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## Spring 2022 Natural Resource Quarterly

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Region 1: National Capital Area

National Park Service  
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# Natural Resource Quarterly | Spring 2022

*Newsletter of Natural Resources in the National Capital Area*

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### Testing DNA Tests in Insect Communities

Identifying bugs can be a tricky process that takes lots of time and expertise. And while diverse plant communities and insect communities are strongly linked, we know much less about insect communities than we do plants. That's why C&O Canal recently sponsored a research project (made possible through an agreement with the Chesapeake Watershed Cooperative Ecosystem Studies Unit) to look at a new way to quickly identify a large number of insects and arachnids mixed together: genetics.



Read [Identifying Insect Communities: Testing DNA Tests](#) for more details.

### 2021 Weather in Review

Each year, the National Capital Region Inventory & Monitoring Network (NCRN I&M) reports on the prior year's weather for each park in the National Capital Area (NCA). During 2021, NCA parks experienced a very warm year, a top-ten warmest year (since 1895) for most.

Unsurprisingly, the United States and the Earth as a whole also experienced warmer than normal conditions in 2021 (4th warmest year for US, 6th warmest year for Earth).

Total precipitation in 2021 for most NCA parks was generally closer to normal, though many parks did have a very wet summer followed by an extremely dry fall.

See the [full collection of "2021 Weather in Review" resource briefs](#) on IRMA Data Store.

Or for individual parks, chose from these links: [Antietam](#), [Catoctin](#), [C&O Canal](#), [GW Parkway](#), [Harpers Ferry](#), [Manassas](#), [Monocacy](#), [National Capital Parks - East](#), [National Mall](#), [Prince William](#), [Rock Creek](#), [Wolf Trap](#).

### Future Forest Regeneration - Update

The latest Forest Regeneration data for all National Capital Area (NCA) parks is now available! A [2021 Forest Regeneration brief](#) from the NCRN Inventory & Monitoring Network (NCRN I&M) includes the latest Stocking Index scores and discusses how forests are changing as a result of deer management. Key takeaways include:

- Forest regeneration is



threatened by a variety of stressors: over-abundant deer, invasive plants, pests, urban development, lack of fire, and climate.

- No NCA park has adequate regeneration levels.
- Deer management is an effective tool to allow forest regeneration to recover.
- NCA parks managing overabundant deer have generally seen an increase in the number of tree seedlings. For example, since deer management began, at Catoctin tree seedlings have increased 13-fold since and at Rock Creek Park tree seedling density has almost tripled.
- Sites around the Potomac Gorge have some of the highest "Stocking Index" scores in NCA. The "Stocking Index" is one way we assess a forest's regeneration capacity.

Read [Forest Regeneration 2021](#) for more details.

## Fifteen Years of Frog Monitoring with I&M

Since 2005, the National Capital Region Inventory & Monitoring Network (NCRN I&M) has partnered with the US Geological Survey to monitor amphibians in NCA parks. This monitoring of stream and wetland habitats began in 2 parks and recently expanded to 11 parks following habitat mapping efforts.



Now, the report, "[Summary and Synthesis of 15 Years of the Amphibian Vital Sign Monitoring in the National Capital Area Inventory and Monitoring Network](#)" is available on IRMA Data Store. It summarizes the monitoring efforts, changes in the program over time, and findings based on data from 2005-2018.

- Monitoring showed 15 species (or species complexes) in wetland sites and 5 species of salamander in stream sites.
- More than half of NCA wetland populations (65%) are estimated to be stable, 2% are increasing, and 33% indicate a negative trend.
- Stream salamander populations appear to be relatively stable, with population fluctuations likely related to available annual surface water.
- Overall, factors promoting occupancy and persistence of amphibians from year to year included: sites that are large, well-connected to other breeding habitats, forested, and with low conductivity water quality.

See the full [15 Year Amphibian Monitoring Report](#) for more details.

## Welcome David Jones, New I&M Data Manager!



The National Capital Region Inventory & Monitoring Network (NCRN I&M) is pleased to welcome David Jones as the new network Data Manager.

See [David's Bio on the NCRN Contact Us page](#).

## Review: Incorporating Traditional Ecological Knowledge at Acadia

By Crystal Chen, NCRN I&M Science Communication Intern

As a new science communicator in an NPS internship with NCA's Inventory & Monitoring network, one of my goals is to practice inclusive communication when writing about the environment. It has been challenging to find the right opportunities to do this, but I am inspired by the recent NPS *Park Science* article,



"[Gathering Sweetgrass and Renewing the Past: How Science at Acadia is Making a Course Correction](#)" that describes how Indigenous Wabanaki ecologists and archeologists are sharing their knowledge, and generating new knowledge, of sweetgrass and cultural sites at Acadia National Park.

Author Catherine Schmitt describes the challenge of inclusive science communication as, "acknowledging these diverse ways of knowing, and not perpetuating legacies of harm through our choices about language and framing."

Schmitt's article is a great piece of science writing and does a good job of exploring how we can incorporate other ways of knowing into NPS resource management. She gives the voices and experiences of Wabanaki scientists priority, while describing how scientists broadened their research approach to incorporate traditional ecological knowledge (TEK).

