



Mid Klamath Watershed Council

Spring 2013, Fifteenth Edition

Fuels Reduction Treatments on Private Property A Bigger Picture

by Nancy Bailey

Over the last hundred years or so, the combination of fire suppression and the criminalization of native and settler controlled burning practices have altered our landscape profoundly, creating a tinderbox of fuels in our forested lands. Historically in the Mid Klamath, fire returns naturally (Fire Return Interval) to most vegetation types every 5 to 15 years. In areas where fires, both wildfires and controlled fires, have

been excluded, the build up of materials has created a fire deficit in the form of excessive fuel loading. Litter, ladder fuels, encroaching brush, and dense thickets dominated by even-aged Douglas-fir, have increased the intensity and impacts of fire when they do ignite. Wildfires these days often burn with such a high intensity and at such a scale that they put human

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Brushing followed by prescribed burns like this one on a midslope property on Thunder Mtn Road keep wildfires from burning homes in the Wildland Urban Interface.

Seiad Ponds Update

Coho Rearing Habitat Projects in Seiad Valley Show Promising Results!

By Will Harling

Seiad Creek and a handful of other tributaries in the Middle Klamath subbasin have one attribute that coho need to outcompete other salmonids and fulfill their life history requirements: low gradient (flat) stream reaches. Historically, beavers engineered these streams to maximize the extent of the wetted channel, building seasonal dams that encouraged side channels and off channel ponds to form where they could feed. These dams encouraged streams to migrate over time from one side of the valley to the other, spreading topsoil and nutrients that created conditions ideal for growing vegetation, and juvenile coho!

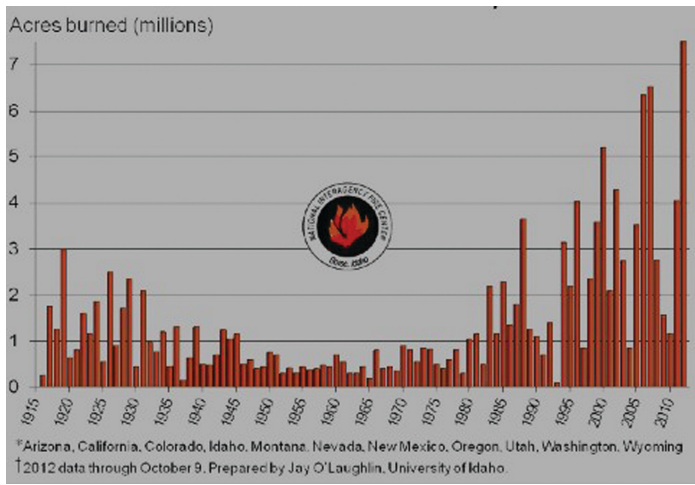
Unfortunately for the coho, there's another species that also thrives along these low gradient stream reaches and the valleys that hold them: Homo sapiens!!! Over the past hundred years, we have been busy as "beavers" engineering these streams

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Rocco Fiori (Fiori Geosciences) and Bob Pagliuco (NMFS) admire the beavers' handiwork on lower Seiad Creek. This dam backwatered the creek nearly 400' upstream and raised the water in the Lower Seiad Pond by two feet.

communities, ecological processes, wildlife habitats and the species that depend on them at risk. This situation is getting worse and likely to be exacerbated further due to a warming planet. (See graph below)



Acres burned in 11 Western States between 1916 and 2011.

WILDFIRE IS HERE TO STAY How Ready Will We Be?

The Orleans/Somes Bar Fire Safe Council (OSBFSC) receives grants annually to do fuels reduction, including brushing, mowing, and prescribed burning, on private lands in our community. Many landowners in the Orleans and Somes Bar area have participated in and benefited from these projects over the last 12 years. Many others have worked on our brushing and burning crews. Since 2001, our fuels crews and subcontractors have done fuels treatments on over 1,400 acres. Nearly 60% of the private parcels from Ti Bar to Bluff Creek have had brushing, mowing, or burning projects implemented on them.

Brushing an area is the first step toward reintroducing prescribed fire. Since local forests have become choked with

Fire Learning Exchange in Orleans

The Klamath Siskiyou Fire Learning Network arranged to have 16 Spanish Firefighters come work with MKWC and OSBFSC at the end of October constructing firelines and burning piles. We had a great Open House at MKWC where their leader, Jose Luis Duce, presented on prescribed burning programs in Spain, and Frank Lake and Arielle Halpern presented on native burning practices in the Klamath Mountains. It is interesting to note they do not conduct burnouts in Spain; just water drops and direct attack when conditions allow. The Spaniards had a wonderful time and we hope to continue to host training exchanges in future years

brush, introducing fire without a preliminary brushing treatment can often damage desired species and be dangerous. As anyone who has done brushing and watched the response of understory plants knows, cutting brush is not a one-time thing: every little hardwood stump will re-sprout with vigor. A few years after the brushing treatment is a good window to initiate a controlled burn, as the stump sprouting species will be set back for a longer period. OSBFSC plans and acquires funding for these three to five year “maintenance burns”. After the first burn, it becomes easier to maintain these areas.

OSBFSC brushing prescriptions generally call for cutting small diameter (<8” dbh) trees and brush species, while leaving all large trees and healthy smaller individuals at a 10’ x 10’ spacing, thereby creating “shaded fuel breaks” where fire is more likely to stay on the forest floor and out of the canopy. Besides the work of the OSBFSC crews, many landowners in the area have taken on their own fuels reduction and fire-safety projects, reflecting a high awareness of the risks and the motivation to meet this critical situation. Local residents have been taking steps that range from keeping a herd of brush-eating goats to creating fire-proof landscaping using mowing, burning, and even strategically placed rock walls. (An OSBFSC-produced documentary entitled “Lifestyles of



Community Rises to the Occasion During Wildfire

During the 2008 Ukonom Fire, a group of community members, having gathered to help at the Wiegel homestead on Offield Mtn, showed great courage and tenacity when faced with the raging front of approaching wildfire. Together with Forest Service crews, at the last minute, the friends and neighbors cut brush and trees near structures and along an exposed water pipeline. At the end, the agency crews were pulled out for safety. The remaining skeleton crew, a half-dozen locals, had to decide whether they should stay or leave. For a full story of this amazing example of community capacity and spirit, as well as anecdotes about fire suppression techniques, read the whole article from the North Coast Journal September 2008, “Our Fire Our Fight” by Malcolm Terence which can be found at <http://tinyurl.com/akvf7xw>



Wildfire Stopped at Hacking Property

Another example where fuels reduction played a key role in protecting homes in the WUI was at the Hacking property on the lower Salmon River. In 2001, the Salmon River Restoration Council's (SRRC) fuels crew brushed four acres in a white oak stand above the Hacking home. Two years later, OSBFSC, SRRC, and the Hackings organized a volunteer burn day to restore the historic fire regime of this stand and maintain the fuelbreak. Tony Hacking, a Wildlife Biologist for the Orleans Ranger District (and president of the MKWC board of directors), instructed participants on proper preparation and ignition techniques, stressing the value of controlled burns to wildlife and fire dependent forests and grasslands. This volunteer burn day was replicated many times in the following years as residents reclaimed the use of lower intensity controlled burns as a tool to maintain their fuelbreaks. In 2007, Tony passed away from a rare form of cancer, leaving behind his wife Teresa and their three children. The next year (2008), Teresa, the OSBFSC, and SRRC organized another maintenance burn on this unit. Three months later the Ukonom Fire jumped a fireline just upslope from this fuelbreak and burned downhill toward the Hacking residence and other homes. In the shifting winds, embers were falling around the home and on the fuelbreak, but because there were no fine fuels left to burn, no spot fires ignited.

the Rural and Firesafe” details some of these activities. DVDs are available at the MKWC office.)

While the most obvious objective of these projects is for fire safety immediately around homes and within the CalFire mandated 100-foot “defensible space”, other treatments have created “safety zones” for use during wildfire incidents. As one of the owners at Butler Flat, Malcolm Terence reported; “Both the 2006 and the 2008 fires came very close to the houses at Butler Creek. Happily, we’d had lots of treatment from the landowners as well as from SRRC and OSB FSC. In 2006, Sue asked one of the division supes if they would try to get us to evacuate when the fire got closer. He answered, “I don’t know

about that, ma’am, but when it all turns to s#*t I’m gonna bring my crews here because you’ve made it so safe.”

Other treatments have gone beyond these parameters to include roadside, ridgeline and larger pieces in strategic locations for shaded fuel breaks and for a variety of other intertwined objectives (see below for information about a new video about prescribed fire):


The Enhancement of Traditional Cultural Resources

Native American Tribes figured out thousands of years ago how burning habitats on a regular basis enhanced habitat for wildlife and increased production of acorns and other native plants that offer food, medicine, or basket weaving materials. Prescribed burning projects in the short-term and re-instatement of historic fire regimes in the longer term will renew these once-abundant resources.

The Restoration of Wildlife Habitat

Historic management with controlled burning maintained large oak woodlands and grasslands, reduced brush and understory fuel densities, and enabled animals (and people) to move more easily across the landscape. A study by US Forest Service Pacific Southwest Research Station geographer Carl Skinner showed that canopy openings in the western Klamath Mountains decreased in size by approximately 39% between 1944 and 1985. Recent large wildfires in 2006 and 2008, while having many negative consequences, did restore many of these canopy openings at the landscape scale.

