

Archived Updates

April 1, 2018: Trustees are currently working on getting the first round of funding on the ground to implement the [selected projects](#).

For most of the land protection projects, our partners are currently in the negotiation phase or are completing preliminary surveys and other tasks necessary for successful acquisition.

Trustees are initiating funding agreements with partners who will be completing the selected water quality and fish habitat improvement projects. Most of these are multi-year projects, and we will continue to provide updates/photos/maps here as they progress. Headwaters, Shenandoah Valley, and Lord Fairfax Soil and Water Conservation Districts have started utilizing funds directed at agricultural best management practices.

The mussel hatcheries are initiating propagation activities in 2018 and have identified target release numbers for 2019 (released mussels will be 1-2 years old, so first release date will be in 2019 at the earliest). Throughout 2018, the hatchery staff and other partners will also work together to identify and prioritize sites in the watershed for release.

After the first round of projects are successfully underway, we anticipate funding additional land conservation and water quality projects after we determine funding availability. As was done previously, we will announce any future proposal requests here on our website and through the email distribution list.

December 8, 2017: After careful review of applications, the Trustees have jointly decided to move forward with [select projects](#).

These projects will protect approximately 2,400 acres and restoration activities will occur on an additional 1,400 acres. Over 14 miles of streams will be protected, including headwaters streams, tributaries, and the South or South Fork Shenandoah Rivers. These projects will provide habitat for the same types of wildlife that were impacted from the release of mercury, as well as other unique biological resources.

The projects are located within the South Fork Shenandoah River Watershed, the City of Waynesboro, and Augusta, Rockingham, and Page Counties. Restoration partners and proposed projects are listed below. More details on projects will be provided as landowner negotiations and restoration plans develop.

December 6, 2017: Governor Terence R. McAuliffe will announce projects selected by the Trustees from the recent proposal process related to the DuPont Waynesboro – South River/South Fork Shenandoah River/Shenandoah River settlement. The settlement was approved by the court in July 2017.

The event will be held on Friday December 8, 2017 at 2:30 pm at the Charles T. Yancey Municipal Building, 503 W. Main St, Waynesboro, VA 22980. Governor McAuliffe and representatives from the City of Waynesboro and U.S. Department of Interior/Fish and Wildlife Service will be in attendance.

Please continue to check this website for updates.

More information:

https://www.fws.gov/northeast/virginiafield/environmentalcontaminants/dupont_waynesboro.html

<https://naturalresources.virginia.gov/dupont-settlement-grants/> (link no longer active)

November 14, 2017: The Trustees are pleased to announce the first restoration project funded through the DuPont NRDAR settlement – the 84-acre expansion of the Cowbane Prairie Natural Area Preserve in Augusta County. Governor Terry McAuliffe announced the project at an on-site event on October 31 ([link to announcement](#)), thank you to all who attended.

Thanks to everyone, including The Nature Conservancy and Department of Conservation and Recreation, for your hard work in making this project happen!

The Trustees were impressed with the many applications received through the VLCF process - thanks to all the applicants for their hard work. We are currently reviewing proposals and are still on track to announce selected projects in early December. Please stay tuned to the website for more information.

August 28, 2017: Thanks to everyone for attending the meeting on August 25, 2017. Below are the presentations, links, and list of attendees for your reference.

A proposal process for projects related to land protection/acquisition and water quality improvements is now open through the Commonwealth of Virginia. Submissions must be received by October 9, 2017. More instructions can be found here: <https://naturalresources.virginia.gov/dupont-settlement-grants/> (Link no longer active. Proposal applications available below)

Resources from August 25, 2017 meeting:

Introduction PPT

Land Protection PPT

Water Quality PPT

Proposal Application for Water Quality Restoration and Protection Projects (VLCF)

Proposal Application for Land Protection and Migratory Songbird Habitat Projects (VLCF)

List of Attendees (contact information redacted)

August 14, 2017: A preliminary stakeholder meeting will be held August 25th at 1 p.m. to discuss goals of NRDAR restoration plan and the proposal process - focusing on land acquisition/protection projects and water quality improvement projects.

