NC1189 in-person meeting, 8/13/19

In attendance: Kyle Hartman (WVU), Ross Andrew (WVU), Bill Taylor (MSU), Reggie Harrell (U Maryland), Andrew Carlson (MSU, Princeton), Gayle Zydlewski (U Maine), Paul Venturelli (Ball State U), Gene Kim (NIFA), Dana Infante (MSU)

9:30 am Introductions

* Gene Kim – aquaculture program leader at NIFA, worked on fisheries issues in the past (student of Dennis Devries, Roy Stein), emphasized need for linkage between fisheries and agriculture/aquaculture in our NC1189 work
* Andrew Carlson – described dissertation research, climate change effects on Michigan stream trout, along with fisheries as coupled human and natural systems; will soon start a postdoc at Princeton focused on the role of fisheries in global food security (good overlap with NC1189 and the current 10 Steps survey, especially Steps 3 [fish as food, nutritional value] and 9 [aquaculture])
* Gayle Zydlewski – position has changed to be primarily (80%) Director of Maine Sea Grant and 20% research within the Maine Experiment Station (under this multistate project), this transition has highlighted the importance of the 10 Steps; research continues to be on anadromous fish populations, endangered species (e.g., sturgeon) is focus of her research and administrative efforts with Maine Sea Grant; also studies invasive species, climate change effects on marine ecosystems, aquaculture (close connection with 10 Steps – lessons learned from marine and freshwater, etc.); works closely with Mike Kinnison (also studies streams, eDNA, etc.). Anticipates continued involvement as a researcher and sees value in bringing lessons learned from Sea Grant to the Experiment Station and multistate project.
* Paul Venturelli – studies inland recreational fisheries primarily, life history, using apps to garner fisheries data, citizen science
* Kyle Hartman – long-term stream research (25 streams sampled since 2003), research informs bass stocking, age and growth, mortality, habitat management, etc.; other research focuses on catch and release mortality of muskellunge on the southern edge of their range, includes a citizen science component (anglers)
* Ross Andrew – worked with Kyle on Ph.D. research (now postdoc), including effects of strong storms on brook trout habitat in headwater streams; more recently studies human dimensions (e.g., angler survey regarding stocked trout, designing management program around angler perceptions of what’s working and what’s not)
* Reggie Harrell – has transitioned research from physiology, conservation biology, etc. to human dimensions (e.g., human attitudes toward conserving threatened/endangered species); lots of differences human perceptions and values surrounding these species; ethics of aquaculture as a commons (e.g., shellfish aquaculture in the Chesapeake Bay); also works with Gene Kim as one of five regional aquaculture directors
* Bill Taylor – provided background info. on the 2015 global conference on inland fisheries (Rome, Italy), explained why and how the 10 Steps were originally crafted; research at Michigan State has emphasized climate change and coldwater fisheries, role of law enforcement in fisheries science and management, supply chain dynamics of commercial lake whitefish fishery, FAO global inland fisheries conference in Rome; research recognizes the important role of ethics and values in fisheries decision-making, stakeholder perceptions, etc. – possible comparative research (e.g., why are muskies viewed differently in the North vs. the South?)
* Dana Infante –studies how landscape-scale (e.g., hydrology, geomorphology, climate) factors affect stream fishes

