



*Washington  
Department of*  
**FISH and  
WILDLIFE**

Options for Wild Steelhead Gene Banks  
in the Coast Area of the Lower Columbia River

January 21, 2016

# Agenda

- Staff Introductions
- Presentation of information
  - Gene bank definitions
  - Policies and Guidelines
  - Work group process
  - Options and Key Information Considered
- Questions/Answers
- Take Public Comments



# Gene Bank – What is it?

- **Gene Bank** – an area where a wild stock (population) is largely protected from the effects of hatchery programs



# Gene Bank – Why do we need them?

- **Effects of hatchery programs -**
  - Interbreeding – leads to reduced fitness of wild populations
    - **Fitness** – how well offspring survive and contribute to next generation
  - Competition with wild fish for habitat and food
  - Negative impact on wild populations



# Gene Bank Characteristics

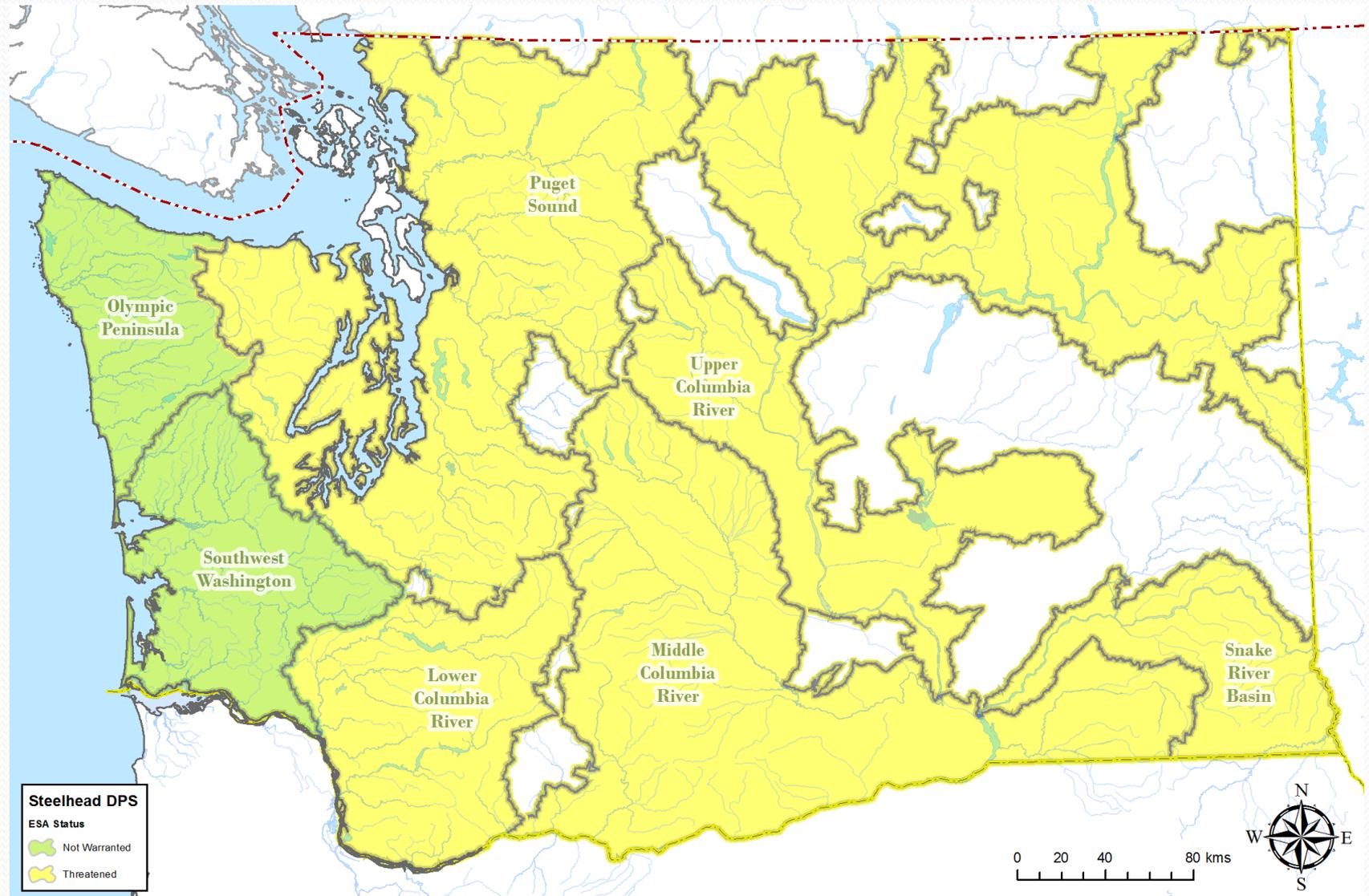
- ▶ Each stock selected for inclusion in the gene bank must be **sufficiently abundant and productive to be self-sustaining** in the future
- ▶ **No releases of hatchery-origin steelhead** will occur in streams where spawning of the stock occurs, or in streams used exclusively by that stock for rearing
- ▶ **Fisheries can be conducted** if wild steelhead management objectives are met as well as any necessary federal ESA determinations.

