[In addition to adding the following language, several other minor revisions will be made, including appropriate changes to the Title Page, Table of Contents, Summary of Basin Plan Amendments (Appendix 1), page numbers, and headers and footers to reflect the new language.]

1. INTRODUCTION

1.1 STATE AND REGIONAL WATER BOARDS

In establishing the California Water Code, the California State Legislature assigned the primary responsibility for the protection and enhancement of water quality to the State Water Resources Control Board (State Water Board) and the nine regional water quality control boards.

The State Water Board sets statewide policies and plans for the implementation of state and federal laws and regulations. The regional water boards adopt and implement water quality control plans (basin plans) which recognize the unique characteristics of each region with regard to natural water quality; past, present, and potential ~~reasonably foreseeable~~ beneficial uses; and water quality problems.

The jurisdiction of the North Coast Regional Water Quality Control Board (Regional Water Board) extends from the California-Oregon state line southerly, to the southern boundary of the watershed of the Estero de San Antonio and Stemple Creek in Marin and Sonoma counties, and encompasses all basins draining into the Pacific Ocean, including Lower Klamath Lake and Lost River basins. ~~, and extends from the California-Oregon state line southerly, to the southerly boundary of the watershed of the Estero de San Antonio and Stemple Creek in Marin and Sonoma counties.~~

The Regional Water Board is a ~~nine~~seven-member decision-making body, appointed by the Governor and confirmed by the State Senate. The Board holds regular meetings, typically monthly, at different locations throughout the North Coast Region. The day-to-day work of the Regional Water Board is carried out by civil service staff, both technical and administrative, under the direction of an Executive Officer appointed by the Board.

1.2 FUNCTION AND OBJECTIVES OF THE BASIN PLAN

The North Coast Basin Plan is designed to provide a definitive program of actions to preserve and enhance water quality and protect beneficial uses of all regional waters. The Basin Plan addresses many factors and activities which may affect water quality. It includes actions to be taken by the State Water Board and the Regional Water Board. ~~as they have primary responsibility for maintenance of water quality in the North Coast Region.~~

Specifically, the Basin Plan:

- ~~Designates~~ Identifies beneficial uses of ~~for~~ surface and ~~ground waters~~groundwaters.
- Sets narrative and numeric~~al~~ objectives that must be attained or maintained to protect beneficial uses.
- Defines implementation programs that include specific prohibitions, action plans, and policies to achieve the water quality objectives.
- Describes the North Coast Regional Water Board's ~~surveillance and~~ monitoring activities.

Additionally, the Basin Plan describes the ~~North Coast Region's~~ Regional Water Board's provisions for public participation and provides the framework for the development of discharger regulation. State Water Board water quality control plans and policies also apply within the North Coast Region. ~~These plans are discussed in Chapter 5.~~

The Basin Plan is the basis for the Regional Water Board's regulatory program. Regional Water Board orders cite the Basin Plan's beneficial uses, water quality objectives, and prohibitions applicable to a

particular discharge. The Basin Plan is used by other agencies in their permitting and resource management activities. Other state offices, departments, and boards shall comply with the Basin Plan when carrying out activities that may affect water quality unless otherwise directed or authorized by statute. The Basin Plan also serves as an educational document for the Regional Water Board's technical staff and dischargers. Finally, the Basin Plan provides valuable information to members of the public about ~~local~~ water quality issues.

1.3 ADDITIONAL WATER PLANNING EFFORTS

This Basin Plan is one of a number of regulations that directly or indirectly address water resources of the North Coast Region.

The Department of Water Resources (DWR) developed ~~is prepared by~~ the California Water Plan and updates it every five years. The Water Plan calls for the orderly and coordinated control, protection, conservation, development, and use of the state's water resources. Once adopted, b~~B~~asin plans become~~are~~ part of the California Water Plan. The Regional Water Board considers the effect of its actions on the California Water Plan, and any other general or coordinated governmental plan, looking toward the development, utilization, or conservation of water resources of the state.

~~All of the counties and cities in the North Coast Region are required to prepare general plans which address conservation development and use of natural resources, including water resources.~~

Federally recognized Native American Tribes may also develop and implement water quality control plans as they can qualify for treatment in the same manner as states in accordance with section 518 (e) of the federal Clean Water Act. Under these provisions, the Hoopa Valley Tribal Council in the Klamath River watershed has adopted and is implementing their Water Quality Control Plan. Other tribes within the North Coast Region may also undertake processes to assess water quality and establish standards for waters under their jurisdiction.

All of the counties and cities in the North Coast Region are required to prepare general plans which address conservation development and use of natural resources, including water resources. Additional plans that address water resources in the North Coast Region are developed and distributed by federal, state, and local agencies as well as watershed groups, stakeholders, and other organizations.

