Hydrologist works toward resource balance

The relationship of the Tribe's water resource to logging activities occupies the thoughts of Warm Springs hydrologist Paul Gregory. He ponders ways to prevent damage to the Reservation's streams and considers mitigation possibilities for areas already injured by logging.

Stream channels and water, says Gregory, can be affected by any small activity. "Just driving across a watershed will impact the hydrologic (water) cycle." he says. Recreation, grazing and logging activities can have severe impacts.

Trained in both Forestry and Watershed Management, Gregory is aware of the consequences of poor logging practices. He is aware, also, of what a productive watershed needs.

Before logging activities begin, during the planning stages, Gregory visits the individual logging sites, taking notes and looking at the history of the area in terms of all human activities. If the unit is over the "stability threshold," which indicates there is a greater possibility of erosion and water quality problems, he will recommend the area be withheld from logging activities for a few years.

Some watersheds on the Warm Springs Reservation have been determined to be over the "stability threshold. According to Gregory, these watersheds are very sensitive to human activities: Shitike Creek, Upper Mill Creek, Seeksequa Creek, Coyote Creek, Quartz Creek, Upper Warm Springs River watershed, Coyote Creek, Quartz Creek, Upper Warm Springs River watershed, Upper Metolius, and Mutton Mountain watershed. Letting a watershed rest will permit vegetation to recover and the ground to heal. Continuing activities in sensitive areas can increase erosion, may cause a hillside to cave in, or could wash more sediment into streams.

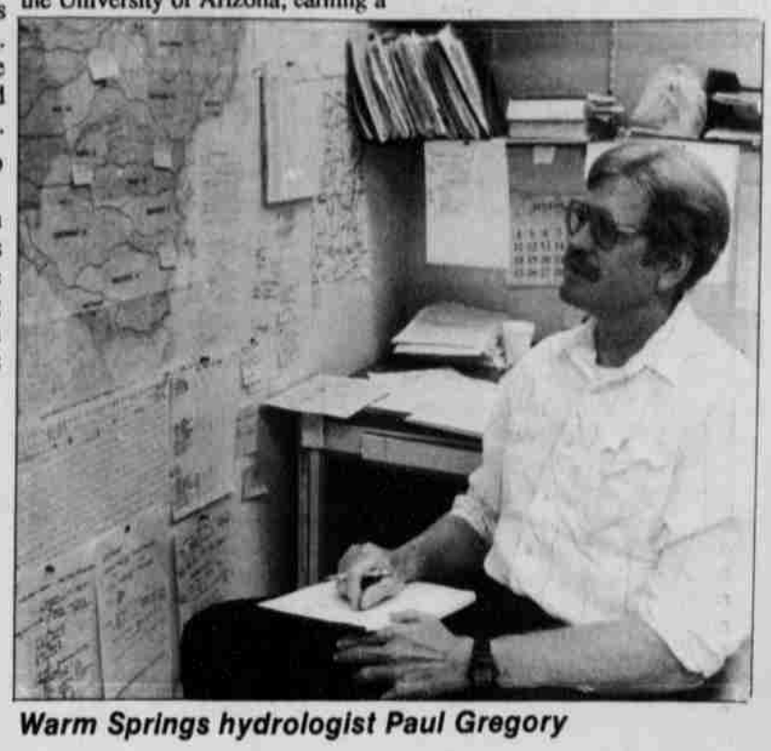
The Integrated Resource Management Plan, when it is implemented, will address concerns about overused watersheds. Watersheds affected by cumulative activities will be carefully examined before further activities are allowed. But for now, Gregory is helping to watch these sites.

Although Gregory has an opportunity to input his recommendations during the planning stages of logging activities, he expresses his concern about the Bureau of Indian Affairs Forestry Office's reluctance to use Environmental Assessments and Environmental impact Statements which are mandated. These reports detail the effects of logging activities. They take much more time, but the reports can help make tribal planners aware of the sensitivity of particular areas. The report can also protect the BIA from suits of mismanagement.

