

Yurok Tribe Environmental Program (YTEP)

Environmental Pollution Risk Reduction Booklet

Information about pollution on the Yurok Indian Reservation and useful tools on how to minimize your risk from potentially harmful environmental pollutants.

This booklet is intended to assist the Yurok Tribal Membership and reservation community in protecting their health and the health of the environment. This goal can be achieved by informing the tribal membership about a wide range of health risks from environmental pollution on the Yurok Indian Reservation & ways to prevent potential health hazards.

The Yurok Tribal Environmental Program (YTEP) recently completed a two year grant entitled “*Enhancing Environmental Protection and Yurok Tribal Sovereignty*” which was funded by the Administration for Native Americans (ANA) This project used a three-phase approach to addressing environmental health on the Yurok Indian Reservation (YIR).

The first phase gathered all available information on locations of potential environmental pollutants and toxins by extensively interviewing the tribal membership, tribal staff, reservation community, as well as conducting archival research, & consulting with surrounding agencies. All of the potential pollution source data gathered has been mapped and compiled in a Geographical Information System (GIS), & also put into YTEP’s departmental computer database.

The second phase involved field truthing the compiled data from phase one by conducting site visits to as many reported pollution sites as possible. Nearly 200 of the 300 reports from phase one were validated in site visits. The information from this ANA grant is building capacity to apply for numerous other grants in the future. Phase three is education.



Reducing Backyard Burning on the Yurok Indian Reservation



WHAT TRIBAL MEMBERS NEED TO KNOW TO PROTECT THEIR HEALTH AND THE ENVIRONMENT

BACKYARD BURNING IS A HEALTH HAZARD

Backyard burning is an outdated practice that should be discontinued. Burning household garbage in burn barrels, open piles, or other means has been practiced for generations on the Yurok Indian Reservation. Burning trash is no longer acceptable. This practice is a major source of dioxin and other toxic emissions, damaging both our health and our environment. Backyard burning is a more serious threat to public health and the environment than previously believed. Many studies show that burning household waste produces many toxic chemicals and is one of the largest known sources of dioxins nationwide. Several tribes and states, including the Yurok Tribe and the State of California have already banned burning trash.

WHAT ARE DIOXINS?

Dioxins are highly toxic, long-lasting organic compounds. They are dangerous even at extremely low levels & have been linked to several health problems, including cancer, & developmental & reproductive disorders.

How are dioxins formed?

Dioxins are formed when products containing carbon and chlorine are burned. Even very small amounts of chlorine can produce dioxins. Because burn barrels do not have the same strict controls as municipal incinerators, barrel burning releases significant amounts of dioxins. Trying to prevent dioxins from forming by separating out items high in chlorine content is not effective, since low levels of chlorine are present in most household trash. Dioxins are created by burning trash.

How are we exposed to dioxins?

Dioxins accumulate in the food chain. Airborne dioxins can settle on vegetation, which are then eaten by animals. These dioxins accumulate in the fats of animals, and then in humans when we consume fish, meat and dairy products. Dioxins can also settle on water or enter waterways through soil erosion.

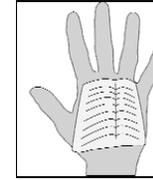
OTHER AIR POLLUTANTS

Smoke from burn barrels contains hazardous pollutants such as particulate matter, sulfur dioxide, lead, mercury, and hexachlorobenzene. These pollutants can have immediate and long term health effects such as:

- Asthma, emphysema, and other Respiratory illnesses.
- Nervous system, kidney, or liver damage.
- Reproductive or developmental disorders.
- Cancer.

What is a serving size?

- A serving is 6 ounces of cooked fish, or about the size and thickness of the palm of your hand.
- Most Yurok People eat much more than 6 ounces per serving. For reference a pint is about 18.6 dry ounces.
- www.gotmercury.org calculator estimates a 150lb person can eat 120 ounces of fresh wild salmon in a week. 120 oz = 20 six ounce servings.
- With these estimates, adjust salmon consumption according to body weight.



Some info used:
California Indian Environmental Alliance (CIEA) www.cieaweb.org

California Indian Basketweavers Association (CIBA) www.ciba.org

Photos:
Salmon cooking: Matt Mais-Yurok Tribe
Acorns & Beargrass: Joe Hostler-YTEP
Huckleberries: www.spranch.org/plantlist
Eels: klamathriver.org/Documents/KlamathRiverNews_winter09.pdf

WHERE TO GET MORE INFO:

Yurok Tribe Environmental Program (YTEP):

(707) 482-1822

for information on herbicide applications on or near the Yurok Indian Reservation.

Humboldt Agricultural Commissioner:

(707) 445-7223

information on which herbicides have been used in Humboldt County (2 weeks post application)

Del Norte Agricultural Commissioner:

(707) 464-7235

information on which herbicides have been used in Del Norte County (2 weeks post application)

Got Mercury?