1.4 LEGAL BASIS AND AUTHORITY

The Basin Plan implements a number of state and federal laws.~~,~~ ~~t~~The most important ~~of which~~ are the California Porter-Cologne Water Quality Control Act and the federal Clean Water Act. Other pertinent state and federal laws include the California Health and Safety Code and the Federal Resource Conservation and Recovery Act.

The Porter-Cologne Water Quality Control Act (Porter-Cologne) is codified in the California Water Code (Water Code §§ 13000 et seq.) and authorizes the State Water Board to adopt, review, and revise policies for all waters of the state.

Porter-Cologne directs regional water boards to adopt, review, and revise basin plans, and provides specific guidance on factors which must be considered in adoption of water quality objectives and implementation measures. The format for basin plans as described in Water Code s~~S~~ections 13241-13247 follows a logical progression toward~~s~~ water quality protection.

The Clean Water Act (CWA) is codified in the United States Code (33 U.S.C. §§ 1251 et seq.). Enacted by the federal government in 1972, the Clean Water Act is designed to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. One of the national goals states that wherever attainable, water quality should provide for the protection and propagation of fish, shellfish, and wildlife, and provide for recreation in and on the water (i.e., fishable, swimmable goal).

~~Section 303 of the federal Clean Water Act requires states to adopt water quality standards (which includes water quality objectives, beneficial uses, and anti-degradation policies) for navigable waters of the United States and to review and update those standards on a triennial basis.~~ The Clean Water Act section 305(b) requires each state to assess the status of water quality in the state and section 303(d) requires each state to provide a list of impaired waterbodies to the United States Environmental Protection Agency (US EPA) every two years. These required reports are developed and approved together as an Integrated Report. While the State of California reports to the US EPA every two years, individual regions may update regional assessments less frequently. After the Regional Water Board updates water quality assessments and approves an Integrated Report, the report is submitted to the State Water Board for approval. Section 303(d) requires identification of waterbodies that are not meeting water quality standards and generally results in the development~~subsequent preparation~~ of total maximum daily loads (TMDL) or alternative implementation programs for these waterbodies to attain and maintain water quality standards. Under state law, a TMDL~~s~~ is to be~~are~~ accompanied by implementation plans ~~under state law~~ that will utilize a variety of regulatory mechanisms to ensure restoration of beneficial uses and attainment of water quality standards. Section 401 requires that the state certify that a project ~~(typically dredge or fill activities)~~ subject to federal permitting, such as a dredge and fill activity, complies with all state water quality standards.

The ~~United States Environmental Protection Agency (~~US EPA~~)~~ has delegated responsibility for implementation of portions of the Clean Water Act to the State and ~~r~~Regional ~~w~~Water ~~b~~Boards, including the National Pollutant Discharge Elimination System (NPDES) ~~control~~ program (33 U.S.C. § 1342). Direction for implementation of the Clean Water Act is provided by the Code of Federal Regulations and by a variety of US EPA guidance documents on specific subjects.

In addition to state and federal laws, several court decisions provide guidance for basin planning. For example, the 1983 Mono Lake Decision (National Audubon Society v. Superior Court (1983) 33 Cal. 3d 419) reaffirmed the public trust doctrine, holding that the public trust is "an affirmation of the duty of the state to protect the people's common heritage in streams, lakes, marshlands, and tidelands, surrendering that right of protection only in rare cases when the abandonment of that right is consistent with the purposes of the trust." Public trust encompasses uses of water for commerce, navigation, fisheries and recreation.

1.5 TRIENNIAL REVIEW AND BASIN PLAN AMENDMENT PROCESS

California Water Code s~~S~~ection 13240 directs the State and ~~r~~Regional ~~w~~Water ~~b~~Boards to periodically review and update basin plans. The Clean Water Act (33 U.S.C. § 303(c)(1)) directs states to review water quality standards every three years (triennial review) and, as appropriate, modify and adopt new standards. The Triennial Review process allows the Regional Water Board to keep pace with changes in regulations, new technologies and policies, and physical changes within the North Coast Region.

During the Triennial Review ~~P~~process, basin planning issues are formally identified and ranked. These and other modifications to the Basin Plan are implemented through basin plan amendments as described below. In addition, the Regional Water Board can amend the Basin Plan as needed. Such amendments need not coincide with the Triennial Review ~~P~~process.

All basin plan and statewide plan amendments are subject to the California Environmental Quality Act (CEQA). The basin planning process has been certified by the Secretary of Resources as being exempt from CEQA's requirement for preparation of an environmental impact report (EIR) or negative declaration and initial study (Code of Regs., title 14, § 15251). Amending the Basin Plan involves the preparation of an amendment, environmental review, and a staff report.

