Science, Service, Stewardship

Public Draft Recovery Plan for: Southern Oregon/ Northern California Coast (SONCC) Evolutionarily Significant Unit (ESU) of Coho Salmon

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Arcata, CA

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NOAA

National Marine Fisheries Service

AGENDA

- 5-5:30 – Open House – View Maps
- 5:30 – Meeting Logistics and Introductions
- 5:45 – Presentation on SONCC Plan
- 6:15 – Public Comment

Outline

- Process and public involvement
- What is a recovery plan?
- Delisting Criteria
- Limiting Factors (Stresses)
- Recovery Actions

What is a recovery plan?

- A plan to restore species to condition which no longer needs protection of ESA
- Advisory
- Voluntary
- “Roadmap” to recovery
- NMFS prepares the plan with public input, and anybody can implement it.

A recovery plan is NOT:

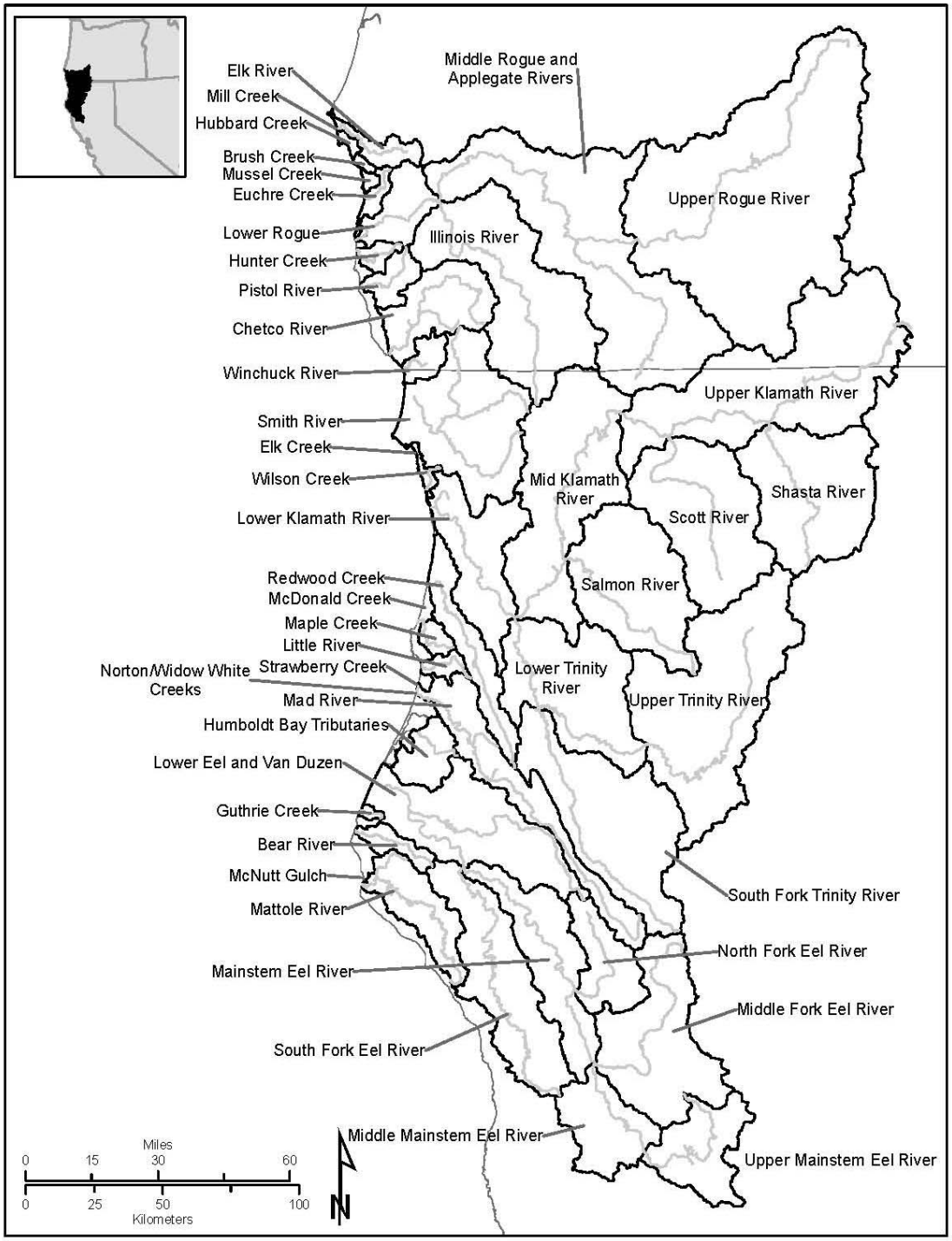
- Required to be carried out by anyone.
- Funding plan.
- Law
- Regulation

Process and Public Involvement

- 1997-2008: Preparation of guidance docs
- 2006-2008: Reports by interagency Technical Recovery Team
- 2008-2011: Review by co-manager agencies (twice)
- 2012: Public input on draft plan
  - Released 1/5/2012, 5 public meetings Jan-Mar '12
  - Public comment period extended until May 4, 2012
- 2013: Final plan
- 2013: Implementation (but already underway)
- 2018: First Plan revision (5-year cycle)

Range of SONCC coho salmon

- Coastal streams in CA and OR:
  - Mattole River north to Elk River
- Larger rivers:
  - Eel/Van Duzen, Mad, Klamath/ Trinity, Smith, Rogue/Illinois/ Applegate
- 45 populations



IP Model

Developed a habitat-based proxy for historical use and environmental capacity called IP (for Intrinsic Potential)

- Used to identify populations and determine their type
  - Independent
  - Dependent
- Used to set abundance targets

IP Model

- Spatial model – predicts distribution of coho-specific intrinsic potential (IP) for habitat suitable for spawning or juvenile rearing.

