CHAPTER 2
BENEFICIAL USES

TABLES

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2. BENEFICIAL USES

INTRODUCTION

The purpose of this chapter is to designate the beneficial uses for all surface and ground waters in the San Diego Region. Beneficial uses form the cornerstone of water quality protection under the Basin Plan. Once beneficial uses are designated, appropriate water quality objectives can be established and programs that maintain or enhance water quality can be implemented to ensure the protection of beneficial uses.

Beneficial uses are defined as the uses of water necessary for the survival or well being of man, plants and wildlife. These uses of water serve to promote the tangible and intangible economic, social and environmental goals of mankind. Examples include drinking, swimming, industrial and agricultural water supply, and the support of fresh and saline aquatic habitats.

Section 303 of the federal Clean Water Act (33 U.S.C. section1313) defines the term water quality standards as both the uses of the surface (navigable) waters and the water quality criteria which are applied to protect those uses. A water quality standard defines the water quality goals for a water body by designating the use or uses to be made of the water body, by setting criteria to protect the uses, and by protecting water quality through antidegradation provisions. Under the Porter-Cologne Water Quality Control Act (California Water Code, Division 7, Chapter 2 section13050), these concepts are defined separately as beneficial uses and water quality objectives. Beneficial uses and water quality objectives are required to be established for all waters of the State, both surface and ground waters. Beneficial uses of the surface and ground waters of the San Diego Region are discussed in this chapter; water quality objectives and water quality criteria are discussed in Chapter 3. Numerous key terms used throughout this chapter are defined in the Glossary which is included as Appendix A of this Basin Plan.

BENEFICIAL USES

The designation of beneficial uses must satisfy all of the applicable requirements of the California Water Code, Division 7 and the federal Clean Water Act. California Water Code, Division 7 is also known as the Porter-Cologne Water Quality Control Act. These two names are used interchangeably.

The designation of beneficial uses for the waters of the State by the Regional Board is mandated under California Water Code section 13240. The Clean Water Act, section 303 requires that the State adopt designated beneficial uses for surface waters. The requirements of both Acts applicable to the designation of beneficial uses are summarized below.

BENEFICIAL USE DESIGNATION UNDER THE PORTER-COLOGNE WATER QUALITY CONTROL ACT

The Porter-Cologne Act establishes a comprehensive program for the protection of beneficial uses of the waters of the state. California Water Code section 13050(f) describes the beneficial uses of surface and ground waters that may be designated by the State or Regional Board for protection as follows:

"*Beneficial uses of the waters of the state that may be protected against quality degradation include, but are not necessarily limited to, domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves.*"

Significant points regarding the designation of beneficial uses are:

(1) Fish, plants, and other wildlife, as well as humans, use water beneficially. Designation of beneficial uses often includes subcategories of the above beneficial uses cited in California Water Code section 13050(f).

(2) Waste transport or waste assimilation in the state's surface and ground waters may not be designated as beneficial uses under the Porter-Cologne Act. The direction of the Act is to protect surface and ground waters against the adverse effects of waste constituents. (California Water Code section 13000, section 13241, and section

13263). Surface or ground waters may be used for waste disposal or waste assimilation if designated beneficial uses are protected. In authorizing the discharge of waste, the Regional Board need not authorize utilization of the full waste assimilation capacities of the receiving waters [California Water Code section 13263(d)]. All discharges of waste into waters of the state are privileges not rights [California Water Code section 13263(g)].

(3) Designated beneficial uses may include potential beneficial uses if existing water quality will support the use or if the necessary level of water quality can reasonably be achieved. [Water Code section13241 (a) and (c)]. Potential and existing uses are defined later in this chapter.

(4) An existing beneficial use ordinarily must be designated for protection unless another beneficial use requiring more stringent objectives is designated. The existing beneficial use designation is necessary to comply with the statutory policy in California Water Code section 13000, which provides in part that "*...the quality of all waters in the state shall be protected for use and enjoyment by the people of the state.*"

(5) California Water Code section 13000 provides in part that: "*The Legislature ...finds and declares that activities and factors which may affect the quality of the waters of the state shall be regulated to attain the highest possible water quality that is reasonable, considering all demands being made and to be made on those waters and the total values involved, beneficial and detrimental, economic and social, tangible and intangible.*" This policy establishes a general principal of nondegradation, with flexibility to allow some change in water quality which is in the best interests of the state. Changes in water quality are allowed only where beneficial uses are not unreasonably affected.

(6) The designation of beneficial uses must take into account the constitutional prohibition of waste and unreasonable waste of water. Designation of a beneficial use for protection should not require a waste of water pursuant to the California Constitution, article X, section 2.

(7) The protection and enhancement of beneficial uses require that certain quality and quantity objectives be met for surface and ground waters.

BENEFICIAL USE DESIGNATION UNDER THE CLEAN WATER ACT

Beneficial uses for surface waters are designated under the Clean Water Act section 303 in accordance with regulations contained in 40 CFR 131. The State is required to specify appropriate water uses to be achieved and protected. The beneficial use designation of surface waters of the state must take into consideration the use and value of water for public water supplies, protection and propagation of fish, shellfish and wildlife, recreation in and on the water, agricultural, industrial and other purposes including navigation.

