

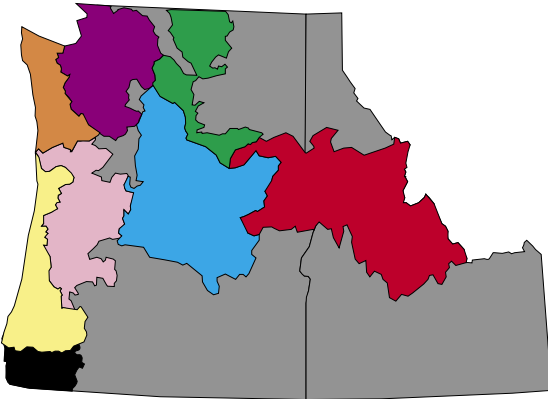
Salmon embody the cyclical nature and renewal of life.

For thousands of years, salmon have played a special role in the ecosystem and culture of the Pacific Northwest. Unfortunately, Pacific Northwest salmon have now dwindled to approximately five percent of their historical abundance, once estimated at 16 million in the Columbia River basin alone.

These declines have led to protections for 15 different groups, or "ESUs,"* of Pacific salmon and steelhead under the U.S. Endangered Species Act (ESA). Salmon are now protected throughout much of the Pacific Northwest (see map). Recovering these salmon populations is a high priority for local, tribal, state and federal interests, as well as for the general public.

Salmon Recovery Process

NOAA's National Marine Fisheries Service (NOAA Fisheries Service) is charged with recovery of Pacific salmon and steelhead species listed under the ESA. Recovery under the Act means listed species and their ecosystems are restored, and their future secured, so that protection under the ESA is no longer needed. State and local governments, tribes, and others throughout the



Salmon Recovery Areas

- Puget Sound
- Upper Columbia
- Middle Columbia
- Snake River
- Oregon Coast
- Lower Columbia/Willamette River
- SW Washington
- Southern Oregon/Northern California Coast

Northwest have taken leadership roles to improve practices to protect salmon. The agency believes recovery must be grounded in conservation efforts currently underway throughout the region. As a result, NOAA Fisheries Service will link its recovery planning processes to these on-going salmon conservation and planning efforts. The agency's salmon recovery process will maximize local involvement and capitalize on these ongoing efforts.

The ESA requires that recovery plans contain (1) objective, measurable goals for delisting; (2) a comprehensive list of the actions necessary to achieve the delisting goals; and (3) an estimate of the cost and time required to carry out those actions. The agency will also ensure that recovery plans are consistent with obligations that support sustainable fisheries and meet federal treaty and trust commitments to Native American tribes. To develop recovery plans that meet ESA requirements as well as goals for local involvement, NOAA Fisheries Service's Northwest Region has organized the listed ESUs into seven recovery areas or "domains" (see map). Each domain will have a recovery plan that addresses all listed salmon and steelhead ESUs within that area.

Pacific Northwest Salmon Biology

Pacific salmon are found in rivers and streams along the West Coast of North America from Alaska to Southern California, and in river basins that reach inland into Alaska, western Canada, and Idaho. The salmon life-cycle has five stages: (1) adults lay eggs in gravels of streams or lakes; (2) the eggs hatch and young fish hide in pools and adjacent wetlands; (3) juvenile fish migrate downriver to estuaries; (4) juveniles mature in the ocean; (5) after three to five years in the ocean, adults return to their home stream or lake to spawn and die. At each of these stages, healthy habitats are critical for salmon survival.

* An Evolutionarily Significant Unit (ESU) is a distinct group of salmon made up of a number of separate populations.



For further information, contact the recovery coordinator for the area in which you are interested.

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Visit these web sites for additional information on recovery planning:

Salmon Recovery Division
<http://www.nwr.noaa.gov>

Northwest Fisheries Service Science Center
Recovery Planning
<http://research.nwfsc.noaa.gov/trt/index.html>

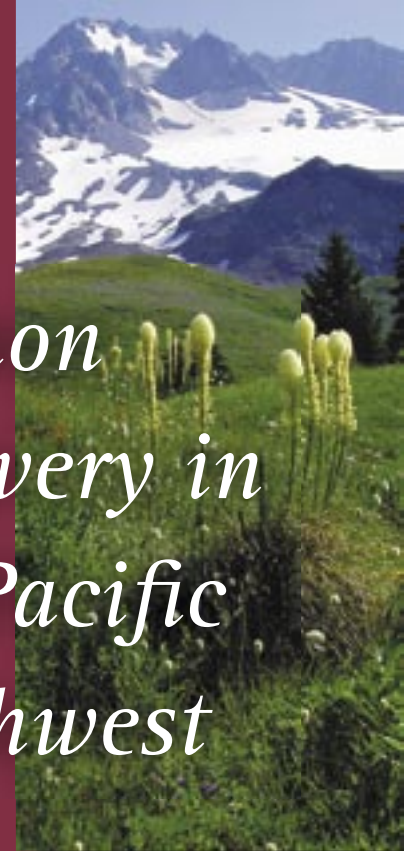
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Salmon Recovery in the Pacific Northwest

NOAA Fisheries Service
Northwest Region:

Oregon,
Washington,
Idaho



Coho Chinook Steelhead

Factors Contributing to the Decline of Pacific Salmon

Salmon rely on a complex array of ecosystems during their life cycle, and many factors affect how well they survive and reproduce. Some of the factors that affect the ability of salmon to survive are:

HABITAT

Land and water management practices have reduced channel complexity; reduced access to spawning and rearing habitats (such as headwater streams and wetlands); and decreased water quality (increased water temperature, sedimentation, and pollution) in river systems.

