

LRBOI Wild Rice Research and Monitoring

Allison Smart
Environmental Coordinator
Little River Band of Ottawa Indians

Legend

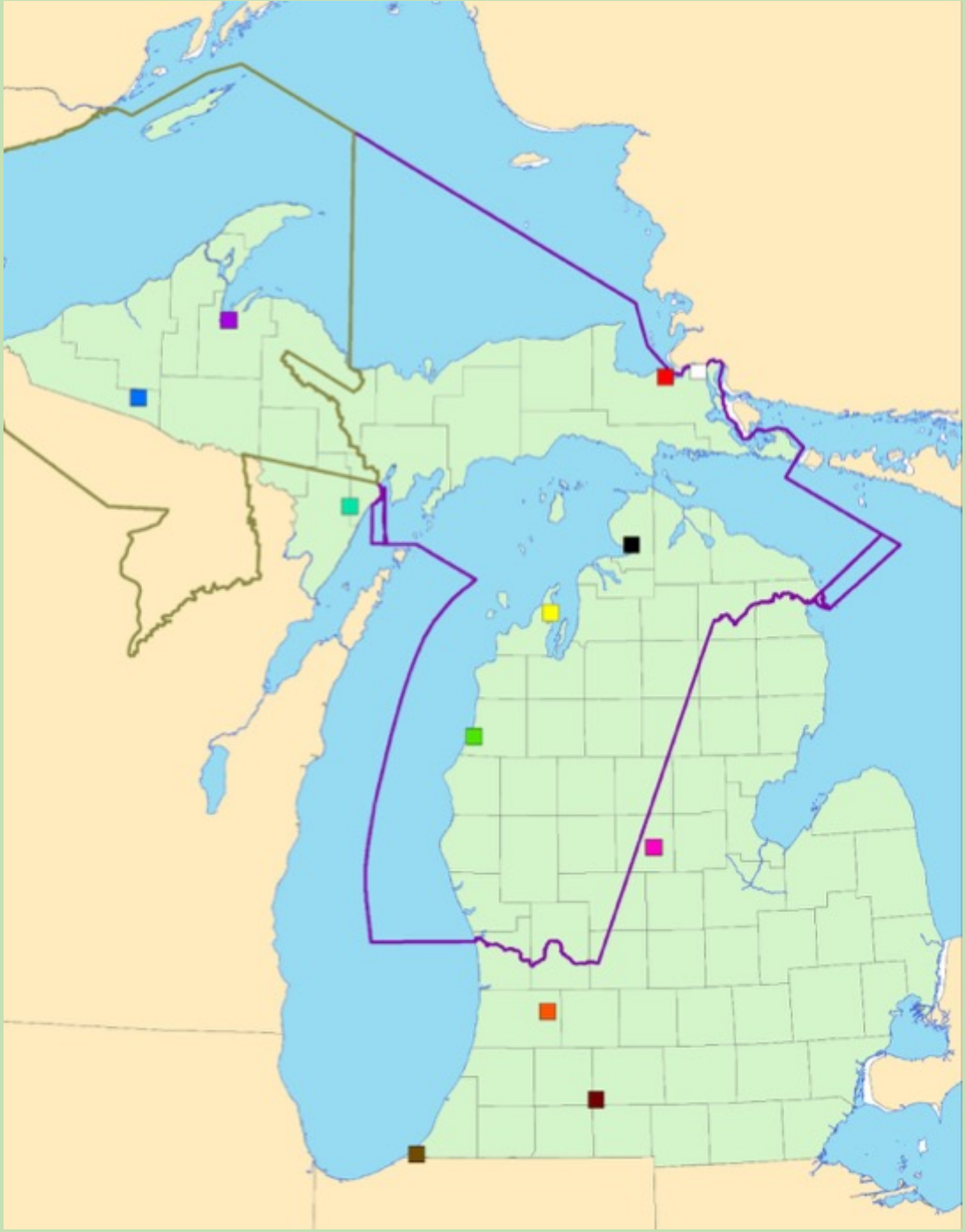
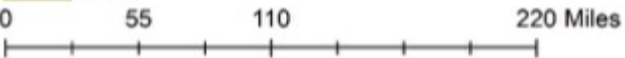


