

Sustainable Sturgeons: Action Plan

Sturgent & Company

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Lake Sturgeon, *Acipenser fulvescens*



Lake Sturgeon Life Cycle

Adults

- Can grow up to 7 ft. long and weigh 250 pounds
- Can live to 150 years old
- Spawn every 2-7 years



Larvae

- 0.25-5 inches in length
- 0-5 months old
- Drift downstream to nursery habitat at night
- Eat aquatic insects

Eggs

- 1/6 inch diameter
- Hatch in 1-2 weeks
- This stage is the most vulnerable to predators

Juveniles

- 1.5-3.5 feet in length
- 1-26 years old
- Eat mussels, small fish, and aquatic insects
- Humans are only predator
- Similar to adults but do not spawn



Young Of Year

- 5-16 inches long
- 0.5-1 year old
- Eat aquatic insects



Drawing by Taaja Tucker ttucker@usgs.gov

http://www.voicenews.com/life/blue-water-sturgeon-festival-to-mark-fifth-year/article_7fe3cef3-ca33-5d6e-84f9-d68c9c62e127.html

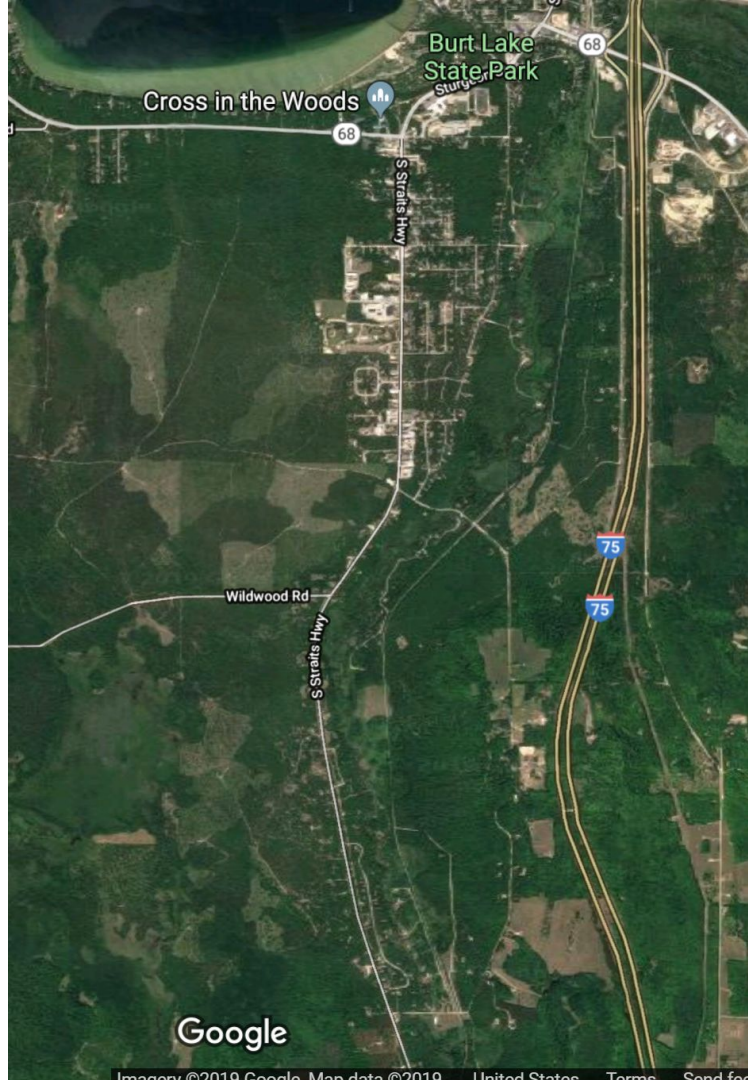
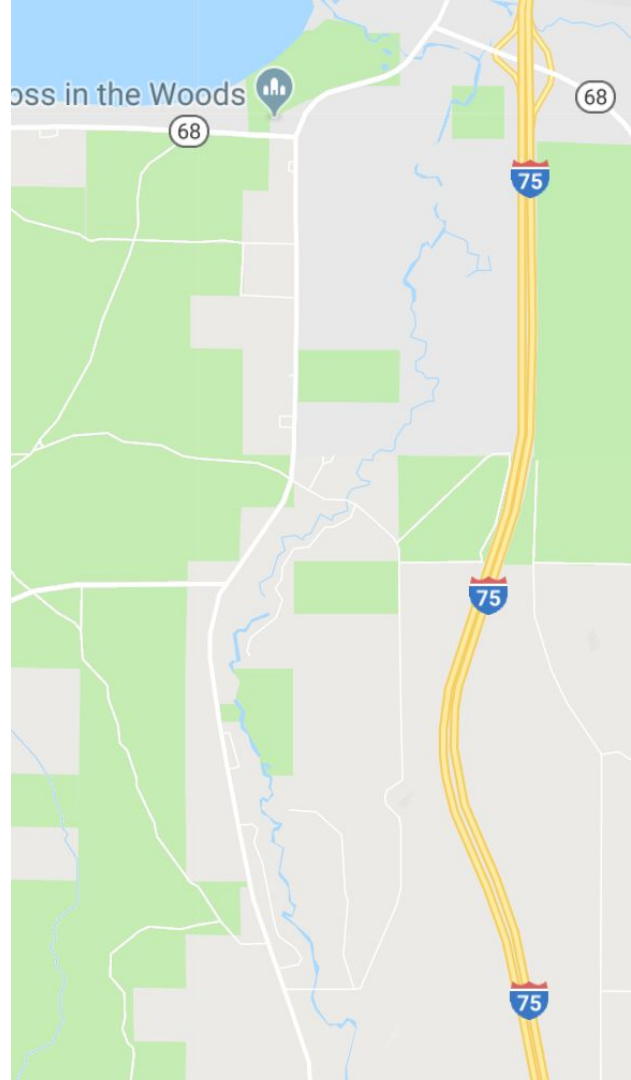
Lake Sturgeon Spawning Needs

