

Fisheries Habitat Workgroup

Fish Habitat Challenges and Collaborative Efforts to Address Them

April 9, 2014

2:00 – 5:00 pm

Tawes State Office Building

C-1 Conference Room

Annapolis, MD

Not re-inventing the wheel...

How we go about it is the key...

Spending our time and funds wisely, and not...



Brook Trout Conservation in Maryland – Starting From Scratch

- Forgotten “stepsister” for decades
- Victim of “progress”, life history and habitat requirements conflict
- Decline not related to commercial or recreational harvest
- Habitat, habitat, habitat...

NATIONAL FISH HABITAT ACTION PLAN

2ND EDITION

COOPERATION

INVESTMENT

STEWARDSHIP





- Initial talks began in 2001
- Coalition of anglers, conservation groups, scientists, state and federal agencies, and industry leaders
- Modeled after highly successful North American Waterfowl Management Plan (\$3.2 billion spent since 1980's for habitat management/restoration)
- Science based and non-regulatory
- 2006 NFHAP signed into existence, Congress appropriates \$3 million to fund NFHAP, renewed in 2012
- Mission statement - ...***to protect, restore, enhance the nation's fish and aquatic communities through partnerships that foster fish habitat conservation....***



NATIONAL
FISH HABITAT
ACTION PLAN

- Protect and maintain intact and healthy aquatic systems.
- ■ Prevent further degradation of fish habitats that have been adversely affected.
- ■ Reverse declines in the quality and quantity of aquatic habitats to improve the overall health of fish and other aquatic organisms.
- ■ Increase the quality and quantity of fish habitats that support a broad natural diversity of fish and other aquatic species.



NATIONAL
FISH HABITAT
ACTION PLAN

Fish Habitat Partnerships

Fish Habitat Partnerships are the primary work units of the National Fish Habitat Action Plan. These partnerships are formed around important aquatic habitats and distinct geographic areas (e.g., Southeast Aquatic Resources Partnership,) “keystone” fish species (e.g., eastern brook trout and western native trout) or system types (e.g., large lakes, impoundments, estuaries.)

Eastern Brook Trout Joint Venture



- Fish and Wildlife agencies from 17 states.
- Federal support from U.S. Geological Survey, U.S. Forest Service, U.S. Fish & Wildlife Service, National Park Service and Office of Surface Mining.
- Conservation organizations including Association of Fish & Wildlife Agencies, Trout Unlimited, Izaak Walton League of America, Trust for Public Land and The Nature Conservancy.
- Academic institutions.

From a biological standpoint the partnership includes a "Who's Who" of the most respected and experienced brook trout biologists and researchers in the U.S.

Eastern Brook Trout: Status and Threats

PRODUCED BY TROUT UNLIMITED FOR THE EASTERN BROOK TROUT JOINT VENTURE

The Eastern Brook Trout Joint Venture is comprised of:

