WATER QUALITY CONTROL PLAN
(Interim)

KLAMATH RIVER
Basin 1-A

JUNE 1971

STATE
WATER RESOURCES
CONTROL BOARD

STATE OF CALIFORNIA

THE RESOURCES AGENCY

STATE WATER RESOURCES CONTROL BOARD

INTERIM

WATER QUALITY CONTROL PLAN

for the

KLAMATH RIVER BASIN

June, 1971

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
NORTH COAST REGION
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FOREWORD

This report contains the Interim Water Quality Control Plan for the Klamath River Basin to satisfy federal and state requirements for construction grant programs. The plan also complies with the Porter-Cologne Water Quality Control Act requirements for water quality control plans.

The Interim Plan will serve as a guide for water quality management and for waste treatment plant construction in the next two years, until completion of comprehensive basin and regional plans which are now under preparation. This plan has been adopted by the Regional Water Quality Control Board, North Coast Region, and approved by the State Water Resources Control Board. It supersedes all previous water quality control plans adopted by this Regional Board.

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CHAPTER I

INTRODUCTION

Until recently it was assumed that wastes could be discharged to the environment in great quantities without adversely affecting aquatic resources. Waste discharges were evaluated in the traditional sense; that is, with major consideration given to oxygen depletion, gross toxicity, and bacteriological quality measured against a presumed assimilative capacity of receiving waters and a tolerable degree of water quality degradation. Requirements for waste discharges were based almost exclusively upon protection of the benefits that man could derive from the direct and consumptive uses of the waters.

Recent advances in technology and science show that certain constituents of wastes can result in far reaching adverse effects upon aquatic environments and man's beneficial uses of his environment. Certain substances in concentrations previously considered inconsequential to man do, in fact, greatly reduce his ability to realize benefits from aquatic resources. This is notably true for persistent toxicants that concentrate in food webs and eventually enter man's diet with potentially debilitating results. Already many species of aquatic animals and plants have been harmed, some of them seriously by the discharge of certain known toxic substances and, presumably, many other unidentified toxic substances into the aquatic environments. Many factions are indifferent to these losses and believe them to be inconsequential unless man is directly affected. Others want only the level of control that will assure sustained commercial exploitation of water resources. Still others, in daily increasing numbers, are demanding total protection of aquatic environments regardless of man's uses of these resources.

While California is endowed with more water of good quality than many areas of the nation, the compounded effects of increased use of water and increasing volume and strength of municipal and industrial wastes have degraded and threatened water quality in many areas of the State. Inadequately treated municipal wastes are discharged to freshwater streams above domestic water intakes, residential and recreational developments have degraded mountain lakes and streams by siltation and inadequate sewage disposal systems, industrial wastes have toxified certain estuaries to levels that are harmful to aquatic organisms, and beaches have been closed to recreation due to bacteriological contamination from domestic waste discharges. Many past efforts to protect and manage California's waters have averted catastrophes and abuses. Frequently, however, they have lacked general applicability and force. These circumstances, coupled with the conflicting social attitudes previously cited, virtually demand a water quality control and water resource management policy that equates to water conservation: wise use, reasoned management, and adequate protection of water and water resources to ensure their preservation for the beneficial uses and enjoyment of present and future generations of the people.

As technology advances and societal needs increase, new benefits of aquatic resources will materialize. Aquatic resources must be managed to provide sustained yields while recognizing the dependence of man on the environment in which he must continue to live. Basin plans must be sufficiently restrictive to assure protection while being sufficiently flexible to adjust to new knowledge, capabilities, and needs. Basin planning further must be cognizant of the costs of wastewater management and the reciprocal compensations of water reclamation.

Clearly, there is growing public awareness of the precarious state of man's global environment. The once predominant indifference to environmental deterioration is yielding to an appreciation of the environment as in indispensable, but threatened and destructible life requirement that needs conservation. Water quality control and management policy must acknowledge this developing environmental ethic. Accordingly, the policy set forth here will embody sound principles of water conservation.

The creation of the State Water Resources Control Board in 1967, and the adoption of the Porter-Cologne Water Quality Control Act in 1970, recognized the need for a long-range, balanced plan for water quality management that will anticipate man's potential needs and technological abilities. This plan is a major step toward fulfilling this responsibility.

This Interim Water Quality Control Plan has been prepared to satisfy federal and state requirements for construction grant programs and the Porter-Cologne Act requirements for water quality control plans. Under present federal-state construction grant programs a community may receive up to 55 percent of the capital cost of a wastewater treatment project from the Federal Environmental Protection Agency (E.P.A.) and an additional 25 percent from the State Water Resources Control Board, leaving as little as 20 percent of the cost to be met by local funding. Under such a program, federal and state officials must be assured that the investment will purchase the greatest protection of our waters from the effects of wastes and make maximum use of the wastewater as a resource.

The E.P.A. has required each state to prepare and approve water quality control plans for drainage basins as a condition for future receipt of construction grants by communities. It has required a fully developed plan for each basin by July 1, 1973 but has permitted adoption of interim basin plans by July 1, 1971 to provide for construction during the time needed to adequately prepare the plans. This report is the interim plan for the Klamath River Basin.

As the term "interim" implies, this document and its supporting information are the initial step toward a more comprehensive "Fully Developed Basin Plan". It will guide our water quality management activities by establishing priorities and time schedules for actions required to meet water quality and environmental objectives during the next several years.

CHAPTER II

SCOPE

This Interim Water Quality Control Plan was prepared by the staff of the California Regional Water Quality Control Board, North Coast Region, with statewide guidance from the State Water Resources Control Board and its staff. Technical assistance from the State Departments of Fish and Game, Public Health and Water Resources is gratefully acknowledged.

Limitations of time did not allow detailed planning studies to be performed for this report but fortunately, considerable technical data was available as a result of past and on-going State and local planning efforts. Using these data, provisional plans have been derived for the interim period until completion of comprehensive basin plans in July, 1973.

The overall objective of the interim water quality control plan for this basin is to set forth a definitive program of action designed to preserve and enhance water quality and protect beneficial water uses in a manner which will result in maximum social and economic benefits to the people of the state.

The beneficial uses to be protected for the various streams and water bodies are listed in Chapter IV. The regional policy guidelines used as a guide in preparing water quality objectives and sewerage plans are the subject of Chapter V.

To protect the beneficial uses of the streams and water bodies of this basin, certain water quality objectives were formulated and are presented in Chapter VI. Waste discharge prohibitions are also included in this report. These prohibitions provide the legal basis for enforcement action which may be necessary to meet water quality objectives and protect the beneficial uses.

The actual sewerage plans formulated to meet both local and regional needs for water quality improvement are presented in Chapter VII. These plans are not intended to serve as the final word on future sewerage plans but will serve to allow planning and construction to continue under the guidance of a basinwide plan. Thus, a continuing flow of federal and state assistance to local agencies is assured.

