

DuPont Waynesboro Natural Resource Damages

Draft Restoration Plan and Environmental Assessment

Department of the Interior, U.S. Fish and Wildlife Service
Virginia Department of Environmental Quality

January 10, 2017



Meeting Goals/Expectations

Presentation – 6:00-6:45

- Background
 - NRDAR process
 - History of site
 - Injured resources
- Draft Restoration Plan and Environmental Assessment for South River & South Fork Shenandoah River
- Next Steps
- Trustee Contact Information

Poster Social – 6:45-8:00

Adjourn 8:30



Natural Resource Damage Assessment and Restoration (NRDAR) .. What is it?

When there is a release of hazardous substances, in accordance with the Superfund Act (CERCLA), Trustees:

- Assess injuries to natural resources resulting from the release
- Determine damages and seek compensation for injuries from the Responsible Party(ies)
- Develop, prepare and implement plans to *restore, replace, or acquire the equivalent* of injured natural resources



Clean up activities ongoing (not NRDAR)

NRDRA is separate from clean-up activities

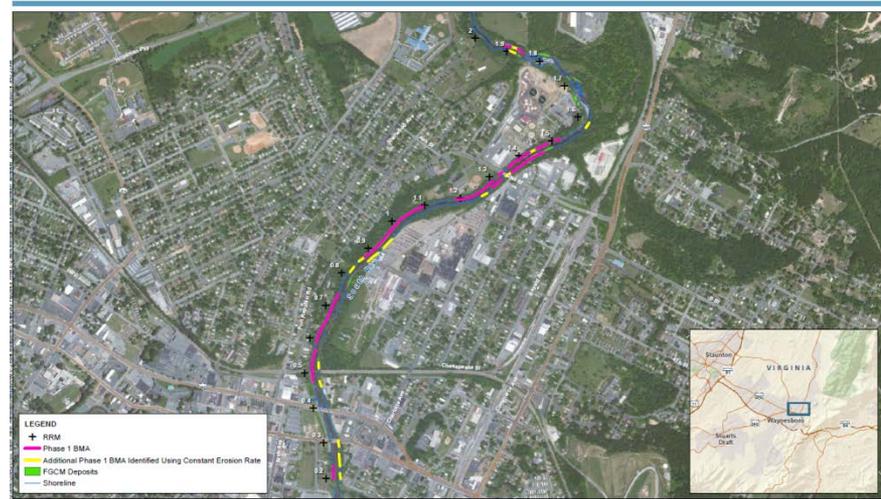
Cleanup activities ongoing under RCRA:

FINAL
INTERIM MEASURES DESIGN,
IMPLEMENTATION, AND MONITORING
WORK PLAN
PHASE 1 – SOUTH RIVER AREA OF
CONCERN 4

Prepared by
Anchor O&E, LLC
URS Corporation
E. I. du Pont de Nemours and Company

August 2014

- RCRA process downstream of facility
- Estimated to take 10 + years to complete



Who are the Natural Resource Trustees?

Superfund Act designates **federal** and **state** governments as Trustees of natural resources on behalf of the public

U.S. Department of Interior

- U.S. Fish and Wildlife Service



Commonwealth of Virginia

- Secretary of Natural Resources
 - Represented by the Department of Environmental Quality

