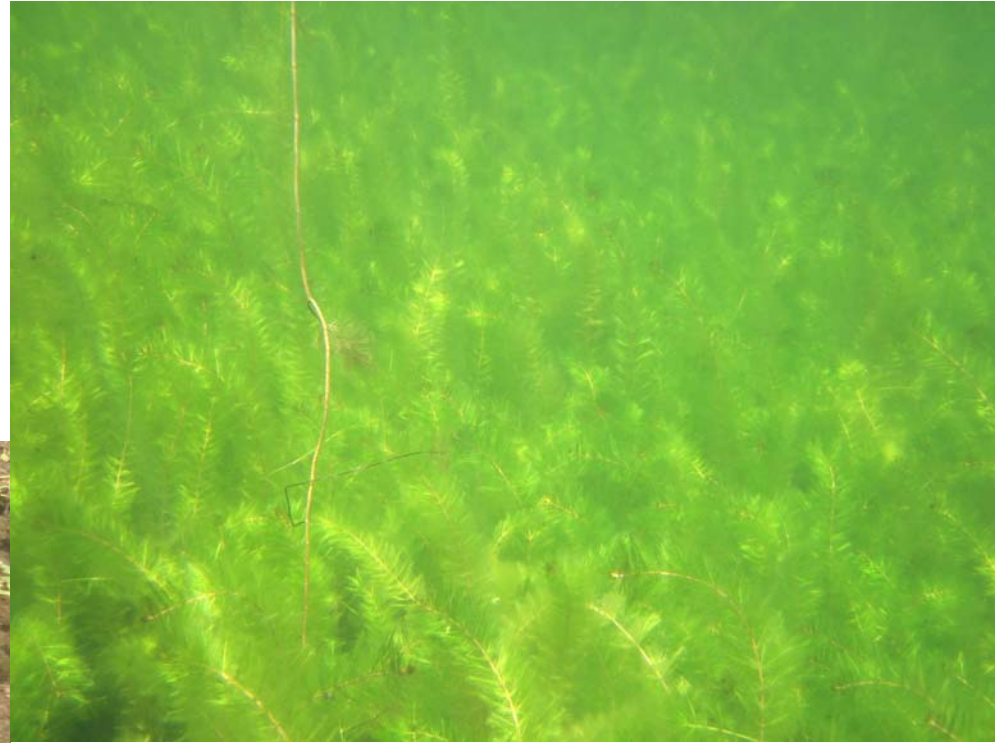
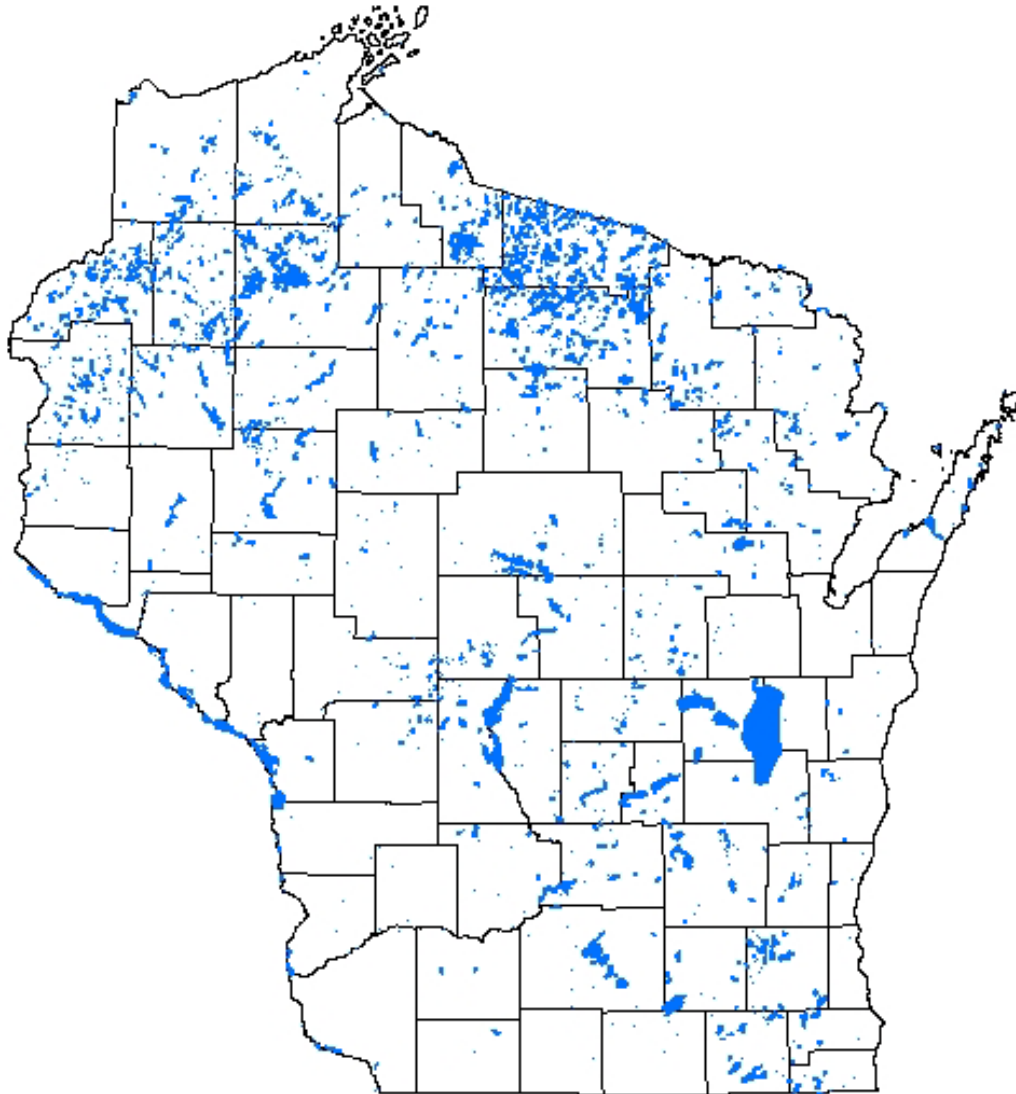


