

Mercury is Contaminating Species in California Rivers

Between 1850 and 1981, an estimated 26 million pounds of mercury were hauled into the Sierra Nevada and Klamath-Trinity Mountains to be used in gold recovery operations. The mercury is still washing out of the mountains in rivers and streams where it accumulates in reservoirs, ponds and wetlands — and enters the food chain.

State scientists have found toxic levels of mercury in fish that inhabit more than 180 California reservoirs and rivers. As a result, some fish are considered unsafe for humans and wildlife to eat.

Four rivers have been found to have the most severe mercury contamination: the American, Bear, Feather and Yuba.

Infants, young children and women of childbearing age are considered most at risk from eating fish exposed to mercury. Excessive ingestion of mercury is known to cause damage to brains, nervous systems, lungs and kidneys.

The highest levels of mercury are found in large, older fish such as Bass and Pikeminnow which feed on smaller fish. The state has posted advisories telling people in certain age groups to limit consumption of some fish and not to eat others.

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Jim's Bridge in January 2017. Photo by Warren Truitt

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Sewer Spills are Polluting Sacramento Area Ravines, Creeks and Rivers

The Sacramento Area Sewer District has been fined \$225,000 for 80 spills totaling more than an estimated 300,000 gallons during 2012-15.

The state Regional Water Quality Control Board is expected to hit the district with an even larger fine for spills estimated at more than 400,000 gallons during the heavy rainfall in January and February of this year.

The sewage overflows run down gutters, storm drains and creeks, and eventually flow into the American and Sacramento Rivers — above the intakes for two plants that tap the rivers for domestic water.

The sewage spills definitely had “the potential to impact aquatic life and human health,” according to Andrew Altevogt, assistant executive director of the state board.

The district serves more than half of Sacramento County. Sewage from its collection system flows to the Sacramento Regional County Sanitation District for treatment.

It is particularly significant that the 2012-15 spills occurred during a severe drought. It's obvious that the spills have been occurring from the district's overloaded and antiquated sewer system for a number of years. Some of the sewer pipes have been in the ground for 50-to-80 years.

Among the many areas where there are chronic spills are these three:

- An estimated 22,750 gallons spilled near Eugene H. Ahert Park in Carmichael on Jan. 8 and flowed into Arcade Creek which drains to the Sacramento River. The spill was attributed to root intrusion in a sewer pipe.
- An estimated 31,182 gallons spilled from an overloaded pump station in Rio Linda on Jan. 10 and flowed into Steelhead Creek which also drains to the Sacramento River.
- An estimated 3,863 gallons spilled into a ravine near Main Street in Fair Oaks

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Mercury

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For the American River, children and women up to 45 years of age are told not to eat Black Bass, Striped Bass and Pikeminnow. Older women and men age 18 and older should have no more than one serving of Black Bass and Pikeminnow per week and no more than two servings of Striped Bass. Limited consumption also is suggested for Catfish, Sucker, Sunfish, American Shad, Steelhead Trout and even Salmon.

A complete list of restrictions for fish from the American and other rivers can be found on the state Office of Environmental Health Hazard Assessment website: OEHHA.ca.gov.

California's Coastal Mountain Ranges were the site of some of the world's largest mercury mines. Early written accounts of the mining describe miners, chiefly Chinese, who died as "shaking, toothless wrecks," after prolonged exposure to what was then chiefly called quicksilver.

The mercury was hauled to mines, sluices and hydraulic operations where it was used to separate out the gold from sediments. Minute globules of mercury washed down streams and rivers where it now lurks in sediments behind dams and in ponds and wetlands. When the mercury enters sediments that are low in oxygen and bacteria are present, such as in the bottom of reservoirs, it is transformed into methylmercury and the toxicity is increased. In that liquefied form, it is sucked up by algae and plants that are feed upon by fish.