Ecological Integrity and Watershed Health

This area is renowned for its biodiversity and abundance, which has been chronicled in David Rains Wallace’s classic book, *The Klamath Knot*, and more recently, *Stewards Fork*, by renowned fire ecologist Jim Agee. Excessive vegetative growth, the shift from low to high intensity wildfire (or no fire), and non-native invasive weeds has all reduced this diversity. Renewal of ecological integrity sounds like a giant mission, but it can be tackled on numerous fronts. Brushing and re-introducing low intensity fire are just part of the huge restoration tasks ahead, but they are key activities as we move toward overall watershed health. 

Just Released on DVD (or view it online) “Catching Fire: Prescribed Burning in Northern California”

The Orleans Somes Bar FSC, through funding from the CA Grants Clearinghouse and USFS Community Protection Program, recently finished a 52-minute documentary addressing the need for expanding the use of prescribed fire as a management tool to reduce the impacts and costs of fire suppression and maintain constructed fuelbreaks. Interviews with local FSC representatives, including Perry Daniels, PT Brucker, and Will Harling add a local flavor to the film. It was well received at the International Fire Congress in Portland in early December and is available on You Tube at the Orleans Somes Bar FSC You Tube page.

Putting the Salmon Back in the Salmon River

By Will Harling

The largest salmon run on the Klamath River during my short stint on the planet was about 30 years ago. I was nine years old, and remember tagging along with my older brother that summer below our family home on the North Fork of the Salmon River, catching salmon about every way imaginable. He let me come with him if I “didn’t scare the fish.” Those were different times when folks lived off the land more and salmon was part of how we got by. We would bring them up fresh from the river, and hang them on hooks while we got the barbecue going. My favorite recipe was fresh salmon steaks with butter, lemon, garlic, salt and pepper in a tinfoil boat cooked hot and fast, the juices simmering together.

Fast forward five years to the late 1980’s and salmon runs dropped to their lowest numbers on record. Stretches of river that used to fill up with salmon were empty. I felt sick to my stomach thinking we had a part in their disappearing act. The fear that I had stolen from my future kids the joy of catching fish was hard to face. I took to heart a local anti-poaching campaign and stopped fishing for salmon on the Salmon River altogether. But the memory of those good years when every hole was full of fish lived on. My dad and my brother had both broken a leg logging, and so when they advised me to choose another career, I leaned toward studying salmon and how we might restore them to a harvestable surplus once again.

Twenty years down this road, I continue to be humbled by the complexity of factors that determine the ebb and flow of salmon into the streams of the Klamath River basin. From when they emerge out of the gravel until they return to spawn, each species of salmon require unique habitats connected by flowing water: these creeks and rivers that are the lifeblood of our fish, and our human, communities. If there is any break in

the chain, in this linkage of habitats, fish disappear in a hurry. Since Copco Dam blocked Spring Chinook salmon from the Upper Klamath Basin in 1917, their numbers in the Klamath River system have fallen from nearly one million fish per year, to less than 3,000 fish on the best of years.

For coho salmon, it wasn’t the dams but the taming of creeks and rivers that once meandered through the valley bottoms, shifting channels in every high water event, that fast

tracked their decline. Nearly every flat stream in the basin has been hemmed in by levees, bridges, roads, and rip-rap, leaving the juvenile coho no place to go in the winter high water events. Historically, the beavers, whose seasonal dams encouraged streams to travel across their floodplains, were unknowing architects of the best coho habitat around. But even as they stage a small comeback after a century of trapping, their dams are easily blown out in streams that resemble bowling alleys more than the winding serpents they once were.

But for the past few years, the stars have aligned for salmon in the Klamath River. Good ocean conditions off the mouth of the Klamath River combined with above average rainfall, especially in late spring, have provided the food and the instream conditions for at least one run of salmon to stage a comeback, of sorts. Fall Chinook runs this year were the largest in thirty years. Once again, by the end of the summer of 2012, nearly every hole in the Salmon River was full of fish. The memory of fresh salmon steaks barbecued to perfection drove me down to the mouth of the Salmon River, where it is legal to fish for Chinook for a brief month in late summer.

I brought my eight year old son, Owen, with me, hoping that he would get a taste of the abundance and excitement of a big salmon run. We shared the shoreline with old friends of mine that remembered that big run 30 years ago, and others like our local doctor, who was hooking his first salmon. Owen fought one into shore, then gave up the fishing pole to be the designated netter as that looked like even more fun. The river was packed, and as the salmon wheeled out into the giant confluence hole, then approached the mouth of the Salmon River to begin their evening run, fish leapt out of the water so often the sound of splashing hardly paused. I looked over to see Owen hefting a 25 pounder onto the shore for an especially talented young fisherman I had watched grow up into a man before my eyes. Owen’s face was flushed. He let out a wild yelp he learned from his TV hero, the Turtle Man, and exclaimed “Now that’s live action!”

We humans naturally tend to deflect blame, but take credit when things take a turn for the good (even if that credit isn’t deserved). While I think Mama Nature deserves most of the credit for this bump in the salmon run this past year, I also think the real changes folks from the headwaters to the ocean have made to help the fish are having some effect. Whether it’s the closure of the commercial ocean fishery, the removal of barriers to fish passage, the miles of riparian fencing, increased water conservation measures, constructed fish habitats, getting wood back in the rivers, giving the beavers a second chance, or all of the above, we are re-thinking our role as stewards of this river. This river that feeds us. This river that lights a spark in a young boy’s eyes so next time the salmon runs dwindle, he will remember why salmon are worth fighting for.



Rory Harling, the author’s three year old daughter, poses next to a 25 pound Fall Chinook salmon that her older brother, Owen, helped net out of the Klamath River.

What is a Foodshed?

By Mark DuPont

If a watershed is a region or area drained by a river, how do we define a foodshed? Start by looking in your pantry—you may find bananas from the Dominican Republic, chocolate from West Africa, coffee from Guatemala, potatoes from Idaho, the wheat in your bread may be from Canada, the corn in your tortilla chips from the Midwest. Draw lines from these points of origin to your doorstep and you have your foodshed. In a watershed gravity moves water downhill, towards the ocean, with nutrients pulsing in complex and dynamic food webs. In a Foodshed, nutrients move in arteries of ships, planes, rails and highways, quite often upstream or uphill. In a community such as ours, the food's final step of the journey is typically on a narrow strip of asphalt vulnerable to the vagaries of weather, landslides, and the price of gas.

Of course, if you live in this community, you're likely to have another class of foods in your pantry—fresh fruit and vegetables from your garden or a local farm, canned tomatoes, jams, pickles and preserves, some smoked fish, maybe some mushrooms gathered from the forest or game that you or a friend hunted locally. At one point in time the foodshed and the watershed were largely synonymous. Here in the mid Klamath it is only a matter of generations since their separation and they overlap more than in most regions of the US. Colonization and the extractive industrial economy have taken their toll on the land and the people of this region, yet a strong culture of traditional ecological land management and food procurement still persists.

Even so, the majority of our food still arrives via that asphalt ribbon, and our local stores stock little more than a few days worth of food on their shelves. Drought and erratic weather patterns combined with hoarding on international markets caused worldwide shortages and price spikes from 2006—2008. Last year a bumper crop of corn and wheat was virtually wiped out by drought and storms. Grain prices doubled overnight causing a cascade of price increases from cereal to meat products. As gas prices increase and funds for public infrastructure decrease, climate change leads to instability in world food markets. People are becoming increasingly concerned with the source and quality of their food. As we come to rely more and more upon our local resources, the clean water and air from our forests, the soil of our farmlands, the integrity of our communities and homes, we are finding that they have been degraded and are in need of restoration and regeneration themselves.

MKWC's Community Foodshed Program

In 2012, MKWC formed a new Community Foodsheds program to promote an abundant, healthy and continuous supply of food for our River communities. We are coordinating our efforts with a groundswell of local initiatives, from the Orleans Community Exchange to school and community gardens, local farmers and gardeners, and concerned citizens in general. This January we participated in a Symposium to launch a 5-year program: *Enhancing Tribal Health and Food*



Community Foodshed events are ongoing workshops and peer to peer skill sharing that focus on seasonal food activities in the Mid Klamath.

Clockwise from upper left: Hawk White demonstrates how to field dress a deer, Grant Hillman shows butchering techniques, Rex Dufour from National Center for Appropriate Technology presents on Poultry, a pruning workshop at Sandy Bar Ranch.

Security in the Klamath Basin of Oregon and California by Building a Sustainable Regional Food System, which aims to achieve a sustainable food system in the Klamath Basin that results in healthy communities, healthy ecosystems and healthy economies in the Klamath watershed. Over the next five years we will be working closely with local community members, the Karuk Tribe, UC Berkeley, San Francisco State University, and the UC Cooperative Extension on activities such as peer to peer workshops and skills exchange, youth led health assessments, promoting access to local, healthy foods for schools and elders, supporting homesteads and community gardens with technical assistance and support. 2013 marks the start of this exciting project, we look forward to community collaboration and invite your input.

The community in the Mid Klamath lives squarely in the 21st century and has come to rely on the mixed blessings of modernity. Turning to our gardens, our community and the watershed rather than the closest urban center for sustenance involves learning new habits for some, reclaiming traditions for others, and the recognition of reciprocity: that if we are to take, be it from the garden, the river or the forest, then we have to give back.