Substrate	Temperature (°C)	Velocity (m/sec)
coarse gravel or cobble	10-20 (Spring)	0.5-1.3 (Spring)

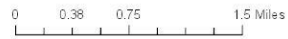
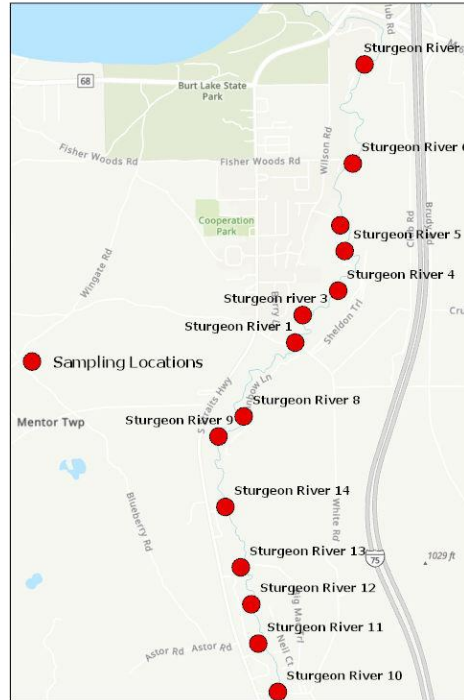
Background and Problem

- No self-sustaining populations
- 2018 study: Black River & Sturgeon River
- Assessed 14 Sturgeon River sites





Sampling Site Locations Along Sturgeon River



Credits: FEMA (Federal Emergency Management Agency); Stantec; STARR (Strategic Alliance for Risk Reduction)

