



# Puget Sound NFIP BiOp: Benefits for Public Safety and the Environment

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National Wildlife Federation

Northwest Regional Floodplain Managers Association  
September 16, 2009



# Why Does National Wildlife Federation Care about Floodplains?



# National Wildlife Federation

- Mission:
  - Inspire Americans to protect wildlife for our children's future
- Members:
  - 4 million members; 48 affiliates
  - Hunters; anglers; gardeners; outdoor enthusiasts
  - Republicans and Democrats
- Strengths:
  - Science, policy, education, grassroots mobilization, litigation



# NWF's Focus

- Drivers:
  - Confront global warming (mitigation)
  - Safeguard wildlife from the impacts of climate change (adaptation)
  - Connect people with nature
- Climate Change is the most urgent threat to fish, wildlife, and the natural resources they need to survive



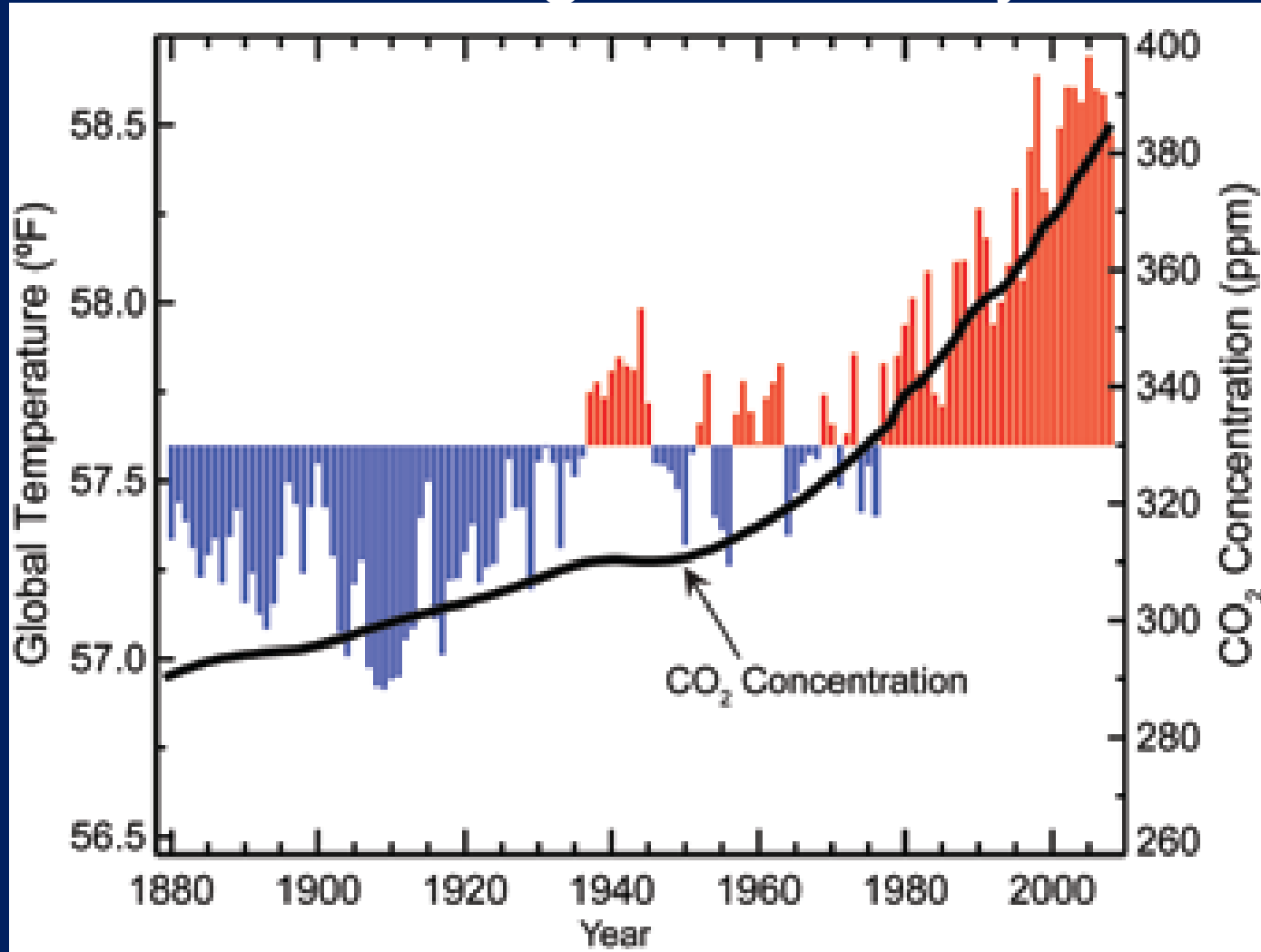
# Floodplains = Habitat

## ESA Listed Species:

- Puget Sound: Salmon, steelhead and Orca
- Florida: Key Deer
- Oregon: Salmon
- California: Delta smelt, salmon, steelhead
- Atlantic coast: sea turtles
- Arizona: jaguar; southwestern willow flycatcher; razorback sucker
- Hawaii: Shorebirds, turtles, monk seal



