***FRIENDS OF THE CALAVERAS UPDATES***

***08.09.22 Jim Marsh***

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***Weekly monitoring of the UOP Native Grass Restoration site continues***

The Spring Daubenmire (Vegetation) Survey work was completed on 03.23.22 and 03.31.22. As reported in March and further confirmed during the Summer Survey this, the fourth drought year since 2018, produced a relatively rich but very short-lived growth spurt in the vegetation that has characterized the Native Grass Demonstration Restoration Site since its inception. Both native and non-native species continue to show signs of moisture deprivation caused stresses. Winter/Spring growth and bloom was stunted and short-lived. The dormant, arid Summer pattern established itself earlier.

Possibly the only exception to this was the bankside crop of invasive Himalayan Blackberries which—typically exhausted in late June--persisted into early August. The berries this year were small but as tasty as ever. They can be a welcome treat during the early hottest, driest walks.

Over the years I’ve been observing on the 3 Acres I’ve also been collecting and propagating some of the native plants in a backyard bed. This collection now includes Gumplant, Poppies, Curly Dock and a common Verbena (V. hastata). The dock is also host to an interesting Curculionid beetle some live samples of which I brought home to see if they’d establish themselves in my backyard Calaveras Natives “arboretum”. They seemed perfectly content feeding on fresh curly dock leaves in containers but so far no word from them since their release onto the garden dock plants.

County mowing crews worked in the area from mid-May until the early weeks of June as has been their pattern for all the years I’ve been observing. This year they did not mow much of the levee face from T2-T4 but did manage to take out the wild roses and Creeping Wild Rye on that south face between T9-10. My instructions to Mike McCoy, mowing supervisor, seem to have gotten garbled in translation. Mike also lamented that they had heavy turn-over in their crews and so he was working with less experienced machine operators. Turned out not to be the biggest issue in terms of damage to the site (see below).

06.20.22: Summer 2022 Photo Survey completed and archived. An area of about 1/4-1/2 acre at Transect 5 had been burned sometime in the previous week. There had been on-going evidence of campers in the willows there. It was subsequently concluded that someone intentionally set this fire and a series of others in the immediate area.

06.27.22: Summer 2022 Daubenmire (Vegetation) Survey completed on Transects 0-4, 7 and 8. Approaching Transect 5 I could see the burn from last week had been extended. The second fire occurring sometime between 06.20 and 06.27 consumed about half of the entire 3 Acre site; that is, between T6-10 and from the bankside to the levee toe. This is by far the heaviest burn damage I have witnessed on the south floodplain of the river and within the restoration site boundaries. This clean burn to bare soil from T5 to well beyond T9 can easily be viewed from the Pacific Ave. bridge.

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While there has been encouraging re-growth in the weeks since these two fires one of the worst outcomes was the total loss of seed in the largest and most extensive Creeping Wild Rye patches. The rye is coming back from roots in many locations already but what was shaping up to be the first really exceptional seed crop in the 9½ year span of the restoration was lost for this year. Also consumed in the fire was all of the blooming Gumplant in that area. Gumplant is a major resource for a variety of native bee species most notably the sweat bee, Lasioglossus sp. which is present on the site in large numbers through the summer and well into the fall. One of their main forage areas is gone for this year.

Of course all cover and forage for terrestrial vertebrates such as fence lizards and alligator lizards will be lost for a time as virtually no insects are now present other than a few occasional large aggregations of dragonflies I still see buzzing around over the most heavily burned areas. Not sure what that behavior is about.

One bit of good news is that the fire likely also consumed a considerable volume of invasives’ seed though there is plenty of sign of perennial invasives such as mustard resprouting from roots. The course of the succession over the next months should be instructive. Every burn I’ve seen here (there have been at least five between T5-T10 since 2013) have followed somewhat different paths to the re-establishment of full vegetation cover of any kind. It appears to be a crap shoot whether burns give natives or non-natives any advantage though two recent burns grew back—initially—as pure stands of mustard and wild radish…both non-native/invasives.

If the fresh excavation mounds seen around Transect stake 7 just days post-fire are any indication, the gopher population found refuge underground temporarily but there’s little forage for them nearby now. It is possible they spend a considerable part of the hot Valley summer in estivation and will weather the barren spell with minimal detrimental effect.

