



The Current

July 2026



A New Frontier

By Ted Gostonski, Network Science Writer

The times have changed, so we are adapting to new ways of doing things by moving *The Current* to SharePoint. Going forward, this is how we will share what we are learning, where we will be, and any other current events of interest.

Park staff have consistently ranked *The Current* as the most read publication we produce, so it's important to us that this line of communication stays open. We hope you will continue to read and enjoy *The Current* in this new format.

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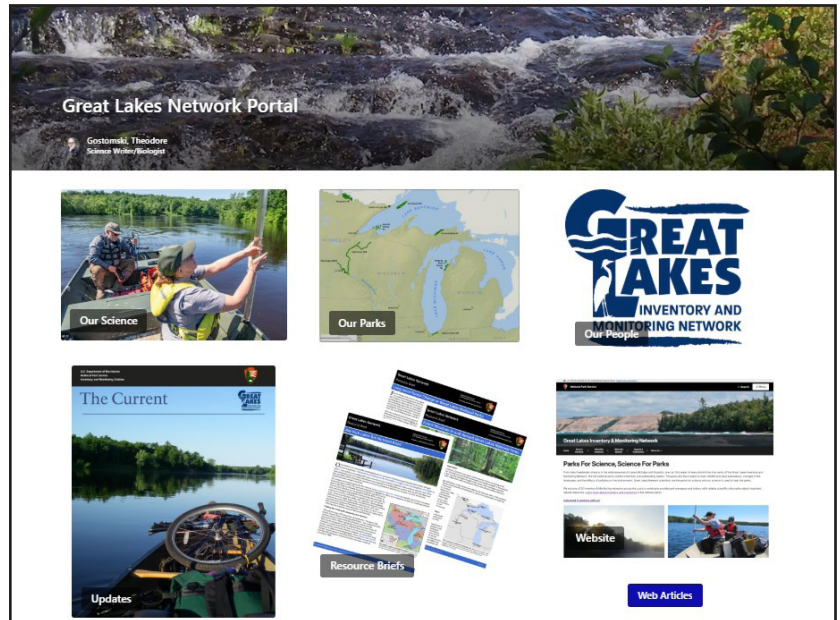


Following the current. NPS PHOTO

A Home Away From Home

While our home on NPS.gov is under new ownership, we have created a SharePoint site to continue sharing information about natural resource monitoring and science with our network parks.

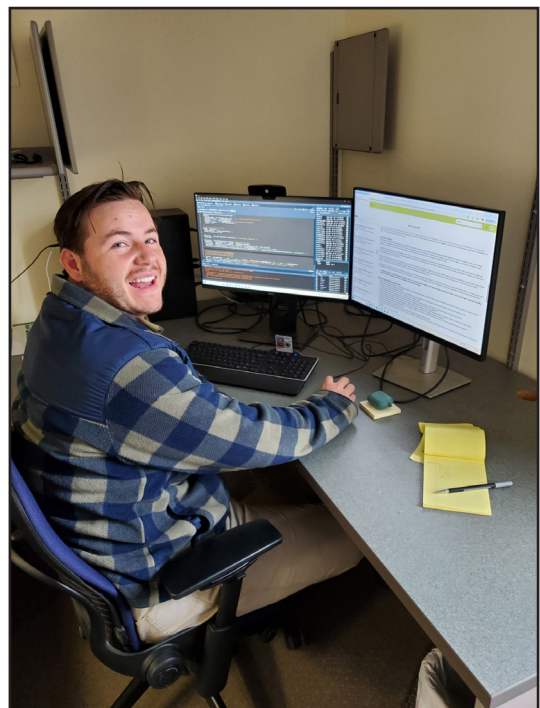
The [Great Lakes Inventory and Monitoring Network Portal](#) is our new home for electronic resource briefs, *The Current*, and links to our reports and data packages in [IRMA \(DataStore\)](#). Our [NPS.gov](#) website is still accessible and functional, but all new content will be posted on the Portal for the foreseeable future.



Welcome Aidan!

Aidan Kingsbury joined the Great Lakes Network this spring as a Scientist-in-Parks intern. His focus is on creating a workflow to draft automated data summary reports for our vegetation monitoring program and to develop a dashboard that will summarize landscape disturbance data for the network's nine parks. But it turns out that in addition to being a talented coder, Aidan is also a skilled birder.

