Massachusetts River Herring Network Fourth Annual Meeting

Thursday October 30, 2014 - 11:00AM-4:00PM
Plymouth Public Library - 132 South St.
(Notes By: Jeannette Morrison)

11:00AM - Welcome & Introductions

The Goal/Objectives:
1.Facilitate communication among herring wardens and other river herring enthusiasts
2.Support herring wardens in their role as active participants in fisheries management processes
3.Document and communicate the natural and cultural history of the herring runs.

Attendees all introduced themselves and their affiliations.

11:10AM - Update on River Herring Management Issues

Brad Chase, Massachusetts Division of Marine Fisheries

48 coastal towns with river herring runs, 78 herring runs, 140 fishways
2014 fish passage improvements projects
Projects: Tom Matthews pond, Yarmouth Mill pond, West Tisbury Carter Beal Park, Bourne Monument River, Bourne Morey's Street Dam, Taunton Santuit Pond, Mashpee
Large watershed projects- Fore River, Braintree Jones River, Kingston

Monitoring-river herring-2013-2014-full implementation of new assessment techniques/technologies Why?-to detect long term population trends, ASMFC requires states to report Sustainability targets
DMF fishway crew works on small ladders

Renewed effort to draft O & M plans for all new and reconstructed fish ways
Documentation for next crew

MA harvest ban 2006-ongoing

ASMFC coast wide stock assessment and sustainable fishery plans, 2010-2012
NOAA/ASMFC river herring conservation plan resulting from 2013 ESA ruling on river herring status-goal is to produce an integrated conservation restoration plan
Thoughts of options concerning opening up a harvest (2016 not 2015)

Question & Answer Discussion:

Why do you think there was such a spike in numbers this year? *Improvements in some runs but not others. Probably not tied to the harvest moratorium. Probably reduced mortality. Other states still harvest for bait.*

Don't want to over harvest a good year class.

11:30AM – Announcements

Julia Beaty, NOAA Fisheries –Conducting a phone survey of people who harvest/have harvested river herring. Perspective of fisherman is helpful to population estimates. If anyone knows of people who used to harvest please put them in contact. Considering the current ban it is hard to find past herring fisherman.
Jason Smith, Masters student at University of Southern Maine – Carrying on a project that Karen Hutchins Bieluch started to interview herring count program volunteers in Massachusetts and Maine and determine what makes a program effective. Keep an eye out for the survey.
Barbara Brennessel, **Wellfleet Friends of Herring River** member announced the publication of her new book, " The Alewives Tale" and that she has copies for sale.
***John Sheppard*-**DMF Biologist announced the availability of the DMF memo with updated herring count information

11:40AM - What We Are Learning from River Herring Otoliths and Genetics?

Sara Turner, Postdoctoral Associate, NOAA Fisheries Service

What is an otolith?-"ear stone"-inner ear bone in fluid filled sac
3 pairs, the saggital otoliths are used for finding information about river herring

Ear bones grow in proportion to fish so you can use them for aging
Bones take up some elements/isotopes in proportion to availability in environment and you can look at the chemistry to answer questions
Applications: distinguish among populations, identify past habitats, determine movement from fresh to saltwater

Question: Can otolith chemistry be used to distinguish among groups of fish reared in different areas?
Hudson River watershed-one of the largest east coast watersheds >79 tributaries

Sampled river herring from Hudson and from watersheds on Long Island
95% correctly re-classified to correct locations

Next looked at rivers along the Atlantic coast to see if sampled fish could be correctly "assigned" to the river
18 alewife populations and 19 blueback populations
Used a genetics technique -microsatellite markers

Tested several different techniques for identifying correct watershed
Calculated % of fish classified to river of capture by different marker combinations
Otolith chemistry, otolith chemistry+genetic info, otolith chemistry+oxygen isotope info, and then all three techniques together
Using all 3 techniques worked the best – it's a lot of work, but it gives the most accurate answer

Can also use otoliths to learn about nursery habitat
Can tell if they spent time in just freshwater, just saltwater, or if they used both habitats as juveniles
In rivers north of Boston Harbor both alewives and bluebacks just used fresh water as juveniles
In southern rivers both species used estuaries more

Next steps are to use this information to learn more about the river herring that are caught as bycatch in the Atlantic herring. Are herring from different rivers mixing together in the ocean, or do they travel separately? Want to predict where they are so they can be avoided.

Question & Answer Discussion:

Do the alewife and the blue back commonly keep separate? *Couldn't tell because of spatial scale. Biologists are seeing hybridization of alewives and bluebacks in some places.*
Are the majority of the fish were seeing in our watersheds one or the other? *most likely seeing both species*

Pizza Lunch Break

12:25PM - MA DMF River Herring Video Counting Project

Mike Bednarski and Ben Gahagan, Massachusetts Division of Marine Fisheries

There are a variety of counting methods-volunteer visual counts, electronic tube counters, video monitoring
Advantages of video monitoring: species identification, complete record of run, potential outreach tool
Disadvantages:initial investment is high ($4-10,000), high maintenance, data quantity – there's a LOT of it and it takes time to analyze
Currently 6 study sites in MA

Guide fish by camera using bar racks
Methods for data analysis: Software called "Salmonsoft" or highly experimental software called "Ispy"
Automatic counting does show promise - the actual/predicted-close to line indicates accurate prediction

Quality of video varies – in some rivers the water is too murky to get good quality video
Conclusions-video systems are viable option, provide very fine scale but…
Critical limitations-info quantity (200-500 GB of video) take a lot of maintenance-daily, tuning, and are expensive

Question & Answer Discussion:
How long do they last/cost? - *Cost estimate $4-10,000 for equipment and then add someone to staff to process + cost of software. Ispy is free but doesn't have a system to quantify the counts yet. Salmonsoft is expensive but you can count as you go and it generates a spreadsheet while you watch.*

12:45PM - 1:20PM Panel Discussion - Stream Clearing to Prepare for River Herring Upstream Migration – See separate notes

1:25PM - Stream Vegetation & River Herring

Russ Cohen, Massachusetts Division of Ecological Restoration

Nature is messy
Habitat complexity is important
Vegetation in streams and on the banks is important to the ecological function of the stream ecosystem
Plant native species along banks where invasive species were removed-
Examples of functions of obstructions (animal crossings, cover from predators from above, perch for foraging)
Removing man made debris and obstructions that are potentially dangerous is best
Consider the obstruction from the fish's point of view

Question & Answer Discussion:

Does the state have guidelines for Phragmites control? Chemicals?

How do you explain to the public that you want to get rid of manmade dams but keep beaver dams? Beaver management is a big issue-overpopulation of their habitat (north east)

What about aquatic plants? Milfoil?-Referred to experts with lakes and ponds

Tour of **Town Brook Fish Passage Improvement Projects. Tour lead by** *David Gould, Town of Plymouth Marine & Environmental Affairs Department and Eric Hutchins, NOAA Office of Habitat Restoration*