



Inventory & Monitoring Reports, 2000-2014

Southeast Coast Network Overview

The Southeast Coast Network (SECN) is one of 32 National Park Service (NPS) Networks established to implement an integrated monitoring program under the Natural Resource Challenge. In 2001, the SECN began planning and implementing its long-term Vital Signs Monitoring Program, and completed its long-term monitoring plan in 2008 (DeVivo et al. 2008). Beginning in FY2010, with the new Administration's focus on climate change science, the SECN began planning for enhancing its original program as a part of the U.S. Department of the Interior (DOI) and NPS strategy to improve the ability of resource managers to include climate change science in planning and management.

The SECN contains 20 parks, 17 of which contain significant and diverse natural resources. In total, SECN parks encompass more than 184,000 acres of federally-managed land across North Carolina, South Carolina, Georgia, Alabama, and Florida. The parks range in size from slightly more than 20 to nearly 60,000 acres, and when considered with non-federal lands jointly managed with SECN parks the Network encompasses more than 253,000 acres.

The following is a catalog of current science products developed by the Inventory and Monitoring Program (I&M) for Chattahoochee River National Recreation Area (CHAT; Figure 1).

About the Park

Located in north-central Georgia, CHAT extends for 48 miles (77 km) along the Chattahoochee River corridor, between the city of Atlanta and Lake Lanier to the north. The upstream terminus of the park is Buford Dam, which is operated by the U.S. Army Corps of Engineers. The dam generates electricity and provides water to the greater Atlanta metropolitan region; however, its operation dramatically alters river flows and water temperatures within CHAT. The entire length of the Recreation Area runs along the Brevard Fault Zone. This zone forms the Chattahoochee River channel, one of the oldest river channels in the United States. The Brevard Fault is a major 320+ mile geological feature that partially delineates the Appalachian Mountains and the Piedmont Plateau physiographic provinces. The NPS owns 9,886 acres (4,000 ha) of land along the Chattahoochee River. CHAT has one of the most prominent wildland-urban interfaces of all SECN parks, resulting in property-encroachment issues, non-native plants and animals, pesticide use, contaminated runoff (e.g., sewage, nutrients), and several other management challenges. According to the 2006 census, the five counties in which CHAT occurs have been some of the fastest growing and most densely populated in Georgia since 1990.

Despite these challenges, CHAT hosts a diverse array of flora and fauna, ecological communities, topography, and other attributes that make the Recreation Area a unique and highly prized resource for its users. The vegetation communities vary with topography and prox-

