



# THE OSPREY

*A Journal Published by the Steelhead Committee  
Federation of Fly Fishers*



*Dedicated to the Preservation of Wild Steelhead • Issue No. 72*

**MAY 2012**

## Oregon's North Umpqua River Can its potential be reached?

by Joe Ferguson

— *The Steamboaters* —

*Author Joe Ferguson is a past president of the The Steamboaters, an organization that works to protect the North Umpqua River and its wild fish. For more information visit their website at [www.steamboaters.org](http://www.steamboaters.org)*

**W**inter or summer, the North Umpqua River is still one of the finest places in the world to cast a fly for steelhead. It's home to a healthy winter steelhead run and one of the rare summer runs in Oregon. The scenery is stunning, the water is clean and cool, and 35 miles of the river is fly-angling only. There is a strong ethic of courtesy and consideration among fly anglers, and while rafters in the summer can produce some teeth-clenching moments, you can always find good water to fish.

There are two processes which have tremendous potential to improve steelhead habitat and management in the North Umpqua watershed, one already completed and being implemented (the Settlement Agreement which reli-

censed PacifiCorp's hydro-electric facilities in the upper North Umpqua watershed), and one just commencing (development of ODFW's Native Fish Conservation Plan (NFCP)) for Oregon coast anadromous fish populations).

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*The single largest impact to the North Umpqua River fisheries is the Soda Springs Dam Project.*

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**Implementing the Settlement Agreement**

The single largest impact to fisheries and aquatic connectivity from the PacifiCorp project is Soda Springs

Dam, which was constructed in the early 1950s and produces 11 megawatts of power. Although fairly high in the watershed, the dam cut off access to prime spawning habitat in the river and Fish Creek, the reservoir inundated over a mile of the best spring Chinook spawning habitat, and cut off the flow of sediment and large woody debris in the upper river. The benefits of dam removal were identified during the settlement negotia-

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recipient of the  
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FROM THE PERCH — EDITOR'S MESSAGE

# An Honor for The Osprey, its Supporters and Contributors

by Jim Yuskavitch

Just a couple of weeks before this issue of *The Osprey* was produced, the Steelhead Committee received an e-mail from Mark Pedersen, past President of the Washington-British Columbia Chapter of the American Fisheries Society. The message his e-mail bore was a shock — but a joyful shock. *The Osprey's* long efforts to communicate wild salmon and steelhead conservation issues was being recognized with the the 2012 Haig-Brown Award.

The Haig-Brown Award, established in 1981, is presented to an individual or agency who best exemplifies the journalistic spirit of Roderick Haig-Brown's book *The Western Angler*: "Hand in hand with preserving and improving the fishery must go the work of presenting it properly to the public."

*The Osprey* was started in 1987 by a small group of dedicated steelheaders from the Seattle area — some on whom are still involved with the publication

— who were becoming concerned about the decline in wild steelhead populations and angling opportunities.

With typewriter and mimeograph machine *The Osprey* came into being, its few pages filled with conservation and opinion articles in defense of wild fish and sounding the alarm.

Twenty five years later, *The Osprey* is still going strong. Although we are a little bigger, and a bit more sophisticated than in those early days, our message is still the same, if not more urgent.

While we who produce *The Osprey* take our bows for having this singular honor bestowed upon our journal, the award is not ours alone. It is to be shared among our many supporters. That includes the many experts and passionate conservationists who have written, and continue to write, for us as well as those of you who send donations to keep us in paper and ink.

Because producing a great publication is like saving a great fish. It can't be done alone.

## THE OSPREY



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Editor  
Jim Yuskavitch

### Contributing Editors

Pete Soverel • Bill Redman  
Stan Young • Norm Ploss  
William Atlas • Schuyler Dunphy  
Scott Hagen

### Contributors

Joe Ferguson • Will Atlas  
James B. Scott • Michael L. Gross  
Ron R. Warren • Heather R. Bartlett  
Paul Jenkin • Pete Soverel  
Curtis Knight • Brian J. Johnson  
Matt Stoecker

### Layout

Jim Yuskavitch

### 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

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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.



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# An Angler's Ethic for the 21st Century

by Will Atlas

— Chair, Steelhead Committee —

**W**ild salmon and steelhead are an integral part of the cultural and ecological fabric of the Pacific Northwest. For thousands of years these fish served as a vital conduit of resources, providing nourishment for people and ecosystems of the Pacific Northwest. The Pacific Northwest is blessed with a multitude of watersheds, from the tiniest trickles flowing from rainforest bogs to massive rivers like the Columbia, Fraser, Skeena, Rogue, Klamath and Sacramento. Rivers course through the very veins of the region, and for thousands of years the life blood beating through those veins has been salmon. Salmon have played an integral role in supporting aquatic and marine ecosystems of our region, and despite the intense pressure placed on them by growing human populations, resource driven industries, over-harvest, dam construction, and industrial scale hatchery supplementation, they continue to be an essential part of our northwest culture and ecosystems. However, despite the resilience of wild salmon, their abundance is at historically low ebb. Today, 17 of the 37 evolutionarily distinct population groups of salmon and 11 of the 14 distinct population groups of steelhead are listed as threatened or endangered under the Endangered Species Act. Despite the billions of dollars that have been spent to protect habitat, remove dams and restore salmon populations, they are facing an uncertain future.

For many Pacific Northwesterners, angling for salmon and steelhead is a kind of cultural ritual, a recreational or commercial practice that serves as a meaningful and essential connection to the places we call home, providing a timeworn link to the cycles and seasons. As anglers, we are truly blessed to live in this rich region and to enjoy the opportunity to pursue wild salmon

and steelhead in our local watersheds. But a century and a half of declining salmon and steelhead, and expanding human populations in our region have brought us to a crossroads.

Throughout the region, restrictive measures now limit opportunities, even for anglers to catch and release wild steelhead in many places. And despite depressed wild fish populations, sport fishing for steelhead is as popular as ever. With fewer watersheds open throughout the spring season, intense pressure and crowding

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*Angling for wild  
steelhead and salmon  
demands a unique set  
of ethical principles  
that ensures  
conservation of the  
resource.*

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have increased dramatically on the last few rivers with relatively healthy wild steelhead runs. One day in the winter of 2010, a friend and I counted 70 boats launched on the Sol Duc on Washington's Olympic Peninsula. This type of crowding is now routine and there is growing recognition among anglers and managers that the situation is not sustainable.

In this way, steelhead and other wild salmon are not unlike many of the precious and finite natural resources on our planet. We've come to a point in our history that demands a shift in the fundamental principles that guide our use of resources, and it is time that we adopted sport fishing regulations that strike a more healthy balance between fishing opportunity, conservation and

the need to maintain a quality fishery that respects the value of wild steelhead and salmon. That means ending the archaic practice of harvesting wild steelhead, gear and method restrictions that limit the effectiveness of anglers in catching fish, and regulations which limit fishing from boats. A boats for transportation only regulation would give fish crucial refuge from the onslaught of anglers, creating a fishery which better balances the WDFW's mandate to provide fishing opportunity, with the need to reduce sport fishing impacts on wild steelhead. These types of regulations have been successfully implemented in many of Oregon's most popular fisheries, including the Deschutes, North Umpqua and Winchuck rivers.

It is also critical that we as anglers accept personal responsibility for our impact on wild fish. Each of us is inspired to fish for our own set of reasons, but for far too long magazines, guides, websites, promotional videos and an egregiously commercialized promotional ethic has glorified anglers with a thoughtless, competitive, fish hogging approach to steelheading. Facing an uncertain future, this mentality is simply unacceptable, and as an angling community we must enforce our own ethical standards of respect for the resource, restraint, and the recognition that every single wild steelhead we are fortunate enough to encounter is a blessing that should not be taken for granted.

As fly fishers we pioneered catch and release, a practice which is now widely accepted among all types of anglers. But simply releasing our catch is not enough. Angling for wild steelhead and salmon demands a unique set of ethical principles that ensures both the conservation of the resource and a high quality experience for anglers. Ethical standards born of the trout filled rivers of Montana will not cut it. Some fisher-



## North Umpqua River Continued from page 1

tions, but removal was taken off the table during closed-door negotiations between PacifiCorp and state/federal agencies (see Jeff Dose's articles in Jan 2001 and Jan 2002 issues of *The Osprey*). The dam's highest value is not power generation but as a re-regulating facility, allowing water levels in reservoirs and the upper river to be fluctuated to meet peak power demands.

While the potential to achieve something truly remarkable for anadromous fish was lost, the final agreement did include some measures designed to lessen the project's impacts and to fund mitigation measures for the continuing impacts to fish and wildlife. For steelhead, the most important are:

- 1) Operational changes and other mitigation measures by PacifiCorp, including fish habitat improvement and construction of fish passage at Soda Springs Dam, providing access to the upper river and to Fish Creek; and
- 2) The establishment of mitigation funds administered by ODFW and Umpqua National Forest.

The major construction projects that have affected summertime water quality the last few years are nearly complete. The new fish ladder and screen at Soda Springs Dam are scheduled for completion by November 2012; most remaining work is above water level and should produce fewer water quality impacts. Access will be provided to approximately three miles of spawning habitat in Fish Creek and 1.5 miles in the North Umpqua above the reservoir. Preliminary modeling suggests an increase of several hundred adult spring Chinook and steelhead from the newly available habitat, with potentially a large increase in lampreys and a smaller potential increase for coho. Concern about predation by brown trout in Soda Springs reservoir remains; predation will be monitored by PacifiCorp and a predator reduction program will be implemented if necessary.