Significant points regarding the designation of beneficial uses under the Clean Water Act are:

(1) Existing beneficial uses are those uses actually attained in the water body on or after November 28, 1975 [40 CFR 131.3(e)].

(2) States are prohibited from adopting waste transport or waste assimilation as a designated use for surface waters [40 CFR 131.10(a)].

(3) The water quality standards of downstream waters must be considered and maintained [40 CFR 131.10(b)].

(4) States may adopt sub-categories of a use and set the appropriate criteria to reflect the varying needs of such sub-categories of uses. For example criteria should be set to differentiate between cold water and warm water fisheries [40 CFR 131.10(c)].

(5) At a minimum, uses are deemed attainable if they can be achieved by the imposition of effluent limits required under Clean Water Act, sections 301(b) and 306 and cost effective and reasonable best management practices for nonpoint source control [40 CFR 131.10(d)].

(6) States may adopt seasonal uses as an alternative to redesignation of the beneficial uses of a water body to uses requiring less stringent water quality criteria [40 CFR 131.10(f)].

(7) States may remove a designated beneficial use or substitute sub-categories of a use only if (a) the use is not an existing use and (b) the state can demonstrate that attaining the designated use is not feasible for one of the following reasons [40 CFR 131.10(g)]:

- naturally occurring pollutant concentrations prevent the attainment of the use; or
- natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use; or
- human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place; or
- dams, diversions, or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of the use; or
- physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of aquatic life protection uses; or
- controls more stringent than the controls for effluent limitations in Clean Water Act sections 301 (b) and 306 would result in substantial and widespread economic and social impact.

(8) States may not remove designated uses if (a) they are existing uses, unless a use requiring more stringent criteria is added, or (b) such uses will be attained by implementing effluent limits under Clean Water Act sections 301 (b) and 306 and by implementing best management practices for nonpoint source control [40 CFR 131.10(h)].

(9) If existing uses are higher than those specified in water quality standards, a state must revise its standards to reflect the uses actually being attained [40 CFR 131.10(i)].

(10) If the designated uses do not include the uses specified in section 101(a) (2) of the Clean Water Act, or if the state wants to remove a use specified in section 101 (a) (2), the state must conduct a "*use attainability analysis*" [40 CFR 131.10(j)]. A use attainability analysis is defined in 40 CFR 131.3(g) as a "*structured scientific assessment of the factors affecting the attainment of the use which may include physical, chemical, biological, and economic factors.*" The uses listed in section 101 (a)(2) are protection and propagation of fish, shellfish, and wildlife, and recreation (i.e., fishable/ swimmable uses).

BENEFICIAL USE DEFINITIONS

In 1972, the State Board adopted a uniform list and description of beneficial uses to be applied throughout all basins of the State. During the 1994 Basin Plan update, beneficial use definitions were revised and some new beneficial uses were added. Overall, the following twenty-three beneficial uses are now defined statewide and are designated within the San Diego Region:

Municipal and Domestic Supply (MUN) - Includes uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.

Agricultural Supply (AGR) - Includes uses of water for farming, horticulture, or ranching including, but not limited to, irrigation, stock watering, or support of vegetation for range grazing.

Industrial Process Supply (PROC) - Includes uses of water for industrial activities that depend primarily on water quality.

Industrial Service Supply (IND) - Includes uses of water for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well re-pressurization.

Ground Water Recharge (GWR) - Includes uses of water for natural or artificial recharge of ground water for purposes of future extraction, maintenance of water quality, or halting of saltwater intrusion into freshwater aquifers.

Freshwater Replenishment (FRSH) - Includes uses of water for natural or artificial maintenance of surface water quantity or quality (e.g., salinity).

Navigation (NAV) - Includes uses of water for shipping, travel, or other transportation by private, military, or commercial vessels.

Hydropower Generation (POW) - Includes uses of water for hydropower generation.


Beachgoers at La Jolla Shores

Contact Water Recreation (REC-1) - Includes uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and SCUBA diving, surfing, white water activities, fishing, or use of natural hot springs.

Non-contact Water Recreation (REC-2) - Includes the uses of water for recreational activities involving proximity to water, but not normally involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.

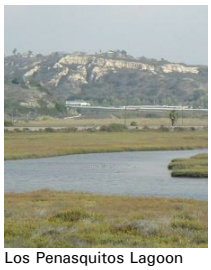
Commercial and Sport Fishing (COMM) - Includes the uses of water for commercial or recreational collection of fish, shellfish, or other organisms including, but not limited to, uses involving organisms intended for human consumption or bait purposes.

Aquaculture (AQUA) - Includes the uses of water for aquaculture or mariculture operations including, but not limited to, propagation, cultivation, maintenance, or harvesting of aquatic plants and animals for human consumption or bait purposes.

Warm Freshwater Habitat (WARM) - Includes uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish or wildlife, including invertebrates.

Cold Freshwater Habitat (COLD) - Includes uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish or wildlife, including invertebrates.

Inland Saline Water Habitat (SAL) - Includes uses of water that support inland saline water ecosystems including, but not limited to, preservation or enhancement of aquatic saline habitats, vegetation, fish, or wildlife, including invertebrates.


