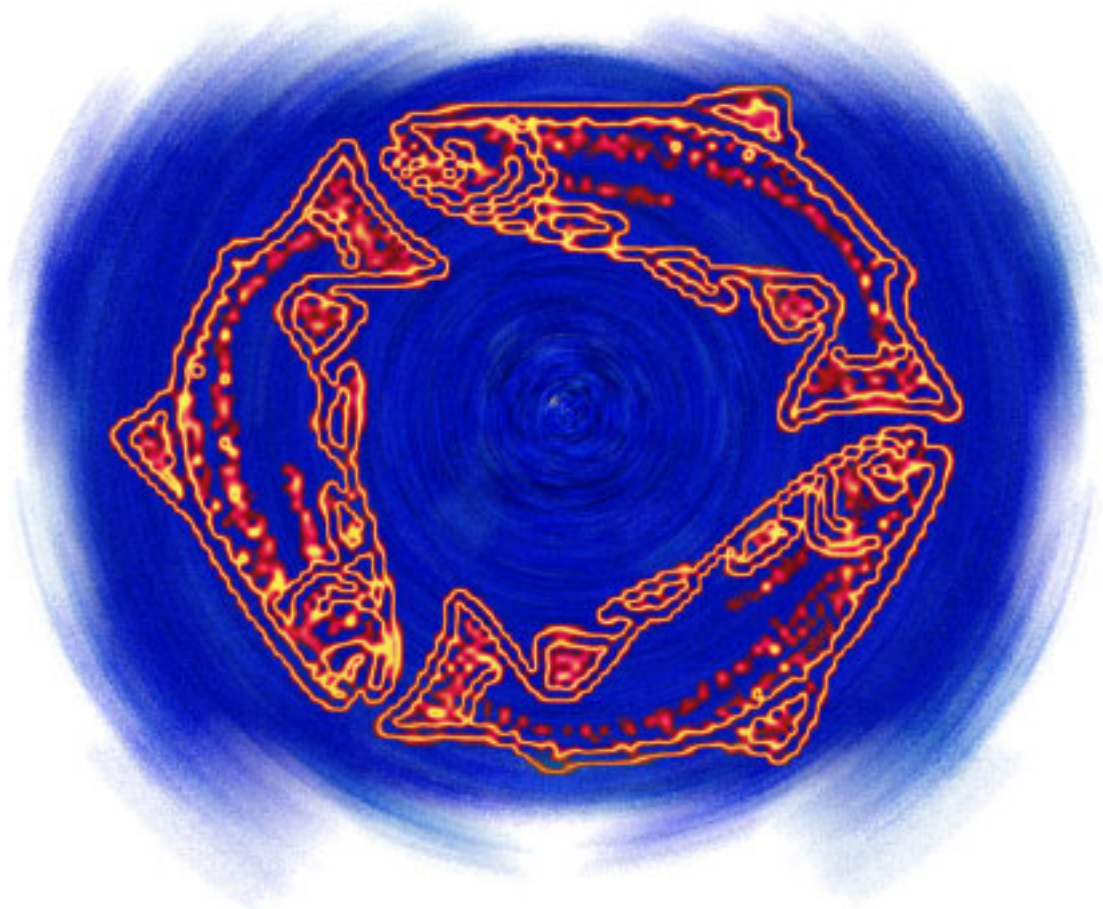


MERCURY **CONTAMINATION** **AND COMMUNITY HEALTH** **IN NORTHERN CALIFORNIA**



A report compiled by
International Indian Treaty Council





ABOUT THE COVER: The three salmon-in-a-circle graphic on the cover is the logo, symbol, and flag of the Pit River Indian Nation, IITC's partner in this project. It was selected for the booklet cover to remind the readers about the profound relationship between traditionally-used fish, in this case the salmon, and the identity and way of life of California Indian Peoples.

Pit River Tribal representatives and elders say that this sacred life symbol "demonstrates resistance to colonization, and stands for the cycle of life and revitalization of both the Nation and the salmon. It depicts the reliance of Indian Nations on the salmon and on all of the natural world for their survival. The salmon symbolizes strength, beauty, persistence, and the memory of what the Pit River Nation once had and will have again.

This booklet was created by the International Indian Treaty Council's Tribal Health and Mercury Education Project. Our heartfelt thanks to Pratap Chatterjee, principle researcher and writer; Jeff Conant and Ronald Nobuhisa Sakamoto for additional drafting, editing and formatting; members of the Pit River, Wintu, Yurok, E'lem Pomo and Karuk Nations and the California Rural Indian Health Board for their invaluable input; and Design Action Collective for design and artwork.

We also thank the Hesperian Foundation, Indigenous Environmental Network, Project Underground, the "Gold, Greed and Genocide" Project of the IITC Youth Program, Physicians for Social Responsibility, Carmen Ecological Consulting, the California Endowment Local Opportunities Fund, the San Francisco Foundation and Clean Water Action for their support and contributions to this project.

International Indian Treaty Council (IITC) encourages others to copy, reproduce or adapt all parts of this booklet, provided that the material reproduced is distributed free or on a not-for-profit basis. Please let us know if you plan to use this material, and send IITC a copy of any materials in which text or illustrations from this book have been used.

Any organization or person who wishes to copy, reproduce or adapt any or all parts of this book for commercial purposes must obtain permission from IITC.

This booklet is part of the Tribal Health and Mercury Education Project

The Tribal Health and Mercury Education Project was initiated in January 2003 by the International Indian Treaty Council in partnership with the Pit River Tribe, which spans four Northern California counties: Siskiyou, Modoc, Shasta and Lassen.

Gene Preston, Pit River Tribal Chairman when the partnership project was initiated, reports that tribal members continue to fish from these areas and have received little or no information as to the possible health effects. The initial goal of the project was to begin to provide information about this threat to health to the Pit River and other affected tribes in the area, including the Clear Lake E'lem Pomo, Maidu, Yurok-Karuk and Wintu Nations.

Gene Preston has stated his belief that "the Pit River Tribe along with other affected tribes in the area need to uphold their traditional responsibilities to their peoples and to the protection of their traditional fishing subsistence resources by addressing this problem." The focus of the project is not to encourage tribal community members to abandon their traditional fishing way of life, but to help them exercise caution, make informed choices and especially, to push for a cleanup and restoration of the waters in these areas. At the same time, the IITC and tribal leaders agree that there is an urgent necessity to inform people, especially pregnant and nursing mothers, of the dangers to unborn and young children posed by mercury until cleanup can occur.

"The only way to keep mercury out of our bodies is to keep it out of the environment. The ultimate goal should be to eliminate mercury use and clean up existing sources of contamination."

