Review of 2004 Upper Putah Creek Watershed Study by 2008 Technical Advisory Committee
Chairman's Summary

Has the 2004 report functioned as an objective problem-solving tool that identifies the potential causes of problems?
Yes, to some extent it has. In reviewing scientific knowledge of the watershed, it only hints at causes of problems, but does describe the nature of current problems.

Does the report interpret watershed information and data, leading to conclusions about watershed conditions?
No, but it has prompted action by the UPCS in reporting to the public on watershed conditions based on new data/analysis based on bioassessment. Much of the 2004 report is in the form of maps, which in themselves are the first steps in data interpretation.

Does the report identify information gaps?
Yes. Most notably in stressing the paucity of data from the western portion of the watershed, where it hints there exists some mysterious impairment of fish habitat.
Only one area impacted by septic systems is discussed, Anderson Springs, other areas might be of concern.
The Corps of Engineers studied only one-third of the watershed, the area with the most demonstrated problems; this surely suggests an information gap

Have the analysis and findings been used to develop appropriate actions?
Yes, the report has prompted data-gathering and public outreach. It has been cited in support of the grading ordinance and in prompting flood-hazard analysis.

Has the report become a watershed management package that leads to planning, implementation, evaluation, and additional monitoring?
Yes. It has paved the way for funding on citizen monitoring of nutrients and mercury in sediments.
More generally, it is the first step in a plan that might tie growth to water availability.

Is the 2004 study a product that is useful for its audience?
Yes, it presents a broad view of geology, watershed features, and watershed processes.

How could the study be improved on in the current watershed assessment?
The current technical advisory committee recommends the assessment team:
Examine, to some extent, the whole watershed from the headwaters to Lake Berryessa.
Develop new flood hazard maps.
Update Rainbow Trout and Western Pond Turtle data.
Develop current lists of species and places of cultural significance.
Incorporate new hydrological models.
Examine changes in use of agricultural lands.
Identify point and non-point sources of pollution.

Individual Comments

JON LEE'S COMMENTS

Colleagues,

Obviously a lot of time and effort went into this. I must confess, I didn't study each chart and table (!) but a valuable reference.

A lot of good information. Will have to take another look but these points stood out for me:

1. "27 miles of Upper Putah Creek are affected by an impairment of an unknown toxicity." Has this unknown toxicity been determined since the report was published?

2. The eastern part of the Upper Putah Creek has been more impaired and studied than the western portion. Seems an assessment from the headwaters to Lake Berryessa would be of value.

3. Expansion of agricultural land. The report mentions any flat land with a water supply is potential agricultural land. Is this the heart of the issue?

Regards,
Jon Lee

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Comments from Dwight Holford

2004 Upper Putah Creek Watershed Study

The purpose of these notes is to make sure that I have recorded my opinions on this matter. These notes will be added to the work that Dr Harry Lyons is doing with the TAC.

Section 3 Geology will be covered by Dean Enderlin
No doubt he will seismic activity to his concerns

Section 4 Geology will be covered by Dean Enderlin
Human History of the Upper Putah Creek Watershed will be covered by Chris Simon
Watershed Features and Processes US Army Corps of Engineers

Section 5 Watershed Features and Processes
The COE chose to study the area around Coyote Valley, Callayomi Valley and Long Valley because this area has had most of the demonstrated problems. This constitutes a 112 square mile area out of the 285 square mile total. The 112 figure

come from what the Guenoc USGS flow gage covers in square area. This area is than a little more than one third of the entire watershed and also confines the main problems to Lake County. Tom Smythe and Korinn Smith will be the main commenters on this section.
For Lev COE used their HEC-HMS Version 2.2.1 model to work the data.

Section 6 Flood Hazard Tom Smythe new maps will be provided.

Fish in the Upper Putah Creek Watershed Get copy of FB179 from CA DFG. Important work relating to our area on Rainbow trout.

Vegetation See page 81 " future analysis ,sub-areas can be analyzed as needed." We need to figure out which areas need more investigation and a what level. Also see Lake County Land Trust priority list. It lists Dead Horse Flats.

Wildlife and Habitat Skip Kruse Herpetology

Is the California Wildlife Habitat Relationship model good enough for our assessment. We know we are going to add to our amphibian and reptile studies. Update the Western Pond Turtle data.

Encroachment on Streams

Septic Systems Anderson Springs is the only area addressed by this study. All other areas that are not served by a sewer system should be studied. Health Department needs to be involved. What is status of Berryessa Estates? Septic or sewer?