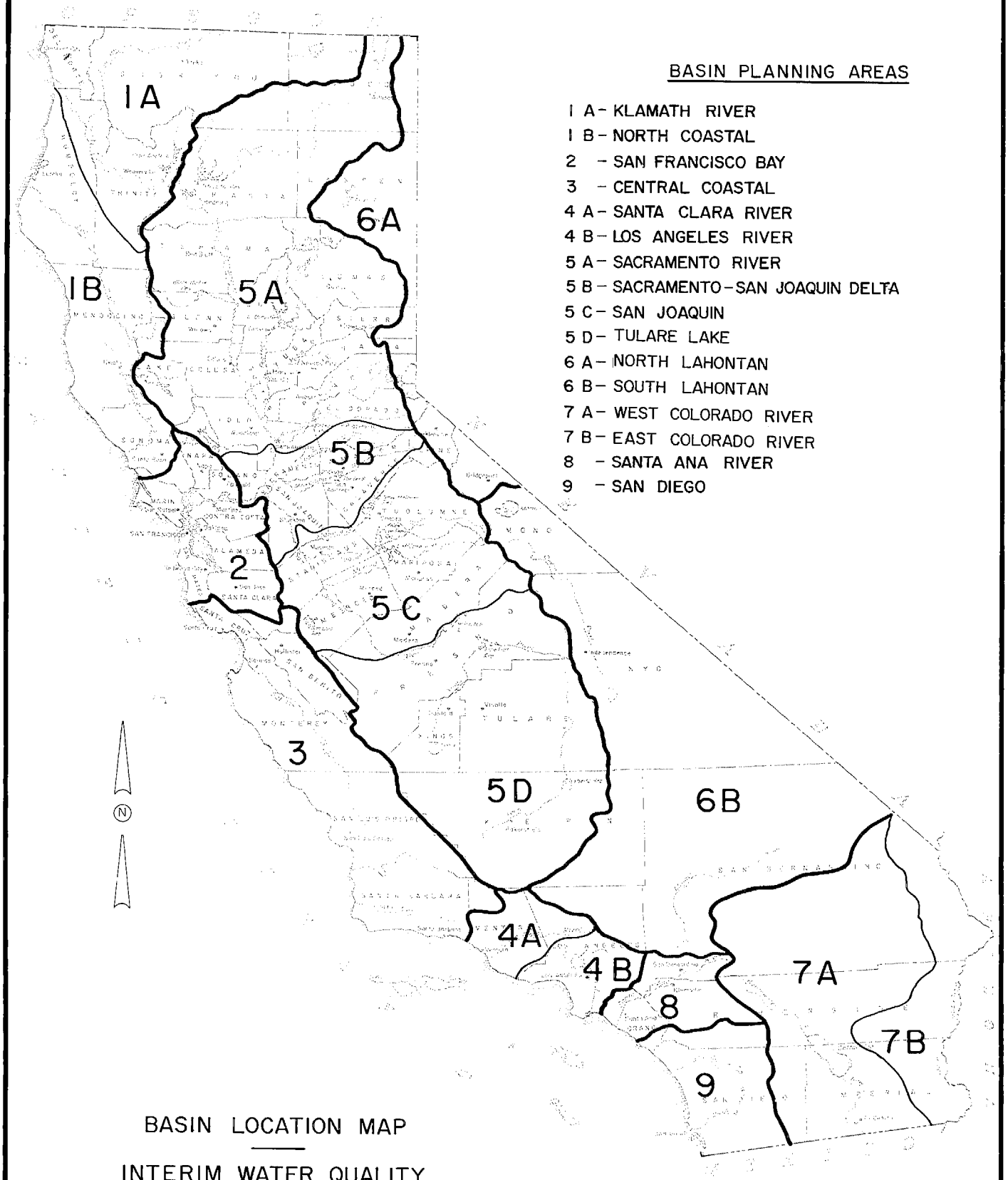
As part of the program to monitor water quality conditions and to enforce waste discharge prohibitions each regional board has embarked upon a surveillance program which is described in this report.

An important portion of the basin plan will be the yearly project list of needed sewerage projects for each of the succeeding five fiscal years. In the future, prior to January 31st of each year the State Water Resources Control Board in conjunction with the Regional Board will update the area list and extend it for the succeeding 5-year period.

Lists of proposed projects which are in accordance with basin wide plans and are thus eligible for state and federal grants-in-aid are appended to this report along with a summary of comments received during hearings held on the report and proposed plan.

It should be restated that the dates – subsequent to 1971–72 – as set forth in the project lists are subject to change after further study. Consequently, failure of a community to comply with those dates will not necessarily constitute a violation of waste discharge requirements.

FIGURE 1. BASIN LOCATION MAP



BASIN LOCATION MAP

INTERIM WATER QUALITY CONTROL PLAN CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD 1971

CHAPTER III

BASIN DESCRIPTION[1/]

The Klamath River Basin as shown on Figure 1 includes the California portion of the Klamath, Smith, Applegate, Illinois, and Winchuck Rivers as well as the Lost River and Butte Valley Basins. Some of the most remote regions of California are also within this Basin – the Marble Mountain Wilderness Area and the Trinity Primitive Area.

Topography

The topography varies from rugged, rain-drenched, tree-covered mountains and canyons on the coast to the ancient lake beds of the Lost River-Butte Valley drainage. The highest point in the Basin is 9,000-foot Thompson Peak in the heart of the Trinity Alps. The rivers of the area have cut deep twisting gorges through the mountains; however, in the northeast portion of the Basin, the terrain becomes less severe and more desert-like.

Climate

Climatically, the Klamath River Basin is a land of extremes. The area lying along the coast has moderate temperatures, influenced largely by the ocean. Temperatures often exceed 105 degrees Fahrenheit in Shasta and Scott Valleys during the summer months while coastal temperatures remain around 60 degrees Fahrenheit. The growing season is approximately 260 days in the western coastal region and 100 days or less in the Lost River-Butte Valley units where killing frosts may occur in any month of the year.

Precipitation in the Basin has a much more clearly defined regional character than the temperature. Winter storms moving in from the ocean must rise to clear the mountains; the result is heavy precipitation on the western slopes of the mountain ranges. As these storms move inland, precipitation decreases. The Smith River and lower Klamath River watersheds average 60 to 125 inches of rainfall per year. In the Lost River-Butte Valley units, the mean seasonal precipitation is less than 12 inches and distinctly seasonal, very little occurring from June through September. Snow falls in moderate amounts above 2,000 feet, but only at altitudes above 4,000 feet does snow remain on the ground for appreciable periods of time.

Geology

The Klamath River Basin is included in parts of the Modoc-Oregon Lava Plateau, the Cascade Range, and all of the Klamath Mountains' geomorphic provinces. The portion of the Basin area east of, and including Butte Valley is within the Modoc-Oregon Lava Plateau. The Cascade Range forms a north-south belt through the basin, extending from beyond Crater Lake on the north to Mount Shasta on the south. It is bounded in part on the east by the western edge of Butte Valley and on the west by the east edge of Shasta Valley. The Klamath Mountains province includes the entire remainder of the basin lying west of the Cascade Range.

Lost River and Butte Valley units are located in the Modoc-Oregon Lava Plateau province. The Modoc-Oregon Lava Plateau is characterized by broad valleys, frequently containing marshy ground, and in many cases, shallow lakes. The surface drainage system is poorly integrated, most of the water draining finally into the Klamath River. The consolidated rocks of the Modoc-Oregon Lava Plateau are nearly all volcanic and volcanic-sedimintary types. These rocks principally occur as a basaltic lava rock, which includes some tuff and sediments, and as a subordinate andesite unit.

1/ Numerical data derived from Department of Water Resources Bulletin 160–70.

Shasta Valley lies along the western side of the Cascade Range province in California and is flanked on the west by rocks of the Klamath Mountains province near Yreka. At the western margin of the valley, marine Upper Cretaceous sandstones and conglomerates overlie the older Mesozoic and pre-Mesozoic rocks. The Cretaceous rocks are in turn overlain by the Eocene Umpqua Formation, which consists mainly of shales. Volcanics of the western Cascades underlie much of the floor of Shasta Valley and bound the valley on the east side.

Between the Cascade Range and the Pacific Ocean, the Klamath Mountains form a complex rugged range whose peaks and ridges reach some 6,000 to 8,000 feet above sea level. In this area there is a wide range of rock types ranging in age from early Paleozoic to late Mesozoic with nearly all the major periods of geologic time represented. Rock types are mostly metamorphic which have been intruded by granitic rocks and serpentine.

The Klamath Mountains were developed principally by stream erosion of an uplifted plateau. The mountain mass is transected by the Klamath River which, with its tributaries, often shows a succession of benches on the walls of the canyons. These benches are indicative of repeated rejuvenation of the whole region. Many of them were left covered with terrace gravels, some of which have proven to be auriferous as the streams cut deeper into the surrounding terrain. Only in a few places have flats developed in valley bottoms; these usually being either in areas of intersecting streams or where weaker rock zones occur. Scott Valley is considered to be the only basin of major importance in this province susceptible of ground water development. The alluvial fill of Scott Valley consists of Recent alluvium and a few isolated patches of Pleistocene alluvium found along the valley margins. The Recent alluvium, which may reach a maximum thickness of more than 400 feet in the wide central part of the valley between Etna and Greenview, is the only formation tapped by wells in Scott Valley.

