July 6, 2022

TO: Cara Allen, CA WCB Project Manager

FROM: Michelle Stevens, CSU Sacramento; and Becky Rozumowicz-Kodsuntie, Area West, Inc.

SUBJECT: Bushy Lake CRP Quarterly Report WC-1943CA

We wanted to update you on the status of the Conceptual Restoration Plan at Bushy Lake. As you know, last summer on June 6 a wildfire burned 130 acres at Bushy Lake and the Lower American River. We have replanted the *in-situ* restoration area, and are surveying for turtles, birds, and wildlife pre-and post-fire. I have obtained additional funding to pay for native plants and an irrigation system to replant the restoration site. Data is collected to provide the background for the development and completion of the Conceptual Restoration Plan.

We completed the Bushy Lake 2021 Summary Report for the California Wildlife Conservation Board Grant Agreement for Bushy Lake Conceptual Restoration Plan; the report was uploaded to our website for public access (https://www.bushylake.com/education). It has a synthesis of all the information and data from our first year of research. This document provides valuable information for our next stakeholder meeting. We plan to hold a Stakeholder meeting in late September or mid-October.

Fire Resiliency

After the June 6, 2021, wildfire, we have been concerned about protecting the Bushy Lake site from future wildfires. To that end, we met with Sacramento City Fire Department Representatives and Nathan Dietrich to discuss fire protection and installing a hand-built fire line early in the year. On July 28, 2021, we met with Sacramento City Fire Department Chief Gary Loesch, Deputy Fire Chief Chris Costamagna, and Fire Marshall Jason Lee to discuss fire protection for Bushy Lake in the future. City Fire suggested getting a hand crew to thin the area around Bushy Lake in the early spring of each year. Proactively thinning the vegetation would be more effective than a new fire road or a wider fire break near the Bushy Lake site. Thinning would occur in the vicinity of the existing roads around Bushy Lake and/ or other areas as deemed appropriate. They suggested asking hand crews from the Red Hawk Casino to clear the low-lying vegetation, creating a fire break (building off and increasing the existing fire break on the east side) to protect critical wildlife and vegetation.

We provided City Fire with a map of areas for City Fire to prioritize protection from wildfires; the map includes key natural resource areas, sensitive species, and important habitats. The map includes GPS coordinates. This *Bushy Lake Key Resources Map* will hopefully help with targeted fire response and help with any helicopter water drops. City Fire offered to create an emergency action plan for staff and students on-site in case of a fire. Fire Marshal Jason Lee will lead the creation of the emergency action plan. Sacramento City Fire noted the importance

of the Department knowing how many people are on-site at Bushy Lake in case a fire occurs. We shared the fire protection information with Cal Expo (Tom Martinez), Sac County Parks (Liz Bellas), the City Manager's Office (Chris Conlin), and Councilman Jeff Harris.

On February 10, 2022, a tour of Bushy Lake was conducted by the American River Parkway Foundation: "Sac Fire leads field visit and vehicle tour of fire hazards behind Cal Expo". I was invited the day before the tour with no input during the tour. They made recommendations to cut the remaining woody vegetation and trees on the north side of Bushy Lake. These trees provide the last remaining structural diversity at Bushy Lake after the June 6, 2021, fire; they provide important habitat for cavity nesters and habitat for perching sites.

On April 15, 2022, a meeting (scheduled without discussion for a time I was unable to attend) was arranged by the American River Parkway Fire Safe Council by the American River Parkway Foundation. In attendance were the Sacramento City Fire Department, Red Hawk Casino Fire Crew Chief Dave Whitt, and the Sacramento County Department of Parks and Recreation. Nathan Dietrich and Alexandra von Ehrenkrook represented Sacramento State. Bushy Lake was evaluated for a fire lane on the east side of the lake. It was determined that having a fire line in the middle of fuel would not be safe for firefighters to enter.

Sacramento County Parks and Recreation Maintenance crews (Mary Maret, Senior Natural Resource Specialist; James Mitts, Superintendent; Paul Raine, Supervisor; and assisted in moving the meadow (Lot Z), "turtle triangle" (an identified turtle nesting area), the road, and the access trail on the east side of Bushy Lake to reduce fire risk and improve fire preparation. We observed turtles appear to immediately use the mowed areas next. Our team is also conducting monitoring and adaptive management to increase fire resiliency on the in-situ restoration site.

Road construction to support the Caltrans Project 03-3F070: American River Bridge Deck Replacement on the I-80 overpass created an access road approximately 30' wide with the hard-packed and bare ground; the access road provides a fire break for Bushy Lake on the east and south sides. In the past few weeks, a big uptick in construction equipment has occurred using the main access road, the dirt road, and the lower part of the Cal Expo levee north of Bushy Lake. With the CalTrans gate left open, we are observing an increase in homeless and other unregulated access to both the Bushy Lake and I-80 construction sites. We are concerned about fire risk.