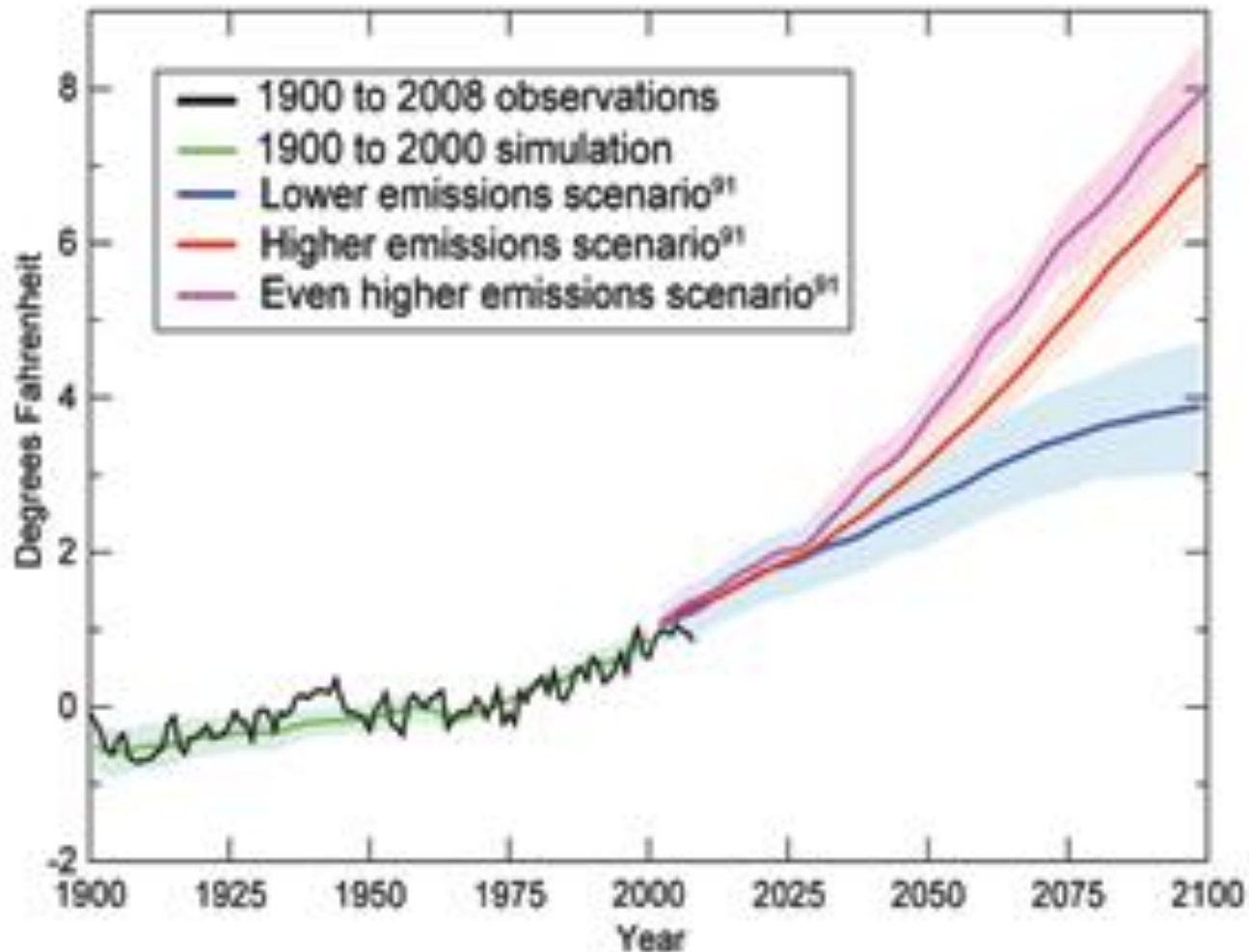
# Climate Change is Already Affecting Us



