

[Home](#)[About Us](#)[Monitoring](#)[+ Publications](#)[+ Recovery Regions](#)[+ Science](#)[Glossary](#)[FAQs](#)

Council of Regions

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The State of Salmon: A Report to the Legislature

Submitted by the
Office of the Governor
in fulfillment of requirements
in RCW 77.85.020

December 2000

Background

The Salmon Recovery Planning Act (ESSB 2496), passed in 1998, requires the Governor's Salmon Recovery Office to submit a "state of salmon" report biennially, beginning in December 2000. That report is presented here, in four parts that together capture important activities the Governor's Office and state agencies have undertaken to recover salmon.

Included are the three major documents we produced in the last two years, plus the new twenty-four page *The State of Salmon* report, our first publication designed for a broad, citizen audience. It captures our goals, challenges and progress in salmon recovery. It tells the state's salmon recovery story to date through maps, photos and other graphics, and even offers tips on what people can do at home and in their own back yard to make a difference - not just for salmon, but for themselves. A copy of *The State of Salmon* is also included in this package.

Every two years we will report on the progress we have made in reversing the decline of salmon, and the challenges we face in achieving recovery.

The Governor's Salmon Recovery Office was formally created in July 1998. Initially, one of the most frustrating organizational issues facing us was just the number of government agencies involved in salmon recovery. There are two countries, six states, and twenty-eight tribes. At the federal level, six departments, some with more than one branch, have some jurisdiction with this issue. In our state, fourteen agencies (about half directly reporting to the governor, and half not) participate in salmon issues. At the local level the issue is even more staggering: 39 counties, 277 cities, 44 sewer districts, 125 water districts, 36 irrigation districts, 32 public utility districts, 14 port districts, 48 conservation districts, and 170 municipal water suppliers all have some impact and/or responsibility in salmon recovery. As a

result, our role in state government touches more than 800 government jurisdictions and agencies that play some part in salmon recovery. This leads to a complex and time-consuming process of coordination.

To coordinate the state's efforts, Governor Gary Locke brought the state agencies together that most affect salmon management to form the Joint Natural Resources Cabinet. This cabinet of 12 agency directors has created the documents that guide salmon recovery at the state level.

The Salmon Recovery Documents

Extinction is Not an Option: The Statewide Strategy to Recover Salmon was first

released in January 1999, as a working draft.

For eight months the Joint Cabinet met with stakeholders and interest groups, seeking their advice on suggested changes to the Strategy.

Over 200 letters and email comments were also considered before the Strategy was rewritten

and reissued in September 1999. The goal of the Strategy: "Restore salmon, steelhead and

trout populations to healthy and harvestable

levels and improve the habitats on which fish

rely." The Strategy was designed as our long-term vision or guide for salmon recovery,

helping us make informed decisions about what

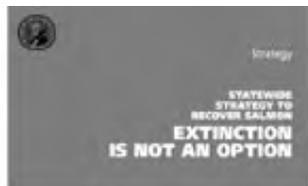
needs to be done to recover salmon. In fall of

2000, the Joint Cabinet began a long-term

public outreach program to update the Strategy.

We expect to issue an updated strategy in fall

2001 (Attachment I).





The State Agencies' Action Plan was released in May 2000; a status report was written in August and updated in November. It defines the state's priority activities for short-term implementation of the Statewide Strategy this 1999-2001 biennium. The Action Plan does not include all ongoing state agency salmon-related activities. Its focus is on new actions or modifications to existing activities that provide additional protection for salmon. The Action Plan outlines how the \$183 million in state funding and \$61 million in federal funds are being spent this budget cycle. More than half of these dollars are passed on directly to local communities. The Action Plan Status Report Summary is attached (Attachment II).

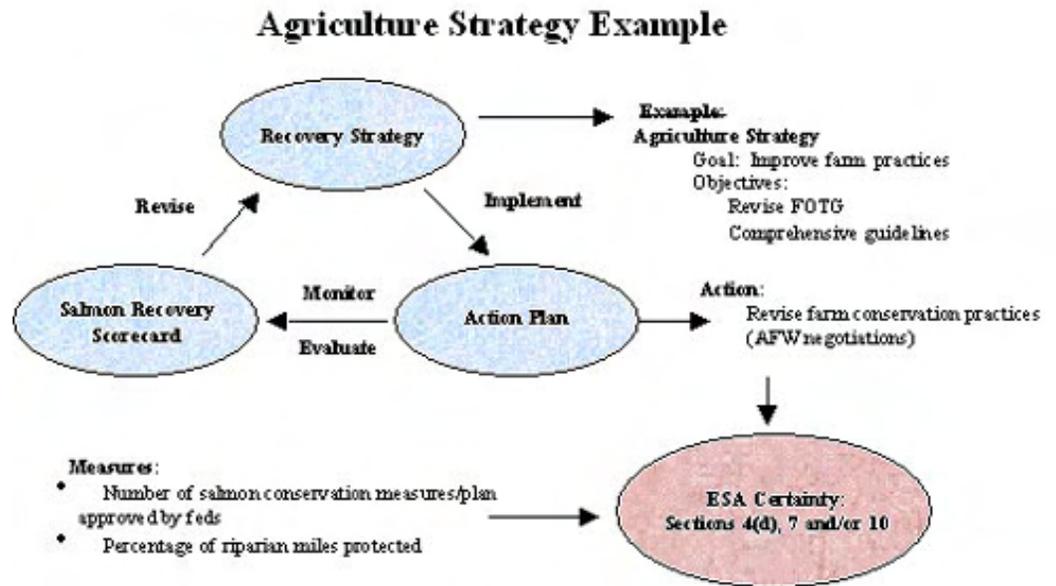
The Salmon Recovery Scorecard is a performance management system, the state's "business plan" for salmon recovery. Thirty-nine indicators have been chosen to track data that will show both short- and long-term variations in natural resources as well as citizen responses to our recovery efforts. It is an important part of implementing adaptive management, as specific measures reveal the progress we make toward achieving our goals. The first draft Scorecard was released in November 1999. After months of outreach with task teams for state agency



data stewards and many of our local salmon recovery partners, the May 2000 scorecard was released. In September, the Joint Cabinet received their first reports from each of the indicator work groups; they are now considering what changes they will make to refine the *Salmon Recovery Scorecard* (Attachment III).

How the Pieces Fit Together

The three recovery documents collectively chart our course in bringing back salmon and meeting the requirements of the Endangered Species Act. They complete a resource planning and implementation cycle in the following way:



In this example, the Strategy lists goals (improve farm practices) and objectives (revise the Field Office Technical Guidelines and Comprehensive Farm Plan guidelines) for agriculture. The priority actions chosen for the 1999-2001 biennium, listed in the State Agencies' Action Plan, are to revise these guidelines and practices through negotiation in the Agriculture, Fish, and Water process. We will monitor implementation of the completed guidelines through two measures from the Salmon Recovery Scorecard. We will also seek ESA certainty from the US Fish and Wildlife Service and National Marine Fisheries Service.

Conclusion

We recognize the process of salmon recovery is - and will continue to be - dynamic as well as difficult. Careful monitoring and a commitment to make changes as information is gathered are essential. And, most importantly, it will take all levels of government, business, and the public working together if we are to be successful.

Introduction



The State of Salmon is the first report of its kind to the legislature and citizens of Washington state. Every two years, we will report on our goals and progress in reversing the decline of wild salmon - and also on the challenges we face in achieving recovery.

Wild salmon did not become endangered or threatened overnight. Their plight is the result of many decades of decline caused by more than a century of activities in a growing state. But just as the cumulative impact of millions of individual actions has damaged the prospects for wild salmon survival, the cumulative benefit of new decisions and actions can work to save wild salmon.

The legacy we leave for salmon will also be the legacy we leave for our children and the many other generations that follow us.

Note: For the purposes of this report, the term "salmon" will be used to refer to all species of salmon, steelhead, trout and char native to Washington state.

It isn't *just our salmon* that are in trouble-it's our *Northwest quality of life* that's at risk. We're all *connected* by our *land and water.*"

A handwritten signature in cursive script that reads "Gary Locke".

~Identification of Salmonids in Washington~



Bull Trout

This fish is olive green to brown above and on the sides with no wormlike markings. There are cream or crimson spots. The tail is slightly forked. Bull trout are found throughout Washington, usually in larger reservoirs.



Chinook

Chinook, also known as king salmon, do not display the general morphological changes of pink, chum, and sockeye salmon during the spawning state. Typically, Pacific salmon turn from the silvery bright ocean coloration to a darker color as they approach spawning. Chinook are often the largest of the Pacific salmon.



Chum

Chum, also known as dog salmon, display characteristic olive-green and purple vertical bars on the sides of the body as they approach the spawning phase. Both males and females develop hooked noses and large canine-like teeth, although the male's characteristics are more pronounced.



Coho

Coho salmon are also known as silvers. In mature male coho, the upper jaw forms an elongated hooked snout and the teeth become greatly enlarged. The spawning color of the male is generally brighter than that of the female and is characterized by the dorsal surface and head turning bluish-green. The sides of the males develop a broad red streak.



Cutthroat

Body color is variable. The upper jaw bone usually extends beyond the margin of the eye. The hyoid teeth are behind the tongue. There may be a red or orange slash on the underside of the jaw. Spotting is more closely grouped toward the tail.



Pink

Pink salmon are commonly called humpy due to the fact that males develop a prominent hump in front of the dorsal fin. Males also develop a characteristic elongated snout and large teeth. Body color in both males and females darkens on the back and sides and becomes a pale whitish color below. Small, oblong irregular black spots are present on the back and sides, and on the dorsal and tail fins.



Sockeye

Sockeye salmon turn bright red on the body, and olive-green on the head as they begin to enter the spawning phase of their life. Males of this species develop a prominent hump in front of the dorsal fin. Also, the male's snout becomes elongated and canine-like teeth grow out of the receding gums. Females undergo distinct color change but retain their body shape.



Steelhead

Steelhead are ocean run rainbows. Their body color is variable and may be silvery in lakes and reservoirs. They have a red to pink streak on their side and irregular spotting. There are no teeth on the back of the tongue.

our goal

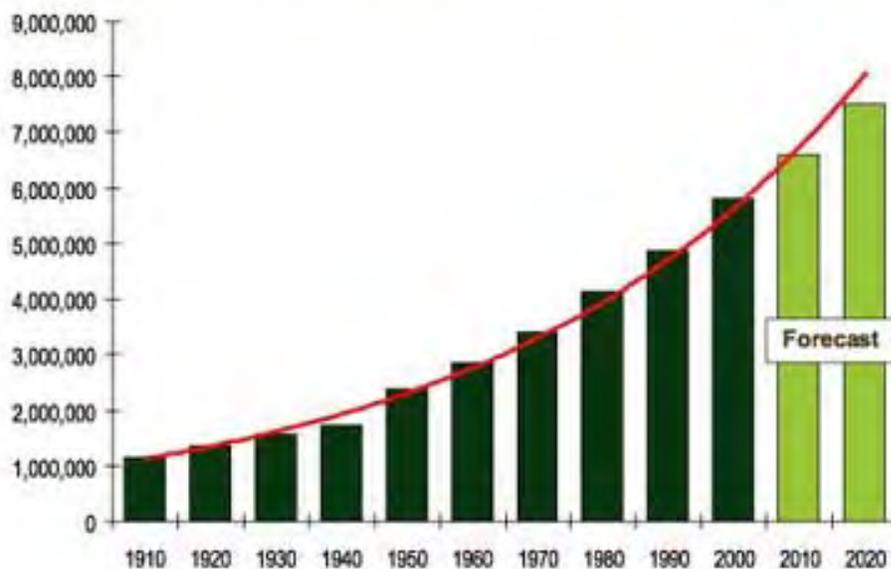
To protect an important element of Washington's quality of life we will have productive and diverse wild salmon populations and we will meet the requirements of the Endangered Species Act and Clean Water Act.



our challenge

Pacific salmon have disappeared from about 40 percent of their historical breeding ranges in Washington, Oregon, Idaho and California over the last century. Today, 15 runs of wild salmon have been federally listed as threatened or endangered across 75 percent of Washington state. The reasons for the decline are long term and complex. We over fished, and hatchery fish competed with wild fish for limited space and food. Beyond that, human activity has radically changed the physical landscape and habitat of salmon in the last 150 years. And as growing numbers of

Washington State Historical and Forecasted Population Growth



Source: Office of Financial Management April 2000 population forecast

Our task is further complicated by the complex relationships between Washington state's economy and the land and water that are so critical to the health of salmon. This will require consideration of the economic costs and benefits of recovery activities, so we can ensure that a healthy salmon population and continued economic vitality go

people take water from rivers, there is less water to supply the needs of salmon.

Today, the listing of some of Washington's wild salmon under the Endangered Species Act provides a fresh opportunity-indeed, a fresh and compelling mandate-to try harder, to do more, and to learn more about this icon of the Pacific Northwest.

The scale of this challenge is enormous. In the next fifty years, the population of Washington is likely to double, placing even more stress on our water supplies and our land. At the same time, each of us consumes more natural resources than ever before. For example, while the population in Central Puget Sound grew by 36 percent between 1970 and 1990, the amount of developed land grew by 87 percent. The cumulative impact of bigger houses and suburban lots, more paved roads, parking lots and shopping malls is taking a heavy toll on rivers and streams and the fish that live in them.

hand in hand.

The Endangered Species Act provides powerful new incentives to rise to this challenge. It says, in effect, that if we don't do this ourselves, the federal government and federal courts will step in to prevent further harm to endangered and threatened runs of salmon. This could mean that the federal government would make local decisions ranging from when and where new roads, houses and businesses can be built, to how much water farmers can use to irrigate their crops.