When a major storm or flood occurs, mercury and methylmercury is washed further downstream. That is



Black Bass

of particular concern on the Lower American River where more than one billion cubic yards of gravel was dredged. An ongoing state sampling program evaluates mercury, methylmercury

and other pollutants that flow out of Alder and Willow Creeks and into Lake Natoma. Both those drainages were heavily dredged.

Many of the wooden dams built by prospectors in the Sierra Nevada eventually collapsed and released contaminated sediments. A major dams collapse today could release large volumes of contaminants. That is a major concern in Jackson where



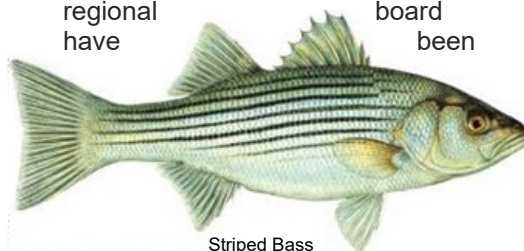
Pikeminnow

the 100-year-old Eastwood Multiple Arch Dam below the long-idle Argonaut Mine is crumbling and could release a

15-foot mudflow into downtown Jackson and nearby creeks. Toxics found in the estimated one million cubic yards of mine tailings behind the dam include mercury, lead, arsenic, fertilizers and other contaminants.

The U.S. Environmental Protection Agency spent \$3 million on emergency cleanup work below the Argonaut Mine last year and has nominated the site for federal Superfund cleanup status. State officials hope to begin efforts to strengthen the dam this year at a cost preliminarily estimated at \$10 million to \$11 million.

For several years, the state Water Resources Control Board and its regional board have been



Striped Bass

developing a statewide mercury control program for reservoirs. Future efforts could include increasing oxygen levels in reservoir waters to reduce methylmercury development, removal of contaminated sediments, and changes in the stocking and management of fisheries.

The program has been subjected to extensive public input could be finalized before the year is over. Then a determination will have to be made as to how to pay for it. ■

Sewer

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on Feb. 20 when the sewage exceeded the capacity of the sewer pipe. The ravine drains to Lake Natoma on the American River.

The volumes of the spills are estimated since the state allows sewer districts to "self report" the overflows.

A spokeswoman for the Sacramento Area Sewer District said they have increased their monitoring and response efforts. In some areas, they are able to retrieve the sewage before it reaches surface water. There also is work underway to upgrade some parts of the system. But no big fix is underway or planned at this time.

That won't happen unless the district's Board of Directors makes a substantial increase in sewer fees that businesses and residents pay.

The directors are Sacramento County Supervisors Phil Serna, Patrick Kennedy, Susan Peters, Sue Frost and Don Nottoli; Citrus Heights City Council Member Jeannie Bruins; Elk Grove City Council Member Patrick Hume; Folsom City Council Member Andy Morin; and Sacramento City Council Member Larry Carr. As of this writing, the City of Rancho Cordova has not appointed a new member to replace the late Dan Skoglund. ■

Our Fish Ladder Debate Began in 1893

By Dan Winkelman

Today, we have major concerns about the survival of American River fish.

The contentious debate to preserve river fish species began in 1893 when the Folsom Water and Power Company completed the first Folsom Dam. The dam took decades to construct utilizing Folsom Prison convict labor.

It originally was designed to float logs down a canal to Folsom, but in 1895 the dam became the water source for hydropower at the Folsom Powerhouse. Remains of the dam can be seen today downstream from the Folsom Lake Crossing Bridge.

Just as the old Folsom Dam was being completed, the public outrage over blocking anadromous fish began. Fishermen from the Placerville Rod and Gun Club were outspoken about fish being stopped at Folsom Dam where they were netted or thrashed to pieces by released water. The California Fish Commission was slow to take action, but finally in 1903 a fish ladder was installed around Folsom Dam with convict labor.

This ladder had various degrees of success and failure over the years. It was washed out and replaced, it was moved

from the north side of the river to the south and back again, the wooden sections of the ladder were replaced by concrete and stone, and the bottom section of the ladder had to be blasted away to create a lower pool wall for the fish to jump.

