



The Northeast Fish Rapper

Newsletter of the Northeastern Division of the
American Fisheries Society



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President's Message

NED President John Cooper

Greetings to all members. The Northeastern Division Executive Committee (ExComm) has been working on several topics over the winter. The primary one is the Annual Meeting, which will be held at the Northeast Fish and Wildlife Conference in Newport, Rhode Island, 19–21 April. Our relationship with this conference has a long history but with a recurring concern from many members: the perceived lack of input from the Division in selecting the meeting location and presentation themes. This perception was addressed to some extent in 1994, and again in 2004 with the writing of a 'white paper' outlining advantages and disadvantages of having the business meeting at the conference. The ExComm is exploring this issue (again) with the hope that our relationship with the conference can be strengthened, but if not, then exploring other options. We have the support of AFS Executive Director Doug Austen, AFS President Donna Parrish, and President-elect Ron Essig, and their efforts have made a difference. One concern is meeting location, which has been relatively expensive, especially for students, and this expense would reduce student and member participation.

Increasing participation at the

Division level is a primary goal and is hampered if costs of the meeting, however valuable in presenting research, create a burden to students, agencies, and the Division. Another concern is having input on the meeting themes, which some members believe has meant an overabundance of wildlife papers at the expense of fisheries papers and the rejection of some fisheries topics entirely. The perception of presentation categories can be argued both ways depending on the year selected (considering years 2001 through 2013). It is true that in those years when the Division sponsored a symposium (2004, 2008, 2010), fisheries papers were 33% to 58% of the presentations. Wildlife presentations were a greater percentage in 2009, 2011, and 2012. The Division, and its members, can influence the number of fisheries presentations.

We are working with the Northeast Section of The Wildlife Society in formulating what we think we can do, and ask of the administrators, to make the conference more relevant for members and students of both societies. The ExComm will be presenting our concerns about our

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President's Message

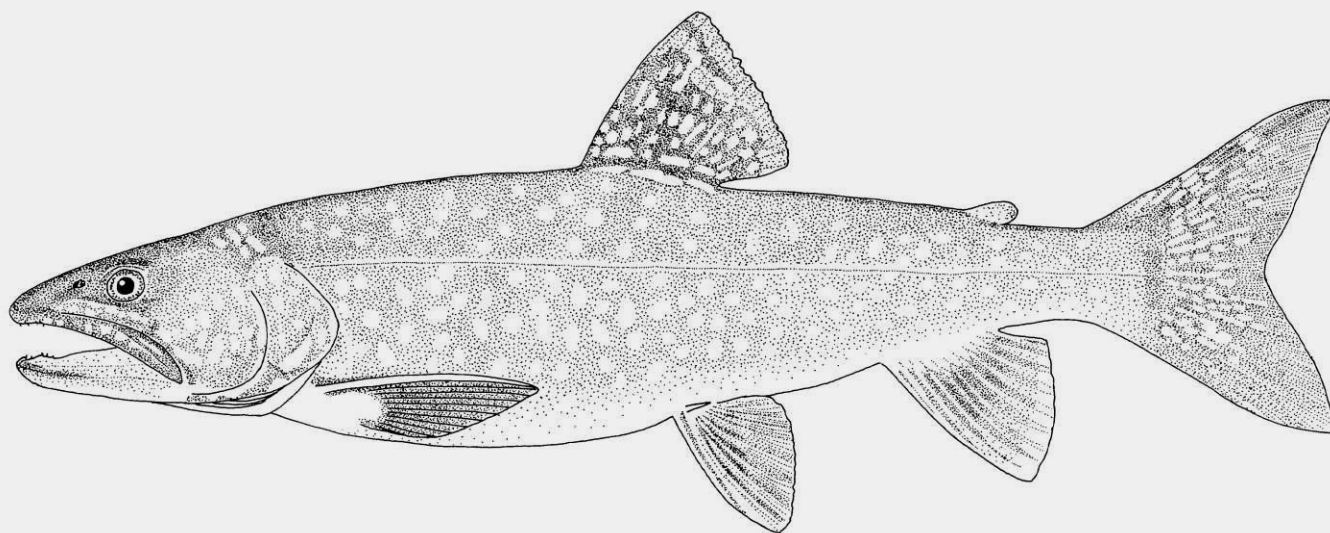
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relationship to conference administrators at the Fish Chiefs meeting as well as the Directors subgroup meeting at the conference in April, and The Wildlife Society is hoping to do the same with wildlife administrators. The outcome of these presentations will influence the choice of meeting location for the Division in 2016 and 2017. The Division will hold its business meeting with AFS in Atlantic City in 2018.

Membership in AFS, and the Northeastern Division, is an asset that can last throughout a career. Some would call this networking, but it is more than that, it is getting to know others in similar or related areas of research. This has become more apparent to me over the past 15 years as it has led to interesting work that also keeps me employed. Membership in AFS (for new regular members) is currently being offered at half the normal rate and this will continue until the first week of March. I would urge all potential new members to consider joining AFS as well as professionals that are not members.

Volunteers are needed for chairing the Best Student Presentation Awards for the Newport, Rhode Island, meeting in April. This involves recruiting judges for the papers and posters and compiling the results. Volunteers are also needed for Program Chair for 2016 and beyond. This would be a chance for you to organize presentations on a topic of special interest to you. Volunteers are the working force within the Division, including the ExCom, and their efforts will make the Division successful.

Dr. John E. Cooper
President, Northeastern Division, AFS
cooperresearch@hughes.net



Lake Trout (Salvelinus namaycush)
Print by Dr. John Cooper from "Island Life, An Isle Royale Nature Guide."

CHAPTER AND SUBUNIT UPDATES

UMaine Student Subunit

Lisa Izzo and Dan Weaver

The University of Maine student subunit got off to a productive start this fall with workshops, community outreach projects, and guest speakers. We started the year off with a fish printing activity, which attracted both graduate and undergraduate students. Guest speakers included professionals from academia, state and federal agencies, the Penobscot Indian Nation, and nonprofit organizations, allowing members to interact with fisheries scientists with diverse backgrounds. In addition to guest speakers, we hosted a second R workshop, lead by one of our graduate students. AFS posted a narrow victory at candlepin bowling, extending its winning streak versus the student chapter of The Wildlife Society!



AFS beats TWS by 1 pin in the semiannual candlepin bowling competition between the two clubs

Members worked closely with the Penobscot River Restoration Trust at both the Common Ground Fair and the Old Town RiverFest, raising awareness for the Penobscot River and its resources. Additionally, the subunit participated in a coastal cleanup at Lamoine State Park, collecting trash and recording data that will become part of the international ocean trash index compiled by the Ocean Conservancy. Subunit members also collected and showcased fish and invertebrates from Sedgeunkedunk Stream for students at the Center Drive School in Orrington, ME. Over winter break, subunit members contributed time



Subunit members pose with their haul during the Lamoine State Park cleanup.

and knowledge to the Atlantic Salmon and Sea-Run Fish Restoration in Maine website (see article on page 21).

Many events are in the works for the spring semester, including a showing of the documentary DamNation, an intermediate R workshop, and exciting guest speakers. With ample ice covering Maine's lakes, members anticipate several ice fishing trips, and hope to recruit a few new



Catherine Johnston, Lisa Izzo, and Mikey Arsenault help out the PRRT at the Old Town RiverFest.

anglers in the process. After the thaw, a 5K Spawning Run is planned for the springtime to raise awareness for restoring fish passage.

Lisa Izzo is the Vice President of the UMaine subunit. She can be reached at lisa.izzo@maine.edu. Dan Weaver is the President of the UMaine subunit. He can be reached at daniel.weaver@maine.edu

Cornell, SUNY ESF, and NYS

Ellen George, Erik Hazelton, and Tom Hughes

Terrible weather, biting cold, and driving rain has never deterred truly dedicated AFS members from working for the noble causes of science and outreach. On October 26th, 2014, students and members of AFS chapters and subunits from SUNY ESF, SUNY Oneonta, SUNY Morrisville, Cornell University, and Wells College braved the elements to attend the first event of the new Youth Aquatic Resources Education (YARE) Workshop in Syracuse, New York. Organized in collaboration between SUNY ESF, Cornell and the NY Chapter AFS, the day functioned as a “dress rehearsal” for the main event, a weekend-long workshop on youth outreach scheduled for



Tending trap nets at Onondaga Lake.

May 2-3, 2015.

Participants in the October day took part in several aquatic sampling activities, including trap netting in Onondaga Lake and macroinvertebrate sampling in Bloody Brook. Activities were designed with kids and the community in mind: fish identification focused on general physiology and ecosystem function, such as comparing and contrasting top predators versus prey fish, bottom feeders and invasive species. Macroinvertebrates were sorted into major functional groups using a large, kid-



A tabletop tank makes a captured yellow perch easy to see as Tom Hughes discusses fish physiology.

friendly flow chart, which also provided a rough estimate of the health of the stream.

Feedback from this first training day is being used to plan the main workshop weekend in May. The workshop will be held at the Cornell Biological Field Station on Oneida Lake, and is geared towards collegiate AFS students and local teachers and educators. The workshop will act as a “train the trainer” event, with lessons on how to teach kids about fish communities, stream ecology, and recreational fishing. We are also excited to announce that the Izaak Walton League of America will be offering a day-long Creek Freaks program, which will provide the training and materials necessary to lead official Creek Freaks stream ecology curricula. At the end of the workshop weekend, participants will be fully equipped to plan and lead youth outreach events in their community.