TEK refers to the ongoing accumulation of thousands of years of knowledge, practice, and belief about the relationships between living beings in an ecosystem. One aspect of TEK is plant gathering. (NPS staff can learn more about TEK from [NCA's Office of Native American Affairs](#)).

The article provides an honest look at how NPS has excluded other ways of knowing, and how centering Indigenous approaches can generate a broader understanding of the environment and lead to better resource management outcomes for everyone. While science adheres to objectivity and the written word, indigenous science is built upon practical experience and oral communication. I'm excited to see how NCA parks might explore and expand the ways in which we engage ways of knowing about our environment.

Read: [Gathering Sweetgrass and Renewing the Past: How Science at Acadia Is Making a Course Correction](#) from Park Science magazine, [Volume 35, Number 1, Winter 2021 \(December 8, 2021\)](#)

## Seeking Tumbling Flower Beetles

A recent paper on mordellid (tumbling flower) beetles in the George Washington Memorial Parkway (GWMP) features six species that are probably new to science.

**However, additional specimens are needed to fully describe them. If you find tumbling flower beetles in your park that resemble those shown in figures 3, 12, 30, 32, 33 (pictured at right), or 34 of the following journal article, or for more information regarding this request, please contact [Brent Steury](#), GWMP Natural Resources Program Manager.**



Figure 33. *Mordellistena Costa* sp. 2. Left: dorsal; right: lateral. Great Falls Park, quarry, Malaise trap, 10–30 April 2009, David R. Smith and Brent W. Steury.

[Steury BW and Steiner WF, 2021. The Tumbling Flower Beetles \(Coleoptera: Mordellidae\) of the George Washington Memorial Parkway, Virginia, USA. The Maryland Entomologist 8\(2\):52-92](#)

## Analyzing Marsh Elevation Data



An [article related to marsh elevation monitoring](#) was published in the journal of Environmental and Ecological Statistics in January 2022. It came from a multi-agency collaboration exploring how to consistently analyze data gathered using Surface Elevation Tables (SET).

## Nature News: ICYMI

In Case You Missed It (ICYMI), here's a roundup of nature news and resources from the last quarter that may be of interest to those working with natural resources in the National Capital Area. This includes articles from InsideNPS, NPS press releases, and new NPS web and social media content.

[Deer in DC-area national parks test positive for the virus that causes COVID-19](#) (NPS news release: 2/25/2022)

[Meg White named to lead NRSS Inventory & Monitoring Division](#) (InsideNPS: 2/23/2022)

[Save the Date: Wildland Fire Resource Advisor \(N-9042\) Training - May 2022](#) (InsideNPS: 2/23/2022)

[NPS FY 2022 Conservation and Outdoor Recreation Challenge Cost Share Program](#) (InsideNPS: 2/22/2022)

[2022 peregrine falcon seasonal closures - Harpers Ferry National Historical Park](#) (NPS news release: 2/11/2022)

Overview material from [2022 IMD Scientists' Training](#) (held January 24-February 17, 2022) (NPS IMD Sharepoint: 2/17/2022)

[New Article Describing Web-based Decision Tool for Invasive Species \(INHABIT\)](#), (NRSS Sharepoint: 2/10/2022)

[INHABIT: A web-based decision support tool for invasive plant species habitat visualization and assessment across the contiguous United States](#) (PLOS One: 2/8/2022)

[Great Backyard Bird Count](#) (InsideNPS: 2/9/2022)

[Call for Nominations for Excellence in Cultural & Natural Resources Stewardship Management due April 1, 2022](#) (InsideNPS: 1/31/2022)

[Coyote sightings often cause neighborhood chatter, but the animals have long been nearby - The Washington Post](#) (Washington Post: 1/26/22)

[The Fourth Edition of Wild and Scenic River Currents is Now Available](#) (InsideNPS: 1/26/2022)

[C2 Announces Environmental Justice Webinar Series](#) (InsideNPS: 1/26/2022)

[Manassas builds log shelter from battlefield trees](#) (NPS news release: 1/11/2022)

[Explore how the NPS - Rivers, Trails and Conservation Assistance Program \(NPS-RTCA\) supports the NPS mission by working with communities and land managers across the country](#) (InsideNPS: 1/4/2022)

[Managing a Right-of-Way Helped This Park Restore Its Grasslands](#) (Park Science: 12/8/2021)

## Calendar

### APRIL

**20-21. 2022 Spotlight on National Park Resources in NCA.** Virtual sessions will be held from 8:00 am to 12:00 pm both days. All are welcome. Contact [Ann Gallagher](#) for details.

### NOVEMBER

**1-3. Resilient Forest Management Workshop.** Workshop for all Region 1 natural resource managers, regional staff, and I&M employees, focused on management strategies for promoting resilient forests. Hosted by Inventory & Monitoring. To be held at the National Conservation Training Center. Contact [Liz Matthews](#) for details.

*The Natural Resource Quarterly provides updates on the status of natural resources and science in the parks of Interior Region 1 - National Capital Area.*

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