Wildlife Surveys (Pre- and Post-Fires)

Our research team is collecting data on turtles, birds, and other wildlife to document pre-and post-burn conditions of the June 6, 2021, wildfires.

Objective 1: Conduct studies and designs for pond turtle conservation and fire resilient habitat restoration

Tasks 1.1 and 1.2 Collect Pond Turtle and Non-Native Turtle Baseline Data

Northwestern Pond Turtles and Non-Native Turtle Status Report

Sacramento State has been using visual surveys, mark-recapture trapping surveys, and nesting surveys to monitor turtles at Bushy Lake. Northwestern Pond turtle data is prioritized and separated from non-native turtle data. Our team began weekly visual surveys in early February when turtles emerged from brumation, through March 11-12 when we began monthly catch-and-release turtle trapping. Experienced biologist Gunner Michaelson led each survey to ensure consistent and accurate data. We trap (catch and release) turtles every month. We began daily turtle nest surveys when turtles began nesting behavior in April; trained biologists from 2021 accompanied new biologists for nesting surveys. Field biologists are going out every day to map turtle nesting behavior, key habitats, and basking sites.

Last year in 2021, all the nests identified in nesting surveys were burned or predated. Intensive data collection in 2022 is of the utmost importance for the CRP project. In 2022, field biologists received an additional nesting survey raining from Jeff Alvarez. This includes active turtles exhibiting nesting behaviors, predated nests, dummy nests, and potentially active nests.

We conducted an on-site turtle training on April 22 with Jeff Alvarez. Jeff invited us to attend his western pond turtle workshop to conduct nesting surveys at Moorhen Marsh on June 22 (all the turtles are western pond turtles). We were able to identify northwestern, southwestern, and hybrid turtles as well as palpate gravid females. Bushy Lake has northwestern pond turtles; henceforth we will refer to northwestern pond turtle (NWPT) in our reports.

Nesting surveys will continue through the end of June, and into the beginning of July. As of June 26, 2022, we have located 147 nest observations, of which 37 could potentially be NWPT nest observations (*Figure 1*). During the surveys so far, a total of 5 nests have been covered and protected for future studies. Of these, 4 covered nests are still active; 1 had been predated through the wire screen and the screen is no longer present. Additionally, a map of turtle basking sites of Bushy Lake was created in February 2022 (*Figure 2*). This map assists in identifying NWPT habitat and assessing how NWPTs interact with the Bushy Lake environment. As we analyze our data from 2022, we again have many Non-Native Turtles compared to NPWT. However, we observe a healthy resident population of NWPTs, and nests that appear to be NWPTs.

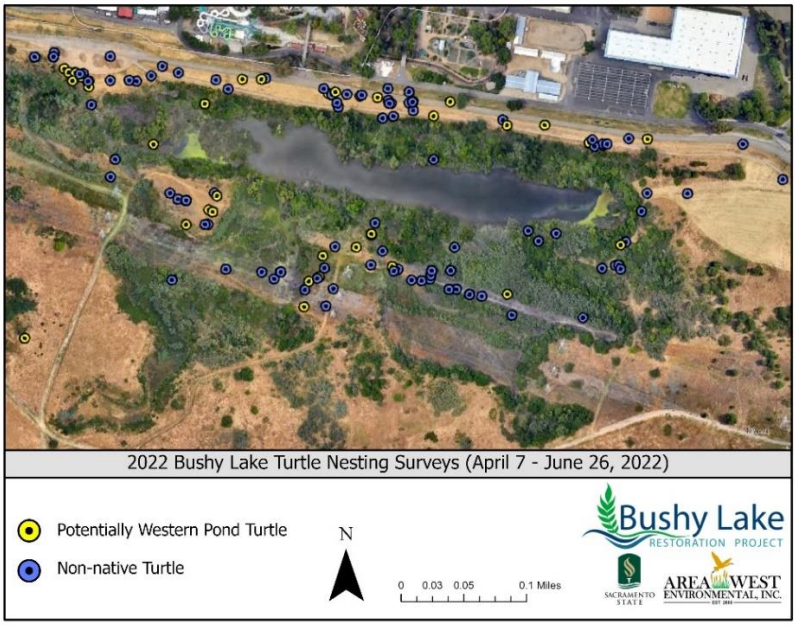


Figure 1. Observations of turtle nesting activity at Bushy Lake between April 7 and June 26, 2022. Observations include active turtles exhibiting nesting behaviors, predated nests, dummy nests, and potentially active nests

