

## **DAM REMOVAL in MASSACHUSETTS**

**A Basic Guide for Project Proponents**



Executive Office of Energy and Environmental Affairs  
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## **Dam Removal and the Wetland Regulations**



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Bureau of Resource Protection  
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[http://www.mass.gov/envir/water/publications/eea\\_dam\\_removal\\_guidance.pdf](http://www.mass.gov/envir/water/publications/eea_dam_removal_guidance.pdf)

<http://www.mass.gov/dep/water/resources/dmpol.pdf>

# Purpose of Guidance

- Encourage improvements to rivers and streams
- Explain major permitting issues associated with dam removal under the Wetland Protection Act



# WPA and Regulations: Provisions for Resource Area Improvement

- Limited Project 310 CMR 10.53(4)
- Traditional mitigation requirements discretionary
- Projects does not need to protect all interests of WPA, but must improve at least one and minimize adverse effect on non-targeted interests



# Dams can Degrade the Environment

- Ecosystem Fragmentation linked to biodiversity decline
- Barriers to fish movement to spawning, nursery or refuge areas
- Impoundments = sink for nutrients & contaminated sediment
- Water Quality Problems (e.g. raise temp., reduce dissolved O<sub>2</sub>, eutrophication)



# Dam Removal can Improve Habitat

- Restore natural movement of water and sediment
- Better temp. and O<sub>2</sub> levels
- Eliminate hazards from floods and release of contaminated sediments



# Bordering Vegetated Wetland

- Wetland systems above dams need to be considered when determining whether or not dam removal would be appropriate .
- Discretionary authority to waive 1:1 replacement
- BVW lost near dam may establish at a lower level or become highly productive riverfront area

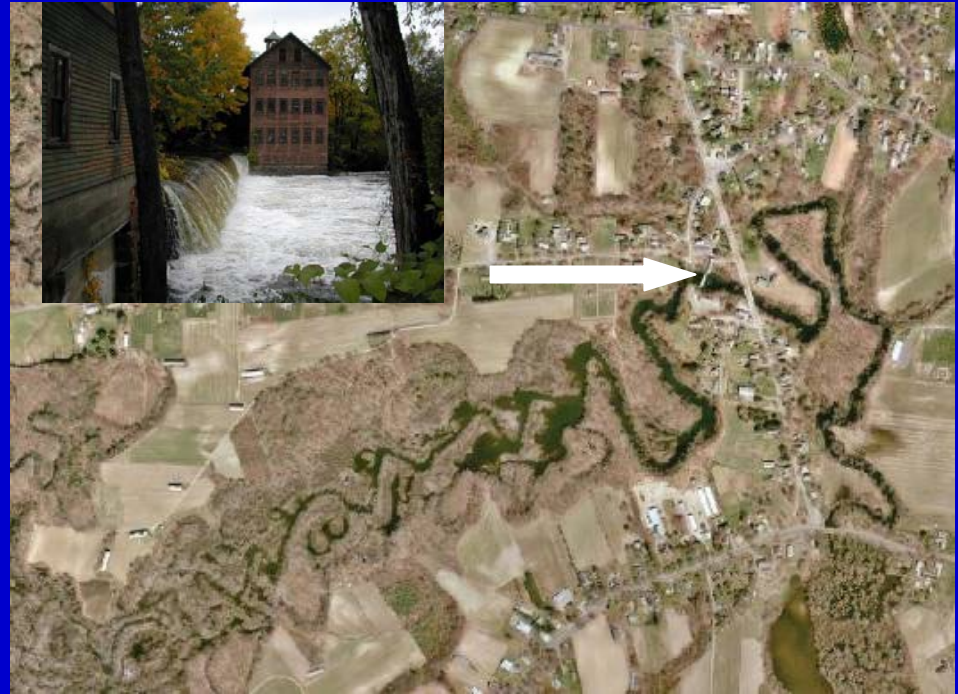


Photo by Scott Jackson, UMass

# Land Under Water

- Elimination of fragmentation of habitat
- Restore thermal regimes for coldwater fisheries
- Improved water quality (impoundments decrease flow + increase water temp).



# Sediment Removal and Disposal Greater than 100 cy

- 401 WQC Dredge Permit Form
- Two steps to determine required sediment analysis (314 CMR 9.07(2))
  - 1) Due Diligence Land Use Review
  - 2) Sieve Analysis for fine grained sediments that have higher potential for chemical contamination





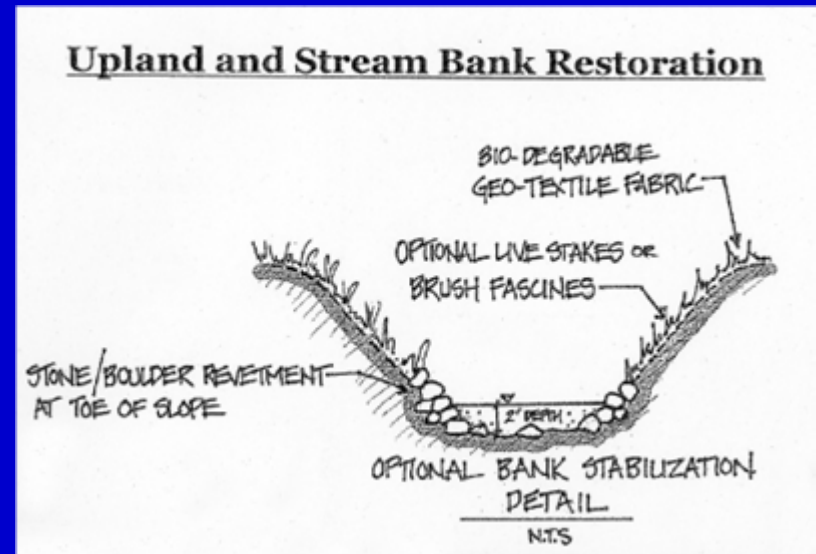
# Staged Removal

- Controls rate of sediment transport
- Slow drawdown of impoundment level – use existing gate or incrementally remove structure
- Check with DFG for time of year restrictions



# Channel Restoration

- Stabilize unvegetated soils
- Slope, cross-section size and shape and meander pattern should fit river system
- Consider bioengineering techniques and grade control until natural recolonization
- Natural succession and revegetation may be adequate in some cases
- Create pools, add boulders, install logs
- Prevent invasives in dewatered impoundment



Example Channel Stabilization

# Permit Applications Include:

- Plan
- Field delineate wetlands near dam
- Use DEP wetland mapping for up and down stream wetlands
- Dewatering details
- Sediment Management
- Channel restoration
- E/S controls
- Consult with DFG for fish salvage plan, time of year restrictions
- Monitor & control invasives
- Monitor infrastructure