NEAFWA Aquatic Connectivity

Colin Apse & Erik martin,

The nature conservancy

Purpose

This project endeavors to produce a tiered list of dams in the Northeast US based on their potential ecological benefit if remediated for fish passage, and develop a tool that allows managers to re-rank dams at multiple spatial scales

Montsweag Brook, ME, before Montsweag Dam removal

Montsweag Brook after. Photos by Dan Creek

- Dams and other barriers to the free movement of fish and other aquatic organisms have had a negative impact on the health and viability of these populations for well over a century in the eastern United States.
- Removing or otherwise mitigating dams can improve the health of aquatic ecosystems and allow fish populations to recover.
- Given the financial and organizational obstacles to dam removal projects, it is critical that managers focus their efforts and resources where they can have the greatest ecological impact.

Methods

- Data Collection & Preparation
  - Dams, waterfalls, anadromous fish habitat collected from states & other sources, processed, iteratively reviewed with state contacts

- Metrics calculated in GIS for every dam. Metrics grouped in 5 categories. The Barrier Analysis Tool (BAT), an ArcGIS plug-in developed for this project, was used to calculate many of the metrics.
  - Connectivity Status
  - Connectivity Improvement
  - Watershed & Local Condition
  - Ecological
  - Size Class

- Ranking
  - Dams ranked based on the metrics calculated in GIS and weighted based on relative weights developed by workgroup for anadromous fish and resident fish scenarios

Status & Utility

- 2nd draft of results are currently being reviewed by state workgroup participants
- Final results: end of August

- Potential utility of results (as suggested by workgroup participants)
  - Project evaluation
  - Communicating with owners/funders
  - Grant writing
  - Justifying projects during funding allocation
  - Bring attention to new projects that may not have been looked at before
  - Developing basin-level plans
  - Local-level communication
  - Inform advocacy efforts
  - Stimulate proactive action rather than opportunistic removals