

STU 305-b

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ANNUAL WATER QUALITY INVENTORY



305 (b)

SURVEILLANCE & MONITORING SECTION
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15009.00

Water Year 1975

A REPORT ON WATER QUALITY CONDITIONS,
PROBLEMS AND WATER QUALITY CONTROL PROGRAMS
PREPARED IN FULFILLMENT OF THE REQUIREMENTS
OF SECTION 305(b) OF PL 92-500

JULY 1976

Division of Planning and Research
Surveillance and Monitoring Section

CALIFORNIA STATE WATER RESOURCES CONTROL BOARD

CHAPTER 4

CONFORMANCE WITH WATER QUALITY STANDARDS

SECTION 305(b)(1):

"(A) a description of the water quality of all navigable waters in such State during the preceding year with appropriate supplemental descriptions as shall be required to take into account seasonal, tidal, and other variations, correlated with the quality of water required by the objective of this Act (as identified by the Administrator pursuant to criteria published under Section 301(a) of this Act) and the water quality described in subparagraph (B) of this paragraph;

"(B) an analysis of the extent to which all navigable waters of such State provide for the protection and propagation of a balanced population of shellfish, fish, and wildlife, and allow recreational activities in and on the water;"

CONFORMANCE WITH WATER QUALITY STANDARDS

Comparison of actual water quality with the established water quality standards can be used to assess the degree to which California is achieving the objectives of the Federal Water Pollution Control Act Amendments of 1972. In the Act, the national objective was stated to be "to restore and maintain the chemical, physical, and biological integrity of the nation's waters." To achieve this objective, an interim goal has been set. The interim goal is to provide for the protection and propagation of fish, shellfish and wildlife and to provide for recreation in and on the water, by July 1983.

Priority I rivers have been selected for display of water quality information and standards to assess the degree to which California waters have achieved the national goals. These Priority I rivers represent a cross-section of water quality conditions in California.

BENEFICIAL USES

Beneficial uses for each of the 23 Priority I rivers were defined in the comprehensive water quality control plans completed in 1975. A uniform statewide system for designating beneficial uses was used for the first time in these plans to facilitate statewide comparisons and to aid in establishing water quality standards which will be compatible on a statewide basis. The following standard definitions of beneficial uses were developed and are used in this report.

Municipal and Domestic Supply (MUN) - Includes usual uses in community or military water systems and domestic uses from individual water supply systems.

Agricultural Supply (AGR) - Includes crop, orchard and pasture irrigation, stock watering, support of vegetation for range grazing and all uses in support of farming and ranching operations.

Industrial Service Supply (IND) - Includes uses that do not depend primarily on water quality such as mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection and oil well repressurization.

Industrial Process Supply (PROC) - Includes process water supply and all uses related to the manufacturing of products.

Groundwater Recharge (GWR) - Natural or artificial recharge for future extraction for beneficial uses and to maintain salt balance or halt salt-water intrusion into freshwater aquifers.

Navigation (NAV) - Includes commercial and naval shipping.

Hydropower Generation (POW) - Used for hydropower generation.

Water Contact Recreation (REC1) - Includes all recreational uses involving actual body contact with water, such as swimming, wading, waterskiing, skindiving, surfing, sport fishing, uses in therapeutic spas, and other uses where ingestion of water is reasonably possible.

Non-Contact Water Recreation (REC2) - Recreational uses that involve the presence of water but do not require contact with water, such as picnicking, sunbathing, hiking, beachcombing, camping, pleasure boating, tidepool and marine life study, hunting and aesthetic enjoyment in conjunction with the above activities as well as sightseeing.

Ocean Commercial and Sport Fishing (COMM) - The commercial collection of various types of fish and shellfish, including those taken for bait purposes, and sport fishing in ocean, bays, estuaries and similar non-freshwater areas.

Warm Freshwater Habitat (WARM) - Provides a warm water habitat to sustain aquatic resources associated with a warm water environment.

Cold Freshwater Habitat (COLD) - Provides a cold water habitat to sustain aquatic resources associated with a cold water environment.

Preservation of Areas of Special Biological Significance (BIOL) - Includes marine life refuges, ecological reserves and designated areas of special biological significance such as areas where kelp propagation and maintenance is a feature of the marine environment requiring special protection.

Wildlife Habitat (WILD) - Provides a water supply and vegetation habitat for the maintenance of wildlife.

Preservation of Rare and Endangered Species (RARE) - Provides an aquatic habitat necessary, at least in part, for the survival of certain species established as being rare and endangered species.