# How were Gene Bank Options Identified?

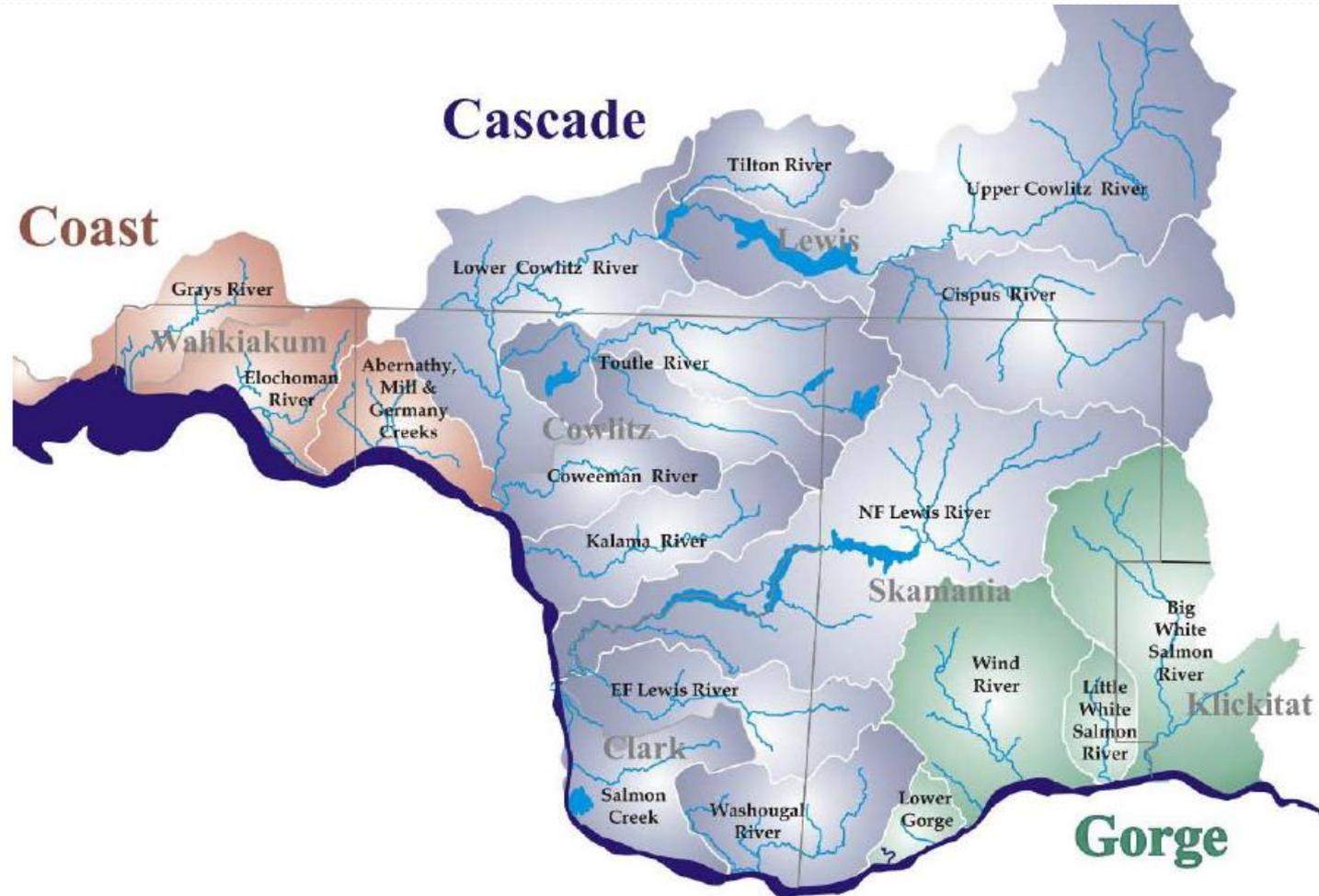
## Wild Stock Gene Banks (from SSMP)