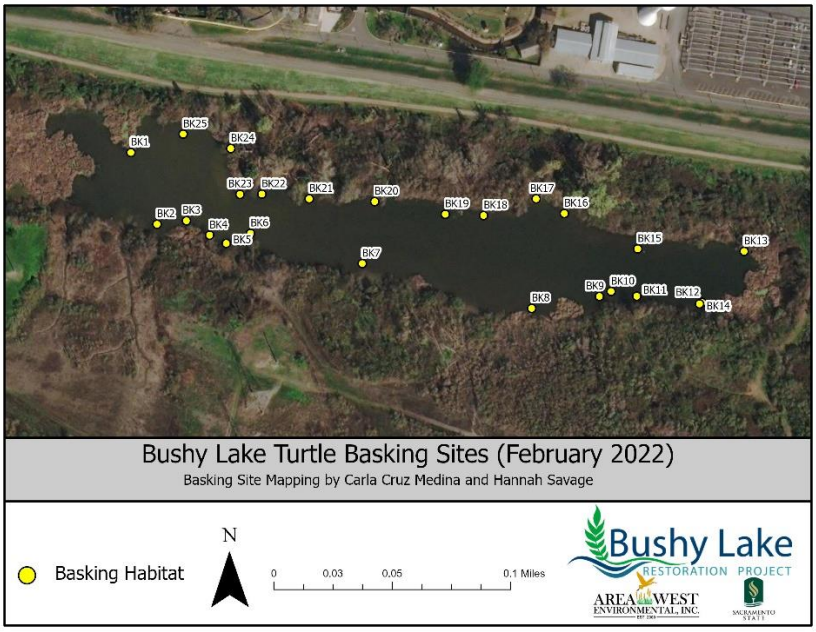


Figure 2. Bushy Lake Turtle Basking Sites as of February 2022

Avian Surveys

An important biological indicator of habitat quality is avian diversity and habitat. Daniel Williams (Sacramento Audubon) has been voluntarily conducting biweekly avian surveys at Bushy Lake since February 2020. In May 2022, I hired experienced field ornithologist Joel Craven to collect data with Daniel Williams. He then began conducting weekly avian surveys using the same protocols. Thus far, over 140 bird species have been identified at Bushy Lake (*Figure 3*). The team has access to avian data that began in 2020, and we can analyze this data to contribute to the Bushy Lake CRP. Avian habitats, species abundance, and observed activities at Bushy Lake will provide a sensitive environmental indicator for the CRP. We will analyze pre-and post-June 6, 2021, fire.

Avain Research Conducted by Daniel Williams

Nesting	Year-Round Resident	Summer (Spring through Fall) Resident	Winter (Fall through Spring) R	Migrant	Flyover Only	CalExpo Racetrack Pond/RV Park Area Only
American Kestrel	Acorn Woodpecker	Barn Swallow	American Pipit	Allen's/Rufous Hummingbird	American White Pelican	Calliope Hummingbird
American Robin	American Coot	Black-headed Grosbeak	Blue-gray Gnatcatcher	Band-tailed Pigeon	American Wigeon	Greater Yellowlegs
Anna's Hummingbird	American Crow	Blue Grosbeak	Cackling Goose	Bank Swallow	Bald Eagle	Mountain Bluebird
Ash-throated Flycatcher	American Goldfinch	Bullock's Oriole	Cedar Waxwing	Black-throated Gray Warbler	Barrow's Goldeneye	Ruddy Duck
Bewick's Wren	Belted Kingfisher	Cliff Swallow	Dark-eyed Junco	Lewis's Woodpecker	Black Swift	
Black Phoebe	Black-crowned Night-Heron	Northern Harrier	Fox Sparrow	Marsh Wren	Budgerigar	
Black-chinned Hummingbird	Brewer's Blackbird	Northern Rough-winged Swallow	Golden-crowned Sparrow	Olive-sided Flycatcher	Bufflehead	
Brown-headed Cowbird	Common Raven	Osprey	Hermit Thrush	Pacific-slope Flycatcher	California Gull	
Bushtit	Cooper's Hawk	Western Tanager	Lincoln's Sparrow	Purple Martin	Canvasback	
California Quail	Double-crested Cormorant	White-tailed Kite	Merlin	Solitary Sandpiper	Common Goldeneye	
California Scrub-Jay	Eurasian Collared-Dove	Wrentit	Pine Siskin	Sora	Common Merganser	
California Towhee	Gadwall		Purple Finch	Swainson's Thrush	Glaucous-winged Gull	
Canada Goose	Great Blue		Ruby-crowned Kinglet	Vaux's Swift	Great-tailed Grackle	
Common Yellowthroat	Great Egret		Savannah Sparrow	Warbling Vireo	Greater White-fronted Goose	
Downy Woodpecker	Green Heron		Say's Phoebe	Western Wood-Pewee	Herring Gull	
European Starling	Hooded Oriole		Sharp-shinned Hawk	Willow Flycatcher	Horned Lark	
House Finch	House Sparrow		Western Meadowlark	Wilson's Warbler	Northern Pintail	
House Wren	Killdeer		White-crowned Sparrow	Yellow Warbler	Northern Shoveler	
Lazuli Bunting	Northern Flicker		Yellow-rumped Warbler	Yellow-breasted Chat	Ring-billed Gull	
Lesser Goldfinch	Oak Titmouse				Ross's Goose	
Mallard	Orange-crowned Warbler				Sandhill Crane	
Mourning Dove	Peregrine Falcon				Snow Goose	
Northern Mockingbird	Pied-billed Grebe				"Thayer's" Iceland Gull	
Nuttall's Woodpecker	Ring-necked Pheasant				Tricolored Blackbird	
Red-shouldered Hawk	Rock Pigeon				White-faced Ibis	
Red-tailed Hawk	Snowy Egret					
Red-winged Blackbird	Turkey Vulture					
Song Sparrow	Virginia Rail					
Spotted Towhee	White-throated Swift					
Swainson's Hawk	Yellow-billed Magpie					
Tree Swallow						
Western Bluebird						
Western Kingbird						
White-breasted Nuthatch						
Wild Turkey						
Wood Duck						

