

Sand Trends and Habitat Degradation

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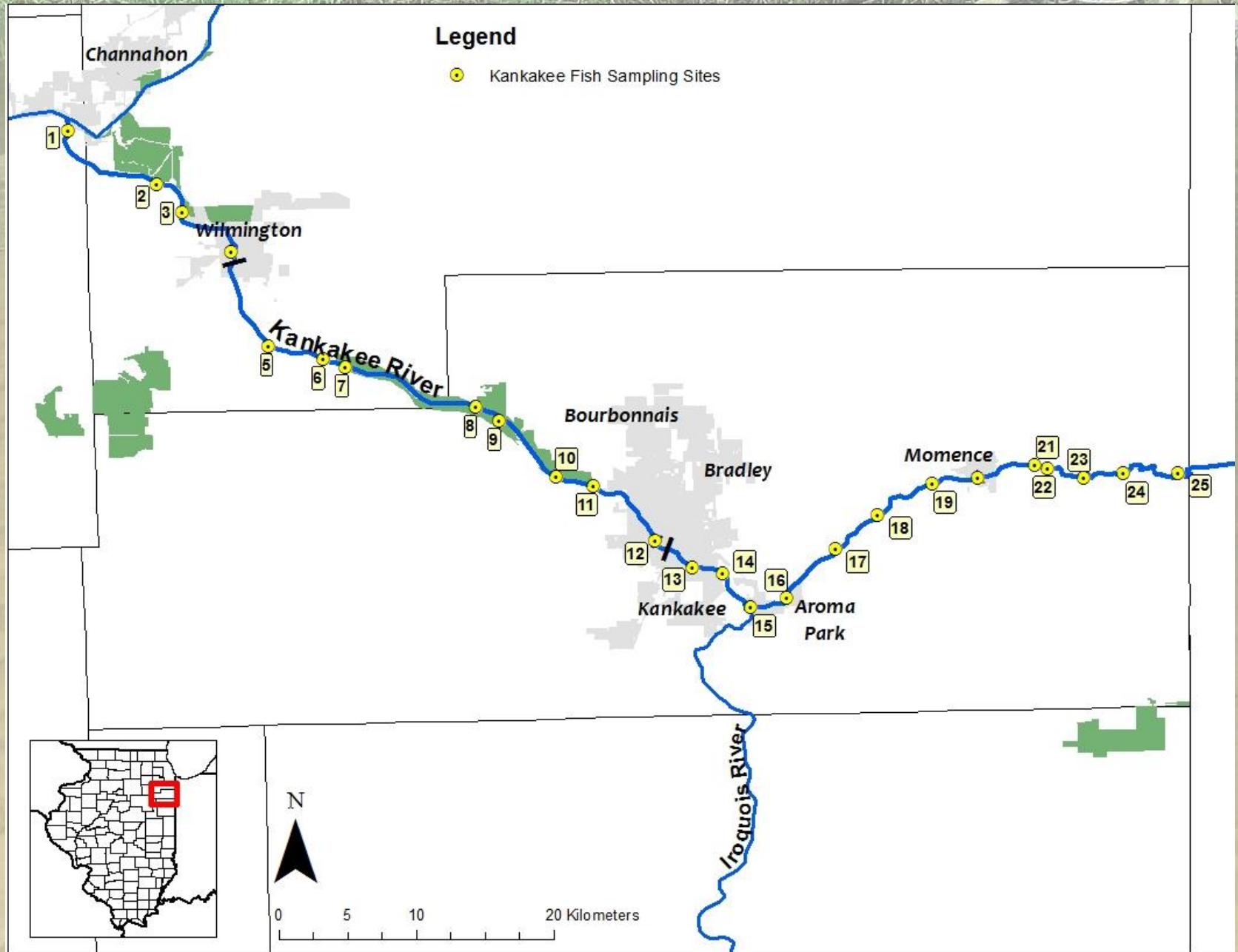
Illinois Natural History Survey



Background

Long-term Fish Population Monitoring Program

River	Year Started
Illinois	1957
Mississippi	1978
Wabash	2010
Ohio	2010
Iroquois	2013
Kankakee	2013



Kankakee River Biodiversity

River	Number of Fish Species	Number of Threatened or Endangered Species	Threatened or Endangered fish/hr of Electrofishing
Illinois	95	7	0.24
Mississippi	104	9	0.16
Wabash	98	4	0.07
Ohio	71	1	0.01
Iroquois	66	4	2.11
Kankakee	88	8	3.80

Significantly Higher Catch Rates

Blackside Darter (FT)

River Redhorse (ST)

Weed Shiner (SE)

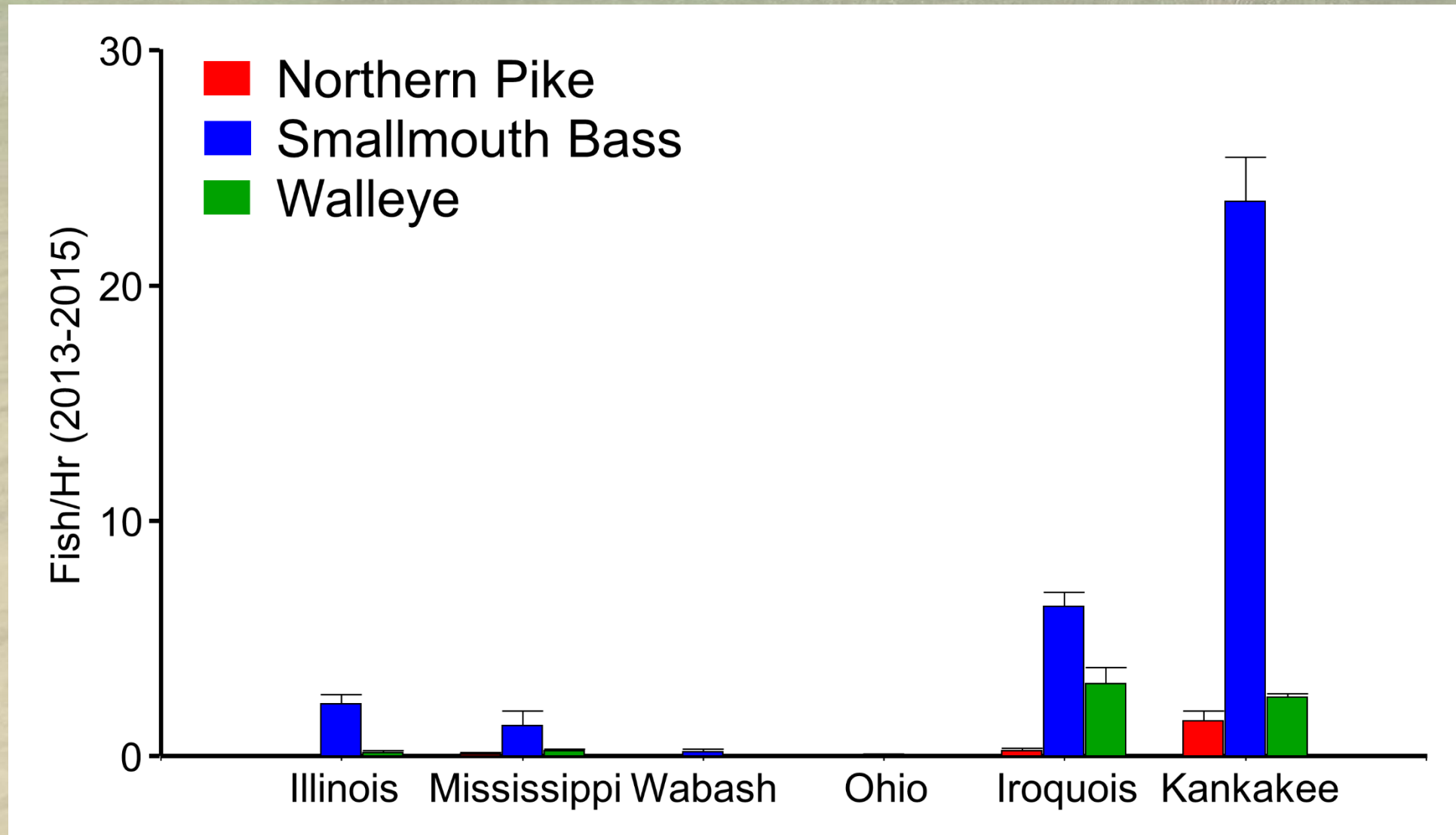
Kankakee Only

American Brook Lamprey (ST)

Blacknose Shiner (SE)

