

WILD STEELHEAD MANAGEMENT ZONES

Annette Hoffmann

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Wild Steelhead Management Zones

Why do we need them?

- Genetic interbreeding leading to fitness impacts
- Competition for resources with wild fish

Wild Steelhead Management Zones

What are they?

An area where a self-sustaining wild stock (population) is largely protected from the effects of hatchery programs.

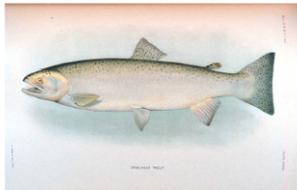
Wild Steelhead Management Zones

What do they mean?

- Fisheries can be conducted if wild steelhead management objectives are met, but
- No hatchery releases will occur.

SCIENCE

Preliminary Draft for
Fish & Wildlife Commission



Oncorhynchus mykiss:
Assessment of Washington State's Steelhead
Populations and Programs

Edited by
James B. Scott, Jr.
William T. Gill

Washington Department of Fish and Wildlife
Olympia, Washington
February 1, 2008

POLICY

FISH AND WILDLIFE COMMISSION
POLICY DECISION

POLICY TITLE: Washington Department of Fish and Wildlife
Hatchery and Fishery Reform POLICY NUMBER: C-3619

Effective Date: November 6, 2009

Supersedes: N/A

See Also:

Approved by *Miranda Wecker*, Chair
Washington Fish and Wildlife Commission

Purpose

The purpose of this Washington Department of Fish and Wildlife policy is to advance the conservation and recovery of wild salmon and steelhead by promoting and guiding the implementation of hatchery reform.

Definition and Intent

Hatchery reform is the scientific and systematic redesign of hatchery programs to help recover wild salmon and steelhead and support sustainable fisheries. The intent of hatchery reform is to improve hatchery effectiveness, ensure compatibility between hatchery production and salmon recovery plans and rebuilding programs, and support sustainable fisheries.

General Policy Statement

The Washington Department of Fish and Wildlife (Department) shall promote the conservation and recovery of wild salmon and steelhead and provide fishery-related benefits by establishing clear goals for each state hatchery, conducting scientifically defensible operations, and using informed decision making to improve management. Furthermore, it is recognized that many state operated hatcheries are subject to provisions under U.S. v. Washington and U.S. v. Oregon and that hatchery reform actions must be done in close coordination with tribal co-managers.

Artificial production programs will be designated as one of the following:

- Conservation Programs. Artificial production programs implemented with a conservation objective shall have a net aggregate benefit for the diversity, spatial structure, productivity, and abundance of the target wild population.
- Harvest Programs. Artificial production programs implemented to enhance harvest opportunities shall provide fishery benefits while allowing watershed-specific goals for the diversity, spatial structure, productivity, and abundance of wild populations to be met.

State commercial and recreational fisheries will need to increasingly focus on the

Network of WSMZs

PSHAAC

- ▣ Puget Sound Hatchery Action Advisory Committee (PSHAAC)
- ▣ 11 Members Representing:
 - Coastal Conservation Association
 - Long Live the Kings
 - Member at Large
 - Puget Sound Anglers
 - Recreational Fishing Alliance
 - Sierra Club
 - Sport Fish Advisor wdfw.wa.gov/about/advisory/pshaac/
 - Steelhead Trout Club
 - Wild Fish Conservancy
 - Wild Steelhead Coalition

PSHAAC Recommendations

Major Population Group	Wild Steelhead Management Zone
North Cascades	SF Nooksack (Summer)
	Samish (Winter)
	*Skagit/Sauk (Summer/Winter)
	Pilchuck River (Winter)
	NF Skykomish (Summer)
	Tolt (Summer)
	White River (Winter)
Central/South Cascades	Puyallup/Carbon (Winter)
	Nisqually (Winter)
	*Skokomish (Winter)
Hood Canal/Strait of Juan de Fuca	*East/West Hood Canal (Winter)
	Sequim (Winter)
	*Elwha (Winter)

WSGB Selection Guidance

Is it abundant and productive?