- IP is function of underlying geomorphic and hydrologic characteristics of the landscape.
  - mean gradient
  - mean annual discharge
  - valley constraint of stream reaches

- Temperature

IP Model

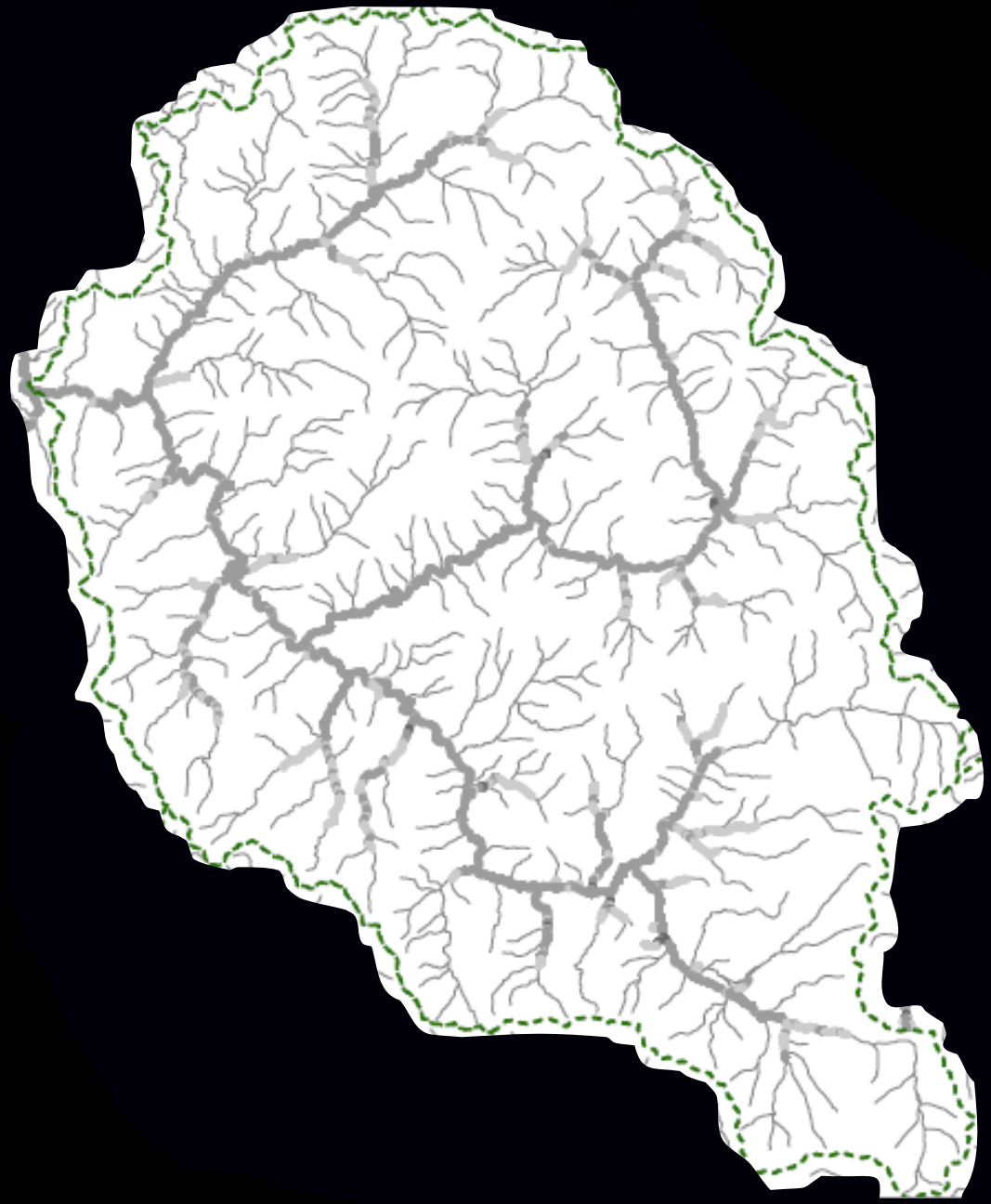
- IP for each 200-m stream reach is described by a suitability score, which ranges from 0-1 and describes the potential that the stream reach could support suitable habitat.
- Suitability scores are summed for each population.

