Sea Grant Michigan

CATF Meeting

October 17, 2019

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Extension Educator

MSU Extension
Serving Marquette and Delta counties

MICHIGAN STATE UNIVERSITY | Extension

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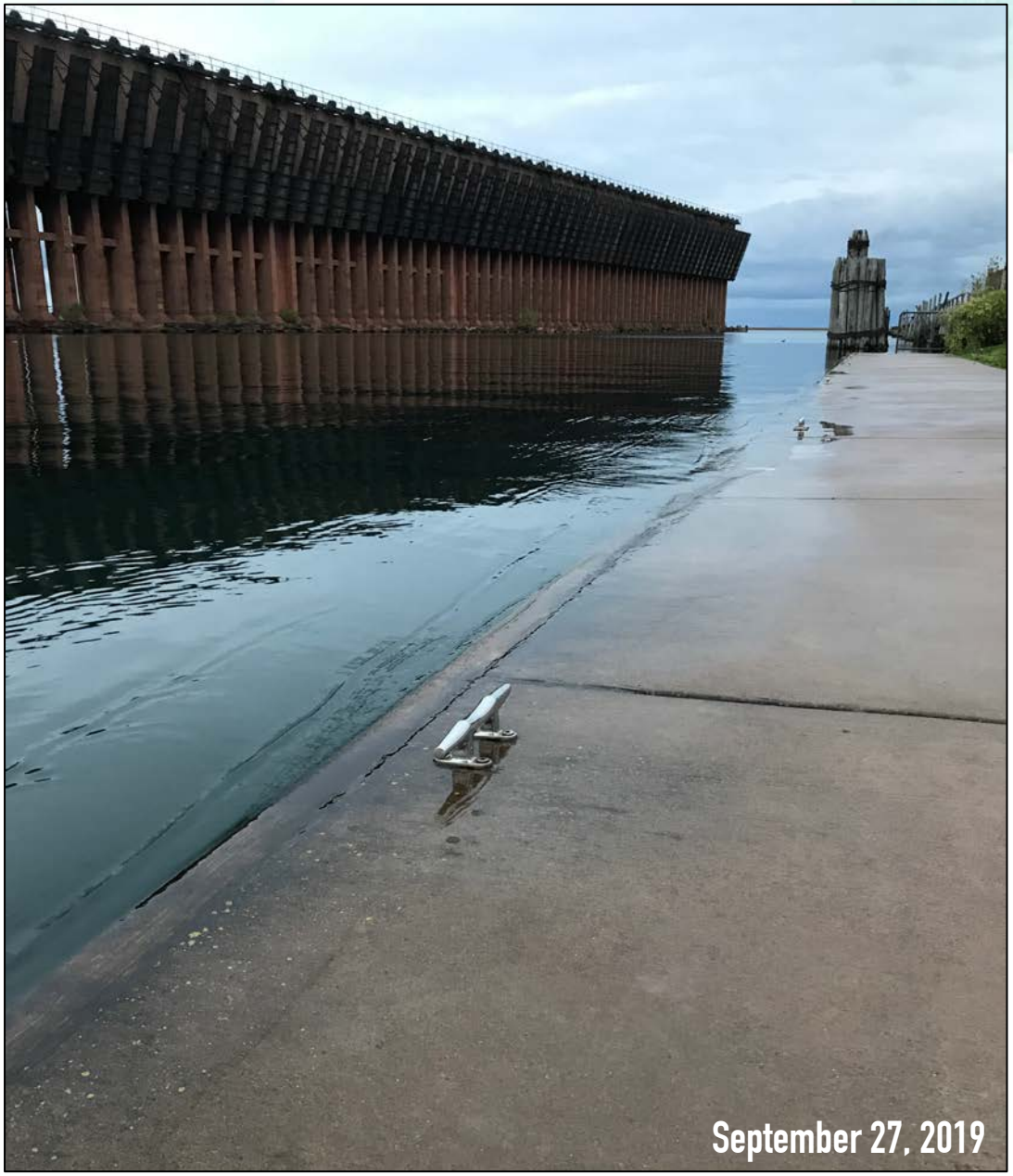

