A Day at the Hatchery

by volunteer Bob Mottram

The boy and his mom duck into the hatchery visitors' center after their tour to use the restroom before leaving for home. Inside, the boy spots their tour guide, and flashes a big grin.

"Wow!" the boy calls. "That was the best tour I've ever been on!"

The boy is about eight years old. Behind him, his mother gives the guide a silent smile of thanks.

You take your rewards where you find them, and the guide is grateful for the boy's high opinion of the tour. What probably had fired his enthusiasm was the part of the visit in which the guide led his group out of the hatchery building and over to the concrete fish-holding ponds. There, he'd let the boy toss a small handful of fish-food pellets into the water. Some of the four-year-old resident rainbow trout broodstock being held in the pond saw the pellets hit the surface, and rose in a hungry rush to engulf them. The stocky fish, each several pounds in weight, swirled and thrashed on the surface, splashing a shower of pond water over the boy and the crowd of grownups who surrounded him.

The boy, realizing he had been the cause of the shower the grownups received, was delighted.

The experience was a typical moment in the day of a tour guide at the Department of Fish and Wildlife's Marblemount salmon and steelhead hatchery in the upper Skagit River watershed. The guide was one of 18 who volunteered through the Skagit Fisheries Enhancement Group (SFEG) this winter to lead weekend tours for the public. Between two and four volunteer guides worked a six-hour shift at the hatchery each weekend day from December 6 to January 31. The purpose of the effort was to win friends for the fish and, possibly, for SFEG as well. The effort also reaped some personal rewards for the guides themselves.

David Cohen, for example, volunteered as a guide along with his wife, Anne.

"This was my first time volunteering, and I really loved it," he said. "Visitors were so amazed by the entire operation . . ."

One large group of developmentally delayed adults was so delighted by the experience that its members promised to return next year, Cohen said.

"I plan to volunteer again," he said. "It was that great an experience."

Most winter visitors to Marblemount come to see eagles, which flock to the Skagit to feed on the carcasses of spawned-out fish. By chance, the visitors see signs advertising free tours at the hatchery, a mile or two outside of town, and figure, "What the heck. The price is right."

This gives SFEG guides an opportunity to capture their attention and their imaginations.

"The story of salmon is one of the most dramatic stories in all of nature," is a good beginning. People love stories, and now they're about to hear one; featuring drama, no less. Sounds like a perfect complement to a day of eagle-watching.

Prior knowledge about hatcheries isn't necessary on the part of the volunteer guides. The guides receive printed material before the start of the tour season that describes hatchery operations and salmon and steelhead life cycles, and then get a special tour of the hatchery hosted by Hatchery Manager Steve Stout. Then they have an opportunity to ask questions and to get answers.

Even with this orientation, guides sometimes feel a little like the school teacher who's just one chapter ahead of her kids in the textbook. But the kids don't know about that when it happens, and neither do the hatchery visitors, who look to the guides as experts.

Regular hatchery workers go out of their way to prepare special displays for the guides to share with visitors. Early in the tour season, these included a small dish of salmon alevin, their yolk sacs still attached to their bellies, thrashing around on a wet paper towel on the bottom of the container. Later in the season, the displays got even better. They included a dish of fertilized coho salmon eggs that actually were hatching, a process that continued all day. A guide could use that as an opportunity to gain a group's complete attention by foreshadowing what the group was about to see, and giving anticipation a moment to build.

“What I’m going to show you next is the most interesting thing you’re going to see today,” a guide might say. “Even more interesting than eagles.”

Private conversations, if any, would stop. All eyes would be on the guide.

“In this dish is a group of coho salmon eggs that are hatching right before your very eyes!” the guide would say, lifting the dish from its bench. People would move forward in a cluster for a better look.

“Ooh! Hold it a little lower so I can take pictures,” visitors typically would demand, as they jockeyed for position with their cameras. Their cameras would not, of course, capture the drama of the tiny fish wiggling and thrashing to emerge from the eggs, but the visitors would carry the image away in their brains.

“Very few people on this planet ever have seen a salmon actually being born,” the guide would tell the group. “And now, you are one of them.”

Visitors would dart meaningful looks at each other as they absorbed the immensity of that information.

Some of the people who come through the hatchery door are quite knowledgeable about fish. Others don’t have a clue, and sometimes a guide can’t tell at first who is who. But virtually every visitor finds his hatchery experience enjoyable, no matter what his level of prior knowledge.

