



County of Yolo

PARKS AND RESOURCES DEPARTMENT

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CACHE CREEK TECHNICAL ADVISORY COMMITTEE (TAC) SUMMARY MINUTES For the July 14, 2008 meeting

1. CALL TO ORDER:

Eric Larsen called the meeting to order at 10:03am and gave a summary of the agenda.

Kevin Schwartz announced that he will no longer be running the meetings, but will help facilitate. The Chair of the TAC will now have the responsibility of running the meetings.

Attendees: Laurie Brajkovich, Max Stevenson, Stefan Lorenzato, Lynnel Pollock, Molly Ferrell, John Rosapepe, Yasha Saber, Mark Cocke, Brian King, Jeanette Wrynski, Tanya Meyer, Duane Chamberlain, Dave Pratt, Vance Russell, Darrel Slotton, Barry Cavanna, Erik Ringelberg, Eric Larsen, Tim Horner.

Staff: Kent Reeves, Kevin Schwartz, Holly Malcolm, Tami Leathers, Cody Potts

2. ADOPTION OF MINUTES OF THE PREVIOUS MEETINGS:

The minutes were not ready for this meeting. They will be ready for the September meeting.

3. PUBLIC COMMENTS:

Stefan Lorenzato stated that the Cache Creek Catalogue for Yolo County will be housed at UC Berkeley; it will also be available online. The documents are in various parts. The first iteration for the Cache Creek catalogue will include only documents within Yolo County. The next iteration will include Cache Creek up through Lake County. Until it is available on-line, you will need to contact the Water Resources Association to view the documents.

4. STAFF UPDATE:

4.1 Parks and Resources staff updates:

Kevin stated he is currently processing all of the information gathered from

the creek walk. The gravel inspection reports were due on July 1st and all but one of the aggregate companies were in compliance. The Capay Open Space Park Grand Opening is scheduled for Friday, August 8, 2008. Please send your RSVP's to Holly Malcolm.

Kent Reeves discussed getting on a regular meeting schedule. There won't be meetings held in August or December. Kent also introduced his Woodland High School summer intern, Cody Potts. Cody is interested in Wildlife and looks forward to working with the department.

4.2 Cache Creek Conservancy (CCC) staff updates:

John Watson has started the spray program. They are using money from 2 different grants to work on Ravenna Grass (*Saccharum ravennae*), Purpleloostrife (*Lythrum salicaria*), and Arundo (*Arundo donax*) from the Capay dam to CR 85. Spraying was done in the first part of June at Correll-Rodgers for Whitetop and Cockleburr. Tamarisk spraying will begin in August and cover the entire CCRMP area. They continue to get more landowners to participate in the spraying program. The CCC is submitting another grant to the Wildlife Conservation Board. They have new "no trespassing" signs that are free to landowners along the creek. The Conservancy will help install the signs if the landowners ask. Tim Horner was concerned about funding for the future and being able to continue maintenance on the creek. They are hopeful that they can get these grants.

4.3 Yolo County Resource Conservation District staff updates:

Jeanette Wrynski began the update. Jeanette is the Interim Director for the Yolo RCD, Paul Robins started July 1 with the County of Monterey RCD and Dan Efseaff is the new director. Tanya Meyers gave the rest of the update. The RCD is working with the USDA to count the beetles with an intern hired by the USDA. The paddle from Brooks to the Capay Dam was successful in being able to see the work needing to be done on the creek. There were walls of Arundo and Tamarisk seen along the way.

4.4 Yolo County Flood Control and Water Conservation District staff updates:

Max Stevenson, YCFCWCD, stated there will only be water deliveries until the end of September and no carry over to next year. They have installed monitoring wells right next to wall and several other locations. The study will cost approximately \$100,000. Work will then begin on improving the dam apron. Max discussed work they are doing with the ag waiver program for the Yolo-Solano subwatershed; Pacific Ecorisk and Larry Walker and Associates are working on this program. The Walker Ridge Fire burned 15,000 acres and took out the main communication towers and so the YCFCWCD are back to where they were last year in terms of communications. They have to send personnel out daily to drive up and make communications. However, the communications system should be fixed in a couple weeks.

5. REGULAR AGENDA:

5.1 Overview of Safe Harbor Agreement for Valley Elderberry Longhorn Beetle and Giant Garter Snake by Vance Russell, Audubon California:

Vance Russell gave an overview of the California Landowner Stewardship Program and the Safe Harbor Agreement. The program is working with landowners around the area in restoration efforts. One thing that has hindered progress is actually the cost and time of doing the permits. While the regulations are important, sometimes they make it difficult.