Preferred	Adequate
Probability of extinction in 20 years < 10%	Probability of extinction in 20 years < 10%
Long term decline < 60%	Short term decline insignificant

WSGB Selection Guidance

Can it sustain itself into the future?

Preferred	Adequate
More than 70% of watershed has existing habitat protection measures	More than 50% of watershed has existing habitat protection measures

WSGB Selection Guidance

Has it been significantly impacted by hatchery programs?

Preferred	Adequate
Proportion effective hatchery contribution or gene flow < 2%	Proportion effective hatchery contribution or gene flow < 5%

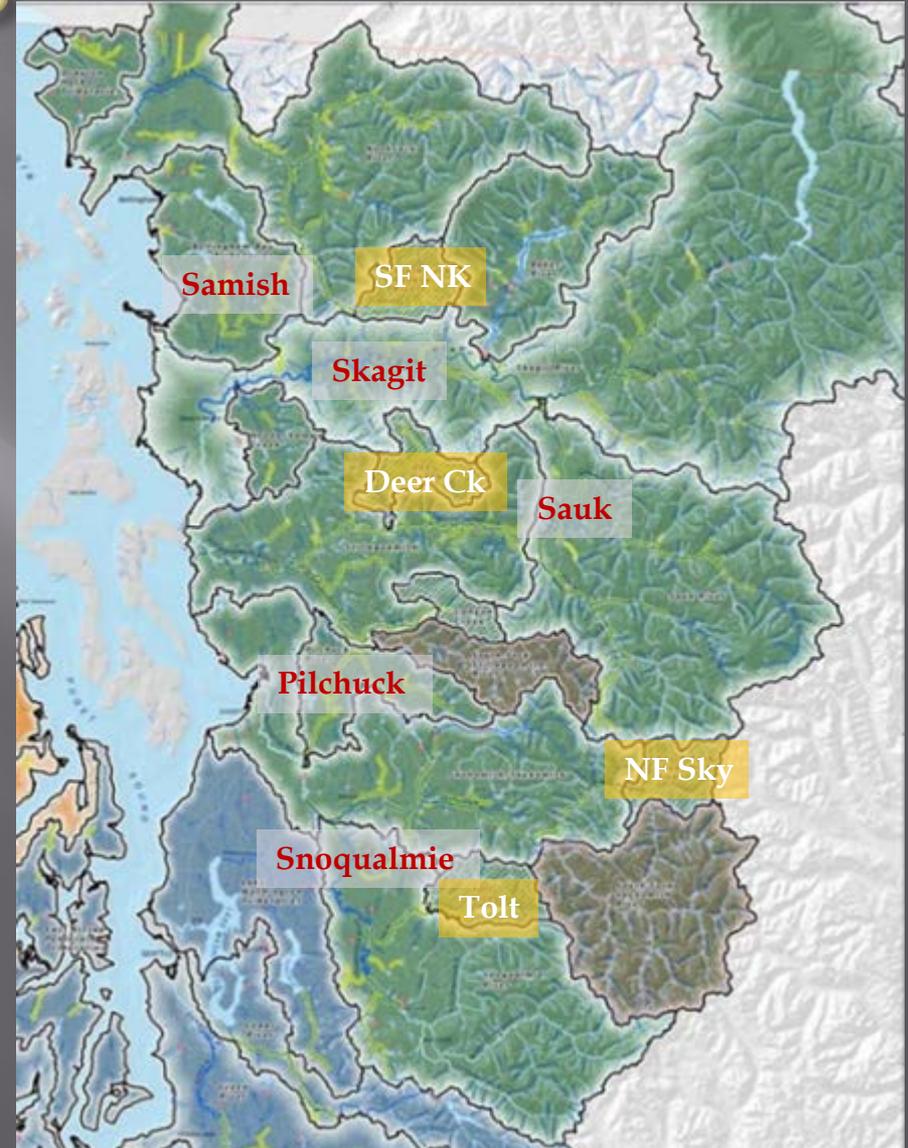
WSGB Selection Guidance

Is there population diversity among the WSGBs?

