

TMDL Project Status & Schedule

Task	Subtask	First Draft	Final Draft
Task 1 - Prepare TMDL Technical Document	1.1 – Background	X	Final Drafts of Background & Problem Statement Complete (2016)
	1.2 – Problem Statement	X	
	1.3 – Numeric Targets	X	
	1.4 – Source Assessment	X	
	1.5 – Linkage Analysis	In Review (Comments due June 26)	July 21 - Final Drafts of all 6 Sections
	1.6 – Allocations	X	
	1.7 – Implementation Plan	October 15	December 1
	1.8 – Monitoring Requirements	November 1	December 1
	1.9 - References	Currently included in sections as a list of references or footnotes	July 21 – included with Sections 1-6
	Complete TMDL Technical Report – Targeting December 22, 2017		
Task 2 – Prepare Substitute Environmental Document	Draft and Final SED	January/February 2018	April/May 2018
Task 3 – Prepare Economic Analyses	Draft and Final Analysis		
Task 4 – Establish Administrative Record	Compilation of Administrative Record	Ongoing	
Task 5 – Prepare Final Documentation	Basin Plan Amendment Package	July 2018	

The background of the slide is a light gray gradient with several realistic water droplets of various sizes scattered across it. The droplets have highlights and shadows, giving them a three-dimensional appearance. The text is centered on the page.

REVISED/UPDATED TMDL FOR LAKE ELSINORE AND CANYON LAKE

SUMMARY OF REGULATORY PEER REVIEW

PURPOSE

- ASSESS COMPLEXITY AND IMPROVE CLARITY
 - 3 LAKES
 - DYNAMIC CONDITIONS
 - MULTIPLE CONFOUNDING FACTORS
- EVALUATE REGULATORY ACCEPTABILITY
 - TMDL TARGETS
 - COMPLIANCE AND IMPLEMENTATION STRATEGY
- NOT A FORMAL SCIENTIFIC PEER-REVIEW

REVIEWER #1

- CURRENT MEMBER OF COLORADO WATER QUALITY CONTROL COMMISSION
- BOARD OF DIRECTORS FOR NACWA & WESTCAS
- FORMERLY RESPONSIBLE FOR REGULATORY COMPLIANCE AT DENVER METROPOLITAN WASTEWATER RECLAMATION DISTRICT - *RETIRED*

REVIEWER #2

- FORMER MEMBER OF CO WATER QUALITY CONTROL COMMISSION
- ATTORNEY W/ 40+ YEARS SPECIALIZING IN CWA COMPLIANCE (CA & CO) – *RETIRED*
- PAST EXPERIENCE IN SANTA ANA WATERSHED

BOTH REVIEWERS

- DEEP UNDERSTANDING OF WQS, 303(d), TMDLS
- CONSIDERABLE EXPERIENCE W/ NUTRIENT ISSUES
- INTIMATELY FAMILIAR W/ ARID WEST HYDROLOGY
- SMART, OBJECTIVE AND PRAGMATIC
- CREATIVE PROBLEM-SOLVERS

BACKGROUND DOCS PROVIDED

- 2004 TMDL AND RELATED STAFF REPORTS
- PETITION TO REVISE THE 2004 TMDL
- SUMMARIES OF POTENTIAL TMDL REVISIONS
- TMDL INTERIM COMPLIANCE REPORT (2016)
- DRAFT OF THE REVISED TDML (CH. 1-6)

PROCESS

- REVIEW BACKGROUND MATERIALS (2 WEEKS)
- DAY-LONG MEETING IN DENVER (APRIL 24TH)
 - CONFIRM UNDERSTANDING
 - TEST RATIONALE AND JUSTIFICATION
 - SEEK SUGGESTIONS AND ADVICE
- WRITTEN SUMMARY OF KEY RECOMMENDATIONS
- TEAM DE-BRIEFINGS TO IDENTIFY & IMPLEMENT

REVIEWERS UNDERSTOOD:

- THE WATER QUALITY STANDARDS
- THE BASIS FOR THE ORIGINAL TMDL
- THE DYNAMIC LAKE & WATERSHED HYDROLOGY
- THE COMPLIANCE AND ATTAINMENT CHALLENGES
- THE REASONS FOR REVISING THE TMDL
- THE PROPOSED APPROACH
- THE CONCERNS RE: REGULATORY APPROVAL

EXPLAIN AND EMPHASIZE:

- NATURAL CONDITIONS (ESP. LAKE ELSINORE)
- IMPORTANCE OF INTERNAL SEDIMENT LOADS
- PRACTICAL CONSTRAINTS ON IMPLEMENTATION ALTERNATIVES
- BEST ACHIEVABLE OUTCOME
- PRECEDENTS AND PERIODIC REASSESSMENT

NATURAL, PRE-DEVELOPMENT CONDITIONS

- **LAKE LEVEL FLUCTUATES GREATLY**
 - LIMITED, IRREGULAR PRECIPITATION
 - EXTREME EVAPORATION: –4 FEET/YR.
 - PERIODICALLY DRIES-UP ENTIRELY
- **WATER QUALITY IS ALSO HIGHLY VARIABLE**
 - EVAPORATION CONCENTRATES POLLUTANTS
 - ELEVATED SALINITY INTERFERES WITH BIOLOGY
 - WIDE RANGE OF ALGAE CONCENTRATIONS
- **NATURAL LIMITATIONS ≠ “IMPAIRED”**

SEDIMENT LOADS DRIVE EVERYTHING

- SEDIMENT LOADS DWARF ALL OTHER SOURCES
- NO ASSIMILATIVE CAPACITY FOR MORE NUTRIENTS
- LAKES EUTROPHIC EVEN IF ZERO EXTERNAL LOADS
- DECADES REQUIRED TO NEUTRALIZE EXISTING SEDIMENT LOADS
- REDUCING INTERNAL CYCLING RATE MORE EFFECTIVE THAN REDUCING EXTERNAL LOADS

PRACTICAL CONSIDERATIONS

- CANNOT AND SHOULD NOT RETURN TO PRE-DEVELOPMENT VOLUME OF RUNOFF
- MUST PROTECT EXISTING USES & WATER RIGHTS IN CANYON LK.
- FEW EFFECTIVE OPTIONS TO REDUCE EXTERNAL LOADS
- WATER QUALITY “CRASHES” BELOW 1230’ - REGARDLESS
- NEED MORE RECYCLED WATER; TAKES TIME
- MORE STRINGENT REQUIREMENTS DOES NOT RESULT IN BETTER IN-LAKE WATER QUALITY

BEST POSSIBLE OUTCOME

- WHAT ARE WE TRYING TO ACHIEVE OR PROTECT?
- WATER SUPPLY, RECREATION AND HABITAT: WATER IS ESSENTIAL
- NARRATIVE OBJECTIVE: TARGETS MUST BE ATTAINABLE
- WATER QUALITY BETTER THAN OR EQUAL TO THAT WHICH WOULD OCCUR UNDER NATURAL CONDITIONS
- RECYCLED WATER PRODUCED USING BAT
- USE PROTECTION BETTER THAN THAT WHICH WOULD OCCUR UNDER OTHER REGULATORY ALTERNATIVES

PRECEDENTS AND REASSESSMENT

- FINDINGS AND CONCLUSIONS ARE NOT NEW AND ARE CONSISTENT W/ PREVIOUS STATE AND FEDERAL STUDIES
- EXAMPLES FROM OTHER STATES OR REGIONS
- CITE EARLY SUCCESS OF PROPOSED APPROACH
- PHASED IMPLEMENTATION & ADAPTIVE MGT. FRAMEWORK
- PERIODIC REASSESSMENT OF TMDL AND PERMITS
- UNIQUE CIRCUMSTANCES MERIT NON-TRADITIONAL APPROACH