Environmental Preferences and Invasion Trajectories of Eurasian Watermilfoil

Alison Mikulyuk
Michelle Nault
Scott van Egeren
Jennifer Hauxwell

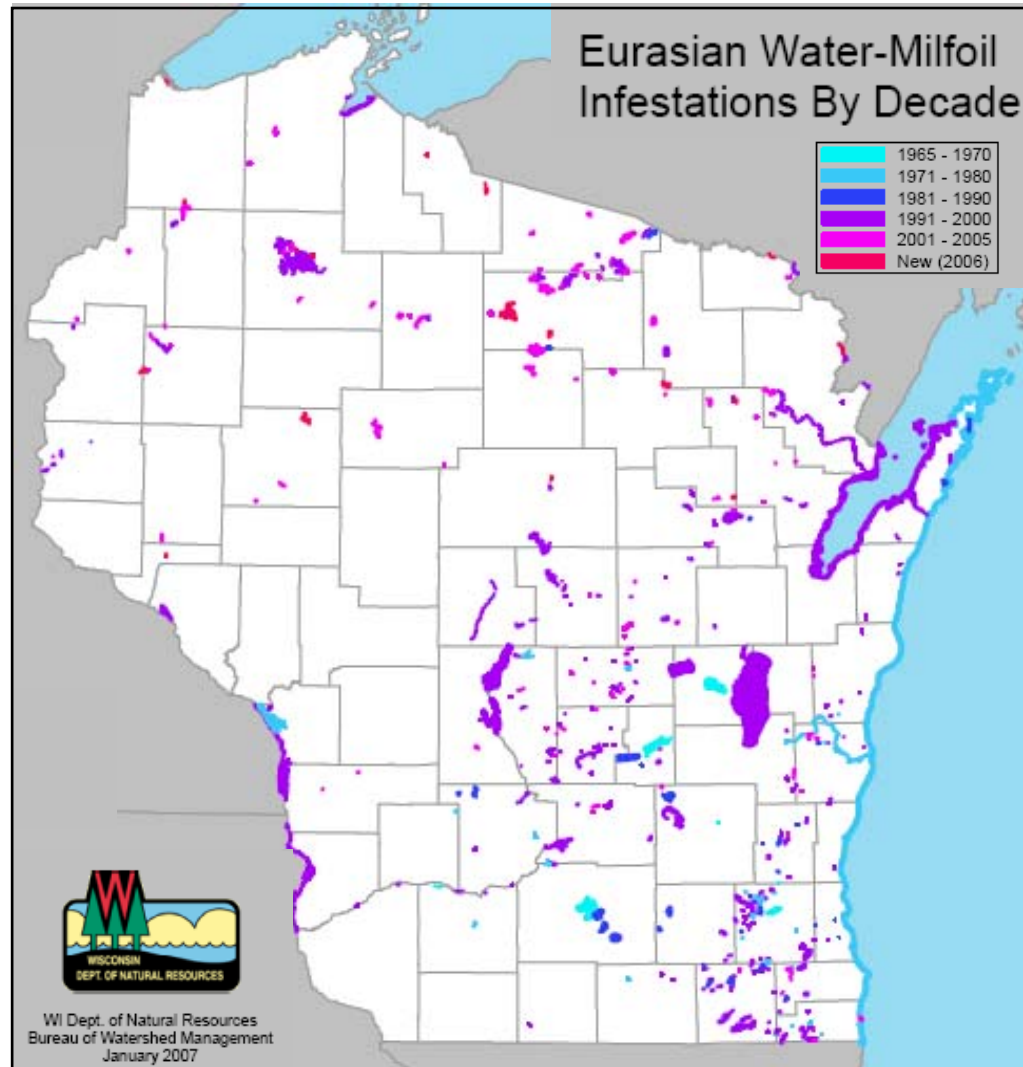


How can we manage lakes most effectively?



We have good surveillance... little information on EWM populations.

539 of 15,000
lakes with EWM

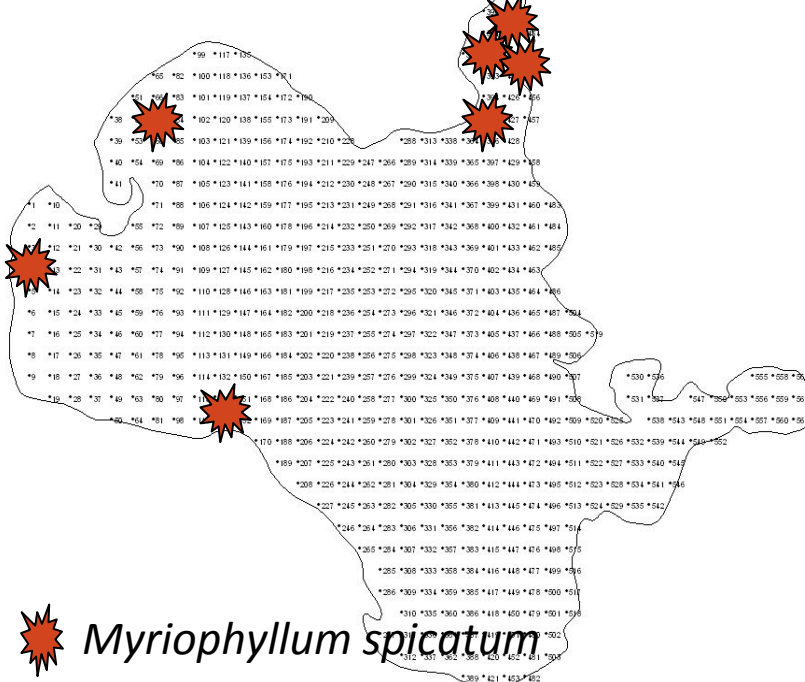


If we knew more, we could manage better.

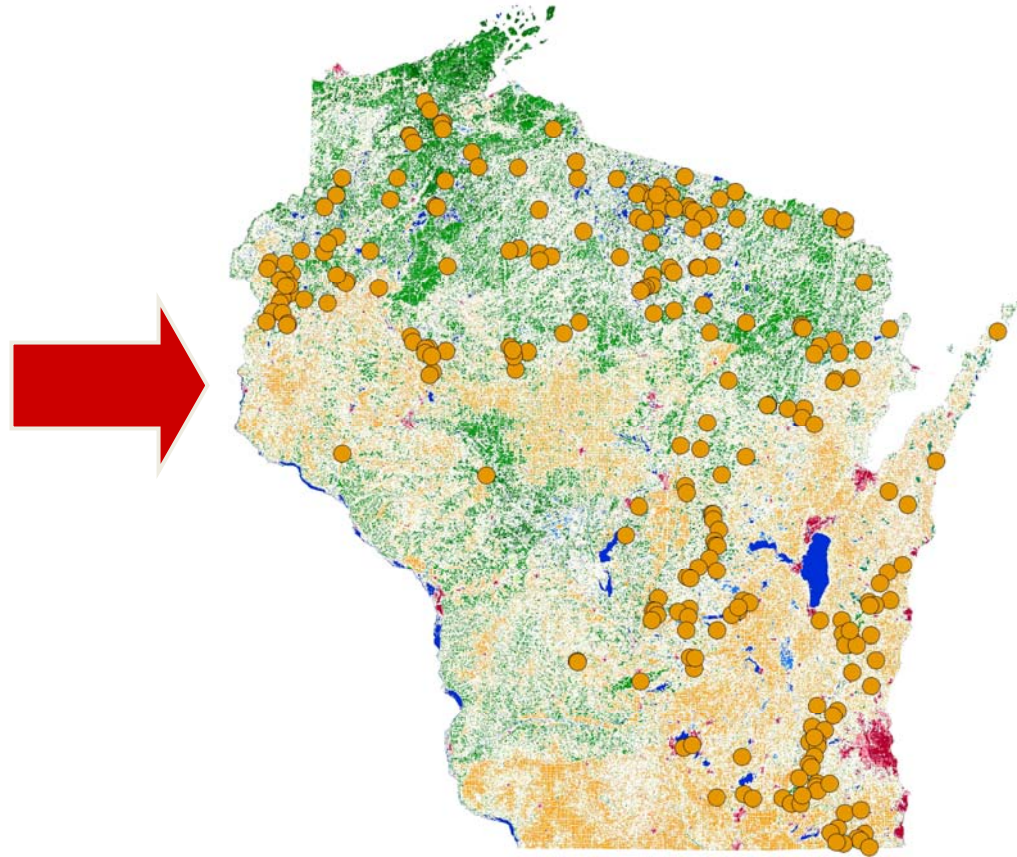
We have developed an observation system (2004-2005)