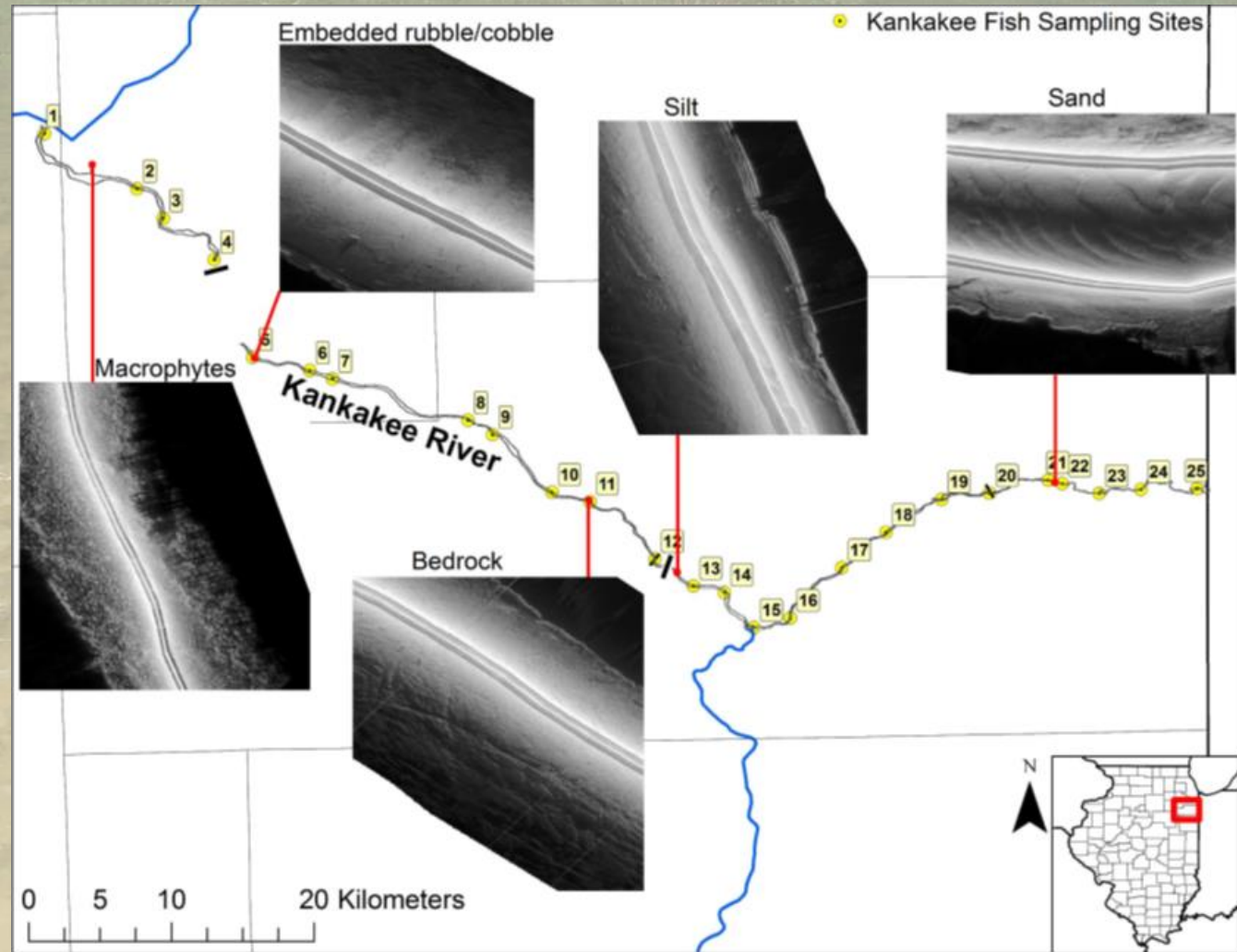
Pallid Shiner (SE)

Kankakee River Sportfish



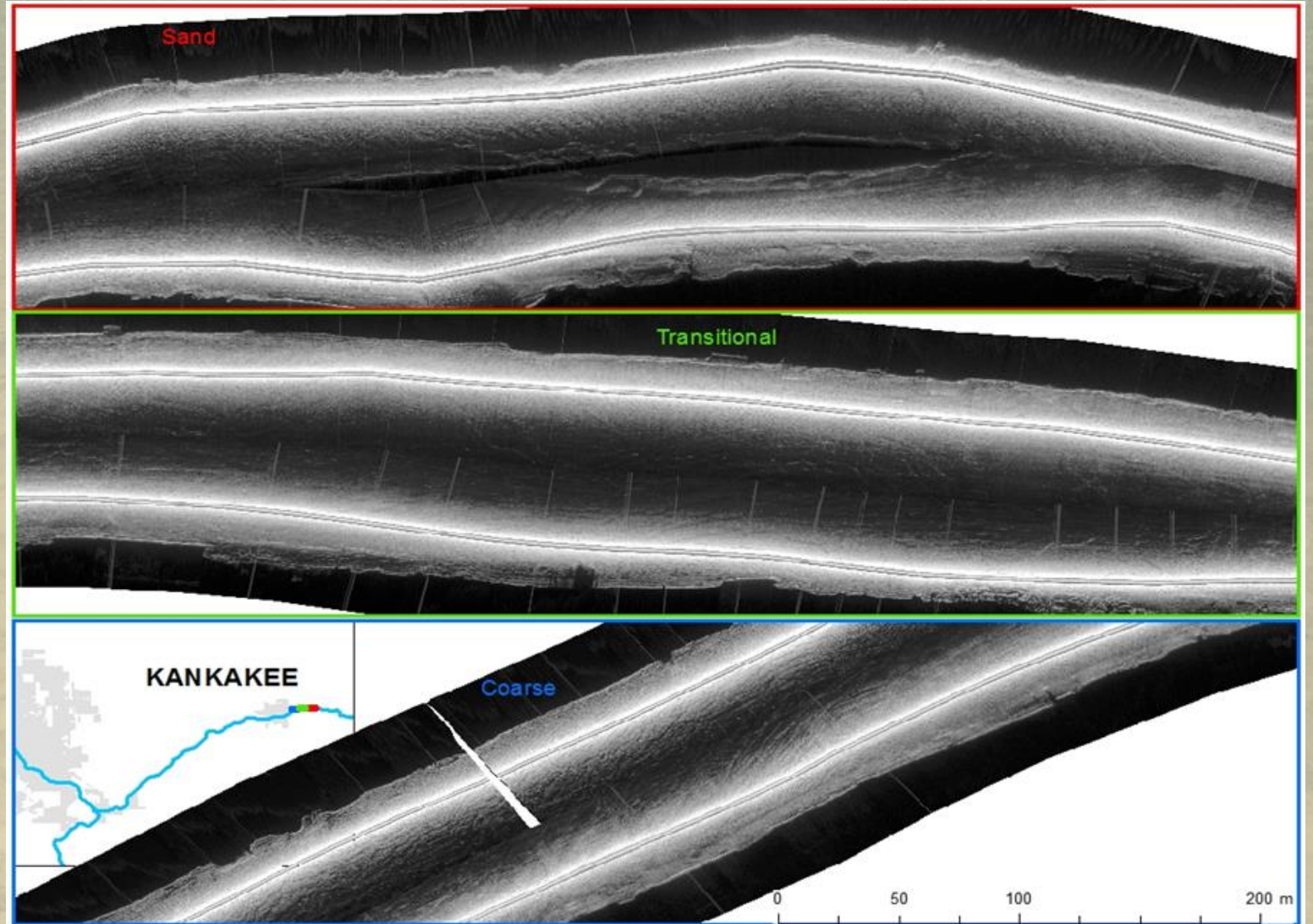
Substrate Mapping

- 2015: Side-scan sonar
 - Illinois portion of Kankakee River
 - Both shores
 - 80m Wide
 - Field calibration: Ground-Truthing