Los Penasquitos Lagoon

Estuarine Habitat (EST) - Includes uses of water that support estuarine ecosystems including, but not limited to, preservation or enhancement of estuarine habitats, vegetation, fish, shellfish, or wildlife (e.g., estuarine mammals, waterfowl, shorebirds).

Marine Habitat (MAR) - Includes uses of water that support marine ecosystems including, but not limited to, preservation or enhancement of marine habitats, vegetation such as kelp, fish, shellfish, or wildlife (e.g., marine mammals, shorebirds).

Wildlife Habitat (WILD) - Includes uses of water that support terrestrial ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.

Kelp on beach at
San Diego – La Jolla Ecological Reserve

Preservation of Biological Habitats of Special Significance (BIOL) - Includes uses of water that support designated areas or habitats, such as established refuges, parks, sanctuaries, ecological reserves, or Areas of Special Biological Significance (ASBS), where the preservation or enhancement of natural resources requires special protection.

The following coastal waters have been designated as ASBS in the San Diego Region. For detailed descriptions of their boundaries, see the discussion on ASBS in Chapter 5, Plans and Policies:

- San Diego - La Jolla Ecological Reserve, San Diego County
- Heisler Park Ecological Reserve, Orange County
- San Diego Marine Life Refuge, San Diego County

The following areas are designated Marine Life Refuges by the California legislature. A legal description of the boundaries of each marine life refuge is contained in the Fish and Game Code of California, Division 7 (Refuges), Chapter 1 (Refuges and Other Protected Areas), Article 6 (Marine Life Refuge):

- San Diego Marine Life Refuge, San Diego County
- Laguna Beach Marine Life Refuge, Orange County
- Newport Beach Marine Life Refuge, Orange County
- South Laguna Beach Marine Life Refuge, Orange County
- Dana Point Marine Life Refuge, Orange County
- Doheny Beach Marine Life Refuge, Orange County
- Niguel Marine Life Refuge, Orange County
- Irvine Coast Marine Life Refuge, Orange County
- City of Encinitas Marine Life Refuge, San Diego County

The following areas are designated Ecological Reserves by the Fish and Game Commission (California Code of Regulations, Title 14, section 630). A legal description of the boundaries of each ecological reserve is on file at the California Department of Fish and Game headquarters, 1416 Ninth Street, Sacramento:

- Batiquitos Lagoon Ecological Reserve, San Diego County
- Blue Sky Ecological Reserve, San Diego County
- Buena Vista Lagoon Ecological Reserve, San Diego County
- Heisler Park Ecological Reserve, Orange County
- McGinty Mountain Ecological Reserve, San Diego County
- San Diego - La Jolla Ecological Reserve, San Diego County
- San Dieguito Lagoon Ecological Reserve, San Diego County
- San Elijo Lagoon Ecological Reserve, San Diego County

The following are designated Natural Preserves by the State Park and Recreation Commission (Public Resources Code, Division 5, Chapter 1, Article 1). A legal description of each natural preserve is on file at the California Department of Parks and Recreation headquarters, 1416 Ninth Street, Sacramento:

- San Mateo Creek Wetland Natural Preserve, San Diego County
- Los Penasquitos Marsh Natural Preserve, San Diego County

The following area is designated a National Estuarine Research Reserve by the National Oceanic and Atmospheric Administration (NOAA)

(Coastal Zone Management Act of 1972 as amended section 315, 16 USC 1461). A legal description of the boundaries of the national estuarine research reserve is on file at the NOAA headquarters, Office of Ocean and Coastal Resource Management, NOAA, Washington, D.C., 20235:

- Tijuana River National Estuarine Research Reserve, San Diego County

Tijuana River mouth

The following area is designated a National Wildlife Refuge by the U.S. Fish and Wildlife Service. A legal description of the boundaries of the national wildlife refuge is on file at the U.S. Fish and Wildlife Service headquarters, Southern California Complex, 2736 Loker Avenue West, Suite A, Carlsbad, California 92008:

- Sweetwater Marsh National Wildlife Refuge, San Diego County

Rare, Threatened, or Endangered Species (RARE) - Includes uses of water that support habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under state or federal law as rare, threatened or endangered.

Migration of Aquatic Organisms (MIGR) - Includes uses of water that support habitats necessary for migration, acclimatization between fresh and salt water, or other temporary activities by aquatic organisms, such as anadromous fish.

Spawning, Reproduction, and/or Early Development (SPWN) - Includes uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish. This use is applicable only for the protection of anadromous fish.

Shellfish Harvesting (SHELL) - Includes uses of water that support habitats suitable for the collection of filter-feeding shellfish (e.g., clams, oysters and mussels) for human consumption, commercial, or sport purposes.

EXISTING AND POTENTIAL BENEFICIAL USES

The water resources of the San Diego Region have been extensively developed over the years and today's existing beneficial uses will probably continue into the future. Since the adoption of the Basin Plan in 1975, changes in land use patterns and resultant changes in water quality have led to some subsequent modifications of beneficial use designations. Minor modifications have also been also made to clarify the definition of some of the beneficial use designations.

