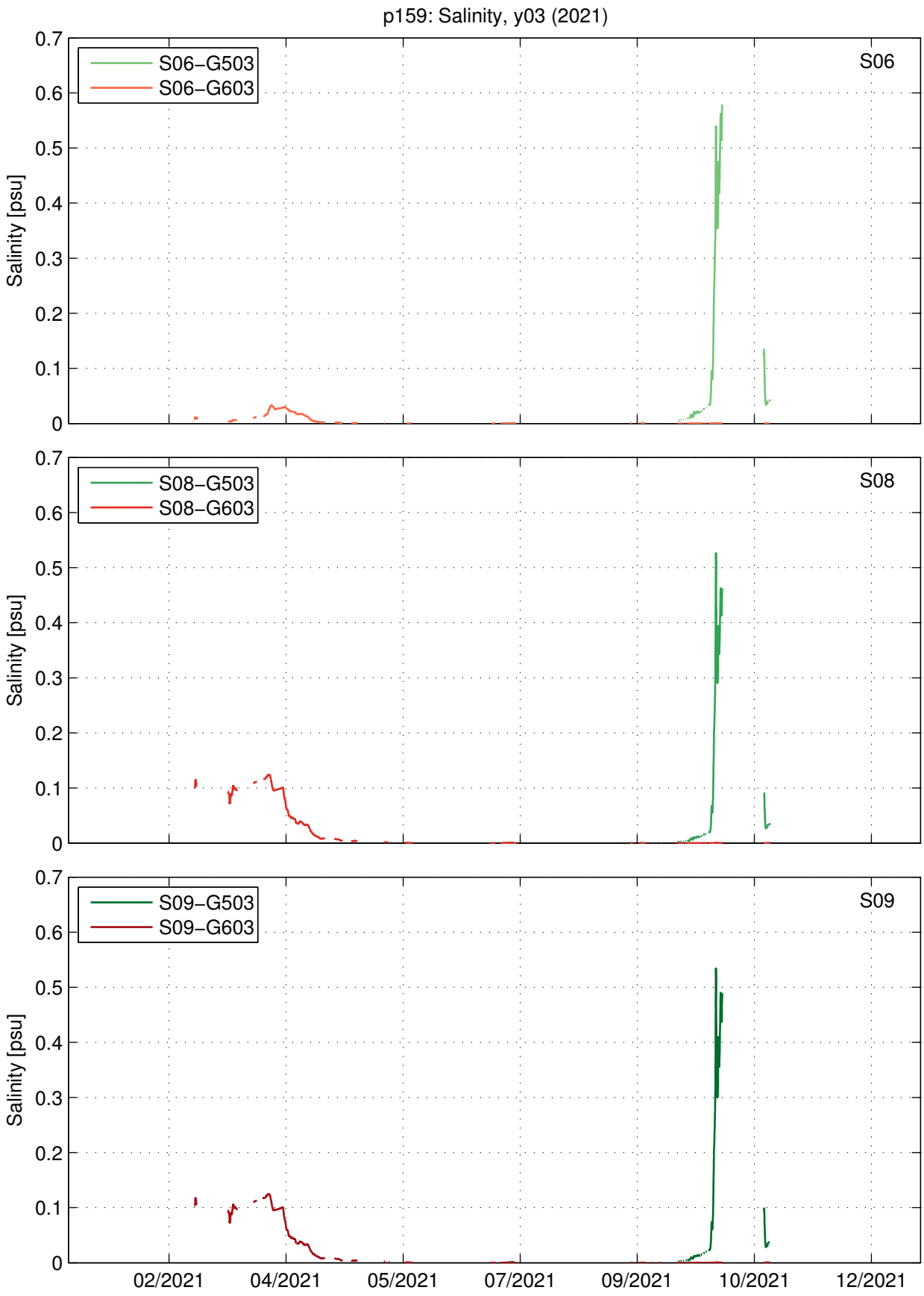

p182: Salinity, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Salinity [psu]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

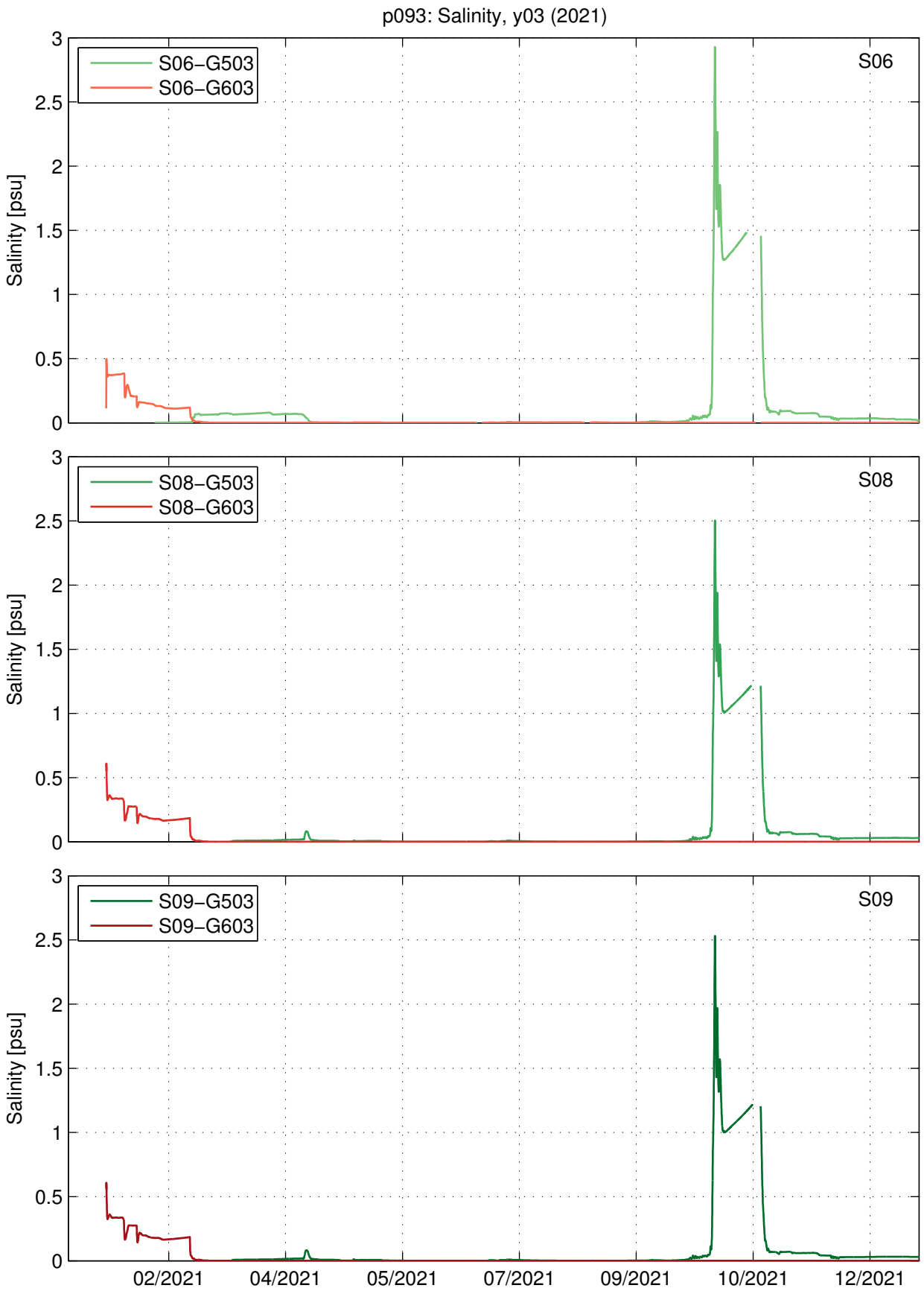

p183: Salinity, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Salinity [psu]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

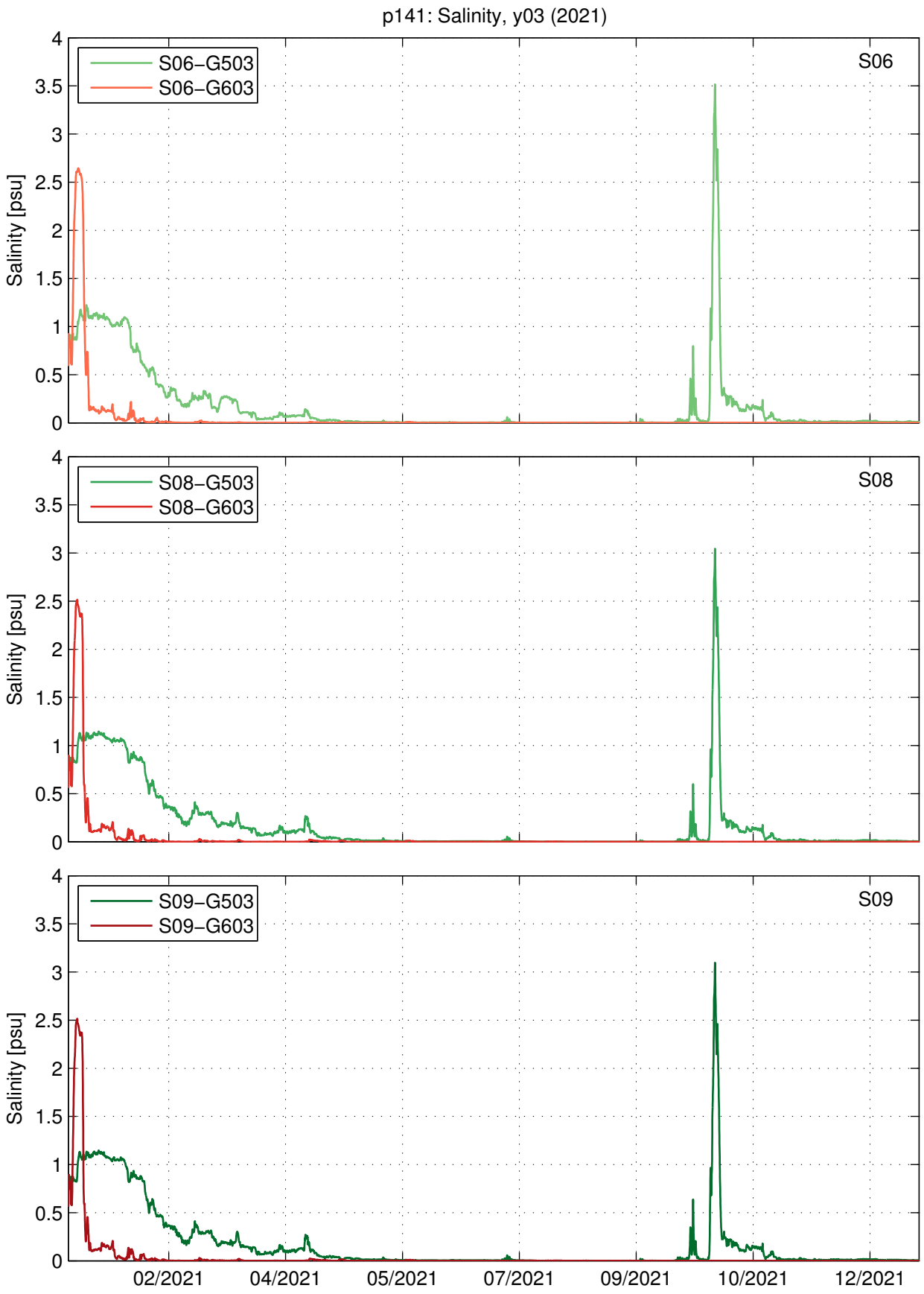

p185: Salinity, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Salinity [psu]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

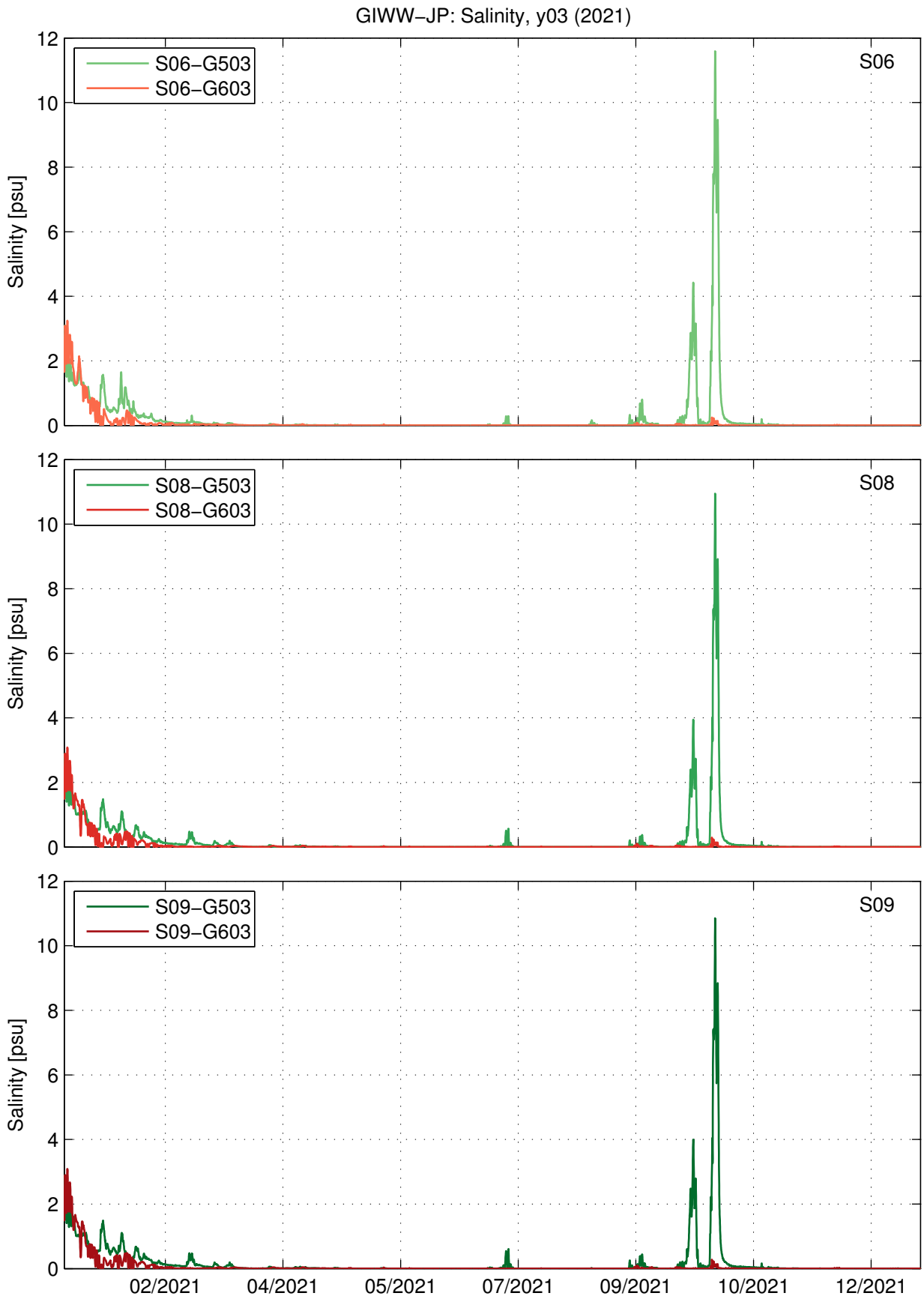

p192: Salinity, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Salinity [psu]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

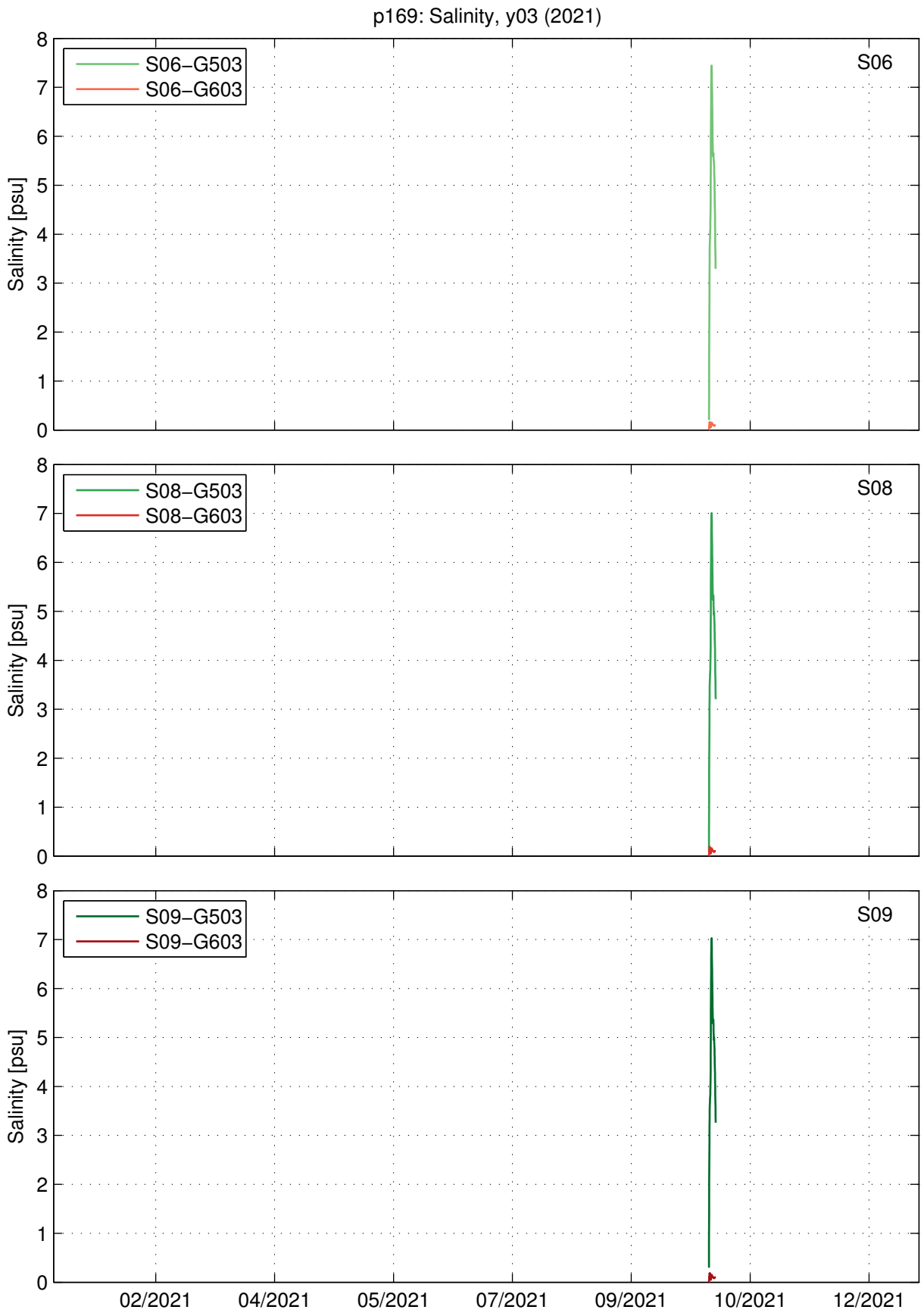

p194: Salinity, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Salinity [psu]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

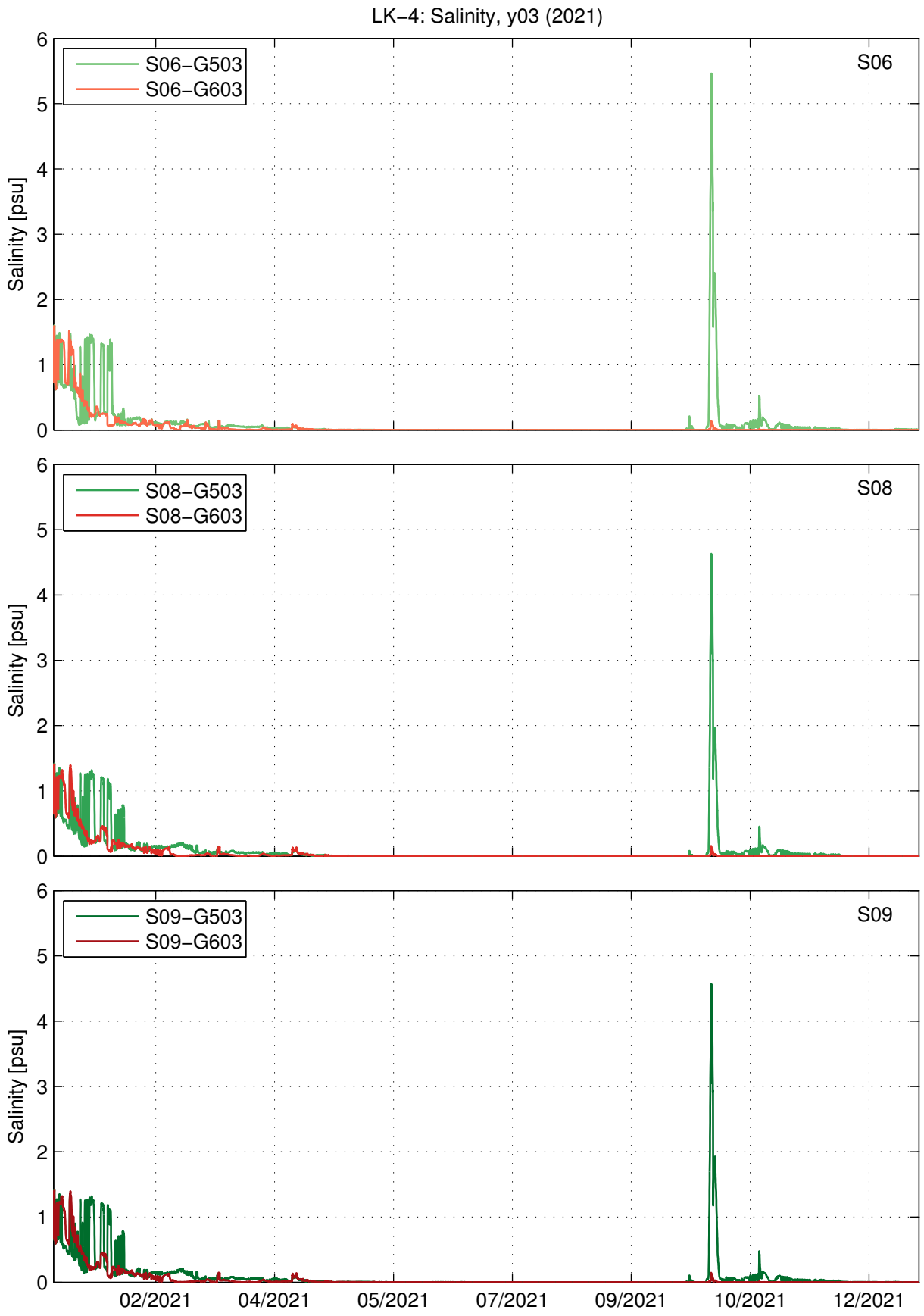

p159: Salinity, y03 (2021)
S06–G503
S06–G603
S06
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
Salinity [psu]
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

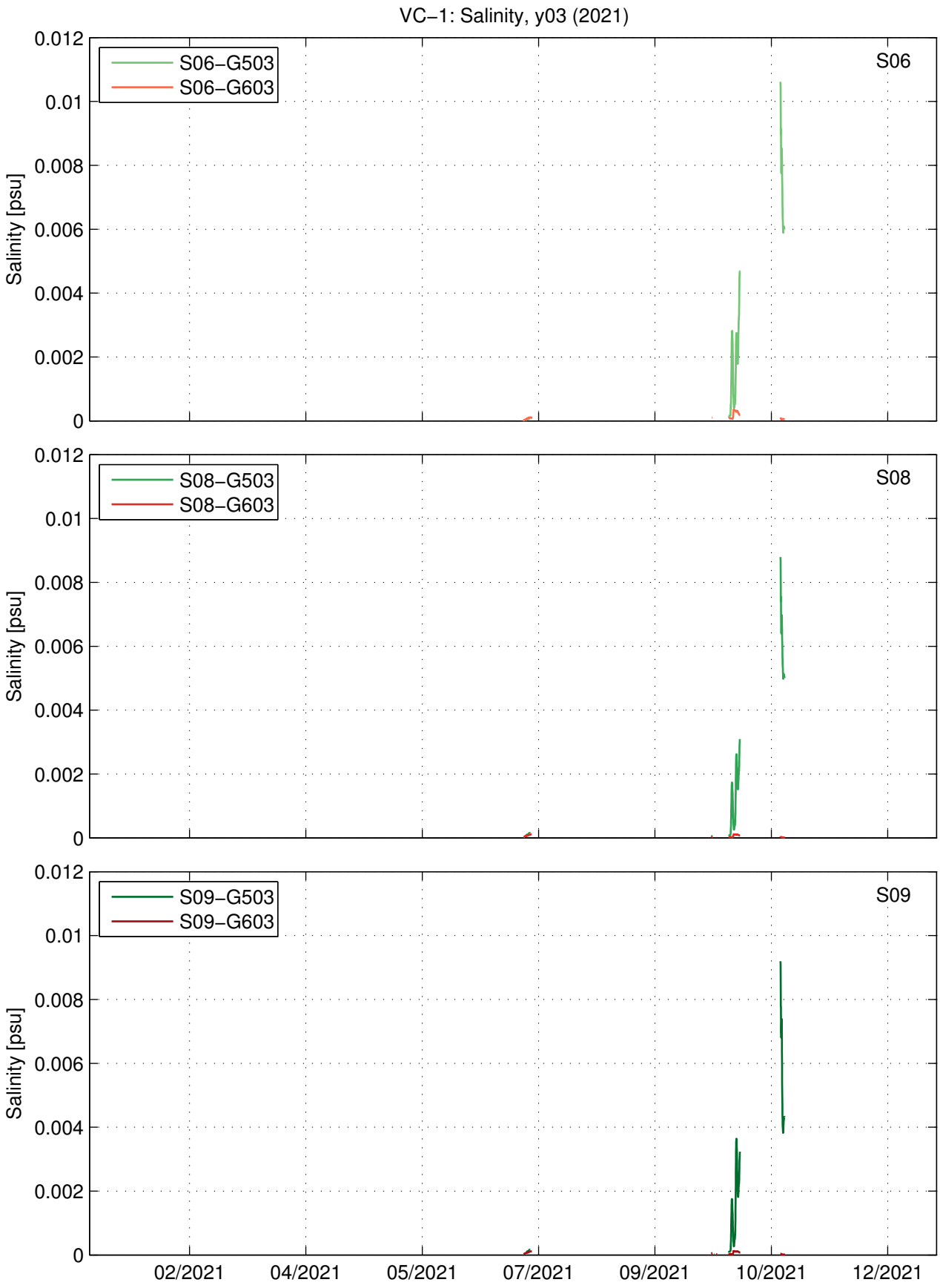

p093: Salinity, y03 (2021)
S06–G503
S06–G603
S06
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
Salinity [psu]
0
0.5
1
1.5
2
2.5
3
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

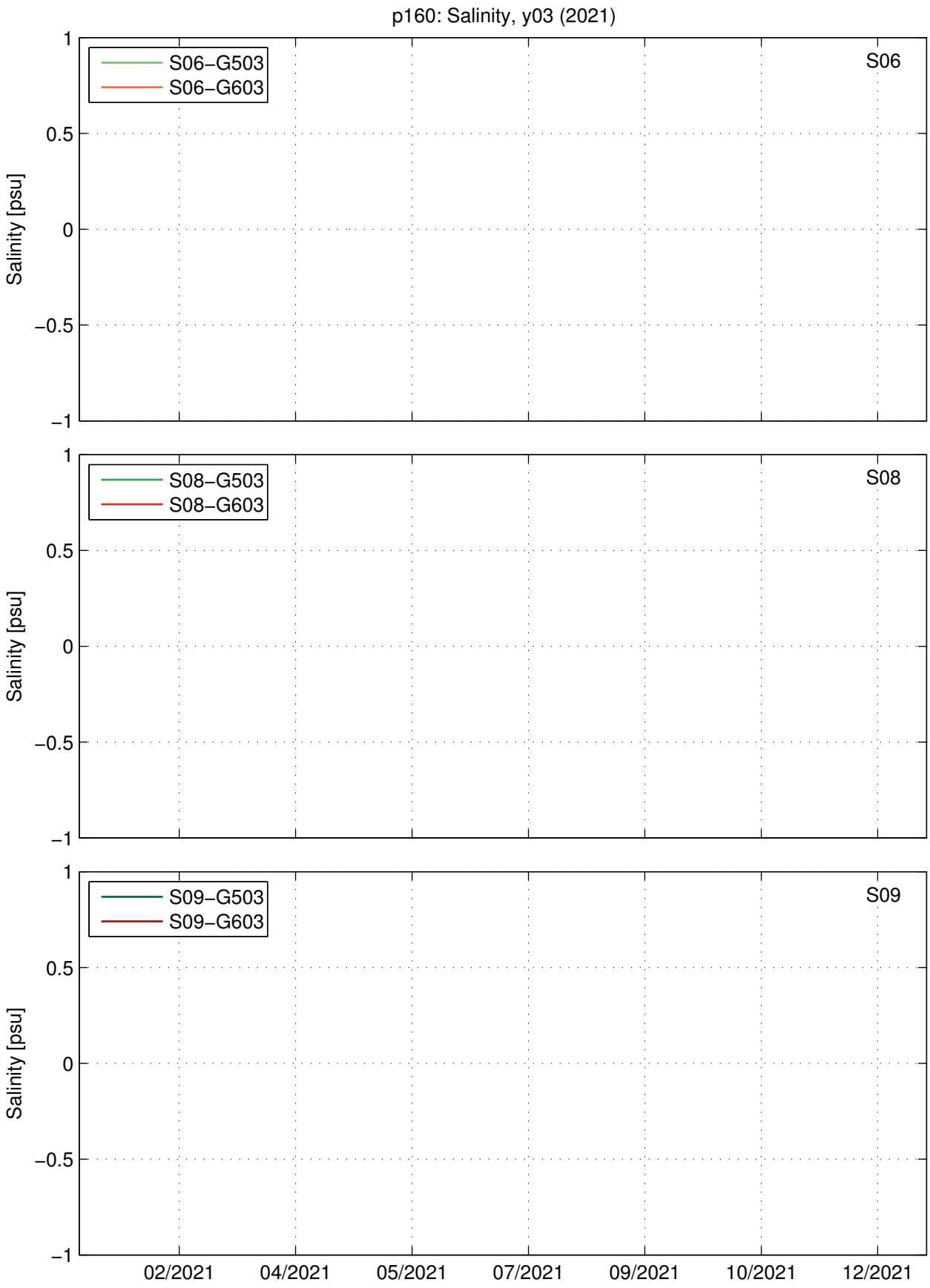

p141: Salinity, y03 (2021)
S06–G503
S06–G603
S06
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
Salinity [psu]
0
0.5
1
1.5
2
2.5
3
3.5
4
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

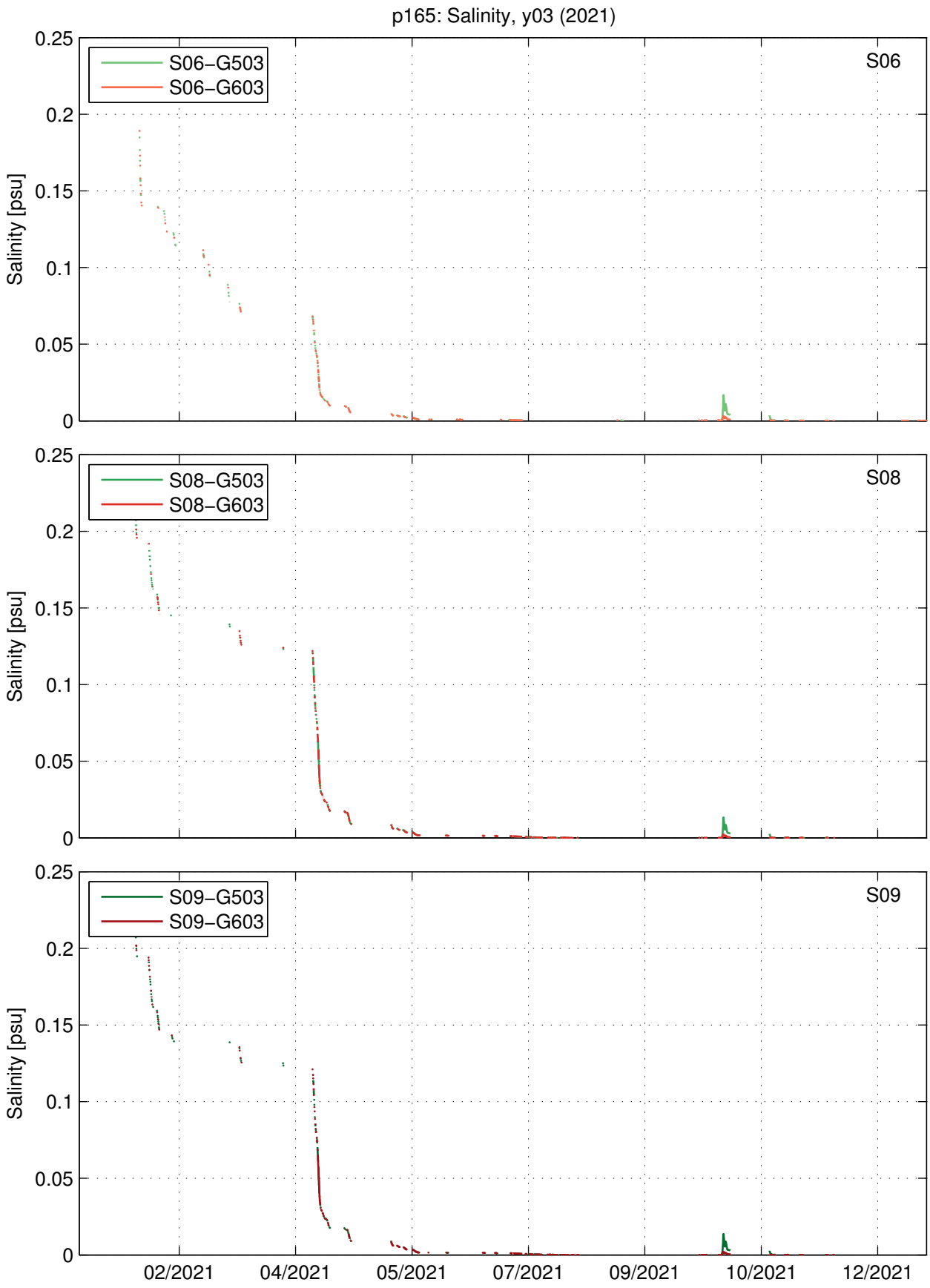

GIWW–JP: Salinity, y03 (2021)
S06–G503
S06–G603
S06
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
Salinity [psu]
0
2
4
6
8
10
12
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

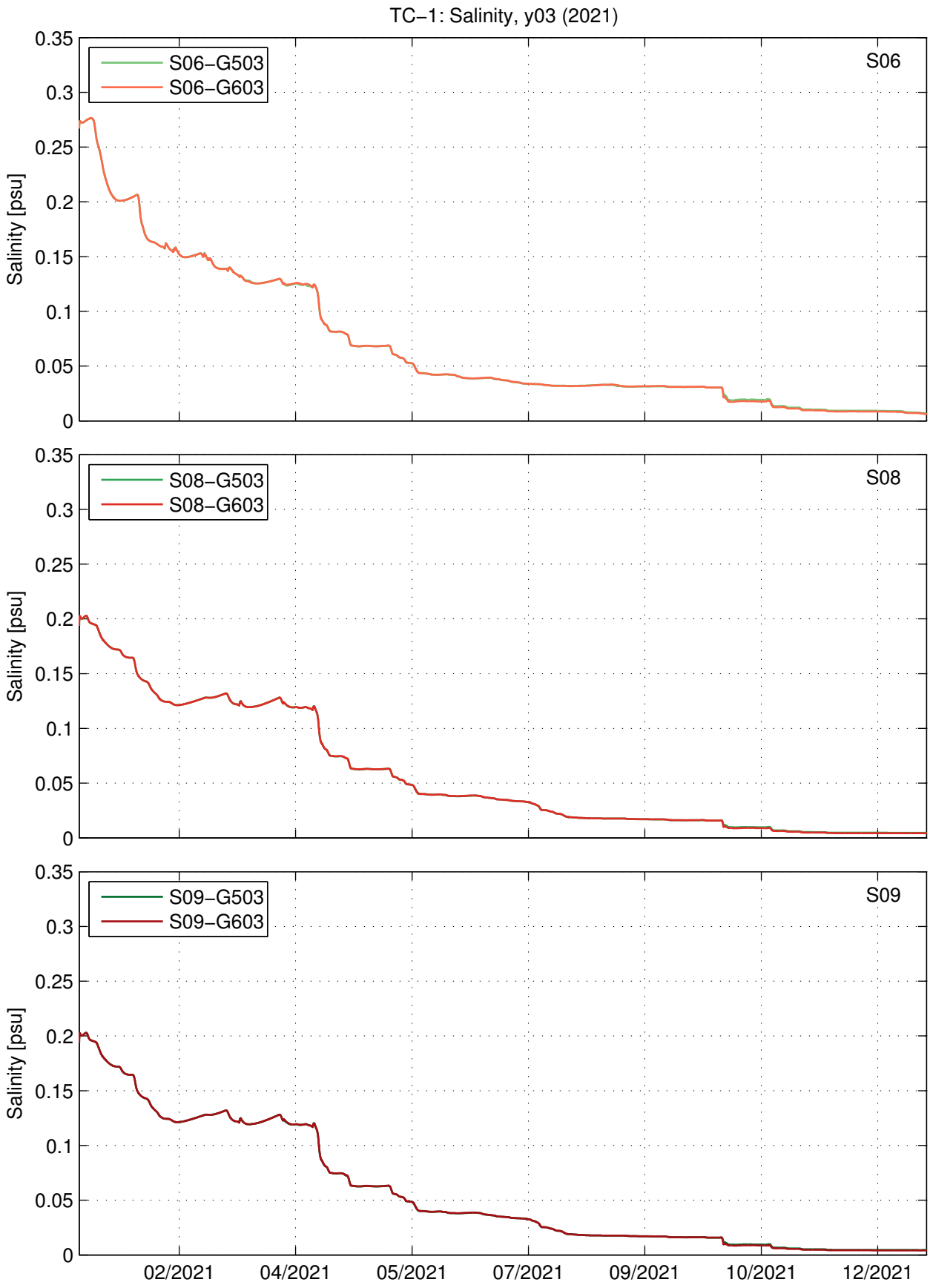

p169: Salinity, y03 (2021)
S06–G503
S06–G603
S06
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
Salinity [psu]
0
1
2
3
4
5
6
7
8
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

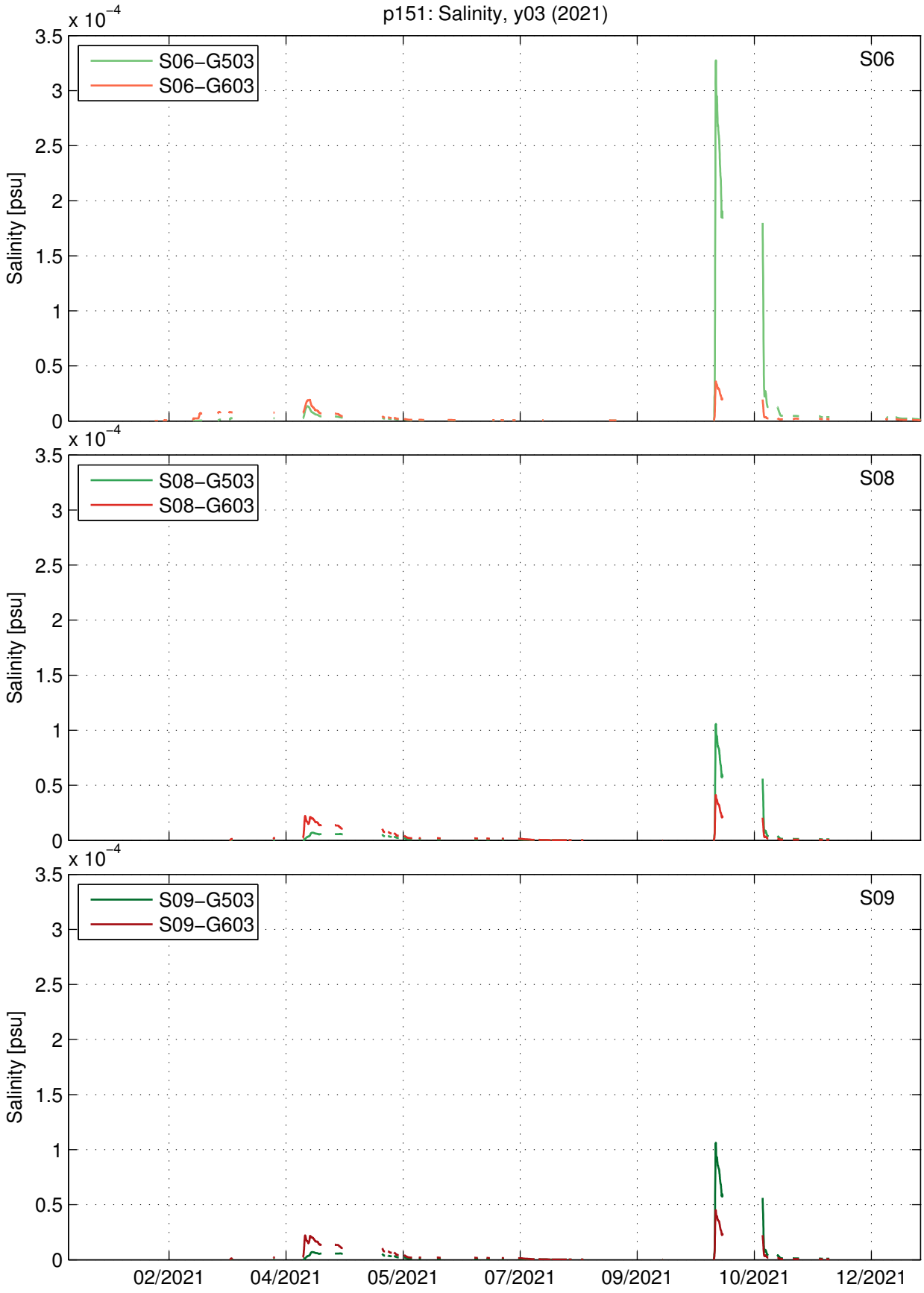

LK−4: Salinity, y03 (2021)
S06−G503
S06−G603
S06
S08−G503
S08−G603
S08
S09−G503
S09−G603
S09
Salinity [psu]
0
1
2
3
4
5
6
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

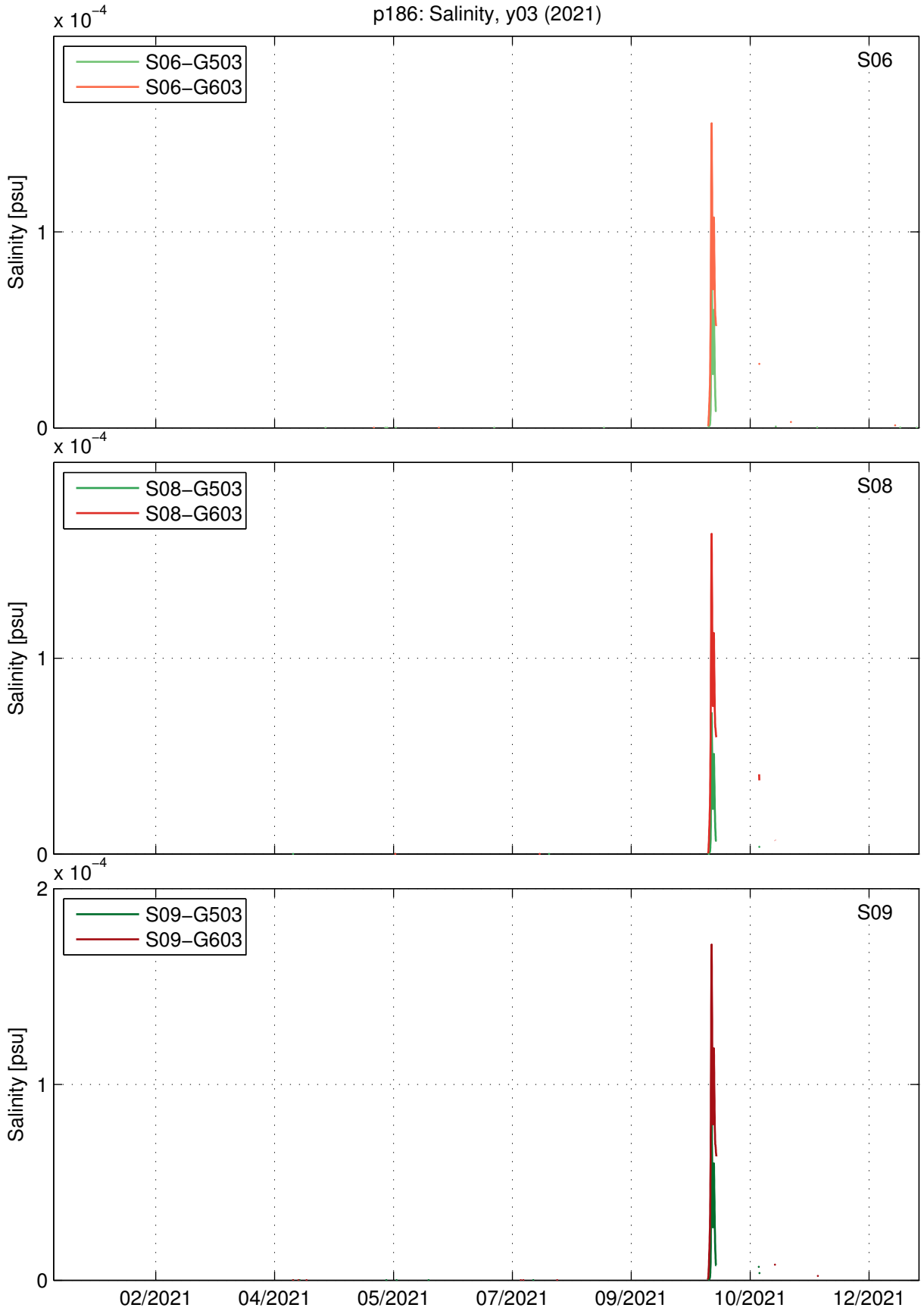

VC−1: Salinity, y03 (2021)
S06−G503
S06−G603
S06
S08−G503
S08−G603
S08
S09−G503
S09−G603
S09
Salinity [psu]
0.012
0.01
0.008
0.006
0.004
0.002
0
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

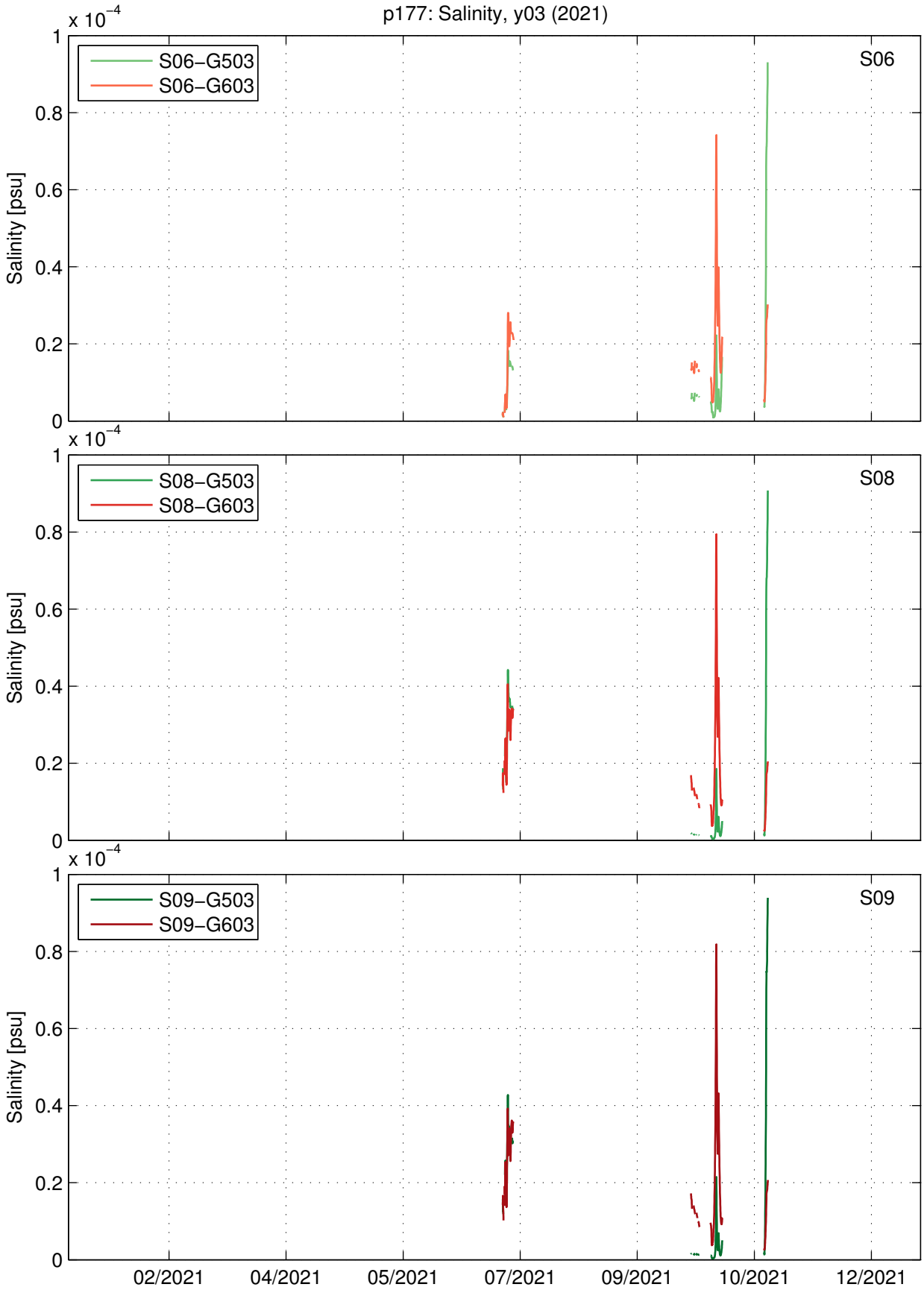

p160: Salinity, y03 (2021)
S06–G503
S06–G603
S06
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
Salinity [psu]
1
0.5
0
−0.5
−1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

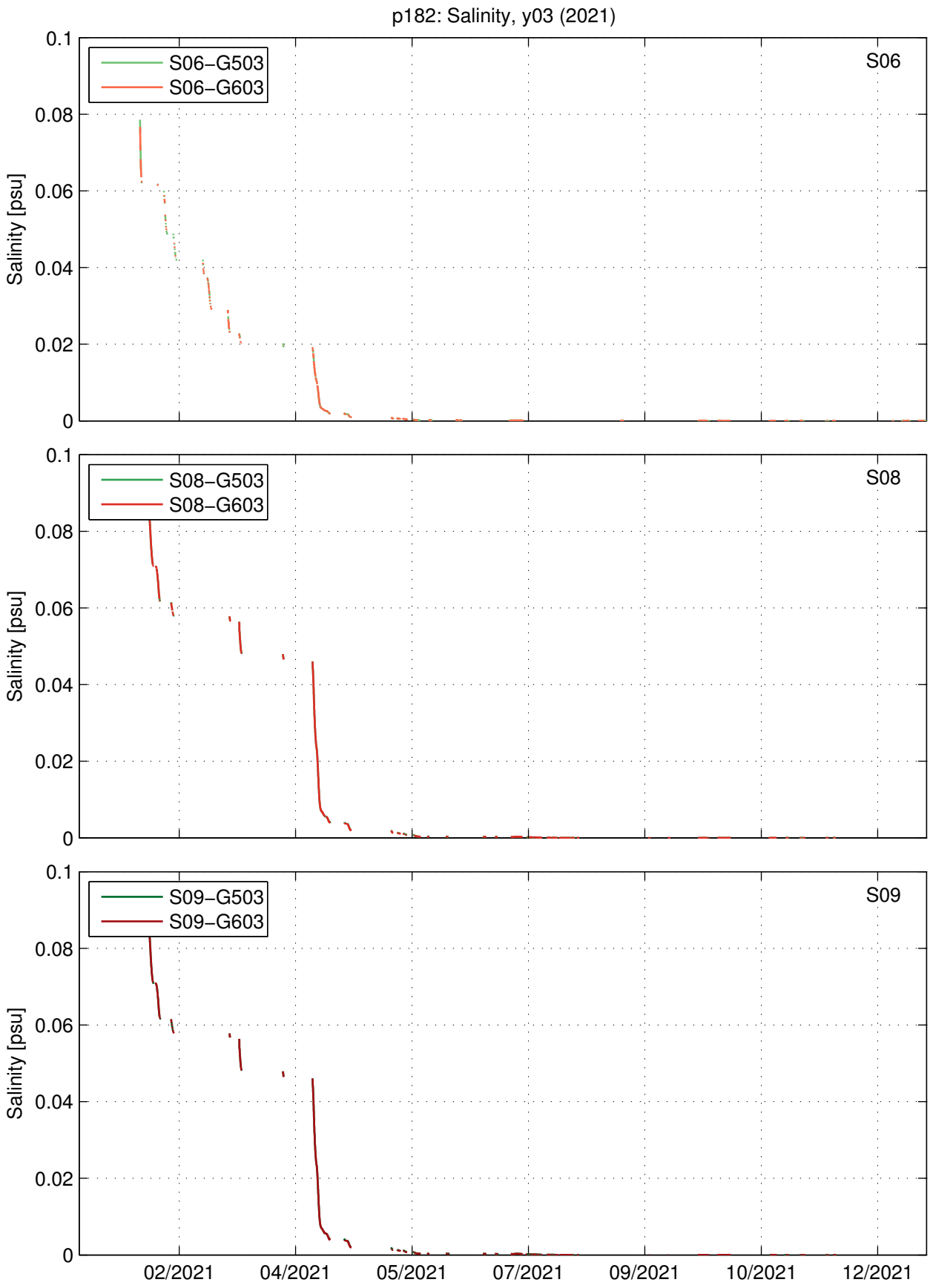

p165: Salinity, y03 (2021)
S06–G503
S06–G603
S06
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
Salinity [psu]
0.25
0.2
0.15
0.1
0.05
0
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

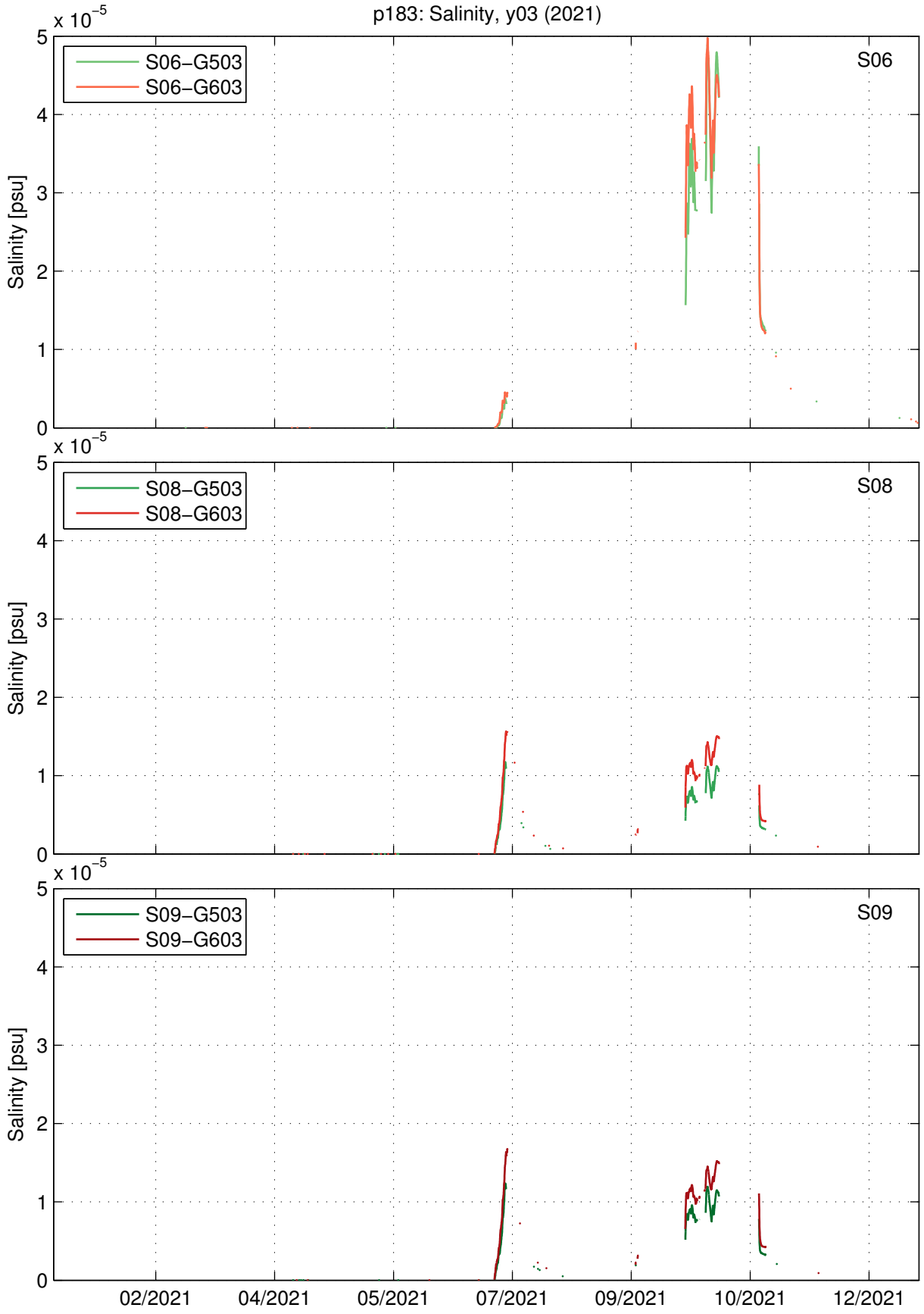

TC−1: Salinity, y03 (2021)
S06−G503
S06−G603
S06
S08−G503
S08−G603
S08
S09−G503
S09−G603
S09
Salinity [psu]
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

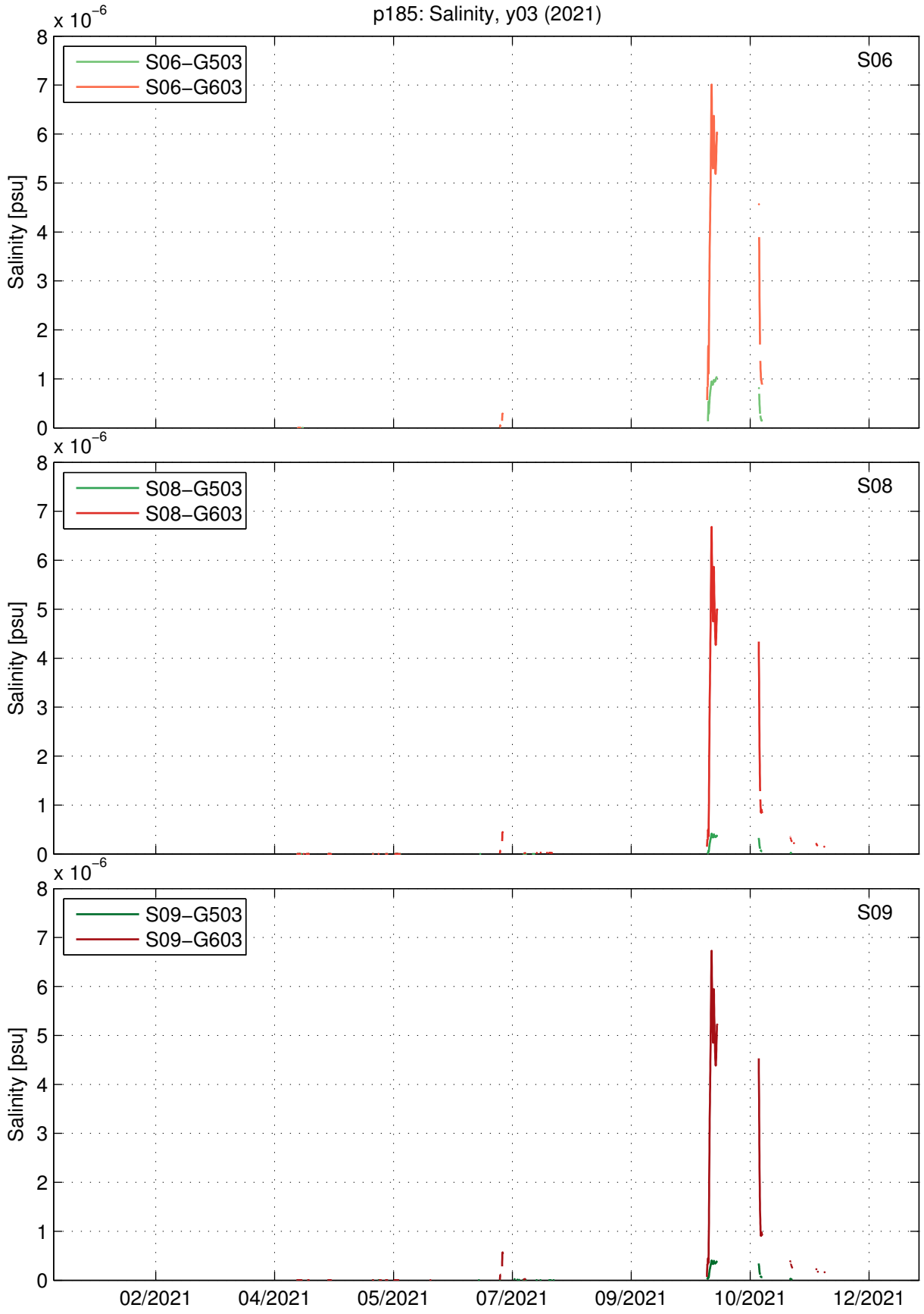

p151: Salinity, y03 (2021)
x 10^-4
S06–G503
S06–G603
S06
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
Salinity [psu]
0
0.5
1
1.5
2
2.5
3
3.5
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

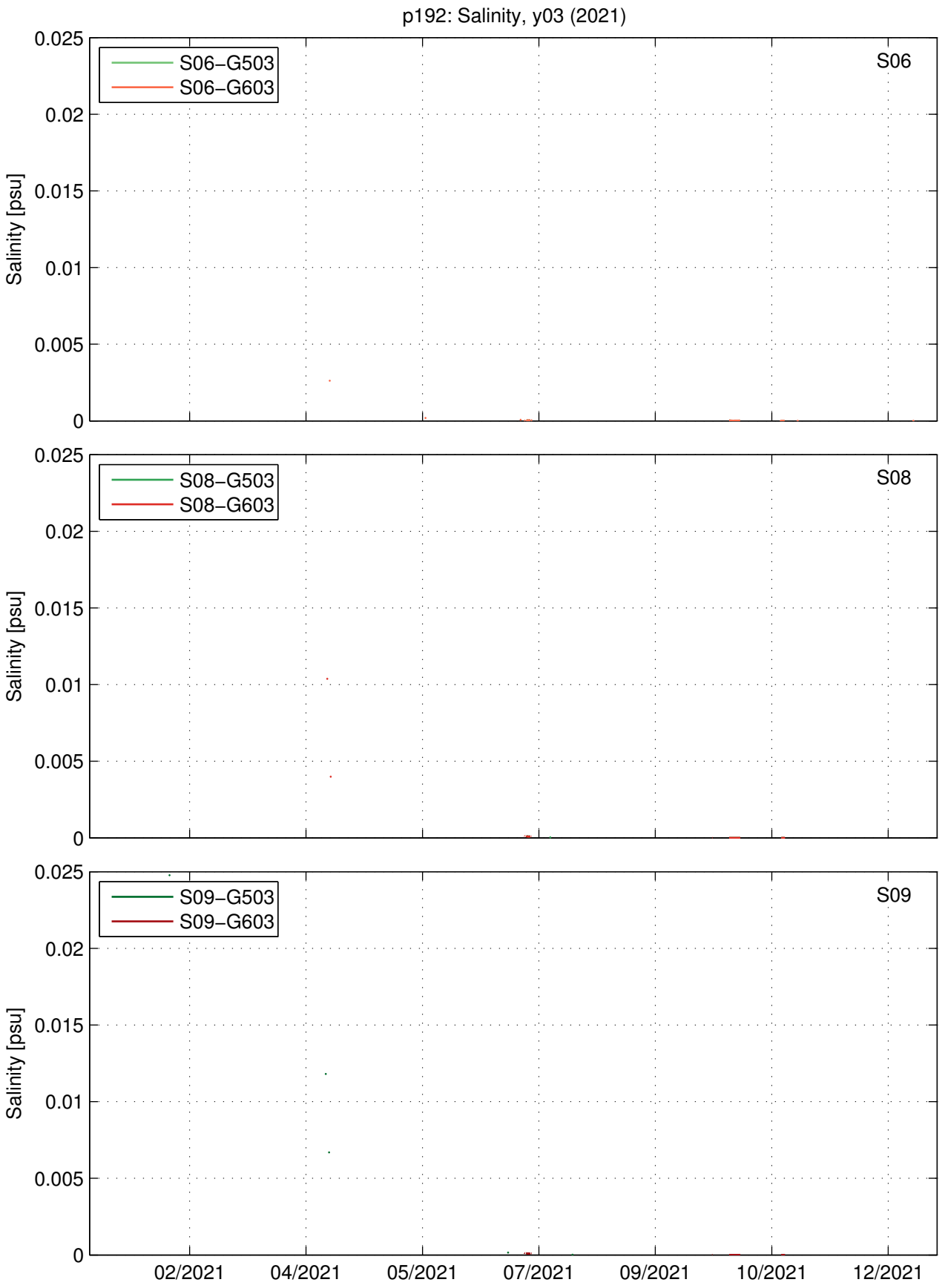

p186: Salinity, y03 (2021)
x 10^-4
S06–G503
S06–G603
S06
Salinity [psu]
0
1
x 10^-4
S08–G503
S08–G603
S08
Salinity [psu]
0
1
x 10^-4
S09–G503
S09–G603
S09
Salinity [psu]
0
1
2
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

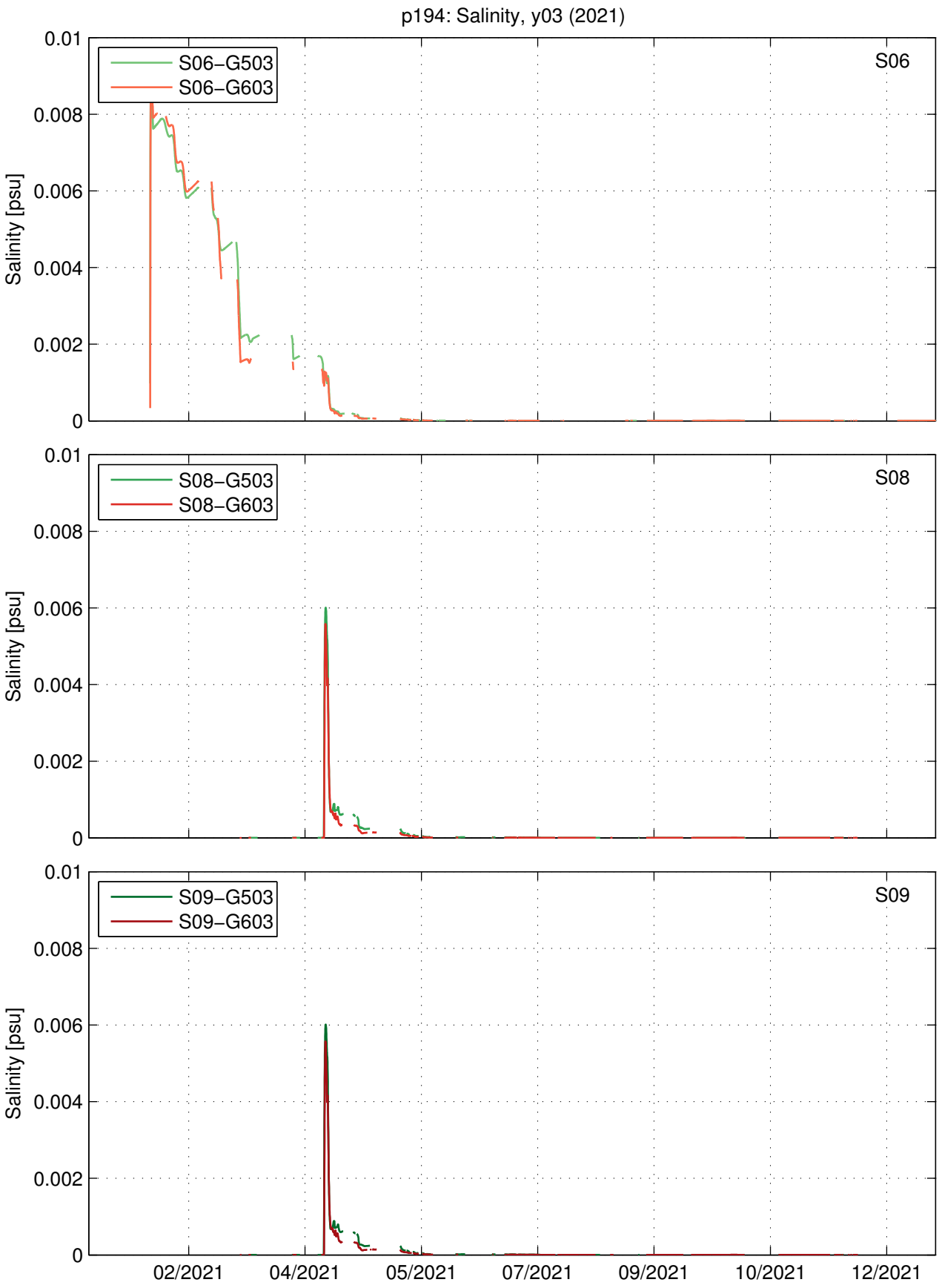

p177: Salinity, y03 (2021)
x 10^-4
S06–G503
S06–G603
S06
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
Salinity [psu]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

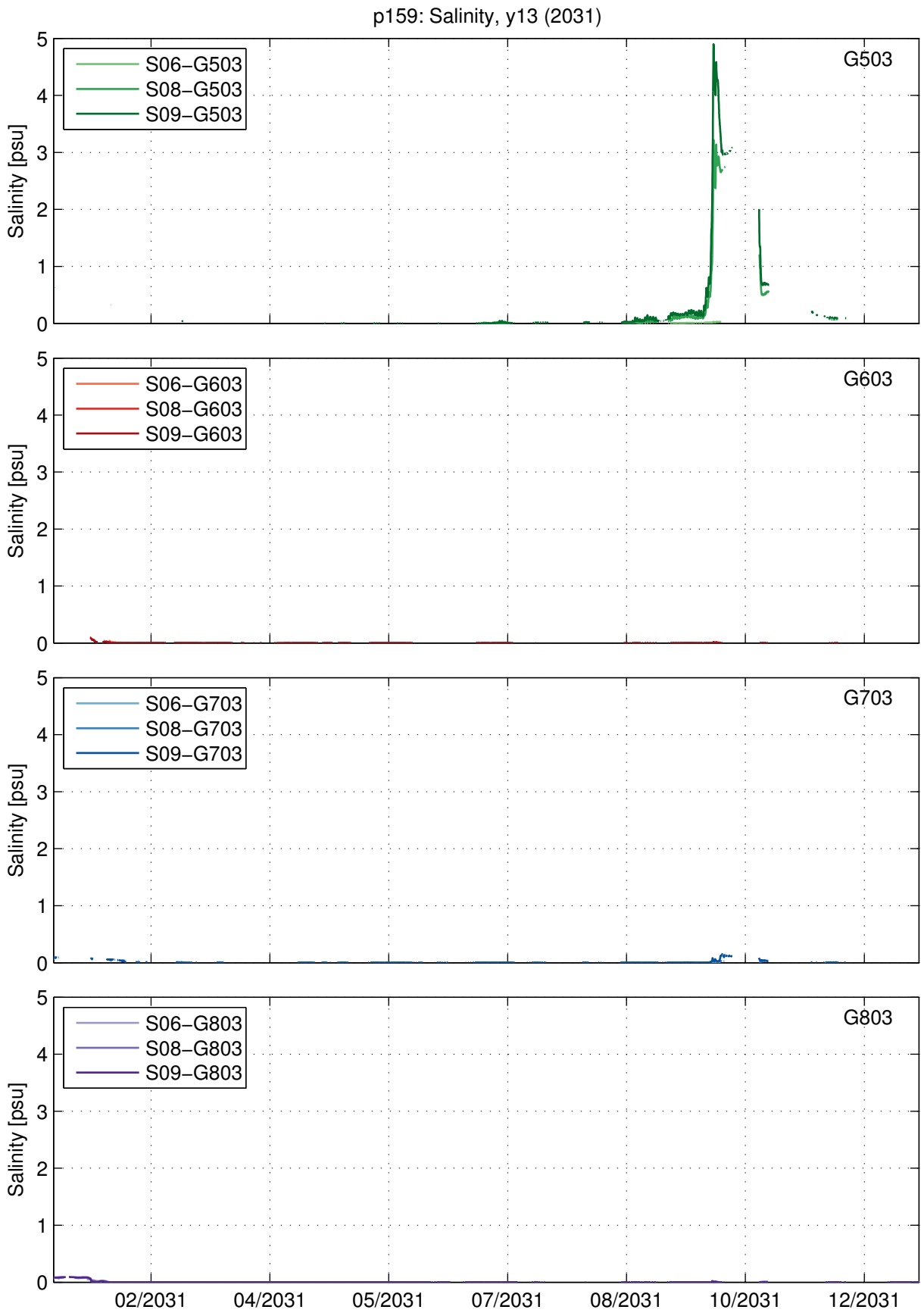

p182: Salinity, y03 (2021)
S06–G503
S06–G603
S06
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
Salinity [psu]
0.1
0.08
0.06
0.04
0.02
0
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

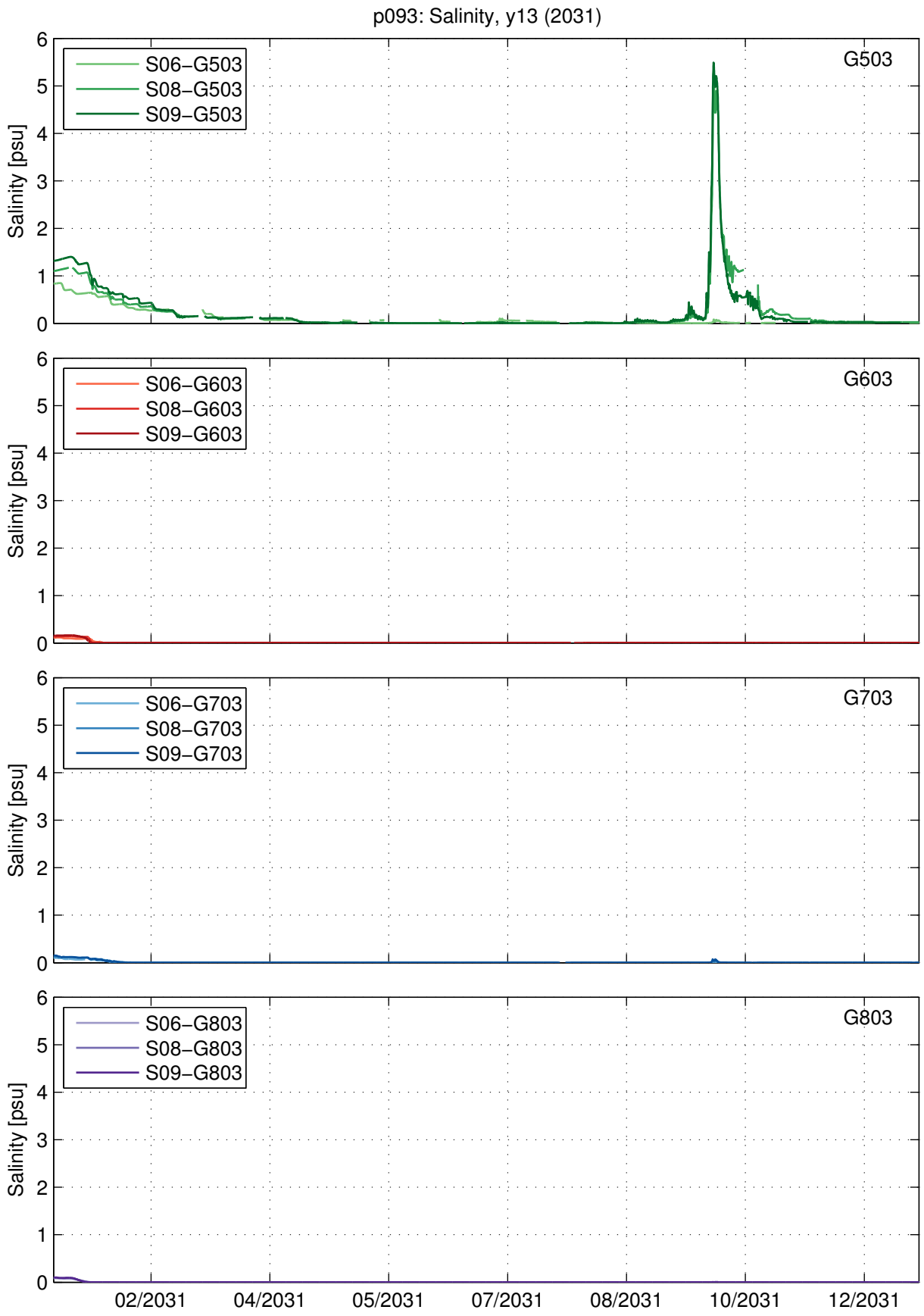

p183: Salinity, y03 (2021)
x 10^-5
S06–G503
S06–G603
S06
Salinity [psu]
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
0
1
2
3
4
5
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

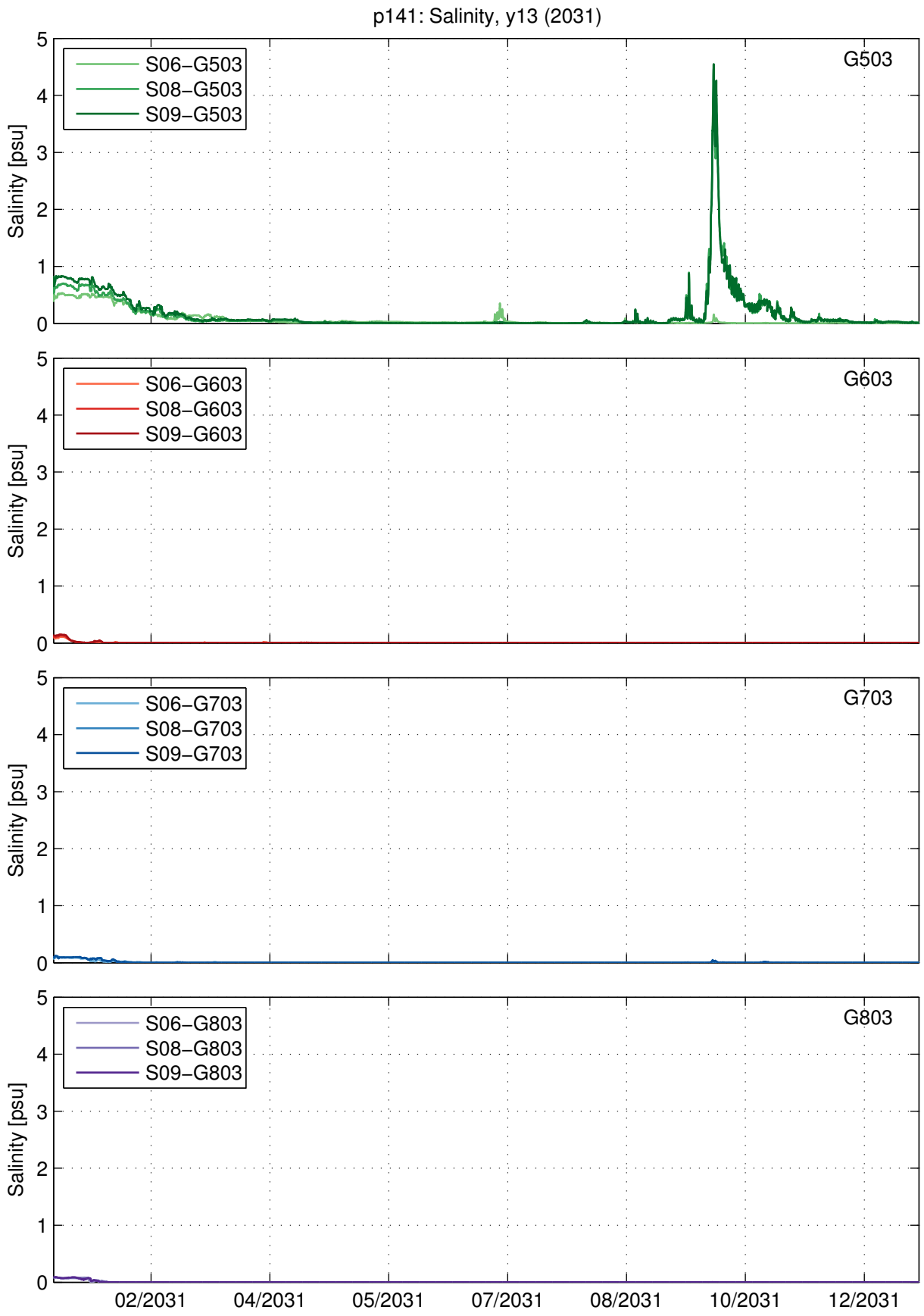

p185: Salinity, y03 (2021)
x 10^-6
S06–G503
S06–G603
S06
Salinity [psu]
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
0
1
2
3
4
5
6
7
8
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

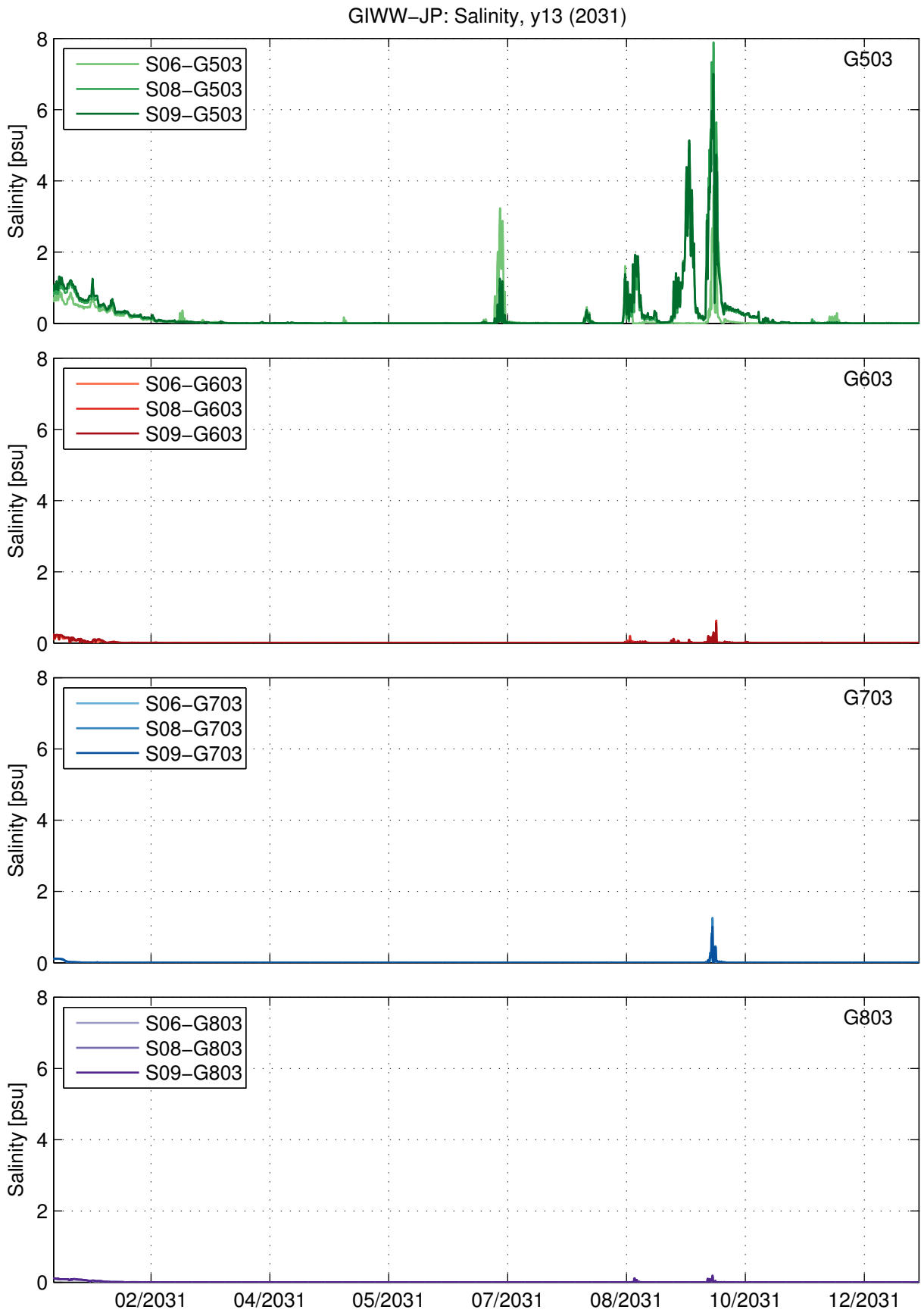

p192: Salinity, y03 (2021)
S06–G503
S06–G603
S06
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
Salinity [psu]
0.025
0.02
0.015
0.01
0.005
0
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

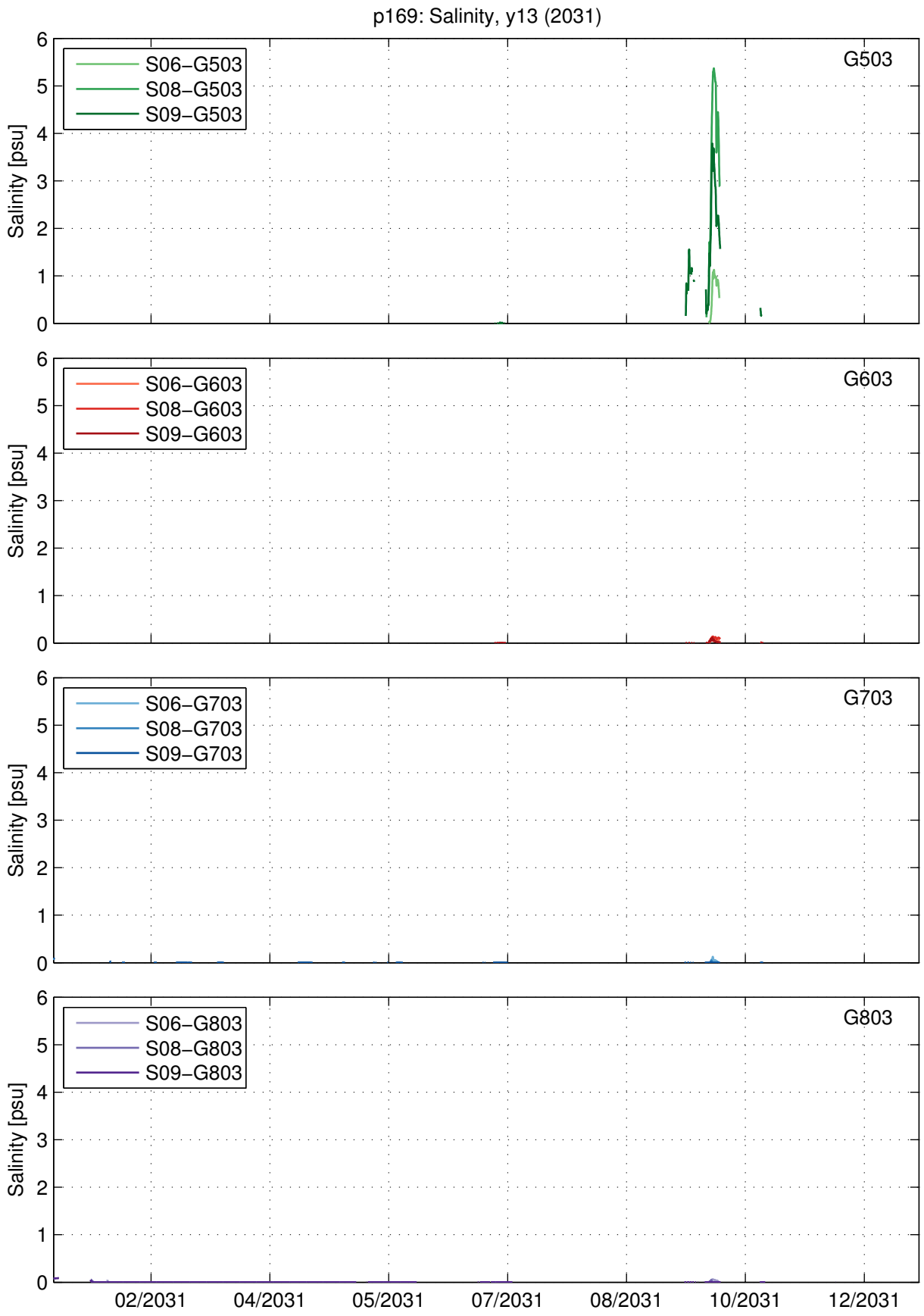

p194: Salinity, y03 (2021)
S06–G503
S06–G603
S06
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
Salinity [psu]
0.01
0.008
0.006
0.004
0.002
0
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

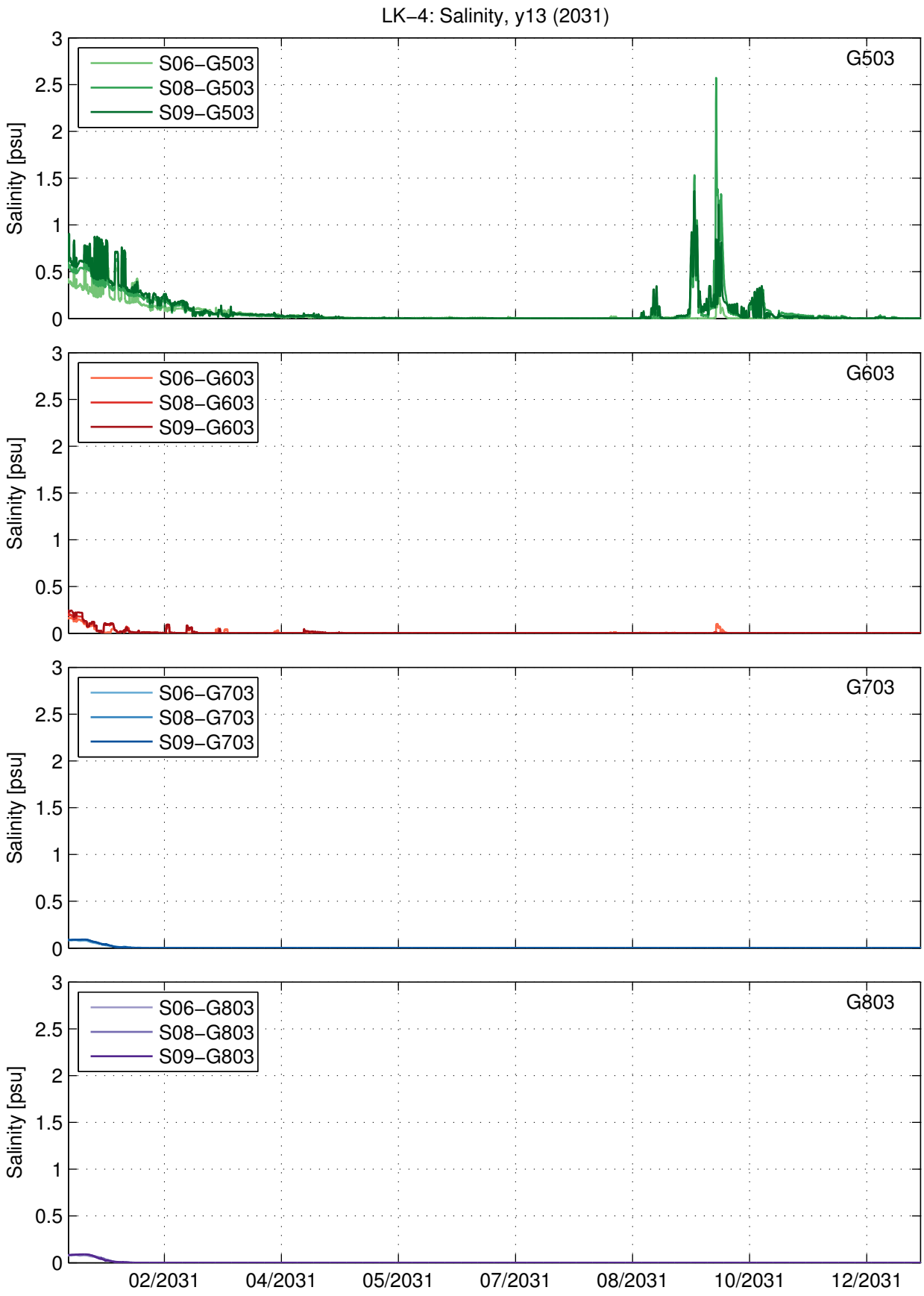

p159: Salinity, y13 (2031)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
1
2
3
4
5
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

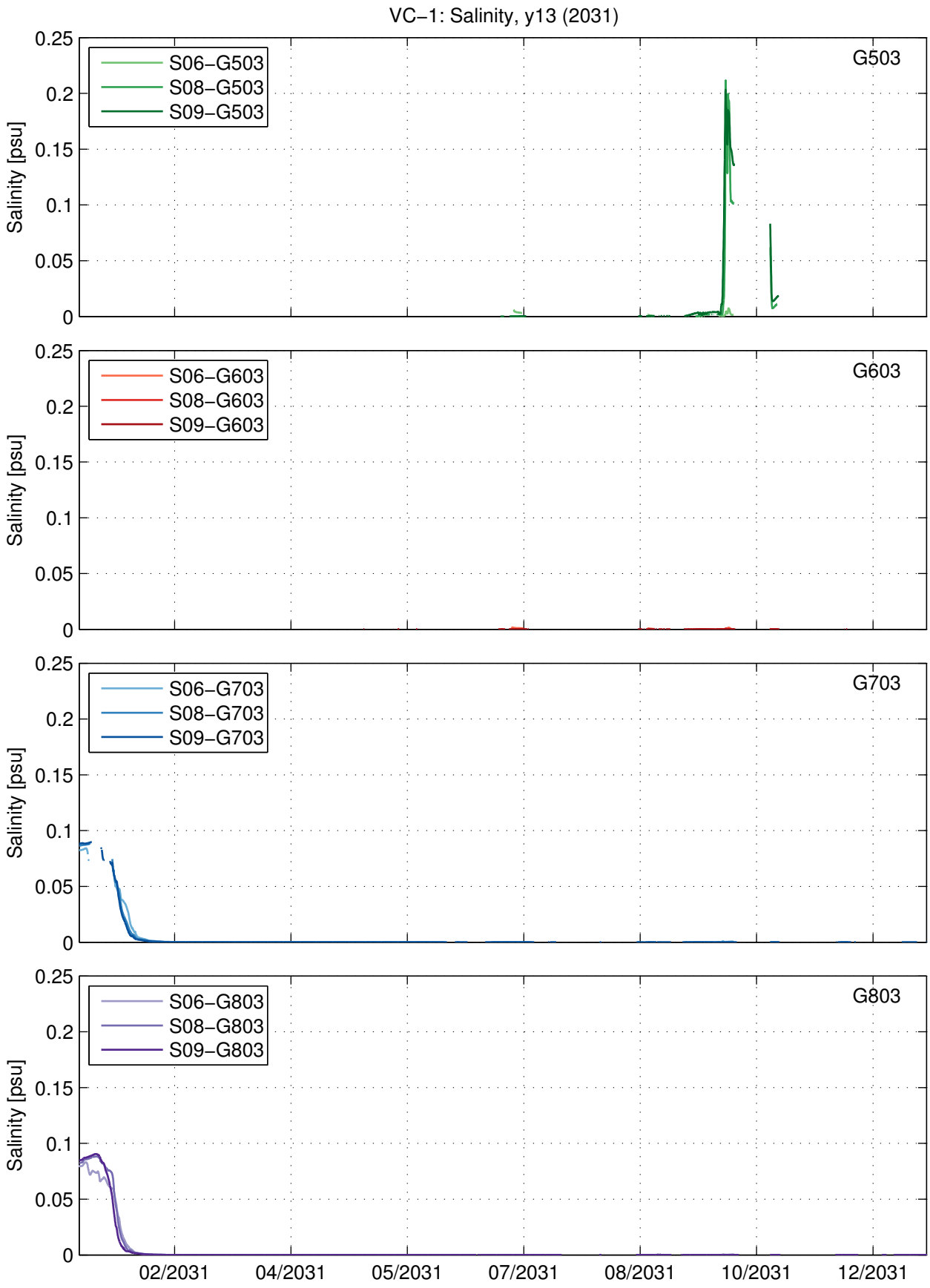

p093: Salinity, y13 (2031)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
1
2
3
4
5
6
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

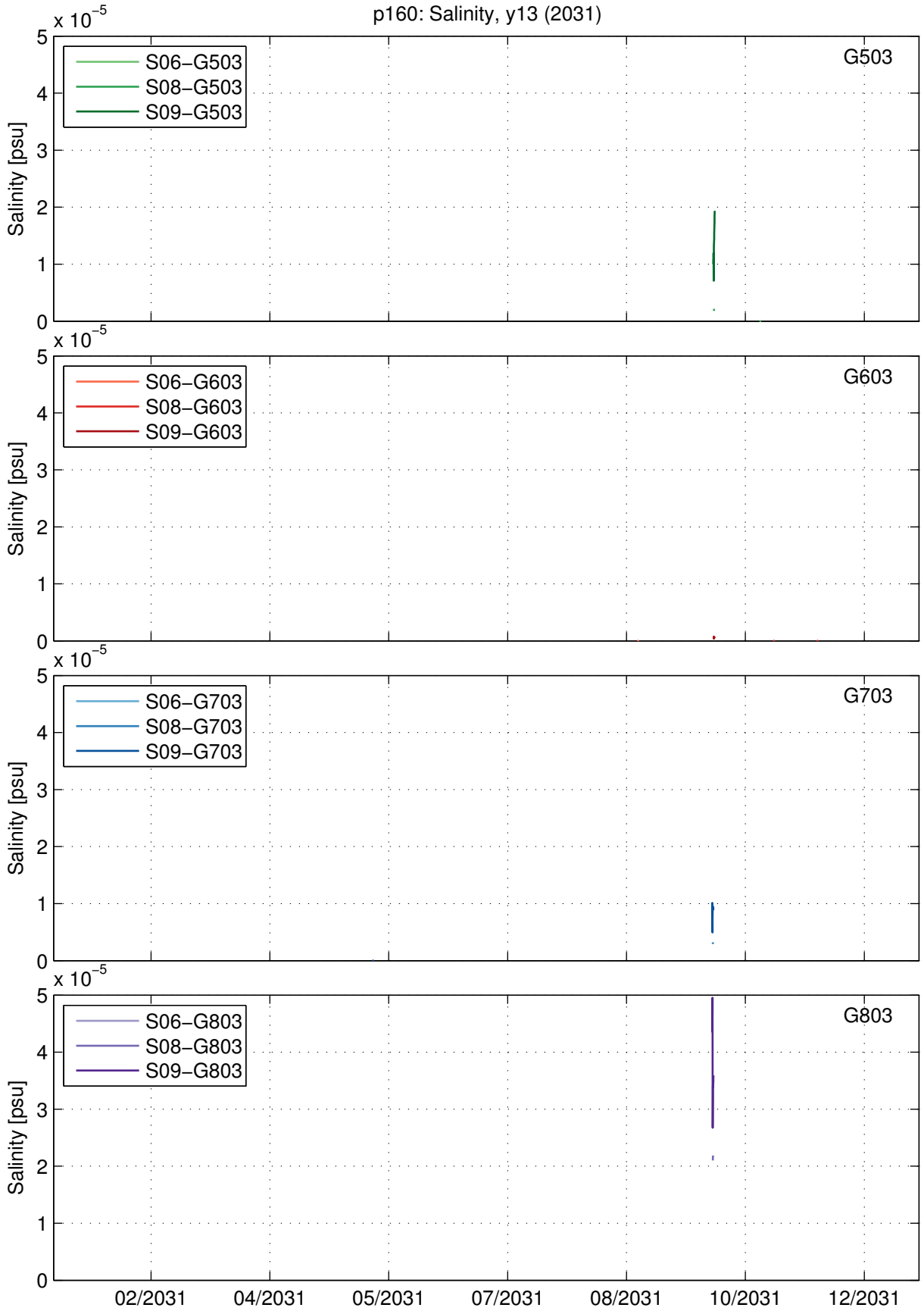

p141: Salinity, y13 (2031)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
1
2
3
4
5
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

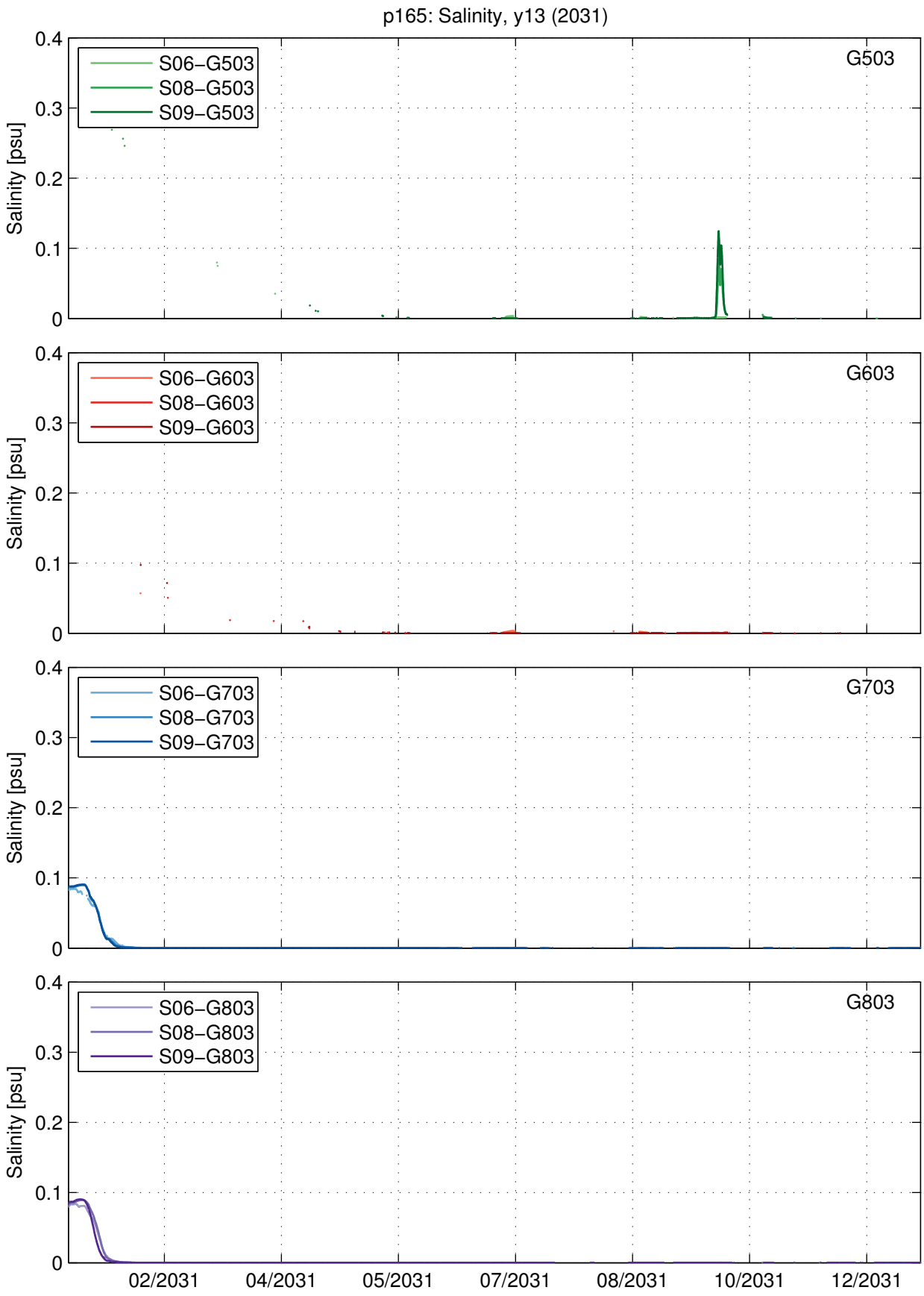

GIWW–JP: Salinity, y13 (2031)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
2
4
6
8
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

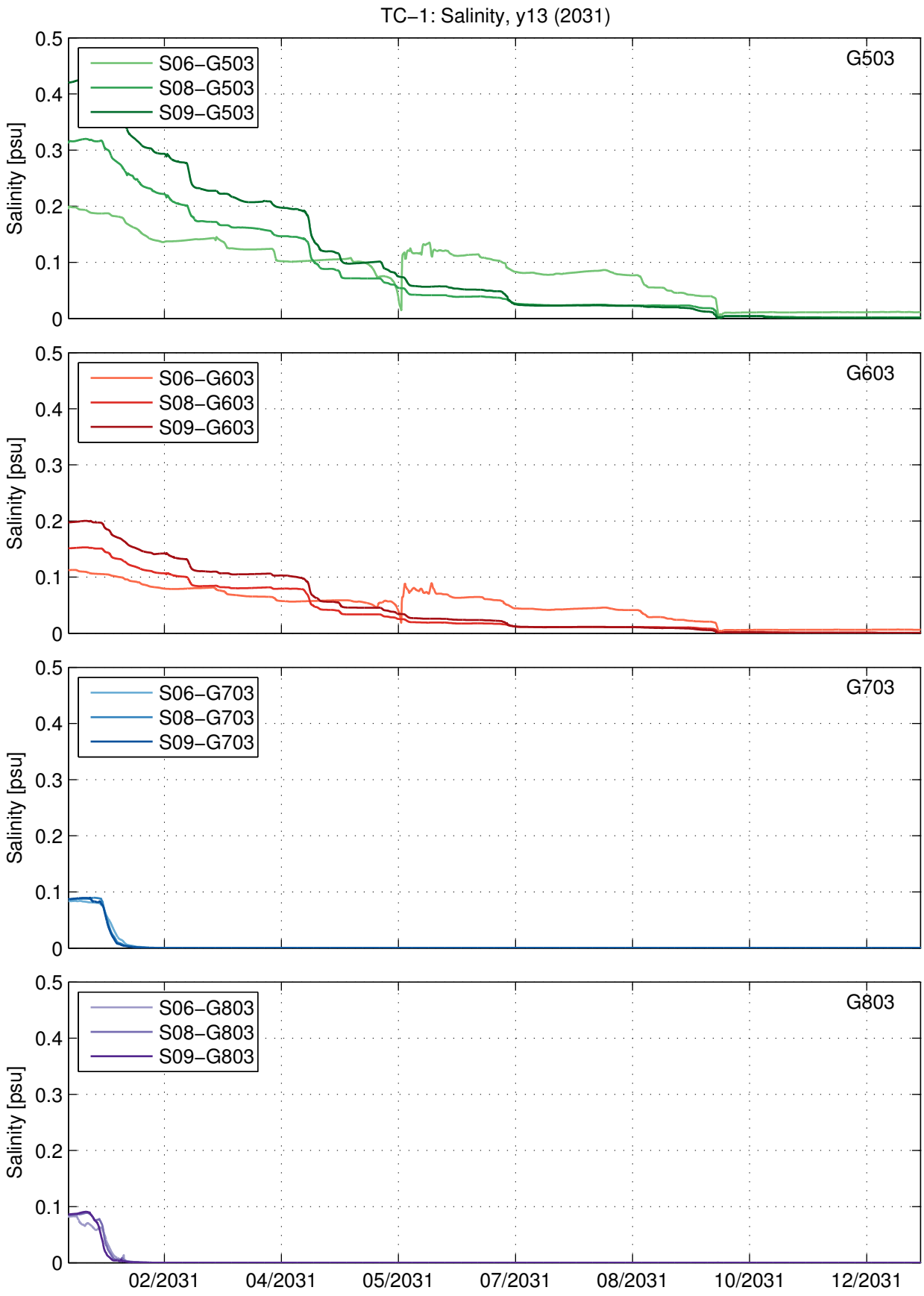

p169: Salinity, y13 (2031)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
1
2
3
4
5
6
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

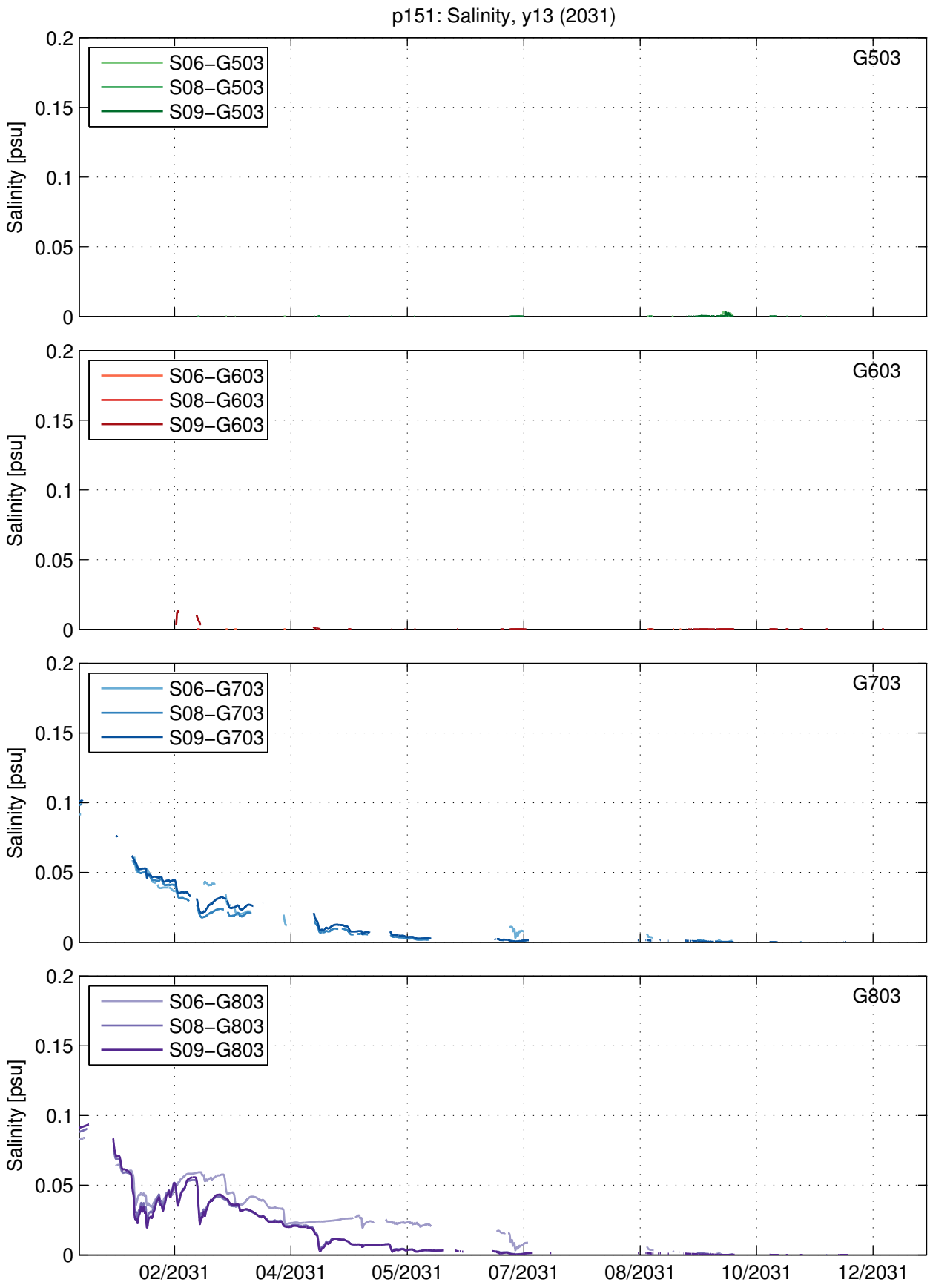

LK–4: Salinity, y13 (2031)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
0.5
1
1.5
2
2.5
3
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

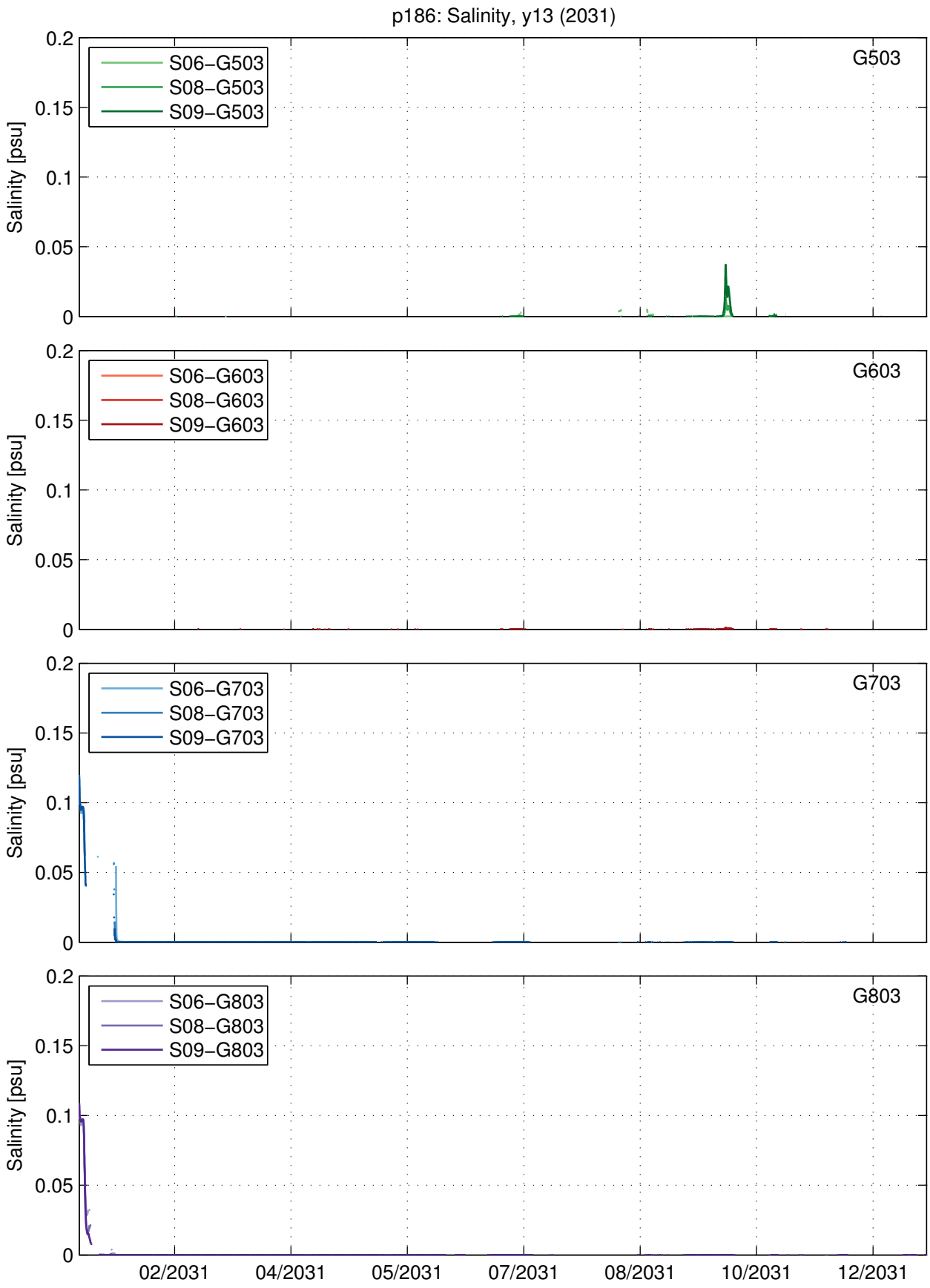

VC−1: Salinity, y13 (2031)
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
S06−G703
S08−G703
S09−G703
G703
S06−G803
S08−G803
S09−G803
G803
Salinity [psu]
0.25
0.2
0.15
0.1
0.05
0
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

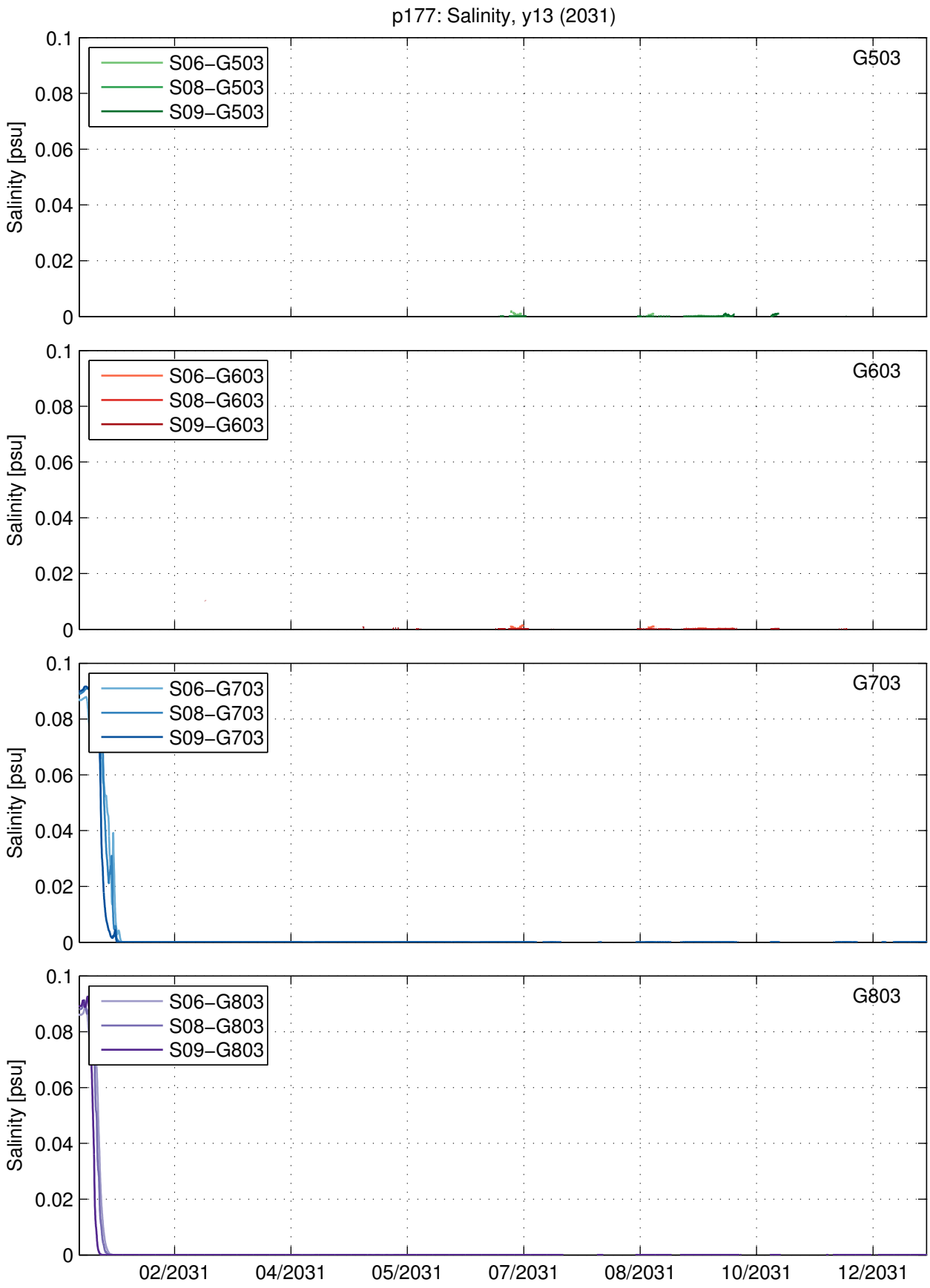

p160: Salinity, y13 (2031)
x 10^-5
Salinity [psu]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
0
1
2
3
4
5
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

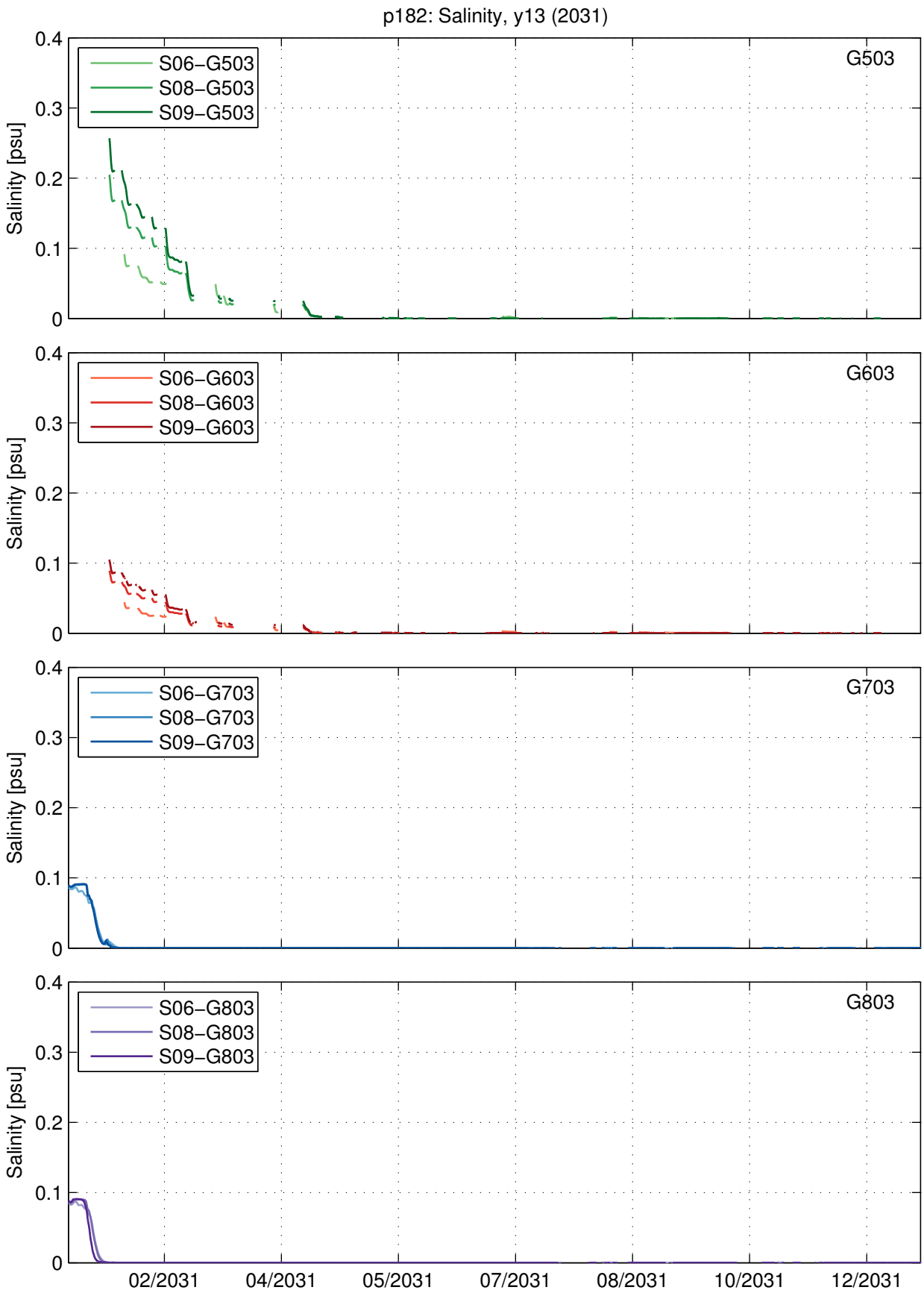

p165: Salinity, y13 (2031)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
0.1
0.2
0.3
0.4
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

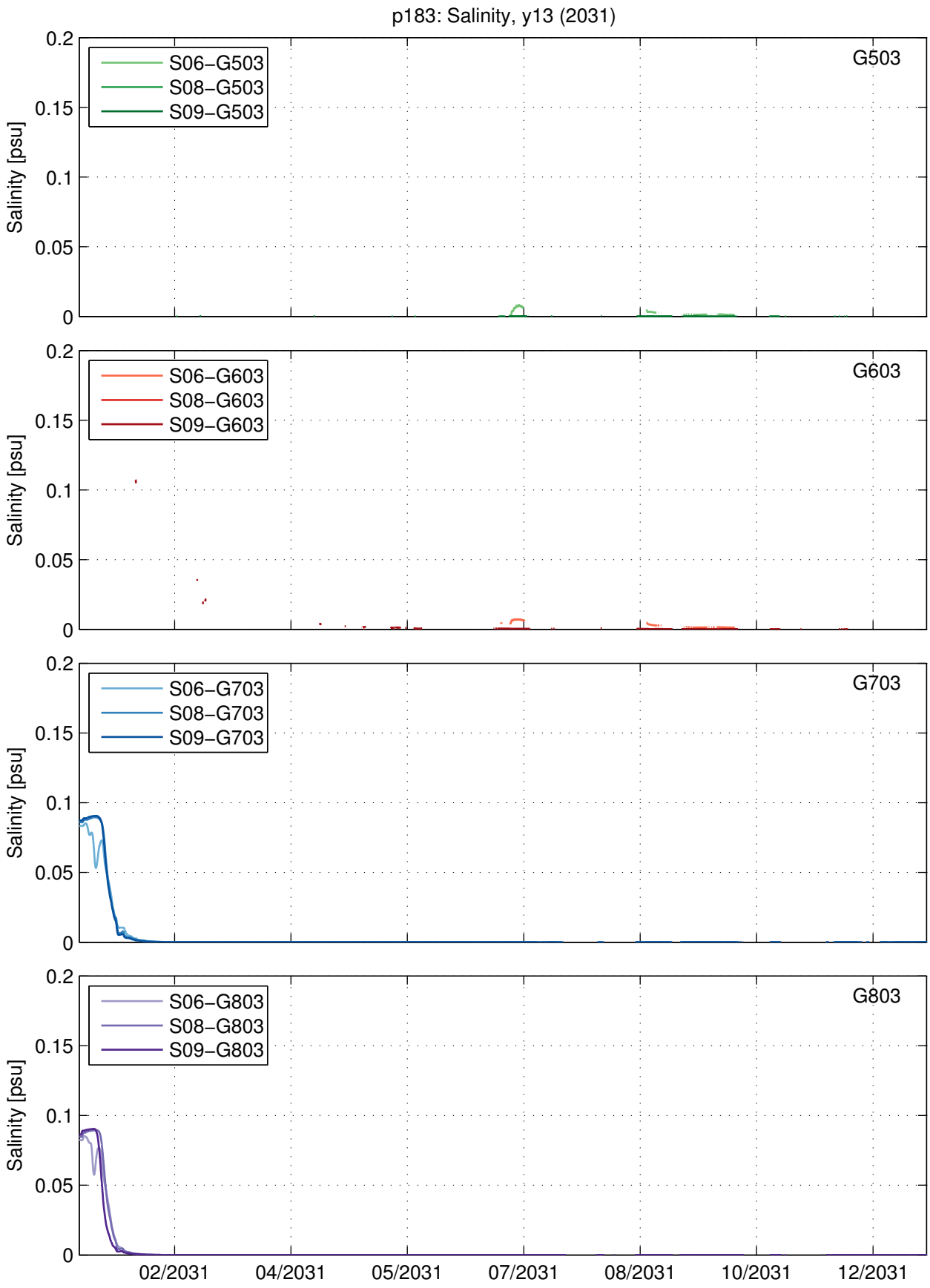

TC−1: Salinity, y13 (2031)
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
S06−G703
S08−G703
S09−G703
G703
S06−G803
S08−G803
S09−G803
G803
Salinity [psu]
0
0.1
0.2
0.3
0.4
0.5
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

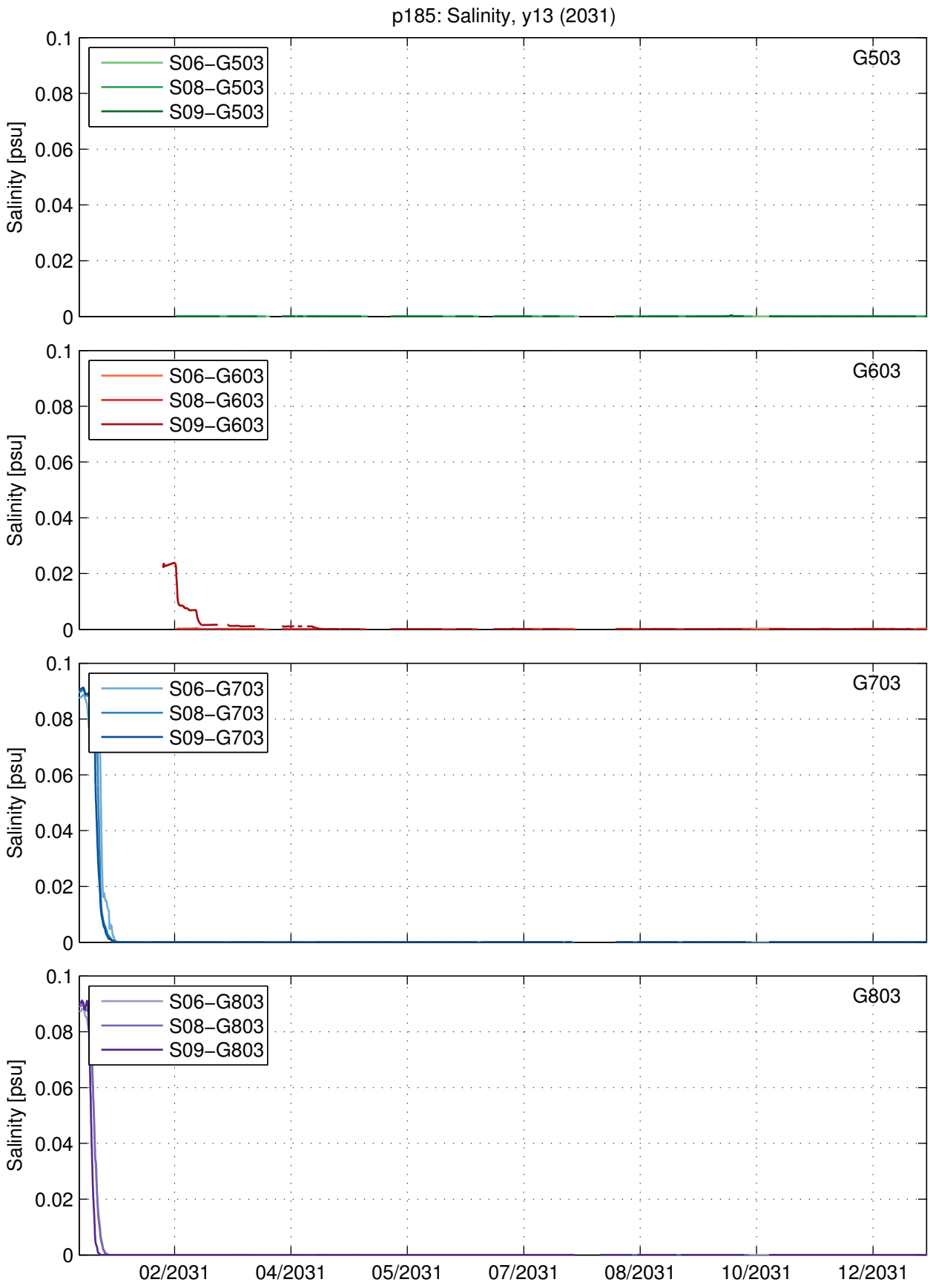

p151: Salinity, y13 (2031)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0.2
0.15
0.1
0.05
0
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

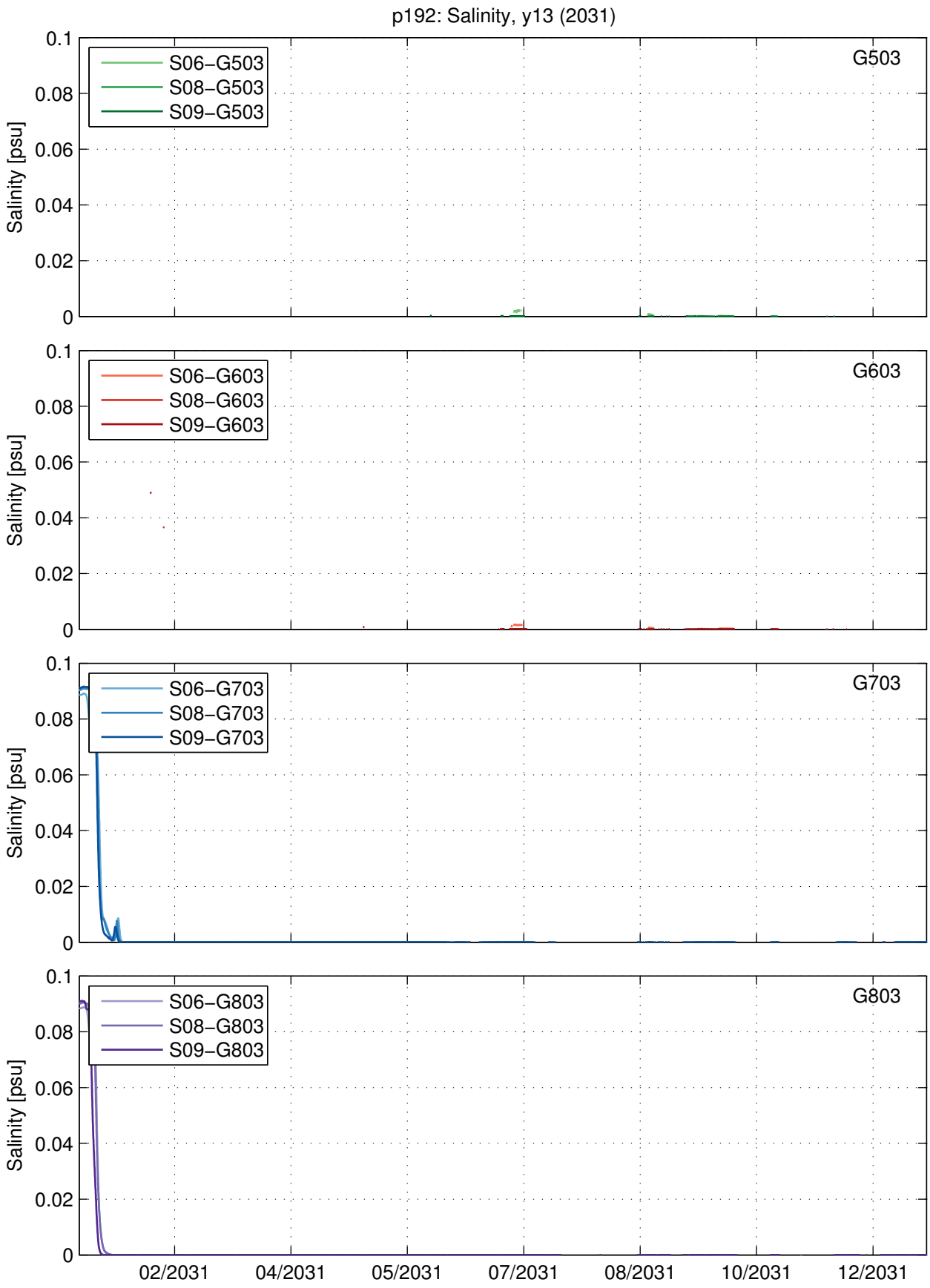

p186: Salinity, y13 (2031)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0.2
0.15
0.1
0.05
0
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

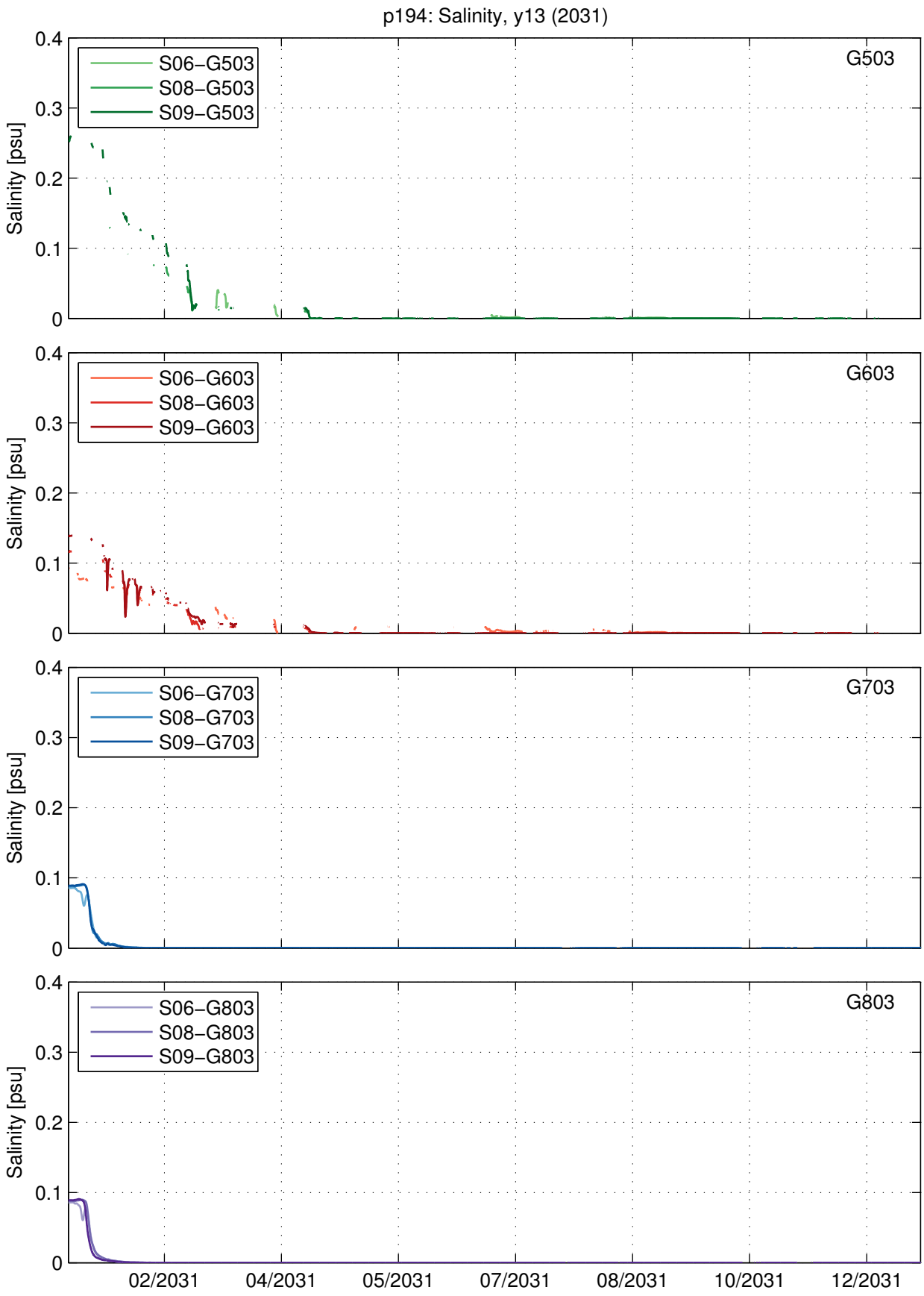

p177: Salinity, y13 (2031)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0.1
0.08
0.06
0.04
0.02
0
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

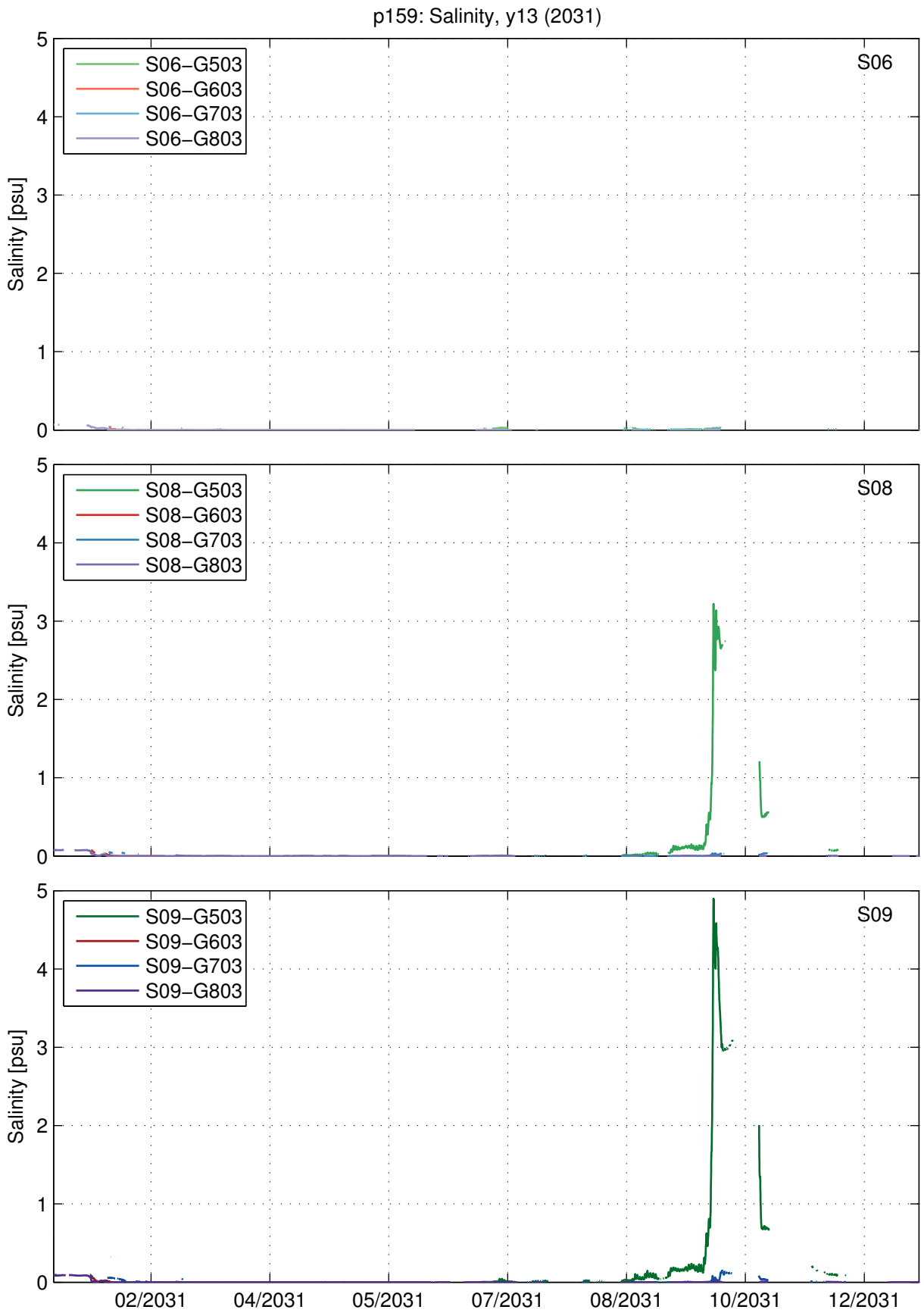

p182: Salinity, y13 (2031)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
0.1
0.2
0.3
0.4
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

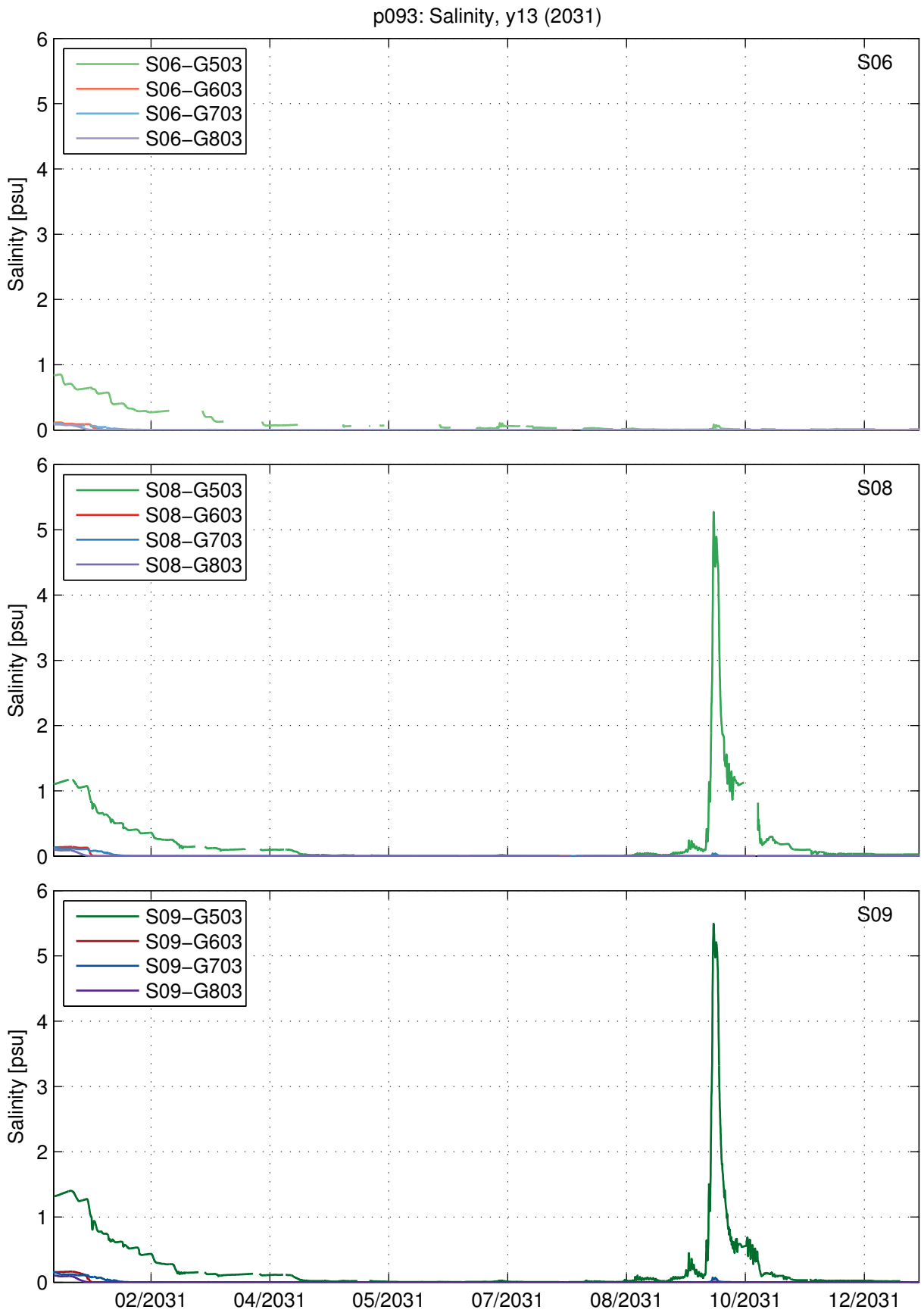

p183: Salinity, y13 (2031)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0.2
0.15
0.1
0.05
0
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

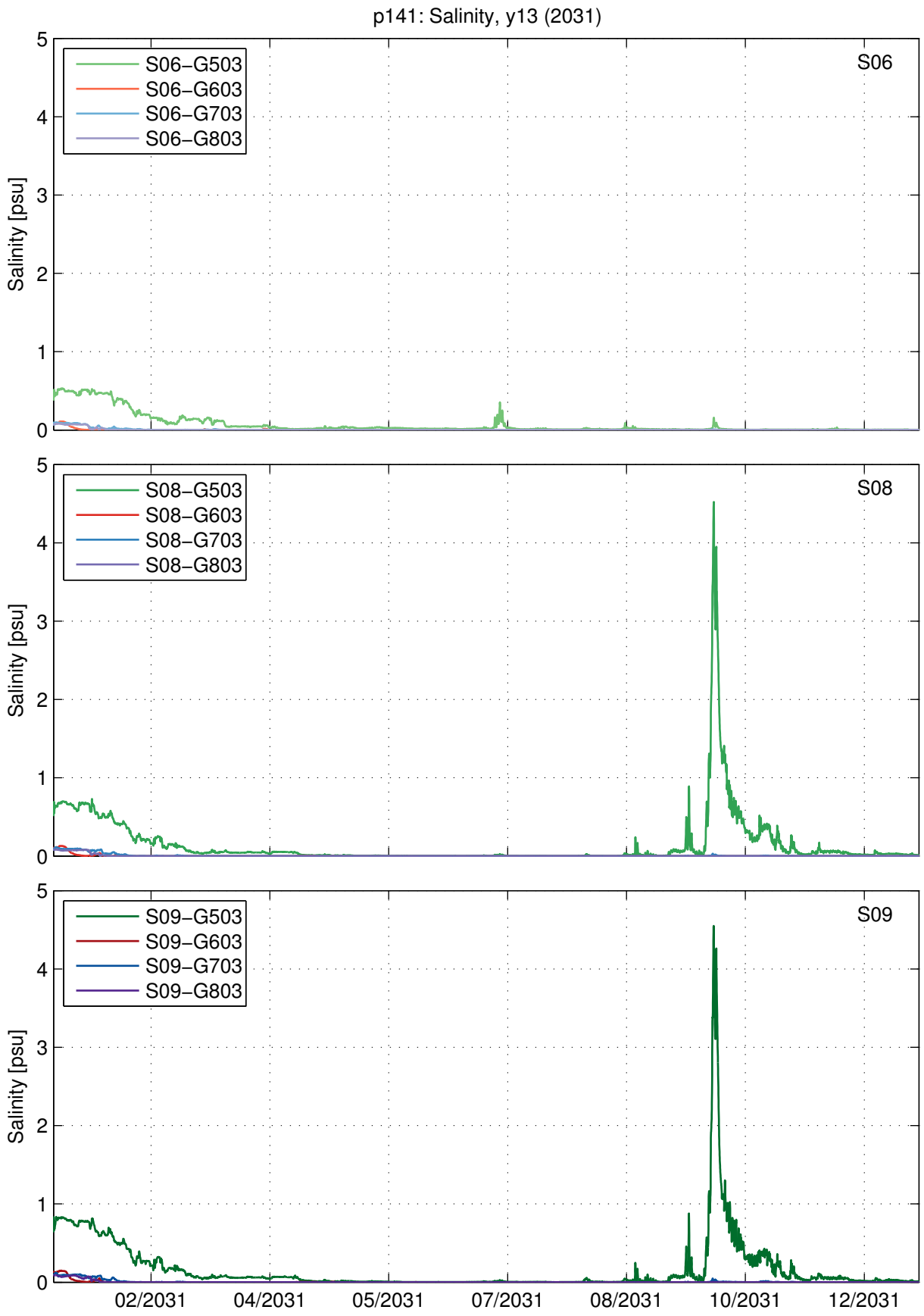

p185: Salinity, y13 (2031)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0.1
0.08
0.06
0.04
0.02
0
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

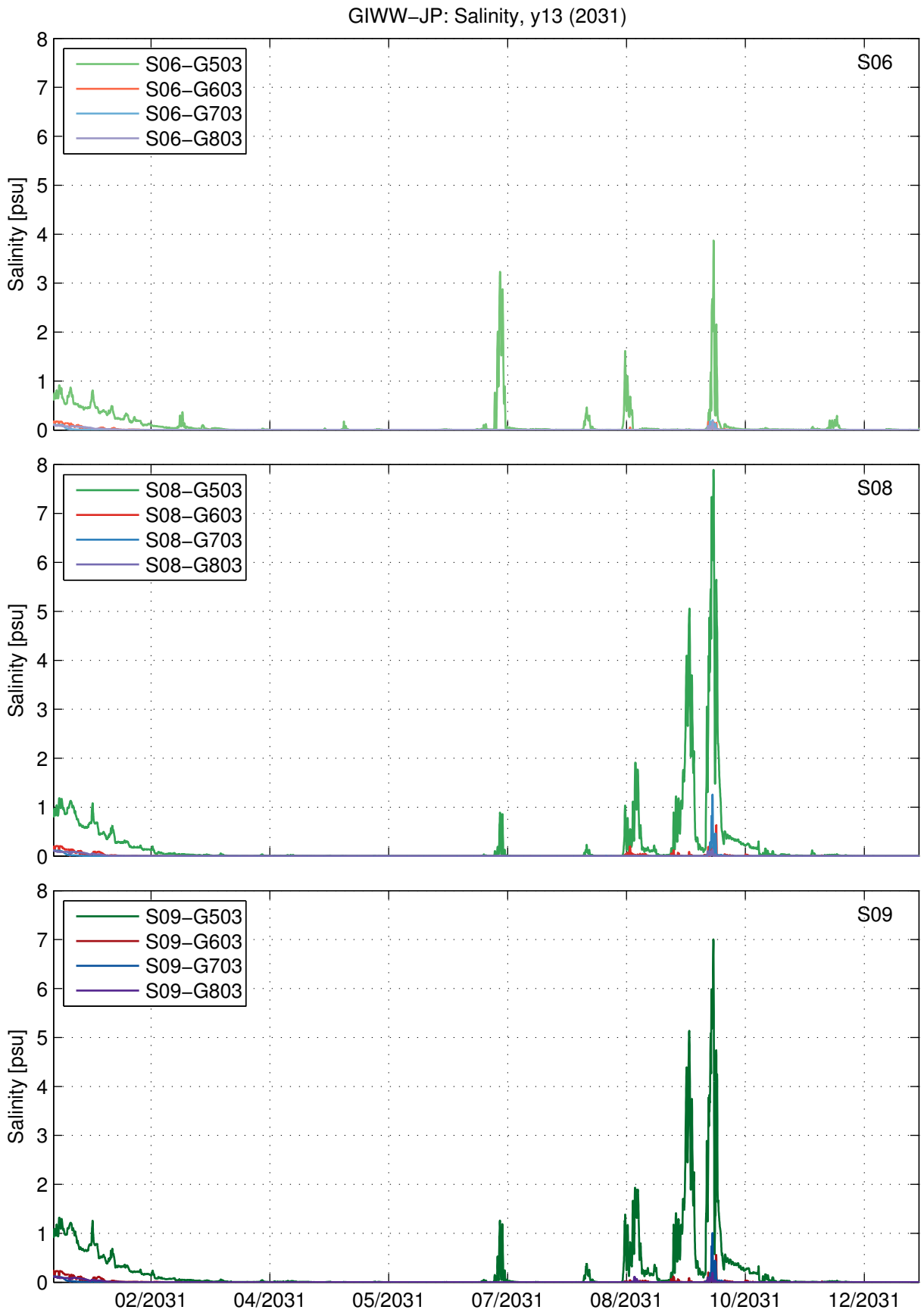

p192: Salinity, y13 (2031)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0.1
0.08
0.06
0.04
0.02
0
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

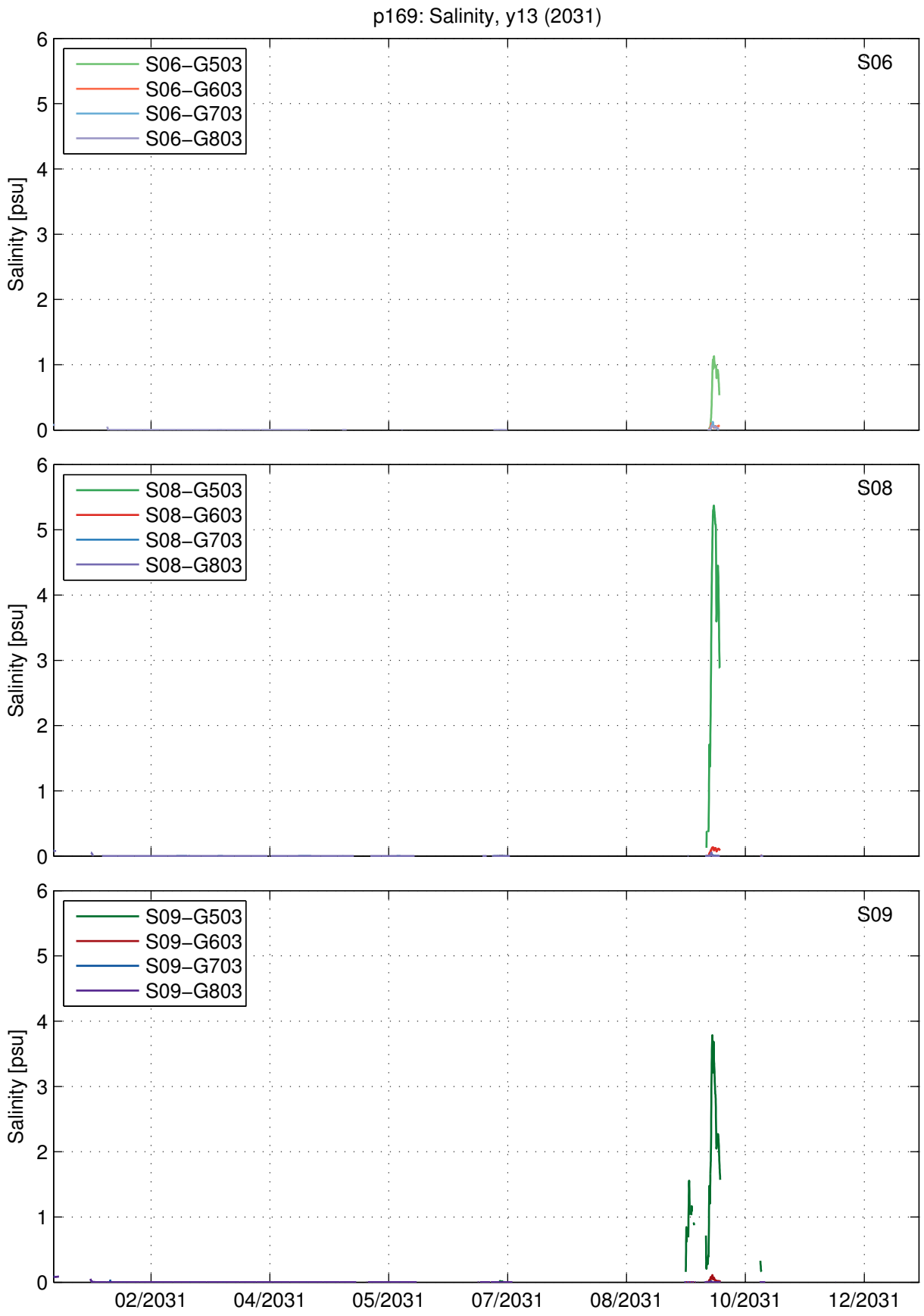

p194: Salinity, y13 (2031)
G503
S06–G503
S08–G503
S09–G503
G603
S06–G603
S08–G603
S09–G603
G703
S06–G703
S08–G703
S09–G703
G803
S06–G803
S08–G803
S09–G803
Salinity [psu]
0
0.1
0.2
0.3
0.4
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

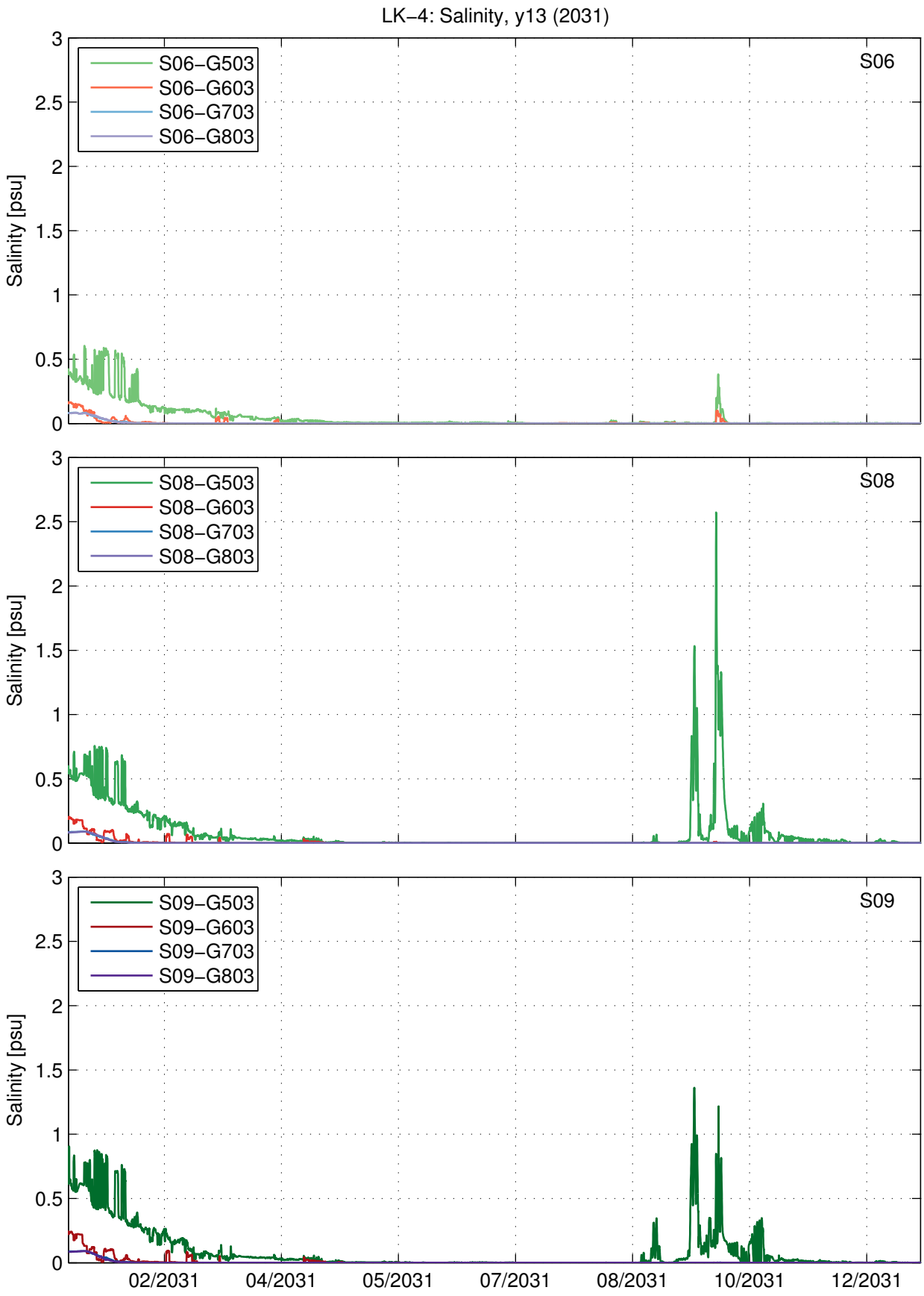

p159: Salinity, y13 (2031)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Salinity [psu]
0
1
2
3
4
5
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

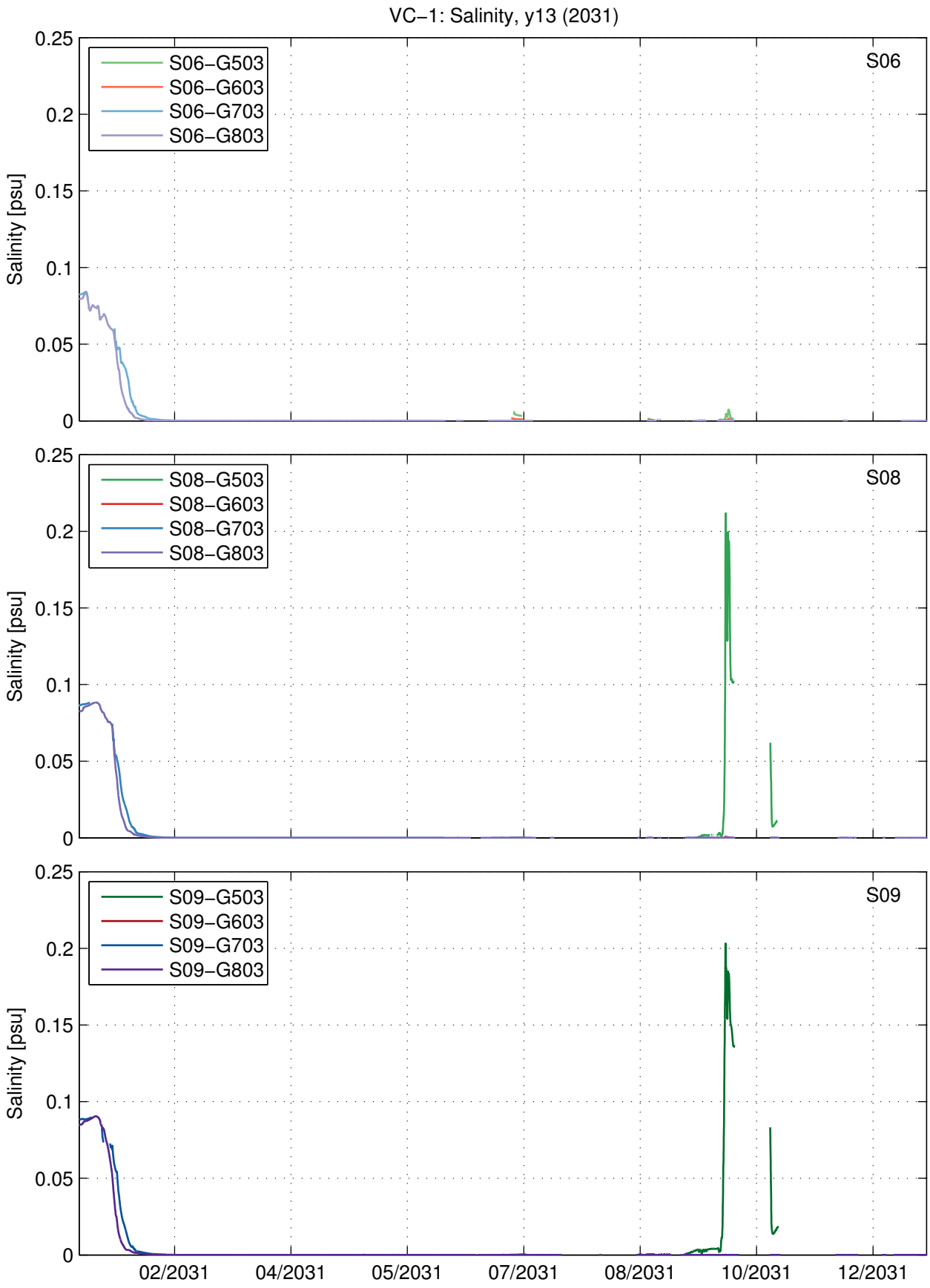

p093: Salinity, y13 (2031)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Salinity [psu]
0
1
2
3
4
5
6
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

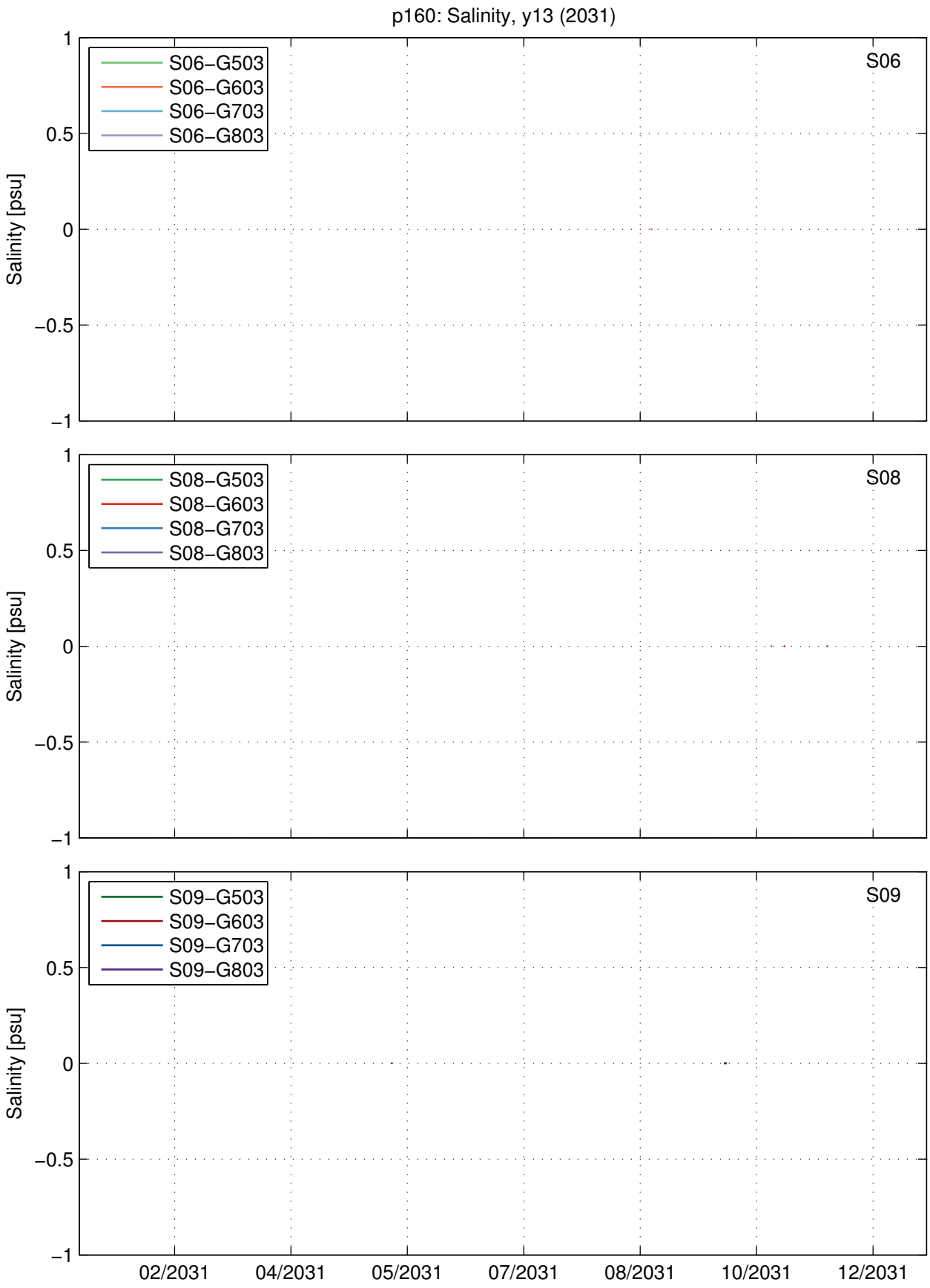

p141: Salinity, y13 (2031)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Salinity [psu]
0
1
2
3
4
5
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

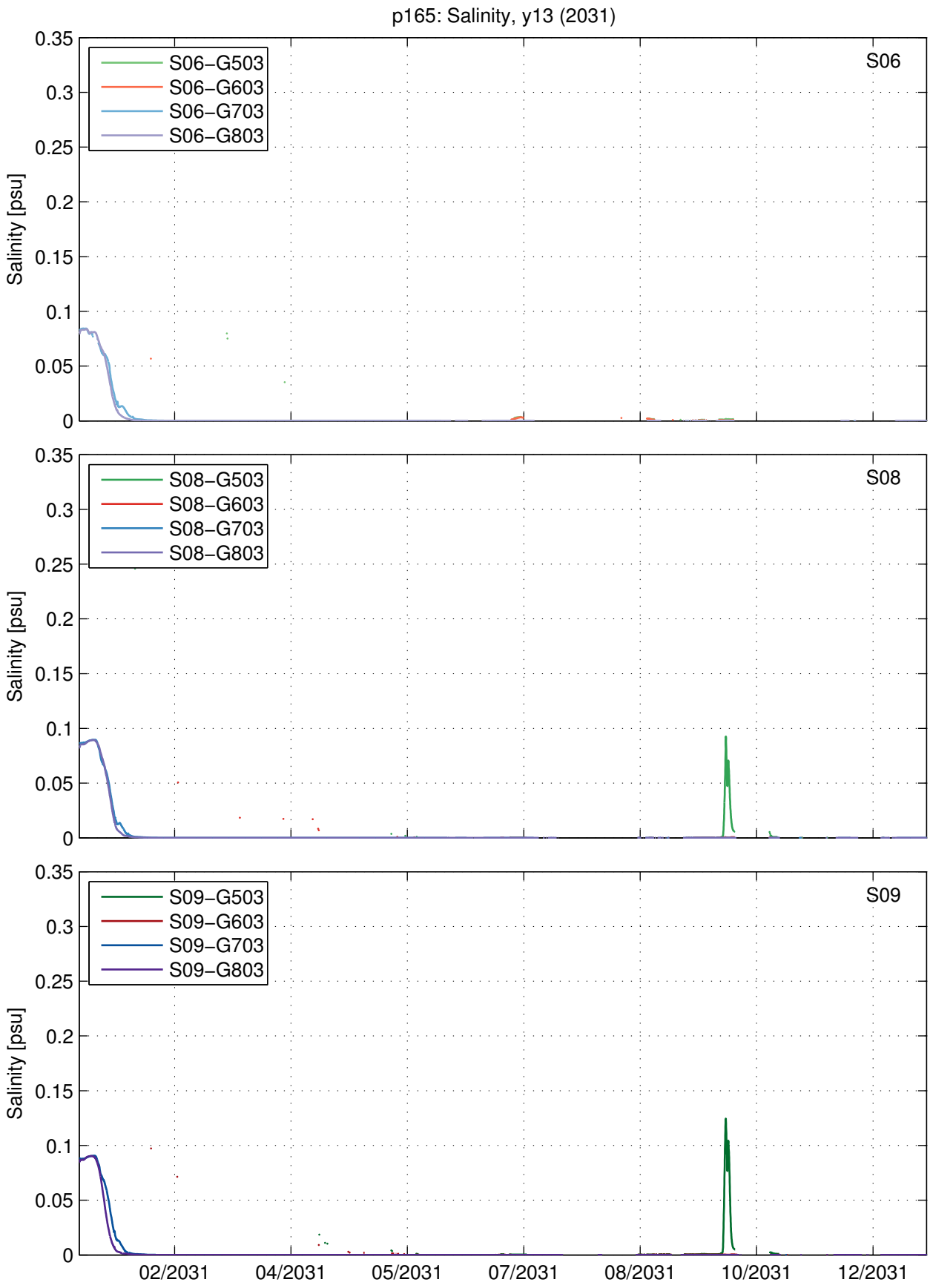

GIWW–JP: Salinity, y13 (2031)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Salinity [psu]
0
1
2
3
4
5
6
7
8
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

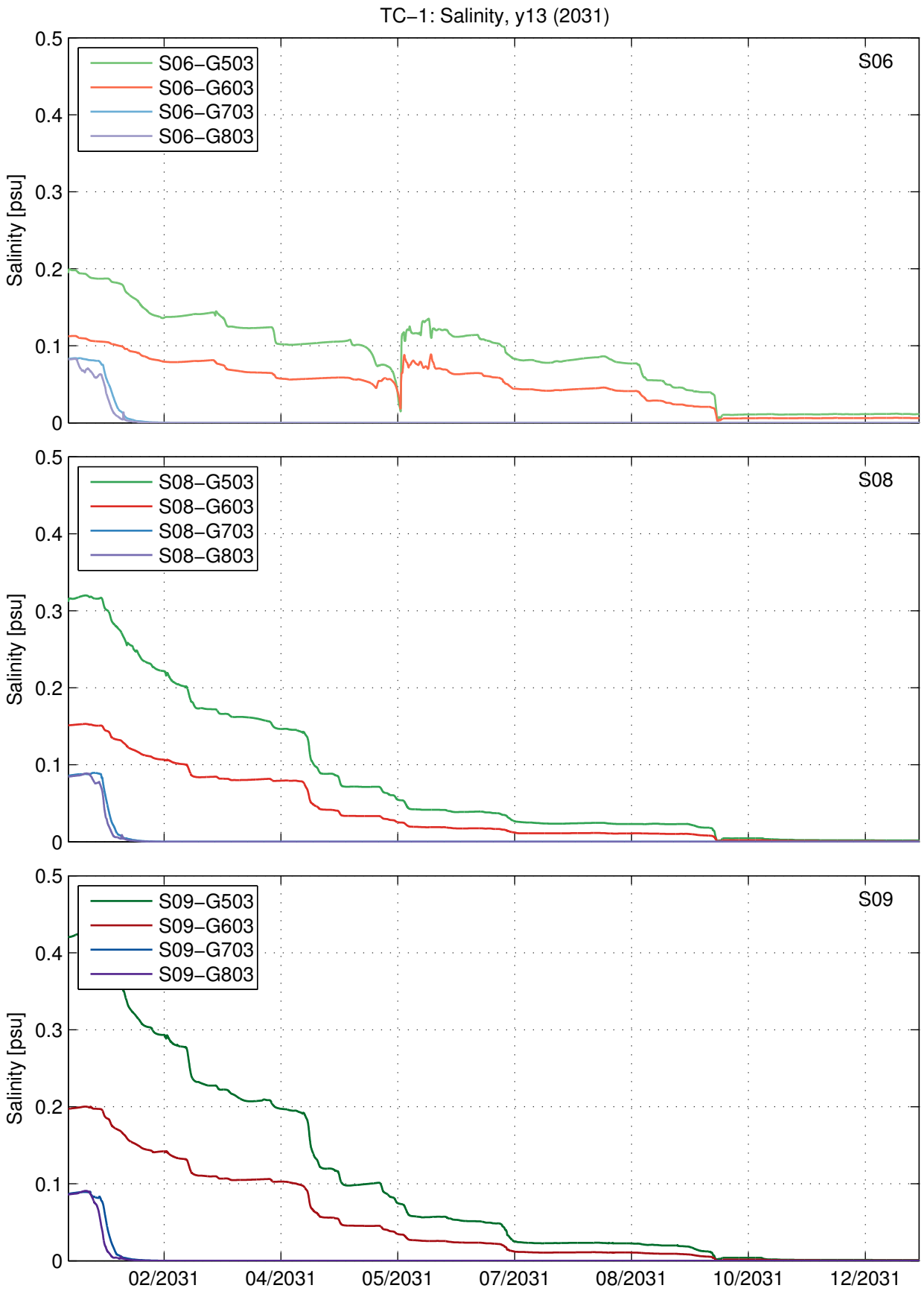

p169: Salinity, y13 (2031)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Salinity [psu]
0
1
2
3
4
5
6
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

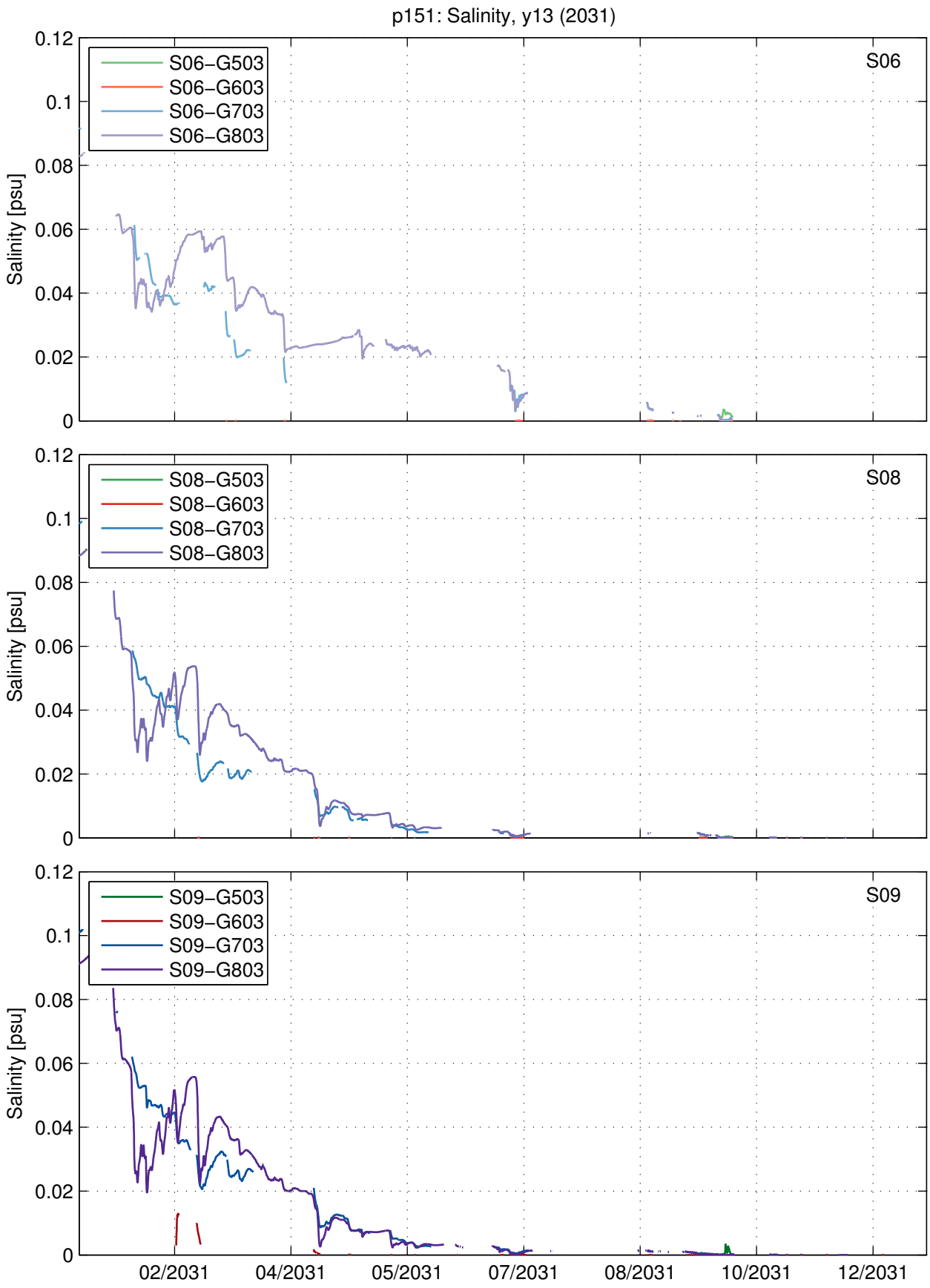

LK–4: Salinity, y13 (2031)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Salinity [psu]
0
0.5
1
1.5
2
2.5
3
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

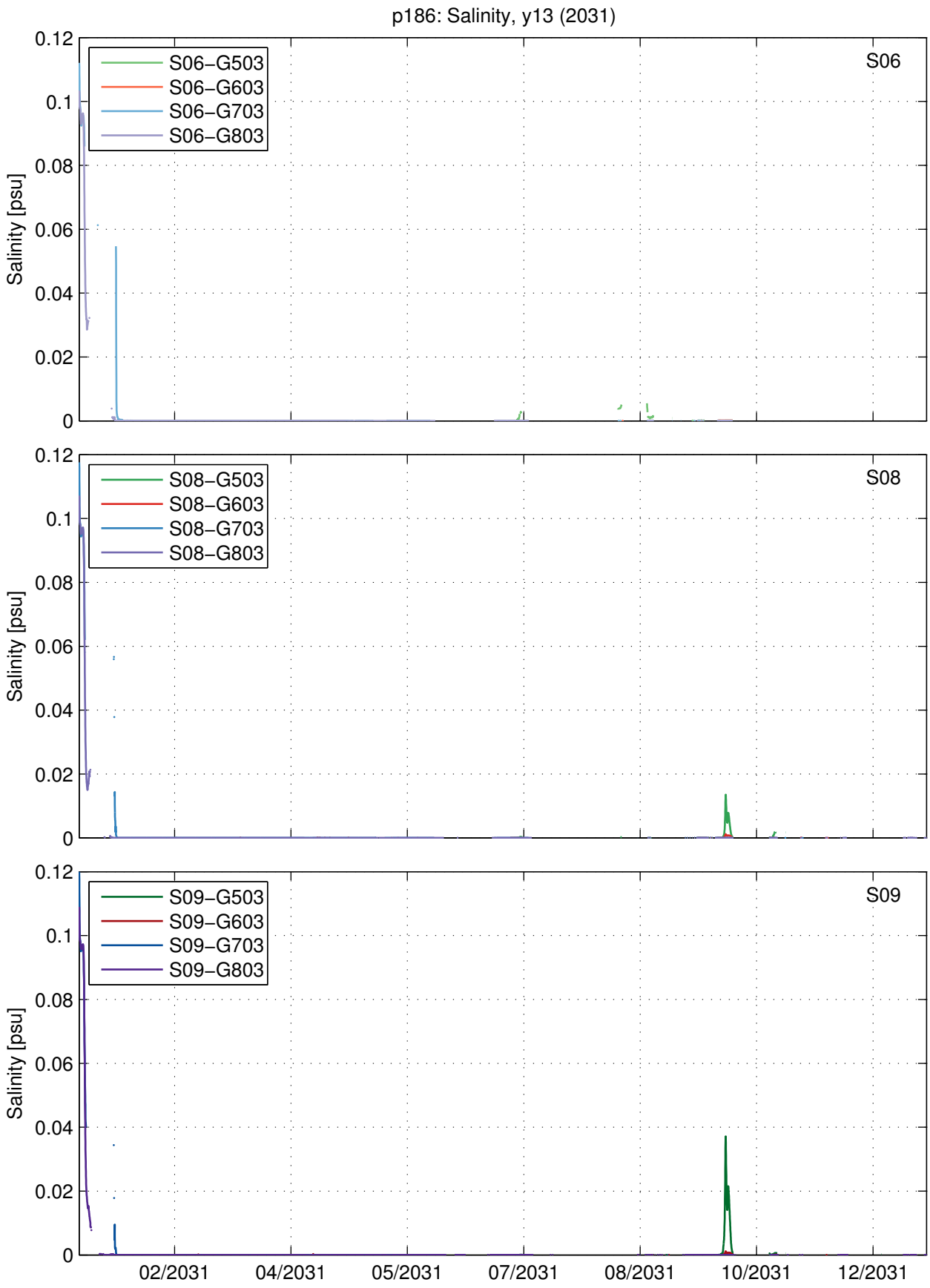

VC−1: Salinity, y13 (2031)
S06
S06−G503
S06−G603
S06−G703
S06−G803
S08
S08−G503
S08−G603
S08−G703
S08−G803
S09
S09−G503
S09−G603
S09−G703
S09−G803
Salinity [psu]
0.25
0.2
0.15
0.1
0.05
0
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

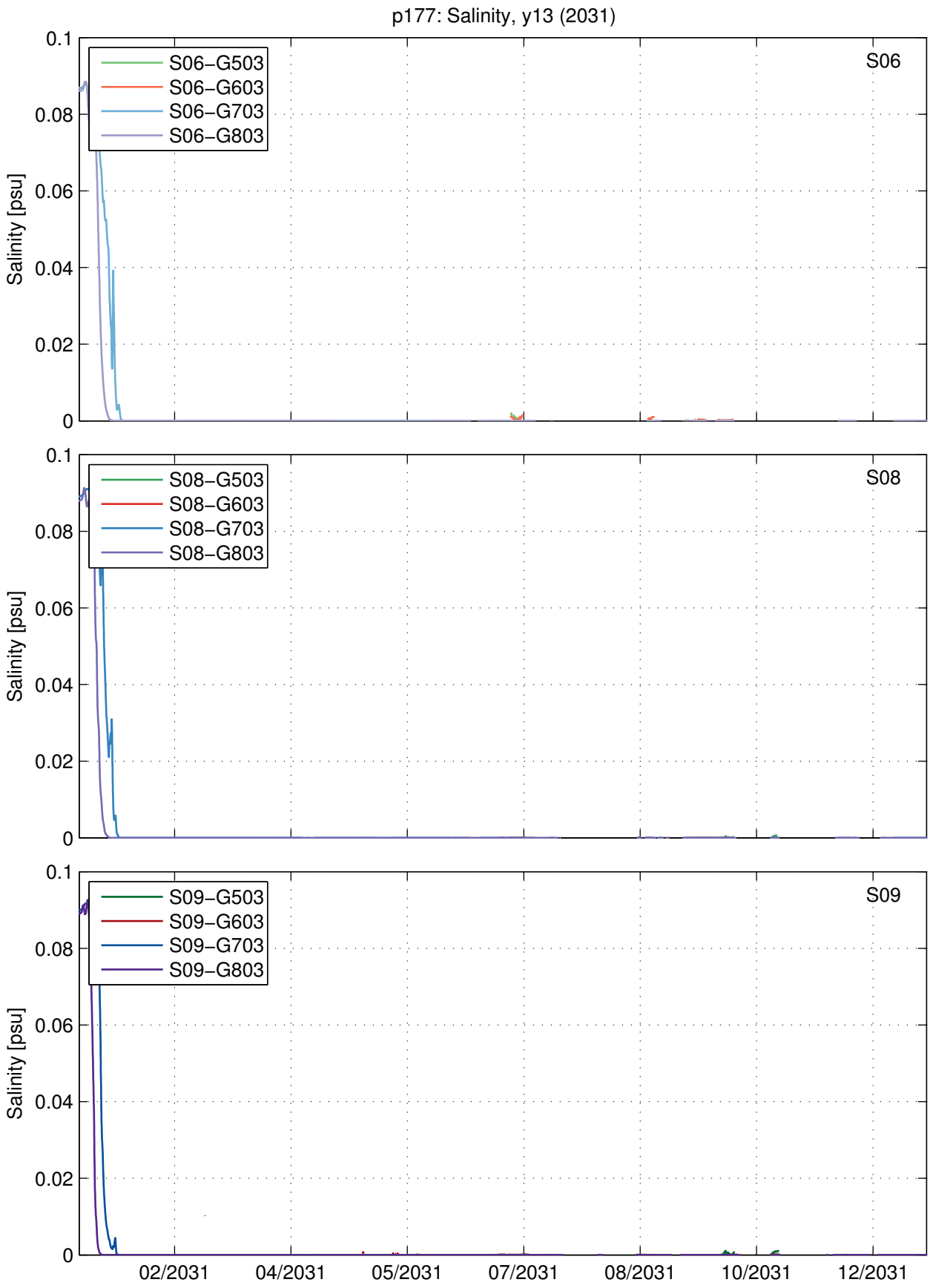

p160: Salinity, y13 (2031)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Salinity [psu]
1
0.5
0
−0.5
−1
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

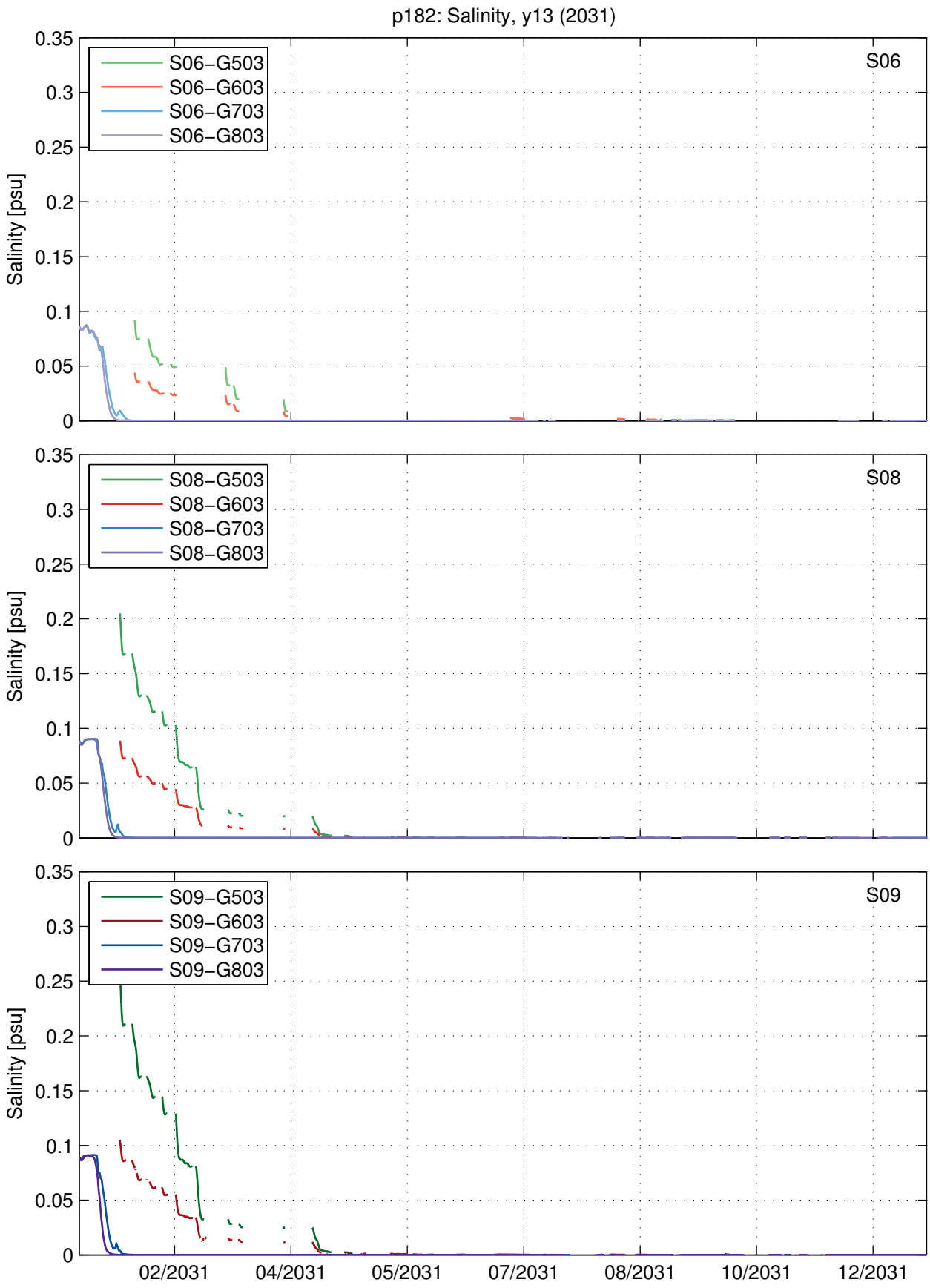

p165: Salinity, y13 (2031)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Salinity [psu]
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

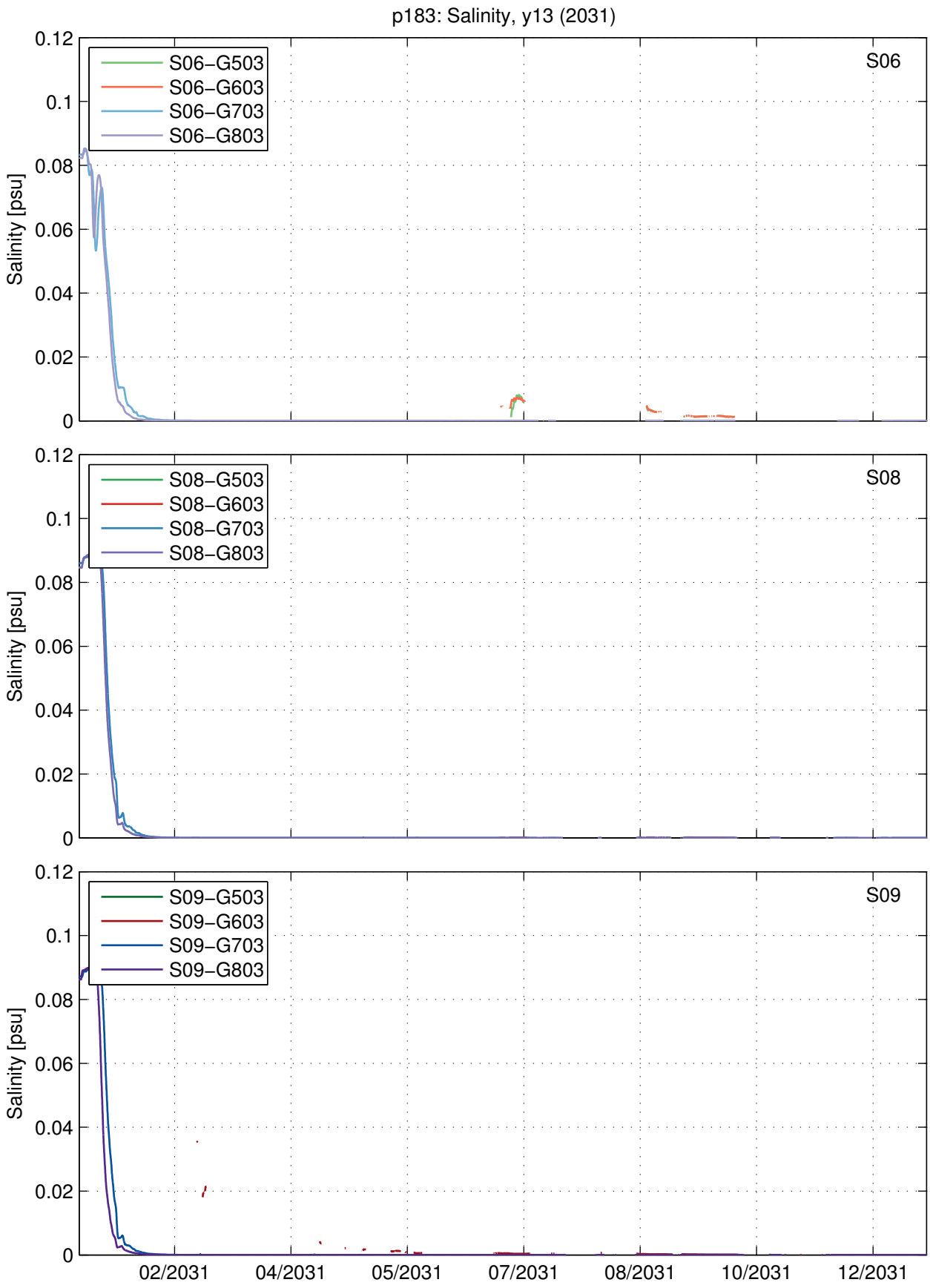

TC−1: Salinity, y13 (2031)
S06
S06−G503
S06−G603
S06−G703
S06−G803
S08
S08−G503
S08−G603
S08−G703
S08−G803
S09
S09−G503
S09−G603
S09−G703
S09−G803
Salinity [psu]
0
0.1
0.2
0.3
0.4
0.5
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

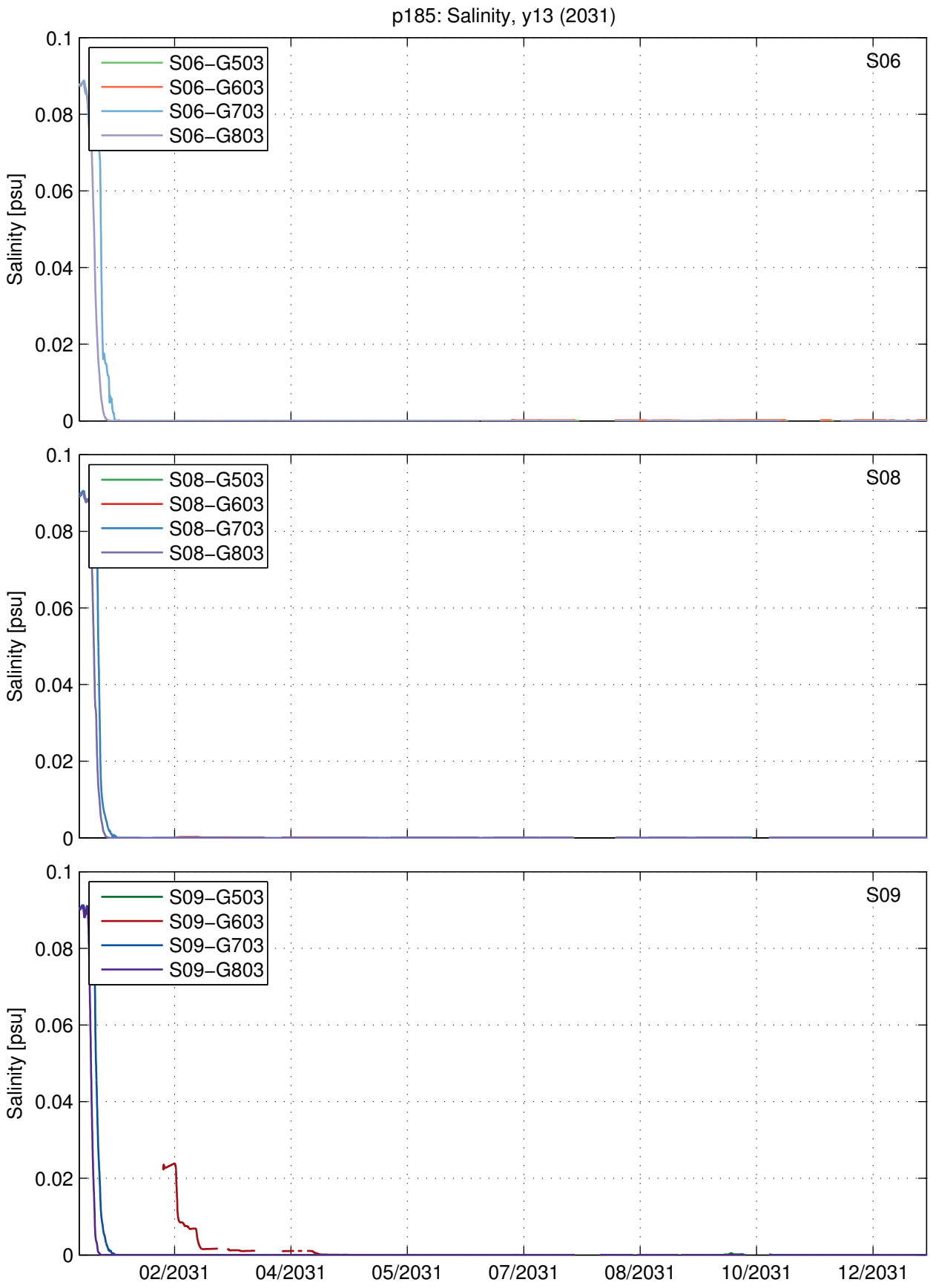

p151: Salinity, y13 (2031)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Salinity [psu]
0.12
0.1
0.08
0.06
0.04
0.02
0
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

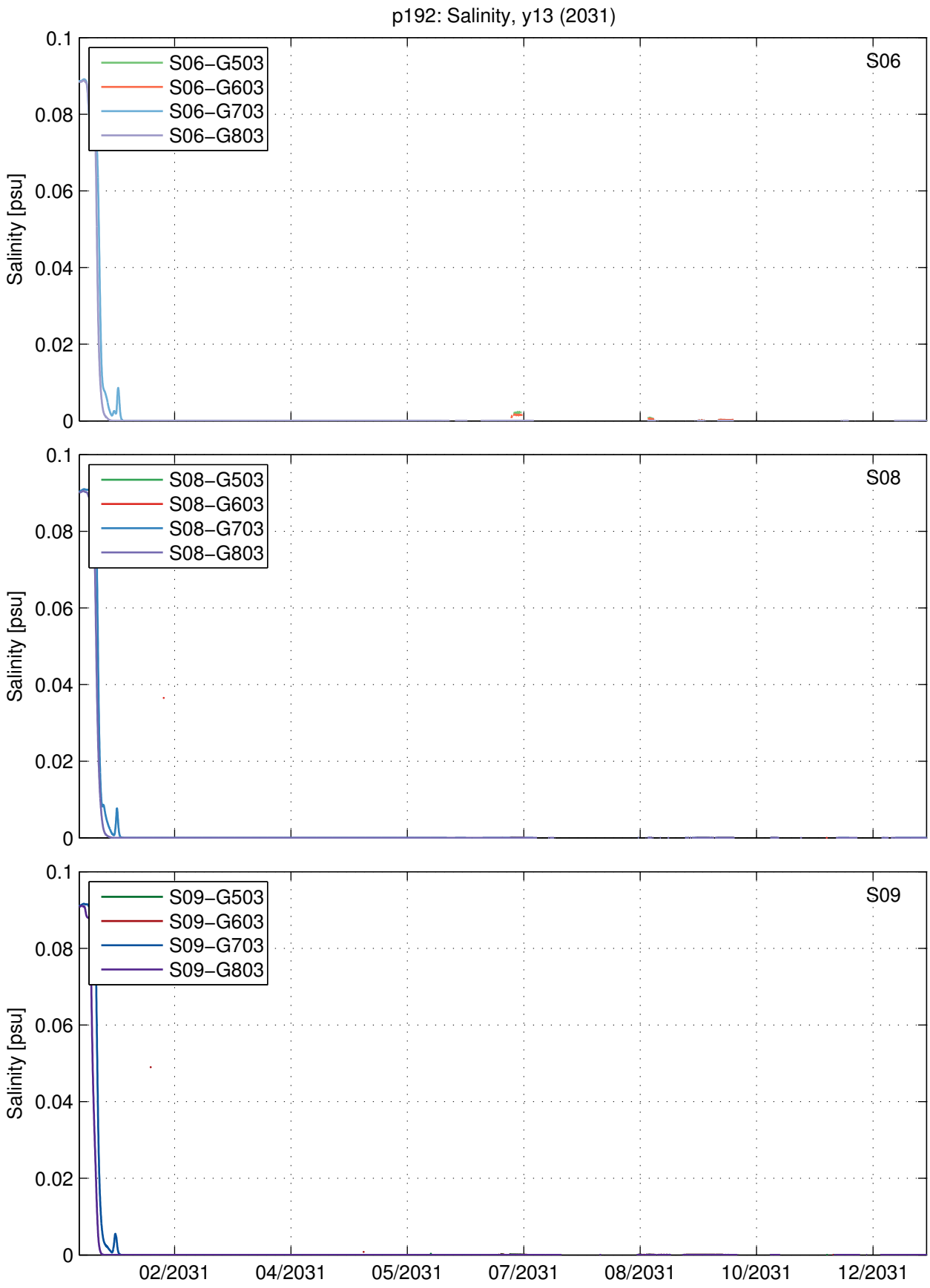

p186: Salinity, y13 (2031)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Salinity [psu]
0.12
0.1
0.08
0.06
0.04
0.02
0
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

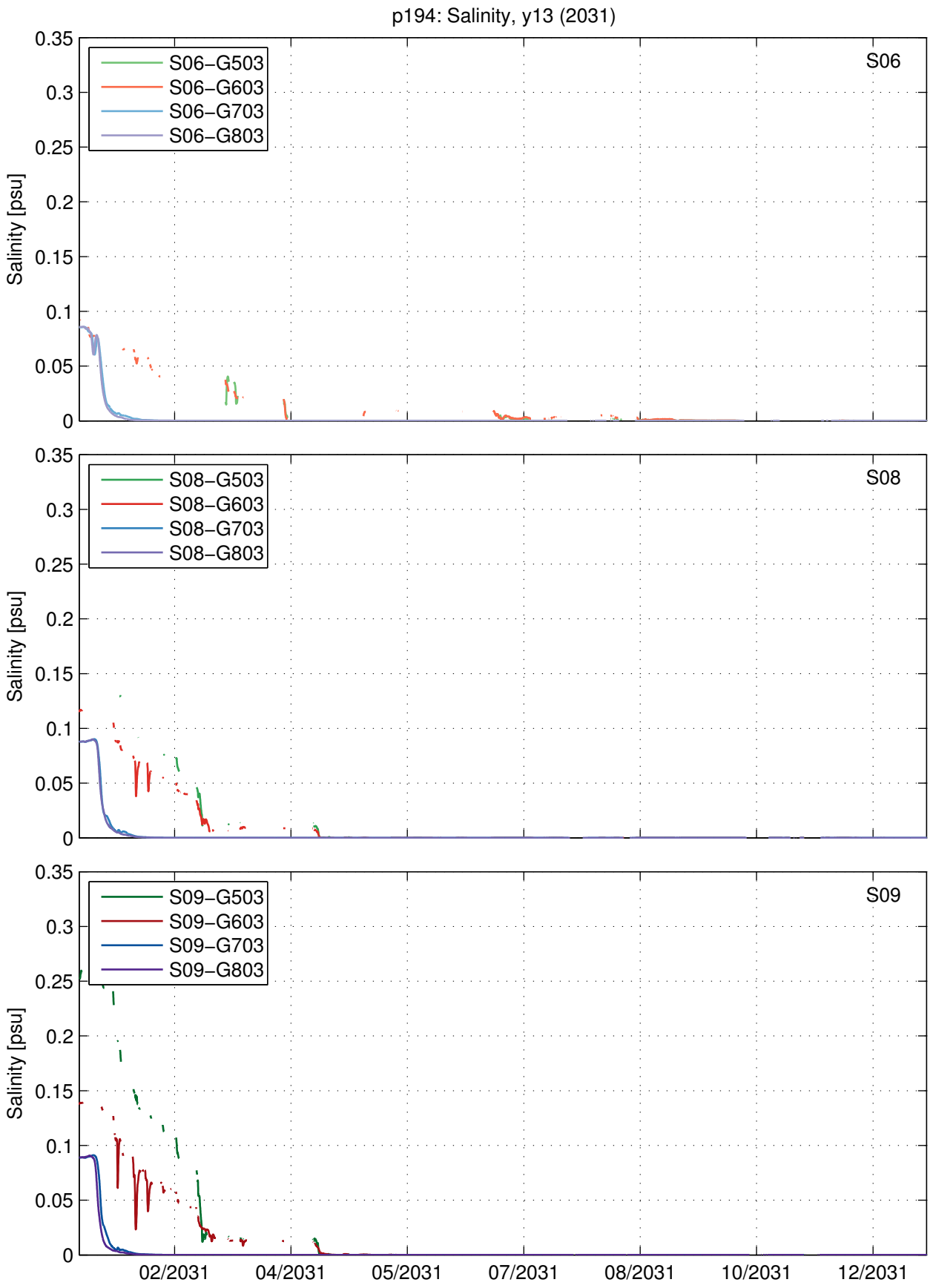

p177: Salinity, y13 (2031)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Salinity [psu]
0.1
0.08
0.06
0.04
0.02
0
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

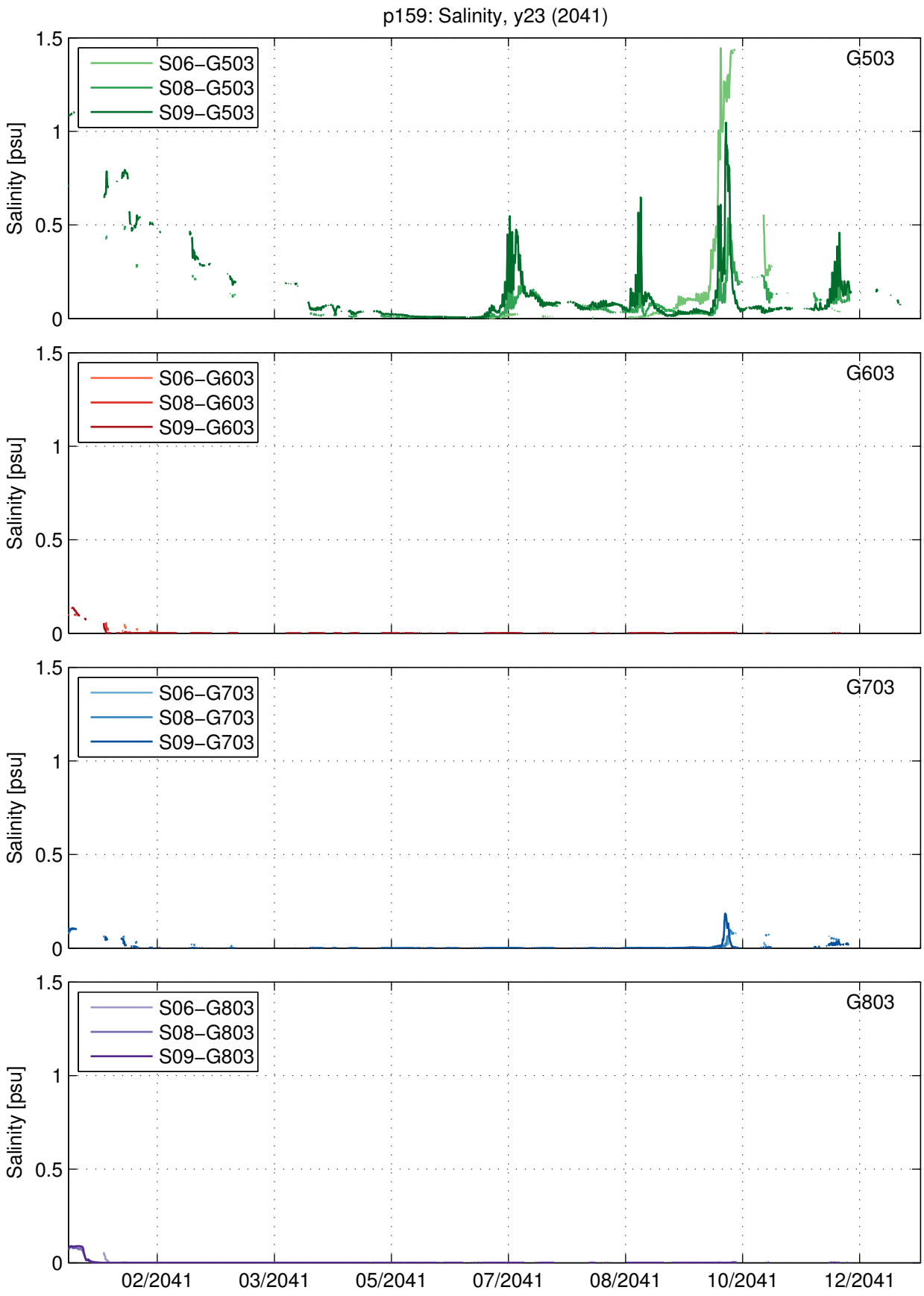

p182: Salinity, y13 (2031)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Salinity [psu]
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

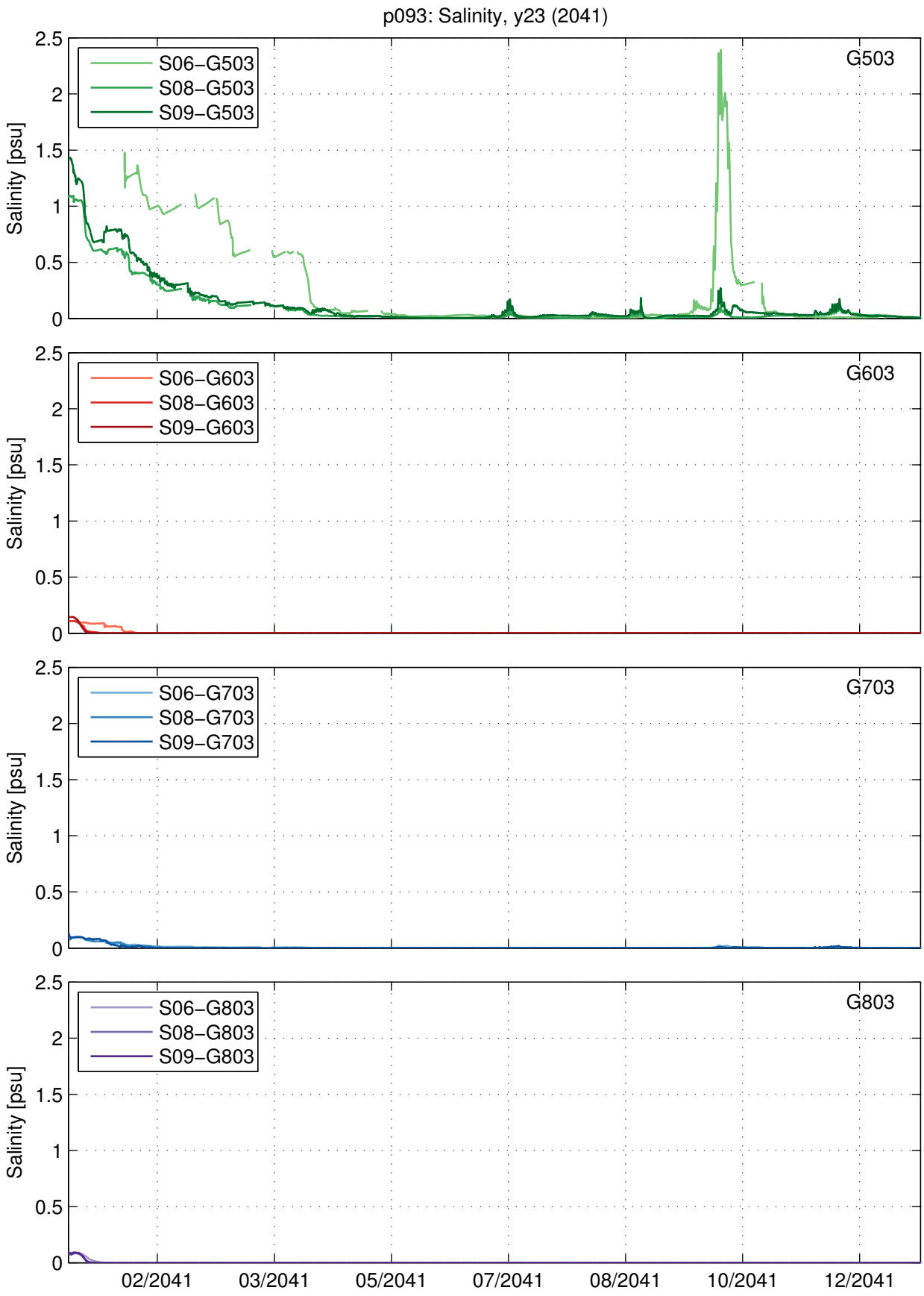

p183: Salinity, y13 (2031)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Salinity [psu]
0.12
0.1
0.08
0.06
0.04
0.02
0
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

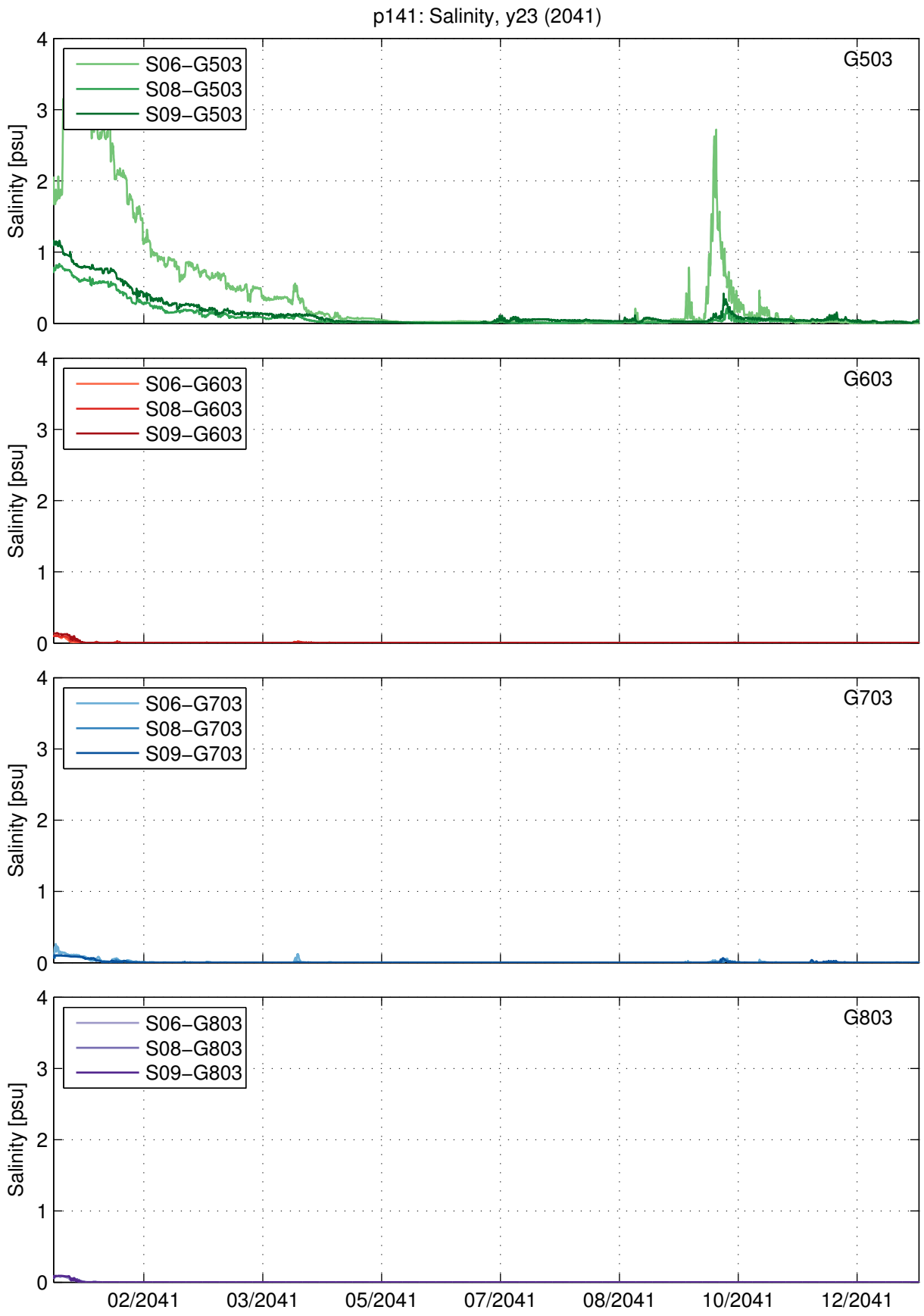

p185: Salinity, y13 (2031)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Salinity [psu]
0.1
0.08
0.06
0.04
0.02
0
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

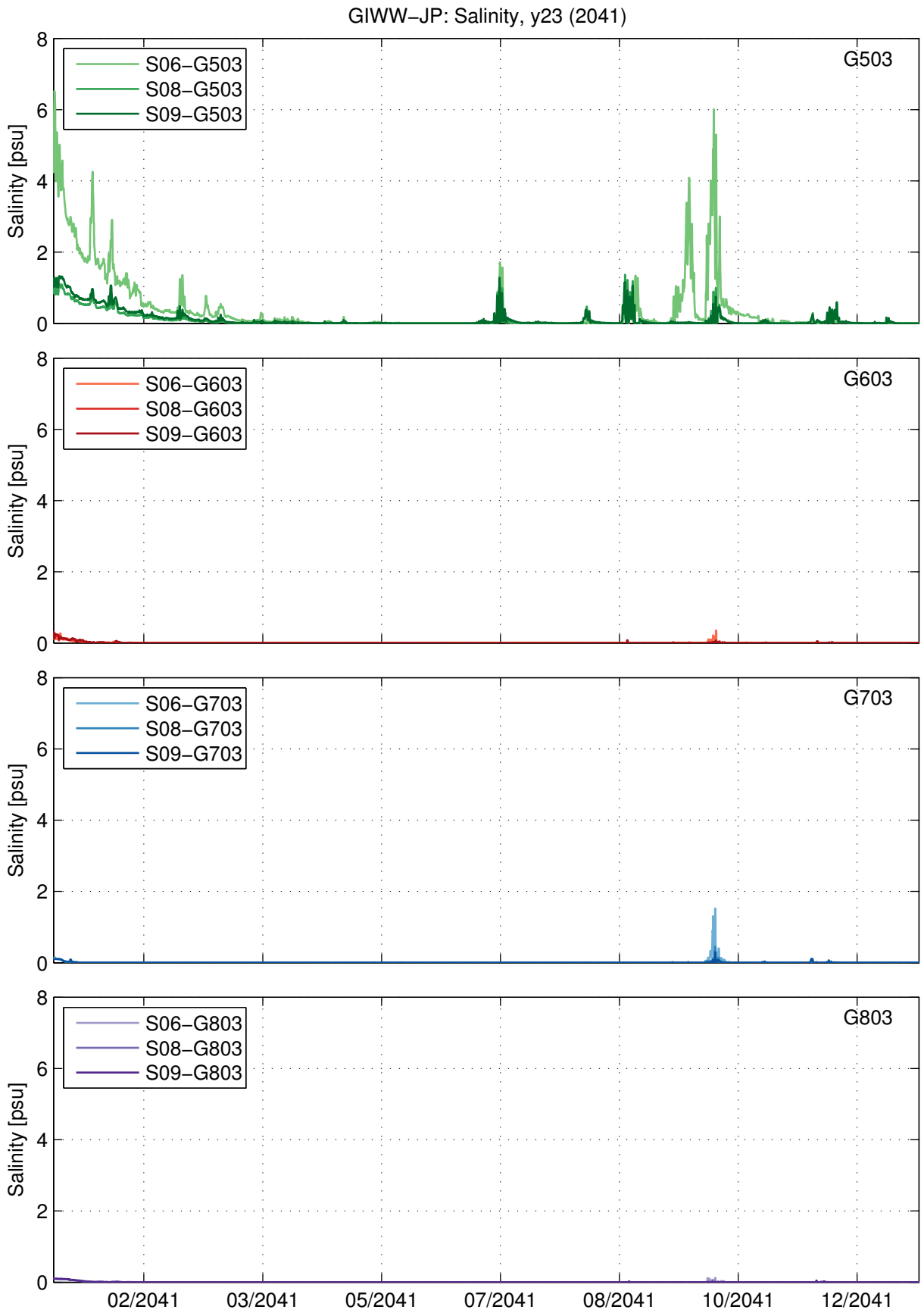

p192: Salinity, y13 (2031)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Salinity [psu]
0.1
0.08
0.06
0.04
0.02
0
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

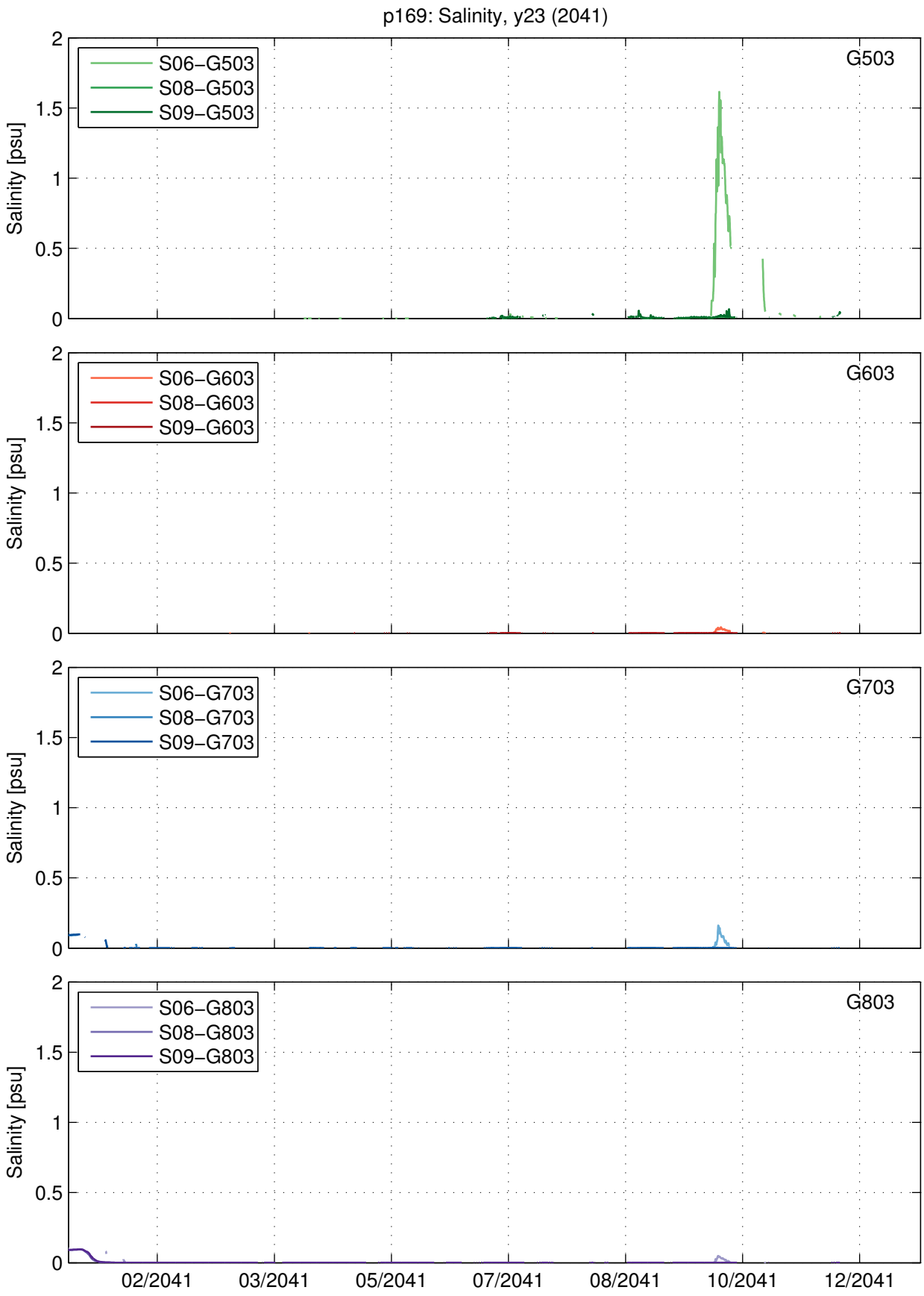

p194: Salinity, y13 (2031)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Salinity [psu]
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

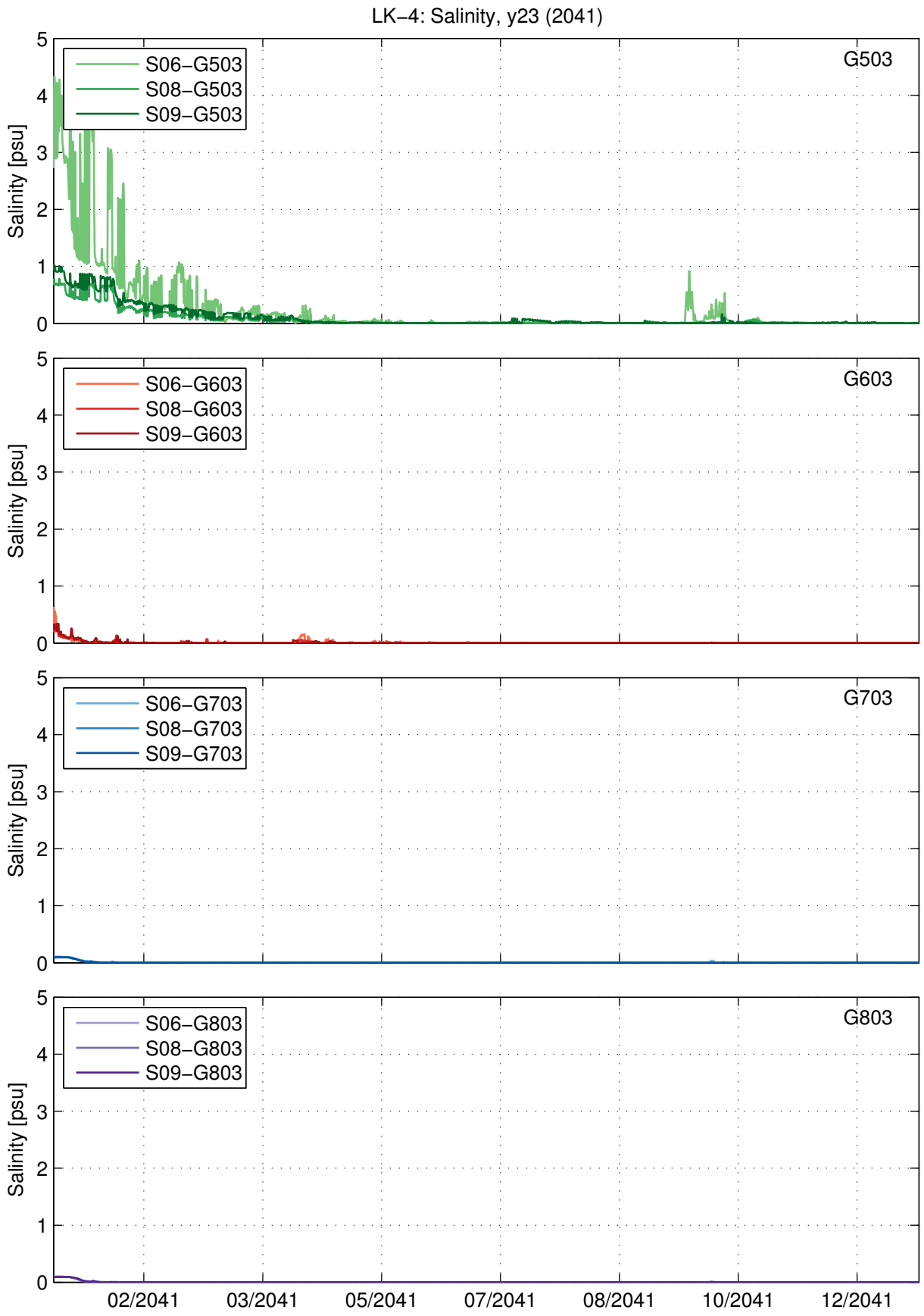

p159: Salinity, y23 (2041)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
1.5
1
0.5
0
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

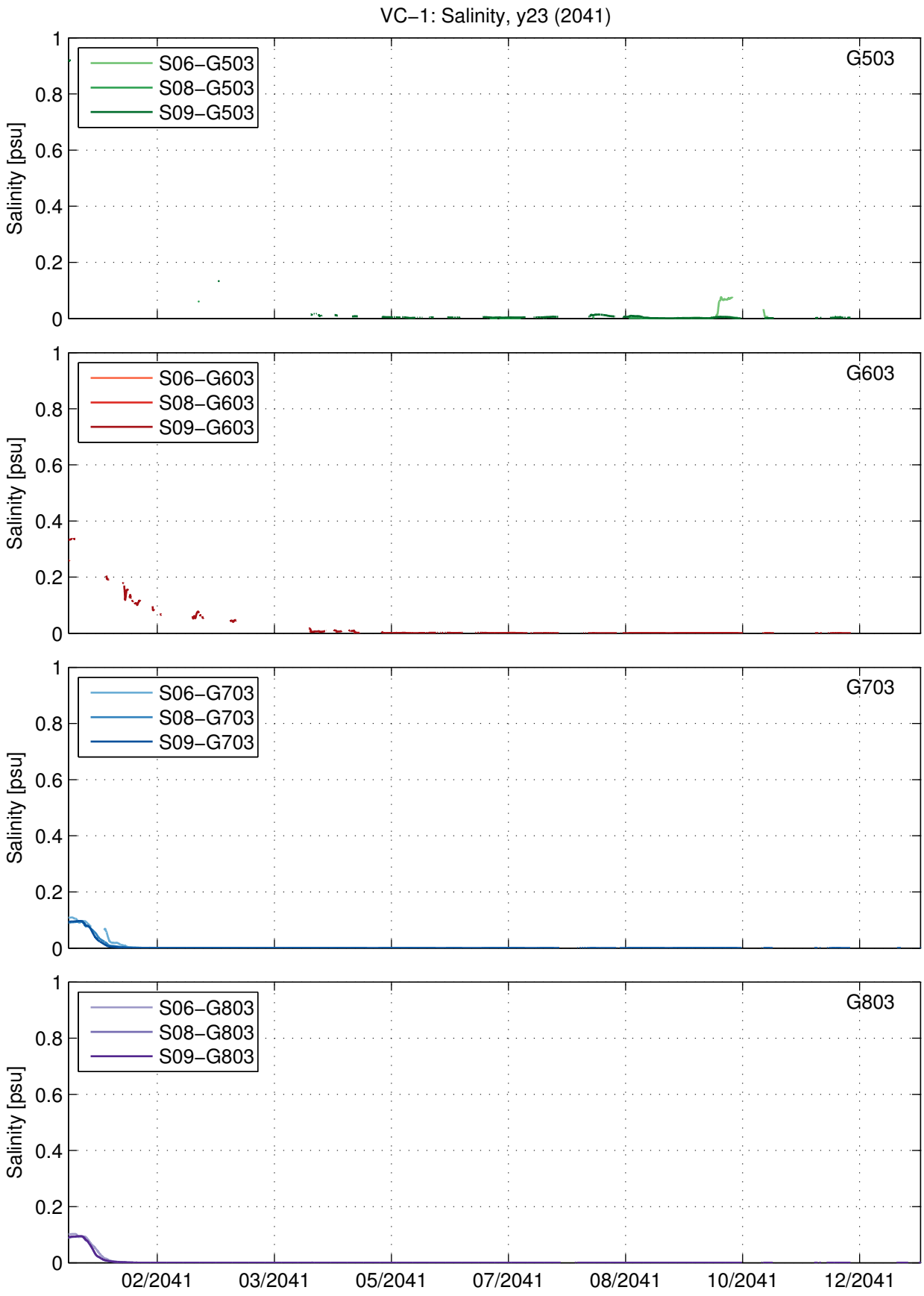

p093: Salinity, y23 (2041)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
0.5
1
1.5
2
2.5
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

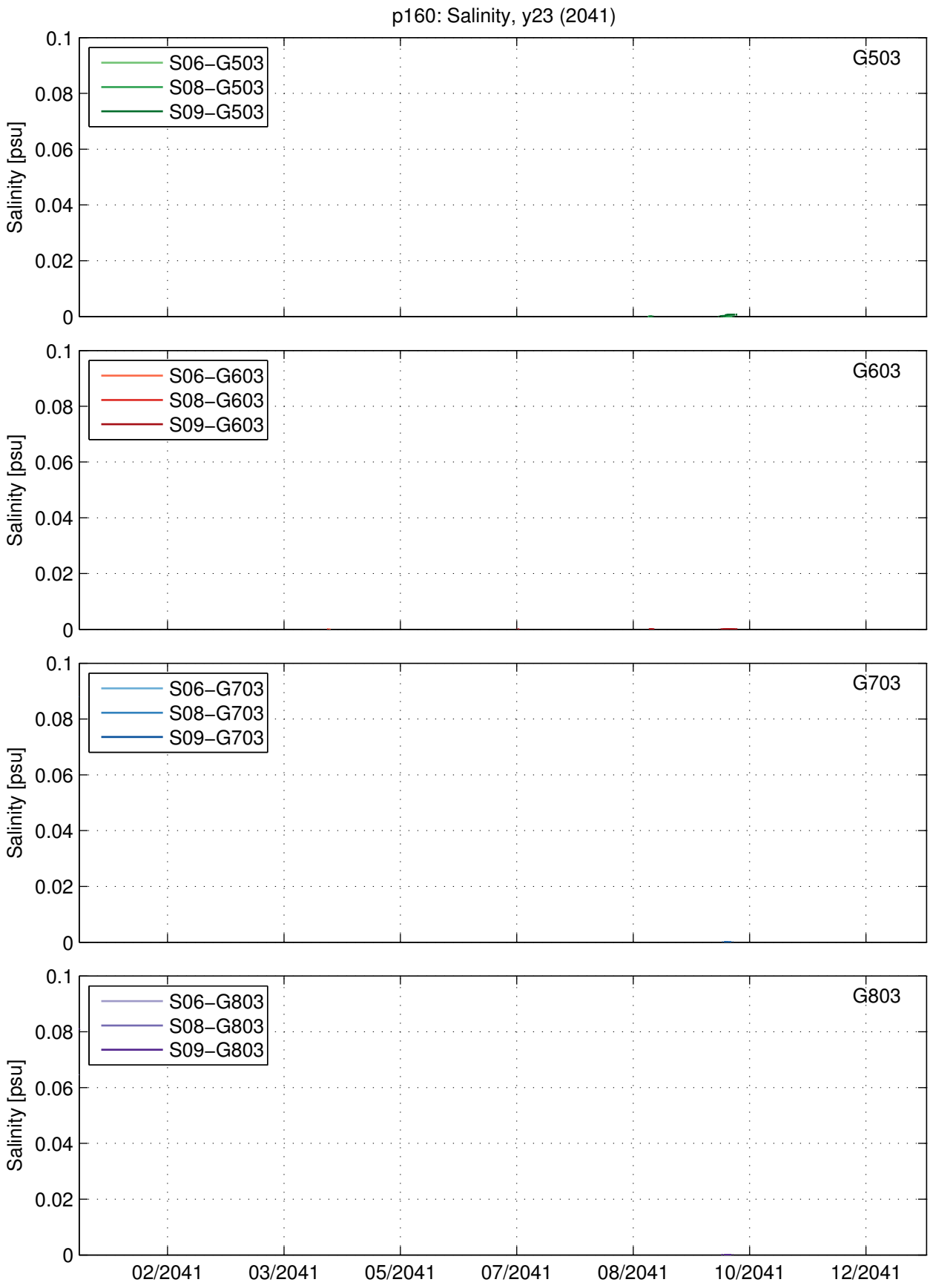

p141: Salinity, y23 (2041)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
1
2
3
4
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

