



Northwestern Pond Turtle (*Actinemys marmorata*)

Western Pond Turtles Could Get Federal Protections

The U.S. Fish & Wildlife Service has proposed federal protections for both species of the Western Pond Turtle under the Endangered Species Act.

Western Pond Turtles are the only native turtle species still living in California. California State University students and faculty are working to protect them as part of their habitat restoration project at Bushy Lake on the Lower American River.

"The proposed listing may result in better-coordinated turtle conservation and restoration activities along the Lower American River," said Prof. Michelle Stevens who is overseeing the Bushy Lake project.

The Northwestern Pond Turtle (*Actinemys marmorata*) is found in Northern California along the Sierra Nevada and Coast Range down to Monterey and Kern Counties. It also resides in parts

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Water Temperature Issues on the Lower American River

BY CLYDE MACDONALD

For decades, high summer and fall water temperatures in the Lower American River have caused increased mortality of Chinook Salmon and Steelhead Trout. In the future, water temperatures will be higher because of climate change.

Folsom Dam is operated by the federal Bureau of Reclamation. In the summer, the water in the reservoir develops layers of different temperatures, with the warmest water on top and the coldest on

the bottom. Water that is to supply Folsom Dam's powerplants first goes through a "temperature control device" (TCD) which establishes which layer of water, i.e. at what temperature, is to be supplied to the turbines. After going through the turbines to generate electricity, the water is released to the Lower American River.

The Sacramento Water Forum funded an analysis in early 2023 to determine how

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YOU'RE INVITED

2023 SARA ANNUAL MEETING

SATURDAY, DECEMBER 2, 2023
9:30 AM

Effie Yeaw Nature Center in Ancil Hoffman Park

Save the American River Association cordially invites you to our **2023 Annual Meeting**, an informational and celebratory gathering of SARA members, supporters and community partners. We will be honoring **Kathy Kayner** for her vigilance to protect wildlife in our region. Lunch will follow a discussion of SARA's current issues. The meeting will also include an election of SARA's 2024 Board of Directors. ■

Water Temperature

Continued from Page 1

best to operate the TCD based on the desired river temperatures, forecasted operations, and expected conditions in the reservoir. This analysis helped to inform the Bureau and the state and federal fish agencies in the development of the annual temperature management plan.

However, in May through August the TCD was not properly installed, and cold water was leaking into the power intakes (unbeknownst to the Bureau). This TCD problem resulted in excess cold water being released. Bureau officials acknowledge that the release of the cold water should not have happened, but it did.

To lower water temperatures in the fall for salmon spawning, the Bureau made a decision to release some of Folsom's coldest water through Folsom Dam's low-level outlets. This is called a "power bypass" because the water released from the low-level-outlets cannot flow through the powerplants to produce electricity. This coldest water will be blended with water coming through the powerplant to achieve the desired temperatures. The use of these low-level outlets will stop when this



Graphic showing the location of the existing temperature control device at Folsom Dam (US Army Corps of Engineers)

coldest water is no longer needed — because air and water temperatures will decline as we move into winter.

The existing TCD leaks, making it an inefficient tool to manage water

temperatures. Also, it is hard for the Bureau to operate because it takes several days to make changes and because it requires the use of a large crane.

Congress authorized and funded the replacement of the existing TCD with an automated TCD that can be operated with the flips of switches. The federal Corps of Engineers has been working on the design. Construction is expected to start after the completion of the three-foot, flood-control raise of Folsom Dam. To do both the dam raise and the TCD at the same time would put too much equipment and too many personnel into a too-small space.

Save the American River Association has been working on these issues as a member of the Sacramento Water Forum. ■



Chinook Salmon near Nimbus Fish Hatchery—Photo by Kathy Kayner

Turtles

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Bushy Lake, located in the Cal Expo Area of the American River Parkway, is home to a number of native species including the Northwestern Pond Turtle.

of Nevada, Oregon and Washington. The Southwestern Pond Turtle (*Actinemys pallida*) is in Southern California and northern Baja California, Mexico. The U.S. & Wildlife Service would classify both as a Threatened Species since their numbers have been declining for decades.