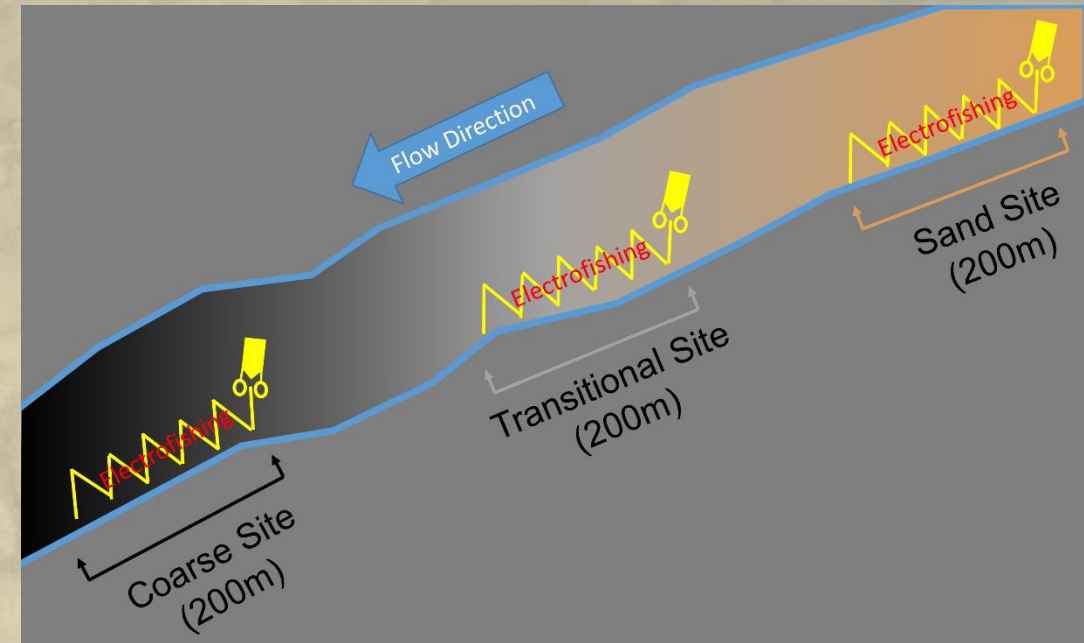
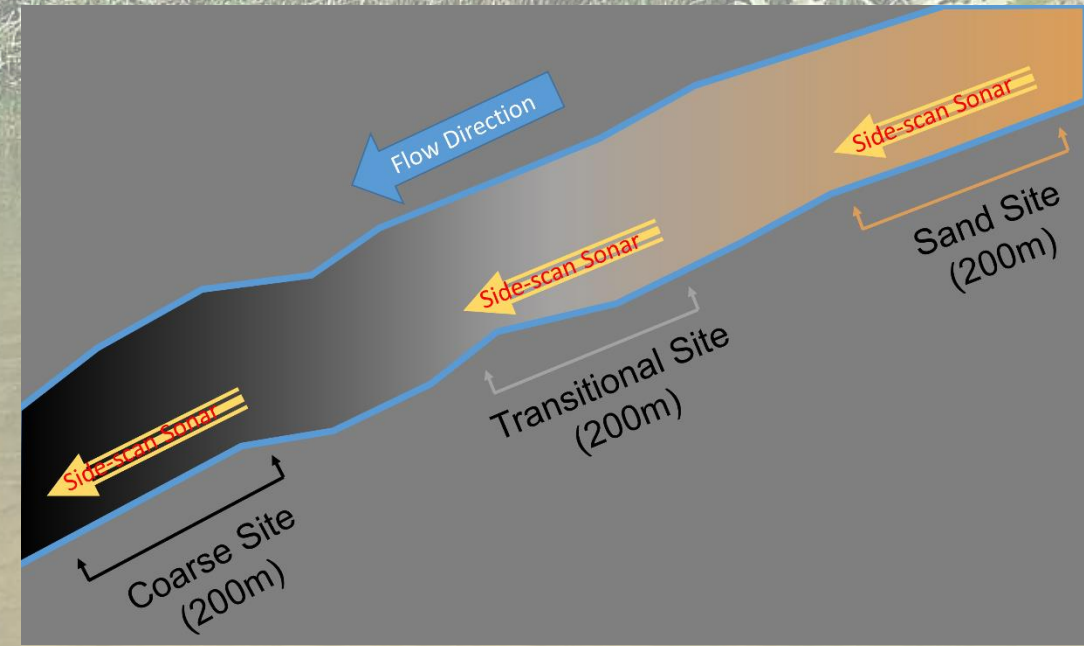
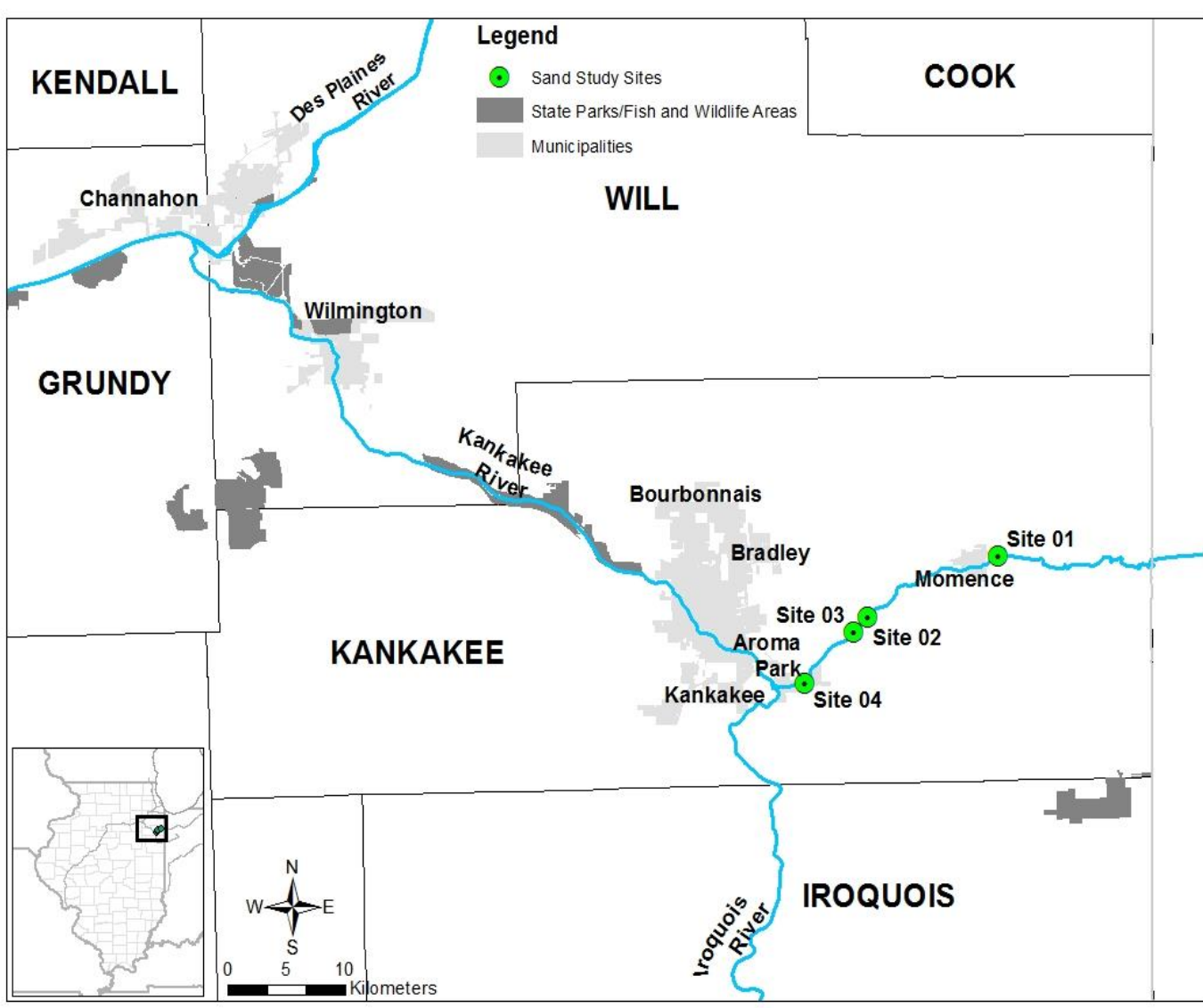