Preferred	Adequate
All run-timings represented, variety of hydrographic types	All run-timings represented

North Cascades

SF Nooksack Summers
Samish Winters
Sauk Summer/Winters
Skagit Summer/Winters
Deer Creek Summers
Pilchuck Winters
NF Skykomish Summers
Snoqualmie Winters
Tolt Summers



North Cascades

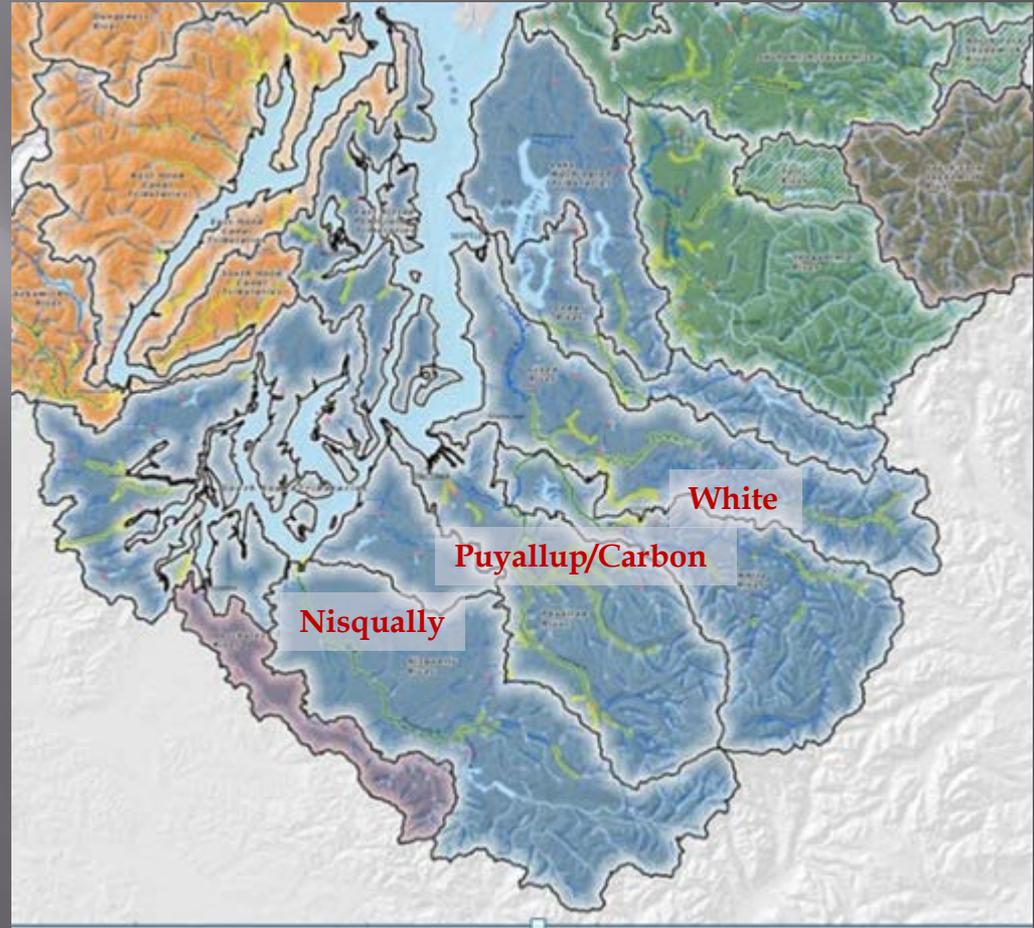
Population	Abundance	Sustainable	Wild Stock
SF Nooksack Summers	No Data	Adequate	Preferred
Samish Winters	Preferred	Poor	Poor
Sauk Summer/Winters	Preferred	Preferred	Adequate
Skagit Summer/Winters		Adequate	Preferred
Deer Creek Summers	No Data	Preferred	Preferred
Pilchuck Winters	Preferred	Poor	Adequate
NF Skykomish Summers	No Data	Preferred	Poor
Snoqualmie Winters	Preferred	Adequate	Poor
Tolt Summers	Poor	Poor	Poor

Central/South Sound

White Winters

Puyallup/Carbon Winters

Nisqually Winters



Central/South Sound

Population	Abundance	Sustainable	Wild Stock
White Winters	Preferred	Adequate	Adequate/ ¹
Puyallup/Carbon Winters	Adequate	Poor	Adequate/ ¹
Nisqually Winters	Adequate	Poor	Adequate/ ¹

