

Initiatives and Research

MDIFW Initiatives and Research



Joe Dembeck holds a Moosehead Lake brookie with a radio tag.

Maine's wild trout ponds and streams are monitored on a regular basis by MDIFW staff to assure that they are well protected and continue to thrive. There have also been a large number of special programs, initiatives, and research undertaken to afford special protection, maximize size quality, and enhance Maine's wild (and stocked) brook trout resources. These types of projects are often conducted by regional management biologists in addition to their regular responsibilities, and the types of special projects undertaken often depend on statewide/regional needs, as well as personal interests and expertise. Below is a listing of some of the more pertinent MDIFW initiatives and research relating to brook trout. Although MDIFW played a sole or major role in these projects, many of the projects, particularly the more recent ones, involve multiple funding partners and are typical of collaborative efforts among various organizations.

- 1990-Present – Brook Trout Stream Monitoring Project – Joan Trial & Merry Gallagher
- 1994-Present – Rapid River Research – David Boucher
- 1996 – Brook Trout Regulations Research – Forrest Bonney
- 1997-2001 – Brook Trout Strain comparison (Kennebago vs. Sourdnahunk)
- 2000-2008 – Stream Restoration Projects – Forrest Bonney
- 2001-2007 – Nadeau Lake Restoration – Frank Frost
- 2001-Present – Brook Trout Strain Comparison (Kennebago vs. MHS) – Tim Obrey
- 2005-Present – Heritage Brook Trout Water Designations – MDIFW & SAM
- 2005-2010 – C Pond Invasives Species Project – David Boucher
- 2005-2006 – Magalloway River Telemetry Work – David Boucher & Dianne Timmins
- 2006-2007 – Maine Brook Trout Books – Forrest Bonney
- 2006-2008 – Sea-run BKT Survey – Merry Gallagher
- 2007-Present – Statewide Stream Assessment of Wild Brook Trout – Merry Gallagher
- 2008- EA of Rotenone Use for Native Salmonid Restoration – James Pellerin
- 2008-2009 – BKT Survey – Joe Dembeck & Marc Edwards

- 2008-Present – Mooshead Lake Brook Trout Study – T. Obrey, J. Bagley, and S. Seebach
- 2008-Present – Big Reed Pond Restoration – Frank Frost
- Priestly Lake Brook Trout Spawning Box – Frank Frost

Stanley Brook Collaborative Research

A collaborative research effort is underway where a single population of sea-run brook trout is being closely studied and monitored. The partners in this effort include MDIFW, the National Park Service, the University of Maine, and the USGS Conte Anadromous Fish Research Laboratory in Turners Falls, MA. Stanley Brook, in Acadia National Park, is approx. 1.2 miles long and drains directly into the Gulf of Maine. This brook contains both sea-run and year round resident brook trout. Biologists are looking at the movement of brook trout in and out of Stanley Brook. Brook trout are caught and tagged with electronic transmitters at various times throughout the year. A data-logging receiver is located at the Route 3 bridge, a little upstream of the estuary. This receiver is capable of determining which individuals are passing and whether they are going up into the stream or down to the ocean. A future receiver will be placed at a location further downstream at the outlet of the stream into the estuary. The brook is also surveyed with a backpack receiver to determine the location of all tagged fish three times a year. To date, the data indicates that sea-run brook trout head to the ocean from April through June and return to freshwater anytime between May and August although there is still a lot to learn about the timing, duration and causes of their estuarine forays.

Cove Brook

A similar project is getting underway in Cove Brook. Cove Brook is located in Winterport, ME and drains into the Penobscot River approximately 11.5 miles above the Waldo Hancock Bridge. This stream is unlike Stanley Brook in that it has different fish species, land use, and drains into the Penobscot River instead of the Gulf of Maine. A University of Maine graduate student will be leading this project.

MDIFW staff also surveyed a number of coastal streams in the Downeast Maine, Pemaquid and Stonington areas. These surveys were part of our Eastern Brook Trout Joint Venture efforts and yearly MDIFW stream fishery surveys. From these surveys, sea-run brook trout were verified in several coastal streams. Blood samples from some sea-run brook trout in the coastal Downeast area were collected in collaboration with Dr. Sharon Maclean at NOAA-Fisheries. She is screening for infectious salmon anemia virus (ISA) in various wild species. The purpose is to find if sea-run brook trout act as a reservoir for ISA in the wild. ISA is a virus that may reside in various marine species but causes mortality in farm raised Atlantic Salmon and is a threat to wild anadromous salmon.

An Unnamed Brook in Belfast, ME has provided MDIFW with a unique stream restoration opportunity. Recently Maine DOT was looking at rehabilitating a culvert on this brook running under Rt. 1 and after surveying the stream, it was found that this stream had a thriving wild brook trout population. The survey found 72 brook trout in 300' of stream and the Rt.1 culvert was subsequently replaced with the ability to pass fish to the upstream side. The brook is a small stream running directly into Belfast Bay. It is very likely that this stream had a sea-run brook

trout population in the past. However there is more at work on this stream than just the new Rt. 1 culvert. After a look at the rest of the stream it was determined that this stream had several fish passage issues before it empties into the ocean. The stream was diverted in the past and currently it runs through a motel lawn that contains several small dams and culverts. The project is in the stage of seeking funding for reconnecting the stream to its original channel thereby bypassing the remaining barriers and creating fish passage from the ocean to upstream sections. The hope is to restore sea-run trout to this native brook trout stream.

Sea-Run Brook Trout

MDIFW is also partnering with the University of Maine in a project to identify individual sea-run brook trout from a population of coastal trout. This will be achieved through analysis of the chemical composition in the fish's scales or other body tissues. Through a trout's life it eats various food items such as insects, snails, and fish. These food items leave behind chemical markers within the fish's body tissues and different food sources leave different chemical markers. Fish that venture into the ocean have a different diet than those residing in the freshwater streams. By analyzing the scales, or other body tissues of trout, we hope to be able to see a different set of markers for fish that have lived in the ocean for a portion of their life than those that stayed in freshwater. This research is just getting underway and has many steps yet to be worked out.

Other Initiatives and Research

- Eastern Brook Trout Joint Venture (EBTJV)
- Trout Unlimited Conservation Success Index (CSI)
- Maine Council of Trout Unlimited
- Sea Run Brook Trout Coalition