Temperature has risen 1.5° since 1900

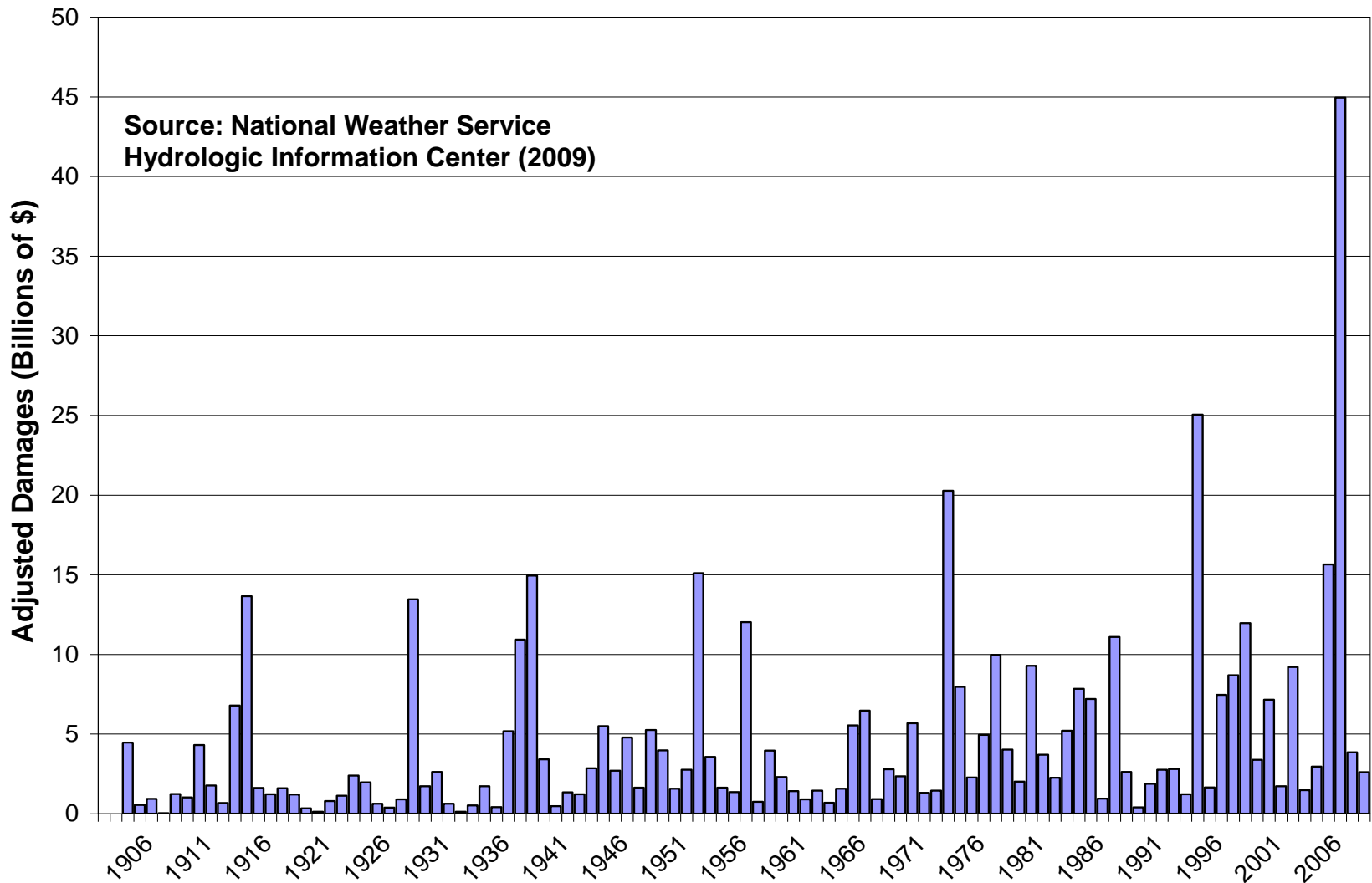
Global Temperature and CO<sub>2</sub>

# Temperature will rise 2° to 11.5°F



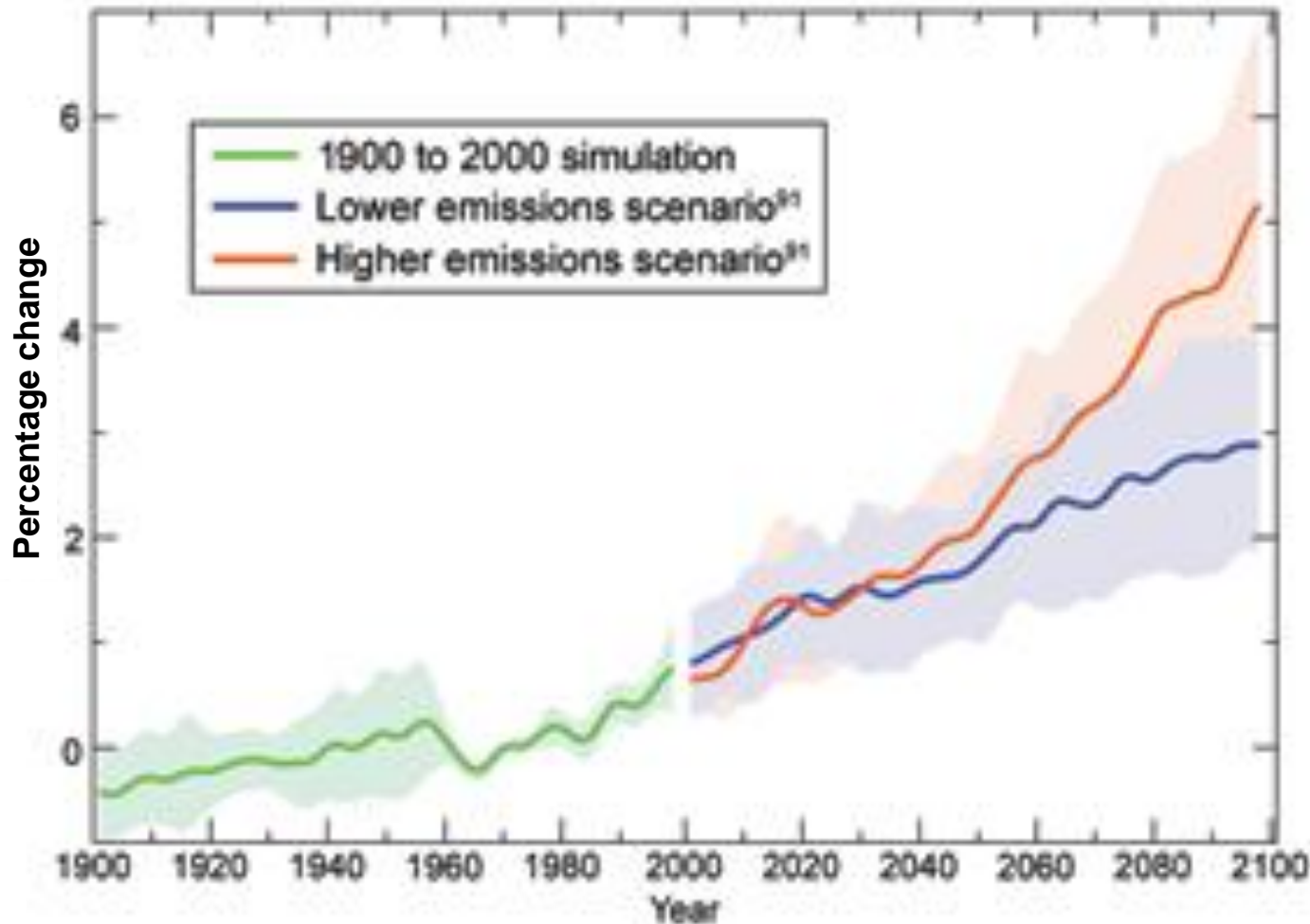
Changes are relative to the 1960-1979 average

# Annual Flood Damages are Increasing





# Heaviest 5% of Precipitation Events are Increasing



Projected changes in precipitation falling in the heaviest 5 percent of daily events.

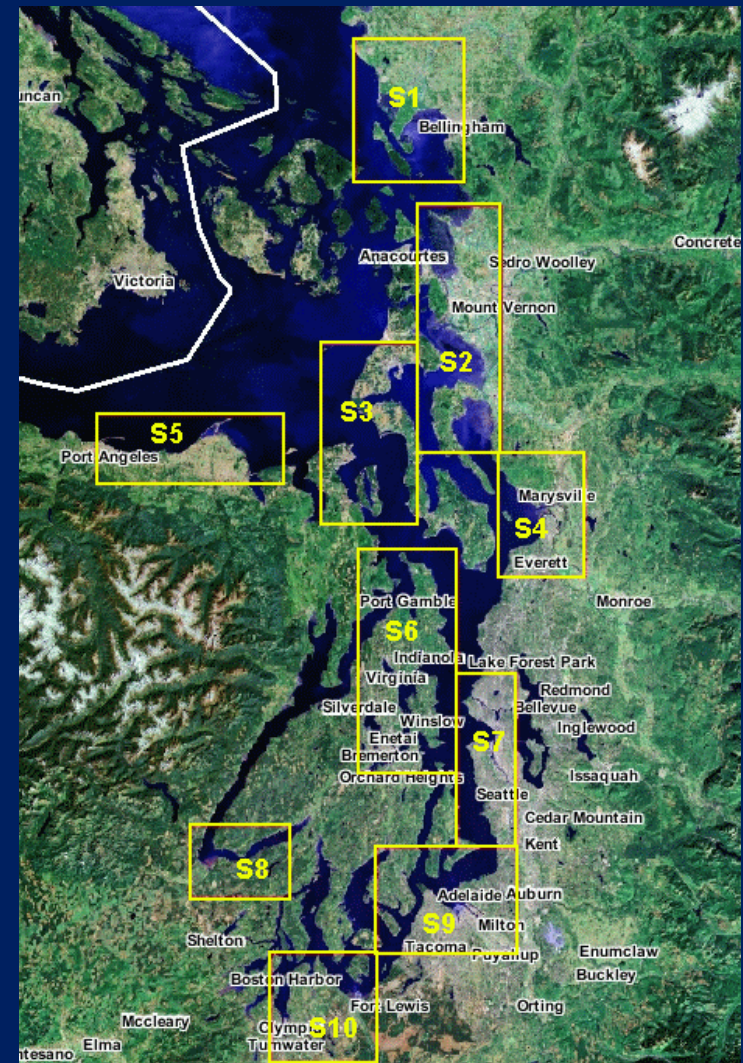
Changes are relative to the 1960-1979 average.