¹No estimates of gene flow, but no hatchery releases in more than 10 years

Hood Canal/Straits

Skokomish Winters
East Hood Canal Winters
West Hood Canal Winters
South Hood Canal Winters
Sequim/Discovery Bay Winters
Strait of Juan de Fuca
Elwha



Hood Canal/Straits

Population	Abundance	Sustainable	Wild Stock
Skokomish Winters	Preferred	Preferred	Adequate/ ¹
East Hood Canal Winters	No Data	Poor	Adequate/ ¹
West Hood Canal Winters	No Data	Preferred	Adequate/ ²
South Hood Canal Winters	No Data	Poor	Adequate/ ²
Sequim/Discovery Bay	Poor	Poor	Adequate/ ¹
Strait of Juan de Fuca	No Data	Adequate	Adequate/ ¹
Elwha Winters	No Data	Preferred	Adequate/ ²

¹No hatchery releases in more than 10 years

²Genetic analyses have shown that the native winter steelhead and early winter steelhead have remained genetically distinct.

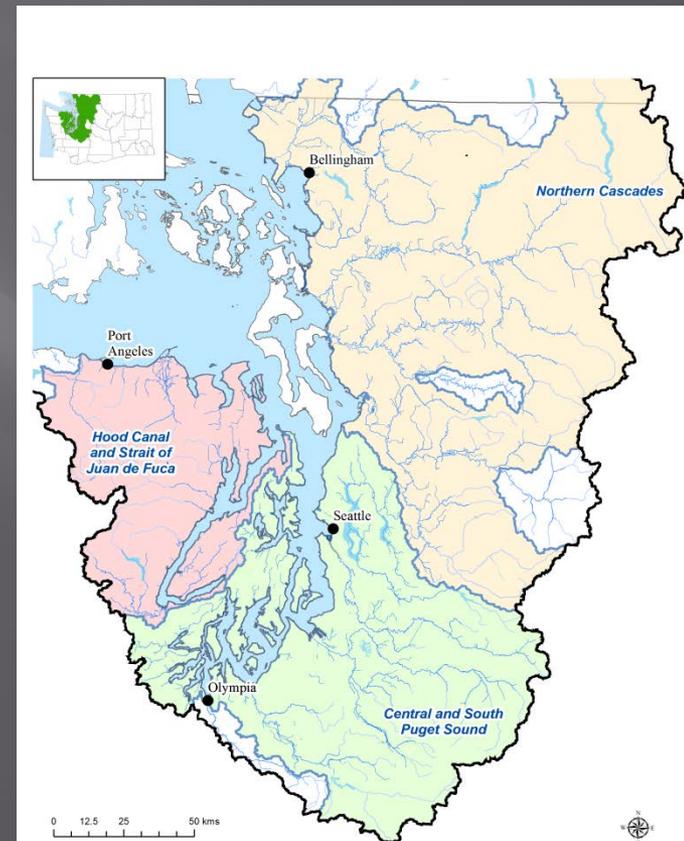
Wild Steelhead Management Zones

How many do we need?

- ▣ At least one for each major population group
- ▣ Spatial/life history diversity

Puget Sound MPGs

- **North Cascades**
- **Central/South PS**
- **Hood Canal/Straits**



How Can I Provide My Input?

By August 13

- **Comment forms or testimony at 3 subsequent public meetings**
 - July 21 Seattle
 - July 27 Mt. Vernon
 - July 28 Sequim
- **Online comments can be submitted at**
 - http://wdfw.wa.gov/conservation/fisheries/steelhead/gene_bank



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 - Statewide Steelhead Management Plan
 - Questions & Answers
 - State Environmental Policy Act (SEPA) Public Meeting & Scoping Summary
 - Stakeholder Meetings
 - News
- For more information on fisheries management, please contact the WDFW Fish Program.
360-890-2100
fishprog@dfw.wa.gov

Fisheries Management

Steelhead Management

Puget Sound Wild Steelhead Gene Bank Selection Process

The Washington Department of Fish and Wildlife (WDFW) plans to designate a wild steelhead management zone, (also called a gene bank) in each of at least three Puget Sound rivers to promote the recovery of wild steelhead. The department will not release hatchery fish into the selected rivers. WDFW is developing selection guidelines and is seeking public input to help determine which rivers within the Puget Sound region should be designated as gene banks.

