The population and racial characteristics of the study area are shown in Table 3.9-3. Among racial groups, whites made up the majority of residents in the study area, at approximately 89 percent. Racial characteristics appear to have changed little since 1990. Additional information on the racial and income status of the local population is provided in Section 3.18, Environmental Justice.

Table 3.9-3
Profile of study area Population Characteristics in 1990 and 1997

	1990	1990 Percentage of Total	1997	1997 Percentage of Total	Percentage Change 1990 to 1997
Total Population	1,304,893	100.00%	1,591,497	100.00%	21.96%
White	1,169,525	89.63%	1,416,693	89.02%	21.13%
African American	71,576	5.49%	86,649	5.44%	21.06%
Asian	16,258	1.25%	18,971	1.19%	16.69%
American Indian	47,534	3.64%	69,184	4.35%	45.55%
Persons of Hispanic Origin[1]	385,174	29.52%	574,593	36.10%	49.18%

Source: US Census 1998
Note: Percentages may not equal 100 due to rounding.
[1] Hispanic Origin is an ethnic rather than racial category. Persons of Hispanic origin can be of any race.

There were 602,252 housing units in the study area during 1998, about 93 percent of which were in Riverside County. Since 1990, the region has experienced a 14 percent increase in housing units. Both Imperial and Riverside counties have had an average two percent annual increase in housing units. The growth has been relatively uniform throughout both counties. While the increase in housing is slightly more pronounced in the more urban western portion of Riverside County, a relatively high increase also has occurred in the Coachella Valley, including in communities along the northern shore of the Salton Sea.

The 1998 vacancy rate for Imperial County was 9.7 percent, down 0.5 percent from 1990. For Riverside County, the rate was much higher at 17.0 percent, just about even with the rate in 1990 (California Department of Finance 1998).

Between 1980 and 1990, total housing in the communities around the Salton Sea increased by 4,618 units, 4,250 of which were in Riverside County and 368 of which were in Imperial County. Historically, this area has had a relatively high vacancy rate, averaging around 20 percent. This is primarily due to seasonal units (primarily in Imperial County) and unoccupied inventory of new housing, particularly in Coachella City.

3.10 LAND USE

3.10.1 Introduction

The affected environment discussion for land use and planning includes urban land use, commercial and industrial land use, public land use, and local land use plans and

policies. Agricultural land uses are discussed in the next section, Agricultural Land Resources. Land use compatibility with different noise conditions is discussed in Section 3.5, Noise.

3.10.2 Land Ownership

The area within and surrounding the Salton Sea is a diverse mixture of private and public ownership. Much of the area is a checkerboard pattern on public and private ownership. (Land uses are discussed below and shown on Figure 3.10-1.) The study area comprises approximately 390,000 dry-land acres in Riverside and Imperial counties. Most of this land is privately held and is urban, commercial, agricultural, or desert land. Federal, state, and local agencies administer the balance of the study area. In addition, formation of the Sea resulted in the inundation of approximately 190,000 acres of public and private lands. Inundated lands are also a checkerboard pattern of ownership.

Federal Land Ownership

Approximately 150,000 acres (39 percent) of the study area is under federal management. BLM is the principal federal landholder, administering approximately 68,000 dry-land acres (18 percent). Military land withdrawals comprise approximately 7,945 dry-land acres and 13,642 in-Sea acres. USFWS administers approximately 53,000 acres in and around the Sea. The majority of inundated lands are federal lands administered by BLM or withdrawn by Reclamation. Additional inundated lands are public lands held as public water reserves.

State and Local Land Ownership

Approximately 15,000 acres (4 percent) of the study area is managed by California State agencies. CDPR is the largest State landholder. Local government land ownership comprises a nominal portion of the area around the Sea.

Private Land Ownership

Privately owned lands comprise the majority of the area around the Sea, approximately 220,000 acres (56 percent). These lands are owned by numerous individual entities, including IID and Torres Martinez band of the Cahuilla Desert Indian Tribe. The Torres Martinez Tribe holds approximately 13,000 acres of land north and west of the Sea. These holdings are interspersed with private holdings and BLM land and are held in trust by the Bureau of Indian Affairs (BIA). Approximately 10,000 acres of tribal lands are also submerged by the Sea. IID and other private entities also own substantial areas of inundated land.

3.10.3 Urban Land Use

Urban land uses in the study area are primarily unincorporated communities adjacent to the Salton Sea or in the Coachella and Imperial valleys. The unincorporated communities of Mecca and North Shore are on the north side of the Sea in Riverside County. Mecca and North Shore consist of scattered single-family homes, RV parks, beaches, a marina, and scattered commercial uses.

The West Shores/Salton City area in Imperial County extends along the western shore from the northern Imperial County line to the Salton Sea Test Base. Within this area are several unincorporated communities, such as Salton City, Vista Del Mar, Salton Sea Beach, and Desert Shores. These communities consist mostly of single-family homes, RV and trailer parks, marinas, and community services. Although a significant amount of the land area is subdivided, most of the residential lots are undeveloped.

Hot Mineral Spa/Bombay Beach is an unincorporated community that extends along the east shore of the Sea from the northern Imperial County line to Bombay Beach. Most urban land uses in this area are single-family homes and RV parks. Recreational facilities include a marina, campground, and mineral spas.

Southeast of the Salton Sea are the unincorporated community of Niland and the incorporated communities of Calipatria and Westmorland. Niland contains mostly single-family homes, while Calipatria and Westmorland include a larger number of residential, commercial, and urban uses.

Occasional residences are found throughout the study area. There are no large urban areas in the study area.

3.10.4 Commercial and Industrial Land Uses

Commercial uses in the study area mostly provide services for tourists and area residents. Industrial uses in the study area mostly consist of geothermal power production.

Commercial recreation facilities found in the study area include beaches, campgrounds, marinas, RV parks, mineral spas, and hunting clubs. Most of these facilities are along the western shore in the Salton City/Desert Shores area or along the northeastern shore between North Shore and Bombay Beach. Several hunting clubs are near the southeast shore. Other commercial activities that support tourism and area residents are found in urban areas, as discussed previously, and along highways 86, 195, and 111. Geothermal power production plants are near the southeastern edge of the Salton Sea.

3.10.5 Public Land Use

Public lands in the study area are managed by federal agencies, including the BLM, US military, and USFWS and by state agencies, including CDFG, CDPR, and the California State Lands Commission. Several county recreation areas are also in the study area.

Federal Land

BLM lands are primarily found along the east and west sides of the Sea and are managed by the Palm Springs and El Centro field offices. BLM lands interspersed with other federally withdrawn, tribal, and private lands. These lands are managed for multiple use, including grazing, recreation, and mineral extraction, in accordance with the California Desert Plan (CDP) (BLM 1981). The CDP assigns use classifications to public lands according to resource values present.

The US Navy manages significant land areas around the Salton Sea. The Navy manages the Salton Sea Test Base on the southwest shore and within the Sea. The base has been used for military training since its establishment in 1942. With the exception of brief periods of use, the base has been abandoned since the 1970s and was designated for closure by the 1989 Base Realignment and Closure Commission. Except for two occasions, live-fire weapons testing and training was not conducted on the base, however, due to these two live-fire training events, unexploded ordnance (UXO) may be found on the site. The US Navy has conducted a physical search of the entire land area of the base and subsurface investigations on 150 acres of the base. The in-Sea portion of the base was not surveyed. UXO was found to be very limited. Please see Section 3.14 Public Safety and Environmental Hazards for further discussion of UXO. Cleanup prior to closure is proceeding and transfer of ownership to other federal agencies is being considered. The base remains a military land use until the property has been conveyed to another federal agency.

The Naval Air Facility El Centro is to the southwest, and the US Marine Corps Chocolate Mountains Gunnery Range is to the east of the Salton Sea. While both of these facilities are within the Salton Sea watershed, only small areas are within the study area for Phase I restoration activities. Both facilities are active military training areas and include live-fire weapons training activities.

The USFWS manages dry and inundated land areas as the Sonny Bono National Wildlife Refuge. The largest portion of the refuge covers the southern third of the Salton Sea; smaller land areas are on the southern and eastern shores. USFWS also manages a small area of CDFG property (Imperial Wildlife Area-Hazard Unit) on the eastern shore.

State Land

The CDPR manages the Salton Sea State Recreation Area on the northeast shore of the Sea and the Anza-Borrego Desert State Park to the west in the Santa Rosa Mountains. CDFG manages the Imperial Wildlife Refuge Area-Wister Unit on the east shore of the Salton Sea near Niland. The California State Lands Commission owns several areas of land east, west, and within the Salton Sea. These lands are interspersed with private and federal lands.

Local Government Land

Two Imperial County parks are on the eastern shore, Red Hill Marina on the southeast edge of the Sea, west of Niland, and Niland Marina County Park, on the eastern shore, west of the Salton Sea State Recreation Area and Bombay Beach.

3.10.6 Local Land Use Plans and Policies

The Riverside and Imperial county general plans provide the policy framework for land use planning in the study area. Although San Diego County extends to within approximately three miles of the western edge of the Sea, this area is completely occupied by the Anza-Borrego Desert State Park. Since land within the park is

managed by the state, San Diego County land use policies are not binding and are therefore not discussed further.

Riverside County General Plan

The northern third of the Salton Sea is in the Coachella Valley of Riverside County. Land use in this region is guided by the Eastern Coachella Valley Plan (ECVP) of the Riverside County Comprehensive General Plan (Riverside County. 1995). Land uses in the ECVP area include open space and conservation, residential, commercial, and industrial/manufacturing. Most of the area is designated as open space and conservation, including agriculture, parks, and areas of water, desert, and mountainous terrain.

Agriculture is the largest land use category in the ECVP and occupies almost the entire area adjacent to the Sea. The Salton Sea State Recreation Area on the northeastern shore of the Sea is designated as parkland and is the only shoreline area in the ECVP not designated as agriculture. To the east, west, and northeast, away from the shoreline, are areas designated as desert lands. Farther to the west, at the base of the Santa Rosa Mountains, is a strip of land designated as planned residential reserve. Residential areas include Mecca and North Shore. Small areas of commercial and industrial/manufacturing are found near Mecca and North Shore, as well as along highways 86 and 111 in agricultural and desert areas.

