Northwest **Power** and **Conservation** Council



August 8, 2017

**MEMORANDUM**

**TO:** **Council members**

**FROM:** **Kendall Farley**

**SUBJECT:** **Lower Columbia Fish Recovery Board introduction and overview**

## BACKGROUND:

Presenter: Steve Manlow, Executive Director, Lower Columbia Fish Recovery Board

Summary: This presentation will provide the Council with an overview of the the Lower Columbia Fish Recovery Board and how their staff and 15 member board work together to lead the coordinated implementation of locally-driven salmon recovery and watershed management plans across southwest Washington to restore at-risk fish populations. The LCFRB integrated their recovery plan with the Council's Lower Columbia Subbasin Plan with the goal of defining a coherent strategy for recovery in the lower Columbia. The presentation will give details on work accomplished to date and lay out goals for the future.

Relevance: NPCC 2004 Lower Columbia Salmon and Steelhead Recovery and Subbasin Plan at: https://www.nwcouncil.org/fw/subbasinplanning/lowerColumbia/plan

LCFRB 2010 Lower Columbia Salmon and Fish & Wildlife Subbasin Plan at: https://www.lcfrb.gen.wa.us/librarysalmonrecovery

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# Lower Columbia Fish Recovery Board

Celebrating19 Years
Working to Recover Salmon, Steelhead & Bull Trout
and
Improve Watershed Health

# WA's Salmon Network Starts With Regional Organizations


## Lower Columbia Fish Recovery Board

- Established by State statute in 1998
- 15-member Board
- 12-member Technical Advisory Committee
- 5-member Clean Water Review Committee
- 3 Multi-WRIA Watershed Planning Units

# Our Region


- 5,700 sq. miles
- 7% of WA State
- 17 subbasins & the estuary
  - *2,882 tributary miles
  - *268 Columbia/estuary shoreline miles
- 74 distinct populations of ESA-listed Chinook, chum, coho, steelhead & bull trout
- 8 tributary dams, 4 Hydro-electric operators
- Bonneville dam in Columbia Gorge
- One of the fastest growing areas in the State

