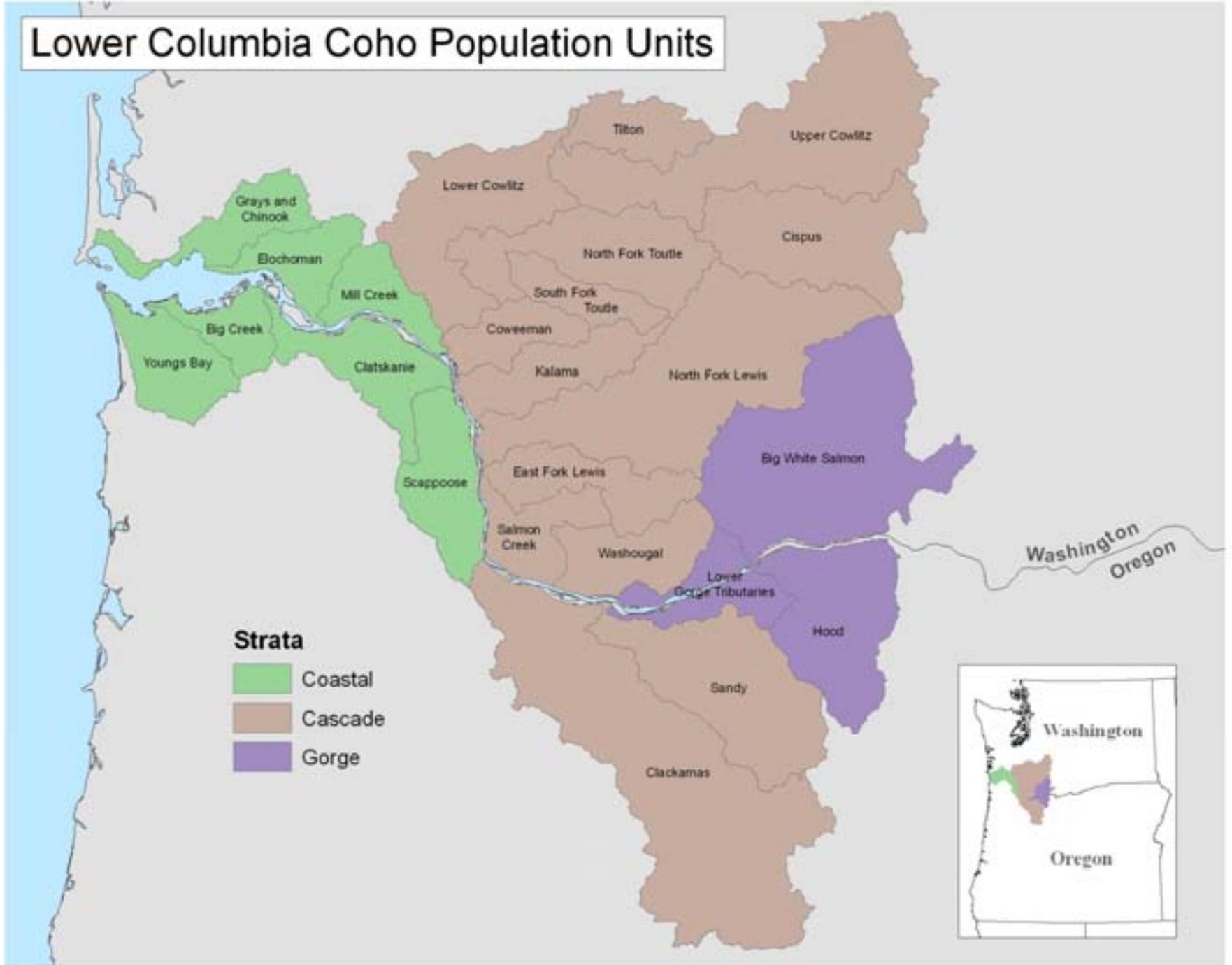


- **Plan Overview**

# Conservation and Recovery Plan

- Four species listed under ESA as threatened (coho, Chinook, chum, steelhead)
- Oregon plan addresses Oregon populations
  - Hood River to Youngs Bay
- Oregon plan will be combined with Washington plans for federal ESA recovery plan (“roll-up” plan)
- Oregon plan serves as a state conservation plan under the NFCP (adopted 8/6/10)