Mercury Calculator
www.gotmercury.org

Office of Environmental Health Hazard Assessment (OEHHA)

Safe eating guidelines: local advisories & fish consumption benefits
www.oehha.ca.gov/fish.html

California Indian Basketweavers Association (CIBA)

(530) 668-1332

www.ciba.org



What you can do:

Know your gathering area: find out if pesticides have been applied nearby within the past year. Is there an old illegal dumpsite that has been buried? Refer to YTEP's posted maps of proposed pesticide spray units. Or call YTEP (707) 482-1822.

When gathering: look for signs of pesticide use for example; discolored or dead plants & unusual odors like kerosene or gasoline. Burnt looking leaves or a pinkish tint on plants, which is the residue of a dye added to herbicides before spraying. This dye lasts only a few days depending on sun exposure and will disperse completely with little rain. Look for pieces of trash that may be buried, which may indicate an old illegal dumpsite.

When preparing: wash well with clean water to remove contaminants. Remove skin, fats and livers, since toxins can accumulate there. Drain fats & oils since they can contain toxins. Microcystin toxins from Blue-Green Algae can concentrate in fish livers. As a precaution, do not drink or wash with Klamath River water when warnings are posted. Boiling water doesn't remove microcystin.



What you can do:

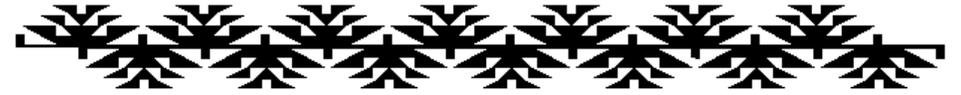
After gathering: if you were in an area recently sprayed with herbicides:

- Use gloves to remove clothing & wash skin
Wash contaminated items separately
- Avoid inhaling dust from contaminated items
- Clean where contaminated shoes have been
- Wash thoroughly with soap & water for at least 15 minutes
- If flu like symptoms persist, contact your doctor and explain what, where & when you have been.

Eat fish safely

Avoid large predatory fish such as Tuna. Fortunately, studies have shown that wild caught salmon has very low levels of mercury contamination and is a healthy traditional food.

- Mercury is stored in the entire fish. You cannot clean the head guts, fat and skin to get rid of it. Other toxins, like PCBs may be stored there so trimming these off is recommended.
- Check fish you plan to eat at the EPA and OEHHA websites. You can also visit a mercury calculator website such as the one at www.gotmercury.org.
- Do not eat fish caught from Trinity Lake. California has issued a mercury warning for Trinity Lake fish.



Not only are the people who burn trash exposed to these pollutants, but so are their families and neighbors.

Children, the elderly, and those with preexisting respiratory conditions can be especially vulnerable.

Ash

The ash residue from backyard burning can contain toxic pollutants, such as mercury, lead, chromium, and arsenic, which can contaminate vegetables if scattered in gardens. Children can accidentally swallow toxic materials from dirt on their hands while playing near discarded ash. Pets can distribute ash residue and toxins from burned material. Toxins can leech into waterways and drinking water sources.

Yurok Culture

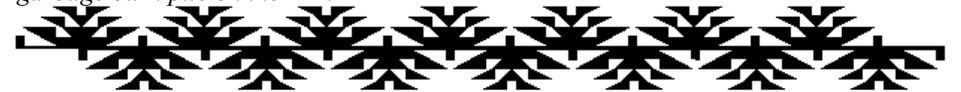
These pollutants also impact Yurok Culture by contaminating our cultural resources: such as cultural use plants used for basket materials, medicinal plants, and berries as well as contaminate fish, game, and drinking water.

Yurok Tribal Air Quality Ordinance

Yurok Tribal law prohibiting trash burning and establishing authority for YTEP to issue burn permits.



The picture above is of a very large illegal garbage burn pile on the YIR.



WHAT YOU CAN DO

There are many free and low cost alternatives to backyard burning:

- **Reduce.** You can reduce the amount of waste you generate by using durable, long-lasting goods and avoiding disposable items; for example buy cloth diapers instead of disposable diapers. Buy products in bulk; and look for products with less packaging.
- **Reuse.** Reusing items is another way to reduce the amount of waste you generate. Repair, sell, or donate used or unwanted items or organize a neighborhood swap event or yard sale. One person's trash is another person's treasure!
- **Recycle.** Upriver at the Weitchpec Transfer site, cans, bottles, glass, batteries and motor oil can be dropped off for free. In Willow Creek, Popko Recycling pays for cans, bottle and glass recycling. Popko # (530) 629-2054. Plastic shopping bags are recycled at Hoopa Rays. The Klamath Transfer Station has free drop off for, plastic bottles, cans, glass and newspaper. Julindra Recycling in Crescent City pays CRV for cans, bottles and glass. Julindra # (707) 464-CANS. There are numerous used motor oil drop off locations in Crescent City. Residents on the YIR can contact YTEP for scrap metal recycling.

Compost. Composting is a great way to dispose of yard trimmings and food scraps, while creating a natural, free fertilizer. As long as you don't dispose of meat or animal parts, you should not attract wildlife.