I did finish the Daubenmire Survey of Transects 5, 9 and 10 within the next week but there was little to document but burn scar. Another bit of good news is that the arsonist who set both fires was apprehended by SPD according to a report this week from Officer Hammer of the UOP Security Department.

Aquatic invasives are at their summer height with Hyacinth clogging the entire length of the waterway between “The Big Island” and the bank there. This clog for the first time includes several large mats of Water Primrose which--in a wetter climate--will also climb up out of the water and establish itself on land. That does not appear to happening here yet though historically this species has been a serious aquatic and terrestrial pest plant in Florida. It is among several invasives being actively removed in the Delta region. This heavy, mixed species floating mat is definitely denser and entirely unbroken along this ~200m stretch—a first this year.

It is the relatively small, protected pockets of these aquatic invasives—like those resident here on this small area at UOP—that die back to some degree over the colder winter months but that clearly persist as I have documented in several backwater places bordering the 3 Acres. Once conditions improve these mats expand very rapidly, break up during the spring and summer tidal flows and spread aggressively being carried downstream to propagate further.

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And though state agencies do spray here regularly they often miss large patches which quickly regenerate. I’ve come to think targeting these upstream “nursery areas” in winter—especially during low flow years when they are not swept away to colder and/or saltier waters--could have a significant impact on controlling the larger infestations that occur in late summer in the Delta proper.

There has been little evidence of any blue-green algae bloom here but there is an abundance of filamentous algae accumulating. With limited flows since 2017-18 there has been none of the typical winter scouring that had some positive effect on clearing out some of the more undesirable aquatic growth.

While I have no hard data for this site, it is well documented that aquatic environments with such abnormally high organic growth—and the underwater decay that accompanies it—can result in low oxygen conditions that then adversely impact fauna up the food chain.

Two anecdotal observations I have made this year may be a result. Even prior to the two major burns I felt I was seeing fewer dragonflies and damselflies on the site. Both groups have important aquatic immature developmental stages. The presence or absence and population numbers of both can thereby be useful indicators of stream health. Absent a healthy dissolved oxygen regime numbers present and even species diversity have been shown to decline in effected waterways.

In addition to seeing fewer dragon and damselflies, in the past I’ve always been able to observe a variety of common fish species—bluegills, carp, shad, Sacramento suckers and the rare occasional steelhead, for example--from the footbridge but also from vantage points on the bank. Though the hyacinth overgrowth this summer doesn’t make this any easier it still seems to me I am seeing far fewer fish of any kind active in the always clear water typical during this time of the year. Mike Wurtz has reported seeing one or two (likely large carp) on his near daily walks over the UOP footbridge and observed either a muskrat or otter dragging a fish carcass on one occasion recently. This paucity of visible fish in the immediate vicinity is noteworthy and begs further investigation. While I see fisherman periodically I’ve seen no evidence of any catches.

On Monday 08.08.22 I gave USF&W biologist and long-time FCR friend JD Wikert and his new boss, Geoff Steinhart a tour of the site accompanied by UOP Special Collections Archivist and 3 Acres photo documentation collaborator, Mike Wurtz. Geoff and JD both have responsibilities for barrier removal projects on the Calaveras as well as oversight tasks for the Mokelumne and Stanislaus watersheds. JD has been a long-time supporter of FCR—almost literally with us as a consultant since Day One. His continued presence is greatly valued and appreciated particularly for his sincere vocal advocacy on behalf of the Calaveras.

***Calaveras Fish Group & Barrier Removal Updates***

JD also mentioned that The Calaveras Fish Group will soon be convening and so we should get some updates on all the latest upriver barrier removal work as well as the state of plans for the Bellota Fish Passage modifications. There

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is some thought an infrastructure portion of the new federal Inflation Bill may be a source of funds for this ~$85 million project. Word is “shovel ready” projects will be prioritized. The Bellota modifications have been at that stage for at least two years.

The Posey Low Flow Crossing modification work is fully funded and scheduled with just one more agency needing to sign off before construction can begin.