# Lower Columbia Coho Population Units

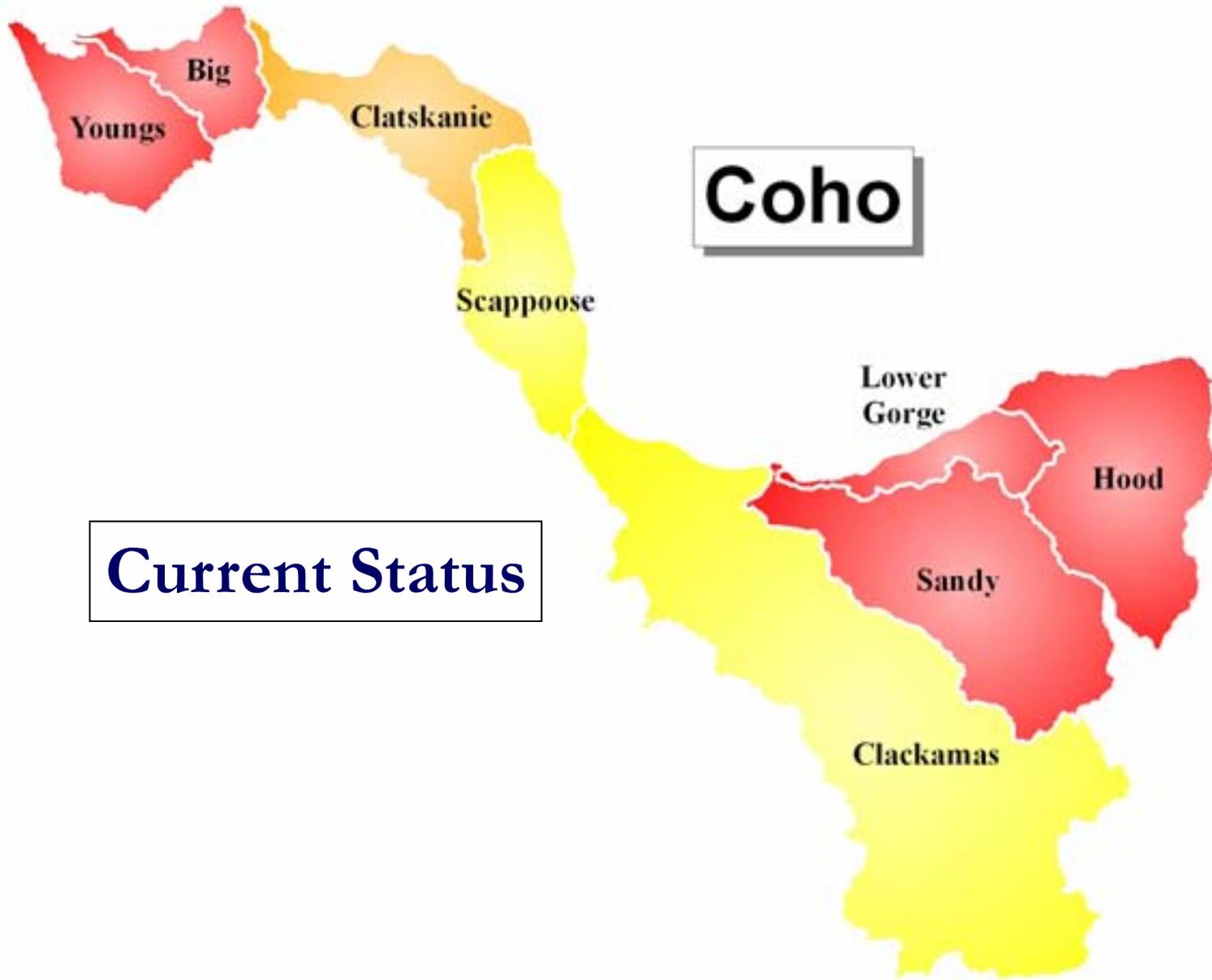


# What's In The LCR Plan?

- **Biological organization (species, strata, populations)**
- **Delisting and Broad Sense Recovery Goals**
- **Current Status**
- **Limiting factors and threats**
- **Desired status**
- **Strategies and actions for all key and secondary threats across entire life cycle**
- **Research, Monitoring, and Evaluation needs**
- **Implementation: action time and cost, framework, and adaptive management plan**

