

Population Status & Ecology of Lake Sturgeon in Lake Michigan Tributaries

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The Lake Sturgeon (*Acipenser fulvescens*)

- Native to North America
- Historical distribution
 - Great Lakes
 - Hudson Bay
 - Mississippi River
 - St. Lawrence River
- Current range
 - 1% of historic



Life History

- Delayed maturity
 - Males: 14-16 years
 - Females: 24-27 years
- Frequency of spawning
 - Males: 1-2 years
 - Females: 3-7 years
- Spawn in rivers
- Sex specific timing



Threats & Causes of Decline

- Overharvest
 - By-catch in commercial fishing
 - Caviar
- Habitat degradation
 - Logging
- Barriers
 - Construction of dams

Overall Goals

- Determine population status of lake sturgeon in Lake Michigan tributaries
 - Muskegon, Grand, & Kalamazoo rivers
- Examine juvenile ecology

Adult Sampling (Spring)

- Gill netting:
Muskegon Lake
- Boat electrofishing:
Muskegon River



Adult Sampling (Spring) Muskegon Lake

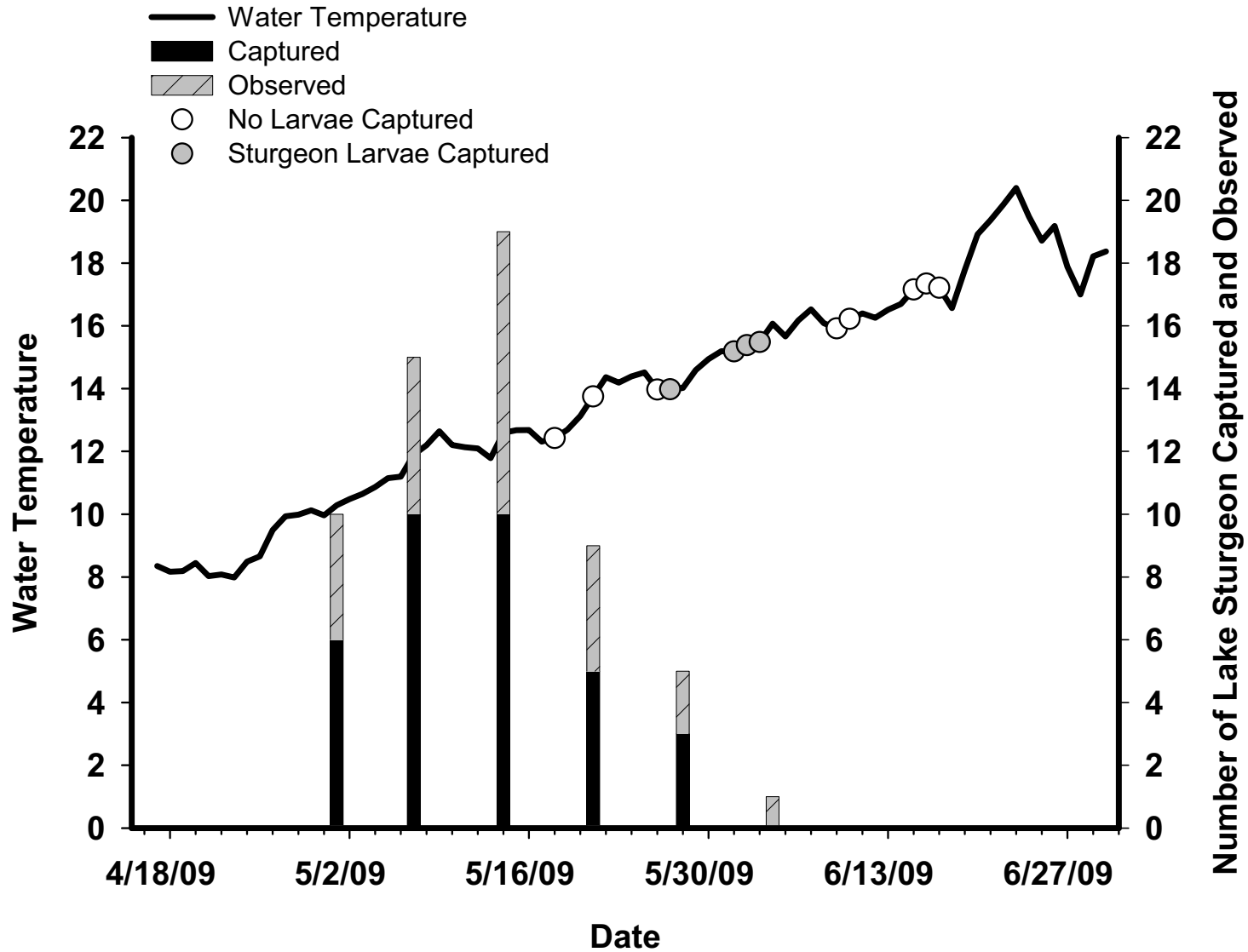
Year	Gill Netting		Boat electrofishing	
	Catch	Effort (hrs)	Catch	Effort (hrs)
2008	1	458	7	24
2009	13	488	18	31
2010	8	984	10	14