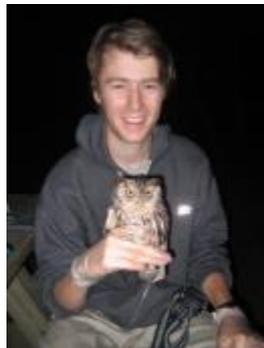


NRDAR Restoration Process

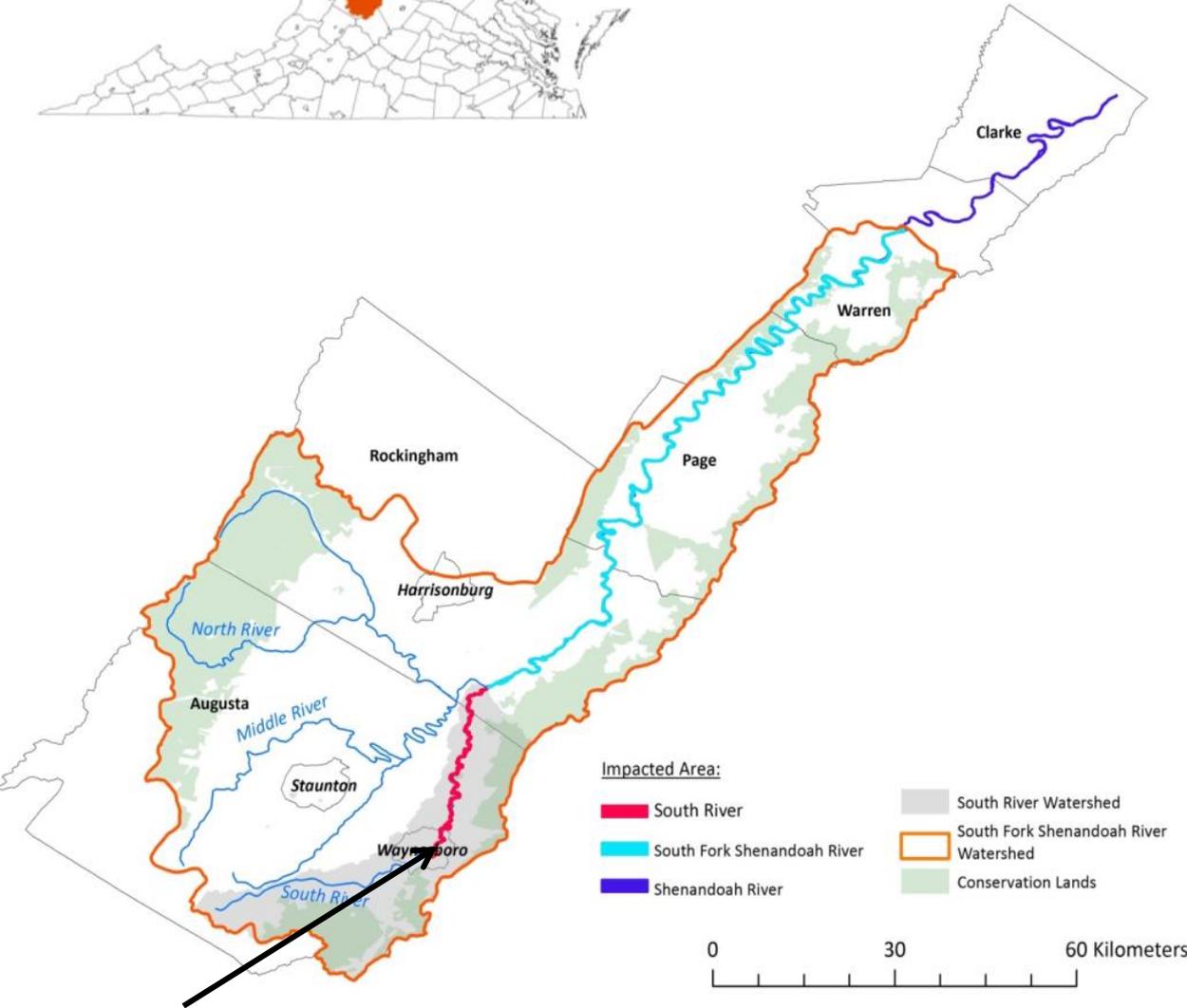
1. Injury assessment (cooperative) 2005
 2. Trustee consultation
 3. Preliminary stakeholder information meetings
 4. Identify and evaluate restoration types
 5. Prepare Draft Restoration Plan/Environmental Assessment (RP/EA) 2016
 - 6. Solicit public review and comment**
 7. Prepare Final RP/EA 2017
 8. Implement restoration projects
 9. Oversee and monitor project performance
-
- ```
graph TD; 2005 --- 2016; 2016 --- 2017;
```

