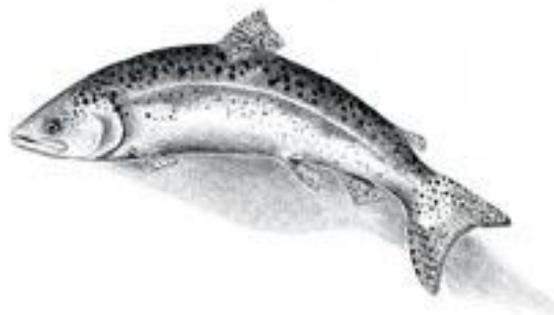




# **Yurok Tribe Environmental Program Klamath Site Handbook**

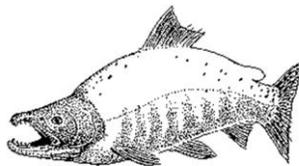
Updated 5/29/12





### **Watershed Stewards Project Mission**

The mission of the AmeriCorps Watershed Stewards Project is to conserve, restore, and enhance anadromous watersheds for future generations by linking education with high quality scientific practices.



*Sockeye Salmon*



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# Introduction

## Site Description

*Location*

Klamath, California

*Agency  
Affiliation*

**Yurok Tribe Environmental Program (YTEP):** This is the department members work for. The rough equivalent of the EPA on the Reservation.

**Kate Sloan:** Program Director for YTEP. Kate is Ken's boss but doesn't have much to do with the daily happenings in the water division.

**Ken Fetcho:** Assistant Director of the Water Division/Mentor: Ken deals extensively with dam removal and basin-wide issues such as monitoring and restoration. Very familiar with the details of most of the fieldwork. He's a great person to ask about equipment, logistics, etc, and was a WSP member in 2000-2001.

**Micah Gibson:** Environmental Program Specialist/Co-Mentor: In charge of hydrology. He's a fun guy to work with and a tribal member, and knows a ton about the local geography.

**Bill Patterson:** Environmental Program Specialist/Co-mentor: In charge of assessing and restoration planning for wetland areas near the river, especially around the estuary.

Environmental Program Water Quality Specialist/Co-mentor: This position is currently vacant.

**Ray Martell:** Assistant director of the Pollution Prevention Division.

**Emery Mattz:** Solid and Hazardous Waste Specialist for the Pollution Prevention Division.

**Michael Taylor:** Environmental Protection Specialist - Source Water Assessment Program for Pollution Prevention.

**Joe Hostler:** Environmental Program Specialist-Air Quality. He runs the Air Quality program and shares office space with the water division.

**Suzanne Fluharty:** Environmental Program Specialist-Environmental Health\Pesticides. She studies pesticides and toxins in areas that directly relate to tribal members health (salmon, sturgeon, mussels, seaweed, etc.)

**Fisheries:** They do all the fish counting, a lot of the non-heavy machinery restoration work, wetlands work. Sarah Beesley is a good contact to have. Their office is located just a bit north of the Lodge, within walking distance. Members will be introduced to this staff but will rarely work with them.

*General  
Ecology*

The climate of Klamath is that of a typical Pacific Northwest rainforest. This means that it rains a great deal in the winter time and is pretty constantly foggy in the summertime with fog so heavy it can even produce a bit of precipitation. The climate inland, however, is more of a Mediterranean zone, with rainy winters and usually hot dry summers. This means that the coast is predominantly temperate rainforest vegetation meaning tall trees with dense canopies and broad-leafed undergrowth. And the interior of the Yurok lands are mostly pine forests with shrubby undergrowth. There is also the Bald Hills region, which is somewhat of a miniature Oak-woodland savannah. The entirety of the physical geography is dominated by the presence of the Klamath River, which forms a deep valley in the steep, forested, mountainous terrain. Flowing down from these mountains are many tributary creeks of varying size, each with their own unique features of geology, resulting in a variety of plant and animal species.



