



NCRN Natural Resource Quarterly

Fall 2015

Protecting & Restoring Globally Rare Habitat in the Potomac Gorge

Mark Frey, Andrew Landsman, Liz Matthews, and Brent Steury

One plant at a time. That's how an NPS team is tackling the restoration of 18 acres of globally rare habitat in the Potomac Gorge. A non-native invasive is removed, and a native is planted, and another invasive is removed. Multiply this effort by a handful of people over scores and scores of days and recovery can begin for dozens of rare plant species and communities making up some of the most diverse plant life in the United States.

The project, officially named "Protect Globally Rare Habitat of the Potomac Gorge Through Native Species Restoration" (PMIS 169138) involves seed collection, rare plant propagation, and re-vegetation, but the primary activity is invasive plant control in high priority sites. Control efforts are being conducted by Student Conservation Association (SCA) interns Sonali Singh, Chris Acosta, and Matt Reilly and staff from the National Capital Region's Exotic Plant Management Team (EPMT). This year, the SCA interns spent ~160 person days working in the gorge along with EPMT staff who worked ~80 person days. Park and regional staff spent many hours planning, collecting seed, and providing guidance.

Most invasive plant control focused on cutting and chemically treating woody shrubs and vines near the gorge. In addition, herbaceous plants have been removed by hand in the most sensitive areas.

Seed collection and propagation efforts are focused on the vulnerable Virginia sida (*Sida hermaphrodita*; a G3, S1 ranked species). The population of *Sida* on the George Washington Memorial Parkway (GWMP*) side of the gorge is readily accessible but very small. NPS partnered with the non-profit native plant nursery run by Earth Sangha to propagate *Sida hermaphrodita* seed at no charge. The non-profit also sold NPS a range of native woody and herbaceous plants for planting at other GWMP sites this fall.

The gorge restoration project follows-up on the recommendations of a 2002 Site Conservation Plan (PMIS 47619) developed in partnership with the Nature Conservancy. Based on the great success of 2015 efforts, additional funds have



SCA intern Sonali Singh treating invasive woody plants on Bear Island.

been secured to support more work in 2016. We will be recruiting three 16-week SCA interns to conduct work in the Potomac Gorge next year under the direction of EPMT staff. In addition, we will recruit a 10-month SCA for volunteer coordination. The interns will directly bring youth to work in our parks and they will recruit and lead additional youth volunteers.



Virginia sida (*Sida hermaphrodita*)

For more information on this project, please contact EPMT Liaison Mark Frey at NPS email or 202-339-8317.

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Avian Influenza

Scott Bates, NCR Wildlife Biologist

Asian highly pathogenic avian influenza (HPAI) A (H5N1) virus occurs mainly in birds and is highly contagious among them. HPAI Asian H5N1 is especially deadly for poultry. The virus was first detected in 1996 in geese in China.

Following a December 2014 outbreak of the disease in wild birds, captive wild birds, backyard poultry, and commercial poultry in the Pacific, Central, and Mississippi flyways, mortality surveillance of wild birds has increased. So far, the closest outbreak to the National Capital Region (NCR) was in suburban Detroit where HPAI was found in 12 Canada geese in May 2015.

An NPS response plan published in 2006¹ recommends actions to be taken at the park level if HPAI occurs in North America and is close enough to an NPS unit that restrictions are imposed on animal movement, management, or on park visitors.

The following mortality events in NCR parks should be reported to NCR Wildlife Biologist Scott Bates:

- Mortality involving 5 or more waterfowl (ducks, geese, or swans) or other water birds (loons, grebes, coots, shorebirds, or wading birds such as egrets, herons, or

1 NPS Biological Resource Management Division Wildlife Health Program. 2006. Highly Pathogenic Avian Influenza in Wildlife Preparedness and Communication Plan. <https://irma.nps.gov/App/Reference/Profile/617504>



Photo: NPS/Kyle Horton

Wild birds of all kinds are potentially vulnerable to avian influenza, including birds like this green heron (*Butorides virescens*).

cranes).

- Mortality involving gallinaceous birds such as wild turkeys and quail.
- Mortality involving raptors, waterfowl, or avian scavengers (ravens, crows, or gulls) observed with clinical signs consistent with neurological impairment, which may include swimming or walking in circles, moving the head in a “jerky” motion, and holding the neck and head in an unusual position (more drastic than simply drooping).