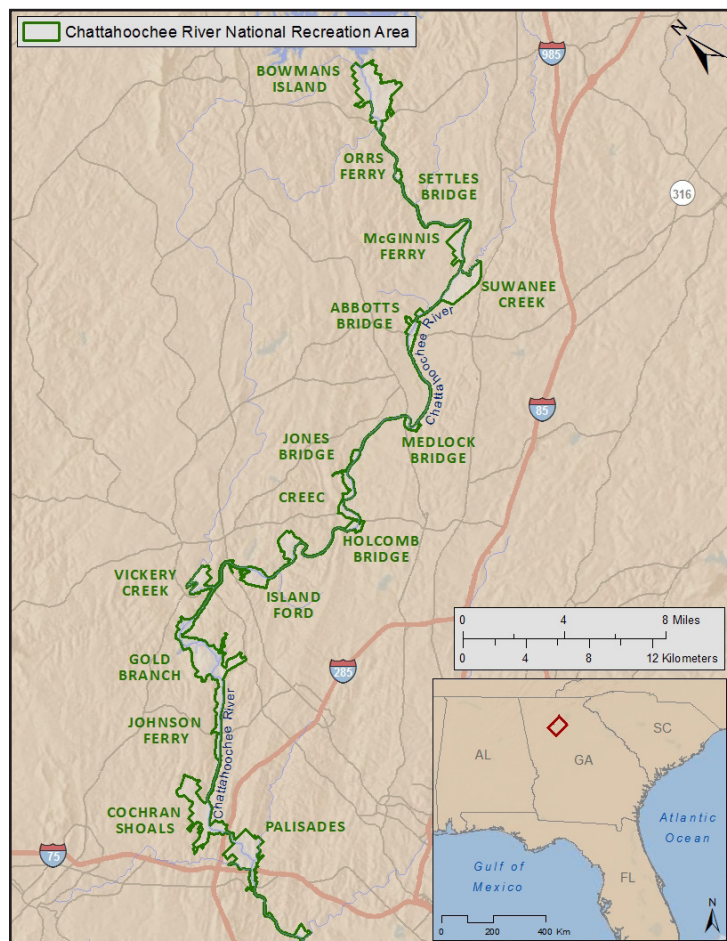


Figure 1. Location of Chattahoochee River National Recreation Area, GA.

imity to the river—uplands include mixed-hardwood communities dominated by oaks (*Quercus* spp.), tuliptree (*Liriodendron tulipifera*), and American beech (*Fagus grandiflora*); as well as pine forests containing loblolly pine (*Pinus taeda*) and shortleaf pine (*P. echinata*). Lowlands include floodplains and riparian areas with canopy species such as water birch (*Betula nigra*), mesic oaks (e.g., *Quercus nigra*, *Q. laurifolia*), red maple (*Acer rubrum*), green ash (*Fraxinus pennsylvanica*), and hackberry (*Celtis laevigata*).

Program Overview and Planning Documents

DeVivo, J. C., C. J. Wright, M. W. Byrne, E. DiDonato, and T. Curtis. 2008. [Vital signs monitoring in the Southeast Coast Inventory & Monitoring Network](#). Natural Resource Report NPS/SECN/NRR—2008/061. National Park Service, Fort Collins, Colorado.

DeVivo, J. C., T. Curtis, M. W. Byrne, M. B. Gregory, and C. J. Wright. 2011. [Southeast Coast Network Climate Science Strategy](#). Natural Resource Report NPS/SECN/NRR—2011/436. National Park Service, Fort Collins, Colorado.

Wright, C. J., J. C. DeVivo, and K. Funk. 2008. [Information management and archiving plan, Southeast Coast Inventory and Monitoring Network](#). Natural Resource Report NPS/SECN/NRR—2008/062. National Park Service, Fort Collins, Colorado. ([Appendices](#)).

Monitoring Protocols

Monitoring protocols are detailed study plans that explain how data are to be collected, managed, analyzed, and reported. They are a key component of quality assurance for natural resource monitoring programs and are necessary to ensure that changes detected by monitoring efforts are not the result of measurements taken by different people or in slightly different ways over time. The SECN is developing several protocols and associated standard operating procedures, the following of which have been published.

Byrne, M. W., J. C. DeVivo, B. D. Smrekar, L. M. Elston, C. J. Wright, and E. Thompson. 2013. [Protocol for monitoring vocal anuran communities in Southeast Coast Network parks](#). Natural Resource Report NPS/SECN/NRR—2013/720. National Park Service, Fort Collins, Colorado.

Byrne, M. W., J. C. DeVivo, C. J. Wright, E. Thompson, and C. D. Jones. 2014. Protocol for monitoring landbird communities in Southeast Coast Network Parks. Natural Resource Report NPS/SECN/NRR—2014/853. National Park Service, Fort Collins, Colorado.

Jones, C. D., A. M. Couch, R. D. Sherrell, T. C. Rasmussen, and J. F. Dowd. 2010. [Southeast Coast Network surface water discharge monitoring: Analysis of existing data and data acquisition applications](#). Natural Resource Report NPS/HTLN/NRR—2010/264. National Park Service, Fort Collins, Colorado.

National Park Service. 2004. [Ozone monitoring protocol for the National Park Service](#). Report No. NPS D-1654. National Park Service, Air Resources Division, Lakewood, Colorado.