If the people of Washington want to control our own destiny, we simply must make the investments of time, energy and money necessary to change our impacts on the natural systems that affect wild salmon.

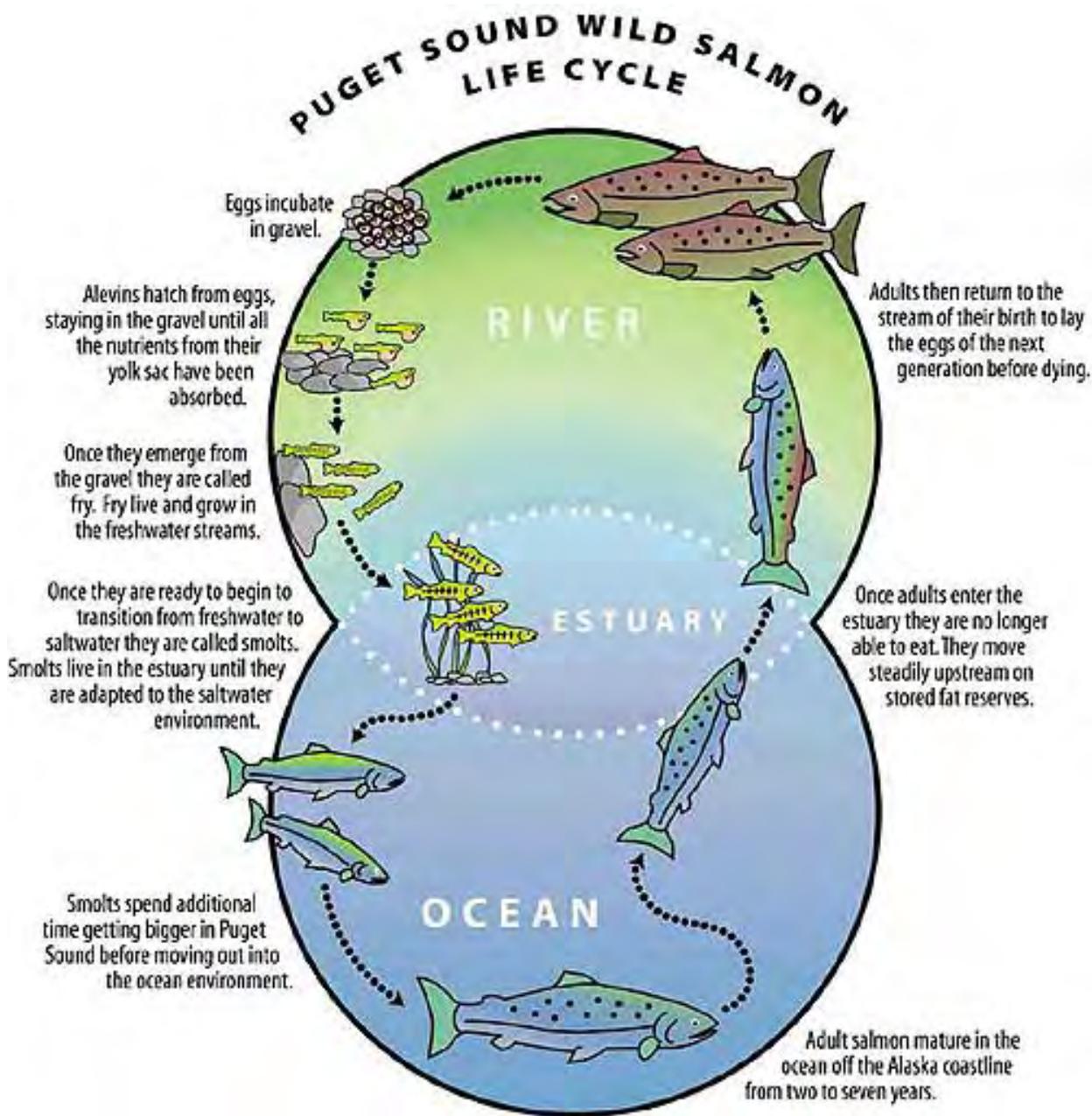


Illustration created by the GIS and Visual Communications Unit, King County Department of Natural Resources

our progress

Nearly four years ago, Governor Locke brought the state agencies together that most affect salmon management to form the Joint Natural Resources Cabinet. This cabinet of 12 agency directors has created a long-term strategy to recover salmon, an action plan for immediate steps state agencies must take, and a scorecard to measure the effectiveness of our work.

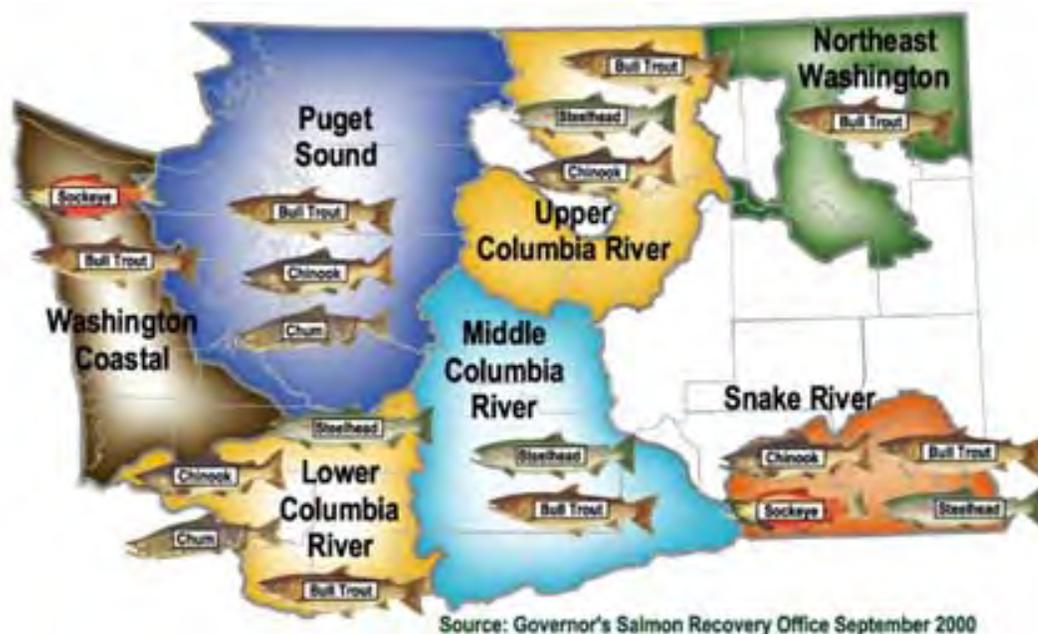
What is the ESA?

The Endangered Species Act was enacted by Congress in 1973 in response to an alarming decline of many animal and plant species. The ultimate goal of the ESA is to return endangered and threatened species to the point where they no longer need the law's protections. The ESA has three basic missions: (1) to identify species needing protection and the means necessary to protect and recover those species; (2) to prevent harm to listed species; and (3) to prevent and punish the so-called "taking" of listed species and destruction of their habitats.

A species is listed as "endangered" if it is in danger of extinction, or "threatened" if it is likely to become endangered within the foreseeable future. The Act provides a variety of tools for saving species threatened with extinction. One widely used tool is the Habitat Conservation Plan which offers protection to landowners in exchange for a promise to manage land in a way that minimizes impacts to listed species. Another tool is adoption of protective regulations, commonly called the "4(d) rules" named after a section in the ESA.

The National Marine Fisheries Service and U.S. Fish and Wildlife Service share responsibility for administration of the ESA. Generally, NMFS is responsible for species in marine environments and anadromous fish, while the USFWS oversees terrestrial and freshwater species and migratory birds.

Threatened or Endangered listings in Salmon Recovery Regions



Our progress is tracked throughout *The State of Salmon*.

Meanwhile, here are a few examples of how the state has worked to comply with the Endangered Species Act. We focused in the last year on negotiating compliance certifications from the National Marine Fisheries Service and U.S. Fish and Wildlife Service for some key programs that are important foundations for salmon recovery:

- The Forests and Fish Agreement received a federal exemption from liability for "taking" threatened species.
- A proposed new set of guidelines for shorelines management provides local governments a choice. They can use a flexible path to adopt their shoreline management programs or use a path that has been certified for salmon protection by the federal agencies.
- More than 725 state and local transportation projects, many

designed to avoid impacts on salmon, were reviewed by the federal agencies and received permission to proceed.

- All tribal and non-tribal fisheries in Washington received ESA permits from the National Marine Fisheries Service.

Five other programs have processes in place that will lead to similar certifications from the federal government. These are water quality standards, hydraulics permits, pesticides application permits, hatchery management plans, and stormwater guidelines. As they have in the past, the federal agencies will make their decisions based on the contribution the proposed actions make to salmon, the degree of certainty they have that the actions will be taken, and the state's commitment to monitor the salmon's response.

Wild Salmonid Stock Inventory

To monitor salmon populations the Department of Fish and Wildlife and tribes are counting the number of wild salmon stocks that are healthy, depressed, or critical through the Salmonid Stock Inventory or "SaSI". This inventory, begun in 1992, currently contains information on 555 stocks of salmon, steelhead, and trout. The inventory was never intended to represent the historical losses of salmon stocks, but it does give us an idea of the trouble salmon are in.

Healthy:

Includes a wide range of actual conditions, from robust to stocks that cannot sustain harvest. Although deemed healthy, concerns may exist and their status may change when the eight-year-old SaSI information is updated next year.

Depressed:

Stocks whose production is below expected levels, based on available habitat and natural variation in survival rates, but above where permanent damage is likely.

Critical:

Stocks that have declined to the point that they are in danger of significant loss of genetic diversity, or are at risk of extinction.

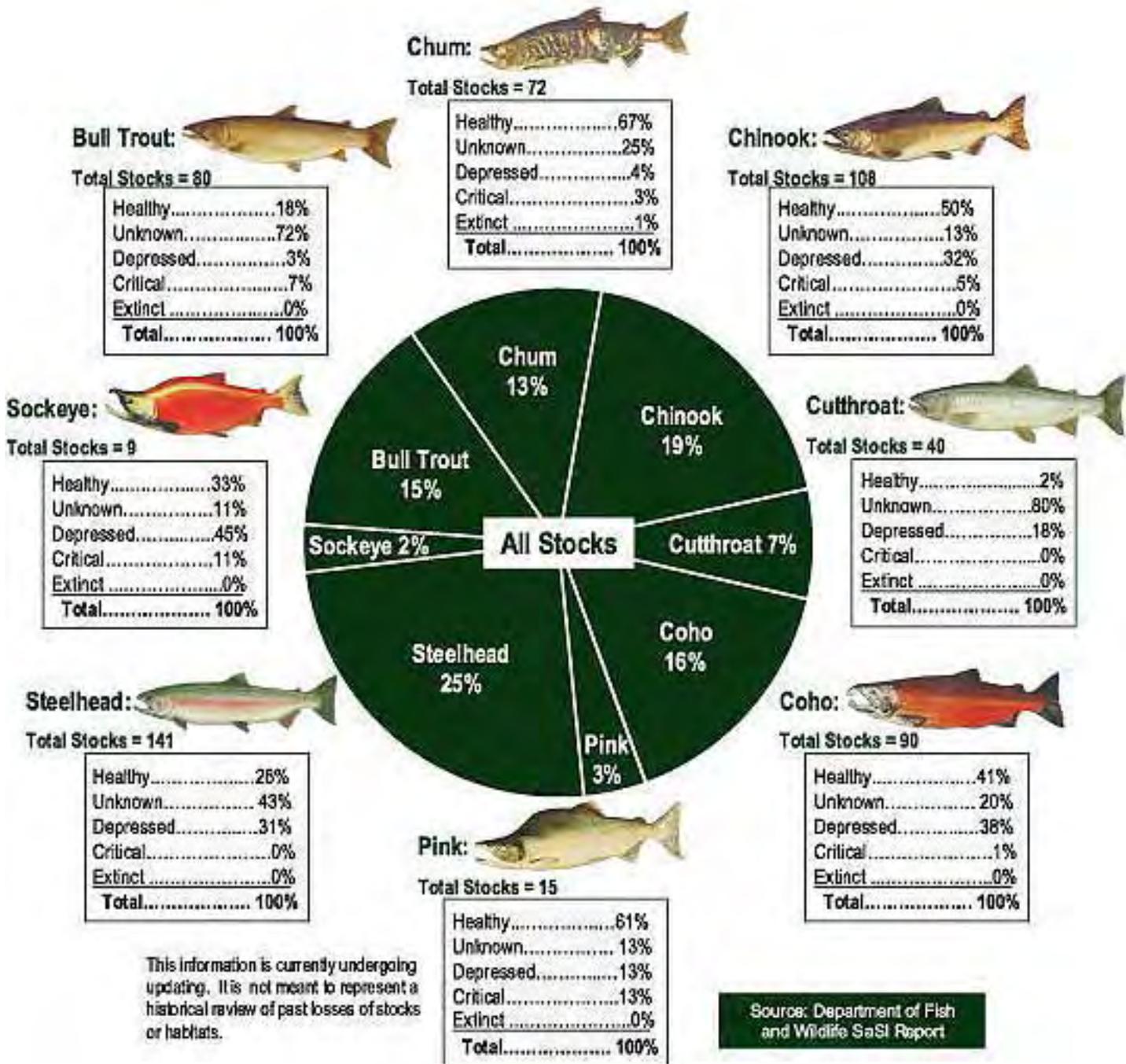
Extinct:

A stock of fish that no longer is present in its original range or as a distinct stock elsewhere.

Unknown:

Stocks that have insufficient information to rate.

~Wild Salmonid Stock Inventory~



This information is currently undergoing updating. It is not meant to represent a historical review of past losses of stocks or habitats.