A new tailrace barrier to be operational this year was built in 2011 at Slide Creek powerhouse, 1.5 miles upstream of Soda Springs Dam, to pro-

tect adult salmon and steelhead from injury at the powerhouse.

PacifiCorp continues with its gravel augmentation program to increase spawning habitat both above and below Soda Springs Dam. Rich Grost, PacifiCorp's Aquatic Scientist for the North Umpqua, said that gravel deposition from Soda down to Boulder Creek exceeded estimates by their consultants, and ongoing monitoring had observed the gravel being utilized by coho, spring Chinook and steelhead.

More disappointing on this front is the failure of the Umpqua National Forest (UNF) to utilize their share of the mitigation funds (MF) for maximum benefit for the impacted resources. UNF lands include the premier spawning and rearing habitat in the North Umpqua watershed, but to date the potential from these funds is simply not being realized.

Under the Settlement Agreement, UNF receives nearly \$500,000/year for the 35-year life of the current permit to spend on federal lands "...for the purpose of offsetting adverse impacts to aquatic, terrestrial, and other natural resources caused by the Project..."

The Settlement Agreement's Explanatory Statement goes on to identify four purposes for the MF which include:

*Increasing wild anadromous fish populations and their habitat within the North Umpqua River basin, and; Promoting the objectives of the Northwest Forest Plan's Aquatic Conservation Strategy.*

The funding process remains primarily ad-hoc. Projects are nominated during the annual budget process, and evaluated based on four criteria encapsulated below:

*Is the proposed project aimed at mitigating or compensating adverse effects from the hydropower project and identified in a policy or planning document?*

*Is there a confirmed external partnership with other organizations or agencies?*

*For anadromous projects, is it in the mainstem North Umpqua or recognized spawning tributaries in or above Steamboat Creek? For non-anadromous projects is it in close proximity to*

*the hydropower project?*

*Is the proposed project a planned phase of a previously funded project?*

In 2009, Steamboaters convened conservation groups including the North Umpqua Foundation, Umpqua Watersheds, Trout Unlimited, and Native Fish Society to organize joint efforts towards two goals: preparation for ODFW's coastal planning process, and influencing how UNF spent the mitigation funds, and hopefully to encourage coordination between state and federal managers in these two efforts.

The groups met with UNF staff in July 2010 and presented three requests:

Development of a long-range plan for monitoring and improvement of spawning and rearing habitat, consistent with the UNF Land and Resource Management Plan, the North Umpqua River Wild & Scenic Management Plan, and the 2001 Aquatic Restoration Business Plan;

Addition of a selection criterion based on net benefit to the impacted resource;

Use of the MF as a match source for securing grants, potentially doubling the available funds.

Follow-up meetings have been tentatively scheduled and cancelled since 2010. The most recent list of funded projects, totaling \$744,000, included some very beneficial projects for steelhead including the new fish ladder at Steamboat Falls (\$42K), road decommissioning in Horse Heaven Creek (\$52K) and a macroinvertebrate study in Steamboat, Calif, and Copeland creeks (\$13K).

However it also included timber stand improvement (\$53K), false brome removal (\$28K), and fuels reduction (\$79K). The largest budgeted item is monitoring the water quality impacts and netting of tui chub in Lemolo Reservoir (\$131K). The link between these projects and hydropower impacts is questionable at best.

UNF is now in the process of developing a 5-year plan for mitigation fund expenditures with a draft available for public review scheduled for August 2012.

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### **ODFW's Coastal Native Fish Conservation Plan**

Oregon's Native Fish Conservation Policy, adopted in 2002, has a stated purpose "...to ensure the conservation and recovery of native fish in Oregon. The policy focuses on naturally produced native fish" because they are "...the primary basis for ESA delisting decisions and the foundation for long-term sustainability of native species and hatchery programs." (OAR 635-007-0502)

The three areas of emphasis identified in the policy are:

*Avoid "serious depletion" of native fish;*

*Restore and maintain native fish at levels providing ecological and societal benefits;*

*Opportunities for fisheries and other societal resource uses are not unnecessarily constrained.*

The policy is implemented through plans at the Species Management Unit (SMU) level; for coastal species the SMUs include all coastal rivers from the Sixes River north. In brief, these plans include descriptions of the existing and desired condition of populations, factors limiting the attainment of the desired condition, management strategies to address the limiting factors, and monitoring programs to assess the effectiveness of those strategies.

There are many very good elements in the North Umpqua's current steelhead management:

Wild steelhead, summers and winters, can't be harvested in the North Umpqua (the winter regulation adopted over staff opposition);

The healthy winter run averages over 8,000 fish, includes 25 pound-plus fish, and is completely wild now (planting hatchery or hatchbox fry in some tributaries was abandoned years ago, and the South Umpqua hatchery smolts are acclimated at their release sites for several weeks resulting in a very small stray rate); Hatchery summer steelhead smolts are no longer planted near the mouth of Steamboat Creek;

The hatchery coho program on the

North Umpqua ended in 2003;

ODFW partners with the North Umpqua Foundation to run the Fishwatch program, with Lee Spencer camping at the Bend Pool on Steamboat Creek all summer to protect the summer steelhead resting in the cold water there.

While some of these policies have been enacted over staff objections, others have been initiated by the staff, and the North Umpqua remains one of the healthiest wild steelhead rivers on the Oregon coast.

So given the current good conditions and the apparent strong language of

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## *The failure of the Forest Service to utilize its share of mitigation funds for maximum benefit of the resource is disappointing.*

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the NFCP, why are wild fish advocates concerned about what the Coastal Plan has in store? Because first and foremost, ODFW has acted over the years as a consumption management agency, and their statutory authority and administrative rules appear to support this position. Their fish management policies and practices are oriented towards hatcheries and harvest; even wild fish protection is couched in terms of utilization. Their statutory charge is to "prevent serious depletion of any indigenous species and to provide the optimum recreation and aesthetic benefits for present and future generations..." (ORS 496.012) by implementing seven co-equal goals, which include:

- (1) To maintain all species of wildlife at optimum levels.
- (2) To develop and manage the lands and waters of this state in a manner that will enhance the production and public enjoyment of wildlife.
- (3) To permit an orderly and equitable utilization of available wildlife.
- (4) To develop and maintain public access to the lands and waters of the

state and the wildlife resources thereon.

(5) To regulate wildlife populations and the public enjoyment of wildlife in a manner that is compatible with primary uses of the lands and waters of the state.

(6) To provide optimum recreational benefits.

(7) To make decisions that affect wildlife resources of the state for the benefit of the wildlife resources and to make decisions that allow for the best social, economic and recreational utilization of wildlife resources by all user groups.

Note that "Serious depletion" is defined as being depleted to the point of eligibility for state or federal ESA listing; "optimum" fish populations are those meeting targets in an adopted plan. And promoting recovery of fish resources in a manner "...compatible with primary uses of the lands and waters of the state" is a tricky undertaking at best. However, the Attorney General's office in 2002 opined that the Oregon Fish and Wildlife Commission has authority to adopt rules that would establish the conservation of naturally-produced native fish species as the Department's "overriding obligation," "top priority," or "principal obligation" for fish management, and went on to state "The Commission has broad authority to interpret its statutes and harmonize potentially conflicting statutory mandates." There is no statutory prohibition against a management plan that prioritizes wild fish recovery, or affords maximum protection for existing healthy stocks.

The second concern is that the single Coastal Plan will address six Species Management Units (SMUs) for spring and fall Chinook, summer and winter steelhead, chum salmon and sea-run cutthroats — in all coastal rivers north of the Elk River. ODFW is preparing a draft assessment of current conditions and management alternatives for public review in a planned six-month process. It could be difficult to go into great depth on issues specific to a single river or species in a short process.

In addition, as part of the regulations process and development of the Coastal Plan, ODFW has commissioned a public opinion poll to determine pub-

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lic attitudes towards use of hatcheries and the harvest issues in the Umpqua system and other coastal rivers. Public opinion appears divided, but many anglers have grown up expecting to harvest hatchery fish, and many of them have complained to ODFW about current regulations prohibiting the killing of wild steelhead. (There's a bumper sticker on a window at the Dry Creek store with ODFW's logo and the phrase "We Hatch'em, You Catch'em"). The healthy runs of wild steelhead in the Umpqua basin are seen not as rare, precious resources to be protected, but rather as an opportunity for harvest. The concept of promoting the opportunity to fish a world-class river for trophy steelhead simply for the experience of catching them (or hooking them) doesn't seem to have much traction in the Department, but it's a huge draw in comparable steelhead rivers — this is truly a unique resource in every sense of the word.

In 2008, The Steamboaters retained Dr. Eric Knudsen to assist in the review of ODFW's Biological Assessment of Umpqua Basin winter steelhead, which supported harvest of wild fish. His work was instrumental in adoption of a ban on wild steelhead harvest that year (along with concerns expressed at the commission hearing by many of the guides on the North Umpqua and mainstem Umpqua). Dr. Knudsen also prepared an analysis of current conditions and management tools for meetings between a conservation group coalition and Roseburg/Salem ODFW staff to discuss our concerns and the unique conditions and opportunities present in the Umpqua River basin.

### Our Concerns

The Umpqua watershed includes the only Cascade rivers in this plan, with different temperature, precipitation and flow regimes and potentially greater impact from climate change than other coastal rivers.

The Umpqua has healthy runs of unusually large winter steelhead, which increases angling pressure, and public interest, as other populations decline.

