Report: Central Valley Regional Water Quality Control Board, Surface Water Ambient Monitoring Program Tulare Lake Basin Annual Report: Fiscal Years 2002/2003 and 2003/2004

Watershed: Tulare Lake Basin

Sampling Period: Eight sampling events were conducted between

September 2002 and May 2004.

Report Objectives: To establish baseline water quality conditions of waters upstream of four basin management areas. Also to determine if beneficial uses of water were not being supported and/or attained of Tulare Lake Basin Plan's water quality objectives.

Message: Results indicated dissolved oxygen (DO) and pH occasionally fell outside of the water quality objectives throughout the Basin. Additionally electrical conductivity (EC), ammonia, and E. coli exceeded the water quality objectives in specific areas. Future monitoring activities in the Tulare Lake Basin should evaluate baselines and potential sources of reduced DO as well as seasonally elevated pH and E. coli.

KEY STATISTICS

Size of Tulare Lake Basin	*10.5 million acres*
Number of sites Sampled	*61*
Number of Constituents measured	*22*
Samples Taken	*~2300*

Site Locations:

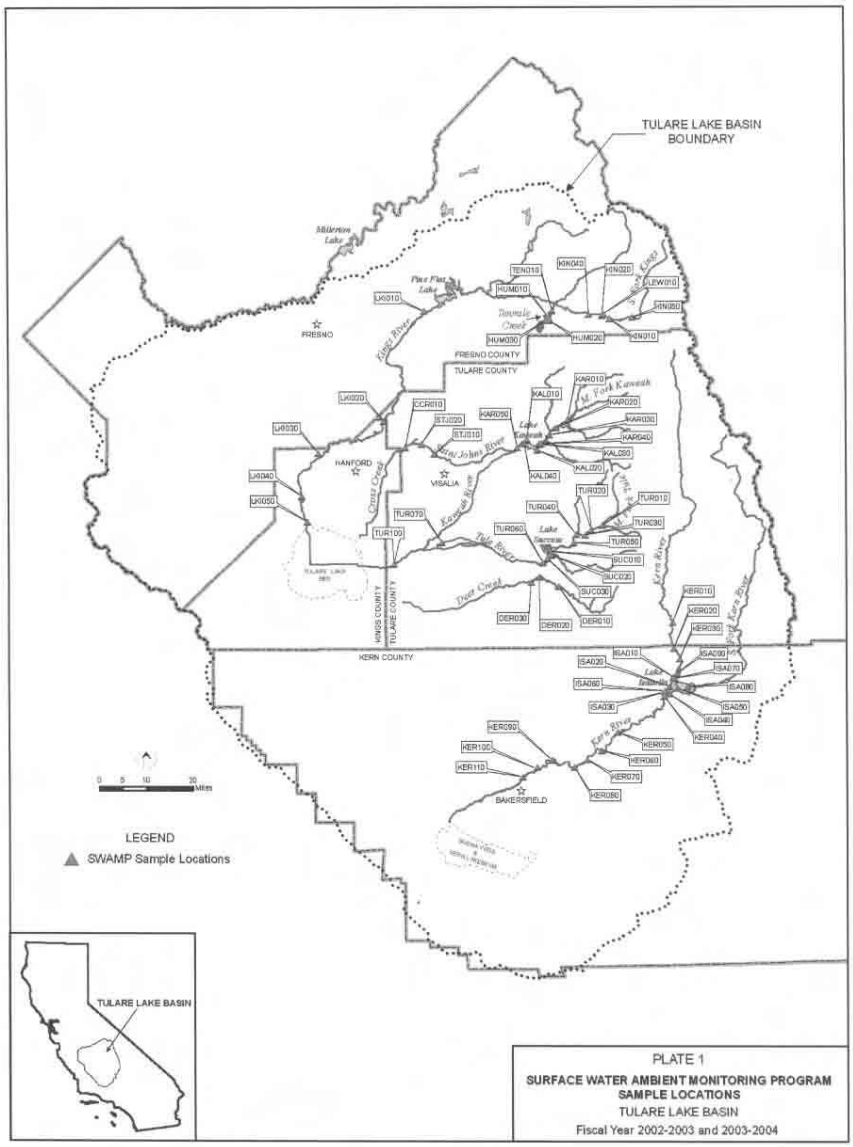

Table 1. Summary of Results Exceeding Basin Plan Objectives and USEPA Guidelines: Tulare Lake Basin