Rasmussen, T. C., J. F. Dowd, R. J. McKinnon, B. M. Price, and R. D. Sherrell. 2009. [Southeast Coast Network groundwater monitoring: Protocol development and analysis of existing data](#). Natural Resource Report NPS/SECN/NRR—2009/126. National Park Service, Fort Collins, Colorado.

Monitoring Data Reports

Data reports are concise reports that summarize the most recent year's data collection efforts as well as highlight any issues of potential concern. All data reports contain a bulleted list of significant findings as part of the executive summary section and are generally published in conjunction with a two-page resource brief containing an abbreviated subset of significant findings along with some limited project information including broader programmatic overview of the sampling effort. Data reports are produced for all active monitoring efforts undertaken by the I&M program at the network and national levels.

Air Quality

Sullivan, T. J., G. T. McPherson, T. C. McDonnell, S. D. Mackey, and D. Moore. 2011a. [Evaluation of the sensitivity of inventory and monitoring national parks to acidification effects from atmospheric sulfur and nitrogen deposition: Southeast Coast Network \(SECN\)](#). Natural Resource Report NPS/

NRPC/ARD/NRR—2011/375. National Park Service, Denver, Colorado.

Sullivan, T. J., T. C. McDonnell, G. T. McPherson, S. D. Mackey, and D. Moore. 2011b. [Evaluation of the sensitivity of inventory and monitoring national parks to nutrient enrichment effects from atmospheric nitrogen deposition: Southeast Coast Network \(SECN\)](#). Natural Resource Report NPS/NRPC/ARD/NRR—2011/329. National Park Service, Denver, Colorado.

Weather and Climate

Wright, C. J. 2012. [Summary of weather and climate monitoring in Southeast Coast Network parks, 2011](#). Natural Resource Data Series NPS/SECN/NRDS—2012/365. National Park Service, Fort Collins, Colorado.

