



Habitat Management, and Protection, Conservation, and Enhancement of Coldwater Resources



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Overview

- Relationship between habitat and fish populations
- **Threats to coldwater resources**
- History of habitat improvement activities benefiting coldwater resources
- **The Division of Habitat Management and its role in trout management**
- Initiatives benefiting coldwater resources
- **Case studies**



What is fish habitat?

- A place or places in which fish live.
- In order for fish or fish populations to thrive, habitat conditions must be suitable for growth and reproduction including sufficient.....
 - **water quality/quantity**
 - **migration routes**
 - **spawning sites**
 - **feeding sites**
 - **shelter, etc.**



Habitat Management

- The characteristics of the habitat play a large role in determining the numbers, sizes, and species that can be sustained.
- Habitat management is a vital aspect of fisheries management because it affects fish populations.



Age/size and species will help determine habitat requirements





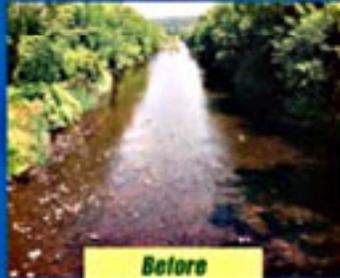
Great Fishing Needs Great Habitat



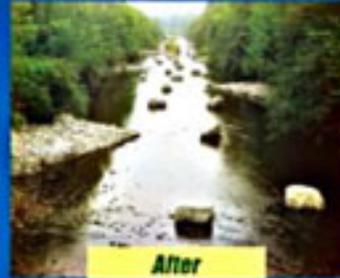
STREAM AND CREEK HABITAT IMPROVEMENT



Brown Trout



Before



After

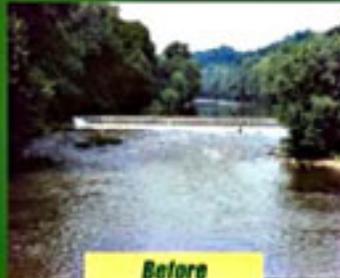


Great Fishing!

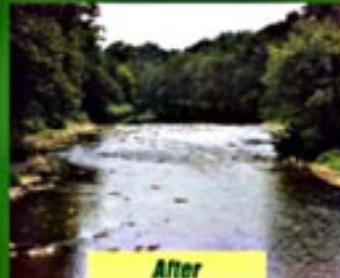
DAM REMOVAL AND HABITAT IMPROVEMENT



American Shad



Before

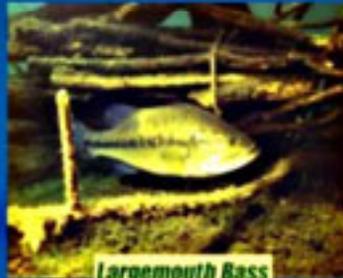


After

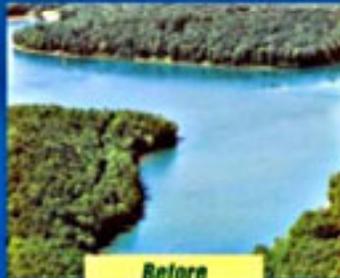


Great Fishing!

LAKE STRUCTURE AND HABITAT IMPROVEMENT



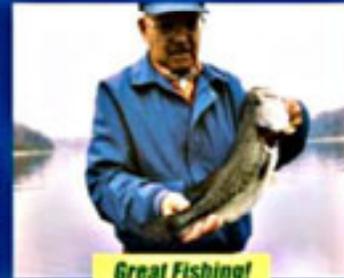
Largemouth Bass



Before



After



Great Fishing!



What is good trout habitat?

- Good water quality/quantity
- Sufficient depth
- Overhead cover
- Diversity of habitat types