The neurological signs associated with HPAI infection are not well characterized; please collect detailed descriptions of the observed signs. Video and photos are strongly encouraged.

Stream Monitoring with Continuous Water Loggers

It’s been three years since NCRN Inventory & Monitoring began pilot testing continuous water loggers in stream water quality monitoring! And since then, we’ve seen some interesting phenomenon play out in NCR streams and learned a few lessons.

The loggers take readings for dissolved oxygen, temperature, and conductivity, every 15 minutes, 24 hours a day. We’ve seen conductivity spikes after road salting in winter, how water temperature drops with storms, and how conductivity decreases as flows increase and dissolved material is diluted. We’ve also realized what a challenge it is to manage 35,000 data points a year versus twelve.

And another lesson? In some places, we need to upgrade the protective housing that holds loggers in streams. Wolf Trap Creek taught us that. Loggers there were regularly getting completely buried in sediment by storms and are now temporarily removed until we can re-install using the new housing pictured at right.

We are still installing loggers in new locations and will soon be adding them to Still Creek (in Greenbelt Park) and to Antietam Creek next to a USGS stream gauge (in Antietam National Battlefield).

For more on NCRN I&M stream water quality monitoring, visit: http://science.nature.nps.gov/im/units/ncrn/monitor/water_quality/index.cfm

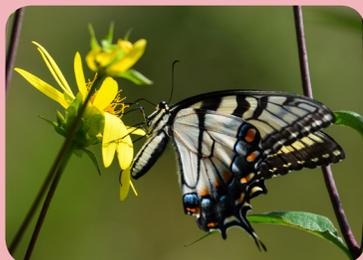
This new PVC housing is designed to better protect continuous water loggers from stream debris and sediment.



Fall Wildflower Walk at Manassas

NCRN I&M Botanist

Liz Matthews will lead a fall wildflower walk at Manassas on Friday, September 25 with NPS volunteer Sheryl Pollock. The 2-hour walk leaves from Deep Cut parking area at 10am. RSVP to Liz by September 18 via NPS email.



A tiger swallowtail female on rosinweed (*Silphium integrifolium*) at Manassas. Photo by Sheryl Pollock.

I&M Fall Field Schedule

Check the "NCRN I&M Activity" google calendar for specific dates or contact Megan Nortrup by NPS email for details.

September, October, and November 2015	Amphibian Habitat Mapping	Forest Vegetation & Soils	Marsh Elevation (SET)	Water (quarterly)	Water (continuous)
Antietam National Battlefield		X		X	
Catoctin Mountain Park		X		X	X
Chesapeake & Ohio Canal NHP		X			
George Washington Memorial Parkway	X	X	X	X	
Harpers Ferry NHP		X		X	
Manassas National Battlefield Park		X		X	X
Monocacy National Battlefield		X		X	
National Capital Parks - East	X	X	X	X	
Prince William Forest Park		X		X	X
Rock Creek Park		X		X	X
Wolf Trap NP for the Performing Arts	X	X		X	X



A new "IPM Pest Brief" on viburnum leaf beetle is now available. Contact IPM Coordinator Jil Swearingen by NPS email for copies. This pest has not yet been detected in NCRN I&M forest vegetation monitoring, but please keep an eye out! Photo of viburnum leaf beetle by Paul Weston, Cornell University.

Who's the I&M Crew?

2015 was a great summer field season for NCRN Inventory and Monitoring. We not only kept up with our core monitoring activities for forest birds, amphibians, forest vegetation (thank you Andrejs, Allen, Heather, and Nicole!), and stream water quality (thank you Noah!), but we also had a fantastic crew of interns and seasonals to help us with a few additional projects.

These included an inventory of eastern hemlocks (thanks Daniel Cunningham, Jaelyn, and Jordan!), and forest soil monitoring (thanks Daniel Colopietro and Adam!). We also got more time from our collaborators (not pictured) at University of Delaware to do another year of grassland bird monitoring, and more time from the USGS Patuxent Wildlife Research Center for amphibian monitoring in new parks, and amphibian habitat mapping.



Front (L to R): Tonya Watts, Margie Shaffer, Nicole Parker, Liz Matthews, Allen Dupre, Heather Calhoun, Jaelyn Bos, Lydia Nichols-Russell, Daniel Cunningham.