The ultimate consequence of blocking fish from returning to the forest is unknown. An ecosystem that took millions of years to establish was gone.

During this period of fish ladder failures and replacement, a new dam was constructed upstream of Folsom called the North Fork Ditch Dam. The Fish Commissioners required the new dam to have a fish ladder, but they were met with resistance from the dam owners who complained that a fish ladder at North Fork would have no purpose without a functional fish ladder at Folsom. The North Fork Ditch Company eventually blasted a fish ladder

in the bed rock on the El Dorado County side of their dam.

By 1921, the Folsom Dam fish ladder became a V shape and was finally serviceable. In 1952, the old Folsom Dam was blown away with explosives to allow effluent discharges from turbines of the new Folsom Dam to flow downstream. In place of a fish ladder, a fish hatchery was built just downstream from the new Nimbus Dam. This appeared to be the solution to fish survival and all was assumed to be well — unless you fished upstream of the dams.

The science of ecology has advanced since the 1950s and has shown that the Sierra Nevada ecosystem extends out into the Pacific Ocean. Nutrients from the Sierra Nevada are washed down rivers and streams to the Pacific and these nutrients are only returned by fish spawning in the high Sierra Nevada watershed. The ultimate consequence of blocking fish from returning to the forest is unknown. An ecosystem that took millions of years to establish was gone.

Would fish ladders around the current Folsom Dam be a solution to re-establishing fish migration? The size of Folsom Lake makes it difficult for returning fingerling fish to find a ladder entrance. Also, now there are eleven dams above Folsom that block access to tributaries. Apparently, the only solution would be to remove all dams on the American River.

Prospects of that happening are negligible. Save the American River Association focuses on at least proper management of the altered ecosystem. The fight continues for a flow standard to ensure fish survival on the American River. Little did we realize how long ago this issue became a public concern. ■

www.sarariverwatch.org



Folsom Dam - showing Fish Ladder

1911

Senate Bill Would Ban Polystyrene Containers

Please write your legislators and urge them to vote for SB 705 which would ban stores and restaurant from using polystyrene containers (also known as Styrofoam) for prepared food starting in 2020. The following year, the law would extend the ban to containers made from any type of plastic that can't be recycled locally or composted. Similar legislation was introduced in 2012 and died in the Assembly in response to strong opposition from the plastics industry. SB 705 was introduced this year by Sen. Ben Allen, D-Santo Monica.

Polystyrene waste is found throughout California. It does not biodegrade. It tends to break into small and even minuscule pieces. It is made of fossil fuels and synthetic chemicals. Those chemicals may leach if they come in contact with hot, greasy or acidic food. They can add toxins to your coffee or tea. Fish, turtles, birds and other animals mistake polystyrene waste for food. They can't digest it and it can kill them. Vast amounts of the waste are ending up in our waterways and the ocean.

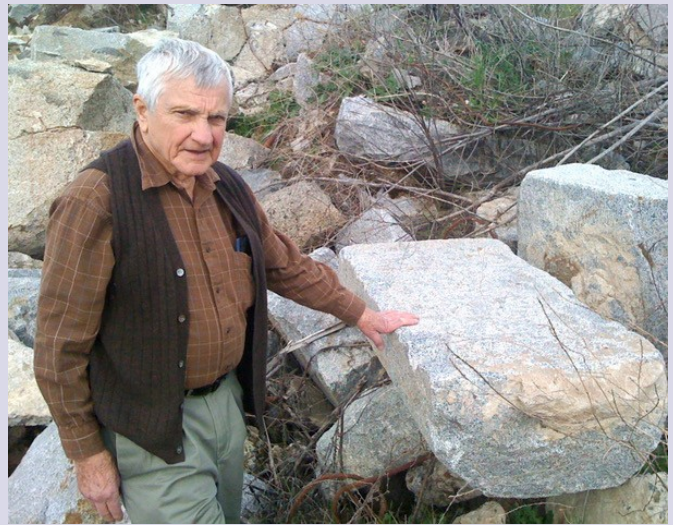
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Dozens of California jurisdictions already have banned polystyrene containers and some have banned polystyrene peanuts for packaging. Culver City is taking steps to ban plastic utensils. Biodegradable containers, utensils, bowls and plates now are available which are made from fermented corn or potato starch mixed with soy oil or