- ***Establish Network of Wild Stock Gene Banks.***
  - Establish a network of wild stock gene banks across the state where wild stocks are largely protected from the effects of hatchery programs
  - At least one wild stock gene bank will be established for each **Major Population Group (MPG)** in each steelhead **Distinct Population Segment (DPS)**

# Distinct Population Segments (DPS)



# Major Population Groups (Strata)



# Policies and Guidelines

- **Statewide Steelhead Management Plan (SSMP) (2008)**
  - Requires development of steelhead watershed management plans
  - Established the requirement for a network of gene banks
- **Fish and Wildlife Commission – Hatchery and Fishery Reform policy (2009)**
  - Requires WDFW to follow HSRG principles for hatcheries
  - Also required network of gene banks
- **Hatchery Scientific Review Group (HSRG)– Columbia Basin Review (completed 2009)**
  - Set standards for allowable hatchery/wild fish interactions on spawning grounds
- **LCFRB Recovery plan (2010)**
  - Prioritized populations and set recovery goals

# Watershed Management Plans: Work Group Process

- Initiated work group formation via a series of public meetings to announce the process.
- Role and Scope
  - Provide input on developing management options
  - Review information and “side-boards” provided in policies and plans
  - Provide expertise and knowledge of local watersheds and fisheries
  - Make best decisions for resource and fishery

# Watershed Management Plan Development

- Established advisory work groups
  - 1 in Coast**
  - 2 in Cascade**
  - 1 in Gorge**
- Gather work group input/recommendations on a variety of topics outlined in the SSMP
- Complete draft watershed plans
  - Incorporating input from work groups
- Adopt watershed plans (supplemental SEPA)

# Work Group Recommendations - Gene Banks

	<b>COAST MPG (stratum)</b> - part of SW Washington ESU - not ESA listed		
Coast Workgroup	Grays/Chinook	Winter	?
	Elochoman/Skamokawa	Winter	?
	Mill/Abernathy/Germany	Winter	?
	<b>Cascade MPG (stratum)</b> - part of LCR ESU - ESA listed		
Cascade Workgroup #1	Coweeman	Winter	
	SF Toutle	Winter	
	NF Toutle	Winter	
	Green River (sub-population of NF Toutle)		X
	Kalama	Winter	
	Kalama	Summer	
Cascade Workgroup #2	EF Lewis	Winter	X
	EF Lewis	Summer	X
	Washougal	Summer	
	<b>Gorge MPG (stratum)</b> - part of LCR ESU - ESA listed		
Gorge Workgroup	Upper Gorge - (Includes the Wind River)	Summer	X

# Gene Bank Options

## The work group...

- Did not reach a consensus recommendation for a gene bank in the Coast stratum
- Was divided between:
  - Grays/Chinook - **Majority**
  - Mill/Abernathy/Germany- **Minority**
- Recommended that the Elochoman/Skamokawa population should not be a gene bank
- Recommended that lost production from a gene bank be reprogrammed to the same geographic area (Coast Stratum), if possible

# Gene Bank Criteria Considered

- **Biological benefit** (for protecting and maintaining wild stocks)
  - Recent Escapement & Recovery Goals
  - Habitat Quantity and Quality
    - Land use and ownership
  - Population Recovery Designations
- **Hatchery issues**
  - Program sizes
  - Infrastructure issues
  - Hatchery Scientific Review Group (HSRG)
  - USFWS Abernathy Fish Technology Center (AFTC)
- **Fisheries/Harvest**
  - Public access
  - Impacts to current fisheries
  - Future opportunities