# DuPont-Waynesboro Site Background/Timeline

- 1929 -present Mercury released from facility
- 1977/1980 Fish consumption ban/advisory- South River and South Fork Shenandoah River (SFSR)
- 1984 Monitoring activities for fish and sediment (State-led, 100-year)
- 2001 South River Science Team (SRST) formed
- 2005 NRDAR assessment activities begin
- 2005/2010 Cooperative Funding Agreement signed by DuPont and Trustees
- 2015 Settlement negotiations
- 2016 Draft Restoration Plan/Environmental Assessment



# Site Background



Former DuPont Facility,  
Waynesboro, VA

## Shenandoah River

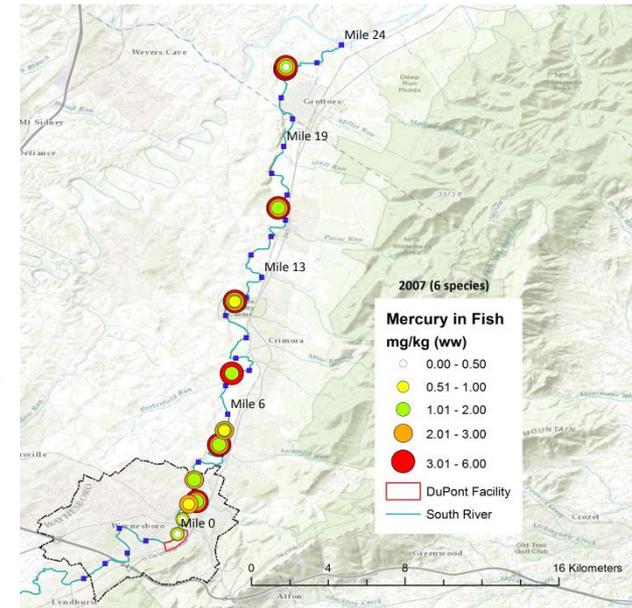
- 35 miles

## South Fork Shenandoah River

- 100 miles

## South River

- 24 miles



# Injured South River Resources

## Ecological Resources – Aquatic and Floodplain Habitat:

- Sediment
- Soil
- Mussels
- Fish
- Reptiles
- Amphibians
- Bats
- Songbirds
- Waterfowl
- Fish-eating birds
- Mammals



## Human Use - Recreational Fishing



# Injury to South River Resources:

## Fish

- Tissue mercury levels associated with effects on growth, survival or reproduction

## Songbirds

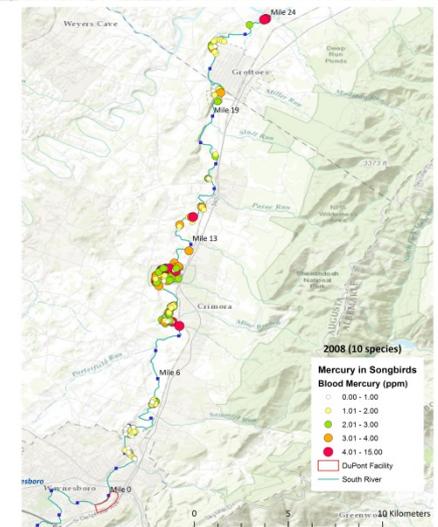
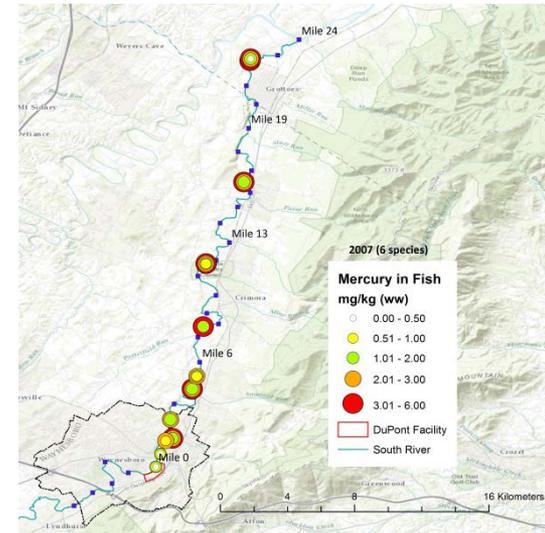
- Reproductive and other nonlethal effects associated with mercury exposure