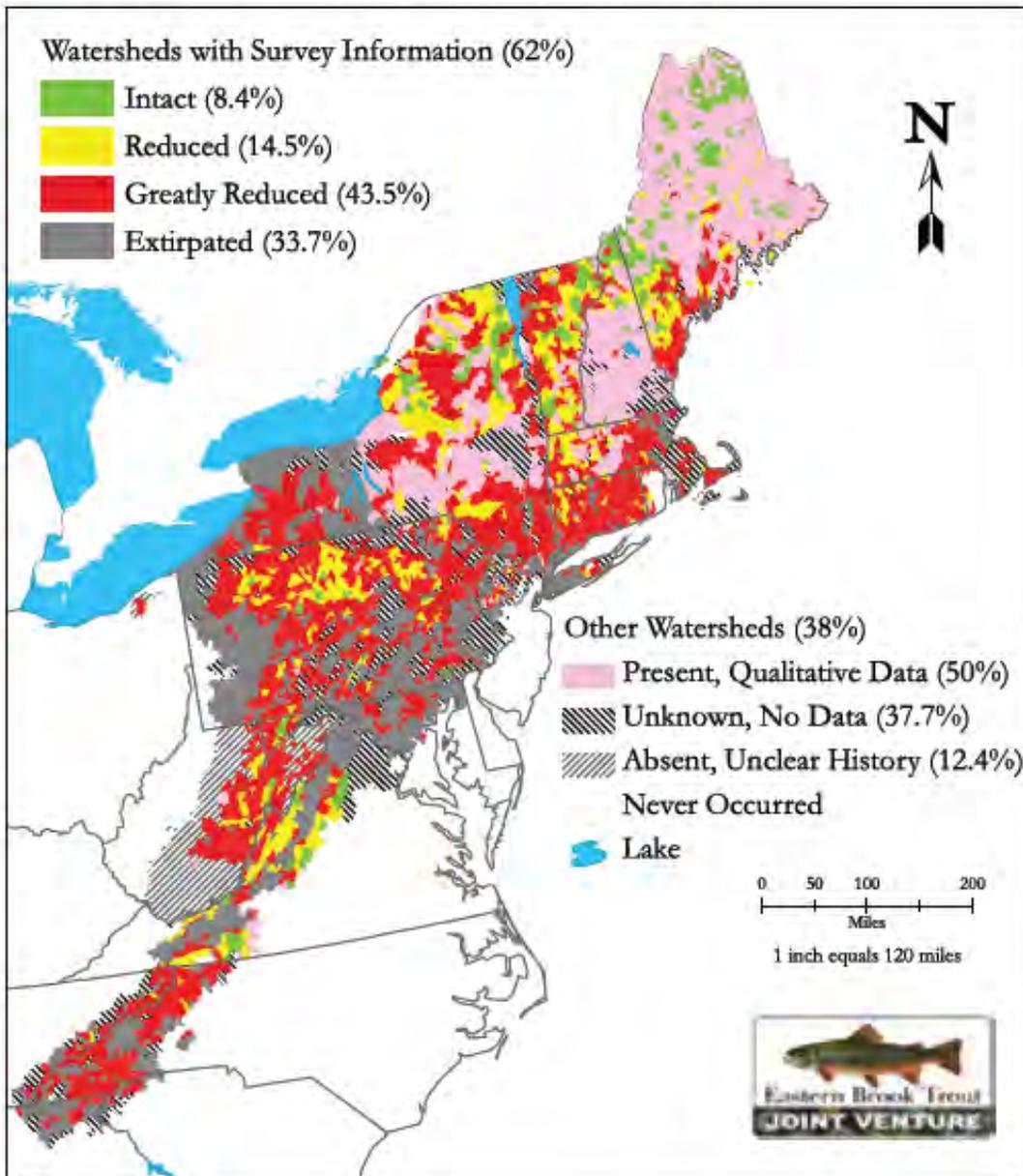
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- Academic institutions including Conservation Management Institute at Virginia Tech and James Madison University



Assessment Methodology:

The assessment team collected existing electronic data on brook trout populations from state and federal agencies in 17 states. The team then traveled to each state and met personally with fisheries biologists to review and classify each individual subwatershed. The team used a consistent classification method based on the percentage of historically occupied habitat still maintaining self-reproducing populations of brook trout. Fisheries biologists then used their expert knowledge to list the greatest local threats to wild, self-reproducing brook trout and their habitat.

Brook Trout Population Status by Subwatershed for Eastern U.S. Range



Identified Threats to Brook Trout Rangewide

Primary Threats to Brook Trout

Rank	Disturbances (High or Medium)	Number of Subwatersheds	Percentage of Subwatersheds
1	Poor Land Management	1647	37%
2	High Water Temperature	1629	36%
3	Sedimentation (Roads)	1225	27%
4	One or More Non-Native Fish Species	1189	26%
5	Urbanization	1141	25%
6	Riparian Habitat	1029	23%
7	Brown Trout	853	19%
8	Stream Fragmentation (Roads)	767	17%
9	Dam Inundation/Fragmentation	705	16%
10	Forestry	642	14%

Threats information based on professional opinion of regional experts. Figures do not add to 100% because zero, one, or multiple disturbances may occur in each subwatershed.