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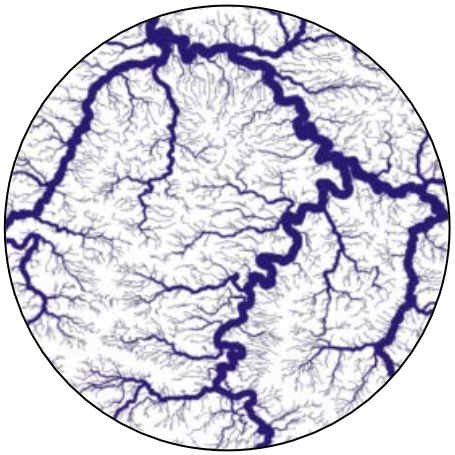
L. Michigan + Mississippi R. basins TO L. Michigan + L. Superior basins

Four **guiding principles:**

Land use change as a global challenge for freshwaters



Stream networks as agents of **transformation**

Quantifying **spatial and temporal patterns** in stream networks

Floodplain restoration to manage downstream export

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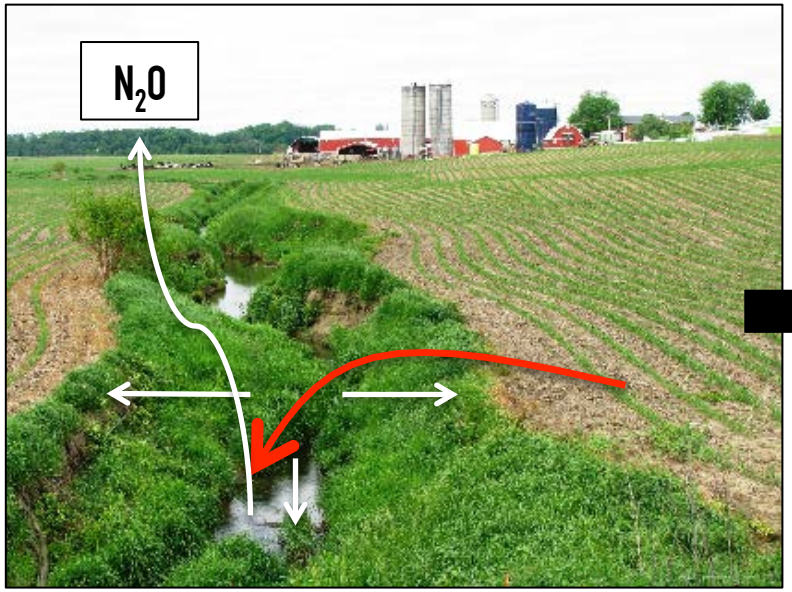
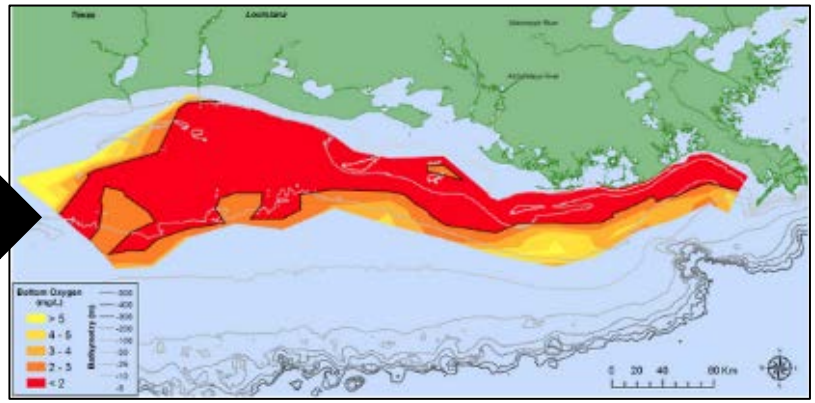
Up to 25% of N added to the biosphere is exported from rivers to the coast.

- Stream networks = **integrators of nutrient inputs** from surrounding landscape.

Streams and rivers are capable of processing 50% of N prior to export downstream.

- **Assimilatory uptake** = uptake by biota.
- **Denitrification** = permanently removes nitrate (NO_3-N) ➔ nitrous oxide (N_2O) + N_2.





