Technical Advisory Committee (TAC) meeting notes – September 7, 2010
Chair: Tom McCubbins
Tom McCubbins opened the meeting with self introductions. The following were in attendance: Rebecca Funes, Mary Fahey, Liz Brackmann, Bill Graves, Mark Dettling, Dan Frisk, Joe Silveira, Gregg Werner, Dave Brown, Fraser Shilling, Scott Rice, Tony Chappelle, Michael Rogner, Dave Wood, Peter Coombe, Ashley Indrieri, John Merz, Eric Larsen, Rob Irwin and Ellen Gentry.

Announcements

Colusa Glenn Subwatershed Program - Copies of their newsletter were provided, which contained an article on the Long Term Irrigated Lands Regulatory Program. The group also submitted a proposal on behalf of irrigated landowners in the Colusa and Glenn County area for the Agricultural Water Enhancement Program (AWEP). Notification was received and $5,999,000 in AWEP cost-share funding will be available for water quality and conservation projects over the next five years. For more information, contact Rob Vlach, NRCS District Conservationist in Glenn County at 530-934-4601x3, or Andrea Casey, MRCS District Conservationist in Colusa County at 530-458-2931x3.

Activity Reports

PRBO Conservation Science - Mark Dettling provided copies of "Bringing the Birds Back - A Guide to Habitat Enhancement for Birds in the Sacramento Valley". During the past year PRBO has been conducting surveys for the state endangered Yellow Billed Cuckoo. The last survey took place in 2000. They are surveying 1500 points, four times during the breeding season. USFWS refuges and TNC properties are included in the surveys. The final survey numbers will be tabulated, and PRBO is exploring funding options for future surveys.

DWR - Scott Rice gave a brief update on the CVFPP Phase 2 Management Action Workshops taking place in the last two weeks, including Small Communities Considerations and Rural/Agricultural Areas Considerations.

Hamilton City Project - Gregg Werner gave an update on the project which will build 6.8mi of setbacks, reduce the flood risk to Hamilton City, and restore ~1,400ac of land between the levee and the Sacramento River. The Project is at 90% design now. There will be no drafts available until USACE knows about funding; last year was the first year for funding. TNC is partnering with RD2140, working on land acquisition. Options involve four different properties expected to close in January. $4M is needed to start construction.

FWA Fish Screen Program - Ashley Indrieri reported that construction is set for three fish screen projects in Colusa, Sutter and Yolo County this fall. Construction will occur on three additional projects in 2011 and five in 2012. We are also selecting additional sites for 2012 on the Auburn Ravine and Feather River.

Furlan Mitigation Project - Rob Irwin reported this project has been entered into Project Tracker (PT157). He reported SRCAF has been having coding issues with Project Tracker, but is working with CSUC to resolve them.

New Projects or Proposal Review

There were no new projects at this time.

Current Projects/Updates

Geomorphic Analysis of the Sacramento River - Eric Larsen, UC Davis, gave a PowerPoint presentation on Channel Dynamics Analysis Monitoring. Eric reported many ecological processes depend on the geomorphic functioning of the channel. The Sacramento River meander migration is a key process for many important ecosystem functions on the Sacramento. Examples include: 1) vegetative establishment for the riparian forest, 2) floodplain creation through progressive meander migration, 3) habitat creation (i.e., bank erosion for swallow habitat), and 4) the creation of off-channel habitats (e.g., oxbow lakes, side channels, and sloughs) by progressive migration and cutoff processes. A suite of geometric attributes were measured on each of the channel centerlines in his study. A mathematical algorithm was used to calculate curvature values every 0.25 channel widths (approximately every 60 meters) along centerlines for each year. An ArcView script was used to analyze the curvature for identifying inflection points. Scorecard Indicators included: total river length, total river sinuosity, entrance angle, line distance between inflection points, bend migration rate and the area of floodplain reworked. The rationale for these being meaningful indicators: Characterize the river's ability to create new floodplains;

dynamic river processes (e.g., erosion sediment deposition) revitalize riverine habitats that are beneficial to native flora and fauna; cottonwood and willow forests naturally regenerate on freshly deposited floodplain surfaces, and salmon and other aquatic species benefit from fresh gravel inputs. Eric's PowerPoint is available on the SRCAF website at: http://localhost/SRCAF/index.php?id=sacmon

Vegetative Analysis of the Sacramento River - Dave Wood, CSUC Chico, gave a PowerPoint presentation on his own work and work performed by Karen Holl, UC Santa Cruz. One of the research questions was: Are planted restoration sites trending toward high quality riparian forest (native species, good complexity, minimal non-natives)? With a variety of methods used, the conclusions of how restoration of riparian forests were succeeding included: where soil conditions permit, forest growth continues to be good and appears to achieve the desired habitat complexity for wildlife; both total basal area and stem density are strongly related to refusal type (sand, gravel, water); plots with no or limited forest development in 2003 remained that way in 2008 and understory vegetation remains non-native; and invasive species (California black walnut, *Arundo*, edible fig, star thistle) remain minor components, but are increasing.