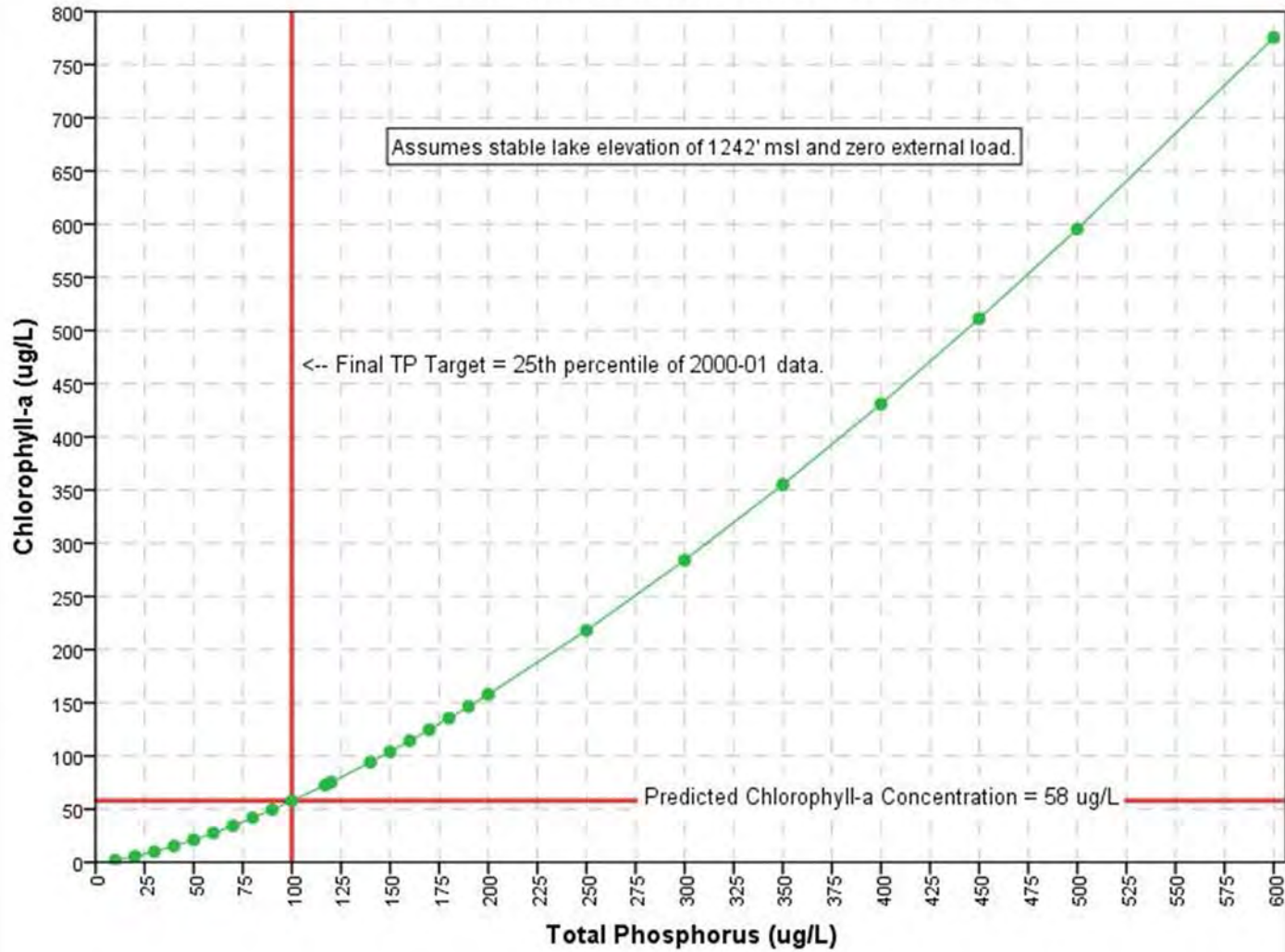
GOOD QUESTIONS

- WHY NOT DESIGNATE “WARM” AS AN INTERMITTENT USE?
- WHY NOT DO A UAA TO RECLASSIFY THE BENEFICIAL USE?
- WHY NOT A SITE-SPECIFIC WATER QUALITY OBJECTIVE?
- WHY NOT A LONG-TERM COMPLIANCE SCHEDULE?
- WHY NOT A WATER-BODY VARIANCE?
- WHY NOT A DISCHARGER-SPECIFIC VARIANCE?

OTHER KEY ADVICE:

- EXECUTIVE SUMMARY TO FRAME THE ISSUES
- DESCRIBE NATURAL, PRE-DEVELOPMENT WATER QUALITY CONDITIONS IN GREAT DETAIL
- MORE PICTURES
- GRAPHS: TIME-SERIES & HISTOGRAMS BEFORE CDFS
- DEVELOP A TRUE, CEQA-STYLE ALTERNATIVES ANALYSIS
- DON'T LET THE MAIN STORY GET BURIED IN TECHNICAL DETAILS OR EXCESSIVE EMPHASIS ON LEGAL ARGUMENTS

