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Mapping Dam Removal Success: Lessons from United States Dam Removals

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Mapping Dam Removal Success: Lessons from United States Dam Removals

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U.S. Dams

- NID ~75,000 dams
- Many dams serve important purposes:
  - Water supply (residential, industrial, farm ponds, fire ponds, irrigation)
  - Flood control
  - Hydropower
  - Recreation
  - Navigation
- Even for the largest dams (NID)
  - 14.6% are flood control
  - 2.9% are hydropower
• 13,126 Dams in CT, RI, MA, VT, NH (databases)

• Majority not serving original purpose
Benefits of Dam Removal

- Fish and wildlife passage
- Habitat connectivity (longitudinally and across the floodplain)
- Flow restored
- Water quality (temp/DO)
- Sediment movement
- Nutrient movement
- Eliminate maintenance
- Eliminate liability
- Eliminate hazard/attractive nuisance

Dam removal is a one-time cost and permanent solution!
1,100 U.S. Dams Removed through 2013

Data Considerations
- State reported data
- Information from partners
- States define ‘dam’ differently
- Collecting information since 1998
1,100 U.S. Dams Removed through 2013

# of Dams Removed


0 10 20 30 40 50 60 70 80
1,100 U.S. Dams Removed through 2013

Wisconsin 132
Pennsylvania 255
Pennsylvania Dam Removal Trends

# Dams Removed in PA

![Graph showing the number of dams removed in Pennsylvania from 1982 to 2012.](image-url)
Keys to Success in PA

• Streamlined permitting for dam removal
  – Restoration Waiver and single point of contact for permitting process

• Dam Safety
  – Active dam safety program that encourages removals and holds dam owners accountable for maintenance

• Funding
Keys to Success in PA

- **Strong Project Managers**
  - American Rivers, PA DEP, Land Trusts, etc.

- **Leadership**
  - American Rivers, partners and state actively pursued dam removal

- **Momentum**

- **PA counts and reports dams of all size to American Rivers**

- **Quantity ≠ Quality:** learned valuable lessons about sediment management from early removals
Dam Removal in PA

# Dams removed by basin in PA

- Susquehanna: 110
- Delaware: 71
- Ohio: 54
- Potomac: 4
- Erie: 3
Shifts in Dam Removal in PA

- Pennsylvania
- Susquehanna
- Delaware
- Ohio
- Erie
- Potomac
- Unknown

Year:
- 1982
- 1984
- 1986
- 1988
- 1990
- 1992
- 1994
- 1996
- 1998
- 2000
- 2002
- 2004
- 2006
- 2008
- 2010
- 2012

Count:
- 0
- 5
- 10
- 15
- 20
- 25
- 30
Transferring the Lessons of PA to New England

What has worked in Massachusetts:
• Well publicized near failure of a dam in 2005 lead to stronger dam safety regulations.
• State rivers program shifted focus to restoration and dam removal around the same time.
• Improved and clarified permitting process for restoration.
• Developed and trained project managers.
Replicating Dam Removal in Other States

• Develop a state “Dam Removal Task Force”
• Identify areas for improvement (Dam Safety/Permitting/Project Managers/Funding)
• Share successes and struggles
• Use new prioritization methods to proactively ID new project opportunities
Dam Removal Map Data

- Review your state/watershed and send us information on missing or incorrect data.
- Send American Rivers your dam removal information annually in December.
- Using the data: data requests will be considered on an individual basis. Keep in mind the limits of the data. Requests can be made from our website. Form to be available soon.
Farmington River, Connecticut. Former site of Spoonville Dam.