# Integrated Programs

Regional Organization

Salmon Recovery

NPCC F&W Program

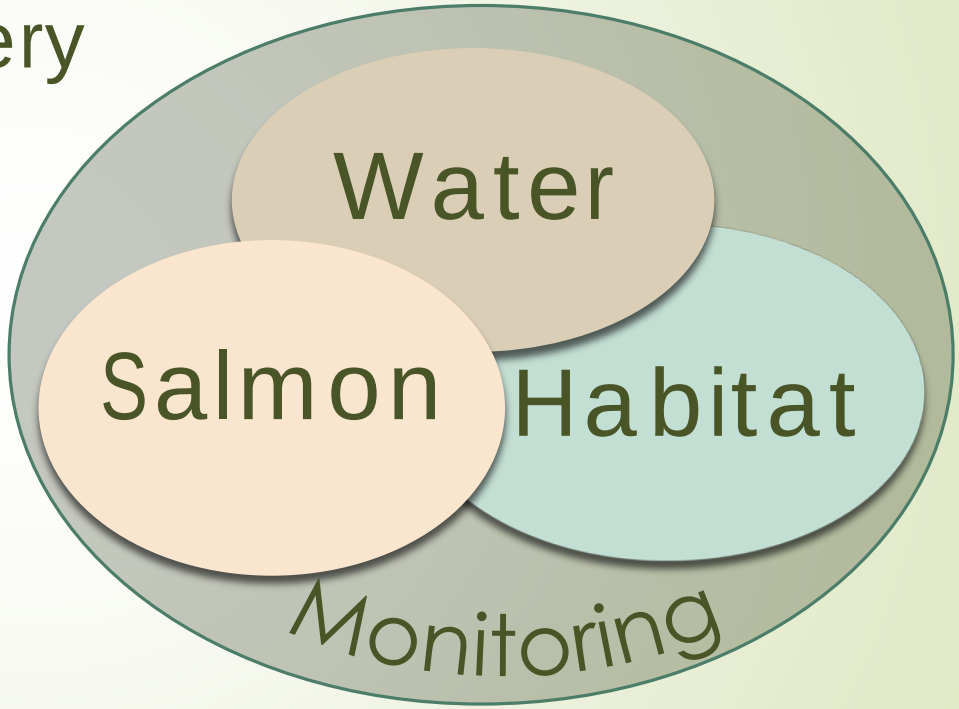
Subbasin Planning

Lead Entity

Habitat Projects

Lead Agency

3 Watershed Planning Units



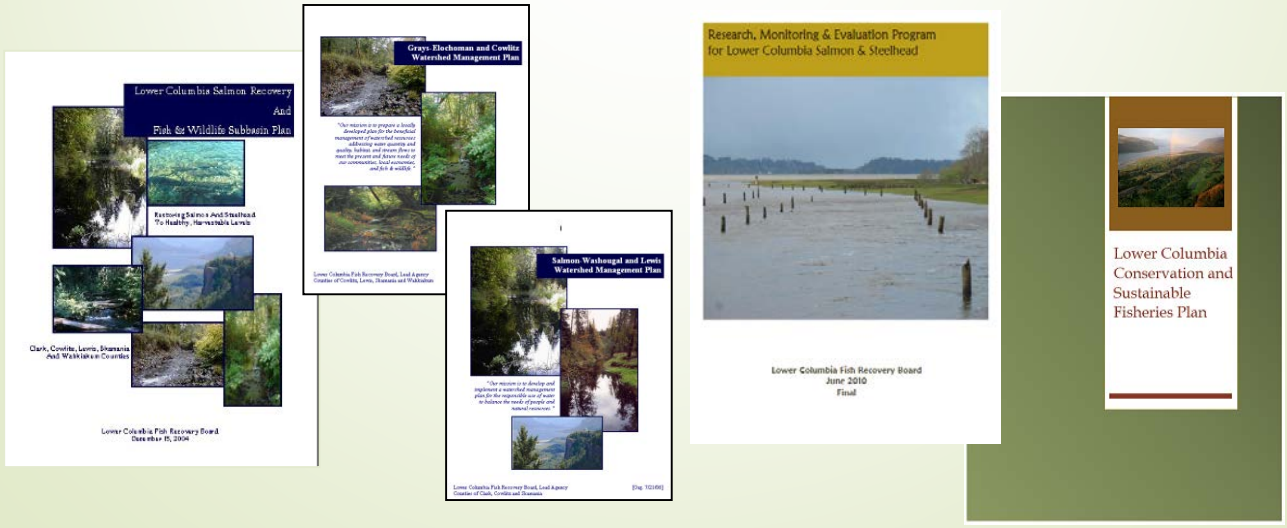
# Our Vision

*"Washington Lower Columbia salmon, steelhead & bull trout are recovered to healthy harvestable levels that will sustain productive sport, commercial, & tribal fisheries through the restoration & protection of the ecosystems upon which they depend and the implementation of supportive hatchery & fishery practices."*

*"The health of other native fish & wildlife species in the lower Columbia will be enhanced & sustained through the protection of the ecosystems upon which they depend, the control of non-native species, & the restoration of balanced predator/prey relationships."*

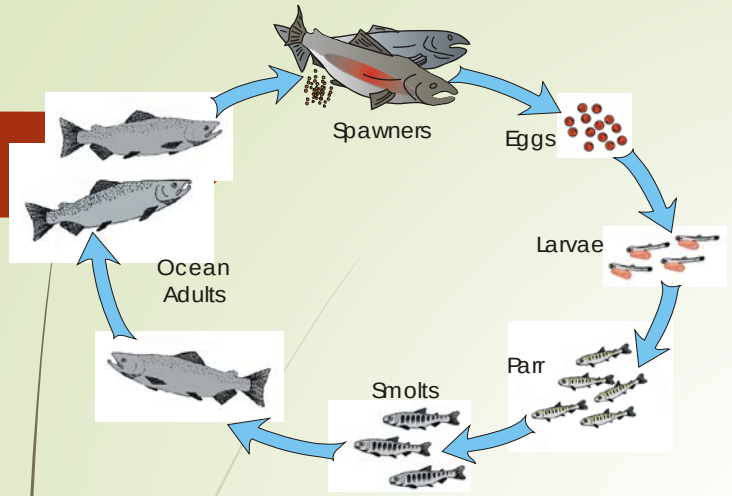
# The Plans

- Lower Columbia Salmon Recovery and Fish & Wildlife Subbasin Plan (NPCC, 2004; NOAA, 2004, 2010, 2013)
- WRIA 25/26, 27/28 and 29A Watershed Management Plans & Detailed Implementation Plans (2004, 2008, 2014)
- Lower Columbia Research, Monitoring and Evaluation Program (2010)
- Conservation & Sustainable Fisheries Plan (2017)



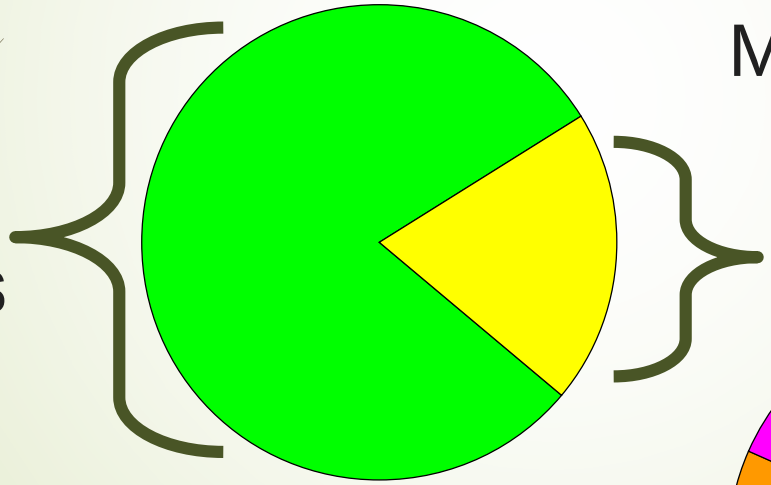
# Guiding Principles

- Scientifically sound
- Transparently developed
- Shared obligation
- Practical solutions working for people & fish