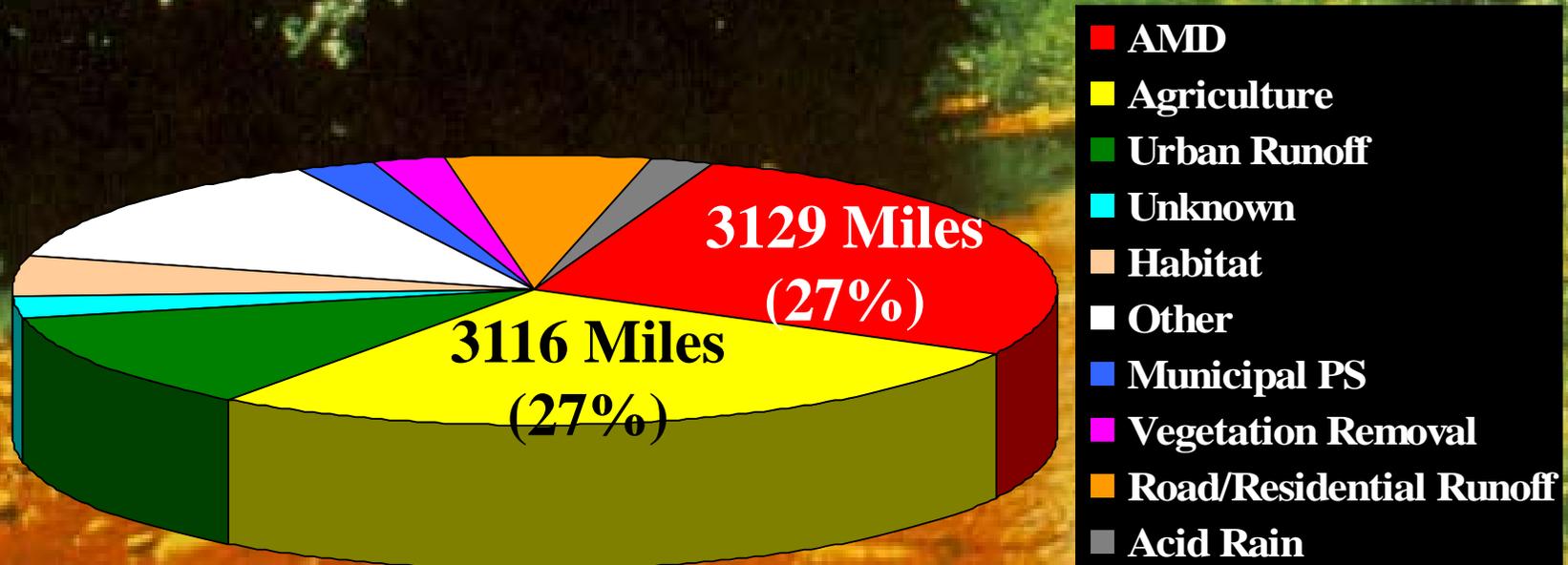








Major Sources of Stream Habitat Degradation (11,476 miles)