N = 1

Enterprise Lake, Langlade

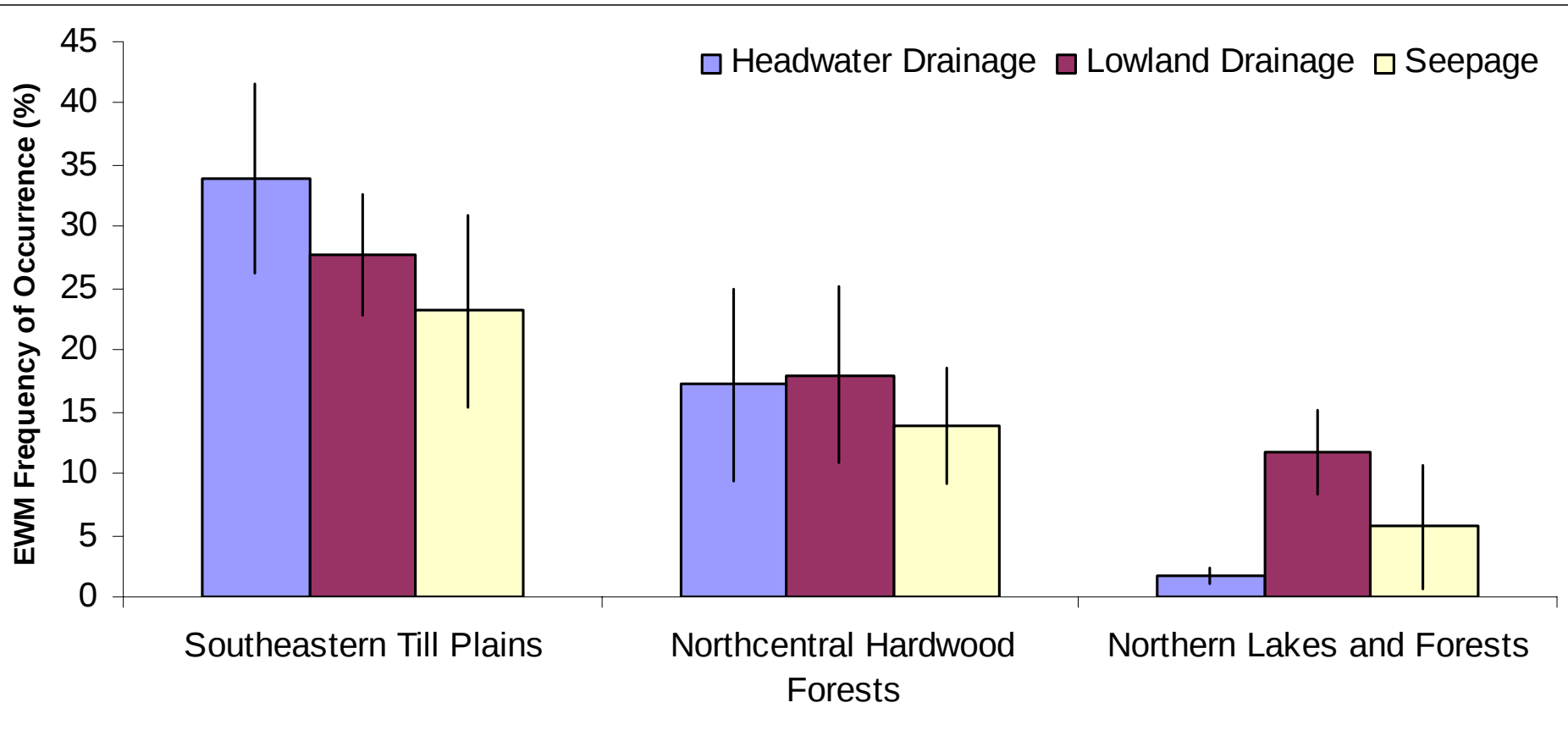


N = 266



Ask the Questions...

How does EWM vary with location and lake type?



EWM frequency varies by ecoregion ($P < 0.001$)

Ask the Questions...

Which plant community is EWM found in?

Community
associates:

P. crispus

M. Spicatum

C. Demersum

E. canadensis

R. Aquatilis

U. Vulgaris

P. zosteriformis

L. trisulca

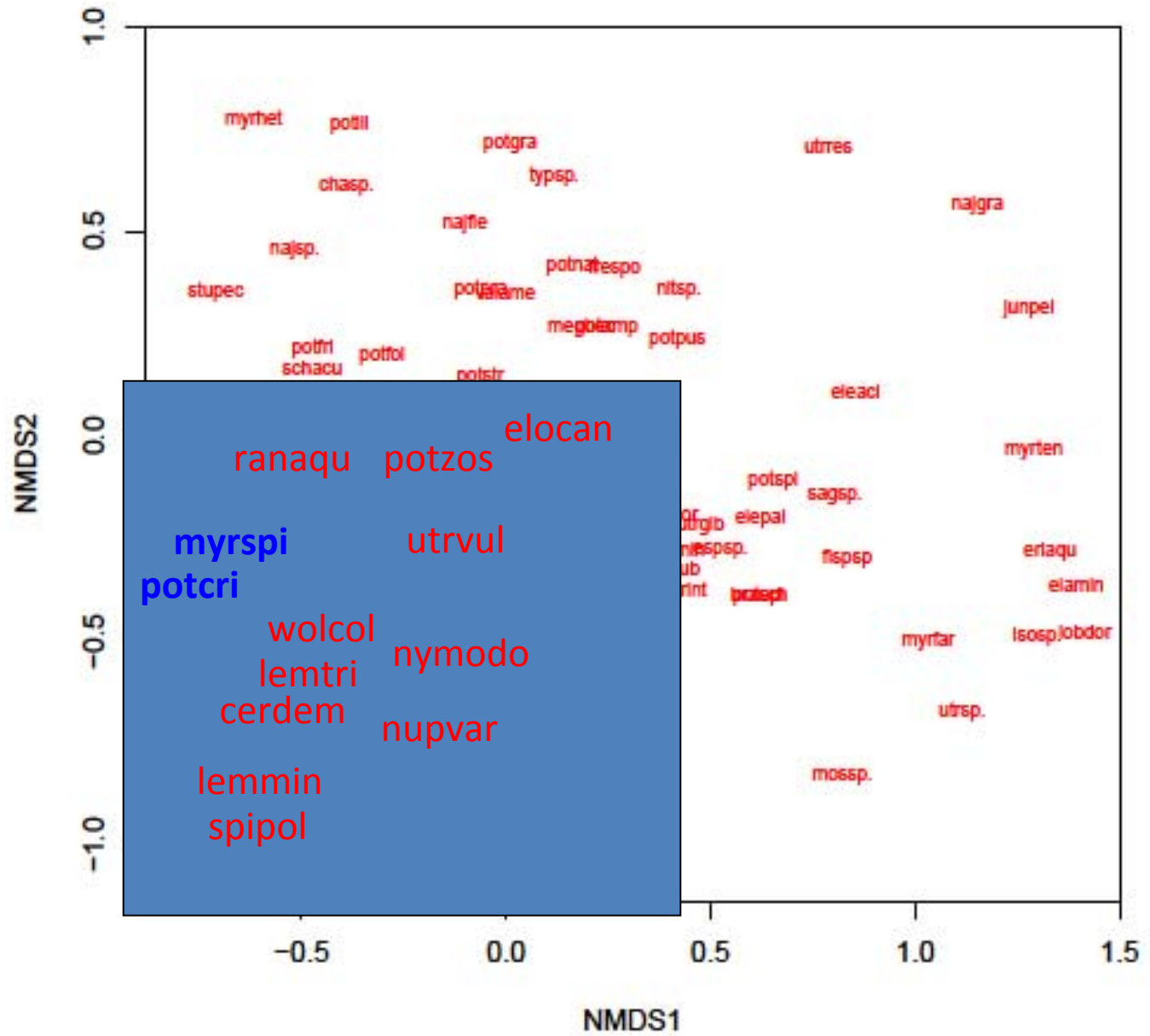
L. minor

S. polyrhiza

W. columbiana

N. odorata

N. variegata



Ask the Questions...