Key
State Species of Special Concern
State Threatened
Etate Endangered
State Fully Protected

Figure 3. Over 140 different avian species have been observed at Bushy Lake since Daniel Williams began bi-week avian surveys in February 2020.

Wildlife Camera Surveys

Multiple cameras are being utilized to monitor wildlife activity at Bushy Lake. The goal of wildlife cameras is to identify what species are present and how they are interacting with their environment. We especially aim to understand how turtles are interacting with their environments. Wildlife cameras have been strategically placed in areas such as the *in-situ* restoration, to observe if turtles utilize this area for nesting habitat, and near beavers' lodges and beaveways, to observe if turtles utilize the structures for basking of accessing upland nesting habitat.

Although turtles have not yet been observed in our wildlife cameras, the images provide insight into the site's biodiversity (*Figure 4*). Species captured thus far include California quail (*Callipepla californica*), bluebirds (*Sialia sp.*), mallard ducks (*Anas platyrhynchos*) and wood ducks (*Aix sponsa*), California mule deer (*Odocoileus hemionus*), coyotes (*Canis latrans*), North

American beavers (Castor Canadensis), North American river otters (*Lontra canadensis*), Eastern gray squirrels (*Sciurus carolinensis*), desert cottontails (*Sylvilagus audubonii*), striped skunks (*Mephitis mephitis*), opossum (*Didelphis marsupialis*), raccoons (*Procyon lotor*), and feral cats.

a. b. c.

Figure 4. Three images were captured on Bushy Lake wildlife cameras. a) two coyotes (Canis latrans), and b) one California mule deer buck (Odocoileus hemionus) in the in-situ restoration's white root bed (Carex barbarae); c) two North American beavers (Castor Canadensis) near their lodge

Task 1.4 Monitor Pilot Project Site

In Situ Restoration Native Plant Regrowth

The entire site burned to the ground on June 6, 2021. Since then, we have monitored natural recruitment in the in-situ restoration area. Mugwort (*Artemisia douglasiana*), willow (*Salix species*), California grape (*Vitis californica*), elderberry (*Sambucus nigra subsp. caerulea*), gumweed (*Grindelia camporum*), white root (*Carex barbarae*), and other species are showing signs of resprouting from their rhizomes (underground stems). This information provides a good opportunity to test our fire resilience plant palette design, based on native plants adapted to Native Californian Traditional Fire Management (Stevens 2019, Zedler and Stevens 2018).

We began replanting in February. We ordered the following plants from Escondido / River Partners Nursery. We planted plugs of yarrow (Achillea millefolium), creeping wildrye (Elymus triticoides), gumplant (*Grindelia camporum*), deer grass (*Muhlenbergia rigens*), California goldenrod (*Solidago velutina spp. Californica*), purple needlegrass (*Stipa pulchra*), and California aster (*Symphyotrichum chilense*). We also planted a pollinator seed mix from Hedgerow Farms including the following: Woodland clarkia (*Clarkia unguiculata*), Fort Miller clarkia (*Clarkia williamsonii*), California poppy (*Eschscholzia californica*), Bolander's sunflower

(*Helianthus bolanderi*), chick lupine (*Lupinus microcarpus var. densiflorus*), rock phacelia (*Phacelia californica*), and Great Valley phacelia (*Phacelia ciliata*).

