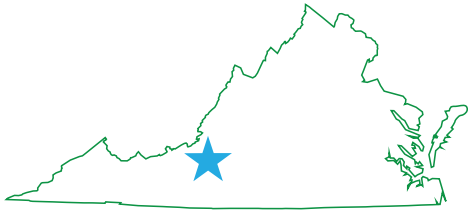


Blacksburg Country Club

North Fork Roanoke River Restoration and Riparian Buffer Establishment

Background

In 2007, chemical fungicides were unintentionally spilled into the North Fork of the Roanoke River (NFRR) on the property of the Blacksburg Country Club in Blacksburg, VA. The type of chemical released is known to cause adverse effects in fish and wildlife. The spill affected an estimated 1.4 miles of the NFRR and thousands of fish were killed. One of the species affected was the federally listed endangered Roanoke logperch (*Percina rex*).



Natural Resource Damage Assessment and Restoration

When hazardous substances enter the environment, fish, wildlife, and other natural resources can be injured. The Department of the Interior, along with State, Tribal and other Federal partners, act as “trustees” for these resources. Trustees seek to identify the natural resources injured and determine the extent of the injuries. Trustees may recover funds from responsible parties to implement restoration projects that will compensate for the injuries. Responsible parties may alternatively fund restoration activities directly. These efforts are possible through the Natural Resource Damage Assessment and Restoration (NRDAR) process, the goal of which is to restore natural resources injured by oil spills or the release of hazardous substances.



Roanoke logperch (Percina rex)

Photo credit: USGS - Noel Burkhead

Noel Burkhead/USGS

Conservation Benefits of Stream Restoration

- Reduces Sedimentation
- Improves Water Quality
- Stream and Floodplain Connectivity
- Restores Instream and Riparian Habitat for Aquatic and Terrestrial Wildlife and Plants
- Stabilizes Streambanks
- Mitigates Flood Impacts
- Increases Floodplain Access and Storage
- Provides Recreational Opportunities



USFWS

Trees planted on the riverbank of the North Fork of the Roanoke River as part of the habitat restoration. A total of 3 acres of river buffer was planted with native grasses and trees, including birch, oak, and dogwood species.

Restoration Highlights

The U.S. Fish and Wildlife Service worked with the Blacksburg Country Club (BCC) to develop six restoration projects designed to improve water quality, and protect and restore Roanoke logperch habitat on BCC property. BCC funded the projects directly and worked with U.S. Fish and Wildlife Service programs to complete the work. Approximately \$50,000 was spent on restoration projects over 3 years (2012-2015). After the restoration concluded, 5 years of monitoring was planned for each project to assess the success of the restoration activities. Monitoring is expected to end in 2019.



Before (left), during (middle), and after (right) photos of a restoration project at BCC. This section of river had significant bank erosion. Restoration activities included installation of a rock vane structure where the most excessive erosion was occurring to deflect flows to the center of the channel and reduce stress on the banks. Riverbanks were planted with woody vegetation and native grasses. Below shows the buffer of native grasses in an area that is in-play.



Modest management adjustments, such as reducing the frequency of mowing along river banks, allowed for the establishment of a grassy riparian buffer that will contribute to improved water quality without obstructing in-play areas of the golf course.

Restoration Results

1. 6 habitat restoration projects completed
2. 0.5 miles of river restored
3. 3 acres of riparian buffer restored

The success of this restoration project has encouraged additional habitat restoration projects on private lands upstream for several miles

Thanks to our partners:

- Partners for Fish and Wildlife Program
- Virginia Department of Game and Inland Fisheries
- Virginia Department of Environmental Quality

For additional information or questions contact:

Virginia Field Office
U.S. Fish and Wildlife Service North
Atlantic-Appalachian Region
6669 Short Lane, Gloucester, VA 23061
804-693-6694
<http://www.fws.gov/>



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Sources: Karl, J. 2016. Quantifying the benefits of stream restoration. Presentation at the 10th Annual Georgia Association of Floodplain Management Technical Conference, March 2016. Atlanta, GA.