

An aerial photograph showing a wide, muddy river flowing through a valley. The river has overflowed its banks, inundating the surrounding land. In the center of the river, there is a large, dark, forested island. The water is a turbid, brownish-grey color. The background shows rolling hills under a cloudy sky.

# Endangered Species Act:

## Federal Nexus and Consultations on Floodplain Mapping

Skagit River flood 1995, Allen Kam, NOAA

# Presentation Overview

- Endangered Species Act; Purpose and Requirements for Consultation
- Biological Opinion Definition and Background in WA and OR
- Columbia River Floodplain Conversion and Species of Concern
- Questions and Discussion

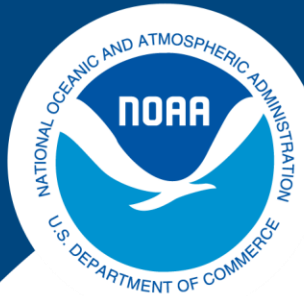


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# Purpose of the ESA:

**“to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved”**

**--- ESA Sec 2(b)**



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# Requirement of the ESA

**“ [E]nsure that any action authorized, funded, or carried out ... is not likely to jeopardize ... species, or result in the destruction or adverse modification of habitat determined to be critical of such species.”**

**ESA Sec 7(a)(2)**

# When is Consultation Required?

When any federal action may affect:

- a species listed as threatened or endangered and/or
- habitat designated as critical for the conservation of a T or E species.

# Types of Consultation

## Informal

When the effects on species or critical habitat are:

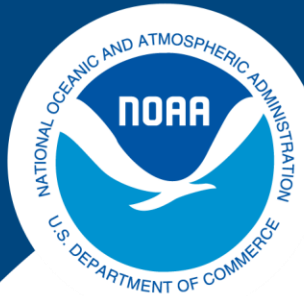
- Discountable
- Insignificant
- Entirely Beneficial
- “NLAA”

## Formal

When the effects on species or critical habitat are:

- Likely
- Adverse
- “LAA”





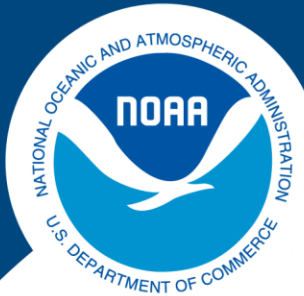
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# Formal Consultation

**First – Evaluate the project’s adverse and beneficial effects on individuals of the listed species, and on habitat features, and how individuals respond to habitat changes.**

**Second – Evaluate how the adverse and beneficial effects alter the function of the habitat that supports individuals of the listed species, and conservation value.**

**Product – Biological Opinion**



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# Formal Consultation

**It is NOT a balancing analysis.**

If adverse effects occur at all, formal consultation is required, regardless of net benefit in the long run.



# What is a Biological Opinion?

- During formal consultation, the Service and the agency share information about the proposed project and the species likely to be affected. The project may be revised during these discussions to reduce effects. Sufficiently reduced effects can produce NLAA conclusion to consultation.
- Formal consultation may last up to 90 days, after which the Service will prepare a **biological opinion on whether the proposed activity will *jeopardize* the continued existence of a listed species**. The Service has 45 days after completion of formal consultation to write the opinion.
- No J/No Admod => Take Statement & Terms/Conditions;  
Jeopardy/Admod => Reasonable and Prudent Alternative & Take Statement

# NFIP Consultation in Washington

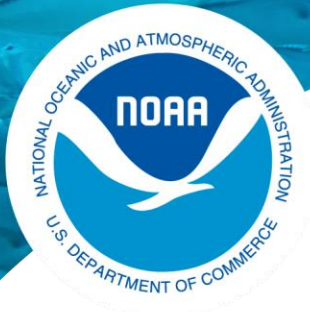
- **2003** – National Wildlife Federation Sued FEMA for failure to consult on the effects of the NFIP on listed species in Puget Sound
- **2004** – Court Ruled that FEMA has discretion, therefore must consult
- **2006** - FEMA provided Biological Evaluation stating NFIP “may affect habitat/species” but not adversely. NMFS did not concur
- **2008** –National Marine Fisheries concluded biological opinion, found Jeopardy/Adverse Modification. A Reasonable and Prudent Alternative (RPA) was negotiated to modify NFIP implementation by local gov'ts in 122 NFIP participating communities in Puget Sound
- **2012** – NWF sued for Summary Judgment against FEMA because its RPA implementation was not avoiding jeopardy
- **2014** – Federal District Court ruled the RPA is drafted so flexibly that FEMA's implementation is not Arbitrary or Capricious