Federally Recognized Tribes Located in Michigan

- Bay Mills Indian Community
- Grand Traverse Bay Bands of Ottawa and Chippewa
- Hannaville Potawatomi Indian Community
- Keweenaw Bay Indian Community
- Lac Vieux Desert Band of Lake Superior Chippewa
- Little River Band of Ottawa Indians
- Little Traverse Bay Bands of Odawa Indians
- Match-e-be-nash-she-wish Band
- Notawaseppi Huron Band of Potawatomi
- Pokagon Band of Potawatomi
- Saginaw Chippewa Tribe
- Sault Ste Marie Tribe of Chippewa Indians

Ceded Territories with Recognized Rights

- 1836
- 1842



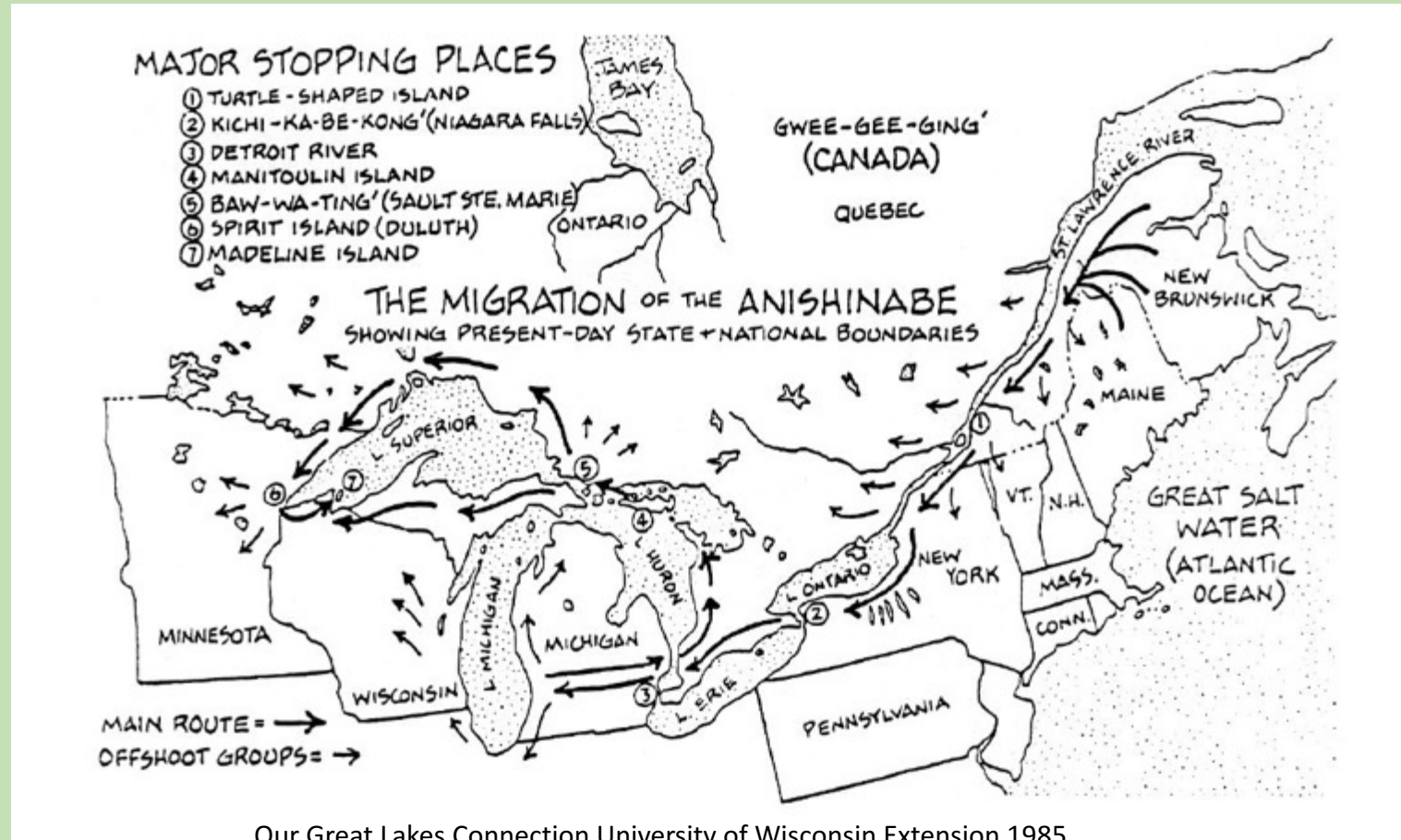
Background on the Little River Band of Ottawa Indians

