THE OSPREY

A Newsletter Published by the Steelhead Committee
Federation of Fly Fishers

Dedicated to the Preservation of Wild Steelhead • Issue No. 60 • MAY 2008

Native Fish Conservation Areas

Sustaining native fish and aquatic ecosystems

by Rick Williams

— Federation of Fly Fishers —

Rick Williams is Chair of the Native Fish Subcommittee and Vice President for Conservation, Western Rocky Mountain Council of the Federation of Fly Fishers. Professionally, he is a geneticist and ecologist and Affiliate Faculty member at the University of Idaho's Center for Salmonids and Freshwater Species at Risk. He may be reached at troutdna@cableone.net. PDF copies of the articles mentioned in this paper are available upon request from Williams.

Since late 2004, the National Conservation Committee of the Federation of Fly Fisher's has been exploring the concept of native fish refuges as a tool for conserving and protecting declining native fish populations and their habitats. Our vision is for a system of native fish refuges that stretches across North America, serving to protect native fish species, native aquatic diversity, and the watersheds in which they live, while providing clean water, clean air, and multiple recreational opportunities for generations of fishing and outdoor enthusiasts. Clearly, this is a dream writ large; yet if our vision holds strong and our efforts succeed, we will have created a conservation legacy on par with those of our environmental forbearers and heroes: Teddy Roosevelt, John Muir, Aldo Leopold, and more recently, Stewart Udall and Roderick Haig Brown.

A central part of our vision for native fish refuges is that conservation and multiple uses can be compatible.

Over the last four years, members of the Native Fish Subcommittee of FFF's National Conservation Committee have published a series of four articles in *Fly Fisher* that examine and develop the refuge concept for salmon, steelhead, trout, and warmwater native fish species.

The first article, *Needed: Salmon and Steelhead Refuges in the Pacific Northwest* by Jim Lichatowich and Richard Williams and published in the Autumn 2004 issue of *Fly Fisher*, examined the need for refuges to conserve Pacific Northwest salmon and steelhead populations, while the second article by Richard Williams and Robert Talbot published in the Winter 2005 issue entitled *Protecting Resident Native Trout: a case for a national refuge system*, described refuge opportunities for native inland trout in western and eastern North America. Our third article which ran in the Winter 2006 issue, *Native fish refuges: the first*

Continued on Page 4

FROM THE PERCH — EDITOR'S MESSAGE

Fish Refuges

by Jim Yuskavitch

We're especially pleased and excited to bring you this special issue of T*he Osprey*, as it focuses on something that many wild fish advocates, including the Steelhead Committee and the Federation of Fly Fishers, believe is key to the future of not just wild salmon and steelhead, but of many other species of wild fish and their habitats — fish refuges.

Although complex in their establishment and occasionally controversial, the idea behind the concept is simple: provide wild fish with the habitat they need through all their life history stages; protect them from overharvest by humans and the negative impacts of hatchery fish, and the fish will eventually take care of themselves.

The concept has been around for a long time and is variously referred to as fish refuges, refugia and sanctuaries, or by more technical terms such as wild steelhead and salmonid management or conservation areas.

The idea makes some anglers nervous, primarily because of fears that it means off-limits to people. While there may be cases where angling might be prohibited in certain areas or for a certain time period, most advocates of fish refuges take the position that there can be room for both fish and human use in a fish refuge. And after all, the more fish, the more angling — and more wild fish is what these places will be all about.

There is not yet an official system of fish refuges in the U.S., but the Federation of Fly Fishers and others are working to make it an eventual reality.

Anglers show off a wild Elk River, Oregon steelhead, which may soon become a fish refuge under the Wilderness Act. Photo by Monte Matheson

Letters to the Editor

Keep Ringing the Bells

Dear Editor:

I appreciate your publication of the California "discoveries" of surviving steelhead. Keep ringing the problem bells for the B.C. and northwest U.S. biologist-managers who continue to ignore the inconvenient facts of habitat loss, hatchery interactions with wild stocks, commercial overfishing and 'ESA gaming."

Keep the pressure on for the Snake River dams. Colin Stryker's film "River Ways" shows the cracks in the economic monolith. Even Lewiston has drastic decisions to make before the next 100-year flood — with changing sentiment among downtown business people.

Stick to your uncompromising views of the biological and cultural value of "wild steelhead."

Joe Jauquet
Olympia, Wash.

The Osprey On-Line

www.fedflyfishers.org/
then go to Conservation, Conservation Committees, Steelhead

THE OSPREY

Chairman
Bill Redman

Editor
Jim Yuskavitch

Contributing Editors
Pete Soverel • Bill Redman
Stan Young • Norm Ploss
William Atlas • Schuyler Dunphy

Contributors
Rick Williams • Bill Redman
Nick Gayeski • Ramon Vanden Brulle
Joseph H. Anderson • Mike Beagle
Curt Kraemer • Conrad Gowell
Doug Schaad

Layout
J. Yuskavitch Resources

Letters To The Editor
The Osprey welcomes submissions and letters to the editor. Submissions may be made electronically or by mail.

The Osprey
P.O. Box 1228
Sisters, OR 97759-1228
jyusk@bendcable.com
(541) 549-8914

The Osprey is a publication of The Federation of Fly Fishers and is published three times a year.

The Federation of Fly Fishers is a unique non-profit organization concerned with sport fishing and fisheries

The Federation of Fly Fishers (FFF) supports conservation of all fish in all waters. FFF has a long standing commitment to solving fisheries problems at the grass roots. By charter and inclination, FFF is organized from the bottom up; each of its 360+ clubs, all over North America and the world, is a unique and self-directed group. The grass roots focus reflects the reality that most fisheries solutions must come at that local level.

FEDERATION OF FLY FISHERS
CATCH AND RELEASE

THE OSPREY IS PRINTED ON RECYCLED PAPER USING SOY INK

CHAIR'S CORNER

Columbia Dam Woes Continue

by Bill Redman
— Steelhead Committee —

We think this is an important issue of *The Osprey*. It features several examples of what can happen when watersheds accessible to the sea are managed for wild steelhead and salmon natural production by protecting and restoring habitat, eliminating hatchery programs, reducing harvest to an irreducible minimum and then, as Will Atlas says in his article beginning on page 19, "getting out of their way."

Because of its importance at this time, however, I take the opposite approach by discussing a prime example of how not to spend taxpayer dollars on alleged salmon recovery.

On April 7, 2008 the three federal agencies charged with operating the Columbia River hydro system reached an agreement with three of the four Lower Columbia Tribes, along with the Colville tribe, in which the government will pay about three-fourths of a billion dollars to the tribes over the next ten years for hatchery projects and tributary habitat improvements, in return for which the tribes agree to suspend for ten years their long running support for lawsuits that demand much stronger steelhead and salmon recovery plans than any of the Biological Opinions (BiOps) proposed by the feds over the last 15 years.

Smaller agreements were reached with the Colville Tribe of the Upper Columbia and the states of Idaho and Montana, bringing the total government outlay to almost a billion dollars. But what follows focuses on the agreement with the three Lower Columbia Tribes and where the money will and will not be spent.

It is good that money will be invested in tributary habitat improvements; those projects should increase spawning and rearing capacity. But a substantial chunk of it will be spent on new and expanded hatchery projects, in the face of a large and growing body of scientific evidence that hatcheries don't contribute to long term recovery. They impede it, because hatchery fish are less fit than wild fish in a variety of critically important ways.

Conversely, the agreement between the government and the Lower Columbia Tribes promises nothing to improve migration passage both downstream and upstream through the hydro system, which is overwhelmingly the biggest problem for the fish and, therefore, the critical path to their recovery.

Paying the Columbia River treaty tribes is a good example of how not to spend taxpayer dollers on alleged salmon recovery.

Fish conservation organizations have sometimes disagreed with the tribes on hatcheries; the tribes are more inclined to rely on them than we are. But until April 7th, the tribes and conservation organizations were completely together on Columbia system habitat and hydro issues, identifying passage through the hydro system as the largest obstacle to recovery. So without speculating on their reasons for agreeing to suspend for ten years their opposition to federal BiOps that don't seriously address mainstem passage, we are disappointed that they signed this agreement. These fish are in great peril, and ten years delay could do great damage to their chances for recovery.

Consider the Columbia system constituencies that have not signed on to any of these agreements. Prominent among them is the Nez Perce Tribe, the only one of the four Lower Columbia Tribes that hasn't signed. It is instructive that the Nez Perce, because of its geography, is also the only one of the four tribes that would benefit directly and in a big way from greatly improved passage through the Lower Snake River dams and reservoirs.

Governor Ted Kulongoski said that the agreement doesn't go far enough to restore salmon runs. The state of Washington also hasn't signed anything, a spokesman saying that the state's objective is to get a biologically and legally defensible BiOp.

The 15 original plaintiffs (including the Federation of Fly Fishers) in the lawsuits opposing the federal government's BiOps for recovery of Columbia system salmon are unmoved by these agreements.

A succession of federal judges has consistently ruled that the government's BiOps have not passed muster because they don't seriously address passage of migrating fish through the mainstem hydro system. In the first of these rulings in 1994, Judge Malcolm Marsh famously wrote of the first BiOp: "the process is seriously … flawed because it is too heavily geared toward a status quo … when the situation literally cries out for a major overhaul."

Most recently, Judge James Redden in 2005 rejected the fifth Columbia BiOp. It was re-written and released in final form in early May of this year. This latest BiOp persists in doing very little about mainstem passage problems, so odds are high that the fate of these once magnificent stocks of steelhead and salmon will be back in court once again.

Since there is nothing in this almost $1 billion of federal spending that will improve mainstem passage, there is nothing that will defer the plaintiffs

Continued on Page 23

Native Fish Conservation Areas
Continued from page 1

step by Williams and Tom Logan described the elements needed for a fish refuge to function, including biological, management, institutional, and political components. In January 2008, the FFF Board of Directors approved the Conservation Committee's Native Fish Refuge Policy, which we presented in a fourth article in *Fly Fisher* in April 2008 by Williams and Logan under the title *The FFF Native Fish Refuge Policy: a new approach to conserving native fish and their habitats*.

In this article, we briefly present the concept and rationale for native fish refuges and how establishing a network of refuges across North America would yield not only great conservation benefits, but also great sustainable long-term recreational opportunities for the public. We then describe a recent symposium in Boise that brought together fisheries scientists, managers, and natural resource policy experts to examine whether establishing a native fish refuge system was feasible. Finally, we discuss recommendations from the symposium on how to proceed with development and establishment of a network of native fish refuges in North America.

The Long-recognized Need for Fish Refuges

In the early decades of the 20th century, Pacific salmon and North American waterfowl, both long-distance migrating animals, were in significant decline; however, salmon and waterfowl biologists took very different approaches to arrest the declines. Waterfowl managers recognized the critical importance of habitat and focused efforts on the protection and restoration of wetlands. A national system of refuges was created to protect key waterfowl nesting and feeding habitat. The refuge system protected waterfowl and their habitats, while still allowing public access for hunting and other recreational uses. In contrast, salmon managers opted for the use of fish factories to reverse the salmon's decline. Concrete ponds replaced salmon habitat. This agricultural-based production approach led to the notion that habitat destruction could be "mitigated" by hatcheries.