~~Public w~~Workshops may be held before formal action on an amendment is scheduled. Public input is solicited before formal action is taken. The public participation efforts are intended to foster public awareness through ~~and~~ the open process~~es~~ of governmental decision-making. Input from interested persons may be through written correspondence, public workshop sessions, or at the hearing. ~~At the hearing, all interested persons have the opportunity to speak and respond to the material under consideration, within reasonable limitations as determined by the Regional Water Board.~~ Following a public review period and response to public comments, the Regional Water Board can adopt the amendment at a

public hearing. During ~~T~~the hearing, the Board considers testimony specific to ~~each~~ the proposed amendment. This process allows the Regional Water Board to consider each potential amendment on its own merits, to thoroughly identify the problem, to consider alternatives for action, and to assess the expected environmental impact of the proposed action.

Following adoption by the Regional Water Board, basin plan amendments and supporting documents are submitted to the State Water Board for review and approval. The State Water Board may approve the amendments or remand them to the Regional Water Board with directions for change. Basin plan amendments must be reviewed and approved by the State Office of Administrative Law (OAL). For purposes of state law, all amendments take effect upon approval by the OAL. Adoption or revisions of federal surface water standards are subject to the approval of the US EPA.

1.6 HISTORY OF BASIN PLANNING IN THE NORTH COAST REGION

The Regional Water Board first adopted an interim Basin Plan in 1971. This was a brief document, which was used until comprehensive basin plans for its two natural hydrologic basins, the Klamath River Basin 1A and the North Coastal Basin 1B, were developed.~~,~~ These plans were adopted by the Regional Water Board, and approved by the State Water Board in 1975. Also in 1975, the comprehensive plans were condensed into two abstracts, which were adopted by the Regional Water Board and approved by the State Water Board.

In 1980, the hydrologic basin planning areas within California were redefined. The North Coast Region is Hydrologic Region Number 1. This hydrologic unit is divided into hydrologic areas and sub areas as shown on Figure 1-1 (located in the map pocket). On April 28, 1988, the Regional Water Board combined and updated the two comprehensive plans and their abstracts into a single Water Quality Control Plan for the North Coast Region (Basin Plan).

The Basin Plan has been amended several times~~,~~ and will continue to be amended to serve the needs of the Regional Water Board, its staff, and the public. Appendix 1 of this ~~P~~plan contains a summary of Basin Plan amendments adopted since 1975.

1.7 SETTING OF THE NORTH COAST REGION

This section provides an overview of the environmental and socioeconomic setting of the North Coast Region, as well as a description of available water resources and water use for each hydrologic unit.

The North Coast Region is defined in s~~S~~ection 13200(a) of Porter-Cologne as follows:

> North Coast region, which comprises all basins including Lower Klamath Lake and Lost River Basins draining into the Pacific Ocean from the California-Oregon state line southerly to the southerly boundary of the watershed of the Estero de San Antonio and Stemple Creek in Marin and Sonoma Counties.

The North Coast Region is divided into two natural drainage basins, the Klamath River Basin and the North Coastal Basin. The North Coast Region covers all of Del Norte, Humboldt, Trinity, and Mendocino Counties, major portions of Modoc, Siskiyou, and Sonoma Counties, and small portions of Glenn, Lake, and Marin Counties.

County	Percent of County in the Region	Approx. Acres in the Region	Approx. Square Miles in the Region
Del Norte	100	6489,320217	1,0134
Glenn	6	54,40031	85
Humboldt	100	2,2915,840312	3,5816
Lake	23	192,000226	300
Marin	7	22,400694	35
Mendocino	100	2,2438,840466	3,50613
Modoc	28	7510,360965	1,1743
Siskiyou	82	3,3247,800196	5,1959
Sonoma	82	8323,640453	1,3012
Trinity	100	2,0512,200836	3,2085

The North Coast Region encompasses a total area of approximately 19,400470 square miles, and includesing 340 miles of scenic coastline and remote wilderness areas, as well as urbanized and agricultural areas.

The North Coast Region is characterized by distinct temperature zones. Along the coast, the climate is moderate and foggy and the temperature variation is not greatminimal. For example, at Eureka, seasonal the highest summer temperatures has've only been not varied by more than around 6600°F warmer than the lowest winter temperature for the period ofon record. Inland hHowever, inland seasonal temperatures can rangevary widely with seasonal variations, sometimes exceedingby more than 100°F.

Precipitation over the North Coast Region is greater than for any other part of California, and damaging floods can be a hazard.

The North Coast Region is abundant in surface water and groundwater resources. Although the North Coast Region constitutes only about 12% of the area in California, it produces about 41% of the annual runoff. This runoff contributes to flow in surface water streams, storage in lakes and reservoirs, and replenishmentes of groundwater.

California is divided into hydrologic areas or regions. The North Coast Region is Hydrologic Region Number 1. There are 14 major surface water hydrologic units in the North Coast Region, as shown in Figure 1-1 (located in the map pocket). Each of these hydrologic units is divided into smaller units called hydrologic areas and hydrologic subareas.

The Department of Water Resources (DWR) has identified several groundwater basins in the North Coast Region. Groundwater may also exist even where groundwater basins have not been identified. Groundwater basins do not always follow the same boundaries as surface waters.