Community Foodshed events are ongoing workshops and peer to peer skill sharing that focus on seasonal food activities in the Mid Klamath. Clockwise from upper left: Hawk White demonstrates how to field dress a deer, Leaf Hillman shows butchering techniques, Rex Dufour from National Center for Appropriate Technology presents on Poultry, a pruning workshop at Sandy Bar Ranch.

For more information and updates about the Foodsheds program activities (including free public workshops, community meetings, youth projects and volunteer opportunities) or to contribute suggestions, please contact ramona@mkwc.org, call our office or join our facebook page. We look forward to hearing from you!!



NEW ARRIVAL: Dalmatian Toadflax *Linaria dalmatica*

By Tanya Chapple

Dalmatian toadflax, though common along the Trinity River and Highway 299, is a perennial invasive weed new to the Mid-Klamath. This plant is terribly invasive, easily displacing native plants and thriving in all conditions; from desolate river bars to garden settings. This plant reproduces both by seed and by vegetative root buds. One plant can produce up to half a million seeds with lateral roots out to ten feet, creating new shoots along the way! This impressive plant can readily out-compete native plants thus reducing plant biodiversity and negatively impacting wildlife.

The Mid Klamath Watershed Council weeds crew first found Dalmatian toadflax near Bluff Creek in 2005. That site was swiftly eradicated and the weed was not seen again until 2011 on a river bar near Weitchpec and at Ullathorne river access. This past summer MKWC found three additional locations: one at Aikens Creek Campground, an additional location at Ullathorne and a large population near the mouth of Camp Creek. MKWC will continue to pull this weed from our watershed, but in order to be effective we need all eyes on the lookout.

The incredibly beautiful Dalmatian toadflax is an escaped garden plant



originating from the Mediterranean region. It is also known as wild snapdragon because of its multitude of showy, bright yellow snapdragon flowers. It blooms from May until September; and here in the Klamath, it is at its showiest in July. The plant ranges from two to five feet tall and about as broad. The leaves are very distinctive: smooth with a bluish hue and clasping to the stem.



Because Dalmatian toadflax is so deep rooted (up to six feet) it can be incredibly difficult to remove. MKWC's treatment strategy is to repeatedly pull the plant several times a year. This prevents it from producing seeds and eventually exhausts the root reserves of the plant enough that it perishes. The sites that we have been treating since 2011 have seen much improvement. The weeds are no longer healthy, the plants are much smaller and insect predation on the fruits is evident. Additionally the number of plants at these sites has reduced by more than half since discovery due to MKWC's hand pulling.

If you have any questions, concerns or information about this invasive plant please contact Tanya Chapple at the Mid Klamath Watershed Council or by email at tanya@mkwc.org.

A Case of Mistaken Identity

By Jimmy Peterson

I write this in regard to the article that I wrote and submitted to the Mid Klamath Watershed Council newsletter last year. The article was about gypsy moths (*Lymantria dispar*), a highly invasive insect native to Eurasia, and the problems that they can cause in a forest ecosystem. I moved out to the Klamath area from Minnesota in September of 2011 and noticed strange, sticky webs in the madrone trees around the river. I had seen similar webs in Minnesota and New Jersey and had learned that they were gypsy moth larvae, which led me to believe that the webs I was seeing along the river were the same insect. A local botanist for the Forest Service read the article and informed me that I had misidentified the webs. What I was seeing along the Klamath were not gypsy moths, but either forest or western tent caterpillar (*Malacosoma*) webs, which are both native to the Pacific Northwest and much of the United States.

Tent caterpillars prefer deciduous hardwoods trees such as ash, alder, cottonwood, willow, or evergreens such as the Pacific madrone. These insects have a natural outbreak cycle and are not seen as an intensive threat to the health of the forest. The outbreak cycle runs roughly every ten years. Once in the adult



stage, the insect is harmless and is food for a variety of birds and bat species.

There are many ecological controls for the caterpillars as they have many natural enemies. Several species of parasitic wasps and flies feed on the caterpillars and other insect species such as the assassin beetle also call the worm food. There are viruses that afflict the caterpillars as well and when the populations explode, so does the virus, helping to curb the population. As fire is a natural control, restoring historic fire regimes in a manner that protects life, property, and resources valued by stakeholders in the Middle Klamath sub basin is likely our best hope for curbing tent caterpillar infestations. We hope this information reaches all boxholders in the Mid Klamath who read this article in our last newsletter. Help spread the word!

Noxious Weeding in the Wildlands

By Tanya Chapple

MKWC has been actively pulling non-native invasive plants since 2005. The invasive weeds we work on are not from here, most of them originating in Europe or Asia. A plant is considered invasive when it has an ability to out-compete native vegetation and results in a changed habitat. This new, non-native habitat does not support wildlife in the same way and drastically reduces biodiversity of an area. In order to protect our ecosystem from the threat of invasive species, we employ manual removal, mulching, and other non-chemical methods of invasive plant control. Eradicating a plant from a landscape can be a very difficult task to achieve, especially when the plant has the outstanding tenacity common to invasive species. Because of this, MKWC emphasizes an “early detection” approach, which is treatment of species that are new to our area but are determined to be a very significant hazard based upon the damage done in outside areas. Early detection allows us to swiftly eradicate weeds upon their introduction into the mid-Klamath. We also emphasize treatment of “leading edge” and “satellite” species. Leading edge refers to where the individual weeds sites are in relation to the greater population. For example, meadow knapweed in Weitchpec is at the southernmost edge of a population that includes the entire Pacific Northwest. An example of a satellite site is where we treat Scotch broom 18 miles up the G-O Road, which on a large scale would be considered part of Northern California’s extensive broom population, but locally it is an isolated small site that can easily be eradicated. By treating the leading edge and satellites of a population, we are containing that species within a boundary preventing its expansion further up the road, or down the river, protecting wilderness areas and other watersheds.

This past year was MKWC’s most productive weeds management year yet. We treated more acres than ever before, completed a survey on river bars from Somes Bar to Weitchpec, continued survey and treatment in the wilderness areas and continued containment of meadow knapweed in Weitchpec.

We inventoried the mid-Klamath river bars for prioritized invasive weeds. We surveyed 272 acres and mapped 53 new sites. This project was funded by the Humboldt Resource Advisory Committee and prioritized mapping of early detection, highly invasive species including leafy spurge, perennial pepperweed, oblong spurge, spotted knapweed, meadow knapweed, Dalmatian toadflax, Canada thistle, and Italian thistle. We will begin treatment of these new sites this coming spring and summer. Many of the sites are only accessible by river so look forward to some rafting volunteer workdays!

In addition to our new river project we treated and monitored 91.25 acres pulling a total of 68,793 invasive plants. The



East Peak Woad Volunteer workday

monitoring was visiting 20 potentially eradicated sites where we have not seen any weeds returning for a year or more.

We have had the opportunity to work in wilderness areas for the past three years. We are working on hand pulling weeds found at trailheads or within the wilderness as well as monitoring trails for new sites. Since 2009 we have worked in the Marble Mountain, Siskiyou and Trinity Alps Wilderness Areas with support from the National Forest Foundation’s Wilderness Stewardship Challenge. We have monitored over 300 miles of trail and worked to reduce the presence of non-native invasive plants in these areas. In 2013 we plan to complete mapping of all trails and trailheads in the Siskiyou wilderness and treat known sites within the wilderness, most notable is a meadow knapweed site near Young’s Valley. Additionally, we have proposed monitoring in the Red Buttes Wilderness and working in conjunction with the Salmon River Restoration Council to monitor Trinity Alps Wilderness trails within the Salmon River watershed and to treat known weeds sites at wilderness trailheads.

All in all, we look forward to another industrious year preventing the further establishment of these nasty plants. Please get a hold of me if you have any questions about the weeds program, to report an occurrence or have a general plant question. I am happy to help! A great way to learn more about what we are up to is to join us for upcoming weeds volunteer workdays! The best way to learn about invasive and native plants is to get out there, on the river or on the trail, and do something positive for our community. Lunch is also provided! Workdays will take place about every two weeks from May through August. Lookout for a more detailed schedule announced in late spring. ✿

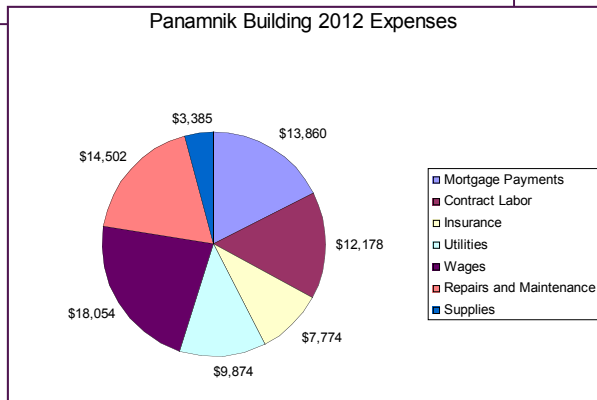
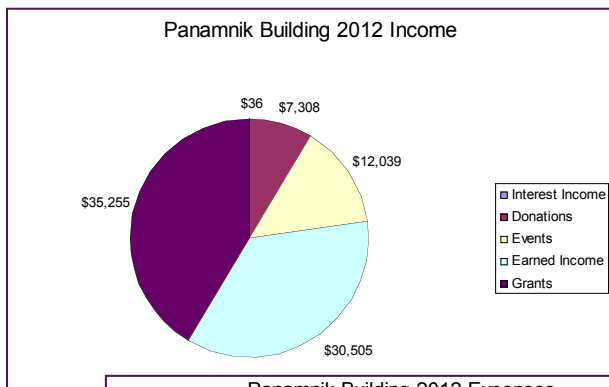
Panamnik Building Project Update

By Michael Stearns

Now a combination community center, office hub, and storehouse, the Panamnik Building was built in 1957. People remember it as a well equipped country store, then a furniture store, and finally in the early 2000s, as a vacant shell. The Mid Klamath Watershed Council began renting the building in 2005. With increasing use of the space for community functions, more and more people expressed the desire to acquire the building as a community asset. In 2010, after a multiyear capital campaign, including many community fundraisers, MKWC purchased the building. The Panamnik Building Project currently operates as a program of MKWC but is guided by the community in its development. The Orleans post office still occupies part of the building.