Larval Drift Sampling Muskegon River

- Downstream of spawning site
- 4 D-frame drift nets
- Nets fished at night
- Larval lake sturgeon measured & released



Muskegon River: 2009

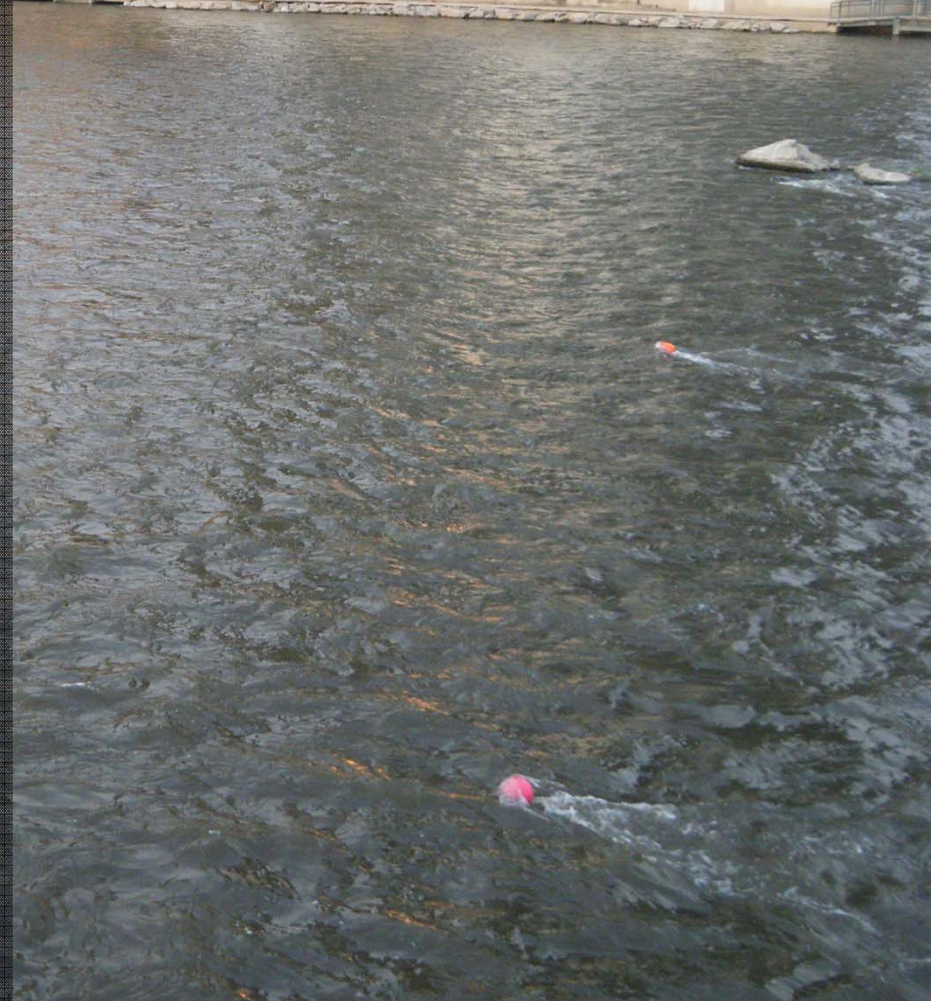


Larval Drift: Muskegon River

Year	Catch	Effort (hours)