The beneficial use designations described in this chapter are categorized as "*existing*" or "*potential*" beneficial uses. An existing beneficial use can be established by demonstrating that:

- Fishing, swimming, or other uses have actually occurred since November 28, 1975; or
- The water quality and quantity is suitable to allow the use to be attained.

Existing beneficial uses were originally determined as part of a use survey of water resources in the Region described in Chapter 1, *History of Basin Planning in the San Diego Region.* Beneficial use designations have also been determined using additional information gathered since 1975. Beneficial uses are designated as "*potential*" for a variety of reasons, including:

- Plans are proposed to put the water to a future use;
- Potential exists to put the water to a future use;
- The public desires to put the water to future use;
- The water is potentially suitable for municipal or domestic water supply under the terms of the *Sources of Drinking Water* Policy (State Board Resolution No. 88-63); or

- The Regional Board has designated a beneficial use as a regional water quality goal.

BENEFICIAL USES FOR SPECIFIC WATER BODIES

Designated beneficial uses are summarized in the tables at the end of this chapter as follows:

Table 2-2 Inland Surface Waters,

Table 2-3 Coastal Waters,

Table 2-4 Reservoirs and Lakes, and

Table 2-5 Ground Water.

In the tables, a "●" indicates an existing beneficial use that was actually attained in the surface or ground water on or after November 28, 1975. A "O" indicates a potential beneficial use that may develop in future years. A "+" indicates that the water body has been exempted by the Regional Board from the municipal use designation under the terms and conditions of State Board Resolution No. 88-63, *Sources of Drinking Water* Policy.

Designated beneficial uses are generally, but not always, present throughout the entire reach of a particular hydrologic unit, area, subarea, or water body. Designated beneficial uses may not be present throughout the year. Specific beneficial uses near or below discharges will be carefully evaluated by the Regional Board during the development of waste discharge requirements or enforcement orders.

Beneficial uses are designated for (a) native waters and (b) imported waters stored in a reservoir. They do not represent the use of water directly imported into the hydrologic basin, unless storage of the imported water occurs within the basin. The lack of a beneficial use listed for any given area does not rule out the possibility of existing or future beneficial uses. Existing beneficial uses which have not been formally designated in this Basin Plan are protected as well as designated uses.

DESIGNATION OF RARE BENEFICIAL USE

species which were used in the designation of specific water bodies with the RARE beneficial use are shown in Table 2-1. The Regional Board

The RARE beneficial use designation was based, in large part, on the information contained within RareFind. RareFind is the personal computer application of the California Department of Fish and Game's (DFG's) Natural Diversity Data Base (NDDB). The NDDB tracks the location and condition of California's rare, threatened, endangered, and sensitive plants, animals and natural communities. The NDDB is the most complete single source of information on California's rare, endangered, threatened and sensitive species, and natural communities. However, the absence of a special animal, plant or natural community from the RareFind report does not necessarily mean that they are absent from the area in question, only that no occurrence data are currently entered in the NDDB inventory.

Under the Fish and Game Code, as well as the California Environmental Quality Act, a state lead agency is required to consult with the Department of Fish and Game (DFG) to determine whether a project under consideration (e.g., the Basin Plan or a permitting process) will adversely affect any threatened or endangered species. The consultation process is important in identifying bodies of water that support threatened or endangered species. During the Basin Plan consultation process in 1994, the DFG provided recent sightings of the bald eagle (*Haliaeetus leucocephalus*). The U.S. Fish and Wildlife Service provided recent surveys for the least Bell's vireo (*Vireo belli pusillus*) and southwestern willow flycatcher (*Empidonax trailli extimus*). These and other information sources are listed in the references for this chapter.

To ensure the applicability of the RareFind information, only current sightings (i.e., those sightings since November 28, 1975) were used. In addition, consideration was given to the frequency, abundance, and occurrence history for each sighting(s), and how recent the sighting was. The RARE designation has been added where there is substantial evidence that the water body supports threatened or endangered species. By definition, water bodies with a RARE designation support habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under state or federal law as rare, threatened or endangered. Those plant or animal can provide specific information about the sighting(s) used to designate the RARE beneficial use. However, it is the responsibility of the lead

agency or project sponsor to provide adequate information as to whether a proposed project will affect fish and wildlife (including plants) and their habitats.

The RARE beneficial use is generally, but not always, present throughout the entire reach of a particular waterbody. Also, the RARE beneficial use may not be present throughout the year. The RARE designation is placed on bodies of water where the protection of a threatened or endangered species depends on the water either directly, or to support its habitat. The purpose of the RARE designation for a particular water body is to highlight the existence of the threatened or endangered species. This will ensure that, absent extraordinary circumstances, they are not placed in jeopardy by the quality of the discharges to those water bodies.

Recognition that a water body is used by threatened or endangered species (RARE designation) does not necessarily mean that any particular suite of water quality objectives will be applied to the water body. In the absence of species specific or site specific objectives, the Regional Board would rely on objectives for WARM and COLD to implement the RARE designation. The existing WARM and COLD beneficial use designations are believed to be stringent enough to protect threatened or endangered species. If these issues arise in the future, they will be decided on a case-by-case basis, considering the most recent scientific data, site-specific factors, and other beneficial uses.

