The Diadromous Species Restoration Research Network Science Meeting 2009

Restoration of Diadromous Fishes and Their Ecosystems: Confluence of Science and Restoration

22 – 24 July 2009 at the
University of Maine, Orono, Maine

Natural Variability: Biological Assemblage Assessments Breakout Session Notes

Collin Apse, lead moderator

Discussions were typically not focused on natural variability in detail (e.g. impacts of climate, ocean conditions), but rather natural variability was implicit in our larger discussions

Note that the themes below are all inter-related. More than one of these themes could be integrated into a Workshop.

Complete Meta-analysis and Synthesis with Existing Data (60) (8 first-place votes)

- People, Effectiveness, Data, Time-scale, State agency role? Logistics (4)
- Lessons from CWA: Grouping individual projects to get to larger questions
- Who is the implementer of scientific synthesis? (6)
- Can we do a meta-analysis for restoration science? (20)
- Useful to have early gap analysis
- Examine goal setting approaches
    - Whether or not goals were met
    - Human dimension
- Have statisticians from the start, test-drive a set of data with "owners"
- Informs what we are collecting for the future
- Pick a few types of restoration of regional importance (culverts, small dams, etc.)
- Examine biophysical diversity first, and stratify
    - Define metadata in simplified forms

Defining Protocols and Collecting Comparable Data (42) (6 first-place votes)

- Next version of framework→ needs more fish data (build on Gulf of Maine Council stream barrier protocol) (4)
- Common monitoring framework (10)
- Use of comparable data (6)
- Monitoring that can be done at every site? (1)
- "Coarse monitoring" of project goal→ can it be used, and how?
- Integration of results from framework (like Gulf of Maine document)
- Getting to database of monitoring results for basic result?
- Lessons from qualitative results in restoration→ core metrics as guidance on likely physical results (4)
- Can we set up monitoring?

- Guidance on research design? (3)
- Monitoring←→ Research
- How would you structure data to answer broader effectiveness question? (6)
- Structuring and implementation of monitoring of a subset of sites
- Can we begin to say things aren't working?
- Monitoring trust funds to ensure future funds availability (8)
- How to predict synthetic projects
- GIS-mapping

Setting Ecological-Based Goals (44) (5 first-place votes)

- Define success (3)
- Goal Setting: (32)
    - Set range of goals
    - Characterize stressors
    - Justify goals in context
- Compliance versus effectiveness monitoring (3)
- Attainable end points (1)
- What is the mechanism to reach the goal? (2)
- Inter-state survival?
    - Other?
    - Should be measured?
- Regional goal setting for species
- Hierarchy of goals for projects as well as monitoring
- Defining reasons for goals as expectations

Public Perception and Outreach (47) (3 first-place votes)

- Can we involve commercial fishermen going forward?
- Getting to a watershed perspective
- Connectivity of populations
- Realizing that inputs in concert
- Inclusion of general public: goals, monitoring, being present at the meeting? (4)
- Include public in a future workshop? (17)
- Perception by stakeholders (4)
- How do we better fully account for the economic value of a project? (8)
- Communicating to the non-scientist (9)
- Shifting baselines—can we engage the public through using historical information? (5)

Statistics: Examining Natural Variability & Restoration Impacts (50) (3 first- place votes)

- Temporal scale (4)
- Spatial scale (5)
- Auto-correlation
- Understand trajectory (7)
- Long term assumptions and context (3)
- Effect size versus power (9

- Using Bayesian statistics

Sources of Variability (39) (4 first-place votes)

- Future context: Accounting for climate change (7)
- Natural variability of response? (8)
- Aspects of natural variability (1)
- Harvest experiment: Harvest to implementation
- Examining harvest impacts (15)
    - River/Ocean
- Meta-population structure as impacts on natural variability (6)
- Connectivity?
- Reinforcing?
- Opportunity to "get back into the water"
- Multi-species interactions→ does it matter? (1)

Other (0)

- Can dam management be an experiment on the Penobscot? (e.g. turbine shut downs, flow manipulation)