Are you part of an AFS chapter or subunit that is interested in leading youth outreach? If so, you are invited to join us for the spring YARE workshop! For more information, email Tom Hughes.

Ellen George is the President of the Cornell subunit. She can be reached at emg239@cornell.edu. Erik Hazelton is the President of the SUNY-ESF Chapter. He can be reached at ejhazelt@syr.edu. Tom Hughes is the Chair of the Youth Aquatic Education Committee for the NYS Chapter. He can be reached at tom.hughes@parks.ny.gov.

University of Connecticut Subunit

Andrew Ransom

The subunit at the University of Connecticut has been busy lately. Meetings in the fall semester consisted mainly of graphic design for a new layout to the displays in the visitor center at the Quinebaug Valley Fish Hatchery in Central Village, CT.



Hayley Morway and Andrew Ransom electrofishing for largemouth bass as part of an ongoing research project at UConn.



Matthew Strobel, Patrick O'Brien, and Dr. Jason Vokoun (L-R) electrofish for largemouth bass.

The current display is being revamped in order to attract more visitors to our state hatchery facilities. The club is hoping to finish the design in the Spring semester and share with the hatchery staff.

Other events the club has been involved with include helping graduate students Jan- Michael Hessenauer and Lucas Nathan with sampling for their dissertation projects. Both boat and backpack electrofishing methods are used, and several members went along to help them. Lucas also gave a talk to the members during one of the meeting about his MS research involving eDNA techniques to monitor for invasive species in bait shops in the Great Lakes region.



Subunit members Adriana Lema (M) and Zach Skelton (R) participate in the Union Pond cleanup.

A pond cleanup at Union Pond in Manchester was also conducted for the 2014 Source to Sea Cleanup of the Connecticut River watershed in conjunction with the Soil and Water Conservation Society's UConn student chapter, and the turnout was better than expected.

We look forward to some needed fundraising this spring and are planning an ice fishing event as well.

Andrew Ransom is the President of the UConn Subunit. He can be contacted at andrew.ransom@uconn.edu.

Pennsylvania Chapter

Rebecca Dunlap

The Pennsylvania Chapter hosted a successful Spring Technical Workshop in April of 2014 titled: Improving Skills in Professional Communications.

The workshop focused on planning and designing PowerPoint presentations and guidelines for effective oral presentations. The workshop was geared towards young professionals and graduate students who had had some

experience making public presentations; upper level undergraduates conducting research; and professionals looking to improve their communication skills

The Chapter was fortunate to have both Bob Carline and Jim Finley instruct this workshop. Bob, now retired, is former Leader of the Pennsylvania

Cooperative Fish and Wildlife Research Unit. He taught a graduate course in

Professional Communications at Ohio State University and Penn State University. For many years, he judged oral presentations and posters at American Fisheries Society (AFS) meetings. He was the lead author in an AFS video production entitled "Designing Effective Slide Presentations". He wrote the AFS "Guidelines for Designing Posters", which was published in Fisheries

in 2007. Jim Finley, Ibberson Professor of Forest Resources Management, Director of the Center for Private Forests at Penn State, and Pennsylvania Extension Forester, has been on the faculty of the School of Forest Resources and now the Department of Ecosystem Sciences and Management for 39 years. In his extension role, he commonly presents information in varied venues, from

formal research to talks designed to engage, motivate, or entertain audiences.

Meeting materials can be downloaded from the meeting webpage at: <http://pa.fisheries.org/2014-spring-technical-meeting/>

Rebecca Dunlap is the President of the Pennsylvania Chapter. She can be contacted at rdunlap01@gmail.com



Mid-Atlantic Chapter

Daphne Munroe

Recently, the Mid-Atlantic Chapter set up a new website and Facebook page! You can find them at:

<http://mid-atlantic.fisheries.org>

and

<https://www.facebook.com/MidAtlanticAFS>

Our goal with these pages is to share information about current research and fisheries topics in the Mid-Atlantic region with our membership and the community at large. We need your updates! Please share field pictures, research updates, publication notes, information about upcoming meetings, regional job postings, etc. Please like and post on the Facebook page or contact Lori Brown (lbrown@desu.edu) if you would like to share something on the website.



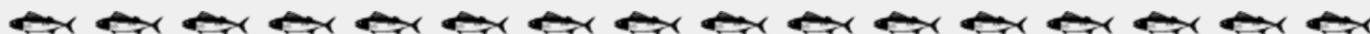
Steve Means, Dr. Bob Carline, and Dr. Jim Finley at the 2014 Spring Technical Workshop



The Mid-Atlantic Chapter is also very happy to announce that our bid to host the national meeting of the American Fisheries Society in Atlantic City from Aug 19-23, 2018 was successful! This meeting will be a great opportunity to showcase all of the excellent fisheries professionals in the Northeast Region. From helping assemble volunteers, to planning and hosting symposia, to organizing field trips – the opportunities for participation will be vast, and we will look to our neighboring chapters (that's you!) for guidance and assistance. There will be many exciting connections to be made logistically and scientifically while creating the vibrant atmosphere for the meeting's success. Atlantic City has plenty of great fun in store for AFS in 2018 and we look forward to continued efforts, made with you, to make this meeting an overwhelming success. See you in AC!



Daphne Munroe is the President of the Mid-Atlantic Chapter. She can be reached at dmunro@hsrl.rutgers.edu



Atlantic International Chapter

Ian Kiraly

We are pleased to announce that our 2015 Annual Meeting will be held at Fundy National Park in New Brunswick; the park is the site of many fisheries research projects, and is a great place to explore. It encompasses everything from rugged coastline where the highest tides in the world are observed to the Acadian Highlands, accessed via an extensive trail system. More information about Fundy National Park can be found at <http://www.pc.gc.ca/eng/pn-pn/nb/fundy/index.aspx>. Even though details for the meeting have not been finalized (it will be held in late September), it is never too early to start thinking about participating in what is always a fun and interesting event. The awards received by presenters are unparalleled: The Lunker Award can be won by presenting a picture of the largest fish caught by an AIC member, and the Soggy Boot award will be given for the most bogus or humorous photos within a presentation. Even the mythical Bear Hat is bound to make an appearance. Stay tuned for more details!



Ian Kiraly is the President of the Atlantic International Chapter. He can be reached at ikiraly@gomezandsullivan.com

FISHERIES IN THE NEWS

Ken Able Honored with NOAA Fisheries Habitat Conservation Award

Rutgers Office of Communications

Ken Able, distinguished professor in the Department of Marine and Coastal Sciences and director of Rutgers University Marine Field Station (RUMFS) at Tuckerton, NJ, was chosen as the 2014 recipient of the Dr. Nancy Foster Habitat Conservation Award from NOAA Fisheries, Office of Habitat Conservation.

“The Dr. Nancy Foster Habitat Conservation Award is the most prestigious award in the country given in recognition of an individual’s contributions to the restoration and conservation of marine and coastal habitats,” said Rich Lutz, director of the Institute of Marine and Coastal Sciences at Rutgers. “What a wonderful honor it is for Rutgers to have one of its most sterling scientists recognized as the worthy recipient of this year’s Dr. Nancy Foster Habitat Conservation Award.”

Able’s research at RUMFS focuses on the life history and population dynamics of larval and juvenile fishes in the relatively undisturbed Mullica River–Great Bay estuary and along the east coast of the U.S. In 1989, Able introduced weekly monitoring of larval and juvenile fishes in the estuary. This weekly monitoring, which continues today by RUMFS, is part of a broader analysis of issues of habitat quality for estuarine fishes in natural and impacted estuaries that stretches from New York Harbor to the Gulf of Mexico.

“Habitat conservation and restoration are increasingly important issues in the management of the nation’s coastal resources and for that reason,

my colleagues and I from the Rutgers University Marine Field Station feel particularly honored by this award,” said Able.

The Dr. Nancy Foster Habitat Conservation Award was established in 1997 by NOAA and it



Ken Able tracking acoustically tagged white perch as part of an evaluation of salt marsh restoration in Delaware Bay

honors Dr. Foster’s legacy through recognition of selected individuals who have demonstrated extraordinary dedication, innovation and excellence in the fields of coastal and marine habitat conservation. Able will be presented with the award at the 7th Annual Summit on Coastal and Estuarine Restoration and the 24th Biennial Meeting of the Coastal Society to be held in Washington, D.C., from Nov. 2-5.

Able began his teaching career at Rutgers in 1977 as an assistant professor in the Department of Zoology, later named the Department of Biological Sciences, and the Center for Coastal and Environmental Studies. Since 1986, he’s been affiliated with RUMFS and has served as its director since 1987. His almost four decades of research and teaching was recognized in 2009 by the Oscar E. Sette Award from the American Fisheries Society in recognition of sustained excellence in marine fishery biology research, teaching and administration.

