



**Water Quality Inventory
for
Water Years 1982 & 1983**

5. SEGMENT CLASSIFICATION

Water quality segment classifications are established by the Regional Boards pursuant to Section 303 of the C.W.A. Classifications pertain to surface and coastal waters only and do not include ground water. Segments are either "Water Quality Limited" [WQL] or "Effluent Limited" [EL]. Effluent limited segments may be either EL-I or EL-II. EPA criteria for these classifications are:

SUMMARY OF WATER BODY CLASSIFICATION CRITERIA

Classification	Compliance with PL 92-500 Goals	
	Present	Future
	Best practical control technology currently available	Best technology economically achievable
Water Quality Limited (WQL)	Documented violation	Will be in violation
Effluent Limited (EL)		
EL-I-A	Suspected violation	May be in violation
EL-I-B	Documented violation	Violation will be cleaned up
EL-I-C	No violation	Documented trend toward violation
Effluent Limited EL-II	No violation	No violation anticipated

A new segment matrix, "Water Quality Problem" [WQP] lists areas, including ground water, where problems have been identified or trends indicate a decline in water quality. Water quality objectives may be exceeded periodically or criteria may be exceeded, but the waters still meet the goals of the CWA.

a. WATER QUALITY LIMITED SEGMENTS

The original Segment Classification list for California was established ten years ago as part of the Basin Planning process, and was first reported in Appendix A of the 1978 305(b) Report for Water Years 1976-1977. Since that time the list has been virtually unchanged as reported in the 1980 and 1982 305(b) Reports. There have been some major improvements in water quality as a result of clean water grant projects. Additional segment classification changes occur as monitoring data provides information to better define the problems or to change water quality objectives.

(1) Improvements

Water quality improvements in segments previously listed as Water Quality Limited include:

- o Region 1, Laguna de Santa Rosa - "New requirements on sewage treatment plants allow discharge to the drainage only during high winter flow periods. The result has been a marked improvement in the water quality of the lower Russian River and enhancement of instream beneficial

uses. Water quality surveys have clearly demonstrated the success of pollution abatement through improved sewage treatment and effluent discharge regulation. As a result of these programs, the general quality and several beneficial uses of Santa Rosa Creek and other tributaries of Mark West Creek (itself as tributary of the Russian River) have been either totally or significantly restored". (pg 36 W.Q.M.R. No. 82-1 TS July 1982)

- o Region 2, Alameda Creek - "The Livermore - Amador Valley Water Management Agency's export system has been completed and this eliminates the former discharge of wastewater to Alameda Creek". (pg 40 op. cit.)
- o Napa River and Petaluma River - "In Sonoma County, the project for the elimination of discharges to the Petaluma River is now in Step 3. For the Napa River, projects are now either completed or under construction for the elimination of all dry weather discharges". (loc. cit.)
- o Region 5, Mokelumne River - "Proposition 2 Bond Monies were used to construct a storm water by-pass pipeline at the Penn Mine to prevent seepage losses in the Hinkley Run diversion channel from overflowing the waste containment ponds. This completes the last phase of the Penn Mine Pollution Abatement project to prevent toxic acid mine drainage to Lake Camanche and the Mokelumne River Fish Installation." (pg 50 op. cit.)

Three of the above segments are reclassified from WQL to EL-II and the Napa and Petaluma Rivers are reclassified as EL-I-B segments.

(2) Remaining Segments

No new water quality limited segments have been designated since the original list was adopted. Table 9 lists the remaining 14 water quality limited segments. Three of these segments are contaminated with pollutants originating in Mexico; the New and Alamo Rivers in Region 7 and the Tijuana River and hydrologic drainage unit in Region 9. Acid mine drainage contaminates Bryant Creek in Region 6 and Little Grizzly and Spring Creeks in Region 5. Bacterial contamination precludes water body contact uses in the Palo Verde Lagoon in Region 7 and in the Middle Santa Ana River and Upper Newport Bay in Region 8. The Ysidora - Deluz hydrologic sub unit in Region 9, including the Santa Margarita River, is adversely impacted by the surface discharge of treated municipal effluent. Nutrients and bacteria compromise the ground waters for municipal uses and surface waters for body contact. The lower San Joaquin River experiences low dissolved oxygen and heavy concentrations of organic chemicals. Fisheries are threatened. Agricultural return flows are suspect. San Francisco Bay is impacted by non-point source municipal and agricultural runoff. The East Walker River downstream of Bridgeport Reservoir experiences poor water quality as a result of controlled releases from the Reservoir. Salinity build up and concentrations of synthetic organic toxics and metals are carried into the Salton Sea by the Alamo and New Rivers and from irrigation return flows throughout the heavily irrigated Imperial Valley.

