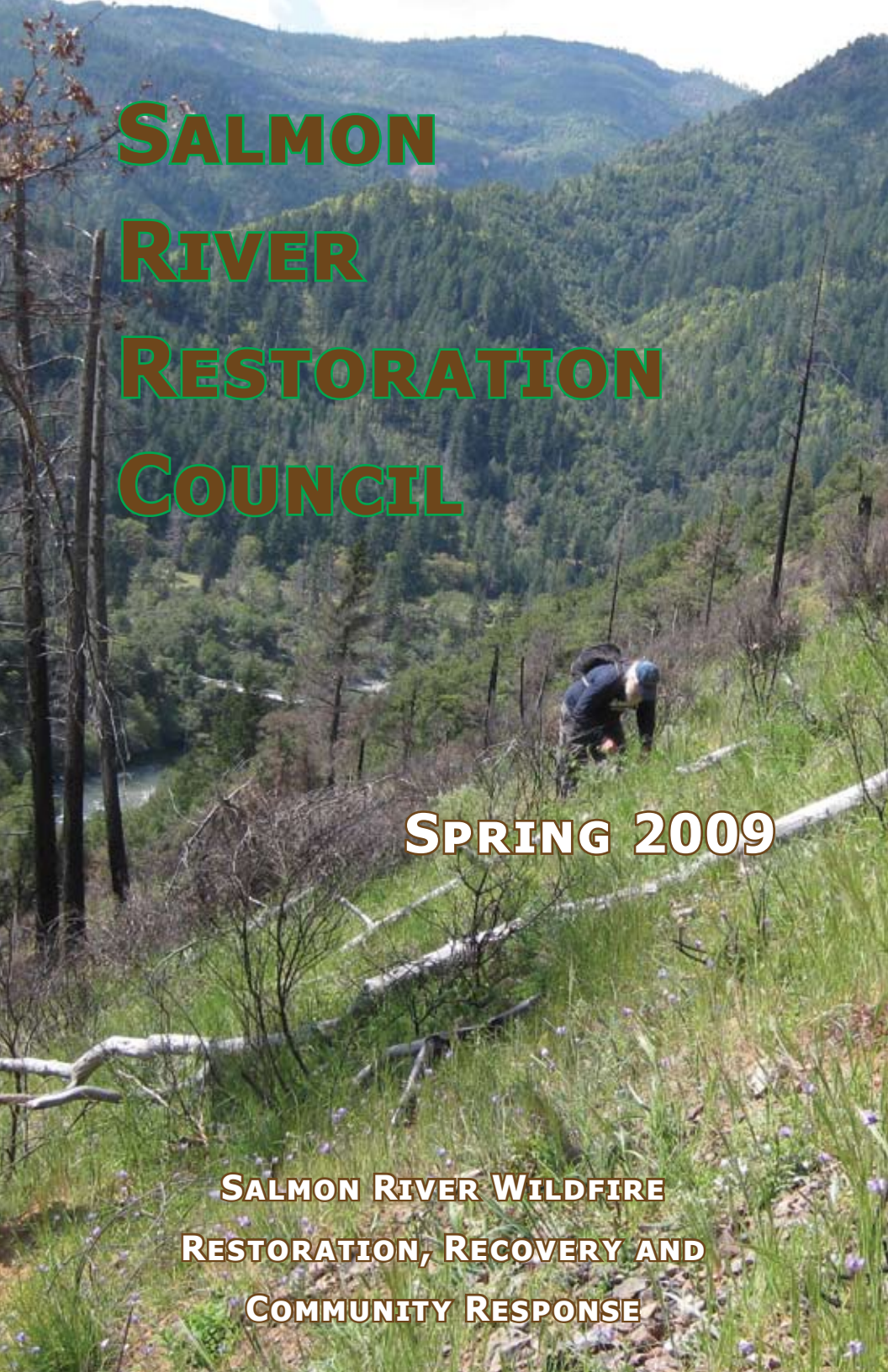

Salmon River Restoration Council

Spring 2009

Salmon River Wildfire Restoration, Recovery and Community Response

Spring is in full bloom in the Salmon River and the grasses are very tall this year and just about to seed. As we go into our third year of below average rain and snowfall, we should remember the lessons learned in the recent wildland fire years of 2008, 2007, 2006, and 2002 on the Salmon River. Dry years and droughts often coincide with more frequent and intense wildland fire incidents. We at the SRRC, have been very busy working with our partners to improve our understanding of these recent wildland fires, and fire behavior in general, on the Salmon River, so that we can improve our response and preparedness in future fires on the landscape and in our yards. We do know that over time these wildland fires have been one of the key features that have influenced and shaped the Salmon River forest and rivers systems, including the local people living, working and playing here.

This edition of our Newsletter is focusing on some of the details associated with the recent wildland fires, as well as providing some insight on the relationship between fire, fish, flora and fauna. Many of our restoration activities either affect fire behavior and its impacts to the fisheries/watershed and its residents; improve the ability to manage wildland fires more safely and smartly; and have been increasingly effective at reducing fire management impacts throughout the Salmon River.

We are excited to be creating a new Community Liaison Program (CLP) in response to the 2008 fire seasons. The Salmon River Fire Safe Council (including community members, SR Volunteer Fire & Rescue, SRRC, CAL FIRE and the USFS) has been working on developing this liaison team of community fire specialists who can work directly with incident management teams (IMT's) during wildfire events. The purpose of the CLP is to provide accurate local information to the IMT's and to the community. Liaisons will attend in-briefings (which occur when new IMT's come onto a fire). Klamath National Forest will make a formal recommendation to new IMT's that they work with the local liaison team. The hope is that this team will make the two week transitions between IMT's much smoother and provide the community with up to date fire news. The liaison team will increase the overall effectiveness of fire suppression activities.

The CLP program goals are to:
- Improve coordination with Incident Management Teams during fires and other emergencies;
- Better include local knowledge in fire management;
- Improve response by managers to local needs during fires and other emergencies;
- Increase preparedness and coordination for fires in the neighborhoods and towns throughout the Salmon River.

For folks who are interested in becoming involved in this process, Salmon River Fire Safe Councils are held on the last Wednesday of each month. See the calendar for meeting times and locations. You can help by reducing the threat of fire at your place and participating or supporting the CLP and Fire Safe Councils.

This year is set up to be another active fire year on the Salmon River, so it is best to finish getting rid of the burnables (piles of leaves, overhanging limbs, dead grass and brush) on and/or around your structures and on your emergency escape routes and be best prepared for fires.

We look forward to continuing to carry out our mission to restore the Salmon River watershed, with the participation of local community and stakeholders, focusing on anadromous fisheries and the development of a sustainable economy. This has often lead to our filling in the management gaps that open up on both private, public, and tribal properties across the landscape. To do this we need your continued support and help as SRRC members, volunteers, staff, landowners and residents, cooperators and funders to improve our partnerships, knowledge base and ability to take actions that improve the health of the Salmon River and its communities. If you would like to participate in any of our activities and events or make a contribution in any way, please contact us at the Watershed Center. Also if you would like to know more about what we're up to, check out our website.

Thank you for your time, interest and continuing support for the SRRC and the Salmon River.

Petey Brucker – SRRC Community Restoration Program - Coordinator

photos from the SRRC archives- SRRC Noxious Weeds surveying fire affects on Italian Thistle, right, after the 2008 Ukonom South backfires burned this area. Fire made it easier to find and treat Italian Thistle, but it also made it more likely to spread in the wind.

The SRRC took advantage of the fire burning the brush and reduced over 90% of existing plants on this steep mountainous site near the river. More than 200,000 plants were removed between January-May this year. GO TEAM.