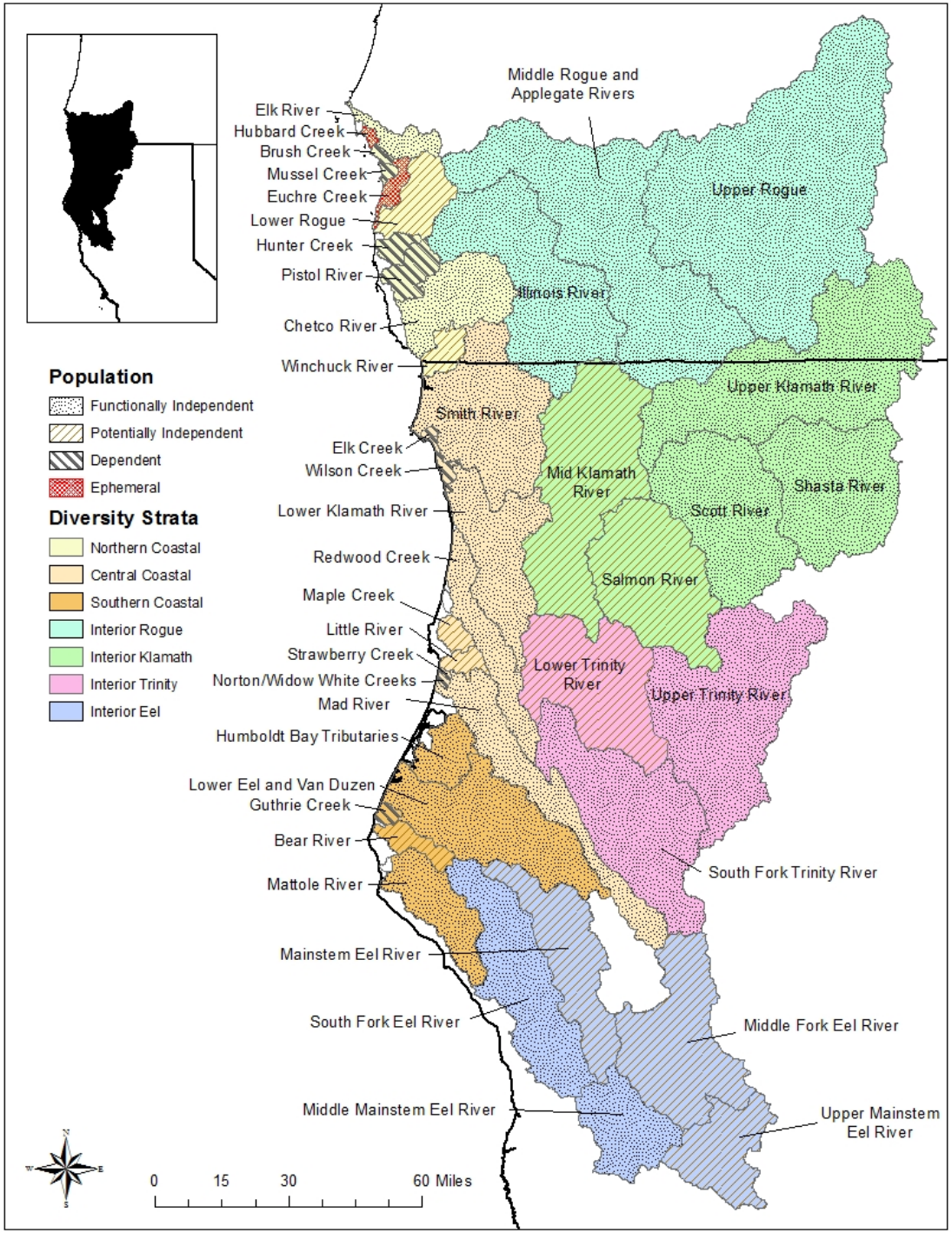
IP Model

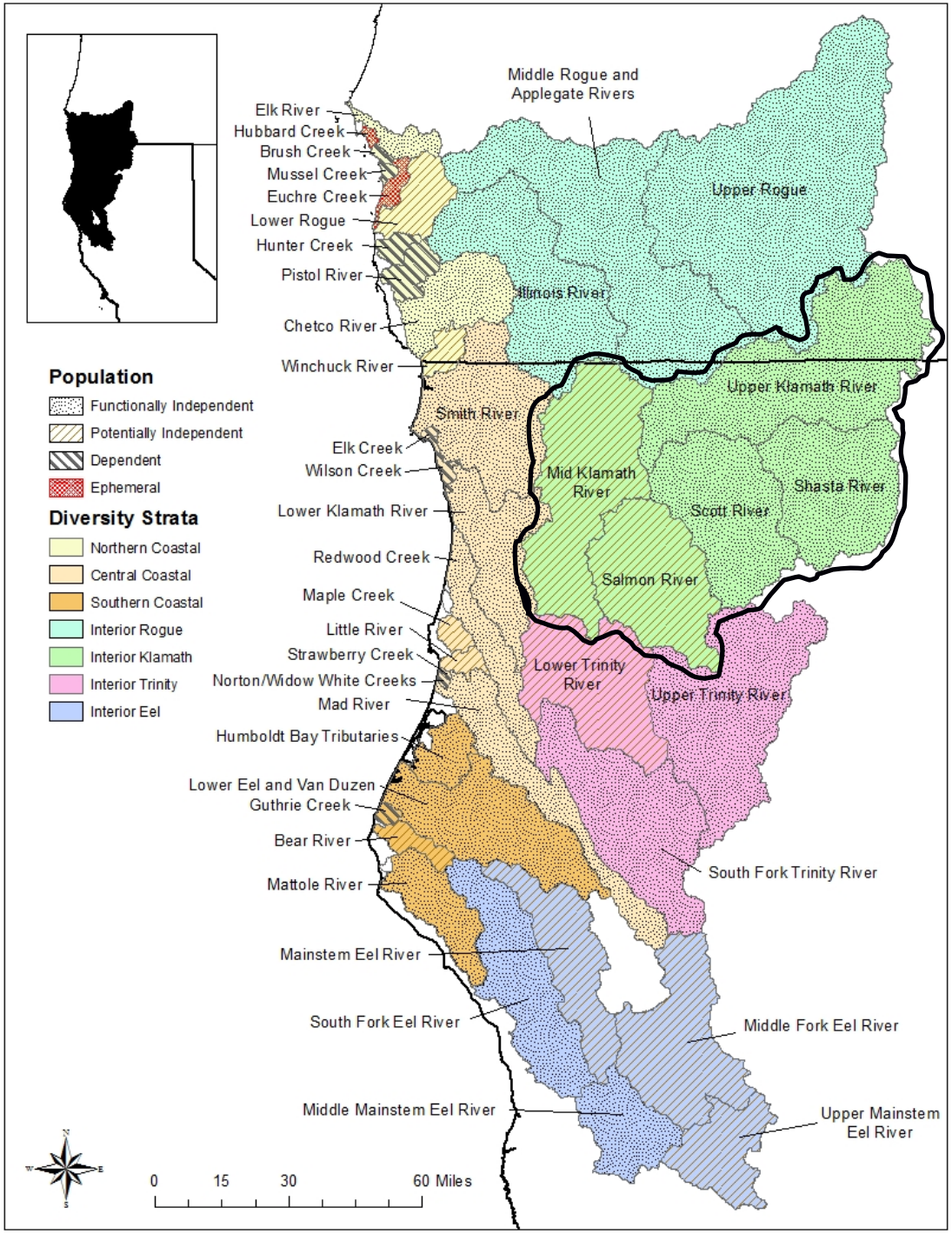
- Amount IP in each population area determined what type of population it was:
  - 5 to < 34 IP km: Dependent population
  - At least 34 IP km – Independent population