Groundwater is used widely throughout the North Coast Region for rural domestic, agricultural, urban, and industrial water supply. The supply of groundwater in the North Coast Hydrologic Region varies yearly with precipitation, infiltration, and the amount of withdrawals from groundwater basins. Withdrawals are dependent on a number of factors, such as changes in surface water availability, urban and agricultural growth, market fluctuations, and water use efficiency practices. Groundwater extractions and uses vary by

watershed. According to the DWR, groundwater contributes about one-third of the total water supply for agricultural, urban, and managed wetlands in the North Coast Region.

Ample precipitation in combination with the mild climate found over most of the North Coast Region ~~has~~ provides~~d~~ for a wealth of fish, wildlife, and scenic resources. The mountainous nature of the North Coast Region, with its dense coniferous forests interspersed with grassy or chaparral-covered slopes, provides shelter and food for deer, elk, bear, mountain lion, furbearers, and many upland bird and mammal species.

The numerous streams and rivers of the North Coast Region contain anadromous fish, and the reservoirs, although few ~~in number~~, support both coldwater and warmwater fish. The North Coast Region's native fish species include salmonids such as coho, Chinook, pink and chum salmon, as well as steelhead, coastal cutthroat and rainbow trout. Other native fish ~~species~~ include green and white sturgeon, eulachon, Pacific and western brook lamprey, stickleback, five sculpin species, two sucker species, and several minnow species.

Healthy fisheries support the economy of the North Coast Region through commercial fishing and ~~the generation of~~tourism. Further, riparian ecosystems are integral to the continued success~~function~~ of native fish populations and the subsistence fishing and cultural uses they support.

The federal government has a responsibility to protect fisheries that are subject to tribal trust rights. This tribal trust responsibility applies to the Klamath and Trinity River systems, both of which run through tribal lands and are subject to tribal fishing rights.

Tidelands and marshes are extremely important to many species of waterfowl and shore birds~~, both~~ for feeding and nesting. Cultivated land and pasturelands also provide supplemental food for many birds, including small pheasant populations. Tideland areas along the north coast provide important habitat for marine invertebrates and nursery areas for forage fish, game fish, and crustaceans. Many species of seabirds use offshore coastal rocks as nesting areas.

Major components of the economy are tourism and recreation, logging and timber milling, aggregate mining, commercial and sport fisheries, sheep, beef and dairy production, and vineyards and wineries.

The largest urban centers ~~continue to be~~ are located in the Eureka area of Humboldt County and in the Santa Rosa area of Sonoma County, the latter of which has experienced the highest population growth of all the counties within the North Coast Region. Numerous Native American communities are scattered throughout the region~~area~~.

In all, the North Coast Region offers a beautiful natural environment with opportunities for scientific study and research, recreation, sport and commerce. To ensure their perpetuation, the resources must be used wisely.

1.7.1 The Klamath River Basin

The Klamath River Basin covers ~~an area of~~ approximately 10,86~~3~~0 square miles within northern California, and includes the Klamath, Smith, Trinity, Applegate, Illinois, and Winchuck Rivers, as well as the closed Lost River and Butte Valley hydrologic drainage areas. The Basin is bounded by the Oregon state border on the north, the Pacific Ocean on the west, Redwood Creek and Mad River hydrologic units on the south, and by the Sacramento Valley to the east. The Basin covers all of Del Norte County, and major portions of Humboldt, Trinity, Siskiyou, and Modoc counties.

The western portion of the Basin is within the Klamath Mountains and Coast Range provinces, and is characterized by steep, rugged peaks ranging to elevations of 6,000 to 8,000 feet with relatively little valley area. The mountain soils are shallow and often unstable. Precipitation ranges from 60 to 125 inches per year. The 45-mile coastline is dominated by a narrow coastal plain where heavy fog is common.

The eastern portion of the Basin receives low to moderate rainfall and includes predominantly high, broad valleys such as the Butte, Shasta, and Scott valleys.

The Klamath River Basin includes five hydrologic units: Winchuck River, Rogue River, Smith River, Klamath River, and Trinity River.

1.7.1.1 Winchuck River Hydrologic Unit (HU No. 101.00)

Most of ~~T~~the Winchuck River drainage lies ~~is located primarily~~ in Oregon;~~, with approximately~~ only 18 square miles of drainage extend~~s~~ing into Del Norte County in California. The watershed ~~is~~ contain~~s~~ed in var~~y~~ied~~ng~~ eco-regions including mountainous regions with high sediment loads, forest regions where forestry use is common, and agricultural and residential areas. ~~Water flows north from California to Oregon.~~

The Winchuck River Hydrologic Unit has no significant surface water development. Consumptive water uses in this unit include~~s~~ domestic, agricultural, and industrial water supply. No ~~significant~~ groundwater basin~~s~~ ha~~s~~v~~e~~ been identified by Department of Water Resources (DWR) for this hydrologic unit.