DESIGNATION OF COLD FRESHWATER HABITAT BENEFICIAL USE

Water bodies with a "*Cold Freshwater Habitat*" (COLD) beneficial use designation support cold freshwater ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.

In the San Diego Region, the cold freshwater fish used for the COLD designation is the rainbow trout. The rainbow trout, *Oncorhynchus mykiss*, is native to the Region. Rainbow trout which migrate from fresh water to the ocean are known as steelhead and those which remain in fresh water are known as a resident population. In addition, hatchery stocked rainbow trout have been planted throughout the Region since the 1880's. Some of these hatchery stocked trout have developed wild populations, and some have hybridized with native trout populations. Other species of trout may have been stocked from time to time, by various mechanisms into the Region's water bodies. (One of these trout is the European brown trout, *Salmo trutta*. At the present time, the brown trout is no longer stocked due to concern for its impacts on fishery resources and the fact that it is picivorous.)

Cold fresh water bodies are usually below 70° F, contain well-oxygenated water, and contain cold freshwater aquatic habitat suitable for cold freshwater fish. Optimum temperatures for growth and for most life stages of rainbow trout are 56 to 70° F (Moyle, 1976). The temperature tolerance for rainbow trout is reported to be from about 32° F to the mid-80's depending on the oxygen content of the water, size of fish, and the degree of acclimation. To survive at the higher water temperatures, trout require a gradual acclimation and water that is saturated with oxygen. Also, smaller trout may withstand the higher temperatures better than the larger fish.

Rainbow trout prefer well-oxygenated water but can survive at very low oxygen levels, the level tending to be less at lower temperatures and longer periods of acclimation. For example, mean lethal oxygen concentrations range from 1.05 part per million (ppm) at 52° F to 1.51 ppm at 68° F for rainbow trout averaging 3.8 inches in length (McAfee, 1966).

Rainbow trout do well in waters of pH from 7 to 8 and have adapted to waters of varying pH, ranging from at least 5.8 to 9.6 (Sigler, 1987).

In cold fresh water bodies, where the water body is free-flowing, such as in a river, stream or creek, the habitat usually supports a diversity of aquatic insects, including those aquatic insects which require a high quality of water. Typically, there is overhanging cover and shade, provided

Table 2 - 1. Water - Dependent Threatened or Endangered Species Which Were Considered in the RARE Beneficial Use Designation

NAME	STATUS*	TYPE	HABITAT REMARKS
Blue whale *Balaenoptera musculus*	FE	Mammal	Ocean
Western snowy plover *Charadrius alexandrinus nivosus* (breeding)	FE, CSC	Shore bird	Beaches, Estuarine Salt Ponds
Pacific green sea turtle *Chelonia mydas*	FE	Reptile	Marine
Salt-marsh bird's beak *Cordylanthus maritimus* ssp. *maritimus*	SE, FE	Plant	Salt Marsh
Southwestern willow flycatcher *Empidonax traillii extimus*	SE, Proposed FE	Bird	Riparian Woodland Habitat
Tidewater goby *Eucyclogobius newberryi* (Girard)	FE	Fish	Shallow Marine Waters, and in the Lower Reaches of Streams
Bald eagle *Haliaeetus leucocephalus*	SE, FT, CP	Bird	Lake
Humpback whale *Megaptera novaeangliae*	FE	Mammal	Ocean
Willowy monardella *Monardella linoides* ssp. *viminea*	SE, C2	Plant	Riparian Scrub Habitat
Belding's savannah sparrow *Passerculus sandwichensis beldingi*	SE, C2	Bird	Coastal Wetlands
California brown pelican *Pelecanus occidentalis californicus*	SE, FE	Bird	Estuarine, Marine, Subtidal, and Marine Pelagic Waters
Light-footed clapper rail *Rallus longirostris levipes*	FE, CP	Bird	Coastal Marshes, Mudflats
California least tern *Sterna antillarum browni*	SE, FE	Bird	Marine, Coastal Area Waters
Least Bell's vireo *Vireo bellii pusillus*	SE, FE	Bird	Riparian Woodland Habitat

Status *

Federally threatened (FT) or endangered (FE) species are defined under section 3 of the federal Endangered Species Act of 1973 (50 CFR 17). An endangered species is any species, including subspecies and varieties, "*in danger of extinction throughout all or a significant portion of its range*." A threatened species is any species "*likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range*." Threatened and endangered species have been the subject of a proposed and final rule (or regulation) published in the Federal Register. Thus, these species are also referred to as listed species. Proposed species are species proposed for listing as a threatened or endangered species for which a proposed rule, but not a final rule, has been published in the Federal Register.

Proposed species are granted limited protection under the federal Endangered Species Act. These species must be addressed by federal agencies in biological assessments (section 7), and are given special management consideration by regulatory agencies. Candidate species are species under consideration for listing, but have not been subject to a proposed rule. Categories for candidate species relate solely to the level of biological information available and not to the degree of threat. Candidate species are not protected under the federal Endangered Species Act.