Table of Contents

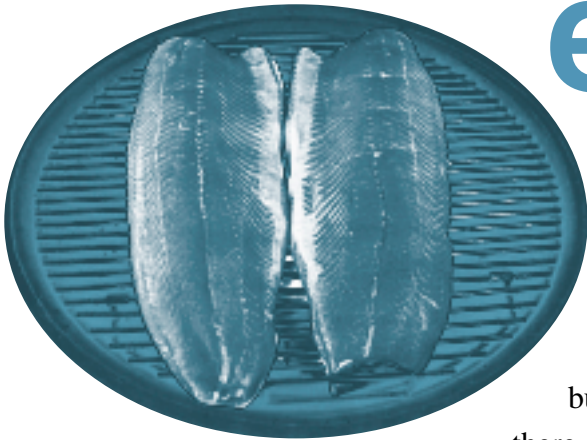
Introduction: How to use this report	3
How safe is it to eat fish?	4
Fish and California Indian Peoples	5
Mercury poisoning: toxic legacy of the California Gold Rush	7
Why is there so much Mercury in California waters?	8
The story of Clear Lake	9
Mercury as a threat to human health	10
Methyl Mercury and the food chain	11
Fish and pregnant women	12
Eating fish safely: what you and your family should know	13
Which fish are safe?	14
How Mercury got in our food	15
Where are the worst problems in California now?.	16
A guide to finding out if you are at risk from mercury poisoning	19
International pressure for the elimination of mercury	20
Resources	21

Introduction: How to use this report

This report contains information for tribal leaders, health educators, community organizers, fisher people, and consumers that will help understand the risks of eating fish that may be contaminated with mercury. It also offers information on how to know if local fish may be contaminated, as well as some cultural and natural history that puts the mercury issue in context.

Educators, organizers, and anyone wanting to gain a complete understanding of the issue should read the entire booklet. However, if you are simply looking for information on the health impacts of mercury in fish, and how to know if you need to take precautions locally, the most useful information will be found on pages 10-15. And if you are seeking resources to get a better understanding of the issue, or help from local or state government regulatory agencies, see the guide to finding out if you are at risk on page 19, and the resources section on page 21.

How **safe** is it to **eat fish?**



Many lakes and streams in California have signs that warn people not to catch fish. Others places have signs posted saying that eating the fish is dangerous. Some places have no signs at all, but people still wonder if it's safe to eat the fish caught there. And now some supermarkets have started putting up signs warning pregnant women not to eat too much fish.

Why is a health advisory on fish needed in Northern California? Fish are full of protein, low in saturated fat, offer good nutrition, and are delicious. Often health and dietary guidelines suggest eating fish as a protein replacement for high-cholesterol and high-fat meats. Many of us have also learned that fish are "brain food" and good for young children with growing bodies. In short, fish are good for us. They are also an important part of the traditional diet and cultures for many Indian peoples in California and beyond. What could be wrong with them?

In their natural, uncontaminated state, nothing is wrong with eating fish. The fish our ancestors depended on for their survival were a pure source of nutritional and spiritual sustenance and health for our peoples. Times have changed, though, and the toxics in our air, water and soil have poisoned the fish, making some fish dangerous to eat in large quantities.

One of the biggest problems in areas where there was a lot of mining, like in Northern California, is mercury contamination. As of 1999 there were warnings against eating fish from 13 Northern and Central California water bodies due to mercury contamination.

This report will try to explain some of the do's and don'ts associated with eating fish. The bad news is that pregnant women and small children should eat as little as possible of certain kinds of fish. The good news is that not all fish are too contaminated to eat in large amounts. The best news is that the wild salmon, which many California tribes use in ceremonies and as a primary food source, are mainly safe to eat.

Fish and California Indian Peoples

(excerpted from *The Yurok and Hupa of the Northern Coast*, © 1998 by Tad Beckman, Harvey Mudd College, Claremont, CA 91711)

The man keeps his eye on the surf, in front of him, while gulls whirl around over his head and a few seals swim back and forth, out of reach beyond the first breaking waves. In his right hand, he holds the long wooden end of a triangular frame; and in his left hand, both the excess end of net and the left side of the frame. Lightly, he guides the frame down into the surf and lets the water pass over the net, frame, and his feet, rushing up almost to his knees. The water is cool and salty. It is a familiar feeling, a good feeling.

There are few smelt today, but the gulls continue to whirl about, waiting for something to eat. And the man makes a few lucky dives with his surf net, lifting the triangular frame upward and letting the floundering smelt fall back into the net's long neck. Gathering the sack-like neck in his left hand, fish shimmering, and bracing the frame, he dips to the surf again. It is a good cast, and the net fills with more fish.

The Yurok and Hupa exemplified a well established Pacific Period life way. They were sedentary; they had achieved specialization in their technological pursuits; and while they harvested hundreds of different plants and animals, they focused on a few staples that provided for them very well throughout the year. Resources were so plentiful that these people had the free time to nurture the arts and crafts in a way that was uncommon in California and that promoted a well developed

sense of status and wealth in their societies.

There were many different fish in these rivers, though the most important by far were the salmon, steelhead trout, sturgeon, and eels.

Salmon and steelhead are ocean-going fish that

lay their eggs in shallow gravel beds far upstream in tiny mountain creeks; thus, their annual passages through the rivers were opportunities to catch great numbers of fish. All of these people had developed a simple and reliable technology for processing these large catches. Fish were cleaned, cut into half-slabs, smoked on racks in the rafters of their houses, and stored for consumption throughout the year.

Smoked or dried fish could be ground into a protein-rich meal that could be mixed with acorn mush. Fresh fish were baked or barbecued.

In order to fish the rivers the Yurok and Hupa extended fishing technology beyond that of most Californians. For navigation, they built large dugout canoes from redwood or cedar. These boats, which were paddled, were relatively shallow but were wide and long (perhaps 16-18 feet with a beam of 5 feet). Given the boat's size, it is clear that construction was an arduous task. A large length of a suitable tree had to be cut and, then, the basic shape of the dugout had to be formed by a succession of treatments with fire and adze. Only as it reached its final shape would it become light enough to be transported



Pomo Women at Clear Lake.
Credit: Smithsonian Institution, National Anthropological
Archive, circa 1889-1895

to the water. These dugouts were excellent for travel on the relatively shallow and gravelly rivers, but they were unstable in the ocean. River travel was the chief means of transportation; hence, villages were all located along the rivers.

At various points along the interior rivers, the Yurok and Hupa built fishing dams, or weirs. Rather than holding back the river, literally, these dams simply created an obstruction which slowed fish passage somewhat and, more importantly, provided an excellent platform from which to spear, harpoon, or net salmon. Positions on the dam were "owned" by individuals who helped in its construction.