# Biological Benefit

- Recent Escapement & Recovery Goals
  - Grays/Chinook
    - 10 yr. avg. wild abundance is 562 (2005-2014)
    - Recovery Goal is 800
  - MAG
    - 10 yr. avg abundance is 354 (includes some hatchery spawners; 2005-14)
    - Recovery Goal is 500
- Habitat Quantity
  - Spawning habitat
    - Grays/Chinook ~77 miles
    - MAG ~ 44 miles
  - Current smolt capacity
    - Grays/Chinook ~12,550
    - MAG ~9,850

# Biological Benefit

- Habitat Quality
  - Most habitat for both populations is private or state timberland
  - Remainder rural residential, agricultural
  - Land use has degraded steelhead habitat
  - Similar land use = similar prognosis for future
  - Grays/Chinook – current active logging = continued high levels of sediment input
  - MAG watersheds in DNR ownership – less current active logging
- Population Recovery Designations
  - Both are ‘Primary’ in the Recovery plan
    - Goal = recovery to high level of viability
  - Consistent with gene banks in LCR ESU

# Hatchery Issues

- Program Sizes
  - Grays – early winter segregated program – 40,000 smolts
  - MAG – integrated winter (research program) – variable release sizes approx. 5,000 – 20,000 smolts
- Infrastructure issues
  - Grays River has failing hatchery infrastructure; production is proposed to transition to Beaver Creek (Elochoman River)
- Hatchery Scientific Review Group (HSRG)
  - HSRG noted – “a unique opportunity exists to establish a Wild Steelhead Management Zone” within the Grays River Basin.

# Hatchery Issues

- USFWS Abernathy Fish Technology Center (AFTC)
  - Currently operates a BPA-funded integrated steelhead hatchery research program in MAG (on Abernathy Creek)
  - MAG could not be formally designated a gene bank until this research program ends (sunset date is unclear)
  - Recommendation of MAG as a gene bank would require further discussion with USFWS regarding this issue

# Harvest

- Both basins offer popular steelhead sport fishing opportunities
  - Harvest fishery (for hatchery steelhead) would be impacted by gene bank designation
  - Catch and Release fishery potential (for wild steelhead) exists in both areas
- Access in both basins is limited
- Number of “fishable” days on Grays may be less due to high turbidity in winter
- Catch Record Card data indicates more harvest in Grays River than MAG

<b>2003-13</b>	<b>Winters</b>		<b>Summers</b>	
	<b>Smolts</b>	<b>Avg Catch</b>	<b>Smolts</b>	<b>Avg Catch</b>
Grays	40K	421	0	23
Elochoman	90K	548	30K	61
MAG	variable	63	0	20

# Other workgroup comments/concerns

- MAG—gene bank would create a conflict with the USFWS-AFTC steelhead program
- MAG—hatchery steelhead program funding less certain; depends on BPA funding
  - Could result in loss of sport harvest fishery in MAG regardless of gene bank choice
- MAG—research programs for both wild populations and hatchery impacts.
  - Gene bank could end hatchery steelhead research conducted by USFWS at AFTC
  - Gene bank could simplify wild population monitoring (IMW Project)
- MAG hatchery fish (integrated) have the same timing as the wild fish
  - Hatchery fish present over longer period (maybe longer fishery)
  - Long return period means some hatchery fish come back after fishing closes
  - Later spawning of hatchery fish complicates wild population monitoring
- SSMP does not list economics (e.g. sport catch, effort) as a specific criterion for gene bank choices – protection of wild steelhead is the highest priority

# Implementation Actions

## *Grays/Chinook*

- Elimination of 40,000 segregated hatchery winter-run steelhead plant into the Grays River
  - Work group recommended these fish be reprogrammed into the Elochoman River
  - Long-term expectations that Grays River Hatchery be closed and production continue out of Beaver Creek Hatchery on Elochoman River

## *Mill/Abernathy/Germany*

- Elimination of 5,000 – 20,000 integrated hatchery steelhead smolt release on Abernathy Creek
  - Would require discussions with USFWS regarding discontinuation of steelhead hatchery releases on Abernathy Creek
  - Delay of gene bank implementation to allow continuation of USFWS research program uncertain; would require further discussions between WDFW and USFWS