# Sea Level Rise will Cause Drastic Habitat Loss in Pacific NW

Source: Glick, NWF, 2007

## Scenario: 27.3 inches by 2100

- 65% loss of estuarine beaches
- 44% decline in tidal flats
- 13% loss of inland fresh marsh
- 25% loss of tidal fresh marsh
- 12% loss of swamp
- 52% loss of brackish marsh
- Loss of 1.5 million acres of undeveloped dry land



# Projected Sea Level Rise around San Francisco Airport (SFO)

**Light Blue:** Area Vulnerable to an approx. 16 in sea level rise by mid century

**Dark Blue:** Area Vulnerable to an approx. 55 inch sea level rise by end of century



**Source:** 2009 California Climate Adaptation Strategy Discussion Draft

# Federal Climate Change Policy

- **Bush Years:** Don't acknowledge it; Don't integrate it into plans.
- **Now:** Plans are not credible if climate isn't addressed; Must plan for impacts.
- Climate Change is about risk

# National Flood Insurance Program



## Purposes:

- Make flood insurance available on nationwide basis
- Guide development away from flood hazard areas
  - State and local regs
- Reduce Federal expenditures for disaster assistance and flood control.

# How NFIP Works

- Provide flood insurance at reasonable rates to communities that *choose* to participate
  - Quid Pro Quo for insurance: sound floodplain management; landuse controls – reduce flood risk
- FEMA sets minimum criteria for NFIP participation
  - 90% of PS communities meet only minimum criteria
- NFIP actually subsidizes and encourages development in Floodplains
  - Most development in coasts and floodplains dependent on NFIP insurance
- Result has been massive development of coasts and floodplains; increased flooding and costs
  - NFIP debt is \$19 Billion and climbing

# Flooding / NFIP Facts

- 11 flood disaster declarations in King Co. since 1990
  - January 2009 Floods: 23 PS rivers flooded; 4 record floods
- Interstate 5 closed twice in 2 years
  - Dec. 2007: I-5 closed 4 days; \$62 mil. Road repair; \$47 mil freight impacts
- 10.3 Sq. miles of floodplain lost every year in Puget Sound
- King Co. is a CRS Class 2
  - Highest Rated County in Nation

# Interstate 5 Flood Damage Chehalis, Dec. 2007



Photo: THE OREGONIAN/Bruce Ely

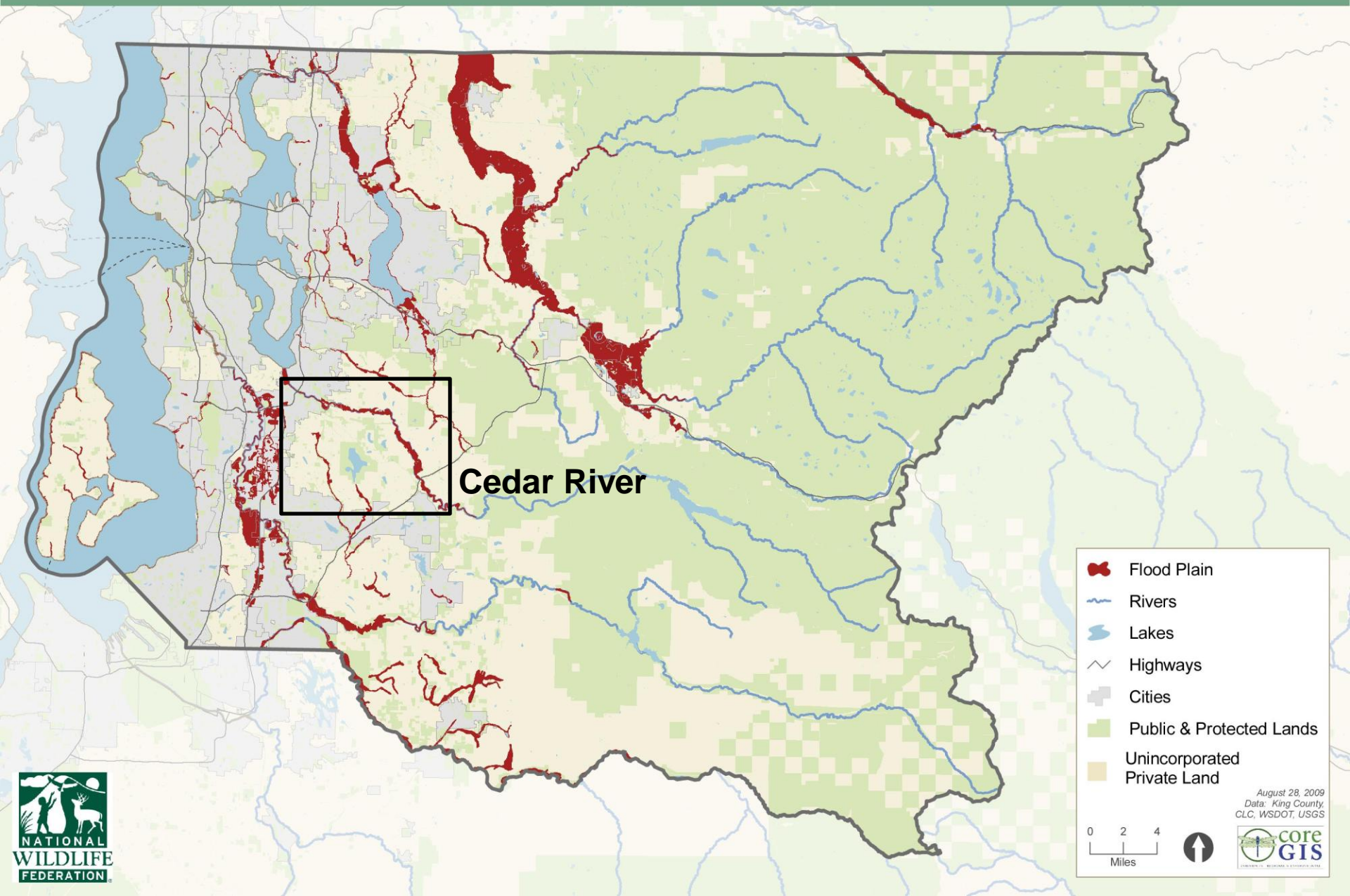


# Puget Sound



# King County Floodplains

2006 FEMA DFIRM



Cedar River

- Flood Plain
- Rivers
- Lakes
- Highways
- Cities
- Public & Protected Lands
- Unincorporated Private Land