Through continued fundraising, rent, donations, and community support we are making triple payments on our mortgage and planning improvements to the Panamnik Building and its grounds. Although our budget is limited, we have been able to make small improvements to the building, and there are plans for more substantial changes. In the past two years the building's lighting has been upgraded, the security system improved, the old walk-in coolers removed, and many other repairs made to keep the doors open and the weather out.

Because the property is close to the river, impacts on biological, historical, and cultural resources must be considered before a building permit can be issued. We have had to work with the federal government, the State of California, and the Karuk



Panamnik Building Project Phase Two

	Community Funds Needed	Grant funds needed	MKWC Funds	Funds already secured	TOTAL
ADA Bathroom and shower	\$ 3,000.00	\$ 20,000.00	\$ 1,500.00	\$ -	\$ 24,500.00
Back door and deck	\$ 500.00	\$ 5,000.00	\$ -	\$ -	\$ 5,500.00
Amphitheater	\$ -	\$ -	\$ -	\$ 38,000.00	\$ 38,000.00
Equipment Shed	\$ -	\$ -	\$ 1,000.00	\$ 7,800.00	\$ 8,800.00
Move propane tank	\$ 1,000.00	\$ -	\$ -	\$ -	\$ 1,000.00
Electrical (light switches, electrical outlets, exterior lighting)	\$ -	\$ 3,000.00	\$ -	\$ -	\$ 3,000.00
Create parking lot	\$ 2,000.00	\$ -	\$ -	\$ -	\$ 2,000.00
Plumb the ovens	\$ 1,500.00	\$ -	\$ -	\$ -	\$ 1,500.00
Install dishwasher	\$ 1,500.00	\$ -	\$ -	\$ -	\$ 1,500.00
More counter space	\$ 50.00	\$ -	\$ -	\$ -	\$ 50.00
New faucet and water heater	\$ 400.00	\$ -	\$ -	\$ -	\$ 400.00
Secure underbuilding	\$ 100.00	\$ -	\$ -	\$ -	\$ 100.00
Paint	\$ 2,950.00	\$ -	\$ -	\$ -	\$ 2,950.00
Mural on building	\$ 200.00	\$ 4,000.00	\$ -	\$ -	\$ 4,200.00
Kids' corner storage area	\$ 100.00	\$ 200.00	\$ -	\$ -	\$ 300.00
Interior storage area	\$ 100.00	\$ 900.00	\$ -	\$ -	\$ 1,000.00
Fix exterior facades	\$ 100.00	\$ 900.00	\$ -	\$ -	\$ 1,000.00
Fix front gutter	\$ 1,000.00	\$ -	\$ -	\$ -	\$ 1,000.00
Termite treatment	\$ 5,500.00	\$ -	\$ -	\$ -	\$ 5,500.00
TOTAL	\$ 20,000.00	\$ 34,000.00	\$ 2,500.00	\$ 45,800.00	\$ 102,300.00

Phase 3: Fix front gutter and drainage, repair damaged framing, new siding, new paint, double-paned windows, upgraded HVAC, complete electrical upgrade (grounding), new roof, commercial kitchen, retail space

Tribe to obtain these permits—a lengthy and expensive process, that has delayed implementation thus far. MKWC intends to responsibly create a useful place for people and events, while enhancing native plants and habitat, and respecting the culture that was here before us. When the permitting obstacles are resolved, we plan to break ground on the project—hopefully this spring.

Our most exciting current project is an Outdoor Park and Education Center. This project will create a riverside amphitheater behind the Panamnik Building along the Klamath River. The Somes Bar Arts Council, through community fundraising, and the Stewardship Council, are providing the funding.

Other plans to develop our property include:

- an equipment shed via a grant from the Headwaters Fund. This new building will replace an old, decrepit building and will house our Fire and Fuel program's tractor and tools.
- moving our parking area to the south and constructing a bioswale to treat runoff from vehicles before it enters the watershed. We would like to change the way traffic flows behind the building to create an outdoor area friendlier to pedestrians and children. We are excited to provide a community outdoor area for education and events.
- removing the deteriorating loading dock and creating a different back entrance and deck. Painting the building, landscaping, putting on a new roof, and heater are all planned projects for 2013.

With community guidance and support MKWC hopes the Panamnik Building will continue to grow and nourish our community. We welcome your feedback and questions and encourage you to add your voice to this blossoming community center.

Meredith Klein-Morehead

Taking the Reins as the Panamnik Building Coordinator

It has been an amazing first year as Fundraising Coordinator for the Panamnik Building Project. I have had the opportunity to work with so many passionate, dedicated people, and be a part of so many wonderful events.

Some of the highlights have been all of the fantastic Third Thursday Dinners we have had. The Fitness group got us river-wear ready with healthy salad rolls and bahn mi sandwiches; Blythe and friends at Sandy Bar cooked us an authentic African Feast; Barbara Rohr gave us amazing Indian Curry; we sampled all things local with our Blackberry festival; Nancy Doman took us to Ireland in March; and let's not forget Tina Marier and Big Band Night, as well as Oktoberfest. I really appreciate all of those hard

working people that took time out of their busy schedules to cook for us so that our community can come together for dinner every month. We capped off all

those great dinners with our Annual Banquet and Auction, featuring delicious food, great music by the Absynth Quintet, and amazing auction items—a truly wonderful night.

My favorite event, by far, had to be the Klamath River Rush, our run/walkathon in September. On a lovely late summer day, 25 of us ran or walked down Highway 96 from the Salmon River Outpost to the Panamnik Building—almost eight miles total—and raised almost \$1500! Talk about bang for your buck! We can't wait to have this event next year, bigger and better.

One of the things I am most proud of is our "Cooking on the Rivers" Cookbook. Edited by Janet Morehead, it is a collection of some of the tastiest and treasured recipes of all of the wonderful cooks here on the river. I am really enjoying trying out all of the recipes, but I must say that my favorite one is still Lillian Rentz's lemon sours.

I am so excited about the year to come and all of the things that we are planning. There are rummage sales, plant sales, more tasty dinners, as well as some new things such as bike rides and garden tours. I would just like to say again how much I appreciate all the people who have helped out this year, whether by cooking, volunteering their time, or just showing up to make these events special and successful. Can't wait to see you at the next event!



Another successful Third Thursday Cafe!

Getting Involved in Watershed Restoration

Volunteering at MKWC is a great opportunity to learn about natural resource management in your area, as well as meet new people, and acquire new skills! Below is a list of MKWC events and volunteer opportunities:

MKWC Public Meeting (Happy Camp): This year MKWC will host an annual public meeting in Happy Camp to introduce citizens to some of our programs and let them know how they can become involved. There will be a special presentation about MKWC's off-channel pond projects. Tuesday April 9th at 5:30 pm at the KS Art Center.

Fisheries Overnight Raft Trip: Come out and enjoy a river camping trip with MKWC's fisheries crew. We will be working on juvenile fish passage and off-channel habitat enhancement at tributary mouths along the Klamath River in the Seaid Valley area. Tentative date is scheduled for June 15th.

Adult Fish Passage Workday: Join the MKWC fish crew in improving adult fish passage on Rogers Creek. Volunteers will raft down the Klamath stopping at Stanshaw creek to snorkel and at Rogers creek to move large boulders and create step-pool fishways. Tentative date is scheduled for August 23rd.

Fall Chinook Spawner and Carcass Surveys: MKWC participates in annual collaborative Spawner and Carcass surveys October-December. If you are interested in helping collect data on these surveys please contact Charles Wickman at the MKWC office.

Prescribed Burning: MKWC's Fire and Fuels program implements prescribed burns in the fall, winter, and early spring. Due to safe burning windows volunteer opportunities arrive with short notice. If you would like to be added to the volunteer burn list please contact Chris Root or Will Harling at the MKWC office.

Invasive Weeds: There will be several volunteer invasive weed removal workdays scheduled for 2013. Participants will learn about local invasive weed identification and removal techniques. This is a great opportunity to help preserve local biodiversity in the Mid Klamath region. All dates TBA. For more information please contact Tanya Chapple at the MKWC office.

Native Plant Garden: There will be a native plant garden workday on Saturday May 18th. Keep your eyes open for flyers with more information or contact Nancy at the MKWC office.