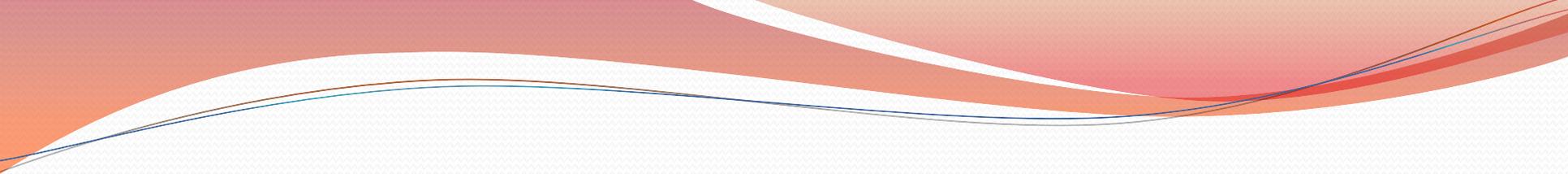
# Questions?



# Comments

**Submit a comment:** WDFW is accepting public comments on these recommendations at tonight's meeting and online from January 25<sup>th</sup>- February 5, 2016 at: [TeamVancouver@dfw.wa.gov](mailto:TeamVancouver@dfw.wa.gov).

[http://wdfw.wa.gov/conservation/fisheries/steelhead/gene\\_bank/columbia\\_river/](http://wdfw.wa.gov/conservation/fisheries/steelhead/gene_bank/columbia_river/)



# Supporting Slides

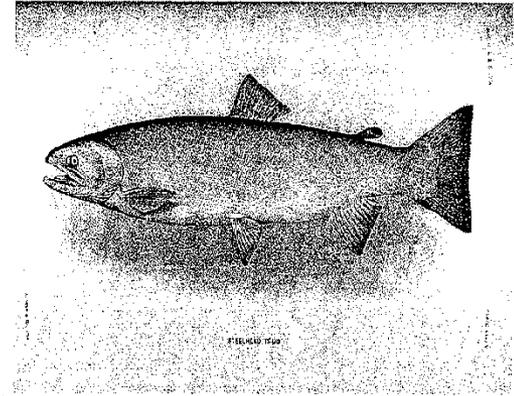
# **Management modifications in response to gene bank recommendations – implemented and proposed**

## **Strategy:**

- Continue to provide fishing opportunity in gene bank watersheds as allowable.
- Re-structure hatchery program releases to minimize impact on harvest opportunity.

# Statewide Steelhead Management Plan

- Guides Steelhead management for the state of Washington
- Outlines mgt. policies, actions and strategies
- Gene bank network
- Develop Regional Watershed Management Plans



Washington Department of Fish and Wildlife

***Statewide Steelhead Management Plan:***

***Statewide Policies, Strategies, and Actions***

February 29, 2008

# Workgroup Input

- **Natural Production**
  - Gene banks
  - Escapement Goals
- Fishery Management/Regulations
- Artificial Production
- Regulatory compliance
- Monitoring, Evaluation and Adaptive Management
- Research – Genetic Introgression Study
- Outreach and Education



# Population Designations

- Identifies individual populations role in recovery
  - ***Primary populations*** are targeted for restoration to high or very high viability. These populations are the foundation of salmon recovery.
  - ***Contributing populations*** are those for which some improvement will be needed to achieve a stratum-wide average of medium viability.
  - ***Stabilizing populations*** are those that would be maintained at baseline levels.

# LCFRB Recovery Designations

- Primary = Recovery to high level of viability
- Contributing = Recovery to medium level of viability
- Stabilizing = Recovery to low level of viability

Coast Stratum	Steelhead	
	Winter	Summer
Population		
Grays/Chinook	Primary	---
Elochoman/ Skamokawa	Contributing	---
Mill/Abernathy/ Germany	Primary	---

# Hatchery Sport Catch

	Winters		Summers	
<b>Population</b>	<b>Release</b>	<b>Avg Catch</b>	<b>Release</b>	<b>Avg Catch</b>
Grays	40K	421	0	23
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