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7 August 2019







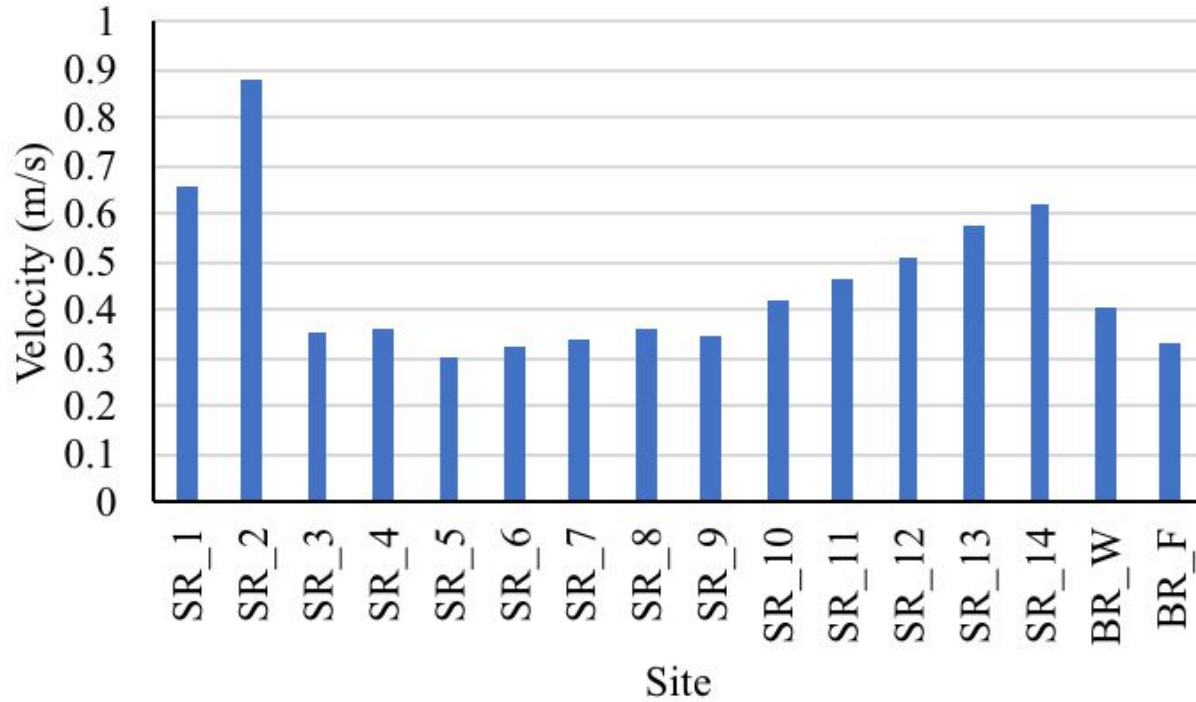




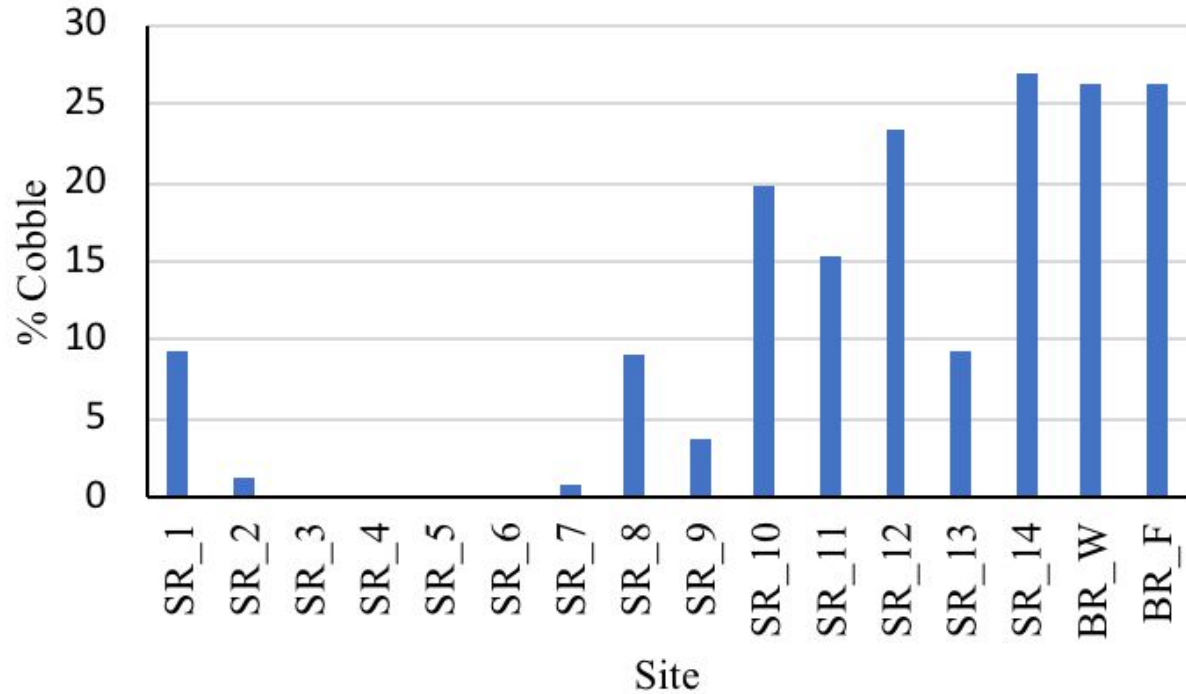




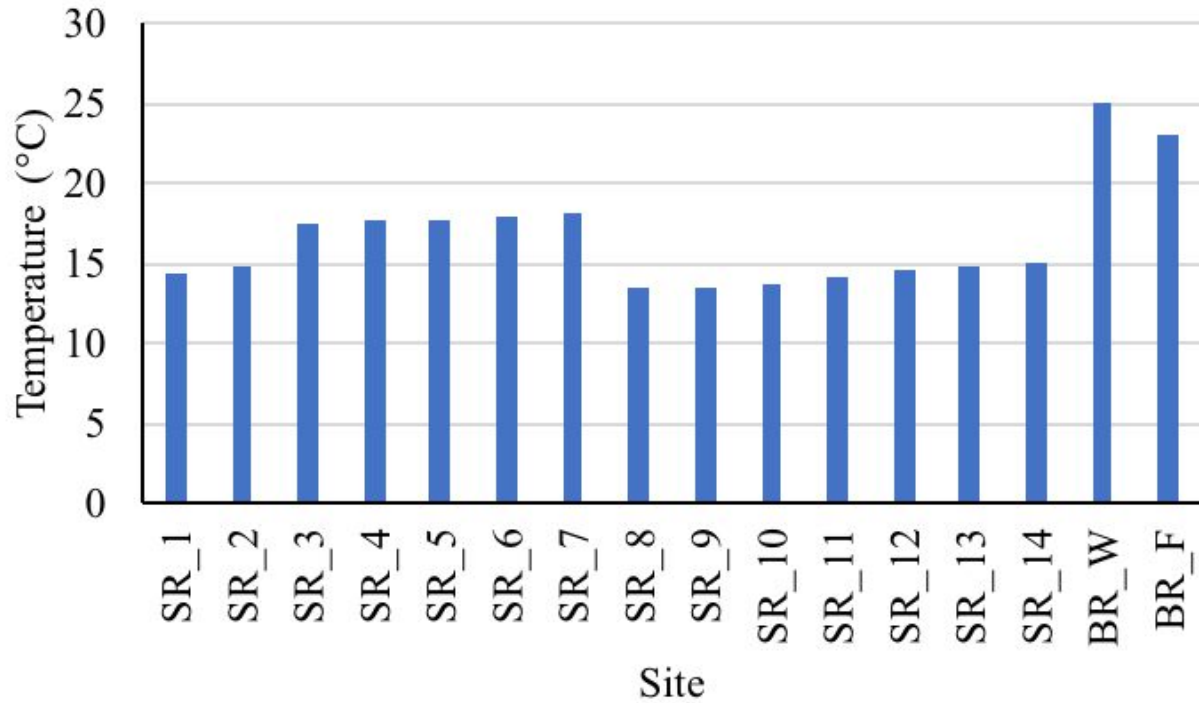
Results



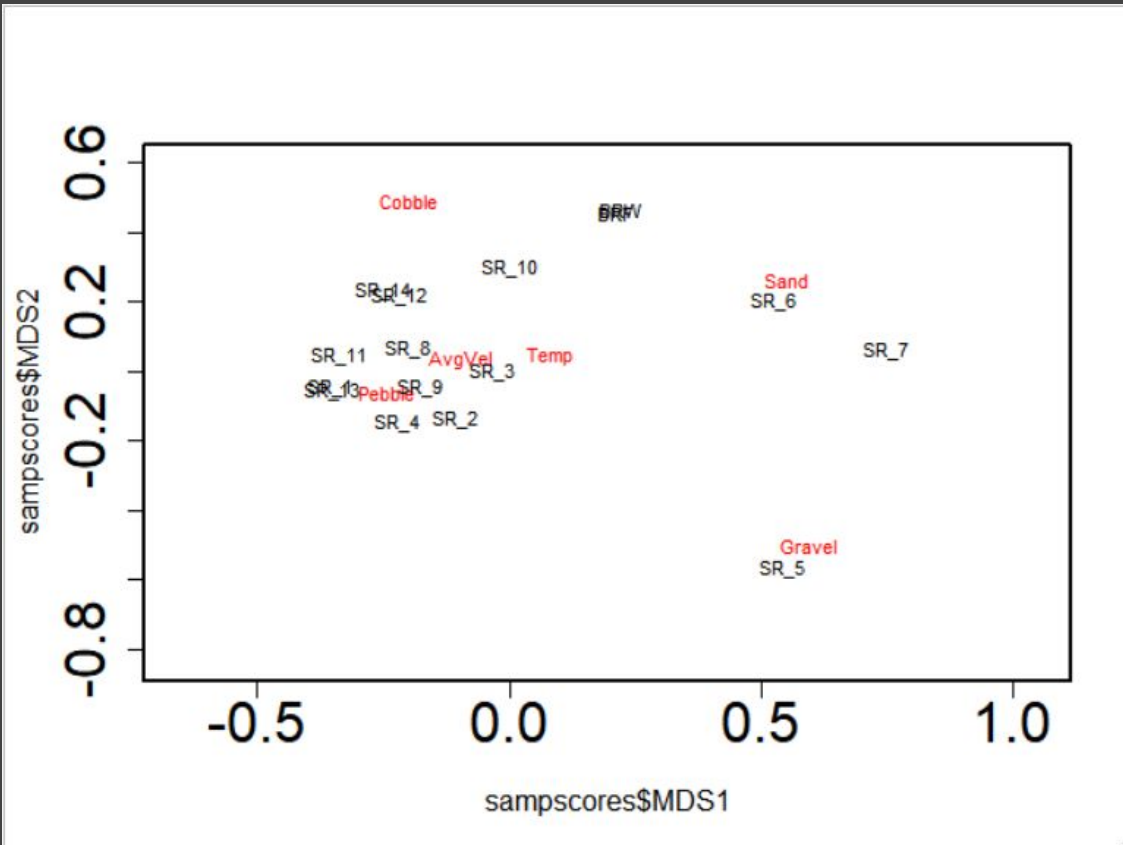
Results




Results

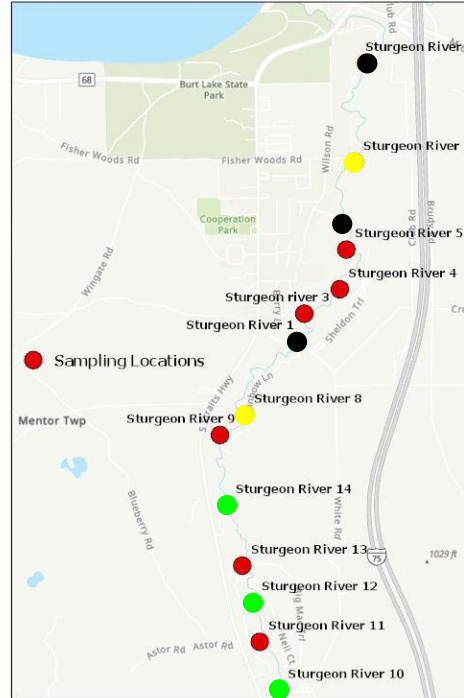


Results



Sampling Site Locations Along Sturgeon River

-  - Priority Sites
-  - Secondary Sites
-  - Tertiary Sites



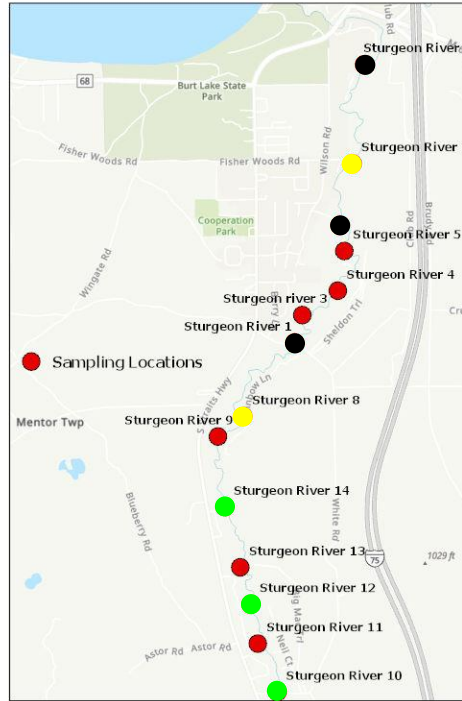
0 0.38 0.75 1.5 Miles