This article was originally published by the Rutgers Office of Communications on October 8, 2014, at <https://sebsnjaesnews.rutgers.edu/2014/10/ken-able-honored-with-noaa-habitat-conservation-award/>

Maine IF&W Conducts Arctic Charr Research

Elizabeth Thorndike

Bald Mountain Pond is an 1,152-acre pond in Bald Mountain Pond Township in Somerset County. It is sixty-five feet deep, has over half a dozen tributaries, and over fourteen miles of boulder and ledge shoreline. There are only three camps on the lake and a fair boat launch best accessed by shallow hulled craft. Bald Mountain Pond hasn't been stocked since 2007 and has been known to produce large brook trout (up to five pounds). A noteworthy quality of Bald Mountain Pond is the presence of landlocked arctic charr. In Maine, there are only 14 bodies of water where charr exist; charr from 12 of the 14 waters are considered genetically distinct. The average charr in Bald Mountain range from 6 to 8 inches but can reach upwards of 10 inches.

Recently, there was an illegal introduction of rainbow smelt into Bald Mountain Pond. Smelt and charr do not coexist, in most bodies of water in Maine, due to competition for the same food source and direct predation by smelt on emerging charr sac fry. Charr in some smaller waters (less

this specific population. This was a critical first step required for developing specific management strategies to protect these fish.



Charr after tag is implanted -- note trailing wire

Maine IF & W's ultimate goal is to learn where the charr population in Bald Mountain Pond spawn in case a relocation or a hatchery culture project is required to preserve this unique strain of fish. This is desirable because large numbers of charr typically congregate near very specific sites during their fall spawning season, and we can readily capture them alive with trapnets. To learn where the charr spawn, fisheries biologists began a telemetry project by inserting radio tags into individual charr. Charr were captured by setting short gill nets into deep water. Once the charr were obtained, they were surgically implanted with a tag, released, and tracked regularly by boat or plane.

Several complications arose during the project. Charr are difficult to work with after being captured from deep water. Issues associated with a rapid change in temperature and the fish's inability to quickly adjust their swim bladder caused delays. Ultimately, only four charr were successfully tagged and released. In spite of this, two of these fish lead to possible spawning shoals. In early November divers investigated the shoals, looking for potential spawning substrate or visible signs of charr spawning activity. No signs of spawning were observed, but limited amounts of suitable spawning substrate were located.

Future plans for Bald Mountain Pond call for reattempting to tag additional charr with "delayed start" tags. These tags would give biologists a longer window of time to tag charr under more favorable handling conditions.

Instances of fish introductions have unfortunately become more common in recent years and cause irreversible damage to native ecosystem. For this reason, Maine IF & W strongly urges anglers not to introduce new species into water bodies – and it's against the law!

Elizabeth Thorndike is an assistant regional fish biologist for Maine IF&W. She can be reached at elizabeth.thorndike@maine.gov.



Charr being implanted with radio tag

than 200 acres) are outcompeted and are often extirpated. Maine IF & W has chemically reclaimed two small charr waters in the recent past that were facing a similar situation. However, Bald Mountain Pond is too large and deep to be reclaimed in this fashion. While we are hopeful that Bald Mountain Pond's large size and the complex, diverse habitat that it provides will mitigate negative impacts on charr, we nonetheless spent considerable time last fall learning about

Summer of the Chinook

Elisabeth Maxwell

The sun was just starting to disappear behind the ridgeline. We had just gotten back to camp after a long day of surveying and everyone was pitching in to help prepare dinner. I was walking down to the riverbank to filter some fresh water when I heard the splashing. I didn't know what to make of it at first. Frozen in place, I scanned up and down the small meadow that was beside the bend in the river. We had seen bear scat earlier on the trail so I was fairly cautious to make sure I didn't walk into anything unsuspecting. I had just taken another step when I heard it again, the quick succession of rapid splashing followed by a long pause. The rippling of



A spawned salmon with pocket knife for size comparison

the river made it hard to pinpoint the origin of the sound. Finally I made it down to the bank and started pumping water. All of sudden there it was! Right in front of me – an adult Chinook Salmon!

Fighting upstream, the Chinook would propel himself forward with a quick burst of strength before settling down to recover. Even with his determination at each effort, he didn't make much headway. I could only imagine how tired he must have been. We were deep in the Eagle Cap Wilderness of Eastern Oregon; this fellow had swum a long way.

After I recovered from my initial shock, I ran back to camp to get the rest of the crew. By the time we got back to the bank we started to notice other fish making their way along the cobbled river. Our hunger was long forgotten as we watched the beautiful sight of these fish fighting their way upstream so they could mate and reproduce. After three months of river and stream surveys, this was the perfect conclusion as we were reminded of the reason we were doing this work.

I was working with the Oregon Department of Fish and Wildlife on a crew for the Columbia River Habitat Monitoring Project (CHaMP). The purpose of this project is to collect long-term topographic data and habitat information in relation to salmonid populations. Overall, the project includes sites in 26 watersheds throughout the Columbia River basin spanning Washington, Oregon, Idaho and even a small part of California. CHaMP is a truly collaborative venture involving individuals and teams from a wide range of organizations including Washington Fish and Wildlife, Oregon Fish and Wildlife,

Oregon State University, Columbia River Inter-Tribal Fisheries Commission, and many more.

For me, working on the CHaMP project was a dream come true! I was exploring rivers, creeks, and streams all throughout eastern Oregon and contributing to work that was providing useful information to managers and planners. During the first half of the summer we worked out of the La Grande office, making



Elisabeth mans the TopCon theodolite system

day trips to nearby sites and perfecting our work-flow. Operating as a team of four, on the ride out to the site we would agree on who was assigned to which task for each day. One person would be responsible for collecting habitat information such as substrate composition, vegetation cover, and water quality data among many other things. Another crew member would be responsible for manning the digital theodolite while the remaining two crew members would "paint" the topographic features with their prism rods, wading through the water and scrambling along the banks. The goals for each day remained the same, but our approach varied by location. Each time we went to a new site we had unique challenges that we had to work together to overcome. It was a great experience for learning how to work efficiently in the field and maintaining good team relationships despite logistical difficulties or physical strain.

As the summer wound towards a close, we prepared for two trips into the backcountry. This was to be the real test of our ability to function as a team and work effectively because once we got into the wilderness, there would be no option for running back to the office for a forgotten battery or lost radio. The challenges suddenly became bigger, the river deeper and faster, the pressure greater. But the rewards were also greater. Not only did we witness the migration of the salmon up the river but also heard the local wolf pack calling to each other and saw their tracks the next morning. The air was a little bit sweeter and the huckleberries a lot more juicy. Perhaps most importantly, everyone returned home devoid of any injury and only a bit dirtier than normal.

Elisabeth Maxwell is a graduate student in the School of Marine Sciences at the University of Maine. She can be reached at elisabeth.maxwell@maine.edu.

Assessing the Effects of Aquatic Herbicide on Water Quality and Native and Non-Native Plants in two New Hampshire Waterbodies.

John A. Magee

Aquatic herbicides have been and currently are being used throughout the U.S., and elsewhere, in an attempt to control nuisance growths of aquatic vegetation. In New Hampshire, variable milfoil (milfoil; *Myriophyllum heterophyllum*) can be problematic in many waterbodies and is often found in dense monotypic stands, and herbicides have been used for many years to control these nuisance growths. Where herbicides are used on dense stands, there is the potential for the reduction of dissolved oxygen and/or the release of nutrients from the dying plants, which could lead to increased algal production.

In 2013 and 2014, we collected dissolved oxygen and turbidity data and made visual observations of aquatic plants in two New Hampshire waterbodies: Drew Lake, Hopkinton, and Scobie Pond, Franconia. Site visits in 2013 were performed several weeks before herbicide treatments and weekly for approximately eight weeks after treatment. One site visit was conducted around sixteen weeks post treatment. In 2014, only one visit was made in Scobie Pond and two in Drew Lake; Scobie Pond was treated with an aquatic herbicide in September 2014 and Drew Lake was not treated in 2014. Dissolved oxygen and turbidity data were collected and groups of plants were photographed at specific sites during each site visit. The entire area of each water body was not surveyed.



Drew Lake 17 days (top), 30 days (mid), and 45 days (bot) post treatment. In the top two photos, curling of the leaves and stems (epinasty) are visible indicators of herbicide damage.

Treatments in both waterbodies led to the mortality of milfoil starting approximately two weeks after treatment. Most variable milfoil appeared to be completely rotted around 30 to 40 days after treatment. Some milfoil in untreated areas of Scobie Pond died at the same time as the treated milfoil suggesting that some of the herbicide may have drifted into untreated areas. Native

plants were impacted at both waterbodies, with the death of 50-75% of the leaves of white water lily (*Nymphaea odorata*) and the near disappearance of watershield (*Brasenia schreberi*) and yellow water lily (*Nuphar variegata*) where surveys were conducted in Drew Lake. The impacts on native plants were much less so at Scobie Pond, both in magnitude and spatially extent. Dissolved oxygen concentrations at Drew Lake were below the New Hampshire Surface Water Quality Standards of 5mg/L throughout the waterbody, beginning about three weeks after the herbicide treatment and lasting for several weeks. It is likely that the decomposition of large masses of rotting milfoil led to the widespread low dissolved oxygen, and that the values were very low because the entire lake was treated with herbicide on a single date. Recommendations on the herbicide labels are to treat only part of a waterbody at a time when the target plant is very dense. Low dissolved oxygen conditions in the littoral area of Scobie Pond were in only limited areas, very short in duration and may have been unrelated to the herbicide treatment. Dissolved oxygen data collected by New Hampshire Department of Environmental Services during the same time period in both waterbodies are consistent with these conclusions. An algal bloom, containing two cyanobacteria species, *Oscillatoria* sp. and *Anabaena* sp., both of which can produce toxins, formed several weeks after the

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treatment at Drew Lake, consistent in timing with large masses of rotting milfoil and increased turbidity. It is likely the release of nutrients from the rotting milfoil led to the algal bloom, although nutrient data were not collected

Each waterbody has unique characteristics, and understanding these in the realm of the management of non-native, invasive aquatic plants is essential in ensuring that water quality and aquatic habitat is suitably protected. Specifically, the widespread impacts to native plants and dissolved oxygen at Drew Lake were likely due to the facts that the entire lake was treated on a single date, milfoil was relatively widespread in the lake and in some places was dense, and the flushing rate was very low. Although the flushing rate of Scobie Pond is also relatively low, a smaller proportion (~10 %) of the pond's surface area was treated.