LEETONIA 1905
Looking south down Cedar Run



Paddy Run
Circa 1901-1908

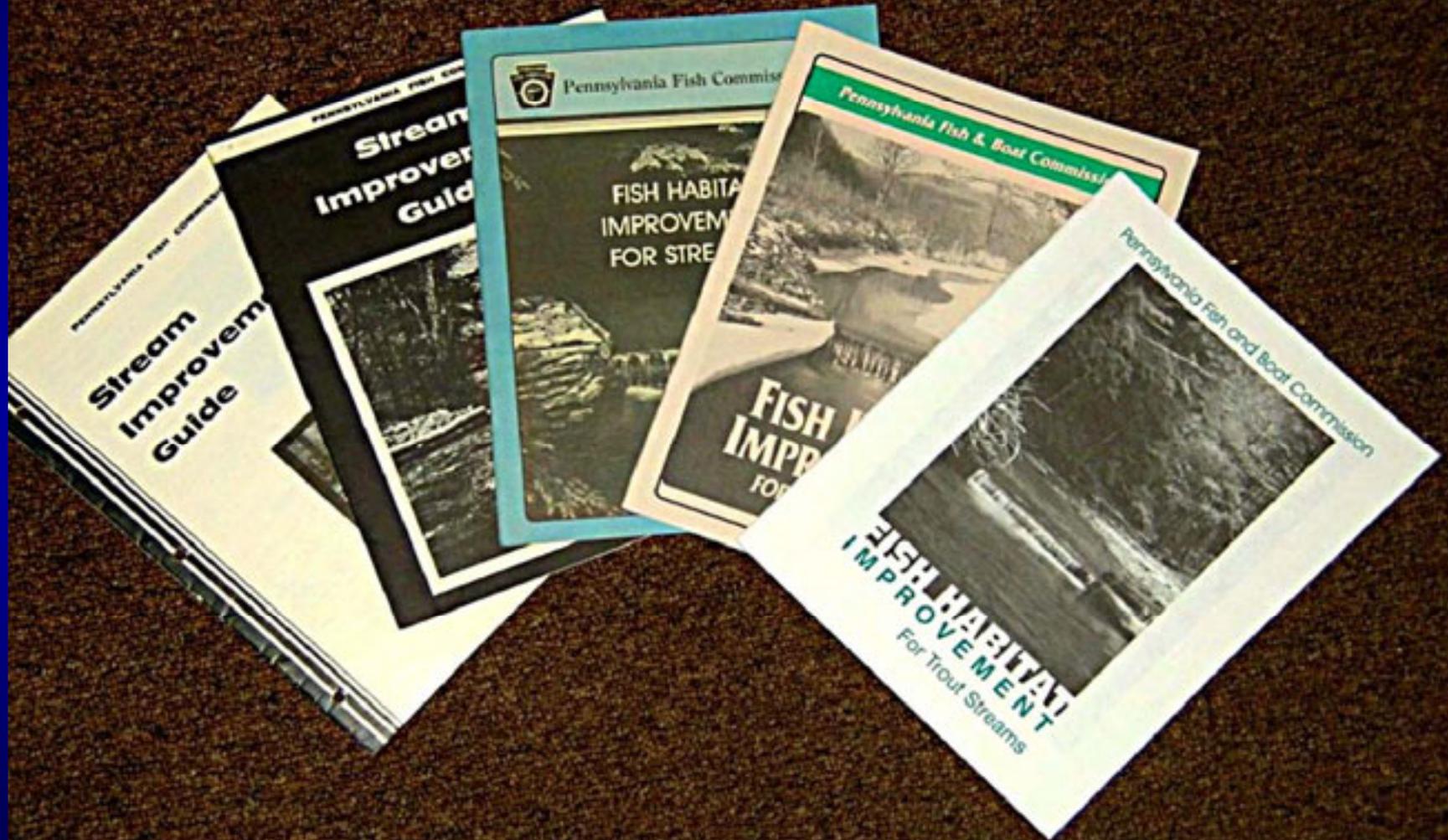


Major limiting factors in PA trout streams

- Poor Water quality – temperature and pollution
- Limited Pool habitat
- Limited Overhead cover
- Insufficient in-stream flow
- Blocked migration routes



Over 40 Years Experience





Spring Creek at Fisherman's Paradise 1947





Habitat Devices





Habitat Devices





Cooperative Habitat Improvement Program (Adopt-a-Stream)



During the last ten years, the Cooperative Habitat Improvement Program has completed over 700 habitat enhancement projects on wild trout waters with the assistance of over 100 cooperators.





Dam Removal Assistance Program



During the last 10 years, the Dam Removal Assistance Program has completed over 50 dams removal projects on wild and stocked trout waters (25+ active projects)



Cabin Hill Dam, Spring Creek,
Centre County



Division of Habitat Management

Established July 2006

Mission Statement

The formation of the Division of Habitat Management provides additional staff and resources that enables the PFBC to be more pro-active advancing habitat initiatives that benefit trout and coldwater resources.

protect and provide access to the Commonwealth's aquatic resources.



Division of Habitat Management





Regional Habitat Section

- Comprised of six full-time, regionally based, Habitat Biologists
- Provide technical assistance to identify, coordinate, finance, implement, and monitor habitat projects that benefit coldwater resources, among others
- Obtain easements to protect and provide public access to coldwater resources
- Since July 2006, have obtained over \$500,000 of grant funding for improving trout habitat and trout fishing
- Major initiatives: Four-Mile Ck, Kettle Ck, Spring Ck, Buffalo Ck, Dark Shade Ck, Big Spring Ck, Conococheague Ck, Pennypack Ck, Ridley Ck

Initiatives Supporting Trout Habitat Improvement

- Hiring two additional stream habitat managers under the Stream Habitat Section
- Proposed amendment to the State Wildlife Action Plan to include the eastern brook trout as a species of greatest conservation need
- Development of a Technical Assistance Program to provide limited assistance with habitat improvement projects on properties that may not be accessible to the public
- Developing cooperative partnerships to address protection and restoration of coldwater resources
- Participation in the National Fish Habitat Initiative and Eastern Brook Trout Joint Venture

Eastern Brook Trout Joint Venture

A Pilot Partnership under the National Fish
Habitat Initiative



Eastern Brook Trout

JOINT VENTURE

The National Fish Habitat Initiative

- Comprehensive, science based, national fisheries habitat strategy
- Based on the recognition that habitat loss is the most serious and severe limitation of our nation's aquatic ecosystems
- Unite all stakeholders in a shared vision for fisheries conservation and enhancement
- Partnership-driven at all levels
- Acknowledge the need for increased \$\$ for long-term success