10 Steps survey and future directions for NC1189

* Andrew – Described the purpose and content of the survey, gave an update on the status of the survey (7 responses in first few days after distribution, 11 total responses after 11 days, will send a reminder email to AFS Governing Board members this afternoon)
* Bill – original intent was to only survey AFS Governing Board members, now we can consider distributing the survey to other groups (e.g., state fisheries chiefs); will need to amend the approved IRB if we survey others; other important questions: how do we downscale the 10 Steps to make them locally/regionally tractable?
	+ Chiefs will meet at AFWA Annual Meeting ; Saint Paul, Minnesota September 22-25, 2019
	+ Also, academic leaders/administrators will meet at APLU (Association of Public and Land-grant Universities) Annual Meeting; San Diego, CA November 10-12, 2019
* Gayle – could we finish the Governing Board survey, analyze the data, and then send the survey to fisheries chiefs (or another group), if needed?
	+ We could also do an internal survey (within NC1189) regarding how each of us address the 10 Steps
	+ “1 to 5, where does your research fall into each of the 10 Steps?”
* Gene – looking over the 10 Steps, it’s important to focus on those that overlap with NIFA goals (e.g., Steps 3, 9), but can’t be the same in all locations; first three steps align well with NIFA, along with Steps 5 and 9
* Bill – need more research on nutritional importance of fish and fisheries, household surveys, etc.
* Reggie – Governing Board could be quite different than other stakeholders (e.g., NGOs, agency professionals, etc.) ... need to survey folks with different ethical constructs (e.g., Extension, AES, Sea Grant, National Aquaculture Association) ... program leaders for each Land Grant institution (assistant directors, directors), Sea Grant directors, etc.
	+ Ross – could help us make the connection between fisheries management and agriculture/food production that NIFA emphasizes
* Gene – could also take it further (e.g., survey NRCS, land managers), now or in the future
	+ State, regional structure (would need someone to reach the state and regional contacts – could be difficult)
* Kyle – if we survey state fisheries agencies, we need at least two people surveyed per state to be representative
	+ Action item: compile a list of our groups contact with state agency administrators/chiefs, use it to hopefully achieve a high response rate
	+ Add a question box: is there a researchable issue within the 10 Steps that you will pursue?
* Reggie – we also need organizational (as opposed to personal) responses
* Gene – need to integrate agriculture and aquaculture into our future NC1189 activities; managing some watersheds for food production, human and family health, others for biodiversity, etc. ... food and economic value in rural areas (key topics that “sell well”)
* Reggie – take our work from an ecosystem services (provisioning) perspective, could help raise the profile of inland fisheries
* Andrew – will the survey be our research or be a tool to define our future research (involving other methods)?
	+ We previously selected climate change and invasive species as focal issues using our own expert opinions (no surveys); we could theoretically do that again regarding the 10 Steps (e.g., focus on Steps 3 and 9); the currently survey will certainly help us choose steps to focus on, but we should think beyond the survey (What research methods will we use next? Where are we headed?) and avoid becoming a “survey group,” in Bill’s words; focus on the real goal – broader initiatives (discussed below - e.g., review paper, white paper, national forum)
* Ross – agreed that the survey can/should be a gateway to the future, which we’ll discuss later in this meeting
	+ May be useful to address spatial and temporal aspects of responses when survey data are evaluated and analyzed
* Reggie – aquaculture has shifted over the years (e.g., production to conservation), need to optimize role of aquaculture on local and regional scales (some places good, some places not) – how do we bring value to this from supply-chain and value-chain perspectives?

Afternoon

*How will the 10 Steps survey inform our future work?*

* Kyle – need to decide which other groups to survey, e.g., state agencies – send to our personal contacts (will perhaps yield the best response rate)
	+ Bill – need to revise IRB first
* Gayle – also do internal survey within NC1189
* Andrew – other than surveys, what will we do? What specific research tools/mechanisms will we use to study the priorities that the survey reveals?
	+ Andrew, Reggie, Ross – review paper, progress report, white paper, horizon scanning document, etc.? Work with national forum/summit of panelists/representatives from different sectors (those with vested interest) ... could lead to review paper, symposium, best management practices (or something similar), book, etc.
	+ Gene – it’s time for a document like this, time to broaden the definition of “aquaculture” (and thereby broaden Step 9)
	+ Reggie – we could advance toward a genetic repository for fish genomes useful for conservation biology
	+ Gayle – this document/forum/summit could provide an opportunity for social science research, "why is the definition of aquaculture so limited (‘this or that’)?”
	+ Ross – create document that provides implementation examples of the 10 Steps
		- These could be outlined in a series of guidelines and/or case studies that are applicable to specific scenarios in a given area/with a given audience/with a given management issue
	+ Dana – who would the document be intended for? (state agencies, NGOs, AESs ... all of the above, if possible)
		- Andrew – distribution of this document to AES (and others) could help strengthen AES-fisheries linkages, as called for in our recent *Fisheries* paper
		- Reggie – we need to connect 10 Steps survey results with development of the next five-year plan and formal proposal (due ~one year from now)