FISHERY HARVEST

Historically, excessive fishery harvest practices resulted in declining runs of Pacific salmon.

HATCHERIES

Hatchery production has led to loss of fitness and other adverse impacts on the genetics and health of Pacific salmon.

HYDROPOWER, FLOW AND PASSAGE

Hydropower facilities and operations have reduced survival in the migration corridor. In addition, barriers such as culverts and road crossings have altered stream flow patterns, and eliminated or blocked fish access to tributary habitats.

OCEAN CONDITIONS, CLIMATE CYCLE, AND CLIMATE CHANGE

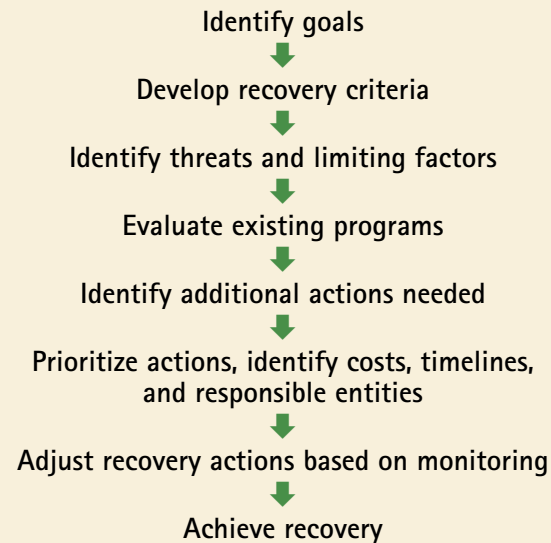
Atmospheric conditions, which can influence long-term trends in rainfall and marine productivity in the North Pacific, also influence salmon production. Climate cycles and climate change affect stream flows, stream temperatures, ocean temperatures, ocean food production, and fish predators.



Components of a Recovery Plan

- Objective, measurable goals for delisting
- Site specific actions necessary to achieve delisting goals
- Estimates of the cost and time required to carry out these actions
- Assessment of factors that led to population declines and/or that are impeding recovery
- Comprehensive monitoring and evaluation program

Steps to Salmon Recovery



NOAA Fisheries Service's Approach to Salmon Recovery

Successful recovery plans need community support and scientific credibility. NOAA Fisheries Service's NW Regional office bases its recovery planning process on the requirements defined in the ESA, including scientific and community involvement. First, NOAA Fisheries Service organized teams of scientists, called "Technical Recovery Teams" (TRTs) for most recovery domains (see map). TRTs are charged with recommending biological guidelines for the recovery of listed ESUs. These guidelines are one consideration in determining when an ESU should be delisted. Next, NOAA Fisheries Service began working with local stakeholders and policy groups to identify actions to achieve recovery. NOAA Fisheries Service is working with ongoing efforts in each domain to develop appropriate recovery policy, planning, and implementation approaches.

Extensive conservation efforts are already underway throughout the Pacific Northwest that contribute to salmon recovery. Protective efforts include improvements to road maintenance activities, watershed and sub-basin planning, federal lands management, long-term habitat conservation plans, and the Oregon Plan for Salmon and Watersheds. In addition, fish harvest and hatchery practices are being reformed, water conservation measures are being implemented, and extensive habitat improvement activities are being funded by several programs, including the Pacific Coastal Salmon Recovery Fund.

Recovery actions, developed in coordination with local groups, will be included in draft recovery plans. These plans will prioritize actions and estimate the time and cost needed to implement them. Draft recovery plans will then go through scientific and public review before publication as final salmon recovery plans.

Recovery plans are useful for many purposes. They provide context and a technical foundation for NOAA Fisheries Service's ESA decisions, potentially expediting ESA permitting actions. Recovery plans can also be used to help focus Federal, state, and local funding and other efforts on priority areas to support salmon recovery.



How Do Recovery Plans Benefit You And Your Watershed?

Recovery plans benefit you by:

- Restoring viable salmon populations, productive watersheds, and prosperous communities
- Restoring meaningful tribal and non-tribal fishing opportunities
- Targeting salmon recovery funds and watershed restoration efforts more effectively to achieve recovery goals
- Developing local watershed plans as building blocks of the ESA plan

Recovery of salmon will take the involvement of many interests in the region, not just governmental entities. Having local, private, tribal and business interests involved with salmon recovery will ensure that the process reflects the needs and interests of a broad coalition of society and increases the likelihood of success.