Originally from the Twin Cities area of Minnesota, Aidan graduated from Wheaton College in Chicago with a degree in Applied Math and Environmental Science. Along the way, he developed an interest in birds and started teaching himself to identify birds by song. When he arrived in northern Wisconsin in late April to start his



NPS PHOTO

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Field Season Schedule

	Amphibians	Contaminants- Dragonflies	Landbirds	Vegetation	Water Quality
Apostle Islands	Mar–Aug	May–Aug	June	n/a	June–Oct ²
Grand Portage	Mar–Aug	May–Aug	June	n/a	n/a
Indiana Dunes	Mar–Aug	May–Aug	June	June–Aug	May, Jul, Sept
Isle Royale	Mar–Aug	May–Aug	June	n/a	May–Sept ³
Mississippi River	Mar–Aug	May–Aug	June	n/a	n/a
Pictured Rocks	Mar–Aug	May–Aug	June	n/a	June–Sept ⁴
St. Croix Riverway	Apr–Aug ¹	May–Aug	June	n/a	Apr–Nov ⁴
Sleeping Bear Dunes	Mar–Aug	May–Aug	June	n/a	June–Sept
Voyageurs	Apr–Aug ¹	May–Aug	June	n/a	June–Sept ⁵

Amphibians — Park and network staff along with volunteers will collect data recordings.

¹ Monitoring is being conducted using a U.S. Geological Survey protocol.

Contaminants-Dragonflies — Samples will be collected by a Northland College field crew at APIS, GRPO, ISRO, and SACN, and by park staff and volunteers at the other parks.

Landbirds — Surveys are conducted by park staff, volunteers, and contractors.

Vegetation — Conducted with a team of three cooperators led by Suzy Sanders and Jessica Kirschbaum.

Water Quality — Conducted by Josh Dickey (INDU), Alex Egan (ISRO), Leah Kainulainen (PIRO), Rick Damstra (SACN), Chris Otto (SLBE), and James Smith (VOYA).

² Includes assisting with nearshore water quality monitoring on Lake Superior.

³ Includes sampling for freshwater midges from a subset of lakes.

⁴ Includes sampling for benthic macroinvertebrates from a subset of sites.

⁵ Includes sampling for mercury in water from a subset of lakes.

Teamwork In Action

Tracking the Wind at Voyageurs NP

What do you do when bogs break loose from their mats and begin floating around aimlessly? They're an obstacle here one day and over there the next, a navigational hazard in more ways than one.

Biologists at Voyageurs National Park (VOYA) are wrestling with this issue on Rainy Lake's Black Bay, where entire sections of bog have broken loose from their shorelines and are floating around the lake. They've asked GLKN GIS specialist Al Kirschbaum to help not just with tracking the

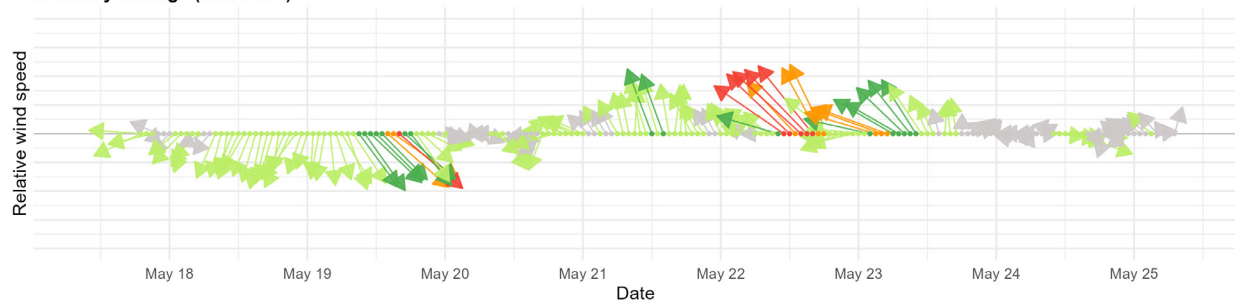
movements of these variously sized landmasses but also to try and predict where they might go. Al's doing the first part through satellite imagery and the second part by downloading meteorological data to create wind figures.