Drainage

The mountainous terrain and heavy rainfall in the Klamath River Basin have resulted in the formation of a complex stream system. The total mean annual natural runoff for the entire area is about 15,000,000 acre-feet.

Although the Smith, Trinity, and Klamath Rivers do have some contribution from snowmelt, the stream system is fed primarily by rainfall and consequently the runoff follows a seasonal pattern.

The following paragraphs are devoted to brief descriptions of each of the major rivers in the Klamath River Basin.

Smith River. The Smith River Basin occupies the extreme northwestern corner of California. It drains a total of 719 square miles, 87 of which are in Oregon. Although relatively small in area, the basin has the highest average rainfall in the State, and thus produces a large mean annual natural runoff of 2,900,000 acre-feet.

Klamath River. The Klamath River is by far the largest stream in the North Coastal area. Its 12,000,000 acre-feet of average annual natural runoff is about 40 percent of the total runoff of the North Coastal area. Major tributaries include the Trinity, Salmon, Scott, Shasta, Sprague, and Williamson Rivers. The stream system drains a total area of 15,700 square miles; 5,695 of this are in Oregon. In 1957, California and Oregon established an interstate compact commission to insure equitable distribution of Klamath River water between the two states.

Trinity River. The Trinity River, a major tributary of the Klamath River, lies in the southern provinces of the Klamath Mountains. It drains a total area of 2,969 square miles. The eastern boundary of the basin coincides with over 100 miles of the divide between the Sacramento River Basin and the North Coastal area. The Bureau of Reclamation's Trinity River Division of the Central Valley Project was completed in 1964. The Division's facilities provide for the diversion of about 1,000,000 acre-feet per year into the Sacramento Valley.

Population

Settlement of the Klamath River Basin started around the mid-1800's with the discovery of gold. As gold gave out, agriculture grew in prominence and has been a principal industry for the past 100 years. Similarly, logging and sawmill operations entered the picture in the late 1800's and have been instrumental in much of the area's growth. Now, however, the general economy of the area is based upon its natural resources and recreational supported activities. Therefore, it is difficult to see anything but modest growth in this Basin in the future.

Present and expected future population is shown in Table 1. As can be seen by examining the data in Table 1, the Klamath River Basin is expected to increase in population from 51,000 in 1970 to 65,000 in 2000.

TABLE 1
Population Projections
Klamath River Basin
(1000's)

County[1/]	1970	1975	1980	1990	2000
Del Norte	15	16	18	22	26
Humboldt	4	4	4	4	5
Modoc	1	1	1	1	1
Siskiyou	24	24	24	25	26
Trinity	7	7	7	7	7
Totals	51	52	54	59	65

Employment

For the most part, the economy of the Klamath River Basin is supported by the forest products industry, tourism, and agriculture.

A breakdown of present and projected employment figures for the Basin is shown in Table 2.

TABLE 2
Present and Projected Employment
Klamath River Basin
(1000 Persons)

	1970	1975	1980	1990	2000
Agriculture, Forestry and Fishery	2.7	2.7	2.7	2.7	2.7
Mining	0.1	0.1	0.1	0.1	0.1
Construction	1.1	1.1	1.2	1.3	1.4
Manufacturing					
Food & Kindred Products	0.2	0.2	0.2	0.2	0.2
Textile Mill Products	–	–	–	–	–
Chemical & Allied Products	–	–	–	–	–
Paper & Allied Products	–	–	–	–	–
Petroleum Refining	–	–	–	–	–
Primary Metals	–	–	–	–	–
Other Manufacturing	4.6	4.7	4.9	5.5	6.1
Total	4.8	4.9	5.1	5.7	6.3
Armed Forces	–	–	–	–	–
Other	8.3	8.6	8.9	10.2	11.5
Total Employed	17.0	17.4	18.0	20.0	22.0

[1/] Includes only that portion of county within Klamath River Planning Basin.

Land Use

The Klamath River area is endowed with a plentiful water supply, but due to other factors such as isolation, climate, and time of occurrence of runoff only a modest increase is expected in irrigated acreage and urban development. As shown in Table 3, irrigated acreage is projected to increase by 20,000 from 230,000 acres in 1970 to 250,000 acres in 2000. At the same time the urban area is expected to double from the present 10,000 acres to 20,000 acres.

TABLE 3
Present and Projected Land Use
Klamath River Basin
(1000 acres)

	1970	1975	1980	1990	2000
Residential	7	14	14	14	14
Commercial	1	2	2	2	2
Industrial	2	4	4	4	4
Total	10	20	20	20	20
Irrigated Land	232	242	242	248	252
Remaining Irrigable Land	320	300	300	290	290
Other Land Suitable for Urban Development	30	30	30	30	30
Remaining Land	6308	6308	6308	6308	6308
Total Area	6900	6900	6900	6900	6900

Waste Disposal

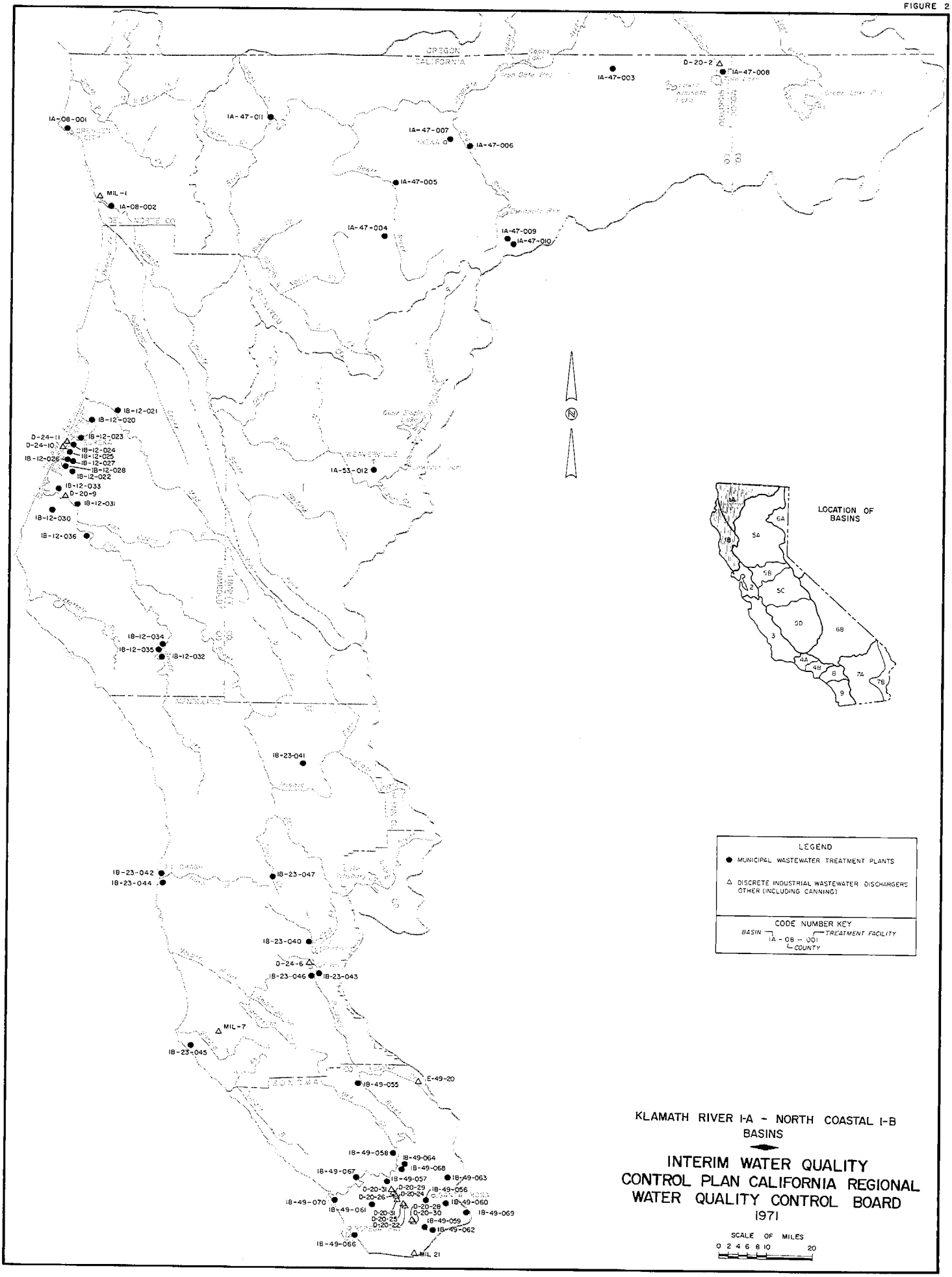
Present waste disposal sites in the Klamath River Basin are shown in Figure 2. Included in Figure 2 are both industrial and municipal discharges. Code numbers shown in Figure 2 are identified in Table 4.