Salmon River Population Area

Salmon River Population Area with IP




Population
Functionally Independent
Potentially Independent
Dependent
Ephemeral
Diversity Strata
Northern Coastal
Central Coastal
Southern Coastal
Interior Rogue
Interior Klamath
Interior Trinity
Interior Eel
Elk River
Hubbard Creek
Brush Creek
Mussel Creek
Euchre Creek
Lower Rogue
Hunter Creek
Pistol River
Chetco River
Winchuck River
Elk Creek
Wilson Creek
Lower Klamath River
Redwood Creek
Maple Creek
Little River
Strawberry Creek
Norton/Widow White Creeks
Mad River
Humboldt Bay Tributaries
Lower Eel and Van Duzen
Guthrie Creek
Bear River
Mattole River
Mainstem Eel River
South Fork Eel River
Middle Mainstem Eel River
Middle Fork Eel River
Upper Mainstem Eel River
South Fork Trinity River
Middle Rogue and Applegate Rivers
Upper Rogue
Illinois River
Smith River
Upper Klamath River
Mid Klamath River
Shasta River
Scott River
Salmon River
Lower Trinity River
Upper Trinity River
0 15 30 60 Miles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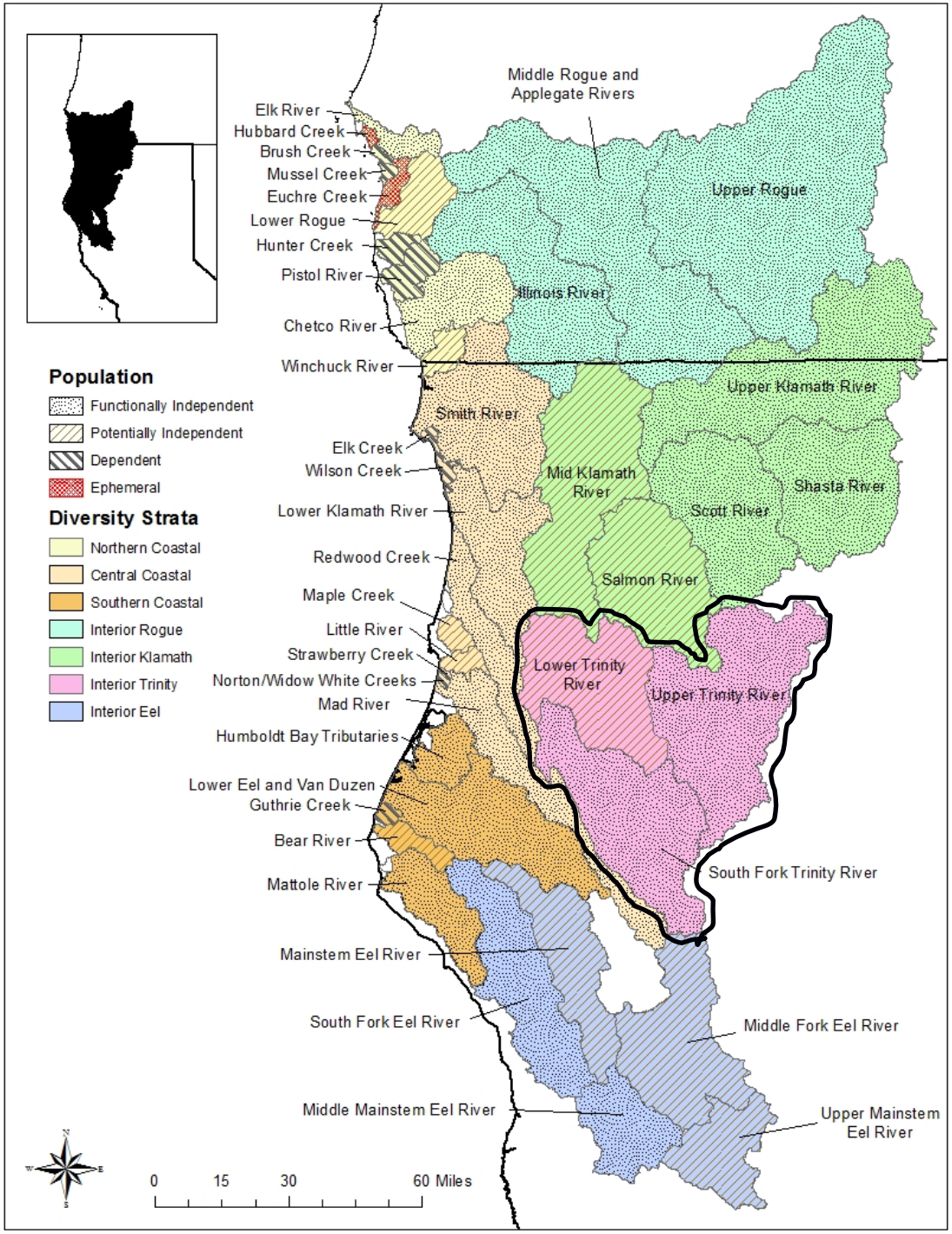
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Winchuck River
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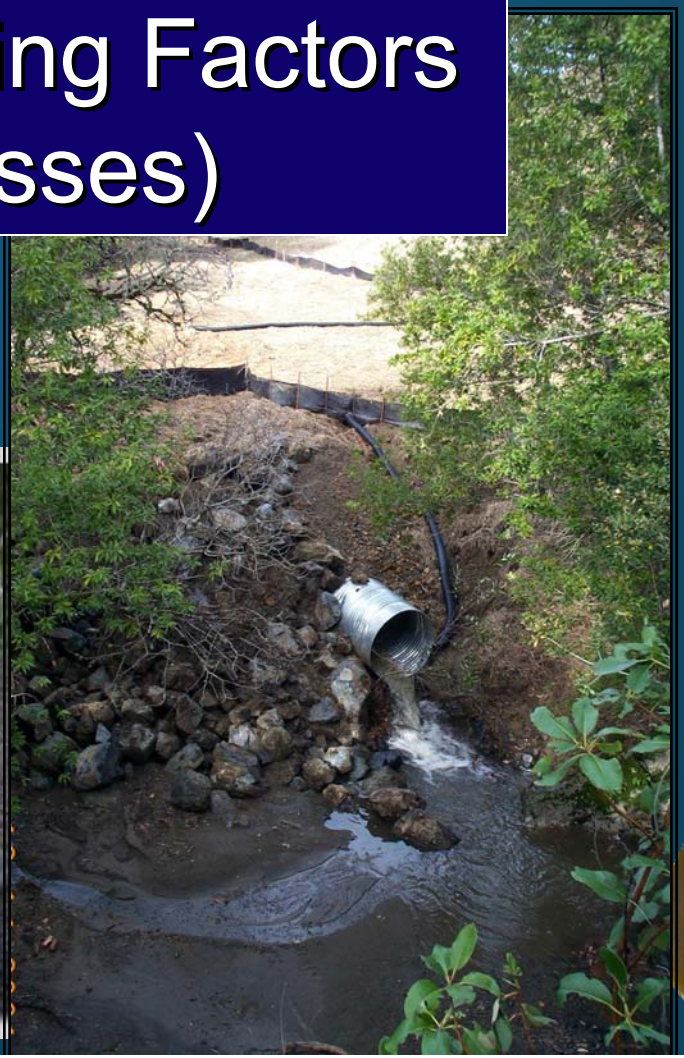
Upper Trinity River
Salmon River
Mid Klamath River
Scott River
Shasta River
Upper Klamath River
Smith River
Illinois River
Upper Rogue
Middle Rogue and Applegate Rivers
0 15 30 60 Miles

Foundations of SONCC Coho Salmon Recovery Plan

1. Delisting Criteria

2. Limiting Factors (Stresses)



3. Recovery Actions

Foundations of SONCC Coho Salmon Recovery Plan

1. Delisting Criteria

Each population's role in recovery

- A viable ESU is made up of a combination of populations with varying degrees of extinction risk.