Sources: Department of Fish and Wildlife SaSI Report

Salmon are in trouble?

There seem to be plenty at the market and in restaurants...

Most of the salmon we buy in stores or restaurants is not from here. It's from Alaska where salmon habitat is still pristine or from fish farms in other countries. The relatively small amount of salmon that is from here is from hatchery runs or healthy wild stocks.

Habitat

our goal

Freshwater and estuarine habitats are healthy. Rivers and streams have flows to support salmon. Water is clean and cool enough for salmon. Compliance with resource protection laws is enhanced.



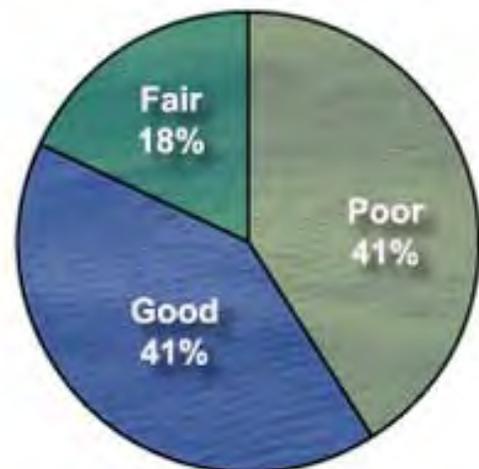
our challenge

The salmon's plight is the result of many decades of decline, caused by many factors. Much of our freshwater rivers and streams where salmon begin and end their lives have been diked, diverted, channeled, polluted, or blocked to meet the needs of agriculture, industry, and homes. Over 1,000 dams impede salmon on their journey to the sea and back. Some of our rivers no longer carry enough water to support salmon in late summer. In winter, we have more scouring floods that destroy salmon eggs and wash young fish out to the sea because of increased urban development.

Urbanization has also been a major factor in the loss of river estuaries-the broad, often meandering and braided areas where rivers empty into saltwater. In the past, river estuaries provided important shelter and feeding grounds not only for wild fish, but for many other species of plants and wildlife, too. Sixty percent of our state's estuaries have been lost as rivers have been channeled, and over half of the 40 percent that are left are in only fair or poor condition.

Urban stormwater-the water that runs off streets, roofs,

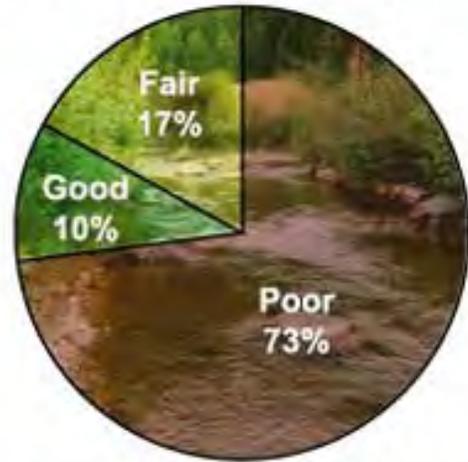
Condition of Washington's Streams



Source: Department of Ecology

parking lots and other hard surfaces-creates a different kind of water problem: when it rains, water is quickly dumped into streams, lakes and marine waters instead of soaking into the ground. In many areas, this water contributes to more frequent floods-floods that can wash young salmon out to sea, destroy salmon eggs in streams, and pollute water with contaminants from streets and parking lots.

Condition of Washington's Riparian Habitat



Source: Department of Fish and Wildlife

Urbanization presents many other challenges, too. Forest and farm land is being converted by urban development at a growing rate. For the four most populous counties in Puget Sound, the rate of urbanization has doubled in the last 25 years, from 150,000 acres per year in 1970 to 300,000 acres per year in 1995. Puget Sound shorelines have been extensively altered by bulkheads, filling, dredging, and other development impacts.

Because of the many demands placed on some rivers and streams to meet our needs for water, one of our most difficult challenges will be finding ways to restore water to streams where and when it's needed for salmon. Most farmers, cities, and industries have long standing water rights that entitle them to special status as "prior appropriators." This means that their rights to water come first, and they can take all the water they have a right to without leaving adequate amounts for fish. This is the legacy of 19th century frontier laws that resulted in a "first come, first served" legal basis for establishing water rights.

Oddly enough, salmon were not accorded a legal right to water until 1967. This means that even if new state laws require that a certain amount of water must be left in streams for fish, the prior appropriators will not be affected because their rights were established first.

In many areas, we simply don't know enough about the quantity and condition of the water in streams to manage it well. We do know that there are 645 streams, lakes, and marine areas listed on the state's water pollution list; about 55 percent of these have been degraded by agricultural activities, 20 percent are affected by municipal wastewater. Additionally, 30 percent have been degraded because the areas near their banks have been damaged.

In the last 30 years, the legislature has given Washington many valuable environmental laws: the Growth Management Act, the Shorelines Management Act, the Hydraulics Act, and the State Environmental Policy Act. Congress has passed the Clean Water Act and the Endangered Species Act. All are important tools in salmon habitat protection.

But their implementation requires coordination across many government agencies, often with competing missions. This contributes to confusion and frustration on the part of people who try to get permits to do their projects.

And putting protective conditions on permits issued under these laws raises the thorny issue of private property rights versus environmental protection. What each of us does on our own land affects our neighbors and the quality of the environment around us. Finding the right balance between individual property rights and the public interest in protecting our environment will continue to be among the most difficult challenges facing federal, state and local agencies.

our progress

Forests and Fish

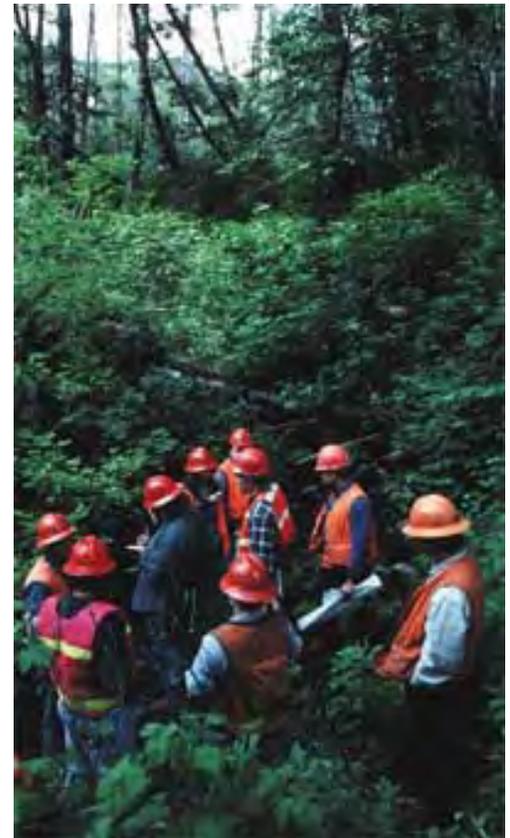
The Forests and Fish Agreement is a voluntary pact negotiated by small and large forest landowners; federal, state, tribal and county governments. It covers eight million acres of private forest land, protecting 60,000 miles of streams. It is the first agreement of its kind in the country, winning the approval of the federal agencies that enforce the Endangered Species Act and Clean Water Act. The Agreement became state law by the 1999 Legislature.

This landmark law establishes new rules for forest practices—rules that do a better job of protecting salmon habitat and providing for restoration of streams that have been damaged by past harvest practices and logging roads. It requires timber harvesters to leave uncut buffers along streams so that banks are not damaged and the water stays shaded and cool. It establishes protections for forested wetlands, limits logging on steep slopes to prevent erosion, requires well-maintained roads, and calls for repair or removal of culverts that

Financial incentives were established to help small landowners adapt to the provisions of the Agreement, and a Small Forest Landowner Office has been created within the Department of Natural Resources.

Even more important, the agreement includes an "adaptive management" provision—a provision that says, in effect, if scientists determine that these measures prove insufficient, everyone will look at what more needs to be done. This adaptive management provision is a new and powerful way to ensure genuine progress for salmon recovery in the 53 percent of Washington's land area that is covered by forests.

However, not everyone feels that the Forests and Fish Agreement is sufficient to protect salmon. In September 2000, environmentalists and commercial fishers filed a lawsuit against the federal government challenging the Agreement. The state supports Forests and Fish and will join the federal government in defense of it.



block fish passage.

Just what is this thing called habitat?

Simply said it's what fish need to live; it's where they live. It's clean, cool water in the right amounts. It's the trees and shrubs that shade streams and help filter pollutants that enter the water. And because fish and people share the same habitat, everything we do in managing our land and water affects salmon.

Agriculture, Fish and Water

A negotiation similar to Forests and Fish is now underway with agricultural interests, irrigation districts, local, state, and federal governments as well as some environmental and tribal participation. Since agriculture accounts for 37 percent of Washington's total land area and 74 percent of our water usage, this is an important effort. And it's the first time the agricultural community has participated in a statewide negotiation-another visible example of the way salmon recovery is bringing diverse interests together. Negotiators have reached agreement on basic principles and concepts and are now working on specific conservation practices and guidelines to help agriculture voluntarily address water quality, quantity, and habitat issues that limit salmon recovery.



The negotiations are proceeding on two fronts: First, work is underway to revise conservation practices used in developing individual farm management plans. The changes will be reflected in the updated Field Office Technical Guide, developed by the U.S. Department of Agriculture. Second, negotiators are working to develop new planning guidelines that will help irrigation districts address water quality and water conservation issues.

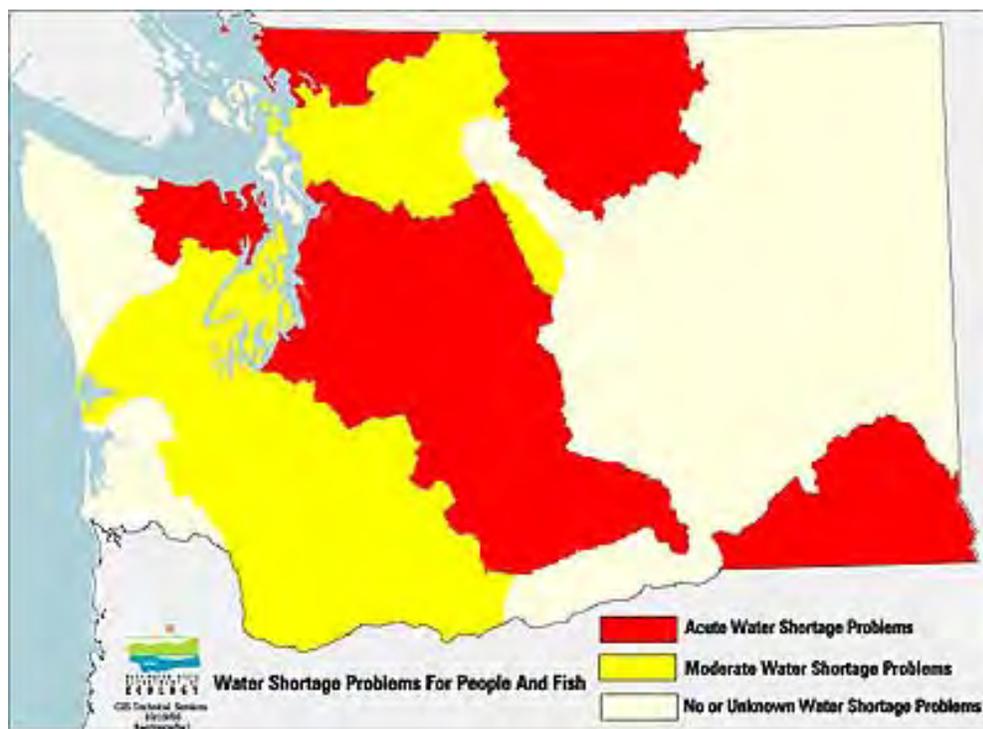
Both negotiation processes are working toward meeting Endangered Species Act requirements and Clean Water Act standards, providing regulatory certainty on both issues. The negotiated agreement also must assure the long-term economic viability of agriculture in Washington state.

While these negotiations are underway, changes already are taking place. State and federal funding of the Conservation Reserve Enhancement Program has made it possible to pay landowners to restore and protect 600 miles of streamside habitat in agricultural lands (and other privately-owned land) adjacent to streams where salmon reside. Individual irrigators are also investing in new methods of water conservation and farm practices. For example, Yakima River basin irrigators have successfully reduced sediment in the river-a major water quality problem-by 25 percent. And dairy farmers are changing practices to keep dairy waste out of streams. Working with conservation districts, 34 percent of the dairy farms developed "nutrient management" plans and are now working to get them certified and implemented.

Water Quantity and Quality

The 1998 Watershed Planning Act (known by many as "2514" after the legislative bill number that created it) gives incentives for local citizens to assess the health of local watersheds and develop plans to restore and manage them with the health of salmon in mind. Of the 62 "water resource inventory areas" in the state, 40 are now developing such plans; eleven of these are in river basins where there currently is a known shortage of water for people and fish. To help local citizens determine how much water is needed in streams to keep fish healthy, state agencies are providing funding and assisting in studies on the amount and quality of water in many of these watersheds.

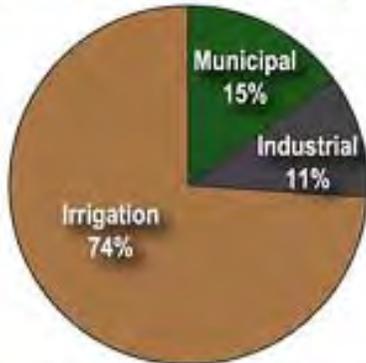
A combination of strategies to increase the amount of water in streams will be needed: aggressive conservation by all water users; finding ways to re-use water for golf courses, street cleaning, and industrial cooling and heating; and identifying environmentally sound water storage opportunities that will



allow release of water to augment historically low flow periods.