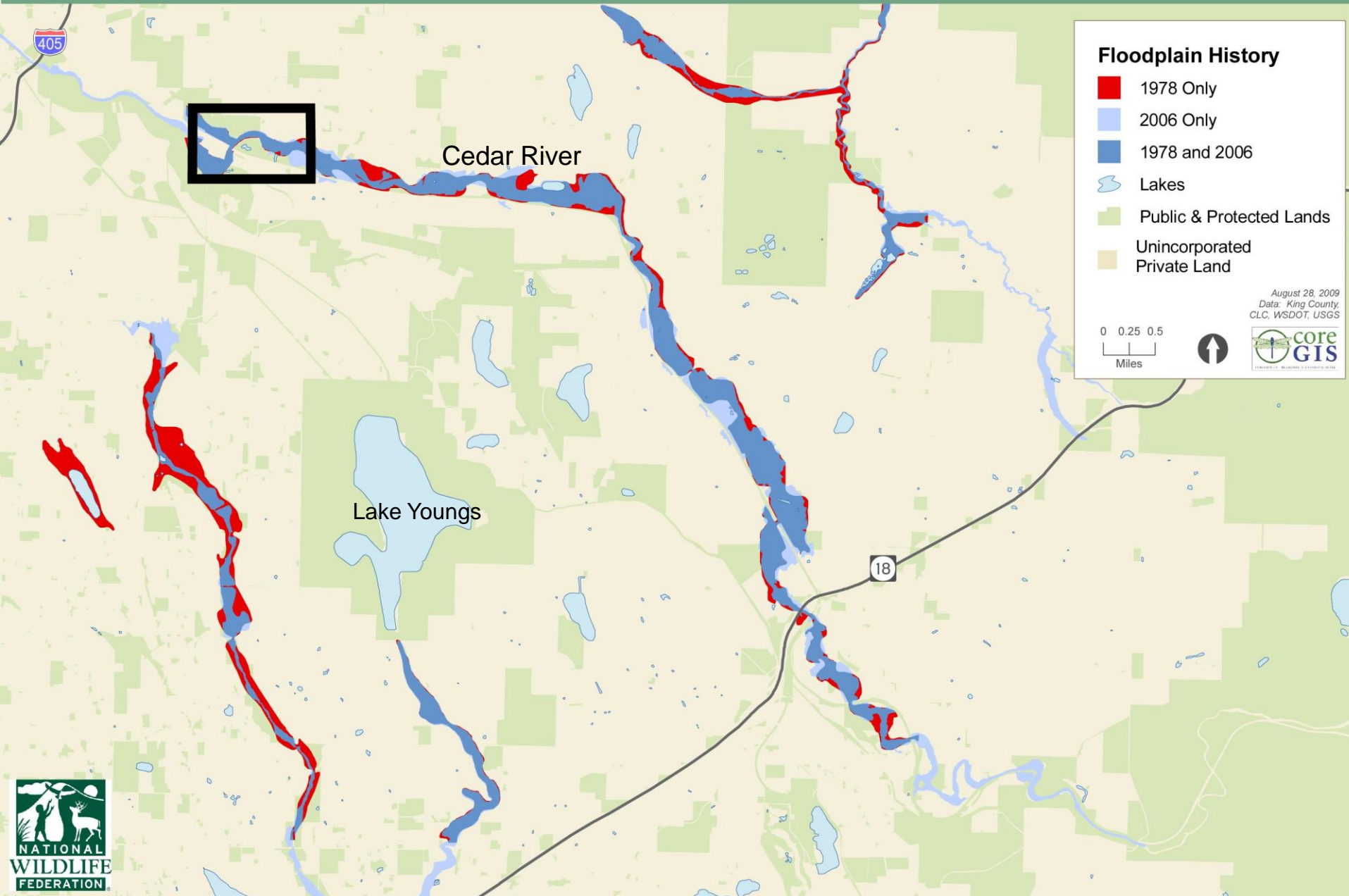
0 2 4  
Miles

August 28, 2009  
Data: King County, CLC, WSDOT, USGS



# Cedar River and Vicinity Floodplain History

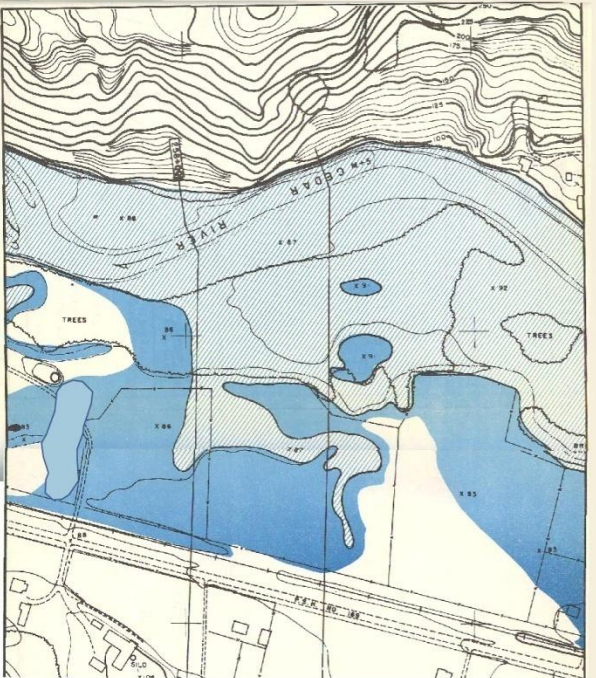
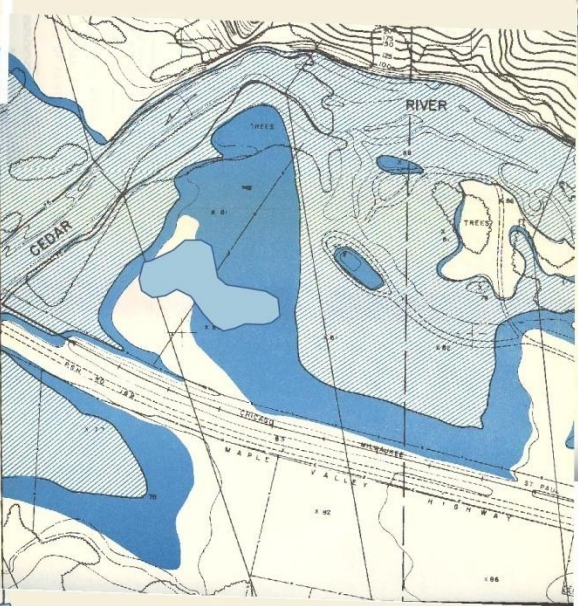
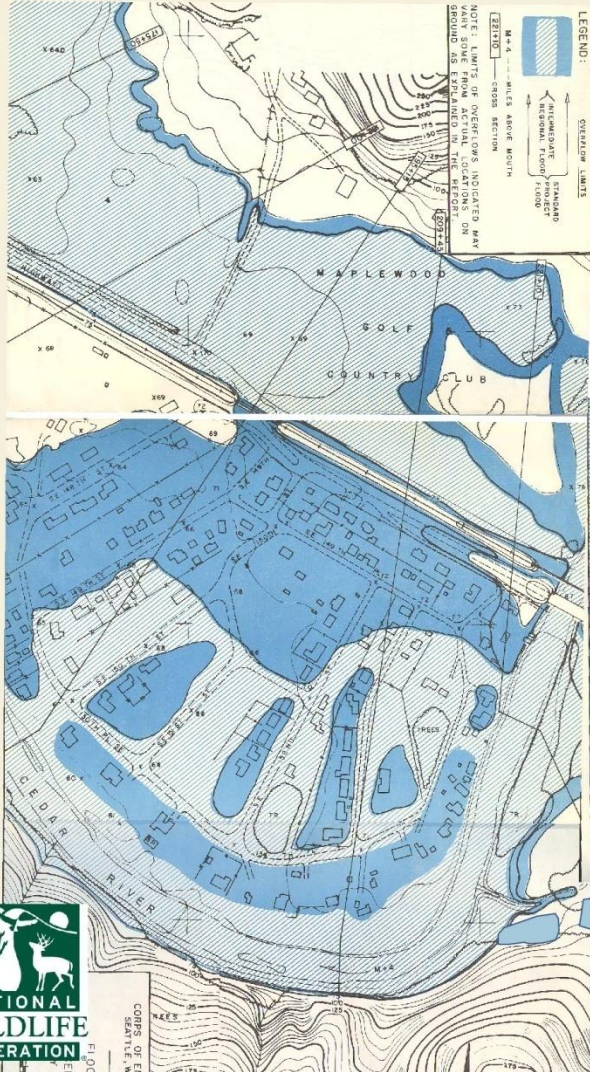
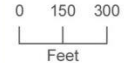
1978 HUD, 2006 FEMA