We have been monitoring and using adaptive management by hand watering and weeding for this entire grant period. The combination of nutrients from the fire and late spring rains resulted in an unusually dense and prolific invasion of weeds. Prominent weeds on the site include hairy vetch (*Vicia villosa*), poison hemlock (*Conium maculatum*), star thistle (*Centaurea solstitialis*), perennial pepperweed (*Lepidium latifolium*), and wild mustard (*HIrschfeldia incana*); they also increase the fuel load on the site. We have removed mountains of weedy species, and Sacramento County Parks maintenance crews removed for us.

We are hand watering twice a week to get the plants established and survive through the summer. I want the site to look good and look and function like a restoration site by spring 2023 when we have our big public event.

Task 1.5 Aquatic Habitat and Water Quality Surveys

Professor Dr. Jamie Kneitel (Chair and Professor, Sacramento State) is continuing monthly water quality surveys, sampling for dissolved oxygen, TSS, pH, and nutrients. We have worked with SARA to find a lab to run samples for E*. coli*.

We are no longer conducting aquatic habitat surveys of algae, crustaceans, and aquatic insects in Bushy Lake to quantify seasonal dynamics. We did not find anything significant to the Conceptual Restoration Plan development. Baseline data is sufficient for this grant.

Task 1.6 Hydrology Characterization

Dr. Kevin Cornwell (Professor, Sacramento State) completed the hydrologic characterization of surface water flow into and conditions at Bushy Lake with his graduate student Kody Wedell. The following information is a synthesis and conclusions from our Bushy Lake Summary Report. This information will be important to discuss at the next stakeholder meeting.

Detailed ground surface mapping suggests that approximately 0.9 km^2 (0.35 mi^2) of the terrain surrounding Bushy Lake would drain into the Lake under precipitation conditions that produced surface water runoff. Likely subsurface sediments in this area would be expected to be generally porous and permeable and waters in the Lake could easily drain from the Lake to the nearby American River Channel. Organic matter (leaf and vegetation litter) or that produced by aquatic life in the Lake that gets deposited on the bottom of the Lake would likely reduce the infiltration rate of Lake waters to the underlying groundwater system. The degree that which this may occur has not been studied.

Subsurface water flow drains from Bushy Lake to the American River at gradients that range from 0.003 to 0.008. The subsurface sediments that underlie Bushy Lake are likely coarse-grained sands and gravels from the Modesto Formation. These conditions present along the entire reach of the American River where this terrace feature occurs suggests that Bushy Lake continuously loses lake waters to the local groundwater system that eventually discharges into the nearby American River channel.

HEC-RAS software was used to route potential floodwaters down the American River through the Bushy Lake reach to assess the discharge values that might inundate the Bushy Lake terrain. By simulating channel and surrounding landscape conditions, floodwaters of varying discharge rates were routed down the channel and showed that discharge rates near 60,000 CFS place floodwaters on the terrace feature that holds Bushy Lake. Under this scenario, the lower elevations of the terrace surface and Bushy Lake are underwater from this hypothetical flood event. If discharges were to reach about 80,000 CFS, complete inundation of the terrace feature (and Bushy Lake) would occur.

Dr. Kevin Cornwell - Recommendations

In its natural state, Bushy Lake is maintained by groundwater pumping from Cal Expo, as mandated by the Bushy Lake Preservation Act. The Bushy Lake Preservation Act requires “CalExpo to preserve, for public day use and enjoyment, the CalExpo floodplain in a manner consistent with the definition of a state park”. The riparian habitat at Bushy Lake is deemed “of vital importance and an integral part of the American River”. “Bushy Lake" means a body of water in the Bushy Lake area with approximately 11 acres of water surface in the summer and approximately 80 acres in the winter" (Public Resources Code Section 5830-5835) (Justia 2022).

The Bushy Lake CRP will need to develop alternative scenarios of water allocation from groundwater pumping by Cal Expo, based on drier and warmer climate conditions leading to more frequent and severe drought conditions. Without groundwater inputs from Cal Expo, Bushy Lake does not support an adequate volume of surface water necessary to maintain a perennial open water system supporting existing aquatic and riparian ecosystems. If the reported groundwater pumping volumes are accurate, Bushy Lake loses anywhere from 1.5 to 6 times the volume of water that the Lake holds each year. Considering the size of the drainage area that contributes surface water to the Lake from precipitation events, the rate of water loss through the floor of the Lake, and the likely evapotranspiration rate during the warmer and drier parts of the year, any ceasing of groundwater pumping would be detrimental to the local ecology that depends on a wet lake under present conditions and mandates.