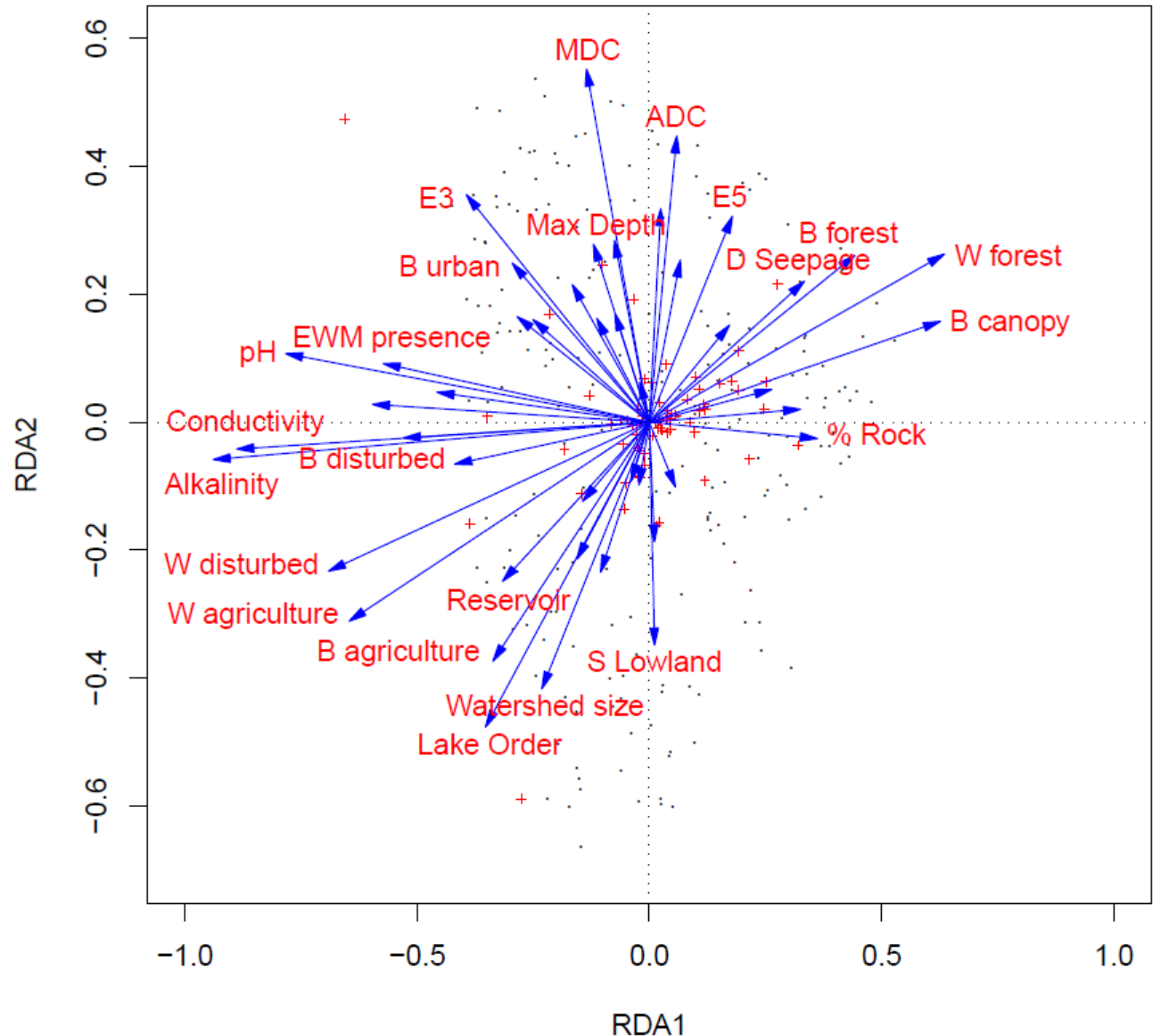
How does EWM vary with environmental factors?