Marine Habitat (MAR) - Provides for the preservation of the marine ecosystem including the propagation and sustenance of fish, shellfish, marine mammals, waterfowl and vegetation such as kelp.

Fish Migration (MIGR) - Provides a migration route and temporary aquatic environment for anadromous or other fish species.

Fish Spawning (SPWN) - Provides a high quality aquatic habitat especially suitable for fish spawning.

Shellfish Harvesting (SHELL) - The collection of shellfish such as clams, oysters, abalone, shrimp, crab and lobster for either commercial or sport purposes.

The 23 Priority I rivers have been subdivided into 52 river segments, for which beneficial uses are tabulated in Table 4. All Priority I rivers, with the exception of the extreme lower reach of the Salinas River, the Santa Ana River, the New River and the Alamo River, are currently protected for fishing and water contact recreation. The beneficial uses in Table 4 are those adopted in the comprehensive water quality control plans.

COMPARISONS OF WATER QUALITY DATA AND STANDARDS

The State Board's program for surveillance and monitoring to obtain water quality data on a statewide basis was initiated during water year 1974 (October 1973 to September 1974). The initial program does not meet the ultimate needs for data acquisition, but is being implemented on a stepwise basis by the State and Regional Boards according to a phased plan adopted by the Board. Data coverage for water year 1975 was incomplete, even for Priority I rivers. Both parameters covered and frequency of sampling were inadequate in many cases to allow a complete comparison of actual data with the adopted standards. This situation has been addressed in planning for development of a truly comprehensive statewide system for water quality monitoring, although it must be recognized that funding and implementation of the Board's monitoring plan, and receipt of meaningful data, will necessarily be a long-range program extending into the 1980's. In the interim, improvements will be made yearly as funds are available. Thus, future editions of this report will more thoroughly address the question of how well California's waters meet the water quality standards set in the comprehensive plans.

For water year 1975, five major parameters were chosen to compare water quality with standards on a statewide basis. They are: dissolved oxygen (DO), hydrogen ion concentration (pH), total dissolved solids (TDS), nitrogen (N), and phosphorus (P). Water quality standards for these parameters vary for each stream segment based on beneficial uses and on historic water quality. For instance, a dissolved oxygen standard of 5 mg/l may be all that is required to support fishlife in a segment. However, if historic values of DO have always exceeded 9 mg/l, the standard would most probably be set at 9 mg/l to prevent degradation of historic water quality.

The numerical standards for the five major parameters for each stream segment were compiled from the recently adopted basin plans, and are displayed in Table 5, which follows. Next to each standard, for comparison purposes, is a summary of values for that parameter which were recorded at one or more sampling stations within the stream segment during water year 1975. For station by station statistics see Appendix A.

The stream segments where water quality standards were not met in water year 1975 are shown in Table 3.

WATER BODY CLASSIFICATION

Water Quality Limited (WQL) Any segment where it is known that present water quality does not provide for recreation in and on the waters and for protection and propagation of fish, shellfish, and wildlife and the July 1, 1983 treatment levels will be insufficient to provide the water quality necessary to meet these goals. Water quality limited designations require supporting documentation.

Effluent Limited I (EL I) Includes segment suspected of being water quality segments, but for which the documentation is not currently available. Segments with suspected violations or threats to any water quality objective identified in the basin plans are of major concern. Segments presently in violation of standards, but where July 1977 and/or July 1983 treatment levels will be sufficient to provide the water quality necessary to meet the goals of the Act; segments presently in compliance, but where documentation substantiates a trend toward violation of a water quality objective identified in the basin plan.

Effluent Limited II (EL II) All remaining water bodies and segments will be classified EL II and may be designated by the hydrologic unit which encompasses the surface waters.

SUMMARY OF WATER BODY CLASSIFICATION - 1976

| Classification | Compliance with PL 92-500 Goals | |
|--------------------------------|--|--|
| | Present Best practical control technology currently available | Future Best technology eco- nomically achievable |
| Water Quality Limited (WQL) | In violation documented | 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 |

