

Understanding the ecological and social constraints to achieving sustainable fisheries resource policy and management (NC1189)

Research Team Meeting

Tuesday, September 10, 2013, 8 – 10 am

American Fisheries Society Annual Meeting; Little Rock, AR

In Attendance

Buhler, Doug (buhler@anr.msu.edu)- Michigan State University
Katie Bertrand (Katie.Bertrand@sdsu.edu)- South Dakota State University
Ingrid Biedron (ib49@cornell.edu)-Cornell University
Kyle Hartman (hartman@wvu.edu)-West Virginia University
Dana Infante (infanted@anr.msu.edu)- Michigan State University
Joe Nohner (jnohner@msu.edu)-Michigan State University
William Taylor (taylorw@msu.edu)-Michigan State University

Action Items Resulting

- **Joe Nohner: Distribute notes from this meeting to the group for review and submission.**
- **Joe Nohner and Bill Taylor: Distribute draft midterm review**
- **Set up work group to formulate future synthetic research goals for this multi-state program and provide options for group discussion over the next year via teleconference and our annual work meeting at the American Fisheries Society meeting in Quebec City (August 17 – 21, 2014).**
- **Identify Work Group to plan symposium at the Annual American Fisheries Society Meeting, in Quebec City related to multistate goals**
- **Recruit new members to fill disciplinary needs (i.e. resource economist)**

Minutes

Doug Buhler: Project Deliverables and Guidelines

- Doug Buhler, our Administrative Advisor, will serve as the primary reviewer of mid-year review report and future program desires.
- Limited funding for travel is available from the State Agricultural Experiment Stations (SAES), which is intended to allow our team to meet and catalyze other products from the team
- Our team should focus on unique contributions of having a multistate program: What are we doing now that we wouldn't have otherwise been doing? The mid-year evaluation will focus on whether our project is on target, and whether there is evidence that the program is allowing for meaningful interactions and results by its members that has made a difference in the quality and quantity of research and its application by partners.

Updates from individual investigators

Bill Taylor

- This project started out with an intentional broad focus (see App. I), but the time has come for us to identify a synthetic theme for future endeavors.

- Proposing to this group a symposium in Quebec next year focused on a specific theme
- We can publish the proceedings of this symposium through AFS, as a book, or as a special supplement in appropriate journals
- Timeline for project deliverables over the next year provided to group (App. II).

Dana Infante

- Provided lessons learned from her experiences in working on a national fisheries research program
- Her team began doing research for the National Fish Habitat Action Plan (now, NFHP) in 2006. What was its goal? Like NC 1189, the NFHP project also began with ambitious, national goals but little had clarity in the end products would look like.
- Reached out to partners across the US to build databases of fish population and habitat data. Some investigators and agencies have been more inclined to share their information than others.
- One key is managing expectations- perhaps starting out with a proof of concept, next step would be a full assessment, and then iteratively improve the model based on new information and testing results.
- NFHP has a strong interest in incorporating socioeconomic factors, but not enough funds or expertise to do this. It will probably be a larger focus in future (2020) assessments provided funding is available. Might be a focus of NC 1189.
- Her research team has been successful in partnering with USGS Aquatic GAP, US Fish and Wildlife Service, USGS National Climate Change and Wildlife Center, and others for new resources and increased visibility and relevance. Additionally, it has spun off a number of side projects with groups like the Landscape Conservation Cooperatives (LCC's), where the development of a decision support tool was funded.
- Some impacts from this project have been the ability to show non-scientists that biological and ecological factors don't stop at state borders, the development of a comparable stream habitat metric across the lower 48 states, use of that metric in management decisions, and a data set downloaded hundreds of times from universities, and natural resource practitioners.

Katie Bertrand

- South Dakota State University and the state agency have a proposal process where the agency identifies top research needs. One of these led to compiling state datasets for abundance and distribution trends for the mountain sucker, which is now limited to 1/3 of its range. As a result, they are exploring population enhancement studies, and research on population genetics.
- If the multistate group's interest was in creel survey data from streams, then that data would need to be collected statewide in South Dakota. Most of the creel survey data in South Dakota is from lentic systems, although some creel data exists for the salmonid stream fisheries in the Black Hills Region. She agreed that stream creel survey data which provides basic biological and human dimensions type information on a routine basis could be used in South Dakota and across our multistate group to evaluate resource management decisions.

Reggie Harrell

- Currently is working on bioelectrical impedance analysis (BIA) technology with Kyle Hartman for striped bass in Chesapeake Bay.
- Additional current research interest related to the general area of -ecological services such as nutrient remediation with leased bottomlands or oysters.
- Recent interests on ethics- anthropogenic movement of species through stocking, creating a decision matrix with the public that bridges ecology, philosophy, and theology in order to appropriately use natural resources

Ingrid Biedron

- Human dimensions research unit at Cornell University is currently working with the New England and Mid-Atlantic Fishery Management Councils to determine if/how Ecosystem-Based Fishery Management might be used in their decision making process.
- Exploring how to include social science, stakeholders and their needs into the process.
- Co-orientation approach looks at what Councils think stakeholders want and what they actually want. These appear at times to be disconnected, there's a need for improved communication.