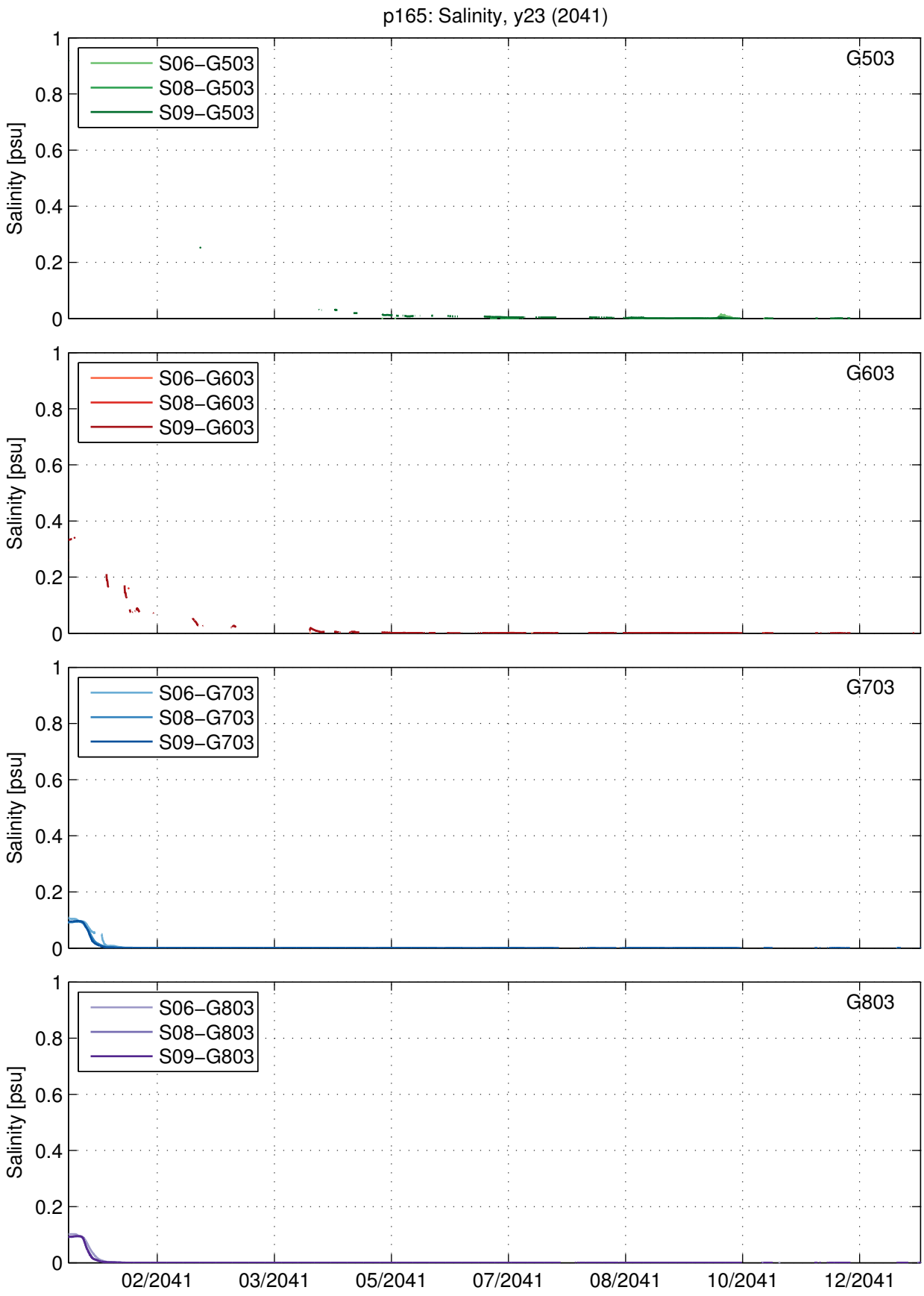

GIWW–JP: Salinity, y23 (2041)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
2
4
6
8
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

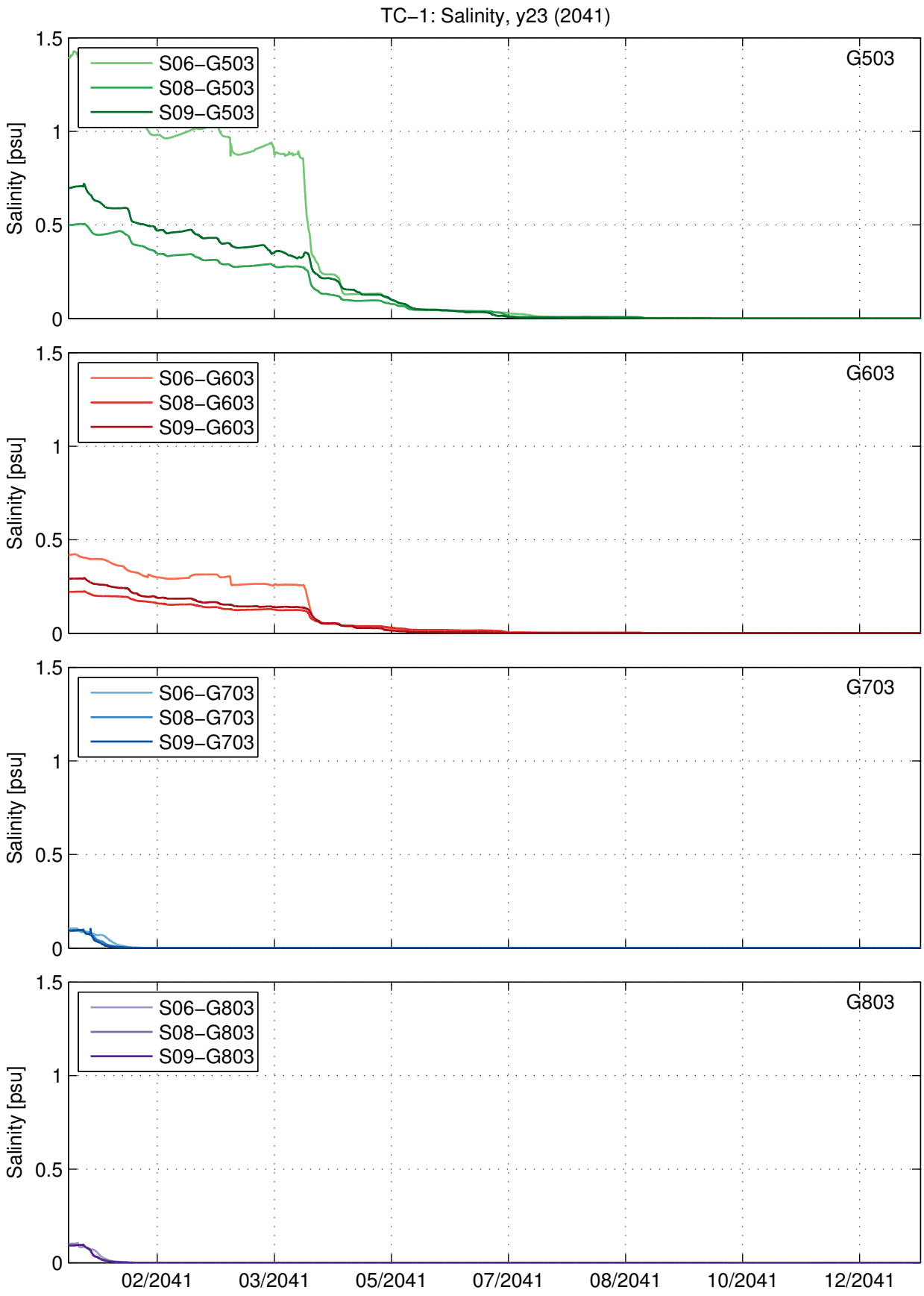

p169: Salinity, y23 (2041)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
0.5
1
1.5
2
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

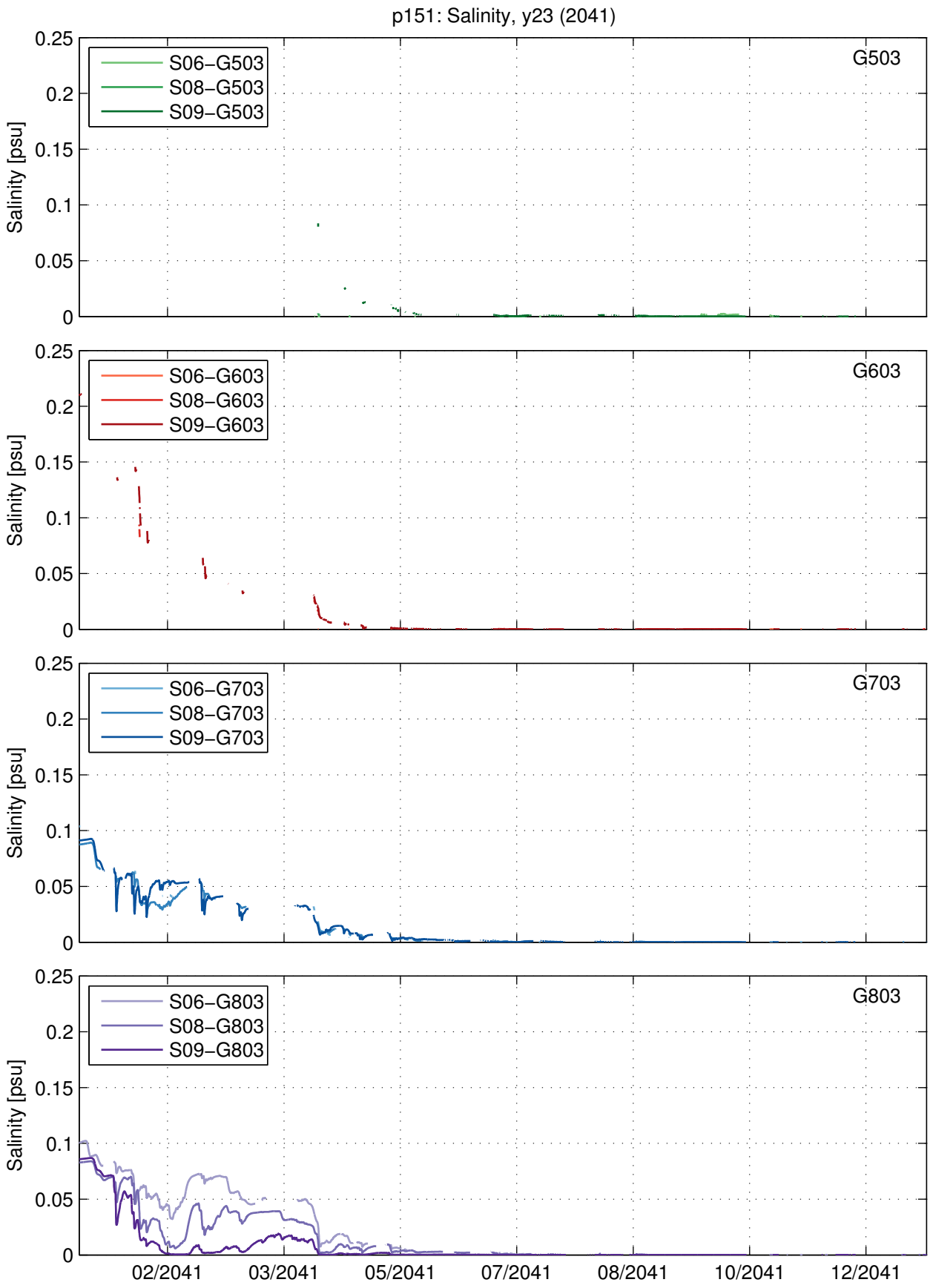

LK–4: Salinity, y23 (2041)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
1
2
3
4
5
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

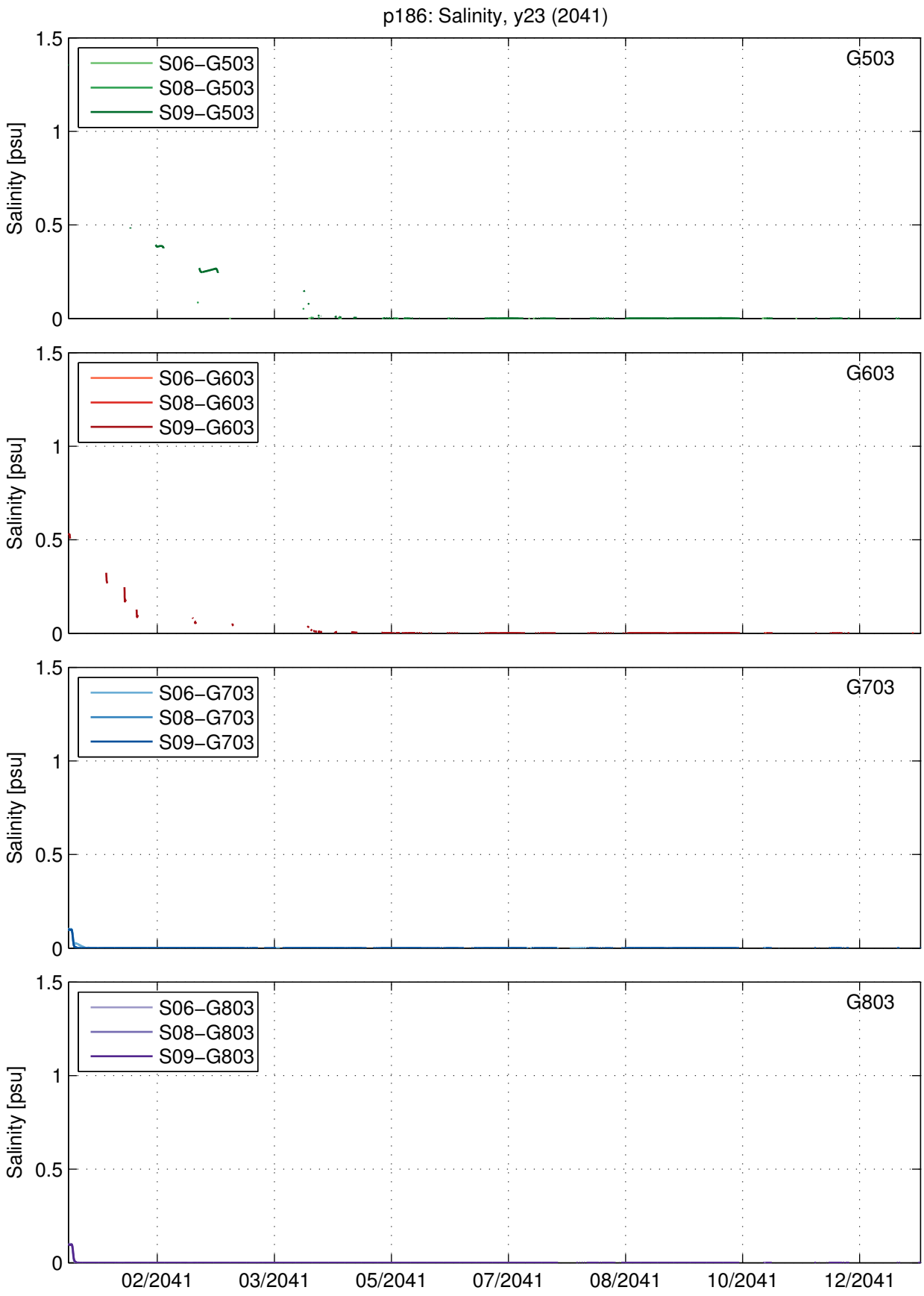

VC−1: Salinity, y23 (2041)
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
S06−G703
S08−G703
S09−G703
G703
S06−G803
S08−G803
S09−G803
G803
Salinity [psu]
0
0.2
0.4
0.6
0.8
1
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

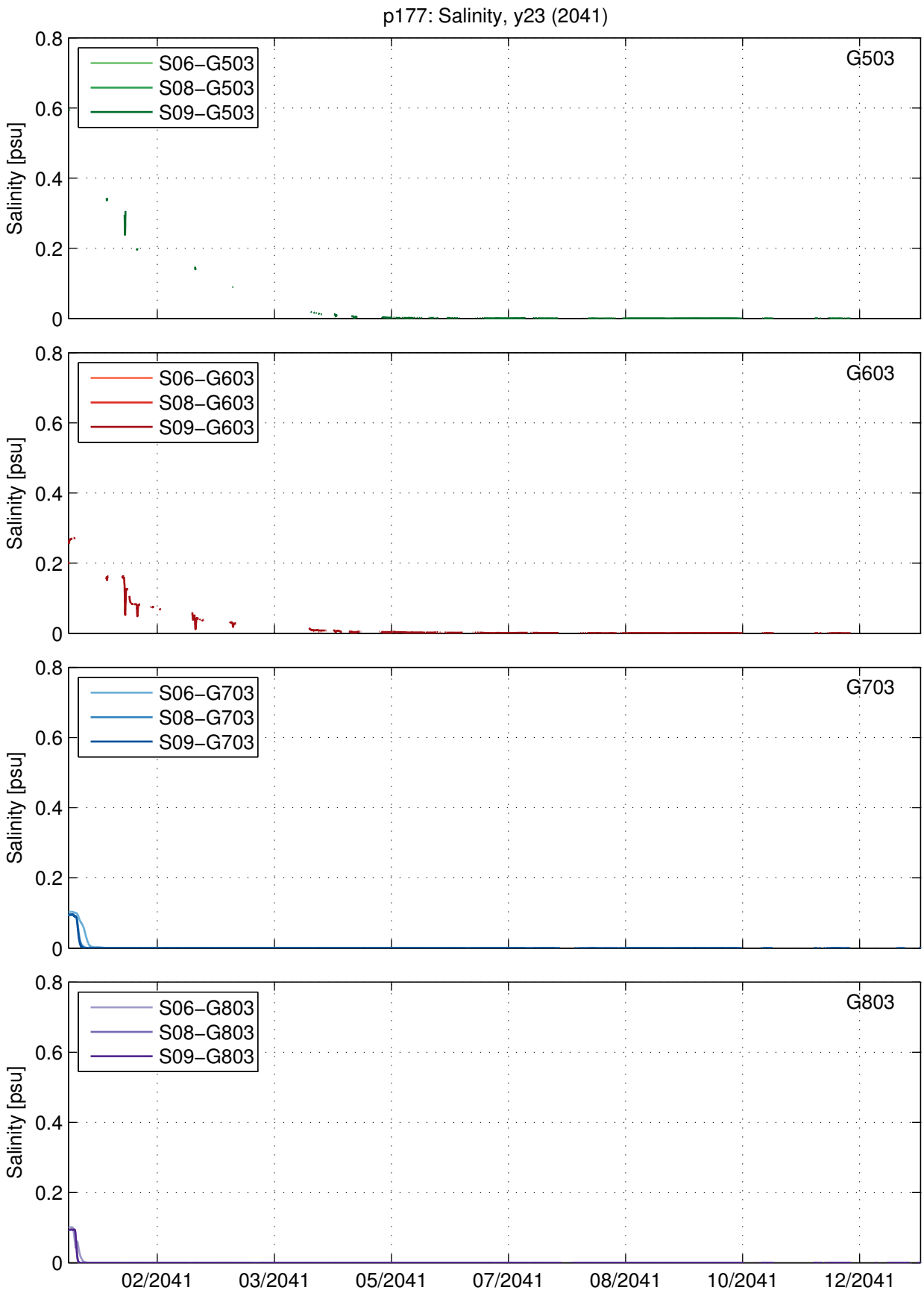

p160: Salinity, y23 (2041)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
0.02
0.04
0.06
0.08
0.1
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

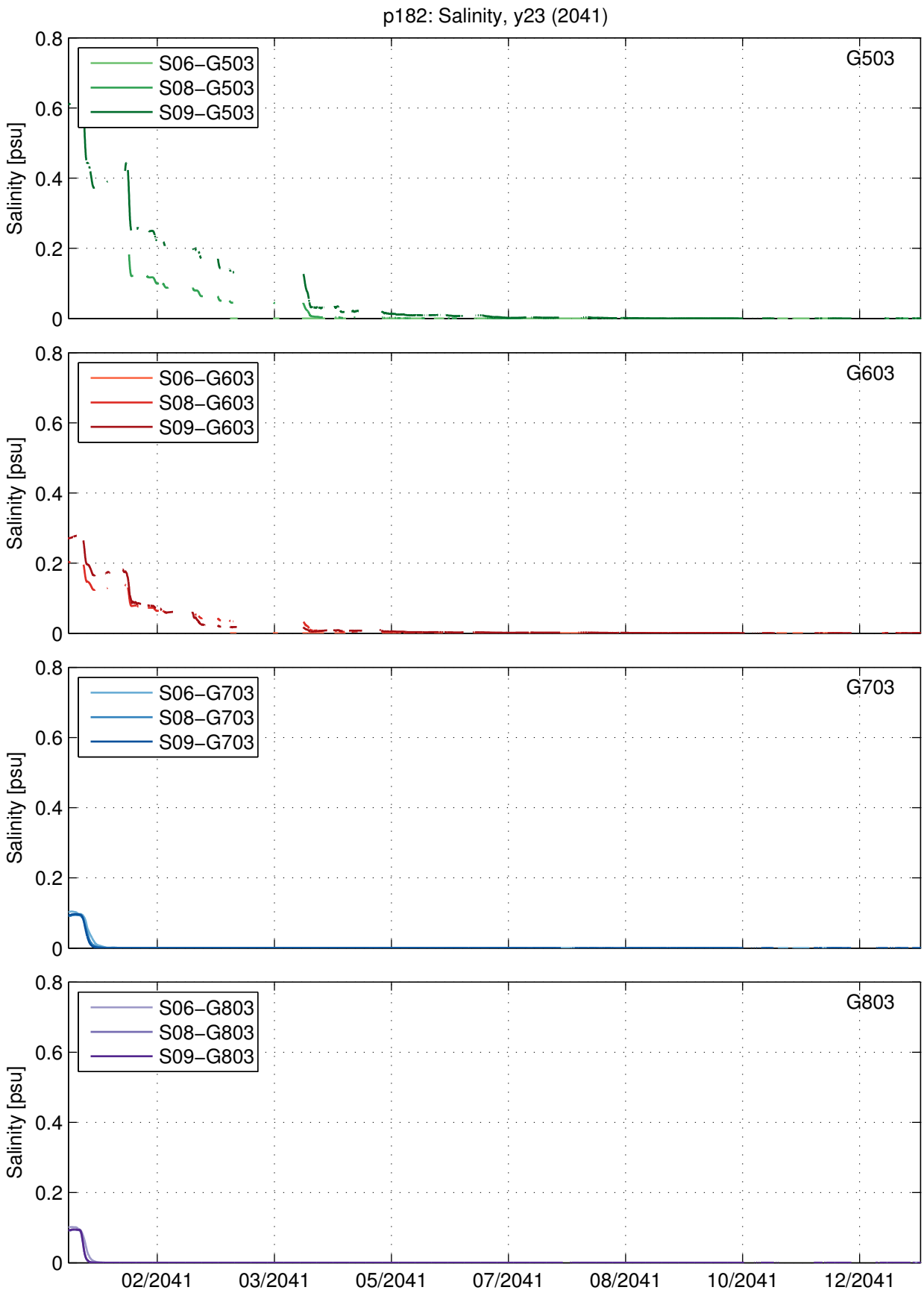

p165: Salinity, y23 (2041)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
0.2
0.4
0.6
0.8
1
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

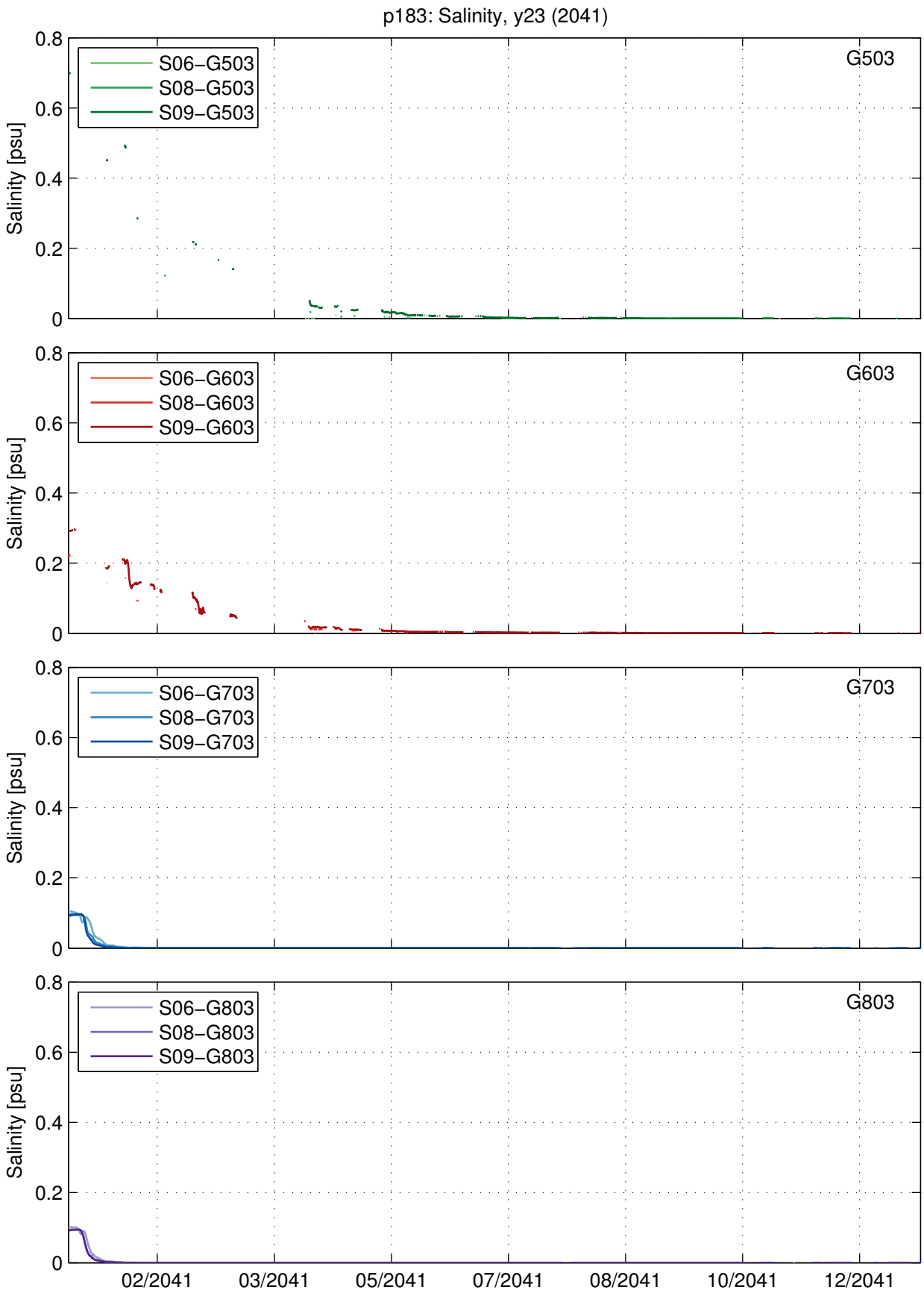

TC−1: Salinity, y23 (2041)
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
S06−G703
S08−G703
S09−G703
G703
S06−G803
S08−G803
S09−G803
G803
Salinity [psu]
1.5
1
0.5
0
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

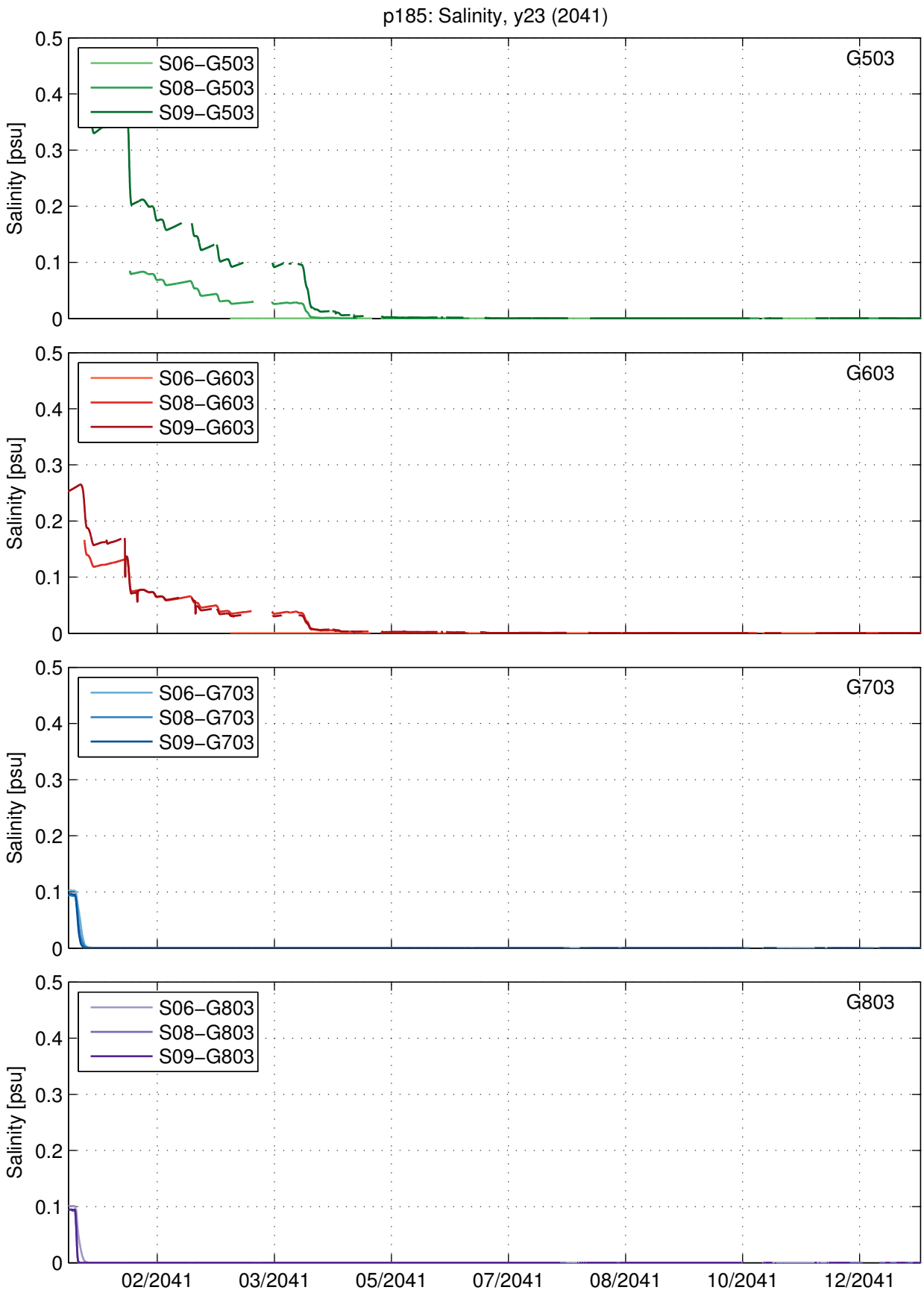

p151: Salinity, y23 (2041)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0.25
0.2
0.15
0.1
0.05
0
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

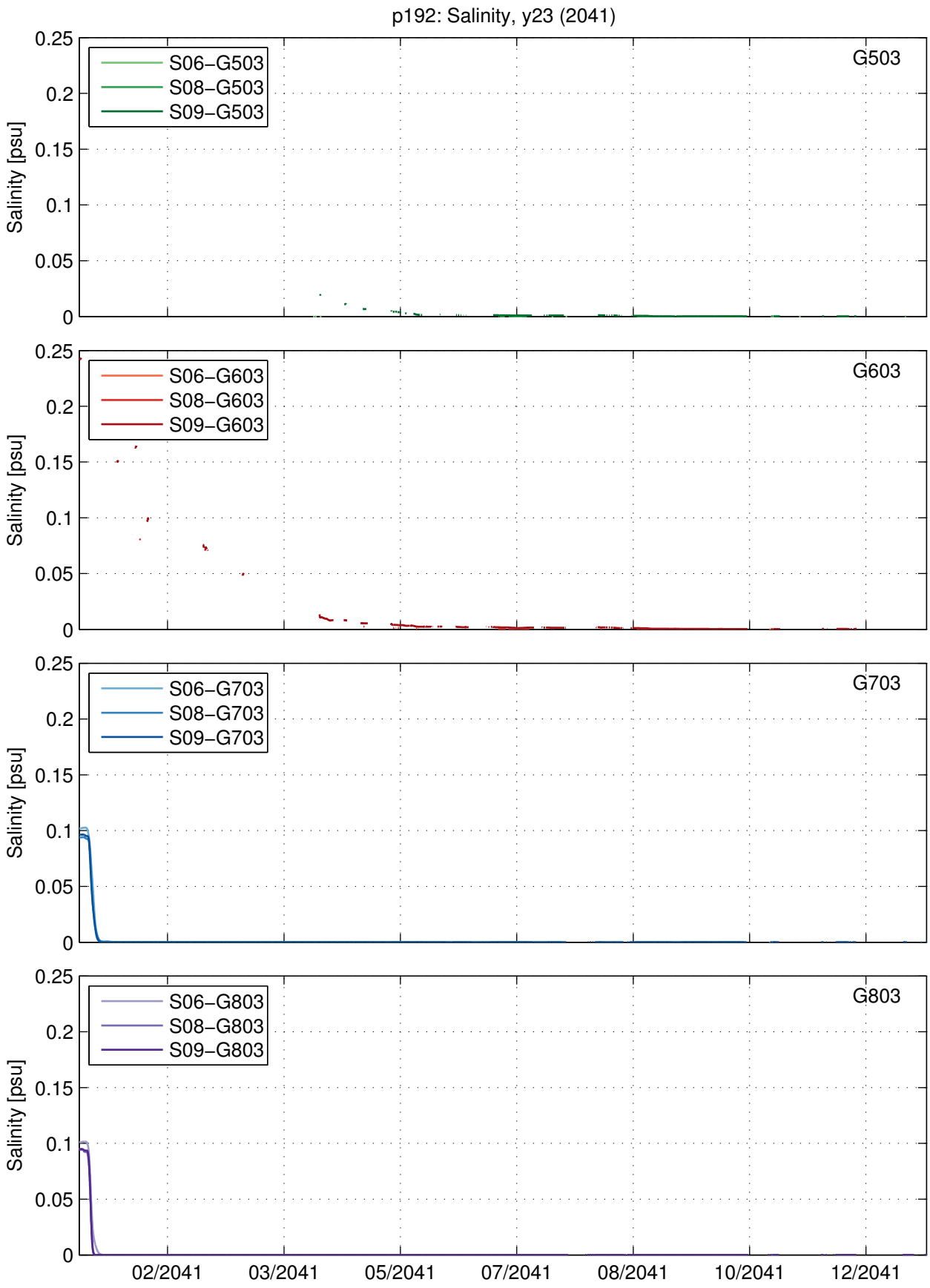

p186: Salinity, y23 (2041)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
1.5
1
0.5
0
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

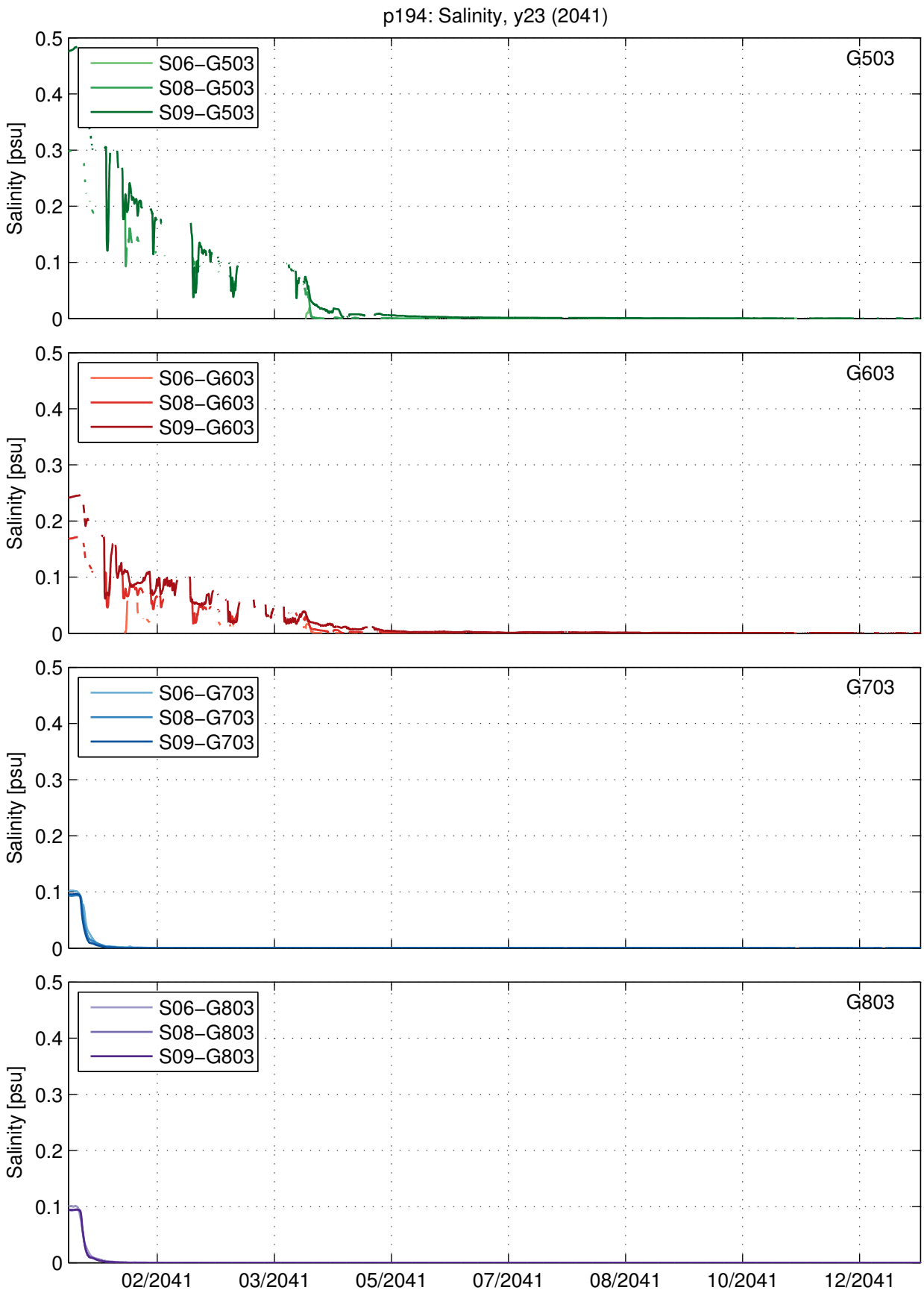

p177: Salinity, y23 (2041)
Salinity [psu]
0
0.2
0.4
0.6
0.8
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

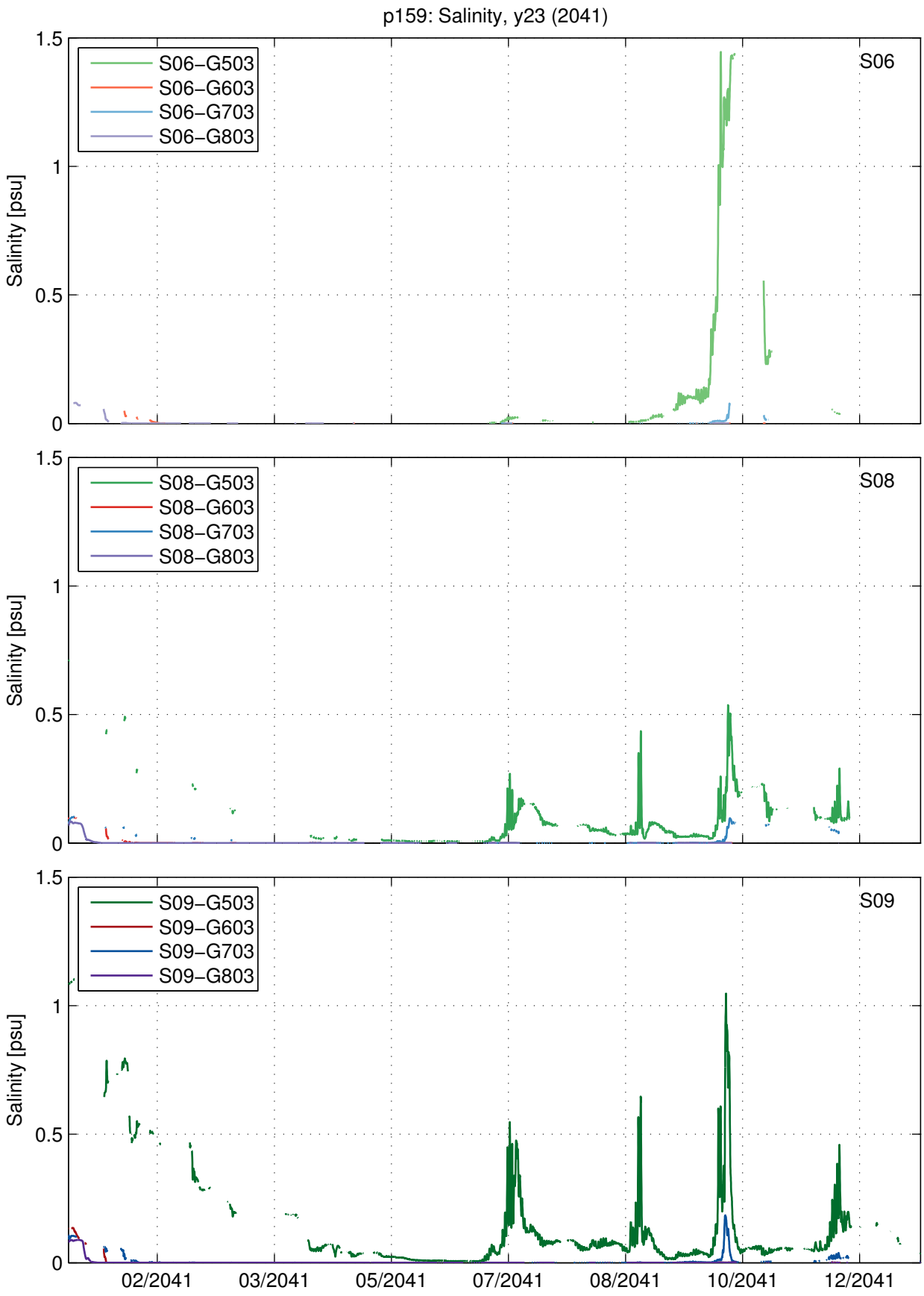

p182: Salinity, y23 (2041)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
0.2
0.4
0.6
0.8
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

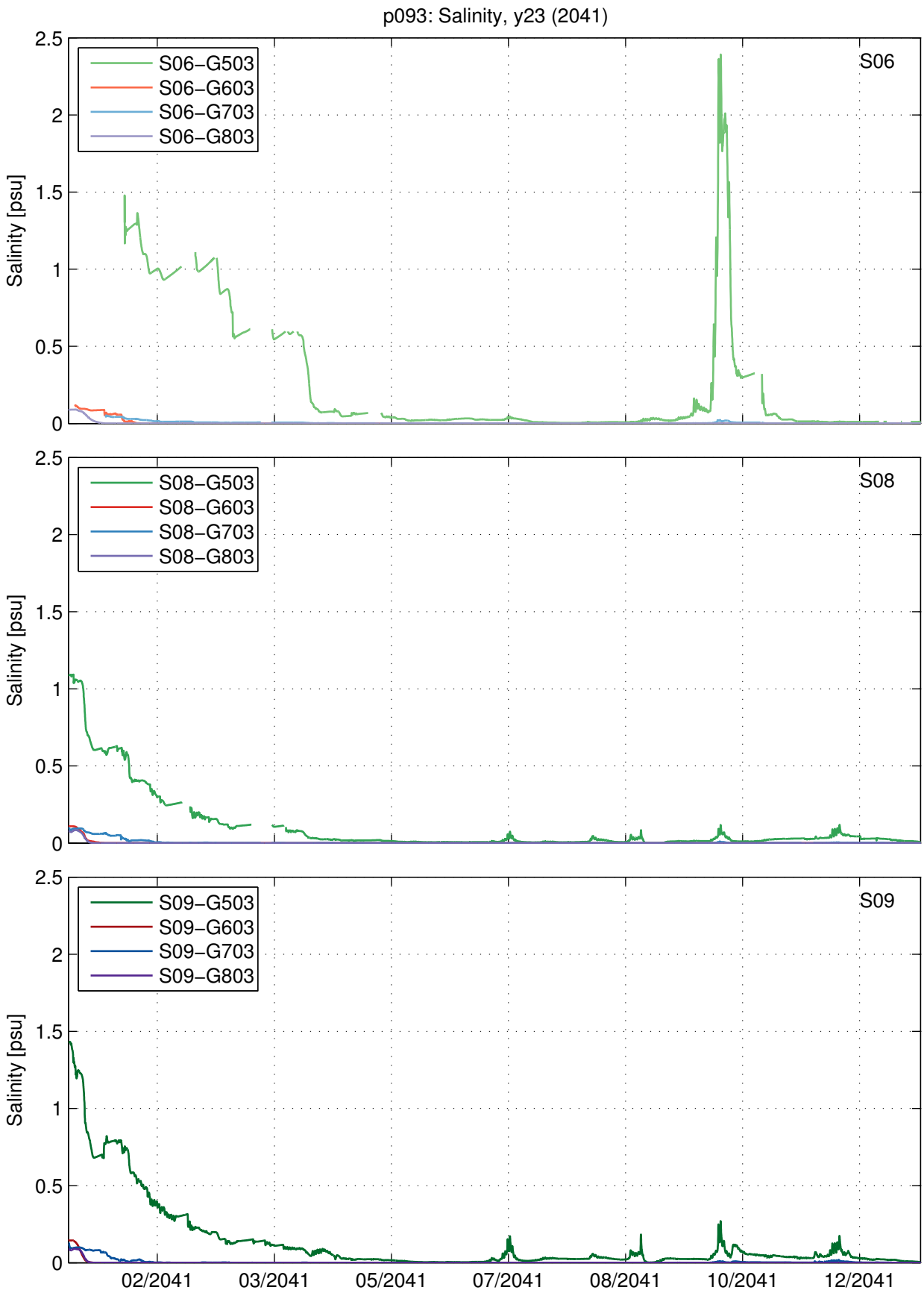

p183: Salinity, y23 (2041)
Salinity [psu]
0
0.2
0.4
0.6
0.8
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

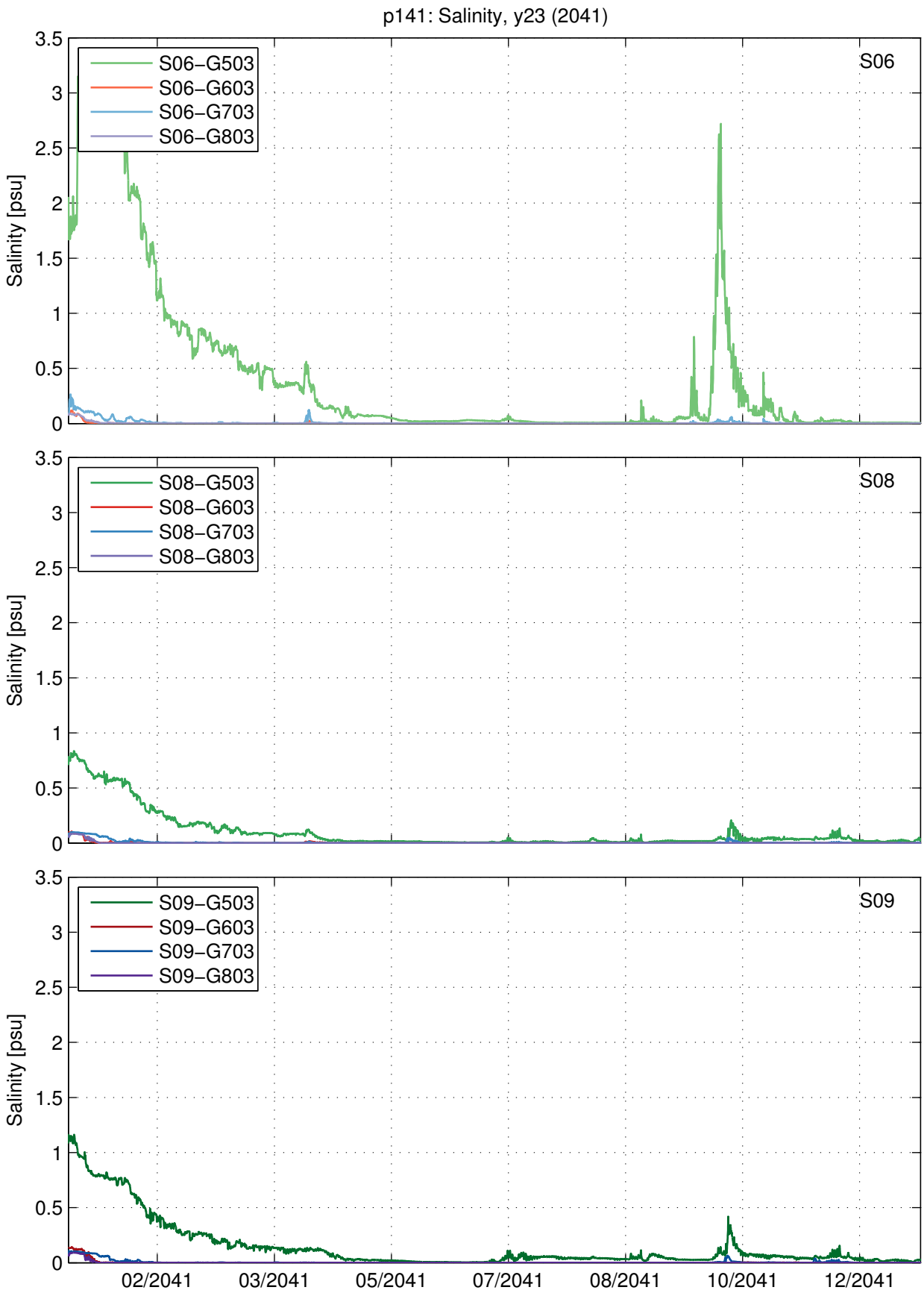

p185: Salinity, y23 (2041)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
0.1
0.2
0.3
0.4
0.5
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

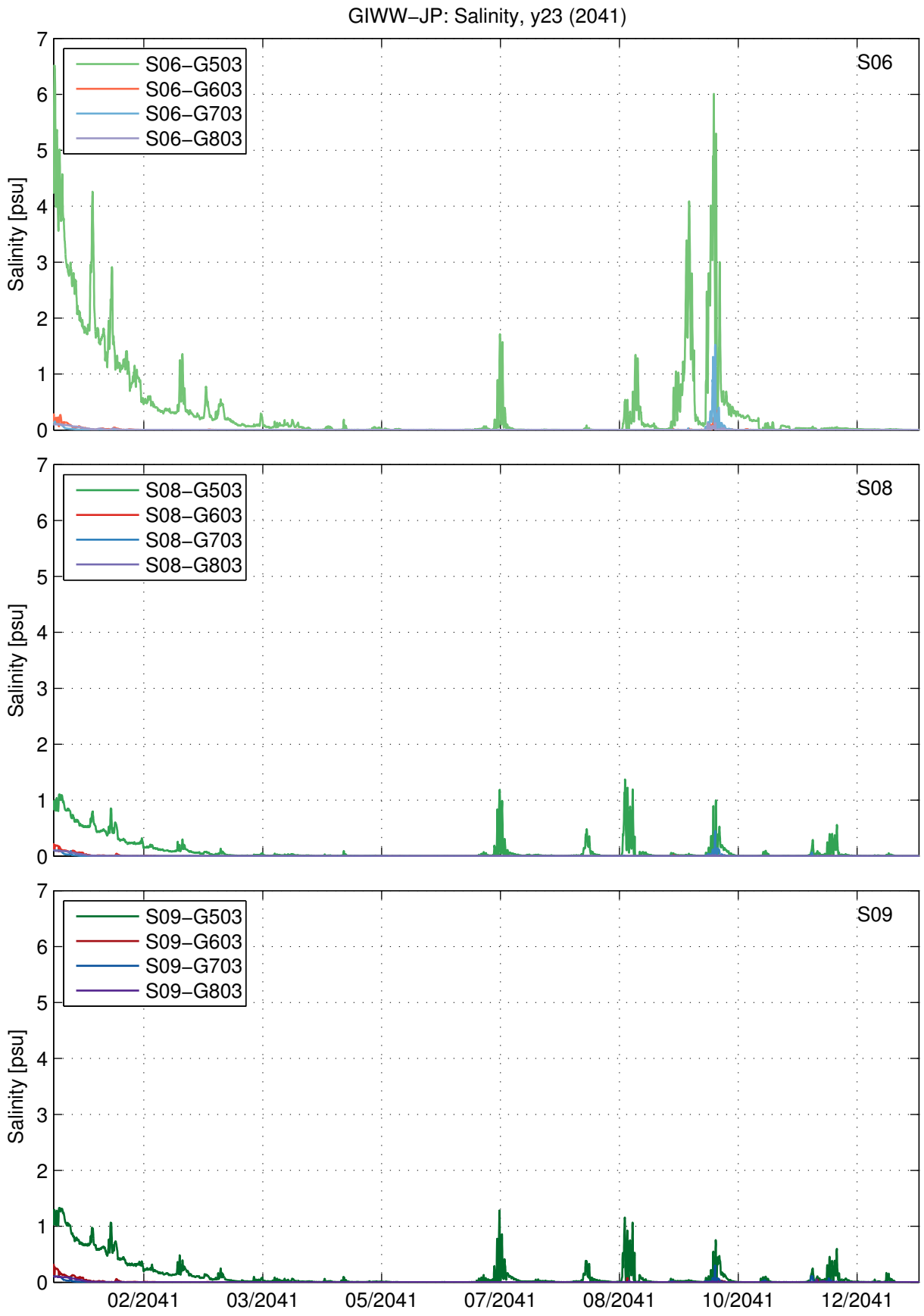

p192: Salinity, y23 (2041)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0.25
0.2
0.15
0.1
0.05
0
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

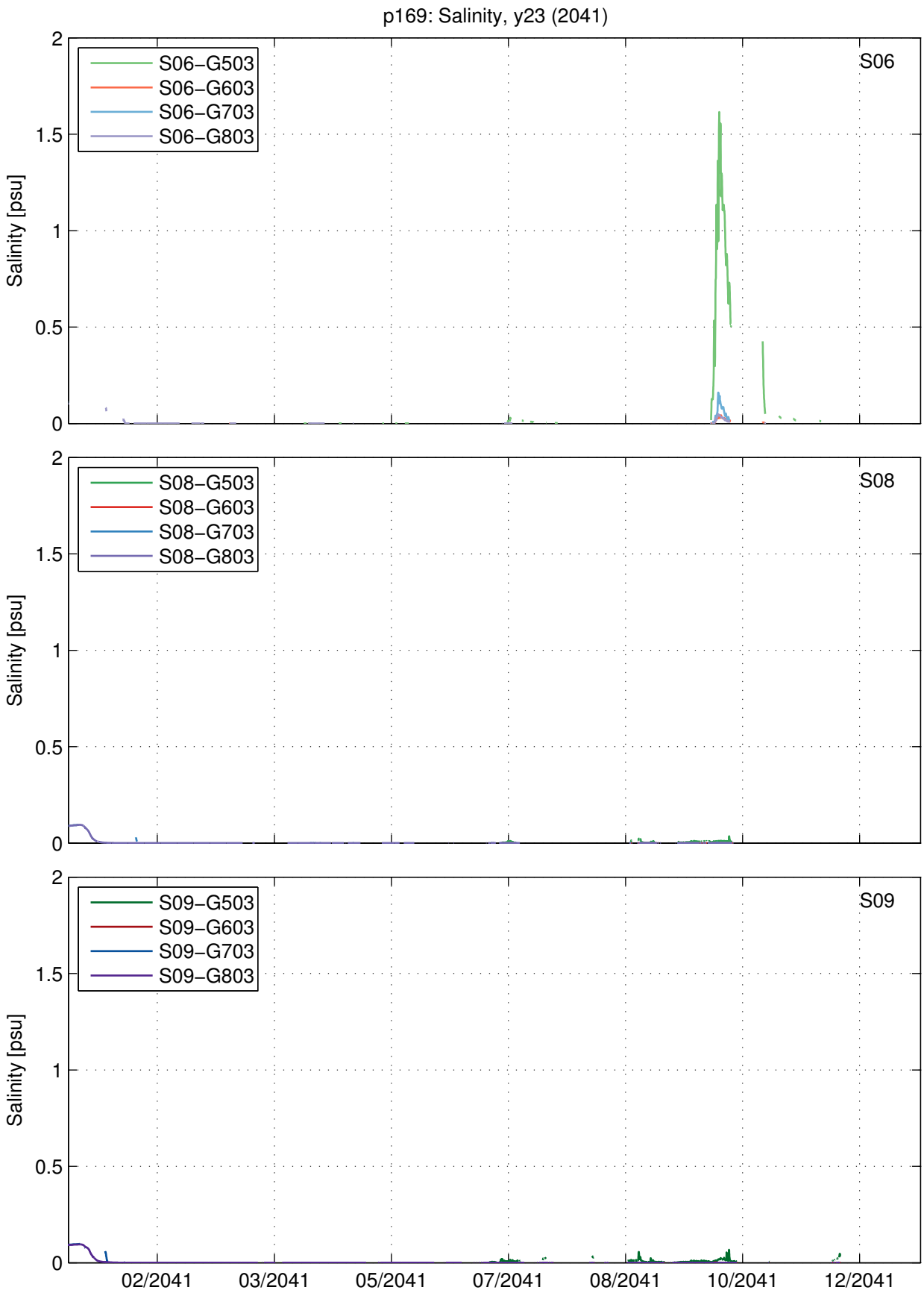

p194: Salinity, y23 (2041)
Salinity [psu]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
0
0.1
0.2
0.3
0.4
0.5
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

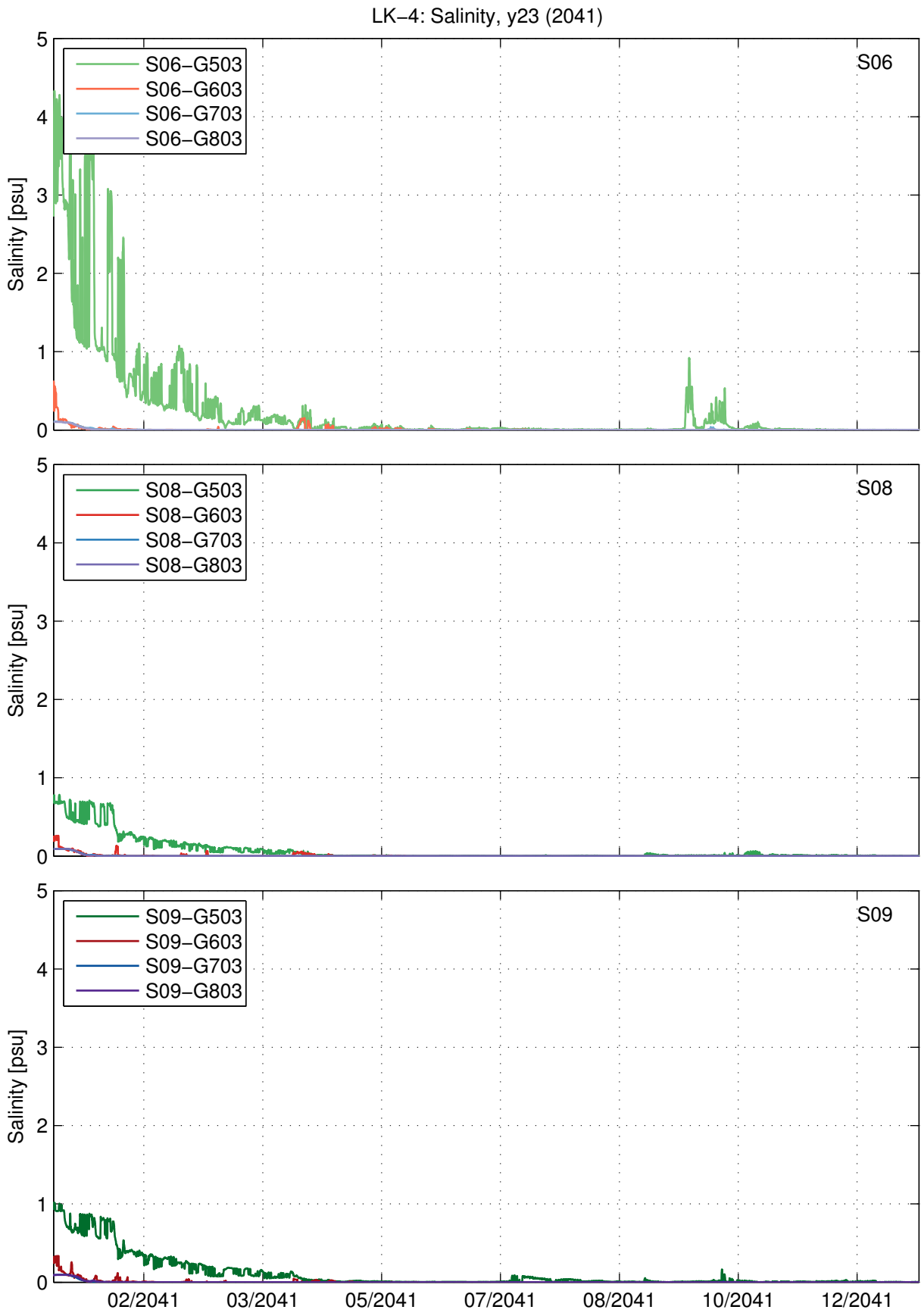

p159: Salinity, y23 (2041)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Salinity [psu]
1.5
1
0.5
0
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

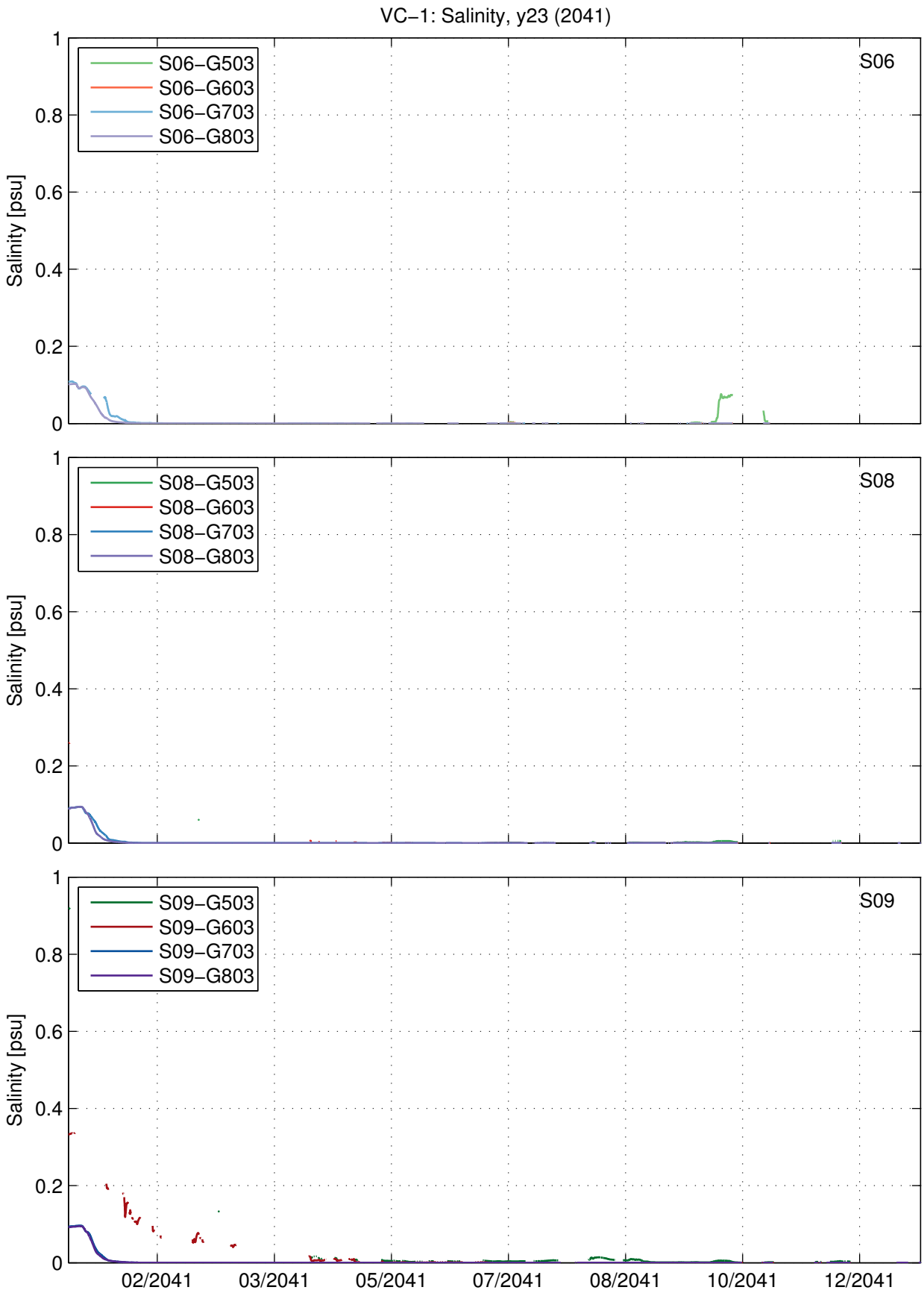

p093: Salinity, y23 (2041)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Salinity [psu]
0
0.5
1
1.5
2
2.5
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

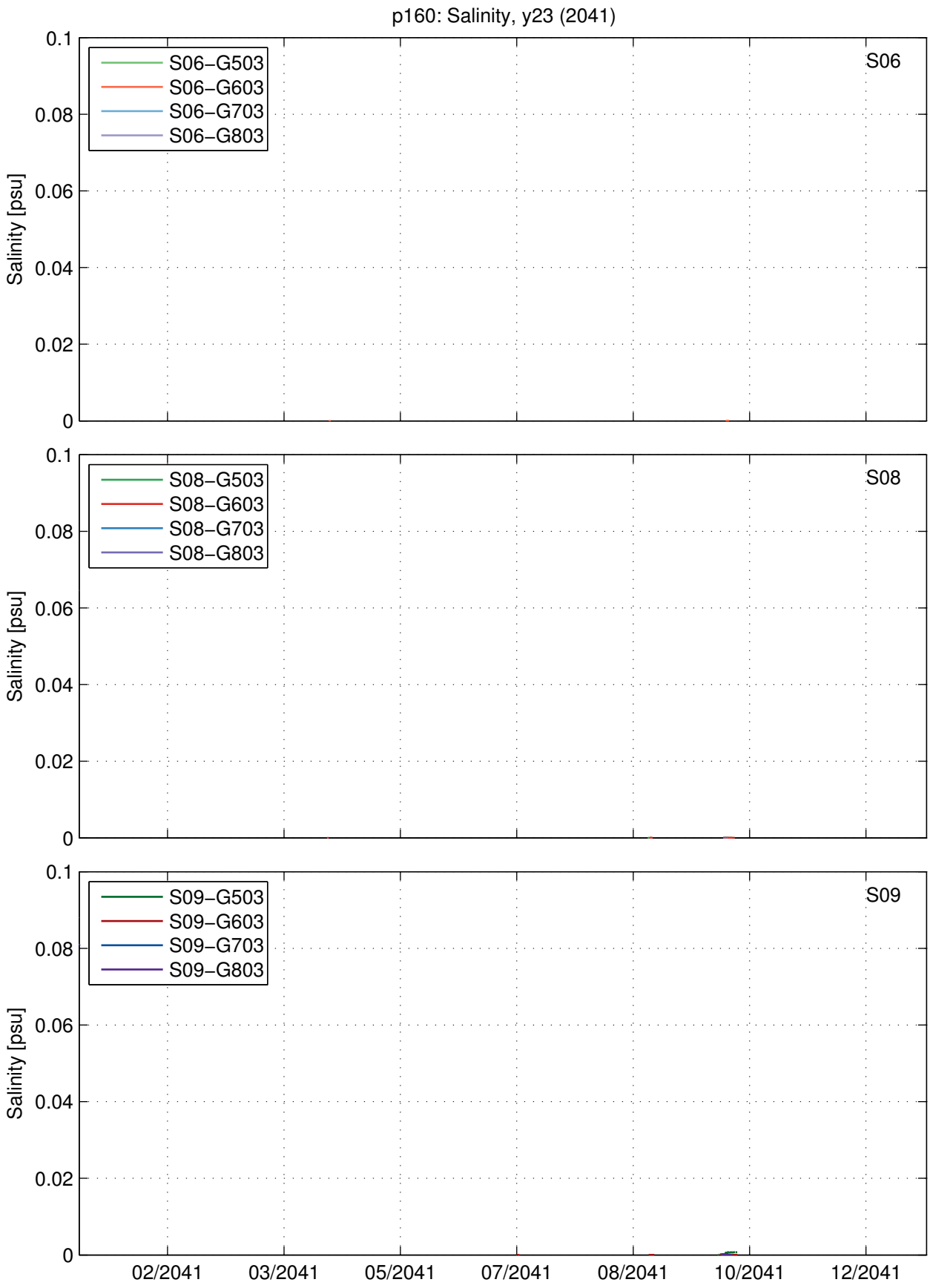

p141: Salinity, y23 (2041)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Salinity [psu]
0
0.5
1
1.5
2
2.5
3
3.5
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

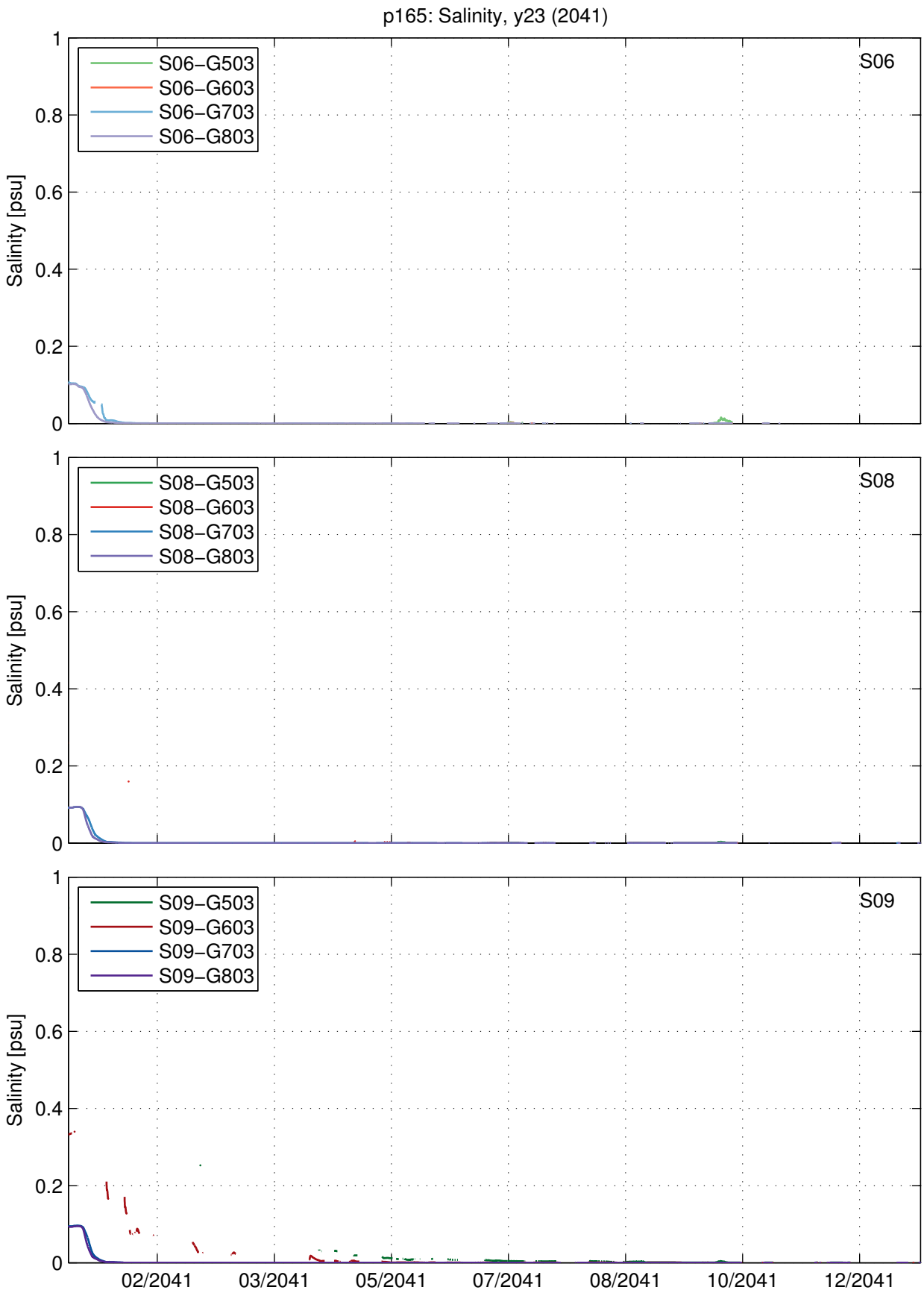

GIWW–JP: Salinity, y23 (2041)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Salinity [psu]
0
1
2
3
4
5
6
7
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

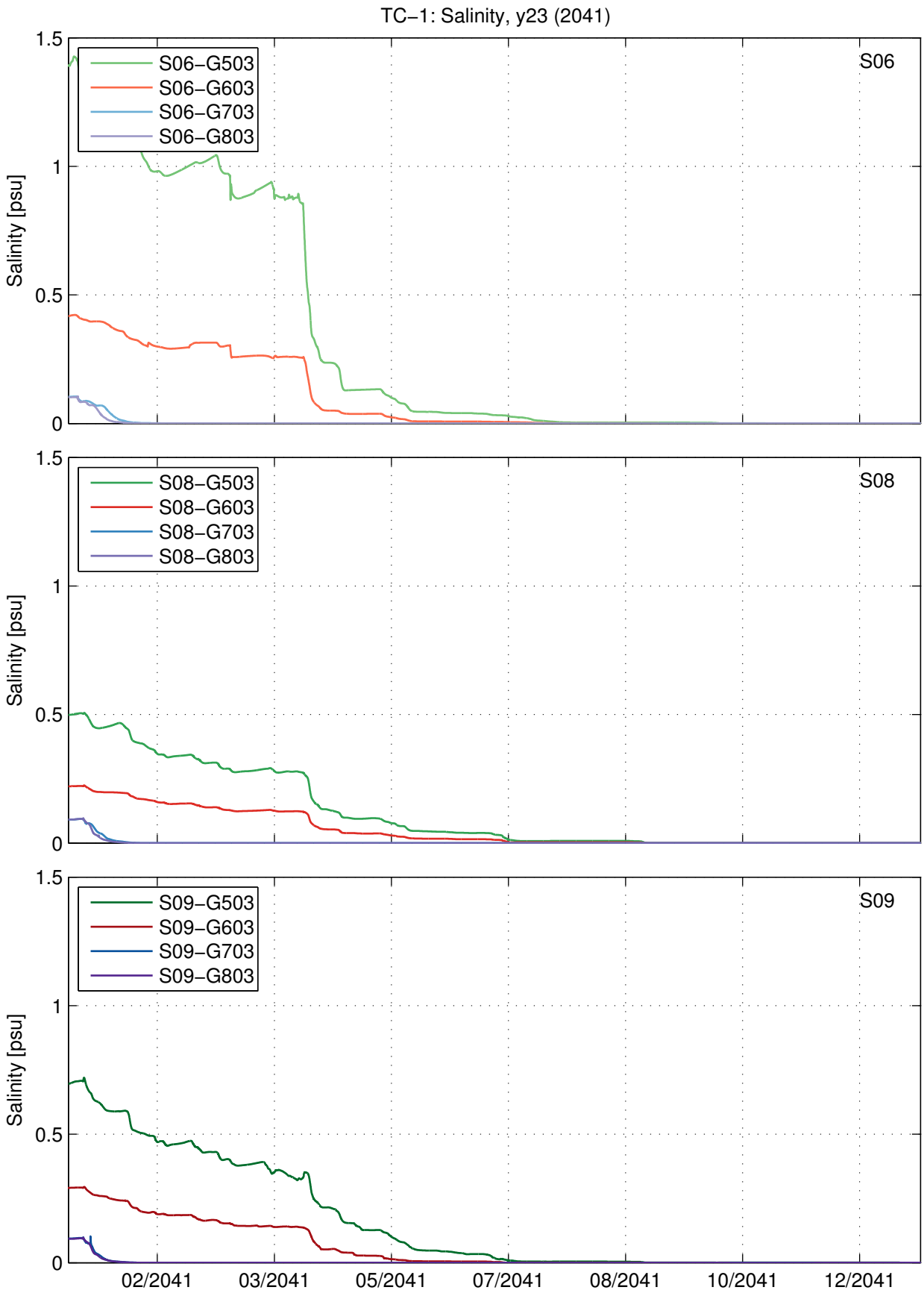

p169: Salinity, y23 (2041)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Salinity [psu]
0
0.5
1
1.5
2
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

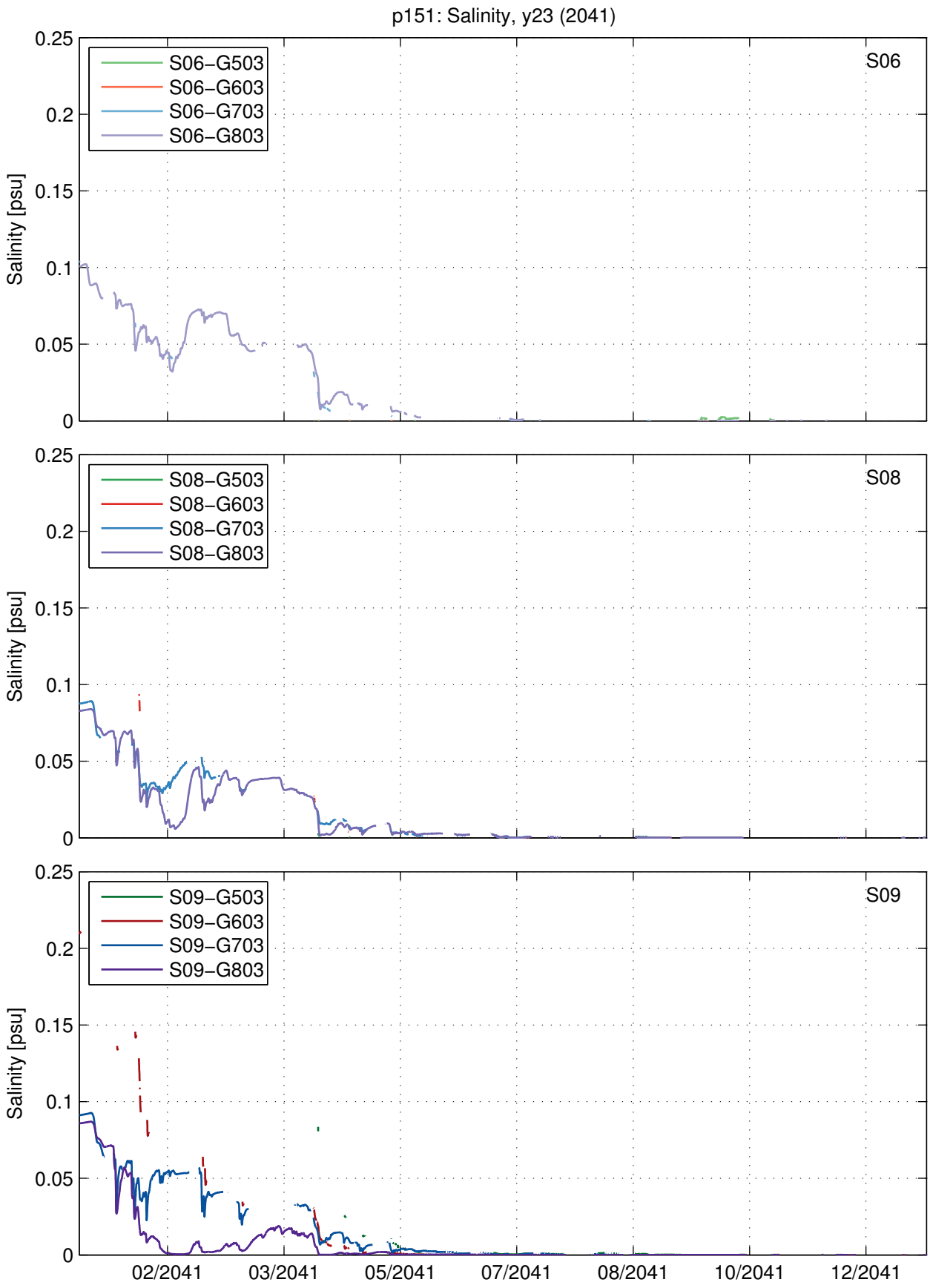

LK−4: Salinity, y23 (2041)
S06−G503
S06−G603
S06−G703
S06−G803
S06
S08−G503
S08−G603
S08−G703
S08−G803
S08
S09−G503
S09−G603
S09−G703
S09−G803
S09
Salinity [psu]
0
1
2
3
4
5
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

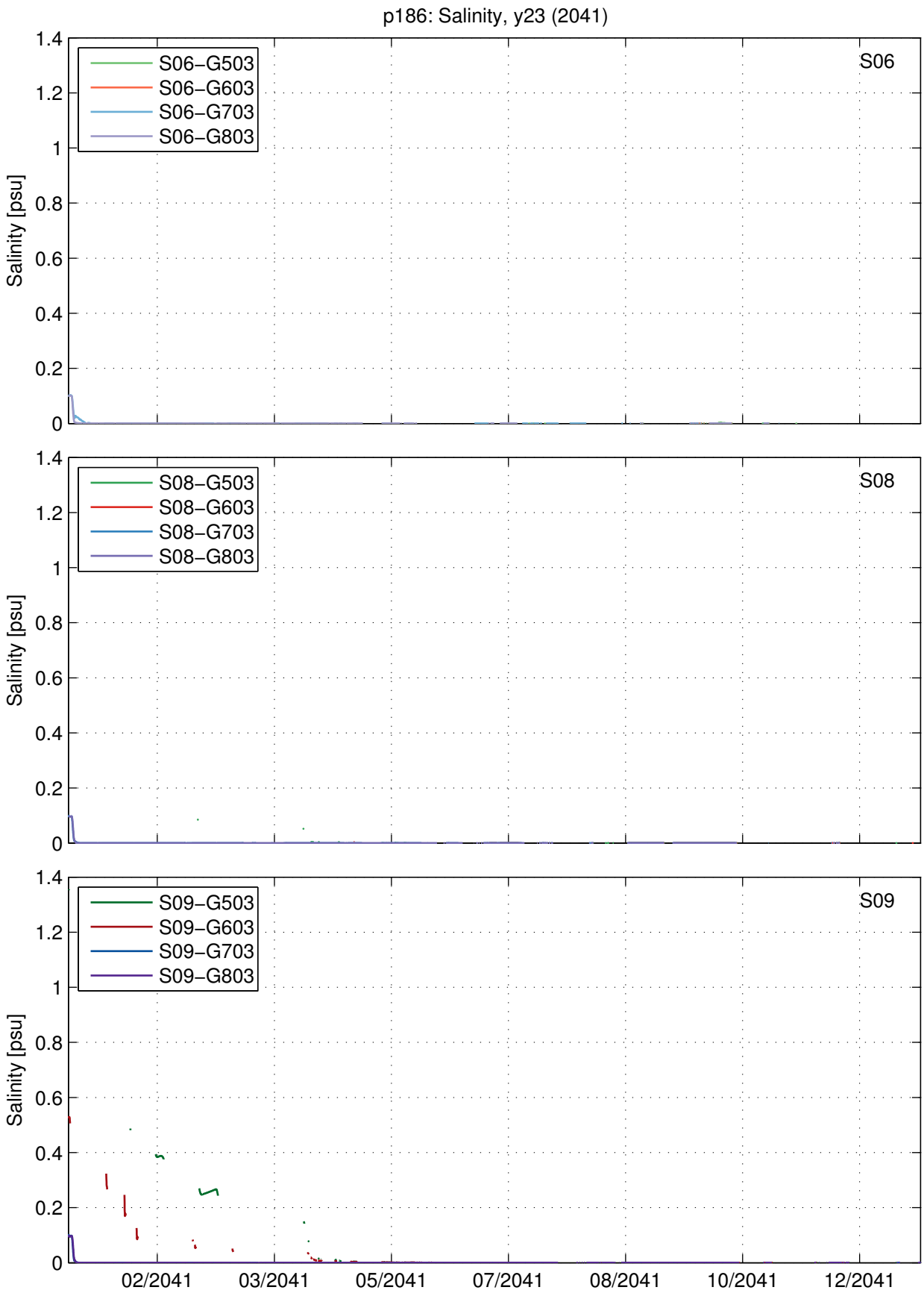

VC−1: Salinity, y23 (2041)
S06−G503
S06−G603
S06−G703
S06−G803
S06
S08−G503
S08−G603
S08−G703
S08−G803
S08
S09−G503
S09−G603
S09−G703
S09−G803
S09
Salinity [psu]
0
0.2
0.4
0.6
0.8
1
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

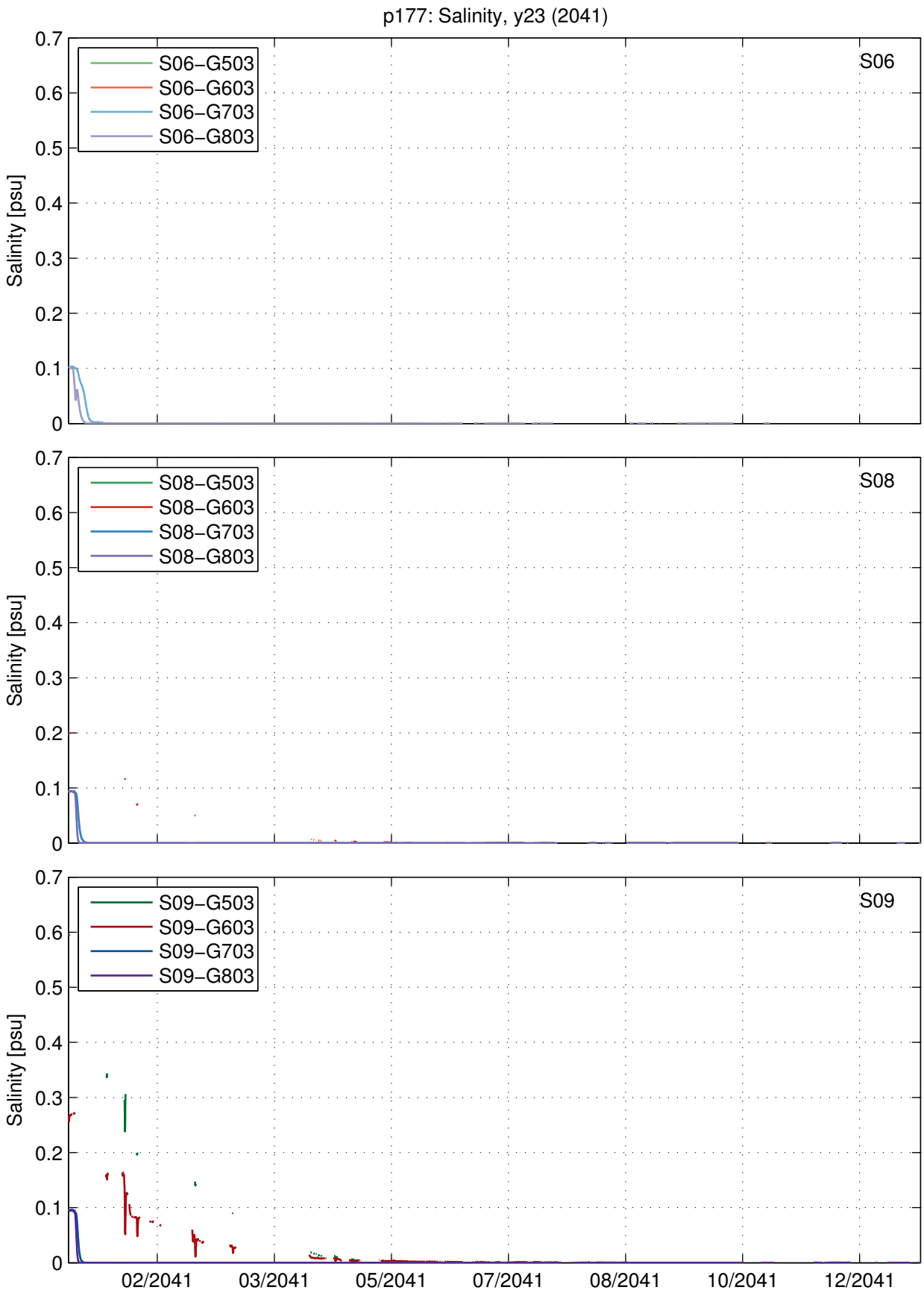

p160: Salinity, y23 (2041)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Salinity [psu]
0.1
0.08
0.06
0.04
0.02
0
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

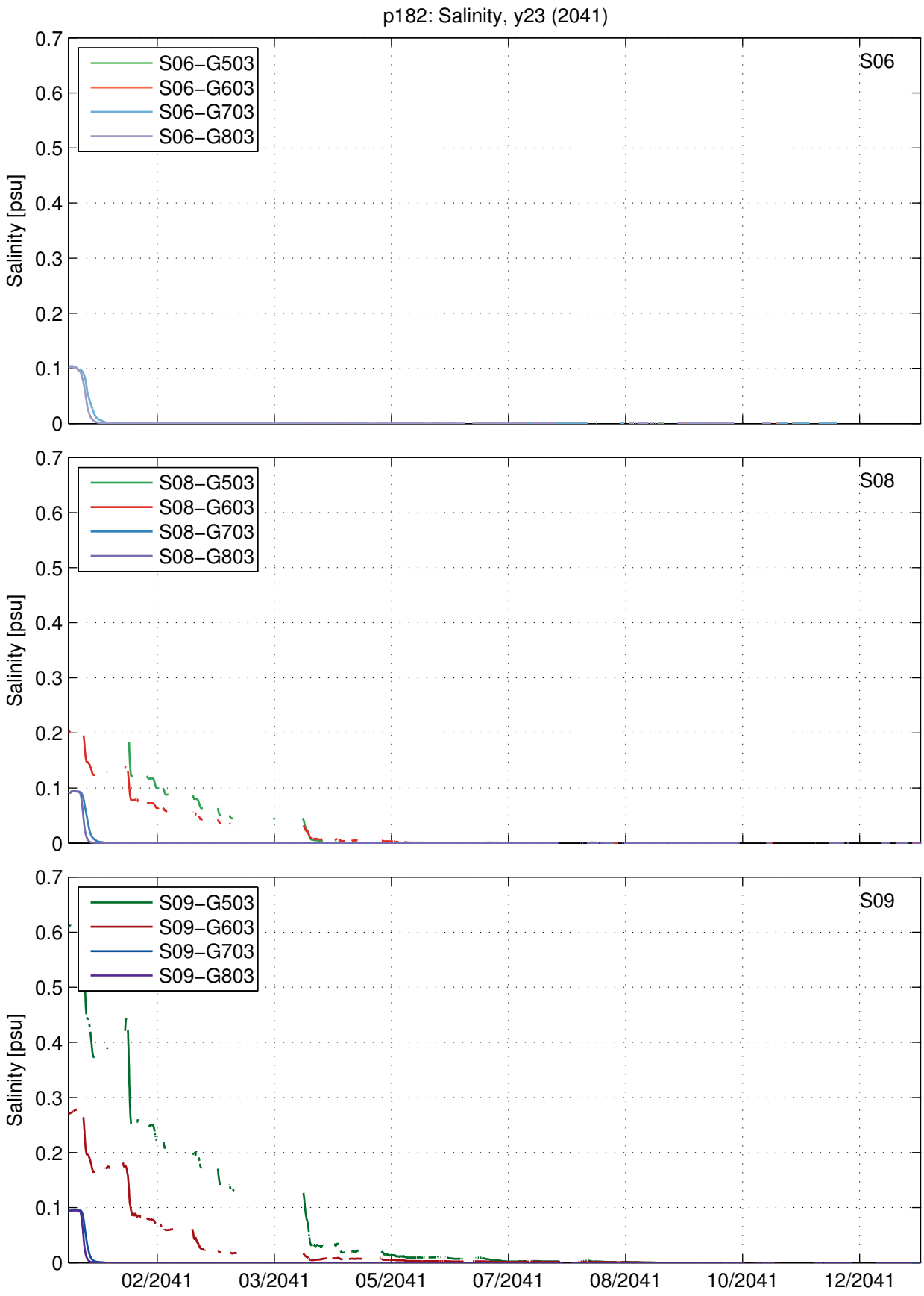

p165: Salinity, y23 (2041)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Salinity [psu]
0
0.2
0.4
0.6
0.8
1
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

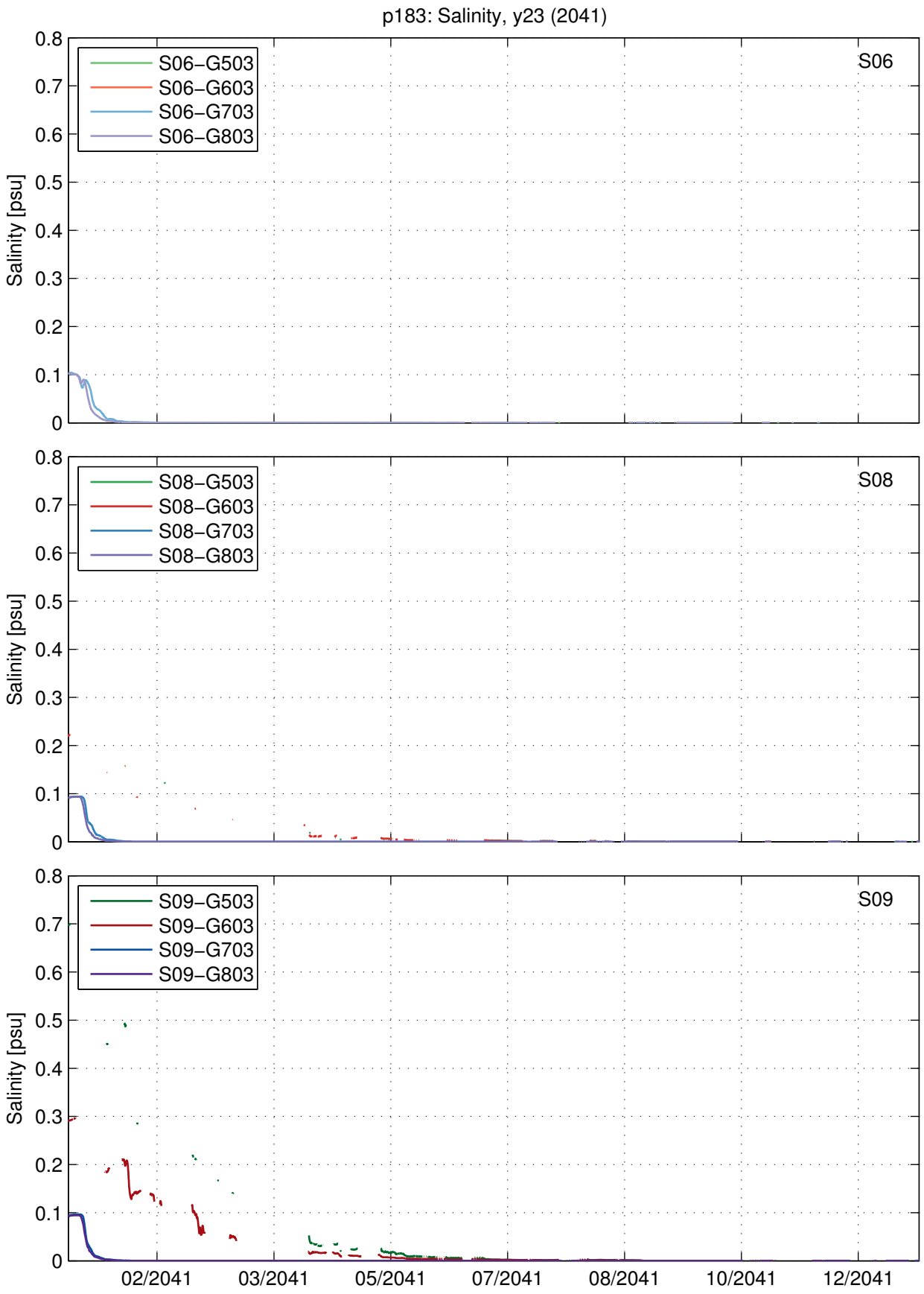

TC−1: Salinity, y23 (2041)
S06−G503
S06−G603
S06−G703
S06−G803
S06
S08−G503
S08−G603
S08−G703
S08−G803
S08
S09−G503
S09−G603
S09−G703
S09−G803
S09
Salinity [psu]
1.5
1
0.5
0
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

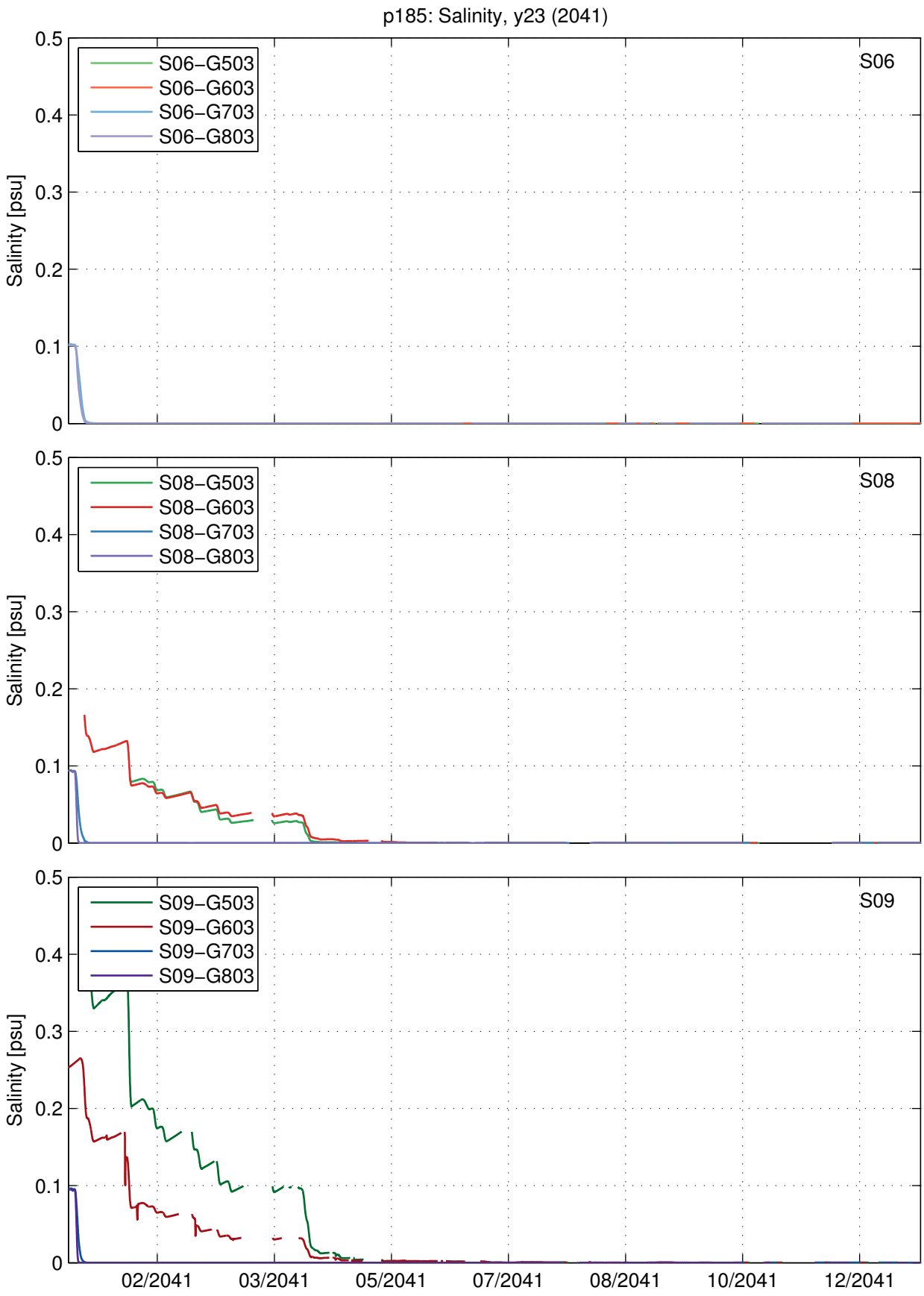

p151: Salinity, y23 (2041)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Salinity [psu]
0.25
0.2
0.15
0.1
0.05
0
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

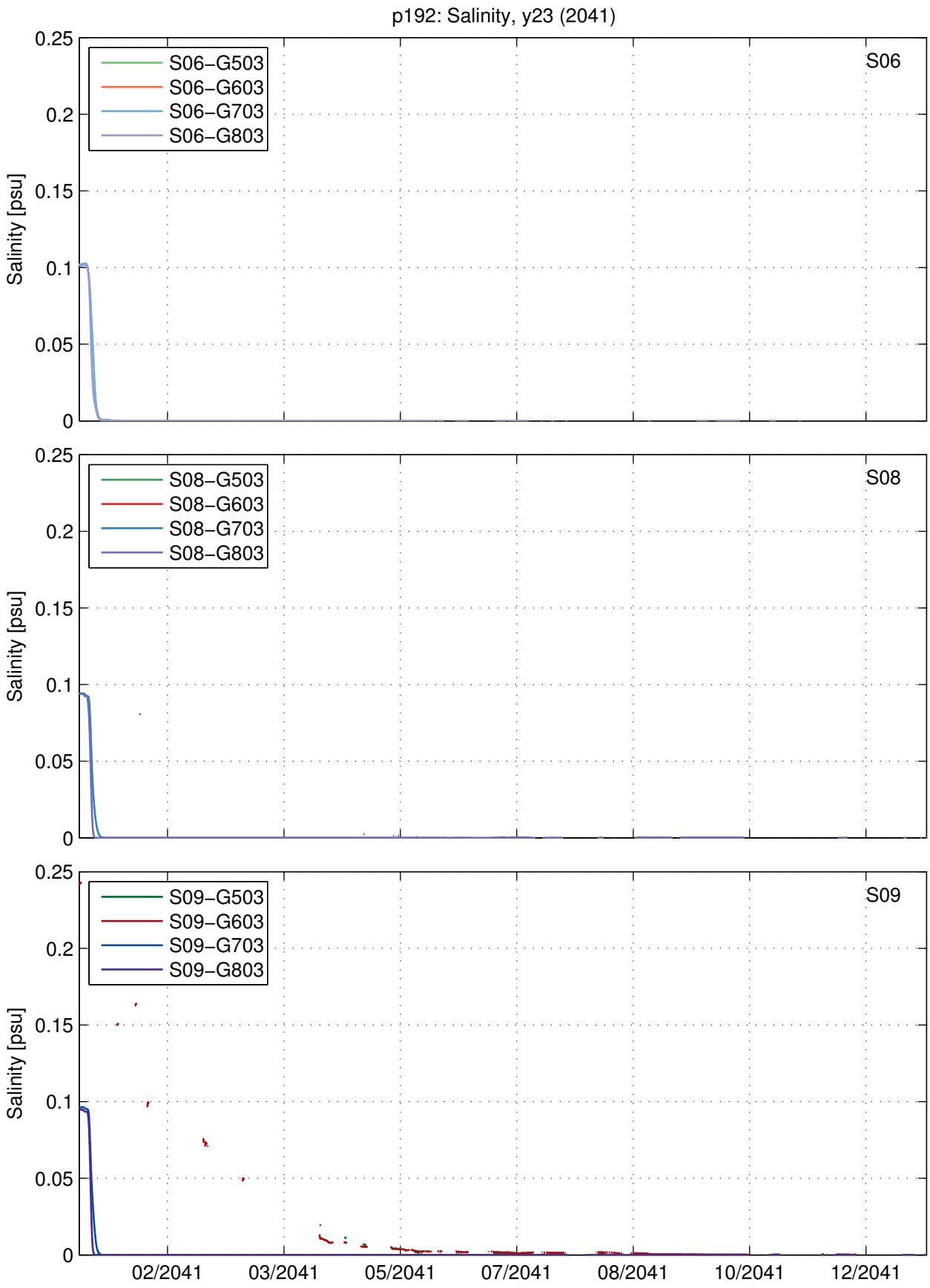

p186: Salinity, y23 (2041)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Salinity [psu]
0
0.2
0.4
0.6
0.8
1
1.2
1.4
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

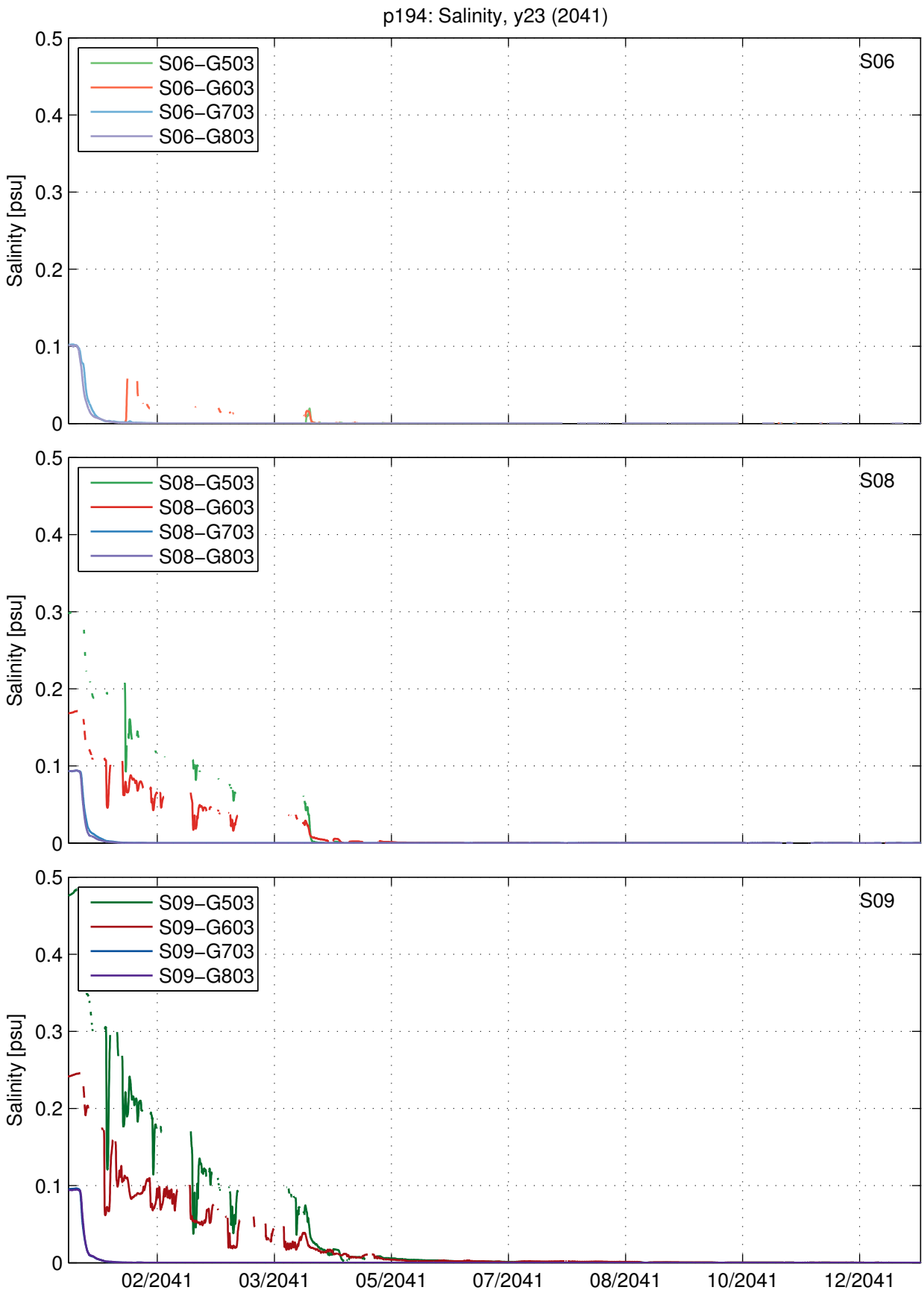

p177: Salinity, y23 (2041)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Salinity [psu]
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

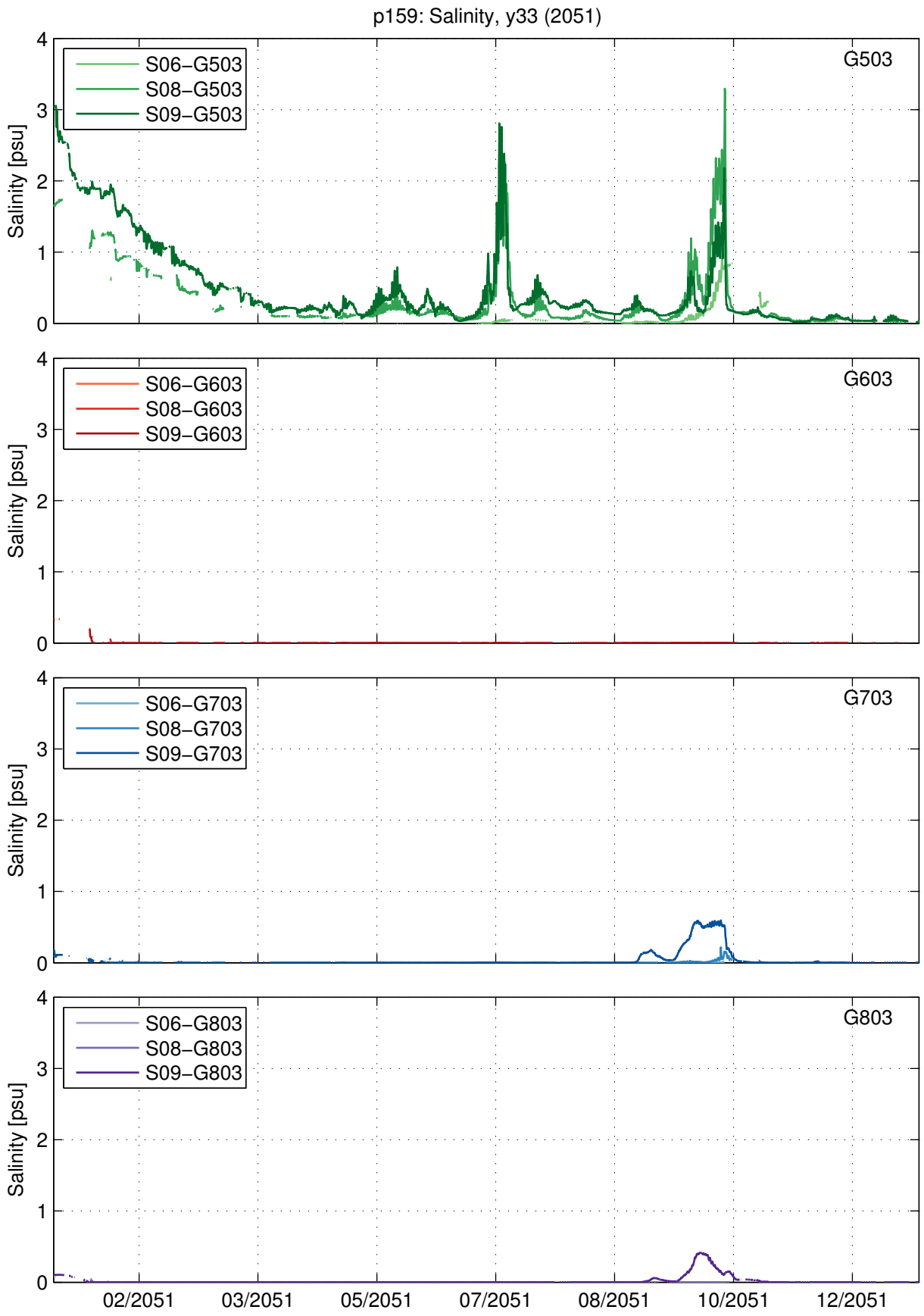

p182: Salinity, y23 (2041)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Salinity [psu]
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

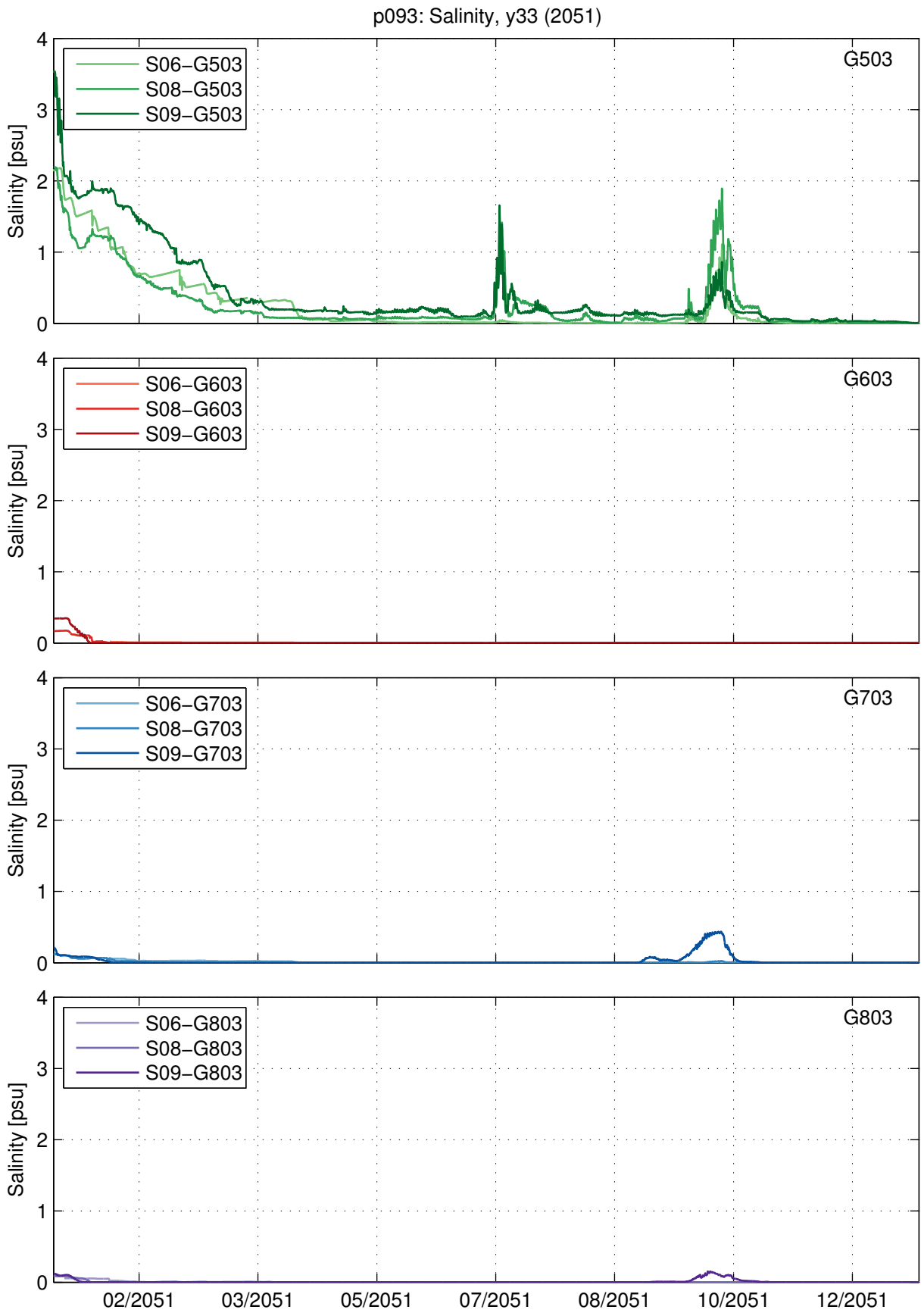

p183: Salinity, y23 (2041)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Salinity [psu]
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

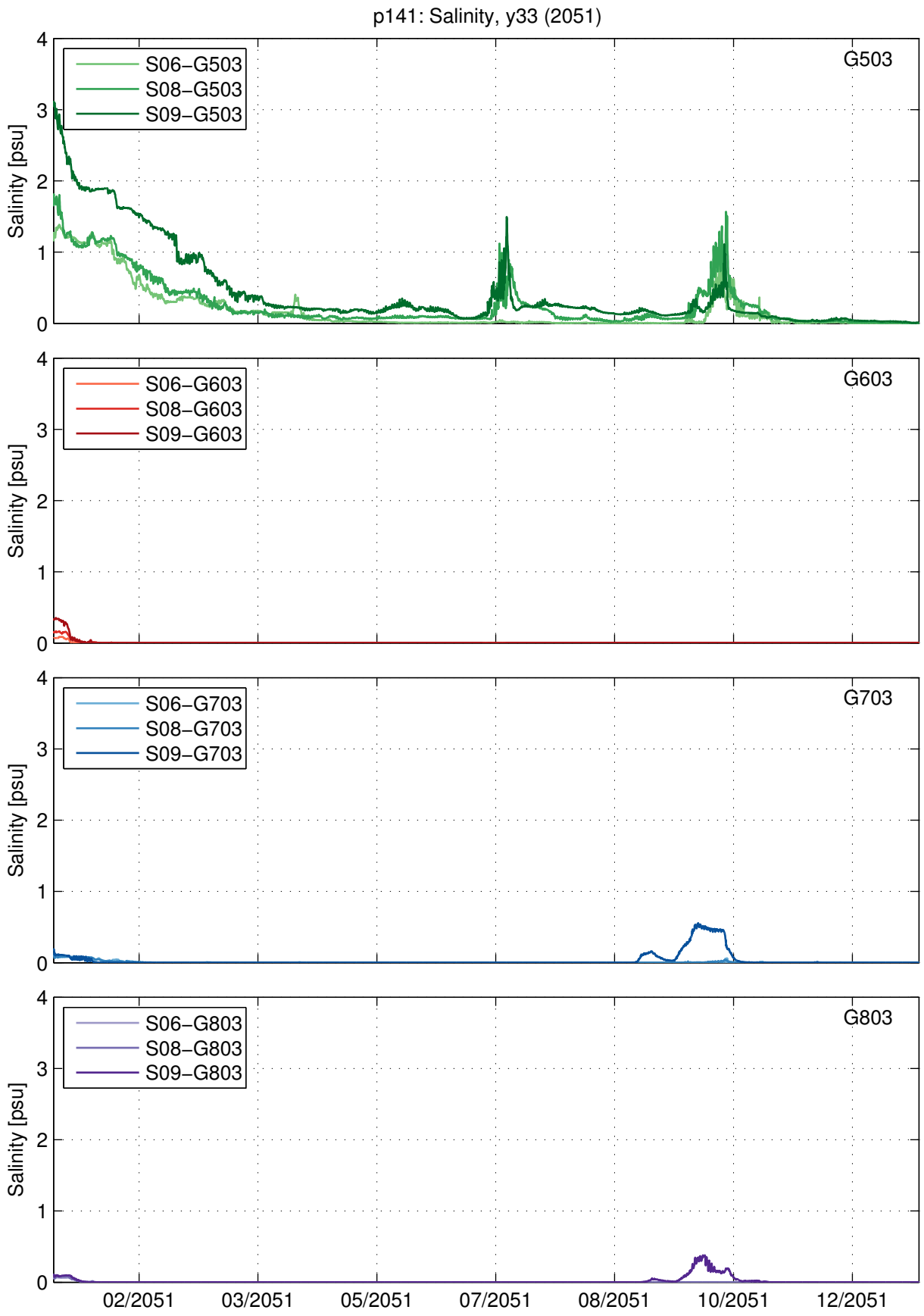

p185: Salinity, y23 (2041)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Salinity [psu]
0
0.1
0.2
0.3
0.4
0.5
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

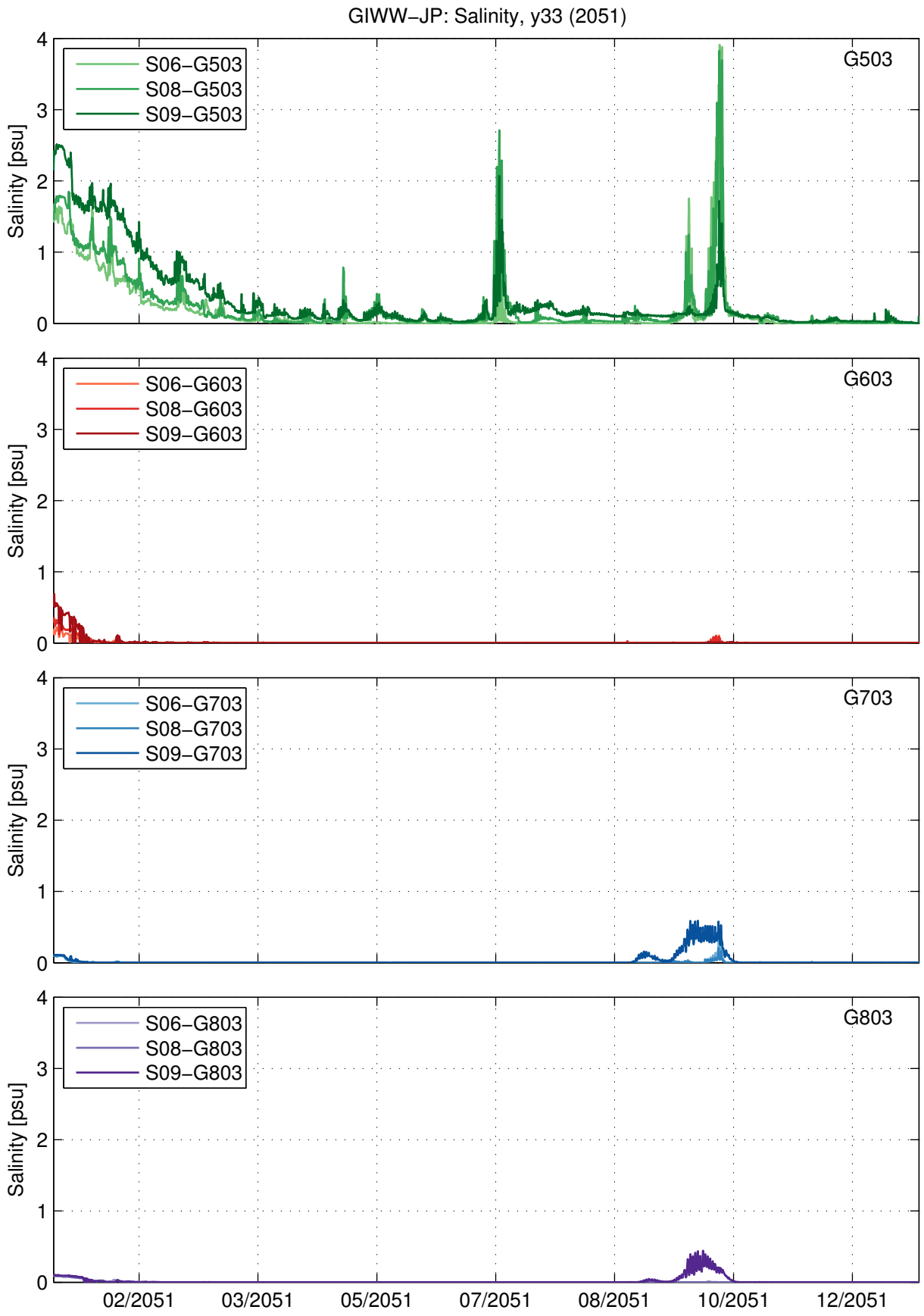

p192: Salinity, y23 (2041)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Salinity [psu]
0.25
0.2
0.15
0.1
0.05
0
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

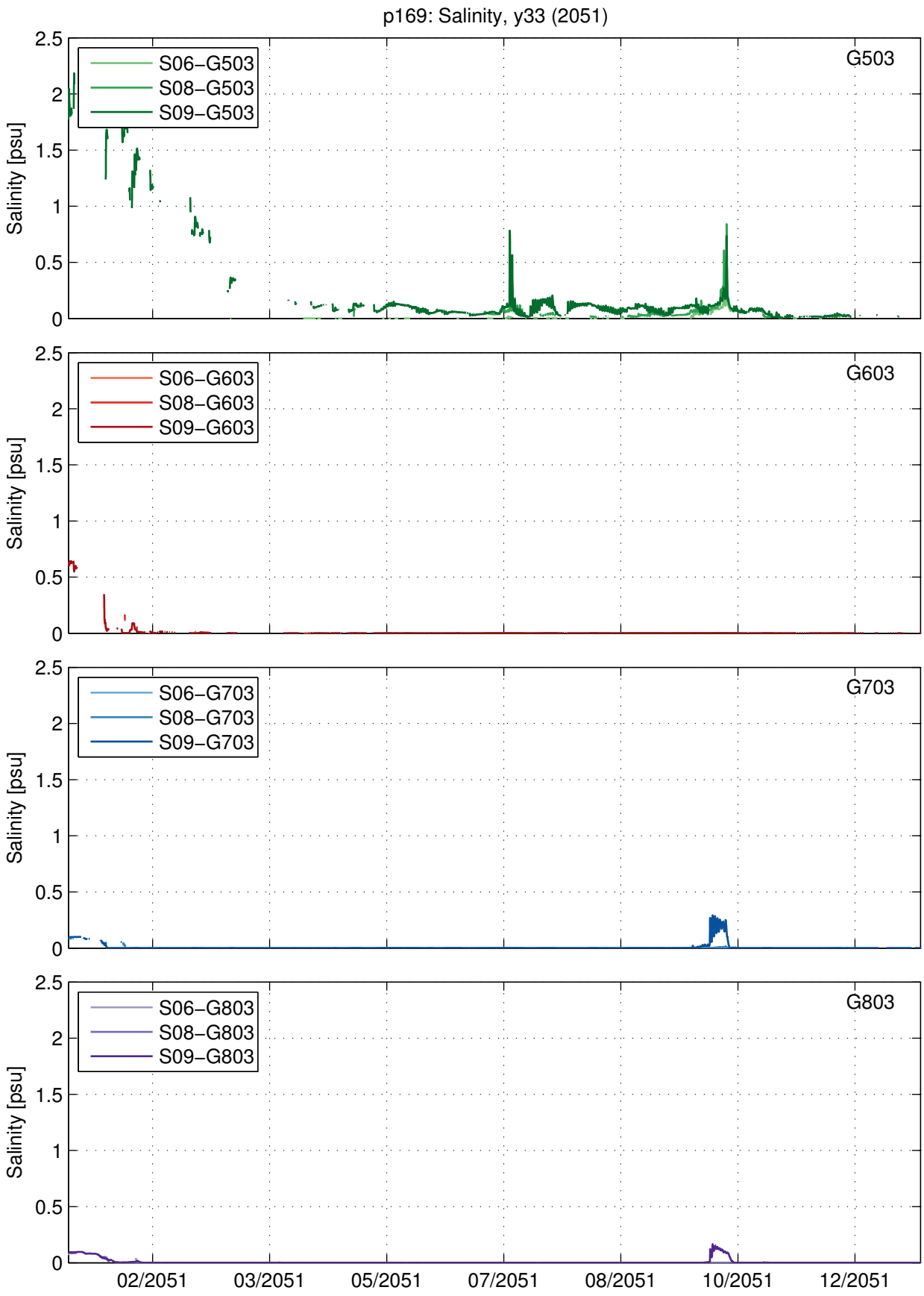

p194: Salinity, y23 (2041)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Salinity [psu]
0
0.1
0.2
0.3
0.4
0.5
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

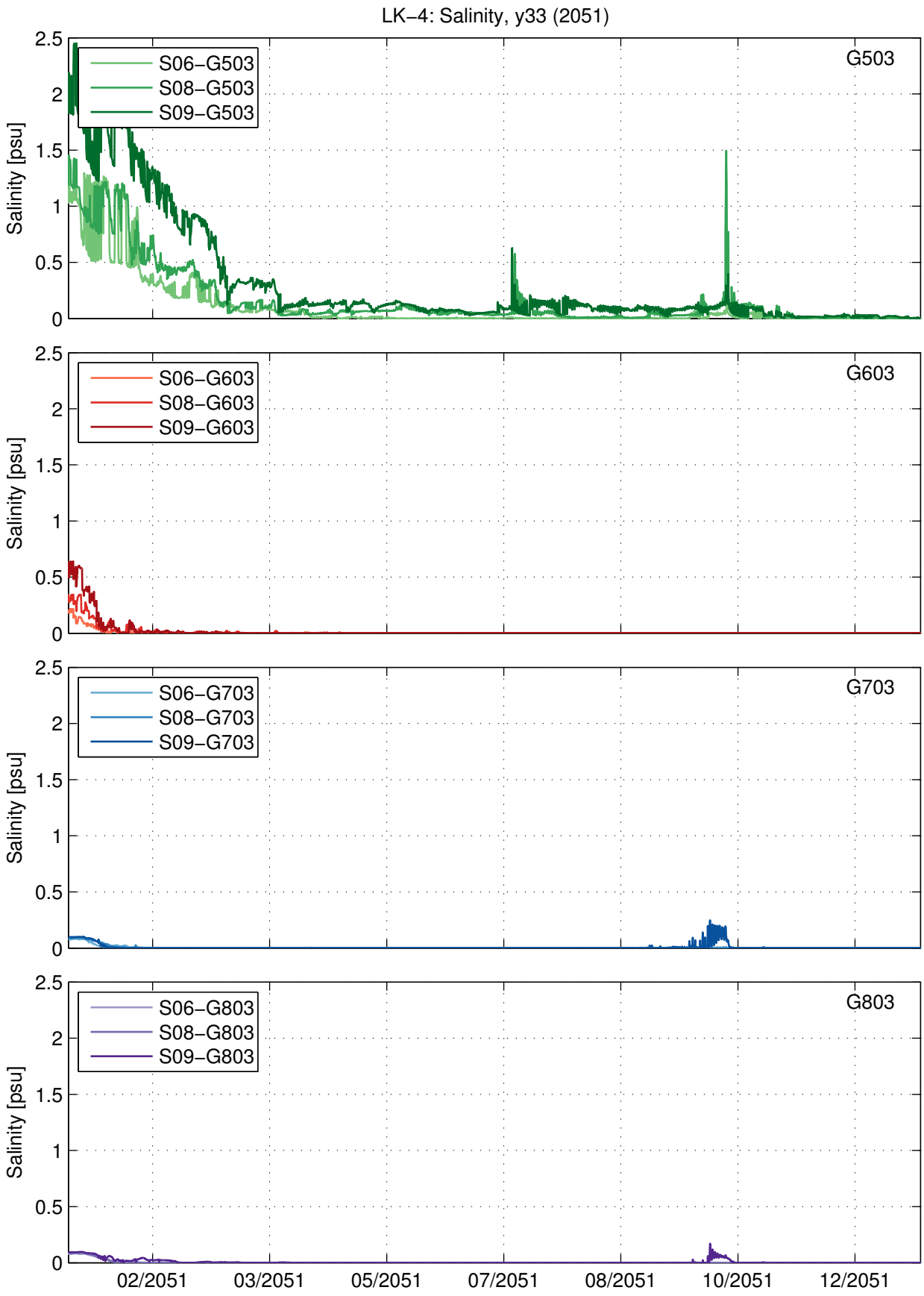

p159: Salinity, y33 (2051)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
1
2
3
4
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

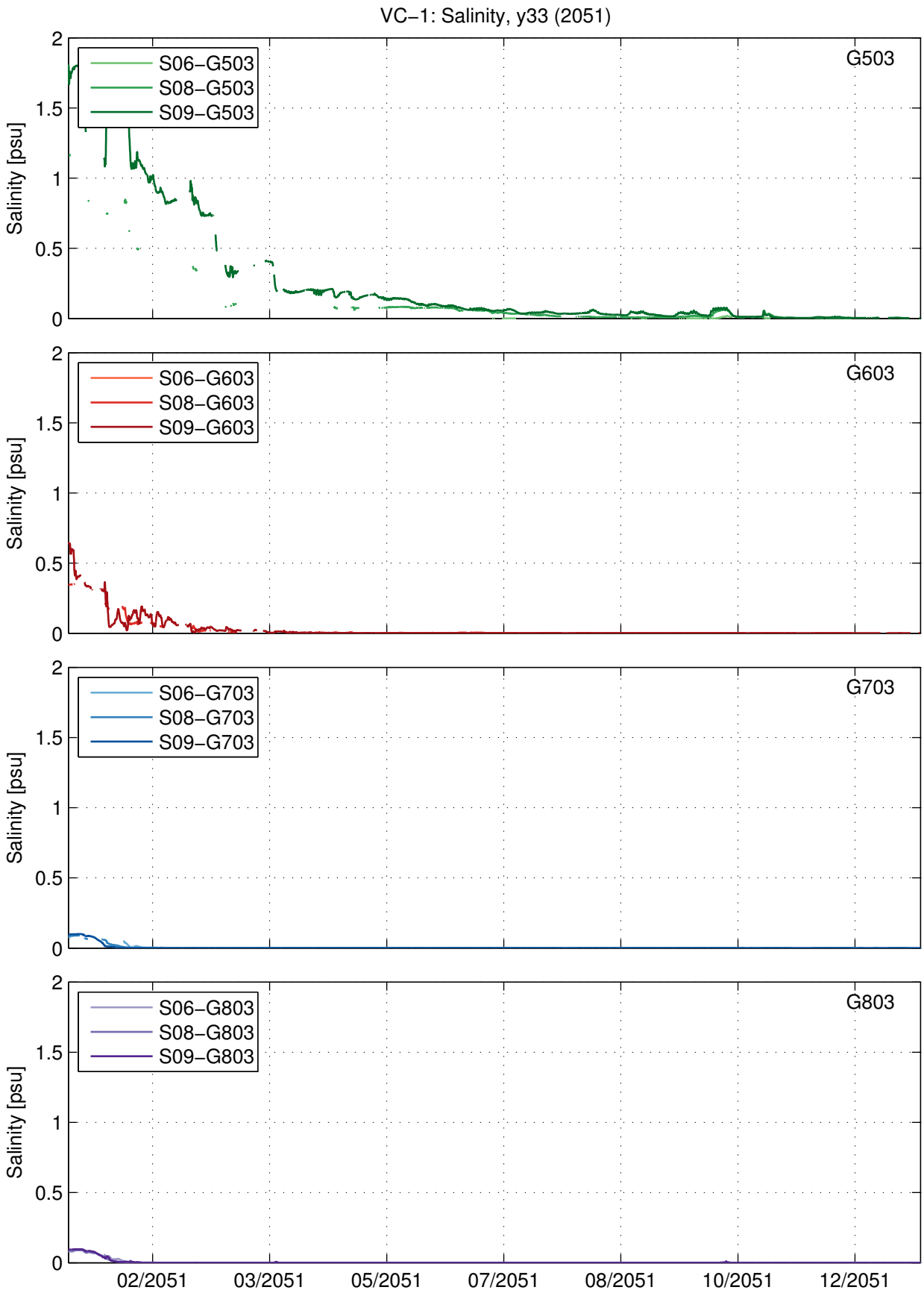

p093: Salinity, y33 (2051)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
1
2
3
4
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

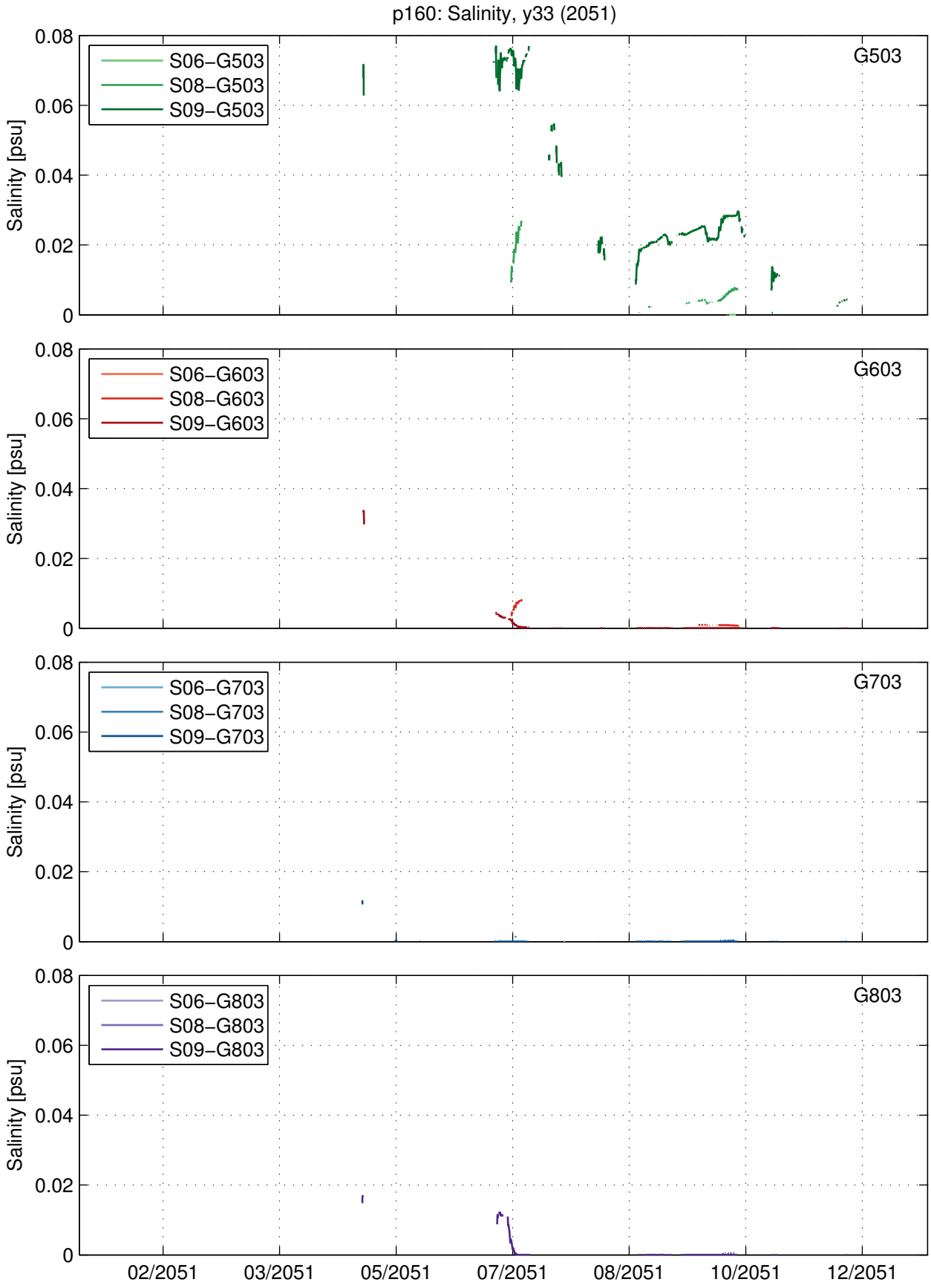

p141: Salinity, y33 (2051)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
1
2
3
4
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

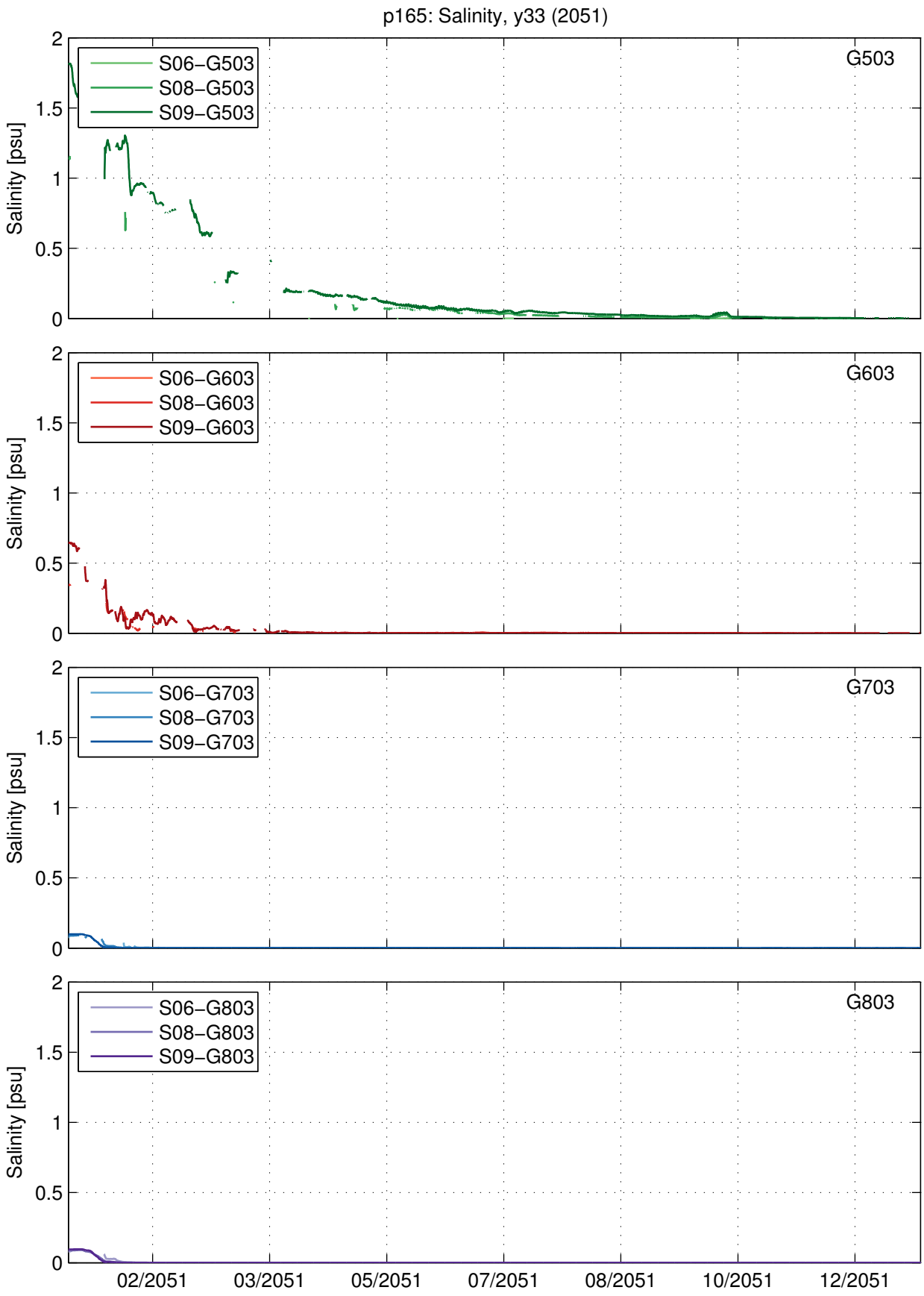

GIWW–JP: Salinity, y33 (2051)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
1
2
3
4
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

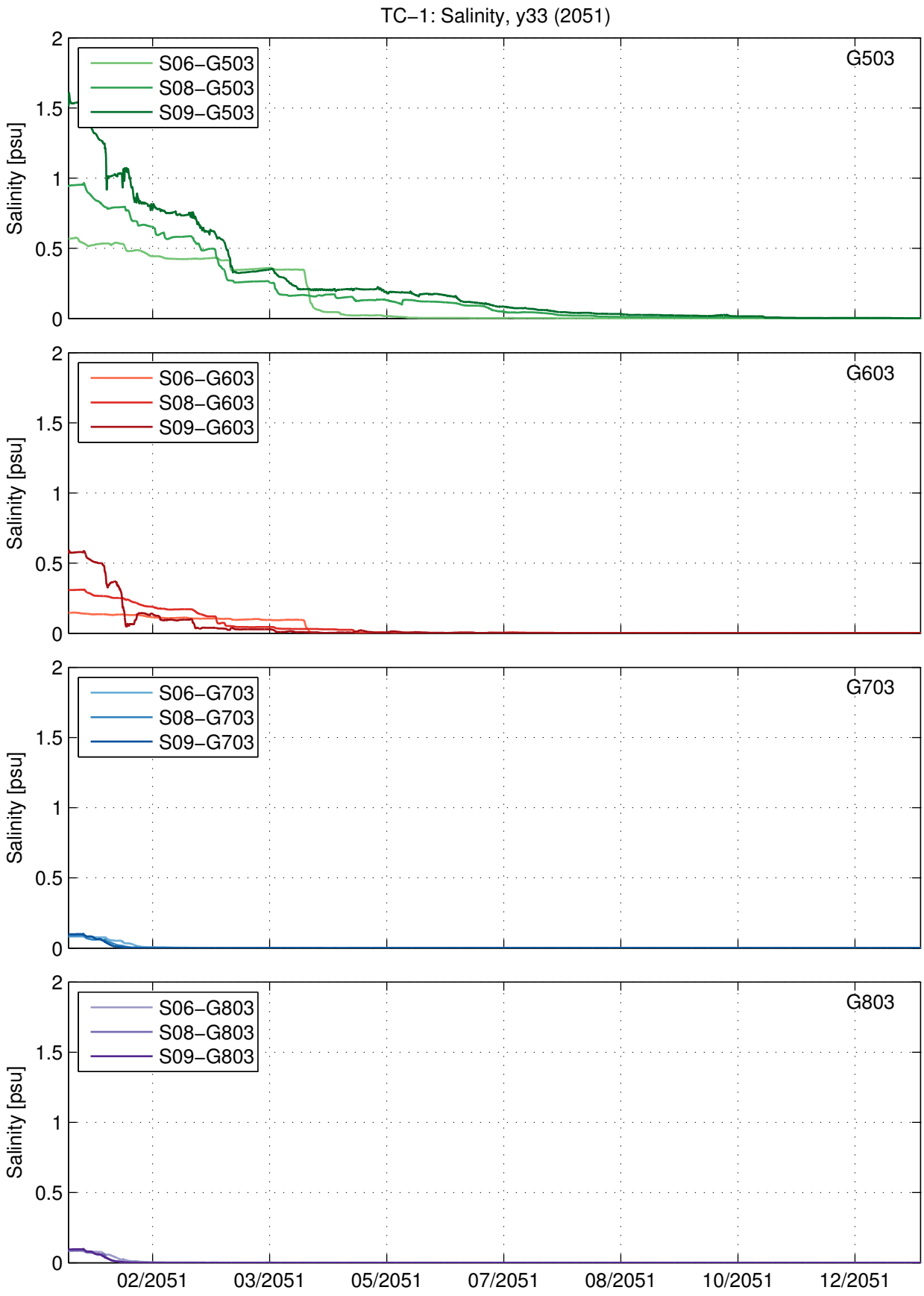

p169: Salinity, y33 (2051)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
0.5
1
1.5
2
2.5
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

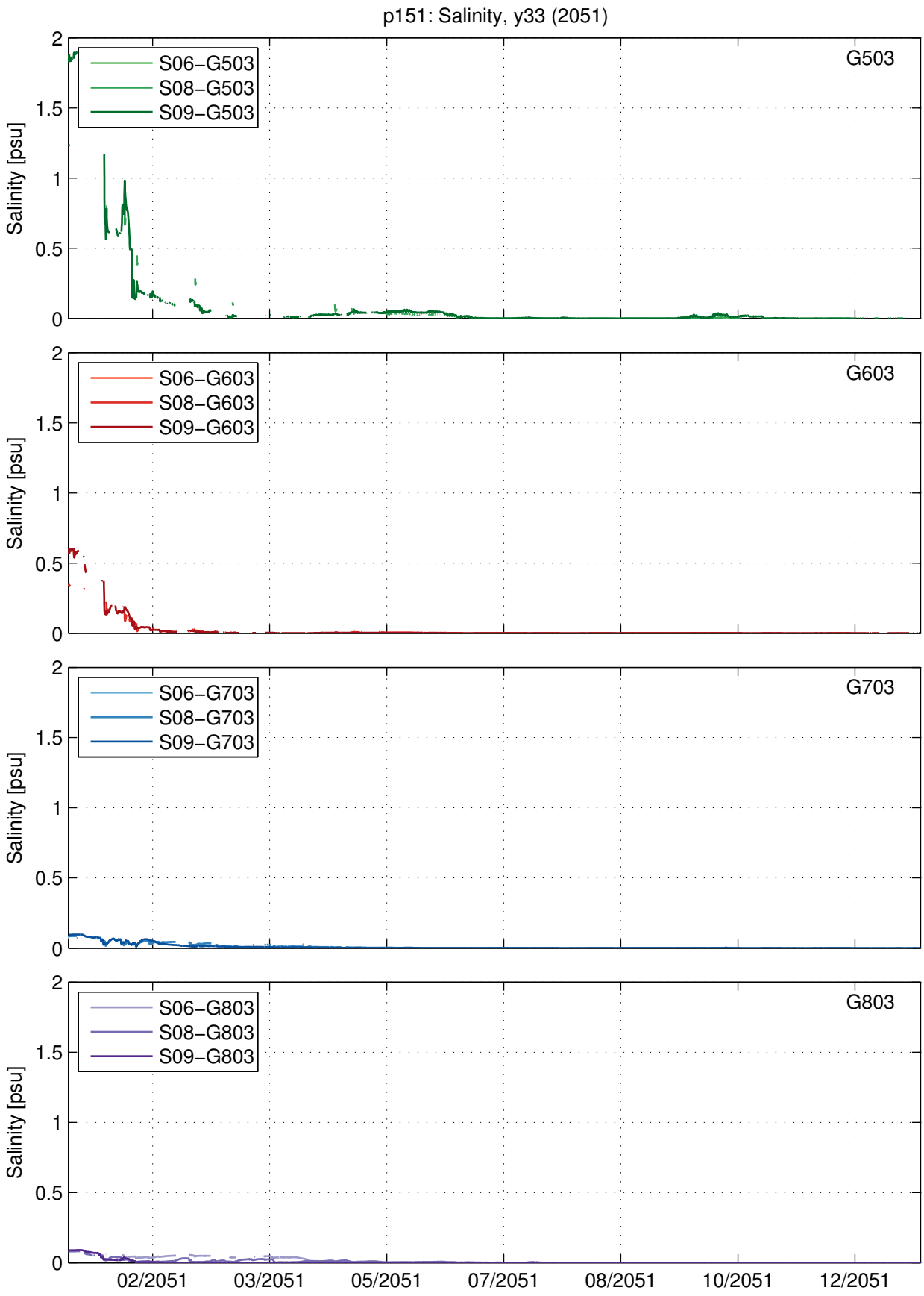

LK−4: Salinity, y33 (2051)
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
S06−G703
S08−G703
S09−G703
G703
S06−G803
S08−G803
S09−G803
G803
Salinity [psu]
0
0.5
1
1.5
2
2.5
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

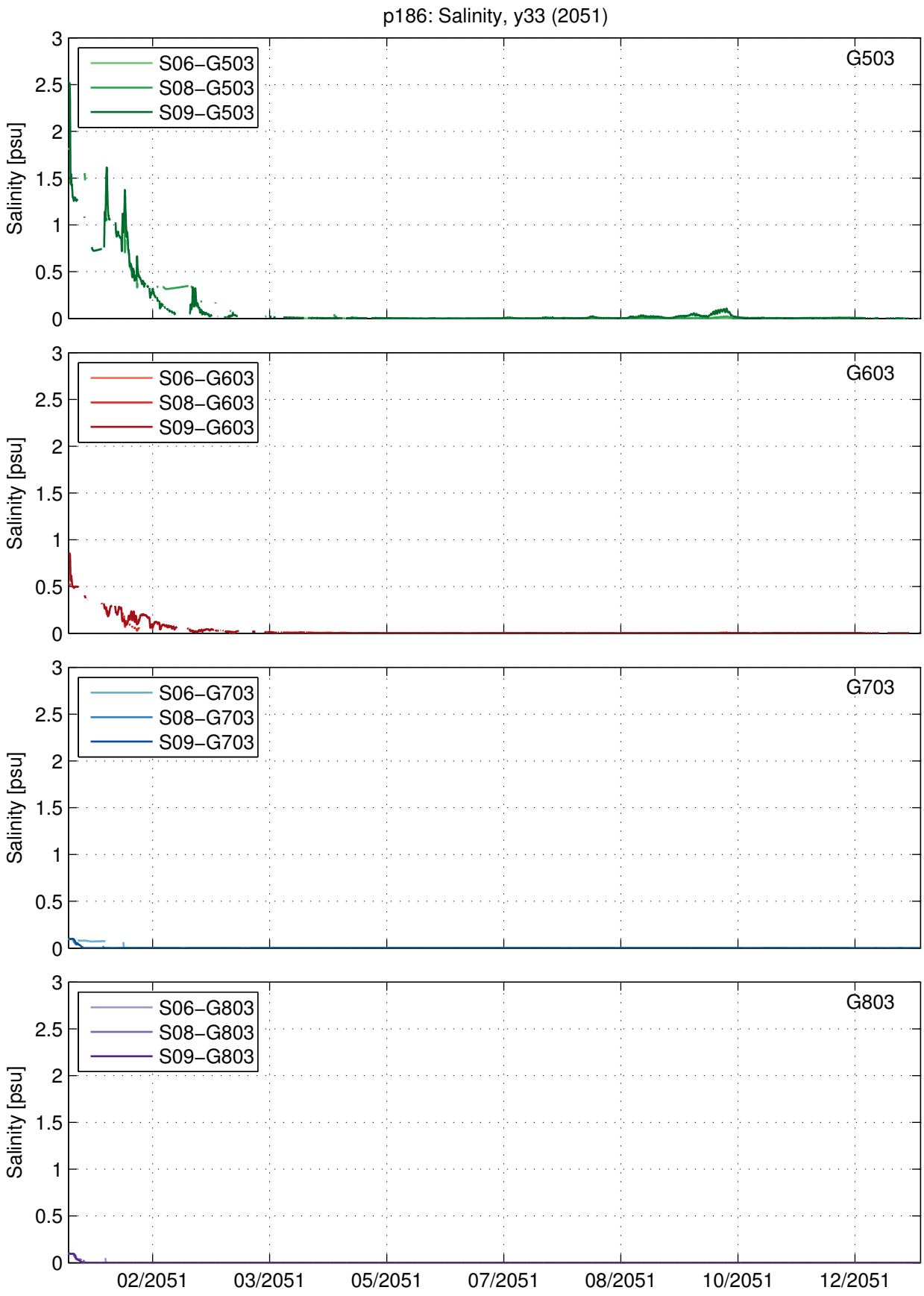

VC−1: Salinity, y33 (2051)
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
S06−G703
S08−G703
S09−G703
G703
S06−G803
S08−G803
S09−G803
G803
Salinity [psu]
0
0.5
1
1.5
2
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

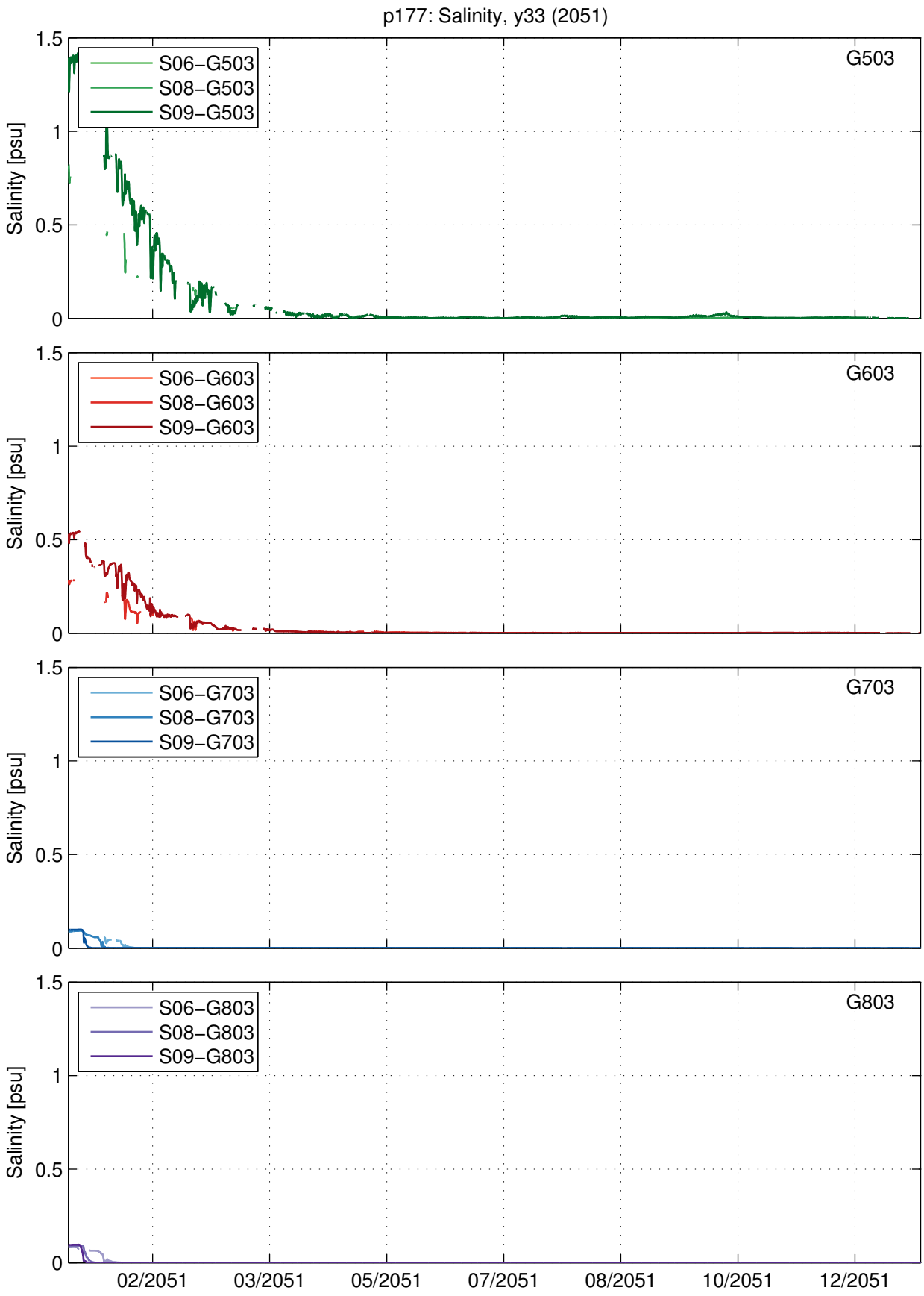

p160: Salinity, y33 (2051)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0.08
0.06
0.04
0.02
0
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

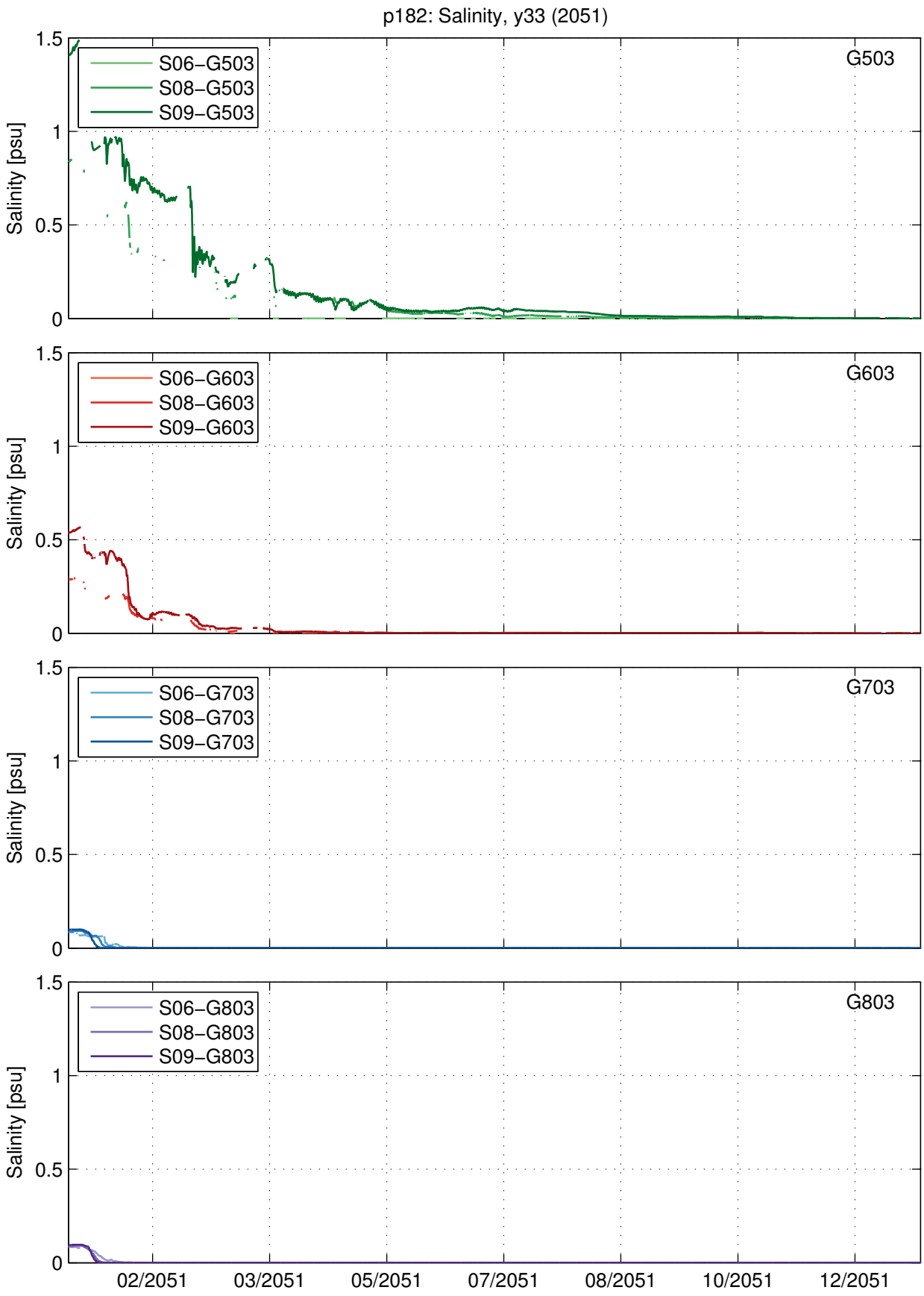

p165: Salinity, y33 (2051)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
0.5
1
1.5
2
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

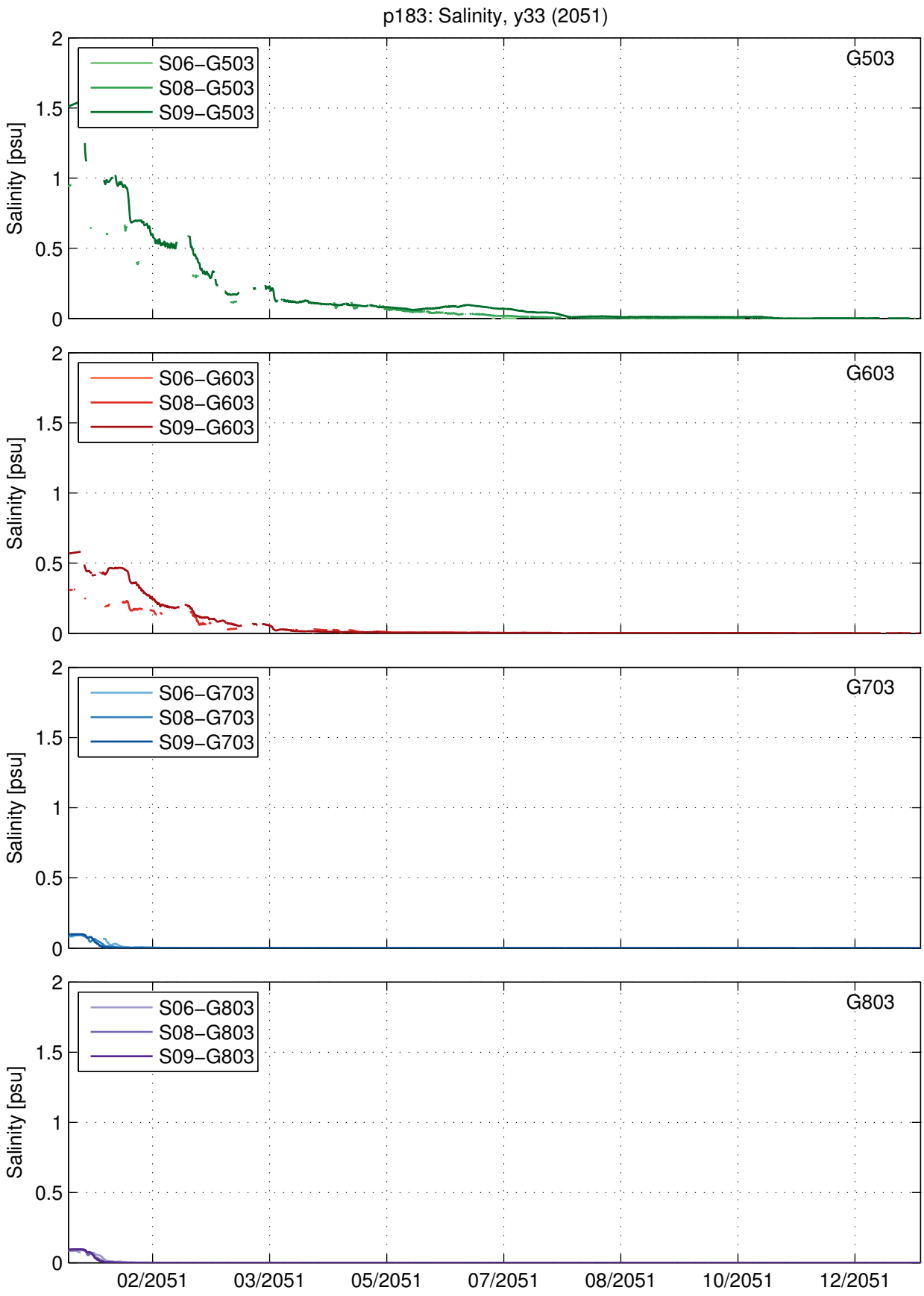

TC−1: Salinity, y33 (2051)
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
S06−G703
S08−G703
S09−G703
G703
S06−G803
S08−G803
S09−G803
G803
Salinity [psu]
0
0.5
1
1.5
2
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

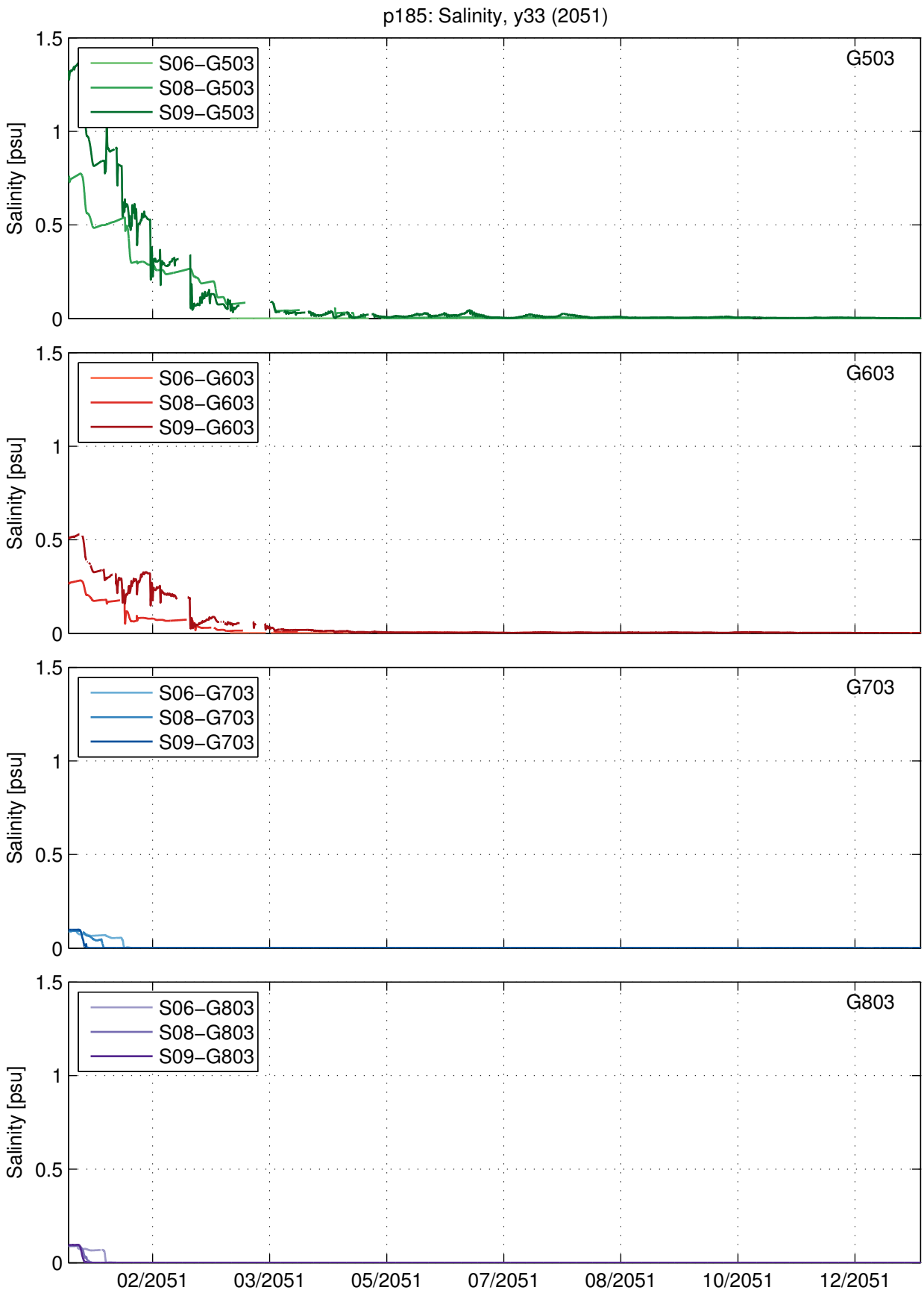

p151: Salinity, y33 (2051)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
0.5
1
1.5
2
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

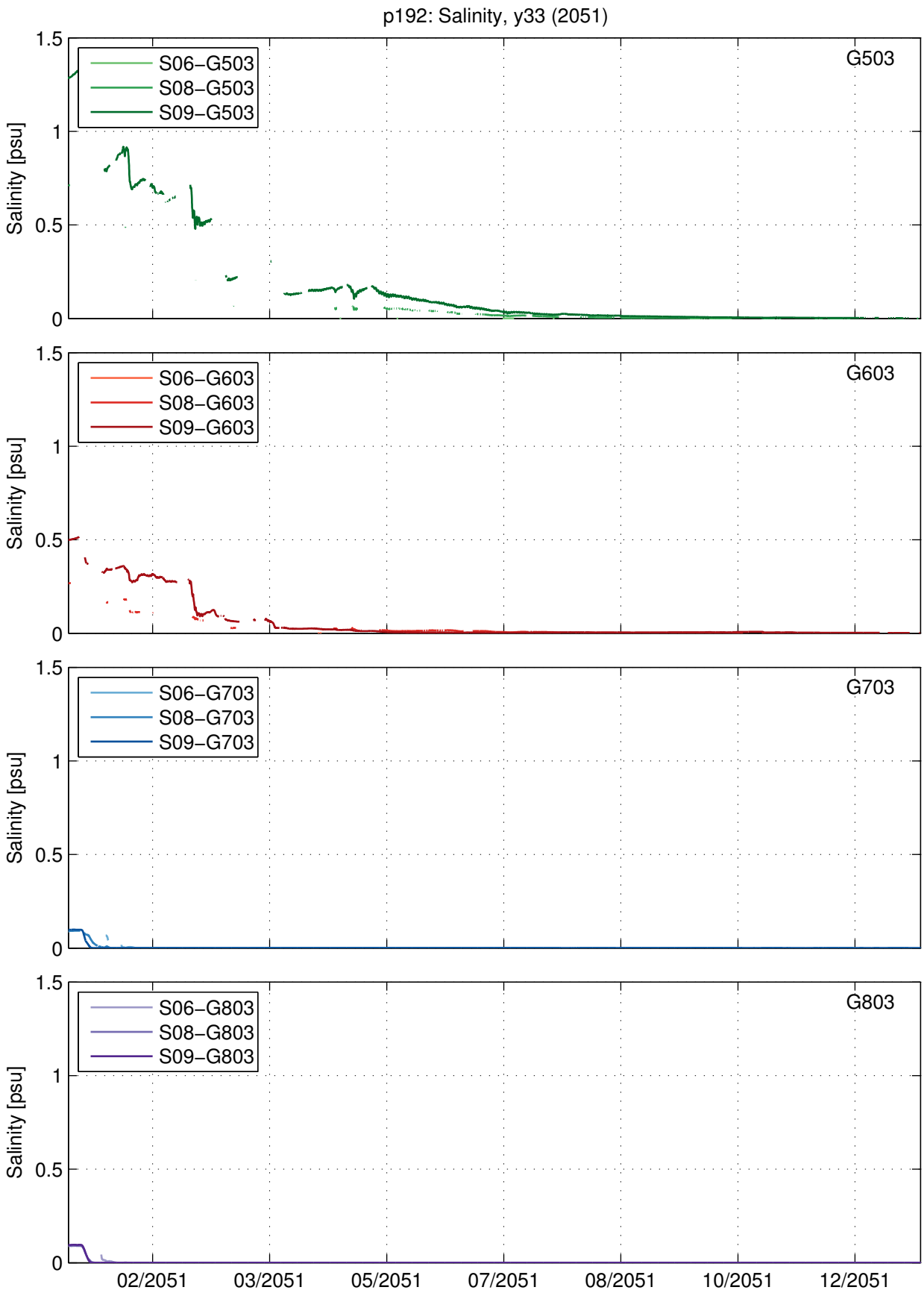

p186: Salinity, y33 (2051)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
0.5
1
1.5
2
2.5
3
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

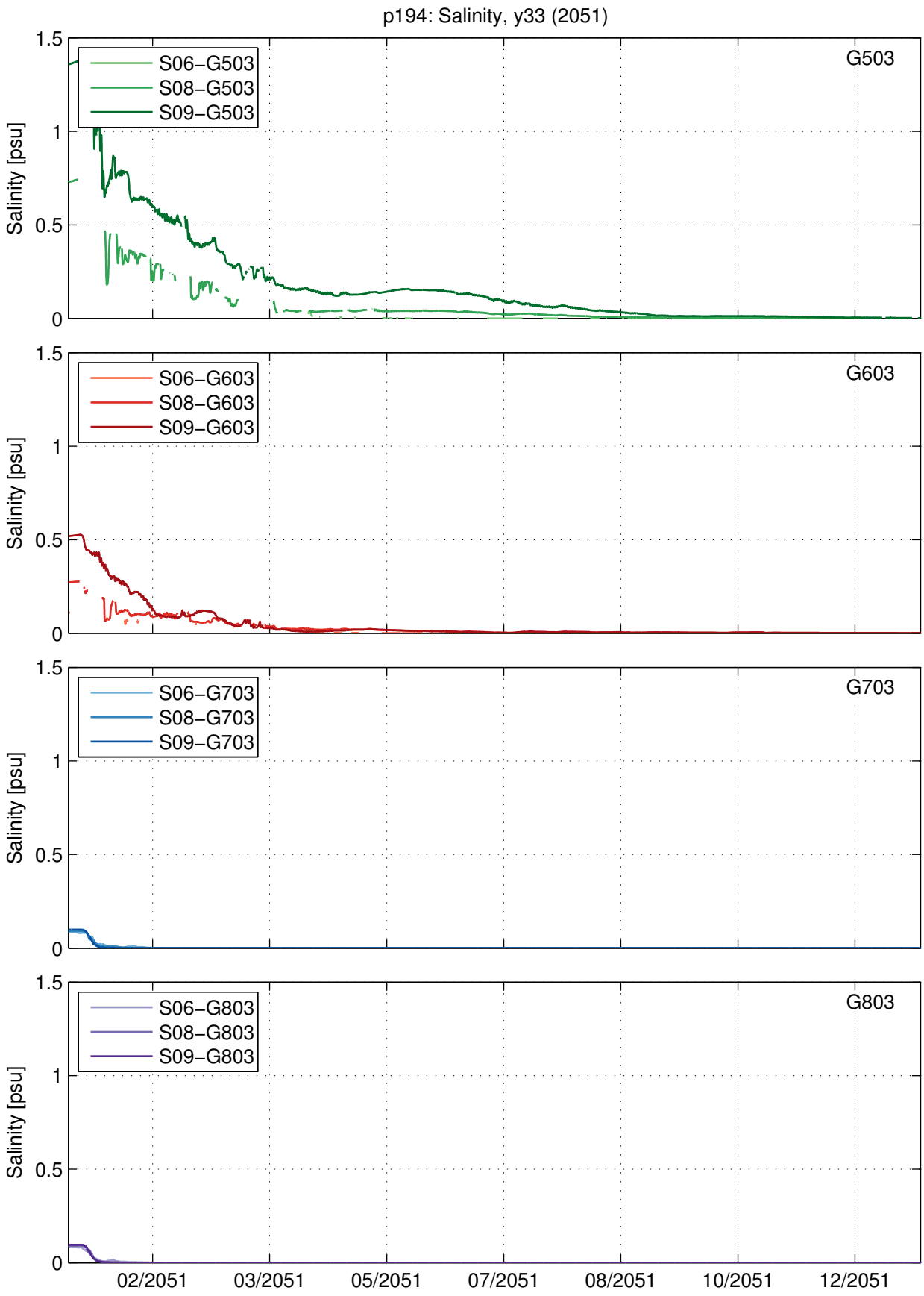

p177: Salinity, y33 (2051)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
1.5
1
0.5
0
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

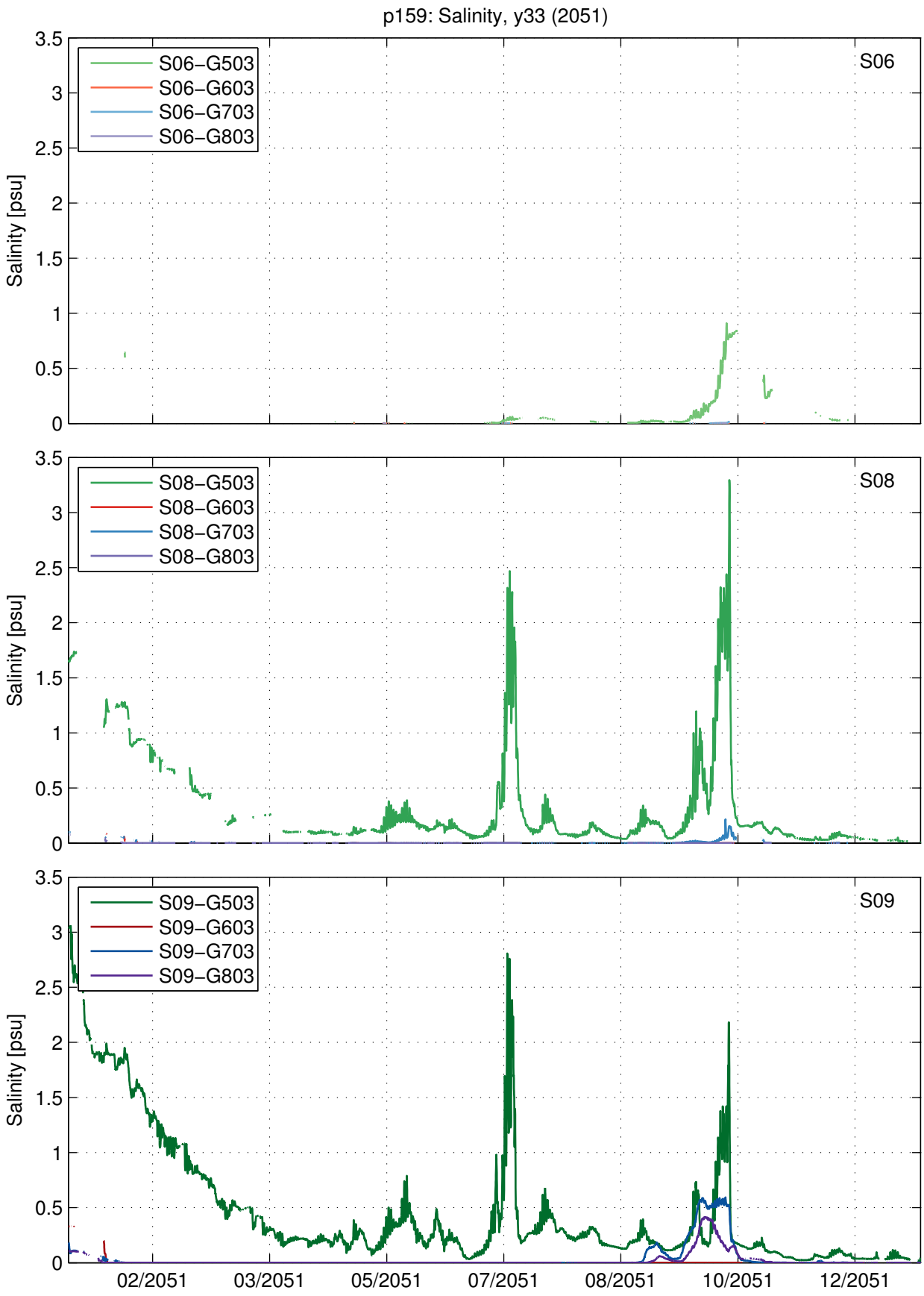

p182: Salinity, y33 (2051)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
1.5
1
0.5
0
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

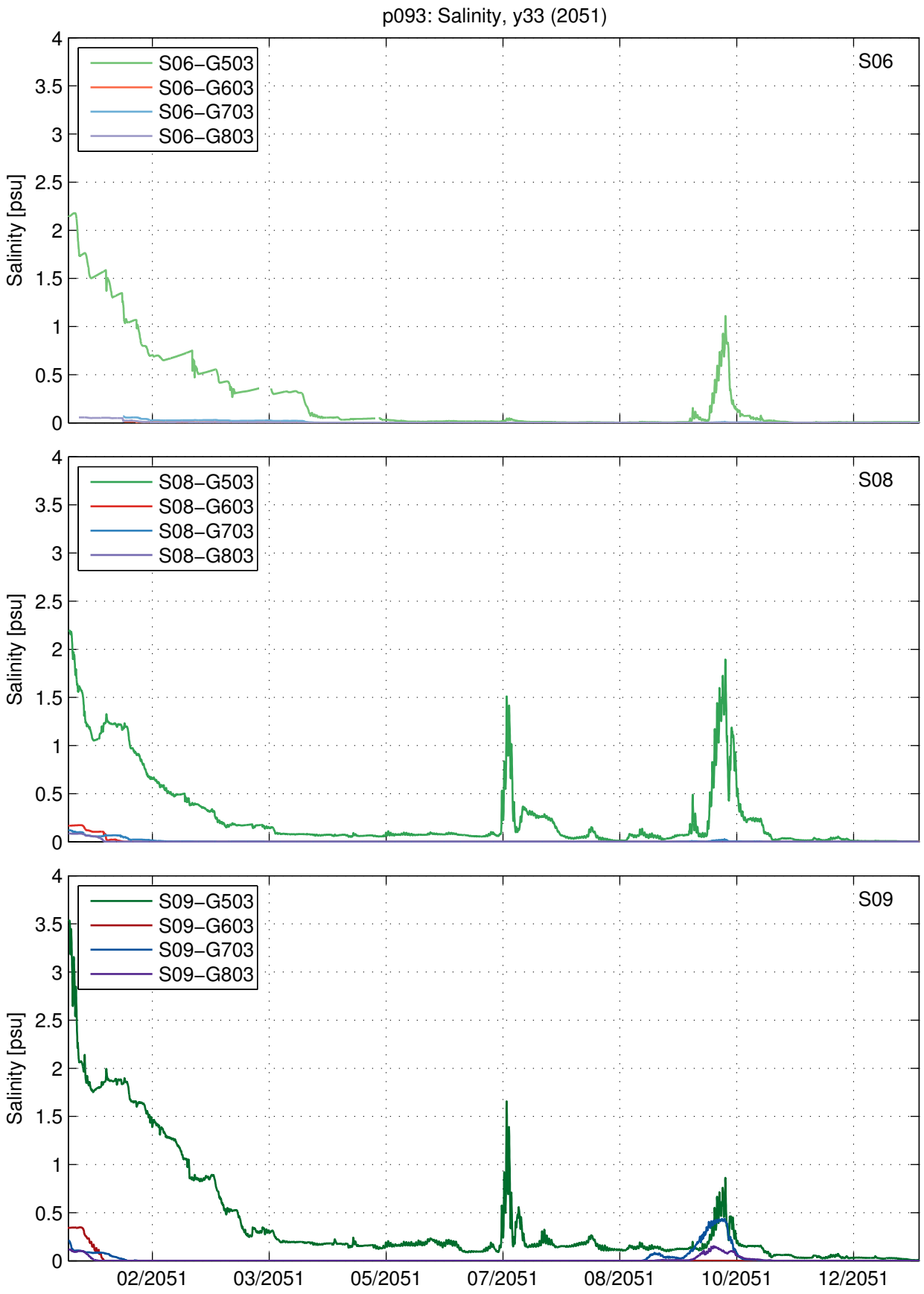

p183: Salinity, y33 (2051)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
0.5
1
1.5
2
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

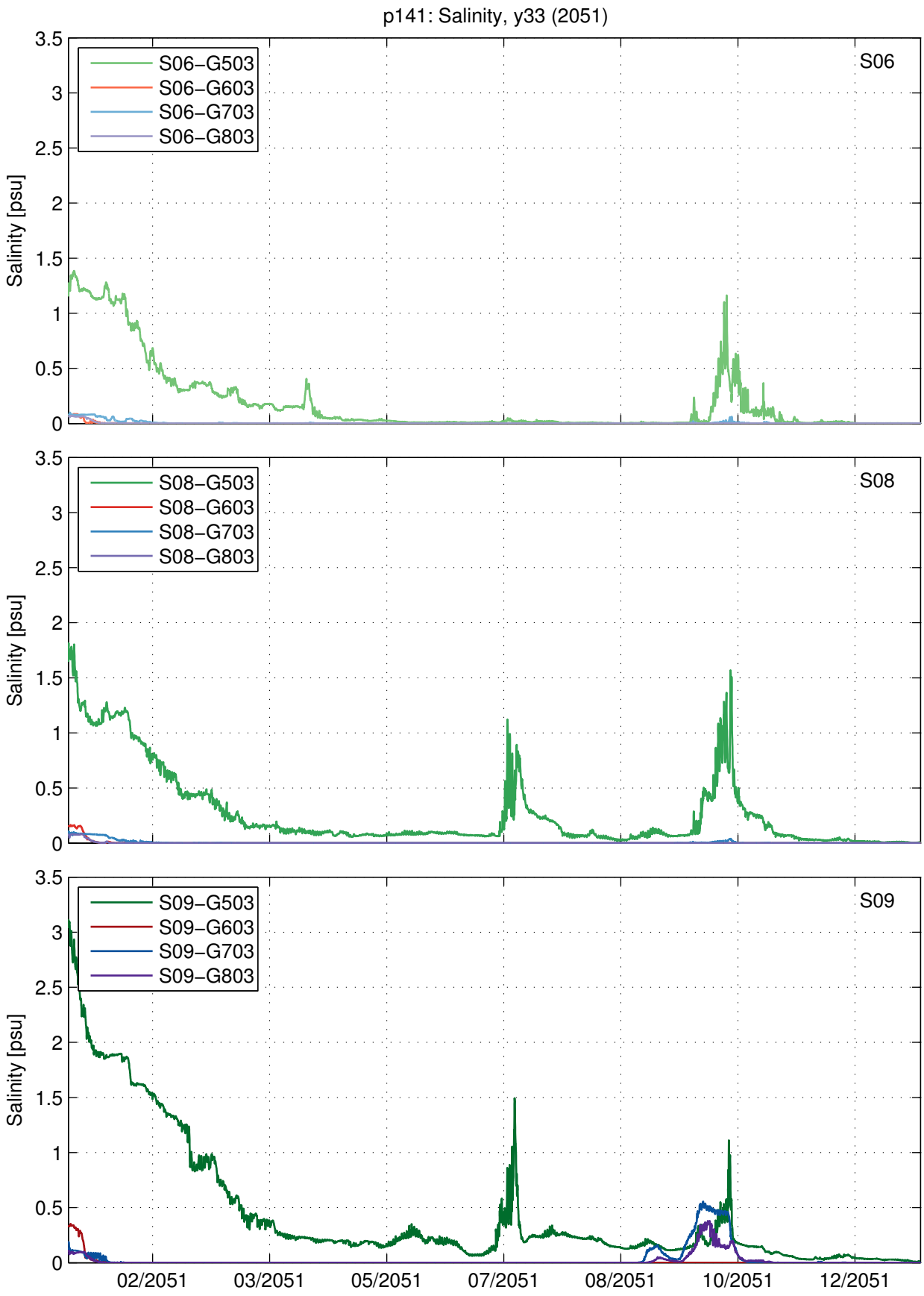

p185: Salinity, y33 (2051)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
1.5
1
0.5
0
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

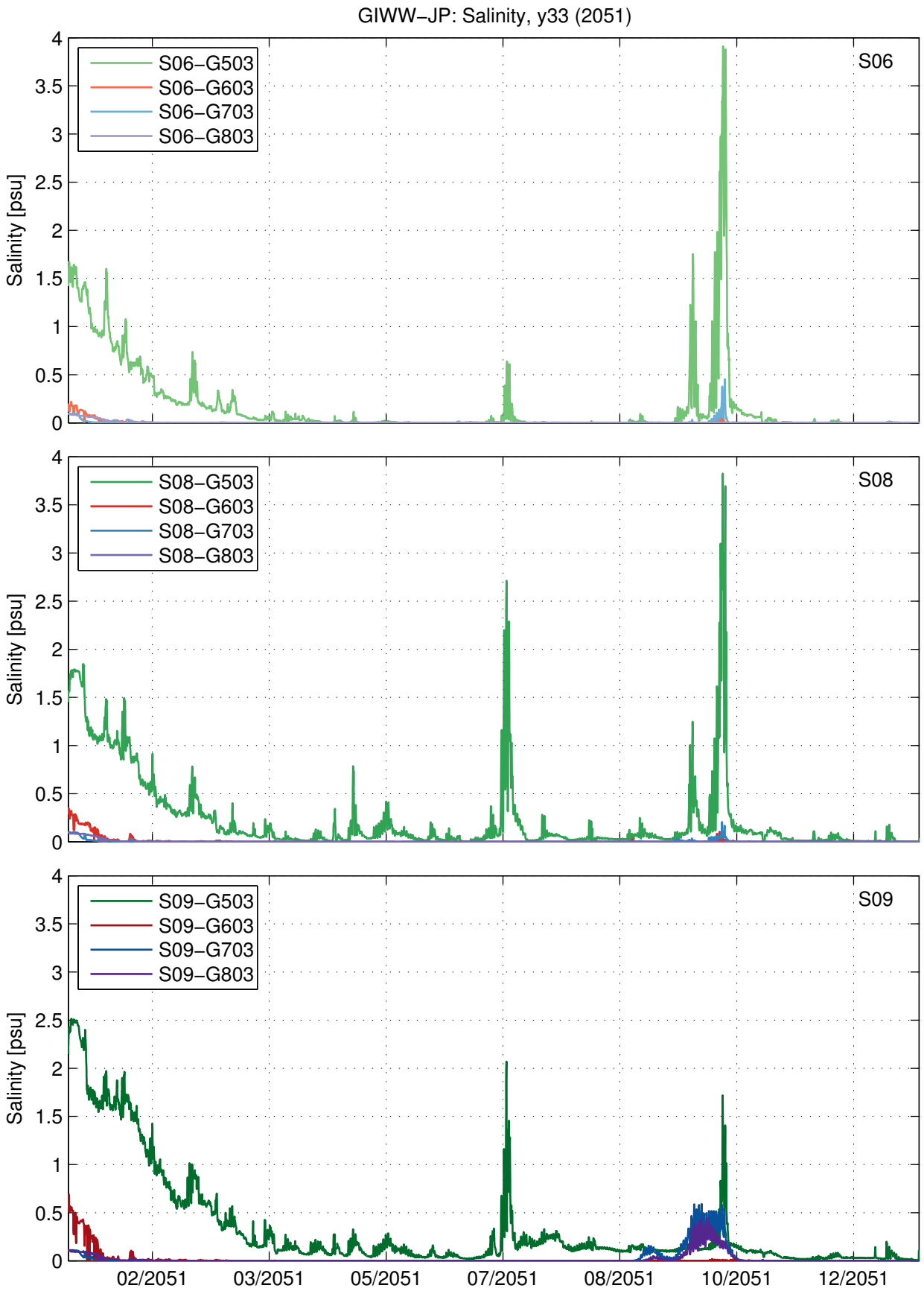

p192: Salinity, y33 (2051)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
1.5
1
0.5
0
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

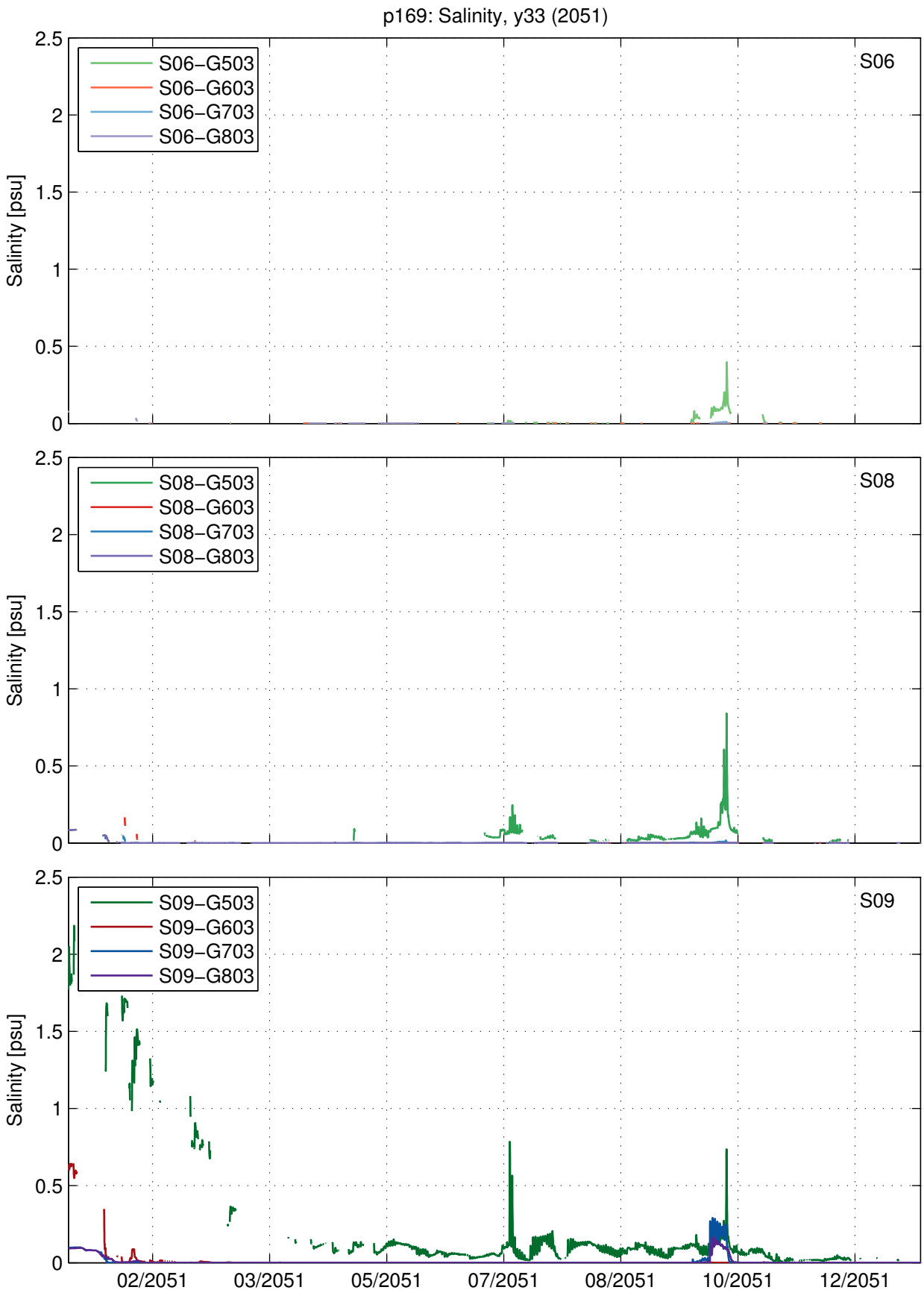

p194: Salinity, y33 (2051)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
1.5
1
0.5
0
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

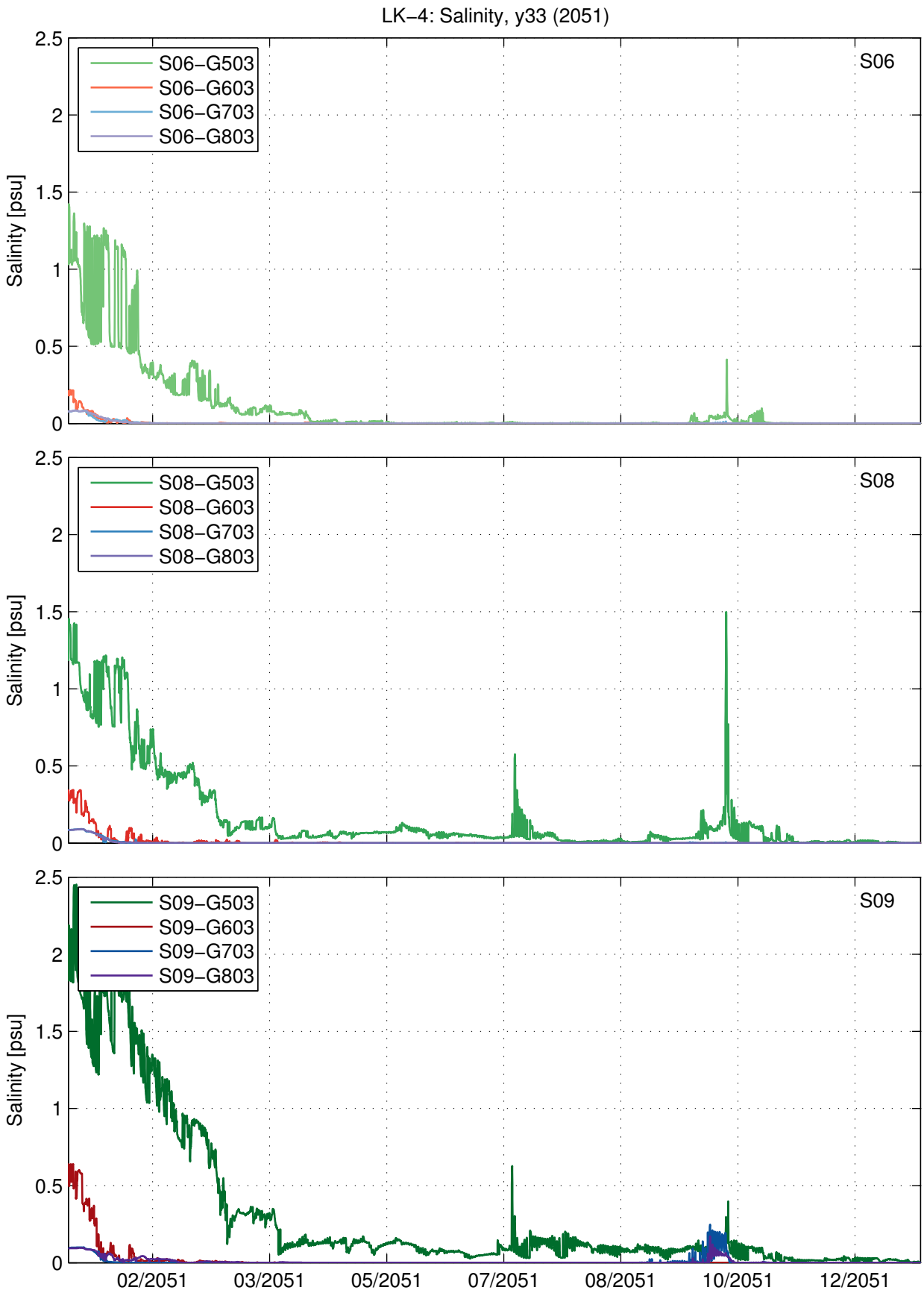

p159: Salinity, y33 (2051)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Salinity [psu]
0
0.5
1
1.5
2
2.5
3
3.5
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

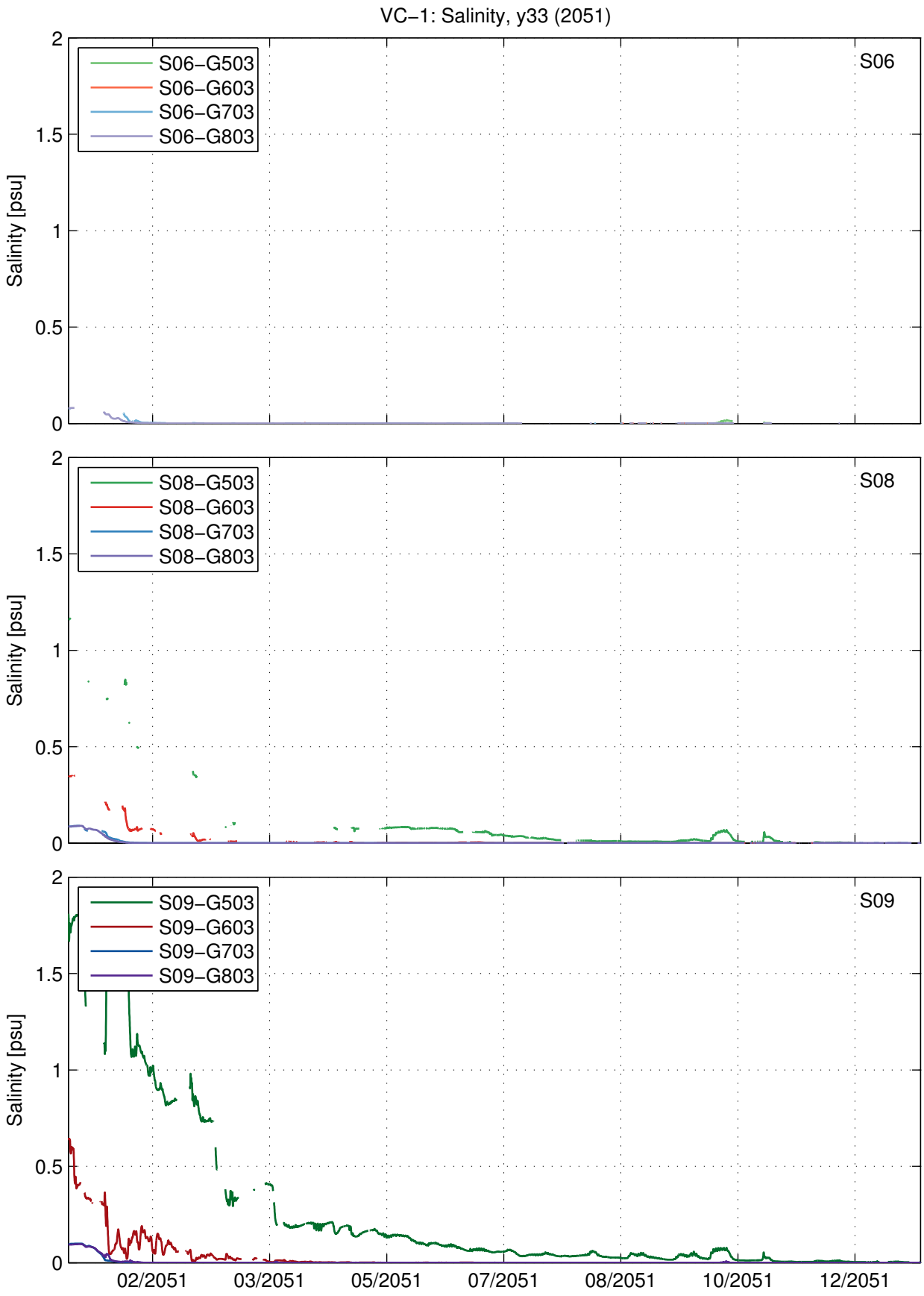

p093: Salinity, y33 (2051)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Salinity [psu]
0
0.5
1
1.5
2
2.5
3
3.5
4
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

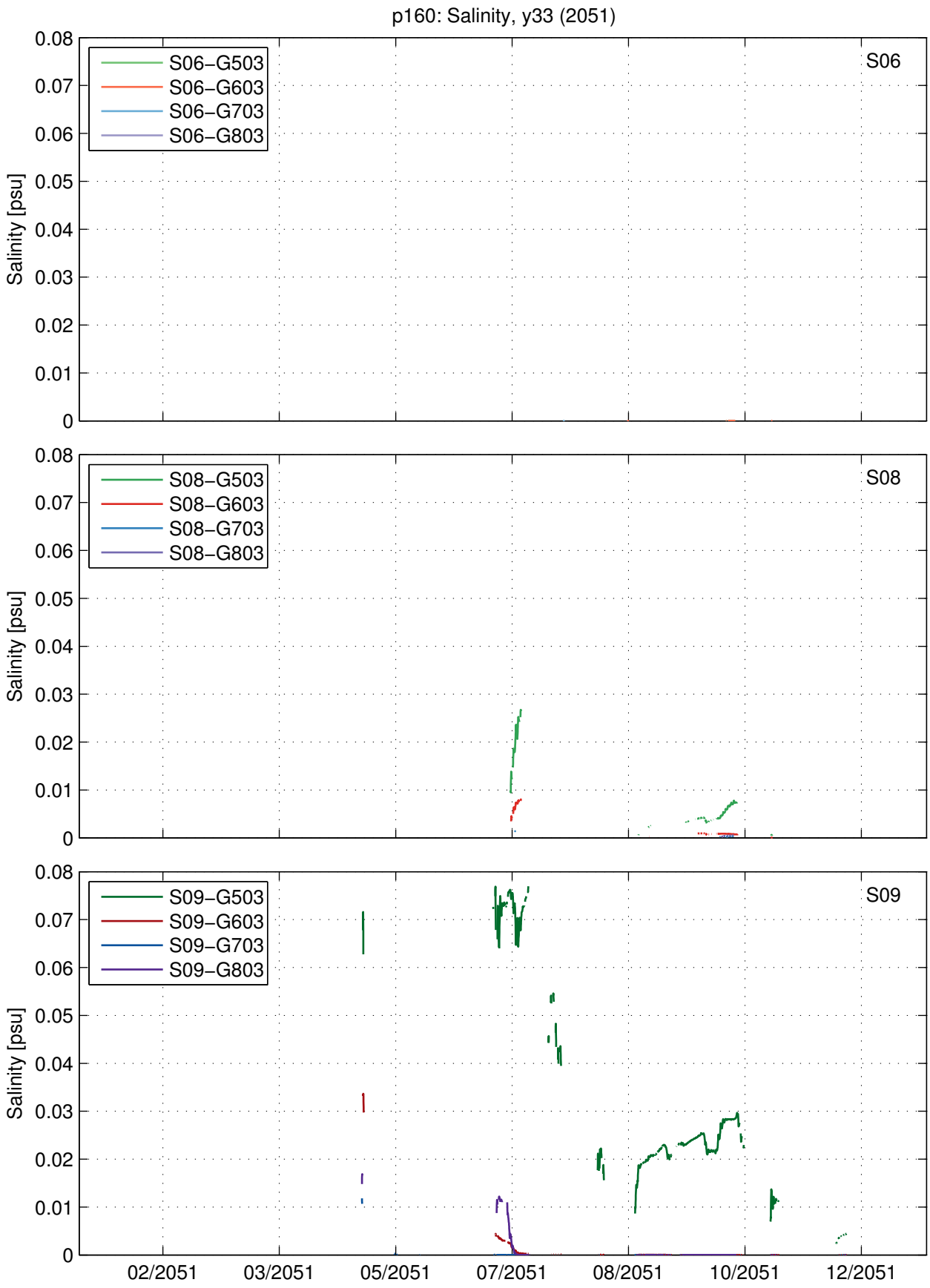

p141: Salinity, y33 (2051)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Salinity [psu]
0
0.5
1
1.5
2
2.5
3
3.5
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

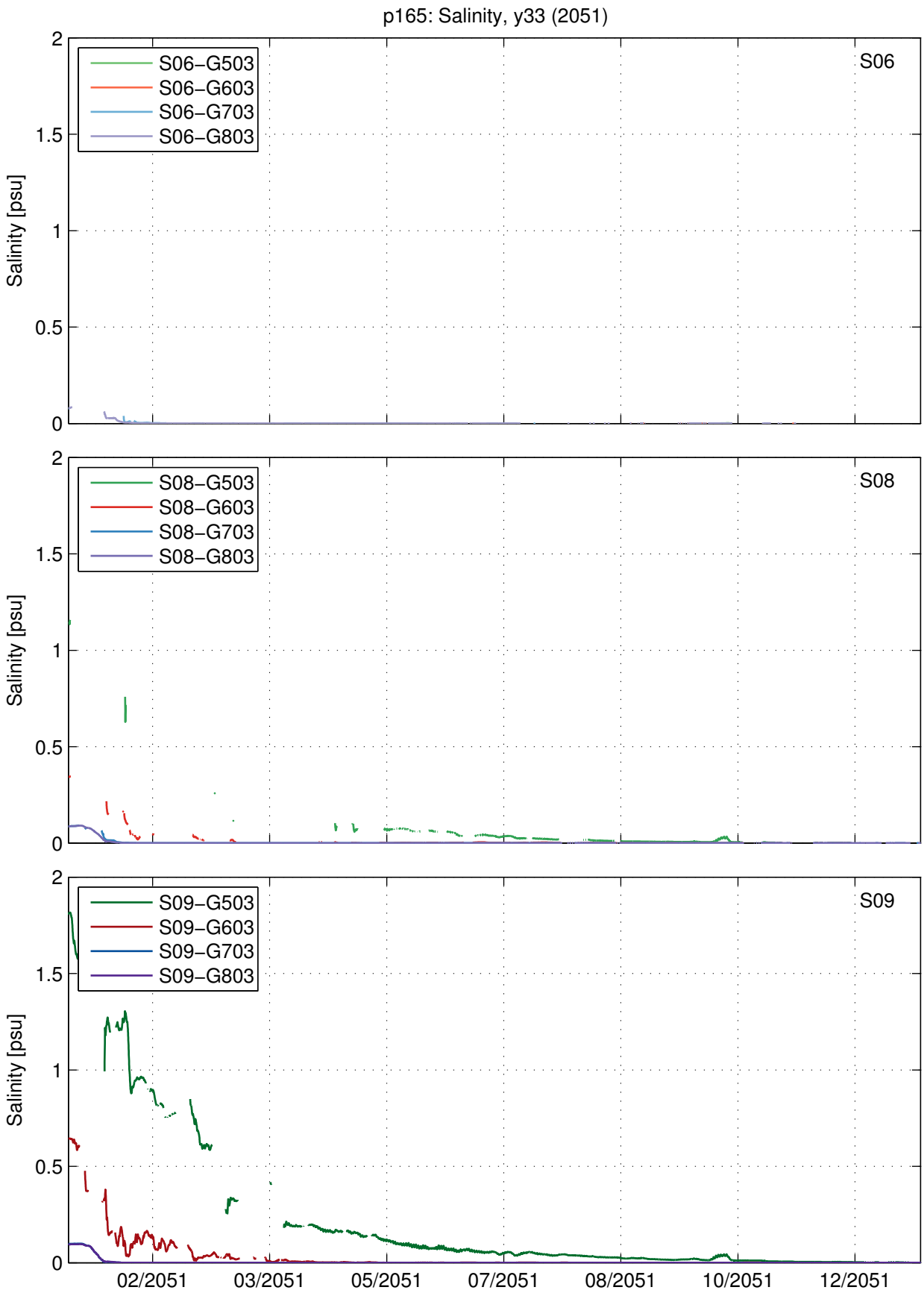

GIWW–JP: Salinity, y33 (2051)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Salinity [psu]
0
0.5
1
1.5
2
2.5
3
3.5
4
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

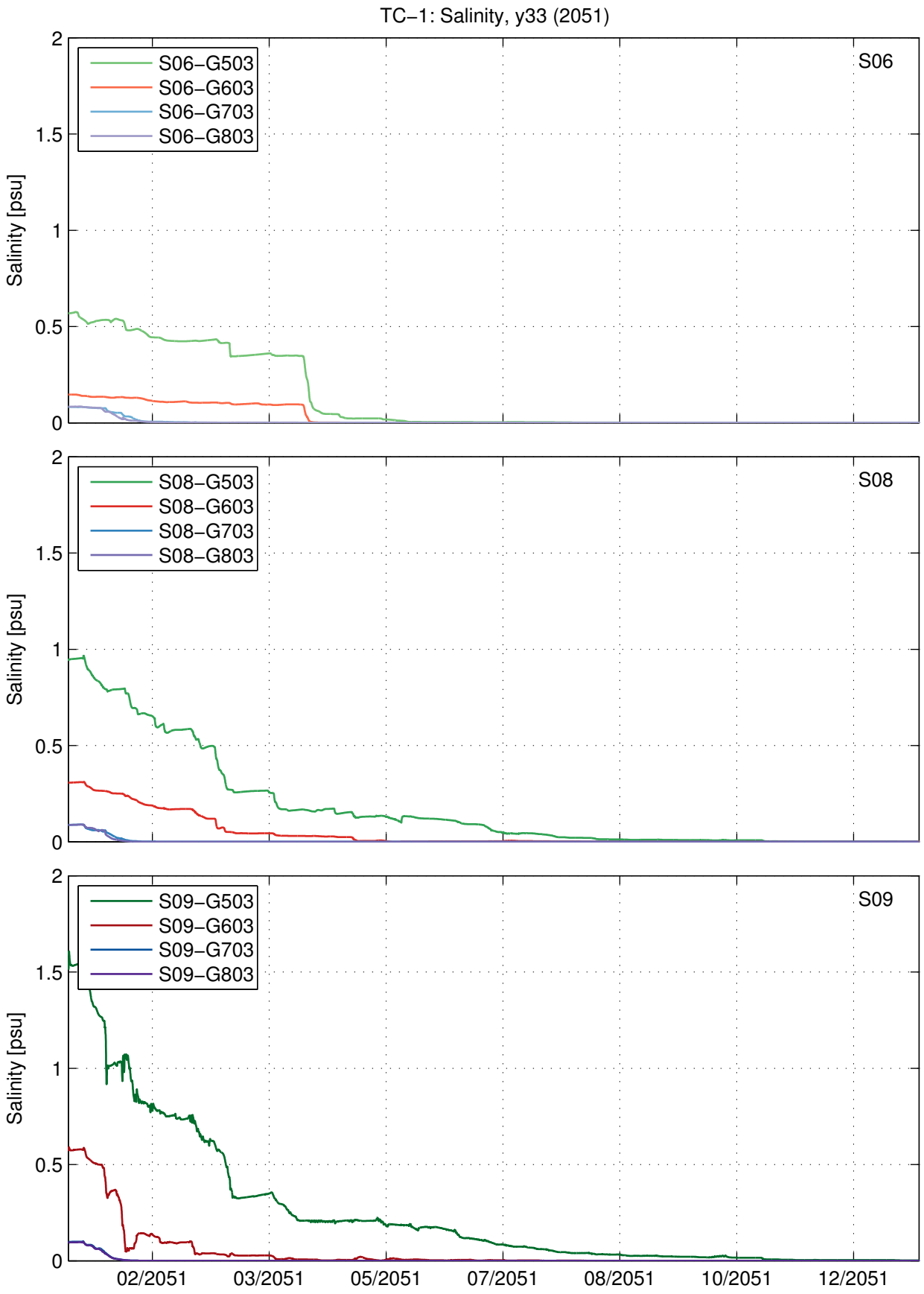

p169: Salinity, y33 (2051)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Salinity [psu]
0
0.5
1
1.5
2
2.5
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

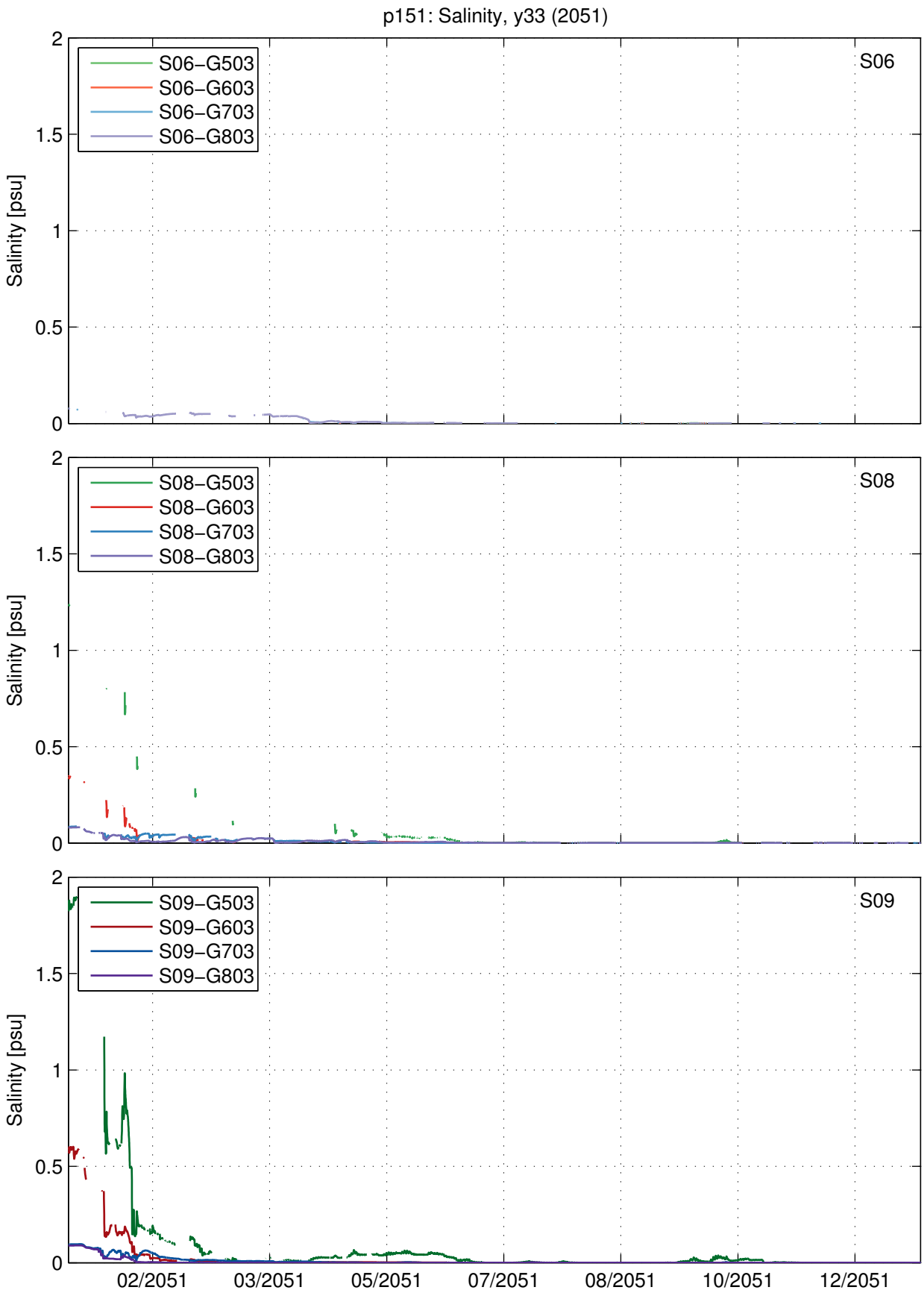

LK−4: Salinity, y33 (2051)
S06
S06−G503
S06−G603
S06−G703
S06−G803
S08
S08−G503
S08−G603
S08−G703
S08−G803
S09
S09−G503
S09−G603
S09−G703
S09−G803
Salinity [psu]
0
0.5
1
1.5
2
2.5
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

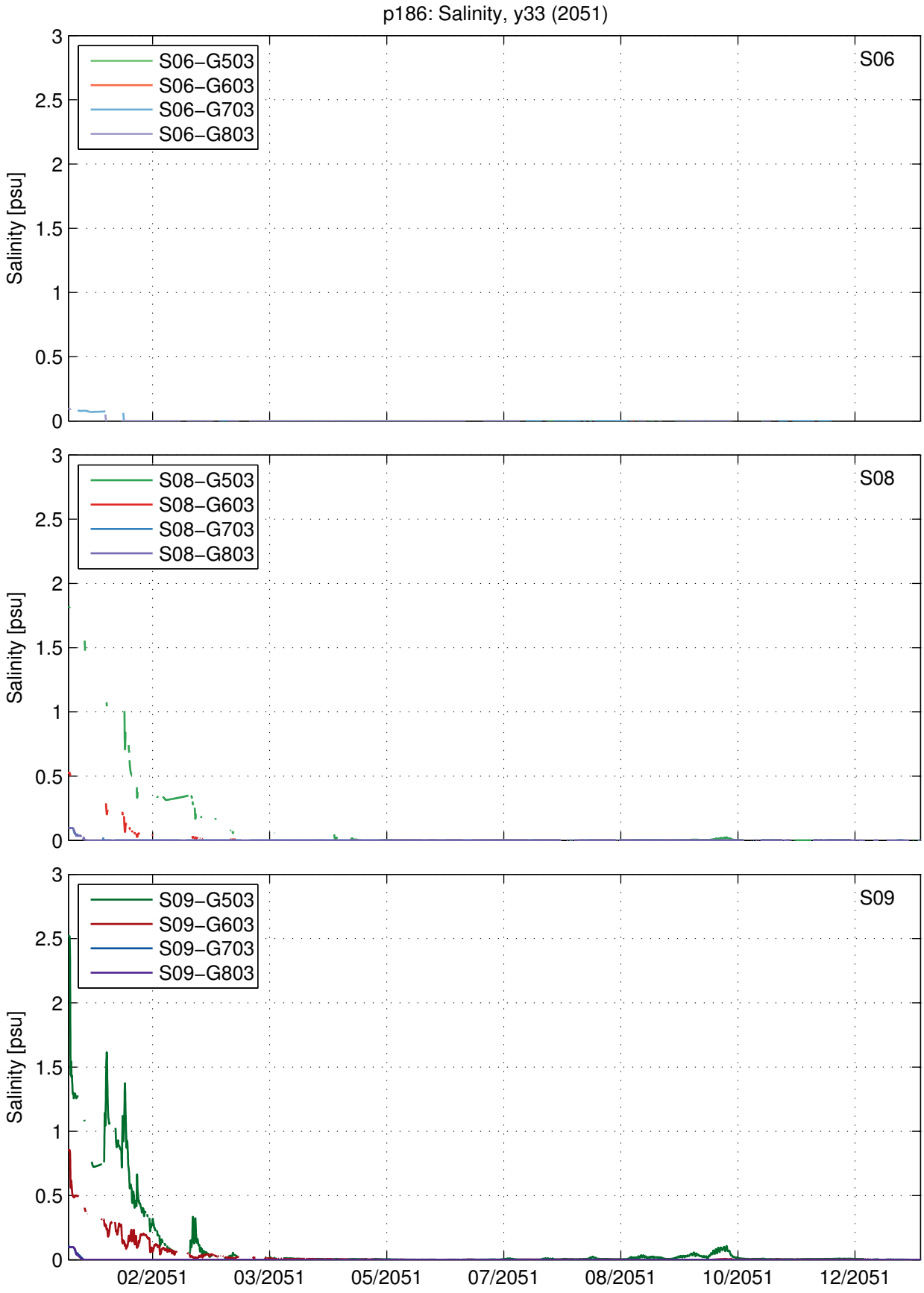

VC−1: Salinity, y33 (2051)
S06
S06−G503
S06−G603
S06−G703
S06−G803
S08
S08−G503
S08−G603
S08−G703
S08−G803
S09
S09−G503
S09−G603
S09−G703
S09−G803
Salinity [psu]
0
0.5
1
1.5
2
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

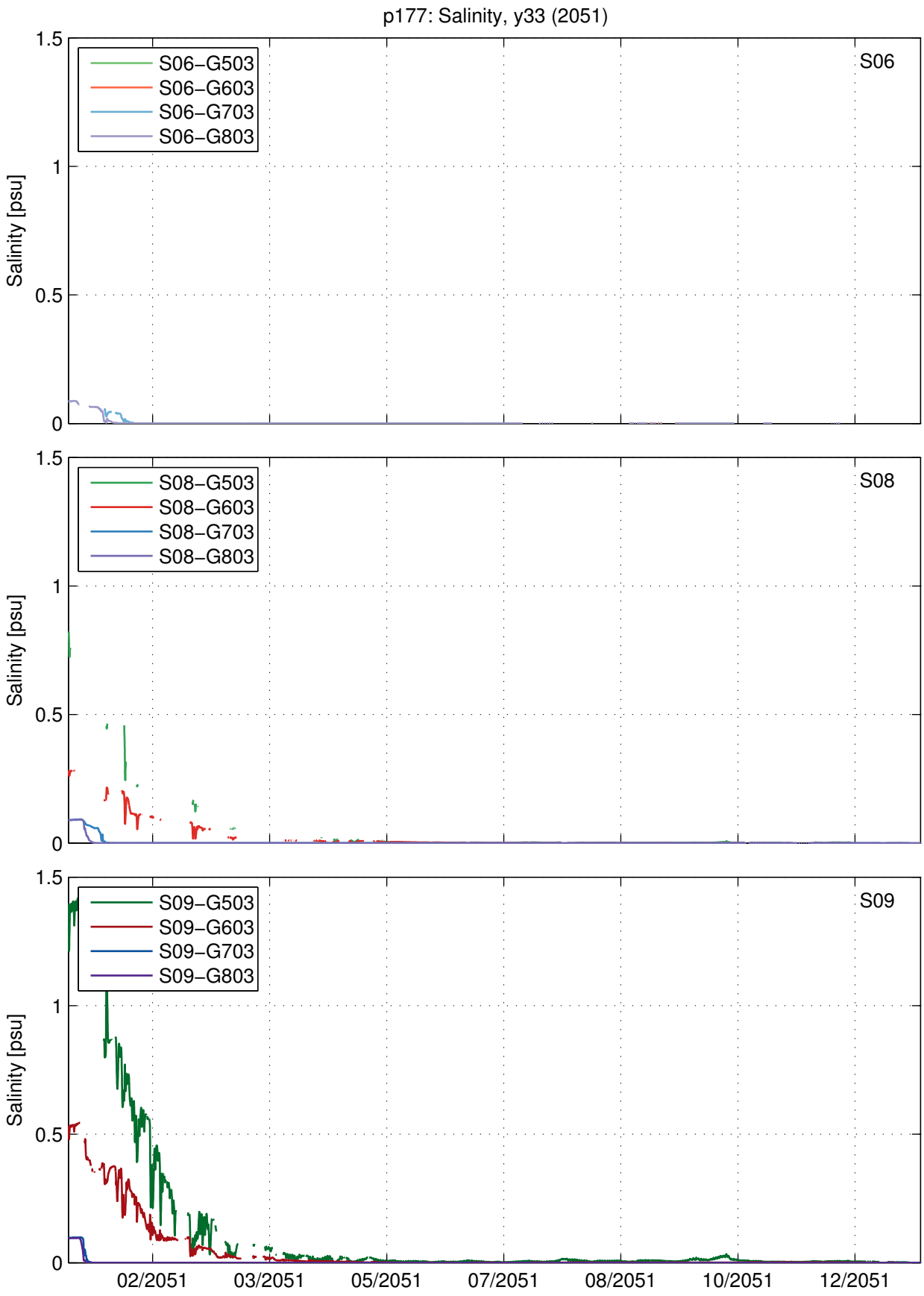

p160: Salinity, y33 (2051)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Salinity [psu]
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

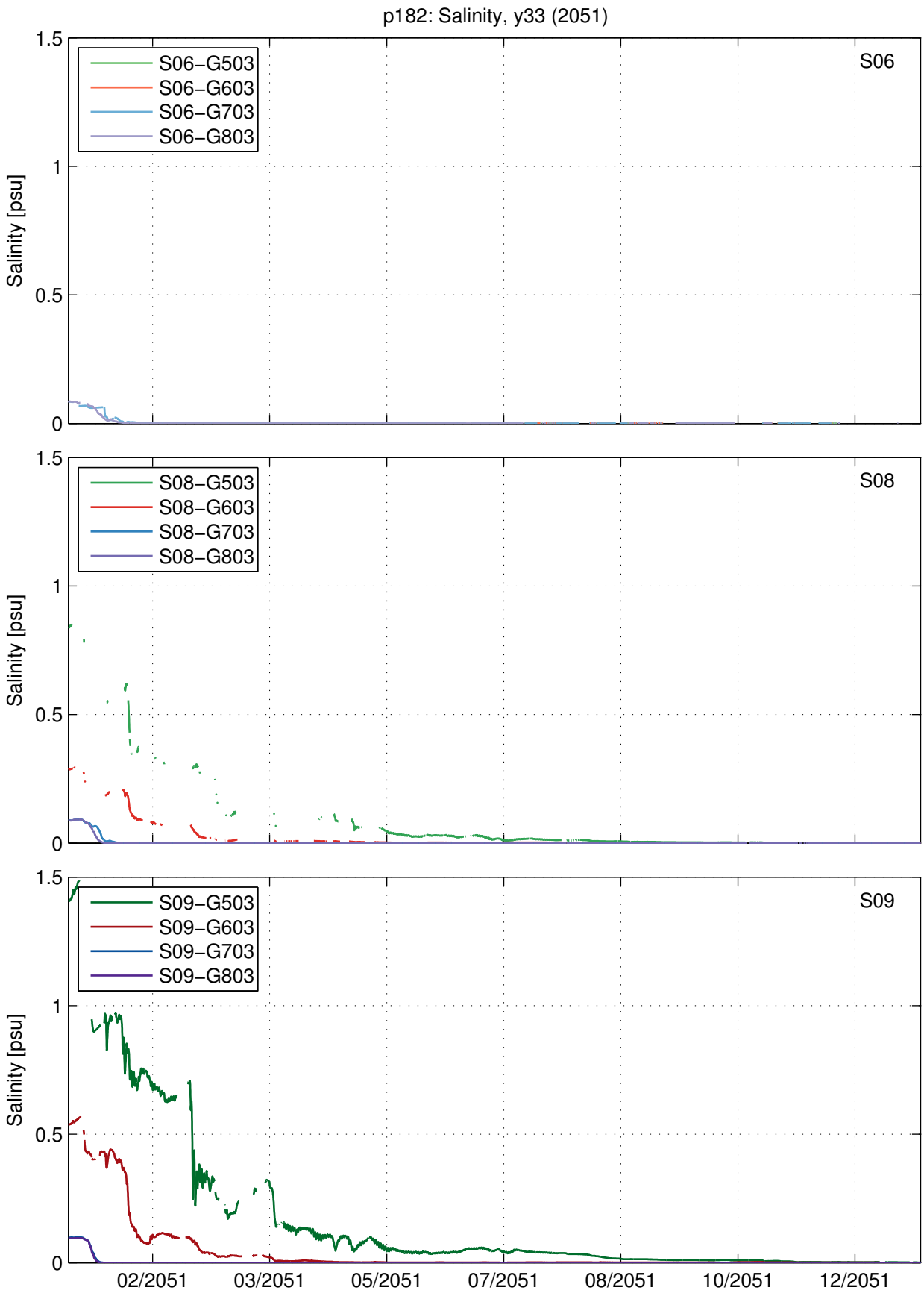

p165: Salinity, y33 (2051)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Salinity [psu]
0
0.5
1
1.5
2
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

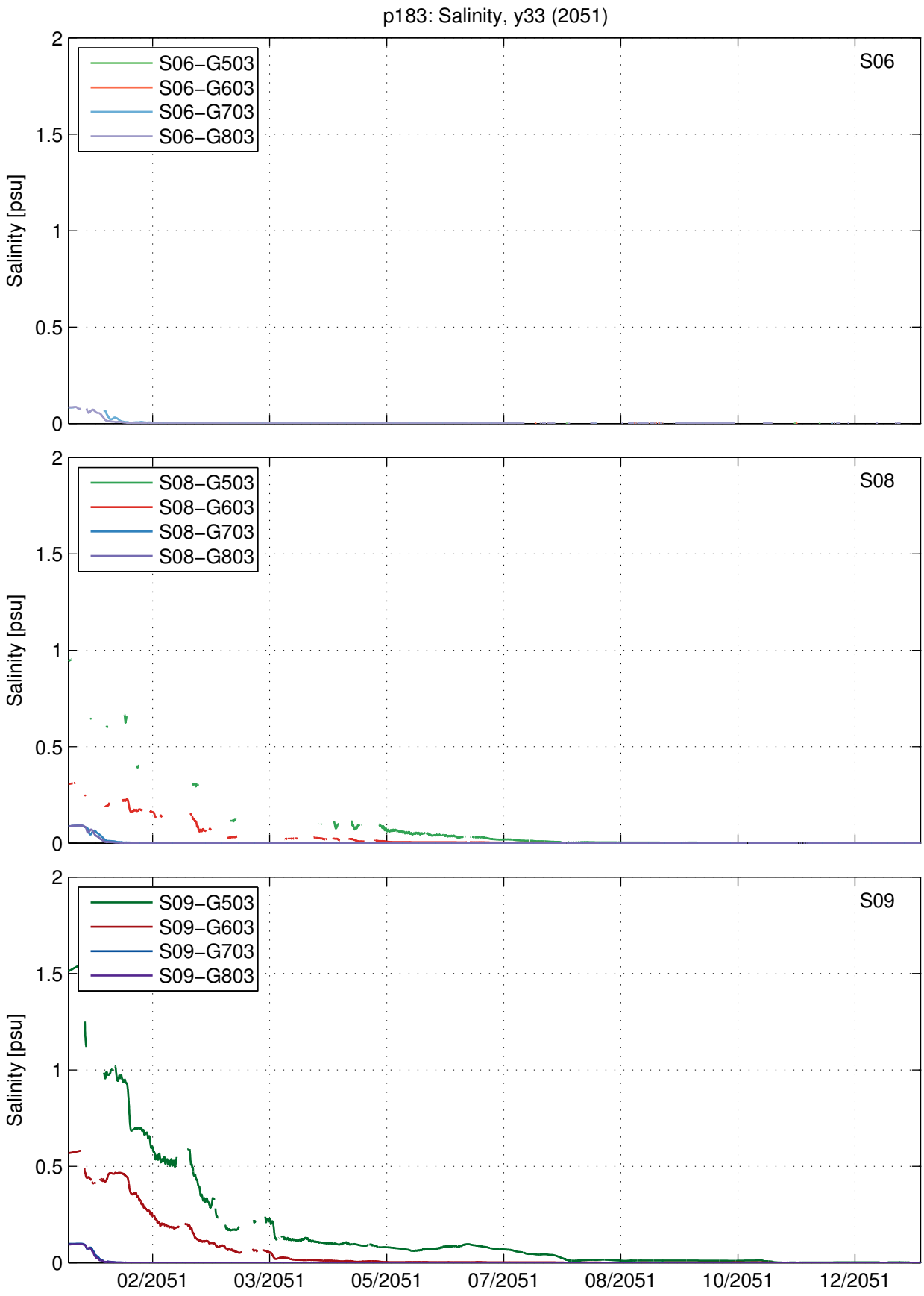

TC−1: Salinity, y33 (2051)
S06
S06−G503
S06−G603
S06−G703
S06−G803
S08
S08−G503
S08−G603
S08−G703
S08−G803
S09
S09−G503
S09−G603
S09−G703
S09−G803
Salinity [psu]
0
0.5
1
1.5
2
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

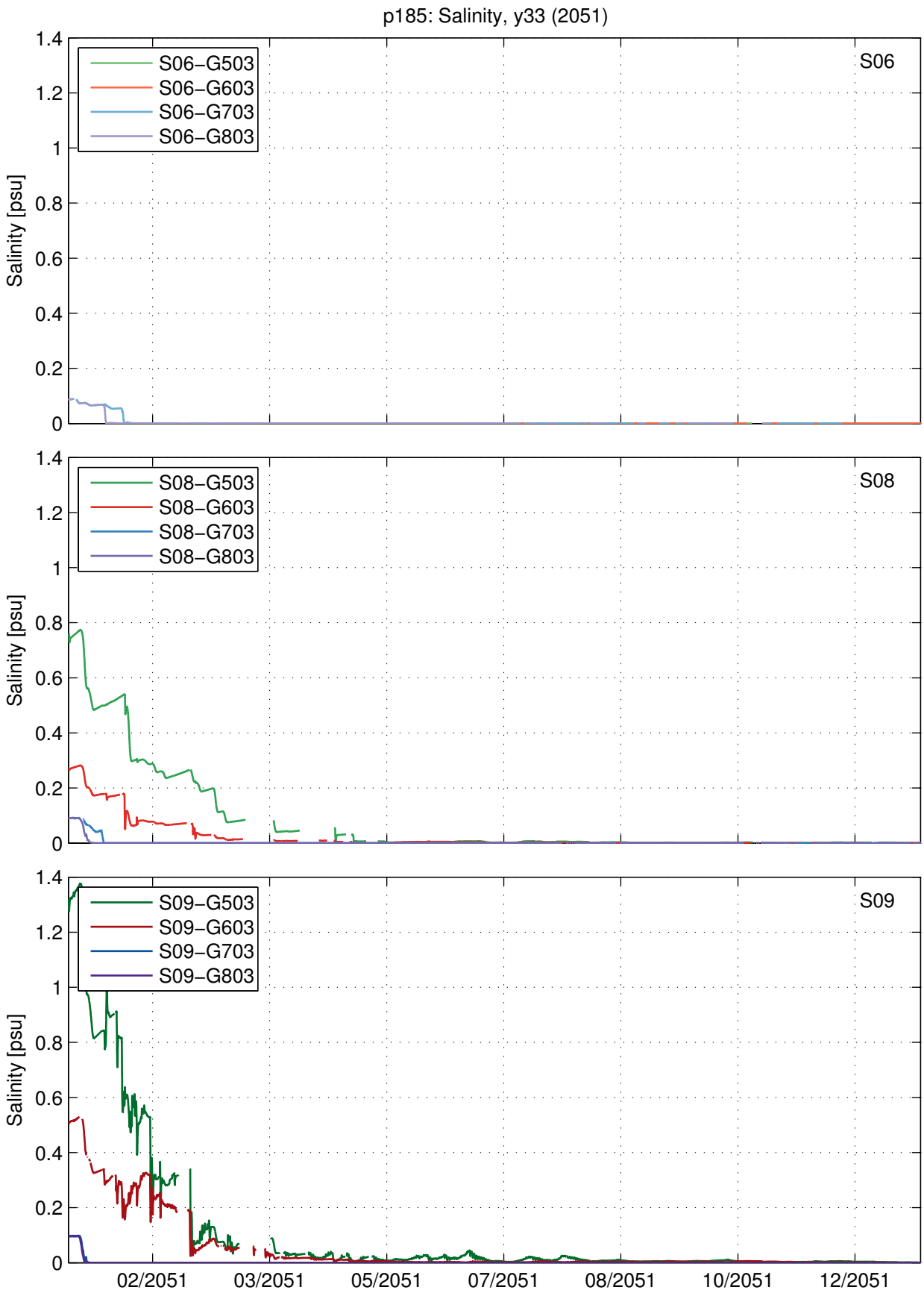

p151: Salinity, y33 (2051)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Salinity [psu]
0
0.5
1
1.5
2
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

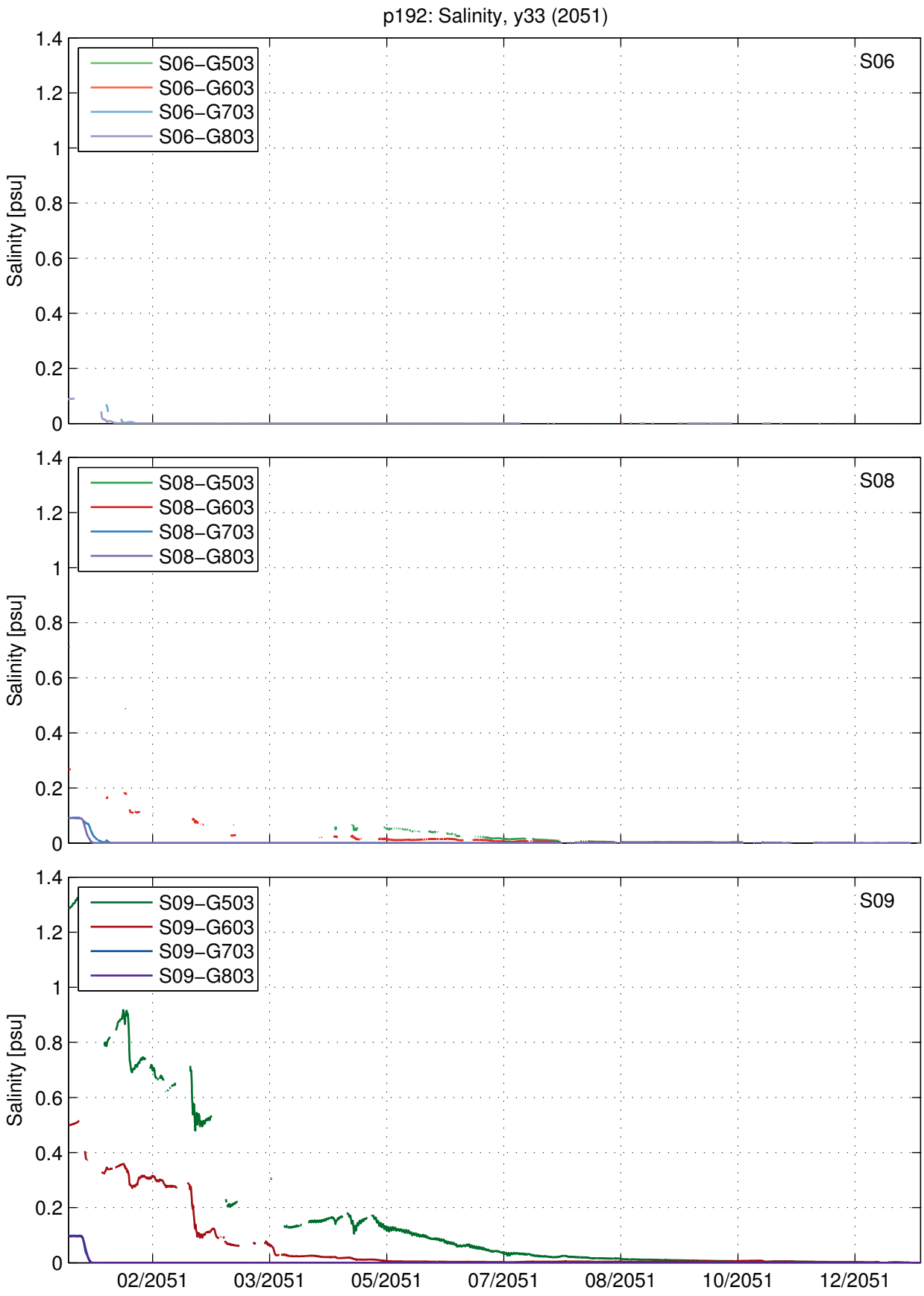

p186: Salinity, y33 (2051)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Salinity [psu]
0
0.5
1
1.5
2
2.5
3
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