The protection of water and fisheries,Gregory explains, must be balanced with the timber resource which is an important economic base for the Tribe. The final decisions regarding management of the resources, however, lie in the hands of tribal members.

The hydrologist would like to see a Warm Springs tribal member study hydrology. Now, Gregory discusses problems and solutions about water with tribal members with whom he comes into contact, but he sees a more effective resource management team when tribal members are knowledgeable in these areas and directly involved in the resource.

Gregory received his training at the University of Arizona, earning a degree in Forestry and a masters degree in Watershed Management in 1976. He worked as a soil scientist for a short time. His hydrologist experience comes from work with the U.S. Forest Service in Arizona and Colorado. He focused on water rights while working for the Arizona Department of Water Resources. Protection of Indian water rights highlighted his career with the BIA in Phoenix and while working with the Flathead Indian Reservation. Before coming to Warm Springs, Gregory served as natural resources manager for the San Carlos Agency in Arizona.


Warm Springs hydrologist Paul Gregory

Water right is legal right

People unfamiliar with western water law are often baffled at the concept of a "water right." There is no equivalent for it in the East. (However, some eastern states are moving toward adoption of permit systems which resemble in some ways the prior appropriation system of western water rights.)

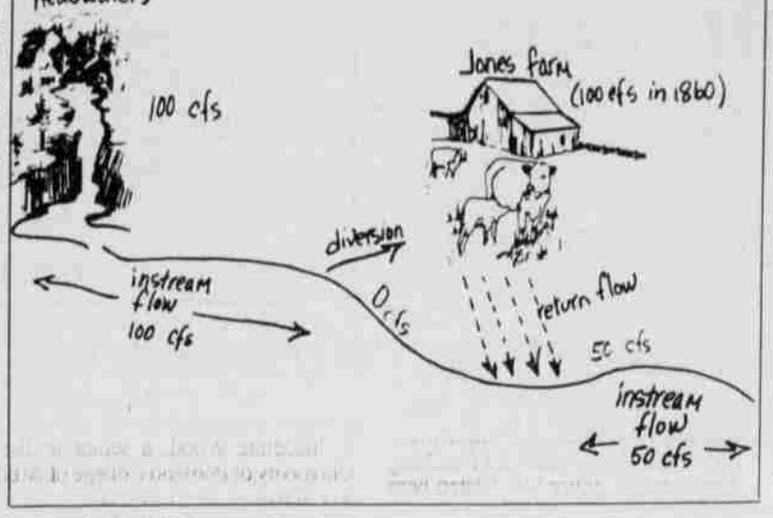
In brief, a water right is a legal right to a certain quantity of water from a certain point on a river (or from a well), during a specified time or season, for application at a particular place, for a particular purpose. Thus, a farmer might own a water right to divert a total of 300 acre-feet of water per year to apply to 100 acres of land for irrigating crops during the course of the growing season. The right is sometimes expressed in volumetric terms (typically acre-feet) and sometimes as a specific flow (typically, cubic feet per sound).

Each western state has its own procedure for obtaining legal documentation of a water right. In all states except Colorado, a person wishing to obtain a water right must first apply to a state agency, often headed by a person called the state engineer. A hearing is held, objections are considered, and a permit authorizing the diversion of water is either granted or denied. In either case, disappointed parties may appeal the decision through the state courts.

Most water rights are obtained through this case-by-case process. Western states, however, also conduct proceedings called "general adjudications" in which every person then using water within a specified river basin is required to come forward and establish his or her water rights. These general adjudications are terribly complex and often go on for decades.

When rivers cross state boundaries, the states themselves often fight over how much water their citizens are entitled to use. If the states are able to work out a compromise, they enter into something called an interstate compact. If approved by Congress, these compacts become binding agreements. If, on the other hand, no accord can be reached, the states may go directly to the U.S. Supreme Court and request the Court issue an "equitable apportionment decree" dividing up the water. These compacts and decrees do not create individual water rights in themselves. Instead entire states are guaranteed the right to develop uses for a given quantity of water from a river system. It is then up to each state in accordance with its own law to determine how and by whom its share of water will be developed.

