**Multi-objective conservation planning: Prototyping a strategic decision**

**framework for aquatic species conservation**

Startup meeting

June 15, 2017

1 – 2 PM CST

Meeting objective(s)

1. Introduce Dr. Schumann

2. Begin discussion and selection of problem to address using a structured decision making approach

Agenda

* Introduce David Schumann (Postdoctoral Associate)
  + Completed MSU employee training program
  + PhD Dissertation: Measuring aquatic organism responses to grassland restoration: Does the *field of dreams* really exist? (Brief synopsis of research project)
* Input from the Adaptation Science Management Team (ASMT) to-date
  + Common concerns:
    - Impacts of climate change on habitat available to aquatic species of conservation concern (NOTE: USGS modeling project that will provide some projections of flow variables in the GCPO, run models for historic data and project forward)
    - Fragmentation of river networks (large dams and smaller barriers) & connectivity of floodplain habitats (SARP and recent work on time series of dam building, using global water dataset to look at addition of small dams)
    - Sedimentation & degraded water quality (Access to EPA data and partners willing to share)
    - Limited funding – targeted conservation investment
    - Lack of public awareness
    - Identification of some candidate species: Alligator Gar, multiple sturgeon species, Southern Brook Lamprey, and numerous darters, crayfish, amphibians, and mussels
* Framing a problem(s)?
  + Opportunities to link terrestrial conservation efforts with responses in aquatic systems
  + Representation of three freshwater aquatic systems (Upland, Medium-low, Big streams and rivers)
* Facilitating communication using a website and blog

NOTES:

* SARP is inventorying barriers (culverts is another animal from dams) develop a prioritization tool for barrier removal but linked to stream length but not explicitly linked to native aquatics or invasive. Could just focus on dams… No second year of funding on SARP to finish up the project.
* Fish ladder-to allow passage through the culvert.
* Full range of species, or small portion of a species range. Arkansas connectivity teams – SARP looking to address connectivity issue.
* Think about who we might pull together as a stakeholder team [AI] inclined to constrain the problem and then identify the stakeholder team.
* Effectiveness monitoring is pretty rare… and unlikely in terrestrial and aquatic systems.
* Actions considered: enhancement of existing habitat (fire, thinning) or restoration (remove ag and replant to hardwood). Lots of interest in MAV to identify where to do these actions – alligator gar won’t spawn on the flood plain under trees. Habitat Suitability model exists for Gar.
* Concern for floodplain fish in Middle Mississippi, Cairo look at floodplain spawning fish as a guild (inundation frequency 🡪 spawning) and link to gauge levels, then bring in climate modeling from USGS. INTERESTING, LIMITED IN RIVER RESTORATION ACTIONS.
* Conservation planning atlas as a good group space.