



Eric Booth

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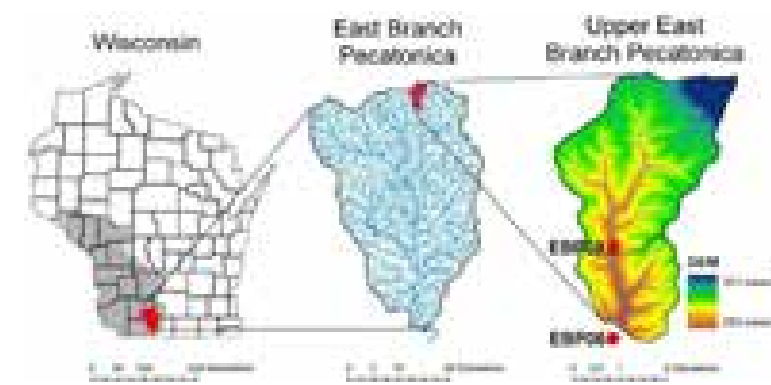
Department of Civil & Environmental Engineering



From Wetland Hydroecology to
Watershed Sustainability Science

Stream-Wetland Hydroecology

- What is the **hydrologic** regime necessary for **ecosystem restoration**?
- Disciplines needed:
 - Hydrology
 - Ecology
 - Hydrogeology
 - Geomorphology
 - Soil physics
 - Plant physiology
- Documented a positive, yet complex, hydrologic and vegetation response to restoration using monitoring & modeling



Watershed Sustainability Science

- What is the ~~hydrological~~ **hydrological** regime necessary for ~~sustainability~~ **restoration**?

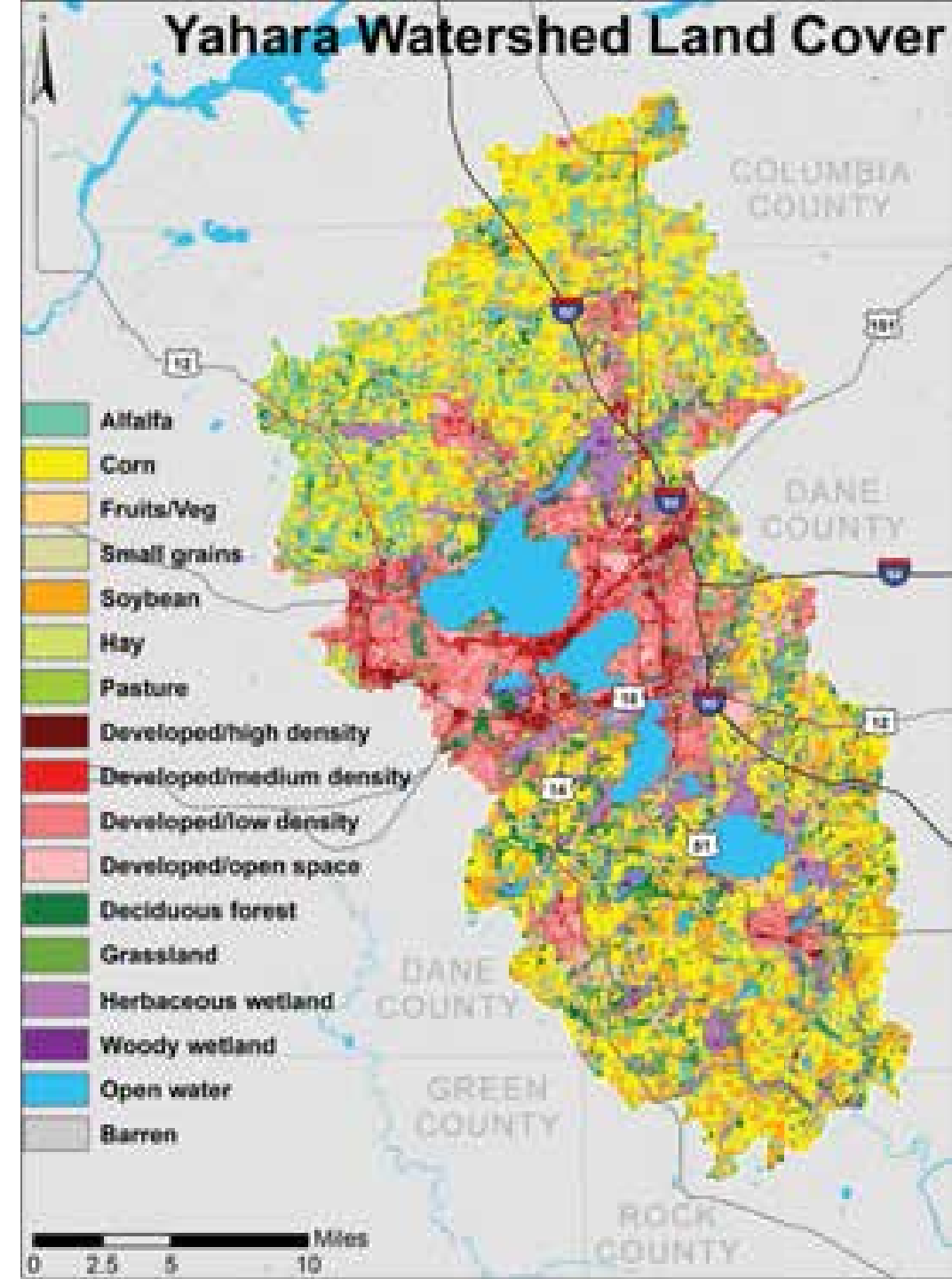
- adequate water supply
- good water quality
- acceptable flood risk
- food & energy production

- Disciplines needed:

- Hydrology
- Ecology
- Hydrogeology
- Geomorphology
- Soil physics
- Plant physiology
- Water Quality
- Agroecology
- Urban Ecology
- Social science
- Storytelling & Outreach
- Art & Humanities

- Developing integrated scenarios of provocative, yet plausible, futures out to 2070 using narratives, art, and biophysical modeling

Yahara2070.org



Tools

• Biophysical Monitoring

- Hydrology / Water Quality
- Climate
- Plants, Crops, Nutrient Inputs
- Data Analysis:
 - Exploration, visualization, trends

• Biophysical Modeling

- Hydrologic niche
- Soil water balance
- Rainfall runoff
- Hydrologic & hydraulic routing
- Water quality / biogeochemistry
- Plant growth