2004 TMDL Water Quality Model for Lake Elsinore



ADDING RECYCLED WATER

4/19/94

Table V-3
Estimated Total Phosphorus and Chlorophyll-a Concentrations

Reservoir Water Quality (ug/L)	Scenario A			Scenario B			Scenario C			Scenario D		
	Avg year	Wet year	Dry year	Avg year	Wet year	Dry year	Avg year	Wet year	Dry year	Avg year	Wet year	Dry year
	1976	1980	1961	1976	1980	1961	1976	1980	1961	1976	1980	1961
Reclaimed Water Phosphorus Concentration - 50 ug/L												
Phosphorus	333.9	114.2		222.0	114.2	245.9	272.7	113.2	327.3	151.5	114.7	92.8
Chlorophyll-a	65.4	22.4		43.5	22.4	48.2	53.4	22.2	64.2	29.7	22.5	18.2
Reclaimed Water Phosphorus Concentration - 500 ug/L												
Phosphorus	333.9	114.2		381.8	114.2	558.4	464.5	113.2	903.6	265.7	114.7	288.0
Chlorophyll-a	65.4	22.4		74.8	22.4	109.5	91.0	22.2	177.1	52.1	22.5	56.5
Reclaimed Water Phosphorus Concentration - 1,500 ug/L												
Phosphorus	333.9	114.2		897.1	114.2	1427.6	1084.0	113.2	2368.9	631.7	114.7	776.7
Chlorophyll-a	65.4	22.4		175.8	22.4	279.8	212.5	22.2	464.3	123.8	22.5	152.2

S-15

Table V-4
TDS Concentrations in Lake Elsinore

Scenario	TDS Concentration (mg/L)	
A	Average	6,151
	Maximum	27,294
	Minimum	1,004
B	Average	3,409
	Maximum	7,162
	Minimum	899

California's Most Perverse Lake



LAKE ELSINORE: "Joyful shouts metamorphosed into prognostications of eternal gloom . . ."

THE CLIMAXING feature of the Ortega Highway, which twists its way inland from San Juan Capistrano to Elsinore, is Inspiration Point. The view sweeps away breathtakingly from lush citrus groves at the base east across a plain as flat and verdant-green as a billiard table to the deep blue of the distant mountains. Dominating this vast bowl is beautiful Lake Elsinore, the most perverse, unruly and quite unpredictable body of water in California.

Lake Elsinore's reputation stems from its annoying habit of drying up at inconvenient intervals, and also from an irrational tendency to spew forth dead fish along its lovely shoreline. One year it may be the garden spot of Southern California, its waters lapping shores dotted with tourist-filled cabins, its beaches bubbling with pretty girls, its surface ringing with the shouts of happy vacationers trying out their water skis for the first time. The next year its resorts may be deserted, its merchants, motel-owners and mineral bath proprietors beating the bushes for customers, its joyful shouts metamorphosed into prognostications of eternal gloom, its once-invigorating atmosphere palsied o'er with the unmistakable odor of dead fish, and maverick hordes of gnats singing their siren song over all. Why? Because Lake Elsinore has done one of its periodic disappearing acts, its cool blue waters transformed into a barren sea of pitted, pock-marked earth.

Inferno. This year the Lake is choos-

ing to be particularly perverse. It is dry enough to make the Oklahoma Dust Bowl seem like a summer sunning of the French Riviera. There is not even a mud puddle to remind observers of the glories that used to be. Its surface is lined with cracks, its center a dangerous quicksand area. Boiling pots bubble continuously. Walking on the encrusted ground surrounding the pots gives the sensation of doing the jelly roll.

But the solid citizens of Elsinore are not discouraged. They know deep down in their hearts that some day it will

rain again and the Lake will be as "wet" as ever, the gnats will depart once and for all, the smells will disappear, the vacationers return and the money will begin to flow again. But they also know that before this can happen drastic changes must be made in the Lake's basin. This requires three things: (1) Persuading the state legislature to finance a state park, (2) wrenching ownership of much of the Lake's bottom from one Major Glenn R. Conklin, (3) curbing the natural perversity of their beloved Lake itself.

Major Problem. The first requirement is not an unduly taxing one. The State Park Commission has already approved taking Lake Elsinore into its system. Now it's up to the legislature to approve the \$3 million necessary to bring (Elsinore hopes) its Lake under control.* This would be forthcoming as a matter of course if it were not for the— ah, er, well, the Major. For he constitutes a problem that's a bit more complicated.

The Major, a National Guard officer, first became interested in Lake Elsinore in 1933. At that time he bought the defunct Southern California Country Club including an ornate but outmoded building, a big chunk of shoreline footage, and 2,900 acres of lake bottom. He then



MAJOR CONKLIN:
"Ah, er, well . . ."

