

Lake Michigan Committee

Ypsilanti Marriott at Eagle Crest
Ypsilanti, Michigan
24, 25 March 2004

Executive Summary

Members: Acting Chair Jay Wesley (for Jim Dexter, MIDNR), Brian Breidert (INDNR), Tom Gorenflo (CORA), Steve Hewett (for Bill Horns, WIDNR), Tom Trudeau (ILDNR)

Highlights: Yellow perch populations remain low, but females are doing better relative to males. Lake trout spawner CPUE was low at most sites. Stocked areas had more lake trout than unstocked areas. The mean age of spawners was below age of full cohort maturity. There was very little evidence of natural reproduction by lake trout. Some strains of lake trout survived better than others. Most lake trout stocked offshore were captured offshore. Sea lamprey numbers have been above target since 2000, and managers think the source may be the Manistique River. This river is being treated and resources have been reallocated to lakes that are above sea lamprey targets. Salmonid health appears to be good, although some increase in pathogens gives concern.

1. LMC Executive Session on 19 April 2004

The LMC will meet the evening of 19 April (before the Council of Lake Committees meeting) at the Detroit Metro Airport.

2. 2005 State of the Lake Conference

In preparation for the 19 April LMC meeting, the Lake Michigan Technical Committee was asked to provide advice on topics for the 2005 State of the Lake Conference, e.g., environmental objectives, chinook stocking, and inshore fisheries.

Likewise, the LMC would like to schedule its 2005 state of the lake conference between meetings of the LSC and LHC.

3. Developing a Systematic Basis for Annually Addressing Whether to Stock Surplus Fish

LMC members will urge their respective agencies to supply Chuck Bronte (USFWS) by 15 February with the previous year's stocking reports.

In preparation for the 19 April LMC meeting, the LMTC will advise the LMC on methodology (maybe database or spreadsheet) for deciding appropriate stocking levels for estimated prey fish populations, e.g. coho equivalents, number stocked, current year's plans, next year's prey projections, implications.

During its 19 April meeting, the LMC will decide on an appropriate target range for stocking, and apply the target to proposed stocking numbers for 2004.

4. Location of 2005 Meeting

The LMC asked that its Chair, Bill Horns, investigate possibility of holding the Upper Lakes Committee meetings in a Lake Michigan jurisdiction, e.g., Sault Ste Marie, Michigan, Grand Rapids, or Traverse City. (Following the historical pattern, the upper lakes lake committees would meet in Sault Ste. Marie, ON in 2005.)

5. Lake Trout Size-at-Stocking

During the 19 April executive meeting, the LMC will discuss lake trout issues, e.g.,

- size-at-stocking,
- alternate stocking sites for use when conditions—weather, Togue not available, cormorants, low water levels, flooding at primary site—inappropriate for stocking,
- process and/or sites for stocking extra fish in future, and
- desired broodstock strains. (The federal broodstock report is calling for a reduction in its strain inventory.)

The USFWS will send a representative.

6. Sea Lamprey Targets for Lake Michigan (attachment)

The LMC approved a 58,000 sea lamprey target, which should result in no more than 5 marks per 100 fish.

7. Release and Disease-Screening of Sea Lampreys Transferred from Lake Ontario to Lake Michigan for Mark-and-Recapture Assessment Studies (attachment)

The LMC concurred with plans to screen sea lamprey for *Heterosporis*. as well as for restricted and emergency diseases listed in the Model Program (60 lampreys per stream) before moving them between lakes. (The only exception is that lamprey to be moved among the three upper lakes will not be screened.) Sea lamprey positive for *Heterosporis* will not be moved. Positive results for other diseases will be referred to the Fish Health Committee for recommendation to the Lake Committee responsible for the destination lake.

8. Update on MOU / MOA with USGS Great Lakes Science Center

Not discussed.

9. Coordination Activities Program Proposals

The LMC is considering endorsing CAP proposals via e-mail. The Yellow Perch Task Group may have a CAP proposal for LMC consideration.

10. 2000 State of the Lake Report

Mark Holey (USFWS) and T. Trudeau, technical chairs for the group that is producing the 2000 state of the lake report, will draft a letter for Bill Horns' signature requesting that the GLFC provide a one-page authors' guide for use in drafting the next state of the lake report. Chairs of other lake committees may be cc'd.

The 2000 state of the lake report will be revised quickly upon return of editorial recommendations from the GLFC's editor, Jim Peck.

11. Yellow Perch Task Group

The YPTG will have recommendations for discussion on 19 April.

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Targets for Sea Lamprey Populations in Lake Michigan

Purpose:

The Great Lakes Fishery Commission (GLFC) is soliciting input from the lake committees and their technical committees on proposed targets for sea lamprey abundance that meet the Fish Community Objectives (FCOs).