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Sampling Site Locations Along Sturgeon River



 - Priority Sites

Recommendations:

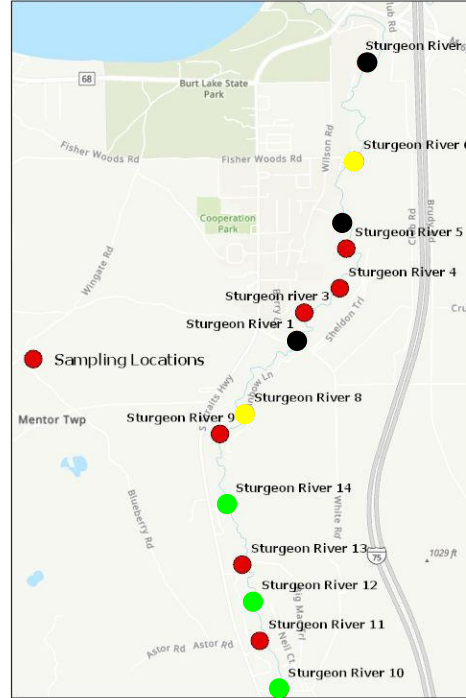
- Protect the sites
- Keep clean

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● - Secondary Sites

Sampling Site Locations Along Sturgeon River



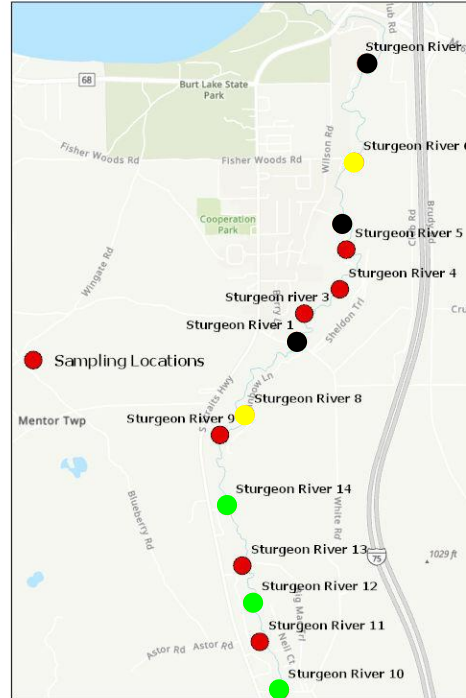
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Recommendations:

- Add cobble

Sampling Site Locations Along Sturgeon River



● - Tertiary Sites

Recommendations:

- Add cobble

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Recommendations

- 10-20 cm limestone
- Focus on high velocity sites
- Periodic cleaning and/or replacement of stones



Acknowledgements

Corey Sitkowski, David Steenstra, Jim Burke, and Mike Supernault

Paul Moore and Chris West

Brenda Archambo, the *Sturgeon General*

Burt Lake Preservation Association



Appendices

Data Collection

- Picked sites that looked ideal for sturgeon spawning
- Measured wetted channel width with 50 m tape measurer
 - Divided channel into 6 quadrants
 - Measured depth with meter stick and surface velocity with meter stick and leaf method in the middle of each quadrant
- Measured dissolved oxygen and temperature with hydrolab
- Characterized substrate using 100 pebble count method

Appendices

Data Analysis

- Multivariable analysis of all 14 Sturgeon River sites and 2 Black River sites
- Velocities multiplied by conversion factor (.45)
- Bar graphs of velocity, % cobble, and temperature