- Located in Manistee
- Bands that would become the Little River Band of Ottawa Indians were signatories of 1836 Treaty of Washington (Michigan became a state 10 months later)
- LRBOI reaffirmed by the federal government in 1994
 - Our Natural Resources Department has 3 branches (Environmental, Fisheries and Wildlife) and 18 full time staff
- 1 of 5 CORA Tribes (LRBOI, LTBB, GTB, SSM, BMIC)
 - Citizens have the right to hunt fish and gather within the 1836 ceded territories (2000 Great Lakes and 2007 Inland Consent Decrees)



Why Does Wild Rice Matter?

Tribal Communities



Our Great Lakes Connection University of Wisconsin Extension 1985

Why Does Wild Rice Matter?

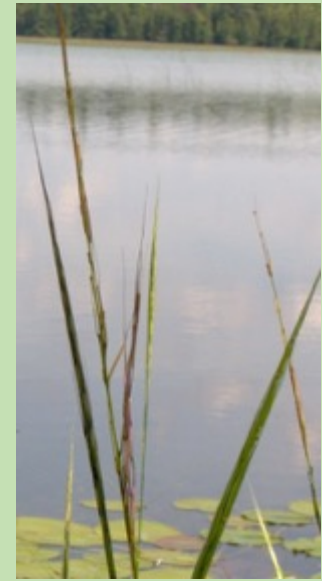
Ecology



- Habitat for a variety of organisms
- Supports other native plant species
- High nutrient uptake



Z. palustris – Northern Wild Rice

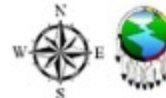


Z. aquatica – Southern Wild Rice








Legend



Best Guess Geography of Wild Rice

-  *Z. palustris* Dominate
-  Mix of *Z. palustris* and *Z. aquatica*
-  *Z. aquatica* Dominate

0 87.5 175 350 Kilometers

A horizontal scale bar with tick marks at 0, 87.5, 175, and 350 Kilometers.

Background on Mannomin at LRBOI – Why we are now researched focused.

- Circle of Flight monies for restoration and planting
- Planted over several years in early 2000s
- Seed was planted in 5 locations
- 2 locations still have some rice in 2015.
 - 1 site has a bed, but is too sparse to harvest
 - 1 site has rice that grows every year but in few numbers (<50 plants a year)
- Knowledge existed that both species (*Z. aquatica* / *Z. palustris*) indigenous to MI grow in Manistee area