Salmon River Fire Ecology and History

A Fire Adapted Ecosystem

The Salmon River is part of the coniferous and mixed evergreen forests of the Klamath-Siskiyou region, which are widely recognized for their globally outstanding levels of biodiversity. The watershed lies at an important biological corridor connecting the interior Basin and Range biomes with the Pacific Coast. It is a land of biodiversity superlatives and boasts one of the greatest coniferous tree diversities in the world - a convergence of trees found in both Alaska and Mexico.

In its natural state, the Salmon River watershed is a fire-adapted landscape that has evolved with a relatively frequent recurrence of non-catastrophic wildfires. The average return interval for fires in this ecosystem is 10-25 years. The Salmon River's diverse ecosystem types - mixed hardwood/coniferous forests, coniferous forests, oak woodlands, grasslands, and riparian plant communities – have evolved with fire as a natural process. With naturally balanced fire and the resulting fuel consumption, wildfires typically did not devastate large areas of the watershed with high intensity burns, but instead travelled slowly, lower to the ground, and did not damage large areas of soil or consume vast stands of forest. Many components of the ecosystem require fire to maintain their natural balance and species composition.

North Fork Salmon River photo by Scott Harding

The watershed's mild Mediterranean climate, characterized by warm, dry summers and cool, wet winters, is one of the primary factors affecting its fire regime. In addition, generally steep topography, and continuous areas of flammable vegetation, naturally create conditions that allow fires to spread across large areas.

How it Starts

Lightening strike in the Caribous

The primary causes of fire in this region, both historically and in the present, are lightning and human ignition. Naturally-occurring wildfires are ignited by lightning strikes during infrequent but powerful summer thunderstorms. Noted fire ecologist Jim Agee reports that the Siskiyou Mountains exhibit the highest pattern of lightning occurrence in the Pacific Northwest, with as many as twice the number of lightning ignitions as either the Cascades or Olympics.

Human-caused ignitions are also an important factor in the fire history of the Salmon River. The native tribes of the area used fire as a tool to manage the landscape in order to maintain oak stands, aid in the collection of mushrooms and acorns, clear travel ways, and improve habitat for favored plants and game animals. With Euro-american settlement, burning by Native Americans decreased dramatically. Unlike the more localized and controlled burning done by native tribes, the typical intent of burning by white settlers was to burn off as much vegetation as possible.

Traditional aboriginal burning, uncontrolled European settler burning practices, and a severe fire year in 1910, precipitated the passage of the Weeks Act in 1911. With this Act, congress initiated the policy of systematically and efficiently suppressing forest fires.

Fire Out of Balance

The balance of natural, fuel-reducing fire occurrence was changed with the advent of large-scale fire suppression in the early 1900's. As an unintended result of preventing nearly all natural fires, fuel loads increased throughout the watershed. Ultimately, any fire not suppressed would grow many times its natural potential size as it consumed this additional fuel load. In essence, fire suppression demanded further suppression in order to prevent conflagrations. Logging, road-building and other activities also significantly increased fuel loads.

Complete suppression is, of course, not possible and the Salmon River watershed began experiencing a series of large, catastrophic wildfires beginning in the second half of the 20th century. It is estimated that more than 70% of the watershed has burned since 1911, with more than half of that having burned since 1977.

A struggle is now in process to bring fire adapted ecosystems back into balance. As evidence of the true consequences of long term fire suppression builds, the policy of rabidly suppressing all fire is gradually giving way to a more measured approach. An array of tactics such as fuels reduction, controlled burning, and wildland fire use, are now being employed to gradually reintroduce fire to our long suffering forests.

The SRRC is a participant in and advocate for the use of these techniques to return fire to its natural place in the Salmon River. The wildfires of 2008, which burned approximately 80,000 acres in the Salmon River, were another in a series of large, high impact burns which the watershed has endured in the past several decades. With each incident we learn more about how to live with, use and control fire in ways that keep both our human and natural communities safe and healthy.