Not all biologists supported the fish hatchery solution. Indeed, calls for the establishment of fish refuges date back to Livingston Stone, who first proposed the idea of a National Salmon Park to the American Fisheries Society in 1892. From our perspective today, it seems ironic that Stone, who was the father of salmonid artificial production technology, was also a proponent of salmon refuges; however, Stone had observed the declines in overall salmon abundance and focused his energies and vision on ways to increases and sustain salmon production. Hatcheries and refuges were both tools he proposed to help sustain salmon production into the future. Stone knew that hatcheries alone, without habitat and refuges, could not avert the continued decline of Pacific Northwest salmon.

Two decades later in 1913 Henry Ward made another plea for freshwater refuges at a meeting of the American Fisheries Society. Ward said stream reaches and whole watersheds should be set aside and protected to halt the decline and extinction of American fish fauna. Since Ward's speech, the call for freshwater refuges for salmon has periodically re-surfaced. The last proposal for a major salmon refuge came in 1959 when Assistant Secretary of the Interior, Ross Leffler, proposed that the Snake River be declared a salmon sanctuary instead of proceeding with planned hydroelectric development. The dams were built.

Today, some parts of salmon streams are protected in parks and wilderness areas. They might be considered partial refuges as they protect part of the salmon's freshwater life cycle, but protection of salmon habitat is not their primary mission. The Wild Salmon Center (www.wildsalmoncenter.org) and other organizations are working throughout the North Pacific to create salmon refuges in areas where rivers are still pristine. In May 2004, the Governor of Kamchatka authorized establishment of a whole watershed salmon and steelhead refuge on Russia's Kamchatka Peninsula. The Kol River Salmon Refuge of more than a half million acres, encompasses the entire Kol River basin and is significant because it contains all six native Pacific salmon species: Chinook, coho, sockeye, chum, pink, and Asian masu salmon, as well as steelhead, rainbow trout, Dolly Varden char, and white-spotted char.

Management of native westslope cutthroat trout and their habitat in Glacier National Park shares many attributes of our Native Fish Conservation Area vision. Photo by Rick Williams.

Refuges as Conservation Tools

We define a native fish refuge as a watershed where management emphasizes conservation and restoration of native fishes, their habitats, and other associated aquatic species for long-term persistence, while allowing compatible recreational and commercial uses. Consequently, all management decisions for the refuges would be reviewed with respect to their effect on the native fish species targeted for conservation. At a small scale, this model is already being used by the Bureau of Land Management (BLM) to guide management decisions in the Redband Trout Refuge on the Donner und Blitzen River in southeastern Oregon, where for an area surrounding 16 miles of the river, all management

Continued on next page

Continued from previous page

decisions give priority to conservation of the redband trout.

The establishment of protected areas, whether freshwater or marine, evokes strong sentiment by the public at large; however, we believe the benefits of a network of native fish refuges far outweigh the concerns. The biological and recreational benefits are many. For example, a system of native fish refuges would benefit fisheries resource managers and user stakeholders by acting as an "insurance policy" against frivolous and unwarranted ESA petitions. Greater management and user flexibility will exist under a refuge designation and management agreement than under mandatory protection of the ESA. Therefore, developing a network of native fish refuges may be a long-term conservation strategy to minimize the potential for much greater loss and restrictions in the future.

A central part of our vision for native fish refuges is that conservation and multiple uses can be compatible. Many recreational uses (hiking, catch-and-release fishing, boating, camping, etc.) are compatible with the conservation goals of the refuge, but other uses, including many extractive commercial uses, may not be. Consequently, proposed uses will need to be reviewed and modified or discontinued depending upon their effect (or potential effect) on the fish species.

Elements of a Native Fish Refuge

What needs to be included in a fish refuge? It requires three critical elements — two that will ensure the biological objectives of the refuge are met and one that will ensure that the refuge is sustainable socially and institutionally. First, the watershed scale processes that create and maintain habitat complexity, diversity, and connectivity must be protected and restored, if necessary, under a management strategy or plan that is developed and agreed upon by the affected stakeholders. Second, the watershed must nurture all the life history pathways of the fish species being protected. This may require restoration activities within the watershed to restore linkages between habitats required by the fish species for completion of its life cycle. Third, a native fish refuge must be established by an appropriate process that provides adequate institutional structure, stakeholder commitment, policies, legal framework, stable long-term funding, and documentation that provides guidance for long-term management, monitoring, and periodic program review.

Native Fish Refuge Symposium

In April 2008, the Federation, along with co-sponsors Trout Unlimited (TU) and the Fisheries Conservation Foundation (FCF), hosted a two-day symposium in Boise Idaho that brought together 18 fisheries scientists, managers, and natural resource policy experts to examine whether establishing a native fish refuge system was feasible. The meeting included Rick Williams, Leah Elwell, and Tom Logan from FFF, Jack Williams, Helen Neville, Chris Wood, and Amy Haak of TU, and Dave Philipp, John Epifanio, and Rick Williams from the FCF. Other attendees came from Non Governmental Organizations (NGOs) (Jim Sedell, National Fish and Wildlife Foundation; Chris Frissell, Pacific Rivers Council), U.S. Forest Service (Gordie Reeves, Pacific Northwest Research Station; Russ Thurow, Rocky Mountain Research Station), state fish and game agencies (Pat Martinez, Colorado; Dirk Miller, Wyoming; Brad Shephard, Montana), federal agencies (Jeff Kerschner, USGS), and universities (Matt Powell, University of Idaho).

Attendees were unanimous in seeing the conservation value of the fish refuge concept and in the timeliness of the symposium. Aquatic species and systems are currently at greater risk of loss and extinction than terrestrial organisms, and conservation efforts lag behind those of terrestrial species and systems.

Attendees shared science-driven management experiences in fish restoration at the watershed and ecosystem level, including efforts for the Rio Grande cutthroat trout and the system-level restoration efforts in the Colorado River for bony-tail and humpback chubs. Lessons learned from these (and other) efforts, include the importance of building broad constituent support that includes not only state, federal and Tribal resource managers, but also other conservation NGOs, private land owners, and recreation and sportfishing user groups.

Recommendations and Next Steps

1. Attendees who have worked closely in the political and management arenas in recent years, felt the term "native fish refuge" might be politically charged, especially given the backlash that has occurred against marine refuges. Consequently, the group decided upon the phrase "Native Fish Conservation Area" to identify locations or watersheds where native fish would be protected.

2. Our original thinking in developing a national system of fish refuges (fish conservation areas) relied on seeking new federal legislation that would authorize designation of fish refuges using legislation similar to that which established the National Wildlife Refuge system or the Wild and Scenic Rivers Act — both strong conservation tools that also allow multiple recreational uses. Discussion at the symposium indicated that this would be a long (10-15 yr), arduous, and uncertain route to establish a network of refuges.

An attractive alternative would be to work through a partnership with other concerned parties (state, federal, NGOs, private landowners) using existing policies to create a loose network of areas where the native fish species and aquatic habitats would be conserved and managed in line with our vision for native fish conservation areas. Existing conservation-oriented partnerships, like the National Fish Habitat Action Plan with its more than 200 partners, may prove powerful allies in establishing a network of Native Fish Conservation Areas.

3. Attendees agreed that the next major step was to refine our collective vision for Native Fish Conservation Areas through a series of scientific and management writings and presentations, and to develop presentation and outreach materials that will assist in establishing partners for the conservation of native fish and their habitats. That work is presently underway.

Wild Steelhead Management Zones

Why we need them and what they should look like

By Nick Gayeski and Ramon Vanden Brulle

— *Wild Fish Conservancy* —

Nick Gayeski is Aquatic Ecologist at the Wild Fish Conservancy, and a regular contributor to The Osprey. *He may be reached at nick@wildfishconservancy.org.*

Ramon Vanden Brulle was Communications Director and Conservation Analyst at the Wild Fish Conservancy from 1999 to 2007. He can be reached at ramvb@hotmail.com.

To find out more about the Wild Fish Conservancy visit their Web site at www.wildfishconservancy.org.

The Washington State Department of Fish and Wildlife has recently completed a Steelhead Management Plan intended to provide policy guidance for managing Washington's steelhead populations. Over the next two to three years, WDFW will develop Regional Management Plans (RMPs) that will establish specific management goals, policies, and actions for geographically organized groups of steelhead populations throughout the state.

In it's policy statement, the Management Plan proposes to "place the highest priority on the protection of wild steelhead stocks to maintain and restore stocks to healthy levels" Among the key strategies for achieving this overarching policy goal is the establishment of "Networks of Wild Stock Gene Banks," WDFW's term for what has been referred to in the management and conservation communities as "wild steelhead management zones."

In this brief article, we have tried to provide some ideas on the primary objectives that WDFW's "networks" should be designed to accomplish. At the outset, we confess dissatisfaction with WDFW's term, "wild stock gene banks." It implies a distinctly narrow and passive purpose for populations designated as "wild gene banks" and the habitats they occupy. In frankness, we don't believe the implication is insignificant, or accidental. For reasons we have tried to make clear in this discussion, we much prefer the original term, *wild steelhead management zones* (WSZs).

Properly conceived and implemented, wild steelhead management zones could achieve several important purposes that could contribute to the recovery of wild steelhead in Washington and the Northwest:

Properly conceived and implemented, wild steelhead management zones would achieve several purposes to help recovery.

1. Evaluating/determining the productivity and carrying capacity of wild populations.
2. Providing a reference for hatchery-influenced populations.
3. Establishing a genetic reserve.
4. Evaluating fishery impacts on wild populations (catch-and-release, and kill/harvest rate evaluation).

Determining Wild Steelhead Productivity

In the Northwest, fisheries managers and researchers have gathered very little reliable information on the productivity and capacity of steelhead-bearing streams under current best-case habitat conditions. Most of the information currently available has been derived indirectly, from stock-recruit relationships for the few major rivers for which reasonably accurate annual run-size and/or spawning escapement data exists. Nearly all these data sets suffer from a lack of historical depth and context. In fact, most begin in the mid-1970s or later, and so likely do not reflect the target populations' long term abundance, diversity, or habitat conditions.

In addition, as detailed by Gayeski in the May 2001, Issue 30 of *The Osprey* in an article titled *Maximum Sustainable Yield: A Formula for Overharvest?* where populations have been significantly exploited by harvesting prior to the initiation of data collection, stock-recruit data will generally over-estimate stock productivity at low spawner levels and under-estimate adult carrying capacity (equilibrium abundance).

It is important to recognize that the productivity and capacity of streams results from the interaction between the physical habitat and the biology/ecology of the species in question. Absent the biology, there is no such thing as "the inherent productivity or capacity of the habitat." One of the greatest benefits that a properly designed and monitored set of WSZs can provide is the ability to acquire good data regarding the productivity and capacity of specific steelhead stocks at several key life stages in particularly important and representative stream and river habitats, without the complicating influences of hatchery fish and hatchery activities. Data from such systems collected over multiple generations will tell us much about the important relationships between the freshwater life-stages of the stocks and the relationship of the biology of these stages to physical and biological habitat conditions.

Continued on next page

Continued from previous page

Hatchery References

The information provided by WSZs will achieve the additional benefit of enabling managers, researchers, and conservation advocates to compare wild fish performance to the performance of hatchery fish and streams influenced by hatchery fish to varying degrees, including by supplementation and so-called conservation-hatchery practices. The Bonneville Power Administration's Independent Science Advisory Board (ISAB), NOAA's Salmon Recovery Science Review Panel (RSRP), and many independent researchers have noted that the use of hatchery supplementation to recover declining wild salmonid populations is almost entirely untested, and dominated by high levels of risk and uncertainty. Indeed, it is well established in the scientific community that hatchery supplementation may in fact do more harm than good.