WHAT YOU CAN DO

- **Properly Dispose of Waste.** Don't burn or dump illegally. Waste disposal is available throughout the reservation. Household waste should be taken to the Weitchpec Transfer Station or the Klamath Transfer Station. Curbside garbage service is available upriver through the Blue Bag Program. Blue Bags can be purchased at the Weitchpec Transfer Station or call YTEP (707) 482-1822. Del Norte Disposal offers curbside waste collection service. (707) 464-4181.
 - **Burn Permits** are issued by YTEP free of charge. Under the Yurok Tribal Air Quality Ordinance anyone burning yard waste or other approved items must have a valid burn permit from YTEP. Burn permit applications are available online on YTEP's website <http://www.yuroktribe.org/departments/ytep/Air.htm>
- When burning, you must have your valid burn permit on site, be an approved burn day (call 866-BURN-DAY the YIR is in Zone 1.) burn between 9AM-3PM, fire must be less than 5 ft diameter, fire must be attended at all times, fire suppression equipment must be on site, and the area around the fire must be clear of vegetation.

Some information used was adopted from:
 U.S.EPA backyard burning webpage www.epa.gov/epawaste/nonhaz/municipal/backyard
www.humboldtrecycling.org
www.recycledelnorte.ca.gov

WHERE TO GET MORE INFORMATION:

YTEP (707) 482-1822
yuroktribe.org/departments/ytep

Weitchpec Transfer Site
 Highway 169 Fri, Sat, Sun 9-3
 Blue Bags can be purchased

Weitchpec Tribal Office
 (530) 625-4130
 Blue Bags can be purchased

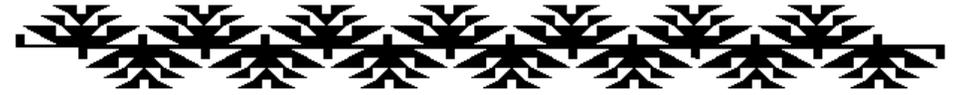
Del Norte County Solid Waste Authority
 (707) 465-1100
 Klamath Transfer Station
 Wed & Sun 10-5
www.recycledelnorte.ca.gov

Del Norte Disposal now called "RECOLOGY Del Norte"
 For Klamath curbside garbage
 (707) 464-4181
www.recologydelnorte.com

Humboldt Waste Management Authority (707) 268-8680
www.humboldtrecycling.org

U.S. Environmental Protection Agency (EPA)
www.epa.gov

North Coast Unified Air Quality Management District
www.ncuaqmd.org
 866-BURN-DAY



Subsistence Resources on the Yurok Indian Reservation



Ney-puy

WHAT TRIBAL MEMBERS NEED TO KNOW TO PROTECT THEIR HEALTH AND THE ENVIRONMENT

What are Subsistence Resources?

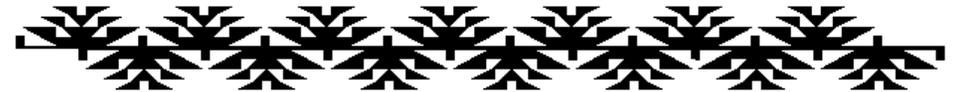
Subsistence resources can be any plant, animal or other resource gathered, harvested or hunted from the land, water or air. Yurok people have utilized subsistence resources for survival and cultural use since time immemorial. Some subsistence resources include but aren't limited to: acorns, salmon, steelhead trout, sturgeon, candlefish, surf fish, eels, deer, elk, mushrooms, waterfowl, huckleberries, salmonberries, basket materials such as hazel, various ferns, bear grass, spruce roots, as well as mussels, clams, seaweed and traditionally sea lions, and many more.

What are the environmental hazards?
 Today's world is not the same world that our ancestors lived in. The benefits of our modern day living make life easier but also can create environmental contamination. Household wastes, cleaning chemicals, leaking oil and gas from junk cars, pesticides and historic contaminants such as mercury from gold mining and petroleum products and chemicals used in logging can all be environmental hazards impacting traditional resources.

Traditional foods are safe
 Fortunately subsistence resources gathered on and around the Yurok Indian Reservation are relatively safe to eat and use when compared to food bought in a grocery store. Traditional foods are generally safe from contamination but because there is always some possibility of contamination, the following precautions should be taken when gathering:



Woo-mehl





What you can do

- Use caution if you live near a historic mill site. Prevent children from playing & eating soil near mill sites.
- Minimize exposure to penta by peeling and washing fruits and vegetables before cooking.
- Minimize exposure by avoiding telephone poles & rail road ties.

Penta was also used as a pesticide. If you have any old containers of pesticides, dispose of them properly at a hazardous waste facility like the Humboldt County household hazardous waste facility in Eureka. Call (707) 441-2005 or the Del Norte County Solid Waste Management Authority (707) 464-1100.

EPA-STAR GRANT

YTEP is currently sampling for numerous toxins in aquatic subsistence foods like sturgeon, eels and salmon. Once the information is gathered and finalized the results will be shared with the public.