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Table 9
 WATER QUALITY LIMITED SEGMENT MATRIX WY. 1982-83
 PROBLEMS DOCUMENTED-BENEFICIAL USES IMPAIRED

SEGMENT NAME AND DESCRIPTION	REGION	REGIONAL PRIORITY	BENEFICIAL USES AFFECTED	WATER QUALITY OBJECTIVE VIOLATED	SOURCE		COMMENTS
					NON POINT	POINT	
South San Francisco Bay	2	1	L,M,Q	D.O., Coliform, Ammonia	x	x	
Bryant Creek	6	1	B,J,P,Q,R,T	Toxics, TDS, pH, Heavy Mtls.	x	x	Acid Mine Drain
East Walker River	6	2	J,P,Q,R	Turb., Sus. Solids, Set. Solids		x	Outflow from Bridgeport Res.
New River	7	1	B,H,I,P,R	D.O., Bacteria, Toxics	x	x	International
Alamo River	7	3	B,H,I,P,R	D.O., Bacteria	x		International
Salton Sea	7	2	I,P,Q,R,S	TDS, Toxics	x	x	Inflow
Palo Verde Lagoon	7	3	I,P,Q,R	Bacteria	x	x	
Middle Santa Ana River	8	1	I,Q,T	Bacteria, TDS, CL	x	x	
Upper Newport Bay	8	2	E,G,Q	Bacteria	x		
Ysidora-Deluz H.S.U.	9	1	A,Q	TDS, Nutrients, Bacteria		x	Includes Santa Margarita
Tijuana H.S.U.	9	2	R,T	Bacteria, Nut., BOD, Solids		x	International
San Joaquin R. (Lower)	5	1	B,H,I,J,M,N	D.O., TDS, Toxics	x	x	
Little Grizzly Creek	5	3	H,J	Toxics, pH, Heavy Mtls.	x		Acid Mine Drain
Spring Creek	5	2	I,J,M,N,P,Q,R	Toxics, pH, Heavy Mtls.	x		Acid Mine Drain
REMOVED FROM LIST							RECLASSIFIED AS
Laguna de Santa Rosa	1						EL-II
Alameda Creek	2						EL-II
Napa River	2						EL-I-B & WQP
Petaluma River	2						EL-I-B
Mokelumne River	5						EL-II & WQP

STANDARD BENEFICIAL USES (1)																				
MUN	AGR	IND	PROC	COMM	POWER	SHELLFISH	FRESH FISH	WARM	COLD	BIOL	MAR	SPWN	MIGR	RARE	WILD	REC 1	REC 2	SAL	GWR	NAV
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U

(1) SEE APPENDIX 'C' FOR DEFINITIONS

b. EFFLUENT LIMITED SEGMENTS

Changes in the Effluent Limited Segment Matrix occur as water quality data becomes available to verify a suspected problem or changes are made in the water quality objectives. Those effluent limited segments listed in Tables 10 (EL-I-A); 11 (EL-I-B); and 12 (EL-I-C), have present or potential violations of water quality standards. EL-I-A segments are suspected to have a violation and may be in violation in the future. As the comment section in Table 10 indicates, most of these 16 segments lack sufficient water quality data to properly classify them as anything except EL-I-A.

EL-I-B segments are water bodies with a pollution problem that has been documented, but where the problem is expected to be cleaned up in the foreseeable future. As indicated in the comment section of Table 11, most of these 14 segments have had the source of pollution identified and a project is either under construction or has been proposed to mitigate the problem.

EL-I-C segments are water bodies that currently do not have a standards violation, but results of monitoring indicate a trend towards an eventual violation. Table 12 lists seven such segments. Trout Creek in Region 6 was originally identified in the Basin Plan as a stream with potential problems. Lake Tahoe has been under intensive surveillance for the past several years and the results of the Inter-agency Monitoring Program indicate a deteriorating situation. The Smith River in Region 1 and the Merced River and Cache Creek in Region 5 have been investigated by the U. S. Geological Survey in cooperation with the State and Regional Boards during the past few years. Special Basin Reports on these streams have been published by the USGS and trends of deteriorating water quality have been identified.