The North American Black Bear *Ursus americanus*

By Blythe Reis

The North Coast/Cascade subpopulation of black bears occurs north and west of the Sierra Nevada Mountains and includes both the Northwestern and Cascade floristic provinces (Jepson 1993). Roughly half of the statewide black bear population resides in this portion of the state. Previous and ongoing studies indicate that bear densities range from 1.0 to 2.5 bears per square mile (Department of Fish and Game 1993, Kellyhouse 1977, Piekielek and Burton 1972). Almost the entire bear habitat in this area is publicly owned or used for timber production.

Black bears can be brown or cinnamon colored as well as black. They are omnivores with their diets varying greatly depending on season and location. They typically live in largely forested areas, where there is sufficient food, cover, and water, but will leave forests in search of food. They are not naturally nocturnal animals but have become so in response to humans. In winter they hibernate for 2-5 months depending on climate. Around here in mild winters they can continue to forage sporadically through the winter. In spring as they start to venture out they will forage for the daylight hours but due to the lack of food and their weakened condition will retire early, sometimes after only several hours. In summer and early fall they will forage 18-24 hours/day, as the food supply reaches its peak, bulking up in preparation for winter hibernation. In the later fall they will gradually decrease foraging time until they go into winter hibernation. When hibernating they do not eat, drink, urinate, or defecate!

The illegal killing of black bears has been a problem in California as well as other western states. In the early 1980s, population modeling indicated that poaching was almost equal to the legal harvest in some areas (Sitton 1982). A demand for bear parts, particularly gallbladders, for use in traditional Asian medicines was thought to have contributed to illegal activity. Field investigations and computer modeling further suggested that poaching was occurring during spring and summer when bear hunting was illegal. Hunters in California are no longer

allowed to use dogs to hunt bears and bobcats under legislation signed by Gov. Jerry Brown in response to complaints the practice is cruel and

unsporting. The ban took effect Jan. 1, 2013. Hunting bears with hounds has already been outlawed in 14 states, including Colorado, Montana, Oklahoma, Oregon and Wyoming. Currently, the hunting season, which runs concurrent with the deer season, is closed when there are 1,700 bears reported taken or the last Sunday in December, whichever comes first.

In 1992, the American black bear was listed under Appendix 2 of the Convention for International Trade in Endangered Species (CITES). The listing occurred because the gallbladder of the North American black bear is very difficult to distinguish from the gallbladders of several endangered Asian bear species. Under the authority of this listing, American black bear parts can only be legally transported over international borders with an appropriate permit. The penalty for selling bear parts is a felony. The possession of more than one bear gall bladder is considered evidence that bear parts are being offered for sale. There is mandatory skull presentation, and mandatory tag return for both successful and unsuccessful bear hunters. The implementation of these laws and regulations over the last three decades appears to be one of the factors which lowered combined mortality to a sustainable level and has resulted in the current health of California's black bear population.



photo: DFG

Sources:

- California Fish and Game (www.dfg.ca.gov)
- Wikipedia

pahûut poomkáanvuti vírussur How Bear Picks Berries¹

(December 20, 1928. Olden, p. 118)

uknii.

[And so] it is.

vírussur uum vookupíti.

Bear is doing this way.

thúkkinkunish vúra kári vári poomkáanvuti.

She is gathering them green.

xás úxviipha

Then she gets mad

páva kunippè'er:

when they tell her:

“vúr uum púya vúr axxár

“They are not yet ripe—

paffâat peemkáanvuti.”

the things you are gathering.”

uppiip:

She says:

“xâat axxár vúra,

“I don't care if [it's] ripe—

yáv nikupeemkáanvahiti.

I am gathering it in a good way.

“vúra kiikchiffichtihap.”

“I beat you anyway.”

February

14th: *Junction Elementary School Fundraising Dinner, 6pm*
Includes dinner, live and silent auctions, and live music

March

21st: *Third Thursday Cafe, 6pm*
Guest Chefs Meredith Morehead and Nancy Doman

April

7th: *Seed Swap, Seed Sowing, Seed Bank, 1pm -4pm*
with the Mid Klamath Food Shed
April 18th: *Third Thursday Cafe, 6pm*
Guest Chef Erin Cauldwell

May

11th: *Retirement Party for Tina Marier*
12th: *Plant and Craft Sale*
16th: *Third Thursday Cafe, 6pm*
Guest Chef to be announced
18th: *Salmon River Classic Bike Ride*

June

20th: *Third Thursday Cafe, 6pm*
Guest Chefs are the Orleans Fitness Class

July

18th: *Third Thursday Cafe, 6pm*

August

15th: *Third Thursday Cafe, 6pm*
Harvest Dinner

September

19th: *Third Thursday Cafe, 5pm*
Oktoberfest

Other Events

with dates to be decided :

- Second Annual Klamath River Rush Run
- Holiday Bazaar
- Taste Of Orleans Food Festival
- Annual Banquet and Auction

MKWC Youth Program 2013 Activity Dates

By Jillienne Bishop

June 24th-29th: *Klamath-Siskiyou Outdoor School. Ages 12-14*
Twenty local youth are invited to participate in a cost-free week long overnight rafting and backpacking trip. Students will learn about kayaking, outdoor survival skills, fishing, arts and crafts, salmon restoration,



A group of Klamath-Siskiyou Outdoor School (KSOS) students backpacking through the Marble Mountain Wilderness.

invasive weeds, gold panning, snorkeling, stand-up paddle boarding, and more! To sign up for this camp, or for any questions, contact Jillienne at the MKWC office (530) 627-3202.

Friday July 12th: *Happy Camp Restoration Raft Trip. Ages 9-12* Indian Creek to Ferry Point

Friday July 19th: *Orleans Restoration Raft Trip. Ages 7-9* Ullathorne to Big Bar

Friday July 26th: *Somes Bar Restoration Raft Trip. Ages 9-12* Persido to Stuarts Bar

All raft trips are cost-free and lunch is provided. MKWC contracts to local licensed and insured raft guides. To sign up for any these raft trips, please contact Jillienne at the MKWC office.

MKWC would like to thank our funders the William F. & Ruby M. Kennedy Fund, Humboldt Area Foundation, Humboldt County RAC, and US Fish and Wildlife Service for making these cost-free trips possible. Additional thanks to project staff, volunteers, and our Klamath River Outfitters raft guides!

kupánnakanakana.

(Here end of story thus.)

vírussur ukúphaanik.

Bear did it anciently.

payêem vúra kár u'íttapti

Nowadays she still knows it,

poomkáanvuti.

how to pick them (berries).²

yáv ukupeemkáanvahiti.

She is picking them good (neatly).

utapkúputi

She likes it,

poomkáanvuti.

when she gathers them (berries).

uvíshtaanti.

She likes to eat them.

chêech ík vúr ishyà'at.

¹ [FN 013: 186-187.]

² The berries that the Indians pick green are only **fáath**

Traditional Burn Plans For Acorns and Basket Materials Foiled by Bureaucratic Road Blocks

By Malcolm Terence, reprinted with permission from the *Two Rivers Tribune*

This fall was not the year for restoration of traditional Karuk cultural burning. It was also not the year for local Forest Service fire managers who see increased prescribed burning as one answer to the puzzle of worse outbreaks of wildfire nearly every summer. Edicts from higher up the bureaucratic pecking order on both the state and the federal level foiled burn plans on both private and public lands despite careful advance planning and extensive site preparation to prevent the *bête noire*, the worst nightmare, for every forest manager, a planned fire that escapes.

Bill Tripp started working for the Karuk Tribe 19 years ago and is now their Eco Cultural Restoration Specialist. It has been one of his long-term goals to restore many traditional burning practices, although it may be taking a longer term than he originally reckoned. He said that it was part of the tribal cultural identity to know when to light understory burns in the tanoak stands as a traditional answer to the pests that would otherwise destroy the acorns. Tripp said, “The agencies say the traditional practice is not founded in science. We launched a university study so it’ll be established in science.” He was referring to the research work being conducted in Somes Bar and Orleans by Arielle Halpern, a Ph.D. candidate from UC Berkeley. See: www.tworivertribune.com/2012/09/tribe-invites-uc-researcher-to-study-acorns/

Managers can measure relative humidity and other indicators of burn conditions, Tripp said, but the trees measure that on their own. Infested acorns fall first, ones with marks but no real insect entry fall next and the viable acorns with the most food value fall last. Traditional burners could use these indicators to burn with the greatest benefit. “We try to do science,” he said, “and yet we get road blocks thrown up citing risk. That’s going to leave a risk, too: that lightning will strike when burn conditions aren’t so good.”

He said the UC acorn test sites were typical of high production oak stands, and were pre-treated with established firelines and secondary containment lines, with unlimited water supply for control, on-site weather data, several pumps, computer model runs of fire behavior, and wide treatment boundaries. All of that was made moot by a state-wide burn ban. Once the rains fell and the ban was lifted, the area, already damp, was too wet to burn. Tripp said, “**It comes around to the question of why do agencies have the authority to regulate our sovereign practices?**”

Cultural burns planned for national forests by local Forest Service districts also hit bureaucratic snags. Terry Walter, fire management officer in Happy Camp, said he had to delay lighting off 300 acres slated to burn because it would



Prescribed burning in tan oak stands was traditionally done in the early Fall, but due to constraints with permits, most burns like this one along Ishi Pishi Road, are conducted in the Spring when permits are easier to obtain.