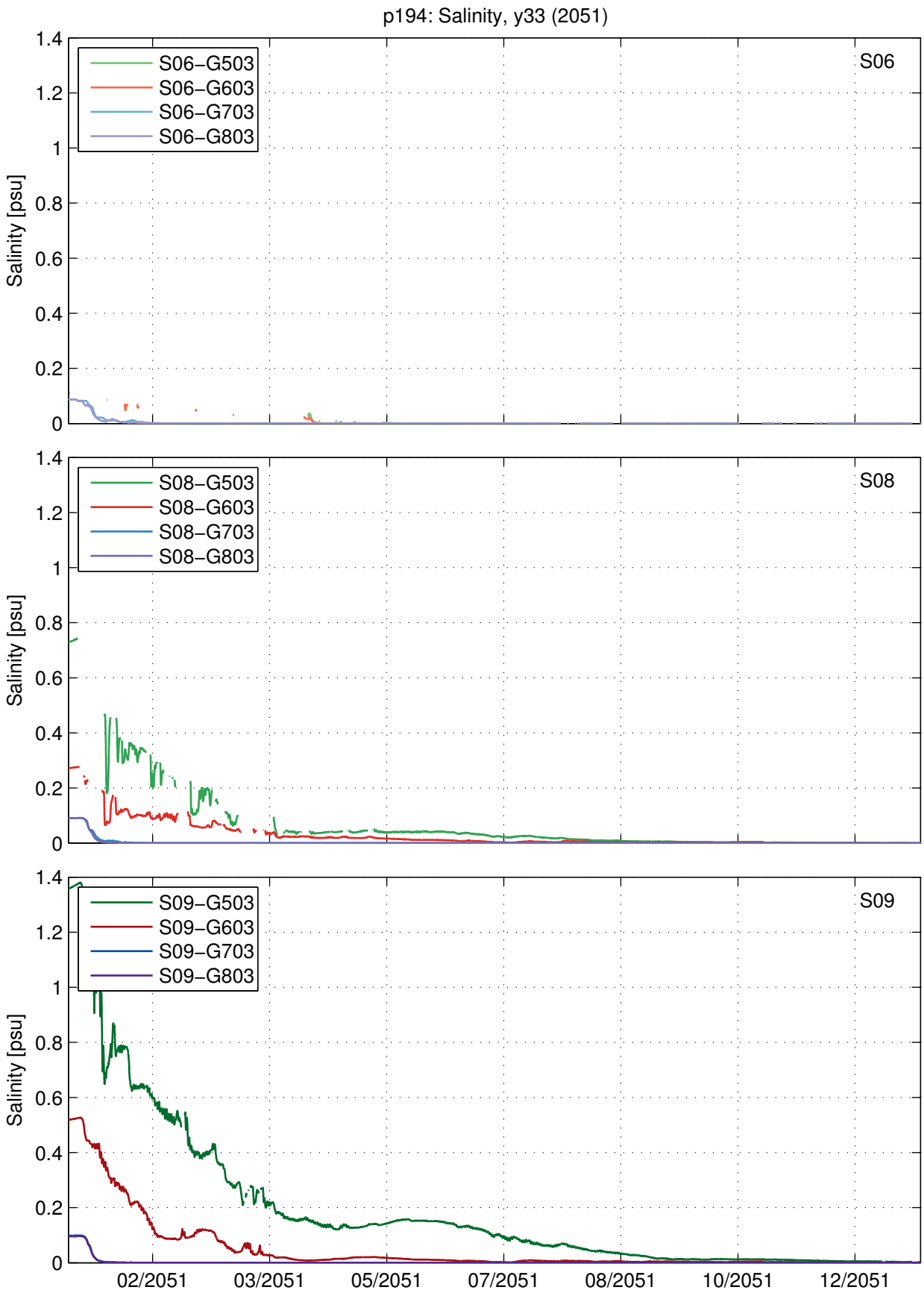

p177: Salinity, y33 (2051)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Salinity [psu]
1.5
1
0.5
0
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

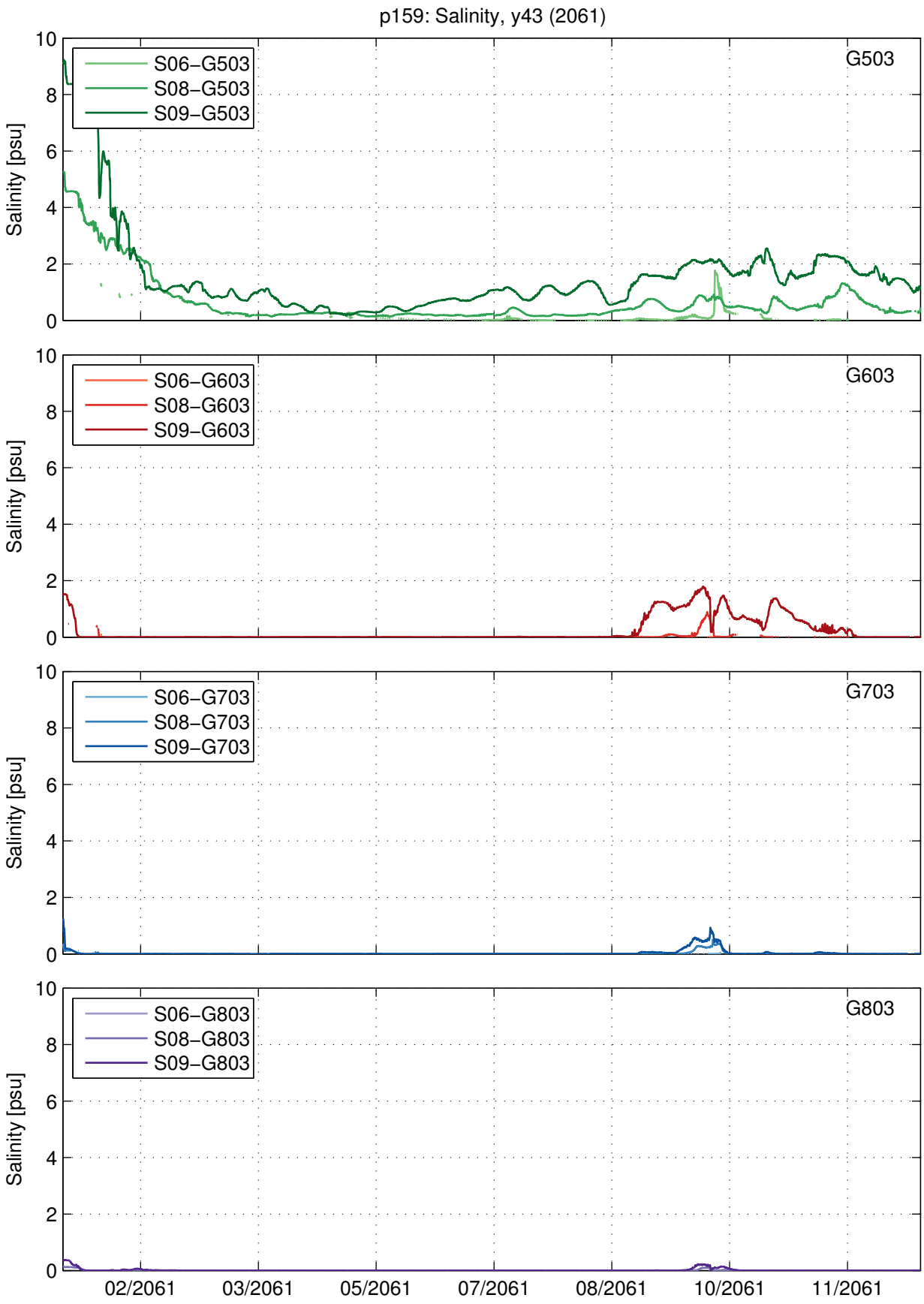

p182: Salinity, y33 (2051)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Salinity [psu]
1.5
1
0.5
0
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

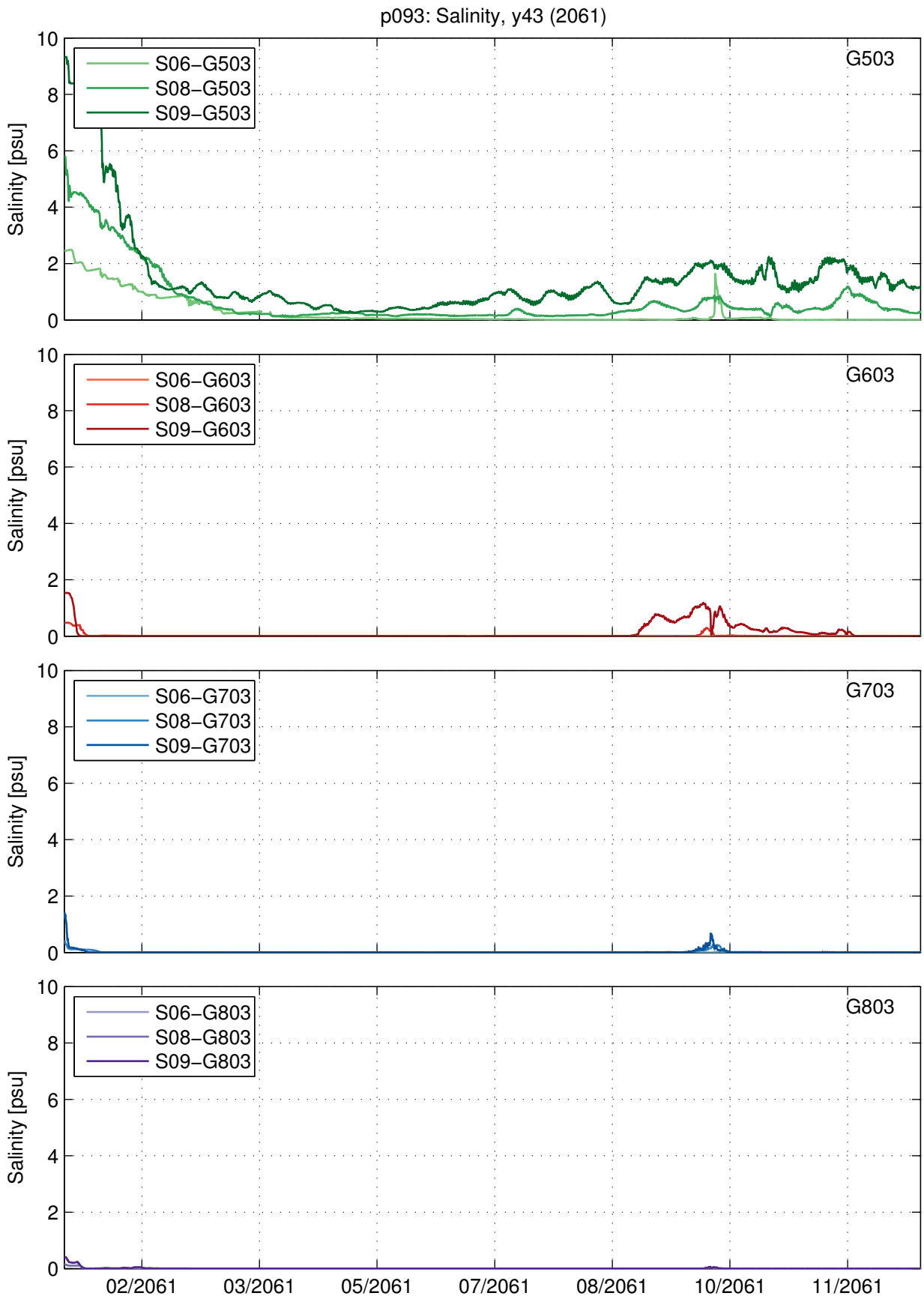

p183: Salinity, y33 (2051)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Salinity [psu]
0
0.5
1
1.5
2
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

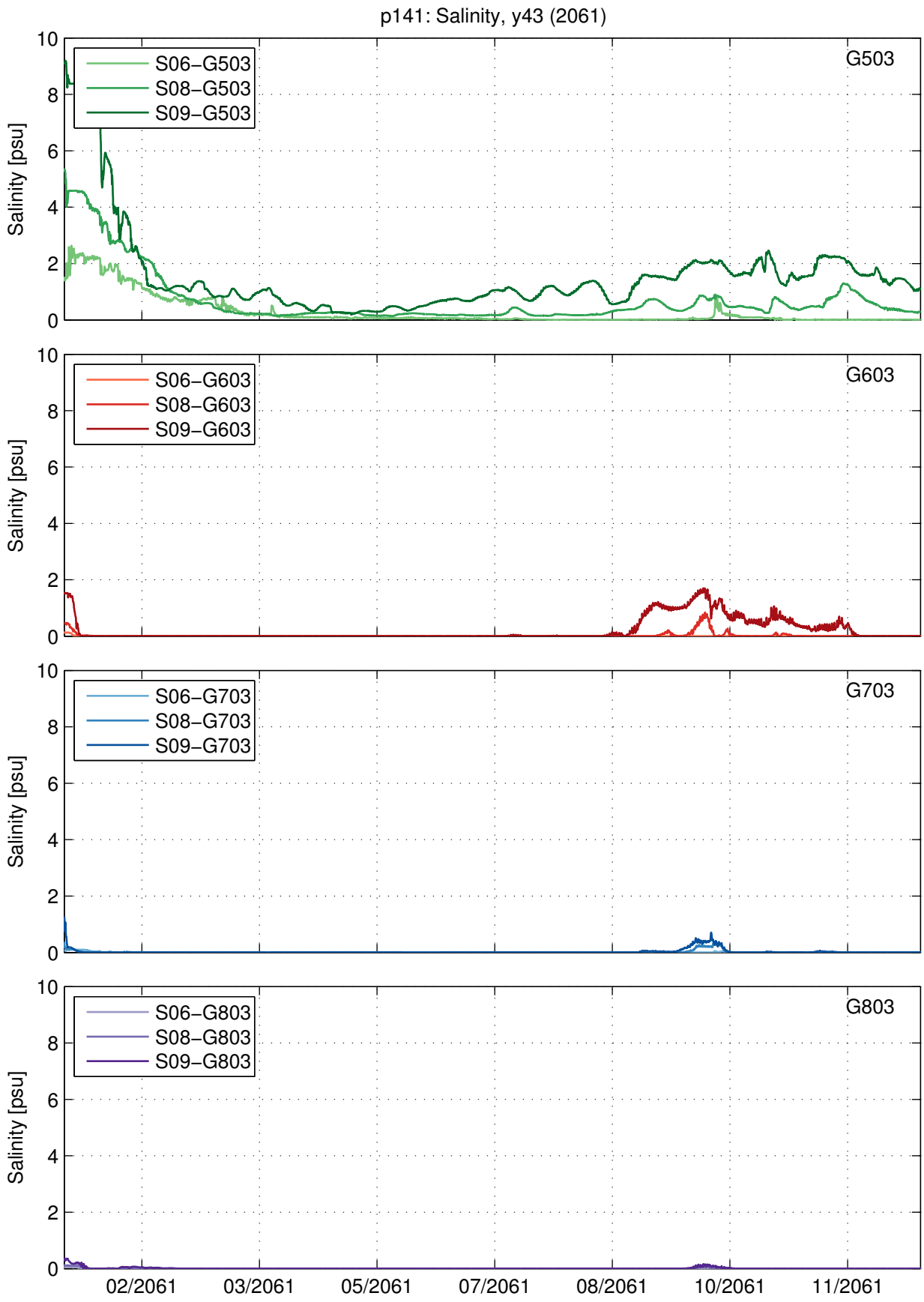

p185: Salinity, y33 (2051)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Salinity [psu]
0
0.2
0.4
0.6
0.8
1
1.2
1.4
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

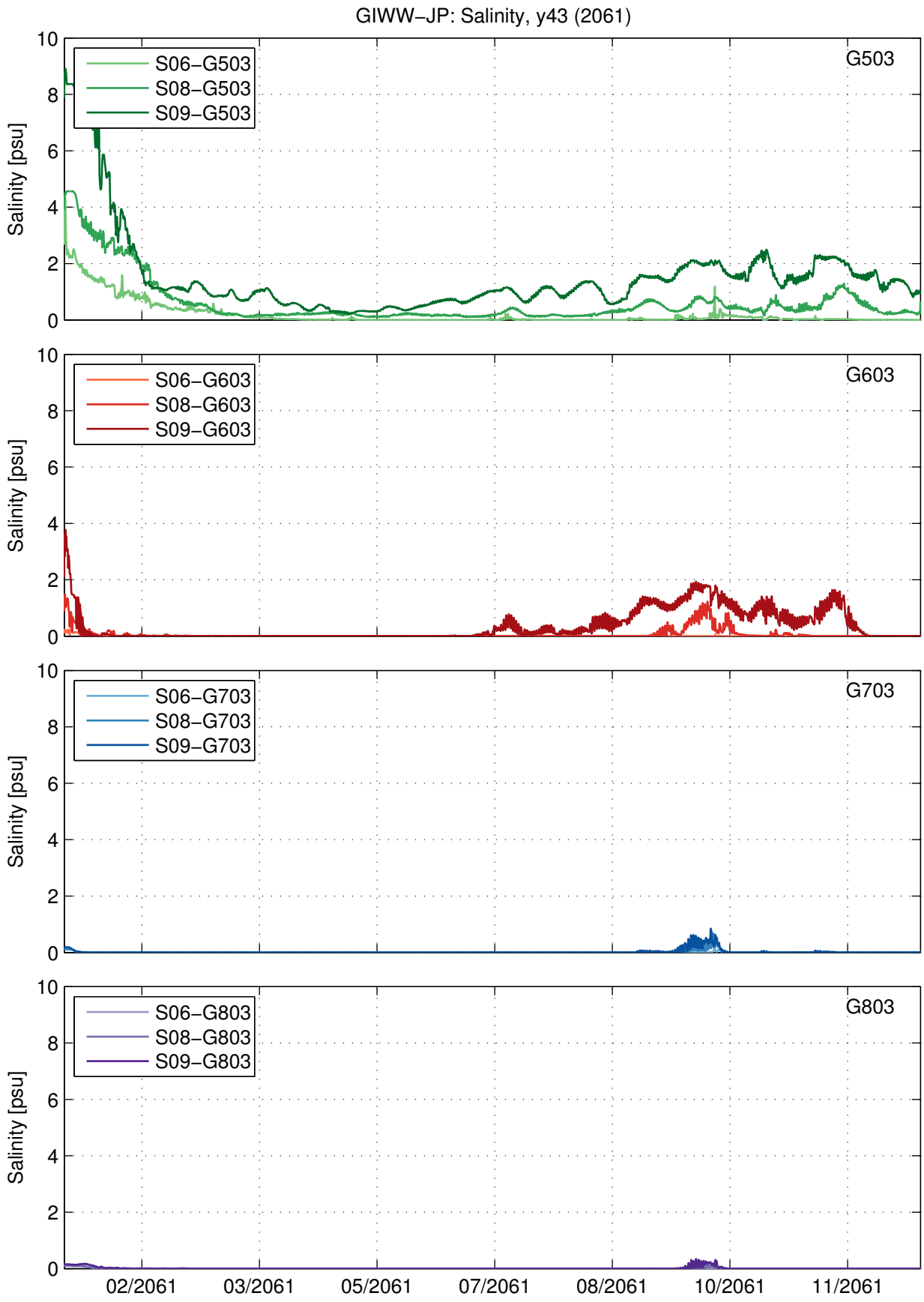

p192: Salinity, y33 (2051)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Salinity [psu]
0
0.2
0.4
0.6
0.8
1
1.2
1.4
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

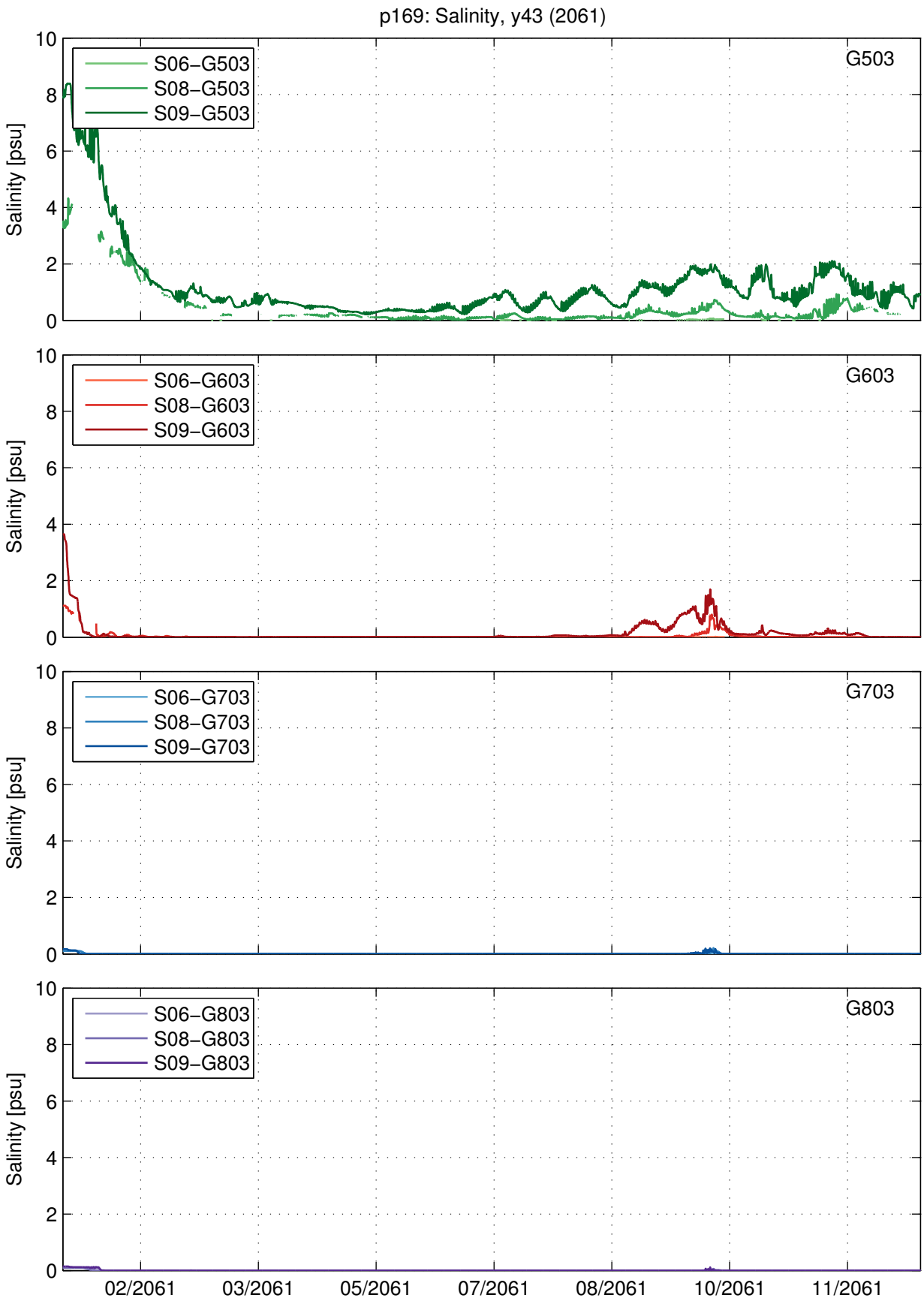

p194: Salinity, y33 (2051)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Salinity [psu]
0
0.2
0.4
0.6
0.8
1
1.2
1.4
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

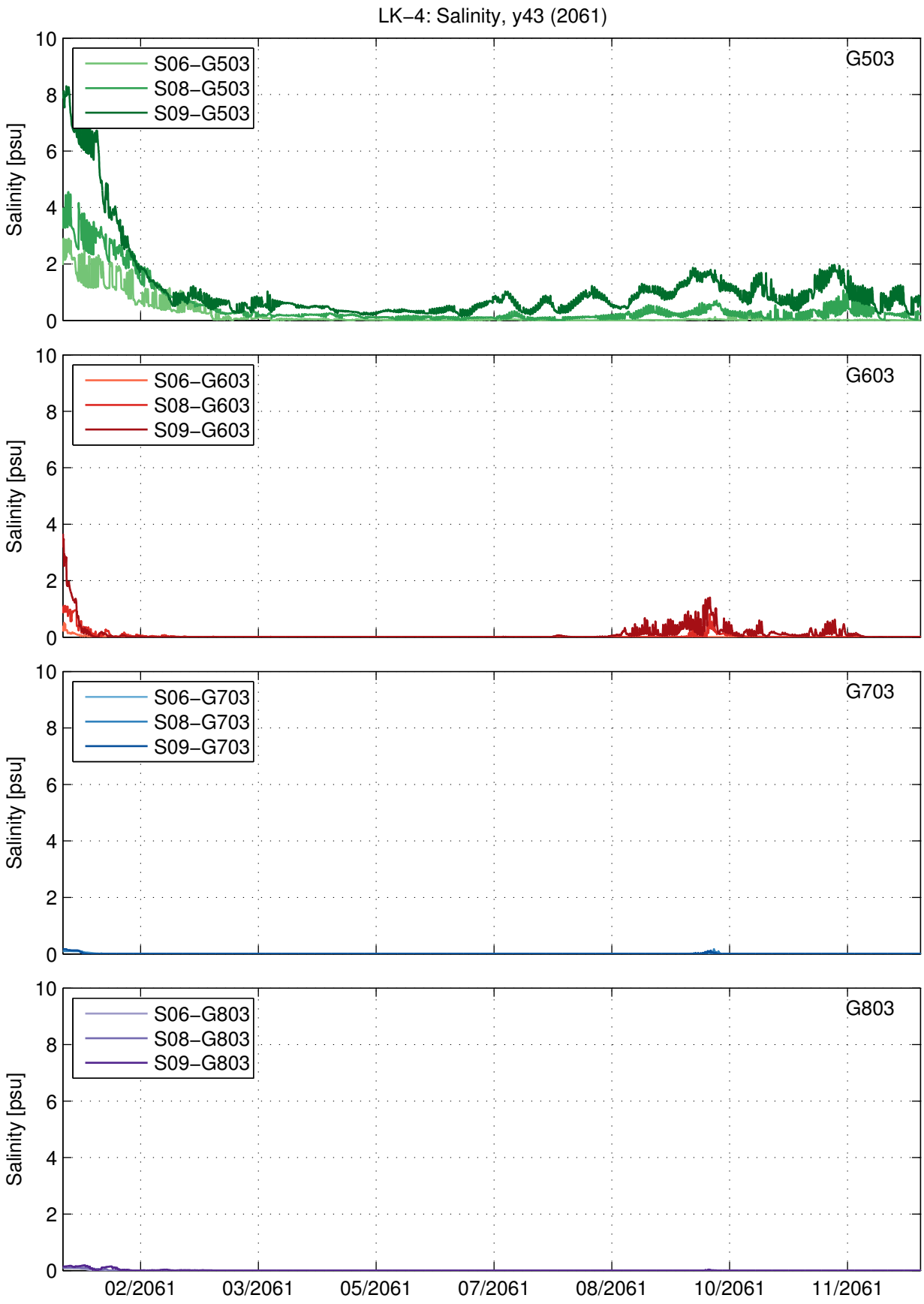

p159: Salinity, y43 (2061)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
2
4
6
8
10
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

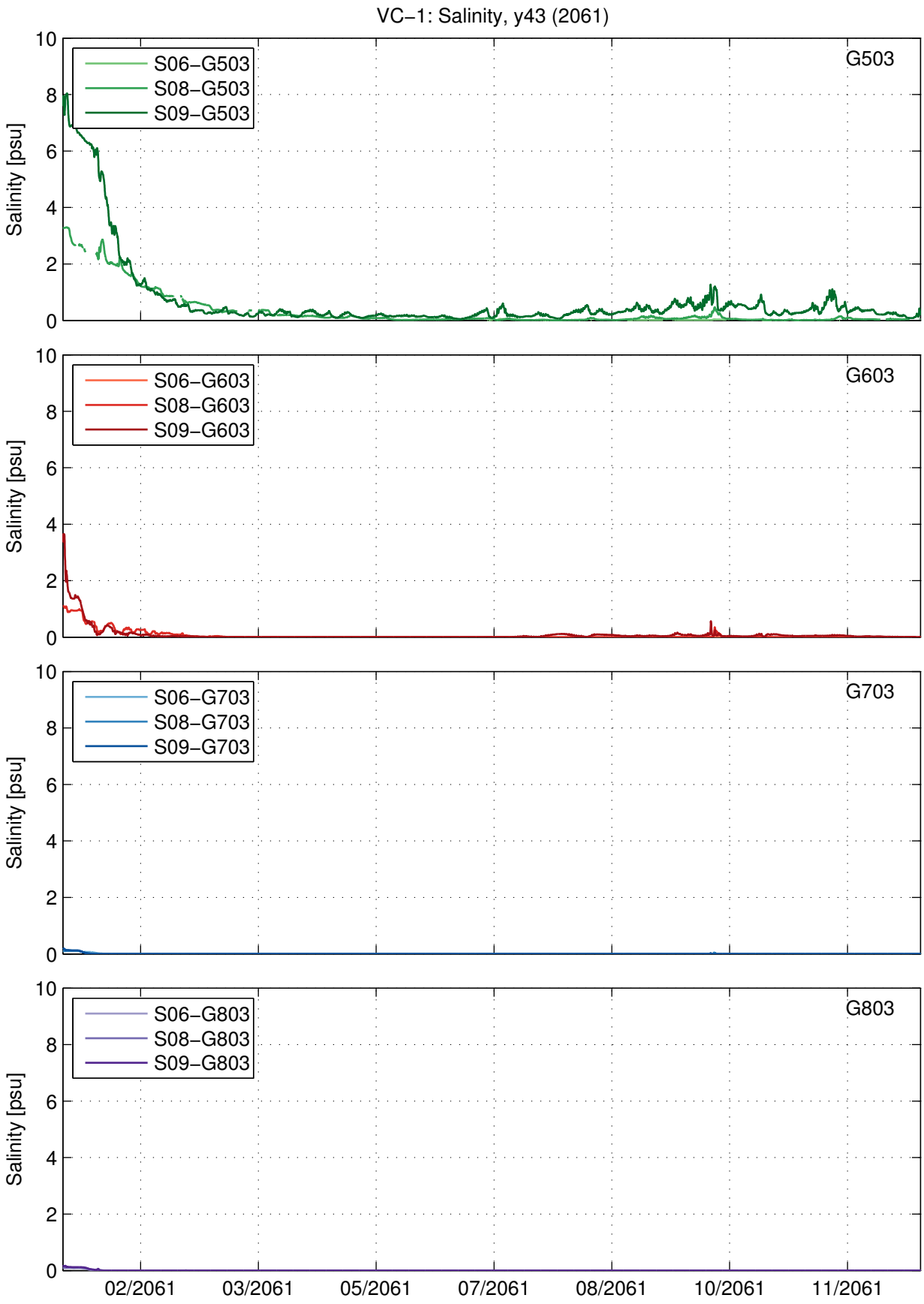

p093: Salinity, y43 (2061)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
2
4
6
8
10
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

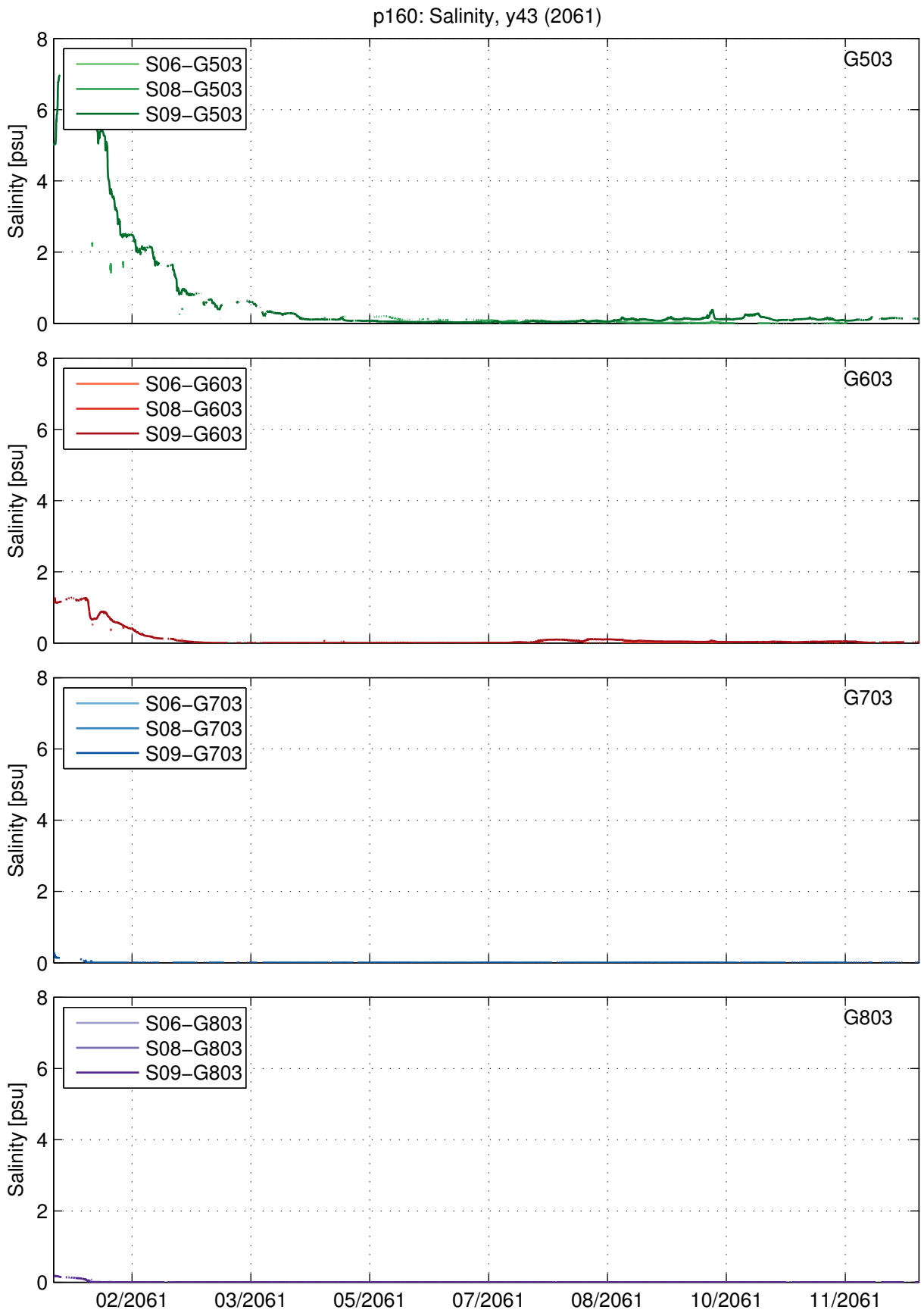

p141: Salinity, y43 (2061)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
2
4
6
8
10
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

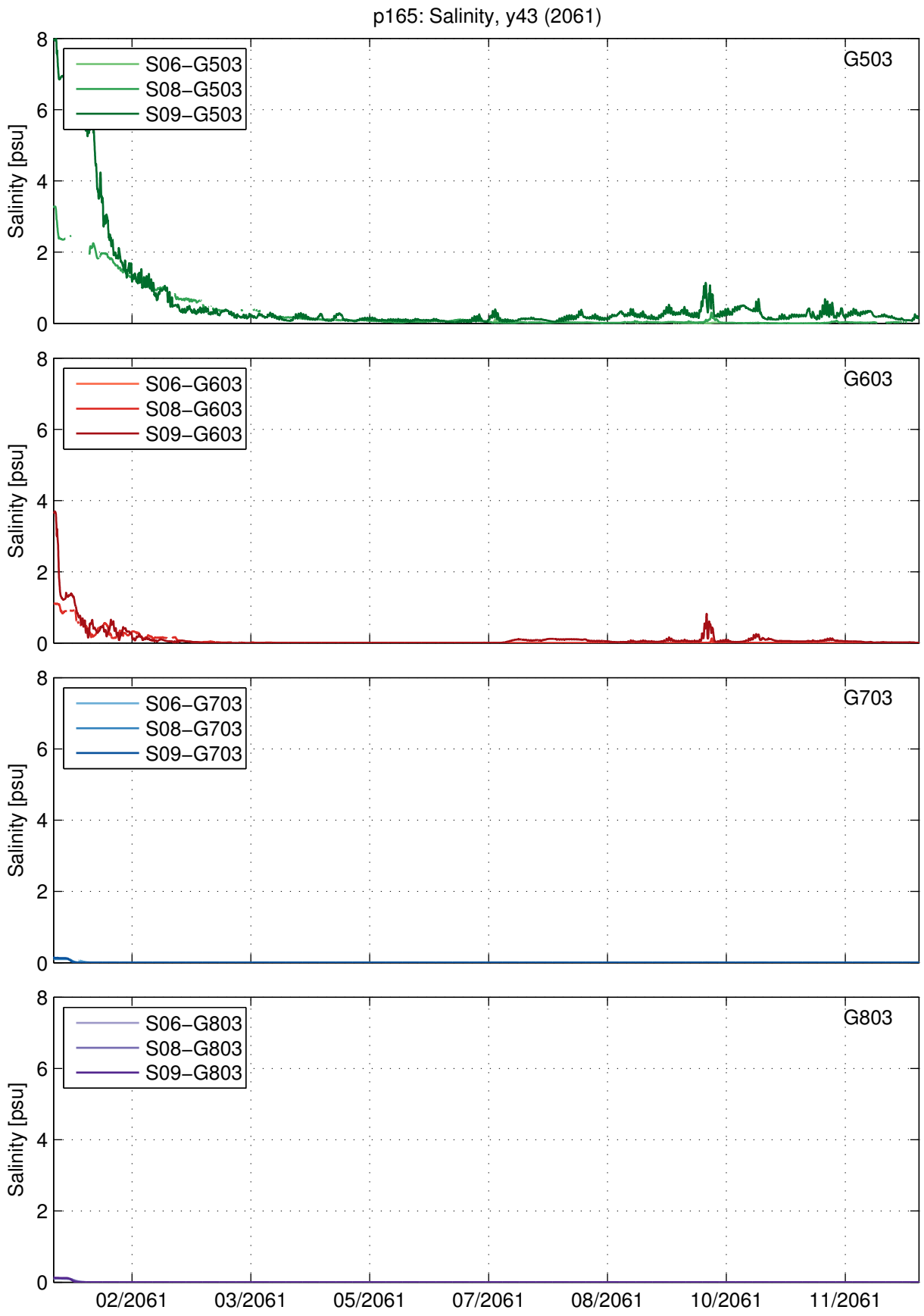

GIWW–JP: Salinity, y43 (2061)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
2
4
6
8
10
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

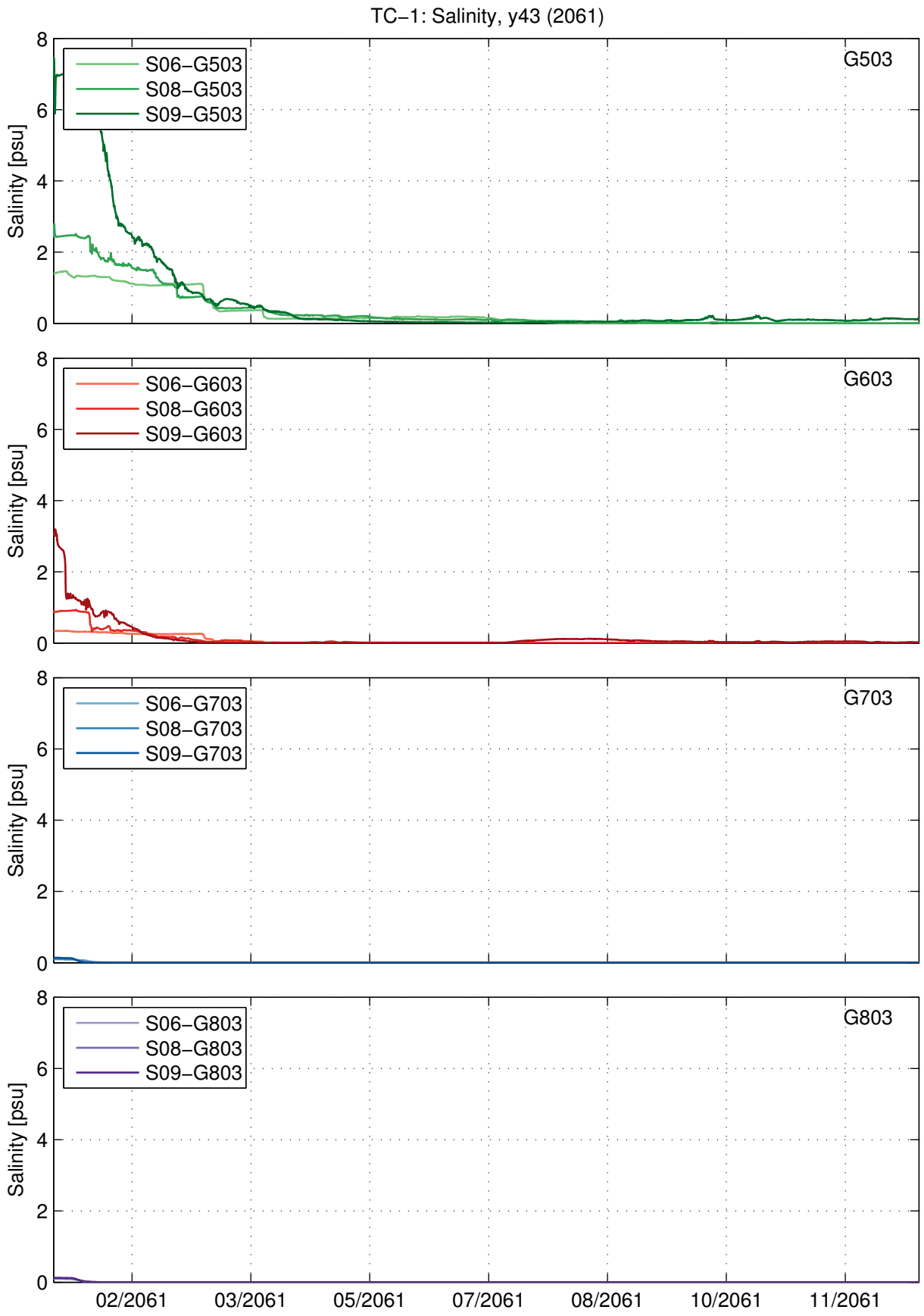

p169: Salinity, y43 (2061)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
2
4
6
8
10
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

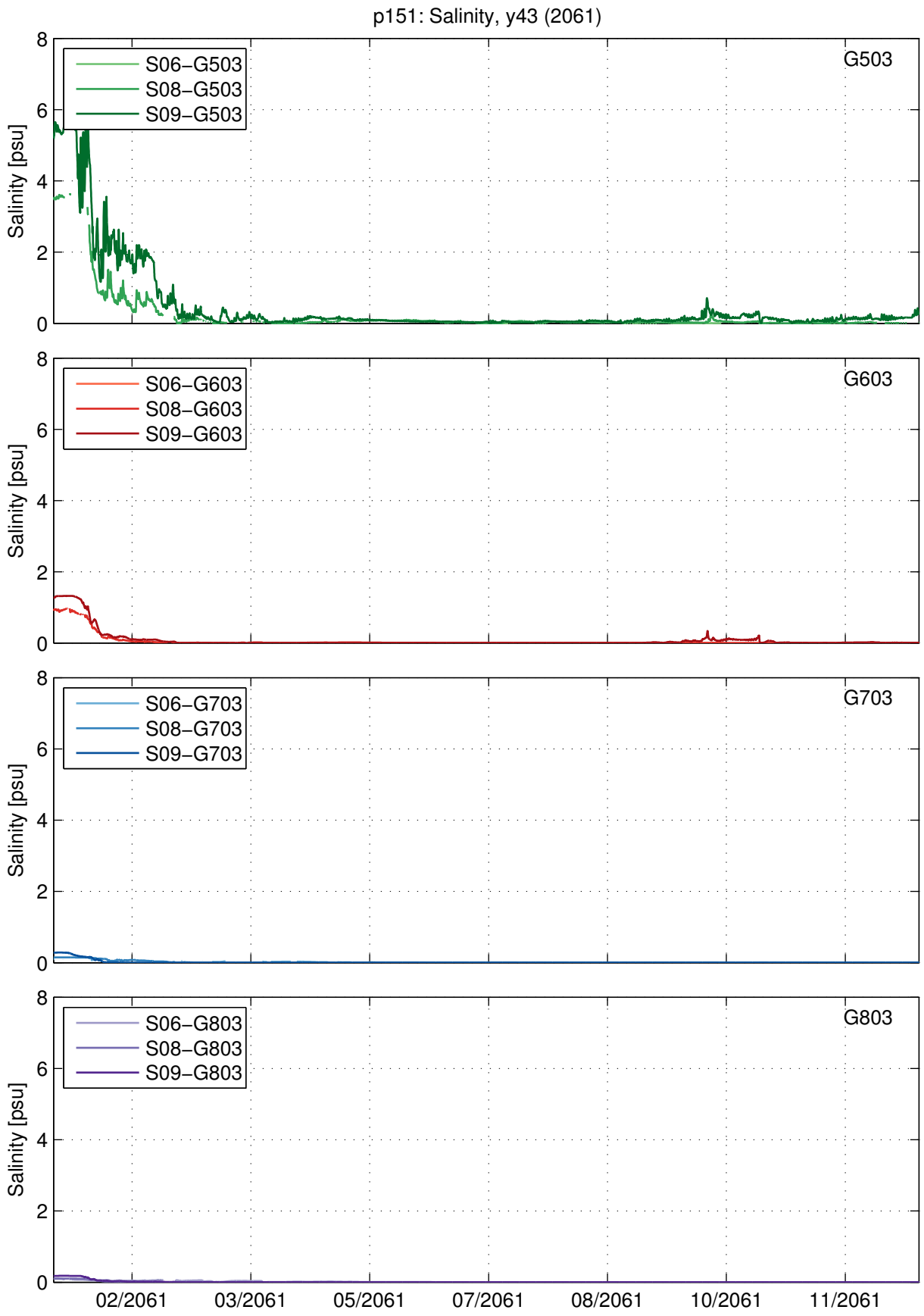

LK–4: Salinity, y43 (2061)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
2
4
6
8
10
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

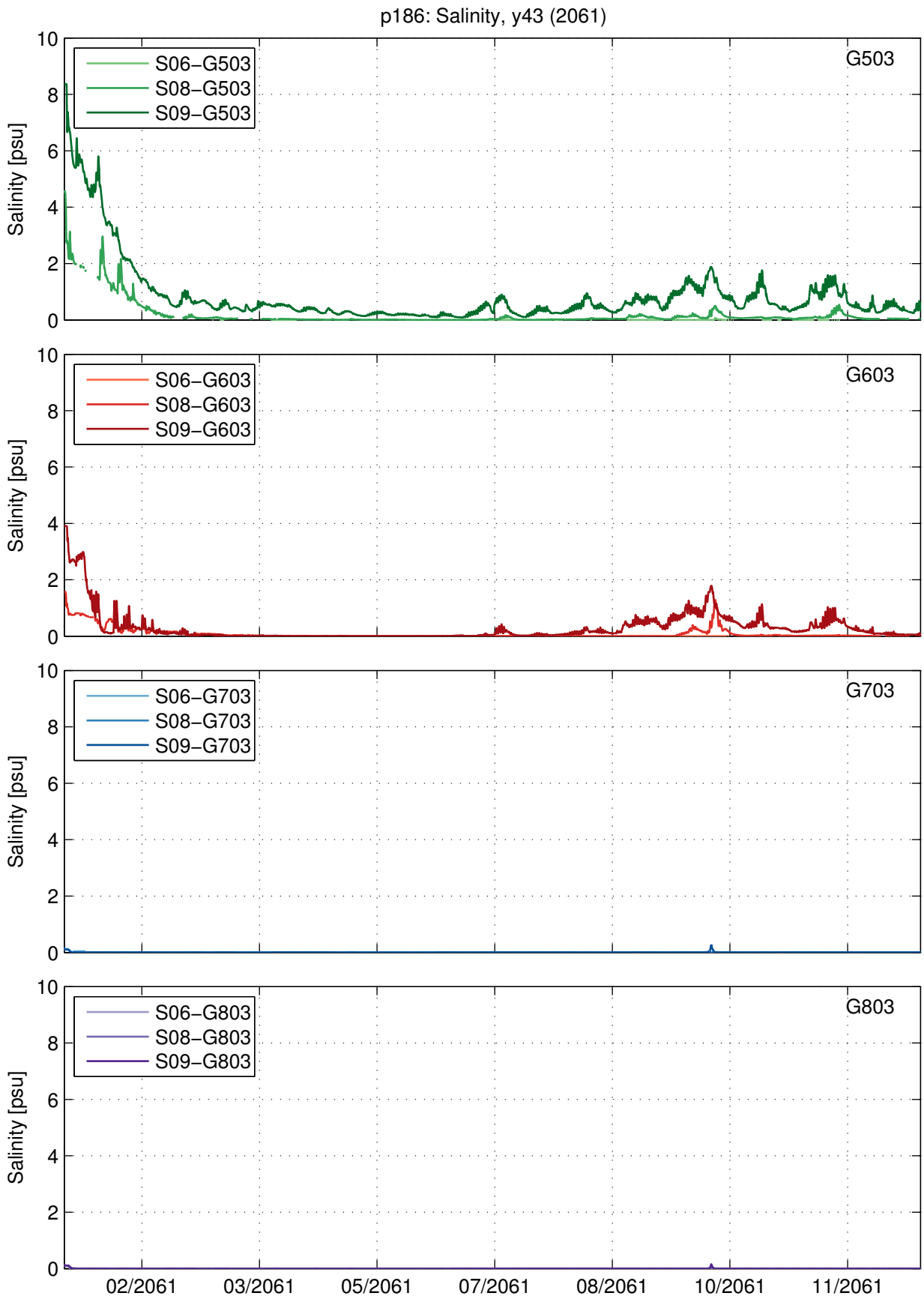

VC−1: Salinity, y43 (2061)
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
S06−G703
S08−G703
S09−G703
G703
S06−G803
S08−G803
S09−G803
G803
Salinity [psu]
0
2
4
6
8
10
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

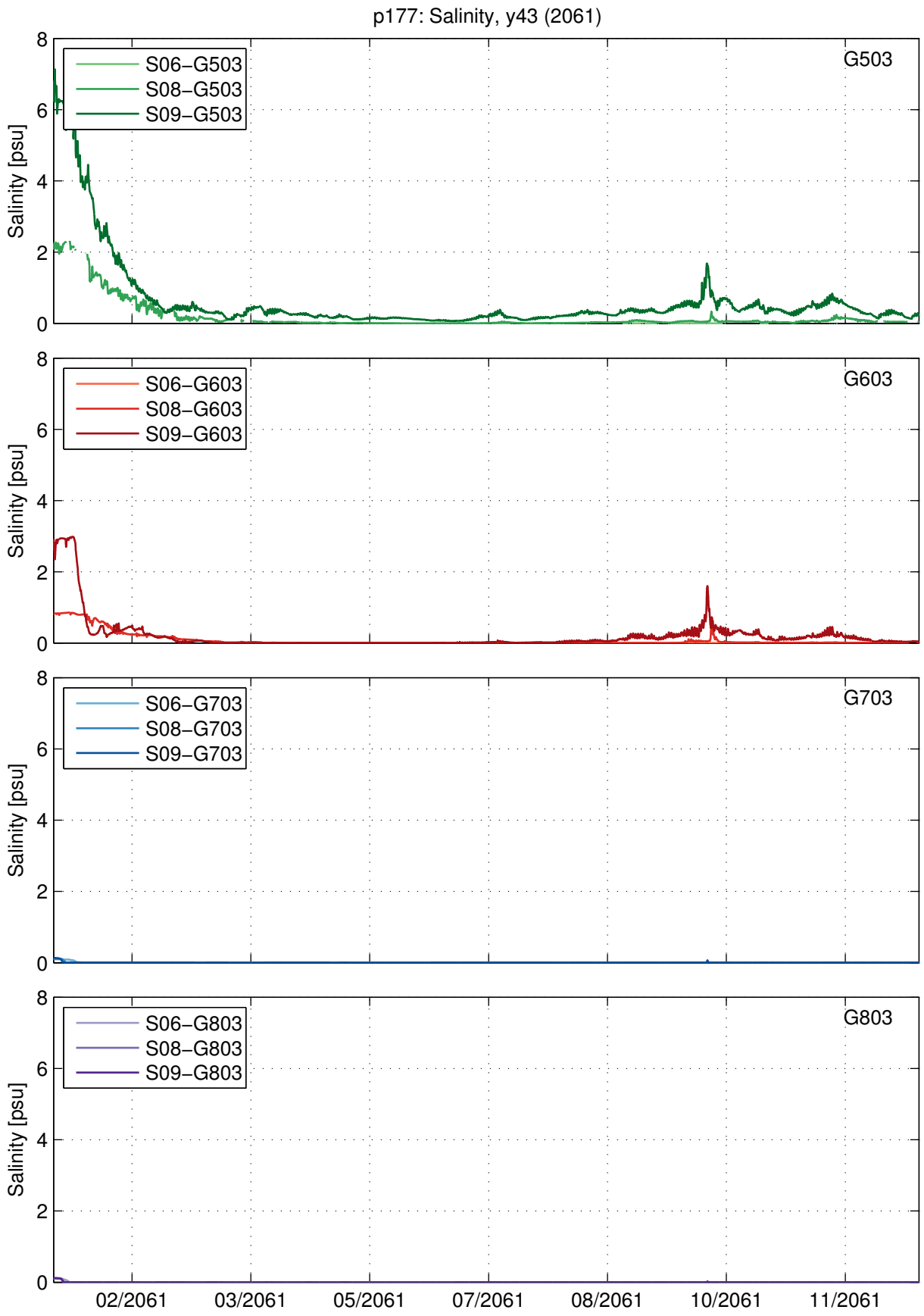

p160: Salinity, y43 (2061)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
2
4
6
8
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

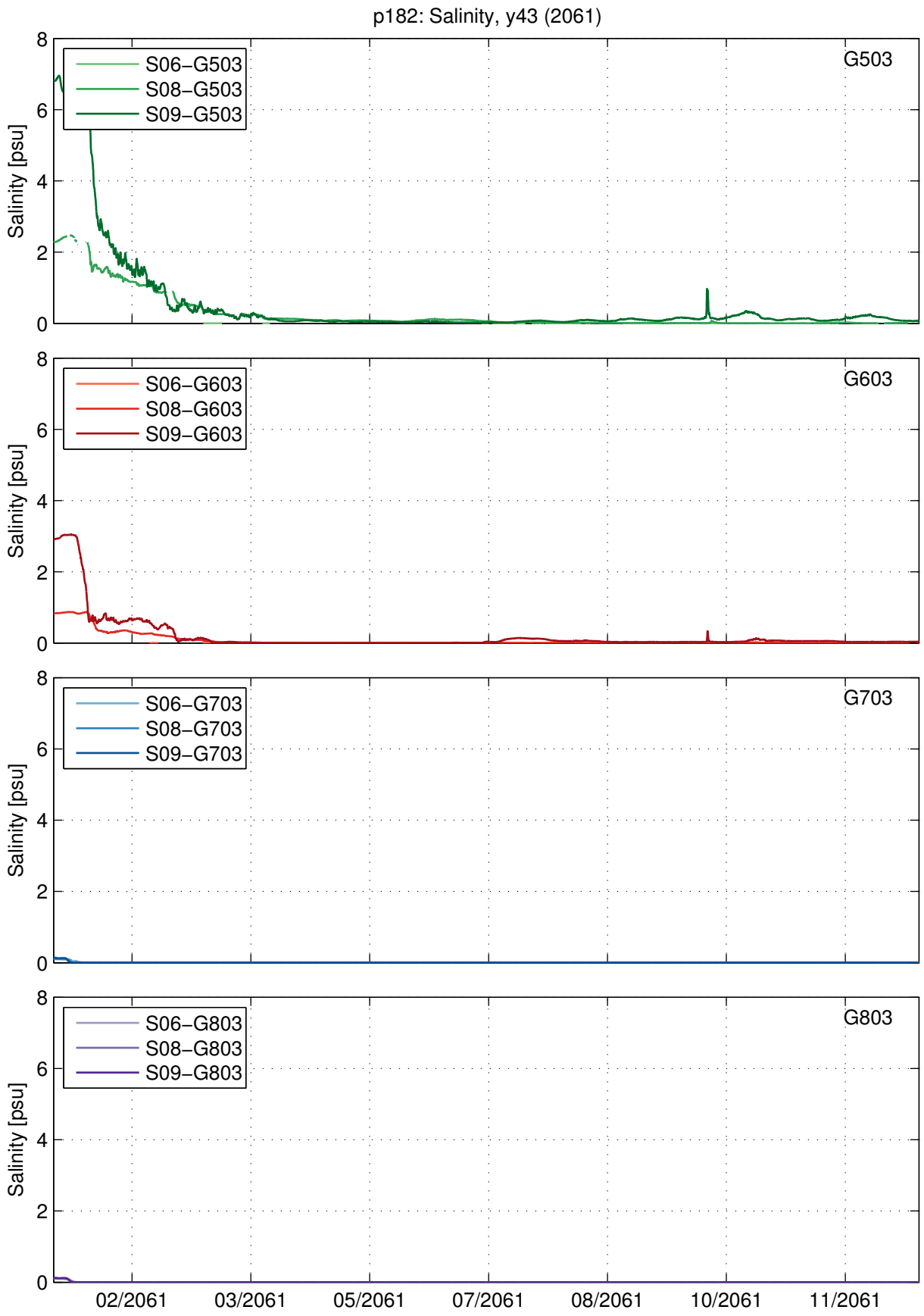

p165: Salinity, y43 (2061)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
2
4
6
8
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

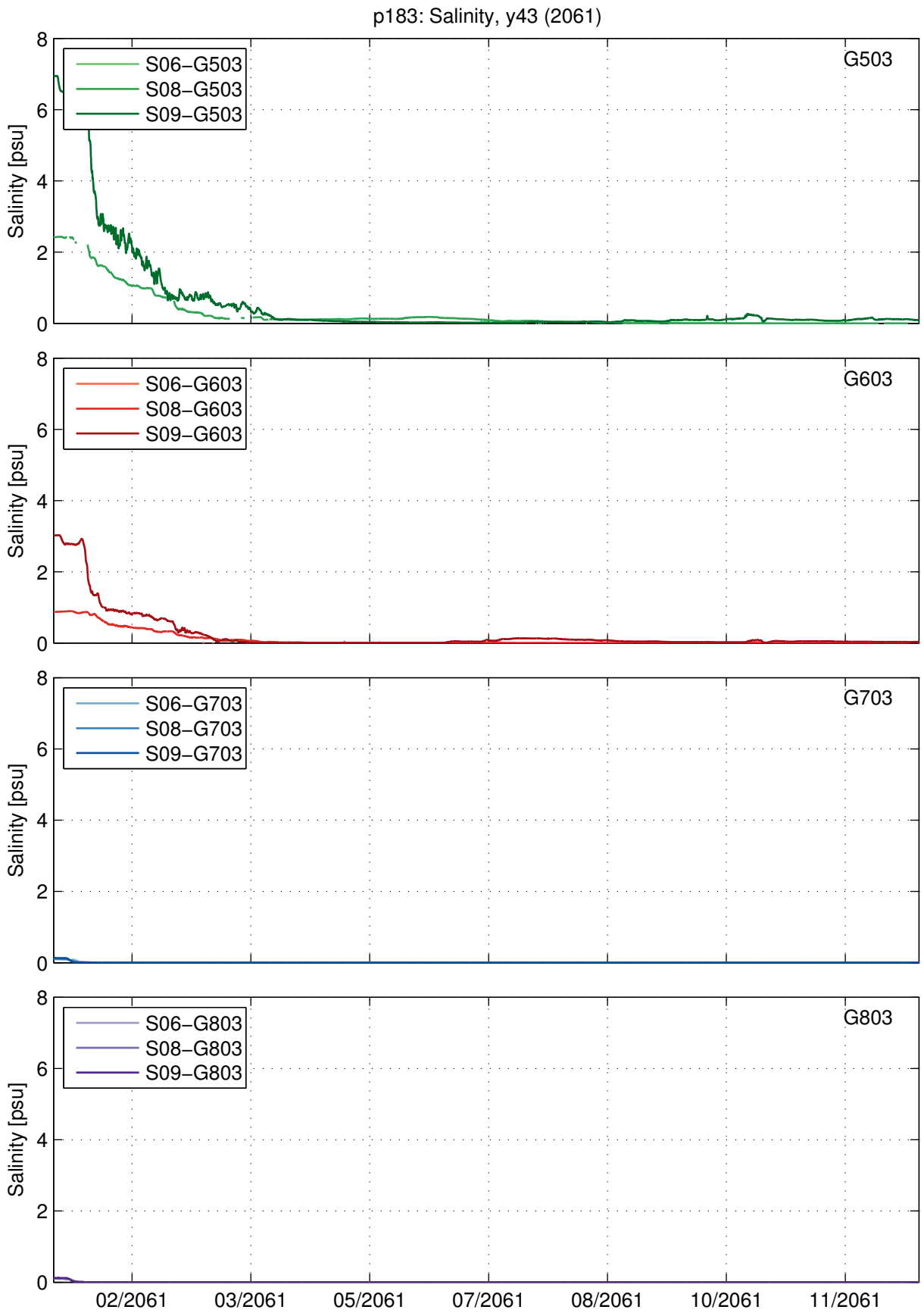

TC−1: Salinity, y43 (2061)
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
S06−G703
S08−G703
S09−G703
G703
S06−G803
S08−G803
S09−G803
G803
Salinity [psu]
0
2
4
6
8
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

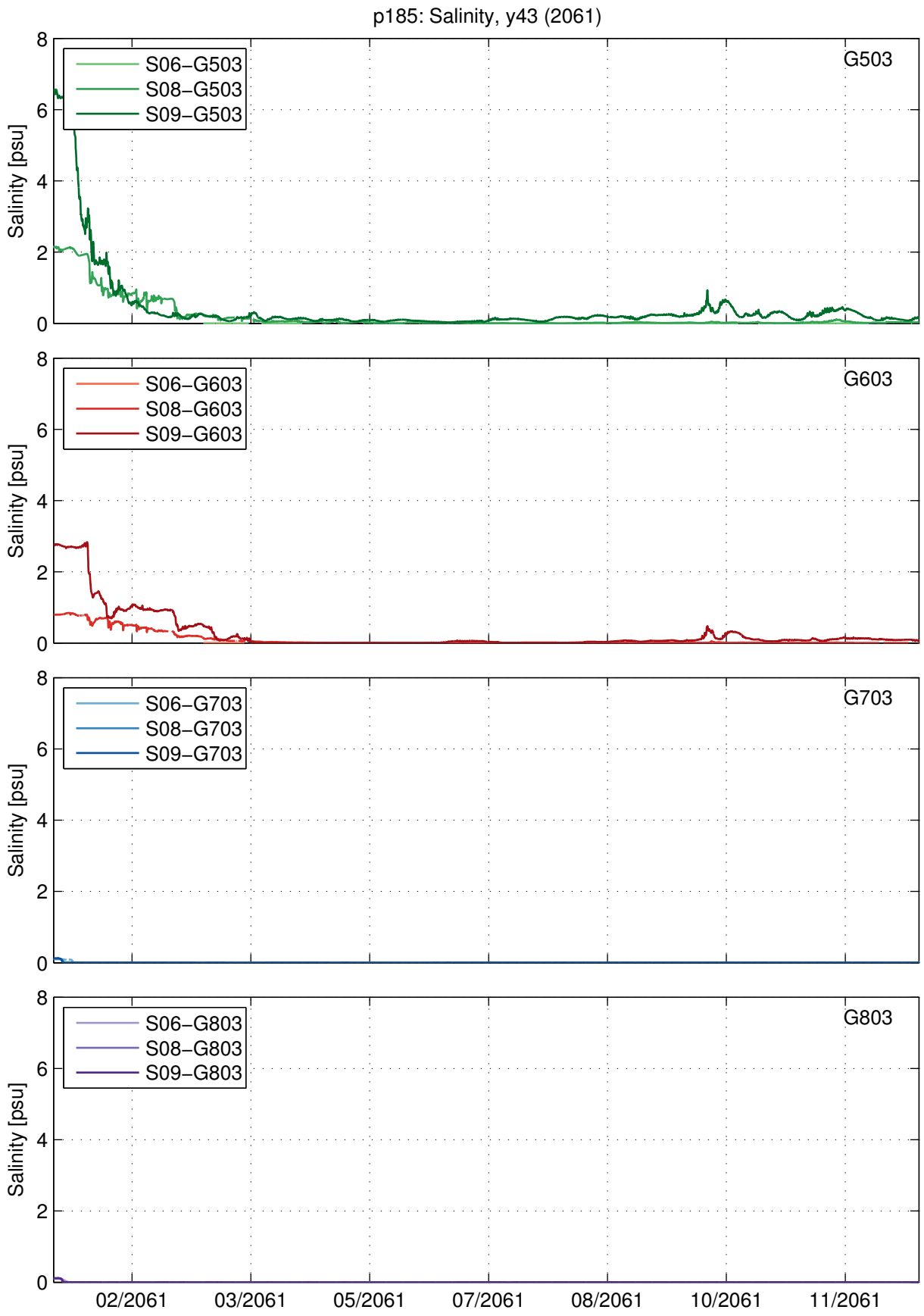

p151: Salinity, y43 (2061)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
2
4
6
8
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

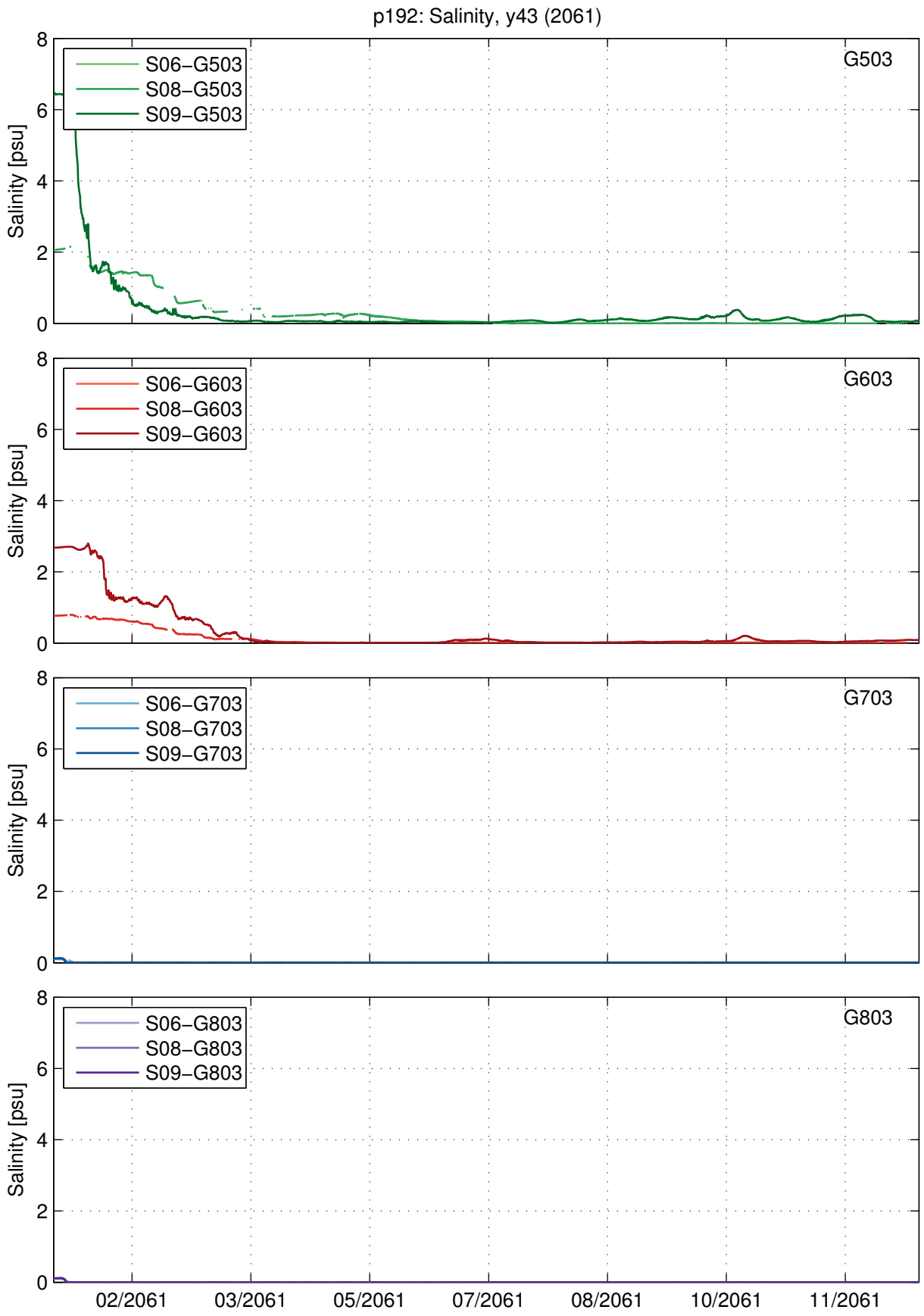

p186: Salinity, y43 (2061)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
2
4
6
8
10
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

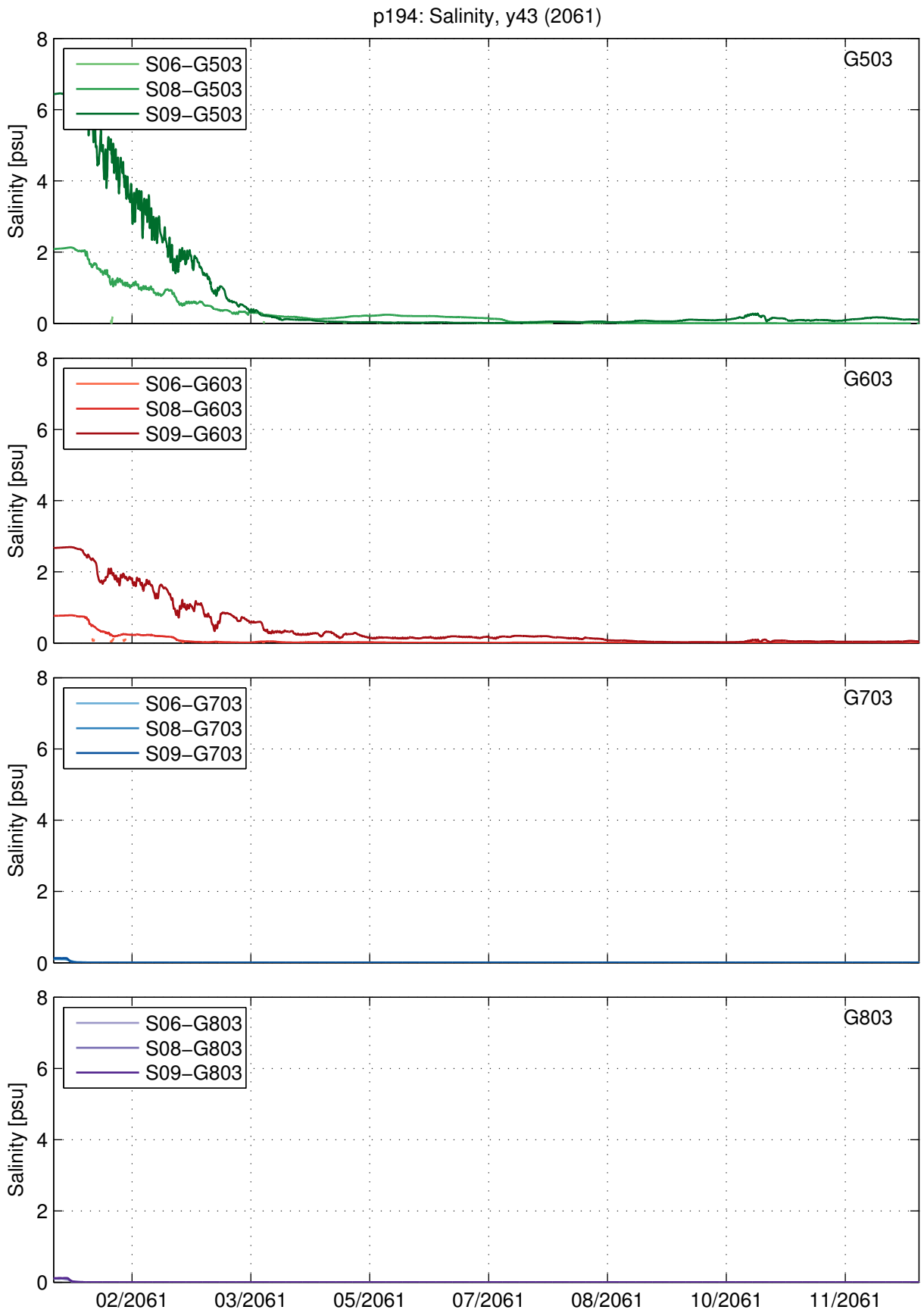

p177: Salinity, y43 (2061)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
2
4
6
8
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

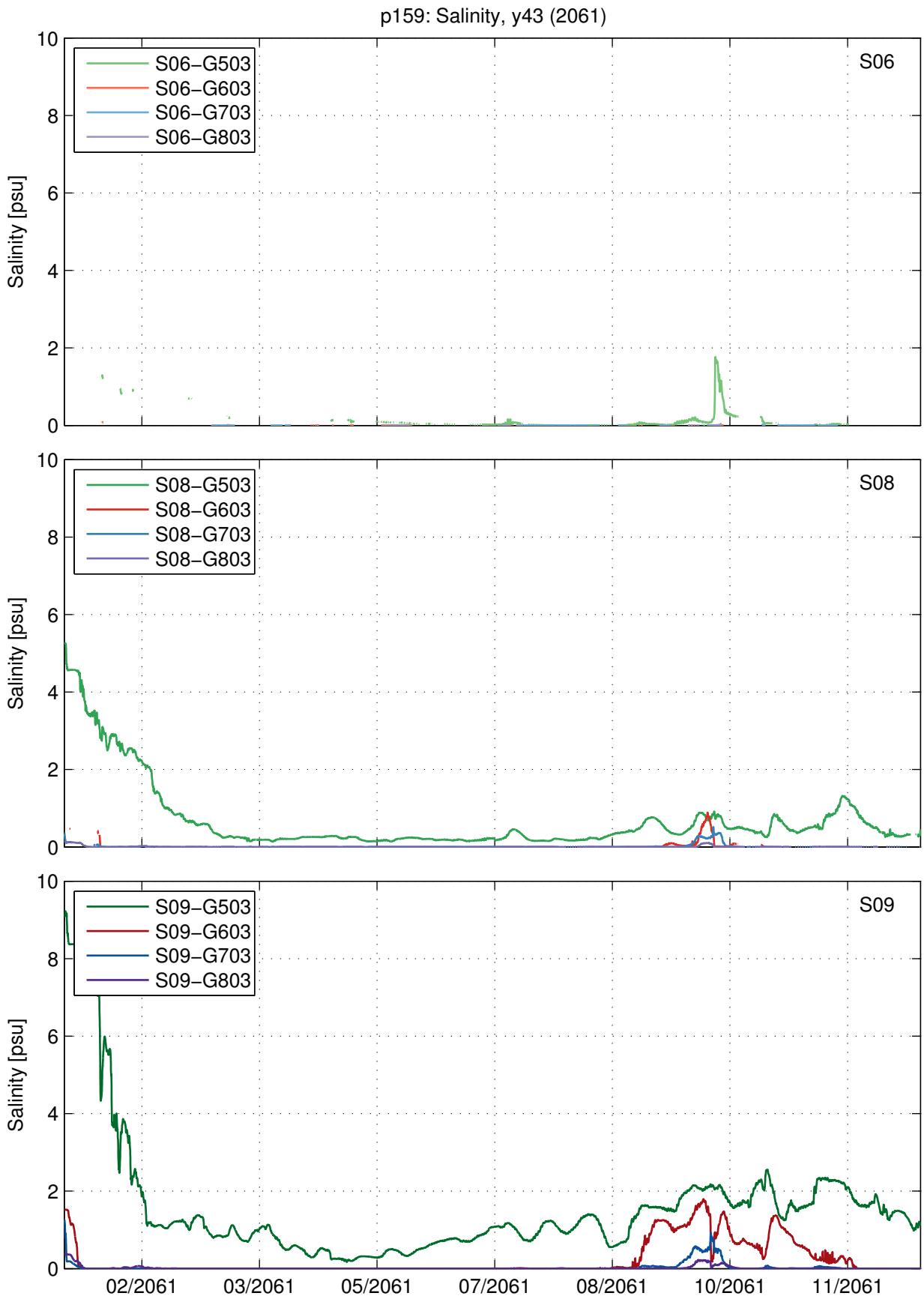

p182: Salinity, y43 (2061)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
2
4
6
8
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

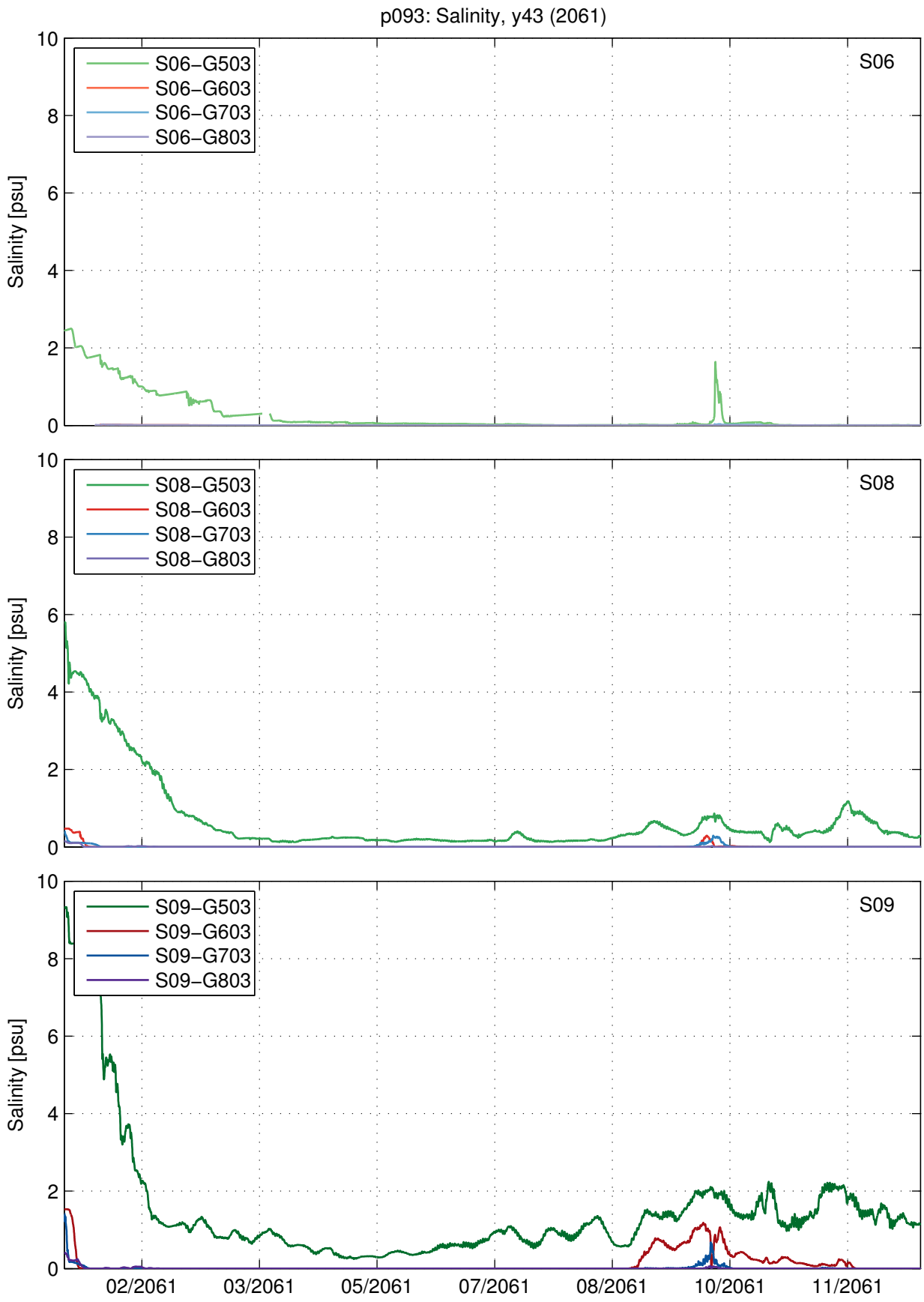

p183: Salinity, y43 (2061)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
2
4
6
8
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

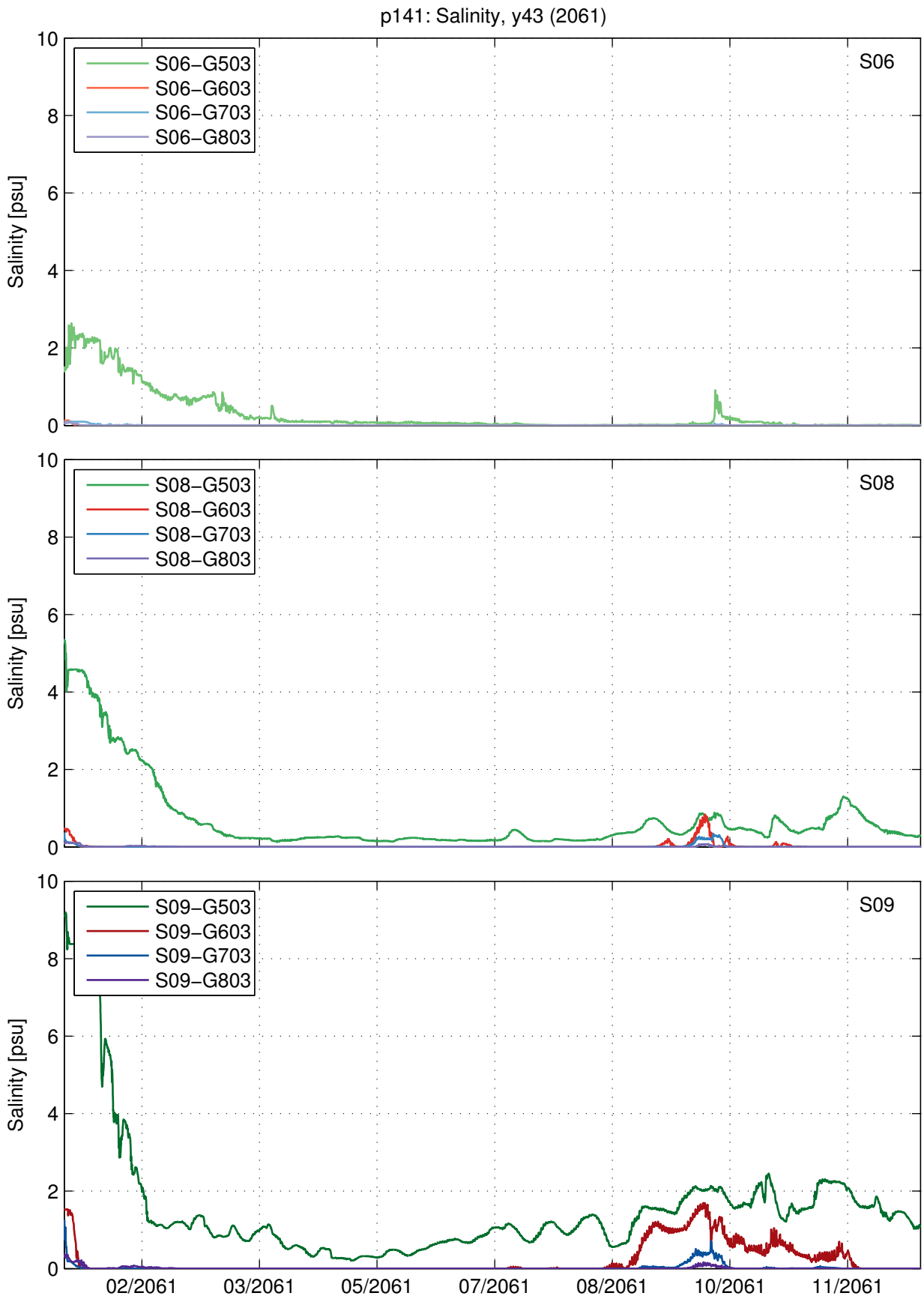

p185: Salinity, y43 (2061)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
2
4
6
8
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

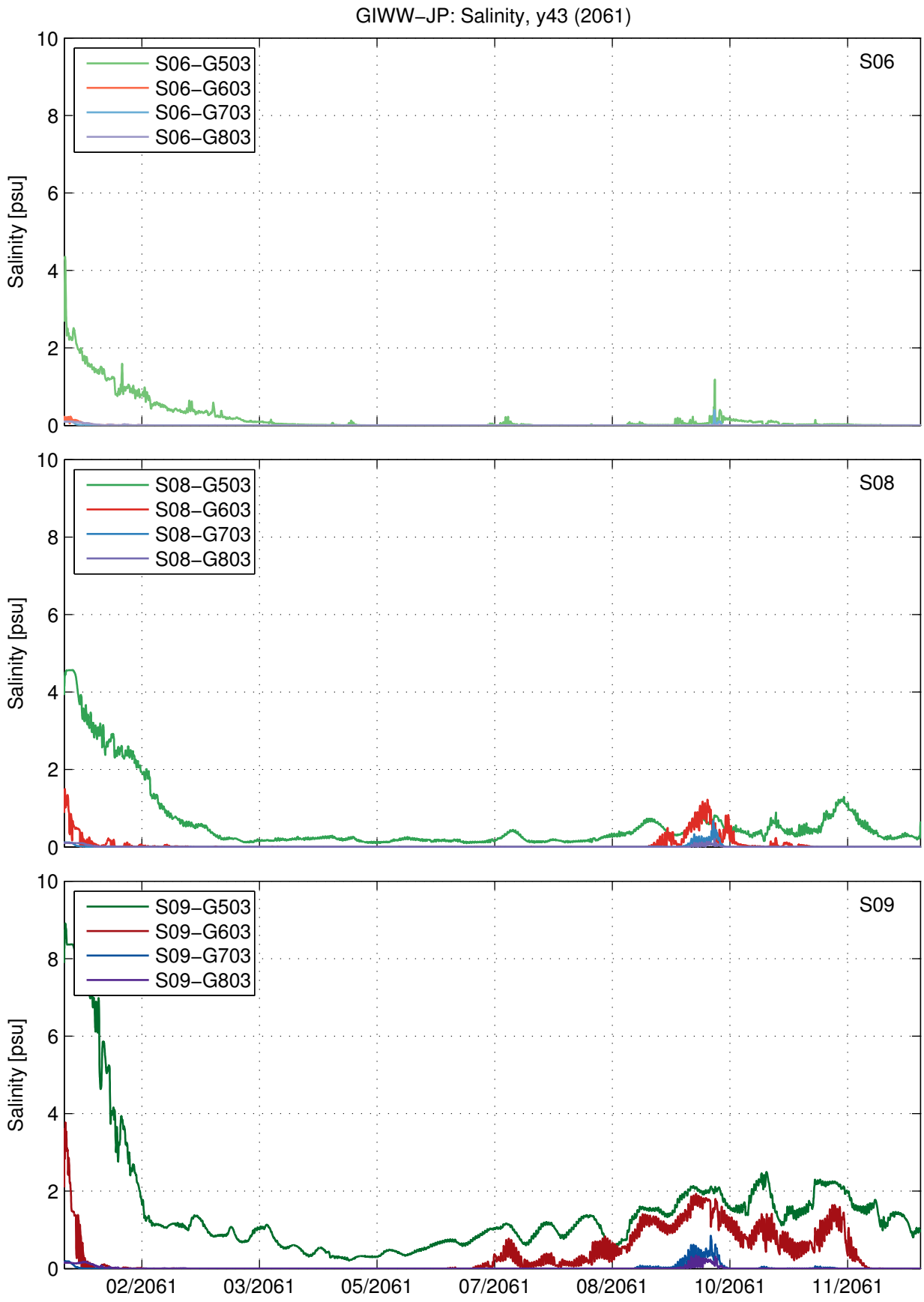

p192: Salinity, y43 (2061)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
2
4
6
8
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

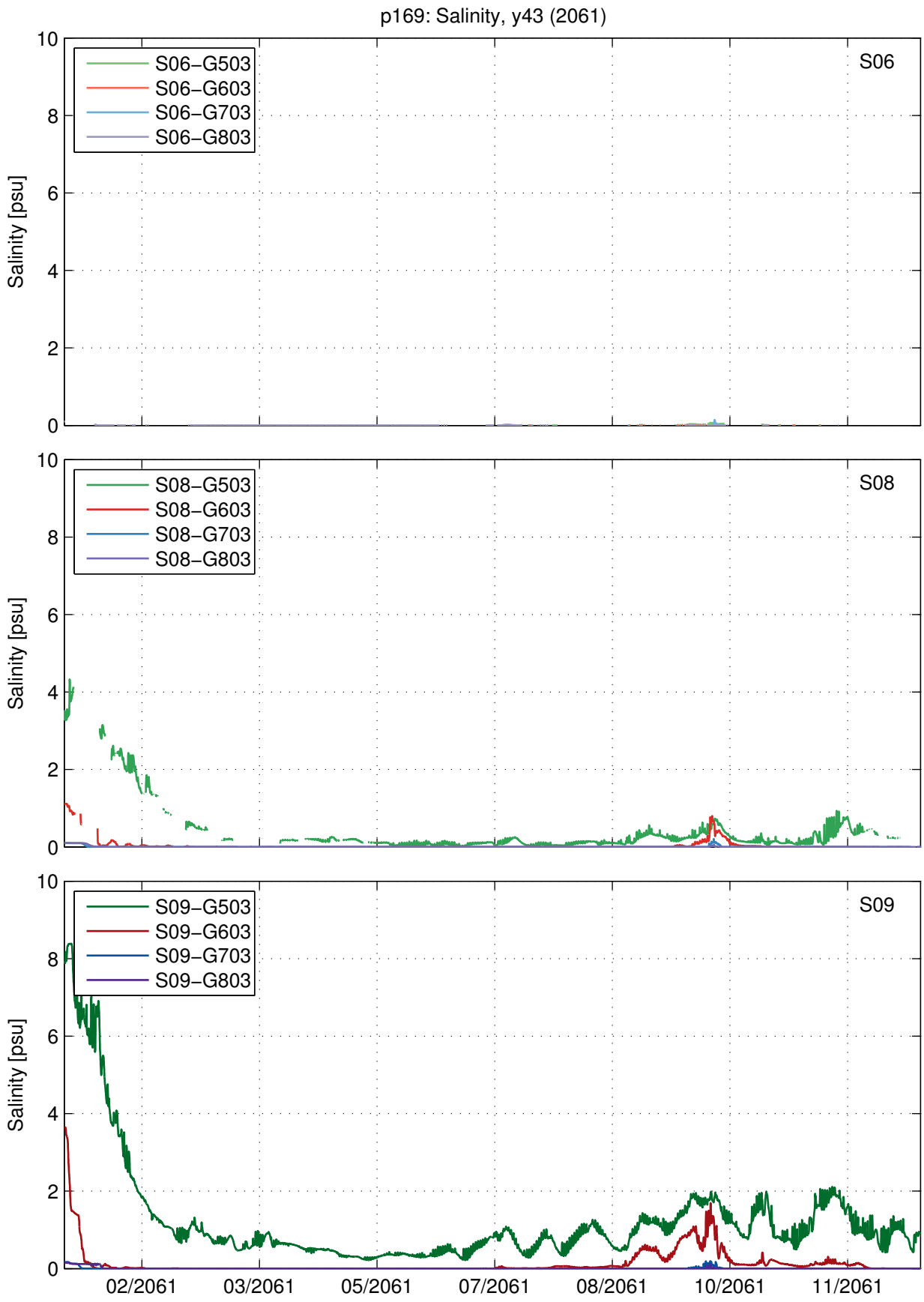

p194: Salinity, y43 (2061)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
2
4
6
8
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

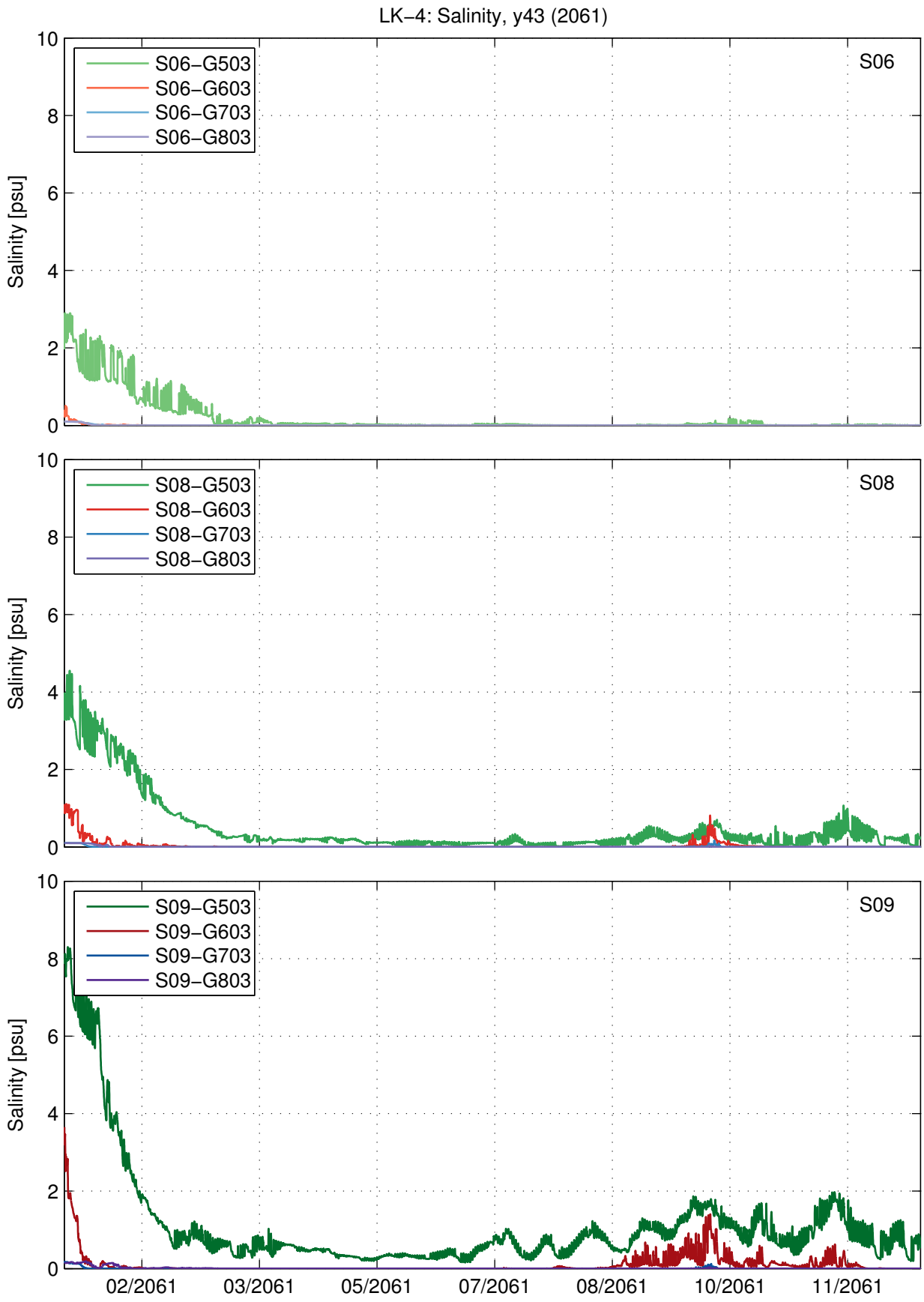

p159: Salinity, y43 (2061)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Salinity [psu]
0
2
4
6
8
10
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

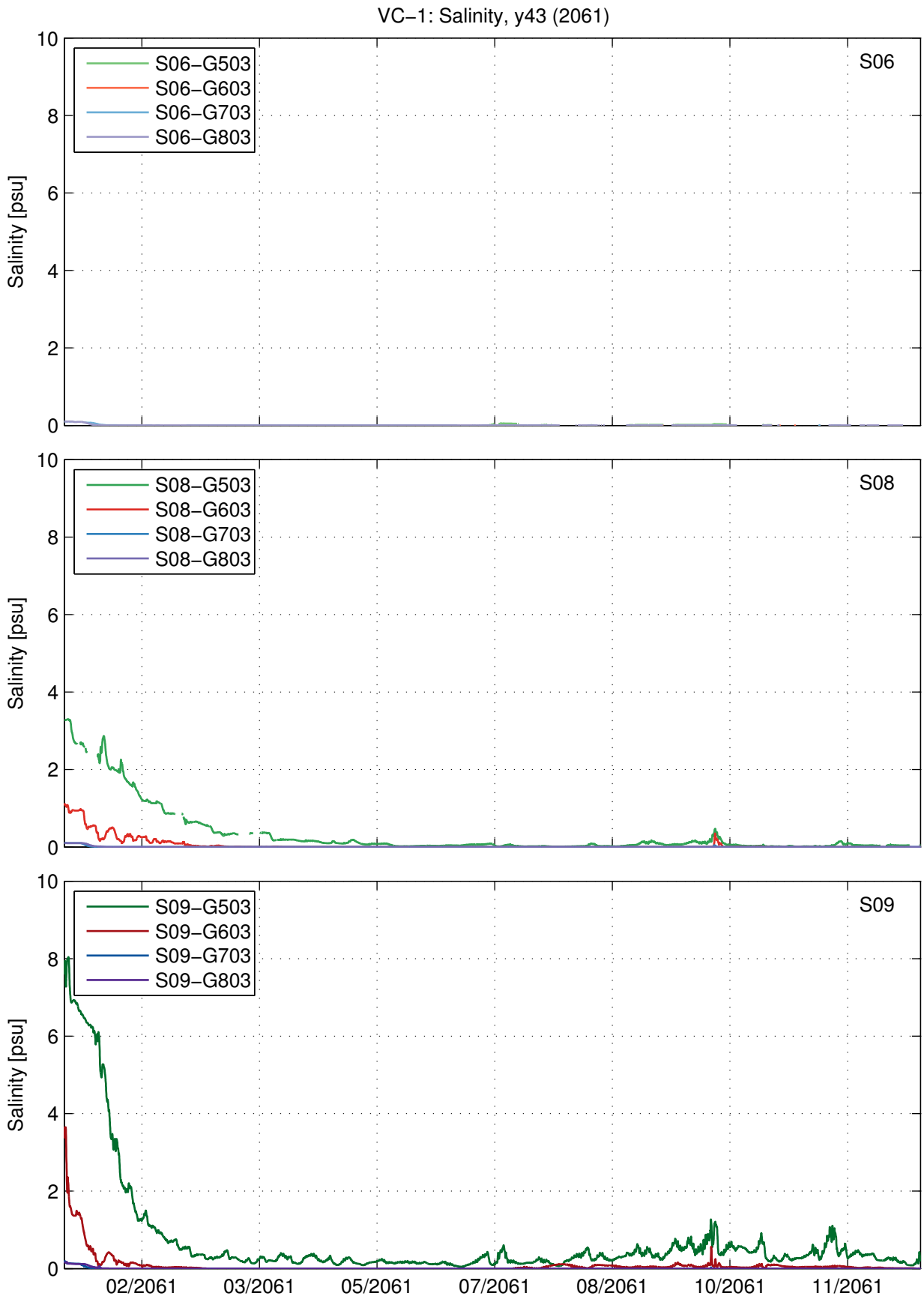

p093: Salinity, y43 (2061)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Salinity [psu]
0
2
4
6
8
10
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

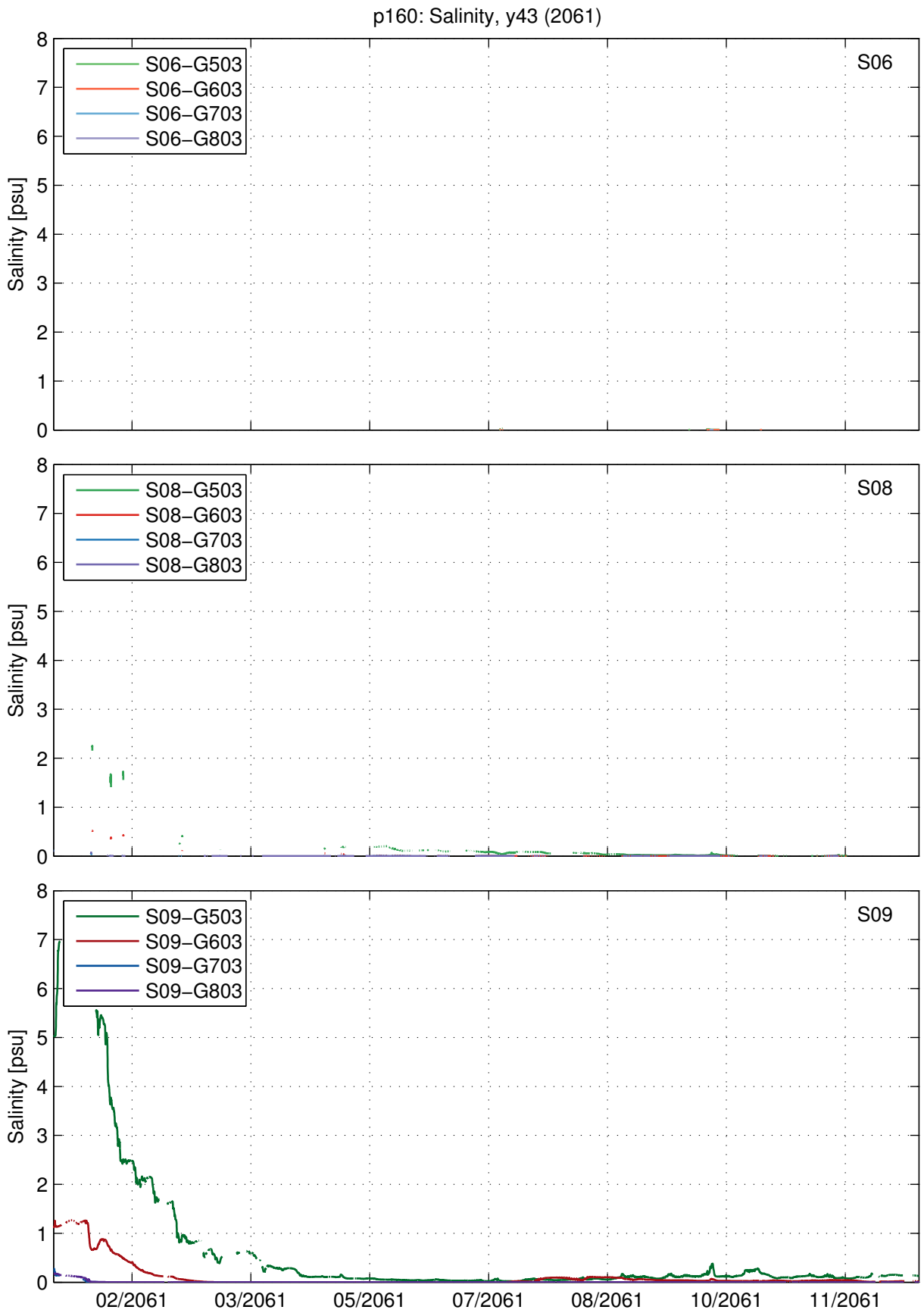

p141: Salinity, y43 (2061)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Salinity [psu]
0
2
4
6
8
10
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

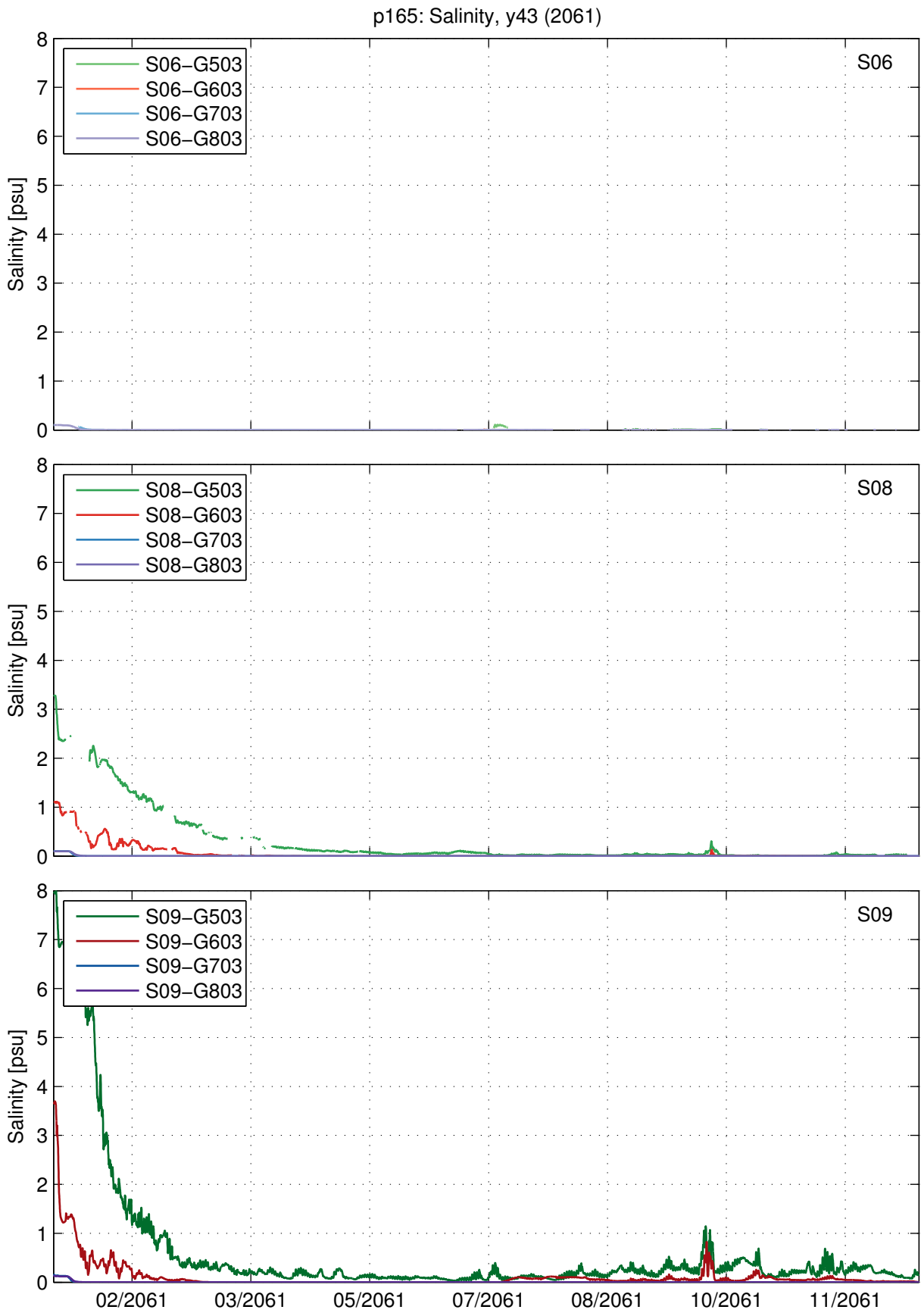

GIWW–JP: Salinity, y43 (2061)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Salinity [psu]
0
2
4
6
8
10
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

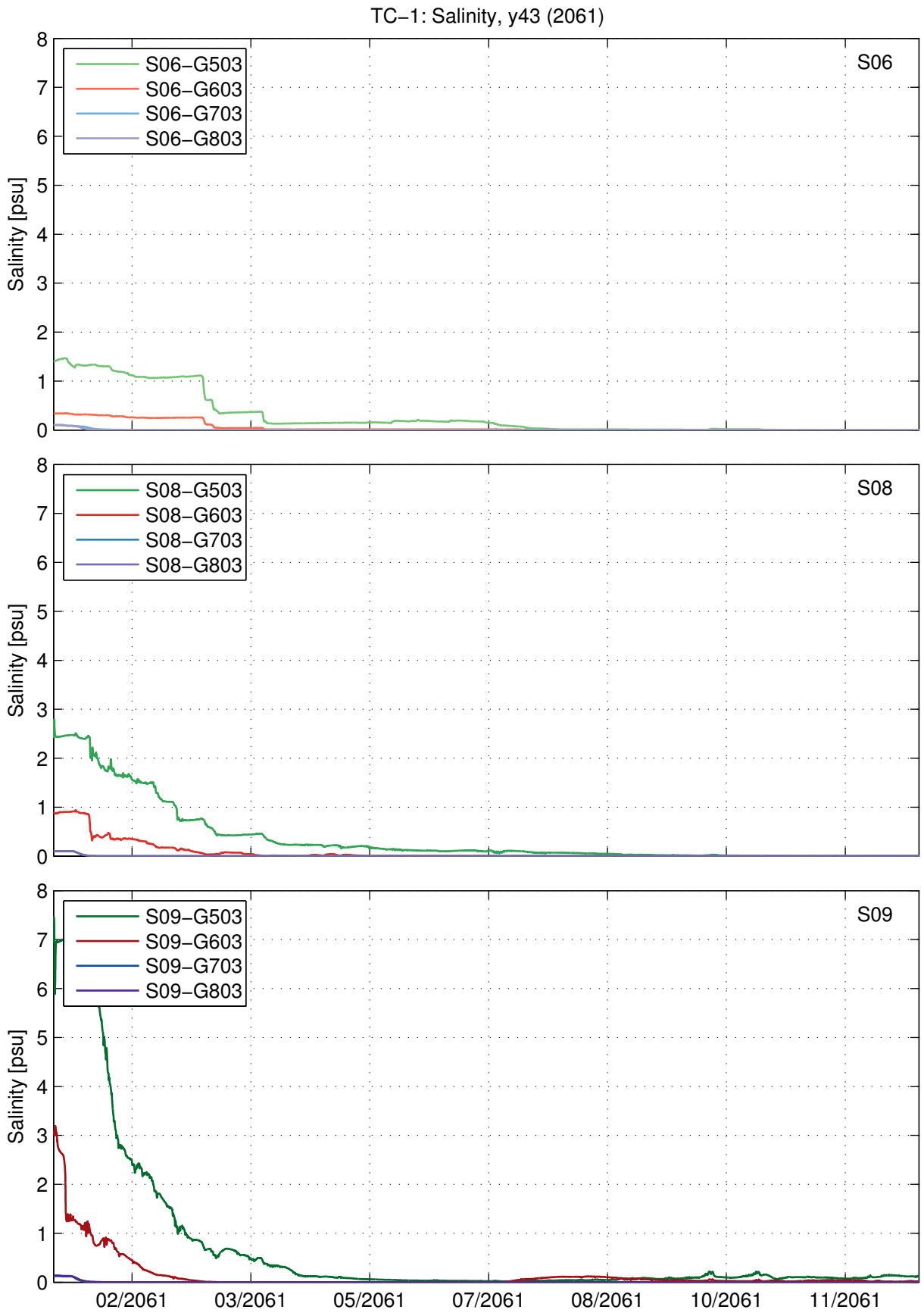

p169: Salinity, y43 (2061)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Salinity [psu]
0
2
4
6
8
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02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

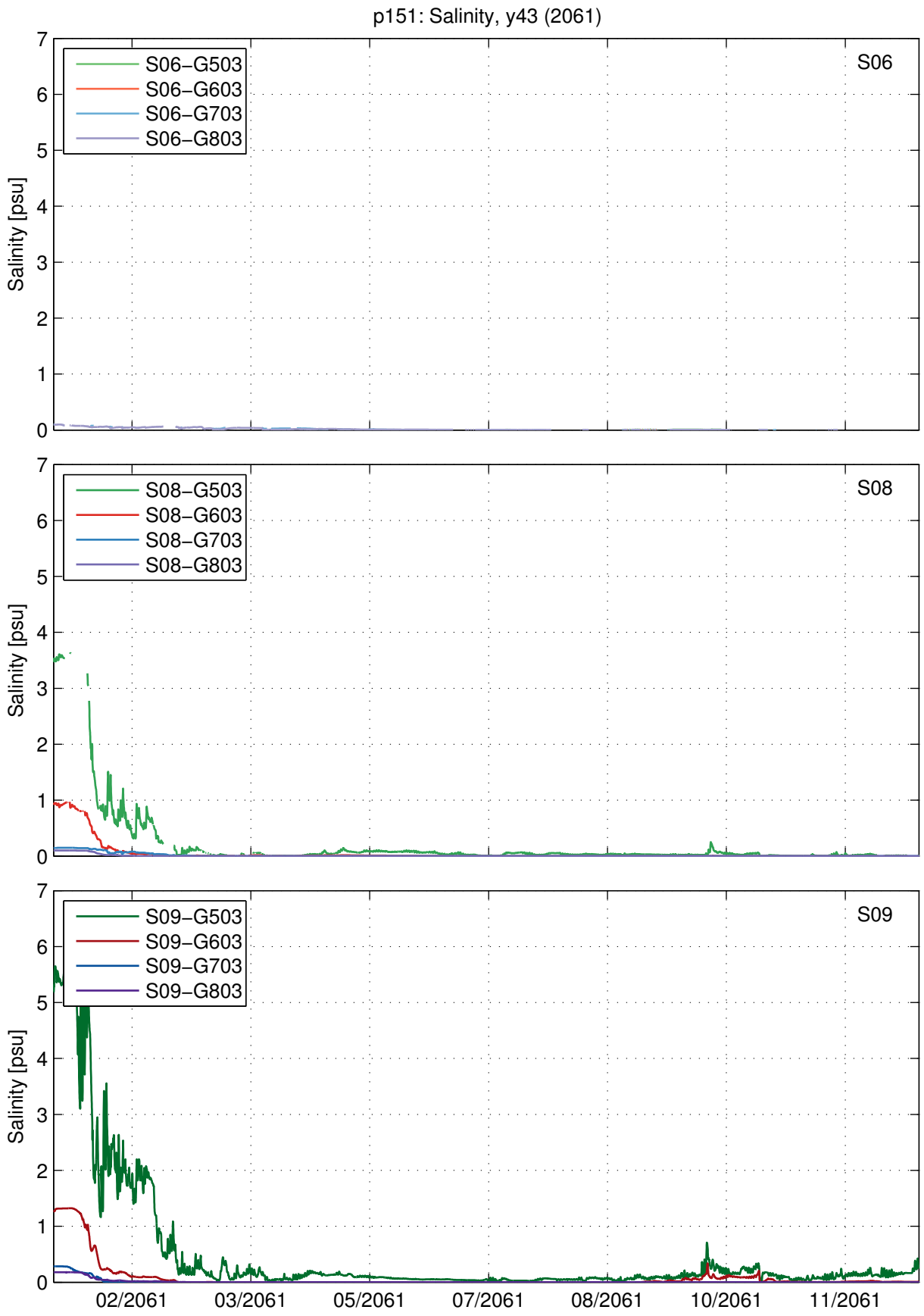

LK−4: Salinity, y43 (2061)
S06−G503
S06−G603
S06−G703
S06−G803
S06
S08−G503
S08−G603
S08−G703
S08−G803
S08
S09−G503
S09−G603
S09−G703
S09−G803
S09
Salinity [psu]
0
2
4
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8
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02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

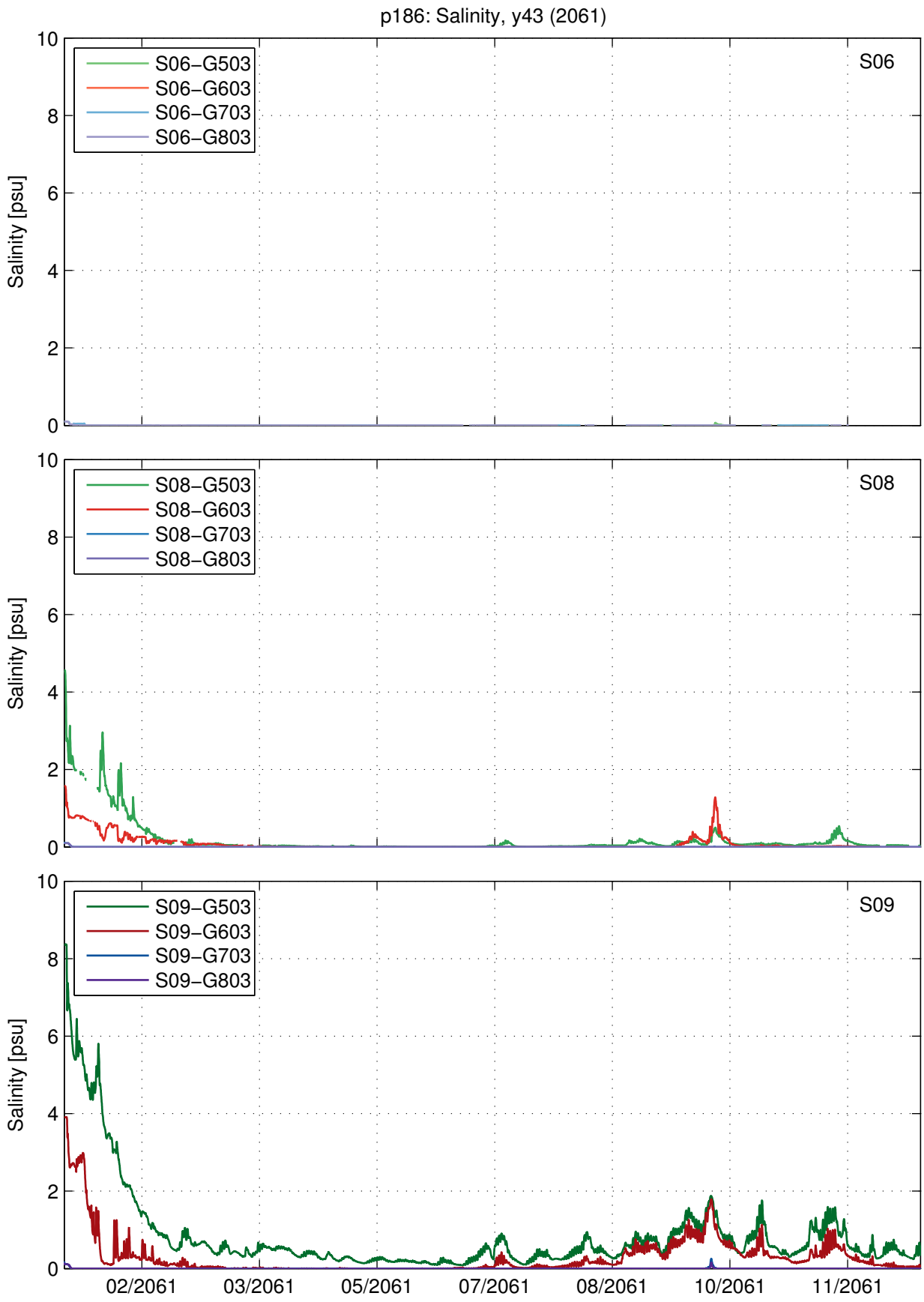

VC−1: Salinity, y43 (2061)
S06−G503
S06−G603
S06−G703
S06−G803
S06
S08−G503
S08−G603
S08−G703
S08−G803
S08
S09−G503
S09−G603
S09−G703
S09−G803
S09
Salinity [psu]
0
2
4
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8
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02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

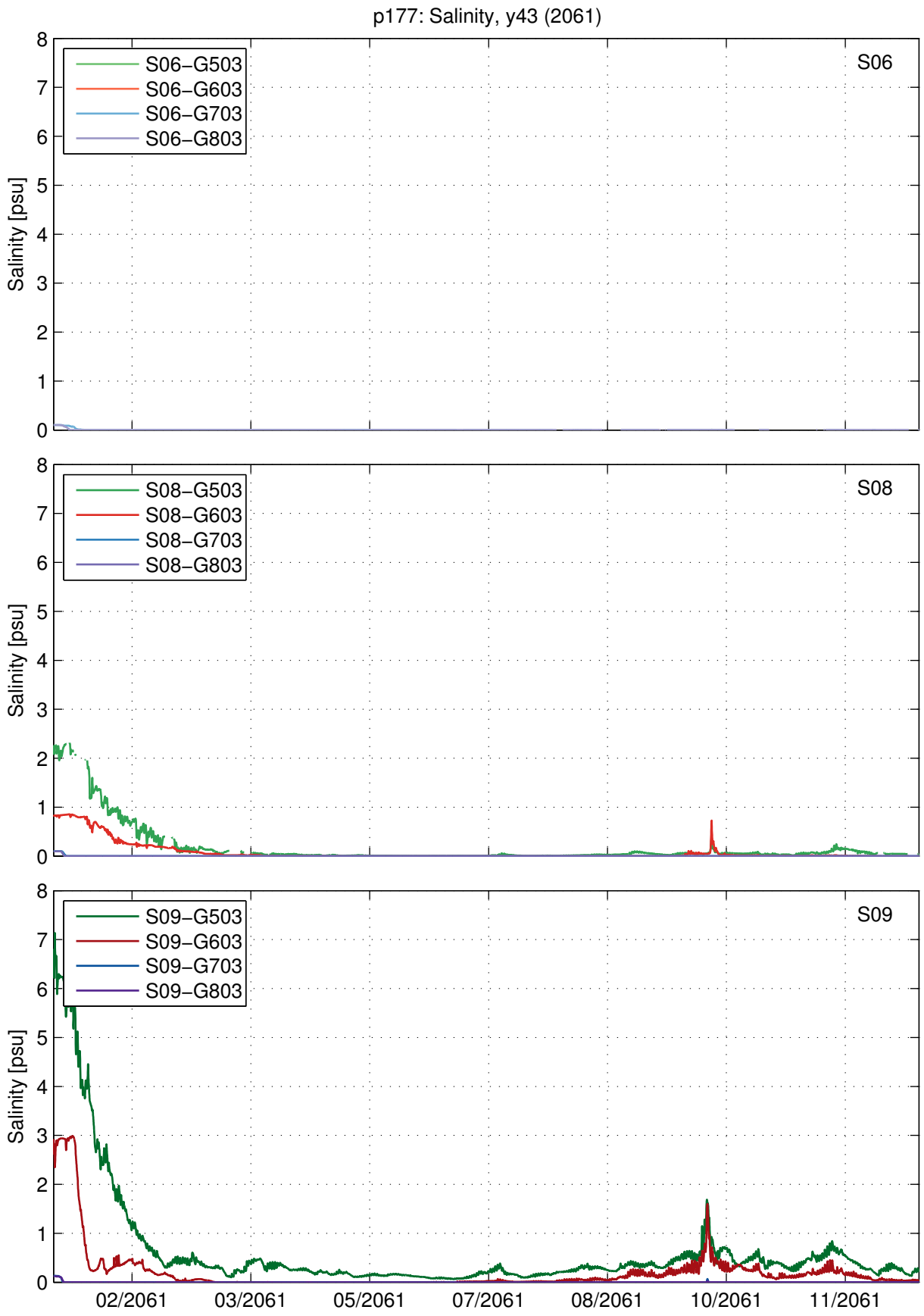

p160: Salinity, y43 (2061)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Salinity [psu]
0
1
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02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

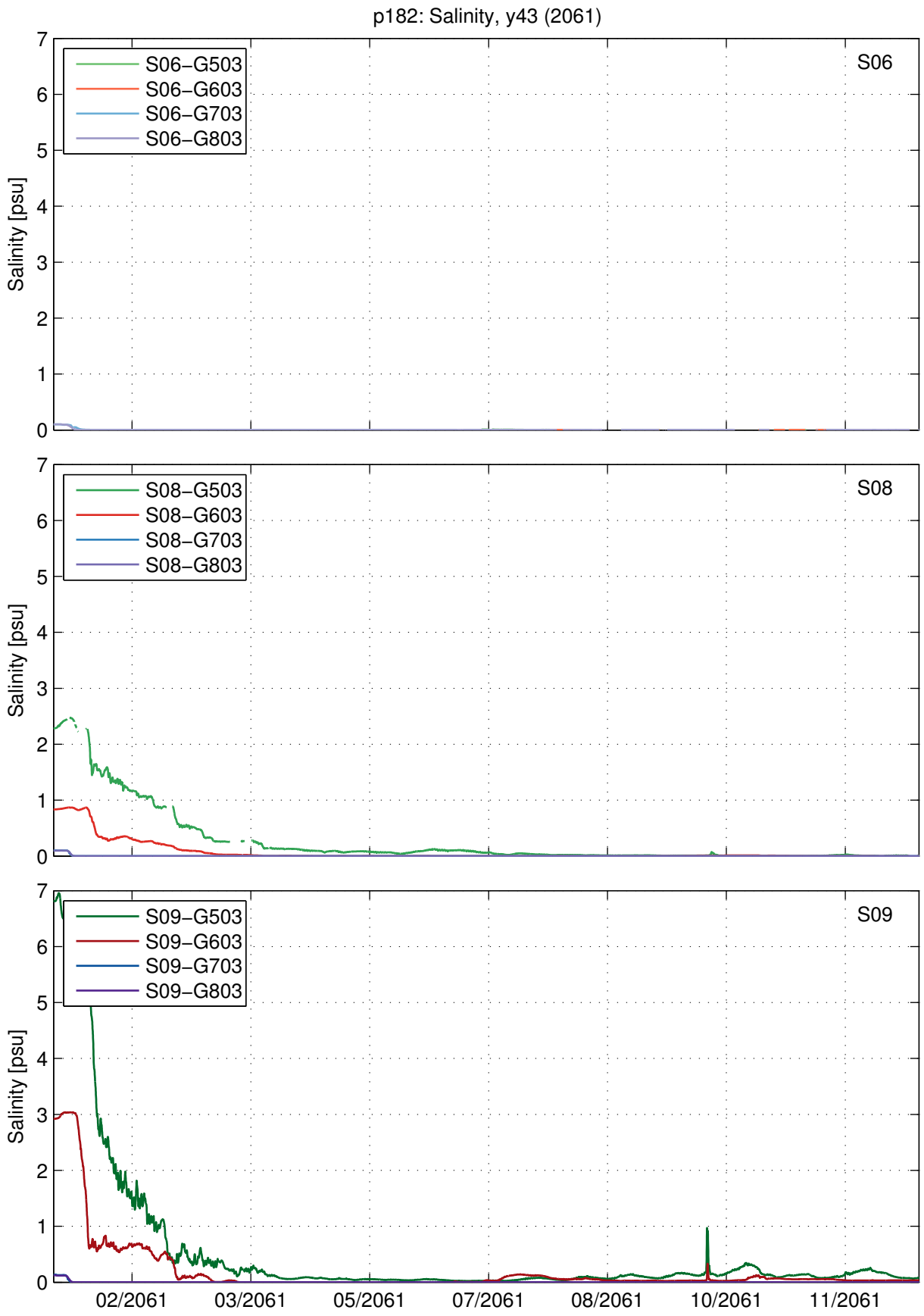

p165: Salinity, y43 (2061)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Salinity [psu]
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02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

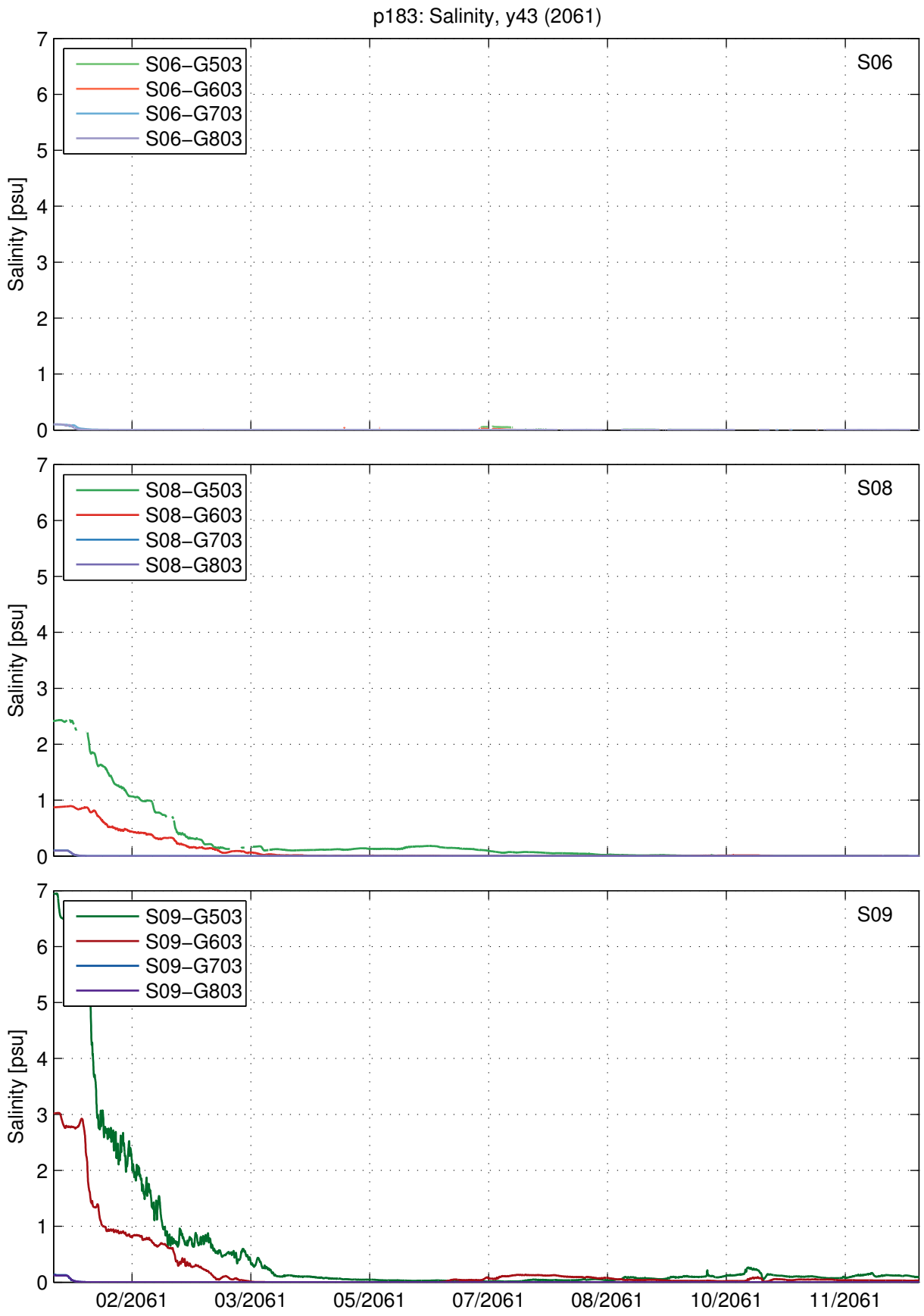

TC−1: Salinity, y43 (2061)
S06−G503
S06−G603
S06−G703
S06−G803
S06
S08−G503
S08−G603
S08−G703
S08−G803
S08
S09−G503
S09−G603
S09−G703
S09−G803
S09
Salinity [psu]
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1
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02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

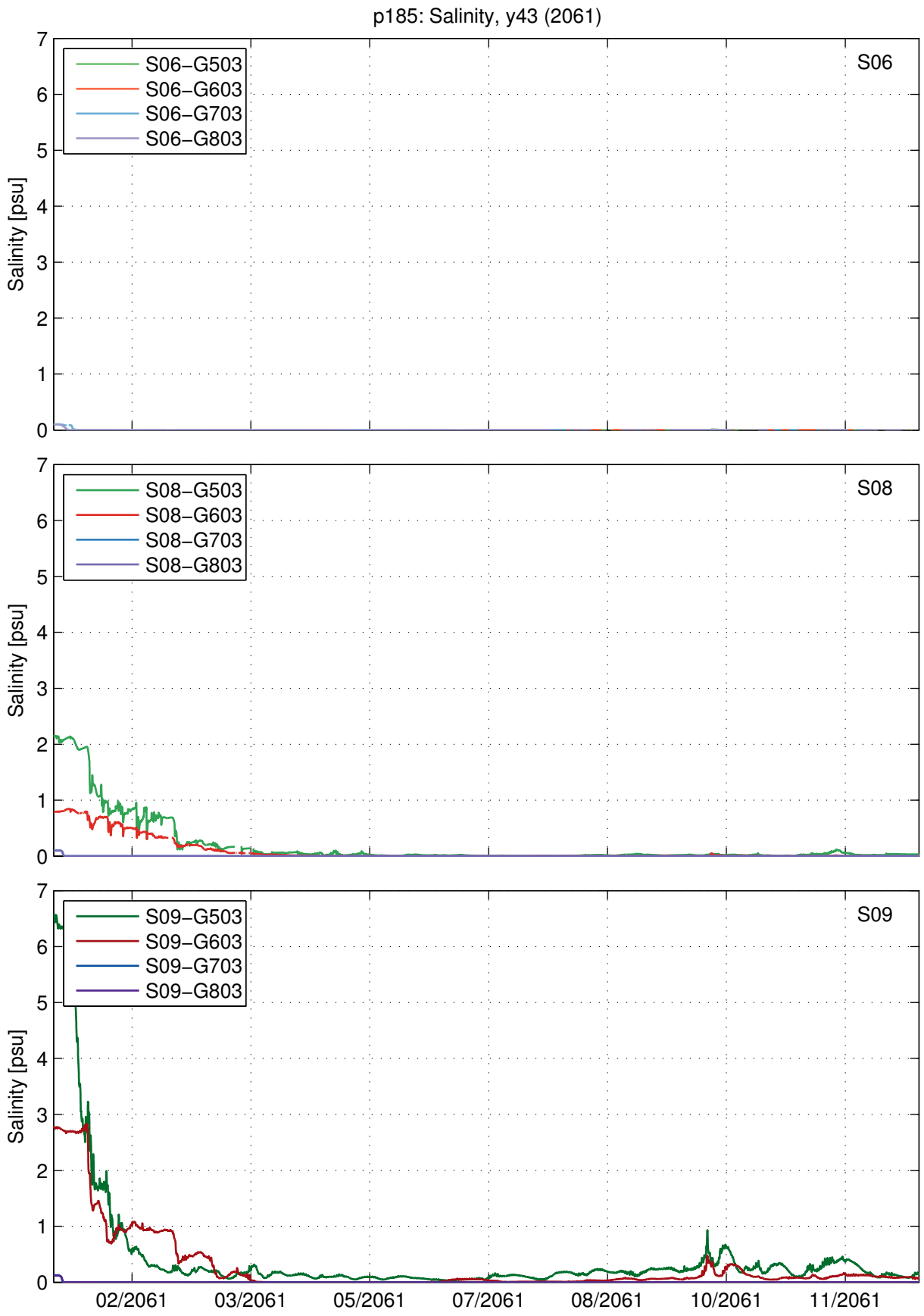

p151: Salinity, y43 (2061)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Salinity [psu]
0
1
2
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02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

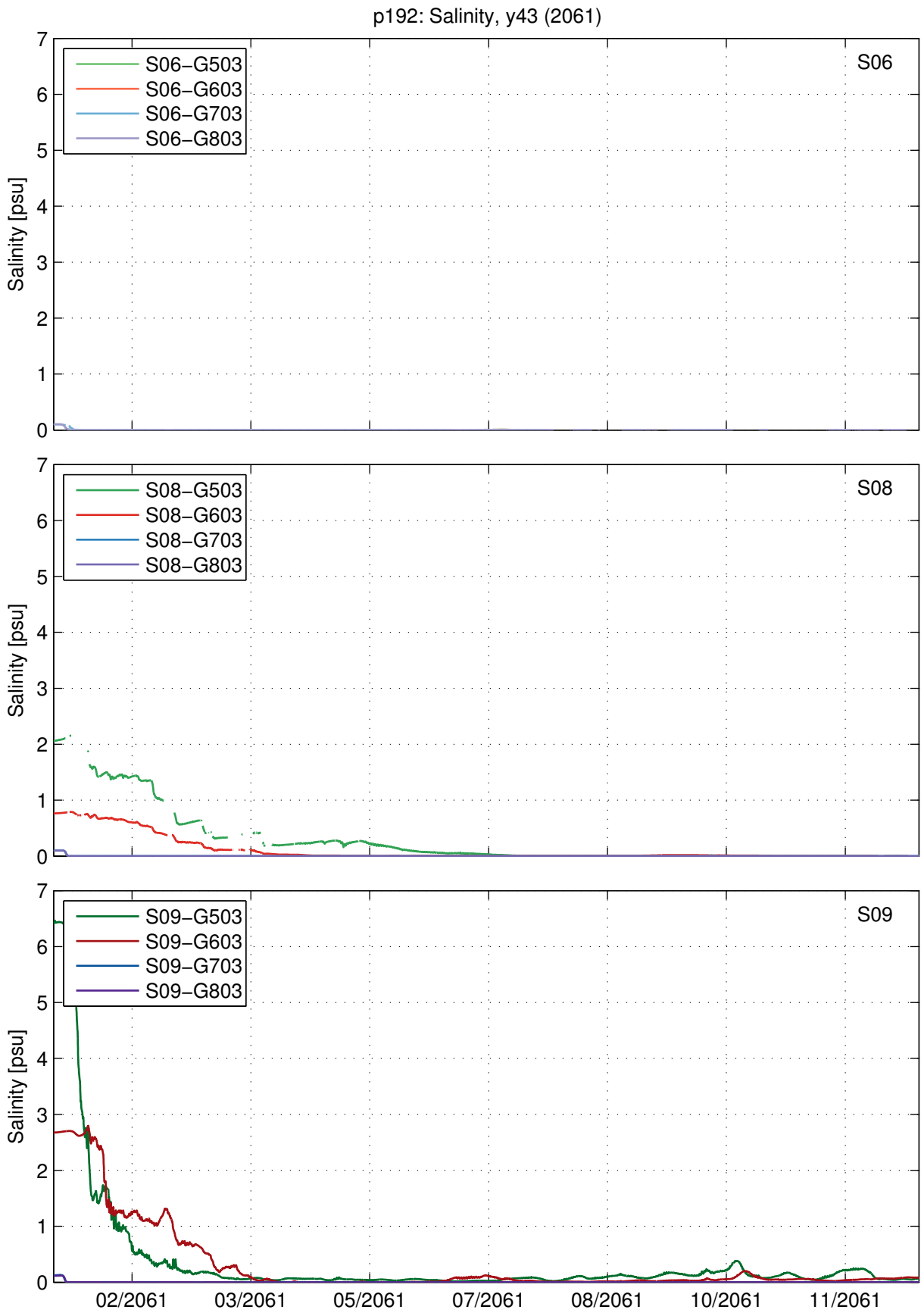

p186: Salinity, y43 (2061)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Salinity [psu]
0
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02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

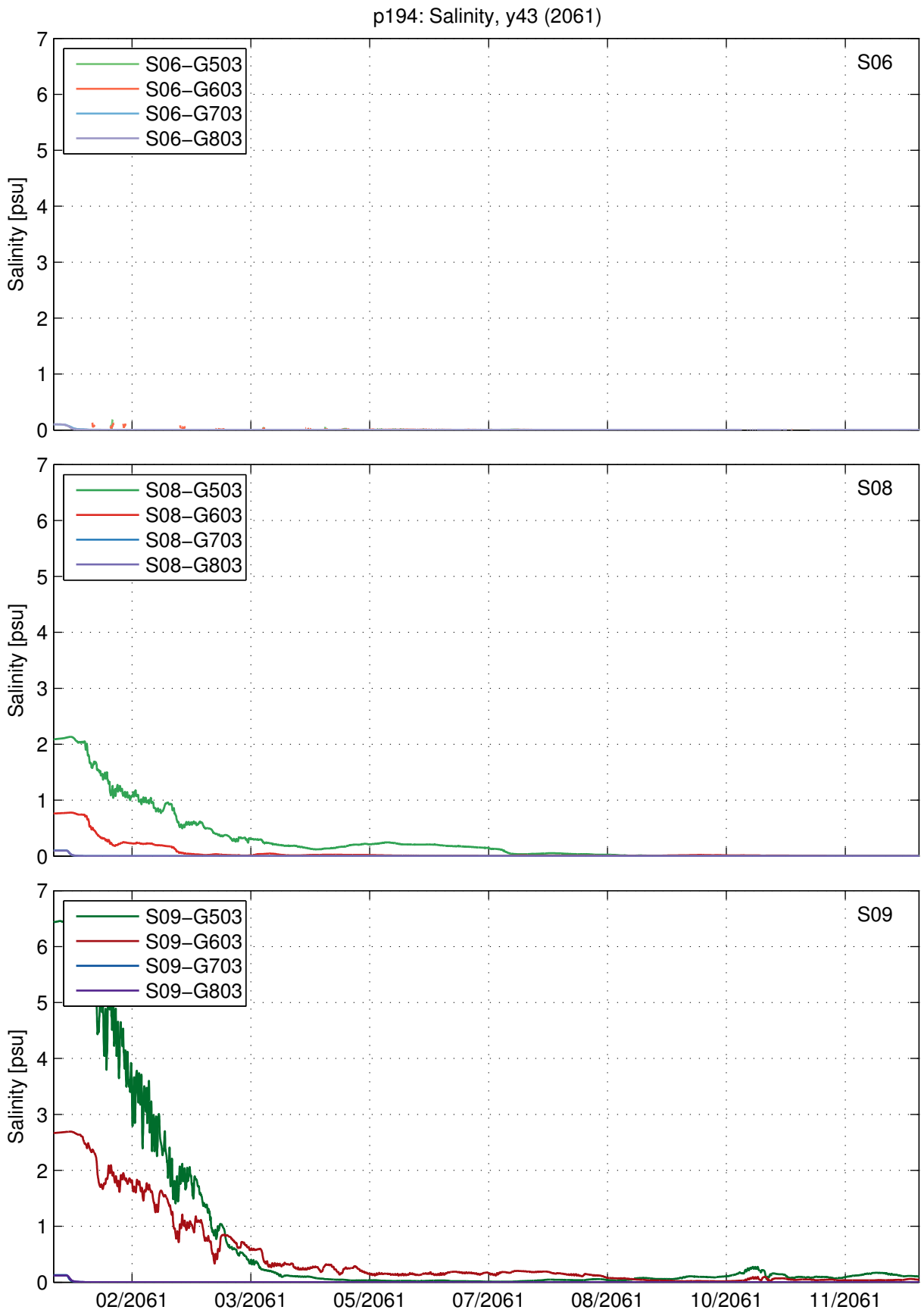

p177: Salinity, y43 (2061)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Salinity [psu]
0
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02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

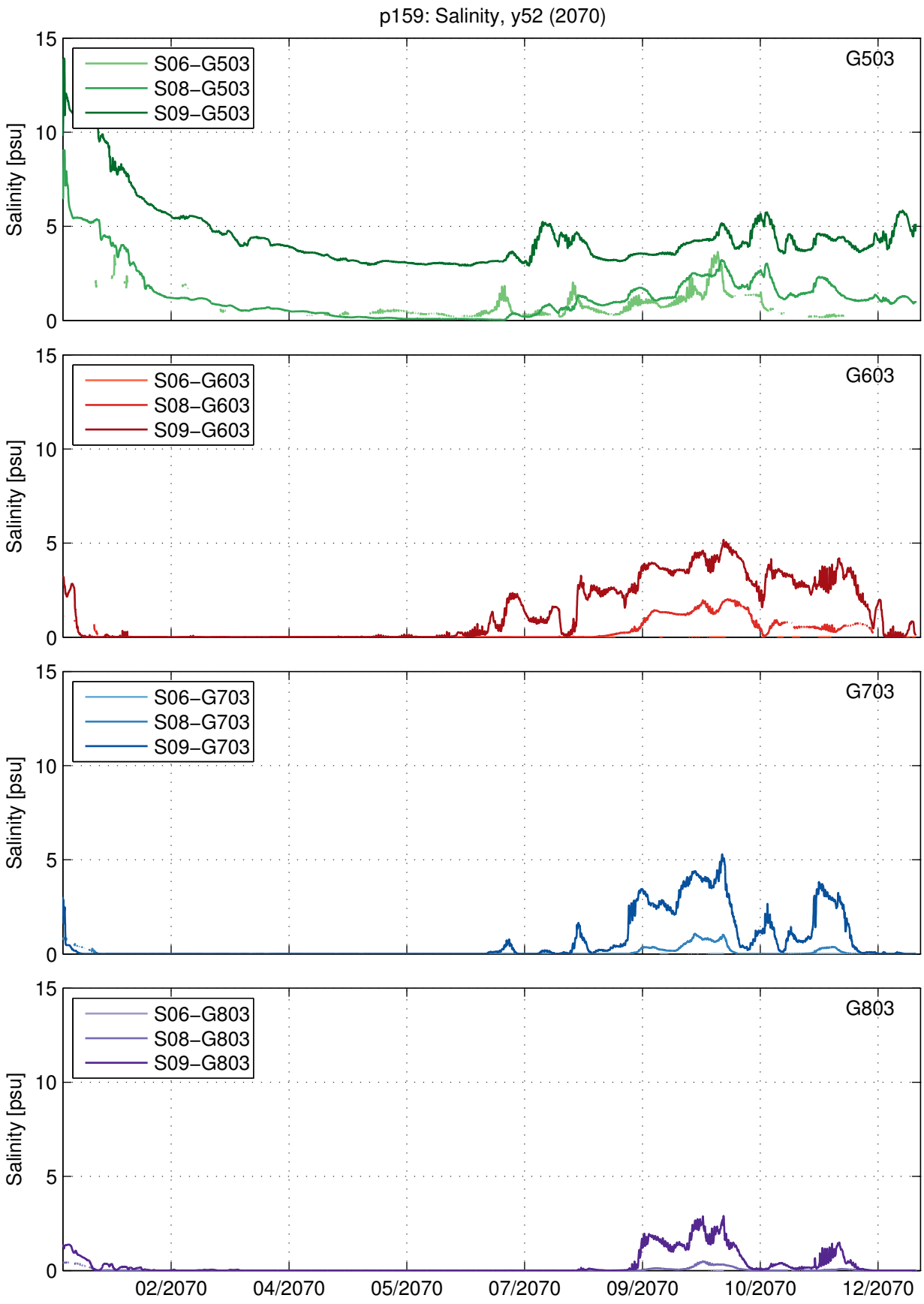

p182: Salinity, y43 (2061)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Salinity [psu]
0
1
2
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02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

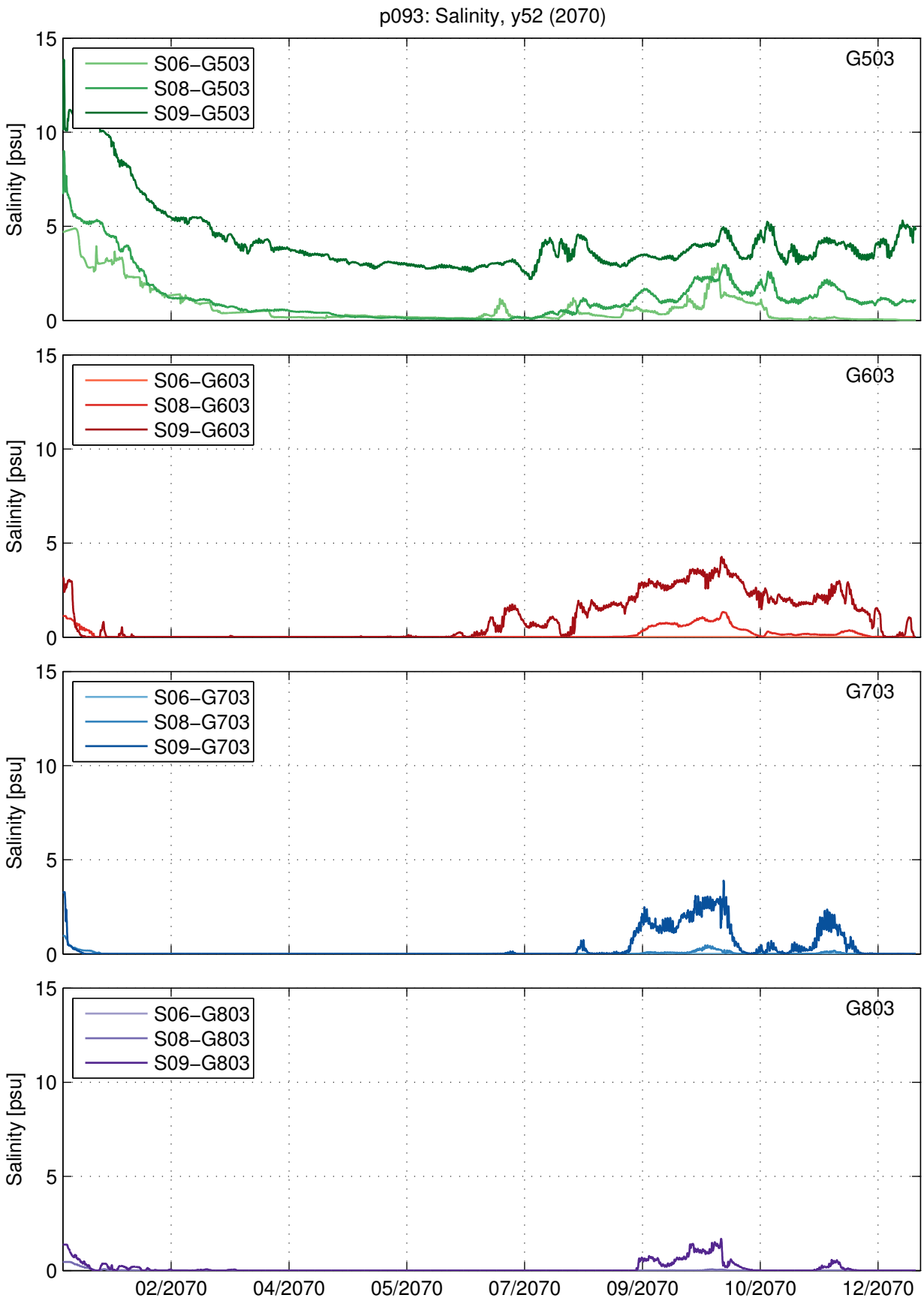

p183: Salinity, y43 (2061)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Salinity [psu]
0
1
2
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5
6
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02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

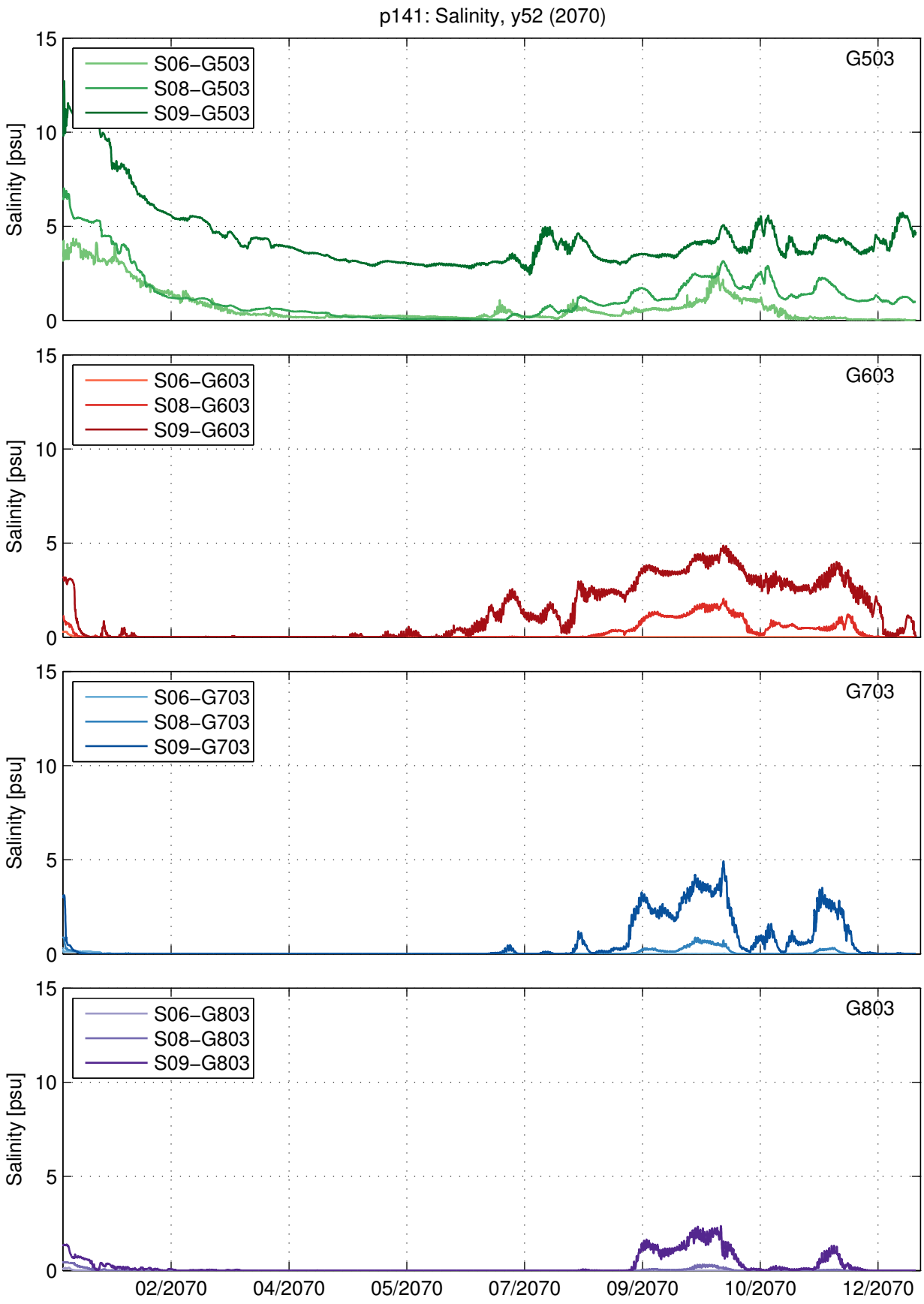

p185: Salinity, y43 (2061)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Salinity [psu]
0
1
2
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6
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02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

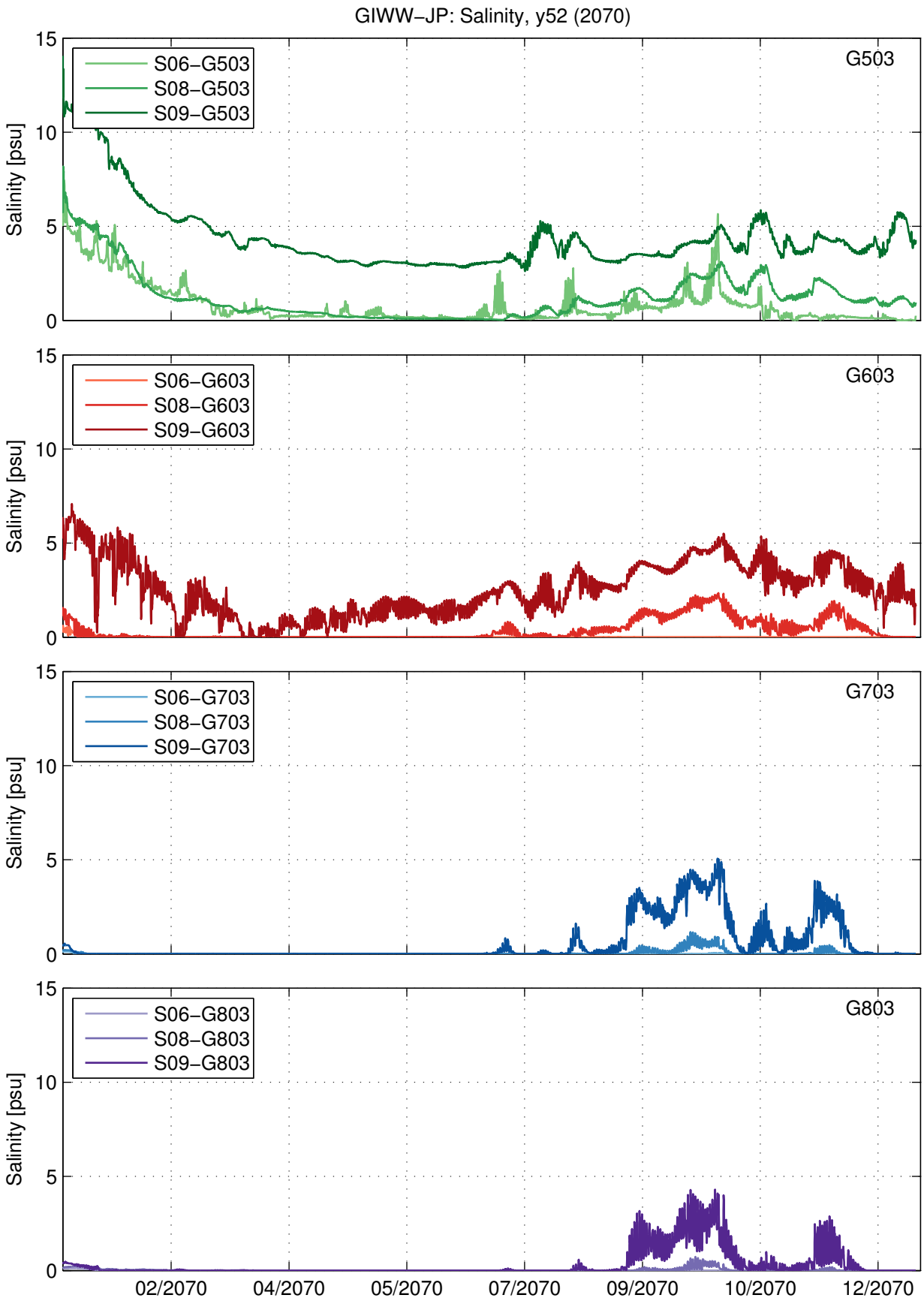

p192: Salinity, y43 (2061)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Salinity [psu]
0
1
2
3
4
5
6
7
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

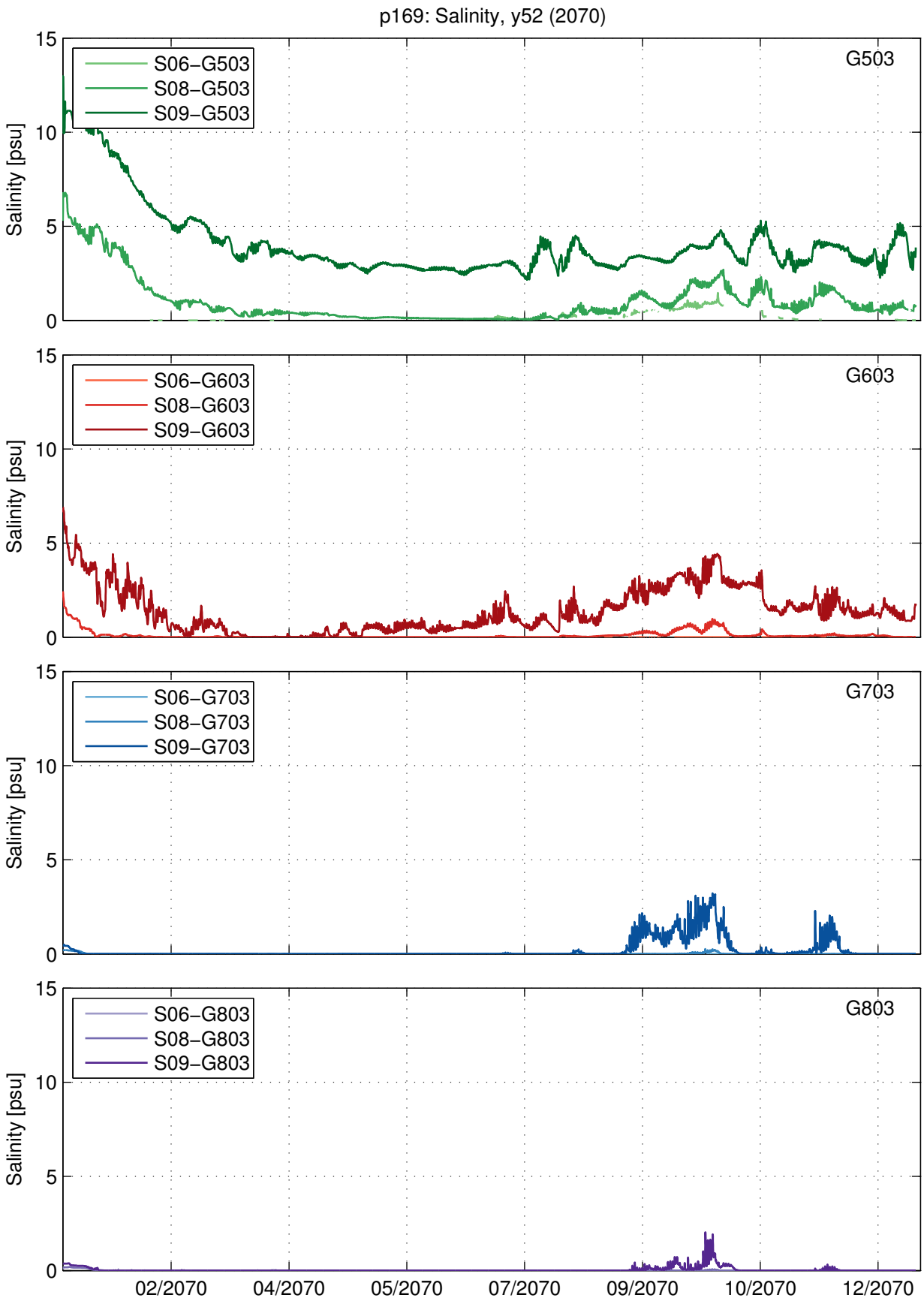

p194: Salinity, y43 (2061)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Salinity [psu]
0
1
2
3
4
5
6
7
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

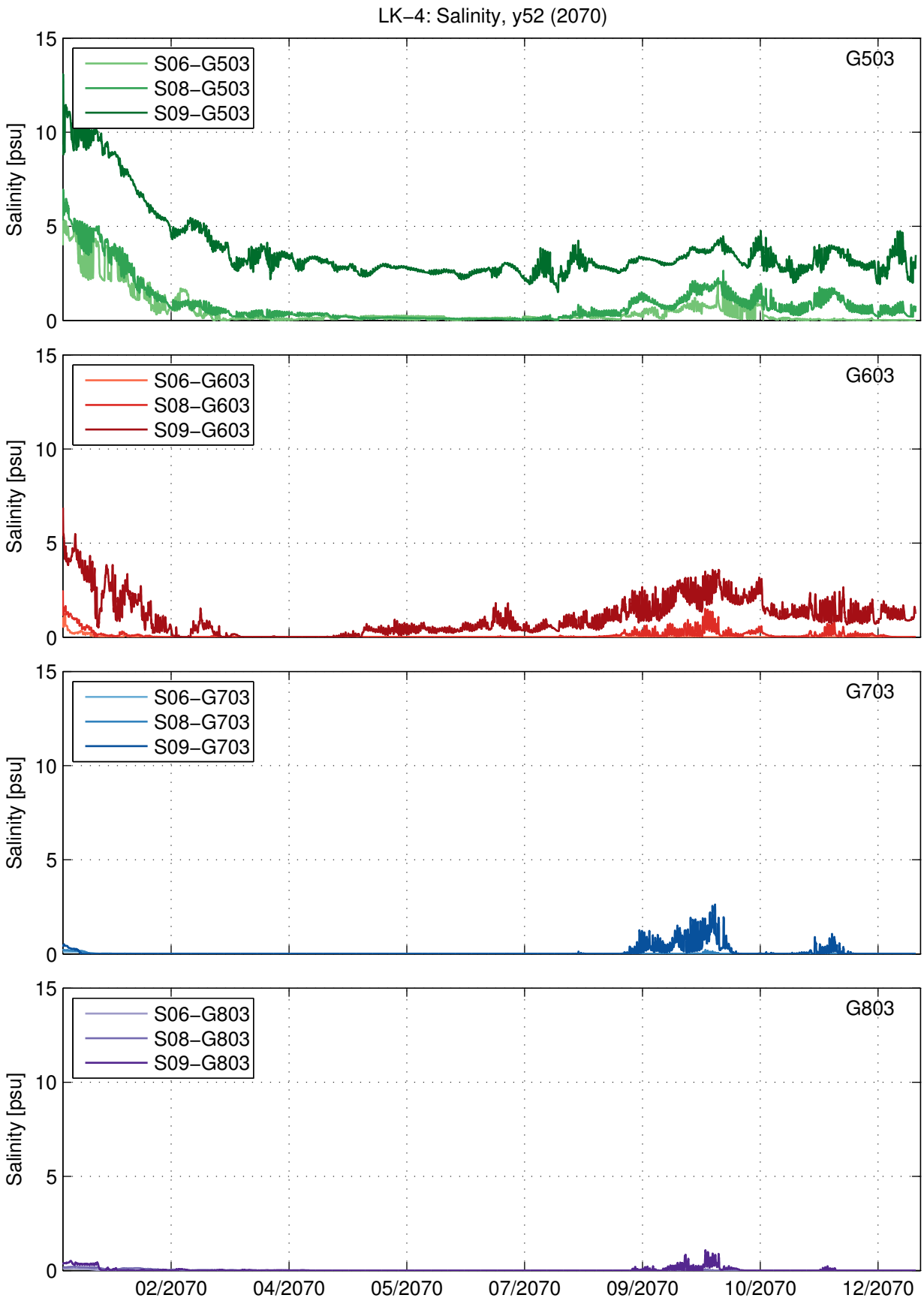

p159: Salinity, y52 (2070)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
5
10
15
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

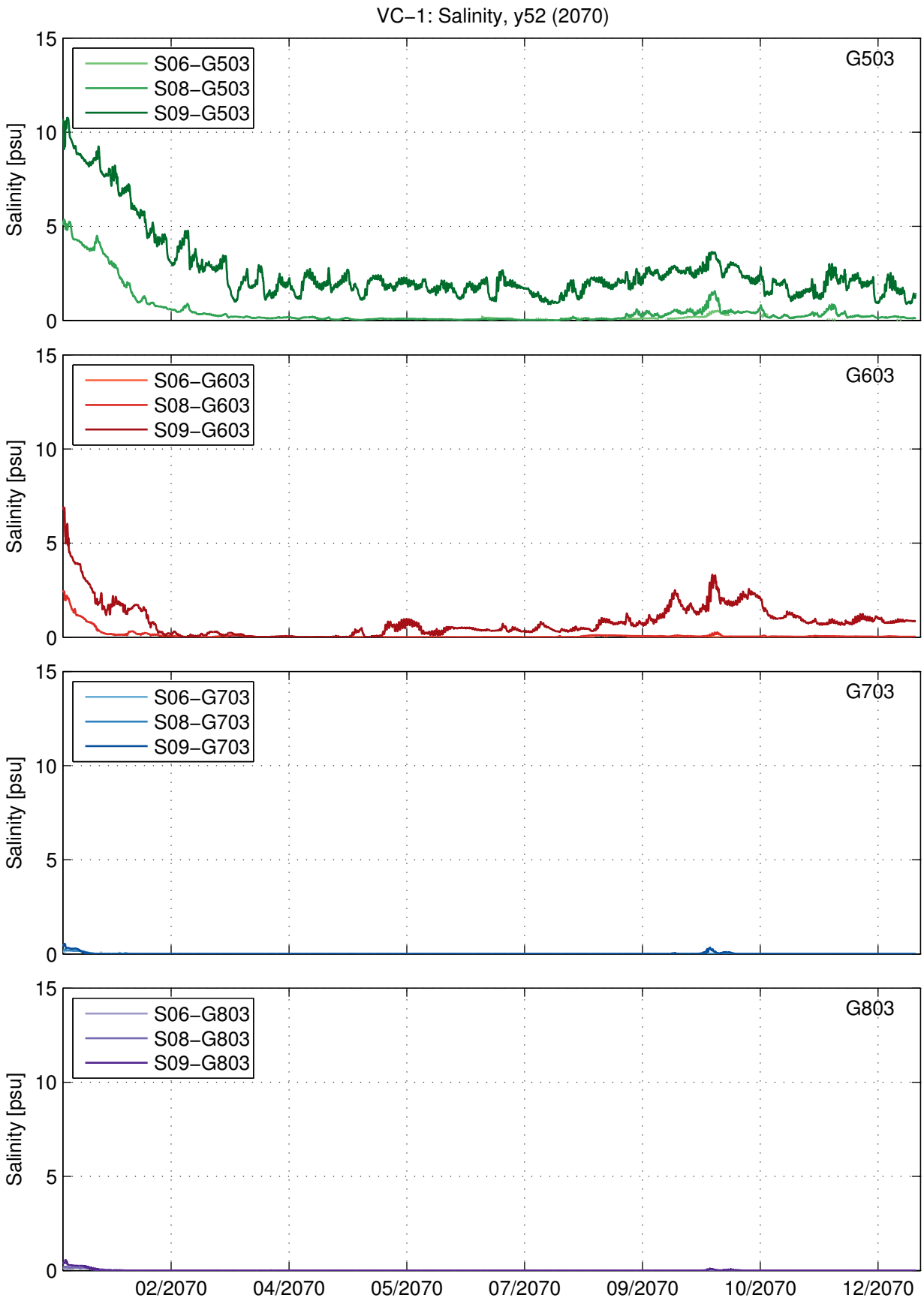

p093: Salinity, y52 (2070)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
5
10
15
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

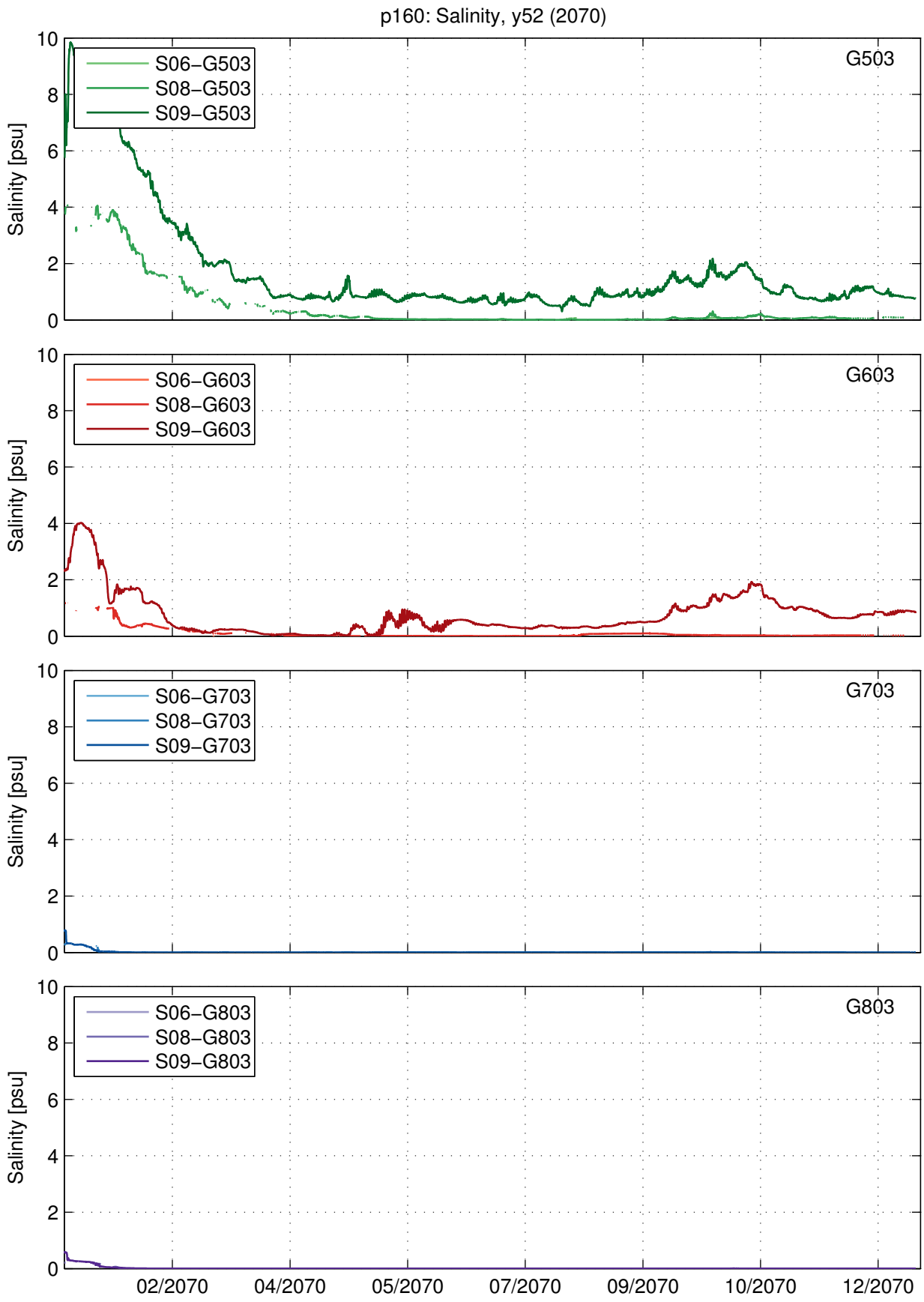

p141: Salinity, y52 (2070)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
5
10
15
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

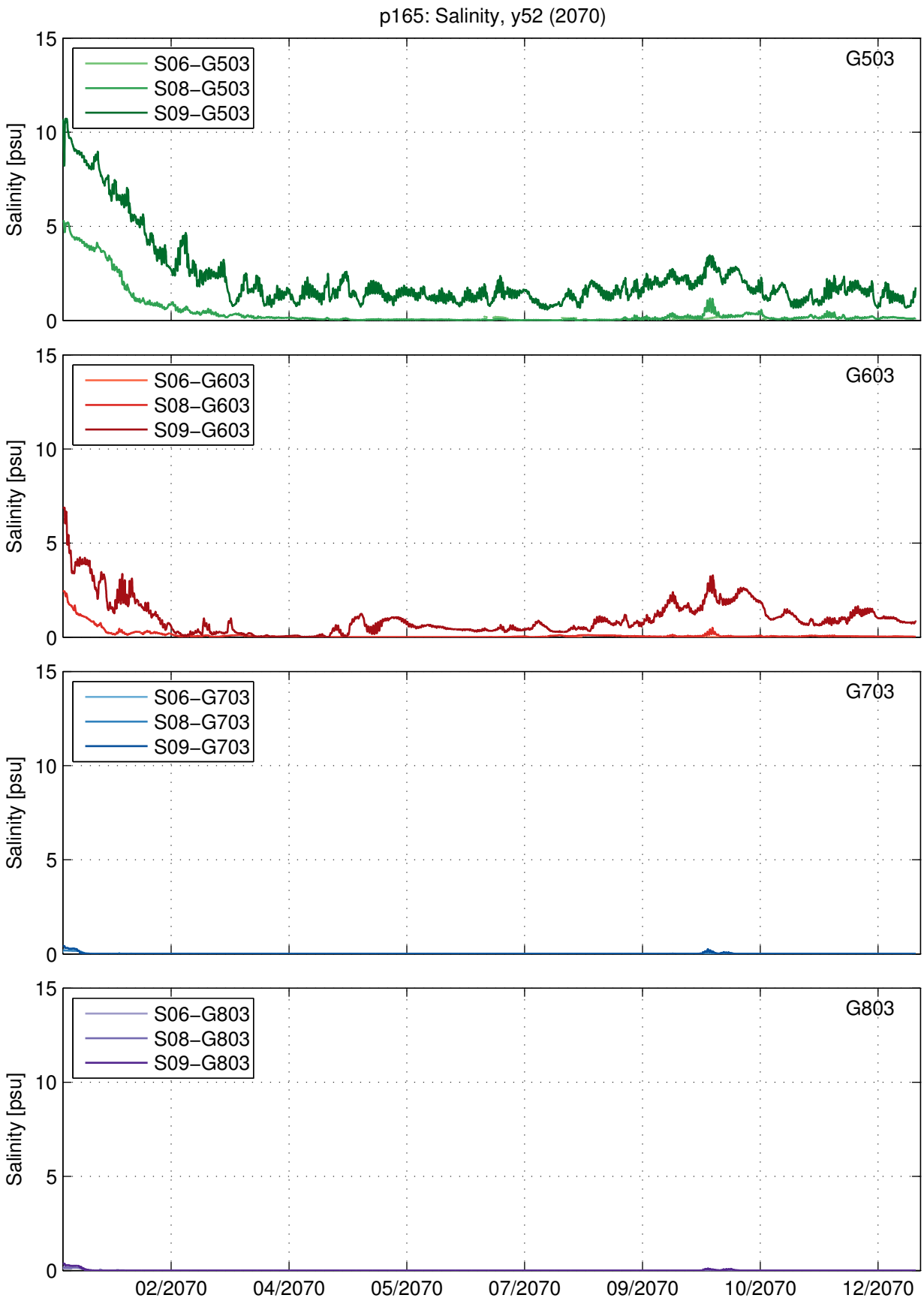

GIWW–JP: Salinity, y52 (2070)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
5
10
15
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

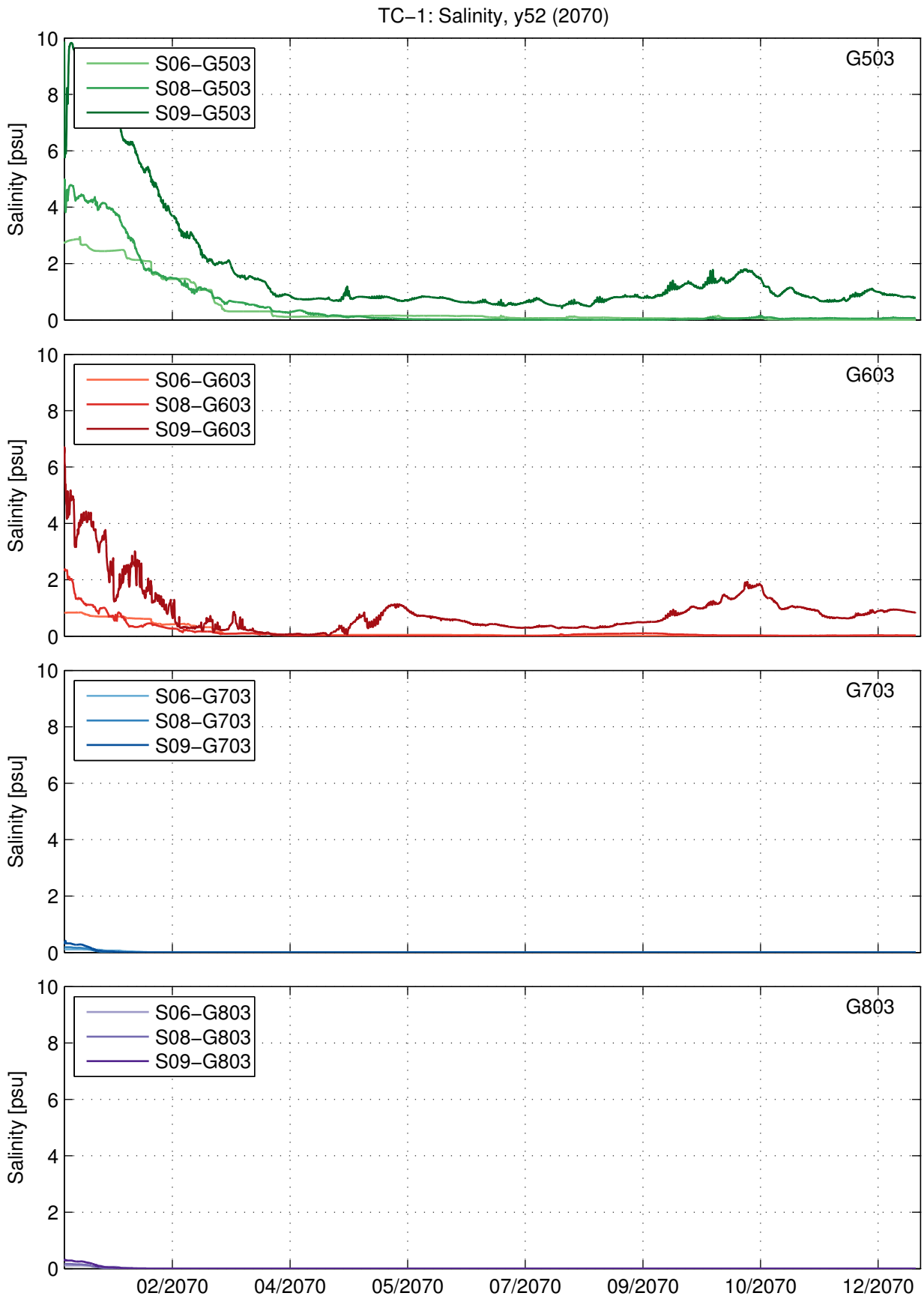

p169: Salinity, y52 (2070)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
5
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02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

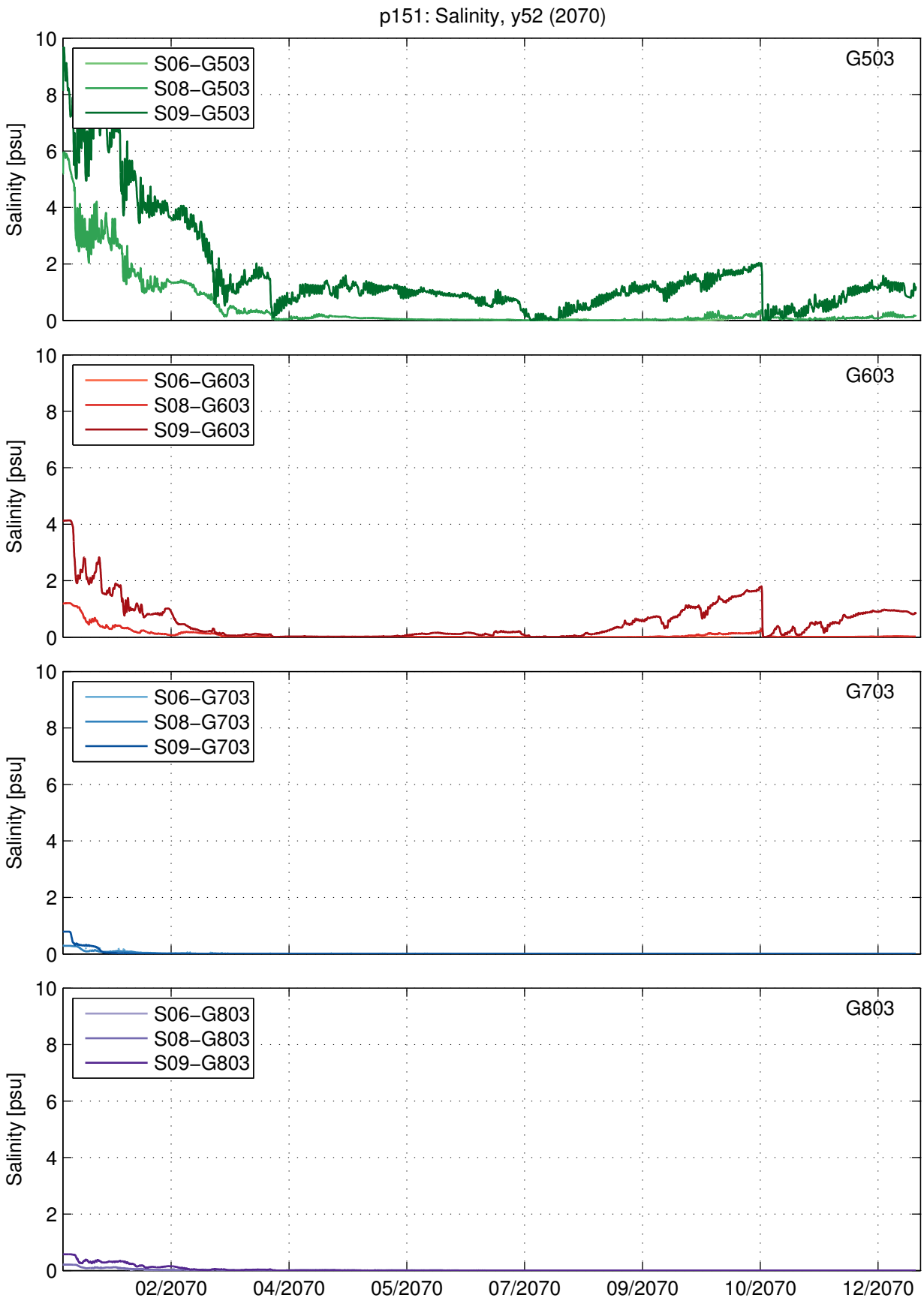

LK–4: Salinity, y52 (2070)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
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02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

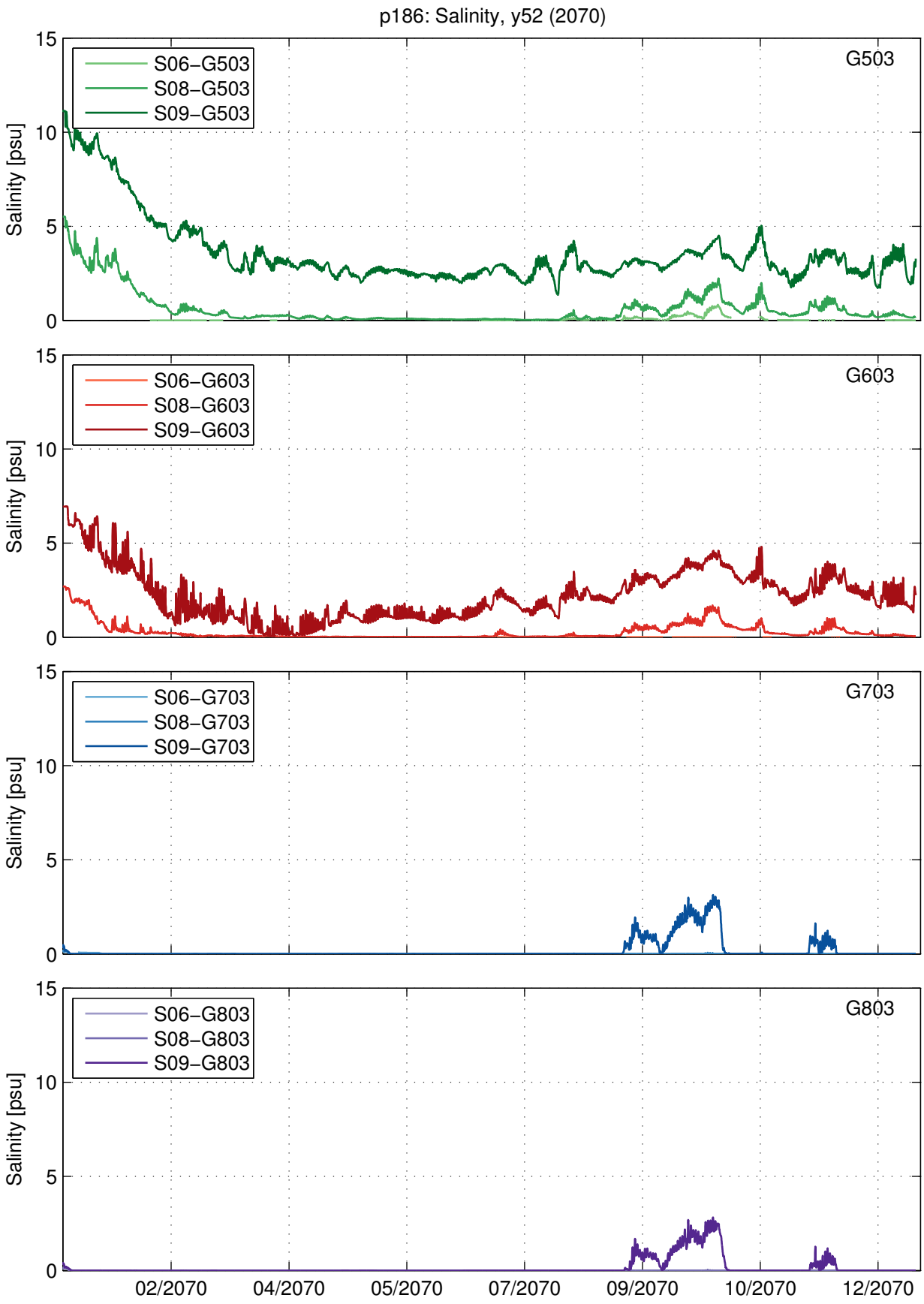

VC−1: Salinity, y52 (2070)
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
S06−G703
S08−G703
S09−G703
G703
S06−G803
S08−G803
S09−G803
G803
Salinity [psu]
0
5
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15
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

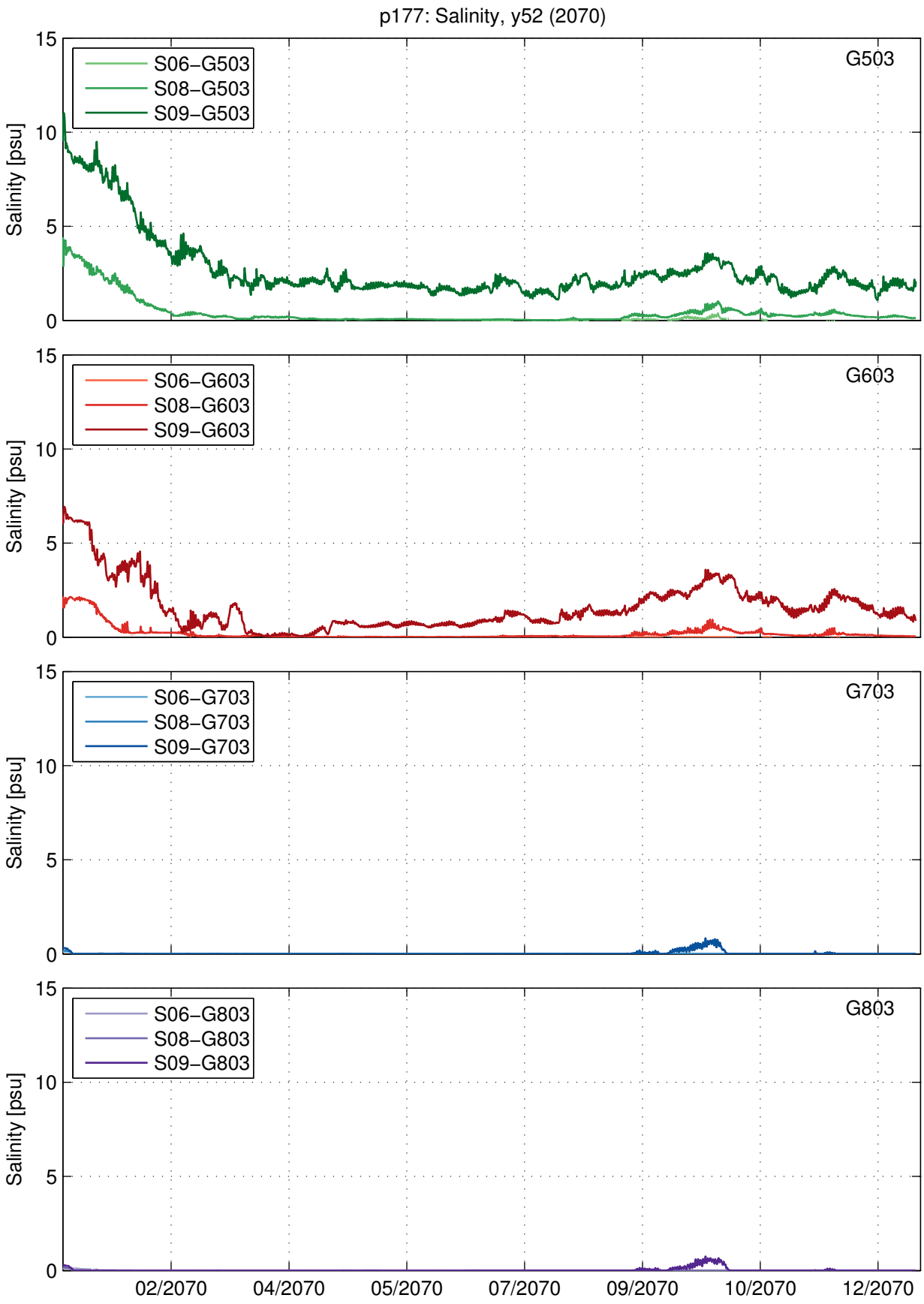

p160: Salinity, y52 (2070)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
2
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02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

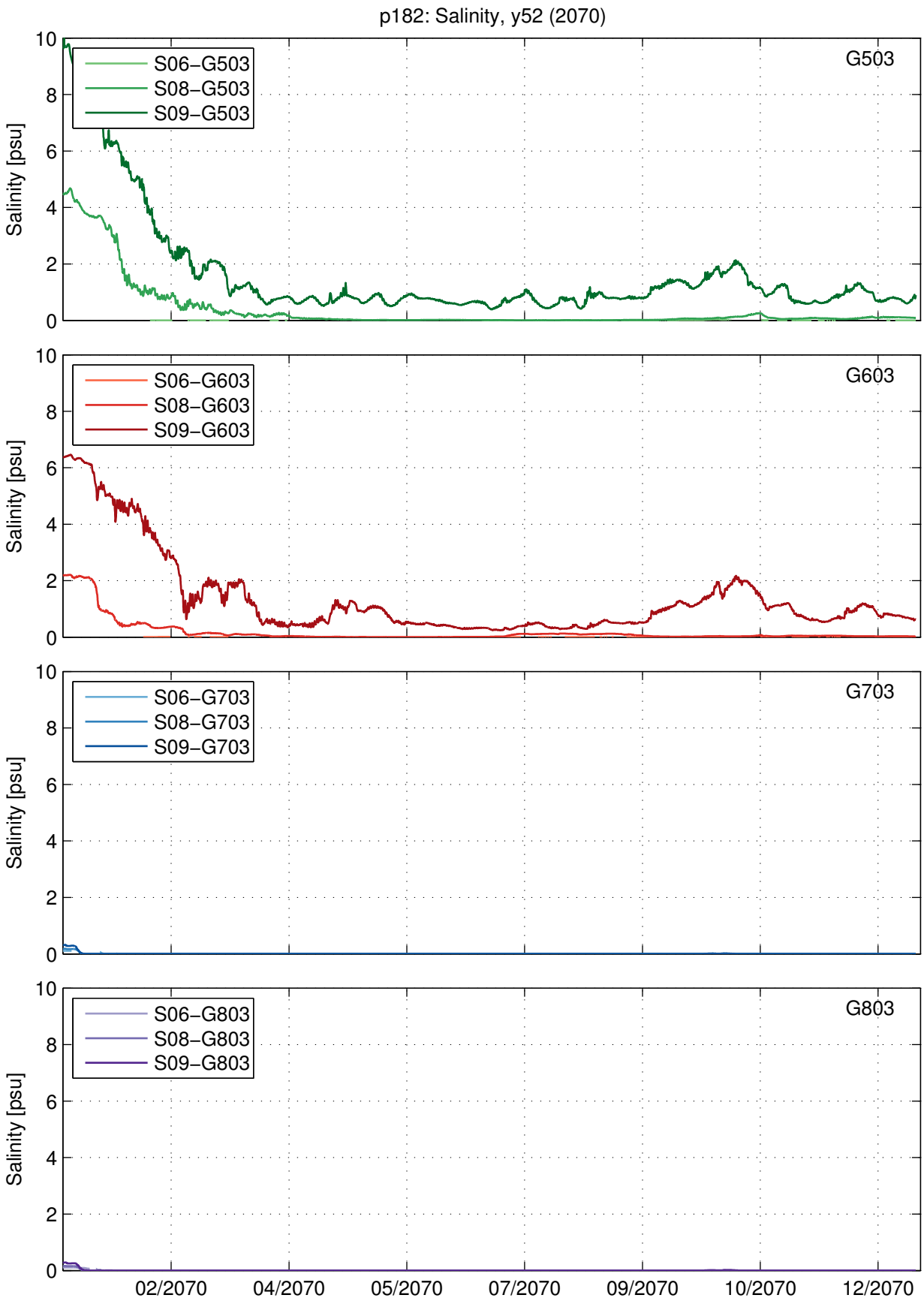

p165: Salinity, y52 (2070)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
5
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02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

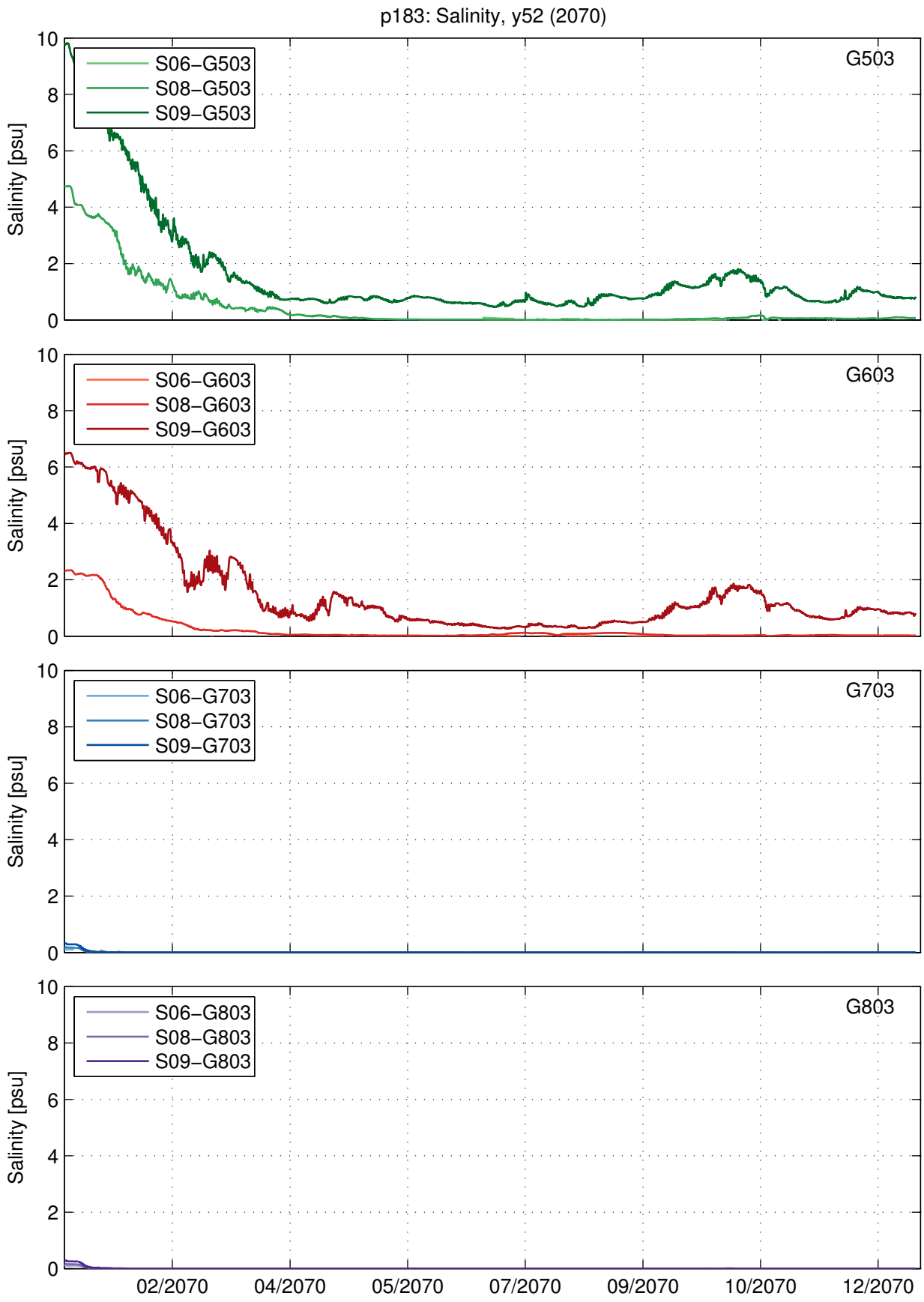

TC−1: Salinity, y52 (2070)
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
S06−G703
S08−G703
S09−G703
G703
S06−G803
S08−G803
S09−G803
G803
Salinity [psu]
0
2
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8
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02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

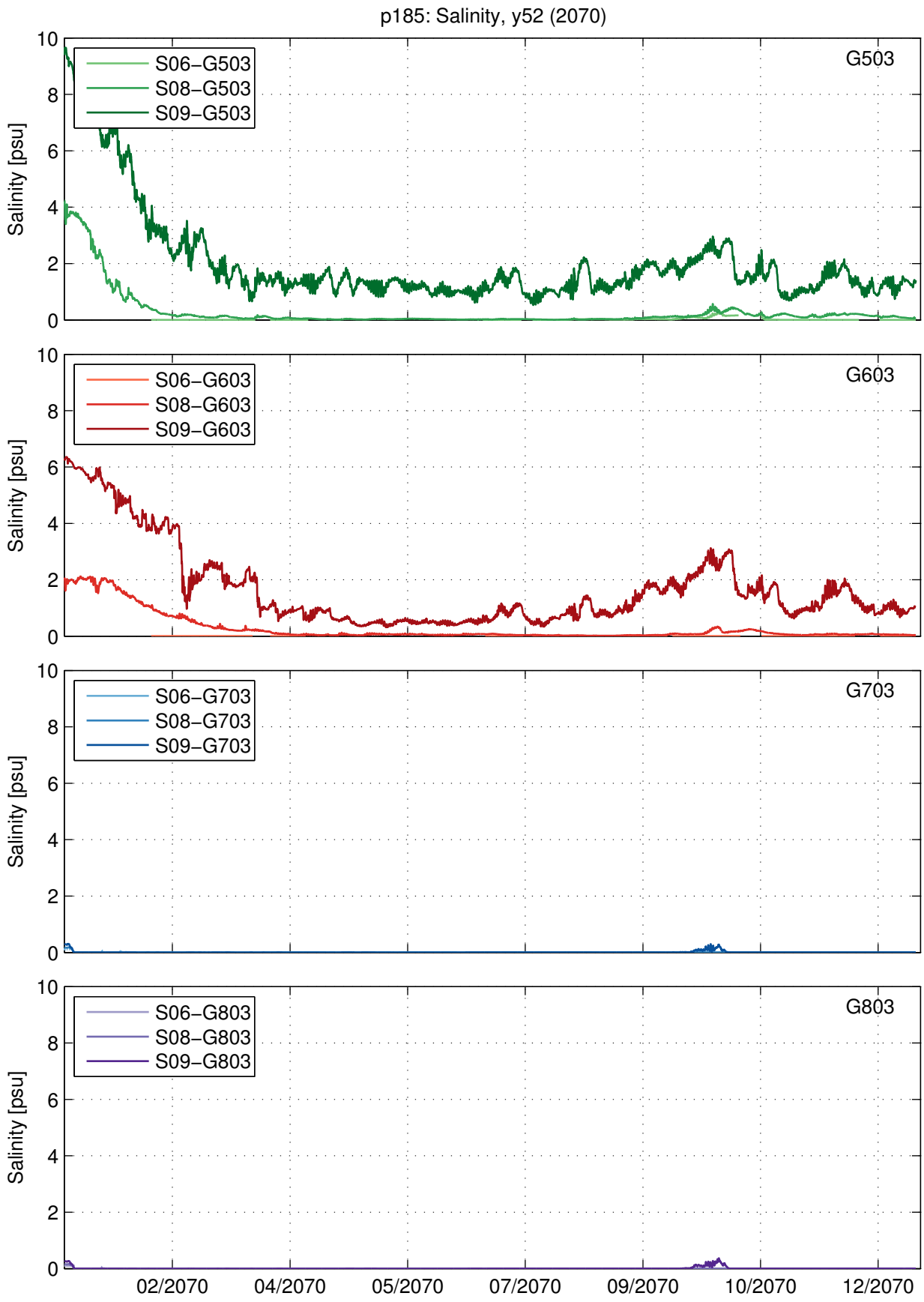

p151: Salinity, y52 (2070)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
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8
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02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

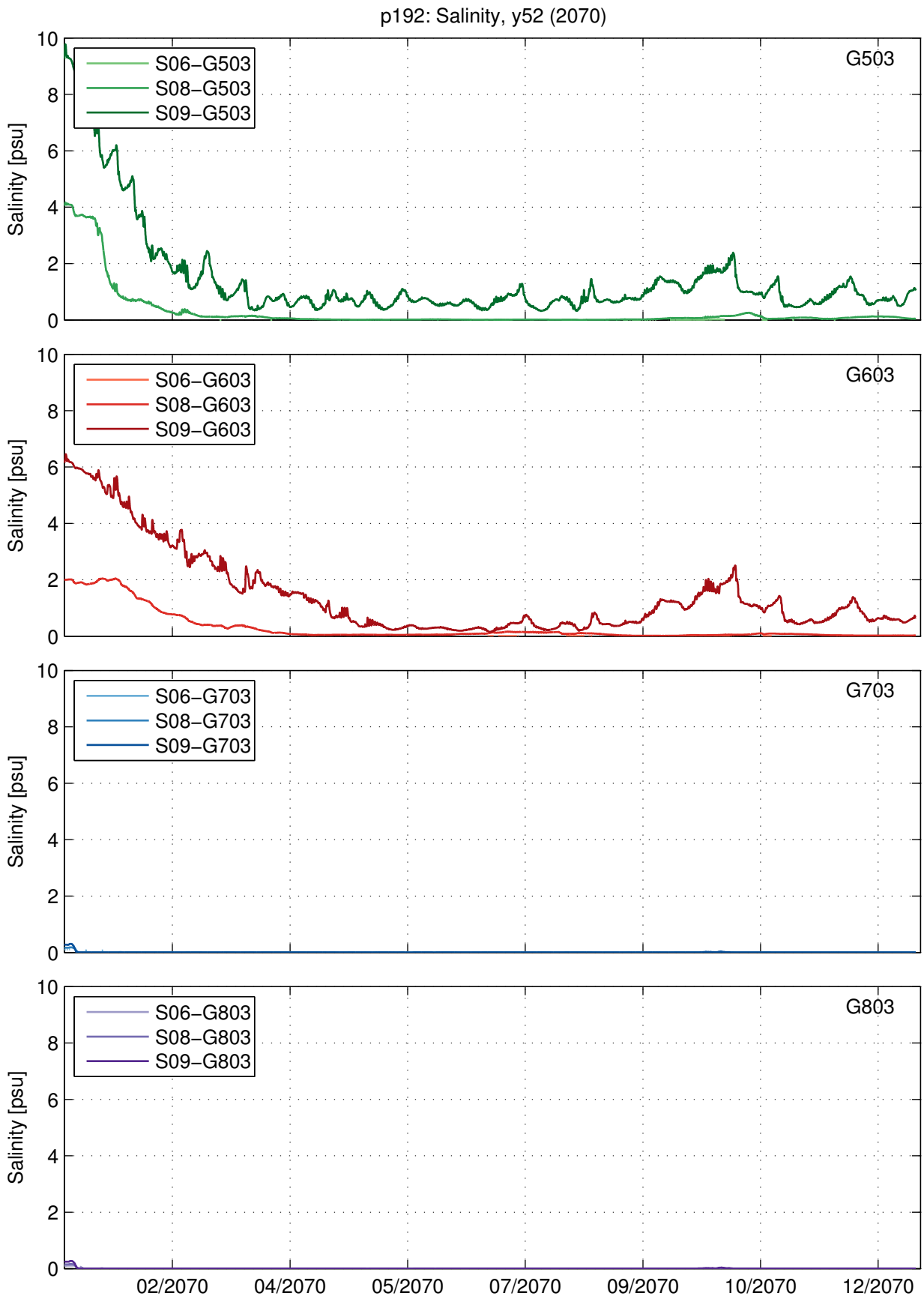

p186: Salinity, y52 (2070)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
5
10
15
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

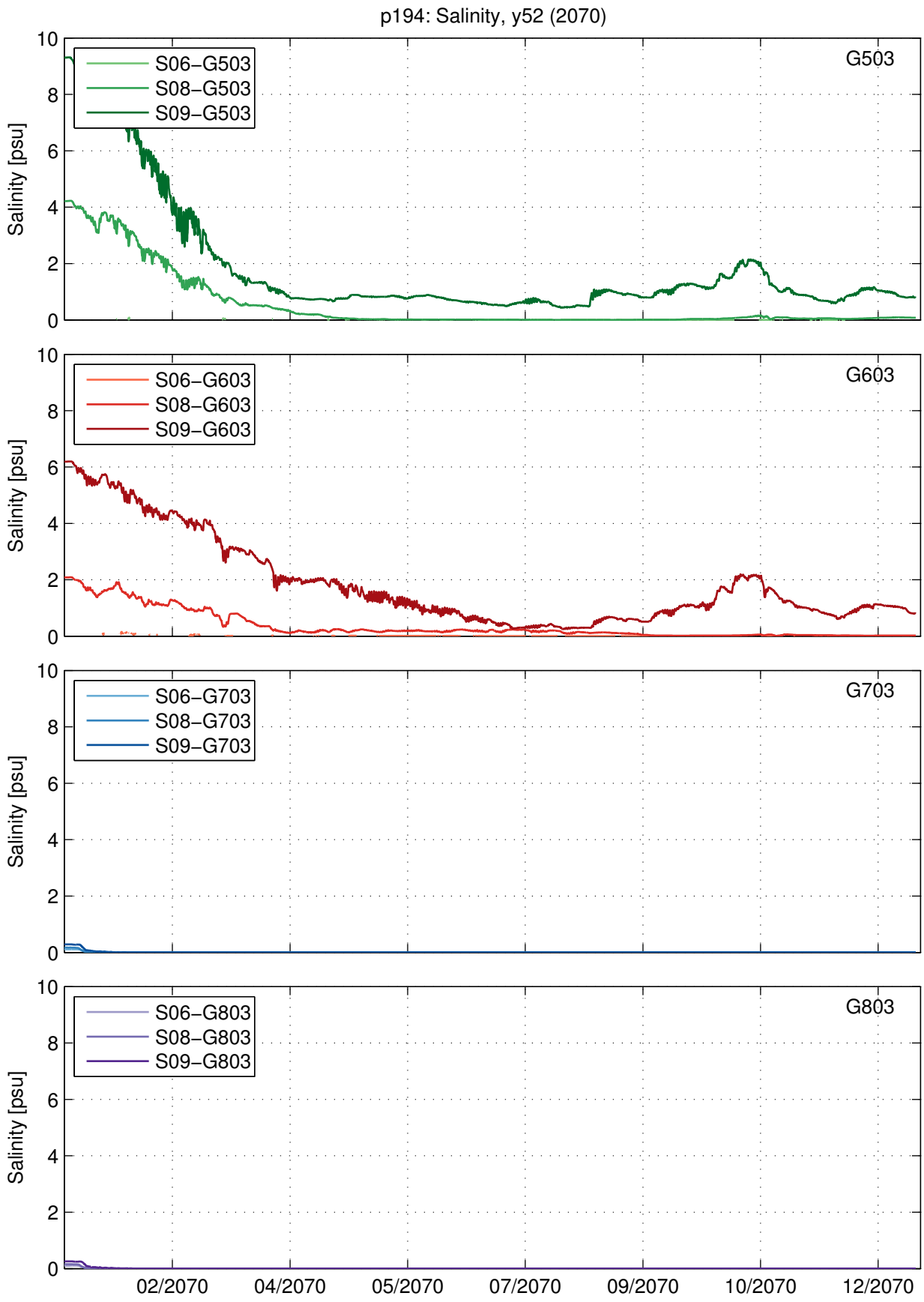

p177: Salinity, y52 (2070)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
5
10
15
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

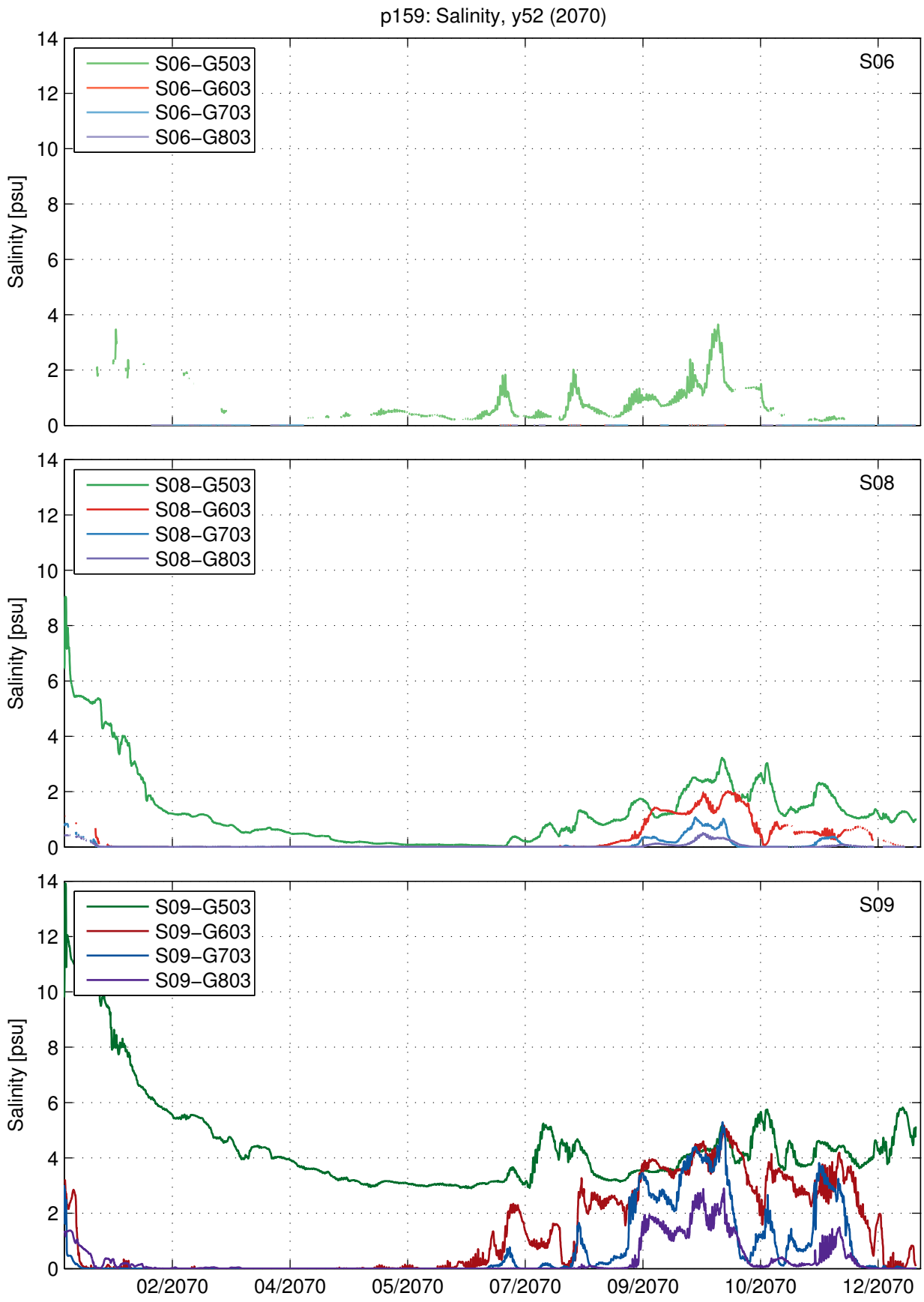

p182: Salinity, y52 (2070)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
2
4
6
8
10
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

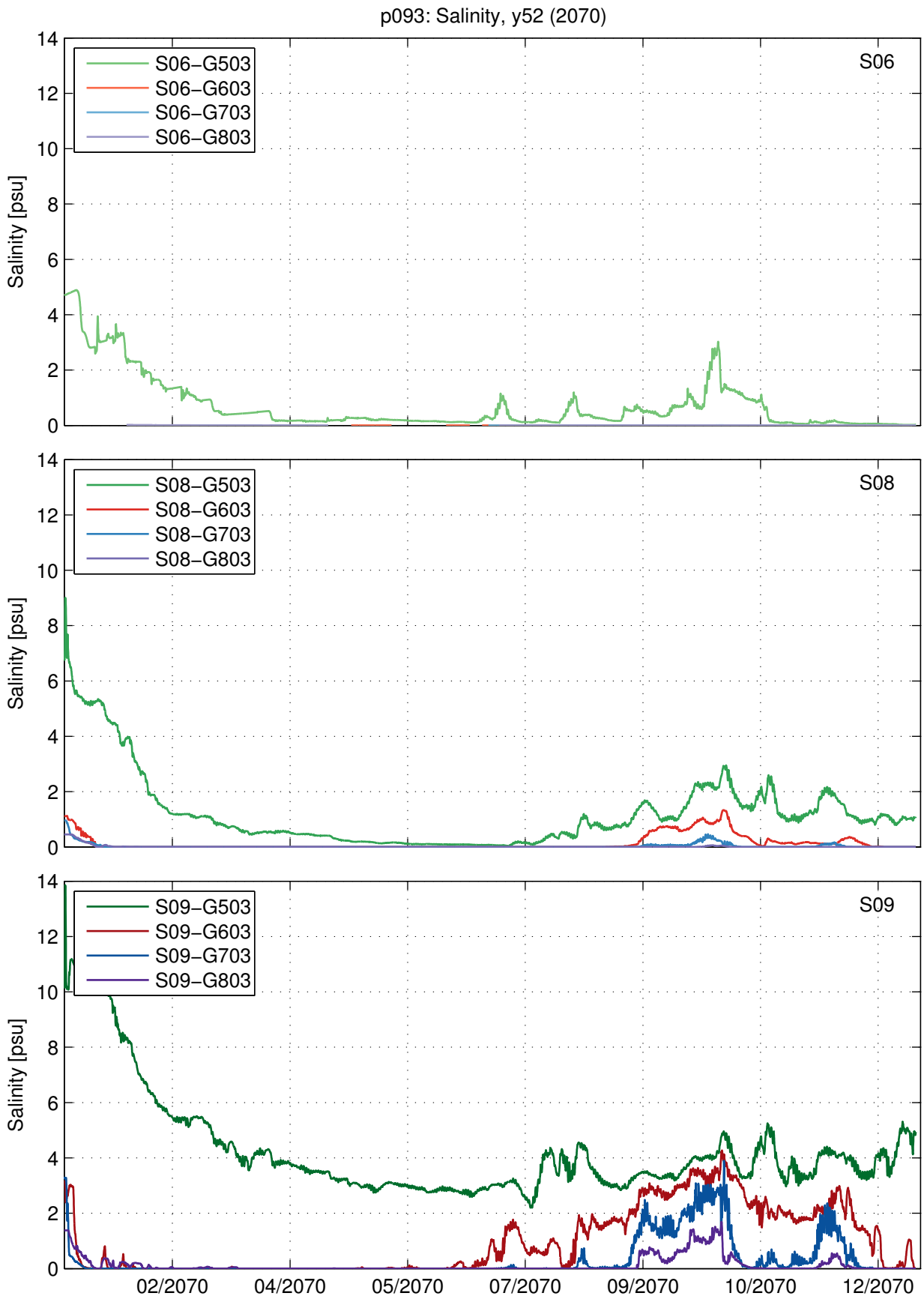

p183: Salinity, y52 (2070)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
2
4
6
8
10
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

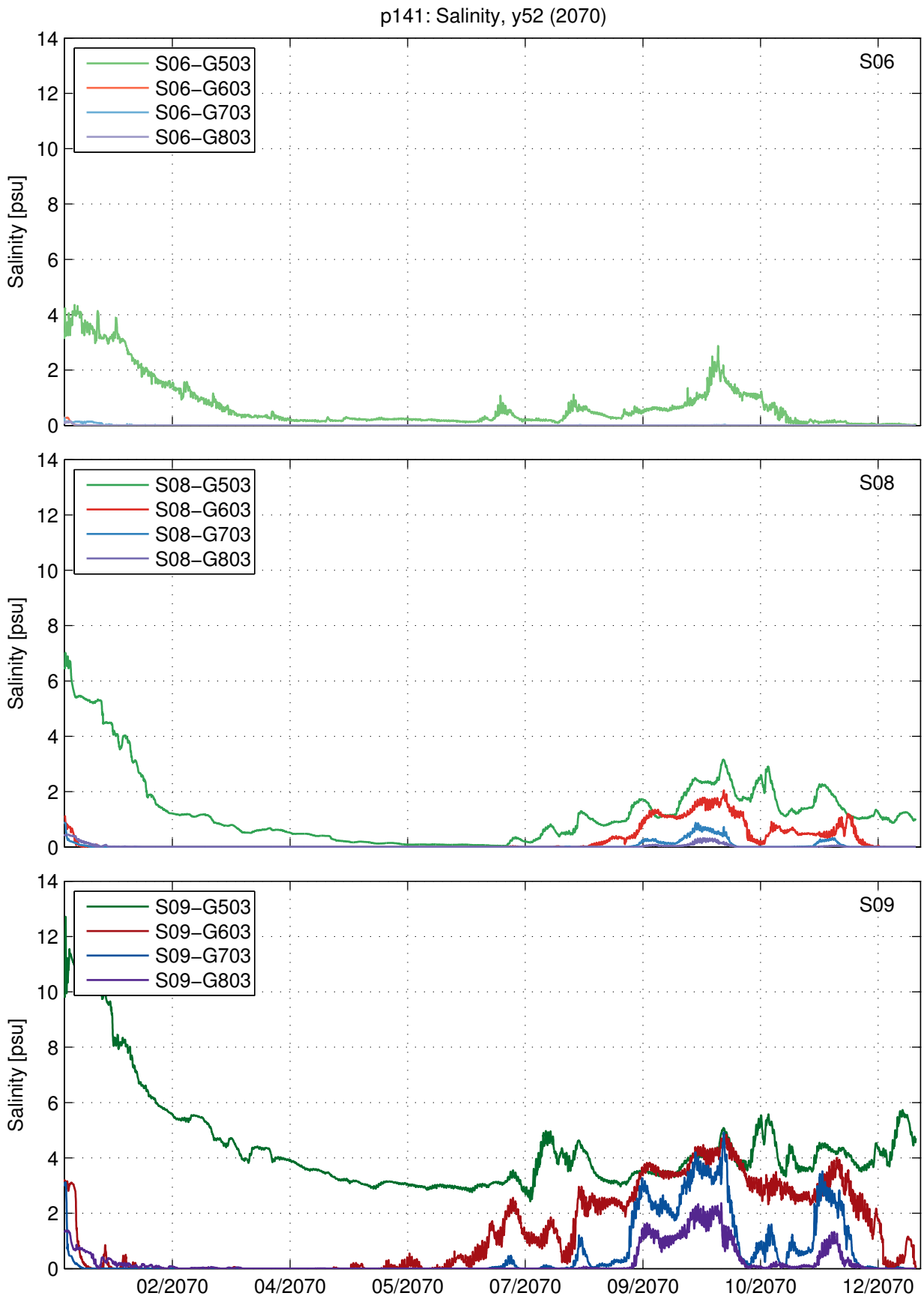

p185: Salinity, y52 (2070)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
2
4
6
8
10
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

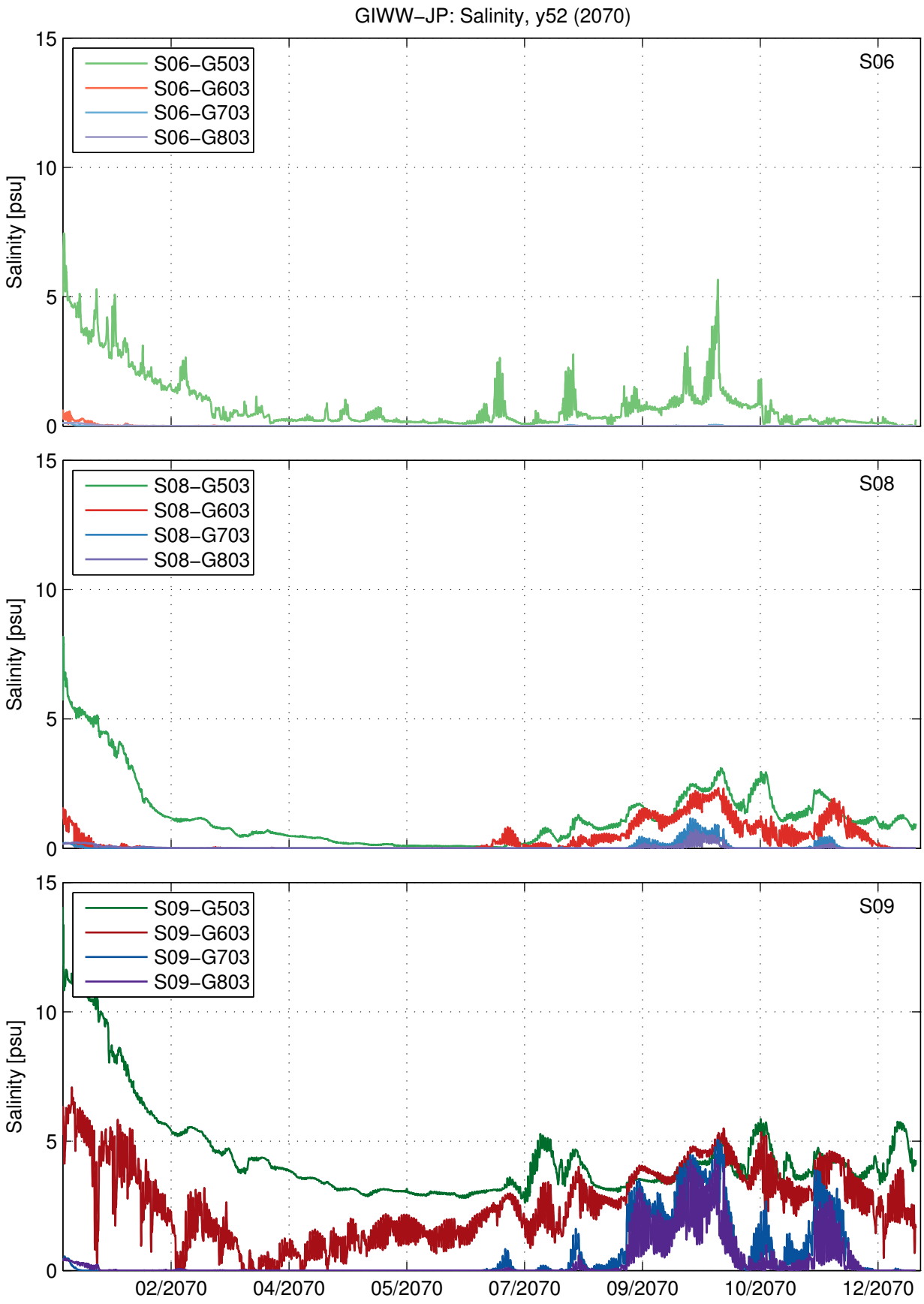

p192: Salinity, y52 (2070)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
2
4
6
8
10
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

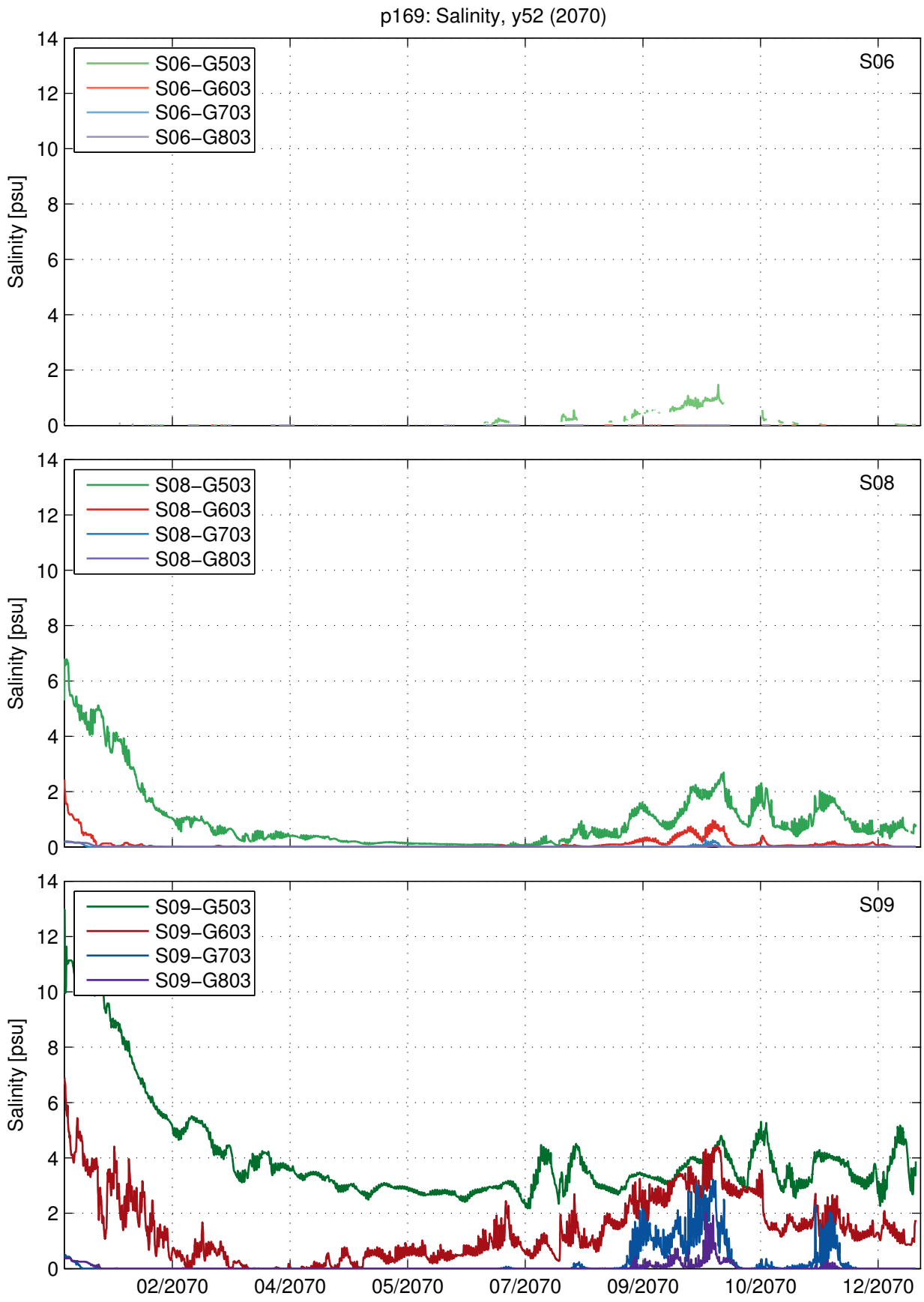

p194: Salinity, y52 (2070)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Salinity [psu]
0
2
4
6
8
10
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

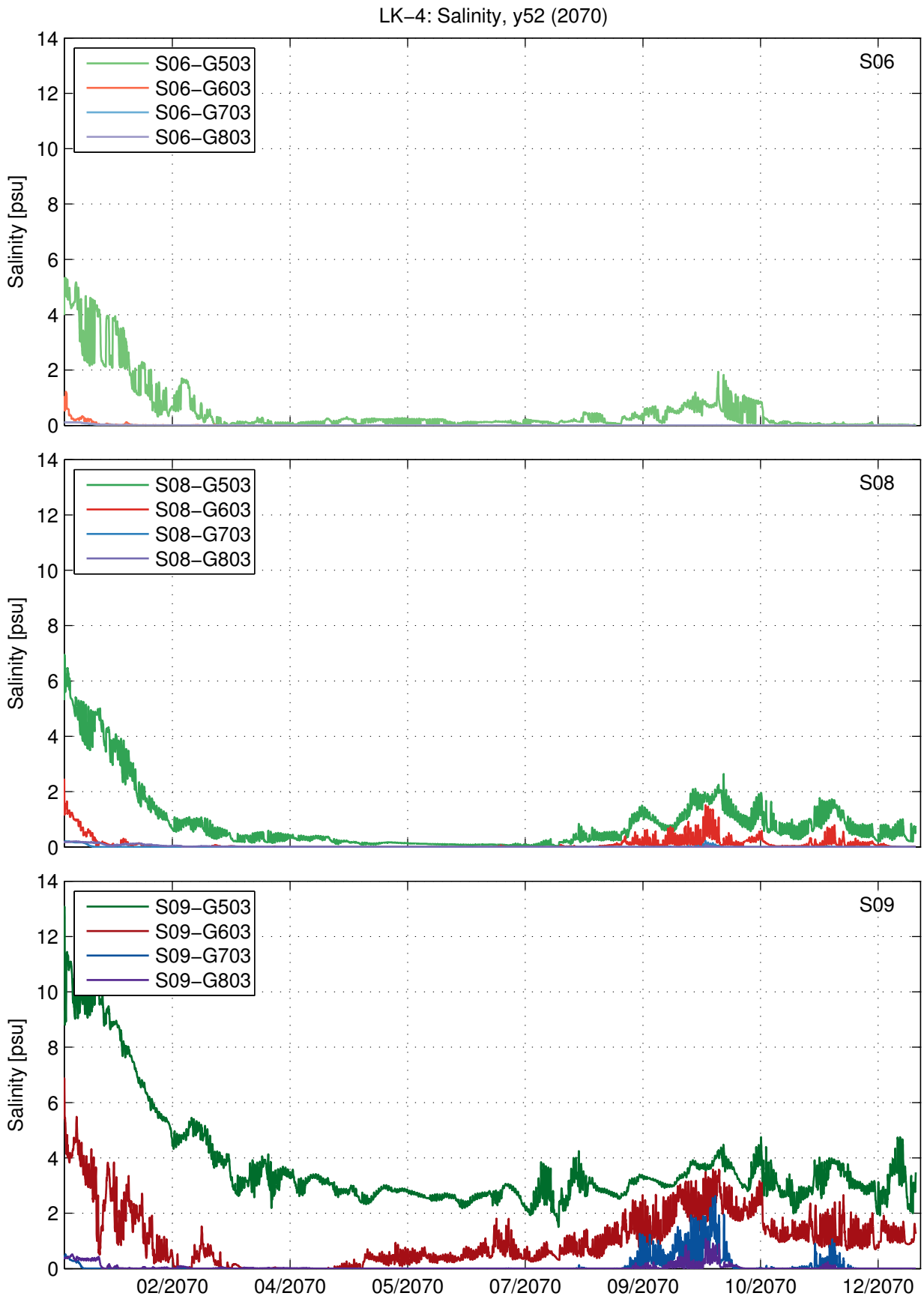

p159: Salinity, y52 (2070)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Salinity [psu]
0
2
4
6
8
10
12
14
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

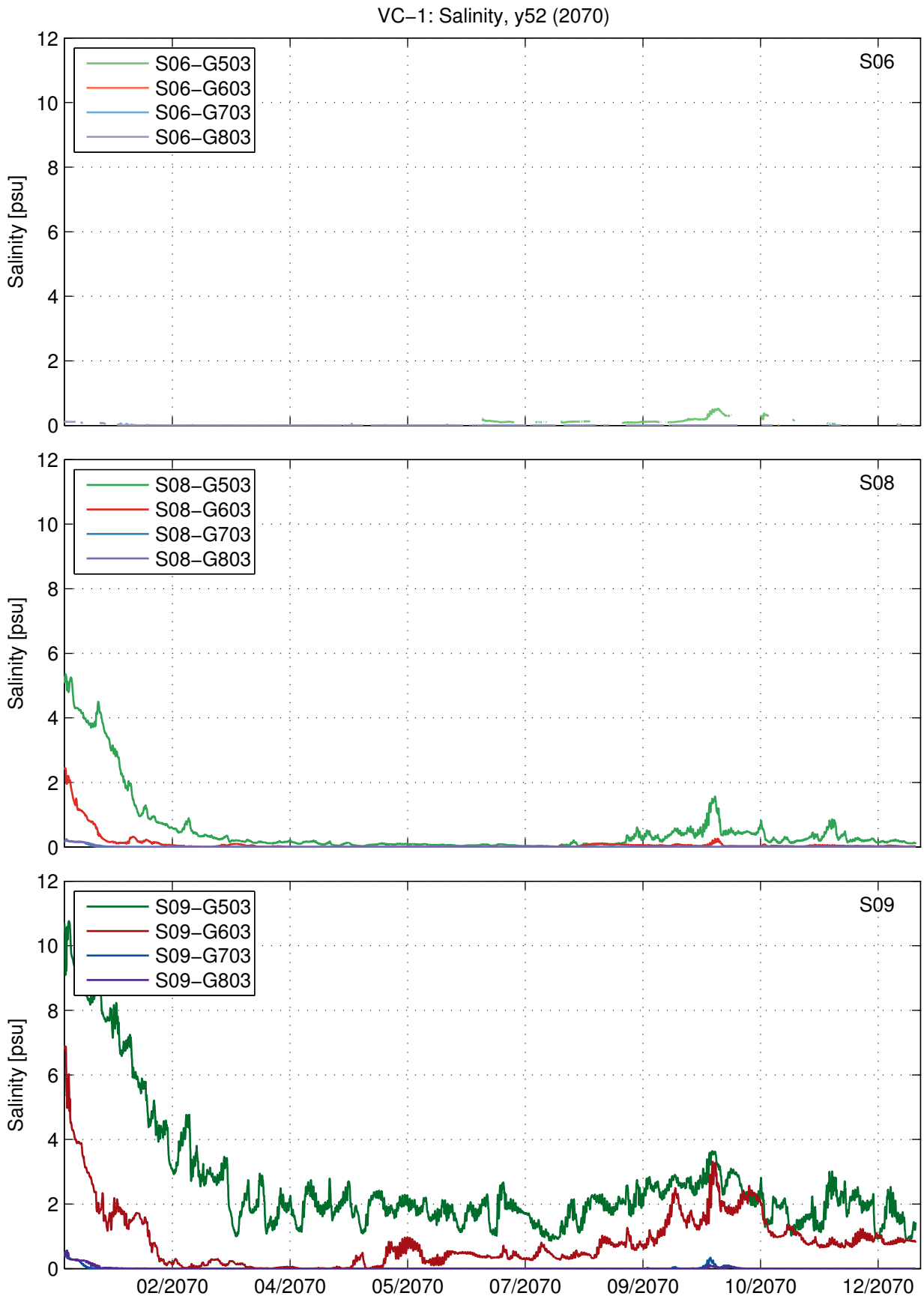

p093: Salinity, y52 (2070)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Salinity [psu]
0
2
4
6
8
10
12
14
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

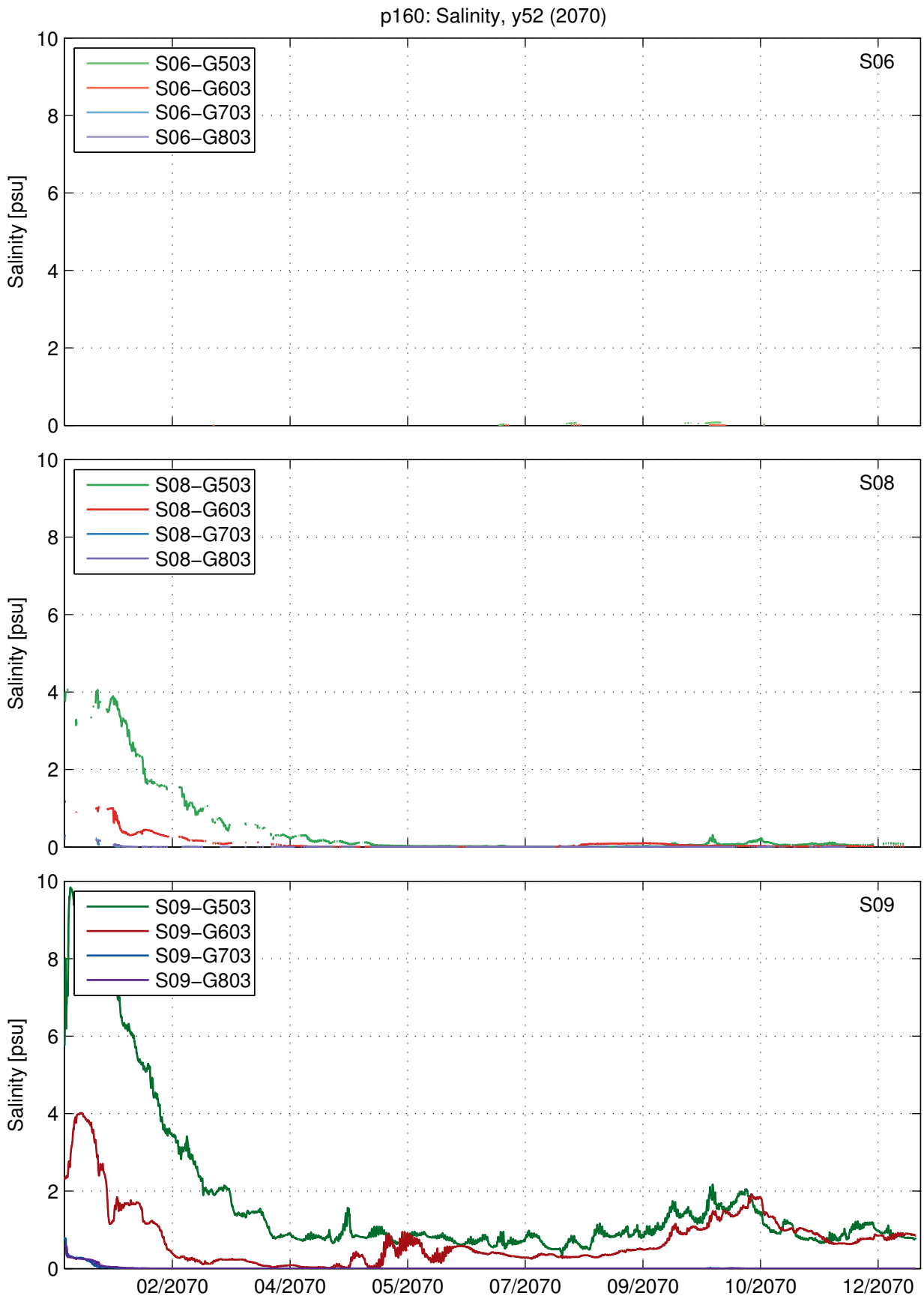

p141: Salinity, y52 (2070)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Salinity [psu]
0
2
4
6
8
10
12
14
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