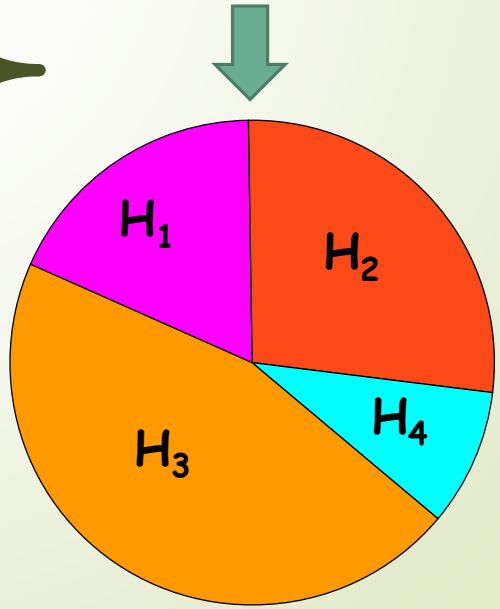



# "All-H" Approach

Natural Impacts



Manageable Impacts



# “All-H” Approach

| Factor | Impact | | Target |
|---|---|---|---|
| Habitat | 50% | For Primary Populations, Reduce Impact rate by 50% | 25% |
| Est/Main | 40% | | 20% |
| Hydro | 10% | | 5% |
| Predation | 20% | | 10% |
| Harvest | 60% | | 30% |
| Hatchery | 40% | | 20% |

# Recovery Scenario

## Lower Columbia Salmon Recovery Scenario[1]

| | | Chinook | | | Chum | | Steelhead | | Coho |
|---|---|---|---|---|---|---|---|---|---|
| | | Fall | Late Fall | Spr. | Fall | Sum. | Win. | Sum. | |
| COAST | Grays/Chinook | C | – | -- | P | -- | P[3] | -- | P |
| | Eloch./Skam. | P | – | -- | P | -- | C[3] | -- | P |
| | Mill/Aber./Ger. | P | – | -- | P | -- | P[3] | -- | C |
| | Youngs Bay (OR) | S | – | -- | S | -- | P[3] | -- | S |
| | Big Creek (OR) | C | – | -- | S | -- | P[3] | -- | S |
| | Clatskanie (OR) | P | – | -- | P | -- | P[3] | -- | P |
| | Scappoose (OR) | P | – | -- | P | -- | P[3] | -- | P |
| CASCADE | Lower Cowlitz | C | – | -- | C | C | C | -- | P |
| | Coweeman | P | – | -- | | | P | -- | P |
| | SF Toutle | P | – | C | | | P | -- | P |
| | NF Toutle | | – | | | | P | -- | P |
| | Upper Cowlitz | S | – | P | | | P | -- | P |
| | Cispus | | – | P | -- | -- | P | -- | P |
| | Tilton | | – | S | -- | -- | C | -- | S |
| | Kalama | C | – | C | C | -- | P | P | C |
| | NF Lewis | P | P | P | P | -- | C | S | C |
| | EF Lewis | | – | -- | | -- | P | P | P |
| | Salmon | S | – | -- | S | -- | S | -- | S |
| | Washougal | P | – | -- | P | -- | C | P | C |
| | Sandy (OR) | C | P | P | P | -- | P | -- | P |
| | Clackamas (OR) | C | – | P[2] | C | -- | P | -- | P |
| GORGE | Lower Gorge | C[4] | – | -- | P | -- | P | -- | P[4] |
| | Upper Gorge | C | – | -- | C | -- | S[4] | P | P |
| | White Salmon | C | – | C | | -- | – | -- | |
| | Hood (OR) | P | – | P | | -- | P | P | P |

[1] Lower Columbia Salmon Recovery and Fish & Wildlife Subbasin Plan, LCFRB 2010, Vol. 1, Ch. 4-25.
[2] Clackamas spring Chinook are part of the Upper Willamette ESU.
[3] Winter steelhead of the Coast Strata are not listed under the Federal ESA.
[4] Designation for shared population based on WA and OR objectives.
P = Primary C = Contributing S = Stabilizing

# Habitat Program

## Develop & maintain a "habitat strategy" that:

- Identifies restoration & protection opportunities at a reach-scale;
- Assesses the relative value habitat work will have on key populations & life history stages;
- Provides guidance for developing restoration & mitigation proposals, & evaluating land use changes;
- Supports evaluation & ranking of proposals for their technical merits, certainty of success & cost; and
- Tracks projects from conception to completion.