We will consider restoration alternatives that consider potential impacts to the groundwater augmentation to the Lake as a result of climatic variations or unforeseen groundwater issues (contamination, severe drought, etc.) and plan for these potential uncertainties and disruptions to the water supply.

Restoration alternatives will be evaluated in the draft CRP that includes variable lake levels that rely less on groundwater to augment the lake and achieve the restoration planning goals and objectives. The alternative lake level/ groundwater investigation will include the following alternatives: 1) continued pumping at existing levels mandated by the Bushy Lake Preservation Act; 2) no pumping and allowing the lake to dry with natural precipitation and overland flows; and 3) modified pumping and drawdown rates that maximize a sustainable and biodiverse ecosystem at Bushy Lake. In summary, the Bushy Lake restoration team (with input from stakeholders) will consider alternative lake levels with variable groundwater contributions from Cal Expo.

Task 1.7 Wetland Boundary Mapping and California Rapid Assessment Method

In June 2022, we utilized a Bad Elf Flex GPS unit to map the wetland-upland boundary; this mapping was completed on June 29, 2022 (*Figure 5*). The wetland boundary was determined by characteristics of vegetation type and elevation change. A few notable wetland species utilized in determining the wetland boundary include cattails (*Typha latifolia*), bulrush (*Scirpus spp.*), and willows (*Salix* ssp.). The elevation changes and slope around the lake additionally informed where the wetland boundary ended. A depression south of Bushy Lake was characterized as being a wetland during rain events; this region was identified as a "precipitation depression", and not included in the year-round "wetland boundary". This map of the wetland boundary will be supported by a future California Rapid Assessment Method (CRAM) survey. We plan to conduct a CRAM for depressional wetlands at Bushy Lake in late September-early October 2022. The 2022 CRAM will be compared to data from the 2016 CRAM assessment (eCRAM ID 5675). We postponed conducting the CRAM due to the June 2021 wildfire major disturbance to the site.

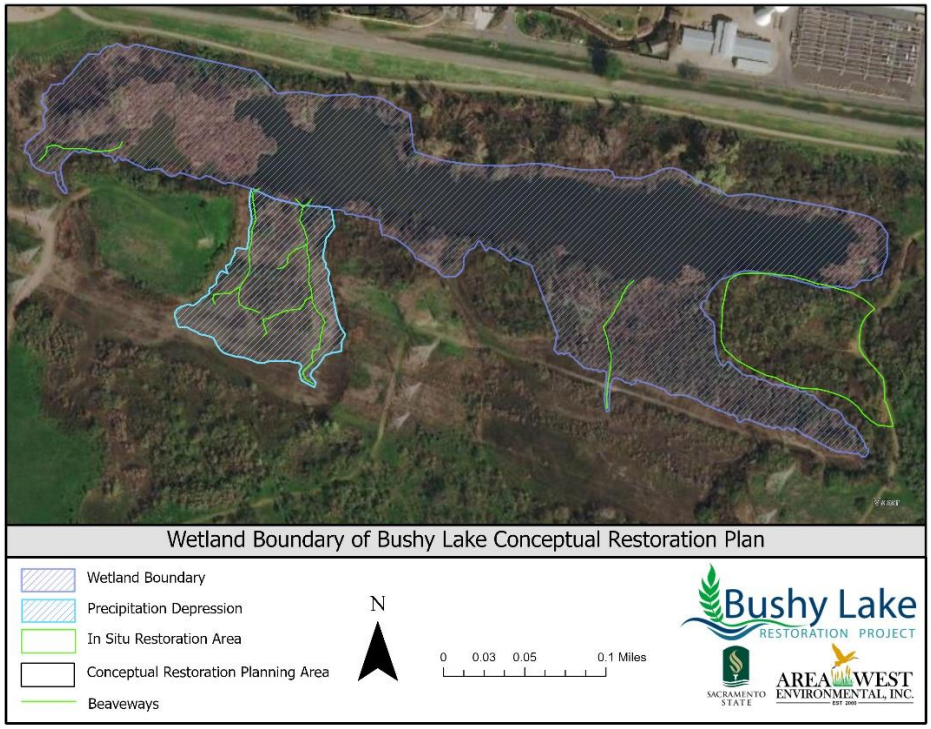


Figure 5. The wetland boundary and precipitation depression of Bushy Lake in June 2022. The "precipitation depression" region was characterized as being a wetland during rain events and therefore was not included in the "wetland boundary"

Objective 2: Education and public outreach

The CRP will outline future mechanisms to promote public education and engagement.

