



NMFS BiOp on FEMA's National Flood Insurance Program (NFIP)



**NOAA
FISHERIES
SERVICE**

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Endangered Species Act (ESA)

Federal agencies are required to consult with USFWS and NMFS re impacts to their actions on listed species; duty to avoid jeopardy and adverse modification of critical habitat.





Background

Lawsuit:

NWF v. FEMA

Species Covered:

Chinook, steelhead, chum,
sockeye, killer whales

Critical habitat for all
except steelhead





Jeopardy Analysis

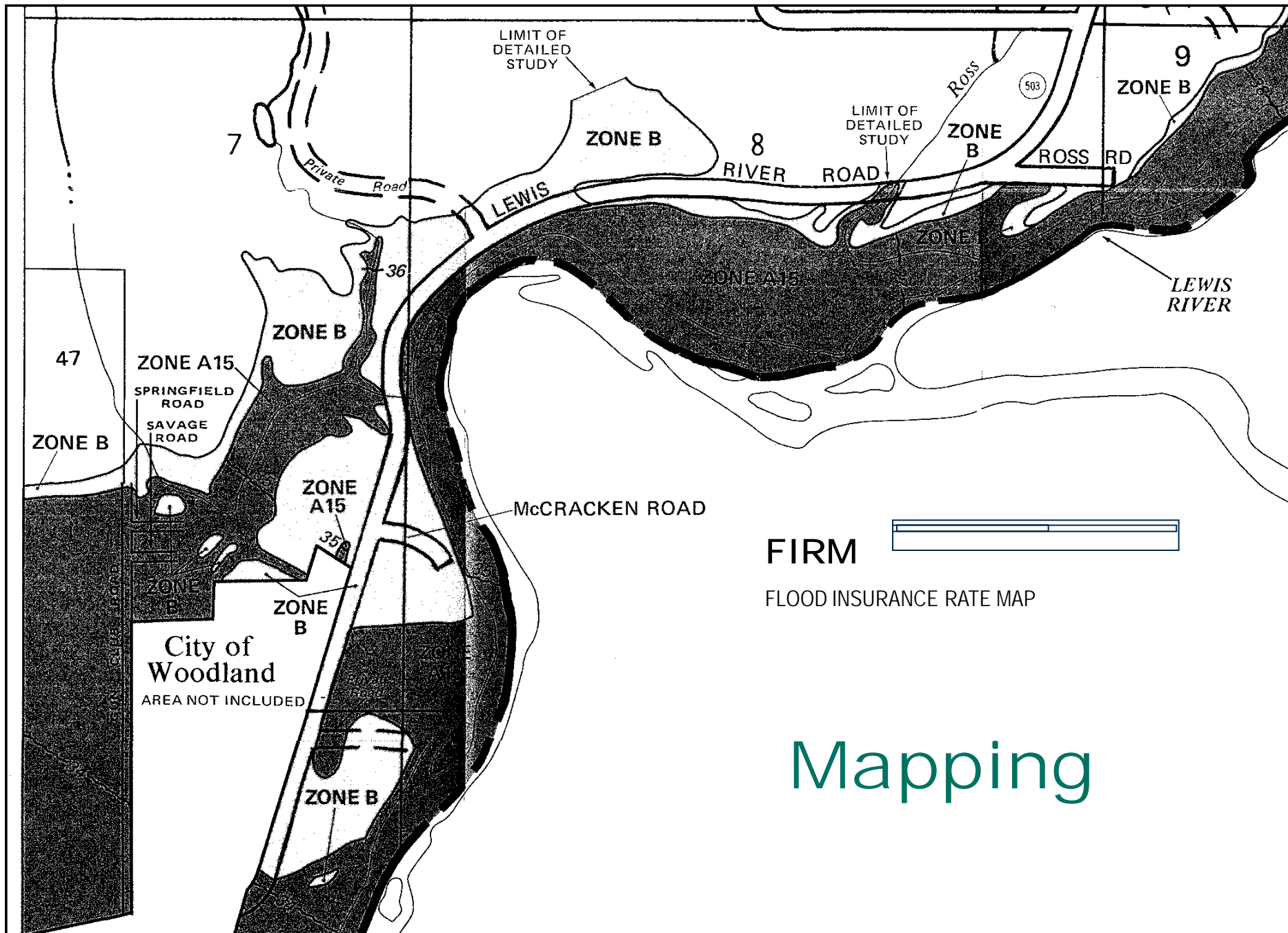
- + Program Effects
 - + Status of Species and Critical Habitat
 - + Baseline Conditions
 - + Cumulative Effects
- = Jeopardy or No Jeopardy to the species
- = Adverse Modification or No AM of CH



