

'Natural' Riverine Recovery Following Dam Removal

National Conference on
Ecosystem Restoration



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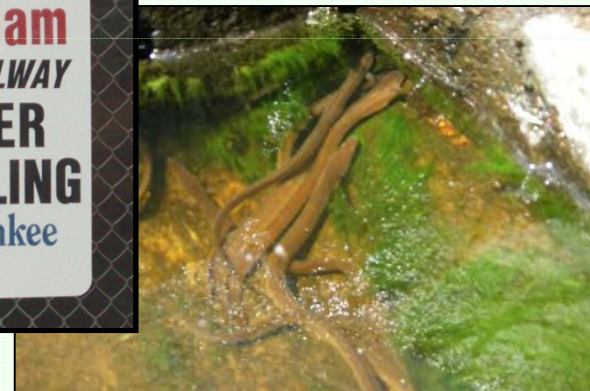
*Montsweag Brook, Woolwich &
Wiscasset, Maine*

One Team. Infinite Solutions



Stantec Consulting Service Inc., August 5, 2011

The Lower Montsweag Brook Dam Woolwich & Wiscasset, Maine



The Chewonki Foundation acquired the dam as part of the Natural Resource Damage Assessment and Restoration (NRDAR) settlement resulting from the former Maine Yankee Nuclear Power Plant that ceased generating electricity in 1997.

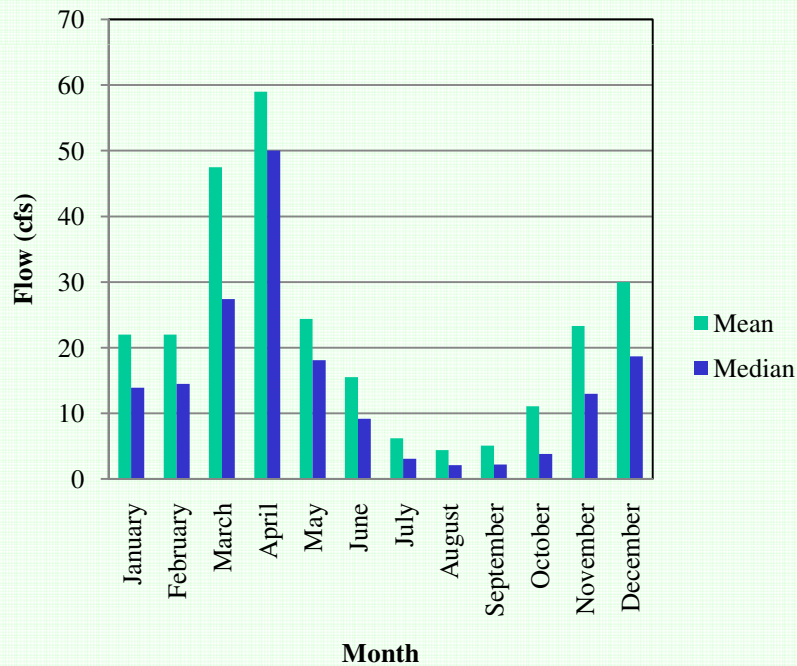
Montsweag Brook Watershed

- 10.5 square miles
- Mixed use with relatively low development density
- Lower dam 300 yards from Route 1 and head-of-tide



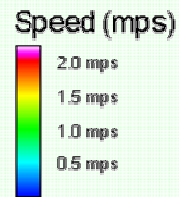
Cascade at upstream limit of impoundment

Monthly Flow Statistics



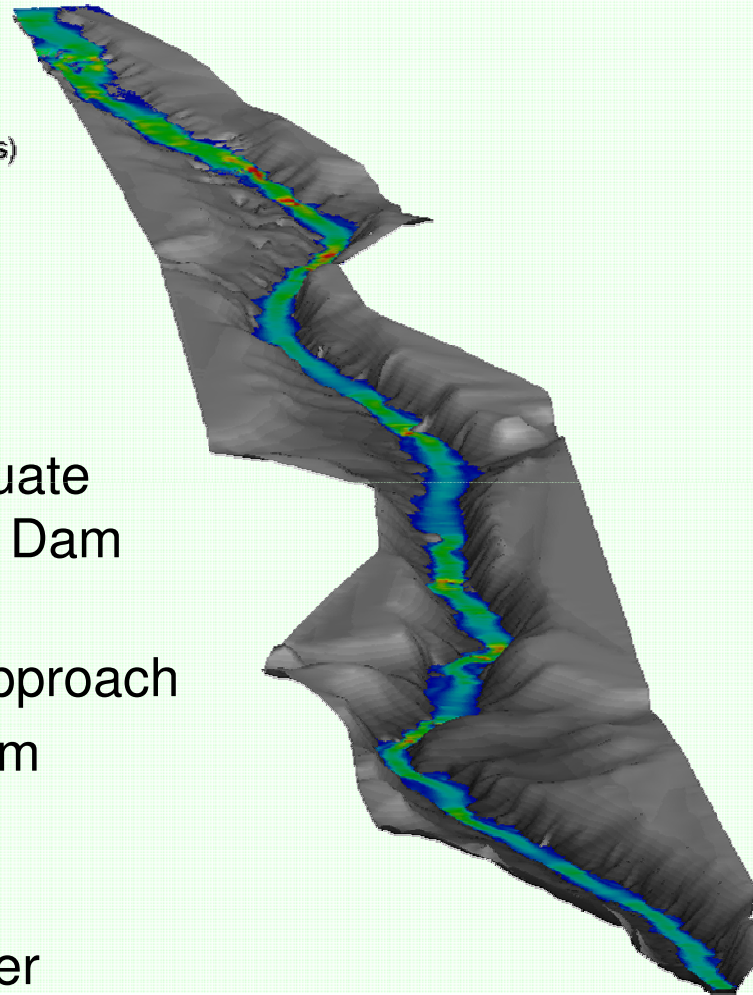
Return-Interval Event (years)	Peak Flow (cfs)
2	626
5	1,036
10	1,356
25	1,798
50	2,157
100	2,542
500	3,536