Candidate species however, are afforded special management consideration due to their status and sensitivity. The U.S. Fish and Wildlife Service provides technical assistance to Federal, State and local agencies on the conservation and management of candidate species. Candidate species in category 1 (C1) are those taxa that seem to conform to the State definition of threatened or endangered species and should be added to the offical list. Candidate species in category 2 (C2) are those taxa that have populations that are low, scattered, or highly localized. Their populations have declined in abundance in recent years and so require management to prevent them from becoming threatened species.

The definitions of state threatened (ST) or endangered (SE) species under the California Endangered Species Act are the same as under the federal Endangered Species Act. Under the State Act, all animals previously listed as Rare have been "*grandfathered*" into the State Act as threatened. All plants previously listed as Rare have been kept as Rare. All plants now listed under the State Act are listed as threatened or endangered.

California Species of Special Concern (CSC) are animal species that have no specific status as a state listed species, but which appear to be vulnerable to extinction because of declining populations, limited ranges, or rarity. CSC meet the criteria for state listing and are commonly addressed under the California Environmental Quality Act. The category of California Fully Protected Species (CP) was established by the California legislature and prohibits the possession or taking of sensitive animals, or parts thereof (sections 3511, 4700, 5050, and 5515, Fish and Game Code).

by a variety of aquatic plants, terrestrial plants, and trees. Another characteristic is that the bottom substrate usually contains structure, provided by tree root wads, logs, boulders, or gravel.

DESIGNATION OF SPAWNING, REPRODUCTION, AND/ OR EARLY DEVELOPMENT BENEFICIAL USE

In the San Diego Region, the 'spawning, reproduction and/or early development' (SPWN) beneficial use designation is assigned only to water bodies with MAR and/ or COLD beneficial uses. The marine fish used for the SPWN designation includes any marine fish. The cold freshwater fish used for the SPWN designation is the rainbow trout. Rainbow trout usually spawn in the Spring, and require spawning areas with gravel and cool, free-flowing, well-oxygenated water. Rainbow trout prefer to spawn in rivers, streams and creeks with a moderate gradient and containing riffles, however some populations of rainbow trout are also known to successfully spawn in lake inlets and outlets. The fry of rainbow trout need suitable nurseries, which allow protection from predators, such as the slow, shallow areas adjacent to riffles, with shade from bank vegetation. The fry also require an abundance of aquatic insects for forage.

SOURCES OF DRINKING WATER POLICY


Clouds

In November 1986, the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) was approved by the California voters. Proposition 65 prohibits the discharge of toxic substances into "*sources of drinking water*". The State Board has defined the term "*sources of drinking water*" in Resolution No. 88-63, *Sources of Drinking Water* Policy. This policy specifies that, except under specifically defined conditions, all surface and ground waters of the state are to be protected as existing or potential sources of municipal and domestic water supply. The exceptions include where:

- The total dissolved solids concentration of surface and ground waters exceed 3,000 milligrams per liter (mg/l);
- The water source has a low sustainable yield of less than 200 gallons per day for a single well;
- There is contamination that cannot reasonably be treated for domestic use with either best management practices or best economically available treatment practices;
- The surface waters are in particular municipal, industrial, and agricultural conveyance and holding facilities; and
- The ground waters are regulated geothermal energy ground waters.

Resolution No. 88-63 provides that any water body designated with an existing or potential municipal and domestic supply (MUN) beneficial use is also defined as a suitable or potentially suitable source of drinking water. The policy also allows a water body to retain beneficial use designations assigned prior to the State Board's adoption of the "*Sources of Drinking Water*" Policy.

EXCEPTIONS TO THE "SOURCES OF DRINKING WATER" POLICY

In 1989 the Regional Board adopted Resolution No. 89-33, *'Incorporation of* "*Sources of Drinking Water*" Policy into the Water Quality Control Plan (Basin Plan) of the San Diego Region'. Resolution No. 89-33 incorporates the State Board's "*Sources of Drinking Water*" Policy into the Basin Plan. Resolution No. 89-33 also provides an initial list of surface and ground water hydrologic units (HUs), areas (HAs), and subareas (HSAs) which the Regional Board has previously determined do not support the MUN or "*Sources of Drinking Water*" designation. Since 1989, additional areas have also been identified as exceptions to the "*Sources of Drinking Water*" Policy. These ground and surface water HUs, HAs, and HSAs are identified in Tables 2-2 and 2-5 with a "+" indicating that the water body has been exempted by the Regional Board from the municipal use designation under the terms and conditions of State Board Resolution No. 88-63, "*Sources of Drinking Water*" Policy.

Arroyo chub

INLAND SURFACE WATERS

Inland surface waters consist of all waters in the Region exclusive of the waters of the Pacific Ocean, enclosed bays and estuaries, coastal lagoons, and ground waters. The existing and potential beneficial uses of inland surface waters and their tributaries in the Region are presented in Table 2-2. Hydrologic unit, area, and subarea numbers are noted in Table 2-2 as a cross reference to the classification system developed by the California Department of Water Resources. For those surface water bodies that cross into other hydrologic units, such water bodies appear more than once in a table. In Table 2-2, starting from the north and proceeding towards the south within the Region, watersheds are listed by the direction of flow from the headwaters downstream to the outlet. Within a particular watershed, the mainstream water body is listed first and is placed flush left in the table, the upstream tributaries are listed below the mainstream water body and placed to the right. In most instances, surface waters are subdivided into reaches at hydrologic subarea boundaries. Those waters not specifically listed (generally smaller tributaries) are designated with the same beneficial uses as the streams, lakes, or reservoirs to which they are tributary.