Fishing with hook-and-line was not useful in the river environments, and nets of different kinds were more commonly used. Both in the rivers and in the ocean surf, indigenous people commonly used a triangular shaped dipping net with a long handle. Along the rivers, the handle was made especially long so that one could reach into the river from rocks alongside. Gill nets were also in use. These were long nets, a couple feet wide and weighted on the bottom side. They could be strung across a portion of the river and left for a day.

Spears and harpoons were also used. A particularly effective harpoon was made with a long pole to which two pointed shafts were

lashed with a separator plug, to keep them firmly apart. One of these was relatively blunt while the other had a sharp bone fore shaft tied through a hole in the shaft. This fore shaft came off in the fish's flesh and turned to create a strong hold on the fish because of the way it was tied into the shaft system. Eels were commonly caught with an implement that consisted of a long pole equipped with a sharp hook at one end.

The Yurok sanctified this relationship with the salmon through the mythological concept, Nepewo, the "headman of the salmon," who lived across the ocean. In effect, salmon was a whole unified being that was never actually killed. Nepewo declared to the Yurok, "I shall travel as far as the river extends. I shall leave my scales on nets and they will turn into salmon, but I myself shall go by and not be killed." (Keeling, 1992; 52)

Maintenance of a good relationship with this spiritual being was all that was required for continuation of their plentiful staple food. And the Yurok were extremely deliberate about this relationship. No one could catch and eat a salmon until after the First Salmon Ceremony in which an appropriately purified ritual formulator, exercising extremely precise traditional movements, caught, killed, and ate the first salmon of the season. To violate this pattern of annual reunion with the salmon would risk the well being of the entire people.

Mercury poisoning: toxic legacy of the California Gold Rush

Mercury is a heavy metal that is most commonly found in liquid form - called elemental or metallic mercury. It is familiar to most people as the silver liquid inside a thermometer. It is very toxic -- the amount of mercury in just two thermometers is enough to poison a small lake making the fish dangerous to eat.

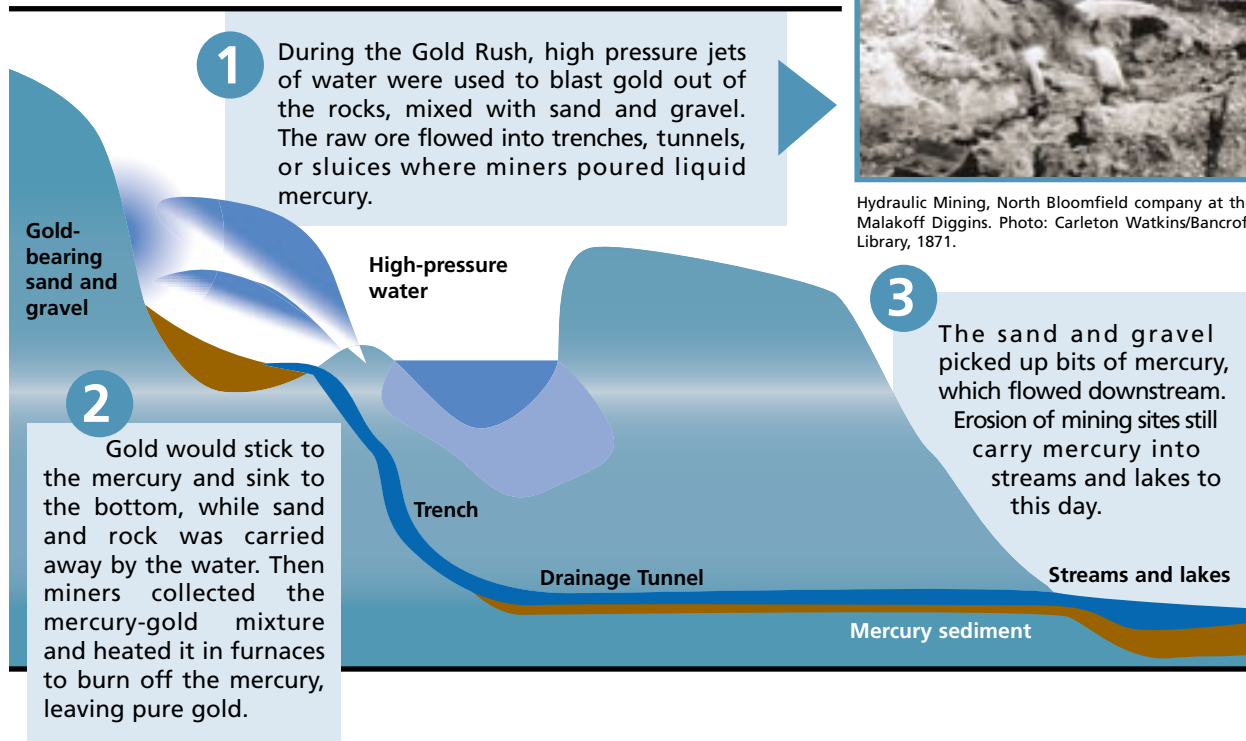
Metallic mercury is used in many industries and is released into the air and water every day, contaminating our environment. In California, one of the greatest contributions to mercury poisoning has been historical gold mining. For hundreds of years, metallic mercury has been used in gold mining to separate the valuable mineral from the raw ore. It dissolves gold from a solid rock to a soft form called amalgam. In the form of amalgam it is easy to separate the metallic mercury from the gold by heating it. The metallic mercury is burned off and the gold is collected. Unfortunately, when the metallic mercury

is burned off it turns to vapor and goes into the air. It then settles in the soil and in the waters, transforming to methyl mercury. The methyl mercury is then eaten by fish and then into the bodies of the people who eat the fish. It remains for a long time in the environment, and becomes increasingly concentrated and toxic as it moves up the food chain.

Metallic mercury is no longer used in mining in the US. But the contamination from formerly used mines continues to pollute the water in areas where it was used, including many areas around Northern and Central California.

How Mercury Travels

History of mercury contamination in California



Why is there so much mercury in California waters ?

Over 150,000 Native Americans lived in California prior to the start of the gold rush in 1849. By 1870 disease, forced relocations and massacres had reduced the Native population to an estimated 31,000. The gold miners dug up 12 billion tons of earth to find gold. When they found specks of the shiny yellow metal, they added a substance called quicksilver or mercury to extract gold from this earth. Most of this quicksilver was also dug up in mines in California, mostly in the coastal range.