TABLE 4
INDEX TO WASTE DISCHARGERS
Explanation of Code Numbers
Used on Figure 2

Code Number	Waste Discharger
1A–08–001	City of Crescent City
1A–08–002	Klamath Community Services District
1A–47–003	City of Dorris
1A–47–004	City of Etna
1A–47–005	City of Fort Jones
1A–47–006	City of Montague
1A–47–007	City of Yreka
1A–47–008	City of Tulelake
1A–47–009	Shastina Sanitary District
1A–47–010	City of Weed
1A–47–011	Happy Camp Sanitary District
1A–53–012	Weaverville Sanitary District
D–20–2	Western Starch Company
Mil–1	Klamath Air Force Station

FIGURE 2. MUNICIPAL AND INDUSTRIAL WASTE DISCHARGERS
KLAMATH RIVER BASIN

FIGURE 2



CHAPTER IV

BENEFICIAL USES TO BE PROTECTED

The logical sequence of steps leading to a fully developed water quality control plan must begin with a statement of the beneficial water uses of the basin which are to be protected.

Obvious and important consumptive uses of fresh waters in the Basin include municipal, domestic, agricultural and industrial water supply with the most intensive development of facilities on the Trinity River. While extensive, this development has tapped only a small fraction of the Basin's developable fresh water supplies. The Smith and Klamath, for example, with monumental volumes of winter run-off, remain virtually undeveloped. Protection of water supplies for potential consumptive use both within the Basin and in other parts of the State must be a matter of serious concern.

Non-consumptive beneficial uses of Basin waters, both fresh and marine, include preservation and enhancement of fish, aquatic life and wildlife; sport and commercial fishing and shellfishing; hunting; water contact recreation; boating; aesthetic enjoyment; scientific study; the support of marinas, small boat harbors, navigation and marine commerce. These non-consumptive uses, enjoyed to a large extent by tourists from outside the Basin, are growing at a rapid rate.

The occurrence and location of these beneficial uses throughout the principal waters of the basin are summarized in Table 5. While some of the uses may become more important (e.g. sport fishing and recreation) as our population increases, it is not believed that the list as a whole will change in the foreseeable future.

Definitions and abbreviations of terms found in Table 5 are as follows:

Municipal and Domestic Supply (MUN) – includes usual community use and individual use for domestic purposes.

Agricultural Supply (AGR) – includes crop, orchard, and pasture irrigation, stock watering, and all uses in support of farming and ranching operations.

Industrial Supply (IND) – includes mining, cooling water, process water, etc.

Commercial Fishing (COM)

Shellfish Harvesting (SHEL)

Scientific Study, Research, Training, and Marine Life Refuge (SCI)

Aesthetic Enjoyment (AES)

Hydroelectric Power Generation (POW)

Freshwater Habitat (FRSH) – provides freshwater habitat for fish, waterfowl, and wildlife.

Marine Habitat (MAR) – provides habitat for fish, plant, and animal propagation and sustenance, shrimp, crab, and other shellfish, waterfowl and other water-associated birds plus mammal rookery and hauling grounds.

Ground Water Recharge (GRW) – recharge for eventual extraction for municipal, industrial, agricultural, and recreational use.

Fish Spawning (SPWN) – provides high quality aquatic habitat especially suitable for fish spawning.

Fish Migration – (MIGR) – migration route for anadromous species.

Water-Contact Recreation (REC1) – all recreation uses involving actual body contact with water such as swimming, wading, and water sports including water skiing, skindiving, surfing, and sport fishing.

Non-Water-Contact Recreation (REC2) – recreational uses which involve the presence of water but do not require contact with water such as picnicking, sunbathing, hiking, beachcombing, tidepool and marine life study, camping, pleasure boating, and waterfowl hunting.

Navigation (NAV)

TABLE 5

BENEFICIAL USES OF THE KLAMATH RIVER BASIN

	MUN	AGR	IND	COM	SHEL	SCI	AES	POW	FRSH	MAR	GRW	SPWN	MIGR	REC 1	REC 2	NAV
Smith River	x	x	x			x	x		x		x	x	x	x	x	x
Klamath River	x	x	x			x	x	x	x		x	x	x	x	x	x
Trinity River	x	x	x			x	x	x	x		x	x	x	x	x	
Salmon River	x	x	x			x	x	x*	x			x	x	x	x	
Scott River	x	x	x			x	x		x		x	x	x	x	x	
Shasta River	x	x	x			x	x		x		x	x	x	x	x	
Lost River		x				x	x		x			x			x	
Applegate River	x	x	x			x	x		x			x	x	x	x	
Illinois River	x	x	x			x	x		x			x	x	x	x	
Winchuck River	x	x	x			x	x		x			x	x	x	x	
Coastal Waters				x	x	x	x			x		x	x	x	x	x

* by individuals on some tributaries

CHAPTER V

POLICY GUIDELINES

Within the past two years, Californians – as never before – have expressed their desire for a far-sighted water quality management program and, of most significance, have demonstrated their willingness to pay their share for public facilities that will make that program a reality.

In 1969, the Porter-Cologne Water Quality Control Act received the almost-unheard-of unanimous endorsement of the California State Legislature. A year later over 70% of the voters of California approved the Clean Water Bond Act of 1970 to provide $250 million in matching State funds to augment existing Federal Grant programs.

While California has reason to be proud of its water quality control accomplishments over the past 20 years, failure to recognize that Californians are demanding an even more aggressive and effective water quality control program now would be most unrealistic.

To support these expressions of legitimate public concern, the California Regional Water Quality Control Board, North Coast Region, declares that:

1. Further degradation of the quality of ground or surface waters in the Klamath River Basin is neither warranted nor acceptable.

2. All existing waste discharge and water quality problems will be resolved at the earliest practicable date with emphasis on restoring all appropriate protection to all beneficial uses in accordance with basin plans.

GOALS

In developing this Basin Plan, the California Regional Water Quality Control Board, North Coast Region, recognizes the following **waste water management goals:**

1. Protection and enhancement of all waters, surface and underground, fresh and saline, for all present and anticipated beneficial uses including esthetics and aquatic environmental values.

2. Maintenance and/or enhancement of the quality of all surface waters to permit maximum recreational use.

3. Development, insofar as practical, of combined wastewater treatment facilities so as to avoid duplication of effort and inefficient operations.

4. Management of municipal and industrial waste water as part of an integrated system of fresh water supplies to achieve maximum use of fresh waters through waste water reclamation and recycling by agriculture, industry, and municipalities.

5. Continual improvement of waste water treatment systems to assure consistent high quality effluents at minimum cost.

MANAGEMENT PRINCIPLES

Accordingly, in order to achieve these five goals and implement the Basin Plan herein set forth, the California Regional Water Quality Control Board, North Coast Region adopts the following **land and water use management guidelines:**

1. All water quality management systems throughout the basin shall be designed to promote waste water reclamation.

2. Plans shall direct that wherever practical, waste treatment facilities be consolidated. The consolidated systems shall be sized and located to assure efficient management of wastes and meet potential demands for reclaimed water.