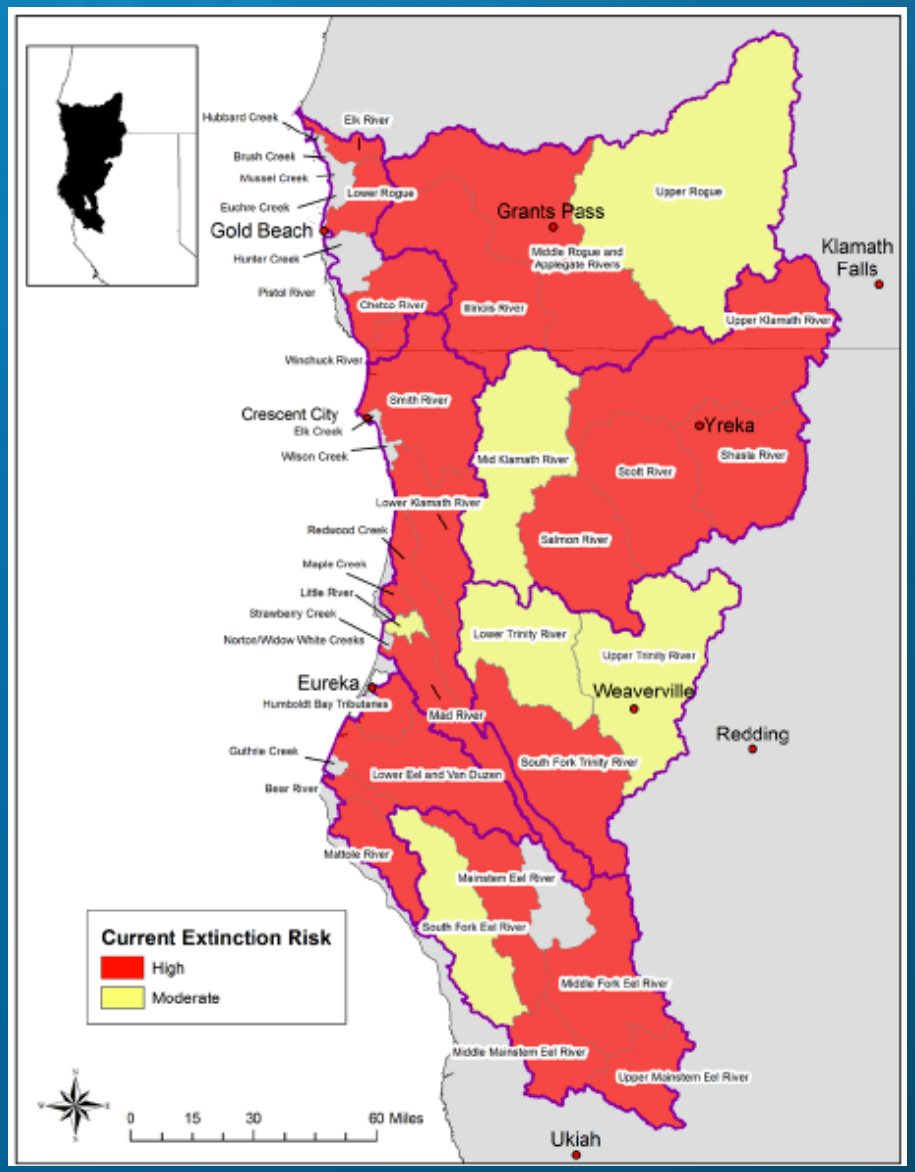
- SONCC Coho Salmon must be at low risk of extinction (viable) in order to delist.

- Each Diversity stratum must be viable in order to delist.

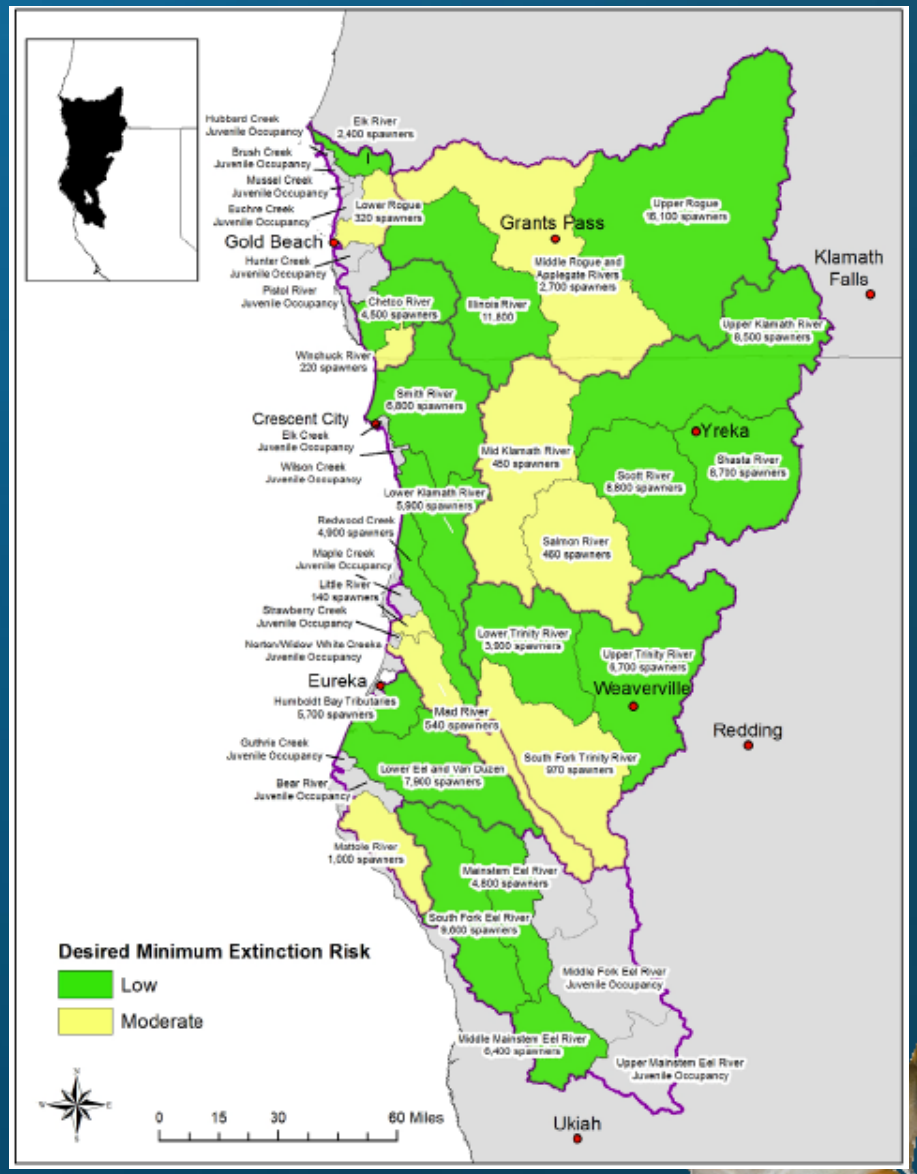
- Every population does not need to be viable in order to delist – need 17 of 39 populations to be viable.