# NFIP Consultation in Oregon

- **2009** – Multiple parties sued FEMA non compliance with the ESA for not consulting with NMFS on the impacts of the NFIP on listed fish species in Oregon, statewide (Section 7 a 2) and failing to meet its federal obligation to conserve listed species (Section 7 a 1).
- **2010** – FEMA settled by agreeing to consult to determine the impacts of the National Flood Insurance Program (NFIP) on 15 salmon and steelhead species that are listed as threatened or endangered under the ESA. At issue: 1) Mapping, 2) Minimum NFIP Criteria, 3) Community Rating System.
- **2011** – FEMA provided a Program Level Biological Assessment (PLBA) on a revised NFIP implementation for Oregon, based in part on the Washington RPA. FEMA determined their action NLAA. NMFS did not concur.
- **2013** – In September, NMFS draft biological opinion concludes Jeopardy/Adverse Modification. Draft RPA is provided. Negotiations begin.
- **2014** – In December NMFS informally releases a redrafted RPA, for further review and comment. It requires FEMA to revise mapping protocols, development standards for floodplains, and has monitoring, reporting, compliance benchmarks, and required enforcement standards.

# 2014-15 Actions affecting Levees and Flood Mapping Oregon and Washington

- 2014-Water Resource Reform and Development Act (WRRDA) directed the Corps to carry out a **comprehensive review of its Levee Vegetation Management plan for both protection of species habitat and public safety.**
- 2015-Significant **revisions to the 2013 RPA will be formally provided to FEMA**, are currently in predraft form for review.



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- West Coast Region

## Why are Floodplains an ESA Concern?

**Floodplains are fish habitat when they are inundated:**

- “[T]he Yolo Bypass, the primary floodplain of the lower Sacramento River (California, USA) provides better rearing and migration habitat for juvenile chinook salmon (*Oncorhynchus tshawytscha*) than adjacent river channels...salmon increased in size substantially faster in the seasonally inundated agricultural floodplain than in the river .”



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Juvenile Chinook  
mainstem rearing

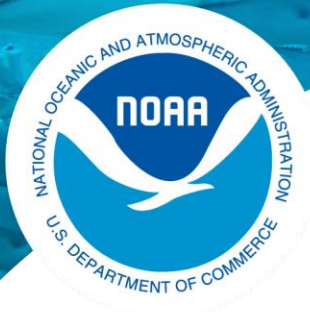
Juvenile Chinook  
floodplain rearing



Fig. 7 Comparison of a single enclosure of fish reared in intertidal river habitat below floodplain (*left*) and a single enclosure of fish reared in the floodplain vegetation (*right*) after 54 days in respective habitats at the end of the second year of the study

Photo from “Ephemeral floodplain habitats provide best growth conditions for juvenile Chinook salmon in a California river” Jeffres et al 2008





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- **West  
Coast  
Region**

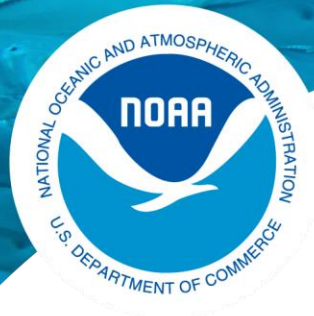
## Why are Floodplains an ESA Concern?

**Floodplains provide important functions for fish even when NOT inundated:**

“Floodplains perform a variety of essential functions including...groundwater recharge [reduces frequency of and duration of low flows], wave attenuation, stream bank erosion control, reduction in sedimentation rates, water quality maintenance [filters impurities in runoff, moderates temperature fluctuations] and support of highly productive ecosystems.



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## In the Columbia River Estuary

Approximately 24,000 acres of  
estuarine habitat was converted to  
developed floodplain between 1870  
and 1983



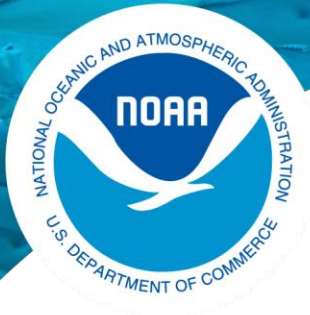
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# What Species Are Affected by This?

- Lower Columbia River Steelhead
- Lower Columbia River Coho
- Columbia River Chum
- Lower Columbia Chinook
- Eulachon
- Green Sturgeon
- Mid Columbia Steelhead
- Upper Columbia Spring Run Chinook
- Upper Columbia River Steelhead
- Snake River Sockeye
- Southern Resident Killer Whales





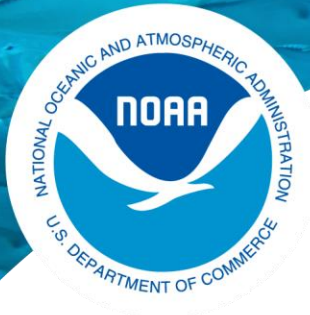
## **NOAA FISHERIES**

**West Coast  
Region**

# **Why are Flood- Related Erosion Zones a Concern?**

- **Because riverine erosion and channel migration create complex habitats for salmonids:**
- “Hydrogeomorphic processes within alluvial river systems create, maintain and degrade riparian habitat. The dynamic interactions between water, sediment, aquatic–terrestrial landforms and biotic elements control the functional processes and biodiversity patterns within the riparian zone and, thus, contribute directly to their ecological integrity and societal value.”