Positive EWM correlation

- pH
- Conductivity
- Alkalinity
- Disturbed land
- South

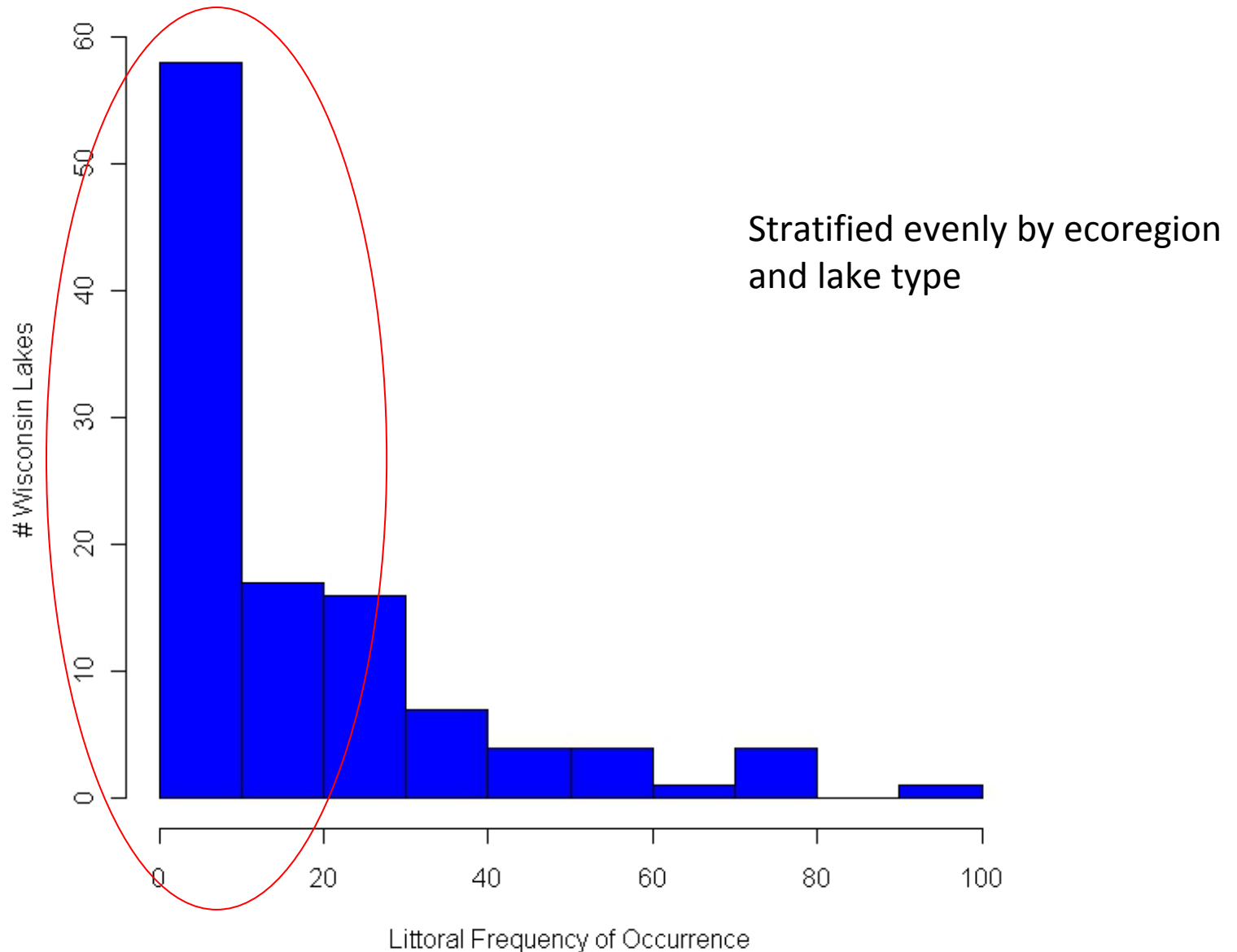
Negative correlation

- % rock
- Forest land
- North

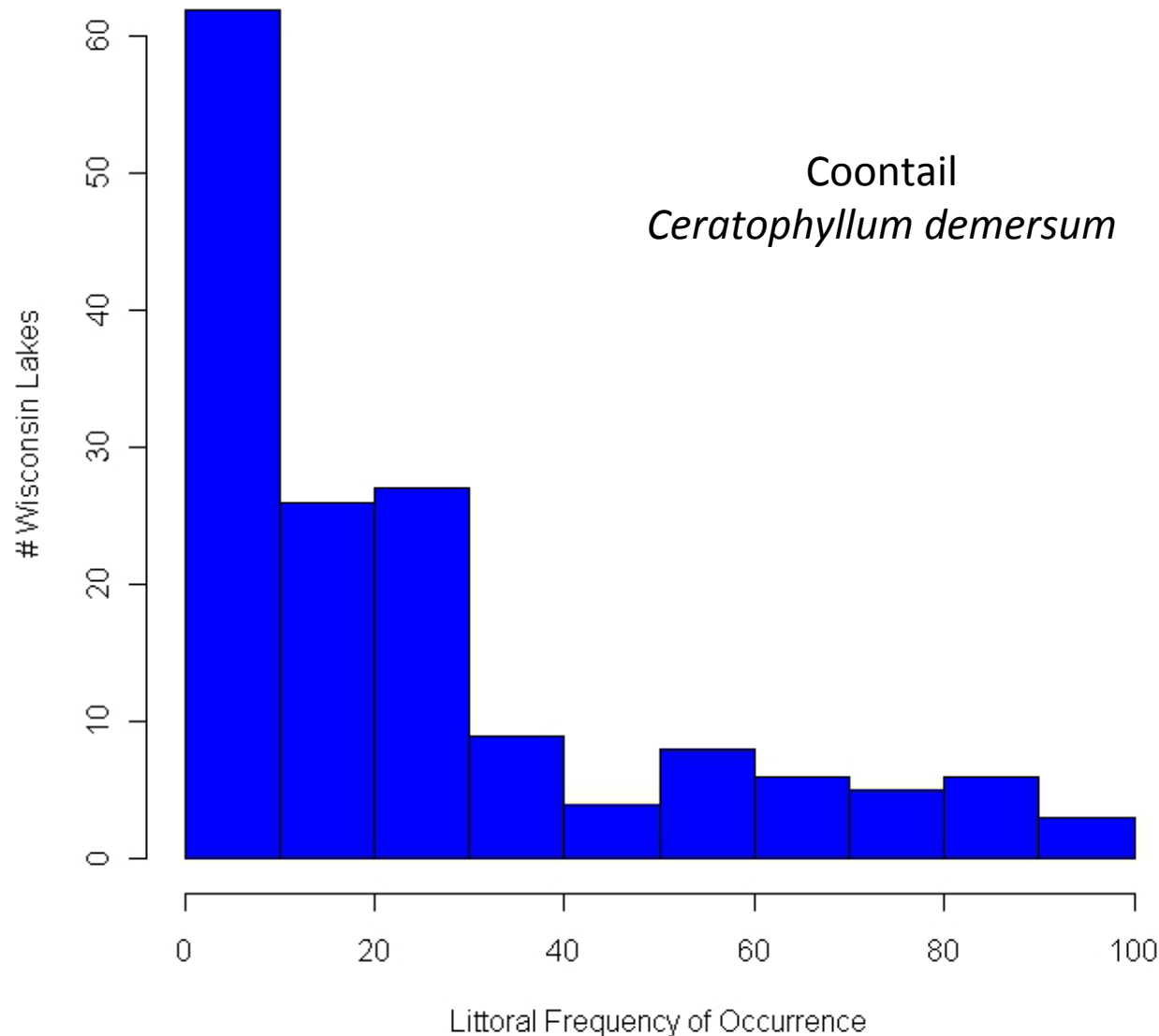


Ask the questions...

How much EWM is in our lakes?



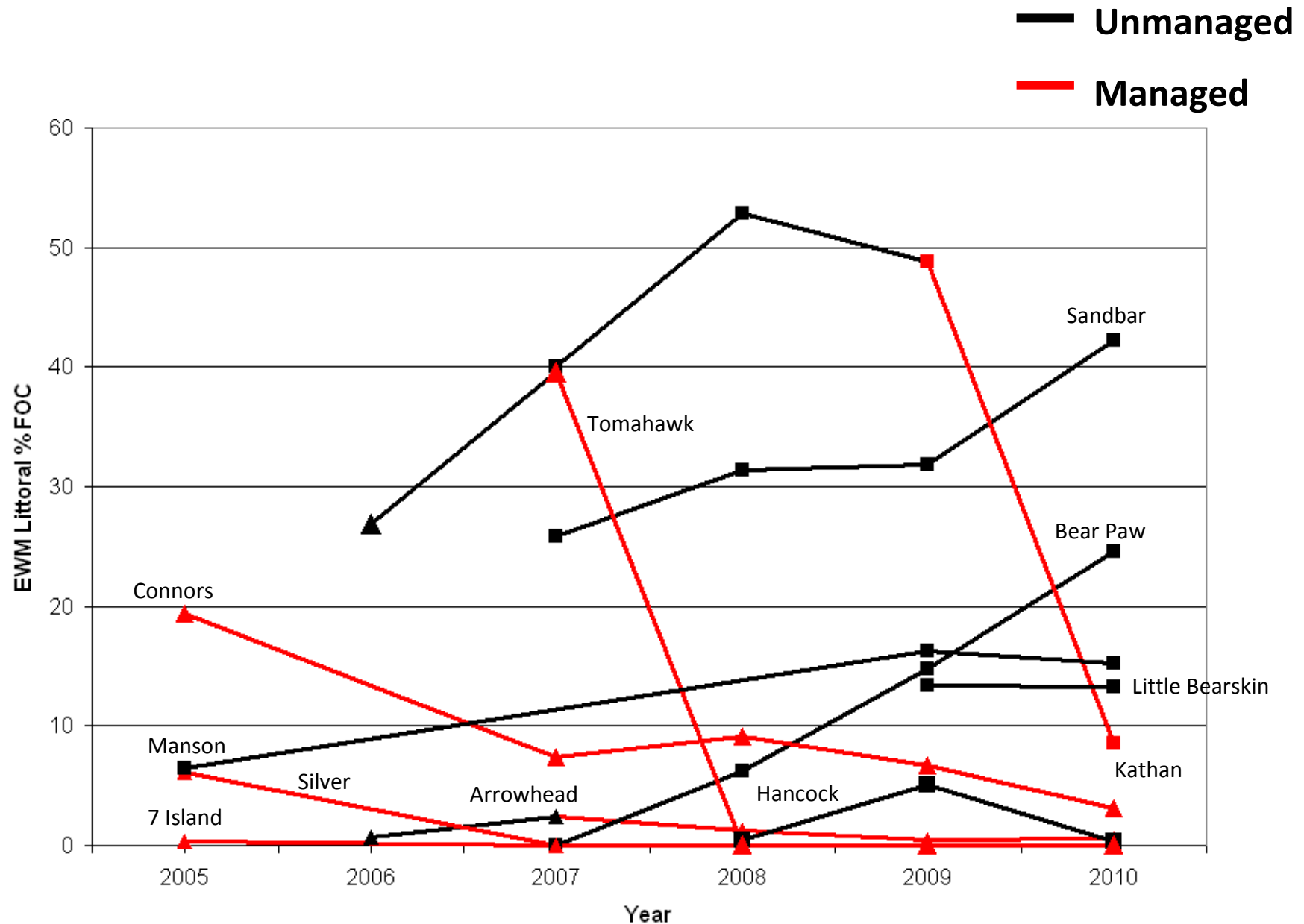
Do other tolerant native species act the same as EWM?