Pesticide registration labels should be followed to meet water quality standards and protect aquatic life. Specifically, the label for Clean Amine, which was used at Drew Lake, states that it may be appropriate to treat only part of a waterbody at a time to avoid causing low dissolved oxygen conditions due to large masses of rotting plants. The labels for most or all of the aquatic herbicides used in New Hampshire have a similar statement.

It is not known if the concentrations of 2,4-D or the impacts to native aquatic plants and water quality observed at Drew Lake in 2013 are typical when other waterbodies are treated with this or other herbicides. A review of the herbicide concentration data for New Hampshire waterbodies may help determine the relative risk to native aquatic plants and water quality for proposed herbicide treatments and be useful in the permitting process and the development of Long Term Management Plans for each waterbody.

Follow up work was conducted in 2014. On three dates in Drew Lake in summer 2014, we collected dissolved oxygen data and observed aquatic plants as in 2013. No herbicide treatment was conducted in 2014. Dissolved oxygen levels were much higher in 2014, especially at depths greater than 1 m despite similar water temperatures. We noted that in at least one location, it appeared that floating-leaf pondweed was no longer there despite it being very common before the herbicide treatment in 2013.

John Magee is a fish habitat biologist for the New Hampshire Fish and Game Dept. He can be reached at john.magee@wildlife.nh.gov

Sauger Restoration Begins in Western NY

Jeff Loukmas

Sauger were historically common in the Great Lakes, Lake Champlain, and St. Lawrence River watersheds of New York, but are now one of the state's most imperiled fish species, thought to now occur as a remnant population in Lake Champlain. One objective of NYSDEC's recently adopted Sauger Conservation Management Plan is to establish a sauger population in the Allegheny River watershed above the Kinzua Dam, which blocks the



Sauger at stocking in June (top) vs. fall collected stocked sauger (bottom).

downstream population in Pennsylvania from accessing the reservoir and upper river in New York.

A 5-year stocking plan was established to achieve this objective using sauger fry produced from Ohio River brood stock, which were donated by the West Virginia DNR and reared in a pond at NYSDEC's Chautauqua Hatchery. The initial stocking event for this program occurred on Monday, June 9, 2014, when 5,700 approximately 2-inch long sauger fingerlings were stocked in the upper Allegheny Reservoir. More details regarding this restoration project can be found at: <http://www.dec.ny.gov/outdoor/92788.html>

Jeff Loukmas is the warmwater fisheries unit leader at the NYS Dept. of Environmental Conservation. He can be reached at jeffrey.loukmas@dec.ny.gov

Agencies Collaborate to Assess Lower Mohawk River Fish Assemblages

Scott Wells

The U.S. Geological Survey (USGS) and the NYS Department of Environmental Conservation (NYSDEC) Bureau of Fisheries in Region 4 completed the first of two spring river sampling expeditions on the main stem of the Mohawk River in central New York. The 2014 results were summarized and presented by USGS staff at the recent NY chapter AFS conference in Lake Placid on Feb 6, 2015.

The Mohawk River, including the NYS Barge Canal, supports a diverse fishery used extensively by recreational anglers. The last comprehensive fish survey was conducted in the lower basin by the New York State Department of Environmental Conservation (NYSDEC) from 1979-1983. The river has experienced a number of substantial changes since then including several major storm events, establishment of Zebra Mussels (*Dreissena polymorpha*), and declining runs of anadromous Blueback Herring (*Alosa aestivalis*). In 2014, the U.S. Geological Survey and the NYSDEC began a two year study to

assess temporal and spatial differences in contemporary fish assemblages. Preliminary results from boat electrofishing surveys conducted at 12 sites suggest fish communities currently differ substantially between permanently and seasonally impounded sections of the river. Catch-per-unit-effort for the entire fish community in permanently impounded sections was more than twice that of seasonally impounded sections. Centrarchids and Yellow Perch (*Perca flavescens*) contributed most strongly to these differences but popular gamefish such as smallmouth bass (*Micropterus dolomieu*) and walleye (*Sander vitreus*) were also more abundant in permanently impounded reaches. Results from an additional 12 surveys in 2015 will be used to complete the contemporary dataset and fully assess spatial and temporal differences. A summary of the project can be found at <http://ny.cf.er.usgs.gov/nyprojectsearch/projects/LK00-FKZ14.html>



Luis Rodriguez (left) and Scott George (right) netting during a 2014 electrofishing survey on the lower Mohawk River.



A mature pumpkinseed captured while electrofishing

Scott Wells is a warmwater fisheries biologist for the New York State Department of Environmental Conservation. He can be reached at scott.wells@dec.ny.gov

Old Mine Site Recovering

Frank Frost

For the past several weeks we've been trap netting a small lake in Fort Fairfield in an attempt to capture brook trout on their spawning run. Nadeau Lake, which lies between Route 1A and the US/Canada boundary, has a history unlike any other lake in Maine. For 30 years its bottom was dredged for a valuable liming agent, marl, that was used in regional agriculture. In 2007, IF&W completed a multi-year project to restore the original water level, improve trout habitat, and remove



A male brook trout recently captured at Nadeau Lake.

several competing species of fishes.

The chemical reclamation in 2007 has been highly successful for trout ; only three other species of fish have been documented, two of which are sticklebacks and banded killifish, which the trout feed on heavily. White sucker and brown bullhead, two significant competitors, were successfully removed. In 2014 trout fishing was reportedly very good, with trout up to 20 inches being caught.

A State-owned launch and parking area are easily accessed off Route 1A approximately 6 miles north of downtown Fort Fairfield. A concrete ramp is available for launching small watercraft and there is a large area available for shore angling as well. Trout numbers are not as high as we had expected but the size and condition are excellent at this time; we've had fish exceeding 2.5 pounds caught in our trap nets.

Frank Frost is a regional fisheries biologist with the Maine Department of Inland Fisheries and Wildlife. He can be contacted at frank.frost@maine.gov.

Pennsylvania Chapter Featured in Fisheries

Jordan Allison

As fisheries biologists, one of our most important responsibilities is to communicate the information we have gained with myriad of stakeholders ranging from the public to other professionals around the world. This component of our job is usually achieved by publishing our work in scientific journals, hosting meetings with stakeholders and presenting at conferences held by a range of professional societies. However, in today's technologically advanced world where almost any piece of information can be conjured up in a moment's notice, additional mediums exist to help us share our message.

One of the most frustrating tasks the Pennsylvania chapter has undertaken as of late has been the development of a functioning website that can be updated easily. Prior to this year, the Pennsylvania Chapter's website could have been described as antiquated at best; to put it into perspective, if it was a person, our webpage would have been wearing bell bottoms, platform shoes and the masthead would have been sporting mutton-chop sideburns.

If you have not yet checked out our new website -- please do so! <http://pa.fisheries.org/> and check out Jordan's article "Units, Step Right Up: Get Your Free Webiste" published in Fisheries, Vol. 39, Iss. 9, 2014.

Jordan Allison is a Fisheries Biologist with the Pennsylvania Fish and Boat Commission's Division of Environmental Services. He can be contacted at jorallison@pa.gov



New Hampshire Fish and Game Celebrates 150 Years

Scott Decker

On June 30, 1865, the state legislature authorized the governor, with the advice of the Governor's Council, "to appoint two commissioners to consider the subject of the restoration of sea fish to our waters, and the introduction of new varieties of fresh water fish . . . the black-bass, land-locked salmon, and other varieties, if they deem it expedient, provided the expense does not exceed the sum of \$100." In 1866, the Fisheries Commissioners, Henry Bellows and Winborn Sanborn, had William Fletcher put fertilized Atlantic salmon eggs into the Pemigewasset River and N.S. Batchelder stocked the state's first landlocked salmon into Newfound Lake. Both the live fish and the eggs came from New Brunswick. So began the first efforts to manage New Hampshire's fisheries.

Naturally spawning Atlantic salmon returned to the Pemigewasset at Livermore Falls in 1877 and that year a Massachusetts help fund a joint venture salmon hatchery at this site. Elliott Hodge oversaw the hatchery in 1882 and the next year began serving for a decade as a Commissioner. Hodge's legacy was a system of eleven hatcheries, his discovery of the Sunapee golden trout, and the hiring of the first "Fish and Game Detective" to enforce fishing and hunting laws. The stocking of trout and salmon from these hatcheries was the predominant fisheries work conducted in the state for the next 50 years.