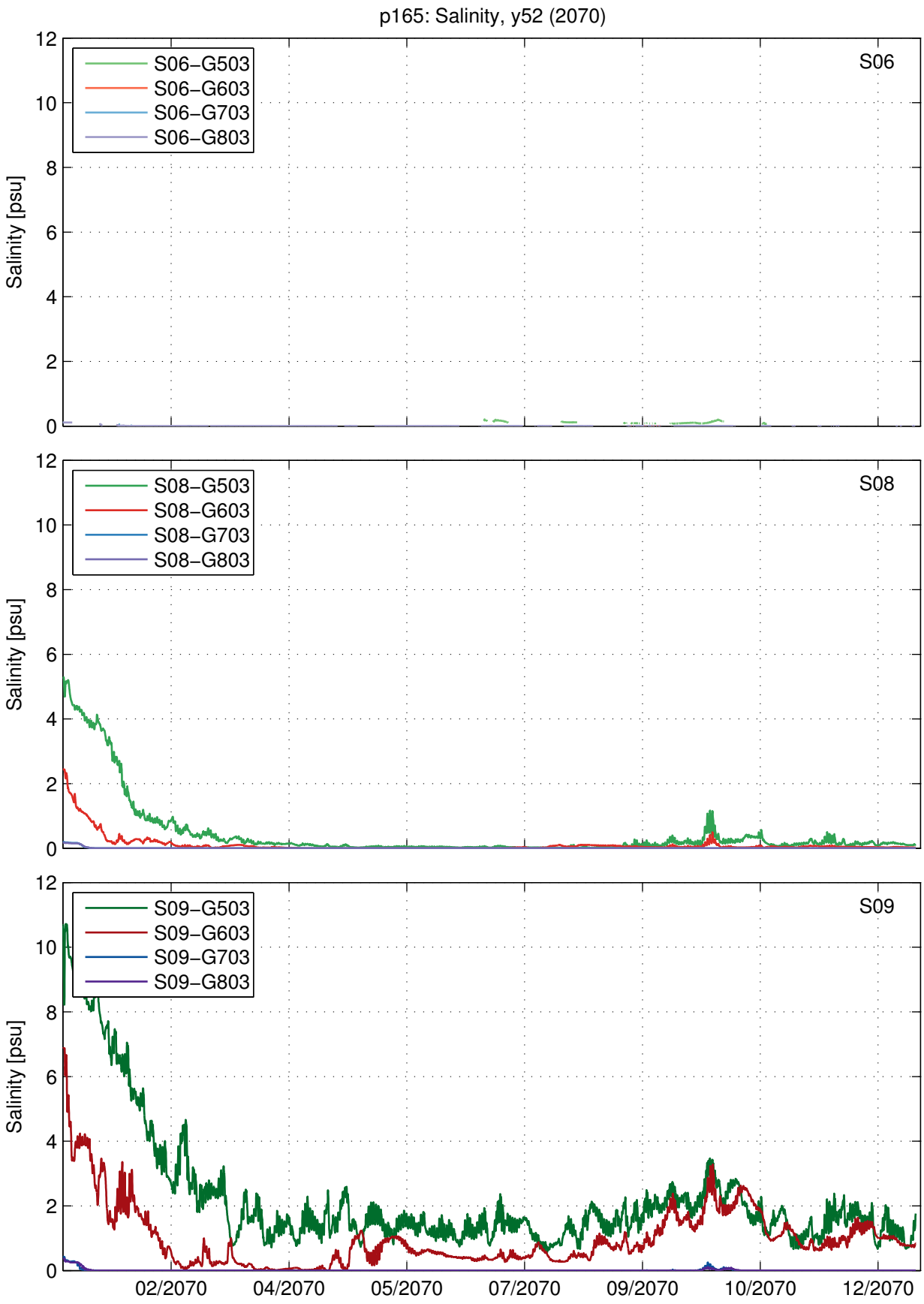

GIWW–JP: Salinity, y52 (2070)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Salinity [psu]
0
5
10
15
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

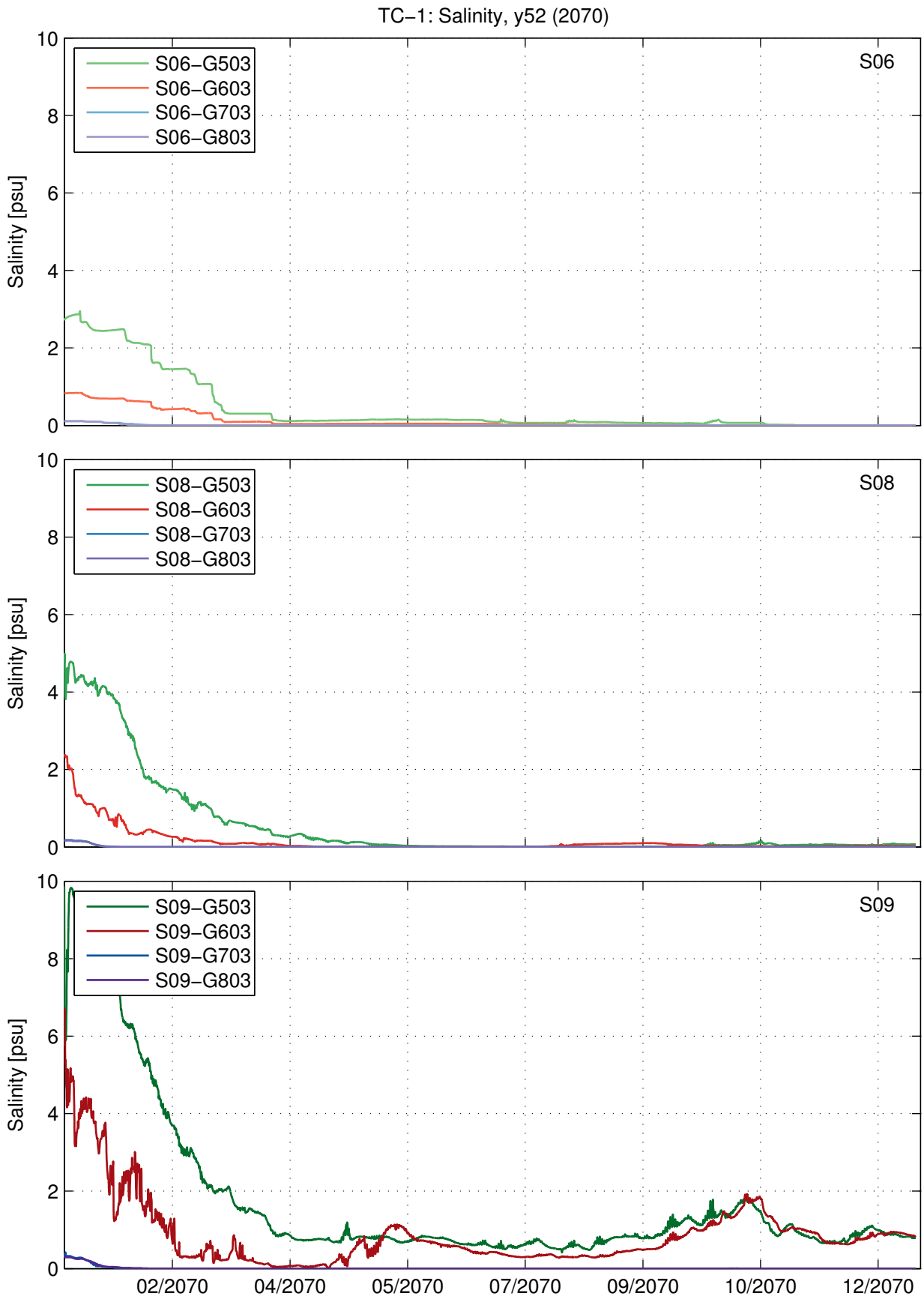

p169: Salinity, y52 (2070)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Salinity [psu]
0
2
4
6
8
10
12
14
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

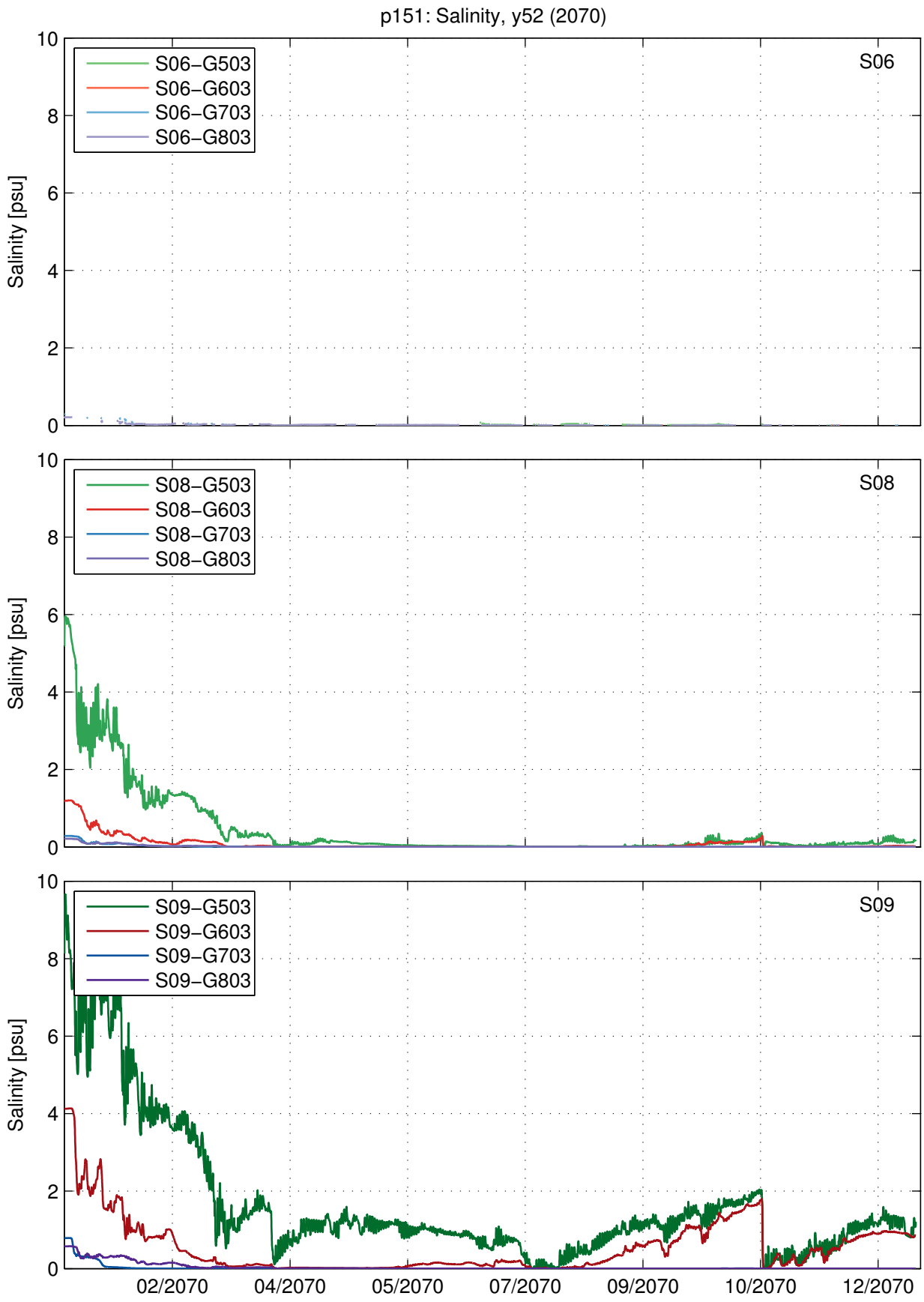

LK−4: Salinity, y52 (2070)
S06−G503
S06−G603
S06−G703
S06−G803
S06
S08−G503
S08−G603
S08−G703
S08−G803
S08
S09−G503
S09−G603
S09−G703
S09−G803
S09
Salinity [psu]
0
2
4
6
8
10
12
14
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

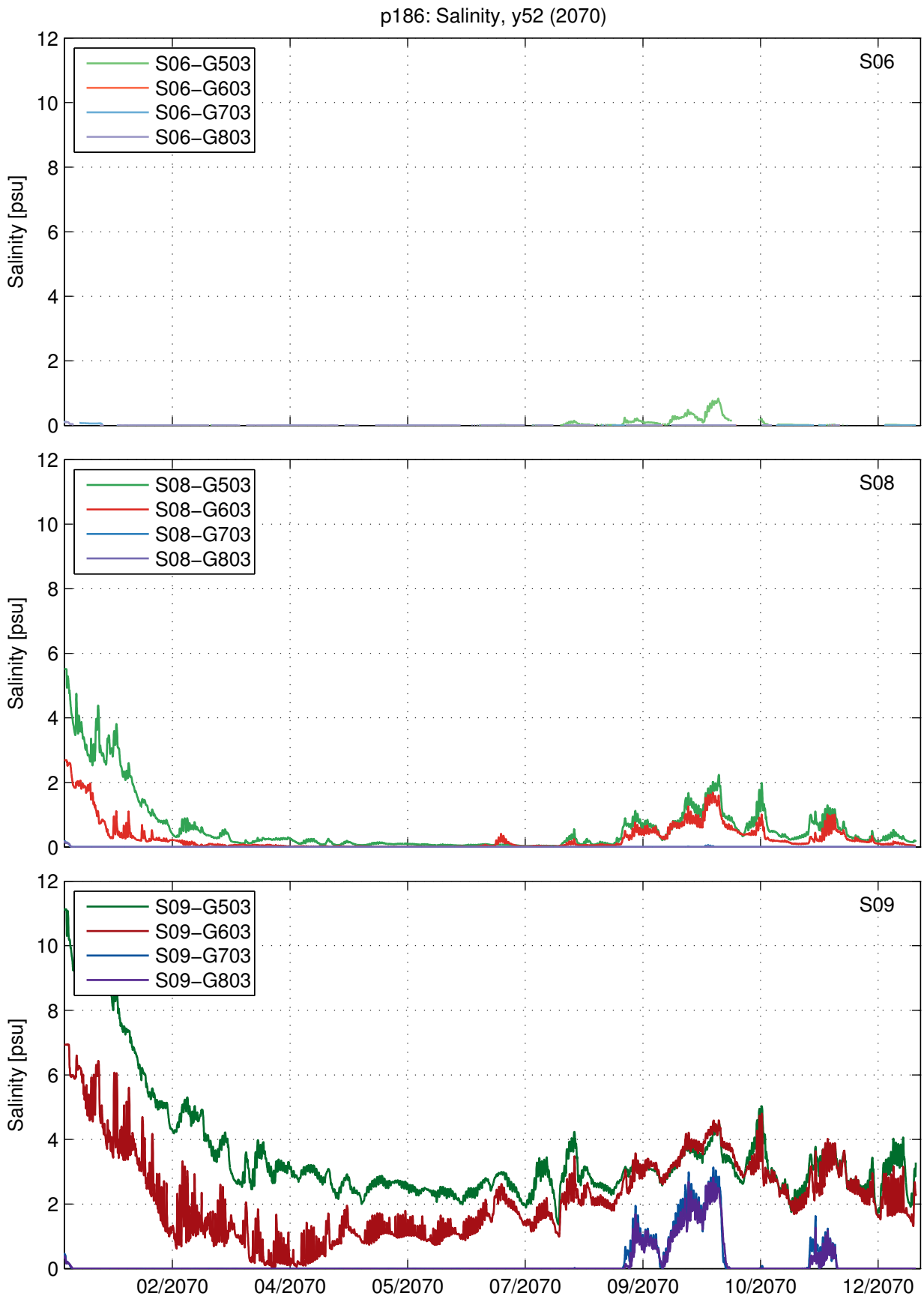

VC−1: Salinity, y52 (2070)
S06−G503
S06−G603
S06−G703
S06−G803
S06
S08−G503
S08−G603
S08−G703
S08−G803
S08
S09−G503
S09−G603
S09−G703
S09−G803
S09
Salinity [psu]
0
2
4
6
8
10
12
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

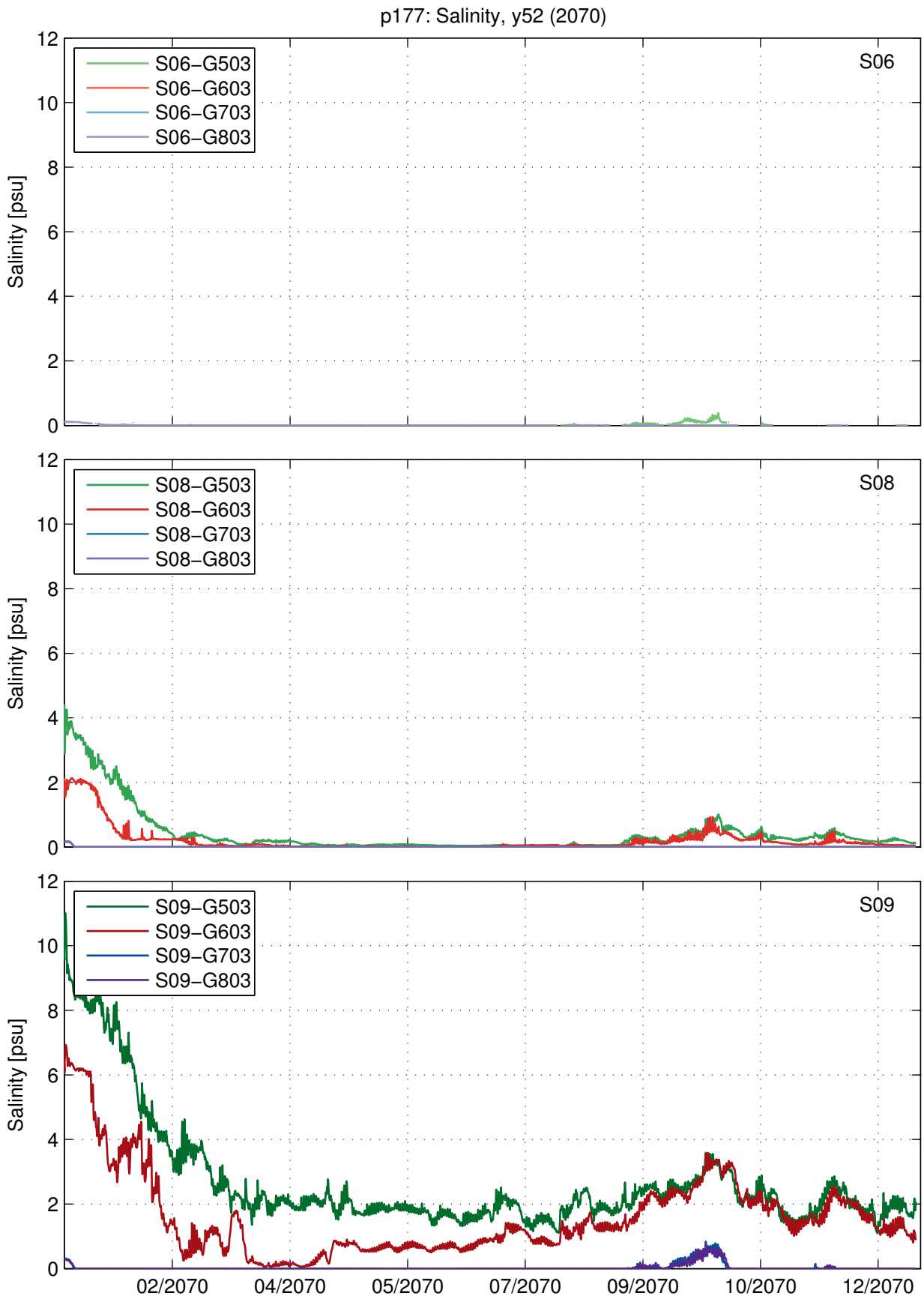

p160: Salinity, y52 (2070)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Salinity [psu]
0
2
4
6
8
10
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

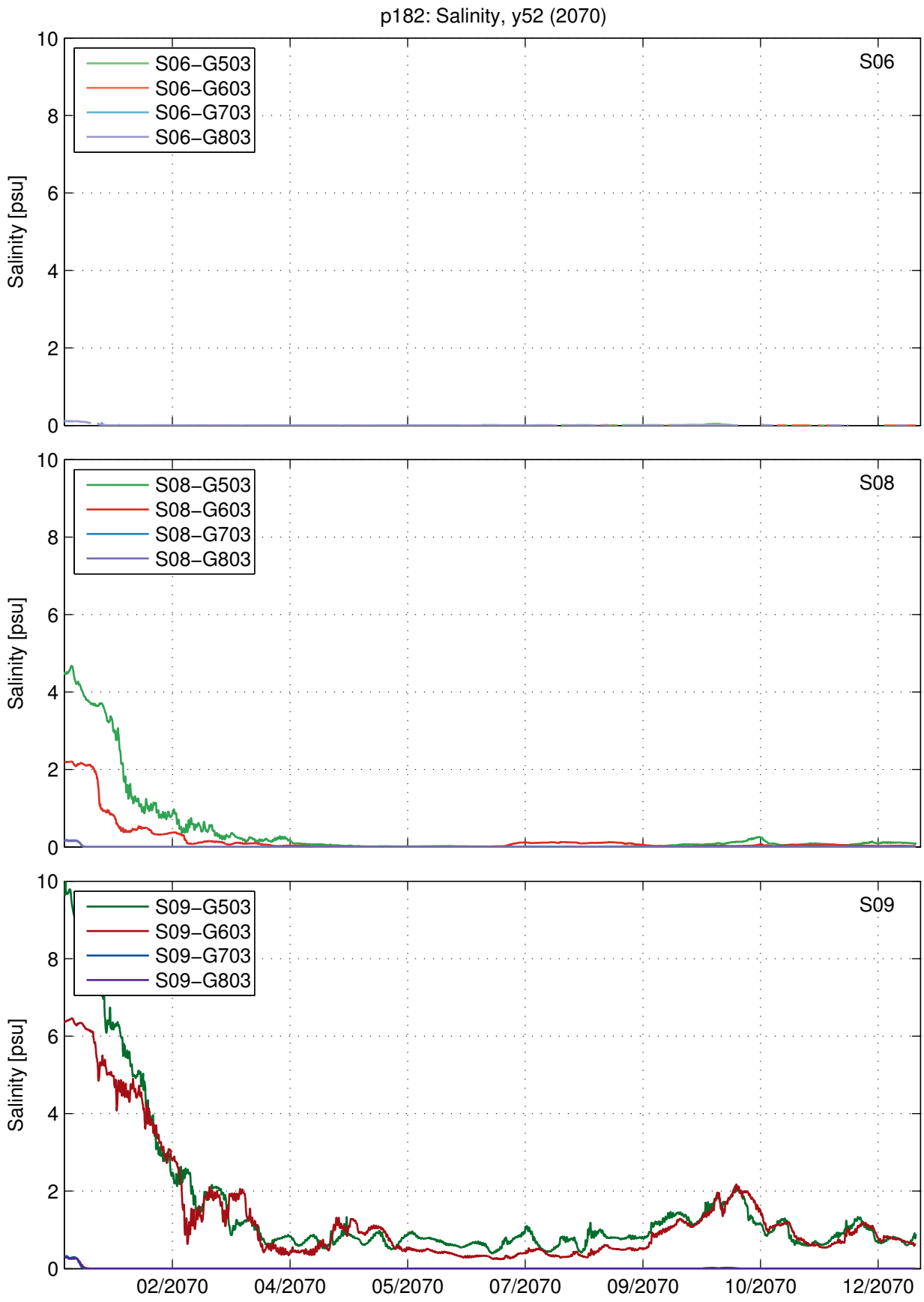

p165: Salinity, y52 (2070)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Salinity [psu]
0
2
4
6
8
10
12
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

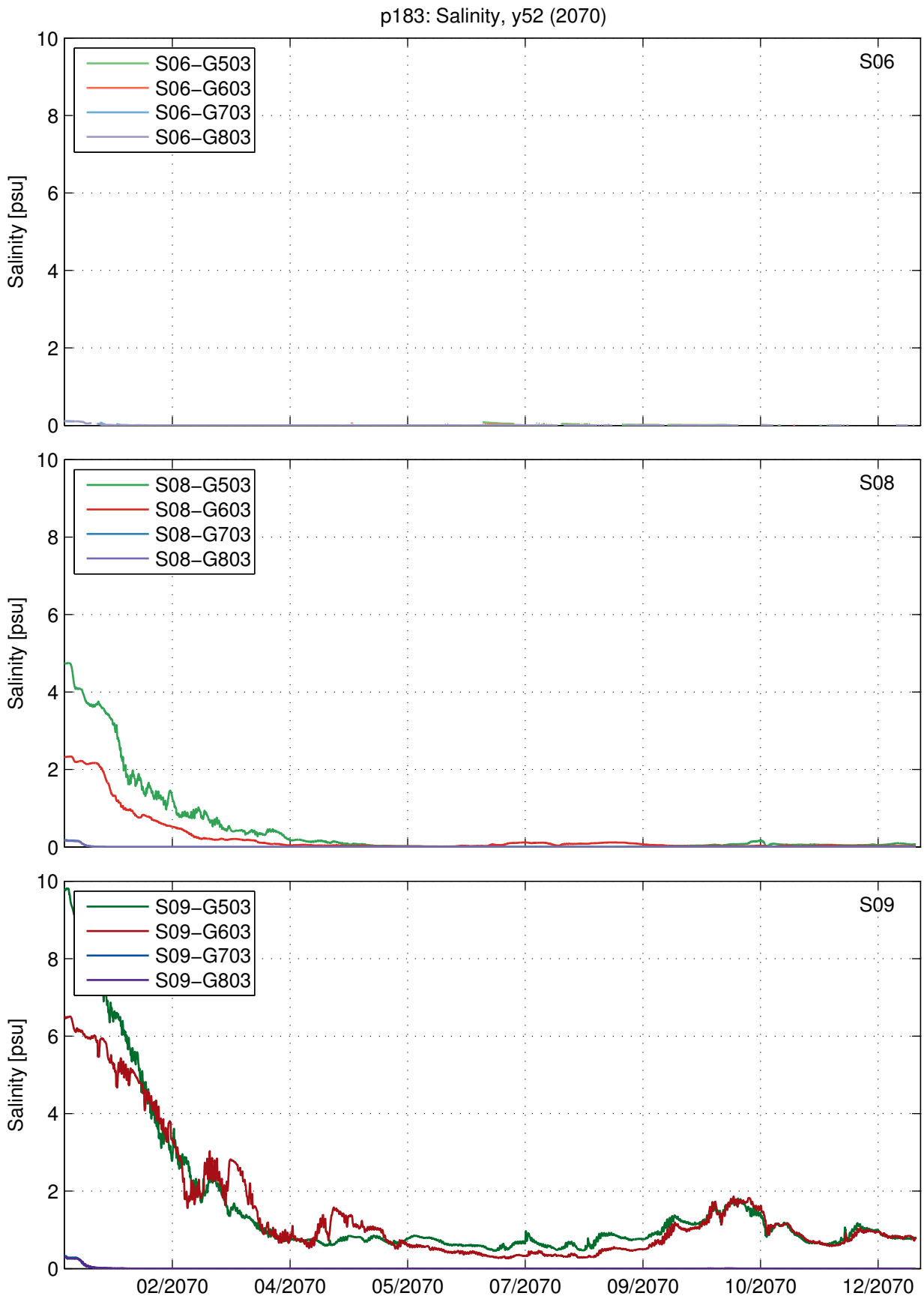

TC−1: Salinity, y52 (2070)
S06−G503
S06−G603
S06−G703
S06−G803
S06
S08−G503
S08−G603
S08−G703
S08−G803
S08
S09−G503
S09−G603
S09−G703
S09−G803
S09
Salinity [psu]
0
2
4
6
8
10
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

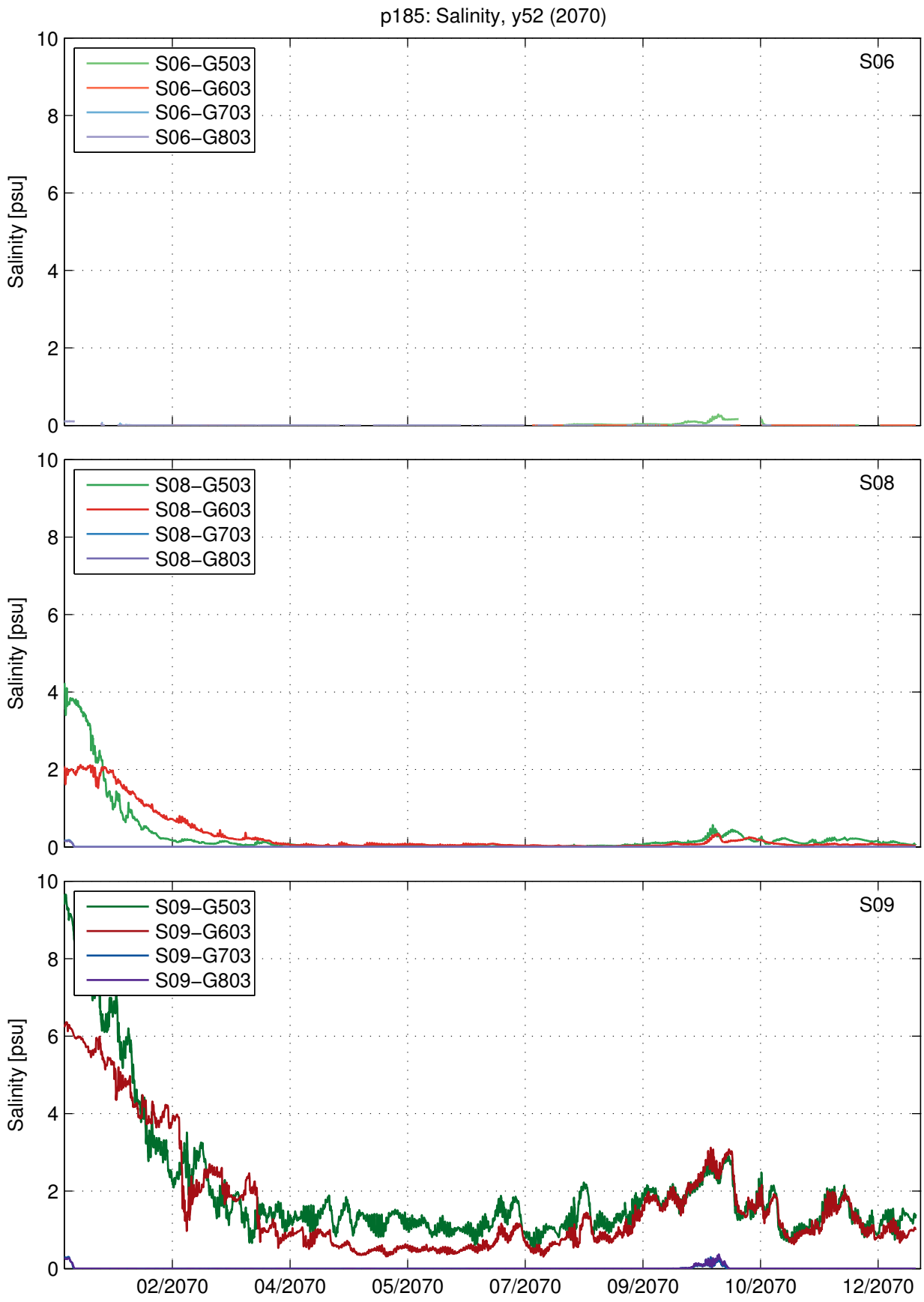

p151: Salinity, y52 (2070)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Salinity [psu]
0
2
4
6
8
10
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

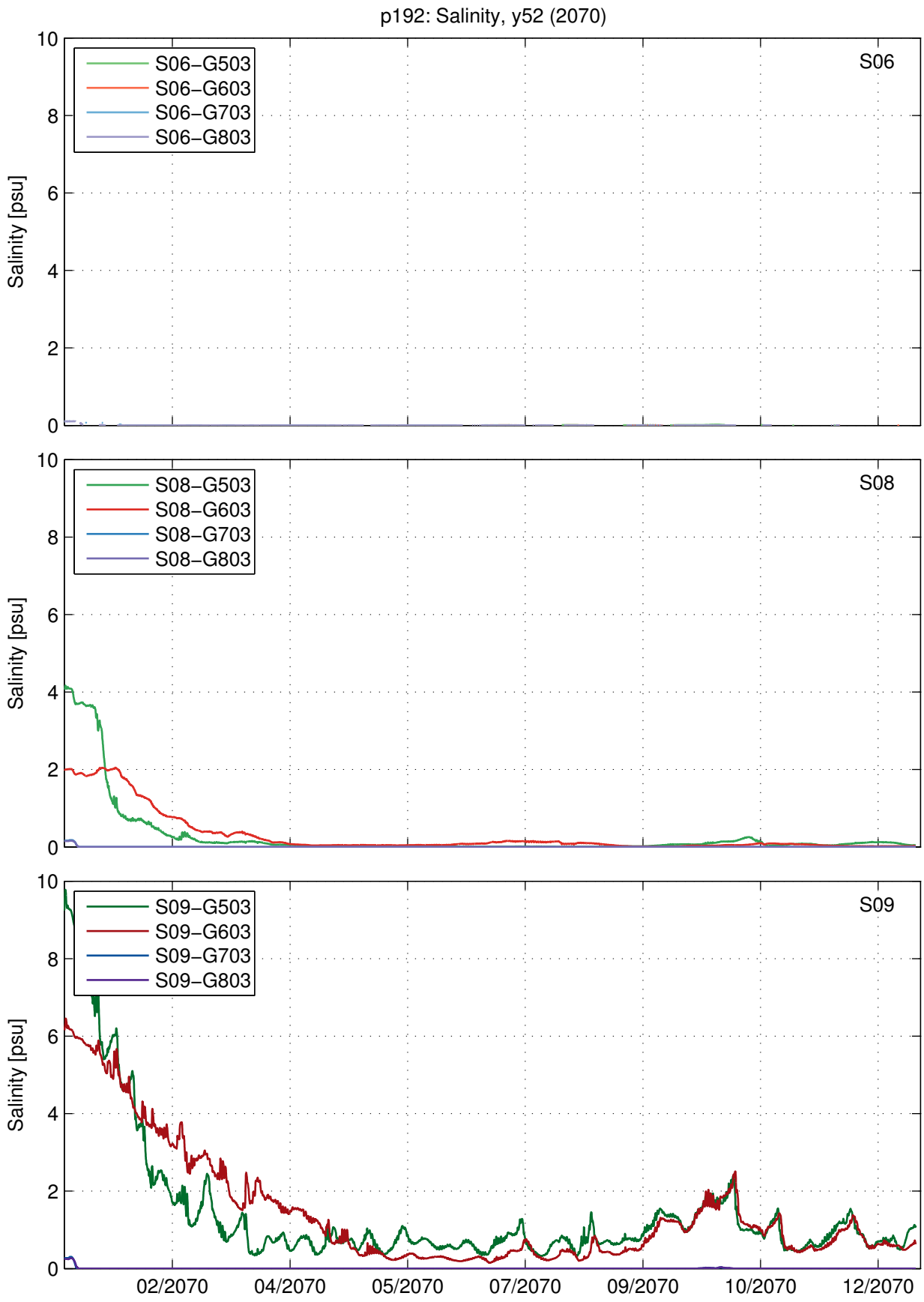

p186: Salinity, y52 (2070)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Salinity [psu]
0
2
4
6
8
10
12
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

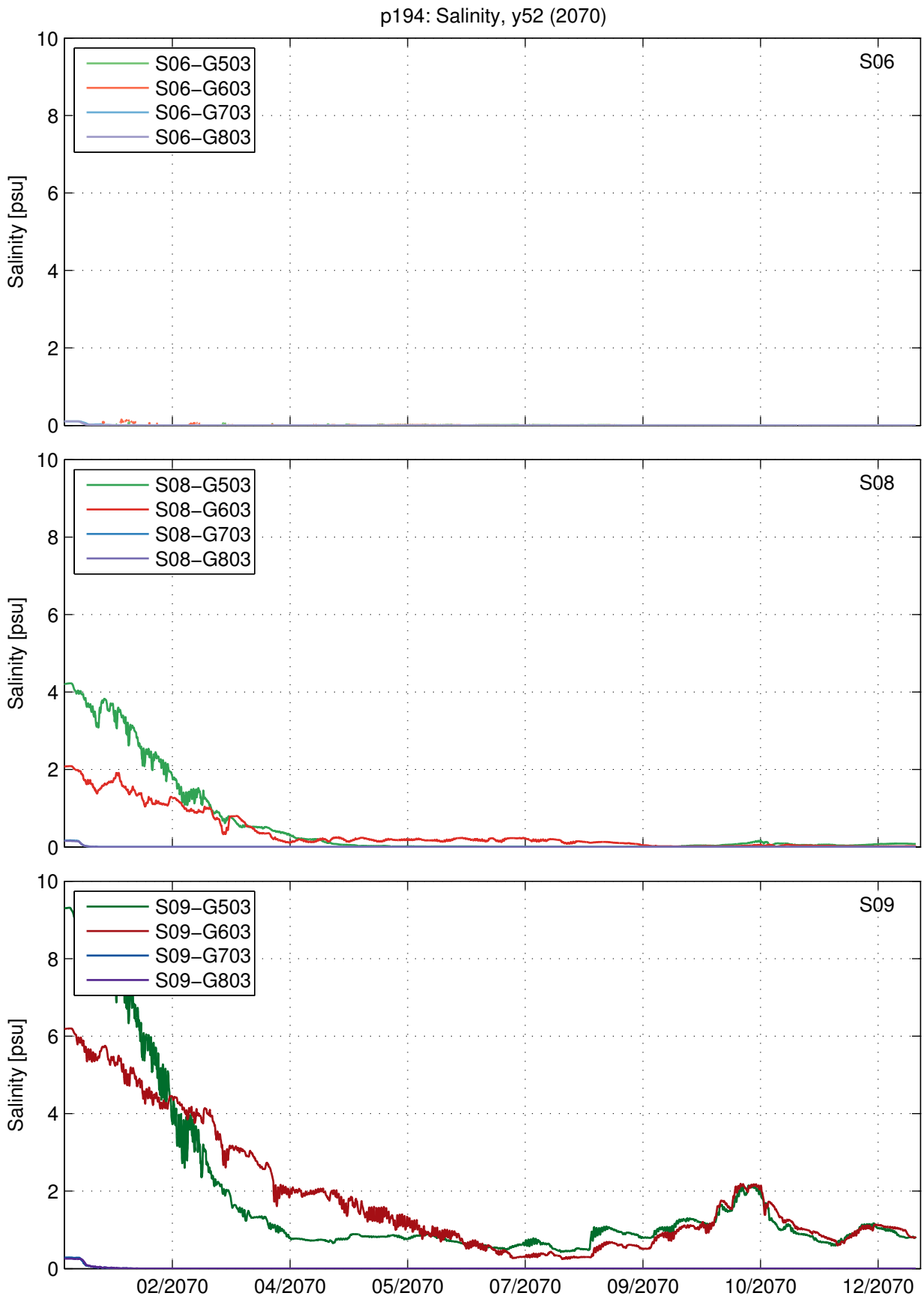

p177: Salinity, y52 (2070)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Salinity [psu]
0
2
4
6
8
10
12
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

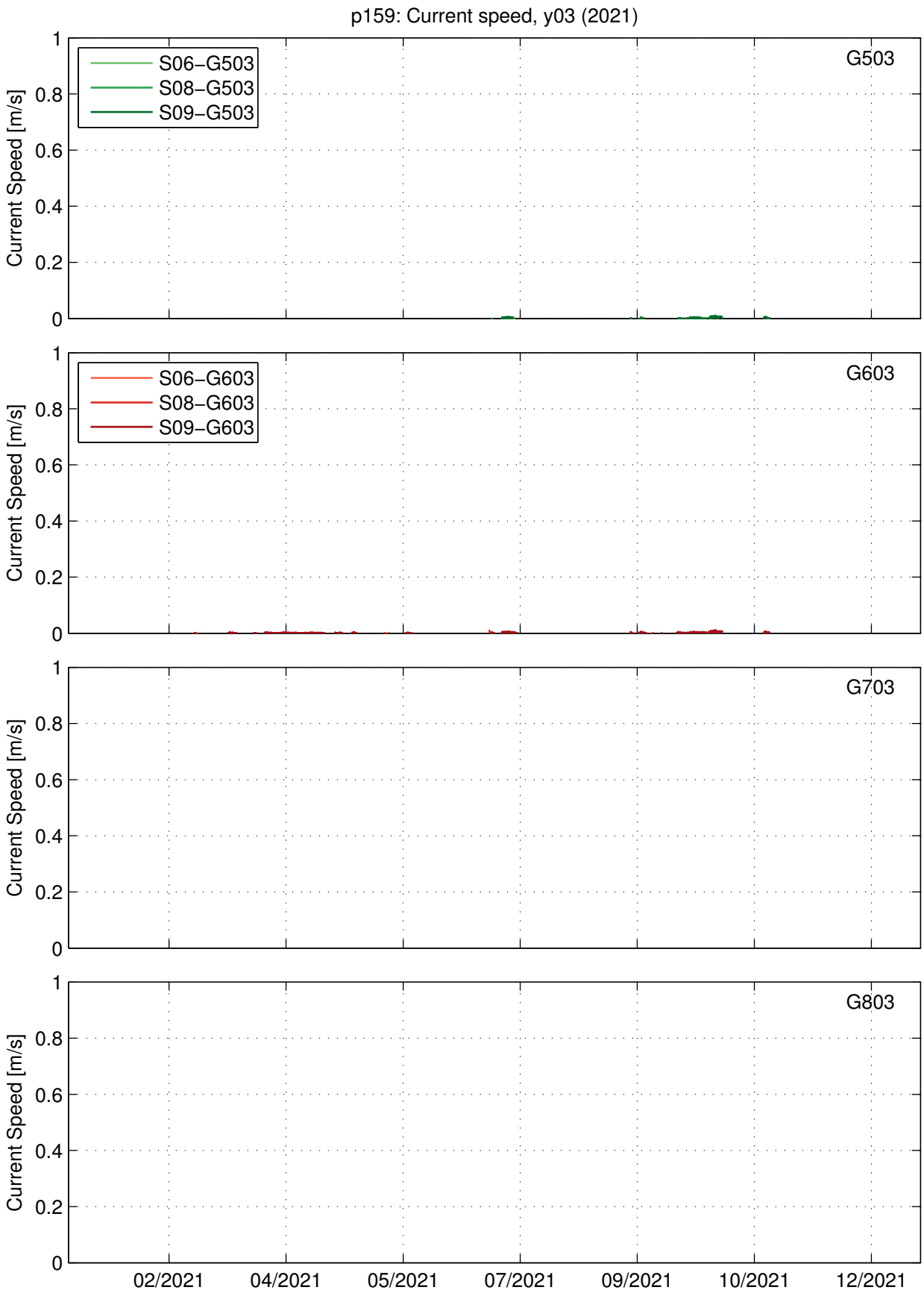

p182: Salinity, y52 (2070)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Salinity [psu]
0
2
4
6
8
10
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

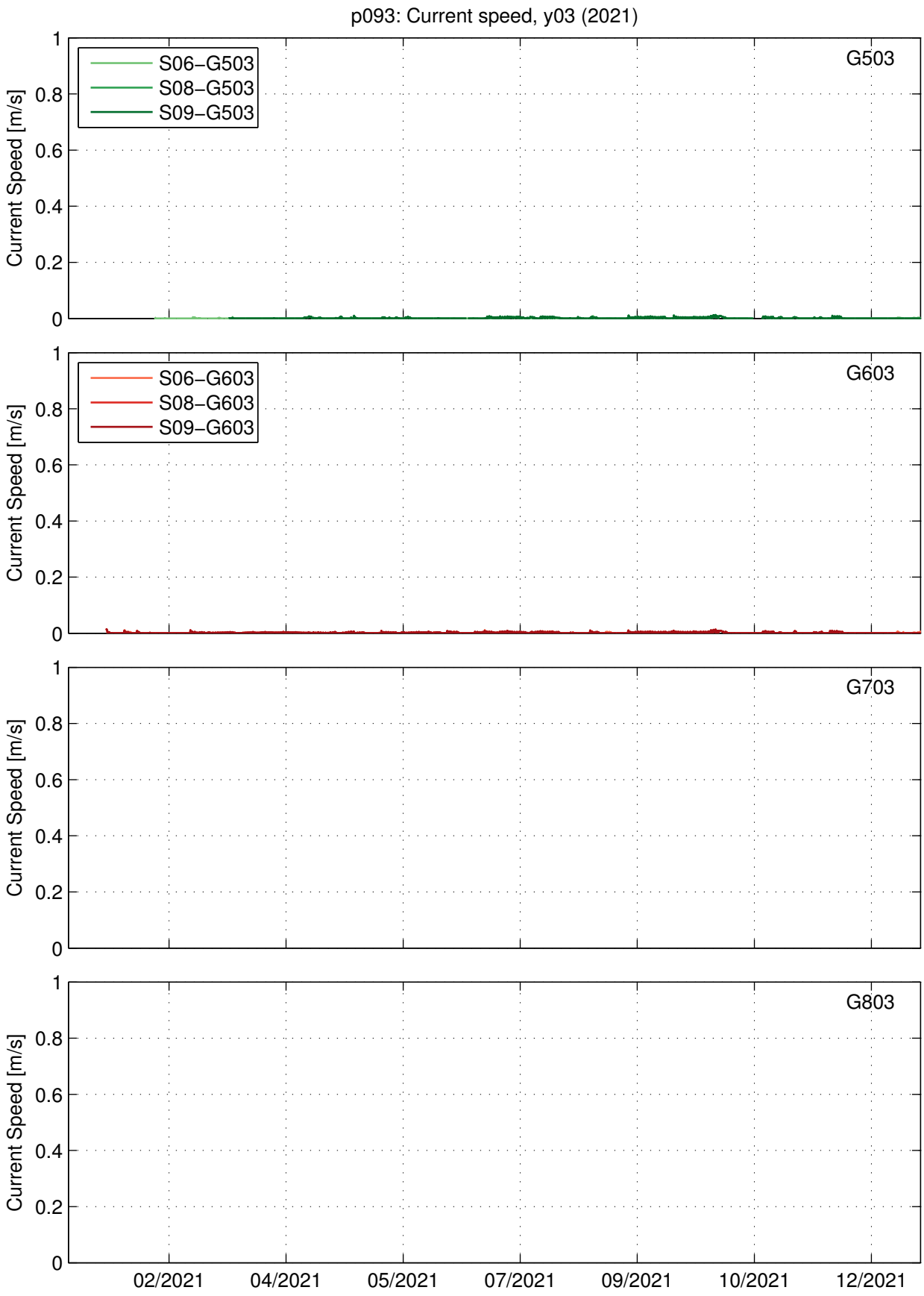

p183: Salinity, y52 (2070)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Salinity [psu]
0
2
4
6
8
10
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

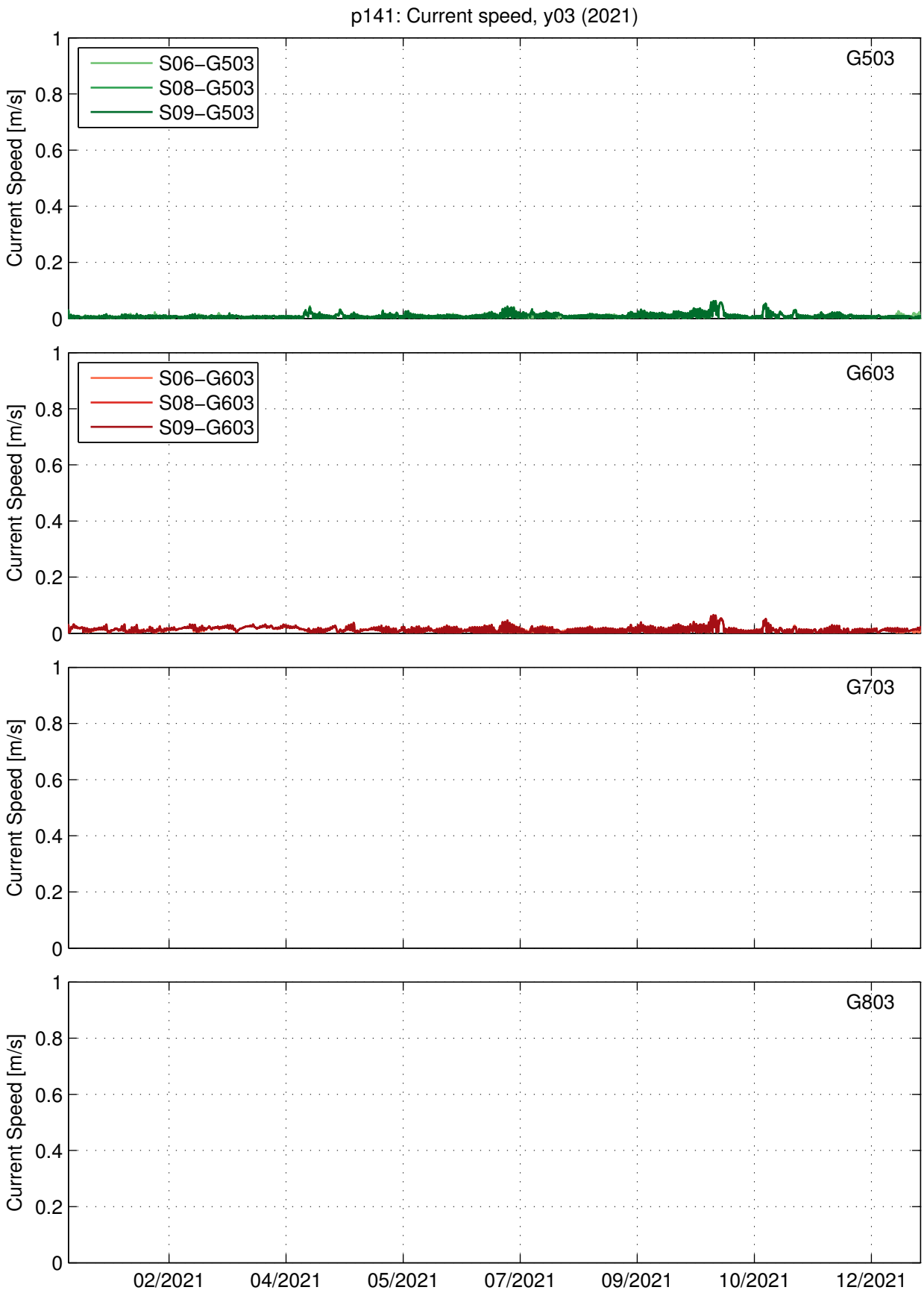

p185: Salinity, y52 (2070)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Salinity [psu]
0
2
4
6
8
10
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

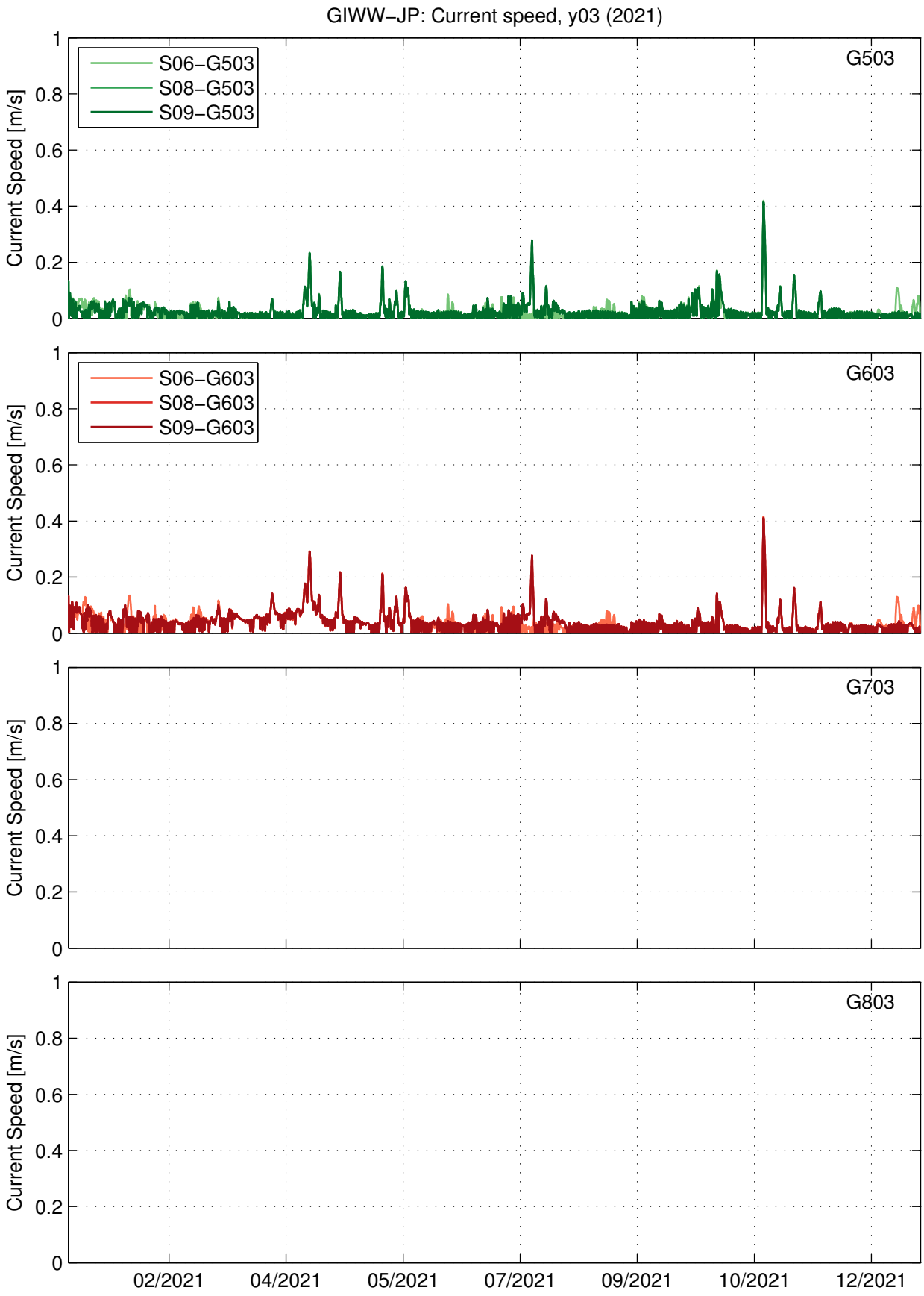

p192: Salinity, y52 (2070)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Salinity [psu]
0
2
4
6
8
10
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

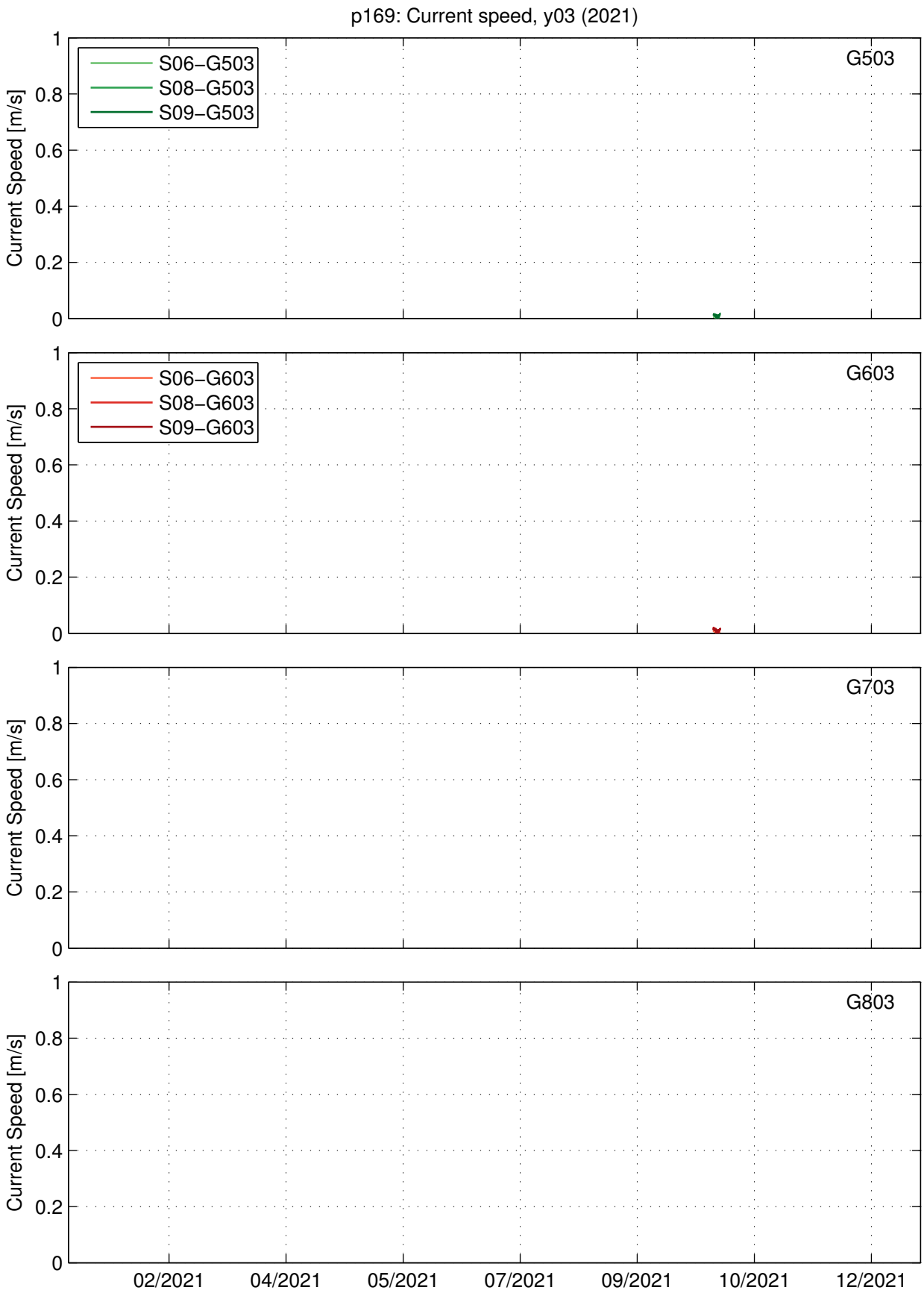

p194: Salinity, y52 (2070)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Salinity [psu]
0
2
4
6
8
10
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

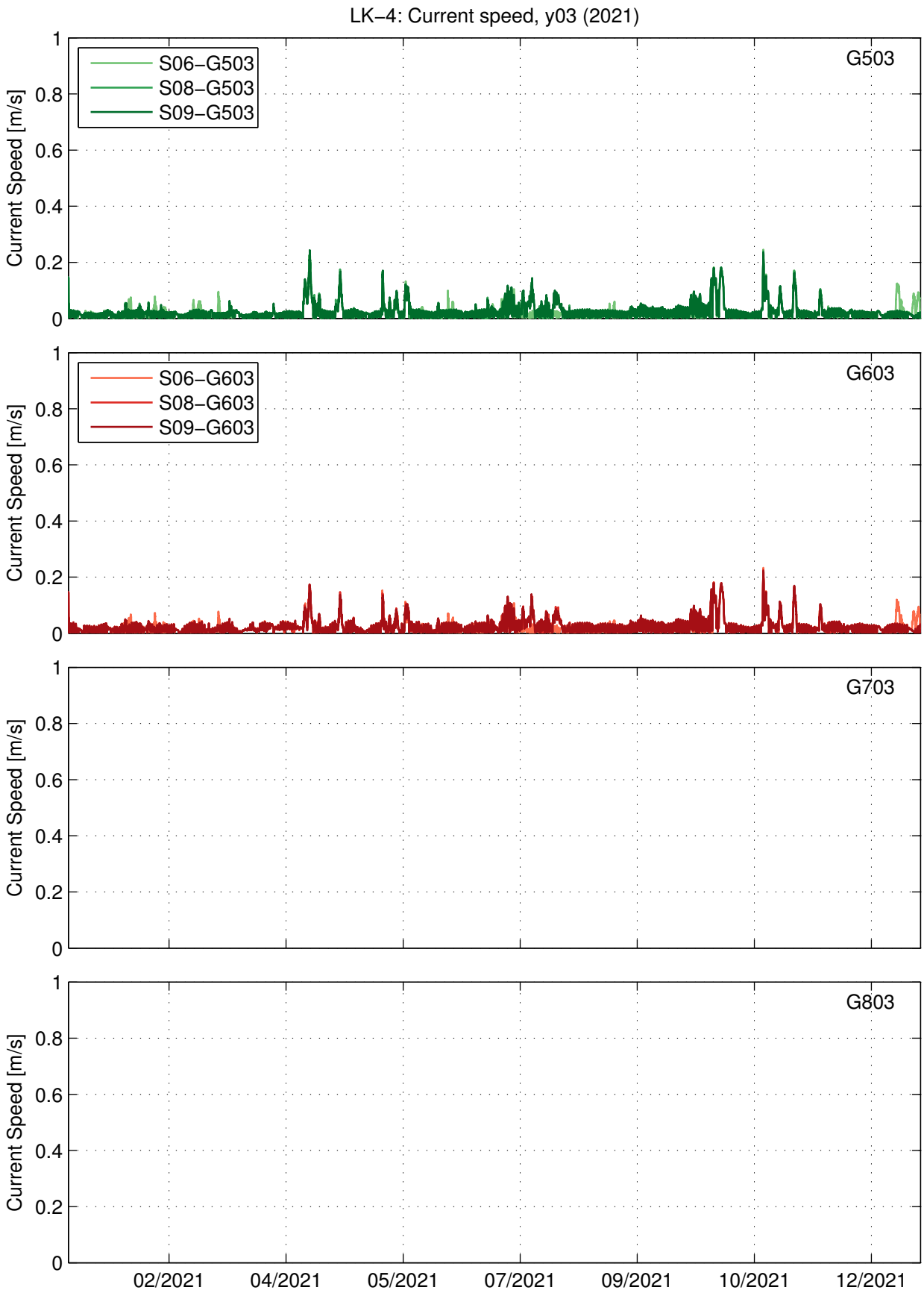

p159: Current speed, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Current Speed [m/s]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

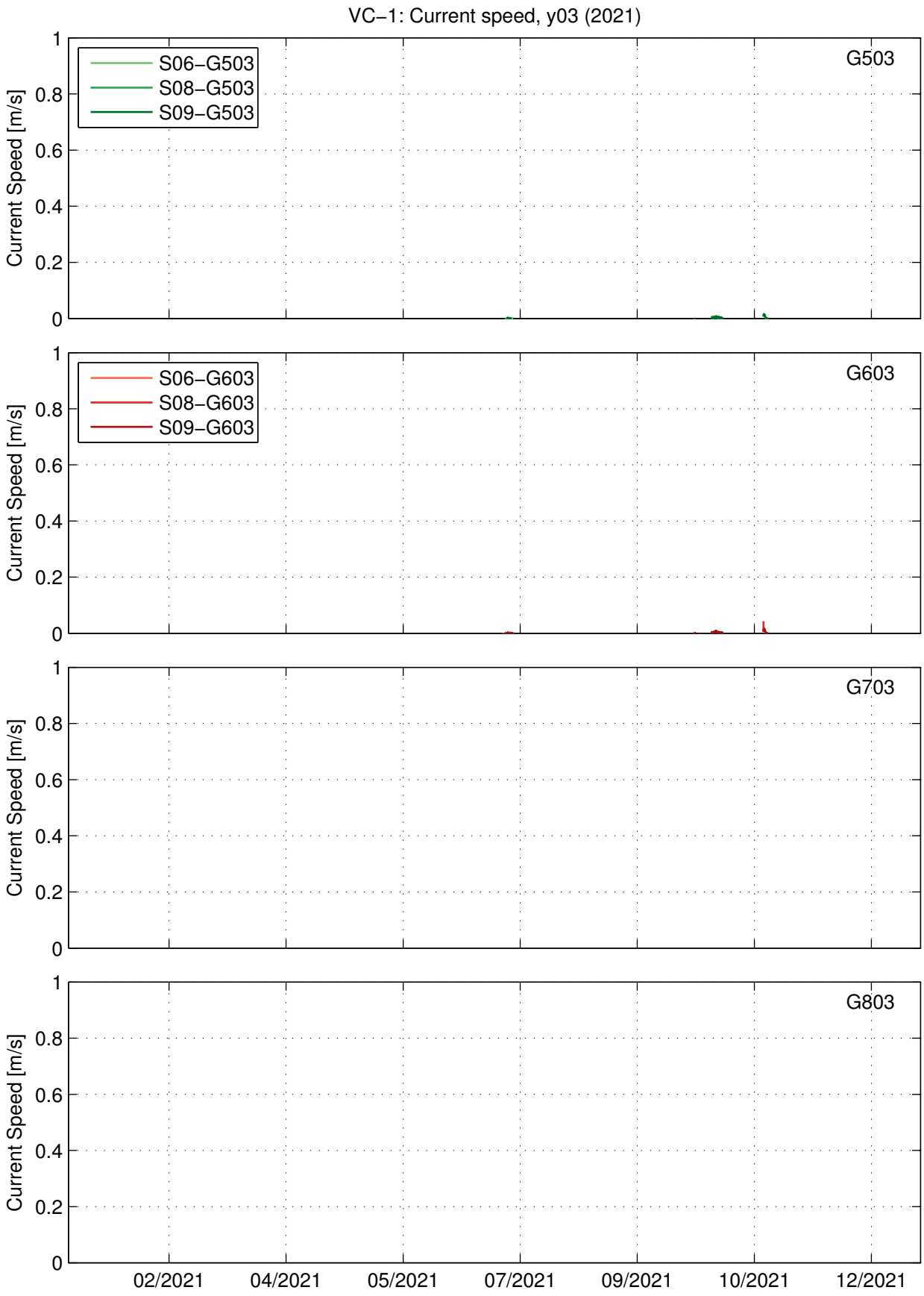

p093: Current speed, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Current Speed [m/s]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

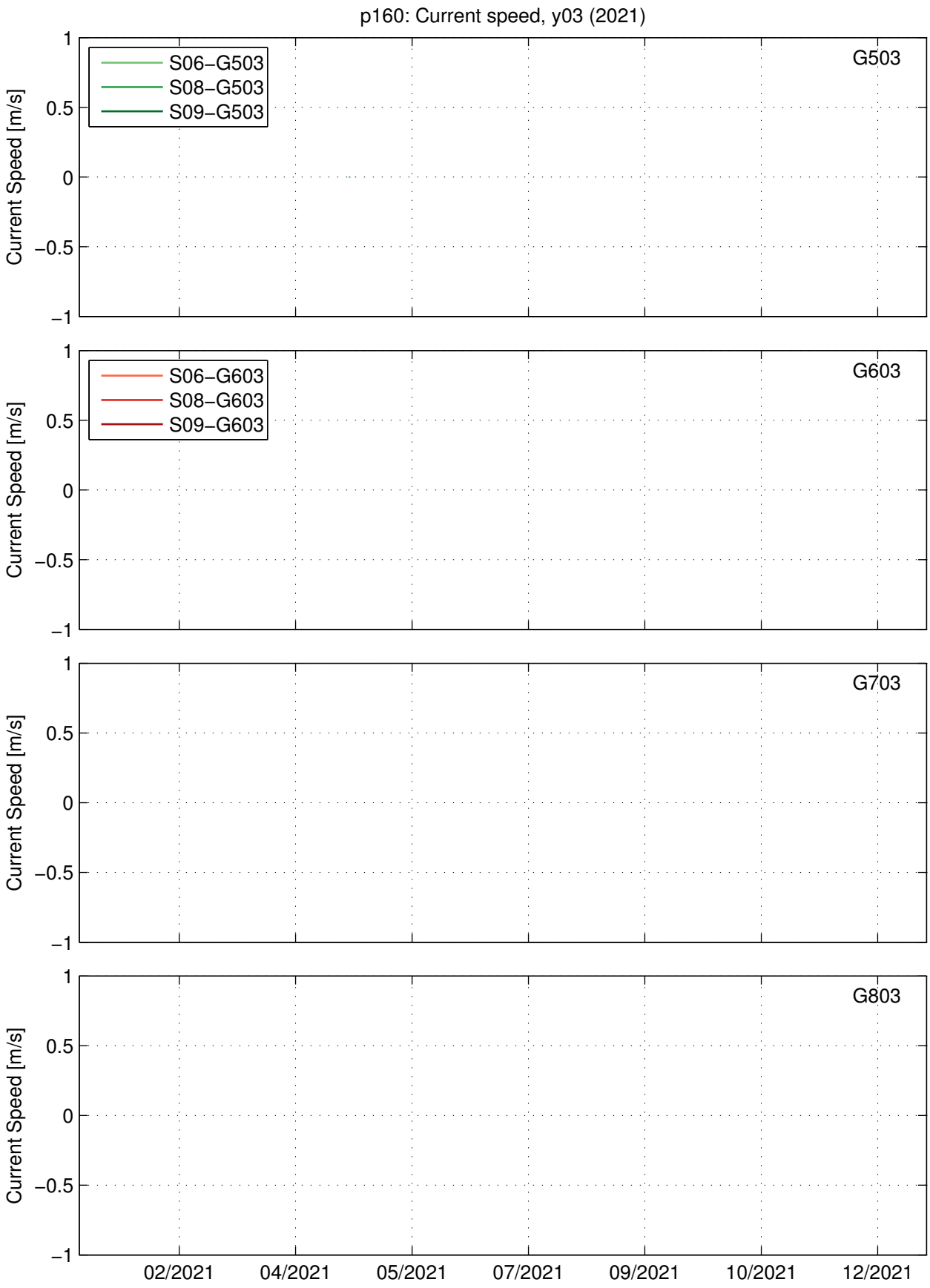

p141: Current speed, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Current Speed [m/s]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

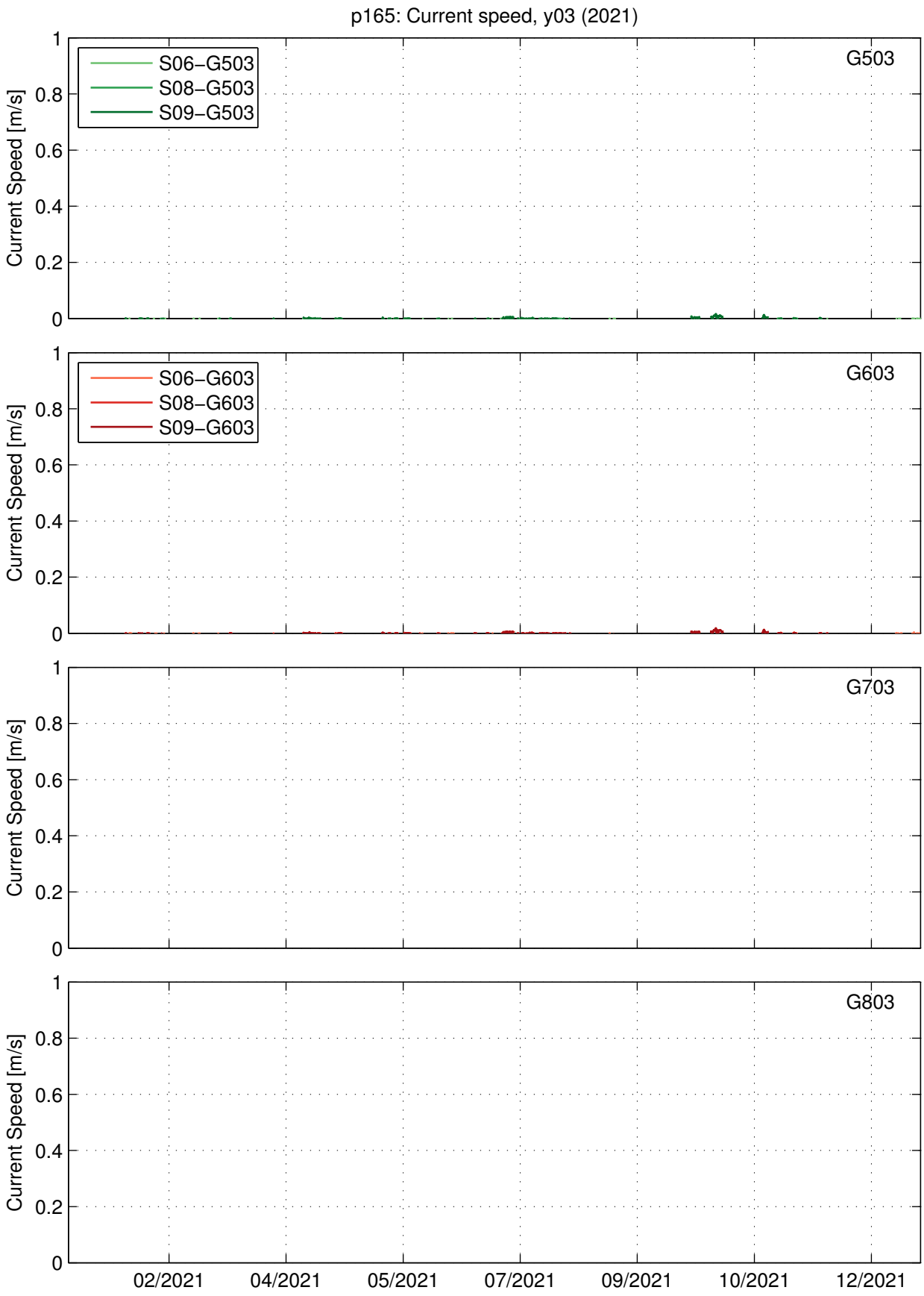

GIWW–JP: Current speed, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Current Speed [m/s]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

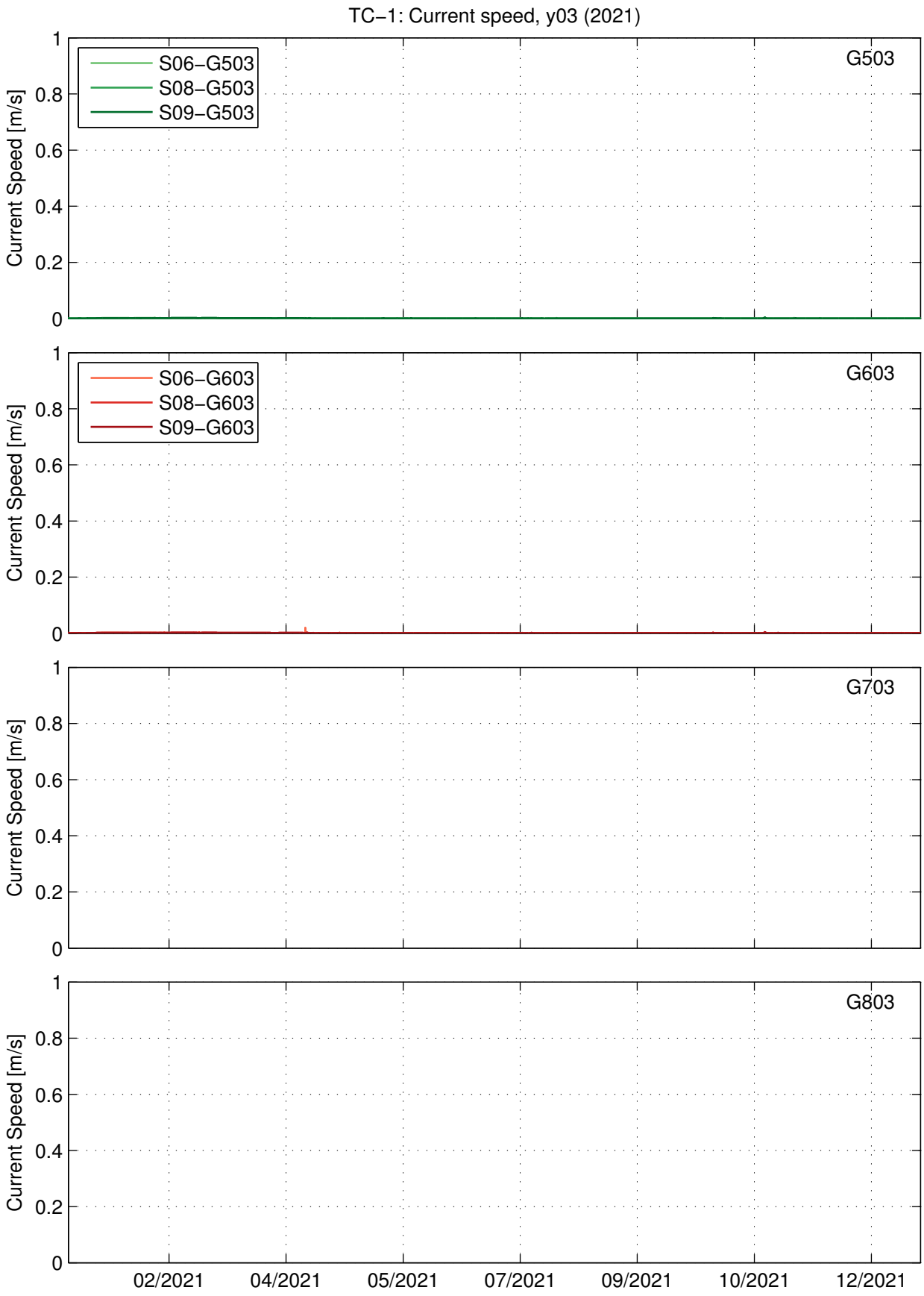

p169: Current speed, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Current Speed [m/s]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

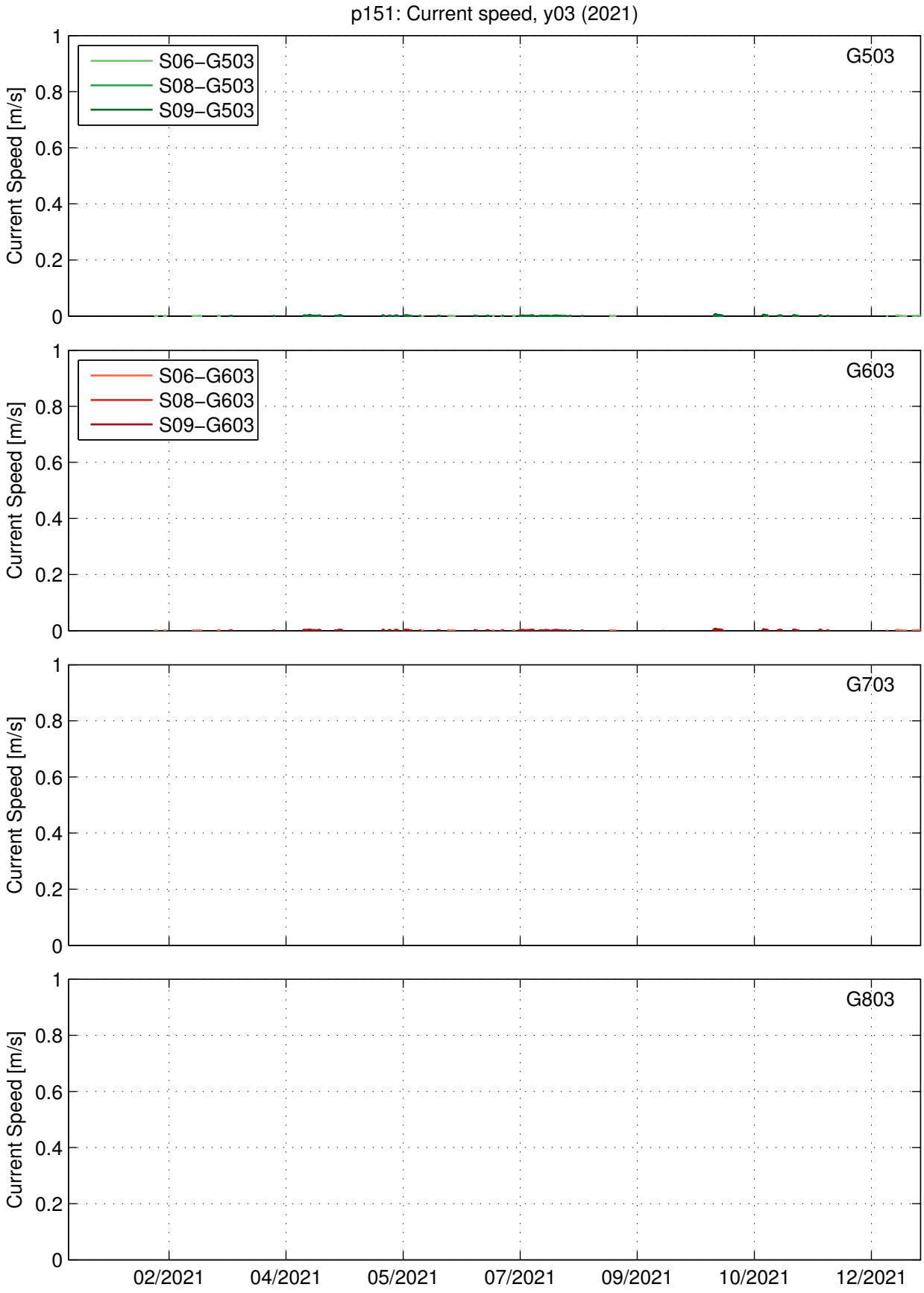

LK−4: Current speed, y03 (2021)
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
G703
G803
Current Speed [m/s]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

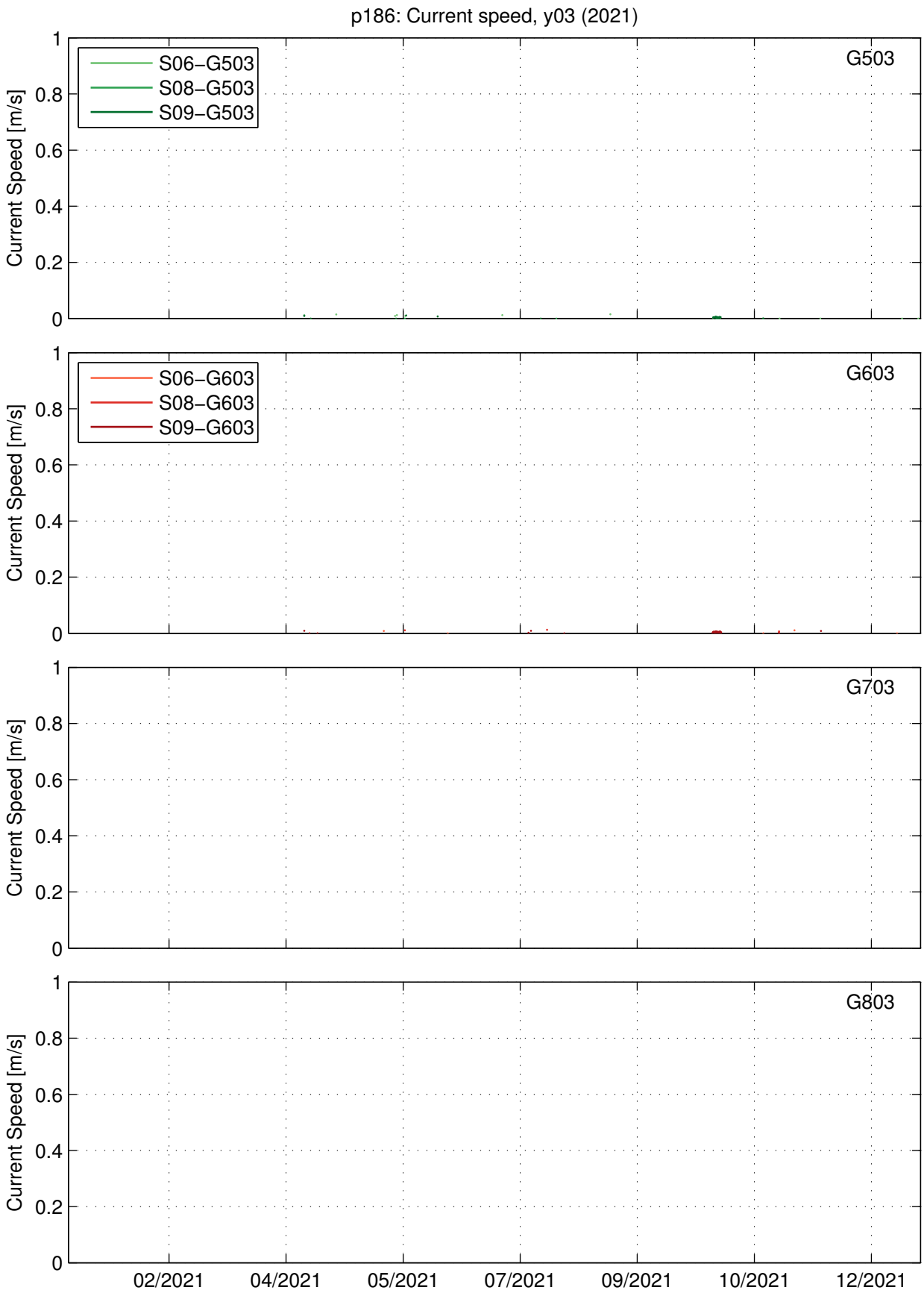

VC−1: Current speed, y03 (2021)
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
G703
G803
Current Speed [m/s]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

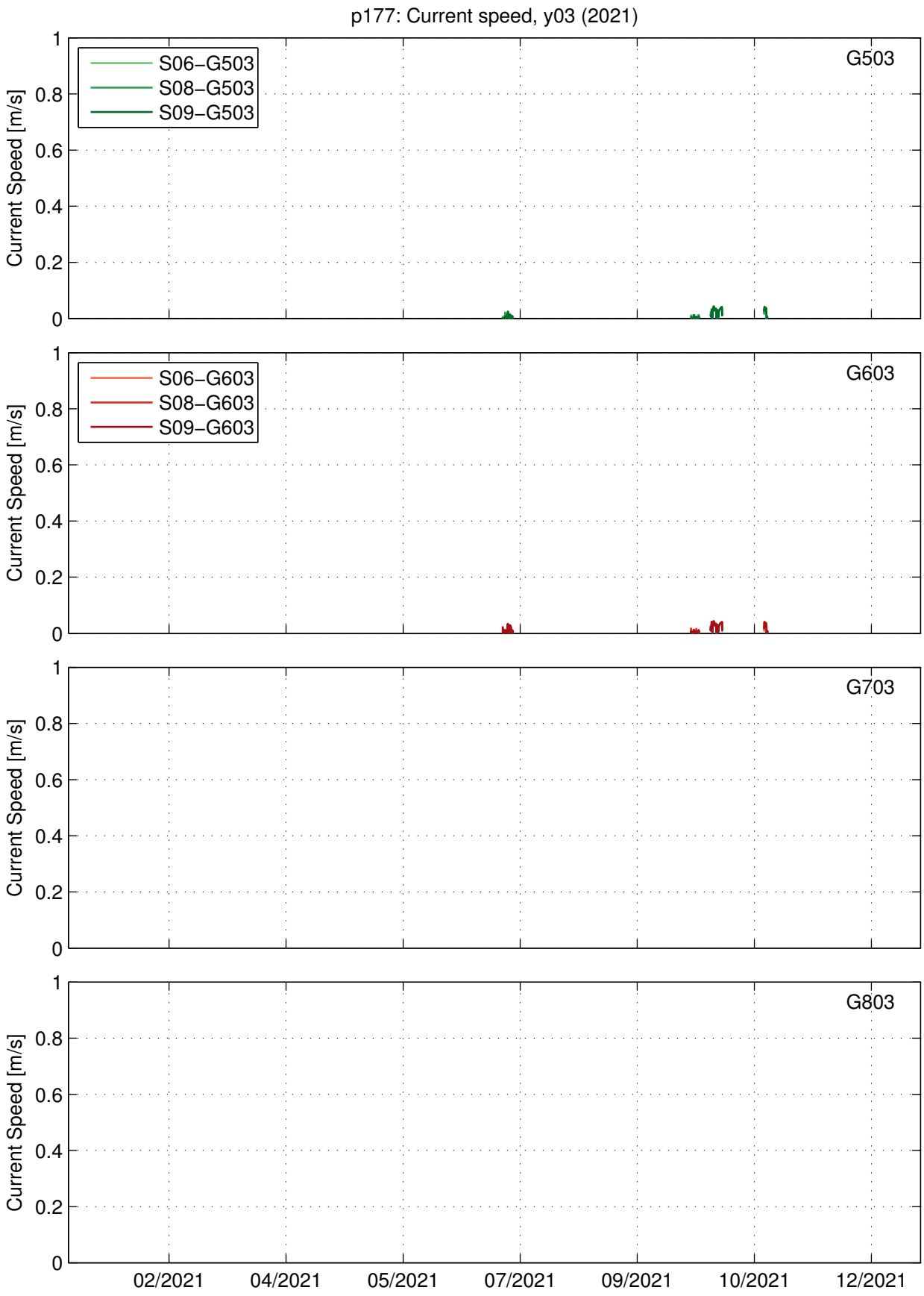

p160: Current speed, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Current Speed [m/s]
1
0.5
0
−0.5
−1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

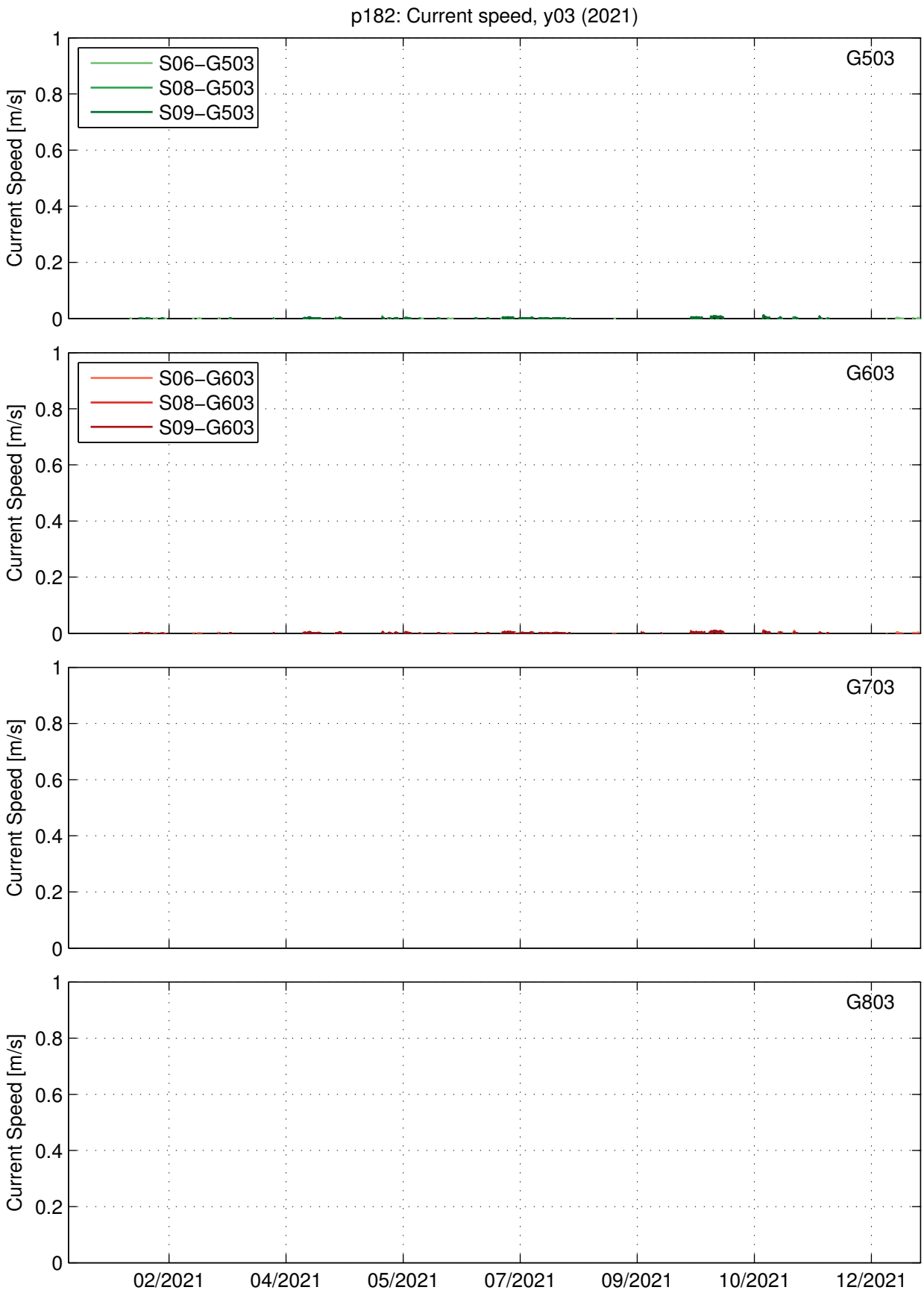

p165: Current speed, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Current Speed [m/s]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

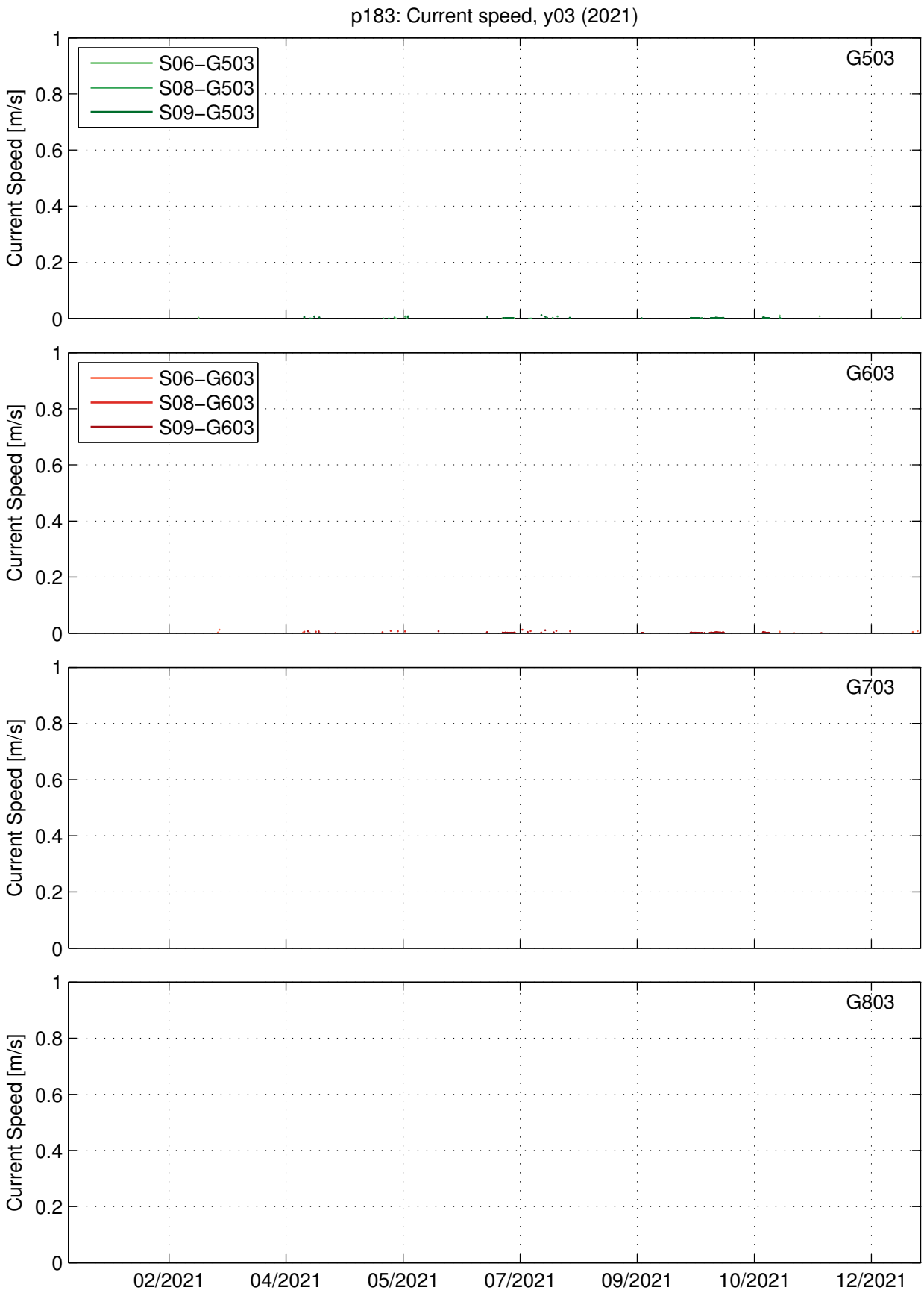

TC−1: Current speed, y03 (2021)
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
G703
G803
Current Speed [m/s]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

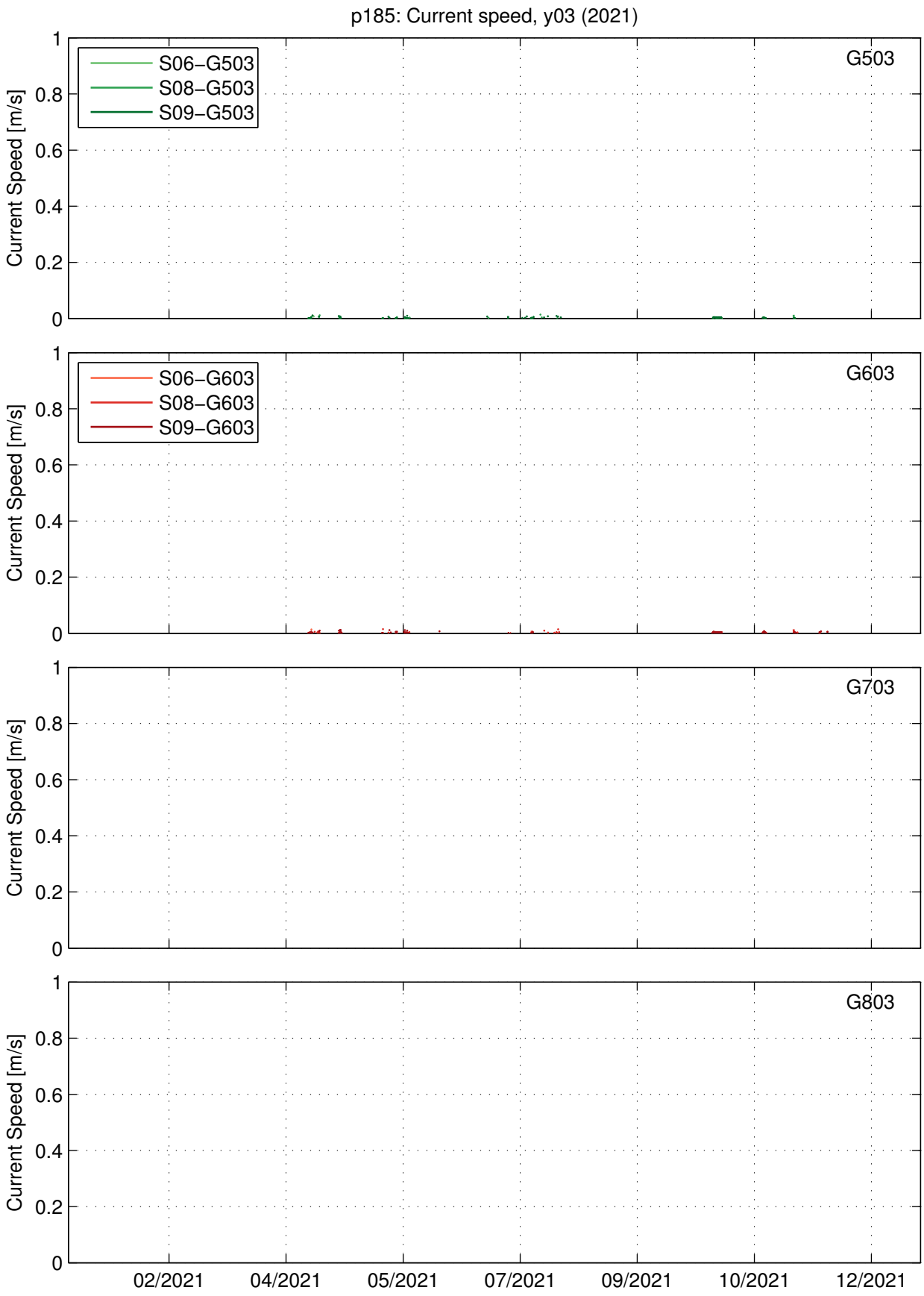

p151: Current speed, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Current Speed [m/s]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

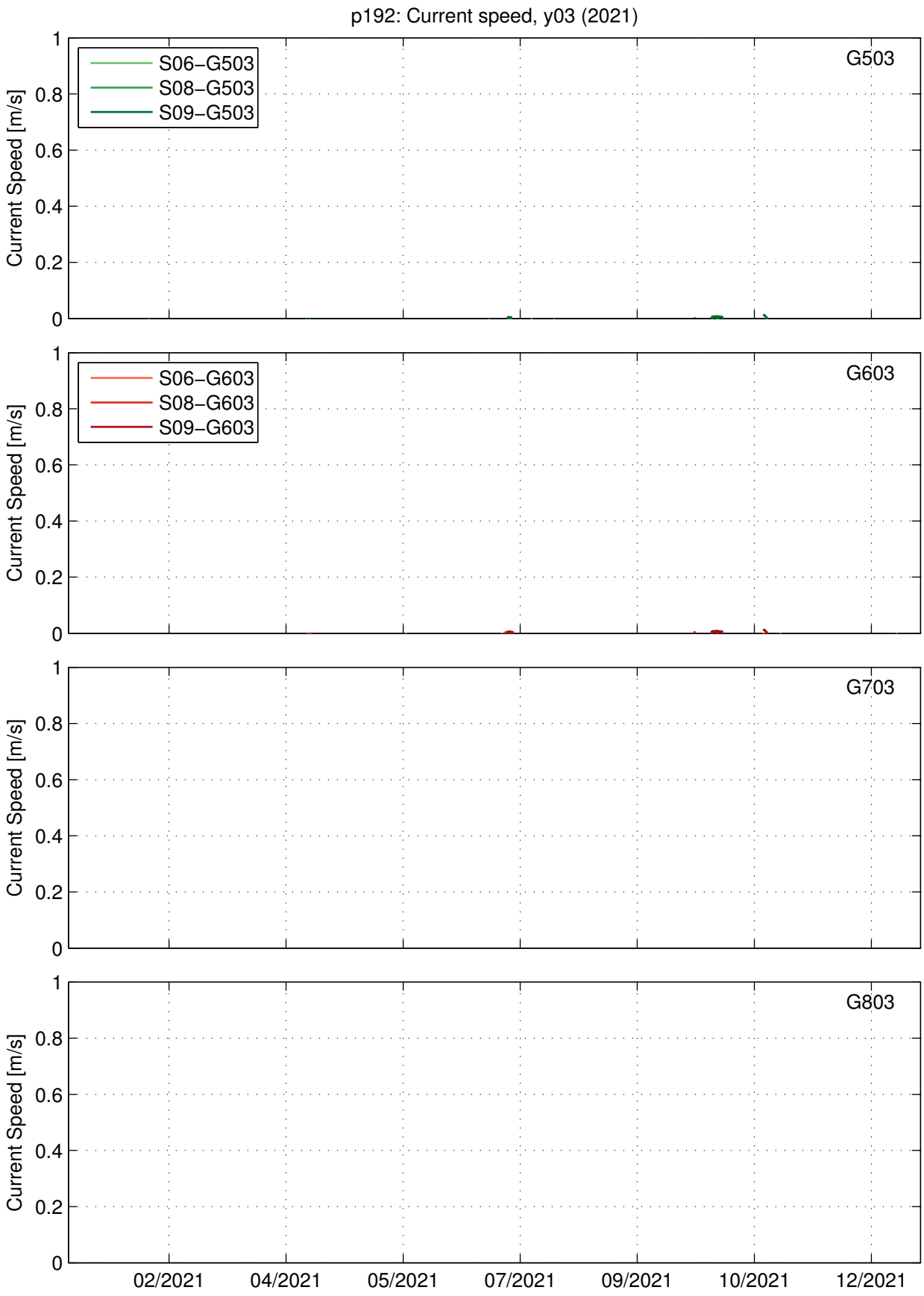

p186: Current speed, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Current Speed [m/s]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

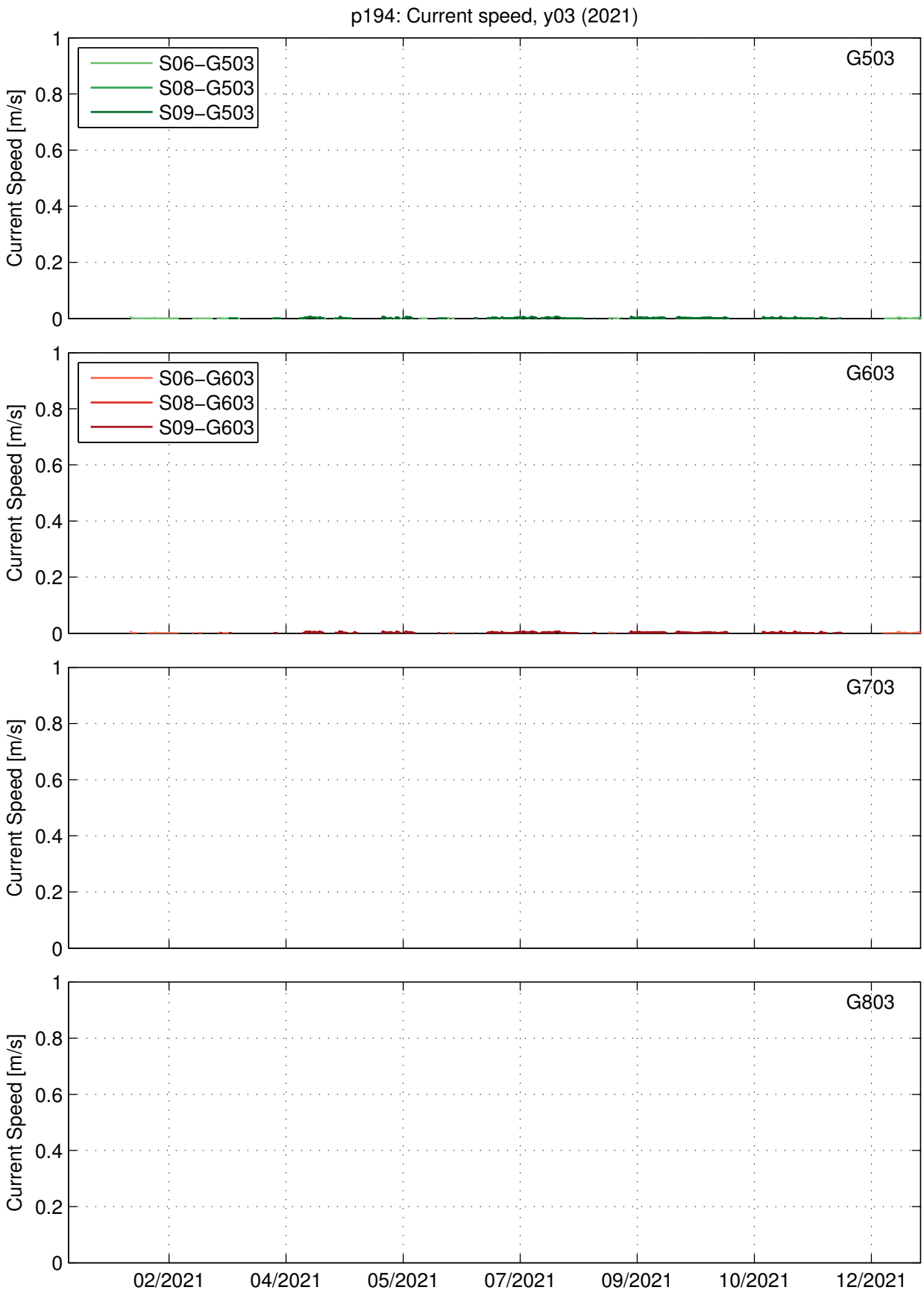

p177: Current speed, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Current Speed [m/s]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

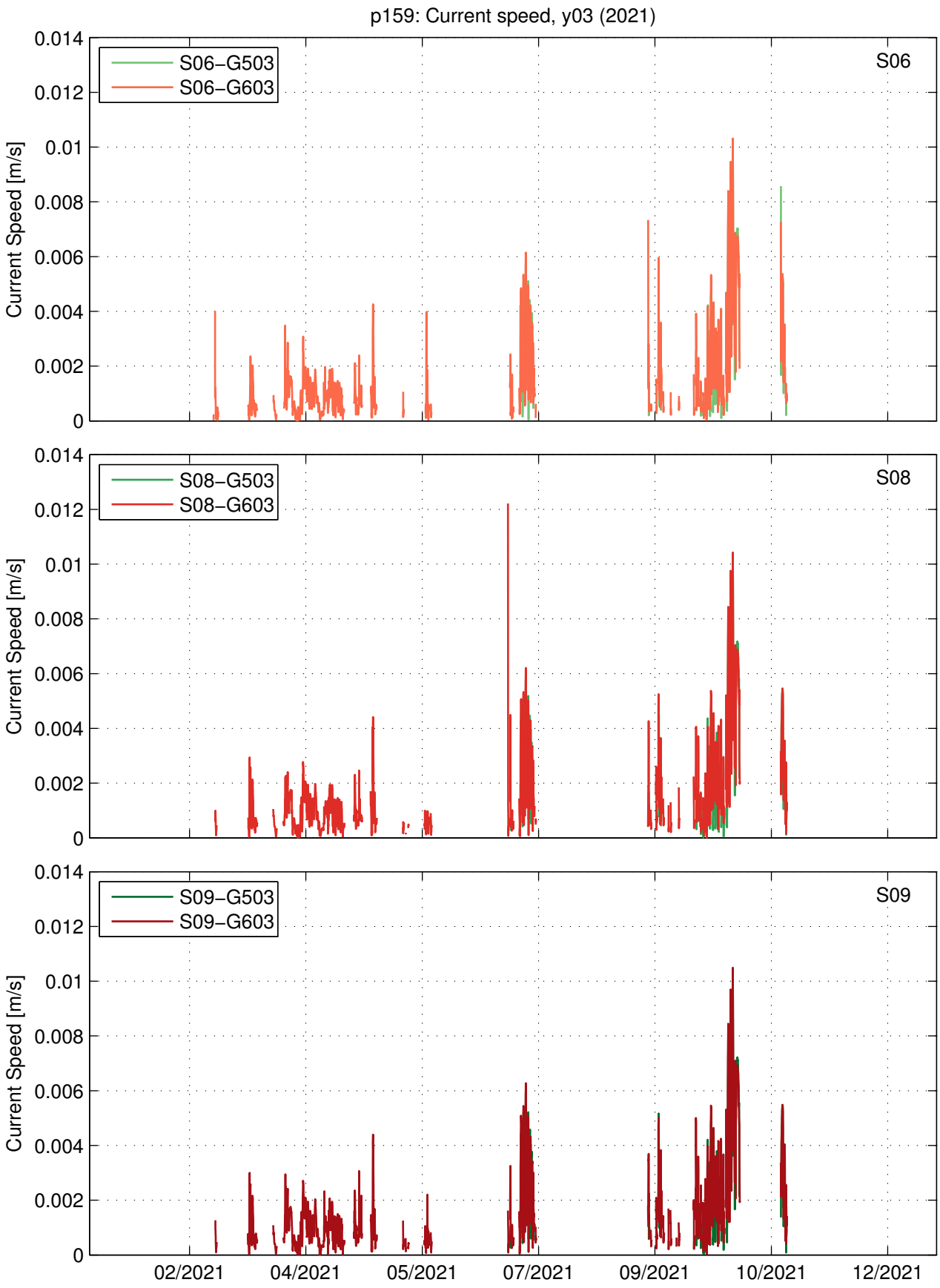

p182: Current speed, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Current Speed [m/s]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

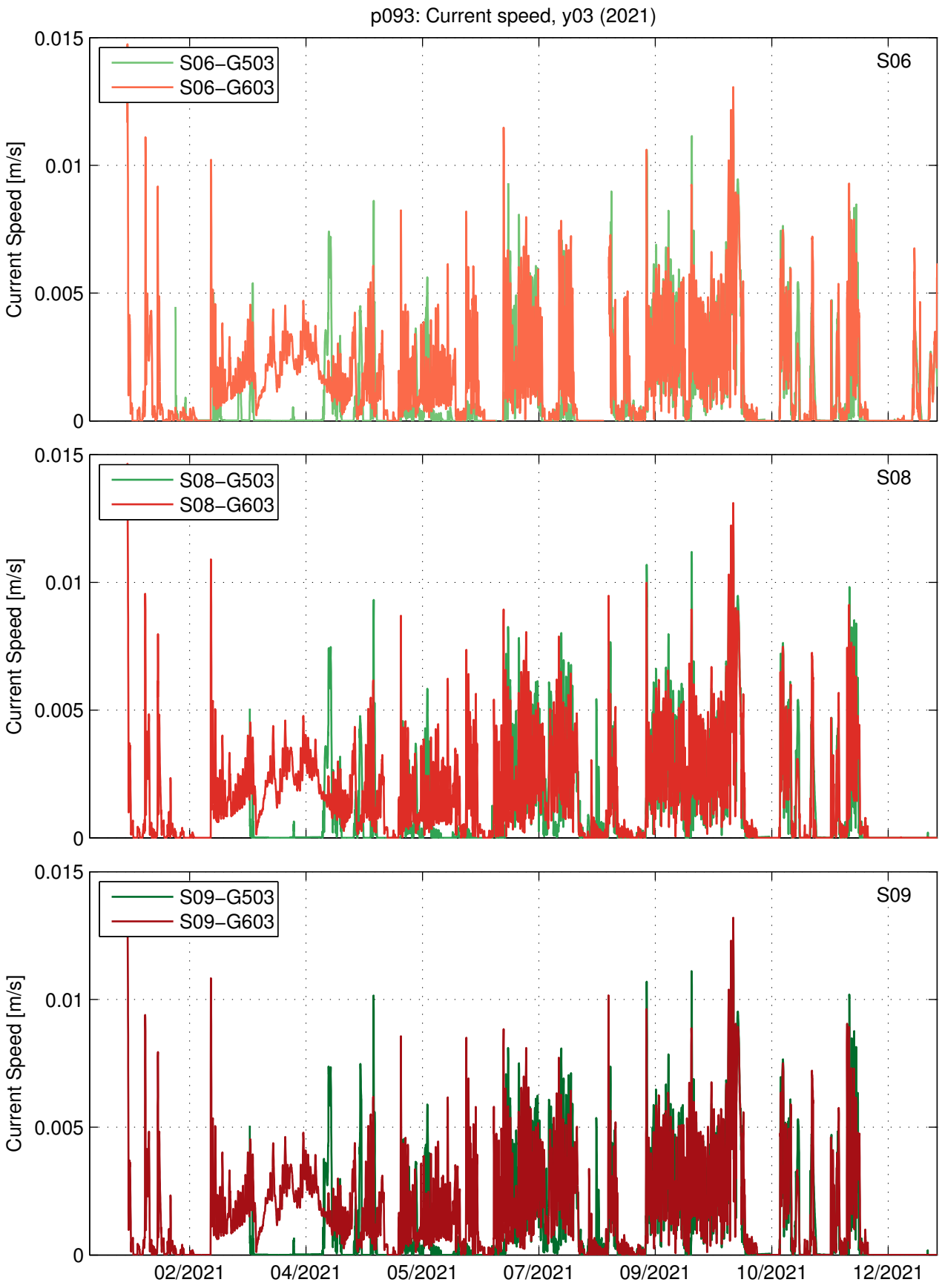

p183: Current speed, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Current Speed [m/s]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

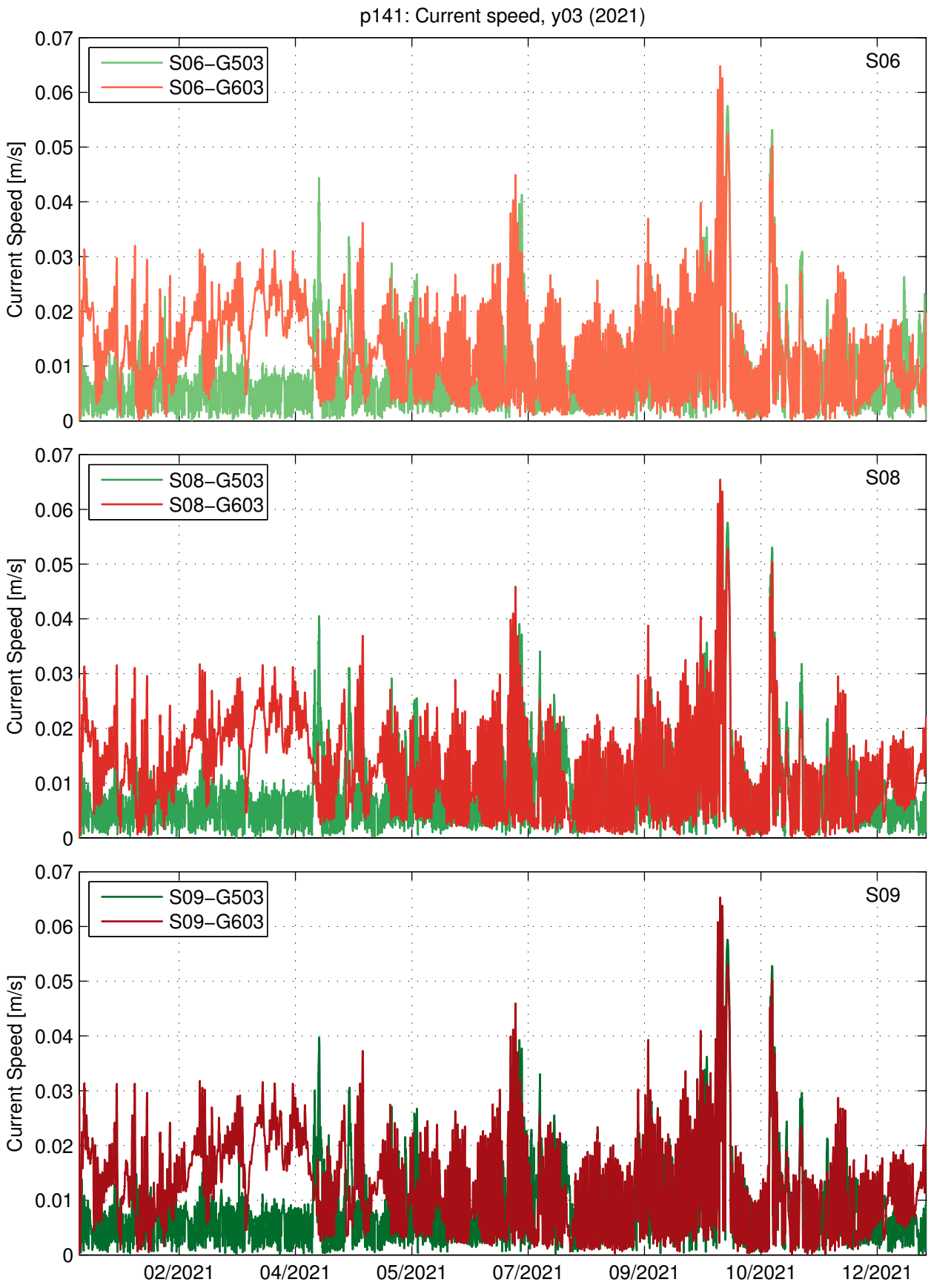

p185: Current speed, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Current Speed [m/s]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

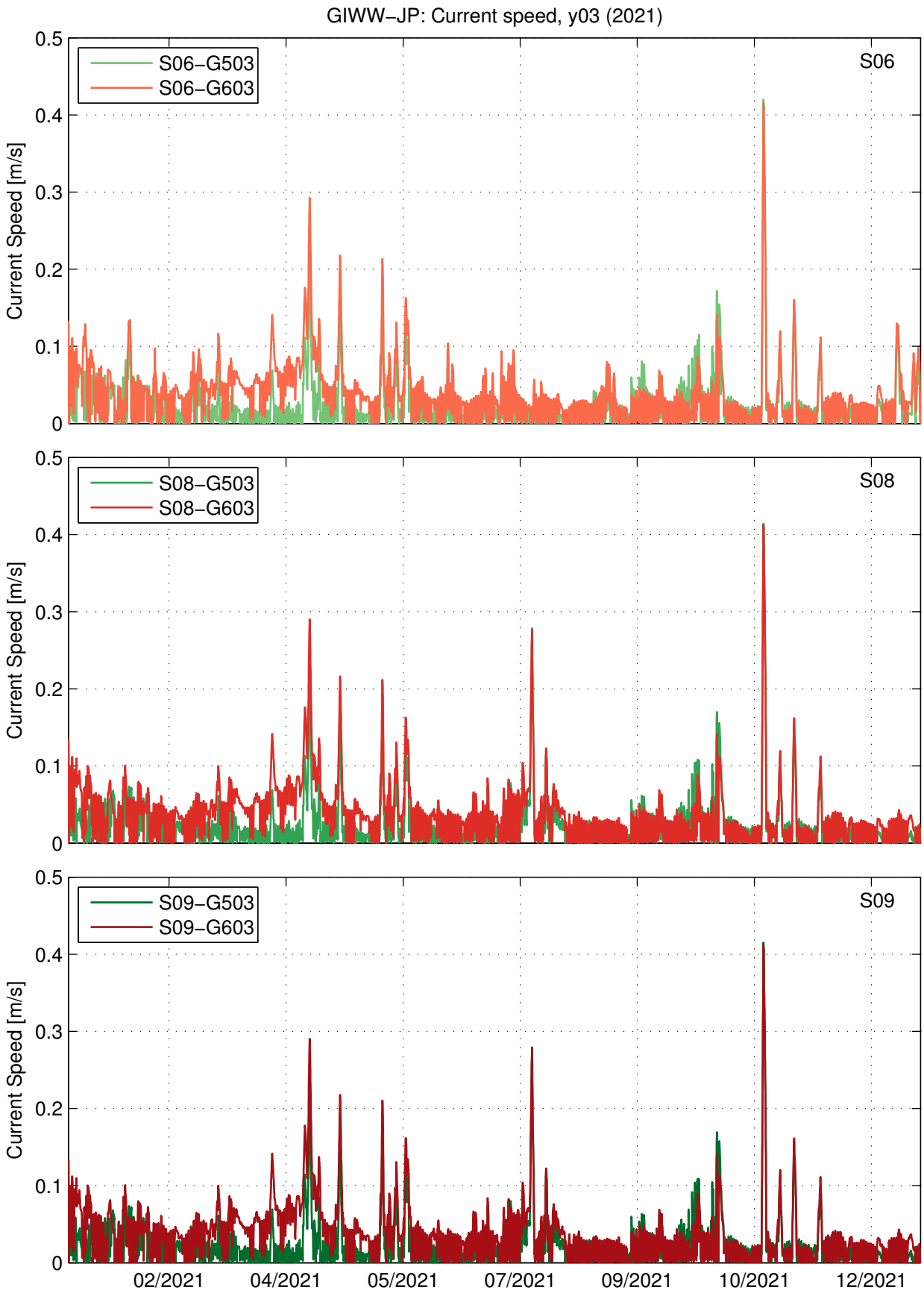

p192: Current speed, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Current Speed [m/s]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

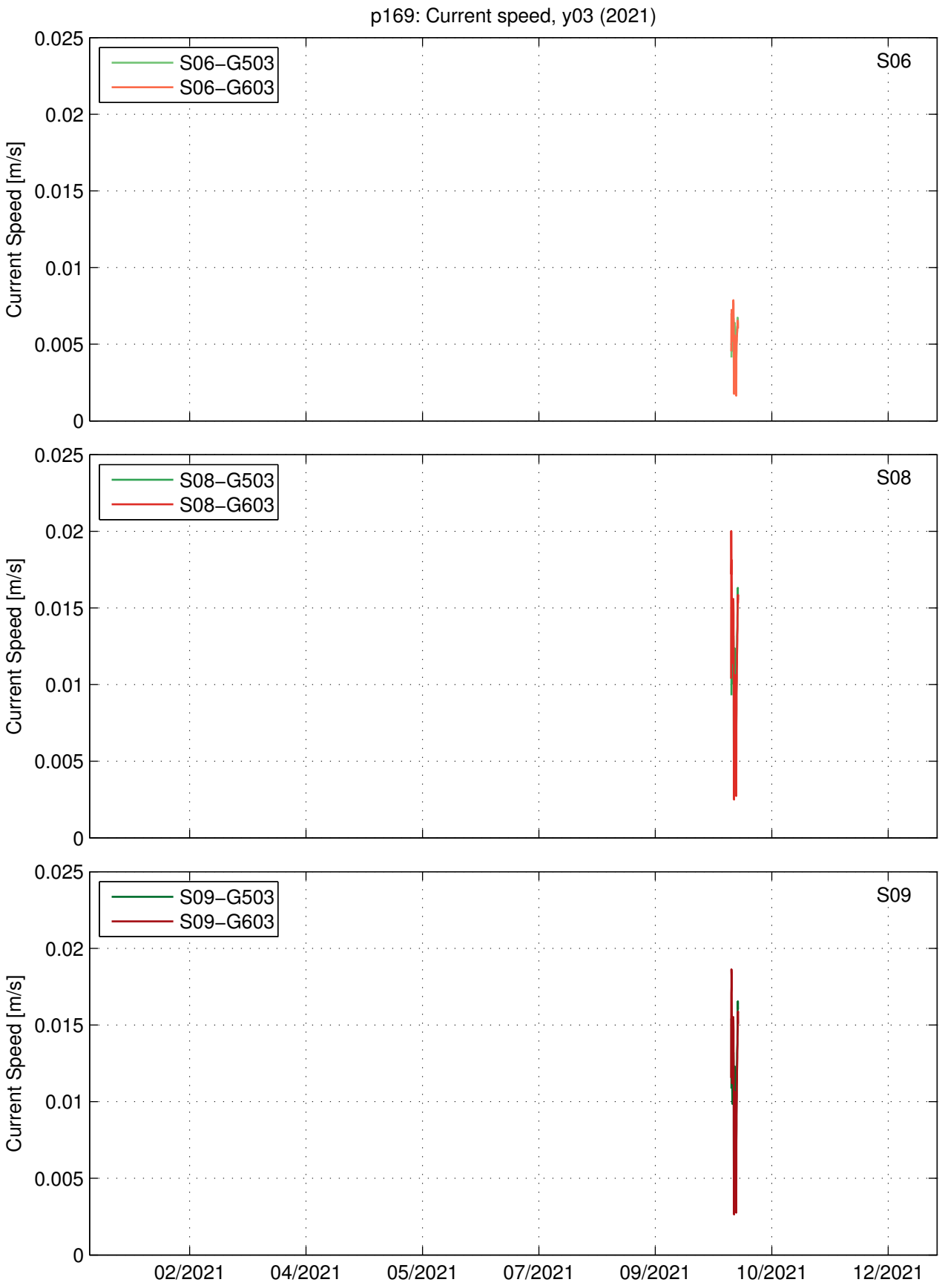

p194: Current speed, y03 (2021)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
G703
G803
Current Speed [m/s]
0
0.2
0.4
0.6
0.8
1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

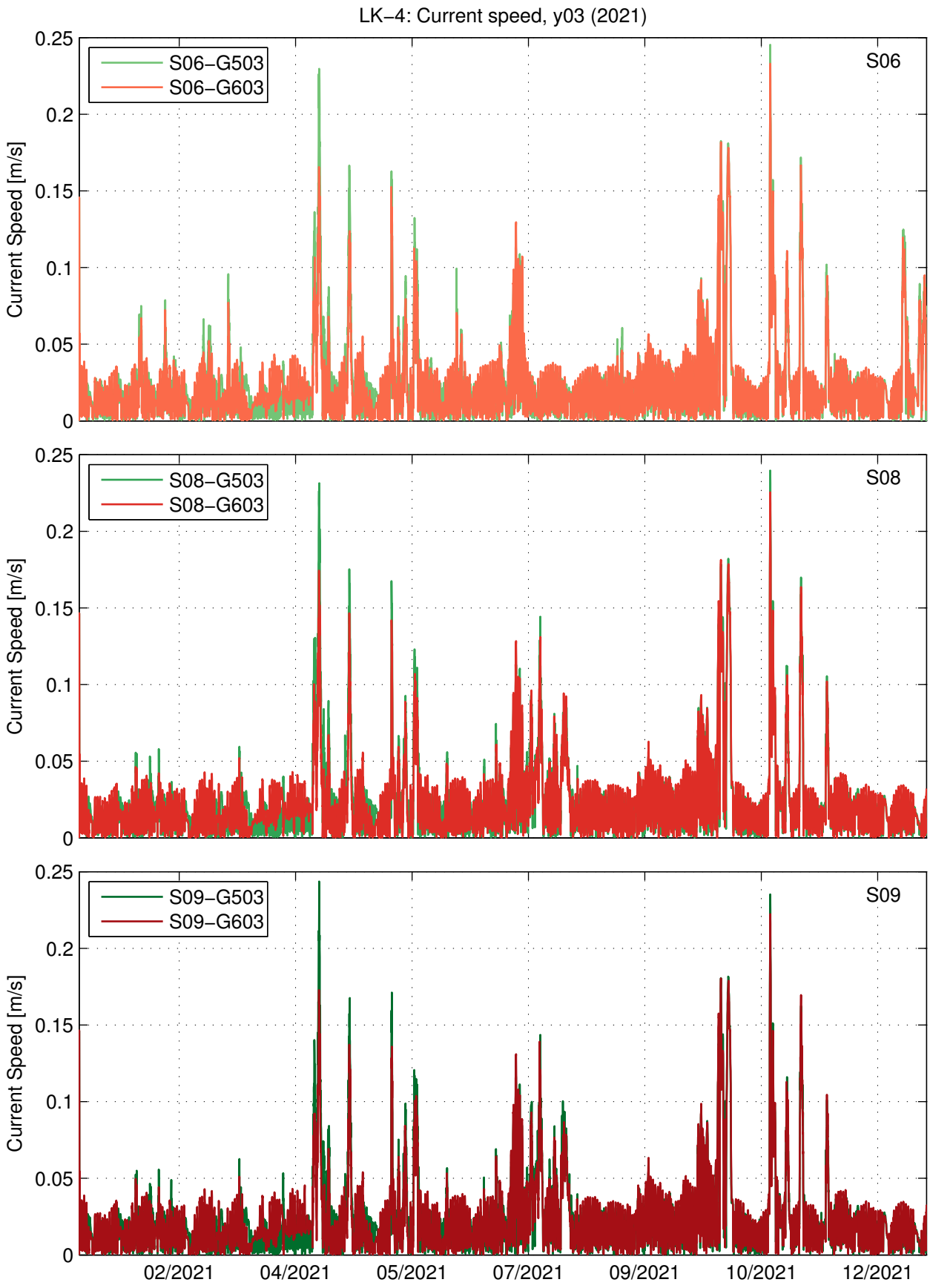

p159: Current speed, y03 (2021)
S06–G503
S06–G603
S06
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
Current Speed [m/s]
0.014
0.012
0.01
0.008
0.006
0.004
0.002
0
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

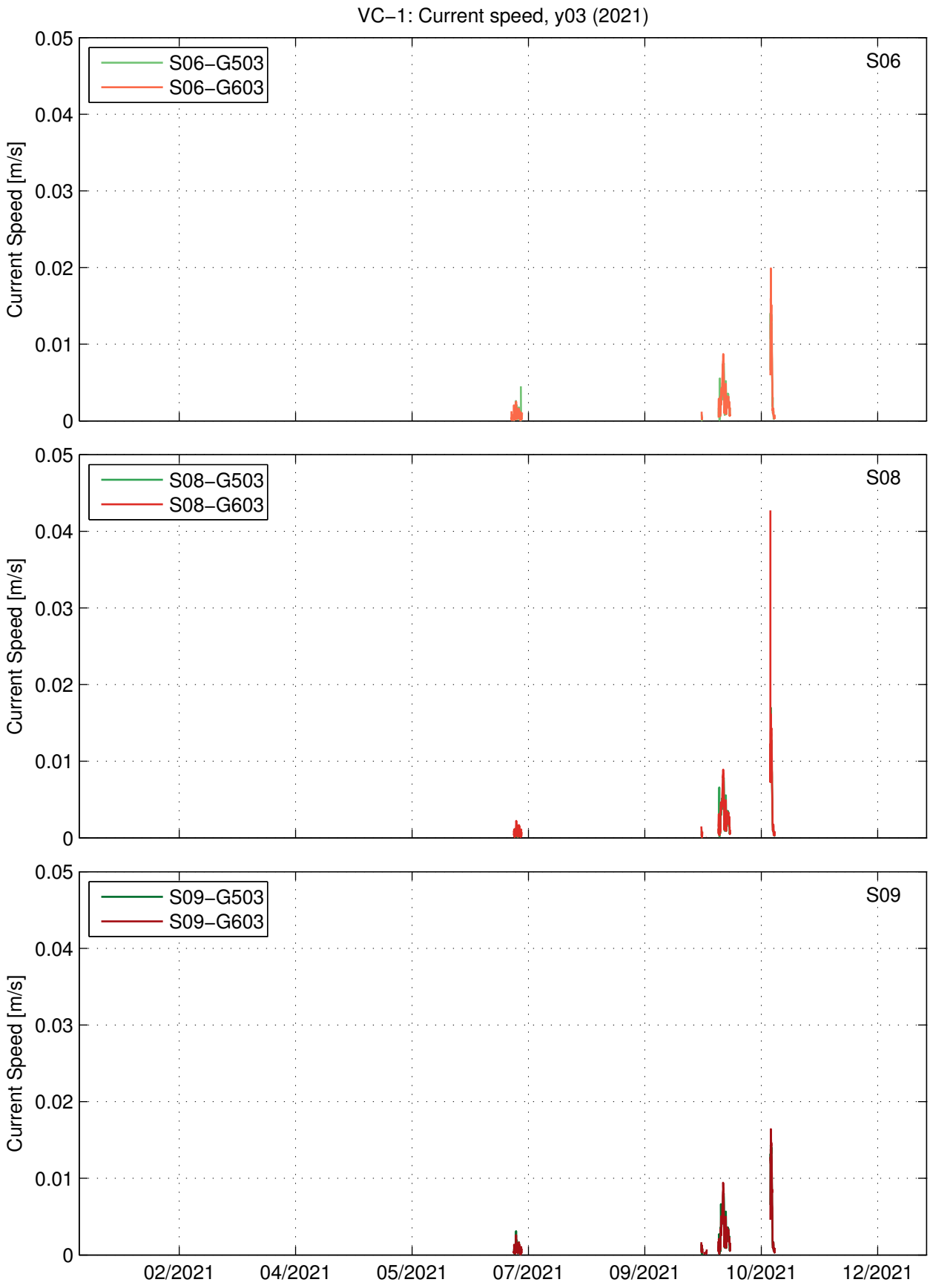

p093: Current speed, y03 (2021)
S06–G503
S06–G603
S06
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
Current Speed [m/s]
0.015
0.01
0.005
0
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

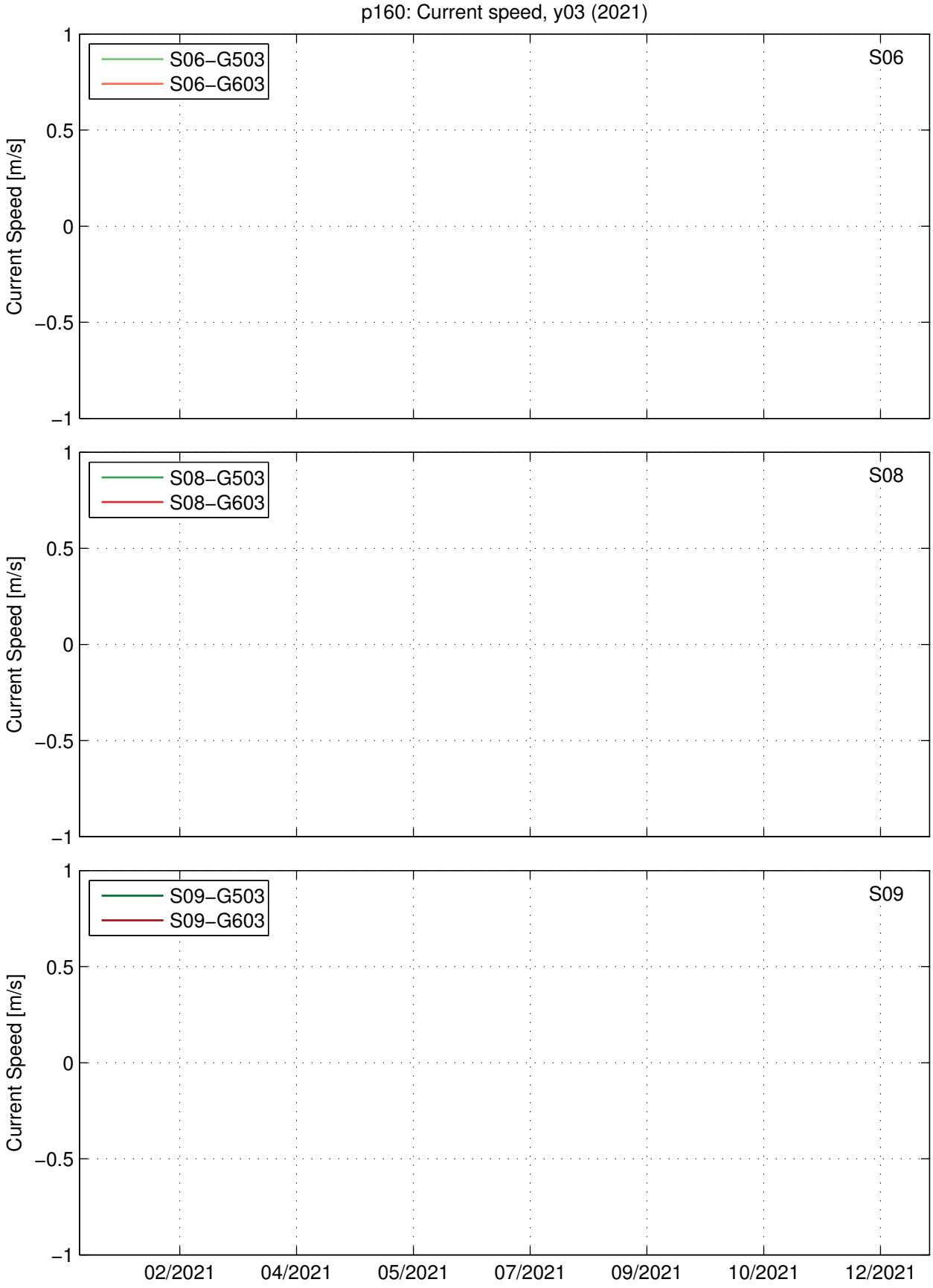

p141: Current speed, y03 (2021)
S06–G503
S06–G603
S06
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
Current Speed [m/s]
0
0.01
0.02
0.03
0.04
0.05
0.06
0.07
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

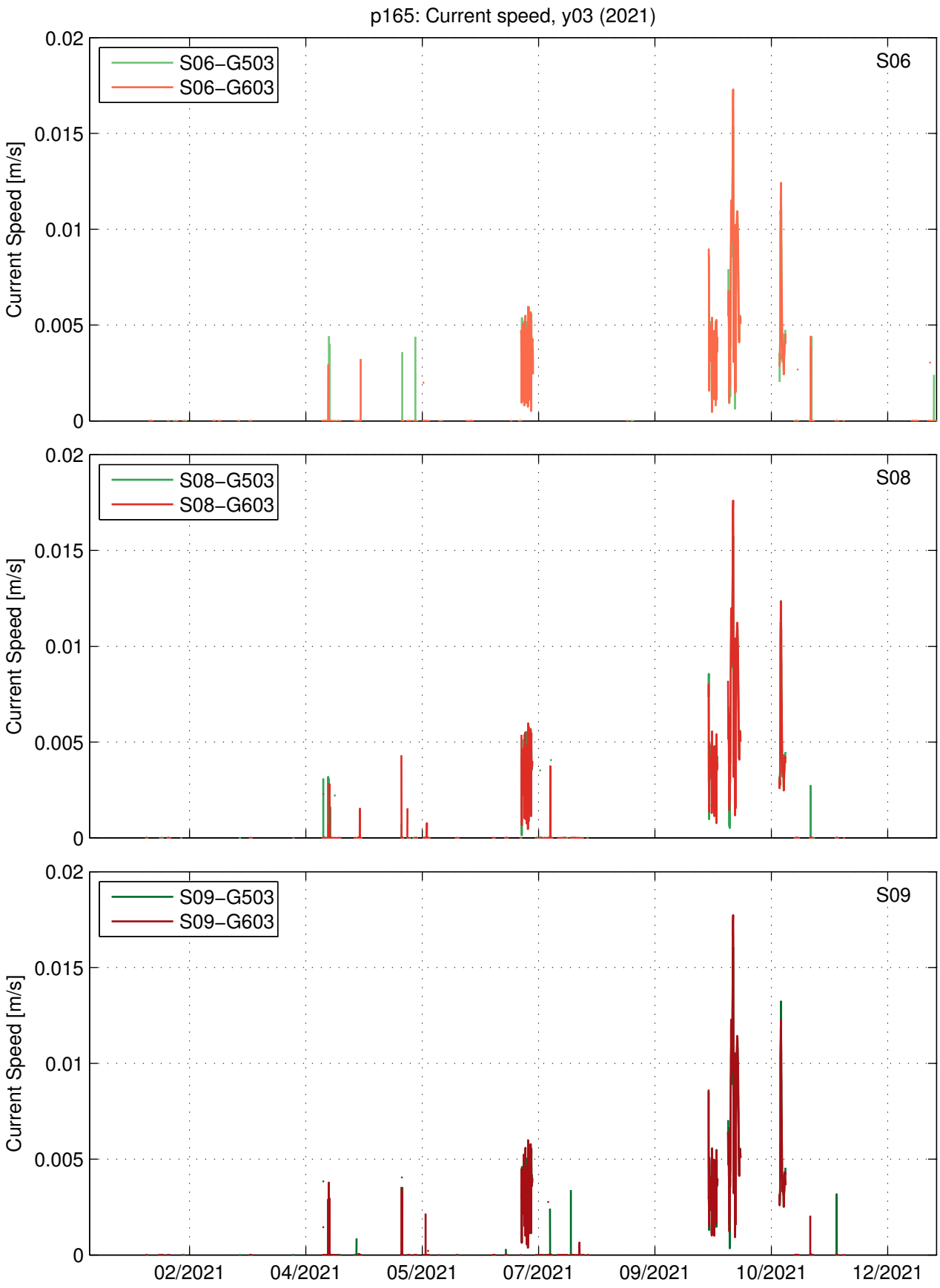

GIWW–JP: Current speed, y03 (2021)
S06–G503
S06–G603
S06
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
Current Speed [m/s]
0
0.1
0.2
0.3
0.4
0.5
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

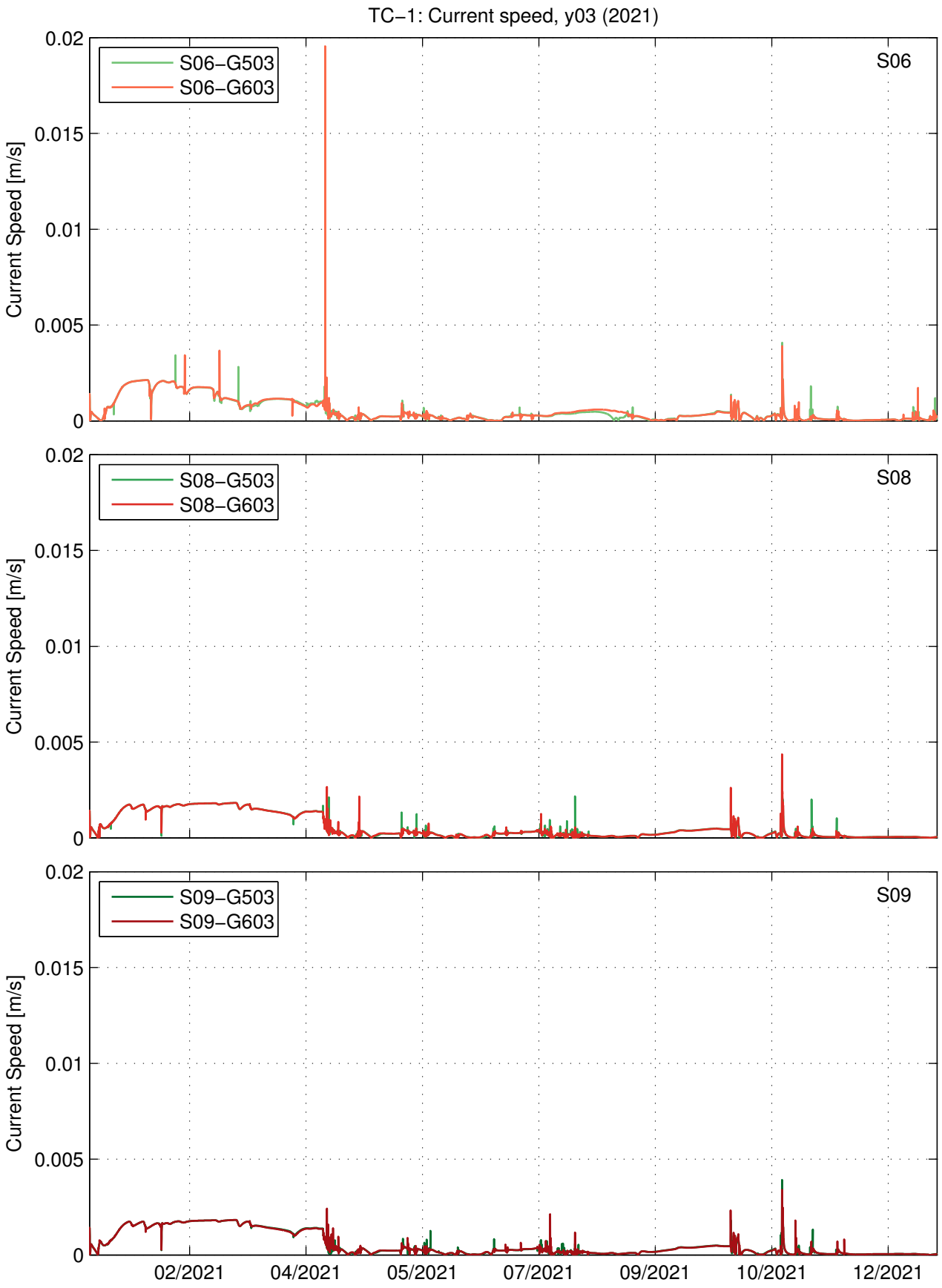

p169: Current speed, y03 (2021)
S06–G503
S06–G603
S06
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
Current Speed [m/s]
0.025
0.02
0.015
0.01
0.005
0
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

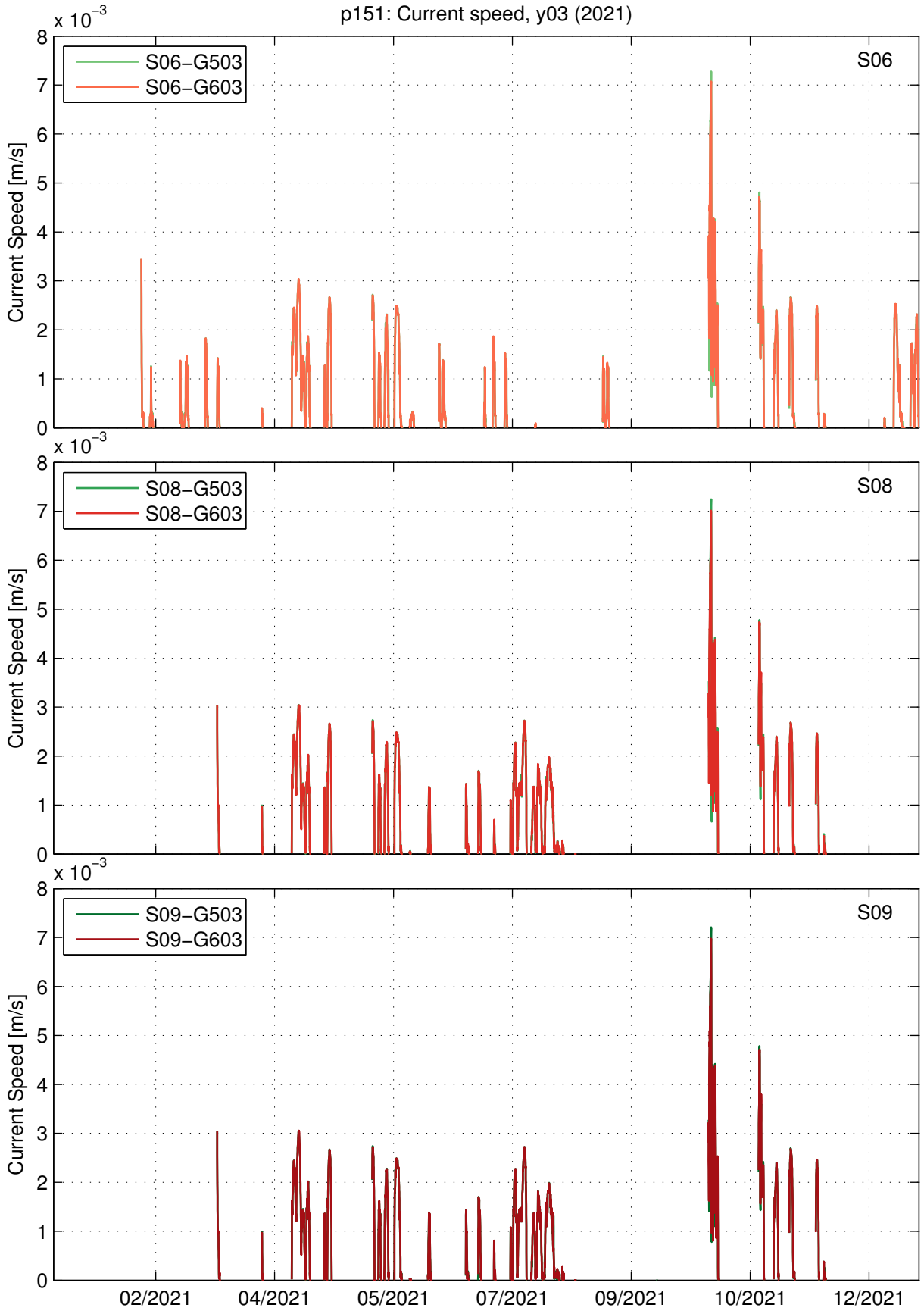

LK−4: Current speed, y03 (2021)
S06−G503
S06−G603
S06
S08−G503
S08−G603
S08
S09−G503
S09−G603
S09
Current Speed [m/s]
0
0.05
0.1
0.15
0.2
0.25
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

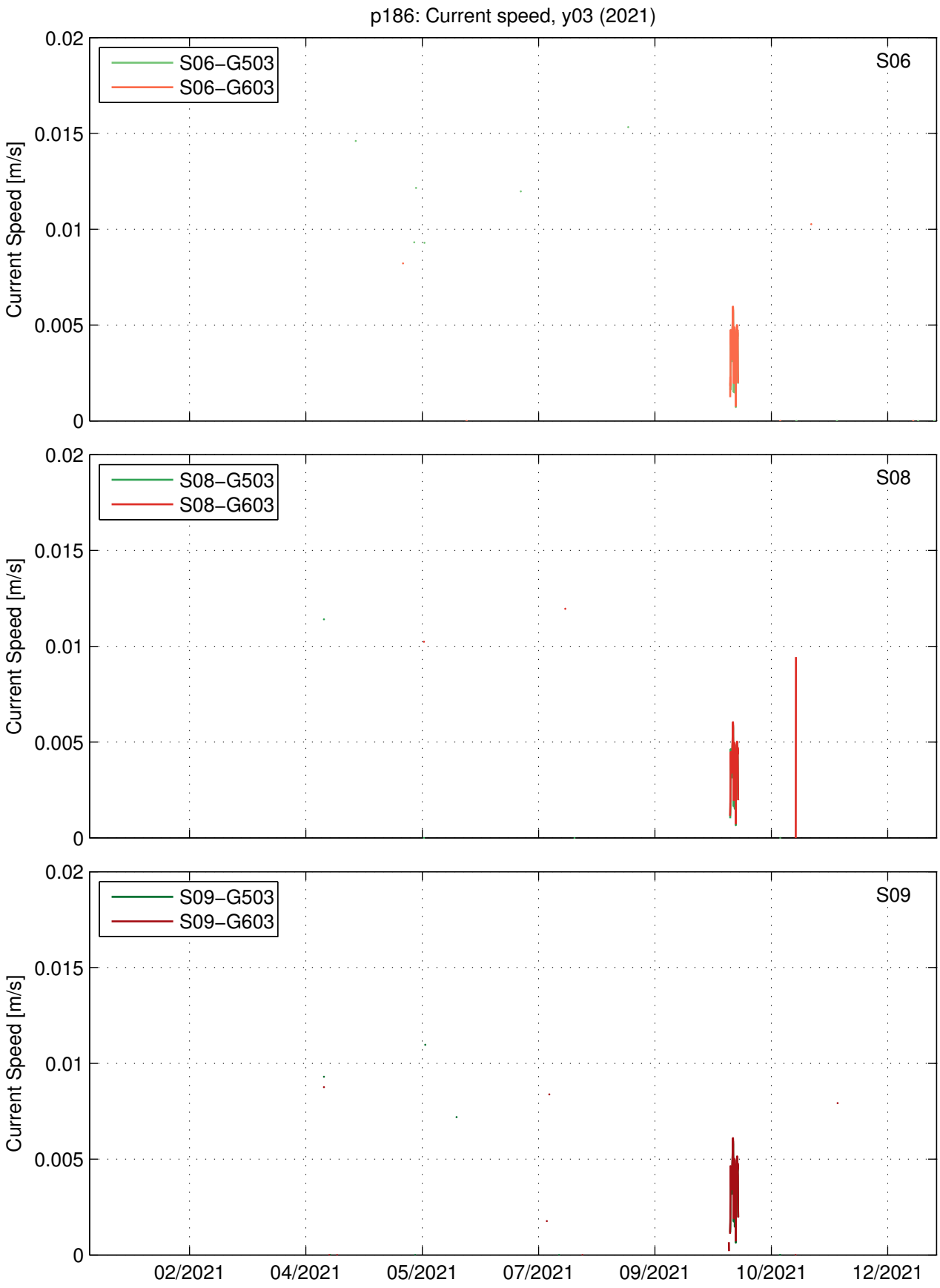

VC−1: Current speed, y03 (2021)
S06−G503
S06−G603
S06
S08−G503
S08−G603
S08
S09−G503
S09−G603
S09
Current Speed [m/s]
0.05
0.04
0.03
0.02
0.01
0
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

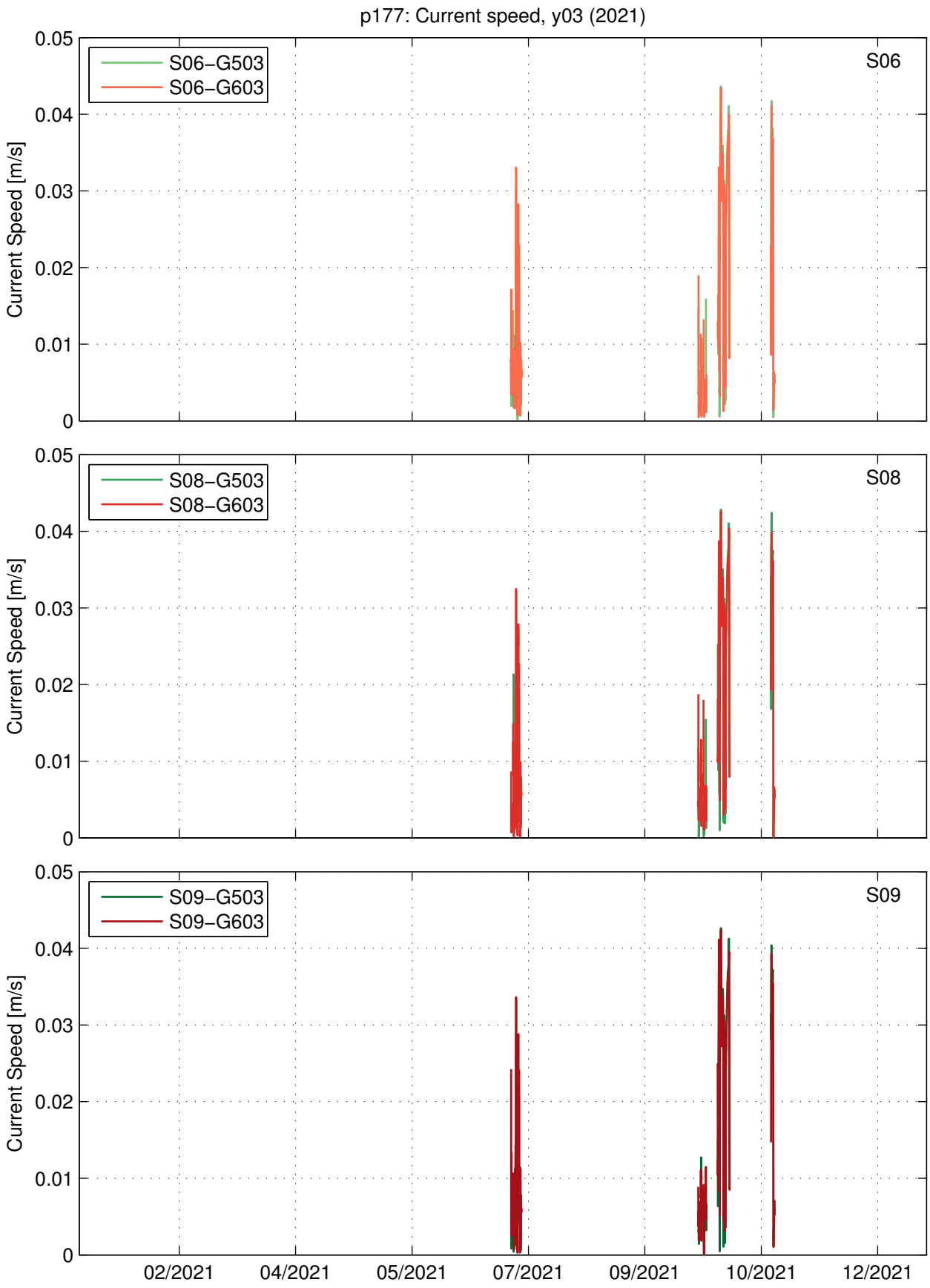

p160: Current speed, y03 (2021)
S06–G503
S06–G603
S06
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
Current Speed [m/s]
1
0.5
0
−0.5
−1
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

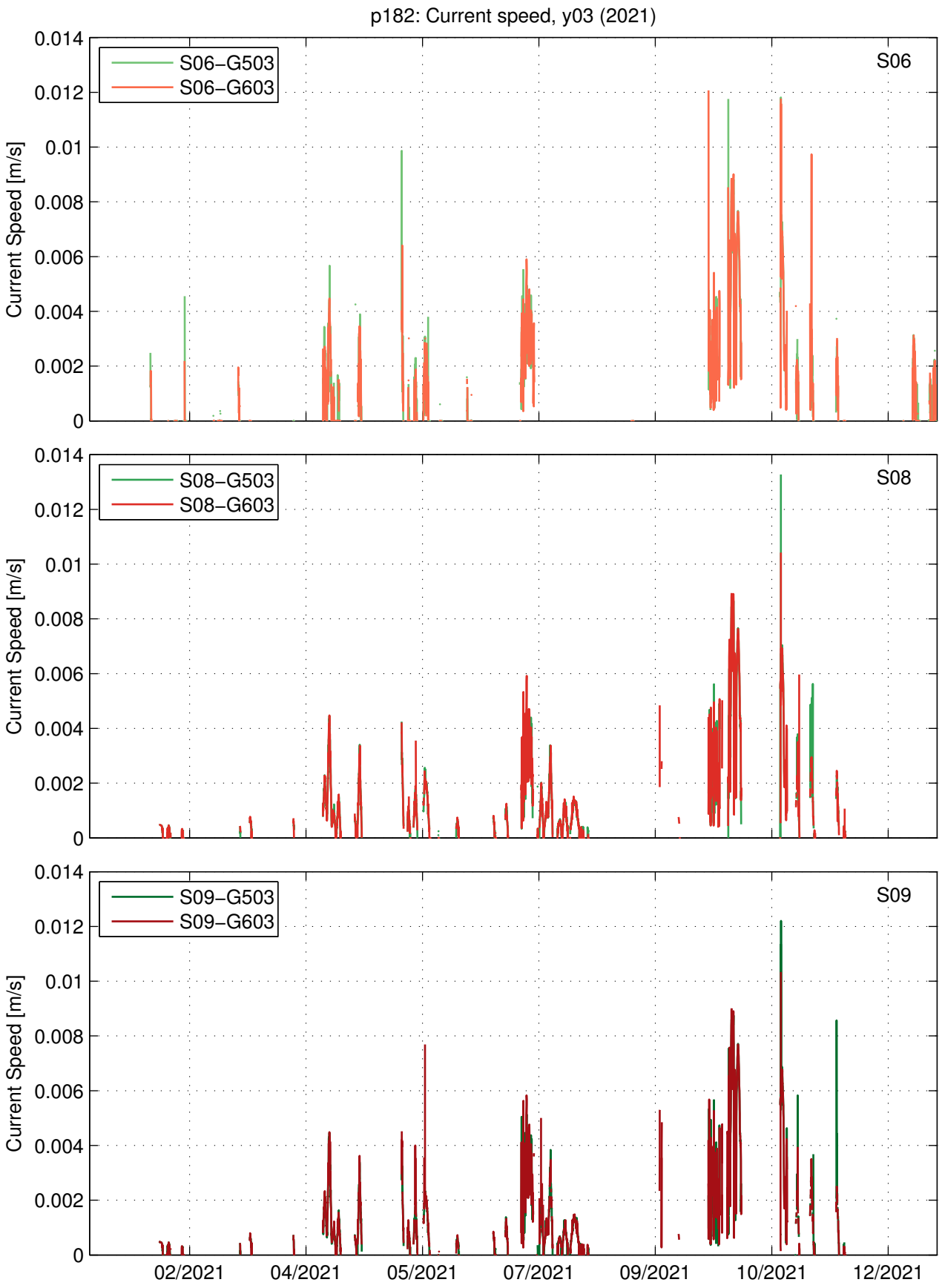

p165: Current speed, y03 (2021)
S06–G503
S06–G603
S06
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
Current Speed [m/s]
0.02
0.015
0.01
0.005
0
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

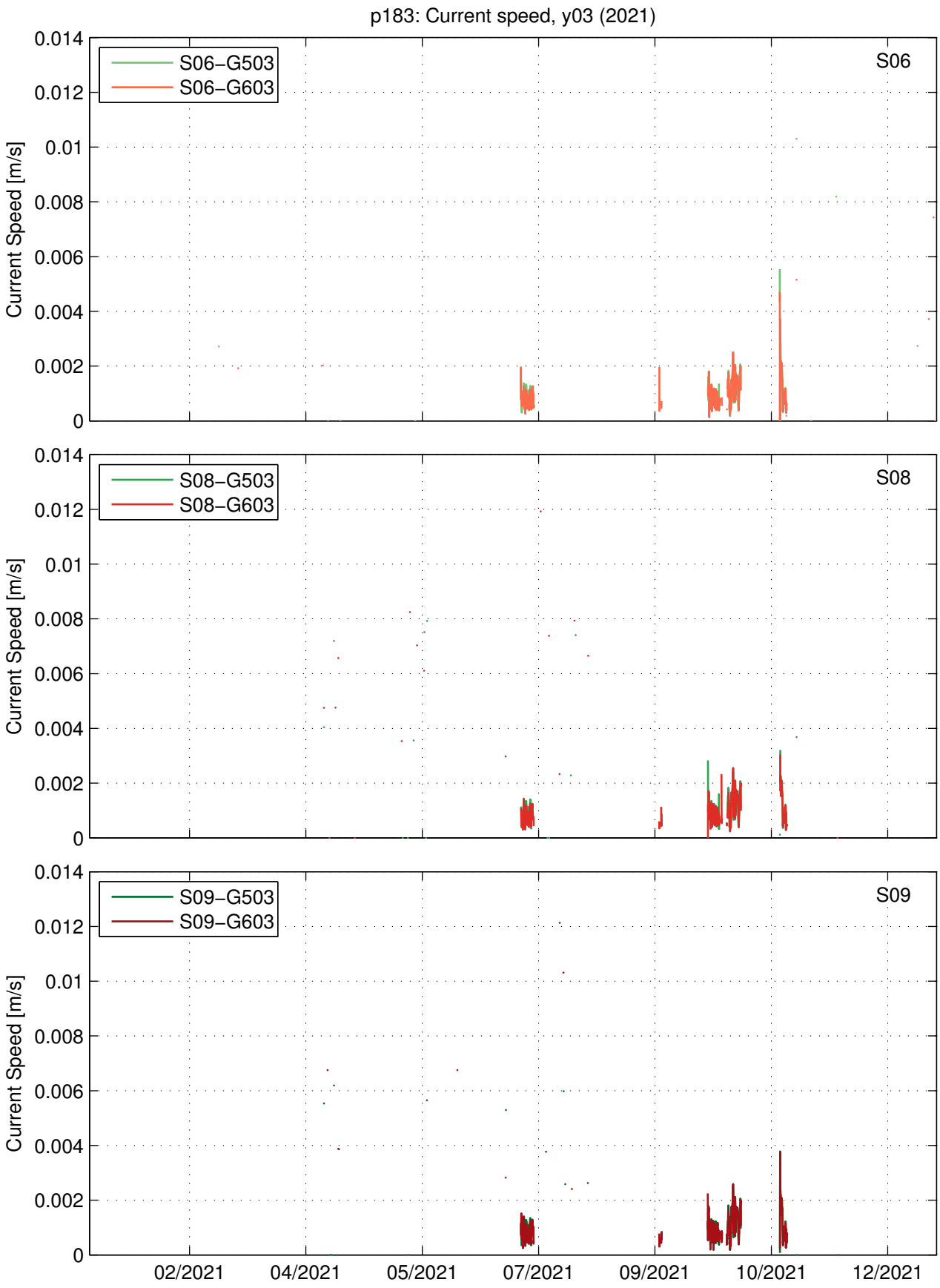

TC−1: Current speed, y03 (2021)
S06−G503
S06−G603
S06
S08−G503
S08−G603
S08
S09−G503
S09−G603
S09
Current Speed [m/s]
0.02
0.015
0.01
0.005
0
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

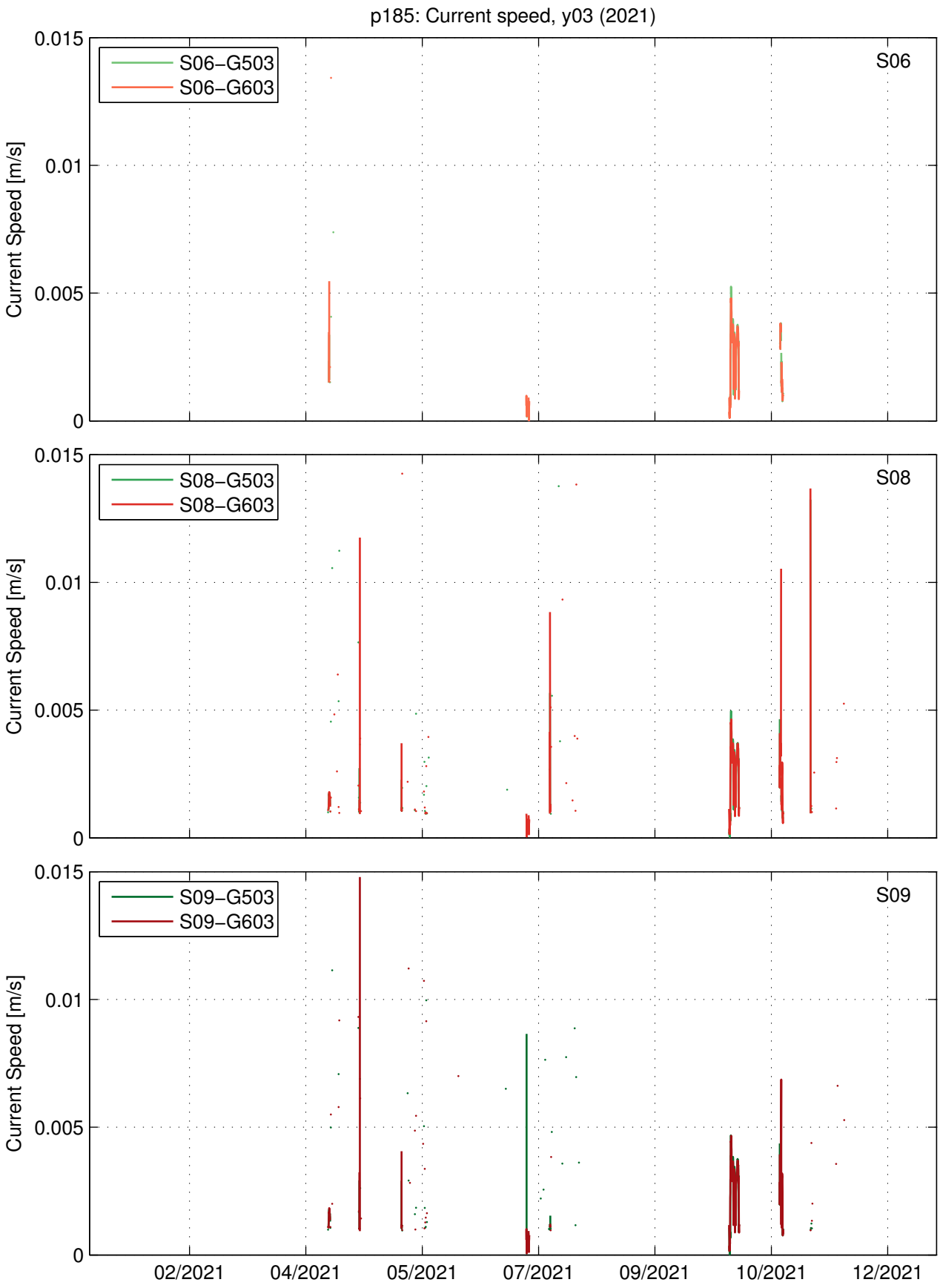

p151: Current speed, y03 (2021)
x 10^-3
Current Speed [m/s]
S06–G503
S06–G603
S06
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
0
1
2
3
4
5
6
7
8
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

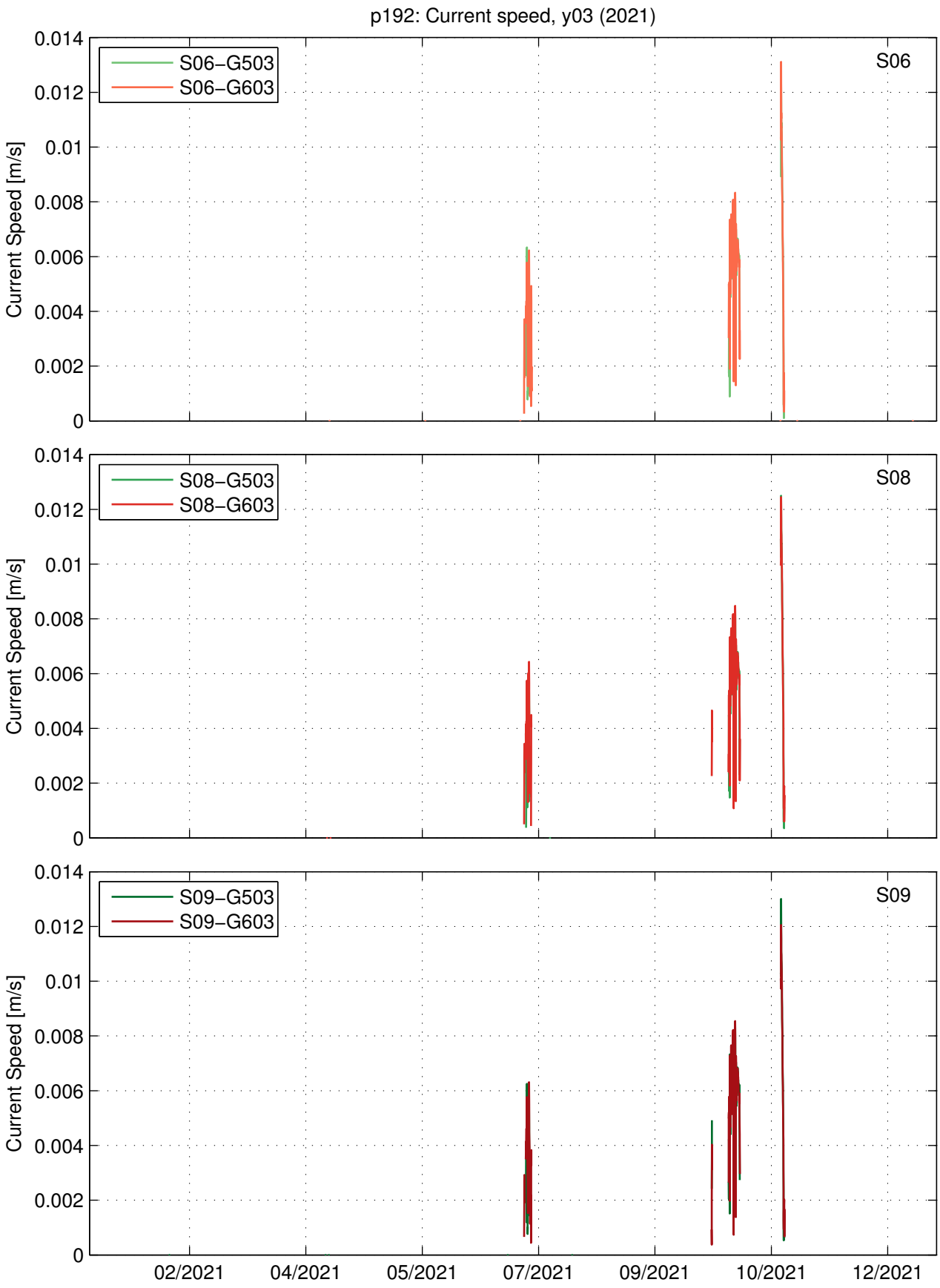

p186: Current speed, y03 (2021)
S06–G503
S06–G603
S06
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
Current Speed [m/s]
0.02
0.015
0.01
0.005
0
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

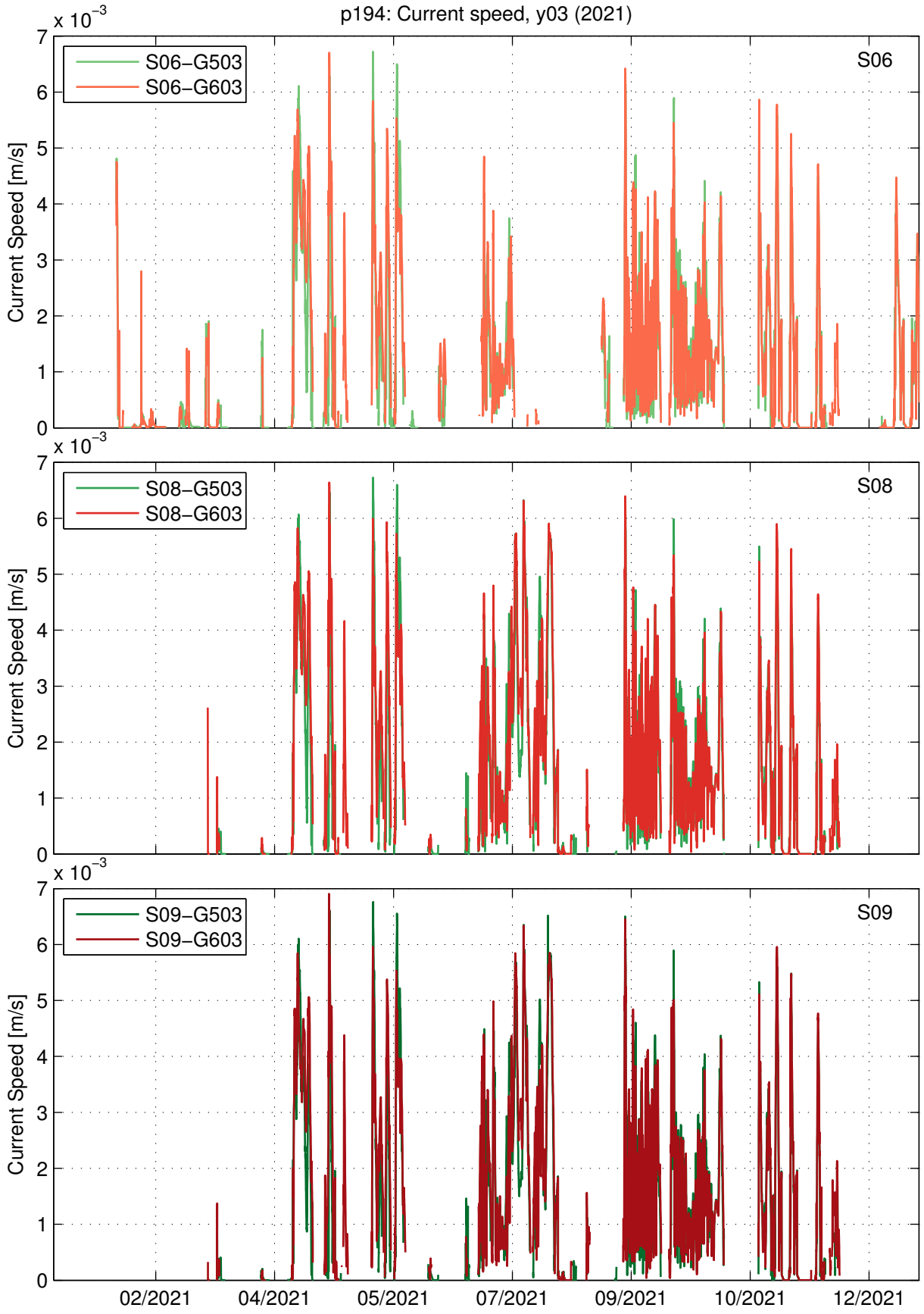

p177: Current speed, y03 (2021)
S06–G503
S06–G603
S06
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
Current Speed [m/s]
0.05
0.04
0.03
0.02
0.01
0
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

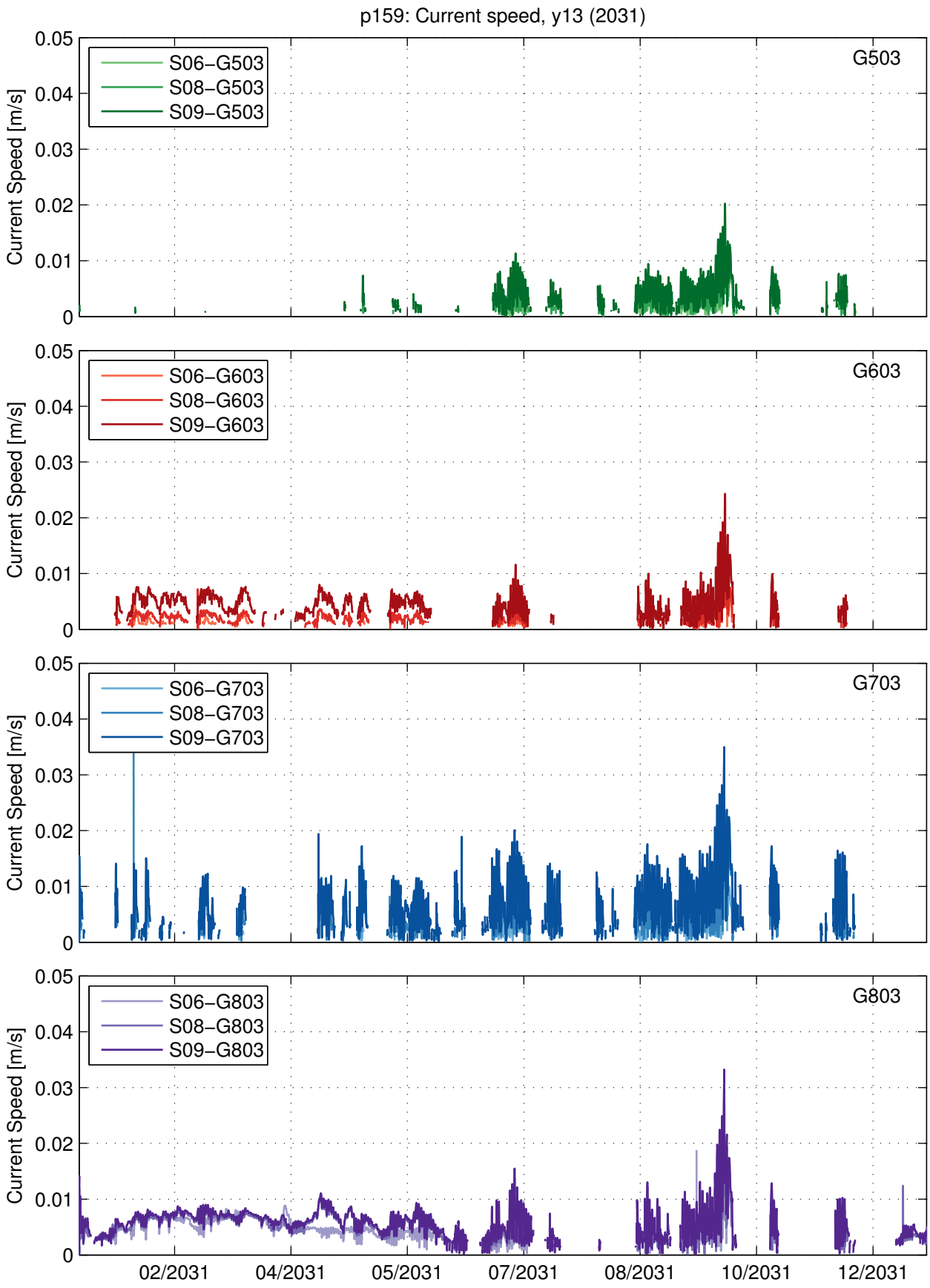

p182: Current speed, y03 (2021)
S06–G503
S06–G603
S06
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
Current Speed [m/s]
0
0.002
0.004
0.006
0.008
0.01
0.012
0.014
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

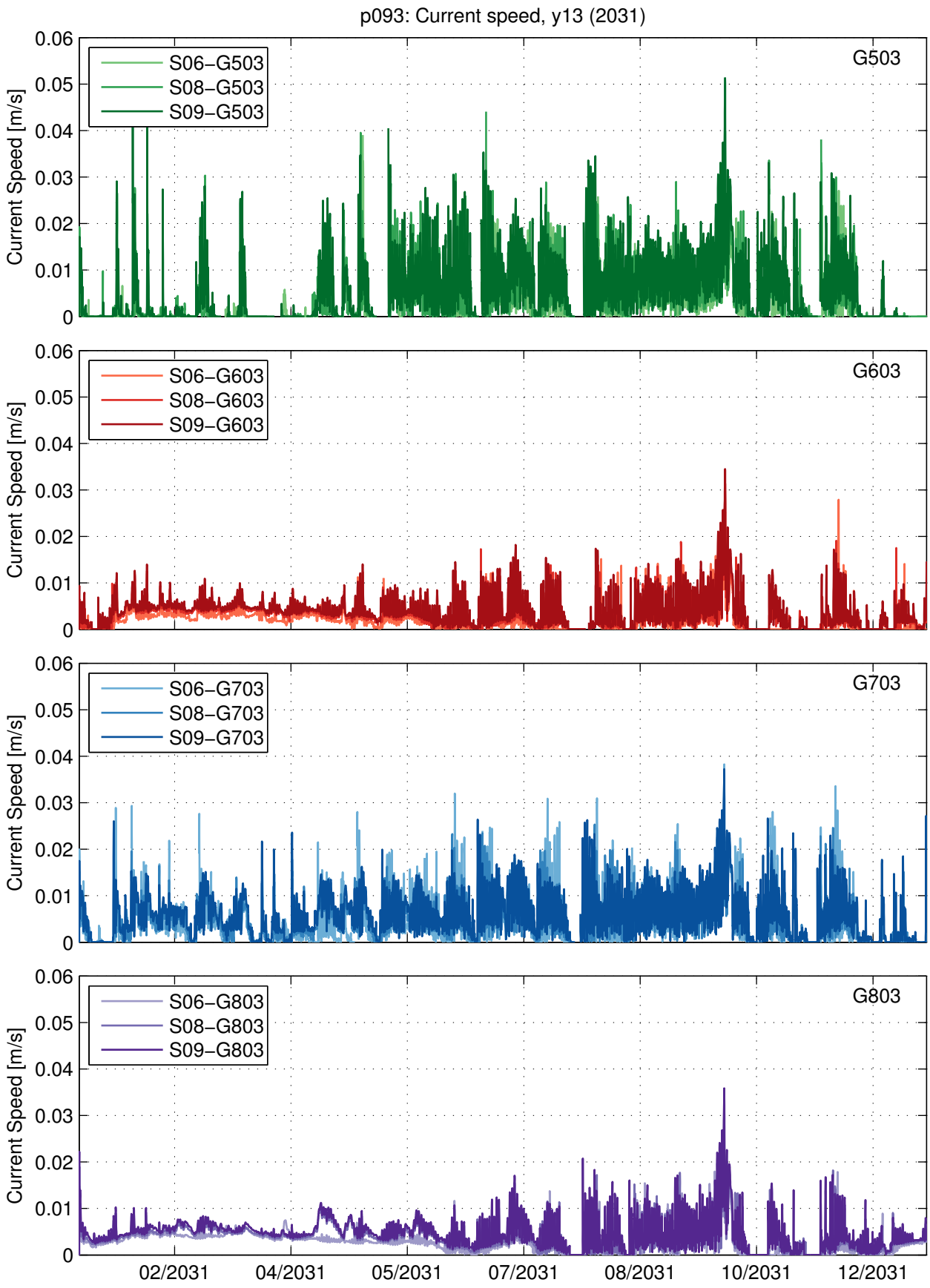

p183: Current speed, y03 (2021)
S06–G503
S06–G603
S06
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
Current Speed [m/s]
0.014
0.012
0.01
0.008
0.006
0.004
0.002
0
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

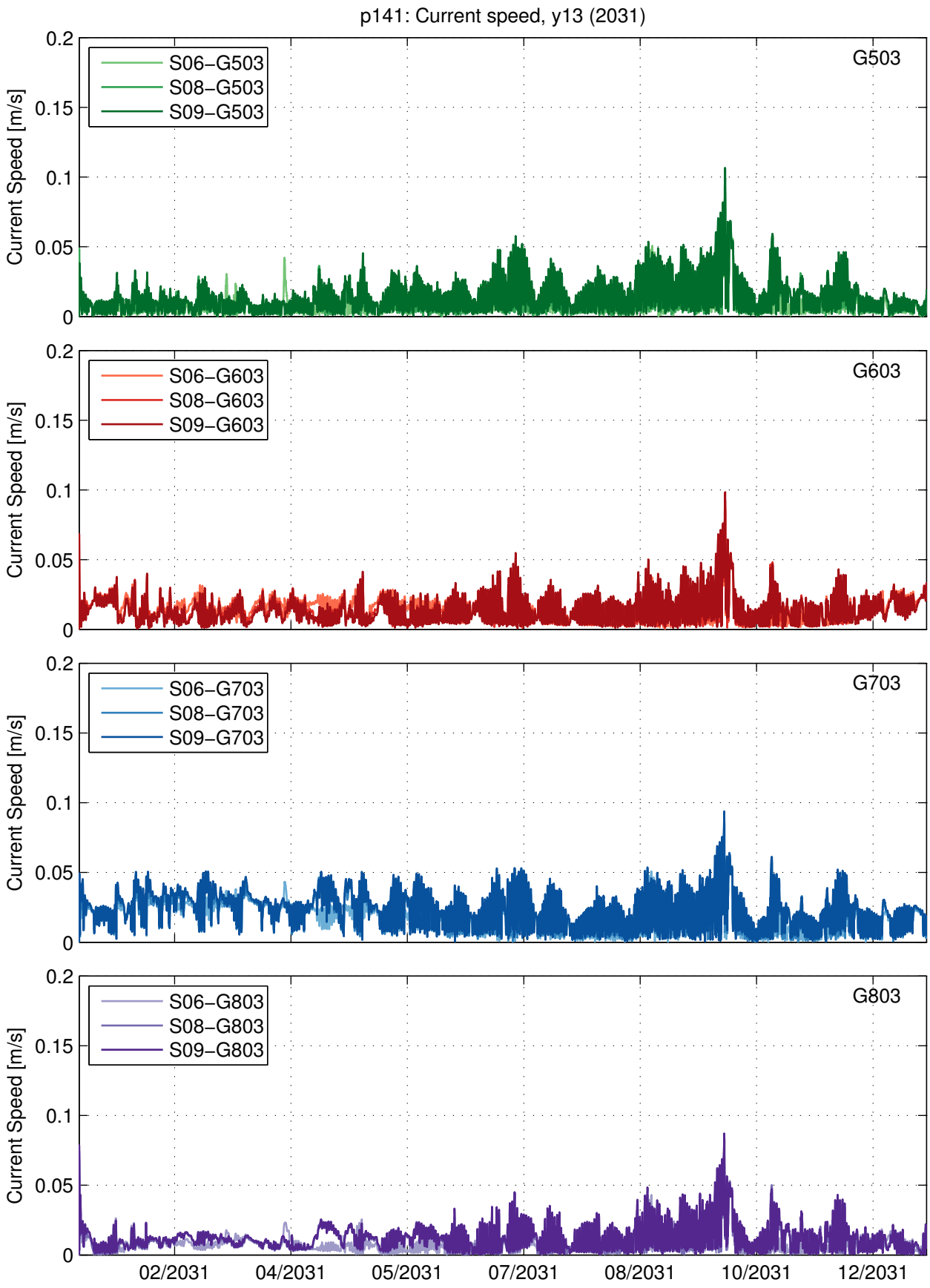

p185: Current speed, y03 (2021)
S06–G503
S06–G603
S06
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
Current Speed [m/s]
0.015
0.01
0.005
0
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

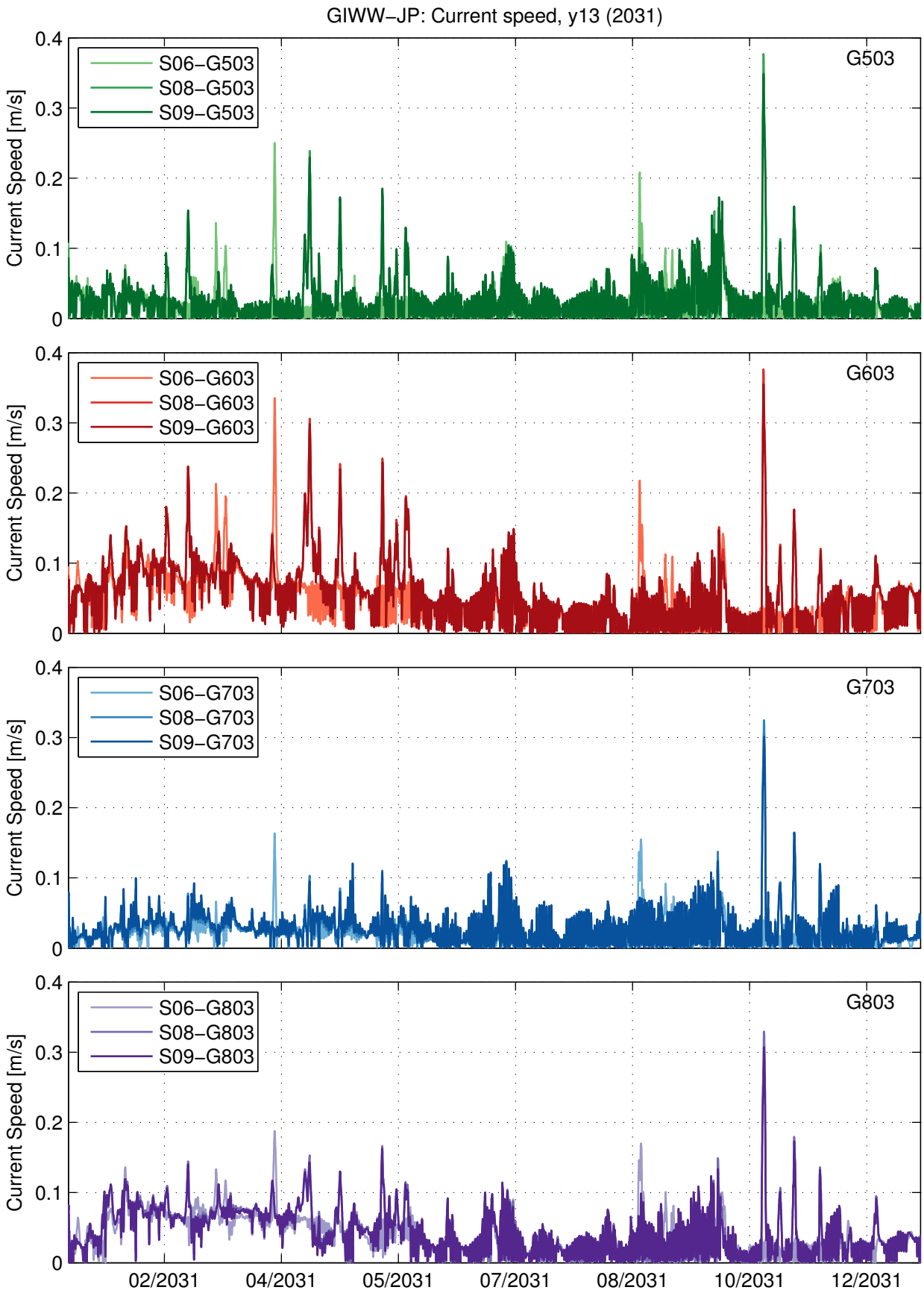

p192: Current speed, y03 (2021)
S06–G503
S06–G603
S06
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
Current Speed [m/s]
0.014
0.012
0.01
0.008
0.006
0.004
0.002
0
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

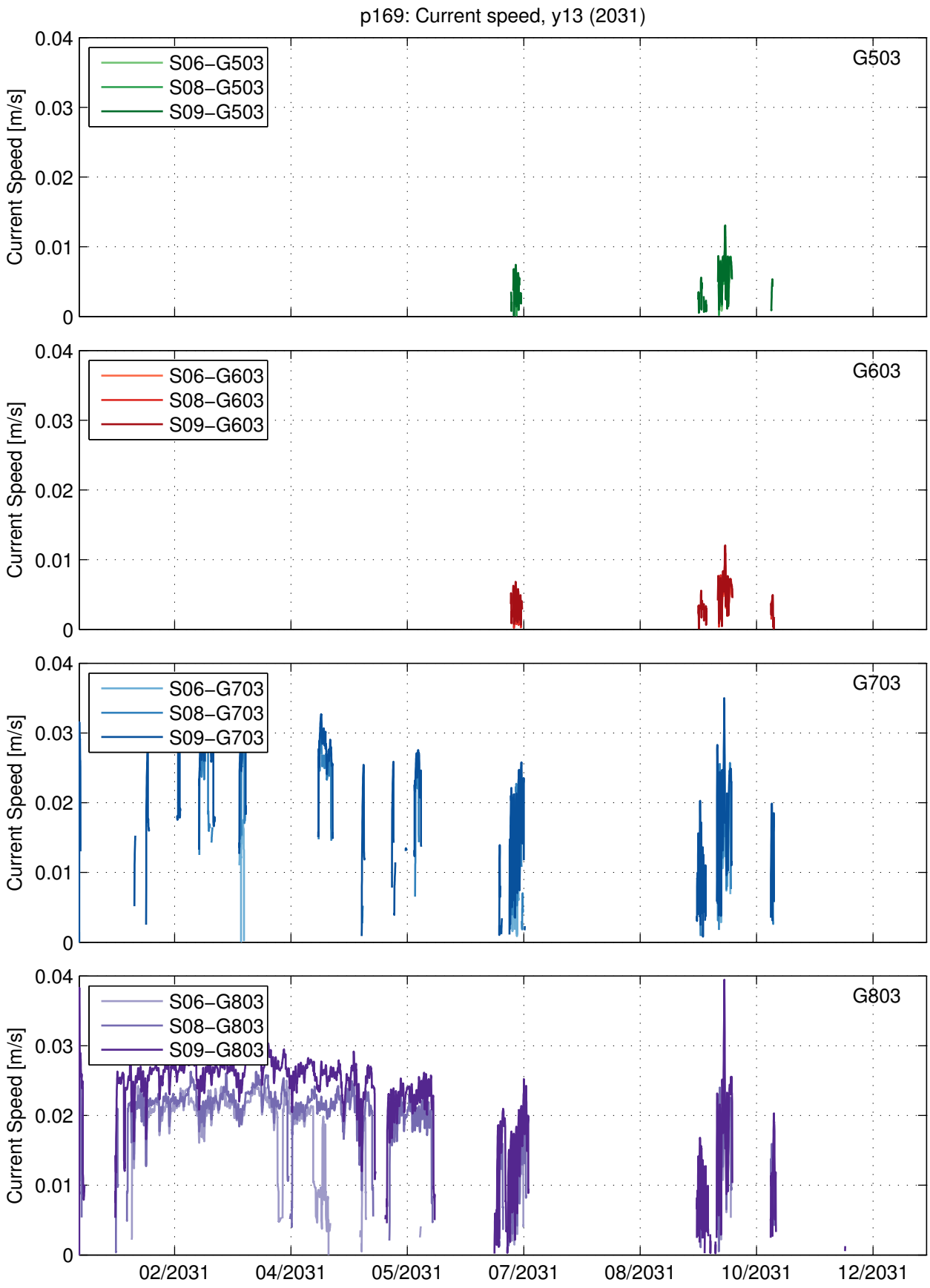

p194: Current speed, y03 (2021)
x 10^-3
Current Speed [m/s]
S06–G503
S06–G603
S06
S08–G503
S08–G603
S08
S09–G503
S09–G603
S09
0
1
2
3
4
5
6
7
02/2021
04/2021
05/2021
07/2021
09/2021
10/2021
12/2021

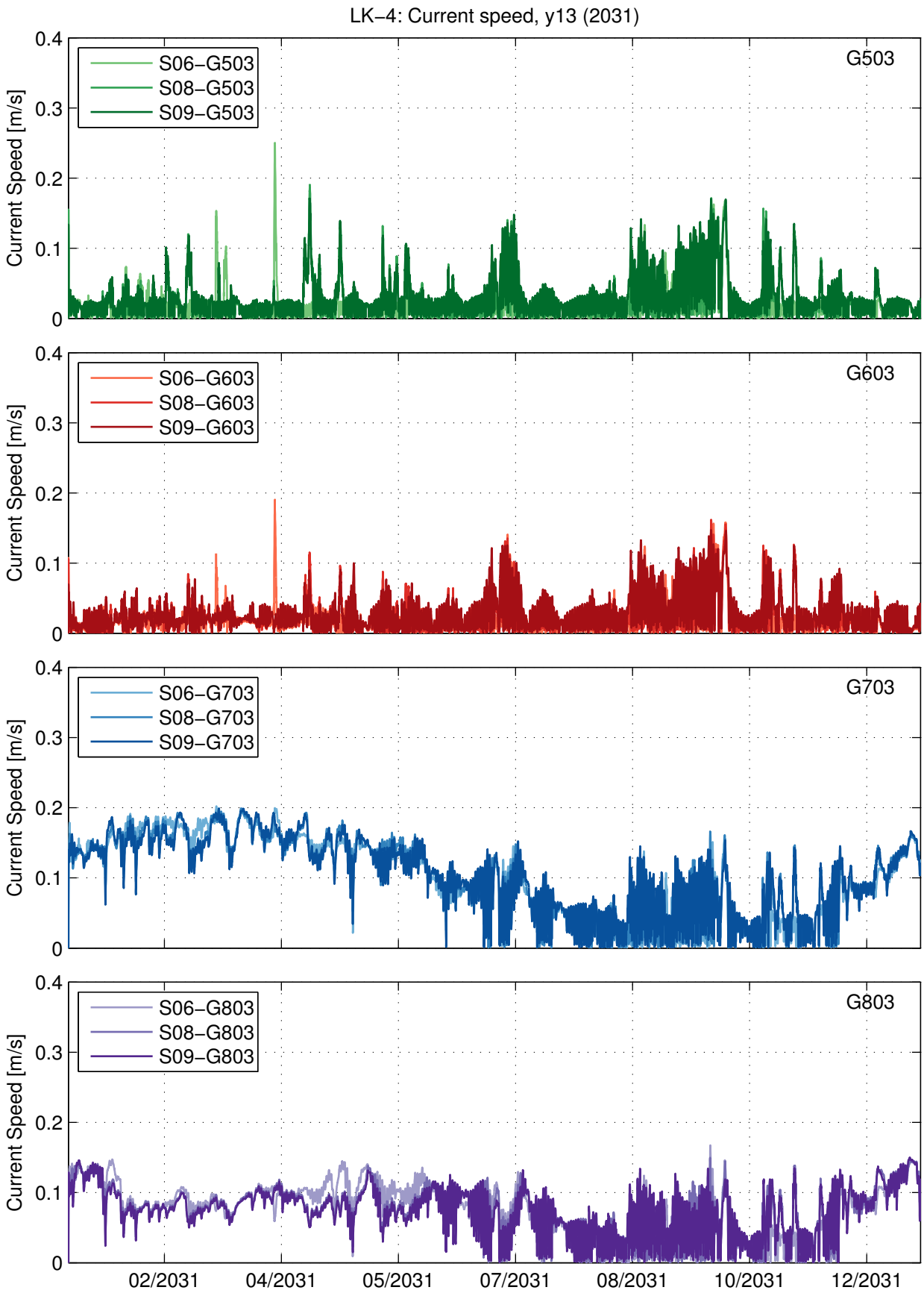

p159: Current speed, y13 (2031)
Current Speed [m/s]
0.05
0.04
0.03
0.02
0.01
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

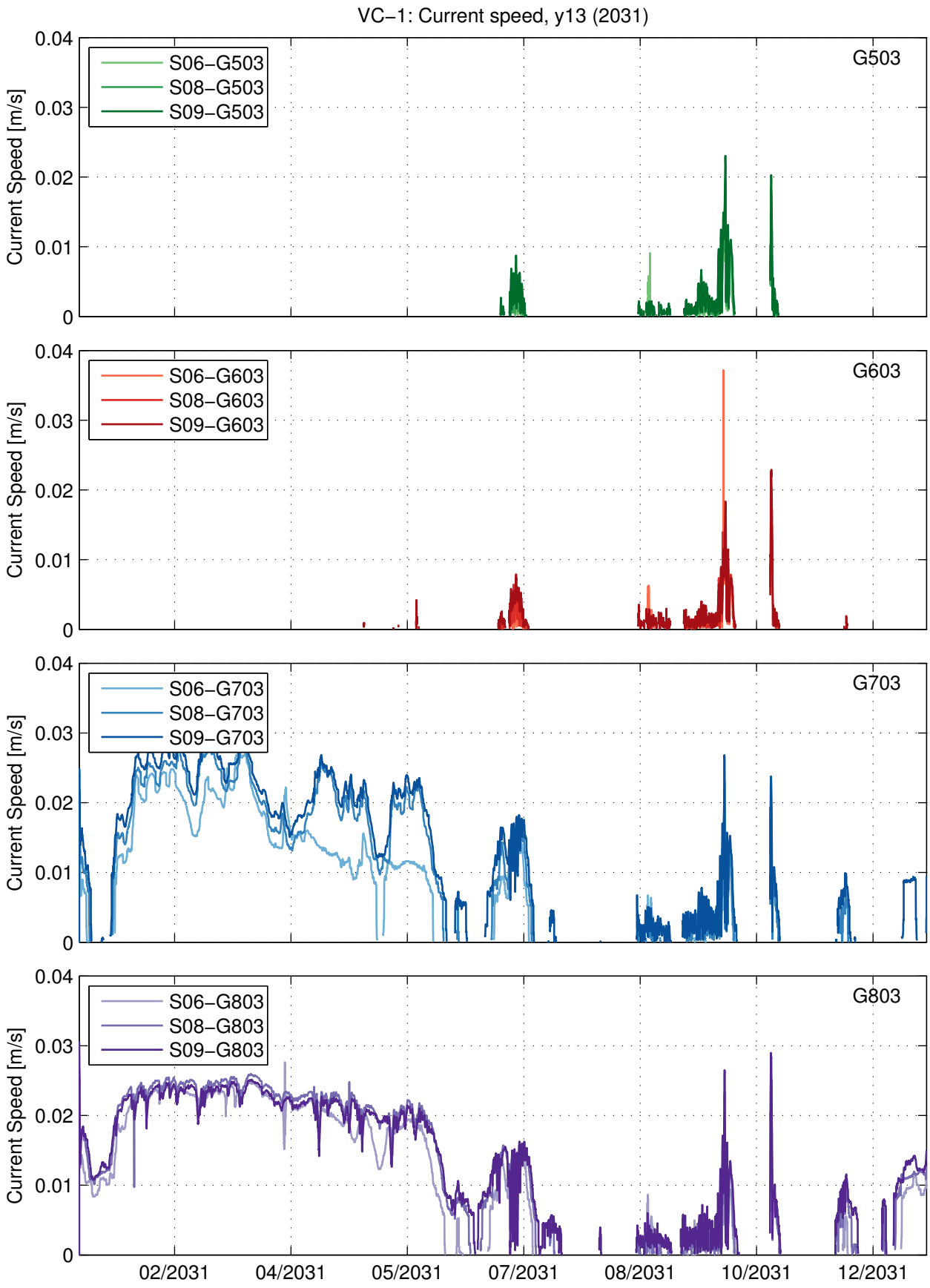

p093: Current speed, y13 (2031)
Current Speed [m/s]
0.06
0.05
0.04
0.03
0.02
0.01
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

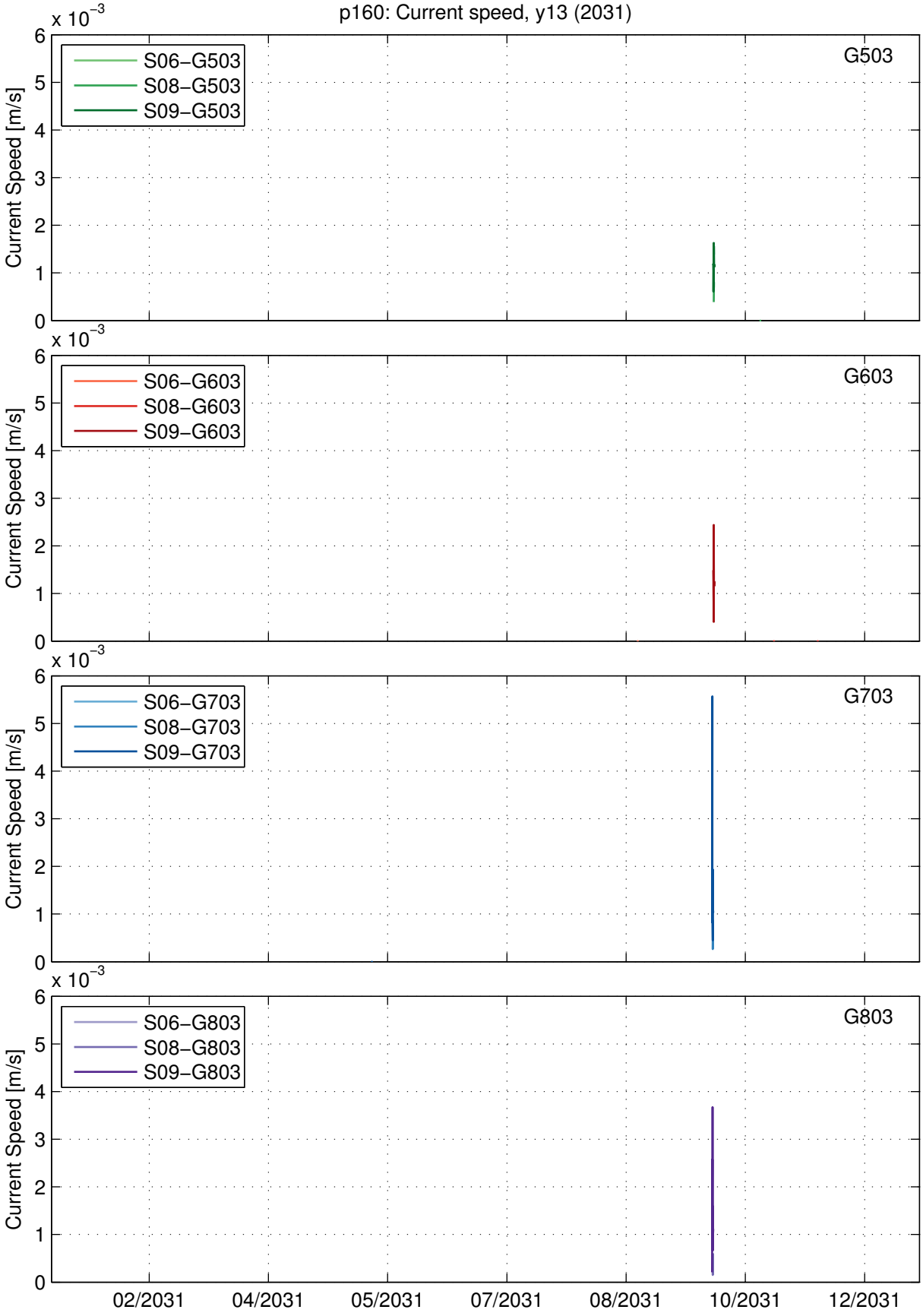

p141: Current speed, y13 (2031)
Current Speed [m/s]
0.2
0.15
0.1
0.05
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

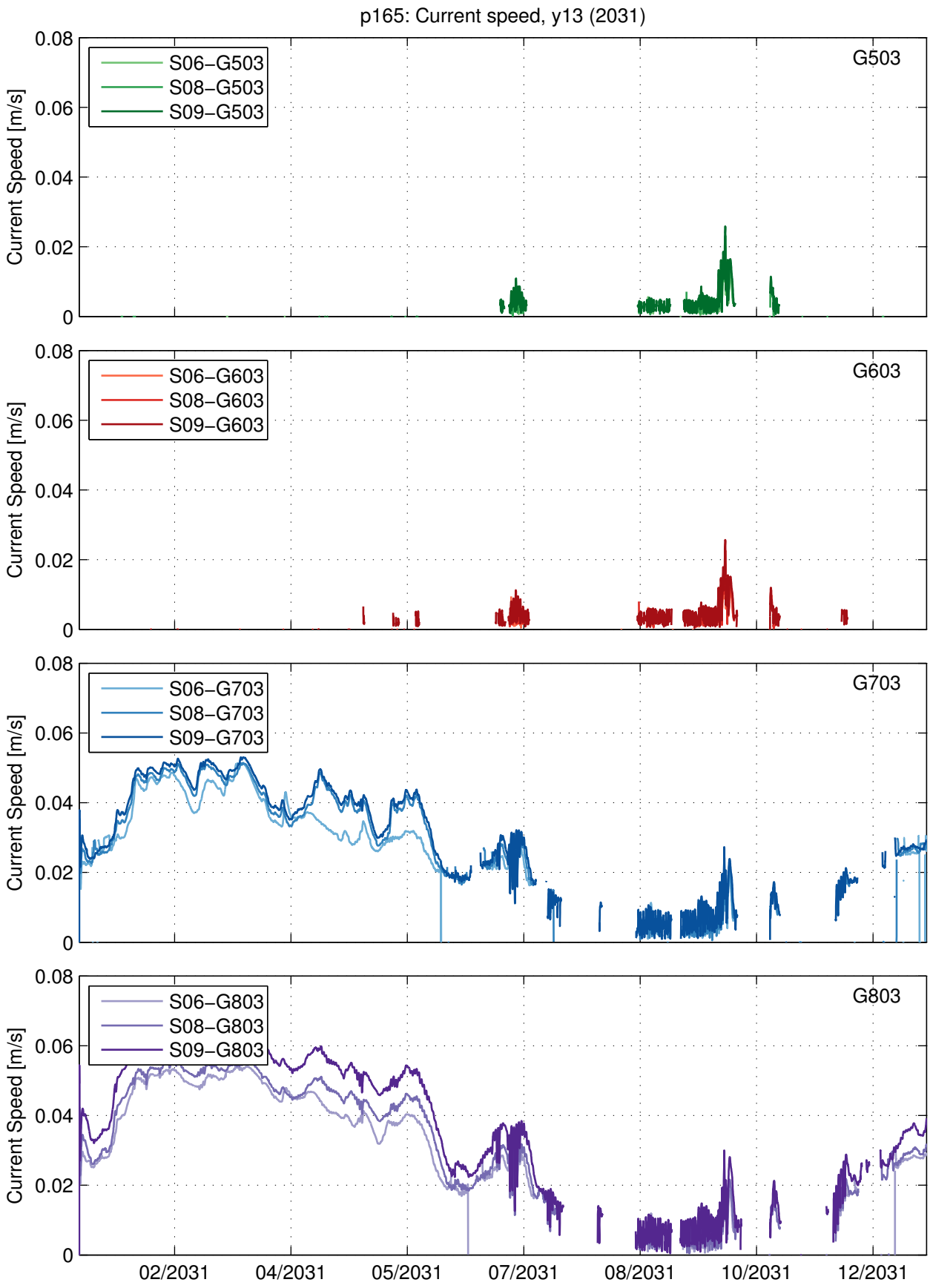

GIWW–JP: Current speed, y13 (2031)
Current Speed [m/s]
0.4
0.3
0.2
0.1
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

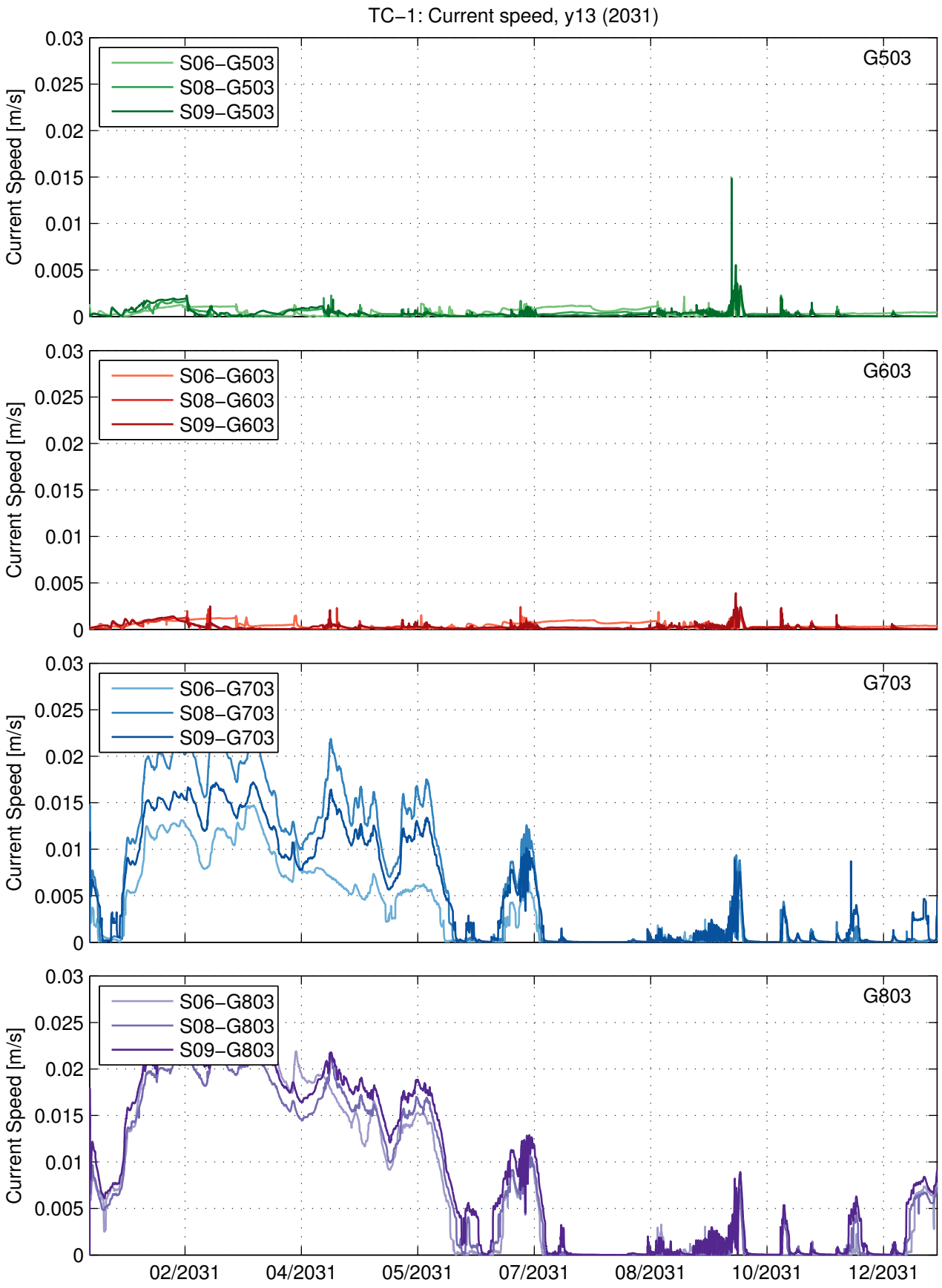

p169: Current speed, y13 (2031)
Current Speed [m/s]
0.04
0.03
0.02
0.01
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

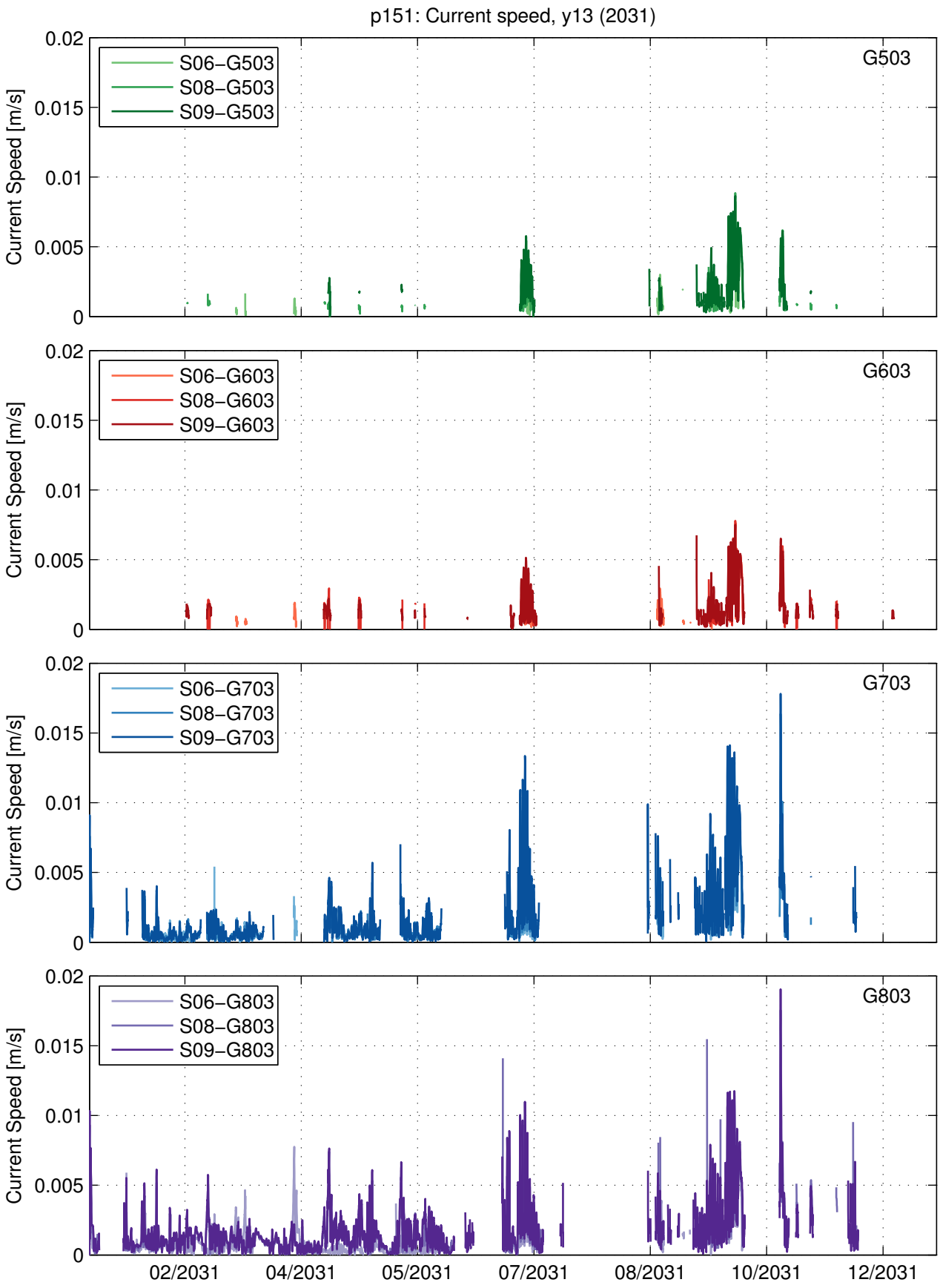

LK–4: Current speed, y13 (2031)
Current Speed [m/s]
0.4
0.3
0.2
0.1
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

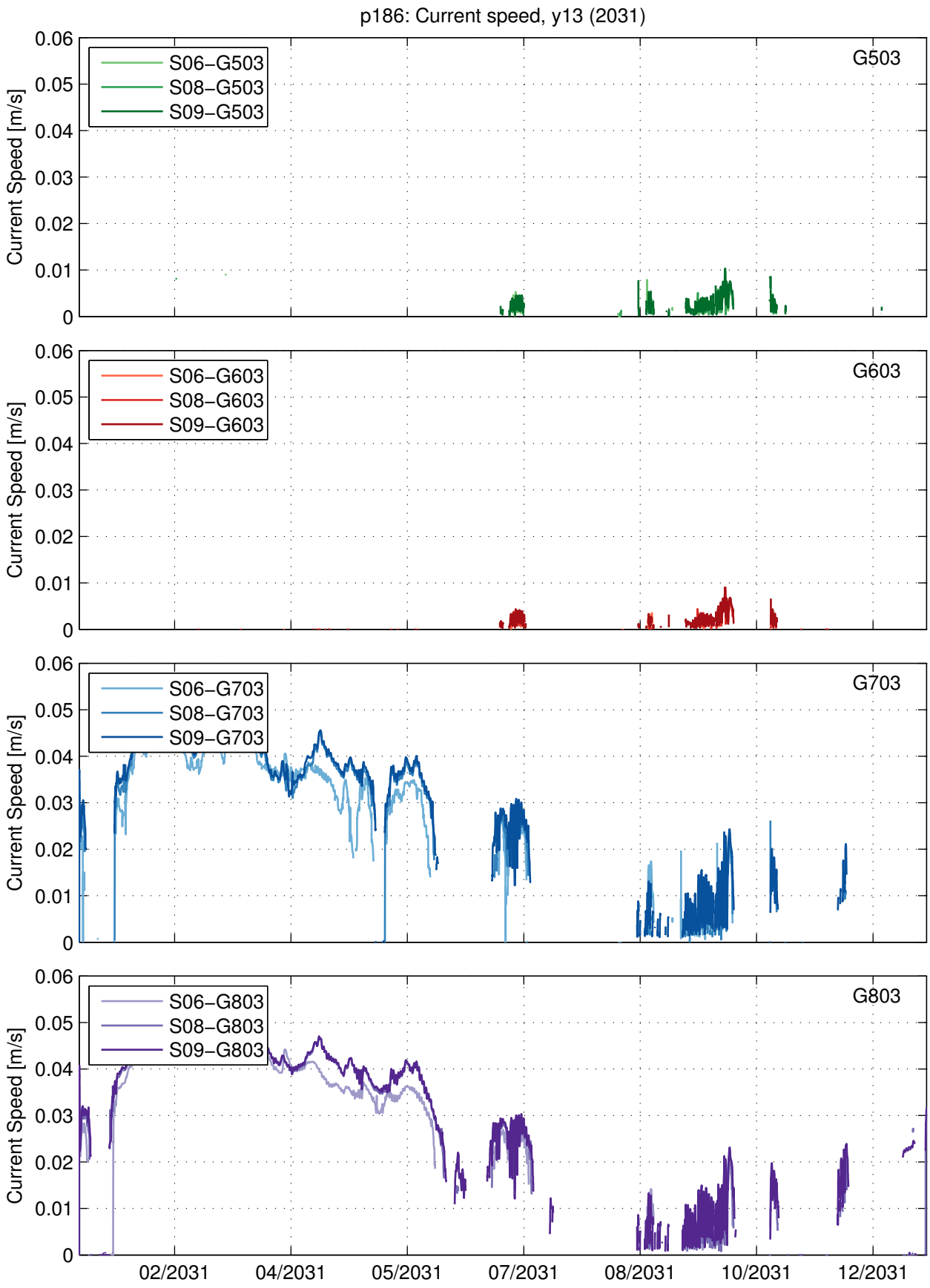

VC−1: Current speed, y13 (2031)
Current Speed [m/s]
0.04
0.03
0.02
0.01
0
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
S06−G703
S08−G703
S09−G703
G703
S06−G803
S08−G803
S09−G803
G803
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

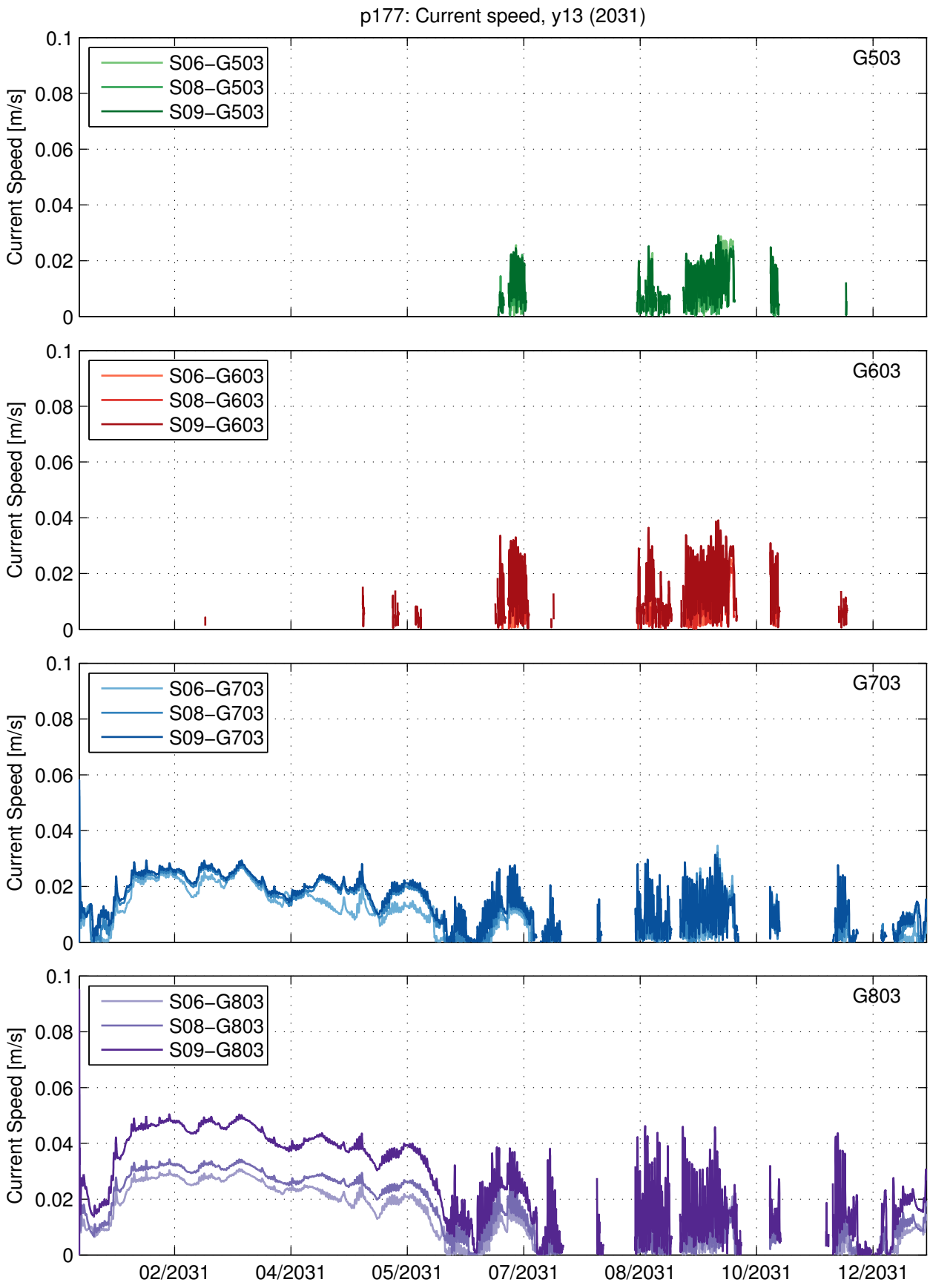

p160: Current speed, y13 (2031)
x 10^-3
Current Speed [m/s]
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
0
1
2
3
4
5
6
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

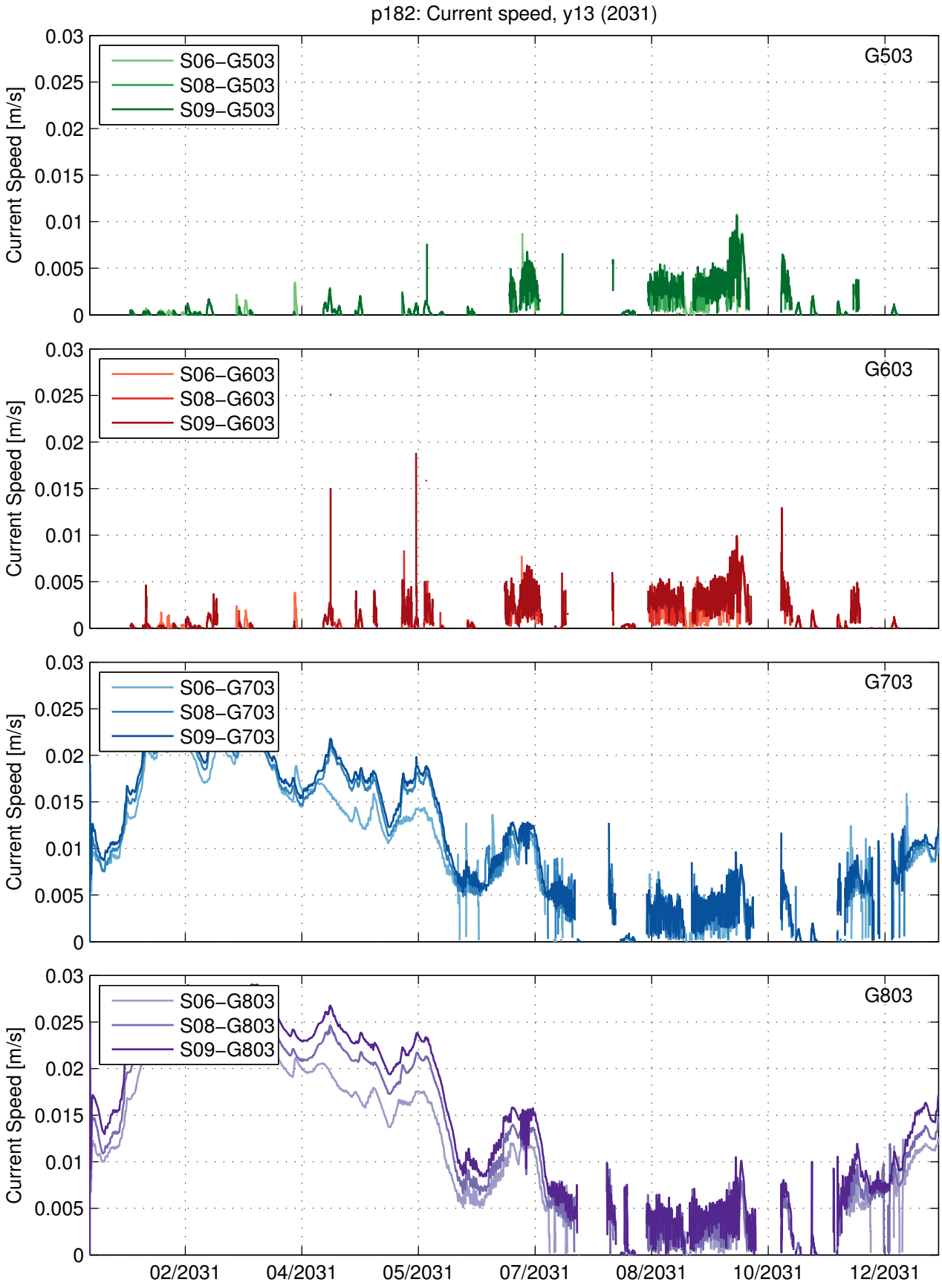

p165: Current speed, y13 (2031)
Current Speed [m/s]
0.08
0.06
0.04
0.02
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

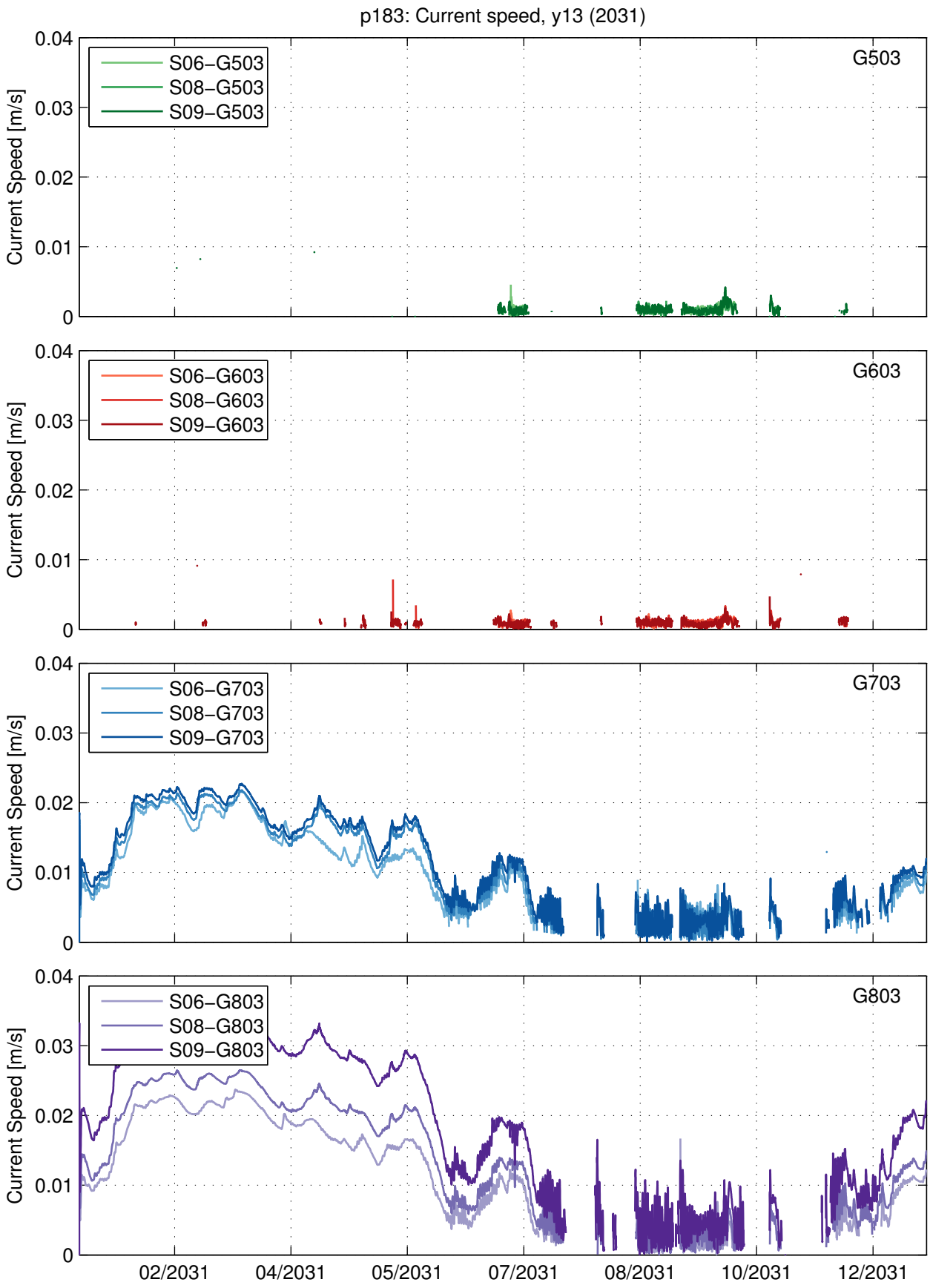

TC−1: Current speed, y13 (2031)
Current Speed [m/s]
0.03
0.025
0.02
0.015
0.01
0.005
0
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
S06−G703
S08−G703
S09−G703
G703
S06−G803
S08−G803
S09−G803
G803
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

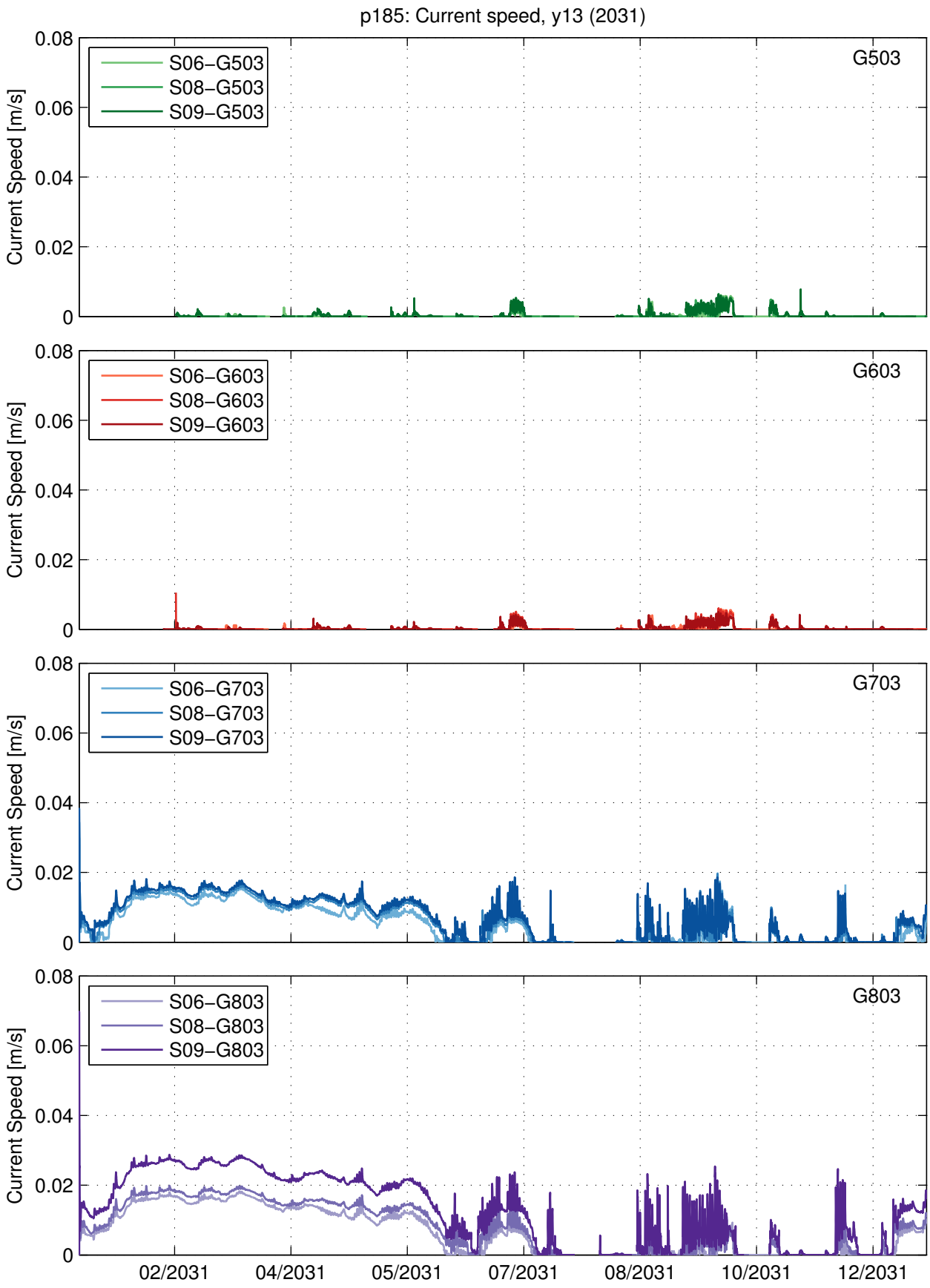

p151: Current speed, y13 (2031)
Current Speed [m/s]
0.02
0.015
0.01
0.005
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