2008	0	263
2009	32	194
2010	16	525



Grand River





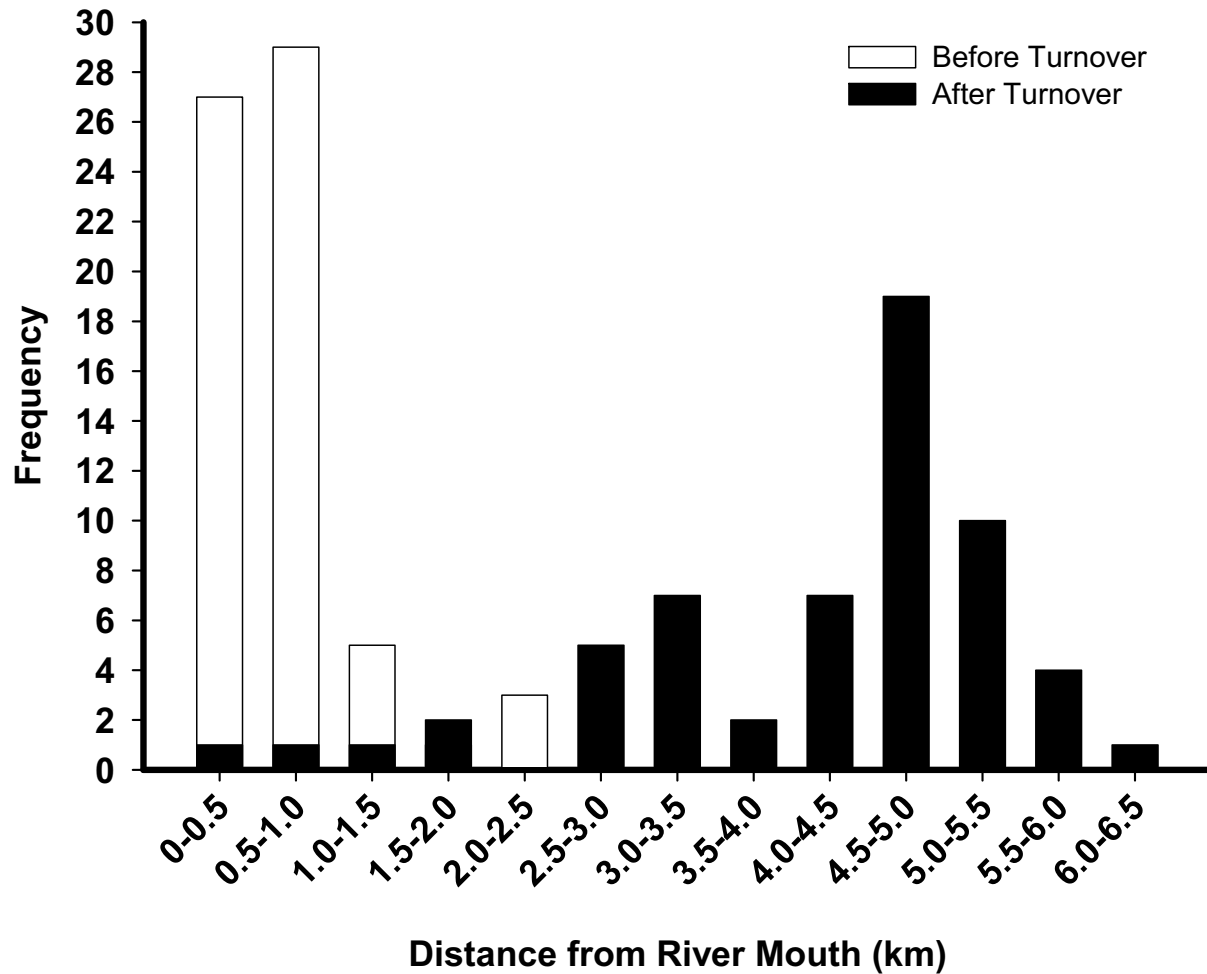


Juvenile Sampling Muskegon Lake

- August-November
- 23 juveniles captured (2008-2010)
 - 14 received transmitters
 - 10 extensively tracked + 3 current
- 5 cohorts (Ages 0, 1, 2, 4, 7)*