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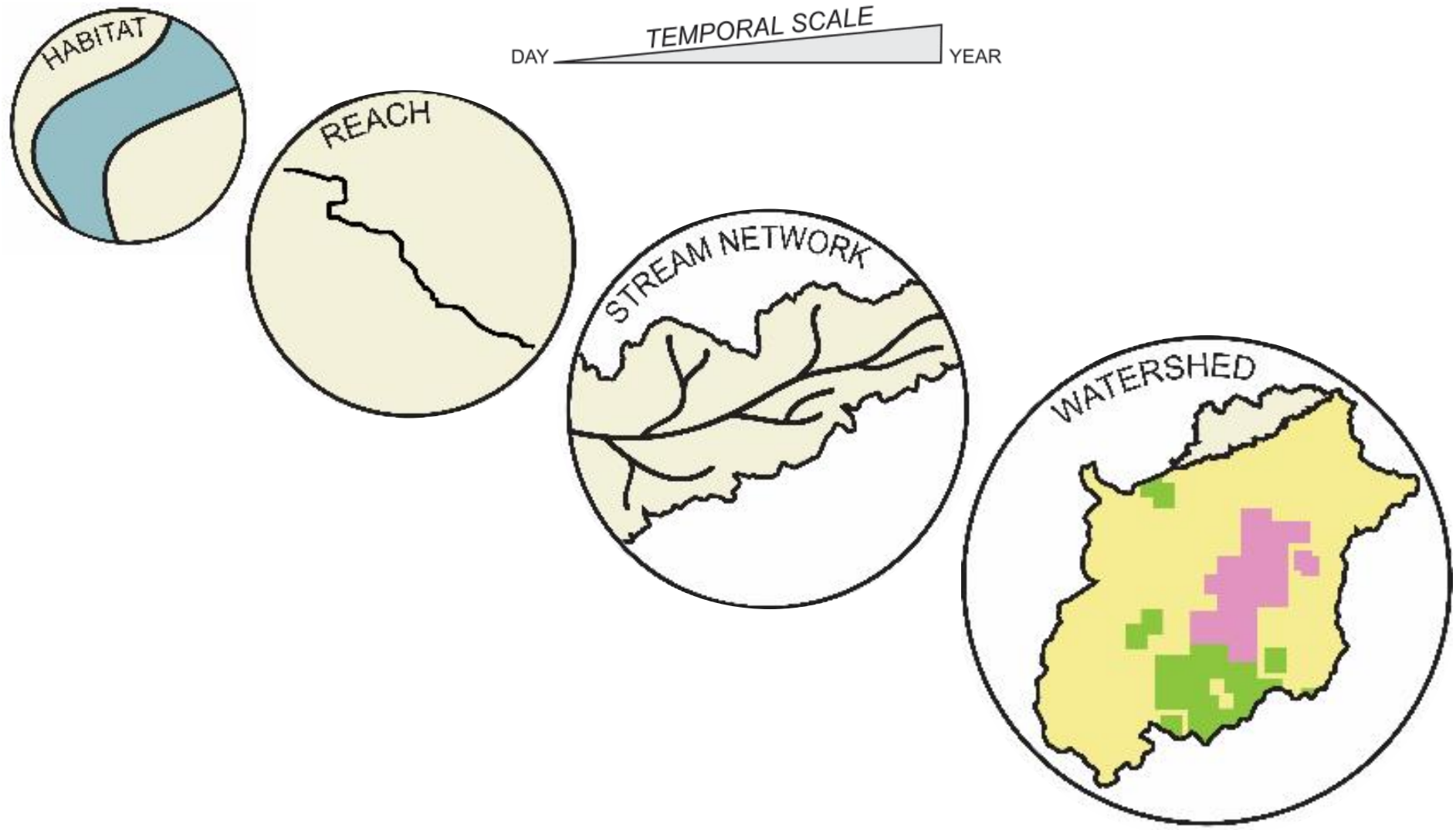

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October 2019 report prepared by Senator Debbie Stabenow: "Climate change is already harming Great Lakes region"

Direct impacts on Great Lakes:

- Extreme high and low water levels = "the new normal"
- Coastal communities at greater risk from erosion and flooding
- Warmer water threatening native fisheries
- Unprecedented algal blooms in our lakes
- Extreme rain overwhelming local infrastructure and flooding homes

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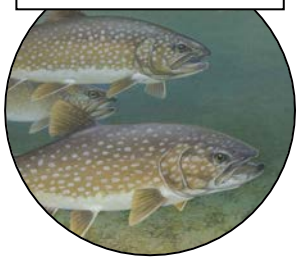
EDUCATE

COMMUNICATE

RESEARCH

G.L. fisheries

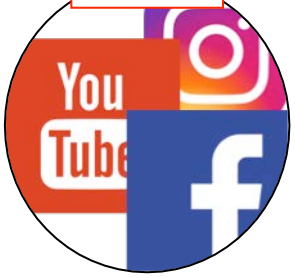


Coastal resiliency

Water safety

Environmental change

Media



Outreach

Citizen science

Collaboration

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