**General Calendar of Duties at YTEP**

<i>Month</i>	<i>Location</i>	<i>Site Duties</i>	<i>Work Load</i>	<i>Typical Work Hours</i>
<b>Winter</b>				
December	Klamath/tributaries to Klamath River	monthly flows on tributaries, monthly grab and bacteria sampling, sediment sampling during high flow events	moderate to busy	8 hrs/day – 5 days/week (sometimes weekends if getting high flows)
January	Klamath/tributaries to Klamath River	same as December plus Real Science, report writing, data entry	moderate to busy	8 hrs/day – 5 days/week (sometimes weekends if getting high flows)
February	Klamath/tributaries to Klamath River	same as January	moderate to busy	8 hrs/day – 5 days/week (sometimes weekends if getting high flows)
<b>Spring</b>				
March	Klamath/tributaries to Klamath River	monthly flows, grab and bacteria sampling, Real Science, report writing, data entry,	Moderate to busy	8 hrs/day – 5 days/week
April	Klamath/tributaries to Klamath River	same as March	Moderate to busy	8 hrs/day – 5 days/week
May	Klamath/tributaries to Klamath River/Trinity River	monthly flows, bacteria sampling, report writing, macroinvertebrate sampling, grab sampling, sonde maintenance	busy	8 hrs/day – 5 days/week
<b>Summer</b>				
June	Klamath/tributaries to Klamath River/Trinity River	same as May plus periphyton sampling	moderate to busy	8 hrs/day – 5 days/week
July	Klamath/tributaries to Klamath River/Trinity River	monthly flows, bacteria sampling, grab sampling, sonde maintenance, periphyton sampling,	moderate to busy	8 hrs/day – 5 days/week
August	Klamath/tributaries to Klamath River/Trinity River	same as July	moderate to busy	8 hrs/day – 5 days/week
<b>Fall</b>				
September	Klamath/tributaries to Klamath River/Trinity River	same as July	moderate to busy	8 hrs/day – 5 days/week
October	Klamath/tributaries to Klamath River/Trinity River	same as July	moderate to busy	8 hrs/day – 5 days/week
November	Klamath/tributaries to Klamath River	monthly flows, bacteria sampling, sediment sampling during high flow events	Moderate	8 hrs/day – 5 days/week (sometimes weekends if getting high flows)



## Description of Site Duties

The AmeriCorps people have primarily been involved in fieldwork. YTEP basically considers any office work members do to be a bonus, so fieldwork always takes priority over office work.

AmeriCorps has been involved in lots of monitoring. This includes:

### **Tributary gaging stations:**

YTEP (specifically Micah) runs 5 gaging stations on tributaries to the Klamath. They measure stage and turbidity every 15 minutes, and transmit the data over satellite so we have data real-time. Flows need to be taken at each site at least once a month, and more often if the stage is changing. So members spend a lot of time measuring flows- if the stream is wadeable, this is done using a handheld flow meter. If it's not, Members drop the flow meter into the water from a bridge or from a cable. Flows are especially important when the rivers are big- which means running out whenever there is a big storm.

Also during storms we try to get suspended sediment samples, which involves filling up bottles off the cableway every 30 minutes or so for a few hours. Usually in the rain.

Because the equipment is out in the elements, things frequently break down, so troubleshooting shooting is a big part of field work.

### **Summer Water Quality Sondes**

In the summer (May-Oct) we (headed by Scott) run water quality instruments (datasondes) in the main stem Klamath and Trinity Rivers. These require maintenance and calibration every two weeks. These are often long days, but if Members time it right, (start early) most of it is in the shade. Plus Members can go swimming in the Trinity when Members are done.

### **Summer Nutrients/ Algae/ Fish Disease/ Toxins**

We also do grab samples (i.e. filling up bottles- though it's a bit more involved than that) once every two weeks in the summer and once a month the rest of the year. These are busy and involved days since members need to return to Arcata by 2:30 to ship them out at FedEx so they can be overnighted to the laboratory within hold times. Basically this is a lot of driving and leaving early- but then members are done by 2:30. Again, if members start early enough members can go swimming in the Trinity if members have time.

**Periphyton Sampling:** This happens once a month during the summer. We go to three sites and scrape algae off rocks for analysis. Like with the nutrient samples, members have to return to Arcata to ship the samples off by 2:30. There are less sites and bottles so a little less hectic and a little more fun. Again swimming in the Trinity to end the day if members leave early enough.

### **Bacteria Sampling:**

This involves filling up bottles at 3 locations in the estuary and taking them to the lab in Eureka. We do this once a month all year and are usually timed with the other grab sample events.

### **Macroinvertebrates:**

Bug sampling and physical habitat assessments are performed in the spring (April-June) at various tributaries. This is really nice: members go to cool new places, hike in the streams, and in general have a good time.



**Restoration:**

The Fisheries department has a lot of restoration work going on. Helping them plant trees is an option if there is not a lot of work in the office and they need help. Take the initiative and plan ahead to be involved in this work.