3. Insofar as they affect water quality, land use practices shall be controlled to assure protection of beneficial water uses.

4. Industrial and municipal discharges shall contain essentially none of the following:

   a. Chlorinated hydrocarbons
   b. Toxic substances
   c. Harmful substances that may concentrate in food webs
   d. Excessive heat
   e. Radioactive substances
   f. Grease, oil, and phenolic substances
   g. Excessively acidic or basic compounds
   h. Heavy metals such as lead, copper, zinc, chromium, mercury, etc., and their compounds
   i. Other known deleterious substances

5. Applicants for State and Federal grants for construction of waste treatment facilities shall be required to submit proof of implementation of adequate source control of the constituents listed above in paragraph 4.

6. The board shall prohibit waste discharges into areas which are found to possess unique or uncommon cultural, scenic, esthetic, historical, ecological or scientific values.

7. Wastes discharged to surface waters shall contain no materials in concentrations which are hazardous to plant, animal, or aquatic life, or which may become detrimental as a result of their accumulation in the environment or the food webs.

8. Waste of quality suitable for disposal in tidal waters shall be discharged through diffusion systems designed to rapidly disperse waste constituents so as to assure protection of all beneficial uses, and to prevent the return of wastes in recognizable form to inshore areas.

9. Waste waters percolated into ground waters shall be of such quality at the point where they enter the ground that the continued useability of all ground waters in the basin is assured.

10. The Regional Board shall encourage and promote a positive program of research into improved waste treatment and management methods and systems with the objective of developing more effective means of resolving waste problems common in the Klamath River Basin.

CHAPTER VI

WATER QUALITY OBJECTIVES AND DISCHARGE PROHIBITIONS

WATER QUALITY OBJECTIVES

Water quality objectives for the Klamath, Smith, and Lost Rivers as well as tidal waters in the Klamath River Basin were previously adopted by this Board as part of the program to develop water quality control policy for California's interstate and coastal waters.

The objectives stated below will supersede those which have been previously adopted. While slight, there are some differences between the water quality objectives in this basin plan as compared to those in the earlier documents on interstate and coastal waters.

Specifically, color and odor limitations are now included; turbidity and toxicity limitations have been reworded and clarified; limitations on bottom deposits, pesticides, biostimulants, and floatables, oil and grease have been reworded; and temperature objectives have been reworded to reflect adopted State policy. In addition, the bacteriological objectives for the Klamath and Smith Rivers have been reworded to include more precise values and the minimum dissolved oxygen requirement for the Klamath and Smith Rivers has been elevated from 7.0 mg/l to 9.0 mg/l. Water quality objectives for the Klamath River Basin are as follows:

INSOFAR AS THEY MAY BE INFLUENCED BY WASTE DISCHARGES, BY WASTES ORIGINATING FROM LAND MANAGEMENT OR CULTURAL PRACTICES OR FROM OTHER HUMAN ACTIVITIES, THE KLAMATH RIVER BASIN WATERS SHALL MEET THE FOLLOWING OBJECTIVES:

Color:

The color of the waters of the Klamath River Basin shall not be significantly increased above naturally occurring background levels.

Turbidity:

The turbidity of the waters of the Klamath River Basin shall not be increased more than 20 percent above naturally occurring background levels.

Bottom Deposits:

There shall be no bottom deposits other than of natural causes in the waters of the Klamath River Basin.

Floatables, Oil and Grease:

There shall be no visible evidence of any floatable material or oil and grease other than of natural causes in the waters of the Klamath River Basin.

Odors:

There shall be no odors other than of natural causes in the waters of the Klamath River Basin.

Pesticides:

The waters of the Klamath River Basin shall not contain concentrations of individual pesticides or combinations of pesticides known to be deleterious to fish or wildlife.

Biostimulants:

No substance shall be discharged to the waters of the Klamath River Basin in amounts which promote aquatic growths in the receiving waters to the extent that such growths cause nuisance or damage any beneficial use.

Bacteriological:

The bacteriological quality of the waters of the Klamath River Basin shall not be degraded beyond background levels. In determining whether or not the basin waters have been degraded, the following established, bacteriological, base-line levels will be used:

1. Klamath River

Monitoring Station	Maximum Geometric Mean Values MPN/100 ml	
	Total Coliform	Fecal Coliform
Klamath River below Iron Gate Dam	95	2
Klamath River above Scott River	523	31
Klamath River below Seiad	272	7
Klamath River at Somesbar	186	4
Klamath River at Klamath Glen	23	2

2. Trinity River

Monitoring Station	Maximum Geometric Mean Values MPN/100 ml	
	Total Coliform	Fecal Coliform
Clair Engle (Trinity) Lake	15	3
Lewiston Lake	50	7
Trinity River at Lewiston	50	7
Trinity River at Helena	120	8
Trinity River at Hoopa	120	8
Trinity River at Douglas City	200	35

3. Smith River

Monitoring Station	Maximum Geometric Mean Values MPN/100 ml	
	Total Coliform	Fecal Coliform
Middle Fork Smith River below Gasquet	150	5
Middle Fork Smith River near Washington Flat	150	5
South Fork Smith River	150	5
Smith River near Crescent City water intake	150	10

4. All other waters

Levels as deemed appropriate by State and local health authorities.

Toxicity:

No toxic substance which will produce deleterious effects upon the aquatic biota or which would render aquatic life undesirable for human consumption shall be discharged to the waters of the Klamath River Basin.

Radionuclides:

Levels of radioactivity shall not exceed limits prescribed by provisions of Chapter 5, Title 17, of the California Administrative Code.

Temperature:

The temperature of the waters of the Klamath River Basin shall conform to those objectives as set forth by the State Water Resources Control Board in its "Policy Regarding the Control of Temperature in Coastal and Interstate Waters and Enclosed Bays and Estuaries of California."

In addition to the aforementioned general water quality objectives, the waters of the Klamath River Basin shall be maintained within the naturally occurring baseline numerical limits contained in Table 6.

TABLE 6

NUMERICAL WATER QUALITY OBJECTIVES
for the
KLAMATH RIVER BASIN [3]

	Specific Conductance (micromhis)		Total Dissolved Solids		Dissolved Oxygen (mg/1)		Phosphate (mg/1)	Nitrate (mg/1)	Hydrogen Ion (pH)	
	Max	Med	Max	Med	Min	Med	Med	Med	Max	Min
Klamath River (upstream)[1]	400	300	270	150	9.0	-	0.37	2.3	8.5	7.0
Klamath River (downstream)[1]	300	200	250	100	9.0	-	0.18	0.7	8.5	7.0
Smith River	200	150	100	65	9.0	-	0.00	0.1	8.5	6.5
Trinity River	300	200	150	100	9.0	-	0.10	0.4	8.5	6.5
					5.0[2]					
Lost River	1000	850	-	-	3.0		-	-	9.0	7.0
Salmon River	170	80	110	55	9.0		0.04	0.2	8.5	6.5
Shasta River	750	530	500	340	8.0		0.52	1.0	8.5	6.5
Scott River	450	230	290	150	8.5	10.5	0.02	1.3	8.5	6.5

1. Klamath River (upstream) refers to the main stem of the Klamath River between the California-Oregon border and the mouth of Salmon River. Klamath River (downstream) refers to the main stem of the Klamath River from the mouth of the Salmon River downstream to the mouth of the Klamath River.
2. The dissolved oxygen shall not be depressed below:
   (a) 5.0 mg/1 in that portion of the Lost River between Clear Lake and the California-Oregon boarder.
   (b) 3.0 mg/1 in the lower portion of the Lost River downstream from Hatfield, in the Tule Lake Sump, and in the Lower Klamath Lake Sump.
3. Numerical values shown in this Table are based on data collected over many years through a cooperative monitoring program conducted by the California Department of Water Resources and the U.S. Geological Survey.

WASTE DISCHARGE PROHIBITIONS

Section 13243 of the Porter-Cologne Water Quality Control Act authorizes the Regional Board – in a water quality control plan or in waste discharge requirements – to specify certain conditions or areas where the discharge of waste, or certain types of waste, will not be permitted.