Photos this article by Will Harling

refresh bear grass and hazel shrubs, both materials needed by basketweavers. By the time the burn ban was dropped, the units had had so much rain that they would not light. He anticipated trying again in the late spring when conditions were drying. He acknowledged the tribal distaste for spring burns because the ecological damage to wildlife, emerging plants and soils are greater, but said “Better burn in the spring than no burn at all.”

He said that someone unknown had lit off bear grass patches last summer and he wanted to get out ahead of such illegal burning. “We can meet the same need with less risk,” he said. “If they get caught because the fire gets away, they face all the suppression costs. I just want to do this the right way.”

Zack Taylor, head of the Fuels Battalion for the Forest Service in Orleans faced similar obstacles. He said the window of opportunity between too dry and too wet is often too short. This year that was compounded when the Washington Office of the agency ruled that every local burn plan had to be approved by the Region 5 level which governs every California national forest. This additional hoop was announced just as managers were approaching burn season. Taylor, who started in the Forest Service in 1997 and came to Orleans in 2005, had been planning to use understory fire on 260 acres in a 2005 log sale called Hazel. The burn did not happen, and, after the rains started, Orleans burners could only successfully light covered hand-piled slash and some machine piles across the district.

He heard much frustration on the federal ban voiced by other managers at a recent meeting of the California Fuels Committee, which had reps from every national forest in California. He said that he hoped to avoid such collisions in the future with solid advance environmental documentation and good partnerships “including people in the neighborhood, local Fire Safe Councils and the tribes, all backing you up.” Forest Service managers and traditional practitioners saw a lot of the same benefits from fall burns, Taylor said—landscapes that burn not too hot or too cold and definitely better than waiting until a summer wildfire when homes are threatened and far more natural resources are destroyed.

The job of upholding the state’s burn ban in Siskiyou County fell to Bernie Paul, the CalFire chief who came to Yreka in the early 1990s after work in Butte and Fresno counties. He said the state typically had a burn ban from July 1 until the rains started, with some exemptions allowed. This year, he said, the state director of his agency ordered a ban that allowed no variance, the first such ban since 2003. The fire-fighting resources were spread too thin and fuels conditions statewide were too risky to allow any exemptions by the director, even ones as well prepped as the ones in Somes Bar. He said he had discussed the Somes Bar request personally with the state director.

Chief Paul said his father and grandfather had worked in the Forest Service and he grew up a strong supporter of prescribed burning, although he voiced a preference for early summer prescribed burns when the resources that could manage an escape were less committed elsewhere.

Siskiyou County actually has it easier than many parts of the state, he said. The shorter days and lower temperatures reduce risk and the state’s air quality regulations are less restrictive. He said there was a still a conflict because the best days for dissipating smoke were breezy, a problem for any intentional burning.

Despite all this, Chief Paul said his agency supported prescribed burns and especially cultural burns. He echoed a common lament among managers that budgets had lots of money to put fires out but little or none for prescribed burning. Still, he predicted that such burning would remain and grow as part of the practical options. “A lot of the local Fire Safe Councils and the tribes are getting more training and experience and are getting better at playing the game,” he said.

Another fireman with long local experience is Jay Perkins who started his career heading fire for the Forest Service in Somes Bar and is now retired. Eventually he became Fire Management Officer for the entire Klamath National Forest and he said obstacles to prescribed burns remained. Among them he listed risk aversion, retirement of many effective practitioners and state regs that make it problematic to put smoke in the air. Perkins said the emphasis was on suppression of wildfire although fuels reduction, which is very cost-effective in comparison, had to be a part in that. He said

fuels treatment would go “hand-in-glove” with traditional cultural burns and recalled listening to Frank Lake, a Karuk descendant and Forest Service research ecologist from Orleans, ten years ago. Lake was then in graduate school and shared oral histories of elders who remembered traditional burning before it was outlawed.

One of the strongest requests for an exemption from the state burn ban came from Will Harling, who heads the Orleans/Somes Bar Fire Safe Council. He said, “What I cannot accept is that there are some areas we just can’t burn with prescribed fire, because in our country that means they will burn in wildfire, when we will have far less control.” He added, “We have a grad student whose last three years of work rests on getting these burns implemented. And we have tribal members who have waited far too long to be allowed to manage resources necessary for ceremony and subsistence with fire. Not vast landscapes, just some of the few remaining decent gathering areas.”

These sentiments were echoed by Tina Bennett, a Karuk tribal member and a mainstay of the Salmon River Fire and Rescue. She remembers her grandfather telling her that he would ignite the high country meadows when they rounded up the herds every fall in order to control brush. When the practice was outlawed, the meadows became overgrown. Closer to home, she said her mother, Lillian Bennett, used to burn off the understory of at least two acres surrounding their home every other year, after a little rain so the flames wouldn’t be too intense. When the Forest Service ordered Lillian to stop, the wild grapes and other brush, what fire specialists call ladder fuels, flourished. Years later, a careless neighbor started a wildfire by burning trash on a day with extreme fire danger. The careful buffer that Lillian had maintained was gone and all that saved the Bennett house and five other structures was a massive and quick response by many crews, helicopters and retardant bombers. Despite all that suppression, the fire grew to around 500 acres.



Filbert weevil worms infect tan oak acorns, turning food into fodder, in stands not managed with low intensity prescribed burns.

Water and Cultivation (of Anything) in the Mid Klamath

By Deborah Bruce-Hostler

The MKWC Board recently stated: “MKWC recognizes that agricultural and horticultural practices have an impact on the watershed, and supports dialogue, education and the development of best practices to reduce these negative impacts.”

As expressed last fall by Scott Greacen (Friends of the Eel River) and Gary Graham Hughes (EPIC) at the 2nd symposium of HSU’s Humboldt Institute for Interdisciplinary Marijuana Research, we live in rare watersheds that will be among the last refuges for certain species as habitats and climate degrade. Loving where we live, we defend these watersheds. Let’s agree as a community to break the silence on environmental impacts of marijuana cultivation. Much to be said about taking a deeper look at how we do things, so as to do less harm, applies as well to tomatoes, lilies, or grapes.

Southern Humboldt watershed-defenders have made changes inspiring communication and repair. Our communities can lessen cumulative impacts burdening streams and species. We can have teach-ins, conversations, action on land-use and ways to conserve water for wildlife and native vegetation (winter water-catchment vs. summer watershed dewatering), fertilizer/sediment catchment (cover-crops, buffers, bioswales), reject rodenticides, revise policies; preserve wildlife corridors. These efforts can benefit other survival concerns: wildfire resilience, food security, economic justice, public health and safety. Leading to related discussions: it should not be life-threatening for traditional gatherers/practitioners to tend to their ancestral places, or for any of us to go up a creek, or to go ask a neighbor for help.

The following excerpts by permission from an article by Kyle Keegan, first published in Forest & River News, Trees Foundation (see link below for article):

“While the proliferation of commercial grows on public lands is significant and saddening, cumulative impacts of marijuana production in nearly every watershed may be far beyond our comprehension. With the increased use of water during dry summer months, many communities have witnessed the effects of impaired watersheds and impacts on salmonids and



Condition of the undisturbed site in which a fisher (*Martes pennanti*) mortality due to anticoagulant rodenticide... was found. Source: M. Gabriel et al. (2012) *Anticoagulant Rodenticides on Our Public and Community Lands: Spatial Distribution of Exposure and Poisoning of a Rare Forest Carnivore* UC Berkeley: Plos ONE 7 (Creative Commons)

other water-bound animals. Excessive use of fertilizers has increased the incidence of blue-green algae blooms... toxic chemicals to combat pests contaminate nearby water and soil. Rodenticides travel up the food chain, affecting the larger predators [such as fishers and martens]...

“Sanctuary Forest and Mattole Restoration Council have been forthcoming in their efforts to educate and empower local communities to store and conserve water... In my [Southern Humboldt]... watershed, we have begun the process of addressing the impacts... through community-based open-circle discussions. While extremely uncomfortable to participate in, we have started the process of breaking several decades of silence and inaction... This is a work in progress and new territory for us. Degradation of our home places in the name of economic prosperity is a cultural problem; it will be corrected only through cultural solutions. We can create diverse and meaningful work that nurtures, restores and fits... our local ecologies.”

Resources:

- Humboldt Inst. for Interdisciplinary Marijuana Research: symposiums, speakers. Watch website for Spring 2013 conference, panels. www.humboldt.edu/hiimr
- Trees Foundation’s *Forest & River News*, www.treesfoundation.org: “North Coast Living: The Green Rush, Economic Boom—Ecological Bust” www.treesfoundation.org/publications/article-476. (Kyle Keegan, 2011); “The Ugly, the Bad, & (Maybe) the Good? Addressing Environmental Impacts of Marijuana Cultivation on the North Coast” (Hezekiah Allen/Mattole Restoration Council & Scott Greacen/Friends of the Eel River, 2012). See also websites for Sanctuary Forest, Mattole Restoration Council, Friends of the Eel River, and other organizations.
- M. Gabriel et al. “Anticoagulant Rodenticides on Our Public & Community Lands: Spatial Distribution of Exposure & Poisoning of a Rare Forest Carnivore.” 2012 (UC Berkeley: Plos ONE 7)
- Traditional ecological knowledge, permaculture, positive peer pressure, community meetings, common sense. Workshop ideas: best practices; bioswales; water; alternatives to pesticides/fungicides.

to stay in a stable single channel so we can use these valleys for house sites, growing food, pasturing livestock, etc. This required us to get rid of these pesky buck tooth rodents, and to construct elaborate levee systems to keep these streams from jumping their banks during floods and messing with our handy work.