Specific objectives or policies of the ECVP that would be relevant to the Salton Sea Restoration Project include the following:

- Maintain compatibility with surrounding land uses, including such factors as intensity of use, hazards, nuisances, aesthetics, and design (Land Use Policy 1[d]);
- Discourage uses that may conflict with agricultural activities from locating in agricultural areas (Land Use Policy 1[g]); and
- Carefully control and manage natural resources, such as soil, water, vegetation, air, wildlife, and mineral resources (Open Space Objective 2).

Imperial County General Plan

The southern two thirds of the Salton Sea is within Imperial County. Land uses within the affected area include agriculture, government/special public, urban, recreation/open space, rural residential, and community area (Imperial County. 1997).

Agriculture is the largest land use category adjacent to the Salton Sea. Agricultural land use extends around the Sea from the Salton Sea Test Base on the southwest shore, to Salton Sea State Recreation Area on the eastern shore. Within the agricultural area are small urban areas, such as Westmorland, Calipatria, and Niland. The Salton Sea Test Base and Salton Sea State Recreation Area are designated as Government/Special Public Land Uses.

The general plan identifies several areas adjacent to the Salton Sea that are characterized by urban or urbanizing uses. Land use in these areas is guided by urban and community area plans that implement the land use element of the general plan. Land use in the unincorporated area west of the Sea to Highway 86 and between the Imperial/Riverside county line and the Salton Sea Test Base is guided by the West Shores/Salton City Urban Area Plan. The Niland Urban Area Plan guides land uses around the unincorporated area of Niland on the eastern side of the Sea. Land use in the unincorporated area east of the Sea and between the county line and Bombay Beach is guided by the Hot Mineral Spa/Bombay Beach Community Area Plan. A small area of rural residential extends east from the Bombay Beach Community Plan area.

Specific goals or objectives of the Imperial County General Plan that would be relevant to the Salton Sea Restoration Project include the following:

- Preserve commercial agriculture and discourage incompatible development adjacent to productive agricultural lands (Objectives 1.1 and 1.2);
- Promote water recreation activities in suitable areas along the Salton Sea (Objective 3.9); and
- Identify and pursue funding sources for cleanup of the Salton Sea (Objective 3.10) and establish policies and programs for maintaining salinity levels (Objective 9.5).

3.11 AGRICULTURAL LAND RESOURCES

3.11.1 Introduction

The affected environment discussion for agricultural resources includes farmland classifications, agricultural land use, and agricultural economics. Although the potential impact on agricultural land use would be limited to the Coachella and Imperial valleys, the Phase I study area includes all of Imperial and Riverside counties because the economic effects resulting from impacts to agriculture would extend throughout the counties.

Agriculture is the most significant economic activity in the Salton Basin. The fertile soil and mild climate of the region allow year-round planting, cultivation, and harvest. The current total acreage under irrigation is about 520,000 acres, with about 460,000 acres in Imperial Valley and 60,000 acres in Coachella Valley, about the same acreage that has been under irrigation since the 1960s. Agriculture in the Salton Basin depends on the Sea as a repository for its drainage water, while the Sea depends on the continuation of these drainage waters to sustain the water level. All project alternatives have been developed with a common goal to maintain the Sea's ability to receive agricultural runoff so that agricultural practices in the Coachella and Imperial valleys can continue. Agricultural land also provides important habitat for the numerous resident and migratory bird species that use the Salton Sea.

3.11.2 Farmland Classifications

The NRCS is responsible for maintaining an inventory of the nation's farmlands. In order to map these lands, the NRCS designates four basic types of important farmland: prime farmland, farmland of statewide importance, unique farmland, and farmland of local importance. Prime farmland and farmland of statewide importance may be used for crops, pasture, range, forestry, or other uses but may not be used for urban or water uses. The California Department of Conservation Farmland Mapping and Monitoring Program provides biennial mapping of California's important farmlands.

Prime farmland is land best suited for producing food, feed, forage, fiber, and oilseed crops and also is available for these uses. Prime farmland has the soil quality, growing season, and moisture supply needed to produce a sustained high yield of crops when treated and managed (including water management) according to current farming methods.

Farmland of statewide importance is land other than prime farmland that has a good combination of physical and chemical characteristics for producing crops. These lands differ from prime farmland in that they may have minor shortcomings, such as greater slope or less ability to store soil moisture.

Unique farmland does not meet the criteria for prime farmland or farmland of statewide importance but is used for producing specific high-value food and fiber crops. It has the special combination of soil quality, location, growing season, and moisture supply needed to produce sustained high quality or high yields of a specific crop when treated and managed according to modern farming methods. Examples of such crops are citrus, olives, avocados, rice, grapes, and cut flowers.

Farmland of local importance is land other than prime, statewide, or unique that is producing crops or that has the capability of production and may be important to the local economy. These lands are identified by a local committee made up of concerned agencies that review the lands under this category at least every five years.

The Farmland Protection Act (P. L. 97-98) of 1981 requires all federal agencies to consider the effect of programs on farmland. Federal agencies are required to develop criteria to evaluate the effect of federal programs on the conversion of agricultural lands to nonagricultural uses. Federal agencies must, to the extent practicable, consider alternatives or mitigation that lessen the impact on farmland conversion.

The California Land Conservation Act of 1965 (Williamson Act) established a voluntary tax incentive program for preserving agricultural and open space land. To be eligible for the Williamson Act program, land must be within a county-designated agricultural preserve. Lands under Williamson Act contracts are restricted to agricultural use, and the property owner is taxed according to the income that the land is capable of generating in agriculture. Williamson Act contracts extend for 10 years and are automatically renewed unless a notice of nonrenewal is issued or an application for

cancellation of the contract is approved. Cancellation of the contract requires that the purpose be consistent with the Williamson Act or in the public interest.

3.11.3 Agricultural Land Use

Riverside County

Approximately 18 percent of land in Riverside County is agricultural. The Coachella Valley, north of the Salton Sea, is one of the county's largest agricultural areas, with approximately 54,000 acres in agriculture. Irrigated agriculture in the Coachella Valley began in the late 1800s with the development of local ground water supplies. The Coachella Valley Irrigation District was established in 1918 to manage the local supplies and to plan for supplemental sources. In 1949, the Coachella Canal was completed and supplied water to the valley from the Colorado River. The Coachella Valley Irrigation District currently supplies water to almost 60,000 acres of agricultural land.

Most of the Coachella Valley is designated as important farmland (Figure 3.11-1). Within the Coachella Valley there are approximately 60,000 acres of prime farmland, 1,000 acres of farmland of statewide importance, 11,000 acres of unique farmland, and 27,000 acres of farmland of local importance (California Department of Conservation 1999).

In 1997, there was approximately 500,000 acres of agricultural land in Riverside County, increased from approximately 420,000 acres in 1992. The total amount of irrigated land also increased during this period, from approximately 190,000 acres to 220,000 acres. Riverside County ranked third among California in 1996 in conversion of agricultural land to nonagricultural uses, with approximately 6,400 acres of agricultural land conversions. Agricultural conversions included the development of housing subdivisions in the Coachella Valley. Riverside County also ranked third in the state in the conversion of irrigated land to urban uses, with 1,642 acres lost between 1994 and 1996 (California Department of Conservation 1998).

Imperial County

Approximately 11 percent of land in Imperial County is agricultural. Most of the agricultural land, especially irrigated agricultural land, is within the Imperial Valley. An approximately 300-acre citrus orchard is located south of the former Salton Sea Test Base, between the Sea and Highway 86.

Large-scale irrigated agriculture in the Imperial Valley began in the early 1900s when the California Development Company constructed a canal to divert water from the Colorado River. Following the flooding of the Imperial Valley by the Colorado River in 1905 (which created the Salton Sea), the Imperial Irrigation District was formed. The district began acquiring the assets of the California Development Company and 13 other water companies. The All American Canal, completed in 1942, supplied water from the Colorado River to the Imperial Valley. The IID currently supplies water to nearly 500,000 acres of agricultural land.

Most land in the Imperial Valley is designated as important farmland (Figure 3.11-1). Within the Imperial Valley there are approximately 15,000 acres of prime farmland, 30,000 acres of farmland of statewide importance, 500 acres of unique farmland, and 24,000 acres of farmland of local importance (California Department of Conservation 1999). Imperial County does not participate in the Williamson Act program.

The total amount of agricultural land in Imperial County in 1997 was approximately 490,000 acres, decreased from approximately 533,000 acres in 1992. The total amount of irrigated land increased during this period from approximately 407,000 acres to 438,000 acres (California Department of Conservation 1998).

3.11.4 Agricultural Economics

Riverside County

Riverside County ranked ninth in California counties in 1997 with $1.09 billion worth of agricultural production. The top ten agricultural products in the county in 1997 were milk, table grapes, eggs, nursery plants, hay, dates, avocados, cattle, grapefruit, and lemons. Coachella Valley alone produced $332 million worth of agricultural crops in 1997. Tree and vine crops, such as grapes and dates, produced in 1997 were valued at approximately $172 million, while vegetable and melon crops, such as peppers, watermelon, and carrots, were valued at approximately $121 million. Most of Coachella Valley, 23,000 acres (42 percent), was planted in vegetable and melon crops, while a slightly smaller area, approximately 20,000 acres (37 percent), was planted in tree and vine crops (noncitrus) (Riverside County 1998).

In 1997, there were 3,048 farms in Riverside County. While the number of farms dropped from 3,511 in 1992, the average size of farms during this period increased from 121 acres to 167 acres (US Department of Agriculture 1997a). Agriculture is a significant employer in this area (see Section 3.9 for a discussion of socioeconomics in Riverside County).

Imperial County

Imperial County ranked tenth in California counties in 1997, with $1.04 billion worth of agricultural production. The top agricultural products in the county in 1997 were cattle, alfalfa, carrots, sugar beets, lettuce, hay, wheat, cantaloupes, and broccoli (Imperial County 1998).