At one point a guide is explaining the hatchery’s fish-seeding program to a group of about a dozen. In the days before most returning fish were waylaid by hatcheries or nets, their thousands of spawned-out carcasses in the rivers provided vital marine nutrients that nourished their offspring and provided nutrition for the surrounding environment itself, the guide says. For many years, however, people didn’t understand how important that source of nutrition was.

Finally discovering that these elements were vital to the natural system, hatchery workers and volunteers now toss spawned-out salmon and steelhead carcasses back into the rivers and streams to make nutrients available to the next generation of fish and to the environment. Most of the visitors have been unaware of the practice, and most appear to find the idea intriguing.

“Those carcasses used to be buried,” the guide says, “and scientists couldn’t understand why the trees didn’t seem to be flourishing. Then they discovered that these lush Douglas fir forests must have nourishment from the sea in order to do really well. And that nourishment gets here only one way. The salmon bring it. Their carcasses provide the environment with sodium, with calcium, with potassium and with, uh . . . with, uh . . .

The guide is having a senior moment, unable to retrieve the fourth element from his brain.

“With nitrogen!” one woman interjects without hesitation.

“Yes! With nitrogen! That’s exactly correct!” the guide replies.

The helpful prompter is one of a pair of young women who are visiting the hatchery together during a break from their eagle-spotting foray. As they walk across the hatchery grounds toward the ponds with their guide they ask a series of questions about hatcheries and fish, and the guide waves an index finger in the air.

“Everything in nature is connected to everything else,” the guide pontificates. “We poke in over here,” he says, jabbing with the finger, “and – much to our surprise – something pooches out over there. It’s one of the reasons we seem always to be living with fallout from the Law of Unintended Consequences. The need for the hatchery’s fish-carcass program is a good example of that.”

After a bit more conversation, the guide asks the women where they’re from.

“We’re from Seattle,” one replies. “We’re both instructors at the University of Washington. In biology.”

In biology! No wonder this woman knew about nitrogen.

“I’m a little embarrassed,” the guide tells them with a grin. “If I had known your backgrounds, I wouldn’t have been talking to you the way I’ve been.”

“Oh, don’t be embarrassed, one of the women replies. “We’re plant people, not fish people. This has been fascinating! Just fascinating!

“Thank you so much!”

From the Director: Celebrating 20 Years of Salmon Habitat Restoration

SFEG is celebrating its 20th year of working with our community to engage volunteers in salmon habitat restoration projects. SFEG was formed in 1990 by a small group of local volunteers passionate about involving our community in restoring wild salmon populations for future generations. 20 years later we have a staff of 12 highly skilled employees and hundreds of volunteers who annually donate over 6,500 hours to habitat enhancement, watershed stewardship and environmental education activities in order to enhance local salmon populations (and keep the Skagit Magic!). Over the last 20 years many things have changed as far as priorities for salmon and watershed restoration as well as educational needs. We have vigorously attempted to adapt as new priorities and funding challenges emerge. Our records are a bit rough for the first few years, but here are some of our accomplishments since 1995:

- Over 87,305 hours documented of volunteer involvement valued at over $1.2 million (that's equivalent to 44 full time employees!)
- Fish passage improved at 46 culvert locations opening 53 miles of habitat for salmon
- 91,448 salmon carcasses distributed back to streams from hatcheries for nutrient enhancement
- 9.4 miles of fencing installed along waterways to exclude livestock and protect water quality
- Native trees and shrubs planted along 32 miles of rivers and streams to enhance critical riparian habitat for salmon and other wildlife species
- Over 16 miles of instream habitat restoration completed
- Total investment of over $10.8 million for salmon enhancement in the local economy
- 5.3 million fish released through net pens and remote site incubators (RSI)

Many thanks to all the volunteers, partners, and property owners who have made this effort possible.

A Recap of the 2009-10 Spawner Survey Season

By Joe George

We've wrapped up an exciting season for spawner surveys. There were fish everywhere! This was the first time in over ten years in which all our volunteers saw fish at their sites. We had a record-shattering count of pink salmon, about 2.5 times more than our largest run in 2001-2002 since SFEG started counting in 1998. There were so many pinks we had to abandon our hand held counters, because they slowed us down. We estimated what a certain count of 50 looked like and proceeded to count using that method as we walked up our creeks. It was a good thing we don't count pink redds, because it was one big redd from beginning to end of our surveys.

