

National Marine Fisheries Service

Salmon Recovery
Endangered Species Act & How it Works



An introduction to the
Endangered Species Act & Salmon Recovery





Life Cycle of the Salmon

Salmon have a five-stage life cycle. Healthy habitat conditions are crucial for the survival of each life stage. First, adult salmon lay their eggs in clean stream or lake gravels to incubate. Second, the eggs hatch and young fish seek shelter in the pools and adjacent wetlands. Third, juvenile fish leave the stream or lake, migrate downriver, and reside in the estuary to feed and adjust to saltwater for up to a year before continuing onto the ocean. Fourth, juvenile fish mature in the ocean. And fifth, adult fish return to their home stream or lake to spawn. This cycle from spawning area to the ocean and back defines Pacific salmon as “anadromous.” Most Pacific salmon die after spawning: their total energies are devoted to producing the next generation, and their bodies help enrich the stream for that generation.

A Natural Wonder

Salmon and the Pacific Northwest are synonymous. It’s hard to think of one without the other. Pacific salmon help define our quality of life and they are important to the region for historical, cultural, economic, and ecological reasons. This is why communities across the Pacific Northwest celebrate the annual return of salmon to local rivers, streams, and lakes.

Streams from Los Angeles to the Bering Sea have been home to Pacific salmon for millions of years. Barely 150 years ago, settlers in the region found salmon populations thriving across the landscape from the rugged mountains of Idaho nearly a thousand miles inland, across the deserts of eastern Oregon and Washington, to the wet, coastal lowlands near the Pacific Ocean.

The Pacific Northwest is home to seven different species of Pacific salmon: coho, chinook, chum, sockeye, and pink salmon. Steelhead and cutthroat trout are also included in this family. Each species, in turn, has developed distinct groups specifically adapted to particular areas. For example, chinook salmon from the coastal rainforests of Oregon and Washington are very different from chinook salmon that spawn in the arid interior of the Columbia Basin.

Self-sustaining generations of salmon produced in streams is the goal of salmon recovery.



Many factors, from overfishing to land and water development, interfere with salmon life cycles.

The Problem

The Pacific Northwest is losing its salmon. These resilient and determined fish have survived cycles of droughts, floods, and changing ocean conditions. Overfishing was the focus of initial regulations, but now we know that the productive capacity of our streams and rivers is declining. The fact is our region's streams are producing fewer and fewer fish. This is no coincidence, nor is it the result of natural processes.

The landscape changes we've created, including urban and industrial development, roads and highways, agriculture, forestry, and hydropower development, have had serious impacts on salmon. In the Columbia Basin alone, more than fifty populations of salmon and steelhead are now extinct.

How the ESA Works

What authority does it give and to whom?

The Endangered Species Act (ESA) is a law of the United States. It is administered by the National Marine Fisheries Service (NMFS) and the United States Fish and Wildlife Service. The act is designed to save species and their habitats when other efforts have failed. NMFS is accountable for animals that spend most of their lives in marine waters, including marine fish, most marine mammals, and anadromous fish such as Pacific salmon.

How does a species gain ESA protection?

Step One: The ESA is triggered when a species' survival is in doubt and other laws and initiatives have not provided enough protection. First, the species' history and present condition must be examined. This "status review," and its scientific findings, must be completed within one year. The process ends here if NMFS concludes that the species is not threatened or endangered. If the status review shows that a species' survival is imperiled, the fisheries service must publish a proposal to protect the species.

Step Two: At this point, the NMFS proposal undergoes further scientific evaluation and public comment. NMFS then makes a prognosis for the species' survival. Federal agencies are obligated, at this stage, to work with NMFS to protect the species (and its habitat) from actions that may appreciably reduce its survival and recovery. No regulations apply to state and local authorities or private citizens at this time.

Step Three: If additional protection is deemed necessary, the species is added to the ESA's list of threatened and endangered species. Note: A final listing decision may be delayed for up to six months if substantial disagreement exists about the scientific information on a species' status.

Adequate time is allowed for the public to become informed of a listing before any protections or regulations become law. After this time, any unauthorized "take" of the species may be prohibited.



At the Federal level, Congress passed the Endangered Species Act (ESA) into law in 1973 to help save at-risk species and their habitats until local initiatives are ready to take its place.



What is “Take”
“Take” means to harass, harm, pursue, shoot, wound, kill, trap, or collect the species. Impacts on habitat that kill or injure the species by impairing its ability to breed, feed, migrate, or find shelter may also harm a species and constitute “take.”