In some places on Seiad Creek, there are three generations of levees that date back to just after large flood events (1964, 1997, and 2006). With every successive flood, these levees got closer together, squeezing the creek into a thin and fairly straight line. In successive high waters, these confined sections of stream gather speed and strength and cut down into the channel, further disconnecting them from the floodplain. Seen from the air, these straight line streams resemble the flat line of an EKG monitor when the patient dies. This metaphor is not lost on biologists who have been studying the reasons behind the decline of coho in the Klamath basin over the past decade.

“Our coho ecology study has shown that winter rearing habitat is most likely the limiting factor to coho populations in the Middle Klamath subbasin,” says Toz Soto, lead fisheries biologist for the Karuk Tribe. “Coho salmon have a unique life history that typically includes staying in these Klamath tributaries for a year or longer after they emerge from the gravel. Their survival depends on whether or not they find low velocity habitats to avoid high, fast winter stream flows.” Soto, and Biostream Environmental consultant Larry Lestelle, modified a coho habitat utilization model originally developed for coho streams farther north to describe their unique behavior here on the southern end of their range of distribution (see graph below.)

The circles denote the relative amount of coho that utilize a given habitat at various life stages. The documented use of remaining floodplain ponds for overwintering habitat, and the lack of these types of habitats currently throughout the

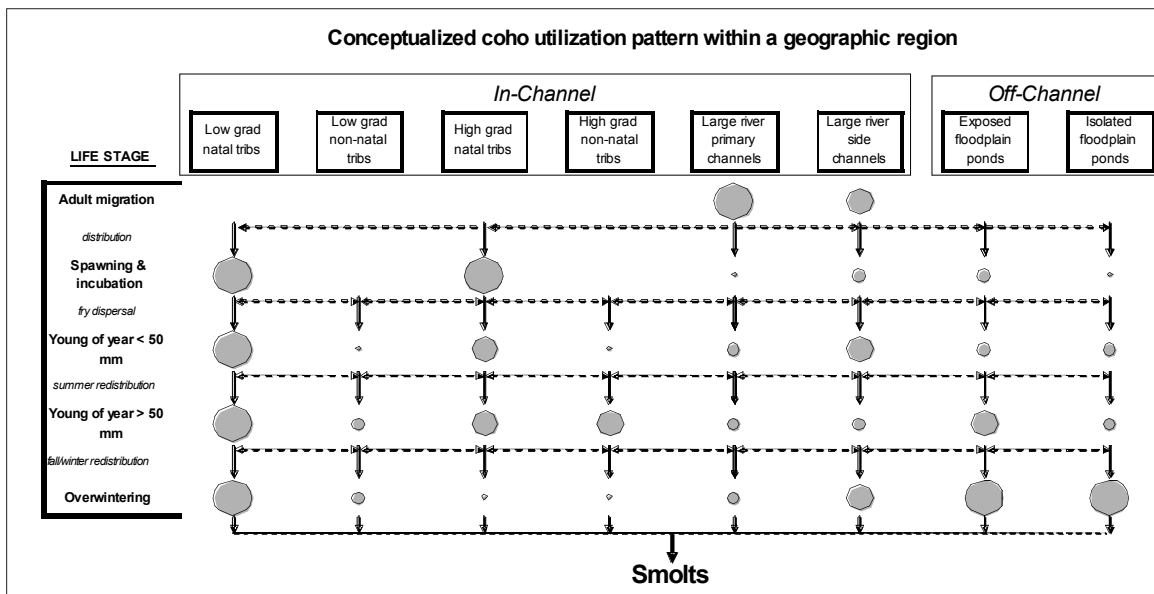


Karuk Fisheries Biologist Toz Soto and landowner Al Durazo examine the levee constructed in 2006 (right) after the Durazo residence nearly flooded, as well as past levees constructed in 1997 (left) and 1964 (farther left, not shown).

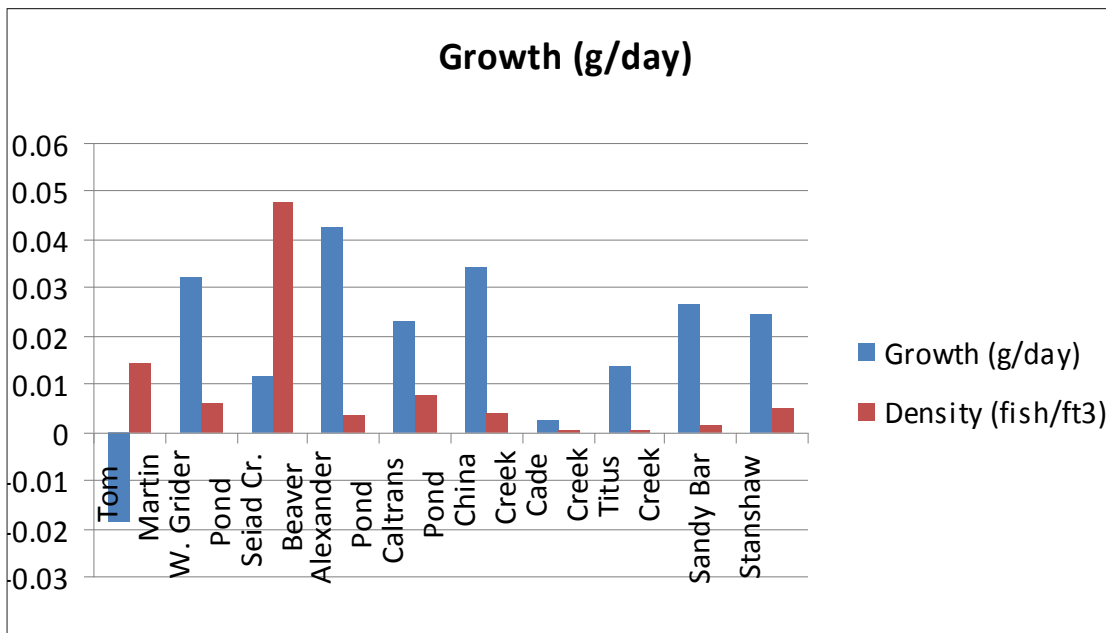
Klamath Basin, gave a clear direction to restoration efforts aimed at reversing the decline of coho salmon.

In the Fall of 2010, the Mid Klamath Watershed Council, in conjunction with local contractors, funders (US Fish and Wildlife Service, PacifiCorp), permitting agencies, the Karuk Tribe, and landowners, constructed three off-channel ponds on private properties along Seiad Creek to increase winter rearing habitat for juvenile coho salmon. In the fall of 2011, they built one more pond on lower Seiad Creek and another across the Seiad Valley on West Grider Creek (see last MKWC Newsletter—Spring 2012). Since these ponds were created, data on water quality parameters (temperature and dissolved oxygen) and fish utilization have been regularly collected by Karuk Tribe and MKWC fisheries crews.

In 2012, Humboldt State University graduate student Shari Anderson teamed up with Karuk Tribe fisheries crews to collect detailed information on coho habitat use and growth rates in



Conceptual framework or model for portraying life history patterns and habitat utilization (by category of major habitat types) by coho within a geographic region of the Klamath River watershed. Pattern shown is meant for illustrative purposes only.



Preliminary data juvenile coho growth per day compared with fish density for Summer/Fall 2012 in constructed and natural habitats (Source: Shari Anderson, HSU)

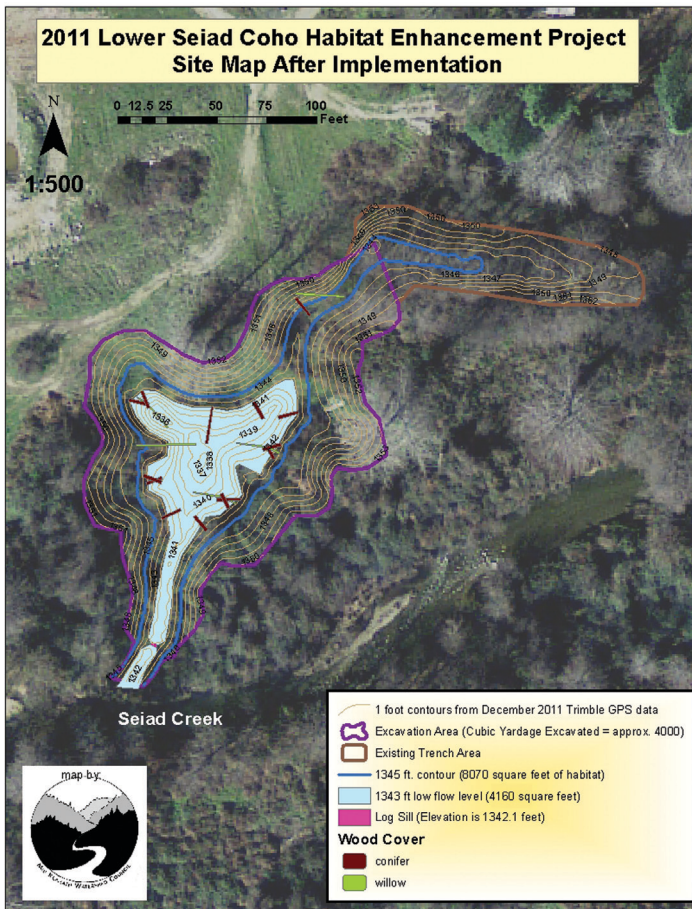
these ponds. In addition to studying the fish in the constructed ponds, coho data was collected in small tributaries and beaver influenced habitats. Many of these habitats offer cool thermal refuge during the warm summer season and during the winter months, a refuge from high flows. Collectively, this data reveals the comparative value and effectiveness of these projects throughout the year to juvenile coho salmon. The data also provides insight as to how we can use restoration techniques to increase coho salmon populations in the Middle Klamath subbasin, with potential application to the Scott, Shasta, and Salmon River watersheds as well.