Photos:

Veneers: Klamath, CA courtesy of Forest History Society Durham, N.C.

www.foresthistory.org

Plywood photo from "Family Trees Simpson Centennial Story" by Robert Spector 1990.

Choker setters: swanlund photo

WHERE TO GET MORE INFORMATION:

Yurok Tribe Environmental Program (YTEP)
(707) 482-1822
yuroktribe.org/departments/ytep

U.S. Environmental Protection Agency (EPA)
www.epa.gov/pesticides/factsheets/chemicals/pentachlorophenol_main.htm

North Coast Regional Water Quality Control Board.
(707) 576-2220
www.swrcb.ca.gov/northcoast

Geotracker
Is a CA State database that provides searchable environmental information for your area.
<http://geotracker.waterboards.ca.gov>

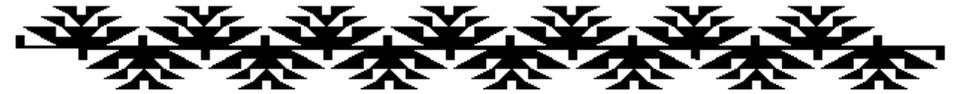
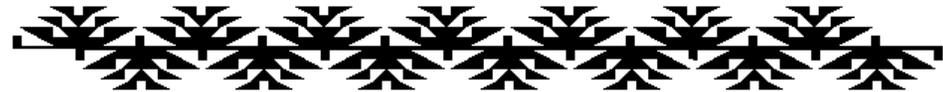
Californians for Alternatives to Toxics
(707) 445-5100
www.alternatives2toxics.org/penta

Some information used:

Californians for Alternatives to Toxics
www.alternatives2toxics.org/penta
Agency for Toxic Substances and Disease Registry (ATSDM)

Public Health Statements for:
Pentachlorophenol CAS# 87-86-5
Hydraulic Fluid CAS# 55957-10-3
www.atsdr.cdc.gov

Numerous interviews with community members at Yurok Tribal functions.



Reducing Illegal Dumping on the Yurok Indian Reservation



WHAT TRIBAL MEMBERS NEED TO KNOW TO PROTECT THEIR HEALTH AND THE ENVIRONMENT

This picture is from the very large illegal dumpsite near the end of Johnson Rd near Mettah village..

ILLEGAL DUMPING IS A HEALTH HAZARD

Open dumping of household trash, appliances, vehicles, construction debris and other unwanted items is an outdated practice that should be stopped. Dumping household trash off of roadsides and other places has been practiced for generations on the Yurok Indian Reservation. Dumping trash is no longer acceptable. In the past, approved and safe disposal of trash was often not easily available and required driving long distances off of the reservation. Improperly depositing trash is damaging to both our health and our environment. Garbage dumping near waterways produces many toxic chemicals. Several tribes and states, including the Yurok Tribe and the State of California have banned improperly dumping trash.

How is Illegal Dumping Hazardous?

Garbage should only be disposed of at approved container sites such as the Weitchpec Transfer Station or the Klamath Transfer Station. Illegal dumping is not only ugly it can also be hazardous to your health; the health of plants and animals, and the health of the environment. Illegal dumps can create a public health hazard by polluting reservation soils, streams, ground water, and wildlife.

Improperly disposing of waste:

- Effects drinking water. many residences rely on wells or creek water.
- Garbage can release toxic chemicals when exposed to sunlight and weathering which can contaminate soils and ground water.
- Plastics can take many years to fully break down, therefore prolonging possible exposure to toxic chemicals.
- Can kill wildlife that eat plastics by suffocating wildlife or filling their stomachs with indigestible plastics.

YUROK CULTURE

Yurok Culture teaches us to respect the land & our resources. Healthy people require a healthy environment. Many Yurok people eat acorns, berries, fish and game. Basketweavers process plant materials through their mouths. All of these resources can be contaminated by illegal dumping. Illegal dumping may cost less money than properly disposing trash but it greatly impacts our health, and culture, as well as future generations.



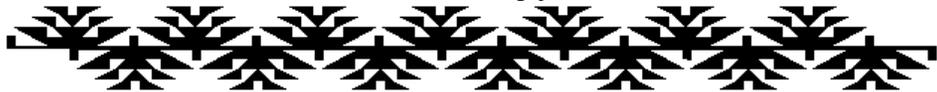


Alternatives to illegal dumping

- Practice the three R's:
 - Reduce, Reuse Recycle.
- Compost yard waste and other unwanted plant materials.
- Create a compost pile by mixing equal parts brown material with green material.
- Mix with a pitchfork at least once per week.
- Keep pile as wet as a sponge.
- Studies have shown that by Reducing, Reusing, Recycling and Composting, up to 70% of total waste can be diverted from landfills.
- Proper disposal of waste is readily available at the Weitchpec and Klamath Transfer stations.
- Yurok Tribe Blue Bag Program is a pre-paid doorstep trash pick-up for downriver residents.