We also recorded numbers of kokanee in the Samish basin. Gina Tautner and Cynthia Hansen enjoyed counting all the kokanee they found in Finnegan and Mud Creeks. Their counts were up in the three hundreds some days. The reason for such a large number is in the past Dept. of Fish and Wildlife had released fry into Lake Samish because the cost of fry was much cheaper than smolts. The last year they released smolts instead of fry and the survival rate was much higher. This past year will be the last of that program because there is no more funding for it.

This year on selected creeks, we added two additional criteria for coho. We were looking for coho with no adipose fin (which would signify hatchery-raised) and pre-spawn mortality (the fish died before spawning). Our volunteers found only 8 coho carcasses with no adipose fins. They were found in Finnegan, Klahowya, Lyle, Lorenzan, and Thunderbird creeks. For the pre-spawn mortality, we had several coho falling to predation, but had none which just died. Creeks around King County record several coho dying with no evidence of predation. They are looking at water pollution as the cause.

SFEG has seen coho in our project area on Klahowya for four years. It was nine years ago when 262 live coho where counted it the SFEG project area. Gene DiPietro had a special mission on Klahowya creek: to find out why coho had not been getting up into the restored reach and to see just how far coho are getting up Klahowya, which could mean blockages further downstream. Gene found a large natural blockage; if the flow is high and at the right time, coho can get around.

Chinook salmon had not been documented in Parson Creek in over 12 years. Chris Brown and Sheila Tomas were happy to report seeing six Chinook this year. They also found a coho which laid one large egg and wanted to report it as a new species *Oncorhynchus titlelista ssp. pinnacle*. (see photo) Chris and Sheila gave a wonderfully jovial presentation on their spawner surveys to their Beach Watchers group, which I was more than happy to attend.

Our terrific volunteer group made it possible for us to cover 30 creeks this year for a total of approximately 18 miles.

Spawner Survey Totals for 2009-2010

Species	Live	Carcass	redds
Chinook	4	10	3
Coho	1,634	294	365
Chum	113	80	25
Pinks	32,728	6,471	did not count
Kokanee	3,441	146	179

Acknowledgements: Lucy DeGrace created another great volunteer base which included **volunteers** Worth Allen, Katie Crowley, Kurt Buchanan, Jim Johnson, David Farrow, Christine Kitch, David and Mary McDonald, Steve Manthe, Patrick and Carol O'Hearn, Mike Oster and family, David Miller, Gene DiPietro, Gina Tautner, Cynthia Hansen, Chris Brown, Sheila Tomas, and Kara Block**; landowners** Ken Goodpastor; **SFEG Interns** Sarah Davis and Katie Moyer; **Restoration Technicians** Andy Beckman, Kyle Koch, Bengt Miller, Neil Vargas; **Restoration Ecologist** Sue Madsen; **Upper Skagit Tribe's** Chris Gourley; **Sauk-Suiattle Tribe's** Scott Morris, Kevin Lenon, Michael Wolten and Amber Bryant; and **Washington Department of Fish and Wildlife's** Brett Barkdull and Natasha Geiger. We greatly appreciate all the hard work and effort that everyone puts into this very important part of salmon recovery. Thanks, and we hope to see you all next year.

Plantastic

By Katie Moyer

Is there anything better than planting trees in lovely weather at various beautiful locales up in the Skagit River Watershed? Probably not. Hopefully the 211 volunteers, 285 students and staff members who planted for SFEG this spring agree!

After arranging some glorious weather to invigorate both our plants and our dedicated workers of all ages, we have had a great spring planting season. We had five volunteer planting parties, 8 school group plantings, plus copious amounts of planting done by our staff members. Our school groups planted about 1,780 trees, and our volunteers contributed 658 hours of their time and planted 4,911 trees, and mulched many more at the Elysian Meadows site. In addition, at our Earth Day event in partnership with Upper Skagit Tribe and many other partners, volunteers planted 16,000 wetland sedges and rushes. Finally, our staff planted 29,324 trees at 3 different sites.

Grand total of SFEG 2010 spring planting efforts: 52,015 plants!

Criminy. That is a lot of plants. Not only that, but our 12 nursery volunteers met on a windy Saturday to pot 2,164 trees! These trees will get a chance to grow healthy and strong before being planted in years to come.