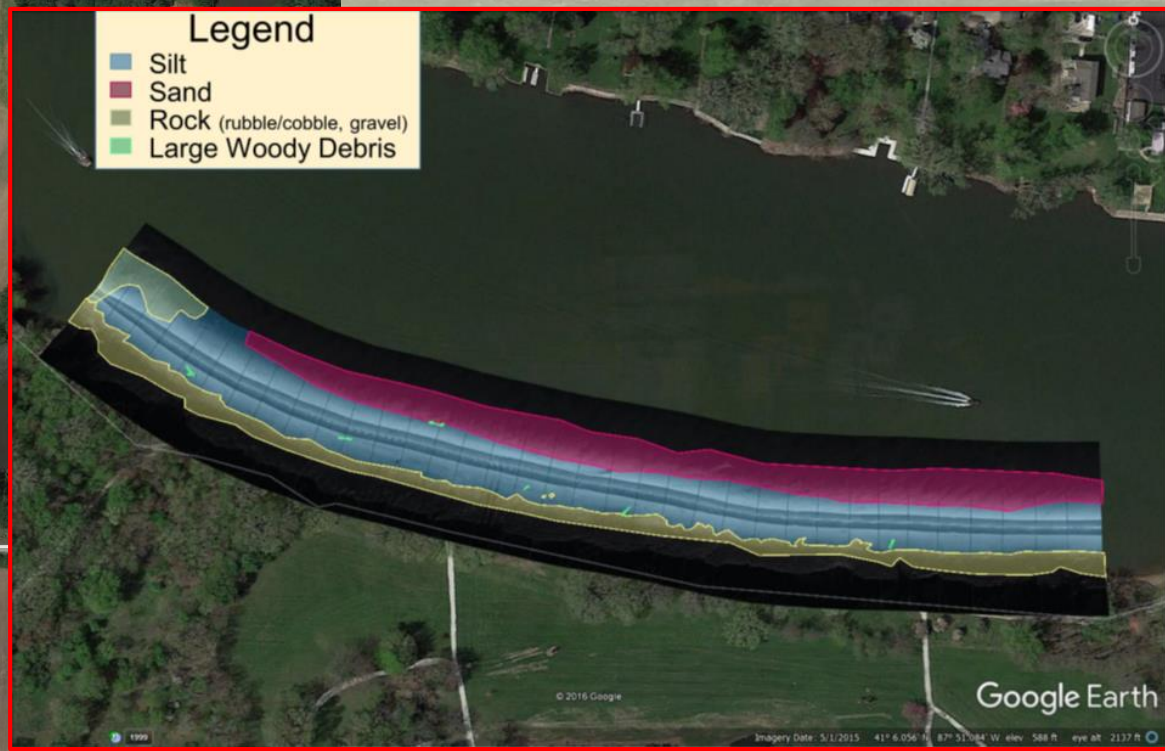
Sand Impact Study 2016

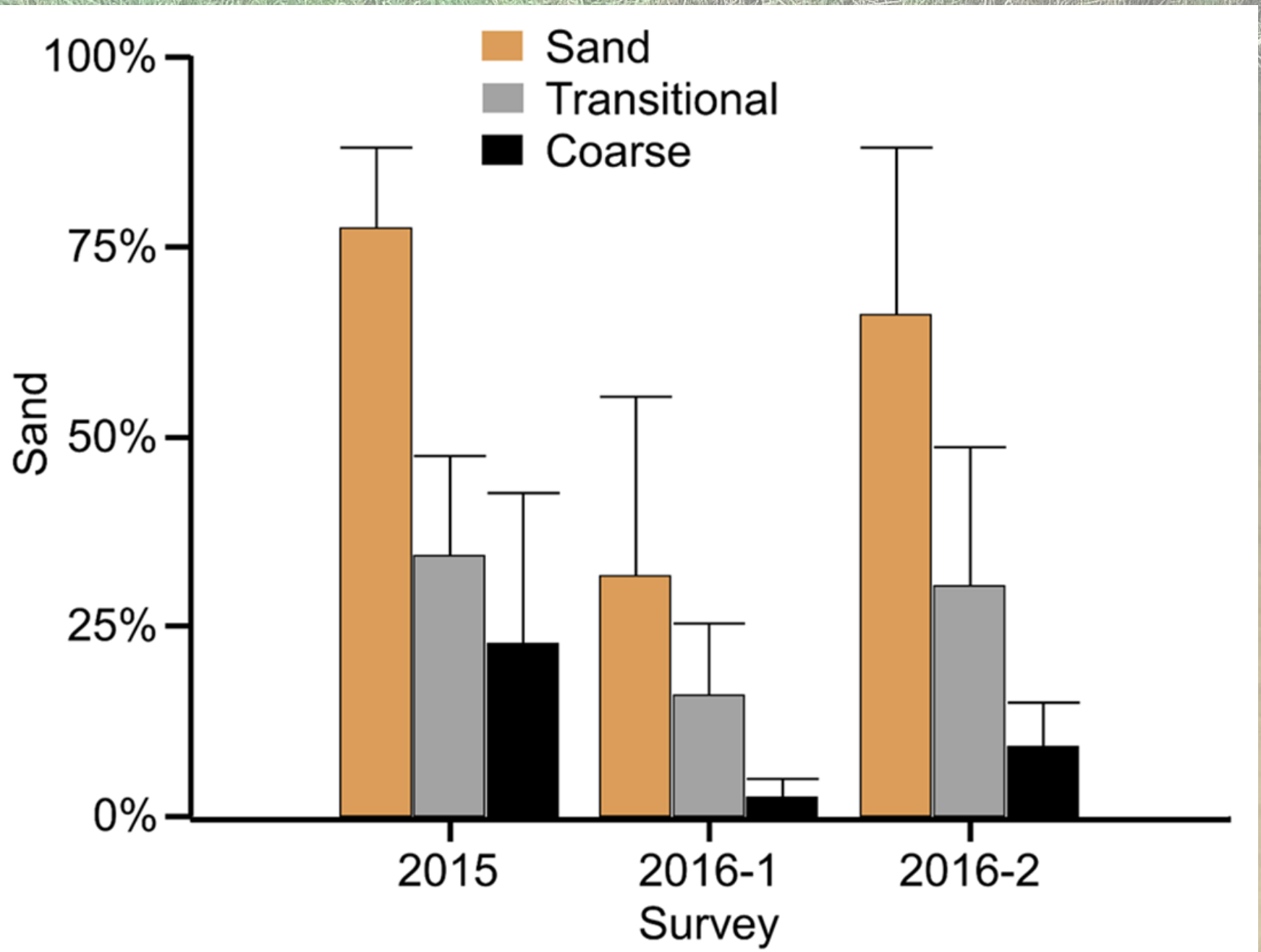
- Contiguous areas with different substrates
 - Sand
 - Sand and Rock mix (transitional)
 - Rock (coarse)