# Goals of the Plan

- “roadmap” to achieve:
- **First: Delisting** (remove fish from ESA list)
- **Second: Broad Sense** (ensure all populations provide fishery, ecological, and cultural benefits)



**Coho**

**Current Status**



# Major Actions

- **Tributary Habitat**
  - protect and restore
- **Estuary Habitat and Predation**
  - implement Estuary Module
- **Hydropower**
  - implement Federal Columbia River Power System Biological Opinion, additional Oregon measures, and tributary re-licensing agreements
- **Harvest**
  - implement weak stock management and mark-selective fisheries (coho, fall Chinook)
- **Hatchery**
  - reduce stray rates (includes wild fish only areas)

# Major Actions (cont.)

- **Youngs Bay and Big Creek**
  - maintain terminal hatchery and harvest programs
- **Chum**
  - reintroduction
- **Conduct Research, Monitoring, and Evaluation**
- **Implementation**
  - Implementation Coordinator and Team
  - prioritized Implementation Schedule
  - adaptive management
- **General:**
  - required in all populations
  - address key and secondary limiting factors and threats
  - prioritization principles and funding strategies included
  - ~\$1.48B over 25 years

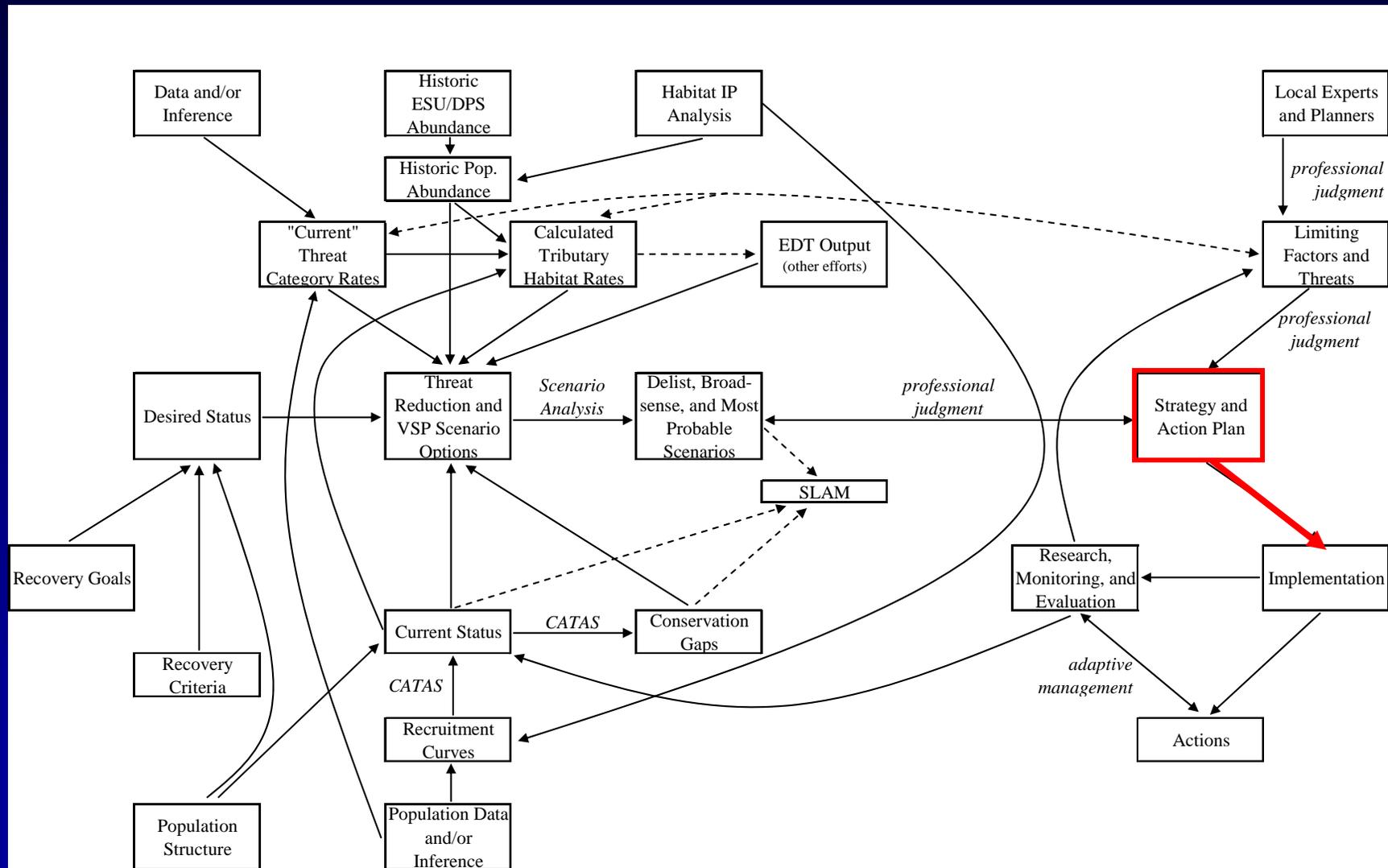
# Plan Process

- **Four-year process**
