

Plan aimed at increasing fish population—continued from page 2

accommodate housing and urban growth can cause erosion and other destruction along spawning streams.

Irrigation

Water diversions for irrigation can attract migrating fish and leave them stranded in water that is too warm or shallow or slow-moving for their survival. In addition, irrigation water withdrawals can drain the river so low that fish passage is impossible at certain times of the year.

WHAT'S BEING DONE FOR THE FISH?

Columbia River Basin Fish and Wildlife Program

The Northwest Power Act of 1980, which allowed the four Northwest states of Idaho, Oregon, Montana and Washington to create the Council, directed the Council to prepare a program to mitigate for damage done to the fishery in the Columbia River Basin by the construction and operation of hydroelectric dams. The Council's Columbia River Basin Fish and Wildlife Program is considered the most ambitious natural resource recovery effort in the United States today. It addresses both anadromous fish, which are fish born in freshwater that spend their adult lives in the ocean and then return to freshwater to spawn, and resident fish, which are fish that spend their entire lives in freshwater. The program also includes measures to protect and increase wildlife populations put at risk by the dams.

The program contains a mix of measures designed to increase fish survival through every phase of their life cycles. The plan includes:

- projects to repair habitat and increase the reliability of hatcheries so more young salmon survive the first weeks of their lives;

- major physical and operational changes at mainstem Columbia and Snake river dams to improve the chances that the fish can safely migrate downriver and upriver;
- coordinated research, computer modeling and data collection; and
- recommendations regarding salmon and steelhead harvesting.

The program's goal is to double the number of adult fish returning to spawn, from about 2.5 million a year to 5 million in a biologically sustainable manner.

At its regular meeting in May, the Council voted to begin the process of amending the fish and wildlife program over the next two years. Between May and August, the Council considered priority projects to aid declining salmon runs this year and in 1992. Between August 1991 and August 1992 the Council will consider other amendments regarding anadromous fish. By the late fall of 1991 the Council expects to approve amendments to the program dealing with Columbia and Snake river flows and passage at the mainstem dams. Between August 1992 and August 1993, the Council will consider amendments dealing with resident fish.

Integrated System Plan

In 1987, the Council contracted with the Columbia Basin Fish and Wildlife Authority, which represents fish agencies and Indian tribes in the region, to identify major fish production problems and opportunities at 31 subbasins in the Columbia River Basin. The Authority's state, federal and tribal fish and wildlife member agencies and members of the public prepared production programs for each subbasin. These were completed in 1990. The programs identify specific actions, such as instal-

ling screens on irrigation diversion dams or improving hatchery conditions, and propose run-size and harvest limits for each subbasin. Together, the subbasin plans comprise an Integrated System Plan, which will be reviewed for inclusion in the Council's fish and wildlife program later this year and in 1992.

System Operation Review

The Bonneville Power Administration, U.S. Army Corps of Engineers and the U.S. Bureau of Reclamation are reviewing all the purposes for which the federal dams are operated: power generation, flood control, irrigation, navigation and recreation. This review will explore trade-offs that affect the salmon and steelhead during their migrations past the dams. The review was initiated in part because certain agreements and treaties regarding management of the Columbia's dams are due to be renegotiated in the coming decade. One product of this review will be a new environment impact statement covering operations of the hydropower system. A draft of this statement could be completed by this fall.

Endangered species petitions

In April 1990, the Shoshone-Bannock Tribes of Idaho filed petitions to list Snake River sockeye salmon as a threatened or endangered species under the federal Endangered Species Act. In June 1990, environmental groups filed similar petitions for four other Columbia Basin salmon runs. On April 2, 1991, the National Marine Fisheries Service proposed to list Snake River sockeye as threat-

ened. The Endangered Species Act says the service has up to 18 months from the date of that decision to decide whether to go ahead with the listing. If it does list any of the fish, the Service must develop a recovery plan for those species.

On June 7, 1991 the National Marine Fisheries Service proposed to list Snake River fall chinook as an endangered species and Snake River spring and summer chinook as a single endangered species. The Service elected not to make a recommendation on lower Columbia coho.

Salmon Summit

On June 30, 1990, in response to the endangered-species petitions, U.S. Senator Mark Hatfield of Oregon and the four Northwest governors called on Northwest states, tribes, federal agencies and other interests to develop a "pre-decisional management plan" to address the issues raised by the endangered species petitions. Representatives of the Northwest Power Planning Council, the governors, government agencies, Indian tribes and interested members of the public began meeting in October.