The first professional biologist was not hired by Fish and Game Department until 1936 who was asked to conduct comprehensive surveys of the states freshwater lakes and streams. It was during that

summer that biologist Earl E. Hoover and conservation officer Elverton C. Berry surveyed 28 lakes throughout the state "to classify waters and ascertain a scientific stocking program." The results of these surveys were published in a report entitled "Preliminary Biological Survey of Some New Hampshire Lakes, Survey Report No. 1." It was the first time that metrics such as depth, temperature, dissolved oxygen, pH, and carbon dioxide were collected in order to evaluate what type of fish could survive in the lakes. Previously, many fish were

wasted by stocking them in places where the habitat did not support them. Age and growth of fish trapped in the lake by analyzing fish scales was also conducted.

During the summer of 1937, a more extensive survey of the lakes of the Androscoggin, Coastal, and Saco watersheds was inaugurated by Fish and Game. The actual fieldwork on lakes was conducted by Dr. J.L. Fuller of the University

of Maine and W.T. Edmonson of Yale University. About 100 lakes were visited and observations were made on the chemical and biological factors which have been found most important to fish life. For the first time, biologists conducted detailed stream surveys collecting data on food conditions, temperatures, cover, pools, and other physical factors which were then interpreted and the potential productivity of the stream used as a basis for ascertaining the size, number, and kind of fish to be planted. About 380 streams totaling 1,400 miles were surveyed, the work again being supervised by Earl Hoover. Similar watershed surveys followed with the Merrimack, completed in 1938, and the Connecticut, completed in 1939.

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New Hampshire fisheries trucks in the early 1930s.

Continued from previous page

Hoover's work readily convinced legislators that the earlier haphazard stocking of hatchery brook trout into unsuitable waters had wasted thousands of dollars. Thus, he paved the way for future Department biologists.



A New Hampshire game warden uses an old-fashioned air ski to check in with ice fishermen.

Lakes and ponds stocked with trout or landlocked salmon often suffered from overpopulations of undesirable species. Rotenone poisoning seemed to be the solution. Unlike the copper sulfate first used in 1933 at Clough Pond in Loudon, the poisonous effect of rotenone didn't linger in the water, and trout and salmon could soon be restocked. In 1938, Back Lake in Pittsburg was the first pond reclaimed using rotenone. Reclaiming ponds (and a few streams) with rotenone to control species such as suckers, pickerel, and perch became the dominant fisheries management technique for producing quality trout fishing in the state for a 40-year period. The last pond to be reclaimed was Little Diamond Pond in Stewartstown in 1989. High cost of chemicals and a trending "ecosystem management" philosophy ended the reclamation program.

The last half of the 20th century challenged fisheries management with the combination of burgeoning population growth, increased demand for quality fishing, and new responsibilities. Cold-water fisheries habitat suffered from the higher water temperatures and lower summer water levels that resulted from upland forest removal for house lots, ski areas, or other developments. The tremendous increase of summer homes on lakes and ponds restricted access to public waters. Permanent

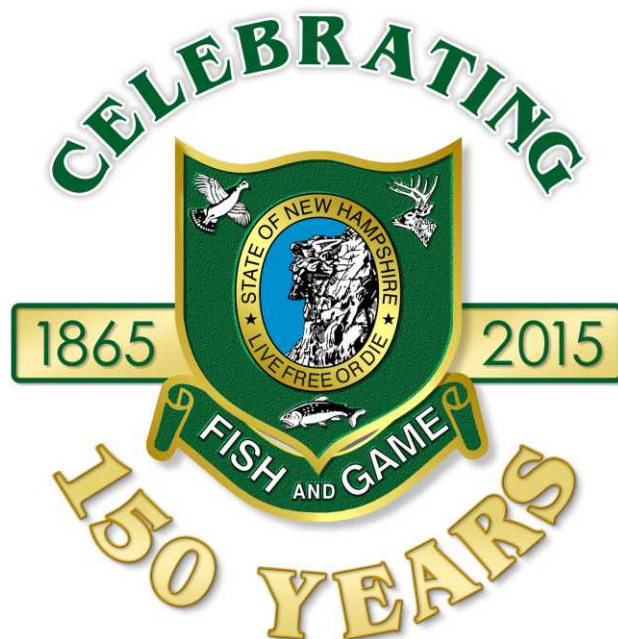
access for the public through land purchases and the construction of boat ramps became a Department priority.

Over the years, countless surveys by fisheries biologists and periodic upgrades of the hatchery system maintained quality fishing supported by Fish and Game's rearing of trout and landlocked salmon, along with special projects for Atlantic salmon, shad, grayling, coho salmon, chinook salmon, and sea-run brown trout. Federal legislation passed in the late 1960s provided matching funds for states' effort to restore sea-run salmon, a program that continued through 2013. American shad and river herring also benefitted from this "modern" effort to restore salmon. Ongoing stocking of the big lakes like Winnepesaukee, Winnisquam, Squam, and Newfound, among others, with landlocked salmon and rainbow trout proved to be a major success.

As the 21st century advances, Fish and Game will continue its stewardship of New Hampshire's coldwater and warmwater fisheries, based on surveys by highly trained biologists. The Department will provide excellent opportunities for fishermen for many years to come through public access acquisitions, fisheries habitat improvements, continued hatchery production of healthy fish for stocking, and ongoing research.

I would like to acknowledge Jack Noon of Warner, NH for providing material for this article.

Scott Decker is the program supervisor of the inland fisheries division of the NHFGD. He can be reached at scott.decker@wildlife.nh.gov.



Penobscot River Restoration Spurs Graduate Research at UMaine

Lisa Izzo, Catherine Johnston, George Maynard, and Jonathan Watson

In 2012 and 2013, the Great Works and Veazie Dams were removed from the Penobscot River in Maine as part of the historic Penobscot River Restoration Project (PRRP), spearheaded by the Penobscot River Restoration Trust. The two dam removals were coupled with the installation of a fish lift in 2014 at Milford Dam, now the lowermost dam on the mainstem of the river. The project is expected to increase habitat access for 11 species of diadromous fish in the river. Throughout the restoration process, graduate students at the University of Maine have been conducting research projects studying the effects of the dam removals and new fish passage devices on a variety of fishes in the Penobscot River watershed.



Lisa Izzo releases a radio tagged salmon into the Penobscot River.

Lisa Izzo, a M.S. student in Wildlife, Fisheries, and Conservation Biology (WFCB), began a study in the spring and summer of 2014 on the post-dam removal upstream migration of federally endangered Atlantic salmon in the lower Penobscot River. The project, which will continue in 2015, aims to examine whether the dam remnants have any impact on upstream migration of adult salmon, as well as the success of the new Milford fish lift. A series of stationary receivers were used to track radio-tagged adult salmon from below the previous Veazie Dam site to the new fish lift at Milford Dam. Initial comparisons of upstream migration speeds suggest that salmon are moving through the dam remnants at a rate comparable to movement in open reaches of the river. Through future analysis we hope to compare post-dam removal migration times to data that was collected before the PRRP began, as well as characterize delays at the Milford fish lift.



Catherine Johnston with a shortnose sturgeon on the lower Penobscot River.

Current research on sturgeon in the Penobscot River focuses on whether the newly available habitat will be used by sturgeon, especially for spawning. Sturgeon have not been documented spawning in the Penobscot since monitoring began in 2007.

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Catherine Johnston, a M.S. student in the School of Marine Sciences who started in May 2014, is continuing the quest to capture early life stage sturgeon by conducting larval drift sampling during the expected spawning period each spring. Sampling sites are chosen based on habitat suitability indices developed by a previous graduate student. Catherine will build on previous work by considering whether the reaches of the river upstream of the old dam sites offer suitable spawning habitat for federally endangered shortnose sturgeon.



George Maynard measures an American Shad electrofished out of the Penobscot River before implanting a radio tag.

She will estimate habitat suitability by adding substrate to a model that previously incorporated water velocity and depth. Acoustic telemetry and gill netting are used in coordination with this and



Jonathan Watson holds a Striped Bass electrofished near the Graham Station power plant on the Penobscot River. This past season marks a sharp uptick in the number of Striped Bass sighted on the Penobscot River after being nearly absent for a decade.

other sturgeon research to track movement patterns and estimate trends in the abundance of sturgeon in the Penobscot River.

The vertical slot fishway at the old Veazie Dam was not effectively used by American Shad. Previous research conducted by Ann Grote found large numbers of American Shad below the dam. George Maynard, a PhD student in WFCB will be following up on some of Ann's research by radio tagging American Shad below the former site of the Veazie Dam and monitoring their movements through the lower river.



The new fish lift at Milford Dam on the Penobscot River opened in spring 2014.

of American shad and river herring above the Milford Dam. These fishes were not caught above Milford before the removal of the Veazie and Great Works Dams and the construction of the new fish lift.

In May, Jonathan Watson, a new M.S. student in WFCB, began the first round of post-dam removal boat electrofishing surveys that follow up on the pre-dam fish community assessment completed by Ian Kiraly. Sampling proved to be difficult due to extreme high and low flows in the spring and fall, respectively. Initial results suggest that restoration efforts have been successful in ensuring passage

Lisa Izzo, George Maynard, and Jonathan Watson are graduate students in the UMaine Dept. of Wildlife, Fisheries, and Conservation Bio. They can be reached at lisa.izzo@maine.edu, george.maynard@maine.edu, and jonathan.watson@maine.edu respectively. Catherine Johnston is a graduate student in the UMaine School of Marine Sciences. She can be reached at catherine.johnston@maine.edu.