LRBOI Biologist had a lot of
questions and very very few
answers

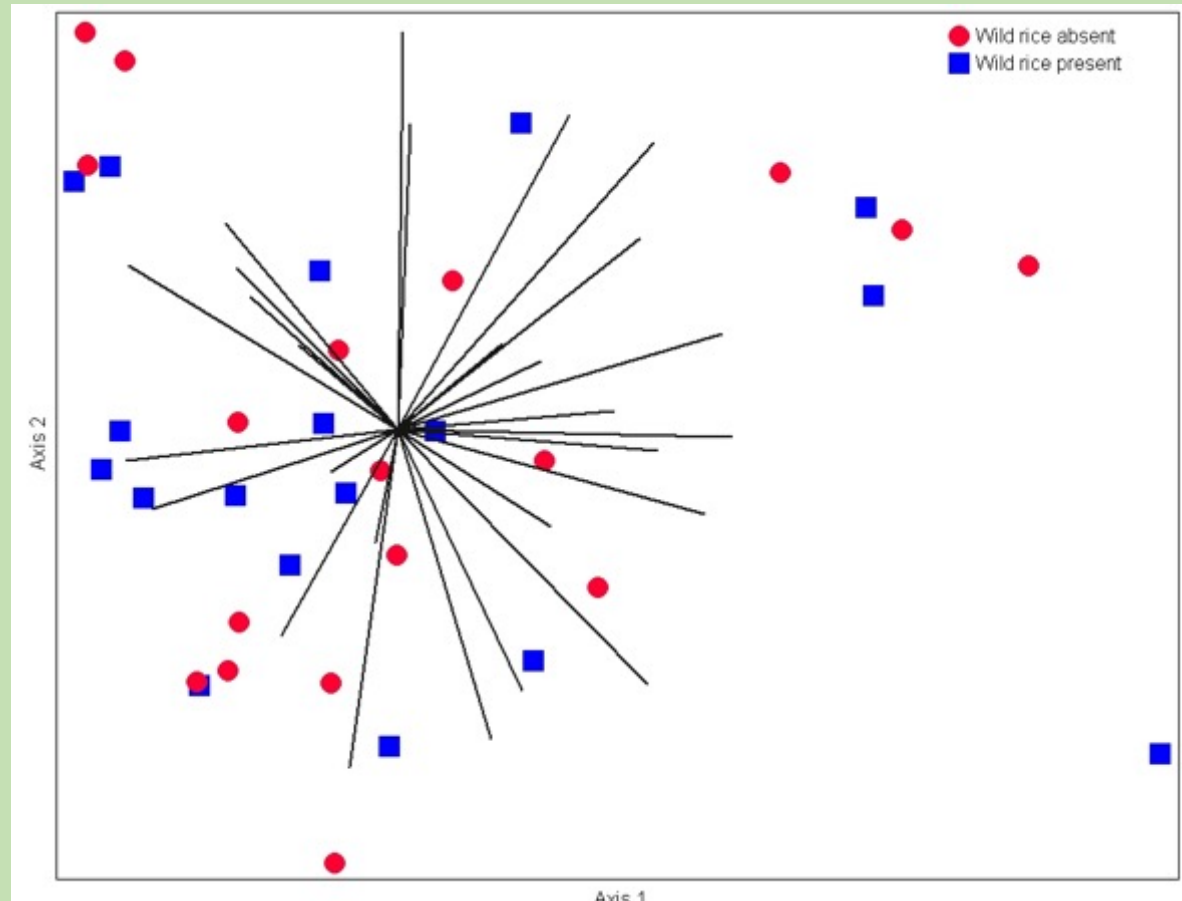
2010/2011 Questions

- Why didn't the rice grow / flourish in areas seeded?
- Based on geography are abiotic habitat parameters similar for wild rice beds in Michigan?
- Are the abiotic habitat parameters different where each species grows?

