



**National Park Service**

## Fall 2023 Natural Resource Quarterly

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## Natural Resource Quarterly | Fall 2023

*Newsletter of Natural Resources in the National Capital Region*

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## A Deeper Dive into Freshwater Streams



*Photo: Researcher Dan Myers (in red hat) with NPS staff monitoring stream water quality (left to right: Lindsay Ashley, Amy Fowler, and Galen Oettel). Credit: NPS/Ashley*

### Salinity in Streams

What are potential stressors to park waters? This question is one that has guided the National Capital Region Inventory & Monitoring Network's (NCRN I&M) stream water monitoring since it began in 2005. And in that time, one of the lurking concerns that has emerged is salinity.

[Many freshwater streams in the National Capital Region are influenced by salt.](#)

Preliminary analysis by NPS collaborators at Stroud Water Research Center shows that it's the streams whose watersheds extend beyond park boundaries that are the ones getting salty. This means urban parks like Rock Creek Park and National Capital Parks-East are the most impacted, while streams whose watersheds are more contained within the park, like those at Prince William, are less salty.

NCRN I&M and the Stroud Center are looking at deicing (road) salt data from the US Geological Survey and a land use analysis from satellite data to explore this phenomenon and plan to formally publish results in coming years.

### The Stroud Center and NPS: A Partnership

When it comes to studying our streams, we're not working alone. Stroud Water Research Center partners with NCRN I&M through a cooperative agreement established in 2019 and is involved in several different projects.

One project involves a review of NCRN's stream water quality protocol and assisting with any needed updates. It also includes assistance with reviewing long-term monitoring data and preparing that data for publication. The published water quality data will provide vital insights on the status and trends of water chemistry, nutrient concentrations, and surface water dynamics in dozens of park streams over nearly two decades.

The Stroud Center is also working on a separate project linking National Capital Region (NCR) park watershed characteristics to water quality. Postdoctoral Associate Dan Myers, Ph.D., guided a collaboration with NASA DEVELOP (a program that pairs early career researchers with organizations using NASA data to address environmental issues) that used satellite and water quality data to examine long-term changes in land cover, climate, and hydrology in NCR freshwater systems.

Additionally, the Stroud Center leads [NCRN's stream fish monitoring efforts](#). Using electrofishing, Stroud Center scientists collected data on freshwater fish in NCR parks in its most recent monitoring period from 2019-2022.

NCR's Interpretation and Education team has also engaged the Stroud Center's education staff in a project to look at how schools get out of the classroom post-pandemic and how parks host watershed education programs. Stroud Center will use this data to provide recommendations for improving watershed education in NCR parks.

*The projects described in this article are facilitated by an agreement through the [Chesapeake Watershed Cooperative Ecosystems Studies Unit \(CW CESU\)](#). To learn more, contact CW CESU Research Coordinator Danny Filer at 301-491-2465.*

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## Reporting Invasives: Extra Credit with iNaturalist

***"Report any sightings to your local county authorities or department of agriculture."***

That's the end of [a recent Washington Post article on the invasive hammerhead worm \(Bipalium\)](#). And it **IS** solid advice. But what if you've already done that, and as a keen observer of nature you want to go the extra mile? Take several photos with your phone, describe the thing as best you're able, and add your observation to iNaturalist.



In addition to gathering information from formal channels (like [foresthealth@DOF.virginia.gov](mailto:foresthealth@DOF.virginia.gov) or [bugbusters@wvda.us](mailto:bugbusters@wvda.us)), many federal and state agencies regularly scan the horizon for species of concern on platforms including iNaturalist. And groups like the [National Capital Region PRISM \(NCR Partnership for Regional Invasive Species Management\)](#) use a special iNaturalist project called [Invader Detectives: National Capital Region](#) to track reports of introduced species that are beginning to spread through natural areas.

So, whether you see an invasive snail, a troublesome plant, or the latest forest-destroying bug—make a formal report to your local official (and National Park staff if you're in a park), and then, put on your citizen science hat and share your observation through iNaturalist.

Observations from iNaturalist were cited in the hammerhead worm article mentioned above, which stated, "According to the [iNaturalist app](#), Arlington has 43 instances of the worms, D.C. has 16, Virginia has 248 and Maryland has 91 over the past 15 years."

*Photo: Spotted lanternfly. Credit: NPS/Brolis*

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## Battling to Save Grassland Birds

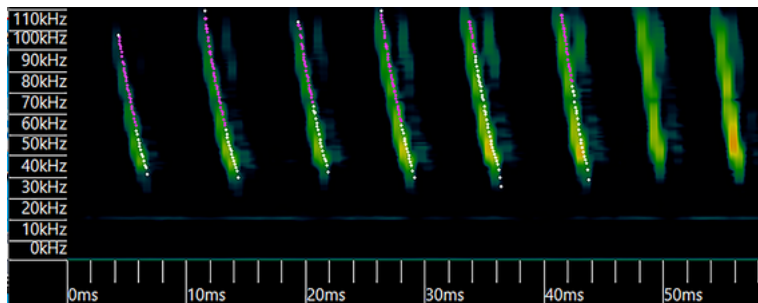




A recent analysis of two focal grassland birds—the eastern meadowlark and the grasshopper sparrow—at four battlefield national parks, showed that how grasslands are managed effects the survival and reproduction of birds in those places. Researchers led by Megan Massa used eight years of NPS grassland bird monitoring data to learn how different practices, in particular farming practices, help conserve these vulnerable species. Read more in the article: [Battling to Save Battlefield Birds](#)