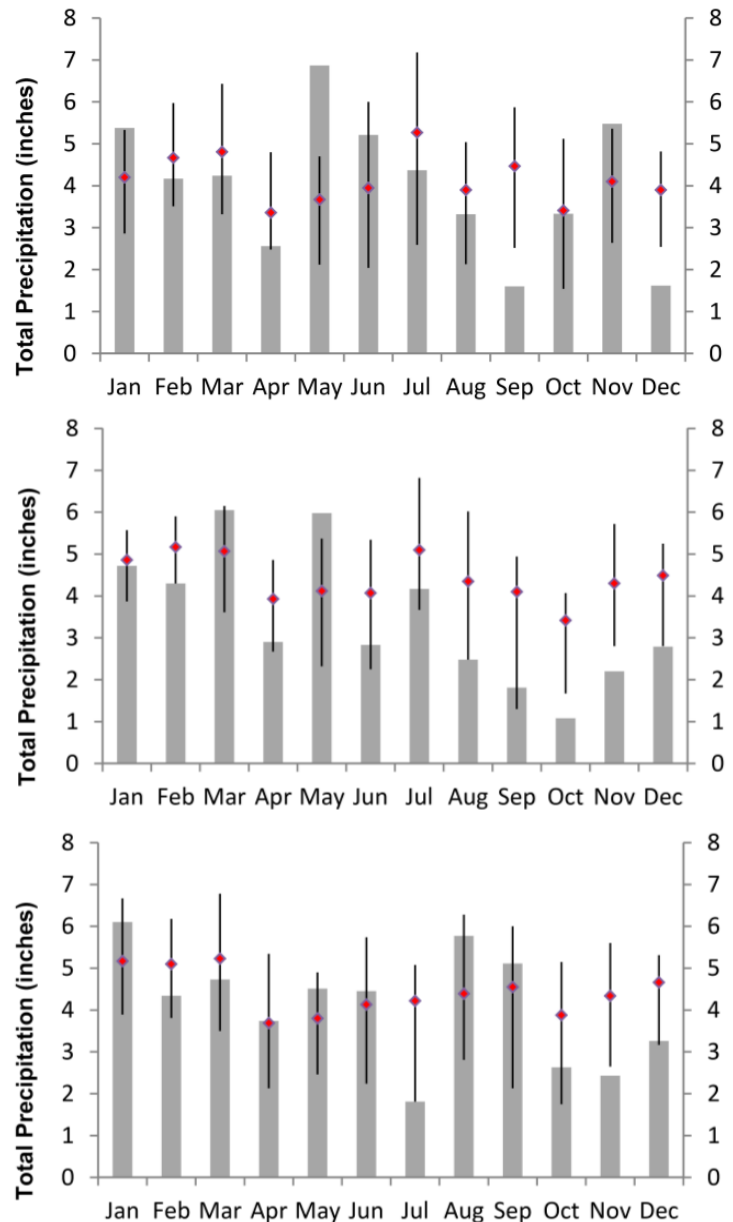


Figure 2. Total monthly precipitation during 2010 and the 30-year (1981-2010) monthly averages for Atlanta Hartsfield International Airport (top), Dallas 7NE (middle), and Gainesville (bottom) stations. Gray columns represent 2010 total monthly precipitation. Red circles represent the 30-year average. Lines indicate the 25th and 75th percentile of the 30-year normal data for each month.



Figure 3. Kentucky warbler (*Oporornis formosus*) was a priority species detected at CHAT in 2009. Photo by Darlene J. Moore.

Wright, C. J. 2013. [Summary of weather and climate monitoring in Southeast Coast Network parks, 2012](#). Natural Resource Data Series NPS/SECN/NRDS—2013/477. National Park Service, Fort Collins, Colorado.

Wright, C. J., E. Thompson, B. A. Blankley, M. W. Byrne, T. Curtis, and M. B. Gregory. 2011. [Summary of weather and climate monitoring in Southeast Coast Network parks, 2010](#). Natural Resource Data Series NPS/SECN/NRDS—2011/309. National Park Service, Fort Collins, Colorado.

Stream Flows

Gregory, M. B., and J. Koa. 2014. [Summary of stream flow conditions at five riverine parks in the Southeast Coast Network, 2013](#). Natural Resource Data Series NPS/SECN/NRDS—2014/700. National Park Service, Fort Collins, Colorado.

Gregory, M. B., C. Wright, C. D. Jones, J. F. Dowd, and J. C. DeVivo. 2012. [Summary of stream flow conditions at five riverine parks in the Southeast Coast Network, 2010](#). Natural Resource Data Series NPS/SECN/NRDS—2012/313. National Park Service, Fort Collins, Colorado.

Jones, C. D., and M. B. Gregory. 2013. [Summary of stream flow conditions at five riverine parks in the Southeast Coast Network, 2012](#). Natural Resource Data Series NPS/SECN/NRDS—2013/505. National Park Service, Fort Collins, Colorado.

Groundwater Dynamics

Wright, C. J., and M. W. Byrne. 2012. [Groundwater conditions in Southeast Coast Network parks, 2010](#). Natural Resource Data Series NPS/SECN/NRDS—2012/275. National Park Service, Fort Collins, Colorado.

Wright, C. 2012. [Groundwater conditions in Southeast Coast Network parks, 2011](#). Natural Resource Data Series. NPS/SECN/NRDS—2012/326. National Park Service, Fort Collins, Colorado.

Land Birds

Byrne, M. W., J. C. DeVivo, J. R. Asper, and B. A. Blankley. 2011. [Landbird community monitoring at Chattahoochee River National Recreation Area, 2009](#). Natural Resource Data Series NPS/SECN/NRDS—2011/299. National Park Service, Fort Collins, Colorado.

Amphibians

Byrne, M. W., and M. N. Moore. 2011. [Incidence of chytrid fungus, *Batrachochytrium dendrobatidis*, in Southeast Coast Network parks](#). Natural Resource Technical Report NPS/SECN/NRTR—2011/477. National Park Service, Fort Collins, Colorado.

Smrekar, B. D., M. W. Byrne, M. N. Moore, and A. T. Presnell. 2013. [Amphibian community monitoring at Chattahoochee River National Recreation Area, 2011](#). Natural Resource Data Series. NPS/SECN/NRDS—2013/522. National Park Service, Fort Collins, Colorado.