Distribution in Muskegon Lake



Before Turnover



1 0 1 2 Kilometers



During Turnover



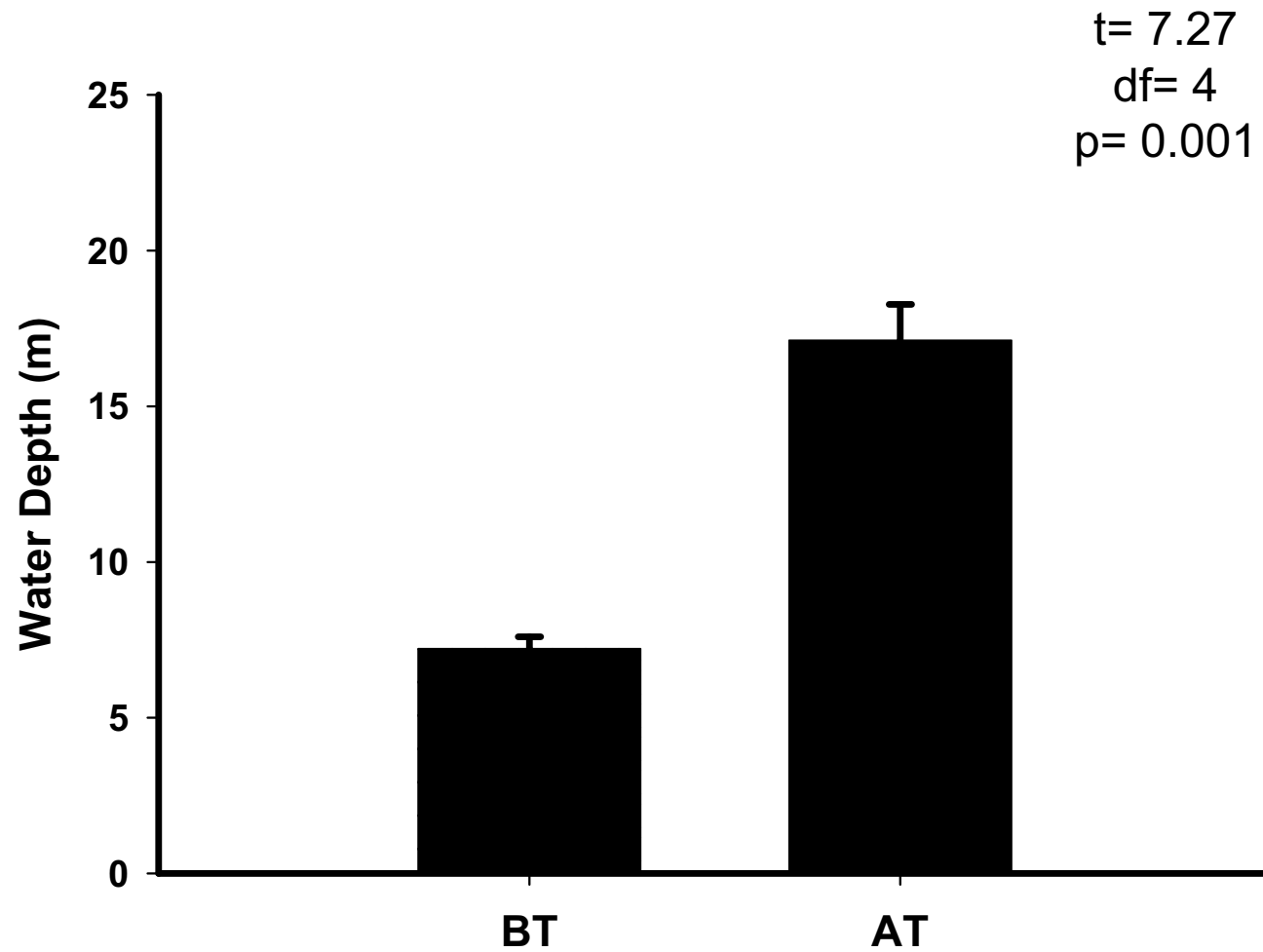
1 0 1 2 Kilometers

After Turnover

