Science, Service, Stewardship

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

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DeeAnn Kirkpatrick September 16, 2009

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Background

Lawsuit:

NWF v. FEMA

Species Covered:

Chinook, steelhead, chum, sockeye, killer whales

Critical habitat for all except steelhead

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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

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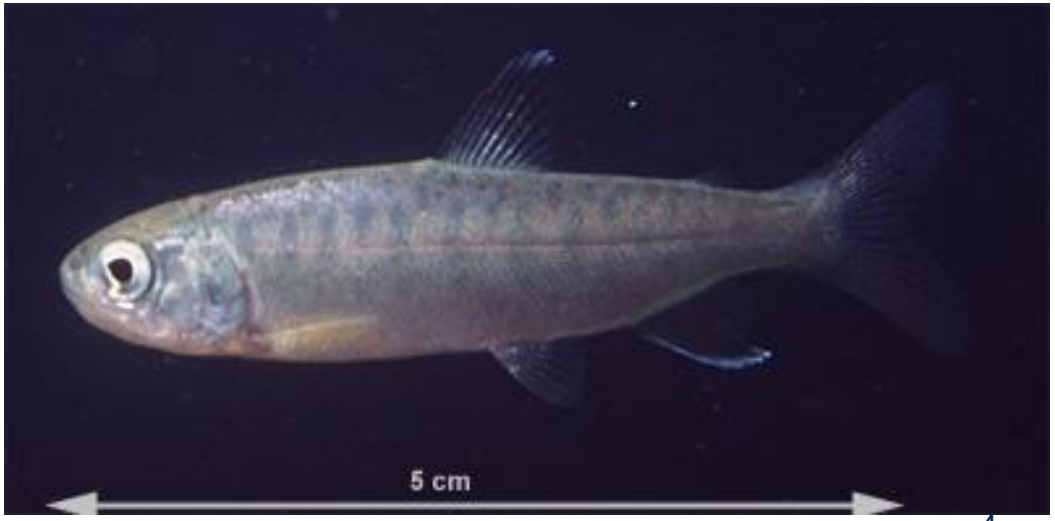
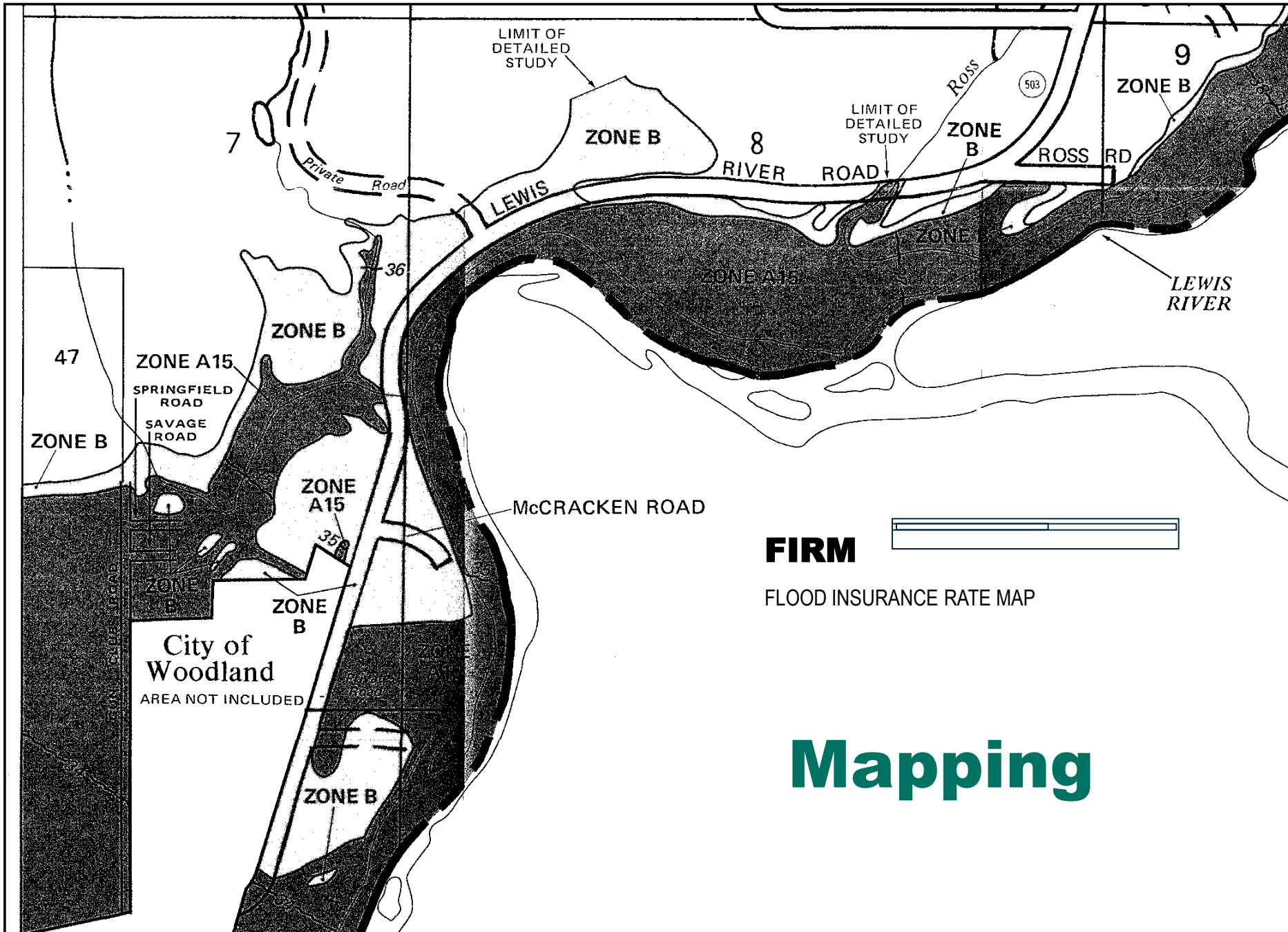
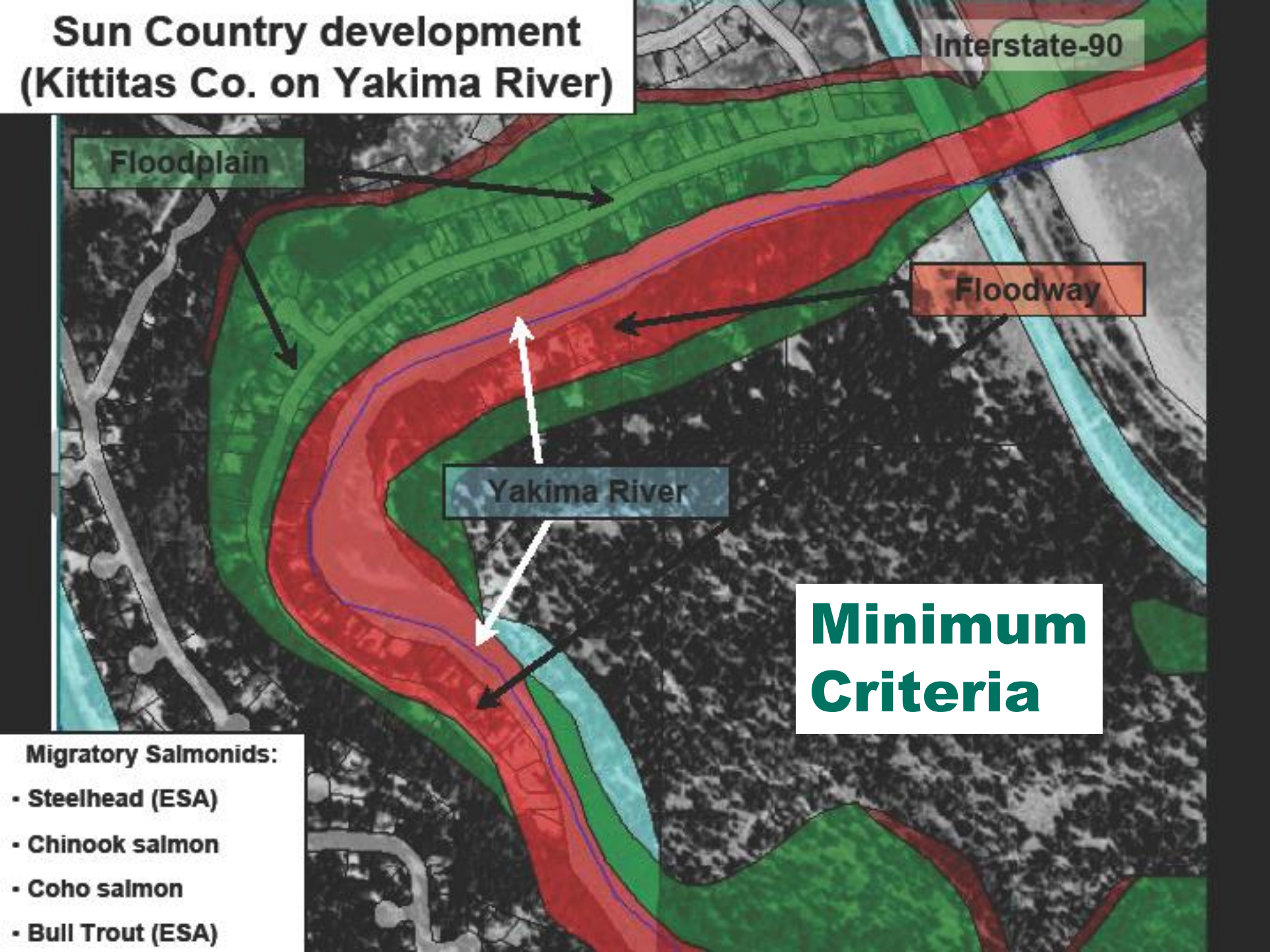
Program Description