It is believed that approximately 26 million pounds of mercury, or what miners called quicksilver, was used in gold ore recovery in Northern California, mostly in the Sierra Nevada and the Klamath-Trinity Mountain areas. The total amount of mercury lost to the environment in gold and mercury mining related to the gold rush from the 1860's through the early 1900's is estimated at 3 to 8 million pounds or more, enough to poison all the lakes and streams in the state many times over. However the miners dumped more mercury in some streams and lakes than others—so some are more dangerous while others may be safe.

Mercury, in various forms is also found in some dental fillings, electrical switches, electronic parts, thermostats, thermometers, children's novelty items, florescent lamps, mercuric oxide batteries, some vaccines and other drugs as preservatives, and anti-fungal wood preservatives.

The Story of Clear Lake

The Sulfur Bank mine is located on the eastern shore of Clear Lake, about three hours north of San Francisco, the largest body of freshwater entirely within California. Behind a big fence, on the road near the E'lem Indian Colony, the mine pit looks like a big, ugly sore because of the translucent green waters at the bottom.

A sulfur deposit was discovered here in 1857 and mining began in 1865. As miners worked their way deeper into the deposit, they found cinnabar, a reddish stone which contains mercury. Mercury was in high demand in the California gold mines, so the mining company sank deep shafts and began sending Chinese and Native American workers down holes 200 feet deep to extract the cinnabar. Since the lake area was also a geothermal site, the mines were hot: as high as 120 degrees Fahrenheit at the bottom of the shafts. Laborers could spend only a little time below before being hauled up and cooled down with water hoses and then lowered again to dig more cinnabar.

After 100 years of digging, the mine finally closed down in 1957. Left behind was the large pit that filled up with water, forming a 23-acre pond that is 90 feet deep and contains about 600 million gallons of toxic waste. The acidic water bubbles and fizzes like champagne as carbon dioxide and other gases escape from the bottom of the pit.

Around the fizzing pond at Sulfur Bank are heaps of broken rock that were dumped there after extracting the mercury ore. This waste covers about 120 acres. A big dam of this debris separates the flooded mine pit from the waters of Clear Lake, but water leaks through the dam from the flooded pit. In the 1970s, the California Department of Fish and Game found levels of methyl mercury in the lake's fish much higher than the one part per million set as safe by the government. Government officials issued a consumption advisory in 1986, warning pregnant women, nursing mothers and children not to eat any Clear Lake fish, and recommending that everyone else eat less than one pound per month.

Jacquelyn Ross (who is part Pomo from Jenner and part Miwok from the Coast) wrote a short article for *News from Native California*, about her memories of fishing in the lake: "As a child, one of my favorite activities was fishing on Clear Lake with my father. He would pull the old oars back to glide gently across the water and hover above another catfish hole set back in the tall shade of the tules. When a big fish came around and took some interest in the bait, Dad would begin a low-voiced narrative of the action. 'He's coming in now. See the line move? Coming in, coming in! Get ready now! He's going to hit fast. There he goes! Okay. Pull 'im up! Steady now. Now.' Success! Whew.

After several hours of fishing, we would go back to the launch, put the boat back on the trailer and head home with channel catfish, crappie, or perch. There would be fresh fish for supper that night, sweet and clean-fleshed. Mom would often remark on how the Clear Lake fish tasted so good, unlike the muddy-tasting cats she remembered from her Midwest childhood. This always made us feel good, like maybe it had something to do with the fishermen."

But the good taste was deceptive. Jim Brown, a former chairman of the E'lem Pomo at Clear Lake, says: "Our elders were dying at a young age but we did not know why. It was only later that we discovered that they were dying of [methyl] mercury poisoning. They were also catching fish and sharing it with the whole family, spreading the poison throughout the community."

A University of California at Davis team has shown accumulation of methyl mercury in the food chain in Clear Lake. Small fish have methyl mercury levels around 100 parts per billion. Big, long-lived predatory fish --like bass and catfish -- have ten times as much (about 1 part per million.) Osprey have the highest level at around 2 parts per million.

Mercury as a threat to human health

Breathing in metallic mercury fumes or touching it is very dangerous. Mercury damages the brain, the nerves, and the immune system. Methyl mercury is especially harmful to pregnant women and their unborn children because it easily crosses the placenta and damages the brain of the developing fetus. Mercury is most harmful when it turns to vapor that we can breathe in and when it gets into waterways and stays there,

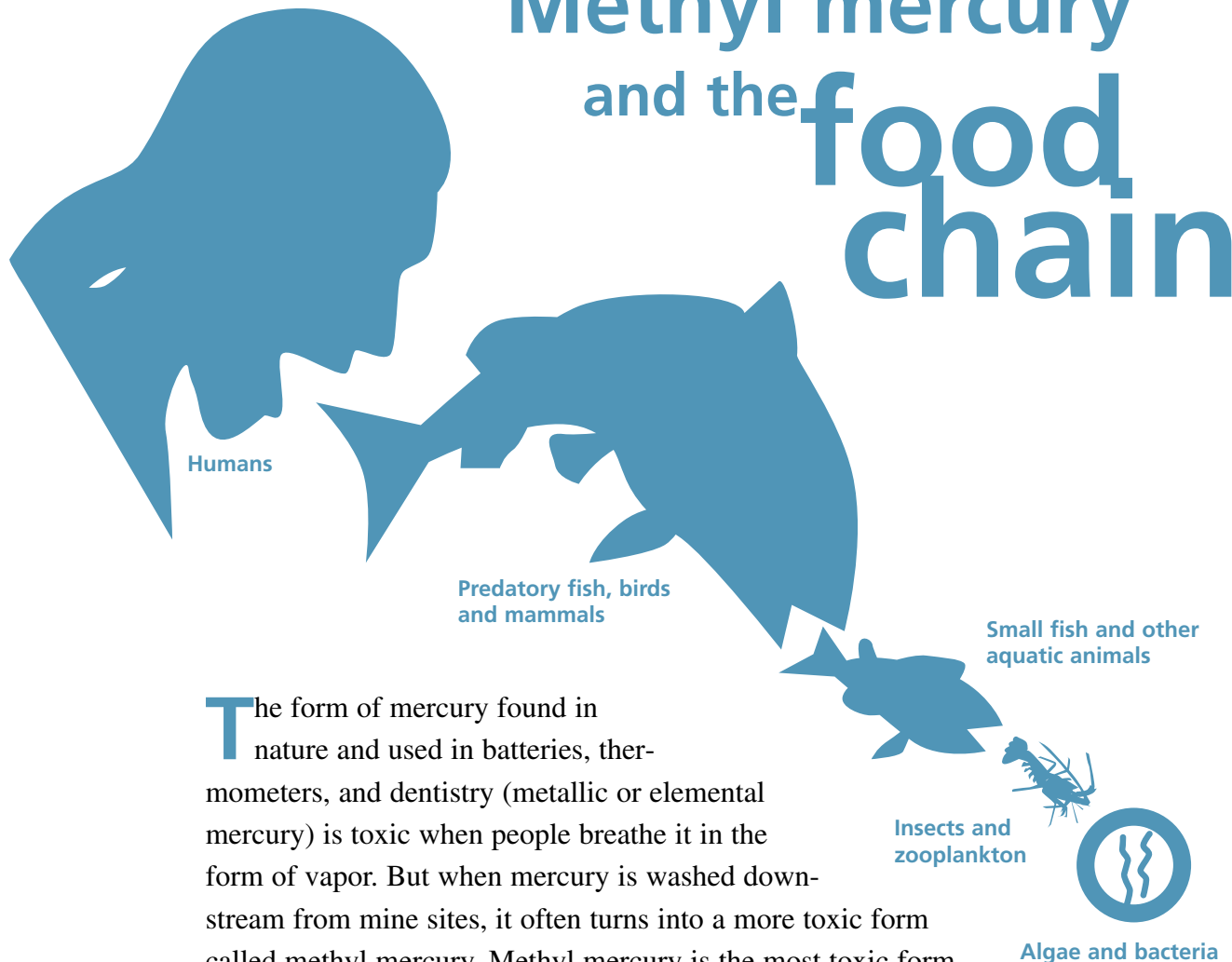
- **Mild mercury poisoning causes tingling in the lips, tongue, fingers, and toes. But in some cases, these signs do not appear until long after exposure.**
- **Severe mercury poisoning causes headaches, memory loss, difficulty coordinating movement and vision, dizziness, metal taste in the mouth, muscle spasms, pain and stiffness in joints and muscles, nervous heart, very weak or very strong pulse, and even death.**
- **In pregnant women, exposure to small amounts of methyl mercury can interfere with normal brain development of their children, causing permanent learning disabilities. It may cause coordination problems, delayed walking, attention problems, memory impairments and problems with language skills. Higher exposures can cause birth defects and mental retardation in their children.**