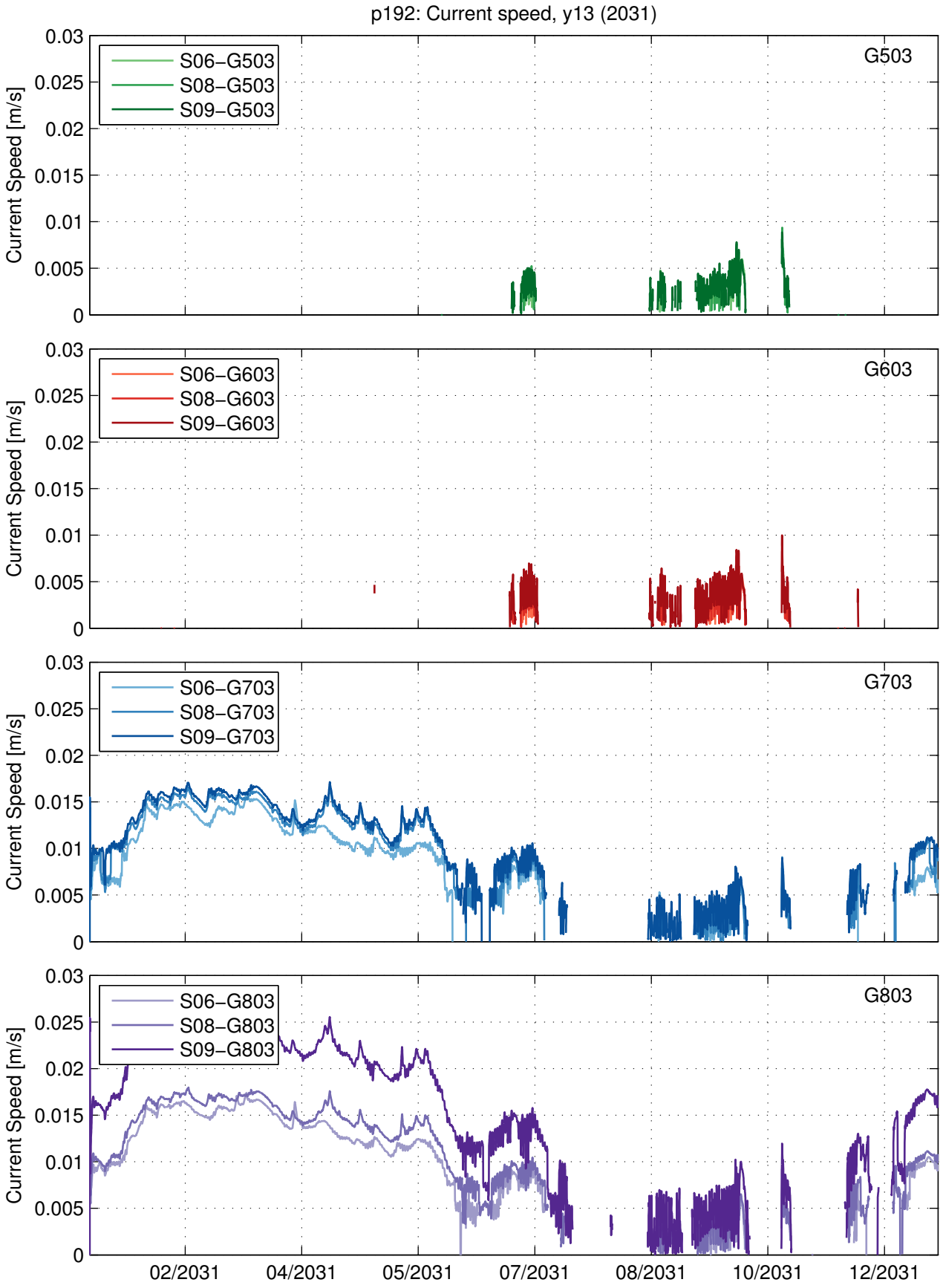

p186: Current speed, y13 (2031)
Current Speed [m/s]
0.06
0.05
0.04
0.03
0.02
0.01
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

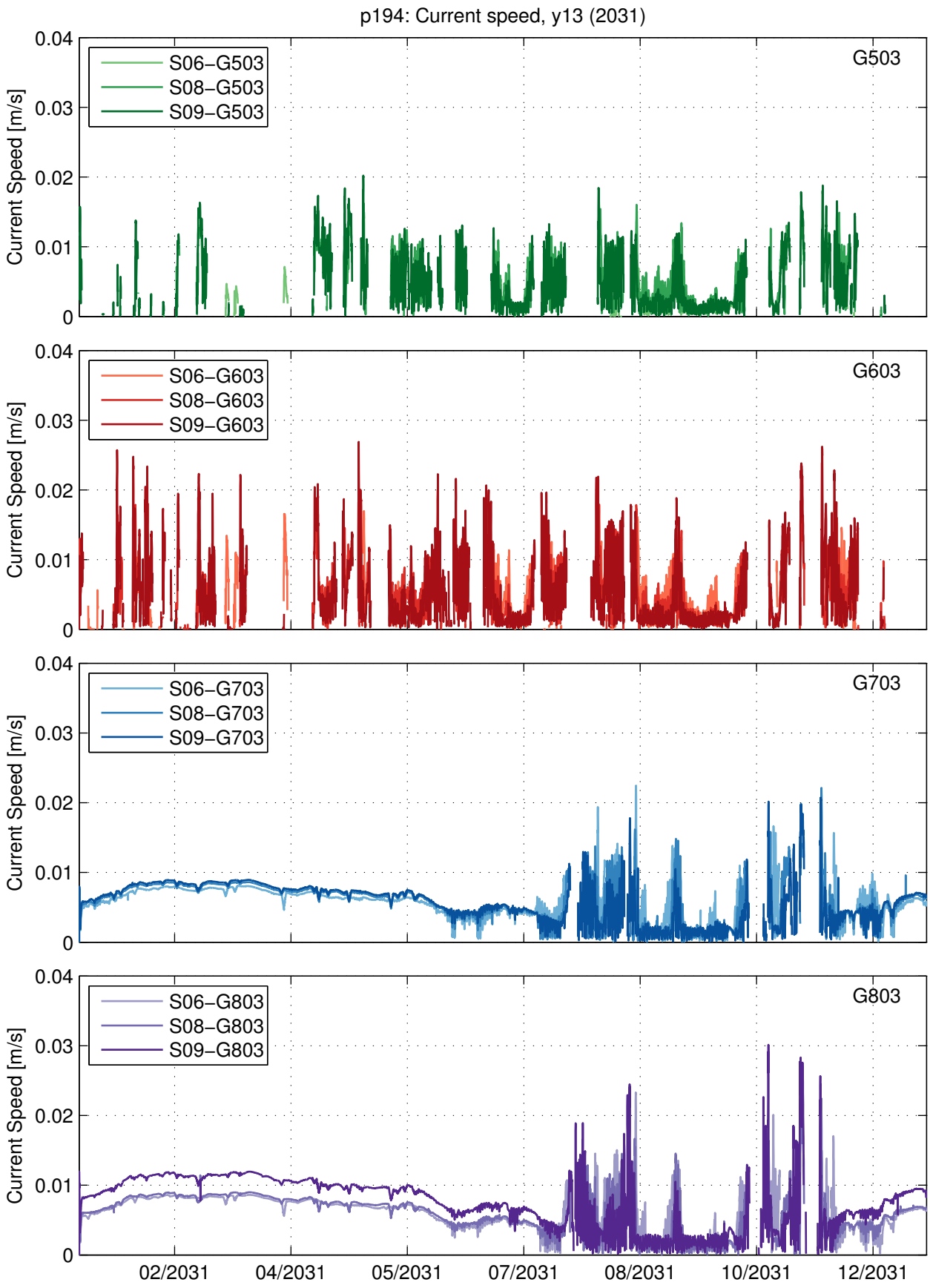

p177: Current speed, y13 (2031)
Current Speed [m/s]
0.1
0.08
0.06
0.04
0.02
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

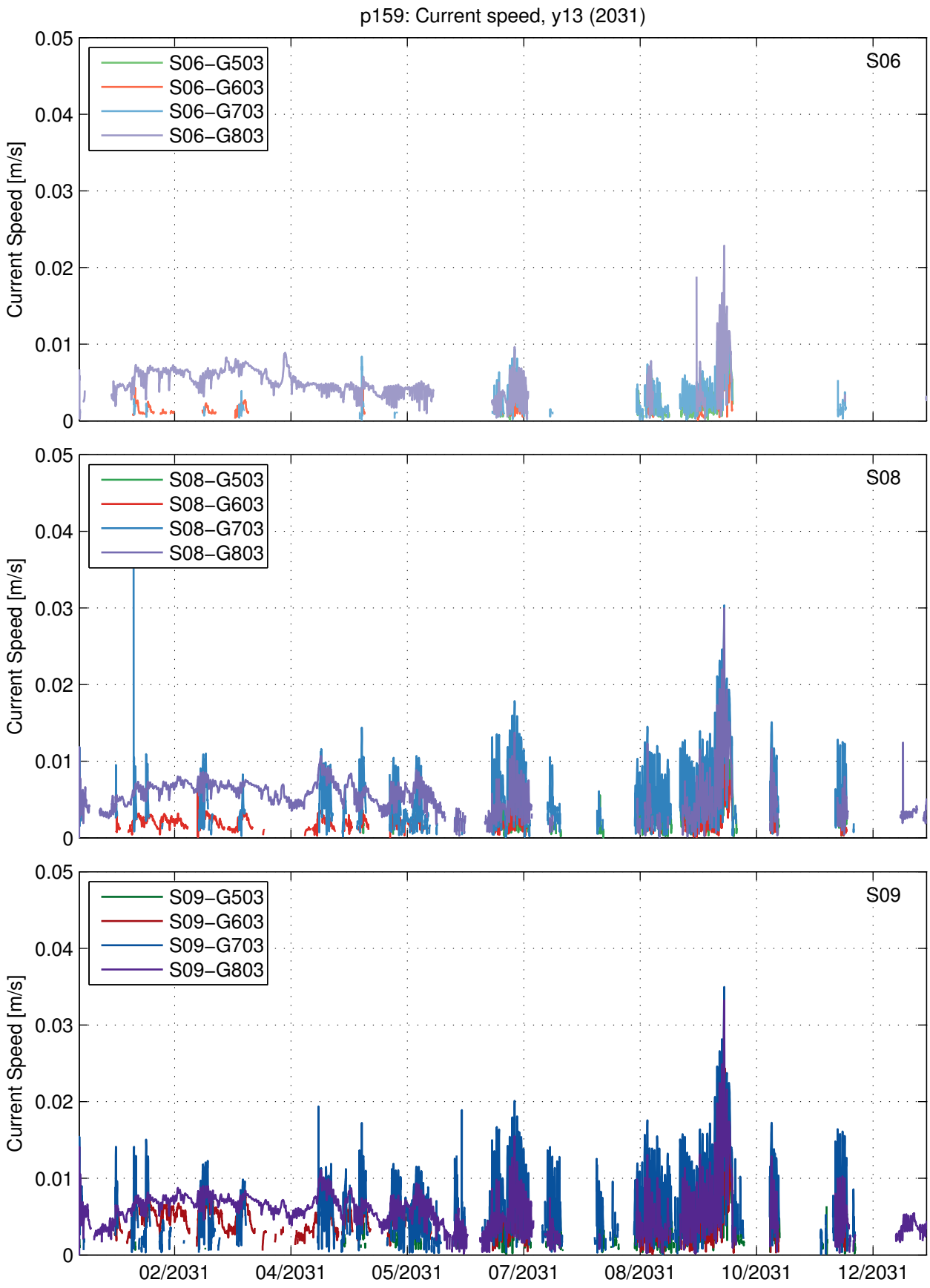

p182: Current speed, y13 (2031)
Current Speed [m/s]
0.03
0.025
0.02
0.015
0.01
0.005
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

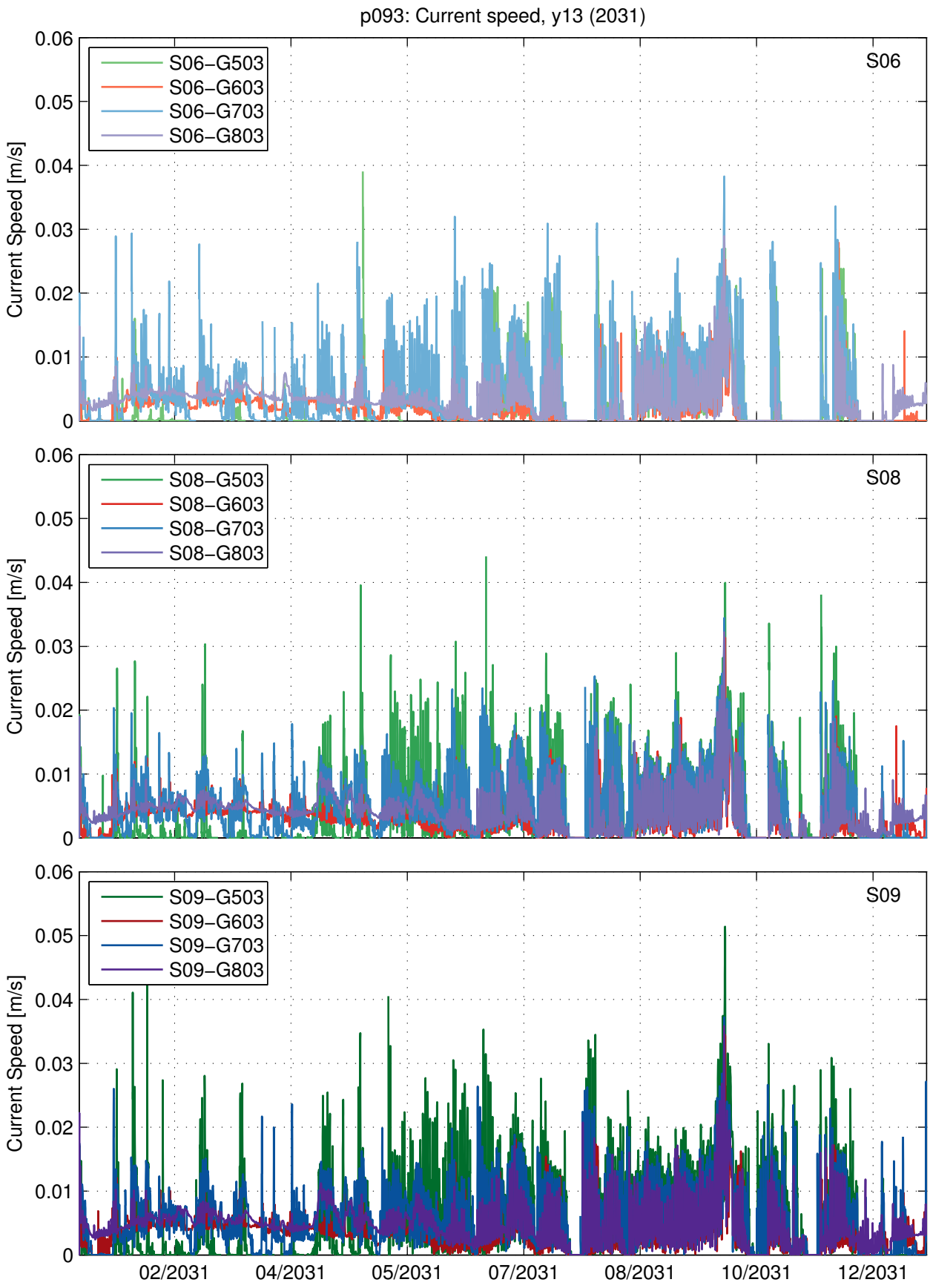

p183: Current speed, y13 (2031)
Current Speed [m/s]
0.04
0.03
0.02
0.01
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

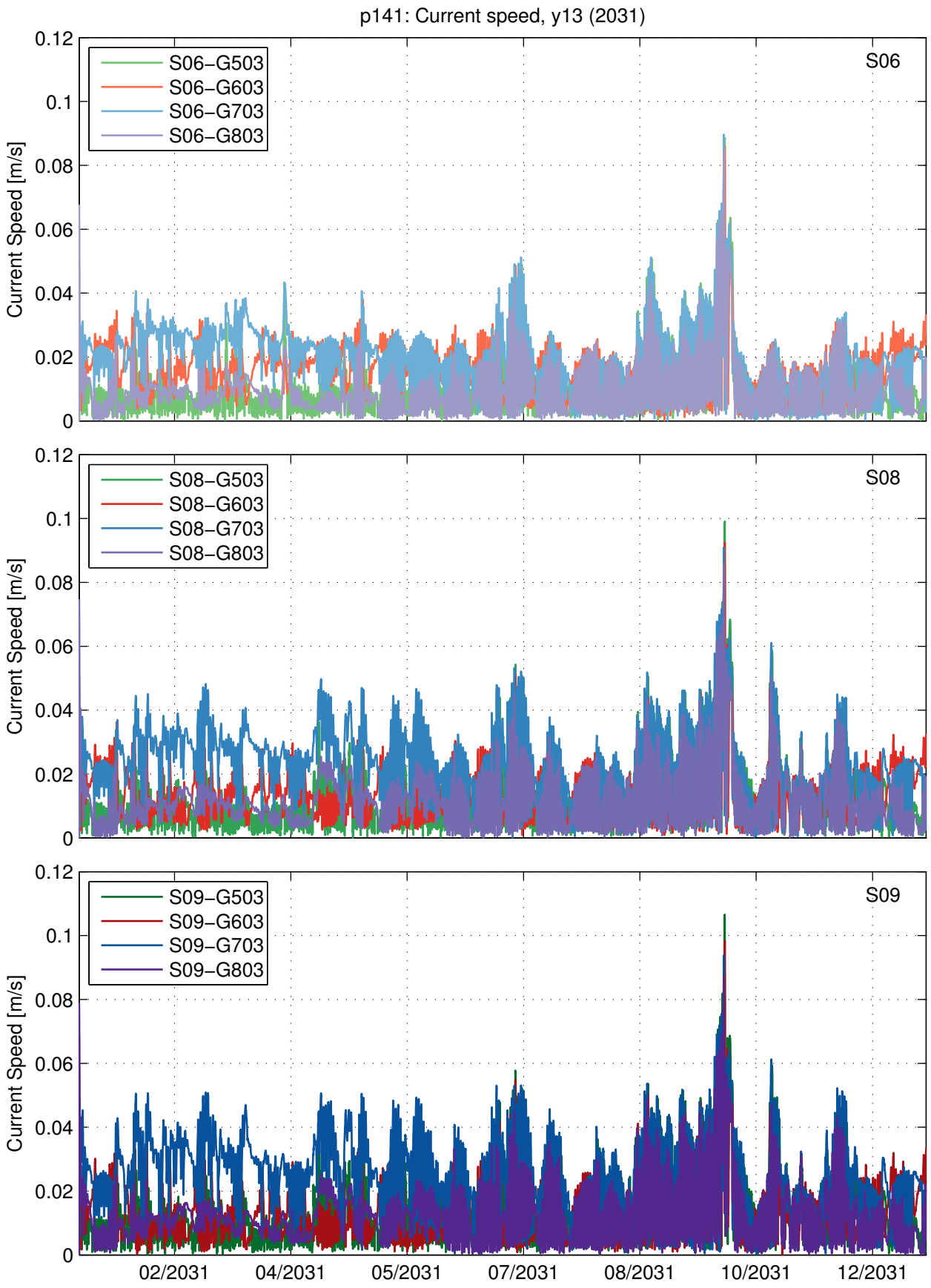

p185: Current speed, y13 (2031)
Current Speed [m/s]
0.08
0.06
0.04
0.02
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

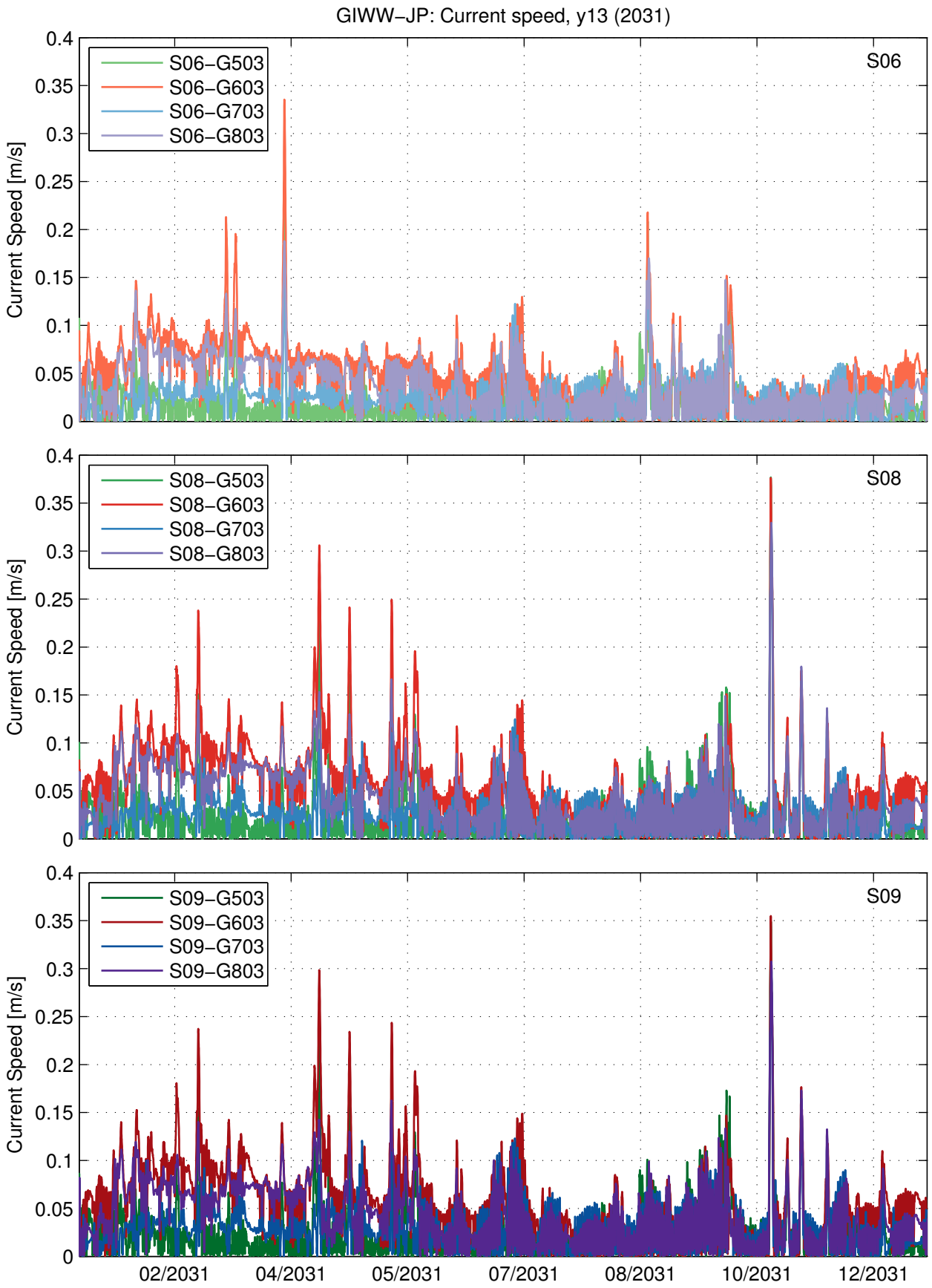

p192: Current speed, y13 (2031)
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
Current Speed [m/s]
0
0.005
0.01
0.015
0.02
0.025
0.03
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

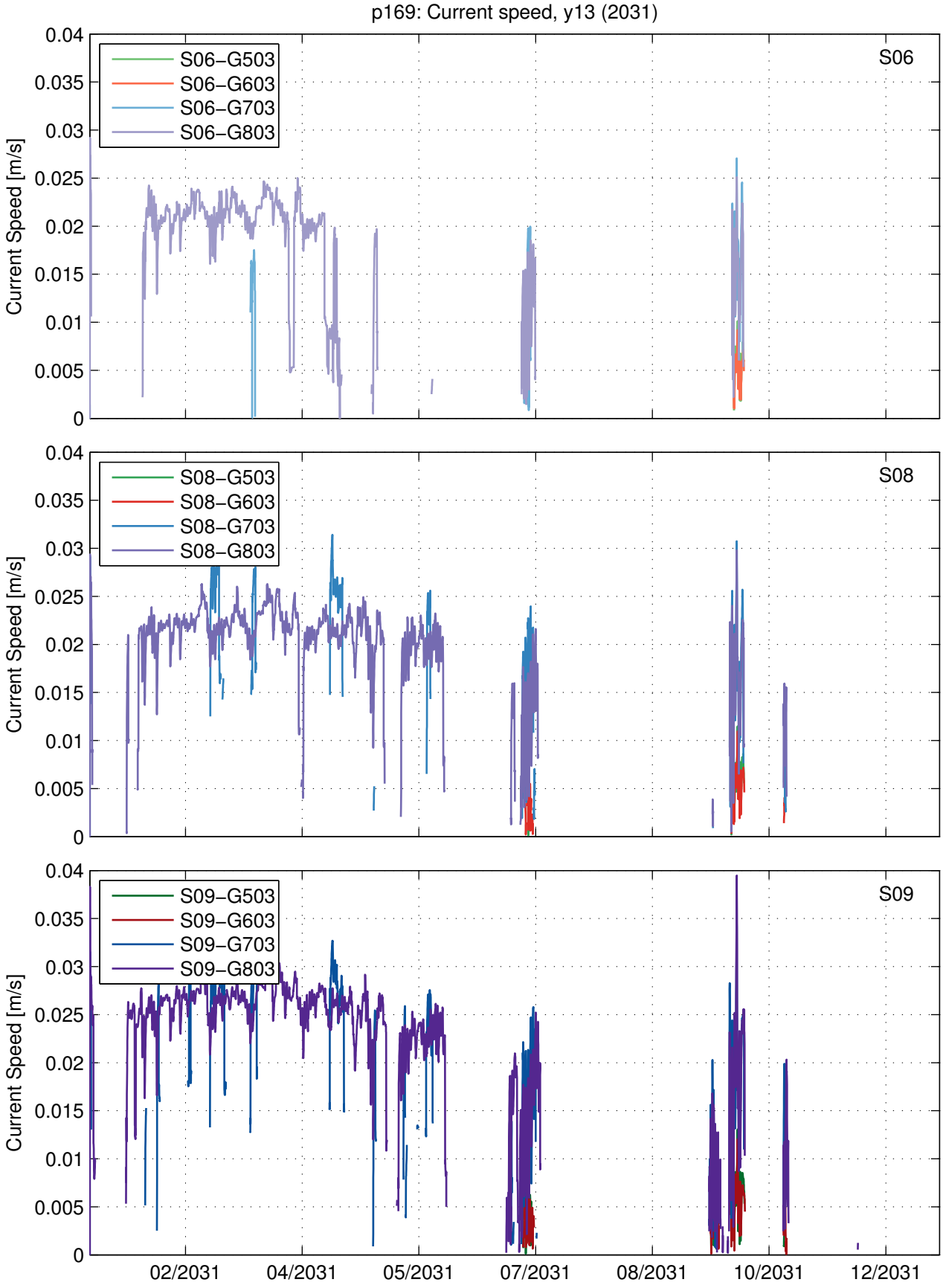

p194: Current speed, y13 (2031)
Current Speed [m/s]
0.04
0.03
0.02
0.01
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

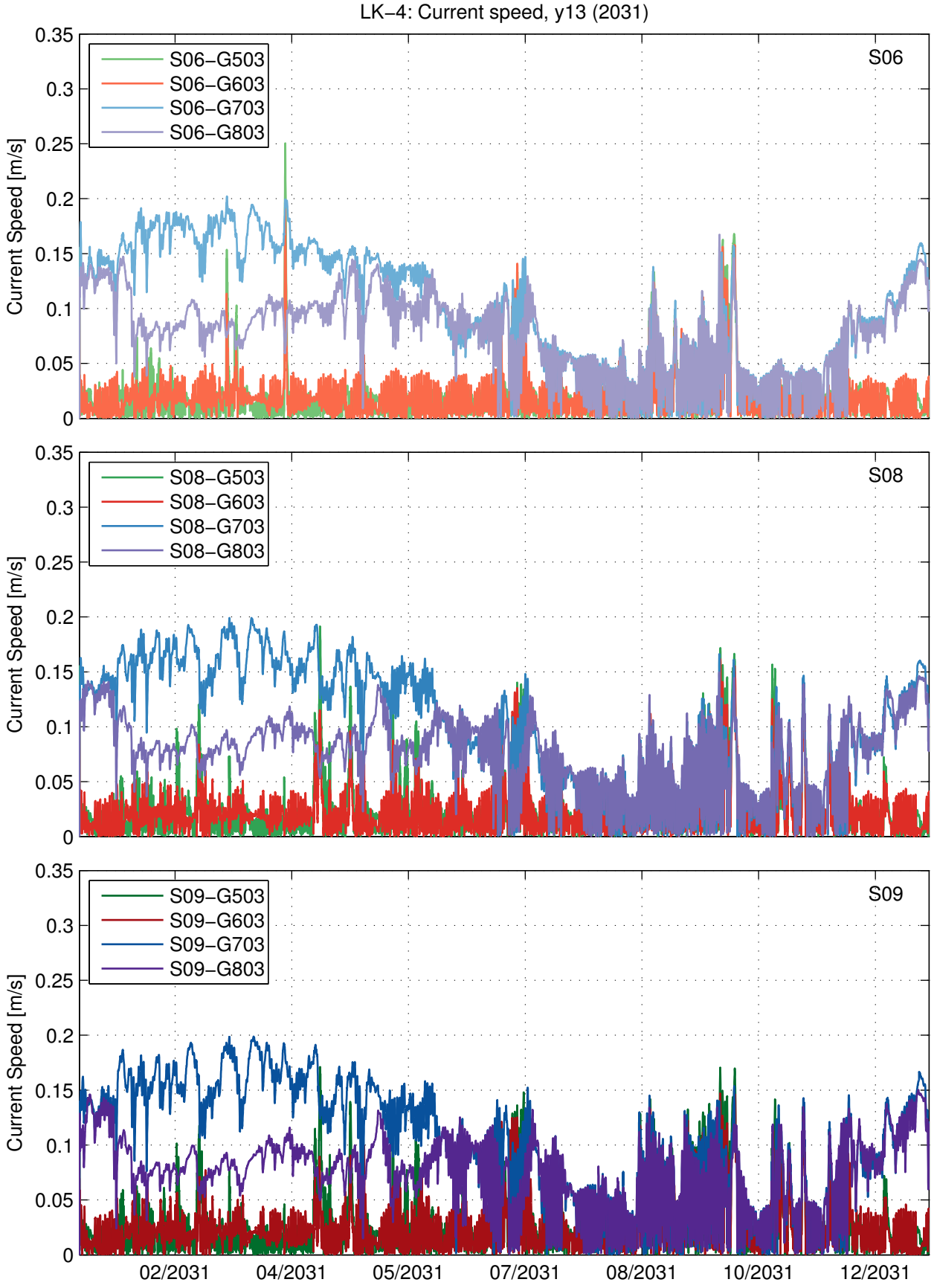

p159: Current speed, y13 (2031)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0.05
0.04
0.03
0.02
0.01
0
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

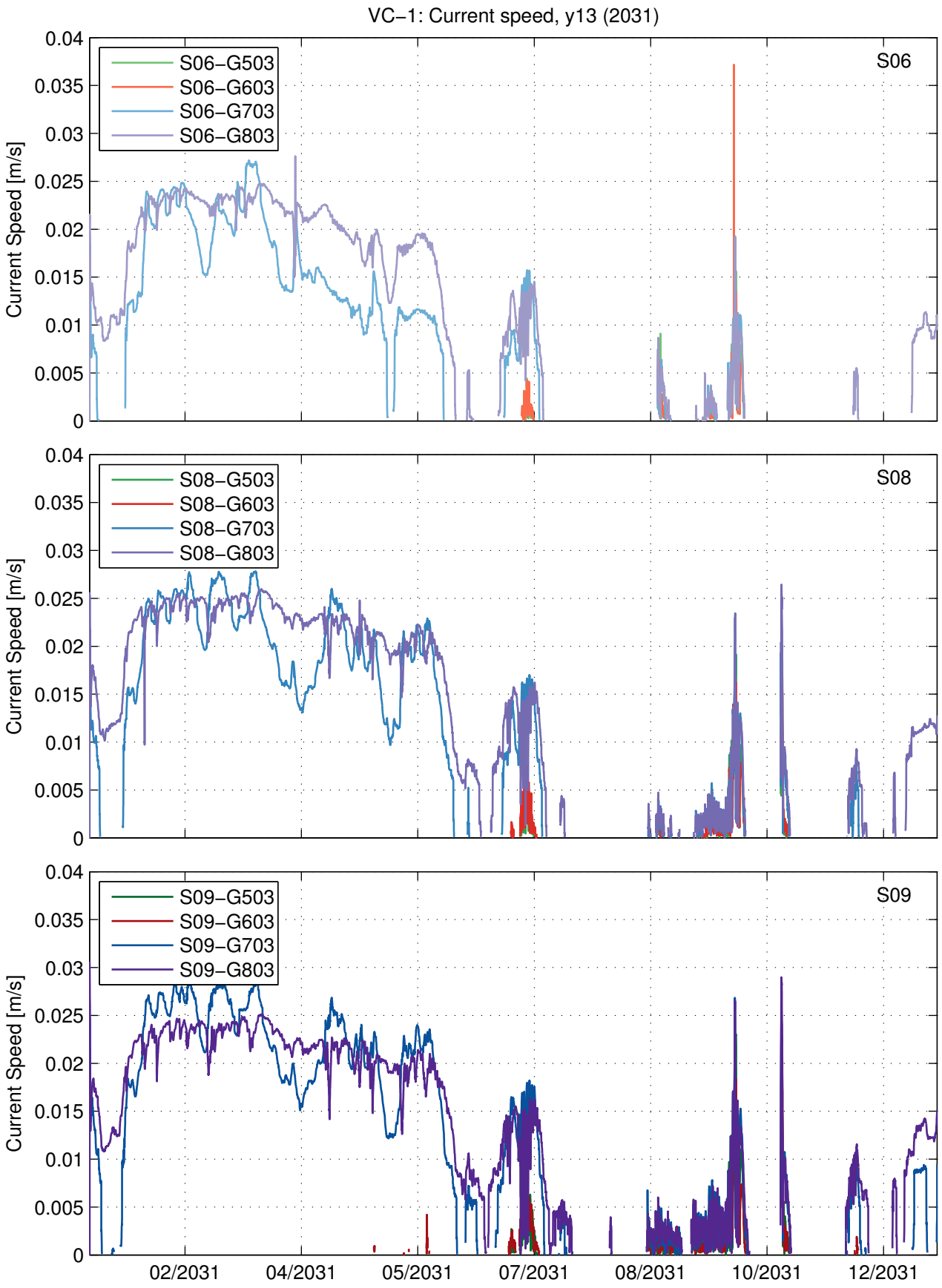

p093: Current speed, y13 (2031)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Current Speed [m/s]
0
0.01
0.02
0.03
0.04
0.05
0.06
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

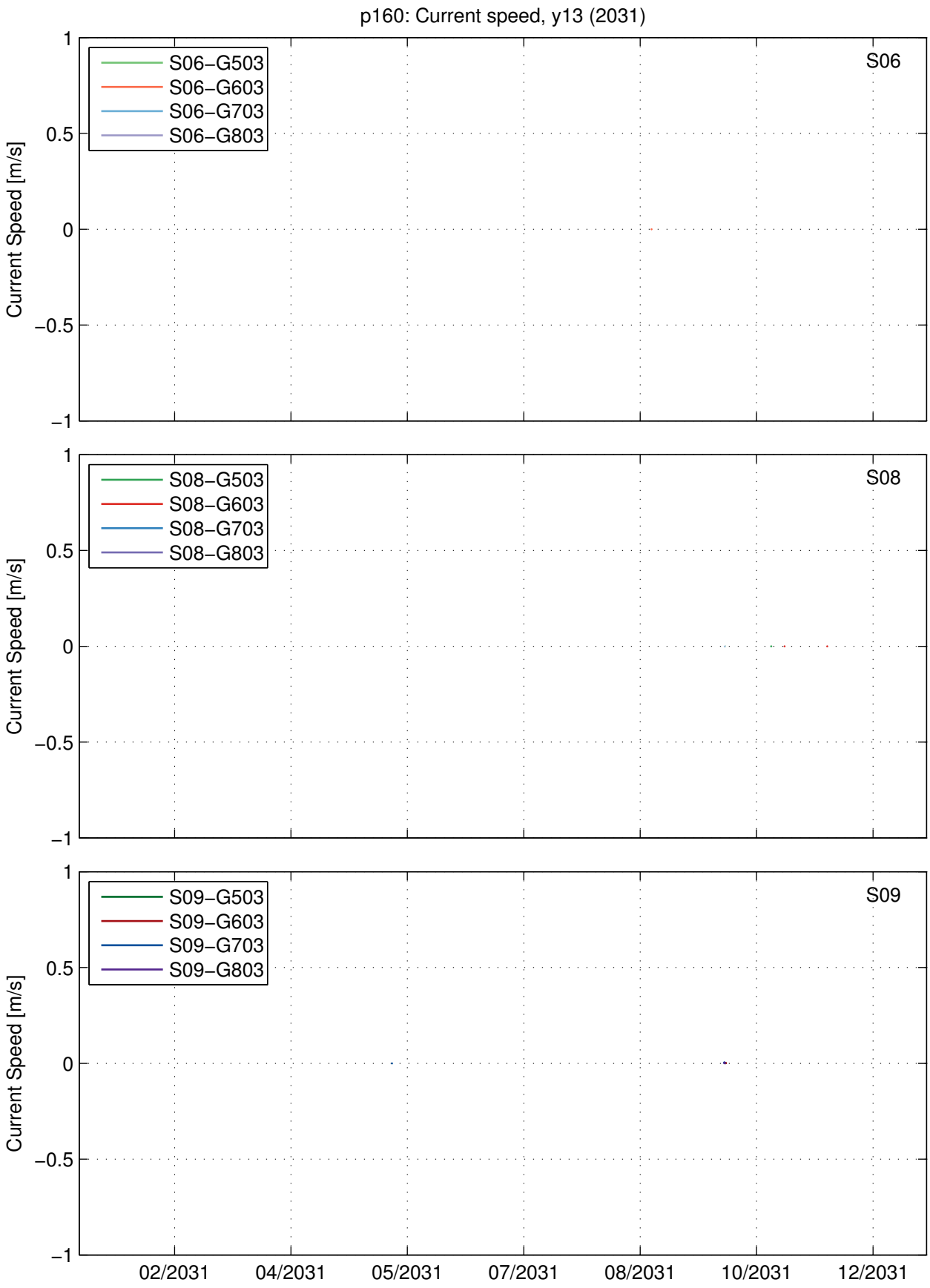

p141: Current speed, y13 (2031)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Current Speed [m/s]
0
0.02
0.04
0.06
0.08
0.1
0.12
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

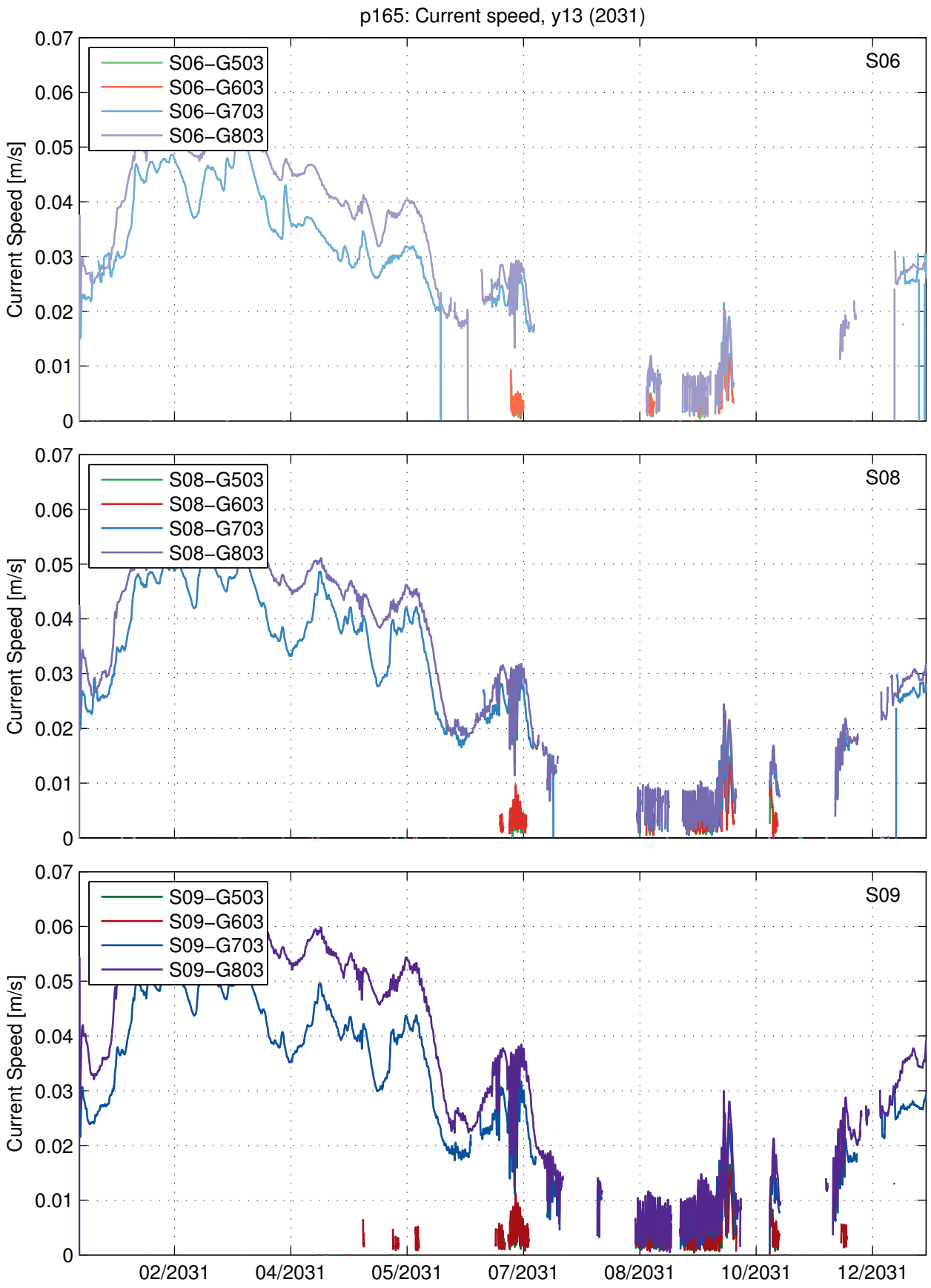

GIWW–JP: Current speed, y13 (2031)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Current Speed [m/s]
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

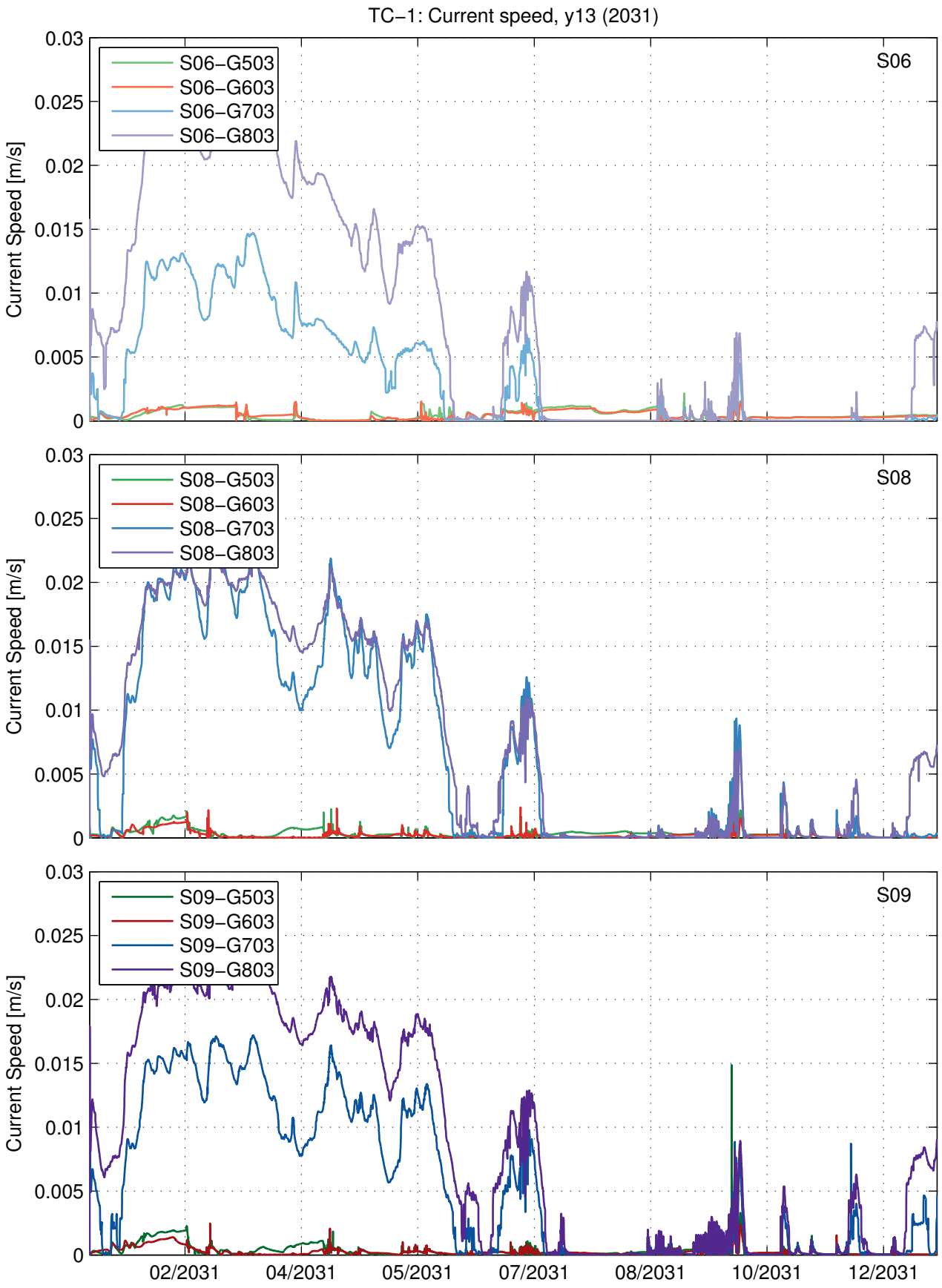

p169: Current speed, y13 (2031)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.005
0.01
0.015
0.02
0.025
0.03
0.035
0.04
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

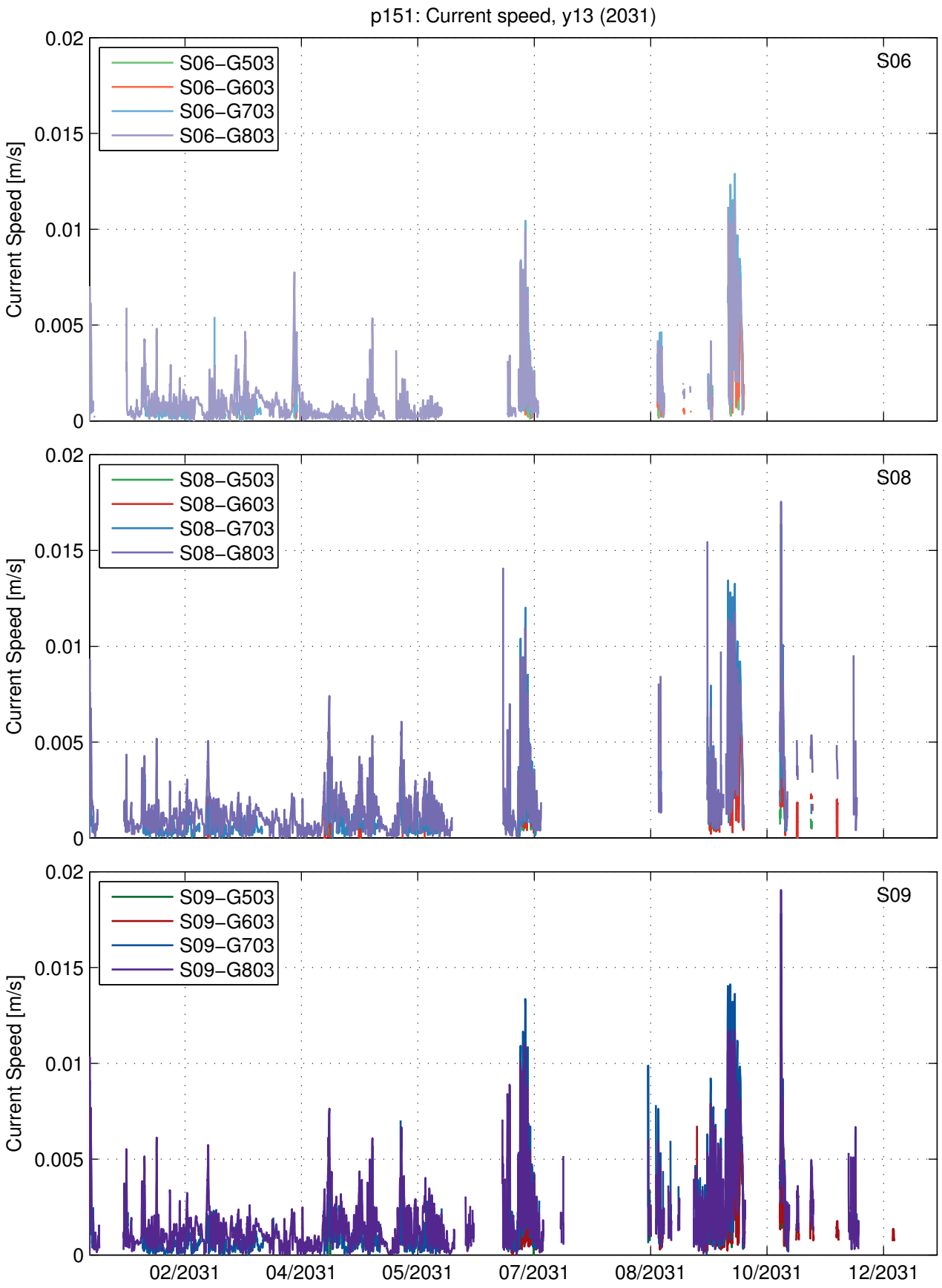

LK−4: Current speed, y13 (2031)
S06−G503
S06−G603
S06−G703
S06−G803
S06
S08−G503
S08−G603
S08−G703
S08−G803
S08
S09−G503
S09−G603
S09−G703
S09−G803
S09
Current Speed [m/s]
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

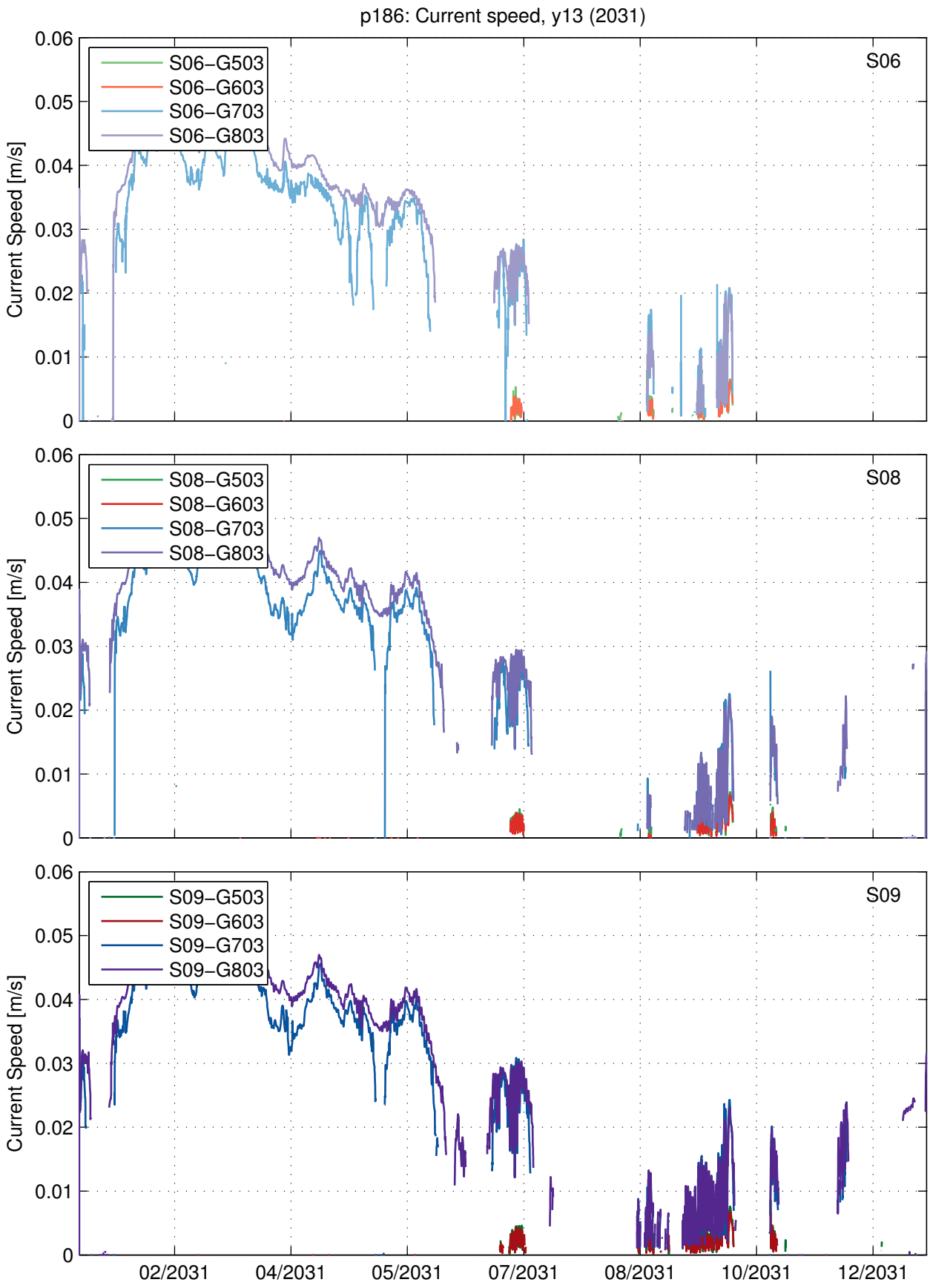

VC−1: Current speed, y13 (2031)
S06−G503
S06−G603
S06−G703
S06−G803
S06
S08−G503
S08−G603
S08−G703
S08−G803
S08
S09−G503
S09−G603
S09−G703
S09−G803
S09
Current Speed [m/s]
0
0.005
0.01
0.015
0.02
0.025
0.03
0.035
0.04
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

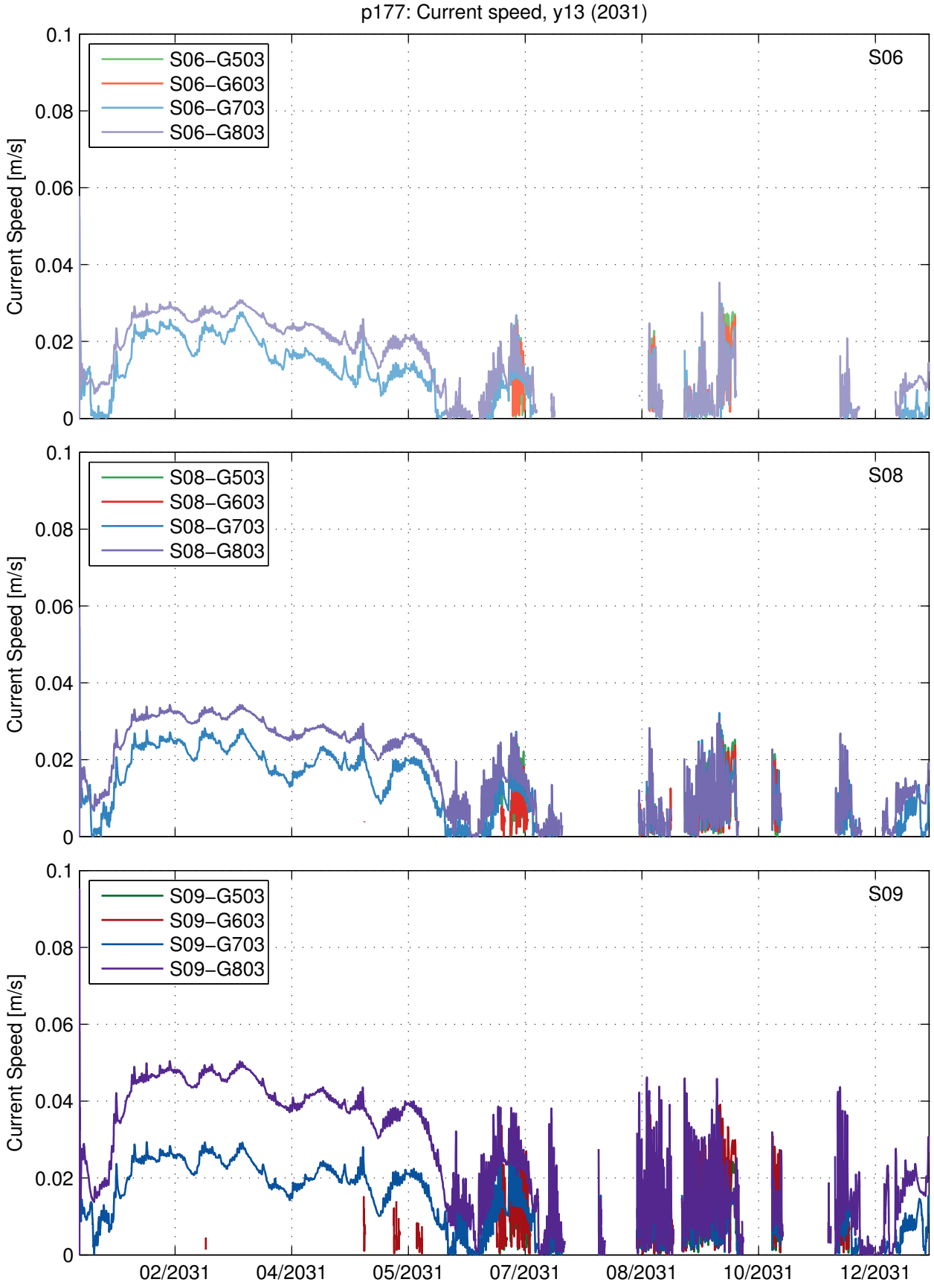

p160: Current speed, y13 (2031)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Current Speed [m/s]
1
0.5
0
−0.5
−1
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

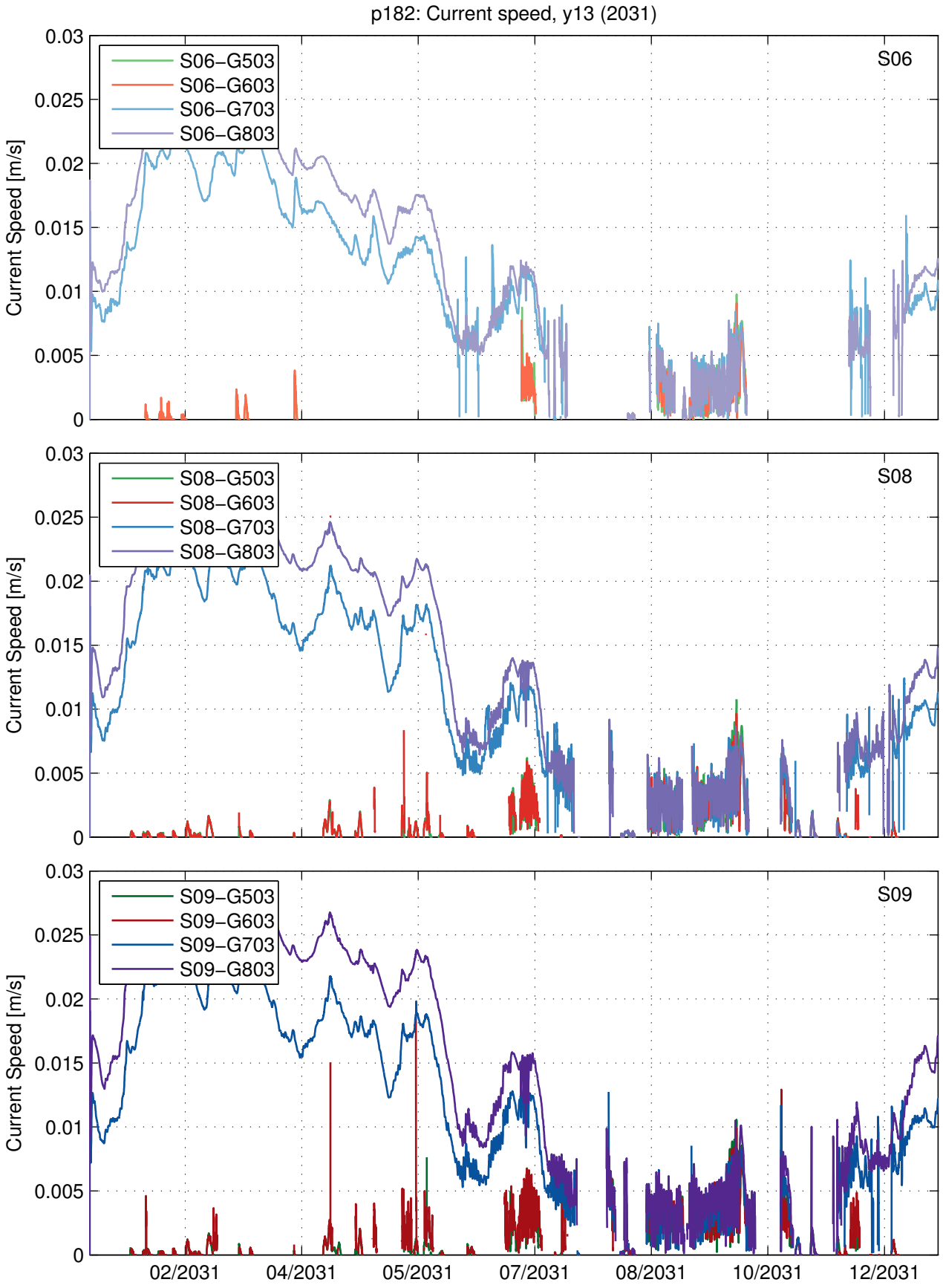

p165: Current speed, y13 (2031)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.01
0.02
0.03
0.04
0.05
0.06
0.07
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

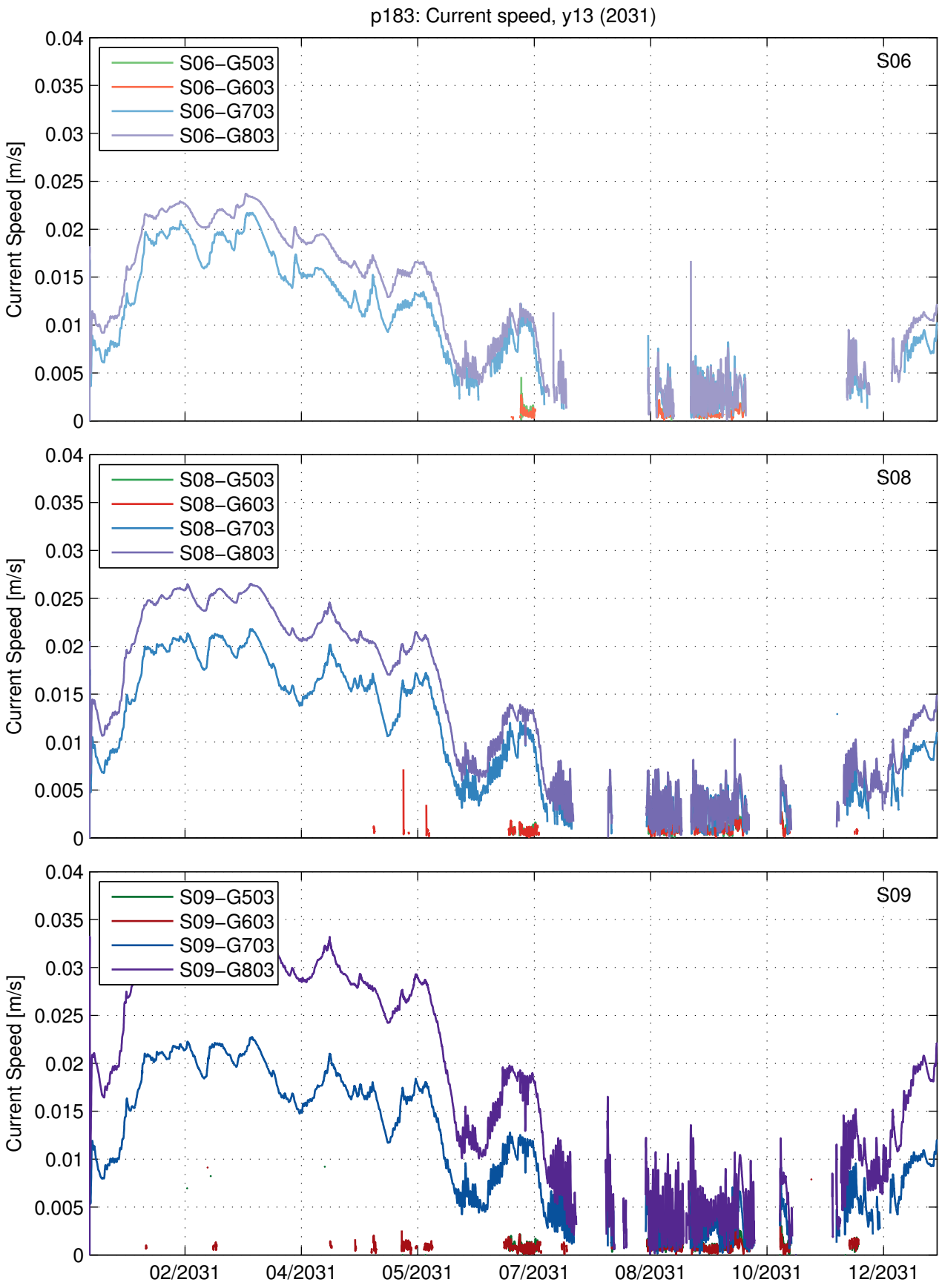

TC−1: Current speed, y13 (2031)
S06−G503
S06−G603
S06−G703
S06−G803
S06
S08−G503
S08−G603
S08−G703
S08−G803
S08
S09−G503
S09−G603
S09−G703
S09−G803
S09
Current Speed [m/s]
0.03
0.025
0.02
0.015
0.01
0.005
0
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

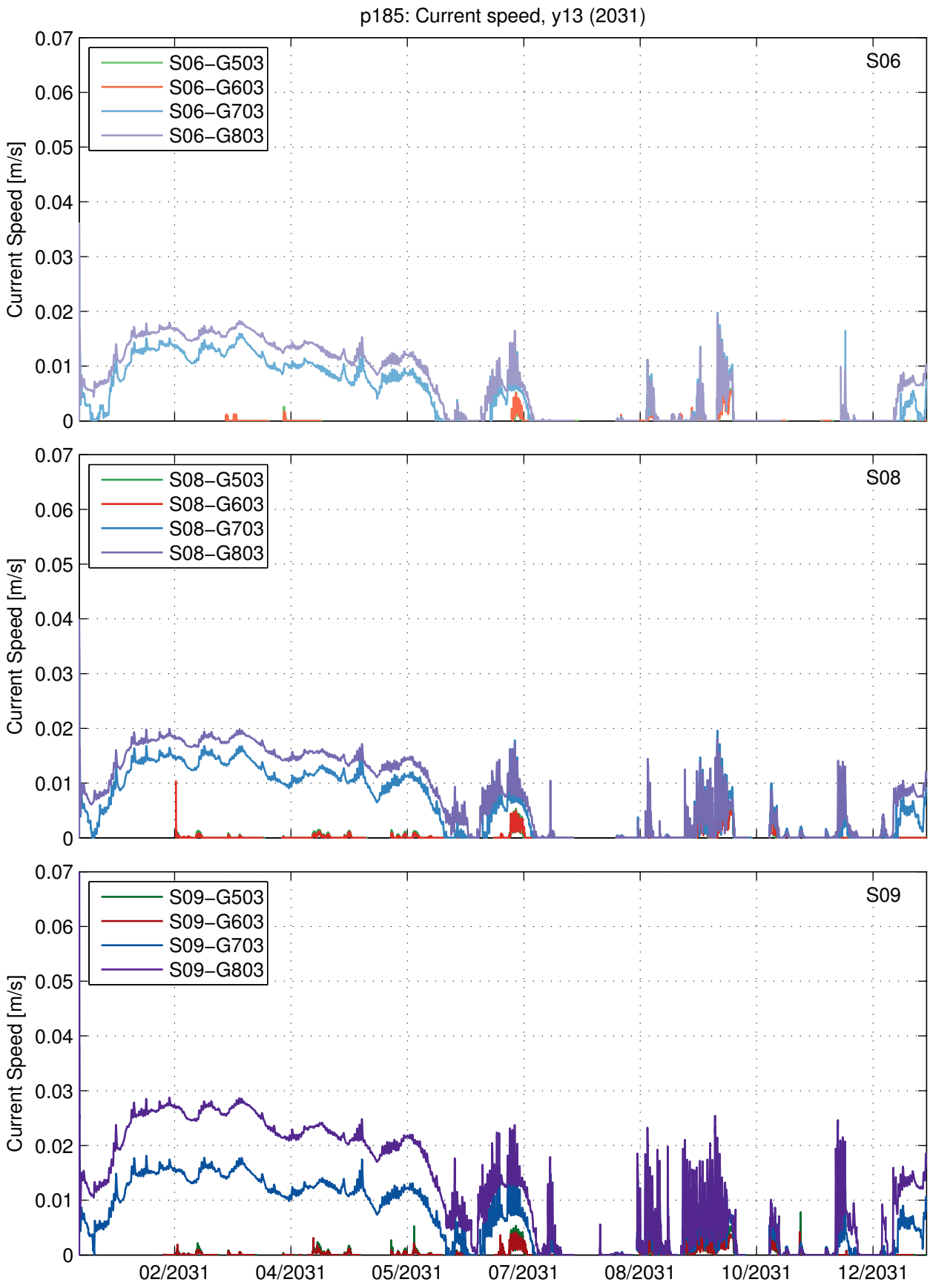

p151: Current speed, y13 (2031)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0.02
0.015
0.01
0.005
0
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

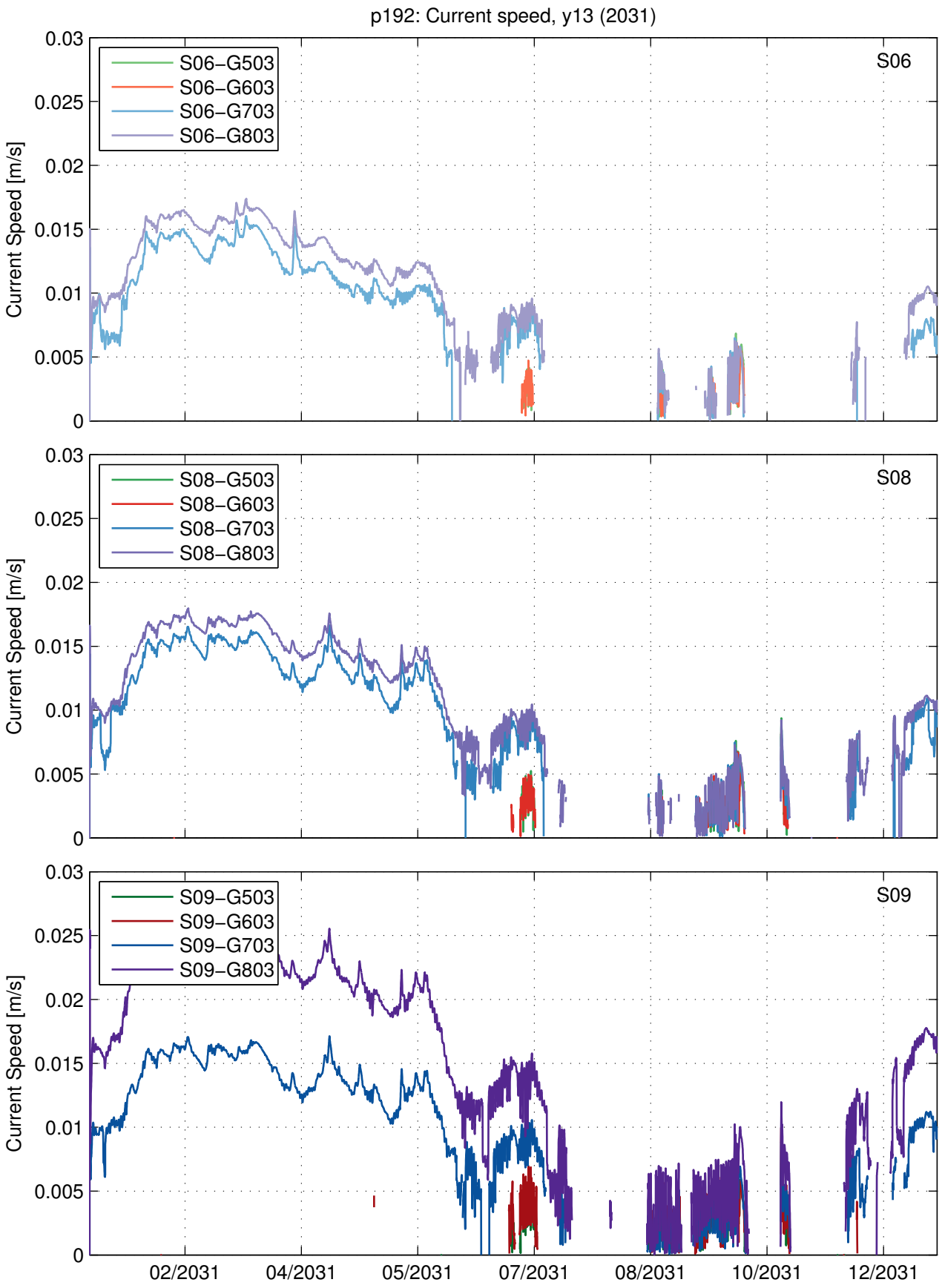

p186: Current speed, y13 (2031)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.01
0.02
0.03
0.04
0.05
0.06
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

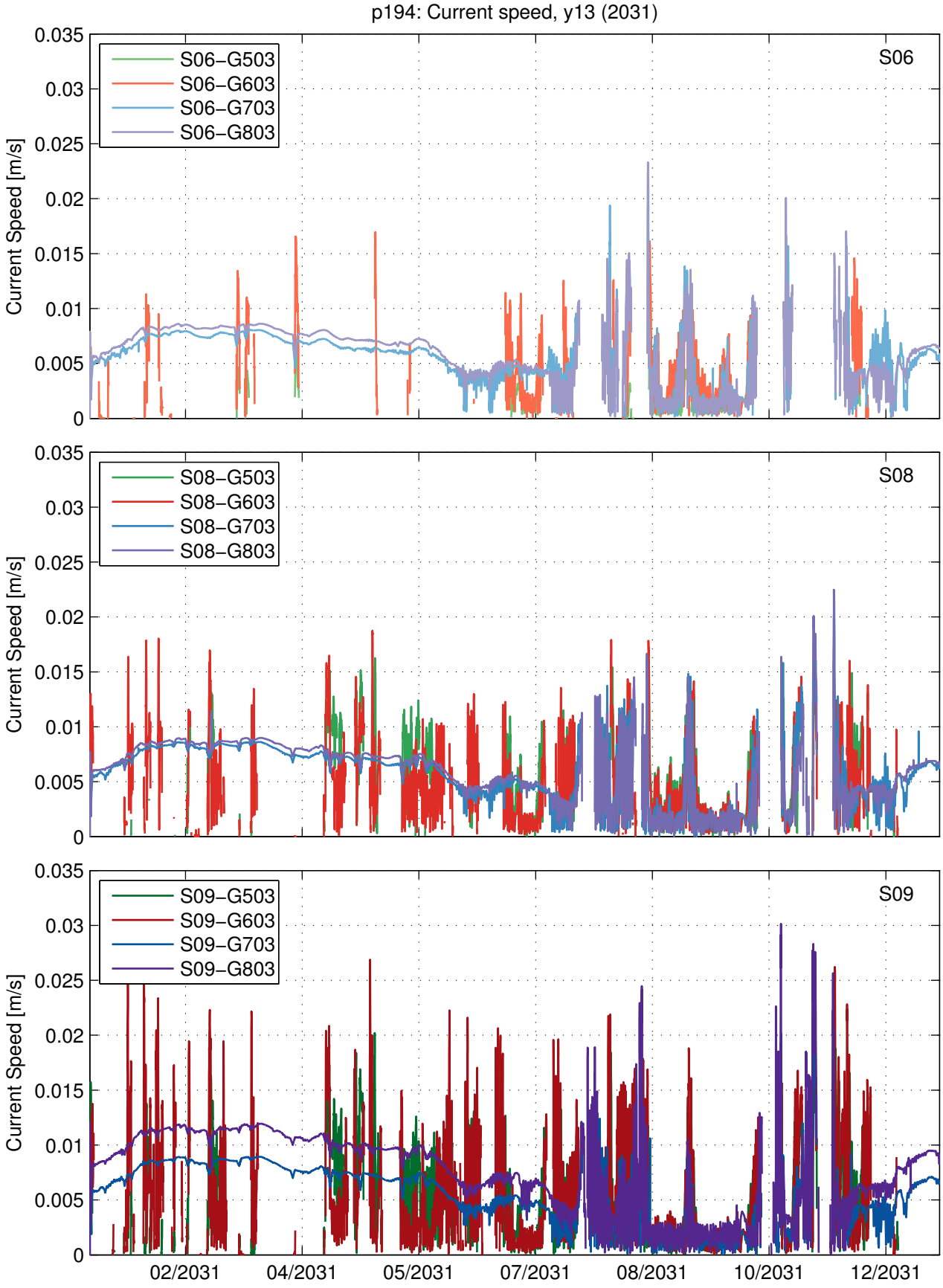

p177: Current speed, y13 (2031)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.02
0.04
0.06
0.08
0.1
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

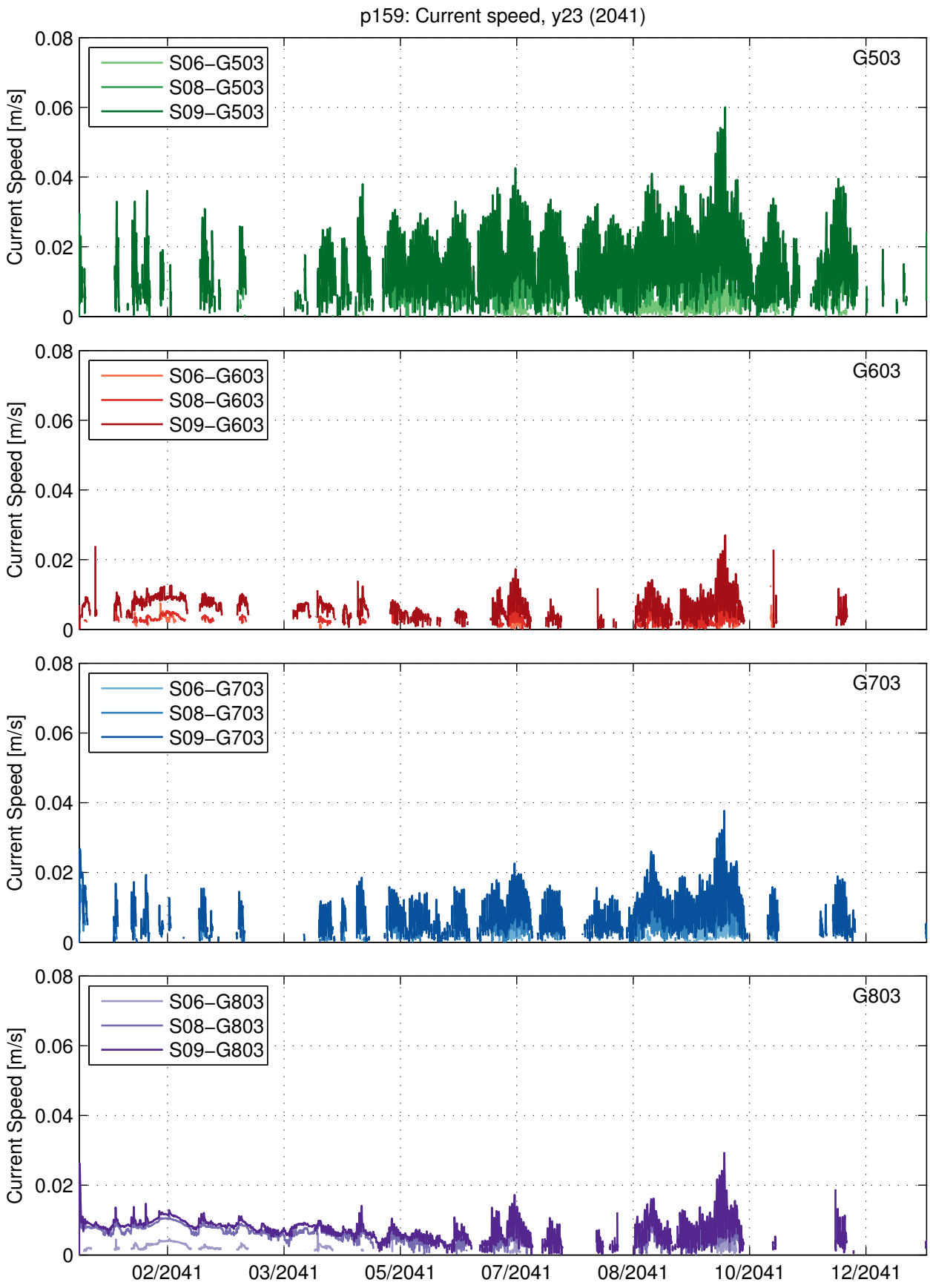

p182: Current speed, y13 (2031)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0.03
0.025
0.02
0.015
0.01
0.005
0
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

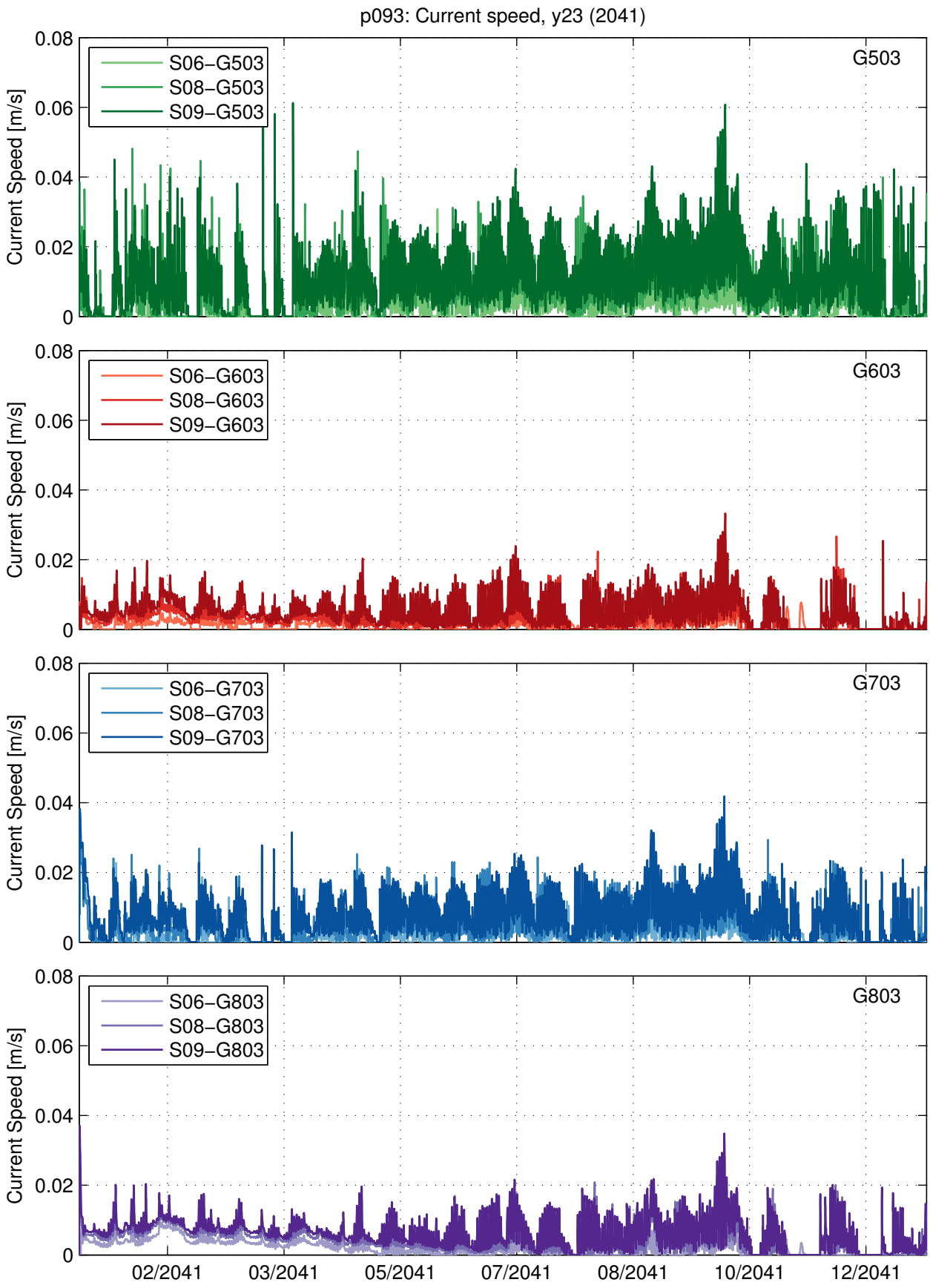

p183: Current speed, y13 (2031)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.005
0.01
0.015
0.02
0.025
0.03
0.035
0.04
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

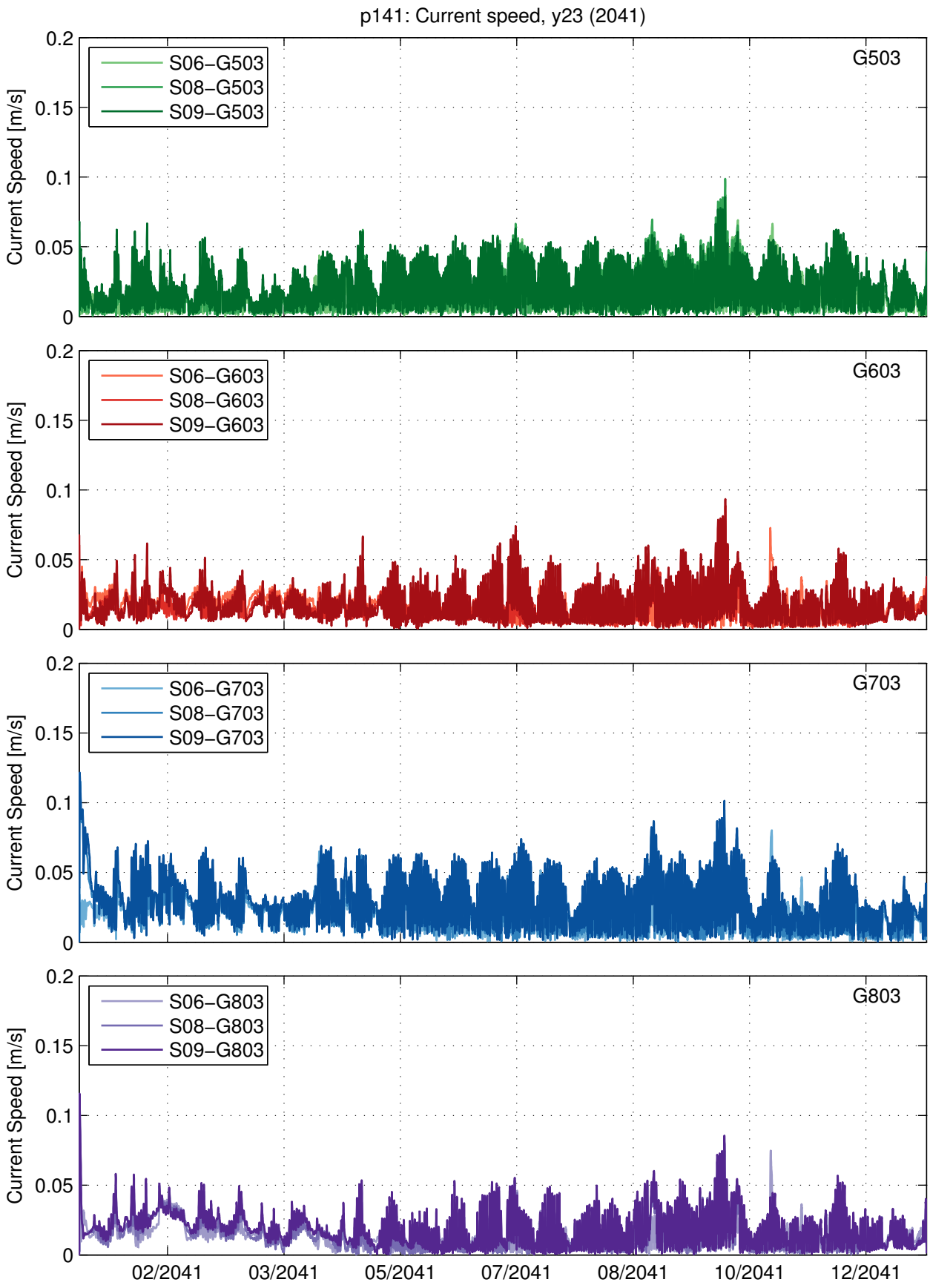

p185: Current speed, y13 (2031)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.01
0.02
0.03
0.04
0.05
0.06
0.07
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

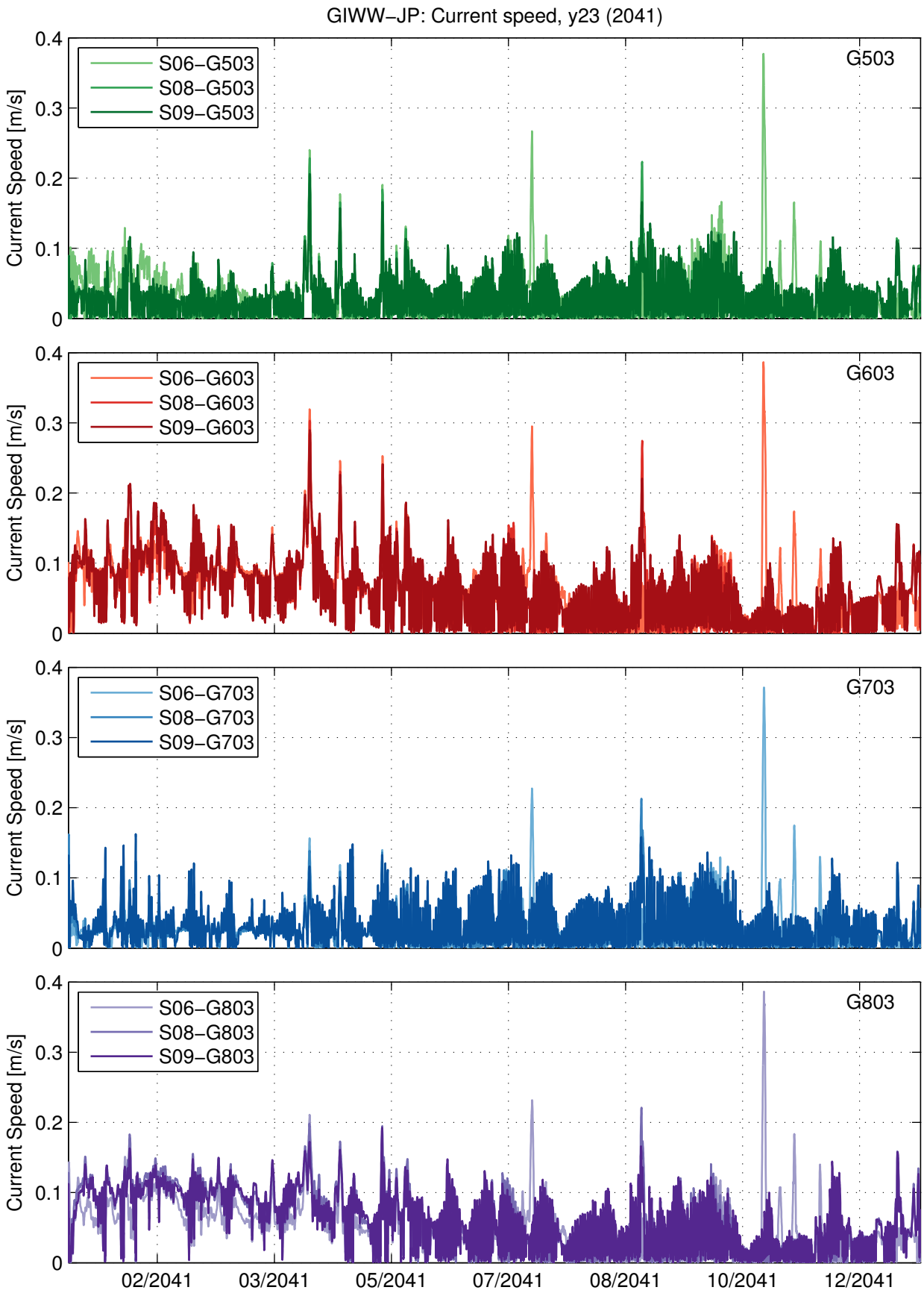

p192: Current speed, y13 (2031)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0.03
0.025
0.02
0.015
0.01
0.005
0
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

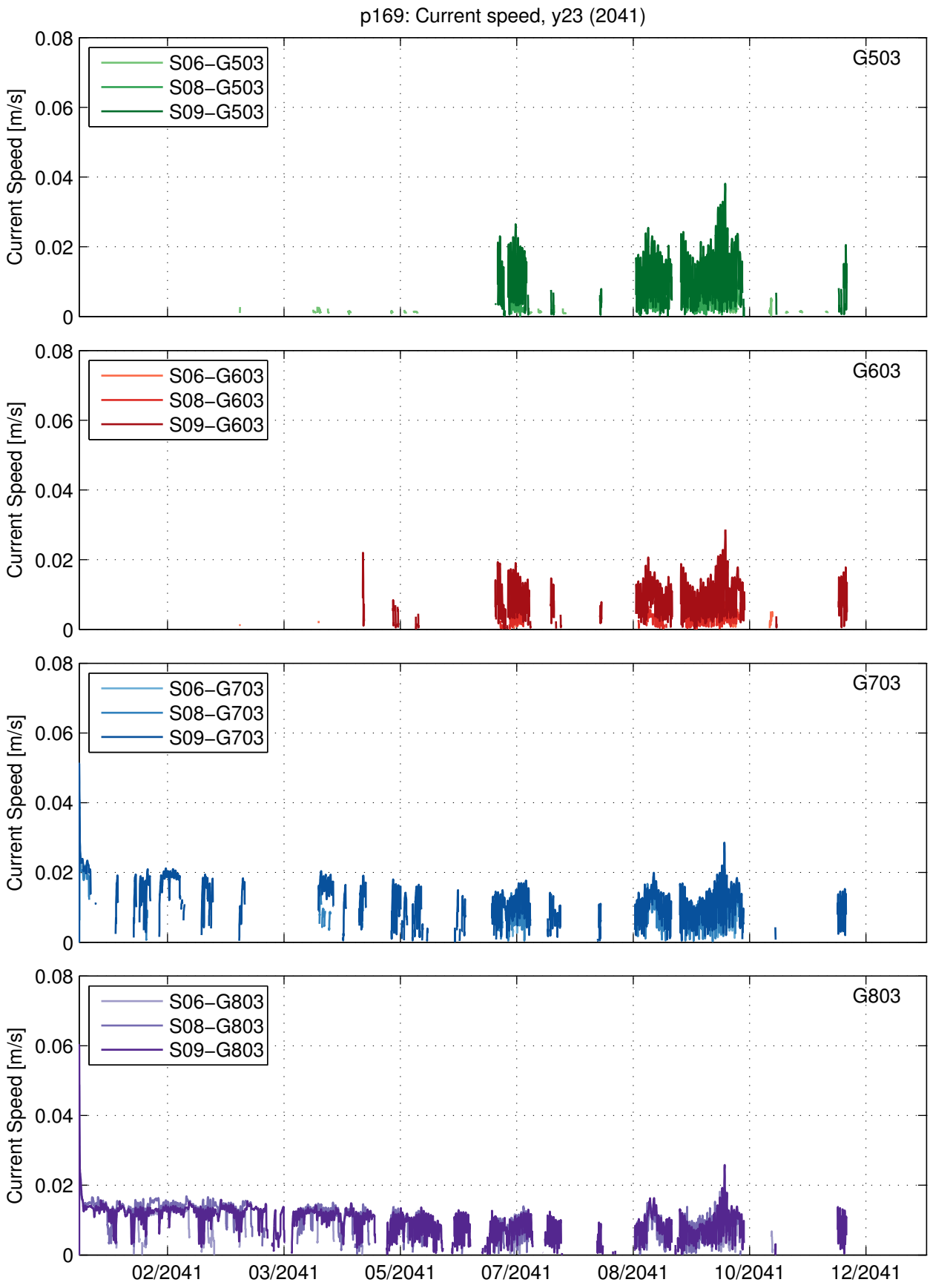

p194: Current speed, y13 (2031)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.005
0.01
0.015
0.02
0.025
0.03
0.035
02/2031
04/2031
05/2031
07/2031
08/2031
10/2031
12/2031

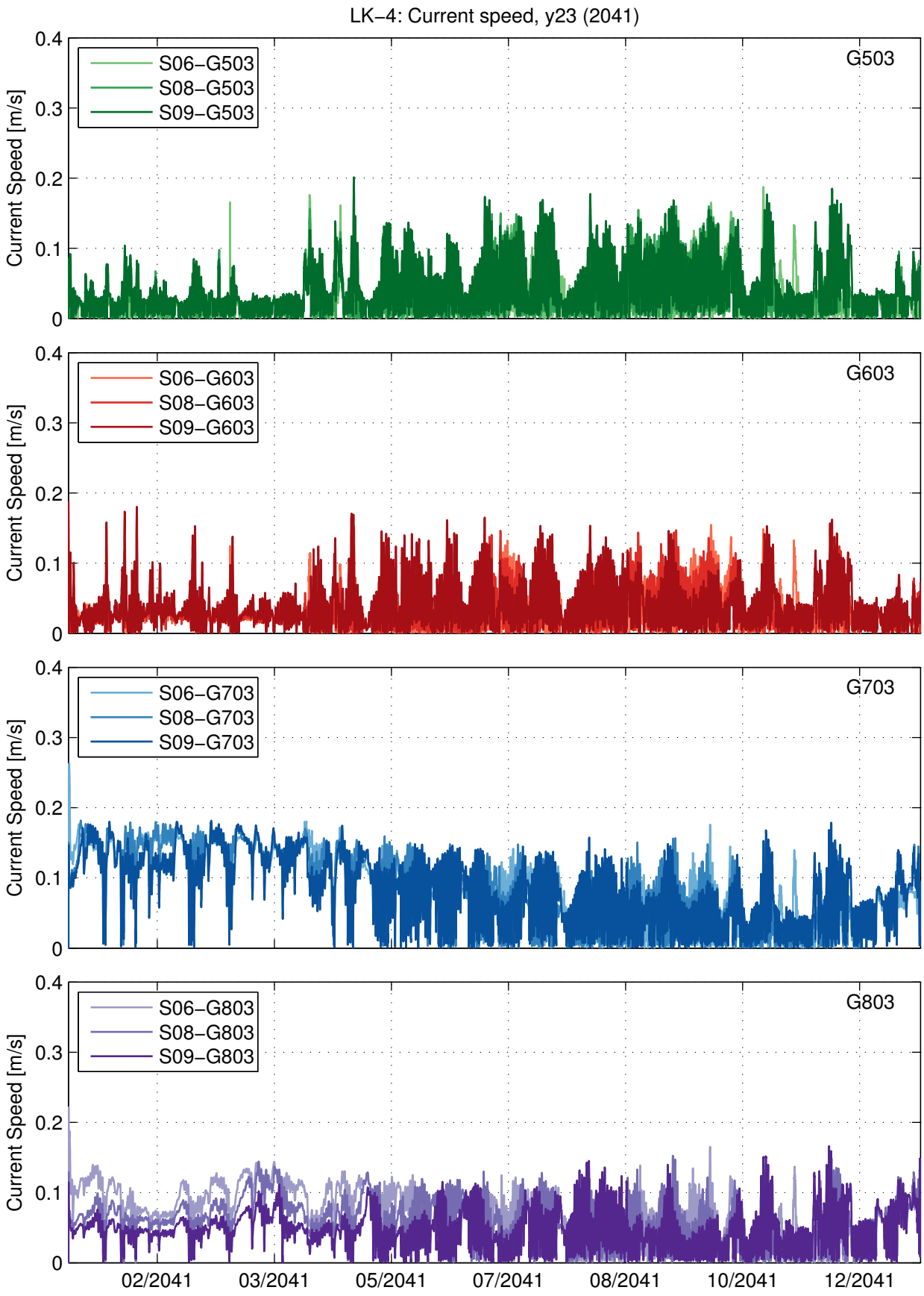

p159: Current speed, y23 (2041)
Current Speed [m/s]
0.08
0.06
0.04
0.02
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

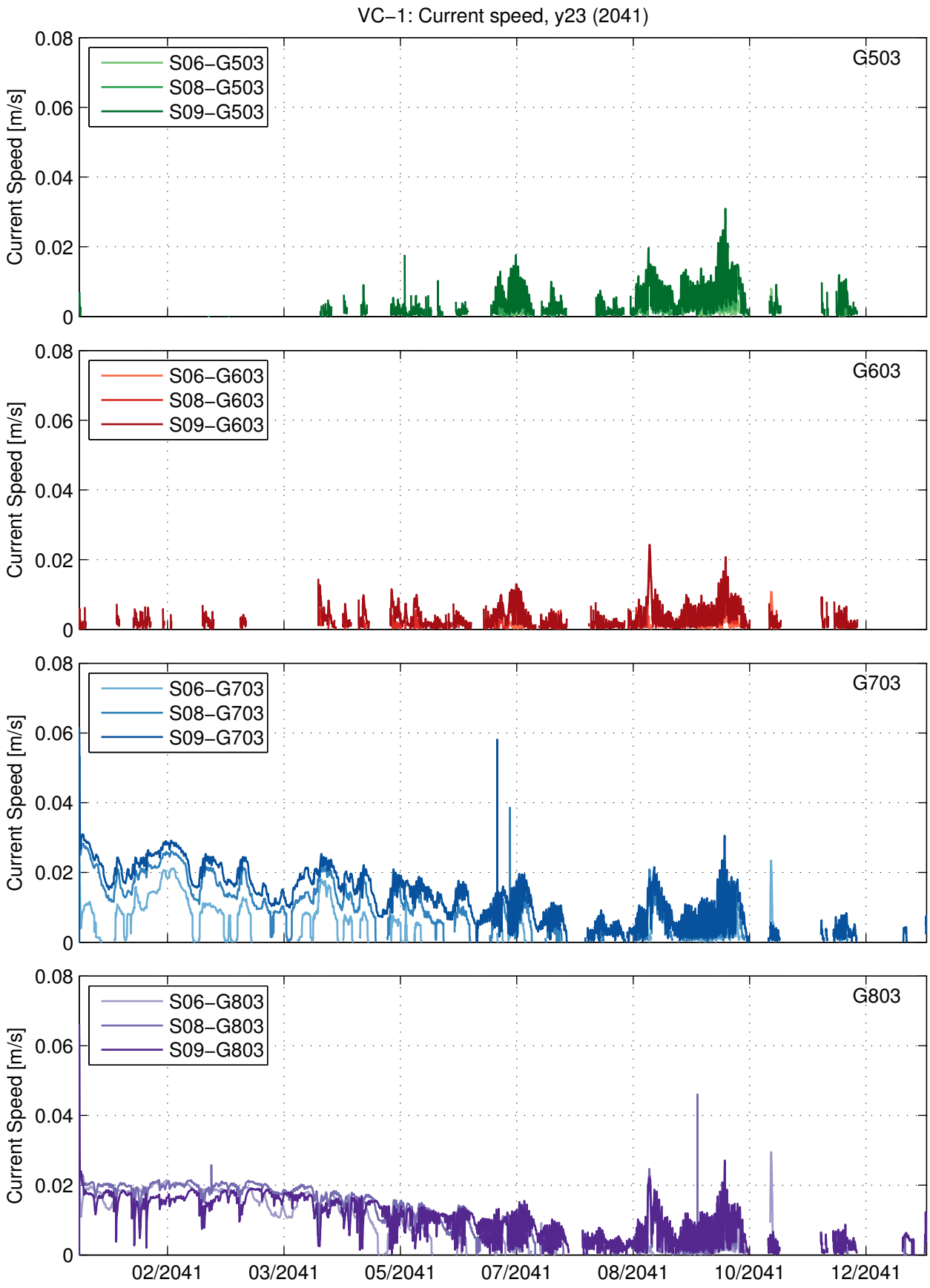

p093: Current speed, y23 (2041)
Current Speed [m/s]
0.08
0.06
0.04
0.02
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

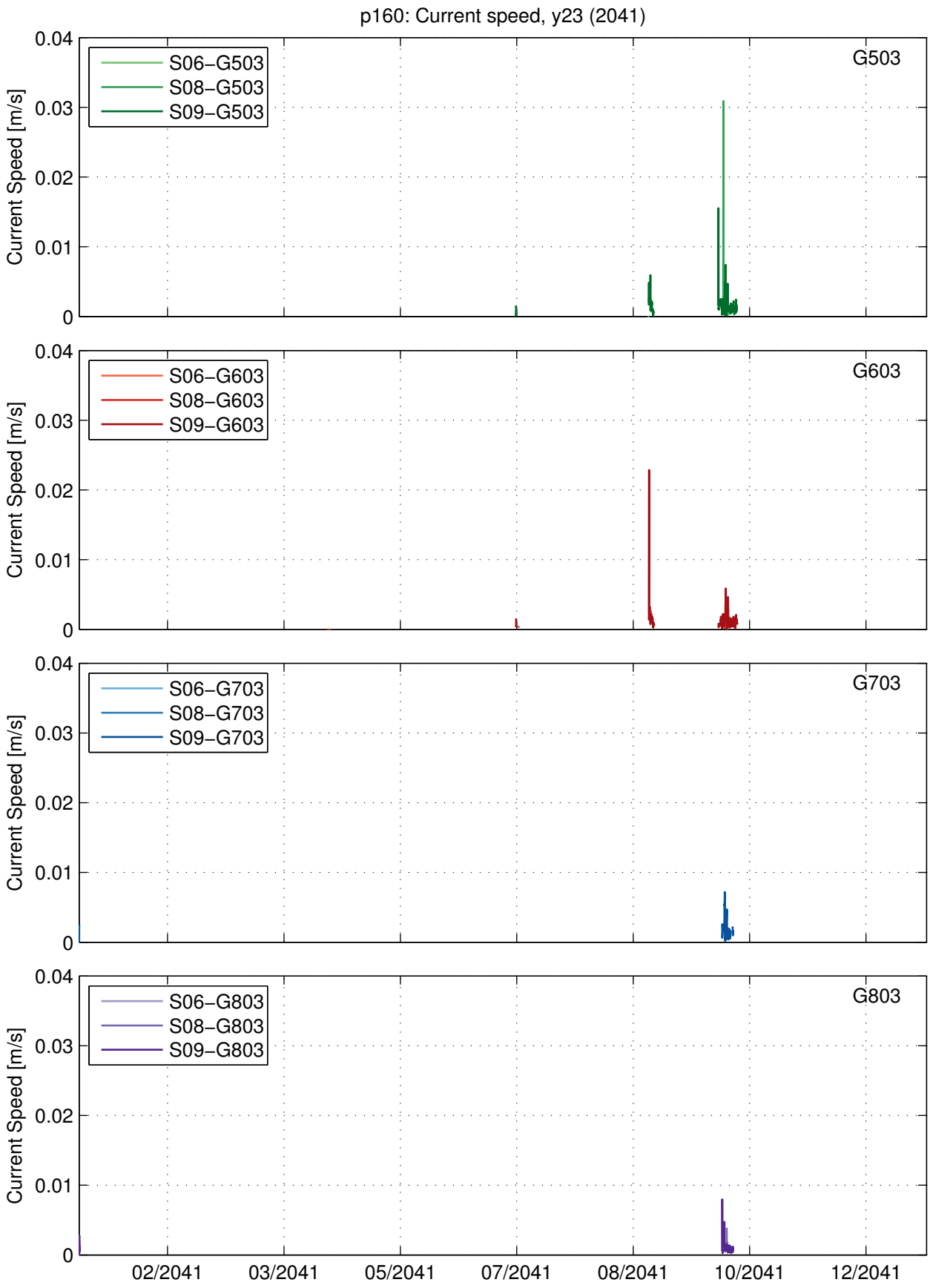

p141: Current speed, y23 (2041)
Current Speed [m/s]
0.2
0.15
0.1
0.05
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

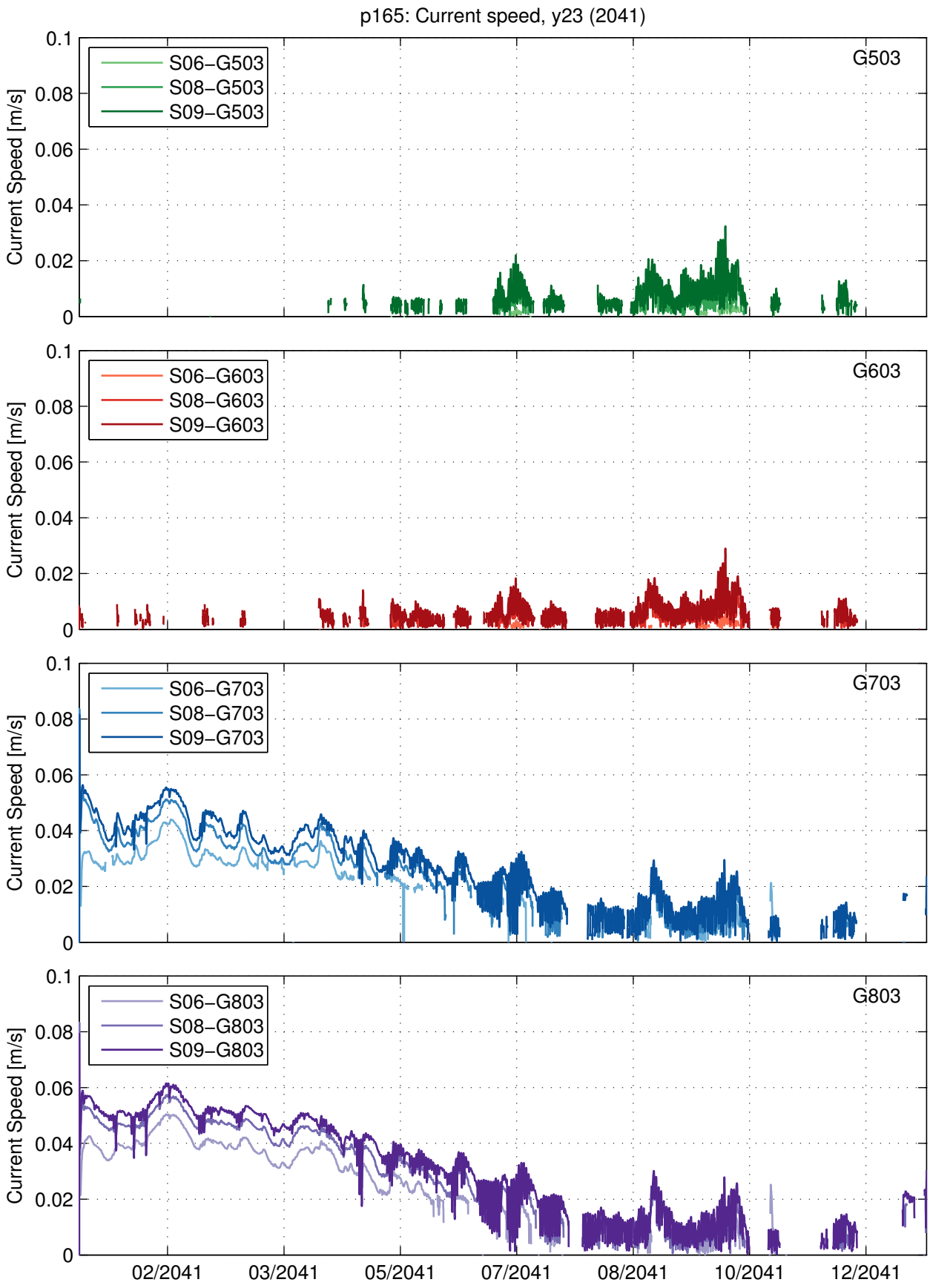

GIWW–JP: Current speed, y23 (2041)
Current Speed [m/s]
0
0.1
0.2
0.3
0.4
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

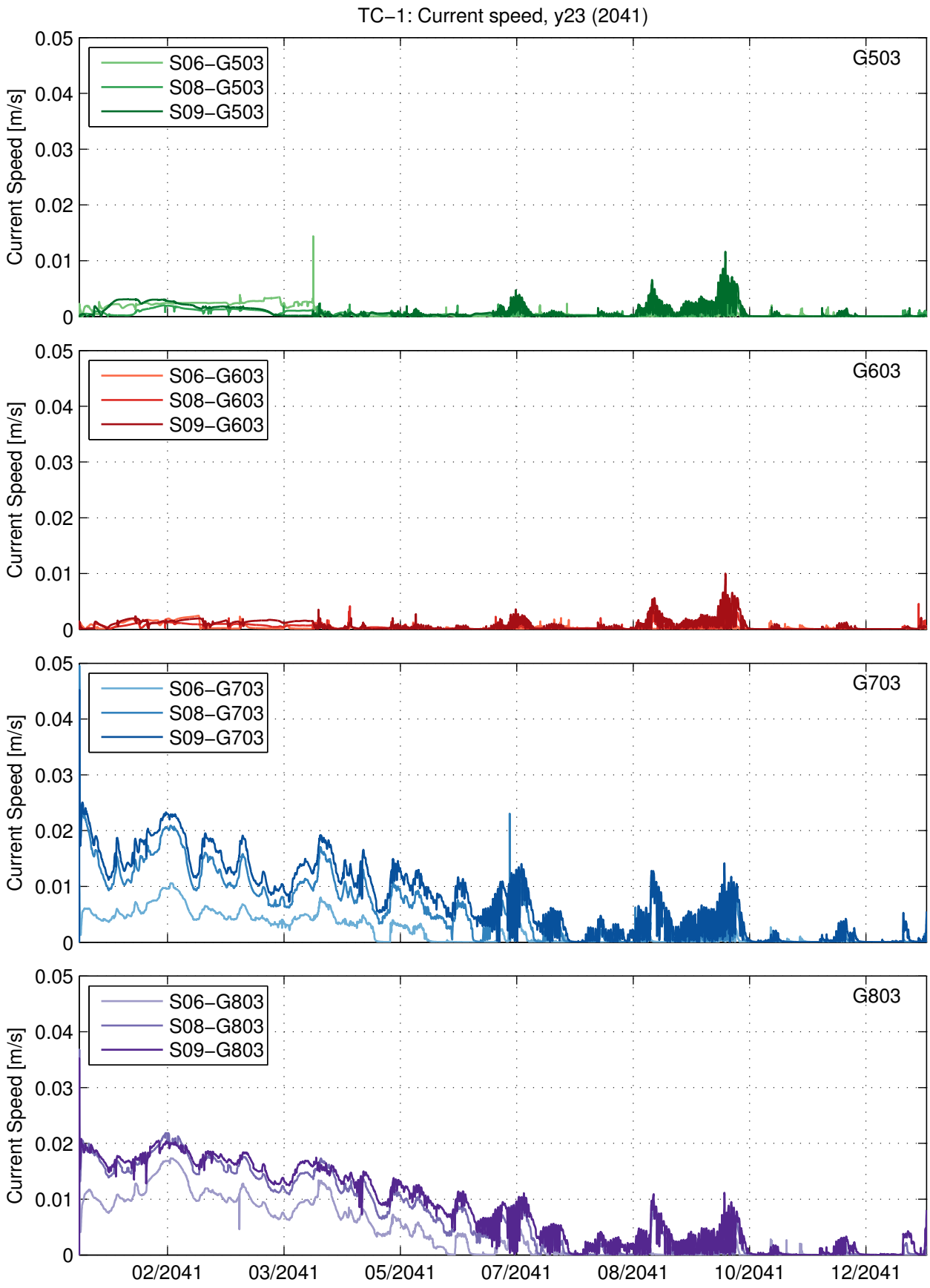

p169: Current speed, y23 (2041)
Current Speed [m/s]
0.08
0.06
0.04
0.02
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

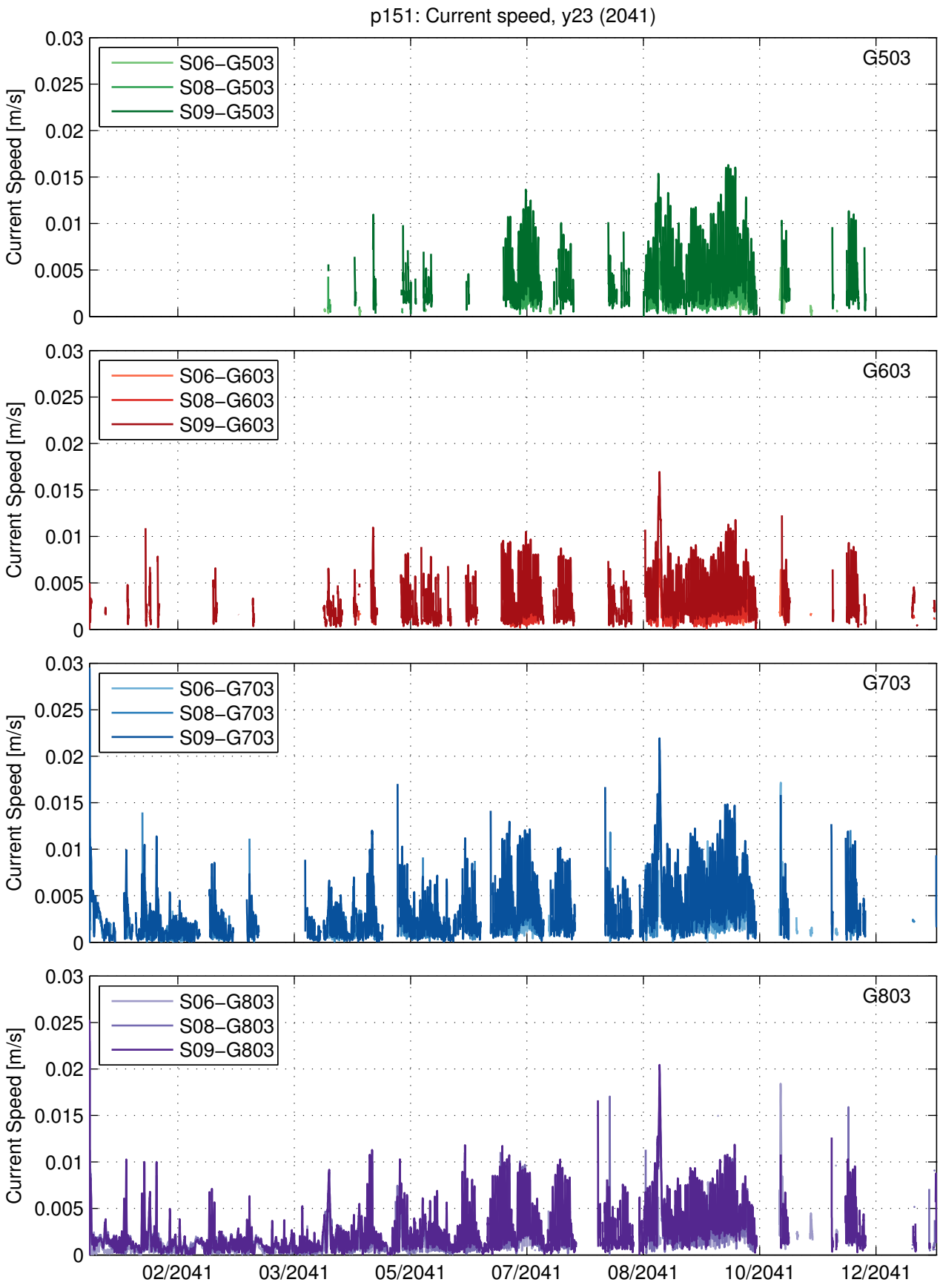

LK–4: Current speed, y23 (2041)
Current Speed [m/s]
0.4
0.3
0.2
0.1
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

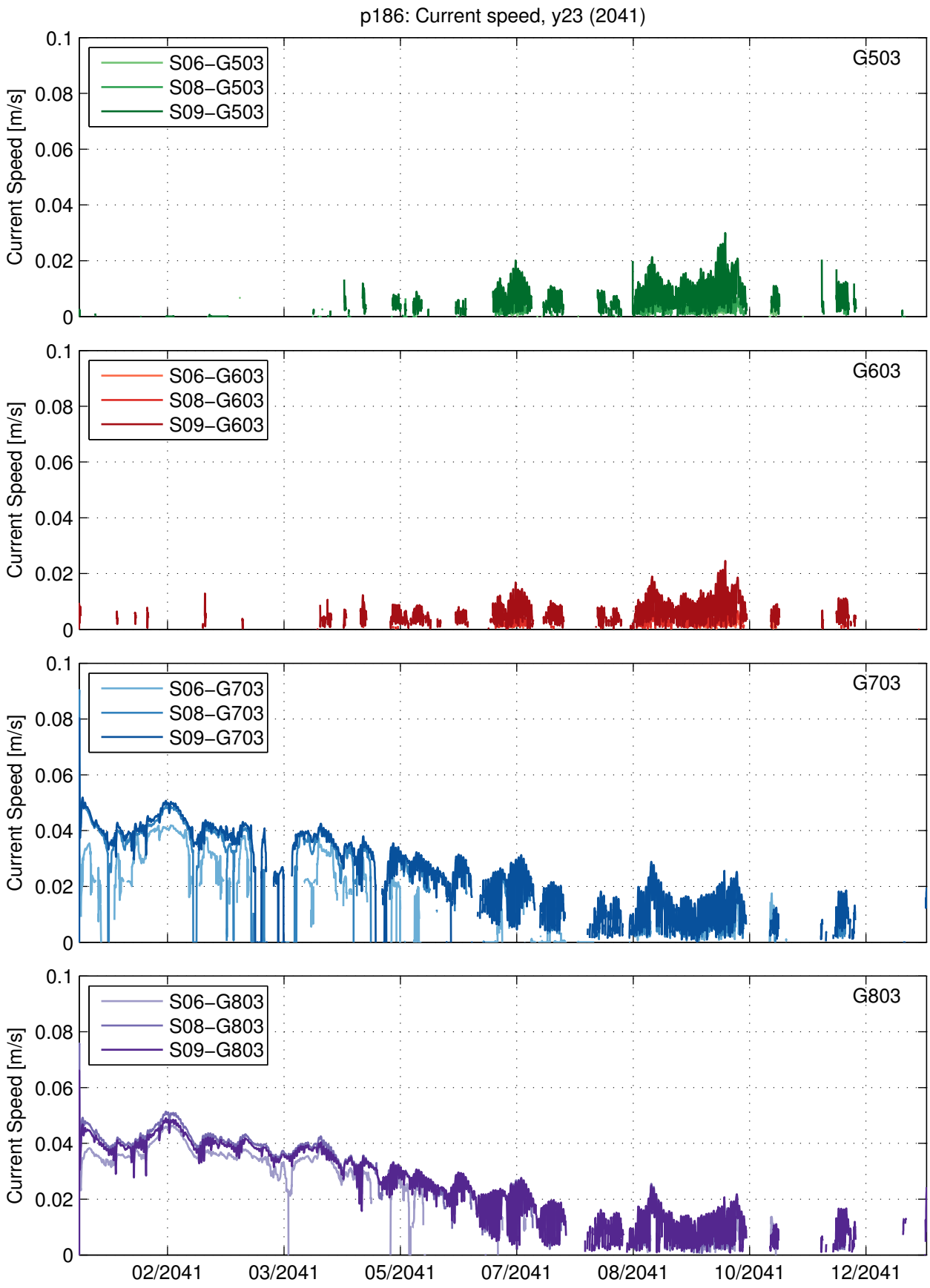

VC−1: Current speed, y23 (2041)
Current Speed [m/s]
0.08
0.06
0.04
0.02
0
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
S06−G703
S08−G703
S09−G703
G703
S06−G803
S08−G803
S09−G803
G803
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

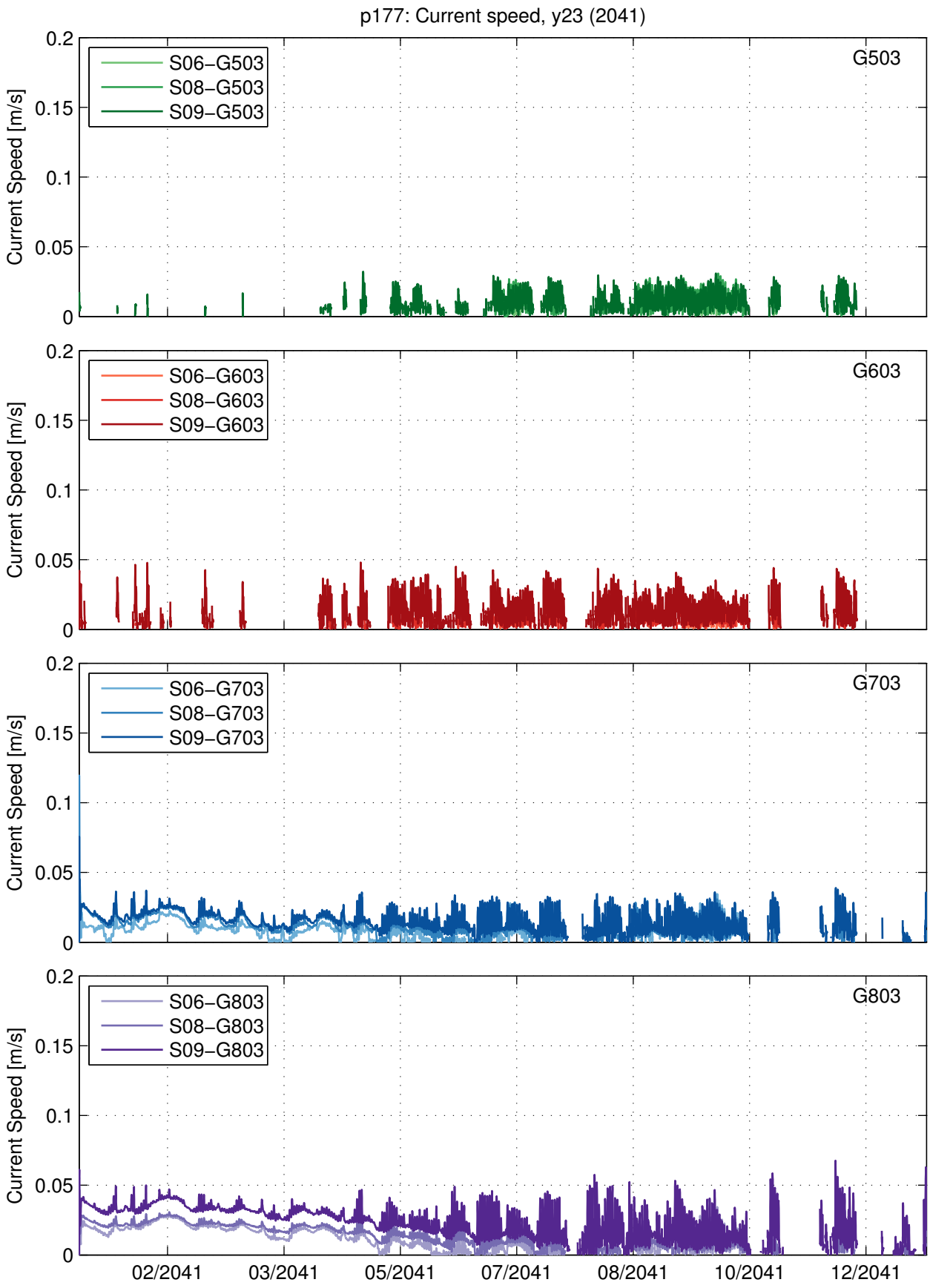

p160: Current speed, y23 (2041)
Current Speed [m/s]
0.04
0.03
0.02
0.01
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

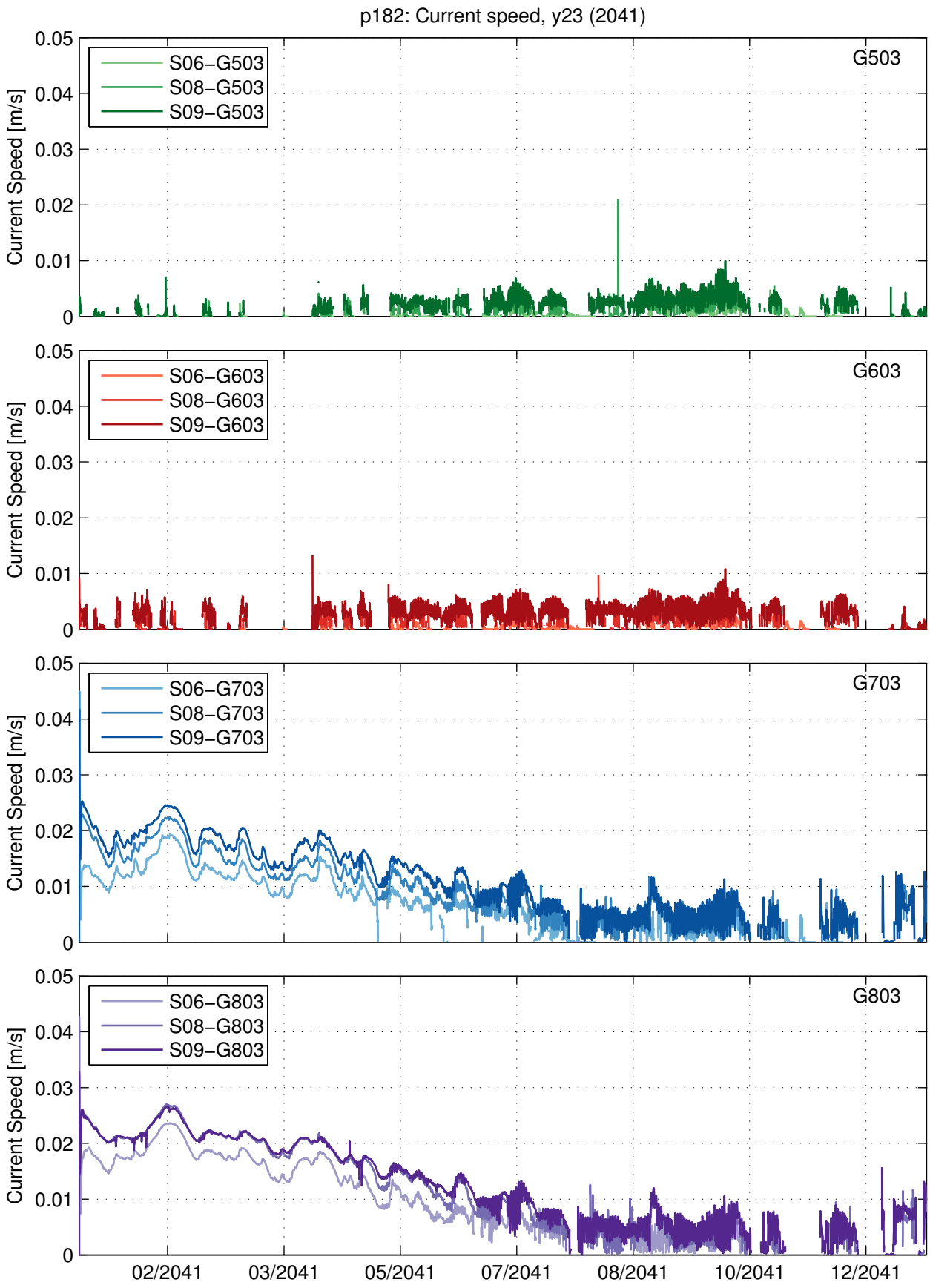

p165: Current speed, y23 (2041)
Current Speed [m/s]
0.1
0.08
0.06
0.04
0.02
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

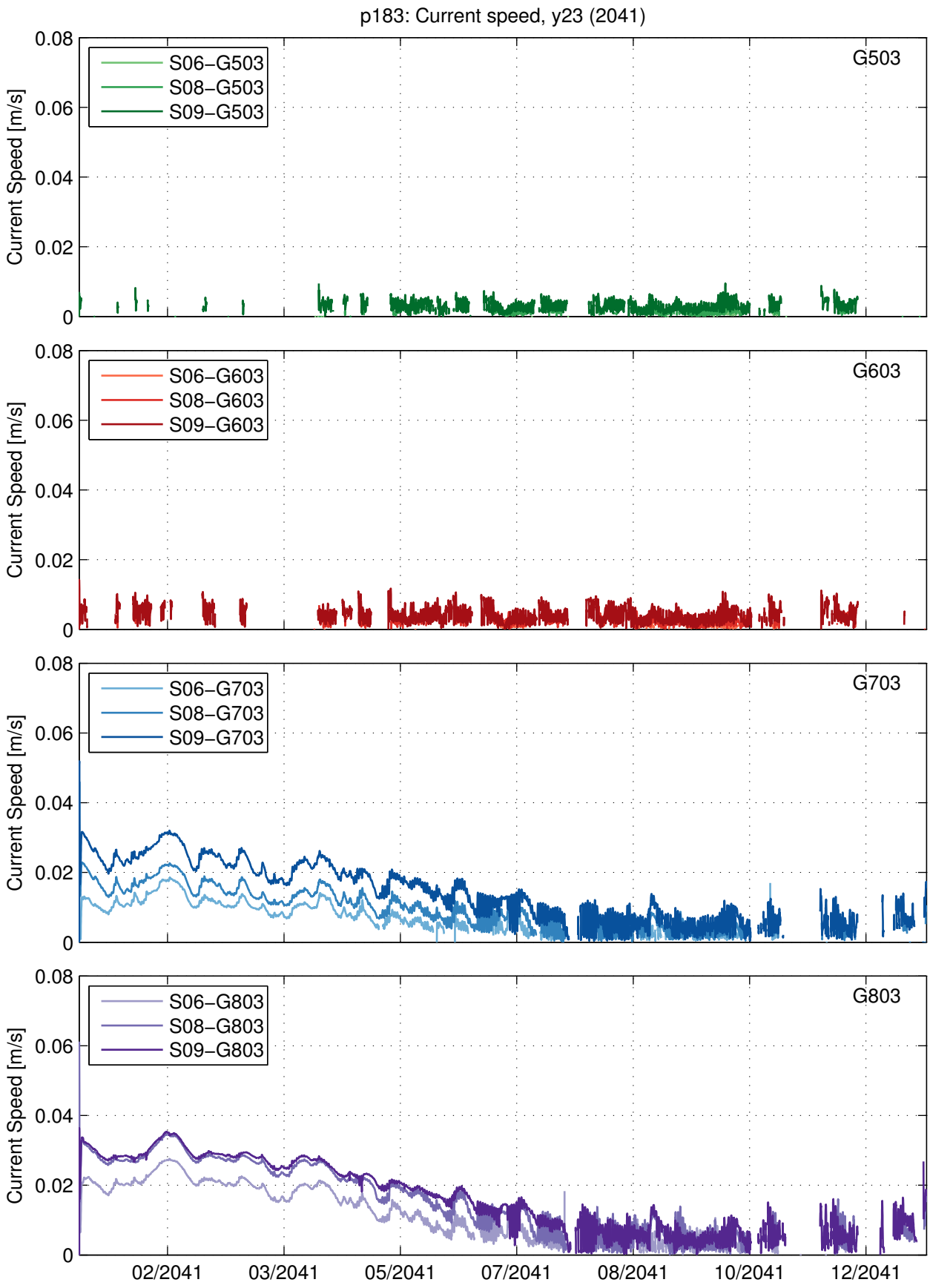

TC−1: Current speed, y23 (2041)
Current Speed [m/s]
0.05
0.04
0.03
0.02
0.01
0
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
S06−G703
S08−G703
S09−G703
G703
S06−G803
S08−G803
S09−G803
G803
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

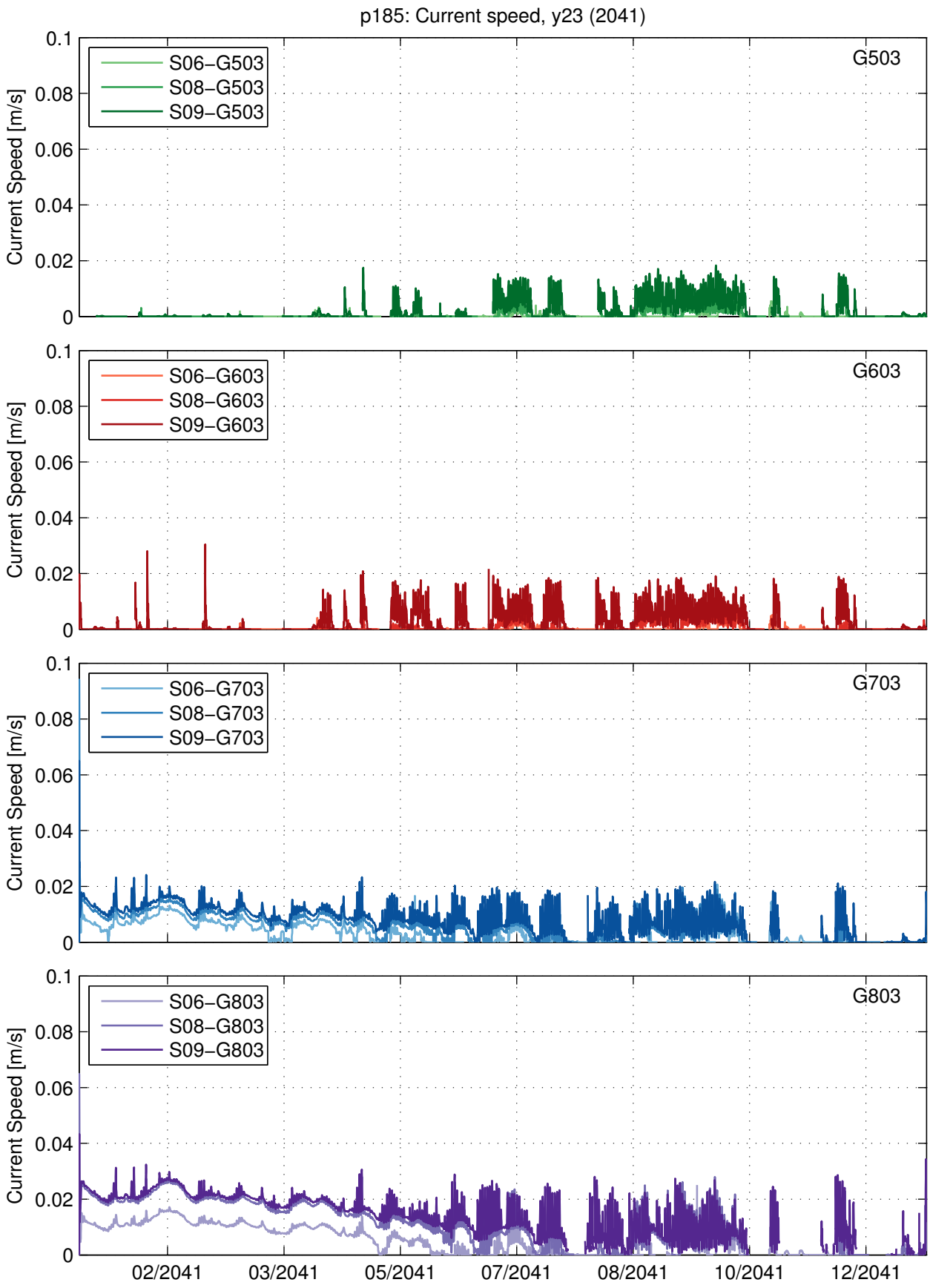

p151: Current speed, y23 (2041)
Current Speed [m/s]
0.03
0.025
0.02
0.015
0.01
0.005
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

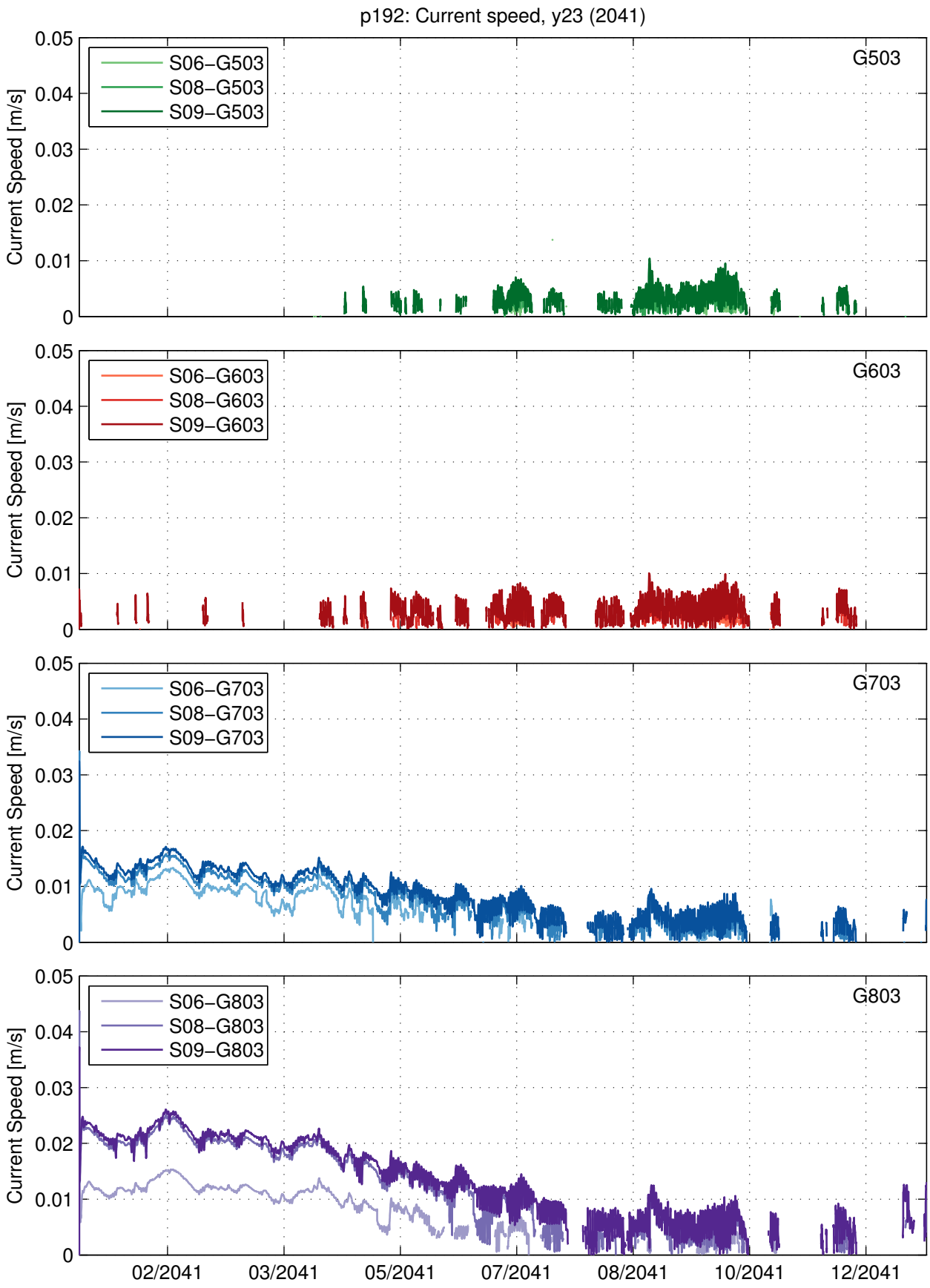

p186: Current speed, y23 (2041)
Current Speed [m/s]
0.1
0.08
0.06
0.04
0.02
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

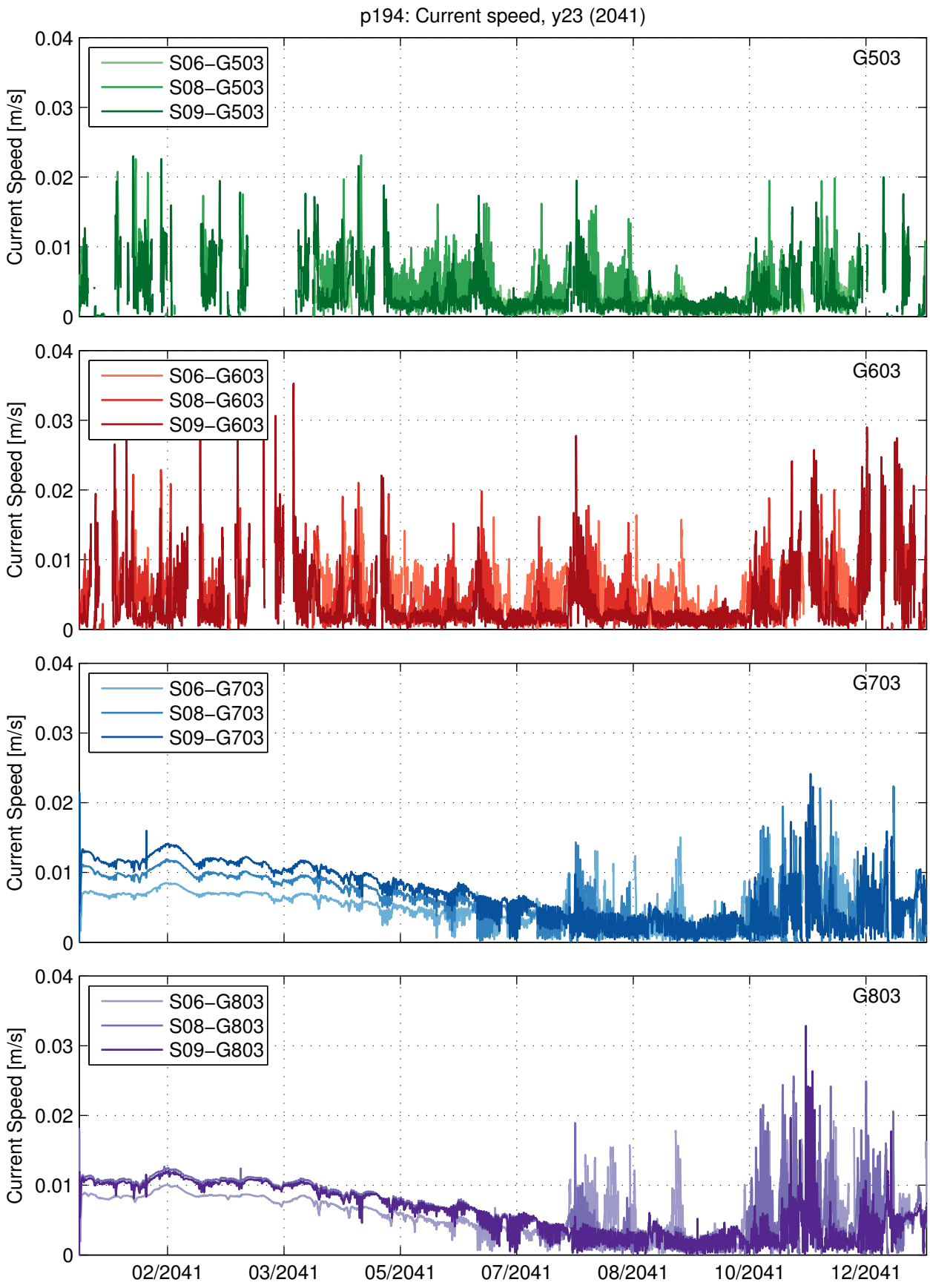

p177: Current speed, y23 (2041)
Current Speed [m/s]
0.2
0.15
0.1
0.05
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

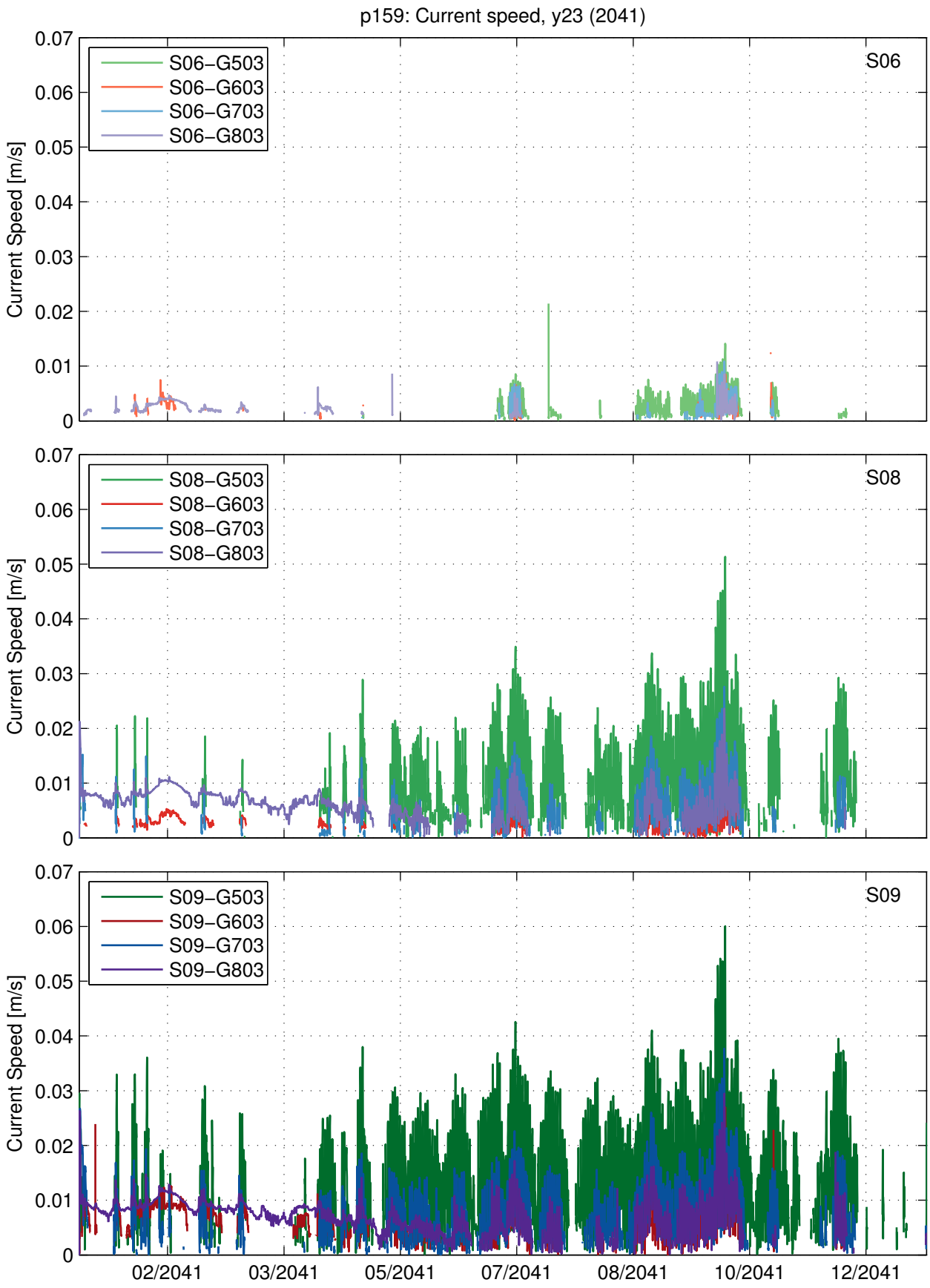

p182: Current speed, y23 (2041)
Current Speed [m/s]
0.05
0.04
0.03
0.02
0.01
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

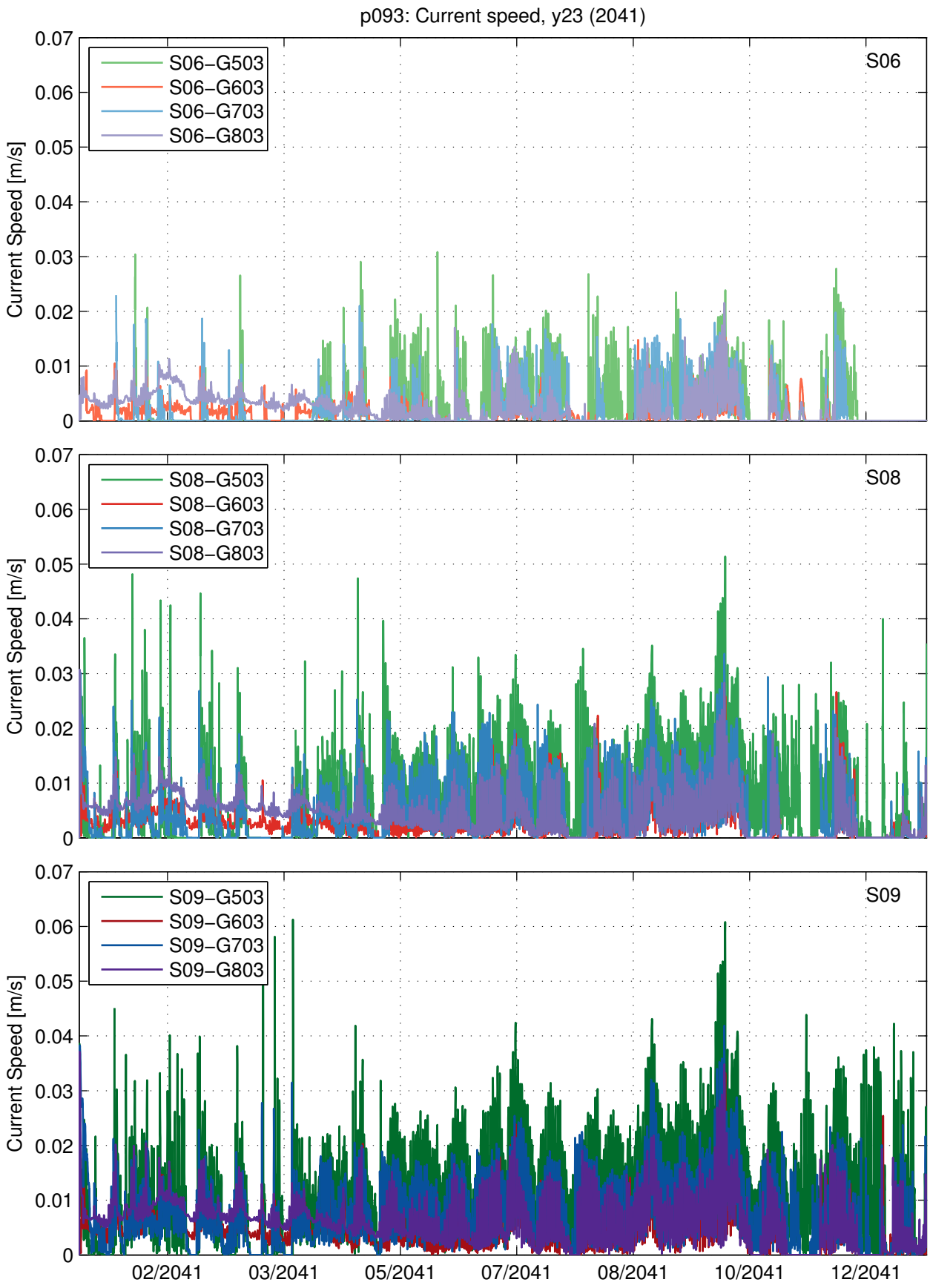

p183: Current speed, y23 (2041)
Current Speed [m/s]
0.08
0.06
0.04
0.02
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

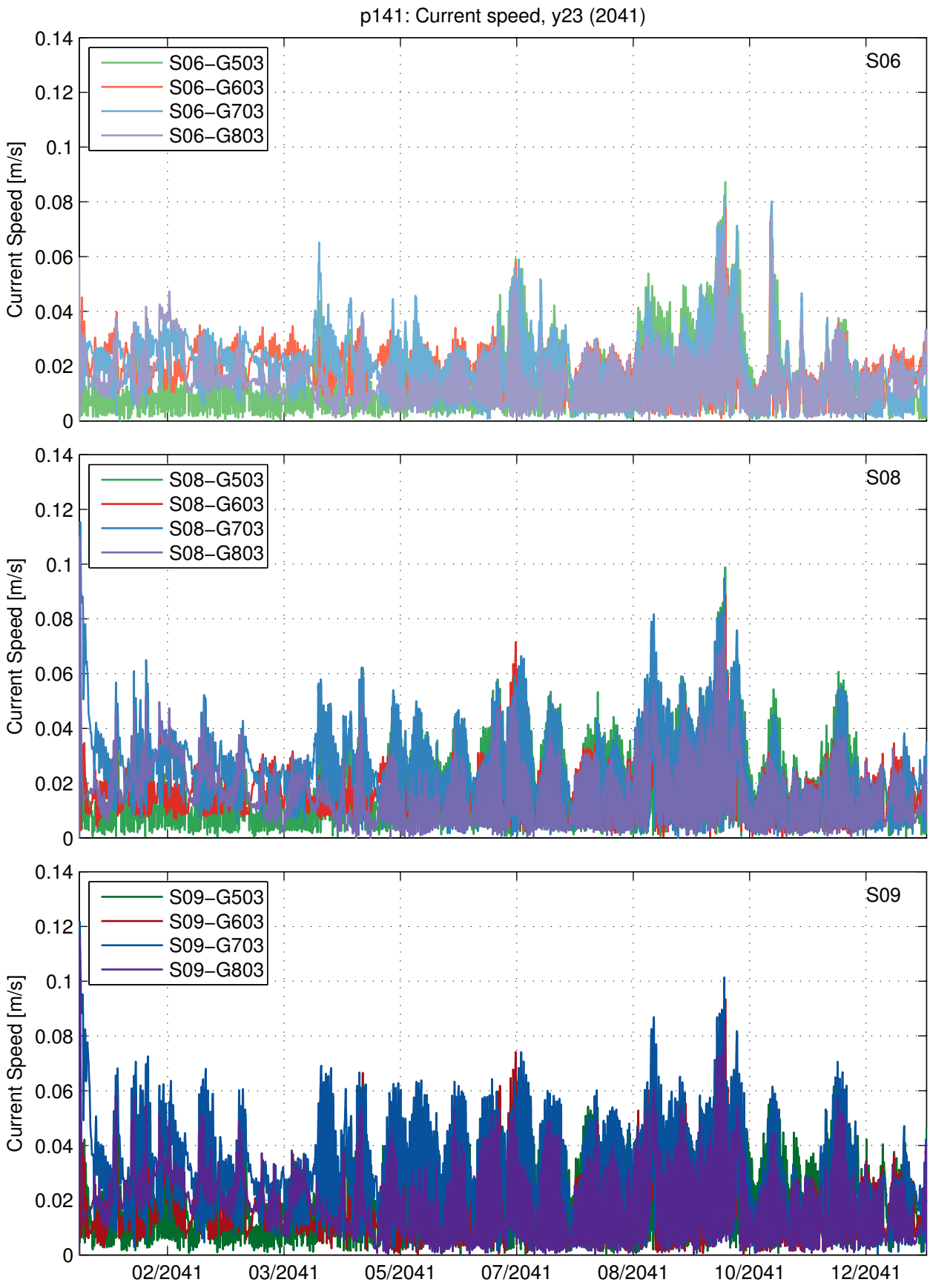

p185: Current speed, y23 (2041)
Current Speed [m/s]
0.1
0.08
0.06
0.04
0.02
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

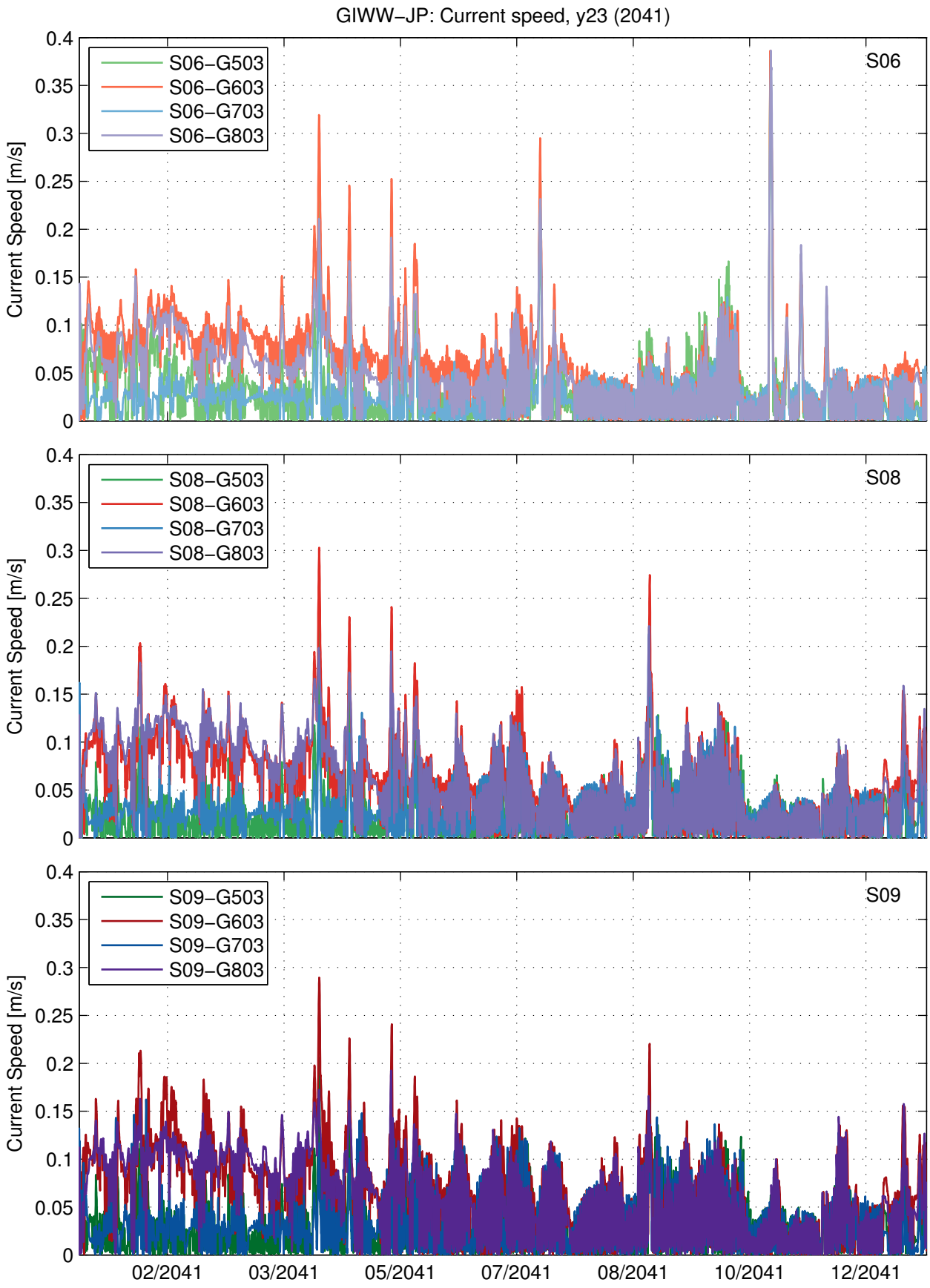

p192: Current speed, y23 (2041)
Current Speed [m/s]
0.05
0.04
0.03
0.02
0.01
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

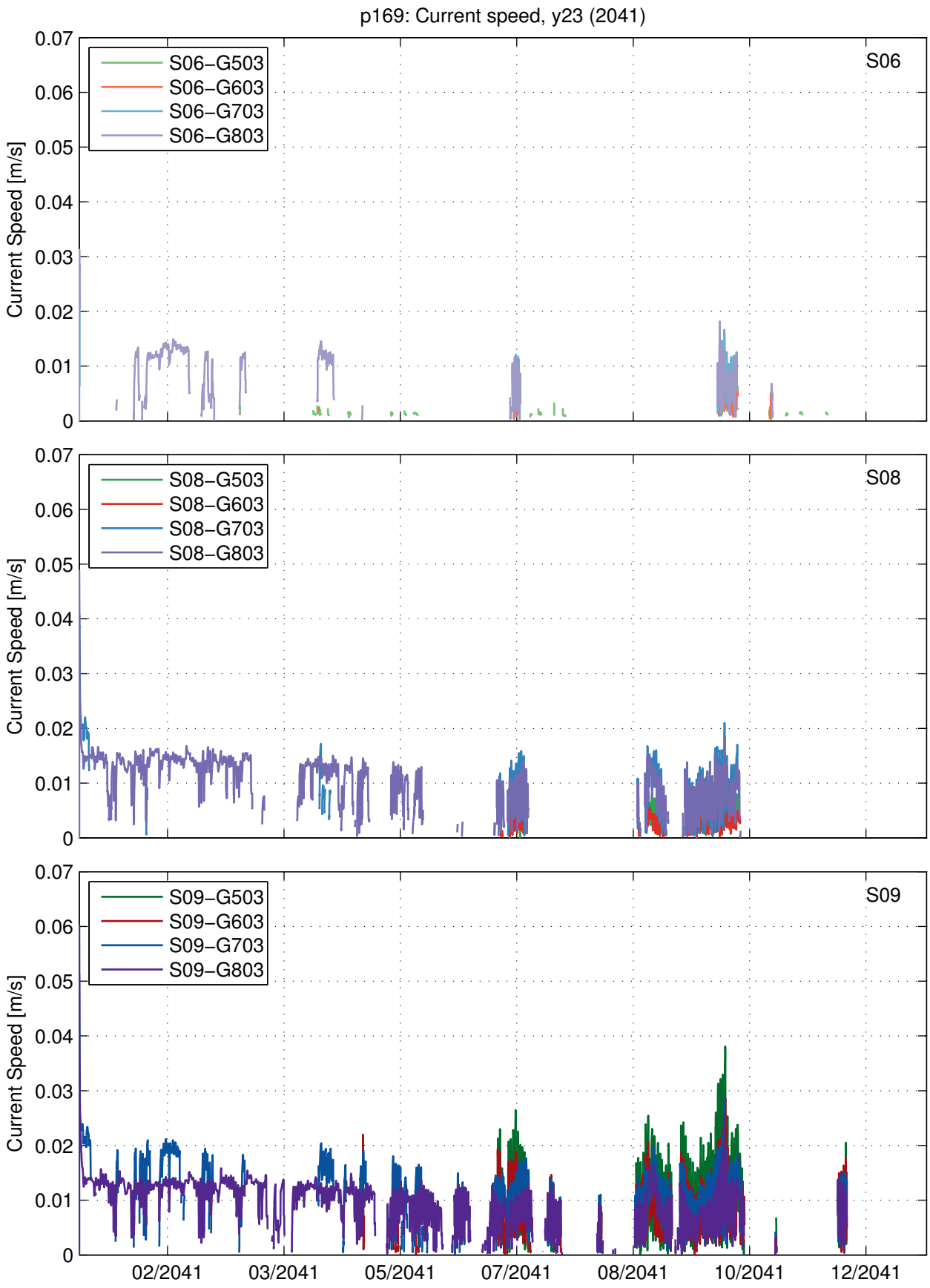

p194: Current speed, y23 (2041)
Current Speed [m/s]
0.04
0.03
0.02
0.01
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

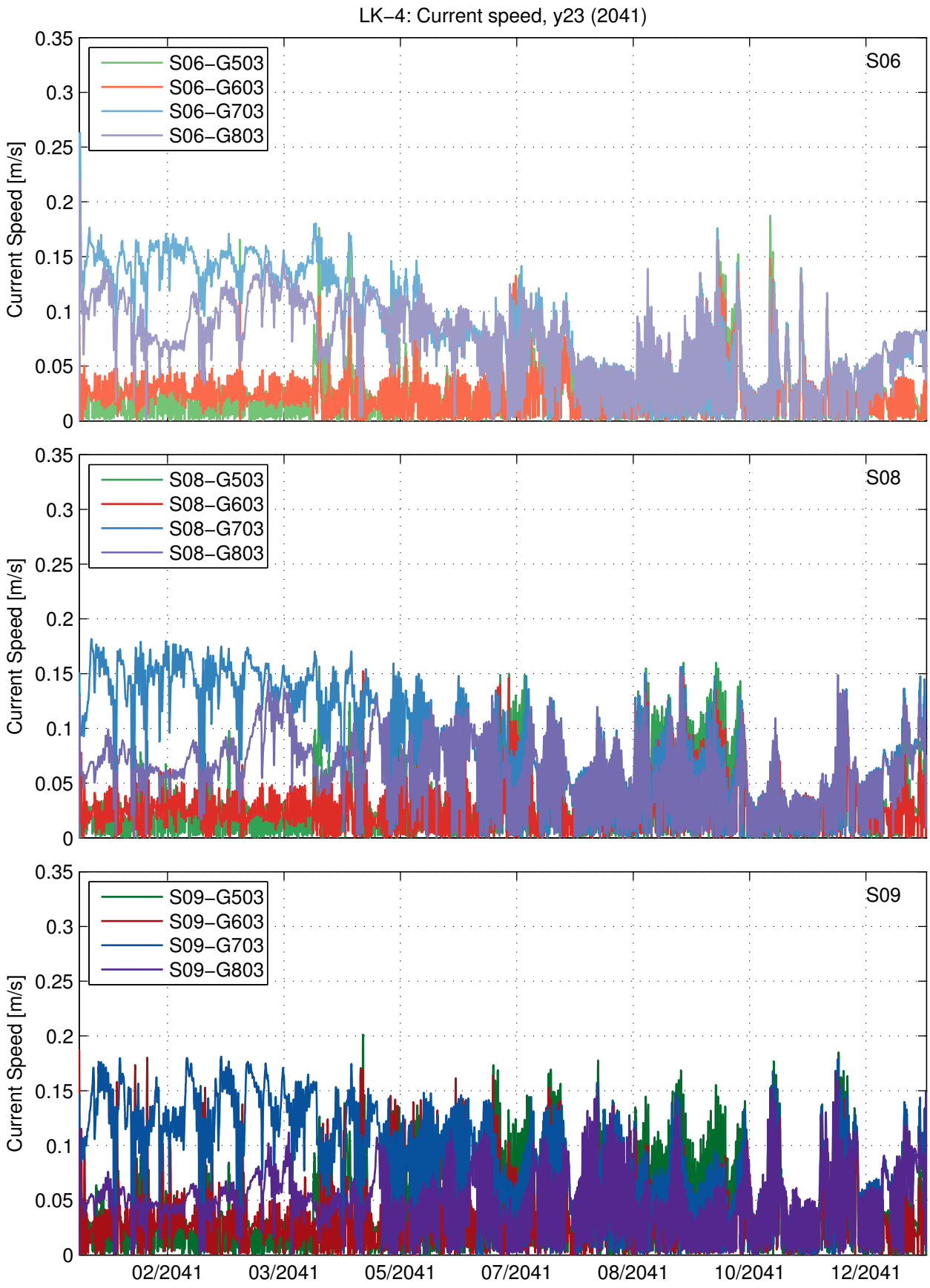

p159: Current speed, y23 (2041)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.01
0.02
0.03
0.04
0.05
0.06
0.07
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

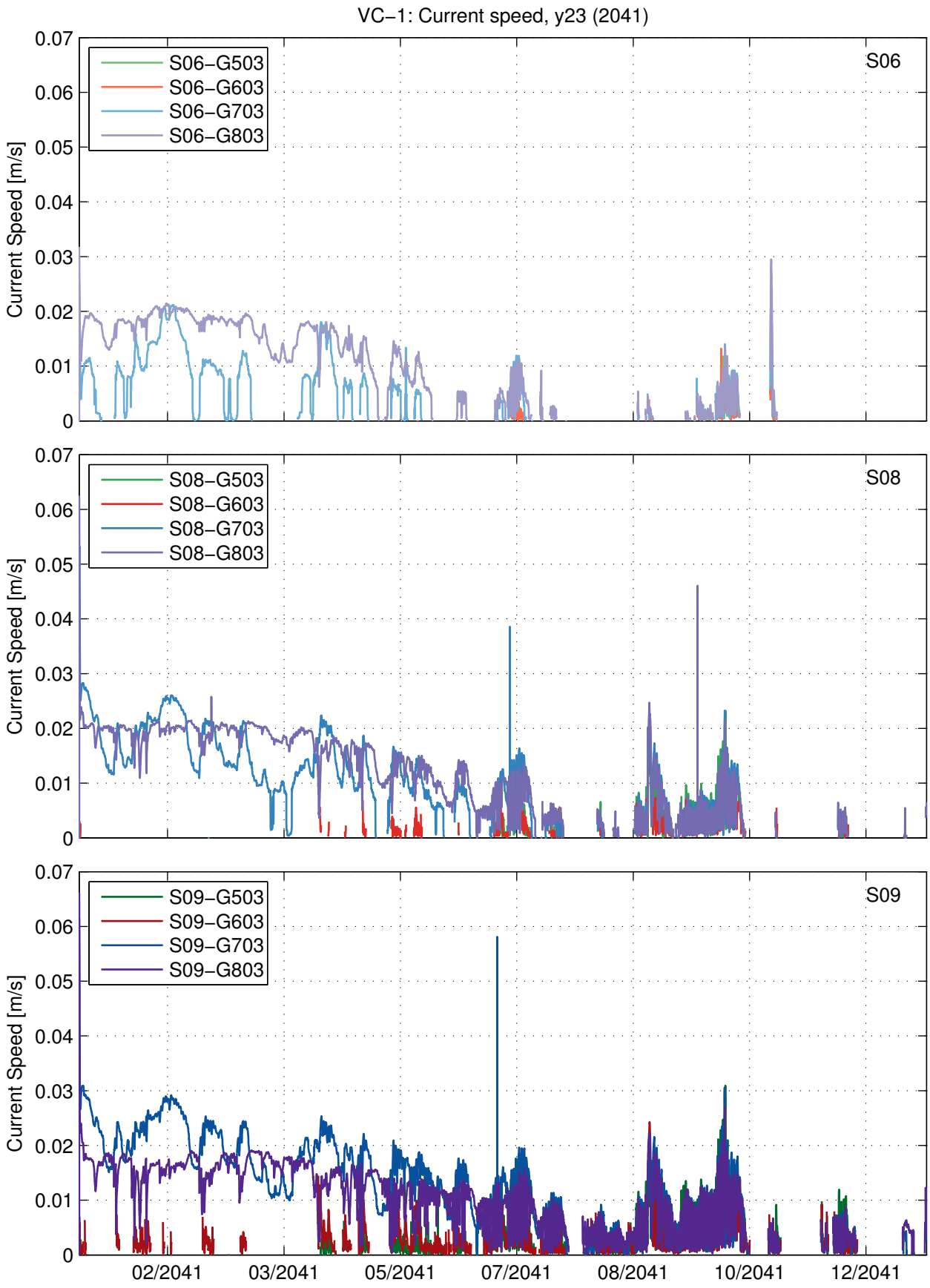

p093: Current speed, y23 (2041)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.01
0.02
0.03
0.04
0.05
0.06
0.07
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

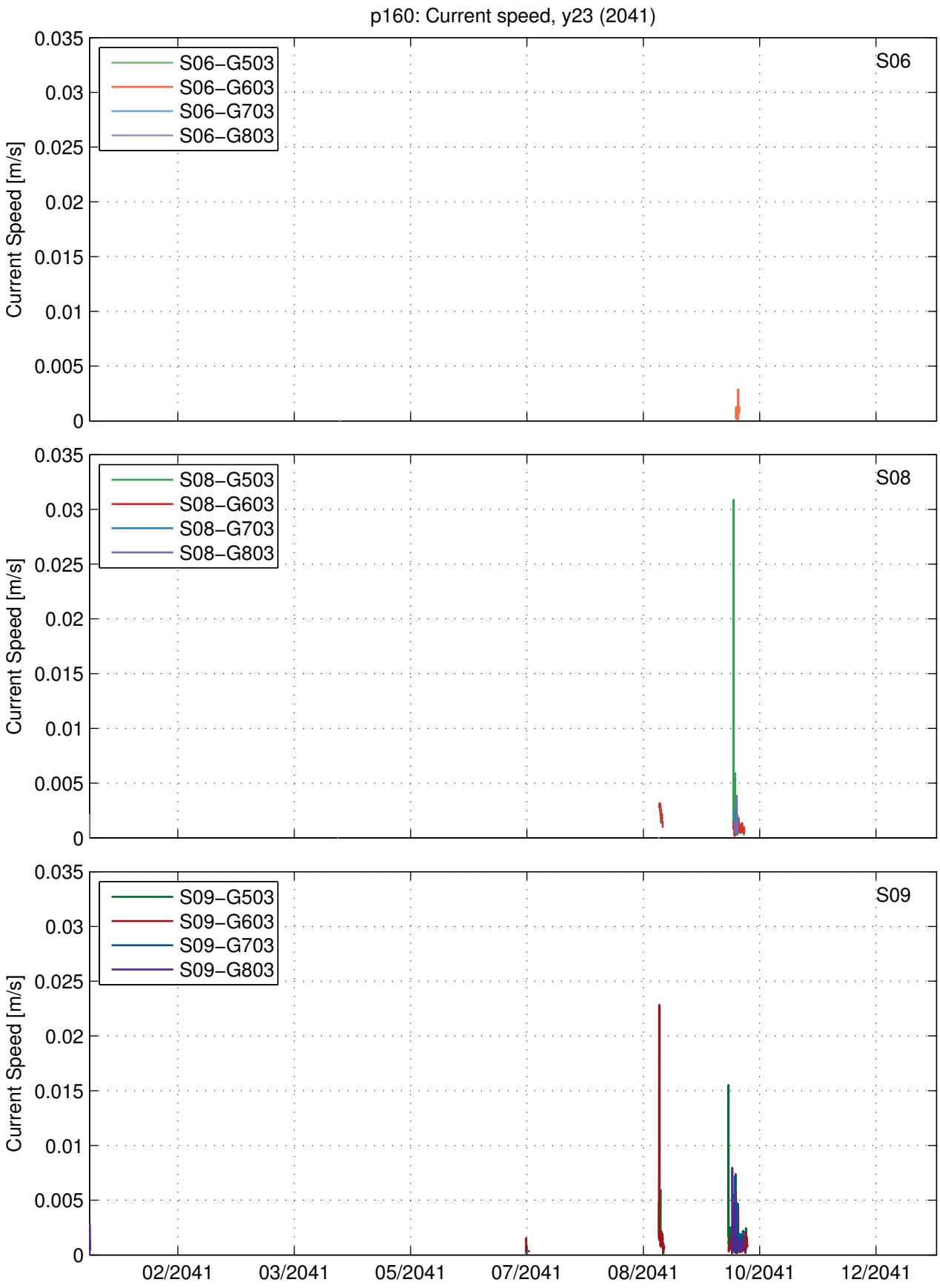

p141: Current speed, y23 (2041)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

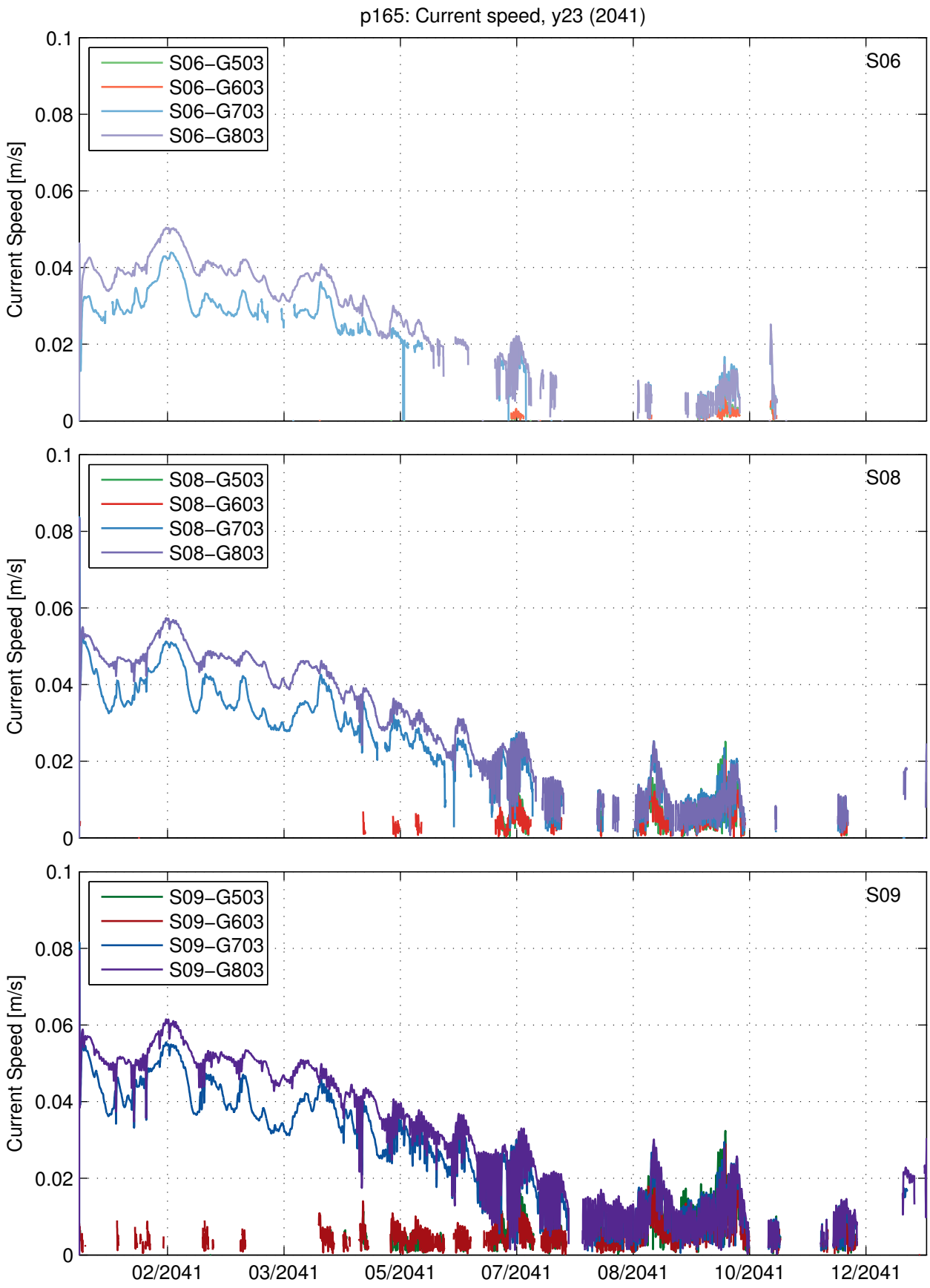

GIWW–JP: Current speed, y23 (2041)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Current Speed [m/s]
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

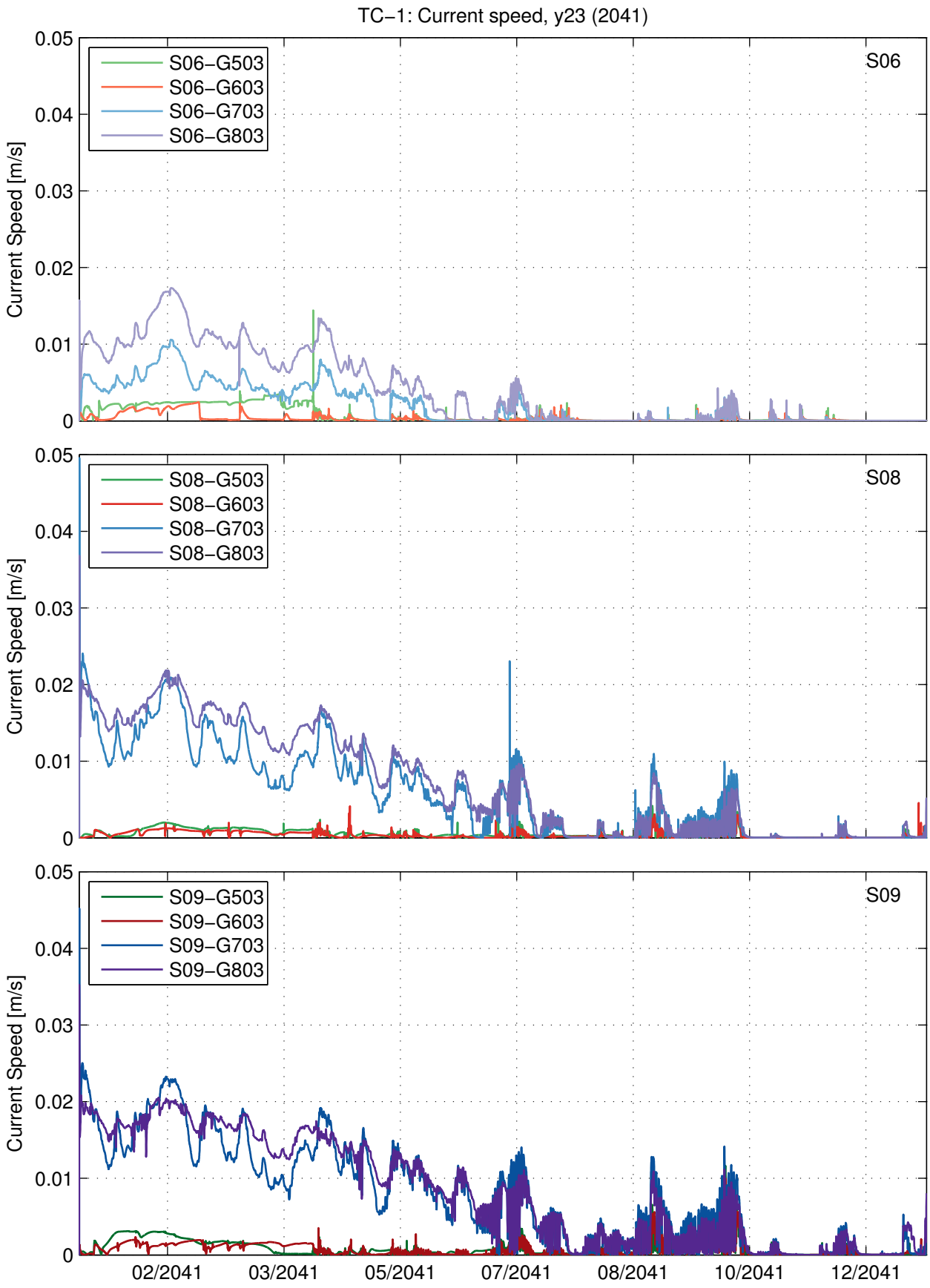

p169: Current speed, y23 (2041)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.01
0.02
0.03
0.04
0.05
0.06
0.07
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

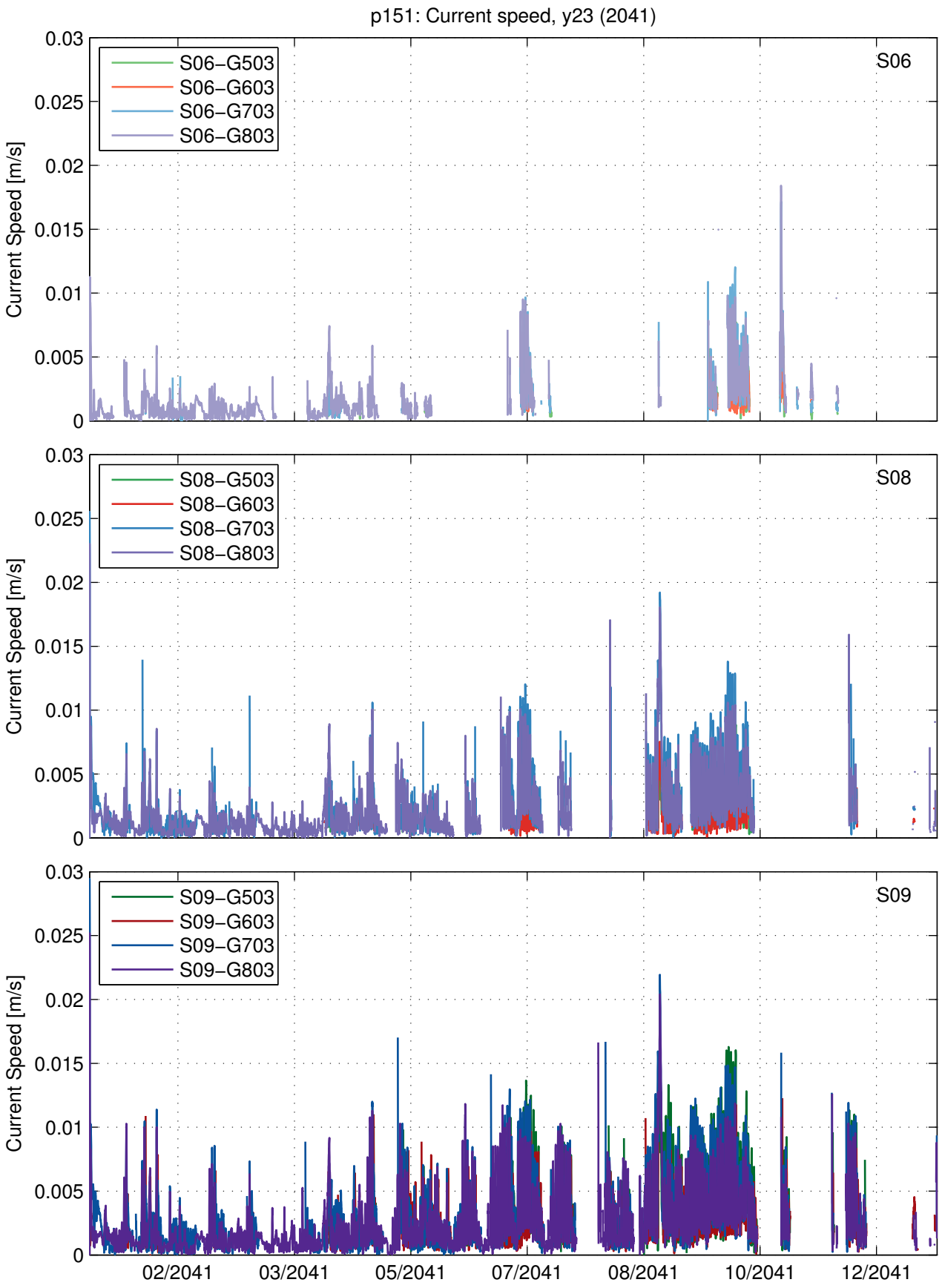

LK−4: Current speed, y23 (2041)
S06
S06−G503
S06−G603
S06−G703
S06−G803
S08
S08−G503
S08−G603
S08−G703
S08−G803
S09
S09−G503
S09−G603
S09−G703
S09−G803
Current Speed [m/s]
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

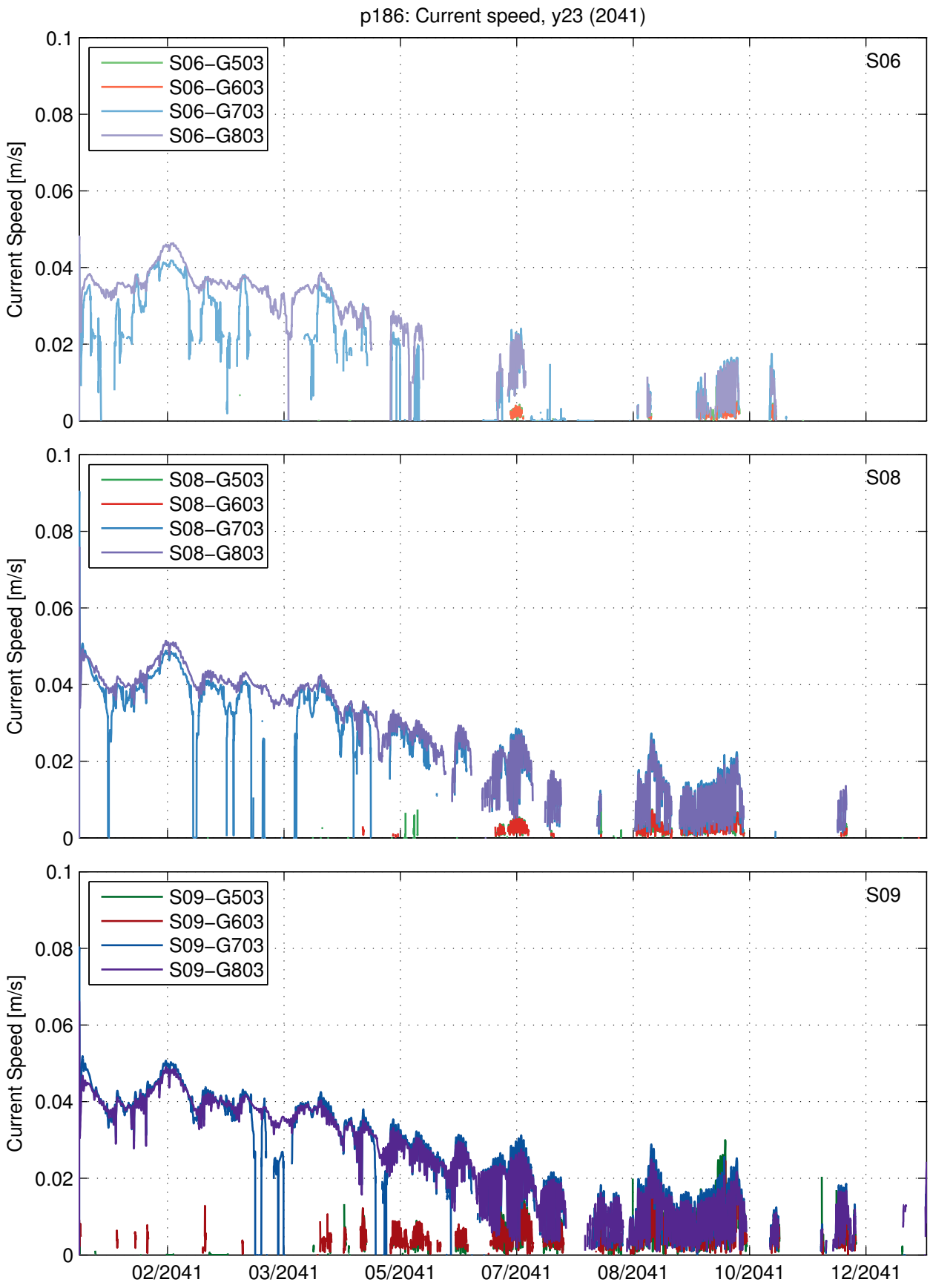

VC−1: Current speed, y23 (2041)
S06
S06−G503
S06−G603
S06−G703
S06−G803
S08
S08−G503
S08−G603
S08−G703
S08−G803
S09
S09−G503
S09−G603
S09−G703
S09−G803
Current Speed [m/s]
0
0.01
0.02
0.03
0.04
0.05
0.06
0.07
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

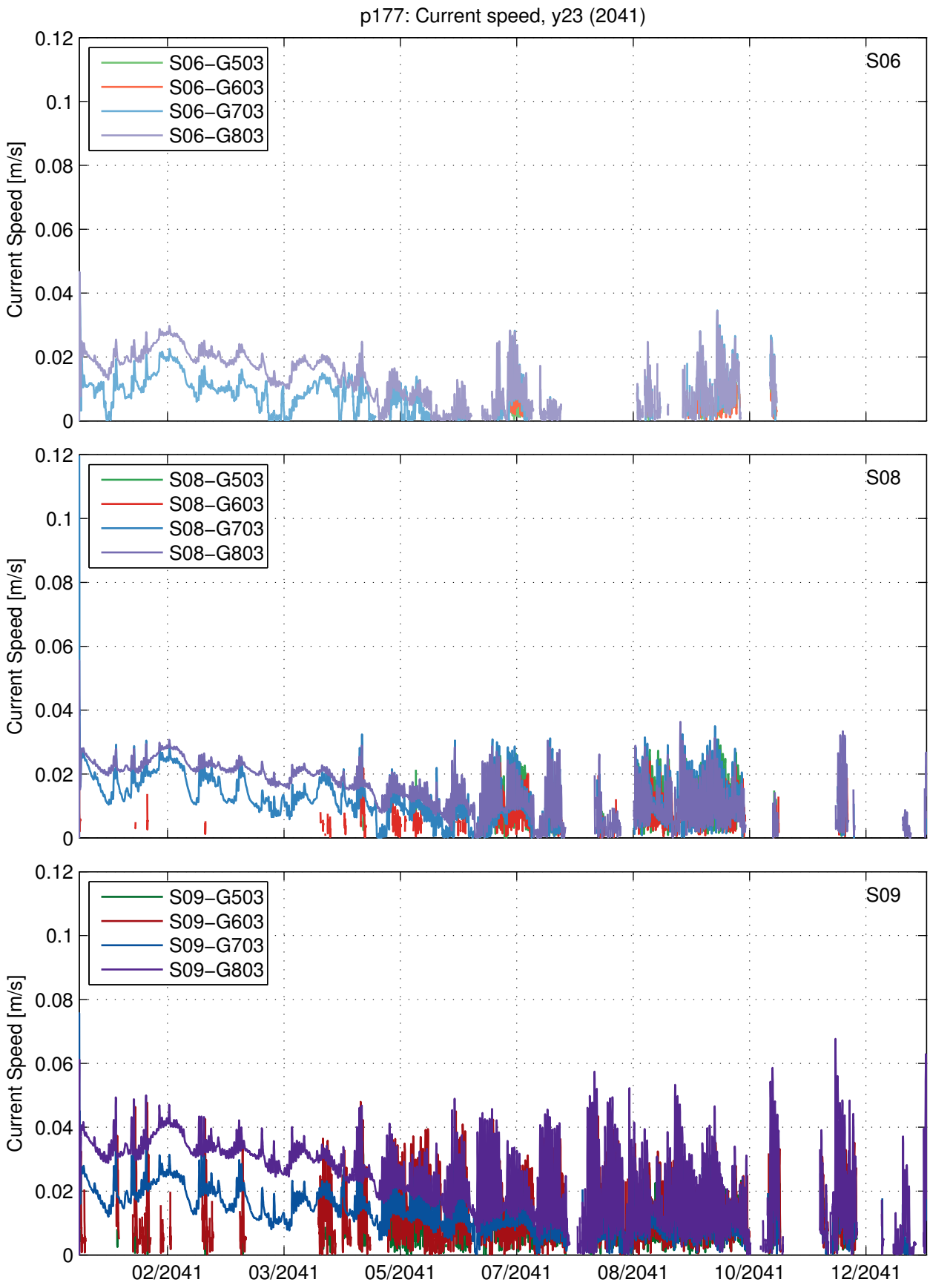

p160: Current speed, y23 (2041)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.005
0.01
0.015
0.02
0.025
0.03
0.035
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

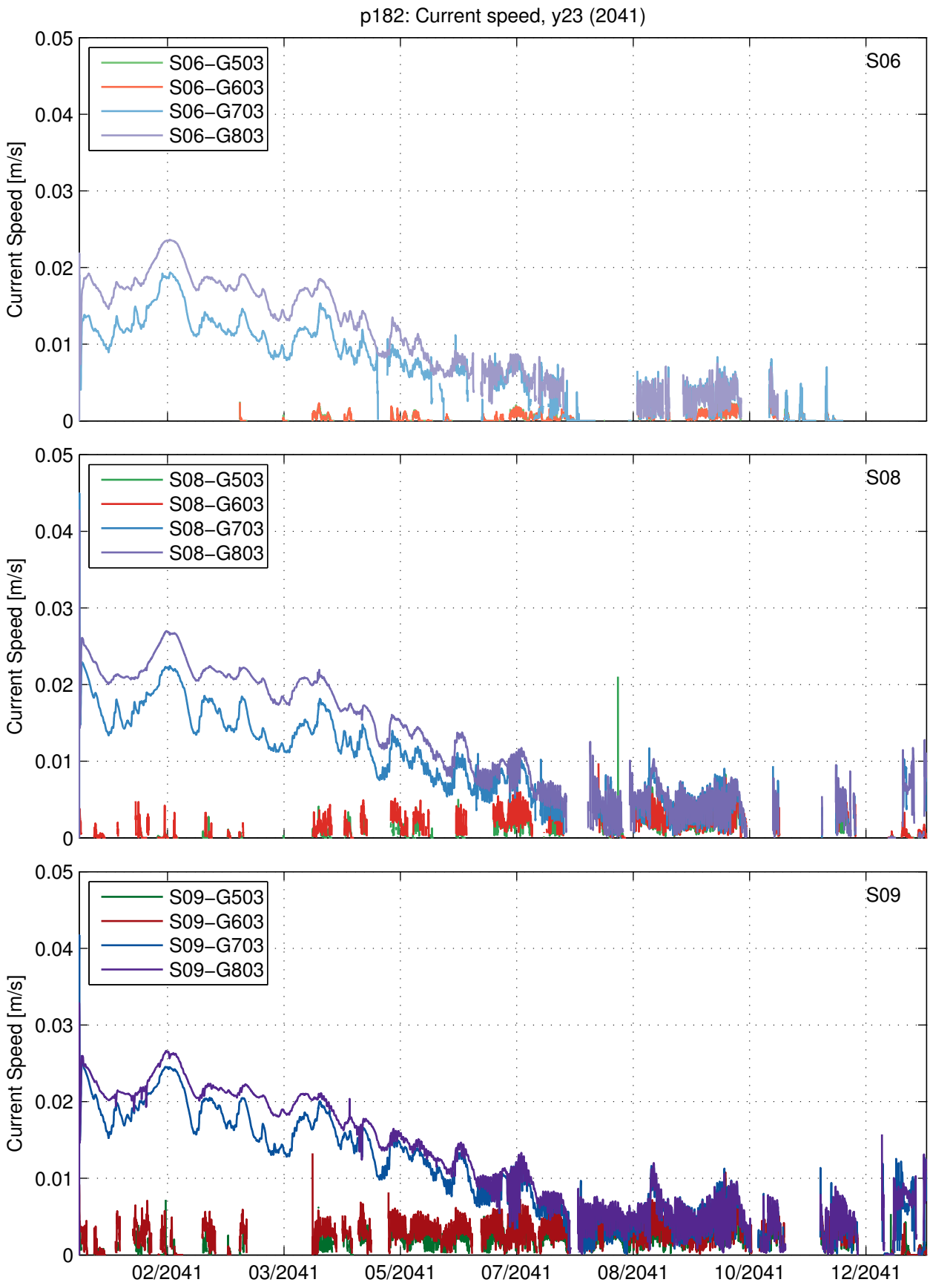

p165: Current speed, y23 (2041)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.02
0.04
0.06
0.08
0.1
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

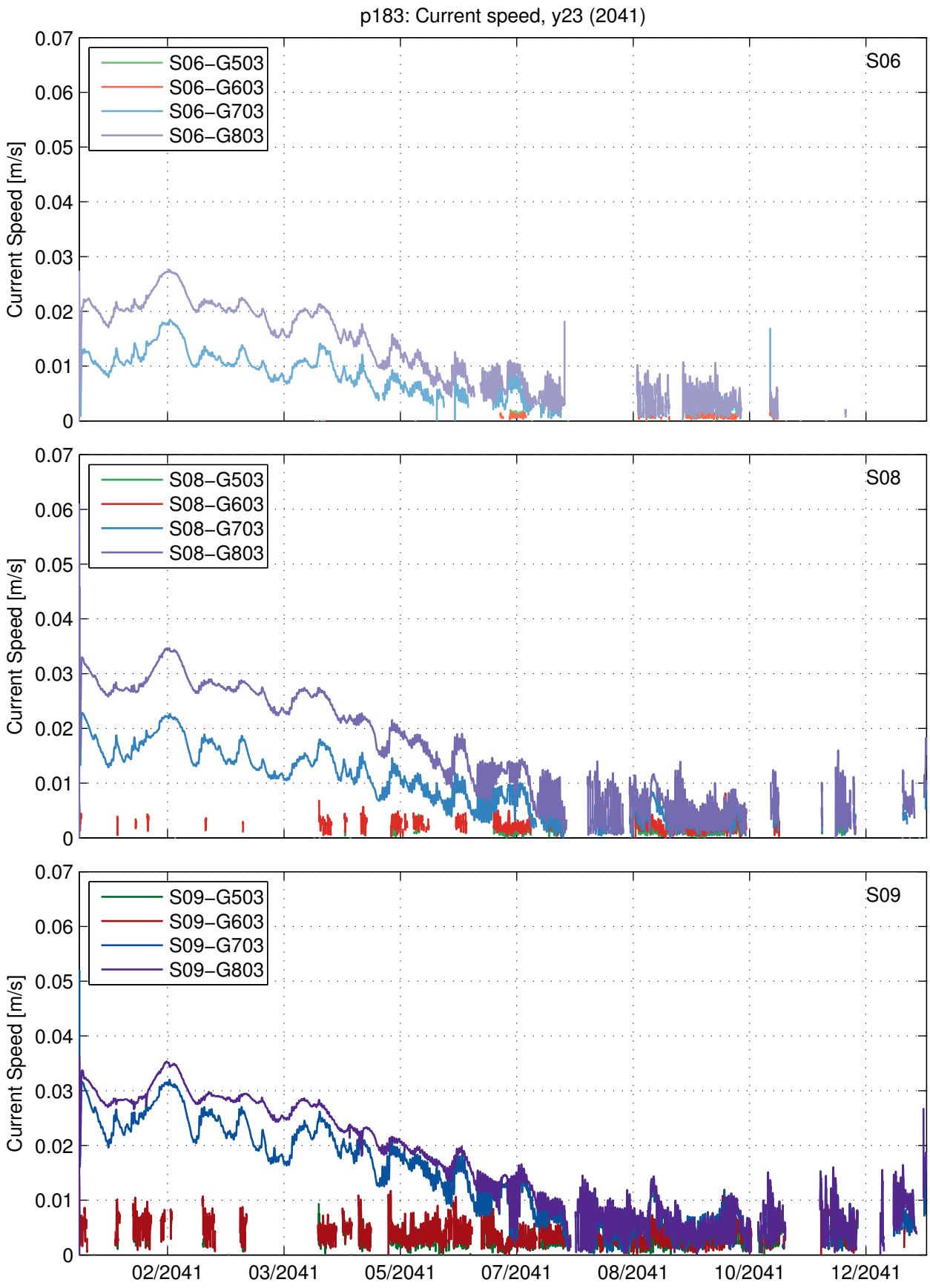

TC−1: Current speed, y23 (2041)
S06
S06−G503
S06−G603
S06−G703
S06−G803
S08
S08−G503
S08−G603
S08−G703
S08−G803
S09
S09−G503
S09−G603
S09−G703
S09−G803
Current Speed [m/s]
0
0.01
0.02
0.03
0.04
0.05
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

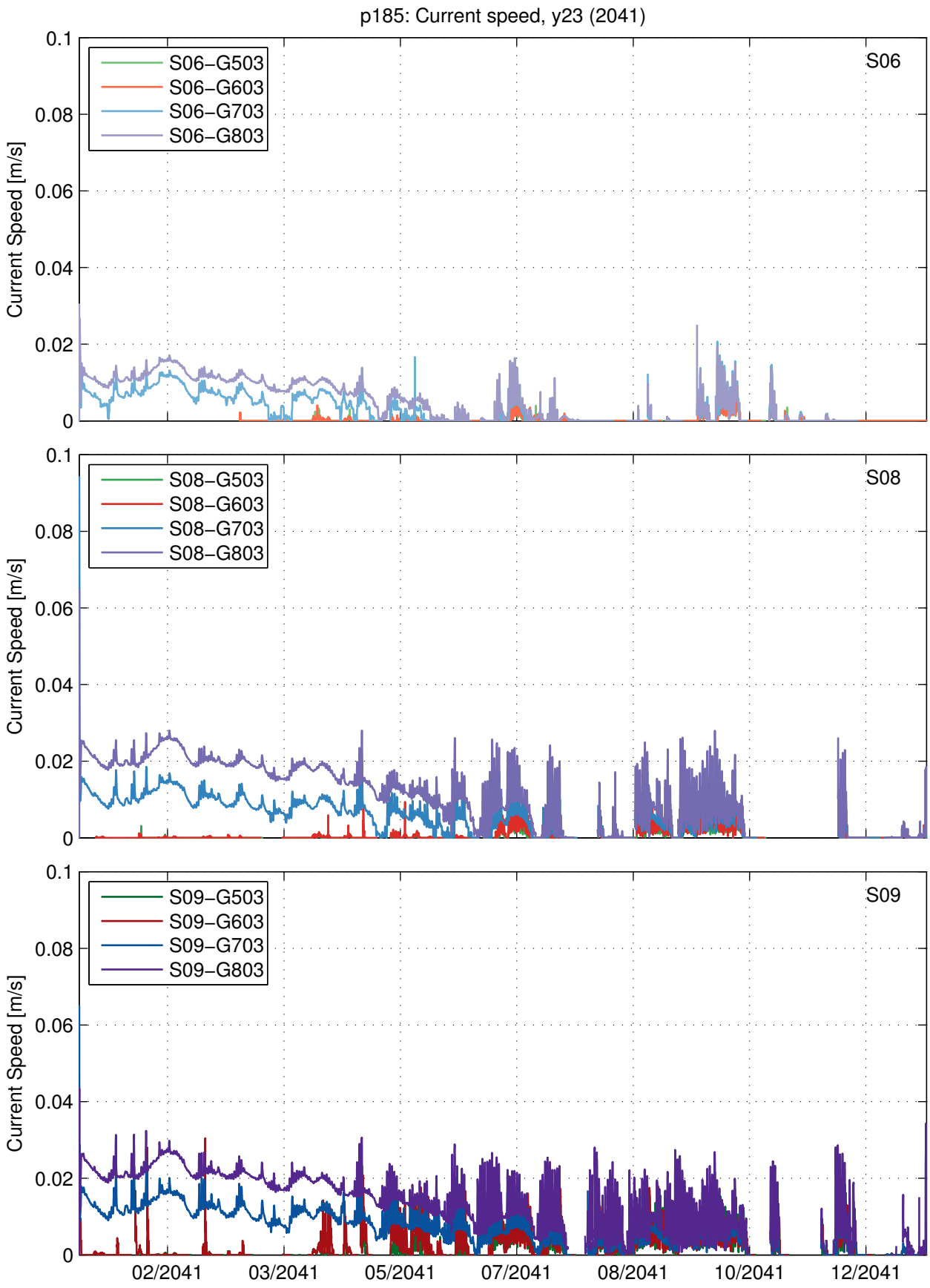

p151: Current speed, y23 (2041)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0.03
0.025
0.02
0.015
0.01
0.005
0
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

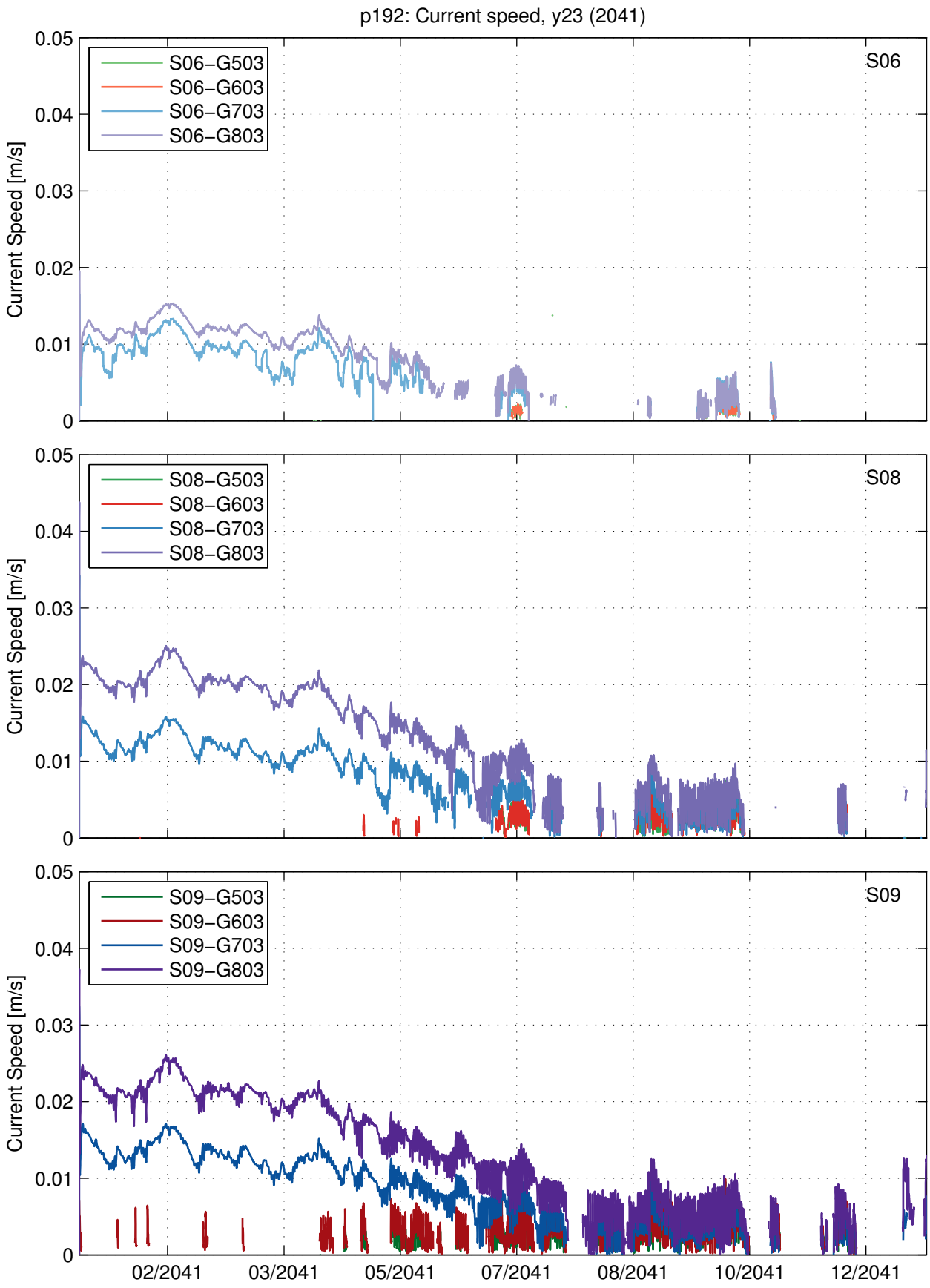

p186: Current speed, y23 (2041)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.02
0.04
0.06
0.08
0.1
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

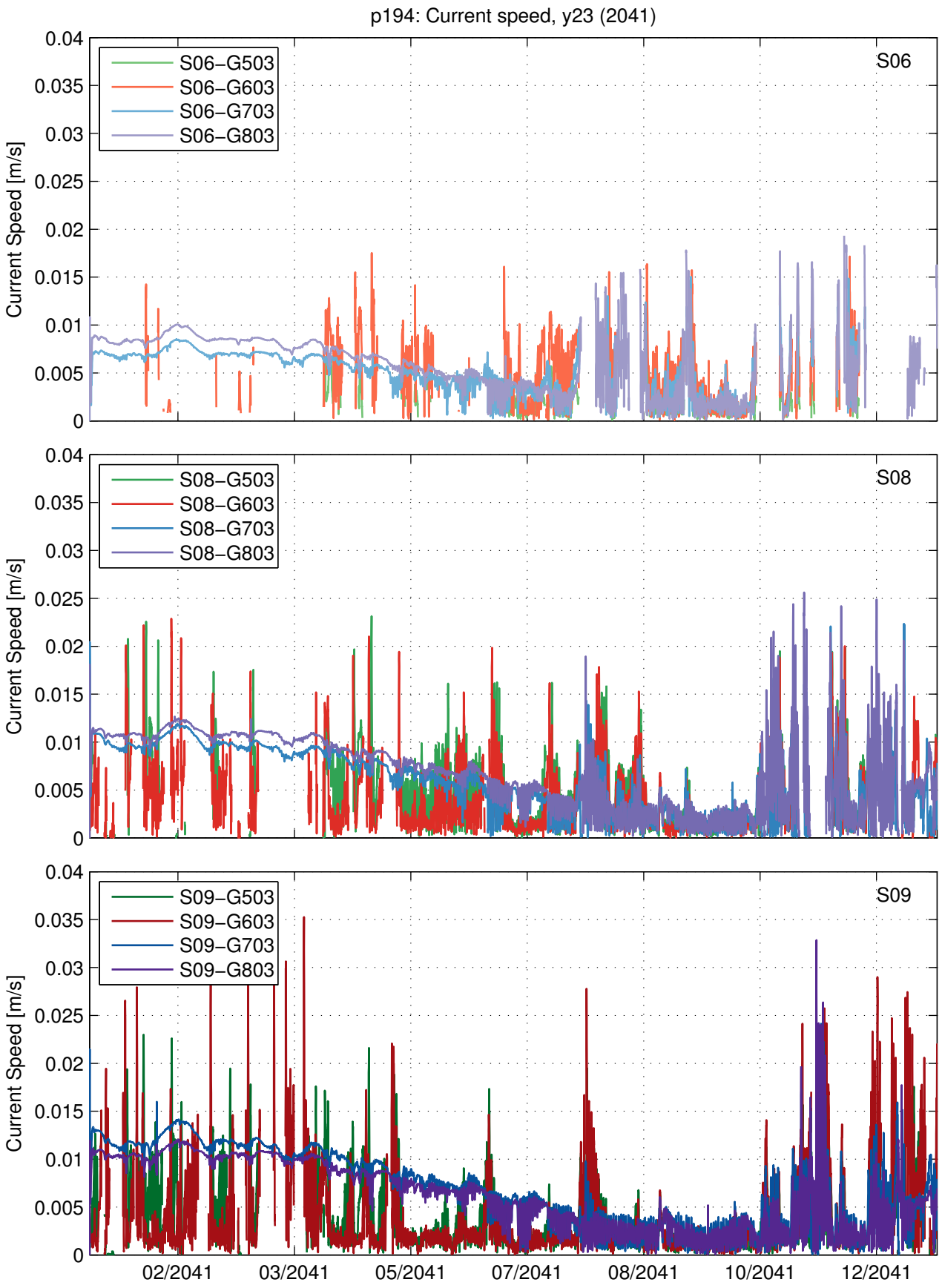

p177: Current speed, y23 (2041)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.02
0.04
0.06
0.08
0.1
0.12
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

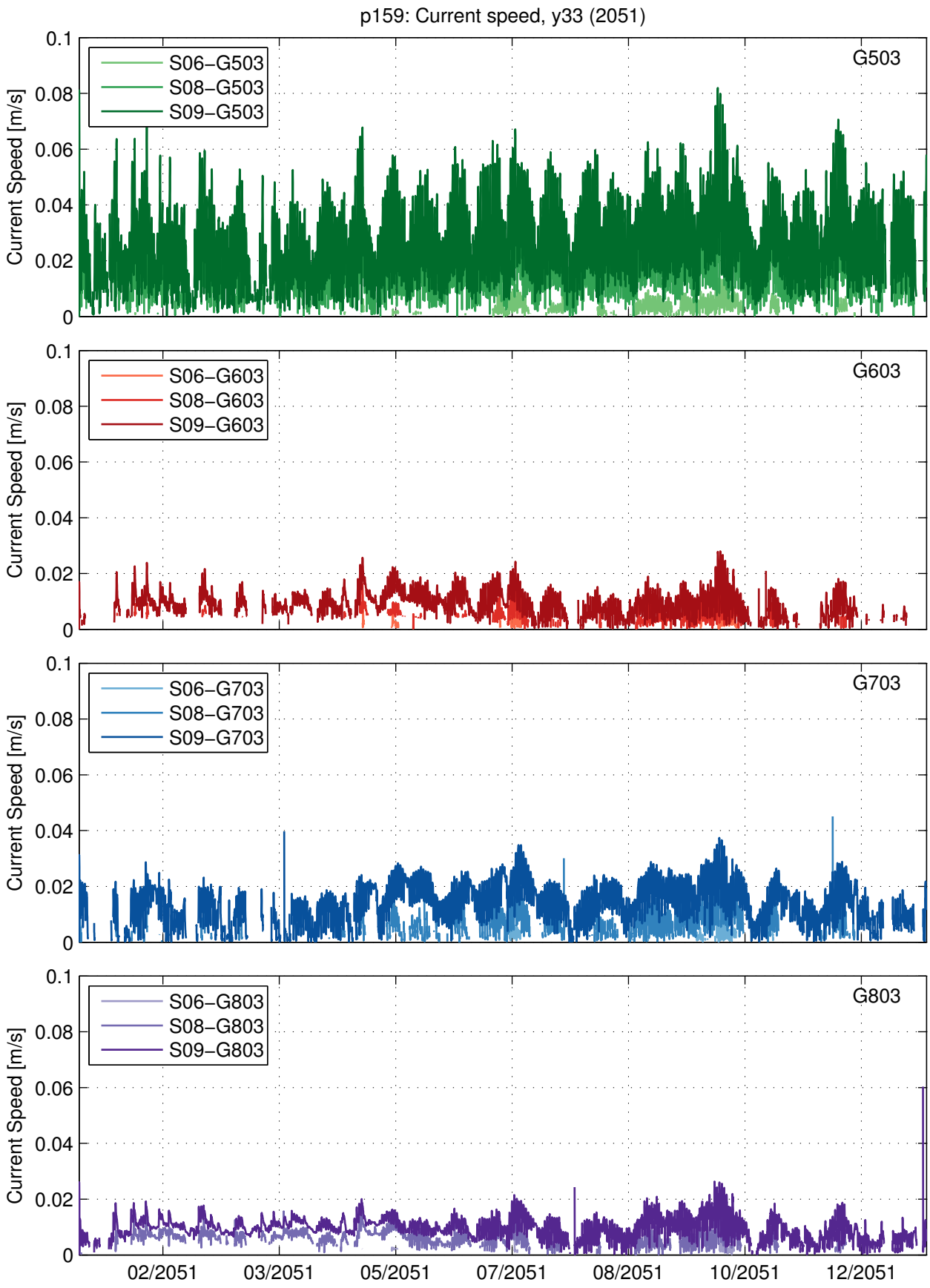

p182: Current speed, y23 (2041)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0.05
0.04
0.03
0.02
0.01
0
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

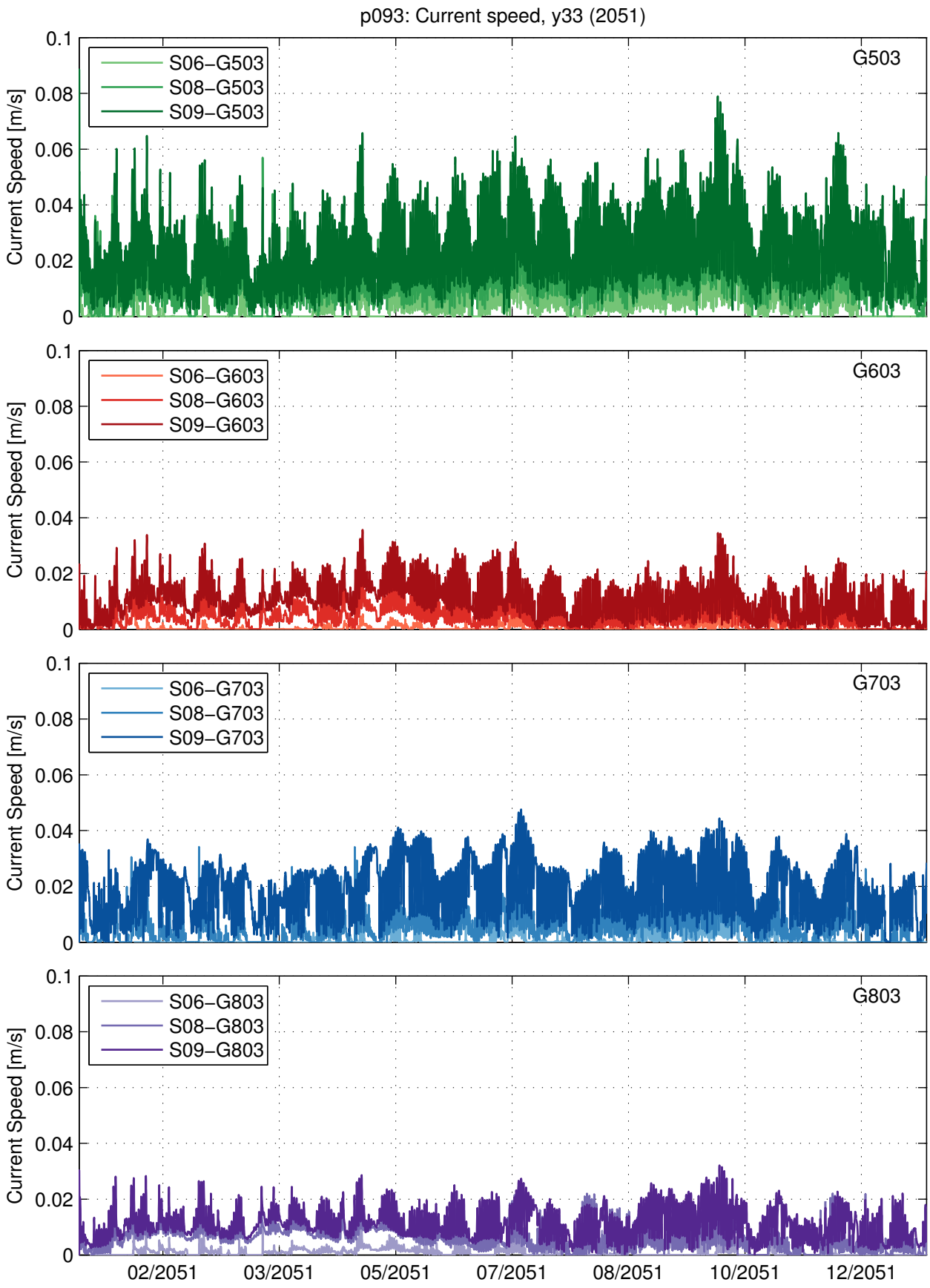

p183: Current speed, y23 (2041)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.01
0.02
0.03
0.04
0.05
0.06
0.07
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

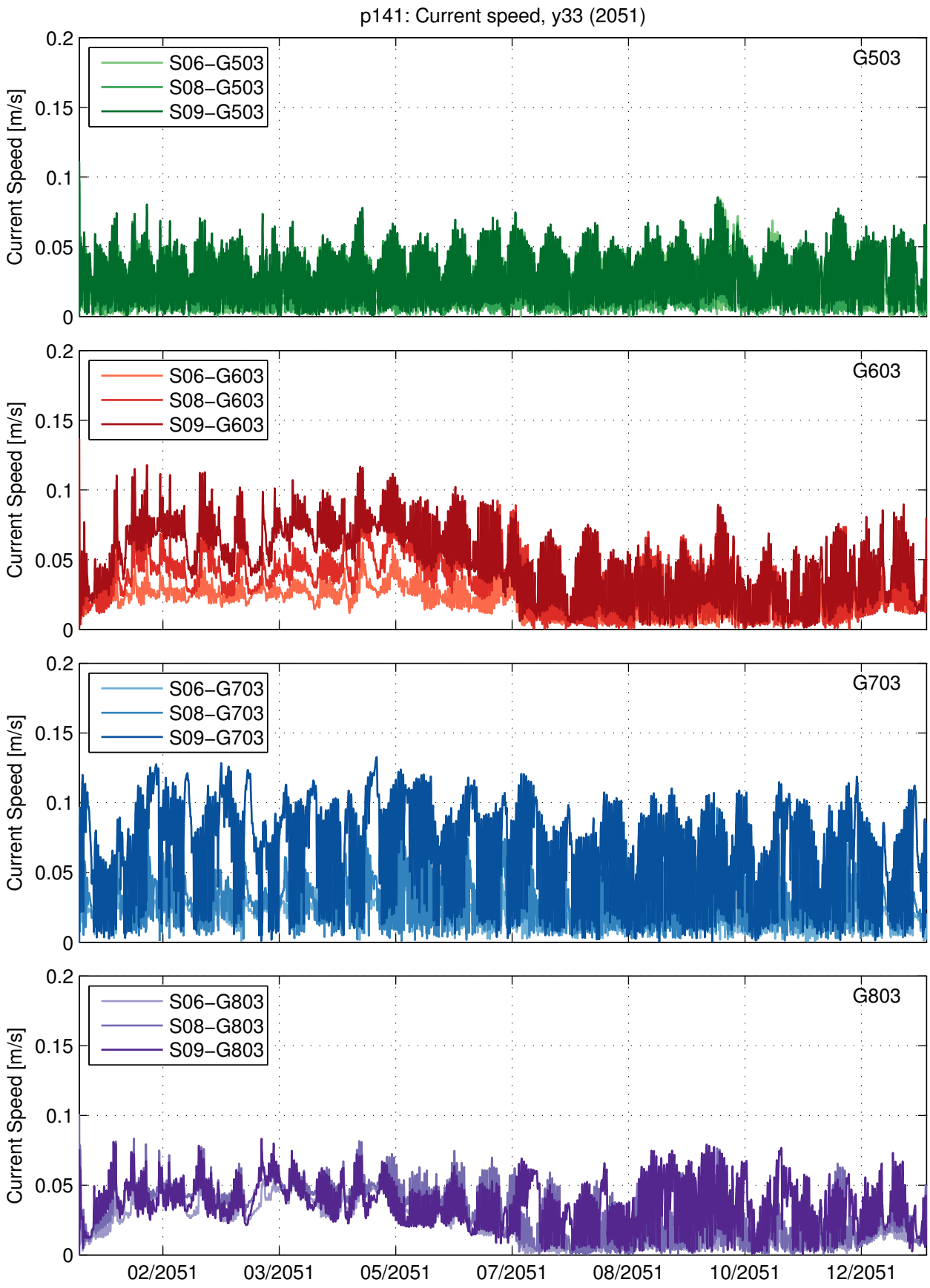

p185: Current speed, y23 (2041)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.02
0.04
0.06
0.08
0.1
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

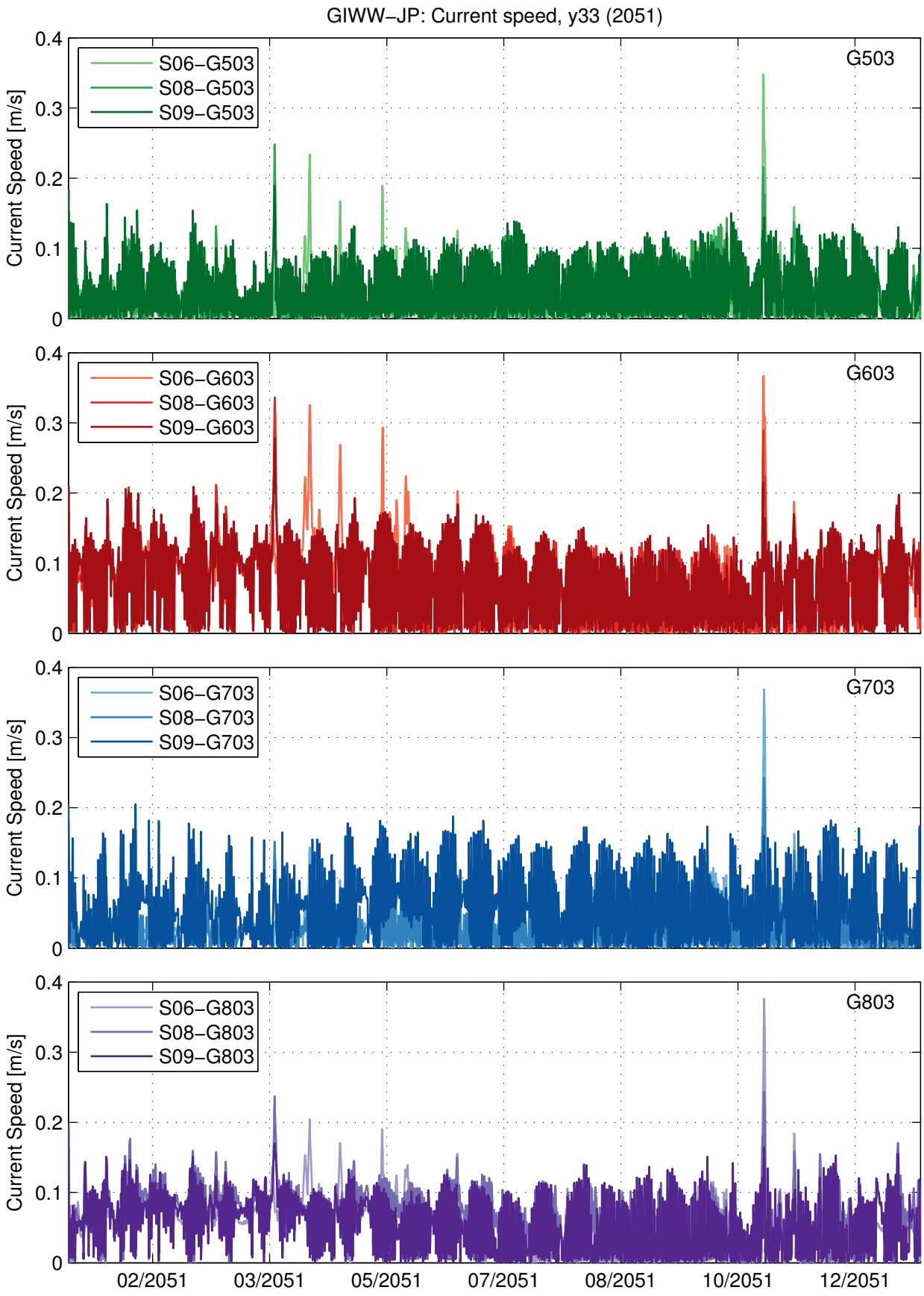

p192: Current speed, y23 (2041)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0.05
0.04
0.03
0.02
0.01
0
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

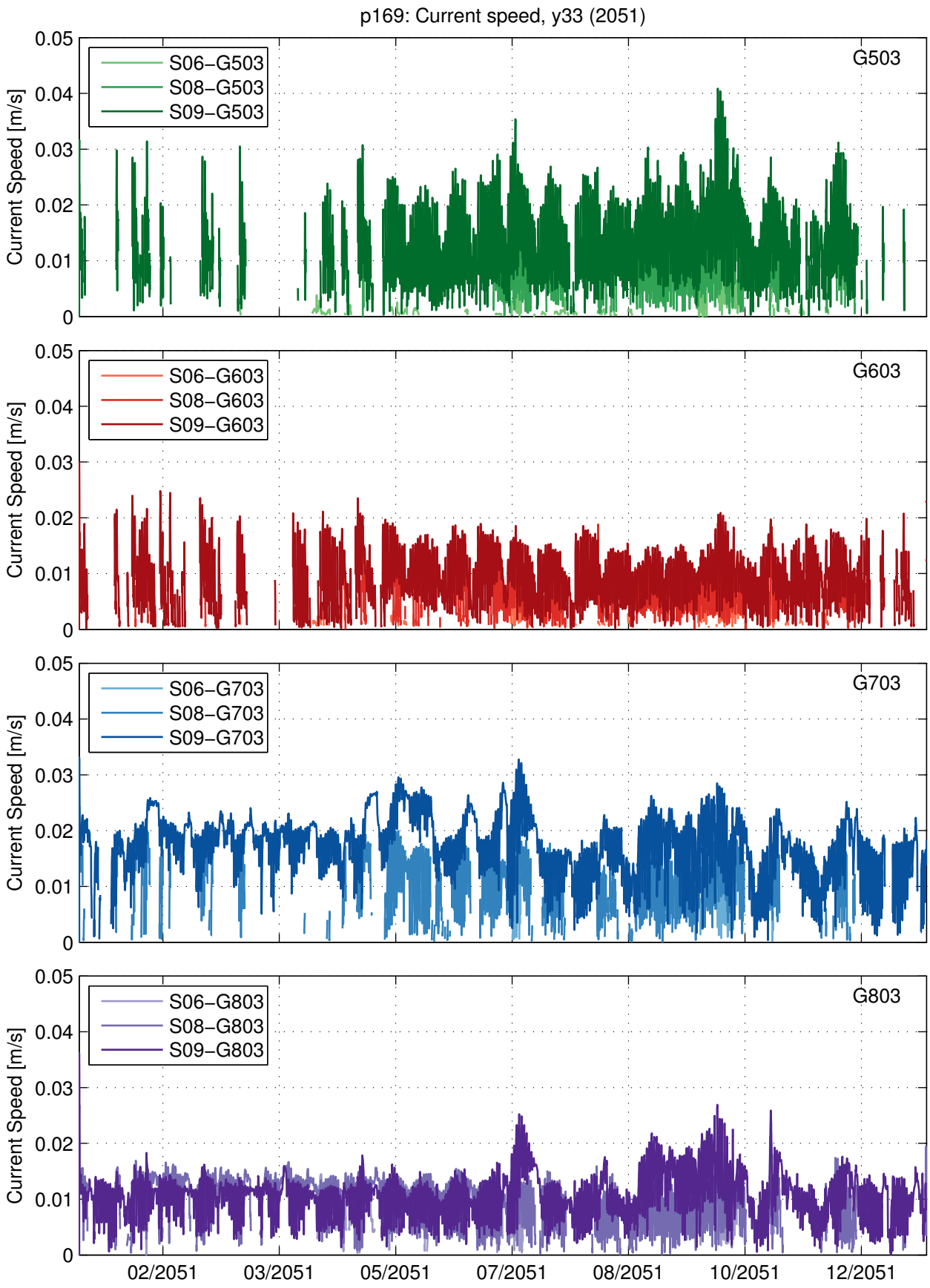

p194: Current speed, y23 (2041)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Current Speed [m/s]
0
0.005
0.01
0.015
0.02
0.025
0.03
0.035
0.04
02/2041
03/2041
05/2041
07/2041
08/2041
10/2041
12/2041

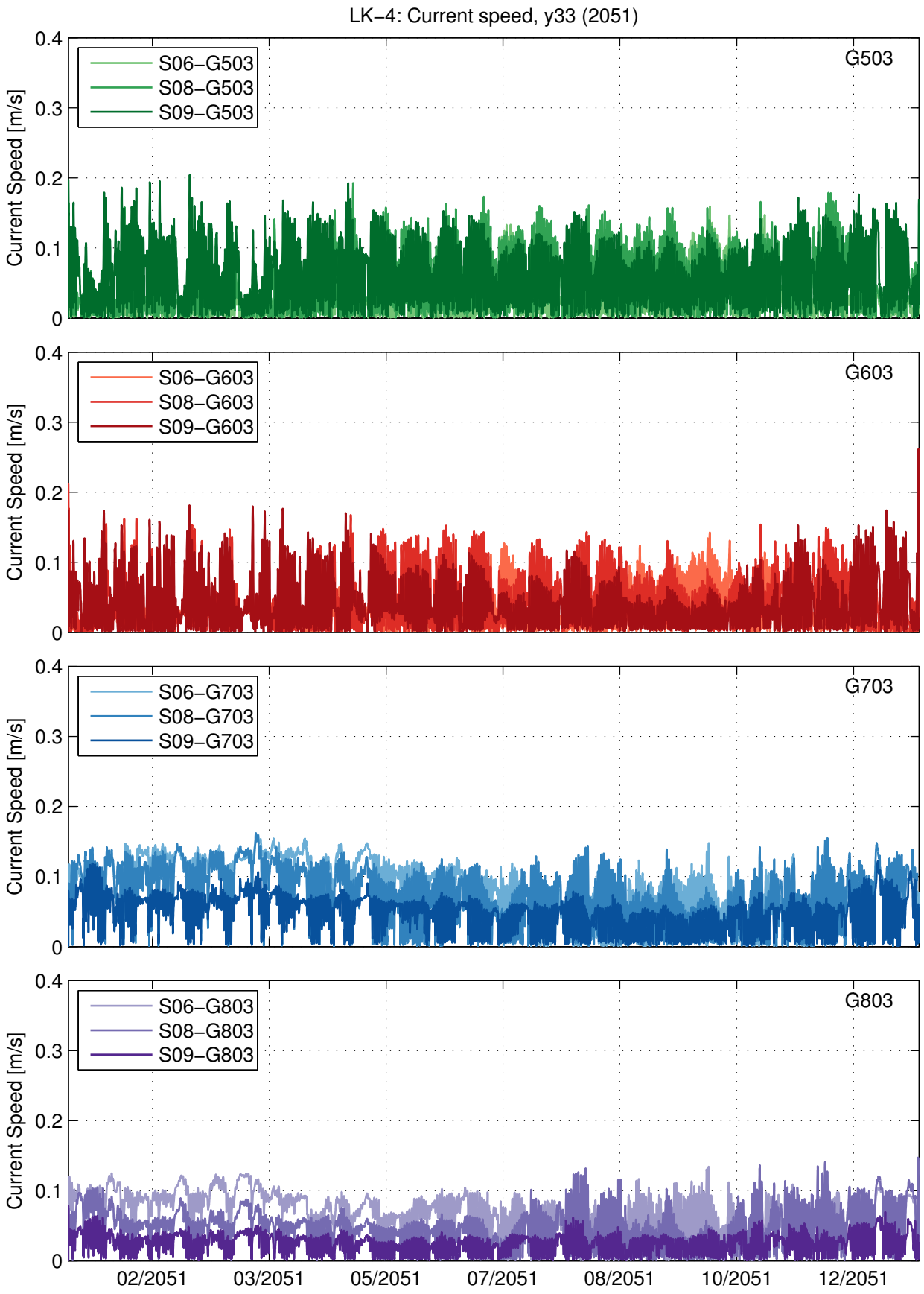

p159: Current speed, y33 (2051)
Current Speed [m/s]
0.1
0.08
0.06
0.04
0.02
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