## UPPER COWLITZ-1A

(Reach Information)

**Tier:** 1

**Reach Length:** 39593 ft.

**Multi-Species Values**
Restoration: 39%
Preservation: 61%

**Description:** Cowlitz R from Cispus R (near the end of the Cowlitz Falls impoundment) to Siler Creek

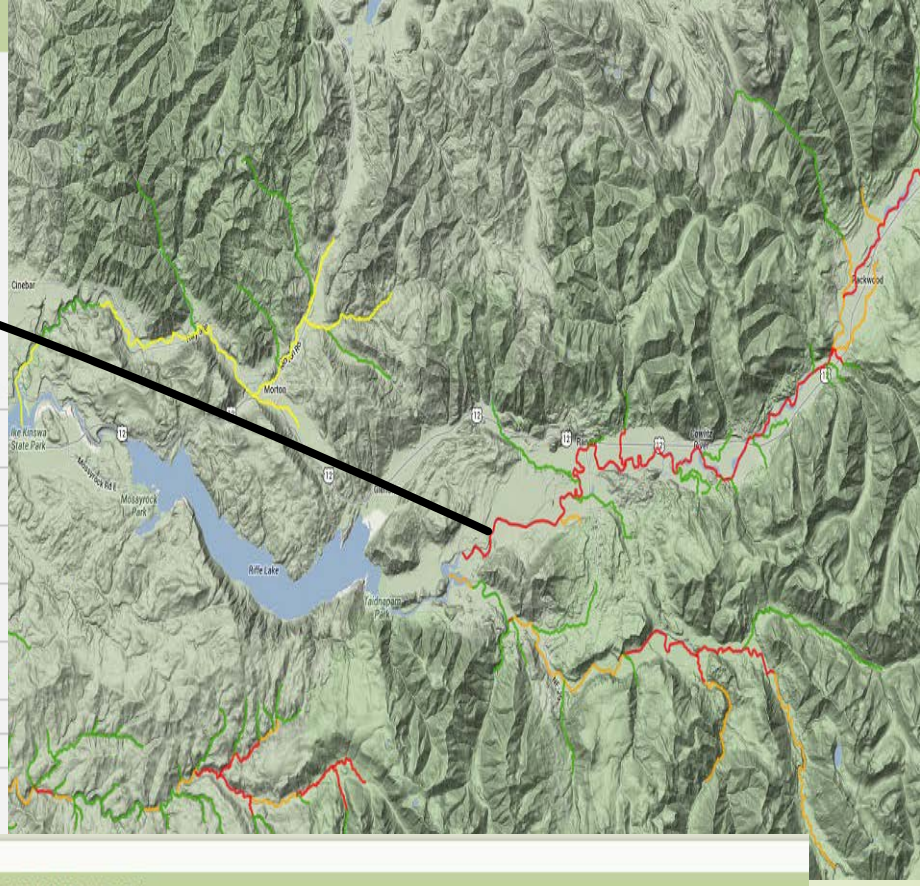
| Species^ | Designation | Reach Potential |
|---|---|---|
| Coho | Primary | H |
| Fall Chinook | Stabilizing | H |
| Spring Chinook | Primary | M |
| Winter Steelhead | Primary | L |

**Projects**

Upper Cowlitz-Cispus Habitat Strategy

| Restoration Needs | Multi-Species Priority * |
|---|---|
| Floodplain function and channel migration processes | H |
| Off channel & side channel habitat | H |
| Riparian conditions & functions | H |
| Stream channel habitat structure & bank stability | H |
| Watershed conditions & hillslope processes | H |
| Instream flows | M |
| Access to blocked habitats | L |
| Regulated stream management for habitat functions | L |
| Water quality | |

**Note:** *Multi-Species Priority are derived from conditions of limiting factors and not from field ob
^Species without a reach potential are present in the subbasin not in the reach




# Habitat Strategy

## UPPER COWLITZ-1A

Upper Cowlitz Fall Chinook (Stabilizing)