Estimating Targets:

- **FCO Direction** – The FCOs among the lakes generally call for sea lamprey to be suppressed to levels at which they affect insignificant mortality on lake trout and other fish. The Lake Michigan Committee (LMC) defined a general objective for sea lamprey calling for suppression to achieve the other FCOs.
- **Fish Damage Status** – New summaries of comparable values for marking rates on lake trout have been compiled for all lakes. Raw data were assembled so that the stage (A1-3) and fish size (>21”) could be compared among the lakes. Lake trout were used as an indicator of effects on fish communities because they are the preferred prey and are the native top-predator in cold-water portions of the lakes. The mortality caused by sea lampreys can be estimated from a relationship between marking rates and the probability of surviving an attack. This relationship suggests that marking rates of less than 5 marks per 100 fish would result in a tolerable annual rate of mortality of less than 5%.
- **Sea Lamprey Status** – Estimates of the number of spawning-phase sea lampreys were used as measures of abundance in each lake. We assumed low mortality during the period sea lampreys feed in the lake and used the spawning-phase abundance as an indicator of parasitic-phase abundance. Annual estimates of lake-wide abundance of spawning-phase sea lampreys and confidence intervals were extrapolated from a regression model that relates the run size in individual streams to the discharge and larval abundance (or treatment history) in all streams in which the animals spawn (Mulett et al, 2003).
- **Estimating Sea Lamprey Targets** – We estimated targets by selecting a period when observed marking rates had averaged less than 5 marks per 100 fish. The observed rate of marking that was just below the target rate during the 5-year period between 1988 and 1992. The mean sea lamprey abundance and confidence interval was estimated for this period.

Sea Lamprey Abundance Targets:

	Targets	95% CI	Years	Marks/100 fish
Superior	35,000	18,000	1994-1998	5.2
Michigan	58,000	13,000	1988-1992	4.7
Huron	74,000	20,000	1989-1993	25.9
Erie	3,000	1,000	1991-1995	4.4
Ontario	43,000	15,000	1991-1995	8.2

Using and Refining Targets:

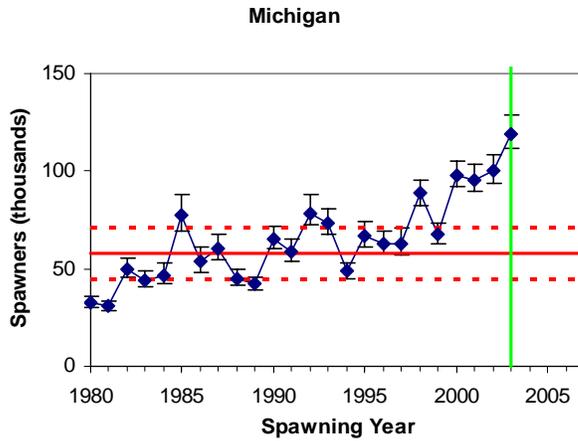
These targets will provide the basis for the lake committees to provide input to the GLFC on the following questions:

- *How successful has sea lamprey control been relative to the Fish Community Objectives on your lake?*
- *Will the proposed control program proposed for next year (e.g. 2004) move us toward those FCO targets?*

Consistent with its Vision, the GLFC will use the status of sea lampreys relative to these targets to guide its decisions on allocation of control. These targets will be refined with improvements in our understanding of the dynamics of the damage caused by sea lampreys, our estimates of the abundance of sea lampreys, and of the effectiveness and costs of control.

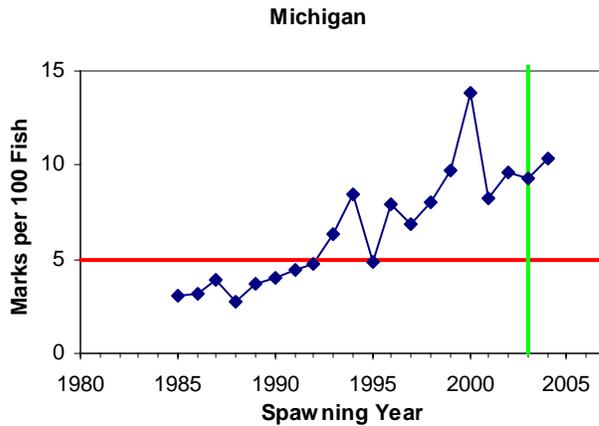
PANEL 1 - LAKE MICHIGAN

a. Sea Lamprey Status: spawning-phase numbers



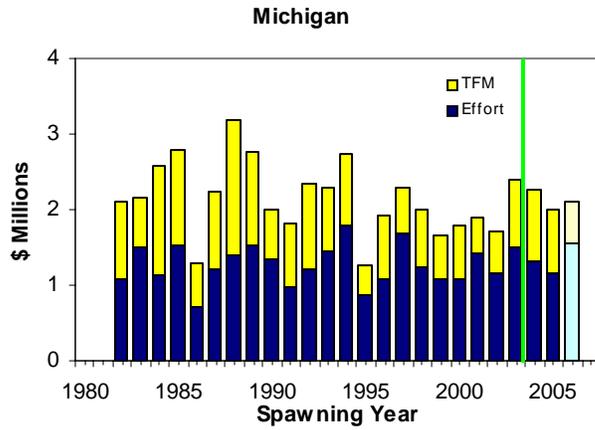
- Significant increasing trend in sea lamprey abundance throughout time period.
- Abundance has exceeded target levels during the past 4 years.
- Abundance estimated during 2003 was up in spite of increased treatment effort during the 2001 treatment year.