This picture is from an illegal dumpsite near the end of Tully Creek Rd.

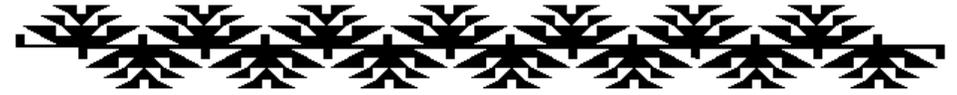


WHAT YOU CAN DO

There are many free and low cost alternatives to backyard burning:

- **Reduce.** You can reduce the amount of waste you generate by using durable, long-lasting goods and avoiding disposable items; for example buy cloth diapers instead of disposable diapers. Buy products in bulk; and look for products with less packaging.
- **Reuse.** Reusing items is another way to reduce the amount of waste you generate. Repair, sell, or donate used or unwanted items or organize a neighborhood swap event or yard sale. One person's trash is another person's treasure!
- **Recycle.** Upriver at the Weitchpec Transfer site, cans, bottles, glass, batteries and motor oil can be dropped off for free. In Willow Creek, Popko Recycling pays for cans, bottle and glass recycling. Popko # (530) 629-2054. Recycle plastic shopping bags at Hoopa Rays. Klamath Transfer Station has free drop off for, plastic bottles, cans, glass and newspaper. Julindra Recycling in Crescent City pays CRV for cans, bottles and glass. Julindra # (707) 464-CANS. There are numerous used motor oil drop off locations in Crescent City. YIR residents can contact YTEP for scrap metal recycling.
- **Compost.** Composting is a great way to dispose of yard trimmings and food scraps, while creating a natural, free fertilizer. As long as you don't dispose of meat or animal parts, you should not attract wildlife.
- **Properly Dispose of Waste.** Don't burn or dump illegally. There are many proper waste disposal options available throughout the reservation.

Stop junk mail. Call 888-5-OPT-OUT



What is hydraulic fluid?

Hydraulic fluid is a commonly used large class of mixed chemical components used in heavy equipment. Over 200 million gallons are sold in the U.S. per year. Local residents whom worked in the woods reported that historically it was common to drain hydraulic fluid on the ground while operating heavy equipment on landings. It was also common to dig a trench or pit to bury empty barrels.

Potential health hazards from hydraulic fluid

Very little is known about its health effects but worldwide there have been reports of pneumonia, brain, nerve & muscle damage and also death. Fish can absorb it. Exposure on the YIR would likely be near old mill sites, or on landings where heavy equipment was operated.

What is Pentachlorophenol?

Pentachlorophenol also called "penta" is a wood preservative used in plywood mills, on mill yards, on telephone poles, and rail road ties. Penta was widely used until being banned in 1987.



Potential health hazards from pentachlorophenol

Penta is extremely toxic, can cause cancer, liver, kidney and nervous system damage. It can disrupt your endocrine system (hormones) & immune system. Dioxin which is a byproduct of Pentachlorophenol can also cause cancer and reproductive system damage.

It's not known if pentachlorophenol was used on the YIR, but because it was so commonly used it's possible that some mill sites may have contamination. A former Simpson Timber Company plywood mill in Eureka has extensive environmental contamination that's currently being cleaned up. It's possible that the Simpson Veneer Mill at Hoppow Creek may also have environmental contamination.





Historic Logging Activity on the Yurok Indian Reservation

VENEERS: KLAMATH, CALIFORNIA



The picture above is "Simpson Timber Company's Klamath Veneer Plant." It was located on Hoppow Creek near Klamath. Although this mill closed years ago, some environmental contamination may exist.

WHAT TRIBAL MEMBERS NEED TO KNOW TO PROTECT THEIR HEALTH AND THE ENVIRONMENT



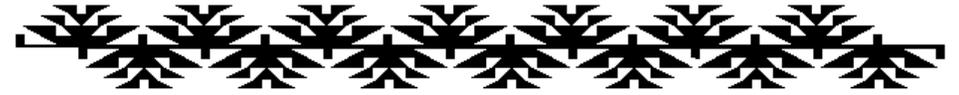
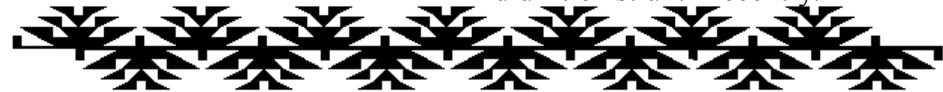
What is the environmental threat from historic logging activity?

Logging was and is still a major industry on and around the Yurok Indian Reservation. This once thriving industry once employed thousands of people on and near the Yurok Indian Reservation. After World War II, logging drastically increased and resulted in numerous lumber mills on the YIR. Most logging activity occurred before many of our existing environmental laws. Although use of some of the most harmful chemicals stopped years ago, these legacy toxins can still impact our health today. We now have a heightened knowledge of the potential health impacts from chemicals and solvents used in logging and in mills.

What are some of the chemicals used in logging and at mill sites?