The Bushy Lake website (www.bushylake.com) was created and is being updated by Sara Stephens, a web designer with Save the American River Association. The website is published by paying for a yearly subscription to Squarespace, Inc. (225 Varick Street, 12th Floor New York, NY10014). The website has been completed since June 2021 and is updated frequently to maintain its relevance.

Task 2.1 Public Education Plan

a) Turtle Public Education Outreach and Bushy Lake Citizen Science - Turtle Monitoring Research Program
   The program we have initiated with public turtle education is the beginning of our CRP public education plan. We have created, written, and distributed information about turtles who are nesting and moving from aquatic to terrestrial sites (included as an Appendix to this quarterly report). Turtle education information has been posted on our website, our social media pages (Facebook and Instagram), the Sacramento County Parks website, the Sacramento Zoo website, and in the American River Bike Patrol's July Newsletter. Sacramento County Parks put up warning signs at Bushy Lake to educate bicyclists about active turtles at the beginning of nesting season in early March.
b) Sacramento Zoo – We brought the Sacramento Zoo staff to Bushy Lake on March 5 as part of our turtle diplomacy. They donated $4,150.00 funding to the Bushy Lake project for turtle education. The zoo staff and I are exploring ways to collaborate and educate the public about western pond turtles and non-native turtles.
c) Bushy Lake Restoration Site Public Outreach
   We had 108 community members and stakeholders out to the Bushy Lake site in the first quarter of 2022, and 90 out to the site in the second quarter. We also had a turtle nest training with Jeff Alvarez on May 20, 2022, with 13 people, and have engaged them in citizen science and adaptive management efforts. Among the people, we have invited to our turtle trapping day are Cara Allen (Senior Environmental Scientist (Specialist), California Riparian Habitat Conservation Program, lower American River Conservation Program, Wildlife Conservation Board), Dianne Hyson (SSIS College Dean), Erica Bishop (The Water Forum Project Manager), Mrs. Barbara Dugal (Patrick James Dugal Memorial Scholarship), and Ricky Prows (Mountain Maidu Historical Preservation Association, Maid Consortium Summit Board Member).
d) Additional Funding for restoration site replanting and public education/ outreach – Sierra Club and Green Inc. ($500.00) for plants; President's Circle Award for Bushy Lake Restoration ($10,000); Sacramento Zoo ($4,150) and a 2022 Anchor University Strategic Investment Grant: "Bushy Lake Eco-Cultural Restoration: Rising from the Ashes" ($5,000.00). We plan to use a good portion of the additional funds for public outreach, including signage and amplification of the public events day next spring as stated in our Bushy Lake CRP grant application.

e) Bushy Lake Public Speaking Engagements

1. Delivered Seminar prepared "Bushy Lake Eco-Cultural Restoration Conceptual Restoration Plan", April 5, 2022, ENVS 187 Environmental Studies and Geology Dept. Colloquium. The Bushy Lake Restoration talk was given by Bushy Lake faculty (Michelle Stevens, Kevin Cornwell, Jaimie Kneitel, Tim Davidson) and students (Alexandra von Ehrenkrook, Gunner Michaelson, Kody Wedell).
2. Conference Presentation.) Oral presentation. Stevens, M. and A. von Ehrenkrook. May 17, 2022. "Eco-Cultural Restoration and Fire Resiliency: Linking attributes of Western Ecological Knowledge and Traditional Ecological Knowledge". Joint Aquatic Sciences Meeting, Grand Rapids, Michigan.
3. Colima Aguirre, K., A. von Ehrenkrook, and M. Stevens. June 25, 2022. Western Pond Turtle Conservation at Bushy Lake. NorCal Herpetological Society, Sacramento, CA.

Task 2.2 Public and Stakeholder Outreach

Our next Stakeholder Meeting will be in late September to mid-October 2022, where we will present a synthesis of our data. We also plan to present information on our Bushy Lake CRP to the American River Parkway Association Board meeting in that same time frame.

At this time, I am in frequent contact with Sacramento County Parks, Cal Expo, CalTrans, and the Sacramento City Fire Department to inform and coordinate activities at Bushy Lake. We have used 311 to inform rangers about homeless encampments at Bushy Lake. In one case the individual had a bike chop shop and bow in the middle of the site, and rangers came immediately. We remain vigilant about threats of wildfires.

Community Engagement and Public Outreach

- American River Parkway Coalition every month
- American River Parkway Fire Safe Council.
- The Water Forum – Cordova Creek Stakeholders Group - technical advice and collaboration
- Internal meetings are held every Friday morning
- Our last stakeholder meeting was on February 11, 2022. We are planning a Stakeholder meeting in September. The agenda will be to present a synthesis of the post fire data and preliminary conceptual restoration plan in order to get stakeholder feedback. We are sending out a letter to stakeholders in the next few days.
- Provide input and attended public hearings on the Draft Lower American River Natural Resource Management Plan (NRMP).