Extinction Risk

Existing



Recovered



Population Targets

- Abundance
- Productivity
- Spatial Structure
- Diversity

Criteria

Parameter	Independent populations	Dependent populations
Productivity	Growth rate ≥1	-
Spatial structure	Juveniles in at least 70% of habitat	Juveniles in at least 20% of habitat after years of good marine survival
Diversity	≤ 10% hatchery spawners	-
	Retain variation in migration timing, age structure, size, behavior	-

Abundance

From IP model

IP km in population area

x

spawners needed per IP km

=

spawners needed per population

From scientific studies

Abundance

Example: Salmon River

From IP model

115 IP km

x

4 spawners needed per IP km

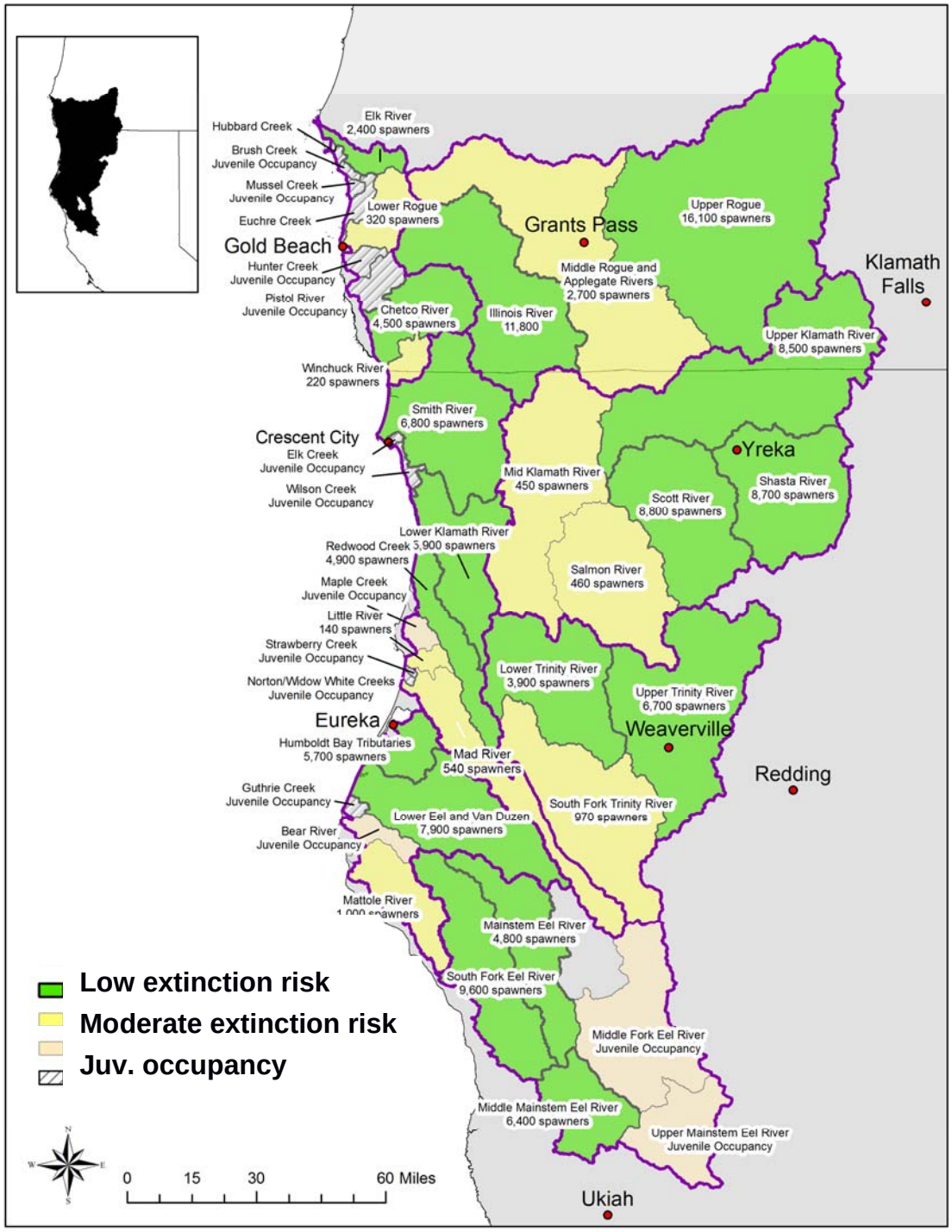
=

460 spawners needed

From scientific studies

Abundance Criteria

Number populations	Recovery Objective	Recovery Criteria
17	Achieve a low risk of extinction	Annual spawner abundance above “low risk threshold” ~ thousands of fish
9	Achieve a moderate or low risk of extinction	Annual spawner abundance above “moderate risk threshold” ~ hundreds of fish
13	Achieve inter- and intra-stratum connectivity	20% of accessible habitat is occupied in years following spawning of cohorts that experienced good marine survival


Hubbard Creek
Brush Creek
Juvenile Occupancy
Mussel Creek
Juvenile Occupancy
Euchre Creek
Gold Beach
Hunter Creek
Juvenile Occupancy
Pistol River
Juvenile Occupancy
Elk River
2,400 spawners
Lower Rogue
320 spawners
Grants Pass
Upper Rogue
16,100 spawners
Middle Rogue and
Applegate Rivers
2,700 spawners
Klamath
Falls
Chetco River
4,500 spawners
Illinois River
11,800
Upper Klamath River
8,500 spawners
Winchuck River
220 spawners
Smith River
6,800 spawners
Crescent City
Elk Creek
Juvenile Occupancy
Wilson Creek
Juvenile Occupancy
Yreka
Mid Klamath River
450 spawners
Shasta River
8,700 spawners
Scott River
8,800 spawners
Lower Klamath River
3,900 spawners
Redwood Creek
4,900 spawners
Salmon River
460 spawners
Maple Creek
Juvenile Occupancy
Little River
140 spawners
Strawberry Creek
Juvenile Occupancy
Norton/Widow White Creeks
Juvenile Occupancy
Lower Trinity River
3,900 spawners
Upper Trinity River
6,700 spawners
Eureka
Weaverville
Humboldt Bay Tributaries
5,700 spawners
Mad River
540 spawners
Redding
Guthrie Creek
Juvenile Occupancy
South Fork Trinity River
970 spawners
Lower Eel and Van Duzen
7,900 spawners
Bear River
Juvenile Occupancy
Mattole River
Mainstem Eel River
4,800 spawners
South Fork Eel River
9,600 spawners
Middle Fork Eel River
Juvenile Occupancy
Middle Mainstem Eel River
6,400 spawners
Upper Mainstem Eel River
Juvenile Occupancy
Ukiah
Low extinction risk
Moderate extinction risk
Juv. occupancy
0
15
30
60 Miles