The data supporting the 2004 Biological Assessment (BA) is insuffi-

cient to describe Umpqua basin winter steelhead with any confidence. Steelhead populations in the North, South, and mainstem segments were estimated from a three-year radio telemetry study and Peterson Mark-Recapture study, with fish tagged at Sawyer's Rapids and tracked to spawning areas (telemetry) or counted at Winchester Dam (marked); numbers were then extrapolated from Winchester Dam counts based on the percentages of tagged fish. This yielded estimates of total run size of approximately 36,000, with 54% mainstem, 24% North Umpqua, and 22% South Umpqua. However the confidence level in these figures isn't high (acknowledged in the BA). Intuitively, the numbers of mainstem fish is suspect — the mainstem itself is too warm and too full of smallmouth bass to provide rearing habitat for this number of fish, and mainstem tributaries that can support twice as many fish as the entire North Umpqua watershed haven't been identified.

ODFW seems satisfied with current conditions and management of North Umpqua steelhead. We want to ensure that limiting factors preventing the watershed from reaching its full potential are adequately addressed. These include lack of rearing habitat (numerous studies show most juvenile steelhead rear in the main North Umpqua); loss of marine-derived nutrients (spring Chinook numbers don't approach historical levels, and lamprey numbers have plummeted from over 40,000/year to under 1,000); and predation by smallmouth bass.

The tools used to estimate steelhead productivity, abundance and distribution aren't the best available.

ODFW has limited funds for monitoring, and most monitoring efforts by ODFW occur below Winchester Dam. Most monitoring funds coast-wide can be expected to go to more at-risk populations.

### The Opportunity

The upper North and South Umpqua watersheds are national forest lands, with habitat protected by the Northwest Forest Plan. Unlike many coast range watersheds with a mix of BLM and private timberland, improvements made in these headwaters can

provide sustainable increases in fish production approaching historical levels. The North Umpqua, with its history and reputation, and the availability of hydropower mitigation money, is a unique situation with unique potential for improvement and partnership with Umpqua National Forest and conservation groups.

### The Responses

The Umpqua basin will have its own "stratum" within the plan and its own public process; members of the public with seats at the table will be determined at a later date.

ODFW stands behind the numbers in the winter steelhead Biological Assessment and its methodologies and management tools. However there are a range of tools available and they will use the most appropriate for each watershed.

More and better data would certainly allow for more targeted, detailed management, but gathering that data is costly. Surveys are being carried out on mainstem tributaries but it's a slow process. Smallmouth bass studies are being undertaken this spring although weather hasn't been favorable thus far. Remember that the aim for the Native Fish Conservation Policy is for long-term viability of the Species Management Unit. Not every wild population will be, or can be, recovered to robust status. Different options for wild fish, hatchery fish, and harvest will be determined for different watersheds as appropriate.

The public participation/review phase of the Coastal Plan is scheduled to begin in late May and run through November, according to Tom Stahl at ODFW headquarters in Salem. Dr. Knudsen will again be assisting in reviewing technical and scientific issues. Once the process starts, periodic updates will be posted on Steamboaters' website, [www.steamboaters.org](http://www.steamboaters.org)

Anyone interested in helping with the expenses for Dr. Knudsen's work or otherwise supporting the effort to protect the North Umpqua River and her steelhead can send donations, or for \$25 join The Steamboaters, PO Box 41266, Eugene, OR 97404.





# Sol Duc Steelhead and the Challenge of Washington's 'State Fish'

By James B. Scott, Jr., Michael L. Gross, Ron R. Warren and Heather R. Bartlett

— Washington Department of Fish and Wildlife —

*Authors James B. Scott, Jr., Michael L. Gross, Ron R. Warren and Heather R. Bartlett are, respectively, Assistant Director, Fish Program; Region 6 Biologist; Region 6 Fish Program Manager; and Hatcheries Division Manager with the Washington Department of Fish and Wildlife. The agency's website is: [www.wdfw.wa.gov](http://www.wdfw.wa.gov)*

**F**rom cold mountain streams to the Pacific Ocean, the waters that shape the landscape of the Pacific Northwest also define the lifecycle of native steelhead (*Oncorhynchus mykiss*). Fast and sleek, steelhead cover thousands of miles from the time they leave their natal streams for the open ocean, then return again — to spawn. Known for their explosive power and their preference for fast-flowing rivers, these fish have long held a special place in the lore of Northwest anglers. A place so special in our northwest cultural heritage that steelhead have been officially designated as Washington's "state fish." That natural heritage is now in peril in much of the state — five of the seven Distinct Population Segments (DPS) are listed under the federal Endangered Species Act (ESA). How effective we are, all of us, in protecting and restoring steelhead populations and the habitat they rely on will help shape the steelhead landscape for future generations.

## Our Challenge

The challenge — to protect and restore wild steelhead — conveyed in the opening words of the steelhead science paper (Scott and Gill 2008; <http://wdfw.wa.gov/publications/pub.php?id=00150>) is now driving substantial changes in the management of steelhead in Washington State. One example is the creation of a wild stock

gene bank (WSGB) for the Sol Duc River. The initial proposal by the Washington Department of Fish and Wildlife (Department) generated considerable public discussion through the course of three public meetings and the submission of over 400 written comments. Why would the Department propose and ultimately implement such a controversial action?

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## Protecting wild steelhead is now driving changes in Washington steelhead management.

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### Statewide Steelhead Management Plan

Steelhead were once abundant throughout much of Washington State, but by 2006 five of the seven Distinct Population Segments (DPSs) within the state were listed or proposed for listing under the federal Endangered Species Act.

To restore and preserve Washington's official "state fish", the Department initiated a multi-step process to improve the management and status of steelhead in Washington. Drawing on decades of research and new analyses, a comprehensive science review of Washington State's steelhead populations and programs provided findings and recommendations to guide improvements in management. Building on this science foundation, the Department convened in July 2006 a Steelhead Ad Hoc Stakeholder Group to guide the development of a Statewide Steelhead Management Plan (SSMP).

Key topics of discussion with the

advisory group were the artificial production programs operated by the Department. Two highly domesticated stocks, Chambers Creek Winter and Skamania River Summer steelhead, were widely used in hatchery programs throughout western Washington. In 2006, juvenile steelhead from these hatchery stocks were often released in locations where returning adults could not be trapped and removed from the river. The returning hatchery adults often spawned in the river, sometimes with wild steelhead, potentially reducing the productivity of naturally produced steelhead in subsequent generations. In reviewing the programs, the steelhead science paper concluded that the "Chambers Creek Winter and Skamania River Summer steelhead programs pose a high potential genetic risk" (Scott and Gill 2008).

Wild Steelhead Management Zones were first proposed in 2002 by the Hatchery Scientific Review Group (HSRG) as a strategy to reduce the risks posed by steelhead artificial production programs. The HSRG recommended that the managers develop a "system of "wild steelhead management zones" where entire sub-regions or portions of watersheds for large rivers (e.g., Skagit River) are not planted with hatchery-origin fish but are managed for wild steelhead only" (HSRG 2004; [http://www.lltk.org/hrp-archive/HRP\\_Publications.html](http://www.lltk.org/hrp-archive/HRP_Publications.html)).

Building on the steelhead science paper and the recommendations of the HSRG, the Department worked with the advisory group to explore strategies to reduce the risks of artificial production programs to wild steelhead. Two broad strategies emerged and were incorporated in the draft SSMP released in August of 2007. One strategy placed limits on genetic mixing between hatchery and wild steelhead on the spawning grounds.

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However, uncertainty remained about the effectiveness of the limits and our ability to monitor gene flow. To address this uncertainty, the plan also proposed a network of WSGBs as a fail-safe strategy for protecting wild steelhead. Public comments received on the proposal through the ensuing State Environmental Protection Act (SEPA) process were generally positive (WDFW 2007; <http://wdfw.wa.gov/conservation/fisheries/steelhead/sepa.html>).

The final Statewide Steelhead Management Plan (WDFW 2008; <http://wdfw.wa.gov/conservation/fisheries/steelhead/sepa.html>) provided strong, science-based guidance for fundamental changes in the management of steelhead in Washington State. The plan, adopted by the Fish and Wildlife Commission in 2008:

- Begins with a clear statement that protection and restoration of wild steelhead stocks is the state's highest priority in all aspects of steelhead management.
- Focuses on protecting wild steelhead through habitat-restoration programs and state fish-passage laws.
- Promotes the use of fishing methods and regulations that focus harvest on hatchery-origin steelhead and provides for the conservation of wild steelhead.
- Identifies limits on genetic mixing between hatchery steelhead and wild fish for different types of hatchery operations.
- Directs the Department to establish a network of WSGBs where wild steelhead are largely protected from interaction with hatchery fish.

With policy guidance in place, our next step was to identify potential candidates for the network of WSGBs.

#### A North Coast Wild Stock Gene Bank?

The north coast of Washington State is steelhead country, a place of rugged glacier-capped peaks, moss-laden trees, and powerful coastal rivers. Rivers like the Sol Duc, Bogachiel, Hoh, Queets, and Quinault hold a special place in the mind of anyone who

has ever watched a chrome-bright steelhead leaping cascading falls.

Steelhead populations on the north coast of Washington fall within the Olympic Peninsula DPS. The DPS includes tributaries to the western strait of Juan de Fuca and the Olympic Peninsula from west of the Elwha River, around Cape Flattery, and south to include all streams that drain into the Pacific Ocean north of Grays Harbor. The DPS includes more than 2,000 miles of historical steelhead habitat and 31 populations of steelhead (Scott and Gill 2008). What were the best potential candidates for a WSGB?