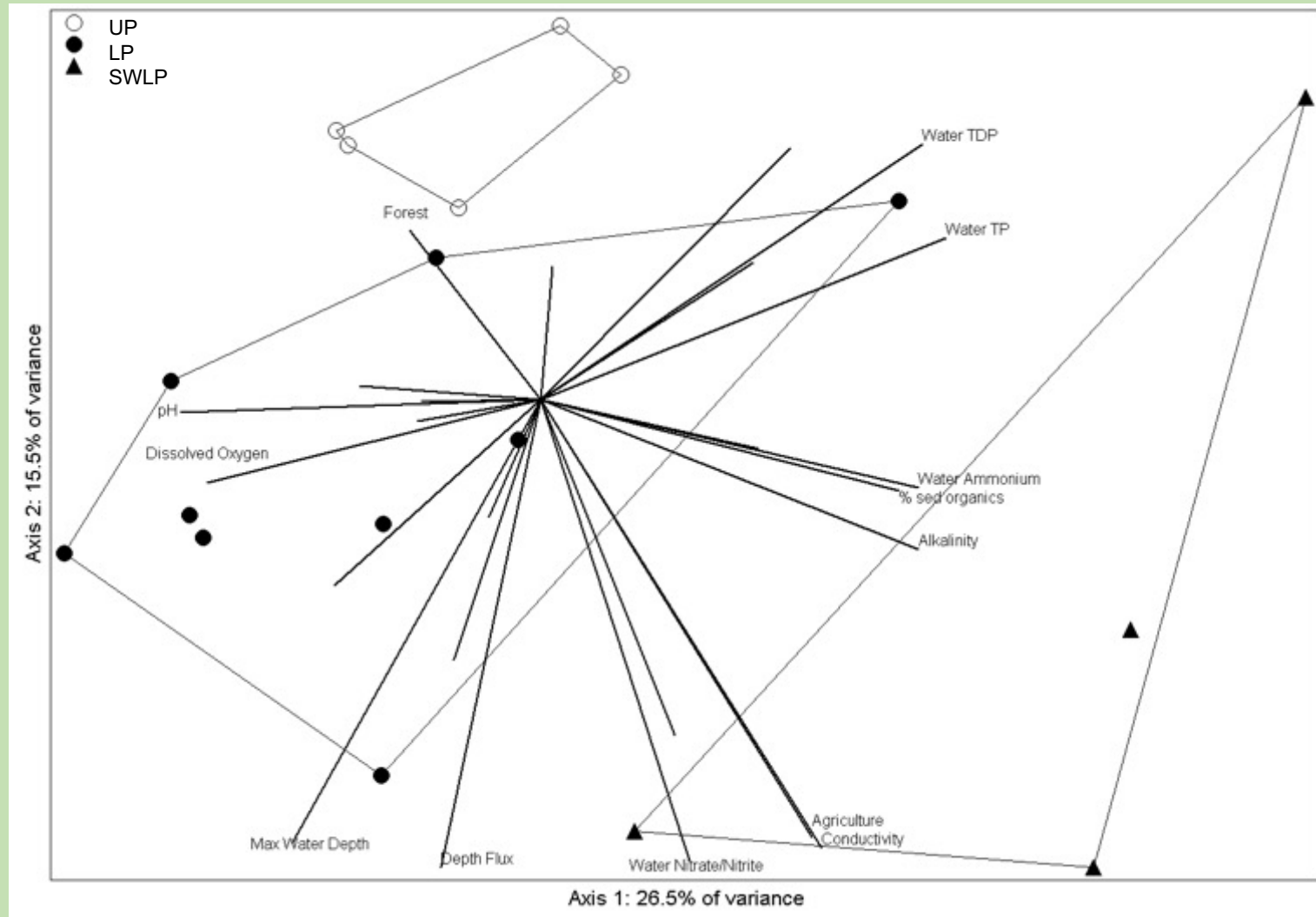


So why didn't the rice grow?