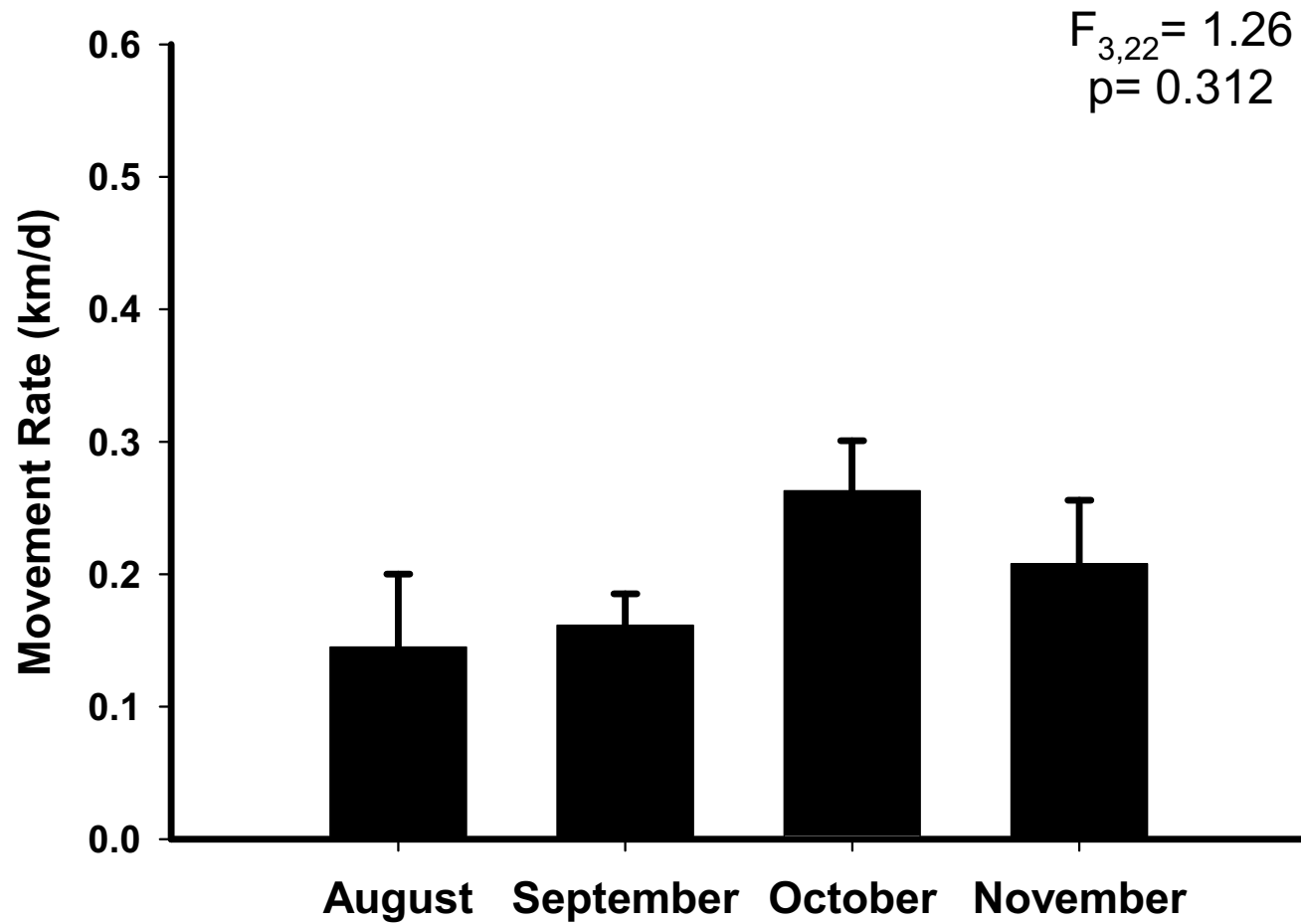


1 0 1 2 Kilometers

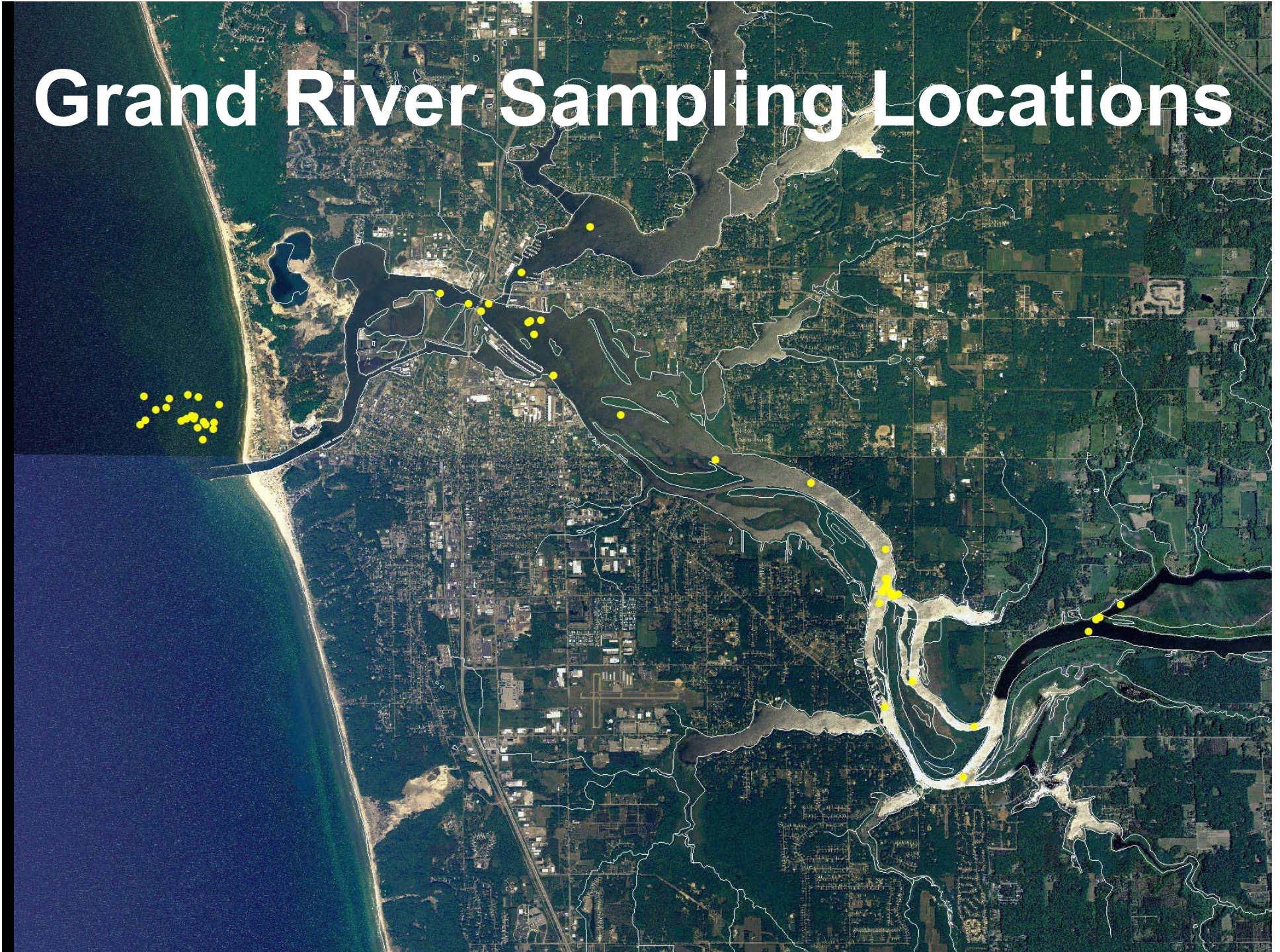
Before vs. After Turnover



Monthly Movement Rate