Both the ISAB and the RSRP have repeatedly recommended the establishment of networks of unsupplemented reference streams to evaluate the performance of hatchery supplementation programs and their impacts on target wild populations (ISAB, 2003; RSRP, 2004, 2005). A geographically and spatially diverse set of WSZs would be essential to these evaluations. In fact, without an adequate set of WSZs, these evaluations cannot take place.

As it is, WDFW's Management Plan is disturbingly silent on the need for WSZs for this purpose. We believe it is likely the most important benefit that WSZs can provide.

Genetic Reserves

Wild steelhead populations need to be protected from the several potentially deleterious consequences of genetic interactions with hatchery-reared stocks. Most importantly, management must insure that wild populations retain the ability to respond to the full suite of selective factors presented by the fresh- and salt-water environments; that is, to preserve local adaptation and the adaptive potential of wild populations.

Unfortunately, WDFW's Management Plan is equivocal in its guidance regarding the extent of the limitation of hatchery influences on stocks selected for WSZ management, stating on page 6:

No releases of hatchery-origin steelhead will occur in streams where spawning of the stocks occurs, or in streams used exclusively by that stock for rearing.

This set of conditions would seem to ignore the majority of juvenile steelhead rearing habitats, which are shared with juveniles of other salmonid species, at least for part of those species' juvenile life histories. Rivers and streams in which hatchery releases of chinook or coho occur and these juveniles overlap in space and time to some degree with juvenile wild steelhead and/or "resident" rainbow trout cannot be ruled out as candidates for WSZs. Nor should the presence of hatchery releases of these or other salmon species be a justification for permitting releases of hatchery steelhead — which appears to be implied by the statement.

Ideally, rivers such as the Hoh, Queets, Sauk, Skagit upstream of the Baker River, or Skykomish (to pick a few west-side rivers) would be managed so as to exclude hatchery production of all salmonid species. However, for numerous legal and policy reasons this is not going to occur anytime in the near future. While that may be an unfortunate fact, it should not be an excuse for not considering WSZ management of rivers of this scale. Under the Management Plan, WDFW could exclude all hatchery steelhead production from rivers of this size. At the very least, such action should not be removed from consideration.

Over the long term, the designation of wild steelhead management zones would allow for increased and healthier populations of wild steelhead, resulting in more and better quality angling opportunities. Photo by Jim Yuskavitch

Evaluating Fishery Impacts

The question remains; how much fishing, if any, might be allowed in WSZs? What kind of fishing should be allowed? When should it be allowed?

We believe it is important to recognize the value of the information that could be obtained from WSZs wherein all angling is excluded. A WSZ from which as much anthropogenic selective pressure as possible is removed for multiple generations can provide the most information about fish-habitat relationships.

Managers simply do not have the quality of information they ought to

Continued on next page

Continued from previous page

have regarding the selective impacts of catch-and-release fishing. Improving the management of fisheries directed at healthy, robust wild steelhead populations requires having good information on the impacts of catch-and-release fishing on mortality and on spawning performance of mature and maturing steelhead caught one or multiple times prior to spawning.

Managers also need more complete information on the performance of healthy wild populations subjected to varying levels of lethal harvest. WSZs are the closest means at the disposal of fisheries managers for approximating pre-fishery conditions and collecting population data from healthy, un-fished populations from the point at which they are first subjected to fishing mortality. As with the evaluation of conservation hatchery practices by comparing them over multiple generations to populations in comparable WSZ streams, harvest impacts could be best evaluated by a comparative methodology.

That said, we want to be very clear that we do not believe responsible WSZ management requires that all WSZs prohibit all fishing. Catch-and-release fisheries on a variety of scales could be responsibly managed in many WSZs, especially in larger river systems.

We do believe that the time is ripe, in conjunction with developing a set of WSZs, to consider and develop appropriate protocols for limited-entry catch-and-release fisheries on WSZ rivers. Managers and researchers have established that multiple-encounters of individual steelhead should be avoided, especially in later-winter fisheries in which fish are close to spawning. There appears to us to be no reasonable way to accomplish the biological objectives of WSZs while permitting catch-and-release fishing without at least restricting the number of angler-days or angler-hours per-day or per-week on rivers that are otherwise likely to experience high angling pressure.

We do not expect this position to be universally accepted by steelhead anglers, and we do not take it lightly. We understand and acknowledge the economic, cultural, and historic importance of steelhead angling in the Northwest. However, we recognize the grave context in which the entire notion of wild steelhead management zones are being considered, the severe decline and significant risk of extinction faced by the region's wild steelhead populations. We would also note that the type of angling restrictions we are proposing could increase the quality of the angling experience itself. Each of us may fish a little less, but perhaps enjoy it more.

An Appropriate Network

WDFW's Management Plan states that over the next 24 to 36 months RMPs will be developed for the following seven regions: Puget Sound, Olympic Peninsula, Southwest Washington, Lower Columbia River, Mid-Columbia River, Upper Columbia River, and Snake River Basin. To its credit, the Plan states that at "least one wild stock gene bank will be established for each major population group within each steelhead DPS" (distinct population segment).

We believe this is best viewed as a *minimum* number of wild steelhead management zones. While one WSZ in each of the seven regions is better than none, the geographic size and physical diversity of these regions renders it unlikely that one river will be sufficient to accomplish the purposes that we should wish a *network* of WSZs to accomplish. In order to provide adequate diversity and a reasonable likelihood of preserving important local adaptations within DPSs and within major population groups, populations need to be identified and designated for wild management status in each major tributary — at least in large regions like the Upper Columbia and Snake River Basin DPSs.

Serious thought needs to be given immediately to identifying a set of candidate streams and rivers within each of the seven regions and associated major population groups. Before the end of 2008, WDFW staff should develop a list of prospective populations to recommend to managers within each of the regions, so that planning (including funding) can begin at the regional level.

In this context, the recent developments in the Columbia River Basin concerning Memoranda of Agreement between several treaty tribes and federal agencies regarding the new Draft Biological Opinion for the Columbia River hydro system is alarming. If approved and implemented, the MOAs contain provisions for drastically expanding hatchery production of steelhead and spring chinook salmon in the Klickitat, Yakima, Wenatchee, and Methow river basins, which would prevent the development of any *bone fide* WMZs in these basins. This would significantly threaten the recovery of wild steelhead in the mid- and upper Columbia.

More wild steelhead management zones will mean more wild steelhead like this one. Photo by Pete Soverel.

Citations

McElhany, P., M.H. Ruckelshaus, M.J. Ford, T.C. Wainwright, and P. Bjorkstedt. 2000. "Viable salmonid populations and the recovery of evolutionary significant units." U.S. Department of Commerce, NOAA Tech. Memo. NMFS-NWFCS-42.

Above the Dam

Coho salmon colonize Washington's Cedar River

By Joseph H. Anderson

— *University of Washington* —

This article is based upon two recently published scientific articles, and resulted from the cumulative efforts of many dedicated researchers. In particular, I wish to acknowledge Paul Faulds, John McDowell, Peter Kiffney, George Pess, Thomas Quinn, Jeremy Cram, Andrew Kingham, Kris Kloehn, and Ryan Klett for their work in developing ideas, collecting data, and interpreting results. Many others, too many to list here, have aided the research program through logistical or funding support.

Author Joseph Anderson is a Ph.D. student at the School of Aquatic and Fishery Sciences, University of Washington. His primary research interests are the behavior and ecology of Pacific salmon, and his graduate work has focused on the population expansion of salmon in the Cedar River, Washington. He can be reached at joeander@u.washington.edu.

Declining Pacific salmon runs have been linked to many causes, but primary among them is lost access to spawning and rearing habitats. Graf (1988) reported over 2,000 dams greater than two meters in height in the Pacific Northwest, and many block migrating salmon from reaching suitable habitat. Eliminating migration barriers, either through dam removal or the construction of fish ladders, offers promise as a means of restoring declining salmon runs. This concept is gaining momentum, as salmon will soon regain access to areas of the Elwha, Green and White Salmon rivers in Washington, and the Rogue and Deschutes rivers in Oregon, among others. By restoring access above dams, we can offer salmon a refuge from the countless stressors they face throughout their range. However, research on the behavior and ecology of salmon populations as they expand into areas above dams is needed to understand the process of colonization, and give the greatest likelihood for long term sustainability and success in such projects.

Unfortunately, very few scientific studies have described the ecology of salmon colonization. We can make some inferences from geologic history of salmon streams, and several artificial introductions. As recently as 10,000 years ago, glaciers buried much of coastal Washington, British Columbia, and Alaska, and thus from an evolutionary perspective, salmon have rapidly expanded into these areas. Furthermore, salmon have shown a remarkable ability to exploit open habitat following introductions outside their native ranges. Documented examples include Chinook salmon in New Zealand and Argentina, as well as pink salmon in the Great Lakes. In each case, salmon rapidly dispersed into nearby unoccupied streams and established self-sustaining populations. Unfortunately, the initial stages of these colonization events are shrouded in the past, and processes occurring at the onset of colonization are not well understood.

Removing dams and building fish ladders provides a substantial opportunity to create refugia for expanding spawning and rearing habitat.

The construction of a fish ladder by Seattle Public Utilities at Landsburg Diversion Dam on the Cedar River, WA presented a rare opportunity to investigate the process of salmon colonization. The fish passage facility, completed in fall 2003, made 33 km of suitable spawning habitat accessible to Chinook salmon, coho salmon and steelhead trout that had been excluded since the dam was constructed in 1900. Salmon were allowed to enter the ladder and bypass the dam on their own volition, without any transplanting or direct hatchery supplementation. By opening the door to an area that had been denied to salmon for over 100 years, the fish ladder tested the rate of population expansion under a policy of natural recolonization.

General features of the Cedar River watershed are important to interpret research results and their significance to other fish migration barrier removal projects. The Cedar River drains a 487-square-km watershed in Washington State, flowing westward from the crest of the Cascade Mountains into the southern end of Lake Washington, and then to marine waters via a shipping canal through Seattle. Landsburg Diversion Dam, situated at river kilometer 35, supplies Seattle residents with drinking water. The fish passage facility made available over 33 km of habitat in the mainstem Cedar River (20 km) and tributaries (13 km, primarily in Rock Creek).

Two factors were critical considerations in the potential for salmon recolonization. First, the City of Seattle manages the area above the dam as a *de facto* reserve, without development, recreation, or commercial logging. Thus the new habitat offers salmon a protected refuge sustaining ecological processes characteristic of healthy rivers such as large woody debris recruitment and natural nutrient cycling. This contrasts with the watershed below the dam, where development of varied intensity covers the landscape. Secondly, coho and Chinook

Continued on next page

Continued from previous page

salmon spawn naturally in the Cedar River and tributaries below Landsburg Diversion Dam, providing a nearby potential source population.

The new Landsburg Fish Passage Facility provided a unique opportunity to investigate salmon colonization from the very beginning of population expansion. Seattle Public Utilities, the National Marine Fisheries Service and the University of Washington have developed a large collaborative research program to document the recolonization of habitat above the dam. The results presented here focus on coho salmon, and address three primary questions. First, will salmon find the fish ladder on their own, and recolonize the new habitat without supplementation? Second, where will the adult colonists spawn, and to what extent will they explore the new habitat before spawning? Third, will juvenile salmon only be found in the areas where their parents spawned, or will they search for new, unoccupied habitat as well?