The Klamath River in Region 1 has had occasions when pH and dissolved oxygen have exceeded the objectives. Figure 10 shows the historical variation in these constituents over the 20 year period 1962 - 1982. It is apparent in Figure 10 that the trend line in pH is increasing and is approaching the 8.5 standard value.

The Lower Sacramento River has experienced an increase in nutrient loading and some decline in dissolved oxygen with occasional instances of D.O less than the 7.0 mg/l standard minimum value. Figure 11 shows the trends in phosphorus between 1972 and 1982 with a tendency towards increasing concentrations and in dissolved oxygen between 1962 and 1982 with a tendency towards an overall decrease in D.O.

The 15 water segments classified as EL-II in Table 13 are areas throughout the State where corrective actions have been taken to prevent water quality degradation or to enhance water quality objectives. Unfortunately, not all 15 success stories are completely free from problems. Although progress has been made in the elimination of one or more problems in 6 of these locations, other problems have been discovered as a result of water quality monitoring. The new problems are identified as a threat to designated beneficial uses and these 6 segments are therefore also included in the Water Quality Problem Segment Matrix shown in Table 14.

Table 10
EFFLUENT LIMITED (EL-1-A) SEGMENT MATRIX WY 1982-83
SUSPECTED VIOLATION-ADDITIONAL INFORMATION NEEDED

SEGMENT NAME AND DESCRIPTION	REGION	REGIONAL PRIORITY	BENEFICIAL USES AFFECTED	WATER QUALITY OBJECTIVE VIOLATED	NON POINT SOURCE		COMMENTS
					NON POINT SOURCE	POINT SOURCE	
Richardson Bay	2	1	G,Q	Coliform	X	X	Insufficient Data
Suisun Marsh	2	2	I,L,N,P	D.O., Biostimulants, Salinity	X	X	Insufficient Data
Sonoma Creek	2	3	I,M,N,Q	D.O., Coliform	X	X	Insufficient Data
Tomales Bay	2	4	G	Coliform	X		Insufficient Data
Walker & Lagunitas C.	2	4	G	Coliform	X		Insufficient Data
Roberts L./Laguna Grande	3	1	I,Q	Nutrients, Sediment	X		Urban Runoff
San Luis Obispo Creek	3	2	B,I,M,N,Q,R	D.O., pH, Nutrients, Bacteria	X	X	Insufficient Data
San Joaquin River (Mid)	5	1	A,B,C,I,J,M, N,Q,R	Nutrients, Salinity	X		Insufficient Data
Sacramento River (Mid)	5	2	H,I,J,M,N	Toxics, Temperature, Cu.	X	X	Mine & Ag. Drain.
Sacto.-San Joaquin Delta	5	3	B,C,D,H,I,N Q,R	D.O., Nut., Bact., Temp., Sal., Cu.	X	X	
Susan River	6	1	A,I,J,Q,R	Nut., Bact., Sus. Sed. Temp.	X	X	Insufficient Data
Deep Creek	6	2	J,Q,R	Nutrients, Bact., Sus. Sed.	X		Insufficient Data
Little Truckee River	6	3	A,J,Q,R	Nutrients	X		Insufficient Data
Big Bear Va.-Bladwin L.	8	1	Q	Bacteria, Turbidity, Nutrients		X	Insufficient Data
Santa Ana River (Upper)	8	2	A	Bacteria	X		Insufficient Data
Lake Elsinore	8	3	I,Q	D.O. Nutrients	X	X	Insufficient Data
REMOVED FROM LIST							RECLASSIFIED AS
Lower Salinas River	3						WQP
San Lorenzo River	3						EL-I-B
Pajaro River (Lower)	3						WQP
Carmel River	3						WQP
Clear Lake	5						WQP
E.Fk. of W.Fk. Mojave R.	6						WQP
Mammoth Creek	6						WQP

STANDARD BENEFICIAL USES (1)																				
MUN	AGR	IND	PROC	COMM	POWER	SHELLFISH	FRESH FISH	WARM	COLD	BIOL	MAR	SPWN	MIGR	RARE	WILD	REC 1	REC 2	SAL	GWR	NAV
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U