Vegetable and melon crops produced in 1997, such as lettuce, carrots, broccoli, and cantaloupes, were valued at approximately $417 million. Field crops, such as alfalfa, sugar beets, and hay, were valued at $331 million. The largest area of the Imperial County, 420,000 acres, was planted in field crops, while a much smaller area, 107,000 acres, was planted in vegetable and melon crops (Imperial County 1998).

In 1997 there were 557 farms in Imperial County, down from 657 in 1992. During the same period, the average size of farms in the county has increased from 811 acres to 879 acres (US Department of Agriculture 1997b). Agriculture is a significant employer

in Imperial County (see Section 3.9 for a discussion of socioeconomics in Imperial County).

3.12 RECREATIONAL RESOURCES

3.12.1 Introduction

The affected environment discussion of recreational resources includes regional and local recreation uses, opportunities, and constraints. Recreation resources in the Salton Sea Phase I study area include a wide range of activities, from water-based to land-based. This section describes the existing recreational use of the Sea based on effects of reduced water quality and fluctuating surface elevation. This discussion combines the needs of local residents with those of visitors from out of the region and does not address local resident recreation programs or facilities. The alternatives proposed by the Salton Sea Authority for Phase I could have both positive and negative impacts on the existing and potential recreational use of the Sea and surrounding regional recreation.

The extent of recreation surrounding the Salton Sea ranges from birding to off-highway vehicle (OHV) use. The most common local recreational activities existing around the Sea include sport fishing, boating, bird watching, camping, hunting, ecotourism, OHV use and rock hunting. Due to issues relating to water quality and lack of land-related facilities, some past popular recreation activities have greatly declined or have ceased to exist. Such recreation activities as swimming, water skiing, boat racing, and personal water craft (PWC) racing, which were once popular activities, are close to nonexistent today. The trend for recreation adjacent to the waters of the Sea has changed from water/body contact activities to non-water/body contact activities.

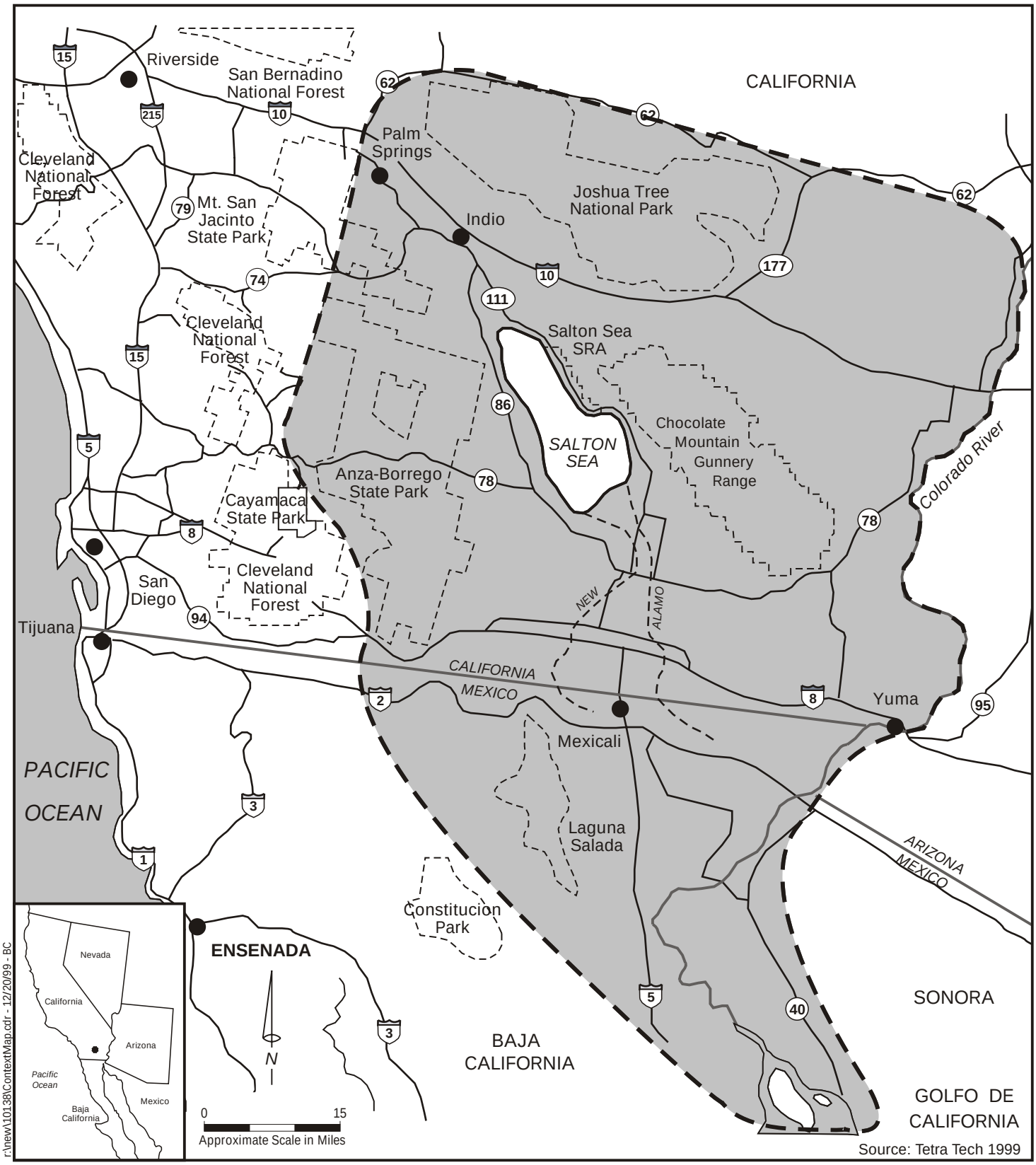
3.12.2 Regional Recreation

There is an abundance of regional recreation opportunities within the Salton Sea Phase I study area. This study area is bounded by and includes, Joshua Tree National Monument to the north, the Colorado River to the east, the northern tip of the Gulf of California to the south, and the Anza-Borrego State Park to the west (Figure 3.12-1). The study area is abundant in recreational opportunity, ranging from cultural tourism sites to thousands of miles of OHV trails. This summary of regional recreation will be divided into those areas north, east, south, and west of the Sea.

The region north of the Salton Sea includes such well known recreation areas as Palm Springs, Joshua Tree National Monument, Mecca Hills, and the San Jacinto Wilderness Area. Resort recreation mixed with natural and cultural opportunities highlight this area. The blend of these extremes has become a trademark attraction to this area of California, which varies from the typical golf/tennis resort of Palm Springs and its surrounding communities to numerous state ecological reserves, palm oases, and alpine experiences of the San Jacinto Wilderness. Some of the typical recreation activities of this region include golf, tennis, gaming, camping, hiking, interpretive walks, birding, mountain biking, auto touring, horseback riding, rock climbing and nature viewing.

Quality accommodations supporting this variety of recreational activities provide a very desirable experience and attraction factor for regional visitors.

From the Salton Sea east to the Colorado River lies thousands of square miles of open space with widely distributed recreational opportunities. The major forms of recreation within the desert portion of this region are focused on OHV use, camping, cultural touring (highlighting historic mining and water conveyance), and geologic sites touring. The highest concentration of recreational activity east of the Sea is along the Colorado River. The juxtaposition of two states, offering activities from sand dune OHV use to hiking, and a highly desirable water- oriented resource draws millions of visitors annually to this year-round playground. Some of the key recreational sites and their assorted activities include the native American ground figures "Intaglios" at Blythe and water skiing, boating, fishing, and wildlife viewing along the Colorado River near Parker, Yuma, and Picacho State Recreation Area. Active sand dunes, some of the largest in the west, including those managed by BLM at the Imperial Sand Dunes Recreational Lands, also provide popular sand OHV use and geologic discovery opportunities.



Salton Sea Regional Context Map

Salton Sea, California

Tetra Tech, Inc.

Figure 3.12-1

The southern portion of the regional study area extends from the Sea to the northern tip of the Gulf of California, encompassing the Colorado River Delta and Laguna Salada. Recreational opportunities are more limited in this region because much of the land is agricultural. From the Sea south to the border is a consistent grid of roads and irrigation canals separating low field crops and creating a visually monotonous setting. The only developed recreational facilities in this area are Wiest Lake County Park and the Finney-Ramer Unit of the Imperial Wildlife Area. These facilities, located along the Alamo River, offer boating, fishing, and waterfowl hunting. Limited OHV opportunities exist along the east and west edges of this area on both sides of the national border with the Yuma Desert Recreation Area, the only officially designated area for this use.

Recreational opportunities occur along the Colorado River and approximately 60 miles south of the border within the river's delta, south to the northern tip of the gulf. The wetlands of Rio Hardy and Cienega de Santa Clara, combined with the intertidal marshes of the gulf, provide extensive birding and wildlife viewing opportunities. The combination of large wetlands and marshes with sport fishing near El Golfo de Santa Clara lead to the potential of attracting thousands of visitors per year. Due to the lack of visitation data available within this area of Mexico, the extent of existing use presently cannot be identified.

Lands west of the Sea to the Vallecito Mountains and Superstition Hills offer abundant recreational opportunities. Anza-Borrego Desert State Park and Ocotillo Wells State Vehicular Recreation Area are dominant recreational facilities west of the Sea. Hiking, horseback riding, mountain biking, OHV use, auto touring, and wildlife viewing are popular recreational activities in this region. When the significant annual visitor use days at Anza Borrego State Park are combined with those of Ocotillo Wells Vehicle Recreation Area, the destination value of the area is evident.