TABLE 3
 WATER QUALITY LIMITED SEGMENT
 - MATRIX - 1976

| SEGMENT NAME AND DESCRIPTION | REGIONAL PRIORITY | | BENEFICIAL USE AFFECTED (1) | WATER QUALITY OBJECTIVE VIOLATED | STATUS (2) | | | COMMENTS |
|------------------------------|-------------------|----------|-----------------------------|----------------------------------|-------------------------|--------------|----------|-----------------------------------|
| | REGION | PRIORITY | | | MONITORING POINT SOURCE | POINT SOURCE | COMMENTS | |
| Laguna de Santa Rosa | 1 | 1 | B,C,J,P,Q,R | D.O., Nutrient, Coliform | C | X | X | Control by 1978 |
| South San Francisco Bay | 2 | 1 | L,M,Q | D.O., Coliform | C | | X | |
| Alameda Creek | 2 | 2 | A,T | TDS | C | | X | |
| Napa River | 2 | 3 | I,M,N,Q | Coliform, pH, Nutrient, D.O. | C | X | X | |
| Petaluma River | 2 | 4 | I,M,N,Q | D.O., Coliform | C | X | X | |
| Bryant Creek | 6 | 1 | B,J,P,Q,R,T | D.O., TDS, pH, Heavy Metals | N | | X | Acid Mine drainage |
| East Walker River | 6 | 2 | J,P,Q,R | Turb., Sus. Solids, Set. Sol. | N | | X | Outflow from Bridgeport Reservoir |
| New River | 7 | 1 | B,H,I,P,R | D.O., Bacteria | C | | X | International problem |
| Salton Sea | 7 | 2 | P,Q,R,S | TDS | C | X | X | |
| Palo Verde Lagoon | 7 | 3 | I,P,Q,R | Bacteria | N | X | X | |
| Middle Santa Ana River | 8 | 1 | I,Q,T | Bacteria, TDS, Cl | C | X | X | |
| Upper Newport Bay | 8 | 2 | E,G,Q | Bacteria | N | X | | |
| Ysidora-DeLuz HSU | 9 | 1 | A,Q | TDS, Nutrient, Bacteria | C | | X | Includes Santa Margarita |
| Tijuana HSU | 9 | 2 | R | Bact., BOD, Set. Solids | N | | X | International problem |
| San Joaquin River (Lower) | 5 | 1 | B,H,I,J,M,N | Dissolved Oxygen, Sal. | C | X | X | |
| Little Grizzly Creek | 5 | 2 | H,J | Toxic, Heavy Metals | C | | X | Mine drainage |
| Spring Creek | 5 | 3 | I,J,M,N,P,Q,R | Toxic, Heavy Metals, pH | C | | X | Mine drainage |
| Mokelumne River | 5 | 4 | H,I,J,M,N | Toxic, Heavy Metals | C | | X | Mine drainage |

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

STATUS (2)
 N - "NEW" - A problem segment not previously included
 C - "CON'T." - A continuing problem

TABLE 3
EFFLUENT LIMITED SEGMENT
(EL - 1 - A) - 1976

| SEGMENT NAME AND DESCRIPTION | REGION | | REGIONAL PRIORITY | BENEFICIAL USE AFFECTED (1) | WATER QUALITY OBJECTIVE VIOLATED | MONITORING SOURCE | | COMMENTS |
|-----------------------------------|--------|---|---------------------------|--|--|-------------------|-------------------|---|
| | | | | | | | | |
| Richardson Bay | 2 | 1 | G,Q | Coliform | X | X | Insufficient data | |
| Suisun Marsh | 2 | 2 | I,L,N,P | D.O., Salinity, Biostimulants | X | X | Insufficient data | |
| Sonoma Creek | 2 | 3 | I,M,N,O | D.O., Coliform | X | X | Insufficient data | |
| Tomales Bay-Walker & Lagunitas Ck | 2 | 4 | C | Coliform | X | | Insufficient data | Within 208 area |
| Lower Salinas River | 3 | 1 | I,P,R | Ammonia, D.O., Coli., P, Toxi., Nutrient, TDS | | X | Insufficient data | |
| San Lorenzo River | 3 | 2 | A,B,C,H,J,M,N, P,Q,R,T | Turbidity, Suspended Solids, Coli., Pesticides, Turbidity, Suspended Solids, Nutrients, Coliform | X | | | Within a 208 Area |
| Bolsa Nueva Hydrologic Unit | 3 | 3 | C,P,Q,R | Solids, Nutrients, Coliform | X | X | | Within a 208 Area |
| Pajaro River (Lower) | 3 | 4 | A,B,T | TDS, Sodium, Pesticides | X | | | Within a 208 Area |
| Carmel River | 3 | 5 | A,Q,R | TDS, Bacteria | X | | | Insufficient data |
| | | | | | | | | ASBS & ANSAG 208 |
| San Joaquin River (Middle) | 5 | 1 | A,B,C,I,J,M,N, Q,R | Salinity, Nutrients, Turbidity | X | | | |
| Sacramento River (Middle) | 5 | 2 | H,I,J,M,N | Toxicants, Copper | X | X | | Mine drainage & other unidentified sources |
| Sacramento-San Joaquin Delta | 5 | 3 | B,C,D,H,I,N,Q,R | D.O., Sal., Bact., Nutr., Temp. | X | | | Suspended W.Q.L. |
| Clear Lake | 5 | 4 | Q,R | Nutrients | X | | | Causing other problem. |
| Susan River | 6 | 1 | A,I,J,Q,R | Sus. Sed., Nutr., Coli., Temp. | X | X | | Insufficient data |
| Deep Creek | 6 | 2 | J,Q,R | None listed | X | | | No data |
| E. Fork of W. Fork Mojave River | 6 | 3 | J,Q,R | Sus. Sed., Coliform, Nutrients | X | | | No data |
| Mammoth Creek | 6 | 4 | A,J,Q,R | Coliform, Nutrients | X | X | | Insufficient data |
| Little Truckee River | 6 | 5 | A,J,Q,R | Nutrients | X | | | No data |
| Alamo River | 7 | 1 | A,B,H,I,P | D.O. | | X | | Insufficient data |
| Big Bear Valley-Baldwin Lake | 8 | 1 | Q | Bacteria, Turbidity, Nitro | | X | | Insufficient data |
| Lytle Creek | 8 | 2 | A | Bacteria | X | | | Source unknown |
| Mill Creek | 8 | 3 | A | Bacteria | X | | | Source unknown |
| Santa Ana River (Upper) | 8 | 4 | A | Bacteria | X | | | Insufficient data |
| Lake Elsinore | 8 | 5 | I,Q | D.O., Nutrient | X | X | | Insufficient data |
| | | | | | | | | |
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STANDARD BENEFICIAL USES (1)