This safe harbor agreement between landowners and Audubon California allows the incidental take of the VELB or giant garter snake on their property in exchange for implementing conservation practices that benefit either or both species.

The agreement eliminates the red-tape for the landowner and allows the permit holder, Audubon California, to conduct the needed surveys and monitoring required by the agreement.

Why do a safe harbor agreement?

Landowners can remove created habitats in the future, and return to the baseline measured in the initial survey, if they so choose. This really acts as an insurance policy for landowners with good intentions. Neighbors can be protected as well if elderberry grows on adjacent property. 75% of land in the US is privately owned. And 75% of rare plants and animals are found on private lands. Successful partnership with landowners is critical for the recovery of species.

Sign up includes establishing baseline data

VELB number of stems >1" base diameter

GGs quantity, quality, location suitable habitat, photo points of habitat, presence of bullfrogs/predators.

Covers incidental take for VELB and GGS and enhancement of survival permit from FWS.

Restoration projects/enhancements

Sign-up with Audubon LSP

Neighbors can sign up adjacent to restore habitat

For Information call 795-2921 or go to www.ca.audubon.org/lsp

The Agreement was just signed 1 year ago.

Mark Cocke, City of Woodland, stated they are interested in working with Audubon California and using the Safe Harbor Agreement. They are interested in having an agreement that would cover their system of levees.

5.2 Overview and update on Mercury issues and history on Cache Creek – Darell Slotton:

Darell Slotton, Shaun M. Aye, Ronald D. Weyand Department of

Environmental Science and Policy and UC Davis report on Hg monitoring program:

The UC Davis Biosentinel Hg Monitoring Program: Feedback Tool for Watershed Management

There were new regulations in the state in the 1980s and Cache Creek became the guinea pig for the state. Darell has been working with the County since 1985 on these issues. He uses small fish and indicator organisms to monitor Hg.

Hg Talk Overview:

Some basics on Hg in general and the CA Hg situation.

UC Davis Hg research in the Cache Creek watershed

Biosentinel sampling; findings from work throughout the state

Conclusions to-date and relevance to watershed managers

California Bulk Hg contamination.

Hg can remain in the air up to 1 year. The Hg arrives in the air mainly as Coal is burned for fuel around the world. The Hg problem in CA began with gold mining since Hg can extract small amounts of gold that were otherwise difficult to get out of the rock. So there was a big Hg rush in order to do the gold mining. During this rush, 7.6 M lbs of Hg were mined mainly from the Coast Range. The main source of Hg now comes from abandoned mines after the Gold Rush ended. Cache Creek can account for 50% of the Hg problem in the Bay Area, this is a huge concern. Darell discussed the Hg cycle and that Methyl Mercury (HgCH_3 , MeHg) accounts for <1% of Hg found in water. Methylization is a natural process, because it is a bacterial by product once methyl sulfide becomes oxidized. Darell has been working with the state for the last 8 years because there is a huge amount of wetland restoration going on and wetlands are a big producer of Hg.

Darell discussed the trophic levels of consumption of the food web and concentration of Hg each step of the way up the web. Like DDT, Hg does not get excreted by most levels of the food chain, but accumulates in tissue. Each trophic level you go up results in at least a 5 fold increase in Hg concentration in tissue; so, as you move up the food chain concentrations of Hg increase by 1M fold. Humans cannot get sick from Hg in water, but eating fish at the top of the food chain is very dangerous. In wildlife it is a huge concern, because they don't have a choice for their diet. Hg affects the nervous system development of embryos.

Darell's group samples fish at the base of the food chain. They have conducted Davis Creek Watershed Studies since 1985. It was obvious that

with the new Homestake Gold Mine in a place where a previous Hg mine was there would be a huge Hg problem. After putting in the Davis Creek Reservoir, they have been able to stop annual Hg loading calculated up to 256 kg Hg/yr. The Total estimated annual Hg load to the Delta: 800kg/yr.

What happened is that the fish on the reservoir skyrocketed in their mean muscle Hg with 95% confidence intervals. There are annual cycles where the anaerobic bottom water every year turns over causing spikes in the Hg.

One reason not to have deep gravel pits is that you can wind up with turnover problems. This reservoir is only 80ft. deep and it has problems. Differences in small fish Hg at closely located sites can be large. There are differences between species, but they try to be consistent when sampling for Hg to use the same species or have overlap. Because of this they use many different species of fish.

Study Invertebrate and Fish Biosentinel Hg in NW Sierra Nevada Watersheds (1993-1996).