Many thanks to all our partners this season: Skagit Land Trust, US Forest Service, Skagit County Parks and Recreation, Skagit County Parks Foundation, Upper Skagit Tribe, Healthy Communities, City of Sedro Woolley, Seattle City Light, and property owners Ger Van den Engh and Barb Trask. The yummy snacks for volunteer events were donated by Burlington Haggen, Mount Vernon Food Pavilion, Mount Vernon Red Apple, Mount Vernon Safeway, Calico Cupboard, Krispy Kreme, Franz, and Starbucks. Please thank them with your business! Congratulations and thank you to all for your hard work!

Puget Sound isn't doing so hot. In fact, Puget Sound is getting to be pretty disgusting. On an average day, it is estimated that **140,000 pounds of toxic chemicals** – including petroleum, copper, lead, zinc, and polychlorinated biphenyls (PCBs) – enter Puget Sound*.

The worst part is that it is not from the factories, nor the mills, nor the large businesses; their pollution output is regulated by the government. It's us. 75% of Puget Sound water pollution comes from the yards, roads, roofs, parking lots, and living spaces of all 4.3 million people living in the 12 counties that encompass Puget Sound*. Our storm water runoff has become a toxic soup of oil, grease, metals, soaps, feces and yard chemicals which all inevitably end up in what used to be the pristine waters of Puget Sound.

That is where the Puget Sound Starts Here campaign comes in. Organizations throughout the Puget Sound area are banding together to raise awareness of the issues so that we can start making the lifestyle changes needed to clean up our water. Seemingly unimportant pollution adds up when it is being contributed simultaneously by millions of people. Some of the things you can do are:

- Pick up your dog's poop.
- Wash your car at a commercial carwash or wash your car on a permeable surface like gravel or grass (allowing the soil to filter some of the toxins)
- Be sparing with (or eliminate) lawn chemicals
- Visit the website: **www.pugetsoundstartshere.org** has lots of information and solutions regarding the various problems that our area is facing.

It is hard to make a change, to not just do what is most convenient. I sure don't feel like picking up dog poop at my rural residence where it won't bother anyone. But then I imagine it washing into the stream, into the Skagit, and myself or others swimming in it, or drinking it. Blech. Cringe-worthy incentive.

Puget Sound is in trouble. You, we, are the solution. Together we can fix it. Visit http://www.pugetsoundstartshere.org to learn how to help in your yard, with your car, around your dog, and in your home.

**Statistics from Puget Sound Starts Here website*

Hosting a Carwash Fundraiser? Borrow a free Car Wash Kit and cut down on pollution! Car Wash Kits are available to borrow from the following locations:
-Skagit County Public Works (360) 336-9400
-City of Anacortes (360) 293-1920
-City of Burlington (360) 755-9715
-City of Mt. Vernon (360) 336-6204
-City of Sedro-Woolley (360) 855-0771
-Skagit Conservation District (360) 428-4313
For more information, Please contact Michael See at (360) 336-9400 or Michaels@co.skagit.wa.us

Restoration Project Update

By Susan Madsen

Skagit Fisheries Enhancement Group has just completed a very successful spring planting season. In addition to the volunteer events SFEG staff and WCC crew completed the installation of 28,800 plants in the Skagit River floodplain at Seattle City Light's Anderson Creek, and an additional 524 at two other sites.

Consultants have been retained to complete a feasibility analysis for restoring hydrologic connectivity between Swan Lake and the marine environment on northern Whidbey Island. This project is funded by the Salmon Recovery Funding Board (SRFB) and is being implemented in partnership with the Swan Lake Watershed Preservation Group, a local nonprofit organization consisting of community members working to protect Swan Lake's ecosystem.

Studies are also underway on hydraulic and geomorphic analysis of proposed large woody debris (LWD) placement in lower Day Creek. Day Creek projects are funded by two grants: one from SRFB and a second from the Washington Department of Ecology.