Lyra Cressey

Smoke during the 2008 wildfire on the Salmon River, photo by Jeff Buchin

Linking Wildfire Effects to Fisheries and Watershed Health

Fish species of the Klamath-Siskiyou bioregion have co-existed with wildfires, and other natural disturbances for millennia. Anadromous fish- salmon, steelhead, sturgeon, and lamprey eels have adapted to natural disturbances and have evolved various life history traits which facilitate their survival. These fish species are regionally important to tribes for ceremonial and subsistence use and local community members. Management impacts which may exacerbate the severity and extent of wildfires, such as past logging, roads, and fire suppression and exclusion, in addition contemporary fire management/suppression activities can have detrimental effects to watershed conditions important to fish. Wildfires may also have short- and long-term beneficial effects which could be better understood.

The direct and indirect effects of wildfire on fish are complex and occur across ecological scales. Spatially and temporally, wildfires are a key ecological process in the Klamath-Siskiyou Mountains influencing bio-geochemical cycles, hydrology, and different scales of biodiversity. The increase in the extent and severity of recent wildfires in mid-lower Salmon River drainages (e.g. Wooley 2005, Somes, Uncles and Hancock 2006, Ukonom Complex 2008) are thought to be caused by climate as well as past land management activities. What may be the beneficial effects of these or past wildfires on fish?

Indirectly, during and after, wildfires can help recruit large woody debris, soil, and nutrients from up-slope locations to stream and river networks, thus providing essential components of in-stream habitat. Additionally, wildfires can reduce vegetation density and cover, reducing evapo-transpiration demands at the sub-watershed scale, temporarily increasing surface water flow at springs and streams contributing to thermal and flow refugia. Lastly, the production of smoke from burning fuels can reduce regional to localized solar radiation, causing cooling of air temperature, increasing relative humidity and lowering subsequent water temperature. These last effects can be critically important, during "severe" wildfire or drought years which are often hotter and drier, to fish survival that are struggling with lower in-stream flows, higher water temperatures, and availability of suitable thermal (cooler) refugia, physiologically stressed, and susceptible to parasites or diseases. Increase in individual fish survival, increases species resiliency and population fitness, thus benefiting the diversity of stocks, runs, and diversity of fisheries.

Due to different life history adaptations, some fish are differentially affected, positively or negatively by short- and long-term effects of climate/weather and wildfires. Those species which are present in freshwater streams or rivers at some life history phase during wildfire season are more likely to be short-term (seasonal to present year) influenced by wildfires, with the same and other species affected over the long-term (post-year to decades). In the Salmon River basin monitoring and research is being conducted by SRRC, MKWC, USFS, and Karuk Tribe to integrate multiple lines of evidence from various physical, biological, and chemical data sources incorporating diverse methods to examine short- and long-term, as well as direct and indirect affects on anadromous fish and aquatic habitat conditions. Phase I incorporate NASA-MODIS satellite imagery (area of smoke plume) for specific dates of wildfire events and will be compared to RAWS (air temperature, humidity, wind direction) from USFS and MesoWest stations and corresponding stream temperature data (SRRC, USFS, Karuk Tribe). Currently, Phase I research results provide adequate evidence for the correlation of smoke decreasing water temperature that influenced more widely distributed Spring Chinook and Summer Steelhead in the Scott, Klamath and Salmon River Systems during the 2008 wildfires. Planned is Phase II of research which should provide a broader spatial and temporal understanding and context for direct and indirect linkages of wildfires to seasonal fish populations and fresh water conditions. Also planned is, Phase III research which should provide new and additional knowledge expanding upon models or theories of short- and long-term effects of wildfires on anadromous fish and aquatic systems of the Klamath-Siskiyou bioregion. Monitoring and research is on-going.

Dr. Frank Lake USFS-PSW. (franklake@fs.fed.us)

The Salmon River Fire Safe Council and Salmon River Restoration Council..

are actively working on fuels reduction projects within private property in our watershed. There are currently 95 acres under two contracts from California Fire Safe Council and California Fish & Wildlife Service. This project will coincide with the Forest Service's much larger effort to reduce fuels and protect old growth forest habitat in the Eddy Late Successional Reserve Fuels/Habitat Project. It will target the highest priorities identified by the Salmon River FSC. The areas to be treated are within the Wildfire Urban Interface or are on private lands within the USFS Late Successional Reserve Project area. If these lands go untreated they will become hazardous locations for fire starts. They also contain wildlife habitat that is losing value as the natural vegetation structure changes with the exclusion of fire.