Program Description

- Mapping
- Minimum Criteria
- Community Rating System
- Levees
- Development





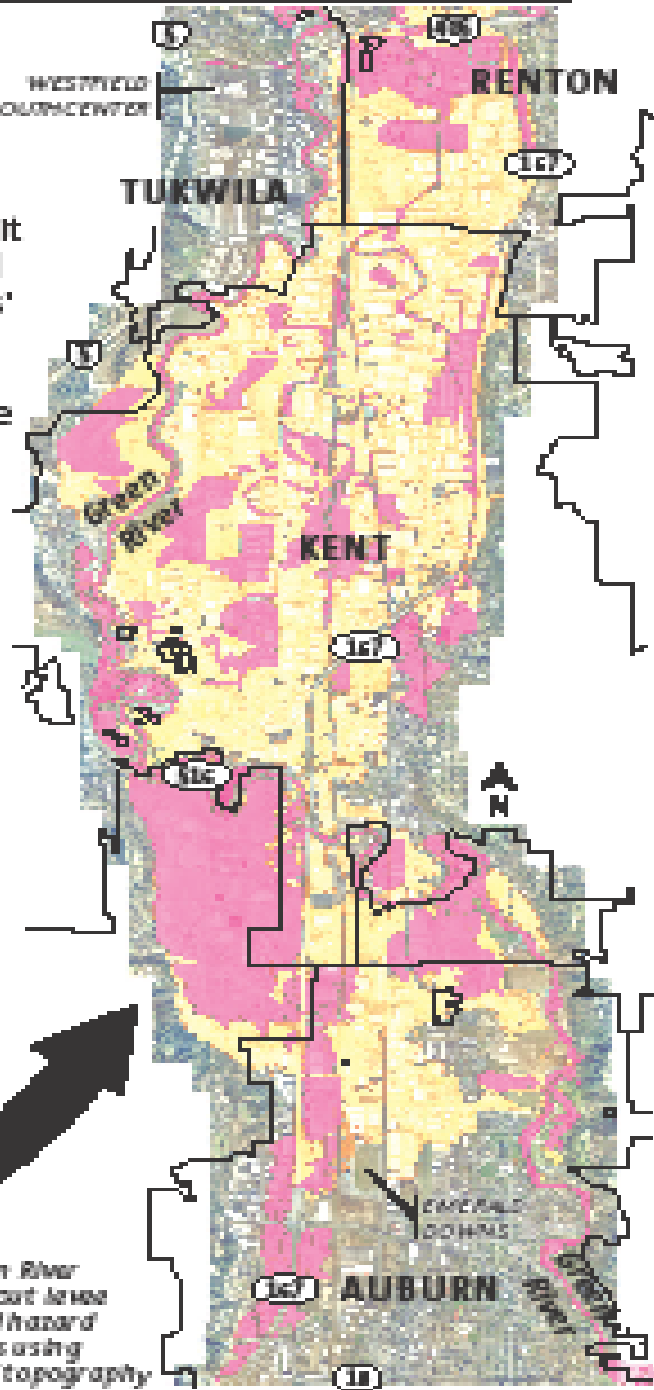
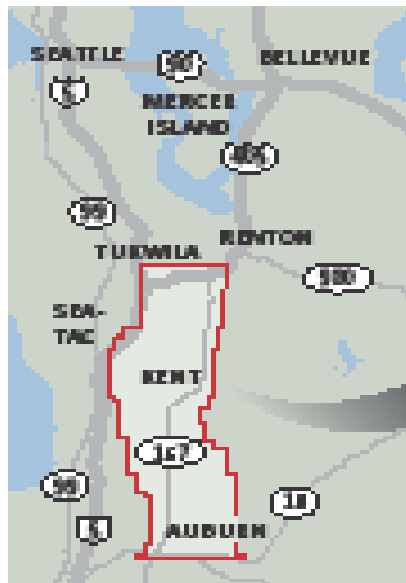
FIRM

FLOOD INSURANCE RATE MAP

Mapping

Revised flood maps

The Federal Emergency Management Agency (FEMA) has released preliminary floodplain maps that could limit development and require flood insurance for billions of dollars' worth of residential and commercial property in the Puget Sound region. One of the most affected areas is the Green River Valley in Renton, Kent and Auburn.