"Bogs can move surprisingly fast and surprisingly great distances, even though they can be several acres in size," says VOYA biologist Haley Smith. "Sometimes we get reports about bogs in certain locations and by the time we get there, it's already moved." Using meteorological data downloaded

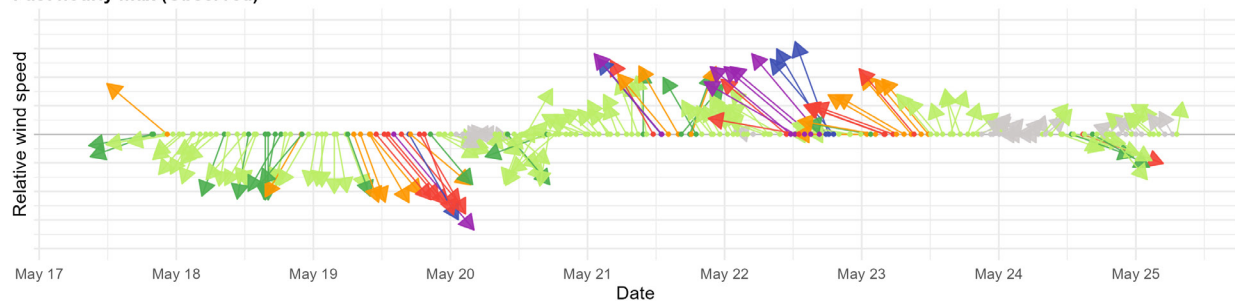
International Falls wind speed and direction (8-day window)

Arrows depict wind speed and direction

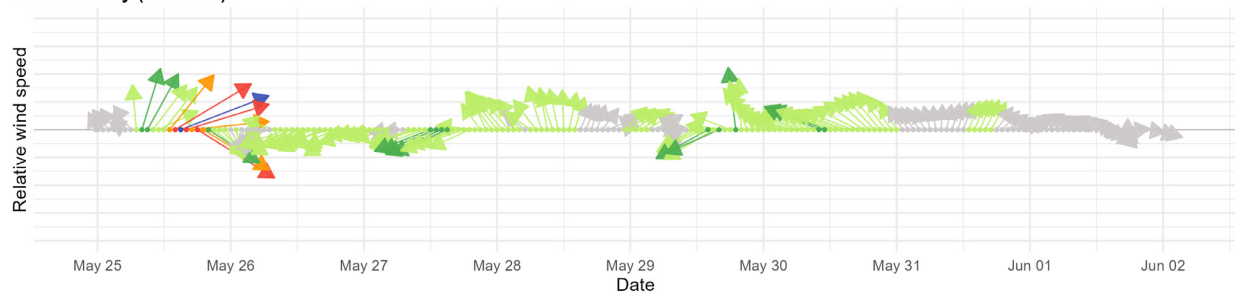
Past hourly average (Observed)



Past hourly max (Observed)



Future hourly (Forecast)



Wind speed (mph) ▲ 0-5 ▲ 6-10 ▲ 11-12 ▲ 13-14 ▲ 15-16 ▲ 17-18 ▲ >19

Data sources: Observed: IEM ASOS (KINL) • Forecast: Open-Meteo

Wind figures for Voyageurs National Park show the wind speed and direction over the last eight days and forecast what is expected. Data from Iowa Environmental Mesonet and Open-Meteo. GRAPHS CREATED BY A. KIRSCHBAUM/NPS.

from two locations, Kirschbaum builds a graph showing past wind observations retrieved from Iowa Environmental Mesonet and forecasted conditions retrieved from Open-Meteo. The [Iowa Environmental Mesonet](#) (IEM) is a collection hub for environmental data from cooperating members. [Open-Meteo](#) is an open-source weather API (Application Programming Interface) that offers free access to historic weather data and future weather forecasts. Al runs a script every Monday morning to capture the most recent eight-day window (past and future) of wind data for International Falls, Minnesota. Historic data are displayed as average wind speed and direction and hourly maximum wind speeds. The forecast is displayed as hourly predictions for wind speed and direction.

The movement tracking is an early warning system to let managers know if they need to act soon or just keep an eye on the mats. When necessary, VOYA biologists will round them up before they cause resource damage.

“Many times, we see mats moving around to different areas for weeks,” Haley says. They can block public docks and water channels, and they can threaten protected resources such as archeology sites or wild rice beds. In these instances, Haley and her team will move the mat somewhere else and stake it down there. “This is done with lots of horsepower: many boats pushing it towards where we want it to go,” she says.

In addition to wind direction and forecasting, Al is collecting radar images to help Haley assess problem areas.

“If we know where bogs are coming from, we can hopefully work to reduce their numbers by treating them earlier,” she says.