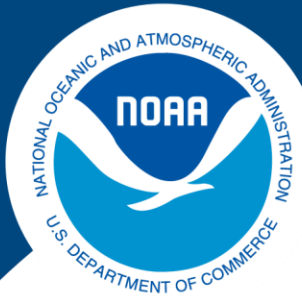
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## Why is FEMA Mapping a Concern?

- We need to know with accuracy where the floodplain habitat is located; we need to know with accuracy where habitat process remain
- FEMA Insurance and Regulatory Provisions come into effect in mapped floodplains, and flood related erosion zones





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# Why are Levees a Concern?

1. They are designed to keep water in the river, and off the floodplain. This disconnects fish from their habitat (impairs survival).
2. Once a levee is certified as providing 100 year protection (Corps standards), it can be accredited as providing sufficient flood protection that areas behind the levee no longer are part of the floodplain. This removes insurance and development criteria (impairs recovery).



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# Have there been Consultations on Levees?

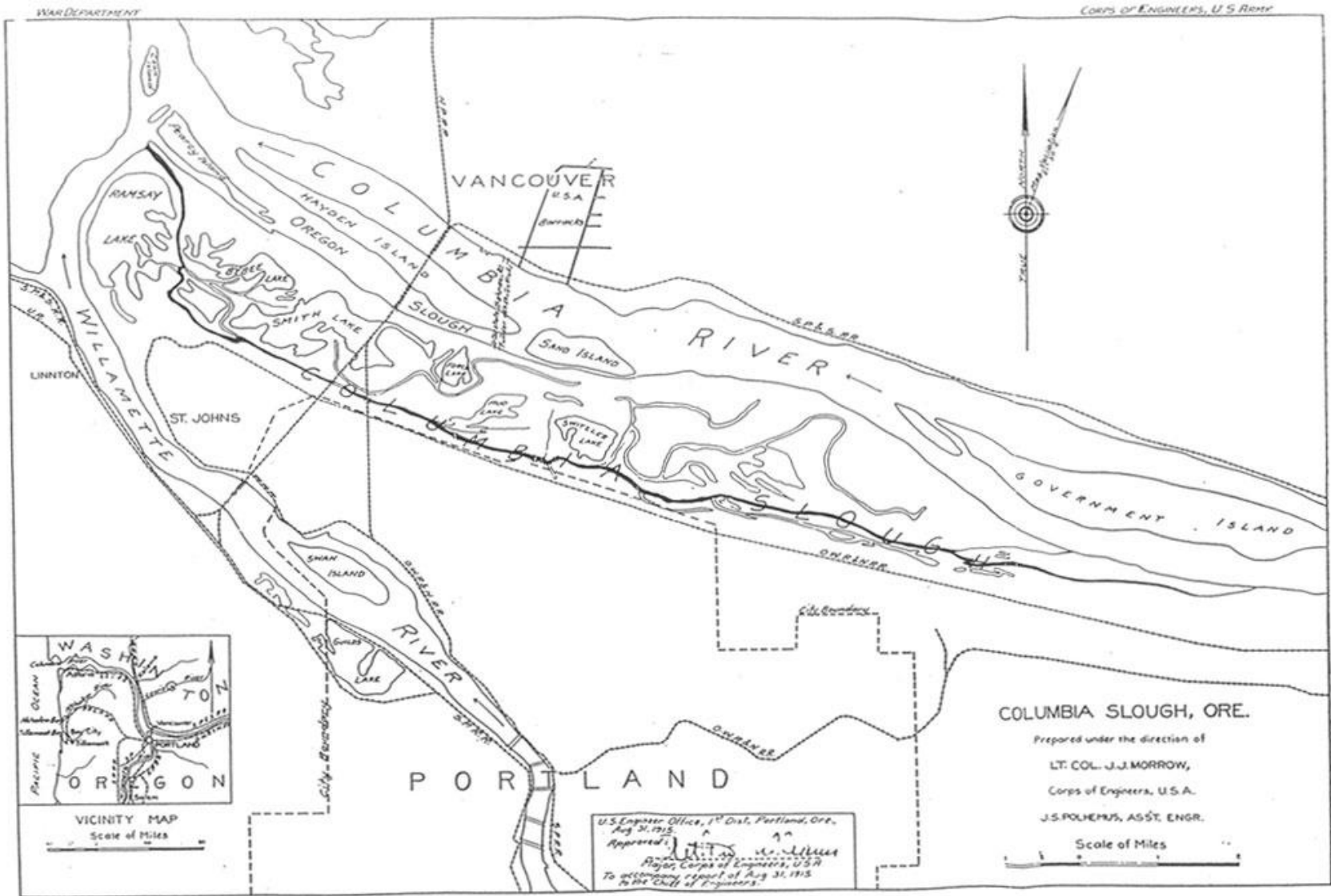
**YES, quite a few, most in Washington, one in Oregon.**

In Washington: Green River; Skagit River; Nooksack River, Puyallup River. Some have reached Draft Jeopardy, and then the Corps renegotiated design, location, vegetation maintenance, or mitigation.