The meeting will be held:
August 25, 2017, 1:00 p.m. - 3:30 p.m.
Augusta County Government Center
18 Government Center Lane
Verona, VA 24482
South Boardroom
[Agenda](#)

August 1, 2017: The U.S. Fish and Wildlife Service and the Commonwealth of Virginia are excited to announce that after careful consideration, the Honorable Michael F. Urbanski, United States District Judge for the Western District of Virginia, approved the Consent Decree on July 28, 2017 for natural resource damages resulting from the release of mercury at the DuPont facility in Waynesboro, Virginia ([Signed Consent Decree](#); [Memorandum Opinion](#)). We look forward to working with interested stakeholders to implement the best projects to benefit the injured natural resources for the future enjoyment of the community. Thank you for your patience and participation throughout this process.

What's next?

Implementation of the Restoration Plan will be a multi-year effort. Trustees are finalizing procedures for project evaluation and implementation. Trustees will begin the restoration process by hosting stakeholder meetings in the region. We will provide additional information when meeting dates and locations are set. Please check our [website](#) for status updates and meeting announcements.

May 10, 2017: A public hearing has been scheduled for the proposed DuPont Waynesboro Consent Decree. See [Order](#) for more information and instructions.

Date: June 2, 2017 - Beginning at 8:30 am, members of the public who wish to speak may sign up outside the courtroom on the third floor. The hearing will begin at 9:00 am and will continue until completion, no later than 5:00 pm. Speakers are limited to 5 minutes each, and an organization may be represented by only one speaker.

Location: United States Courthouse, 116 N Main St, Harrisonburg, VA 22802.

The Final Restoration Plan and Environmental Assessment for DuPont Waynesboro - South River/South Fork Shenandoah River/Shenandoah River is available

April 20, 2017: Following a review of public comments, the U.S. Fish and Wildlife Service and the Commonwealth of Virginia have finalized the [Restoration Plan and Environmental Assessment \(RP/EA\)](#) (PDF-2.35MB) for the Natural Resource Damage Assessment and Restoration (NRDAR) process for DuPont Waynesboro – South River/South Fork Shenandoah River/Shenandoah River. The goal of the settlement is to restore habitat and resources in place of those that were affected by mercury releases, and to protect the resources for the future enjoyment of the community.

The restoration categories include: recreational fishing improvement projects, agricultural and urban best management practices, land protection, mussel restoration, and migratory songbird restoration. These projects are expected to have long-term benefits to habitat, wildlife, and recreation locally and throughout the watershed. For example, agricultural and urban best management practices will improve water quality for miles downstream and benefit fish and wildlife.

During a 45-day public comment period ending January 30, 2017, we received over 60 responses from municipalities, state and federal agencies, nonprofit entities, other organizations and associations, businesses, and private citizens on the draft RP/EA. We considered all issues raised, and Appendix D of the final RP/EA includes the Trustee responses. The United States Department of Justice and the Virginia Office of the Attorney General lodged the Consent Decree, which includes the final RP/EA attached as Appendix A, on December 15, 2016. We are currently awaiting review by the District Court for the Western District of Virginia, Harrisonburg Division.

If the court enters the Consent Decree as a final court order:

- The Trustees will finalize the process to receive and evaluate potential projects that are consistent with the restoration categories discussed above;
- Project funding will be multi-year and should be available to the Trustees 30 days following the final court order; and
- Trustees will host restoration planning and scoping meetings in the City of Waynesboro and in the affected watershed.

We are excited to continue working with the City of Waynesboro, community leaders, and others to get projects underway in the watershed. Throughout the process, status updates on each category will be posted on this webpage.

Under federal law, federal and state agencies and Native American tribes are authorized to act as trustees on behalf of the public for natural resources they own, manage or control. In this role, trustees assess and recover damages or implement restoration projects to compensate for injuries to natural resources due to hazardous substance releases, such as mercury.

