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AIC Newsletter - Winter 2014

ATLANTIC INTERNATIONAL CHAPTER OF THE AMERICAN FISHERIES SOCIETY

Volume XLI, No. 1

Winter 2014

President's Message

By Michael Bailey
docbaileymm@gmail.com

Hello AIC members. Mother Nature must have realized we are getting the Winter Newsletter out a bit late this year, so She has been gracious enough to hold onto winter a few extra weeks (please don't be months!). I am stationed about as south as I can be and still be within the AIC borders, and at the time of writing, it certainly is not spring yet. Hopefully, this will finally be the year when all the biologist have their waders patched and nets mended before they need them (and/or have all the reports off your desk).

I have been busy spending lots of time on conference calls learning all the ins and outs of planning the 144th AFS Annual Meeting for this summer. This year AIC will hold our annual business meeting in conjunction with the AFS 2014 Annual Meeting which is setting up to be fantastic event. As of last count there are 43 Symposia and over 1,700 submitted abstracts! Please visit the website afs2014.org and stay up to date on social media www.facebook.com/afs2014 and <https://twitter.com/AFSQuebec2014>.

As one of our co-host duties, we have been asked to help with fund raising and gathering raffle items. While efforts are already underway, any and all help will be greatly appreciated. Please contact me at docbaileymm@gmail.com for more information on ways to help. We benefit from the income made from the meeting, so efforts to help out with the Annual meeting, directly helps AIC.

Some of the primary goals of the AIC are to promote fisheries interests and the collaboration and networking of the regions fisheries biologists. The annual AFS meeting is a great way for folks to meet with fisheries professionals from around the world! We have also made a commitment to support students traveling to the Annual meeting. We have not fully developed a mechanism yet but we will be in the near future. To help lower the cost of student travel see afs2014.org/students/ it includes a list of all activities and discounted Lodging at Laval University. For more information on the student support please contact Christine Lipsky (Christine.Lipsky@noaa.gov).

Michael Bailey



144th Annual Meeting of the American Fisheries Society

August 17-21, 2014
Quebec



Fisheries and Oceans Canada, and the Northeastern Division, the Atlantic International Chapter and the Canadian Aquatic Resources Section of the American Fisheries Society (AFS), cordially invite you to attend the 144th Annual Meeting that will be held in Québec City from 17 to 21 August 2014.

Go to the meeting website (<http://afs2014.org/>) for additional information including registration, program, continuing education, and much more.

Job Announcement! Secretary / Treasurer

John Magee, current (and long-term) Secretary/Treasurer of the Atlantic International Chapter, is pleased to announce his retirement!...from the Secretary/Treasurer position. He said, "It's been my honor to serve the members of the AIC as Secretary/Treasurer, and it's time to provide this opportunity to new leadership. The Secretary/Treasurer position is quite easy to do well, and the advantage is that your agency is more likely to find funds to send you to AIC meetings because you are on the Executive Committee!".



John has enjoyed travelling to Quebec, New Brunswick, Prince Edward Island, Nova Scotia, Maine and Vermont during his tenure as Secretary/Treasurer. John will also make this announcement at the AIC Annual Business Meeting, which will be held at the AFS Parent meeting in Quebec in August, 2014. If you are interested in providing this valuable service to your fellow fisheries colleagues, please let John know - john.a.magee@wildlife.nh.gov.

[Editors Comment: John, thanks for a job well done!]

Upcoming Meetings

AFS — 144th Annual Meeting
August 17-21
Quebec
(page 2)

*Species ID and Assessment of Northeastern
Freshwater
Fish Assemblages*
June 1-2
Eagle Hill Institute, Stueben Maine
(page 4)

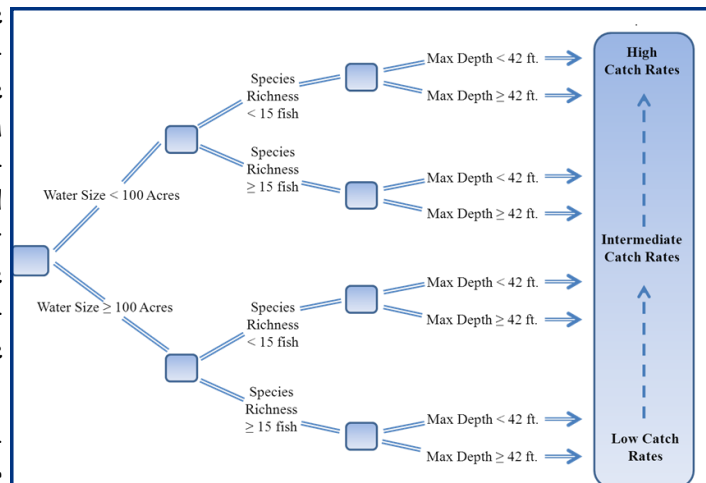
HABITAT VARIABLES INFLUENCING THE RETURN OF HATCHERY-REARED FALL-YEARLING BROOK TROUT IN MAINE WATERS