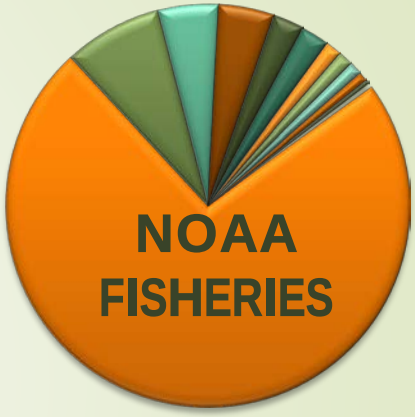
Tier: 1

Primary limiting factors for Fall Chinook in Reach UPPER COWLITZ-1A:
Sediment
Channel Stability
Key Habitat Quantity

| Top 5 Ranked Life Stages: | Primary Limiting Factors (in order of importance to life stage): |
|---|---|
| Egg Incubation | Sediment, Channel Stability |
| 0-Age Transient Rearing | Key Habitat Quantity |
| Fry Colonization | Key Habitat Quantity |
| Prespawn Holding | |
| Prespawn Migrant | |

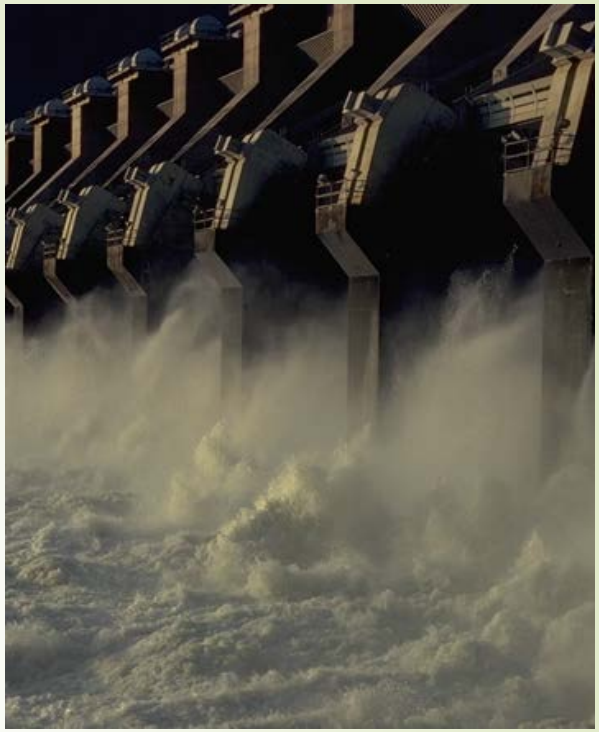
# Habitat Program
# $86.3 million invested since1998

- NOAA Pacific Coastal Salmon Fund $63,128,375
- WA Salmon Recovery Funding Board $6,795,446
- Family Forest Fish Passage Program $4,162,754
- WA Department of Ecology $3,854,353
- Clark County Clean Water Fund $2,128,637
- PacifiCorp Aquatics Fund $1,959,394
- National Fish & Wildlife Foundation $1,143,064
- WA Department of Transportation $1,039,060
- Bonneville Power Administration $899,001
- Pacific States Marine Fisheries Commission $643,171
- WA Department of Fish and Wildlife $259,093
- Coastal Initiative $201,186
- Lewis River Fund $97,835