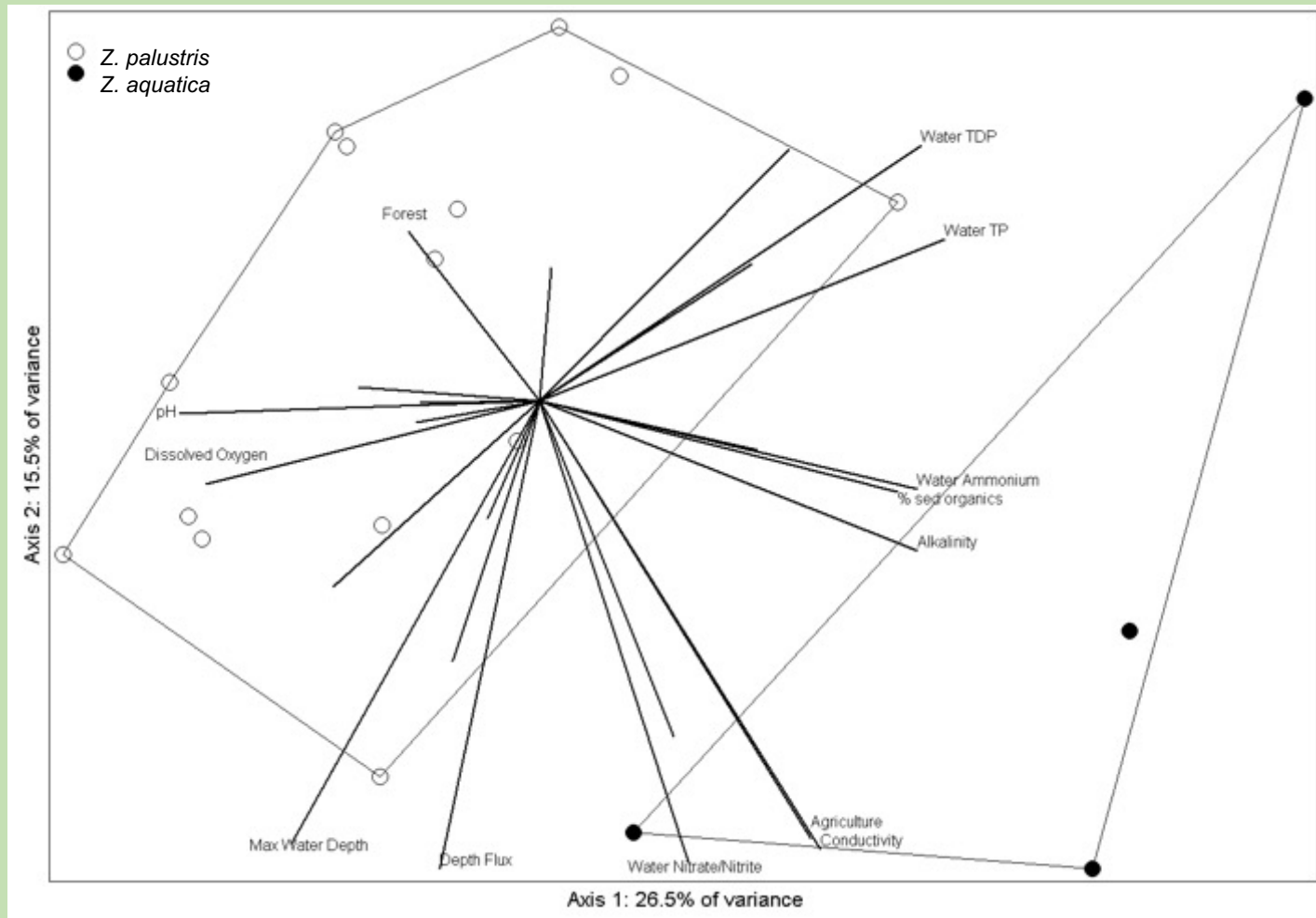
According to abiotic habitat parameters sampled we still do not know

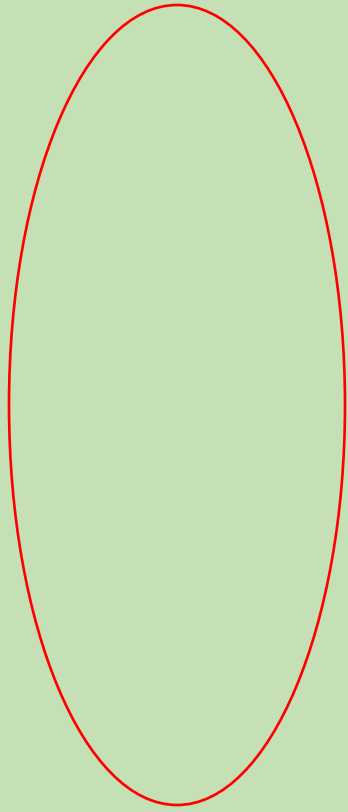


Are there differences between sites based on geographic locations?



Are the abiotic habitat parameters different between species present?