The Department used multiple criteria to screen potential candidates for a wild stock gene bank driven by the policy guidance of the SSMP. These criteria included:

- 1) "Sufficiently abundant and productive to be self-sustaining in the future." This requirement suggested that we should look to watersheds that had a sufficient quantity and quality of habitat to support naturally reproducing steelhead through an extended time, over a broad range of environmental conditions. Smaller populations of steelhead, for example Mosquito Creek, were probably not the prime candidates for a coastal WSGB.
- 2) "Wild stocks largely protected from the effects of hatchery programs." The intent of the SSMP suggested we should initially focus on watersheds that had no or few releases of hatchery-origin steelhead, or where the effects of the hatchery releases on the wild population had been limited. Populations such as the Pysht (estimated 26.5 percent gene flow rate from the Chambers Creek type hatchery stock (Scott and Gill 2008)) or the Bogachiel (annual release of over 200,000 Chambers Creek type hatchery smolts) were probably not the preferred candidates.

Our review of potential candidates for a north coastal wild stock gene bank (WSGB) led us to two prime candidates: the Clearwater and the Sol Duc. The watersheds for each population were large with diverse habitat, both populations were abundant and self-sustaining, and hatchery programs were limited (Sol Duc) or absent (Clearwater).

The Department also knew from our

previous work with the SSMP advisory group that there was keen interest in establishing a WSGB in the Sol Duc, but that there were also substantial concerns among some stakeholders on how it would affect fishing opportunities.

The Department had entered into a 25-year cooperative agreement with the Olympic Peninsula Guides Association (OPGA) in 1986. The OPGA program at Snider Creek Hatchery was:

"to provide a maximum of 100,000 winter steelhead smolts of wild Soleduck River stock annually for release into the Soleduck River. These fish shall be reared to release size (larger than 10 fish/pound) on OPGA managed facilities and are to be used to produce additional harvestable adult steelhead for commercial and sport fishermen on the Quillayute River system. Returning adults from this project will be considered hatchery fish for the purposes of hatchery management."

The fishing opportunities provided through broodstock collection (conducted by the OPGA) and on the returning adults from the Snider Creek program were extremely popular. Our analysis indicated that the Snider Creek program had contributed more than 400 fish to the tribal and recreational fisheries in the 2009-2010 season.

With the OPGA agreement set to expire in 2011, the time was ripe in the fall of 2010 for a public discussion of potential locations for a WSGB on the north coast.

#### What Does the Public Think?

The Department anticipated that there could be widely divergent viewpoints regarding the creation of a WSGB on the north coast. Our interest and intent in initiating a public discussion was to ensure that relevant information was easily accessible, that interested stakeholders had multiple opportunities to discuss the proposal and provide comments, and that we promoted a respectful, solution-oriented discussion.

The public process and discussions that occurred evolved as the

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Department learned more about the interests and concerns of stakeholders. Our steps to promote a transparent, informed, and productive public discussion included the following:

- Distributed Snider Creek Hatchery data (November 2010) and analysis (March 2011).
- Briefed and solicited input from the Steelhead and Cutthroat Policy Advisory Group.
- Held public meeting in Forks (November 2010, June 2011) and Mill Creek (June 2011).
- Met with the Olympic Peninsula Guides Association (November 2010, February 2011) and Trout Unlimited (December 2010).

By the summer of 2011, the Department had received more than 400 comments from respondents in three nations and 36 states. The respondents provided a wide variety of comments, but in short:

- 375 respondents favored a WSGB on the Sol Duc River
- 13 respondents favored a WSGB on the Clearwater River
- 391 respondents favored discontinuing the Snider Creek Hatchery program
- 26 respondents favored maintaining the Snider Creek Hatchery program

The Department did not rely simply on “bean-counting” as we considered the options for establishing a WSGB on the north coast. Rather, we attempted to use the discussions in the public meetings and the responses to help us shape an alternative that implemented the SSMP and effectively addressed stakeholder concerns. We concluded that the Snider Creek Hatchery program was providing substantial fishery and economic benefits, but there was broad support for establishing a WSGB in the Sol Duc River rather than in the Clearwater River.

In February 2012 the Department announced that it would end the Snider Creek Hatchery program (last 25,000 smolts released in 2013) and establish a WSGB on the Sol Duc River. Such a designation means the Sol Duc will be managed to maintain and encourage natural genetic diversity, widespread distribution of rearing juveniles and spawning adults, and healthy levels of

productivity and abundance. Fisheries are also appropriate where management objectives are being met.

The value of the Snider Creek Hatchery production to the guides and anglers of the North Coast, and to the community of Forks, encouraged the Department to consider options that might minimize the impacts of ending the Snider Creek program while still improving the management of wild steelhead. The Bogachiel and Calawah rivers both receive plants of early timed hatchery winter steelhead, and the Calawah also receives a plant of summer steelhead. Moving the Snider Creek program (capped at 50,000 smolts) to one of these rivers would consolidate the hatchery plants in the system to these rivers. Locating an appropriate site and developing new facilities will offer opportunities to minimize straying from the program, and structuring the program to use about 30 wild steelhead annually for broodstock (from the river where the program is located) will minimize the genetic impact of those that do stray to the wild. Discussions are continuing regarding the details of the relocation of the program.

Addressing the Steelhead Challenge Establishing a WSGB on the Sol Duc River was an important step, but our broader challenge — to ensure that our children’s children can witness the beauty and power of the Washington State fish — remains before us.

To promote citizen stewardship of steelhead, the Department has established a “Steelhead — Washington’s State Fish” webpage. The page identifies action steps that you can take, including:

- 1) Contact the Enforcement Program (360-902-2936) to learn about a citizen “Stream Watch” program that puts volunteer observers on our rivers to increase the awareness of and compliance with fishery regulations.
- 2) Advocate for effective habitat protection in local land use processes and planning forums. Help restore habitat by participating in Regional Fishery Enhancement groups, Lead Entities, and other organizations.
- 3) Submit and review proposed changes in fishing regulations to protect juvenile steelhead and returning

## Giving Back to the River

The Commission's decision to establish a wild gene bank in the Sol Duc River held very personal significance for me. My first fishing experiences were on the Sol Duc River learning how to read the river — to see those places that might hold a fish. In those days, I had no idea that there were easier fish to catch and that starting with steelhead was like skipping little league and going right to the World Series. I thought that all fishing meant casting for days without a bite, learning patience, humility, and just soaking in a place — that place — for a time. No matter that for hours I did not get a bite. The time on the Sol Duc readjusted my senses. It restored and rejuvenated me. Eventually I caught my first steelhead and it was a magnificent bright wild buck.

Like many women, I came to fishing later in life than most. I grew up in Chicago about as far from wild steelhead rivers as one can be. The river I learned to fish in still flows through rainforest landscapes that are in good condition. In addition to habitat protection, science tells us that we should protect the genetic heritage of wild fish runs. It may sound cliché, but by making the choice to give special status to the Sol Duc River, by protecting its steelhead from hatchery influence, I felt that I was giving something back to the river that gave me so much.

Miranda Wecker  
Chair, Washington Fish and  
Wildlife Commission

adults ([http://wdfw.wa.gov/fishing/regulations/rule\\_proposals/](http://wdfw.wa.gov/fishing/regulations/rule_proposals/)).

- 4) Comment on proposed changes to hatchery programs as the Department provides new Hatchery Genetic Management Plans for public review.

We can successfully address the steelhead challenge with your help and the support of communities throughout Washington.



# Recovering Ventura River Steelhead

By Paul Jenkin

— Surfrider Foundation —

*Paul Jenkin is Ventura Campaign Coordinator for the Surfrider Foundation, a non-profit organization focused on the protection and enjoyment of the world's oceans, waves and beaches. For more information visit their website at [www.surfrider.org](http://www.surfrider.org).*

These days most people don't associate Southern California with wild trout. Indeed, throughout much of the region the historically rich rivers, floodplains, and estuaries have been replaced with strip malls, housing tracts, and hundreds of miles of famously congested freeways. But for those in the know, small populations of native fish may still be found in the cool mountain streams on the fringes of this concrete jungle. And in many of these watersheds, local stewards are working to protect and restore the once bountiful runs of steelhead.

In many ways, the Ventura River is ground zero for recovery of the endangered southern steelhead. Just 60 miles north of Los Angeles, this small 220 square-mile basin once supported 4,000-5,000 returning steelhead, a run that attracted fishermen from throughout the region. Back in the 'good old days' the local community in Ventura was well attuned to this bounty, and all the hotels were filled during a good steelhead season. Although today the region suffers from many of the ills of the metropolis to the south, these smaller communities have fought hard to protect open space and a unique quality of life. But although suburban development has largely been limited to existing urban boundaries, dams, flood control, water extraction, and runoff are constant threats to the native riparian habitat.

## Dam Removal

As with all river systems, dams have the most direct impact on native fish-

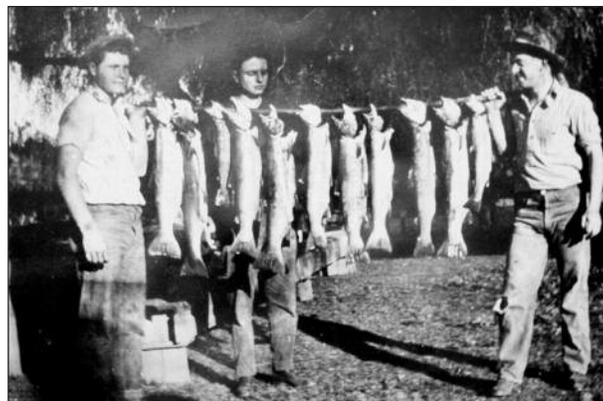
eries. The turning point for the Ventura River was dam construction, which resulted in the rapid decline of anadromous steelhead runs. And we are finding today that undoing past mistakes is more difficult than one might imagine.