Dave included information on Karen's portion of the PowerPoint, involving natural vegetation establishment on gravel bars. Again, after using a variety of methods, the conclusions were that most of the colonization occurred where the relative elevation above the low-flow river was between 1.0 and 1.7m.; comparisons among years show that the net establishment of vegetation is low; and that erosion is significant, although some pockets of early establishment in 2002 have developed into mature willow and cottonwood forest.

While monitoring understory plant species at numerous sites, analyses indicated understory cover increased from 2001 to 2007; changes in native understory cover were variable across sites but, overall, native cover did not increase over time; and increasing cover in some sites was largely due to increase in the widespread species *Galium aparine* (bedstraw). Factors affecting native establishment included overstory cover, exotic understory cover, native understory cover, distance from the river, and the surrounding forest. Conclusions and recommendations were: the need to actively plant most native understory species and continue monitoring survival and natural establishment; some species naturally establish nearer to the river and near remnant forest so plantings should be tailored to site conditions; Overstory shading is an effective way to control most exotic species; and wait to plant some species until overstory cover has shaded out exotics. Dave and Karen's PowerPoint is available on the SRCAF website at: http://localhost/SRCAF/index.php?id=sacmon.

Sacramento River Monitoring Plan - Fraser Shilling, UC Davis, gave a PowerPoint presentation on the mapping assessment program which is at 80% completion. His work is intended to quantitatively assess the extent to which restoration activities have impacted the overall health of the Sacramento River ecosystems between Colusa and Red Bluff. The monitoring plan will evaluate SRMAP research datasets to develop monitoring strategies for terrestrial vegetation, landscape changes, geomorphic condition and biotic response. This evaluation will identify indicators of these environmental conditions and of management performance, through the use of analytical and statistical techniques. The data used will come from the vegetation mapping and change detection work from UC Davis and the GIC, channel morphology and dynamics work by Dr. Eric Larsen, UC Davis, and an evaluation of riparian vegetation characteristics in restored and remnant sites conducted by Dr. Karen Holl, UC Santa Cruz, and Dr. David Wood, CSU Chico. Song bird and Chinook salmon population trends will also be incorporated in the plan development. The monitoring plan is set to be completed by the end of 2010.

Sacramento River Ecological Scorecard - Gregg Werner, TNC, gave a PowerPoint presentation on the scorecard, which is a method for assessing the status of ecological resources, characterizing trends and evaluating the success of implemented projects. The framework is built upon quantitative data and is a means for integrating and synthesizing diverse scientific information. The geographical focus has been the Sacramento River, between Red Bluff and Colusa. SRMAP components include channel and floodplain dynamics, vegetation, birds and VELB. Other available information can include riprap, bats, bees and large woody debris.

The scorecard was developed by staff at TNC as part of the Conservation Action Planning Workbook. This conservation planning methodology is done for landscape-scale projects, such as the Sacramento River Project. The basis for this planning is a set of identified Conservation Targets, such as terrestrial riparian habitat, aquatic riverine habitats, birds and anadromous fishes. For each of the Conservation Targets there are definitions and habitat associations in the workbook. Gregg also shared Scorecard Indicators for the three conservation targets. The Scorecard included information on how specifically the indicator is defined, rationale for it being a meaningful indicator, references that support its use as an indicator of river health, ratings values, current measurement and status, methods and previous values (trend data), effect of

restoration, goals and anticipated change if acquisition/restoration goals are met. Much of the information is captured in the archival framework that is hidden within the workbook.

Positive outcomes of the information generated showed: strong increase in forest patch core size, area of Fremont cottonwood forest, length of river with conservation ownership on both banks; and a mild increase in area of valley oak woodland and area of riparian scrub. Things to be concerned about included strong increase in area of black walnut and in area of Himalayan blackberry; mild but continued long-term increase in meters of bank with riprap; strong decrease in number of bank swallow burrows, number of in channel large woody debris aggregations; and decreases in nest survival of Black-headed Grosbeak and lazuli Bunting.

Gregg concluded with some take home messages: monitoring and synthesis of information is important, broad baseline of information is now archived and available, and the scorecard is not intended to be a prescription for all that needs to be done - a subset of core information needs are identified in the monitoring plan. A Poster Cluster focusing on the Scorecard, Monitoring plan and River Dynamics Indicator will be presented at the Bay Delta Science Conference September 27-29 at the Sacramento Convention Center. More detailed information on the scorecard can be presented to the TAC at a future date, if desired. For more information contact Greg Golet, TNC, (530) 897-6370x212, ggolet@tnc.org.

Next Meeting Date and Location

The next TAC meeting was scheduled for 9:30-12Noon, October 5, at Willows City Hall.