Shad and River Herring TC Conference Call
February 22, 2011

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Staff: Kate Taylor and Katie Drew (ASMFC)

Vice – Chair Position
- Currently vacant
- Kathy's term is up in April
- Recommendations

New Hampshire Sustainable Fishing Plan Review
Mike Dionne presented an overview of the NH SFMP (SFMP). The previously submitted plan had a target of a harvest level that is 25% of returning river herring within the 'Great Bay Indicator Stock. The TC was concerned that this target was arbitrary. In response NH used the target developed from Maine, which is 35 fish /acre. There is 207 acres of available spawning habitat that fish have access to, but not necessarily where they spawn. The fish are spawning mostly in the main stem and the rivers are not that big. So there is not a large amount of spawning area. The 35 fish / acre target translates into a target of 7000+ river herring. This is a number lower than what the population would ever be allowed to get down to. The highest harvest levels have no correlation with return numbers, with exception of a correlation with m and exploitation rates in GBI stock. The years when you have the highest return you have the lowest mortality rates. There is no correlation that suggests that the harvest level in any year has any effect on return.

Q: Have you looked at harvest versus a lagged-returning fish count?
A: It was suggested we look at a three year lag.

Q: Is it possible to lag the total mortality to the returns in the next year? Where would you see the strongest sign of the effect of returning juveniles or adults?
A: I was going to do that with a three year lag. Our greatest returns are four years out. If you lag it to four years it would show you more about spawning fish. We don't have a system where rivers are that far apart. They come up one river to get to the others. So really they could go to any one any year.

Q: Can we see the age structure? You have to use the raw data. Averaging will smooth things out. I don't understand the statement that your JAI is too short.
A: The JAI started in 1997. If you lagged it by three years you are reducing the time series from 12 years to 9 years.

Q: You could look for relationships backwards. You have done some regression estimates looking at returns vs. JAIs although they didn't end up in the report?

A: There were 120 correlations. There were 18 figures of correlations per river, as well as the GBI and then the GBI w/o Oyster River. If there were significant correlations it was included.

Q: There was no JAI data in the report. Were there sample size concerns?
A: Yes it was a small sample size. Plus, it's not targeted for herring. It's a seine that is pulled 90 times annually. It covers one fourth of the bay, but no specific location. It's more of a state wide survey.

Q: Can you subset the data or use all the data from the sites?
A: There is a GB site that is in the middle of the bay and does not focus on a specific river. But there is a very minimal number of herring caught. In the lowest flood years you can have your highest herring numbers.

Q: When you go through your data criteria sheet for herring it would have helped to say how the data are collected and how the survey is done.
A: The bay includes five of the 15 sites. 10 are outside GB estuary. 100 feet net size. 6 feet deep.

Q: Do you know if it is measuring juvenile abundance?
A: I'd be much more confident saying it is not measuring juvenile abundance. The survey is conducted through November. It begins in the summer.

Q: There is nothing significant except when you throw it all together, but this totally muddies the water and smoothes everything way too much. Where you go the p values from?
A: Statistical r table. I think the p values are pretty low.

Q: Is the z based on ages? Collected from the ladders or catch?
A: Yes. From ladders.

Q: So low catch is due to people not wanting to catch as many, but you are still aging the fish. The fishery is a bait fishery so if people are not catching because another source is cheaper or easier then that would affect exploitation.
A: Well nothing is cheaper than free. Harvest is so small and isolated that you can compare this many ways and not fund much significance. What is clearly driving return numbers is accessibility to habitat and inefficiency if ladders. It's not the fishery. Fishery is not driving the run. Sampling came from ladder returns and is independent from harvest. This year 60 fish retuned to Exeter River. Most of the samples are from the other locations.

Q: You have runs declining but we know from the data its not because of the in-river fishery. So the source of morality is from somewhere else. Are you content to not regulate your in-river fishery even as you watch it go down the tube? Or do you use the tools in the tools box to do what you can even through it's no the primary reason?
A: We are placing even more restrictions on the fishery as we have done recently, such as tote size, escapement days, and we feel reducing it even more will not have any or very minimal if any benefit in a return of the resource. We really need a habitat solution.
Q: So you don't want to do any more and want to take a chance?

A: Reducing the harvest any more will not help the resource.

Q; It's more than possible for the fishery to go to nothing without you taking any more action.
A: The plan has the 7,000 target. Which is lower than we would ever allowed it to get to.

Q: So you are taking a precautionary approach?
A: Yes

Q: Have you focused on juvenile habitat? Have you thought to include where they go in the GB? And used 35 fish/acre there?
A: We are not sure how long they stay in the bay. Only in the Exeter – where ladder is inefficient and most of the fishing occurs. The fish spawn below the first dam. But we don't know how successful they are, where they are going, how many, etc…

Q: It wasn't specified you use the ME target number. Have you measured against what you have?
A: GBI stock is absolute minimum return number. The fish are spawning somewhere successfully. Our fish only have river access and it's not that far from the first dam. The 35 fish/acre target really provides a ridiculous number for NH and it's not relevant.

Q: Returns are averaging over the last 15-20 years ~150K. To say you have a target of 7000 is giving up the fishery right there. Even through it's based on something real it's not worth considering. I like 70K target even though it's based on a wild guess. It's certainly better than 7,000.
A: We don't have any data set to provide the rational for 50 percent of the historical mean. We don't have a ME study of our own. We don't have a state stock assessment.

Q: Are you going to continue to monitor the same way you have in the past? You came up with the number and, although its not a pretty as other number that have been accepted, it seems reasonable. Sounds like folks don't think it unreasonable. It's an iteration process. But you have to start somewhere. So start with some number to target. It's not perfect but then what in science is. You've done a commendable job and need to move foreword with the plan and then reassess it in the future. It's a start, and a good start. It's a reasonable effort with goals and monitoring. We need them to give them a chance to prove it.

Recommended:
Add
- 35 fish min target equals 7,000 fish but New Hampshire would like to take a precautionary approach and increase the target to 350 fish / acre, which would raise the minimum 70,000 fish.
- Continue to monitor and reassess after 5 years or after assessment or some timeframe.
- Include text about JAI, but do not need to include graphs where there is no significance.
- Describe sampling program and why it's not abundance index.