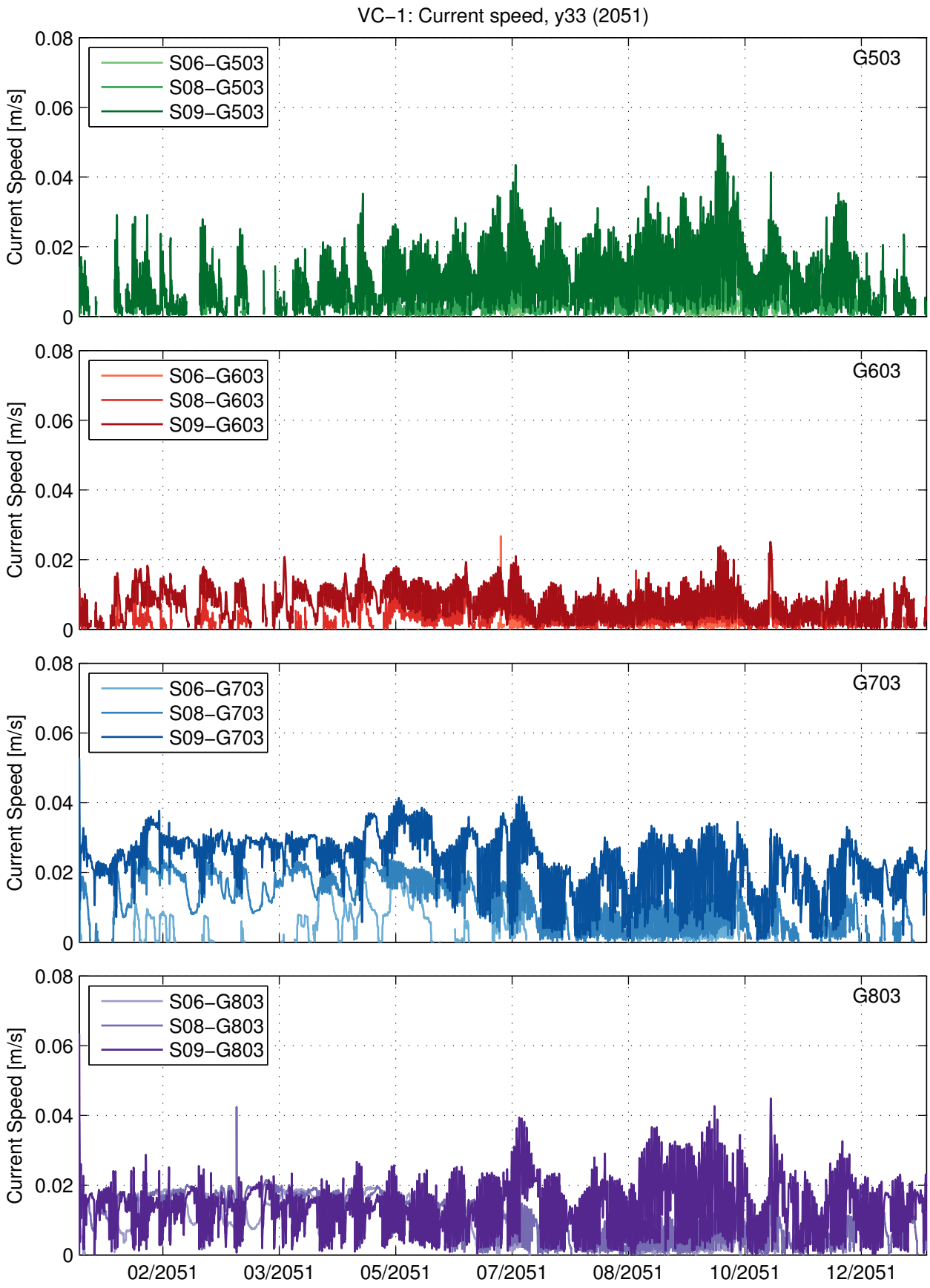

p093: Current speed, y33 (2051)
Current Speed [m/s]
0.1
0.08
0.06
0.04
0.02
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

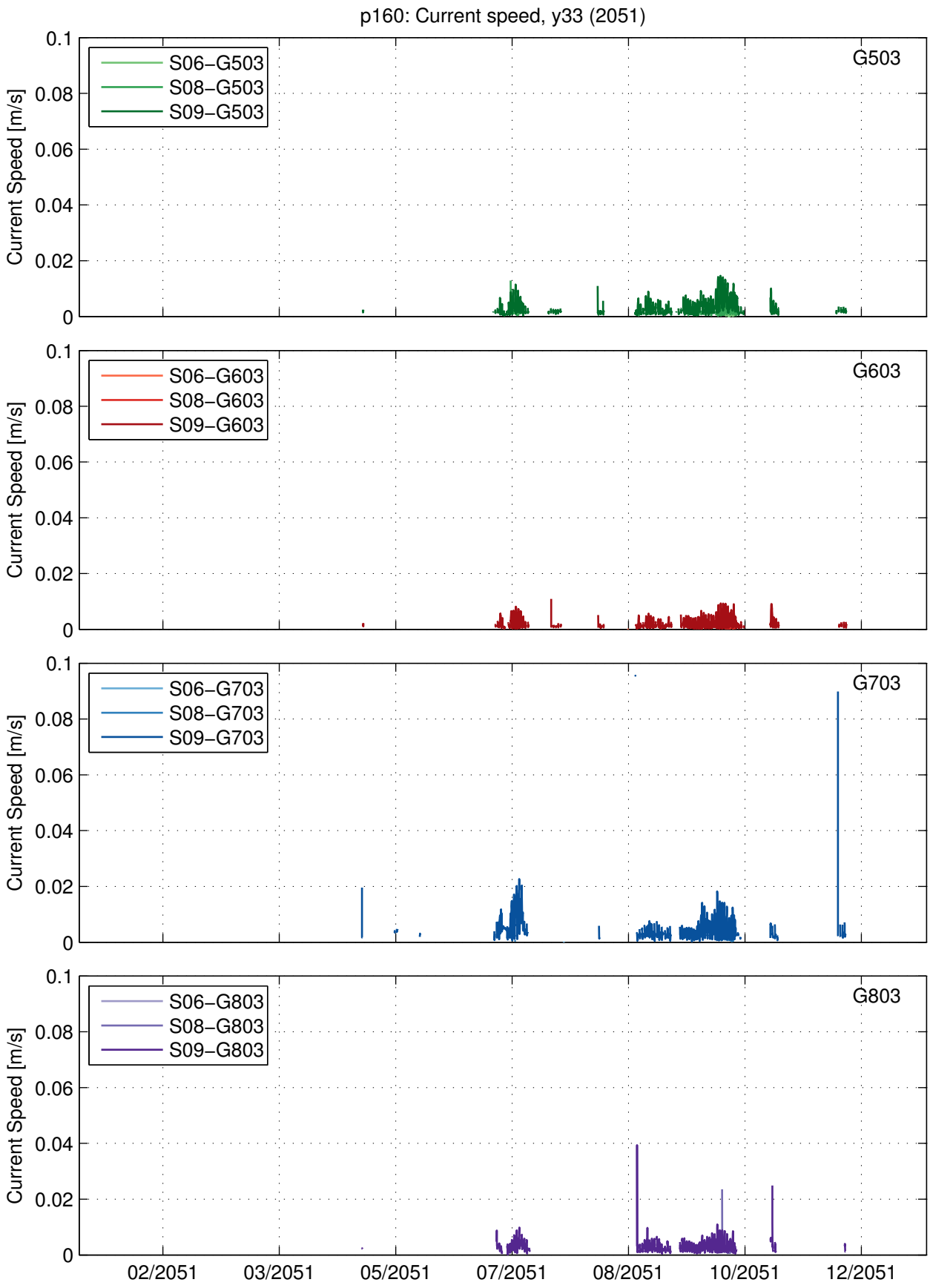

p141: Current speed, y33 (2051)
Current Speed [m/s]
0.2
0.15
0.1
0.05
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

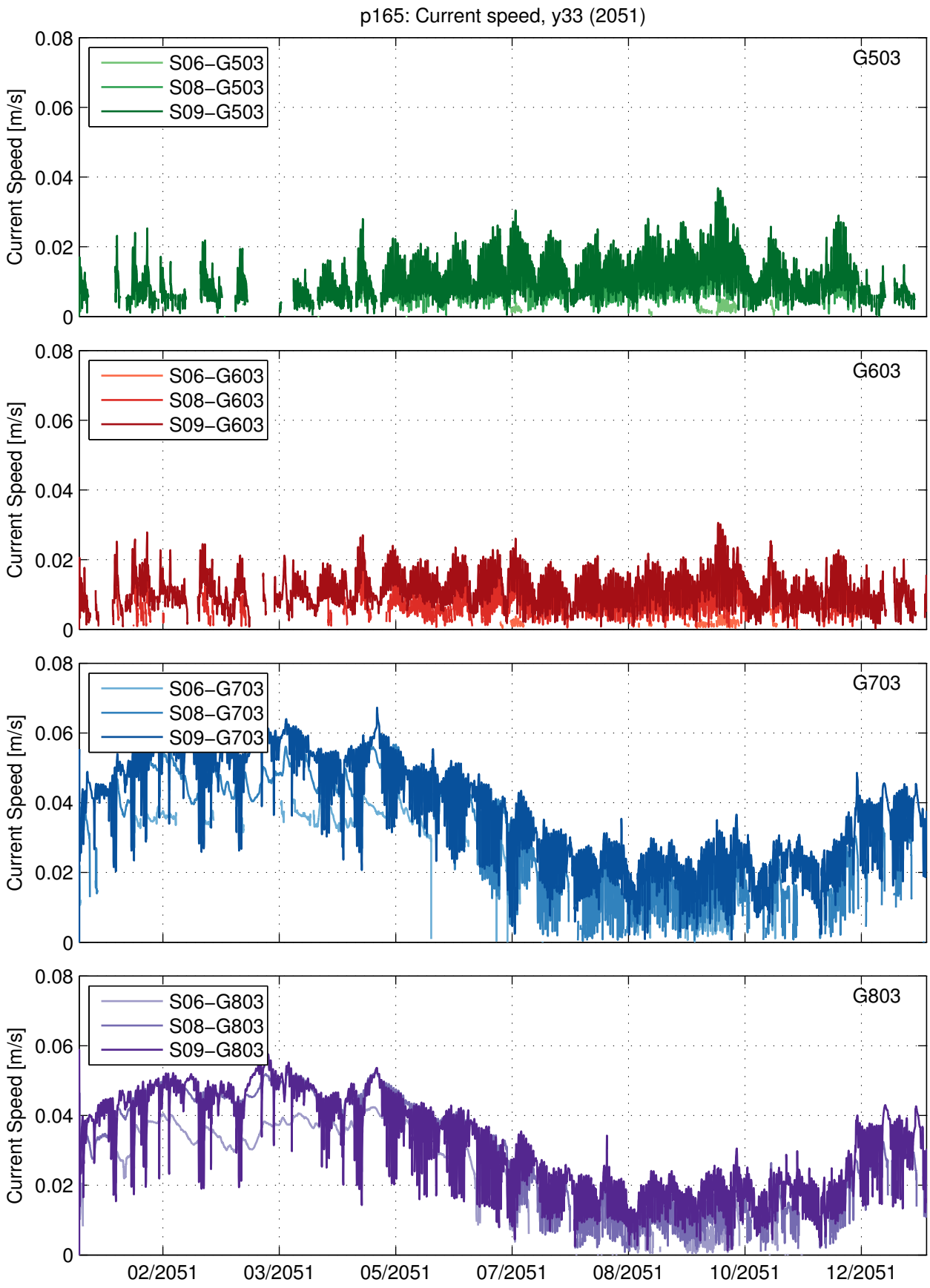

GIWW–JP: Current speed, y33 (2051)
Current Speed [m/s]
0
0.1
0.2
0.3
0.4
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

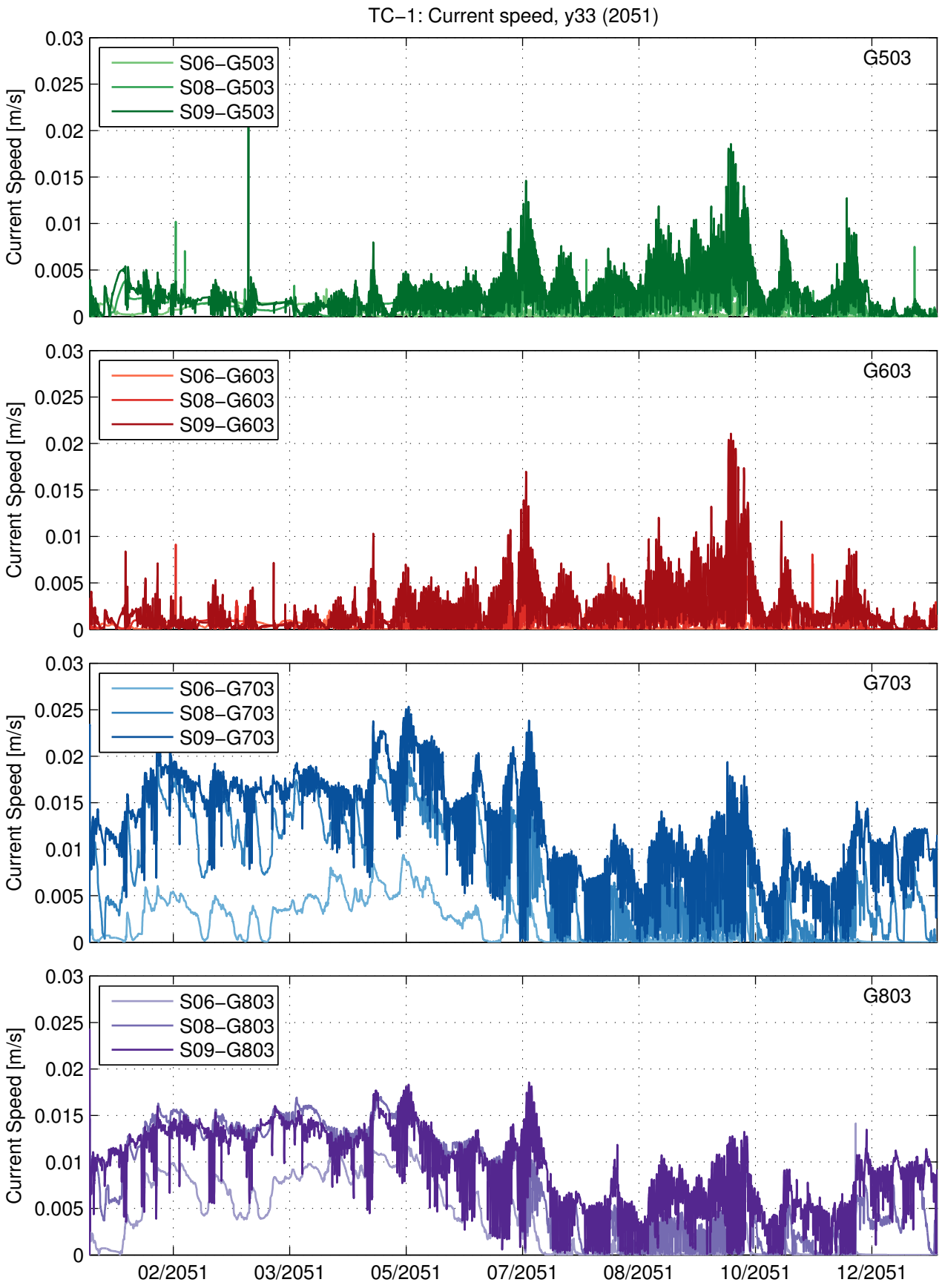

p169: Current speed, y33 (2051)
Current Speed [m/s]
0.05
0.04
0.03
0.02
0.01
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

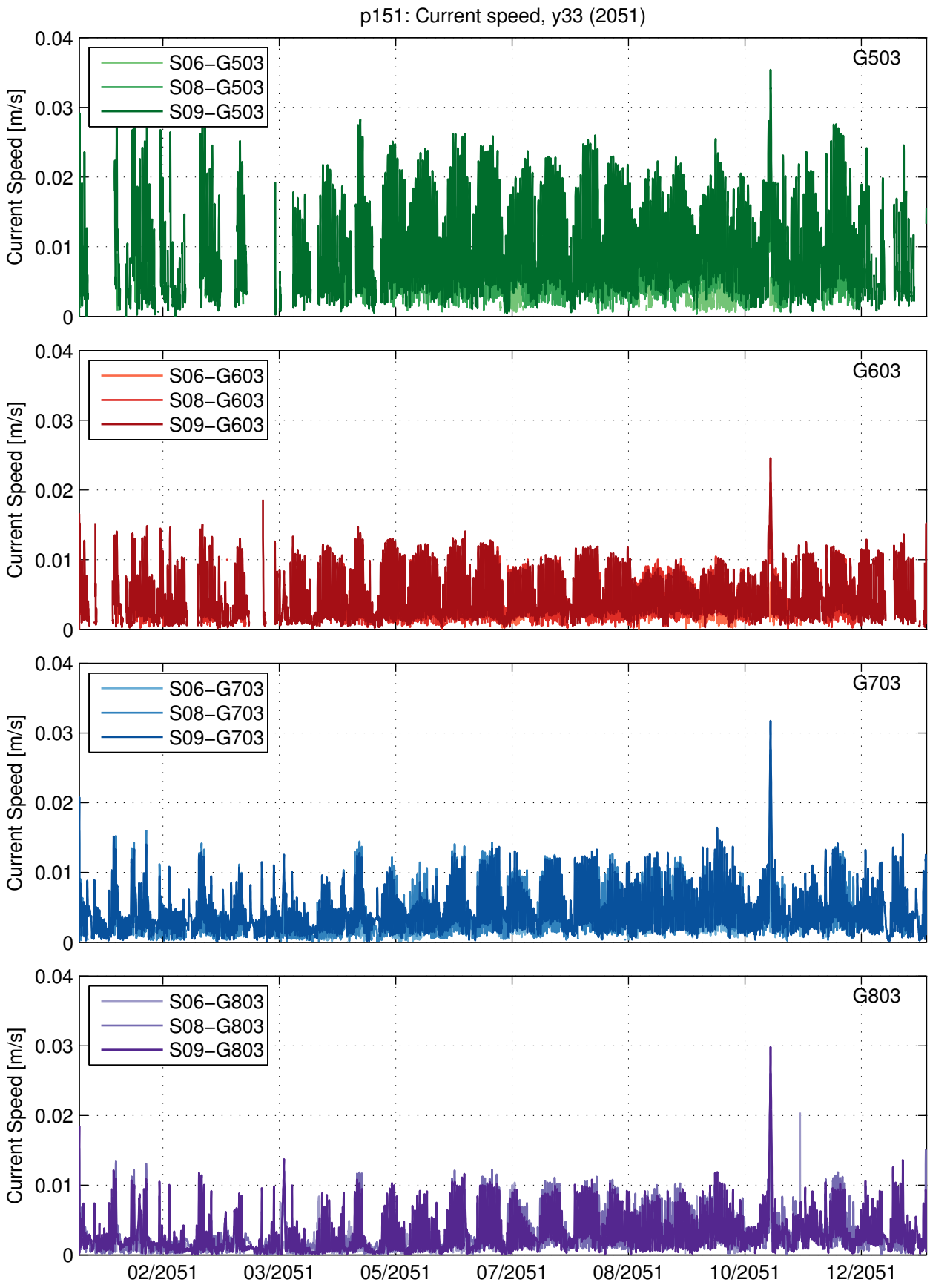

LK–4: Current speed, y33 (2051)
Current Speed [m/s]
0.4
0.3
0.2
0.1
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

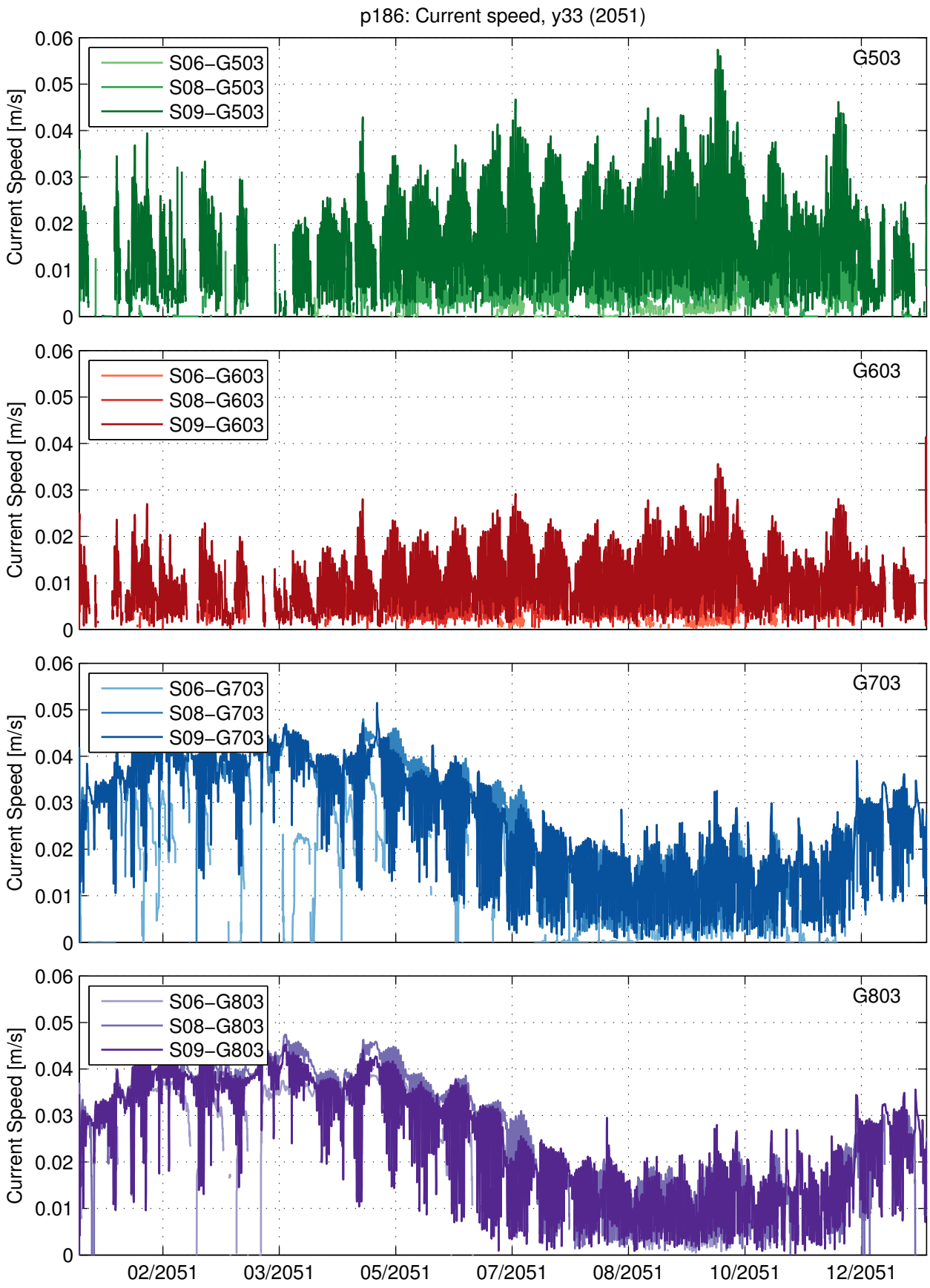

VC−1: Current speed, y33 (2051)
Current Speed [m/s]
0.08
0.06
0.04
0.02
0
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
S06−G703
S08−G703
S09−G703
G703
S06−G803
S08−G803
S09−G803
G803
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

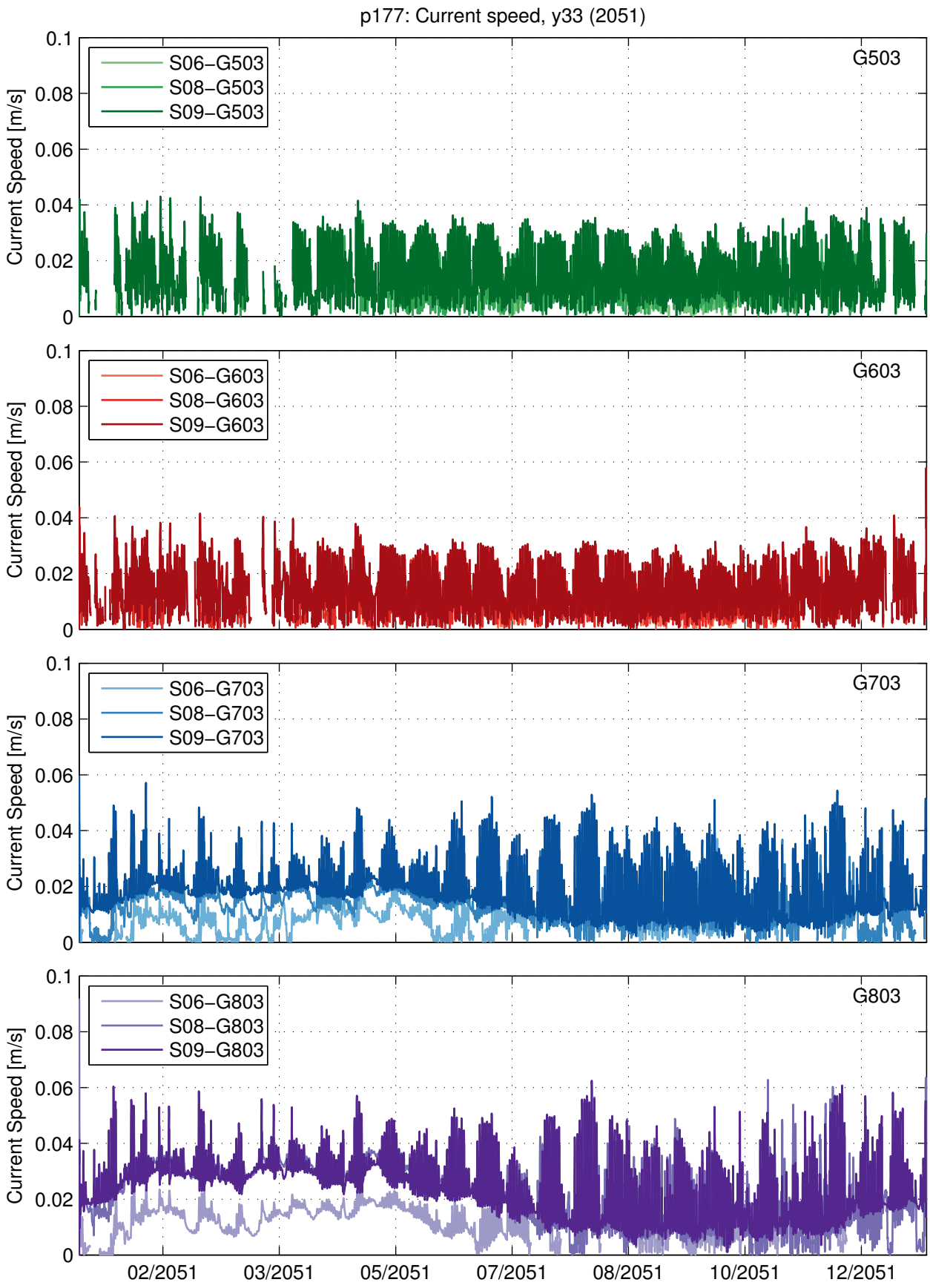

p160: Current speed, y33 (2051)
Current Speed [m/s]
0.1
0.08
0.06
0.04
0.02
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

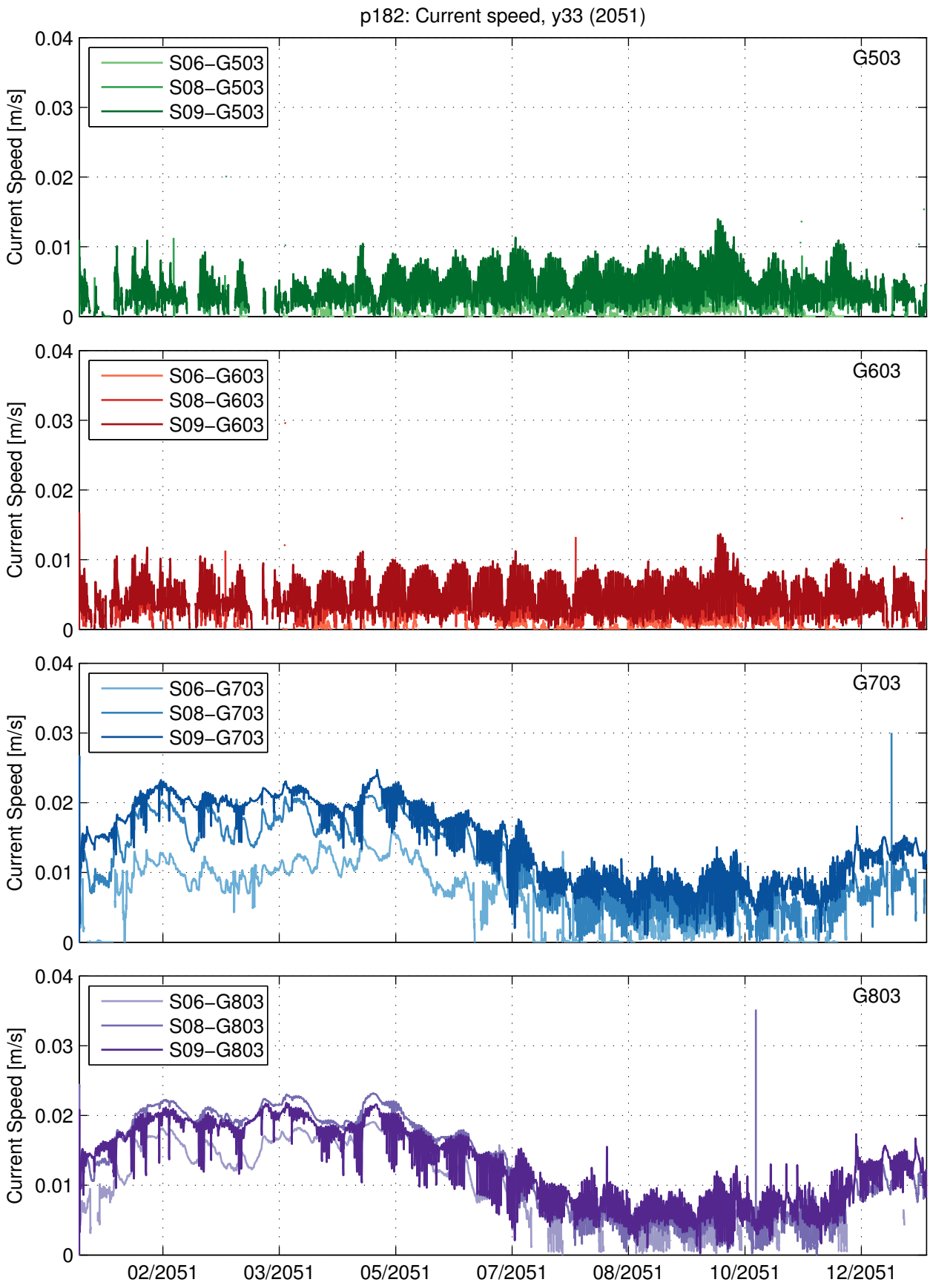

p165: Current speed, y33 (2051)
Current Speed [m/s]
0.08
0.06
0.04
0.02
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

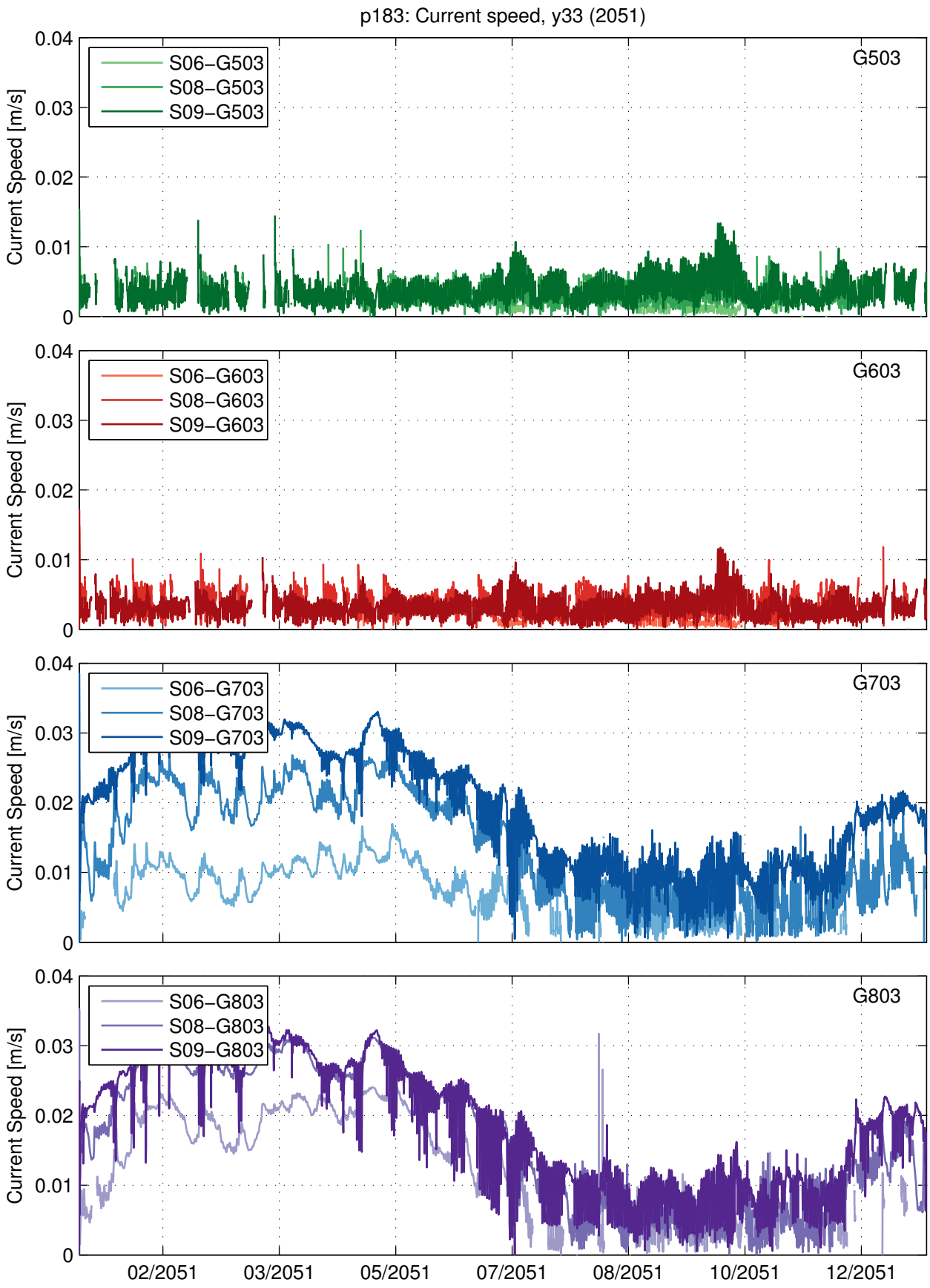

TC−1: Current speed, y33 (2051)
Current Speed [m/s]
0.03
0.025
0.02
0.015
0.01
0.005
0
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
S06−G703
S08−G703
S09−G703
G703
S06−G803
S08−G803
S09−G803
G803
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

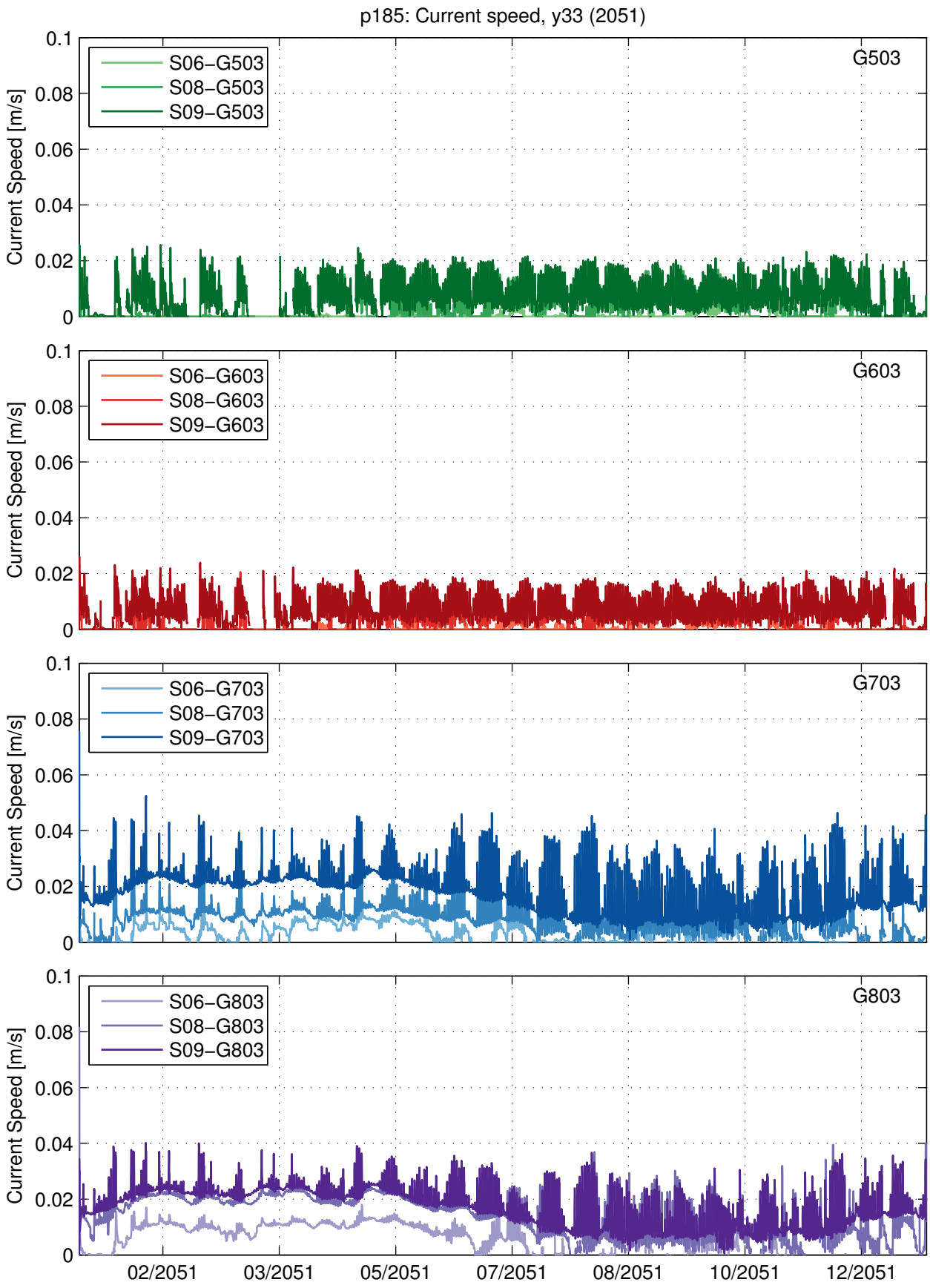

p151: Current speed, y33 (2051)
Current Speed [m/s]
0.04
0.03
0.02
0.01
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

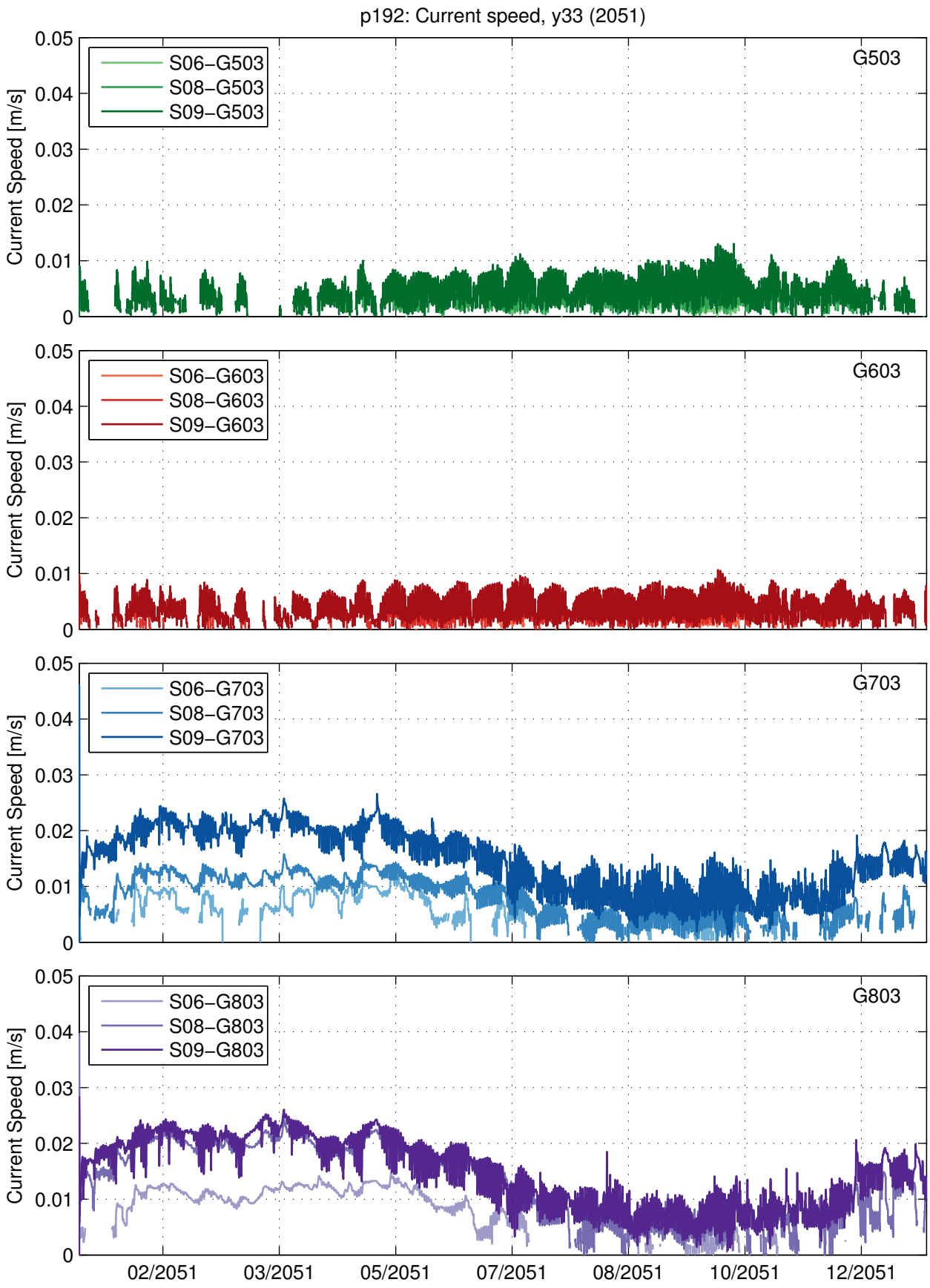

p186: Current speed, y33 (2051)
Current Speed [m/s]
0.06
0.05
0.04
0.03
0.02
0.01
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

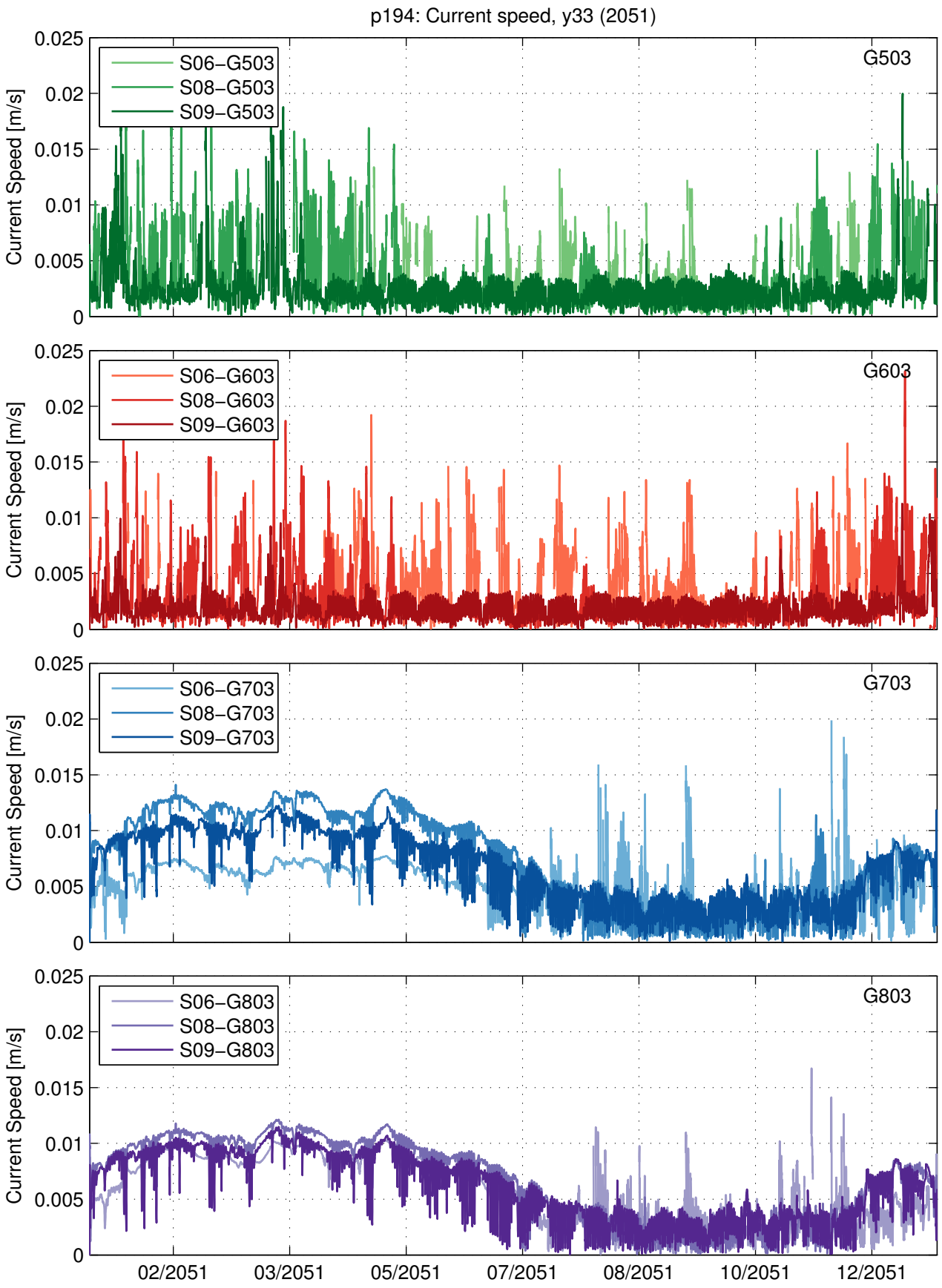

p177: Current speed, y33 (2051)
Current Speed [m/s]
0.1
0.08
0.06
0.04
0.02
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

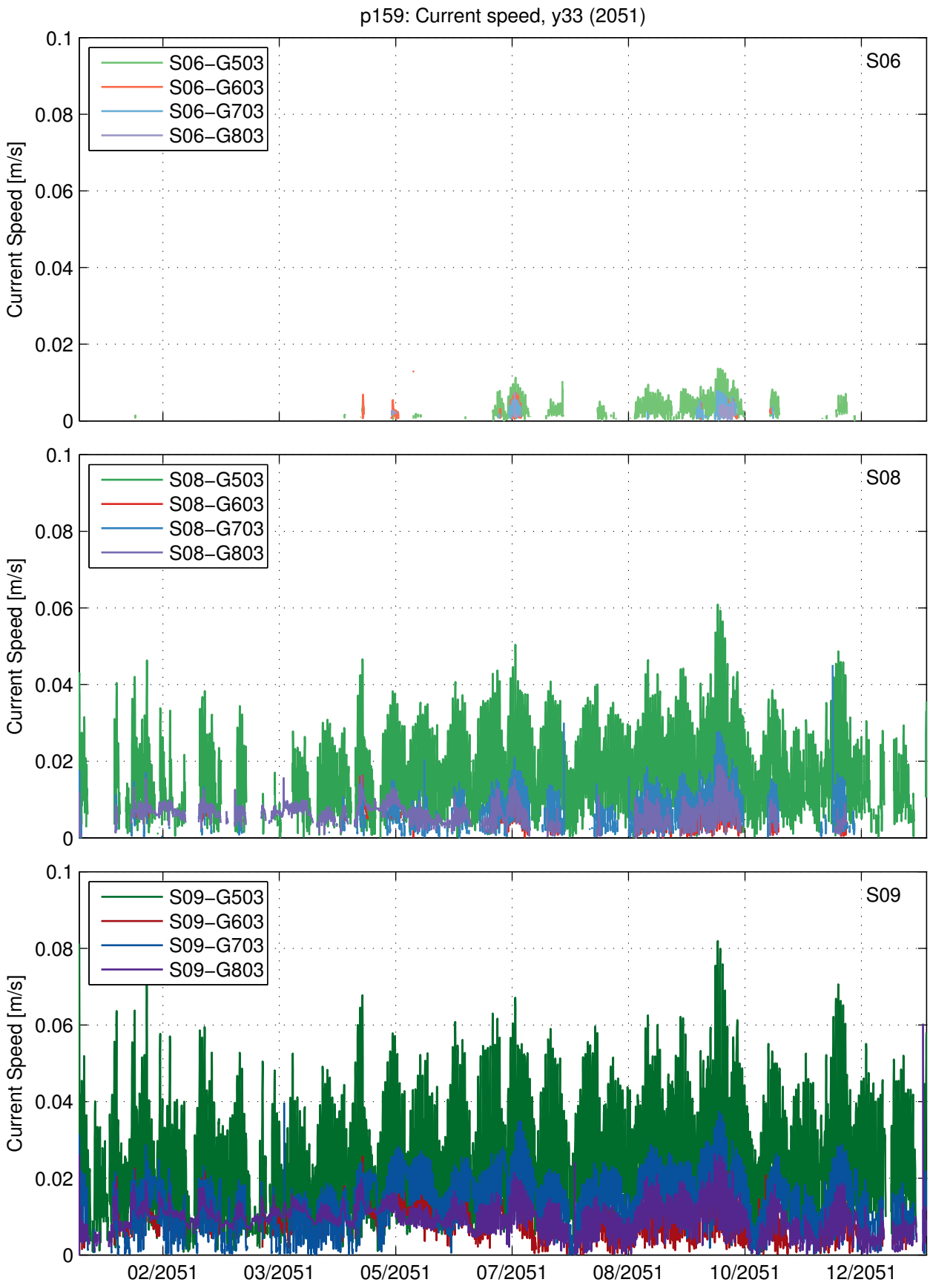

p182: Current speed, y33 (2051)
Current Speed [m/s]
0.04
0.03
0.02
0.01
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

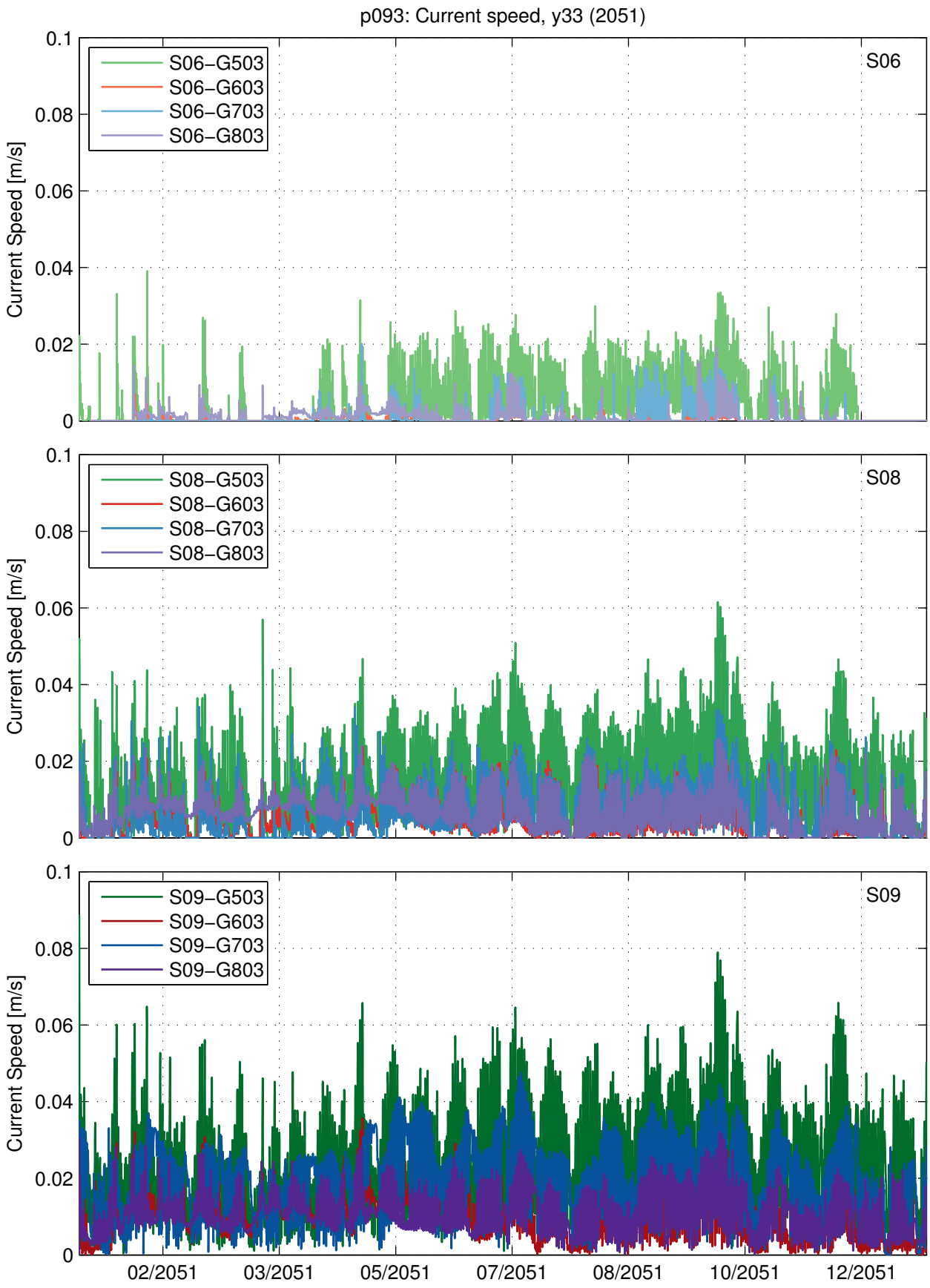

p183: Current speed, y33 (2051)
Current Speed [m/s]
0.04
0.03
0.02
0.01
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

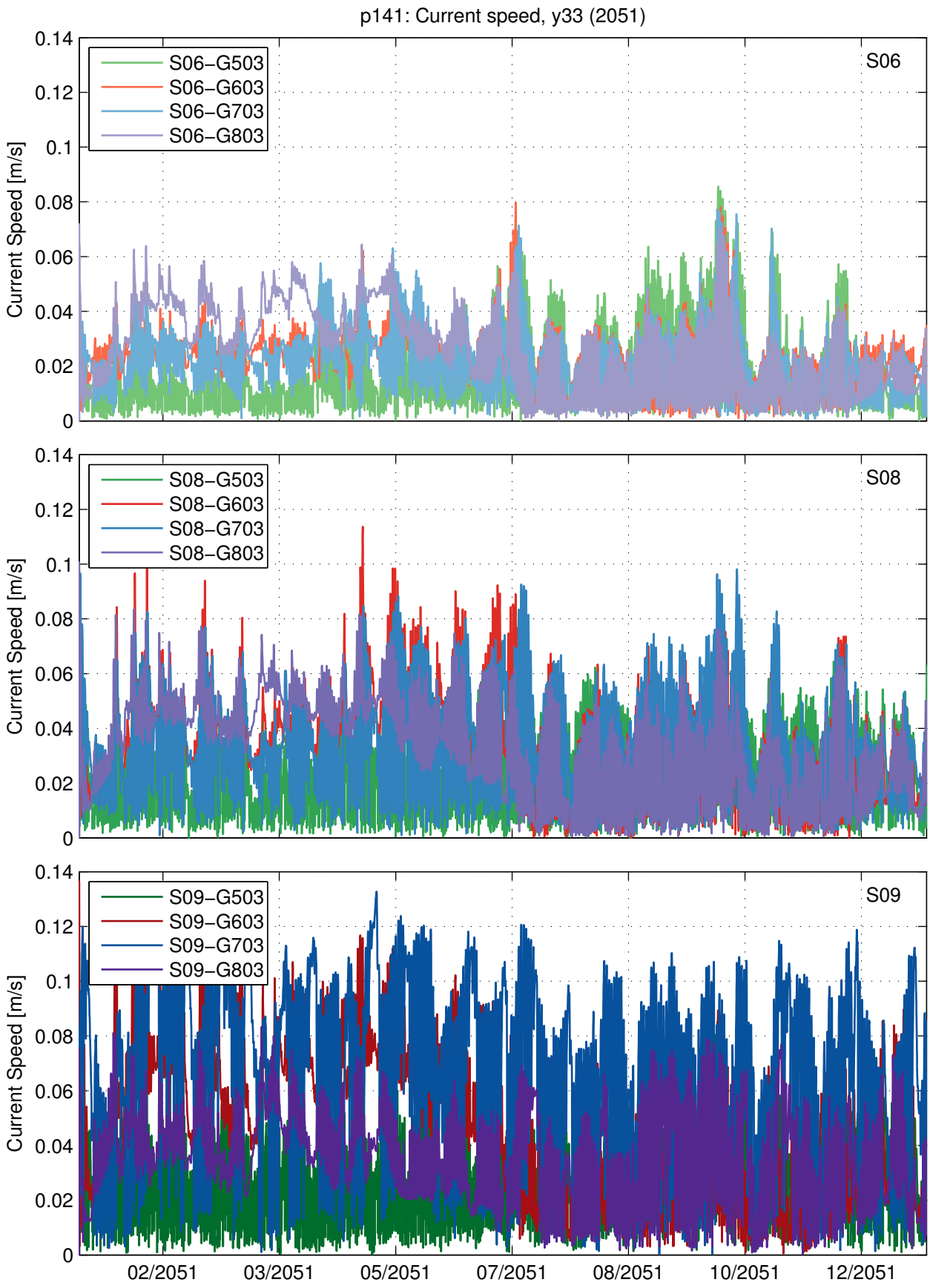

p185: Current speed, y33 (2051)
Current Speed [m/s]
0.1
0.08
0.06
0.04
0.02
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

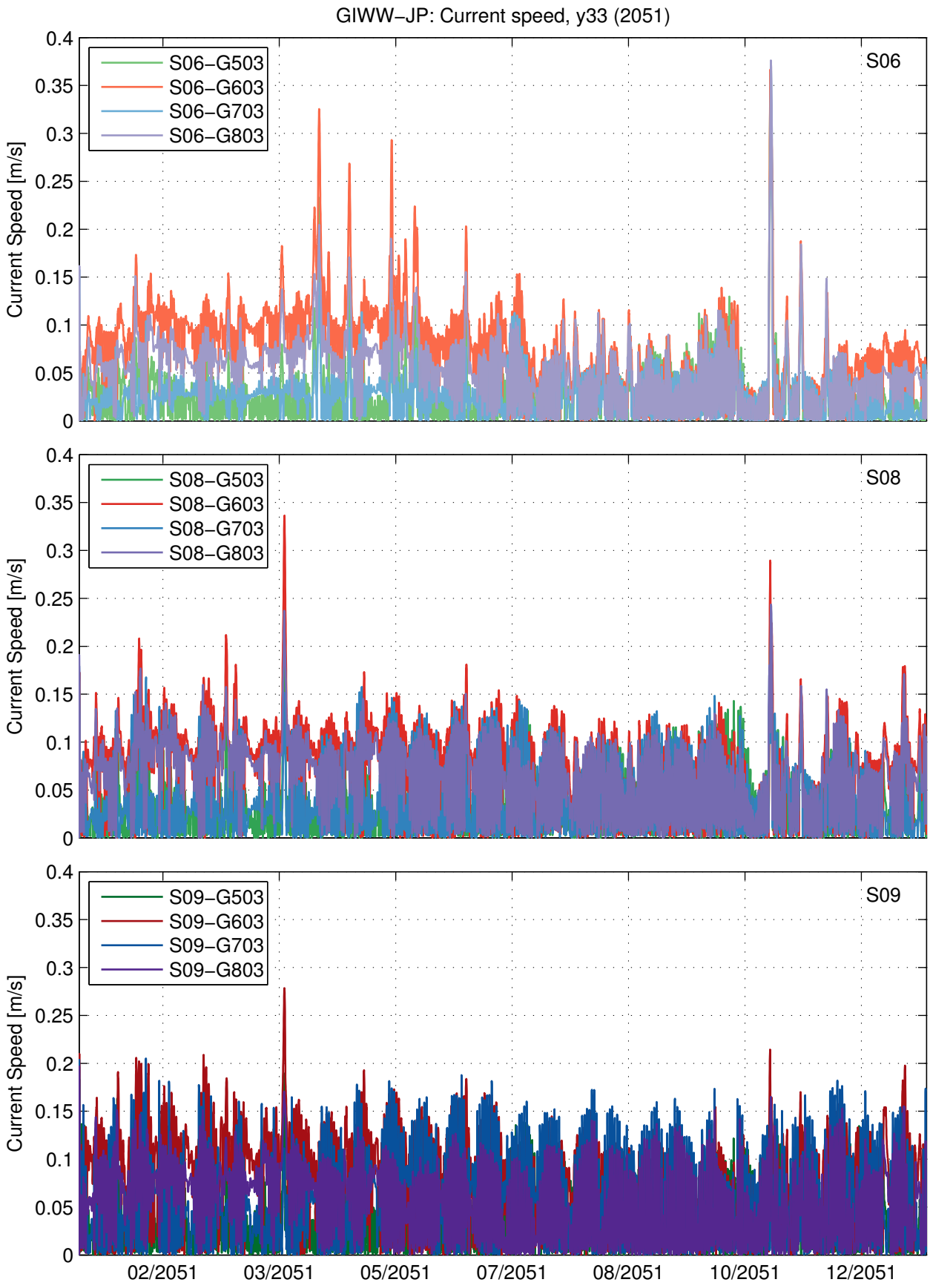

p192: Current speed, y33 (2051)
Current Speed [m/s]
0.05
0.04
0.03
0.02
0.01
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

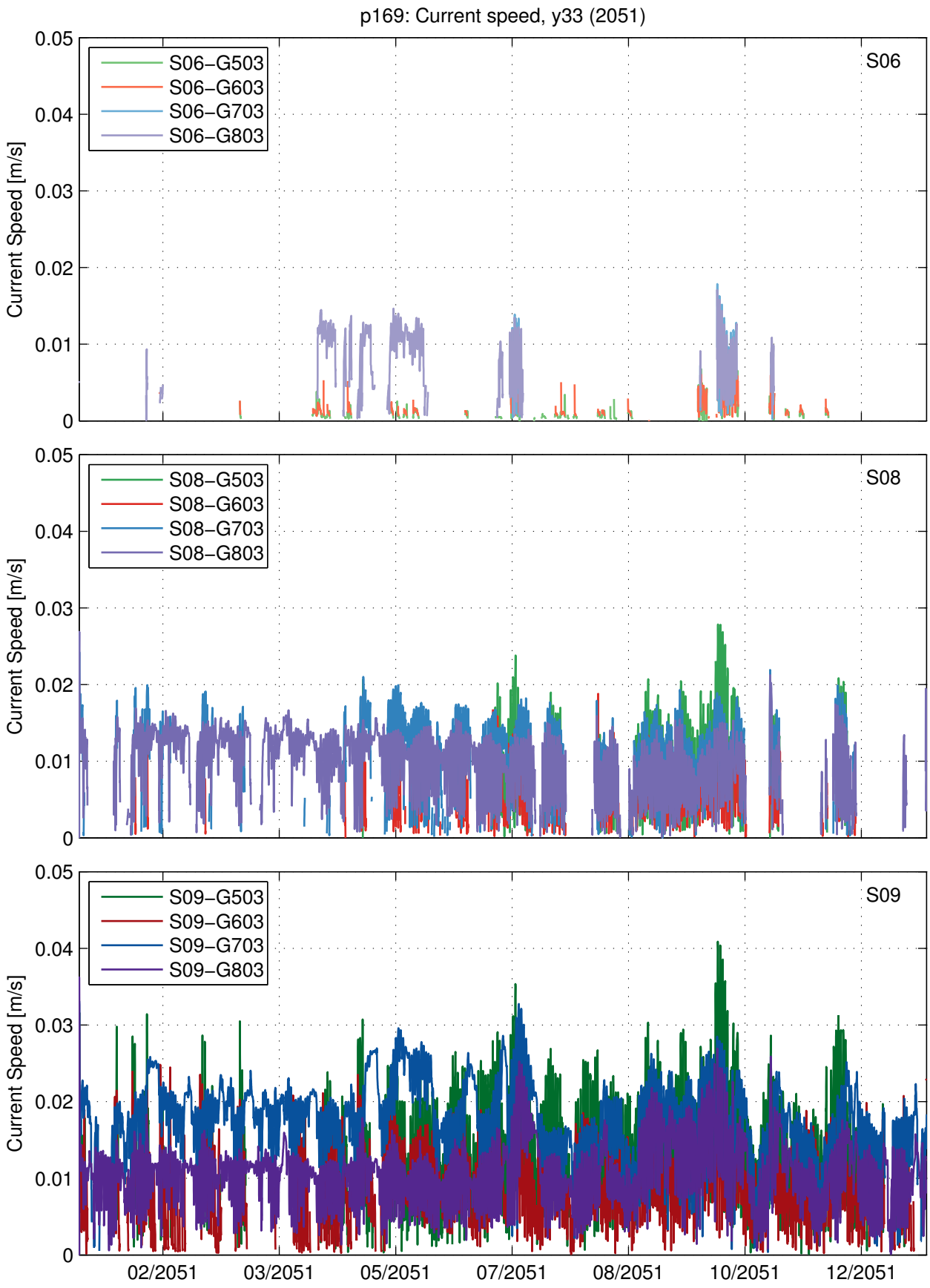

p194: Current speed, y33 (2051)
Current Speed [m/s]
0.025
0.02
0.015
0.01
0.005
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

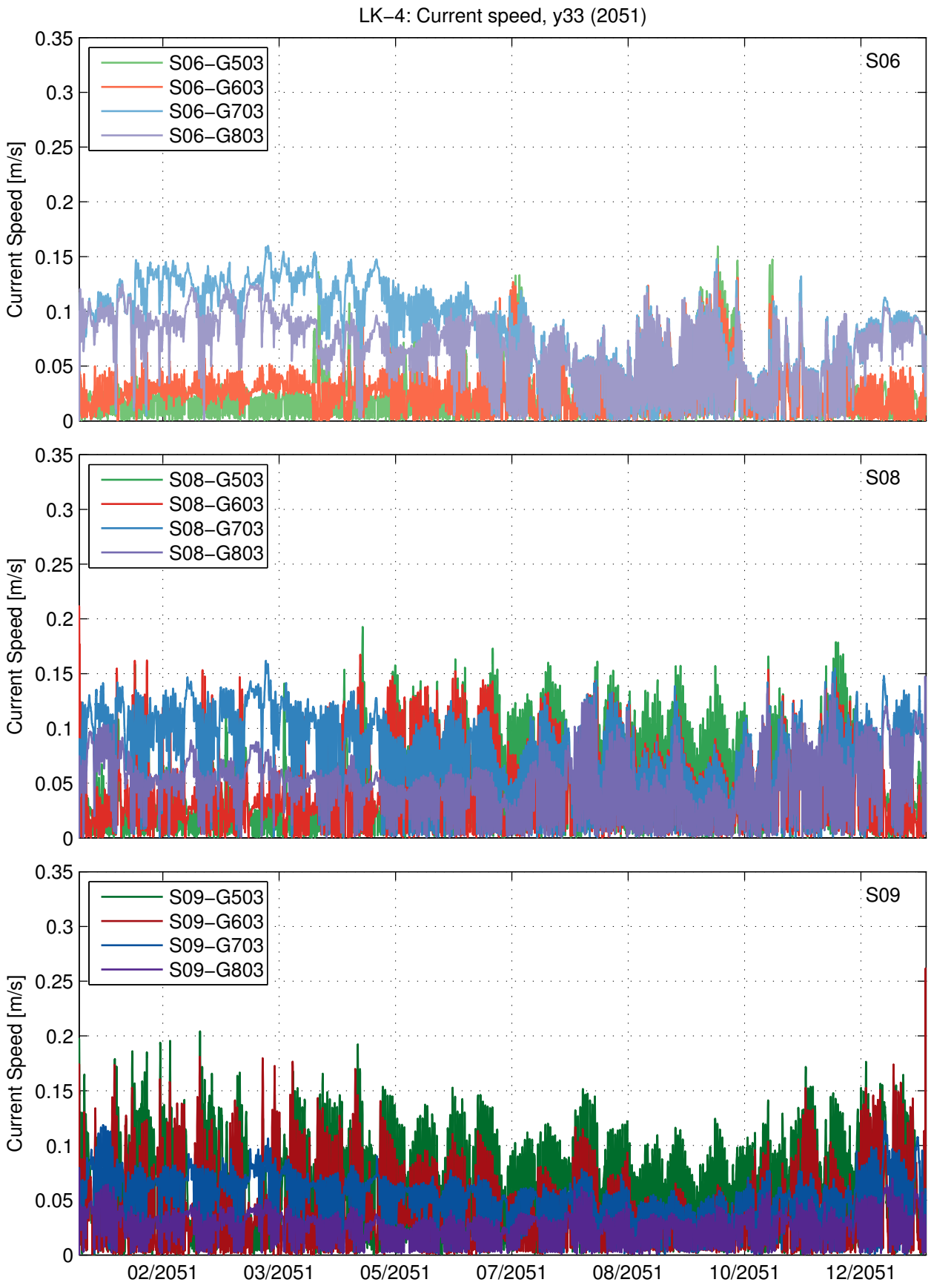

p159: Current speed, y33 (2051)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.02
0.04
0.06
0.08
0.1
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

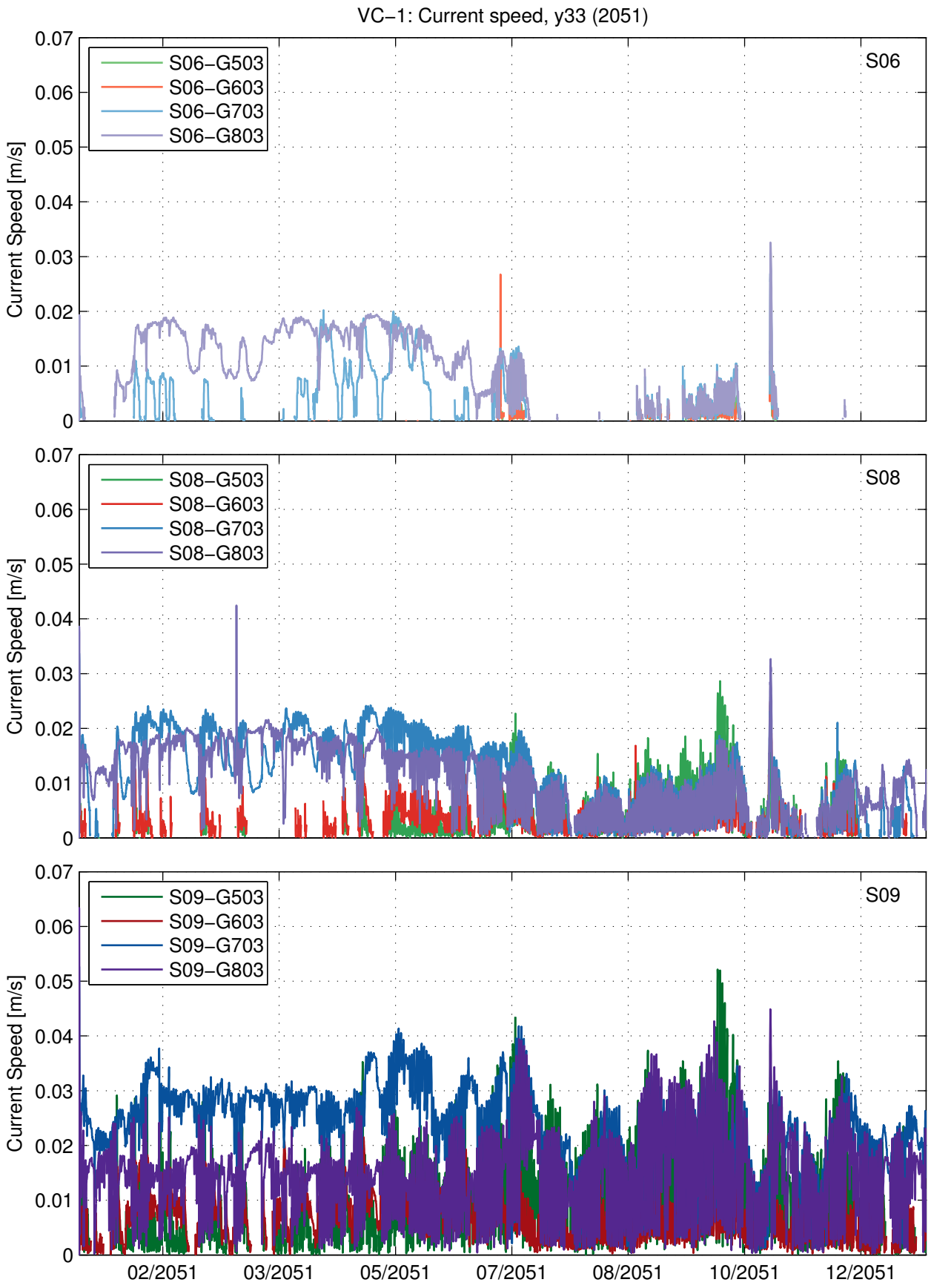

p093: Current speed, y33 (2051)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.02
0.04
0.06
0.08
0.1
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

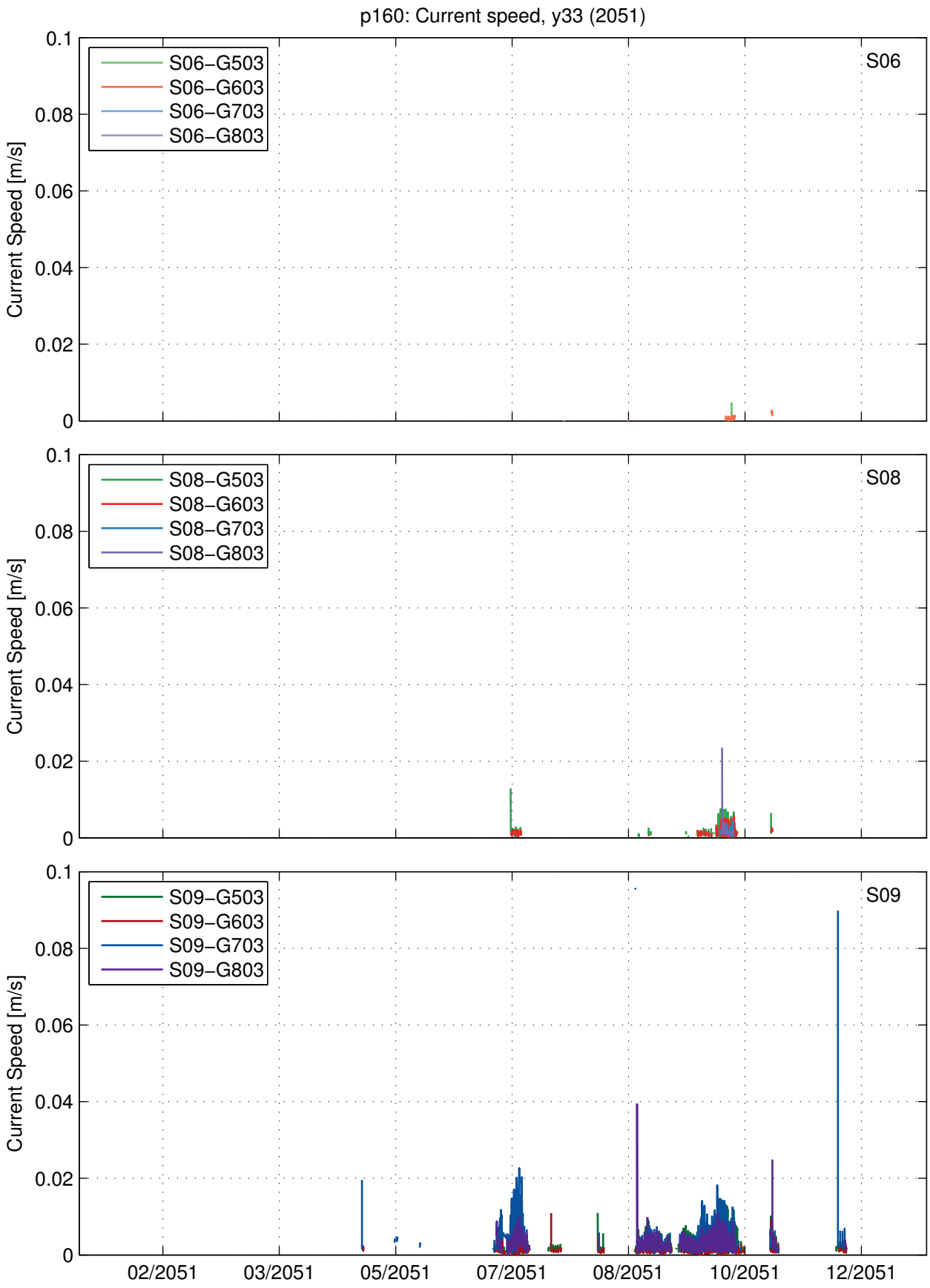

p141: Current speed, y33 (2051)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

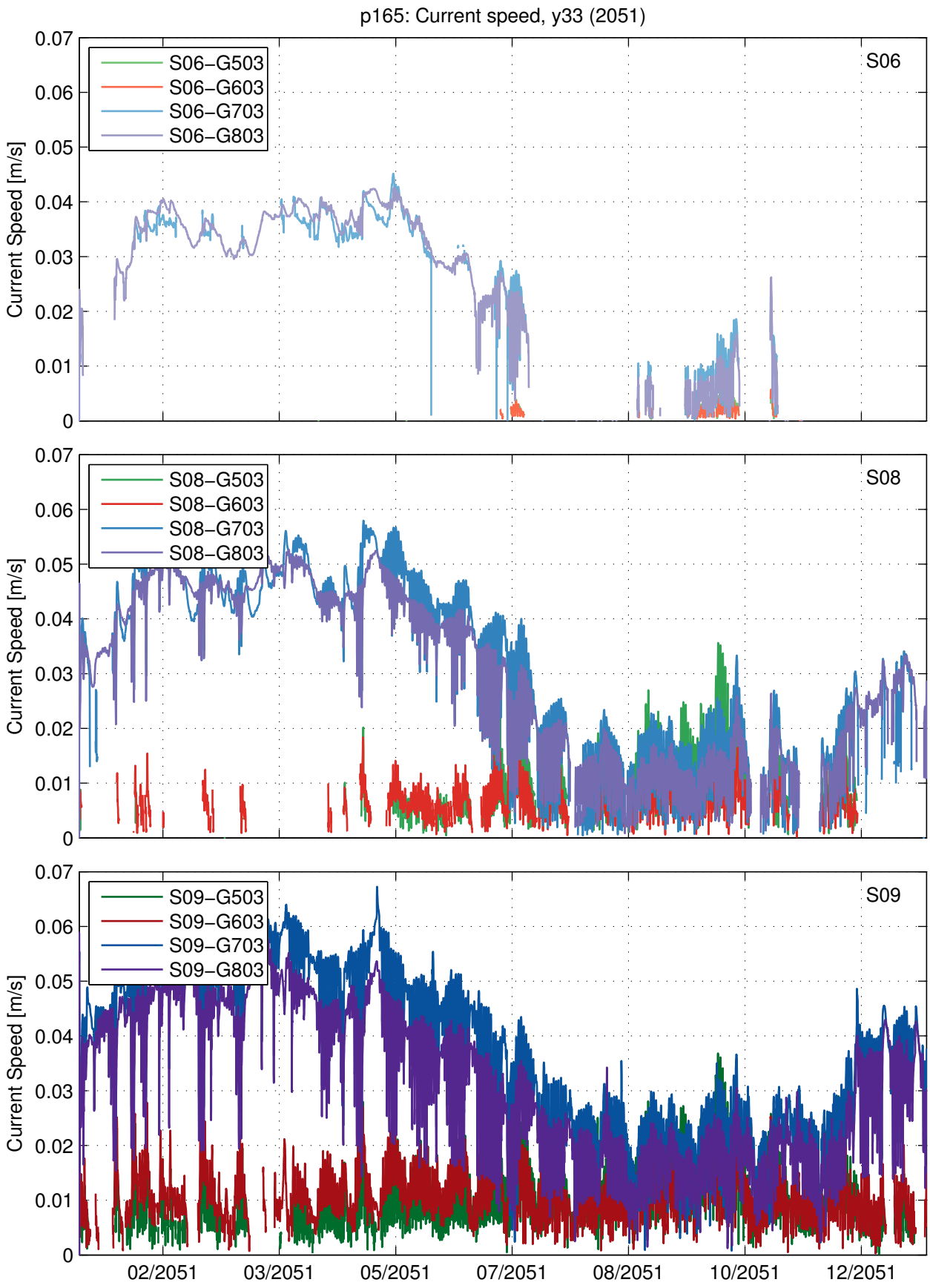

GIWW–JP: Current speed, y33 (2051)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Current Speed [m/s]
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

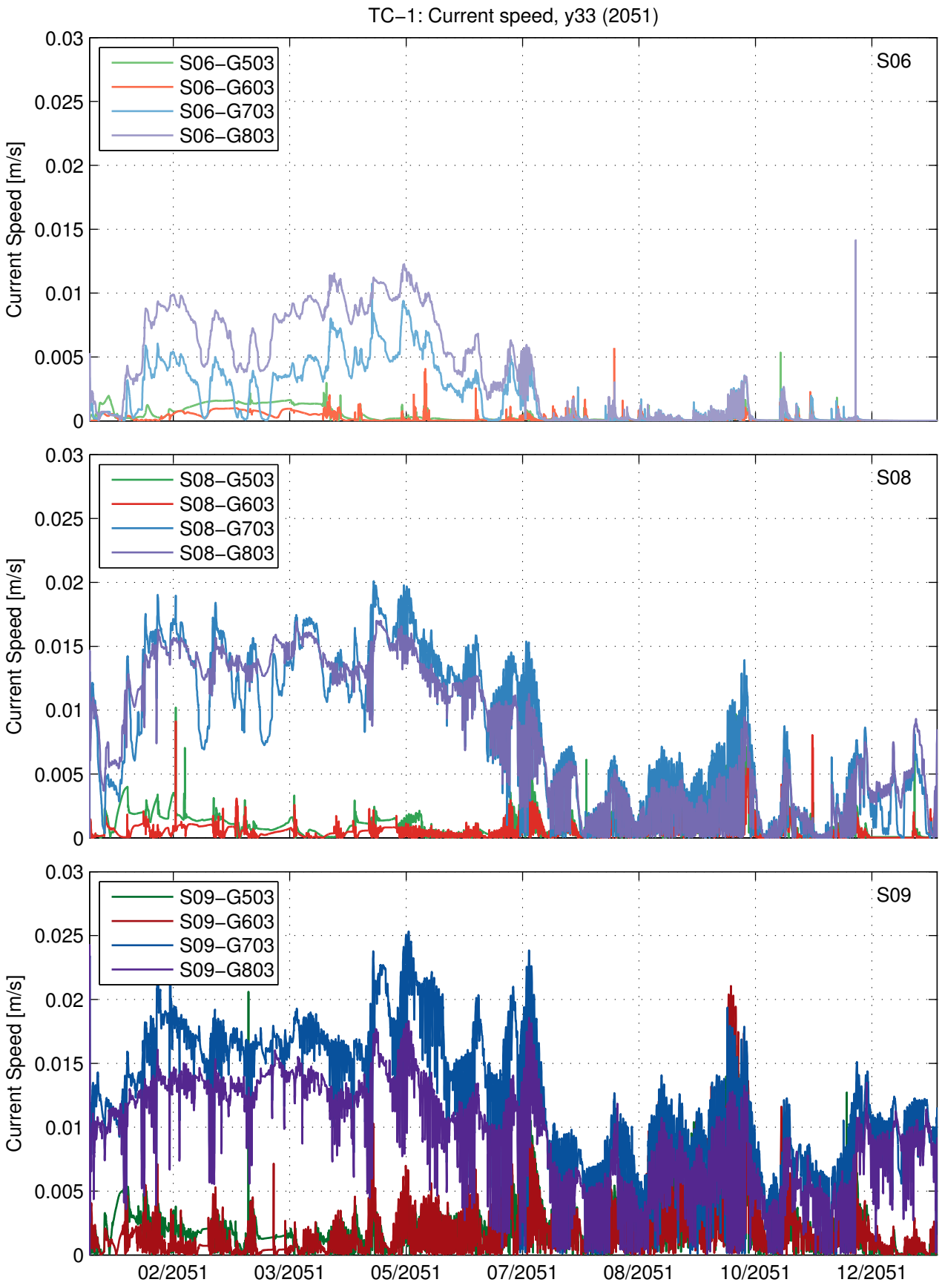

p169: Current speed, y33 (2051)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.01
0.02
0.03
0.04
0.05
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

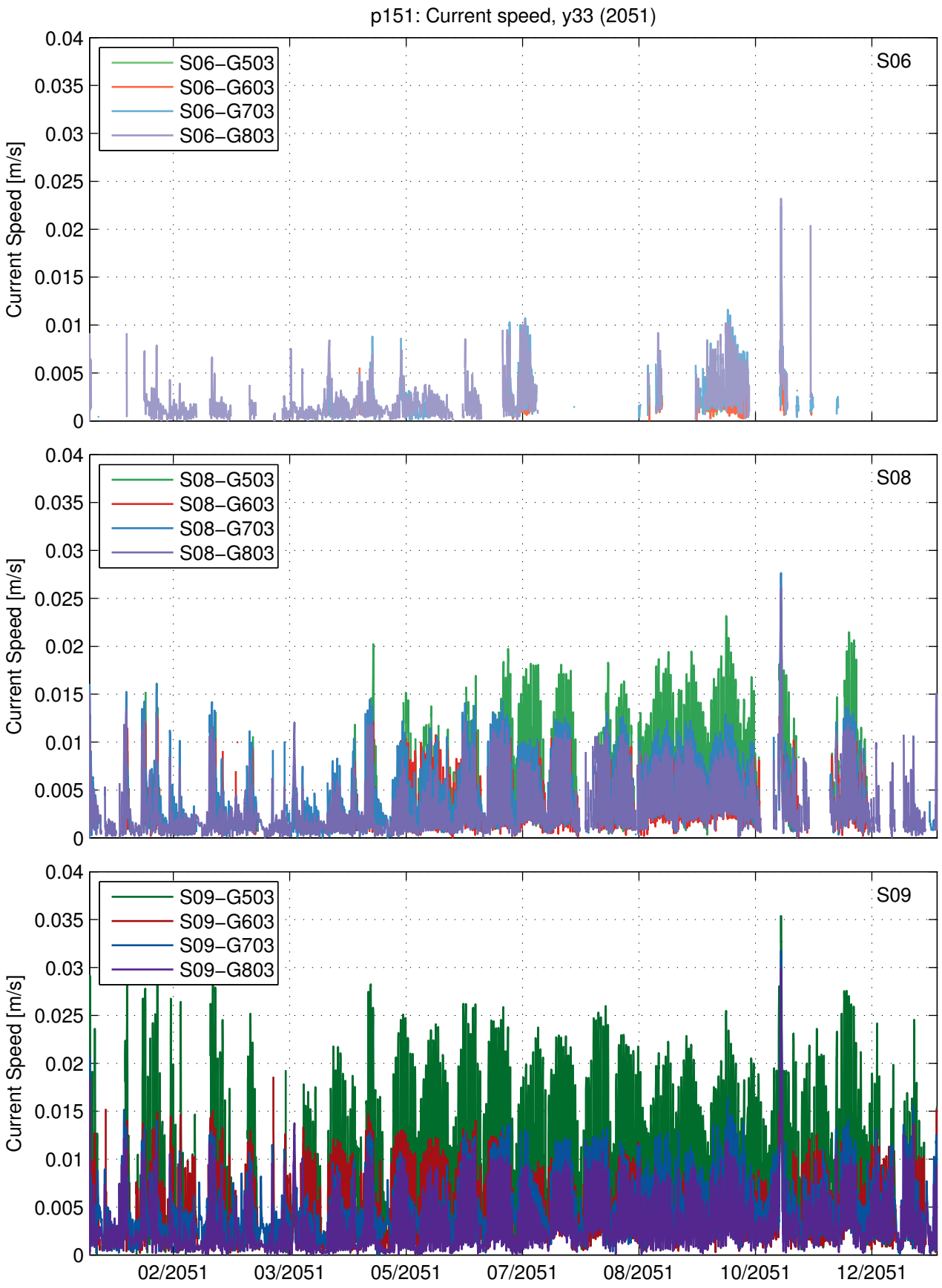

LK−4: Current speed, y33 (2051)
S06−G503
S06−G603
S06−G703
S06−G803
S06
S08−G503
S08−G603
S08−G703
S08−G803
S08
S09−G503
S09−G603
S09−G703
S09−G803
S09
Current Speed [m/s]
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

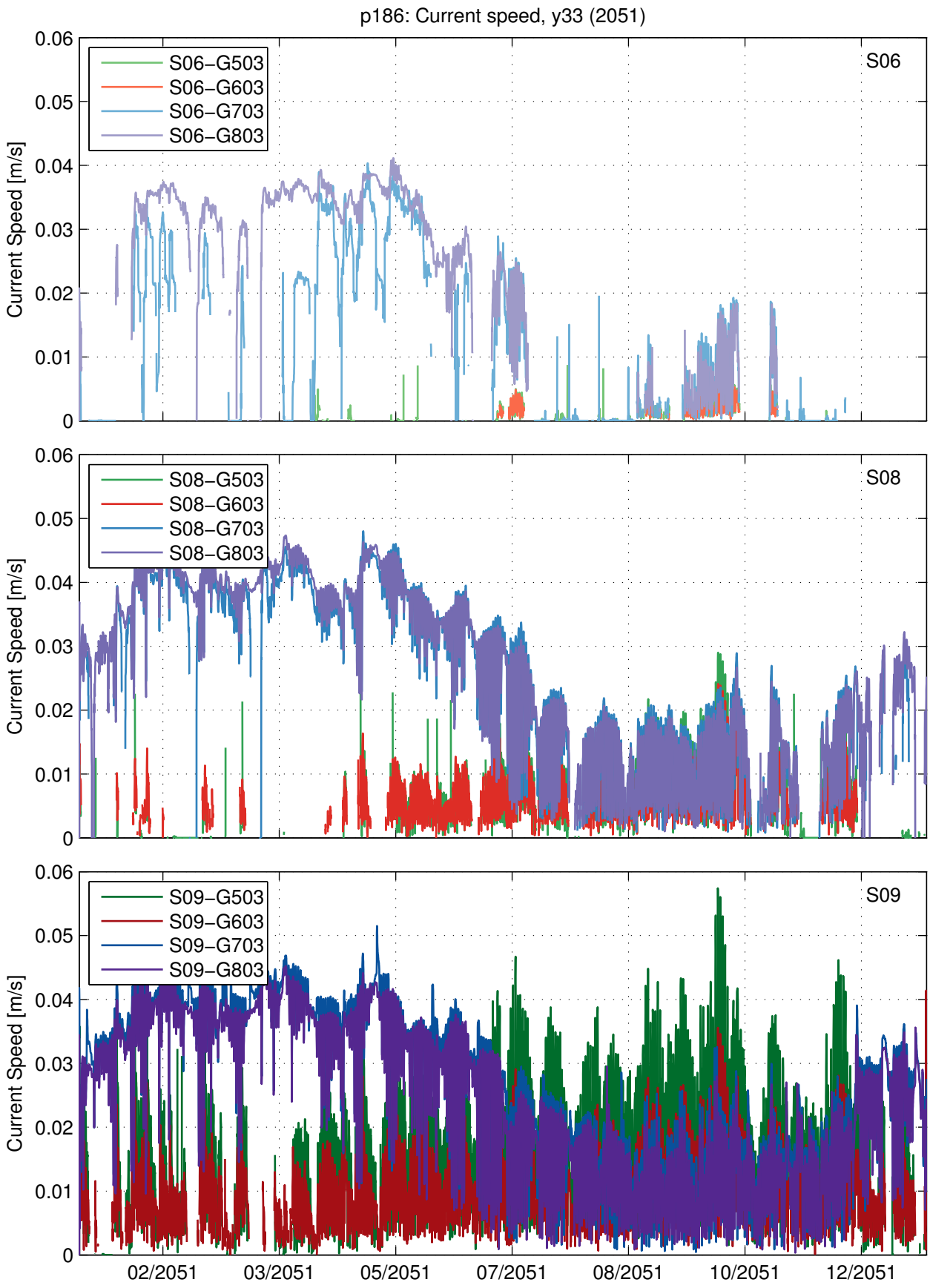

VC−1: Current speed, y33 (2051)
S06
S06−G503
S06−G603
S06−G703
S06−G803
S08
S08−G503
S08−G603
S08−G703
S08−G803
S09
S09−G503
S09−G603
S09−G703
S09−G803
Current Speed [m/s]
0
0.01
0.02
0.03
0.04
0.05
0.06
0.07
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

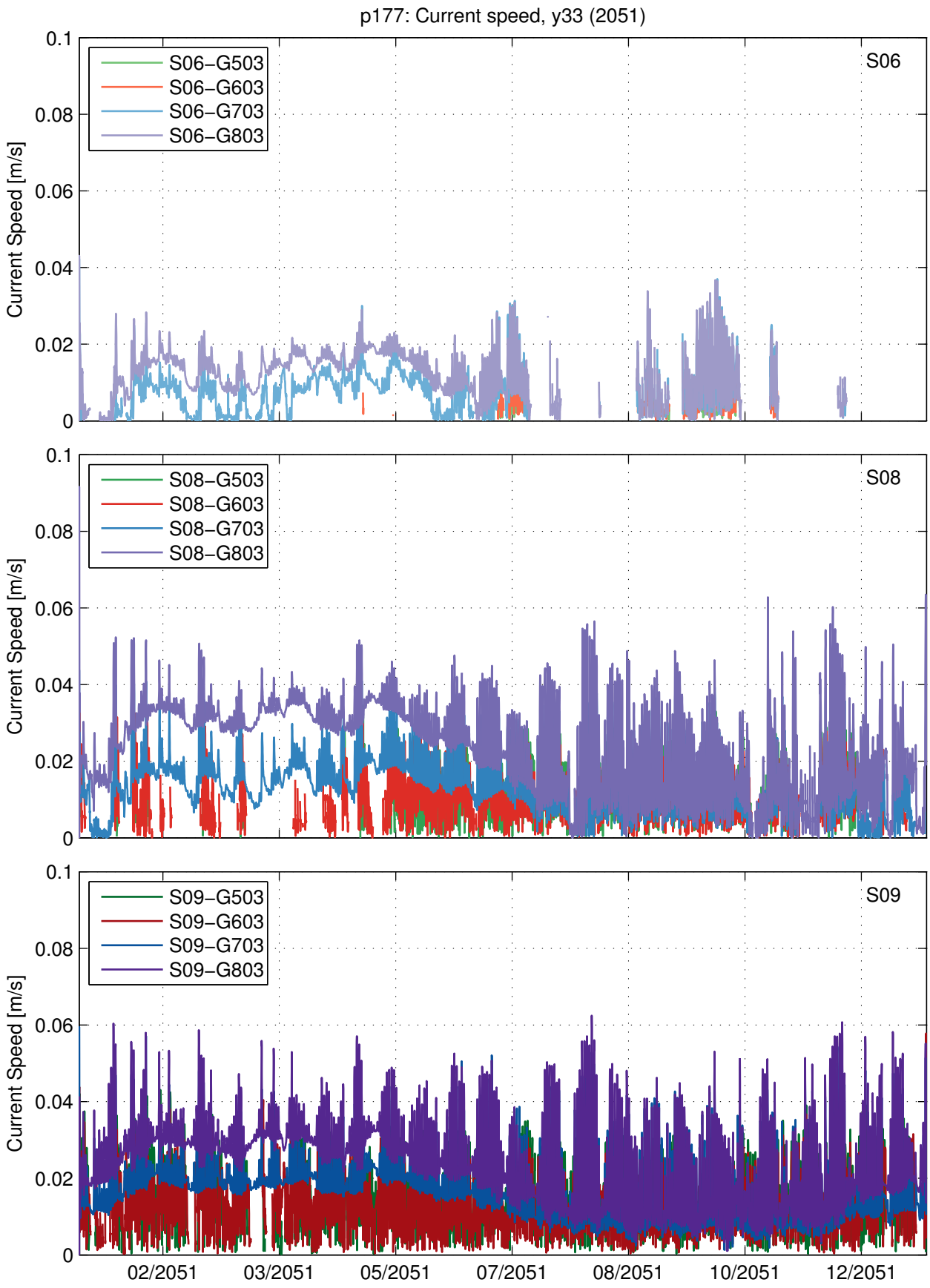

p160: Current speed, y33 (2051)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.02
0.04
0.06
0.08
0.1
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

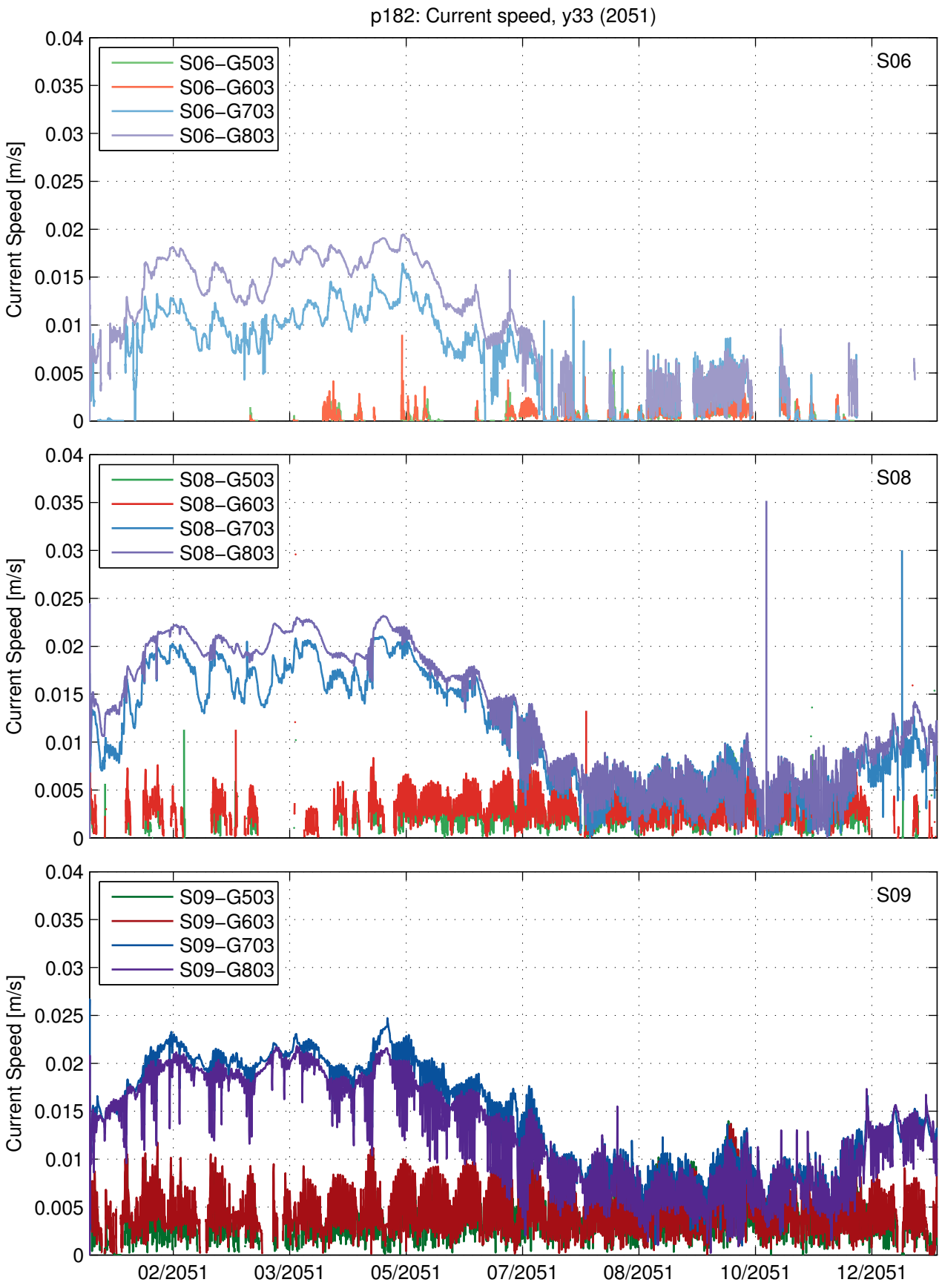

p165: Current speed, y33 (2051)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.01
0.02
0.03
0.04
0.05
0.06
0.07
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

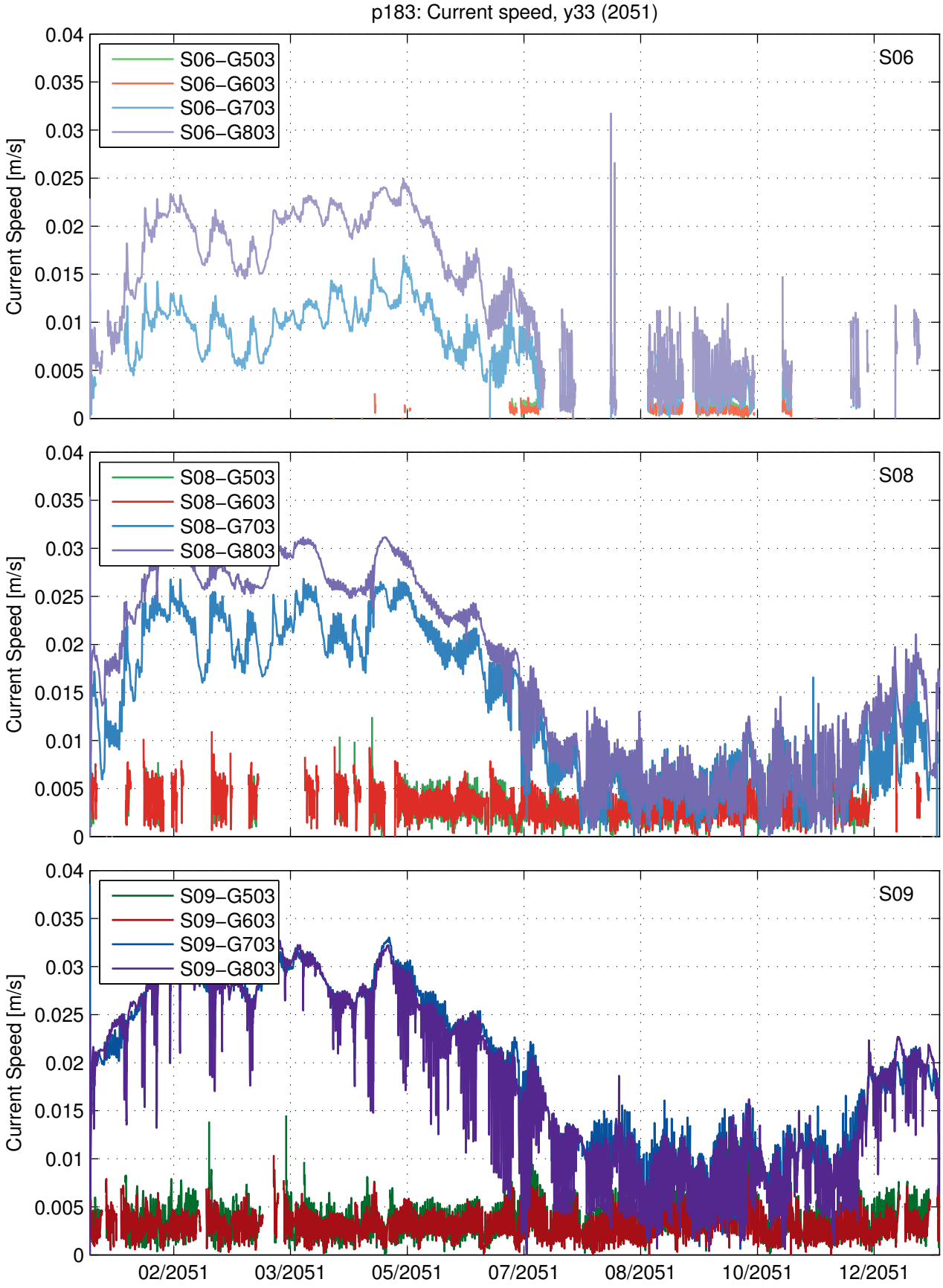

TC−1: Current speed, y33 (2051)
S06−G503
S06−G603
S06−G703
S06−G803
S06
S08−G503
S08−G603
S08−G703
S08−G803
S08
S09−G503
S09−G603
S09−G703
S09−G803
S09
Current Speed [m/s]
0
0.005
0.01
0.015
0.02
0.025
0.03
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

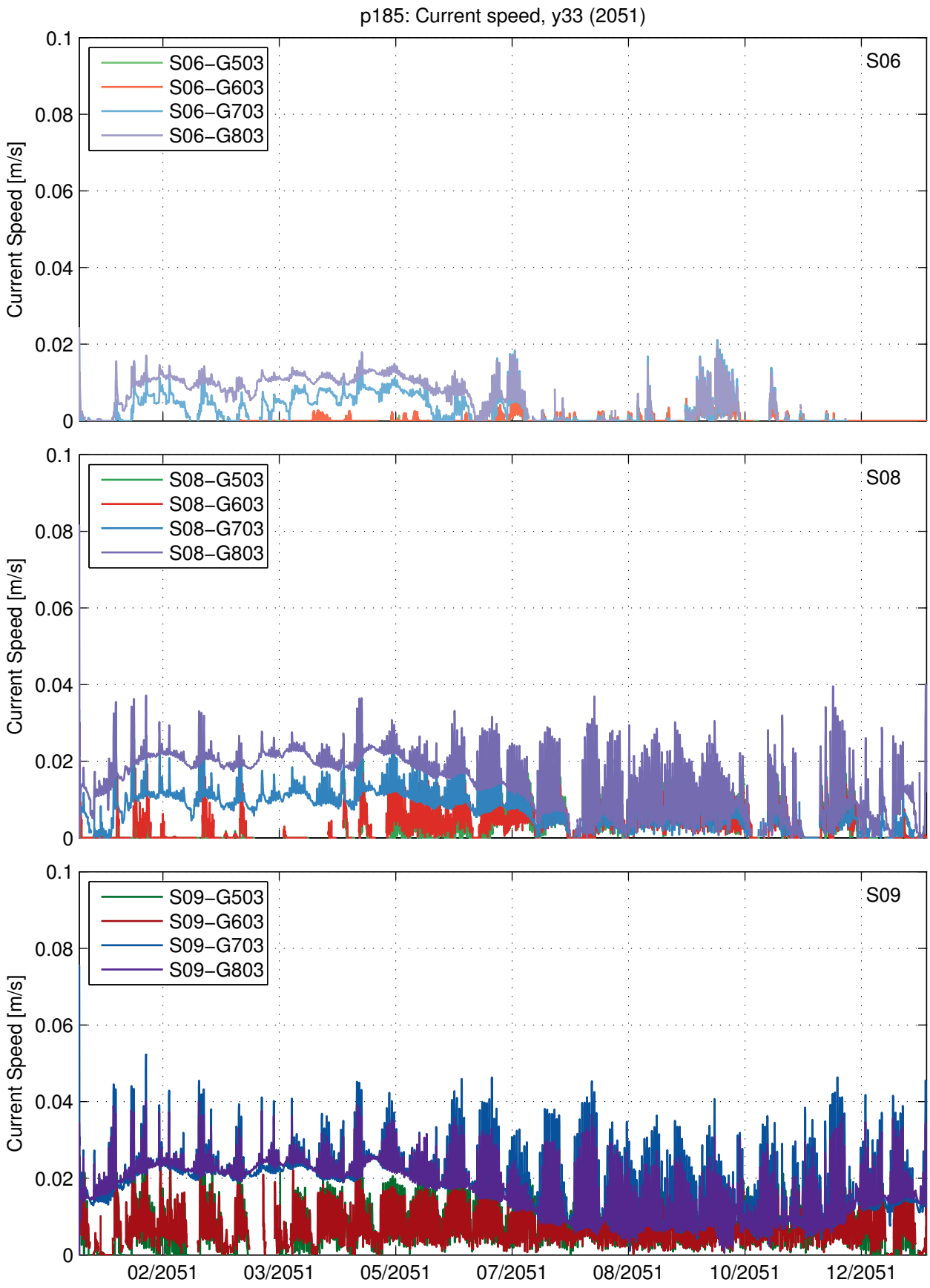

p151: Current speed, y33 (2051)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.005
0.01
0.015
0.02
0.025
0.03
0.035
0.04
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

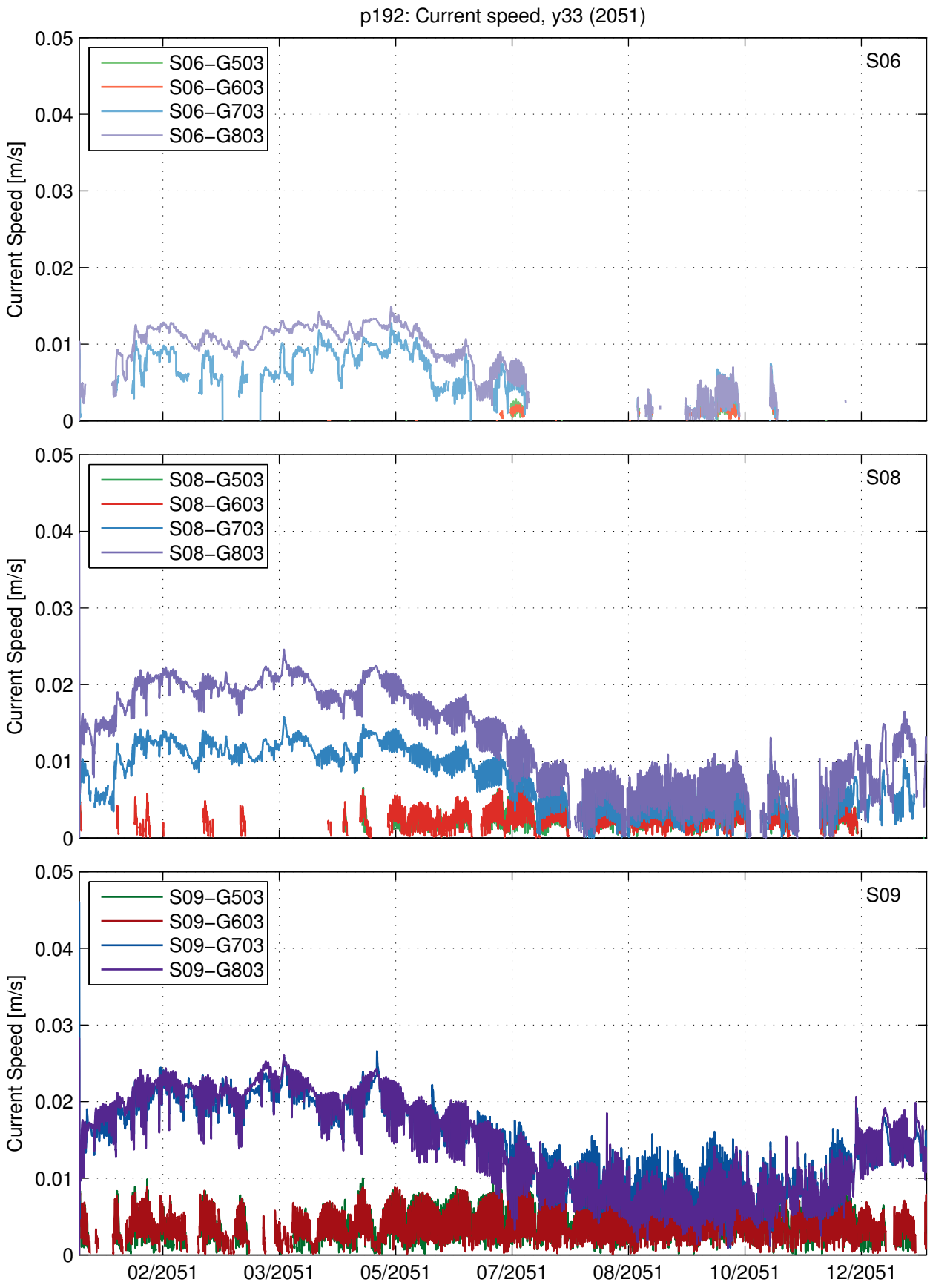

p186: Current speed, y33 (2051)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.01
0.02
0.03
0.04
0.05
0.06
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

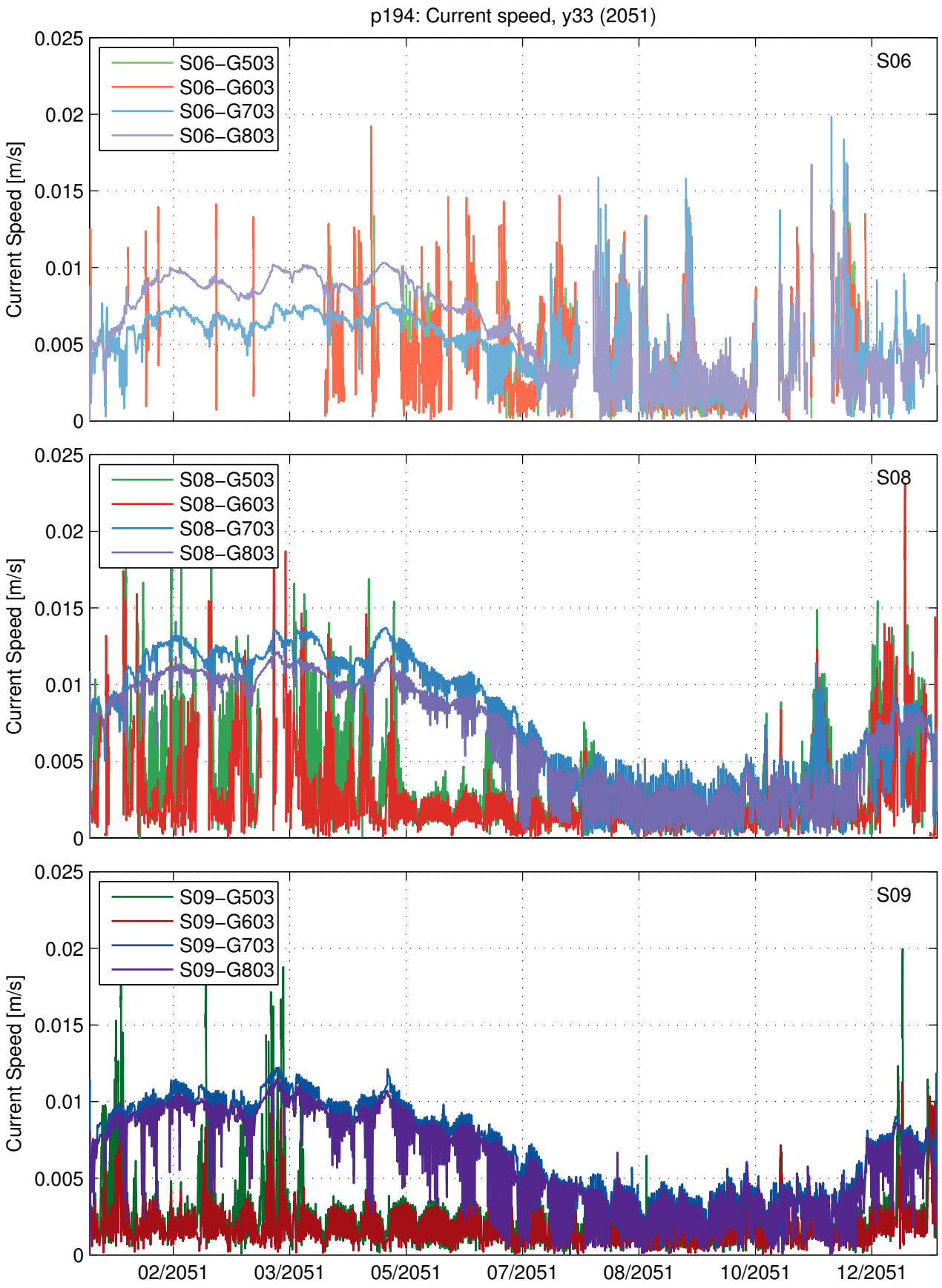

p177: Current speed, y33 (2051)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.02
0.04
0.06
0.08
0.1
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

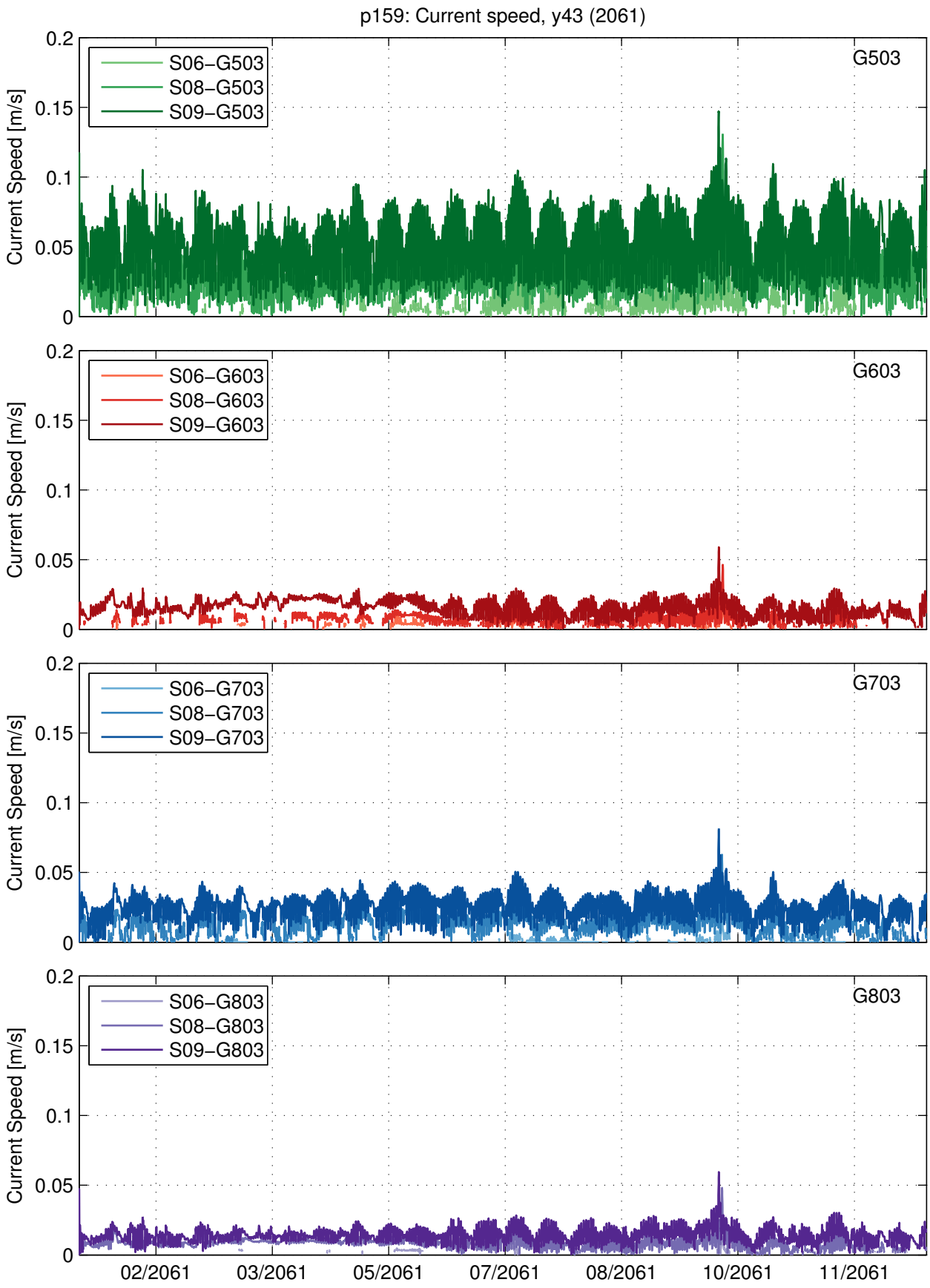

p182: Current speed, y33 (2051)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.005
0.01
0.015
0.02
0.025
0.03
0.035
0.04
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

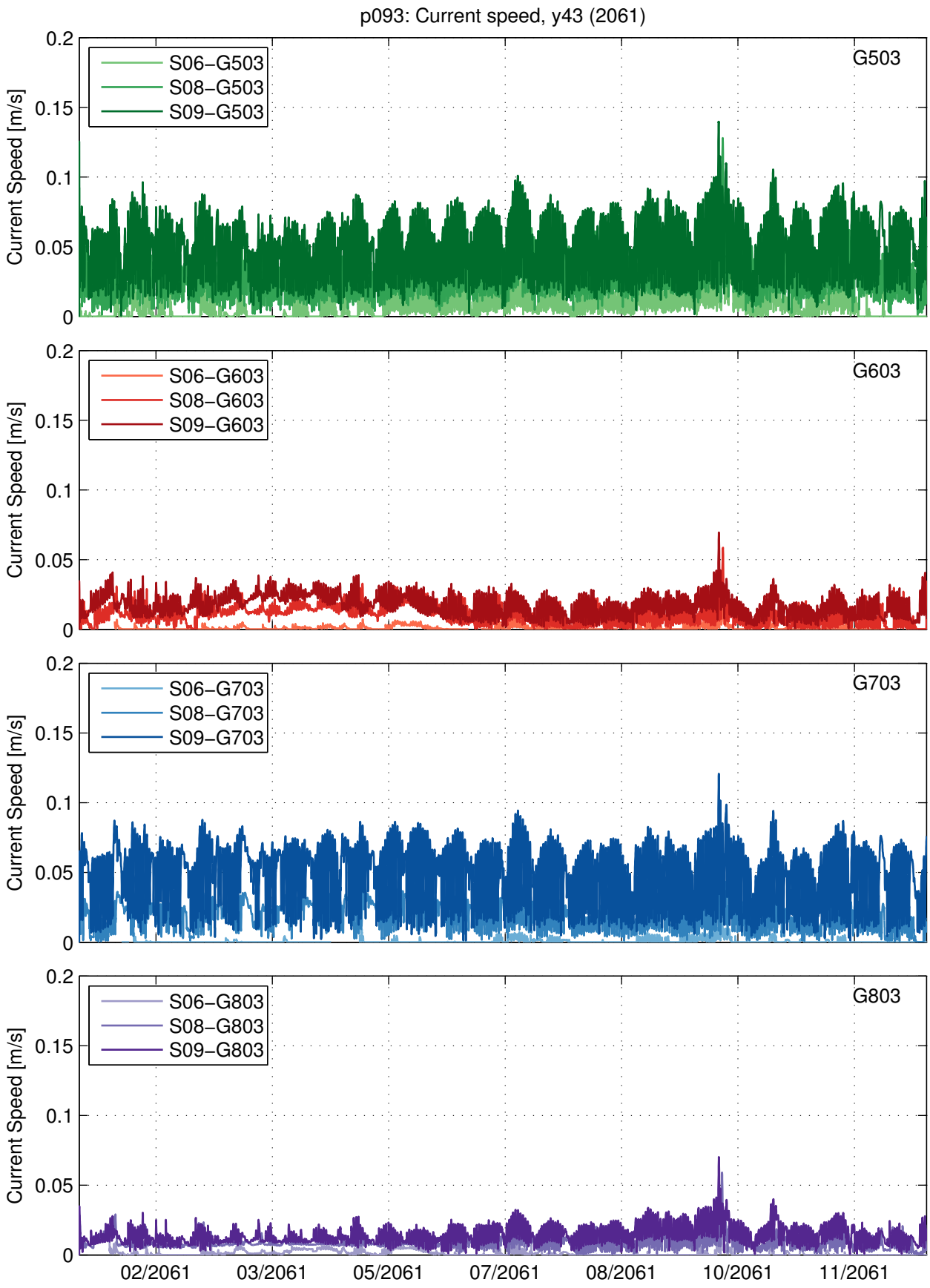

p183: Current speed, y33 (2051)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.005
0.01
0.015
0.02
0.025
0.03
0.035
0.04
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

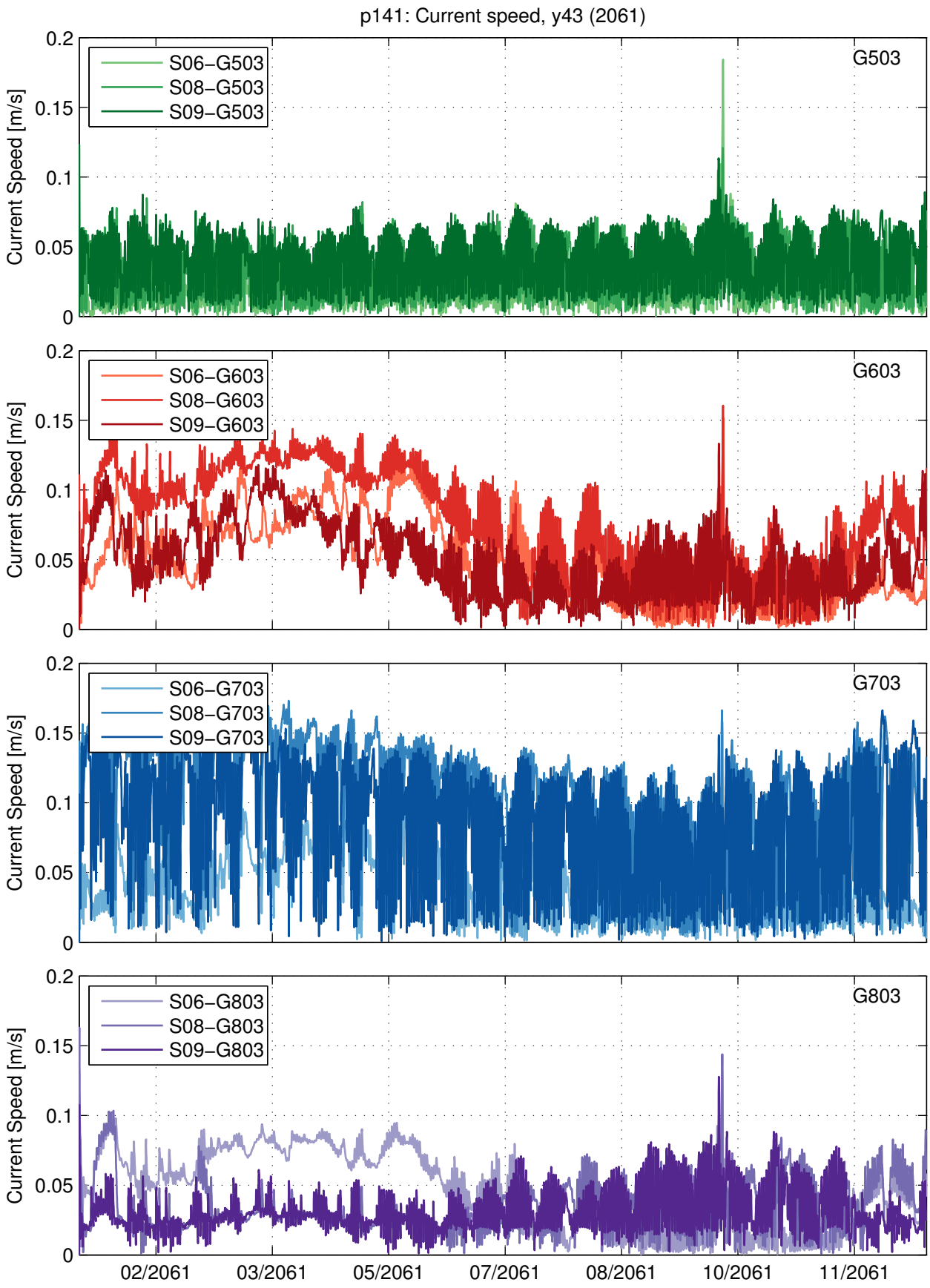

p185: Current speed, y33 (2051)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.02
0.04
0.06
0.08
0.1
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

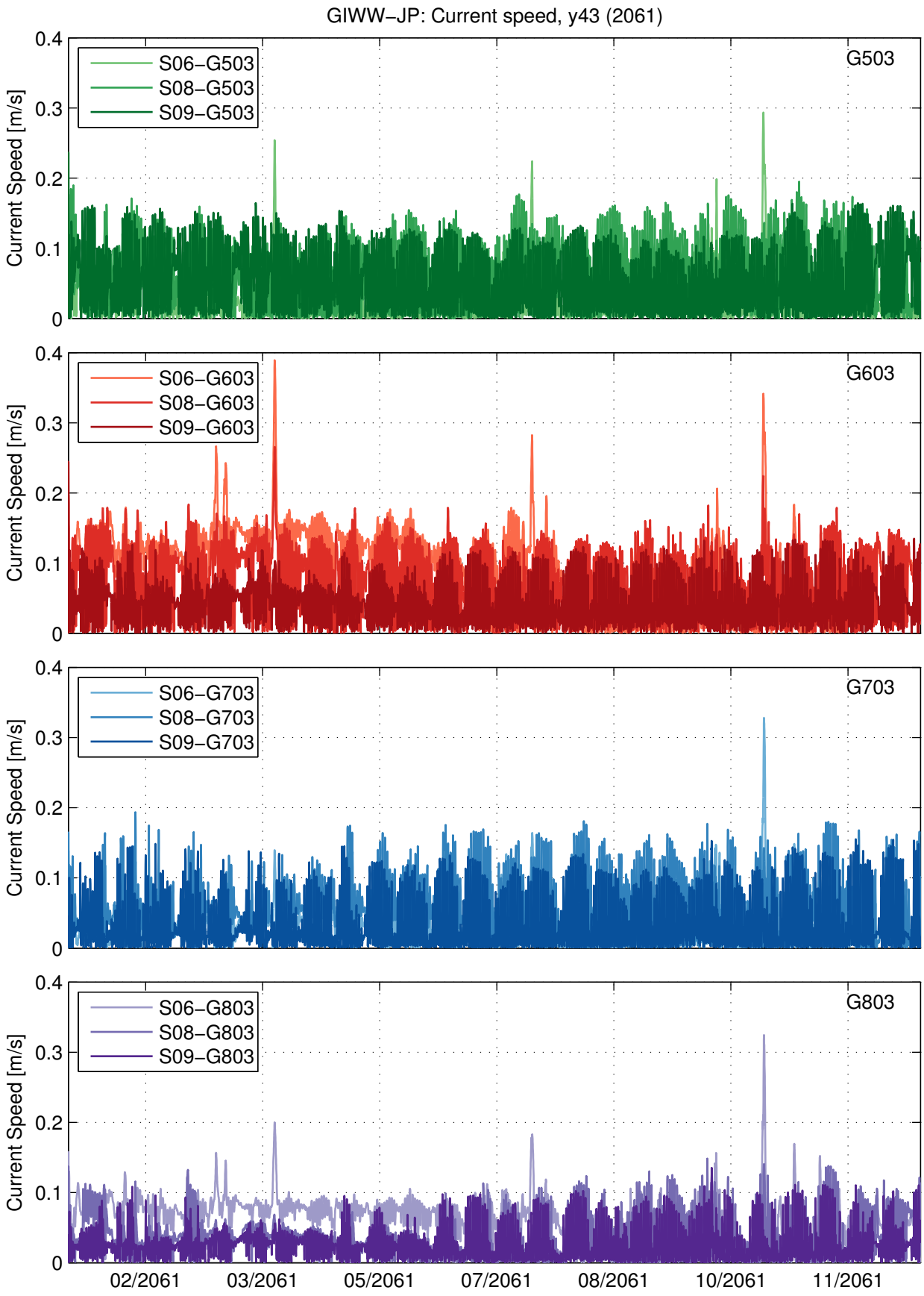

p192: Current speed, y33 (2051)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.01
0.02
0.03
0.04
0.05
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

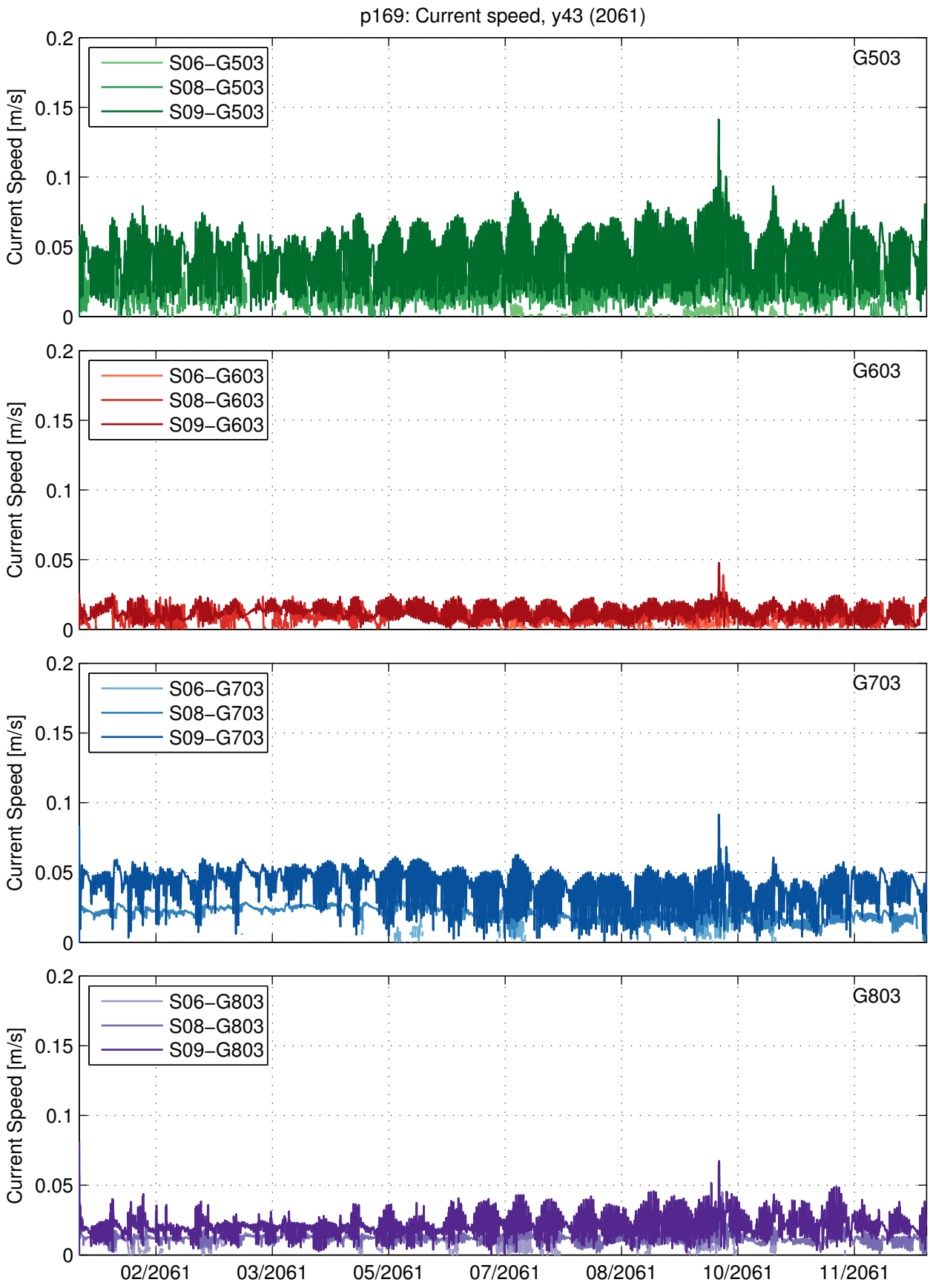

p194: Current speed, y33 (2051)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.005
0.01
0.015
0.02
0.025
02/2051
03/2051
05/2051
07/2051
08/2051
10/2051
12/2051

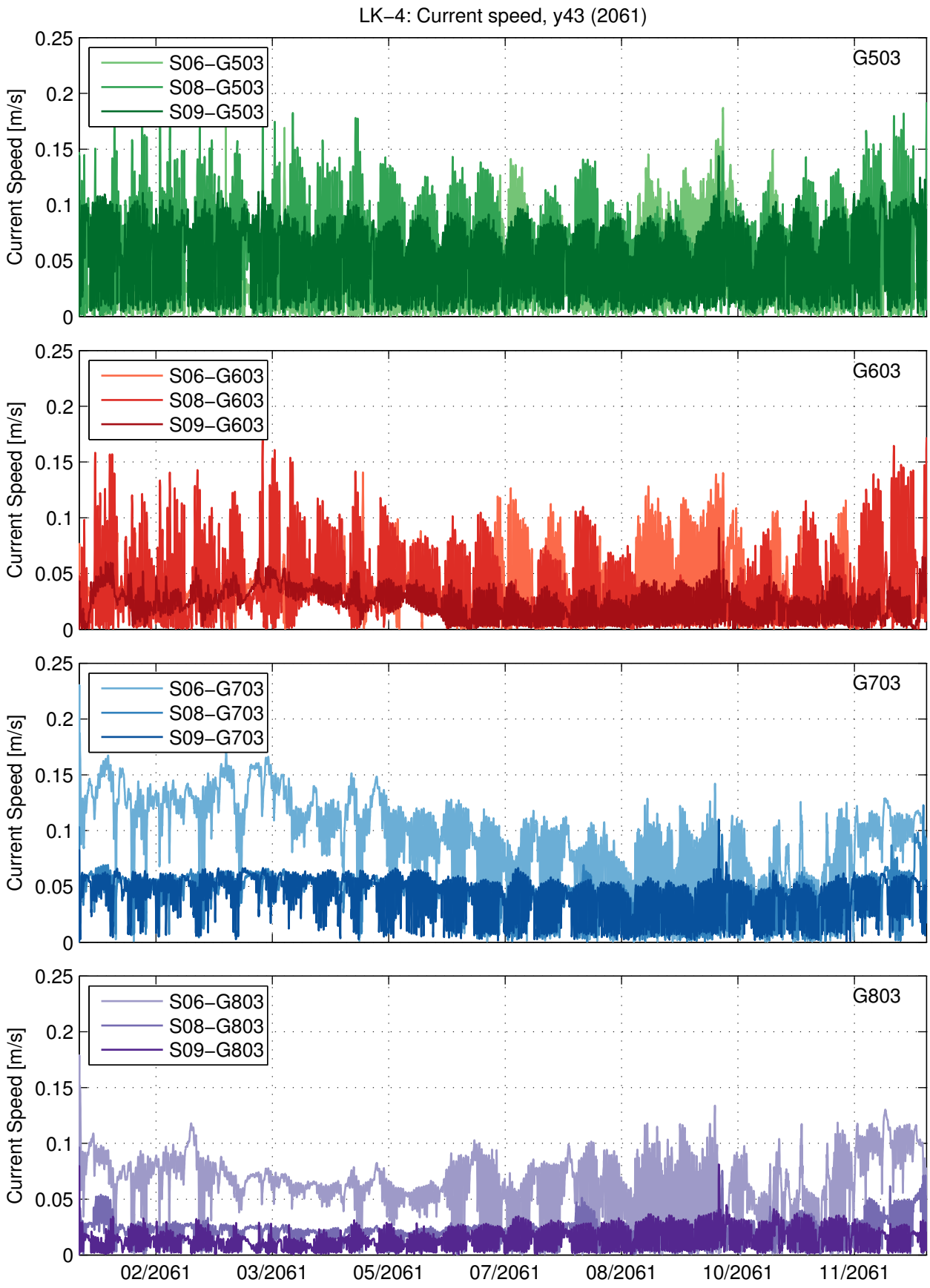

p159: Current speed, y43 (2061)
Current Speed [m/s]
0.2
0.15
0.1
0.05
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

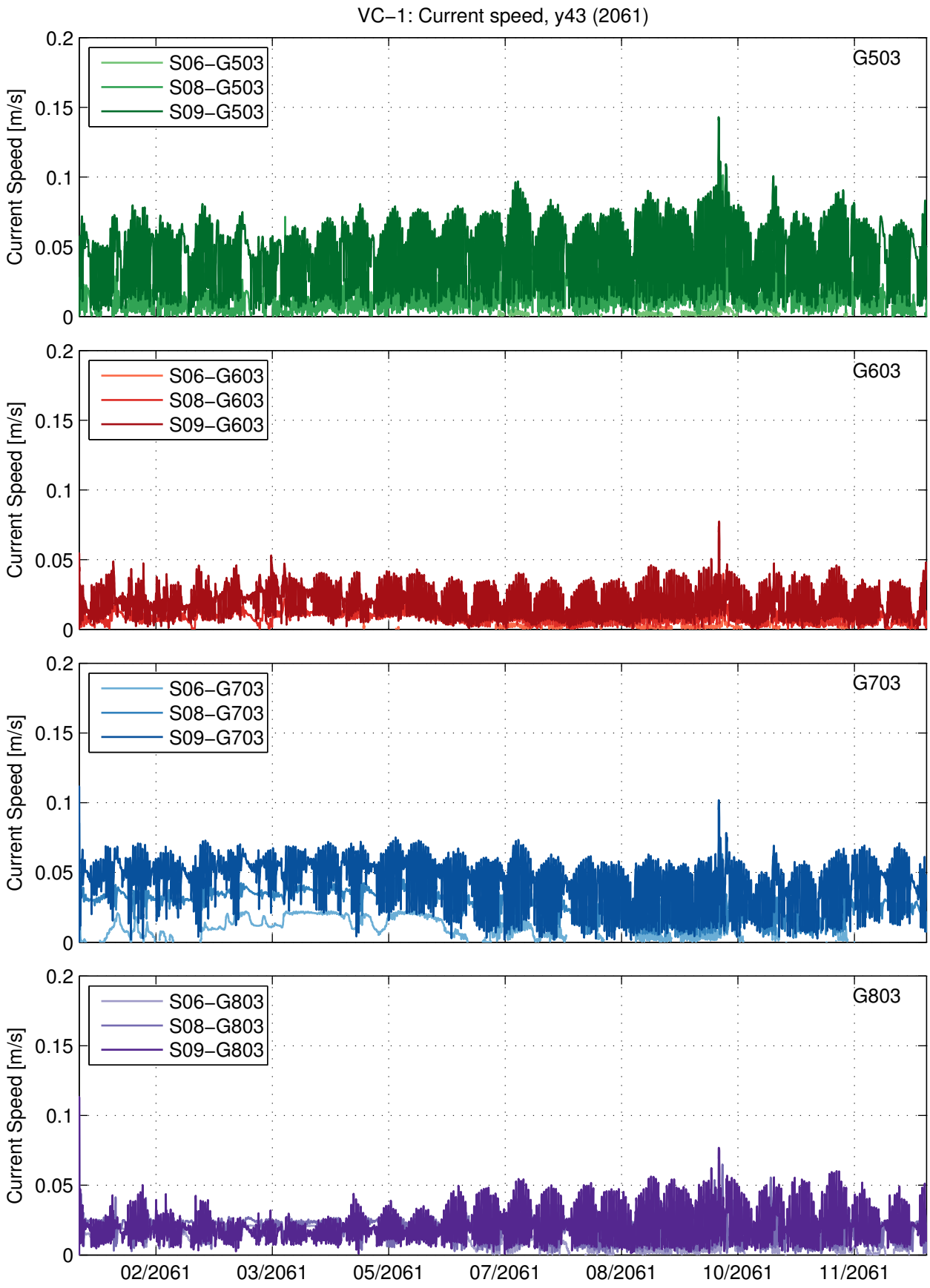

p093: Current speed, y43 (2061)
Current Speed [m/s]
0.2
0.15
0.1
0.05
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

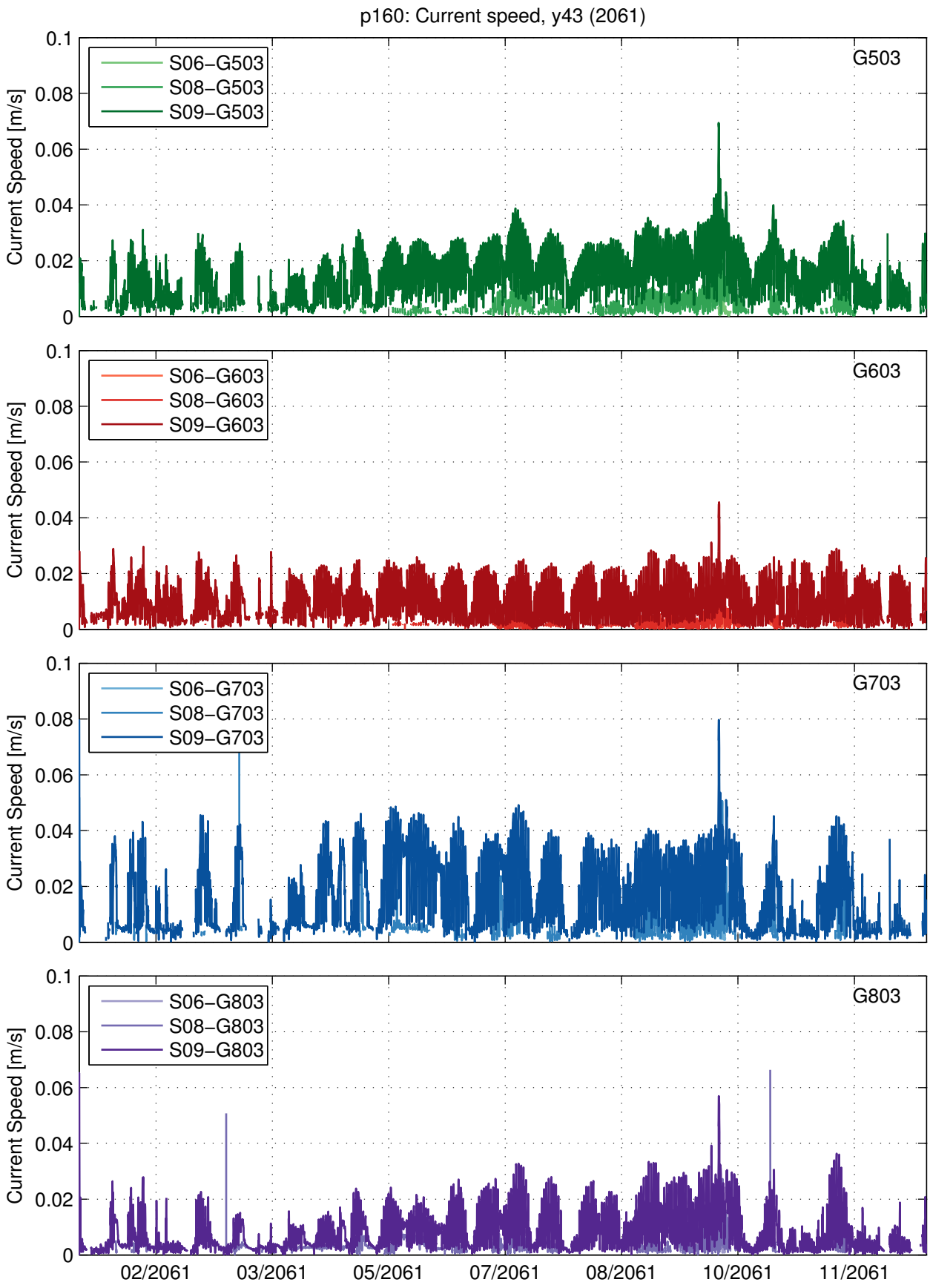

p141: Current speed, y43 (2061)
Current Speed [m/s]
0
0.05
0.1
0.15
0.2
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

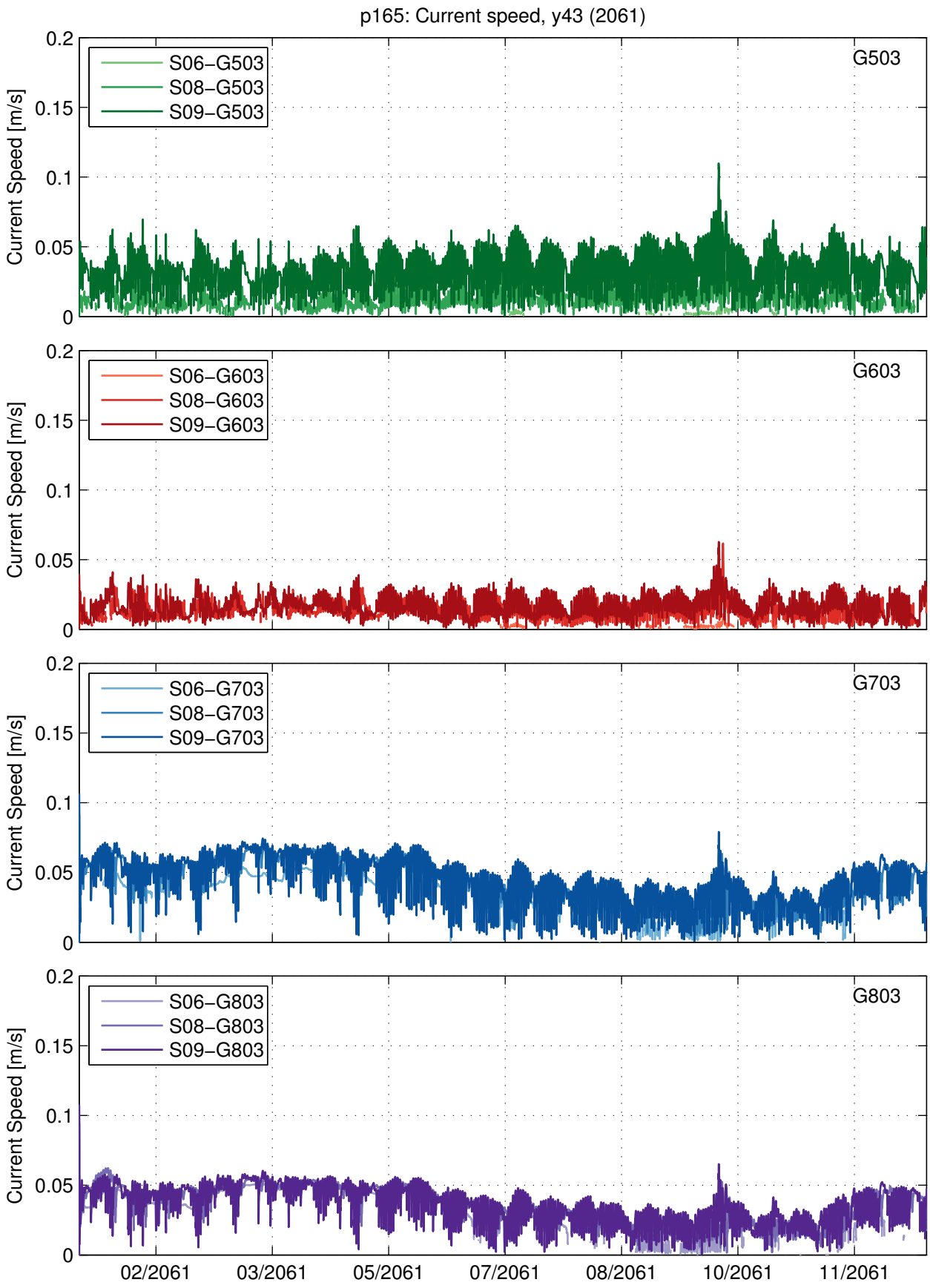

GIWW–JP: Current speed, y43 (2061)
Current Speed [m/s]
0
0.1
0.2
0.3
0.4
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

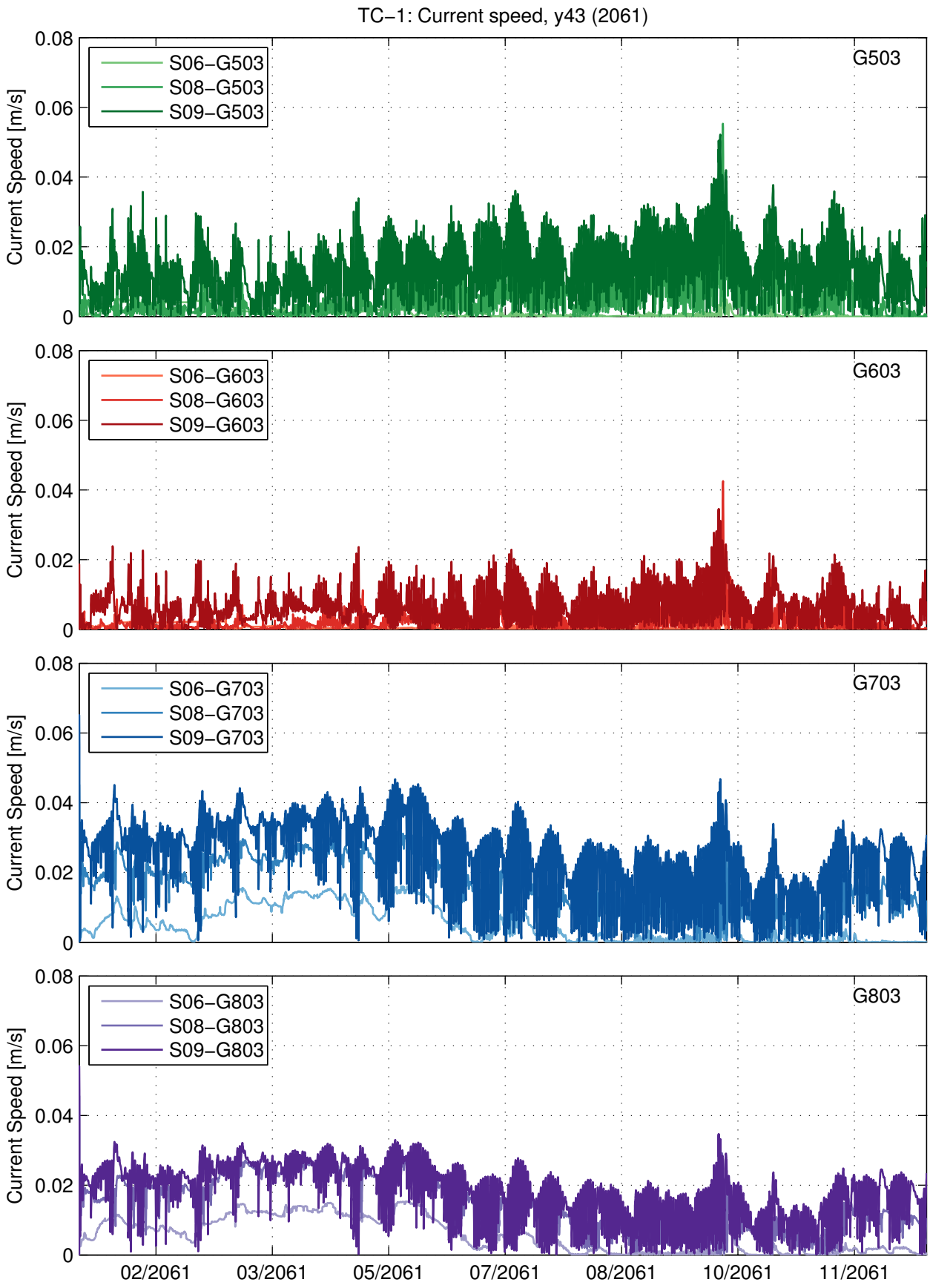

p169: Current speed, y43 (2061)
Current Speed [m/s]
0.2
0.15
0.1
0.05
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

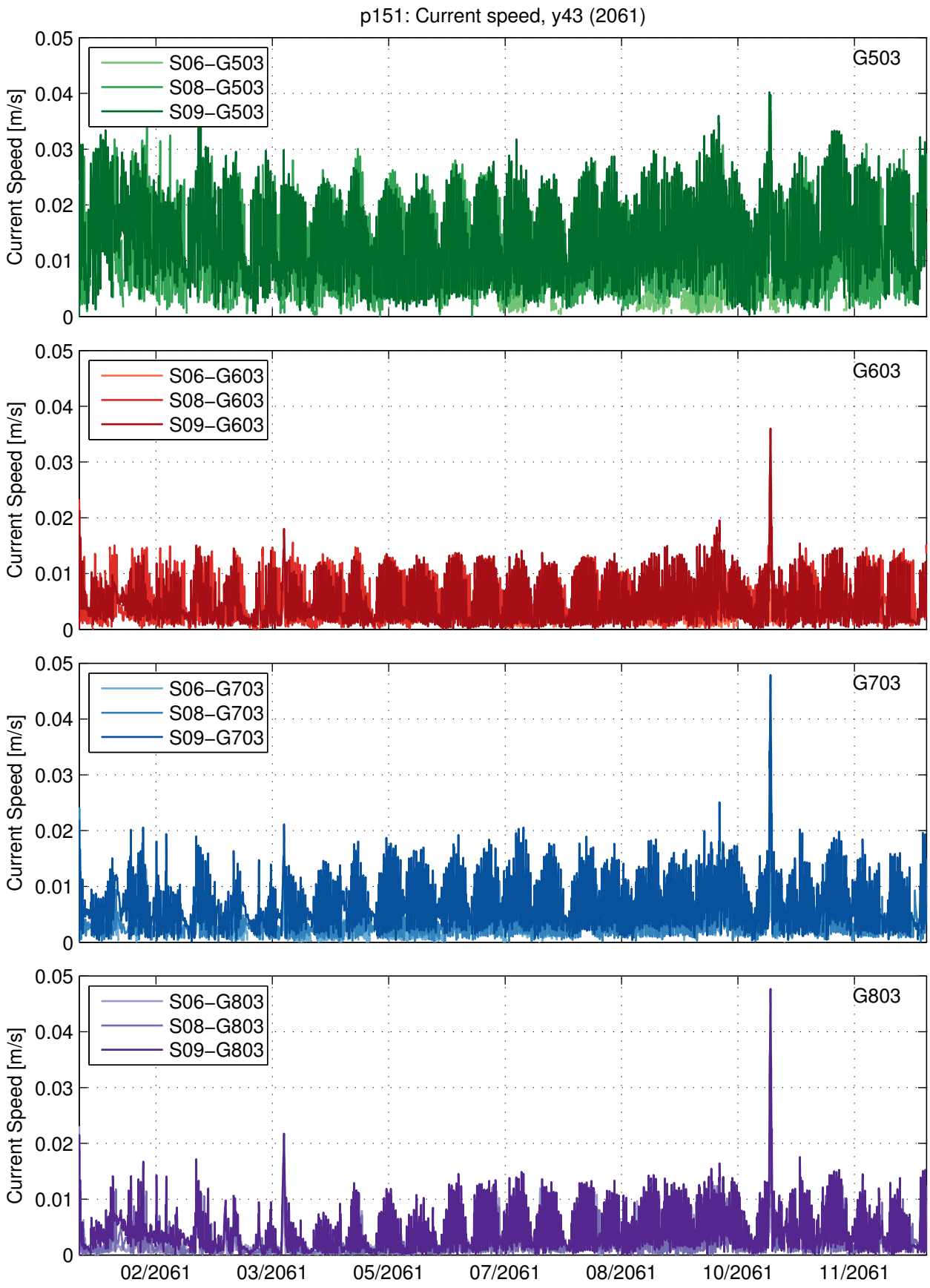

LK–4: Current speed, y43 (2061)
Current Speed [m/s]
0.25
0.2
0.15
0.1
0.05
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

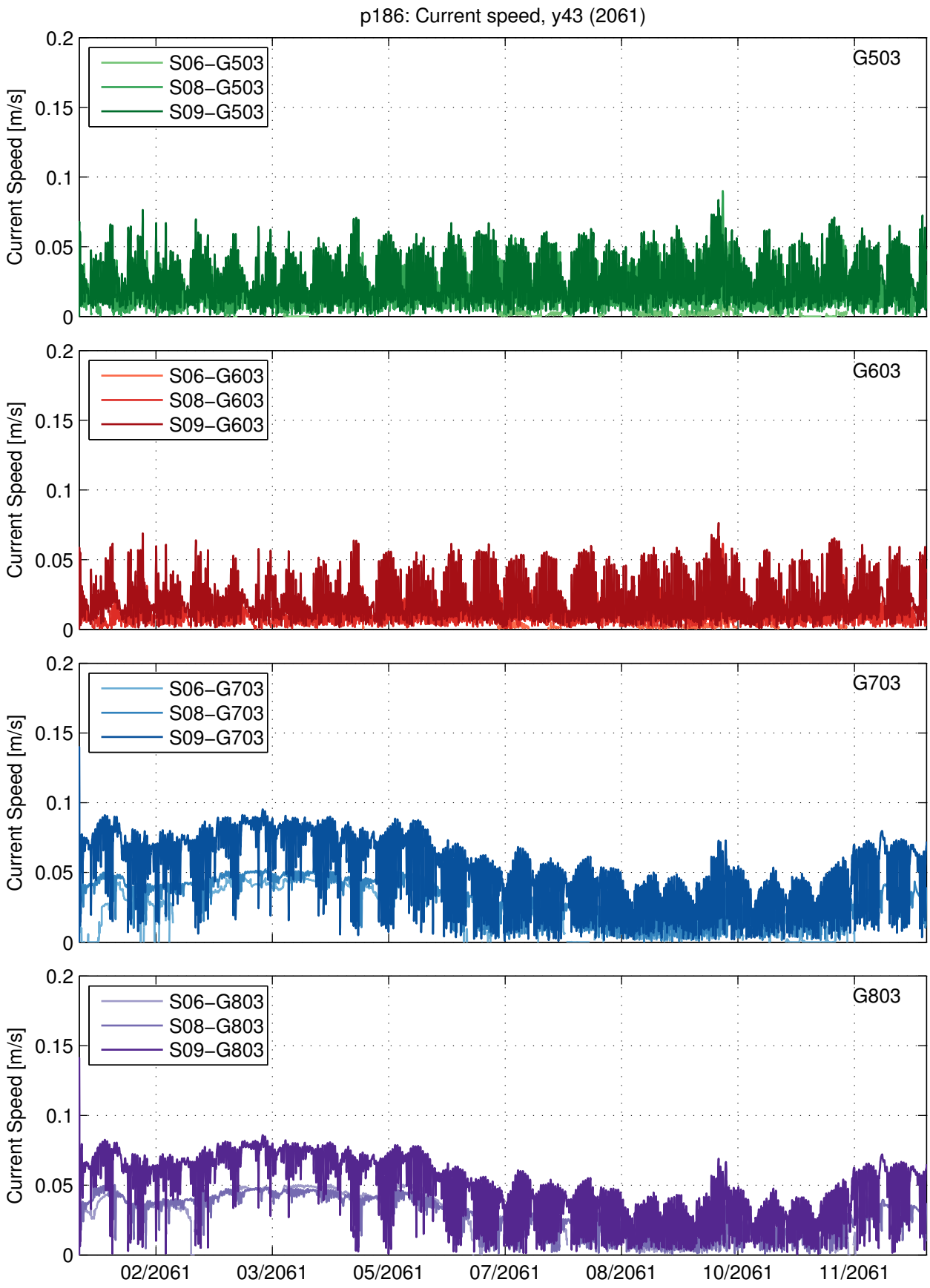

VC−1: Current speed, y43 (2061)
Current Speed [m/s]
0.2
0.15
0.1
0.05
0
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
S06−G703
S08−G703
S09−G703
G703
S06−G803
S08−G803
S09−G803
G803
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

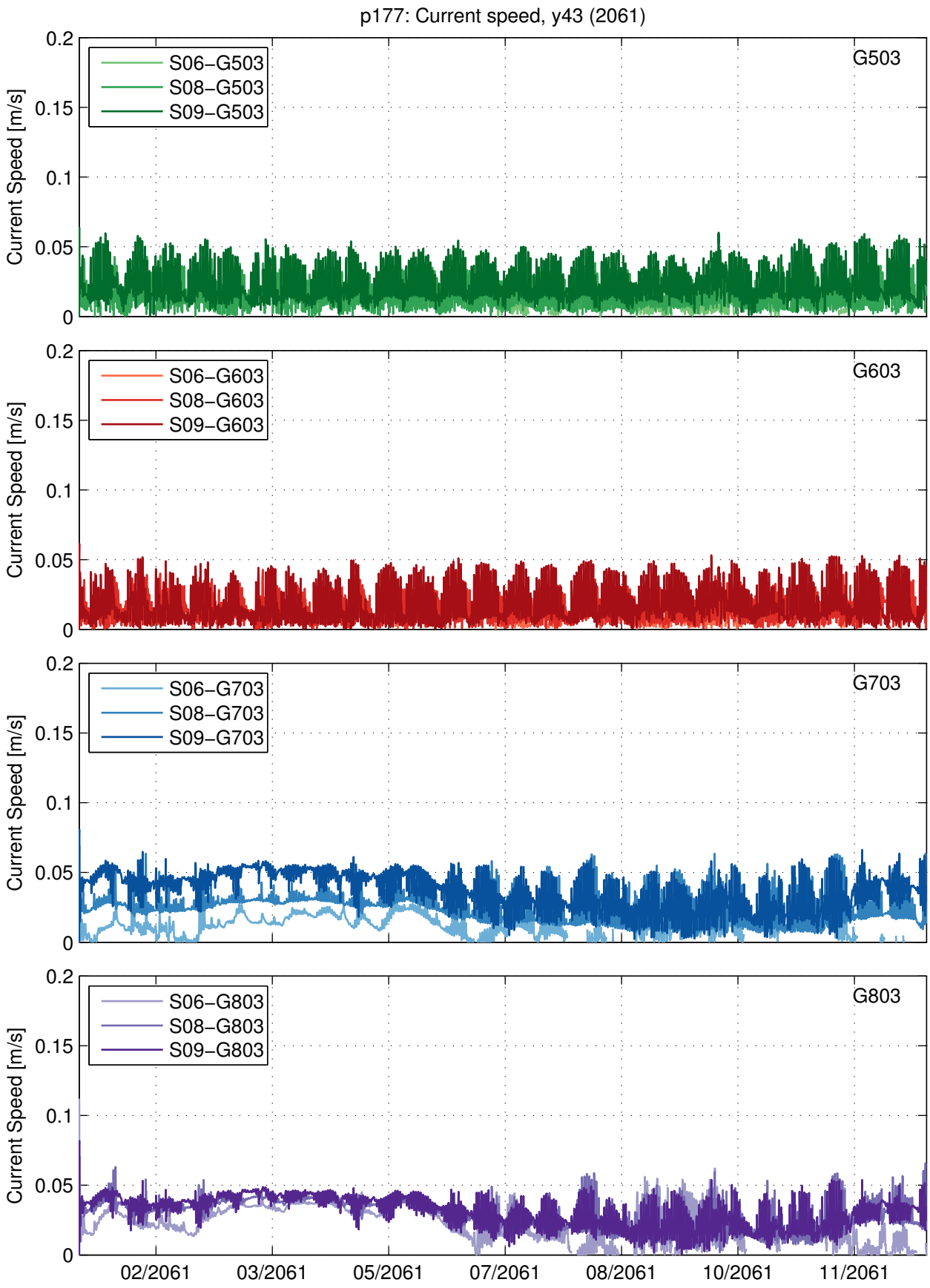

p160: Current speed, y43 (2061)
Current Speed [m/s]
0.1
0.08
0.06
0.04
0.02
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

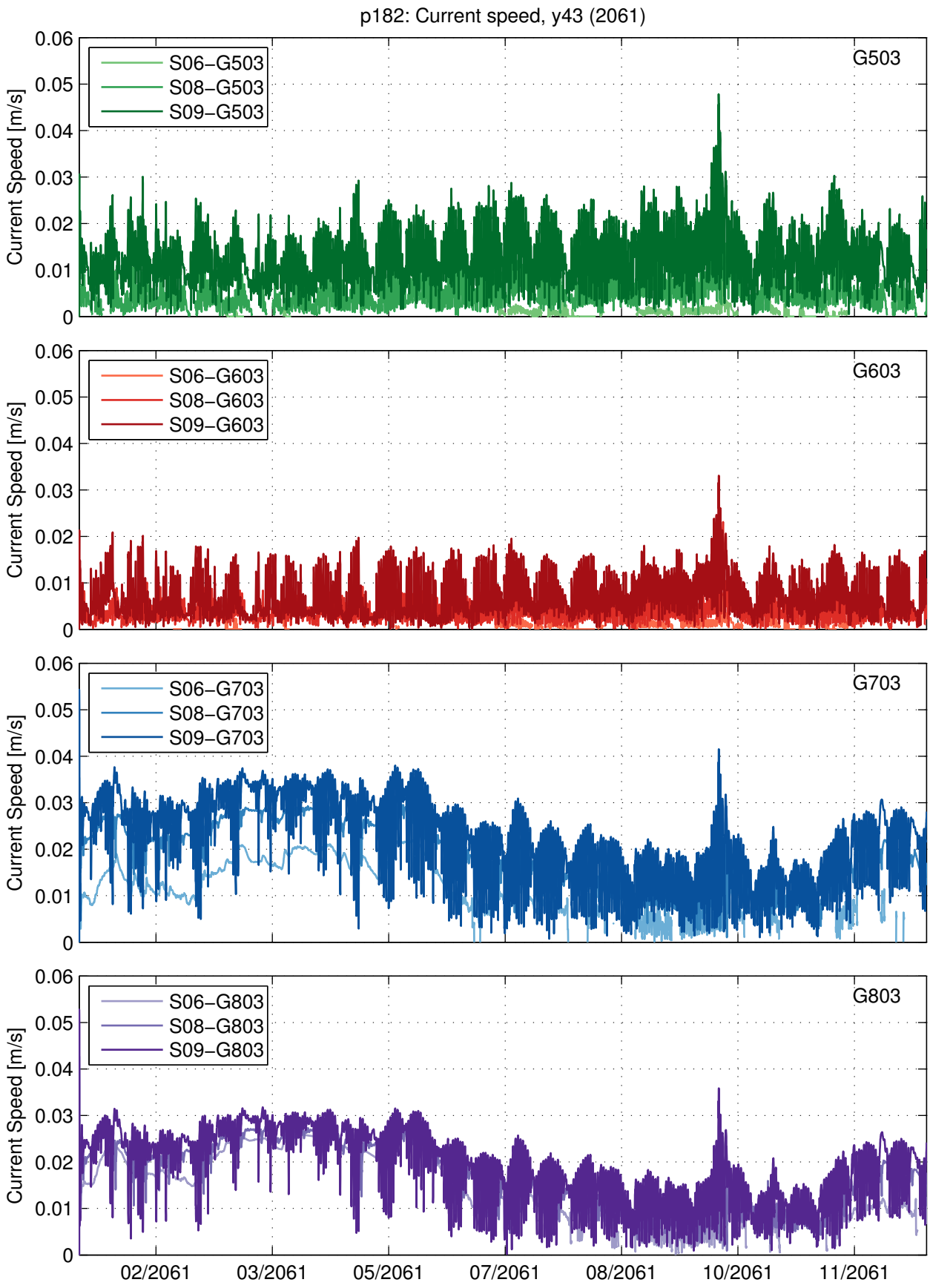

p165: Current speed, y43 (2061)
Current Speed [m/s]
0.2
0.15
0.1
0.05
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

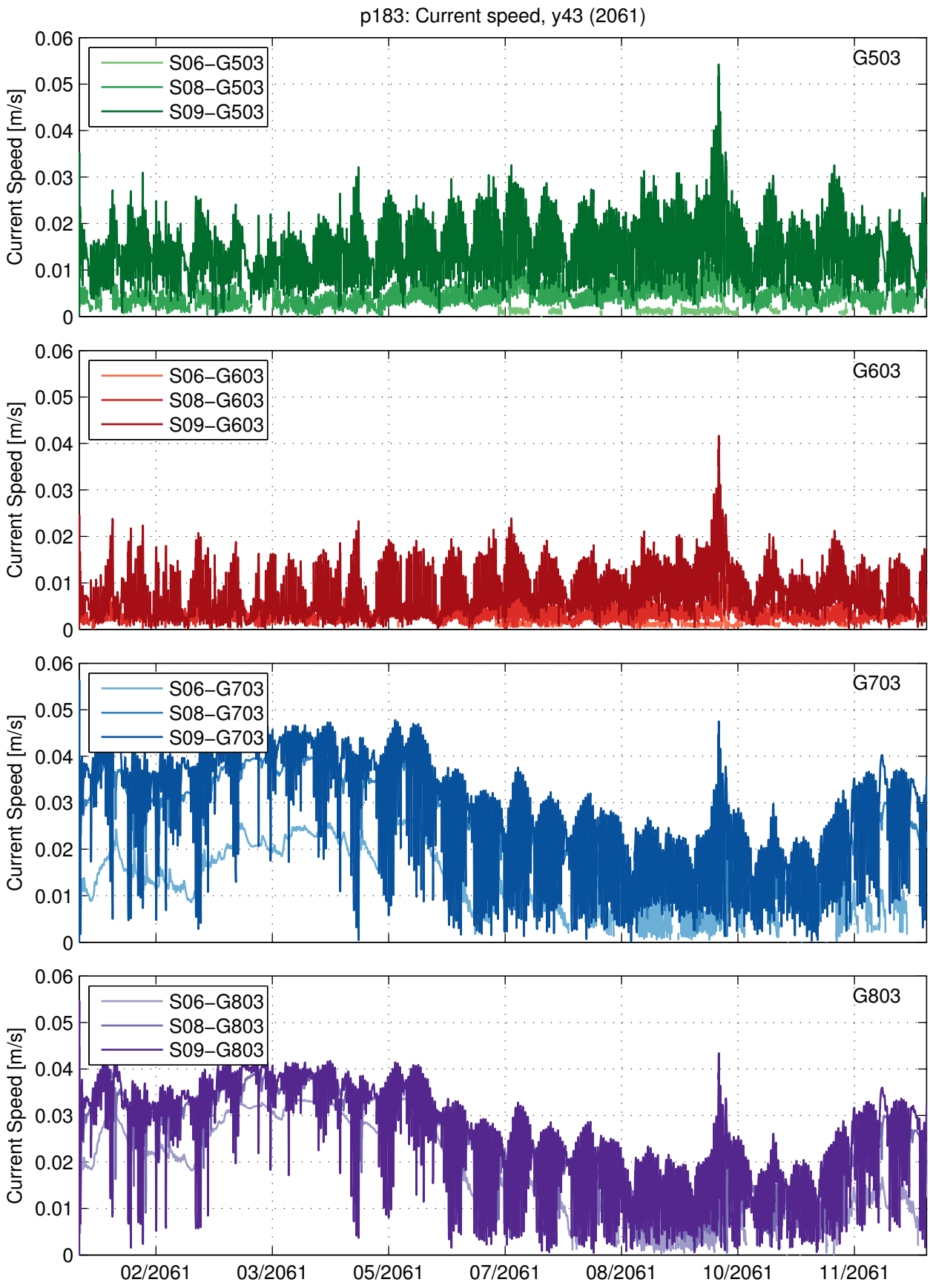

TC−1: Current speed, y43 (2061)
Current Speed [m/s]
0.08
0.06
0.04
0.02
0
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
S06−G703
S08−G703
S09−G703
G703
S06−G803
S08−G803
S09−G803
G803
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

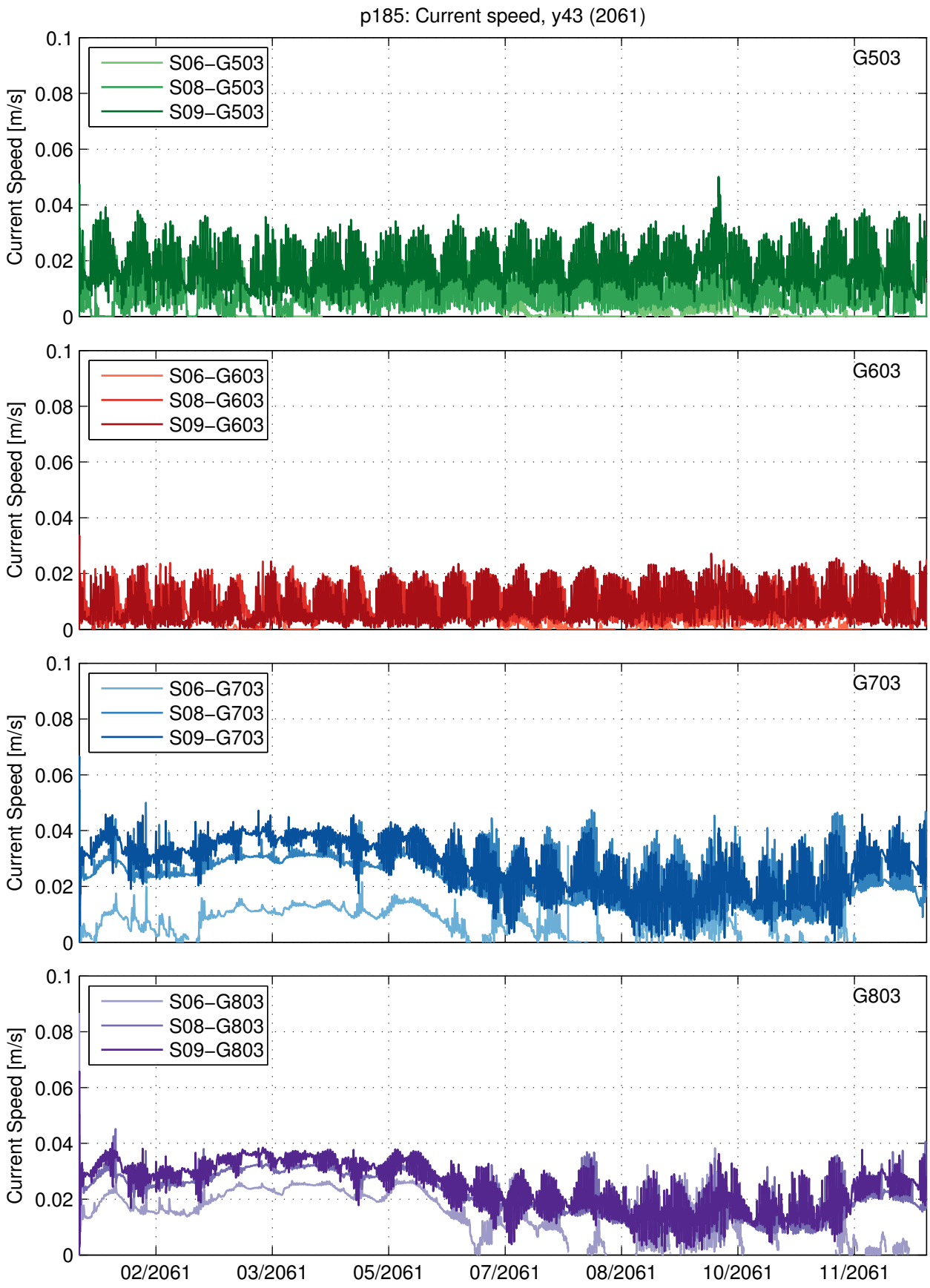

p151: Current speed, y43 (2061)
Current Speed [m/s]
0.05
0.04
0.03
0.02
0.01
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

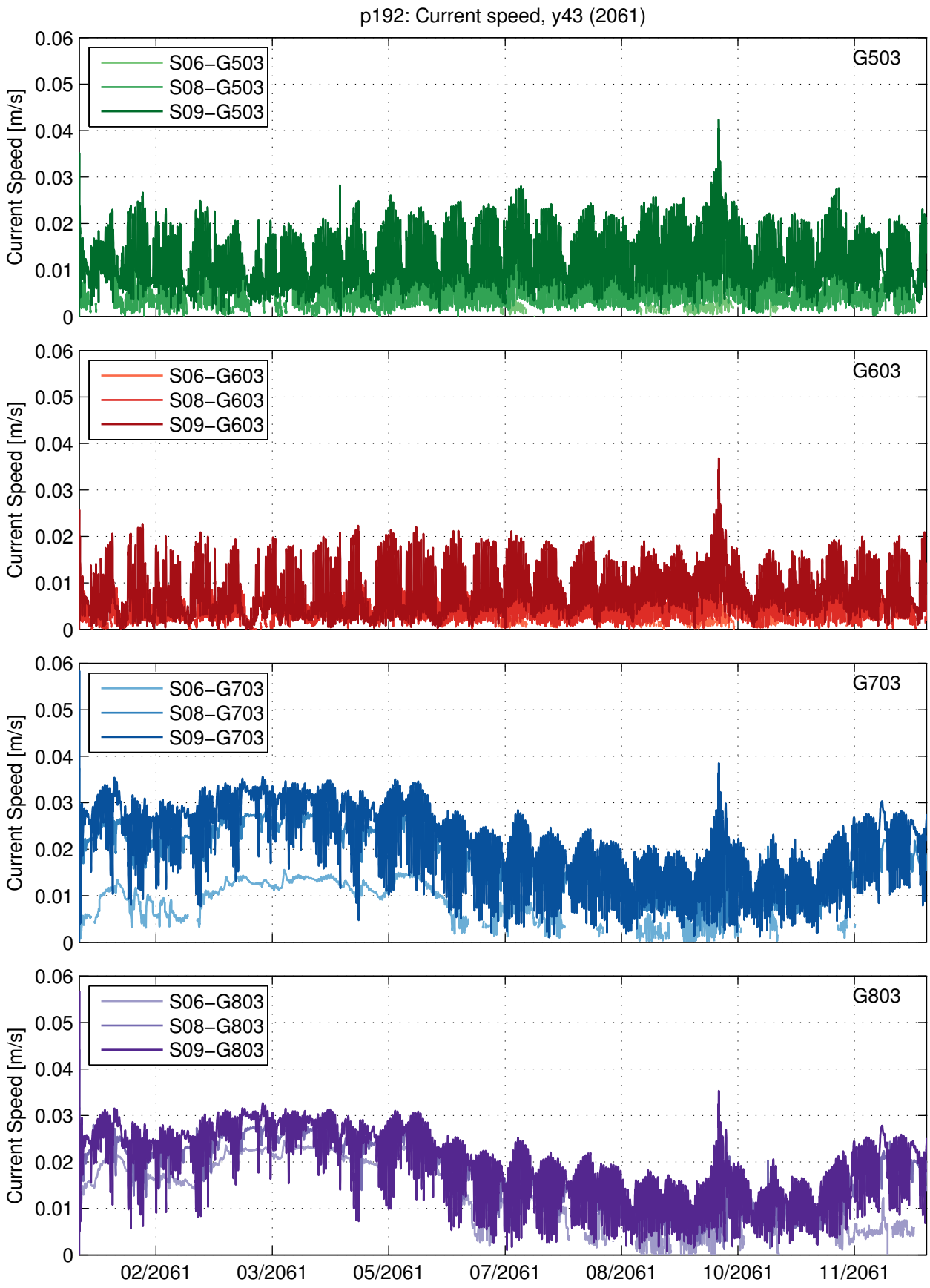

p186: Current speed, y43 (2061)
Current Speed [m/s]
0.2
0.15
0.1
0.05
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

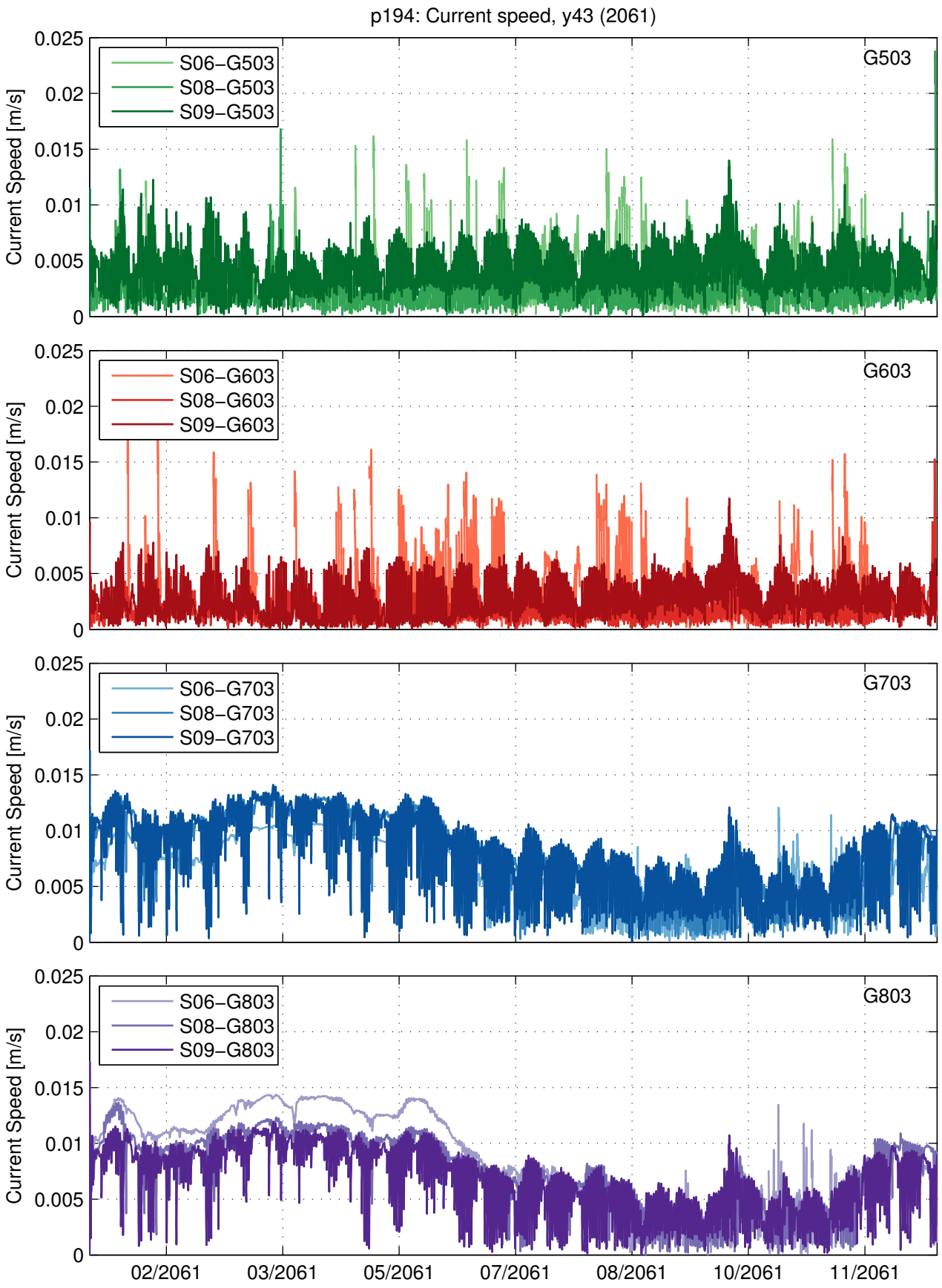

p177: Current speed, y43 (2061)
Current Speed [m/s]
0.2
0.15
0.1
0.05
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

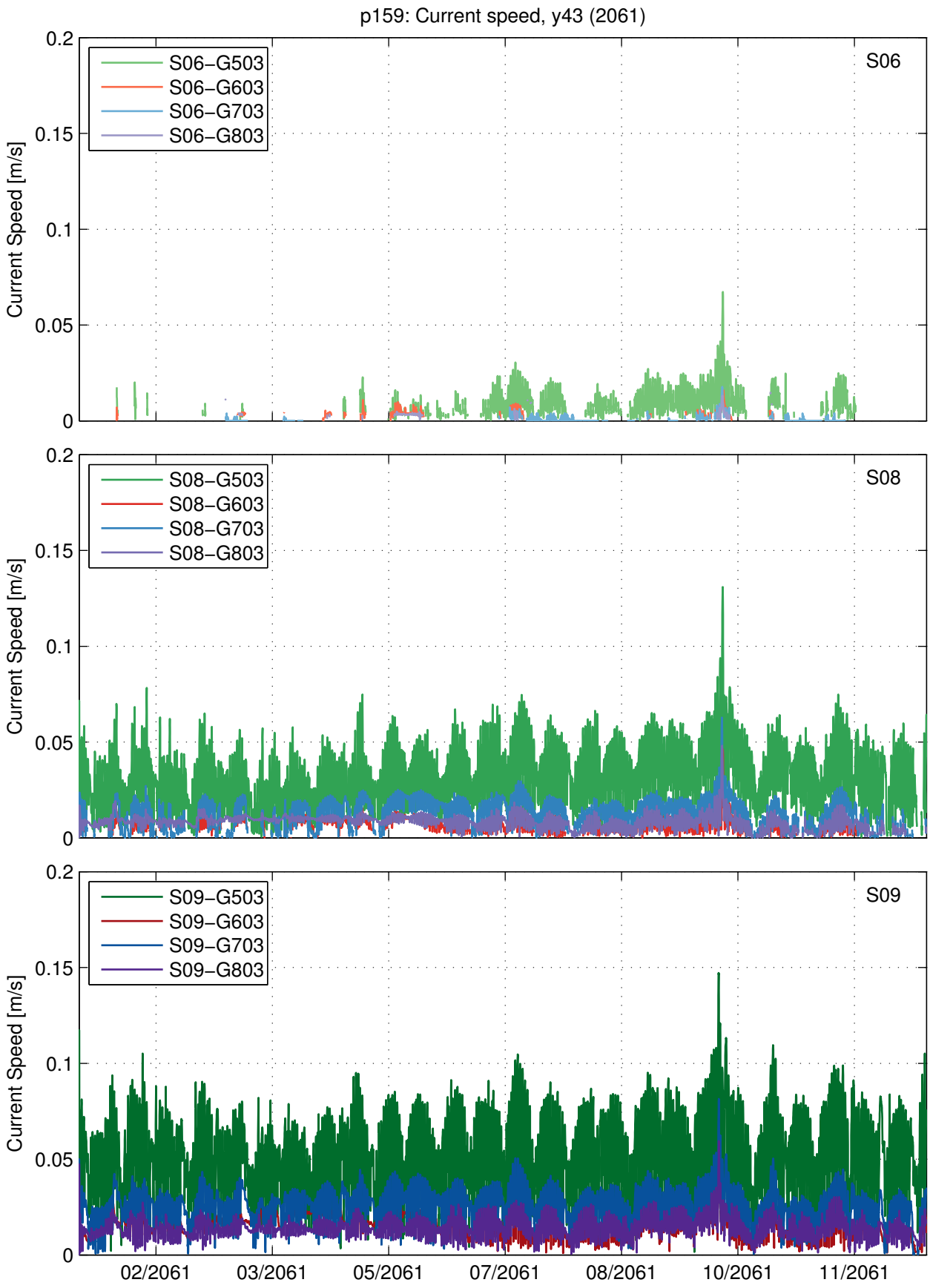

p182: Current speed, y43 (2061)
Current Speed [m/s]
0.06
0.05
0.04
0.03
0.02
0.01
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

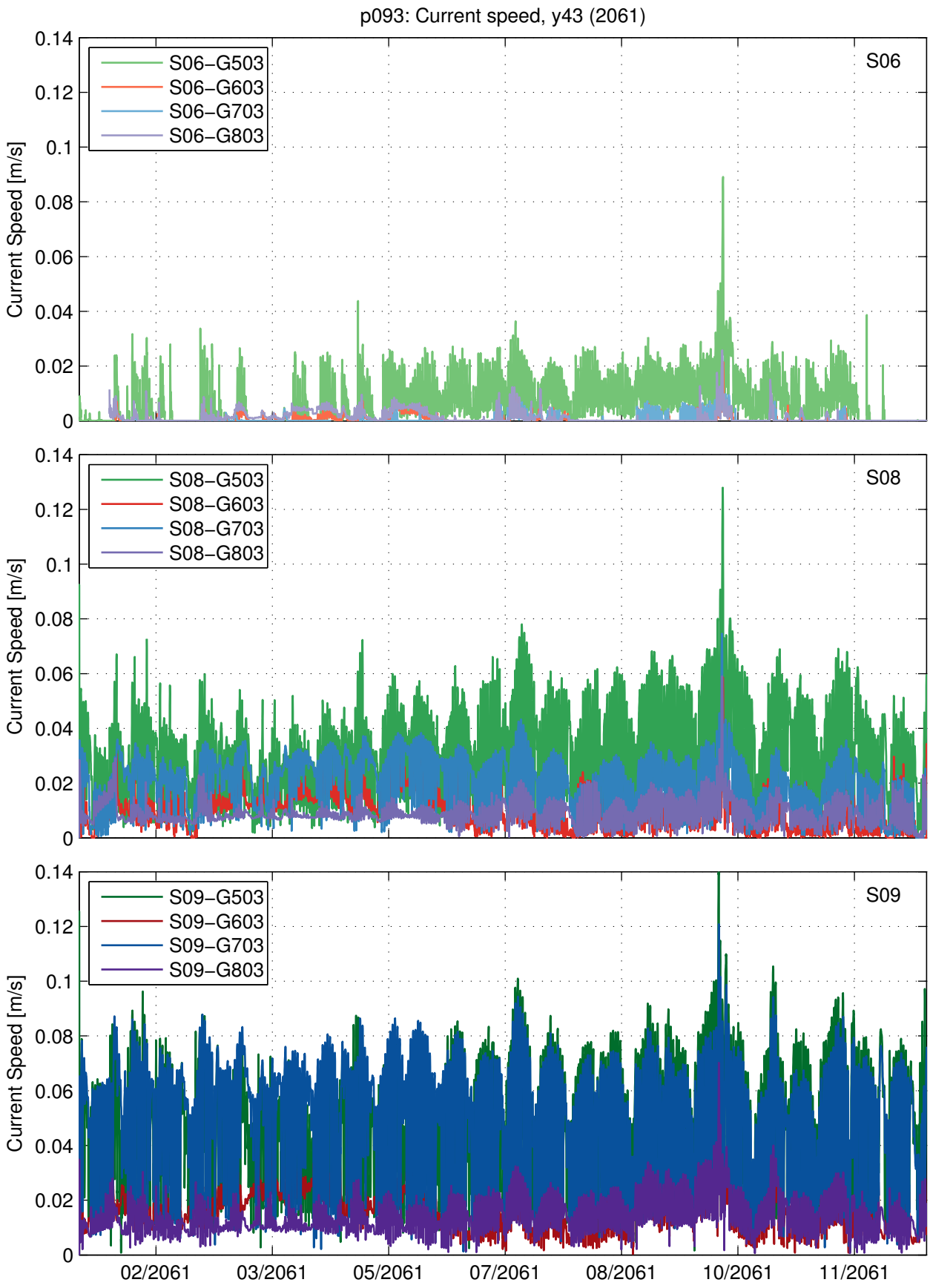

p183: Current speed, y43 (2061)
Current Speed [m/s]
0.06
0.05
0.04
0.03
0.02
0.01
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

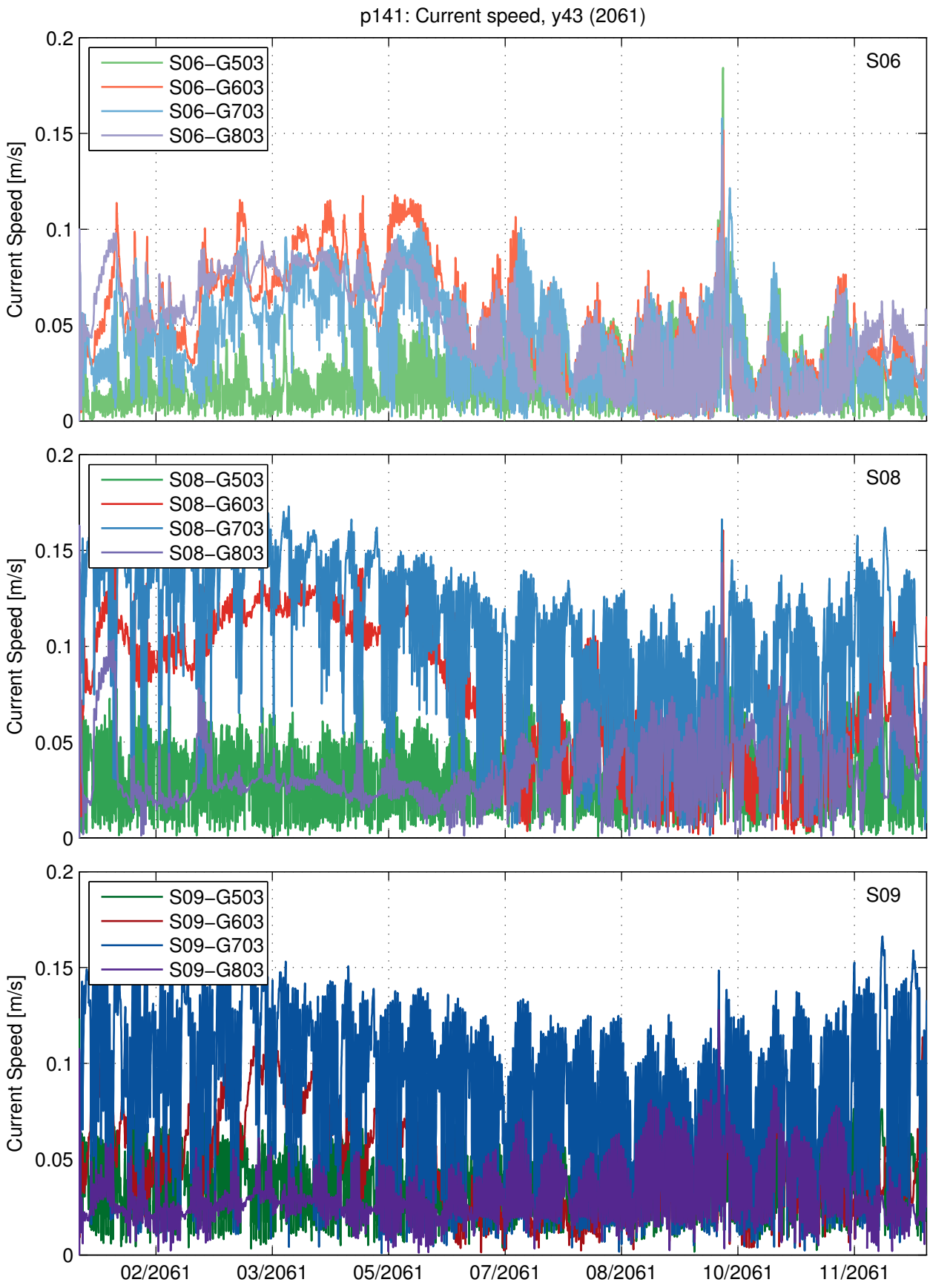

p185: Current speed, y43 (2061)
Current Speed [m/s]
0
0.02
0.04
0.06
0.08
0.1
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

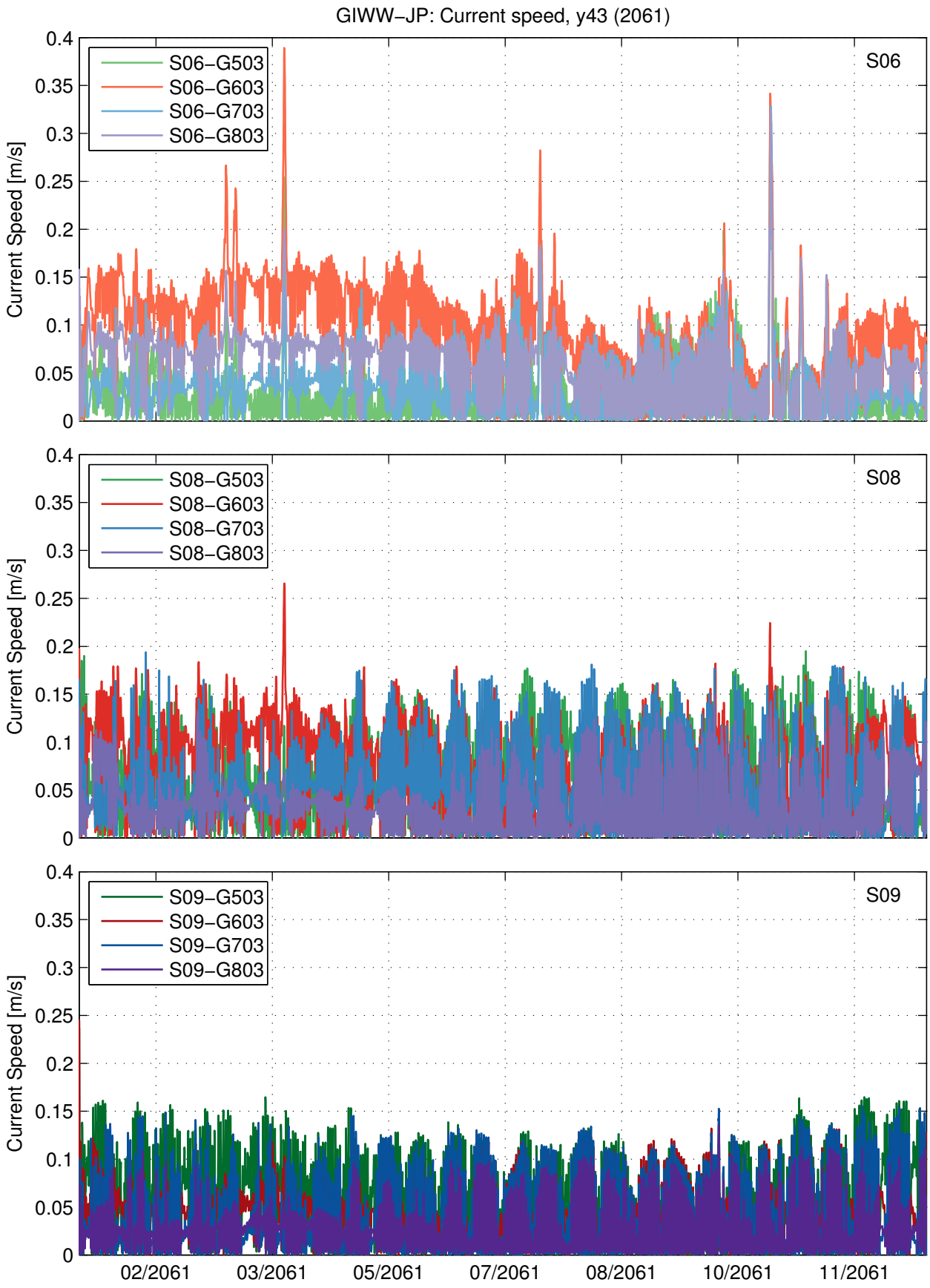

p192: Current speed, y43 (2061)
Current Speed [m/s]
0.06
0.05
0.04
0.03
0.02
0.01
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

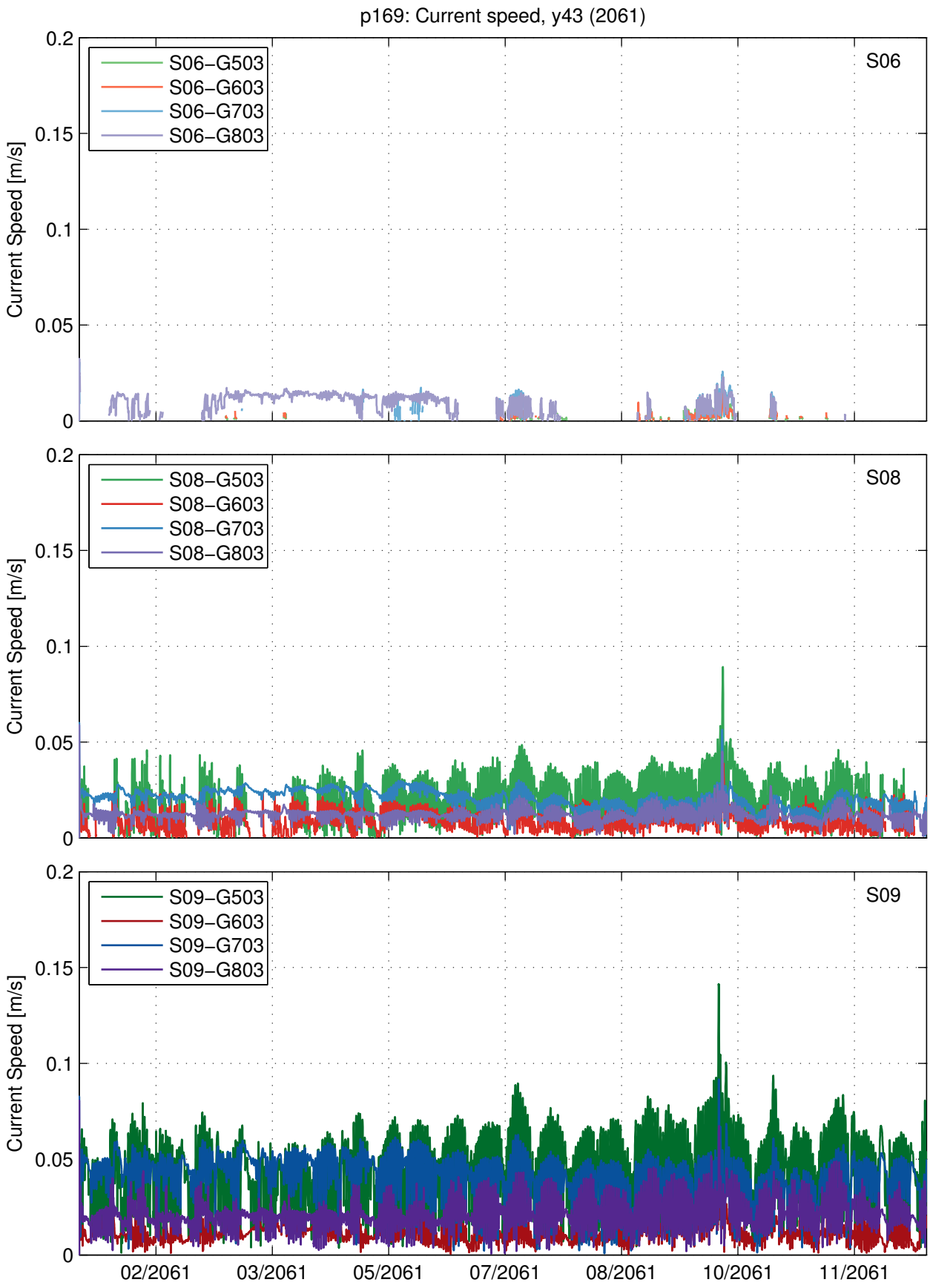

p194: Current speed, y43 (2061)
Current Speed [m/s]
0.025
0.02
0.015
0.01
0.005
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

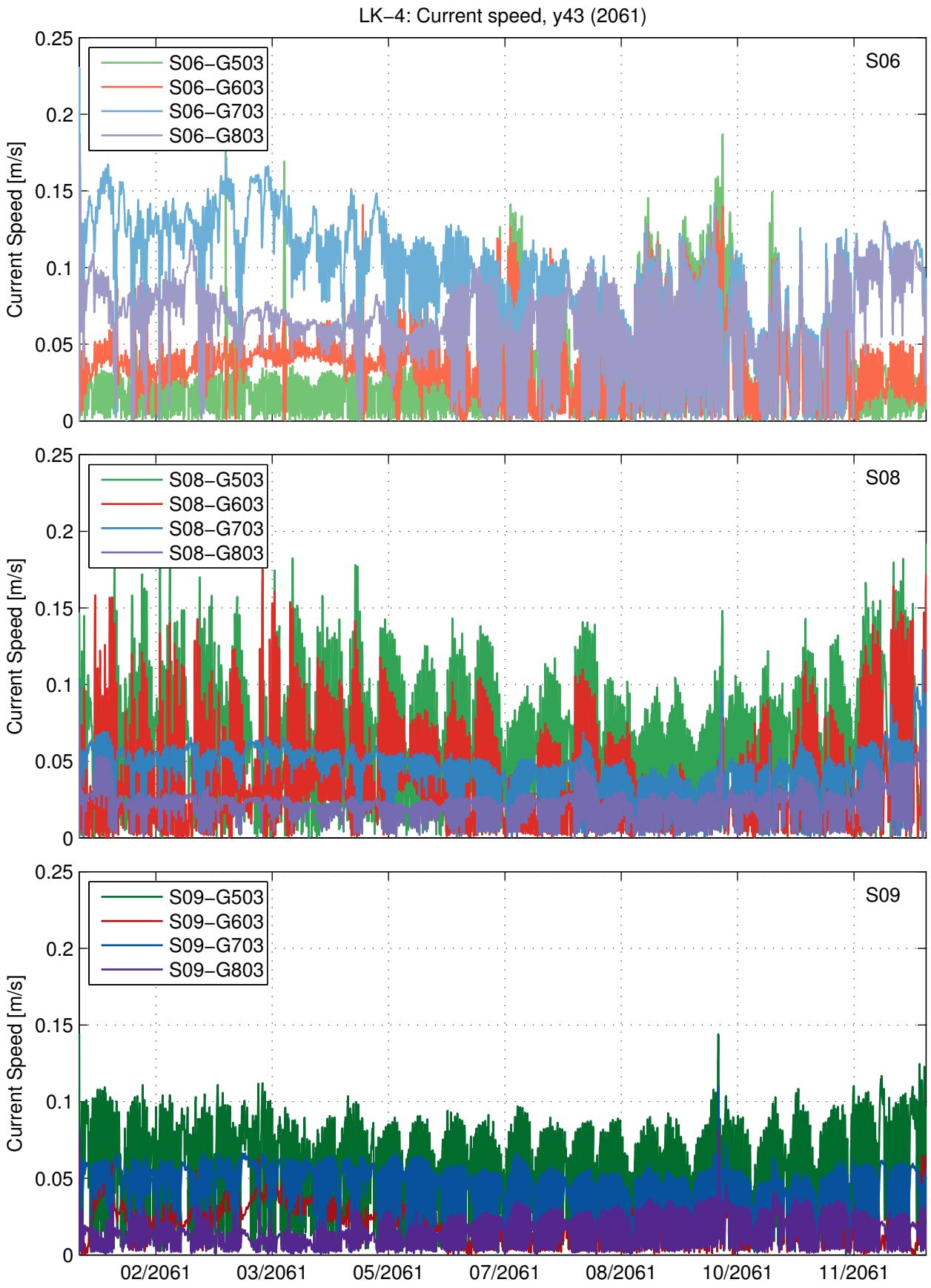

p159: Current speed, y43 (2061)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Current Speed [m/s]
0
0.05
0.1
0.15
0.2
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

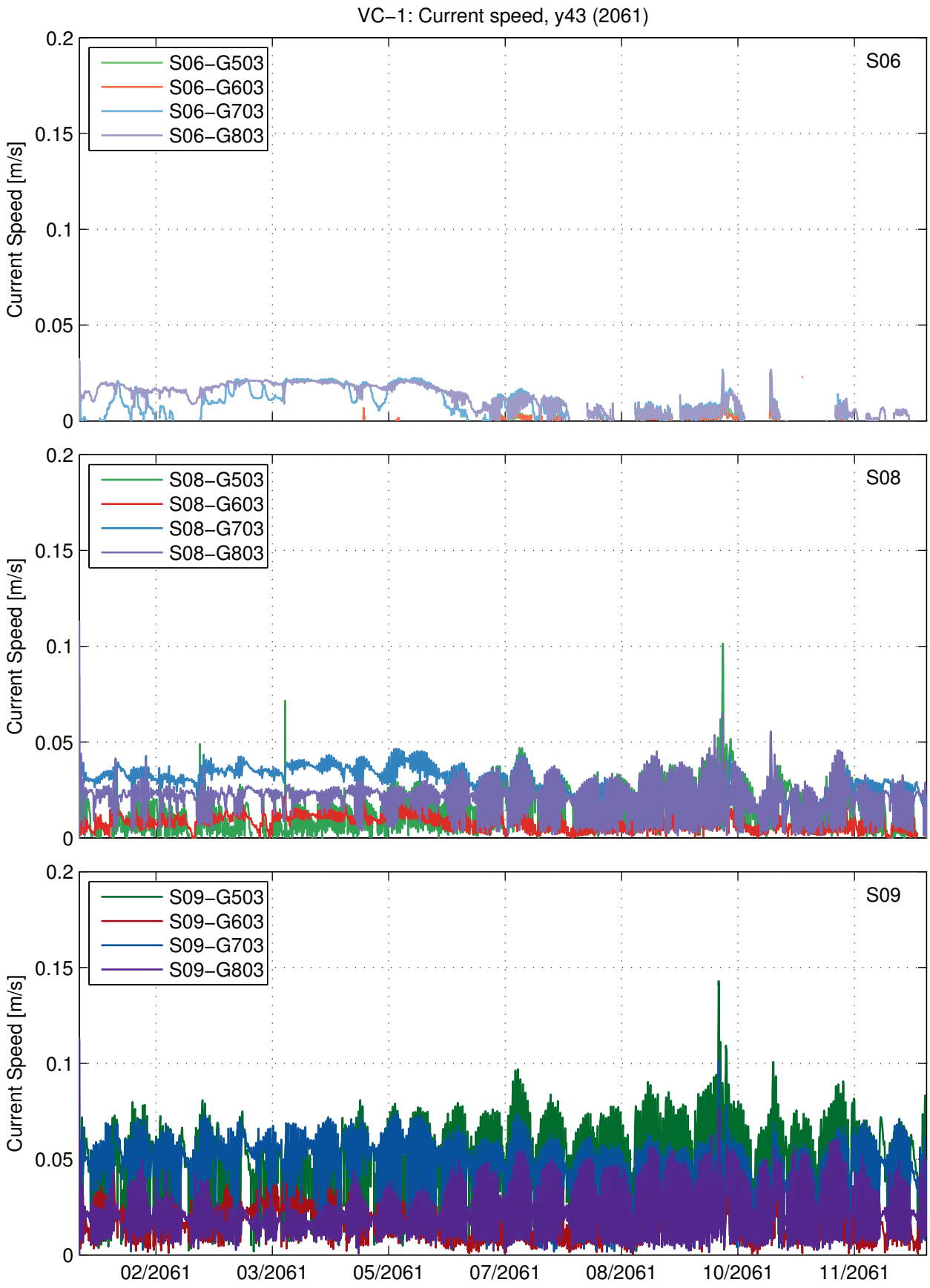

p093: Current speed, y43 (2061)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.02
0.04
0.06
0.08
0.1
0.12
0.14
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

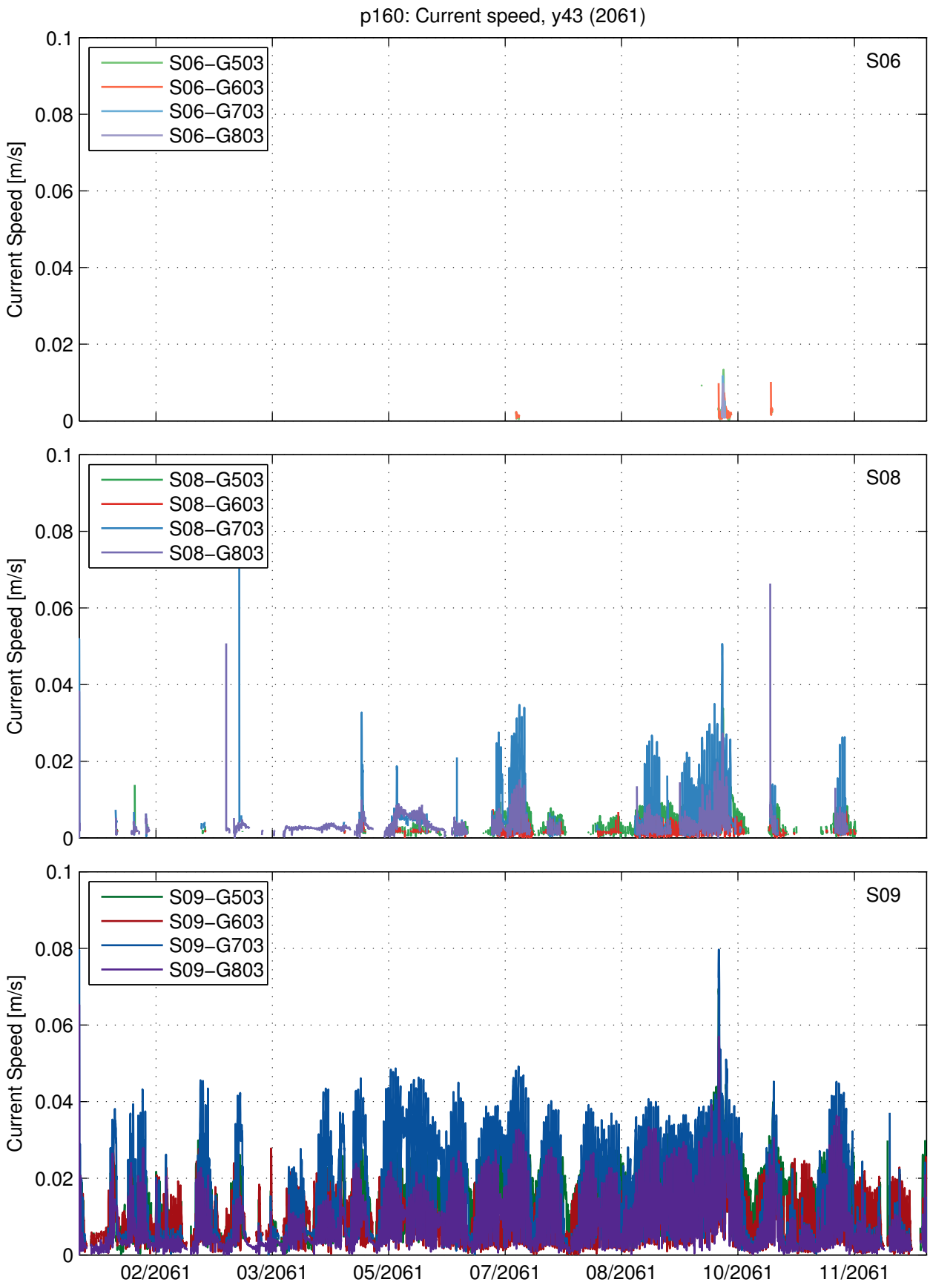

p141: Current speed, y43 (2061)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.05
0.1
0.15
0.2
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

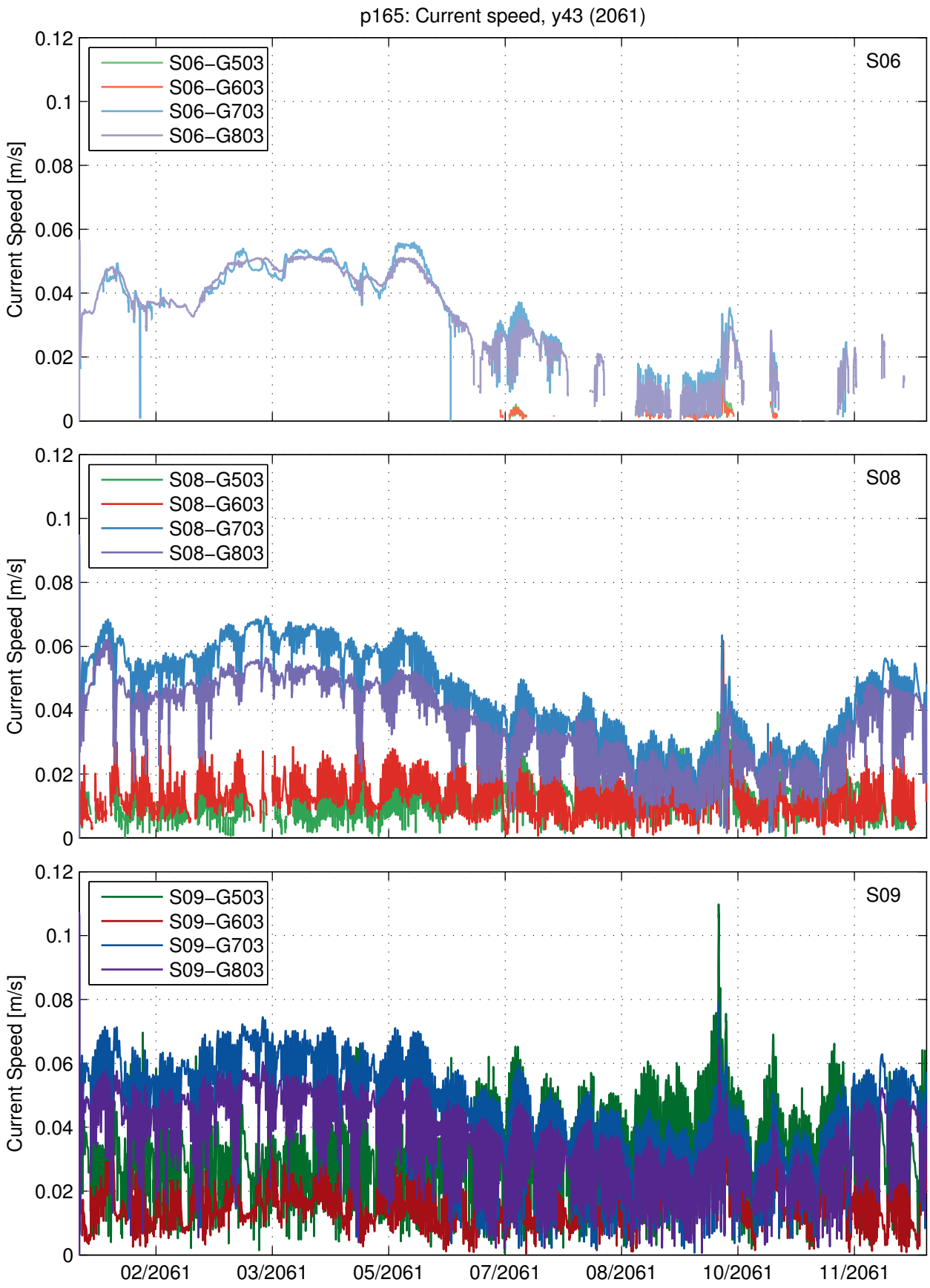

GIWW–JP: Current speed, y43 (2061)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Current Speed [m/s]
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

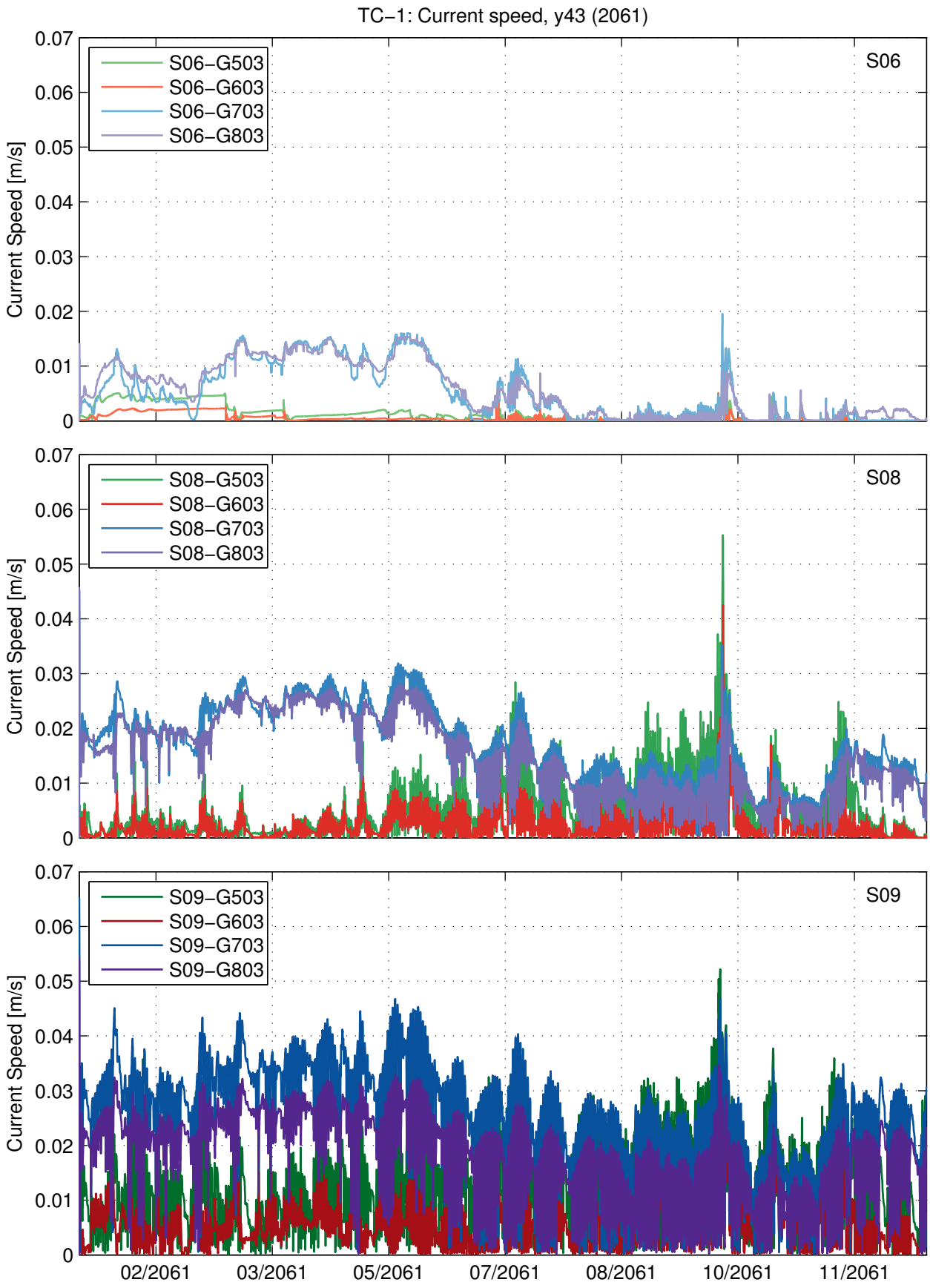

p169: Current speed, y43 (2061)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.05
0.1
0.15
0.2
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

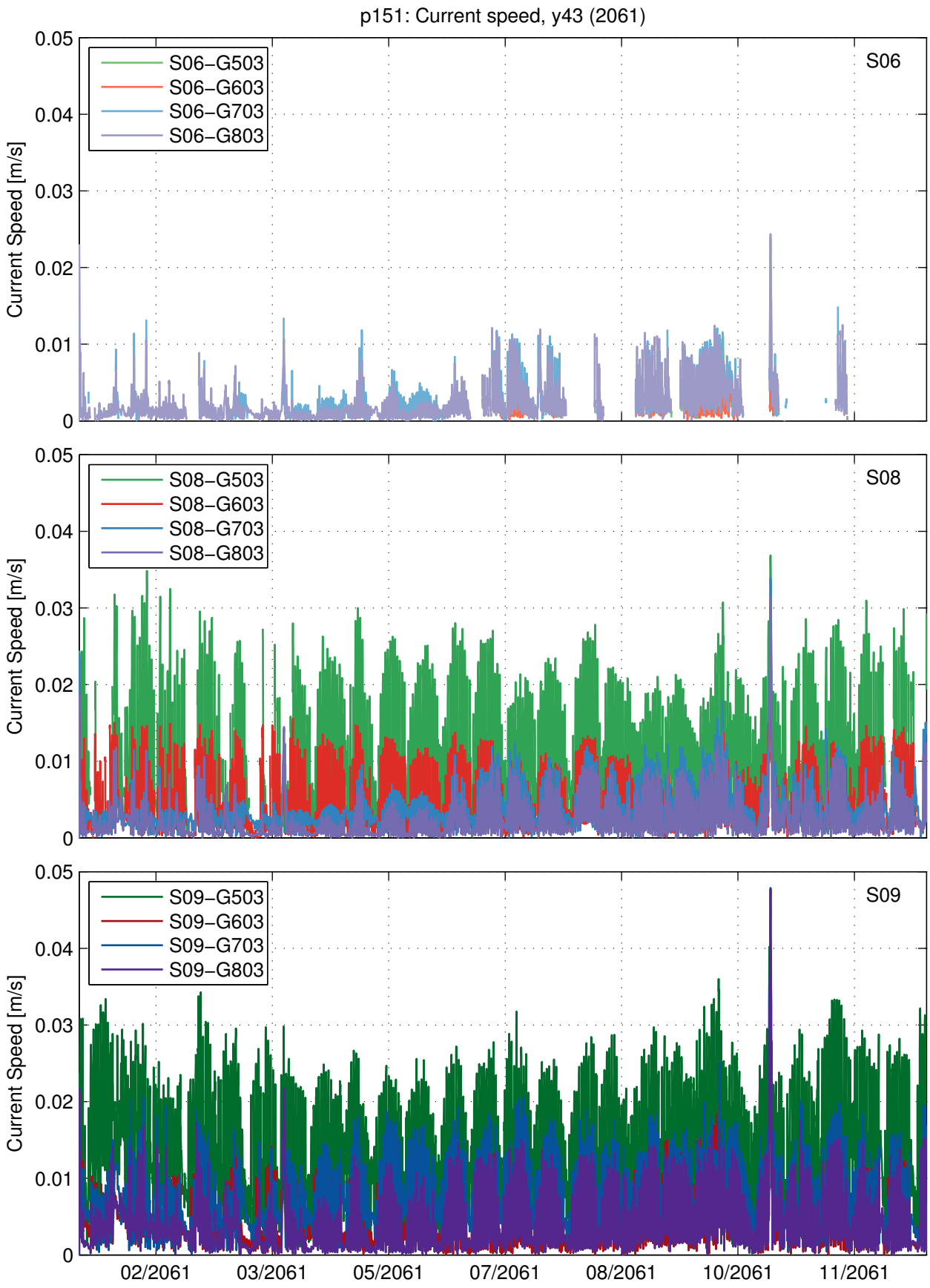

LK−4: Current speed, y43 (2061)
S06−G503
S06−G603
S06−G703
S06−G803
S06
S08−G503
S08−G603
S08−G703
S08−G803
S08
S09−G503
S09−G603
S09−G703
S09−G803
S09
Current Speed [m/s]
0
0.05
0.1
0.15
0.2
0.25
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

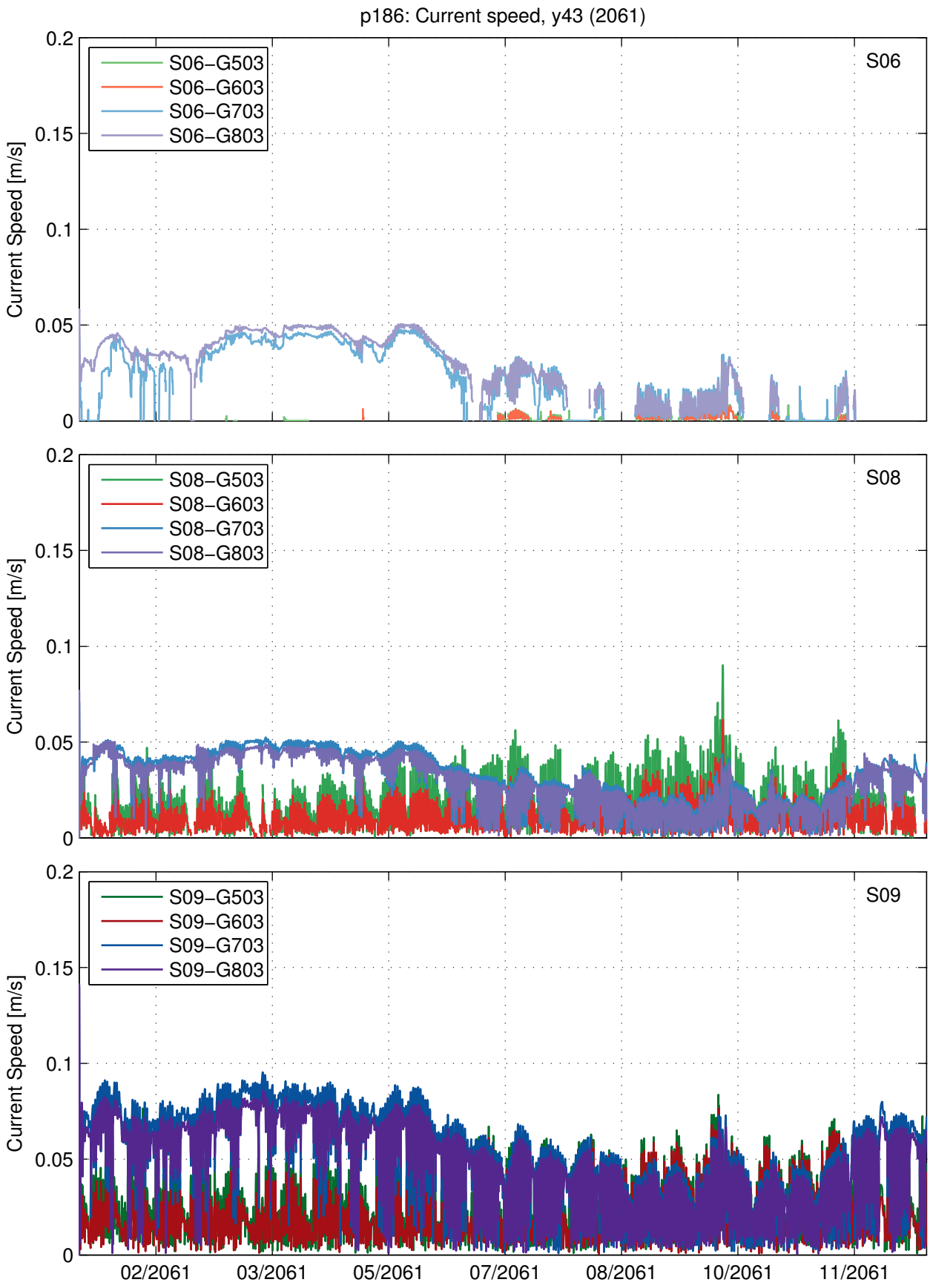

VC−1: Current speed, y43 (2061)
S06−G503
S06−G603
S06−G703
S06−G803
S06
S08−G503
S08−G603
S08−G703
S08−G803
S08
S09−G503
S09−G603
S09−G703
S09−G803
S09
Current Speed [m/s]
0
0.05
0.1
0.15
0.2
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

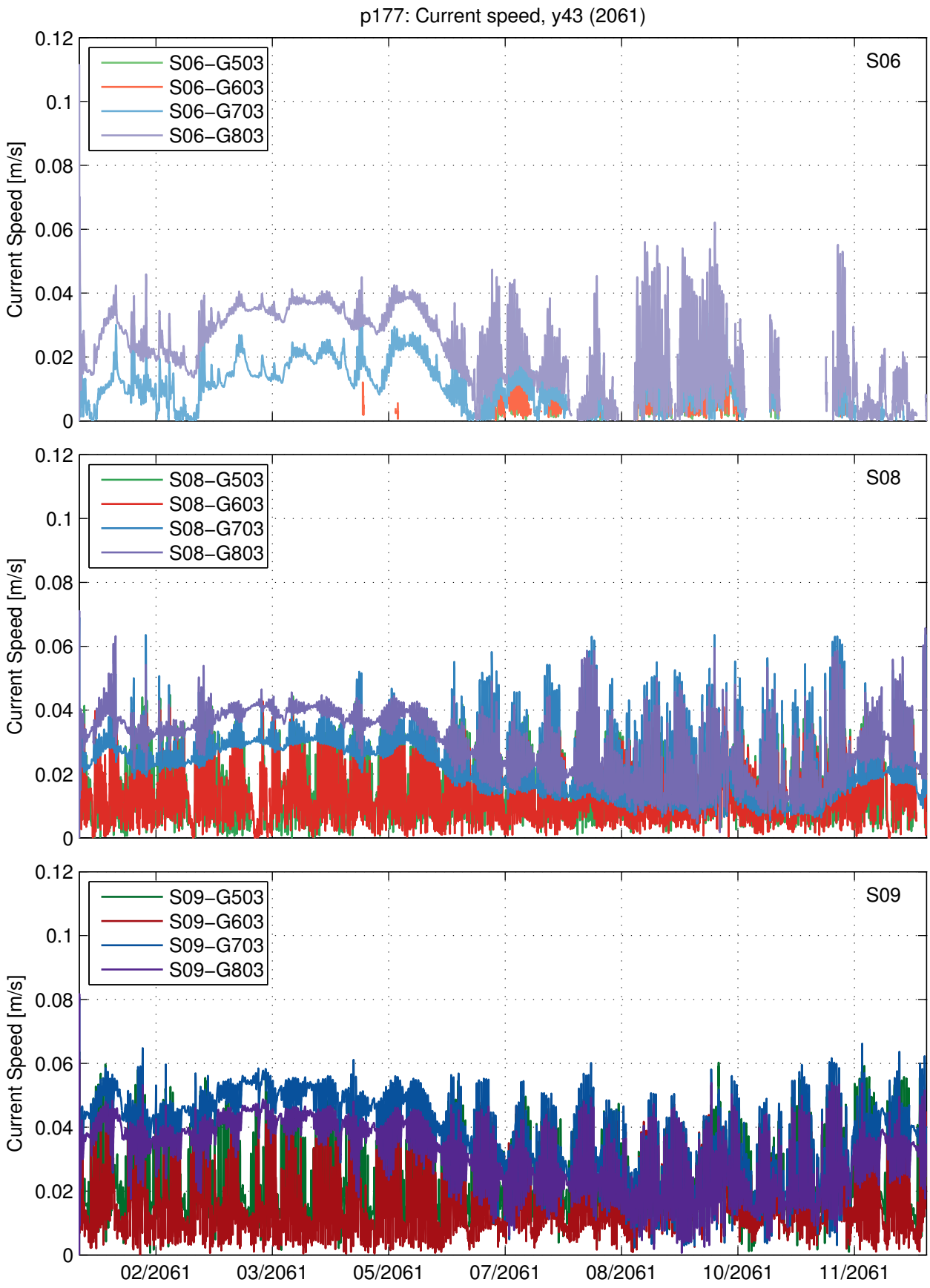

p160: Current speed, y43 (2061)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.02
0.04
0.06
0.08
0.1
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

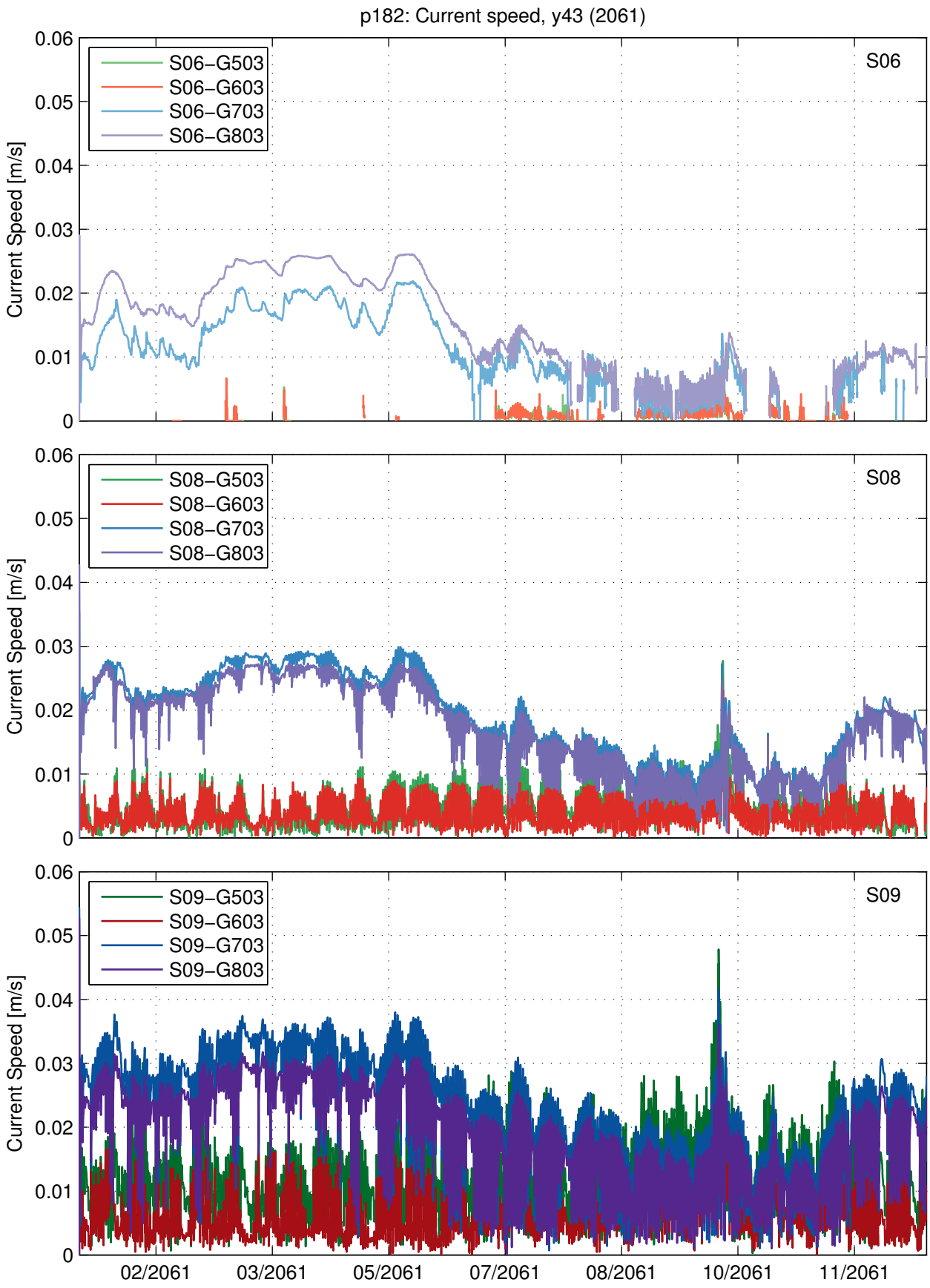

p165: Current speed, y43 (2061)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.02
0.04
0.06
0.08
0.1
0.12
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