It is evident that recreation demand pressures of population growth from San Diego and San Bernardino counties, two of the fastest growing counties in the state, combined with advancing growth in western Arizona, will continue to press toward the edges of the Salton Sea. If water quality of the Sea was improved and surface elevation was stabilized, this growth would rapidly extend to its shores. This demand is intensified by the fact that the Salton Sea, the largest inland body of water in California, is in an arid region where waterborne recreation is highly desirable. The fact that the Sea is surrounded by a multitude of quality and unique recreational opportunities, to which visitors are willing to travel great distances to enjoy, speaks to the increasing demand in southern California and western Arizona for outdoor recreation facilities and areas.

3.12.3 Local Recreation Resources

Zone Analysis

- The Salton Sea has served and continues to provide for a diversity of water-associated recreation interests. Although much of the landscape and human

uses surrounding the Salton Sea share many common features, there are distinct characteristics, existing uses, and conditions that vary from one shore edge area to the next. These distinct characteristics can be used to divide the Salton Sea into a series of zones. The physical boundaries of these zones are defined by their proximity to the Sea and extending land-side to the foot of the nearest mountain range or up to six miles from shore, depending on the location of Sea-related facilities (Figure 3.12-2).

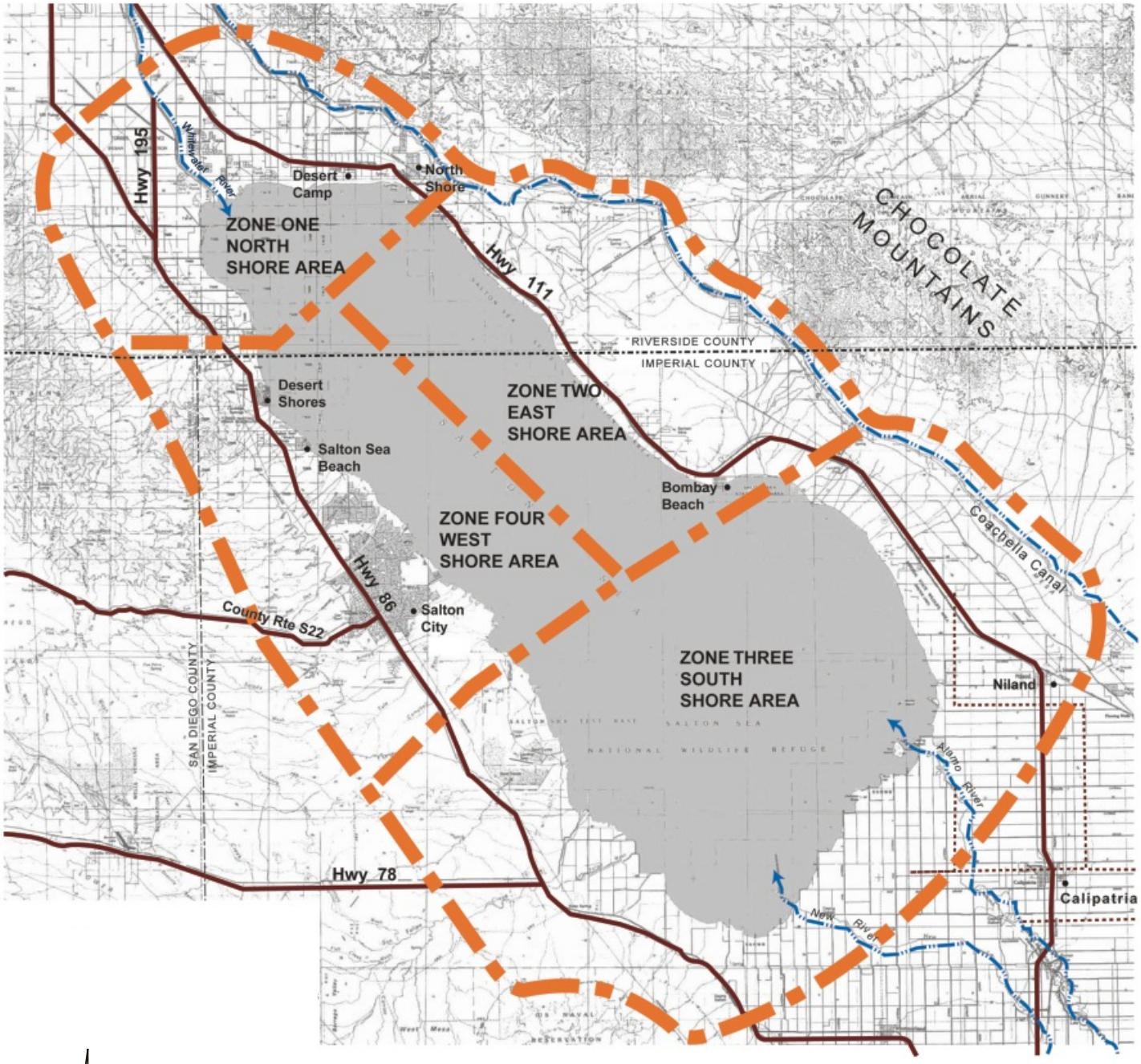
This section defines four relatively homogeneous subareas of the Salton Sea shoreline that can be described as distinct recreation zones:

- North Shore (see Figure 3.12-3);
- East Shore (see Figure 3.12-4);
- South Shore (see Figure 3.12-5); and
- West Shore (see Figure 3.12-6).

Zone One: The North Shore Area

The North Shore Area (Figure 3.12-3) includes approximately 16.5 miles of Sea shoreline and stretches from the Riverside/Imperial county boundary on the west side, just north of Desert Shores around the north perimeter of the Sea, to Desert Beach along Highway 111. The nearly flat land is mostly in private ownership, with portions falling within Torres Martinez tribal land. The land is predominantly agricultural, with well-established irrigation systems supporting intensive crop and orchard production, including citrus, date, and vineyards at the northwest corner and row crops along the northeast shoreline. Orchard crops provide scenic foreground and middle ground features for the relatively limited view opportunities to the Sea and beyond. Public roads tend to be set back from the Sea in this zone, with over a two-mile off-set on the west side, no public roads in the vicinity of the Whitewater Rivers, and approximately one-mile off-set from Highway 111 along the northeast shore.

Due to the absence of public roads and the predominance of private ownership, there is limited public access in this zone, especially in the Whitewater River and delta area. There are some developed urban uses along Highway 111 with the residential pockets of Desert Camp, North Shore, Mortmar, and Desert Beach. Numerous private duck ponds are in the delta region of the Whitewater River.



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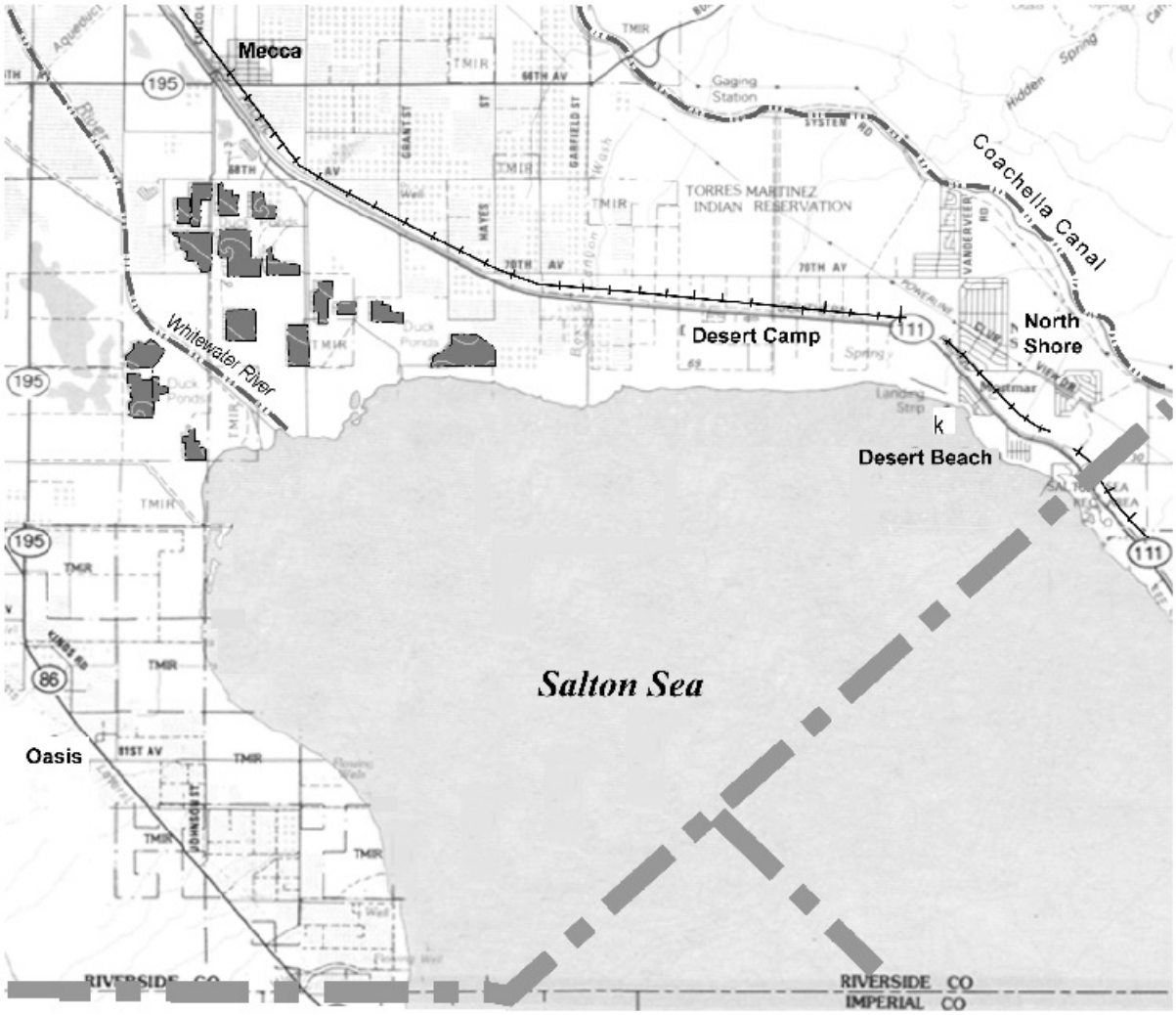
Source: Tetra Tech 1998

Salton Sea Study Area Study Zones

Salton Sea, California

Tetra Tech, Inc.