Renovations Underway at Reynoldsdale, PA State Fish Hatchery

Len Lichvar

Not many things function today like they did in 1928, but the Reynoldsdale State Fish Hatchery is one of them. The Pennsylvania Fish and Boat Commission (PFBC) managed fish culture facility, located in Bedford County, has supplied many of the trout to the southwest and southcentral stocked trout waters for nearly 100 years. However, as Brian Wisner, PFBC Director of Fish Production, says, "Among other things, the facility has been operated with old technology including earthen ponds and raceways, lack of proper drains for tanks and an outdated effluent system."

Although upgrades and modifications have been made to modernize portions of the hatchery operations over the years, the PFBC knew that in order for the hatchery to have a future a complete makeover was required. In order to accomplish that, the Commission secured 6.4 million dollars in Growing Greener II funds several years ago and set about the laborious process of design and contracting, which took a number of years to finalize.

Demolition and reconstruction of the main components of the facility began in September 2014 and continues today. The Commonwealth's Department of General Services (DGS) is the direct manager of the project with Fiore Contracting of Altoona and Darr Electric as the principle contractors.

The project completion date is set for January 2016, with milestones to be met along the way. Harry Wade, PFBC Hatchery Manager, states that, "The process the reconstruction takes is crucial for the facility to maintain its current production numbers, which will be unchanged throughout the construction process. By working closely with DGS and the contractor, we will continue to hatch and grow fish as we always have done and stocking numbers this year and beyond will not be impacted."

Currently the Reynoldsdale hatchery supplies 185,000 trout to Commission sponsored Coop Trout Nurseries and provides 154,000 fingerlings and 197,000 adult trout for stocking in the region.

The Reynoldsdale facility, however, will look and function



Workers construct forms for pouring new concrete raceways.

completely differently upon completion. Raceways will be consolidated and narrowed, enabling a better use of water that will supply more oxygen to fish as well as transport waste out of the water faster and more efficiently. Wade says, "The final configuration will provide the best possible environment for the rearing of fish as well as require much less maintenance."

The handling of fish waste is a crucial component of all the

Commission's hatcheries and each must meet stringent water quality effluent standards set by the Pennsylvania Department of Environmental Protection. Reynoldsdale's new effluent system will be a state of the art flocculation treatment system and Reynoldsdale will be the first state hatchery with such a process, that may well be a requirement of future upgrades at other fish culture facilities in order to meet current and future effluent standards.

In addition, the new facility will provide the opportunity to eliminate or significantly reduce the presence of harmful pathogens, such as Infectious Pancreatic Necrosis (IPN), that can cause high mortality in cultured fish that exist in high densities. The new Hatch House will also become IPN free and the elimination of the potential for disease is yet another of the essential upgrades.

The only unknown at this time is the method that will be used to limit bird predation that has been a historic problem, causing a loss of fish throughout the hatchery's existence. According to Wisner, "We are still working on a final plan for that."

Reynoldsdale has been a popular visitation destination point for decades for local residents as well as those from outside the area who have enjoyed seeing and learning about the fish at facility. Wade reminds everyone that, "Because of the construction, some areas normally open to the public are off limits, [but] we are still very much open to the public and everyone is welcome to stop by as they have done in the past."

It now appears to be a certainty that the public's interest in Reynoldsdale will remain the same, but Reynoldsdale itself will change. Both are good omens for the future.

This article was reprinted from the Somerset Daily American.

NEW ONLINE RESOURCES

Atlas of Fish Distribution of NY's Inland Species Now Available Online

Doug Carlson

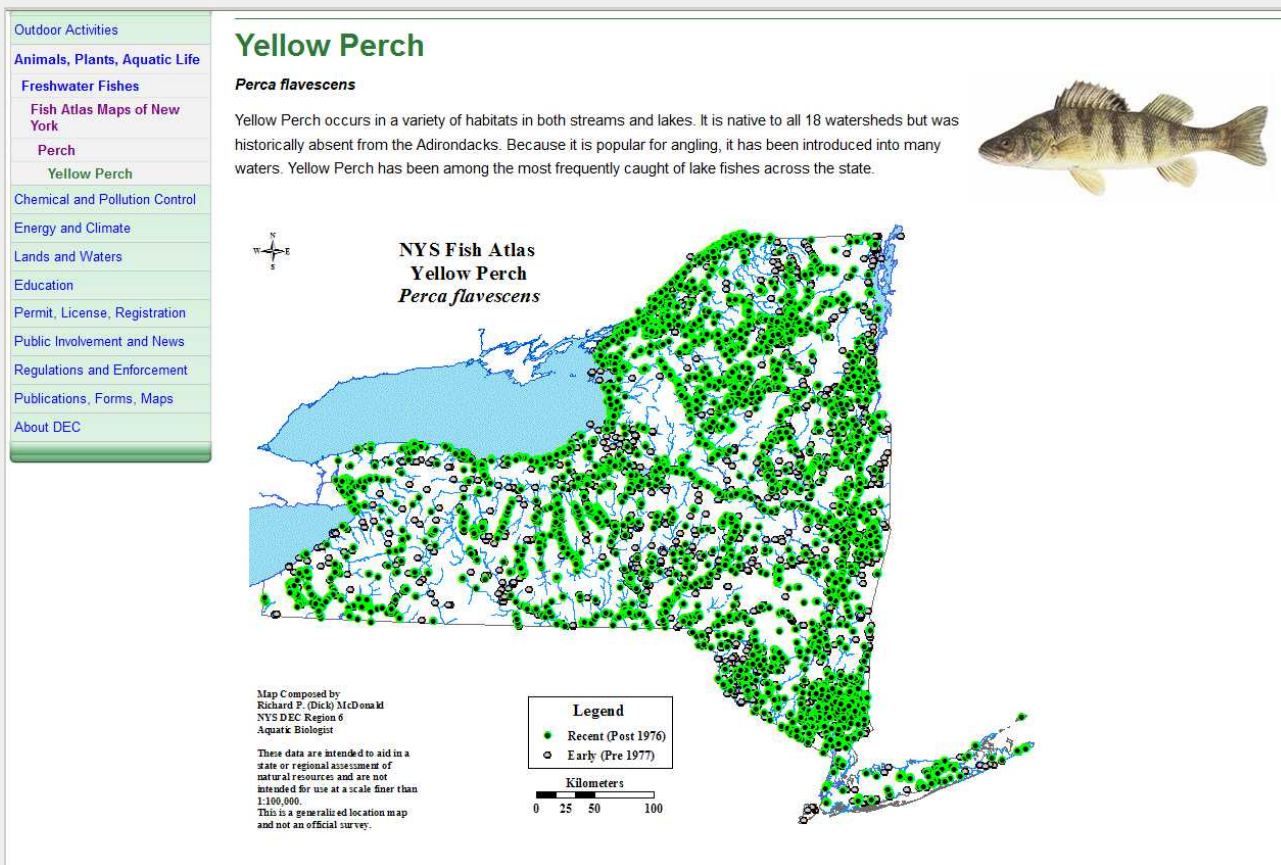
There are about 180 species of fish from New York's inland waters and new distribution maps for each one have been published on New York State Department of Environmental Conservation's (DEC) website at <http://www.dec.ny.gov/animals/84622.html>. This effort results from many years of work by DEC aquatic biologists through fish collections and analysis of historic records from both inside and

outside the agency.

The maps provide an update to the 1985 book *Inland Fishes of New York* written by Dr. C.L. Smith and published by DEC. Almost 30 years have gone by since that publication and in that time things have changed. For example, New York has picked up a few invasive species like the round goby. Others that were thought to be lost in New York have resurfaced, like the deepwater sculpin.

This fish atlas on the website is the first of two products from this research. The map series is also planned for publication in partnership with the New York State Museum in their online journal next year. The publication will include detailed accounts of dates and sources of the records, including some unusual finds. These efforts have been partially funded by the US Fish Wildlife Service to New York through State Wildlife Grants.

Doug Carlson is a biologist with the New York Dept. of Environmental Conservation. He can be reached at douglas.carlson@dec.ny.gov



Atlantic Salmon and Sea Run Fish Restoration in Maine Website Launched

Serena Doose

The State of Maine, the U.S. Government, federally recognized tribes, non-governmental organizations, and educational institutions are currently working together in Maine to recover wild Atlantic salmon and other diadromous fish. As a community of partners, they are striving to successfully protect and recover these species. The ultimate goal is to recover the Gulf of Maine Distinct Population Segment (DPS) of Atlantic salmon as defined in the final listing rule (2009) of the Endangered Species Act (74 FR 29344), and restore other sea-run fish and their habitats.

The Atlantic Salmon Recovery Framework, as part of its Outreach Strategy, created a comprehensive web portal tailored to the needs of all partners involved in Atlantic salmon and sea-run fish restoration in Maine. The website now provides a central location for all of the many organizations involved to share press releases, upcoming events, funding opportunities, training workshops, databases, etc. In addition, the site also serves as an online work space for partners, such as the Stream Connectivity Working Group. Use of this site will serve to demystify regulations, improve public knowledge, highlight recovery efforts, promote resources, opportunities, projects and accomplishments, and demonstrate that there is a community of accessible partners working on sea-run fish restoration in Maine.