*How to strengthen AES support?*

* Gene - challenging question, given the relatively low profile of fisheries compared to other aspects of agriculture ... and the variability from institution to institution in terms of how the fisheries discipline is prioritized
* Gayle - Make AES directors an audience for our future work, including a national forum/summit that leads to best management practices, or similar (perhaps 2-3 years from now)
* Bill – need for communication regarding the relationship between aquaculture and fisheries – they’re not separate but rather a continuum, engage Extension and other partners to communicate widespread importance of fisheries for agriculture, food security, human well-being
* Andrew – role of “fish as food” (obvious but, then again, not so obvious – not as widely recognized as we would like), fish as livelihood source, etc.
* Gene – there are other multistate projects devoted to some aspects of the 10 Steps, potential opportunities for cross-fertilization; connecting with AES via salient messages (local foods, gardening, “local fish for food”)
* Reggie – resource allocation questions are key (commercial [“you’re taking my business”] vs recreational [“you’re taking my resource”], etc.)
* Kyle – landscape-level analyses and maps (e.g., where is aquaculture maxed out vs. where can it be implemented in an ecologically, economically viable way? At which sites would aquaculture be worst for fisheries?)
	+ Ross – could fold up this information, summarize it as an indicator/index (“aquaculture management interface index”, *sensu* habitat suitability in ecology)
		- Could be applicable across a continuum of aquaculture from conservation to production-focused
		- Contact Ross for more info. if you’d like to get involved
* Gene – June 7-11, 2021 national forum for aquaculture Extension, Land Grant-Sea Grant in Portland, Maine (National Aquaculture Extension Conference)
	+ Gayle – AES directors could be invited (at least those from the region)

Leadership book for AFS Press

* Potential for an NC1189 team-authored chapter/summary on fisheries leadership
* Bill – we’re well-positioned to do one of three things (introduction, summary, vignettes [authored by individuals or small teams])
* Gayle – team authors would need major talking points from the book to work from (Bill and Andrew could provide)
* Kyle – could be good way to demonstrate that leadership happens at the group level (not only at the individual level)
* Andrew – “leading from all chairs” is a key aspect of the book, could provide a foundation for illustrating how our work as an NC1189 group exemplifies leadership
* Gayle – good way to demonstrate how leadership takes shape in different careers, career stages, seasons of life, etc.
	+ We could invite NCC1189 members to join and then move forward (not required)

Journal impact factor (IF)

* Discussed the relationship between journal IFs and "effective" fisheries science that improves management/governance ... do we need a new metric or metrics?
* Kyle – open access, can pay thousands of dollars in fees to publish open access in a low IF journal but still have high “impact” (visibility)
* Bill – personal experiences with high professional/personal “impact” in the fisheries management community but relatively low IF journals
* Gayle – thankful that we’re discussing this important issue, there are better indices than IF, h-index, etc. ... but how do we communicate this to wider audiences?
* Reggie – evaluation of “impact” in the cooperative extension community is different, based on metrics wherein impact is measured by effect on stakeholders (farmers, aquaculture producers, etc.), socioeconomics, etc.
* Paul – mentioned two papers (Swihart <https://wildlife.onlinelibrary.wiley.com/doi/full/10.1002/jwmg.1034>, https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0155097) that are helpful for this discussion
	+ Who’s citing people’s papers? Are they managers, biologists (i.e., “those on the ground”)? Could be a way to measure “impact”
	+ Or gray literature citations, newspapers, etc. – these are measures of “impact” that aren’t traditionally considered
* Reggie – taking bench/lab research to the field is critical, “how are you making a difference for stakeholders?” ... need to think critically about how we define scholarship
* Andrew – to what extent is this problem a function of the generally low IFs of most “fisheries” journals (those that include the term “fisheries”)? And how is a university administrator to compare a fisheries scientist with a cell biologist (or professional in another field with higher IF journals)?
* Reggie – most North American fisheries journals are not widely read on the international scale, could contribute to relatively low IFs of fisheries journals
* Dana – including additional metrics (ResearchGate, Google Scholar, etc.) into evaluation packages; overall, the current evaluation system is a slippery slope
* Gene – has AFS considered publishing abstracts in different languages as a way to increase impact factors?
	+ Paul – could cut into budgets, might be a financial barrier
	+ Reggie – publishing whole articles in other languages would be cost-prohibitive, but not abstracts
* Paul – at some level, journal IFs reflect the number of people doing research in particular fields (thus fisheries might have a relatively low ceiling compared to larger fields)
* Reggie – fundamentally, how do we ensure and increase the value of fisheries research?