	Kings River		Kern River	Tule River	Kaweah River
	South Fork Kings River Hume Lake Tenmile Creek Lewis Creek	Lower Kings River	Kern River Lake Isabella	Tule River Lake Success	Kaweah River Lake Kaweah
Drinking Water					
Electrical Conductivity	100	100 - 300	200 - 300	450	175
(Specific to Reach, in uS/cm)		**9/31**			
Arsenic**					
Bacteria**					
Nutrients**		**2/31**			
Aquatic Life					
Water Temperature**					
pH Basin Plan (6.5 – 8.3)		**6/31**	**64/117**	**11/30**	**7/26**
Dissolved Oxygen	9	7	8	7	7
(Specific to Reach, in mg/l)	**27/33**	**5/31**	**14/117**	**8/30**	**5/26**
Recreation					
Bacteria*					
Basin Plan (400 MPN/100ml)		**2**		**1**	
USEPA (235 MPN/100ml)			**1**	**2**	
Irrigation Water Supply					
Electrical Conductivity	100	100 - 300	200 - 300	450	175
(Specific to Reach, in uS/cm)		**9/31**			
Nutrients**		**2/31**			

- - Some samples were not collected using SWAMP protocol
- **No criteria listed in the report

WHAT IS THE MEASURE SHOWING?

The data gathered over a twenty one month period provides information on water quality from September 2002 to May 2004 and suggestions for future monitoring

The results were compared to the Basin Plan objectives for dissolved oxygen, ammonia, electrical conductivity, and pH, and discussed by Basin Management Areas. Results for *E. coli* were also compared to the Basin Plan single sample criteria and the USEPA Guideline for swimming beaches. Table 1 summarizes these discussions.

While in general, water quality throughout the Tulare Lake Basin met water quality objectives, there were exceptions. The Aquatic Life Beneficial Use had potential concerns in all Basin Management Areas due to low

dissolved oxygen and high pH. Additionally, water quality in the Lower Kings River was potentially concerning for municipal, aquatic life, recreation and irrigation Beneficial Uses.

Why is this information important?

Surface water quality in the Tulare Lake Basin has been described as generally good, with excellent quality exhibited by most eastside streams. Protection and enhancement of beneficial uses of water against water quality degradation is a basic requirement of water quality planning under the Porter Cologne Water Quality Control Act. The Tulare Lake Basin Plan's water quality objectives were used to determine potential impacts to beneficial uses of water such as drinking water, aquatic life, recreation, and irrigation water supply.

WHAT FACTORS INFLUENCE THE MEASUREMENTS?

Land Use: Foothill community development, recreation, industrial processes, irrigated agriculture, and livestock grazing.

Hydrology: The Tulare Lake Basin comprises the drainage area of the San Joaquin Valley south of the San Joaquin River, and includes the historic lakebed. Essentially it is a closed basin since surface water drains north to the San Joaquin River only in years with well above average rainfall.

TECHNICAL CONSIDERATIONS:

- Fecal coliform and *E. coli* are only indicators of potential pathogens and do not necessarily identify an immediate health concern.
- Public report and fact sheet are available at: http://www.waterboards.ca.gov/centralvalley/water_issues/swamp/report_summary_sheet/index.shtml
- Sample collection was conducted by Regional Water Board staff with the exception of Hume Lake, South Fork Kings River, and Tenmile Creek where volunteer monitors from the Friends of the South Fork Kings River provided assistance. Water samples were analyzed by Twining laboratories, Inc. and the University of California Davis, Limnology Laboratory.

REFERENCES:

1. Data is available to the public in the report and through the California Environmental Data Exchange Network (CEDEN), information on CEDEN is available at www.ceden.org.
2. California Regional Water Quality Control Board Central Valley Region, Water Quality Control Plan for the Tulare Lake Basin, Second Edition 1995
3. State Water Resources Control Board, Porter-Cologne Water Quality Control Act, with Additions and Amendments, Effective January 1, 2008.