Figure 3.12-2



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Source: Tetra Tech 1998

Legend

Study Zone

Duck Ponds

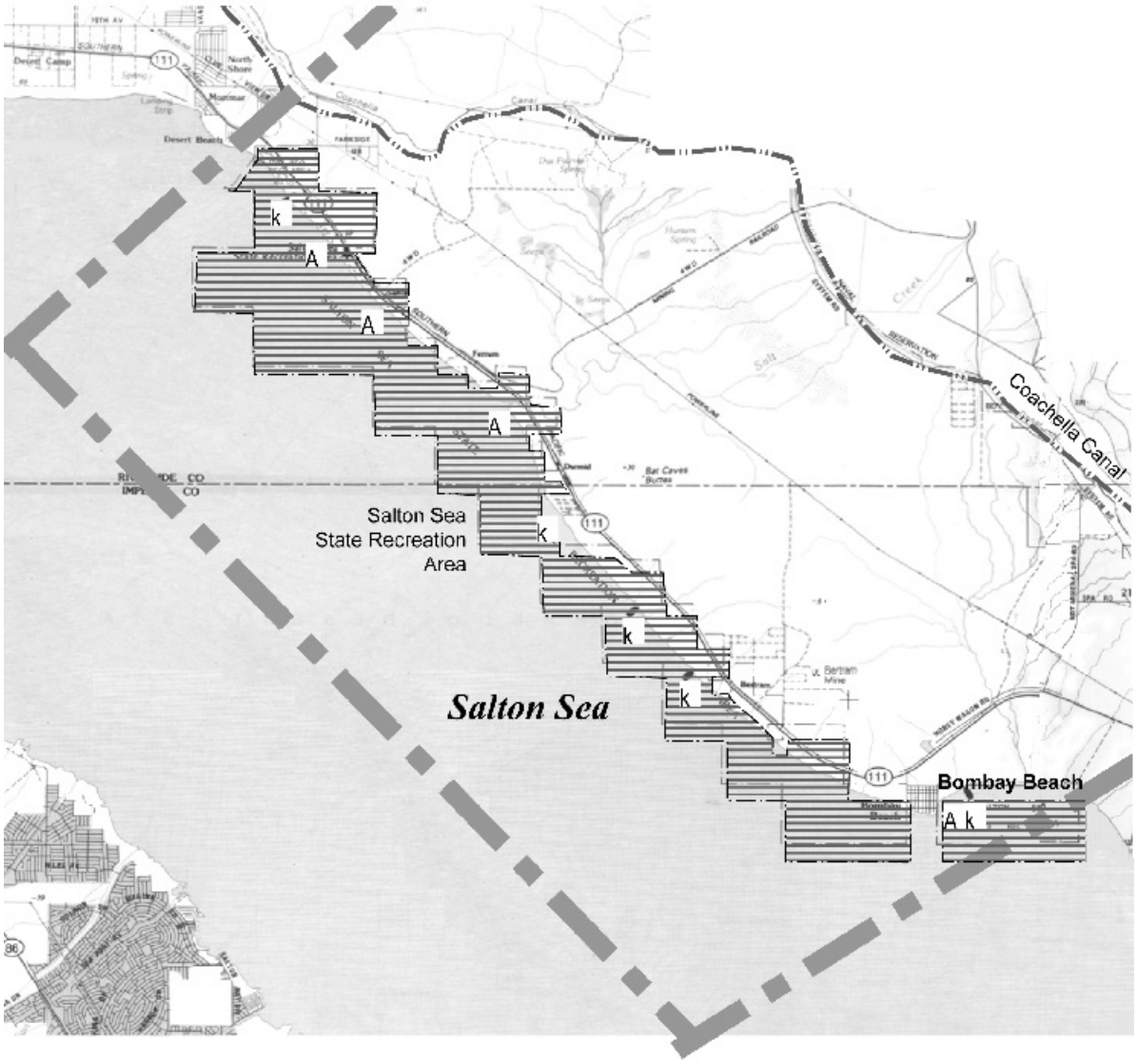
k Boat Ramp

Zone One Map: The North Shore Area

Salton Sea, California

Tetra Tech, Inc.

Figure 3.12-3



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Approximate Scale in Miles

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Source: Tetra Tech 1998

Legend

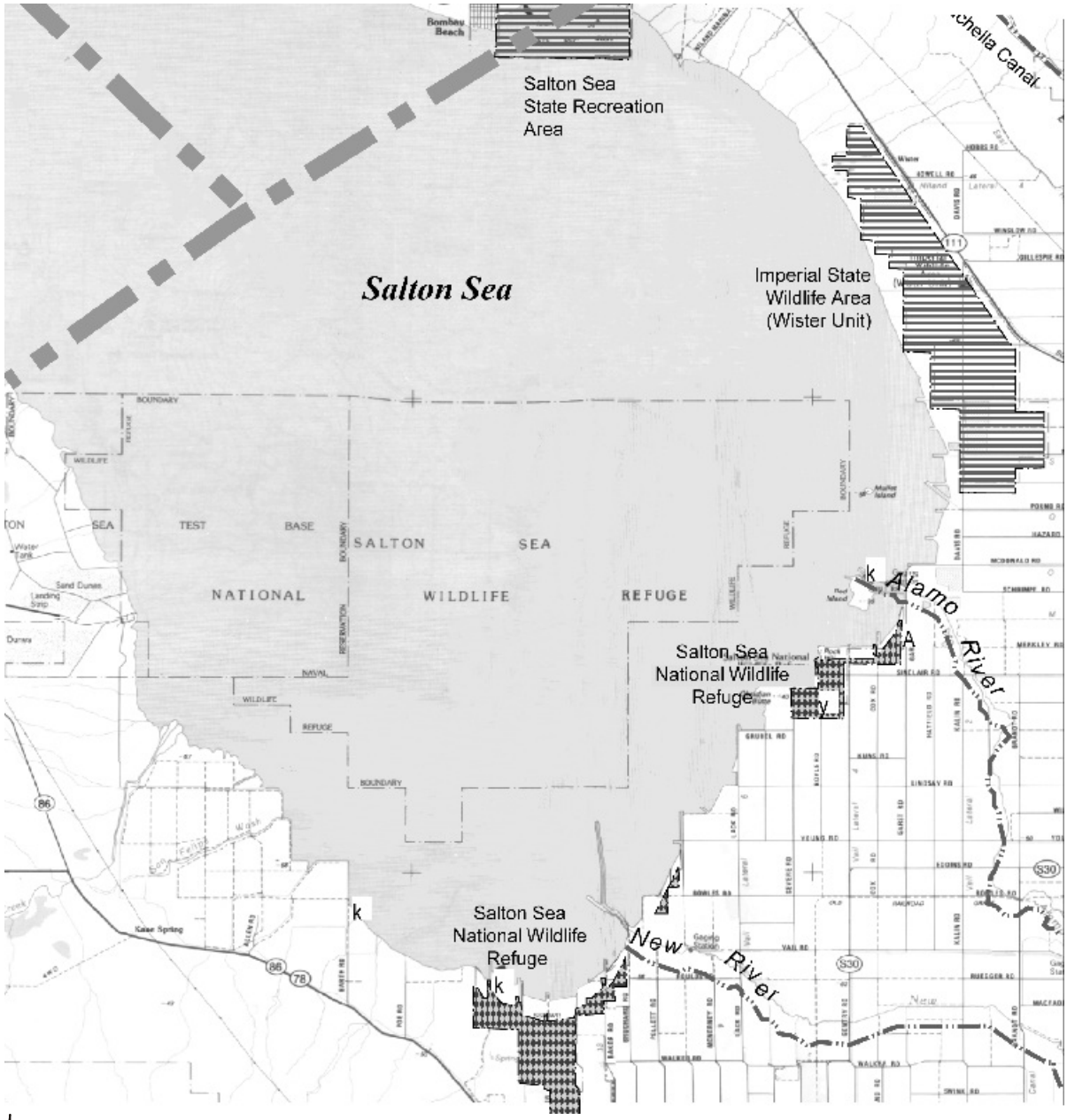
- Study Zone
- State Recreation Area
- k Boat Ramp
- A Camp Ground

Zone Two Map: The East Shore Area

Salton Sea, California

Tetra Tech, Inc.