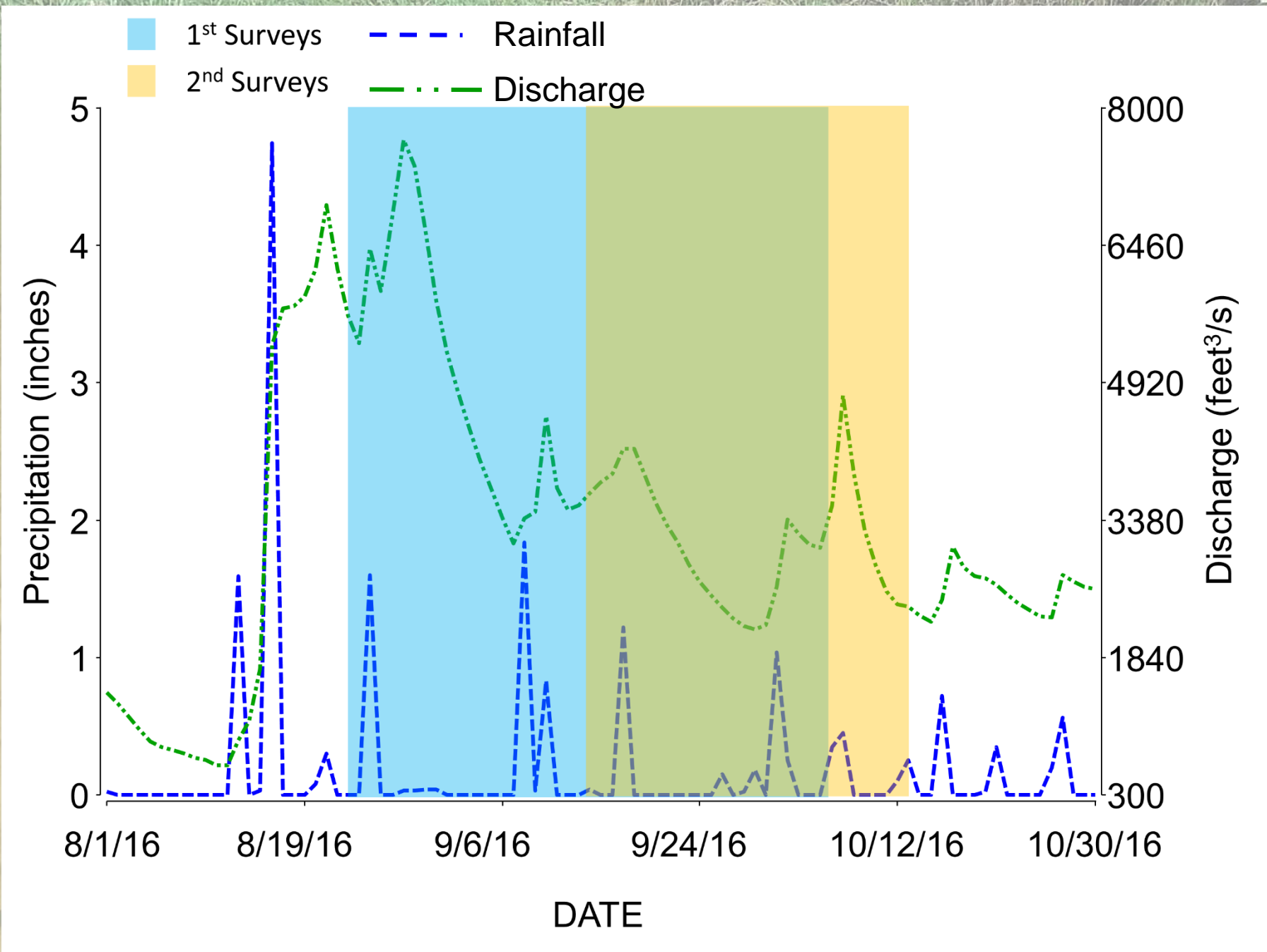


Sand Impact Study 2016

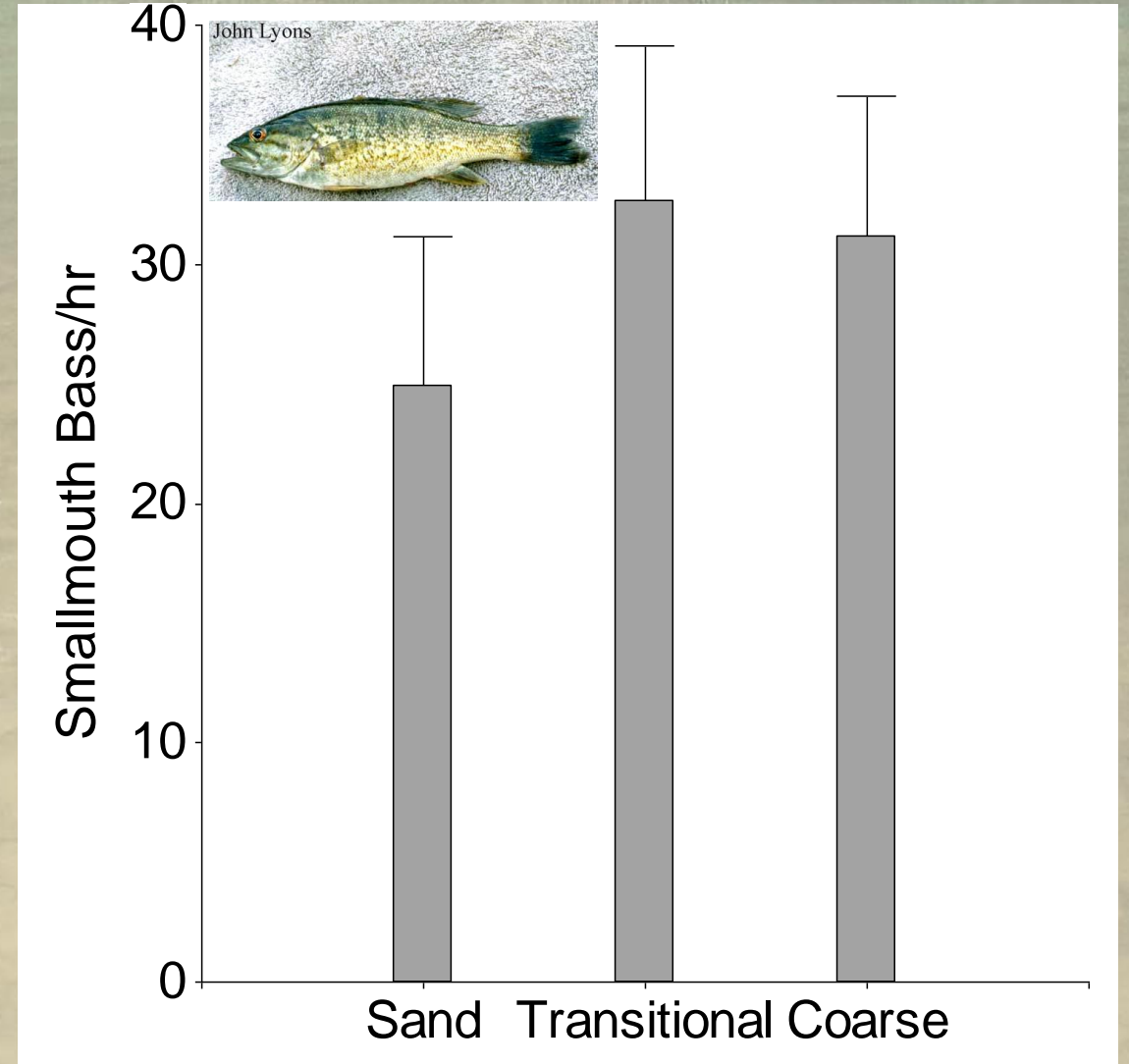
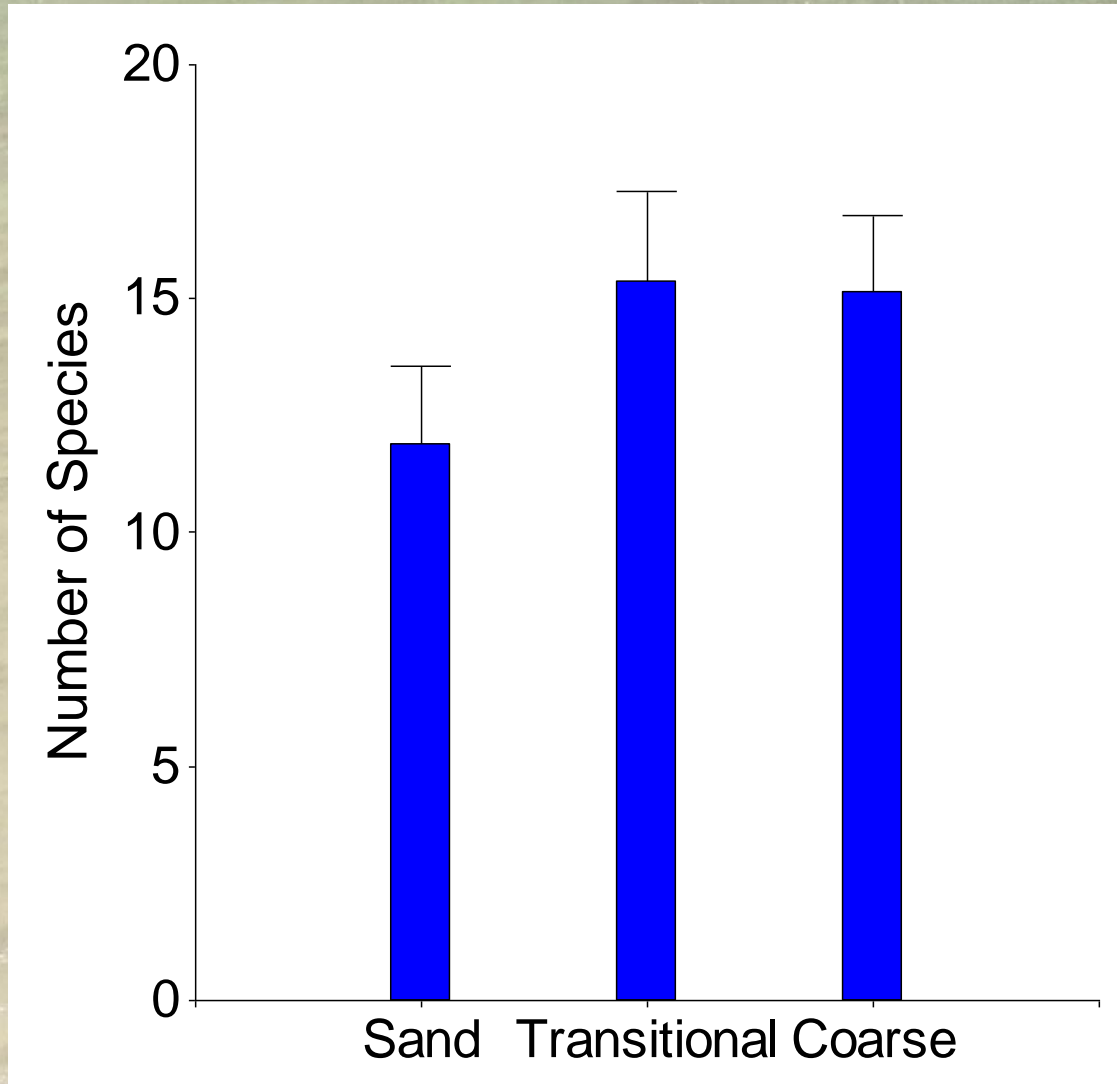