# Cedar River East of Renton Floodplain History

## 1969 USACE Original Maps

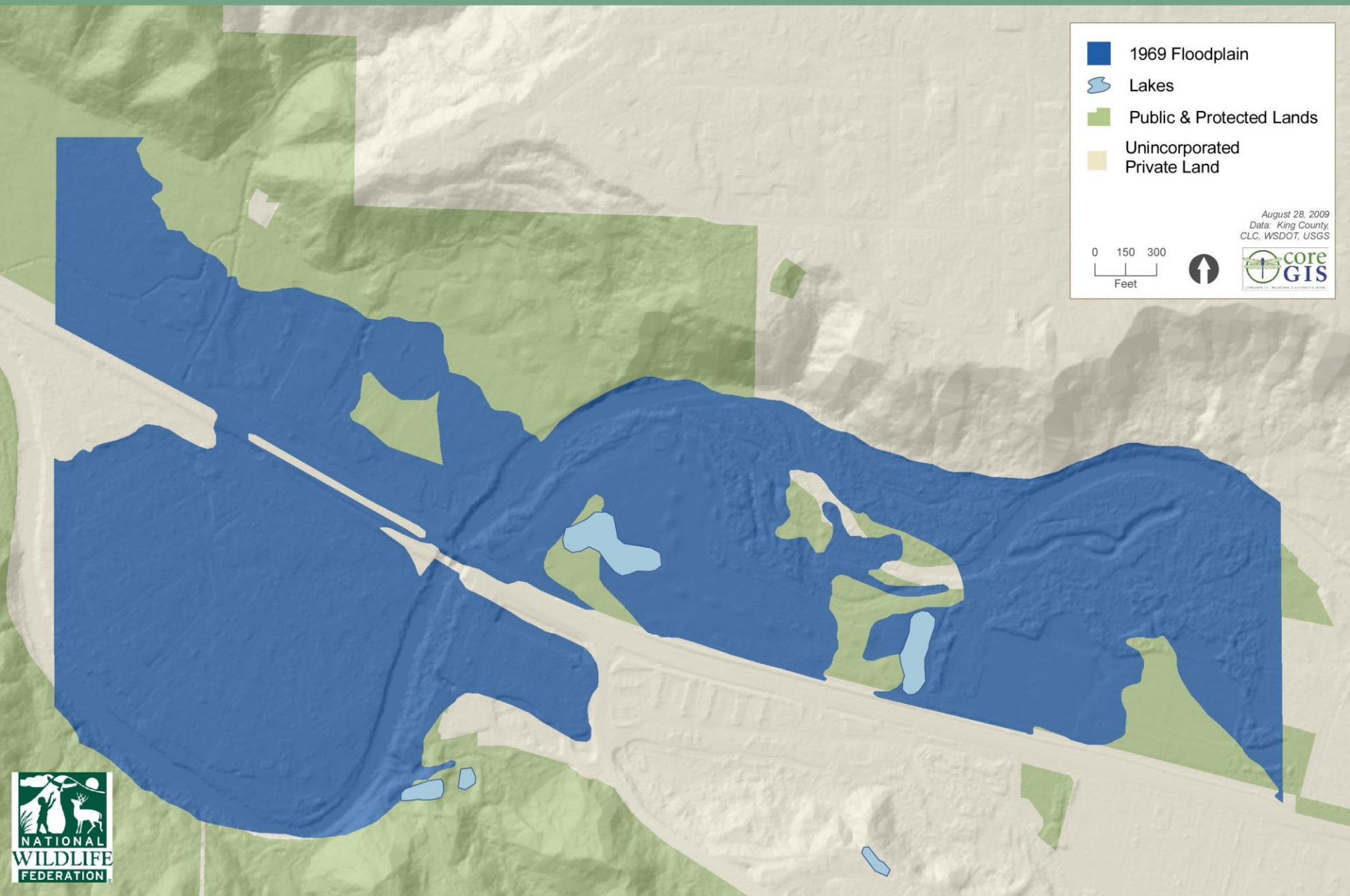
August 31, 2009  
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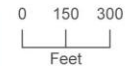
ENGINEERING  
CORPS OF ENGINEERS  
SEATTLE, WA