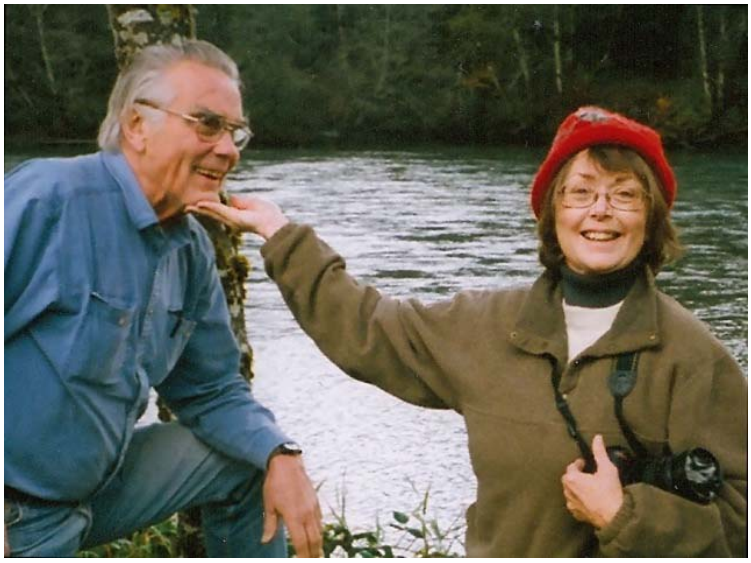
We are initiating three small riparian restoration projects on private lands as part of Skagit County's Natural Resource Stewardship Program, and are preparing restoration plans for three additional sites.

SFEG Board Members viewing the passage barrier on a small tributary in Howard Miller Steelhead Park. Note Board member Mike Olis standing on top of submerged culvert in middle of the stream.

SFEG's Restoration Group has several exciting projects in the planning stages. These include a barrier removal/stream relocation that will increase spawning habitat for coho, chum and native trout, and more than double the available off-channel rearing habitat for juvenile Chinook salmon and other species at Howard Miller Steelhead Park. Also on the horizon is the potential reconnection of Davis Slough near Seattle City Light's Iron Mountain Ranch property. Stay tuned for more information as the projects are developed.

Volunteer Spotlight

Christine Kitch and David Farrow have been volunteering with SFEG for a few years now, in such varied tasks as spawner surveys, potting native plants, and leading tours of the Marblemount Hatchery. They always have great stories to tell, and here Christine describes how they got involved and why they've stayed:



We bought our home in the spring of 2007. One of the first pieces of mail was a little notice for owners of property in the Nookachamps Watershed to please come to a meeting in Clear Lake. We hardly knew where Clear Lake was at that time but we did know that we had a little piece of a "Type 3" stream on the north end of our property. However, no one could tell us what a "Type 3" stream meant. Maybe if we went to the meeting we could learn something.

Two very intelligent speakers entertained us with tales of salmonids for over an hour. They talked about water quality, stream temperature, septic leakage....all very important topics BUT what was a "Type 3" stream? Finally, I went up to the speaker, Kurt Buchanan, and asked the question. "Well, it means that you have salmon spawning in your stream" was his answer.

We gathered up all the brochures, notices and information that evening. Our next step took us to a long day of bouncing about in a passenger van still listening to Kurt talk about salmonids. This time we were on the Nookachamps Watershed tour learning about Nookachamps Creek, trees, seasons, redds, beaver dams, water reclamation and a world that we didn't really know about yet. Lucy drove. Kurt talked. All of this wealth of information was available to us. We could ask questions! People had answers! It was amazing.

The van trip led to the Spawner Survey Workshop, tree planting, stream surveying and nursery planting days. We've met our neighbors while walking the stream, made friends in the community, learned a little about native plants and wildlife. Now, when we walk by a stream in the summer, I find myself looking at the trees overhead, the size of the stones in the water, the markings for the high water flow. Skagit County is an inspirational place to live and a treasure to protect.

All that of from one little piece of mail. You've opened our eyes and enhanced our lives. We thank you.

-Christine Kitch and David Farrow

Help us Welcome Michelle Murphy, Stewardship Manager

Hello! My name is Michelle Murphy and I am the new Stewardship Manager for SFEG. I will be working on the Knotweed Project and Seattle City Light Stewardship Program. I grew up in the Skagit Valley and graduated from Huxley College of the Environment at WWU with a degree in Geography and Natural Resource Management. I have been working in the field of restoration ecology for over seven years and most recently worked in the San Francisco Bay Area as a Project Manager for an environmental non-profit focused on restoring park lands. Although, I enjoyed my time in California I am very excited to be back in Washington State and am looking forward to helping to restore the beautiful Skagit watershed.