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## Lessons from Elwha Ecosystem Restoration: Integrating science, policy, and management

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**Speaker**

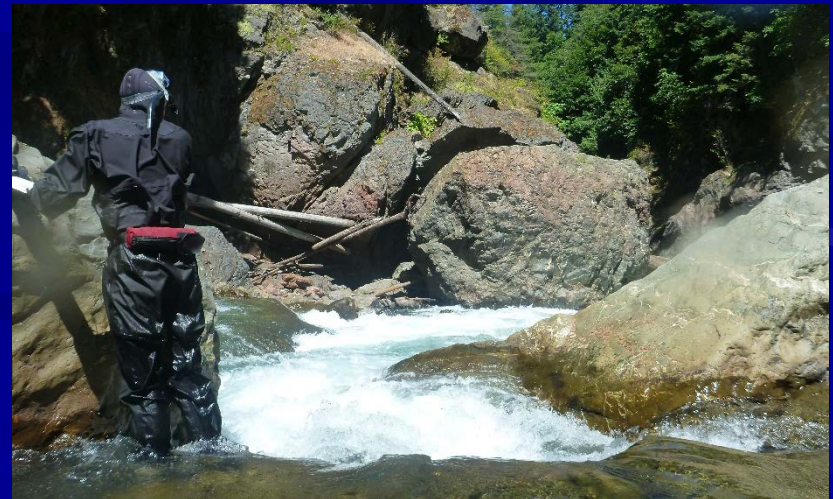
Pat Crain, Mike McHenry, George Pess, Roger J. Peters, Joseph H. Anderson, Sam Brenkman, and Jeffrey Duda

# Lessons from Elwha Ecosystem Restoration: Integrating Science, Policy, and Management

Pat Crain (NPS), Mike McHenry (LEKT), George Pess (NOAA), Roger Peters (USFWS), Joe Anderson (WDFW), Sam Brenkman (NPS), and Jeff Duda (USGS)



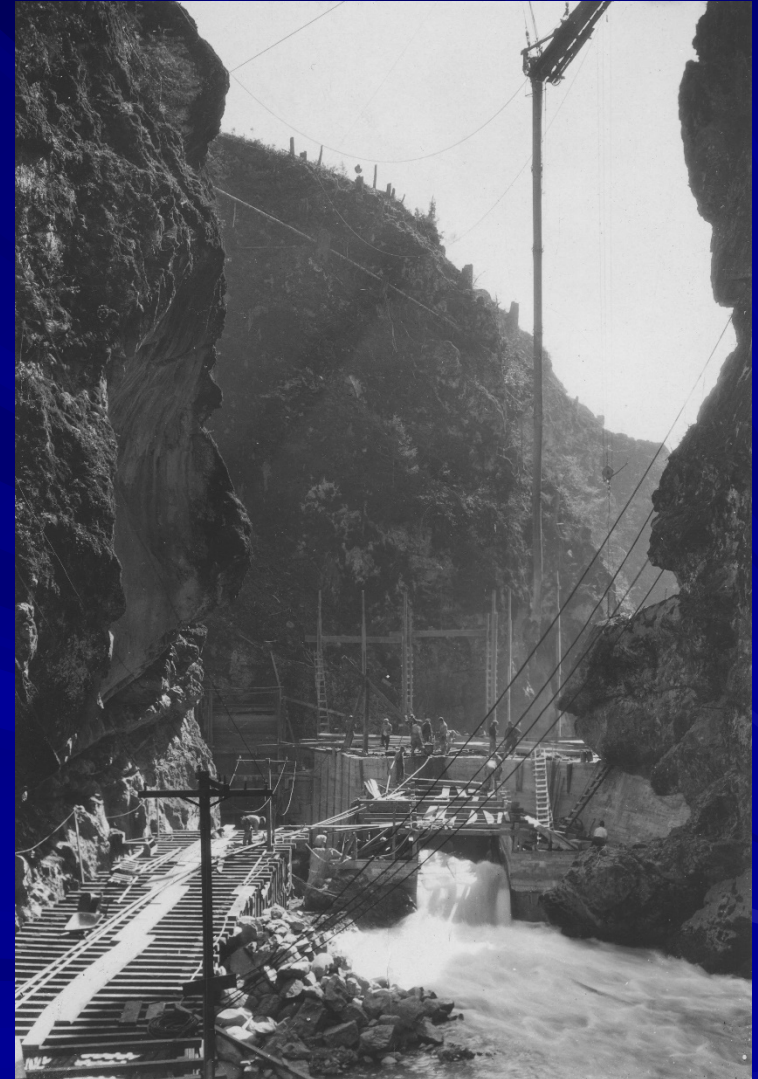
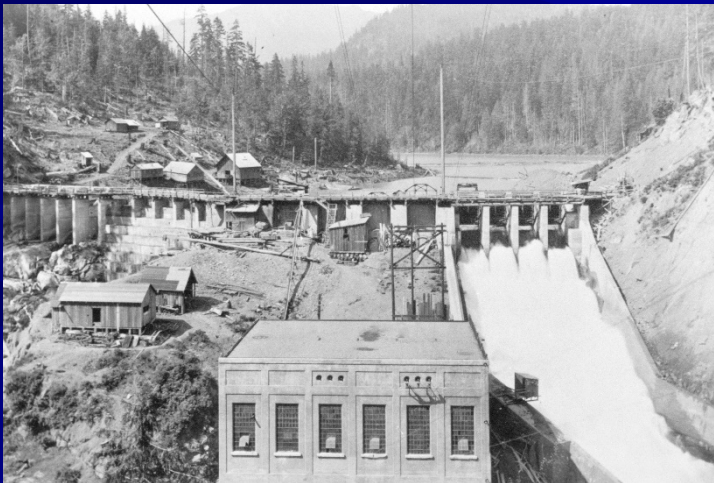
Robert Lundahl and Associates