Inventory Reports

The NPS I&M developed a strategy in 1992 for developing and delivering a minimal set of products for 12 “baseline” natural resource inventories for all park units containing significant natural resources. The primary purpose of natural resource inventories is to document the presence of resources in parks, and to assess and document the current condition and knowledge of natural resources in the parks. Baseline inventories for CHAT are either complete or underway (Table 1), and have been augmented by additional inventory projects of interest to the park. Inventories with published reports are listed below, although data are available for all completed reports.

Baseline Inventories

Byrne, M. W., and D. M. Lagana. 2009. [Live-specimen key for the mammals of Southeast Coast Network parks](#). Natural Resource Report NPS/SECN/NRR—2009/122. National Park Service, Fort Collins, Colorado.

Davey, C. A., K. T. Redmond, and D. B. Simeral. 2007. [Weather and Climate Inventory, National Park Service, Southeast Coast Network](#). Natural Resource Technical Report NPS/SECN/NRTR—2007/010. National Park Service, Fort Collins, Colorado.

Table 1. Status of twelve baseline inventories at Chattahoochee River National Recreation Area [● – Complete; ● – In Progress; — – Not Yet Scheduled]

Inventory	CHAT
Air Quality Data	●
Air Quality Related Values	●
Base Cartography Data	●
Baseline Water Quality Data	●
Climate Inventory	●
Geologic Resources Inventory	—
Natural Resource Bibliography	●
Soil Resources Inventory	●
Species Lists	●
Species Occurrence and Distribution	●
Vegetation Map Inventory	●
Water Body Location and Classification	●

- Kohut, R. J. 2004. [Assessing the risk of foliar injury from ozone on vegetation in parks in the Southeast Coast Network](#). National Park Service, Fort Collins, Colorado.
- Johnston, C. E., M. Castro, L. Casten, A. Henderson, and A. Kennon. 2006. [Fish inventories at Southeast Coast Network parks](#). Auburn University, Auburn, Alabama.
- Tuberville, T. D., J. D. Willson, M. E. Dorcas, and J. W. Gibbons. 2005. [Herpetofaunal species richness of southeastern national parks](#). *Southeastern Naturalist* 4(3): 537-569.
- Webster, W. D. 2010. [Mammalian diversity in nineteen Southeast Coast Network parks](#). Natural Resource Report NPS/SECN/NRR—2010/263. National Park Service, Fort Collins, Colorado.

Additional Inventories

- Alber, M., W. Sheldon, C. Laporte, and T. Douce. 2012. [Water quality metadatabase for the South Atlantic Landscape Conservation Cooperative](#). Natural Resource Report NPS/SECN/NRR—2012/581. National Park Service, Fort Collins, Colorado.
- Burkholder, J. M., E. H. Allen, C. A. Kinder, and E. B. Morris. 2010. [Assessment of water resources and watershed conditions in the Chattahoochee River National Recreation Area, Georgia](#). Natural Resource Report NPS/SECN/NRR—2010/274. National Park Service, Fort Collins, Colorado.

For More Information

The NPS Integrated Resource Management Applications (IRMA) portal (<http://irma.nps.gov>) is the start of a web-based “one-stop” for data, reports, and other information related to National Park Service natural and cultural resources. IRMA allows users to search, view, download, and print information from multiple sources and systems, all from a consistent user interface. No logins or passwords are required.

Information on activities of the SECN can be found at <http://science.nature.nps.gov/im/units/secn/>, including the Network’s monitoring plan, descriptions of inventory and monitoring efforts, and links to data and final project reports.

For notification on the release of new reports from the SECN and job/internship opportunities follow us on Twitter [@SECoastNetwkNPS](#) or <http://twitter.com/SECoastNetwkNPS>.



National Park Service. 2014. Inventory & Monitoring Reports, 2000-2014: Chattahoochee River National Recreation Area. Southeast Coast Network, National Park Service, Athens, GA.