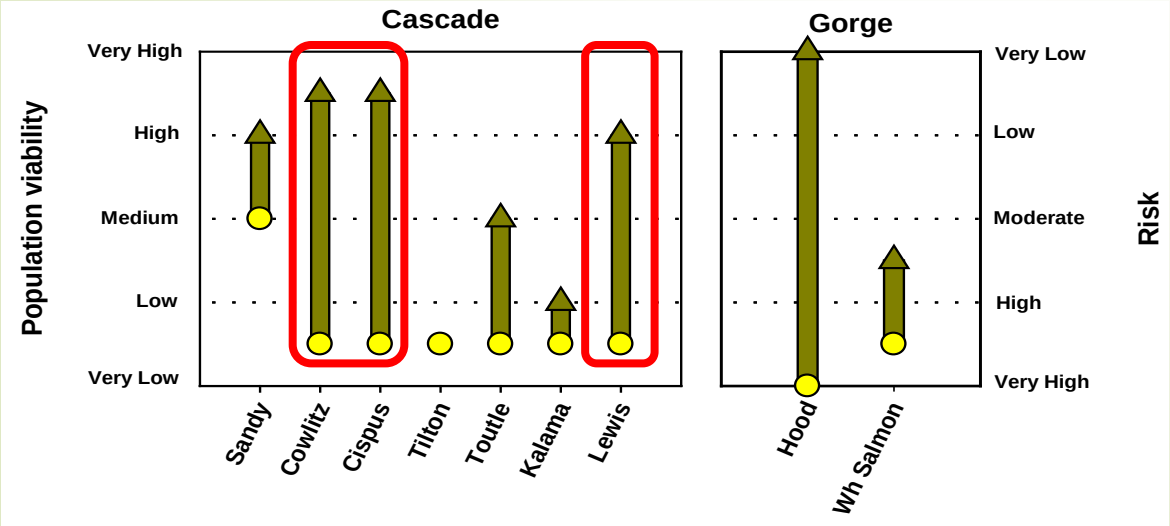


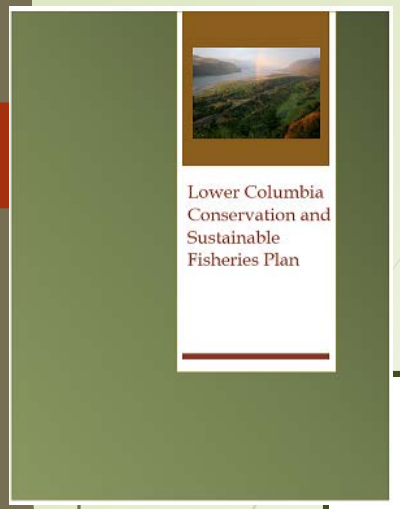

507 Proposed
381 Awarded
310 Completed
71 Active

# Hydropower

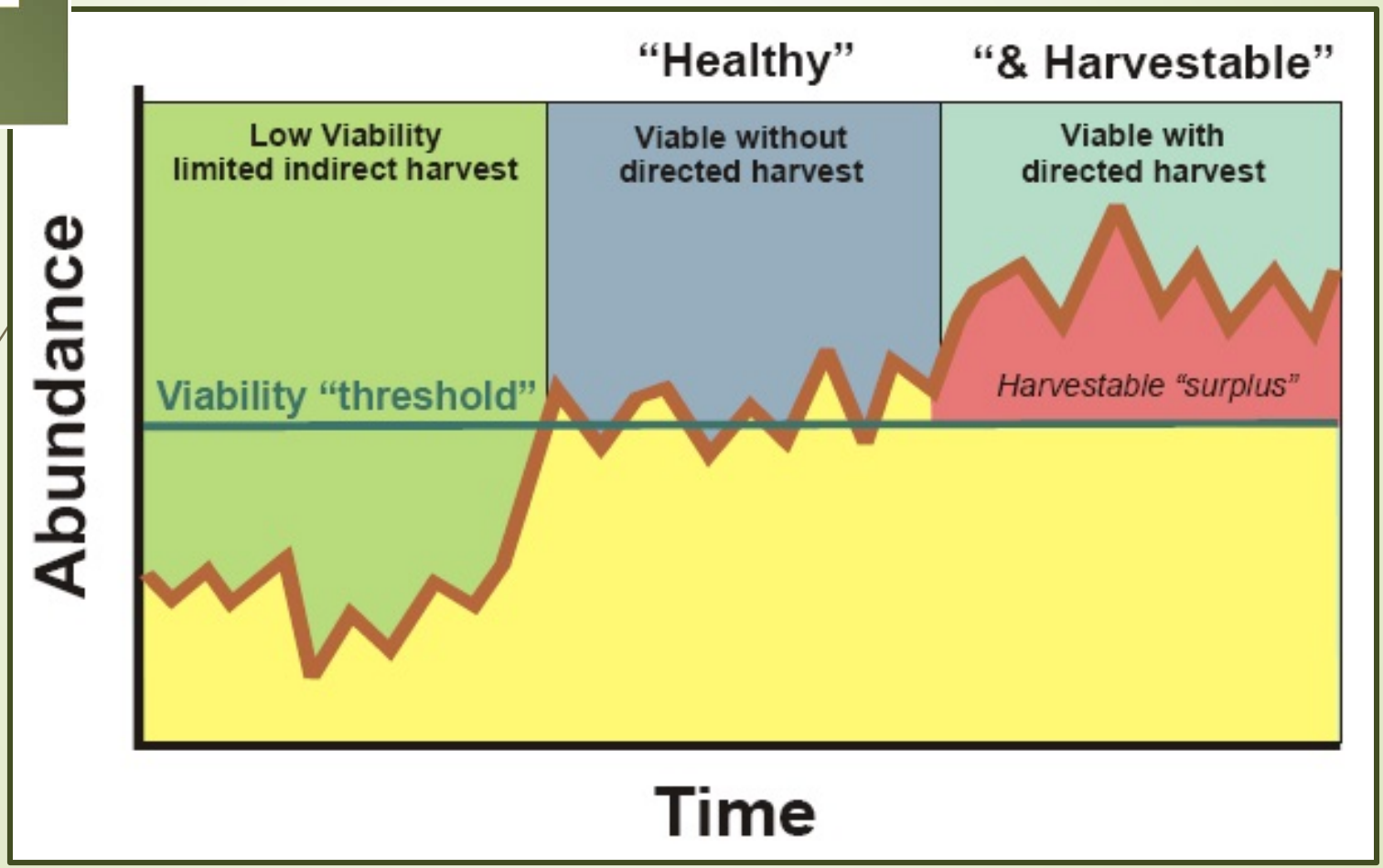


- Habitat Restoration Partnerships
  - Cowlitz River Restoration Fund
  - Lewis River Aquatic Restoration Fund
- Fisheries and Aquatic Committees
  - Reintroduction Efforts
  - Fishery & Hatchery Management Plans - Hatchery & Harvest Reform
    - Conservation & Sustainable Fisheries Plan Alignment