Back (L to R): Noah Lee, Megan Nortrup, Pat Campbell, Jordan Psaltakis, Andrejs Brollis, Daniel Colopietro, JP Schmit, Adam Lee, Leslie Frattaroli. (Not pictured: Geoff Sanders)

Park Acronyms

ANTI = Antietam National Battlefield
 CATO = Catoctin Mountain Park
 CHOH = Chesapeake & Ohio Canal National Historical Park
 GWMP = George Washington Memorial Parkway
 HAFE = Harpers Ferry National Historical Park

MANA = Manassas National Battlefield Park
 MONO = Monocacy National Battlefield
 NACE = National Capital Parks - East
 NAMA = National Mall and Memorial Parks
 PRWI = Prince William Forest Park
 ROCR = Rock Creek Park
 WOTR = Wolf Trap National Park for the Performing Arts

Vine Identification and Upland/Lowland Tree Briefs

NCRN I&M is always looking for new ways to dig into our long-term monitoring data to share new insights. Recently, a few new treasures have been mined from the rich trove that is NCRN I&M's forest vegetation data—in the form of resource briefs on vines and upland and lowland forest trees.

Vines in Rock Creek

Need to tell a *Campsis radicans* from a *Celastrus orbiculatus** in winter? Is there room in your heart to embrace poison ivy? (Figuratively only please.) A new resource brief on Rock Creek vines with a key to common vine identification (both natives and non-native, invasives), as well as a discussion of the role of vines in forest ecosystems is now available.

Thanks go to Rock Creek's Ana Chuquin, NCRN Botanist Liz Matthews, and University of Maryland summer intern Carson Coriell for their contributions.

More vine resource briefs are planned. If you are interested in a vine



Trumpet creeper (*Campsis radicans*) is included in the handy identification key of the new Rock Creek vine resource brief.

Photo: NPS/Nortrup

brief and ID key for the vines specific to your park, please contact Megan Nortrup at NPS email or 202-339-8314. The Rock Creek brief is available at: http://science.nature.nps.gov/im/units/ncrn/assets/docs/RBs/ROCR_vines_rb.pdf.

Trees in Upland and Lowland Forests of C&O Canal

Another new resource brief describes the dominant tree species of upland and lowland forests in C&O Canal NHP. Forests show two very distinct groups of tree species based on their elevation and frequency of flooding. This brief uses a measure called tree importance value to assess the dominance of different species.

Thanks go to NCRN Botanist Liz Matthews and University of Maryland summer intern Lydia Nichols-Russell for their contributions. The CHOH brief is available at: http://science.nature.nps.gov/im/units/ncrn/assets/docs/RBs/CHOH_Tree_IV_RB.pdf.

*a Trumpet creeper from an Oriental bittersweet?

Calendar

SEPTEMBER

1. NCR IPM Training: Protecting Natural and Cultural Resources. 10 am - 3 pm. MONO Historic Preservation Training Center. Contact Jil Swearingen at NPS email or 202-339-8318.

25. Fall Wildflower Walk at Manassas NBP. 10am - 12pm. Contact Elizabeth Matthews by NPS email by Sept. 18 to RSVP.

29. Urban Forest IPM Workshop. 9 am - 3:30 pm. U.S. National Arboretum, Washington, DC. Contact Jil Swearingen at NPS email or 202-339-8318.

OCTOBER

15. Natural Resources Advisory Team (NAT) Meeting. WOTR.

NOVEMBER

13. Maryland Water Monitoring Council 21st Annual Conference. North Linthicum, MD. <http://mddnr.chesapeakebay.net/MWMC/MWMC2010/index.asp>

2016 NPS's Centennial Year!

APRIL

21. Spotlight on National Park Resources Biennial Meeting. NCTC, Shepherdstown, WV.

Visit NCRN I&M online at:

Website: <http://science.nature.nps.gov/im/units/ncrn>
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Twitter: <https://twitter.com/NPSNCRN>

NCRN Natural Resource Quarterly offers updates on the status of park natural resources and Inventory and Monitoring (I&M) "vital signs" for the NPS National Capital Region Network (NCRN).

Questions or comments? Contact Megan Nortrup by NPS email or at 202-339-8314

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