After five months of intensive work, the 30 participants agreed on significant actions for 1991 to benefit the fish. For example, an additional 500,000 acre feet of water was released into the Columbia system from behind the dams to enhance flows to aid juvenile fish migration. That brought the total fish flows to about 1 million acre feet. Also, the U.S. Army Corps of Engineers lowered reservoir levels behind four Snake River dams in

an experiment to increase flow velocity and monitor the effects on fish.

Summit participants also agreed that better coordination of Columbia and Snake flows is needed. To that end, representatives of fish agencies and Indian tribes will continue to meet with river managers and other affected parties to determine how to ensure flows that will aid fish. An oversight committee will be formed that could set priorities for future habitat projects.

The Salmon Summit received mixed reviews. The group did not reach consensus on four major issues: fish passage, habitat, harvest and production. But the work is not over. Discussions continue on long-term measures for flows, harvest and production. Senator Hatfield, the governors and most parties look to the Northwest Power Planning Council to assume a stronger role in the next few months to formulate a long-term recovery plan.

Harvest reductions

In an effort to help weak runs, the Pacific Fisheries Management Council voted to reduce ocean harvest to protect Snake River fall chinook and lower Columbia River coho. As part of this effort, the agency also reduced the 1991 harvest of spring chinook. In addition, there will be no commercial harvest of sockeye salmon in the mainstem of the Columbia River this year. Summer chinook will continue to be off limits to harvest, as the run has been since 1964.

THE FUTURE

Events are moving quickly; deci-

sions are being made to help the fish. Here is a look at what is likely to happen in the next six months.

Emergency-recovery measures to aid salmon

In May 1991, the Power Planning Council began the legal process of amending more than 60 specific habitat and production improvement activities into its fish and wildlife program. Most of these activities were selected from the subbasin programs of the Integrated System Plan because they could help fish immediately. Other agencies, tribes and groups also contributed proposals, including specific activities to help the Snake River sockeye and chinook.

The Council conducted public hearings on these proposals in the four states in June and July, and planned to decide in August which projects to recommend for financing. The projects would be financed primarily by the Bonneville Power Administration, but also would include other federal, state and private financing.

Flows

At the same time, the Council will consider flow measures to improve mainstem salmon survival. Water levels and velocities in the Columbia and Snake rivers are being studied intensively. The Council expects to move quickly this fall on flow proposals.

As the post-Salmon Summit discussions continue, regional officials expect to consult regularly with the National Marine Fisheries Service to determine how best to coordinate regional efforts with the endangered species listing process.

Biologist brings valuable experience to Warm Springs

An early interest in wildlife and a special enthusiasm for herpetology (a branch of zoology dealing with reptiles and amphibians) motivated Doug Calvin to pursue a bachelor's degree in pre-veterinary science and wildlife management. With financial assistance through an athletic scholarship in water polo, Calvin was able to complete five years of study at the University of Arizona.

Before starting work for the Tribe as a wildlife biologist, Calvin acquired a varied background. He worked for two years in Australia where he coached water polo in an outback town with an aboriginal name—Gooniwindi. The biologist also built a few houses and did volunteer work at the Brisbane University Veterinary Research Center located in the small town.

Calvin later worked for six months as a wildlife ranger and researcher for the Queensland National Park and Wildlife Service. One of his duties was picking up problem animals including venomous snakes. Calvin relates that 89 percent of Australia's snakes are poisonous.

While in Australia Calvin also participated in a cattle egret disease study and assisted in studying Koala

Conjunctivitis which causes blindness in Koalas. The disease also affects the aborigine people who have no resistance to the disease.

After two years, Calvin returned to the United States where he worked in a wildlife sanctuary park in California doing wildlife inventories, habitat improvement projects and worked on numerous projects involving volunteers.