Prof. Stevens said threats to Western Pond Turtles include loss, degradation, fragmentation and conversion of their habitat. Female turtles require access to terrestrial nesting sites as far as 328 feet from water. Urban areas have limited nesting habitats, invasive weedy plant species and turtle predation by skunks, raccoons, bullfrogs, bass sunfish and invasive crayfish. Female turtles and hatchlings also are vulnerable to strikes from bicycles and vehicles on their journeys to and from water.

Another threat, Stevens added, are the red-eared slider turtles sold in pet stores. Many pet owners are unaware that sliders can live up to 50 years and they eventually dump them in

wildlands where they take over the habitat where Western Pond Turtles live.

Sacramento State's Bushy Lake Conceptual Restoration Plan proposed the following for the turtles: (1) identify and protect nests; (2) add basking sites; (3) remove barriers such as fencing between points; (4) provide "turtle crossing" signs on roads and bike paths during nesting season; (5) remove hatchling predators such as bullfrogs and fish; and (6) develop in situ nurseries or headstarting to improve turtle reproductions and recruitment.

The U.S. Fish & Wildlife Service is requesting comments on classifying the turtles as Threatened from other agencies, Native American tribes, scientific communities and other interested parties. The proposal is open to public comments through Dec. 4, 2023. The proposal and information on how to submit comments can be found at www.regulations.gov by searching under docket number FWS-R8-ES-2033-0092. ■

Support County Parks — Buy An Annual Pass

For as little as \$60 per year, you can have unlimited access and parking in the parks. All funds go directly towards maintaining and operating the 15,000-acre system.

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:	\$60
Vehicle + Trailer/Boat/RV:	\$120
Senior Citizen Vehicle*:	\$30
Senior Citizen Vehicle + Trailer/Boat/RV*:	\$60

** Senior discount applies to ages 65 or older and must have proof of age at time of purchase.*

Where to Purchase Your Parks Pass

- Online through the American River Parkway Foundation Web site arpf.org/visit
- 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 ■

White-breasted Nuthatches Thrive In and Near the Parkway

One of the most frequent visitors to bird feeders near the American River Parkway is the White-breasted Nuthatch, *Sitta Carolinensis*. They often make quick trips to and from the feeder when they are storing seeds for winter by wedging them into furrows in the bark of nearby trees.

Nuthatches are found nationwide, in southern Canada and in areas of Mexico, but they are especially fond of the oak trees in the Parkway where they may nest in cavities or old woodpecker nests up to 60 feet above ground. They are agile little birds with black cap tops, a white face and breast, a blue-gray back and a short tail.

They may be small, but their voices are loud with a nasal yammering that ends in a high pitch.

Nuthatches pair for life and are territorial. Their nest is lined with fur, fine grass and shredded bark. The clutch will usually have five-to-nine eggs which are incubated by the female for 13-to-14 days. The chicks will fledge in 18-to-26 days and the adults continue to feed them for about two weeks. Once independent, the juveniles leave the adult's territory and establish their own territory or become "floaters," unpaired birds without territories.

Predators of adult Nuthatches include owls and hawks. Nestlings and eggs are often eaten by woodpeckers and squirrels. Nuthatches respond to predators near the nest by flicking their wings while making hn-hn calls.

When the adult leaves the nest hole, it wipes around the entrance with a piece of fur or vegetation which makes it more difficult for a predator to find the nest using its sense of smell. The Nuthatch also may smear crushed insects around the entrance to the nest in hopes that the unpleasant smell will keep squirrels away.

In winter, Nuthatches join foraging flocks led by chickadees or titmice, perhaps because it makes food easier to find and because more birds can keep an eye out for predators. One study found that when titmice leave the flock, Nuthatches became more wary and less willing to visit bird feeders.

The lifespan of Nuthatches is normally a few years. But one was nine years and nine months old when it was found in Colorado. ■



White-breasted Nuthatch

Birds and songs are good for you

Seeing or hearing birds can be good for our mental health, according to two recent studies published in the journal *Scientific Reports*.

Listening to birds – even if you can't see them – allows people to connect with nature and that reduces stress in the brain and can even reduce feelings of depression and anxiety.

"Birds help us feel more connected with nature and its health effects," said Emil Stobbe of the Max Planck Institute for Human Development in Berlin. "The more connected we are to nature, the more we can benefit from those effects."