- Hydraulic fluid
- Gasoline/Diesel
- Glues
- Wood preservatives– possibly pentachlorophenol (PCP)

It's not entirely known exactly which chemicals were used, nor what quantities used because regulation of many of these chemicals didn't exist until recently.



WHAT IS YTEP DOING ABOUT ILLEGAL DUMPING?

Yurok Tribal Laws

- Prohibiting Pollutants Ordinance– illegal dumping can result in fines up to \$ 1,500 per offense, plus clean up cost & up to 300 hrs community service.
- Vehicle Abatement Ordinance
- Blight Ordinance

Environmental Complaints

Anonymously report illegal dumping. You can get the complaint form at the Yurok Tribal website www.yuroktribe.org/departments/ytep. If no internet access, report information regarding environmental concern or damage to YTEP. For example: what, where, when, etc.

YTEP recently helped clean up 3 large illegal dumpsites on the upriver portion of the reservation. Many tons of household garbage, appliances, cars and other unwanted waste were removed from Abbot's, Roach Creek and Johnson Rd dumpsites, which required great expense and effort to remove the large amount of waste from very steep hillsides.

YTEP continues to apply for grant money to clean up illegal dumpsites and removing junk cars. Unfortunately these funding sources won't last forever, therefore it's essential that the reservation community help prevent illegal dumping.



WHERE TO GET MORE INFORMATION:

YTEP (707) 482-1822
yuroktribe.org/departments/ytep

Del Norte County Solid Waste Authority (707) 465-1100
www.recycledelnorte.ca.gov

Del Norte Disposal now called "RECOLOGY Del Norte" (For curbside garbage pick-up in Klamath) (707) 464-4181
www.recologydelnorte.com

Humboldt Waste Management Authority (707) 268-8680
www.humboldtrecycling.org

Weitchpec Transfer Site Highway 169

U.S. Environmental Protection Agency (EPA)
www.epa.gov

North Coast Unified Air Quality Management District
www.ncuqmd.org

Some of the information used in this brochure was adopted from:

U.S. E.P.A backyard burning webpage
www.epa.gov/epawaste/nonhaz/municipal/backyard
www.humboldtrecycling.org
www.recycledelnorte.ca.gov

Historic Gold Mining on the Yurok Indian Reservation



WHAT TRIBAL MEMBERS NEED TO KNOW TO PROTECT THEIR HEALTH AND THE ENVIRONMENT

The picture above is “Lord’s Hydraulic Mine” on Weitchpec bar. 1880’s

What is the environmental threat from Historic Gold Mining?

Gold mining was once widespread throughout the Klamath-Trinity Mountains from the mid-1800’s up to the 1950’s. Gold was extracted using mercury (quick silver). A typical hydraulic mine used hundreds of pounds of mercury (Hg) per month, and it’s estimated that 10-30% of mercury used was deposited in nearby gravels and waterways. Mercury is a very heavy metal that sinks in water and takes a very long time to break down. Mercury was also mined in the Klamath River Basin

What is Methyl Mercury ?

Two types of mercury from gold mining:

- Elemental mercury which was heavily used in gold mining and can also be found in older thermometers.
- Methyl mercury is created when elemental mercury is converted by bacteria into organic mercury. Methyl mercury can be eaten or absorbed by bacteria & other organisms; then magnify up the food chain

Why you should care about Mercury and Methyl-Mercury.

- At low levels mercury can damage the brain, central nervous system, immune system, kidneys, and heart.
- In pregnant women, it can cause permanent learning disabilities in a developing fetus, even at very low levels.
- Children are particularly vulnerable.
- High levels of mercury are very rare, but at high levels, it can cause severe birth defects, neurological damage and death.

What is Bioaccumulation?

Bioaccumulation occurs when small sized contaminants such as methyl mercury are ingested by small plants or animals. These small plants or animals are then eaten by a larger animal such as a small fish. This small fish then absorbs all the mercury that was taken up by the plant over it’s entire life. A larger fish can then eat the smaller fish and absorb the methyl mercury from the smaller fish and the plant too. This process continues up the food chain & can result in an organism like a large fish like a tuna having a higher concentration of the contaminant than the surrounding water.

IMPACTS ON YUROK CULTURE

Many Yurok people continue to gather traditional foods & resources. Green Diamond owns much of the lands on the Yurok Indian Reservation. The plants that GDR considers undesirable & applies pesticides to are the same plants, trees and grasses that Yurok People have used for thousands of years. Some of the sprayed plants include; Tan Oak trees that provide acorns, pacific huckleberry, numerous basket materials like hazel, ferns, alders & many others. Federal regulation of Triclopyr, a foliar herbicide used on the YIR, doesn't consider use on food plants



What is YTEP doing about pesticides?

- Consultation– consults with GDR on planned pesticide applications. Has worked with the U.S. Forest Service, Cal-Trans, Redwood National Park, and PacifiCorp which has resulted in these organizations stopping or severely limiting pesticide use.
- Notification– shares & posts planned pesticide spraying info. with public.
- Database/GIS-inventories all pesticide spraying units on the YIR with computer mapping.