Kyle Hartman

- Collaborating with WV DNR and the Forest service on fisheries ecology and management
- Highlighted the need for long term studies, has generated such datasets through a series of assistantships. Has good pre-hurricane Sandy datasets for small streams, will be able to investigate impacts of wood addition to streams from the hurricane.
- Developing the BIA approach in an effort to determine when fish health is declining before it happens.

Next Steps for our Project (Taylor)

- Need to focus on a theme and produce unique, new products that otherwise wouldn't have been achieved (workshops, grants, papers, proceedings, etc.).
- Could use National Conservation Needs (NCN), an Association of Fish & Wildlife Agencies (AFWA) designation, to apply for funds such as the Multistate Conservation Grant Program or for funds from the Fish and Wildlife Service. Grants can be in the \$300-500k range.
- Discussion on what would the ideal NCN investigate related to NC 1189
 - a. We have a rough understanding of ecological condition, not so much for socioeconomics such as harvest, angler hours, access points, etc.
 - b. Diseases
 - c. Invasive species
 - d. Climate change is already being worked on, but may get more attention
 - e. Ecosystem services-ecological services, real estate, aesthetic, intrinsic value, etc.
- If we're trying to bridge policy and science, what value-added materials and knowledge can we provide appropriate policy makers?
- South Dakota has the WILMA (Wildlife Inventory and Management Application) database that lists access points to fishing for the public, and similar databases exist in other states. We could use these as a data source to inform creel surveys or analyses of fishing access.

- NFHP would likely be supportive of efforts to generate a regional map of popular fishing areas, areas where catch rates are high, or where the resource is otherwise economically or socially valuable.
- If we move forward with socioeconomic data and a spatial ecosystem services assessment, the program will need to bring in more economists such as those from the World Bank, NOAA, State and Federal agencies and NGO's.
- Creel surveys are available in many states, may be vastly different though in methodologies, but our research program may be able to do a prototype of appropriate models in partnerships with a few willing states and then fill in the gaps later (demonstrating utility and value for use in management).
- Creel information is one piece of the puzzle for sustainable management, but one also needs fish biomass, nutrient cycling, diversity etc.
- Could apply for National Science Foundation funding in their integrated research program.
- The group agreed that a spatial socioeconomic analysis from an aquatic ecosystem perspective would provide the most tangible benefits from our multistate group for fisheries and other stakeholders. Pairing such data with biological data (e.g. NFHP) would provide information on why particular habitats are valuable, how valuable they are, whether access is sufficient, etc.
- Moving toward this goal would be the focus of the next two NC 1189 meetings (2014 in Quebec City and 2015 in Portland).
- The group discussed how to define ecosystems. There will be tension between coupled ecosystems and socioeconomic systems (where boundaries and flows may be unclear), and nationally available datasets (where data are available by ecosystem (e.g. river) or not spatially attributed to particular ecosystems). One solution would be to produce a schematic chart that incorporates these elements, and then identify the "low hanging fruit" that may be possible at a multi-state scale for a proof of concept. Future iterations could build in new types of data or new geographic areas and joint funding opportunities to enhance our capacity.
- In the long term, would want key indicators for policy and management, want the research framed broadly, and want to be able to support EBFM.
- Proposed title for our symposium at AFS in 2014: Ecosystem Services: Bridging Natural and Social Sciences toward Sustainable Policies
- Doug Buhler was supportive of the efforts. If we can keep this type of program on track it would make a compelling research proposal for outside funding as well as a compelling reason to renew this multi-state project.

Appendix

APPENDIX I *NC1189 Project Objectives*

- 1) Improve understanding of the causes underlying the changes in habitat, such as climate change, invasive species, and land use, and the associated effects on the production and resilience of fisheries and aquatic communities.
- 2) Determine factors driving fish populations' growth, survival and reproduction.
- 3) Improve understanding of the factors underlying public awareness, engagement and public support for fisheries resources, aquatic ecosystems, and fisheries sustainability.
- 4) Compare and evaluate governance systems and management tools regarding their potential to adaptively link ecological, social and political systems for enhanced fisheries sustainability and prosperity.

APPENDIX II *NC1189 Project Timeline for 2013-2014*

Date	Deliverable
September 10, 2013	NC 1189 Annual Meeting, Little Rock, AR
October 10, 2013	Draft Annual Report sent to work group
November 10, 2013	SAES-422 and Annual Meeting minutes due
December 15, 2013	AA's review of our project submitted
January 11, 2014	Anticipated symposium deadline for 2014 AFS Annual Meeting, Quebec City
July 31, 2014	Proposal work group provides options for annual meeting
August 17-21, 2014	Symposium at 2014 AFS Annual Meeting, Quebec City
December, 2014	Symposium Proceedings to be published