Washington State Water Use

total water use statewide = 8,820 million gallons per day



Source: U.S.G.S. Estimate of Water Use in the United States

State and federal governments are now negotiating cooperative agreements with water rights holders near rivers that need more water. In some cases, the state will actually buy water from them to leave in the rivers for fish.

Work is also underway to revise water quality standards to address salmon's sensitivity to the temperature of the water, and to ensure that streams are cool enough to keep salmon healthy.

Water clean-up plans are being developed for each of the 645 polluted water bodies; last year 56 of these plans were completed, bringing the total to 216. All plans will be done by 2013, in accordance with a schedule approved by the federal Environmental Protection Agency.

State agencies are also more assertive in enforcing existing laws against water pollution and unauthorized use of water. Actions have been taken against illegal water use, and new partnerships have been established with property owners who agree to work with local conservation districts to halt and repair stream degradation. During the last four years, \$3 million in water pollution fines has been levied against persistent polluters—a 100 percent increase over the previous four years.

Fish Passage Barriers

There are big cumulative gains for salmon when culverts and other barriers that fish can't navigate are removed. In both urban and rural areas, preliminary studies estimate that a total of somewhere between 2,400 and 4,000 culverts and other barriers now block salmon access to 3,000 to 4,500 miles of freshwater spawning and rearing habitat.

Of the barriers that have been created in the course of road-building, 10 percent are estimated to be on state highways, 40 percent on county, city and town roads, and about 50 percent are on private and



before

To help this process along, new manuals on fish barriers, screening for surface water diversion, fish ladders and fish-friendly culvert designs have been produced. The Washington Department of Fish and Wildlife is providing extensive technical assistance and support to other state agencies, counties, cities, tribes, irrigation districts and private landowners. And various government agencies and private donors are providing grant funding to accelerate progress in barrier removal. Projects funded by the state's Salmon Recovery Funding Board and carried out by local citizens and organizations opened up

forest roads. Other barriers such as dikes, levees, and floodgates can also stop fish migration.

Correcting these fish passage barriers can be one of the most cost-effective ways of restoring more habitat for salmon. Fixing a single culvert can open many miles of a stream for spawning and rearing young fish when there's good upstream water and riparian conditions.

Many government agencies, environmental groups and civic organizations are involved in the repair, removal or maintenance of culverts and other barriers as part of their habitat restoration efforts. For instance, the Washington State Department of Transportation has inventoried 2,300 culverts under state highways, and found that 30 percent of them block a total of 508 miles of streams that could provide salmon habitat. So far, they have fixed 59 of them.



after

Years after roads are built, the culverts installed to allow creeks and streams to flow under them may no longer function properly. If too much gravel or dirt washed away, or if too much debris has filled the bottom of the culvert, fish may not be able to pass through it, and many miles of habitat then become blocked to salmon. Fixing problems such as these will eliminate one of the more significant factors limiting salmon production in many watersheds.

180 miles of stream habitats during the summer of 1999.

There are over 60,000 places where water is diverted from Washington's streams, rivers, and lakes for irrigation or other uses. Screens are needed at these locations to keep fish from getting swept into the diversion and becoming lost, stranded, and destroyed. The majority of these diversions are either not screened at all, or have screens that are inadequate. 1998 studies showed only 48 percent compliance with screening regulations.

These problems are being addressed with stepped up inspection and enforcement actions, more technical assistance, education, and systematic efforts to identify, prioritize and fix inadequate screens. Last year, screening efforts concentrated in the Methow Valley. Funding was provided by the Salmon Recovery Funding Board to assist the installation of three large screens on major diversions in the valley. Progress will remain slow, however, because the needs outstrip funding available to accomplish the task.

Balancing the needs of farmers, fish, business and ordinary people will not be easy. Anything worth doing is rarely simple."

Gary Locke



Designed to provide boat passage and regulate lake water levels between sea-level Puget Sound and higher-elevation fresh waters, fish passage was not a major consideration when the Ballard Locks were constructed nearly 90 years ago. Attention has turned in recent years to the toll this man-made marvel takes on fish. A scientific task force recommended changes in both operations and facilities to make the locks more friendly to the millions of fish that make their way from rivers and streams feeding Lake Washington on their way to the ocean. This year, four new smolt slides (upper right) provided fish with a safer alternate passage, allowing them to follow water flow and glide unharmed past the locks.

Urbanization, Land Use and Stormwater

State and local governments are working now to rewrite guidelines for dealing with stormwater runoff. Separate stormwater guidelines are being written for Eastern and Western Washington that will recognize the differences between these distinct regions; the Western Washington guidelines will be completed this winter. They will be aimed at reducing stormwater runoff from new developments, and improving the way stormwater is collected and discharged into streams, lakes, and marine waters. Already many cities and towns have changed requirements for new development so that more land is left unpaved to allow water to soak into the ground. But a growing population and rapid urbanization—especially in Western Washington—make this a difficult challenge.

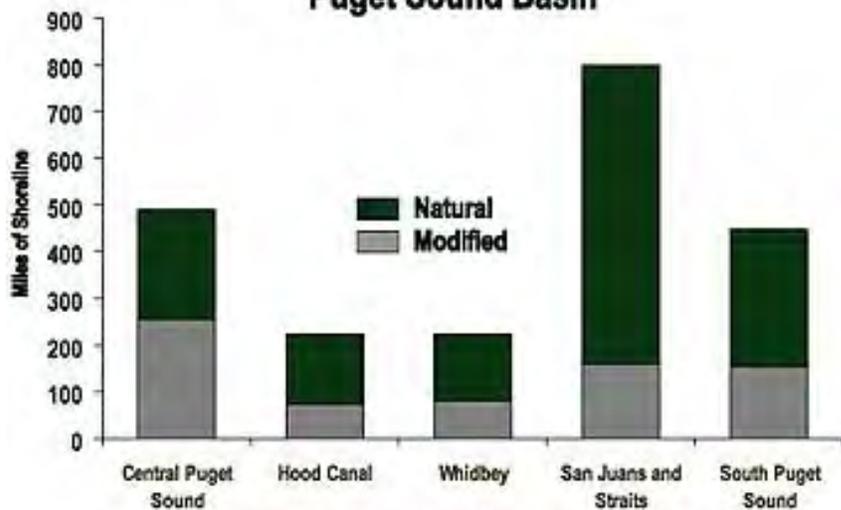
Land Use in Washington State



To help protect shorelines and support salmon recovery in an era of rapid population growth, the state's Department of Ecology is adopting new shoreline management guidelines. These new guidelines, updating 28 year-old rules, have been reviewed by the public in meetings around the state, and were completed in November. The new guidelines allow local communities to choose one of two paths. They can adopt a shorelines master program using a set of guidelines approved by federal agencies responsible for enforcing the Endangered Species Act, or they can customize their plans and negotiate individually with the federal agencies for ESA certainty.

Because of state laws, local governments are defining urban growth boundaries, protecting remaining wetlands, estuaries, and forest and agricultural lands, and adopting shoreline protection programs. In most areas, we need to first protect the best of what's left, then work to restore what's been degraded. This means placing a high priority on reducing further degradation of stream health and water quality, then working to restore as much of the damage that has been done as is possible. This can be achieved by protecting wetlands and unstable slopes, acquiring key parcels in fee or easement, leaving adequate buffers along streams, reducing stormwater discharge, preventing erosion during construction, and changing landscaping to reduce water and polluted runoff.

Shoreline Modification in the Puget Sound Basin



Source: Department of Natural Resources 'Shoreline Modification in Puget Sound' Report

The current condition of salmon suggests we need to continue these efforts. But we also need to examine how government agencies with overlapping responsibilities for environmental protection can lessen confusion and frustration on the part of people attempting to obtain permits.

In all of these efforts, it is clear that regulation alone won't suffice. Private streamside and waterfront landowners, other citizens, and business owners all must play a role in addressing the impacts that threaten wild salmon. There will be a continuing need for incentives, technical assistance and public education about the importance of changing the way we build new houses and businesses, maintain our lawns, and care for the streams in our communities.

That's why state, federal, tribal and local governments are working at every level to encourage a new kind of cumulative impact—the cumulative benefit of thousands upon thousands of urban residents using less

water, retaining or planting more trees, putting fewer chemicals on the lawn, and choosing to live in higher-density housing in order to preserve more habitat for salmon and more open space for generations to come.

Harvest

"We are *entering* a *new era* in the way we *manage* and think about our state's *fisheries resources*."

Dr. Jeffrey Koenings, Washington
Department of Fish and Wildlife Director

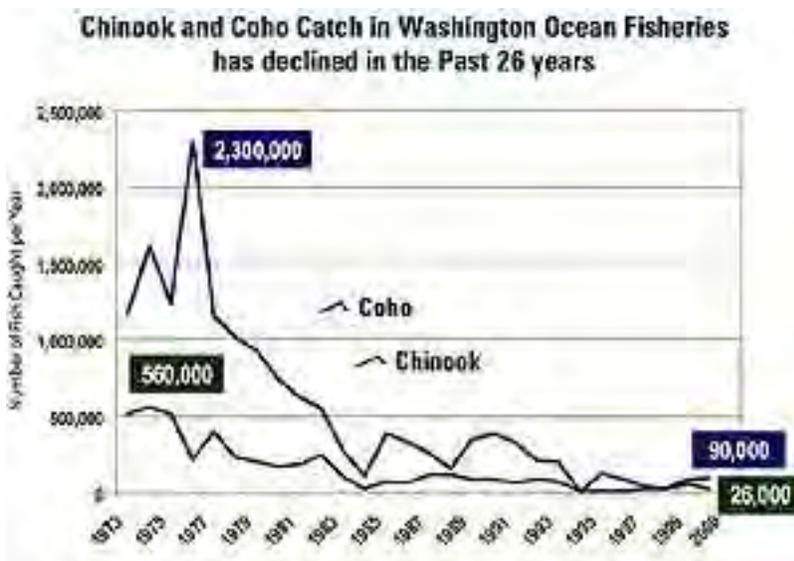
our goal

Fish harvest management
actions
protect wild salmon.

our challenge

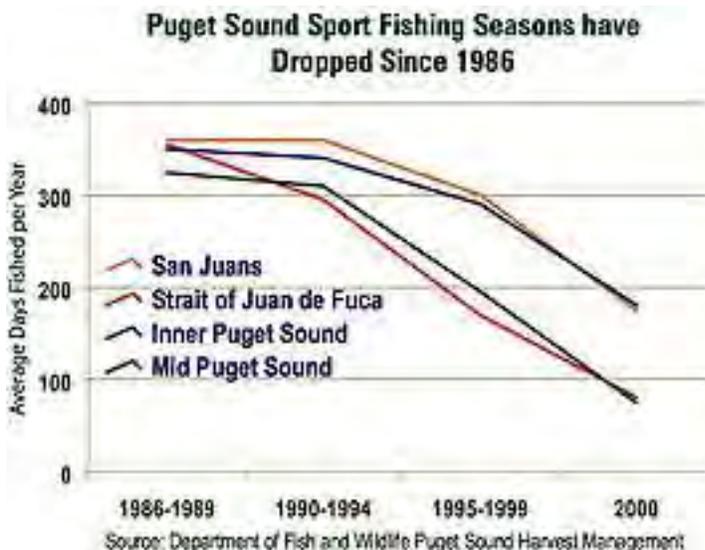
Fishing has been a way of life for Washington people for thousands of years. For local tribes, salmon were both sustenance and spiritual equals in the web of life. For immigrant settlers, Washington's abundant waters were an opportunity to sustain fishing traditions, and to build new lives and communities in the far frontier of the American west. Fishing- especially fishing for salmon- has also been one of the defining recreational experiences of growing up in Washington for millions of youngsters over many generations.

Needless to say, cooking and eating salmon are a signature of life in the Northwest. In any gathering of people, a stranger can always strike up a conversation simply by asking about the best way to cook this fish.



Salmon have a high profile, and for many who live here, fishing has been considered a major cause of their decline. One early response to the decline was to build hatcheries to produce more fish. But even the most productive hatcheries in the world cannot make up for the continuing shrinkage in the amount of clean, cold water and unobstructed streams accessible to migrating salmon.

While hatchery fish sustained-and in some cases increased- the fish available for harvest, the abundance of hatchery fish masked the problems of dwindling and degraded freshwater habitat for wild fish. It also created another problem. When fishers caught hatchery fish, they were at times mixed with wild salmon stocks. The result is we over-harvested wild fish that were in trouble.



Since fishers couldn't distinguish between wild and hatchery fish, fisheries managers had to take action to protect wild fish. By regulation, chinook harvest in Washington ocean fisheries had to be reduced by 91 percent in the past 26 years; coho harvests were reduced by 76 percent. In the mid-1990s, the ocean chinook sport season was cancelled altogether because there were so few wild fish left.

Fishing seasons also became shorter and shorter as conservation became more and more urgent. This caused economic devastation to fishing communities. The number of commercial fishing licenses has

been reduced by 55 percent in the last 25 years, in part because of a license buy back program, and in part because fishers simply gave up and went out of business.

our progress

We are finding new ways to catch hatchery fish and protect wild fish. The goal of changes in fishing practices has been to find ways to discriminate between healthy, abundant stocks of salmon (including, of course, hatchery salmon), and weak, threatened or endangered stocks of wild salmon. Several changes have contributed to this goal.



Thanks to a strong return of hatchery fish and improved ocean conditions, the Lake Washington sockeye fishery opened for the first time in four years on Independence Day 2000. It's believed to be the largest urban sports fishery in the country.