While not stated in the Act, this Board believes that appropriate situations for waste discharge prohibitions fall generally into two categories:

1. The first are those situations where experience, judgment, and knowledge indicate a strong probability that water quality objectives cannot or will not be continuously met. In the Klamath River Basin, failure to meet water quality objectives would threaten very significant beneficial uses.

   Therefore, in order to achieve water quality objectives, protect present and future beneficial water uses, protect public health, and prevent nuisance, the California Regional Water Quality Control Board, North Coast Region, declares that waste discharges are prohibited in the following locations:

   A. All surface, freshwater impoundments and their tributaries;
   B. Water-contact recreation areas;
   C. All coastal streams and natural drainage ways that flow directly to the ocean;
   D. Crescent City Harbor;
   E. All intertidal reaches of the coast, bays, and estuaries;
   F. All other tidal waters unless it is demonstrated on the basis of waste characteristics, degree and reliability of treatment, rate of mixing and dilution, and other technical factors that water quality objectives will be met and all beneficial uses will be protected;

2. The second general category of situations that this Board believes warrants waste discharge prohibitions are those where the proposed receiving water or its beneficial uses have unique or exceptional cultural, esthetic, historical,, scientific, or ecological values. The public's need and concern for these values is so important that no risk of degradation from wastes should be accepted. Therefore, all domestic waste discharges are prohibited in the following locations within the Klamath River Basin in California:

   A. Smith River and its tributaries;
   B. Klamath River and its tributaries, including but not limited to, the Trinity, Salmon, Scott, and Shasta Rivers and their tributaries;
   C. The Applegate, Illinois, and Winchuck Rivers and their tributaries;

While not part of the rationale for the above prohibitions, it should be noted that the terms of the prohibitions are being met now and should be readily attainable for the foreseeable future:

3. As further implementation of this plan to meet water quality objectives and protect beneficial uses, the following conditions are imposed with respect to solid wastes, vessel wastes, and individual sewage disposal systems:

   Solid Wastes

   1. No Class I solid waste material shall be discharged at any location other than a Class I solid waste disposal site.

   2. No Class II solid waste material shall be discharged at any location other than a Class I or Class II solid waste disposal site.

   3. No Class III solid waste material shall be discharged at any location other than a Class I, II, or III solid waste disposal site.

Vessel Wastes

The discharge of vessel wastes including sewage, trash, rubbish, grease, oil, galley waste, shower waste, and all other waste substances is prohibited in all fresh waters, bays, estuaries, and nearshore tidal waters.

Individual Sewage Disposal Systems

1. Individual sewage disposal systems are prohibited at all locations not in conformance with those regulations contained in the "Uniform Plumbing Code" or local county ordinances whichever is the most restrictive. (See Rationale, Appendix D).

2. Individual sewage disposal systems are prohibited in all new subdivisions until such time as the developer demonstrates to the satisfaction of the Board that the geologic and hydrologic conditions are such that the quality of the underlying groundwater or adjoining surface water will not be impaired and that the proposed lot size provides sufficient space to permit additional leach lines to be constructed on the lot should it become necessary.

CHAPTER VII

PROGRAM OF IMPLEMENTATION

An important portion of any basin-wide plan is its program of implementation. Of equal importance, however, is its acceptance by the public. Therefore, the Board has relied upon local planning efforts -- where available -- in developing its conceptual plans. The following pages contain a facilities plan for water quality control as well as a statement of the Board's intent with respect to surveillance.

FACILITIES PLAN FOR WATER QUALITY CONTROL

Basically, this water quality control plan calls for the following:

1. The prohibition of all domestic waste discharges to streams in the Klamath River Basin excluding the Lost River.

2. The prohibition of all waste discharges to:

   a. fresh water impoundments
   b. water-contact recreation areas
   c. all coastal streams and natural drainage ways that flow directly to the ocean
   d. Crescent City Harbor
   e. all intertidal reaches of the coast, bays, and estuaries
   f. all other tidal waters unless it is demonstrated to the satisfaction of the Board that water quality objectives will be met and all beneficial uses will be protected.

In order to implement this plan, the Board believes it will be necessary for all concerned entities to follow the facilities plan contained in Table 7.

In order to implement the aforementioned facilities plan for water quality control, the Regional Board has developed a yearly project list of needed sewerage projects for each of the succeeding five fiscal years. In the future, prior to January 31 of each year, the State Water Resources Control Board, in conjunction with the Regional Boards, will update the yearly list and extend it for the succeeding five-year period.

Projects will be scheduled according to the following criteria:

(a) Those needed to correct an existing water quality or water pollution problem or to conform to an area-wide sewage collection plan will be scheduled at the earliest practicable date.
(b) Projects affecting a common receiving water or that can be logically included in an area-wide or consolidated system will be scheduled as close together in time as water quality needs permit.
(c) Treatment plants nearing flow or treatment design capacity will be scheduled so the expanded facilities will be available before a problem develops.
(d) Water reclamation projects which beneficially improve water quality and which conserve water resources through feasible reuse will be scheduled as soon as practicable.
(e) Not foregoing any of the above criteria, projects will be scheduled for a uniform level of construction for each fiscal year within the five-year period.

Following these criteria, project lists indicating those projects which will be considered for certification by the State Water Resources Control Board to the Environmental Protection Agency as eligible for federal grants were prepared. They are included in this report as Appendix A.

SURVEILLANCE

Effective water quality management requires three categories of water quality monitoring. First, individual treatment plant monitoring is necessary to maintain optimum treatment efficiencies and compliance with waste discharge requirements. Plant effluent monitoring is also essential to assess the individual effects of each waste source on the waters into which it discharges. Second, the rivers, lakes, ground and coastal waters receiving wastes must be examined to assure attainment and maintenance of water quality levels consistent with state water quality criteria. Third, the effects on water quality of manipulating the state's waters through water resource development projects must be determined and evaluated. These three categories of monitoring will provide information necessary for efficient management of pollution control facilities and water resource development projects, and the effective administration of water quality criteria.

The objectives of a comprehensive surveillance or monitoring program for water quality management are to identify:

Compliance and noncompliance with water quality criteria.

Water quality baselines and trends.

Improvements in water quality produced by abatement measures undertaken.

Emerging water quality problems, in sufficient time to effect adequate preventive measures.

The State Water Resources Control Board and California Regional Water Quality Control Boards have an established program of surveillance based on discharger self-monitoring, regional board routine sampling and data acquisition from other state agencies.

Significant waste discharges and, in many cases, the attendant receiving waters are monitored by the discharger in compliance with waste discharge requirements adopted by the Regional Board. These data are supplemented by sampling conducted by the Regional Board staff and by special surveys conducted by other agencies at the Board's request.

The Department of Fish and Game conducts many special surveys of water quality and aquatic biota at specific locations for limited time periods.

The Department of Public Health requires public water suppliers to periodically report certain water quality parameters of importance to public health and supplements this information with sampling and analyses by departmental staff. Special surveys of new water supply sources also yield considerable data.

The Department of Water Resources operates an extensive water quality monitoring program. The program includes, in general, monthly sampling of both surface and ground waters. In addition, short-term studies yielding water quality data are made of specific areas. Additional data are acquired from local agencies and are available through Department of Water Resources.

In addition to the various state and local agencies, several federal agencies routinely collect water quality information within their respective areas of interest and conduct studies and investigations which yield water quality data. Particularly significant among these are the U.S. Geological Survey; Environmental Protection Agency, Water Quality Office; U.S. Bureau of Reclamation and the U.S. Corps of Engineers.

The need for a comprehensive surveillance program encompassing the requirements of all state agencies has already been recognized by the State Board. A preliminary evaluation was presented in the February, 1971 report, "Evaluation of Water Quality Monitoring Programs in California." The steps leading to a comprehensive program were described as:

a. Define objectives and scope
b. Develop a data management system capable of handling the data and providing for evaluation of the program
c. Evaluate existing monitoring against the program objectives
d. Identify methods of sampling and analysis to include in the program
e. Prepare and implement the detailed program.

