



Columbia River Channel Improvements Project

Navigation Improvements and Environmental Restoration





Columbia River Navigation Channel

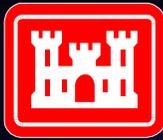




Reconsultation

Endangered Species Act
Consultation/Conferencing on
Aquatic Species





Potential Impacts on the Ecosystem

Alteration of Flow, Salinity, and ETM

Reduce Ability to Function as a Conduit to Ocean

Reduce Sand Transport to Ocean

Dredging Forecast is too Low

Increased Suspended Sediment

Change Bathymetry

Deposit in Spawning Gravels

Redistribute Contaminants

Behavioral/Sub-Lethal Effects of Increased turbidity

Adult Salmoid Migration Routes



Potential Impacts on the Ecosystem Continued

- Contaminant Exposure Pathways
- Alteration the Food Web
- Alter Salmonid Habitat
- Entrainment
- Stranding
- Dredging Window
- Monitoring of Physical and Bio Processes



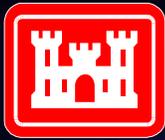
NMFS' Reasons for Reconsultation

- New Information Regarding Impacts of Bathymetry and Flow on Estuarine Habitat
- Resuspension of Toxics

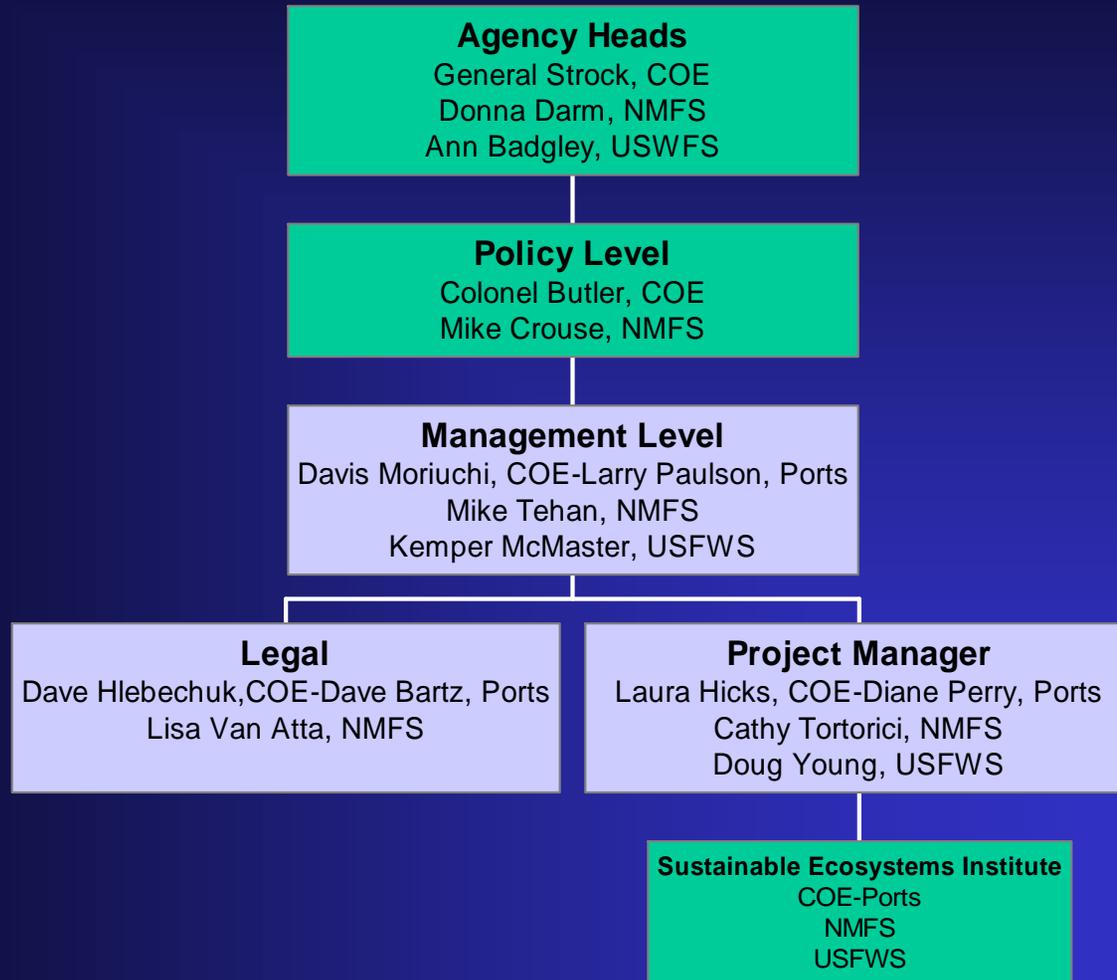


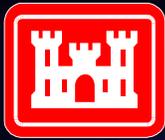
Salmonid Species of Concern

- **Chinook Salmon:** Snake River fall, spring/summer; Lower Columbia fall; Upper Columbia spring; Upper Willamette spring
- **Chum Salmon:** Columbia River
- **Sockeye Salmon:** Snake River
- **Steelhead Trout:** Snake River Basin, Upper, Middle, Lower Columbia; Upper Willamette
- **Coastal Cutthroat Trout**