- **Development:** ODFW, NMFS, GNRO, WDFW, LCFRB, LCREP, Planning Team, Stakeholder Team
- **Reviews:**
  - ODFW, NMFS, NWFSC, Planning Team, Stakeholder Team, IMST
- **Outreach for Public Draft:**
  - web post, news release, public comment period
  - state legislators, local government notification
  - stakeholder group briefings
  - public meetings: Hood River, Portland, St. Helens, Astoria
- **Commission Review and Approval**
- **...“Roll-Up” Plan**



- **Development of Actions**

# Action Development in the Plan



# Current Status and Gaps

## (Chapter 4)

$$\ln(R_t) = \ln(\alpha) + \ln(S_t) - \ln(1 + (\alpha/\beta * S_t)) + (\gamma * C_{t+lag}) + [\rho * \varepsilon_{(t-1)}] + [sd * (1 - \rho^2)^{0.50} * z_t]$$

- **Population Viability Assessment Model**
  - extinction risk
  - current status
  - gaps: “turn dial” for improvement need
- **Overall Risk: Viable Salmonid Population Parameters**
  - Abundance
  - Productivity
  - Spatial Structure
  - Diversity

# Limiting Factors and Threats

## (Chapter 5)

COHO			Threats and Limiting Factors					
Population	Threat Level	Life History Stages	Tributary Habitat	Estuary Habitat	Hydro	Harvest	Hatchery	Predation
Y o u n g s  B a y	Key	Adult				7a	7c	
		Juvenile	5c, 6e	3a, 3b, 5b, 6c				
	Secondary	Adult	4c					
		Juvenile	5c, 6a, 6e, 9a	1a, 6e, 9a, 9b, 9c				8b