Some info used from: *California Indian Basketweavers Association (CIBA)* www.ciba.org
U.S. Environmental Protection Agency
 Citizens Guide to Pest Control & Pesticide Safety EPA-730-K-95-001 Sept. 1995

WHERE TO GET MORE INFO.

Yurok Tribe Environmental Program:

(707) 482-1822 x 1013

for information on herbicide applications on or near the Yurok Indian Reservation.

Humboldt Agricultural Commissioner:

(707) 445-7223

information on what has been used in Humboldt County (2 weeks post app.)

Del Norte Agricultural Commissioner:

(707) 464-7235

information on what has been used in Del Norte County (2 weeks post application)

Californians for Alternatives to Toxics:

(707) 445-5100

Information on pesticides and alternatives <http://www.alternatives2toxics.org/>

Pesticide Action Network North Amer.

Information on pesticides and alternatives <http://www.panna.org>

California Department of Pesticide

Regulation: (916) 445-4300

California-specific regulations governing pesticide application and more <http://www.cdpr.ca.gov/>

National Pesticide Telecommunications

Network (800) 858-7378 M-F 6:30 AM to 4:30 PM

California Poison Action Line

(800) 222-1222 24/7 365 days per year



Application techniques are determined by the type of herbicide being used and the kinds of plants being controlled.

Foliar application targets the leaves of individual plants or groups of plants. **Ground & broadcast applications are used over large areas** to remove large numbers of plants, and to prevent plants from sprouting .



Hack and squirt' uses slashes cut into the trunk to introduce herbicide directly into the tree's inner bark.

Typical signs of herbicide use include:

- Wilted, or burnt-looking leaves
- Patches of dead & dying plants near healthy young trees
- Unusual odors, like kerosene & ammonia
- Tree with large slashes cut into the trunk (see right)



What Are The Health Risks?

Pesticides, by their nature, are toxic. Short-term exposure to pesticides can cause irritations to skin, eyes, and the respiratory system. They are also thought to have an association with diseases such as cancer, diabetes, asthma, and reproductive and behavioral problems in people and other animals.

SYMPTOMS COMMONLY RELATED TO HERBICIDE EXPOSURE

- Headache
- Dizziness
- Itchy, burning eyes
- Sore Throat
- Red, itchy rash
- Tingling skin
- Swelling
- Difficulty breathing
- Nausea, vomiting
- Abdominal pain
- Diarrhea

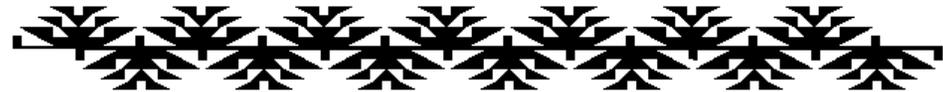
MANY OF THESE SYMPTOMS CAN MIMIC THE FLU

FIRST AID FOR HERBICIDE EXPOSURE

- Remove clothing with gloves & wash skin
- Wash contaminated items separately
- Avoid inhaling dust from contaminated items
- Clean where contaminated shoes have been
- Wash thoroughly with soap & water for at least 15 minutes
- If symptoms persist, contact your doctor and explain what, where & when you have been.

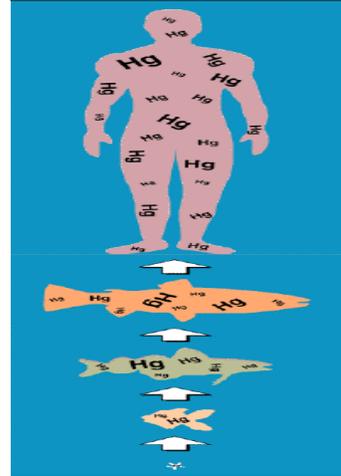
Reduce herbicide exposure by:

- referring to YTEP's posted spray maps
- contact YTEP's pesticide staff person
- Look for signs of herbicide application
- Clean gathered items well before using. Report any possible health effects to YTEP.



Mercury (Hg) Bioaccumulation in Humans

The diagram below illustrates how mercury (Hg) concentration increases up the food chain.



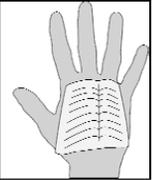
From the University of Wisconsin Extension



Photo by Matt Mais

What is a serving size?

- A serving is 6 ounces of cooked fish, or about the size and thickness of the palm of your hand.
- Most Yurok People eat much more than 6 ounces per serving. For reference a pint is about 18.6 dry ounces.
- www.gotmercury.org calculator estimates a 150lb person can eat 120 ounces of fresh wild salmon in a week. 120 oz = 20 six ounce servings.
- With these estimates, adjust salmon consumption according to body weight.



What you can do:

Eat fish safely

Avoid large predatory fish such as Tuna. Fortunately, studies have shown that wild caught salmon has very low levels of mercury contamination and is a healthy traditional food.