CRCIP Reconsultation Heirarchy





Endangered Species Act

- 7 a (1) Agencies should use their authorities to carry out affirmative programs to conserve listed species
- 7 a (2) Agency actions shall not jeopardize listed species or adversely modify/destroy critical habitat



Process to Develop Best Available Science

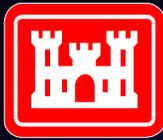
Sustainable Ecosystems Institute (SEI)

- ◆ Public benefit, non-profit scientific expertise
- ◆ Organize independent science panel in order to review project activities and impacts
- ◆ Facilitate panel discussions
- ◆ Open, transparent process
- ◆ Agencies receive the best-available science



Key Workshop Topics

Scale of Analysis for the Project	March 17-18
Physical Modeling	April 28-29
Salmon Ecology	May 15-16
Contaminants and Sediments	June 7-8
Adaptive Management	July 14
Summary	August 28-29



Questionnaire

Panelists generally agreed that the ...

- issues in Document 2 were covered
- modeling was adequate – “best available science”
- estuary was “adequately understood”
- Project could affect shallow, side channel and wetland habitats, though to a limited extent
- Project could have long term indirect and additive effects



Biological Assessment and Biological Opinion

SEI Workshops/Summaries

Numerical Modeling

Conceptual Model

Biological Requirements

Last BO and Administrative Record

NMFS New Information

Other Existing/New Information

**Biological
Assessment**

**Biological
Opinion**



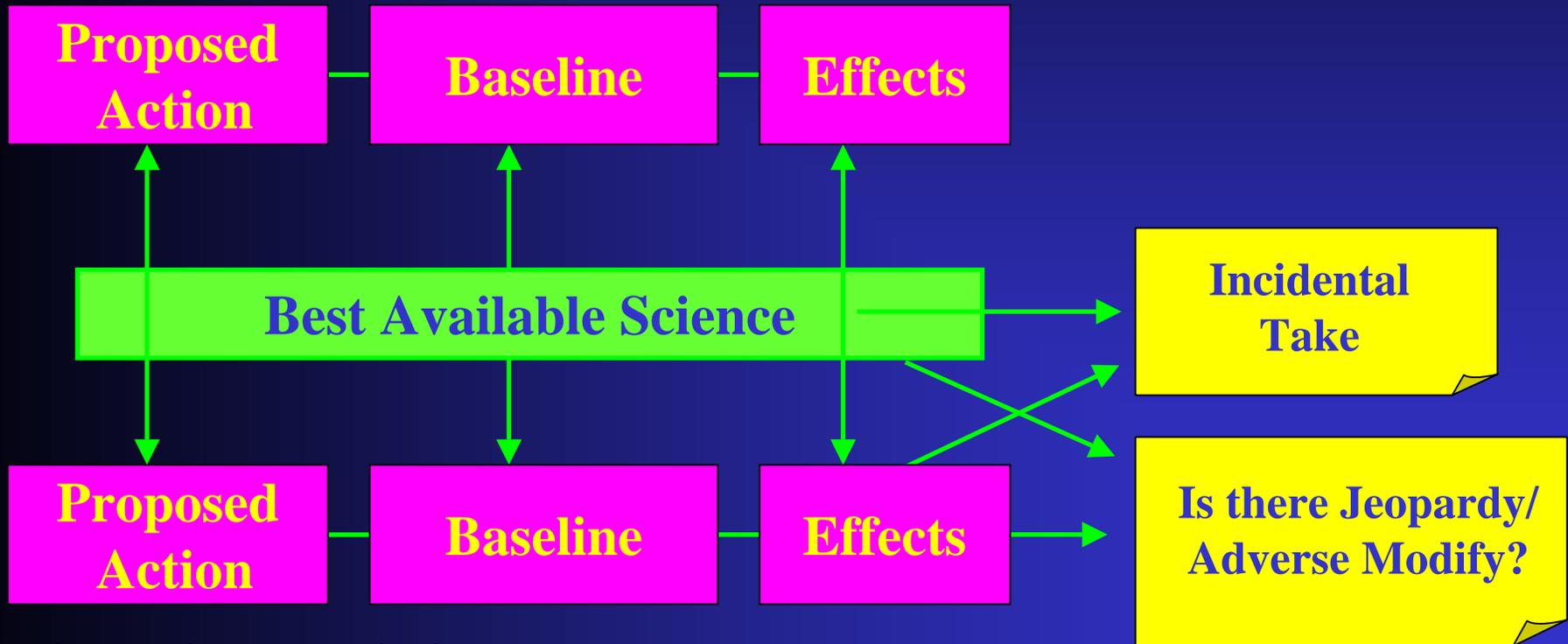
Biological Review Team

- Membership: Corps, NMFS, USFWS, Ports
- "Frontload" Analysis and Negotiations
- Assess Effects of Proposed Action
- Negotiations under 7(a)(1) and (2)
- Assist with Biological Assessment



Consultation/Conference Process

Biological Assessment



Biological Opinion

Potential Project Changes as a Result of Reconsultation



Action

7 a (1)

**Ecosystem Restoration
and Research Actions**

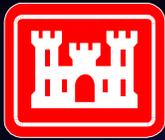
7 a (2)