The website can be found at <http://atlanticsalmonrestoration.org/>. If you are interested in becoming a part of the community, please contact Serena Doose.

Serena Doose is a biologist with the USFWS Gulf of Maine Coastal Program. She can be reached at serena_doose@fws.gov.

Atlantic Salmon and Sea-run Fish Restoration in Maine

Search Site Search
only in current section

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Companion Sites

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Joseph Dana of the Penobscot Indian National paddles a traditional birch-bark canoe past the breaching. [Read more...](#)

NEWS and ANNOUNCEMENTS

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- USASAC Meeting
US Atlantic Salmon Assessment Committee 27th Annual... [More](#)
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The Atlantic Salmon Recovery Framework
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Get involved with Atlantic salmon and sea-run fish restoration in Maine

- Register to become a member
- Share your photos
- Share your documents or data

Videos

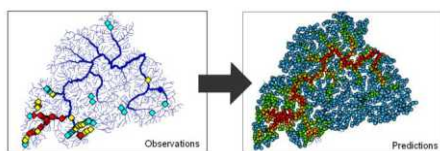
- The Fish that Feeds All Alewives and blueback

MEETINGS AND WORKSHOPS

3RD ANNUAL SPATIAL STATISTICAL NETWORK MODELS WORKSHOP

April 20-22, 2015
Idaho Water Center
Also available as a webinar!

The goal of this workshop is to share new ideas and software for better analysis and interpretation of data measured on stream networks. The workshop will provide an overview of spatial statistical modeling on stream networks including a discussion of when they are or are not useful.



We will also be sharing two sets of free, user-friendly tools: STARS ArcGIS Toolset and the SSN package for R Statistical Software. Plus, we will demonstrate the GIS tools and steps necessary to calculate the spatial information needed to fit a spatial statistical model in R. Finally, the workshop will demonstrate statistical tools and their functionality for modeling continuous, presence/absence (binomial), and count (Poisson) data, block kriging and prediction, uncertainty estimation, simulation and visualization techniques for space/time stream data, and developing and supplementing monitoring designs.

Room for attendees is limited, but webinar viewers are unlimited!

STREAM RESTORATION TECHNIQUES WORKSHOP

March 11, 2015
The Gilsland Farm Audubon
Center, Falmouth, ME

The principle objective is to bring restoration practitioners together to share and discuss a variety of stream/habitat restoration techniques that are currently being used in New England. Each topic has an invited speaker who will provide a formal presentation/training. Each presentation will be followed by a discussion/question answer period intended to encourage participant interactions.

This is intended to be an interactive, hands-on workshop sharing ideas, experience, and tools of the trade. There will be an invited speaker for each topic followed by general discussion. The intended principle audience is the project manager who might gain some specific information on



how to do their job a little bit better. For those of you who have not been to the Gilsland Farm Audubon Center you are in for a treat. It is a beautiful setting. We are requesting a nominal fee of \$35.00 to cover some of the cost associated with hosting the workshop. Lunch will be provided. Checks can be written

out payable to Project SHARE and sent to 14 Boynton Street, Eastport, Maine. 04631. If you wish to pay by credit card, you can email me the card # or let me know that you would like to take care of it in person the day of the.

For more information, please contact Steve Koenig at skoenig@salmonhabitat.org



3RD INTERNATIONAL CONFERENCE ON FISH TELEMETRY

Halifax, Nova Scotia, Canada
13-17 July 2015

Taking place for the first time in North America, the 3rd ICFT will present the latest aquatic-animal telemetry research under emerging topics like transboundary issues, visualization and modelling, and intelligent open-access data.

This year's conference is hosted by the Ocean Tracking Network and will be held at the World Trade and Convention Centre, with accommodations in the connecting Delta Halifax Hotel, in the Halifax downtown-core.

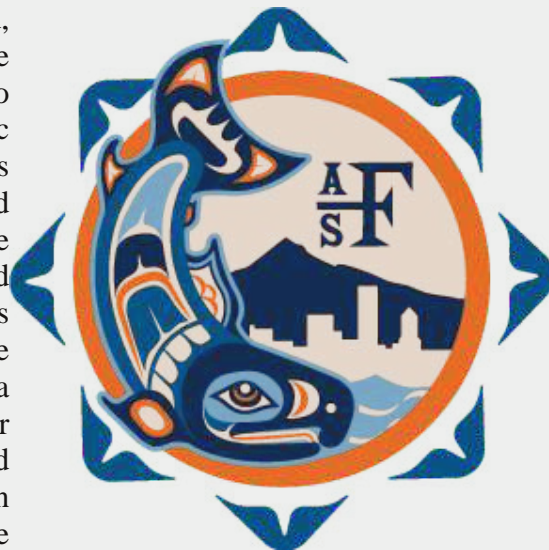
Halifax's ties to the ocean are deep and bold. Home to Historic Properties, leading ocean-research institutions and many marine-based industries, Halifax offers an array of ocean experiences.

Abstract submission deadline is March 15! Registration is now open. Don't forget to join the mailing list to track ICFT news. You can find more information at; <http://2015icft.org/>

145th Annual Meeting of the American Fisheries Society

August 16 -20, 2015 Portland, OR

The Oregon Chapter and Western Division of the American Fisheries Society cordially invite you to attend the 145th Annual Meeting to be convened in Portland from August 16 to 20, 2015. Deadline for submittals is March 13, 2015. A diverse program, unconstrained by a single theme, will allow you to learn how freshwater and marine resources are managed, conserved, and restored globally. The City of Portland offers unique experiences and endless activities for conference attendees to enjoy in a relaxed atmosphere. From wine bars in historic buildings to art galleries housed in modern buildings, Portland is repeatedly ranked as one of the best walking cities in the United States. It is this walkability that will allow you to easily visit the countless restaurants, food carts, microbreweries, distilleries, and coffee shops that have led to Portland being recognized for its outstanding culinary and beverage scene. Portland and the surrounding Pacific Coast-Wine Country-Cascades-Columbia River Gorge landscapes provide endless opportunities for sightseeing, outdoor adventure, and fishing. The City of Portland and surrounding areas have something for everyone to enjoy in August 2015! For more information, please see <http://2015.fisheries.org>



THE NORTHEAST NATIONAL HISTORY CONFERENCE

April 18-20, 2015
Springfield, Massachusetts

We hope you will join us for this year's conference, which will be held Saturday, April 18th through Monday, April 20th, 2015 in Springfield, Massachusetts. The conference website is live and 20 sessions are already planned!

We encourage you to join us and to consider giving an oral or poster presentations. Also, let us know your suggestions for potential sessions, workshops, field trips, and exhibitions. We welcome your involvement.

As you know, the NENHC is the largest regional broad spectrum forum for presentations and networking about applied field biology and natural history science in northeastern North America.

This conference is considered one of the premiere venues for researchers, natural resource managers, agency specialists, faculty members and their students, and naturalists to present current information on the varied aspects of applied field biology (freshwater, marine, and terrestrial) and natural history for the Northeastern United States and adjacent Canada. It is thus a wonderful opportunity to meet with friends and colleagues and to make new ones.

Students can volunteer, earn their registration fees and attend the meeting for free! For more information, please see http://www.eaglehill.us/NENHC_2015/NENHC2015.shtml



71ST ANNUAL NORTHEAST FISH AND WILDLIFE CONFERENCE

April 19-21, 2015
Newport, RI



The annual Northeast Fish & Wildlife Conference attracts over 500 natural resources professionals in the fields of wildlife biology, fisheries and fisheries management, information and education and law enforcement. The event provides opportunities for education, discussion, and exchanging of ideas. Highlights include: over 50 workshop sessions, keynote speakers, poster displays, and social networking events. Registration is open for the 71st Annual Northeast Fish & Wildlife Conference!

Register by March 6 to take advantage of early-bird pricing.

Thank you to everyone who submitted an abstract for the 71st Annual Northeast Fish & Wildlife Conference! Accepted

presentations and posters have been notified by Track Chairs. Poster abstracts and the schedule of technical presentations and abstracts have been posted! Review the conference schedule and technical session and symposia grid to read the abstracts. All presenters will need to register and pay to attend the conference. Registration is now open and speakers must register by the early registration deadline of March 6, 2015.



Other Announcements

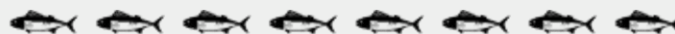
The Northeast Division Walking Stick Award

The Walking Stick award was initiated in 2002 in recognition of the 50th anniversary of the Northeastern Division. The recipient is a Division member who has the longest AFS membership and originally held the stick until another member had the longest membership. This time period was reduced to three years in 2005 and reduced again to one year in 2014. The first recipient was Dr. Edwin L. Cooper who joined AFS in 1940. The stick was then passed to Dr. Saul Saila in 2006, Dr. John Forney in 2009, Thomas Dolan in 2012, Philip Briggs in 2014, and Richard Hames in 2015. The walking stick was carved by Dr. Robert Carline.