Figure 3.12-4



r:\new\10138\Chapter3\SouthMap.cdr - 11/9/99 - GE

Source: Tetra Tech 1998

Legend

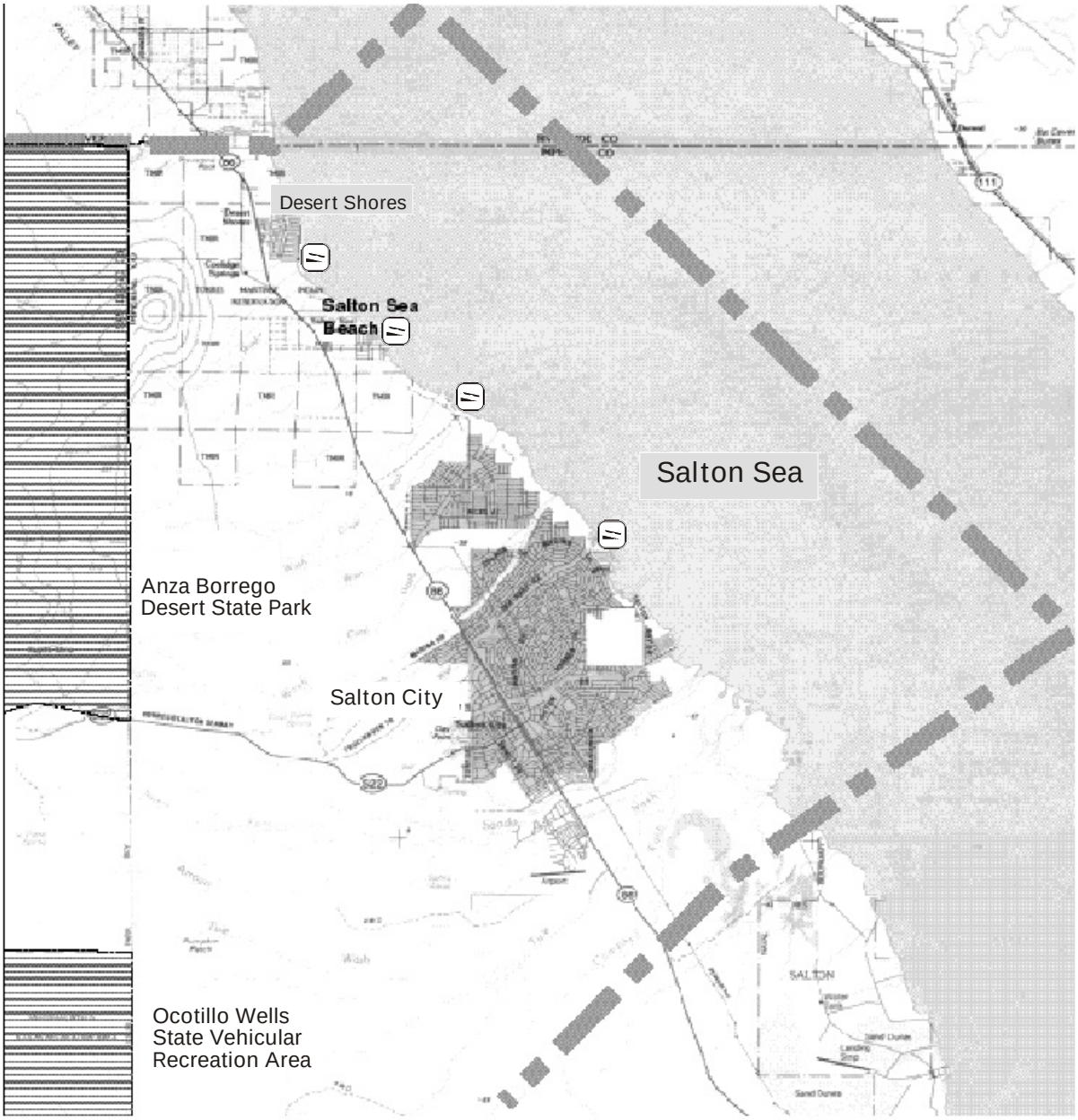
- Study Zone
- Federal Lands
- State Lands
- K Boat Ramp
- A Campground
- y Ranger Station

Zone Three Map: The South Shore Area

Salton Sea, California

Tetra Tech, Inc.

Figure 3.12-5



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Source: Tetra Tech 1998

Legend

- Study Zone
- State Lands
- Boat Ramp

Zone Four Map: The West Shore Area

Salton Sea, California

Tetra Tech, Inc.

Figure 3.12-6

Relatively high levels of wildlife habitat sensitivity can be assumed for the Whitewater delta area because of its inaccessibility and the converging freshwater to saltwater biomes. A significant characteristic of this zone is its locational relationship between the Coachella Valley development thrust and the Salton Sea.

Types of recreation uses associated with the North Shore Zone include hunting at the private duck ponds, offshore fishing and boating. Under present ownership, there is limited shore-related recreation use in the North Shore Area. The intensive agricultural uses with mature orchard canopies provide both aesthetic and possible future opportunities for recreational uses, such as campgrounds or day-use areas. Wildlife habitat around Whitewater River outflow offers wildlife viewing opportunities. The prevalence of tribal lands could present recreation-related economic development opportunities.

Zone Two: The East Shore Area

The East Shore Area (Figure 3.12-4) includes approximately 17.5 miles of Sea shoreline and stretches from just east of Desert Beach at the north end to Bombay Beach at the south end along Highway 111. Geomorphically, the terrain consists of the lower alluvial plains of the Mecca Hills and the Orocopia and Chocolate mountains, with, typically, moderate gradients of one to five percent. California low desert scrub vegetation is the predominant cover for this zone, with introduced palms and exotics at some of the public use areas. Because of the proximity of Highway 111 to the Sea, low-growing desert scrub vegetation, and the relatively undifferentiated topography and gradual slopes, this zone affords wide open views of the Sea and provides the best viewing opportunities to the Sea from public lands. This zone is also the first point of visual and physical access to the Sea from the north where the major nearby population centers are located.

Resort facilities in this zone are in various stages of disrepair. The North Shore Yacht Club and Marina are unused. Sea frontage is almost entirely within state ownership, with the CDPR-operated Salton Sea State Recreation Area (SRA) being the primary presence. Thermal springs east of Highway 111 and north of Frink are used for recreational/health purposes. Habitat sensitivity is assumed to be lower than portions of Zone One due to less extensive riparian vegetation and greater public access. Both Sea-related and California low desert-associated habitats can be considered sensitive.

Recreation uses associated with the East Shore Area include camping, RV camping, power boating, sailing, PWC windsurfing, shore fishing, boat fishing, and sunbathing. The Salton Sea SRA offers the most extensive public access and use of the Sea, with a total of approximately 1,400 campsites. The headquarters area provides 15 full hook-up sites, 25 developed campsites, and restrooms with electricity, running water, and hot showers. Mecca Beach campground provides four full hook-up sites, 109 developed campsites, and restrooms with electricity, running water, and solar showers. The three remaining campgrounds provide primitive camping with chemical toilets and water. There are boat launching and mooring facilities at each of the five campgrounds. The

facility headquarters includes the additional features of a visitor center and day-use area. A day-use beach is at the northern end of the area.

Records of public use of the Salton Sea SRA, including total numbers of visitors, total revenue, and spending per visitor, have been kept since 1972. Prior to official recording of the economic statistics, park staff estimated the historic peak seasonal use of the unit was approximately 660,000 visitors in 1961-62. Although recorded peak years for both visitation and revenue occurred in the early 1980s (Table 3.12-1), the last three years reveal evidence of a resurgence in public attendance, with a doubling of the total number of visitors in that period.

Table 3.12-1
Salton Sea State Recreation Area Visitation Data

Fiscal Year	Annual Visitation	Total Revenue	Spending per Visitor
1972-73	180,086	$ 74,850	$ 0.42
1973-74	179,304	$ 64,532	$ 0.36
1974-75	228,204	$ 63,436	$ 0.28
1975-76	174,156	$ 80,543	$ 0.46
1976-77	221,454	$ 100,406	$ 0.45
1977-78	207,149	$ 93,126	$ 0.45
1978-79	214,141	$ 93,418	$ 0.44
1979-80	209,724	$ 105,022	$ 0.50
1980-81	330,828	$ 168,623	$ 0.51
1981-82	394,552	$ 231,057	$ 0.59
1982-83	382,441	$ 250,158	$ 0.65
1983-84	328,902	$ 236,661	$ 0.72
1984-85	232,691	$ 206,236	$ 0.89
1985-86	261,889	$ 200,462	$ 0.77
1986-87	276,401	$ 186,160	$ 0.67
1987-88	160,285	$ 185,126	$ 1.15
1988-89	183,359	$ 164,538	$ 0.90
1989-90	175,368	$ 155,740	$ 0.89
1990-91	134,779	$ 103,223	$ 0.77
1991-92	114,297	$ 98,345	$ 0.86
1992-93	90,996	$ 87,124	$ 0.96
1993-94	87,369	$ 83,451	$ 0.96
1994-95	87,586	$ 84,124	$ 0.96
1995-96	139,013	$ 91,279	$ 0.66
1996-97	203,272	$ 99,003	$ 0.49
1997-98	250,000	$ 130,280	$ 0.52
1998-99	275,000	$ 130,000	$ 0.47
		$ 3,566,923	**$ 0.62**

Private recreation facilities within this zone all show evidence of deferred maintenance and were nonoperational at the time of this field inventory. Bombay Beach**,** a recreation residential pocket of around 150 trailers, has been effectively cut off from the Sea due to the construction of a levee structure surrounding the residential area.

Although evidence of some needed repair exists, the recreation area is still quite functional and attractive to visitors. Sea elevation rise has caused problems with some of the facilities and with such elements as paving, picnic tables, and landscaped areas. One potential opportunity cited by park staff would be a shift in emphasis to increased enhancement of interpretive-oriented facilities, such as wildlife viewing facilities (blinds), natural history, and historically focused interpretive elements. Sea level stabilization also would allow the state to apply for funding to begin improving boating facilities. Improvements for private recreation facilities within this zone are assumed to be linked with stabilized Sea elevations and improved water quality.

Zone Three: The South Shore Area

The South Shore Area (Figure 3.12-5) includes approximately 41.3 miles of Sea shoreline and stretches from the Imperial County Niland facility area on the east side around the southern perimeter to just north of the Navy's Salton Sea Test Base on the southwest side of the Sea. The nearly flat land is fairly evenly divided between public and private ownership. Public lands can be grouped into three categories, state-owned and operated lands, such as the Imperial County Wildlife Area-Wister Unit, and federal lands split between the Sonny Bono Salton Sea National Wildlife Refuge, operated by the USFWS, and the Navy's Salton Sea Test Base. The Salton Sea Test Base has been decommissioned and is being conveyed to other federal agencies for management.

The Salton Sea southern shore comprises the northern reach of the intensive Imperial Valley agricultural area. Irrigation water and drainage from the New River and the Alamo River result in a substantial freshwater riparian zone between the Sea and surrounding agricultural lands, resulting in the most extensive and rich wildlife habitat area of the Salton Sea. The greatest levels of wildlife habitat sensitivity occur in this zone of the Sea. Other uses found in this zone, in addition to the agricultural and preserve areas, include geothermal hydroelectric facilities that, because of their vertical scale, tend to dominate the agricultural landscape. Public roads tend to be set back from the Sea in this zone, with typical setbacks of two or more miles on the west side, one or more miles offset adjoining the Imperial Wildlife Unit, and very limited public roads along the southeastern margin of the sea. Obsidian Butte, Red Island, and Mullet Island, unique volcanic-related landforms along the southeast margin, are in striking contrast with the predominantly flat landscape surrounding the Sea. The Imperial County recreation facility has been entirely abandoned due to rising water levels.