To determine the rate of population expansion, and hence the ability of salmon to locate and ascend the fish ladder, all salmon were sampled as they entered the new habitat. Results showed a general pattern of increasing numbers of coho salmon. The exception was 2007, perhaps related to the depressed productivity of coho salmon stocks across the West coast. Unfortunately, the lack of comprehensive abundance data on coho salmon below the dam makes it impossible to determine whether the increase in abundance over time reflects higher rates of colonization or merely increases in coho salmon throughout the system.

The vast majority of coho salmon mature as three year old adults, and thus the increased abundance of salmon in 2006 and 2007 compared to 2003 and 2004 raises the possibility that a portion of the more recent runs were offspring of the original colonists. This would indicate a shift towards self-sustaining production, which is critical to the long term success of the expanding population. Ongoing genetic studies are focusing on this question, and determining the proportion of salmon in recent years that were produced by first generation colonists.

Eighty-six coho salmon bypassing the dam in 2003 and 2004 were given radio tags, and their movements were tracked to evaluate exploration of the new habitat and spawning site selection. A combination of permanent listening stations operating at all hours of the day and mobile tracking by inflatable raft, vehicle and foot determined the positions of the tagged salmon. Our tracking surveys paid particular attention to the use of Rock Creek based on the general observation that coho salmon often spawn in small tributaries. Although 38% of radio-tagged salmon entered Rock Creek at least once, the vast majority of these trips were short duration visits by male salmon.

The two sexes adopted dramatically different movement patterns. Many of the males moved extensively throughout the watershed, often reversing directions and repeatedly swimming upstream and downstream in the Cedar River, likely in search of mates. On the other hand, female salmon tended to move upriver more deliberately, and select a nest site without the back and forth movements characteristic of the males. Spawning sites were identified based on inference from the movements of radio-tagged salmon and visual observation of salmon nests, and virtually all were located in the mainstem Cedar River. While we cannot preclude the possibility that a small number of coho salmon spawned in the tributaries, the vast majority spawned in the Cedar River, primarily in the first six stream kilometers upstream from the dam.

This coho salmon is one of many that have returned to Washington's Cedar River to colonize new habitat made available by the construction of fish passage over a former barrier. Photo by Joseph Anderson.

The third component of our research program was snorkel surveys to evaluate the spatial distribution and abundance of juvenile coho salmon. Juvenile coho salmon in this portion of the species' geographic range spend one year rearing in freshwater streams, rivers and lakes prior to migrating to the ocean. Thus, the snorkel surveys for the first two broods of juvenile coho salmon (conducted in the summers of 2004 and 2005) were designed to compare the locations of offspring to the areas where their parents had spawned the previous fall. Results indicated that most juvenile coho salmon remained in spawning reaches, but some dispersed

Continued on next page

Continued from previous page

as much as several kilometers into previously unoccupied habitats, notably a tributary to the main river. Coho salmon were largely absent from Rock Creek in the spring, but as the season progressed through summer, they appeared in the creek at higher densities and further upstream. By the end of the summer, they were found as much as 2.6 kilometers upstream from the river mouth. These observations indicate that juveniles entered and moved upstream within Rock Creek, where few, if any, adults spawned. While the total number of juvenile salmon entering Rock Creek was small compared to the number rearing in the Cedar River, these exploratory juveniles clearly expanded the range of habitats used for rearing.

These results have added to our knowledge of the patterns and processes of salmon colonization. Coho salmon ascended the fish ladder under their own power and successfully spawned in the very first generation that they were given access to habitat above the dam. The number of salmon that entered the new habitat via the dam passage facility, as well as the widespread movements of some salmon above the dam, suggest that exploration is an innate component of salmon breeding behavior. Exploratory behavior was not limited to the adults, as juveniles moved from the Cedar River into Rock Creek in search of rearing habitat.

The immediate use of the fish ladder by salmon and the initial success of the expanding population suggest that barrier removal is an effective conservation strategy. Initially, all salmon entering the new habitat had strayed from some other source population, presumably the lower Cedar River below the dam. The long term success of the new population will be determined by the reproductive success of these original colonists, and their ability to produce offspring that return to spawn above the dam. Therefore, although the population is too young to clearly demonstrate the capacity to sustain itself over longer time scales, initial results offer an optimistic perspective on the ability of salmon to recolonize formerly lost habitat. This response was particularly impressive considering the population's urban migratory pathway through a man-made shipping canal bisecting Seattle, the heavily altered Lake Washington shoreline and a watershed below the dam characterized by suburban development. Thus salmon took advantage of a refuge in upriver areas for natural spawning and rearing despite widespread urbanization of the lower portions of the watershed.

The implications of Cedar River salmon re-colonization extend beyond the Lake Washington watershed, and imply that the removal of barriers to salmon migration should be prioritized as a conservation measure. Dam removal or fish ladder projects are expensive, and resource managers are justifiably uncomfortable with the uncertainty of biological responses to any proposed restoration projects. A local government agency considering a barrier removal project wants to know that the proposed action will provide a clear benefit to fish populations, and outweigh the financial cost. Anadromous fish passage on the Cedar River provides a concrete example of well spent restoration dollars, and a documented response of the local salmon population.

While natural colonization after barrier removal gives no guarantees, it offers the greatest chance for long-term salmon restoration.

Dams are ubiquitous throughout the Pacific Northwest, and thus dam removal or circumvention offers great potential to salmon restoration. Results from the Cedar River can help identify barriers whose removal are most likely to benefit salmon. On the Cedar River, two major factors promoting colonization were the nearby source population below the dam, and the relatively high quality of habitat above the dam. Identifying dams in watersheds that mirror this situation will give the greatest potential for success. Movement barriers are not just limited to dams, as road culverts impassable to fish plague countless small streams. Restoring access to these areas is likely to benefit juvenile salmon seeking rearing habitat, as demonstrated by the immigration of juvenile coho into Rock Creek in this study.

Lessons from the Cedar River will also provide management advice for salmon populations during recolonization of formerly inaccessible habitat. Pacific salmon will soon regain access to lost habitat on some of the more famous rivers in the region including Elwha, Deschutes, Green, and White Salmon rivers. There are a variety of options on how to manage expanding salmon populations in these and other rivers. Although jumpstarting the population with hatchery supplementation may be tempting for a quick boost in abundance, the risks of such actions may outweigh the costs. A focus on hatchery production at the onset of colonization might threaten the long term fitness of the population through genetic, behavioral, or ecological interactions between hatchery and wild fish. The proven ability of salmon to exploit open habitat, both in the Cedar River and other areas such as New Zealand and Argentina, implies that such risks can be avoided by allowing salmon to colonize under their own power.

Removing dams and constructing fish ladders provides a substantial opportunity to create refugia for natural spawning, rearing and population expansion. In my mind, salmon conservation does not simply reduce to a desire for more fish; it requires an appreciation for the innate behaviors of wild fish and their connection to the entire stream ecosystem. Although a policy of natural recolonization following barrier removal cannot promise an immediate increase in abundance, it offers the greatest likelihood for long term restoration of salmon as keystone species in our rivers. Management should therefore prioritize reconnecting isolated habitats so that the exploratory behavior instinctive to Pacific salmon, and not artificial production, will promote population expansion.

Our Little River

How a small Oregon river became a wild fish refuge

By Doug Schaad and Conrad Gowell
— University of Washington and University of Puget Sound—

In May of 2002, Doug Schaad wrote a short piece for The Osprey *on "My Little River" of the central Oregon Coast. In that article Doug provided a four-decade retrospective on his role and that of his father as 'unofficial' streamkeepers. In this issue, Doug provides an update and introduces us to the next 'official' streamkeeper of 'My Little River.'*

On the sixth of March 2005, Doug's father passed from the life of steelheading that they had shared since the first of January 1955. He was the streamkeeper. Doug was his apprentice. He was a local resident, attended meetings, registered his concerns and provided guidance to both the Oregon Department of Fish and Wildlife and the Siuslaw National Forest. Doug wasn't local and couldn't attend meetings but he engaged in every political process that impacted 'our little river.'

Co-author, Conrad Gowell, has succeeded the Schaad family as the river's next streamkeeper and their tradition of stewardship and advocacy.

Conrad was born in 1987, less than a mile from Doug's father's home. His grandmother was Doug's father's housekeeper as his health began to fail. Along the way, Conrad became a fisherman, then a fly fisherman and a conservationist. He heard the call of Our Little River and responded in the affirmative. He shaped his high school studies around fishery issues, with the stream they refer to as Our Little River' as his frame of reference. He continues his studies at the University of Puget Sound.

Today, our fisheries are managed by emergency closures rather than rational environmental planning. We've relied on hatcheries for 40-plus years to fill the commercial and recreational demands. Along the way, we've lost nearly everything worthy of saving — genetic diversity and habitat. With hatcheries (and early-run timing) came the complete annihilation of early run wild steelhead, economic nonsense and Endangered Species Act listings. We could do better!

In that regard, here is the history of 'Our Little River' on the central Oregon coast.

Doug Schaad can be reached at dcschaad@comcast.net. Conrad Gowell may be reached at CGowell@ups.edu.

Thanks to decades of work by dedicated river stewards, this small Oregon coastal river has become a sanctuary for wild steelhead. Photo by Scott Lyke.

Our Little River encompasses a watershed of approximately 42 square miles within the Siuslaw National Forest of Oregon. For comparative purposes, that's about half the drainage of Washington state's Clearwater (Queets tributary) or nearly equivalent to the Hoko drainage, also on the Olympic Peninsula. Like most Oregon coastal streams, flows are very low in the late summer/early autumn and peak in November/December. The maximum flow on Our Little River is estimated at 12,000 cfs on the day after Thanksgiving 1999. The minimum flow is estimated at 10 cfs during October of 1984.

Over the last 100 years, our river has been subjected to all manners of abuse and subsequent recovery. Most informed citizens now think of the difficulties facing anadromous species in terms of the four H's: Habitat, Harvest, Hatcheries and Hydropower. In the last decade, a new lexicon has also emerged: sanctuaries, gene banks, large woody debris, Pacific Decadal Oscillation and engineered logjams. We will attempt to address each of those issues across the span of the last six decades.

Habitat

One can only imagine the appearance of this watershed prior to 1900. It was clearly a mixed forest of conifers and

Continued on next page

Continued from previous page

hardwoods, with historical photos from that period showing two-man crosscut saws falling fir, spruce and cedar with diameters exceeding 20 feet. All access was via horse and mule, and timber harvest was relegated to easily accessible trees near the mouth of the river. As this harvest increased, the Siuslaw National Forest was established in 1908 to increase tax revenues.

Schaad's familial history with this watershed began in 1946, two years after the U.S. Forest Service began applying herbicides on the Siuslaw National Forest for removal of undervalued hardwoods and native plants that impacted growth of conifers. In 1948, the first sanctuary zone on Our Little River was established at River Mile 2.49, above which no angling was allowed. Local residents routinely parked their vehicles next to the lower river before and after work, hung out a line and harvested wild fish for the evening meal.

Timber harvest within the watershed began to build in 1954 as the Forest Service increased the number of roads beyond the estuary zone. Log trucks and chain saws replaced older technologies. Clear-cuts became dominant, and the river rarely ran clear. By 1955, harvest receipts in the Siuslaw National Forest exceeded one million dollars for the first time. For the decade, coho spawning densities were estimated at 25 per mile. No estimates are available for wild steelhead.

On October 12th 1962, the Oregon coast was decimated by the remains of a tropical typhoon. Billions of board feet of timber were suddenly on the ground. Trees that had stabilized hillsides were now available for expedited harvest. The convergence of two new technologies, direct drive chain saws and revolutionary chain design, allowed for increased timber harvest. Postage stamp clearcuts in the lower watershed expanded to massive clearcuts for 'salvage' throughout the watershed. Coho productivity remained stable at 23 spawners per mile.