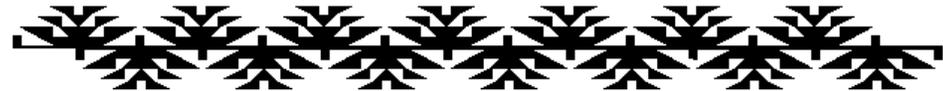
- Mercury is stored in the entire fish. You cannot clean the head guts, fat and skin to get rid of it. Other toxins, like PCBs may be stored there so trimming these off is recommended.
- Check fish you plan to eat at the EPA and OEHHA websites. You can also visit a mercury calculator website like www.gotmercury.org.
- Do not eat fish caught from Trinity Lake. California has issued a mercury warning for Trinity Lake fish.

What you can do:

To further minimize mercury exposure

- Recycle compact fluorescent light bulbs (CFL or curly bulbs)
- **If a CFL breaks:**
- Do not vacuum or sweep.
- Open a window and leave room for 15 minutes.
- Clean with damp paper towels & dispose of bulb & towels in a sealed jar or sealed bag.
- Recycle CFL's at Home Depot or at the Eureka Transfer Station.





What is YTEP doing?

YTEP is currently testing numerous aquatic species like sturgeon, eels, and salmon, on the Yurok Indian Reservation for numerous toxins including mercury and methyl mercury with funding from YTEP's EPA STAR grant. Results of this testing will be shared with the public once the results are collected & finalized.

WHERE TO GET MORE INFORMATION:

Yurok Tribe Environmental Program (YTEP)
(707) 482-1822
www.yuroktribe.org/departments/ytep

Office of Environmental Health Hazard Assessment (OEHHA)
Safe eating guidelines: local advisories & fish consumption benefits
www.oehha.ca.gov/fish.html

U.S. Environmental Protection Agency (EPA)
National store-bought fish consumption advice
www.epa.gov/waterscience/fish/advisory.html

Environmental Health Investigations Branch Ca. Dept. of Health Services
www.ehib.org
Cal EPA Dept. of Toxics Substances Control
<http://dtsc.ca.gov/HazardousWaste/Mercury/index.cfm>

WHERE TO GET MORE INFORMATION:

Got Mercury?
Mercury Calculator
www.gotmercury.org

If you find toxins in your home contact:
1-800-CLEANUP (1-800-253-2687)
<http://ccelearn.csus.edu/mercurylamp/content/resources5.htm>
or www.earth911.org

Some Information used:

California Indian Environmental Alliance (CIEA) www.cieaweb.org

University of Wisconsin Extensions
www.mercuryinschools.uwex.edu/curriculum/hg_in_env.htm

USGS Mercury Contamination from Historical Gold Mining in California
<http://pubs.usgs.gov/fs/2005/3014/>

Got Mercury?
Mercury Calculator
www.gotmercury.org

California is haunted by Gold Rush legacy of toxic mercury
<http://forests.org/>
Environmental News Network
August 16, 2002 John Krist

Humboldt State University Library
<http://content.cdlib.org/ark:/13030/ft038n96s5/?brand=calisphere>



Pesticides On the Yurok Indian Reservation



WHAT TRIBAL MEMBERS NEED TO KNOW TO PROTECT THEIR HEALTH AND THE ENVIRONMENT

Photo on next page is of a Madrone Tree sprayed with herbicide. (note dead and burnt looking leaves next to healthy leaves.)

WHAT ARE PESTICIDES?

A pesticide is any substance or mixture of substances intended for: preventing, destroying, repelling, or mitigating any pest.

Though often misunderstood to refer only to insecticides, the term pesticide also applies to:

- herbicides,
- fungicides,
- various other substances used to control pests.

What is a pest?

Pests are living organisms that occur where they are not wanted or that cause damage to crops, humans, or other animals. Examples include: insects, mice & other animals, unwanted plants (weeds), fungi, microorganisms such as bacteria and viruses.

How are pesticides used on the YIR?

The most common uses of pesticides are:

- Household use
- Industrial timber

Do household products contain pesticides?

Many household products are pesticides. All of these common products are pesticides:

- Bug sprays and baits
- Insect repellents for personal use.
- Rat and other rodent poisons.
- Flea/ tick sprays, powders, pet collars.
- Kitchen, laundry, & bath disinfectants and sanitizers.
- Products that kill mold and mildew.
- Some lawn and garden products, such as weed killers.
- Some swimming pool chemicals.

Some alternatives to pesticides

- Use non-toxic and biodegradable products.
- Clean up food spills to prevent pests.
- Store food in sealed containers.
- Make your home unattractive to pests by clearing vegetation near your home & fixing leaky faucets. Caulk all holes & cracks in exterior walls.

HOW ARE INDUSTRIAL TIMBER HERBICIDES APPLIED?

Most herbicide use occurs in spring & fall. Spring applications are aimed at seedlings & small plants that are just beginning to emerge from the soil (ground & broadcast). Fall herbicide use targets larger plants and those missed in the spring (foliar, & hack & squirt applications)