A literal moving target for managers

Though they are referred to as “bog mats,” the mats are composed entirely of cattails (*Typha*), primarily



Biologists at Voyageurs NP use boats to push floating bog mats into a safe place where they can be staked down. NPS PHOTO.

the hybrid species *Typha × glauca*. The hybrid is a cross between the native broad-leaved cattail (*Typha latifolia*) and the Eurasian narrow-leaved cattail (*Typha angustifolia*). The hybrid species is invasive and forms dense stands that choke out all other wetland vegetation and dominate freshwater marshes. They can grow on land or in the water. The cattails have air-holding pockets in their root structure that allow them to float, so when strong winds and waves cause large sections to break off, away they go to float freely around the lake.

The Voyageurs Wetland Restoration Project began in 2015 “to restore wetlands that had been degraded by invasive hybrid cattails and other factors.” Their goal is to “mechanically remove cattail and other invasive plants and restore native vegetation, such as wild rice, using new and established techniques.”

“We treat the bogs by chopping up the mats and piling them on shore to decompose. We have other treatment methods if they are rooted in the ground or on land,” says Haley.

Her ultimate goal is to work with neighboring landowners to reduce the number of invasive cattails

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“Welcome, Aidan,” continued from page 2

internship, he was keen to learn where to go see birds of the northern forest. He even took advantage of two opportunities to visit Wisconsin DNR blinds on the Sharp-tailed Grouse lekking grounds in the Namekagon Barrens.

As the field season began, we learned that some of our parks did not have the capacity to complete breeding songbird surveys in June, so Aidan’s GLKN supervisor offered him up to help if he was interested. Aidan jumped at the chance, in his own understated way. He took the birder certification test that is required of all GLKN bird surveyors and passed it with flying colors. So, with datasheets and his binoculars in hand, Aidan started out doing surveys at Apostle Islands National Lakeshore,

where he completed five of the park’s nine transects, including Devils Island, which required a very early boat ride to the second-most distant survey transect in the archipelago. With the Apostles surveys done, he went to Isle Royale and completed two of that park’s survey routes.

Aidan came to the Great Lakes Network with a job description that promised office work and computer screen time. He also found that skills achieved through his hobby could be used to advance long-term monitoring objectives and take him to unique island environments on Lake Superior. That’s a good job, and we’re grateful that he offered his talents.

Thanks, Aidan!

“Teamwork In Action,” continued from page 5

in lakes and wetlands. “We really hope landowners will join us and adopt these methods to treat the cattails on their property before mats float away,” Haley says.

But until then, Al will continue to track and predict the wind so that Haley and her team can follow the mats and try to direct their movement.

This restoration work was funded by Lessard-Sams Outdoor Heritage Council’s Outdoor Heritage Fund from the State of Minnesota.

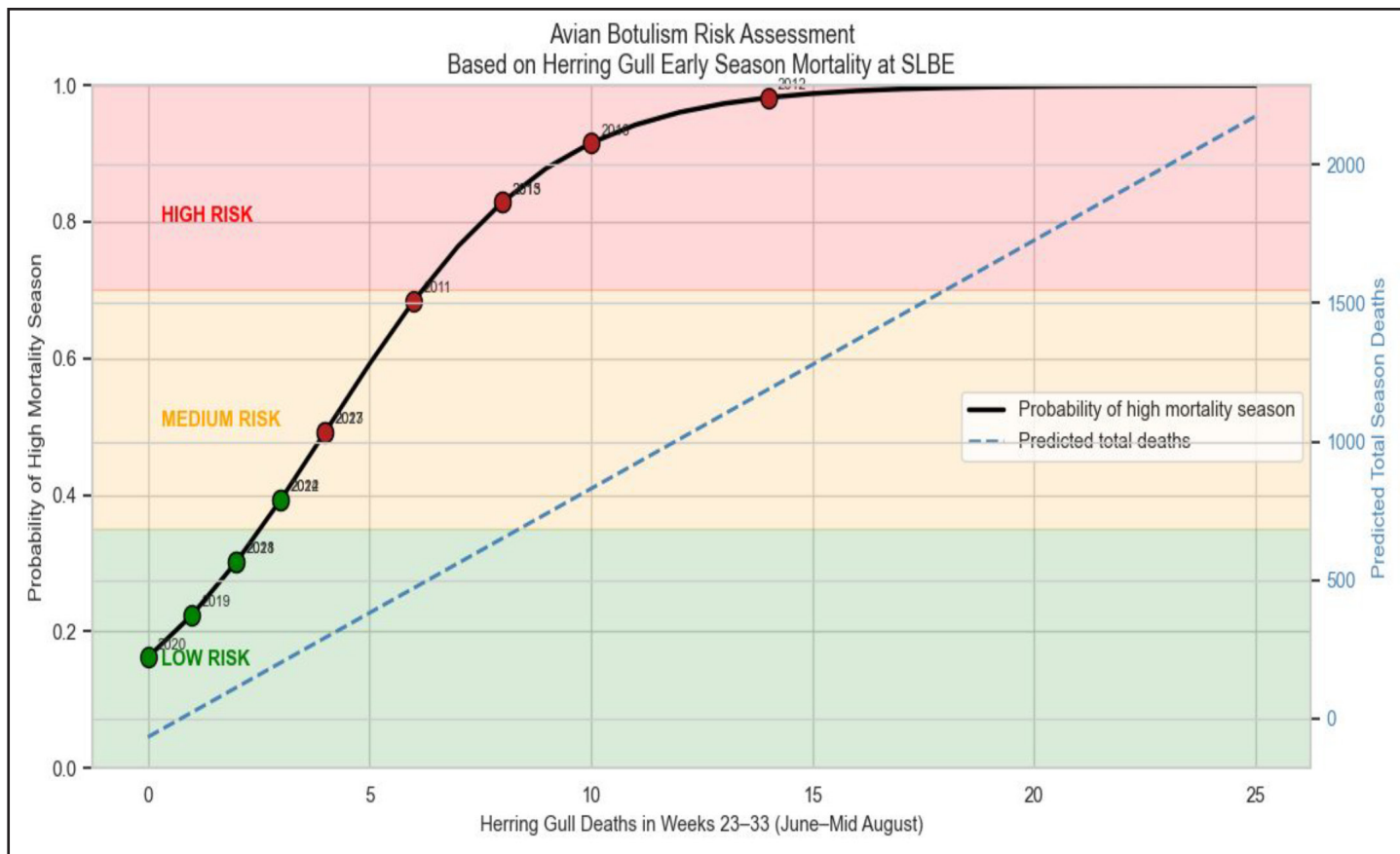
Using Long-term Data to Glimpse the Future at Sleeping Bear Dunes