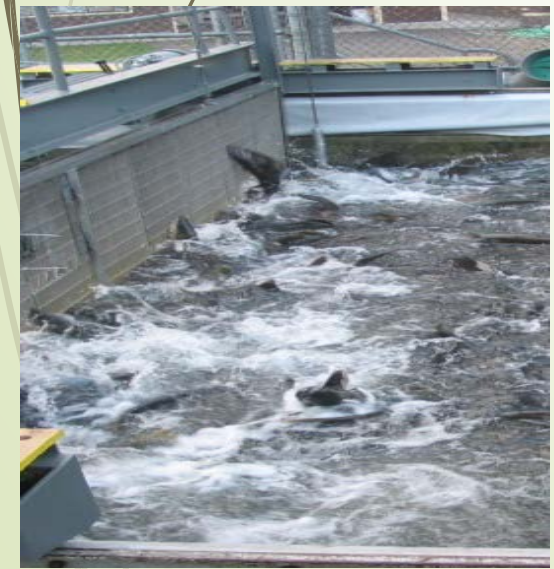



# Harvest & Hatcheries - Lower Columbia Conservation & Sustainable Fisheries Plan (CSF Plan)

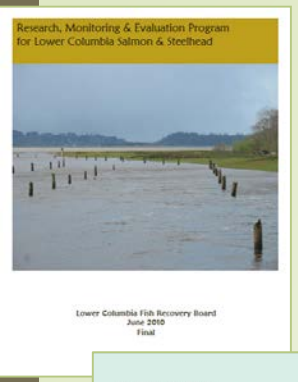


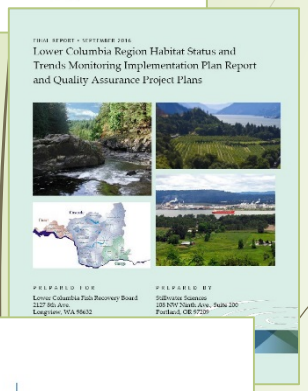
# CSF Plan – Harvest & Hatchery Reform Actions

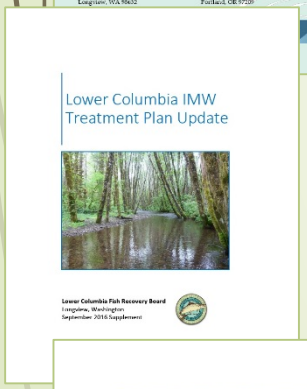
- Time, area & gear restrictions
- Mark-selective fisheries
- Retention restrictions
- Alternative commercial fishing gears & methods
- Abundance based fishery management

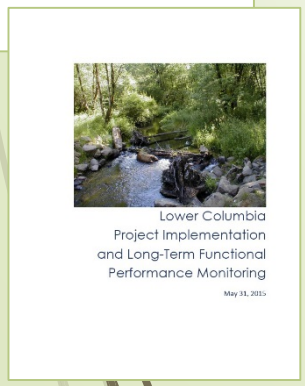


- Mass-marking programs
- Natural origin hatchery broodstock
- Conservation & reintroduction programs
- Control hatchery fish on spawning grounds
- Gene banks & refuges
- Improve infrastructure




# Research, Monitoring & Evaluation Program

- Biological Status & Trends
- Habitat Status & Trends
- Intensively Monitored Watershed
- Project Implementation & Performance
- Program Evaluation
- Action Effectiveness
- Uncertainty & Validation Research

# LCFRB Online Project & Program Tracking

## SalmonPORT

Map | Project Tracking | Program Tracking | Plan Actions | Partners | Library | LCFRB | Contact Us

