



# Chesapeake Bay Field Office

## *Coastal Program*

## *Stream Habitat Assessment and Restoration Implementation Projects*

### Approach

The U.S. Fish and Wildlife Service (Service) Chesapeake Bay Field Office (CBFO) Stream Habitat and Restoration team promotes a comprehensive approach to conduct watershed and natural stream restoration activities that preserve trust species of high priority biological habitats of the United States. To achieve this, the stream team focuses on three core objectives:

- Training
- Technical Assistant
- Implementation Projects

### Types of Implementation Capabilities:

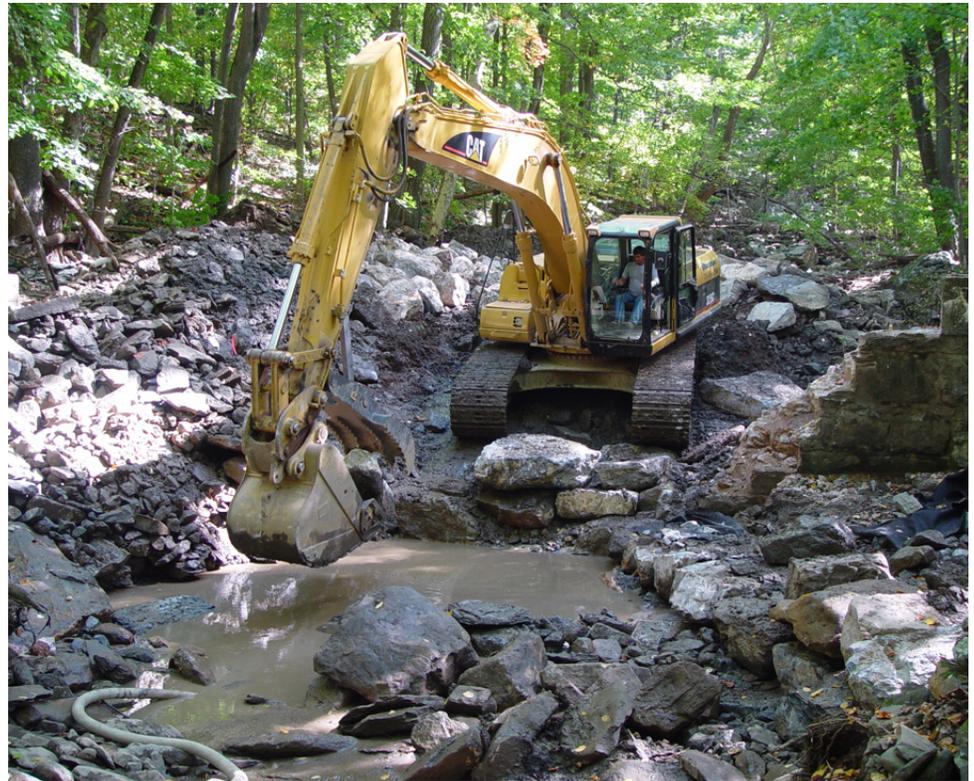
- Total station survey
- Watershed and reach function-based assessment
- Geomorphic assessment
- Biological assessment
- Hydraulic modeling
- Sediment transport analysis
- CAD generated designs
- Construction oversight
- Post construction monitoring
- Permit application packets
- As-built surveys
- Construction specifications

### Benefit to Trust Species

Restoration activities promote the establishment of critical habitat to a variety of trust species in our region including the American eel, Brook trout and American shad. The improvement of both the aquatic environment as well as the stream side forest and floodplain habitats benefit a vast array of other species as well.

### Function-Based Project Process

The Stream Team has the ability to implement stream restoration projects using a variety of design approaches. They focus on selecting the most appropriate design approach based on stakeholder goals and objectives, site



*Raven Rock 10-03-2007*

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constraints and opportunities, potential functional uplift, and implementation costs. To ensure the most appropriate design approach is selected, the Stream Team developed and uses a function-based project process. This process ensures consistency from beginning to end and allows the Stream Team to accurately determine if the project goals and objectives were achieved.

### Innovative Restoration Design and Specifications

The Stream team uses design concepts and procedures that are consistent with Natural Channel Design (NCD) Methodology as well as other design methodologies. These methodologies result in the creation of a stable

dimension, pattern, and profile for a stream type and channel morphology appropriate to its landform and valley. The channel is designed such that over time, is self-maintaining, meaning its ability to transport the flow and sediment of its watershed without aggrading or degrading.

These design methods promote the use of instream structures, bio-engineering, functional riparian corridors and floodplain connectivity. The Stream team is constantly striving to produce innovative, low impact solutions for stream functionality and watershed recovery.

### Hydraulic Modeling

The Stream Team can provide HEC-RAS modeling for stream restoration assessments and designs to compare pre and post conditions to ensure designs are appropriate for the stream system.

### Permitting

The Stream Team is able to provide assistance to partners in order to prepare and submit permit applications for restoration activities.

### Construction Oversight

The stream team has extensive experience with the direct construction oversight and management process.

The ability to provide “on the ground” support during the construction process ensures that restoration designs are implemented accurately and efficiently.

### Projects

Recently Completed Projects:

- Watts Branch Stream Restoration
- Little Catocin Creek Stream Restoration
- Raven Rock Dam Removal
- Daniels Run Stream Restoration
- Puckum Branch Dam Removal
- Octoraro Dam Removal
- Clifford Dam Removal
- Mossy Creek Dam Removal and Stream Restoration

### Current Activities

The Stream Team is currently finalizing designs for multiple dam removal projects that benefit brook trout as well as watershed scale restoration projects for TMDL reduction.

### For more information contact:

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*“We cannot make rivers whole unless we wholly understand them” Rob Brown, Wheeler School, Providence, RI*



*Raven Rock post construction 04-2010*

**U.S. Fish & Wildlife Service  
Chesapeake Bay Field Office**

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