*The State's proposal, known as the Sonderegger Plan, would divide the present lake bed into a so-called permanent lake, west of the dike, and a flood storage basin at the east end. The plan does not provide for putting any water into the lake, but would retain, by the building of channels, a pumping plant, dikes and a 1,200-foot spillway, whatever rainwater fell into the lake.

established Elsinore Naval and Military Academy which now has an enrollment of 150 boys and conducts classes from first grade through high school. That same year, with a wary eye to the future, the Major transferred his title to the Academy.

From the beginning there has been an undeclared war between the Major and most of Elsinore's 2,700 citizens. For it soon became evident that Major Conklin regarded the Lake as strictly his own private estate. In the spring of 1949 he started fencing in the lake bed, ostensibly to plant white clover. The Major's sudden interest in agriculture was bewildering, to say the least. The townspeople chafed because they were being cut off from the free use of the lake. "Vigilante bands" (so-called by the more vociferous anti-Major faction) were formed which vowed to cut down the fences as fast as the Major put them up. The whole thing had the quality of a Charlie Chaplin comedy. But Elsinore was not amused.

The Missing Lake. The battleground soon spread out as far as the Superior Court. Hot-under-the-collar Elsinorians at last won an injunction against the Major restraining him from erecting any more barriers between them and their beloved lake. But the prolonged victory celebration was no sooner under way than the Lake—unpredictable as always—played the townspeople a low, vile, detestible and consummately dirty trick. It dried up. Since there was no longer any lake, there could no longer be any injunction and, on a motion by Major Conklin's lawyer, the Judge dissolved the restraining order.

That left the situation in a worse tangle than ever. The Elsinore Park and Parkway district members spent many a sleepless night trying to think up ways to separate the Major from the Lake. At first it was thought he could be bought out for "a reasonable sum." But after weeks of trying the attorneys threw up their hands in despair. They found the problem so hopelessly complex that condemnation proceedings were decided upon as the only way out. Last fortnight the Major's little "white clover" melodrama had reached the stage where the Parkway District had appointed three appraisers while Major Conklin had appointed three of his own. When the case comes to court in Riverside within the fortnight, a postponement is expected. Then the appraisers will go into a huddle, split their differences, and come up with a final "satisfactory" offer. The Major will be paid off and then the whole town will sit on pins and needles waiting for the legislature to act. Meanwhile the Lake was having a good—if perverse—laugh.

Crazy Like a Fox. The Major, an



LAKE ELSINORE NOW: "Cool blue waters transformed into a barren sea of pitted, pock-marked earth..."

astute poker player in finances as well as cards, has a few aces to play before he is through, and one of them may be to maneuver his opposition so that they will buy out his academy, and pay him a fat price in the bargain. If that fails, he may turn the Academy into a non-profit educational institution. That way, when the State takes over the lake, his land evaluation will rise considerably while his taxes will go down.

In fact, there is very little the Major overlooks. "Look at it this way," he said last fortnight in the cool and comfortable lobby of the Academy. "The state will own the lake. Well, suppose

somebody gets on the lake in a motorboat and proceeds to run down a swimmer or water skier. The State will have to pay through the nose."

But Galal Gough, who has been Glenn Conklin's chief adversary for years, scoffs at the Major's problem. "Why doesn't Conklin look in the mirror?" he asks. "He's owned the lake for years and people have drowned in it. Has he been held responsible?"

Still the Major insists that every person who enters the waters should be made to pay, through the Lake Elsinore Development Corporation, of which he happens to be president. But



LAKE ELSINORE THEN: "It is to Elsinore Valley what the Alps are to Switzerland, or the desert to Arabia..."

Elsinore's answer was a bristling "Try and collect!" and the Corporation took in no admission fees.

The curious thing about all this is that as far as Elsinore is concerned the Major is about as charming and urbane a man as it has ever known. The gentry mingle with him socially on every possible occasion. A prominent woman active in the battle says: "I've had cocktails with the Major and we've sat and talked for hours. Most delightful!"