# Scenario Analysis

## (Chapter 6)

current status

limiting factors and threats from Chapter 5

status and gaps from Chapter 4, +20%

Species (Run): COHO

Population: Youngs Bay  
Historic Abundance: 18,588

Threat Level	Life History Stages	Threats and Limiting Factors					Predation	Cumulative Mortality	% Mortality Improvement	Abundance	VSP Extinction Risk Class			Delisting Scenario	Confidence	A&P Need
		Tributary Habitat	Estuary Habitat	Hydro	Harvest	Hatchery					A&P	Diversity	Spatial Structure Overall			
Key	Adult				7a	7c										
	Juvenile	5c, 6e	3a, 3b, 5b, 6c													
Secondary	Adult	4c														
	Juvenile	5c, 6a, 6e, 9a	1a, 6e, 9a, 9b, 9c			8b										
		Mortality Rates of Threats														
		Tributary Habitat	Estuary Habitat	Hydro	Harvest	Hatchery	Predation	Cumulative Mortality	% Mortality Improvement	Abundance	A&P	Diversity	Spatial Structure Overall	Delisting Scenario	Confidence	A&P Need
Current Status		98.18%	10.30%	0.00%	90.00%	86.00%	5.60%	99.98%	---	4	VH	VH	VL	VH	---	---
Threat Reduction Options	20% - All	78.54%	8.24%	0.00%	72.00%	68.80%	4.48%	98.36%	1.62%	305	VH	VH	VL	VH	---	---
	Max Harvest and Hatchery	98.18%	10.30%	0.00%	5.00%	0.00%	5.60%	98.54%	1.44%	272	VH	VL	VL	VH	---	---
	Max Feasible - All	56.00%	8.00%	0.00%	70.00%	43.00%	3.00%	93.29%	6.69%	1,248	VH	VH	VL	VH	---	---
	Min Trib Habitat	98.18%	8.00%	0.00%	70.00%	43.00%	3.00%	99.72%	0.26%	52	VH	VH	VL	VH	---	---
	Maintain into Future	97.00%	8.00%	0.00%	90.00%	86.00%	3.00%	99.96%	0.02%	7	VH	VH	VL	VH	Maintain	Exceed
	Low Extinction Risk	20.00%	8.00%	0.00%	15.00%	10.00%	3.00%	45.39%	54.61%	10,152	L	VL	VL	L	---	---
	Very Low Extinction Risk	16.00%	8.00%	0.00%	10.00%	5.00%	3.00%	35.91%	64.08%	11,913	VL	VL	VL	VL	---	---

scenario options / alternatives

chosen delist scenario (blue)

# Actions

## (Chapter 7, 9)

Table 7-3B: COHO

Action ID	Action	Threats and Limiting Factors						Future Threats			
		Tributary Habitat	Estuary Habitat	Hydro	Harvest	Hatchery	Predation				
<b>All Populations - Within Tributaries (Coho)</b>											
51 - Trib	Develop education and outreach materials on the benefit of beaver dams to ecosystem function in general and specifically to rearing habitat for juvenile coho.	6e, 9a						cc, pg			
<b>All Populations - Mixed Locations (Coho)</b>											
102 - Mxd	Monitor harvest levels in all fishery areas for all species (direct and indirect mortality).				7a, 7b						
<b>Youngs Bay (Coho)</b>											
L D	<b>limiting factors and threats from Chapter 5</b>	Adult				7a	7c	---			
		Juvenile	5c, 6e	3a, 3b, 5b, 6c				---			
		Adult	4c					---			
		Juvenile	5c, 6a, 6e, 9a	1a, 6e, 9a, 9b, 9c				8b	---		
	<b>Scenario from Chapter 6</b>	Mortality Rates	Current Status		98.18%	10.30%	0.00%	90.00%	86.00%	5.60%	---
		Delisting Scenario for Desired Status: Maintain		97.00%	8.00%	0.00%	90.00%	86.00%	3.00%	---	
111 - YB	Protect intact and functioning riparian areas through riparian easements and acquisition.	5c, 6e, 9a						cc			
112 - YB	Restore (plant and/or fence) and protect (conservation easements, acquisition) riparian areas that are degraded.	5c, 6e, 9a						cc			
116 - YB	Maintain existing wild fish sanctuary.						4c, 7c				
117 - YB	Trap and sort hatchery adults: Investigate placing trap to sort hatchery fish from upstream migrants.						4c, 7c				