So What Have We Found?

The graph above tracks the relationship of coho growth compared to coho density at a variety of habitats through the summer and fall of 2012. This preliminary data from Anderson’s thesis shows that the highest growth rates were found in the Alexander Pond, one of our largest constructed to date. However size of the constructed habitat is not all that matters. “The likelihood of a fish finding a pond is the limiting factor” Soto says. It is important to have many off channel habitats on both sides of the stream to increase the chance they will find them.” Indeed, a recent study by Roni et. al. (2011)



Lower Seiad Pond habitat connected when beavers dammed Seiad Creek downstream of the pond entrance. Note the willow on the left is in process of being felled by beavers.



This map of Lower Seiad Pond shows pond extent before the beaver dam (light blue fill) and after the beaver dam (dark blue line). An additional 3,910 square feet of habitat was created.

from two coastal watersheds in Washington found that coho numbers increased with added winter rearing habitat in a linear fashion.

Another interesting story emerges from the relationship between habitat quality, coho density and growth. In lower Seiad Creek where beavers annually construct dams that create perhaps the best coho habitat in the subbasin, fish densities are high but they are still growing. Coho juveniles from the Scott River seeking refuge in Tom Martin Creek, however, showed negative growth due to poor habitat quality. Juvenile coho in ponds feed more and metabolize food, putting on significant growth at a time when juveniles in the creek are showing little to no growth. MKWC will be constructing an off-channel pond next summer at Tom Martin to create slow water habitat that will hopefully reduce fish density and increase growth rates.

Temperatures in all ponds have stayed cool enough throughout the summer to support coho comfortably (less than 18 degrees Celsius, or 64.4 degrees Fahrenheit). Daily temperatures in the ponds fluctuate less than Seiad Creek. More importantly, when creek temperatures are near freezing between December and February, the groundwater feeding the ponds keep them 3-6 degrees Celsius (5-10 degrees Fahrenheit) warmer. This allows juvenile coho in the ponds to feed more.

Dissolved oxygen is another important variable for juvenile salmon. As streams tumble through rapids and over falls, oxygen mixes with the water and is then extracted from the water in a fish's gills. Steelhead and Chinook salmon need at least 5 mg/L, however coho appear to have adapted to very low levels of dissolved oxygen associated with the habitats they prefer (beaver ponds, off channel ponds, low gradient streams). Recent data from the Klamath watershed and nearby river systems show that even when little to no oxygen is detected, coho are still able to survive, most likely by utilizing trace amounts from upwelling groundwater. Dissolved oxygen in our constructed habitats varied between 3 mg/L and 11 mg/L, providing adequate oxygen for coho growth.

All ponds constructed so far have remained connected to the main creek with minimal handwork in the spring at the outlet to clean out sand and organic material deposited along the eddy line during high flows. This allows juvenile coho to select whether or not they want to stay in the ponds or feed in adjacent creek habitats. At sites like the Lower Seiad Pond (aka Caltrans Pond in graph), beavers constructed a three foot high dam across Seiad Creek 250 feet downstream of the pond entrance, raising water levels in the pond and creating an additional 4000 square feet of habitat, mostly at the rear of the pond. As velocities in the main creek began to resemble the pond habitat, fish moved between the creek and the pond as if they were one contiguous habitat unit.

As these constructed habitats mature, plants around them and in them grow up, increasing their productivity and habitat complexity. We still have a lot to learn about these ponds, but so far the benefits are clear: juvenile coho that are lucky enough to find them grow up to ten times as fast as their siblings in adjacent creek habitats not augmented with beaver dams. The Karuk Tribe Fisheries Department are now recording adult coho salmon in their array at the mouth of Seiad that were tagged as juveniles two years ago. Data from this study combined with coho spawning survey data will allow us to determine the ultimate effect of restoration work on Seiad Creek: whether or not we getting more spawning coho in streams where restoration has occurred. Stay tuned for further updates!



A 2+ (two year old) juvenile coho in Buma Pond has likely resided in the pond since it was created in the Fall of 2010. The diversity of age classes observed in these constructed habitats is rarely seen elsewhere, but likely occurred frequently before low gradient streams were channelized.

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By Annelia Hillman

Amayav is an idea.

The word in the Karuk language basically means “good food”, or “the best food”. It’s an idea that means healthy, affordable, sustainable food that is accessible to all. It is also a place. A small group of community members, indigenous and non-indigenous, formed an LLC in order to purchase a piece of land in downtown Orleans. Generous community members have donated the money for the land, so the land, in essence, belongs to our community. The LLC Board makes all the major decisions related to the land use, but the community is the moving force.

Amayav is the idea that we can have a decolonized, land based food system, and that the creation of egalitarian economies is crucial to the survival of our community and the world as a whole. The people who dreamed up this idea believe that by tending our natural resources, through traditional management and sustainable agriculture, the wealth of humanity can be as great as it was before western colonization.

We have been hosting farmers markets, known as the “Orleans Exchange”, for three summers now. Our goal is to provide a place where locally grown and processed food can be accessible to the people who live here. There is so much food that is grown all around us, yet we find ourselves driving to the coast to buy it. Many people, unable to afford the prices of locally grown products on the coast, resort to buying cheap produce that comes from halfway around the world. Amayav strives to address these contradictions.

Amayav is an organic movement. It has been resistant to formalization, and we encourage the Orleans Exchange as the place of informal organization, and collaboration. The meeting time is every Sunday afternoon, in fair weather seasons. The possibilities for community education and understanding around humanitarian issues are wide open. Watch for our flyers for special events.



Amayav’s primary mission is to achieve food justice in the Karuk ancestral territory. The first priority is to pay off the loan for the land. The next is to build infrastructure, including running water, electricity, and a bathroom. We are also renovating a “taco truck” that would be available for rent to people who are willing to provide healthy food and a menu that is affordable for all.

Our community was blessed this last fall with a surprise visit from four very talented and inspiring artists representing the Estria Foundation. The Estria foundation is funding the Water Writes Project, which is a series of murals that represent water rights struggles around the world. In coordination with Klamath Justice Coalition, the Water Writes artists helped design and paint two murals on the Klamath, both addressing the indigenous perspective of the dam removal struggle. The first was done in Klamath at the Salmon Festival. The Second was at Amayav. It was an amazing challenge to create and paint a mural in three days (which turned to five), but it was a wonderful experience that brought community together, and created a welcoming feeling at the Amayav space. If you would like to know more about the Water Writes project, visit estriafoundation.org

We would like to thank all of you that have been involved and contributed to the movement. We hope to see a lot more people at the markets this year, and if you would like to sell your goods, we just ask for a small donation. Drop by for a visit sometime.



**MID
KLAMATH
WATERSHED
COUNCIL**

MEMBERSHIP LEVEL

(PLEASE CHECK ONE)

- \$25 Spring
- \$50 Creek
- \$100 River
- \$250 Confluence
- \$500 Estuary
- \$1500 Ocean (Lifetime Member)
- Other \$ _____

Thank you!

I WANT TO SUPPORT MKWC!

NAME: _____

MAILING ADDRESS: _____

CITY, STATE, ZIP: _____

E-MAIL: _____

PHONE (OPTIONAL): _____

\$50 and up check one: Please send me a Notecard Pack,

T-Shirt (Shirt Size _____), No Gift.

All members will receive an annual newsletter and annual report.

Check any that apply: I want to be anonymous, List me as a member, but don't specify my member level, Please add me to your current events mailing

IN ADDITION TO MY MEMBERSHIP,

I WOULD LIKE TO DONATE

\$ _____ TO:

Programs: Fire & Fuels Fisheries Native Plants Invasive Weed Management Panamnik Building Project Watershed Education Wildlife

Donations of \$250 or more are eligible for a one-day tour of current on-the-ground projects.

Please send me information on the restoration tour dates.

Send your check to:
MKWC
PO Box 409



Mid Klamath Watershed Council

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To send comments to the editors: editor@mkwc.org	

*Newsletter edited by Blythe Reis,
with design & layout by Trees Foundation*

Want to Be Involved?

Donations of time and money are graciously accepted.

We need volunteers for:

- ☞ New rear entry and deck
- ☞ Landscaping
- ☞ Adding counters into the kitchen
- ☞ Painting the building
- ☞ Kids' area and Panamnik Building storage
- ☞ Tree and brush clearing for amphitheater
- ☞ Pouring concrete slab for equipment shed
- ☞ Re-flashing façade for mural project
- ☞ Making food for volunteer workdays