Many will remember 1964 for passage of the National Wilderness Act, the first federal protection for wild places. I remember 1964 for the December rain-on-snow event that resulted in head-wall failures releasing torrents of woody debris that decimated fall Chinook and coho redds. The entire scenario was repeated in 1966 with higher flows, more logging debris and annihilation of all redds within the system. With multiple years of spawning failure, coho red counts plunged to 14 per mile.

Federal legislation created the Endangered Species Act in 1973 — an act that was to forever change management within the Siuslaw National Forest. Timber harvest was crippled, as documentation was processed to assess potential damage to other resident species of the ecosystem. By 1981, coho redd counts had dropped to 12 per mile. In 1982, the Oregon Coastal coho plan was established with the goal of insuring that there would be five wild spawning coho per mile. In 1984, Federal Court rulings precluded any additional timber harvest from the Siuslaw National Forest, a ruling that was soon overturned.

Since 2000, we've seen an amazing recovery of wild steelhead throughout the watershed.

During the 1970s and 80s, there were no deadlines on the entire mainstem of our river and the only sanctuary areas were on its tributaries.

The spring of 1988 provided the first ESA listing: the northern spotted owl. In 1990, the marbled murrlet was added to the list. Contracted timber harvest within the Siuslaw National Forest in 1990 was 382 million board feet, which fell to 12.4 million board feet in 1992. For all practical purposes, the wholesale harvest of coastal timber on public lands was ending. With the adoption of the Northwest Forest Plan in 1994, timber harvest on national forest lands shifted from small clear-cuts to larger commercial thinning of stands planted in the late 1950s. Listing of the Oregon coastal coho in 1998 ensured that a new paradigm for habitat management was needed. By order of then-Oregon Governor John Kitzhaber, watershed councils were established to monitor and advise future activities within the state's watersheds. Timber harvest saw further reductions and coho spawning counts rebounded to 31 spawners per mile.

Today the public lands surrounding our little stream show a patchwork of commercial thinning, new plantings and old-growth timber. The most recent commercial harvests have even included the use of large draft horse to minimize damage along sensitive riparian and wetland areas. Private lands, though much smaller in scope, continue to resort to the clear-cutting mentality.

Hatcheries

In the context of ecosystems, hatcheries are a relatively recent phenomenon. The impact, however, is immediately profound and has a consequence that may take decades to remediate. On our little river there were no hatchery steelhead introductions until 1966. Publicly available records provide the following data:

1966	13,000 smolts
1967	10,004 smolts
1968	10,000 smolts
1969	10,000 smolts
1970	18,300 smolts
1971	22,500 smolts
1972	25,000 smolts
1973	20,012 smolts
1974	7,760 smolts
1975	18,000 smolts
1976	20,000 smolts
1977	19,954 smolts
1978	20,007 smolts
1979	20,203 smolts
1980	20,008 smolts
1981	26,966 smolts
1982	20,535 smolts
1983	21,171 smolts
1984	35,637 smolts
1985	28,837 smolts
1986	25,041 smolts
1987	19,871 smolts
1988	19,799 smolts
1989	20,034 smolts
1990	20,000 smolts
1991	20,021 smolts
1992	20,022 smolts

Continued on next page

Continued from previous page

1993 22,528 smolts

No more hatchery smolts were released after 1993.

Until recently, the success of the introduction of hatchery fish was most often documented through catch statistics, angler participation, angler satisfaction and economic benefits through increased recreational activity. Now, new developments in the genomic sciences have documented the profound impact hatcheries have on genetic diversity.

How has this played on our little river? From the 1950s through the 60s, wild steelhead were available to the angler from Veteran's Day to the official closure at the end of March. With the introduction of early-timed hatchery fish, our little river had enormous runs of hatchery steelhead that provided exceptional fisheries into early January. Crowds of anglers harvested exceptional numbers of fish, many of which were wild in origin. Without need to segregate wild from hatchery fish, the wild fish were overharvested. Within a decade it became rare to land a wild fish prior to the first of February. The wild autumn runs had been extirpated.

Harvest

Our little river is a minor player on the Oregon coast. There are no fish-checkers and limited data is publicly available. Catch card data from the Oregon Department of Fish and Wildlife provide the following statistics on retained fish (wild and planted).

1985	389
1986	715
1987	637
1988	233
1989	188
1990	237
1991	74
1992	86
1993	54
1994	31
1995	105
1996	9
1997	15
1998	23

The two adjoining watersheds provide the following numbers:

1985	3,849
1986	4,151
1987	5,342
1988	2,147
1989	2,911
1990	2,795
1991	1,979
1992	1,921
1993	1,305
1994	1,634
1995	1,256
1996	1,089
1997	1,320
1998	2,262

While I would argue that the steelhead harvest began its decline in 1988, it is clear that the population had crashed by the winter season of 1991-1992 — long before what we would have expected, given the anticipated benefits of hatchery smolts that were planted through 1993.

In an unanticipated and prescient move, the Oregon Department of Fish and Wildlife (ODFW) closed coastal streams to the take of wild steelhead in 1992. Originally enabled as an emergency closure, it remains in effect today. With the exception of poaching (5-10%) and release mortality (1-5%), most coastal streams in Oregon have provided sanctuaries for wild steelhead for 15-plus years.

Hydropower

On Our Little River, there are no dams. The splash dams common in the 1920s through the 40s for moving logs downstream, have long since disappeared. Though there are no dams, our little stream does provide municipal water to a growing populous. We suspect there will be increasing demands for 'water-mining' — a process which sucks water from well beneath the stream bed, utilizing the substrate for first stage filtration. Should we return to the 10 cfs flows of 1984; both our stream and the surrounding communities may be endangered.

Sanctuaries and Gene Banks

Management of this stream has historically included sanctuaries as defined by 'deadlines,' above which fishing was prohibited. The quality and size of those reserves has shifted rather dramatically throughout the last six decades, but has always included each of the tributaries to the main stem of the river. In total, there are approximately 18 miles of main stem spawning habitat, perhaps four miles of which is optimal. Two large tributaries, one with an intermittent hydraulic barrier, provide an additional six miles of premier spawning habitat.

We have been unable to discover any records indicating fish reserves prior to the late 1940s. In 1948, the angling deadline was established at river mile 2.48, leaving nearly 85% of the main stem as a sanctuary zone. Due to public pressure for angling opportunity, the deadline was moved to river mile 9.11 in 1949 — still preserving over 50% of the watershed for undisturbed salmonid escapement. With subsequent road building to facilitate timber harvest, the deadline was moved upstream from an ancient tree to a bridge crossing at river mile 9.53 in 1970.

With the introduction of hatchery smolts in 1966, and the unbridled enthusiasm that hatchery production would provide historic returns into the future, the main stem deadline was abandoned in 1972. This experiment in allowing take throughout 100% of the main stem continued until 1983, when the deadline reverted to river mile 9.53.

Soon thereafter multiple public stakeholders argued strenuously that the deadline should be moved to river mile 14.3, the confluence of a major tributary. It was also argued that with the increased 30% of waters available for angling, a ban on the retention of wild steelhead should be enacted. Simple math: increase the probability of harvesting hatchery fish, reduce wild catch to zero and enable the wild fish to reach sanctuary zones. After six years of discussions, meetings, and public testimony, the deadline was moved to river mile 14.3 in 1989 and remains in effect in 2008.

Today, roughly 40% of the spawning gravels available to salmonids are within sanctuary zones from 1 October through 31 March. From the first of April through the first of June, the entire watershed is protected.

Recent spawning surveys show the

Continued on next page

Continued from previous page

following counts of new wild steelhead redds:

2003	66
2004	174
2005	189
2006	161
2007	144

While spawning surveys are always biased, as they are subject to the vagaries of weather, available manpower and stream turbidity; a breakout of the above provides the following counts of new redds by month:

Feburary

32 Redds
25 Observations

March

252 Redds
44 Observations

April

293 Redds
40 Observations

May

157 Redds
35 Observations

For the five years for which we have data, the vast majority of spawning occurred after the angling season was concluded. Though we don't often recognize seasonal closures for the creation of sanctuaries, we should. The data that we've seen from multiple streams from California to Alaska is consistent with increasing spawning when angling opportunity is discontinued — the result of decreased disturbance to the fish.

Large Woody Debris/Log Jams

In 1998, ODFW commissioned a survey of large wood debris (LWD) on the coastal streams of Oregon. Large woody debris was defined as any log segment greater than 20-inch diameter extending into the streambed. Our little river topped the list at 85 LWD segments/mile.

All that large woody debris disappeared in the Thanksgiving Day floods of 1999. The torrential rains within a 24-hour period mobilized every piece of LWD and scoured the river. Logjams that existed since the major flooding of 1996 were gone overnight.

In 2005, ODFW in association with the local watershed council and public and private timber concerns, began the creation of engineered log jams on major tributaries to the river. Though it is far too early to determine the long-term benefits of these emplacements, they have allowed for the retention of important spawning gravels.

Today

Since 2000, we've seen an amazing recovery of wild steelhead throughout the watershed. Though we occasionally encounter a stray hatchery fish (humanely removed from the gene pool), wild steelhead are now available in early November and continue throughout March. Redd counts and angling reports indicate that temporal and spatial diversity of wild steelhead has increased dramatically. Riparian habitat is mostly intact and improving. A single culvert remains that blocks an additional three miles of spawning habitat.

Public access to Our Little River remains problematic. While 90 percent of the river is available to the public, there are only seven access points to the 14-plus miles of legal water. Four of those access points require significant hiking, and two of them require well over an hour before one can make the first cast. While that has reduced pressures upon wild steelhead, it has also reduced the number of anglers that have bonded with Our Little River.

As a disclaimer, we speak about Our Little River as if we own it. Nothing could be further from the truth. Our Little River is a public asset that needs a concerned constituency. Prior to the creation of state-mandated watershed councils in 1998, there were few public stakeholders involved in any aspect of the management of this unique resource. For many years, Doug and his father filled that void. Now, Conrad has inherited the job and has already built coalitions that will ensure that the river continues to flourish.

Furthermore, Our Little River has recently been discovered by a number of young and gifted fly fishing guides. While they revel on the river on their days off, they have also introduced a high-end clientele to the watershed — with economic benefits that have yet to be documented. Let's hope that they become streamkeepers, too.

Wild Salmonid Management Areas

An idea whose time has come?

By Curt Kraemer
— *Washington Department of Fish and Wildlife, Retired* —

Author Curt Kraemer grew up in western Washington and has fished the region's rivers all of his life. He graduated from the University of Washington in 1965 with a B.S. in fisheries. He retired in 2005 from the Washington Department of Fish and Wildlife after more than three decades of service, nearly all of which were in the North Puget Sound area. He can be reached at kraemerfam1@hotmail.com.

In recent years it has become fashionable to talk about the need for and the establishment of wild steelhead management areas on our Pacific Northwest rivers. While many consider this to be a new idea, the reality is such areas have been around for quite some time. An example that many of the region's steelhead fly fishing anglers might be familiar with is the North Fork Stillaguamish River's Deer Creek. In recognition of the value and uniqueness of that basin's summer steelhead, the creek has been closed to all angling for 70 years while allowing angler access to those summer steelhead in the North Fork prior to their reaching Deer Creek. Deer Creek's angling closure is typical of most such regulations from the past; that is they were created after angler concerns forced the issue. However, with increased understanding of such issues as hatchery/wild steelhead interactions, the importance of bio-diversity, degrading habitats and declining productivity of various stocks, and increasing numbers of Endangered Species Act listings, many are now recognizing that a more comprehensive approach to the application of "wild steelhead management areas" is needed.