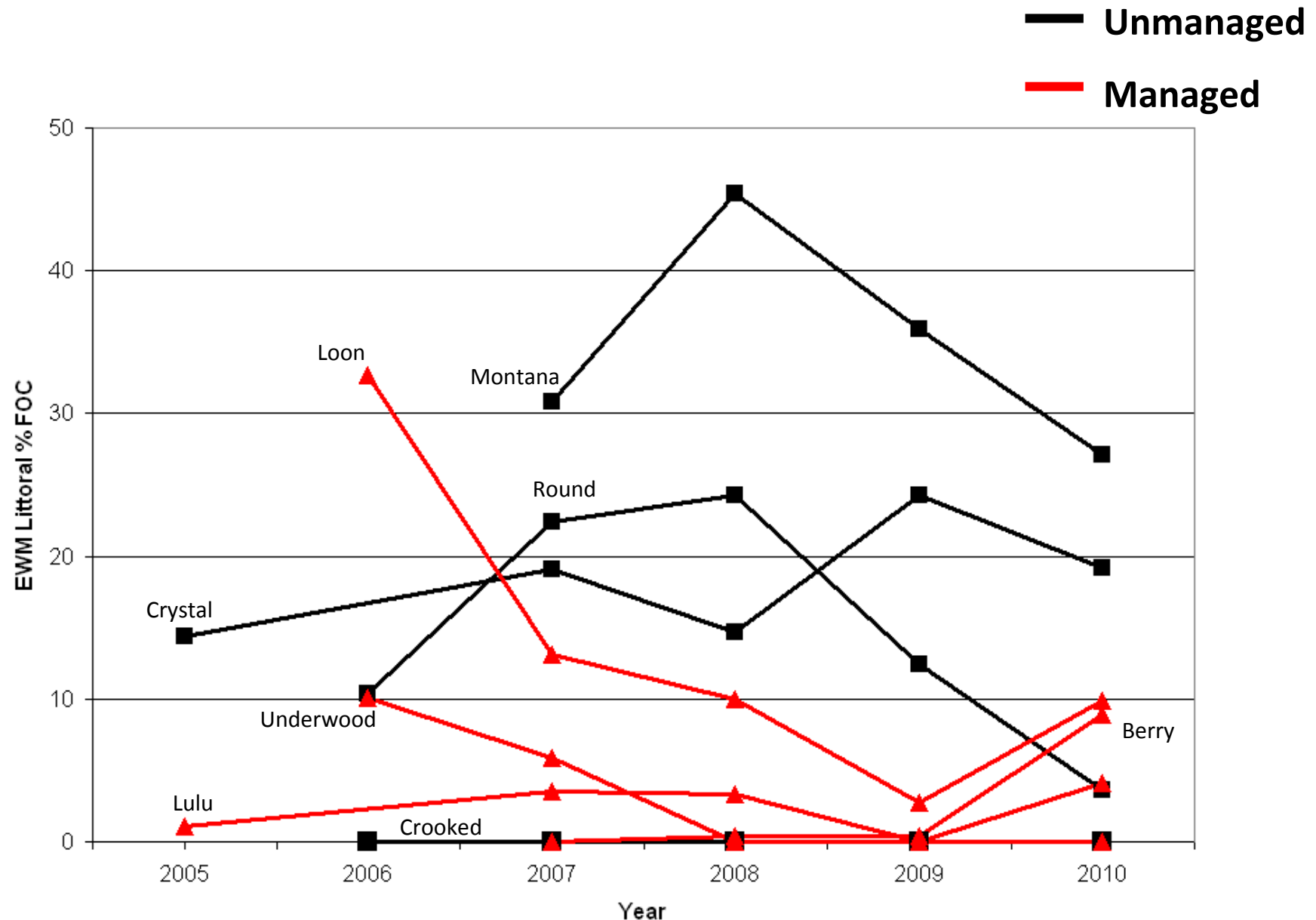
How does strategic management affect long-term EWM population levels?

- Comparing unmanaged to strategically managed lakes.
- 24 lakes will be monitored annually for ten years (2005-2015).
- Selected best examples of strategic EWM management in each ecoregion.
- Northern and central ecoregion lakes are mostly new populations.
- Southern lakes are established populations.
- Track species occurrences – both native and exotic.