## Amphibian and Turtle studies

- Reproductive effects associated with mercury exposure

## Recreation

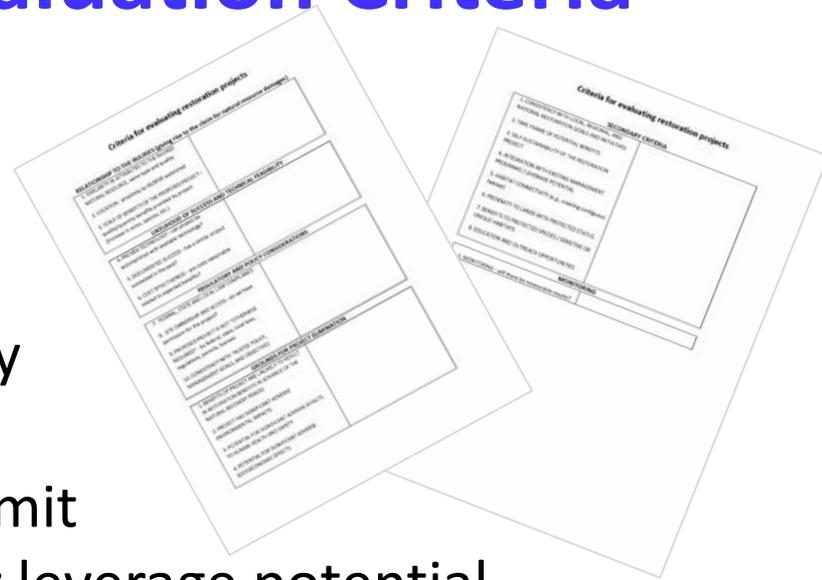
- Fish consumption advisory



**Total Settlement: \$42 M + Front Royal Fish Hatchery Renovations**

# Restoration Project Evaluation Criteria

- Connection to injured resources
- Technical and regulatory feasibility
- Cost effective to plan, design, permit and implement the alternative, or leverage potential
- Likelihood of measureable project success and sustainability
- Multiple natural resources or ecological service benefits are optimally achieved



See Draft RP/EA Section 5.1

# Inappropriate Restoration Projects/Activities

- Projects that do not restore the same or similar resources that were injured
- Activities that are “otherwise required” by law or permit



# Preferred Restoration Projects

Projects that restore, replace or acquire the same or similar natural resources:



- Human Use / Recreational Fishing

# Proposed Restoration Alternatives

| Alternative | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A           | <ul style="list-style-type: none"><li data-bbox="450 404 1456 461">. No Action, no projects implemented</li></ul>                                                                                                                                                                                                                                                                                                                                                                            |
| B           | <ul style="list-style-type: none"><li data-bbox="450 586 1624 715">. Land protection, property acquisition, and recreational and wildlife enhancements</li><li data-bbox="450 739 1818 796">. Projects to improve water quality and fish habitat</li><li data-bbox="450 815 1045 872">. Mussel propagation</li><li data-bbox="450 891 1663 948">. Migratory songbird full life cycle restoration</li><li data-bbox="450 966 1634 1023">. Recreational fishing improvement projects</li></ul> |
| C           | <ul style="list-style-type: none"><li data-bbox="450 1122 1476 1179">. All components of <b>Alternative B</b>, and</li><li data-bbox="450 1198 1354 1255">. Trout stocking and management</li></ul>                                                                                                                                                                                                                                                                                          |