More than five years ago the Hatchery Scientific Review Group, in their review of Washington State's hatchery programs in the Puget Sound region, recommended that consideration be given to the establishment of what they called "wild steelhead management zones" on all the major river systems of the area. The idea was that these management zones would provide areas where the potential of hatchery and wild steelhead interactions would be reduced. Parts of that recommendation included: 1) Significant portions of a basin should not be planted with hatchery steelhead; 2) Fishing could be allowed; and 3) The State conduct workshops to develop further the idea of "wild steelhead management zones" and how to implement the concept. To date this concept has not been fully developed or implemented.

Perhaps the greatest gain in wild steelhead diversity from WSMAs is increased protection and emphasis on resident forms.

The 2008-2009 season finds the latest application of a Wild Salmonid Management Area (WSMA) here in Washington. This February the Washington Fish and Wildlife Commission approved a regulation change that established a significant portion of the Skagit River basin as a WSMA. The new regulation establishes a basic regulation package of catch-and-release of all game fish except for a daily limit of two hatchery (fin-clipped) steelhead with selective gear rules (single barbless hooks with no bait) whenever the affected sections of river are open for fishing. The focus is on main stem areas and includes all of the Sauk (including its North and South Forks), the Cascade River upstream of the Rockport-Cascade Road bridge, and the Skagit upstream from the mouth of the Cascade to the Gorge Dam.

This change began its path toward implementation as proposal(s) from concerned anglers as part of the regulation change process used by the Washington Department of Fish and Wildlife (WDFW) every two years to solicit input and comments on potential changes in the State's fishing regulation package. The proposal survived in-house agency review, public review and final Commission approval. In this case, after getting through agency review, the proposal received surprising little input from the angling public. Only nine people (eight for and one against) went to the trouble to provide the Commission with comments regarding the proposal. That lack of interest and support may be an indication of the difficulties that lie ahead for the development of additional WSMAs.

The following discussion is an attempt to provide guidelines to more fully develop the idea of wild steelhead management areas. The focus is a holistic approach that includes expanding the idea from wild steelhead management to one of wild salmonid management. The hope is to provide guidance for the development of such areas while providing for both the consistency needed for resource protection and the flexibility required for application across diverse geographic areas and basins. Attempts were made to address the biological needs of the fishery resource — giving wild fish priority — while recognizing the political realities that often constrain fisheries managers.

The goal of WSMAs is insuring the maintenance of wild salmonid populations with the abundance, productivity, and diversity one would associate with

Continued on next page

Continued from previous page

populations utilizing the habitat available to that population. In WSMAs, recreational fishing would be allowed, although regulations should be restrictive enough to meet the needs of wild fish. Past experience on some quality, catch-and-release waters has illustrated that such fishing opportunities would likely be popular with a segment of the angling public and may provide additional diversity of recreational opportunity. WSMAs would be different from an 'inviolable riparian sanctuary' closed to all fishing and limiting other human activity.

A WSMA would be managed under the following guidelines:

1) The primary focus of WSMAs is the diversity of the fish populations within a basin. While it would certainly be preferable to have all the various habitat types included in WSMAs, it is often the case that the upper portions of anadromous reaches support more diversity than the lower portion. It may well still be possible in those basins that have significant hatchery production to successfully create a WSMA if the area upstream of the site of hatchery production provides sufficient habitats to both support the needed intra and inter species diversity. In those cases some of the fishing opportunities (both Tribal and non-tribal) that a hatchery facility supports may be preserved.

2) The focus of WSMAs should be the main stems and larger tributaries. This is especially the case when considering O. mykiss where those habitats represent both the major spawning areas as well as the primary rearing habitat for the fluvial life histories. Even for those species that use the smaller tributaries more extensively, the larger water likely remains key as that is the location of the majority of recreational fishing activity.

3) Release of all wild salmonids would generally be required throughout established WSMAs. There would be no exceptions to this wild fish release requirement for steelhead, sea-run cutthroat, bull trout, or ESA listed species. Exceptions for other species (for example whitefish) could potentially be considered if such fisheries were common in the past and such fisheries will not jeopardize the other wild salmonid populations.

4) For most WSMAs , hatchery releases should be phased out and the retention of any returning or stray marked hatchery fish should continue to be allowed. An exception to this general approach would be for those systems where it has been determined that hatchery releases are a key component of recovery efforts for listed species and the retention of those hatchery fish may be prohibited when returns are below established triggers.

Portions ofhe Skagit-Sauk system have been designated as a Wild Salmonid Management Area by the Washington Fish and Wildlife Commission. Photo by Jim Yuskavitch

5) The standard gear regulation for all WSMAs, as with all waters where the fish are required to be released, would be selective fishing gear restriction. Only unscented artificial flies or lures with a single point barbless hook are allowed. Bait is prohibited and only knotless nets may be used to land fish on Washington waters managed under selective gear restrictions.

6) WSMAs regulations should be applied to all seasons (summer, winter, etc.) that are open for the proposed area.

7) While it might be ideal if WSMAs were to cover an entire river system, it may not be essential to require such extensive coverage. At a minimum, WSMAs should be large enough to insure that both the diversity of the fish stocks and habitats found in the basin are substantially covered. Depending on the basin in question, as much as one-third to one-half of the main stem habitats may be needed to be put aside as a WSMA.

The recent approval of the Skagit WSMA provides an illustration of how the above guidelines could be implemented on the ground. While the final regulations may have not been as extensive as many would have desired, they do represent a significant change from past management. A review of the affected Skagit species may help to illustrate how such changes help tip fisheries management toward more emphasis on wild fish needs.

This new Skagit WSMA includes about half of the linear main stem areas found in the anadromous portion of the basin. These areas and their tributaries include major production areas of spring and summer Chinook, pink, chum and coho salmon, winter steelhead, limited summer steelhead, bull trout and resident trout (mostly rainbows) and whitefish. These areas have long been closed to angling for the salmon species, and as a result this regulation change will not change the directed harvest fisheries on those species. The selective gear restrictions and the general catch-and-release regulations can be expected to provide some benefits to various salmon species incidentally encountered by anglers targeting game fish (the banning of bait should reduce hooking mortality as well as reducing the total encounters for species such as spring Chinook).

The production areas and their tributaries included in this proposal include more than half of the wild steelhead spawning in the basin. The majority of the hatchery steelhead supplementation in the Skagit basin has been downstream from the areas included in the WSMA. For decades, some hatchery winter steelhead (hatchery summer

Continued on next page

Continued from previous page

steelhead are no longer planted anywhere in the basin) have been released in the Sauk basin. Recently, the number of smolts released in the Sauk has averaged about 20,000 fish. WDFW anticipates that the smolts released in the spring in 2007 on the Sauk will be the last hatchery steelhead released anywhere in the WSMA. There has been a long history of releasing Chambers Creek hatchery winter steelhead in the basin. For a number of years the hatchery steelhead production target for the Skagit basin was 536,000 smolts. Recently that target has been reduced to 229,000 smolts. The temporal spawning separation of the hatchery and wild winter steelhead in the basin, coupled with the increased spatial separation of the spawners required under the WSMA and the reduction of the number of smolts released should collectively reduce the interactions between hatchery and wild spawners within a significant portion of the Skagit basin.

Perhaps the greatest gain in wild steelhead diversity that the WSMA approach provides is the increased protection of and emphasis on resident forms. In recent years research in a number of basins has highlighted that reproductive interactions between resident rainbows and steelhead regularly occur. These interactions have been primarily between the fluvial and anadromous life histories of O. mykiss. These interactions have included genetic exchange between the life histories as well as plasticity between those life histories (anadromous fish producing resident fish and resident fish producing anadromous fish). It has become increasingly clear that the various life histories of O. mykiss represent significant diversity within the species and are crucially important to the long-term health and survival of the species in the Pacific Northwest. As a result, restoring and maintaining life history diversity is becoming an important consideration in making steelhead management decisions.

The emphasis on the upper portion of basins for WSMAs can be somewhat of a double-edged sword. In the Skagit basin, those upper basin areas provide for additional protection of some interesting steelhead diversity. Just one example are winter steelhead that spawn in the headwaters of the South Fork Sauk, an area up to 115 miles from the mouth of the Skagit and at an elevation of nearly 3,000 feet. I know of no other use of such habitats by winter steelhead; and it is unique in western Washington. The Skagit basin WSMA and its tributaries include all but one of the major spawning areas for the basin's anadromous and fluvial bull trout. However the emphasis on the upper portion of the basin provides virtually no additional protection for the basin's coastal cutthroat, particularly the anadromous life history. More than 95% of the sea-run cutthroat spawning occurs in tributaries downstream of the WSMAs. WSMAs would need to be extended downstream to the mouth of the basin to provide sea-run cutthroat protection similar to that afforded to the bull trout and steelhead in the upper portion of the basin.

The question now becomes: where do the managers and concerned anglers go from here? Success in establishing addition WSMAs will likely require participation of local anglers and each individual basin will require "champions" who are willing to invest the time to lobby for basin WSMA proposals and to shepherd those proposals through regulation and approval processes. With the designation of the Skagit and Sauk as a WSMA, we hope that it, along with the guidelines described in this article, will inspire the establishment of more in the future.

Steelhead Sculpture Auction at FFF Conclave

Proceeds to benefit *The Osprey*

Supporters of *The Osprey* will again have an opportunity to bid on a dedicated auction item at the Federation of Fly Fishers 43rd Annual International Show & Conclave, July 22 -26, 2008 in Whitefish, Montana.

Wildlife artist Hank George of Redding, California will offer a truly lifelike trophy steelhead carving for auction with proceeds to support continued publication of *The Osprey*. The successful auction winner will be able to have the artist recreate a lifelike trophy replica from a photo and description provided by the angler. Color scheme and position can be discussed at the time of order.

A recognized wildlife artist, Hank's unique and beautifully wrought pieces are carved from kiln-dried western sugar pine, sealed with acrylic undercoats and paints applied by a combination of hand and airbrush. Variations of light, distance, and movement, along with natural iridescence, give wild steelhead the ability to go from completely camouflaged to a stunning array of color on the move. His sculptures represent these qualities and knowledge of his subjects.

Be on the lookout for this one-of-a-kind item at the Conclave. For more information on Wildlife Artist Hank George contact Norm Ploss at ndeanploss@aol.com.