Green River without levee flood hazard areas using 2006 topography

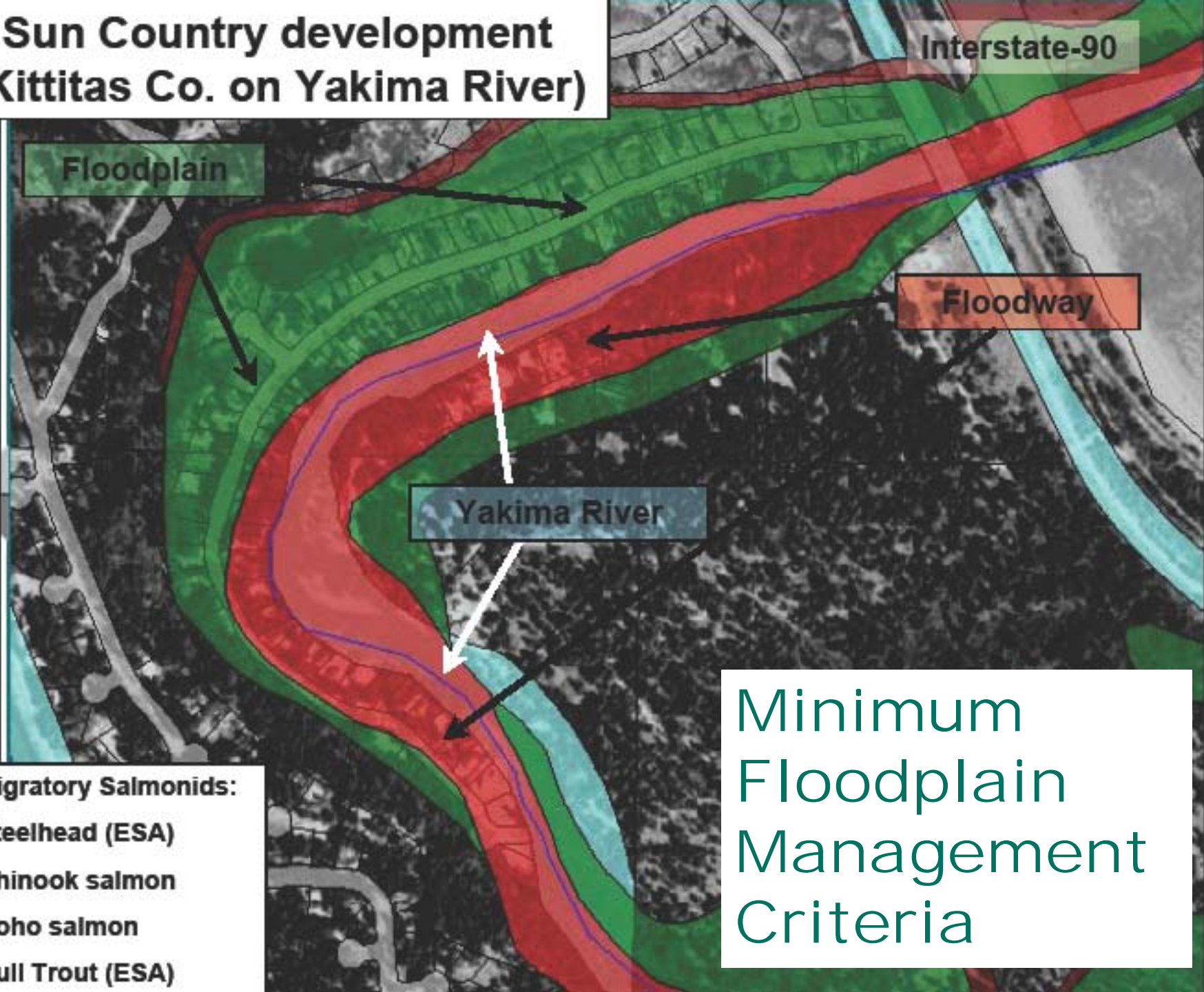
THE SEATTLE TIMES

Effects of Mapping

Source: King County



Sun Country development (Kittitas Co. on Yakima River)