Outputs

- National Fish Habitat Action Plan - a comprehensive plan that focuses on fish and their habitats including protection, restoration and enhancement
 - Modeled after the successful North American Waterfowl Management Plan
- 5 Pilot Programs
 - Eastern Brook Trout Joint Venture
 - Southeast Aquatic Resource Partnership
 - Western Native Trout Initiative
 - Midwest Driftless Area Restoration Effort
 - Matanuska Susitna Basin Salmon Conservation Partnership

An Active Partnership





Watershed Approach





Ecosystem Structure and Function





Riparian Buffers





Wood is Good!





Habitat & Stabilization





Monitor for Success



Partnerships





Little Lehigh Creek Habitat Enhancement Project

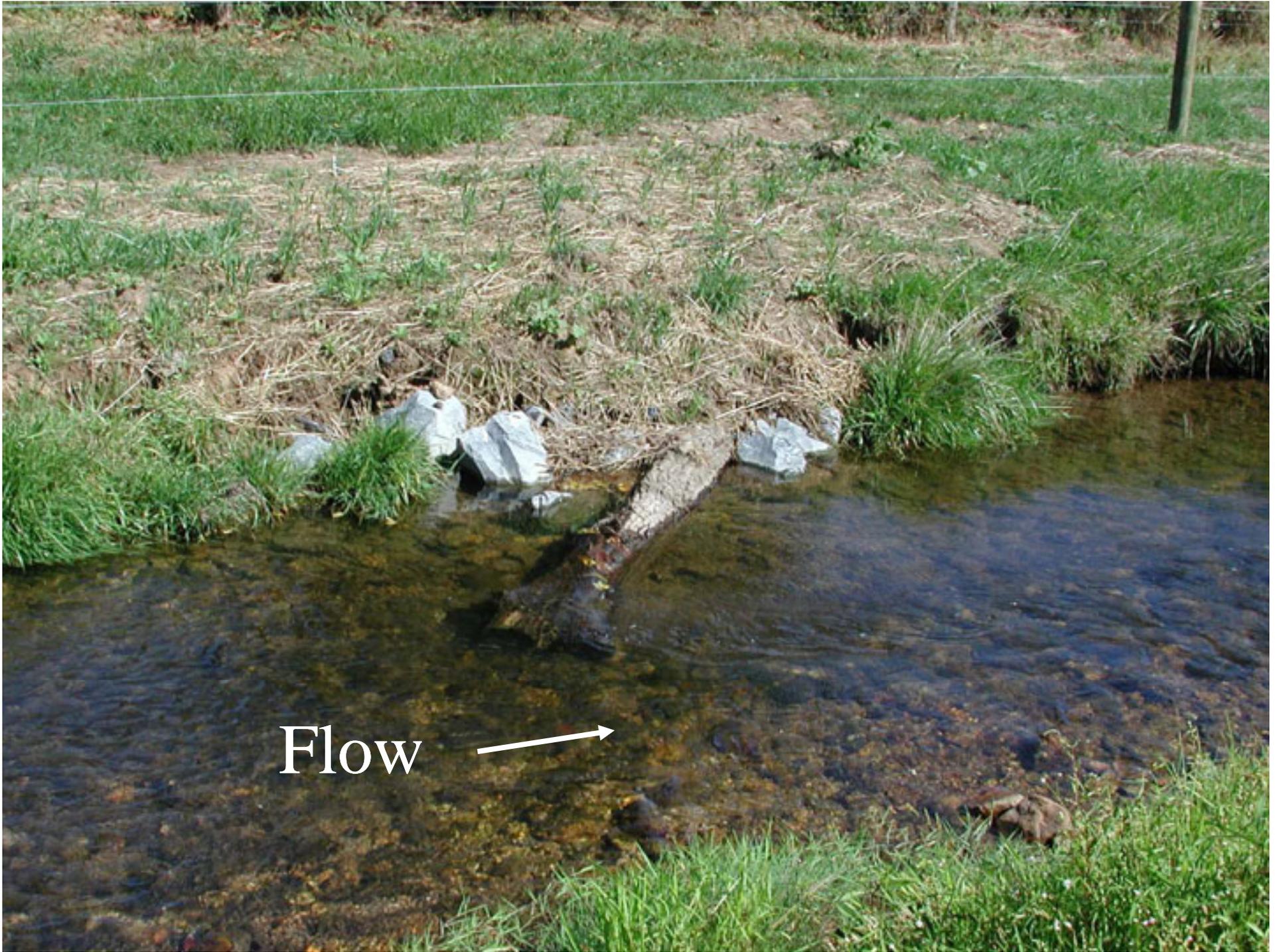




Pre-project – late 1990s

Just after habitat device construction, stream bank fencing, and riparian plantings in 2000



