Dams and Dam Removal in New England
The Dammed Shawsheen Course
Nejem Raheem and Jon Honea
“The chief aim of science however is not to open the door to infinite wisdom, but to put some limit to infinite ignorance.”

Bertolt Brecht, *Galileo*
More than 3000 dams in MA
- 43 flood control dams
- 44 licensed hydropower dams
- 164 water supply dams
- Many no longer used for original purpose & many in disrepair (~88%)
What is needed for a course on dams and dam removal?

- Ecological Context
- Engineering Context
- Historic Context
- Economic Context
- Legal/Policy Context
- Stakeholder/Communication Context
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Ecological Context
Engineering Context
Historic Context
Economic Context
Legal/Policy Context
Stakeholder/Communication Context
Emerson College Institute for Liberal Arts and Interdisciplinary Studies
No sciences per se, but Science and Env Studies Minor
Ballardvale Dam
Existing Conditions
• Intro to Ecol/Intro to Econ (Honea in next talk)
• BCA/ES exercise (Colby et al)
• Excel exercise
• Readings/quizzes
• Group work first big assignment  BCA exercise
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BCA/ES exercise
Land use BCA simulation exercise
Proposed sale/conversion of ranch/cropland into conservation property
Six stakeholder groups: gov’t, private sector, civil society
BCA/ES exercise requires knowledge of:

- Ecosystem Services
- BCA incl discounting
- LEIA
- Stream/restoration ecology
- Basic Economic Analysis
BCA/ES exercise

Throughout first 6 weeks of semester we discuss ecological principles, economic principles, how they overlap/intersect, policy background, relevant laws (US, MA), relevant agencies, decisionmaking processes, history
BCA/ES exercise

- 2-day spreadsheet workshop
- Work on exercise each day in class for several weeks
- Present as groups at a community meeting
  - NPV, discussion of what ES matter
Second half of semester:
Focus on Shawsheen River
Create BCA using benefits transfer from existing lit on freshwater ES
Requires training in different valuation methods, familiarity with peer-reviewed and gov’t lit
Throughout
Discuss differences between NCRP and ECO approaches
Difficulties of valuation
But mostly focus on valuation
Interdisciplinarity in Co-teaching
Ecological Economics

Jon Honea, Asst. Prof. Emerson College
Interdisciplinarity in Co-teaching Ecological Economics

Jon Honea, Asst. Prof. Emerson College

Teaching the course
Learning from the course
What/Why to include other ecologists
Our next steps
Ecology of an econ course.
Why don’t more ecologists speak this language?
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What would we gain?
What’s next

- Hoping to develop the approach into a field training for stakeholders
- Example: Shawsheen Dam Removal
- Connect with MA and town agencies, local environmental, historical, etc.
What’s next pt. II

- Change watersheds to focus on other local issues
- Next up: the Mystic River!
- Focus more on ECO approaches
- GPI, etc