Instream right protects flows



How instream flows work

While each western state has its own statutes and precedents governing the recognition (or nonrecognition) of instream flows, the basic principles remain the same. Typically states which recognize instream flow rights will allow a state agency, or in some cases a private party, to file for an instream flow water right, which is then placed on the State Engineer's books and administered like any other water right. The only difference is that a consumptive water right usually has a single point of diversion. While an instream flow right applies to a specified reach of the stream from one point to another.

Take a simplified example. Suppose that the stream diagrammed above flows at 100 cfs. And suppose that Farmer Jones has an 1860 water right to divert the entire 100 cfs of water from the stream, but that 50 cfs of that returns to the stream as return flow. In 1989, instream flow rights could then be obtained for up to 100 cfs from the headwaters down to the Jones diversion, and for up to 50 cfs downstream of the Jones Farm. (The instream right would not necessarily be for the entire remaining flow. It might claim considerably less if a lesser amount is all that is needed to protect the natural values of the stream).

Because instream rights are administered within the priority system, Farmer Jones (and any other existing consumptive users on the stream) would not be affected. An instream use added in 1989 cannot interfere with a water right initiated in 1860. If that means that the stream continues to run dry while the senior irrigator continues to water his or her crops, that's the way it works.

What good, then, is an instream flow water right with a junior priority? The answer is that it preserves the status quo. It does this in two respects:

First, if there is any water left in the stream after the seniors satisfy their needs, that remaining flow may be protected from subsequent appropriators. For instance, a new user could not build a hydro diversion project upstream of the Jones Farm, nor take additional water out of the protected stretch downstream of the Jones Farm.

Second, and this is important, the junior instream right prevents seniors (like Farmer Jones) from moving their points of diversion upstream into the protected reach. Suppose that in 1995 Farmer Jones decides to sell his water right to Major Metropolis, and Major Metropolis wants to take out the water farther upstream in the headwaters. Even though Major Metropolis steps into Farmer Jones' shoes and obtains a senior 1860 water right, it may not change the point of diversion so as to injure any other water right--including junior instream flow rights. In other words, it is possible to protect pristine mountain streams with very junior instream flow water rights.

The long and the short of it is that instream flow rights pose no threat to any existing use of water. But they may prevent future changes and new users from further dewatering what is left of our streams and rivers.

Deschutes River meetings set

Meetings on the Deschutes River Management Plan are scheduled at: Pendleton on September 9 at the Vert Little Theater; The Dalles on September 10 at The Dalles High School Auditorium; Madras on September 11 at the Jefferson County Fairgrounds; and, Salem on September 12 at the Employment Division Auditorium. All meetings start at 7:00 p.m.

Testimony will be accepted until October 15, 1991. Written testimony can be submitted to: Deschutes River Coordinator, Oregon State Parks & Recreation Dept., 525 Trade Street S.E., Salem, OR 97310.

River Rendezvous set for Sept. 6-8

The Central Oregon Environmental Center, the Confederated Tribes of the Warm springs Reservation and the Klamath Tribe are sponsoring the 1991 Oregon River Rendezvous. The two-day conference is scheduled for September 7 and 8 at Shevlin Park in Bend Oregon.

The agenda for the Rendezvous includes activities for three days.

Friday

Poetry reading and Coyote stories by John Daniel and Susan Strauss.

Saturday

Field trips beginning at 8:30 a.m. include: 1. The ancient forest along the Metolius River; 2. Metolius River Conservation Area; A discussion of the endangered Bull Trout and a tour of its habitat; Discussion and tour of wild trout in the Metolius River.

The afternoon sessions include talks on various environmental topics including: Salmon decline in the Northwest; Forest ecology and salmon; fish management; saving the salmon; and salmon in the Native American Culture.