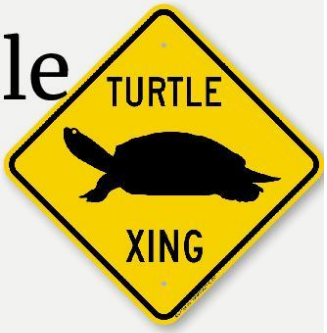
Social Media

Community Engagement and Outreach play a crucial role in the success of the Bushy lake Conceptual Restoration Plan. Social media is an excellent cost-efficient marketing tool to help the Bushy Lake Eco-Cultural Restoration project, build relationships with potential stakeholders, specific community groups, and public education.

We are currently using social networking services, Facebook, and Instagram, to share updates on different projects at Bushy Lake. In the past month, Instagram has gained 59 new followers, totaling 67 followers. Our Facebook page has reached 587 profiles, 184 people like the page, 195 followers, and 3 check-ins.

Appendix A – Educational Turtle Nesting Flyers

Ensuring Turtle Safety



Female turtles on the lower American River are currently nesting in upland habitats. The turtles travel up to 2 kilometers (1.24 miles) away from the water for nesting. The movement between aquatic and terrestrial habitats make them highly susceptible to vehicle and bicycle strikes along the American Parkway Trail and Bushy Lake Restoration site.

What to do if you see a Turtle in the Field or along the American River Parkway

1. Leave the turtle alone and give them at least 100ft of space;

2. If you observe a potential or direct risk to the turtle, such as being in the middle of the road or bike trail, try to gently encourage the turtle to move to a safer place in the same direction it was heading. Avoid picking up the turtle; handling a turtle can scare them. Turtles may urinate, lose their water, and be unable to finish laying eggs. She will need to return to the water to "fill up" to make another nesting attempt.

3. If you believe the turtle is a Western pond turtle, maintain your distance, take the best picture you can, and provide information to the Bushy Lake Citizen Science Turtle Monitoring research program. Do not disturb or handle the turtle. Email bushylake.ca@gmail.com.

Bushy Lake
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Bushy Lake Turtle Research

Female turtles on the lower American River are currently nesting in upland habitats. The turtles' movements between aquatic and terrestrial habitats make them highly susceptible to vehicle and bicycle strikes along the American Parkway Trail and Bushy Lake Restoration site.

Turtles at Bushy Lake have been observed nesting between late April and the end of July. Turtles travel up to 2 kilometers (1.24 miles) away from the water to nest and lay their eggs. While all turtles on the Parkway face the risk of collision, the Western pond turtles (*Actinemys marmorata*) are especially vulnerable to risks from human activity and collisions with vehicles. The Western pond turtle is the only native freshwater turtle in California, is listed as a reptile species of special concern, and is undergoing review for protection under the U.S. Endangered Species Act (Thomson, Wright, and Shaffer 2016; USFWS 2015).

If any turtles are seen in the field or along the parkway, follow these steps to ensure the turtles' safety:

1. Leave the turtle alone and give them at least 100ft of space;
2. If you observe a potential or direct risk to the turtle, such as being in the middle of the road or bike trail, try to gently encourage the turtle to move to a safer place in the same direction it was heading. *Avoid picking up the turtle*; handling a turtle can scare them. Turtles may urinate, lose their water, and be unable to finish laying eggs. She will need to return to the water to "fill up" to make another nesting attempt.
3. If you believe the turtle is a Western pond turtle, maintain your distance, take the best picture you can, and provide information to the Bushy Lake Citizen Science Turtle Monitoring research program. Do not disturb or handle the turtle. Email bushylake.ca@gmail.com.

How to identify the Western Pond Turtles and Red Eared Sliders

Western Pond Turtle (Native)

Western pond turtles (*Actinemys marmorata*) are characterized by their nearly uniform brown, dark brown, or black upper shell (carapace). They often bask with an outstretched neck, and the face and neck are cream colored with dark markings. The outer scutes along the rear edges of their carapace have a smooth edge and are not serrated.

Red-Eared Slider (Non-Native)

Red-eared sliders (*Trachemys scripta elegans*) are characterized by their colorful, distinctive markings. They have two red stripes behind each eye. Their upper shell (carapace) and skin are olive or brown in color and have a mottled pattern. Their bottom shell (plastron) is most commonly yellow. The outer scutes along the rear edge have a serrated edge.

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