Upper Klamath River
8,500 spawners
Yreka
Mid Klamath River
450 spawners
Shasta River
8,700 spawners
Scott River
8,800 spawners
er Klamath River
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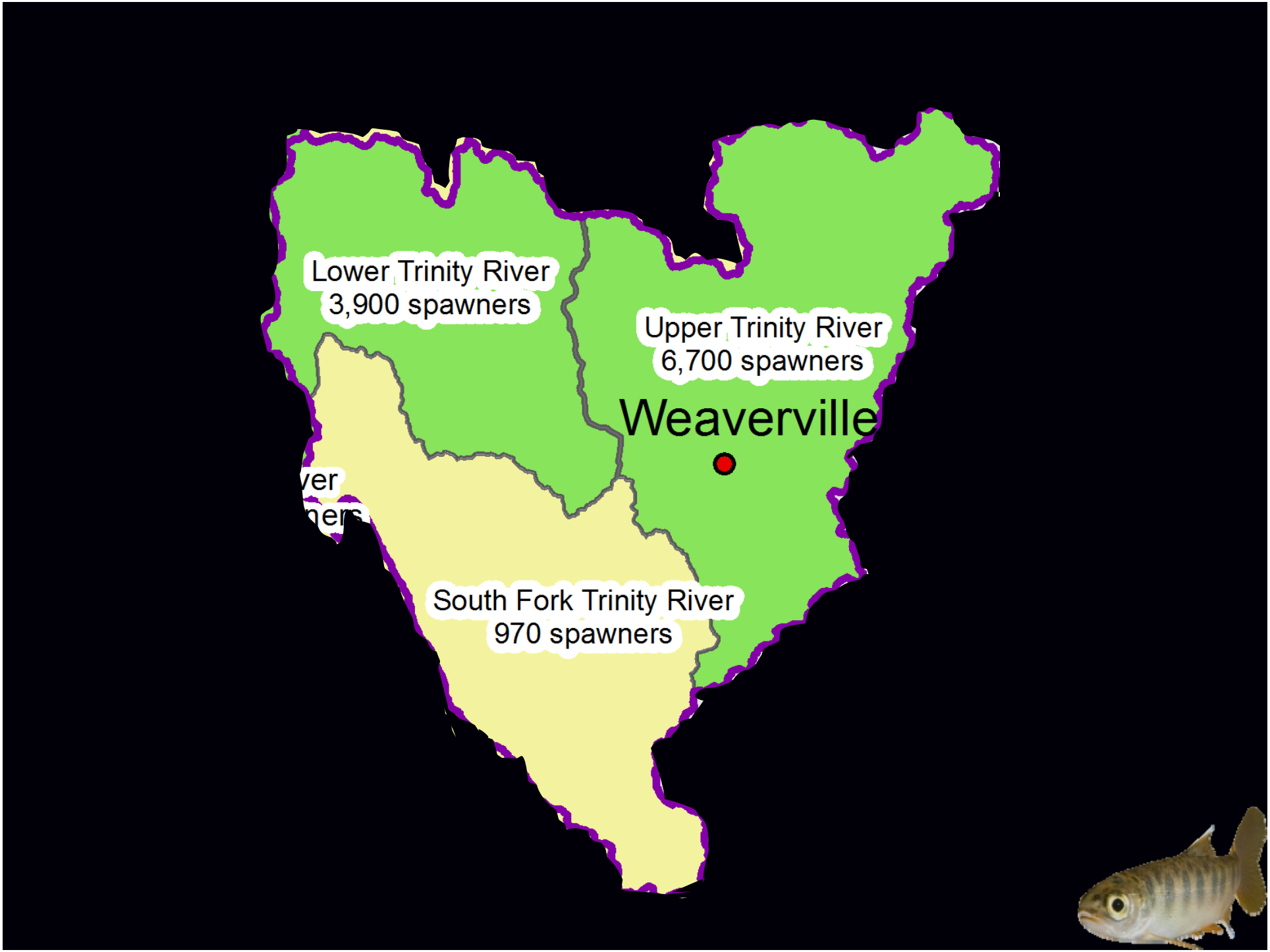
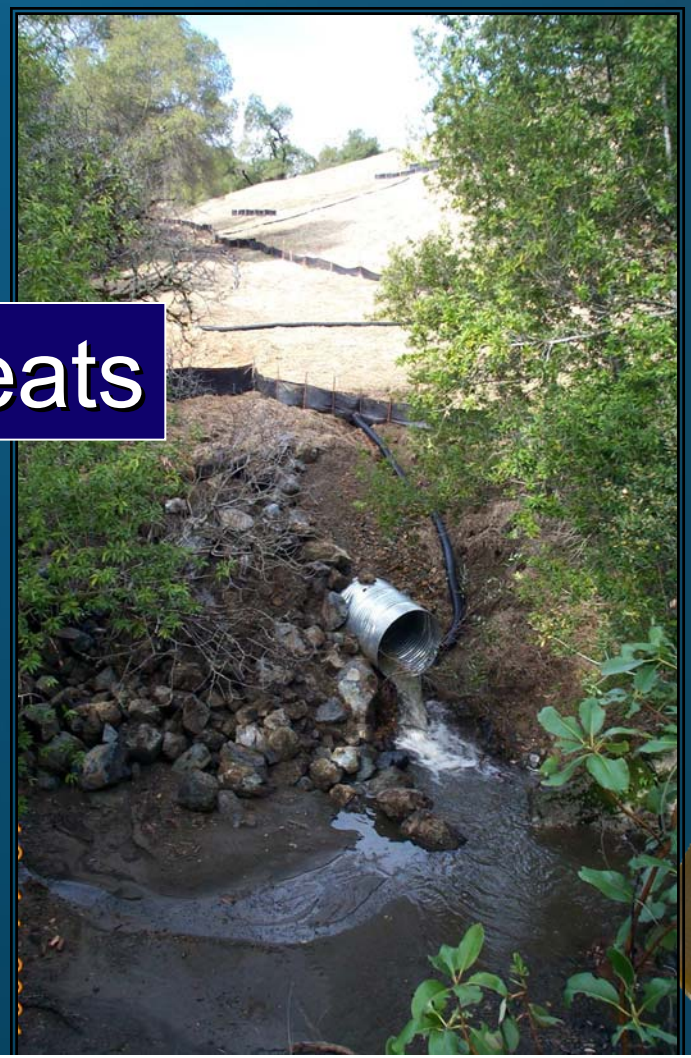
Salmon River
460 spawners


Lower Trinity River
3,900 spawners
Upper Trinity River
6,700 spawners
Weaverville
South Fork Trinity River
970 spawners

Spawner Abundance
IP model results compared to actual data

Area	Data period	Spawner abundance
Oregon coastal watersheds (OC Coho Salmon ESU)	Cannery records estimate 1892-1915	Average: 210,000/year Recovery target: 12,100/year Percent of cannery estimate: 6%
South Fork Eel River (SONCC Coho Salmon ESU)	Dam counts 1938-1952	Average observed: 13,500/year Recovery target: 6,800/year Percent of dam count: 50%