# Cedar River East of Renton Floodplain History

1969 USACE

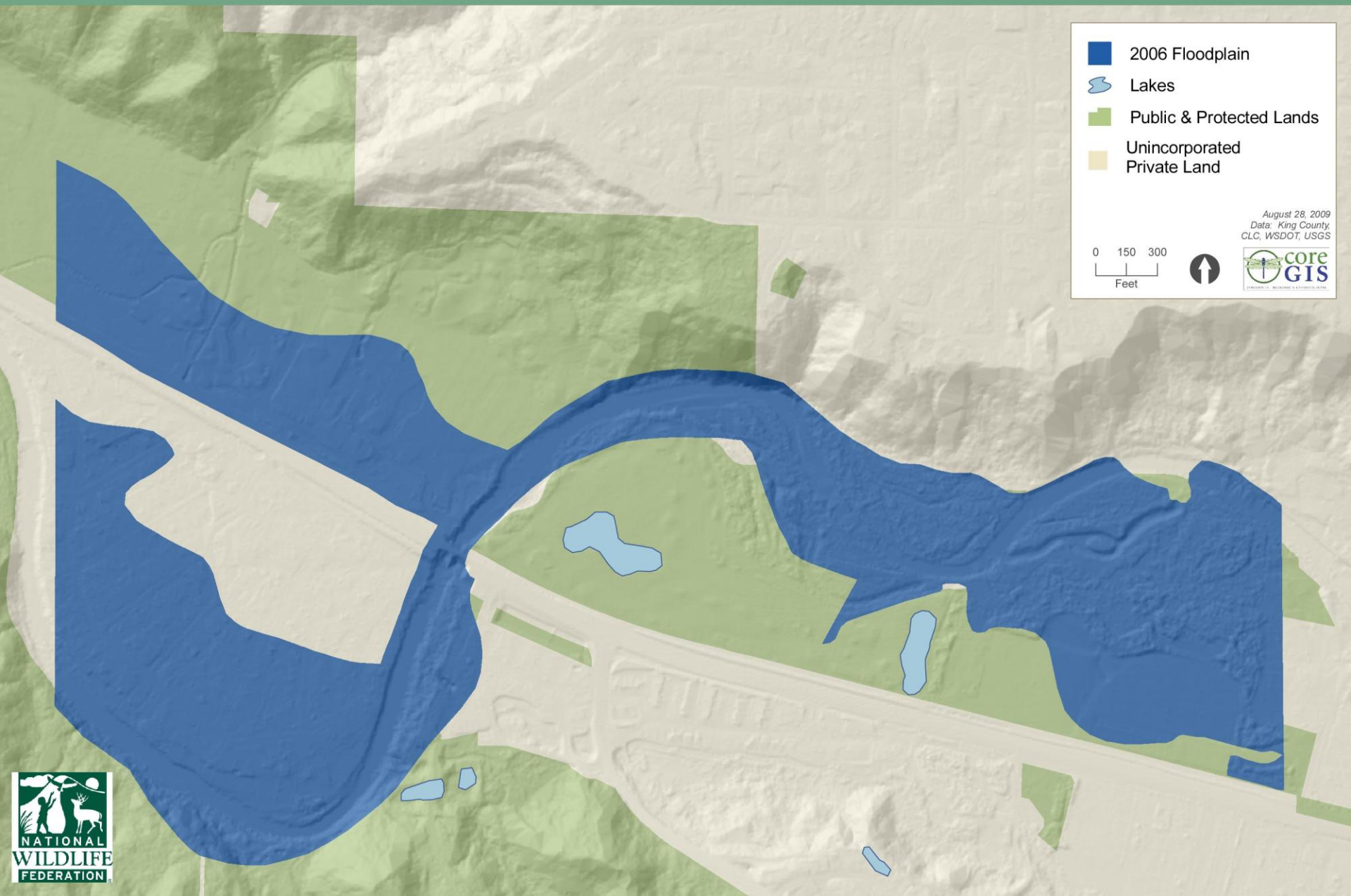


August 28, 2009  
Data: King County,  
CLC, WSDOT, USGS



# Cedar River East of Renton Floodplain History

2006 FEMA



- 2006 Floodplain
- Lakes
- Public & Protected Lands
- Unincorporated Private Land

0 150 300  
Feet



August 28, 2009  
Data: King County,  
CLC, WSDOT, USGS

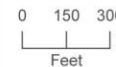


# Cedar River East of Renton Floodplain History

2006 FEMA and 2006 NRCS NAIP Orthophoto



August 28, 2009  
Data: King County,  
CLC, WSDOT, USGS



# Cedar River East of Renton Floodplain History

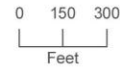
1969 USACE, 2006 FEMA, and 2006 Orthophoto



## Floodplain History

- 1969 Only
- 1969 and 2006
- 2006 Only

Lakes



August 31, 2009  
Data: King County,  
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# Reforming the National Flood Insurance Program

- Decades of complaints that NFIP encourages development in flood-prone areas
- NFIP subsidy fueling harmful development of coastal and floodplain habitats
- Inability to obtain NFIP insurance would effectively stop development in flood hazard areas
  - Good for wildlife, communities, public safety, & taxpayers.