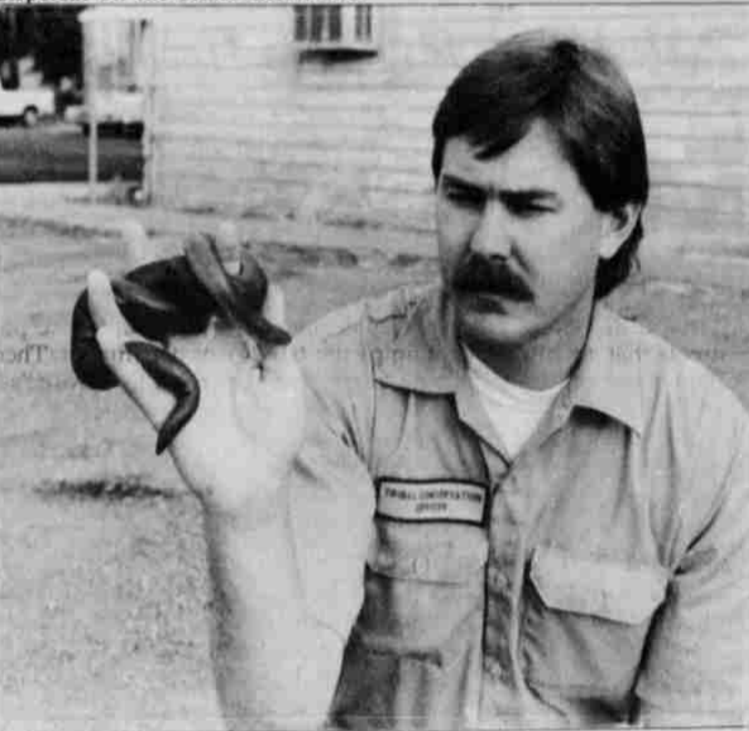
Making a decision to move to Oregon with his wife, Calvin has recently worked with the Oregon Department of Fish and Wildlife on several projects including a Metolius Elk dispersal study and a fishing pressure survey at Crane Prairie Reservoir.

In Warm Springs only a few months, Calvin is already involved in groundwork to protect Reservation wildlife. As part of an identification team to plan 1993 timber sales, Calvin pinpoints important habitat and species where logging is being proposed. With other team members he makes suggestions about ways to limit damage to the environment during logging activities.

Calvin also represents the Tribe in regards to wildlife efforts involving other agencies. Working with the

Oregon Department of Fish and Wildlife and the U.S. Forest Service, he is currently studying elk dispersal on the Reservation and

nearby lands as well as monitoring tagged animals to learn more about habitat and migration patterns.



Wildlife biologist Doug Calvin holds a special interest in herpetology.

Internship exposes students to Natural Resources management

Seventeen students are involved in natural resources through an internship program which runs for ten weeks in the summer.

In its second year, the program is administered by a coordinator who arranges educational and cultural activities for the students along with their daily work chores.

Coordinator Lorraine Hintsala, who holds a degree in education curriculum, says, "I like working with adolescents. They are very challenging."

Hintsala is also coordinating activities with the U. S. Forest Service and Oregon Department of Fish and Wildlife to place students with those organizations for summer training.

Following students through

school is also part of the coordinator's duties. Hintsala hopes to increase students' interest in natural resources management. At the high school level, students can enter the internship program and at the college level, Hintsala hopes to help students with job placement.

Funding for fifteen students in the internship program comes from the Natural Resources Department. Two students receive funding from the Education Department.

The program will continue again next summer with youth once again becoming involved in the natural resources fields including forestry, wildlife, fisheries, water, range, business management, mapping and clerical.

Soil productivity important to Gannon

Soil scientist Chris Gannon monitors the soil. He is aware that the natural biological and chemical processes of the earth cannot continue unless the soil is productive. He intends to make certain that Warm Springs soils are as prolific as possible.

Fertile, productive soil is of great importance to the Warm Springs Tribe as it works arduously to improve the natural resources of the Reservation. As a specialist in

soils, Gannon not only helps monitor and protect the soils for the Tribe but also serves as a liaison between the tribal Natural Resources Office and other departments and agencies whose operations can affect the soil.

Representing tribal interests in protecting the soils as it relates to timber management, Gannon works with the Bureau of Indian Affairs Forestry Office in planning sales, during actual logging activities and

in monitoring clean-up and reparation following logging operations.

Logging can severely affect the soil if care is not taken during logging activities, Gannon explains. Displacement and compaction are two common consequences of such activities caused by heavy equipment use on the site.

Displacement can wash good topsoil away, which can hinder plant and tree growth. Topsoil, the most fertile part of the soil, can be moved by equipment, creating furrows which lead to erosion.

Compaction of the soil occurs below the surface, six to 10 inches. Subsoil compaction not only inhibits root growth but it also affects water filtration in the soil and may also cause increased erosion.

Gannon relates that there are actions that can be taken to prevent displacement and compaction of soils which include: insuring that operators use the least damaging types of equipment in sensitive areas; avoiding heavy equipment use in wet seasons; and, keeping logging operations on predetermined skid trails.

Subsequent to logging, the land can be rehabilitated so it continues to be productive. Soil monitoring determines the needs for each area and soil type.