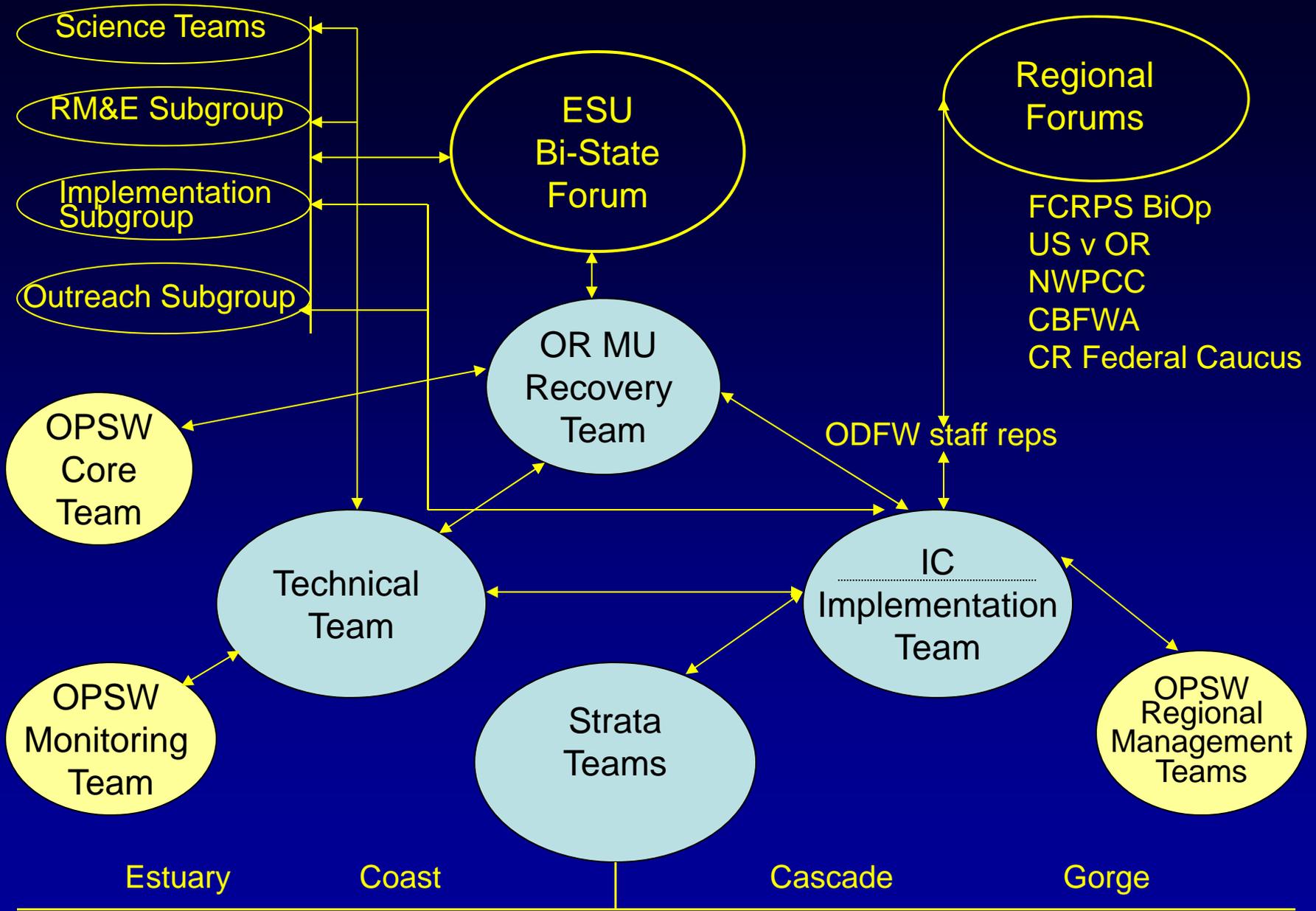
# Action Priorities

- individual actions not prioritized
- recommendations for prioritizing implementation projects, which support:
  - actions for populations which must achieve viability
  - actions addressing a threat reduction need
  - actions which address a key limiting factor are a priority
  - actions which address a greater gap
  - actions related to high quality habitat
  - restoration actions in high IP locations
  - protection actions in high quality or highly productive habitat
  - actions which provide resiliency against climate change