Above photo from the SRRC archives of fuels treatment work being done on private land.

A new residential assessment program called Red Zone is being implemented by the Salmon River FSC and the USFS. This is a detailed questionnaire covering all aspects of structure and property conditions relating to fire risk. Vegetation, road access, structures, and water systems are all taken into consideration to give homeowners a look at their property from a fire risk perspective.

Red Zone information is given to emergency fire crews to assist them when protecting our homes. Participation in this fire preparedness program is optional but remember how chaotic it can be when wildfires are approaching. An review of your protection needs and problem areas NOW can make July and August much less risky and stressful.

More funding has been secured for 2010. Interested landowners needing help complying with new CAL FIRE requirements on their property, can contact SRRC to make a date for a Red Zone appointment. You can have either a local FSC representative or a USFS fire prevention technician help you. Our fuels reduction crew consists of experienced locals with knowledge of specific aspects of concern.

Robert Will

Noxious Weeders Are Winning the Game!

Noxious weed crew leader holding an Italian thistle dug from above Forks of Salmon

As spring burst into bloom, the SRRC crew was ahead of the game, digging the flowers we don't want to see any more of. Italian thistle is high on the list and huge progress as been made on the only known site in Siskiyou county - Downtown Forks of Salmon! A May Day celebration brought out over 25 volunteers to the steep hillside site. Participants were rewarded with a delicious Italian sausage meal. Thank you to Etna Brewery for the generous beverage donations. Thanks to everyone helping get a handle on this infestation!

Marlahan Mustard season is nearly to the seed stage, and so their yellow blossoms are seen along roadsides and other disturbed areas. Junction School took initiative in celebration of Earth Day, and obliterated a large roadside patch on the Main Stem. Feel free to join the effort - those single plants along the road or near your mailbox can easily turn into hundreds, but with a quick stop and a sharp digging tool, You can take them out!

You may recall last summer saw multiple fires, phone line construction, and other management activities bringing extra folks to noxious weed sites. Our early treatment was a key factor in minimizing the impact. The results of over a decade of digging Spotted Knapweed include a greatly reduced seed bank. Although ground was disturbed (potentially moving seeds) at numerous roadside and river sites, we are confident that very few, if any, seeds were available for spreading. Our careful attention to areas accessed during the fires and roadwork means we know where to look for anything new popping up. We'd like to encourage you to keep an eye out for noxious weeds growing in fire access, camps, and burned areas too. The knowledge our community has of noxious weed species has always been the key to finding far-flung infestations.

The BAER (Burned Area Emergency Recovery) has provided some funding for monitoring fire-affected areas for noxious weeds, and the California Department of Agriculture is again able to offer funding for prioritized weeds on private lands adjacent to the National Forest. Carri Pirosko has been instrumental in recognizing our important work and helping it continue. As always, drive slowly and notice what's coming up along the roadsides!

Shannon Flarity

Postfire-Habitat Specialists

Last year, 80,000 acres burned on the Salmon River. Now that the smoke has cleared and the fire crews are gone, what is happening in these burnt patches of forest? Take a look up. There has probably been a shift in the types and abundance of birds you find in the air.

Many different avian species are moving into recently burned habitats due to the increase of insects, such as the wood-boring beetle. By opening up the forest, eliminating some trees species, and influencing the growth of others, fire has created unique habitats for specialized birds. Some bird species found in fire rich habitats have evolved under the existence of fire. They utilize the food and shelter found in burnt patches of forest. Some species of birds are termed Postfire-Habitat Specialists. Their species survival is dependent on fire to create suitable habitats. Where prescribed fire is being used to reduce potentially hazardous fuels, bird habitat enhancement can be achieved as a secondary benefit. Postfire-Habitat Specialists birds include many woodpecker species. There are other species of birds that do not necessarily need postfire habitats to survive but are frequently found in recently burned areas.