*Image: Grassland bird infographic. Credit: Cornell Lab of Ornithology*

## DC Area Bats Spur Hope for Bats Across the US



Since they were first documented in 2014, there have been reproducing populations of northern long-eared bats in urban Washington, DC. These populations of endangered bats are part of a much larger story of bat survival across the US in the face of white-nose syndrome. The article, [Bats Are in Danger. Here's How and Why We're Helping Them](#), featured in the Summer 2023 issue of Park Science magazine, describes how national parks in the National Capital Region and beyond are helping us all to learn about and care for bats and the places they inhabit.

*Image: Spectrogram showing multiple echolocation calls of a northern long-eared bat. They range from about 40 to 110 kilohertz (1 kilohertz = 1,000 hertz) and occur every 10 milliseconds. Humans hear sounds between 20 and 20,000 hertz, so these high-pitched calls are out of range of human hearing. The bat produces these sounds and is able to identify insects and other objects by listening to and interpreting the echoes bouncing back. Credit: U.S. Geological Survey / Mark Ford*

## Inspiring Curiosity Science Ed Videos





The new short NPS film "Timber Rattlesnake Mothers" was featured in the "Picture This" feature of Park Science magazine. To read the article and see the video, go to: [Timber Rattlesnakes Show Their Tender Side](#)

The film (and two others on rattlesnakes) was created by Grace Eggleston and features the late rattlesnake expert W. H. Martin and Catoctin Mountain Park ranger Conrad Provan. Each film adds to the viewer's knowledge of rattlesnake behaviors and ecological contributions. "Timber Rattlesnake Mothers," celebrates the underappreciated maternal side of the [iconic, misunderstood timber rattlesnake](#) (*Crotalus horridus*).

The rattlesnake films, and many others, were created through the Urban Ecology Research Learning Alliance (UERLA) by American University film students. The early-career filmmakers developed interconnected films related to natural science in national parks as part of an "Inspiring Curiosity" science education video series. These films are coming soon to [the UERLA website](#).

*Image: A screen capture from a new NPS video on timber rattlesnake mothers.*

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## 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 Region. This includes NPS press releases, new NPS web and social media content, and articles from InsideNPS (available to NPS only).

[Hike Monocacy National Battlefield's newest trails on August 25! - Monocacy National Battlefield](#) (NPS News Release: 8/17/2023)

[The Eclipses Are Coming! The Eclipses Are Coming!](#) (NPS Sharepoint: 8/11/2023)

[Inflation Reduction Act to invest \\$446,000 in forest restoration at Catoctin Mountain Park - Catoctin Mountain Park](#) (NPS News Release: 8/8/2023)

[Park Science Summer 2023 Issue is Here!](#) (NPS Sharepoint: 8/7/2023)

[At Fletchers Cove, Immigrants Fish For Joy, Connection And Healing](#) (DCist; 7/12/2023)

[Peregrines Fledge 2023 - Harpers Ferry National Historical Park](#) (NPS News Release: 6/20/2023)

[Announcing the 2022 Share the Experience Employee Photo Contest Winners and 2023 Contest Launch!](#) (NPS Sharepoint: 6/16/2023)

[National Park Service expected to receive more than \\$11 million to improve parks in Southeast Washington, D.C. - National Capital Parks-East](#) (NPS News Release: 6/6/2023)

[National Park Service completes flood prevention project along the C&O Canal towpath - Chesapeake & Ohio Canal National Historical Park](#) (NPS News Release: 6/2/2023)

[National Park Service approves plan to rehabilitate Tidal Basin, West Potomac Park seawalls - National Mall and Memorial Parks](#) (NPS News Release: 6/1/2023)

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## Calendar

### SEPTEMBER

**9:** Invasive Plant Removal at RFK Meadow by Kingman and Heritage Island Park. [Register here](#). 10am-12pm.

**22:** National Public Lands Day (NPLD) Invasive Plant Removal at RFK Meadow



by Kingman and Heritage Island Park. [Details and Registration Link](#). 9:30am-12pm.

**22: NPLD Invasive Plant Removal at Oxon Hill.** [Details and Registration](#). 9:30am-12pm

**23. The 30th annual National Public Lands Day**  
(NPLD). [www.nps.gov/subjects/npscelebrates/public-lands-day.htm](http://www.nps.gov/subjects/npscelebrates/public-lands-day.htm)

**23: NPLD Invasive Plant Removal at Theodore Roosevelt Island.** [Register Here](#). 9:30am-12pm

**23: NPLD English Ivy treatment at Riley Locks.** 9am-12pm. [National Public Lands Day Cleanup Project at Rileys Lock, C&O Canal – C&O Canal Trust](#)

## 2024

### APRIL

**4. 12th Spotlight on National Park Resources in the National Capital Region.** Details forthcoming.

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The *Natural Resource Quarterly* provides updates on the status of natural resources and science in [National Capital Region](#) parks.

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