Economic Impacts of Dam Removal in Massachusetts



Massachusetts Department of Fish and Game

Division of Ecological Restoration

Invested in Nature and Community

Renaissance de la Vallee de la Selune September 25, 2019

Major Dams in the US by Age



Outline

- Background on
 Division of Ecological
 Restoration (DER) and
 dam removal
- 2. DER's restoration economy studies
 - Job creation
 - Cost
 comparisons
- 3. How we use the information



Take Home Messages

- Dam removal is voluntary; dam owner chooses to remove or repair
- Incentive funding / technical assistance needed for removal
- DER must constantly make a case for state funding
- Economic studies help us demonstrate impact



Massachusetts Division of Ecological Restoration (DER)

- Small state agency
- 20 staff
- Annual capital budget ~\$1.5 million

- Leverage our capital budget for other grants ~1:7
- Leveraged \$85 million over the last 10 years



DER's mission: to protect and restore rivers, wetlands and watersheds for the benefit of people and the environment



Massachusetts has over 3000 Dams

Owned by towns, companies, NGOs, private individuals, the state...





DER coordinates projects in partnership with agencies, NGOs, interested dam owners

DER Staff

Fundraising

Engineering and design

Permitting

Partnership with dam owner, agencies, NGOs

Outreach

What is the benefit to state taxpayers from investing in the MA Division of Ecological Restoration?

- Inspired by studies in Oregon, California, MontanaS
- Does MA have a "Restoration Economy"?
 - Job creation
 - Cost of dam removal vs. dam repair; savings to dam owners
 - Tried to quantify ecosystem services; not enough information

Methodology: job creation

- Contracted with IEC, a company with economic analysis expertise.
- IEc examined economic benefits associated with economic activity in MA resulting from restoration projects, including dam removal.
- IEc used IMPLAN, proprietary software: US data plus models; industry standard in the US
- In 2017, DER purchased IMPLAN and now uses it in-house for small studies
- We've examined ~10 projects

Results

- Dam removal creates or maintains 12.5 jobs for every \$1 million spent
- \$1.75 million total economic output for every \$1 million spent
- Similar to road / bridge construction or water infrastructure project construction
- Caveat: these are shortterm estimates based on a model





Why quantify cost savings for dam owners?

- Most dams owned by municipalities, individuals, companies, or NGOs
- Dam removal is a big upfront cost
- Typically takes 5+ years
- Involves working with the government
- Often controversial

Methodology

- Case study approach
- Used three recently completed projects
- Compared cost of removal with cost of inspections; repair; maintenance over 30 years





Results

- For the three case studies, dam removal was 60% less expensive compared with repair and maintenance over 30 years
- Case studies provide useful examples, stories, quotes about costs avoided
- Not statistically significant, but stories are powerful

We use these studies to explain the benefits of dam removal

- To the state legislature
- To the state's fiscal / budgeting agency
- To federal funders
- To potential partners who have interests beyond environmental benefit





Take Home Messages

- Dam removal is voluntary; dam owner chooses to remove or repair
- Incentive funding / technical assistance needed for removal
- DER must constantly make a case for state funding
- Economic studies help us demonstrate impact



Thank you! Beth.Lambert@mass.gov

Eel River Headwaters Restoration, Plymouth