Maryland Brook Trout Status by HUC 6 Watershed

Brook Trout Classifications	Number of Subwatersheds	Percentage of Subwatersheds
Present, Intact	3	2%
Present, Reduced	5	3%
Present, Greatly Reduced	42	30%
Present, Qualitative Data	0	0%
Extirpated	83	57%
Absent, Unclear History	0	0%
Unknown, No Data	12	8%
Total	145	100%

Identified Habitat Stressors to Maryland Brook Trout

Disturbances (High or Medium)	Number of Subwatersheds	Percentage of Subwatersheds
High Water Temperature	106	79%
Urbanization	100	75%
Poor Land Management	91	68%
Groundwater Withdrawals	75	56%
Surface Water Withdrawals	53	40 %

Threats information based on professional opinion of regional experts. Figures do not add to 100% because zero, one, or multiple disturbances may occur in each subwatershed.

Impoundments

Increasing human population

Loss of riparian buffer

Global warming

Increasing impervious surface

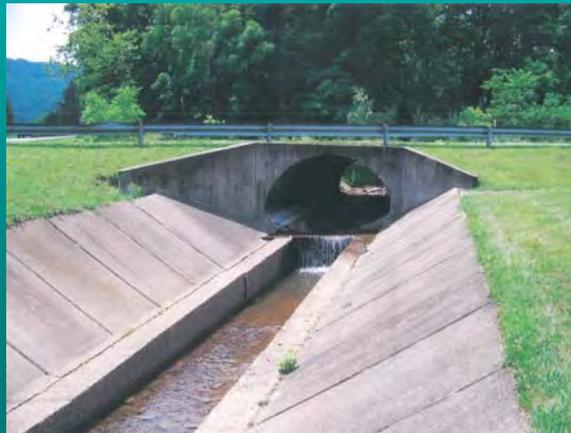
Agriculture

ORV use

Coal mining legacy

Forestry

Road crossings



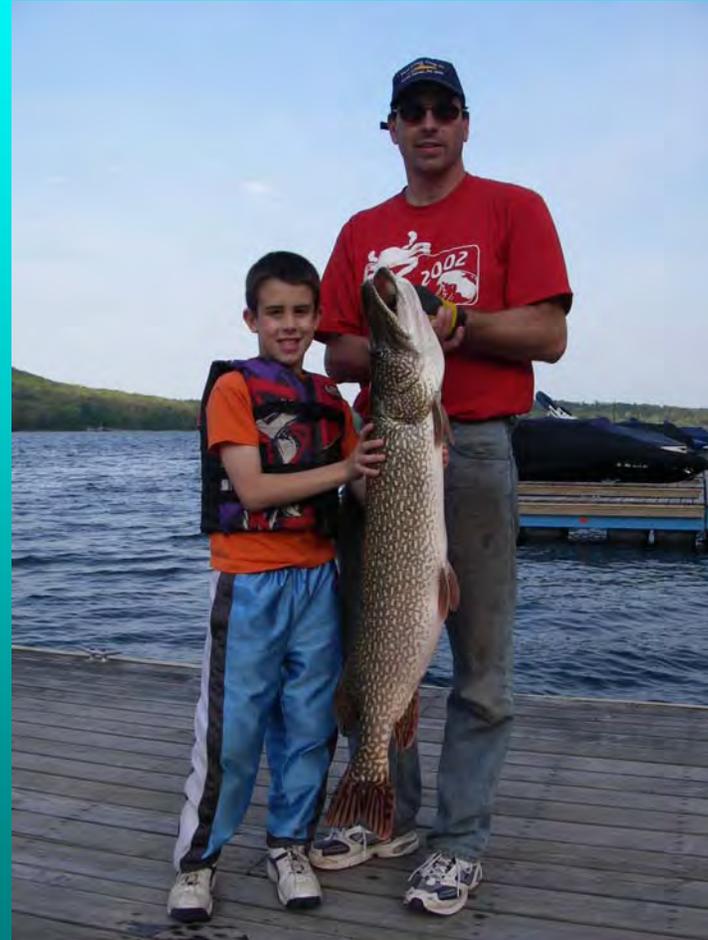
Coldwater Habitat Restoration and Preservation Strategies in Maryland – a Watershed Group Vision for Maryland Brook Trout



Keeping coldwater management and restoration in perspective...



Protecting and restoring brook trout is absolutely vital to...



Trophy esocid production!