The UC-Berkeley Student Association for Applied Statistics (SAAS) partnered with GLKN to perform a semester-long exploratory analysis of avian botulism data collected by volunteers and park staff at SLBE since 2007. Their specific objective was to “investigate hypothesized ecological cascade dynamics leading to avian botulism outbreaks and generate predictive risk forecasts to support proactive wildlife management decisions.”

Botulinum neurotoxin type E has caused periodic mortality of fish and fish-eating birds in the Great Lakes since at least the 1960s, but the outbreaks have become more common since the early 2000s leading to tens of thousands of deaths among fish-eating birds such as the Common Loon^{1,2}.

The SAAS team analyzed environmental factors such as water temperature, algae biomass, and densities of invasive quagga mussels and round gobies, and they looked for predictors and trends among bird species and survey transection location. When they finished, the team identified several interesting and novel findings including:

- Early season (June to mid-August) gull deaths could predict late season outbreaks in other species such as loons, scoters, and grebes;
- A subset of transects were predictive of other transects, which will allow field crews to prioritize the more informative transects when capacity is limited; and
- Water temperature, algae biomass, and quagga



The number of Herring Gull deaths due to botulism that occurred between June and mid-August was a predictor of the magnitude of mortality among all species later in the season. GRAPHIC BY UC-BERKELEY STUDENT ASSOCIATION FOR APPLIED STATISTICS.

mussel density showed strong relationships with outbreak severity.

The students also identified patterns in the data suggesting that outbreaks affect different feeding guilds differently (deep-divers such as loons versus shallow-divers such as mergansers), likely suggesting that where the botulism enters the food web significantly contributes to annual severity and mortality outcomes.

This project shows the value in using long-term monitoring datasets to refine monitoring strategies and identify effective management options. Several of the students are doing more in-depth work this summer, and we look forward to seeing what more they are able to learn.

Further Reading

¹[Links between type E botulism outbreaks, lake levels, and surface water temperatures in Lake Michigan, 1963–2008](#) (2011, Journal of Great Lakes Research)

²[The Bot. Squad: Fighting Type E Botulism Since 2006](#)



Apostle Islands National Lakeshore
Grand Portage National Monument
Indiana Dunes National Park
Isle Royale National Park
Mississippi National River and Recreation Area
Pictured Rocks National Lakeshore
Sleeping Bear Dunes National Lakeshore
St. Croix National Scenic Riverway
Voyageurs National Park

The Current is published twice a year for Great Lakes Network park staff, our partners, and others interested in resource management at Great Lakes region national parks.

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Thanks to the following contributors

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