



THREE LAKES
ASSOCIATION

Fish Shelter Project

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August 22, 2010

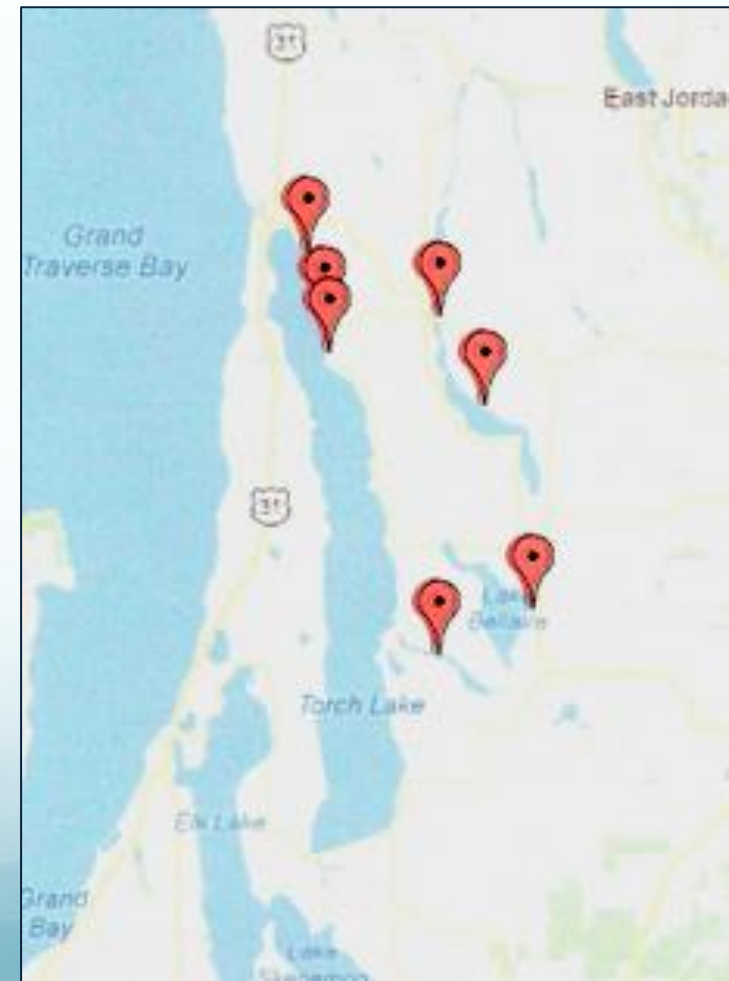
What?

- 5 year project to deploy fish shelters in 5 lakes:
 - Torch Lake
 - Clam Lake
 - Lake Bellaire
 - Intermediate Lake
 - Elk Lake
- 3 shelters at each of the 80 sites in 15-20 ft of water
- Written permission of riparian property owners
- Michigan DEQ permit issued June 1, 2012



Meeting with the DNR

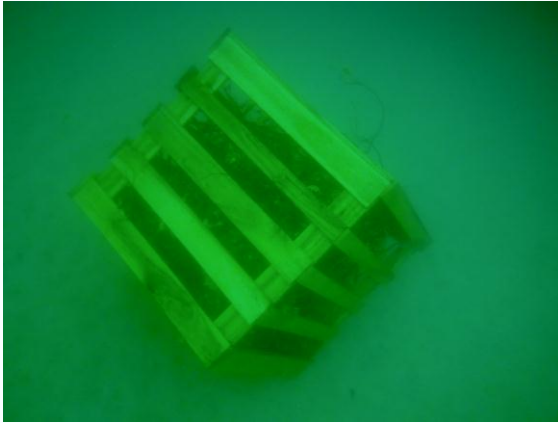
- Heather Hettinger, fish biologist
 - With Dean Branson & Fred Sittel
- Topics
 - Pelletier's thesis
 - Scientific method
 - Standard protocol
 - Minimize variables
 - Abundance of sites
 - happy medium



Factors

- The weather, day to day or the season
- The shoreline of the particular site
- The distance between the 3 shelters
- The type of lake (e.g. Torch is oligotrophic)
- Presence and activity of humans

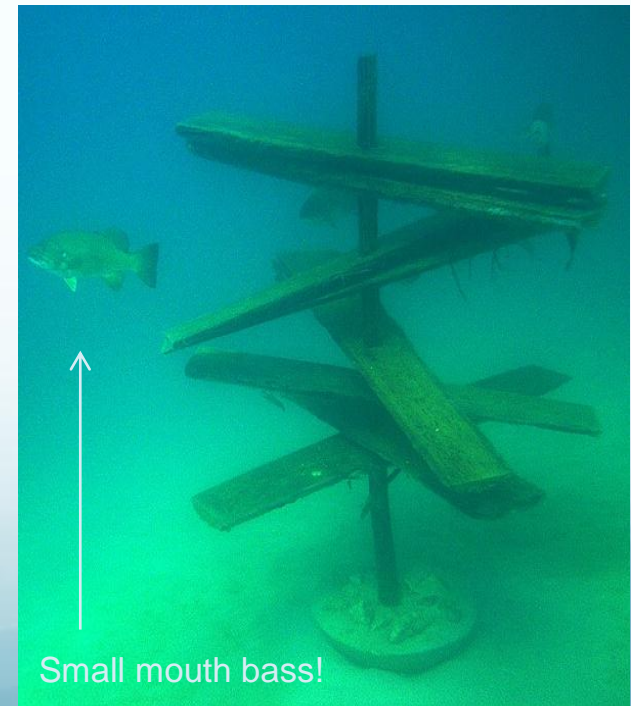




Diving



- Record the quality of the site and the shelters



Diving

- Record the number and sizes of fishes
 - 0-6", 6-12", 12-18", 18"+



Observations

- Smaller fish – stump and crate
- Larger fish – around crate and slab tree
- Overall range of fish length observed: 2-19”
- Colonizing at a rapid rate – less than 1 week



Data Sheet

Site #

T15

Date

8/18/12

Time

9:45

Water Temp

69

Air Temp

68

Weather:

Sunny, light breeze

Site Description

Crayfish on slab tree, around stump, and inside crate

& Comments:

Crate is supporting larger populations of fish

Slabs have rotated parallel to each other

Crate and slab tree are ~15 ft from each other



Fish Size Range:	0-6"	6-12"	12-18"	18+"
Crate	20+	30+	3	
Tree			2	2
Stump	5	1		

Future Work

- Continue to deploy shelters
 - Gather as many materials and volunteers as possible
- Find a willing and able diver to continue observing underwater progress
- Continue educating the community



Collaborating Organizations



Acknowledgements

- Three Lakes Association
- Leslie Meyers, Dean Branson, and the many volunteers helping in contributions, construction, and deployment
- Chief Joe Baker and the Bellaire Fire Department