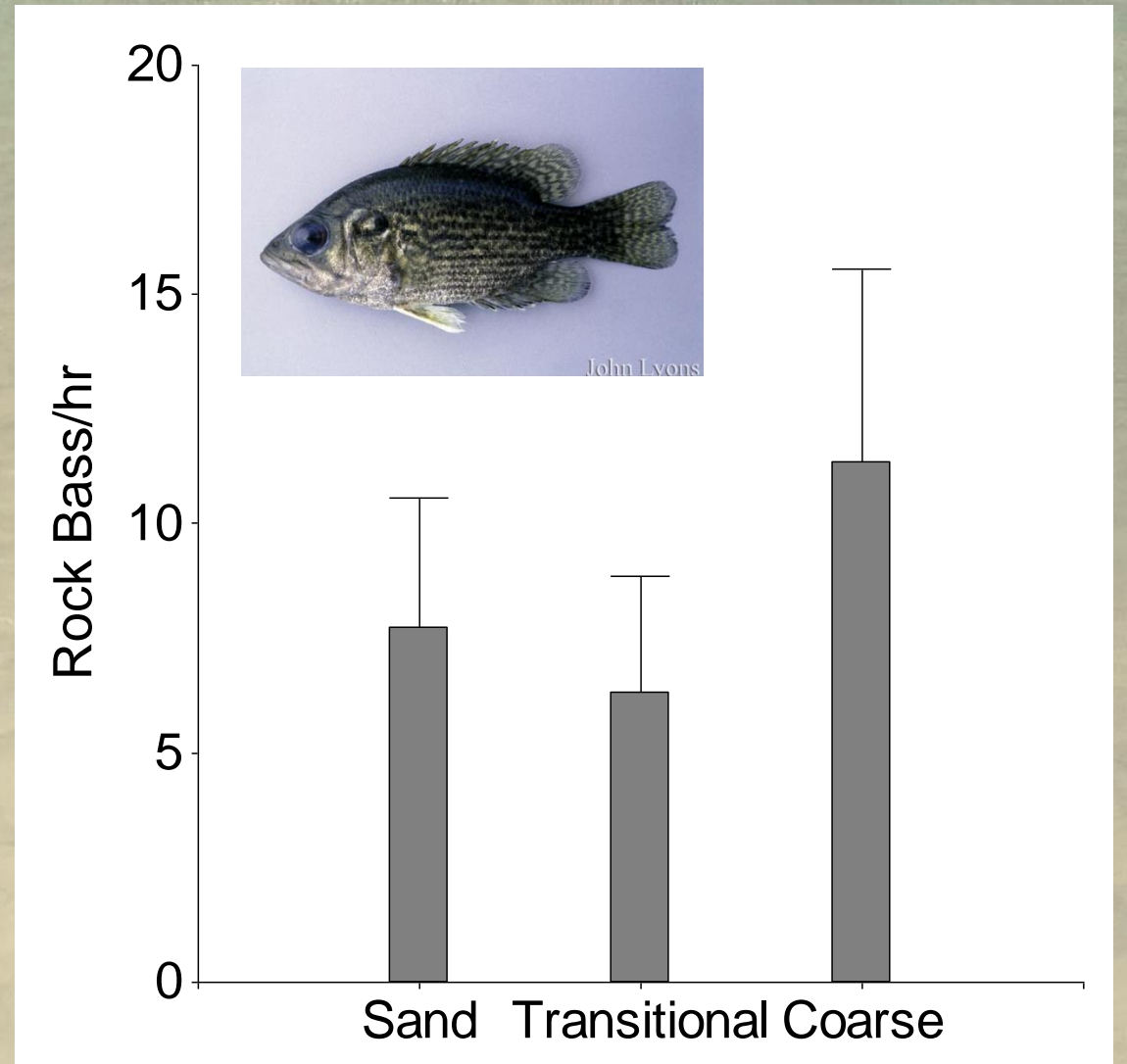
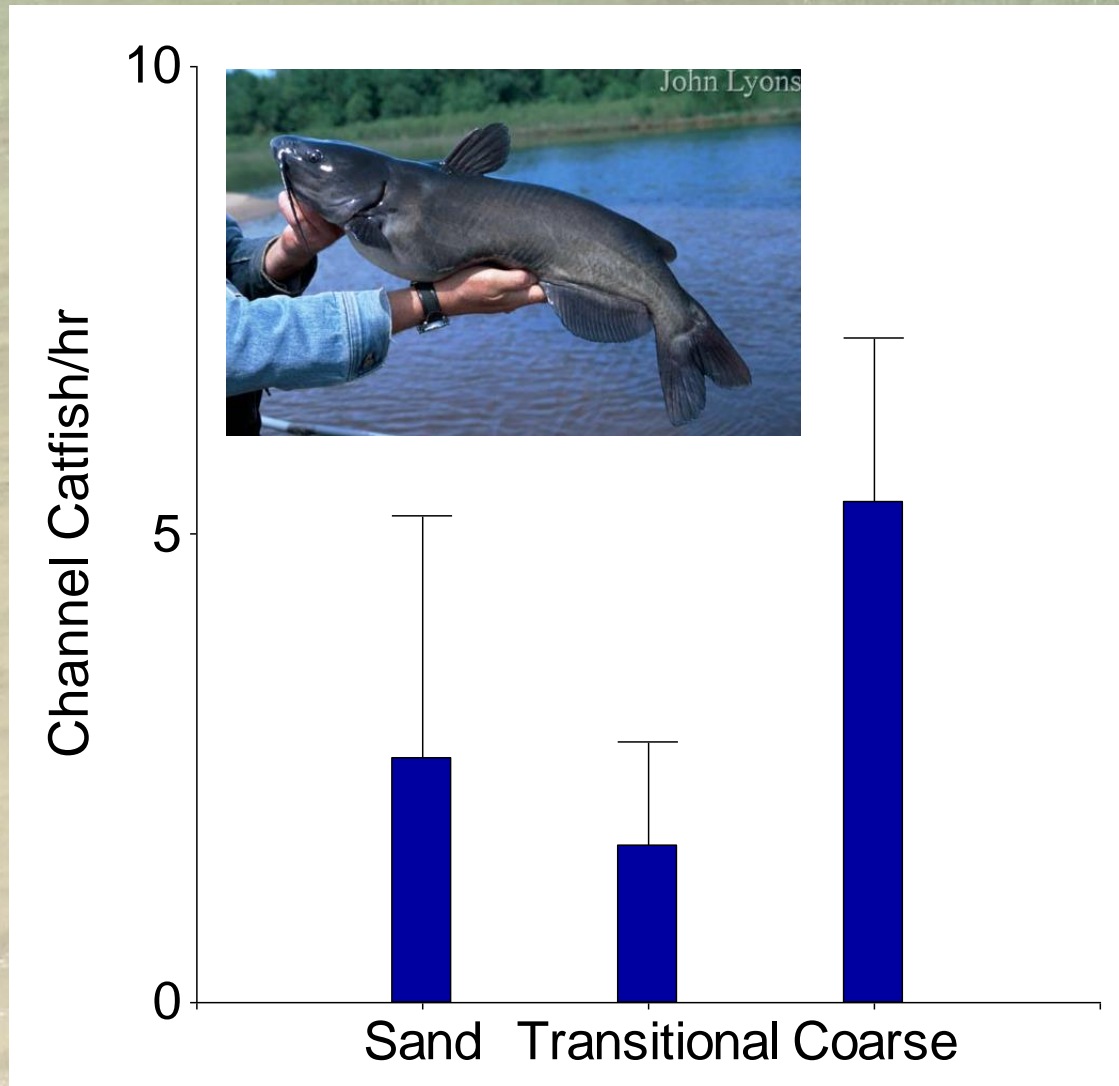




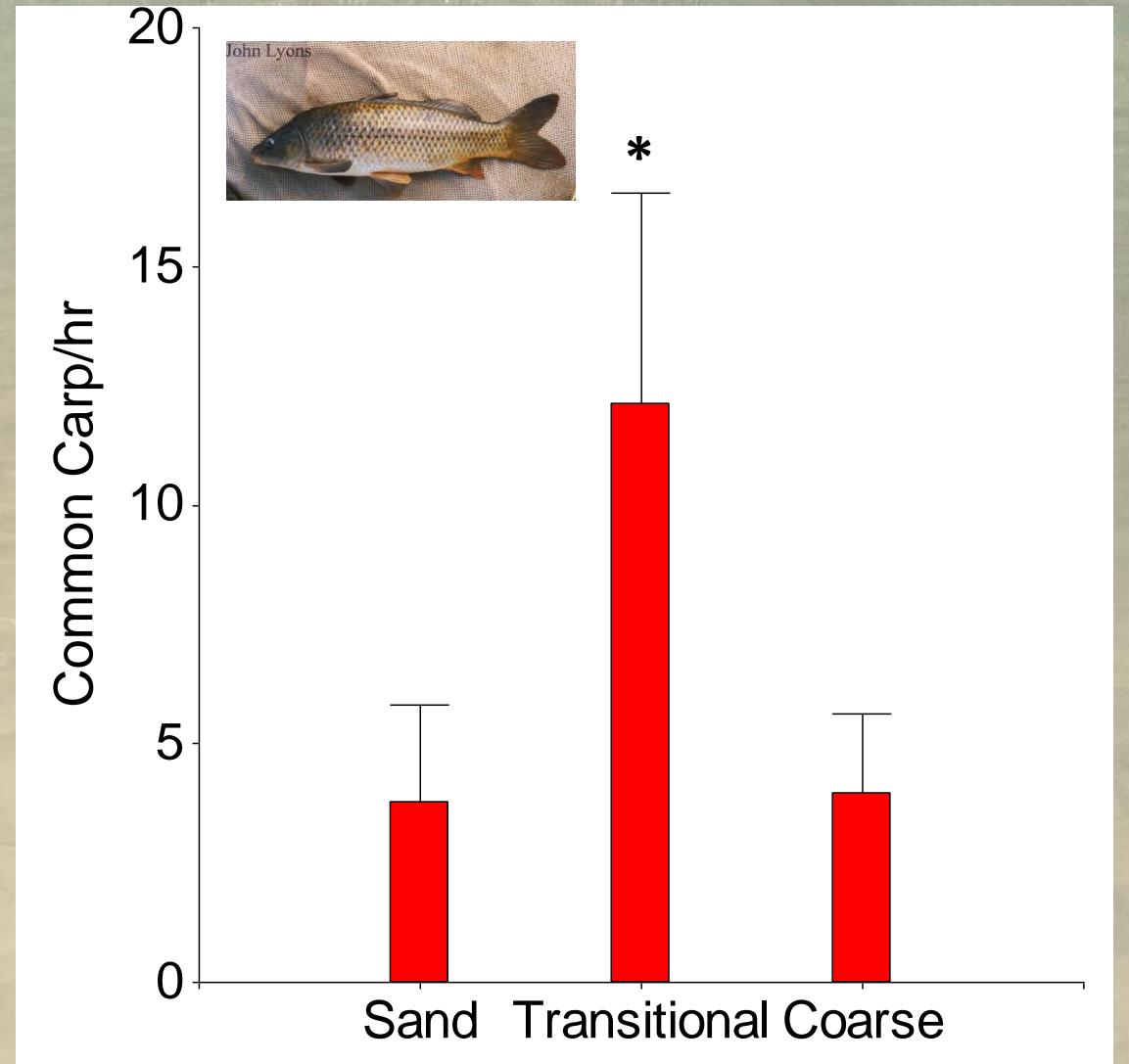
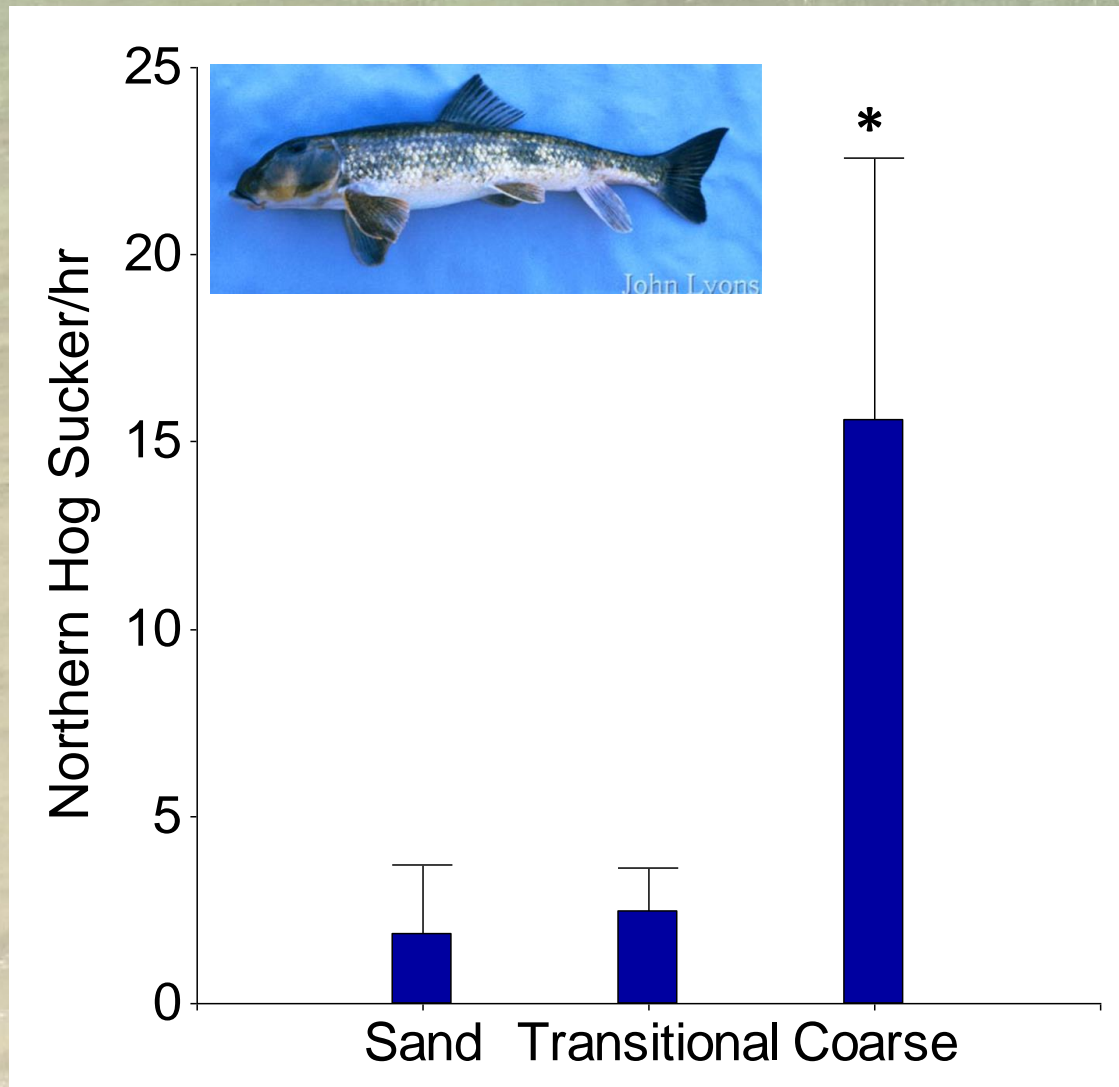
Fish Differences