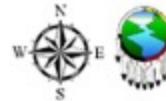







Studying Genetic Diversity



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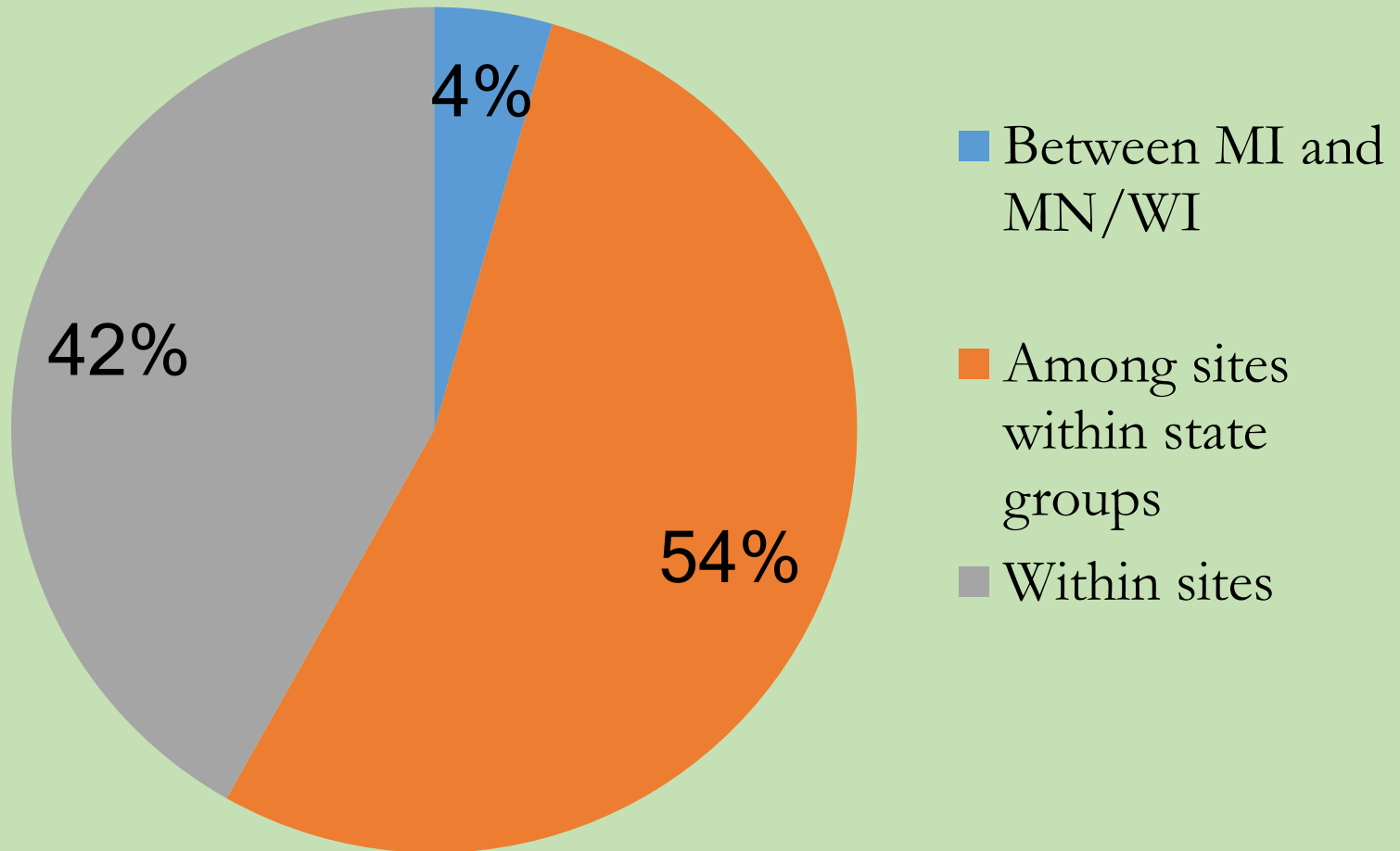
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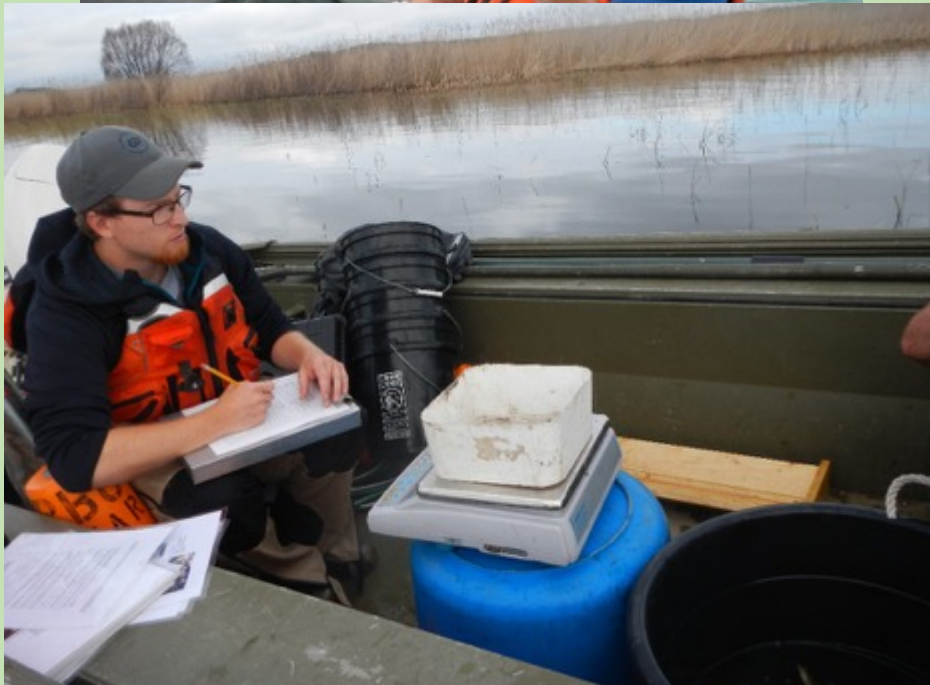
A horizontal scale bar with tick marks at 0, 87.5, 175, and 350 Kilometers.