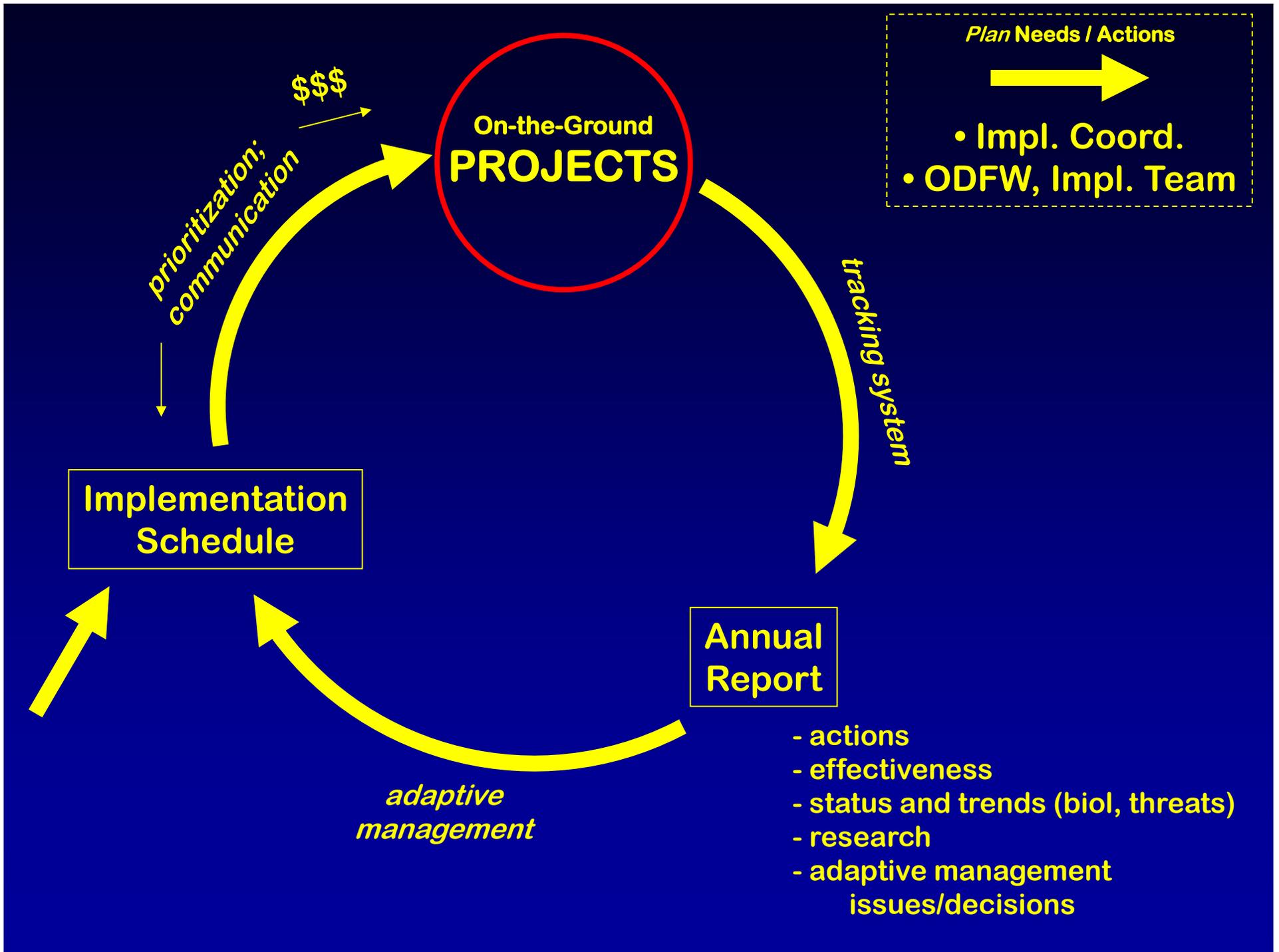
# Funding Strategies

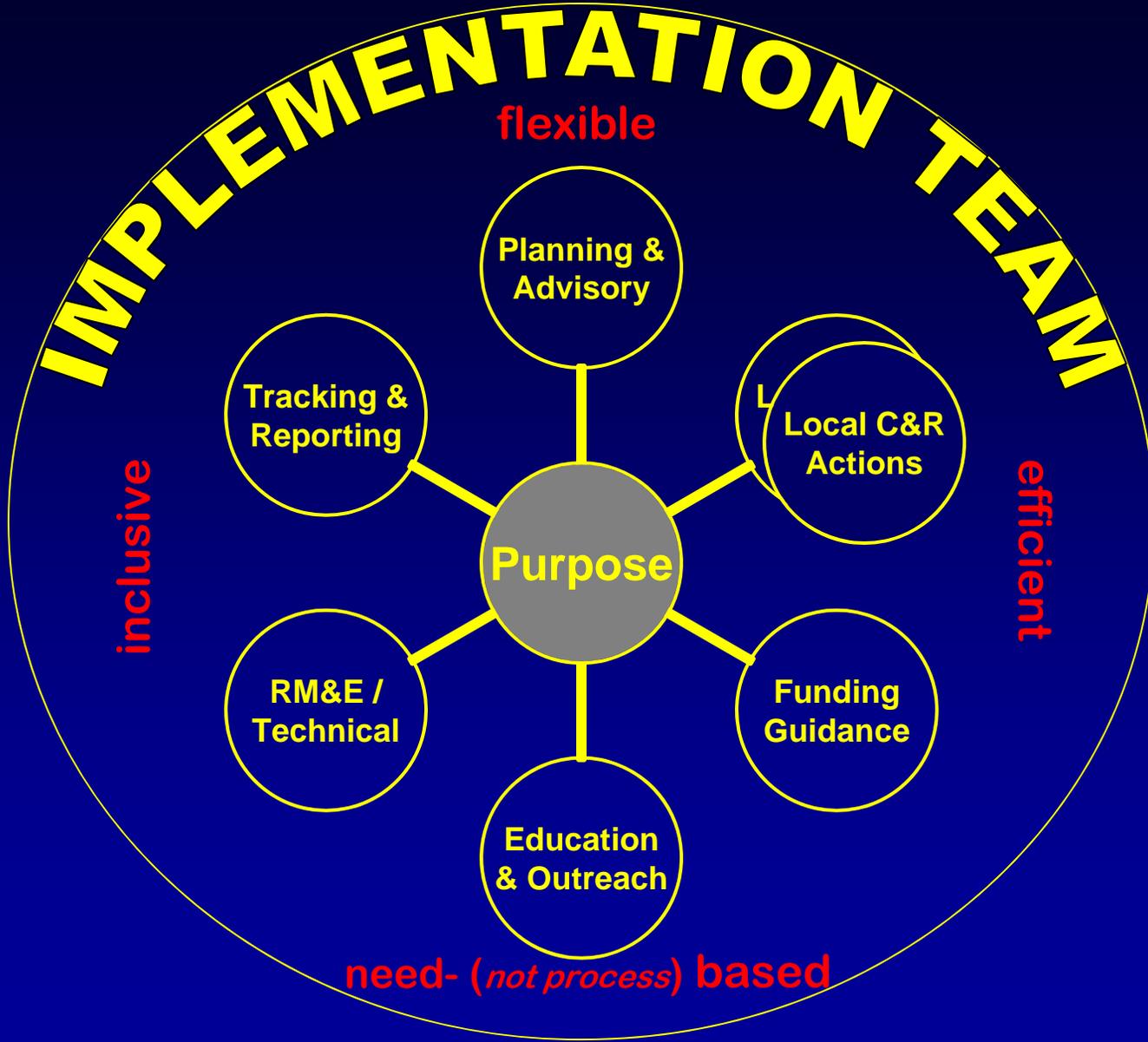
- actively engage in grant funding processes (OWEB, BPA, etc...) and recommend:
  - focus funds in high priority actions / locations
  - provide funds to lower priority actions / locations
  - report funding activity
  - coordinate reporting metrics
  - encourage innovative funding approaches

- **Implementation Framework and Concepts**



Watershed Councils, SWCDs, conservation groups, landowners, interested citizens







- **Plan Overview**
- **Development of Actions**
- **Implementation Framework and Concepts**

*Lower Columbia River Conservation and  
Recovery Plan for Oregon Populations of Salmon  
and Steelhead*

Implementation Team Meeting  
March 20, 2012