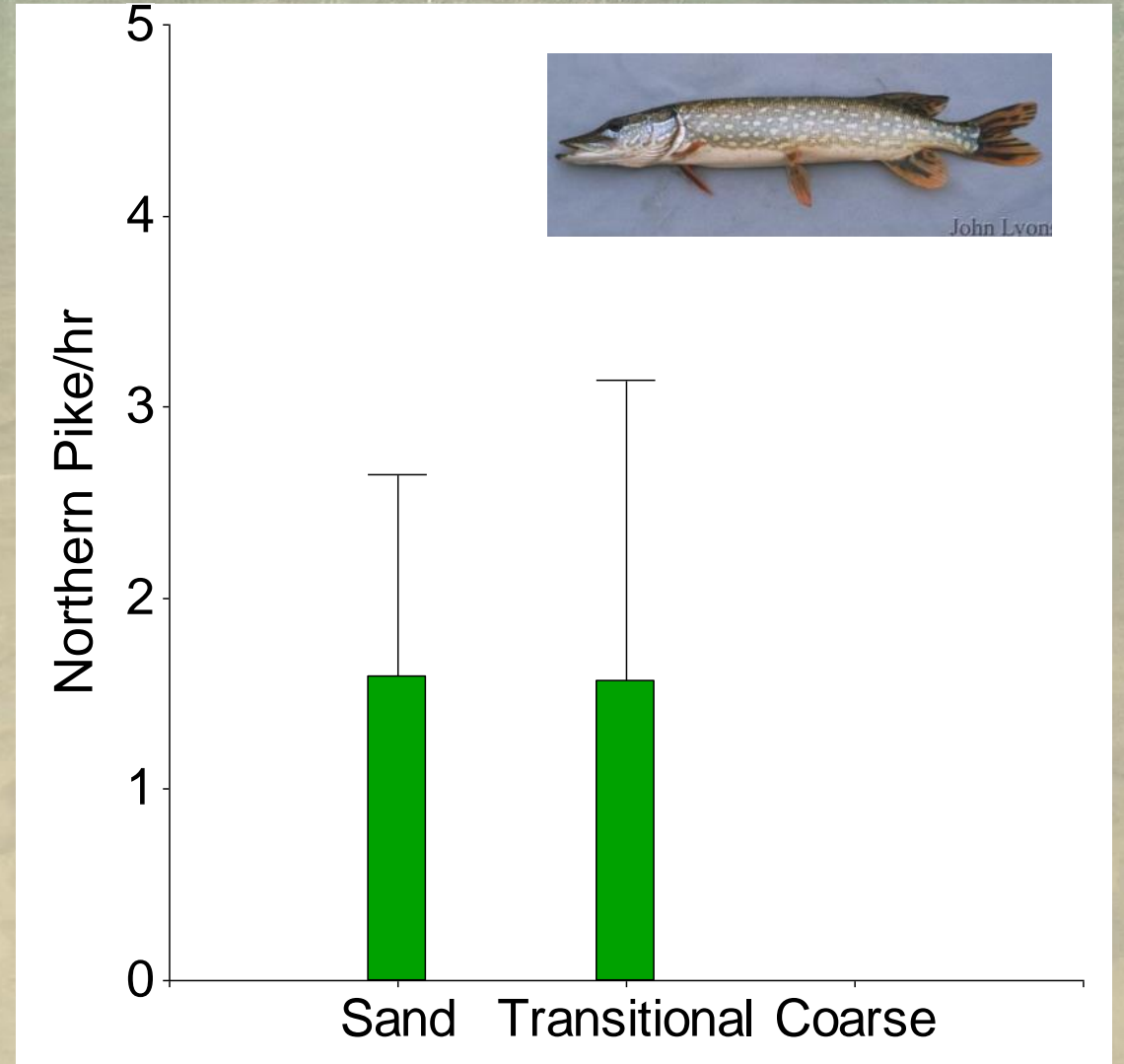
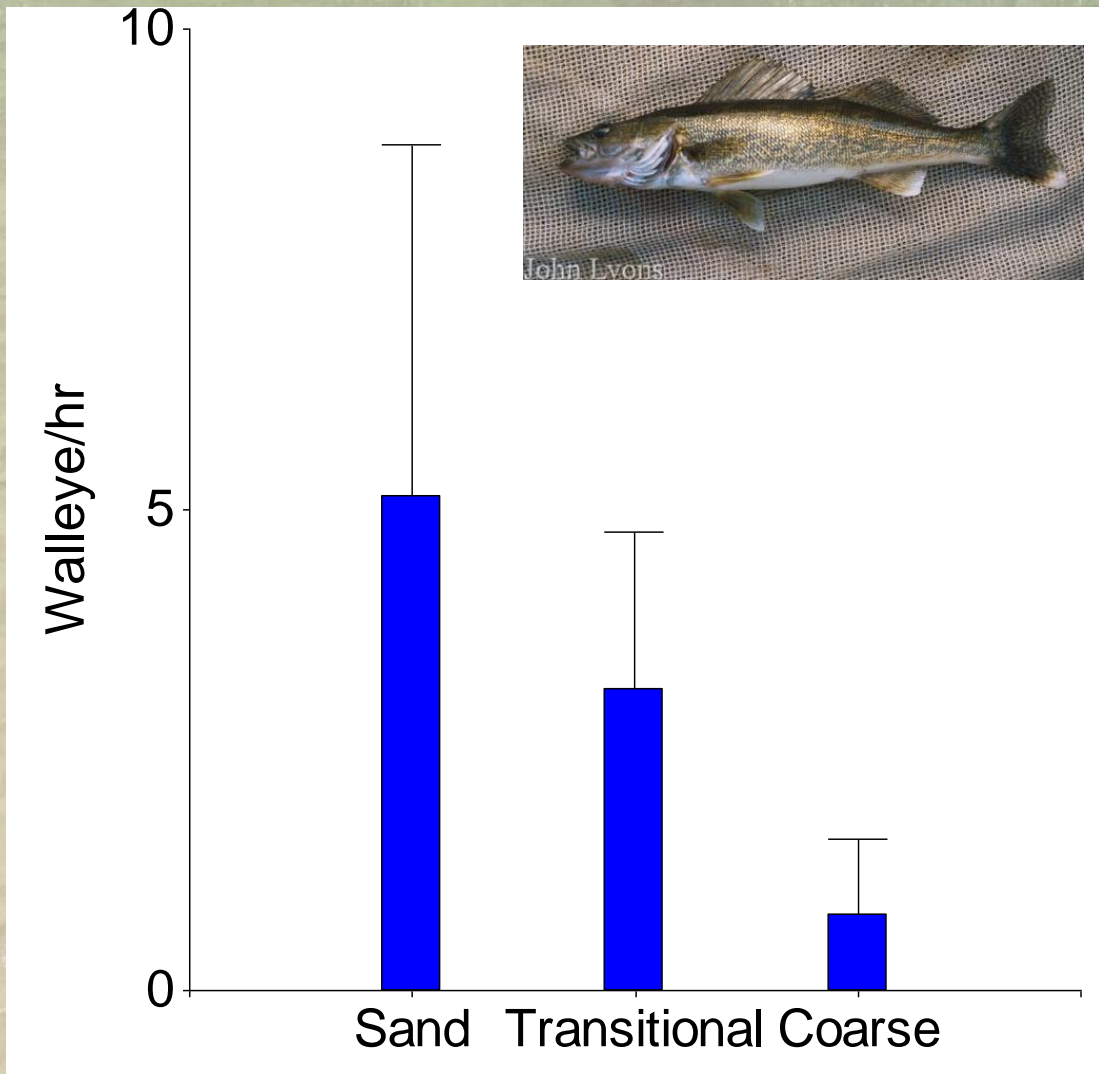
Fish Differences