The objectives of a comprehensive surveillance program for water quality management have been previously presented. The State Water Resources Control Board is currently preparing and implementing a data management system capable of satisfying the needs of the total statewide surveillance program. Detailed evaluations of water quality monitoring needs have been made for the Bay-Delta area ("An Environmental Monitoring Program for the Sacramento-San Joaquin Delta and Suisun Bay," State Water Resources Control Board Publication No. 40), and for pesticides monitoring throughout the state ("A Review of Pesticide Monitoring Programs in California," State Water Resources Control Board, February, 1971). The utility of remote sensing has been studied ("Study to Evaluate the Utility of of Aerial Surveillance Methods," State Water Resources Control Board Publication No. 41) and monitoring by satellite is being investigated through the Earth Resources Technology Satellite program.

As techniques appear practical, they are being tested in pilot programs. Two pilot programs will be in operation shortly after July 1, 1971. A low altitude aerial surveillance program will be conducted by board staff as a routine surveillance component. An intensive monitoring of hazardous materials will be conducted in the Monterey Bay drainage area to determine the most effective approach to a full statewide operation.

These surveillance planning and development activities are proceeding on a schedule which will complement and support the fully developed water quality management plans.

TABLE 7

FACILITIES PLAN
INTERIM WATER QUALITY CONTROL PLAN
KLAMATH RIVER BASIN

ENTITY	FACILITIES PLAN	START CONSTRUCTION	RECLAMATION POTENTIAL
City of Tulelake	Make a study of sewerage needs	--	Evaluation pending study
City of Fort Jones	Eliminate existing septic tank and enlarge existing percolation ponds	1974–75	Effluent could be reclaimed on farm land during irrigation
City of Yreka	Construct new secondary treatment plant and enlarge percolation ponds	1971–72	
City of Etna	Continue to maintain all effluent on land	--	
Happy Camp Sanitary District	Construct collection system, interceptors, and pump stations; provide activated sludge treatment and leach field	1971–72	None
Weaverville Sanitary District	Construct new secondary treatment plant and percolation beds	1971–72	None
City of Weed	Add chlorination facilities to existing plant and dispose of effluent on land by irrigation	1972–73	Effluent will be reclaimed on nearby farm and pasture lands
Shastina Sanitary District	Chlorinate effluent from facultative ponds, discontinue discharge to Boles Creek and apply effluent to land	1971–72	Effluent will be reclaimed
City of Montague	Maintain existing facilities and construct additional percolation ponds. Eliminate all overflows	1973–74	Effluent could be reclaimed on nearby farm and pasture land

TABLE 7
(continued)

City of Crescent City	Enlarge existing primary treatment facilities, add secondary treatment facilities, and chlorination	1971–72	None
Klamath AFB	Construct extended aeration treatment plant	1971–72	None
Klamath Community Services District	Existing treatment plant fully meets waste discharge requirements	None Planned	None
Dorris	Discharge meets waste discharge requirements	None Planned	None
Lake Shastina Properties	Construct treatment facilities, and facilities to export waste out of the Lake Shastina drainage basin	1972–73	Effluent could be reclaimed on land in Shasta Valley downstream from Shasta River Dam

APPENDIX A

PROJECT LIST

Basic to the implementation of this interim plan is a list of municipal projects proposed for construction. These are presented on the following pages.

On April 1, 1971, the California State Water Resources Control Board adopted regulations for administering the joint federal-state grant program for construction of wastewater treatment projects. These regulations (Subchapter 7, commencing with Section 2100 of Chapter 3, Title 23, California Administrative Code) were adopted to implement the Clean Water Bond Law of 1970 (Water Code, Division 7, Chapter 13) and Section 8 of the Federal Water Pollution Control Act. Federal regulations (18 CFR 601.32) state that no federal grant shall be made unless a project is included in "an effective current basinwide plan for pollution abatement consistent with applicable water quality standards." Sections 2120 and 2121 of the aforementioned State regulations cover establishment and scheduling of municipal projects.

The Municipal Project List is a list of municipal wastewater treatment projects by fiscal year that contains the name of the project, a brief description, estimate of project cost, and project group. A project must be on the list to be considered for certification by the State Water Resources Control Board and the Environmental Protection Agency. In addition, each construction grant application will undergo a thorough evaluation by the Regional and State Board staffs as required by Section 2140 through 2149 of the State regulations. **Therefore, it should be absolutely clear that inclusion of a project on the project list does not mean that it is approved for grant participation but merely that it will be considered for grant participation.**

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, NORTH COAST REGION

BASIN 1A – KLAMATH RIVER BASIN

MUNICIPAL PROJECT LIST

RESPONSIBLE AGENCY	PROJECT GROUP FISCAL YEAR 1971–72	DESCRIPTION OF PROJECT	ESTIMATED ELIGIBLE COST
Crescent City, City of	I	Upgrading primary plant to secondary and disinfection "Phase I"	$473,800
Yreka, City of	I	Construct new secondary plant with increased capacity	820,000
Happy Camp Sanitary District (Plant)	I	New secondary plant-leaching fields for final disposal	713,650
Happy Camp Sanitary District (Interceptor)	I	Interceptor	204,150
Shastina Sanitary District	I	Add disinfection and ponds	10,000
Weed, City of	I	Add disinfection and ponds	10,000
Weaverville Sanitary District	I	New secondary plant percolation ponds	400,000

APPENDIX B

COMMENTS AND SPECIFIC RECOMMENDATIONS RECEIVED AT PUBLIC HEARING ON KLAMATH RIVER BASIN PLAN, MAY 11, 1971, EUREKA

	Comments and Recommendations
1. James R. Hooper Attorney Crescent City	Agrees action is necessary, generally approves concepts of plan but disapproves of short time schedule and methods of solving problems. Stresses need for increase of Federal and State funds to rural areas.
2. William L. Hess Director of Public Works, Del Norte County	Generally approves what plan is trying to accomplish but offers long list of shortcomings and failure to recognize the realities of impoverished local governments. Specifically: water quality only one part of the environmental problem; plan is only restrictive rather than helpful in achieving appropriate development; requirements unrealistic and no interim solutions; individual sewage system standards will absolutely prevent any further development in major growth center of county due to high ground water; plan should recommend and find solutions rather than impose restrictive prohibitions; report is suggesting assumption of power over land use practices which is totally unacceptable; contradictory and confusing with respect to requirements of Crescent City and Del Norte County; must have 100% financing or very long-term low interest loans.
3. Jacob H. Miller Chairman, Water Resources Subcommittee, Sierra Club, Palo Alto	Strongly endorses the plan and urges continuing emphasis on waste water reduction, toxicant removal, source control and elimination of all estuarine and marine disposal of waste waters. Urges continuous review of septic tank standards – 100 feet may not be enough in some situations. Temperature standards may not be restrictive enough. Urges careful review of local cost estimates.
4. Robert B. Bond Executive Director, Klamath River Compact Commission	Urges close coordination with State of Oregon so that finally adopted plans for basins in both states will be of greatest benefit to water users in the basins.
5. R. J. O'Brien Regional Manager Dept Fish & Game, Redding	Appreciated opportunity to help in development of background data for the plan. Believes plans embody basic concepts necessary for protection of fish and wildlife resources in basin. Generally in agreement with plan but believes Lost River beneficial uses should include scientific study to protect the Lost River sucker, a rare and endangered species. In addition, urges minimum of 9.0 ppm D.O. in salmon spawning portions of Smith, Shasta, and Scott Rivers during spawning season.
6. Joe Creisler Sanitarian, Humboldt-Del Norte County Health Department	Concerned over implementation of the plan in view of severe individual disposal problems and cost of ultimate correction. Making great strides in Crescent City area to connect as rapidly as possible to sewer system. Due to high ground water in winter, individual problems are severe and widespread. The county will need all possible economic and technical help in implementing plan.
7. Frank J. Brickwedel Crescent City	No argument with desirability of cleaning up our environment, but concerned about over-reaction and subsequent economic chaos. Need more specific guidelines regarding individual disposal systems.