1.7.1.2 Rogue River Hydrologic Unit (HU No. 102.00)

The Rogue River lies~~is located primarily~~ in Oregon. However, the headwaters of ~~T~~two of its major tributaries, the Illinois River and the Applegate River, ~~have watersheds that~~ extend into California, where they ~~and~~ cover a total of approximately~~about~~ 150 square miles in Del Norte and Siskiyou counties of California. The majority of the Rogue River Hydrologic Unit ~~basin~~ lies within National Forest lands. The Rogue River was one of the original eight rivers named in the Wild and Scenic Rivers Act of 1968.

The Rogue River Hydrologic Unit has no significant surface water development. Consumptive water uses in this unit include~~s~~ domestic, agricultural, and industrial water supply. No ~~significant~~ groundwater basin~~s~~ ha~~s~~v~~e~~ been identified by DWR for this hydrologic unit.

1.7.1.3 Smith River Hydrologic Unit (HU No. 103.00)

The Smith River Hydrologic Unit covers ~~an area of~~ approximately 704 square miles. The Smith River is one of the longest national wild and scenic rivers in the United States, and as such, ~~flows freely as it contains~~there are no dams ~~from the headwaters to the mouth, and no~~ or significant surface water development~~s~~ on the river ~~has occurred~~. Domestic, agricultural, and industrial water needs are supplied through surface water diversions and groundwater pumping. DWR has identified one groundwater basin within this hydrologic unit;~~,~~ the Smith River Plain basin.

1.7.1.4 Klamath River Hydrologic Unit (HU No. 105.00)

The Klamath River Hydrologic Unit covers approximately 7,039 square miles and is divided into seven hydrologic areas: Lower Klamath River, Salmon River, Middle Klamath River, Scott River, Shasta Valley, Butte Valley, and Lost River. Water resources and water use are described for each ~~of these~~ hydrologic area~~s~~ in the following sections.

The Klamath River is a valuable ecological resource to ~~the states of~~ California and Oregon. The Klamath River Basin ~~also~~ provides important spawning habitat for Chinook salmon, coho salmon, and other fish species. The Klamath's lakes, marshes, tributaries, and tidal estuary have in the past supported multiple fish runs, resulting in the third largest salmon producing river on the west coast of the Unites States.

The Klamath River ~~W~~watershed is home to the largest population of Native American Tribes in California. Tribal people depend on the Tribal Trust species of the Klamath River for subsistence fishing purposes. The Trust species and races include, but are not limited to: coho salmon, Chinook salmon, steelhead trout, Pacific and non- anadromous lamprey eel, sturgeon, and eulachon. Sufficient numbers of Trust species must be maintained to sustain the primary dietary needs of the Klamath Basin Tribes. The federal allocation of salmon fishery to the Klamath Basin Tribes is 50~~%~~ percent of the total available harvest.

Lower Klamath River Hydrologic Area (HU No. 105.10)

The Lower Klamath River Hydrologic Area is in the Coastal Range and Klamath Mountains provinces and covers ~~an area of~~ approximately 771 square miles. Elevation ranges from sea level to over ~~greater than~~ 1,000 feet. Annual precipitation ranges from 42 inches to 125 inches.

In the Lower Klamath River Hydrologic Area, domestic and agricultural water supply~~y~~ies ~~is~~are provided through surface water diversions and groundwater pumping. DWR has identified one groundwater basin in this hydrologic area; the Lower Klamath River Valley.

Salmon River Hydrologic Area (HU No. 105.20)

The Salmon River Hydrologic Area covers~~is comprised of~~ approximately 751 square miles in the Klamath Mountains province. Elevations in this hydrologic area range from approximately 450~~9~~ feet to 8,560~~9~~0 feet. There are no dams, diversions, urban areas, nor major industry in the watershed, and as such, the water quality is very high. Annual precipitation ranges from 35 inches in the South Fork Salmon River Canyon to 85 inches in the headwaters.

Domestic water use in the Salmon River Hydrologic Area is supplied by surface water diversions and springs. No groundwater basins have been identified by DWR in this hydrologic area.

Middle Klamath River Hydrologic Area (HU No. 105.30)

The Middle Klamath River Hydrologic Area is in the Cascade Volcanics and Klamath Mountains provinces and covers ~~an area of~~ approximately 1,615 square miles. Elevation ranges from ~~around 500~~ 460 feet to over 2,000 feet. Annual precipitation ranges from 14 inches to 115 inches.

Domestic and agricultural water supply needs in the Middle Klamath Hydrologic Area are met through surface water diversions, groundwater pumping, and springs. DWR has identified two groundwater basins in this hydrologic area: Happy Camp Town Area and Seiad Valley.

Hydroelectric reservoirs regulate Klamath River flows in the Upper and Middle Klamath River hydrologic areas. Within California, there are three power generating facilities and three reservoirs on the mainstem of the Klamath River: Copco 1, Copco 2, and Iron Gate.