A salmon bake and keynote address by former secretary of the Interior and governor of Idaho Cecil Andrus and Edison Chiloquin follows workshop sessions. Drums and dancers will entertain beginning at 8:00 p.m.

Sunday

Rights and remedies for saving the salmon will be discussed beginning at 9:00 a.m. followed by a meeting of the Citizens Congress.

The meeting this year has been changed from Cold Springs Campground to Shevlin Park. Coordinators for the Rendezvous hopes everyone makes these changes in their plans. All tours will begin at Shevlin Park.

Conference fee is $20.00. Participants may camp at the conference site. Send registration fee to COEC, 16 N.W. Kansas Street, Bend, OR 97701.

Rendezvous location change

A sensitive plant species, penstimon peckii, has been found at the site of the planned Oregon River Rendezvous location near the Coldsprings campground. The event had to be moved and will be meeting at Shevlin Park, three miles west of Bend. Free camping is still available. All field trips will leave the Shevlin park parking lot.

Directions to the Rendezvous are: From Highway 97, turn west on Greenwood Ave.; proceed through two stoplights and across the Deschutes River. Proceed 5 miles to Shevlin Park on Tumalo Creek.

Water cycle has no beginning, end

Next to air, water is the most vital substance for human existence. Water has been a subject for scientific study for many years and its complexity and intricacy is slowly becoming understood.

The water or hydrologic cycle has no beginning or end and many processes are involved. Water evaporates from the oceans and land, becoming a part of the atmosphere. The evaporated moisture is lifted and carried in the atmosphere until is eventually precipitates to the Earth either on land or over the oceans.

The precipitated water may be intercepted in the evaporation process by plants which utilize it for growth, by infiltration into the ground, or it may occur as runoff into streams eventually traveling back into the sea, again evaporating into the atmosphere to begin the cycle again.

Although the total amount of water in the global hydrologic cycle remains essentially constant, the distribution of this water is continually changing on continents, in regions, and within local drainage basins. The behavior of water in an area is fundamentally determined by the climate of the region and by natural features of the area including geologic formations, topographic features and types of vegetation.

Man also has its impact on water, gradually encroaching upon the natural water environment sometimes disturbing the natural hydrologic cycle and initiating new hydrologic processes and events.

The Hydrologic Cycle, the time needed for water to complete the cycle from the ocean surface back to the ocean, may be as little as a few hours or days or as much as thousands of years.

Water cycle is impartial, efficient, economical

Even the water, in its own passive way, seems economical in its motions. It responds to the rhythms of day and night, thawing, freezing, and thawing again, running drop by drop, a million drops together toward the sea. The little streams flow submissively, governed only by gravity and topography, mumbling, gurgling, skipping, sliding—yet making not one wasted motion, following always the path of least resistance.

Some of the water runs straight away to the ocean. Some percolates slowly through the soil, penetrates hidden membranes in many dark, subterranean passageways, and enters the peculiar chemistry of life, only to be transpired again into the air. There the vapors join the clouds and fall again in a summer thundershower, or blow on beyond the range to etch their phrases upon some other landmark.

What wondrous stories a water molecule could tell, of wild peaks visited on stormy nights, of quiet rivulets and raging rivers traveled, of peaceful fogs and sun-colored clouds, of glaciers and ocean currents, of fragile snowflakes and crisp little frost crystals, and of the seething protoplasmic retorts of living cells—a zillion places visited since the earth's beginning. If only the water could speak our language, but instead we must read of its work among the rocks it etches and tumbles, and among the living organisms it helps to fashion.

At the source of the river and all along its course, we find that water, like life, responds to a basic natural economy. No wound it inflicts, no matter how severe, leaves a scar which cannot be healed eventually. No mountain range is worn away that cannot be rebuilt, no plants are torn from the ground that cannot be resown, no rain falls to the earth that cannot be evaporated again in a moment or a million years. The water cycle is impartial, efficient, and splendidly economical.