A Skagit River Commentary

By Will Atlas

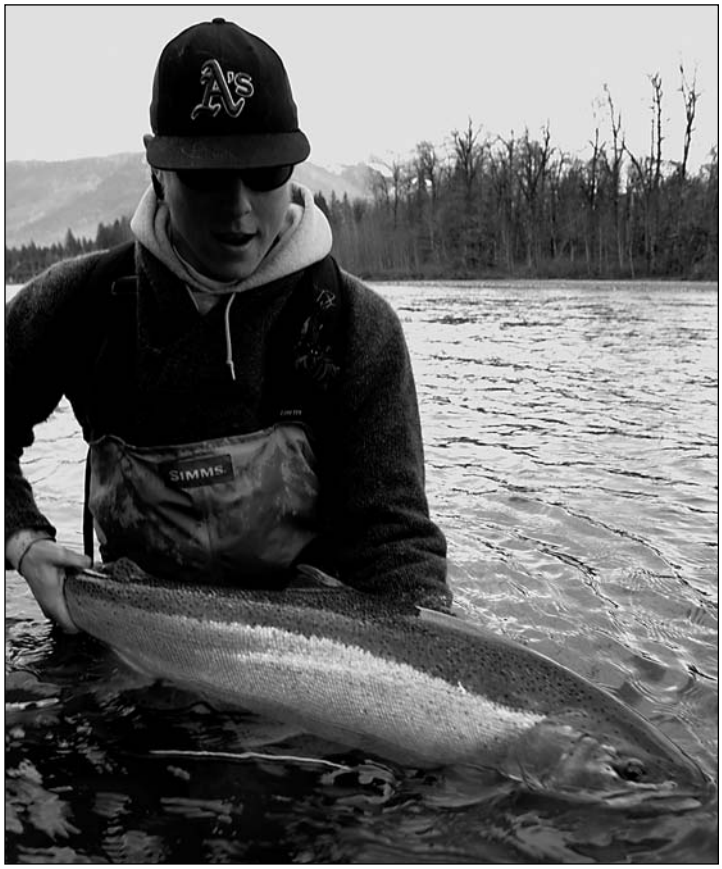
— The Osprey Editorial Committee—

Will Atlas is a recent graduate of the University of Washington School of Aquatic and Fisheries Sciences, and a member of The Osprey *Editorial Committee. A passionate steelhead angler and advocate, he plans to pursue a career in fisheries with a focus on rivers and the aquatic communities they support. He may be reached at atlasw@u.washington.edu.*

After years of declining abundance, Puget Sound Steelhead were listed as threatened under the Endangered Species Act last year. Among the many struggling steelhead populations of the Puget Sound region is one of our state's highest profile steelhead fisheries, the Skagit River. Famous for its March and April catch-and-release season, the Skagit has been a Mecca for passionate steelhead anglers for decades. The Skagit is the third largest river draining into the Pacific Ocean in the lower 48, and is home to one of the most tremendous races of steelhead in the world. Numerous fish over 20 pounds have been caught in past years and larger fish have been undoubtedly lost. The chance to catch these huge, ocean bright fish in the heart of the North Cascades makes the Skagit a truly special place, and its proximity to the Seattle metropolitan area makes it a favorite for many in our state.

Based on catch data, many estimate the run size was as large as 30,000 in the 1950s, and as recently as the 1970s and 1980s the size of the run was well over 10,000 fish. Last year however, the state estimated that only 4,250 fish reached the spawning grounds on the Skagit and its largest tributary, the Sauk, the second lowest number in its recorded history. With the forecast being almost as bleak this year, the state opted to close the river to angling a month early — only the second occasion they have done so since the March-April catch-and-release season began in the late 1970s.

As we sit idle this April, unable to fish for steelhead in one of Washington's most prominent watersheds, it is important that we understand the history of events that brought the Skagit/Sauk steelhead to this point. Closing the fishery is a token measure. It is a reactionary management action, illuminating the lack of foresight that has plagued our fisheries management for decades. Removing catch-and-release angling pressure will do little if anything to recover our wild steelhead, and meanwhile, the status quo that has led to the decline of our Puget Sound fish continues. As anglers, it is important that we are stewards of the resource; however, I find it ironic that the state is so willing to curtail sport fishing, when they continue to dump hundreds of thousands of hatchery steelhead smolts into the Skagit system each year.



Author Will Atlas with his first wild Skagit-Sauk steelhead, a fine 38-inch hen. Photo by Ryan Smith.

Consider the historic run size on the Skagit. A conservative estimate likely would place it around 40,000 adult wild fish returning to the watershed annually. If we do some quick math and assume marine survival of roughly 10%, that means the watershed was probably producing in the ballpark of 400,000 steelhead smolts annually. In 2003, the Washington Department of Fish and Wildlife released 513,200 steelhead smolts into the Skagit River watershed. Hatchery fish now outnumber wild fish almost 10 to 1 as smolts, and in all likelihood the number of smolts leaving the Skagit today actually exceeds the historic abundance. So why isn't the fishing amazing? With this number of fish competing for limited resources in a degraded watershed, it is no surprise the wild fish struggle. Furthermore, hatchery fish in the Skagit watershed experience particularly low marine survival, often below 1%. This means for all those smolts, we see an adult hatchery return of only a few thousand fish.

Certainly hatchery programs are not completely responsible for the declines we have witnessed in the Skagit, Sauk and other Puget Sound Rivers. Development, and decades of

Continued on next page

Continued from previous page

bad forestry practices have severely degraded our watersheds, and recent low marine survival has resulted in particularly poor adult returns. With harvest curtailed for the most part on Puget Sound Rivers, hatcheries are the last impediment to wild steelhead recovery in our region, and our fisheries managers have been slow to acknowledge their effects. Regardless of the state's policy, the scientific literature is unequivocal. Large-scale hatchery production can have severely adverse effects on wild steelhead populations.

So take away our fishing. If wild steelhead populations are depressed to the point that they cannot sustain the impacts associated with a selective regulations, catch-and-release fishery, so be it; but they cannot be expected to sustain the far more detrimental impacts of introducing 500,000 non-native steelhead smolts into the watershed each year. With every run cycle we lose ground in our struggle to recover these magnificent fish, and frankly we need to demand more of our management agencies. It is time to critically examine how effective and necessary our hatchery programs are, and realistically assess their impacts. On the Skagit and Sauk, the wild fish are the main attraction. They are the fish that have attracted anglers from throughout the world to the banks of the Skagit every March and April, and we should manage them as such. Wild fish need to be the centerpiece of every management decision made, not just harvest opportunity, and not just maintaining the rural jobs program that is our hatchery system in this state.

While the Skagit watershed has been modified and degraded over the last century, it remains the most pristine watershed in Puget Sound. As such it should be managed as a present and future stronghold for wild steelhead and salmon in our region. Take the hatchery fish out, protect the existing habitat, and work to restore the dynamic river habitats that made the system so productive in the past. The fish will recover. Some may see this year's closure as a sign of the times, an indication of the bleak future for wild steelhead in our region. I choose a more optimistic outlook. We've come to a crossroad, and I see a community of anglers and advocates that is more catalyzed than ever. We are united in demanding better management of our wild fish, and while the results are slow to appear, slowly things are changing for the better. There is a real, sustained dialogue about making the Skagit/ Sauk a refuge for wild fish, and state biologists appear to be placing more emphasis on wild fish recovery.

Take this April's closure as a call to arms. A future without Puget Sound steelhead is a bleak thought, and the fish have fallen to a point where they can no longer sustain the current paradigms guiding the management of our anadromous fishes. The inertia of the status quo is great, but so is the power of a united group of wild fish advocates to overcome it. Protecting the Skagit River watershed as a wild steelhead refuge would represent a huge momentum swing toward conservation and recovery of our wild steelhead. Those wild fish made the Skagit an icon of steelhead angling in the Northwest, and they are more than capable of making a recovery, if we can simply get out of their way.

Judge Tosses Biological Opinion for Salmon and Steelhead in California

FRESNO, Calif. — Federal Judge Oliver W. Wanger has invalidated a water plan that would have allowed more pumping from the San Francisco Bay Delta at the expense of five species of protected salmon and steelhead trout. The decision is the second time the court has ruled that water export plans would harm the threatened estuary.

In his opinion Judge Wanger relied on the National Marine Fisheries Service's (NMFS) own finding that diverting water from the bay-delta was killing huge numbers of salmon.

The court cited NMFS findings that "current operations result in the loss of 42 percent of the juvenile winter-run Chinook population, and proposed project effects are expected to result in an additional 3 to 20 percent loss of the juvenile population." **NMFS also found that proposed water project operations would kill as many as 66 percent of Central Valley steelhead** and 57 percent of juvenile spring run Chinook salmon — **likely leading to the extirpation** of the spring run in the Sacramento River and **steelhead in the Central Valley**. [Emphasis added]

The plaintiffs challenged a 2004 long-term water plan known as OCAP (Operating Criteria and Plan) that would have allowed increased exports south of the delta by reversing many of the decade-old protections credited with saving endangered winter-run Chinook salmon from extinction, including relaxing cold water flow requirements and eliminating nearly half of the available spawning habitat in the Sacramento River. These operational changes have corresponded with significant declines in protected Chinook salmon populations since 2004. This year's salmon run has largely failed to show up.

The decision is the second time the court has ruled that water export plans would harm the threatened estuary.

The plaintiff coalition that launched the legal challenge includes: Pacific Coast Federation of Fishermen's Associations and the Institute for Fisheries Resources, The Bay Institute, Baykeeper, California Trout, Friends of the River, Natural Resources Defense Council, Northern California Council of the Federation of Fly Fishers, and the Winnemem Wintu Tribe.

Read the entire press release at: http://www.nrdc.org/media/2008/080416a.asp

A Copper-Salmon Wilderness

Roadless and wilderness areas as fish refuges

by Mike Beagle

— Trout Unlimited —

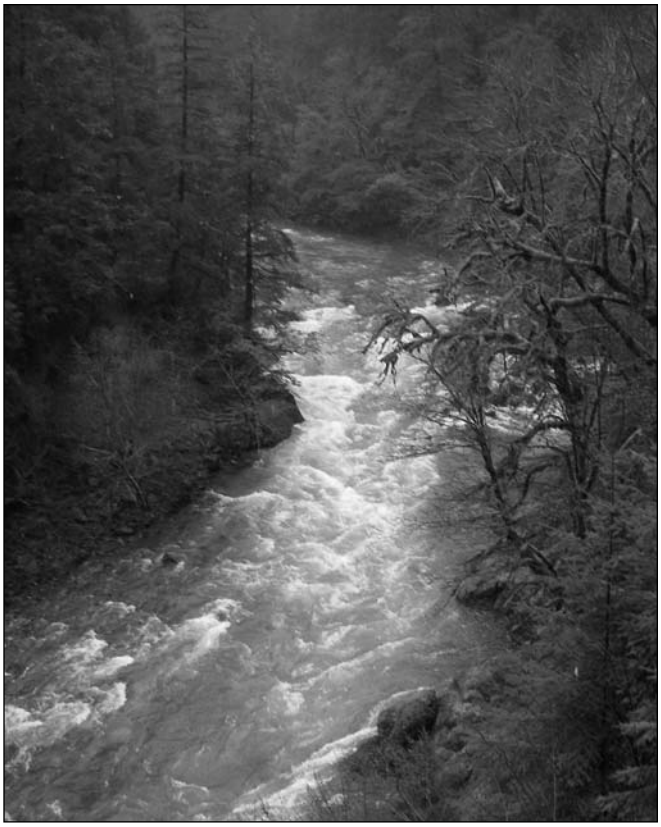
Author *Mike Beagle is a former U.S. Army field artillery officer in the 9th Infantry Division stationed at Fort Lewis, Wash. Previously, he taught history and coached in Oregon high schools for 15 years. He is the Pacific Northwest Field Coordinator for Trout Unlimited and works with hunters and anglers on public land issues*. He may be reached at mbeagle@tu.org.

Protecting an official wilderness area has always been difficult — and is particularly tricky in today's Congress. In Oregon, sportsmen-oriented conservation groups like Trout Unlimited and the Oregon Council-Federation of Fly Fishers and several others are playing a key role in convincing elected officials to do the right thing.