**Wetlands:**

This project (headed by Bill) involves using the California Rapid Assessment Method (CRAM) to assess wetland health. In year 14, members spent some time assembling a reference book documenting common invasive species around the estuary of the Klamath. In service year 15, we helped to CRAM some wetlands. We also worked with Bill and Rocco Fiori to take some soil samples for analysis.

**Office Work:**

There's always data to be entered into the tribe's database. There are also reports to be written. At slow times, members may have time to do some data analysis, although YTEP is typically not very involved in data analysis.

**Education:** See the education section for details

**Outreach:** See the outreach section for details.

**WSP stuff:** Other than required events and trainings, talk to Ken, Micah, Scott, and Bill about getting time off for WSP stuff. They are usually pretty lenient unless we are really busy or someone will be gone. Members will easily get the required hours, so do not be worried about participating in extra events or taking time off.



## ISPs and Outreach Events

### ISP Information

The Klamath River Cleanup draws many volunteers so this event can be used to fulfill both members' ISP requirement. This event has been run by the Yurok Tribe for a number of years. All of YTEP is actively involved in the Cleanup. Pollution Prevention has a good idea of where trash is and has the equipment to clean it up. Coordinate with them for Cleanup logistics.

The cleanup is not picking up cigarette butts with little pinchers: most of it involves moving dryers, refrigerators, cars, mattresses, and other large things, although there are enough small things to keep kids busy.

1. Make sure that the WSP volunteer forms are integrated with the Yurok Tribe forms, so that volunteers don't have to fill out two sets of paperwork. This form is on the z-drive.
2. Work with Matt Mais (Public Relations Manager) to advertise the event.
3. Work with Kate, Ray, and Emery to organize the event.
4. Camping at local campgrounds can probably be secured for WSP volunteers the night before the event. Kamp Klamath donated campsites in Year 17.
5. On the day of the cleanup WSP members supervised specific clean-up sites along the river. This involved accumulating garbage on site and transporting it to dumpsters stationed at various points on the Reservation.
6. In general, make it clear WSP members are available to help out, and keep in contact with the organizers.
7. Helping out with cooking the salmon after trash collection is over is a great way to meet elders and other community members. Plus WSP members get choice samples of salmon, sturgeon and eel.
8. Year 15 did a 'trash craft' day with Margaret Keating. Basically taught the kids about the three R's and had art to display for the cleanup. Community members enjoyed this.
9. In recent years, the Pollution Prevention department has taken an aggressive approach to trash dump cleanup throughout the summer. This has reduced the amount of trash on the Reservation (a good thing), which means there is less for volunteers to do. In Years 17 and 18, WSP members incorporated invasive removals.



## **Outreach Information**

KRECR is always open to having AmeriCorps come and do something in the classroom. Make sure WSP members clearly articulate what WSP members are capable of providing as far as time and resources and have them clearly state what they are looking to achieve.

The Yurok Tribe puts out a newsletter titled "Yurok Today" that members are more than welcome to submit articles to. Contact Matt Mais if members are interested.

The Klamath Salmon Fest is another big operation. It is usually in August, so WSP is no longer involved since it is after the term ends.

## **Calendar of Outreach Events for Site / Community**

Summer      Ceremonial dances: these are at various locations and times. They are announced several weeks in advance of the event. Almost all are open to the public, but some are closed. Make sure to go out of the way to be respectful and if members can, ask someone in advance about etiquette and protocol.



## Education

### Education Notes

There are two schools in Klamath. There is an alternative high school next to tribal office, the Klamath River Early College of the Redwoods (KRECR). They can be typical teenagers at times (rambunctious, distracted etc), but have a wealth of local and tribal knowledge that they love to share. They love field trips and hands-on learning. Past members have dissected fish, showed them how to do a macroinvertebrate survey, toured fisheries fish trap, took them on a boat ride on the Klamath in the YTEP jet boat, gave lessons on invasive plants and pulled English ivy. Try to integrate lessons with the Yurok Language teacher. Year 18 members taught the 6-8<sup>th</sup> grade students.

The other school in Klamath is Margaret Keating Elementary. These kids are delightful and enthusiastic. Past members have taught in the first and fifth grade classrooms. The teachers were excited to have us and were very helpful with classroom management. Past members have done a lot of hands on activities and have taken them on a field trip at the Ah-Pah Interpretive Trail. Kids are in love with the Geomorphology table. Make sure members utilize the WSP Ed library too.