Migratory Salmonids:

- Steelhead (ESA)
- Chinook salmon
- Coho salmon
- Bull Trout (ESA)

Minimum
Floodplain
Management
Criteria



Community Rating System

Provides reduced insurance premiums to communities exceeding minimum criteria

Gives points for flood protection/reduction activities

Some activities benefit listed species/CH, some have detrimental effects



Levees





Development





NFIP Program Effects

ESA Effects not considered/analyzed

Floodplain models/maps inaccurate,
outdated

Allows fill, levees, and development

All confine channels, levee mgt removes
riparian vegetation, armors banks

Stormwater increases stream flood flows,
decreases water quality



Effects to Critical Habitat

Decreased: flood storage and conveyance, water quality, recharge to gw, riparian vegetation, soil fertility, habitat

Increased: flood velocities, elevations, flows, volumes, erosion, water temp

No program protection of habitat elements, e.g., floodplain, CMZ, riparian vegetation, river banks, off-channel and in-stream habitat, etc.



Effects to Salmon

Salmon and steelhead use floodplain and channel habitat for rearing, foraging, refuge, migration, and spawning

Salmon using floodplains have higher growth and survival rates; salmon using channels expend more energy

Channels confined by levees and floodplain fill displace salmon, reduce productivity and survival





Status and Baseline

Species:

Salmon and steelhead:

threatened, high risk

killer whale: endangered &

depleted

Critical Habitat:

Salmon and steelhead - channelization,
freshwater and estuarine floodplain habitat
loss/access

killer whale - decreased prey





Cumulative Effects

Land use change:



Channel/floodplain function,
flood storage, channel capacity

Stormwater runoff

Climate change:



Flooding frequency/severity,
water temperature





Spawning flows





Jeopardy Analysis for Salmon & Critical Habitat

Effects of the Action + Baseline & Status
+ Cumulative Effects

- =  survival (individual scale)
- =  productivity & abundance (pop)
- =  spatial structure & diversity (ESU)
- = **Jeopardy to the species**
- =  conservation value of CH (3 scales)
- = **Adverse Modification of CH**



Jeopardy for SRKW & CH

Effects of the Action + Baseline & Status
+ Cumulative Effects + Jeopardy to salmon

↓ prey base of SRKW

↓ survival

= Jeopardy to SRKW

↓ Jeopardy to salmon prey

↓ conservation value of CH

= Adverse modification
of SRKW CH





Reasonable and Prudent Alternative (RPA) Elements

1. Notification
2. Mapping
3. Minimum Floodplain Mgt Criteria
4. Community Rating System
5. Levees and Development
6. Mitigation
7. Monitoring and Adaptive Management



RPA 1 - Notification (by 10/22/08)

Relay consultation outcome

Current NFIP = J and AM, take

Temporary moratorium

ESA coverage for adopting revised
minimum criteria



RPA 2 - Mapping (by 3/22/09)

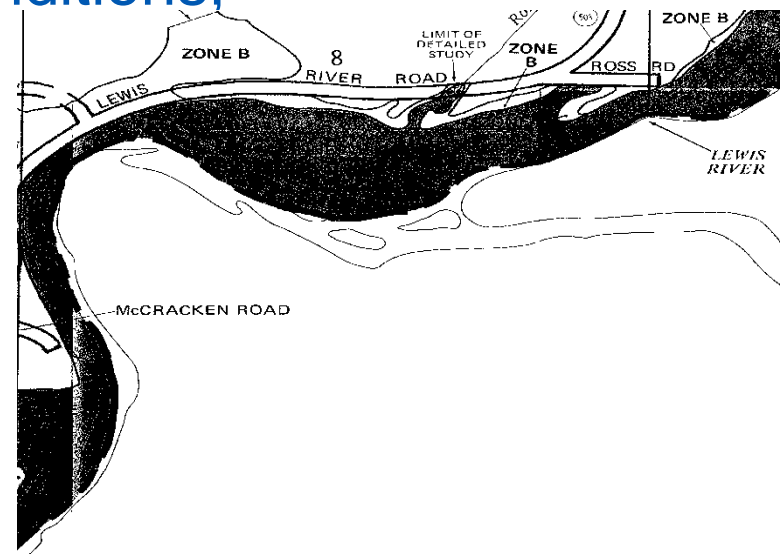
Issue map changes when effects avoided/mitigated