# Outline

- Elwha Project Overview
- Integrating Science, Policy, and Management
  - Pre-FERC
  - FERC Process
  - Elwha Act/Elwha Report
  - NEPA
  - On-going work
- Lessons Learned





# Elwha River Watershed



<http://www.pc.etc.edu/coe/ind>





## Strait of Juan de Fuca



## Watershed Characteristics

- 832 km<sup>2</sup>
- > 110 km habitat
- 83% in ONP
- 8 runs of salmon and steelhead
- 2 species of native char
- Cutthroat, sculpin, lamprey



# Integrating Science, Policy and Management

## Pre-FERC Process (~ 1913 – 1968)

- Science and Management largely driven by agency policy (e.g. maximize harvest)
- Occasional examples of management informing policy (e.g. Elwha Chinook Program)
- Scientific studies focused on achieving agency goals (e.g. Schoeneman and Jung, 1954)

*Elwha River*



# Integrating Science, Policy and Management

## FERC Process (~ 1968 - 1989)

- Science and Policy largely driven by relicensing proceedings
- Management separated from FERC process.
- FERC encourages cooperation between agencies (JFWA)
- Scientific studies focused on responding to FERC or agency requests for information
- Beginning of long-term cooperative ventures between agencies



# Integrating Science, Policy and Management

## Elwha Act (~ 1989-1994)

- Elwha Act provides congressional guidance across agencies
  - “Full Restoration”
  - Authorization to remove the two dams
- Policy compromises, informed by science, are made in order to reach agreement.
- Science, Policy, and Management begin to be fully integrated, as ecosystem restoration appears to be possible
- Managers begin to have a longer view towards recovery.



# Integrating Science, Policy and Management

## NEPA Process (~ 1995-2006)

- Science, Policy, and Management focused on completion of NEPA process
- Science, Policy, and Management work together to develop a road map for ecosystem recovery
- Specific Management actions taken to achieve restoration goals (e.g changes in harvest and hatchery programs)
- Investigations primarily focused on stock status



# Integrating Science, Policy and Management

## Dam Removal (~ 2007- Present)

- Science, Policy, and Management continue to coordinate achieve restoration goals
- Long term monitoring strategy developed for a variety of metrics (sediment, revegetation, fish, etc.)
- Adaptive Management an integral part of the restoration program
- Unforeseen issues continue to pop up (e.g. passage at dam sites; US/Can negotiations)
- Some independent research underway, but funding for “pure science” limited

# Lessons Learned

- Integration is not assured
- Across and within agency agendas may not align
- Development of a common objective is imperative
- “Turf Wars” are bound to happen
- Effective integration takes much time, patience, coordination, and communication
- IT'S WORTH IT!







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 Nancy Elder  
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 Marshal Hoy  
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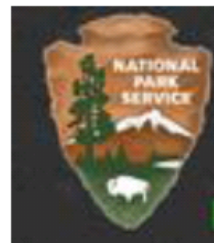
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# To Be Continued...