These two classes are enough to reach the Real Science education requirement and it is great to teach in the community where we work. The students in Klamath benefit from having AmeriCorps members in their classrooms. Members are an example of what they can do locally to make a difference in their communities.

Members can get contact information for local teachers from the education department in the tribal office building. Members will probably be working with the same kids so take a look at the lessons we have already done. There are pictures available of our ed. stuff on the z-drive.

Additionally, there are camps during the summer that ask for environmental education. Depending on our schedule AmeriCorps and other members of YTEP will teach some students.

There are two schools on the Upper Reservation. One is in Weitchpec and is called Weitchpec Magnet School. Typically the MKWC host site in Orleans delivers Real Science environmental education curriculum since it takes 2 hours to drive up there from Klamath. Winter road conditions can also prevent driving up there on scheduled days since members have to drive over Bald Hills Road. If this happens members have to cancel pretty much last minute which is never a good thing. It is good to communicate with MKWC early in the term to see if they can teach there and for the mentors to be aware what is occurring up there. The other school on the Upper Reservation is Jim Norton Elementary School near the village of Pecwan. This school is off of the grid and takes over 2 hours to drive to. Past AmeriCorps Members taught there but it has been a while since Real Science has been taught there. However, it is good to go up there and meet the staff and faculty and take the initiative to do some work up there if members are interested.



### **Site / Region Specific Education Resources**

The Klamath River! Most of the kids (and adults) love the river and streams and always want to go out on it. A trip to the river can be used to talk about plant and animal biology, geology, weather patterns, logging, history; the list goes on and on.

YTEP as well as the Fisheries Program are doing amazing things in this area and love to show kids what they are doing.

Redwood National and State Parks. These parks have interpretive trails and are amazing places that kids love to explore.



## Local Ecology

### Descriptions of Local Ecology

Klamath is beautiful. It's on the coast. There are lots of redwoods, willows, poison oak, stinging nettle, berries, and wild flowers. It rains a lot, can be windy and chilly and very overcast most of the year. The estuary and mouth of the Klamath are right here. There is some logging that can make some areas look patchy. In the spring the lupine takes off on Bald Hills Rd and smells fantastic. The pond lilies at Richardson Creek are pretty cool. There is a bear that likes to get into the trash on site. A former WSP member to this site, named Forest, once battled a bear with his paddle while doing some water quality work on the boat. He was very brave and survived to tell the tale of the mighty bear battler! There are mountain lion sightings. Members can watch the elk battle with their antlers on the way to and home from work.

There are a lot of environmental issues on the Klamath like toxic algae and fish disease. There is also a little problem down river with invasive reed canary grass. Up river there are lots more invasives. There are lots of tan oak, madrone, and fir trees inland. The estuary houses lots of birds like osprey, eagles, and herons. Along the creeks are woodpeckers, chickadees, thrushes, wrentits, and warblers. There are a lot of harbor seals in the estuary; there is a seal rookery in the estuary. Whales congregate at the mouth of the river and can be seen in the spring and summer. Highway 299 is gorgeous, at sunrise the valley often fills up with a sea of clouds. The Yurok tribe has dance ceremonies at the mouth of the Klamath and I recommend attending one, it's quite a sight at sunset. Fishing is really big around here. There are six rivers so water sports are popular. The Smith River is a favorite recreational river because it's not dammed and the geology makes it stand out from the others. This is a good location because members aren't too far from some killer backpacking spots like the Lost Coast and the Trinity Alps.



## Housing and Local Resources

### Housing Contact List

Housing is pretty much non-existent in Klamath as far as the usual 2bd 1ba type place. The options are as follows:

Crescent City- A small city, the capital of Del Norte County, Crescent City feels bigger than it is only because it's the only thing around. Not many options for entertainment, bands do not stop through, there is no natural food store, and it is the rainiest and foggiest of any of the towns mentioned. The plus side is that it is right on the beach, surf is good, members are 5 minutes from the Smith River for kayaking and fishing, rent is cheap and the commute is only 20 miles in the morning. YTEP has a commute that leaves from here.

McKinleyville- This is an unincorporated town located just north of Arcata. Its plus side is the cheap housing in close proximity to Arcata. Its downsides are a lack of entertainment other than the local brewery. The commute can stop in McKinleyville to pick members up.