Fire in the Upper Putah Creek Watershed
It would be appropriate for CalFire to review the data.

Agricultural Land Korinn Smith
The future expansion of agriculture depends on what the water data shows. Resource Assessment Checklist. Is this the latest?

Identified Concerns
Flooding New maps from Tom Smythe
It can be assumed that that the Davis model will supplant the NRCS model. Will the data be similar? The Davis model calculated the area to be 274 square miles (ArcView).

Erosion and Sediment
Add in the new Grading Ordinance

Water Quality
I think we have a strong water quality program; we have added in nutrients and mercury sediment and will be doing extensive bioassessment.
Water balance is the new thing that we want to put a lot of effort in. This properly used will be an aid in keeping growth tied to water availability.
We also need to be aggressive in the IRWMP program. Most people think that this is the future conveyor of all grant monies.
The other big push is that we should make every effort to get on the California 303(d) for impaired water bodies. If we really have a problem, and we don't know this yet, we need to be in a position to where we can take the appropriate action.

Beneficial Uses
No change needed.

Threatened and Endangered Species.

All of this data needs to be updated. This item is the most volatile of them all. It needs an even hand, well thought out approach. Nothing important should be left out.

Conclusions Fold in present conclusions into final conclusions.

Appendices, Glossary and Bibliography, change or add to as appropriate.

Review of Upper Putah Creek Watershed Study — Harry Lyons — 21 April 2008

This was a well-sewed quilt of information. Who sewed it? I assume it was Holford & Dills, but in the upcoming assessment we should squarely lay the blame for this high-quality work.

In my opinion, the body of the document presents information of two types: that which does not need updating and that which does. Has the basic biology, geology, ecology, and hydrology of the region changed? If not, the assessment can let such topics stand and address current issues:

1. Is there any earth-shaking, biota-baking literature to review on the region? Do we have any data on 21st Century flooding, local peak flows after 1997? The assessment should hazard an educated guess on how flows will change with probable warming.

2. How effective are civic actions? In 1989 the Lake County General Plan called for restrictions in flood plains, in 1988 the DFG protested appropriative water right applications, in the 1990s the Anderson Springs Study forwarded recommendations, and we now have a road grading ordinance. The assessment should describe why the watershed looks different as a result of all this talk and typing.

3. The Study suggests there is a West/East split in terms of historical data on stream flow and water quality. Elsewhere it hints at some mysterious impairment of fish habitat in the west end. The assessment should report on how our efforts in the UPCS added useful information on the western watershed.

4. Does anyone still use the Resource Assessment Checklist and the Index of Watershed Indicators? Are there new forms and protocols even more massive? If so, they should be used in the new study.

5. We await hydrological models. I have no doubt they are new and also improved. In the old study, the models stood alone, like an expensive date unwilling to dance. The watershed assessment must tie the models to other sections of the study, show their value.

Comments, questions, and answers from Korinn Smith, NRCS – April 30, 2008

The section on agricultural land needs updated. The new crop reports from the Ag. Commissioner will have the needed info for county Ag since 2001.

Prime farmland should not have changed, so that information should be up to date. Dwight – Do you have the electronic files for the maps included in this section? Should I be trying to find those from NRCS State Office?

To answer question 4 in Harry's comments, Yes, NRCS still uses the Resource Assessment Checklist. I will get the most recent version to everyone.

Chris Simon Comments
Preliminary PSP REVIEW FOR TAC

The following are components I believe (keeping in mind that I believe that a perfect world exists somewhere) are missing or incomplete in the PSP and need to be addressed in our watershed assessment.

Cultural: Tribal & Pioneer

- **Indigenous Territory**
- **Plants of Significance**
- **Species of Significance**
- **Places of significance**

Point and Nonpoint Sources

- **Mercury Mines / History**
- **Geothermal Development, Releases and Ponds**
- **Pesticides / Vineyards /Roadside Spray**

Potential Groundwater Recharge Areas

Potential buffer strips

Update Inventories

- **Botanical and Biological Components**
- **Plants, Birds, Animals**
- **Inventory of invasive, Plants - Quagga mussel – ect**

Historical-Pre Dam Fisheries Data (HITCH?)

Past, Present & Proposed Projects (a time line…wish list?)

Where does Restoration measures for plant and animal communities go?