Celebration of Life For Frank Cirill

A Celebration of Life for American River Parkway Guardian Frank Cirill has been scheduled at 11 a.m., **June 10**, in Ancil Hoffman Park. The Celebration will be in the main picnic area at the river's edge across from the golf course parking lot and club house.

Cirill, president emeritus of Save the American River Association, passed away last January at age 94. For nearly half a century, Cirill did more than any other person to preserve and enhance the Parkway's ecosystem, wildlife habitat, waterway and recreation resources. ■



bagasse, a fibrous waste left over from processing sugar cane.

In December 2004, the state Integrated Waste Management Board gave the Legislature a report urging the adoption of restrictions on all plastic waste. The first successful bill was enacted in 2014 which banned plastic, throwaway bags. The industry succeed in getting a repeal on the ballot in 2016 which voters rejected.

The proposed law would not apply to straws, lids, utensils or foam packaging. But the proposed law would not prevent cities or counties from passing tougher restrictions such as those already in place in San Francisco, Oakland, Berkeley, Los Angeles and other cities. ■

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SARA appreciates the support of our generous members. Without your support, SARA would not be able to continue our role as *Guardians of the American River and Parkway since 1961*. New and renewing members are listed in *RiverWatch* according to their preference (indicated on the SARA membership/renewal form).

In Memoriam

Save the American River Association has received donations honoring the memory of the following friends:

Elmer Aldrich

Frank Cirill

Alyce Fielder

Lou Heinrich

Jim Livingston

Kevin Regan

Richard and Teasy Snyder

Save the American River Association frequently receives donations in memory of lost loved ones, many of whom were users and supporters of the American River Parkway. Some donors give names. Others prefer to remain anonymous. SARA notifies family members when donations are made and those people are always very appreciative. The money is used to further SARA's advocacy work on behalf of the Parkway.

Contributions may be made by check or online via SARA's website. **SARA also has a Legacy program. For information on the program, please call the SARA office (916) 482-2551. ■**

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BOOK REVIEW

DROUGHT, WATER LAW, AND THE ORIGINS OF CALIFORNIA'S VALLEY PROJECT

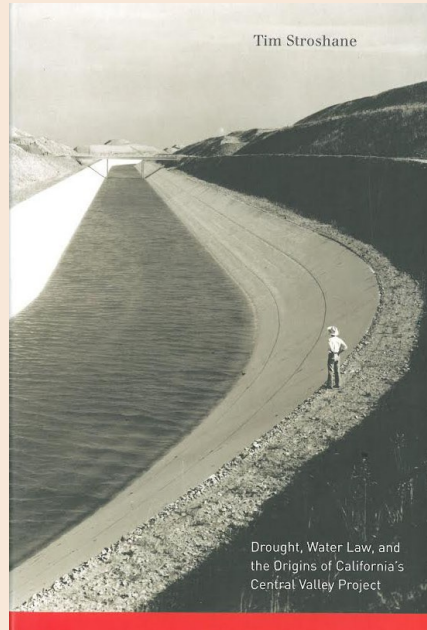
By Tim Stroshane. University of Nevada Press. \$27.99 Kindle; \$34.95 Hardcover

Speaking to a Fresno audience last summer, then-Presidential Candidate Donald Trump trumpeted: "There is no drought in California...Believe me, we're going to start opening up the water, so that you can have your farmers survive. We're going to get it done quick. Don't even think about it. That's an easy one."

Before Trump wades into this one, he ought to read Tim Stroshane's book chronicling the origin, development and complexity of California water infrastructure and water law, and the on-going wars that it has generated.