One wilderness proposal has potential to jump all of the political hurdles — the Copper-Salmon in the headwaters of southwest Oregon's Elk River near Port Orford. Nestled between Copper and Salmon mountains of the Rogue River-Siskiyou National Forest, this modest, 13,700-acre area will help guarantee that future generations will always have trophy wild Chinook salmon and winter steelhead to catch.

Scientists from Oregon State University and the federal government have come to the conclusion that the North Fork of the Elk River is one of the finest spawning and rearing tributaries in the lower 48 states for salmon and steelhead. This land also provides excellent habitat for black-tailed deer, black bear, and mountain lion, as well as refuge from summer heat for Roosevelt elk. Because of this tremendous fishery, local foresters Jerry Becker and Jim Rogers formed Friends of the Elk River to keep the fishery intact and to educate local and regional folks about the importance of healthy watersheds to the community.

With significant state and federal Wild and Scenic status and with protections for old growth forests under the 1994 Northwest Forest Plan, most thought that the Elk River and its precious fishery had enough layers of protection to prevent logging and the inevitable slides and erosion associated with such practices on steep slopes. But along came the infamous Salvage Logging Rider, which was attached to the Omnibus Rescissions Bill of July 27, 1995, a bill the main purpose of which was to provide relief for the domestic terrorist attack on Oklahoma City and for Missouri River flood victims. Within the fine print of the Salvage Rider, nearly all environmental standards were suspended. Previous timber sales that were held up in court or stopped because they violated Endangered Species Act or National Environmental Policy Act standards, went through. In the case of the Elk River watershed, more than 200 acres of live, healthy old-growth timber was cut. From that point on, Friends of the Elk River have believed that the only certain way to protect the Elk and its famed big fish was to designate all of the roadless backcountry in the watershed as Wilderness under the 1964 Wilderness Act. Though Wilderness designations allow for hunting and fishing in the proposed Copper-Salmon Wilderness, its headwater streams are off limits to angling to protect its high-quality spawning and rearing habitat for Chinook salmon and winter steelhead.



The Elk River watershed is widely considered to be among Oregon's most productive wild steelhead producers. Photo by Alan Moore.

As a result of the Salvage Rider, Friends of the Elk River began an education campaign and secured unprecedented local support for Wilderness designation. The Curry County Commissioners voted unanimously to support Wilderness, a resolution that still stands. The Port Orford-North Curry County Chamber of Commerce has supported Wilderness multiple times and continues to do so. The Mayor of Port Orford, Jim Auburn, supports it and has gone to Washington, D.C. to lobby for it and has spoken at a Senate hearing about the Elk River's values and the ripple effect upon Port Orford's economy. In addition to the outstanding local sup-

Continued on next page

Continued from previous page

port, the Oregon Chapter of the American Fisheries Society supports it, as well as former Governor John Kitzhaber and current Governor Ted Kulongoski.

Just two years ago in April, Trout Unlimited put together a strong coalition of sportsmen conservation groups to protect this jewel. Joining TU and the Oregon Council-FFF in the coalition are the Northwest Sportfishing Industry Association, the Association of Northwest Steelheaders, Oregon Backcountry Hunters and Anglers, the Oregon Division of the Izaak Walton League of America, the Native Fish Society, and the Berkley Conservation Institute to form Sportsmen for Copper-Salmon Wilderness (www.sportsmenforcoppersalmon.org. It is the only sportsmen-led Wilderness campaign in the country and, quite possibly, the only one in American history.

My epiphany happened in January 2006 on my first visit to the region. Accompanied by then Oregon Council-FFF president Tony Brauner, we visited this river and were pleasantly surprised by what we found. Southwestern Oregon had been plagued by near record rainfall, flooding and mudslides that winter. We traveled through three different watersheds as we left home: the Rogue, the Umpqua and the Coquille. All were at flood stage — murky brown with silt and strewn with debris — rendering them completely unfishable.

Crossing the Elk River on Highway 101 north of Port Orford, we caught our first glimpse of the river. We were amazed to see it had a gray-green color and was almost fishable. How could this be? After all, the region had recently received an astounding 25 inches of rain in December alone.

We got our answer. Guided by Becker and Rogers, we saw steep canyons and rocky gorges and thousands of acres of Douglas fir and Port Orford cedar — big trees, some 500-plus-years-old. These massive and ancient forests soaked up the water and held the soil firm. The tributaries ran clear. The more elevation we gained, the clearer the water became in the Elk itself. We were witnessing a natural filtration system that did not cost a dime. With an average rainfall of 150 inches per year in the headwaters of the Elk, disrupting the natural system could cause irreparable harm to the system and its famous salmon and steelhead. Is it any wonder that guides will drive their clients five hours to fish the waters of the Elk when their own home rivers are blown out? And having a federal wilderness designation in place that protects the fall Chinook fishery and wild winter steelhead also protects the local economy.

Since that magical moment during the wet winter of 2005-2006, we have taken several grassroots folks back to Washington D.C. to tell the story of the Elk River and its trophy fall Chinook and winter steelhead. Long-time, local forester Jim Rogers, the backbone of this impressive effort and a 40-plus year resident of the region, has gone back to Washington, D.C. three times to tell the story of big trees and big fish. We've taken the president of the Chamber of Commerce back, a local sportsman and a third generation fishing guide. All of these efforts have resonated. In September of 2007, Senator Ron Wyden and Representative Peter DeFazio, both Oregon Democrats, introduced legislation to protect 13,700 acres of the Elk's watershed as a Wilderness Area with an additional 10 miles of Wild and Scenic protections added as well. Shortly thereafter, Oregon Republican Senator Gordon Smith co-sponsored the bill to make this a truly bipartisan effort. And Smith was very clear about why he supported it — local business and government support as well as sportsmen support.

As this bill travels through the process in Congress, we're making this effort to designate Wilderness in this region part of Trout Unlimited's *Protect-Reconnect-Restore* model.

Protect intact backcountry watersheds with few roads and very little development. These areas produce the coldest and cleanest waters, offer refuge from heat and habitat degradation for wild salmonids and give our native fish respite and refuge as the world's climate warms.

Reconnect mainstem streams and tributaries where culverts, dams and other impediments have obstructed passage for migratory fish.

Restore historic and natural flow regimes, meanders, flood plains and habitat in areas where urban growth, development and population centers have degraded and altered our waterways and harmed our native fish.

By the combined efforts of local groups like the South Coast Watershed Council and the Elk River Land Trust, education and restoration activities are well under way. For the second year in a row, we've submitted paperwork for a federal appropriation to remove the Blackberry Creek culvert and replace it with a bridge. We are also applying for an Oregon Watershed Enhancement Board grant as well. This huge culvert, large enough to drive a large diesel pick up truck through and over 110 feet long, acts like a fire hose during heavy flows and impedes salmon and steelhead spawning for several miles of this pristine tributary of the Elk River. Removing this barrier will open up miles of previously inaccessible fish habitat, which salmon and steelhead will quickly colonize.

Thinking back to 2006, I remembered how we ended the night at the Steelblue Chameleon Lodge, courtesy of the Friends of the Elk River and owner Mark Kimball. I felt like I had been removed to some remote lodge in Alaska. I looked at the snapshots that adorned the walls — people of all stripes from all over the world. All featured ear-to-ear smiles and trophy Chinook salmon and steelhead. Wild country had provided all of this as a natural gift.

Do we have the foresight to protect this modest little Elk River wilderness? I think so. After all, every person who fishes the Elk River gets a "watershed moment" education just like we did. Our Congressional delegation has heard us and has taken the necessary steps to keep this fishery healthy in perpetuity. In a few more months, we believe we'll have a congressionally protected Wilderness that anglers everywhere will use as a model of watershed health and conservation.

More information on the Elk River

Elk River Land Trust
www.erlt.org

Friends of the Elk River
www.foer.org

Continued on next page

Continued from previous page

Sportsmen for Copper-Salmon Wilderness
www.sportsmenforcoppersalmon.org

Steelblue Chameleon Lodge
www.steelbluelodge.com

Trout Unlimited
www.tu.org

Elk River Fish Stats

1. Fall Chinook average 12-15 pounds. Largest known fish was 64 pounds.
2. Winter steelhead average 6 to 8 pounds with the largest being 27 pounds.
3. Wild Chinook escapement from 1970-2002 averaged 1,705 fish.
4. Hatchery Chinook escapement from 1970-2002 averaged 2,464 fish.
5. Around 2,000 wild winter steelhead spawn in the Elk River system. Steelhead in the Elk River system are 100% wild.
6. Some wild coho salmon and sea-run cutthroats use the system, as well as resident cutthroats and

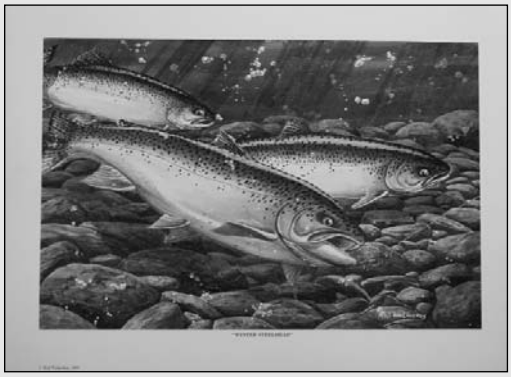
Chair's Column,
continued from page 3

from pressing their case. Fourteen years later, we are still waiting for the major overhaul. We trust the courts will agree.

The following excerpt may shed some light on why it is so difficult to get the federal agencies to simply follow the Endangered Species Act and the courts' orders. In an article about Puget Sound in the April 20, 2008 issue of the Seattle *Times*, William Dietrich wrote that critics of economists say: "We are in danger of knowing the price of everything and the value of nothing." On the Columbia we know in excruciating detail the price of water for electricity, irrigation, and industrial and domestic use. But as a society, we seem to have no idea of how to arrive at the real value of flowing water for salmon and many other purposes.

Special Osprey Subscription Offer!

For a limited time, anyone subscribing to *The Osprey* at a donation level of $100 or more will receive a 13 1/2 x 18 1/2 inch colorprint "Winter Steelhead" by artist Rod Walinchus.



Supplies are limited and this offer is good until June 30, 2008 or until the prints are gone, so act now. Help us keep publishing *The Osprey*, help the fish and put a few bright steelhead on your wall!

Just fill out the coupon on page 19, send it in with your donation for $100 or more and your print will be on its way!

To receive *The Osprey,* please return this coupon with your check made out to The Osprey - FFF

THE OSPREY

NAME

ADDRESS

CITY/STATE/ZIP

PHONE E-MAIL

Yes, I will help protect wild steelhead

- ❑ $15 Basic Subscription
- ❑ $25 Dedicated Angler Level
- ❑ $50 For Future Generations of Anglers
- ❑ $100 If I Put Off Donating, My Fish Might Not Return Home
- ❑ $_____ Other, Because _____

_____

I am a . . .

- ❑ Citizen Conservationist
- ❑ Commercial Outfitter/Guide
- ❑ Professional Natural Resources Mgr.
- ❑ Other _____

If you are a new subscriber, how did you hear about The Osprey?

- ❑ Friend or fellow angler
- ❑ Fishing show
- ❑ Fly shop, lodge or guide
- ❑ Another publication.Which?_____
- ❑ Club or conservation group meeting
- ❑ Other _____

The Osprey — Steelhead Committee
Federation of Fly Fishers
215 E. Lewis St., Suite 305
Livingston, MT 59047

Thanks For Your Support

THE OSPREY

Federation of Fly Fishers
215 E. Lewis St.
Suite 305
Livingston, MT 59047

Address Service Requested