Design Approach

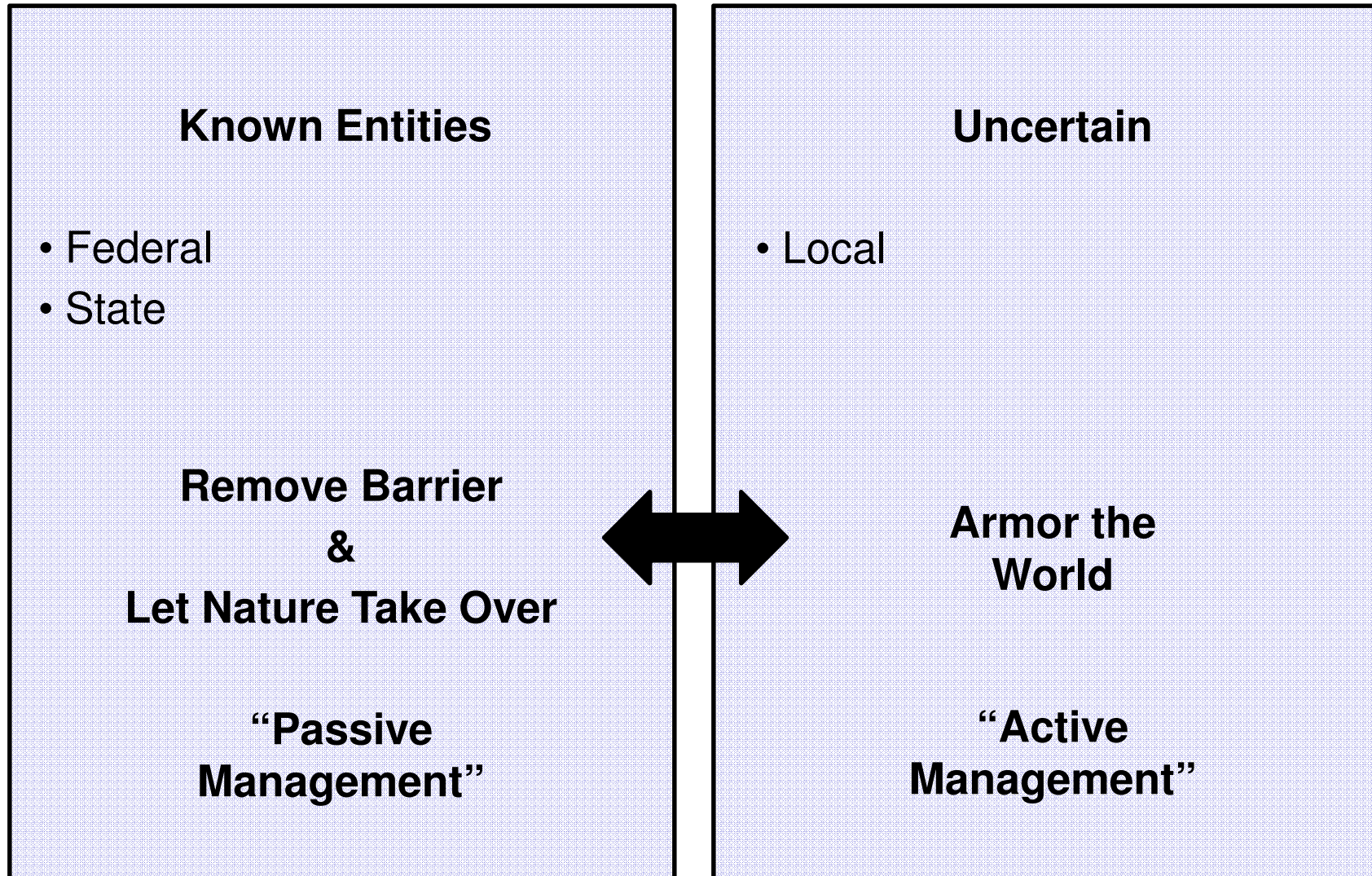


General Approach

- Collect Data & Evaluate Potential Impacts of Dam Removal
- Identify Preferred Approach
- Design & Permit Dam Removal
- Remove Dam
- Let Nature Take Over
- Monitor



Regulatory Environment



Dam Removal Construction (Fall 2010)

Construction Stages

- Partial Drawdown of the Impoundment
- Partial Seeding of the Impoundment (*steep slopes only*)
- Construction of Work Platform
- Demolition of Dam
- Removal of Cofferd Dam
- Let Nature Take Over
- Monitor the Results



Letting Nature Take Over...



Early November 2010 and March 2011 Storms give the site a workout...



Pre- & Post-Construction Observations



Riffle Bar Formation



Channel Adjustment – Depositional Features



Fisheries & Macroinvertebrate Habitat



Woody Debris Movement



Tributary Response



Riparian Zone Revegetation



When is Passive Management Appropriate?

Considerations

- Access
- Infrastructure
- Sediment Quantity, Quality, & In-stream Management Implications
- Geomorphic Context
- Regulatory Environment
- Budget
- Aesthetics



Acknowledgments



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