By Wes Ashe, Jason Seiders, and Scott Davis

Maine Department of Inland Fisheries & Wildlife – Region B, Sidney, Maine

The Maine Department of Inland Fisheries and Wildlife (MDIFW) stocks over one million brook trout (*Salvelinus fontinalis*) statewide annually and at a substantial cost to the State of Maine. Considerable hatchery production is dedicated to the rearing of larger fall-yearling brook trout (FY BKT) (age-1+, ~12"), which are stocked in the fall and primarily into marginal waters with limited summer holdover potential. However, most of these waters are suitable for fall to spring survival, and thus provide popular fishing opportunities for Maine ice anglers. Given the financial investment put forth by MDIFW in providing a FY BKT program, waters destined for stocking should be selected based on a specific suite of habitat criteria that promote higher angler returns. Therefore, the goal of this study was to investigate those habitat variables that contribute most to the "catchability" of stocked FY BKT.

Twenty-eight (28) waters from fishery management regions A, B, and D were selected for analyses for this study and varied across a gradient of physical (i.e. acreage, urban proximity, water depth) and biological (i.e. species richness, urban proximity) variables. Principal component regressions determined that water size, species richness, and maximum depth were the most important variables influencing FY BKT returns. Running averages were used to subset the data to identify discrete threshold values that marked precipitous changes in angler returns. Those threshold values were pinpointed at a water size of 100 acres, a species richness of 15 fishes, and a maximum water depth of 42 feet. Based on this research, we recommend that MDIFW fisheries biologists adopt a tiered, decision tree selection process by which regional waters proposed for FY BKT stockings be selected; allocating resources more efficiently and increasing angler returns. Ultimately, both fisheries biologists and anglers will benefit by a more focused approach to FY BKT stockings.



Wiley Pond in Boothbay along the mid-coast of Maine, identified as meeting the criteria for high catchability of fall-yearling brook trout stocking, was opened in February 2014 for youth fishing with great success.



Eagle Hill

Eagle Hill Institute
Eagle Hill FoundationMaine
U.S.A.

Species ID And Assessment of Northeastern Freshwater Fish Assemblages

Instructor: Dave Halliwell

June 1-2, 2014

Eagle Hill Institute, Steuben, Maine

Freshwater fish in the northeastern United States number over 150 species, inclusive of native and introduced forms, resident to ponded and flowing waters of varying habitats and water quality. Sportfish species (trout, salmon, bass, pike and perch) are most recognizable, while many of the vast minnow (one-third of the fish fauna) and non-game species are more difficult to identify, particularly in the field. This seminar will focus on the taxonomy and field/ laboratory identification of 28 freshwater fish families, inclusive of diadromous (migratory) species. Through lectures, actual field sampling (minnow trapping, beach seining, and backpack electrofishing), examination of fresh and preserved-aquarium specimens and use of technical keys, participants will gain an understanding of the taxonomy, morphology, and ecology of freshwater fish. Fish origins, distributions and conservation status will be emphasized and development of Indices of Biotic Integrity (IBI) and the Biological Condition Gradient (BCG) reviewed, as well as an introduction to pre-Columbian fish remains found at Maine archaeological sites. A listing of historical and current scientific literature will also be provided. This seminar will be of great interest to aquatic-wildlife-conservation biologists-scientists, environmental consultants, natural historians and others who wish to learn more about freshwater fish and resident fish species assemblages.

Dave Halliwell (david.halliwell@maine.gov) received his Ph.D. in Fishery Biology from the University of Massachusetts, Amherst, specializing in fish conservation, aquatic habitat classification, and vertebrate taxonomy. He has been employed as an Aquatic Biologist with Maine DEP (Augusta) since 1999. Dave has spent over three decades identifying and investigating the habitats of freshwater fishes while working with northeastern State and Federal fish and water quality agencies and has considerable experience teaching University and field courses related to New England fish and wildlife. Related interests include pre-Columbian indigenous fish (archaeological) studies, aquatic habitat restoration, hydropower-flow issues, reservoir water levels, lake water quality assessment and fish zoogeographic studies. Dr. Halliwell is a co-author of the *Inland Fishes of Massachusetts* (2002). All participants will be provided with a comprehensive course notebook and study guide (\$35 fee). *Inland Fishes of Massachusetts* is currently out of print, however, multiple classroom copies will be available.

<http://www.eaglehill.us/programs/nhs/seminar-flyer-pdfs/2014Halliwell.pdf>

To register: <http://www.eaglehill.us/programs/general/application-web.shtml>

For calendar of Eagle Hill seminars and workshops: www.eaglehill.us/programs/nhs/nhs-calendar.shtml

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Governmental Blindness and the Extinction of Sandy Pond

By R. John Gibson

Sandy Pond Alliance to Protect Canadian Waters Inc. (www.sandypondalliance.org)

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A flame has been extinguished in our natural world.