If we completely stop eating food that contains methyl mercury in small amounts, our bodies begin to get rid of the mercury before it builds up to dangerous levels. But when we regularly take in more than extremely small amounts of methyl mercury, it tends to build up to levels that can cause health problems.

When the EPA or other agencies issue warnings or publish the “safe” vs. “dangerous” levels of toxins such as mercury in fish, they usually base their estimates on the body weight of an average adult. But people with smaller bodies, such as young children, suffer much greater impacts when they eat that same amount of fish.

In addition, government estimates for “safe levels” often fail to consider the combined effects of all the toxic chemicals in our environment. The effect is a “toxic cocktail” which multiplies the harm each toxin causes on its own. For example, recent studies show that exposure to methyl mercury combined with other metals such as lead, or chemicals such as PCBs, substantially increases the dangerous impacts of both toxins.

Methyl mercury and the food chain



The form of mercury found in nature and used in batteries, thermometers, and dentistry (metallic or elemental mercury) is toxic when people breathe it in the form of vapor. But when mercury is washed downstream from mine sites, it often turns into a more toxic form called methyl mercury. Methyl mercury is the most toxic form that affects wildlife and humans.

Metallic mercury is transformed into methyl mercury by bacteria in the sediments. Even a very small amount of metallic mercury spilled in a pond or river transforms into methyl mercury and can poison all of the fish and animals that depend on that water. The impact of methyl mercury in the environment may last for centuries.

Methyl mercury collects in the bodies of fish, animals, and people. When larger animals eat smaller animals, they collect all of the mercury from the smaller animals in their bodies. Because of this chain of poison, fish that live in mercury-filled waters and can be very toxic, *even though the water itself may not be*. The amount of methyl mercury may be tens of thousands of times higher than the amount in the water where the fish swim.

Fish and pregnant women

Fish is one of the best sources of nutrients for babies and young children. Some of these nutrients help children's brain development. But if a pregnant woman eats a serving of mercury-contaminated fish, methyl mercury crosses the placenta and enters her baby's brain. Even a tiny amount of methyl mercury can cause permanent developmental problems.

Exposure to methyl mercury in the womb can cause irreversible brain damage, delay the mental development of children, causing learning deficits, and other developmental problems. Children who suffer from methyl mercury poisoning are at risk of struggling to keep up in school and often require remedial classes.

Recent studies show that one in six women in America have unsafe levels of mercury in their bodies and more than one in three children are at risk from mercury exposure in the womb. If a pregnant woman in the U.S. eats two meals of six ounces of fish (each equal to the size of a small pack of cards) every week, there is a 50/50 chance that her child will get a harmful dose of methyl mercury.

Developing babies receive concentrated amounts of mercury from their mothers: according to an EPA study released Feb. 9, 2004 the amount of mercury in the umbilical-cord is almost twice as high as the amount in the mother's blood.

The government previously said that two 6 ounce meals of fish per week was safe. But the new study shows that the risk is much greater than was previously thought. And these studies only consider average-sized women eating average fish contaminated with an average amount of methyl mercury that leaves her body at an average rate. The truth is that some women weigh less than average while some fish have higher amounts of methyl mercury.

Estimates of the negative impacts of mercury on the developing fetus continue to increase. The new EPA study estimated that 630,000 babies born in the US each year are at risk. Even a more conservative estimate by the National Academy of Sciences in July 2000 concluded there was "little or no margin of safety" for the consumption of mercury by women of childbearing age.



Eating fish safely: What you and your family should know

You cannot tell if a fish contains methyl mercury by looking at it. And methyl mercury is stored in the muscle of the fish, so if a fish does contain methyl mercury, there is no special way to clean or cook it that will prevent exposure. But some types of fish are likely to have less methyl mercury in them, due to their feeding habits or life histories —so methyl mercury exposure can be reduced by eating certain types of fish.

If you live in a mine-drainage area, it is not safe to eat:

- larger, older fish
- bottom-feeding fish, such as catfish and carp, unless they have been grown in fish farms
- only fish as the main food

It is safer to eat:

- smaller, younger fish
- fish that feed on insects (they are less likely to have methyl mercury contamination)
- less fish. Red meat, chicken, rice with lentils or beans, eggs, milk, and cheese are good protein substitutes. Some of the “brain food” fats in fish are also found in pumpkin seeds, sunflower seeds, walnuts and whole grains like brown rice and whole wheat flour (rather than white rice and white flour).
- fish mixed with other foods like rice or potatoes. This will not reduce the amount of methyl mercury in the fish, but it will reduce the amount of fish eaten at a meal.

What about other toxins?

Chemicals from pesticide runoff, industrial wastes, and mining collect in the skin, fat, guts and head. If you suspect that fish in your area carry other chemicals, remove these parts before you cook the fish. It is best to grill, bake or broil fish. Frying fish causes chemicals to move from the fat into the meat.