Connecticut Sea Grant Announces RFPs

Connecticut Sea Grant has released two research Calls that may be of interest to fisheries researchers. Principal investigators must be affiliated with CT-based educational or research institutions, but collaborators may be located outside of CT. The two RFPs can be accessed at the CTSG website: <http://web2.uconn.edu/seagrant/funding/grants.php>



RECENT PUBLICATIONS

ATLANTIC BLUEFIN TUNA (THUNNUS THYNNUS) FEEDING ECOLOGY IN THE NORTHERN GULF OF MEXICO: A PRELIMINARY DESCRIPTION OF DIET FROM THE WESTERN ATLANTIC SPAWNING GROUNDS

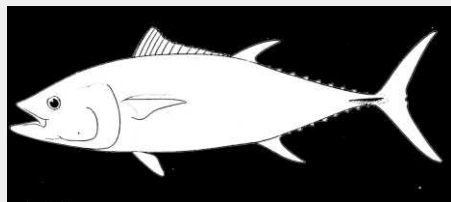
Butler C.M., J.M. Logan, J.M.
Provaznik, E.R. Hoffmayer, M.D.
Staudinger, J.M. Quattro, M.A.
Roberts, G.W. Ingram Jr., A.G.
Pollack, and M.E. Lutcavage.

A combination of stomach contents, nitrogen stable-isotope and tissue C:N values are presented to demonstrate feeding activity of Atlantic bluefin tuna *Thunnus thynnus* on the Gulf of Mexico (GOMEX) spawning grounds. Diets include teleosts, cephalopods, crustaceans and a pelagic tunicate (*Pyrosoma atlanticum*). Results reveal the need to classify the GOMEX as a *T. thynnus* feeding ground.

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USING MULTIMETHOD OCCUPANCY ESTIMATION MODELS TO QUANTIFY GEAR DIFFERENCES IN DETECTION PROBABILITIES: IS BACKPACK ELECTROFISHING MISSING OCCURRENCES FOR A SPECIES OF CONCERN?

Pregler, K.C., J.C. Vokoun, T.
Jensen, and N. Hagstrom.

The Bridle Shiner *Notropis bifrenatus* is a small, rare minnow species native to northeastern streams and lakes. It is declining over most of its range and currently is listed as a species of concern in Connecticut. Surveys conducted with seine nets in the 1960s found Bridle Shiners at 56 locations statewide. In contrast, surveys conducted in the 1990s using electrofishing detected Bridle Shiners at 8 locations. Different sampling techniques made it difficult to assess what portion of the observed decline might be a sampling artifact, confounding efforts to assess the actual conservation status. We sampled 18 habitat patches in 2012 to determine if seining for Bridle Shiners yielded a higher detection probability than backpack electrofishing. A multimethod occupancy estimation modeling approach, using the program PRESENCE,

quantified the probability of correctly detecting Bridle Shiners by gear and as detection covaried with habitat features. Backpack electrofishing detection probability was lower and approximately half that of seining. The abundance of Bridle Shiners in the sample patch was the most supported covariate to detection and particularly aided detection for electrofishing. High mean water velocity improved the detection probability of backpack electrofishing and reduced that of seining. It is possible that the 1990s sampling underestimated the number of populations of Bridle Shiners, and a repeat survey of all historic locations using a seine is recommended.

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LAND USE AND SURFACE WATER WITHDRAWAL EFFECTS ON FISH AND MACROINVERTEBRATE ASSEMBLAGES IN THE SUSQUEHANNA RIVER BASIN, USA.

Shank, M.K. and J.R. Stauffer.

Water withdrawals in the Susquehanna River basin, USA, are increasing due to burgeoning shale gas extraction activities. In order to determine if flow alteration resulting from shale gas industry surface water withdrawals impacts fish and macroinvertebrate assemblages in lotic habitats, data were collected upstream and downstream of 12 withdrawal and three reference sites in headwater, cold water, and large warm water streams. Watershed size ranged from 4 to 517 km² and average daily withdrawals ranged from 0.05 to 1.4 million liters. Analysis of withdrawal data indicated that approved withdrawals far exceeded actual withdrawals across all stream types. The largest withdrawals relative to stream size were from headwater streams, where on average 6.8% of average daily flow was withdrawn daily. Fish and macroinvertebrate assemblage similarity at study sites depended largely on stream sampled, rather than position upstream or downstream of withdrawals. Regression techniques were employed to determine if catchment-level variables or withdrawal metrics best described variation in fish and macroinvertebrate metrics shown to be sensitive to flow alteration. The catchment-level variables were responsible for the majority of observed variation in fish metrics.

Macroinvertebrate models performed poorly, indicating that the stream sampled or variables not included in the analyses were responsible for the majority of variation. Overall, evidence suggests impacts of shale gas withdrawals within the Susquehanna basin are limited at the present state of flow alteration. Potential reasons include protective measures such as pass-by flow restrictions, which require withdrawals to cease when flows drop below a predetermined low flow threshold, maximum instantaneous and daily withdrawal limits, and recent initiation of withdrawals (1–3 years of operation).

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A THREE YEAR STUDY OF AN ISOLATED BROOK TROUT POPULATION IN THE EASTERN ADIRONDACKS: SUSTAINABILITY, PROPAGATION AND GENETICS

Sinopoli, D.

Over the past several years, changing weather patterns have led to costly and destructive storms that are damaging both environmentally and

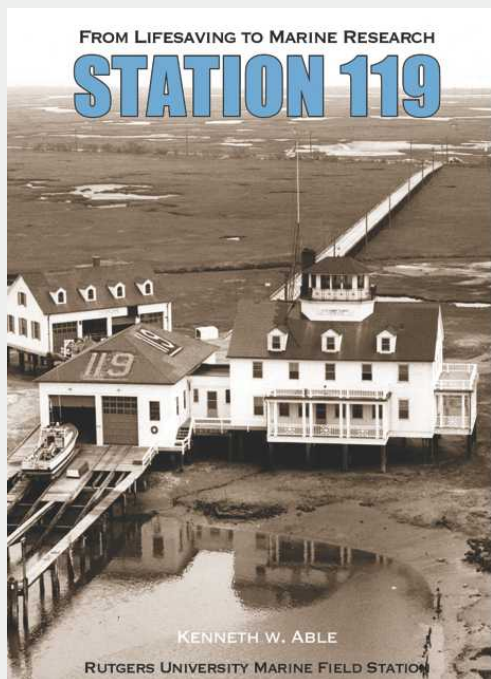
economically. Hurricane Irene in 2011, was an unusual storm because it struck the eastern Adirondack Mountains in New York. The Adirondack region mainly relies on tourists to make money, and fishing is a large part of what draws people to this region. Three years ago a study was started to explore the impact of Hurricane Irene on the brook trout population. During the first year, stream bed and water quality were analyzed to determine if a brook trout population could be supported one year after Hurricane Irene. After determining conditions could support a brook trout population, the fish were aged using their scales, invertebrate counts were collected and dissolved oxygen levels were collected to determine if the stream could support the continued survival of the brook trout population even though glacial till from 10,000 years ago was exposed from flooding. The genetics of three samples of brook trout (n=60) were analyzed and was revealed that the brook trout in the primary research stream Styles Brook were genetically distinct ($p < 0.001$) from the domestic strain that was last stocked 22 years ago.

This article will be published in the National High School Journal of Science in 2015.

<http://nhsjs.com/>



FROM LIFESAVING TO MARINE RESEARCH: STATION 119



Kenneth W. Able

The Rutgers University Marine Field Station's southern New Jersey location is ideally located between two large ocean water masses, the Labrador Current from the north and the Gulf Stream from the south, giving it access to a large variety of larvae. From the north, cod, rockling and Atlantic herring are common. From the south come Atlantic croaker, silver perch and even an occasional tarpon or ladyfish, which may have been spawned as far away as the east coast of Florida, or maybe even Cuba. Even more extreme in distance traveled are the larvae of American eels, which spawn in the Sargasso Sea. Of course, a large number of locally spawned fish — bay anchovy, Atlantic silversides and gobies — are also collected and studied. All of these pass under the bridge over Little Sheepshead Creek on Great Bay Boulevard at some point during the year.

This is the story of the mission of the men and women who work at the Rutgers University Marine Field Station. It is also the story of the station itself: While the station now may play a role in saving the planet, it began with a mission of saving lives.

Over the years the old Coast Guard Station behind Little Egg Inlet in southern New Jersey has been a source of mystery, in large part because of its incompletely known history. This story begins before the construction of



Field collections of fishes in Barnegat Bay by personnel Ken Able and Stacy Hagan were used to evaluate fish habitat quality for conservation purposes in collaboration with Trust for Public Land.

the present facility in 1937. What occurred in the late 1880s and early 1900s help to explain the reasons for its location, its demise as a federal facility and its birth as a university research center.



Plankton net sampling for bivalve larvae on the bow of the barge Cynthia. Jim Durand, the future director of the Marine Science Center (which later became the Rutgers University Marine Field Station) at Tuckerton is on the far left.

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The Northeast Fish Rapper is produced by volunteers. It would not be possible without contributed content from Northeast Division members. Our next edition will be published in August 2015. We are always looking for writers to contribute to our "Fisheries in the News" section. These news briefs can be based on original research, management actions, or articles published in other news outlets and should range from 350-750 words. If you have a particular interest you wish to write about, let us know! If you would like to be included when we send out a list of potential topics for news briefs, send your name and email address to Jocelyn Runnebaum or George Maynard. Additionally, we are always looking for photographs and artwork to include in the Rapper. If you have interesting pictures from field work, fishing trips, or anything else you'd care to share, send it along, no writing necessary. A big thanks goes out to everyone who contributed to this edition of the Fish Rapper.

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