- Wild salmon and hatchery salmon look alike-or at least they did until the mid-1990s, when hatchery workers and volunteers began to clip the adipose fins (a fin that fish don't need) of hatchery fish. This simple measure has meant fishers can tell the difference between wild fish and hatchery fish. Where wild stocks are in trouble, fishers can look at their catch, and return wild salmon-the salmon with unclipped adipose fins-to the water. This simple measure can make a life-or-death difference to an endangered salmon run.
- Fin clipping is not yet universal in hatchery operations, but it has become a very important part of the movement toward more selective fishing that protects wild salmon from over-harvest. One hundred percent of coho salmon and steelhead produced in Washington Department of Fish and Wildlife hatcheries are clipped, and about 40 percent of the chinook are clipped.
- Returning wild fish to the water only works if those fish are not injured or killed when they are caught. That's why new kinds of fishing gear, such as tangle nets and barbless hooks, are being developed that don't injure fish.
- Commercial fishers using purse seines (a kind of net that encircles fish) are now required to sort their catch and

release wild chinook.

- Fish runs are monitored throughout the season to make sure that actual runs match the forecasts. If they don't, fishing is stopped.
- Enforcement of fishing regulations has been increased. Newly-formed Department of Fish and Wildlife enforcement detachments have increased compliance with state fishing rules to over 90 percent in the first year of service on the state's coastal waters.



A 1999 *re-negotiation* of the *treaty* between the *U.S.* and *Canada* has also changed the focus *from arguing* over who catches fish *to working together* to protect fish, and putting *conservation first*.

A critical component of this landmark Pacific Salmon Treaty was negotiated by Governor Locke and Canadian Fisheries and Ocean Minister David Anderson; it reduces Canadians' catch of chinook and coho whose home streams are in Washington. This treaty re-negotiation will be in effect through this decade. It followed an important 1998 Locke/Anderson agreement on conservation that had the effect of increasing by 30 percent the number of Puget Sound chinook that return to our streams to spawn. After only one season of this agreement's life, wild chinook spawning goals were achieved in the Snohomish River basin for the first time in 18 years, and the number of Skagit fall chinook tripled.

While much has been done, it is still too early to know how effective many of these fixes will be for wild fish. Fishers-Indian and non-Indian, commercial and sport-have become important advocates for putting conservation first. All tribal and non-tribal fisheries in Washington are currently operating under permits, issued in compliance with the Endangered Species Act, by the National Marine Fisheries Service.

With the "tangle net," one of the new gear types being tested, salmon become entangled in the small, loose weave of webbing and can be disengaged with relative ease.

Co-managers

Tribes and the Department of Fish and Wildlife

Washington's salmon and steelhead fisheries are managed cooperatively in a unique government-to-government relationship. One government is the state of Washington, and the other governments are Indian tribes whose rights were established in treaties signed with the federal government in the 1850s. A 1974 federal court case (decided by Judge Boldt) re-affirmed the tribes' rights to harvest salmon and steelhead and established them as co-managers of Washington fisheries. State and tribal managers cooperate in setting annual fisheries in federal and inland waters, in restoring fish habitat, and in hatchery production.



Salmon are an important part of the diet of terns, cormorants, bald eagles, gulls, and marine mammals such as sea lions.

Hatcheries

"Hatcheries will play an increasingly *important role* in the re-introduction *of wild salmon* in areas where they have historically *spawned*."

State Representative Jim
Buck



Improvements are underway to reduce hatcheries' effects on natural systems. Here, the Department of Fish and Wildlife constructed a wetland to filter hatchery wastewater before it returns to the river.

our goal

Hatchery practices meet wild salmon recovery needs.



Hatcheries near cities, like this one in Vancouver, are a good place for families to learn about fish.

our challenge

When hatcheries were first being built over one hundred years ago, there was a belief that technology could solve all the problems created for wild salmon by over-fishing, destructive forest practices, pollution, urbanization, and dam-building. This optimism created an approach to hatcheries management that persisted for most of the 20th century: the sole purpose of hatcheries was to provide fish for harvest in order to sustain both commercial and sports fisheries.

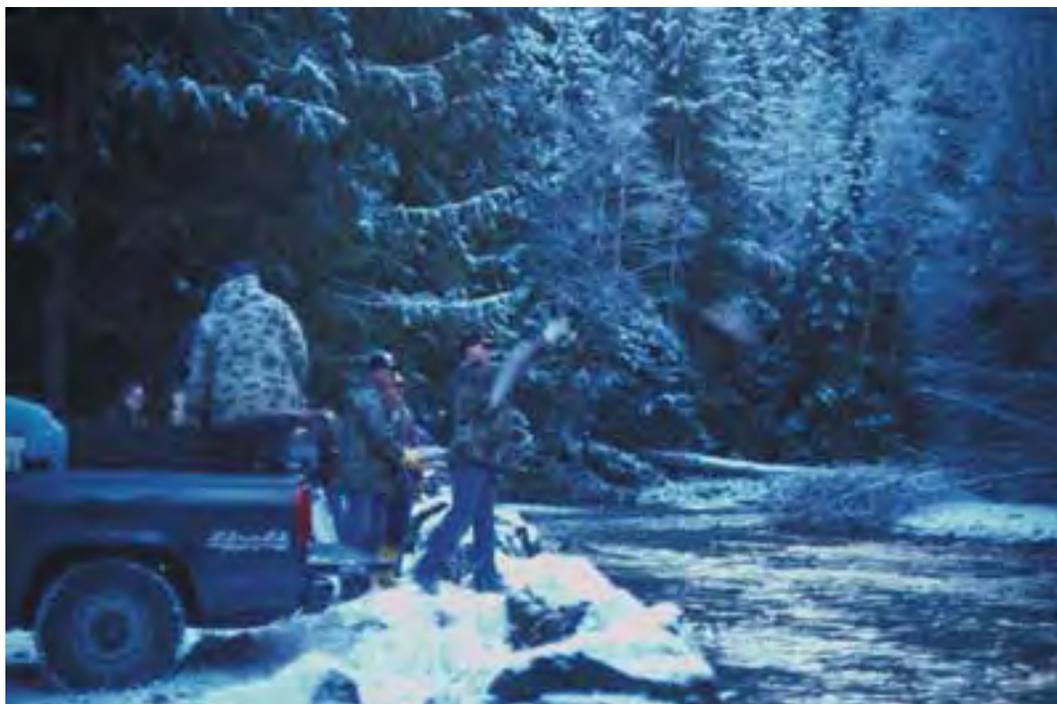
The first hatcheries opened in the 1870s. In the 1960s, the introduction of pellet fish food significantly increased the productivity of hatcheries. By the early 1990s, about 95 percent of the coho, 70 percent of the spring chinook, more than 50 percent of the fall chinook, over 80 percent of the summer chinook, and 70 percent of the steelhead in the Columbia-Snake River system were hatchery fish.

What we've since learned is that hatchery fish often competed with wild salmon for dwindling freshwater habitat. Mass rearing in hatchery ponds also bred diseases, which then could be introduced into wild fish populations. And because not much was known about the subtlety and complexity of the way wild salmon evolve and adapt to specific streams, hatcheries often transferred eggs from one river system to another. These hatchery fish then interbred with wild fish, and sometimes compromised the genetic suitability of wild salmon for their native streams.

In addition, some hatcheries actually blocked

the streams on which they were located, making it impossible for wild fish to reach their spawning grounds.

our progress



Salmon carcasses play an important part in nourishing a healthy watershed. Many plants and animals rely on decaying salmon as food sources. The Washington Department of Fish and Wildlife has begun a program of freezing salmon after they return to hatcheries and have spawned, then later tossing these "carc-sicles" into nutrient-poor streams.

The role of hatcheries is changing dramatically. Deeper understanding of the problems hatcheries have created and of the role they have to play in the recovery of salmon, and a new recognition of the limits of our scientific knowledge are profoundly changing the way hatcheries are managed.

Today, producing fish for harvesting is balanced with a second mission: to help conserve wild salmon, and, where they are endangered or threatened, to help them recover to healthy, sustainable levels. This mission will take on even more importance in the years to come.

To lay the groundwork for a comprehensive re-tooling of hatcheries, the first-ever scientific review of federal, state and tribal hatchery practices is now underway.

Even in advance of the results of this review, state hatcheries have changed many of their practices. And many of these changes have been underway for twenty years or more. Work has begun to

redesign some hatcheries to provide safe passage for wild fish. Hatchery operations are timed so that young fish are released when they will not compete with wild fish for food. Guidelines have been developed to protect the genetic integrity of wild salmon, and state, tribal, and federal governments are working together to complete Hatchery and Genetic Management Plans for hatchery operations that may affect wild salmon. An Independent Scientific Review panel has also been asked to develop a scientific framework for hatchery operations.

Already there are examples of how hatcheries can play a vital role in saving endangered wild salmon. In 1976, biologists estimated that fewer than 50 wild spring chinook salmon remained in the North Fork of the Nooksack River-the result of excessive fishing, timber practices and other factors. To guard that stock against immediate extinction, biologists from the Washington Department of Fish and Wildlife captured these fish and moved them to the nearby Kendall Creek Hatchery. These native salmon are bred at the hatchery, and they return as adults to the hatchery, where they help propagate future generations. A scientific committee, which includes representatives from the Nooksack and Lummi tribes and WDFW, meets regularly to chart the course of their recovery.

For the past five years, an average of 2,000 adult wild spring chinook has returned to the hatchery, and in 1999 an additional 900 fish returned to the river itself.

This successful restoration project took many years. But this experience has been the source of new knowledge about how to succeed in the delicate task of preserving and restoring wild fish when they are at the brink of extinction.

Today, one third of the 100-plus hatcheries in Washington state are involved in recovering wild salmon runs. Still, there is a great deal more to do. Some hatcheries are a century old, and urgently need to be improved-in some cases to remove obstacles that block wild fish from migrating upstream. This is work that must be done to bring hatchery practices into harmony with their new, dual mission of recovering wild fish while sustaining the abundance of hatchery fish available for harvest.

Today, *one-third* of the *100-plus* hatcheries in Washington state are involved in *recovering* wild *salmon*



runs.

Many hatchery fish (above) are now "marked" by clipping the adipose fin on their upper body to distinguish them from wild salmon (below). Fishers can now identify the hatchery fish they can keep while providing a means to protect wild salmon.

Hydropower Facilities and Other Dams

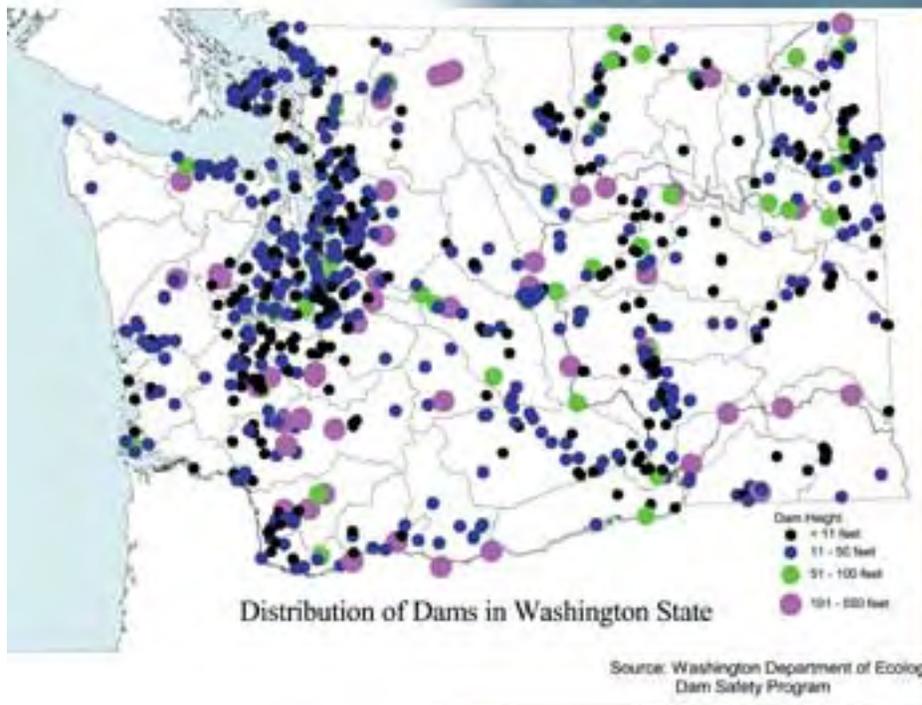
our goal

Freshwater and estuarine habitats are accessible.

our challenge

There are over 1,000 dams in Washington state. Some dams produce electricity; some are important for transportation; some store water used for irrigating crops; some prevent flooding; and some do all of these things. Washington's dams range in size from very small irrigation dams to the enormous Grand Coulee Dam.

Several federal agencies, the state, public utility districts, cities, counties, and private businesses own and operate dams. About 60 percent of Washington's dams are privately owned; 9



percent are federal dams; and the remainder are owned and managed by the state or local governments.

Many of us have been fortunate to live in a state with cheap, abundant, non-polluting hydroelectric power. Dams used for irrigation have also created economic opportunity for farm communities, especially in the dry areas of Eastern Washington. Dams have helped make our state what it is today.

What we now know about the effect of dams-both large and small, hydropower and irrigation-is this:

- Dams that don't have fish ladders block salmon from migrating upstream to spawn. Many older fish ladders don't work very well and need to be replaced with newer, more fish-friendly



designs.

- Dams also impede young fish as they migrate downstream on their way out to sea. The lakes behind dams slow the fish down, because they reduce the velocity of the river's current. This can be critical to fish that have evolved to transform themselves for life in saltwater at a particular time or stage of development. Slower migration to the sea also exposes young salmon to more predators.
- By slowing down water and creating large lakes, dams can also cause the water temperature in the river to rise, which can be fatal to fish.
- The way dams

are managed
sometimes
creates
conditions
where there
isn't enough
water in the
river to support
fish, and, at
other times, so
much water is
released at
such high
velocity that it
sweeps fish out
of the river
before they are
ready.