8. Mayor Ston Yackamouih Crescent City	Agrees with basic objectives of plan to protect water quality and environment. Concerned that once adopted it becomes locked in regardless of its weaknesses. Does not address itself sufficiently to local differences and problems. Time schedules do not offer sufficient time for adequate facility planning and plan gives insufficient guidelines on specifics in particular definition of "nearshore tidal waters." Even 80% assistance may not be enough for small economically depressed communities.
9. Robert Clawson Acting District Engineer, Northern District, Dept. of Water Resources	Generally concurs with the plan, its goals and requirements. However, mandatory consolidation of facilities may not always be practical, and the definition of "unique" areas should be clarified.
10. Donald F. Peterson Chairman, Humboldt County Board of Supervisors	The plans are compatible with the basic policies established by the Board of Supervisors. Regional Board and staff should be commended for forward thinking in water pollution control but unrealistic time frames allowed for review and to implement. In general, have concerns: 20% local money for corrections is very substantial sum when total cost is measured in millions. Real concern that once adopted, "interim plan" will have very major long-range effects. Prohibitions in areas of unique value need better definition. Objects to vagueness in requirements for odor, color, tastes. Prohibitions – regardless of treatment – are unreasonable. No Class I disposal sites possible if definition followed in County. Individual disposal system regulation unenforceable, water temperature standards are not based on factual data, prohibition against discharges to Klamath, Salmon, and Trinity Rivers cannot be done.
11. Crescent City Harbor District, J. J. Yarbrough, President	Harbor District is countywide. Sewage service provided to the District by Crescent City. Every effort being made to comply but questions feasibility of three-year crash effort to solve problems that have been centuries in developing. If industry must finance their proportionate share of treatment, the Harbor District would be required to tax the people of Del Norte to fund the District's share as an industrial waste contributor. Del Norte County described as chronically depressed economic area with stable or declining population. Some of proposed regulations may force some industry out of existence. Will do everything possible to comply but request understanding for special problems.
12. W. L. Cobb Timber Cruising Service, Santa Rosa	As a placer miner on Elliot Creek, Siskiyou County assures Board of his agreement with aims and goals but urges no action be taken to prohibit placer mining on Elliot Creek. Mine has operated since 1927 and methods of pollution control have continually improved. Only clear water returns to stream in same quality as upstream of operations.
13. Dave Stang Watershed Branch Chief, Six Rivers National Forest, U.S. Forest Service	Do stream prohibitions include underground leach field or only direct discharges? Immediate tributaries should be defined.
14. John J. Gannon Bureau of Sanitary Engineering, State Dept. Public Health	Suggests expansion of industrial waste ordinance to include prohibition of damaging substances. Suggests some alternative to Crescent City if land disposal not feasible.

APPENDIX C

Glossary of Terms

As used in this plan:

(a) "State Board" means the State Water Resources Control Board.*

(b) "Regional Board" means the California Regional Water Quality Control Board, North Coast Region.*

(c) "Waste" includes sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation or animal origin, or from any producing, manufacturing, or processing operation of whatever nature, including such waste placed within containers of whatever nature prior to, and for purposes of, disposal. Waste has also been interpreted by the Attorney General to include all of the following:

(1) Drainage from inoperative and abandoned mines.
(2) Drainage, flow or seepage containing debris or eroded earth from logging operations; waste materials in dumps; drainage from agricultural operations; liquids from a stratum intercepted by a well which flows through the well into another stratum.
(3) Discharge of water from a hydroelectric plant.
(4) Changes in the physical or chemical characteristics of receiving waters caused by extraction of sand, gravel or other materials from a streambed.
(5) Waste from construction operations, dumped in waters of the state.*

(d) "Waters of the state" means any water, surface or underground, including saline waters, within the boundaries of the state.*

(e) "Water quality objectives" mean the limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specified area.

(f) "Water quality control" means the regulation of any activity or factor which may affect the quality of the waters of the state and includes the prevention and correction of water pollution and nuisance.*

(g) "Water quality control plan" consists of a designation or establishment for the waters within a specified area of (1) beneficial uses to be protected, (2) water quality objectives, and (3) a program of implementation needed for achieving water quality objectives.*

(h) "Bays" mean indentations along the coast which enclose an area of oceanic water within distinct headlands or harbor works.

(i) "Estuaries" mean waters at the mouths of streams which serve as mixing zones for fresh and ocean water during a major portion of the year. Mouths of streams which are temporarily separated from the ocean by sandbars shall be considered as estuaries.

(j) "Tidal waters" mean all coastal ocean waters of California including bays and estuaries upstream to the inland limit of tidal action.

(k) "Intertidal" means that area alternately covered by marine water at extreme high tide and and exposed at extreme low tide.

(l) "Fresh waters" mean all freshwater lakes and streams downstream to the limit of tidal action.

(m) "Groundwaters" mean all potentially usable subsurface waters that occur in and below the saturation zone.

(n) "Biostimulants" mean substances which promote the growth and reproduction of aquatic organisms, including but not limited to nitrates, phosphates, vitamins, minerals, and other trace elements.

(o) "Pesticides" mean any substance or combination of substances or chemicals used to control objectionable pests including weeds, insects, fungi, rodents, or other forms of plant or animal life.

(p) ""Toxicity"" (toxicant) means any substance which, when it contacts or enters the body of an organism, by its chemical activity kills, debilitates, or otherwise impairs the vital processes of the organism.

(q) "Vessel" means watercraft or other contrivances used or capable of being used as a means of transportation or habitation on or in the waters of the state.

(r) "Nearshore tidal waters" mean all tidal waters inland from the breaker line or otherwise sufficiently close to shore so that waste discharged from vessels reaches shore in recognizable form or adversely affect any beneficial use.

* As defined in Section 13050 of the Porter-Cologne Water Quality Control Act.

APPENDIX D

Rationale for Waste Discharge Prohibitions

Individual Sewage Disposal Systems

This Board and virtually all responsible agencies believe that connection to an adequate public sewerage system is the most satisfactory method of sewage disposal for the individual property owner. This is particularly true in areas likely to undergo significant urbanization or where there is any question as to the suitability of soil conditions and lot sizes to assure system reliability and to protect water quality and the public health.

However, the Board recognizes that connection to a public sewerage system is not always feasible – especially in the more remote parts of the Basin. Moreover, in instances where individual systems are properly engineered on adequately sized lots and where hydrological and geological conditions are suitable, there need be no adverse water quality problems.

In the broadest terms, a septic tank-leach field disposal system is considered satisfactory if it is located in an area not subject to inundation, the effluent is accepted by the soil without surfacing, and if there is sufficient distance and travel time between the system and any surface or ground water to prevent contamination or pollution.

Within the Basin, the regulation of individual sewage disposal systems is the responsibility of the County Health Officer, and, as might be expected, there are some differences between individual County regulations. Table 11 summarizes the present individual County regulations relating to required setback from streams.

The most generally accepted standards in this regard are those contained in the "Uniform Plumbing Code" of the International Association of Plumbing and Mechanical Officials. Those standards are included as the last line in Table 11 and are recommended as minimum basin-wide, set-back standards.

TABLE 8

Existing Set-Back Regulations Pertaining to Individual Disposal Systems

June 1971

	Required Setback from Streams Minimum Horizontal Distance		
	Septic Tanks	Disposal Fields	Seepage Pits
Del Norte County – Ordinance No. 71–7	50'	50'	100'
Humboldt County – Ordinance No. 324	100'*	100'*	100'*
Modoc County –	–	–	–
Siskiyou County – Ordinance No. 425	50'	100'	100'
Trinity County – Ordinance No. 315	100'	100'	100'
UNIFORM PLUMBING CODE	50'	50'	100'

* When stream is otherwise suitable for a domestic water supply.

The Board commends those counties that have adopted ordinances equal to or more stringent than those contained in the Uniform Plumbing Code. In accordance with Section 13225(d) of the Porter-Cologne Water Quality Control Act, the Board requests those counties to aggressively enforce their respective local ordinances.