The types of recreation uses occurring in the South Shore Zone are strongly linked with the wildlife values associated with this area and include hunting, shore and boat fishing, boating, and wildlife viewing. The State Imperial Wildlife Area, operated by the CDFG, has been maintained as a hunting, fishing, and passive recreation use area for close to 50 years. Records kept since 1962 of the number of hunters and birds taken

show a fairly constant pattern of usage (Table 3.12-2). The peak year for hunters occurred in the 1970-1971 season, with 10,547 hunters registering that year. The lowest usage occurred during the 1992-1993 season, with 5,302 registered hunters.

The Sonny Bono Salton Sea National Wildlife Refuge consists of approximately 36,000 acres, 34,250 of which are inundated by the Sea, leaving 1,750 acres of agricultural fields, freshwater marsh, and riparian lands. This refuge is considered one of the premier wildlife habitats along the Pacific Flyway, with over 400 bird species recorded. Observation towers, viewing blinds, observation trails, and an interpretive center have been developed to facilitate public use of these resources. The prime season for wildlife viewing runs from October to March.

The Salton Sea Navy Test Base consists of 21,587 acres of land, two thirds of which is submerged by the Sea. Unlike the other portions of Zone Three, vegetation on this property is characterized by California low desert scrub (creosote, sage, and prosopis). A large area of active sand dunes covers much of the property. Numerous remnant structures, roads, and utilities remain on the property. The area has relatively high habitat values.

Zone Four: The West Shore Area

The West Shore Area (Figure 3.12-6) includes 15 miles of shoreline from north of the Naval Test Base to the intersection of the Riverside, San Diego, and Imperial county lines. Extending west to the base of the Santa Rosa Mountains and paralleling Highway 86, this zone includes most of the residential development around the Sea (Figure 3.12-6). Topography of this portion of the shore is a gradually sloping alluvial fan between the Sea and the boundary to Anza-Borrego State Park. Most of properties within Zone Four are privately owned, with checkerboard sections of land to the north owned by the Torres Martinez tribe, interspersed with private agriculture. Undeveloped residential lots appear on many maps but are identified on the ground only by the roads and utilities servicing them. Views of the Chocolate Mountains across the Sea and the Santa Rosa Mountains to the west provide exceptional displays with changing light. Extending from Salton City to Borrego Springs, State Route 22 is a major recreational corridor to the Sea.

This portion of the shore is critical to support the existing level of sport fishing on the Sea. Public access to the shore can be attained via some dirt roads, but most of the recreating public uses the four boat ramps located in the varied communities within this zone. Residential development within this zone is the highest quality

Table 3.12-2
Imperial Wildlife Area Waterfowl Hunting Profile

Period	Number of Hunters	Number of Ducks	Number of Geese	Number of Coots	Other Birds	Total Birds Shot	Average Take
1961-62	5,357	7,294	1,130	207	630	9,261	1.73
1962-63	4,779	5,072	1,290	265	0	6,627	1.39
1963-64	5,431	6,969	1,061	177	0	8,207	1.51
1964-65	6,074	10,834	1,466	172	0	12,472	2.05
1965-66							
1966-67	8,815	12,614	5,890	261	0	18,765	2.13
1967-68	8,423	12,714	1,633	292	0	14,639	1.74
1968-69	7,280	8,506	1,286	357	0	10,149	1.39
1969-70	8,169	14,294	894	474	0	15,662	1.92
1970-71	10,547	15,093	5,808	488	0	21,389	2.03
1971-72	9,800	14,603	3,123	394	0	18,120	1.85
1972-73	10,676	16,018	2,110	448	0	18,576	1.74
1973-74	10,937	8,940	5,672	283	0	14,895	1.36
1974-75	10,206	17,720	989	570	0	19,279	1.89
1975-76	10,927	19,125	3,716	501	0	23,342	2.14
1976-77	8,565	13,758	5,416	135	0	19,309	2.25
1977-78	9,041	9,467	2,692	69	0	12,228	1.35
1978-79	8,793	17,995	575	116	0	18,686	2.13
1979-80	8,881	16,492	653	120	0	17,265	1.94
1980-81	7,711	8,510	950	181	0	9,641	1.25
1981-82	8,621	13,323	1,617	200	0	15,140	1.76
1982-83	9,327	13,736	678	157	0	14,571	1.56
1983-84	8,731	7,626	1,679	155	0	9,460	1.08
1984-85	8,853	6,744	3,177	77	0	9,998	1.13
1985-86	8,969	10,808	2,273	105	0	13,186	1.47
1986-87	8,919	12,636	819	105	0	13,560	1.52
1987-88	7,995	15,084	1,218	76	0	16,378	2.05
1988-89	6,107	4,894	2,253	13	0	7,160	1.17
1989-90	6,166	5,763	1,253	46	0	7,062	1.15
1990-91	6,432	7,849	2,211	65	0	10,125	1.57
1991-92	5,835	5,641	932	53	0	6,626	1.14
1992-93	5,302	5,466	913	55	0	6,434	1.21
1994-95	6,774	10,088	2,857	85	0	13,030	1.92
1995-96	7,627	9,675	1,380	106	0	11,161	1.46
1996-97	7,870	11,554	1,505	160	0	13,219	1.68
1997-98	8,187	14,880	1,317	37	0	16,234	1.98
1998-99	8,141	12,468	2,811	54	0	15,333	1.88
Total	**290,268**	**404,253**	**75,247**	**7,059**		**487,189**	**1.68**

around the Sea. There is a potential, assuming infrastructure needs are met, for the development of approximately 20,000 residential lots within this zone. With the adjacency to both the southern Coachella Valley and Borrego Springs, this area of the Sea seems the most suitable location for shore development. Other than a few small shoreline nature trails, there are no significant wildlife viewing areas within this zone, nor is there significant habitat. The most significant characteristic of this portion of the Salton Sea is its existing and potential for land-based support facilities of waterborne recreation. With the existing infrastructure and location away from sensitive wildlife habitat, the communities of Desert Shores, Salton Sea Beach, and Salton City provide the basis for needed recreational facility redevelopment.

The types of recreation associated with this zone include recreation rental housing, RV camping, shore fishing, boating (boat launching), sport fishing, sunbathing, hiking, and bird watching. Desert Shores, Salton Sea Beach, and Salton City all provide RV camping adjacent to the boat launching facilities and marinas within their respective communities. The few motels and RV campgrounds in the three major communities also provide accommodations for birders in early spring.

The remnants of closed and dilapidated resorts and restaurants from the height of the area's popularity have a tendency to give a negative impression to visitors. This zone of the Sea is very tourist dependent, which will be hurt if water quality and surface elevation stability are not improved in the short term. There is excellent potential for this area, above all others around the shore, for an enormous growth in recreation visitation and possible influx of private capital. The west shore has the beginnings of support facilities for recreation and marinas, which are critically needed if situations improve to their 1960s levels.

3.13 VISUAL RESOURCES AND ODORS

3.13.1 Introduction

This affected environment discussion includes visual resources and the olfactory character of the area (odors). The Phase 1 study area for visual resources and odors encompasses most of the Salton Basin. The effects would be of most concern in areas that are populated or that receive a high amount of use, areas with adjacent sensitive uses, areas that attract sensitive users (e.g., recreational areas), and areas of public or special interest (e.g., areas of local concern or wilderness areas).

The BLM Visual Resource Inventory Manual H-8410-1 provides a visual resource management (VRM) methodology for evaluating the visual resources for BLM lands. For consistency sake, the visual resources of public lands managed by BLM and additional project lands affected by the proposed alternatives will be evaluated using the VRM methodology. According to the VRM, the scenic visual resources in an area are defined by scenic quality, viewer sensitivity, and viewer distance zones.

Based on these three factors, BLM and project area lands are placed in one of four visual resource inventory classes. Visual resource inventory classes are assigned to

public lands as an inventory tool that portrays the relative value of the visual resources and as a management tool that portrays the visual management objectives. For example, Class I is assigned to national wilderness areas and other administratively designated areas where management decisions have been made to maintain a natural landscape. Classes II, III, and IV are assigned based on a combination of scenic quality, sensitivity level, and distance zones. Classes I and II are the most valued, Class III represents moderate value, and Class IV is least valued.

BLM conducted a visual resource inventory of federal lands surrounding the Salton Sea. This evaluation included a determination of scenic quality sensitivity levels and distance zones and led to the establishment of VRM management classes. BLM recognizes that the Salton Sea Basin has important scenic qualities and has categorized various parts of the basin in terms of VRM Objective Classes I through IV, with Class I being the most pristine and subject to the highest level of visual protection. Classes II through IV allow progressively higher levels of visual modification to the landscape.

The areas immediately west and east of Salton Sea, where the proposed Phase 1 facilities associated with the restoration project would be located, have been classified as VRM Class II. This classification provides the primary directive for the evaluation of design, construction, and operation activities for the proposed project.

(***Note to Reviewers***: *The Class II VRM for the Salton Sea Basin is an interim unofficial designation that is highly conservative but is assumed for purposes of completing the draft impact analysis. Tetra Tech is awaiting receipt of official BLM VRM classifications for the Salton Sea Basin from the El Centro BLM Office. Therefore, the conclusions presented in the impact analysis in Chapter 4 are preliminary and subject to change*.)

The specific objective for the Class II VRM is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. A proposed project may be seen but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

3.13.2 Visual Resources—Salton Sea Basin

Landforms, water surfaces, vegetation, color, adjacent scenery, scarcity, and cultural modifications (i.e., engineered features) make up the visual aspects of an area or project and determine the visual character and the manner in which it is viewed. The Salton Basin is visually characterized by desert landscapes, ranging from sparsely vegetated, gently sloping alluvial terrain surrounding the Sea, to sandy and broken rock hills on the perimeter of the basin. Unique within the desert landscape is the Sea itself, which provides a scenic combination of open water against a background of desert and mountains.