## Alternative A: No Action/Natural Recovery

- No restoration would take place, injury would not be restored



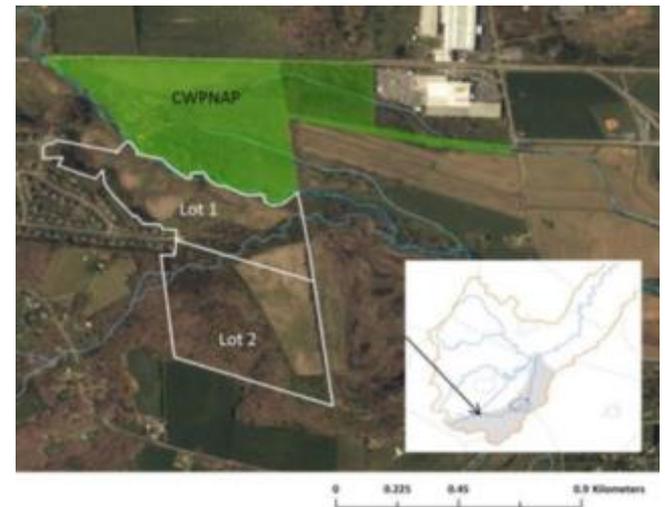
# Alternative B: Preferred Restoration Alternative

- Land protection, property acquisition, and recreational and wildlife enhancements \$19.5 million
- Projects to improve water quality and fish habitat \$10 million
- Mussel propagation and restoration \$4 million
- Neotropical migratory songbird full life cycle restoration \$2.5 million
- Recreational fishing improvement projects – access points and Front Royal Hatchery renovations \$2.5 million + Front Royal Hatchery renovations

# Alternative B: Preferred Restoration Alternative

\$19.5 M for land protection, property acquisition, and recreational and wildlife enhancements

- Restore, enhance, and/or protect riparian habitat
  - Examples: conversion of unused fields to forest, invasive species control, wetland enhancement
- Willets Tract Addition and Forest Restoration
  - Reforestation and enhancement
  - Adding to already protected area



# Alternative B: Preferred Restoration Alternative

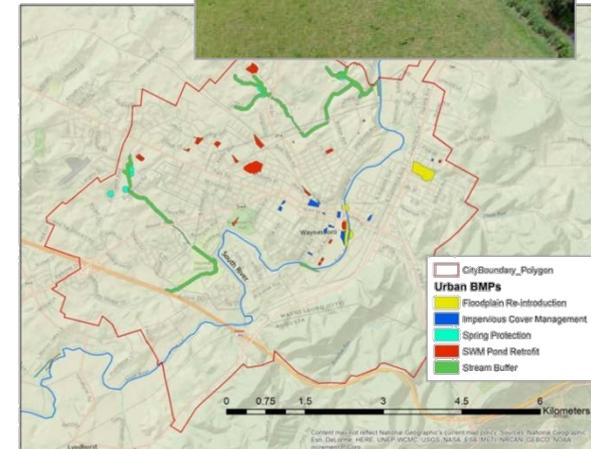
\$10 M for projects to improve water quality and fish habitat

Possible project types:

- Protecting/improving riparian buffers
- Stabilizing eroding banks
- Stormwater management pond enhancements

Potential Benefits:

- Improve water quality - reduce nutrient and sediment input
- Provide or improve habitat for fish and wildlife (birds, bats, mammals)



# Alternative B: Preferred Restoration Alternative

\$4 M for mussel propagation and restoration

- Mussel propagation and restoration of mussels to sites in the South River watershed.