There are two large dams on the Ventura River that together block access to the majority of headwater streams. These headwaters are critical, as that is where cool perennial streams flow through relatively pristine public lands. Matilija Dam was constructed in 1948 on Matilija Creek in the Los Padres National Forest, 16 miles from the Pacific Ocean. Then, almost a decade later, Casitas Dam was built in 1956 creating a large reservoir on Coyote Creek, a major tributary to the Ventura River.

While Casitas reservoir still functions as an important water supply, Matilija Dam has long outlived its useful purpose. In 1965, less than two decades after its construction, structural concerns prompted lowering the crest of Matilija Dam from 200 feet to 165 feet. The decreased capacity, combined with the high sediment yield from the steep coastal mountains, has now almost completely filled the remaining reservoir with over six million cubic yards of sand, gravel, cobble, and silt.

Planning for the removal of the obsolete structure has now been underway for almost 15 years. Interestingly, initial support for the ambitious effort did not begin with fisheries in mind, but rather due to a growing need to restore local beaches. Faced with a regional beach erosion problem, local policy makers were considering expensive beach replenishment and other artificial means to widen the beaches. When the Surfrider

Foundation, an organization focused on protecting coastal resources, presented the case that Matilija Dam was trapping sediment destined for the beaches, local governments resolved to investigate the feasibility of dam removal.



The Ventura River system once produced strong steelhead runs. Photo courtesy Surfrider Foundation

The initial planning for the removal of Matilija Dam started out rapidly. An appraisal investigation by the Bureau of Reclamation was completed in 1999, followed by a visit from the Secretary of the Interior, Bruce Babbitt in 2000. Matilija was the largest dam on Babbitt's nationwide 'dam busting' tour, where he had to forgo his ceremonial sledgehammer for a crane that was used to remove a 20-ton concrete block in a demonstration of the outgoing administration's support for dam removal.

With early cost estimates for dam removal ranged from \$20 million up to \$200 million, the US Army Corps of Engineers was selected as lead agency for the next planning phase. This was based largely upon the perception that they were the only agency capable of delivering the federal dollars necessary to undertake a project of this magnitude. With support from a unique multi-agency process, the Corps completed a feasibility study in 2004. The feasibility plan called for a

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complex sediment management scheme and a host of downstream improvements to flood control and water infrastructure. In 2007, Congress approved the \$144.5 million project through the Water Resources and Development Act (WRDA 2007.)

The complexity of the project was largely driven by water supply concerns. Any sediment released with the removal of the dam could potentially impact the Casitas Municipal Water District (CMWD) surface water diversion downstream. The Robles diversion dam diverts up to 500 cubic feet per second (cfs) from the main stem of the Ventura River into Casitas Reservoir whenever adequate flows are present. With the ever-present threat of drought, CMWD is sensitive to any lost diversion opportunity. Therefore, plans for the removal of Matilija Dam included dredging the fine silt accumulated in the reservoir and transporting it downstream of the Robles diversion using a slurry pipeline. This large volume of material, amounting to two million cubic yards or about a third of the total sediment accumulation, was to be stored within the floodplain so that future floods could carry it out to the Pacific Ocean. Ultimately, it was the cost of this slurry scheme, along with disputes over where and how to place this huge mass of silt, which stalled the project.

Now, in 2012, a Technical Advisory Committee has been appointed to develop a scope of work for additional studies to examine the feasibility of alternative approaches to sediment management to reduce the overall project cost. This may include incremental notching of the dam to allow natural transport, as well as modification of the Corps' plan so as to provide for fine sediment to be incorporated in upstream sediment management. Of course, any analysis will have to include quantification and mitigation of potential downstream impacts. And all of this has to take into account the highly unpredictable flood-and-drought climate of southern California, where any year could bring record floods, or mark the beginning of a long-term drought!

With the recent large dam removals in the Pacific Northwest, there is hope

for the eventual removal of Matilija Dam. But the difference in climate and politics combined with the current fiscal crisis creates an uncertain future. It is clear that this would be the single most effective action for the restoration of the Ventura River steelhead population, but there are also other issues that could make or break the overall recovery of the river.

### **Water for Fish?**

The Ventura River is setting precedence for more than its dams. The fight over water for fish has been brewing for years, and the battle is steadily making its way ever higher through the courts. At issue is whether the federal government can require adequate instream flows for fish migration, and the case has been elevated to the higher courts in an era where, unfortunately, short-term human interests usually prevail.

Since 1956, slightly less than half the water storage in the Lake Casitas reservoir has been diverted from the main stem of the Ventura River through the Robles diversion dam and a 5-mile long canal. This diversion has not only blocked upstream migration of adult fish, but also diverted outmigrating steelhead smolts into Lake Casitas. In 1999, CalTrout sued Casitas Water District to provide for fish passage at Robles.

As a result, a complex fish passage facility was completed in December of 2004. The facility included a fish ladder and diversion screen. Migrating fish can now swim upstream as far as [Matilija Dam](#) and the [Ojai Quarry](#), and all downstream migrants are directed back into the river. The region has since experienced several wet years, and a camera installed in the fish ladder has documented several adult ocean-run steelhead.

The operations of this fish passage are the subject of a potentially precedent-setting case against the federal government (*Casitas Municipal Water District v. United States.*) At issue is the NOAA Fisheries 'Biological Opinion' on the operations of the fish ladder. This regulatory action (much more than just an opinion, as the title suggests) requires adequate releases of water to allow fish migration through the mainstem Ventura River

downstream of the diversion. Historically, CMWD was only required to release 50 cfs downstream, while diversions could be as high as 500 cfs. The new NOAA requirement calls for additional water to be released following storms, to ensure that downstream flows are adequate for steelhead migration and more closely mimic the natural hydrograph to prevent stranding. The water district, however, contends that this water belonged to them, and is suing for 'taking' of property worth up to \$60 million, the retail value of the potential water not diverted into the reservoir in the future. The case has been appealed to higher courts, the most recent ruling that the case is not 'ripe' because CMWD has not yet suffered financial loss for released water. However, if the water district ultimately prevails, this case could set a precedent that the federal government would be required to compensate property owners for any enforcement under the Endangered Species Act.

### **How Many Fish are There?**

Until the past decade, any estimates of steelhead populations on the Ventura River system, and indeed anywhere in Southern California, have been little more than a guess. But with the potential for dam removal, and an increased focus on the now-endangered Southern steelhead, resources became available for field studies.

Initial studies were conducted in 2002 as part of the Matilija Dam Ecosystem Restoration project. There was a need to assess the habitat potential above the dam for the federal feasibility study to evaluate baseline conditions for steelhead habitat and predict the benefits from opening up over 16 miles of good-to-excellent perennial creeks to anadromous steelhead trout. These studies are a critical part of the Ecosystem Restoration project, since a dam of this scale has not yet been removed in the 'drought and flood' climate of southern California.

This initial work was expanded to include population estimates in the Ventura River and Matilija Creek basin. Fish counts were conducted through snorkel surveys of pools in the lower, middle, and upper reaches of the main stem Ventura River, as well

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as the main stem Matilija Creek. With funding from the California Department of Fish and Game (DFG) Fisheries Restoration Grant Program through the NOAA Pacific Coastal Salmon Recovery Fund, these studies were expanded to include more comprehensive surveys in 2006-2007, and have been continued on an annual basis. These annual surveys have begun to reveal the dynamic nature of this fish population, which is constantly adapting to the extreme variability in rainfall from year to year. The Matilija Coalition has served as the local sponsor for this program since 2009, and has secured additional local support from Patagonia and local fly-fishing groups. All of these studies are on the [Matilija Coalition website](#).

In addition to the population studies, NOAA Fisheries has been conducting bimonthly spawning surveys for the past three migration seasons. Although this data has not yet been published, it represents a huge step forward in documenting spawning activity of both anadromous and resident trout. Furthermore, it has allowed NOAA biologists to become intimately familiar with the system, which will add value and credibility to future regulatory and policy actions.

### Watershed Restoration

Increased attention and funding have been directed at restoration within the watershed. This is largely due to the 1997 listing of the southern Steelhead under the Endangered Species Act, and subsequent funding through the PCFFA and California Department of Fish and Game. The California Coastal Conservancy has also invested over \$15 million in watershed projects, including the Matilija Dam Ecosystem Restoration Project, habitat acquisitions, fish passage improvements, and invasive plant removal.

Because the upper watershed area has been largely cut off to fish passage, considerable investment has been made on San Antonio Creek, the major tributary to the Ventura River that runs through the Ojai Valley. Recently several bridges have been constructed to eliminate so-called 'Arizona Crossings.' Although these are expensive investments, the politi-

cal winds have aligned to raise over \$6 million for these bridges, the most recent completed in March 2012.

In 2011, the Ojai Valley Land Conservancy (OVLC) completed acquisition of a historic ranch property near the San Antonio Creek confluence to create the new 'Steelhead Preserve.' This compliments the 'Confluence Preserve' to protect what has been termed the 'live reach' of the Ventura River. This 3-mile reach has year-round flows due to rising groundwater from subsurface bedrock layers, and provides some of the best spawning and rearing habitat in the Ventura River.