Major viewing areas near the Sea include public travel routes (primarily state routes 86 and 111), nearby residential and commercial areas, such as the communities of North Shore, Bombay Beach, Niland, Salton City, Salton Sea Beach, and Desert Shores, and

public use areas, such as parks and recreation areas. Major recreation attractions include the Salton Sea SRA, developed along 20 miles of the northeastern shoreline by the California Department of Parks and Recreation, and the Sonny Bono Salton Sea National Wildlife Refuge at the southern end of the Sea. Recreation facilities also are available at other public areas and at commercial marinas and residential-recreational communities around the Sea.

Visual Characteristics

The area bordering the Salton Sea to the north is a gently sloping alluvial plain dominated by intensive high-value agriculture. The area is characterized by small plots of land containing crops of differing color, height, texture, and spacing, such as date palms and vineyards. The Orocopia Mountains are northeast of the Sea. A two-lane highway, State Route 111, follows the shoreline of the Sea south of Mecca along the eastern boundary to Niland.

Moving south along State Route 111, the landscape to the east is first sheltered from the wind by eastern mountain ranges and then becomes more rugged and desolate. The northwest trending and steeply sloped Chocolate Mountains, so named because of their dark color, lie between five and ten miles east of the Sea from just north of the county line south to Niland. The terrain is arid, and natural erosion has formed ravines carrying debris, such as rock, from the mountains toward the Sea. A railroad runs parallel to Highway 111 along the east side of the Sea, and farther east a high-voltage powerline runs from northwest to southeast. The Coachella Canal runs along the base of the mountains, paralleling the Sea and the highway.

The Salton Sea SRA is between the highway and the Sea from south of North Shore to Bombay Beach. The park is highly developed, with camping and recreational uses to the north, becoming less developed to the south. The town of Bombay Beach, located on the Sea at the point where the highway turns eastward, contains a dense cluster of mainly seasonal residences and a small number of commercial establishments. From south of Bombay Beach the highway becomes increasingly distant from the Sea, and smaller routes lead to the shoreline.

The area south of the Salton Sea is a northward-sloping wide open valley supporting large fields of intensive commercial agriculture. Two rivers that terminate in the Sea, the Alamo River and the New River, are deeply incised in the alluvial slope. Large tracts of irrigated farmland are bordered by irrigation and drainage ditches. The tracts form a patchwork of fields planted with crops of similar size and spacing but with differing color and texture. Because the terrain is so flat, elevated structures, such as silos, tend to dominate the viewshed. Geothermal plants near the mouths of the Alamo and New rivers are dominant features of the landscape because of their height and because their steam plumes provide a stark contrast to the blue skies characteristic of the region.

The four-lane State Route 86 is the predominant viewing area on the western side of the Salton Sea; the highway begins paralleling the Sea at its southern tip. Agriculture

continues as the predominant land use southwest of the Sea. Melon and vegetable fields alternate with fields of grains and grasses up to the inactive Salton Sea Test Base site. The Vallecito and then the Santa Rosa mountain ranges are visible west of the Sea, trending closer as they progress north. The Sonny Bono Salton Sea National Wildlife Refuge, located in the southern part of the Sea, contains some artificial landscaping and ponds designed to benefit the waterfowl and other birds that inhabit and traverse the refuge.

The Salton Sea Test Base contains a limited amount of pre-World War II style architecture, although most was demolished to the foundation when the base closed. Cultural artifacts and some local topography in the form of sand dunes are on the test base. As with other areas of the Sea, remnants of marinas and wharf structures can be seen partially submerged in the Sea, illustrating the rising water level.

The permanent communities of Salton City, Salton Sea Beach, and Desert Shores lie along State Route 86 starting at the midpoint of the western side of the Salton Sea and following the shoreline north. These communities contain the highest amount of residential and commercial development found around the Sea. Marinas and other private recreational facilities are visible along the shoreline of the Sea. Desert vegetation replaces agricultural fields from the test base to Desert Shores, north of which are some high value fields on both sides of Highway 86.

The Torres Martinez Indian Reservation occupies the northwest corner of the Salton Sea. This economically depressed area is characterized by subsistence uses, such as small garden plots and small fenced areas, with a few livestock and farm animals.

Regulatory Considerations

The Riverside County Comprehensive General Plan and Imperial County General Plan contain objectives regarding scenic highways and the preservation of visual resources.

The Riverside County Comprehensive General Plan contains the following scenic highway objectives:

- Promote the establishment of Official and Eligible State and County Scenic Highways and Corridors.
- Design development within designated scenic highway corridors to maximize the compatible multi-purpose objectives of open space and urban planning.

The Imperial County General Plan recognizes the Salton Sea as an important visual resource in the county. The guidelines for preserving visual resources are as follows.

- Goal 7: The aesthetic character of the region shall be protected and enhanced to provide a pleasing environment for residential, commercial, recreational, and tourist activity.

- Objective 7.1: Encourage the preservation and enhancement of the natural beauty of the desert and mountain landscape.

State Route 111, which runs parallel to the northeast shoreline of Salton Sea, is a state-designated scenic highway, included in the "Master Plan of State Highways Eligible for Official Scenic Highway Designation" (Abraham, M., August 13, 1999, personal communication; Imperial County, 1997). The portion of State Route 111 designated as a scenic highway stretches from Bombay Beach to the Imperial County line. The contrast between the flat wide Salton Sea, with its sandy beach, and the rugged rise of the Chocolate Mountains becomes apparent as one travels along State Route 111.

3.13.3 Site-specific Visual Resources

The following descriptions characterize the scenic quality of the Phase 1 project area where changes to the visual landscape would occur.

Proposed Site for Evaporation Ponds and Pupfish Pond. The location of the proposed evaporation ponds would be near the following areas (in order, from north to south): Salton City, Salton Sea Test Base, and a strip of land east of State Route 86, which begins from the base and continues for approximately 20 miles to the southern tip of the Sea.

Salton City, located along State Route 86, is a small residential community with a small number of residential houses scattered throughout the area. Views to the east include the Sea in the foreground and middle ground and the Orocopia and Chocolate mountains in the background. Views to the northwest include the Santa Rosa Mountains. Desert vegetation dominates the area. Predominant colors in the landscape are beige and green. The landform of Salton City is generally flat.

South of Salton City, along State Route 86, is the closed Salton Sea Test Base, which includes uneven topography of dunes and gullies, abandoned building foundations, elevated viewing mounds, and an abandoned dirt airstrip. Views to the east include the Sea in the foreground and middle ground and the Orocopia and Chocolate mountains in the background. Views to the northwest include the Santa Rosa Mountains. Desert vegetation is uneven, course, and low, with varying shades of beige and green that dominate the landscape. Between State Route 86 and the Salton Sea shoreline, the land gently slopes eastward toward the Sea.

South of the Salton Sea Test Base, between the Sea's shoreline and State Route 86, the predominant land use is agriculture. Melon and vegetable fields alternate with grain and grass fields up to the southern boundary of the Salton Sea Test Base site. Views are similar to both the test base and Salton City. Between State Route 86 and the Salton Sea shoreline, the land gently slopes eastward to the Sea's shoreline. Views to the south include Superstition Hills.

Proposed Site for Displacement Dike. The displacement dike would be located along the southern shore of the Sea, between the New and Alamo rivers. It would

extend from the shoreline into the Sea, exposing land currently submerged. The area is within the Sonny Bono Salton Sea National Wildlife Refuge and is used by a variety of birds for feeding, nesting and roosting.

Proposed Site for EES north of Bombay Beach. Project area lands north of Bombay Beach are characterized by a relatively wide, bowl-shaped expanse of land framed by the rugged Chocolate Mountains to the east. The terrain is arid. Vegetation in this area includes predominantly low shrubs that grow in an uneven pattern. Colors in this area, attributed to both the vegetation and desert sand in the foreground and middle ground and the Chocolate Mountains in the background, are warm beiges and browns. Cultural modifications in this area include a powerline, which bisects the middle portion of the project area, and the Coachella Canal, which runs parallel and approximately four to five miles east of the powerline.

Proposed Site for North Wetland Habitat.. The North Wetland Habitat would be located adjacent to and include portions of the Torres Martinez reservation lands on the north end of the Sea. The area is currently characterized by seasonally flooded and submerged shallow areas, includes the mouth of the Whitewater River, and is the most significant shorebird habitat in the northern portion of the Salton Sea. This area also provides more snag habitat for nesting and roosting than any other area of the Sea.

3.13.4 Odors

Odors are a social factor that can negatively affect the desirability of the Salton Sea as an area to visit, to recreate, or to reside. Odors associated with the Salton Sea are a result of water quality, nutrient levels, and other biological factors, which are discussed in other sections of this document. Most drainage into the Salton Sea originates at the Colorado River, where waters are diverted westward through canals to the Coachella and Imperial valleys for irrigating agricultural lands. Approximately one fifth of this irrigation water ultimately drains into the Salton Sea (US DOI, Federal Water Quality Administration, Pacific Southwest Region, Salton Sea, California, Water Quality and Ecological Management Considerations 1970).

Salton Sea odors occur primarily as a result of decaying organic matter. The Salton Sea is characterized by an overabundance of nutrients, primarily from irrigation runoff, that produce eutrophic conditions and results in phytoplankton blooms. Phytoplankton are floating microscopic plants that exist in the upper levels of the Sea. In large abundance, these microorganisms die and decompose, resulting in the production of obnoxious odors over extensive areas of the Sea (US DOI, Federal Water Quality Administration, Pacific Southwest Region, Salton Sea, California, Water Quality and Ecological Management Considerations 1970). This problem is most prevalent in the summer months, when freshwater feeds to the Sea are at a low and temperatures are at a high. Compounding this problem are high sulfates and other compounds of the saline Sea.

Phytoplankton blooms are partially responsible for another source of odors at the Salton Sea, fish and bird kills. Beginning in the 1980s, as elevation and salinity of the lake were rising, the fishery began to decline, periodic algal blooms occurred, and die-