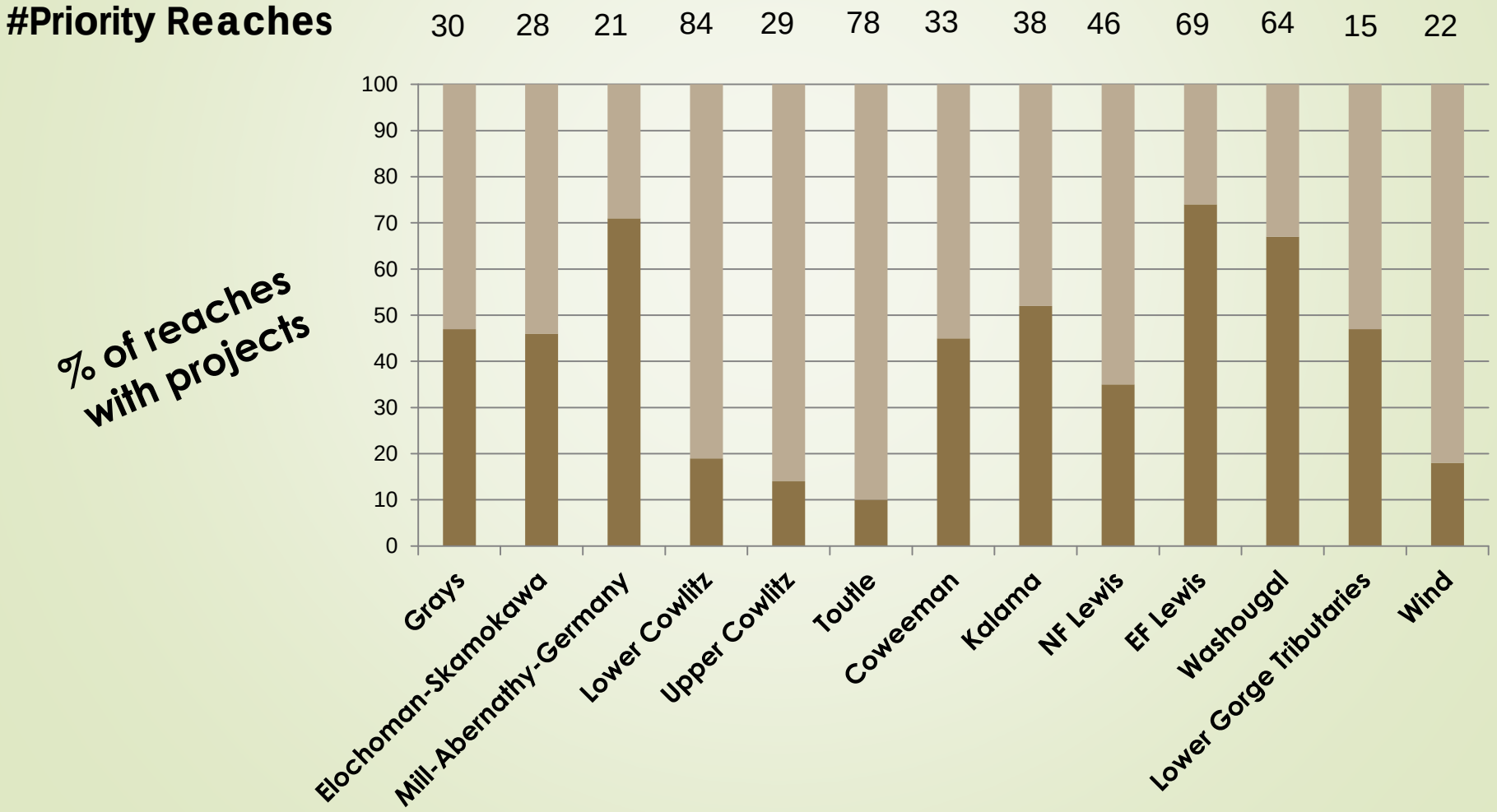
At the heart of our region are several thousand miles of rivers and streams that feed the main stem of the Lower Columbia River and support dozens of rural communities, growing urban areas, and the remaining wild places that we enjoy. Protecting and restoring these watersheds is essential to reducing the risk of extinction facing our salmon, steelhead and bull trout populations.

SalmonPORT helps us track our partners actions as they undertake habitat projects, improve hatchery programs, manage harvest measures and implement land use practices that will help improve our waterways and recovery our fish.

# Questions?

# Habitat Program

- 675 miles are high priority
- 284 projects implemented



# CSF Plan – Adaptive Management

| Life Cycle | Hatchery Fish | Natural Origin Population |
|---|---|---|
| 1st | Step 1<br>• Implement action at start of life cycle<br>• Partial biological response occurs | Step 1<br>• Implement action at start of life cycle<br>• No biological impact on population |
| 2nd | Step 2<br>• Biological response occurs<br>• WDFW assesses response to action | Step 1<br>• Partial biological response occurs |
| 3rd | Step 3<br>• Adjust hatchery or harvest programs to meet pHOS criteria | Step 2<br>• Biological response occurs<br>• WDFW assesses response to action |
| 4th | | Step 3<br>Adjust hatchery or harvest programs to continue trajectory toward recovery goals |

| Goals | | Historical | Washington Recovery Plan | |
|---|---|---|---|---|
| | | | Baseline | Minimum Viability Goal |
| Minimum Viability | | | Very Low | High |
| Escapement | Natural Origin Fish | 3,000 | <50 | 1,500 |
| Gene Flow (pHOS or PNI) | | | pHOS 61% | pHOS <5% |
| Fitness | | | 0.50 | 0.60 |
| Harvest Rate | Hatchery Origin Fish | | 65% | NA |
| | Natural Origin Fish | | 65% | 46% |