In Oregon: Milton Freewater, levee improvement to avoid FEMA floodplain designation behind the levee.



Willamette River flood 1996 – wikipedia (this is surprisingly good habitat)








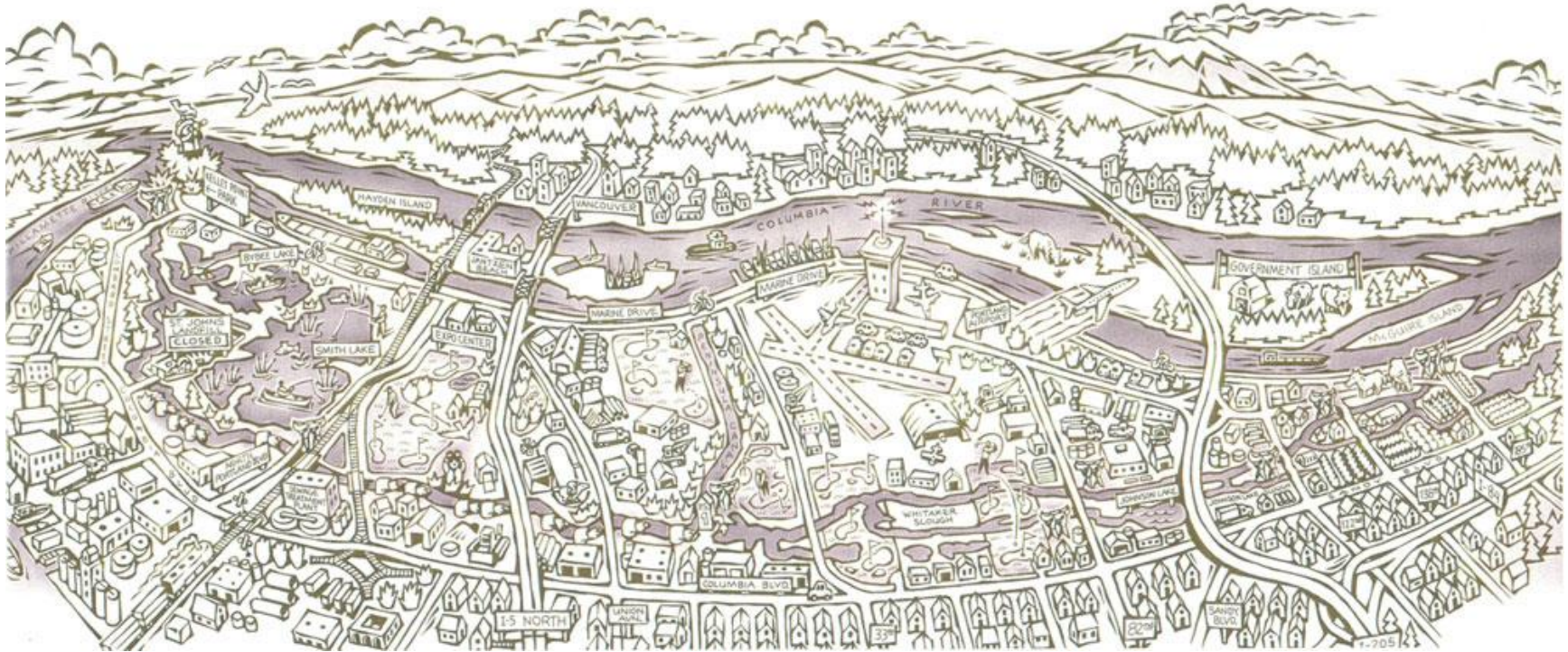
Columbia Slough Map, 1915

Center for Columbia River History

# The Columbia Slough

Legend:

	Good Birding		Recreational Fishing
	Golf Course		Combined Sewer Outfall
			Canoe Access





Various species have been rendered extinct “as a consequence of economic growth and development, untempered by adequate concern and conservation.”  
The ESA was enacted to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved  
ESA Sec 2(a)(1), 1973





# Extra Background Slides

# Individuals v. populations v. species:

- The extinction process usually progresses through phases
- Populations and species will have different symptoms of decline at different phases
- The extinction process affects populations and sub-populations first
- Once a sufficient number of populations have been affected, the extinction process appears at the level of species or sub-species