On the Salmon River, you can find Hairy, Lewis and Downy Woodpeckers, Northern Flickers, Chipping Sparrows, Tree Swallows and the American Robin. All of these avian species are opportunistic in postfire habitats and feed on the abundance of insects found in dead snags. These birds also utilize cavities within the dead snags for nest sites.

Research has also found an influx of raptorial birds in burned over forests. The small mammals which hawks and eagles eat are easier to find in areas with less foliage. Many fuels reduction efforts address key threats that birds face, such as lack of mature trees, snags, and opened woodlands. Forest restoration practices are good, in general, for many bird species but we have much to learn about the effectiveness of forest treatment types.

Postfire habitats may look barren and lifeless but next time you find yourself pulling Italian Thistle above Forks of Salmon or just enjoying a hike through a burned over patch of forest, try to notice all the birds that were not there before the fire.

Kate Rowe, AmeriCorps steward

Watershed Education on the Salmon River

The local river schools have continued their enthusiastic study of our watershed. With funding continuing to be provided by the California Department of Fish and Game, students have expanded their studies to include the effects of fire on the landscape as well as its inhabitants- both terrestrial and aquatic. Junction upper grades have used their own knowledge, local resources and research materials to compile profiles of animals and plants affected by fire in our area. Forks school established monitoring plots to record the longer term impacts of fire in our local forest.

The 2008 Fall Chinook Survey was a success. Students also got a chance to participate in the Springer Spawning Survey. Collecting otoliths was a new experience for them, and the trip to Cecilville gave students from Junction a close look at an area they had never seen before. Students enjoyed their time on the river, noticing tracks and wildlife and counting more fish than they'd seen in past years. Mostly experienced counters, the kids were quick with the Data forms and knew just what to do - likely they'll be getting paid as fish crews before too long!

Students raised a total of 33 Chinook fry from the hatchery. The photos below are of the fry before release into the Klamath River and the kids on the way there.

The Bureau of Land Management provided the program with funding to enjoy BLM lands, which took us off the river on an expedition that included the wildlife refuges on the Southern Oregon/Northern California border. Students explored caves as well and were quick to recognize the similarities in the characteristics lava flows and river flow- an impressive connection! The opportunity for the river schools to travel together saved on funding and brought us together in a fun way. *Shannon Flarity*

News from the Watershed Center

Our new AmeriCorps Watershed Stewards for 2009, Michael Kein and Kate Rowe, have joined us and are busy getting acclimated to our rural communities, student teaching, seeking out noxious weeds, counting fish and setting up the trailer to live in on the Forest Service compound in Sawyers Bar. Michael and Kate have joined us from Florida and Wisconsin and are looking forward to their year with us.

Our solar panels are up and working nicely. Every little bit of extra energy to our battery bank certainly helps with our fuel bill. Hopefully we will be self-sufficient during the summer months and use the generator very little. We are hoping for a beautiful summer without an inversion layer of smoke.

Jim V. secured a grant through the McConnell Fund approved by the Board of Directors of the Shasta Regional Foundation to acquire new laptops and a color printer for the office. It has been so nice for those of us who did not have a new anything to actually have a brand new version for our office use.

As always the Watershed Center is open Monday-Friday most weeks with internet access, copy machine, fax, and map services available.

Kathy Duffy McBroom

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This institution is an equal opportunity provider.
Funding for the newsletter comes from the US Fish & Wildlife Service, CA Fire Safe Council, US Forest Service, Bureau of Reclamation, CA Department of Fish & Game, Sidney Stern Memorial Trust, Ayers Family Trust, The Strong Foundation, Clif Bar Foundation, and Trees Foundation
printed on Recycled paper with soy based ink

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The Salmon River Cooperative Spring Chinook & Summer Steelhead Dives

followed by the

4th Annual Spring-run Chinook Salmon Symposium

in Forks of Salmon

July 21st - July 24th