February 3, 2017: The comment period for the draft Restoration Plan/Environmental Assessment closed Monday, January 30, 2017. Thank you to everyone who took the time to review the draft plan and for your comments and feedback. We received over 50 emails and letters. Our next steps are to review and address these comments and work on finalizing the Restoration Plan.

Documents

[Dupont-Waynesboro Draft Restoration Plan/Environmental Assessment \(October 2016\) \(PDF\)](#)
[Restoration Evaluation Criteria Form \(1/12/2017\) \(PDF\)](#)
[Fact Sheet - Draft Restoration Plan/Environmental Assessment \(1/12/2017\) \(PDF\)](#)
[Public Meeting Presentation \(1/12/2017\) \(PDF\)](#)

Visuals

[Freshwater Mussel Restoration \(PDF\)](#)
[Migratory Songbird Full Life-Cycle Restoration \(PDF\)](#)
[Recreational Fishing Projects \(PDF\)](#)
[Projects to Improve Water Quality and Fish Habitat \(PDF\)](#)
[Land Protection, Property Acquisition and Recreational and Wildlife Enhancements \(PDF\)](#)

Mercury from industrial activities at a former E.I. du Pont de Nemours and Company (DuPont) facility in Waynesboro, VA, contaminated the South River and South Fork Shenandoah River, impacting fish, wildlife, and their habitats, including over 100 miles of river and associated floodplain and riparian habitat. Recreational fishing opportunities were also impacted from the mercury contamination, due to the fish consumption advisory on the South River and South Fork Shenandoah River.

Trustees, U.S. Fish and Wildlife Service and Commonwealth of Virginia, worked cooperatively with DuPont for over 10 years to study the impacts of mercury on natural resources. Many of the injury studies were published in peer-reviewed literature (list and links below).

Clean up activities on-site and in the South River are ongoing. Information on remediation activities is available online at:

<https://www.epa.gov/hwcorrectiveaction/hazardous-waste-cleanup-dupont-waynesboro-currently-invista-inc-waynesboro-va>

or,

<http://southriverscienceteam.org/news/>

(see: TECHDOCS → SOUTH RIVER RCRA)

Information on the NRDAR program is available online at: <https://www.doi.gov/restoration/>. For the DuPont case, see [DOI Restoration Program - DuPont Waynesboro case](#).

Case Documents

[Damage Assessment Plan \(PDF-826KB\)](#)

[Trustee MOA \(PDF-316KB\)](#)

Published studies related to the DuPont NRDAR. These studies informed the injury assessment.

Amphibian/reptile studies from South River/South Fork Shenandoah River

Bergeron, C.M., C.M. Bodinof, J.M. Unrine, and W.A. Hopkins. 2010. Mercury accumulation along a contamination gradient and nondestructive indices of exposure in amphibians. *Environmental Toxicology and Chemistry* 29(4):980-988.

Bergeron, C.M., W.A. Hopkins, C.M. Bodinof, S.A. Budischak, H. Wada, and J.M. Unrine. 2011a. Counterbalancing effects of maternal mercury exposure during different stages of early ontogeny in American toads. *Science of the Total Environment* 409(22):4746-52.

Bergeron, C.M., W.A. Hopkins, B.D. Todd, M.J. Hepner, and J.M. Unrine. 2011b. Interactive effects of maternal and dietary mercury exposure have latent and lethal consequences for amphibian larvae. *Environmental Science & Technology* 45:3781-3787.

Burke J.N., C.M. Bergeron, B.D. Todd, and W.A. Hopkins. 2010. Effects of mercury on behavior and performance of northern two-lined salamanders (*Eurycea bislineata*). *Environmental Pollution* 158(12):3546-3551.

Todd, B.D., J.D. Willson, C.M. Bergeron, and W.A. Hopkins. 2012. Do effects of mercury in larval amphibians persist after metamorphosis? *Ecotoxicology* 21(1):87-95.

Willson, J.D. and W.A. Hopkins. 2013. Evaluating the effects of anthropogenic stressors on source-sink dynamics in pond-breeding amphibians. *Conservation Biology* 27(3):595-604.