## Potential Benefits:

- Restoring and stabilizing population of mussels
- Stabilize sediment and enhance bottom structure
- Improve water quality
- Increase food abundance



# Alternative B: Preferred Restoration Alternative

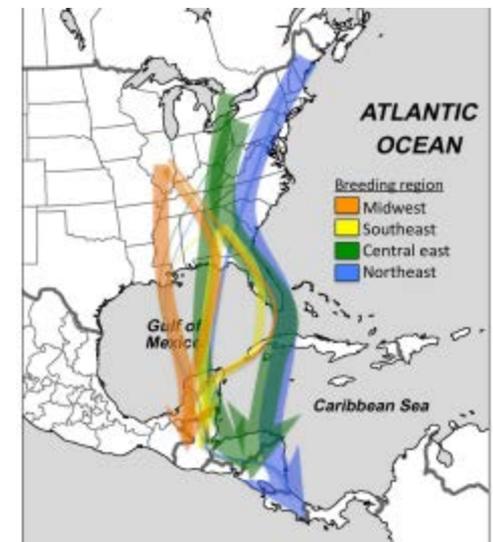
\$2.5 M for neotropical migratory songbird full life cycle restoration

- Significant songbird injury
  - Over 60% of injured were neotropical migrants



Possible project types:

- Protection of migratory bird habitat throughout life cycle



# Alternative B: Preferred Restoration Alternative

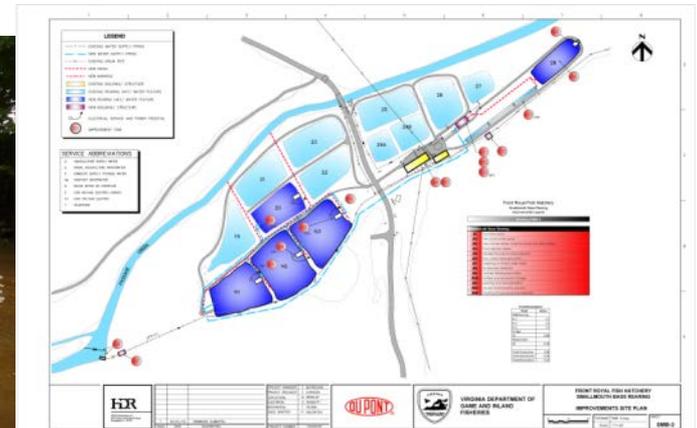
\$2.5 M + Front Royal Fish Hatchery Renovations

## Renovation of Front Royal Hatchery

- Upgrade and renovate to increase smallmouth bass production

## Access creation or enhancement

- Create or enhance access points along the rivers



# Alternative C: Non-preferred Restoration Alternative

- Recreational fishing improvement projects - access points and Front Royal Hatchery renovations \$2.5 million + a project funded directly by DuPont
- **Trout stocking and management** **\$2.5 million**
- Land protection, property acquisition, and recreational and wildlife enhancements \$19.5 million
- Projects to improve water quality and fish habitat \$7.5 million
- Mussel propagation and restoration \$4 million
- Neotropical migratory songbird full life cycle restoration \$2.5 million

# Alternative C: Non-preferred Restoration Alternative

- Trout stocking and management

Possible projects:

Trout grow-out facility

Not preferred because:

- Trout were not an injured resource
- Project would not provide as many additional benefits to other resources
- Potential high cost of additional oversight and staffing needs



# Proposed Restoration Alternative: Alternative B: Preferred Restoration Alternative

- Greatest potential to restore full suite of injured resources
- Projects are feasible, likely to succeed longterm
- Supported by natural resource stakeholders
- Cost-effective, leverage potential with other programs
- Flexible programs

# Next steps – Public Comments

- Draft Restoration Plan/Environmental Assessment available for public comment through **January 30, 2017**.

