People and Conflicts in Dammed New England Landscapes: From a Stakeholder Assessment to a Science-Based Role-Play Simulation

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People and Conflicts in Dammed New England Landscapes:
From a Stakeholder Assessment to a Science-Based Role-Play Simulation

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Natallia Leuchanka, Catherine M. Ashcraft | University of New Hampshire, Durham, NH, USA
Presentation Agenda

- Problem Overview
- About Stakeholder Assessments
- Methods
- Preliminary Analysis
- Next Steps/Ongoing Work
- Questions?
What’s the “dam” problem?

Dams in New Hampshire (shown in red dots). Source: NH dam inventory layer from NH GRANIT displayed in the Data Discovery Center spatial viewer.

"Future of Dams" project objective: understand how science is used in decisions around current and future dam management in New England.

Trend: Increased demand from stakeholders to participate in dam decision-making.

Problem: Hard-bargaining approaches to negotiations over water resources often do not have the right or all relevant stakeholders represented.

Need: 1) Strengthen consensus building approaches to dam negotiations and 2) data about social context within which decisions are made.

Solutions:
1) Conduct a stakeholder assessment;
2) Develop a science-based role-play negotiation simulation to strengthen consensus building.
Stakeholder Assessments

- **Stakeholders** are “those who have an interest in or are affected by a decision. Stakeholders are also those who have influence or power in a situation” (NOAA, 2007).

- Used to determine whether a consensus building process is appropriate, and if so, who should be involved and what issues should be addressed.

- Stakeholder assessments identify and prioritize:
  - Key issues (social and biophysical), stakeholders, their interests and constraints.

- Key process steps:
  - Gather data: interviews, document analysis, public dam meetings
  - Analyze data
  - Recommend process design for collaboration: role-play design
  - Share report

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**Project Overview**

**About Stakeholder Assessments**

**Methods**

**Preliminary Analysis**

**Next Steps & Questions**
Identifying stakeholders using:

1) maximum variation sampling: seek diversity among types of stakeholders
   - existing expert knowledge
   - over 1,000 media news articles (McGreavy et al., 2017)

2) snowball sampling method: interviews with initial sample of stakeholders lead to references of additional stakeholders
Roughly half of interviewed stakeholders are dam owners (21 out of 46)
Analysis

• Interviews focused on 4 key themes

• Qualitative coding and analysis using NVivo software (ongoing)
  o Units of analysis: organizations & dam sites

• Making sense of your data: Coding
  o Identified the most common stakeholder interests, issues, constraints
  o Identified common features of dam decisions (What types of dams and which river systems? Who are the dam owners? Who is involved?)
    o Coalitions (via “Relationship codes” - allows for Social Network Analysis and identifying possible coalitions)

  o Making sense of your data: Synthesis
    o Queries, visualizations, memos, etc.
      o E.g. Matrix Query of Stakeholder Types vs. Interests (example to come...)
Priority interests identified by interviewees

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**Project Overview**

**About Stakeholder Assessments**

**Methods**

**Preliminary Analysis**

**Next Steps & Questions**
| Stakeholder Group                                                                 | Assist with permitting process | Collaboration | Cost | Fish passage and habitat | Flood control | General ecosystem health | Historic preservation | Hydroelectric generation | Participatory & transparent decision-making | Prioritization | Recreational resources | Safety | Water quality | Wildlife habitat | Property Values & Economic Development | Use of Science/Data in Decisions |
|---------------------------------------------------------------------------------|--------------------------------|---------------|------|--------------------------|--------------|--------------------------|---------------------|------------------------|------------------------|--------------------------|--------------------------|---------|--------------|----------|---------------|----------------|---------------------------------|--------------------------------|
| Local community group representing homeowner interests                          | No                             | Yes           | No   | No                       | Yes          | Yes                      | Yes                  |                          |                        |                          |                          |         |              |          |                |                        |                                 |
| State government representing safety interests                                   | No                             | No            | Yes  | No                       | No           | No                       | No                   |                          |                        |                          |                          |         |              |          |                |                        |                                 |
| State government representing ecosystem health interests                         | Yes                            | No            | No   | Yes                      | No           | No                       | Yes                  |                          |                        |                          |                          |         |              |          |                |                        |                                 |
| State government representing fish and wildlife interests                         | No                             | Yes           | No   | Yes                      | No           | No                       | Yes                  |                          |                        |                          |                          |         |              |          |                |                        |                                 |
| Federal government representing fish and wildlife interests                      | No                             | Yes           | No   | No                       | No           | Yes                      | Yes                  |                          |                        |                          |                          |         |              |          |                |                        |                                 |
| State and municipal government representing historic interests                    | Yes                            | No            | No   | No                       | No           | No                       | No                   |                          |                        |                          |                          |         |              |          |                |                        |                                 |
| Private sector/business representing hydropower interests                        | No                             | No            | Yes  | No                       | No           | No                       | No                   |                          |                        |                          |                          |         |              |          |                |                        |                                 |
What do people say?

“The strongest argument for dam removal is public safety, environmental considerations come secondary.”

“I realize safety is a reason, but in my mind there are other reasons to remove dams.”

“The environment has adapted to the dam being here.”

“Dams have cultural and generational history. Almost all our dams probably have Native American sensitivity when they were first developed.”

“We’d have hydro[power] on every dam if it was that easy to do. It’s not as easy as people think.”
What do people say?

“People like ponds and lakes.”

“People don’t care about the dam until they start talking about removing it.”

“People who want to save dams are not heard.”

“People don’t understand the free flowing river potentially provides a lot of environmental benefits.”

“New Englanders are very attached to their dams.”

“Back in the 1800s, early 1900s it was ‘build dams for hydropower’. I think the pendulum has swung in the other direction in terms of removing dams. I think the reality is that we should be somewhere in the middle.”
What are the key issues?

- Regulatory/permitting process burdens, challenges, and constraints
- Funding for different kinds of dam management options
- Collaboration among diverse stakeholders
- Inadequate public participation and engagement process
- Contaminated sediments
- Prioritizing dam projects: opportunistic vs. strategic


Applying results toward role-play design:

- Use of preliminary results to design a role-play decision-making scenario (including individual roles)
Impact of SA

• Understand stakeholder interests
• Inform role-play to foster innovative decision-making and policy options
• Decisions are complex and contentious → need to understand perspectives from stakeholders and representative populations

Other ongoing work

• Understanding public preferences:
  o Public opinion polling surveys with ~1,500 respondents (with C. Ashcraft, K. Gardner, and L. Hamilton)
  o Analysis of municipal meeting minutes (led by UNH undergraduate students: M. English, A. Sims, S. Tardiff)

Gather data: interviews, document analysis, public dam meetings

Analyze data

Recommend process design for collaboration: role-play design

Share report
Questions? Comments?

Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation

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