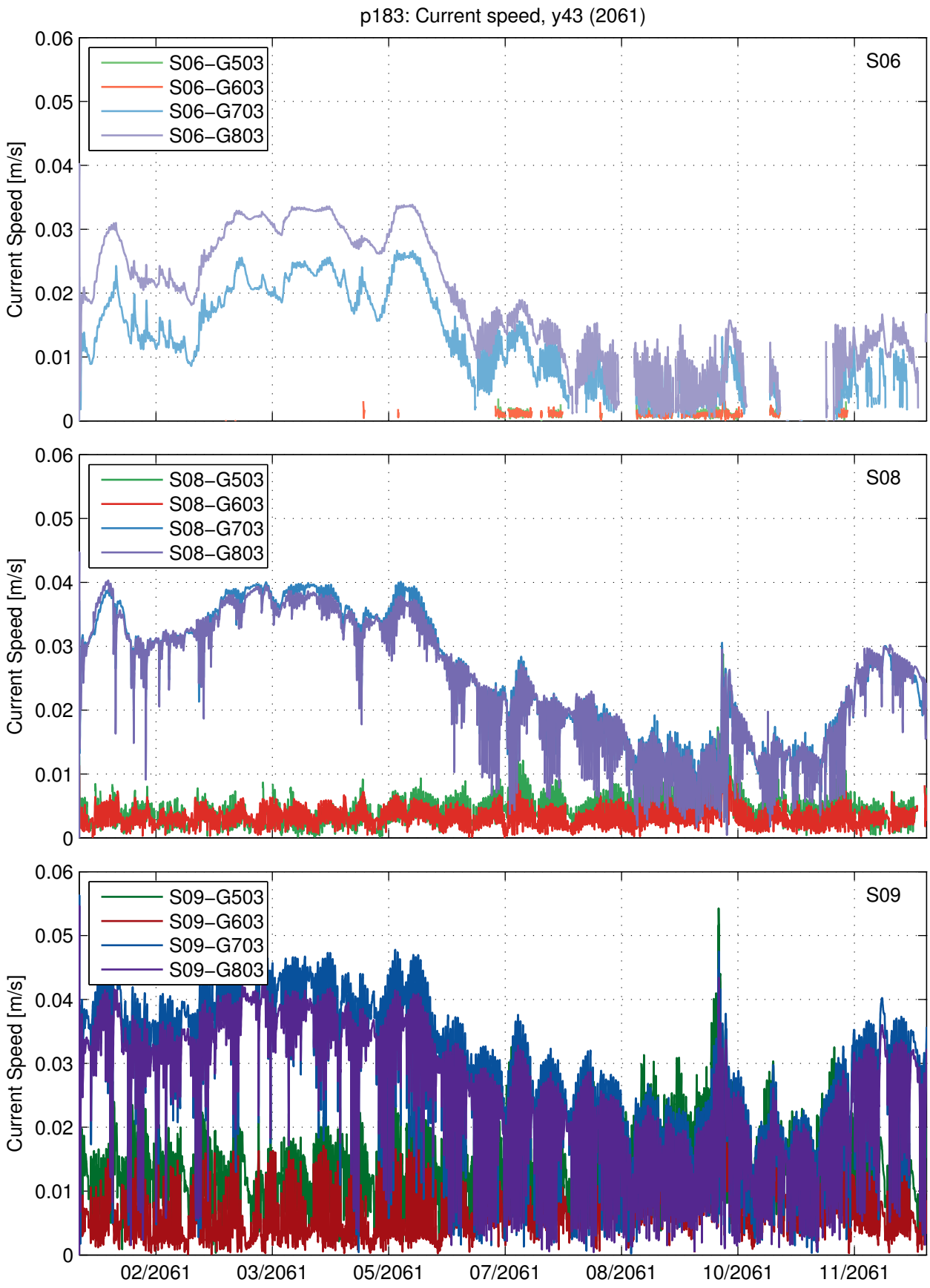

TC−1: Current speed, y43 (2061)
S06
S06−G503
S06−G603
S06−G703
S06−G803
S08
S08−G503
S08−G603
S08−G703
S08−G803
S09
S09−G503
S09−G603
S09−G703
S09−G803
Current Speed [m/s]
0
0.01
0.02
0.03
0.04
0.05
0.06
0.07
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

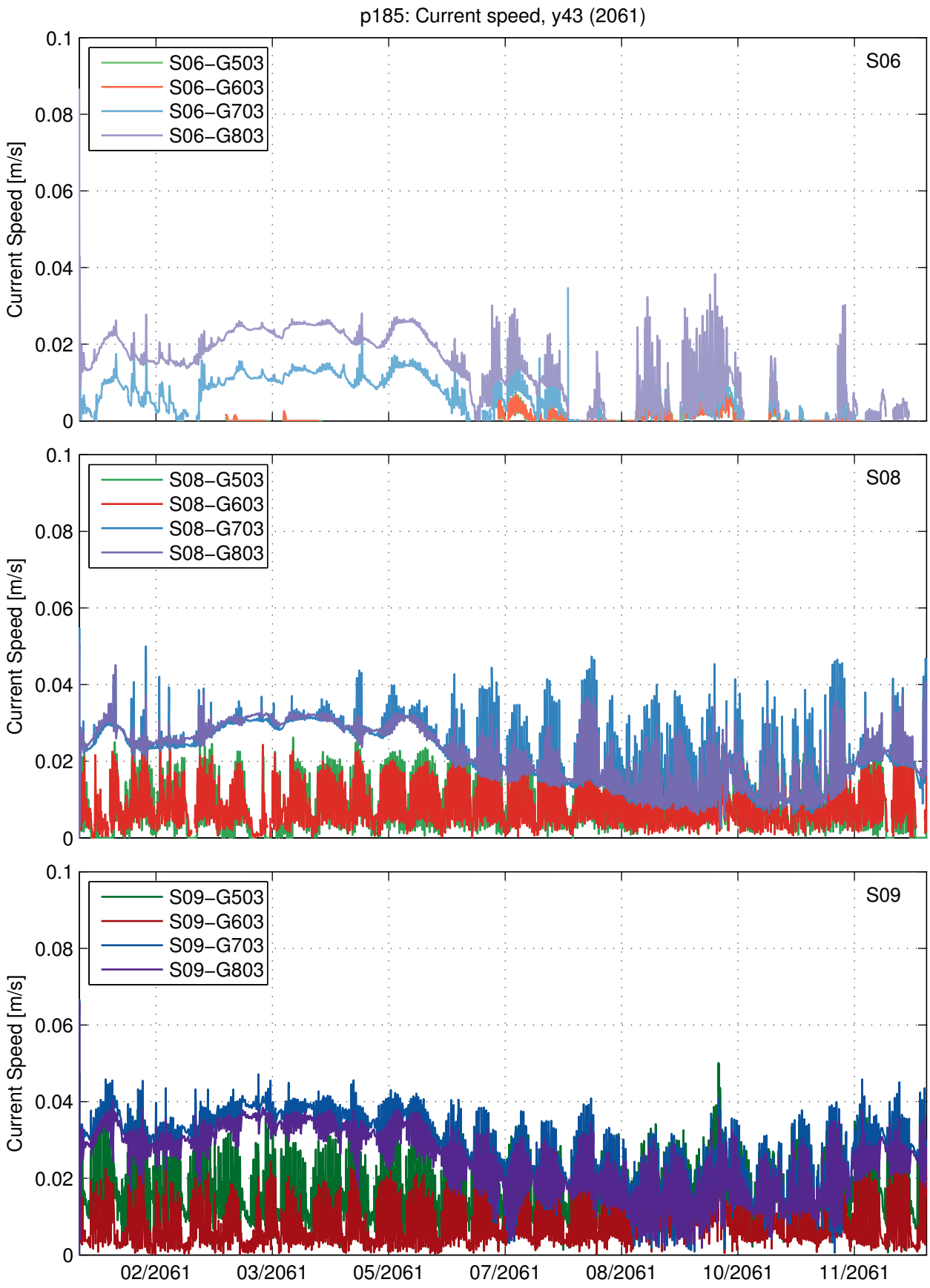

p151: Current speed, y43 (2061)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.01
0.02
0.03
0.04
0.05
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

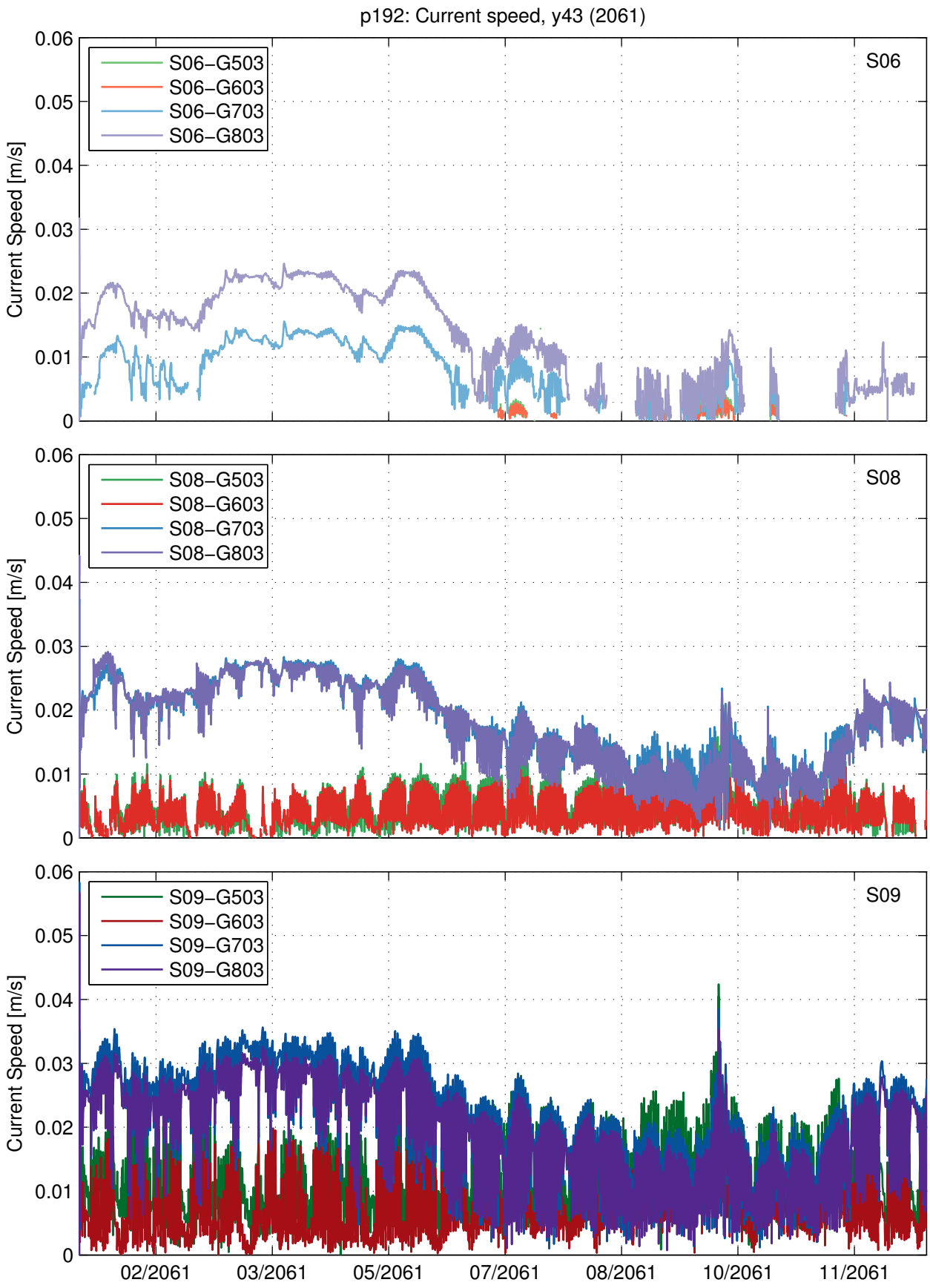

p186: Current speed, y43 (2061)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.05
0.1
0.15
0.2
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

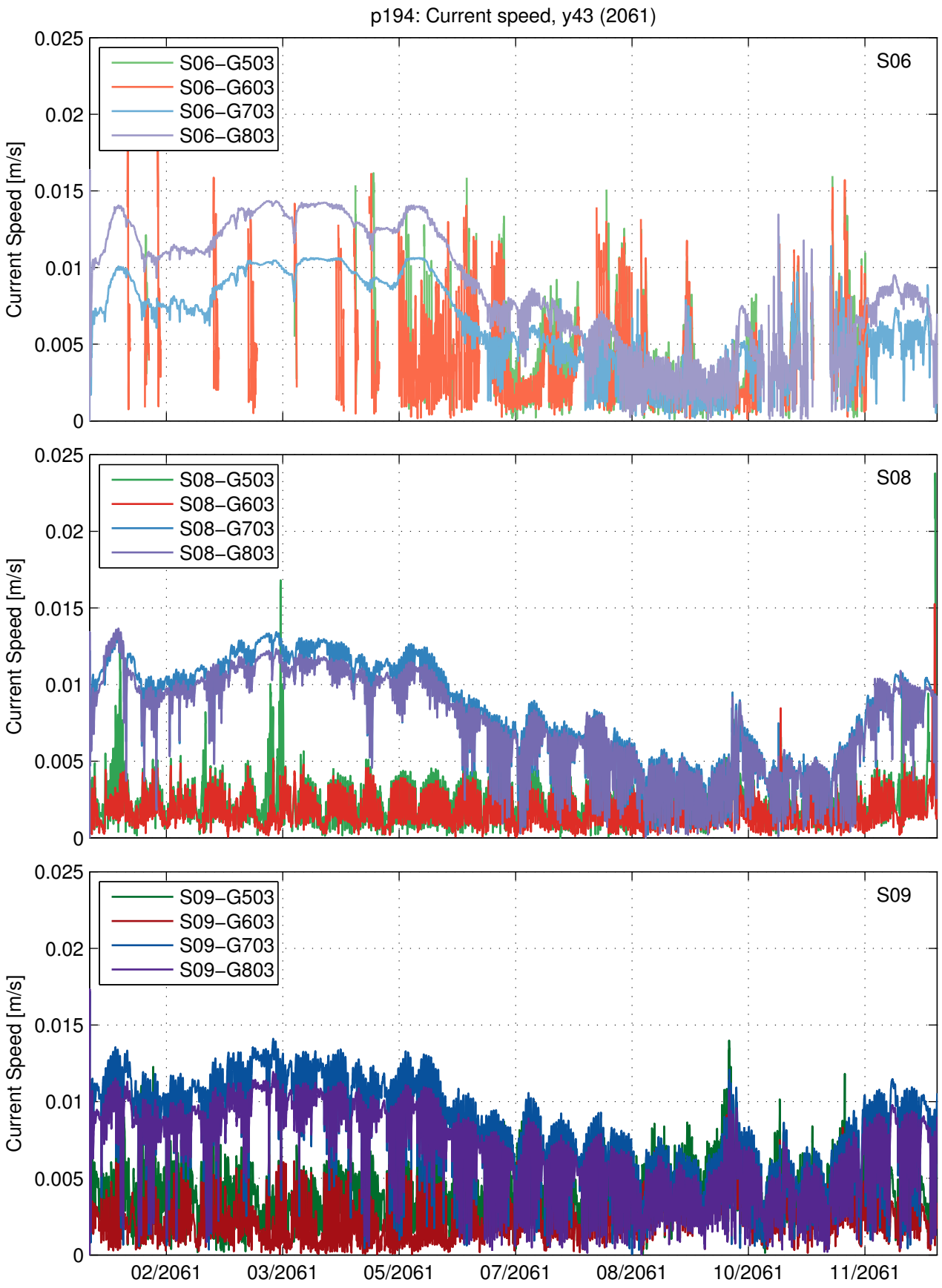

p177: Current speed, y43 (2061)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.02
0.04
0.06
0.08
0.1
0.12
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

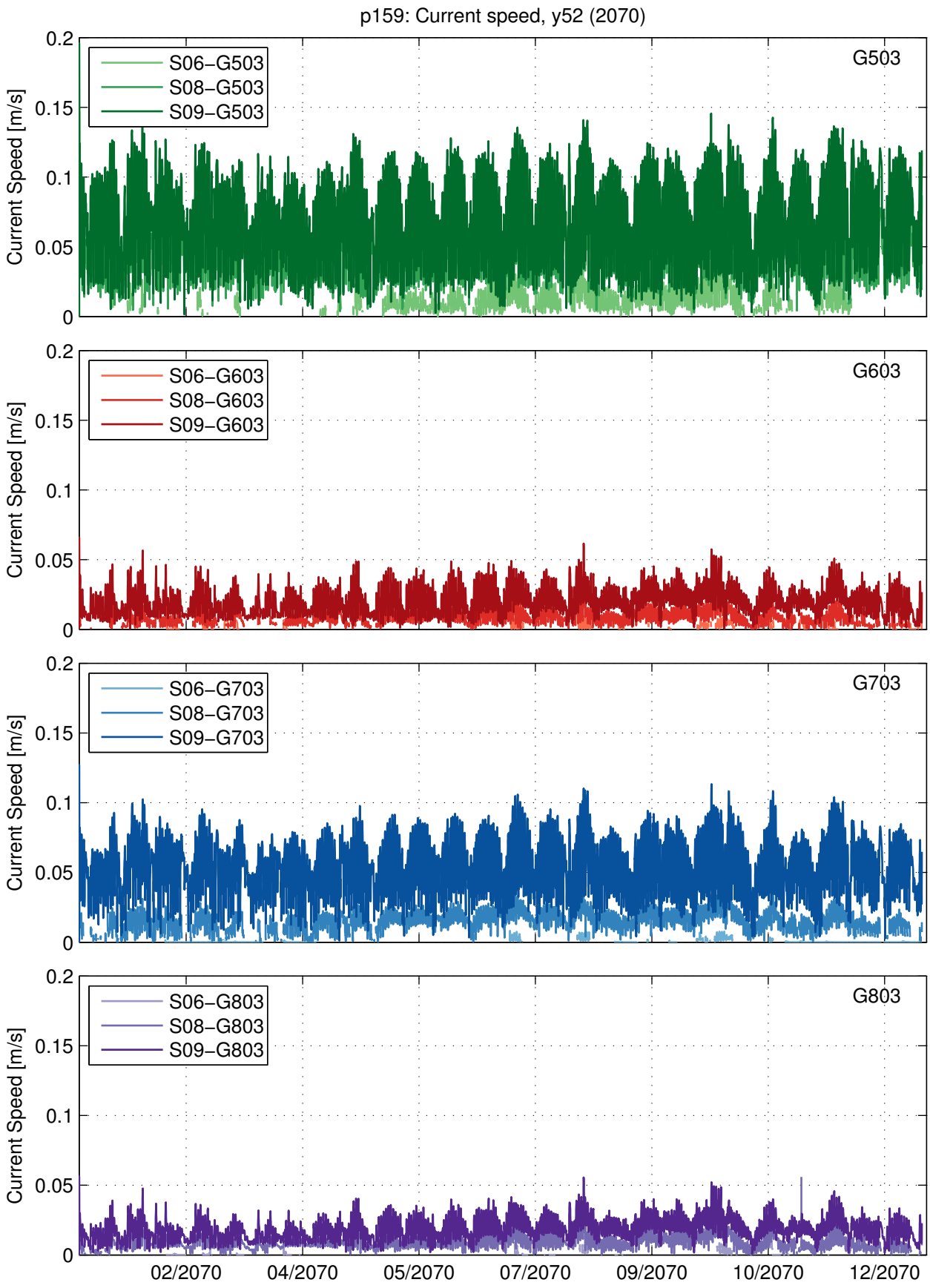

p182: Current speed, y43 (2061)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.01
0.02
0.03
0.04
0.05
0.06
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

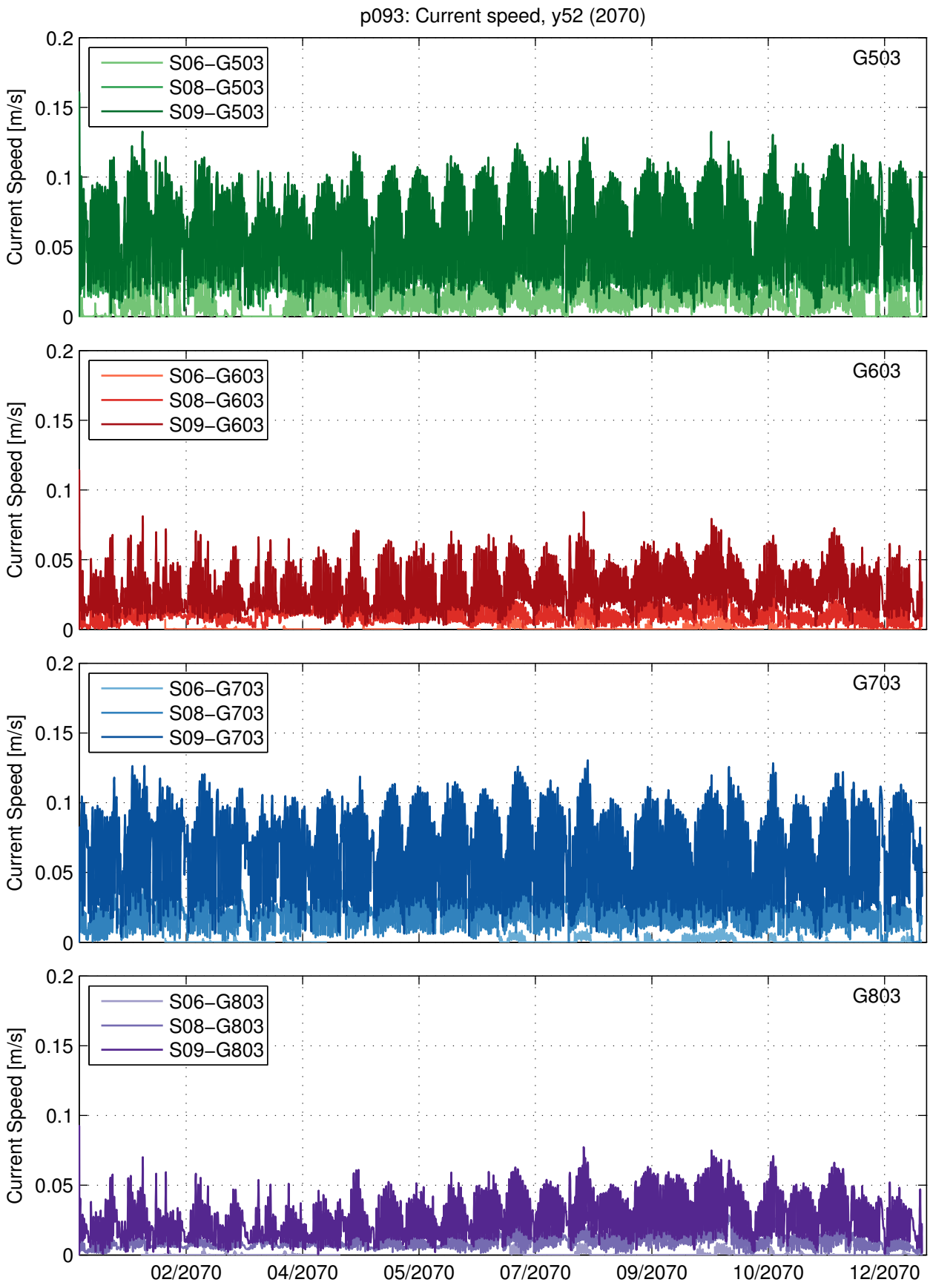

p183: Current speed, y43 (2061)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.01
0.02
0.03
0.04
0.05
0.06
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

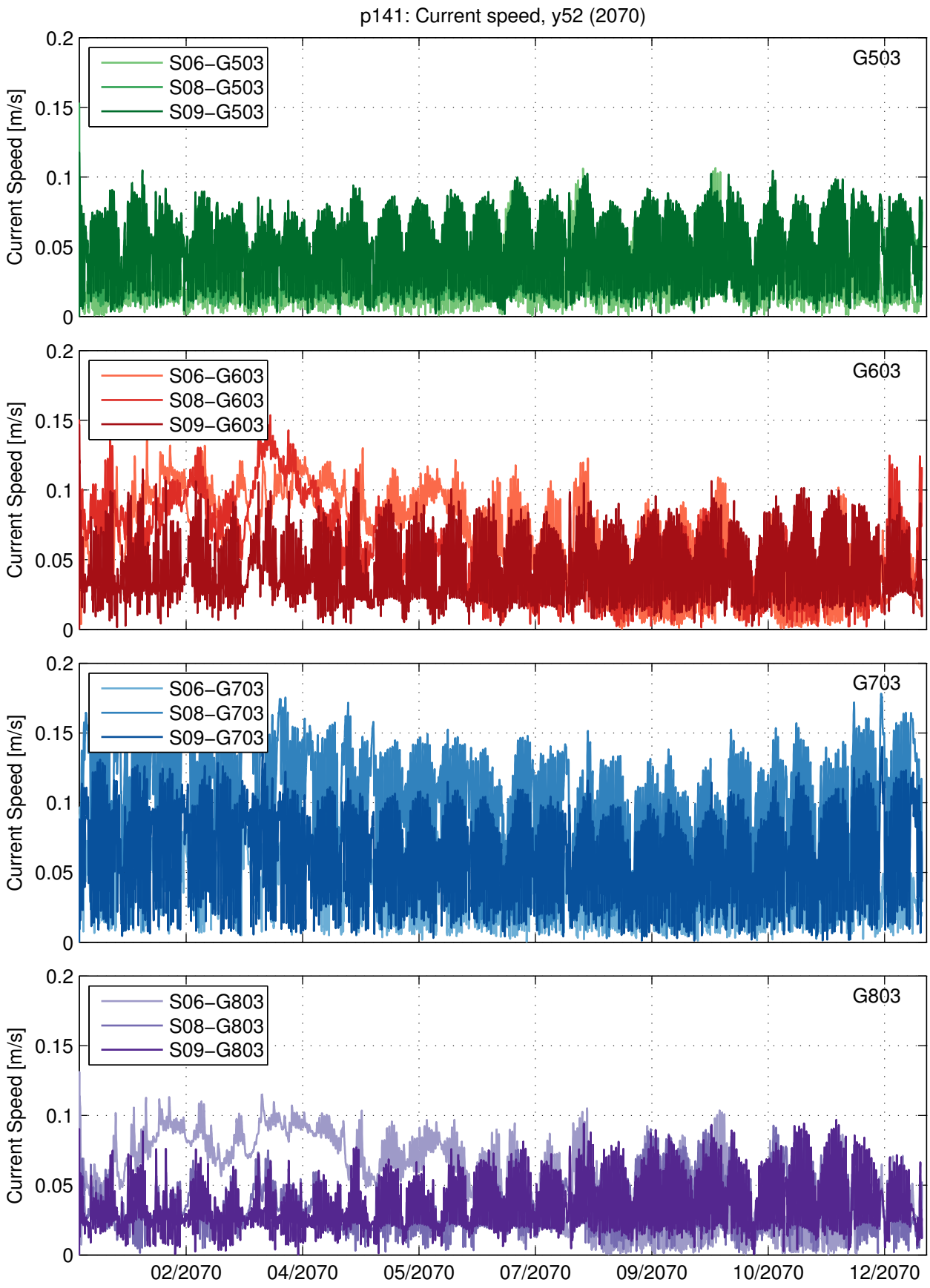

p185: Current speed, y43 (2061)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.02
0.04
0.06
0.08
0.1
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

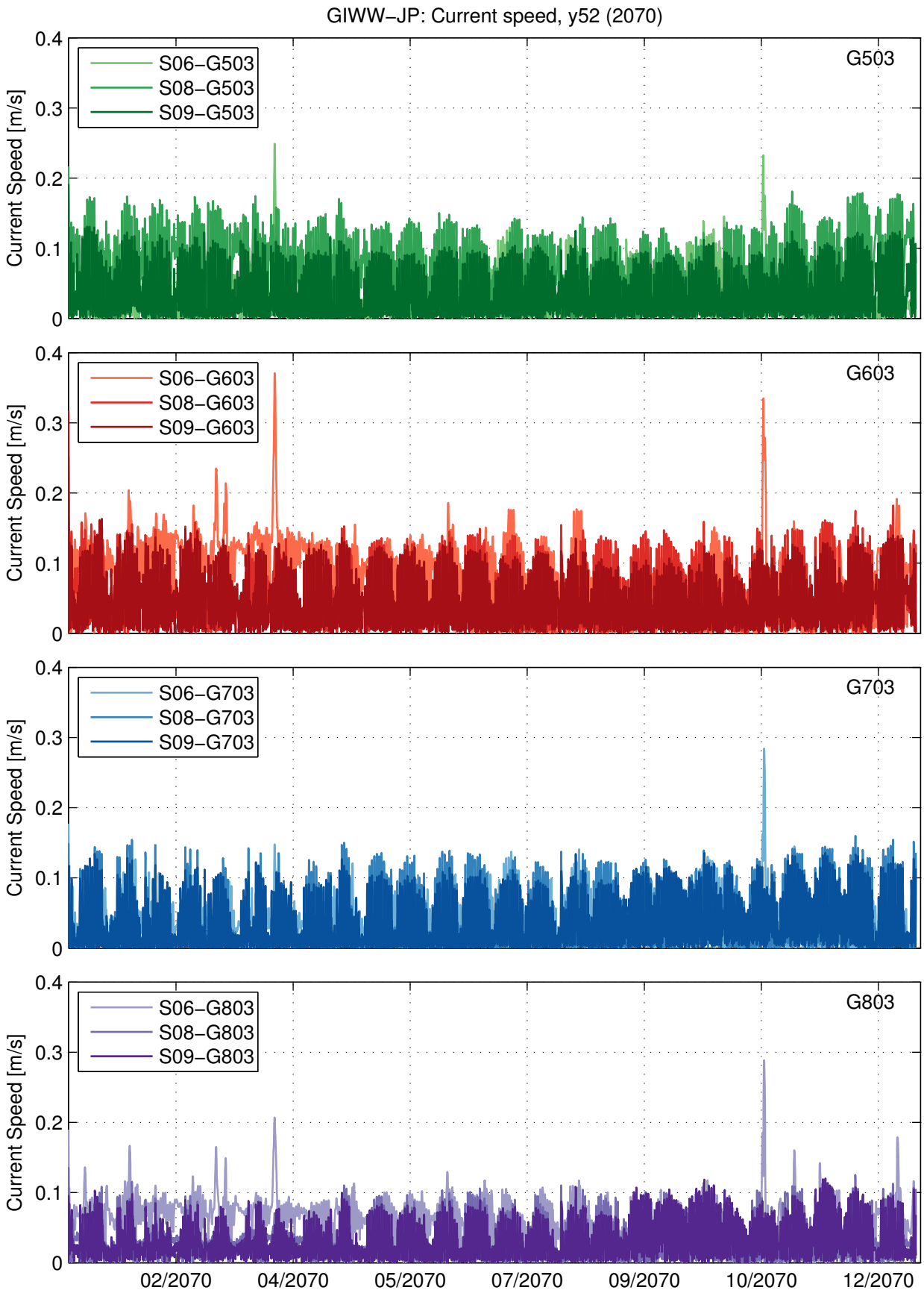

p192: Current speed, y43 (2061)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.01
0.02
0.03
0.04
0.05
0.06
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

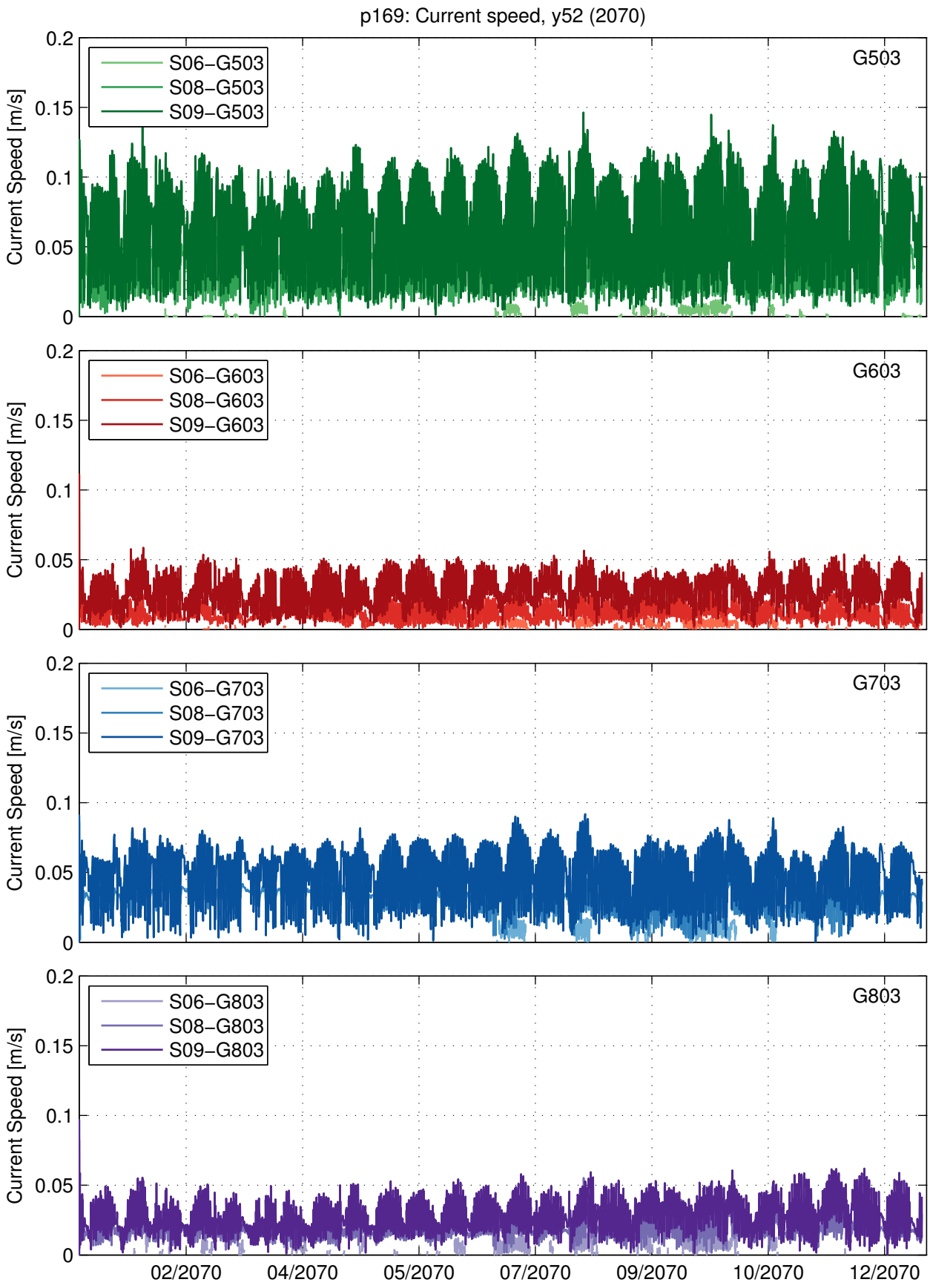

p194: Current speed, y43 (2061)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.005
0.01
0.015
0.02
0.025
02/2061
03/2061
05/2061
07/2061
08/2061
10/2061
11/2061

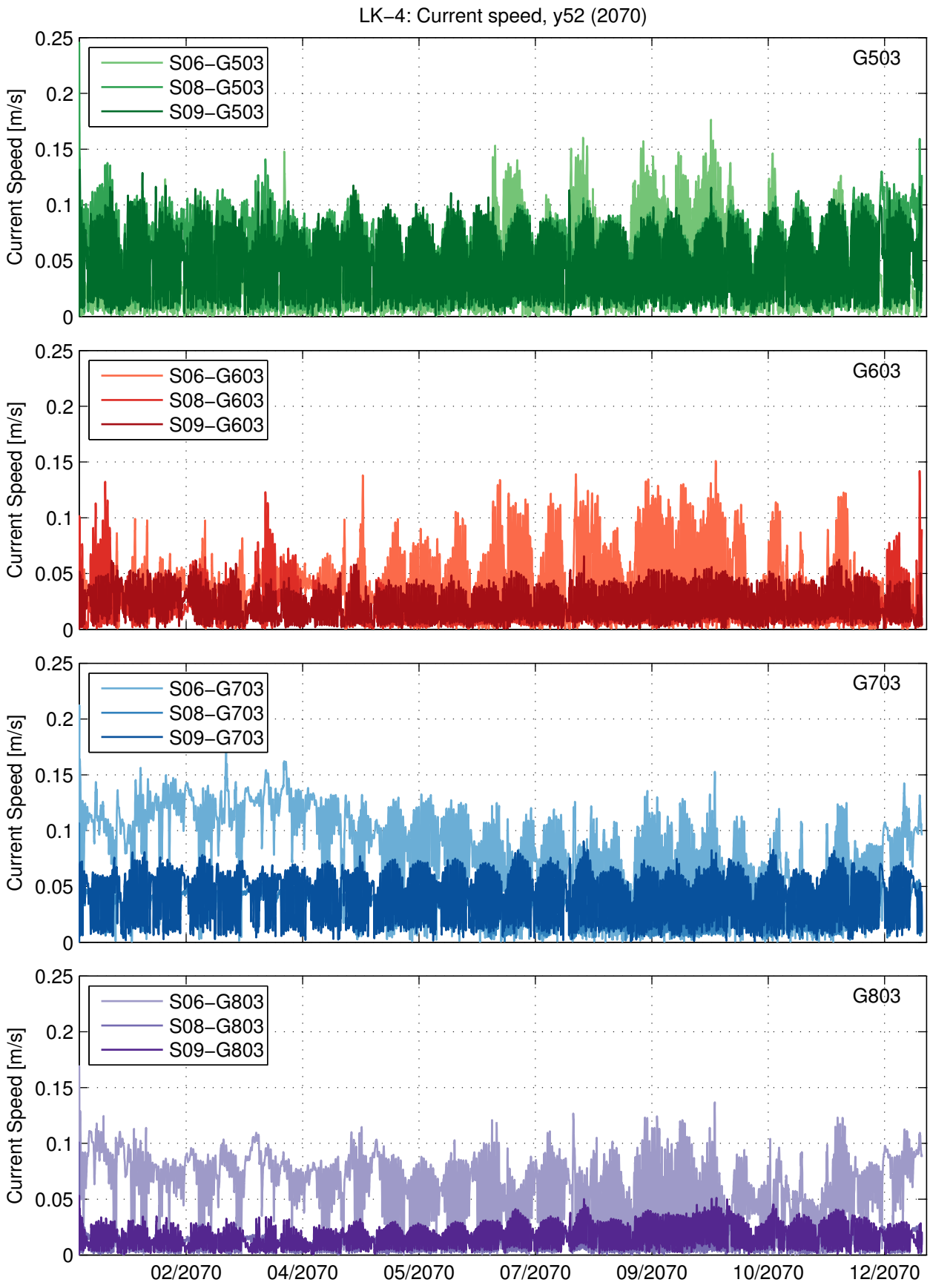

p159: Current speed, y52 (2070)
Current Speed [m/s]
0.2
0.15
0.1
0.05
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

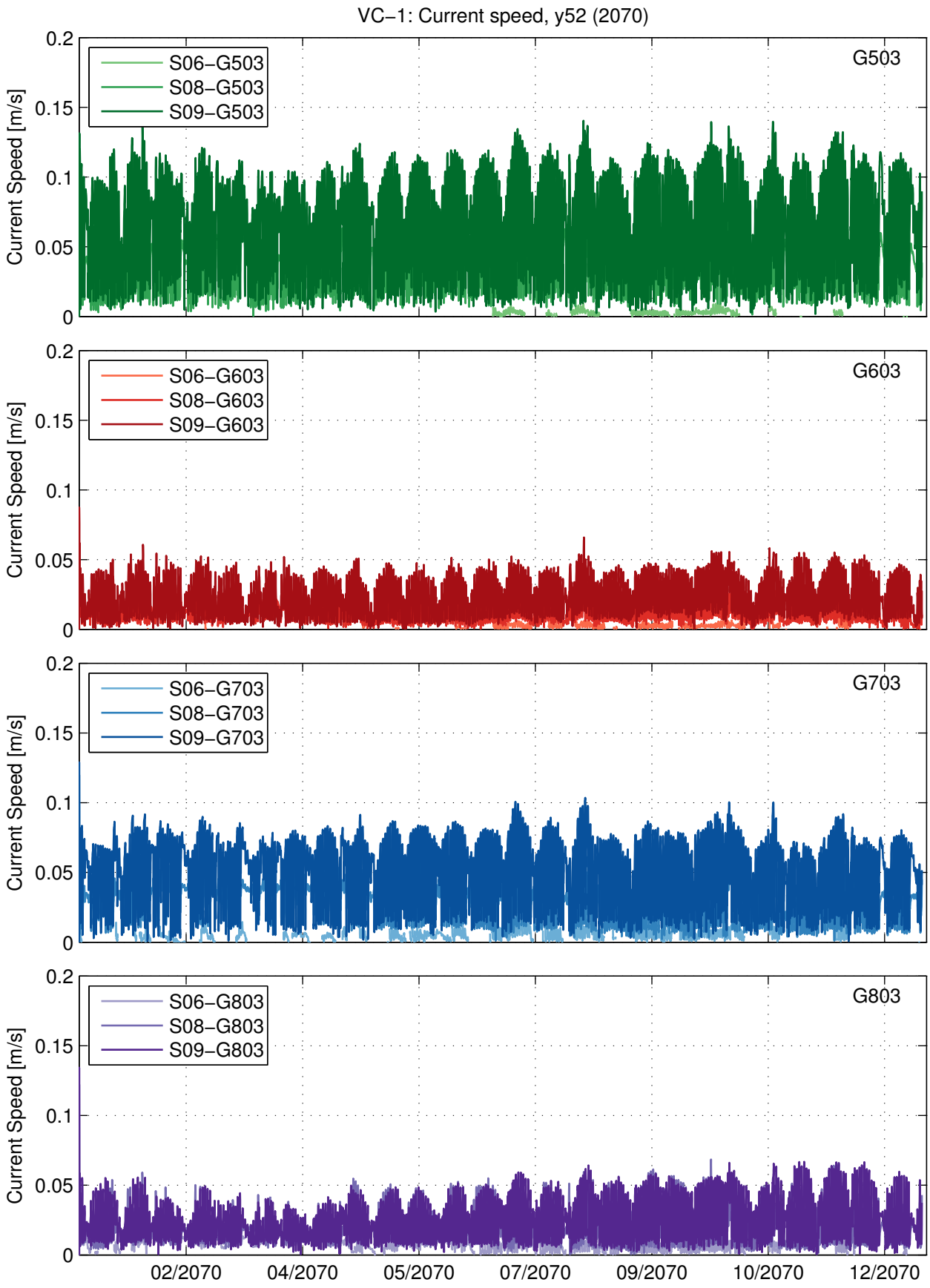

p093: Current speed, y52 (2070)
Current Speed [m/s]
0
0.05
0.1
0.15
0.2
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

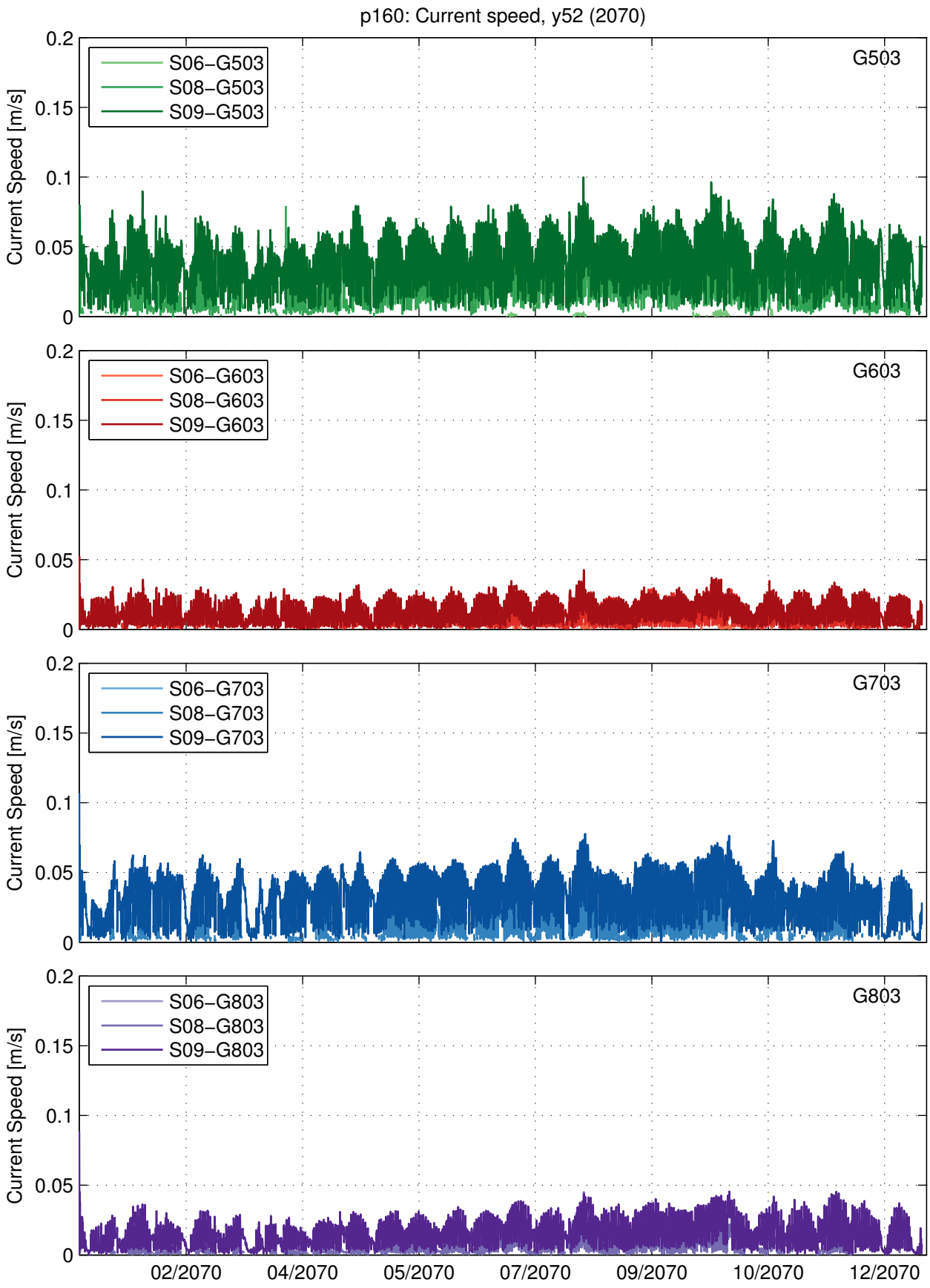

p141: Current speed, y52 (2070)
Current Speed [m/s]
0.2
0.15
0.1
0.05
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

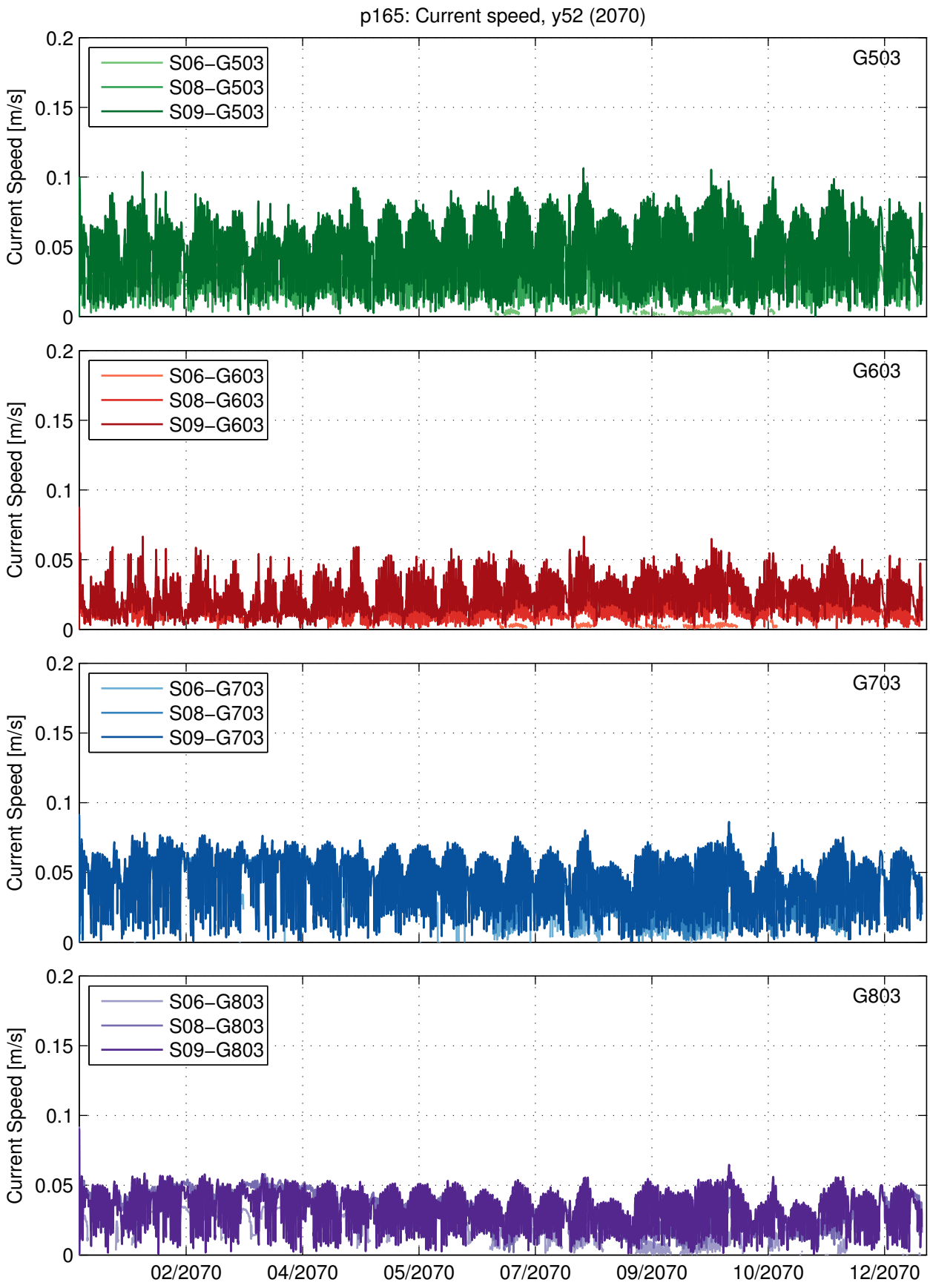

GIWW–JP: Current speed, y52 (2070)
Current Speed [m/s]
0
0.1
0.2
0.3
0.4
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

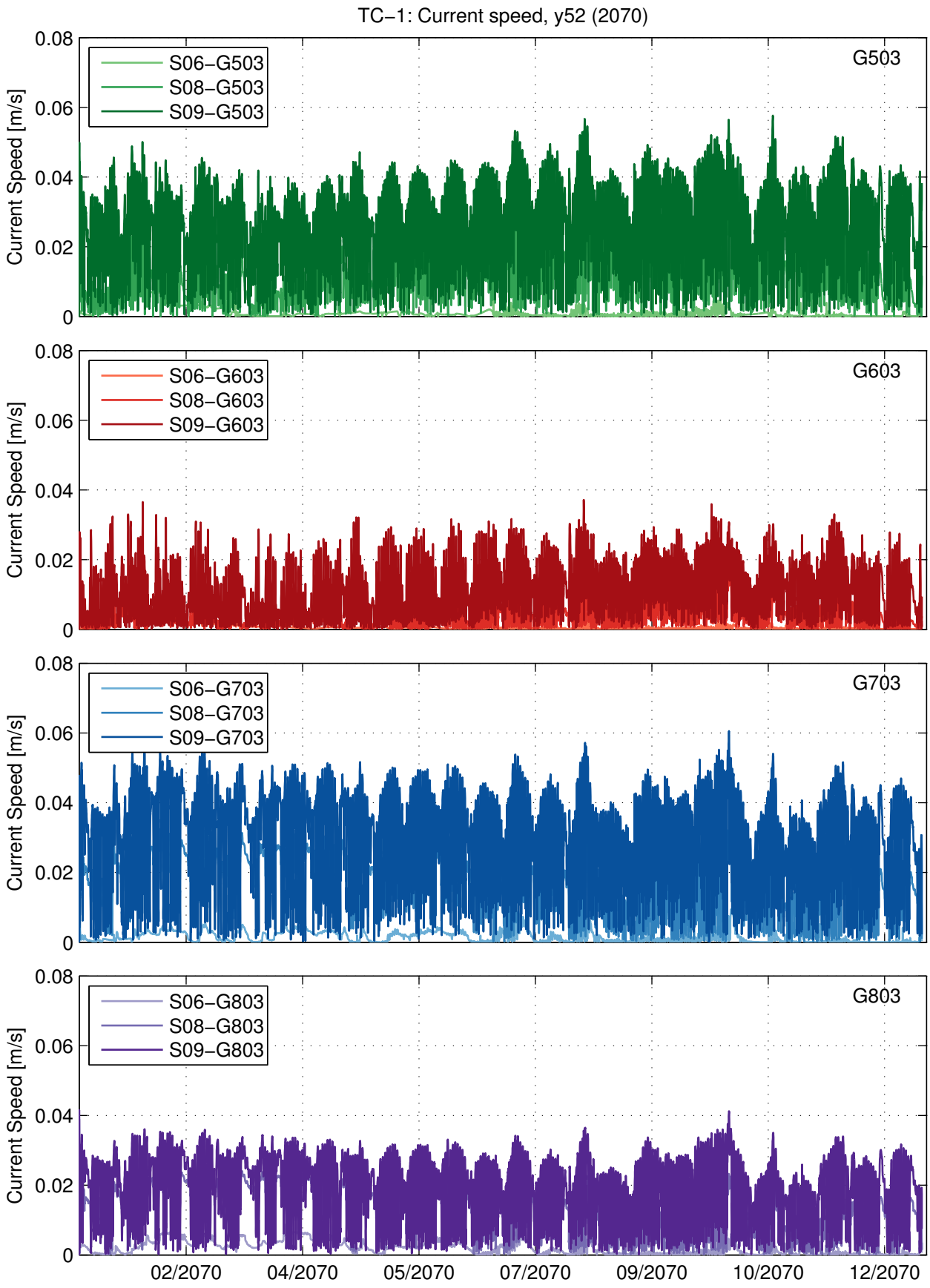

p169: Current speed, y52 (2070)
Current Speed [m/s]
0.2
0.15
0.1
0.05
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

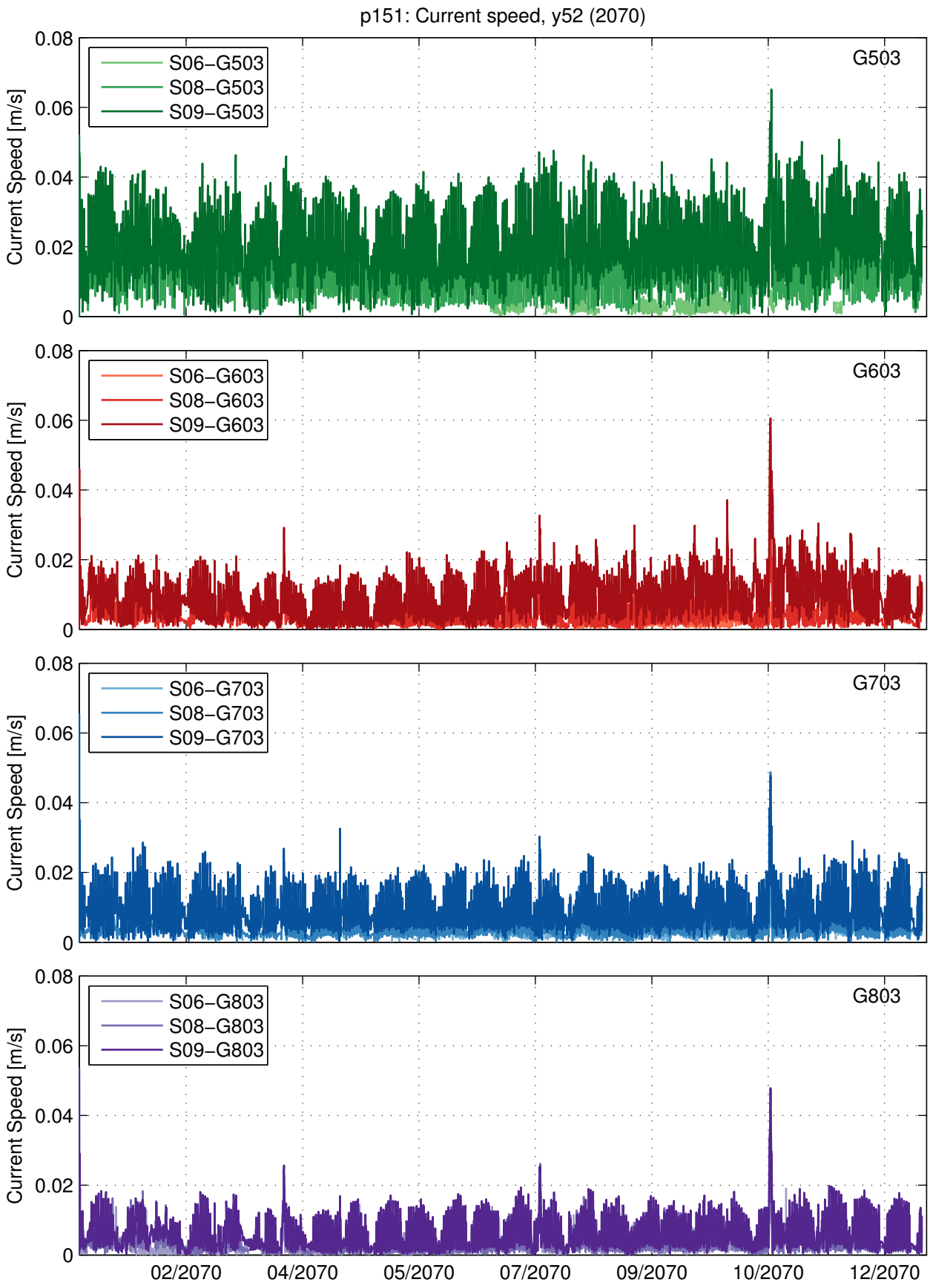

LK–4: Current speed, y52 (2070)
Current Speed [m/s]
0.25
0.2
0.15
0.1
0.05
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

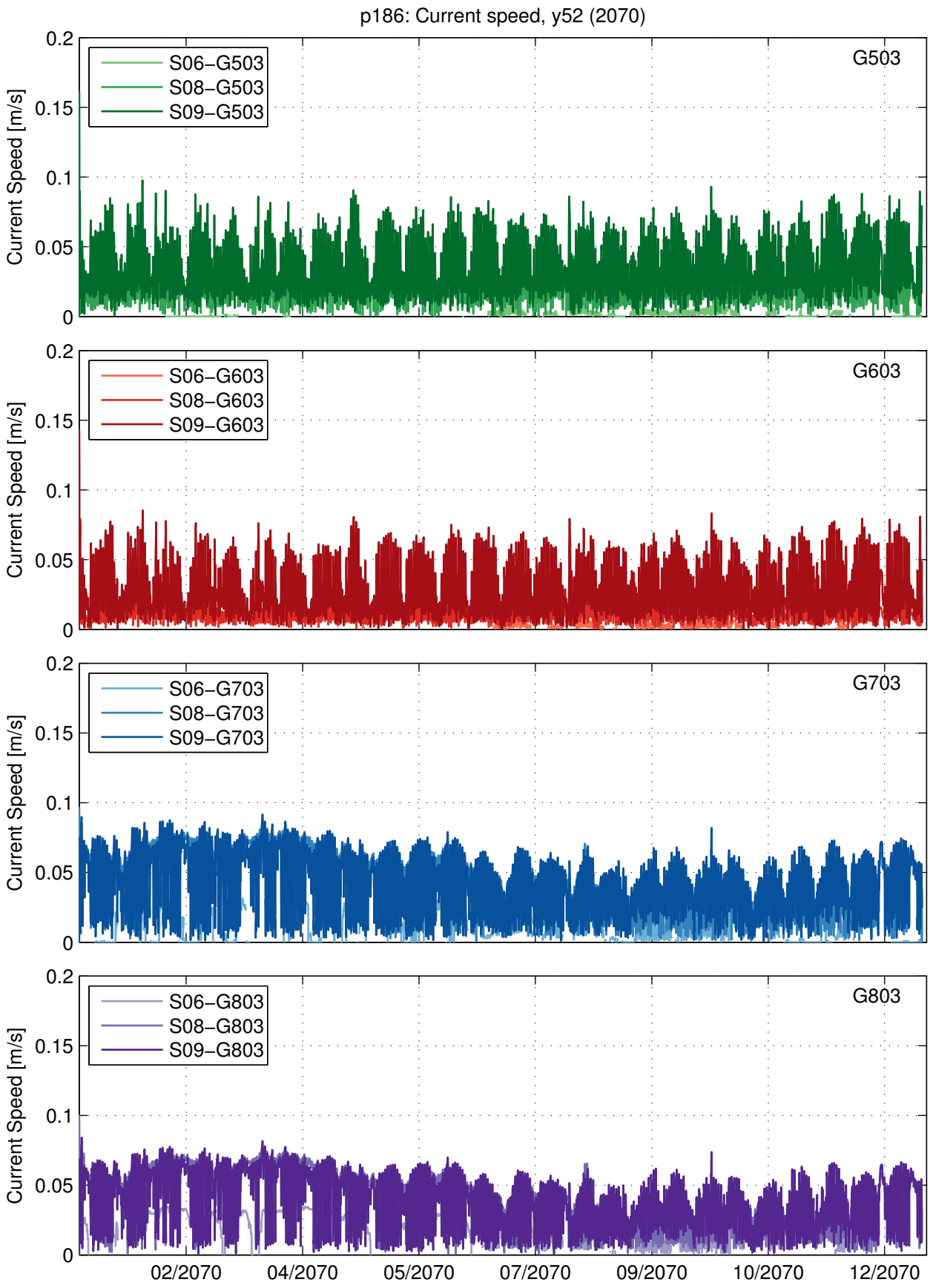

VC−1: Current speed, y52 (2070)
Current Speed [m/s]
0.2
0.15
0.1
0.05
0
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
S06−G703
S08−G703
S09−G703
G703
S06−G803
S08−G803
S09−G803
G803
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

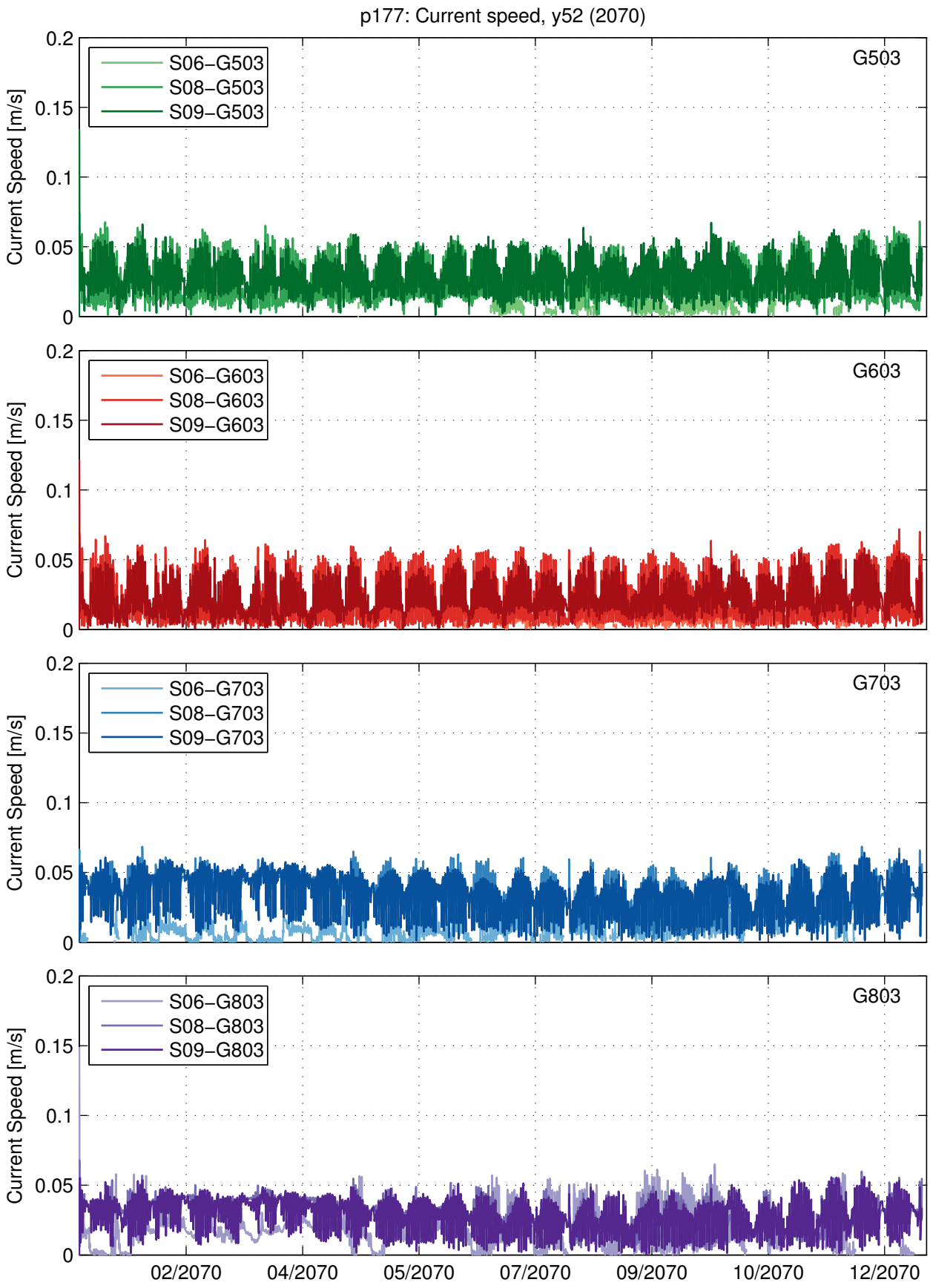

p160: Current speed, y52 (2070)
Current Speed [m/s]
0.2
0.15
0.1
0.05
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

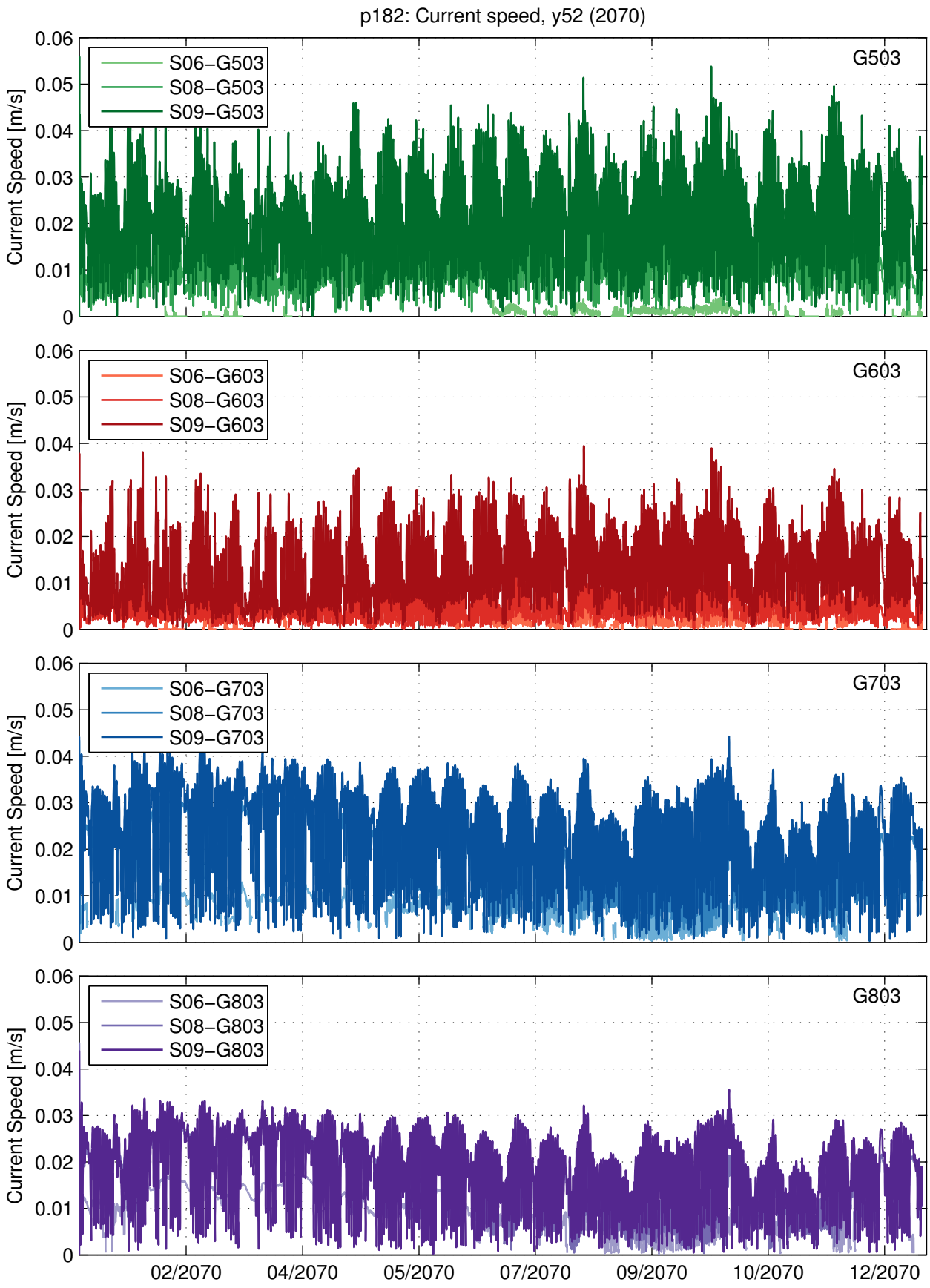

p165: Current speed, y52 (2070)
Current Speed [m/s]
0.2
0.15
0.1
0.05
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

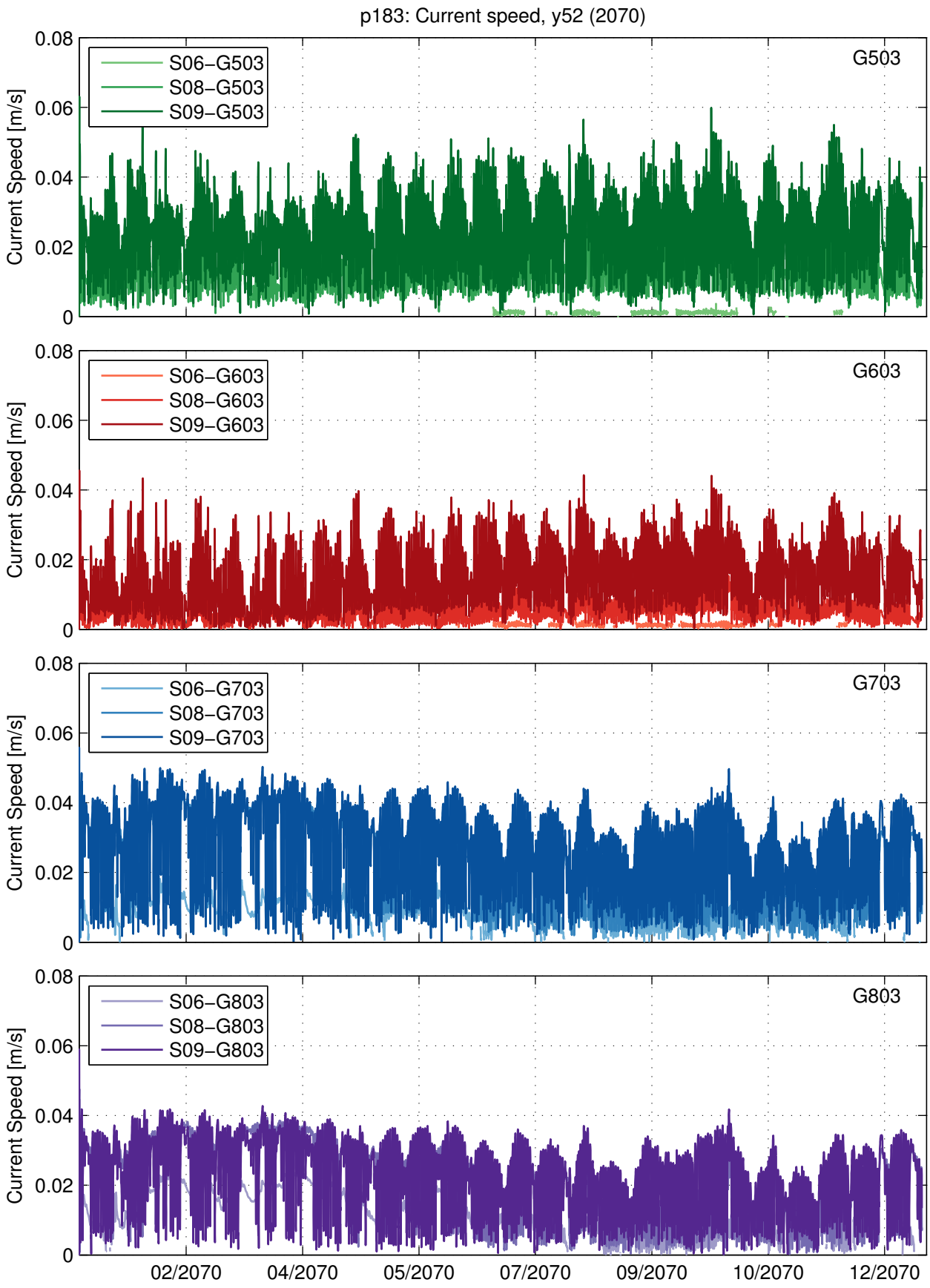

TC−1: Current speed, y52 (2070)
Current Speed [m/s]
0.08
0.06
0.04
0.02
0
S06−G503
S08−G503
S09−G503
G503
S06−G603
S08−G603
S09−G603
G603
S06−G703
S08−G703
S09−G703
G703
S06−G803
S08−G803
S09−G803
G803
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

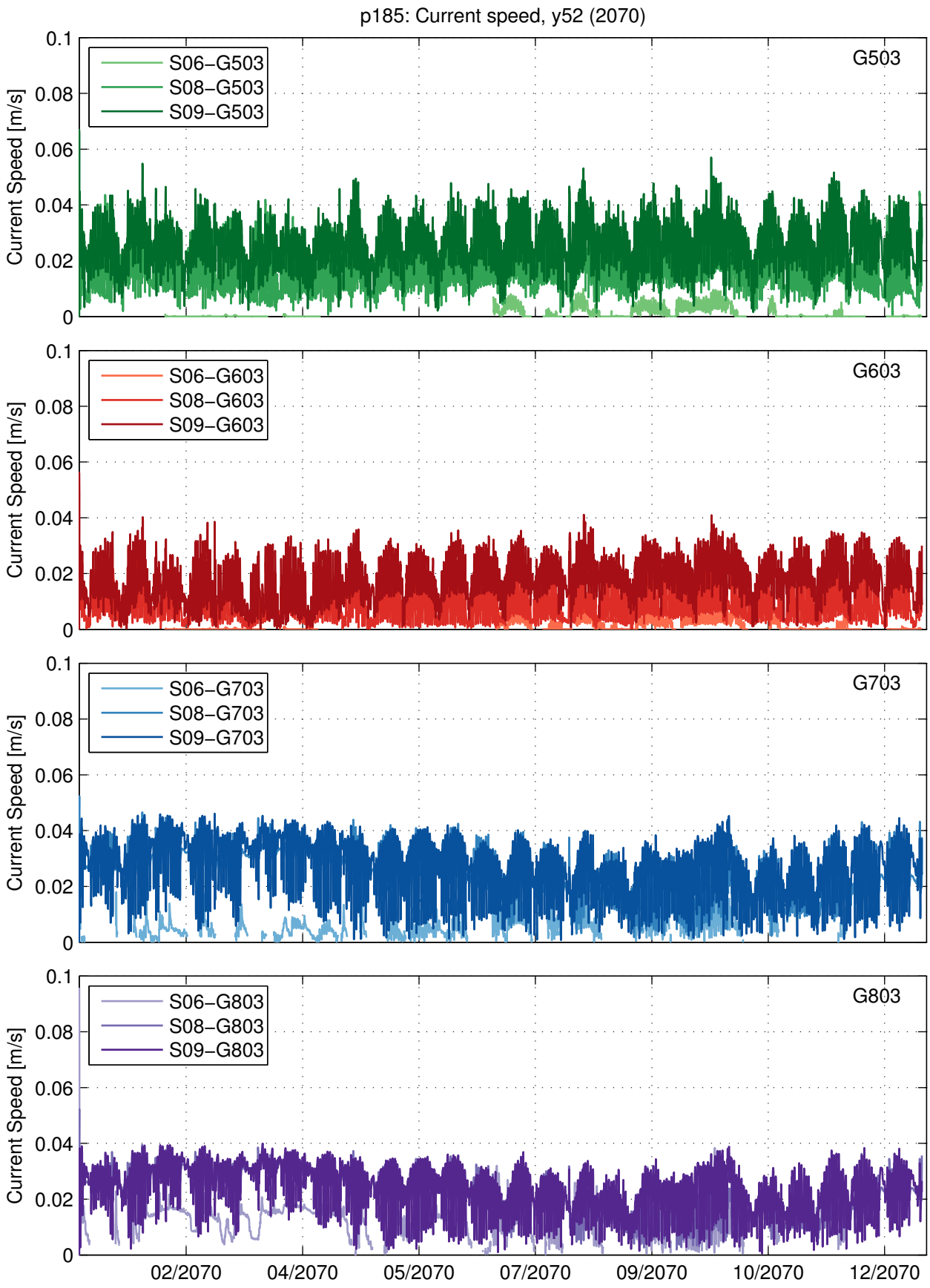

p151: Current speed, y52 (2070)
Current Speed [m/s]
0.08
0.06
0.04
0.02
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

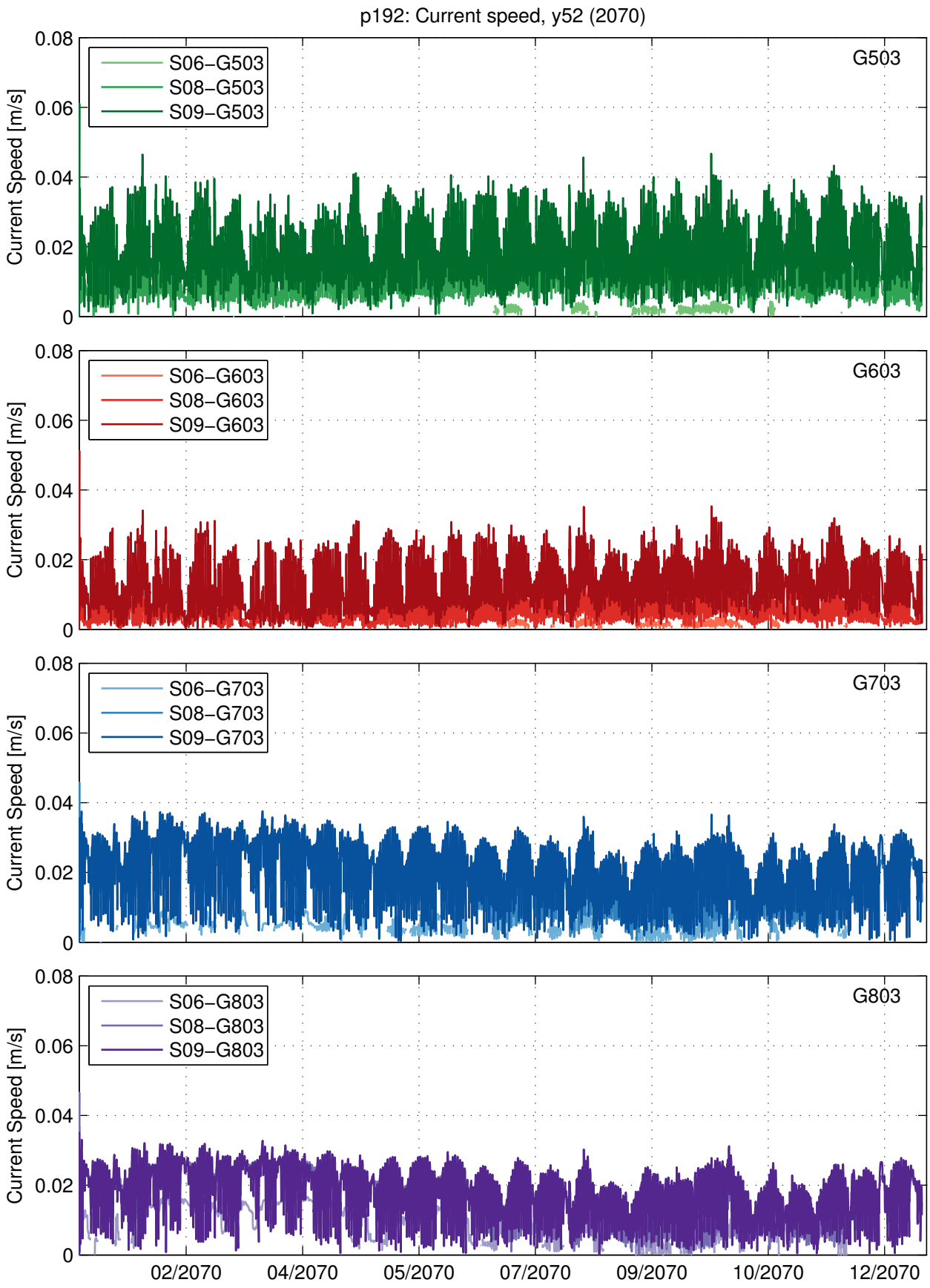

p186: Current speed, y52 (2070)
Current Speed [m/s]
0.2
0.15
0.1
0.05
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

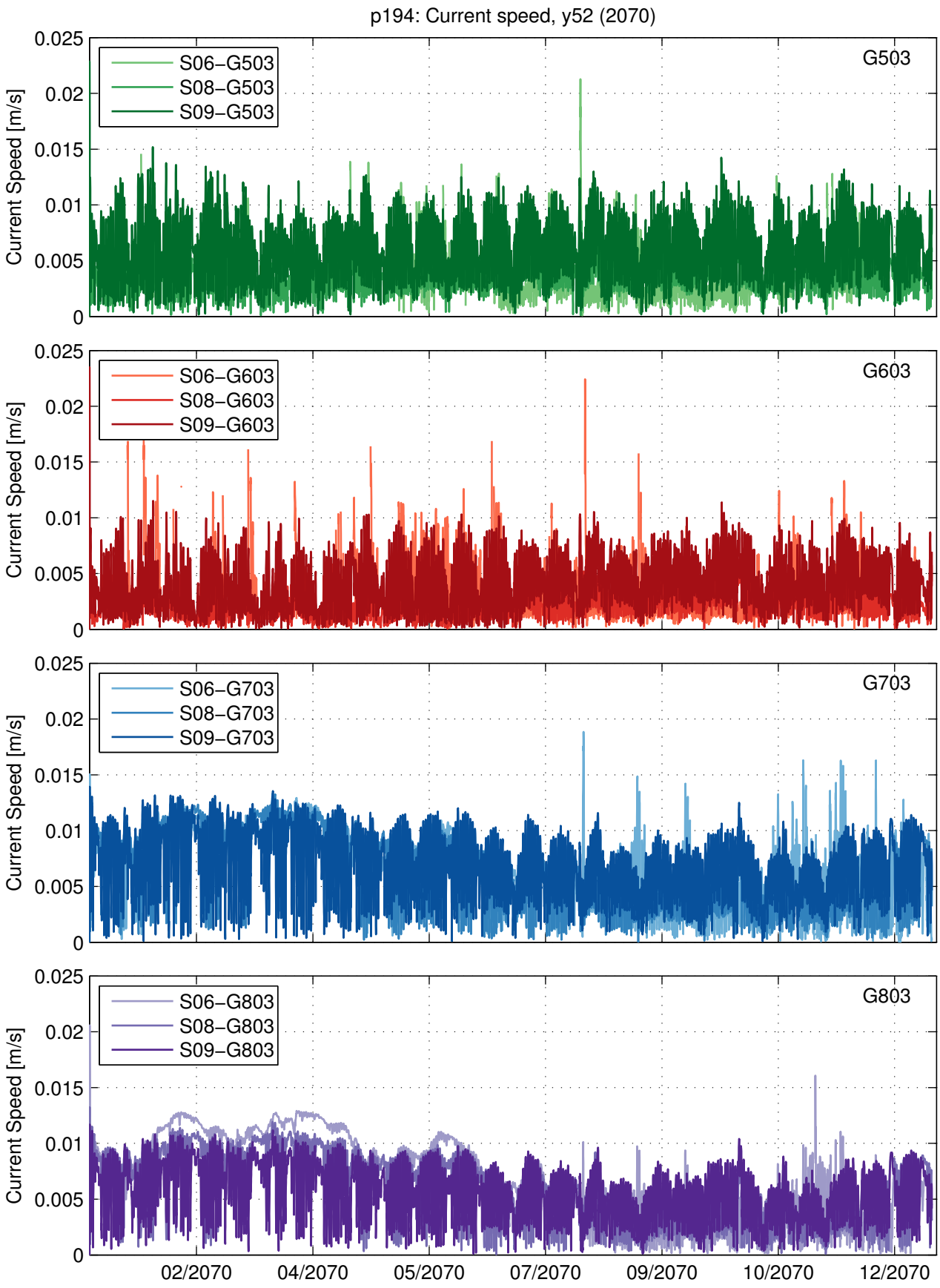

p177: Current speed, y52 (2070)
Current Speed [m/s]
0.2
0.15
0.1
0.05
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

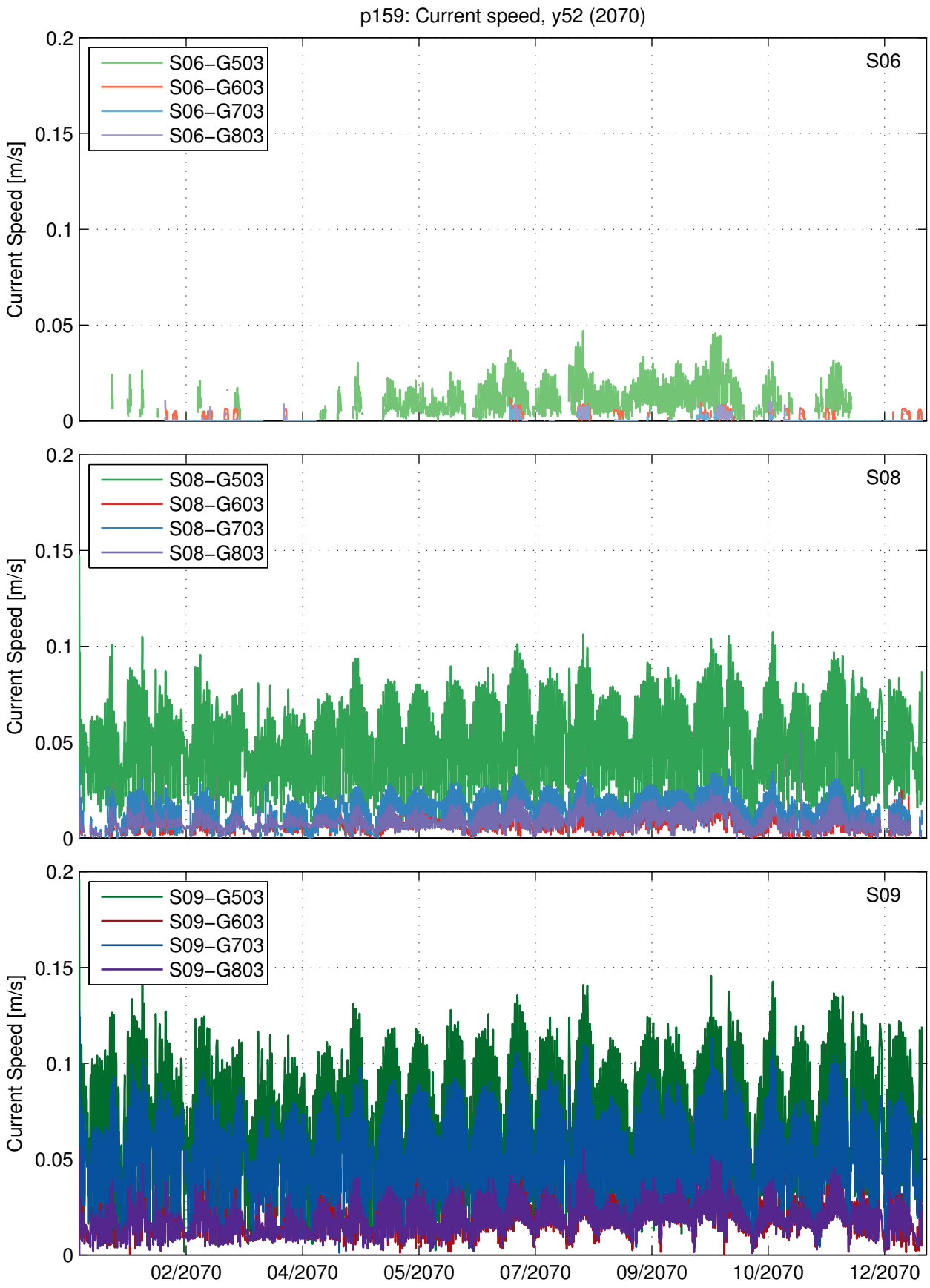

p182: Current speed, y52 (2070)
Current Speed [m/s]
0.06
0.05
0.04
0.03
0.02
0.01
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

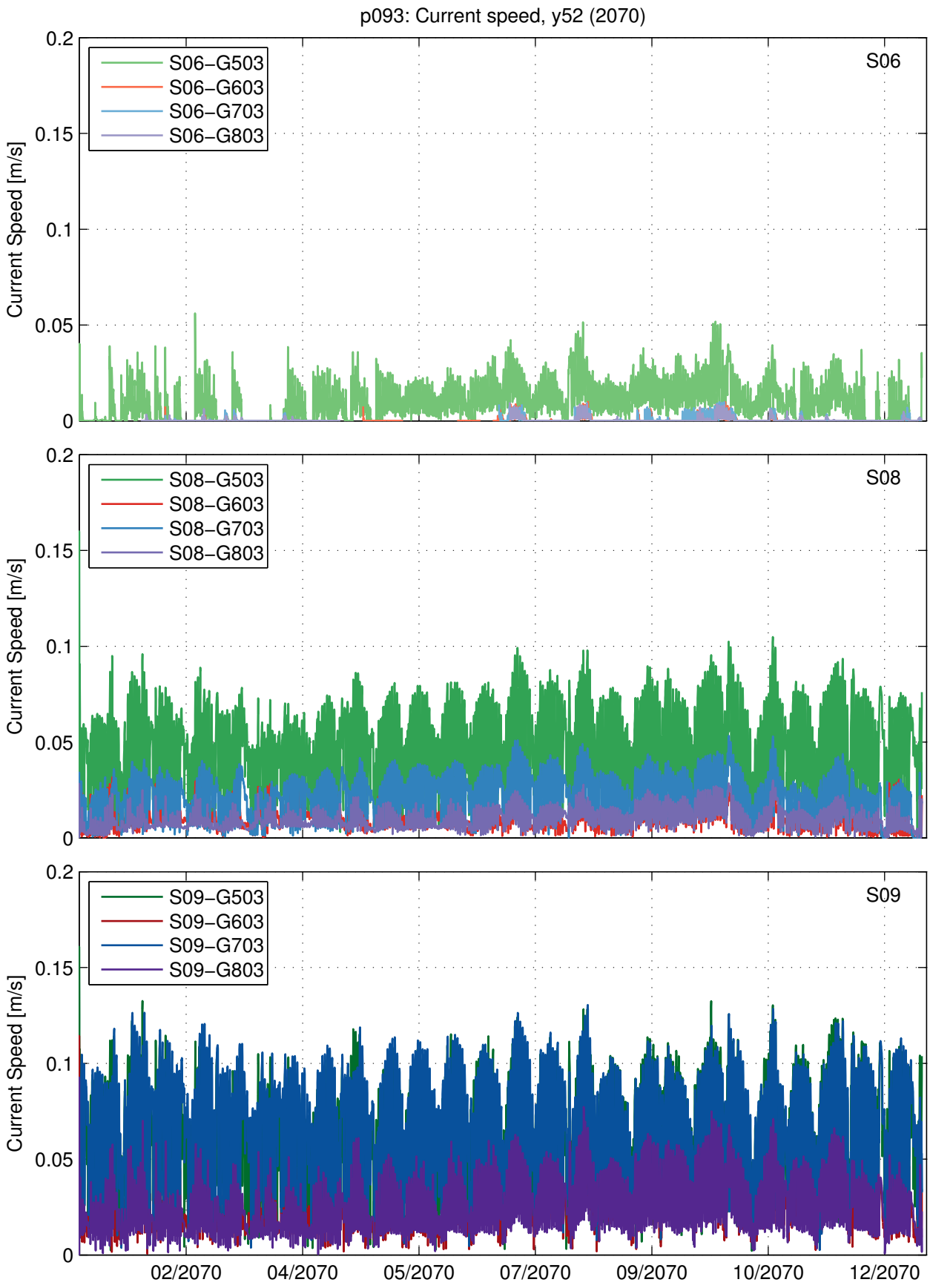

p183: Current speed, y52 (2070)
Current Speed [m/s]
0.08
0.06
0.04
0.02
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

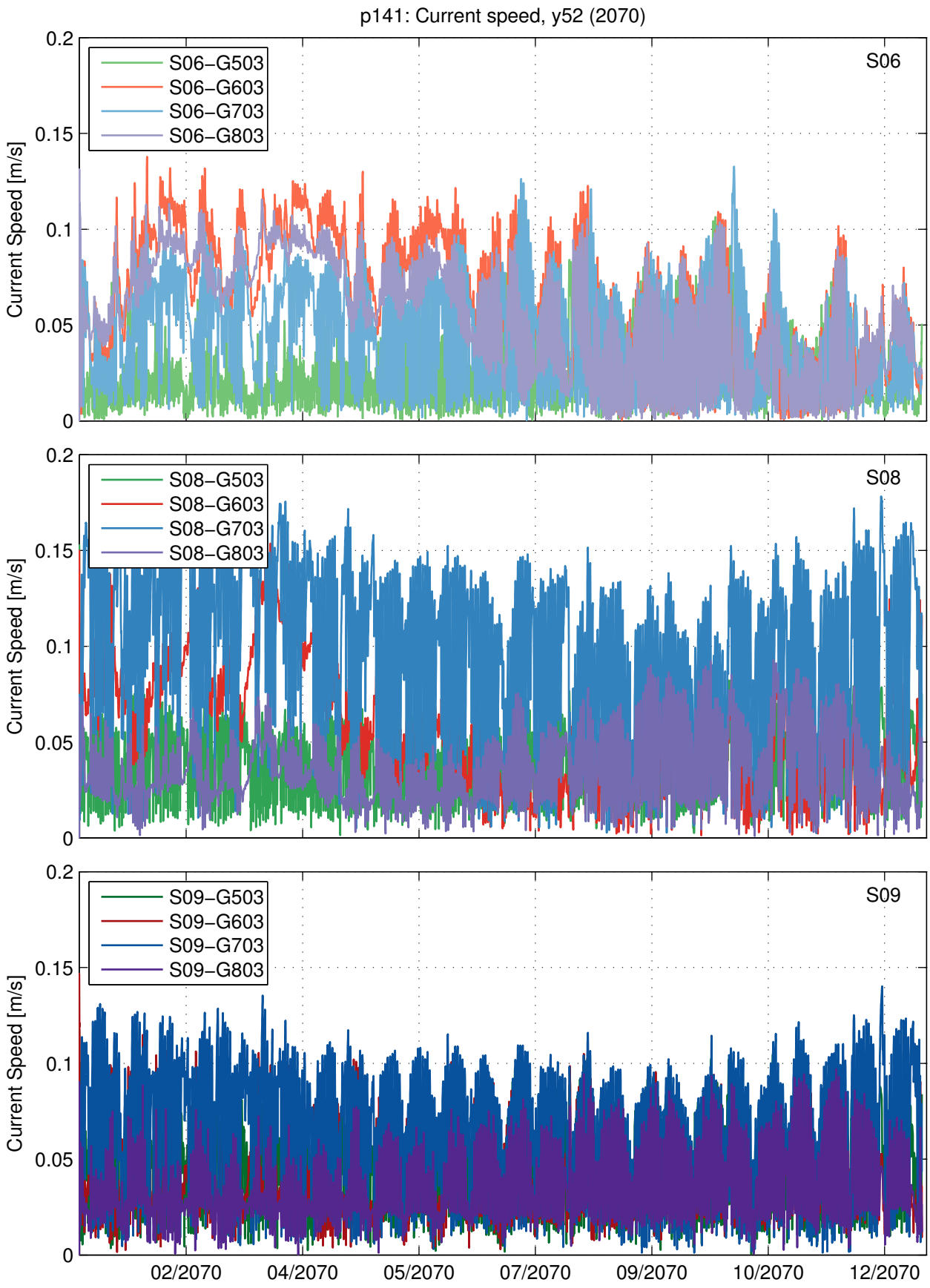

p185: Current speed, y52 (2070)
Current Speed [m/s]
0.1
0.08
0.06
0.04
0.02
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

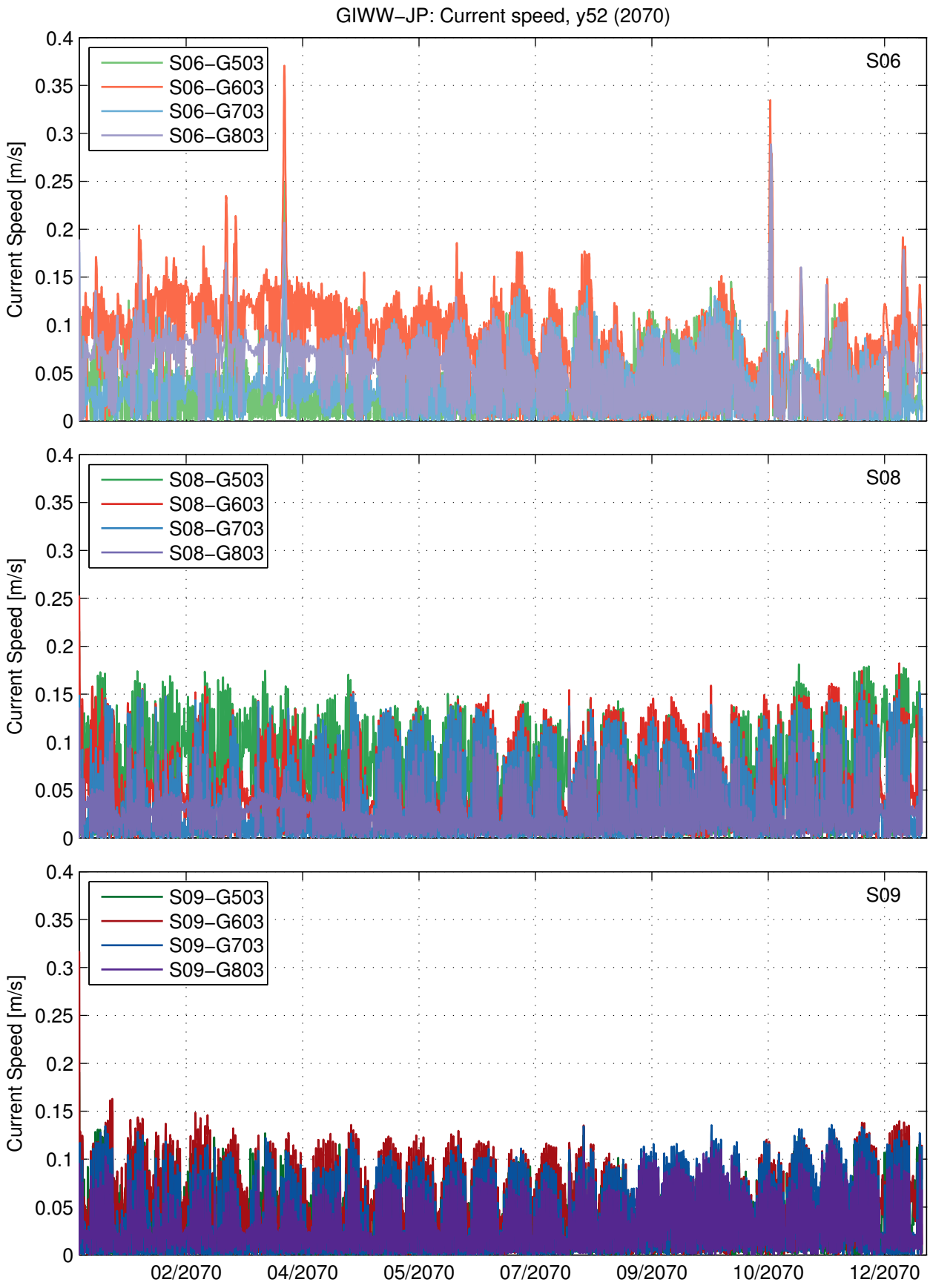

p192: Current speed, y52 (2070)
Current Speed [m/s]
0.08
0.06
0.04
0.02
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

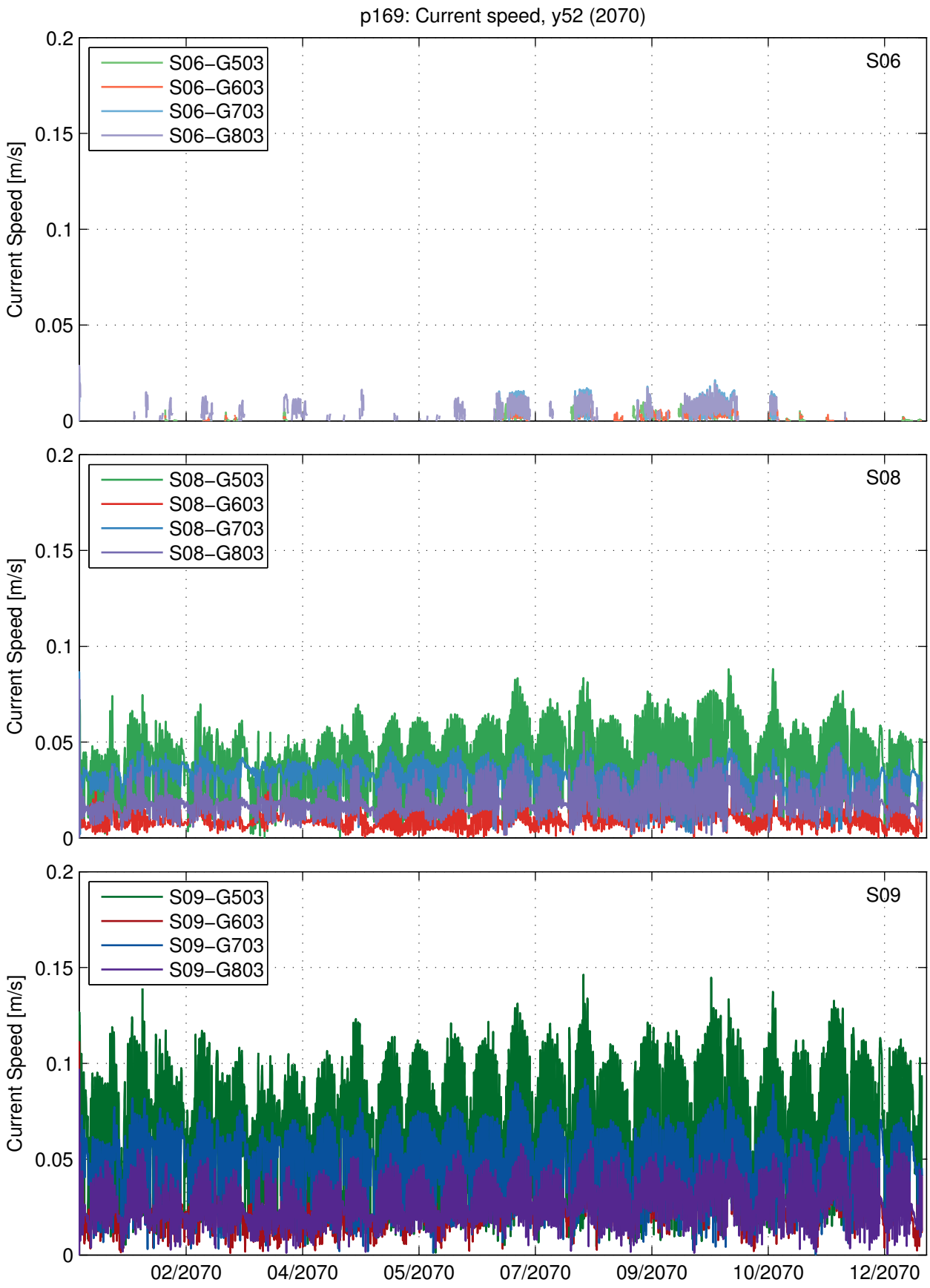

p194: Current speed, y52 (2070)
Current Speed [m/s]
0.025
0.02
0.015
0.01
0.005
0
S06–G503
S08–G503
S09–G503
G503
S06–G603
S08–G603
S09–G603
G603
S06–G703
S08–G703
S09–G703
G703
S06–G803
S08–G803
S09–G803
G803
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

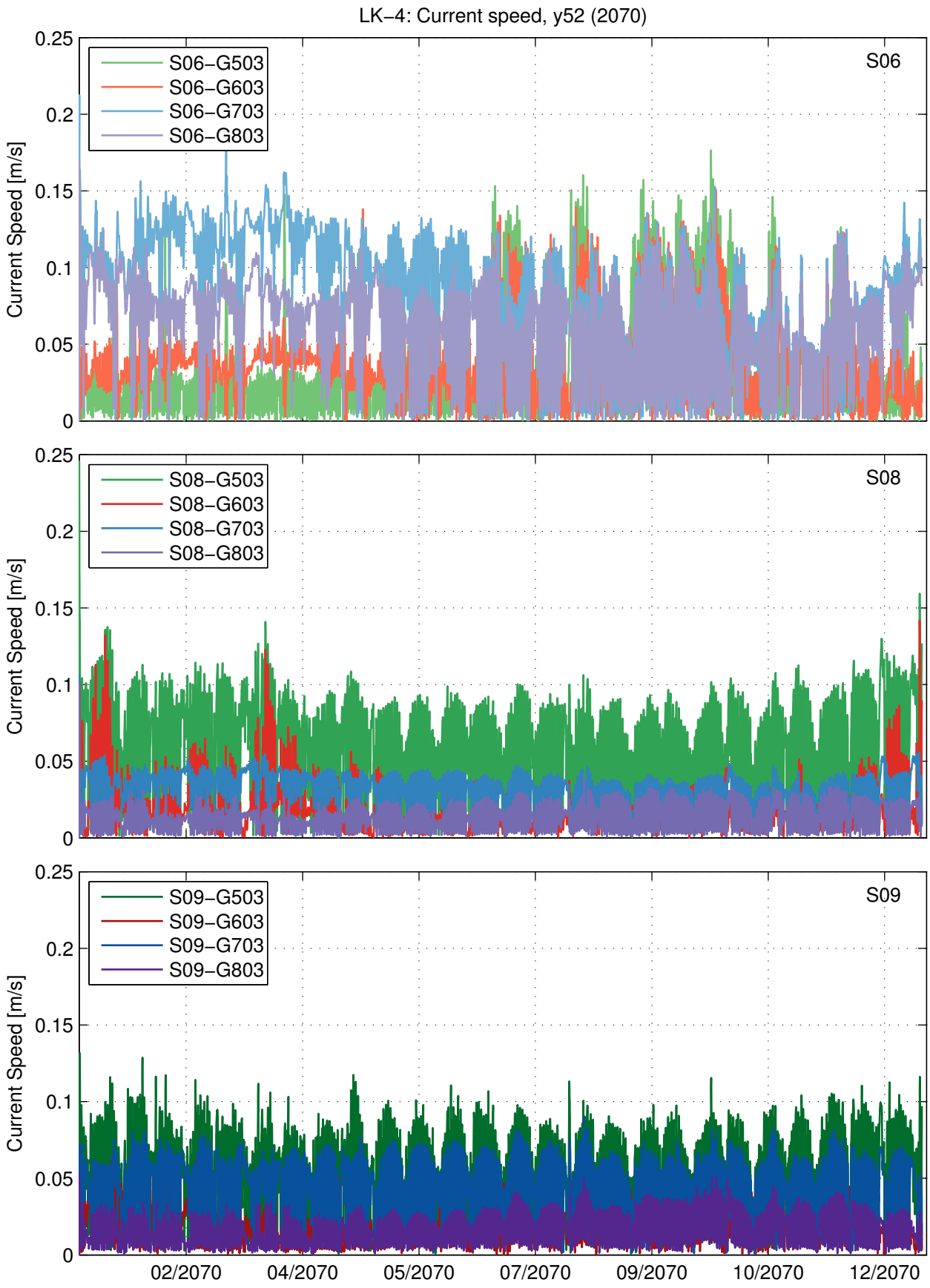

p159: Current speed, y52 (2070)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.05
0.1
0.15
0.2
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

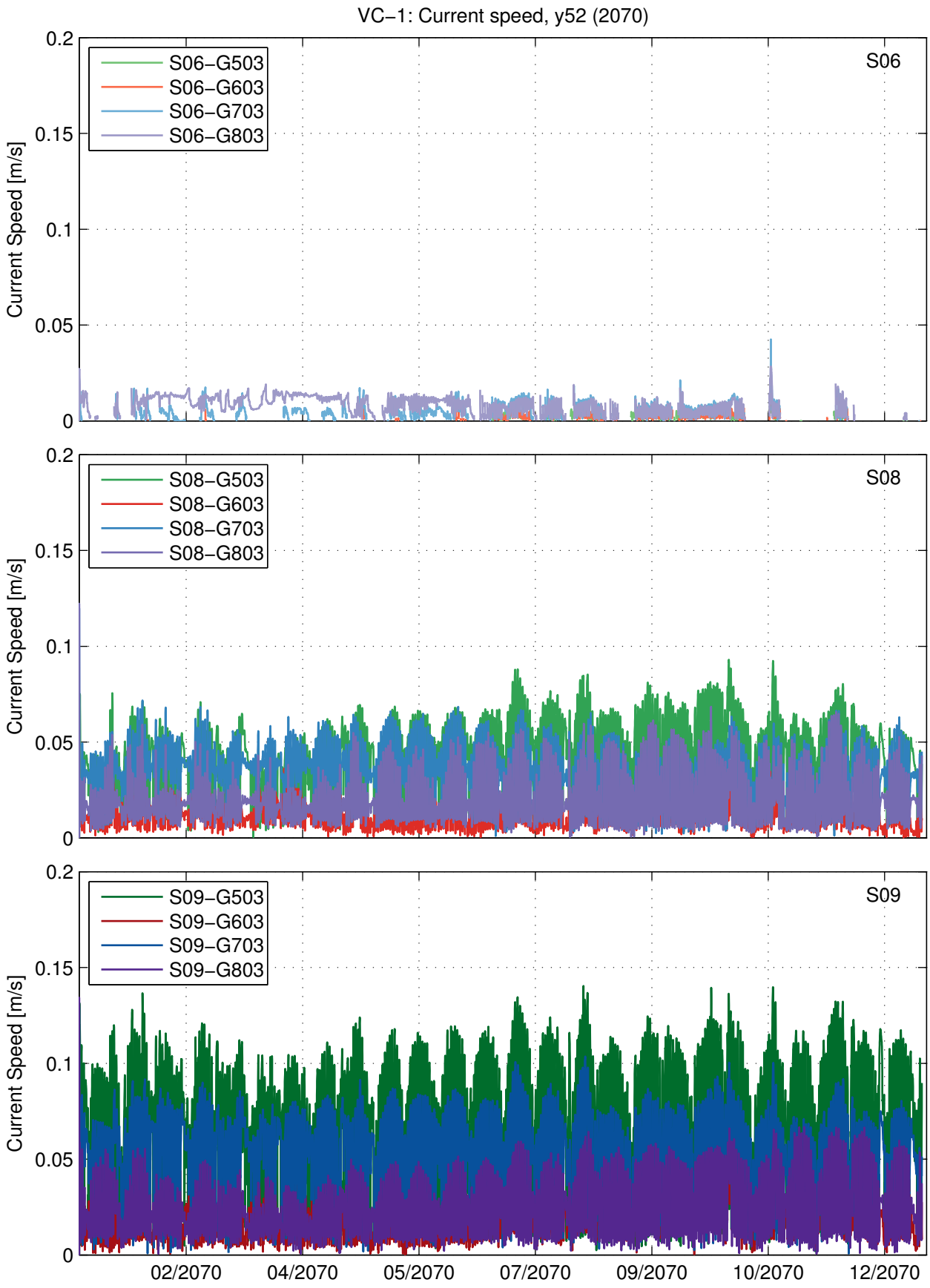

p093: Current speed, y52 (2070)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.05
0.1
0.15
0.2
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

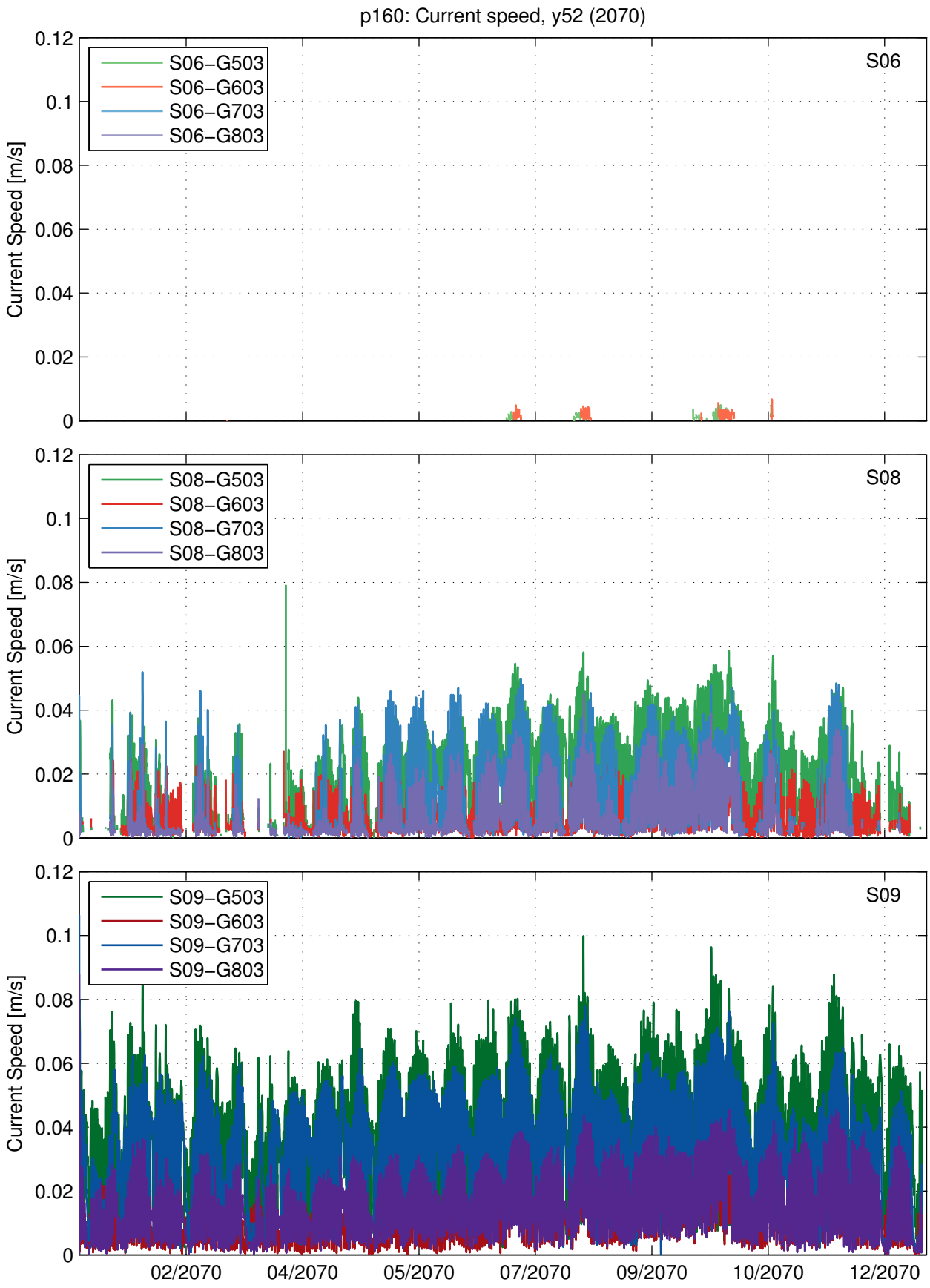

p141: Current speed, y52 (2070)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.05
0.1
0.15
0.2
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

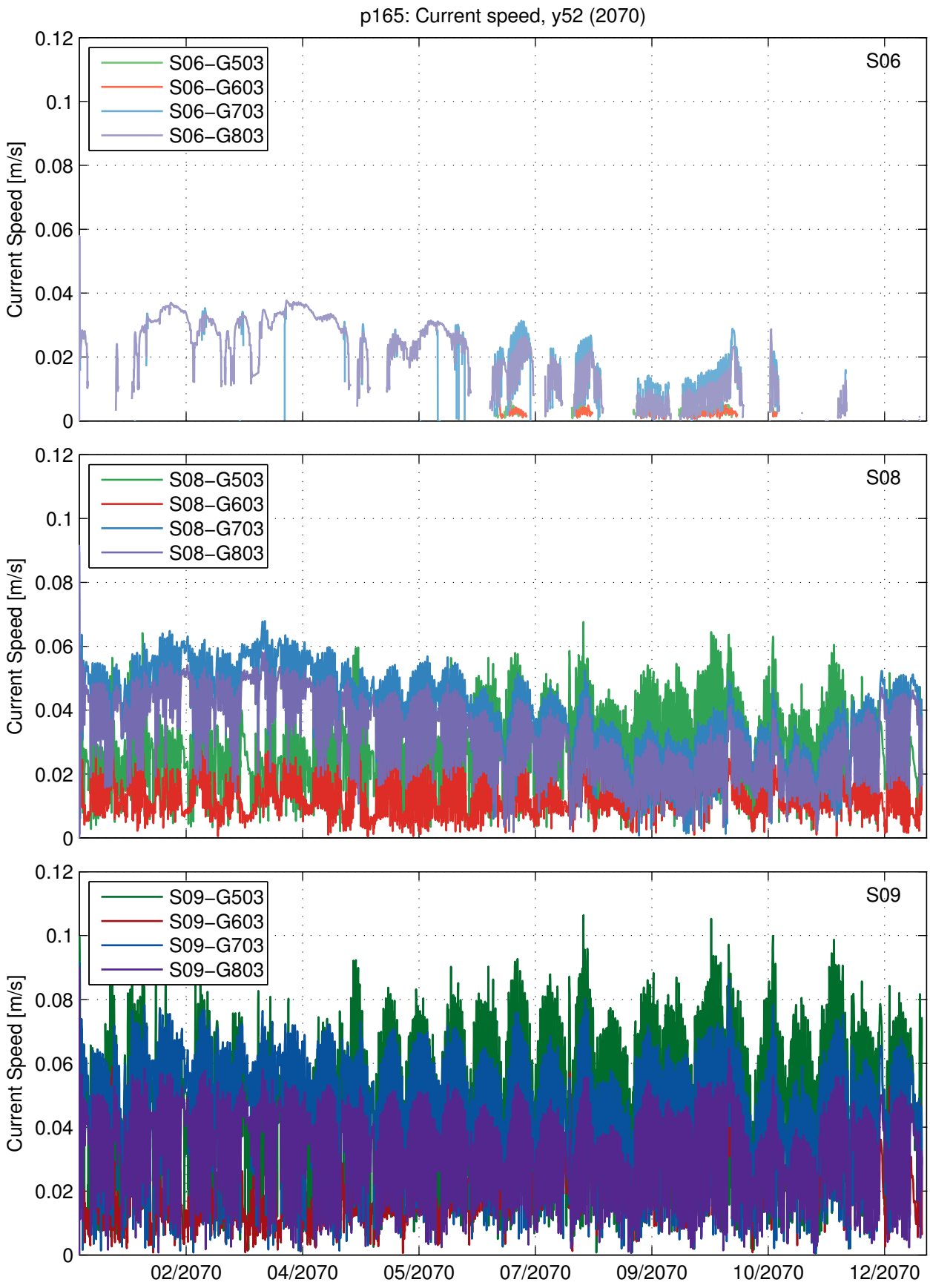

GIWW–JP: Current speed, y52 (2070)
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
Current Speed [m/s]
0
0.05
0.1
0.15
0.2
0.25
0.3
0.35
0.4
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

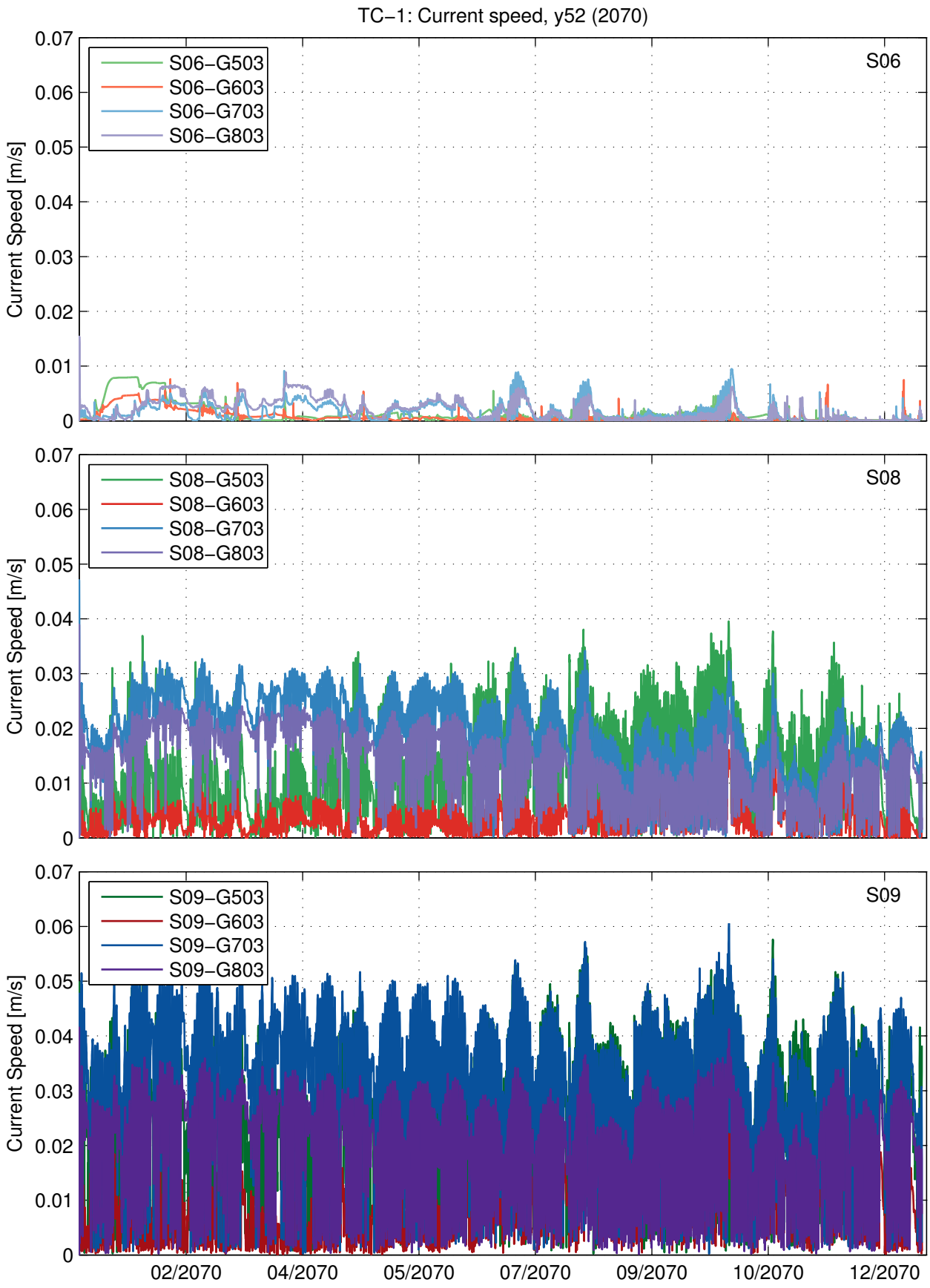

p169: Current speed, y52 (2070)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.05
0.1
0.15
0.2
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

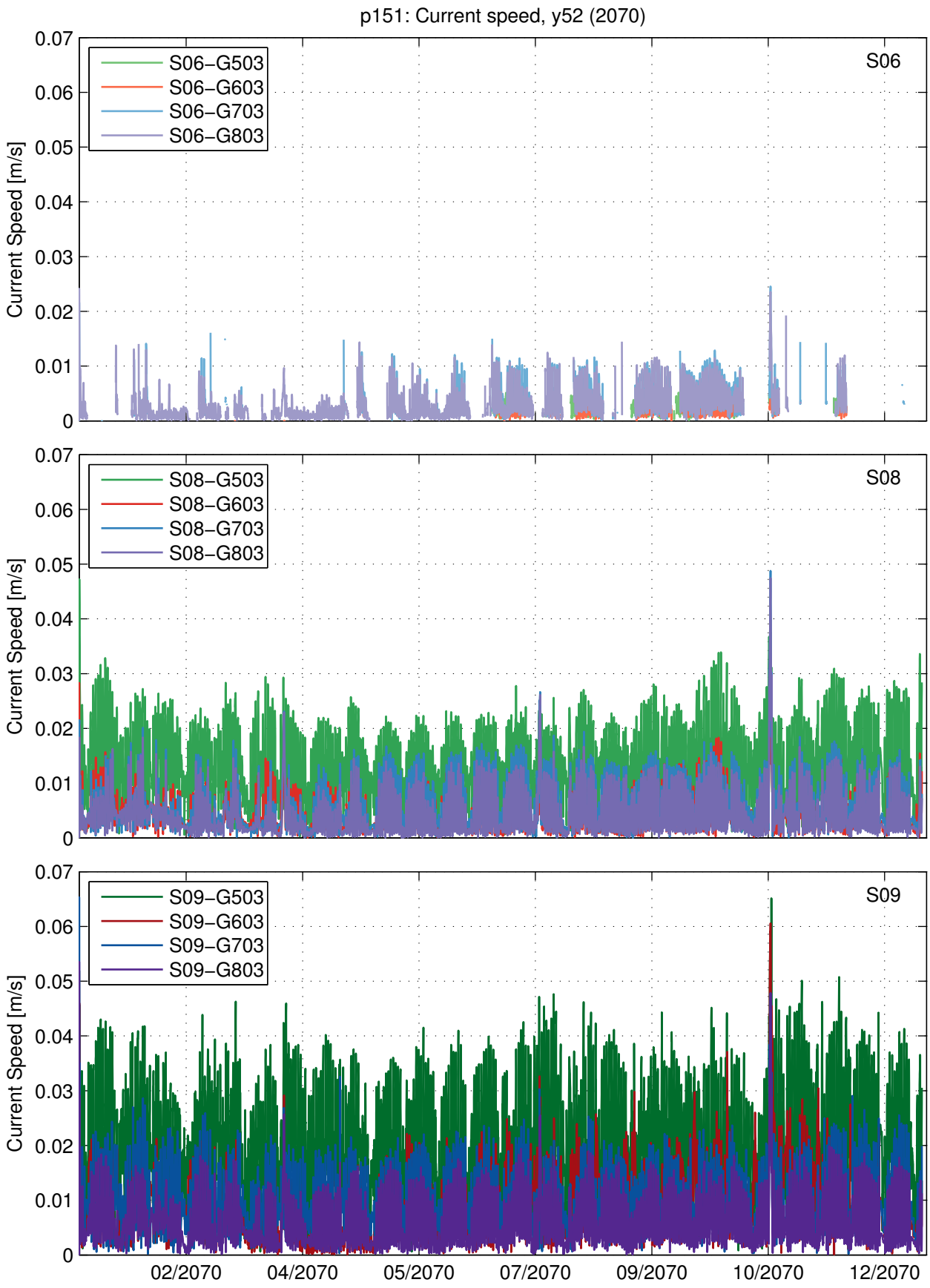

LK−4: Current speed, y52 (2070)
S06−G503
S06−G603
S06−G703
S06−G803
S06
S08−G503
S08−G603
S08−G703
S08−G803
S08
S09−G503
S09−G603
S09−G703
S09−G803
S09
Current Speed [m/s]
0
0.05
0.1
0.15
0.2
0.25
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

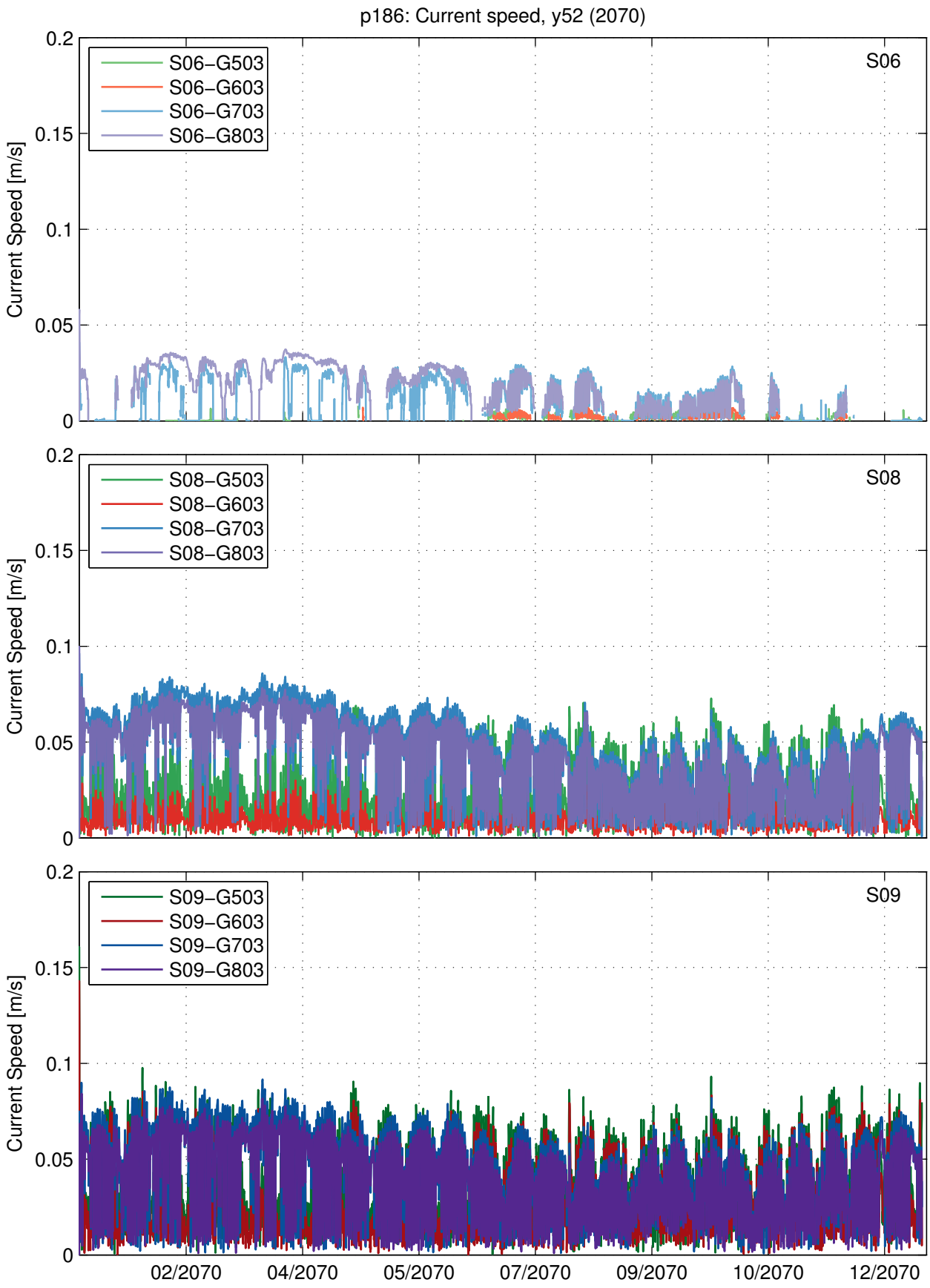

VC−1: Current speed, y52 (2070)
S06−G503
S06−G603
S06−G703
S06−G803
S06
S08−G503
S08−G603
S08−G703
S08−G803
S08
S09−G503
S09−G603
S09−G703
S09−G803
S09
Current Speed [m/s]
0
0.05
0.1
0.15
0.2
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

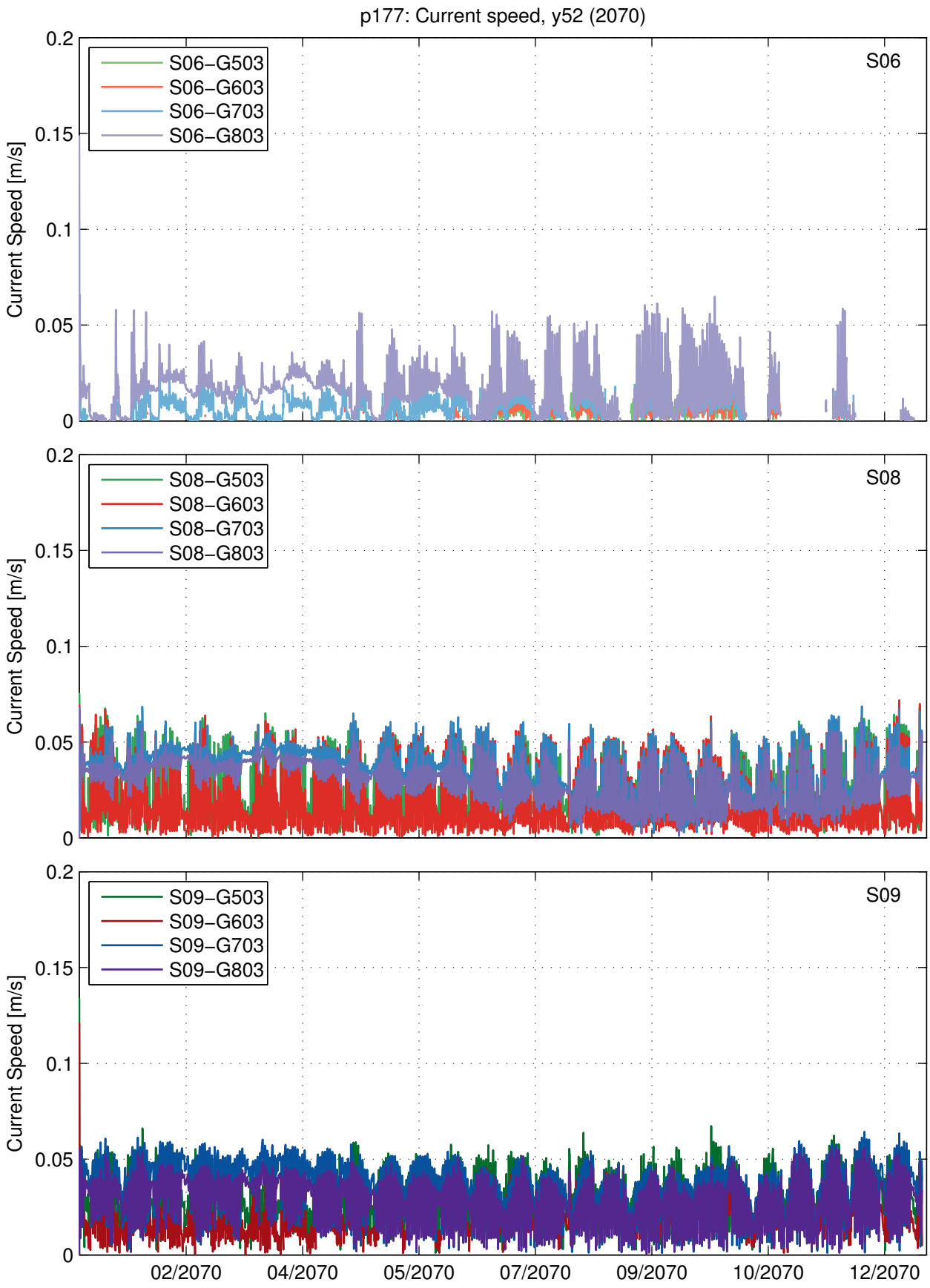

p160: Current speed, y52 (2070)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.02
0.04
0.06
0.08
0.1
0.12
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

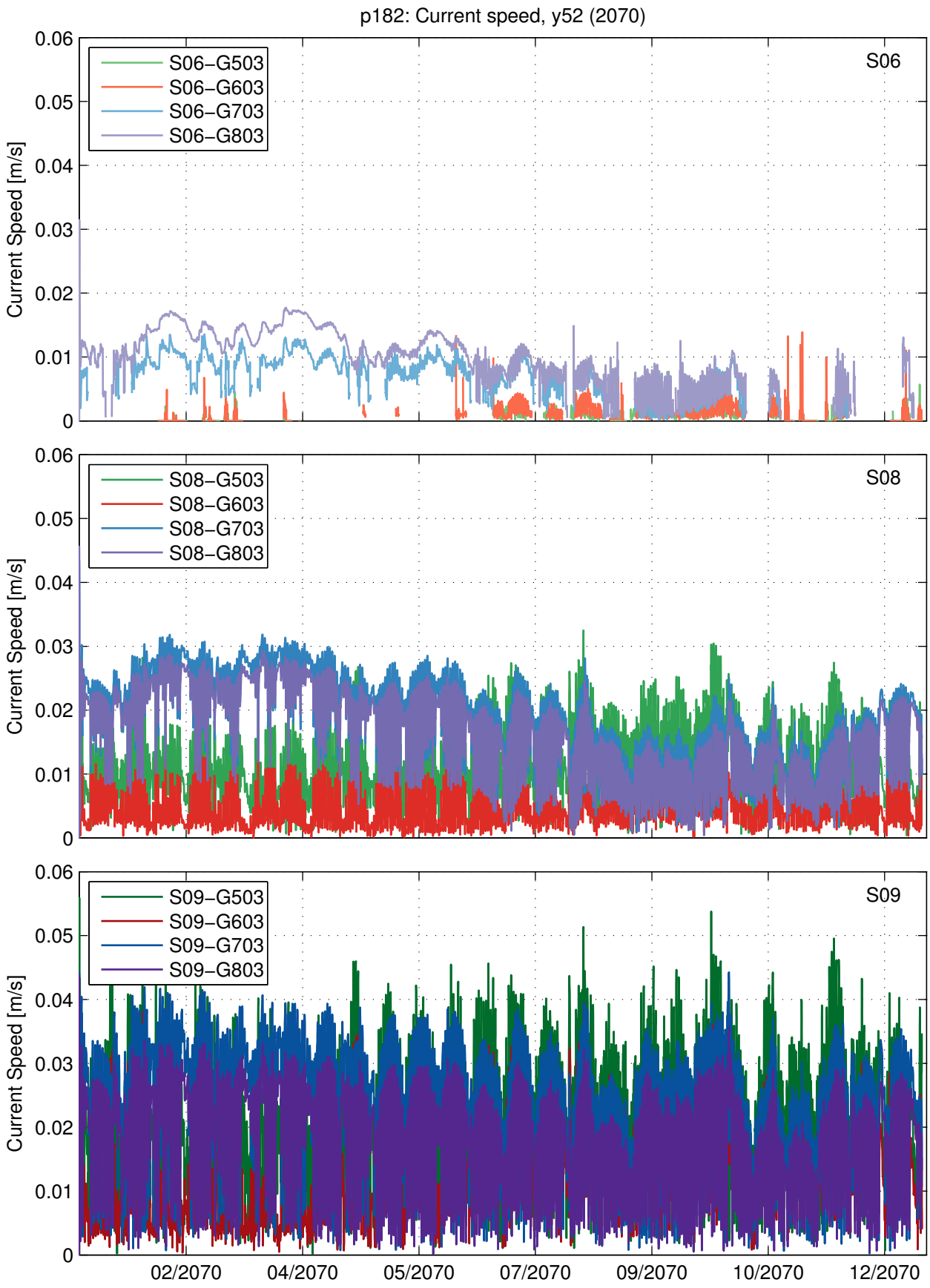

p165: Current speed, y52 (2070)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.02
0.04
0.06
0.08
0.1
0.12
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

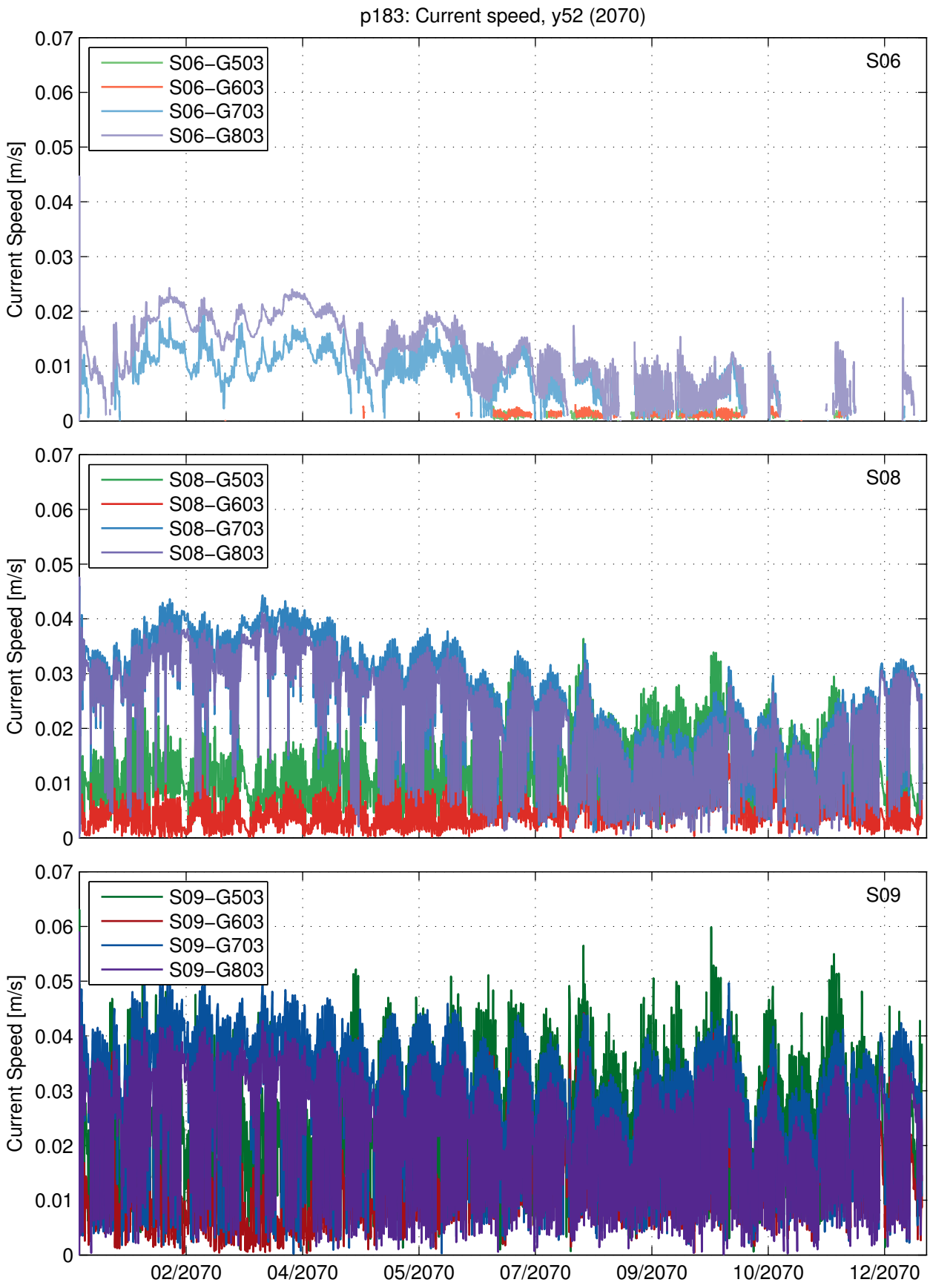

TC−1: Current speed, y52 (2070)
S06−G503
S06−G603
S06−G703
S06−G803
S06
S08−G503
S08−G603
S08−G703
S08−G803
S08
S09−G503
S09−G603
S09−G703
S09−G803
S09
Current Speed [m/s]
0
0.01
0.02
0.03
0.04
0.05
0.06
0.07
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

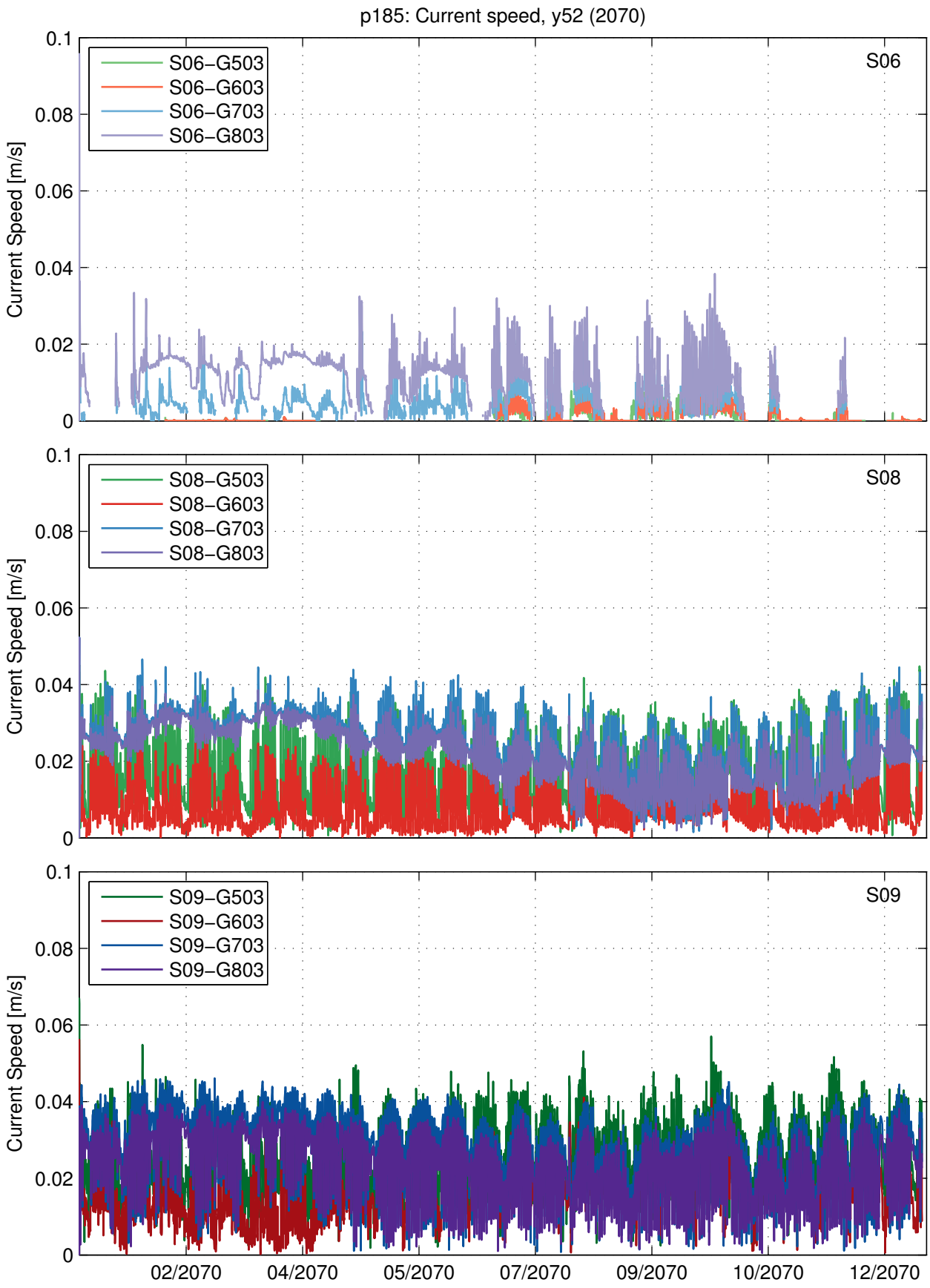

p151: Current speed, y52 (2070)
Current Speed [m/s]
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
S06–G503
S06–G603
S06–G703
S06–G803
S06
S08–G503
S08–G603
S08–G703
S08–G803
S08
S09–G503
S09–G603
S09–G703
S09–G803
S09
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

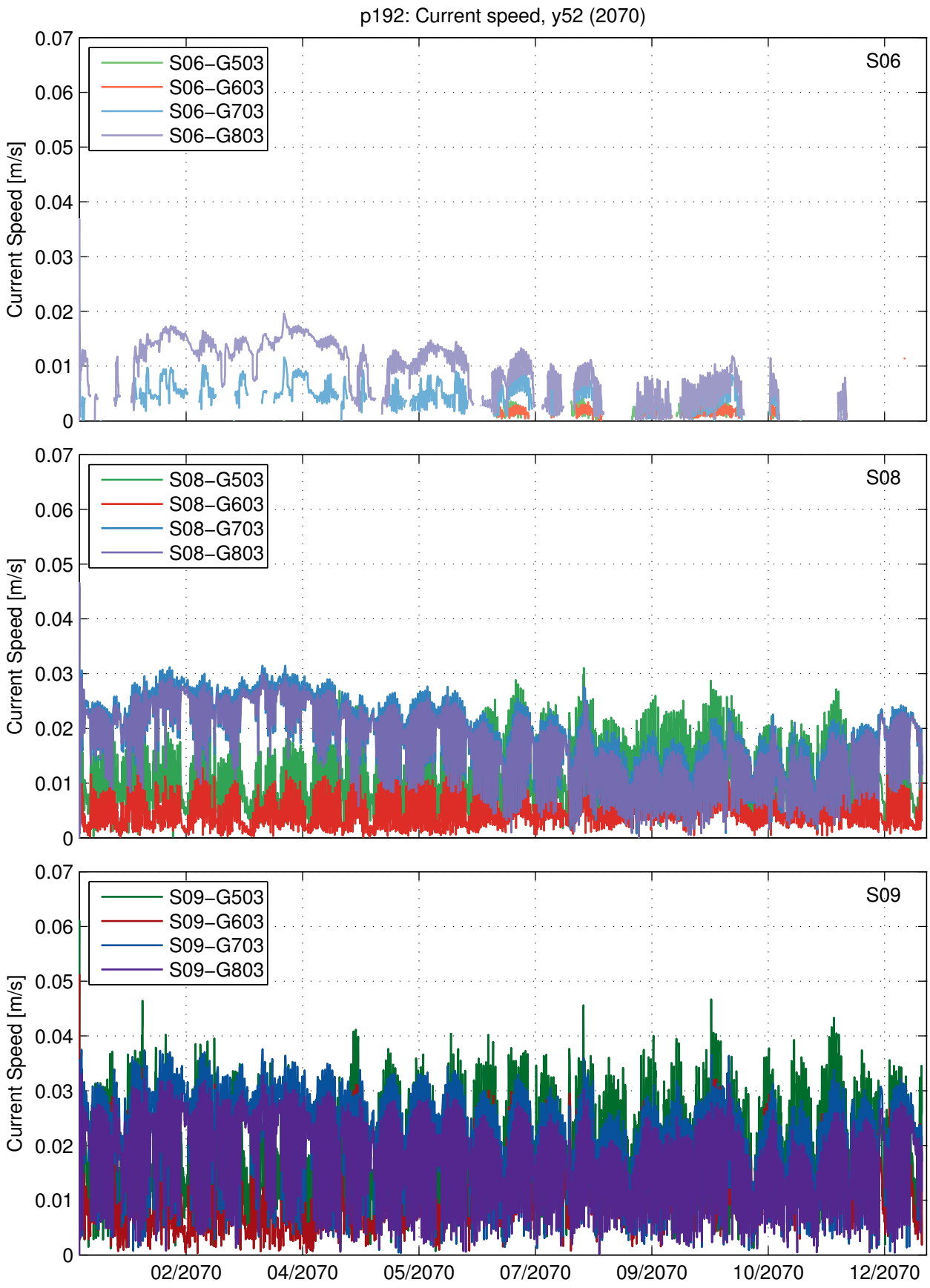

p186: Current speed, y52 (2070)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.05
0.1
0.15
0.2
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

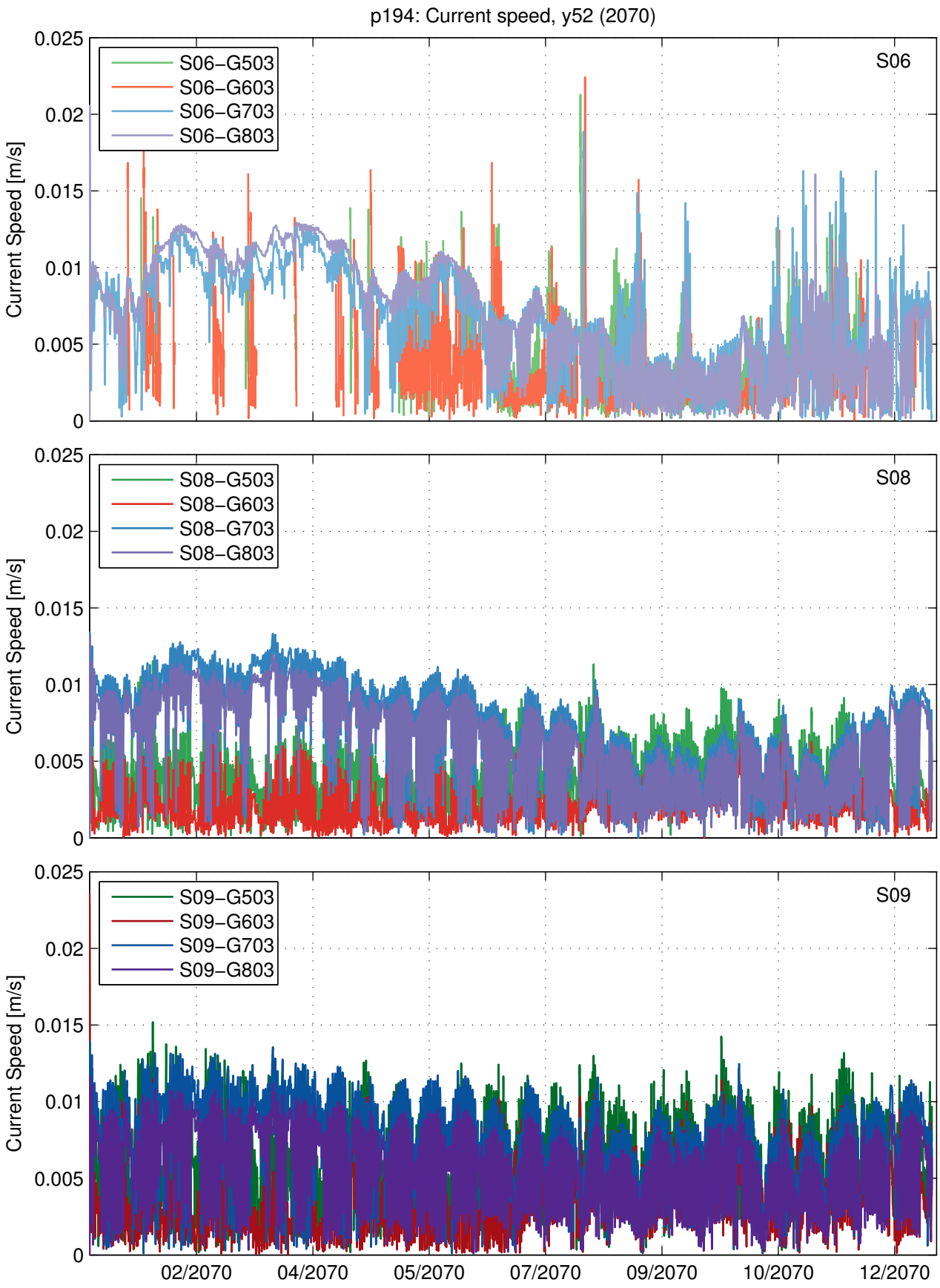

p177: Current speed, y52 (2070)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.05
0.1
0.15
0.2
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070


p182: Current speed, y52 (2070)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.01
0.02
0.03
0.04
0.05
0.06
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070


p183: Current speed, y52 (2070)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.01
0.02
0.03
0.04
0.05
0.06
0.07
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070


p185: Current speed, y52 (2070)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.02
0.04
0.06
0.08
0.1
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070


p192: Current speed, y52 (2070)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.01
0.02
0.03
0.04
0.05
0.06
0.07
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

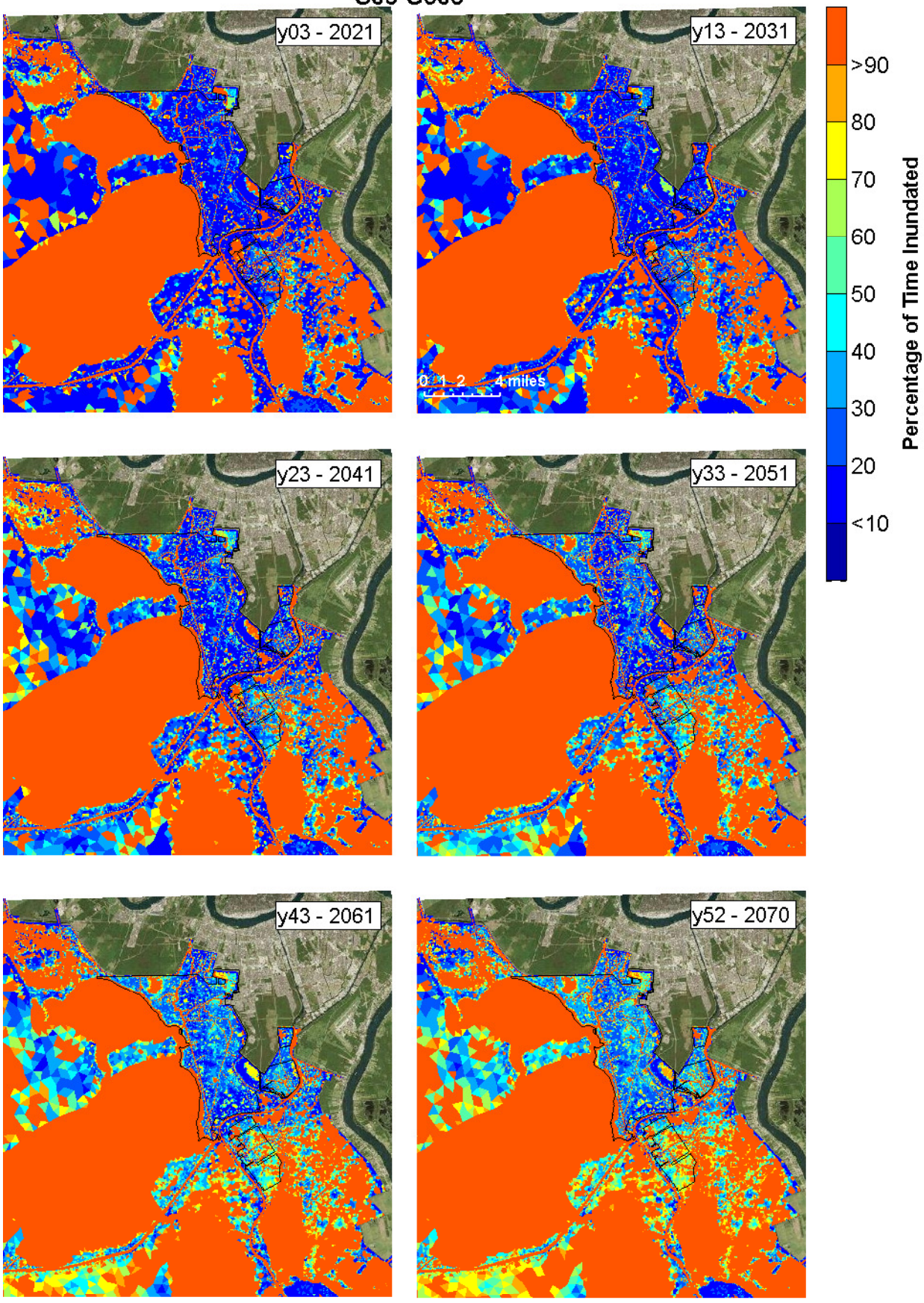

p194: Current speed, y52 (2070)
S06
S06–G503
S06–G603
S06–G703
S06–G803
S08
S08–G503
S08–G603
S08–G703
S08–G803
S09
S09–G503
S09–G603
S09–G703
S09–G803
Current Speed [m/s]
0
0.005
0.01
0.015
0.02
0.025
02/2070
04/2070
05/2070
07/2070
09/2070
10/2070
12/2070

National Park Service
JELA Barataria Preserve Future Conditions Modeling

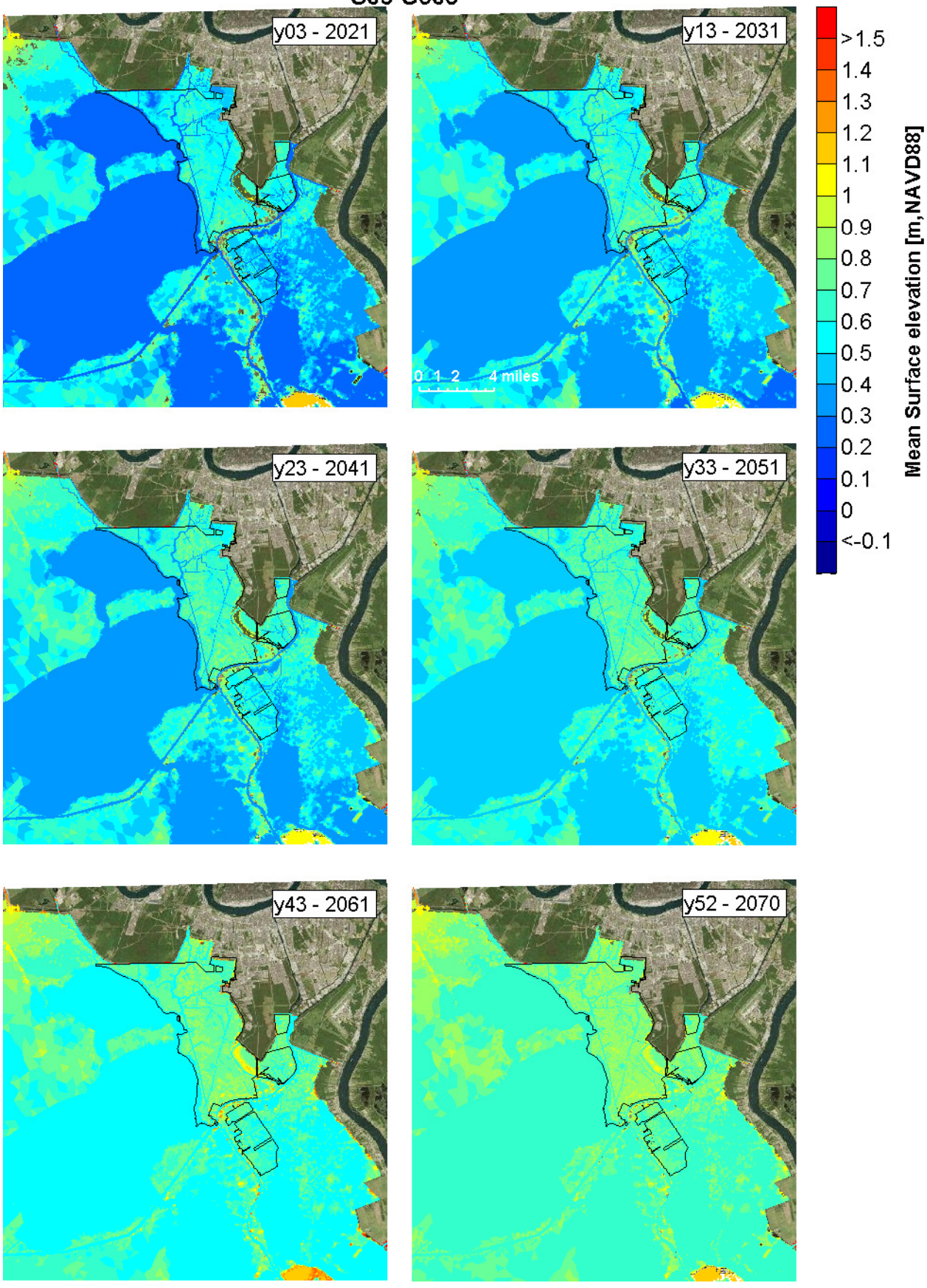
Appendix G: Hydrodynamic Model Annual Spatial Statistics Results



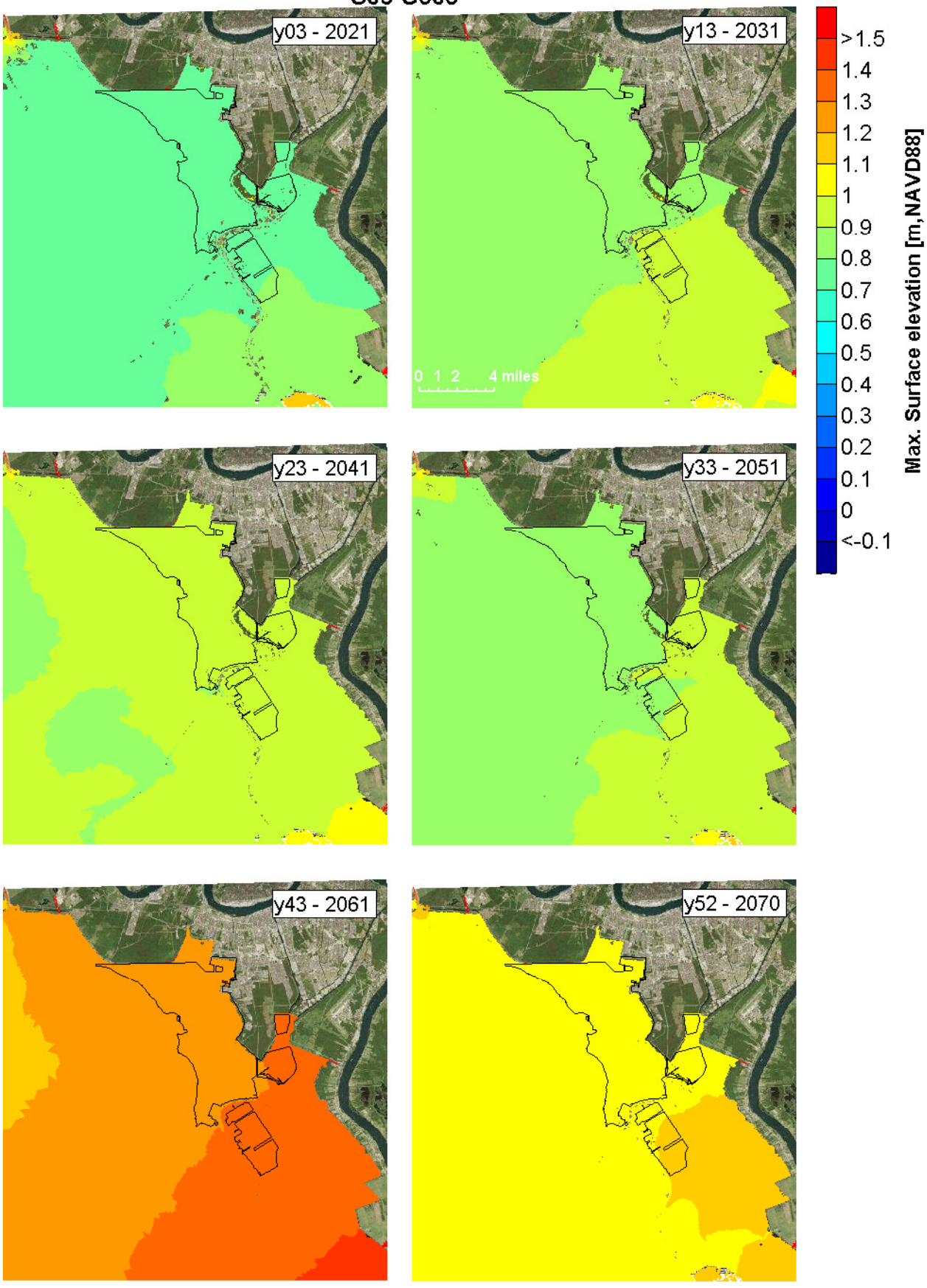
S06-G503

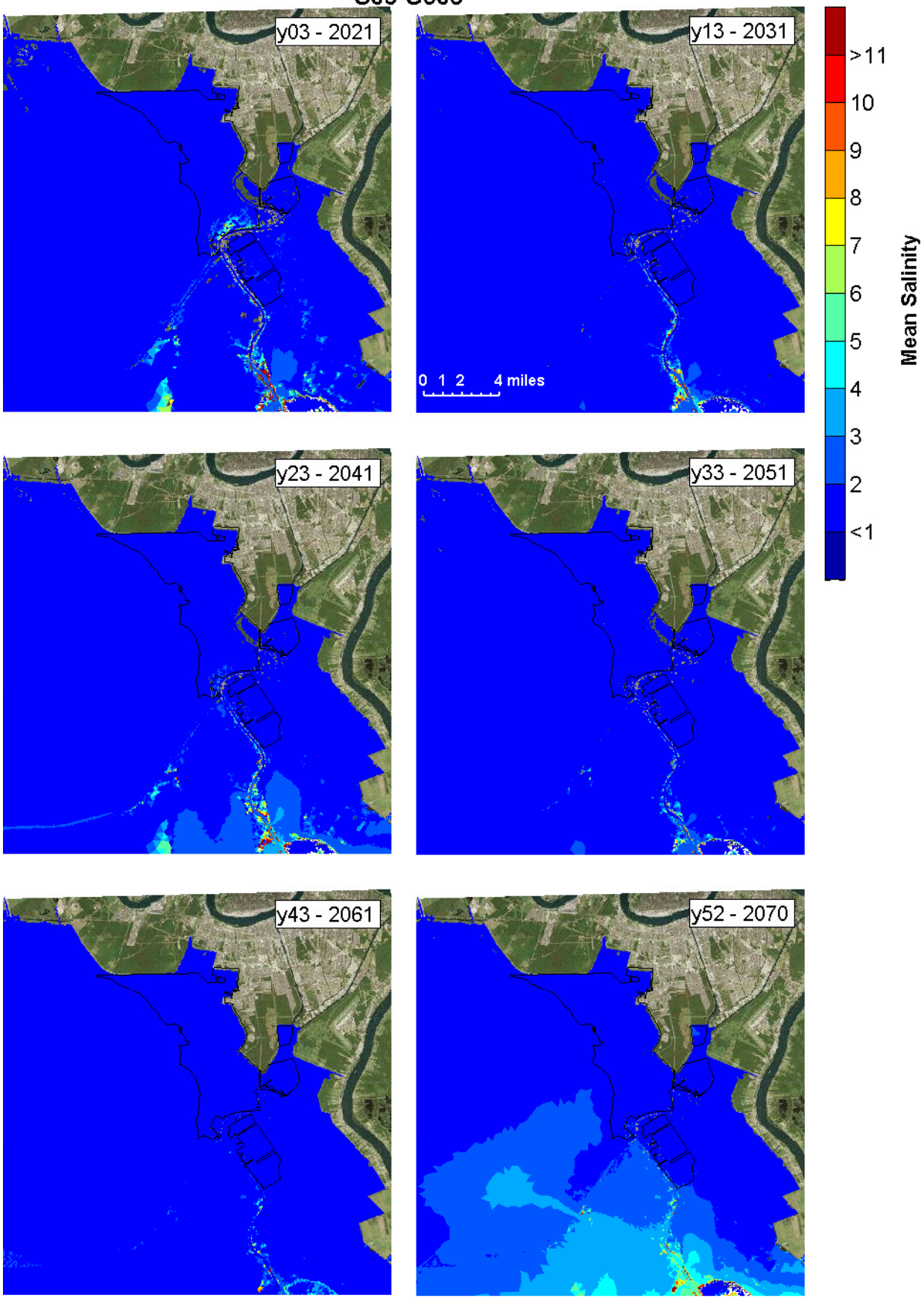

y03 - 2021
y13 - 2031
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
0 1 2 4 miles
>90
80
70
60
50
40
30
20
<10
Percentage of Time Inundated

S06-G503

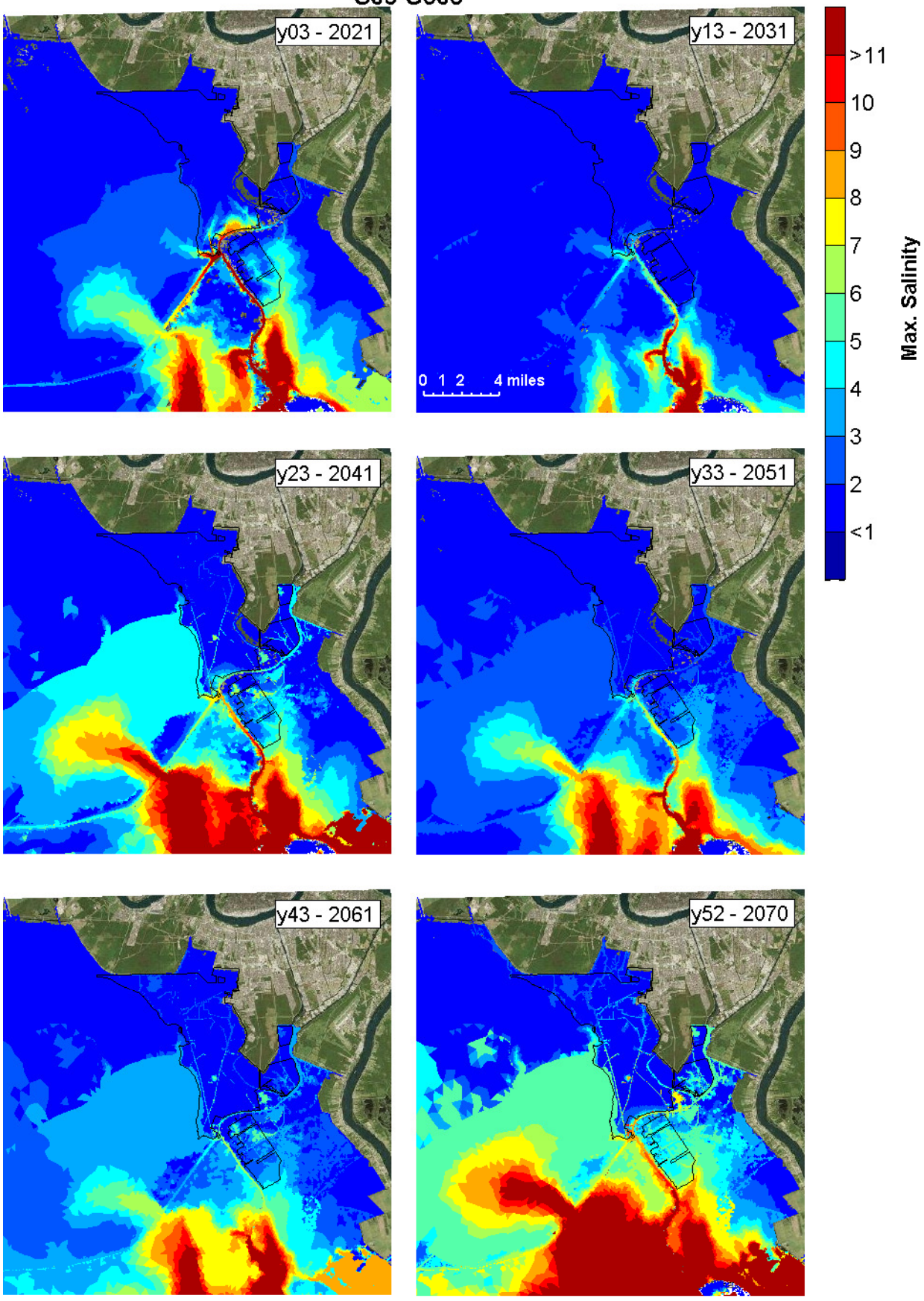

y03 - 2021
y13 - 2031
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
0 1 2 4 miles
>1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
<-0.1
Mean Surface elevation [m,NAVD88]

S06-G503

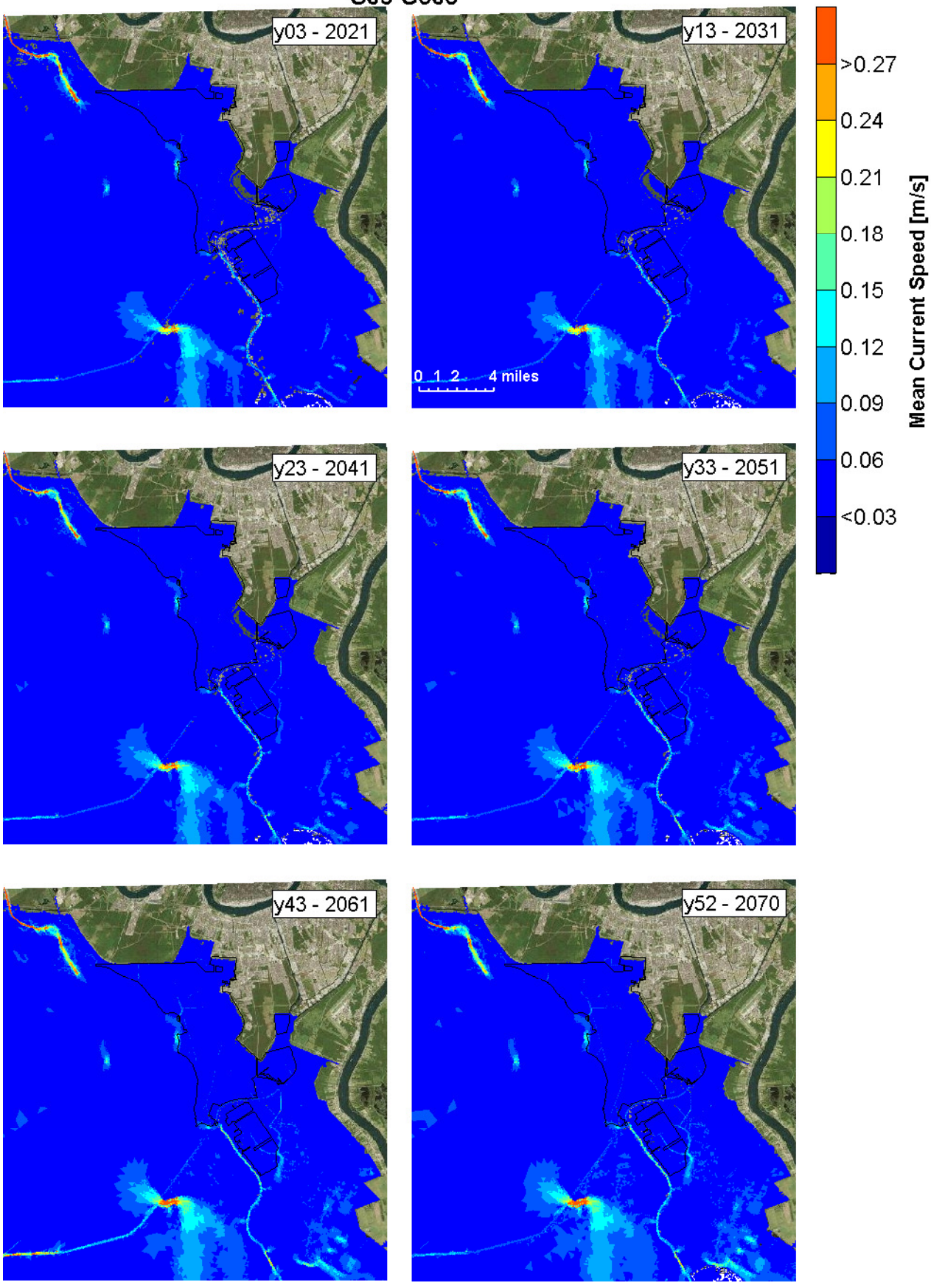

y03 - 2021
y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
<-0.1
Max. Surface elevation [m,NAVD88]


S06-G503
y03 - 2021
y13 - 2031
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
0 1 2 4 miles
>11
10
9
8
7
6
5
4
3
2
<1
Mean Salinity

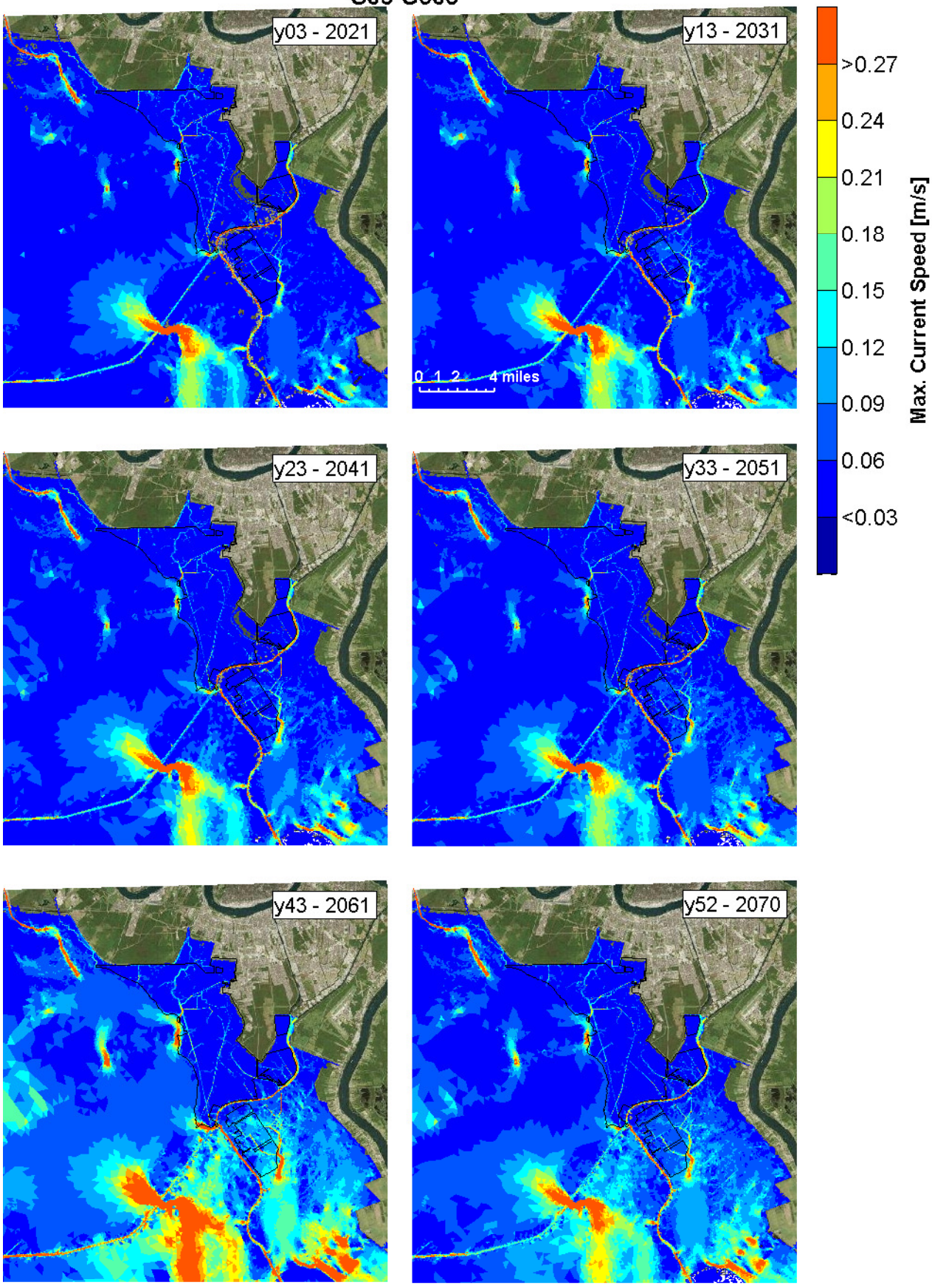
S06-G503


y03 - 2021
y13 - 2031
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
0 1 2 4 miles
>11
10
9
8
7
6
5
4
3
2
<1
Max. Salinity

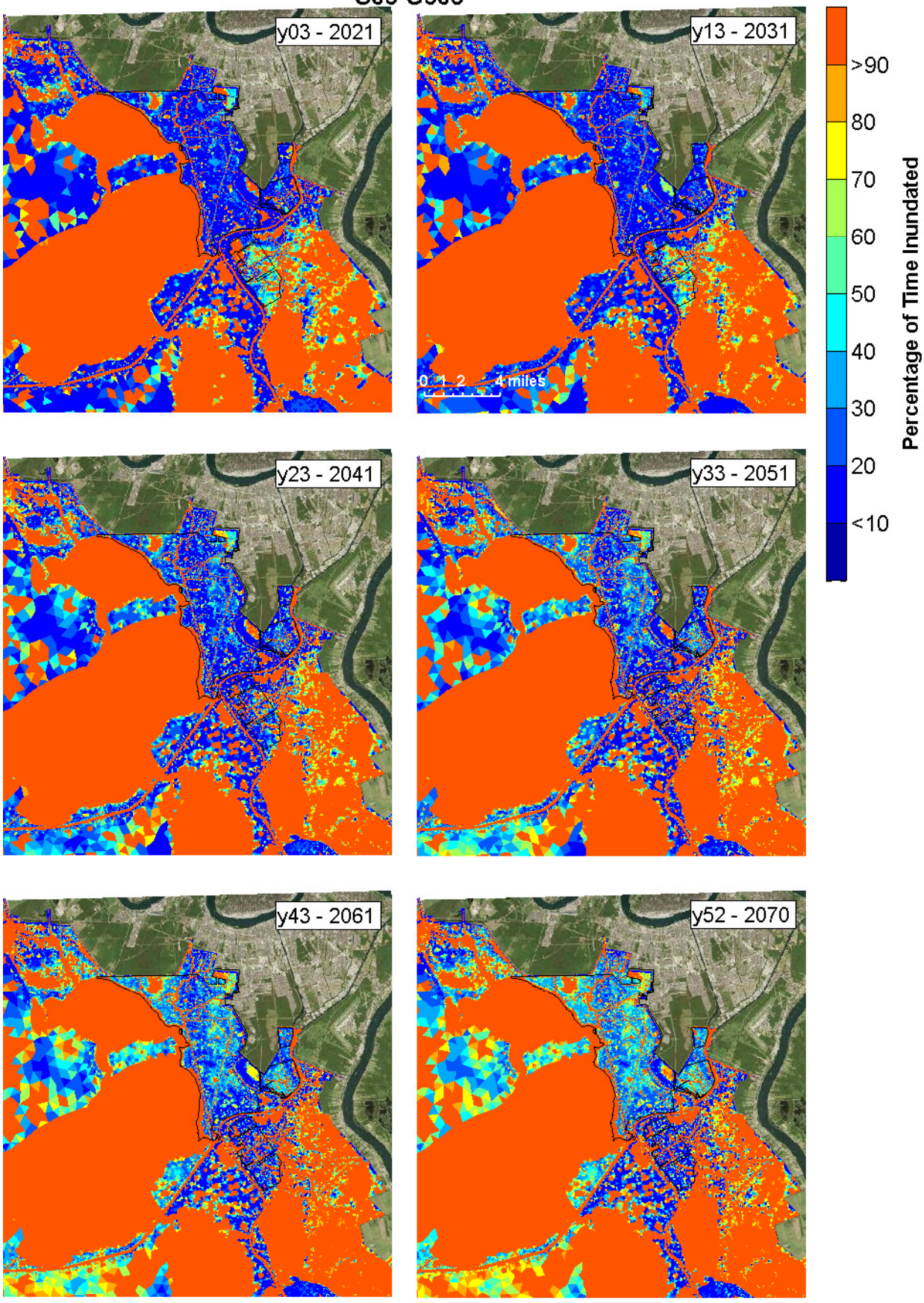
S06-G503

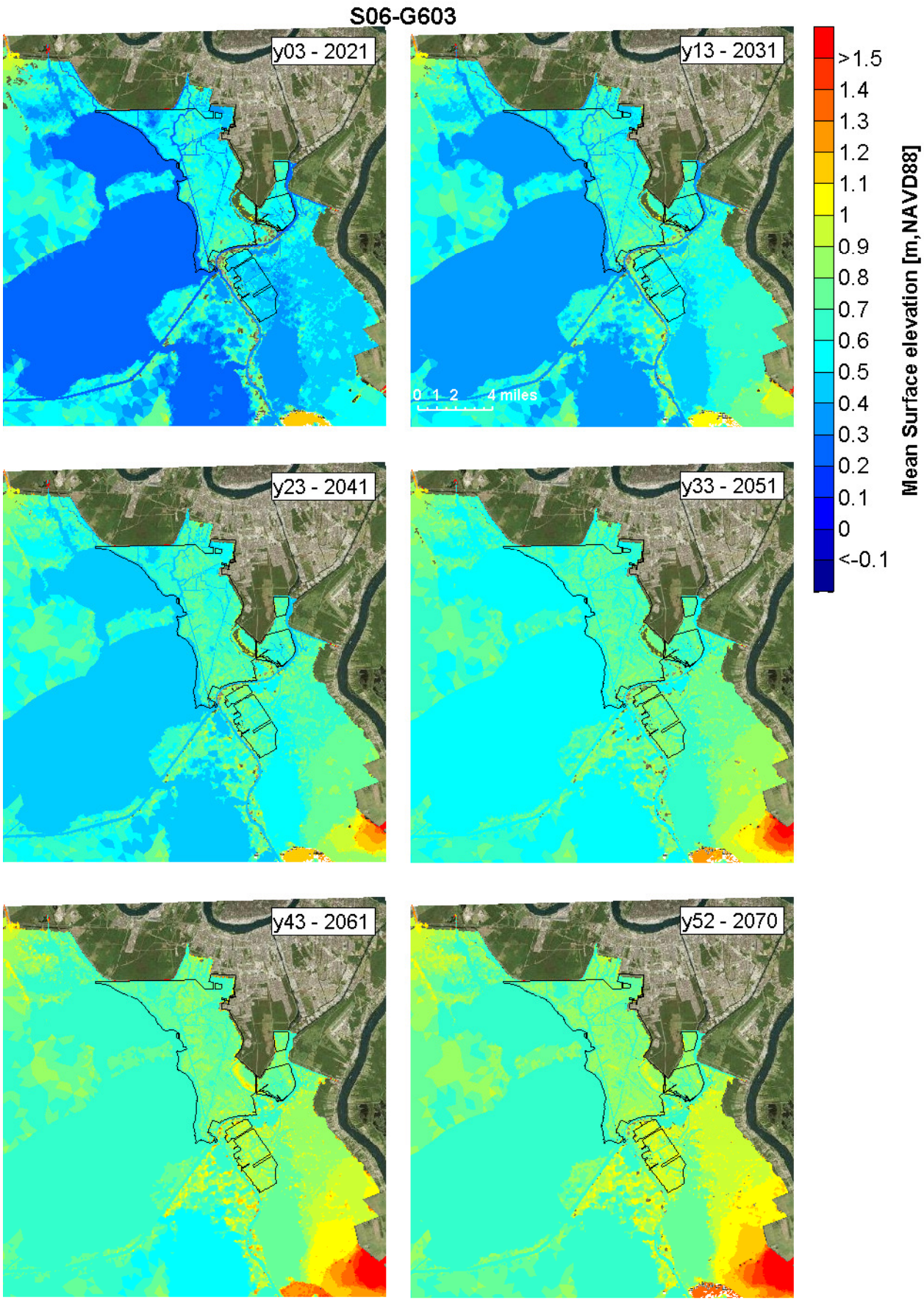

y03 - 2021
y13 - 2031
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
0 1 2 4 miles
>0.27
0.24
0.21
0.18
0.15
0.12
0.09
0.06
<0.03
Mean Current Speed [m/s]

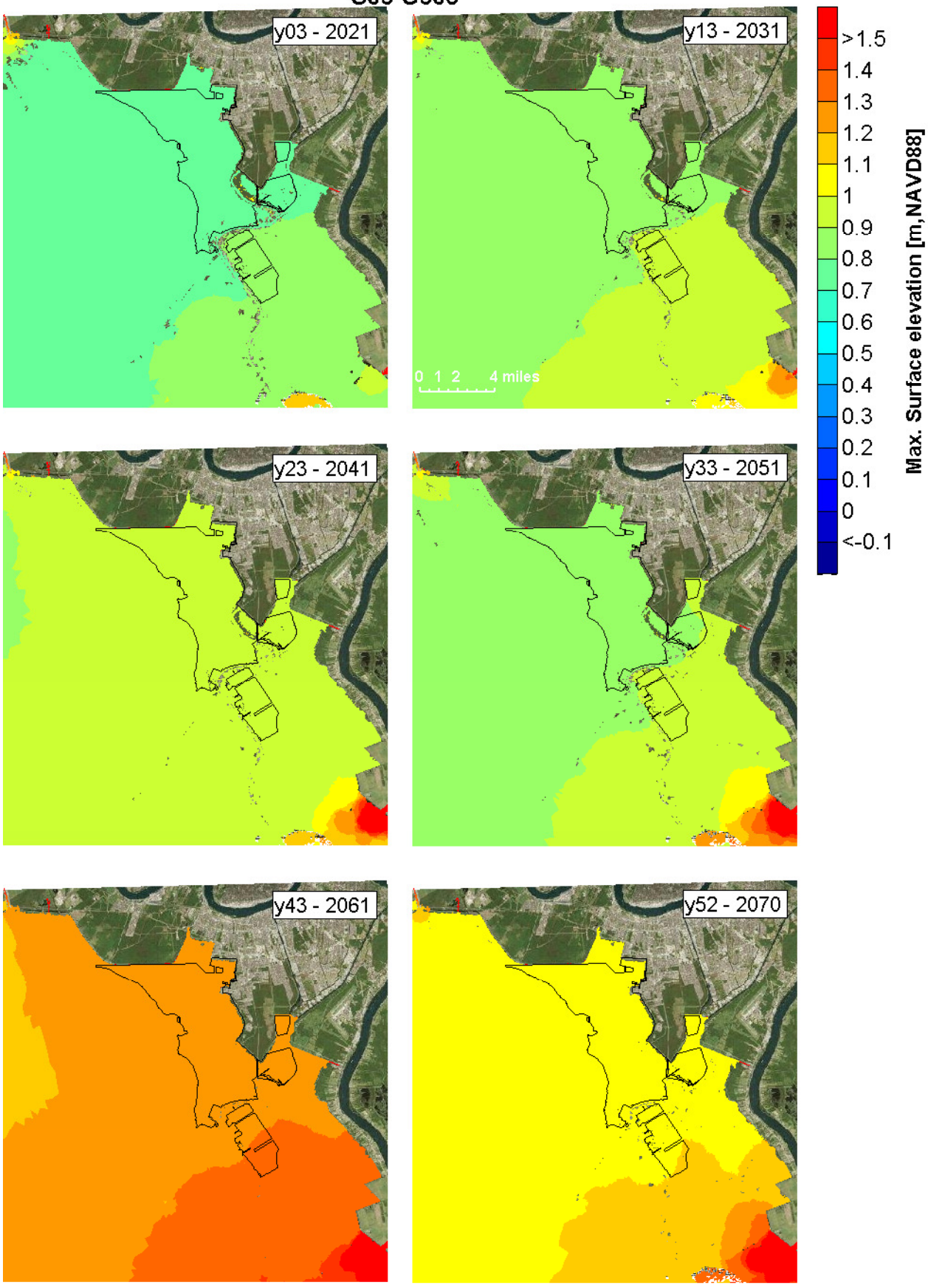
S06-G503

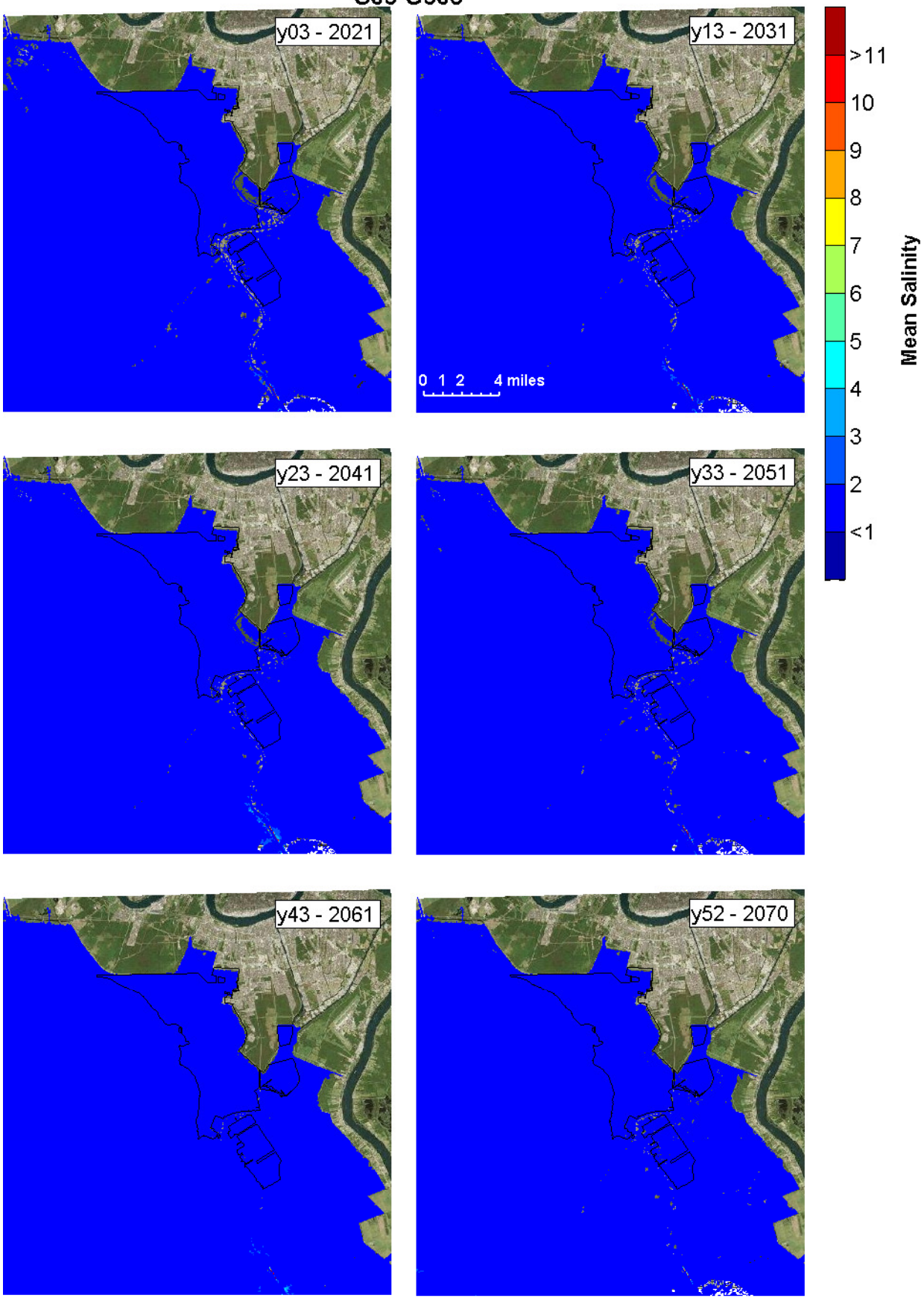

y03 - 2021
y13 - 2031
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
0 1 2 4 miles
>0.27
0.24
0.21
0.18
0.15
0.12
0.09
0.06
<0.03
Max. Current Speed [m/s]

S06-G603

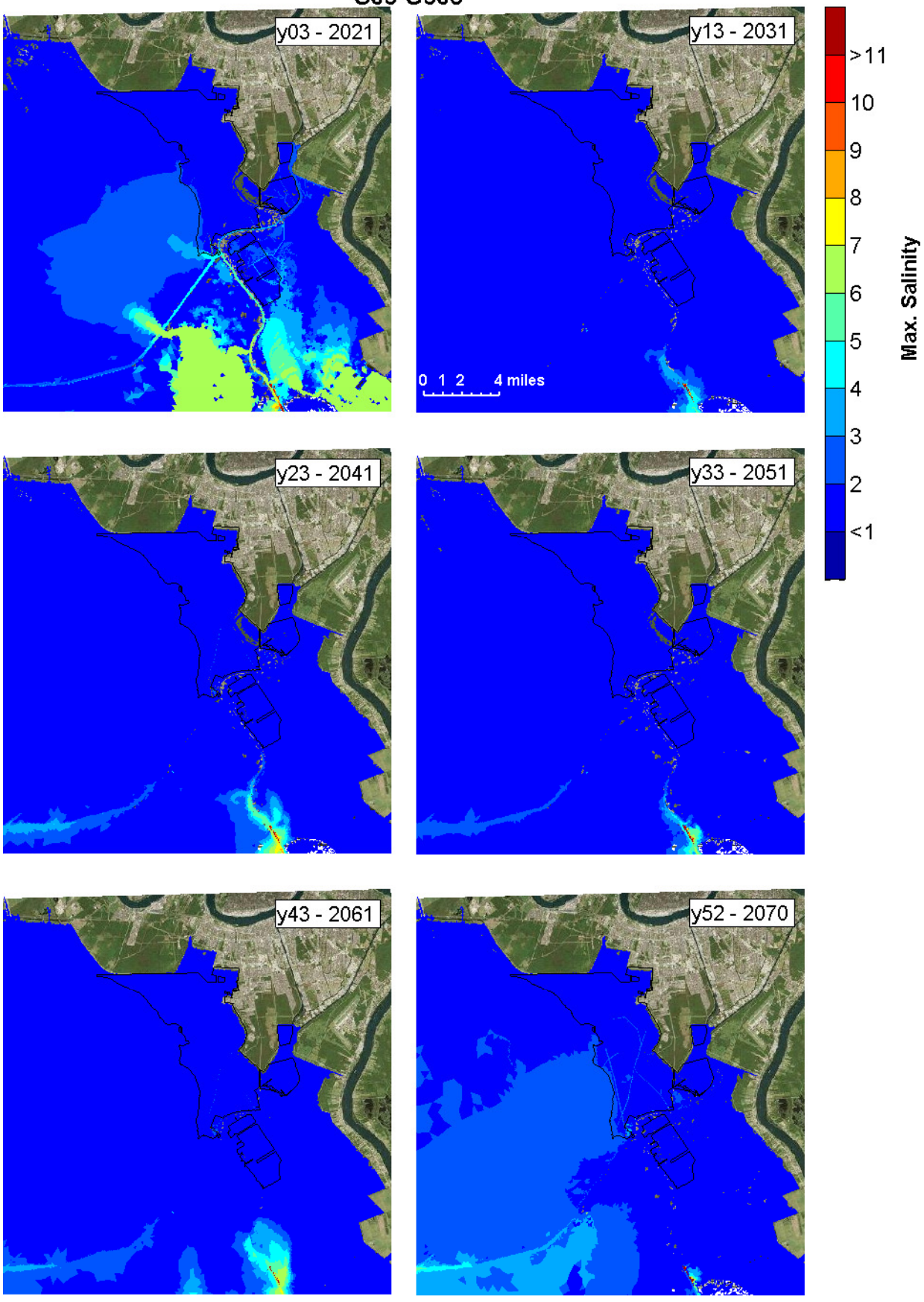

y03 - 2021
y13 - 2031
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
0 1 2 4 miles
>90
80
70
60
50
40
30
20
<10
Percentage of Time Inundated

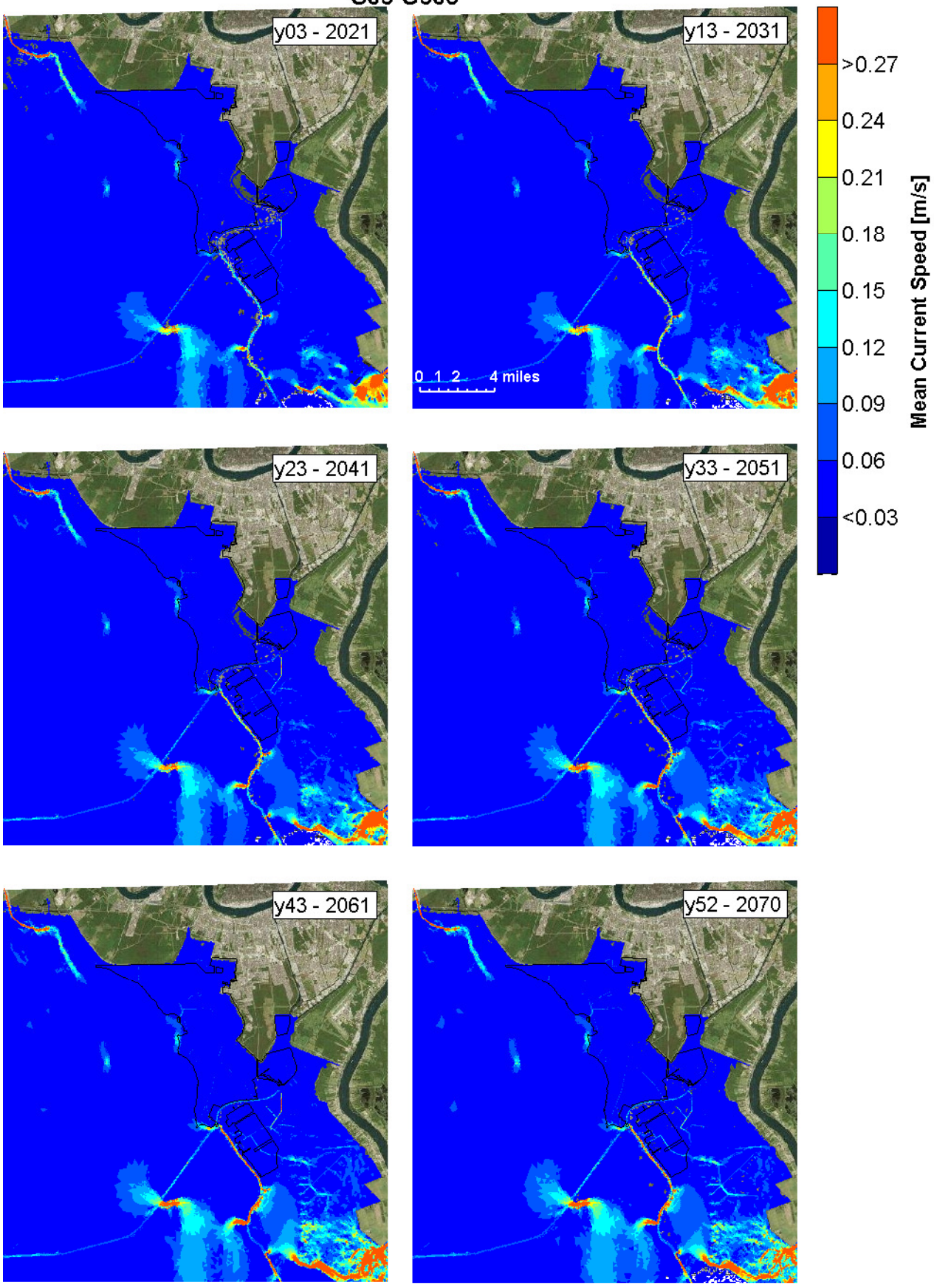

S06-G603
y03 - 2021
y13 - 2031
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
0 1 2 4 miles
>1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
<-0.1
Mean Surface elevation [m,NAVD88]


S06-G603
y03 - 2021
y13 - 2031
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
0 1 2 4 miles
>1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
<-0.1
Max. Surface elevation [m,NAVD88]

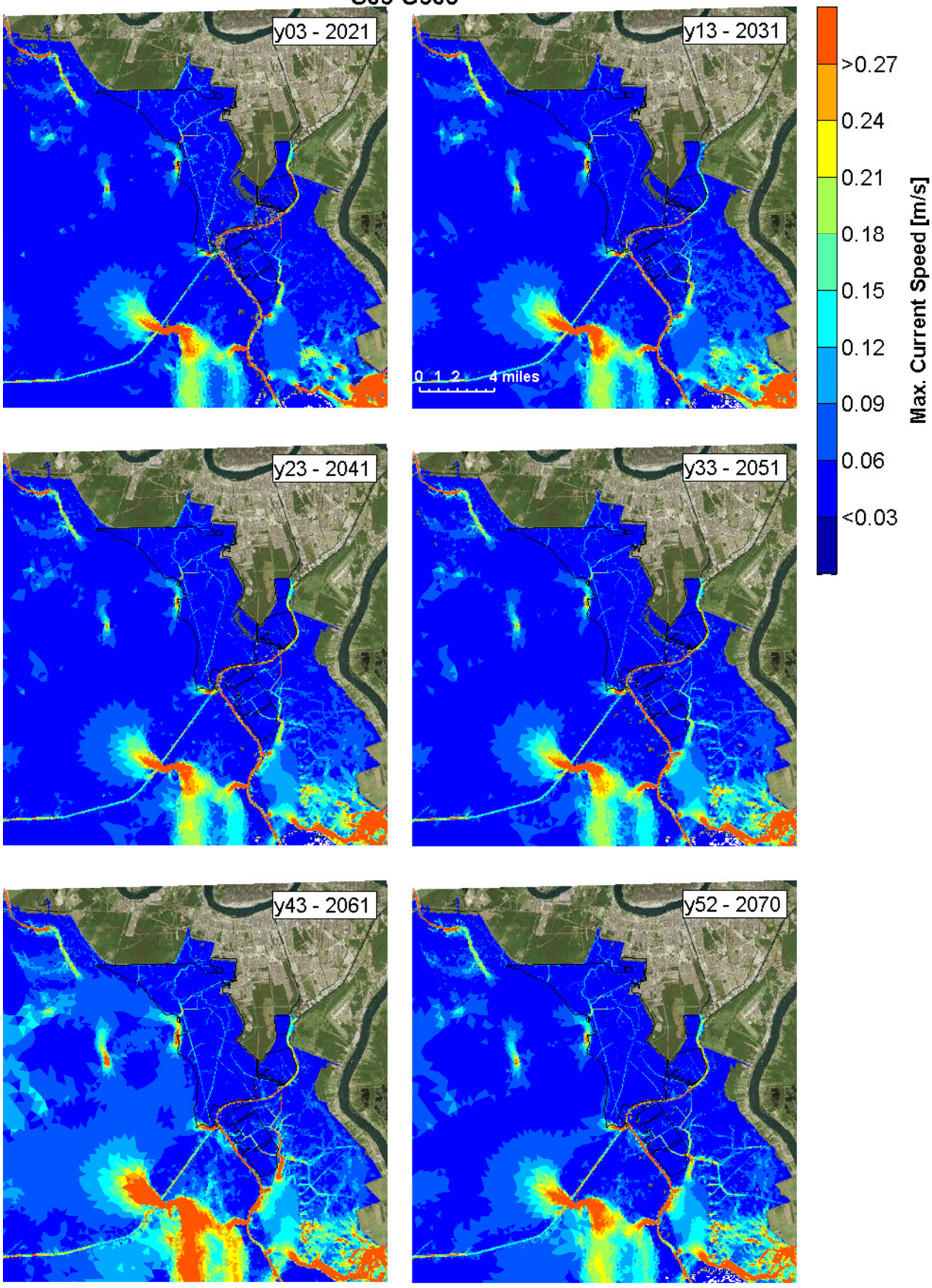

S06-G603
y03 - 2021
y13 - 2031
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
0 1 2 4 miles
>11
10
9
8
7
6
5
4
3
2
<1
Mean Salinity

S06-G603

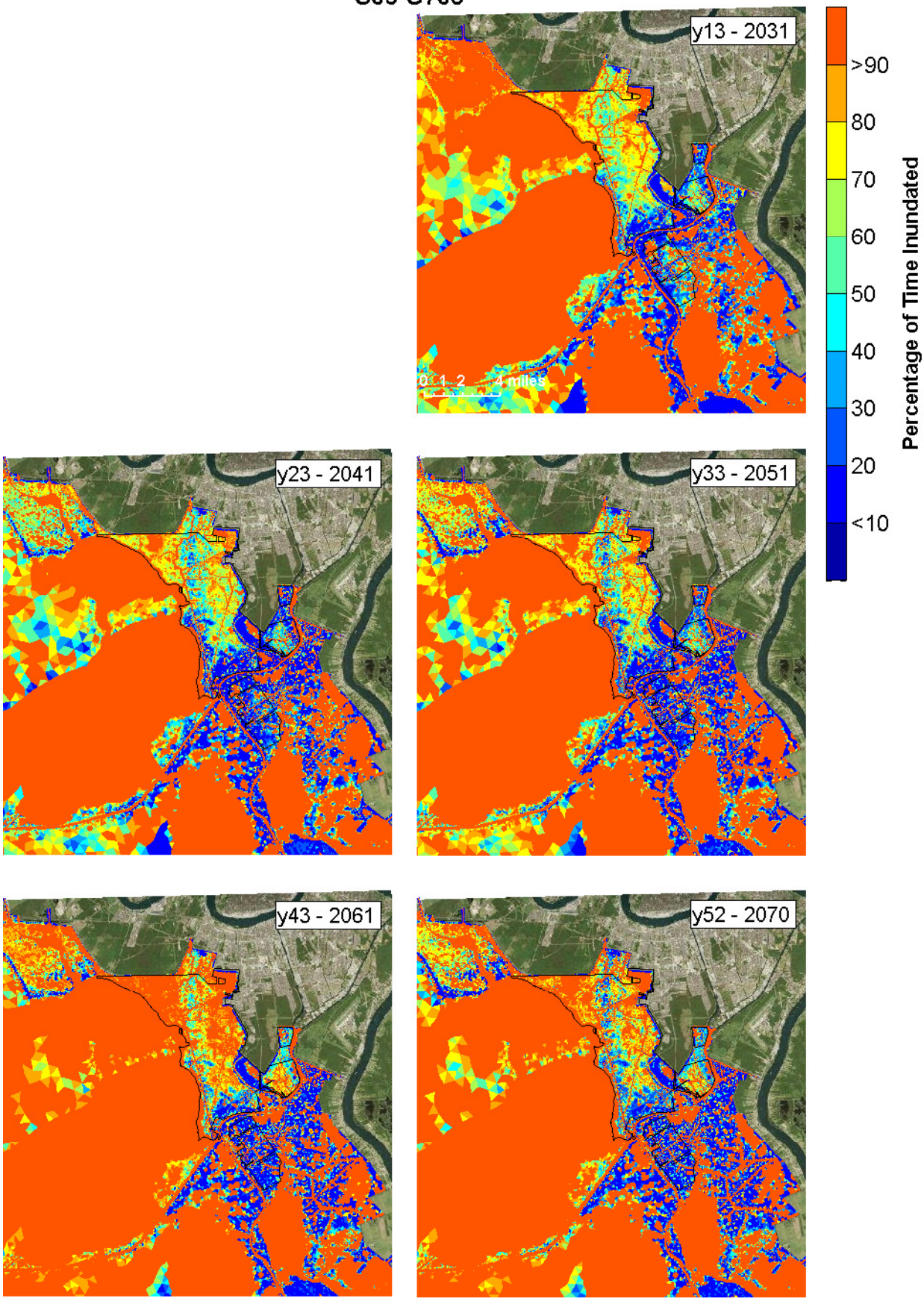

y03 - 2021
y13 - 2031
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
0 1 2 4 miles
>11
10
9
8
7
6
5
4
3
2
<1
Max. Salinity


S06-G603
y03 - 2021
y13 - 2031
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
0 1 2 4 miles
>0.27
0.24
0.21
0.18
0.15
0.12
0.09
0.06
<0.03
Mean Current Speed [m/s]

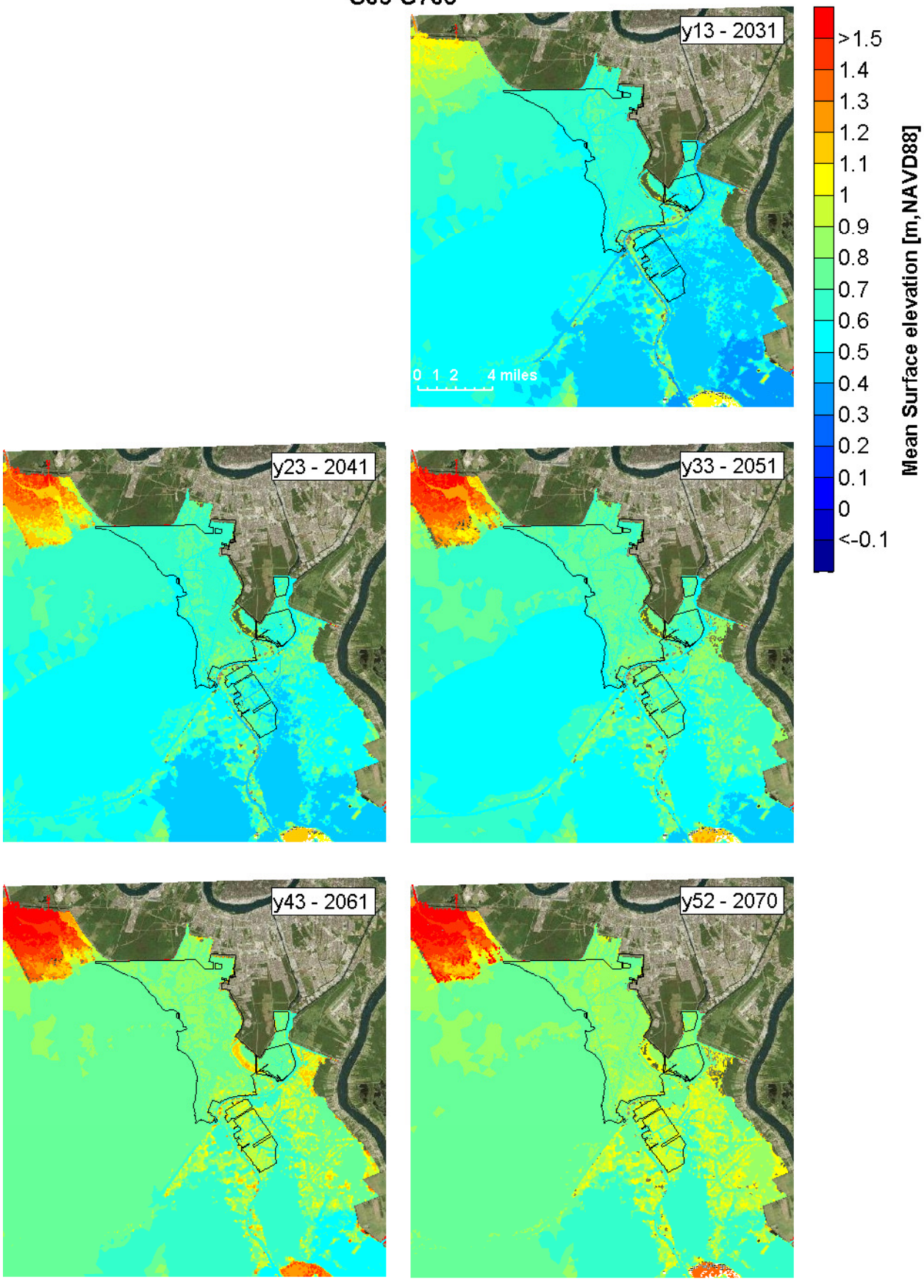
S06-G603


y03 - 2021
y13 - 2031
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
0 1 2 4 miles
>0.27
0.24
0.21
0.18
0.15
0.12
0.09
0.06
<0.03
Max. Current Speed [m/s]

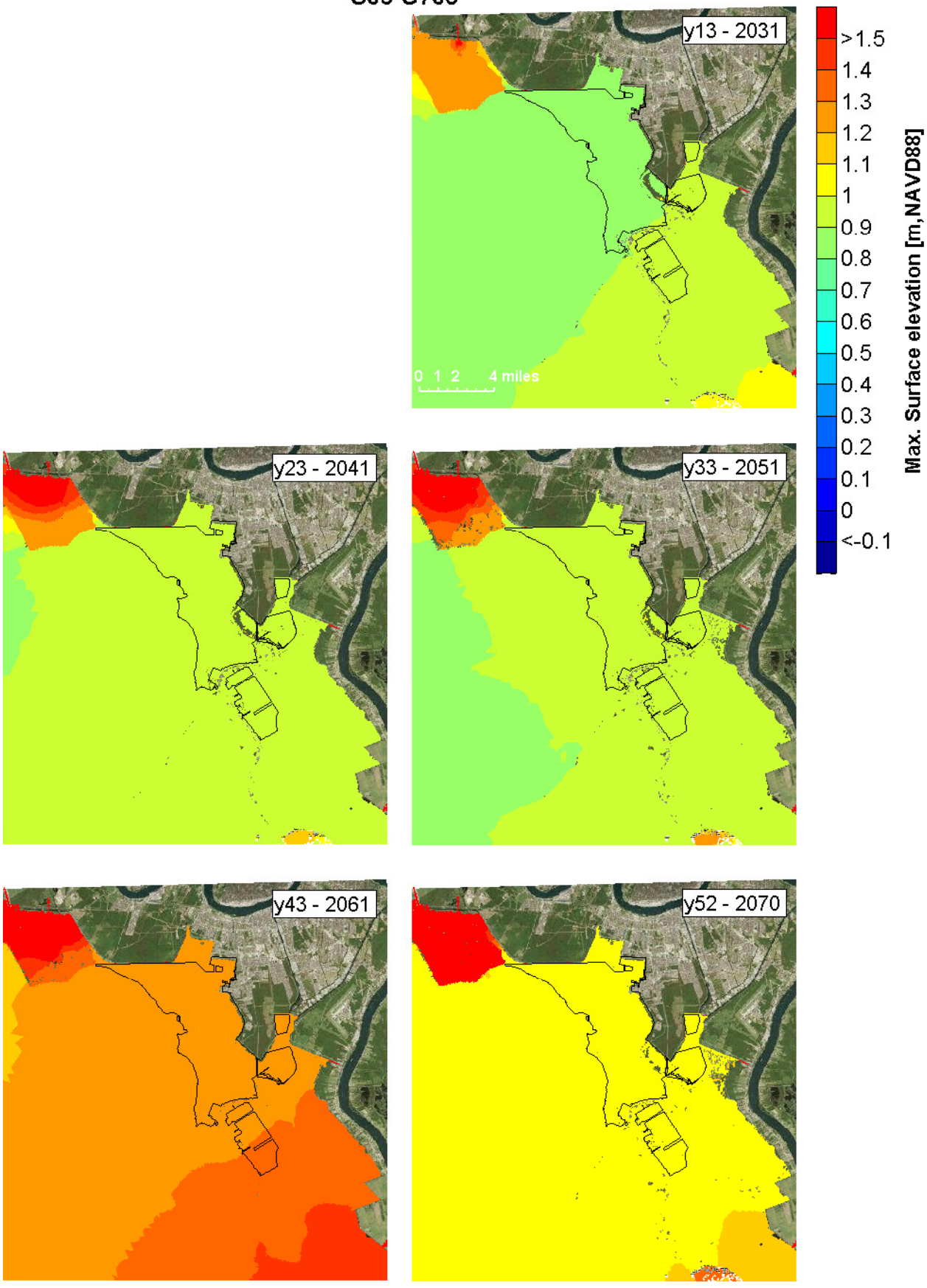
S06-G703


y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>90
80
70
60
50
40
30
20
<10
Percentage of Time Inundated

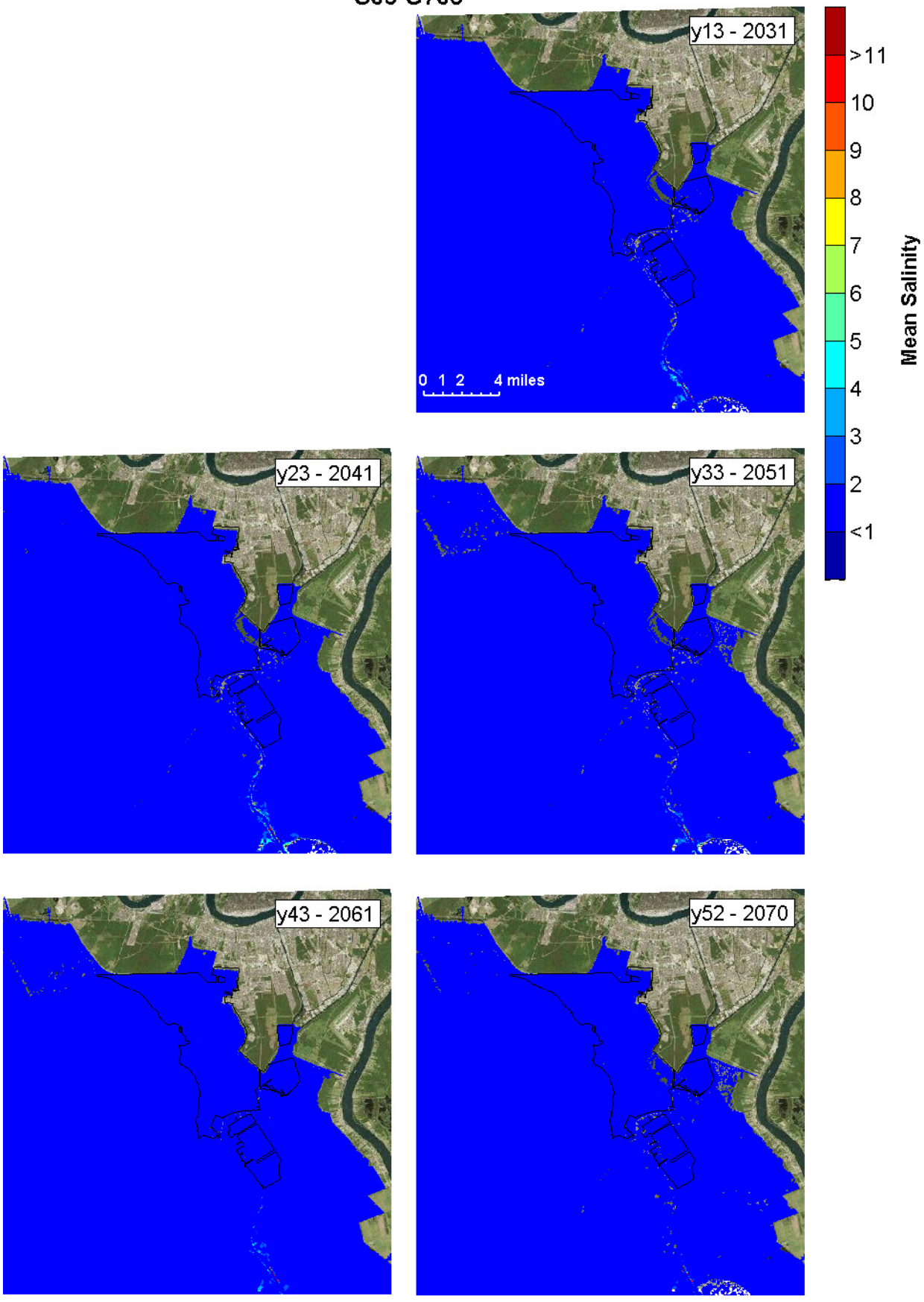
S06-G703


y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
<-0.1
Mean Surface elevation [m,NAVD88]

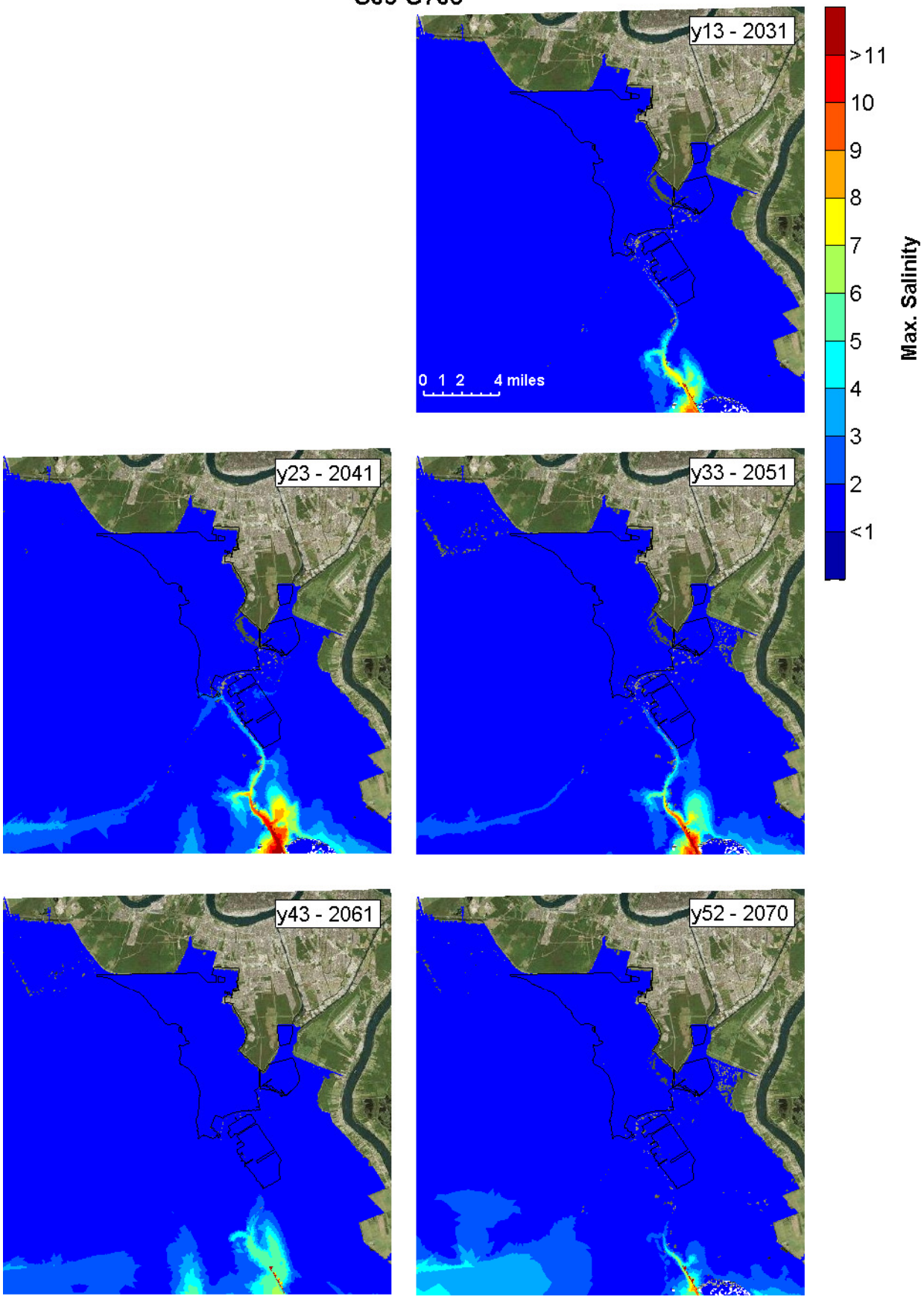
S06-G703


y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
<-0.1
Max. Surface elevation [m,NAVD88]

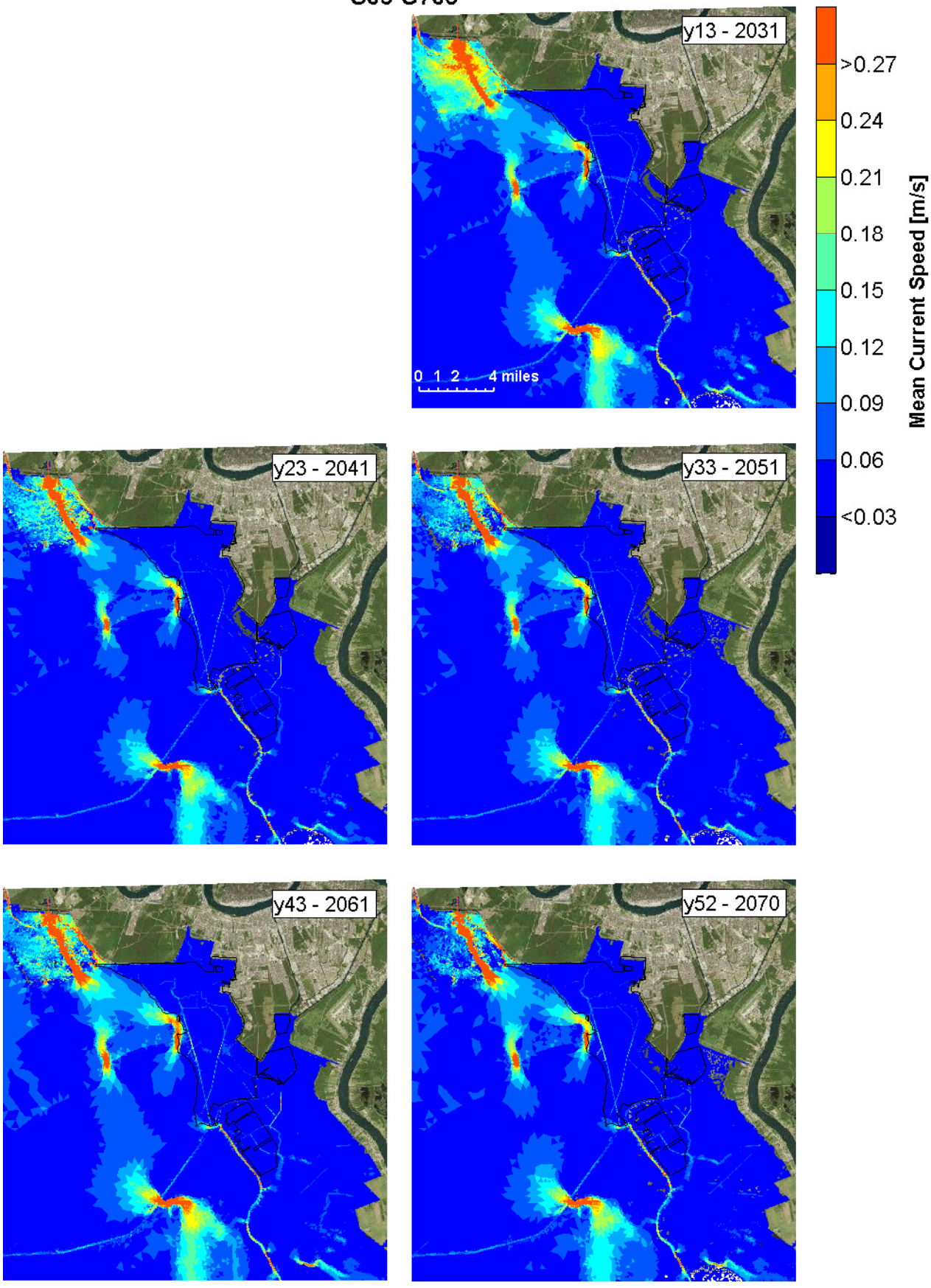
S06-G703


y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>11
10
9
8
7
6
5
4
3
2
<1
Mean Salinity

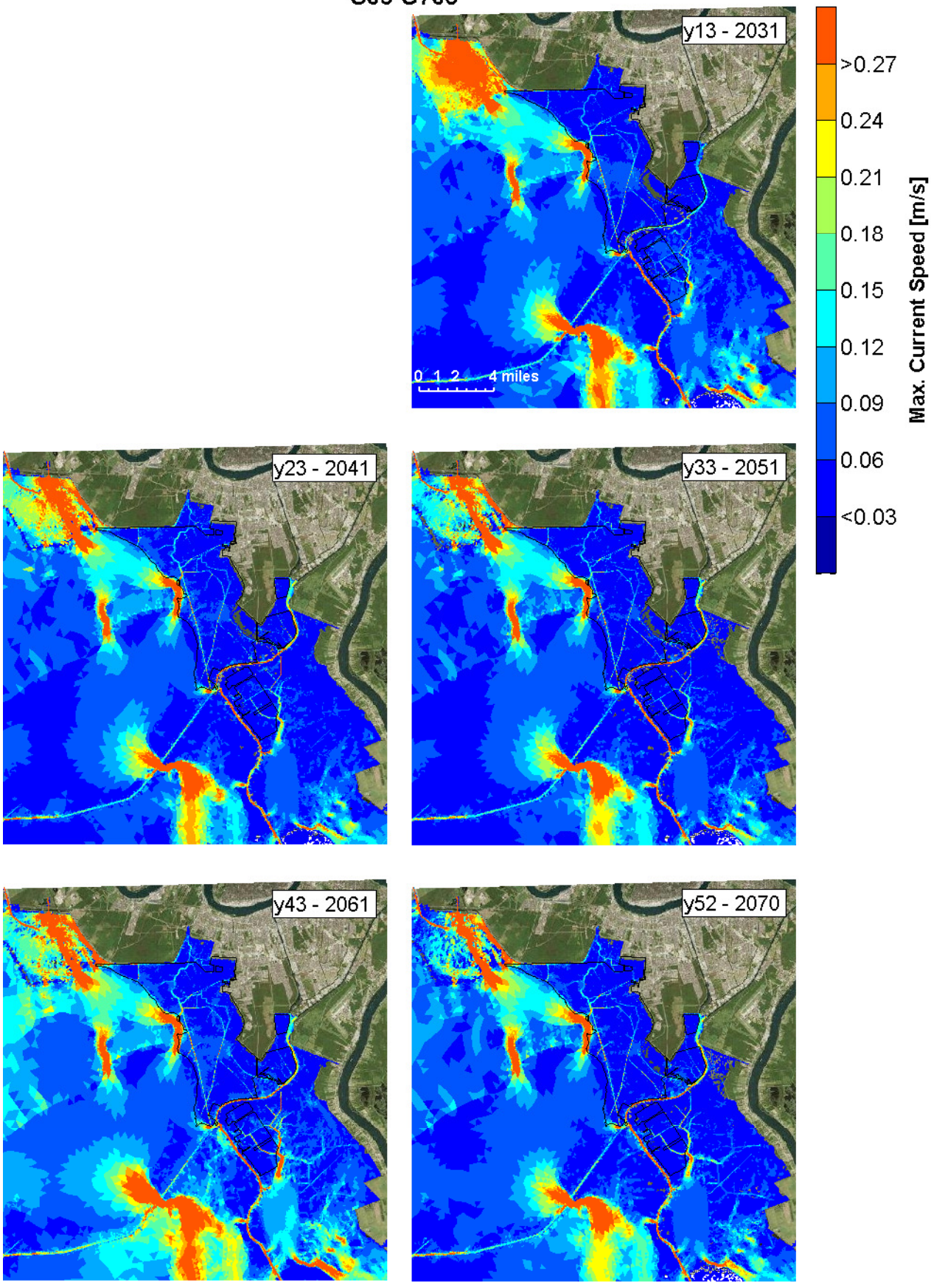
S06-G703


y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>11
10
9
8
7
6
5
4
3
2
<1
Max. Salinity

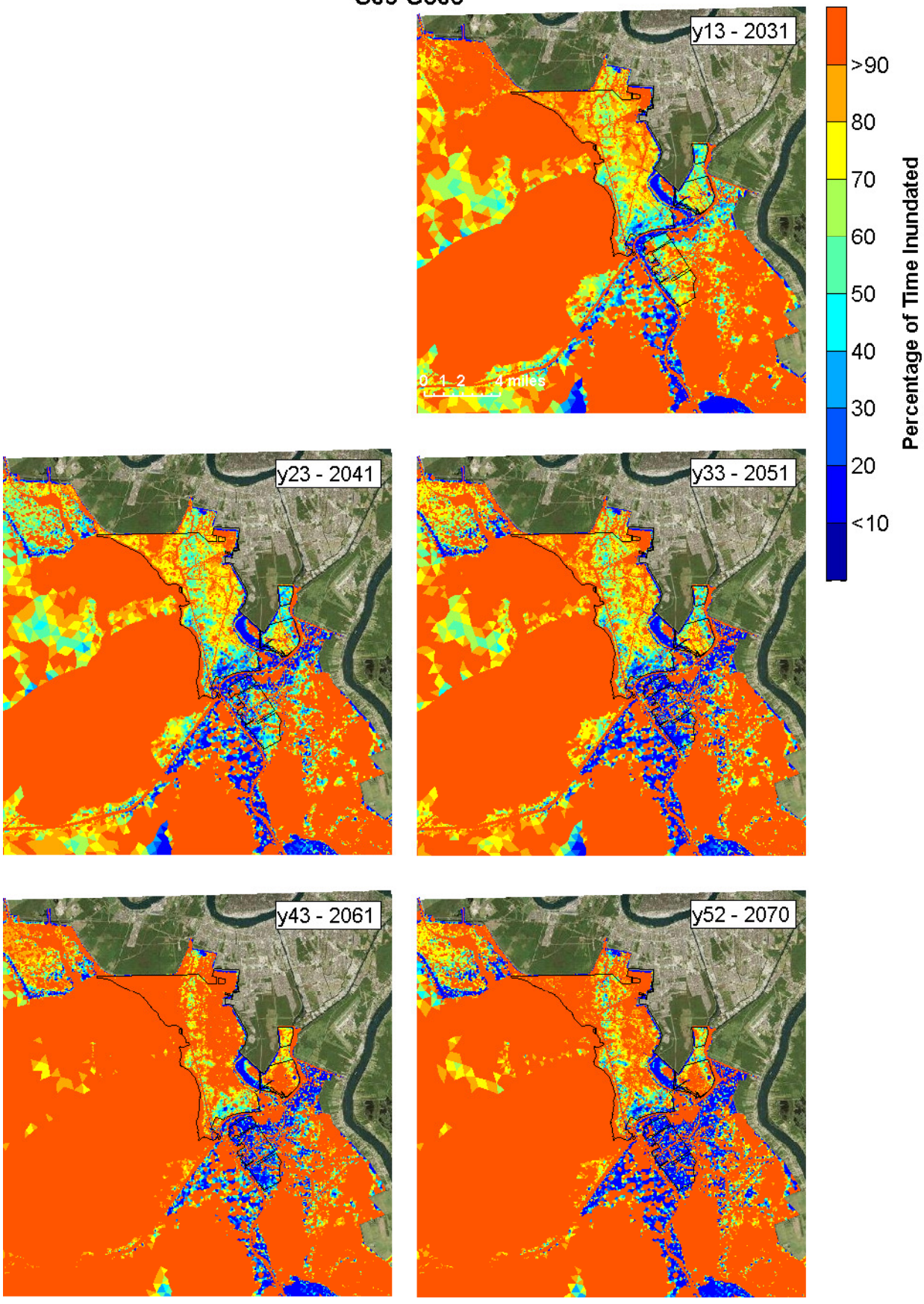
S06-G703


y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>0.27
0.24
0.21
0.18
0.15
0.12
0.09
0.06
<0.03
Mean Current Speed [m/s]