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




LIMIT OF DETAILED STUDY
ZONE B
7
8
9
Private Road
LEWIS
RIVER ROAD
LIMIT OF DETAILED STUDY
ZONE B
ROSS
503
ROSS RD
ZONE B
ZONE A15
LEWIS RIVER
36
47
ZONE B
ZONE A15
SPRINGFIELD ROAD
SAVAGE ROAD
ZONE B
McCRACKEN ROAD
ZONE A15
35
ZONE B
ZONE B
City of Woodland
AREA NOT INCLUDED
ZONE B
FIRM
FLOOD INSURANCE RATE MAP

Mapping


Sun Country development
(Kittitas Co. on Yakima River)
Interstate-90
Floodplain
Floodway
Yakima River
Minimum
Criteria
Migratory Salmonids:
• Steelhead (ESA)
• Chinook salmon
• Coho salmon
• Bull Trout (ESA)

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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

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Levees

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Development

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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

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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.

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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

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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

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Cumulative Effects

Land use change:

↓ Channel/floodplain function, flood storage, channel capacity

↑ Stormwater runoff

Climate change:

↑ Flooding frequency/severity, water temperature

↓ Spawning flows

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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

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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

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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

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

- Relay consultation outcome, identify communities affecting Tier 1 and 2 fish populations
- Current NFIP = J and AM, take
- Temporary moratorium
- ESA coverage for adopting revised minimum criteria

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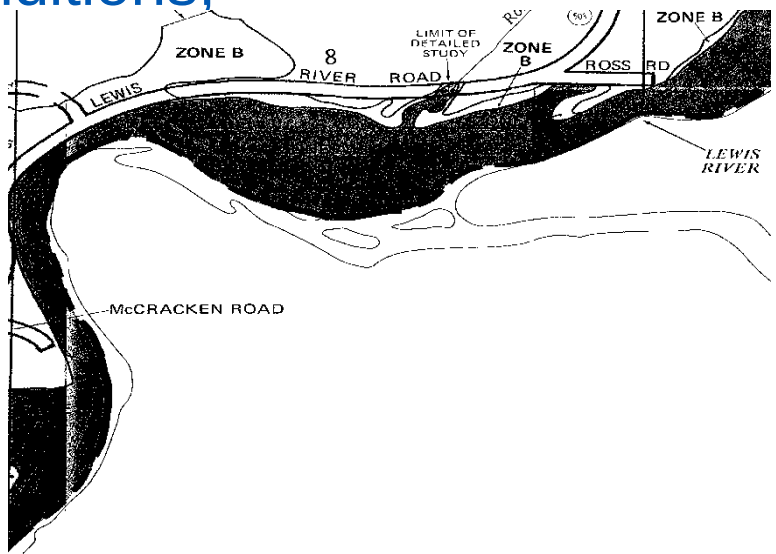
RPA 2 - Mapping (by 3/22/09)

- LOMC issued 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



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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