Which fish are safe?

This list shows which fish can generally be considered safe or not safe regarding methyl mercury exposure. But if you are in doubt, always err on the side of caution. Advisories change according to local conditions or new information. See below for contact information for local fish advisories in California.

Small Children & Pregnant Women Strongly Advised Not to Eat

Shark
Swordfish
Canned Albacore Tuna (White Tuna)
Tuna steak
Bluefish
Bonito
Red Snapper
Sturgeon
Striper
Sea bass
Cod
Croaker
Flounder
Grouper
Halibut
Marlin
Oysters (Gulf of Mexico)
Perch
Lake Trout
Bat Rays
Porgy
Pollock & Imitation Crab (also Pollock)
Sablefish
Tilefish
Yellowtail
King Mackerel
Largemouth Bass
Orange Roughy
Walleye
Channel Catfish (wild)
Mahi Mahi
Dungeness, Green, Mitten & SF Bay Crab

Less Than One Meal per Month of One of the following

Canned Chunk Light Tuna
Wild Channel Catfish
Blue Mussels
Eastern Oyster
Great Lakes Salmon
Lake white fish
Blue crab (Gulf of Mexico)
Rockfish
Lobster & Crawfish
Haddock
Any fish from San Francisco Bay unless otherwise listed

Safer Options

Shrimp (environmental concerns)
Anchovies
Farmed Catfish (High in PCBs)
Scallops
Herring
Smelt
Flounder (summer)
Salmon (wild Pacific)
Trout (farmed)
Tilapia
Tomales Bay Clams, Mussels & Oysters
Blue Crab (mid Atlantic)
Abalone (endangered species)

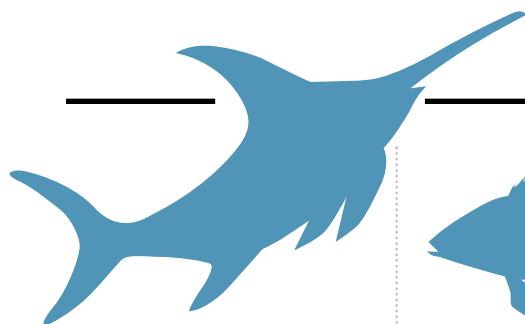
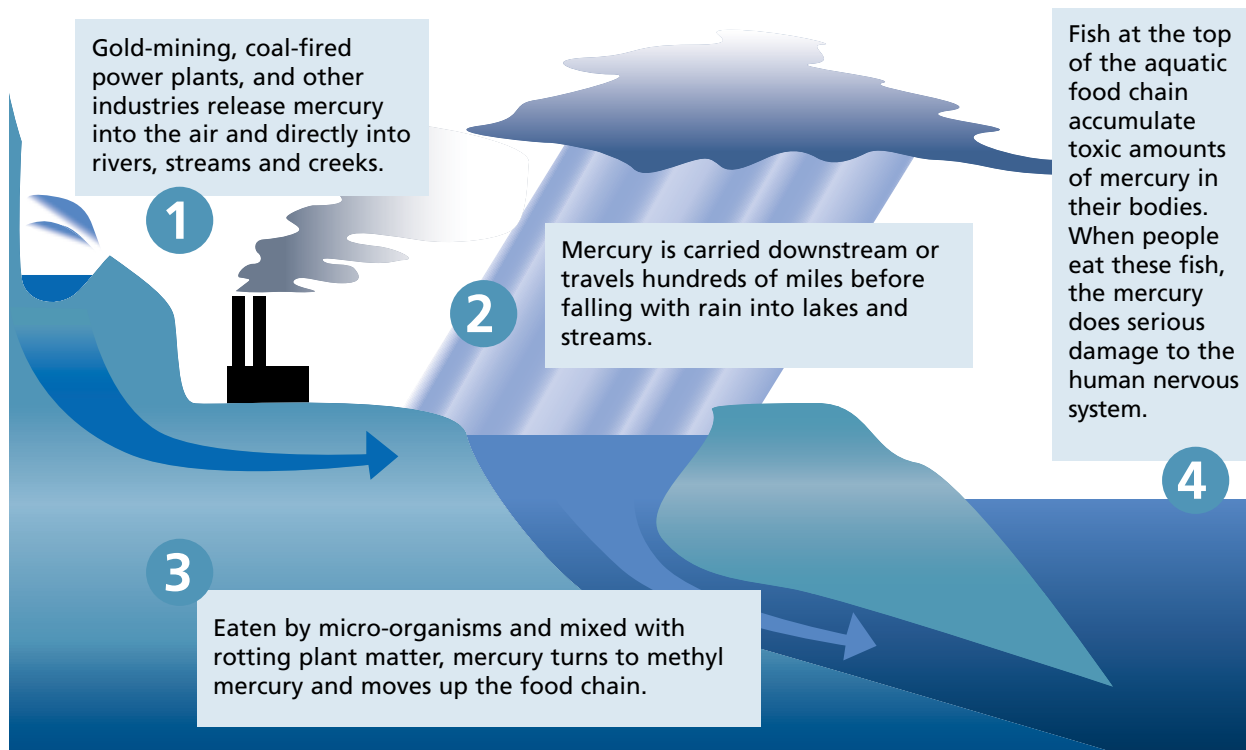
Sources: Environmental Working Group's "Brainfood updated with US FDA data 2001-2003. These advisories do not include Feb. 9, 2004 EPA study.

This list does not consider other toxins, and advisories change. Check local fish advisories at:

California Office of Environmental Health Hazard Assessment:
(510) 622-3200, (816) 323-4763
www.oehha.ca.gov/fish.html

Dept. of Fish and Game:
www.dfg.ca.gov/fg_comm/regs.html

How mercury got in our food



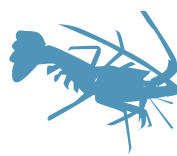
LARGE PREDATORY FISH

Fish at the top of the food chain accumulate the most mercury. Pregnant women should avoid large predatory fish such as swordfish, tilefish, king mackerel, and shark.



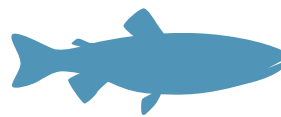
SMALLER SALTWATER FISH

Fish such as red snapper and cod can have different levels of mercury. Pregnant women should not eat more than 12 ounces of these fish per week.



SHELLFISH

Shellfish can contain harmful levels of mercury. Lobster generally has the highest levels.



FRESHWATER FISH

Mercury levels in freshwater fish depend on the concentration of mercury in the water. Check with local officials or use the references in this booklet to assess the mercury risk from freshwater fish.