The land conservancy also protects over 1,600 acres and two miles of the river below the Robles Diversion dam. This 'Ventura River Preserve' has provided much needed access to open space, and the network of trails and seasonal swimming pools provide much enjoyment for the community. All told, over five miles of the mainstem Ventura River in the Ojai Valley have been set aside for conservation, habitat restoration, and recreation.

The younger counterpart in the lower watershed, the Ventura Hillside Conservancy (VHC), complements the work of the Ojai Valley Land Conservancy. VHC recently acquired several floodplain parcels below Foster Park, and another parcel just above the Ventura River estuary. Both of these organizations have built community support for their ongoing acquisition and restoration efforts that benefit the recovery of native steelhead.

As with most rivers today, the Ventura River has suffered from invasive species. Most prominent has been the giant reed, *Arundo donax*, with Ventura County government taking the lead on grant-funded programs to eradicate the invasive plant. Much of this was funded as a first step in the Matilija Dam ecosystem restoration project, which identified significant arundo growth above and below the dam that was deemed to impair riparian habitat value important to the steelhead. Work began in 2007, with significant progress made in removing the nonnative plant from the riparian areas in the upper reaches of the Ventura River and Matilija Creek. A similar effort has begun on upper San

Antonio Creek, as well as recent work by private landowners in the lower river above the estuary.

### Water and Watershed Management

Beginning in 2007, the Ventura County developed an Integrated Regional Water Management Plan (IRWMP), which has attracted funding for watershed studies and projects. These studies have advanced the knowledge of the watershed, but there is still a need for a truly integrated water management plan that can balance existing and future human needs with the need to enhance riverine conditions for the steelhead and other threatened species. The Ventura River Watershed Council recently hired a watershed coordinator with state grants and contributions from member organizations with the goal of developing a coordinated watershed plan.

There is also a growing awareness of water and watershed issues within the community. Although few understand the extent of the changes over the past century, there is increasing concern for sustainable water use given the potential stressors of climate change and increasing population. The Surfrider Foundation has developed programs with creative titles like "Ocean Friendly Gardens" and "Know Your H2O" aimed at enhancing community awareness and stewardship. A short film titled "Watershed Revolution" featuring community activities in the Ventura River watershed aired nationwide on PBS in the fall 2011.

### Hope for the Future

Although water management remains a contentious issue, there is reason for hope for the Ventura River and its steelhead population. Growing community awareness and support for land acquisitions and restoration projects has led to incremental progress within the Ventura River. With two large dams, water diversions and groundwater pumping, urban, agriculture, and industrial interests, the Ventura River may be seen as a microcosm of the threats to native steelhead trout as well as the potential for recovery in Southern California.





# Ksenya S. Savvaitova: A Tribute

By Pete Soverel

— Federation of Fly Fishers Steelhead Committee —

**O**n April 3, 2012, Professor Ksenya S. Savvaitova died after a lengthy illness. Science lost a giant; steelhead lost a pioneering defender; I lost a close friend and colleague.

The basics of her life provide only an outline of a wonderful person and world renowned scientist. Ksenya earned her Ph.D. from Moscow State University in 1962 based upon her research on Kamchatkan chars (genus *Salvalinus*), of which there are several species and many forms found on the peninsula. Twenty years later, she was awarded her Doctor of Science (the Russian academic system is different than the American system — Doctor of Science is a much higher standard than Ph.D.) based upon her lengthy research on speciation and population structure system of the family Salmonidae. She conducted much of that work on Kamchatka.

Her life was entirely devoted to science. She studied population ecology, systematic, micro-evolution and speciation of salmon fishes, as well as their conservation. She did not limit her research work solely to the family Salmonidae, but also studied other riverine species including lamprey, sticklebacks and others. She authored more than 250 published research works including 17 monographs. She was the recipient of the prestigious Lomonosov Prize of the First Degree from Moscow State University for a series of investigations in 2009.

She organized and participated in over 50 expeditions to the Arctic, Kamchatka, Chukotka, Sakhalin, Central Asia, Siberia, and Chile. These expeditions were important scientific schools for many generations of students, graduate students, and young scientists. She supervised 27 pupils who received their Ph.D.'s and 8 disciples who received their Doctors of Sciences, providing a lasting legacy to the scientific and academic community. Additionally, almost singlehandedly, she secured legal protection for

Russian steelhead by listing Kamchatka steelhead in the Russian Red Book of Rare and Disappearing Species — a rough equivalent to our Endangered Species designations of Threatened and Endangered.

Ksenya was a frequent lecturer at scientific conferences around the world, including Germany, Finland, USA, and in other countries, where she was affectionately known as the “Dolly Queen” in recognition for her unmatched knowledge and expertise on the world’s char species. She was a member of international organization



**Ksenya S. Savvaitova. Photo by Jeff Mishler**

of “Char Fans,” and the IUCN Salmonid Specialist Group. She was a scientific consultant of Wild Salmon Center, and a member of numerous editorial boards of Russian and international scientific journals. Professional positions included: Principal Research Scientist and Professor, Moscow State University; Professor, Moscow State University Ichthyology Department; Honorable Research Scientist, Lomonosov Institute, Moscow State University (MSU); Director of the Laboratory of Ecology and Fish systematic, Department of Ichthyology, Moscow State University; Affiliate Professor, University of Montana and, my favorite, Director, Science and Research, Kamchatka Steelhead Project.

It was in this latter capacity that I came to know and then work closely with her over the past two decades. We met in the spring 1993 for a series of meetings arranged and facilitated by fellow Steelhead Committee member John Sager and funded by former **Wild Salmon Center** director Serge Karpovich. At those meetings we developed the outline of the joint Russian-American Kamchatka Steelhead project to conduct long-term research and monitoring of the completely natural Kamchatkan steelhead populations and their relationship to non-anadromous forms of *Onchorynchus mykiss*. The Kamchatka Steelhead Project pioneered the marriage of fly fishers and scientists. The anglers sponsored the field expeditions to remote wilderness rivers in Kamchatka and they then helped collect biological data (length, girth, sex, tissue for genetic analysis, scales for life history, tagged to help determine migration as well as abundance) from protected steelhead through catch and release fly fishing. Moscow State University scientists and collaborating scientists from the University of Montana, National Marine Fisheries Service, and Oregon Department of Fish and Wildlife analyzed the collected data, which has resulted in over 25 scientific papers. In addition to the fascinating and illuminating results of the scientific work, the physical presence of the Kamchatka Steelhead Project camps with attendant fish inspectors more or less eliminated illegal, large scale poaching, which, in turn, has resulted in a dramatic increase to already abundant steelhead populations.

Ksenya participated in our annual expeditions until just a few years ago. She and I always shared a tent and house-keeping duties. She greatly disliked getting up in the morning to a cold tent (Kamchatka is usually pretty darned cold in late September and October). My job was to get the wood stove going, actually to get it hot

# River at a Crossroads

## Progress towards Klamath dams removal

By Curtis Knight and Brian J. Johnson

— *California Trout, Trout Unlimited* —

*Curtis Knight is Conservation Director for California Trout. Brian J. Johnson is California Director for Trout Unlimited. California Trout's website is [www.caltrout.org](http://www.caltrout.org). Trout Unlimited's website will be found at [www.tu.org](http://www.tu.org).*

**T**he Klamath River's salmon and steelhead fisheries have been in steady decline for decades, and after exhaustive scientific studies, it seems clear that removing the four lower Klamath River dams remains the best option for restoring the Klamath's once-storied salmon and steelhead stocks.

Yet finding a framework for moving forward on the Klamath has been elusive; a 2003 *Outside* magazine article dubbed the Klamath "River Impossible" and suggested resolution of its problems simply aren't possible.

So when the Klamath Basin Restoration Agreement (KBRA) — and its sister agreement, the Klamath Hydroelectric Settlement Agreement (KHSa) — were hammered out by diverse groups (including former "sworn" enemies like irrigators, commercial fishermen, native Americans, environmental groups, California, Oregon and others), some remained skeptical, yet the agreements have cleared every hurdle placed in front of them. Now the settling parties face another great challenge: gaining support from a divided Congress.

### Overview of a River on the Brink

The Klamath River was historically among the top three most productive salmon rivers on the USA's West Coast; upwards of a million salmon returned every year to spawn. Between 1917 and 1965, a series of hydroelectric dams was constructed that severed access to about 450 miles of Klamath River salmon and steelhead spawning habitat.

The dams degraded the river's water quality (in the summer, toxic algae blooms turn the waters of the reservoirs above the dams pea-soup green, and health warnings are posted for miles down the river), and also heated the water, increasing stresses on migrating fish. Today, pink and chum salmon are extinct on the Klamath, and coho salmon, shortnose suckers and Lost River suckers are listed under the Endangered Species Act.

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### *The Klamath River was among the top three producing West Coast salmon rivers, until the dams were built.*

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Even the highly adaptable Chinook salmon returns represent a tiny fraction (10 percent) of their historic numbers, and many of those are hatchery fish, which produce inferior offspring with far lower survival rates.

### Irrigators, Fishermen Both Lose

During the 2001 drought, water supplies to upper Klamath Basin irrigators were cut off to protect endangered suckers and salmon, imposing an economic hardship on the area's agricultural community.

In 2002, [Vice President Dick Cheney intervened](#) to reinstate water deliveries, resulting in untenably low flows — and the West Coast's largest ever fish kill (estimates of salmon mortality range between 34,000 and 60,000).