After 100 years there is still a strong signal of residual bioavailable Hg. All are centered on historic gold mining zones. Cleaning up the area in the Sierras is unlikely, because all the sites are so spread out and the Hg problem is everywhere. Interestingly, the atmospheric deposition is minimal compared to spikes seen near old mine sites.

In the middle of the Delta there are very low concentrations; they sampled Inland or Mississippi Silversides.

Slotton's group received support from CalFED through the Central Valley Regional Quality Control Board. They asked the question: Is there any correlation between measuring water Hg and measuring Hg in fish. For 3 years, the study sampled the Cache Creek watershed and primary Hg point sources. They found that Turkey Run and the Aboot Hg mine which are part of the Sulfur Creek Hg mines and geothermal complex and which don't have a dam below them are a high source of Methyl Hg for Cache Creek, versus the Indian Valley and Clear Lake Reservoirs.

The study looked at Invertebrate MeHg vs aqueous Hg fractions (all watershed site-samplings).

Aqueous Raw THg and Aqueous Filtered THg correlated to concentrations in invertebrates, but the correlation was largely driven by two clusters of low and high numbers. For Aqueous Raw MeHg and Aqueous Filtered MeHg saw some correlation. Some of correlations were site specific, however. They used small, young fish as localized time-sensitive measures of MeHg exposure and this allows us to get to spatial patterns to a local scale, interannual trends and variability, within-year seasonal trends, performance measured by restoration and remediations.

Overflow into Yolo Bypass and North Delta Sites in restoration sites.

Slotton's group studied Hg issues related to open water areas versus wetland areas. Darell believes our current expensive sampling of Hg of open water is not useful. Marsh areas were the lowest areas for Hg. There were hot spots in some upland episodically-flooded wetlands; often not seen in daily-flooded tidal wetlands. Petaluma marsh was found to be the biggest hot spot. Why is it a hot spot and how does this correlate with other patterns? In an upland tidal marsh, the marsh goes dry for a couple weeks. When the soil is exposed to oxygen, Hg changes form to the more dangerous MeHg. So, when the soil gets wet again MeHg flows out of the system. On Sacramento River, they use sculpin, a local species of fish to study Hg. There was a doubling in this species between Chico area and Delta of Hg concentration. 1 ½ mile up stream Sacramento Regional Discharge there was no difference from downstream. Sampled up and downstream of American River and found the same results. So, they looked up and downstream of the Colusa drain and found the smoking gun of episodically drained and farmed rice fields and duck ponds that were the source of Hg. Now they are exploring ways to keep water in the system rather than having this water drain into the Sacramento River.

Slotton's group is now doing seasonal sampling, because Hg concentrations change considerably during the year and also change hugely between flood years and non-flood years and also after flooding fields that haven't been flooded in a while. They found that sediment sampling doesn't correlate to what you are going to see in fish.

Slotton's group sampled the operating ponds at Solano Concrete. They found that the deep pond stays oxygenated because they are constantly stirring up the bottom of the pond with new effluent being added, so these deep ponds are not problems, and act the same as shallow ponds.

For 6 years, Slotton's group has monitored at the Cache Creek Nature Preserve (CCNP). They have sampled upstream from the CCNP, Gordon Slough, and downstream. The fish at CCNP have 2 times as much Hg concentrations, but there is no downstream effect because the water stays in the CCNP. The mayflies and caddisflies close by are more concentrated with Hg, but further downstream there is not a problem.

Wetland Restoration Options on Cache Creek.

If water is allow to continually flow through ponds, this would prevent methyl mercury problems. With ponds disconnected from Cache Creek that are deep and shallow ponds, you can add aeration plumes that disrupt the column of Hg that causes methylation. While creating a connected breach is good habitat, it can lead to Hg problems. However, on Cache Creek this might not be a problem, because we get most of our flow in the winter.

Monitoring is an important component of any restoration project involving

connected breaches to lessen any concerns about restoration and its effect on Hg.

Wetlands can increase MeHg production and bioaccumulation in fish. The effect is largest with seasonal flooding, vegetation, and warm temps. Downstream effects can be minimized or eliminated by timing or curtaining outflow. MeHg production in deep ponds may be mitigated by disrupting bottom anoxia. Restoration projects can be managed to balance mercury concerns and habitat benefits. Careful monitoring can track effects, locally and downstream.

6. SET DATES FOR FUTURE MEETINGS:

Monday, September 8, 2008

7. ADJOURNMENT:

The meeting was adjourned at 12:00pm.