Arcata- This is the hip college town. Small but with plenty to do, especially when the university is in session, it has a great sense of community, easily accessible farmer's market, easy access to beaches and forests, and all the food options members could want. The down side is that housing is increasingly expensive because of high competition. Since members will be arriving after the school year has started, many of the best options may be taken. The commute usually starts in Arcata.

Eureka- This is the "big city" and as such, pretty much has everything that Humboldt has to offer and then some. Eureka has plenty of shopping and entertainment opportunities, some access to beaches and forests. Rent is cheaper than Arcata and the commute can start from Eureka if necessary.

If members are not into the city life, there are a couple of options:

Trinidad- A small fishing village about 15 miles north of Arcata has a grocery store and restaurants. Housing is expensive, but it is really scenic and the commute can stop there if arranged.

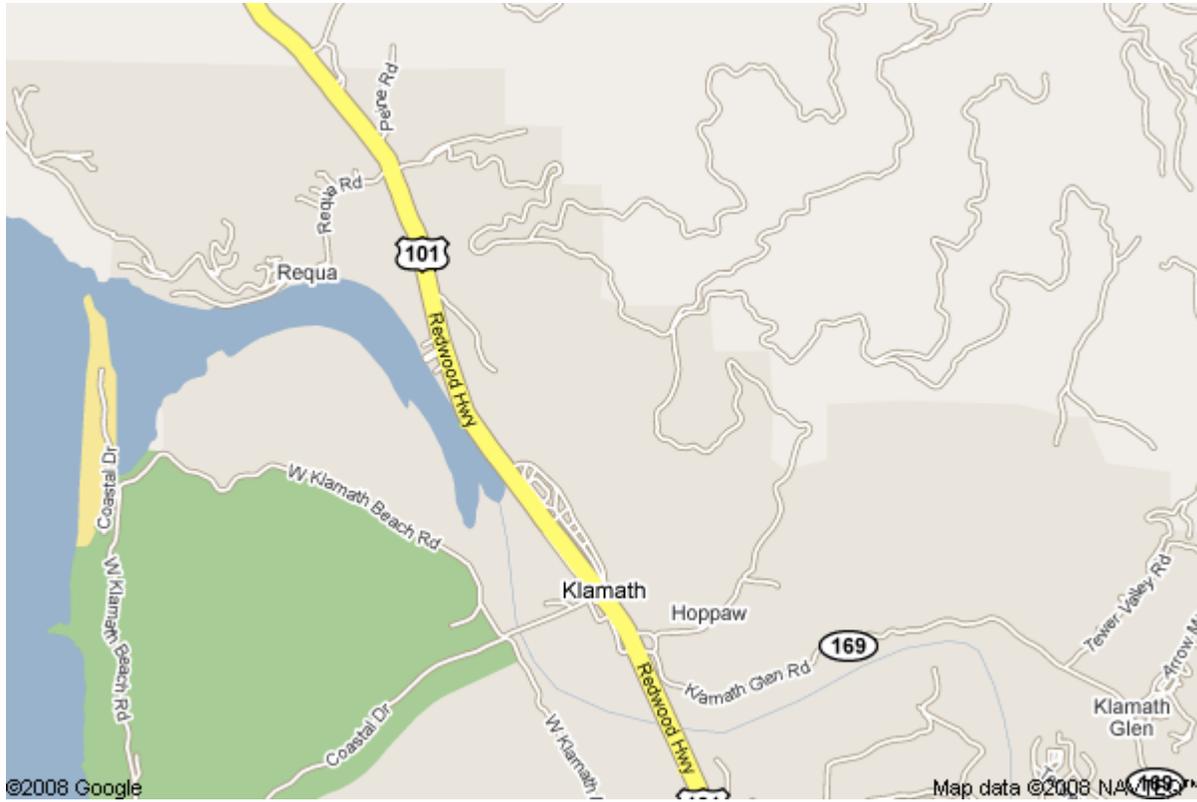
Klamath- As was mentioned, there is nothing traditional available. If members really want to live in Klamath ask around and be patient. There are some wonderful people in the area and the location is beautiful. The name of the game is that if members want to live in Klamath, members need to be persistent.

Other Places- It is up to members and their creativity. There are places all throughout northern Humboldt on the way north to Klamath.



## Community Information

### Map of Area





## **Attachments**

**Contact Lists**

**Ed Logs & Information**

**ISP Logs & Information**

**Outreach Summaries & Information**

**Site Protocols & Information**

**Site Forms**