Where are the worst problems in California now?

There are more than 300 abandoned mercury mines and prospects in the California Coast Range and thousands of abandoned gold mines. Approximately 26 million pounds of mercury were used in gold ore recovery in Northern California, mostly in the Sierra Nevada and the Klamath-Trinity mountain areas.

The biggest mercury problems in California are at lakes and streams around the old mercury mines such as Lake Berryessa, Clear Lake, New Almaden and New Idria, near San Jose.

A short list of old mercury mines includes:

- Stulsaft Park, just south of the San Francisco Bay, in Redwood City.
- Mount Jackson Mine, along Sweetwater Springs Road, Guerneville.
- Warm Springs Dam at Lake Sonoma.
- The Geysers geothermal field is located in the vicinity of Cobb Mountain.
- Walker Creek near Tomales Bay.

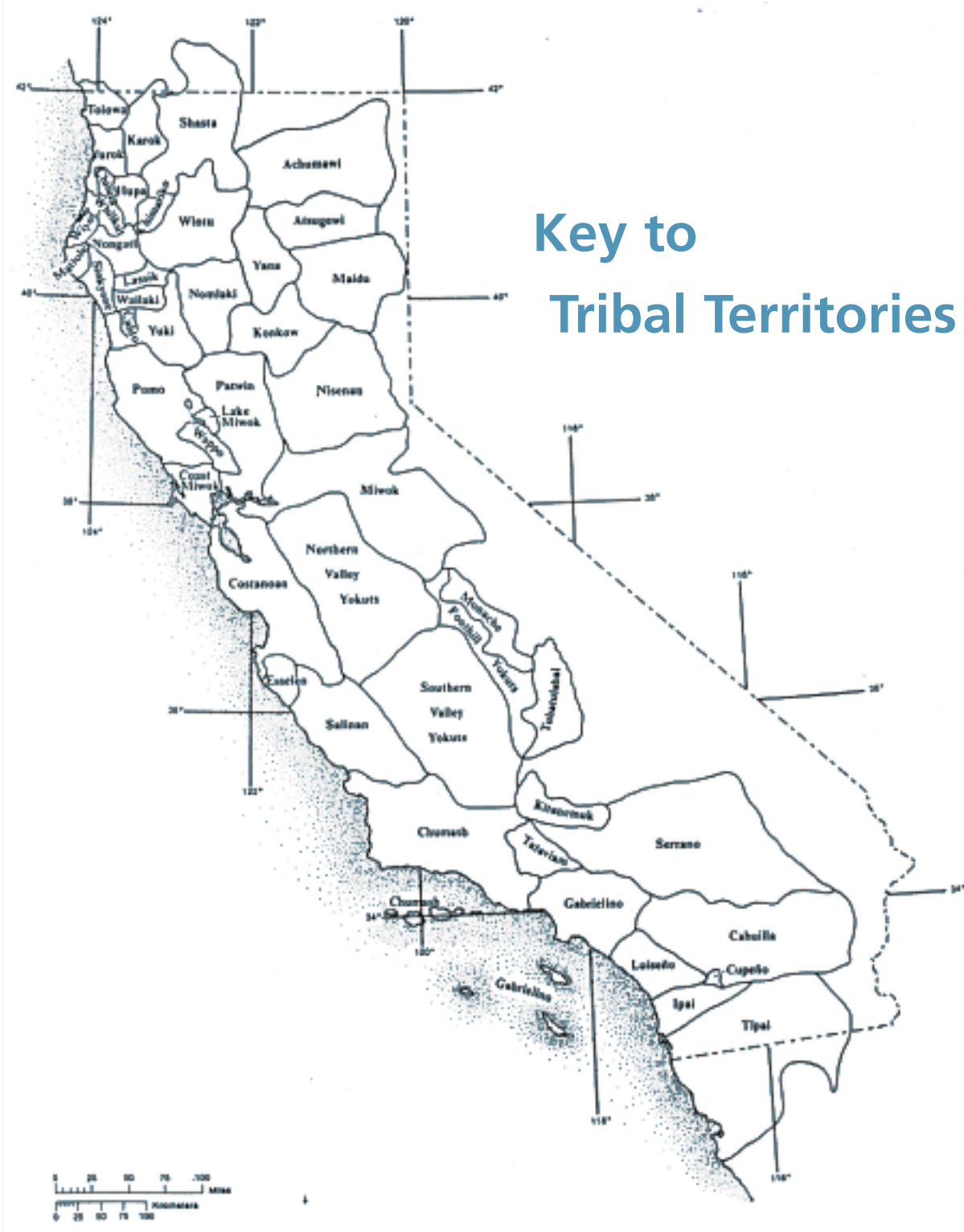
Rivers, flowing down from the old gold mines in the Sierra Nevada and the Klamath-Trinity mountain areas, also contain a lot of waste mercury. The American River is one of four of the most mercury-contaminated rivers in the state. Together with the other three such rivers—namely the Bear, the Feather and the Yuba—the American joins the Sacramento River to flow into the San Francisco Bay.

The most toxic places are the mouths of rivers where the silt gets deposited such as the San Francisco Bay and behind the old dams where the mining waste is trapped such as the Englebright Dam.

The best source to learn the locations of historic California Mines is:
http://www.consrv.ca.gov/cgs/minerals/images/Big_AUMap.pdf

The best source to learn the locations of active California Mines is:
<http://www.consrv.ca.gov/cgs/minerals/images/YellowAu.pdf>

To Report Undocumented Mines: Phone: (877) OLD-MINE.





A guide to finding out if you are at risk of mercury poisoning

There are three steps you can take to find out if the fish you are eating contains dangerous amounts of mercury:

- 1) Ask local elders and local government**
- 2) Check fish advisories**
- 3) Have the fish tested**

1. Ask, have there been any gold or mercury mines in your community?

Start by asking elders where you live if they have heard any stories about mining, especially during the Gold Rush years. Sometimes the books or records at your town library or city hall may describe local mining activities from previous years.

If you can't get a good answer, ask government officials. The main source of information on this subject is the California Geological Survey in Sacramento, who have been studying mining for the last 150 years and publishing the results in special bulletins. Bulletin # 193, which is also called "Gold Districts of California," has lists of many of the mines. You can find it at major university libraries or county libraries (if they have a government document repository) as well as the regional offices of the California Geological Survey (see <http://www.consrv.ca.gov/CGS/contactUs.htm> for a list of the main offices). But remember that not all mines are listed in this book, so if you have no luck, ask for other bulletins that may have more information on your community.

If you cannot find these books call the California Geological Survey: (916) 327-1850 -to buy a copy for \$20.