The benefits last well beyond the bird encounter, according to Ryan Hammoud the Institute of Psychiatry, Psychology and Neuroscience at King's College in London. His studies show that birds benefit both healthy people and those who have been diagnosed with depression, which is the most common mental illness worldwide.

"That has an interesting implication for trying to protect and preserve environments to sustain bird life," Hammoud concluded. ■

SARA Membership Donations

July 2023 — October 2023

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Jordan Lang	Steve & Tracy Wetzel
Marianne Leach	Andrea Willey, MD
Charles Lindquist	<i>in honor of "Great Blue Heron"</i>

In Memoriam

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

Elmer Aldrich
Lorraine B. Bucaria
Jane Hagedorn
Jim Jones
Howard R. Leach
Jim Livingston

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. 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 contact the SARA office.** ■

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).

Valley Fever May be Coming Your Way

Since the mid-19th Century when farms and ranges began to proliferate in California's Central Valley, a disease called Valley Fever has been a little understood and widely ignored.

It has been most prevalent in the hot and dry areas of the southern end of the Valley where most of those suffering from the disease are farm workers and outdoor laborers.

But with climate change, the disease is working its way northward in California and other southwestern states, according to a study by scientists at the University of California, Irvine. By the end of this century, they predict that Valley Fever could reach the Canadian border and travel east to the Dakotas.

The disease is caused by two species of fungus in the genus *Coccidioides*. The fever thrives in dirt and in the lungs of humans and animals. After a heavy spring rain in dry lands, the *Coccidioides* spread through the wet soil like mold in bread. When the soil dries out, its spores mingle with dusty topsoil and can be inhaled as airborne pathogens. When summer arrives and soils dry out, the spores remain in the topsoils and can survive for years.

When the spores reach lungs, they quickly multiply and spread through the body where they can cause fevers, coughing, body aches, night sweats, rashes and fatigue. Some of the

“By 2100, for a business-as-usual scenario in which we do not take serious action to limit climate change, we would predict a doubling of the area where this disease is present.”

JAMES RANDERSON
UNIVERSITY OF CALIFORNIA,
IRVINE

symptoms can last for years. Some victims of the disease can develop skin lesions that can result in the loss of a limb.

The most vulnerable people and animals are those who spend most of their time in dusty outdoor locations. The Centers for Disease Control and Prevention estimates that about 200 people die from the disease annually but perhaps only one in 33 infections are reported.

Many of those who are infected have no access to health care or work for employers who don't accommodate people with diseases. And some fever victims don't seek medical help for fear of being deported. In addition, there has been little research on the

disease and cases are often misdiagnosed.

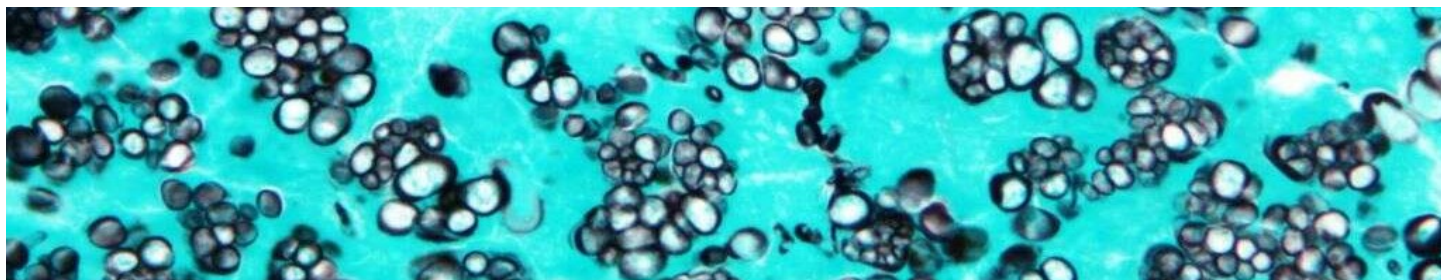
For those who have been diagnosed with Valley Fever, the mortality rate is about one death per 1,000 infections. The people considered the most vulnerable to Valley Fever are pregnant women, the elderly and individuals with HIV, according to James Randerson, one of the co-authors the UCI study. The disease disproportionately affects people in low-income communities, he added.