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

TABLE 3
**EFFLUENT LIMITED SEGMENT
 (EL - 1 - B & C) - 1976**

| SEGMENT NAME AND DESCRIPTION | REGION | REGIONAL PRIORITY | BENEFICIAL USE AFFECTED (1) | WATER QUALITY OBJECTIVE VIOLATED | MONITORING FREQUENCY | CONSENTS | |
|--------------------------------|--------|-------------------|-----------------------------|----------------------------------|----------------------|----------|-----------------------------------|
| EL-1-B | | | | | | | |
| Belinas Lagoon | 2 | 1 | G,Q | Coliform | X | X | Recom. Monitoring Prog. |
| Monterey Bay (So. Part.) | 3 | 1 | G,Q,R | Bacteria, Pesticides | X | X | |
| San Luis Obispo Creek SA | 3 | 2 | B,I,J,M,N,Q,R | Coliform, Nutrients | X | X | |
| Santa Maria River (Lower) | 3 | 3 | A,B,C,I,P,Q,R | Bact., Sus. Solids, Pest., Nutr. | X | X | No data |
| Coastal Segment (Aptos-Sequel) | 3 | 4 | G,Q,R | State's Ocean Plan | | X | |
| Santa Barbara E. Beach | 3 | 5 | G,Q,R | State's Ocean Plan | | X | |
| Tuolumne River (Lower) | 5 | 1 | A,N,T | TDS | | | Regional Board working |
| American River (Lower) | 5 | 2 | A,Q | None listed | | X | |
| Jackson Creek (Upper) | 5 | 3 | A,H,I,Q | Bacteria, D.O., Nutrients | | X | |
| Woods Creek | 5 | 4 | H,I,Q | D.O., Nutrients, Bacteria | | X | |
| Lower Truckee River | 6 | 1 | A,J,Q,R | Nutrients | | X | Tertiary treatment by 1980 |
| Rush Creek | 6 | 2 | A,J,Q,R | Bacteria, Nutrients | X | X | Collection system to be installed |
| EL-1-C | | | | | | | |
| Upper Truckee River | 6 | 1 | J,R | Erosion & Stormwater runoff | X | | 208 Area |
| Trout Creek | 6 | 2 | J,R | Erosion & Stormwater runoff | X | | 208 Area |
| Colorado River | 7 | 4 | A,B,C,F,H,I,J,O,P,Q,R,T | Salinity | | | Over Use |
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| STANDARD BENEFICIAL USES (1) | | | | | | | | | | | | | | | | | | | | |
|------------------------------|-----|-----|------|------|-------|-----------|------------|------|------|--------|-----|------|------|------|------|-------|-------|-----|----|-----|
| MUN | AGR | IND | PROC | COIN | POWER | SHELLFISH | FRESH FISH | WARS | COLD | BIOLOG | MAR | SWIM | MIGR | RARE | WILD | REC 1 | REC 2 | SAL | GR | NAV |
| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U |