Observed Distribution of Genetic Diversity



Determining Fish Assemblages

Looking at what fish are found in wild rice beds: 2017 and beyond

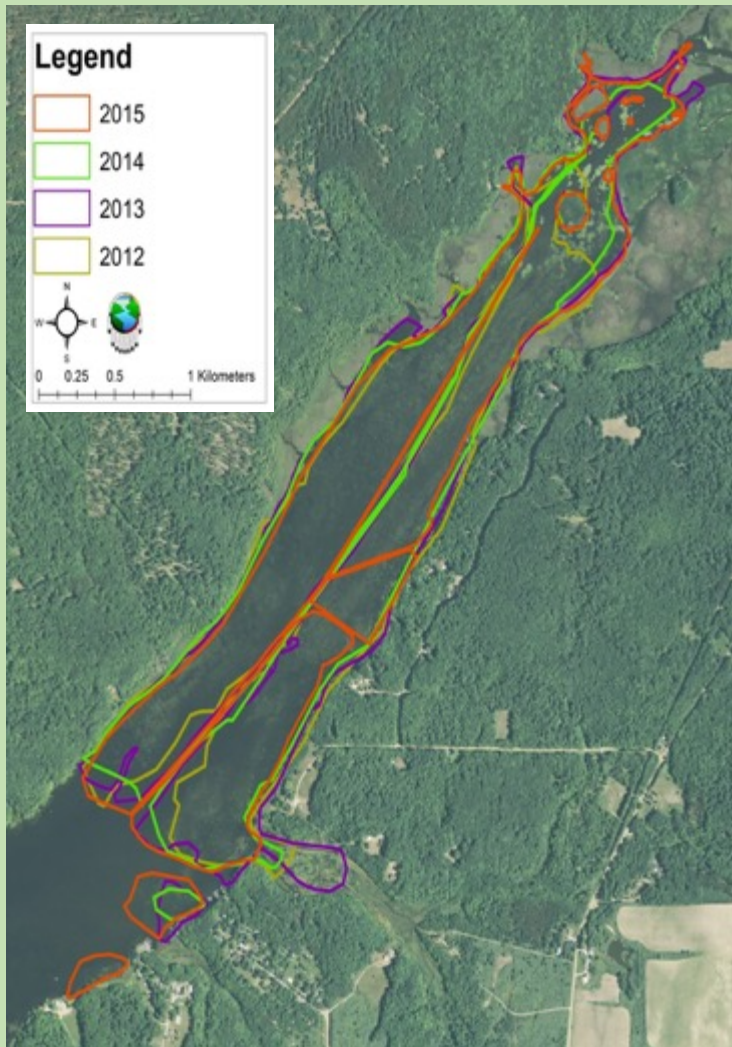


Wild Rice Monitoring

- Annual Density
- Annual Bed Area
- Annual Seed Collection
- Annual Seed Contaminate Monitoring (As, Hg, Pb, Cd, Se) (A lot of non-detects)
- WQ Monitoring



Looking at Bed Area, Density, & Water Depth





Lake Site

EPA Region 5 Wild Rice Monitoring Network

Long Term Restoration Planning

- Looking at restoring and enhancing both species to areas around Manistee
- Continue to protect and monitor current stands
- Potential enhancement through planting
- Graduate Student Project



Questions?

- Acknowledgements Allison Smart
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