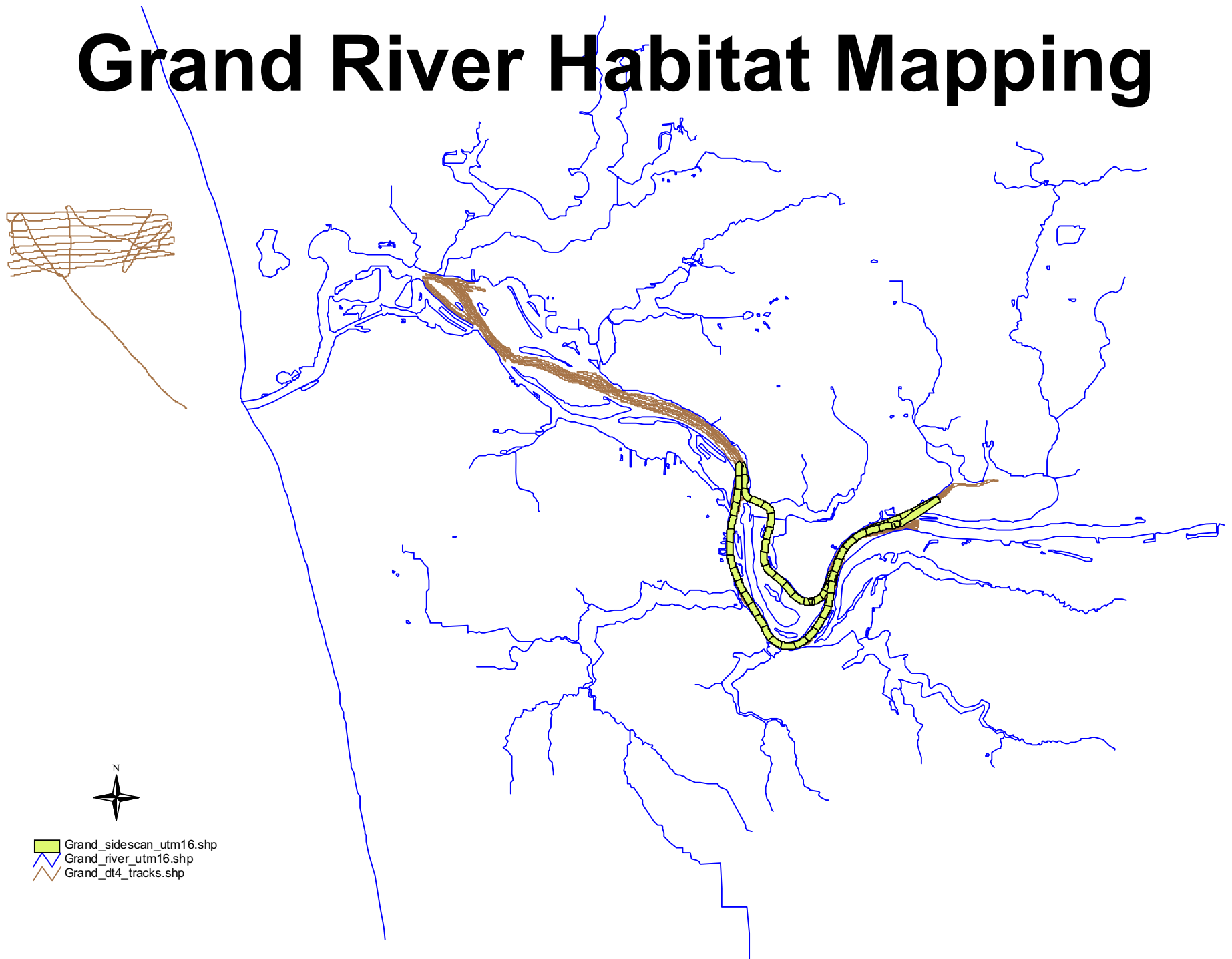
Grand River Sampling Locations



Juvenile Movements



Grand River Habitat Mapping



Conclusions

- Muskegon Lake = important nursery area
 - Multiple cohorts
 - Residency
 - Suitable overwintering areas?
- Adults (<100 annually) successfully reproduce in Muskegon River
 - Larvae & Age-0 lake sturgeon