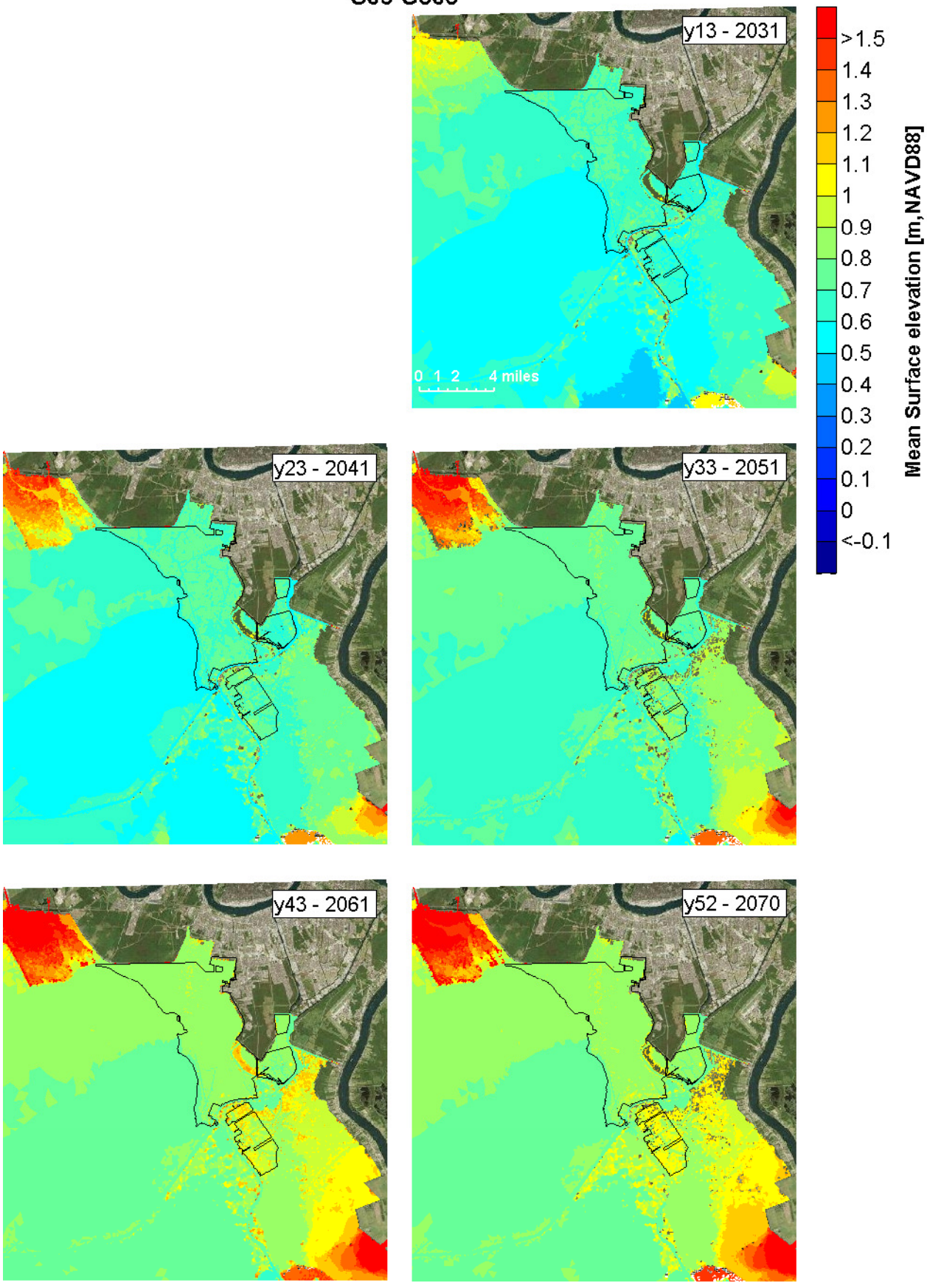
S06-G703


y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>0.27
0.24
0.21
0.18
0.15
0.12
0.09
0.06
<0.03
Max. Current Speed [m/s]

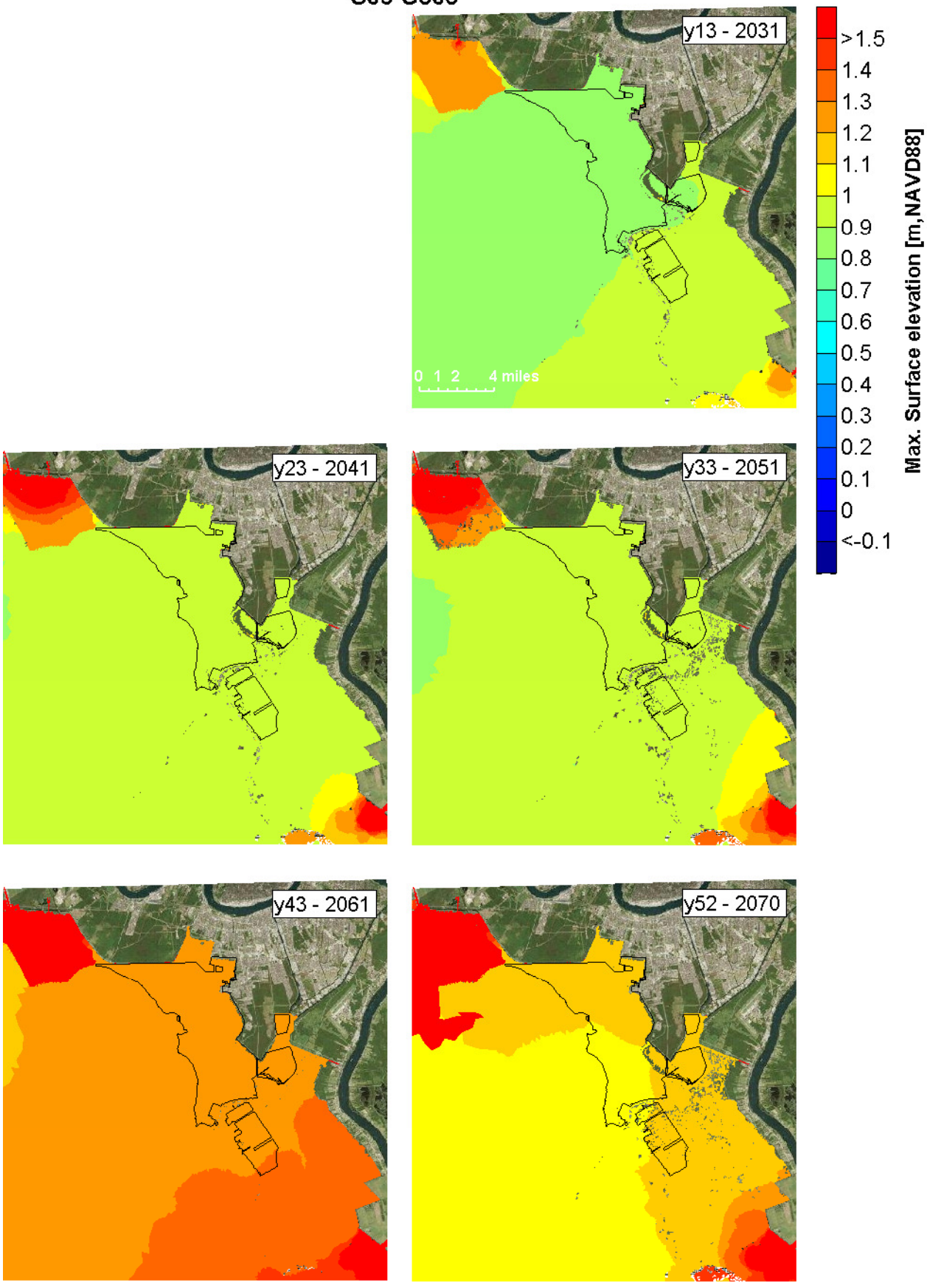
S06-G803


y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>90
80
70
60
50
40
30
20
<10
Percentage of Time Inundated

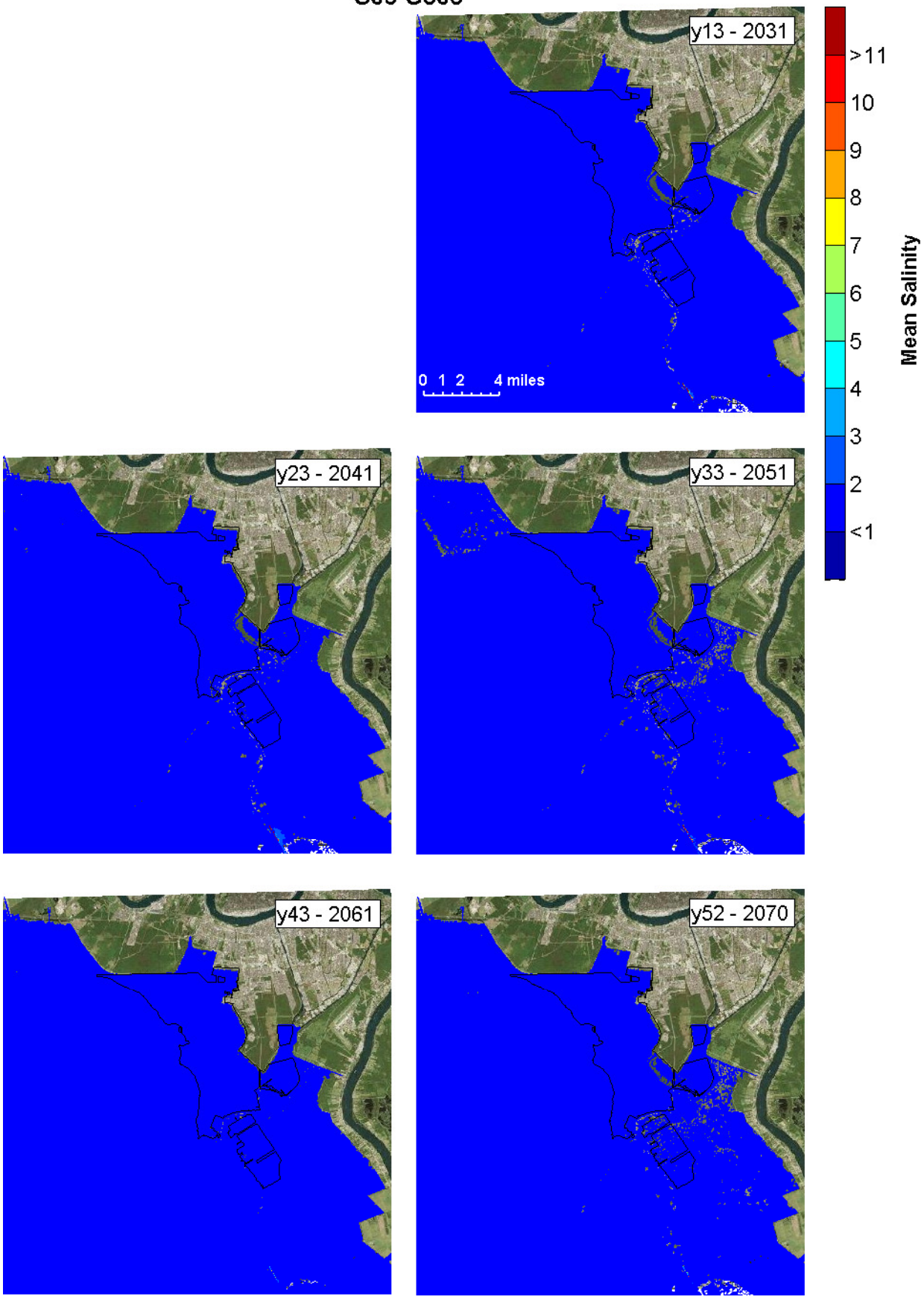
S06-G803


y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
<-0.1
Mean Surface elevation [m,NAVD88]

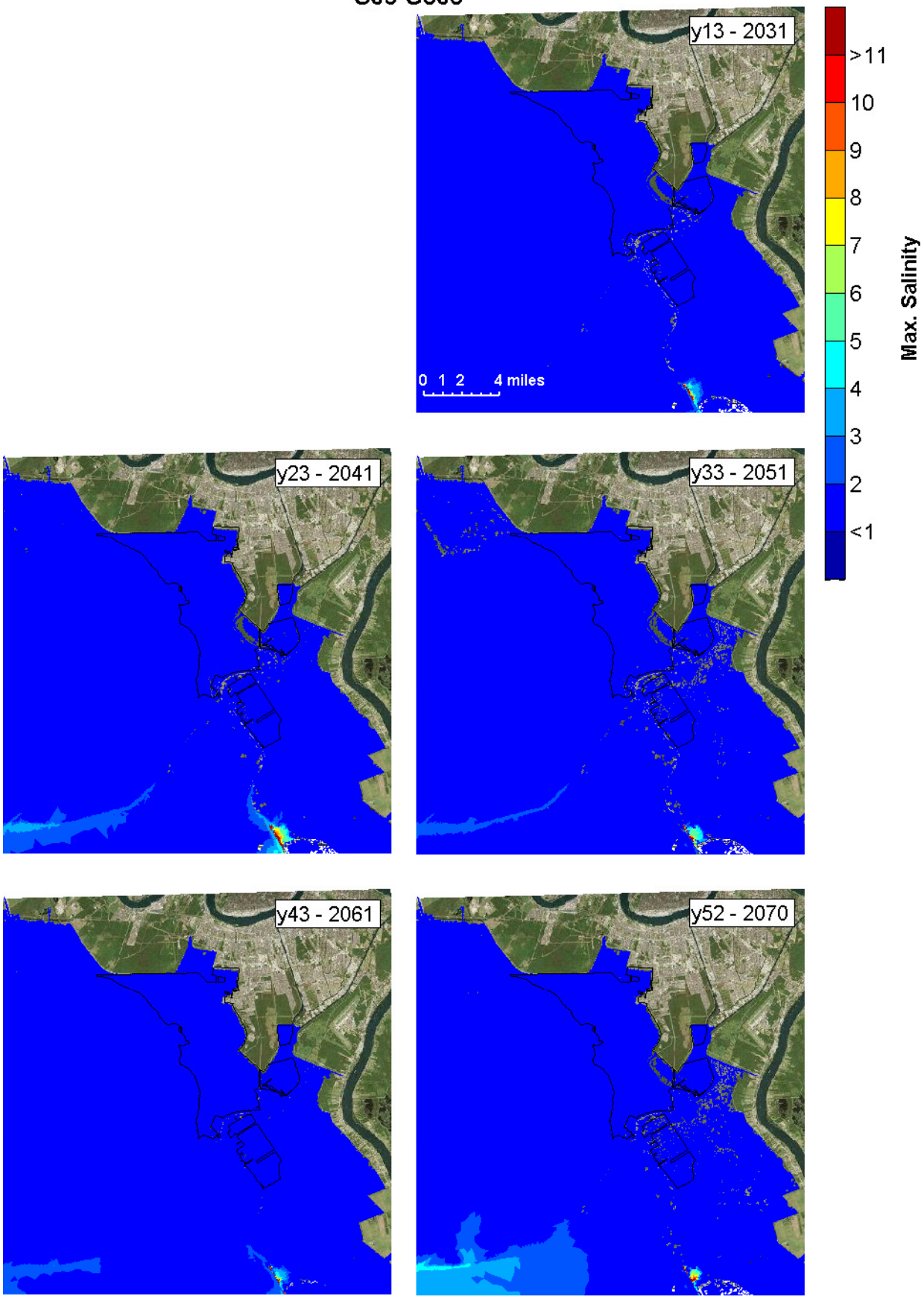
S06-G803


y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
<-0.1
Max. Surface elevation [m,NAVD88]

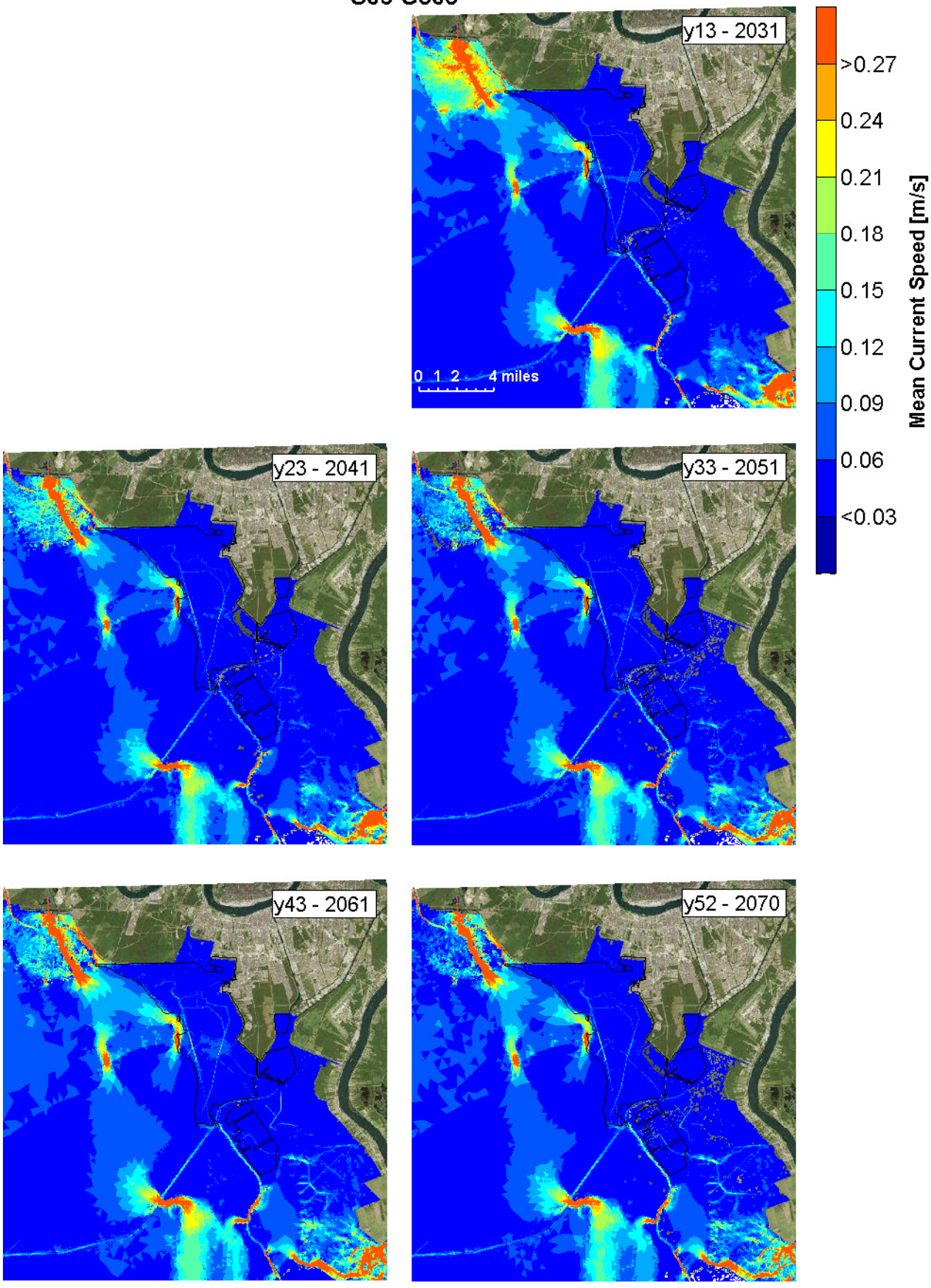
S06-G803


y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>11
10
9
8
7
6
5
4
3
2
<1
Mean Salinity

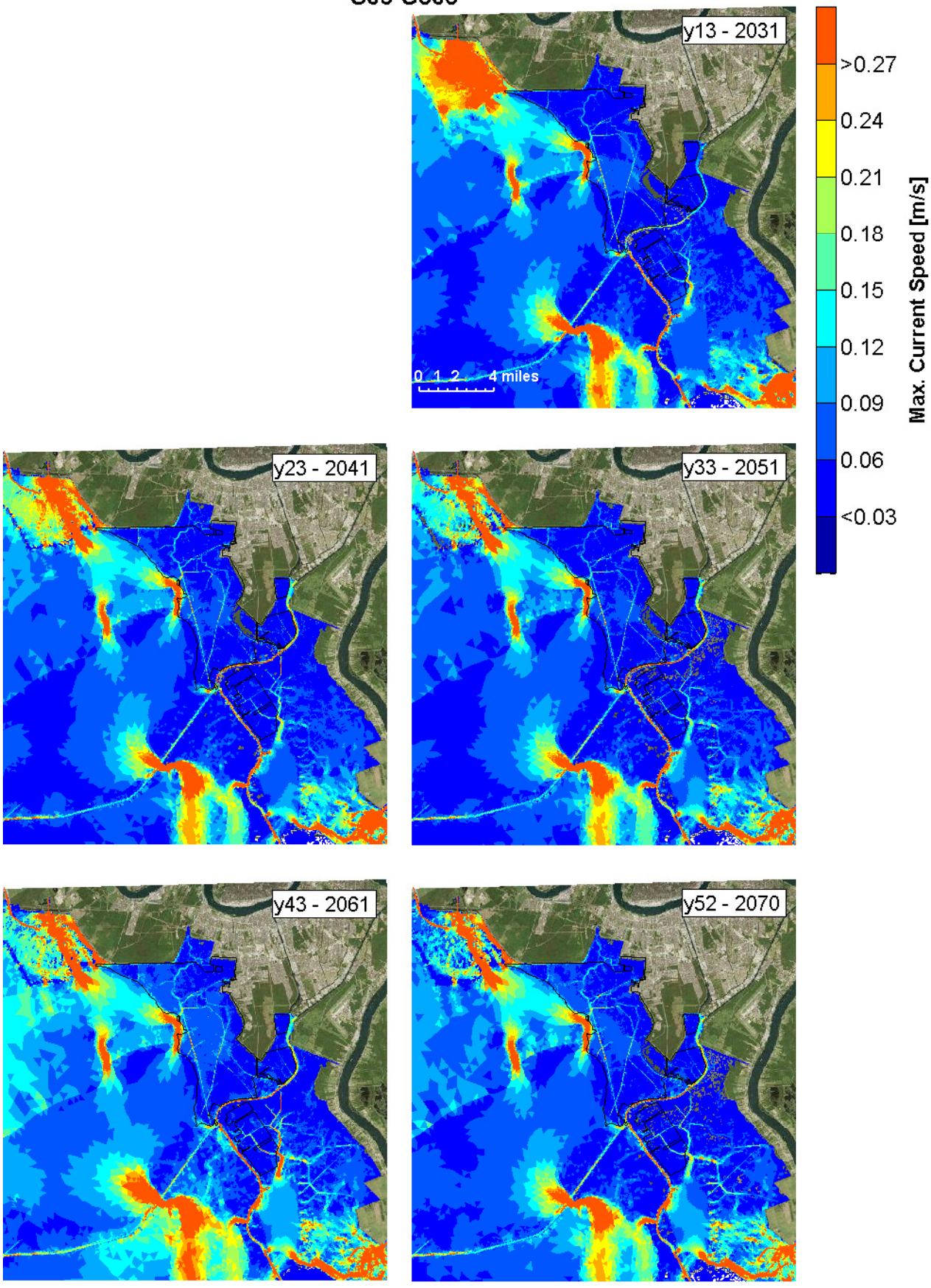
S06-G803


y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>11
10
9
8
7
6
5
4
3
2
<1
Max. Salinity

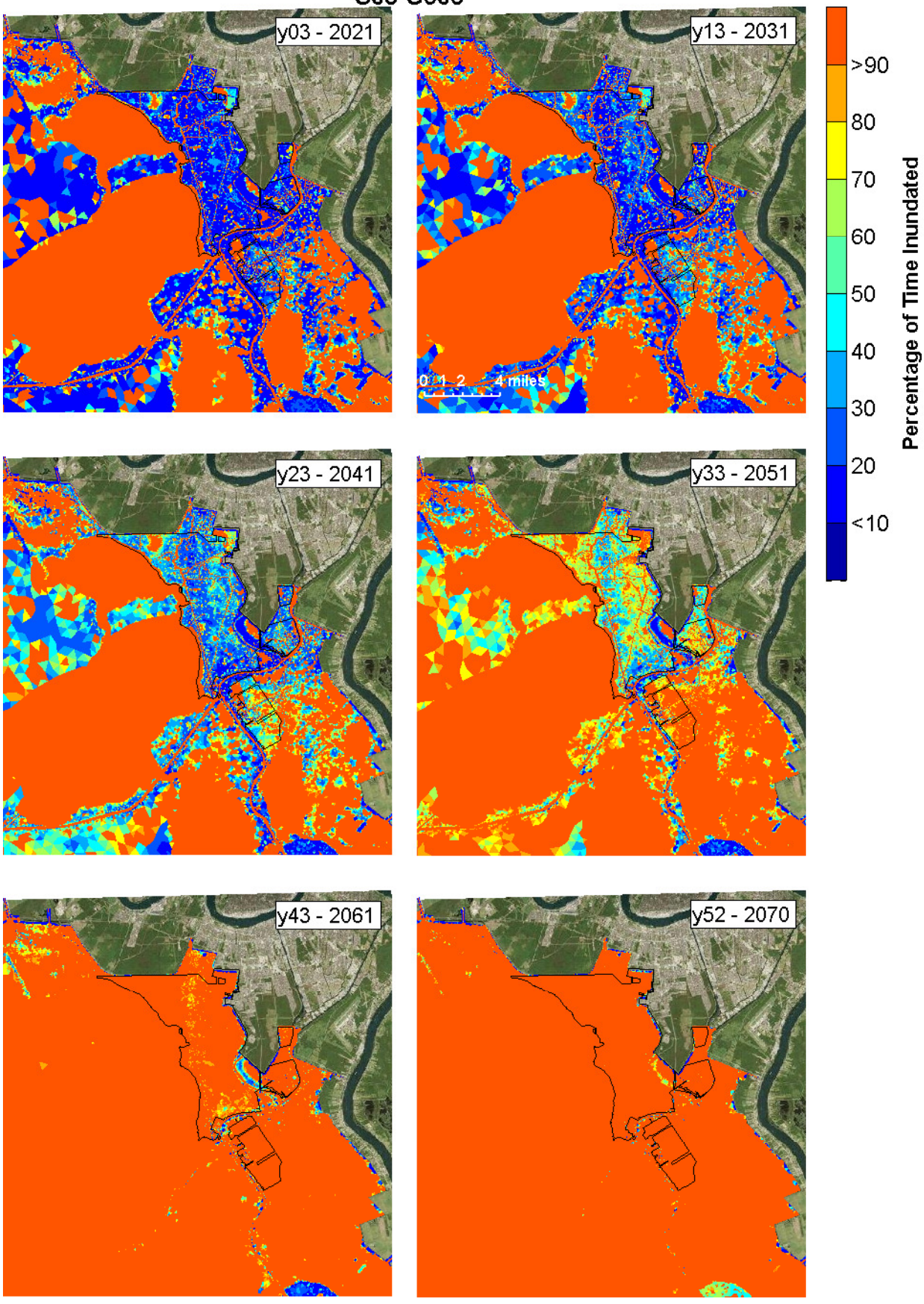
S06-G803


y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>0.27
0.24
0.21
0.18
0.15
0.12
0.09
0.06
<0.03
Mean Current Speed [m/s]

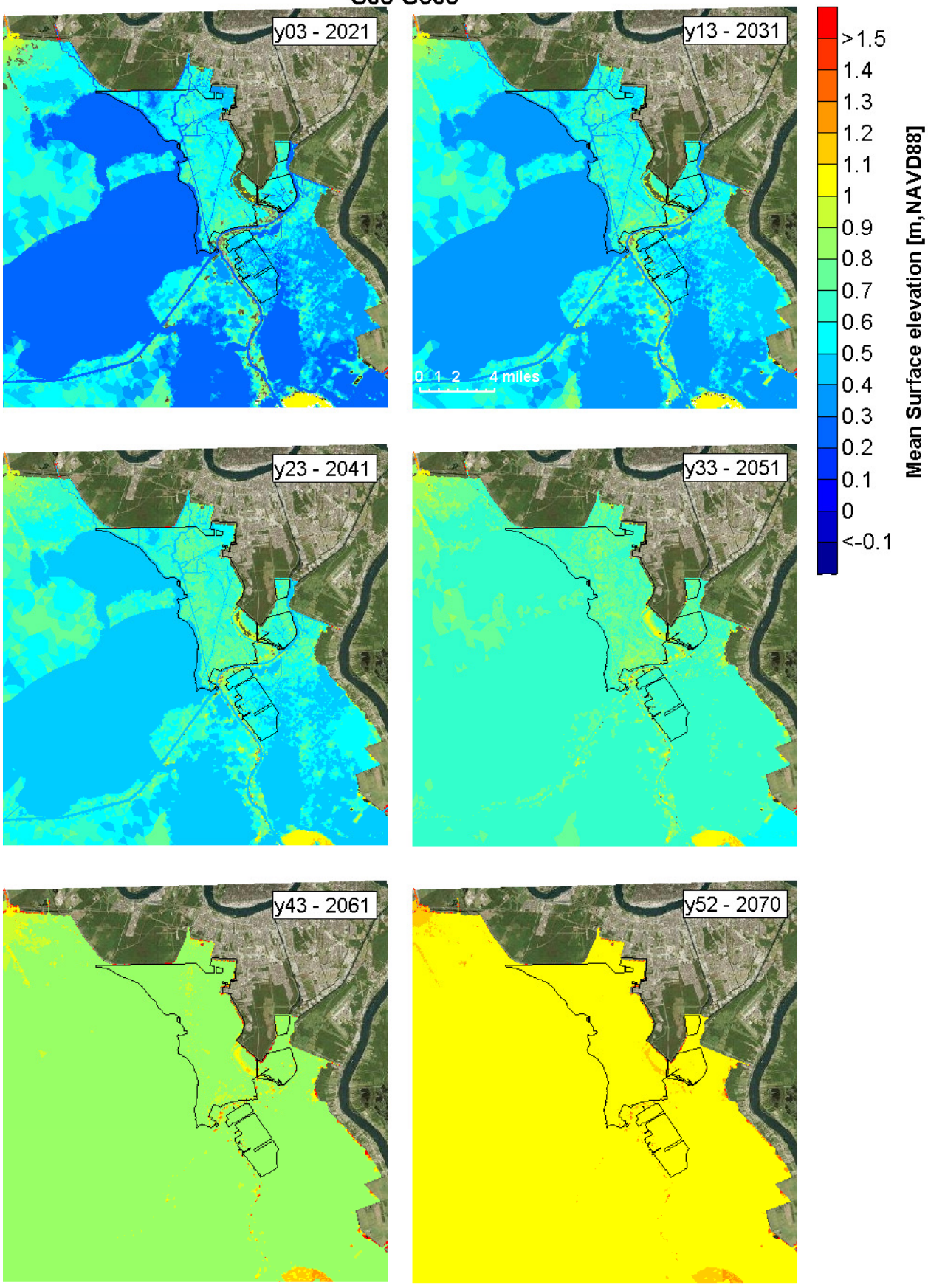
S06-G803

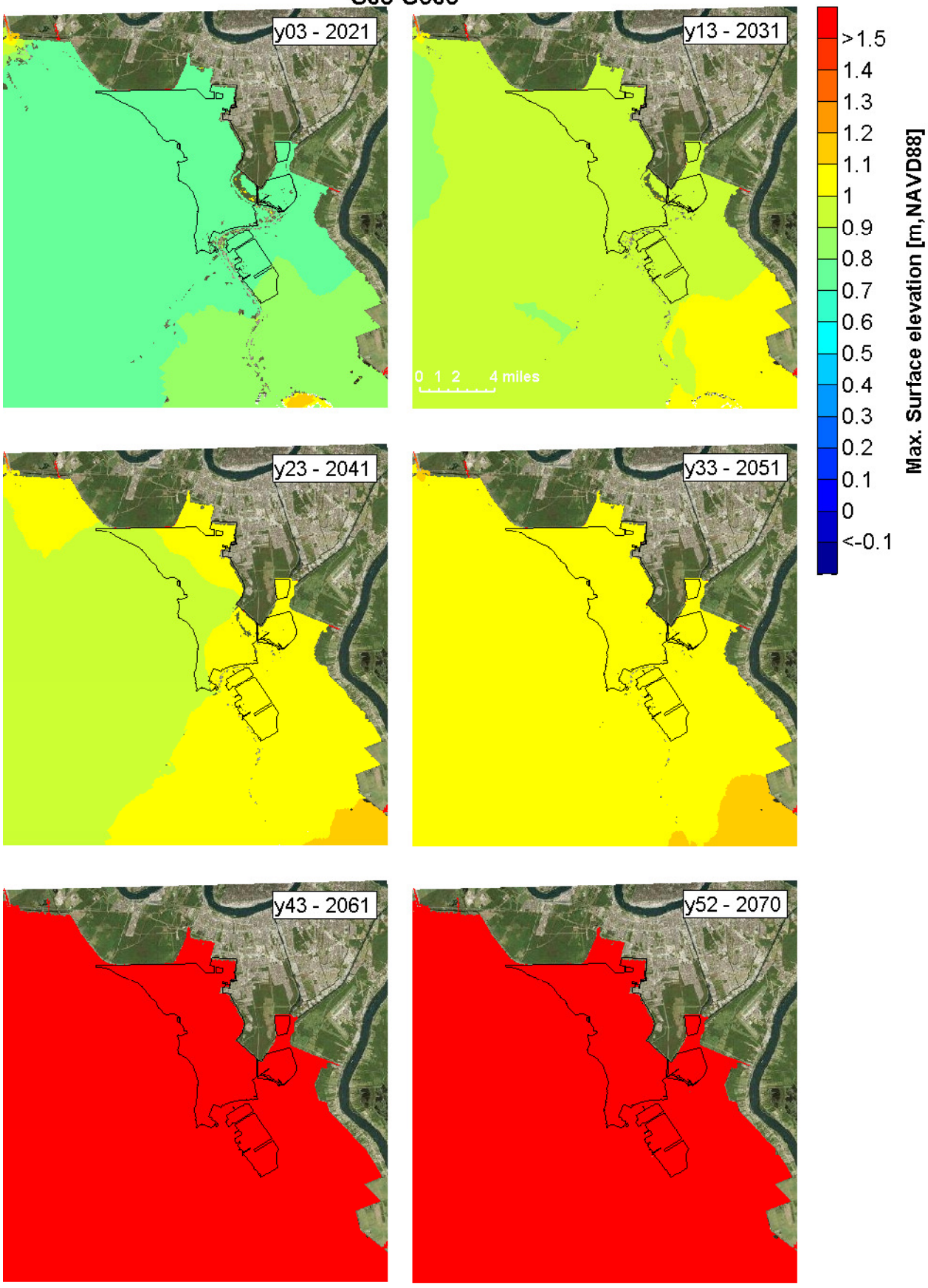

y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>0.27
0.24
0.21
0.18
0.15
0.12
0.09
0.06
<0.03
Max. Current Speed [m/s]

S08-G503

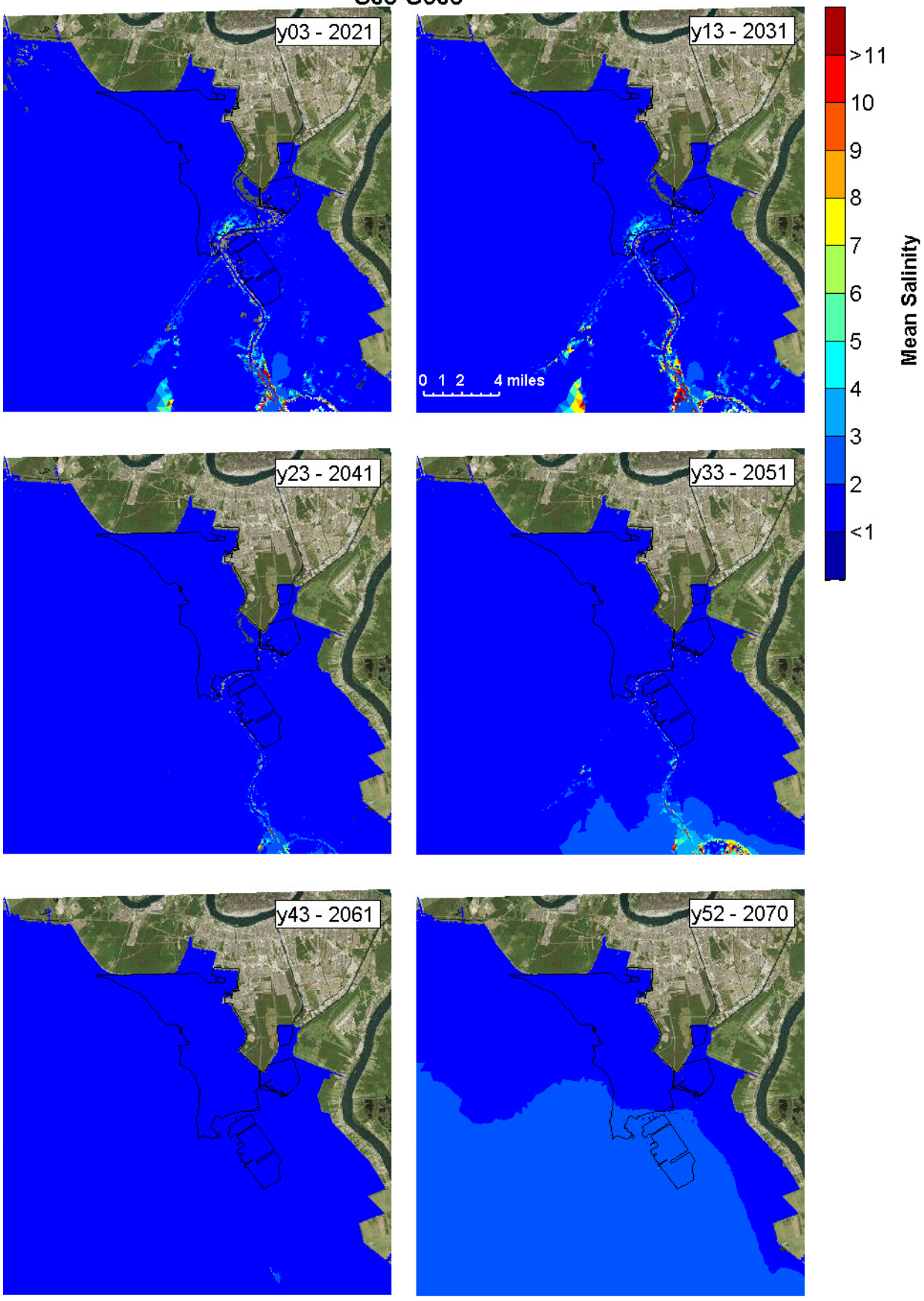

y03 - 2021
y13 - 2031
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
0 1 2 4 miles
>90
80
70
60
50
40
30
20
<10
Percentage of Time Inundated

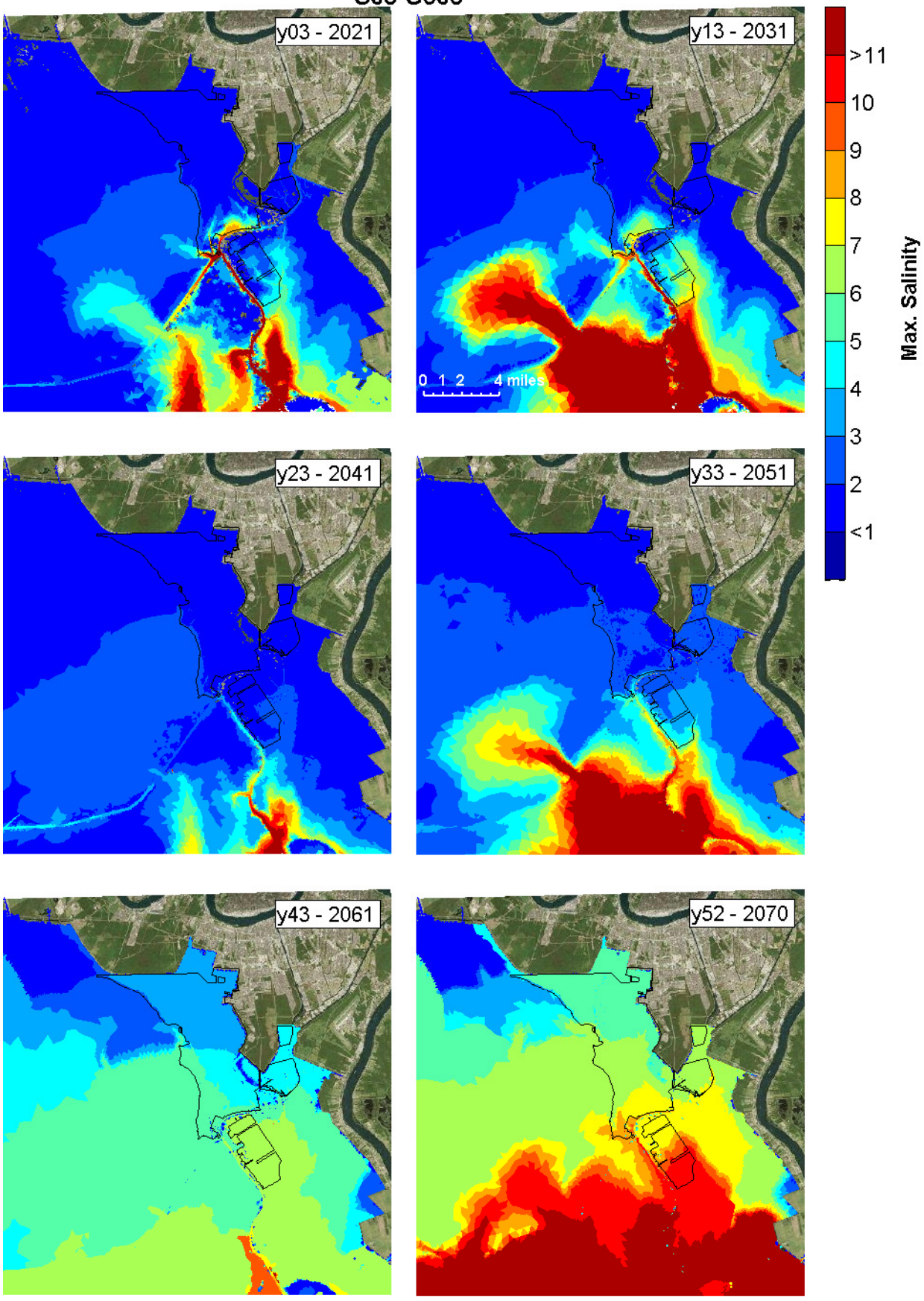
S08-G503


y03 - 2021
y13 - 2031
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
0 1 2 4 miles
>1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
<-0.1
Mean Surface elevation [m,NAVD88]

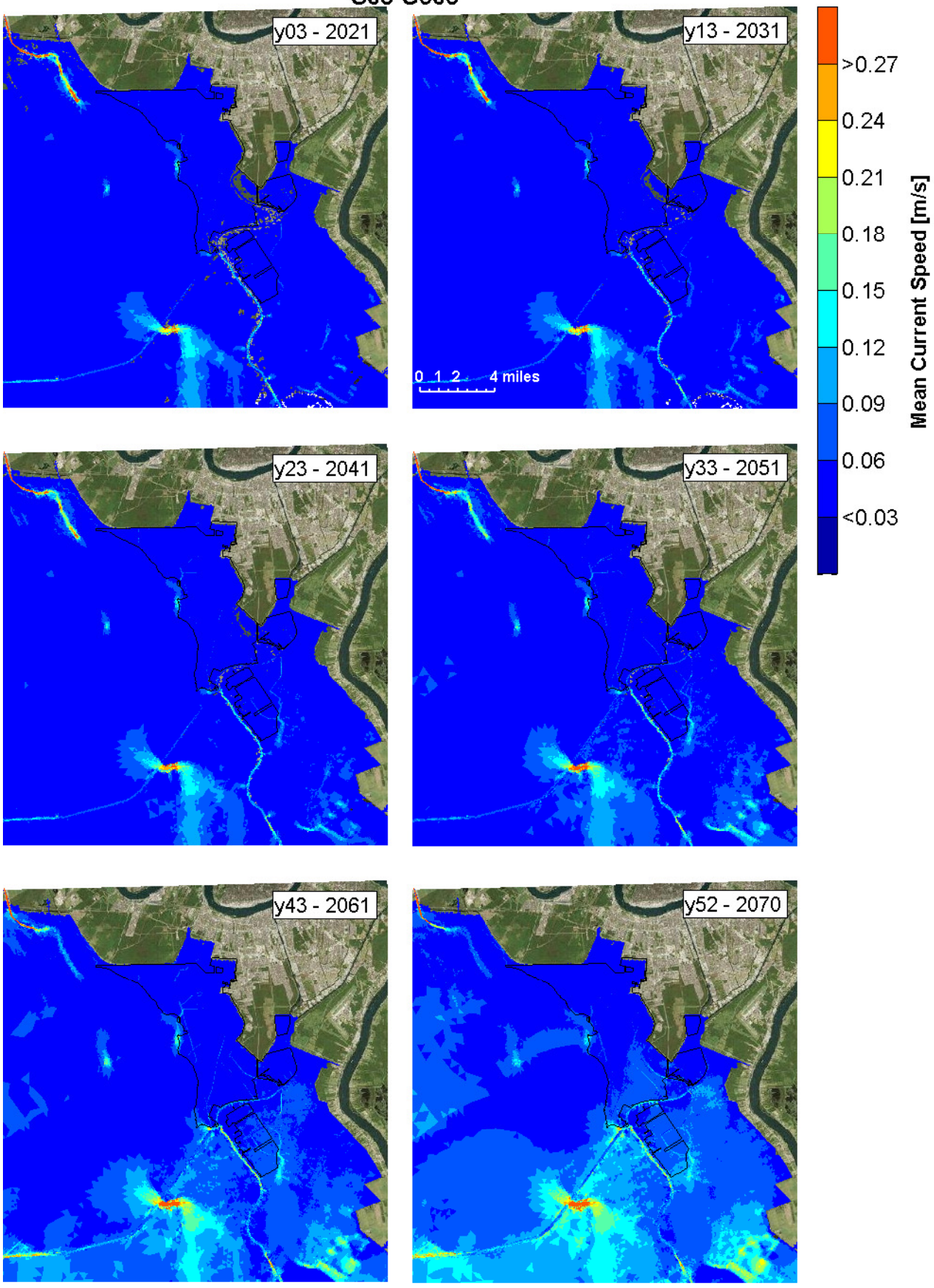

S08-G503
y03 - 2021
y13 - 2031
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
0 1 2 4 miles
>1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
<-0.1
Max. Surface elevation [m,NAVD88]

S08-G503

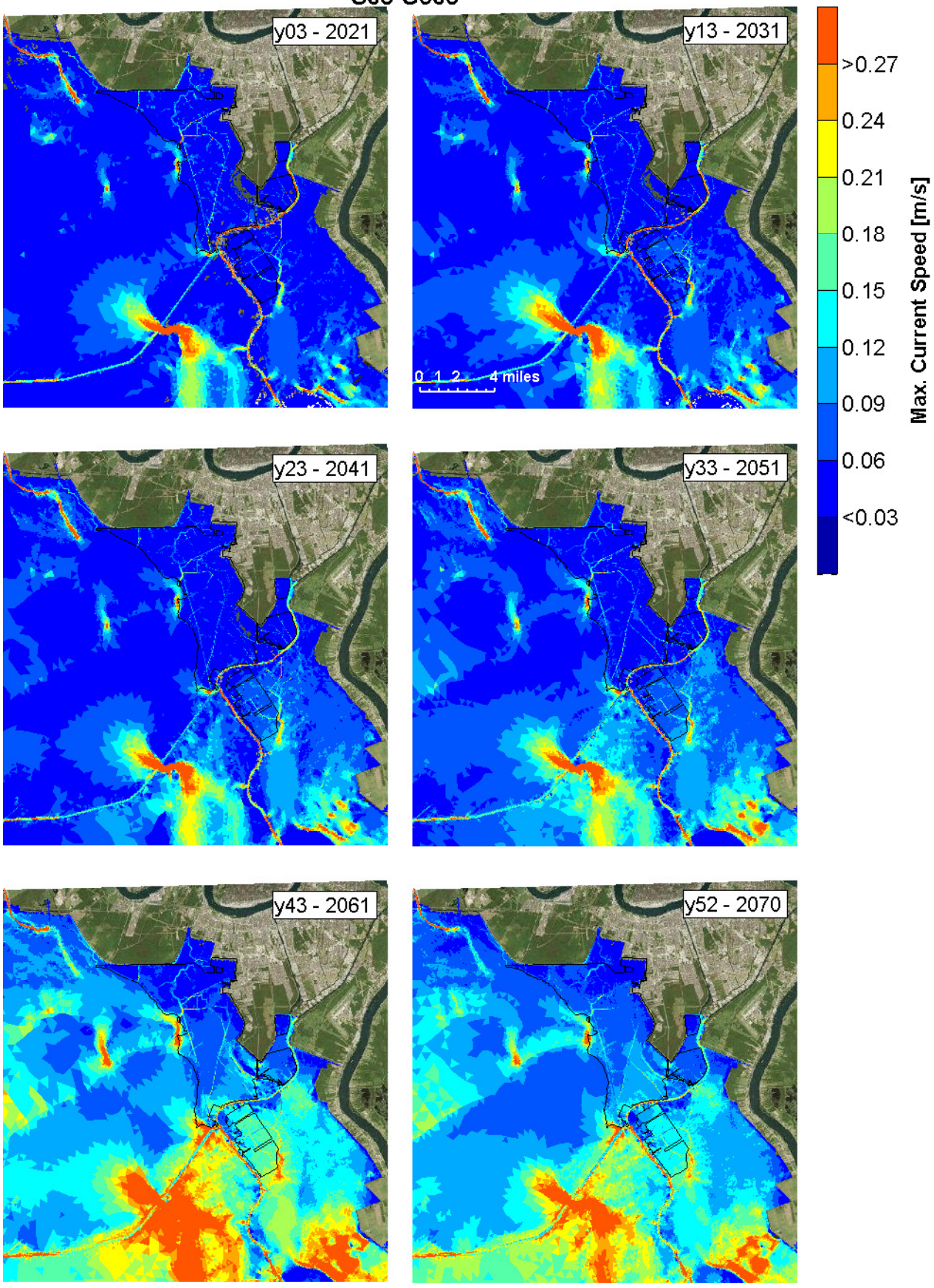

y03 - 2021
y13 - 2031
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
0 1 2 4 miles
>11
10
9
8
7
6
5
4
3
2
<1
Mean Salinity


S08-G503
y03 - 2021
y13 - 2031
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
0 1 2 4 miles
>11
10
9
8
7
6
5
4
3
2
<1
Max. Salinity

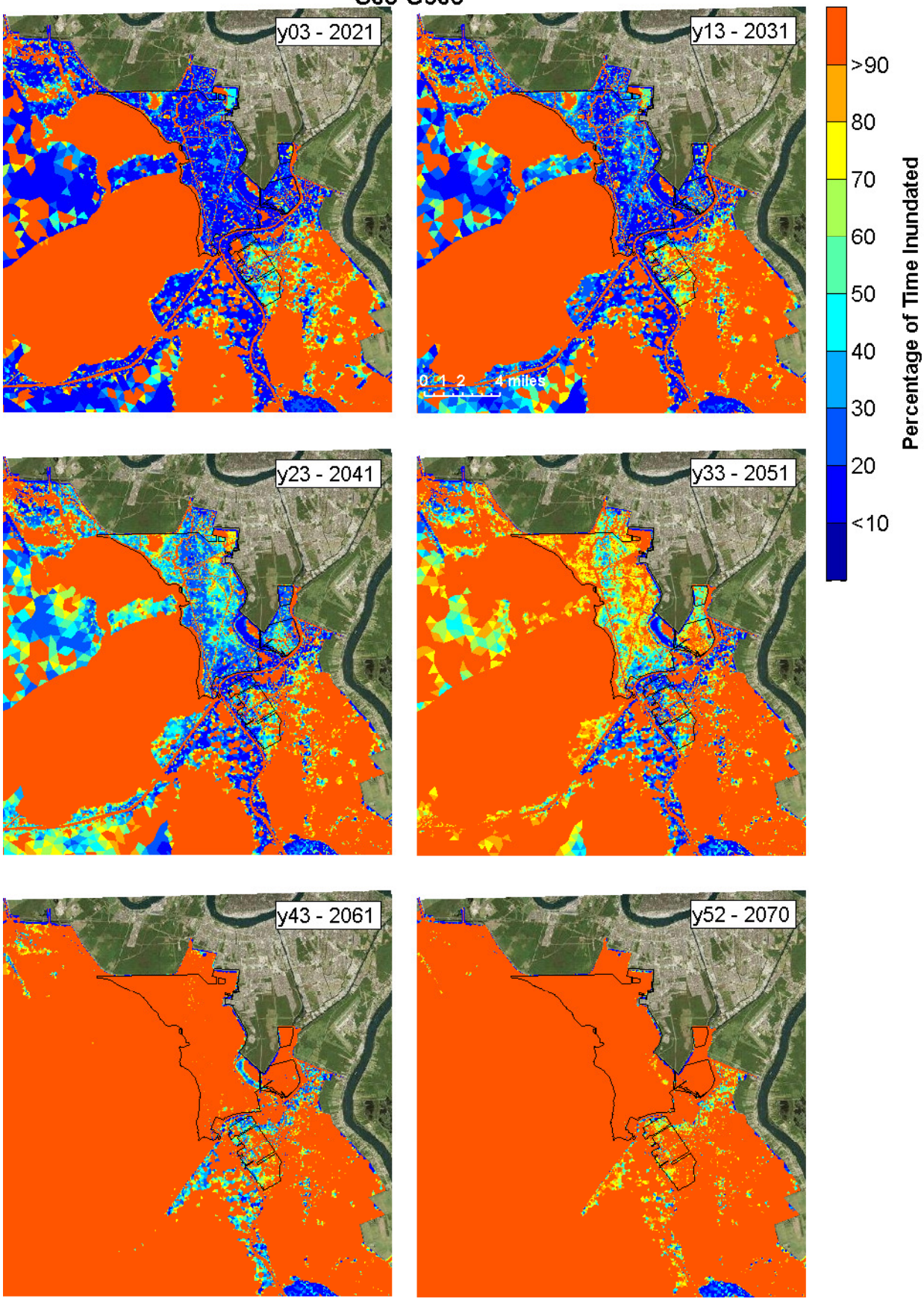
S08-G503


y03 - 2021
y13 - 2031
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
0 1 2 4 miles
>0.27
0.24
0.21
0.18
0.15
0.12
0.09
0.06
<0.03
Mean Current Speed [m/s]

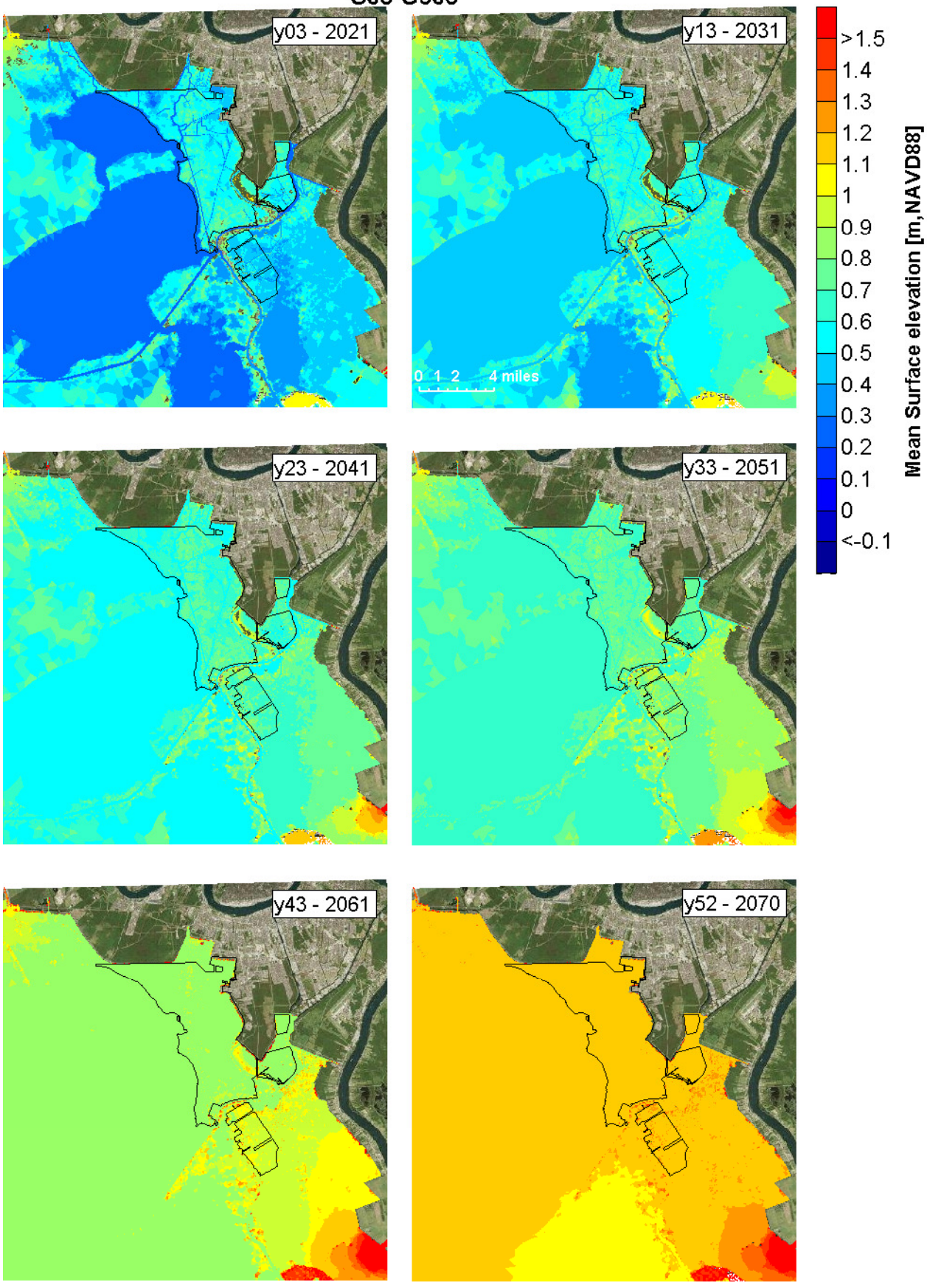
S08-G503


y03 - 2021
y13 - 2031
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
0 1 2 4 miles
>0.27
0.24
0.21
0.18
0.15
0.12
0.09
0.06
<0.03
Max. Current Speed [m/s]

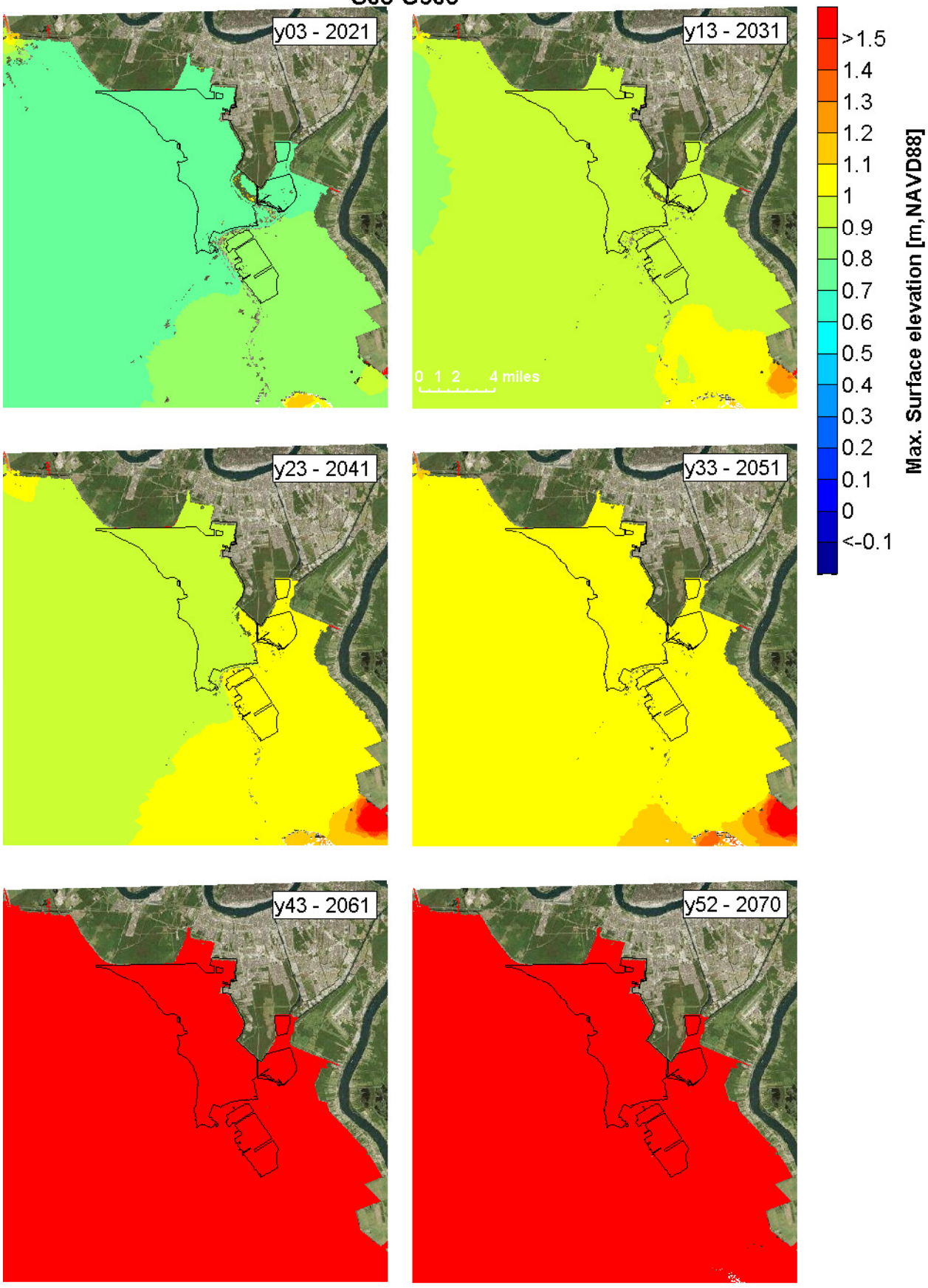
S08-G603

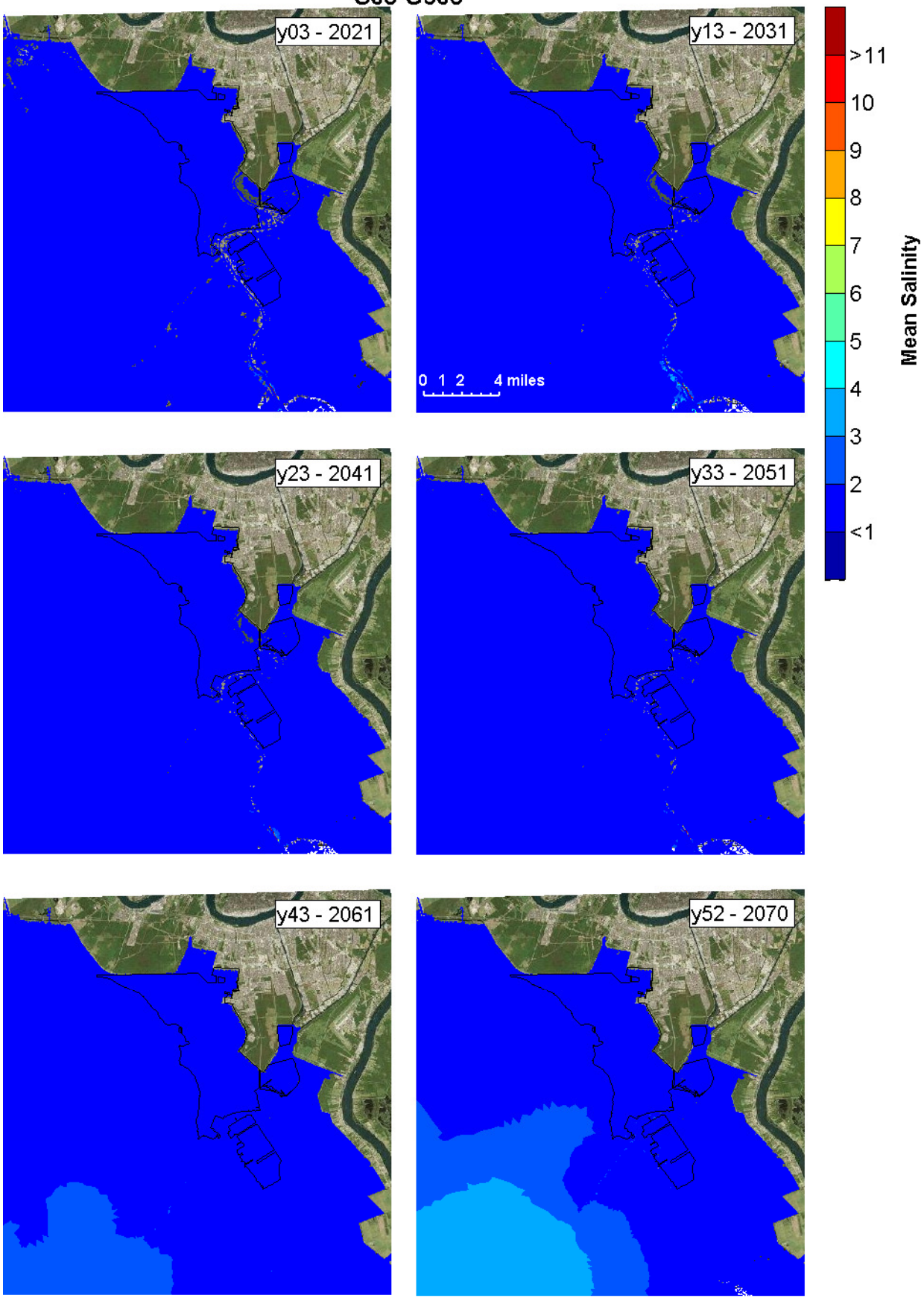

y03 - 2021
y13 - 2031
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
0 1 2 4 miles
>90
80
70
60
50
40
30
20
<10
Percentage of Time Inundated

S08-G603

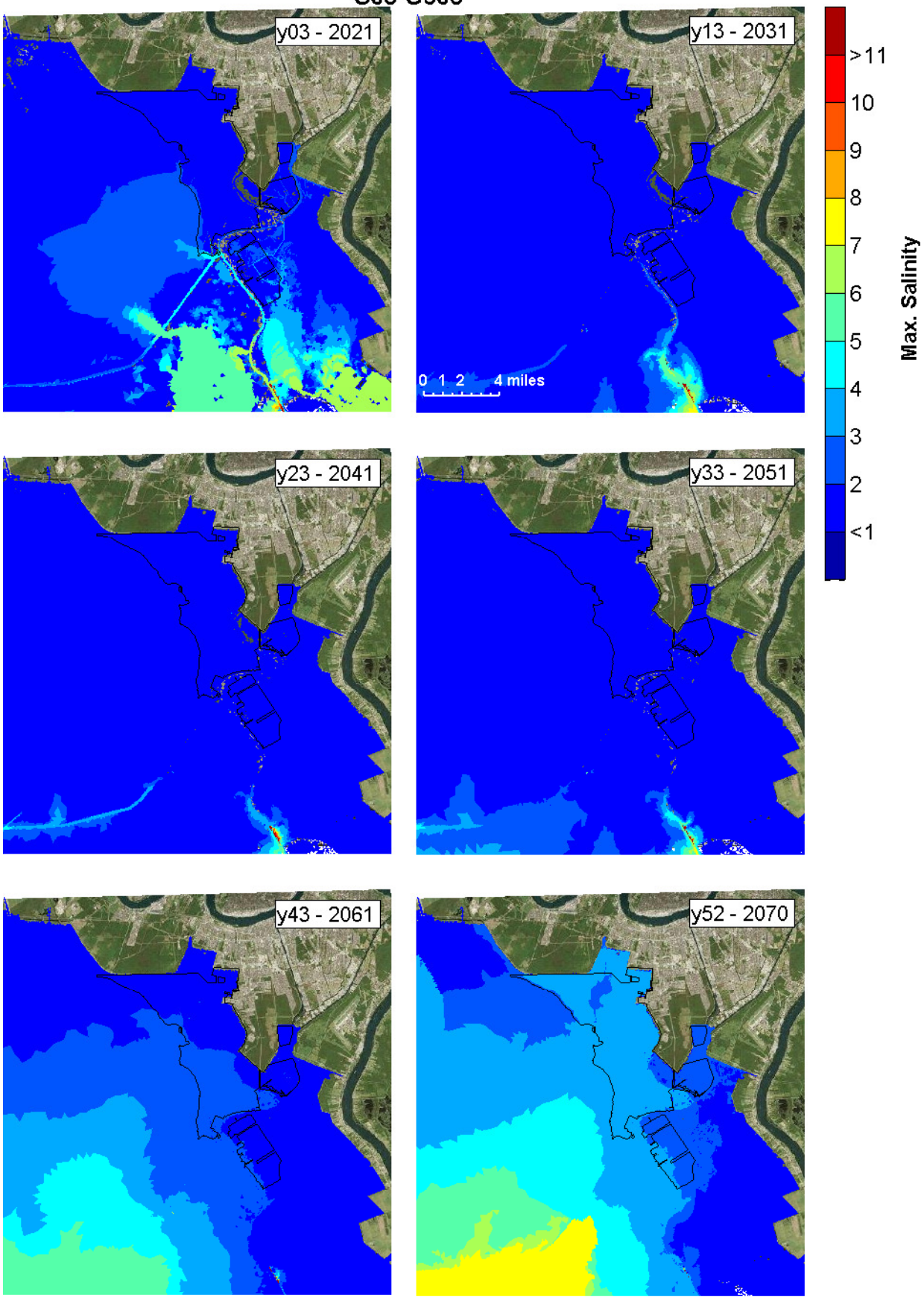

y03 - 2021
y13 - 2031
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
0 1 2 4 miles
>1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
<-0.1
Mean Surface elevation [m,NAVD88]

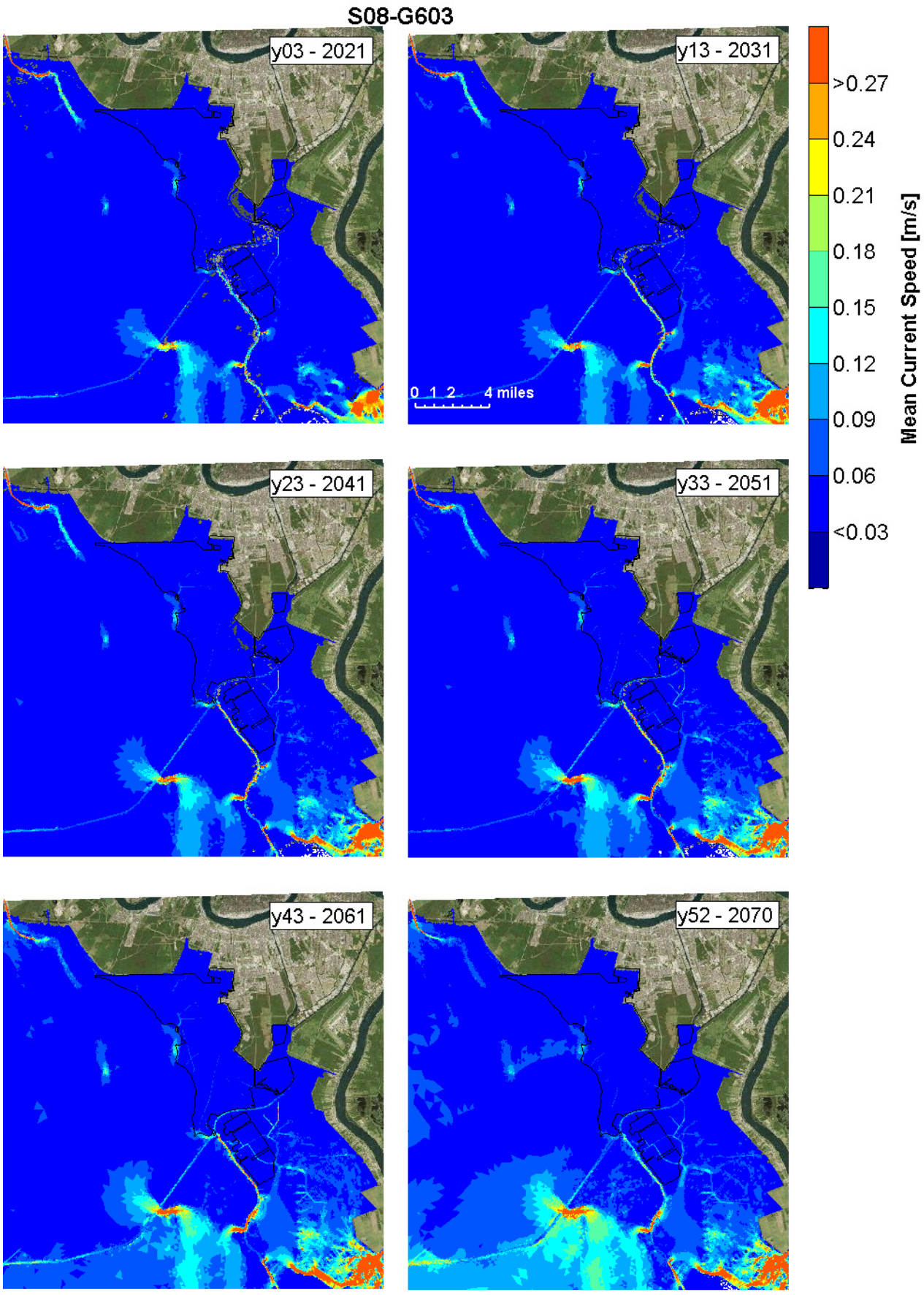
S08-G603


y03 - 2021
y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
<-0.1
Max. Surface elevation [m,NAVD88]

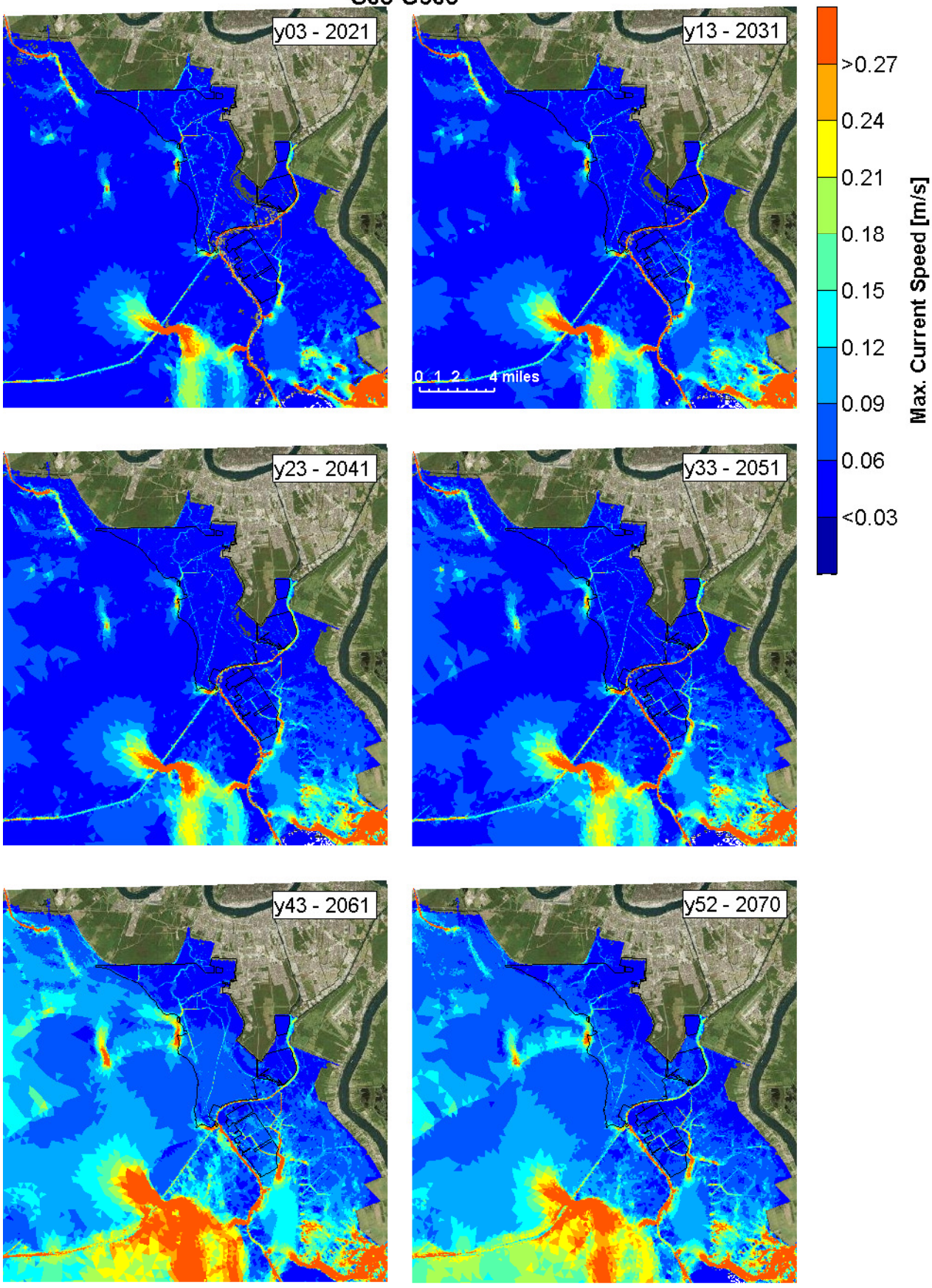

S08-G603
y03 - 2021
y13 - 2031
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
0 1 2 4 miles
>11
10
9
8
7
6
5
4
3
2
<1
Mean Salinity

S08-G603

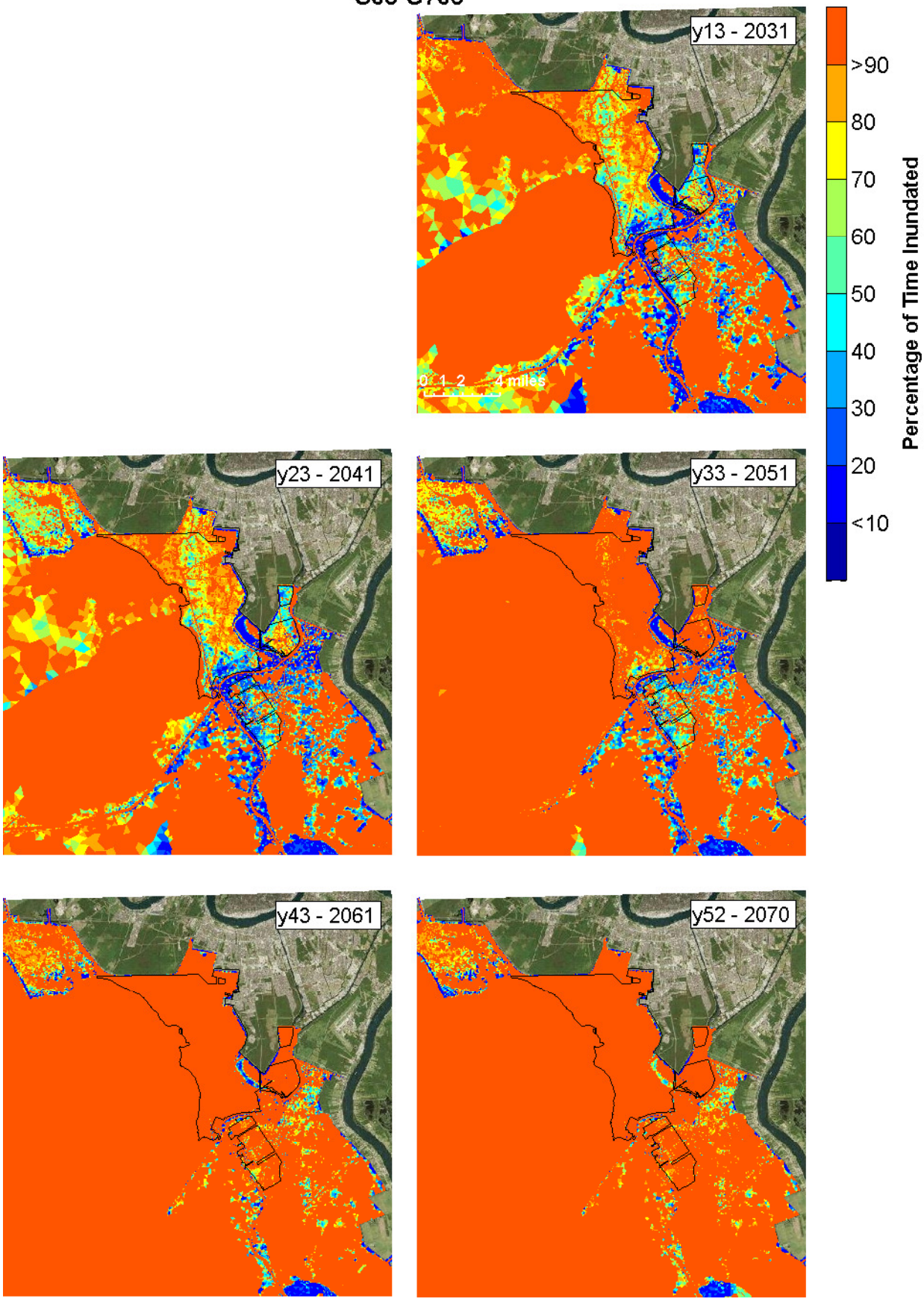

y03 - 2021
y13 - 2031
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
0 1 2 4 miles
>11
10
9
8
7
6
5
4
3
2
<1
Max. Salinity


S08-G603
y03 - 2021
y13 - 2031
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
0 1 2 4 miles
>0.27
0.24
0.21
0.18
0.15
0.12
0.09
0.06
<0.03
Mean Current Speed [m/s]

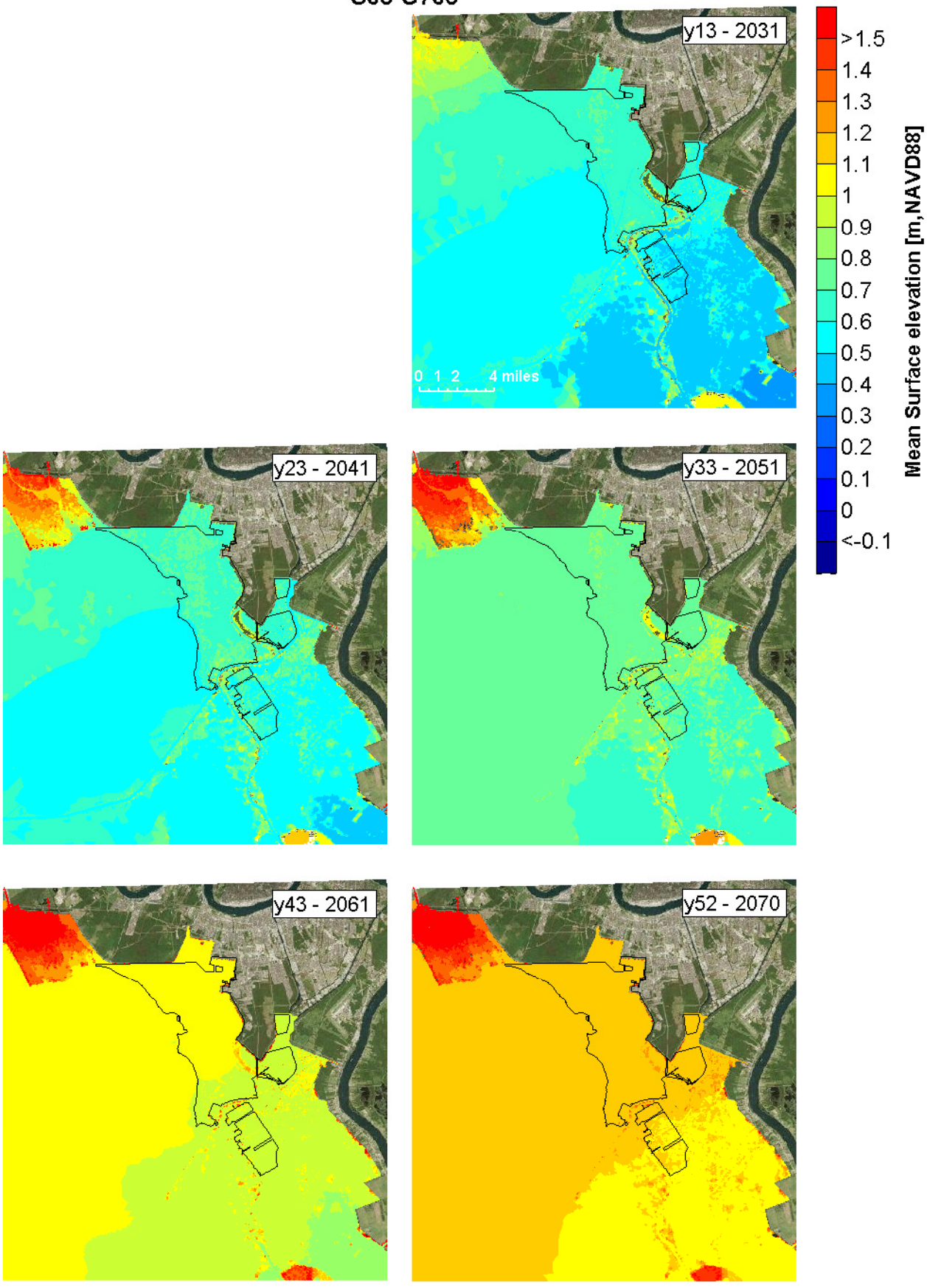
S08-G603


y03 - 2021
y13 - 2031
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
0 1 2 4 miles
>0.27
0.24
0.21
0.18
0.15
0.12
0.09
0.06
<0.03
Max. Current Speed [m/s]

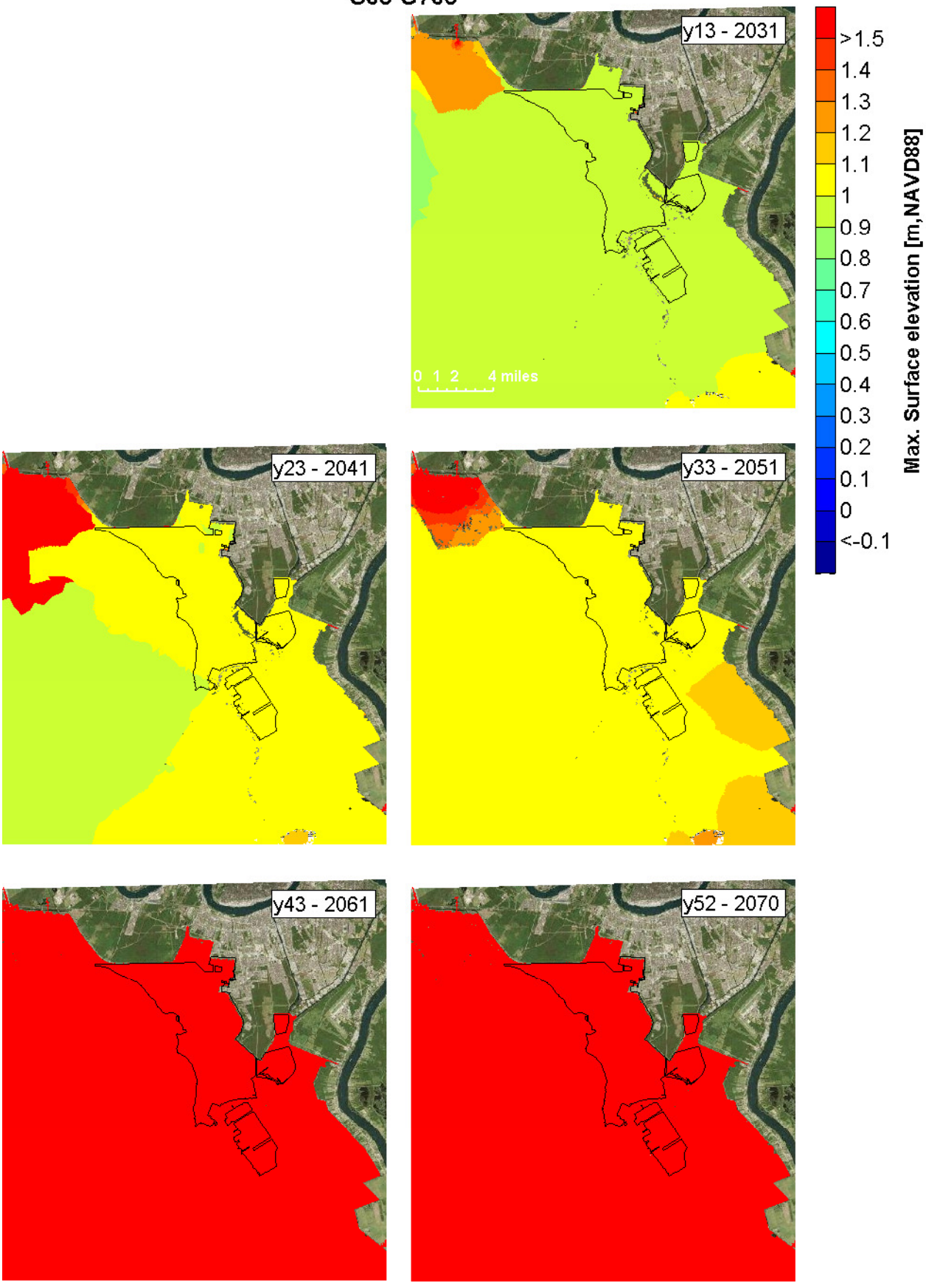
S08-G703


y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>90
80
70
60
50
40
30
20
<10
Percentage of Time Inundated

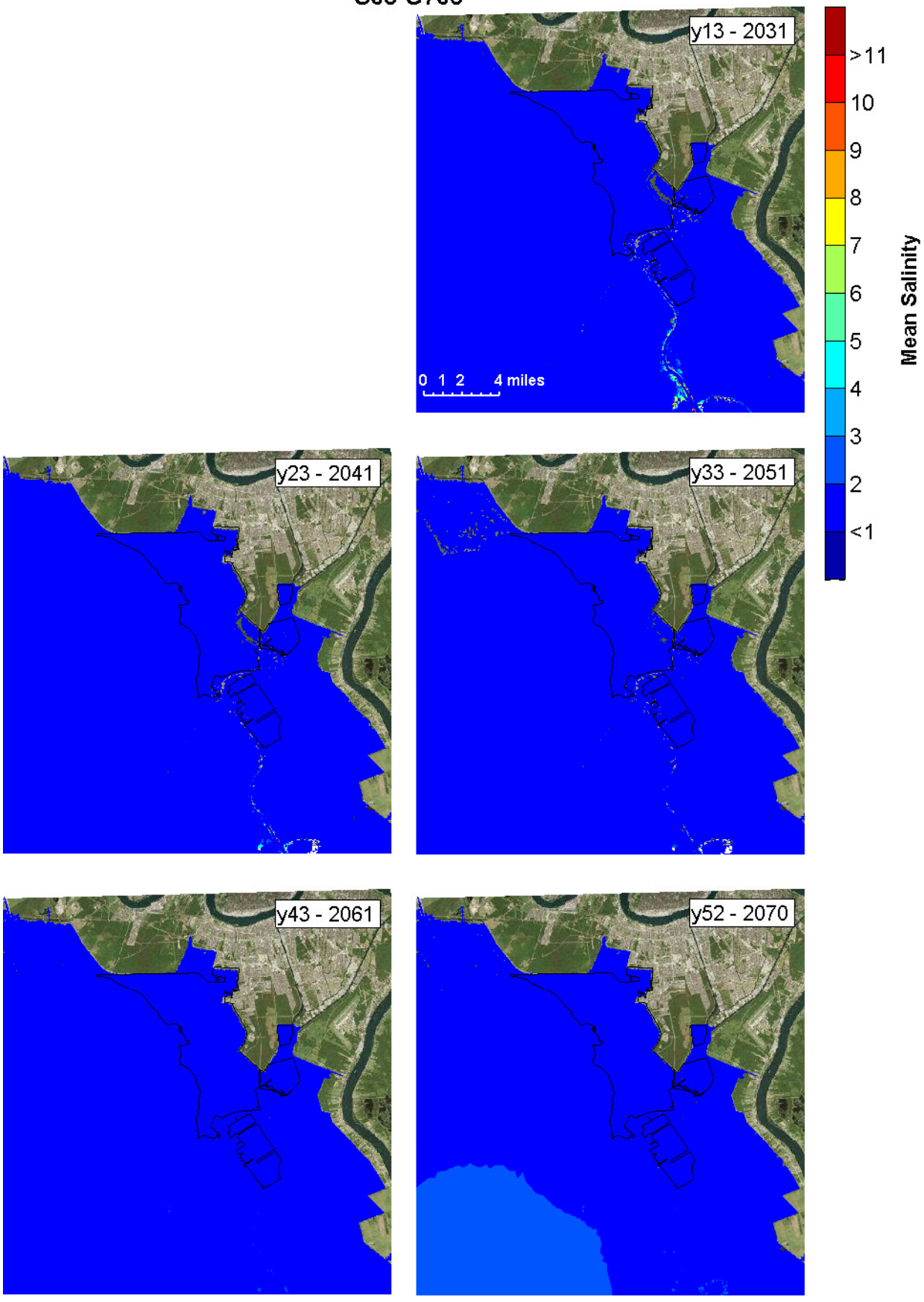
S08-G703


y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
<-0.1
Mean Surface elevation [m,NAVD88]

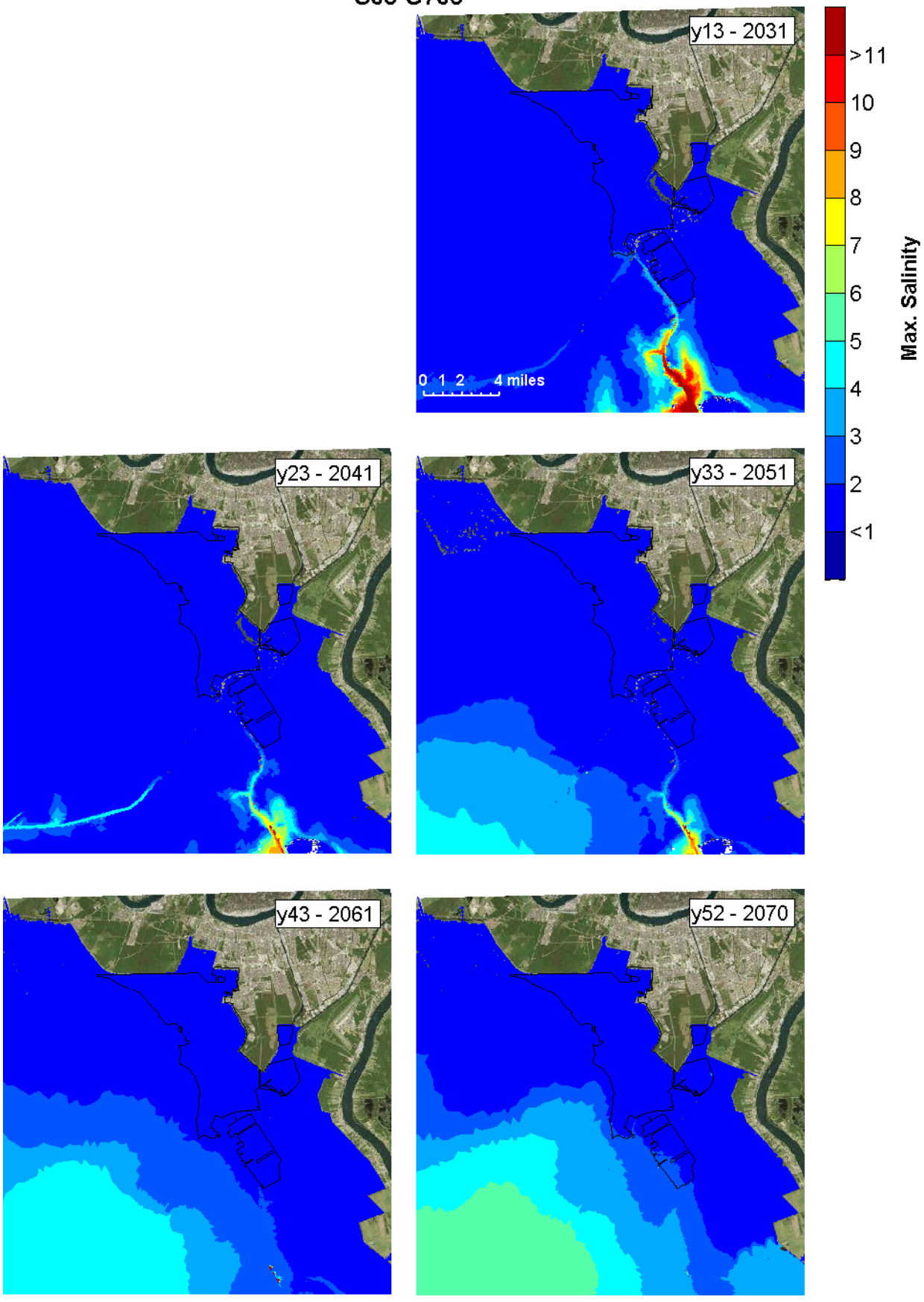
S08-G703


y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
<-0.1
Max. Surface elevation [m,NAVD88]

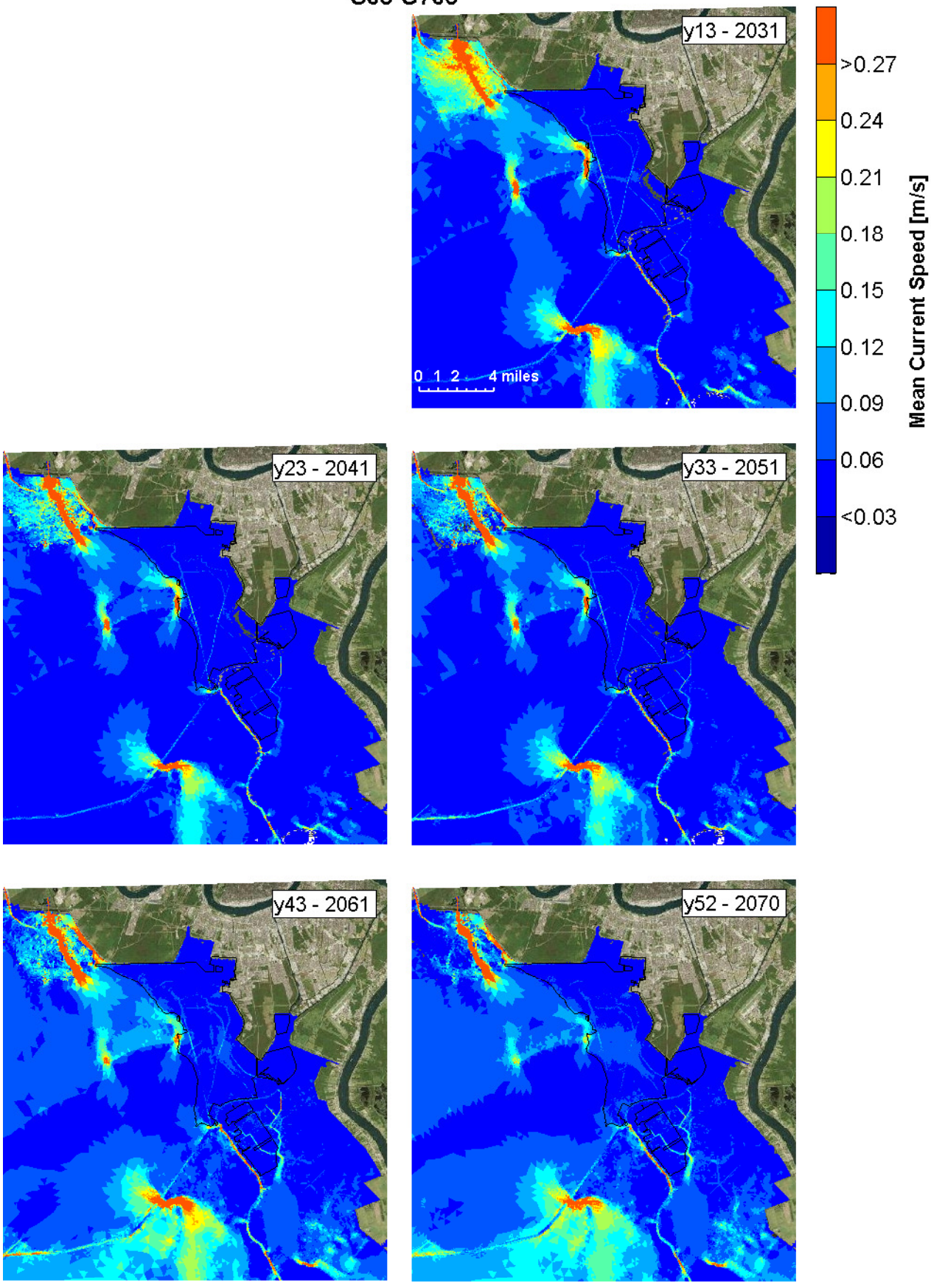
S08-G703


y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>11
10
9
8
7
6
5
4
3
2
<1
Mean Salinity

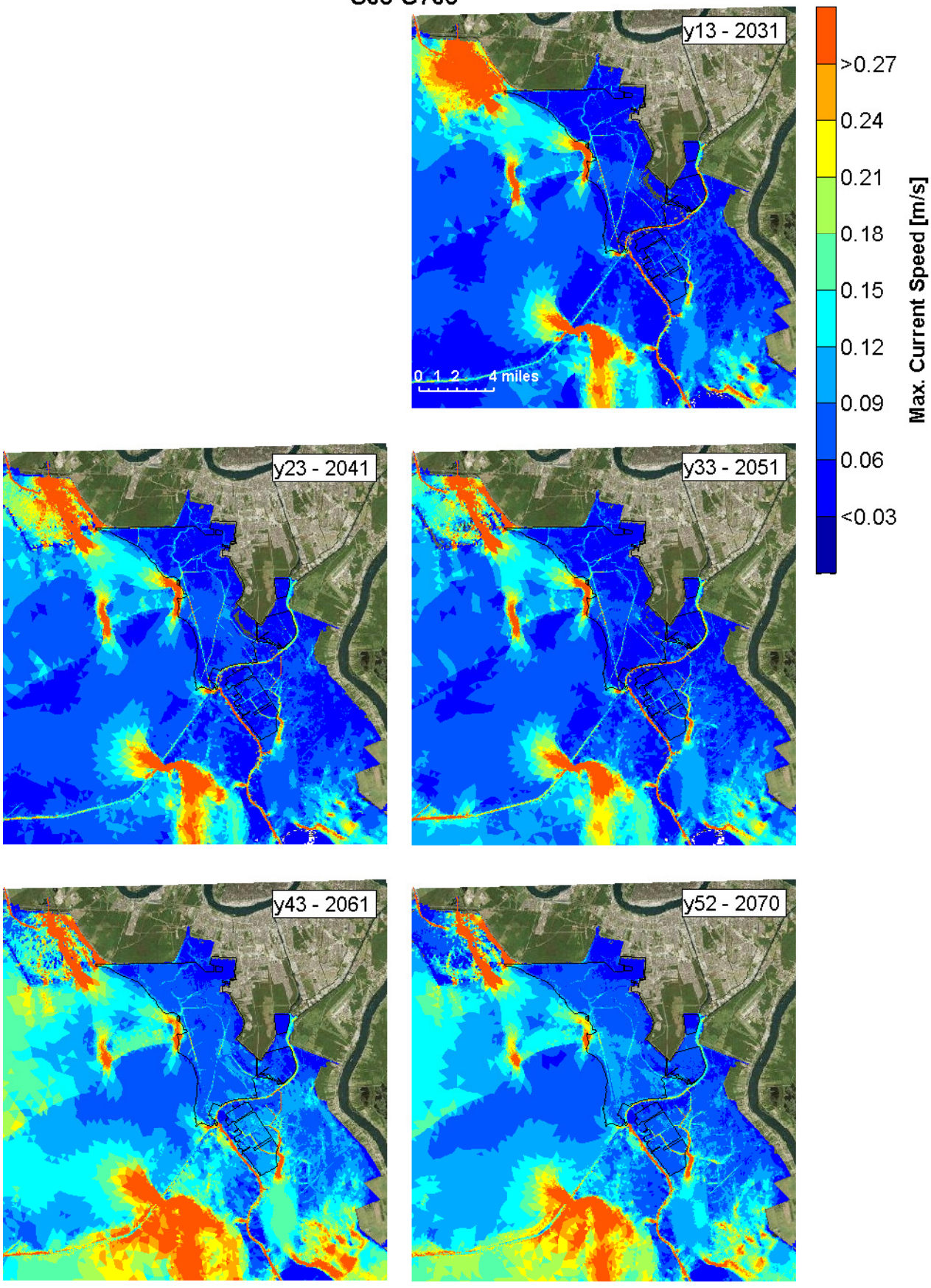
S08-G703


y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>11
10
9
8
7
6
5
4
3
2
<1
Max. Salinity

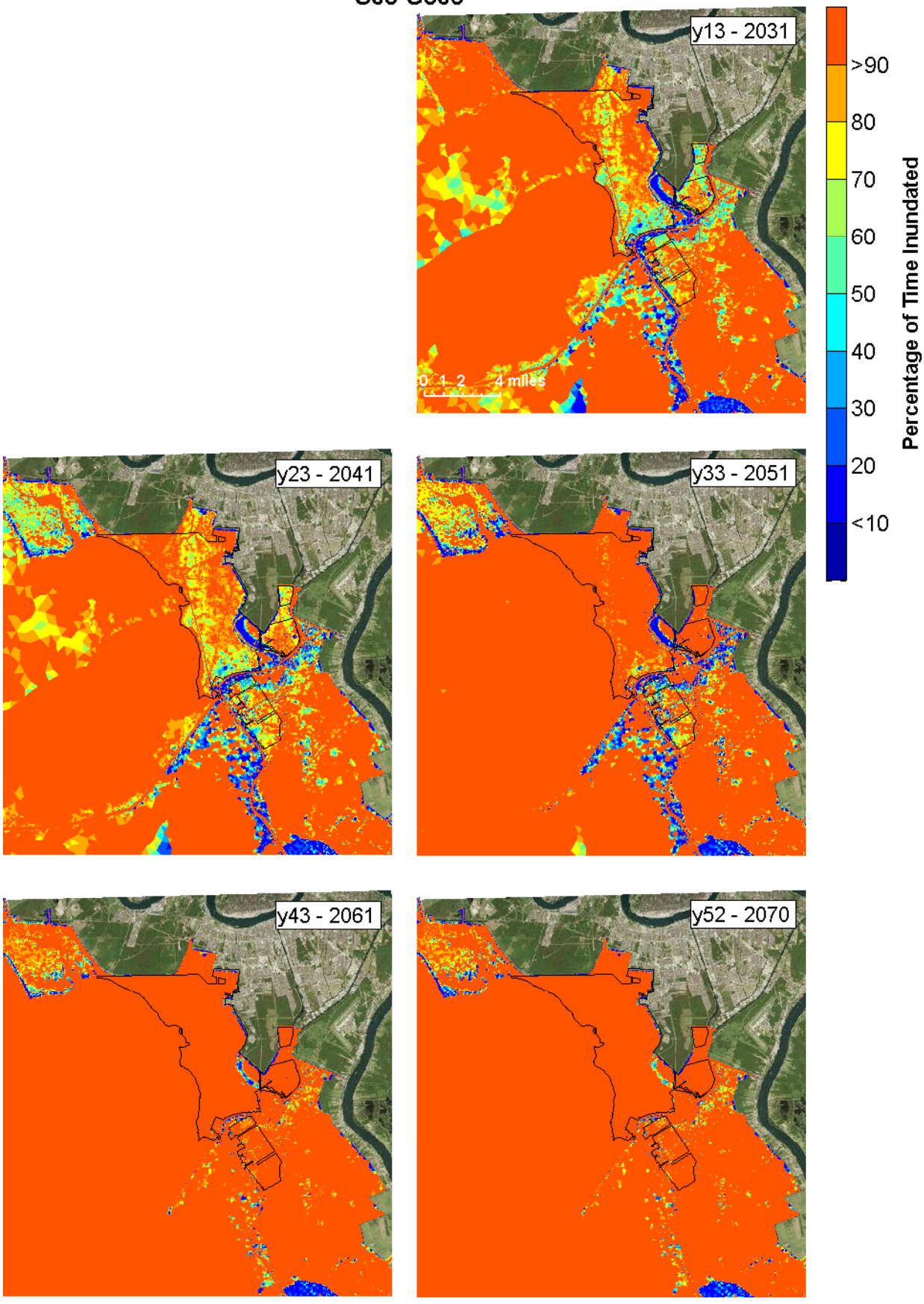
S08-G703


y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>0.27
0.24
0.21
0.18
0.15
0.12
0.09
0.06
<0.03
Mean Current Speed [m/s]

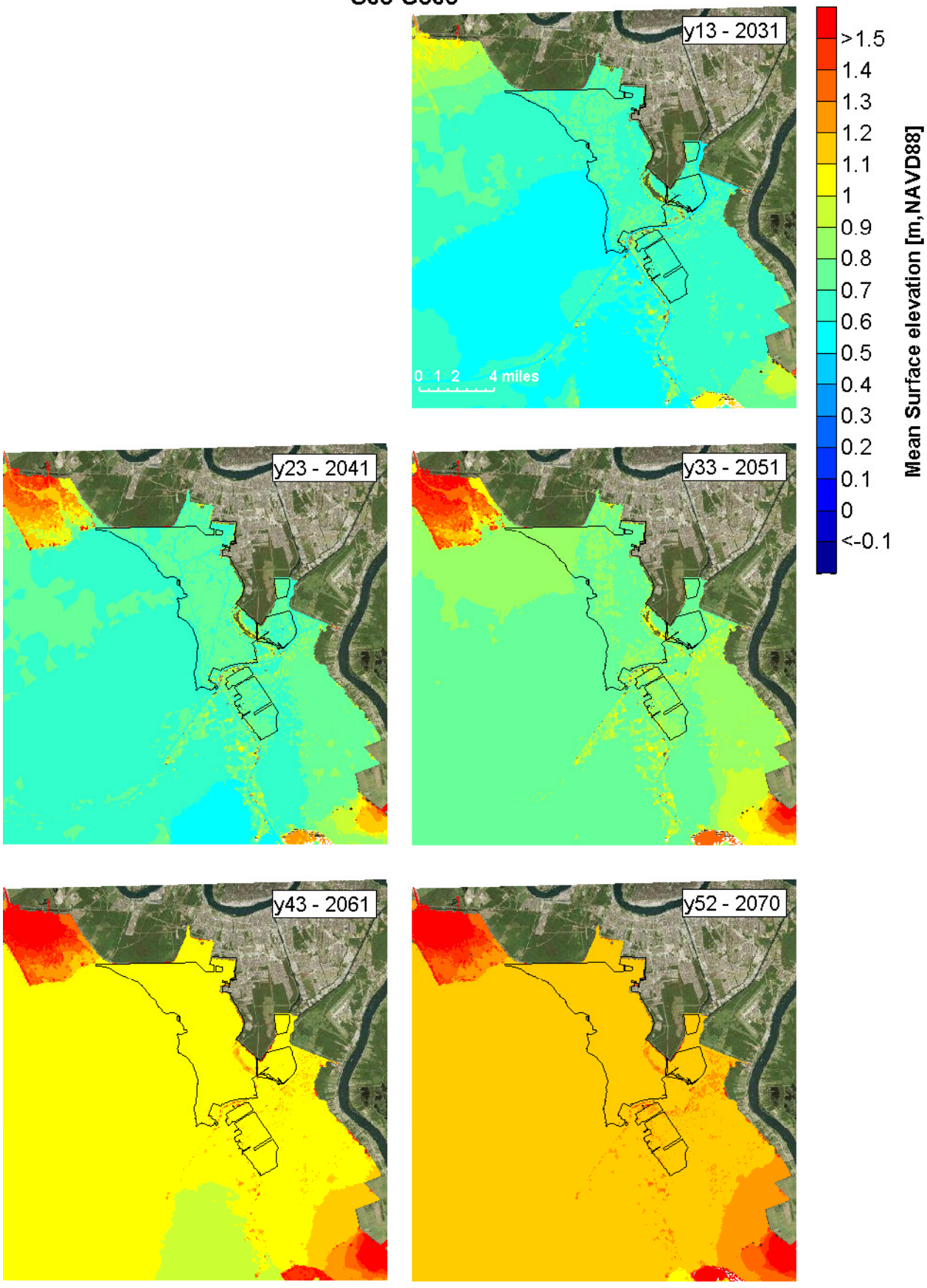
S08-G703


y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>0.27
0.24
0.21
0.18
0.15
0.12
0.09
0.06
<0.03
Max. Current Speed [m/s]

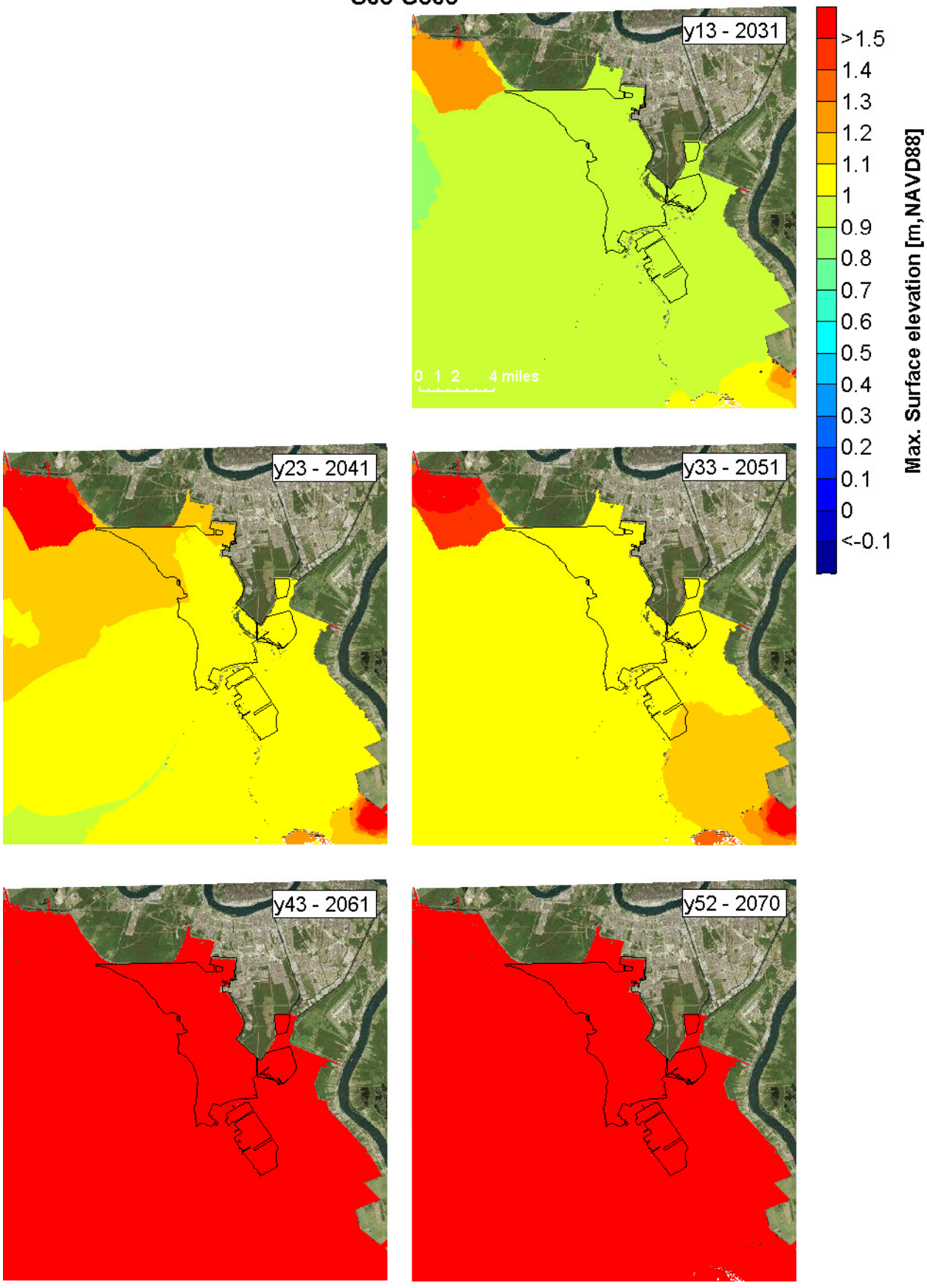
S08-G803


y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>90
80
70
60
50
40
30
20
<10
Percentage of Time Inundated

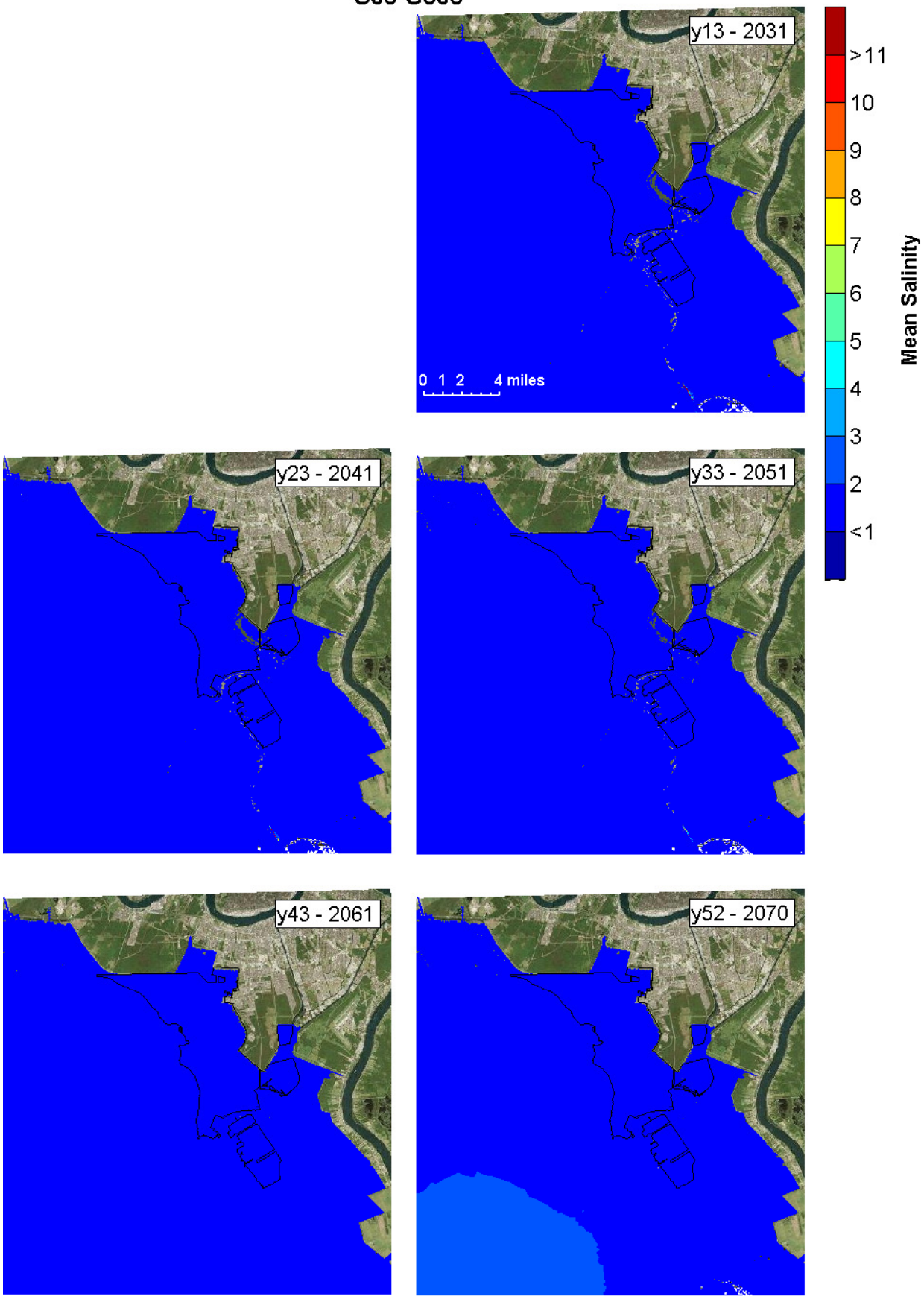
S08-G803


y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
<-0.1
Mean Surface elevation [m,NAVD88]

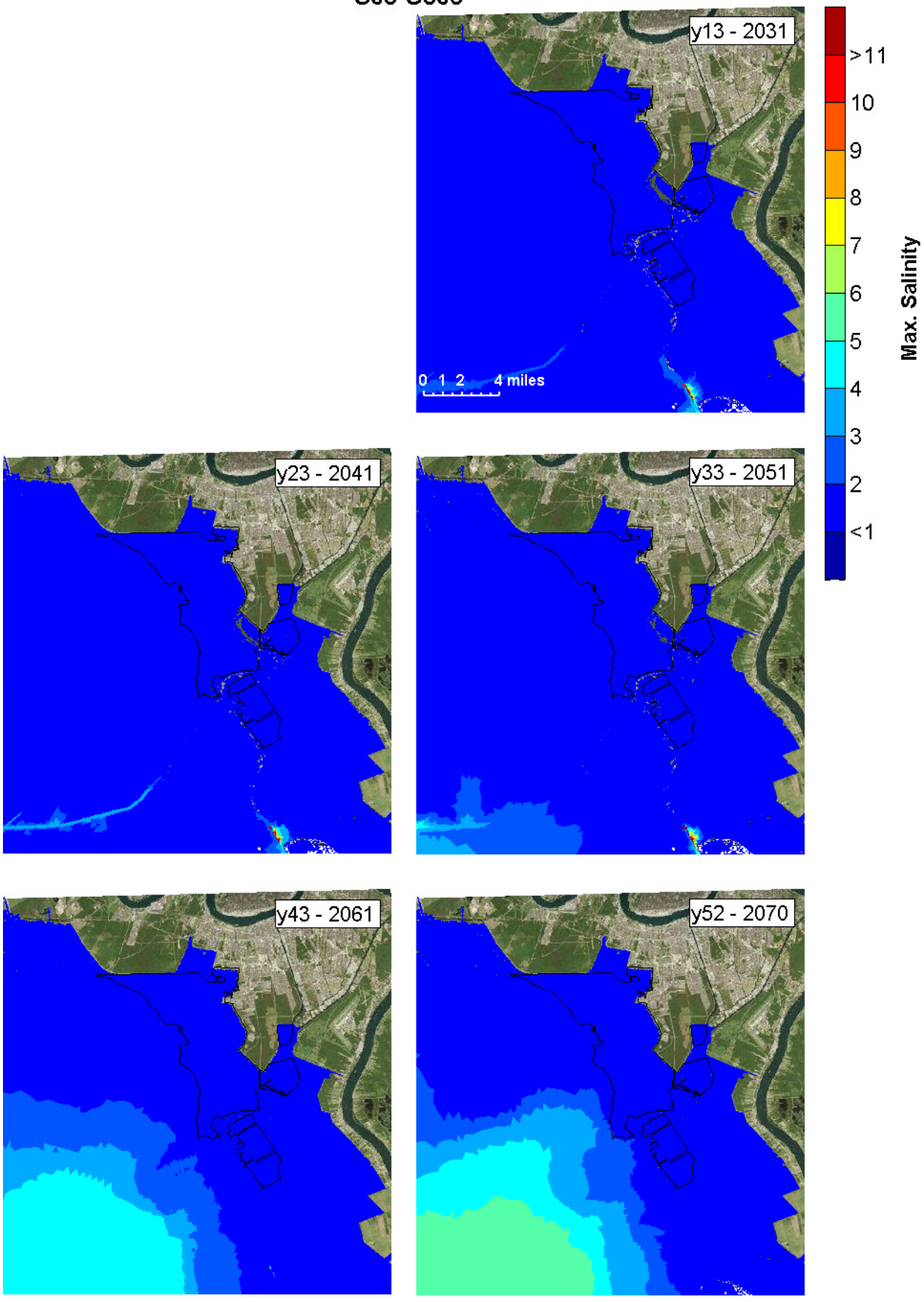
S08-G803


y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
<-0.1
Max. Surface elevation [m,NAVD88]

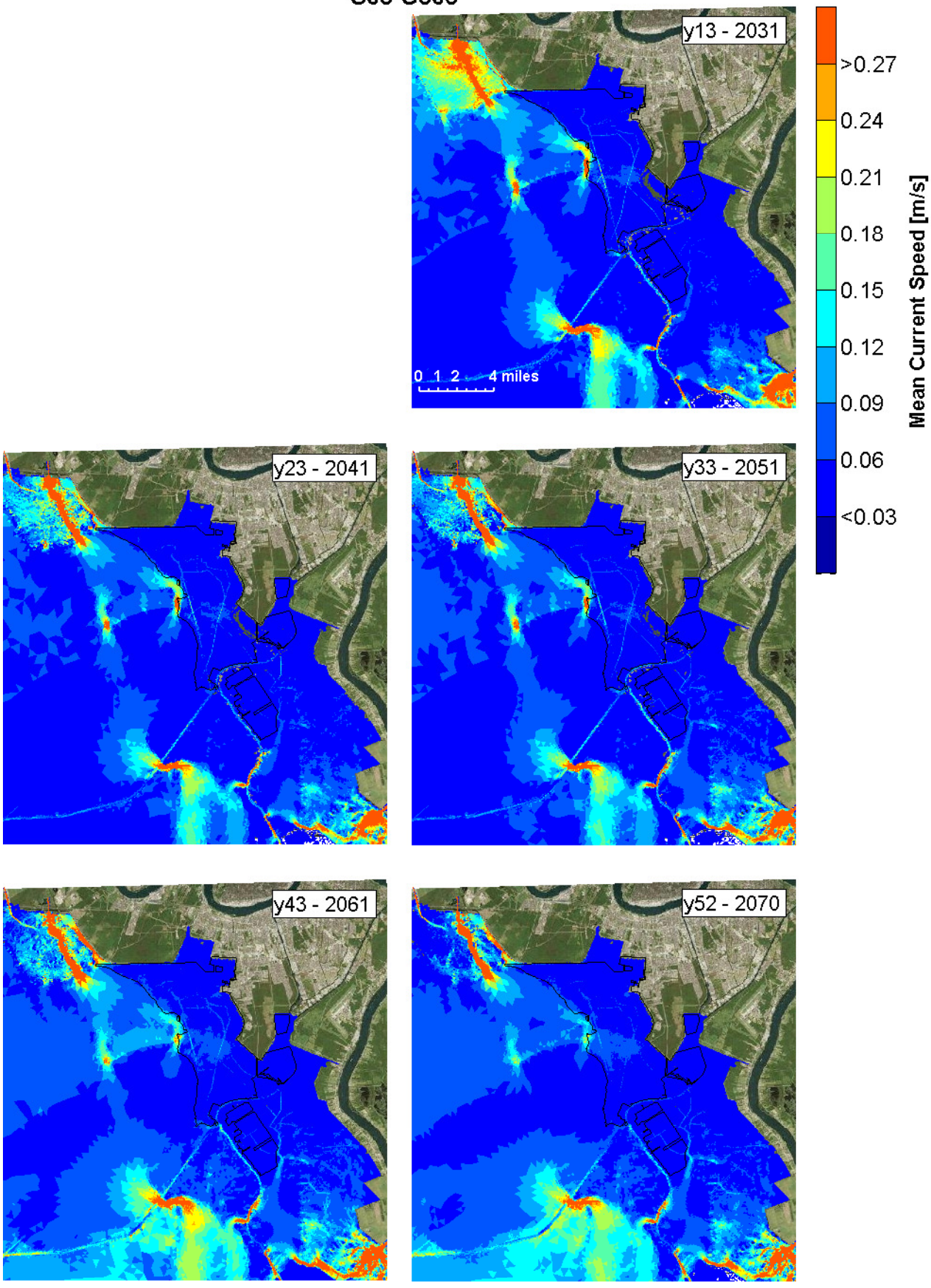
S08-G803


y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>11
10
9
8
7
6
5
4
3
2
<1
Mean Salinity

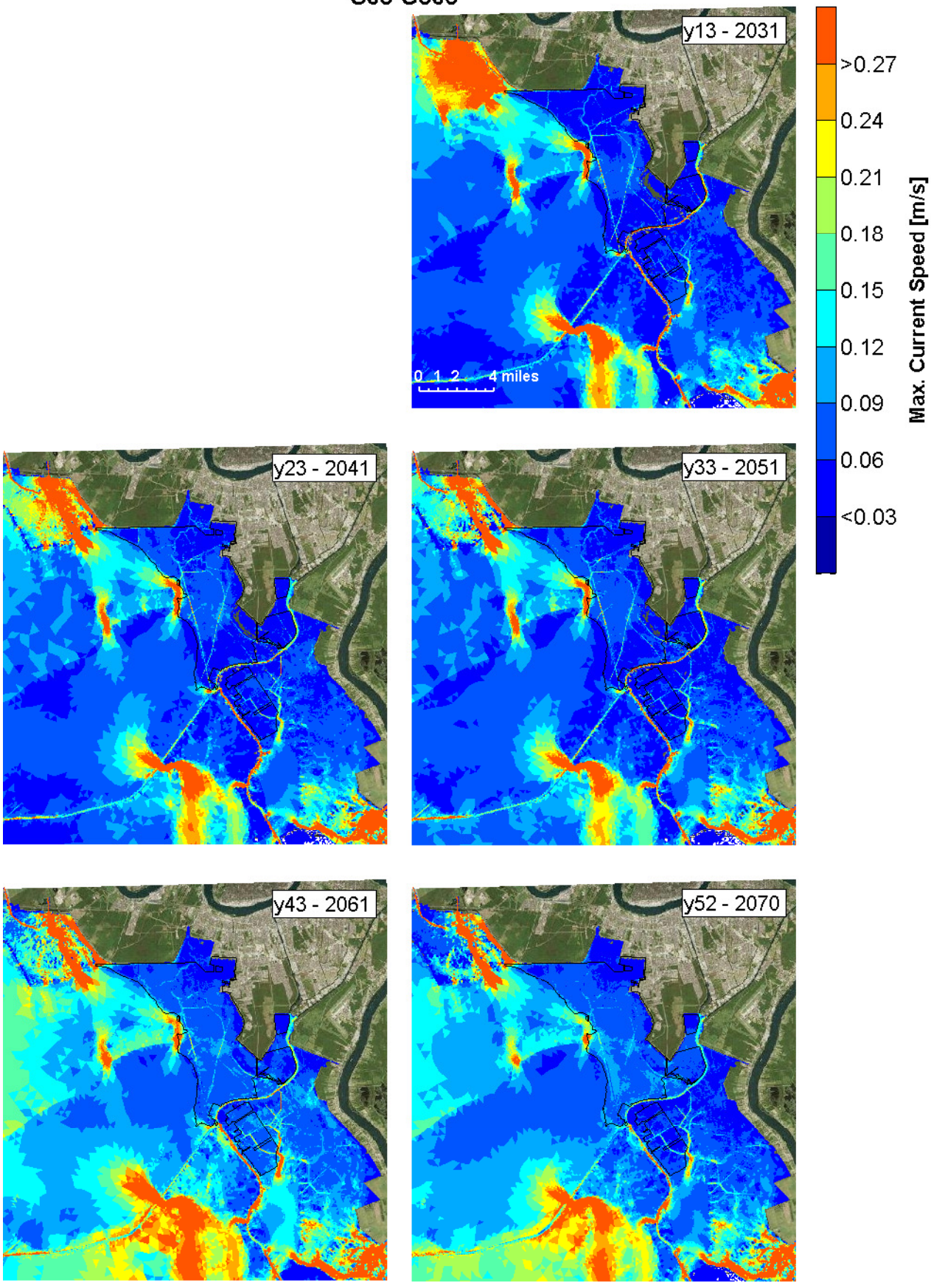
S08-G803


y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>11
10
9
8
7
6
5
4
3
2
<1
Max. Salinity

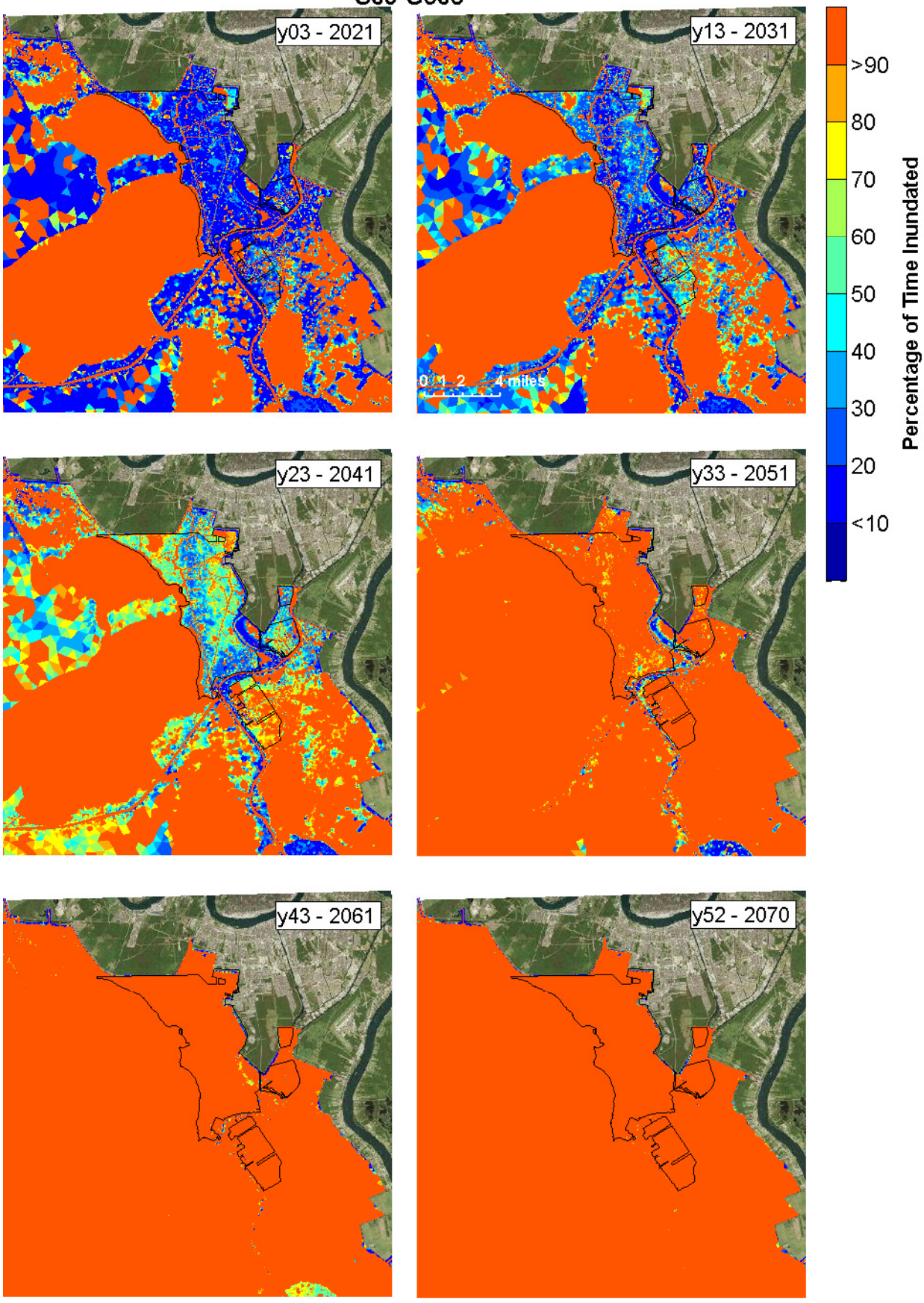
S08-G803


y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>0.27
0.24
0.21
0.18
0.15
0.12
0.09
0.06
<0.03
Mean Current Speed [m/s]

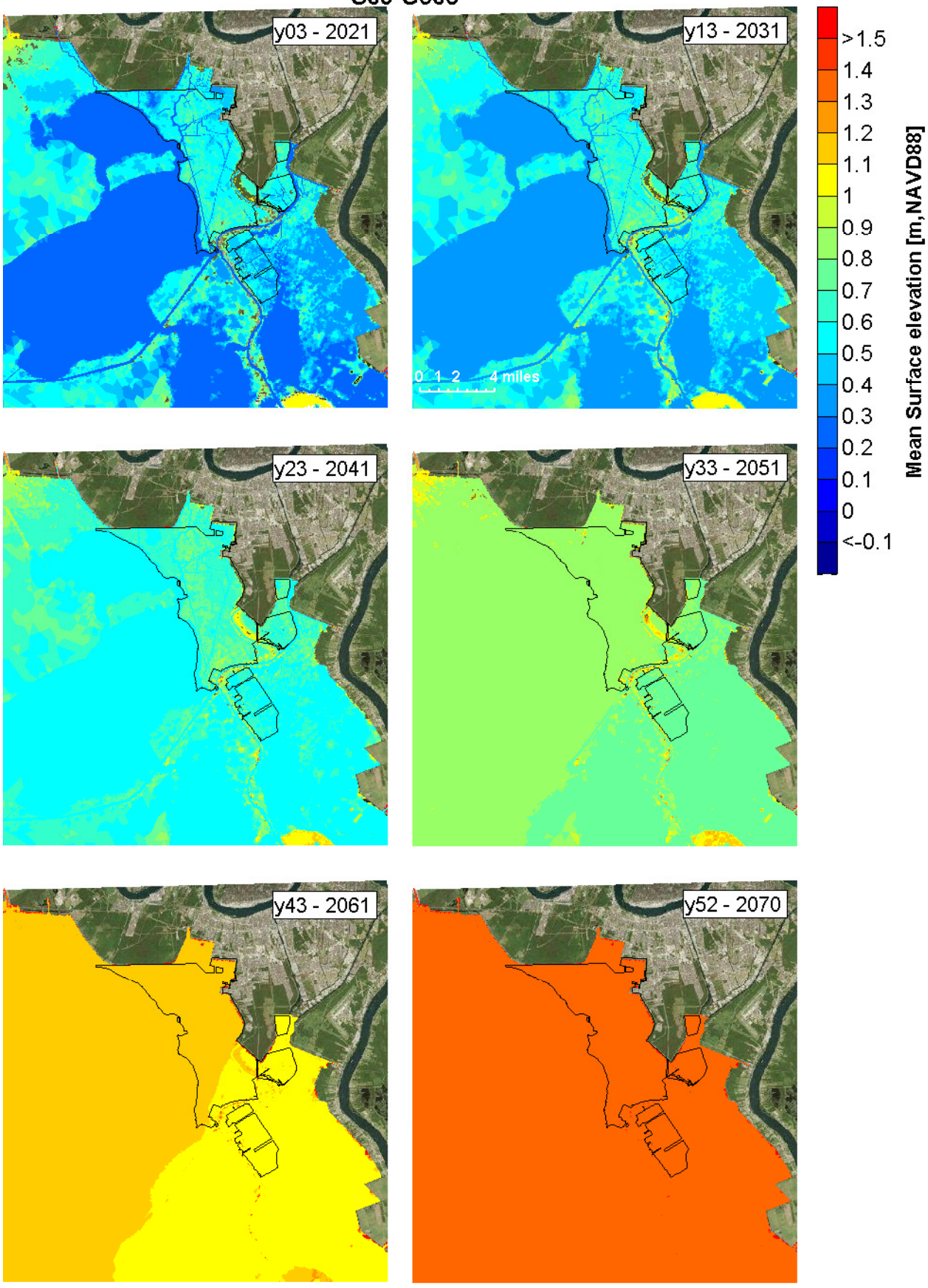
S08-G803

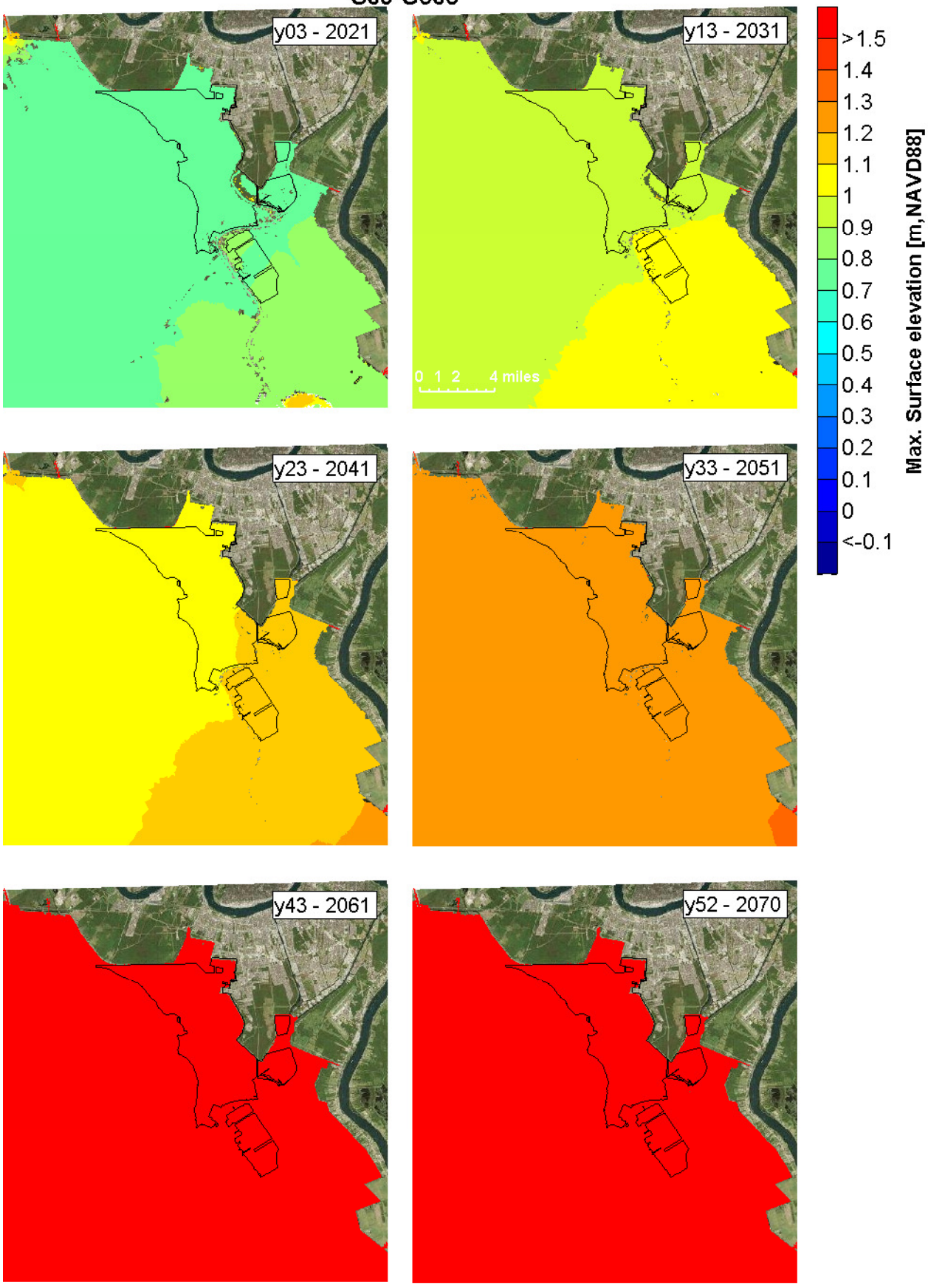

y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>0.27
0.24
0.21
0.18
0.15
0.12
0.09
0.06
<0.03
Max. Current Speed [m/s]

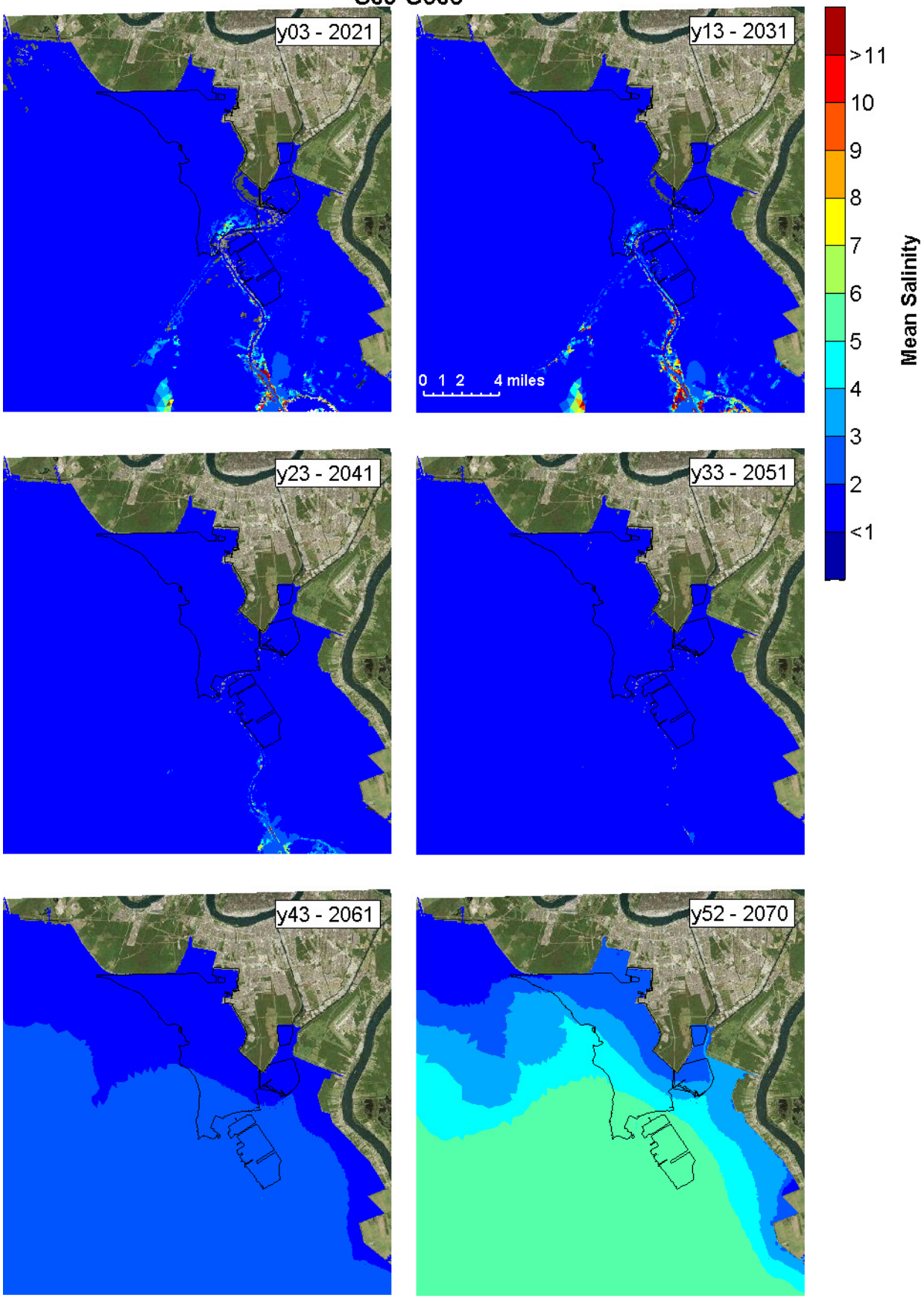
S09-G503


y03 - 2021
y13 - 2031
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
0 1 2 4 miles
>90
80
70
60
50
40
30
20
<10
Percentage of Time Inundated

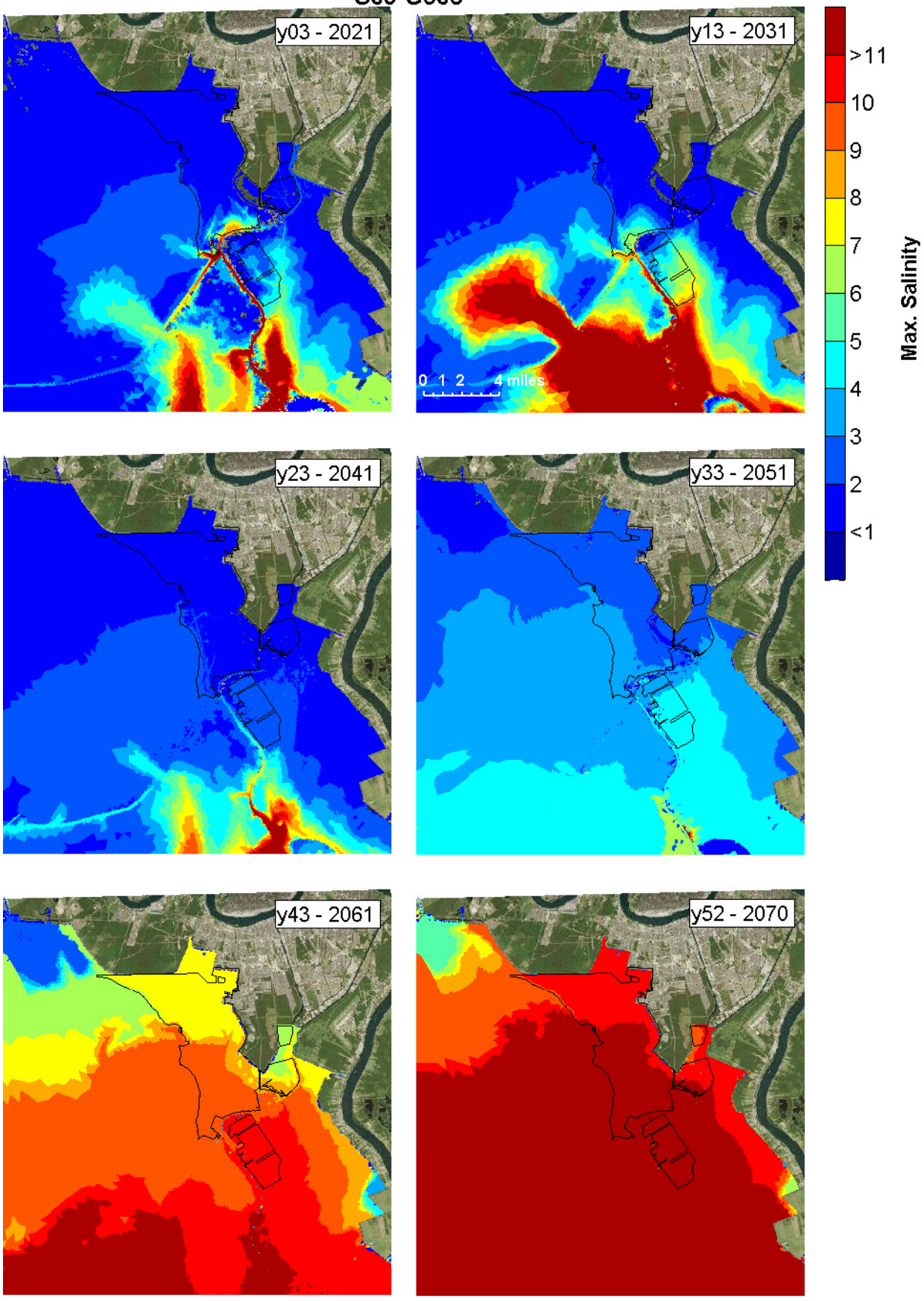
S09-G503


y03 - 2021
y13 - 2031
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
0 1 2 4 miles
>1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
<-0.1
Mean Surface elevation [m,NAVD88]

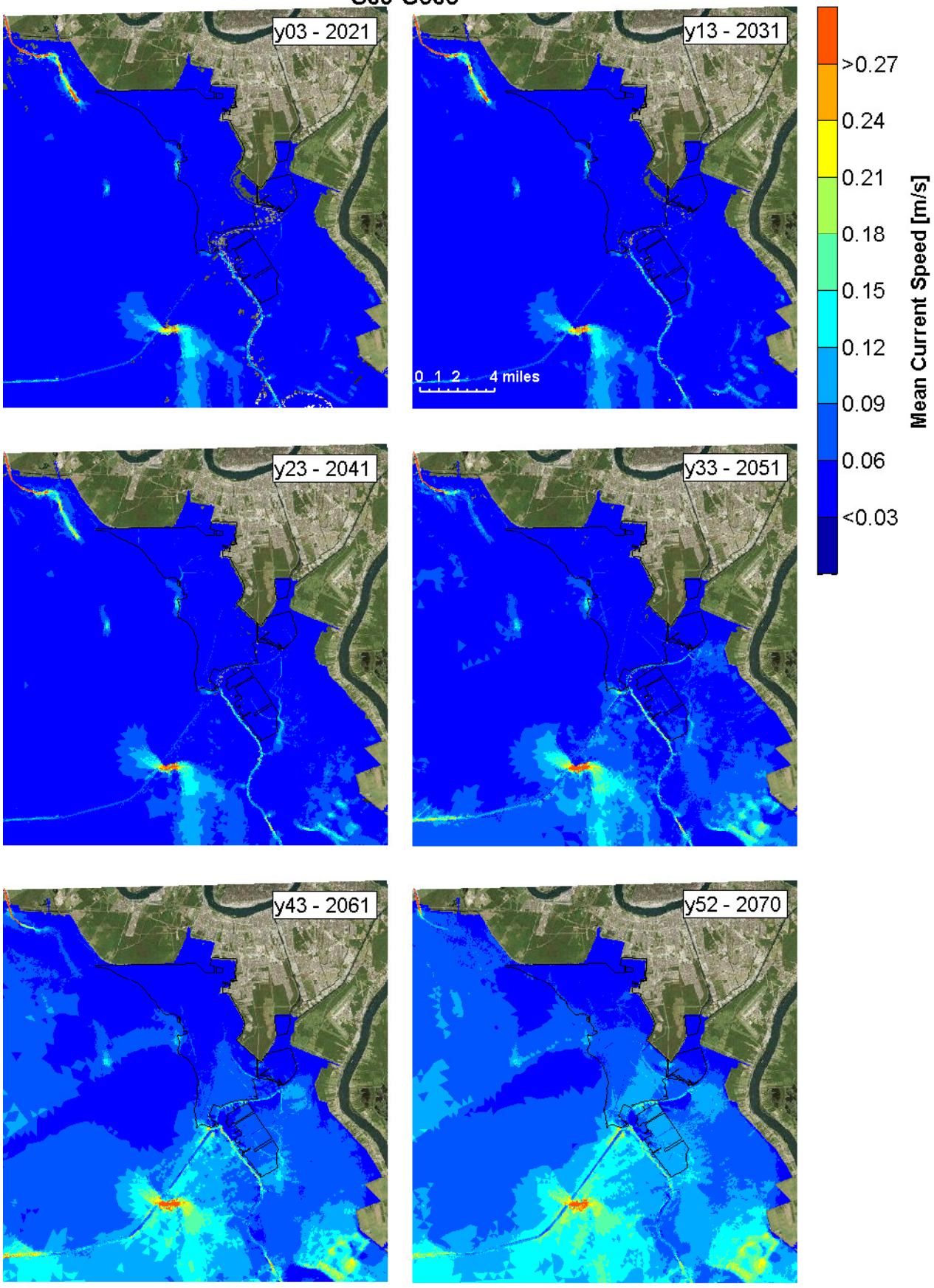

S09-G503
y03 - 2021
y13 - 2031
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
0 1 2 4 miles
>1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
<-0.1
Max. Surface elevation [m,NAVD88]


S09-G503
y03 - 2021
y13 - 2031
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
0 1 2 4 miles
>11
10
9
8
7
6
5
4
3
2
<1
Mean Salinity

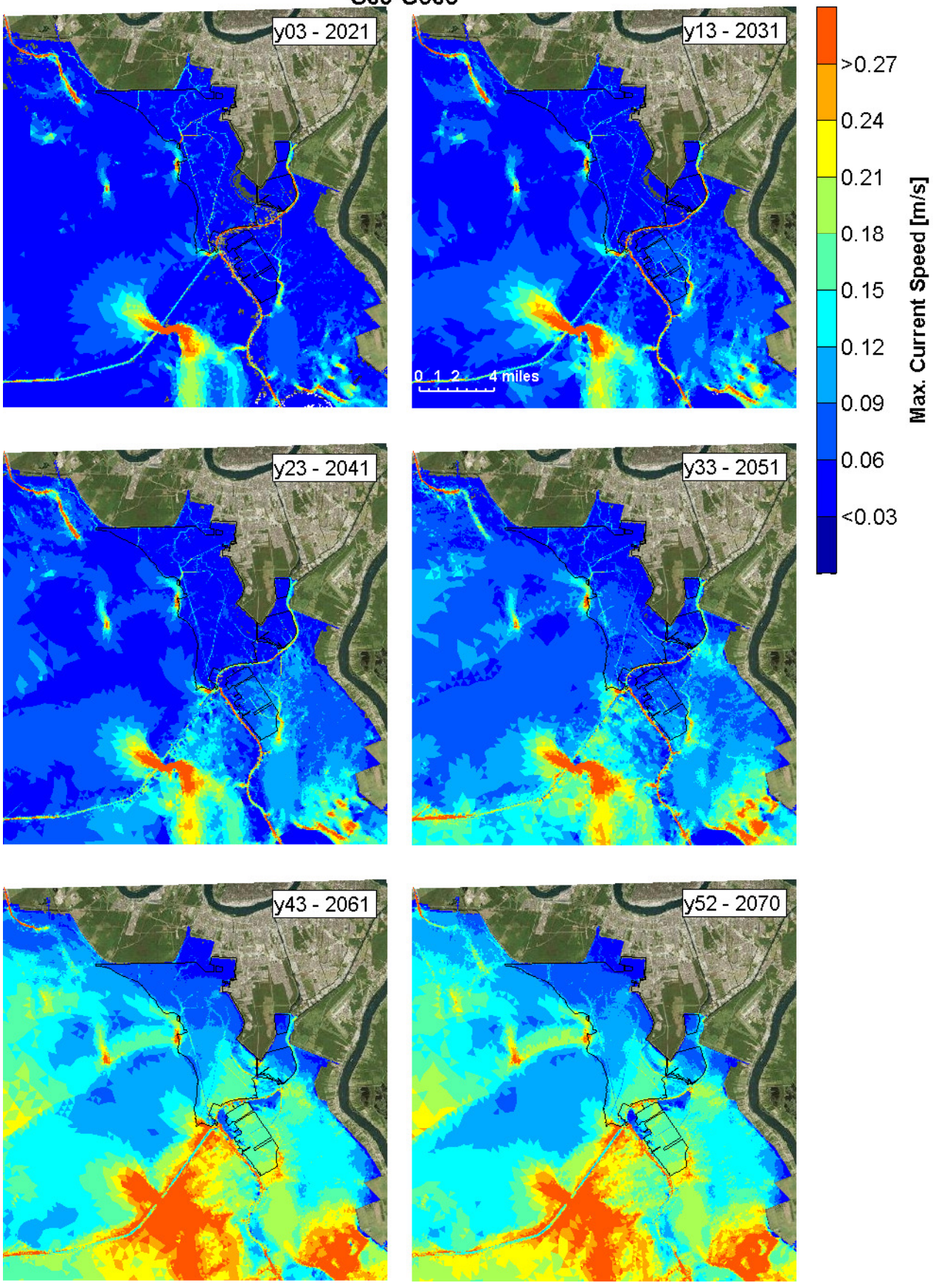
S09-G503


y03 - 2021
y13 - 2031
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
0 1 2 4 miles
>11
10
9
8
7
6
5
4
3
2
<1
Max. Salinity

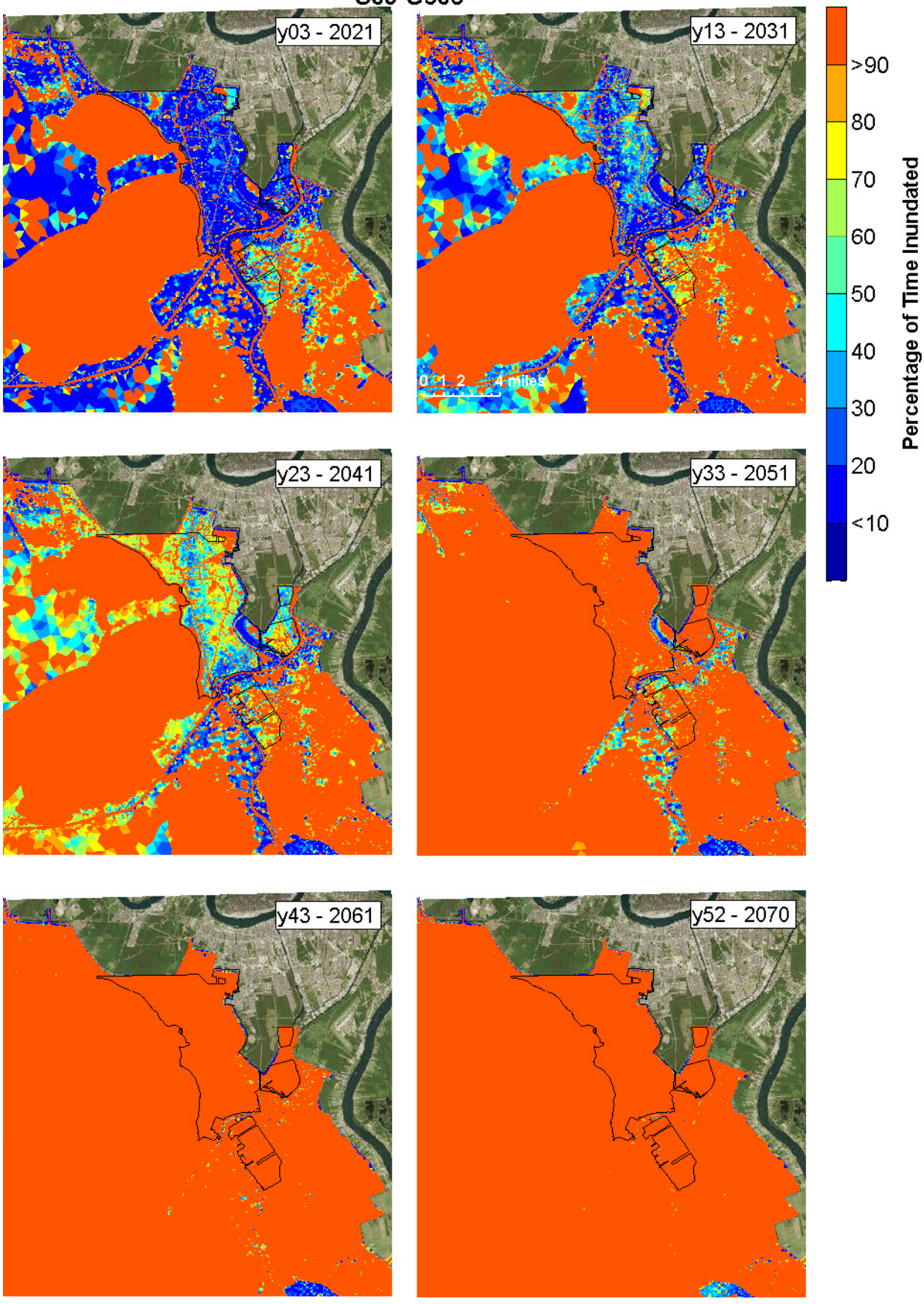
S09-G503


y03 - 2021
y13 - 2031
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
0 1 2 4 miles
>0.27
0.24
0.21
0.18
0.15
0.12
0.09
0.06
<0.03
Mean Current Speed [m/s]

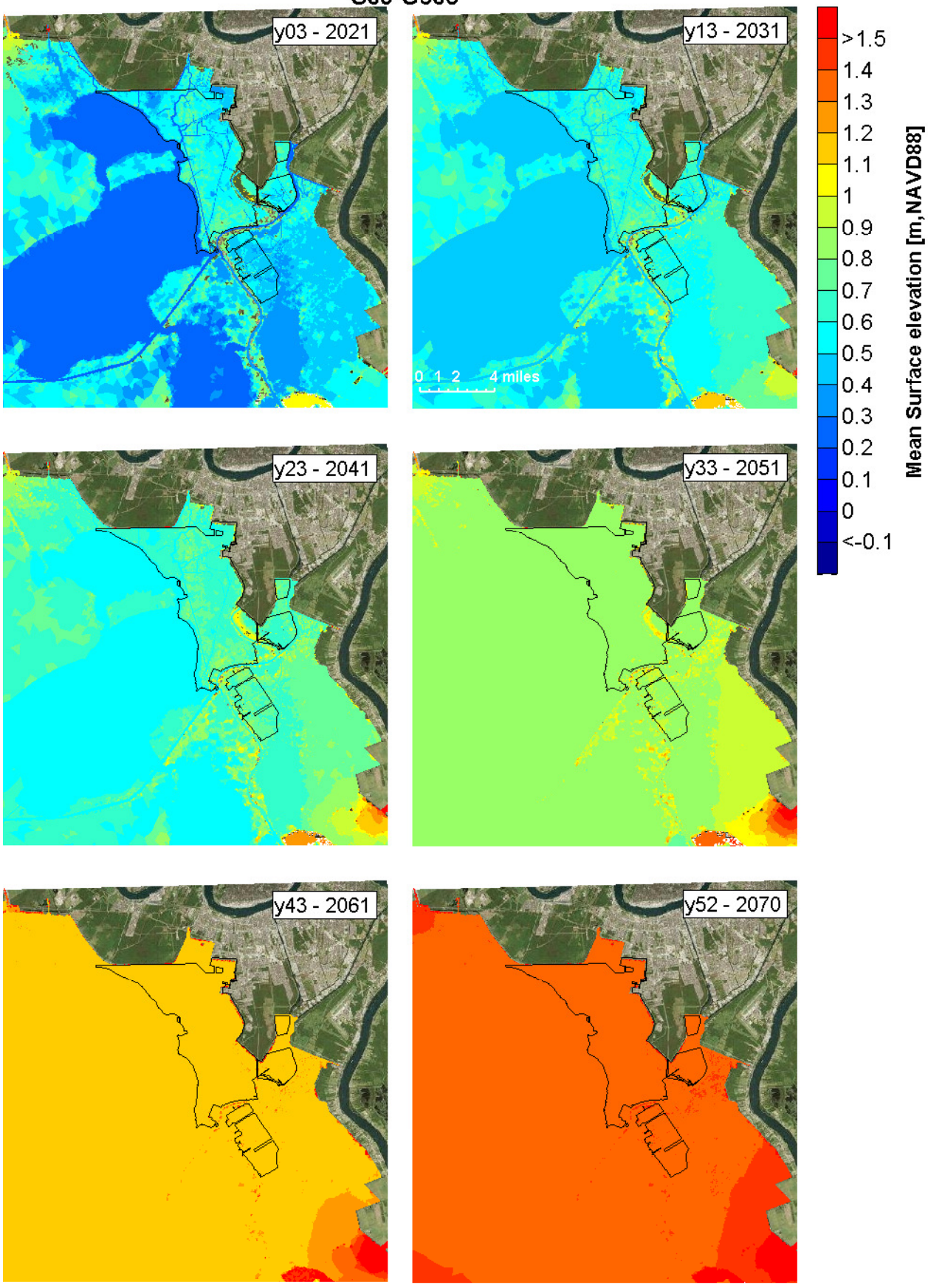
S09-G503


y03 - 2021
y13 - 2031
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
0 1 2 4 miles
>0.27
0.24
0.21
0.18
0.15
0.12
0.09
0.06
<0.03
Max. Current Speed [m/s]

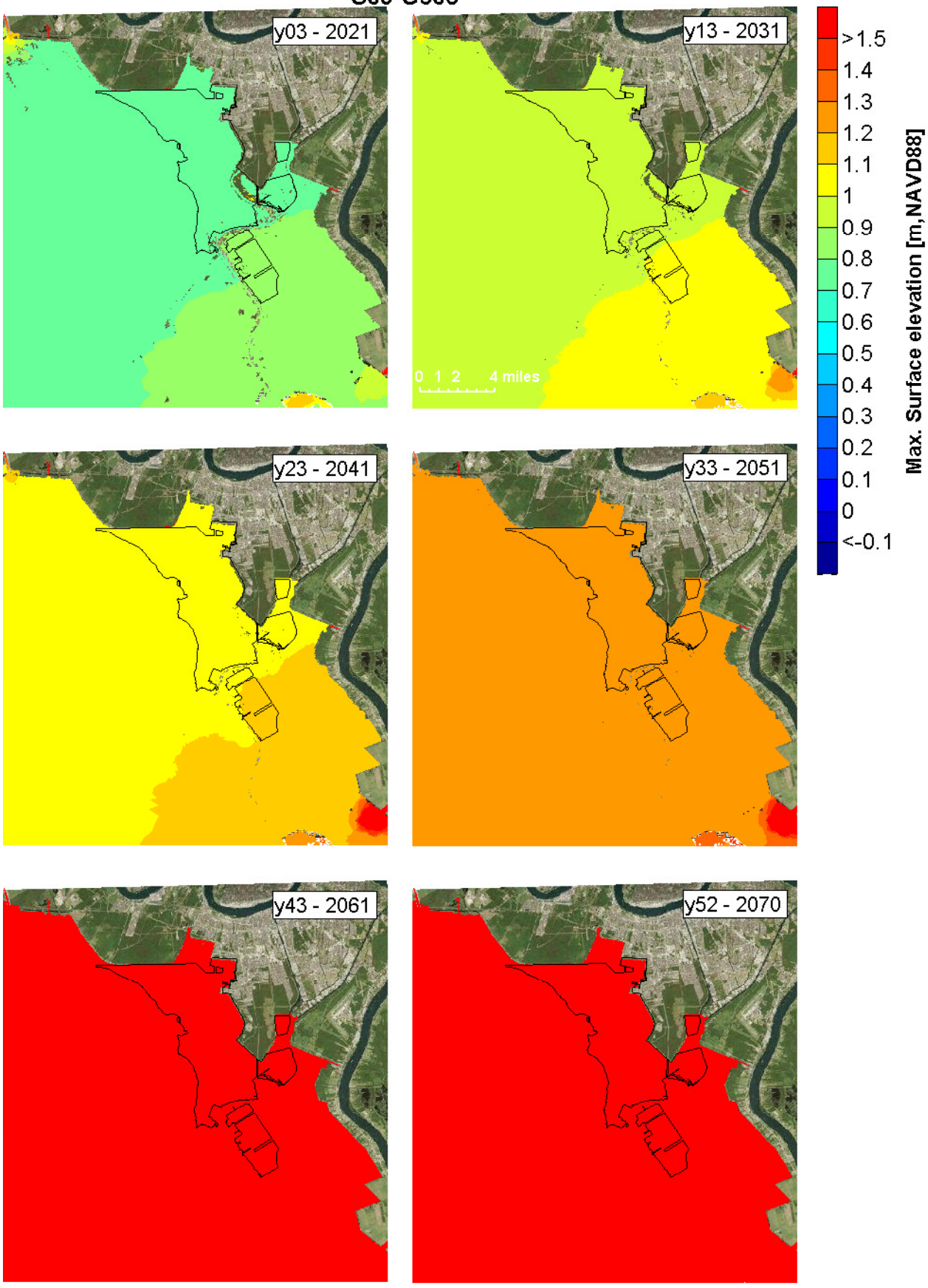
S09-G603


y03 - 2021
y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>90
80
70
60
50
40
30
20
<10
Percentage of Time Inundated

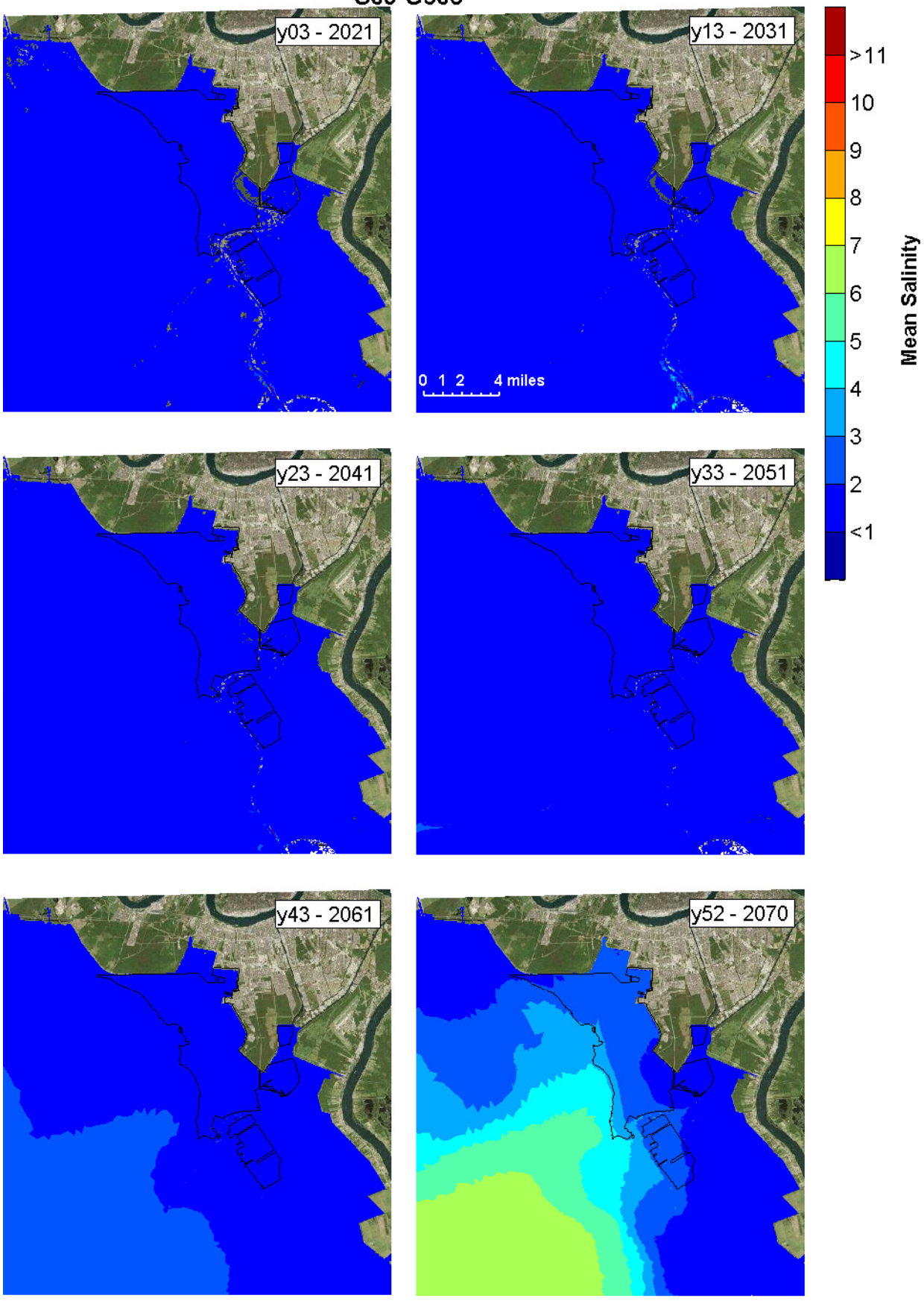
S09-G603

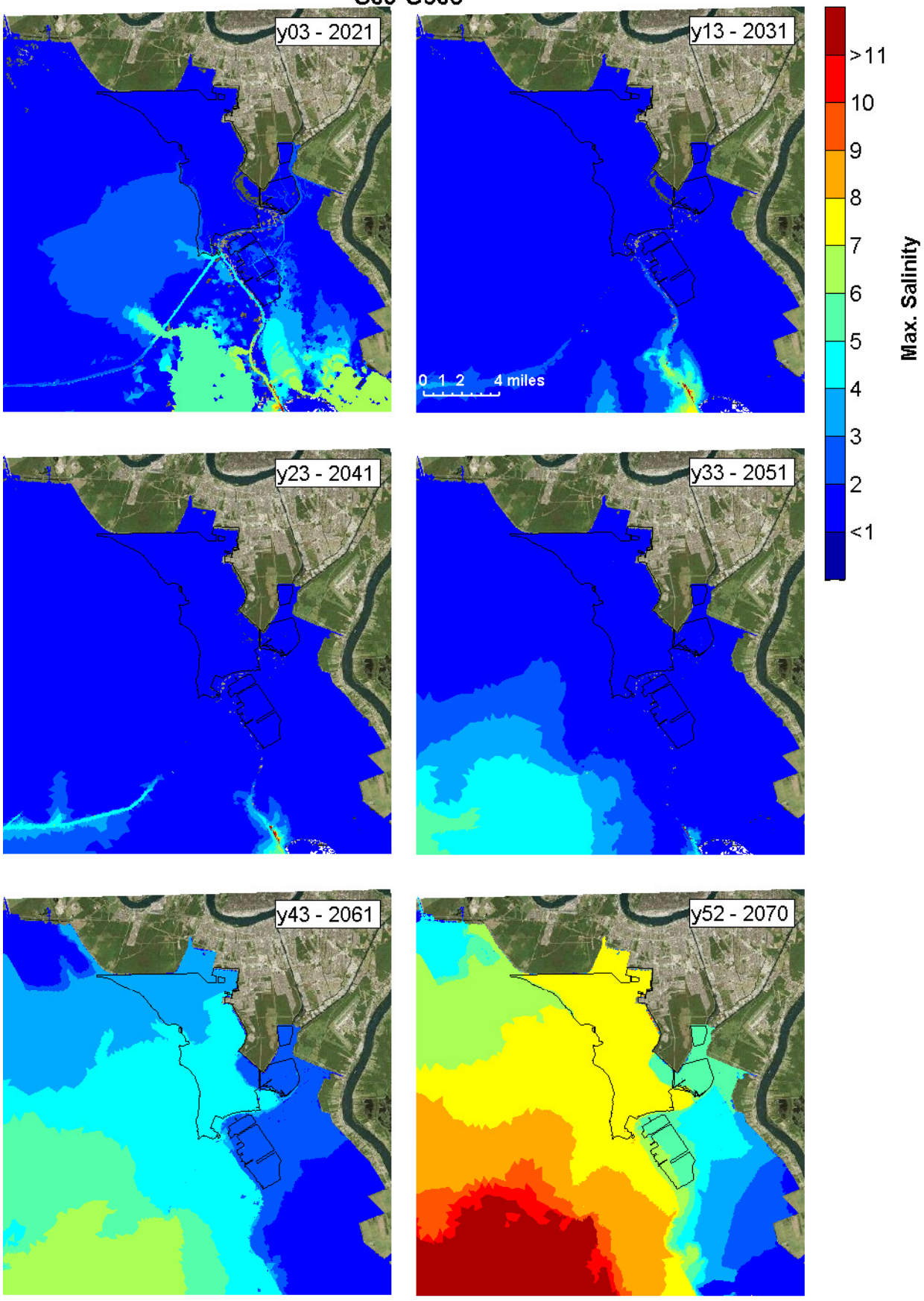

y03 - 2021
y13 - 2031
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
0 1 2 4 miles
>1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
<-0.1
Mean Surface elevation [m,NAVD88]

S09-G603

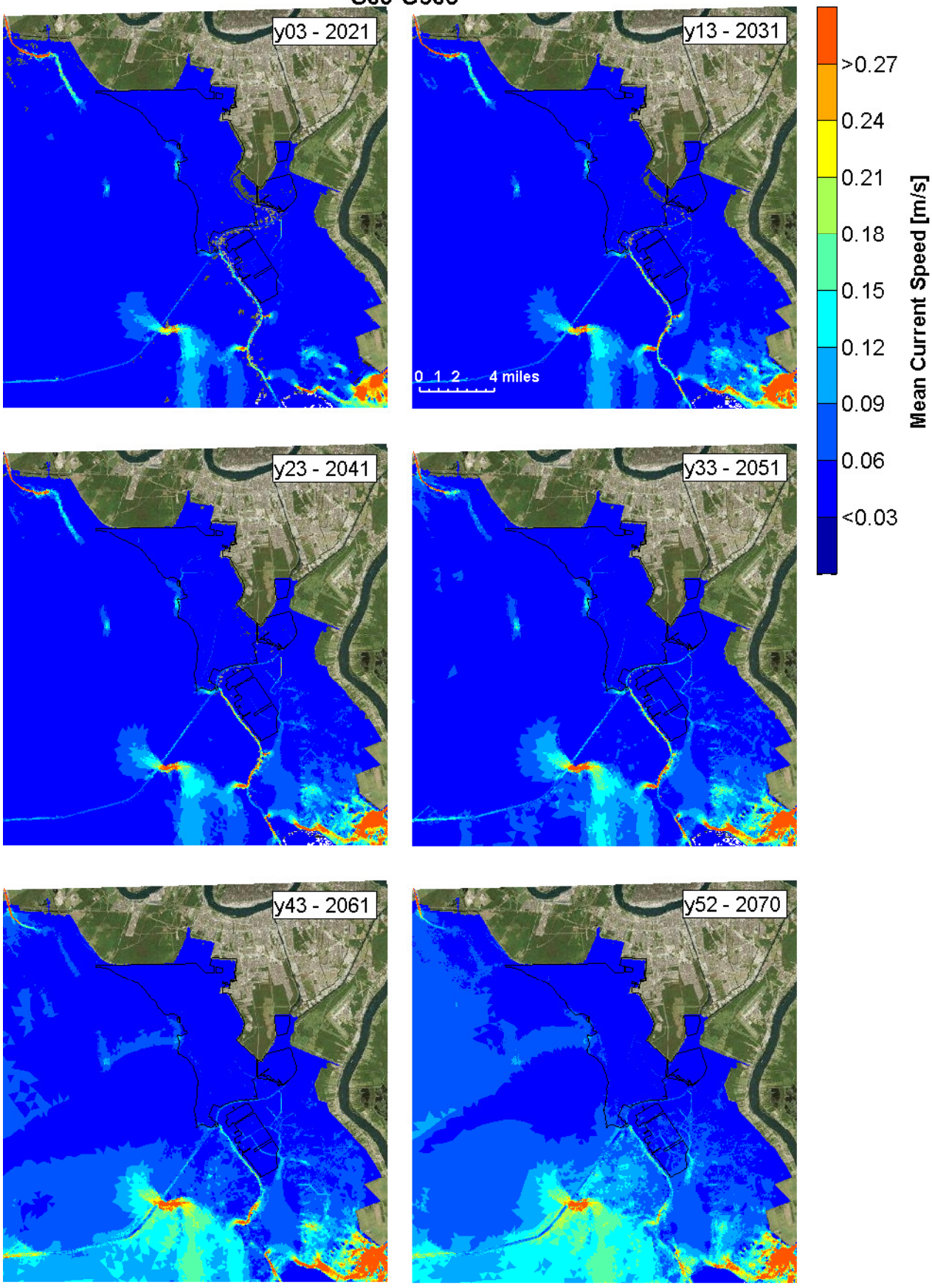

y03 - 2021
y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
<-0.1
Max. Surface elevation [m,NAVD88]

S09-G603

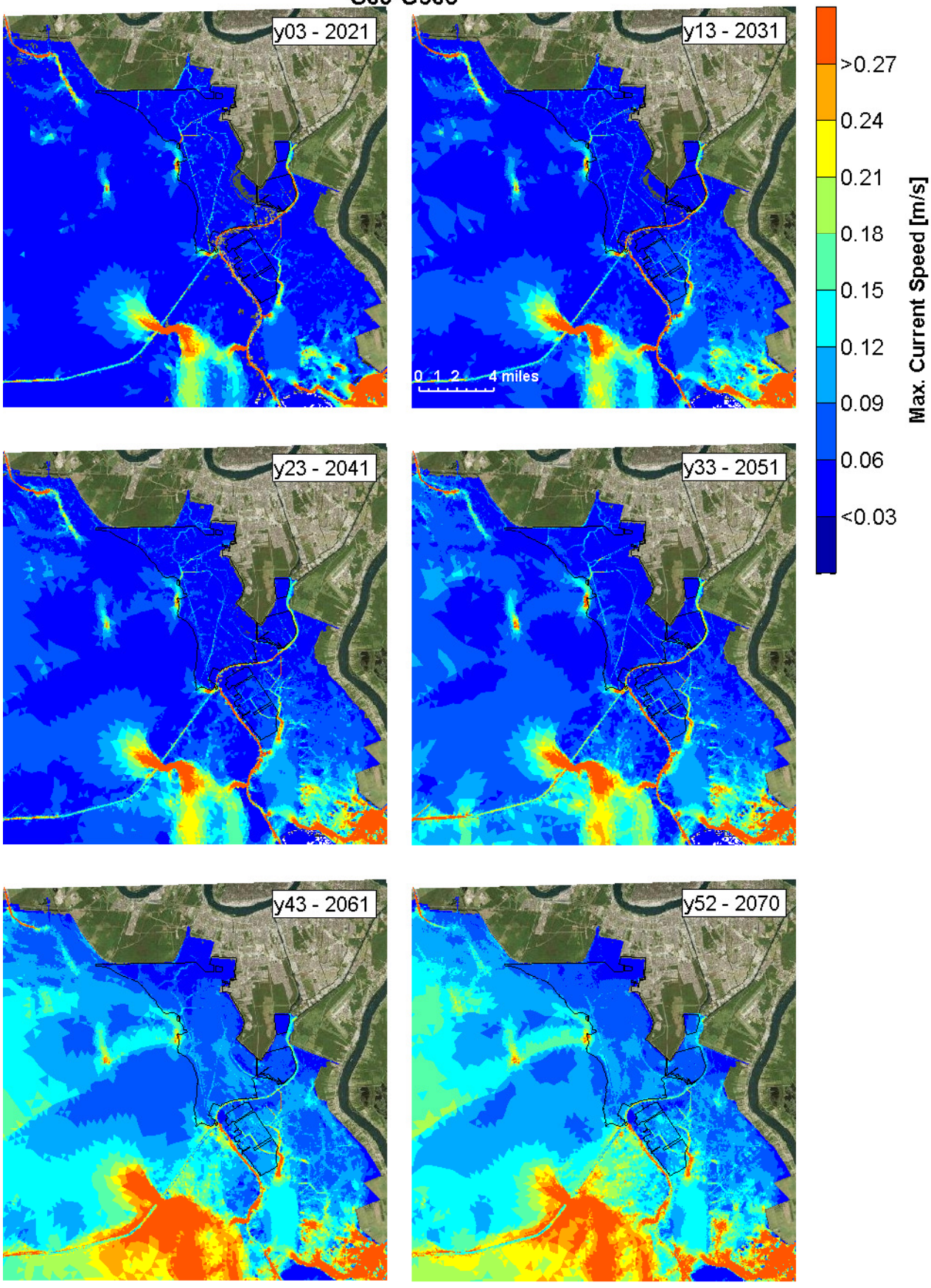

y03 - 2021
y13 - 2031
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
0 1 2 4 miles
>11
10
9
8
7
6
5
4
3
2
<1
Mean Salinity


S09-G603
y03 - 2021
y13 - 2031
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
0 1 2 4 miles
>11
10
9
8
7
6
5
4
3
2
<1
Max. Salinity

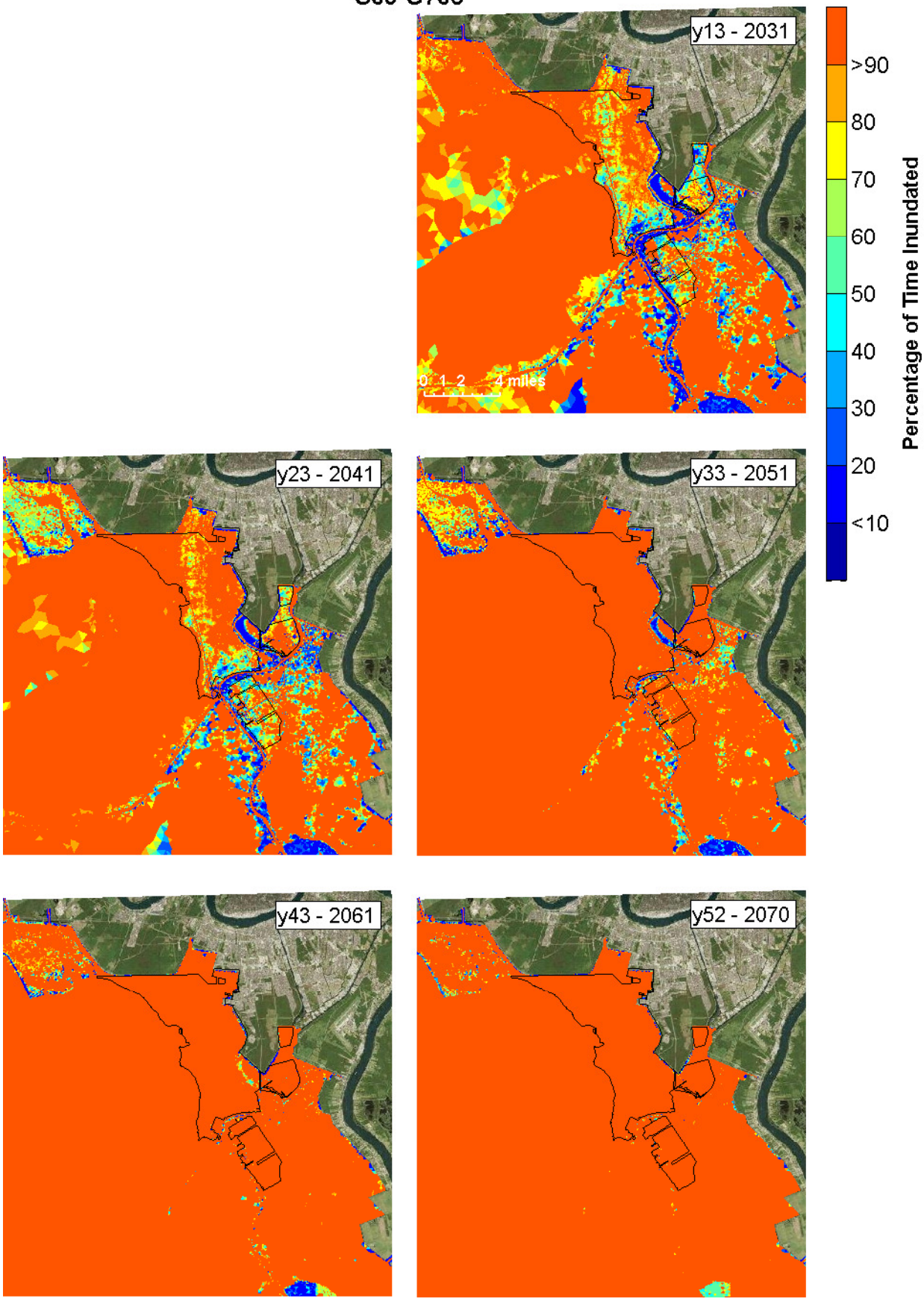
S09-G603


y03 - 2021
y13 - 2031
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
0 1 2 4 miles
>0.27
0.24
0.21
0.18
0.15
0.12
0.09
0.06
<0.03
Mean Current Speed [m/s]

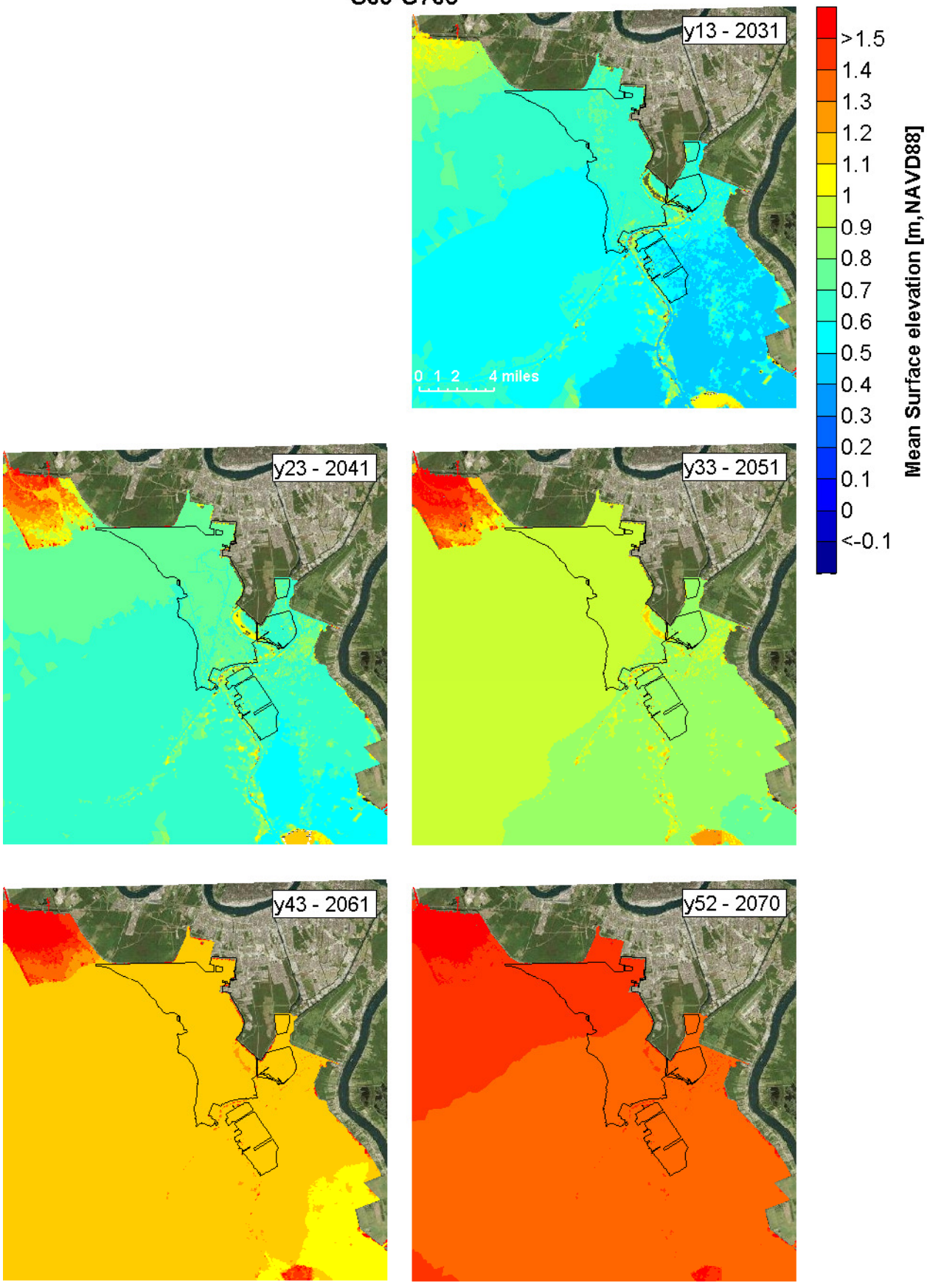
S09-G603


y03 - 2021
y13 - 2031
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
0 1 2 4 miles
>0.27
0.24
0.21
0.18
0.15
0.12
0.09
0.06
<0.03
Max. Current Speed [m/s]

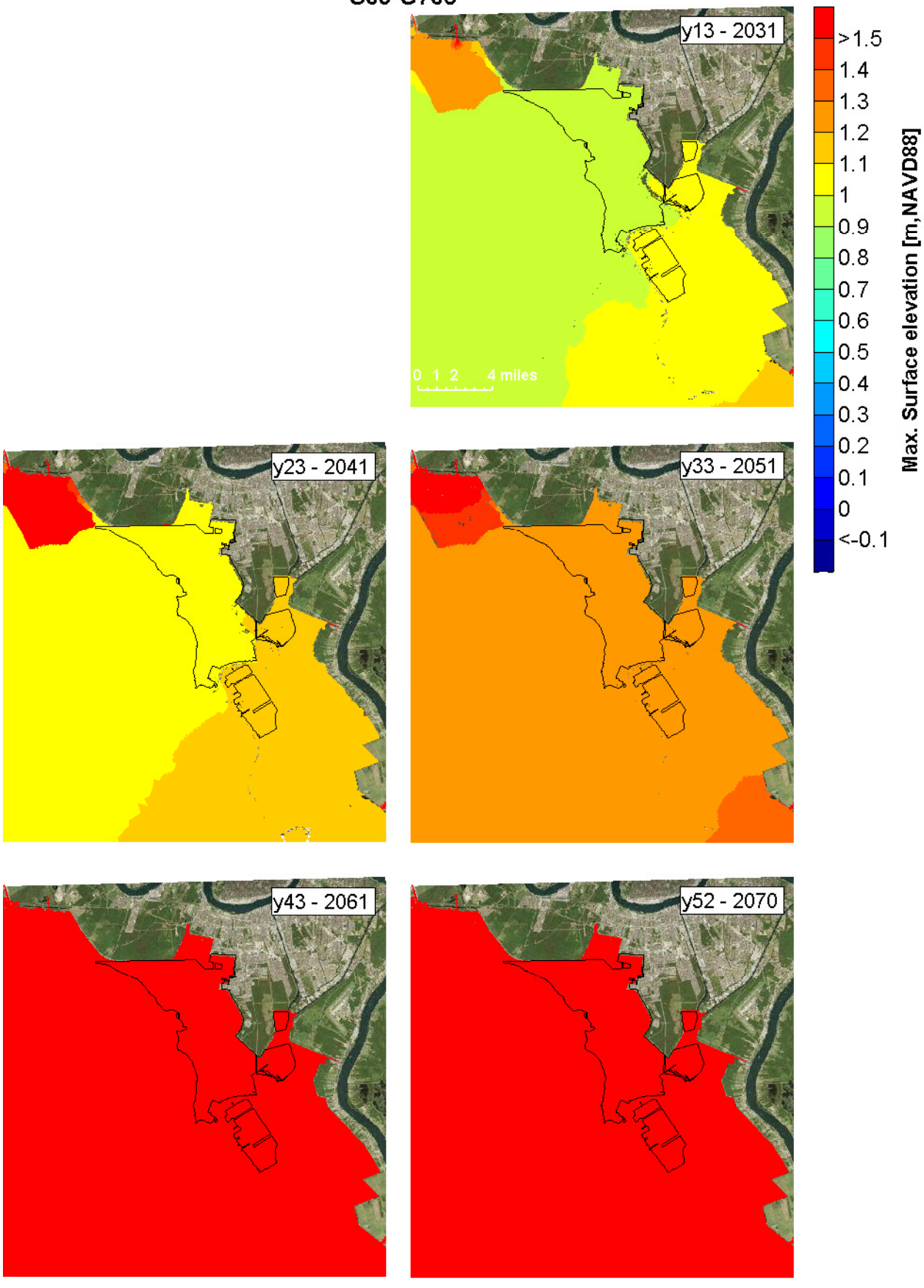
S09-G703


y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>90
80
70
60
50
40
30
20
<10
Percentage of Time Inundated

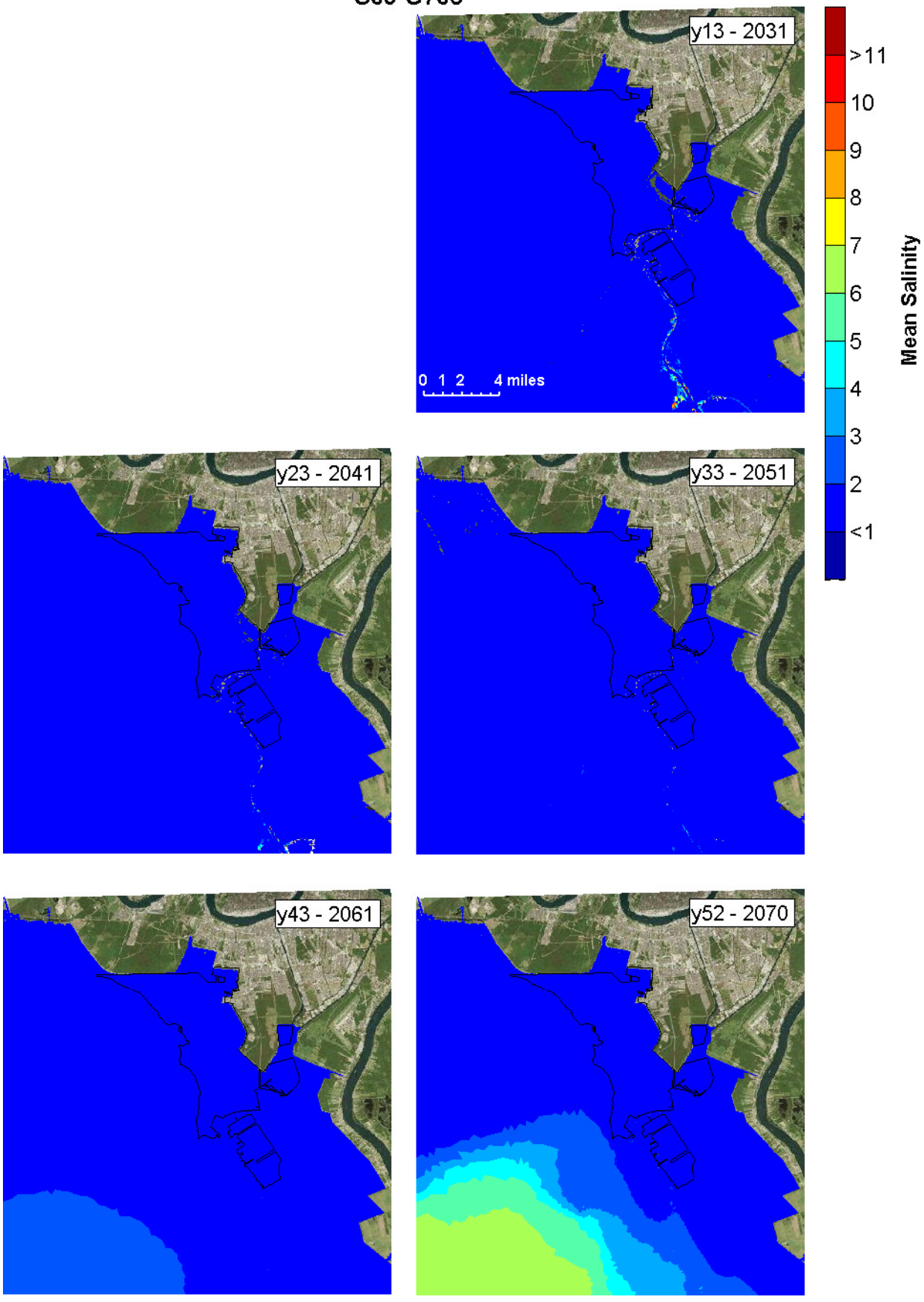
S09-G703


y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
<-0.1
Mean Surface elevation [m,NAVD88]

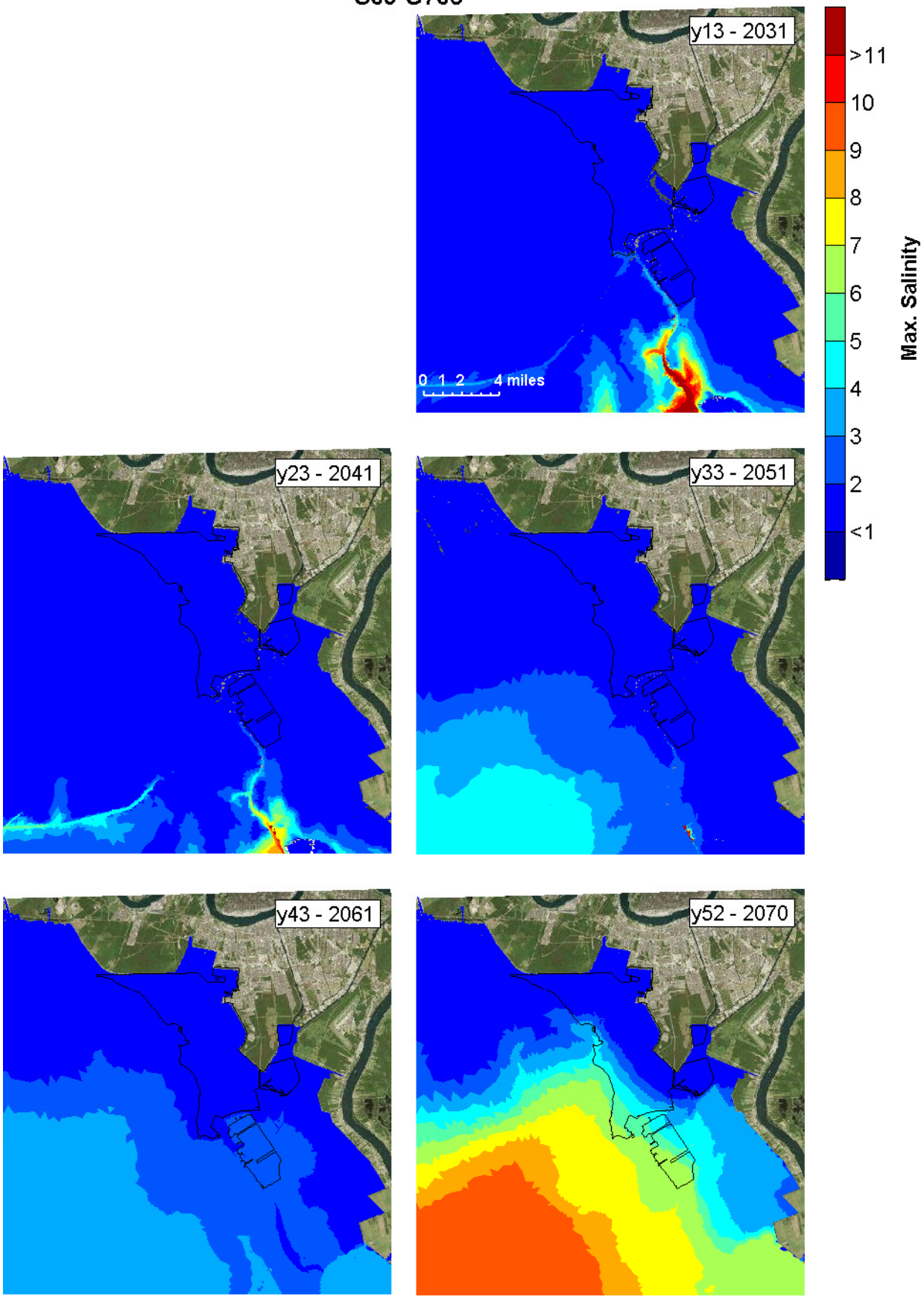
S09-G703


y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
<-0.1
Max. Surface elevation [m,NAVD88]

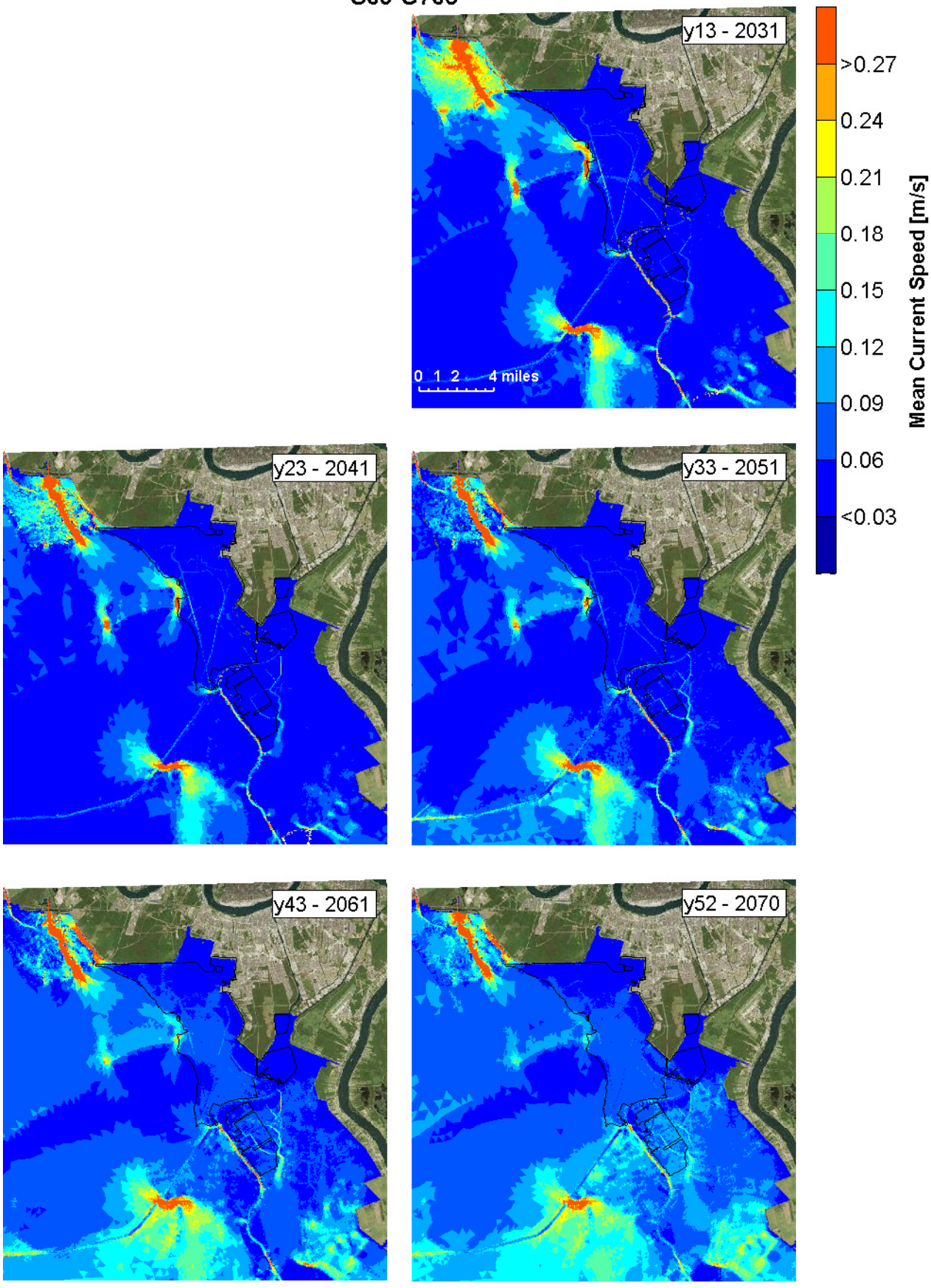
S09-G703


y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>11
10
9
8
7
6
5
4
3
2
<1
Mean Salinity

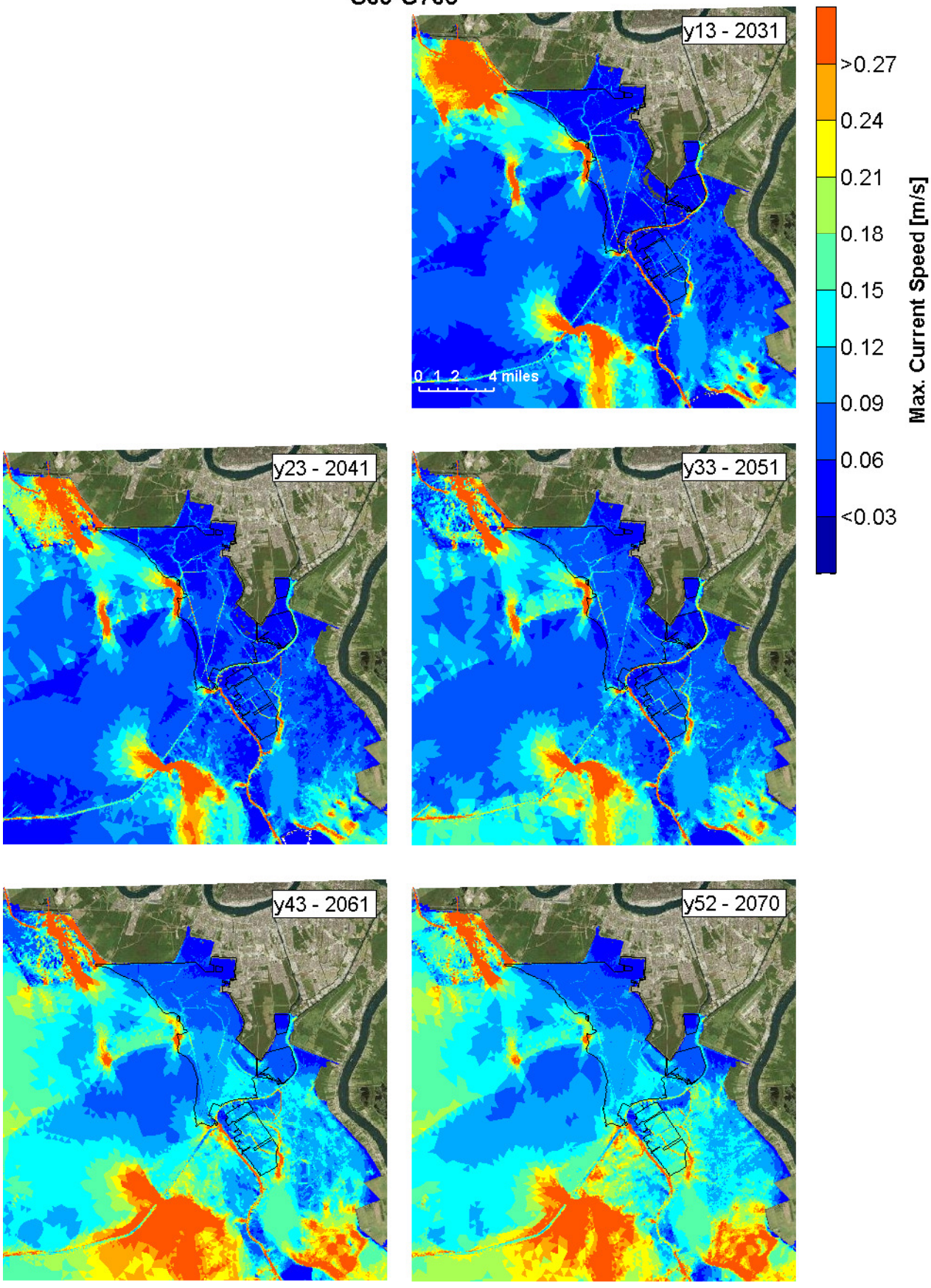
S09-G703


y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>11
10
9
8
7
6
5
4
3
2
<1
Max. Salinity

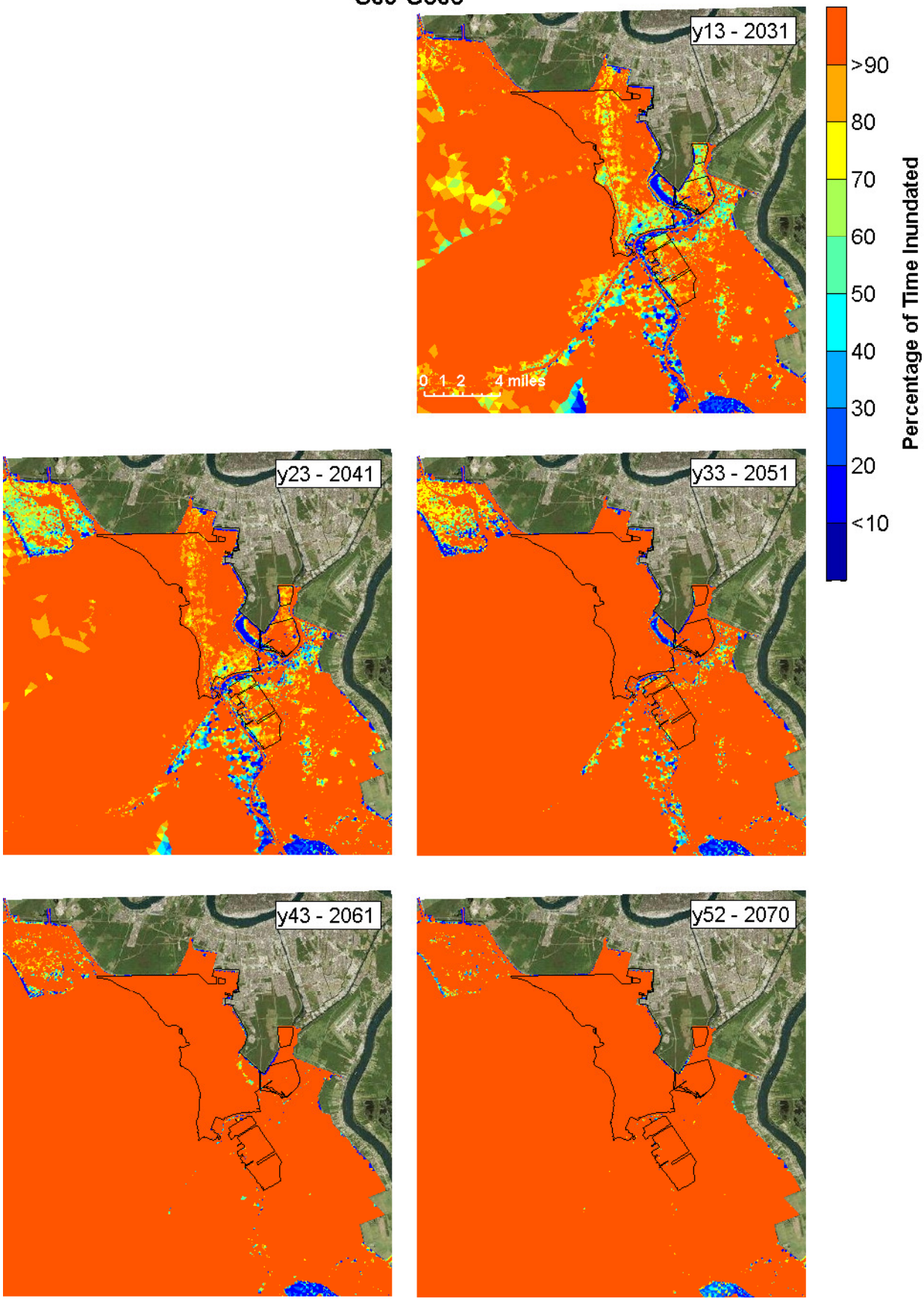
S09-G703


y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>0.27
0.24
0.21
0.18
0.15
0.12
0.09
0.06
<0.03
Mean Current Speed [m/s]

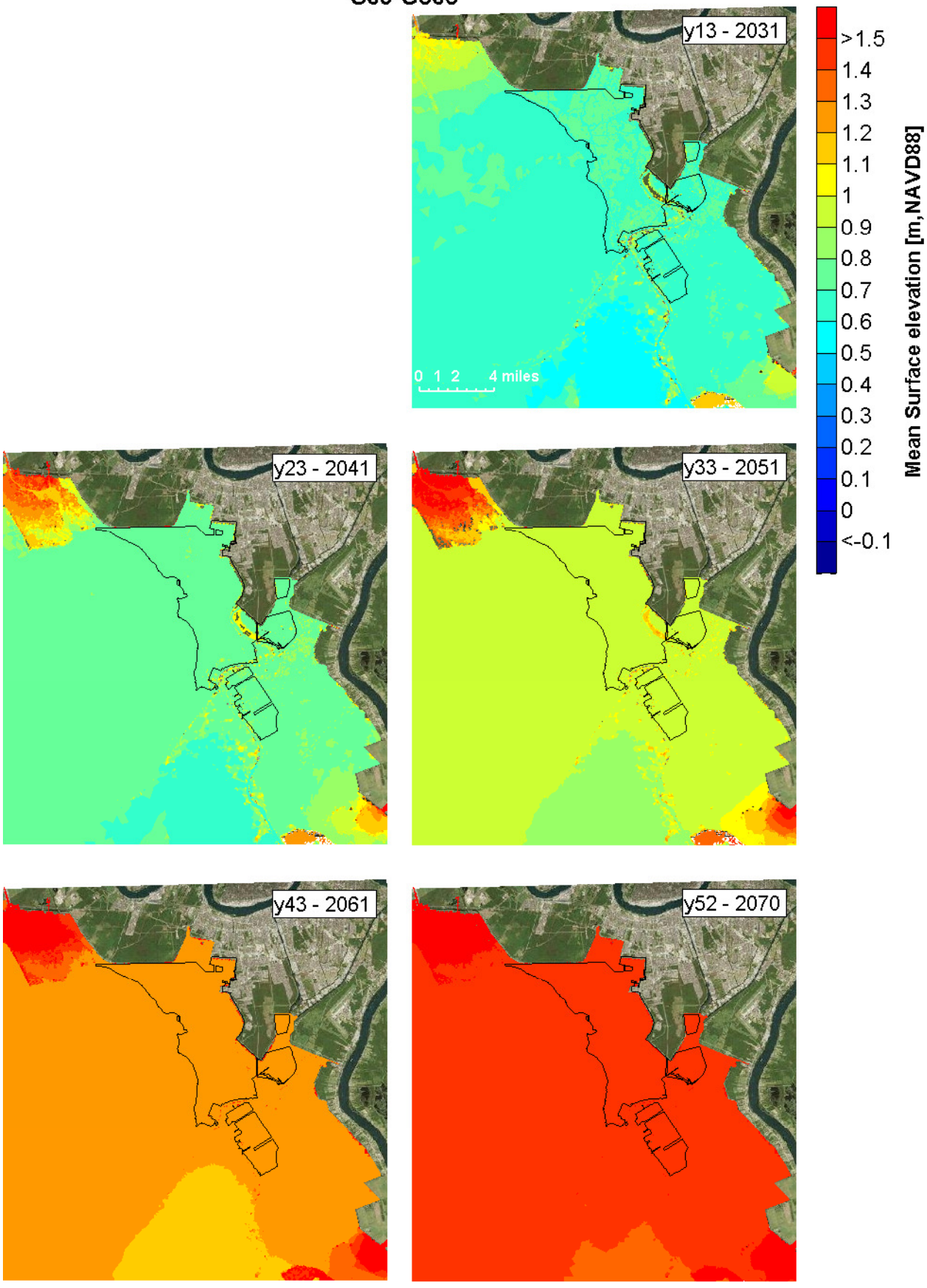
S09-G703


y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>0.27
0.24
0.21
0.18
0.15
0.12
0.09
0.06
<0.03
Max. Current Speed [m/s]

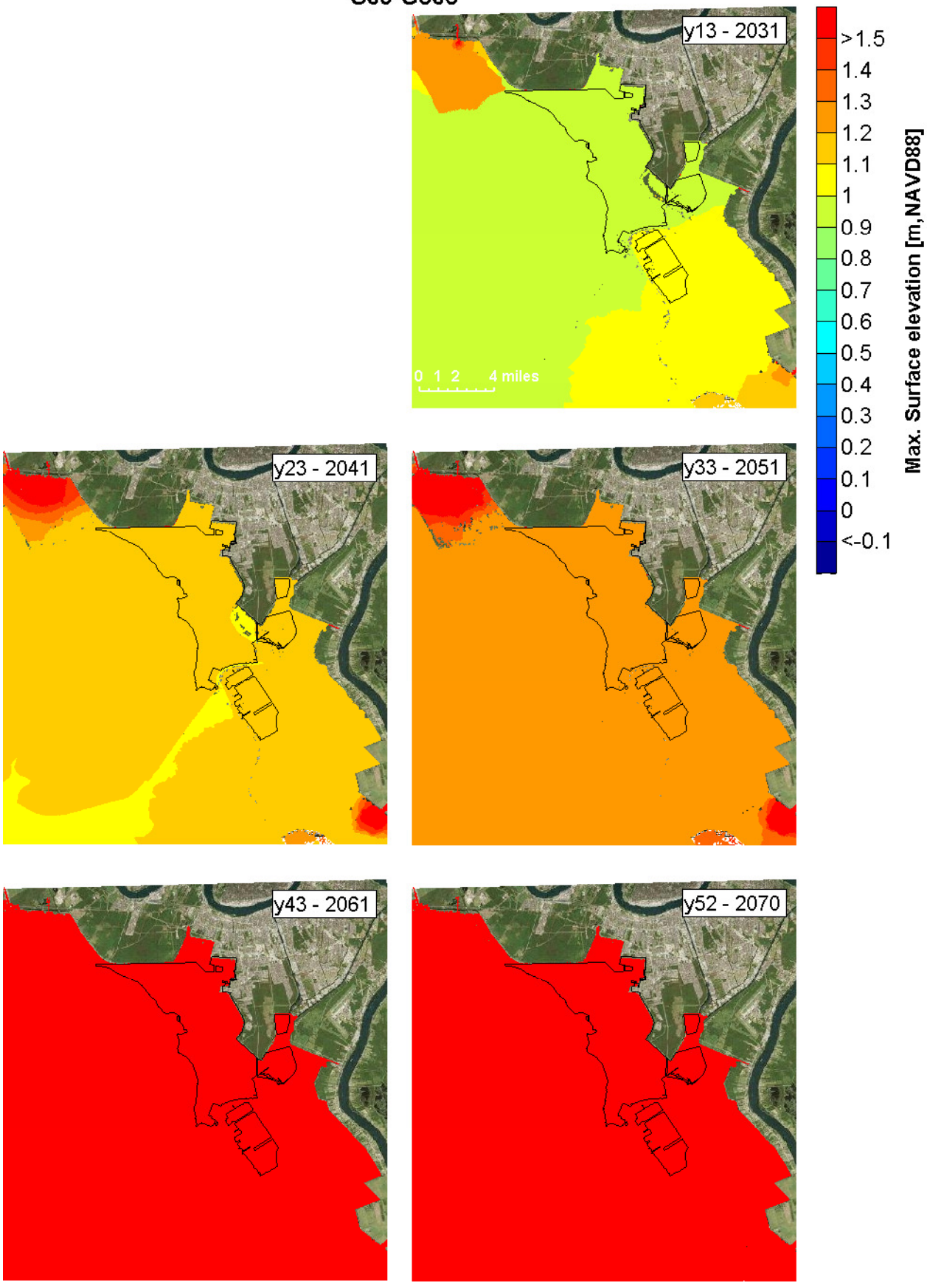
S09-G803


y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>90
80
70
60
50
40
30
20
<10
Percentage of Time Inundated

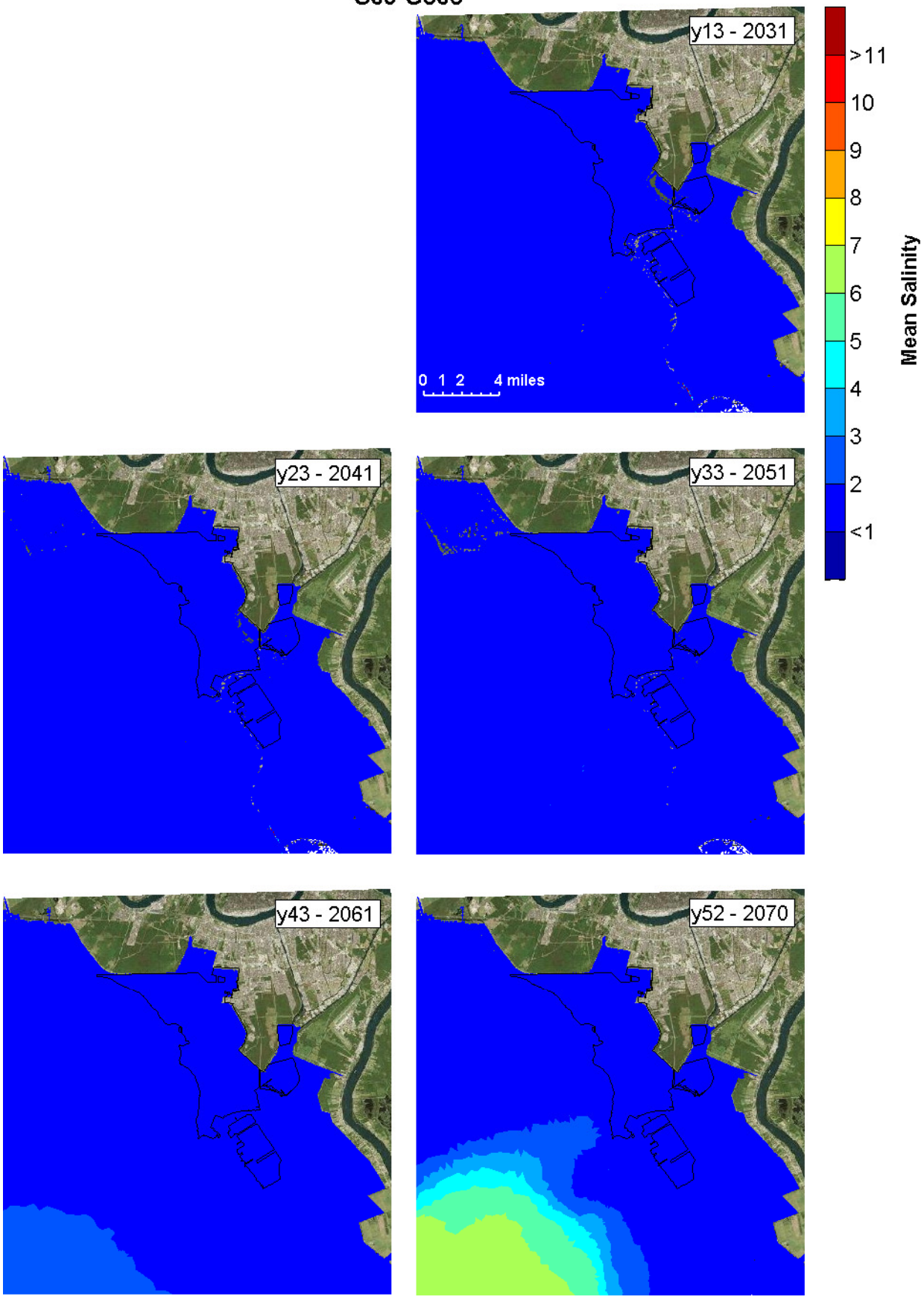
S09-G803


y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
<-0.1
Mean Surface elevation [m,NAVD88]

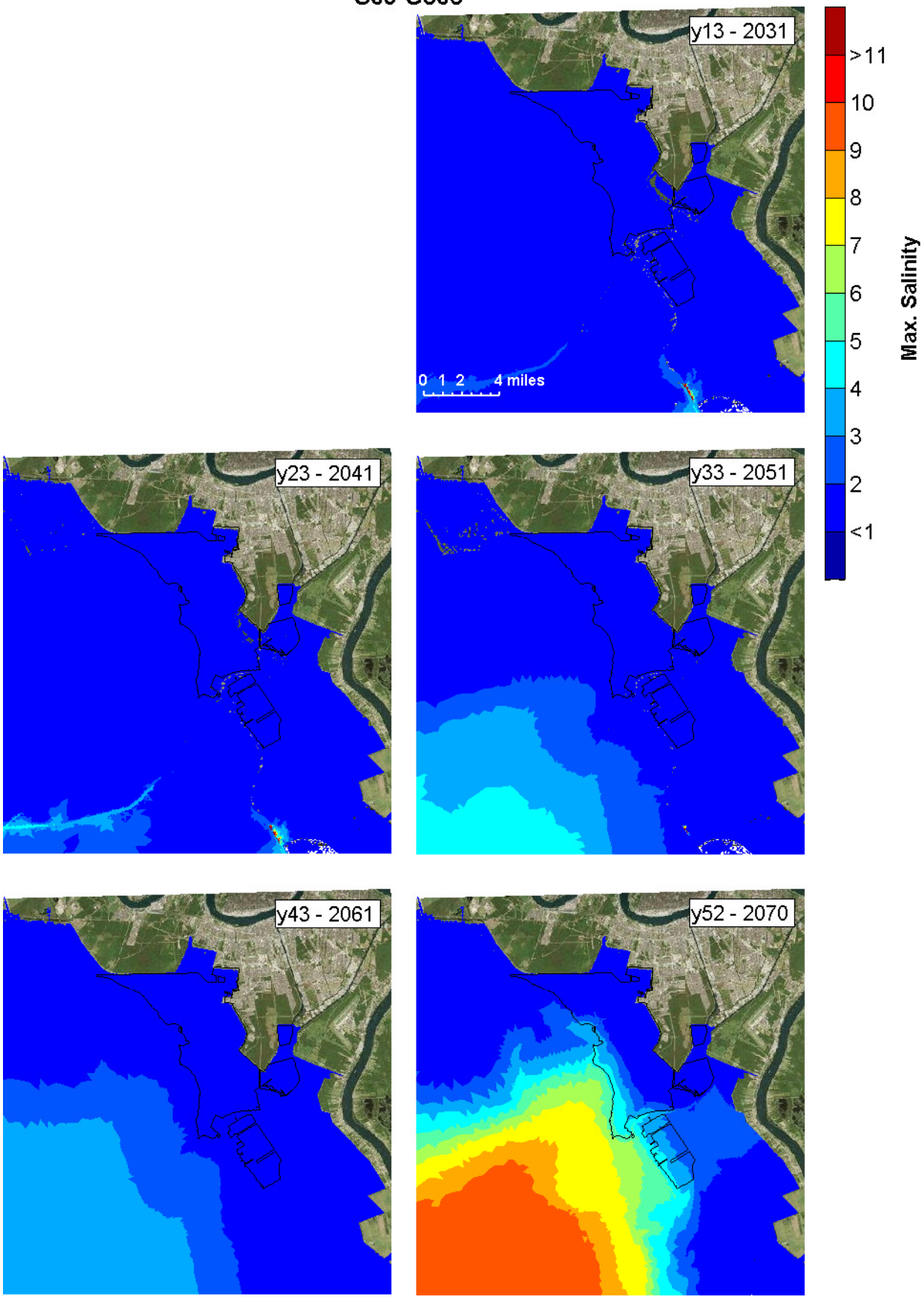
S09-G803


y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
<-0.1
Max. Surface elevation [m,NAVD88]

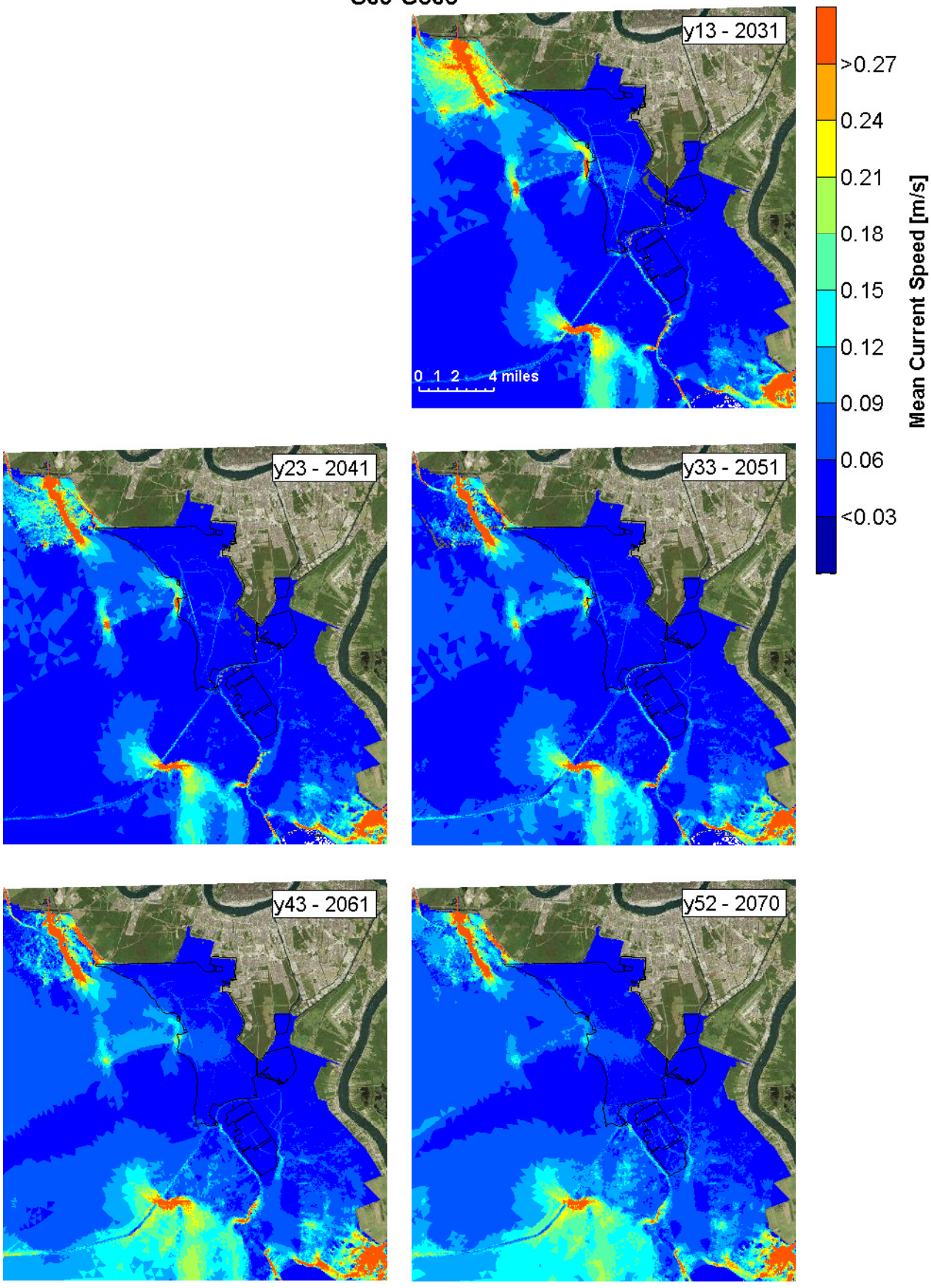
S09-G803


y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>11
10
9
8
7
6
5
4
3
2
<1
Mean Salinity

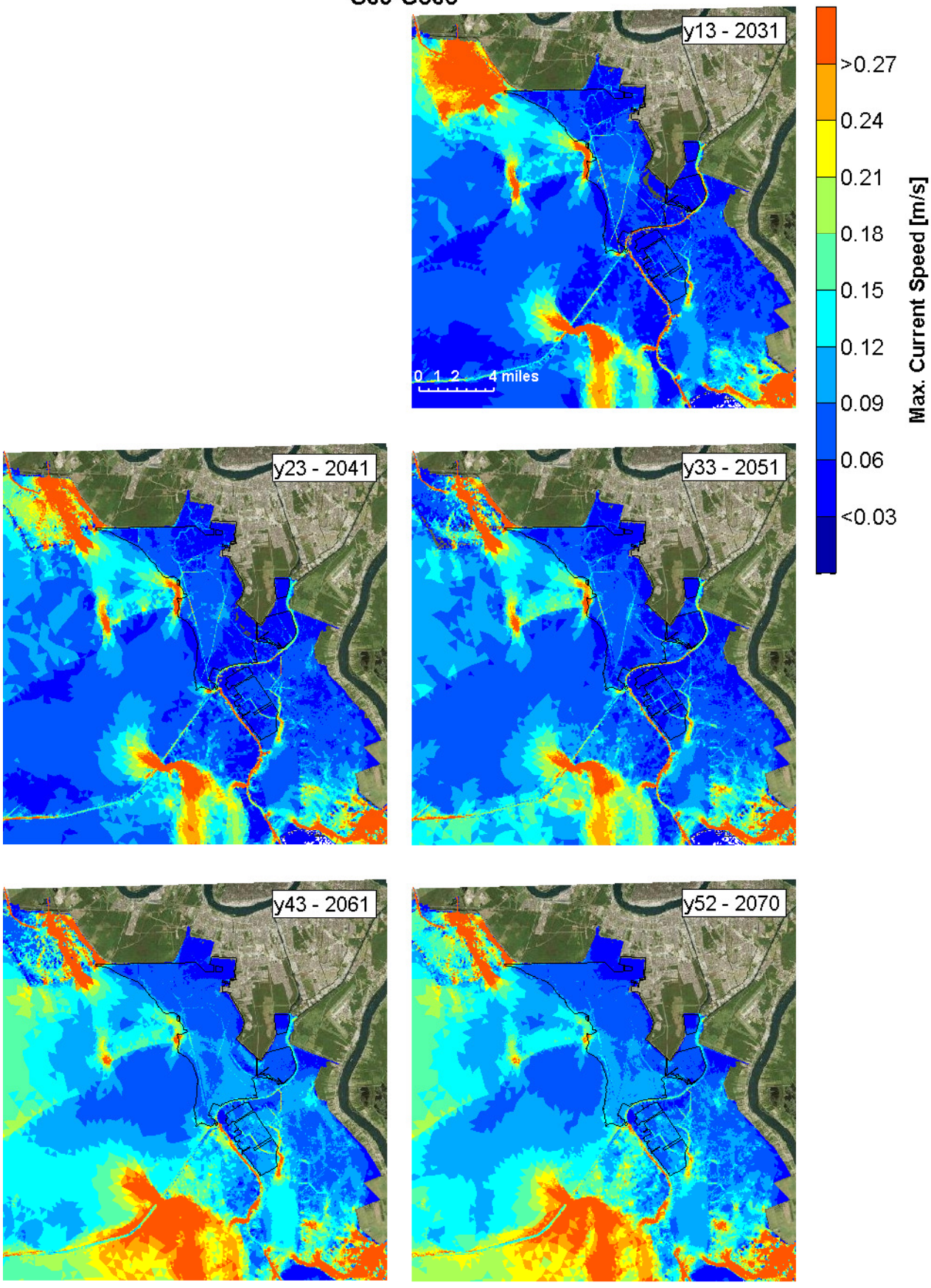
S09-G803


y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>11
10
9
8
7
6
5
4
3
2
<1
Max. Salinity

S09-G803


y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>0.27
0.24
0.21
0.18
0.15
0.12
0.09
0.06
<0.03
Mean Current Speed [m/s]

S09-G803


y13 - 2031
0 1 2 4 miles
y23 - 2041
y33 - 2051
y43 - 2061
y52 - 2070
>0.27
0.24
0.21
0.18
0.15
0.12
0.09
0.06
<0.03
Max. Current Speed [m/s]