(1) SEE APPENDIX 'C' FOR DEFINITIONS

**Table 11
EFFLUENT LIMITED (EL-1-B) SEGMENT MATRIX WY 1982-83
DOCUMENTED VIOLATION-CORRECTIVE ACTION BEING TAKEN**

SEGMENT NAME AND DESCRIPTION	REGION	REGIONAL PRIORITY	BENEFICIAL USES AFFECTED	WATER QUALITY OBJECTIVE VIOLATED	NON POINT SOURCE	POINT SOURCE	COMMENTS
Humboldt Bay	1	1	G,Q	Coliform	x	x	POTW Under Const.
Bolíñas Lagoon	2	1	G,Q	Coliform	x	x	
Monterey Bay (S. Port)	3	1	G,Q,R	Bacteria, Pesticides	x	x	
Santa Maria River (Lower Coastal Seg. (Aptos-Soqu.)	3	3	A,B,C,I,P,Q	Bact., Nut., Pest., S. Solids	x	x	
Bolsa Nueva Hydro. Unit	3	-	Q	Bacteria		x	Project Proposed
San Lorenzo River	3	1	C,G,P,Q,R	Bact., Nut., Pest., turb., S.S.	x	x	Project Proposed
Jackson Creek	5	3	A,H,I,Q	Bact., Nut., D.O.		x	Project Proposed
Woods Creek	5	4	H,I,Q	Bact., Nut., D.O.		x	Project Proposed
Lytle Creek	8	-	A	Bacteria	x		Project Proposed
Mill Creek	8	-	A	Bacteria	x		Project Proposed
Napa River	2	3	I,M,N,Q	Bact., D.O., pH, Nut.	x	x	POTW Under Const.
Petaluma River	2	4	I,M,N,Q	Bacteria, D.O.	x	x	POTW Under Const.
ADDED TO LIST							RECLASSIFIED FROM
San Lorenzo River							EL-I-A
Napa River							W.Q.L.
Petaluma River							W.Q.L.
REMOVED FROM LIST							RECLASSIFIED AS
Tuolumne River (Lower)	5						EL-II & WQP
American River (Lower)	5						EL-II & WQP
Truckee River (Upper)	6						EL-II & WQP
Rush Creek	6						EL-II

STANDARD BENEFICIAL USES (1)

MUN	AGR	IND	PROC	COMM	POWER	SHELLFISH	FRESH FISH	WARM	COLD	BIOL	MAR	SPWN	MIGR	RARE	WILD	REC 1	REC 2	SAL	GWR	NAV
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U

(1) SEE APPENDIX *C* FOR DEFINITIONS

**Table 12
EFFLUENT LIMITED (EL-1-C) SEGMENT MATRIX WY 1982-83
DOCUMENTED TREND TOWARDS VIOLATION**

SEGMENT NAME AND DESCRIPTION	REGION	REGIONAL PRIORITY	BENEFICIAL USES AFFECTED	WATER QUALITY OBJECTIVE THREATENED	SOURCE		COMMENTS
					NON POINT	POINT	
Trout Creek	6	2	J,R	TDS, Sediment	X		Basin Plan
Lake Tahoe	6	1	R	Nutrients, Sediment	X		TRG. 3rd Annual Report
Klamath River	1		I,J	pH, D.O.	X		See Trends Plot
Smith River	1		J,M,N,Q	Bacteria, Sediment, Toxic Mtls.	X		USGS Rpt. 81-22
Sacramento R. (Lower)	5		I,J,M,N,Q,R	Nutrients, D.O.	X		See Trends Plot
Merced Riv. (Lower)	5		A,B,I,J,M,P	Nut., pH, D.O., Pesticides	X		USGS Rpt. 82-450
Cache Creek	5		B,I,M,Q,R	Nut., Sediment, Pesticides	X		USGS Rpt. 81-677
ADDED TO LIST							RECLASSIFIED FROM
Lake Tahoe							EL-II
Klamath River							EL-II
Smith River							EL-II
Sacramento River							EL-II
Merced River							EL-II
Cache Creek							EL-II
REMOVED FROM LIST							RECLASSIFIED AS
Truckee River	6						EL-II & WQP
Colorado River	7						WQP

STANDARD BENEFICIAL USES (1)																				
MUN	AGR	IND	PROC	COMM	POWER	SHELLFISH	FRESH FISH	WARM	COLD	BIOL	MAR	SPWN	MIGR	RARE	WILD	REC 1	REC 2	SAL	GWR	NAV
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U

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