**Actions Associated with
Dredging and Disposal**

**Research
Restoration**

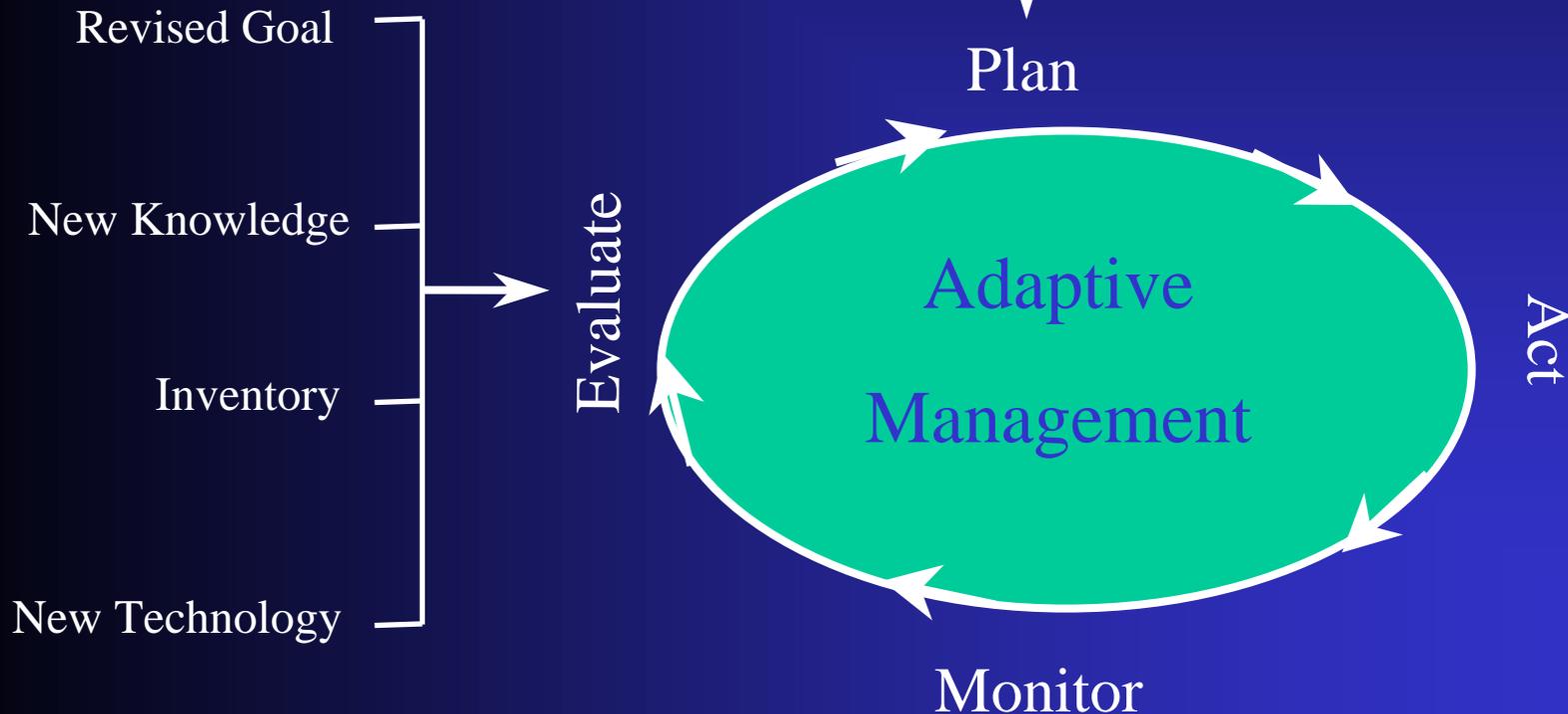
**Compliance
Measures**

Monitoring



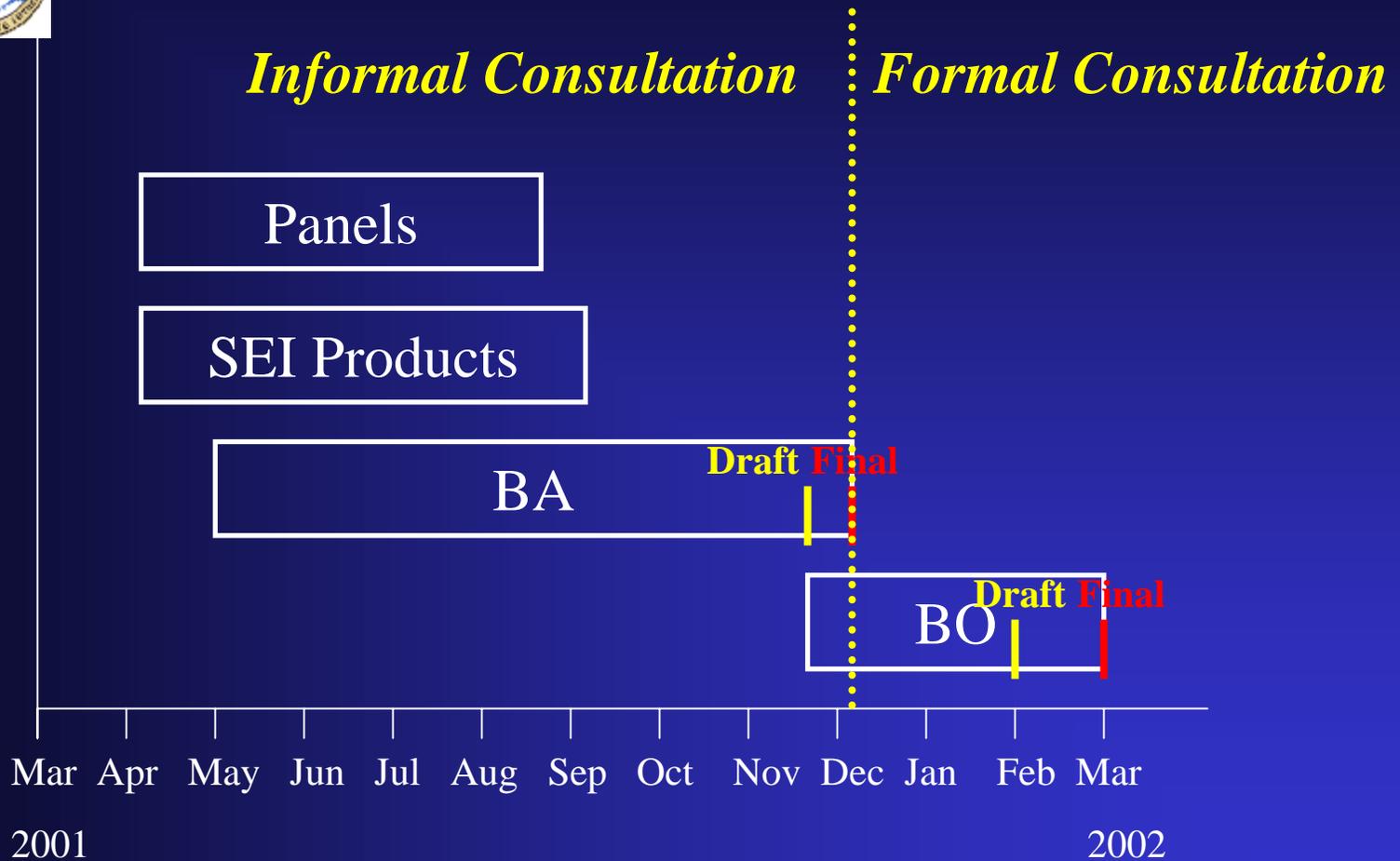
Adaptive Management

Goals Knowledge Technology Inventory





Reconsultation Timeline





Project Requirements

- Reconnaissance Study
- Feasibility Study
- Chief of Engineers' Report
- Congressional Authorization
- ESA Biological Opinion
- Clean Water/Coastal Zone Approvals
- State and Federal Funding
- Record of Decision