1. Delisting Criteria



2. Limiting Factors and Threats

Limiting factors (Stresses)

Impaired aspects of species or its habitat

- Lack of floodplain and channel structure (Simplified habitat)
- Altered hydrologic function (not enough water at right times)
- Impaired water quality (water too warm)
- Degraded riparian forest conditions (not enough streamside trees)
- Altered sediment supply (dirt getting in to stream)
- Impaired estuary/mainstem conditions
- Barriers
- Adverse hatchery-related effects
- Increased disease/predation/competition
- Adverse fishery-related effects

Threats

Human activities or processes that have caused, are causing, or may cause the stress

- Dams/Diversions
- Channelization/diking
- Roads
- Agricultural practices
- Urban/residential/industrial development
- Timber harvest
- Mining/gravel extraction
- Climate change
- Invasive species
- Hatcheries
- Hatcheries
- Road-stream crossing barriers
- High intensity fire
- Fishing and collecting

How are limiting factors and threats assessed?

- For each population, summary tables rank stress/threat severity on 4-category scale for each of five life stages.
- Identification of key limiting factors
  - Those that are most impeding recovery of a population
- Review by co-manager agencies

Limiting Factor (Stress) Summary Table Salmon River

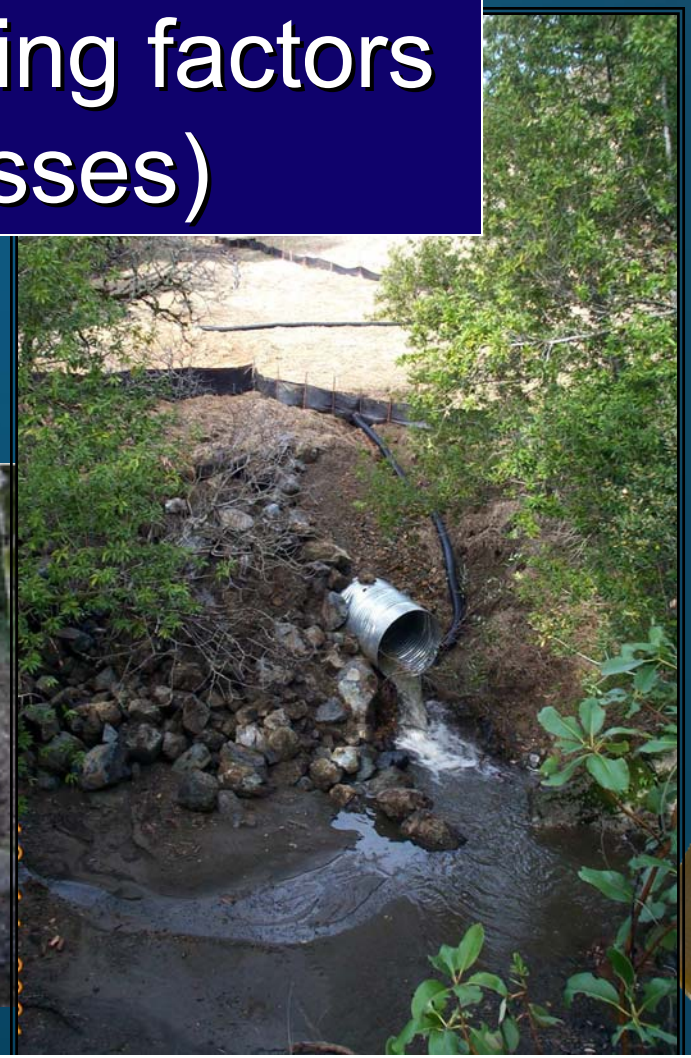
Stresses (Limiting Factors)		Egg	Fry	Juvenile[1]	Smolt	Adult	Overall Stress Rank
1	Lack of Floodplain and Channel Structure[1]	High	High	High[1]	Medium	Medium	High
2	Degraded Riparian Forest Conditions[1]	-	High	High[1]	Medium	Medium	Medium
3	Impaired Water Quality[1]	Low	Medium	High[1]	Medium	Medium	Medium
4	Adverse Hatchery-Related Effects	Medium	Medium	Medium	Medium	Medium	Medium
5	Altered Sediment Supply	Medium	Medium	Medium	Low	Low	Medium
6	Altered Hydrologic Function	Low	Low	Medium	Low	Low	Medium
7	Impaired Estuary/Mainstem Function	-	Low	Medium	Medium	Medium	Medium
8	Adverse Fishery Related Effects	-	-	-	-	Medium	Medium
9	Increased Disease/Predation/Competition	Low	Low	Low	Low	Low	Low
10	Barriers	-	Low	Low	Low	Low	Low

[1] Key limiting factor(s) and limited life stage(s).

Foundations of a CA Salmonid Recovery Plan

1. Delisting Criteria

2. Limiting factors (stresses)



3. Recovery Actions

Recovery Actions

- Actions that, collectively, lead to recovery of the species
- Linked to identified limiting factors
- Site-specific whenever possible

Table 35-3. Recovery action implementation schedule for the Salmon River population.

Action ID	Strategy	Key LF	Objective	Action Description	Area	P
Step ID	*Step Description*					
SONCC-SalR.2.1.7	Floodplain and Channel Structure	Yes	Increase channel complexity	Increase LWD, boulders, or other instream structure	High IP sub watersheds, guided by Karuk tribe data and SRRC Riparian assessment information.	
SONCC-SalR.2.1.7.1	*Assess habitat to determine beneficial location and amount of instream structure needed*					
SONCC-SalR.2.1.7.2	*Place instream structures, guided by assessment results*					
SONCC-SalR.2.1.8	Floodplain and Channel Structure	Yes	Increase channel complexity	Construct off channel ponds, alcoves, backwater habitat, and old stream oxbows	High IP sub watersheds, guided by Karuk tribe data, SRRC Riparian assessment information, and CDFG/USFS data.	
SONCC-SalR.2.1.8.1	*Identify potential sites to create refugia habitats. Prioritize sites and determine best means to create rearing habitat*					
SONCC-SalR.2.1.8.2	*Implement restoration projects that improve off channel habitats as guided by assessment results*					

Monitoring

- Need data to better understand number and distribution of coho salmon and status of limiting factors and threats.
- Determine whether delisting criteria are met.
- Chapter 5 describes monitoring

How to get involved

- Attend public meeting
- Submit formal written comments by 5/4/2012
- Contact Julie Weeder, Recovery Coordinator:

  julie.weeder@noaa.gov

  (707) 825-5168