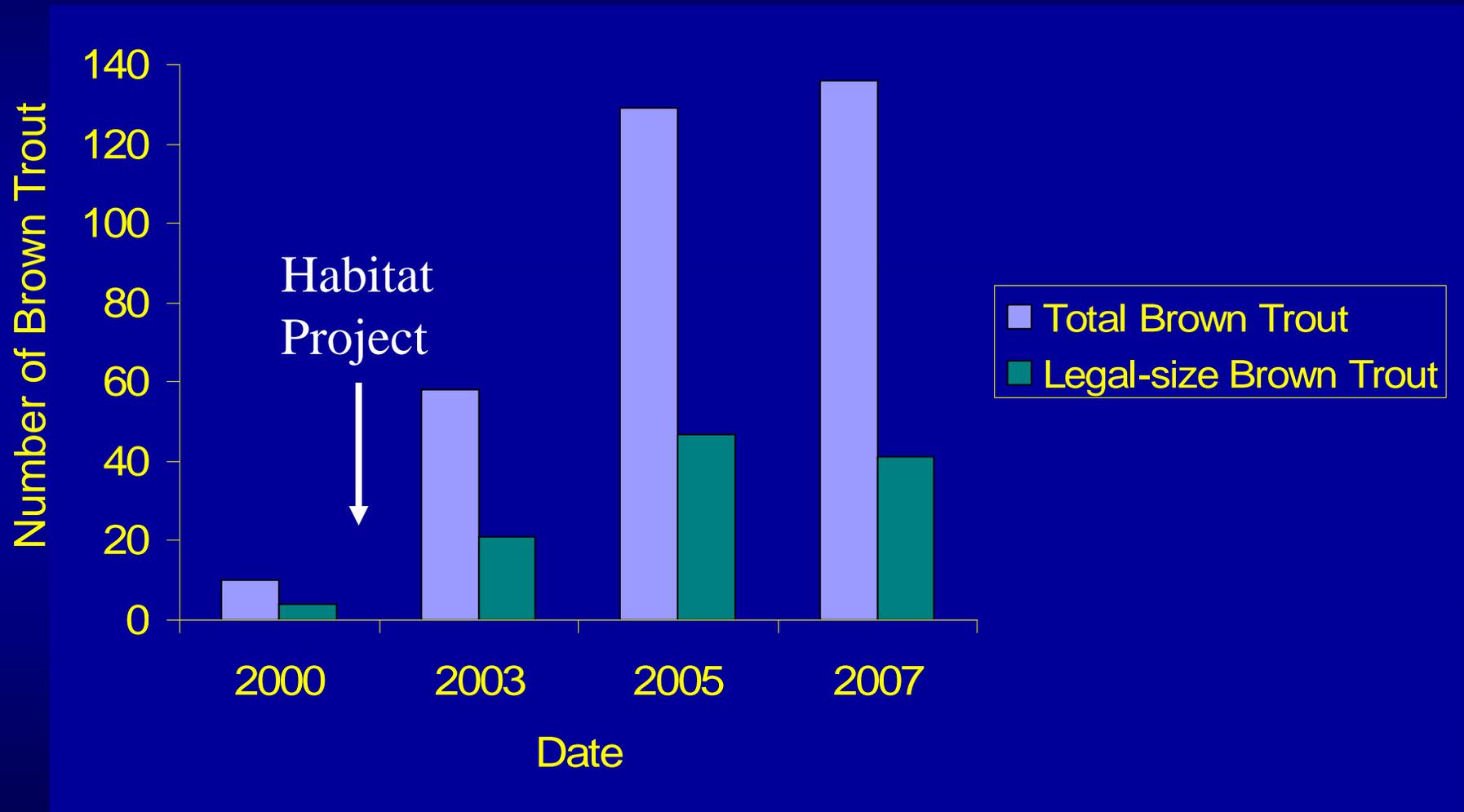


2007 – 7 years post treatment

**Habitat
Device**



Brown trout electrofishing catch in the same 350 m stream reach from 2000 - 2007





Reedsville Mill Dam, Tea Creek, Mifflin Co.