(43.5", 22.5 lbs, Deep Creek Lake, MD 2007)

Background - EBTJV

National/State Conservation Strategies

- Re-establish brook trout populations in 10% of extirpated subwatersheds (gray to red or better)
- Maintain number of current intact subwatersheds (23 in Mid-Atlantic Region, only 3 in Maryland)
- Improve classification in 30% of subwatersheds (i.e. red to yellow, yellow to green)
- Maintain classification in 70% of subwatersheds (i.e. no loss)



Background – Maryland BTFMP, EBTJV Priorities

Three major goals:

- Protect and maintain Upper Savage River Intact Populations - “Best of the Best”
- Re-establish extirpated populations (i.e. Aarons Run, Winebrenner Run, Dan’s Mt. tributaries)
 - No net loss of existing populations



So once we had our EBTJV and Maryland goals, what next?

- Duh...habitat, habitat, habitat...
- Who is going to do this? Not enough Inland staff and time, need more help
- Grant fund opportunities exist, pool of interested citizens, Technical knowledge for direction...



Encourage Creation of Citizen Watershed Groups

- Demonstrated success nationally for other fisheries
- Well suited to working at the subwatershed scale level
- Membership local, live in subwatershed directly or nearby, local tie in
- Diverse, motivated conservation oriented membership
- Large enough, diverse enough membership to handle administrative and organizational needs
- Members will know, be neighbors of, the private landowners in the subwatershed whose participation/cooperation is crucial, a huge benefit that is typically not available to government staff



Role of Watershed Groups

- Selecting candidate subwatersheds to work on
- Contact group for working with private landowners (removes fear of government influence/meddling)
- Develop/foster relationships with government and NGO groups vital to conservation and restoration efforts
- On the ground conservation/restoration work
- Administrative and organizational functions



Role of DNR Inland Fisheries

- Provide technical assistance to watershed groups (including help with selecting target subwatersheds, providing data, monitoring, etc.)
- Liaison/facilitator between watershed groups and governmental and NGO organizations that assist/provide funding for restoration work (i.e. CREP, WHIP, EBTJV, etc.)



Developing a Brook trout Restoration Project at a Sub-watershed Level

Step 1: Select a sub-watershed within the watershed group region

- A) Meet with DNR Inland representatives to discuss candidate sub-watersheds within the region
- B) Develop and prioritize a list of candidates, based on criteria including:
 - 1b) Agreement with EBTJV and DNR goals
 - 2b) Likelihood of success from a biological perspective
 - 3c) Membership knowledge/experience with sub-watershed landowners
 - 4d) Likelihood of landowner participation, either anecdotal or through initial contact
- C) Present the prioritized candidates to the watershed group/steering committee
- D) Membership selects the subwatershed project



Developing a Brook trout Restoration Project at a Sub-watershed Level

Step 2: Delineate/describe the problems that need to be addressed within the sub-watershed

- A) Contact respective government agencies in regards to specific habitat issues (DNR can assist with this, act as liaison)
- B) Record/map baseline physical habitat conditions within the watershed, including brook trout presence data
- C) Define and prioritize restoration/conservation objectives (i.e. no riparian buffer, warmwater pond, cattle in stream, nutrient/sediment point sources, beaver damage, fencing, etc.)
- D) Define strategies to achieve objectives (i.e. obtain grants for work thru state, federal, county programs (CREP, WHIP, etc.), obtain NGO funding/help Nature Conservancy, etc.)
- E) Determine long term preservation options for landowners (easements, etc.)



Developing a Brook trout Restoration Project at a Sub-watershed Level

Step 3: Initiate on the ground restoration/conservation efforts

- A) Identify all landowners adjoining stream course in subwatershed, initiate contact to inform and solicit participation/cooperation
- B) Delegate membership roles/efforts/committees per strategy
- C) Identify funding sources/cooperators to initiate strategies and restoration efforts
- D) Initiate on the ground efforts, directed by committee's and overseen by steering committee/officers
- E) Coordinate/track work progress, direct volunteer effort
- F) During course of project publicize thru media and newsletters progress, efforts, needs



Developing a Brook trout Restoration Project at a Subwatershed Level

Step 4: Monitor success

- A) Long term brook trout population monitoring
- B) Press releases/PR highlighting accomplishments