See: [Background information and list of candidate rivers](#)

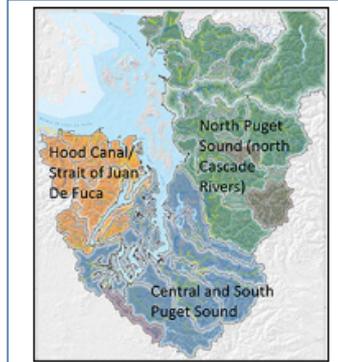
Wild steelhead management zones

In 2007, Puget Sound steelhead were listed as threatened under the federal Endangered Species Act. The following year, WDFW developed the Statewide Steelhead Management Plan, which included several recommendations for recovering steelhead, including the designation of gene banks.

The Statewide Steelhead Management Plan includes the following strategy to conserve and recover wild steelhead:

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 in each steelhead distinct population segment. Each gene bank will have the following characteristics and management:

1. Each stock selected for inclusion in the gene bank must be sufficiently abundant and productive to be self-sustaining in the future.
2. No releases of hatchery-origin steelhead will occur in streams where used exclusively by that stock for



Public input

The process for designating wild steelhead gene banks will begin with a steelhead workshop sponsored by WDFW followed by three public meetings and a public comment period. WDFW will share information on the Statewide Steelhead Management Plan, the status of Puget Sound steelhead, and the risks and benefits of hatchery programs and will present criteria for evaluating each candidate population.

Following the workshop the department will host three public meetings to discuss the options and to take public comment to solicit public comment directly. Comments that focus on substantive aspects of the candidate populations and selection criteria may also be submitted online and may be general or population-specific. Please include rationale for support or opposition of a specific river or population.

Public comments

- [Submit comments online](#)

Workshop

- 5 to 9 p.m., Monday, July 13, Phinney Center, 6532 Phinney Ave N., Seattle [Agenda]

Public Meetings

All public meetings will be held from 6 to 9 p.m.

- Tuesday, July 21, Phinney Center, 6532 Phinney Ave N., Seattle [Agenda]
- Monday, July 27, Skagit PUD, 1415 Freeway Dr., Mount Vernon [Agenda]
- Tuesday, July 28, Trinity Methodist Church, 100 S Blake Ave., Sequim [Agenda]

Public comments

- [Submit comments online](#)

Hatchery effects

In the Pacific Northwest, salmon and steelhead hatchery programs are a commonly employed to provide harvest opportunities and conserve declining populations. Hatchery practices, including the protocols used during broodstock collection, spawning, rearing, and release, are guided by the ultimate goal of the hatchery program.

Although hatcheries can increase abundance and spatial distribution, they can also pose genetic and ecological risks to wild populations. Not all hatchery-origin steelhead return to the hatchery and some may spawn naturally in rivers. Several studies have demonstrated that hatchery-origin fish spawning in rivers produce fewer offspring than wild fish. This observation raises concern that when hatchery-origin fish interbreed with wild fish, they may reduce the productivity of the wild spawners. Releases of hatchery smolts also present a variety of ecological risks to wild populations including competing with wild juveniles for food and rearing territories, as well as altering interactions with predators. Assessing the genetic and ecological interactions between wild and hatchery fish is an active area of scientific research; links to some of these studies are provided below.

Selection Process

To assess steelhead population attributes, WDFW has examined extinction probabilities, hydrology, land use, and historic hatchery gene flow, and developed guidelines for selecting gene banks from the list of candidate populations. The department assessed each attribute and categorized the population as either a preferred, an adequate, or a poor match with an ideal gene bank. Through the public meeting process and online comments, WDFW is asking for public input on designating at least one steelhead population in each Puget Sound area as a gene bank.

Additional resources

http://wdfw.wa.gov/conservation/fisheries/steelhead/gene_bank