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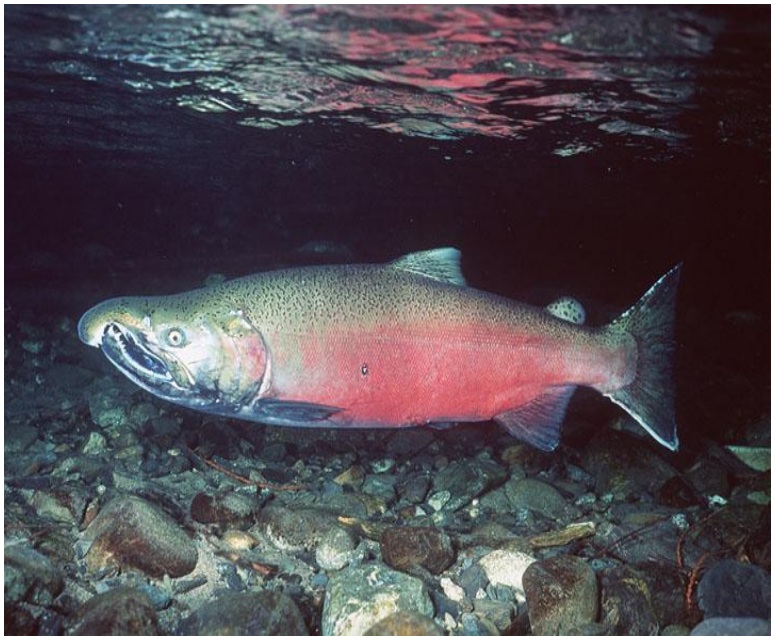
RPA 3 - Minimum Criteria



All floodplain development
- uses LID for stormwater

Greater than 10%
- expansion of existing buildings must mitigate for all habitat, flood storage, and development

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RPA 3 - Minimum Criteria

Interim actions:

Communities track/report floodplain permits issued.

FEMA mitigates for all unmitigated activities

Long-term actions:

All mitigation reported, if not effective, FEMA mitigates

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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

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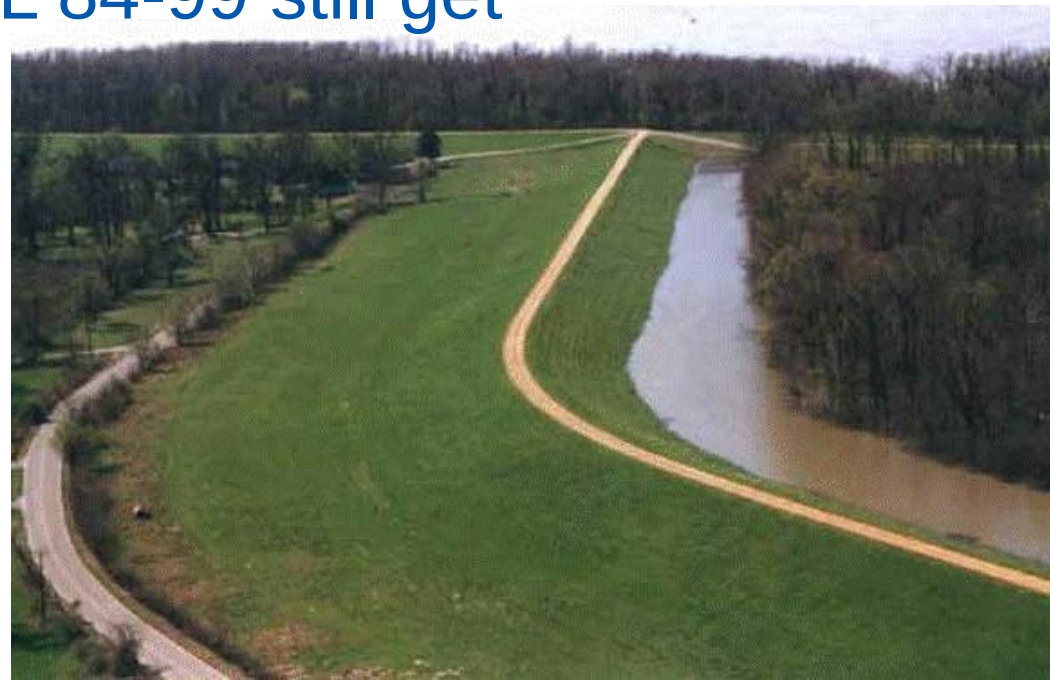
RPA 5 – Levees (9/22/09)

FEMA recognizes COE certified levees only if NLAA for salmon habitat

FEMA revises policy so that levee owners opting out of PL 84-99 still get emergency funding

FEMA only recognizes levees if natural floodplain function is maintained (CMZ, LWD, riparian vegetation, flood flows)



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RPA 5 – Development in the Floodplain (9/22/09)

FEMA encourages floodplain acquisition, purchase of development rights, levee setbacks, flood easements, reduced flood risk that benefits salmon

FEMA uses their funding for projects

FEMA reports on project implementation

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RPA 6 – Mitigation (on-going)

For NFIP actions that occur before and after full implementation that degrade habitat (for elements 2, 3 and 5)

For failed mitigation

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RPA 7 – Monitoring and Adaptive Management (on-going)

Report progress on meeting timelines, implementing RPA elements

As a result of review, alternate actions may be identified

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QUESTIONS?