A recent federal regulatory change to the Metal Mining Effluent Regulation under a weakened Fisheries Act allows toxic wastes to be dumped into pristine waters and Canadian Federal and Provincial governments have given permission to Vale, a mining company, to use Sandy Pond, located near Placentia Bay, Newfoundland, as a Tailings Impoundment Area.

Sandy Pond was a pristine, isolated post-glacial lake with a unique ecosystem, including perhaps the largest Brook Trout left in Newfoundland, as well as Rainbow Smelt and American Eel. Based on research in similar situations where a population has been isolated for thousands of years, the trout and smelt were probably unique genotypes. After attaining a certain size, the trout fed on the smelt, and grew up to 3 - 5 lbs. The trout had a deep girth, and 'looked different' from most Brook Trout, probably representing a unique stock. However, no genetic studies were conducted before eradicating these stocks. Destroying biodiversity contravenes the Convention on Biological Diversity (1992), signed by Canada, but this was not a consideration in permitting the destruction of Sandy Pond. Additionally, American Eel is classified as 'threatened' under the Species at Risk Act. Under the Act, no person is allowed to kill, harm or harass an individual of a listed wildlife species, nor is it permitted to damage or destroy the habitat of such species.



Sandy Pond.
Photo credit: D.E. Messervey.



Sandy Pond Brook Trout.
Photo credit: D.E. Messervey

When permission is given for fish habitat to be destroyed, compensation must be provided in the form of equivalent habitat, either newly created or restored elsewhere. In the case of Sandy Pond, the approved compensation was grossly inadequate. The newly created 74 ha reservoir constructed for permanent toxic waste storage destroyed 45 ha of natural waters including Sandy Pond and small adjacent lakes. In their fish habitat compensation plan, the proponent calculated a total loss of 18.11 ha of habitat for the three species combined. Using the same variables and methods for 'Habitat Equivalent Units', however, I calculated habitat losses of 25.5 ha for Brook Trout, 34.8 ha for smelt and 15.7 ha for eel. Although compensation must be made for habitat destruction, it may amount to no more than a public relations exercise. Thus, the new regulations have the potential to destroy aquatic ecosystems and valuable fish stocks throughout Canada.

In 2010, the Sandy Pond Alliance to Protect Canadian Waters, a group of concerned Canadian citizens, challenged the give-away of this priceless natural resource. Their case was based on the premise that the guiding principle of the federal Fisheries Act is conservation. Therefore, such destruction of fish stocks and their habitats was beyond the parliamentary intention of the Act. In her ruling of October 31, 2013 Federal Court Justice Heneghan stated that "...the Fisheries Act allows the Minister to

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authorize the alteration, disruption or destruction of fish habitat under any conditions he deems appropriate". Thus, if the government so chooses, Sandy Pond, or any other waterway in Canada, can simply be taken from the public trust and given free of charge for a destructive industrial use.

Justice Heneghan's decision that the applicant was mistaken when asserting that conservation is the paramount purpose of the Fisheries Act suggests that it is now regulatory policy for economics to override environmental protection. In forming her decision, Justice Heneghan described the formal Environmental Impact Study as an "extensive environmental study of Sandy Pond" when in fact it was surprisingly inadequate. No studies were done to estimate the biological productivity of the lake and attempted population estimates were a failure. For example, in mark-recapture studies, no marked trout were recaptured, though it was stated that one trout with a damaged fin might have been a recapture. From those results, a population of 303 trout was calculated. Additionally, no marked smelt were recaptured, but the study's authors stated that if one marked fish had been caught, the smelt population would number 3,609.

Across Canada, some 23 other lakes are currently under threat of destruction. The Sandy Pond Alliance is working to protect such lakes and will continue to inform Canadians of the unnecessary destruction of our natural heritage. Following the advice of Justice Heneghan, "the will of the people with respect to legislation can be expressed at the ballot box", we will continue to rally to bring pressure on our politicians to stop this destruction.



Sandy Pond being converted into a reservoir for toxic waste (Vale newsletter)

What is World Fish Migration Day?

"World Fish Migration Day 2014 (WFMD) is a one day global initiative, with

local events worldwide, to create awareness on the importance of open rivers and migratory fish. WFMD is held to improve the publics' understanding of the importance of open rivers and migratory fish and their needs." <http://www.worldfishmigrationday.com/>



CONNECTING FISH, RIVERS AND PEOPLE

24th May 2014



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Researchers Discuss Habitat and Life History Diversity of Atlantic Salmon and other Diadromous Fishes at Maine Forum

Reproduced from NOAA Fisheries Service, Northeast Fisheries Science Center Newsroom

http://www.nefsc.noaa.gov/news/features/salmon_forum/

More than 165 participants from the Northeast and Northwest U.S. and Atlantic Canada gathered in Orono, Maine, January 8-9 to attend the 7th biennial Atlantic Salmon Ecosystems Forum.