The United States Geological Survey is also working on a new list of mines in the country but that may not be published for several years.

Another source of information is the Abandoned Mines Lands Unit of the Office of Mine Reclamation in the California Department of Conservation. See: http://www.consrv.ca.gov/OMR/abandoned_mine_lands/index.htm

But remember that even if there were no mines, that does not mean there is no mercury! Mercury comes from other sources too, including industry and natural mercury deposits (the Mojave Desert, for example, has many natural mercury deposits.) For this reason it is important to speak to a local geologist to confirm the presence or absence of mining or other sources of mercury.

To report undocumented mines in your area contact California Office of Mine Reclamation toll free: (877) OLD-MINE. This department conducts field visits.

2. Check to see if there are any fish advisories (warnings) about dangerous levels of toxins.

There are two sources of information on this: the California Department of Fish and Game and the Office of Environmental Health Hazard Assessment. You can find their phone numbers on page 17. The easiest way to get basic information on this subject is to pick up a copy of the latest issue of Fresh Water Sport Fishing Regulation Booklet or the Marine Sport Fishing Regulation Booklet—many sporting goods shops give these away for free. You can also download them for free at:

http://www.dfg.ca.gov/fg_comm/fishregs.html

While the booklets have a lot of useful information, it is best to speak directly to a fisheries biologist of either the California department of Fish and Game or the Office of Environmental Health Hazard Assessment to find out if there are any special warnings for your community because what may be safe in one river may be dangerous in another. Information about each mine can change from year to year also.

3. Test the fish in your community.

Unfortunately, this can cost hundreds or even thousands of dollars. Most people cannot afford to do this by themselves, so that's why you need to talk to your government officials again! The Office of Environmental Health Hazard Assessment does this

kind of testing on a regular basis to help them provide information for the fishing regulations. If enough community people express concerns, the government may decide to do special tests.

International pressure for the elimination of mercury

The International Indian Treaty Council, founded in 1974, is an Indigenous organization working for the protection of their human rights, cultures, treaties and traditional lands from the local to the international levels. In 1977, IITC was the first Indigenous organization to receive Consultative Status with the United Nations Economic & Social Council. IITC continues to work actively at the UN to address the concerns and defend the rights of Indigenous Peoples.

The Right of All Peoples to their own means of subsistence is recognized in International Human Rights Covenants, including the International Covenant on Civil and Political Rights which was ratified by the United States in 1992. The UN Convention on the Rights of the Child, which has been ratified by every country except two (one of which is unfortunately the US), affirms the right of all children to “the provision of adequate and nutritional foods and clean drinking water, taking into consideration the dangers and risks of environmental pollution.”

In February 2003, the United Nations Environmental Program agreed to begin developing an international treaty to eliminate the introduction of toxic mercury into the environment.

While we strongly support this effort, at this time we must focus on our communities’ “Right to Know” about this critical health threat, and build a public campaign to demand that the contamination be cleaned up without delay!

“As the original people of this land, we have lived through centuries of colonization and genocide. We honor the spirit of strength of our Grandmother Earth, and recognize the water, plants and animals as our relatives. As the descendants of the smartest, strongest survivors of our people, we will continue.”

-- Tasina Ska Win

Resources and useful addresses

Abandoned Mines Lands Unit Department of Conservation Office of Mine Reclamation

801 K Street, MS 09-06
Sacramento, CA 95814-3529
E-mail: OMR@consvr.ca.gov
Web: http://www.consvr.ca.gov/OMR/abandoned_mine Lands/index.htm
Phone : (916) 323-9198

California Geological Survey

801 K Street, MS 12-30
Sacramento, CA 95814
Phone: (916) 445-1825
Email: cgshq@consvr.ca.gov
Web:
<http://www.consvr.ca.gov/CGS/contactUs.htm>

U.S. Geological Survey

345 Middlefield Road
Menlo Park, CA 94025, USA
Phone: (650)853-8300

California Fish and Game Commission

1416 Ninth Street
P.O. Box 944209
Sacramento, CA 94244-2090
Phone: (916) 653-4899: Ed Pert: 445-3616
Email: fgc@dfg.ca.gov
Web:
http://www.dfg.ca.gov/fg_comm/fishregs.html

Fish and Water Quality Evaluation Unit Office of Environmental Health Hazard Assessment

P.O. Box 2815
1001 I Street
Sacramento, CA 95814
Phone : (916) 324 7572: Robert Brodber
<http://www.oehha.ca.gov/fish/index.html>

State Water Resources Control Board

1001 I Street Sacramento, CA 95814
P.O. Box 100 Sacramento, CA 95812
Phone: (916) 341-5250
<http://www.swrcb.ca.gov/>

For more information on fish consumption advisories:

US EPA Northern California Fish Advisories:

<http://www.epa.gov/waterscience/fishadvice/advice.html>

US Food & Drug administrator:

Phone: (888) SAFEFOOD
<http://www.cfsan.fda.gov/~lrd/tphgfish.html>

California Office of Environmental Health Hazard Assessment:

Phone: (510) 622-3200, (816) 323-4763
<http://www.oehha.ca.gov/fish.html>

Department of Fish and Game:

www.dfg.ca.gov/fg_comm/regs.html

Environmental Working Group:

“Brainfood: Executive Summary”
<http://www.ewg.org/reports/brainfood/exec-summ.html>

For educational material on the cultural and environmental impacts of the California Gold Rush:

Gold, Greed and Genocide: video and curriculum

International Indian Treaty Council
Phone: (415) 641-4482
Email: iitc@treatycouncil.org

THE INTERNATIONAL INDIAN TREATY COUNCIL (IITC) is an organization of Indigenous Peoples from North, Central, South America and the Pacific working for the Sovereignty and Self-Determination of Indigenous Peoples working for the recognition and protection of Indigenous Rights, Traditional Cultures and Sacred Lands.

IITC was founded in 1974 at a gathering by the American Indian Movement in Standing Rock, South Dakota attended by more than 5000 representatives of 98 Indigenous Nations. In 1977, the IITC became the first organization of Indigenous Peoples to be recognized as a Non-Governmental Organization (NGO) with Consultative Status to the United Nations Economic and Social Council."

In 2003, IITC initiated the "Tribal Health and Mercury Education Project", in partnership with the Pit River Indian Nation, to address the widespread but largely unknown health and environmental crisis of the mercury contamination in Northern California, a toxic legacy of the California Gold Rush.



INTERNATIONAL INDIAN TREATY COUNCIL

2390 Mission St., Suite 301

San Francisco, CA. 94110

Telephone (415) 641-4482

Fax (415) 641-1298

Email: iitc@treatycouncil.org

www.treatycouncil.org

Lakota Harden, Project Coordinator