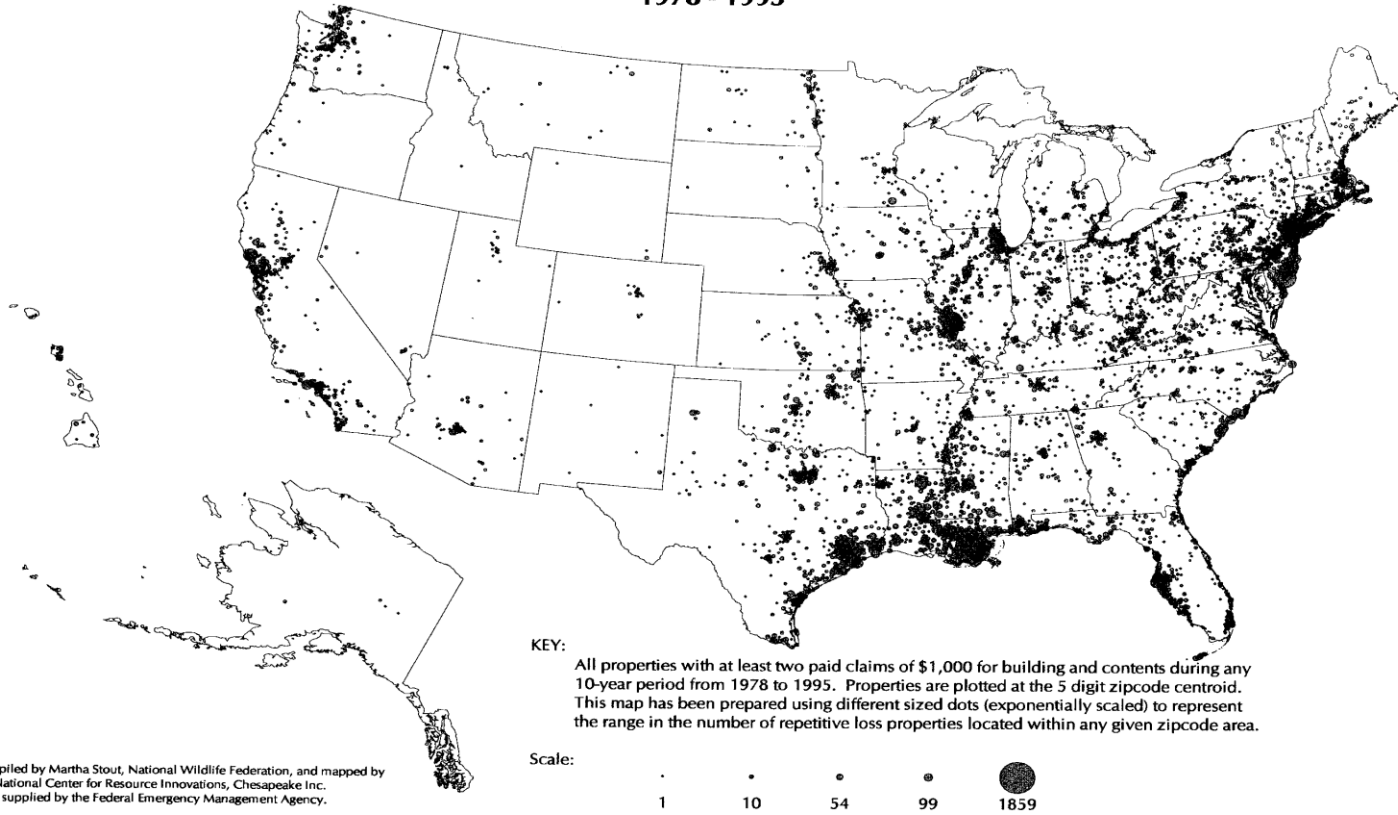


# NFIP Evaluations

- 1998 NWF Report: Higher Ground
  - 2% of properties were generating nearly 40% of NFIP losses
  - 20% of repetitive losses occur outside floodplains
- 2006 Major Evaluation of NFIP, Led by American Institutes for Research. Findings:
  - Risky development continues due to lack of provisions to discourage development
  - Maps don't delineate some types of hazards and many floodplain areas
- 2009 Homeland Security Inspector General Report
  - Repetitive losses increasing; outpacing FEMA mitigation efforts 10 to 1
  - Florida, Louisiana and Texas are worst offenders

# Repetitive Loss Properties

**U.S. Properties with Repetitive Loss Claims Paid by the National Flood Insurance Program  
1978 - 1995**



Compiled by Martha Stout, National Wildlife Federation, and mapped by the National Center for Resource Innovations, Chesapeake Inc. Data supplied by the Federal Emergency Management Agency.

# NFIP v. ESA

- 1994: Florida Key Deer ESA Lawsuit
  - Moratorium on development;
  - still in court
- 2004: Puget Sound ESA Lawsuit
  - FEMA must consult with NMFS re: potential impacts of NFIP on listed salmon in PS



# ESA Legal Claim

- ESA Sec. 7: Federal agencies must ensure their actions do not:
  - Jeopardize listed species
  - Adversely modify critical habitat
- If discretionary agency action might cause harm, must consult
- Courts found FEMA has discretion over:
  - Floodplain mapping
  - Minimum floodplain management criteria (for community inclusion in program)
  - Community rating system
- Therefore, FEMA must consult
- Sec. 7 Consultation results in Biological Opinion

# Sept. 2008 Biological Opinion National Marine Fisheries Service Found:

- NFIP jeopardizes existence of
  - 3 salmonid populations
    - PS Chinook salmon
    - PS steelhead
    - Hood Canal summer-run chum salmon
  - Southern Resident killer whale population
- Adversely modifies critical habitat for:
  - PS Chinook salmon
  - Hood Canal summer-run chum salmon
  - Southern Resident killer whale



# Reasonable and Prudent Alternatives (RPAs)

1. Notify participating PS communities- Temporary moratorium
  - Done
2. Update Floodplain maps; change modeling methods
  - Implement changes by March 09
3. Modify Floodplain management criteria
  - Tier 1: 1 year; Tier 2: 2 years; All: 3 years
4. Community Rating System
  - Make changes by June 09
5. Levee Vegetation Maintenance and construction
  - Sept. 2010
6. Floodplain mitigation activities
  - Now till full implementation of elements 2, 3, 5.
7. Monitoring and adaptive management
  - Annual reports to NMFS on progress, timelines, on-the-ground NFIP effects

# NWF Position

- Protecting floodplain habitat is consistent with reducing flood risk.
- FEMA has a national responsibility to minimize harm to all ESA species everywhere
  - Not just Puget Sound



# Floodplains = Habitat

## ESA Listed Species:

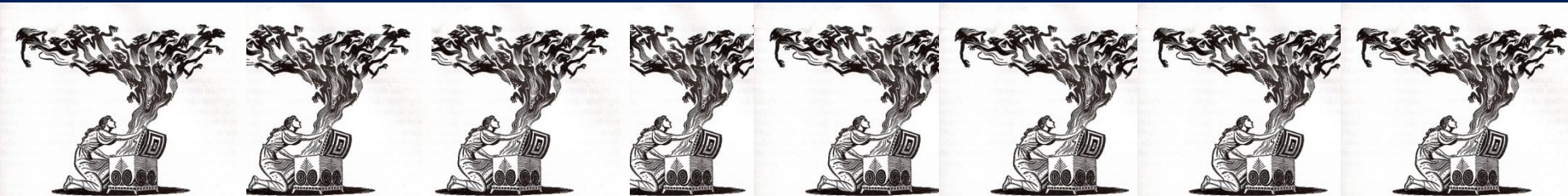
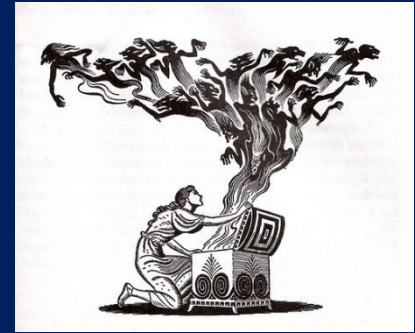
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- Atlantic coast: sea turtles
- Hawaii: Shorebirds, turtles, monk seal
- NM, TX, etc. etc.

# Why Does FEMA Resist Addressing ESA Issues Nationally?

- Pandora's Box?

Maybe...

- ... But so are the lawsuits
  - And the Federal Regs are likely to be revised anyway.
- Isn't One Pandora's Box better than 50?



# Recap

- Climate Change is about risk
  - Incorporate the risk of increasingly extreme storms & sea level rise into maps, NFIP minimum criteria, CRS, and rates
- Protecting floodplain habitat is good for public safety, taxpayers, communities, and the environment
- FEMA has a national responsibility to minimize harm to all ESA species everywhere

# ...And Finally

- Lawsuits are wasteful
  - Resources would be better applied to fixing the problems

# Questions???





# Cost of Flooding

Replacement value of buildings and contents vulnerable to a 100 year coastal flood with 1.4 meters of sea level rise:

## \$98 Billion