The book details how we got where we are today, the evolution of water rights and the corporate monopolies that developed.

Readers will learn of the actions of water warriors who were calling for the adjudication of water rights more than a century ago. Yet meaningful efforts for reform have been thwarted time and again. Back then, there were even warnings that the San Joaquin Valley floor would recede in response to overdrafting of groundwater and



that fisheries would collapse if river flows were greatly reduced. But the people charged with regulating and protecting our water supplies paid little attention.

The future path to conservation and more equitable distribution of California water will be long, twisted and completely nuts at times. This book is an essential read for anyone involved in water policy.

Tim Stroshane has spent years consulting with environmental water organizations focused on California and Bay-Delta Estuary water and environmental justice issues including Restore the Delta. It would be best read in the kindle edition since, like most hardcover books being published today, this one has small type.



Support County Parks — Buy An Annual Pass

The Pass pays for itself in 10 visits and all funds go directly towards maintaining and operating the 15,000-acre system. For as little as \$50 per year, you can have unlimited access and parking in the parks.

Pass holders receive free daily entry into Regional Parks and annual passes are valid for one year from date of purchase.

Pass Fees Are Based On Use:

Vehicle:	\$50
Vehicle + Trailer or over-sized vehicle (over 22 feet):	\$100
Vehicle + Horse trailer:	\$75
Vehicle and small watercraft:	\$80
Parks supporter pass*	\$50

** This pass is for those who want to support Parks but do not drive to Parks facilities*

Where to Purchase Your Parks Pass

- Online through the Sacramento County Web site www.regionalparks.saccounty.net
- At REI stores in Sacramento, Roseville and Folsom
- Patriot Cycles in Fair Oaks
- Effie Yeaw Nature Center at Ancil Hoffman Park
- Regional Park offices and park kiosks
- American River Parkway Foundation Office at the William B. Pond Recreation Area

Bobcats Roam the Parkway

You may never see one, but Bobcats have hidden dens throughout the American River Parkway and in nearby neighborhoods.

Bobcats, *Lynx Rufus*, are the most widespread and adaptive carnivores in California after the coyote. They roam mainly after dark and are excellent hunters, feeding on rodents, birds, rabbits, loose pets and backyard chickens.

Named for their short, bobbed tail, Bobcats grow to about the size of a Cocker Spaniel. They have coats that vary in color from shades of beige to brown with spotted or lined markings in dark brown or black. Their life span can be 8-to-12 years.

Bobcats especially like the Parkway's oak woodlands and thick underbrush where they tend to establish several dens. The main den is often a rock shelter, hollow log or some other protected place. Auxiliary dens in their range are often brush piles, rock ledges or stumps.

They are usually solitary and territorial. Male territories can overlap, but females never share territory with other females. They mark their territory boundaries with urine and scat. Their mating season tends to be in late winter with a gestation period of 50-to-70 days. Litters can range from 1-to-6 kittens. The kittens begin learning to hunt when they are about five months old. Once they are 8-to-10 months, the mothers evict them from their territories.

Bobcats were once found from Southern Canada to Central Mexico. But in the early-to-mid 1900s, their populations were decimated by hunters seeking their fur. But their populations began to rebound once protective laws began to kick in. Today, it is estimated that there are a least of million of them in North America.

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California didn't get around to approving a Bobcat Protection Act until 2013. The act gave the state Fish & Game Commission to power to regulate the 100 commercial Bobcat trappers in the state — down from 3,000 in the mid-1900s. The primary markets for the fur were in China, Russia and Greece where the pelts would fetch about \$350 each. In August 2015, the commission banned all commercial Bobcat trapping in the state.

Brendan Cummings of the Center for Biological Diversity applauded the ban, saying "California has stepped into the 21st Century of wildlife management."

But Hector Barajas, a spokesman for the trappers association, said "The commission has become a political arm of the animal rights extremists."

■



Bobcat photo by Jeff Wendorff.



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