Scott River Hydrologic Area (HU No. 105.40)

The Scott River Hydrologic Area covers ~~is comprised of~~ approximately 814 square miles in the Klamath Mountains province. The valley floor elevation ranges from~~is about~~ 2,500 to 3,000 feet, and surrounding mountains range up to ~~approximately~~ 8,500 feet. Annual precipitation ranges from below 20 inches in the valley to over 70 inches in the western mountains.

Domestic and agricultural water supply needs in the Scott Valley Hydrologic Area are met through surface water diversions, groundwater pumping, and springs.~~, with o~~ One irrigation district and one private ditch company serve~~ing~~ a small area on the east side~~ of the valley~~. Approximately 32,~~3,~~000 acres are irrigated in the Scott Valley area. All surface water rights in the Scott River Hydrologic Area above the U.S. Geological Survey gage station on the mainstem Scott River, and groundwater within a delineated interconnected groundwater area, are adjudicated. DWR has identified one groundwater basin in this hydrologic area; the Scott River Valley Basin.

Shasta Valley Hydrologic Area (HU No. 105.50)

The Shasta Valley Hydrologic Area covers ~~an area of~~ approximately 790 square miles principally within the Cascade Range province. The valley floor elevation ranges from~~is about~~ 2,500 to 3,000 feet, and surrounding mountains range up to 14,162 feet (Mt. Shasta). Annual precipitation ranges from less than~~below~~ 15 inches in the valley to more than~~over~~ 60 inches in the mountains.

In the Shasta Valley Hydrologic Area, domestic and agricultural water supply needs have historically been met through surface water diversions and from springs. Groundwater is used increasingly for domestic and agricultural supply. DWR has identified one groundwater basin in this ~~e Shasta Valley~~ hydrologic area, the Shasta Valley basin. The principal water service agency in the Shasta Valley Hydrologic Area is the Montague Water Conservation District, which serves more than ~~over~~ 140,000 of the approximately 486,000 acres irrigated in the watershed. The District's main supply source is 50,000 acre-foot Lake Shastina (also known as Dwinnell Reservoir) on the Shasta River. Several smaller irrigation districts in the Shasta Valley serve from 1,500 to 3,500 acres each.

Butte Valley and Lost River Hydrologic Areas (HU Nos. 105.80 and 105.90)

The Butte Valley and Lost River hydrologic areas cover ~~are made up~~ of approximately 2,298 square miles in the Modoc-Oregon Lava Plateau. The area is characterized by broad valleys ranging from 4,000 to 6,000 feet in elevation. Typical annual precipitation is 15 to 25 inches. Groundwater is the primary source of domestic water supply in the Lost River Hydrologic Area. Groundwater basins identified by DWR in the Lost River Hydrologic area are Klamath River Valley and Fairchild Swamp Valley.

Water use in the Butte Valley Hydrologic Area comes mostly from groundwater pumping. Groundwater basins identified by DWR in the Butte Valley Hydrologic Area are Butte Valley, Bray Town Area, and Red Rock Valley. Approximately ~~28~~23,000 acres are irrigated in Butte Valley. Water not used for irrigation is pumped from ~~the 4,000 acre-foot~~ Meiss Lake to the Klamath River via drainage facilities operated by Meiss Lake Ranch in order to regulate the groundwater table.

The Bureau of Reclamation's Klamath Project, located in the Lost River Hydrologic Area, is the largest irrigation development in the Klamath River Basin. It serves irrigation water to approximately 210,000~~33,625~~ acres of ~~irrigable~~ land in Oregon (62 percent) and the Lost River area of California (38 percent). The project's water supply is derived from the Klamath River in Oregon and the Lost River. The principal feature within the basin is the 527,000 acre-foot Clear Lake Reservoir on the Upper Lost River. Runoff and drainage reaching ~~the 13,200 acre-foot~~ Tule Lake is pumped to ~~the 9,000 acre-foot~~ Lower Klamath Lake ~~Sump~~ for irrigation and wildlife refuge use. Water not used for irrigation in Lower Klamath Lake ~~Sump~~ is pumped to the Oregon portion of the Klamath River via the Klamath Straits Drain to regulate the water table within the Tule Lake Irrigation District area. The Klamath Project serves a majority of the irrigable land in the Lost River watershed. The Tule Lake Irrigation District, the basin's largest, serves more than 60,600 acres in California with Klamath Project water.

1.7.1.5 Trinity River Hydrologic Unit (HU No. 106.00)

The Trinity River Hydrologic Unit covers ~~an area of~~ approximately 2,970 square miles. In the Trinity River Hydrologic Unit, domestic, agricultural, and industrial water is supplied through surface water diversions, groundwater pumping, and springs. Groundwater basins identified by DWR in this hydrologic unit are Hayfork Valley, Hoopa Valley, Hyampom Valley, and Wilson Point Area.