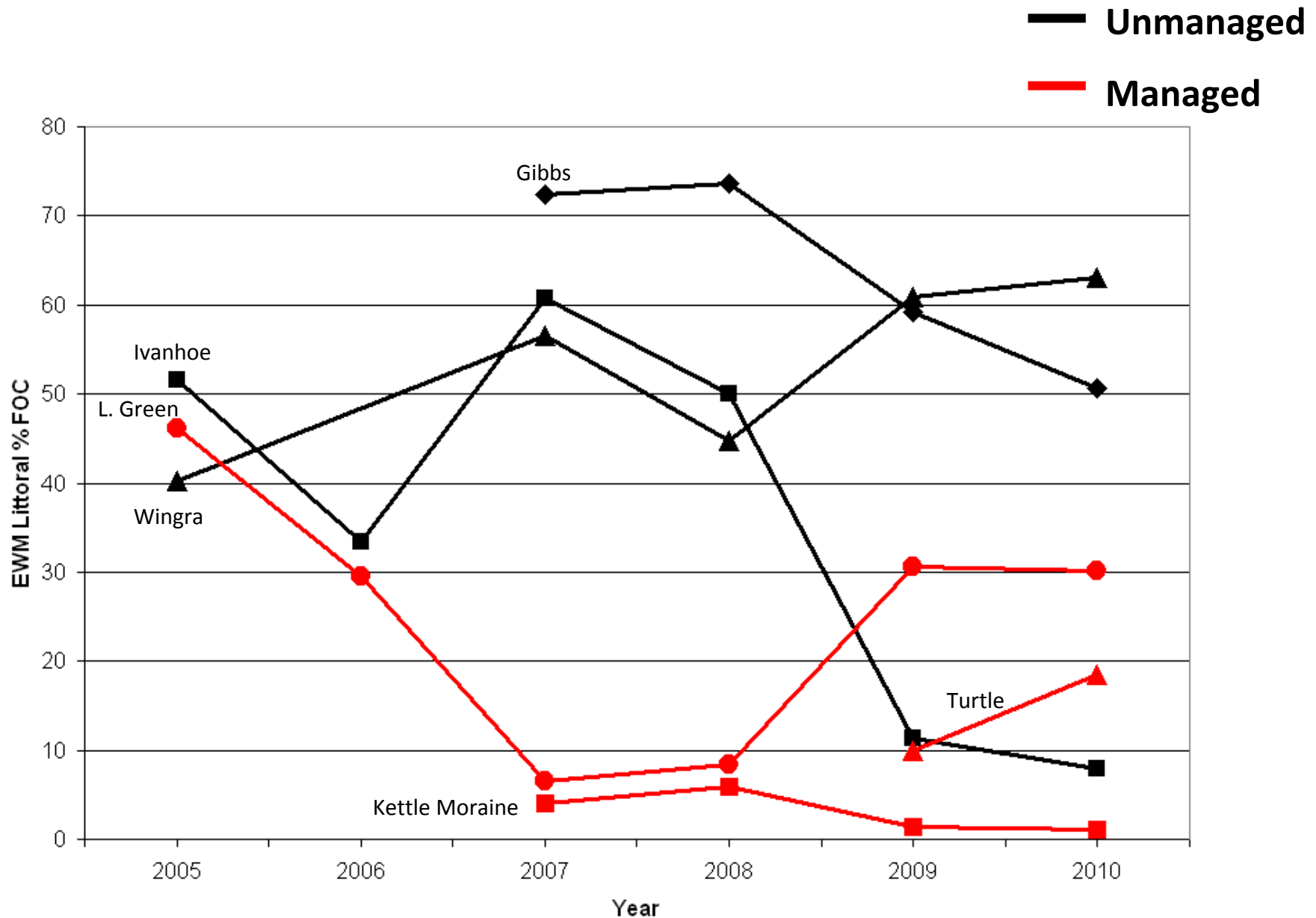
Northern Lakes & Forests



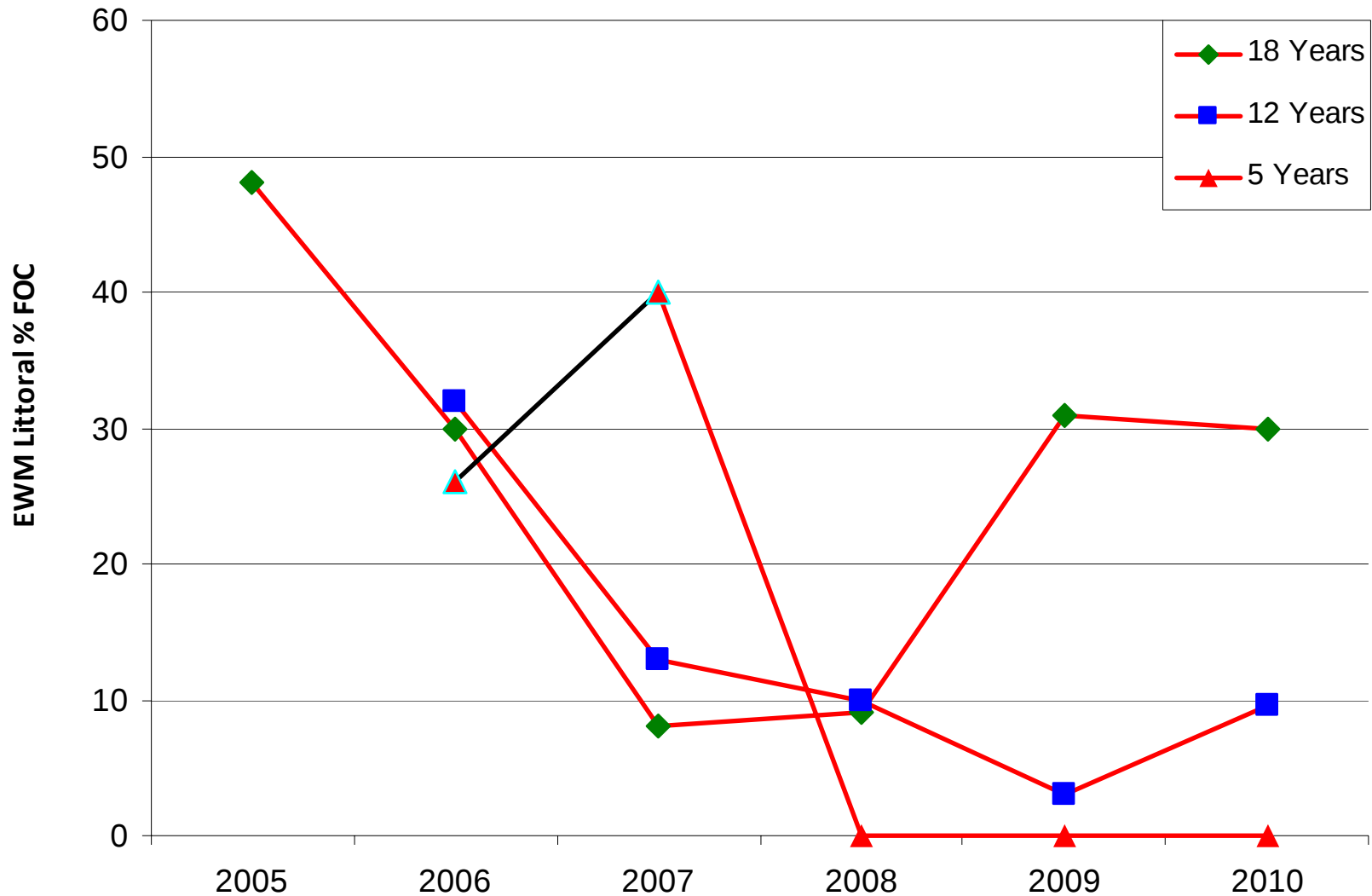
North Central Hardwood Forests



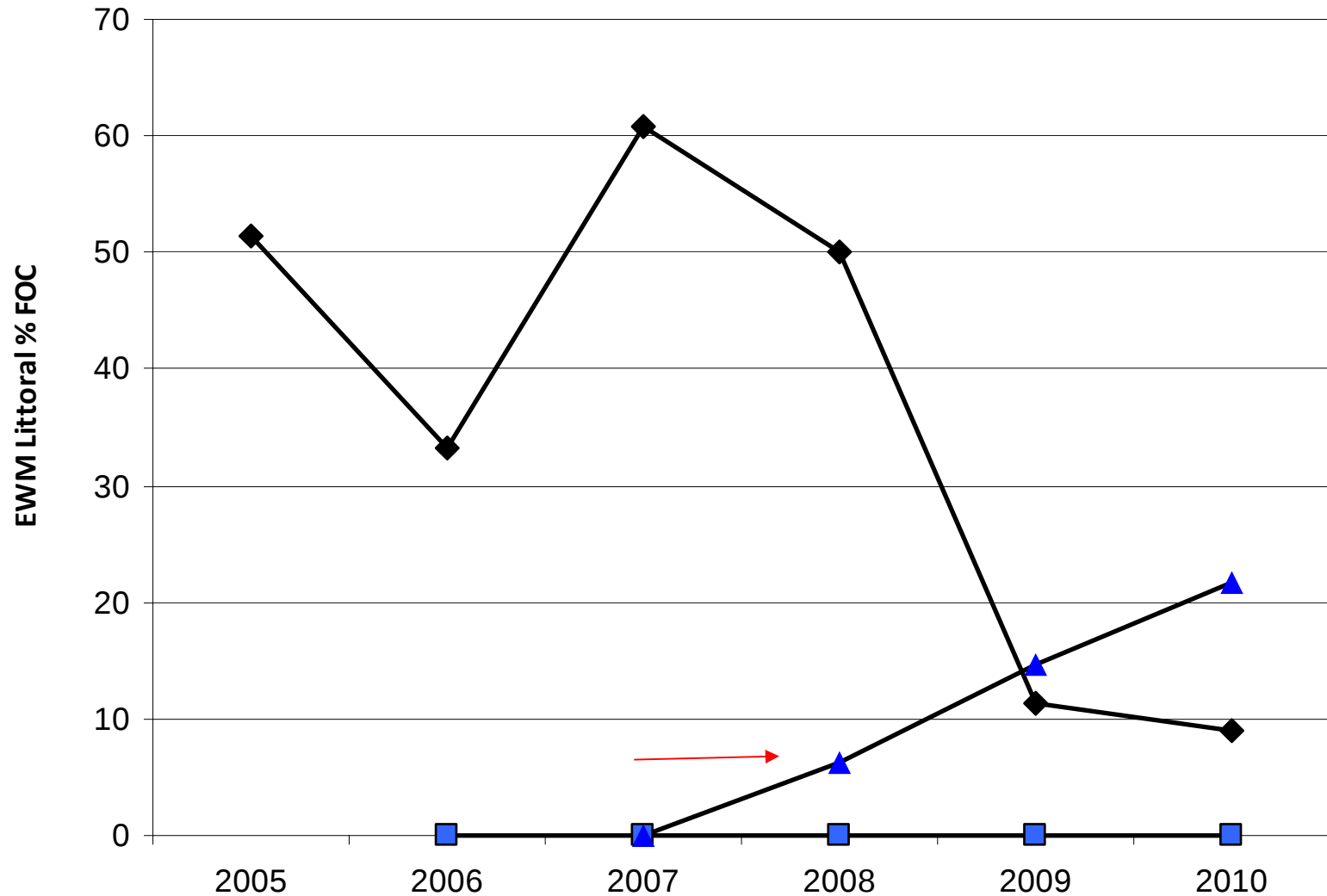
Southeastern Till Plains



Strategically Managed Lakes

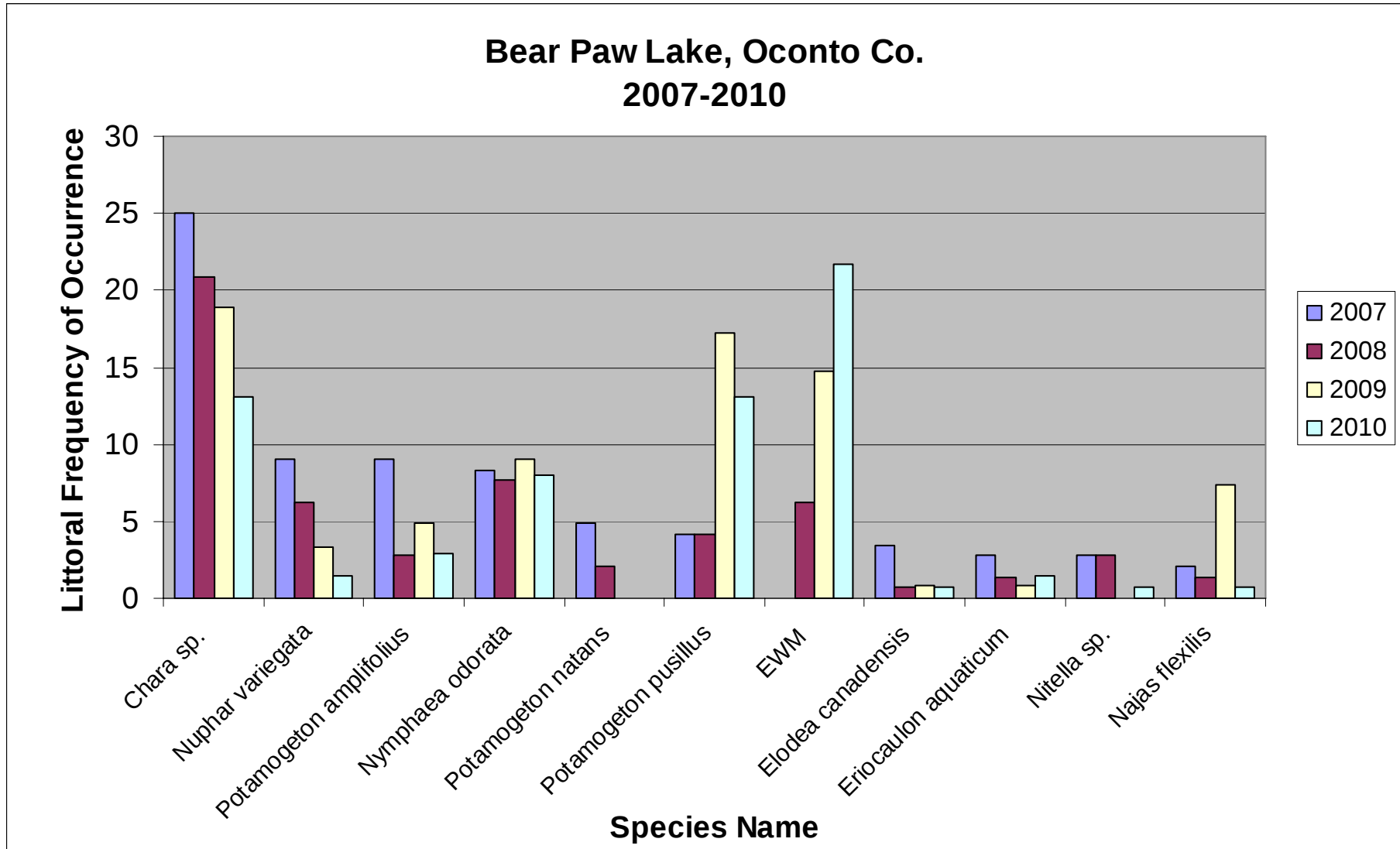


Unmanaged Lakes



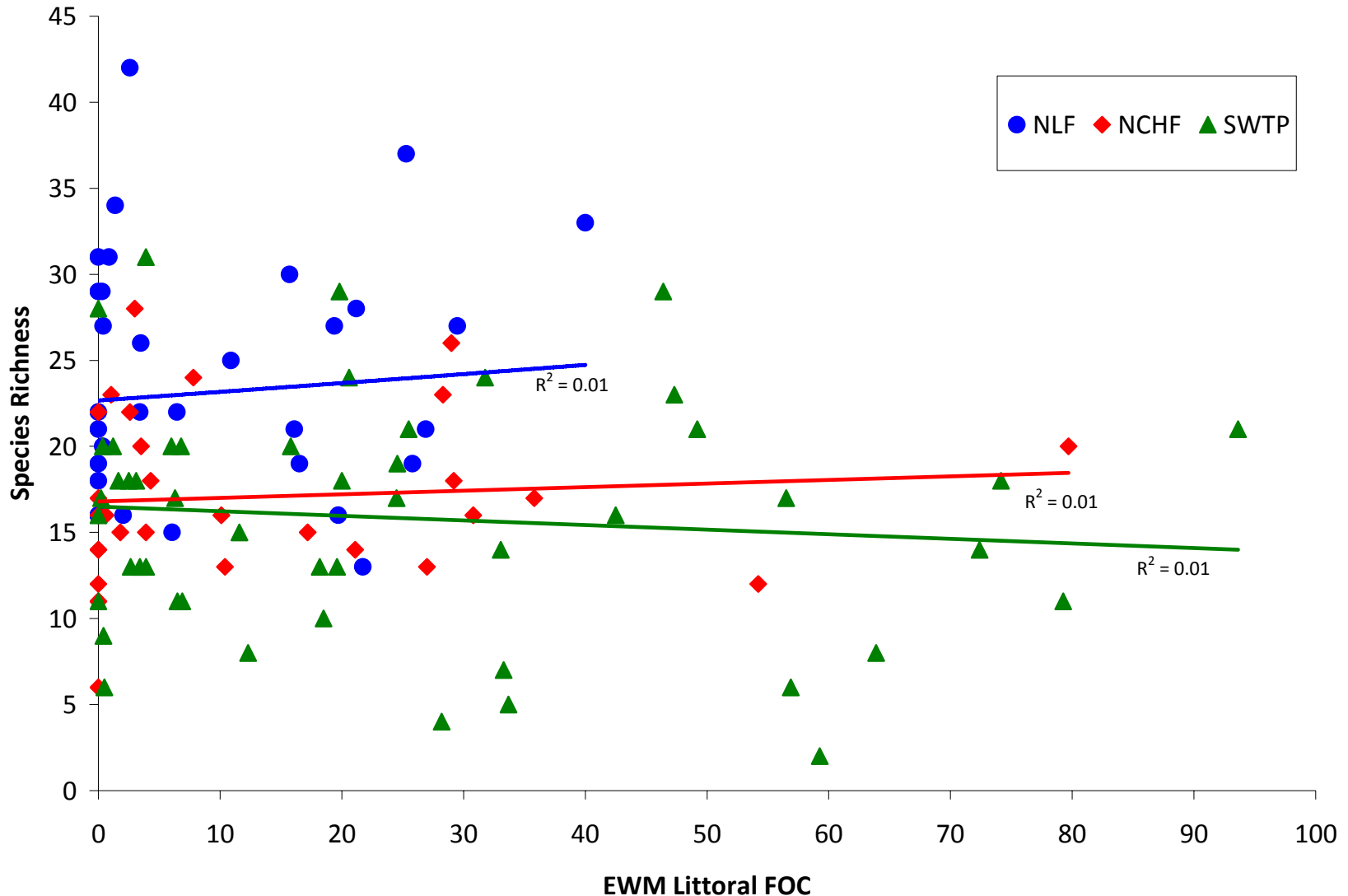
Ask the questions...

Does EWM affect native species?



Ask the questions...

Does EWM affect native species?



Summary

- Environmental correlates of EWM can help predict distribution and abundance.
- Associated aquatic plant species may help target within lake management.
- Early detection and response to EWM pays off.
- Intraannual variation can be large in established populations.
- Variable trajectories of spread in unmanaged systems.
- Early signs show no strong correlation with native species...more to come.

Questions?