- Pumps and turbines in dams often suck up fish and kill them, and fish that go over the dam spillway often get gas bubble disease from the extreme turbulence of the water.

There are several regulatory strategies for making dams more fish-friendly. Non-federal dams are licensed by the Federal Energy Regulatory Commission, and license renewals can require changes to make dams more fish-friendly. The Clean Water Act requires that federal standards for water quality be met-and those standards include keeping the water cold. And of course, the Endangered Species Act requires mitigation of dams' ill effects on salmon. But these regulatory approaches can be extremely time-consuming. Most dams are licensed for a period of 30 to 50 years, so waiting for licenses to come up for renewal in order to make fish-friendly improvements doesn't always make sense. Moreover, the re-licensing process can take from 10 to 24 years.

our progress

Collaborative, cooperative efforts to improve dams are essential. These efforts also take time and patience, but they pay off much faster than regulation or litigation. There are several early examples of what can be achieved when people decide to work together for fish:



Larger than the entire city of Seattle, the 90,500-acre Cedar River Watershed has been the region's primary water supply for more than a century. With 23 miles of streams, it's also home to salmon-and some 80 other fish and wildlife species. On April 21, 2000, Gov. Locke joined other city, state and federal officials in signing agreements for the final Cedar River Habitat Conservation Plan. This agreement puts fish over the Landsburg Dam giving salmon and steelhead access to more than 17 miles of their native and historic range for the first time in over 100 years.

Cowlitz Hydroelectric Project

The Cowlitz River was once home of the most abundant salmon and steelhead runs in the Pacific Northwest, but it has been severely degraded by the construction and operation of three hydropower dams.

A dozen state and federal agencies, conservation groups, the Yakama Nation and the City of Tacoma have negotiated a comprehensive mitigation plan to restore wild salmon to this watershed. The plan includes improved fish passage, an improved instream flow regime so that there is the right amount of water when and where fish

Duncan Creek Dam

In the 1960s, Duncan Creek Dam was built with no fish passage. Years later, a culvert was added for fish, but it was so small few fish could find it. The number of chum salmon returning upstream to spawn dropped to one or two fish every few years.

Sixty Skamania County landowners are working with the Department of Fish and Wildlife and the Lower Columbia Fish Recovery Board to enlarge and improve fish passage. The landowners each contributed \$3,500 to get this project started; additional funding was provided by the Governor's Salmon Recovery Office, the Salmon Recovery Funding Board, the Department of Natural Resources, the Bradley Fund, the Sand County Foundation and the National Fish and Wildlife

need it, funding of habitat restoration, and changes in hatchery practices along the river. Broad local support and involvement will be important as the plan is implemented.

Condit Hydroelectric Project

In September 1999, the Yakama Nation, PacificCorps, and environmental groups reached an agreement to remove Condit Dam on the White Salmon River. This alternative was the most cost-effective choice for PacificCorps, and a victory for migrating salmon.

U.S. Secretary of the Interior Bruce Babbitt hailed this negotiation and said that this outcome "could not have been achieved without a remarkable partnership involving the Yakama Nation, PacificCorps, state and federal agencies, American Rivers and the Columbia Inter-Tribal Fish Commission."

Goldsborough Dam

An agreement to remove this obsolete and unused dam in Mason County was reached by its owner Simpson Timber, the U. S. Army Corps of Engineers, and the Washington Department of Fish and Wildlife. Removal of this structure will open up 14 miles of ideal spawning and rearing habitat.

Foundation.

Elwha and Glines Canyon Dams

The Elwha River was once home to one of the most impressive runs of chinook salmon-salmon that often reached 100 pounds. Although most of the Elwha River is inside the Olympic National Park where it has remained in pristine condition, over 80 years ago the river was completely blocked by two hydroelectric dams.

After many years of debates and studies, the U. S. Congress made a decision in 1992 to remove the dams. Now plans are underway to do this, but scientists must first figure out how to deal with the 70-plus years worth of sediment that have built up behind the dams.

When these two dams are removed, one of Washington's most productive and pristine river systems will once again be available to wild salmon.

Hanford Reach: Protecting the Best

Sometimes, the best way to protect and restore salmon is to make sure we don't do any more damage to important areas. The Hanford Reach of the Columbia River is one of those places. Calling the area a "snapshot of an earlier time," Governor Locke praised the executive order signed by President Clinton this year establishing the 51-mile Hanford Reach as a national monument. The order protects approximately 195,000 acres and the last remaining free flowing section of the river above Bonneville Dam for future generations.

The Four Governors' Agreement

The governors of Washington, Idaho, Montana and Oregon signed an agreement in July 2000 that establishes priorities for restoring salmon in the Columbia River Basin. This agreement acknowledges that controversy over the Snake River dams should not distract from the many other salmon restoration and protection priorities in the Columbia system, and commits the four states to cooperative efforts. The governors wrote, "Regardless of the ultimate fate of the dams, the region must be prepared in the near term to recover salmon and meet its larger fish and wildlife restoration obligations by acting now in areas of agreement without resort to breaching the four dams on the lower Snake River."

Salmon Recovery Partners

our goal

We are engaged with citizens and our salmon recovery partners. We will reach out to citizens. Salmon recovery roles are defined and partnerships strengthened.



Volunteers working with the Skagit Fisheries Enhancement Group use nets to catch tiny animals called invertebrates to help analyze the health of streams.

our challenge

If there were only one government for the entire Pacific Northwest, saving wild salmon might be a lot easier, and we could achieve our goal with a lot fewer committees and meetings.

But salmon swim through multiple states, through dozens of counties, towns, Indian reservations, and water districts, and even into the waters of more than one country. The result is that there are over 800 government jurisdictions and agencies involved in salmon recovery.

And, of course, salmon swim past many privately-owned forests, farms, orchards, vacation homes, suburbs, and cities. Everyone who owns land near a river or stream is affected by efforts to save wild salmon. And every citizen is, too, since we all share responsibility for the dams that produce our electricity, the streets that we drive on, the chemicals we put on our lawns, and the water and sewer services we use.

The number of governments, farms, businesses,

our progress

The Governor's Joint Natural Resources Cabinet has tried to set a high standard of collaboration, coordination, and mutual support with our myriad partners. The agency directors, their staff and the Governor's Salmon Recovery Office regularly work with local and tribal governments, farmers, business leaders and citizens across the state.

The state legislature has also pushed for local partnerships and the empowerment of local citizens. Efforts to save salmon must begin one river at a time, and one community at a time. Although the imperative to save threatened and endangered species is a national commitment, embodied in the Endangered Species Act, the work called for in that Act can only be achieved locally.

The legislature has recognized the key role of collaborative action in the three major bills it has enacted:

- The Salmon Recovery Funding Board supports local partnerships by funding habitat protection and restoration projects that are proposed by local groups established under the Salmon Recovery Planning Act. Five citizen members were appointed by the Governor in 1999: Bill Ruckelshaus as Chair; Frank "Larry" Cassidy, Jr.; Brenda McMurray; James Peters; and Hon. John

homeowners and other citizens involved in salmon recovery presents a special challenge: To save wild salmon, we must coordinate the actions of all these agencies and people.

That's why partnership is such an important theme at every level of government and in every watershed in Washington state.

Roskelley. They are assisted by the state directors of the Washington Conservation Commission, Department of Ecology and Department of Fish and Wildlife; Commissioner of Public Lands; and Secretary of the Department of Transportation.

- Lead Entities for Salmon Recovery were established by the Salmon Recovery Planning Act (known by many as "2496" after its legislative bill number) in 1998. The Act focuses on the need for coordinated local action to restore habitat conditions necessary for salmon recovery. Lead Entities spearhead these local efforts. Some of the Lead Entities are the same as the watershed planning groups created by the Watershed Planning Act, but in other areas water planning and salmon recovery efforts remain separate. To date, 25 lead entities covering 45 watersheds have been created.

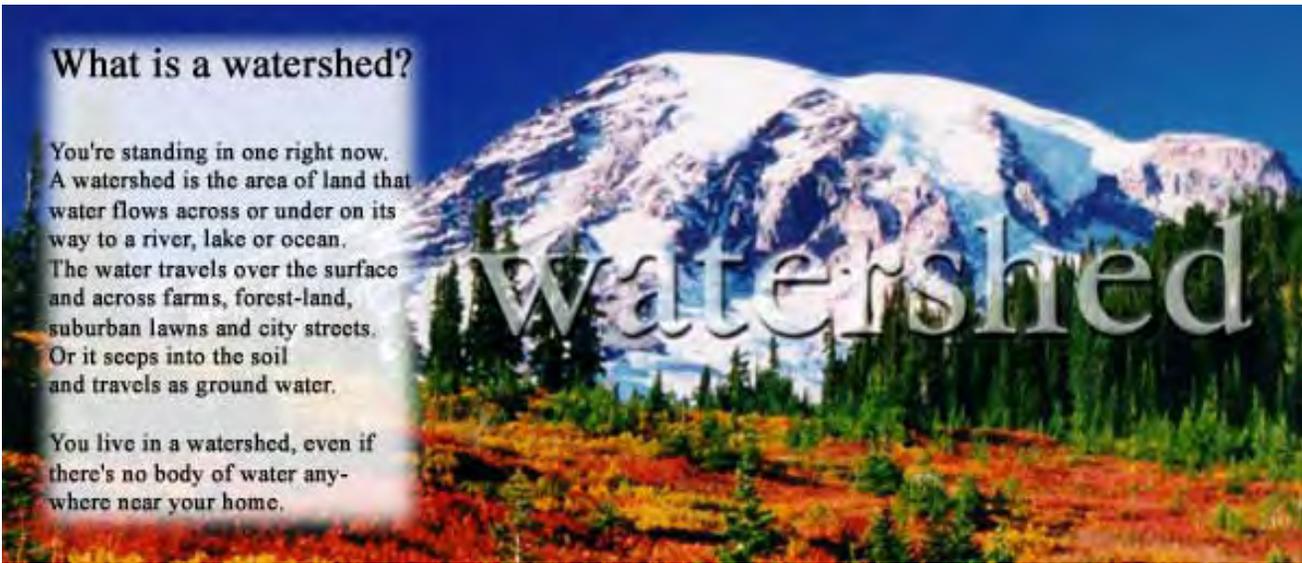
What does "riparian" mean?

The riparian zone is the green area next to the water. These vegetative strips of grass, shrubs and trees protect stream banks from erosion and filter pollutants out of stormwater before they can reach the stream. Trees and shrubs along stream banks also provide shade to keep water cool for salmon.

What is a watershed?

You're standing in one right now. A watershed is the area of land that water flows across or under on its way to a river, lake or ocean. The water travels over the surface and across farms, forest-land, suburban lawns and city streets. Or it seeps into the soil and travels as ground water.

You live in a watershed, even if there's no body of water anywhere near your home.



watershed

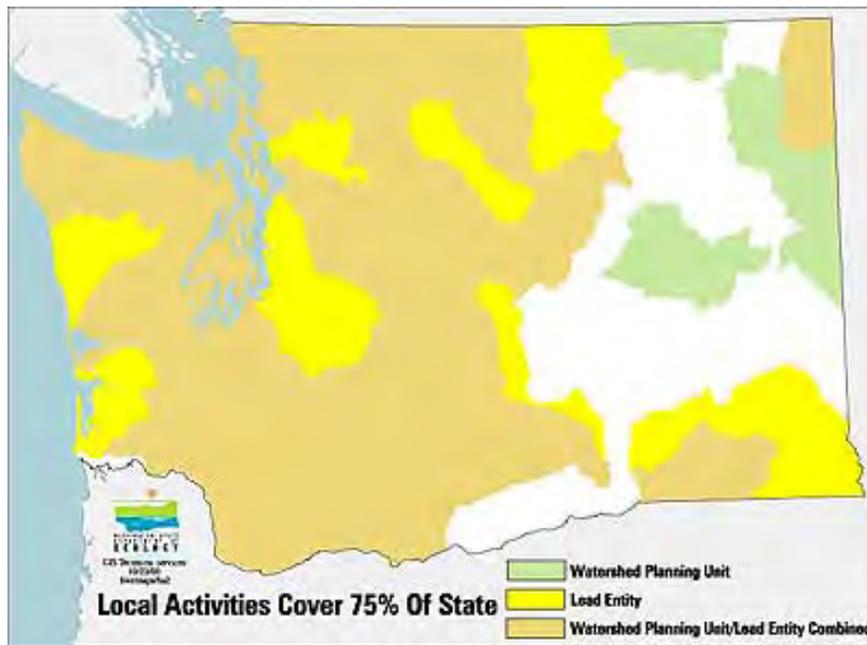
With technical and financial help from the Department of Fish and Wildlife, Lead Entities examine what factors in local streams limit the recovery of wild salmon, develop and prioritize lists of science-based projects to address those factors, and submit proposals to the state's Salmon Recovery Funding Board. The Board then chooses which projects merit grants for technical and scientific assistance and implementation.

The Conservation Commission is also providing valuable information to Lead Entities. It recently completed its limiting factors analysis in 19 watersheds, offering the first comprehensive picture of the issues facing salmon specific to each watershed.

- Watershed Planning Units are a framework for working partnerships in each of Washington's 62 major watersheds. These partnerships, created by the Watershed Planning Act (commonly called "2514" after the bill number that created it), are a response to the need to focus on the natural boundaries of watersheds rather than the human-made boundaries of counties, cities, and other jurisdictions. Twenty-nine watershed planning units have been created so far, covering 40 of the 62 water resource inventory areas.