Saving Salmon

Meeting the challenge of restoring salmon populations to sustainable levels means:

1. Healthy habitat and ecological conditions are necessary at each stage of a salmon’s life cycle.
2. Communities have the option of designing and implementing their own local strategies to save salmon under the ESA.
3. Our entire society, from governments to businesses to individual citizens, is responsible for maintaining healthy watersheds and ensuring salmon survival.
4. Momentum is building to protect watersheds and save salmon, thanks largely to grassroots citizens’ groups. Several tools and options are available under the ESA to help in these efforts.

Take Guidance

The ESA provides broad-brush emergency protection until local safeguards become effective. Regulations against take apply to any party or person under United States jurisdiction and are intended to safeguard the salmon we have left and preserve any options for recovering them. “Take” of a protected species is prohibited without written authorization. Authorization can be granted for limited take that does not interfere with efforts to save the salmon.

Some activities are, as a general rule, more likely to “take” protected salmon. NMFS’ ESA enforcement, therefore, will focus on these activities. For the complete list of such activities, refer to the July, 2000, 4(d) ruling on NMFS’ website at www.nwr.noaa.gov.

“Take” that does not interfere with salmon survival and recovery can be allowed under the ESA.



ESA Tools

Section 7 - for Federal agencies or activities involving Federal permitting or funding (such as actions that require Army Corps of Engineers Section 404 permits):

Federal agencies bear the greatest obligation for protecting threatened and endangered species. These agencies must implement programs that do not reduce the species' chances for survival and recovery. Under

Section 7, Federal agencies must also consult with NMFS on any action they permit, fund, or manage that is likely to adversely affect a threatened or endangered species. In doing this, NMFS must issue a "biological opinion" that explains how the Federal action affects the species and lays out what actions the agency should take to protect the species. Section 4(d) rules or Section 10 permits cannot substitute for Section 7 consultation requirements.

Section 4(d) - for state, tribal, and local jurisdictions or individuals:

Section 4(d) prohibits "take" without ESA authorization. State and local actions must complement salmon recovery to obtain such authorization. This section of the ESA also encourages local problem-solving. Section 4(d) requires NMFS to issue regulations deemed "necessary and advisable" to provide for the conservation of the species. If tribal, private, local, state, or Federal programs do not interfere with the long-term survival and recovery of a species, they can be authorized under section 4(d) of the ESA. The July 10, 2000, 4(d) rules for Pacific salmon and steelhead protect 14 different groups of salmon and steelhead in Idaho, Washington, Oregon, and California. The 4(d) option is available only for threatened species because threatened species are less likely to go extinct than endangered species, and the ESA allows more flexibility in this case.

Section 10 - Habitat Conservation Plans: HCPs are another way for state and local governments, industry, and even private citizens to comply with the ESA.

In return, they obtain authorization for potential "take" as long as it does not interfere with species recovery. Under this section, tailor-made, beneficial measures are agreed upon. State and local governments, industry, and individual citizens can then manage their programs and properties with certainty they won't be prosecuted for the accidental "take" of a protected species. HCPs can also cover other species in the event they are subsequently listed under the ESA.

Standards: The same standard applies to programs under Section 7, Section 10, and Section 4(d). NMFS is looking for programs that provide conditions that support recovery of protected species.



The primary goal of recovery is to achieve continuing generations of salmon produced in streams.

Recovery Planning

Recovery planning occurs over time, so regulations controlling “take” are established first to preserve as many options as possible for saving threatened and endangered species. The first draft ESA recovery plan for Pacific salmon was written for three species in Idaho, and recovery planning is now also underway for protected salmon populations in Oregon, Washington, and California. The primary goal of recovery is to achieve self-sustaining generations of salmon produced in streams. Salmon recovery plans, therefore, first identify the number of salmon that streams need to produce to ensure long-term survival, as well as population diversity, geographic distribution, and healthy population growth trends. These factors are used to indicate when a species is no longer at risk of extinction. Second, recovery planning identifies the factors limiting salmon recovery and looks for programs, regulations, and initiatives from communities, Native American tribes, and state and Federal authorities that fix the problems. Third, recovery planning prioritizes these actions and estimates the time and cost to implement them. Once these steps are organized into a cohesive program, the plan goes through scientific and public review before publication as a final salmon recovery plan.

If a species is even being proposed for ESA protection, that species is in serious trouble.



For More Information

The fact that Pacific salmon and steelhead are receiving protection under the ESA means their survival is in doubt. This brochure has been created to provide interested parties with an overview of how the ESA works and the tools and options the ESA provides to help save these fish.



For more information about the ESA and NMFS' role in salmon recovery, please contact our offices in Seattle at (206) 526-6150 or Portland at (503) 230-5400, or go to our website at www.nwr.noaa.gov.

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