Dogs often get Valley Fever because they explore the environment with their noses and can inhale large quantities of the fungal spores. Once they've contracted the disease, their symptoms can be more severe.

Last year, the National Institutes of Health allocated \$4.5 million to study Valley Fever and develop a vaccine to treat it. But it could be years before a vaccine is available.

“By 2100, for a business-as-usual scenario in which we do not take serious action to limit climate change, we would predict a doubling of the area where this disease is present,” Randerson said. “It's a huge expansion and especially worrisome because Valley Fever is going to impact previously untouched communities throughout the West.”

The UCI study was published last July in the American Geophysical Union journal “GeoHealth.” ■



Road Kill is a Common Sight Near the Parkway

People who travel on streets and bridges that cross the American River Parkway frequently see roadkill – squirrels, raccoons, frogs and occasionally a deer among others.

“The Bay Area through Sacramento, through into the foothills and Tahoe, that is where we have the most roadkill in the state,” said Fraser Shilling, director of the Road Ecology Center at the University of California, Davis.

The reason for that, he explained, is that streets and highways pass through big protected areas like the American River Parkway where wildlife is abundant. State Fish & Wildlife officials estimate that 2,600 deer live along the Lower American River from Folsom Dam to the river’s confluence with the Sacramento River.

In 2009, UC Davis launched the California Roadkill Observation System which collects roadkill data and identifies areas where most of the animal death occur. They get reports from the California Highway Patrol, Caltrans staff, academics, biologists and many private citizens.

In a recent report, Shilling and others said they have seen a decline in roadkill reports for mule deer and coyotes. If there has been no increase or decrease in traffic in a given area, or no measures such as a fencing to keep animals off the roads, Shilling said that could mean there has been a decline in species populations.

Last year, legislation was approved appropriating nearly \$1 billion to build wildlife crossings and fencing throughout the state to protect wildlife. But Shilling noted that most of the roadkill data comes from volunteers. The state needs a program to collect more complete data on roadkills so that protections are established in the most vulnerable locations.

Californians can get a web app to report roadkills using their smartphones. Information on the process is available at wildlifecrossing.net ■

BOOK REVIEW

THE THREE AGES OF WATER: Prehistoric Past, Imperiled Present and a Hope for the Future

Written by Peter Gleick, Published by Public Affairs, 356p, \$30 hardcover, \$18.99 kindle

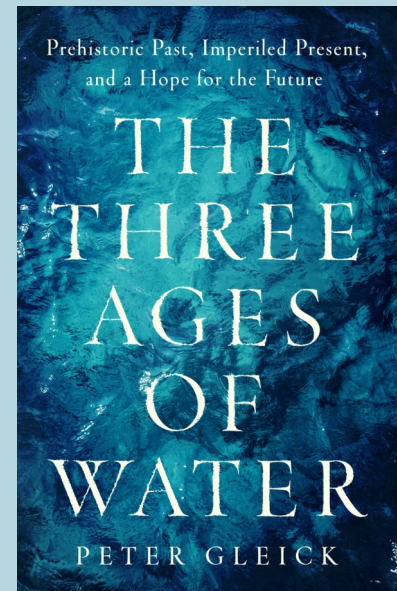
Water has always been central to the existence of life on Earth. This book is a comprehensive history of how water has shaped the evolution of the planet and its living environments, civilizations and advances in science and technology.

The author then documents the consequences of unsustainable water use, ecological destruction, and global climate change. And he warns that we are approaching “a new dark age” unless actions are taken NOW to protect our water for future generations.

Gleick then outlines a “new way forward” to meet basic human water needs, protect and restore water resources, and tackle climate change.

Former California Governor Jerry Brown reviewed the book and said “At a time of fraught political divisions and intensifying environmental disruptions, Gleick presents this timely and magisterial report on humankind’s use and misuse of water” that should help us find sustainable ways to live with and manage our water.

Peter Gleick is a cofounder of the Pacific Institute based in Oakland, a leading independent research group devoted to finding solutions to the world’s most pressing water problems. He’s received numerous awards for his renowned scientific work. ■





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