In each watershed, the county government, the largest town or city, and the largest water purveyor are asked to convene a process that brings together tribal and local governments and private citizens. These watershed planning groups decide what actions need to be taken in their watershed to provide adequate water for fish and other water users.

In many cases, research is needed to assess the condition of local rivers and streams. In addition, it takes time for all the partners involved to understand each other's needs, learn to work together, and set priorities for action.



The completed watershed plans can become the specific, local action plans for addressing water needs for salmon and people. State agencies, participating in the process, will agree to certain state actions to improve watershed health. That's why reaching out and involving local citizens is such an important part of every planning group's efforts. Plans on paper have to be brought to life by local people who are willing to protect streams, and take other actions recommended in the plans.

Examples of other initiatives that also carry out habitat restoration projects are:

- Regional Fisheries Enhancement Groups, created by the legislature in 1990, work under the guidance of the Washington Department of Fish and Wildlife. Fourteen of these non-profit groups, including two new ones established in Eastern Washington this year, develop projects in partnership with tribes, sports fishers, private landowners and local, state and federal agencies. These groups restored 148 miles of stream habitat, and improved 72 acres of estuary habitat last year alone.
- The Washington Conservation Corps, created in 1983, also works to protect environmental resources such as salmon habitat. With funding from the Corporation for National Service (AmeriCorps), a national volunteer program for young people, WCC participants last year planted over 800,000 trees and shrubs, removed 80 barriers to fish passage, and restored or fenced 34.3 miles of salmon streams. In return for their work, the young participants earn scholarships for college. In 1999, Governor Locke successfully petitioned the federal government for \$2.3 million for the Washington Conservation Corps.



To save wild salmon, partnerships that transcend watersheds are also needed. The Forests and Fish Agreement is another example of a vital statewide partnership between private forest land owners and state and federal governments. And the work that is now proceeding on the Agriculture, Fish and Water negotiations is also evidence of the way in which the need to recover salmon is stimulating new cooperative efforts.

The youth Salmon Corps, assisted by the Department of Fish and Wildlife, follow up on earlier habitat restoration work. They are measuring stream width, number of pools, and average pool depth as part of the Asotin Creek Model Watershed Program.



Healthy estuaries are a vital link in the lives of wild salmon, shellfish, and other marine creatures, but more than 50 percent of the estuarine habitat in Puget Sound's major bays has been dredged or filled since the 1850s.

Condition of Washington's Estuaries



Source: Department of Ecology

Valuable partnership efforts have also been initiated to focus on a specific estuary, to bring together jurisdictions that share the specific problems of urban areas, or to share resources within a group of watersheds:

The Puget Sound National Estuary Program

has been underway for 15 years in the Puget Sound basin. The Puget Sound Water Quality Action Team, a program in the Governor's Office, has focused on water quality protection and biological resources, including salmon and the habitat they depend on. Enhancement of stormwater programs, with an eye toward strengthening local programs and more technical assistance from state agencies that comprise the Action Team, will pay off in protection of salmon in rivers and streams and in the marine environment.

The Lower Columbia River Estuary Program

was organized following the 1995 designation of the Lower Columbia River as a National Estuary-a nationally significant resource that was in need of protection and restoration. The governors of Washington and Oregon and the U. S. Environmental Protection Agency signed an agreement in 1996 to develop a joint management plan for the Lower Columbia. On both sides of the river, local communities, and federal and state agencies worked together for three years to craft a plan that identifies 43 specific actions needed to prevent further degradation, protect existing resources, and restore areas that have been damaged. The plan calls for actions such as the restoration of 3,000 acres of tidal wetlands along 46 river miles, development of floodplain and shoreline zoning protections, and systematic long-term monitoring of the estuary.

The Lower Columbia River Fish Recovery Board

is a partnership of Clark, Cowlitz, Lewis, Skamania and Wahkiakum counties created by the state legislature in 1998. These counties encompass five watersheds. The Board's mission is to help recover steelhead and other fish species listed under the Endangered Species Act. The Board works with local governments and tribes, and a technical advisory committee of scientists, to identify habitat restoration projects and to coordinate state and local salmon recovery and watershed planning within their area. The Board also acquires and distributes funds to carry out the projects.

The Upper Columbia River Salmon Recovery Region

is a partnership of Chelan, Douglas, and Okanogan counties, the Yakama Nation, the Colville Confederated Tribes and state and federal agencies. Its mission is to restore healthy runs of fish through "collaborative efforts, combined resources, and wise resource management of the Upper Columbia region." This region includes seven watersheds. This regional partnership is also supported by a regional technical team that has developed priorities for projects to be submitted to the Salmon Recovery Funding Board for financial support.

Tri-County

is a voluntary initiative created by the three most urban counties in Washington. It includes King, Pierce and Snohomish county governments, tribal governments, and an array of cities, towns, business leaders, and environmentalists. This alliance faces the special problems of urban population growth, land use planning, and the protection of streams and fish in an increasingly paved environment. This three-county alliance works with the National Marine Fisheries Service and the U.S. Fish and Wildlife Service to negotiate local programs that meet the needs of salmon, and the need for predictability in reconciling the protection of wild salmon with continued population growth and economic expansion.

These partnerships-and many other similar efforts-can lead to genuine progress for saving wild salmon and improving the health of our watersheds. But they can also be a source of confusion and frustration. Creating the right partnerships-and synchronizing all of them-will continue to be an enormous challenge. It will always be difficult to make sense out of multiple levels of government, multiple and sometimes overlapping legislative mandates, pre-existing salmon recovery efforts, and innumerable volunteer and citizens' groups.

Everyone acknowledges that we must continue to iron out the wrinkles in this elaborate web of interrelated programs, projects, and organizations. We need to eliminate incentives that encourage agencies or alliances to compete for funding rather than to collaborate. We can always do better-and for the sake of wild salmon, we are committed to keep trying. We must work together. We must learn how to make every meeting and every dollar produce real results in real streams

and rivers.

You, too, can become a Salmon Recovery Partner.



Here are a few *tips* that *you can do* at home to help *save* our *salmon*.

"Washington *must change* the way it *uses water*. If we don't act, a lack of water will *limit* our *economic potential* as well as our ability to *protect* our *natural resources*."

Handwritten signature of Gary Locke in black ink.

- ▶ When washing your car, soapsuds, oil and antifreeze run off your driveway, into the storm drains and then the nearest stream, wetland or lake. Wash your car on the lawn to absorb the water. Or take your vehicle to a car wash that recycles water.
- ▶ Direct the downspout from your gutters away from pavement and into your yard where the rainwater can be absorbed.
- ▶ Own a septic system? Learn proper maintenance through a clickable guide on the Internet called "Septic Sense, Scents and Cents: Three Supreme Insights to the Fearless Flush." Visit the Washington Sea Grant Program home page at www.wsg.washington.edu.
- ▶ Don't use septic tank cleaning compounds or additives. They can impair the tank's efficiency and damage the drainfield. Modern low flow toilets help reduce the volume of water that goes into septic tanks.
- ▶ Most commercial household cleaners are toxic. Whether polishing the kitchen sink or scrubbing the toilet bowl, the water you rinse away likely contains chemicals poisonous to salmon. And that runoff eventually reaches a stream, lake or wetland-whether you have a septic tank or are connected to a sewer system.
- ▶ Use low phosphate detergents for all household purposes. Phosphates fertilize the growth of undesirable algae in lakes and streams

robbing oxygen from fish which then suffocate. Usually liquid detergents contain less phosphate than powders. Look for detergents labeled low phosphate at the grocery store.

► For a list of "green" cleaning products, and how to dispose of leftover toxic products, call the state Department of Ecology's Hazardous Substances Information Hotline at 1-800-633-7585.

► The Washington Department of Health and local health departments are responsible for assuring safe, reliable drinking water. They oversee 16,000 public water systems serving nearly five million people. Learn more about your drinking water by reading your system's annual "consumer confidence" water quality report. If you get water from a private well, have it tested annually.

► How do your daily activities affect salmon? Fill out the Department of Fish and Wildlife's "Your Impact on Salmon/Fish: A Self Assessment" at www.wa.gov/wdfw/outreach/salmon/selfasmt/selfasmt.htm

► Interested in conducting your own salmon restoration activities? Contact your local Regional Fisheries Enhancement Group or RFEG. The legislature created these groups to include citizens in salmon restoration efforts. These 14 non-profit volunteer groups cooperate with the Department of Fish and Wildlife to improve salmon resources throughout the state. For a listing of groups, visit www.wa.gov/wdfw/volunter/vol-3.htm

► Find out about volunteer monitoring activities to help salmon at the Watch over Washington Web Site, www.wa.gov/ecology/wq/wow.

► Washington WaterWeeks offers water-related education and action events across the state. This

year, WaterWeeks featured more than 130 events and activities, attracting thousands of participants. Visit www.waterweeks.org.

Building Blocks for Success

"Salmon recovery is really a debate about our future and the values we hold for where we live. Ultimately the public will decide whether or not we save salmon."

- Curt Smitch, Gov. Locke's salmon advisor



our goal

Achieve *cost-effective* recovery and *efficient* use of *government resources*.

Use the *best* available *science* and integrate *monitoring* and *research* with *planning* and *implementation*.

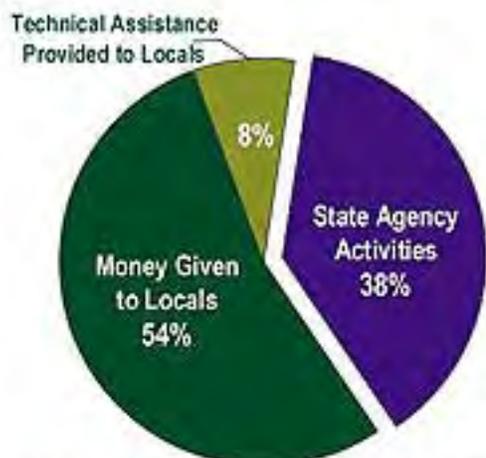
Ensure that citizens, salmon recovery partners and state employees have *timely access* to the *information*, technical assistance, and funding they need to be *successful*.

our challenge

During most of the past 100 years, we believed that science and technology could solve just about any problem—including the problem of dwindling salmon runs. But natural systems are dynamic, and human activities were outpacing the salmon's ability to compete for their basic needs. We simply didn't account for the fact that we didn't know all we needed to know in order to make wise choices.

Meanwhile, we recognize the vital role

Action Plan Budget has a Local Focus



Source: Office of Financial Management, September 2000

of salmon in Washington's economy. Fishing provides jobs, supports businesses, and offers quality recreational experiences for a significant number of families from Washington, around the country, and the world. For example, the U.S. Department of Commerce estimates that in 1996 sport fishing contributed more than \$704 million to Washington's economy. The decline of salmon is affecting all of us.

Yet, there is no consistent, dependable source of funding for salmon recovery in federal, state or local budgets. Salmon recovery must compete in every budget cycle with schools, health care, higher education, and other important priorities. In fact, only 1.4 percent of state government's general fund is devoted to all natural resources spending, and salmon is only a small portion of this already tiny investment.

No one believes that government alone can save wild salmon. This is an issue that requires a response from everyone, because all of us affect salmon in one way or another. Moreover, government simply cannot afford to pay for the myriad habitat restoration projects that must be completed to restore many streams to a healthy condition. An enormous corps of volunteers will be needed to accomplish this work. And they will need technical and financial assistance to participate in meaningful ways.

our progress

To recover healthy, abundant runs of wild salmon, we are developing new tools and using old tools in new ways.



Adaptive Management

Perhaps the most important tool is actually an idea—the idea of adaptive management.

Adaptive management recognizes that we are often ignorant. Adaptive management says, in effect, that we will use the best, most up-to-date scientific knowledge we have, but we will also recognize that we are always learning more—and that we will never know everything we need to know. Therefore, we need to continuously adapt what we are doing, based on the new information that the advances of science reveal to us.

This represents an attitude change—a change from over-confidence in our scientific and technological prowess to much greater humility about how little we really know, and how infinitely complex, subtle, and interactive the natural world is. Adaptive management recognizes that many of the decisions we make today will need to be revisited as we learn more about what works and what doesn't—and it incorporates this recognition in the plans, agreements, and partnerships we create today.

Adaptive management is a fundamental principle in our state salmon strategy. We recognize that careful monitoring and information gathering is essential as we strive to recover wild salmon and to improve the condition of the habitat on which they rely. Incorporating the principle of adaptive management in all salmon recovery efforts has stimulated greater efforts to gather, share and use data about salmon much more efficiently and purposefully.

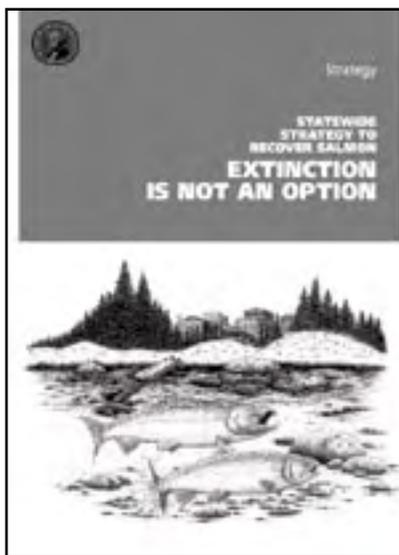
Science is Our Guide

One of the fundamental tenets of the state's strategy to recover salmon is that "science is our guide." The state is committed to making decisions using information based on what scientists have determined is necessary for fish to thrive. There are many scientists within state government, including biologists, hydrologists, geologists, geneticists, and ecologists. This body of scientific expertise is vital to our salmon restoration efforts.