Fish Differences



Fish Differences



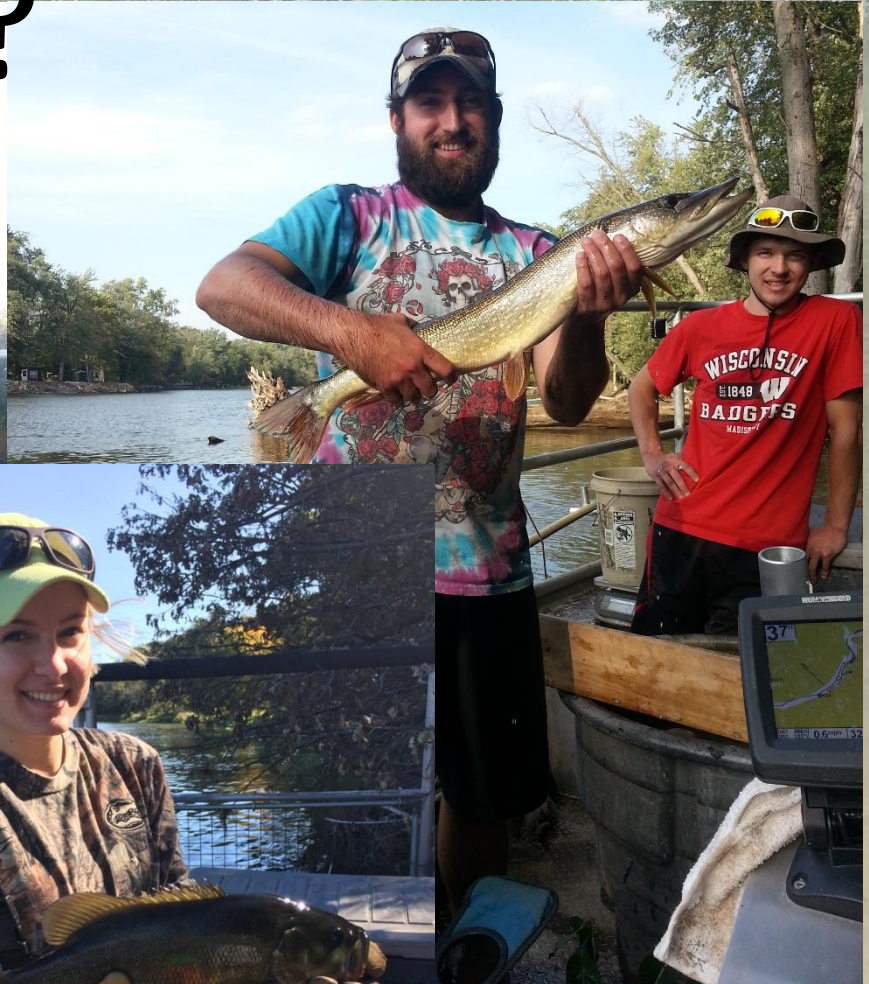
Summary

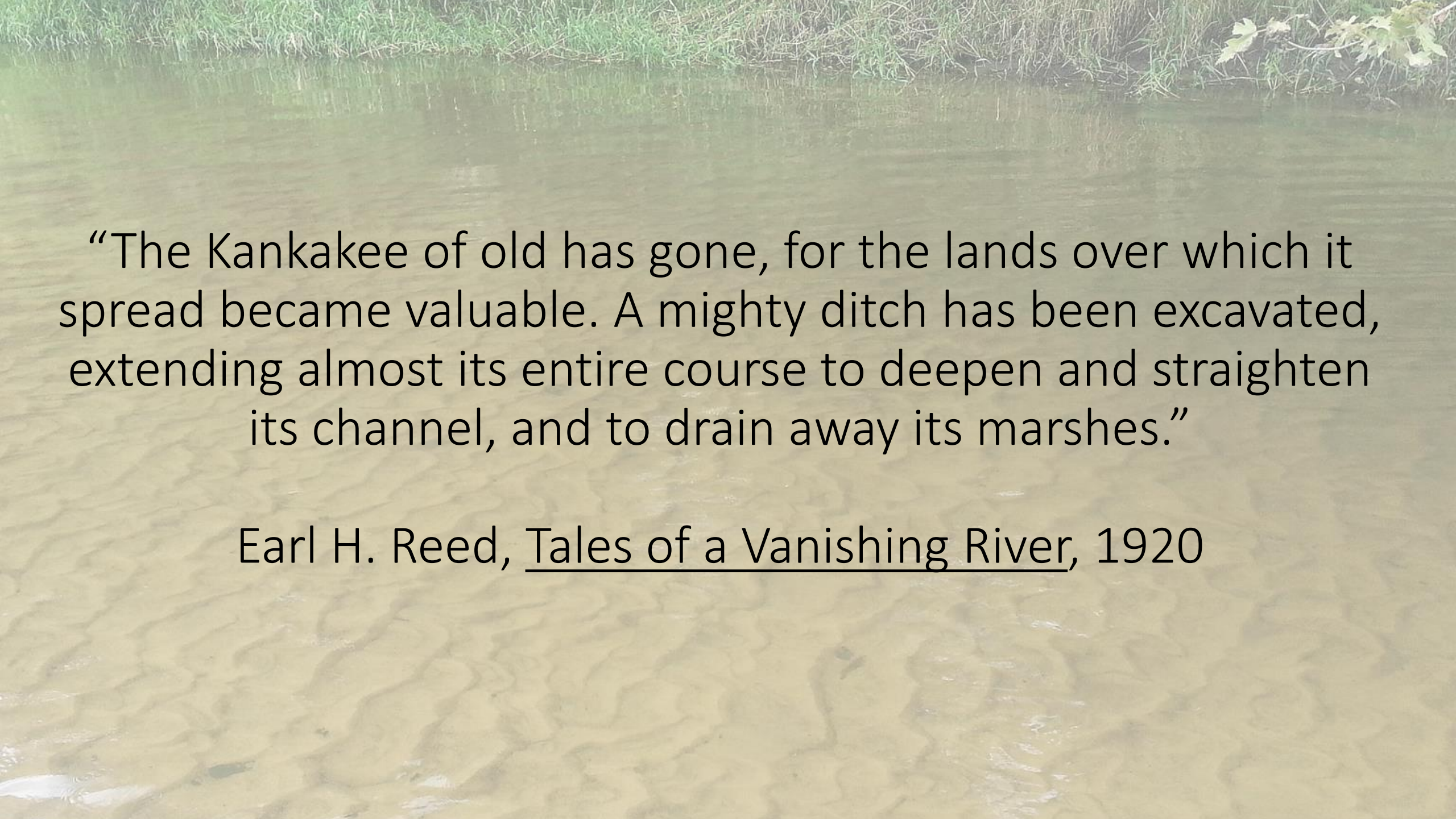
- Diversity and sportfish populations remain high despite the sand
 - The River is healthy
- Sand accretion zones unstable
 - Sand mobilizes and deposits shift with flow
- Sand + Flow
 - Intrinsically linked
 - Difficult to separate effects on fish

Projects

- Classify substrate composition in rest of the River
 - Is the sand having a measurable effect at a larger scale?
- Northern Pike and Floodplain lake diversity
- Smallmouth Bass growth and population comparisons
 - Mackinaw River vs Kankakee River

Questions?



A photograph of a wide, shallow river with muddy water. The water is a light brown color with some ripples. In the background, there is a grassy bank with some green foliage. The text is overlaid on the water.

“The Kankakee of old has gone, for the lands over which it spread became valuable. A mighty ditch has been excavated, extending almost its entire course to deepen and straighten its channel, and to drain away its marshes.”

Earl H. Reed, Tales of a Vanishing River, 1920