Attendees from as far as Washington and Idaho heard and viewed more than 50 oral and poster presentations given on the science, management, and restoration of diadromous fish species and their habitats in New England, Atlantic Canada and the Northwest Atlantic Ocean.

Mark Renkawitz of the Northeast Fisheries Science Center (NEFSC) and Tara Trinko Lake from the Greater Atlantic Regional Fisheries Office (GARFO), served as co-convenors of the forum, which has broadened its original focus on salmon to include other diadromous species.

"Atlantic salmon constitute a small portion of the overall fish biomass in the Gulf of Maine but are part of a much larger diadromous species community," Renkawitz said. "Despite the name, the forum is not completely salmon-centric and encompasses sturgeon, river herring and other sea-run species and their habitats, and the role each plays in the ecosystem."

The meeting focused on estuary and marine ecology, diadromous species ecology, freshwater ecology, and applying science to management. Topics ranged from migration, predation, and habitat to the impact of dam removals and improved fish passage. The forum was co-sponsored by NOAA, the Diadromous Species Restoration Research Network (DSRRN), Project SHARE (Salmon Habitat and River Enhancement), the Atlantic Salmon Federation (ASF), The Nature Conservancy (TNC) and the U.S. Fish and Wildlife Service.

"Improving and maintaining habitat diversity and life history diversity of the various species in the ecosystem is critical," Trinko Lake said. "In the last 10-15 years, there has been a lot of attention paid to the relationship between salmon distribution, abundance and oceanic conditions including climate change, and the timing of migrations. This meeting brings researchers from different fields and managers together to exchange the latest information."



An NEFSC Salmon Team member removes a fyke net in the Penobscot River estuary in May 2012.
Photo credit: Shelley Dawicki, NEFSC/NOAA.

Maine's Penobscot River has the largest Atlantic salmon run remaining in the United States. Although salmon numbers remain very low in New England, access to habitat has improved as dams have been removed and fish passage improved. The Penobscot River Restoration Project, a collaborative effort to restore 11 species of sea-run fish to the river while maintaining energy production, has led to the removal of the lowermost dams on the river. The removal of Great Works Dam in 2012 and Veazie Dam in 2013 opened the section of river between Veazie and Milford to sea-run fish for the first time in almost 200 years. Future fish passage upgrades are also scheduled for the river's Howland Dam in 2014.

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More than 3,000 Atlantic salmon returned to the Penobscot River in 2011, the highest number since the mid-1980s. Although fewer salmon returned in recent years, researchers like NEFSC's John Kocik are cautiously optimistic the Penobscot River population can rebound. "The expected positive effects of improved fish passage are an essential step in increasing the number of salmon that head to sea," Kocik said. "The research presented at the forum is helping us understand the next steps of improving marine survival."

Kocik, head of the Northeast Salmon Team, has been working with the Atlantic Salmon Federation and with Canada's Department of Fisheries and Oceans since 1997. U.S. and Canadian salmon have experienced record low survival at sea since 1990. Trying to figure out why the survival rates are so low, and where the losses are happening, has been a priority.

"We can't study salmon or save them if we don't know where they are," said Kocik, who gave a presentation on migration timing of Atlantic salmon smolts from Penobscot Bay to the Scotian Shelf at the forum. "Studying salmon at sea using telemetry enables us to tag and follow very small fish in saltwater. We have also used satellite tags to study adult salmon at West Greenland to look at their return trip. Tracking wild Atlantic salmon with tags has provided information on the migration cycle and where mortalities occur."

Other technologies, such as hydroacoustic monitoring, have enabled researchers to better understand where salmon smolts and other river-run species are found at different times of the year and in what locations in the Penobscot River. A comprehensive fisheries survey of the Penobscot Estuary to monitor and describe pre-and post-dam removal conditions was conducted by NOAA Fisheries from 2010 to 2012 using mid-water trawling, seining, fyke nets and hydroacoustics. Some results from that study and ongoing research were presented at the recent forum.

"We're focused on the ecosystem as a whole," Renkawitz said. "Our ongoing research projects focus on the estuary, on the near shore marine ecosystem, and on the large-scale ocean ecosystem and what role oceanographic conditions may play in the survival of salmon and other diadromous fish species. We want to determine what makes a healthy estuary, a healthy ecosystem, and if it is broken, how do we fix it for future generations."

Contact: Shelley Dawicki, shelley.dawicki@noaa.gov



Great Works Dam on the Penobscot River shortly before removal began in June 2012.

Photo credit: Shelley Dawicki, NEFSC/NOAA.

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