Although most free flowing streams in the Region are essentially interrupted in character having both perennial and ephemeral components, several beneficial uses, including aesthetic enjoyment and habitats for fish and wildlife, are made of these surface waters. Beneficial uses of inland surface waters generally include REC-1 (swimmable) and WARM or COLD. Additionally, inland waters are usually designated as IND, PRO, REC-2, WILD, and are sometimes designated as BIOL and RARE. Inland surface waters that meet the criteria mandated by the *Sources of Drinking Water* Policy are designated MUN. Unless otherwise designated by the Regional Board, all inland surface waters in the Region are considered suitable or potentially suitable as a municipal and domestic water supply.

COASTAL WATERS

Coastal waters discussed in this section may be defined as waters subject to tidal action and include the water bodies defined below. Beneficial uses of coastal waters in the region generally include REC-1, REC-2, EST, WILD, RARE, and MAR. The Pacific Ocean and San Diego Bay also include NAV.

- ***Ocean Waters***

Ocean Waters are the territorial marine waters of the Region as defined by California law to the extent these waters are outside of enclosed bays, estuaries, and coastal lagoons.

- ***Enclosed Bays***

Enclosed bays are indentations along the coast which enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays includes all bays where the narrowest difference between the headlands or outermost harbor works is less than 75% of the greatest dimension of the enclosed portion of the bay. Enclosed bays do not include inland surface waters or ocean waters.

- ***Estuaries***

Estuaries means waters, including coastal lagoons, located at the mouths of streams which serve as areas of mixing for fresh and ocean waters. Coastal lagoons and mouths of streams which are temporarily separated from the ocean by sandbars are considered estuaries. Estuarine waters are considered to extend from a bay or the open ocean to a point upstream where there is no significant mixing of fresh water and sea water. Estuaries do not include inland surface waters or ocean waters.

Beneficial uses for these coastal waters provide habitat for marine life and are used extensively for recreation, boating, shipping, and commercial and sport fishing. Coastal waters in the San Diego Region have as many as fourteen designated beneficial uses.

All coastal lagoons of the Region are included in the category "*Coastal Waters*". The mouths of most of the rivers and creeks are continually

affected by tidal action and present a relatively stable environment for wildlife and vegetation. Other coastal lagoons may be separated from tidal action by earthen deposits and thus present an environment with major seasonal variations. Such conditions result in the development of a unique biologic community highly specific to that area. Occasionally, the mouths of these coastal lagoons are opened, subjecting the lagoons to tidal flushing to enhance their value for recreational use. This action would not alter the categories of beneficial uses of the coastal lagoons.

A listing of coastal waters in the San Diego Region and the existing and potential beneficial uses of each are summarized in Table 2-3.

Lower Otay Reservoir

RESERVOIRS AND LAKES

The water resources with the greatest diversity of beneficial uses in the Region are the man-made water storage reservoirs and lakes. Located in nearly all of the Region's hydrologic units, these reservoirs and lakes intercept surface runoff and store imported water supplies. As such, the storage reservoirs serve as: (1) sources of supply for municipalities, agricultural areas, and industrial operations; (2) recreational bodies; and (3) habitats for fish and wildlife. In a few cases, such as reservoirs used primarily for drinking water, REC-1 uses can be restricted or prohibited by the entities that manage these waters. Many of these reservoirs, however, are designated as potential for REC-1, reflecting federal Clean Water Act goals.

A listing of existing and potential beneficial uses of major reservoirs and lakes in the San Diego Region is given in Table 2-4.

GROUND WATERS

Ground water is defined as subsurface water that occurs beneath the water table in soils and geologic formations that are fully saturated. Ground water bearing formations sufficiently permeable to transmit and yield significant quantities of water are called aquifers (Bouwer, 1978). A ground water basin is defined as a hydrogeologic unit containing one large aquifer or several connected and interrelated aquifers (Todd, 1980).

The principal ground water basins in the San Diego Region are small and shallow. Only a small portion of the Region is underlain by permeable geologic formations that can accept, transmit and yield appreciable quantities of ground water. In many parts of the Region, usable ground water occurs outside of the principal ground water basins. There are ground water bearing geologic formations in the Region that do not meet the definition of an aquifer. Accordingly, the term "*ground water*" for basin planning and regulatory purposes, includes all subsurface waters that occur in fully saturated zones within soils, and other geologic formations. Subsurface waters are considered ground water even if the waters do not occur in an aquifer or an identified ground water basin.

Ground waters in the San Diego Region can have as many as six designated beneficial uses including: (1) municipal and domestic; (2) agricultural; (3) industrial service supply; (4) industrial process supply; (5) ground water recharge; and (6) freshwater replenishment. Nearly all of the ground water development in the Region has been for the purpose of municipal and agricultural supply. Ground water uses in some hydrologic units have been expanded to include industrial uses, especially gravel and sand washing. The fresh water replenishment designation has been assigned to ground water basins that are utilized for supplying water to a lake or stream. The ground water recharge designation has been applied to ground water hydrologic units which are used to recharge another hydrologic unit.