Mapping prioritized based on salmon

Floodplain modeling uses on the ground data, unsteady state, and 2-D models

Map modeling considers future conditions,
cumulative effects

Communities identify flood
risk behind levees using
future conditions,
cumulative effects





RPA 3 - Minimum Criteria (9/22/10 – 9/22/11)

No development in the Riparian Buffer Zone
(RBZ)*, OR

Demonstrate that no adverse effects to habitat will
occur.

*RBZ = greater of the FEMA floodway, Channel
Migration Zone + 50 feet, and the stream buffer
depending on stream type

Prohibit development in the remainder of the 100-
year floodplain, OR

Mitigate for all habitat, flood storage and
development effects

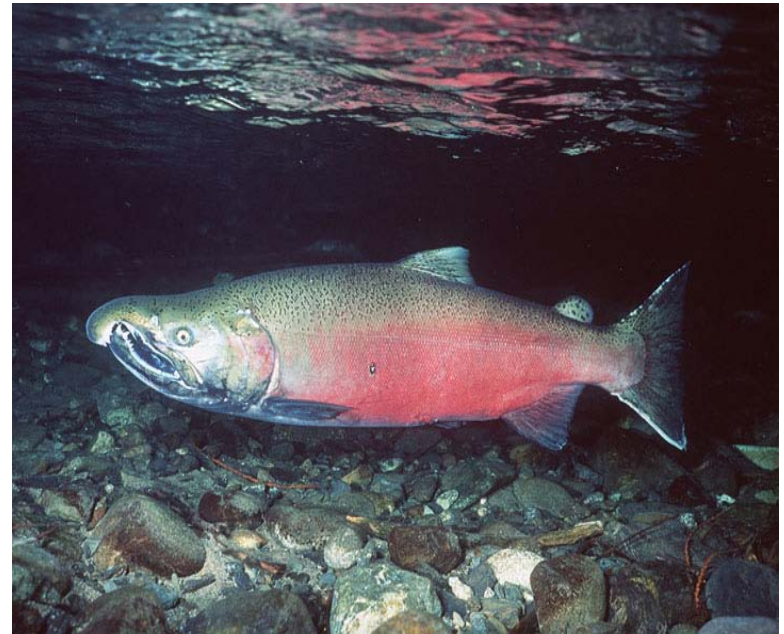


RPA 3 - Minimum Criteria

All floodplain development
uses LID for stormwater
Greater than 10%

expansion of existing
buildings must mitigate

for all habitat, flood storage, and development





RPA 3 - Minimum Criteria

Interim actions:

Communities track/report floodplain permits issued, NMFS review.

FEMA mitigates for all unmitigated activities

Long-term actions:

All mitigation reported, if not effective, FEMA mitigates



RPA 4 - Community Rating System (6/22/09)

Increase and award points for actions beneficial for salmon, e.g., open space preservation, moving pre-firm out of floodplain, LID, increasing riparian function, levee setbacks, active buyout program

Reduce points for levees, closing conveyance channels, etc.

Encourage communities to have levee certified by professional engineer rather than the COE



RPA 5 – Levees and Development (9/22/09)

- FEMA recognizes COE certified levees only no adverse effects
- FEMA revises policy so that levee owners still get emergency funding w/o COE certification
- FEMA only recognizes levees with natural floodplain function
- FEMA funds floodplain acquisition, other actions that benefit habitat





RPA 6 & 7 Mitigation and Monitoring

Mitigation for NFIP actions that degrade
habitat and for failed mitigation

Report progress on meeting timelines,
alternate actions may be identified





QUESTIONS?