Willson, J.D., W.A. Hopkins, C.M. Bergeron, and B.D. Todd. 2012. Making leaps in amphibian ecotoxicology: translating individual-level effects of contaminants to population viability. *Ecological Applications* 22(6):1791-802.

Bird studies from the South River/South Fork Shenandoah River

Bouland, A.J., A.E. White, K.P. Lonabaugh, C.W. Varian-Ramos, and D.A. Cristol. 2012. Female-biased offspring sex ratios in birds at a mercury-contaminated river. *Journal of Avian Biology* 43:244-251.

Brasso, R.L. and D.A. Cristol. 2008. Effects of mercury exposure on the reproductive success of tree swallows (*Tachycineta bicolor*). *Ecotoxicology* 17(2):133-141.

Carlson J.R., D.A. Cristol, and J.P. Swaddle. 2014. Dietary mercury exposure causes decreased escape takeoff flight performance and increased molt rate in European starlings (*Sturnus vulgaris*). *Ecotoxicology* 23:1464–1473.

Cristol, D.A., R.L. Brasso, A.M. Condon, R.E. Fovargue, S.L. Friedman, K.K. Hallinger, A.P. Monroe, and A.E. White. 2008. "The Movement of Aquatic Mercury through Terrestrial Food Webs." *Science* 320:335.

Hallinger, K.K. and D.A. Cristol. 2011. The role of weather in mediating the effect of mercury exposure on reproductive success in tree swallows. *Ecotoxicology* 20(6):1368-1377.

Hallinger, K.K., D.J. Zabransky, K.A. Kazmer, and D.A. Cristol. 2010. Birdsong differs between mercury-polluted and reference sites. *The Auk* 127:156-161.

Hallinger, K.K., K.L. Cornell, R.L. Brasso, and D.A. Cristol. 2011. Mercury exposure and survival in free-living tree swallows (*Tachycineta bicolor*). *Ecotoxicology* 20(1):39-46.

Hawley, D.M., K.K. Hallinger, and D.A. Cristol. 2009. Compromised immune competence in free-living tree swallows exposed to mercury. *Ecotoxicology* 18(5): 499-503.

Henry K.A., D.A. Cristol, C.W. Varian-Ramos, and E.L. Bradley. 2015. Oxidative stress in songbirds exposed to dietary methylmercury. *Ecotoxicology* 24(3):520-526.

Jackson, A.K., D.C. Evers, M.A. Etterson, A.M. Condon, S.B. Folsom, J. Detweiler, J. Schmerfeld, and D.A. Cristol. 2011a. Mercury exposure affects the reproductive success of a free-living terrestrial songbird, the Carolina wren (*Thyrothorus ludovicianus*). *The Auk* 128(4):759-769.

Jackson, A.K., D.C. Evers, S.B. Folsom, A.M. Condon, J. Diener, L.F. Goodrick, A.J. McGann, J. Schmerfeld, and D.A. Cristol. 2011b. Mercury exposure in terrestrial birds far downstream of an historical point source. *Environmental Pollution* 159(12):3302–3308.

Varian-Ramos, C.W., J.P. Swaddle, and D.A. Cristol. 2014. Mercury reduces avian reproductive success and imposes selection: an experimental study with adult- or lifetime-exposure in zebra finch. *PLoS ONE* 9(4):e95674.

Wada, H., D.A. Cristol, F.M.A. McNabb, and W.A. Hopkins. 2009. Suppressed adrenocortical responses and thyroid hormone levels in birds near a mercury contaminated river. *Environmental Science and Technology* 43(15):6031-6038.

Other relevant links:

Virginia Department of Environmental Quality - South River/South Fork Shenandoah River Mercury

South River/South Fork Shenandoah River Mercury Information website

Virginia Department of Health - Shenandoah River Basin Fish Consumption Advisories

<http://www.vdh.virginia.gov/content/uploads/sites/12/2016/01/ShenandoahRiver1.pdf>

<http://www.vdh.virginia.gov/environmental-epidemiology/public-health-toxicology/fish-consumption-advisories/>

[Return to NRDAR homepage](#)