➤ Available on USFWS website:

<https://www.fws.gov/northeast/virginiafield/news/news.html>

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|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>DeFost Waywaters - South River South Fork Shenandoah River/Shenandoah River<br/>Natural Resource Damage Assessment and Restoration<br/>Restoration Plan Environmental Assessment</p> <p>Draft - October 2016</p> <p>prepared by:<br/>Natural Resource Trustee:<br/>U.S. Fish and Wildlife Service<br/>Commonwealth of Virginia</p> | <p><b>TABLE OF CONTENTS</b></p> <p>List of Figures ..... v</p> <p>List of Tables ..... vi</p> <p>List of Acronyms ..... vi</p> <p>Executive Summary ..... 1</p> <p>Chapter 1 - Introduction and Summary ..... 2</p> <p>1.1 Purpose and Need for Restoration ..... 2</p> <p>1.2 Trustee Authority and Natural Resource Damage Assessment and Restoration ..... 2</p> <p>1.3 Summary of Settlement ..... 4</p> <p>1.4 Facility History and Remediation ..... 4</p> <p>1.5 Relationship to Remedial Activities ..... 6</p> <p>1.6 Compliance with National Environmental Policy Act and Other Authorities ..... 7</p> <p>1.7 Public Participation ..... 8</p> <p>1.8 Administrative Record ..... 9</p> <p>1.9 Organization of the Draft RPEA ..... 9</p> <p>Chapter 2 - Affected Environment - Natural Resource / Watershed ..... 10</p> <p>2.1 Watershed ..... 11</p> <p>2.1.1 Assessment Area ..... 12</p> <p>2.2 Natural Resources in the SR/SFR Watershed ..... 12</p> <p>2.2.1 Birds ..... 13</p> <p>2.2.2 Fish ..... 13</p> <p>2.2.3 Reptiles and Amphibians ..... 14</p> <p>2.2.4 Birds ..... 14</p> <p>2.2.5 Mammals ..... 14</p> <p>2.2.6 Madison Cave Insects ..... 15</p> <p>2.2.7 Wetlands - Inhabits Ponds ..... 15</p> <p>2.2.8 Limestone Cave Habitat ..... 16</p> <p>2.3 Cultural and Historic Resources ..... 16</p> <p>2.4 Ecological Services ..... 17</p> <p>Chapter 3 - Injury Assessment ..... 18</p> <p>3.1 Continuation of Concern ..... 18</p> <p>3.2 Pathway ..... 19</p> <p>3.3 Injury Assessment Strategy ..... 20</p> |
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# Next steps – continued

- Prepare Final Restoration Plan
- Finalize process for project submission
  - Share information with stakeholders on DuPont Waynesboro NRDAR website (US Fish and Wildlife Service – Virginia Field Office)
- Begin selection of projects and implementation
- Oversee / monitor restoration performance
- Release annual updates of restoration progress



# Trustee Representatives – Points of Contact

- **U.S. Fish and Wildlife Service**

Anne Condon, 804-824-2407

Susan Lingenfelter, 804-824-2415



- **VA Secretary of Natural Resources**

Angela Navarro, 804-786-0044



## Updates posted here:

[https://www.fws.gov/northeast/virginiafield/environmentalcontaminants/dupont\\_waynesboro.html](https://www.fws.gov/northeast/virginiafield/environmentalcontaminants/dupont_waynesboro.html)

# Please submit comments to:

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U.S. Fish & Wildlife Service  
Virginia Field Office  
6669 Short Lane  
Gloucester, VA 23061

[anne\\_condon@fws.gov](mailto:anne_condon@fws.gov)

804-824-2407



Note - comments on CD to Department of Justice, [pubcomment-ees.enrd@usdoj.gov](mailto:pubcomment-ees.enrd@usdoj.gov)

# Special Thanks

VA Department of Environmental Quality

VA Department of Conservation and  
Recreation

VA Department of Game and Inland  
Fisheries

VA Department of Forestry

U.S. Forest Service

Natural Resources Conservation Service

City of Waynesboro

Augusta County

Valley Conservation Council

Virginia Outdoors Foundation

The Nature Conservancy

Whitescarver Resources Management LLC

College of William and Mary

Virginia Tech

James Madison University

South River Science Team

Shenandoah Riverkeeper

Trout Unlimited

Friends of the North Fork  
Shenandoah

Friends of Shenandoah River

Potomac River Smallmouth Club

DuPont