Salmon recovery is also guided by independent scientists. In May 1999, Governor Locke appointed a five-member Independent Science Panel to review and comment on the state's salmon recovery efforts. These scientists do not have the power to make policy, but they play a powerful role as objective, independent experts whose judgment about the quality and feasibility of recovery efforts can help the Governor and the legislature make sound policy decisions.

In May 2000, the Independent Science Panel completed an initial review of the Statewide Strategy to Recover Salmon. The Panel judged the state strategy "a disjointed collection of partial measures that may or may not reduce adverse impacts" on salmon. But it also said, "We consider the development of

Tools for Accountability: Salmon Strategy, Action Plan and Scorecard



Nearly four years ago, Governor Locke brought the state agencies together that most affect salmon management in a forum called the Joint Natural Resources Cabinet. This cabinet of 12 agency directors has created a long-term strategy to recovery salmon, an action plan for the immediate steps state agencies must take, and a scorecard to measure the effectiveness of our work.

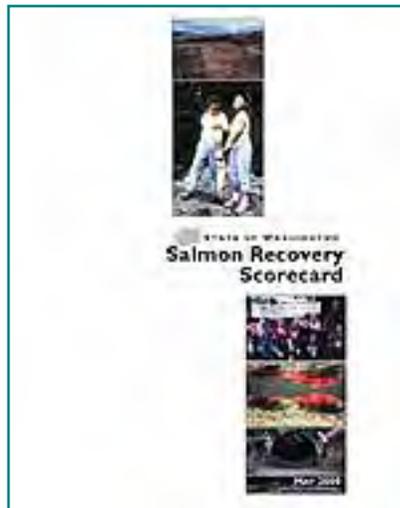
The Statewide Strategy to Recovery Salmon was completed in September 1999 and will be updated in the coming year. The more specific State Agencies' Action Plan for the 1999-2001 biennium was completed in May 2000 followed by a status report this fall on specific accomplishments.



the Strategy an extremely worthwhile and necessary first step toward formulating a comprehensive and cohesive strategic plan focused on salmonid recovery in Washington State. We believe it does a good job of outlining the major elements (with the exception of estuarine environments) that need to be addressed in such a plan, and also serves to identify major problem areas that will require special attention."

This initial report was, to say the least, a clear demonstration of the panel's independent spirit. But everyone involved in salmon recovery recognizes that no matter how uncomfortable this kind of advice may be, it is vital to policy-makers and citizens alike.

The Independent Science Panel has also issued a preliminary review of the state's salmon recovery monitoring program, and will issue an update of this review in December 2000.



The Governor asked the Joint Cabinet to develop a Salmon Recovery Scorecard. It's essentially the state's business plan for salmon recovery. It's a management tool that requires agencies to work together to set specific goals, identify what is needed to reach them, and measure progress toward achieving them. This tool also will reveal where we need to change course if necessary. A Salmon Recovery Scorecard document that enumerates specific goals, performance measures, assignment of responsibilities, and projected completion dates was published in August 2000.

Citizen Education and Engagement

To address the needs of citizens who want to contribute their time and energy to the task of salmon recovery, state agencies and their local partners are stepping up education and outreach efforts in many ways:

- **The Washington Conservation Corps** trained and coordinated volunteers who provided 16,500 hours of work between July 1999 and March 2000.
- **The Department of Fish and Wildlife and Conservation Commission** have funded fourteen Regional Fisheries Enhancement Groups. These groups last year completed 76 habitat restoration projects, and 3,488 volunteers donated 66,000 hours of their time. The state has also awarded grant funds to non-profit organizations such as People for Salmon that mobilize volunteers for habitat restoration projects.
- The state has provided funding for Public Involvement and Education contracts in 12 counties. PIE fund contracts are awarded every two years to communities, businesses, non-profit groups, tribes and local governments. The legislature provides the money through the **Puget Sound Water Quality Action Team** from the Washington State Water Quality Account. Since 1987, more than \$5 million has funded over 280 projects. Up to \$500,000 was available for this current round of projects which began this spring and continue into spring 2001.
- Many of these projects are very small in cost but large in long-term impact; for instance, two dozen students who make up the Seabeck Alki Salmon Team received PIE funds this year to develop and present a traveling slide show and booklet to other children and community groups. They studied the salmon in Seabeck Creek, helped with restoration projects, and visited with many resource professionals.



Planet CPR and City of SeaTac's "GrateMate" event with students from the Academy of Travel & Tourism from Tye High School

- **The Governor's Salmon Recovery Office** joined the partnership of Tri-County restoration efforts in King, Pierce and Snohomish counties to create a Salmon Information Television Network that produces educational television shows on salmon recovery. These monthly shows on 26 Western Washington stations are also available for use by local community groups and schools.

It rains all the time here...isn't there plenty of water?

Fresh water is far more scarce than many of us realize. Only one quarter of one percent of the Earth's water supply is available as drinking water at any given time. About 97 percent of the Earth's water is in our oceans and 2 percent is frozen.

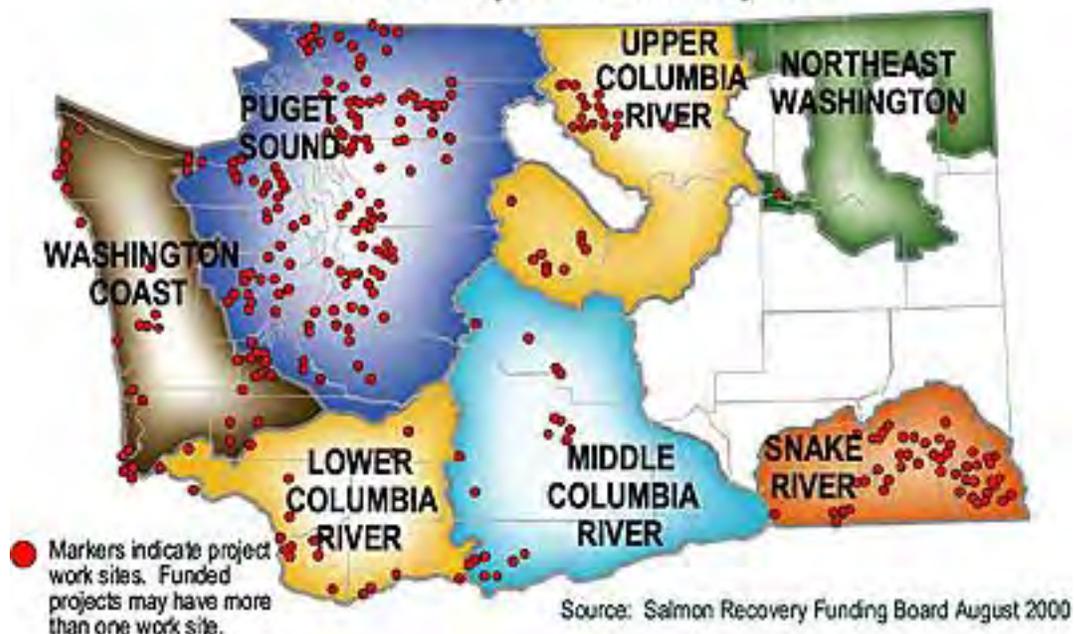
Here in Washington we double our water consumption in the summer-the same time no new rainfall is entering our reservoirs and water tables. This is also a critical time when fish need water.

Funding Extraordinary *efforts* have been made to marshal the *resources needed* to begin the many tasks of salmon recovery. State government has provided approximately *\$183 million*-not only in new money, but through *redirection of existing funds*. The federal government has *contributed* about *\$61 million* during the current biennium.

More than half these funds are passed on to local communities. For example, the Department of Ecology has provided \$12.9 million in watershed planning grants under the terms of the Watershed Planning Act passed by the legislature in 1998. The Department of Fish and Wildlife has provided \$25 million to locally-based Lead Entities under terms of the Salmon Recovery Act. The Salmon Recovery Funding Board has provided approximately \$38 million to finance 348 local salmon recovery initiatives to date, including fish barrier removal, habitat restoration, and purchase of important salmon habitat. It anticipates distributing another \$22 million to proposals identified by Lead Entities in January 2001. Other grant funds have been given to local governments for planning, research, and early actions.

Salmon Recovery Funding Board

Funded Project - All Grant Cycles



Over \$13 million was provided by the legislature and Salmon Recovery Funding Board to the Department of Natural Resources to implement the Forests and Fish Agreement.

Each year, state natural resource agencies report how money is being spent, and what results are being achieved. More than ever before, state natural resource agencies are keeping careful account of what works, what doesn't, and what it costs. The rigorous implementation of adaptive management and the Salmon Recovery Scorecard are ensuring that with each passing year, there will be continuing improvement in the efficiency and effectiveness of our investments in salmon recovery.

Governor's Salmon Recovery Office

The Governor's Salmon Recovery Office was established by the legislature in 1998. It supports the Joint Natural Resources Cabinet. It also supports the Government Council on Natural Resources—a broad forum of representatives from the legislature, tribes, cities, counties, federal government and the ports—that reviews our efforts. Contact the Governor's Salmon Recovery Office at www.governor.wa.gov/gсро.

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Note:

Many readers have brought concerns to our attention about some of the salmon-friendly recipes in the State of Salmon Report. The Washington Department of Fish and Wildlife and others provided these homemade alternatives to chemical products.

Nevertheless, we appreciate the concerns generated, and believe it's important to educate citizens on how their behaviors and activities in their own homes and yards can benefit salmon. Because it is, and will continue to be, our goal to provide the most scientifically accurate and credible information available to us, we are replacing three recipes previously found in this document with new recipes for salmon-friendly compost starter, salmon-friendly pressure washing solution, and salmon-friendly window cleaner.

We also have new resource information for home gardeners who are interested in WSU-approved options. A WSU Cooperative Extension web site <http://pep.wsu.edu/hortense/> contains many useful recipes for home gardeners. WSU's Cooperative Extension Bulletin #0648 is also a valuable resource you can obtain by calling 1-800-723-1763 or on-line at <http://caheinfo.wsu.edu>.

Recipes for Saving Salmon



Salmon-friendly recipes (from the Washington Department of Fish and Wildlife)

(page 20) Steve Schroder; (page 21) Chris Drivdahl; (page 22) Desmond Machuca; (page 23) Blake Surprenant, Ian Edelstein; (Back Cover) Steve Schroder

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To accommodate persons with disabilities, this document is available in alternative formats and can be obtained by contacting the Governor's Salmon Recovery Office at (360) 902-2231.

The Joint Natural Resources Cabinet*

Special Assistant to Governor Locke for Natural Resources, **Curt Smitch**

Department of Agriculture, **Jim Jesernig**, Director
Conservation Commission, **Steve Meyer**, Executive Director

Office of Community Development, **Busse Nutley**, Director

Department of Ecology, **Tom Fitzsimmons**, Director

Department of Fish and Wildlife, **Jeff Koenings**, Director

Department of Health, **Mary Selecky**, Secretary
Interagency Committee for Outdoor Recreation, **Laura Johnson**, Director

Pacific Northwest Electric Power and Conservation Planning Council, **Larry Cassidy**, Member

Pacific Northwest Electric Power and Conservation Planning Council, **Tom Karier**, Member

Parks and Recreation Commission, **Cleve Pinnix**, Director

Puget Sound Water Quality Action Team, **Nancy McKay**, Chair

Salmon-friendly pressure washing solution



2 cups mild laundry detergent
½ cup vinegar
¼ cup lemon juice

Salmon-friendly compost starter



For quick composting with minimal odor, start with a mixture of browns (dried up plant material) and greens (kitchen scraps and grass). Never add meat scraps or bones. Do add eggshells, paper, coffee grounds and filters.

3 parts dry leaves (browns)
2 parts fresh garden weeds and grass clippings
1 part food scraps (greens)
2 parts water (or beer) added periodically

Salmon-friendly window cleaner



Use the following mixture in a spray bottle, and wipe with newspapers instead of paper towels.

¼ cup vinegar or 2 tablespoons lemon juice
1 quart water

Salmon-friendly all purpose cleaner



1 quart warm water
1 teaspoon liquid soap
1 teaspoon borax
¼ cup vinegar

Salmon-friendly drain cleaner



Office of Trade and Economic Development, **Martha Choe**, Director
Department of Transportation, **Sid Morrison**, Secretary

*In August of 1999, the Northwest Indian Fisheries Commission formally accepted the Governor's invitation to join the Joint Cabinet. They have asked Terry Williams, Executive Director of Fisheries and Natural Resources for Tulalip Tribe, to participate with the Joint Cabinet.

Try the plunger first. Next, pour ½ cup of baking soda followed by ½ cup of vinegar down the drain. Cover and let sit for 15 minutes. Pour in 2 quarts of boiling water. The clog should disappear. Do this weekly and you can prevent clogs and keep drains smelling fresh.

Salmon-friendly gardening

Whether your garden is two feet or two miles from the nearest stream, it affects salmon. Everything that runs off your property into storm drains eventually ends up where salmon live. Fertilizers and pesticides harm salmon and inefficient irrigation wastes water, leaving less in streams and rivers for salmon to swim and spawn.

Salmon friendly gardens work with natural processes to grow healthy plants with minimum irrigation, fertilizer and pesticides. In addition to keeping the water clean and protecting habitat, they save you time and money. Go native. Plants that are native to the area where we live thrive with little care. They attract wildlife, don't need fertilizers or pesticides and are drought resistant. Visit your local nursery or contact the Washington Native Plant Society at 1-888-288-8022 or <http://www.wnps.org/>.

Direct rain water appropriately. Use porous materials in place of pavement-gravel paths and driveways, stepping stones in grass, blocks or flagstones in sand, and wood decks all reduce runoff. Plant trees to catch rain and let it evaporate naturally.