Most of the ground waters in the Region have been extensively developed; the availability of potential future uses of ground water resources is limited. Further development of ground water resources would probably necessitate ground

water recharge programs to maintain adequate ground water table elevations.

Ground waters that meet the criteria mandated by the *Sources of Drinking Water* Policy are designated MUN. Unless otherwise designated by the Regional Board all ground waters in the Region are considered suitable or potentially suitable as sources of drinking water.

The Regional Board has deleted beneficial use designations in portions of certain hydrologic ground water units, areas or subareas. Available information indicated that the beneficial uses in portions of these hydrologic ground water basins did not occur and were not likely to occur in the future. The Regional Board will issue waste discharge requirements and enforcement orders in these basins in conformance with the terms and conditions of State Board Resolution No. 68-16, *Statement of Policy With Respect to Maintaining High Quality of Waters in California*. It is the Regional Board's intent that water quality be maintained in conformance with the terms and conditions of Resolution No. 68-16.

A listing of the beneficial uses of the ground waters in the Region is presented in Table 2-5.

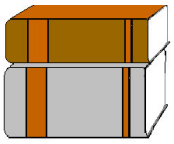
BENEFICIAL USE TABLES

Designated beneficial uses are summarized in the tables at the end of this chapter as follows:

Table 2-2 Inland Surface Waters;
Table 2-3 Coastal Waters;
Table 2-4 Reservoirs and Lakes; and
Table 2-5 Ground Water.

In the tables, a "●" indicates an existing beneficial use that was actually attained in the surface or ground water on or after November 28, 1975. A "○" indicates a potential beneficial use that will probably develop in future years through the implementation of various control measures. Potential uses also include uses that have been developed in the past but have been abandoned for reasons other than water quality. A "+" indicates that the water body has been exempted by the Regional Board from the municipal use designation under the terms and conditions of State Board Resolution No. 88-63, *Sources of Drinking Water* Policy.

REFERENCES



Bouwer, H. 1978. Groundwater Hydrology. McGraw-Hill Book Company, New York. 479 pp.

California Department of Water Resources. 1967. Ground Water Occurrence and Quality San Diego Region. Volume 1: Text. Bulletin No. 106-2. 235 pp. + maps.

California Porter-Cologne Water Quality Act, California Water Code, Division 7. 1969 (and all amendments thereto).

California Regional Water Quality Control Board, San Diego Region. 1975. Comprehensive Water Quality Control Plan Report for the San Diego Basin (9). James M. Montgomery, Consulting Engineers, Inc.

Federal Water Pollution Control Act. 1972 (and all amendments thereto). PL 92-500. (Clean Water Act).

McAfee, William R. 1966. "Rainbow Trout" in Inland Fisheries Management, on pages 192-215, Alex Calhoun, editor. State of California, Department of Fish and Game. 546 pp.

Moyle, Peter B. 1976. Inland Fishes of California. Univ. of California Press, Berkeley, California. 405 pp.

National Marine Fisheries Service, National Oceanic and Atmospheric Administration. 1993. Environmental Assessment on Proposed Regulations Governing the Taking of Marine Mammals Incidental to the Underwater Detonation of Conventional Explosives in the Offshore Waters of the Outer Test Range of the Naval Air Warfare Center, Pt. Mugu, California. pp: 20-46.

Natural Diversity Data Base, Natural Heritage Division, California Department of Fish and Game. May 3, 1994.

Sigler, W.F. and J.W. Sigler. 1987. Fishes of the Great Basin, A Natural History. Univ. of Nevada Press, Reno, Nevada. 425 pp.

Steinhart, P. 1990. California's Wild Heritage, Threatened and Endangered Animals in the

Golden State. California Department of Fish and Game. 108 pp.

Stinson, M. L. 1984. Biology of Sea Turtles in San Diego Bay, California, and in the Northeastern Pacific Ocean. San Diego State University, M.S. Thesis. 578 pp.

Sweetwater Environmental Biologists, Inc. 1992. 1992 Status of the Least Bell's Vireo on Camp Pendleton - California, Draft Final Report. Prepared for U.S. Marine Corps, Camp Pendleton, Environmental and Natural Resources Management Office, Camp Pendleton, California 92055-5000.

Sweetwater Environmental Biologists, Inc. 1993. Draft 1993 Least Bell's Vireo Monitoring and Cowbird Removal Program. Prepared for California Department of Fish and Game, 1416 Ninth Street, Sacramento, California 95814.

Todd, D.K. 1980. Groundwater Hydrology. Second Edition. John Wiley & Sons, New York. 535 pp.

United States Environmental Protection Agency. 40 CFR 130. EPA Requirements for Water Quality Planning.

United States Environmental Protection Agency. 40 CFR 131. EPA Procedures for Approving Water Quality Standards.

U.S. Fish and Wildlife Service. 1994. Status of the Least Bell's Vireo and Southwestern Willow Flycatcher at Camp Pendleton Marine Corps Base, California in 1993. Prepared for U.S. Marine Corps, Environmental and Natural Resources Office, Camp Pendleton, California. Scope of Work M00681-93-MP-00016.

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