Stakeholders (a list of organizations active in our watershed)

- **Fishing organizations**
- **Non Profits – Land Trust, Sierra Club, etc**
- **Landowner Associations**

- **Water Districts**

My dream assessment would be how the CWAM authors stated:

What an Assessment Is

- An objective problem-solving tool that identifies the potential causes of problems
- The scientific interpretation of watershed information and data, leading to conclusions about watershed condition
- A tool to help identify data and information gaps
- Analysis and findings that can be used to develop appropriate actions
- A component of a watershed management package that leads to planning, implementation, evaluation, and additional monitoring
- A product that is useful for its audience

What an Assessment Is Not

- Monitoring and data collection only
- A list of data only
- A consolidation or summary of existing information only
- Historical conditions or "baseline" only
- An identification of symptoms of problems only
- A plan
- An endpoint

Just extra garb . . .FYI

Resources available Regarding Hitch in the UPC Watershed:

California Department of Water Resources. **Clear Lake Water Quality Investigation**, Sacramento, CA, California Department of Water Resources, 1966 Bulletin 143-2. W750 B9 no. 143-2

California Department of Water Resources. **Clear Lake Water Quality Data**. Sacramento, CA, California Department of Water Resources, 1975. W750 C48

CIS US Serial Set Index, 1789 – 1969, Washington, DC, Congressional Information Service. Reference/Index table

CIS Index to Congressional Publications and Legislative History, 1970 – present. Washington DC and Bethesda, MD, Congressional Information Service. Reference/Index Table

CIS US Serial Index, Index and Carto-Bibliography of Maps, 1789 – 1969. Congressional Information Service, Washington, DC. Reference/Index Table

Climatological Data, California, Asheville, NC, National Oceanic and Atmospheric Administration. C55.214/6: Reference – for in library use only.

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Macedo, Richard. "Swimming Upstream Without a Hitch," **Outdoor California**, January/February 1994, vol. 55, No. 1, pages 1-5. F650 O8 v. 54-55

Moyle, Peter B., et al, **Fish Species of Special Concern in California**, Sacramento, CA Department of Fish and Game, 1995. F 660 S63 1995
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Rostlund, Erhard, **Freshwater Fish and Fishing in Native North America**, Publications in Geography, No. 9, Berkeley and Los Angeles, University of California,1952. U300 P9g

Geological Survey (U.S.) **Lakeport quadrangle, California--Lake Co**. Washington, DC: United States Geological Survey, Various dates. Map

Week, Larry E., **Habitat Selectivity of Littoral Zone Fishes at Clear Lake, California**, Sacramento, CA, Department of Fish and Game, 1982. F660 A3 82-7

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The fish and wildlife resources of Anderson Marsh, Clear Lake, Lake County.
[Sacramento, Calif.] : State of California, Dept. of Fish and Game, [1975] F650 .A68

Mercury concentrations and loads from the Sacramento River and from Cache Creek to the Sacramento-San Joaquin Delta Estuary.
[Sacramento] : California Regional Water Quality Control Board, Central Valley Region, [1998] W425 .M47

Methyl mercury in northern coastal mountain lakes : guidelines for sport fish consumption for Clear Lake (Lake County), Lake Berryessa (Napa County), and Lake Herman (Solano County) / by James W. Stratton ... [et al.].
Berkeley, CA (2151 Berkeley Way, Berkeley, 94704-1011) : State of California, Dept. of Health Services, Hazard Evaluation Section, Office of Environmental Health Hazard Assessment. [1987] H929 .T6 M47

Physical, chemical, and isotopic data for samples from the Anderson Springs area, Lake County, California, 1998-1999 [microform] / by C.J. Janik ... [et al.].
Menlo Park, CA : U.S. Dept. of the Interior, U.S. Geological Survey ; [Denver, Colo. : Branch of Information Services, distributor], 1999. I 19.76:99-585

California. Dept. of Fish and Game. **The feasibility of establishing a waterfowl management area at Clear Lake, Lake County : report to the Legislature of California re: Senate Concurrent Resolution no. 37.**
[Sacramento? : s.n.], 1966. F650 .W4c

California. Dept. of Water Resources. **Lake County investigation.**
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[Sacramento] : The Commission, 1979. E2015 .B691

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Sorenson, Stephen K. **Water-quality assessment of Cache Creek, Yolo, Lake, and Colusa Counties, California microform / by Stephen K. Sorenson and Ann L. Elliott ; prepared in cooperation with the California State Water Resources Control Board.**
Menlo Park, Calif. : U.S. Geological Survey, [1981] I 19.76:81-677