

Lake Michigan Stocking Strategies Work Shop 3.0

Introductions

Attendees included core group of constituents from throughout the basin, Lake Michigan Committee Members, Lake Michigan Technical Committee Members, and observers.

Overview of Process

This is the third meeting of the core group of constituents to discuss Lake Michigan Stocking Strategies. The first meetings in April and June discussed goal and objectives for the Lake Michigan fishery. The second meeting was a full review of how managers make decisions, Red Flags Analysis (i.e. abundance and natural reproduction of Chinook salmon; Chinook salmon growth, condition and health; and prey abundance and forecasts.), and an overview of the Lake Michigan Decision Analysis model design and capability. This third workshop is intended to further review the model, evaluate decision analysis outcomes, and help managers develop potential stocking strategies.

Decision Analysis Model Overview and Outcomes

- Questions asked during presentation and discussion of outcomes:
 - **What are natural reproduction rates of other species (i.e. coho, brown trout, steelhead)?** Presumed to be much lower than Chinook salmon. It appears to be more isolated to specific river systems such as the Pere Marquette, Little Manistee River, and several small coldwater tributaries. The State of the Lake Report addresses some potential rates for these species.
 - **How does mortality other than predation work in the model?** Natural mortality is accounted for with prey and salmon as well as harvest for salmon.
 - **Do you account for angler effort?** Fishing effort does vary year to year depending on catch rates and also varies randomly (i.e. Gas prices, economy, and weather). We could run any “what if” scenario in the model by increasing or decreasing effort. Right now based on current and past conditions.
 - **Is sea lamprey predation accounted for?** Yes, and held constant for lake trout mortality.
 - May be too optimistic regarding lake trout mortality if only using 1836 treaty water modeling.
 - **Will policy give you same outcomes today as it would tomorrow?** Yes. Given that it is run 100 times we should see the same distribution of outcomes.
 - **Will model be run every year to make a decision?** No, it is designed to help develop a policy. Other indicators may be used to trigger a decision.
 - **Comment: Consider different way to present results – Perhaps the number of times in a given year that an outcome is in one category or another.**
 - **Are you using lake trout as triggers?** No, just Chinook.
 - **How much would we have to cut Chinook to get similar result as cutting all species 20%?** Model runs were made with 25%, 30%, and 50% cuts to Chinook and it really did not change the results in alewife

- biomass much. Perhaps, Chinook stocking does not have the same effect given increases in natural reproduction and immigration from Lake Huron.
- **Why Chinook harvest going up with stocking cut?** Chinook growth and survival is going up with more alewife.
 - **What about reducing both Chinook and lake trout by 20% and leave steelhead, coho, and brown trout the same?** It might be same as all except lake trout given that lake trout have same predation level as other three.
 - **Is there a relationship with stocking cuts and increases in wild production?** Like stock-recruitment curve that is over its peak, cutting stocking could result in more wild recruits. Better health of spawning adults.
 - **Is there a better way that we can present this information to the public such as a dashboard or barometer, risk tolerance, dials that include alewife biomass, chs harvest, chs cpue, and chs age 3 wt?** Yes. We will develop some visuals to help interpret the risk of a stocking strategy.
 - **Has anyone looked at temperature in relation to alewife year class strength?** Not sure if warmer weather helps or not. No correlation with winter temperatures either although some believe that hard winters result in poor survival. It would be difficult to predict future temperatures.
 - **Comment: We want to see another year of red flags before make a decision on a stocking strategy.**
 - **Can we reduce lake trout?** Yes. States and tribes can decide to reduce stocking, but it would be nearshore stockings to be cut first. Offshore on reefs would continue per rehabilitation strategy.

Outcomes/Results (There is a handout with all possible outcomes)

- Status quo Policy – forecasted for alewife biomass.
 - 71% of time (on average) ok outcome, 6% too many alewife, 22 too few. **Why different than last time?** Not allowing for drastic changes in stock-recruitment model of alewife.
 - This is also based on the average of 25 years and does not show extremes. Over the next 25 years, this is what you would expect to happen.
 - Less than 100 KT alewife (too few), 100-500KT ok, Great than 500 too many alewife.
- Possible Stocking Scenarios
 - Fixed Stocking levels (all species)
 - Increase 10%
 - Status quo
 - Decrease 10%
 - Decrease 20%
 - Target Species
 - Feedback Policy
 - Annual Trigger
 - weight of age 3 chinook 7 kg
 - Estimated alewife biomass trigger < 100 kt
 - Decrease 10%
 - Decrease 20%
 - Return to original stocking number when above 200 kt

- Target species
 - All species
 - Chinook only
 - All except lake trout

Risk Tolerance

- Biggest risk is an alewife crash
 - Ok with 10% chance of crashing
 - Not ok if 20% chance of crashing

Constituent views on various proposed options

- Increases in stocking – there was no support from the group for increases in stocking of any species.
- Prefer reductions in Chinook over other species; if cutting all species, Chinook should be cut more than others.
- Status Quo (keep same for 5 years):
 - Comments
 - Saw good fishing with the recent decreases, so fishery is good.
 - Want to see all red flags first.
 - Want more natural reproduction results.
 - Don't like risk of having alewife go too low.
 - One constituent against status quo rest will live with it.
- 10% Increase
 - No support from group.
- Cut by 10 to 20%
 - Reduce stocking by 20% but not all species
- Stock no Chinook salmon
- Feedback
 - Chinook only
 - Concern about cutting other species.
 - Economy
 - Diversity of fishery would drop
 - Would affect both lake, near shore, and river anglers.
 - Depends on the trigger level.
 - Indiana would like to see numbers of fish vs. size.
 - Rather see fish in the box.
 - Weight at age of Chinook seems to be good indicator of alewife population.
 - Trigger less important than the trend.
- Reduce Chinook 20% and other species at a lesser %
 - Need to explore some more.
- Reduce at a graduated or progressive level depending on conditions.
 - 20% first for awhile then cut more if not responding.

Next Steps

- The Lake Michigan Committee will develop a list of options by **Mid-February** and distribute to the constituent groups and Lake Michigan Technical Committee for comment.

- Constituent groups and Lake Michigan Technical Committee will provide comments to Lake Michigan Committee by **March 9th**.
- Lake Michigan Committee will make decision on options to present to public at their **March 19th** meeting.
- Lake Committee will communicate acceptable options to the constituent groups immediately after **March 19th** meeting.
- News Releases will go out regarding the **April 14th** meeting in Benton Harbor with the proposed options for public comment.
- Public Meeting April 14th
 - Webinar option
 - Web based emails and surveys available to offer comments
- Continue to receive public comments until **June 1st**.
- Agencies begin tactical planning based on stocking strategy decision.
- September 2012 – Tactical stocking plans finalized (i.e. What proportion of stocking changes will each state implement? Where will the stocking changes be implemented within each state?)
- October – Implement egg-takes based on strategy.
- Spring – stock at the new rate for Chinook. Any changes to other species will have a one year lag time.