Gannon has also been involved in other projects since he started working for the Tribe in April: Monitoring was required at Warm Springs Elementary after underground storage tanks were removed; A spill on the highway near White Water necessitated monitoring; and, a proposed wetland development called for assessment of soils.

Gannon received his bachelor of science degree from New Mexico State College and his masters degree in soil science from the same college. Before coming to Warm Springs he worked three years for the U.S. Forest Service in Colorado and Washington.

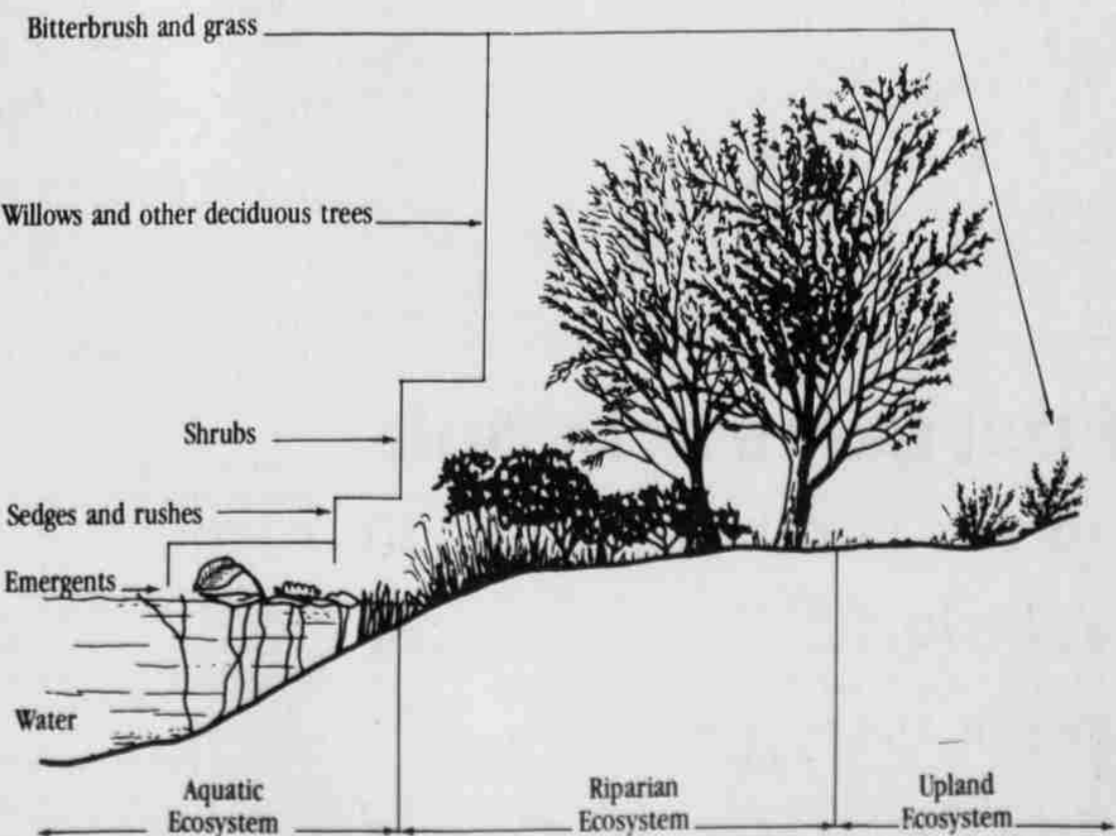
Entire communities live in Riparian areas

Riparian areas are important in many ways, including their value as ecologies for whole communities of life. Riparian areas are the green areas found on the edges of water channels including streams, lakes and ponds. Conditions there support plant communities that grow best when their root systems are near the level of high ground water. These zones range in width from narrow ribbons in desert and mountain settings to wide bands on the plains and lowlands.

Riparian areas provide space, shelter, and food for the plant and animal communities with which they are associated. For example, leaf litter and terrestrial insects falling from

vegetation into a stream are a source of food for some aquatic life. Vegetation may also provide shade from the sun for aquatic plants and animals and land-dwelling creatures at the water's edge. The riparian plant community, especially shrubs and trees, provides shelter and food for animals as large as deer. Trees and marshy areas provide shelter for nesting birds and the banks provide homes for burrowing animals.

Riparian vegetation strengthens stream banks and prevents erosion. This green area stores water during periods of high flow and then releases it into the stream during low flow times. The riparian area also filters water entering the stream channel.



Riparian areas are the green strips along the banks of rivers and streams and other water features.



Soil scientist Chris Gannon monitors the soil, protecting this tribal resource.