By 2006, salmon runs in both the Klamath and Sacramento watersheds had declined to the point that West Coast commercial salmon fisheries were closed to protect the decimated

populations. This multi-year closure also decimated the commercial fishing communities along the coast.

### Groups Look For a Solution

Without hint of progress in the air for fish or farmers, a group of more than two dozen entities (including "sworn enemies" like irrigators, Native American tribes, conservation groups and commercial fishermen) sat down and negotiated the [Klamath Basin Restoration Agreement](#) (KBRA) and the [Klamath Hydroelectric Settlement Agreement](#) (KHSa).

It provides for reduced — but predictable — water supplies for Klamath Basin irrigators. The KBRA and KHSa also mandate the removal of the four lowest Klamath River dams (Iron Gate, Copco 1 & 2, and J.C. Boyle), an increase in water storage capacity through wetlands restoration, and extensive habitat restoration projects.

Today, the agreements have been embraced by almost all of the Klamath Project irrigators, the mainstem Klamath River tribes, PacifiCorp, conservation groups, commercial fishermen, the states of California and Oregon, and others.

### The Case for the KBRA and KHSa

#### *Fisheries Improvements*

With so many different species of fish in jeopardy on the formerly and hugely productive Klamath River, it is clear that fisheries need a boost.

Removing the four lower Klamath River dams would open up between 68 and 420 miles of salmon spawning habitat for coho and Chinook, respectively, and the draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) suggests Chinook salmon populations, which are the most commonly fished for commercially, would see an 81.4% boost in

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population should the KBRA be instituted.

Steelhead trout populations — a much sought-after game fish — would regain even more spawning habitat, delivering a surge in recreation-based dollars to the area's economy. In fact, the draft EIS/EIR's [Benefits of The Proposed Action](#) document suggests steelhead and trophy redband rainbow trout fisheries would experience sizable benefits.

Distribution of steelhead in the watershed is expected to expand to a greater degree than that of any other anadromous salmonid species under dam removal. Steelhead are the most prized game fish in the Klamath River, providing recreational fishing opportunities that would expand well into the upper basin in Oregon.

Dam removal would also expand the total distribution of trophy redband rainbow trout in the fishery and would provide a more natural flow and temperature regime for trout and reintroduced salmon and steelhead.

In addition to dam removal, the KBRA also calls for habitat restoration projects and grows the acreage of the Upper Klamath wetlands, which offer the side benefit of more water storage than is currently provided by the four reservoirs (which would be removed).

#### **Economic Benefits**

Removing the privately-owned Lower Klamath Dams seems inevitable given the cost of keeping them. Keeping the dams would require an estimated \$450 million plus in improvements, (including fish passage), if removed, PacifiCorp's liability is limited to \$200 million. Operating the dams after relicensing would reduce power generation from an annual average of 82 MW to 62 MW, resulting in dams that would operate at a \$20 million annual loss

It's important to note that these four dams are privately owned by PacifiCorp, which makes decisions based on what's best for the company and its ratepayers. In a presentation to the Siskiyou County Board of Supervisors, [Pacific Power's CEO, Patrick Reiten said:](#)

*The issue of Klamath dam removal is not political for PacifiCorp, but one of business and economics.*

Retrofitting the existing dams to comply with regulations and qualify

agreement was the constant lawsuits that plagued the Klamath River basin over the last couple of decades. After the 2001 irrigation water turn-off and the 2002 fish kill, former enemies met and proceeded to hash out the KBRA.

While Upper Klamath irrigators gave up some water, they'll receive regular, predictable water allocations, allowing them to plan for the future.

Fisheries groups also wanted more water for fish than they ultimately got, but the agreement will help endangered salmon populations recover, and



**Iron Gate Dam, the lowermost dam on the Klamath River in California. Photo by Thomas Dunklin**

for re-licensing would cost rate payers about \$450 million. However, the company has negotiated a \$200 million cap on rate payer contributions to the removal process.

“It comes down to an economic calculation, trying to cut the best deal for customers,” Reiten said.

Finally, there are the sizable economic benefits outlined in the [draft EIS/EIR economic summary](#), including: 4,600 new jobs as a result of dam removal over 15 year life of KBRA; 1,400 new jobs during the year of dam removal; 70-695 additional jobs in the agricultural sector due to reliable water supplies; and 453 new commercial fishery jobs

#### **Reliable Water Supplies for Fish & Farmers**

One of the drivers of the KBRA

fast-disappearing salmon populations wouldn't survive decades more neglect.

#### **More Klamath River Dam Removal Resources**

The Klamath Basin Restoration Agreement (KBRA) and its sister agreement, the Klamath Hydropower Settlement Agreement (KHSA).

The draft Environmental Impact Statement (EIS) and Environmental Impact Report (EIR) are available at <http://klamathrestoration.gov/Draft-EIS-EIR/download-draft-eis-eir> (along with selected elements of each should you not want to pick your way through the entire document).



## Six Common Myths about Klamath Dams Removal

Opponents of dam removal have cited several reasons the four Klamath dams shouldn't be removed, though many of the often-cited reasons are more myth than reality. Here are a few.

### Removing the Dams Will Harm Irrigators

This myth has been often heard in public discussions, but the four dams slated for removal provide no irrigation function.

### Removing the Dams Will Increase Flooding

This is another commonly heard complaint. The four lower Klamath River dams are not designed to control flows; they're "run of river" dams which provide little water holding capacity.

In fact, they can store less than 10 hours of high springtime runoff flows before they reach capacity (and start spilling). In other words, they can't buffer high flows, so they are essentially incapable of buffering high flows.

### The Dams Provide 'Cheap, Clean' Energy

It makes sense to support clean energy. But if reservoirs are creating toxic algae blooms, returning warmed water to the river, and starving the lower Klamath of sediment, they aren't "clean." Some hydropower dams operate without significant impacts on fisheries and riverine habitats, but these dams aren't among them.

And they're anything but cheap. FERC estimates the dams will operate at a \$20 million annual loss if retained — costs that would have to be borne by ratepayers.

If relicensed, the four Lower Klamath River dams would generate less than two percent of PacifiCorp's energy, and with the utility already committing to generating 1,400 MW of energy from renewable resources, the loss of 62 MW remains a drop in the ocean.

A *Redding Record-Searchlight* editorial put it bluntly when the editors said: "Perfectly good dams? If they

were, they'd have been relicensed long ago, as so many of PG&E's dams are. These are dams with obvious problems."

— *Redding Record-Searchlight*

### The Dams Protect Salmon Populations

Some say the Klamath used to "dry up" in normal years prior to the dams, so the dams are actually protecting the salmon. It's not true. The historic low flows on the river (prior to dam building) were in the 800 cfs neighborhood — far from dry. The KBRA provides for a minimum of 800 cfs flows where Iron Gate Dam is today; contrast that with summer flows in 1992 at the same location, which fell to 400 cfs.

### The Sediment Is Toxic and Will Destroy Salmon Populations

Extensive testing has shown that very little toxic material is contained in the sediment piling up behind the four Lower Klamath River dams. Plus, dam removal projects like Marmot, Condit, Powderdale and the Clark Fork show us rivers have the ability to move sediment downriver very quickly during high flows. The draft EIS/EIR predicts that sediment clouds will have a negative effect on fish populations for a short time after dam removal, but the long-term benefits will be sizable.

### Coho Salmon Are Not Native To The Klamath River

This astonishing claim has gained a foothold among dam removal opponents in Siskiyou County, though the evidence used to support it is largely nonexistent. Some cite the lack of information about coho salmon prior to an 1895 planting of coho in the Trinity River (a large tributary of the Klamath), yet it's clear that little distinction was made between species of salmon in that era. In addition:

The Klamath River falls within in the native range

of coho salmon

Several tributaries of the river (notably the Scott and Shasta rivers) provide excellent coho salmon habitat. Still, some cite the 1895 planting of coho in the Trinity as the beginning of the coho population on the Klamath, ignoring a few key facts:

The coho were only stocked in the Trinity in an attempt to supplement the native stocks, which had been decimated by a cannery operation at the mouth of the river

A California Department of Fish & Game document makes it clear that the 1895 stocking couldn't have been the source of the Klamath's coho populations: "Regardless, because of their three-year life cycle, coho salmon returns from the 1895 plant would have appeared at the Klamathon Racks in only one or two of every three consecutive years. Egg take records from the Klamathon Racks show that this is not the case: coho salmon eggs were taken in substantial numbers in consecutive years beginning with the 1912-1913 season."

This would not have been possible if all the adult fish had been descendants of fry and yearling plants made in 1895.

— Curtis Knight  
Brian Johnson



The big rainbows that inhabit Upper Klamath Lake are ample evidence that upriver habitat exists for anadromous fish once the four lower Klamath dams are removed. Photo courtesy Curtis Knight



## The Osprey receives Haig-Brown Award for excellence in fisheries conservation journalism

*The Osprey* has received the Haig-Brown Award for excellence in fisheries conservation journalism and communications. The Washington-British Columbia Chapter of the American Fisheries Society presented the award on Tues., May 15 at its 2012 conference in Victoria, British Columbia.

The *Osprey* is a publication of the Steelhead Committee of the Federation of Fly Fishers. Published three times per year since 1987, *The Osprey* offers in-depth coverage on the science and management of wild steelhead and Pacific salmon. *The Osprey's* goal is to keep people interested and involved in conserving wild steelhead and Pacific salmon and their habitat.