The Trinity River Division of the Central Valley Project is the largest water development in the Klamath River Basin. The 538-foot-high Trinity Dam forms the 2.5 million acre-foot Trinity Lake (formerly ~~formally~~ Clair Engle Lake). Releases pass through the ~~105,556~~ 140,000 kW Trinity Power Plant to Lewiston Reservoir (14,660 acre-foot capacity), from which water is diverted by tunnel to the Sacramento Valley. ~~The diverted flows pass through two additional power plants with a combined capacity of 291,444 kW.~~

1.7.2 The North Coastal Basin

The North Coastal Basin covers ~~an area of~~ approximately 8,546~~0~~ square miles ~~located~~ along the north-central California Coast. The area~~Basin~~ is bounded on the west by the Pacific Ocean ~~on the west~~; on the north by the Klamath River and Trinity River ~~B~~basins ~~on the north~~; on the east by the Sacramento Valley drainage, consisting of the basins of Clear Lake, Putah and Cache Creeks, and the Napa River ~~basins on the east~~; and on the south by the Marin-Sonoma area ~~on the south~~. The North Coastal Basin covers all of

Mendocino County, major portions of Humboldt and Sonoma counties, about one-fifth of Trinity County, and small portions of Glenn, Lake, and Marin counties.

Most of the North Coastal Basin consists of rugged forested coastal mountains dissected by six major river systems: the Eel, Russian, Mad, Navarro, Gualala, and Noyo rivers, and numerous smaller river systems. Soils are generally unstable and erodible, and rainfall is high. The area along the eastern boundary of the North Coastal Basin is mostly National Forest land administered by the United States Forest Service. Major population areas are centered in the~~around~~ Humboldt Bay and Santa Rosa areas.

Four hydroelectric power generation plants exist within the North Coastal Basin. R.W. Matthews Dam at Ruth Lake~~Reservoir~~ is equipped with a 2,000 kW facility. Cape Horn Dam on Van Arsdale ~~Dam~~Reservoir supports a 9,000 kW plant. Coyote Dam (also known as Coyote Valley Dam) at Lake Mendocino supports two power generation units with a combined capacity of 3,500 kW. Warm Springs Dam at Lake Sonoma is equipped with a 2,600 kW facility.

The North Coastal Basin is divided into nine hydrologic units: Redwood Creek, Trinidad, Mad River, Eureka Plain, Eel River, Cape Mendocino, Mendocino Coast, Russian River, and Bodega.

1.7.2.1 Redwood Creek and Trinidad Hydrologic Units (HU Nos. 107.00 and 108.00)

The Redwood Creek and Trinidad hydrologic units cover ~~an area of~~ approximately 424 square miles and include Little River, Maple Creek, and Redwood Creek.

In the Redwood Creek and Trinidad hydrologic units, there are no significant surface water developments. Groundwater and surface water diversions supply most of the domestic and agricultural needs. Groundwater basins identified by DWR in these units are in the Prairie Creek Area, Redwood Creek Valley, and Big Lagoon Area.

1.7.2.2 Mad River and Eureka Plain Hydrologic Units (HU Nos. 109.00 and 110.00)

The Mad River and Eureka Plain hydrologic units cover ~~an area of~~ approximately 724 ~~acres~~ square miles and include Elk River, Freshwater Creek, Humboldt Bay, Jacoby Creek, Mad River, and Salmon Creek.

In the Mad River and Eureka Plain hydrologic units, water supply is adequate to meet currently projected requirements. The only major surface storage is provided by the 48,030 acre-foot capacity Ruth Reservoir on the Mad River which regulates municipal and industrial water supply for the Eureka/Arcata area by exporting Mad River water to the Eureka Plain subbasin. Groundwater basins have been identified by DWR in both of these hydrologic units. The main groundwater sources in the Eureka Plain are in the Elk River / Salmon Creek Area and the Jacoby Creek / Freshwater Creek Area.

1.7.2.3 Eel River Hydrologic Unit (HU No. 111.00)

The Eel River Hydrologic Unit covers ~~an area of~~ approximately 3,682 square miles and includes~~. There are~~ seven major branches of the Eel River: the Upper Mainstem Eel River, Middle Mainstem Eel River, Lower Mainstem Eel River, North Fork Eel River, Middle Fork Eel River, South Fork Eel River, and the Van Duzen River.

The only major surface water development in the Eel River Hydrologic Unit is Lake Pillsbury, which is formed by Scott Dam, with a storage capacity of ~~80,700~~74,993 acre-feet. This facility, in conjunction with Cape Horn~~Van Arsdale~~ Dam and the Potter Valley Tunnel, provides power and export of Eel River water to the Russian River. The City of Willits obtains its water supply from the ~~723~~621 acre-foot capacity Morris Reservoir and the ~~635~~ 504 acre-foot capacity Centennial Reservoir, both located on James Creek. Fifteen groundwater basins have been identified by DWR in this unit: Eel River Valley, Pepperwood Town Area, Larabee Valley, Hettenshaw Valley, Dinsmore Town Area, Laytonville Valley, Little Lake Valley, Weott Town Area, Garberville Town Area, Lower Laytonville Valley, Gravelly Valley, Sherwood Valley, Round Valley, Williams Valley, and Eden Valley.