Amazing Lake. Despite the Major and his winning ways, in the last analysis it is the Lake that holds the center of the stage at Elsinore. And for good reason. It can do more tricks than a barrelful of Majors. It is known as one of the most beautiful lakes in America—when it is full. But it is about as on-again-off-again a natural lake as it is possible to conceive—even in California where wonders are as commonplace as coffee for breakfast. Until the present all-out catastrophe Lake Elsinore has been bone-dry twice, in 1810—and again in 1859. It was little more than a mud-hole in 1830, 1883 and 1951. On the other hand—just to show that it plays no meteorological favorites—it overflowed in 1841, 1862, 1864, 1884 and 1916. In 1951 it managed to retain its rating as a lake by the margin of a few puddles in the center. This year it went all out, its bottom nothing more than a mass of cracks resembling the baked-out farmland of the drought-stricken Southwest.

Even when it is full, there is a kind of sulphurous odor about it. The story goes it got its name from a pungent conversation between two weary travelers, one a Yankee, the other a Spaniard. The Spaniard rushed into the water and did not stop until it had reached his armpits. Then he drank greedily. The Yankee, a more cautious adventurer, inquired, "How does it taste, señor?" To which the Spaniard replied in disgust, "Like 'ell, Señor!"

Everything the Lake does it does in style. An eleven-pound gold nugget, largest ever found in California, was picked up near it. On its shores was first established Olympic Fields, the West's pioneer nudist colony. Speedboat pilots with international reputations (like Bandleader Guy Lombardo) have broken international records on its cool blue surface, and Richard Pope, head of Florida's famed Cypress Gardens, waterski capital of the world, has openly stated that Elsinore is the boat-iest and ski-iest lake in the world.

Then there is the matter of the dead fish and the gnats. The former, Johnny-Come-Latelys, began being washed ashore with grim regularity in 1948. The latter have been present in more or less overpowering numbers every time the Lake showed signs of disappearing. Be-

tween them they have supplied a never-ending source of dinner conversation.

From Fish . . . Some said it was "chemical poisoning due to volcanic eruptions" which caused the fish to die. Dr. R. S. Westphal, the county health officer, attributed it to "lack of oxygen and the presence of carbon monoxide gas from motorboats." State Fish and Game biologist Willis A. Evans told Riverside County Health officials that it was due to "too much plankton in the water." And the Lake laughed.

In 1951 there was another mass death of fish, followed by another horrible stench and another back-breaking hauling away. Then the Lake performed what was in some ways its most diabolical act of all. With the fish dead, clouds of gnats began to descend upon the town, forcing everyone indoors and barring all windows. Federal, state and county scientists joined forces in an attempt to relieve the town from its siege. A light trap set by one of the researchers caught an announced 56,000 gnats in an hour and tests of the lake bottom showed scads of larvae, representing still more generations of the winged pests. (In normal years, the larvae would have been eaten by the fish.)

. . . To Gnats. The local Chamber of Commerce sponsored an attempt to poison the gnats by dosing the lake with benzine hexachlorine, but the attempt failed. Laboratory tests by the State Department of Health showed that the whole lake had about 60 billion larvae, enough potential gnats to drive everyone in Elsinore out of mind.

But in the late spring of 1954 a

sharp crew of experts gathered at the lake for one final showdown battle. The team, consisting of Dr. Robert Metcalf, University of California at Riverside entomologist, and Harvey I. Magy and Edward Perry, State Bureau of Vector Control officers, chemically sprayed the lake bottom, and triumphantly announced complete annihilation of Elsinore's gnats. And to this day, their victory has remained unchallenged.

But the old Lake hardly seemed to notice. It had hidden resources enough to keep the scientists, health officers and engineers busy for years. It can generate more peculiar odors and stench than all the rest of the natural lakes in California put together. Before the fish died the tumbleweeds in the Lake decomposed and the smell drifted thick over the Ortega Hills where it had a malevolent rendezvous with the smog floating south from Los Angeles. And every once in awhile mosquito snipers zoom out of the stagnant hangars to drill holes into homefolks and travelers alike.

Still Elsinore loves its lake. It is still—when it's full and on its best behavior—one of the most beautiful, coolest, bluest in America. And barring acts of God, of the Major or new outbursts of its ancient perversity, Lake Elsinore must and will rise again.

One of Elsinore Valley's poets, Evaline Morrison, expressed the feeling well when she recently wrote in the *Elsinore Sun*: "Lake Elsinore, full or dry, but still our Lake. It is to Elsinore Valley what the Alps are to Switzerland, the desert to Arabia."



LAKE ELSINORE'S BOTTOM:

"Not even a puddle and observers of the glories that used to be."