The Haig-Brown Award was established in 1981 to recognize those who have produced outstanding, non-technical articles or publications on any aspect of fishery management, research, habitat protection, enhancement, or other related fields. It is presented to an individual or agency who best exemplifies the journalistic spirit of Roderick Haig-Brown's book *The Western Angler*: "Hand in hand with preserving and improving the fishery must go the work of presenting it properly to the public."

"It is a profound honor for us to be recognized with the Haig-Brown Award," said Will Atlas, FFF Steelhead Committee chair. "The ethos of conservation and advocacy pioneered by Roderick Haig-Brown remains an inspiration to our organization to this day."

### The Osprey on the Web

*The Osprey* now has its own website, <http://www.ospreysteelhead.org/>. Learn about our history, check on the status of wild steelhead and salmon populations and download past copies of *The Osprey*.

To donate to *The Osprey*, go to: [www.fedflyfishers.org](http://www.fedflyfishers.org) and click on the "Support Us" tab under the "Home" tab. Be sure to specify your donation is for *The Osprey*.

Also, check out our blog at: <http://ospreysteelheadnews.blogspot.com/>

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Effective immediately you also have the option of making a secure credit card donation to support *The Osprey* and wild steelhead and salmon by going to the following link: <http://www.fedflyfishers.org/Default.aspx?tabid=4329>.

By either means, the steelhead and salmon will thank you for supporting *The Osprey*.

## Letters to the Editor

### Searsville Dam, Failed Responsibility

Dear Editor:

I just finished reading Matt Stoecker's article, "Stanford University's Dirty Secret: Searsville Dam", in *The Osprey*, Issue No. 69. As we all know, there are always two sides or more to every story, but Mr. Stoecker does an excellent job of bringing out the critical issues involving the Searsville Dam, including the dam's history, its past and present use, the damage it is doing to the environment and critical species, and Stanford's lack of scientific-based ecological studies, such as an HCP that adequately addresses the impact of the dam to the environment, fish, wildlife and people. I argued for many years for Congress to authorize the removal of the Elwha Dam in Washington where I live. After the citizens of the state managed to rid our political system of Slade Gorton, Congress acted and we are now on the path to removing this useless concrete barrier and creating a sustainable salmon and steelhead fishery on the Elwha. Brave deeds take brave people. I've always considered Stanford a university steeped in honor — and bounded by science. There is no place in the public sector, the private sector, or the educational sector for obstruction based on ignorance. Leaders acknowledge the problem, confront it, and move forward to solve it. Based on the article, Stanford's leaders are failing their responsibility to the institution, its present, past and future students, and the community at large by not including Searsville Dam in the university's HCP and having a "revised and corrected HCP and supplemental draft EIS be released to the public."

John Roskelley  
Spokane, Washington  
Spokane County Commissioner,  
1995-2004

(Editor's note: See the update on the Searsville Dam on page 18 of this issue of *The Osprey*.)

# Searsville Dam Update

## A year of progress

By Matt Stoecker

— *Beyond Searsville Dam* —

Matt Stoecker is director of the non-profit coalition *Beyond Searsville Dam*. To find out more, visit their website at: [BeyondSearsvilleDam.org](http://BeyondSearsvilleDam.org)

Since my article in the May 2011 issue of *The Osprey*, “Stanford University’s Dirty Secret: Searsville Dam” our Beyond Searsville Dam coalition has made great progress in our efforts to see the destructive, 120-year-old dam retired. This past year also saw the start of the world’s largest dam removal and restoration project on the Elwha River in Washington state and growing recognition from owners that removing antiquated dams and replacing them with less harmful solutions is both financially and legally advantageous. However, several Stanford dam defenders cling to the notion that their dam and artificial reservoir are somehow environmentally beneficial and operationally essential, despite overwhelming evidence and infrastructure upgrade examples to the contrary. While this past year has been a pivotal one, the future of Searsville Dam is still as murky as the stagnant reservoir behind it.

Readers of *The Osprey* joined thou-

sands of coalition supporters in sending letters to the president of Stanford University and state and federal agencies in charge of protecting our natural heritage demanding university leadership and compliance with environmental laws. Our efforts were heard loud and clear, with the National Marine Fisheries Service and U.S. Fish and Wildlife reportedly making significant changes to their forthcoming Environmental Impact Statement (EIS) for Stanford’s proposed Habitat Conservation Plan (HCP). In addition to correcting several factual inaccuracies presented in earlier drafts, the agencies agreed with our legal argument that all Searsville Dam activities must be specifically excluded from coverage in any subsequently issued EIS and Incidental Take Permit. The bottom line is that Stanford will not receive a federal permit to harm threatened steelhead and other listed species due to the ongoing operation of the dam, reservoir, and related diversion activities. Our legal team has made it clear that if Stanford is unwilling to address Searsville Dam in their proposed HCP, then the dam and its operations will not enjoy protection under the Endangered Species Act. This is a

major victory for our coalition, because the proposed Stanford HCP had sought inclusion of reservoir and diversion infrastructure and the ability to dredge the accumulating reservoir sediments without any commitment to provide fish passage or downstream bypass flows for listed species. Fortunately, our state and federal laws can head off such a misguided plan when groups and individuals rally together and ensure that resource agencies abide by their own laws.

In the face of mounting public pressure, charges of

“Sustainable Stanford” greenwashing, and a stalling HCP proposal, Stanford University formed a Searsville Committee comprised of top faculty and staff to study options and decide the dam’s future. While we are optimistic about the level of faculty expertise represented on the committee, we remain discouraged by the inclusion of several administrative individuals that continue to show a stubborn bias against equal consideration of dam removal as a viable option, while spreading misinformation about the dam and our coalition. Despite over a decade of recommendations from local stakeholders and agencies for a collaborative Searsville study process, Stanford decided to keep this committee internal, without other meaningful stakeholder involvement in the planning and decision making process. This decision comes despite full recognition that any decision about the dam’s future will impact all watershed stakeholders and require regulatory support. Still, we remain hopeful that the bright minds on the committee will prevail, and confident that our growing community, regulatory, and legal support will ensure that the dam removal option is adequately assessed. Across the country, owners of antiquated, high hazard dams are realizing the benefits of letting go and upgrading to a more reliable, economical, and safe water solution.

Over a dozen more groups have signed onto our coalition in the past year including; Pacific Rivers Council, Northern California Federation of Fly Fishers, International Rivers, Native Fish Society, Palo Alto Humane Society, Sequoia Audubon Society, Wild Fish Conservancy, Wild Steelhead Coalition and more. Sign yours up today!

Please visit our website to find out more, help spread the word, and support our effort.



One of two 27-inch threatened San Francisco Creek steelhead that died this past February as the creek became dewatered downstream of Searsville Dam. Photo by Oliver Burke and Carrie Widener





Savvaitova, Continued from page 13

enough that it glowed. When the inside of the tent reached the approximate ignition temperature of nylon, Ksenya would arise. In turn, she always had a warm, cheery fire going in the afternoon when I returned from a day of running the river in a jetboat — cold work indeed. No matter the weather or conditions, Ksenya was unfailingly cheerful and encouraging — the perfect wilderness partner.

Unlike some professional biologists, Professor Savvaitova valued the information provided by non-professional observers — anglers, local native peoples, commercial fishermen and so on. I recall vividly her conversation with a native Koryak woman who lived at the reindeer station on the Kvachina: Savvaitova, “How is the Kvachina?” Native lady, “It is good; it is as good as God made it.” Until that moment, I am sure I had never visited a place that met that standard.

She was once asked why she focused so much of her energy, including her Ph.D. dissertation and later multiple wilderness expeditions on Kamchatka. She replied: “As a young girl, I was fascinated by tales of Kamchatka. It was far away, mysterious and sounded beautiful. I have continued to return throughout my adult life because Kamchatka remains far away, mysterious and is, beyond challenge, one of the most beautiful and alluring places on earth.” She infused this spirit into the Kamchatka Steelhead Project, which in turn became the first significant undertaking of the then nascent Wild Salmon Center. Without her enthusiastic support, scientific determination and persistence and annual participation, the project could never have happened and the Wild Salmon Center may well have been stillborn. The steelhead rivers we explored together (Kvachina, Snatolvayam, Utkholok, Sopochnaya, Russoshishnaya, Saichik, Krutogorova) and their steelhead are more secure as a consequence of her inquiring mind and determination to protect her favorite fish.

In sum, Ksenya Savvaitova, world renowned scientist, accomplished educator, charming interlocutor, was above all a wonderful person and dear friend.

Dasvidanya. (Farewell)



Angler's Ethic, Continued from page 3

men and guides brag of routinely catching 10 or more fish in a single day, without ever once considering the fact that the entire run of steelhead within that watershed could be fewer than 1,000 fish. In catching 10 they are singlehandedly impacting one percent of the river's wild run. Ten fish days are acceptable when there are 5,000 fish per mile, not when there are only a few thousand fish in an entire run.

As we've learned all too painfully in Puget Sound, without wild fish we have nothing. A month long terminal fishery in front of a hatchery outflow can never replace the experience of drifting the Skagit, Sauk or Skykomish in March, or the joy of hooking an ocean bright steelhead only a few miles from the waters of Puget Sound. If there is a future for our sport, it will require a

radical shift not only in the paradigms and values that guide our fisheries management, but also in the ethical standards we hold ourselves to as an angling community. It will require a renewed commitment and the adoption of a modern set of angling ethics: an angling ethic for the 21st century.



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