1.7.2.4 Cape Mendocino Hydrologic Unit (HU No. 112.00)

The Cape Mendocino Hydrologic Unit covers ~~an area of~~ approximately 499 square miles and includes the Bear and Mattole rivers and Oil Creek.

No significant surface water development has occurred in the Cape Mendocino Hydrologic Unit. Groundwater and surface water pumping are used for domestic supply in this unit. DWR has identified two groundwater basins in this unit: Mattole River Valley and Honeydew Town Area.

1.7.2.5 Mendocino Coast Hydrologic Unit (HU No. 113.00)

The Mendocino Coast Hydrologic Unit covers ~~an area of~~ approximately 1,599 square miles and includes the Albion River, Alder Creek, Big River, Brush Creek, Caspar Creek, Elk Creek, Garcia River, Greenwood Creek, Gualala River, Navarro River, Noyo River, Pudding Creek, Ten Mile River, and Wages Creek.

Surface water storage in the Mendocino Coast Hydrologic Unit is minor, and includes Newman Reservoir~~, a 4 acre-foot capacity reservoir~~ on Newman Gulch, a tributary to the Noyo River. Surface water diversions and groundwater pumping are used to supply agricultural and domestic needs. DWR has identified eleven groundwater basins: Ten Mile River, Cottoneva Creek Valley, Branscomb Town Area, Little Valley, Fort Bragg Terrace Area, Big River Valley, Navarro River Valley, Anderson Valley, Garcia River Valley, Annapolis Ohlson Ranch Formation Highlands, and Fort Ross Terrace Deposits.

1.7.2.6 Russian River Hydrologic Unit (HU No. 114.00)

The Russian River Hydrologic Unit covers ~~an area of~~ approximately 1,484 square miles.

There are two surface water storage facilities in the Russian River Hydrologic Unit. Lake Mendocino stores imported Eel River water and East Fork Russian River water. Coyote Dam forms Lake Mendocino and has a maximum storage capacity of 122,4~~5~~00 acre-feet with 70,000 acre-feet allocated to water supply.

Formed by Warm Springs Dam, Lake Sonoma is located on Dry Creek, a tributary to the Russian River. ~~Warm Springs Dam forms~~ Lake Sonoma ~~and~~ has a maximum storage capacity of 381,000 acre-feet. ~~with 212,000 acre-feet allocated to water supply.~~

DWR has identified a number of groundwater basins in this unit. These include: Potter Valley, Ukiah Valley, Sanel Valley, McDowell Valley, Cloverdale Area, Alexander Area, Alexander Valley, Healdsburg Area, Santa Rosa Plain, Santa Rosa Valley, Kenwood/Rincon Valley, Lower Russian River Valley, and Wilson Grove Formation Highlands. Groundwater is used for domestic supply by the cities of Ukiah, Windsor, Santa Rosa, Rohnert Park, and Sebastopol, as well as in unincorporated areas outside of the City of Santa Rosa. Russian River water also is exported to southern Sonoma County and northern Marin County for domestic use.

1.7.2.7 Bodega Hydrologic Unit (HU No. 115.00)

The Bodega Hydrologic Unit covers ~~an area of~~ approximately 148 square miles and includes Bodega Bay, the Estero Americano and Stemple Creek, Estero de San Antonio and San Antonio Creek, and Salmon Creek.

The Bodega Hydrologic Unit has no significant surface water storage. One groundwater basin has been identified in the unit.

1.8 WATER QUALITY ISSUES

In many cases, ~~.~~ water quality within the North Coast Region is sufficient to support, and in some cases enhance the beneficial uses assigned to waterbodies in Chapter 2 of this Basin Plan. However, there are a number of present or potential water quality problems, which may interfere with beneficial uses or create nuisances or health hazards.

Section 305 (b) of the Clean Water Act requires the State Water Board to compile surface water quality assessment information from each of the nine regional water boards on a biennial basis. The US EPA uses these reports to prepare the National Water Quality Inventory Report to Congress,. ~~This report~~ which characterizes water quality, identifies water quality problems, and describes various programs implemented to restore and protect water quality.

1.9 WATER QUANTITY

The nexus between water supply and water quality must be recognized when managing water and controlling pollution. For example, water rights policies and permit requirements~~terms~~ that provide additional stream flows for fish and wildlife usually improve water quality. The Division of Water Rights (Division) within the State Water Resources Control Board regulates water rights in order to develop, conserve and utilize in the public interest the water resources of the ~~S~~state, while protecting vested rights, water quality, and the environment. In determining water availability, the Division must consider the amount of water needed to remain instream for protection of beneficial uses whenever it is in the public interest. In acting on applications to appropriate water and other actions, the Basin Plan shall be considered and the Division may require terms and conditions necessary to carry out the Basin Plan.