b. Fish Damage Status: marks per 100 lake trout



- Wounding below 5 marks per 100 during most years prior to 1992, and above thereafter.
- Marking rates show same pattern of increase as sea lamprey abundance.
- 2003 fall wounding rates that were caused by the survivors of treatments in 2002 continue increase in spite of increased effort.

c. Lampricide Control Actions: treatment costs



- Overall downward trend in standardized treatment effort until 2001 treatment year.
- More consistent and reduced effort with initial use of ESTR (1996-2000) than before (1980-1995).
- Increased treatment effort expended on Lake Michigan during 2001-2004.
- Manistique lentic area treated in 2001
- 2003 includes major treatments of the Big Manistee and Manistique rivers.
- 2004 includes re-treat of Manistique R.

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Transfer of Sea Lampreys among Lakes and Disease Screening

Issue: The Great Lakes Fishery Commission (GLFC) seeks the Lake Michigan Committee's review and concurrence with its plans to move sea lampreys from Lake Ontario to Lake Michigan.

Background: The commission and the sea lamprey control agents are committed to leading in application of the fish health model program in order to minimize risk to fishes in the Great Lakes. We have met all previous requirements for testing of fish proposed for importation from outside the Great Lakes basin. During last year, we met all testing requirements for *Heterosporis* following the Fish Health Committee's (FHC's) recommendation to the CLC to limit transfer of fish from Lake Ontario. We will continue to work with the FHC to ensure that adequate evaluations and screening procedures are in place for any transfer where there could be risk to fish in the wild. We will continue to work with the Lake Committees evaluate the trade-off between the risks of transfers versus their benefits to sea lamprey control.

Why move sea lampreys? Purposes for moving sea lampreys from Lake Ontario to Lake Michigan include:

- large larvae and transformers for mark-and-recapture estimates of the size of the population of newly metamorphosed sea lampreys in Lake Michigan;
- larvae for mark-and-recapture estimates of larval populations to verify the accuracy of our assessment techniques;
- adult males for sterilization and release for control in the St. Marys River; and
- larvae for extraction of migratory pheromone for field trial research at Hammond Bay on Lake Huron.

Larval sea lampreys in the Lake Ontario drainage are especially fast growing and productive offering opportunity to efficiently collect larger and metamorphosing specimens. Adults from Lake Ontario represent a source independent of the effects of the control effort on the St. Marys River and as such provide a valuable influx of males to this alternative control effort.

The disease issue: The FHC has recommended that fish movement from Lake Ontario be minimized in order to prevent the spread of the microsporidian parasite *Heterosporis* from Lake Ontario. Further, the FHC has recommended that the model program screening for restricted diseases be carried out on sea lampreys moved among the lakes. Sea lampreys have been found to harbour a number of diseases that are common in to other Great Lakes fishes including, for example, bacterial kidney disease and enteric redmouth. The model program seeks to restrict movement of diseases that have a limited geographic range in the lakes. Along with *Heterosporis*, members of the FHC are concerned about movement of the following geographically isolated or non-evident diseases: whirling disease, anti-biotic resistant furunculosis, and EED.

Our proposal for screening: We propose to screen all sea lampreys moved from Lake Ontario for *Heterosporis* along with the emergency and restricted diseases from the model program. **We do not intend to screen sea lampreys transferred among the upper three lakes.** We consider the upper three lakes to be open systems and have clear evidence of sea lampreys moving among these lakes (mark and recapture results). We will continue to move animals among the upper lakes as we have for the last decade for SMRT release and for mark and recapture without screening. We do not intend to transfer sea lampreys from Lake Erie this year.

We intend to solicit help with this screening from members of the FHC. Rapid turn around is critical to efficiently and effectively carrying out these transfers. We will ask the FHC to provide further review of the details of our screening plans.

Screening results and recommendations to the lake committee: We will work with the chair to establish a subcommittee of the FHC to review the results of the screening and make recommendation to the lake committee based on these results.

Positive observations of *Heterosporis* will result in no transfer from the source location. Observations of other diseases or pathogens will have to be reviewed by the FHC and, based on determination of their geographic distribution and potential effect, recommendation on the transfer will be made to the lake committee.

Future direction: We intend to continue the transfer of sea lampreys to improve assessment and control to support the Fish Community Objectives in all the Great Lakes. We are supportive of transmission studies on *Heterosporis* in order better understand risk of transfer with sea lampreys. We also support a formal risk analysis of the costs and benefits of movement of sea lampreys from Lake Ontario to the upper lakes.