Dam removed in 2004



Immediately Post-Removal

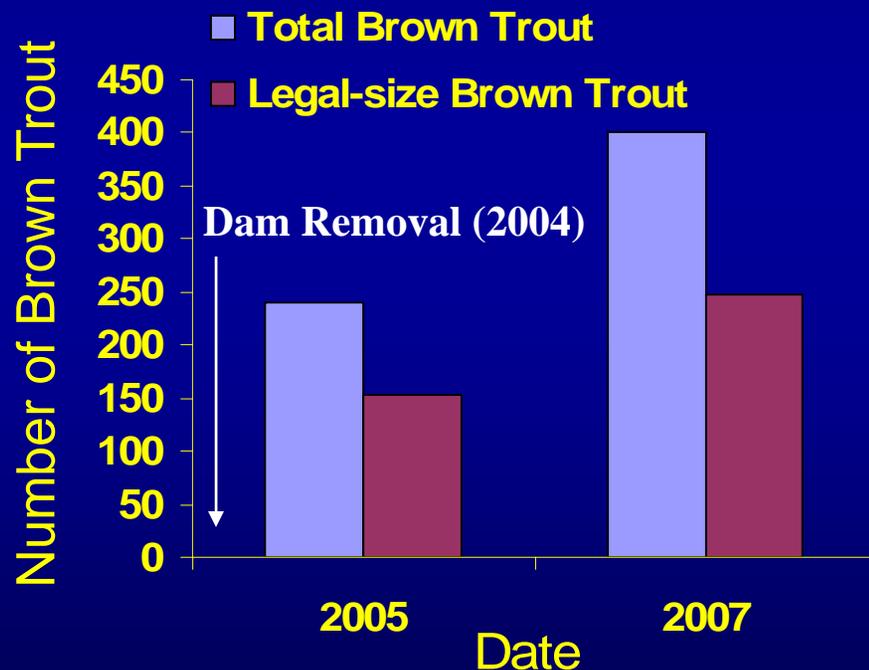


**2007 – Only 3 years post dam removal; 2
years post habitat enhancement**

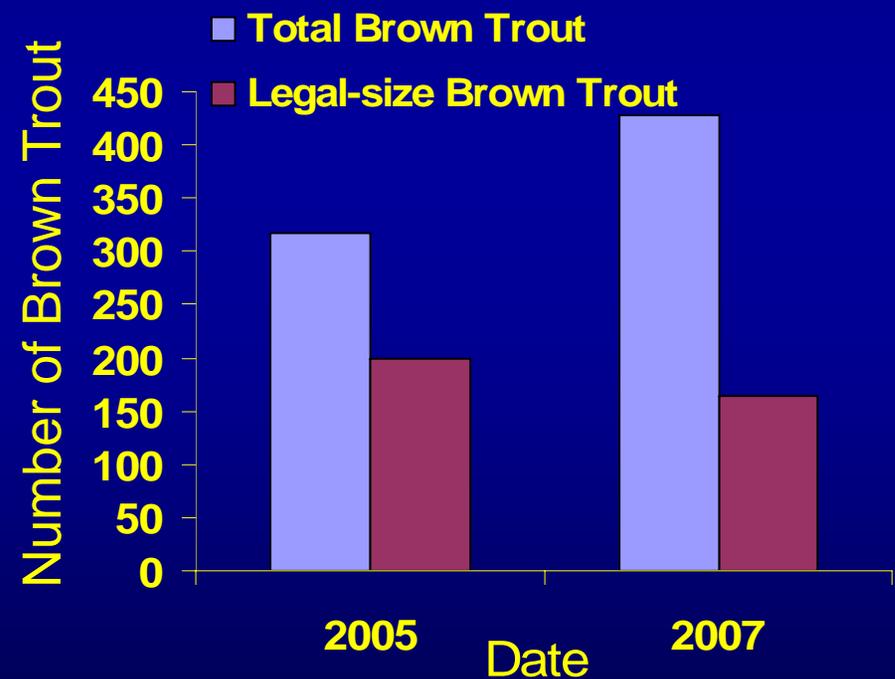


Brown trout first pass electrofishing catch in former Impoundment and control reach in 2005 and 2007

Former Impoundment



Upstream Control





Future Challenges

- Keeping up with requests for project assistance
- **Long-term funding support for projects**
- Recruitment of young volunteers
- **Public access to waters**
- Climate change and other stressors to the resource

Questions?

