Southern California Marine Ecoregional Assessment

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The Nature Conservancy
SAVING THE LAST GREAT PLACES ON EARTH

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EXECUTIVE SUMMARY

In conjunction with The Nature Conservancy's Marine Initiative, science and planning staff in California prepared this assessment of the most important areas for conservation of marine biodiversity in the Southern California Marine Ecoregion - one of four major divisions of the California Current. The California Current is recognized as a globally significant region of temperate upwelling that supports a rich diversity of marine life.

The goal of ecoregional planning is to identify conservation areas that contain multiple and viable examples of important ecological systems, communities, and species represented across environmental gradients. To do this, we identified and mapped the distribution of 104 marine conservation targets and set conservation goals for each target. The targets included shoreline types, benthic habitats, upwelling areas, near-shore ecosystems such as kelp beds and coastal marsh, and biologically significant areas such as seamounts, seabird colonies and marine mammal rookeries. We used MARXAN, a site-selection software tool, to identify a portfolio of marine conservation areas that best meet the biodiversity conservation goals.

The assessment identifies a suite of conservation areas that represent the diversity of estuarine, near-shore and off-shore habitats of the region and is the first comprehensive assessment of marine biodiversity in U.S. and Mexican waters along the southern California and Baja California coasts. A total of 47 marine conservation areas were delineated; these conservation areas together make up a portfolio that represents 16% of the area of ecoregion. A preliminary and qualitative assessment of threats and opportunities in the ecoregion led to the identification of seven conservation areas as TNC's highest priorities for conservation action: Point Conception, Ventura Coast, Northern Channel Islands, Southern Channel Islands, Cortes Bank, San Quintin, and Guadalupe Island.

With this assessment, TNC and its private and public partners can be confident that site level marine conservation activities are not isolated, but part of a larger conservation design for the region that meets specific conservation goals. The use of a site-selection tool such as MARXAN and the development of the underlying database facilitate an iterative approach to conservation planning.

The identification of these 47 conservation areas makes no presumption about the best strategies for conservation at individual sites. TNC and its partners utilize a variety of strategies for marine conservation including habitat protection of nursery and spawning sites, coastal land and submerged land acquisition, elimination of destructive fishing practices, and reduction of nutrient and pollutant inputs. In some sites, TNC has found that marine protected areas (MPAs) are appropriate strategies for the conservation of marine biodiversity. There are many forms and names of MPAs; however, most MPAs are designed to contain zones with different uses that preserve and enhance recreational, commercial, scientific, cultural, and conservation values. TNC recognizes that MPAs will only be successful if supported by the communities that surround them and the stakeholders that utilize them.

Southern California Marine Ecoregional Assessment

INTRODUCTION

The mission of The Nature Conservancy (TNC) is to preserve the plants, animals, and natural communities that represent the diversity of life on earth by protecting the land and waters they need to survive. Recognizing that a focus on the marine realm is critical to achieving our mission, TNC has launched a new Marine Initiative to link land and sea conservation. Although TNC has been actively working on coastal and marine conservation at more than 100 sites throughout the world, the Marine Initiative will expand these efforts by adding new science, partnerships, and an ecosystem approach to achieve conservation success.

In conjunction with the Marine Initiative, TNC science and marine program staff in California prepared this assessment of the Southern California Marine Ecoregion (SCME). It follows an ecoregional planning methodology outlined in Geography of Hope (Groves et al. 2000) and builds on a growing body of experience in conservation planning (Groves 2003; Beck 2003). The goal of ecoregional planning is to identify conservation areas that contain multiple and viable examples of important ecological systems, communities, and species represented across environmental gradients. This assessment identifies a suite of conservation areas that represent the diversity of estuarine, near-shore and off-shore habitats of the region and is the first comprehensive assessment of marine biodiversity in U.S. and Mexican waters along the southern California and Baja California coasts. In combination with TNC's terrestrial and freshwater assessment for the South Coast ecoregion, this marine assessment provides the basis for a truly integrated conservation vision.

The ecoregional planning approach included identifying conservation targets to represent the marine biodiversity of the region, establishing conservation goals for each target, and identifying an assemblage of marine conservation areas that best meet the biodiversity conservation goals established. We used MARXAN (v.1.8.0), a site-selection software tool developed by Ian Ball and Hugh Possingham (2000) to identify the marine conservation areas. Site-selection software tools are increasingly being used in marine conservation planning to provide decision-support due to their usefulness in optimizing the selection and configuration of conservation areas and their flexibility for modeling different planning scenarios (Sala et al. 2002; Airame et al 2003; Stewart et al 2003; Leslie et al 2003).

A peer review workshop was held at the National Center for Ecological Analysis and Synthesis (NCEAS) on June 10, 2003 with a leading group of marine scientists from the region (Appendix I). The TNC planning team presented a first draft of the assessment, including targets, stratification units, suitability factors, conservation goals, and resulting conservation areas. The workshop participants provided input and suggestions on how to improve the model inputs; these suggestions were incorporated into this revision of the assessment to the extent possible, given available data. In addition to the peer review process, TNC has engaged in discussions with state and federal agencies, non-governmental organizations (NGOs), and resource users on our planning approach and eventual use of this assessment.

Description of the Ecoregion

The Southern California Marine Ecoregion (SCME) is one of four major divisions of the California Current in the Pacific Ocean (Figure 1). The California Current has its origins in the Gulf of Alaska and flows southward along the West Coast of North America toward the equator. It is one of four temperate upwelling zones in the world where seasonal winds blow surface water away from the coast, causing cold water from deep in the ocean to upwell, or rise to the surface. The California Current is one of the most productive of these Eastern Boundary Currents and is characterized by seasonal upwelling of cold nutrient rich water, periodic El Nino Southern Oscillation climatic events, and decadal climatic shifts (US GLOBEC 1994). The waters are rich in nutrients and support a highly productive and diverse ecosystem that includes large numbers of marine mammals, seabirds, fishes, and invertebrates. The seasonal variability in upwelling, wind stress and freshwater inputs affect the distribution and abundance of prey resources. Large numbers of breeding seabirds and marine mammals in the region are dependent on this seasonal abundance of prey resources.

The four ecoregions of the California Current differ in the degree of storm intensity, winds, upwelling, coastal relief, fresh water inflow, and circulation pattern. Their boundaries can be diffuse and are known to change in response to long-term climate variations such as the El Nino-Southern Oscillation. Compared to the other ecoregions of the California Current, the SCME is characterized by fewer winter storms, low wind stress, weak upwelling, negligible fresh water inputs, a concave coast with numerous islands and basins, and a strong counter-clockwise gyre that recirculates water masses. The southern California Bight extends from Point Conception to northern Baja and is characterized by a wide continental shelf and off-shore islands and is a region where the cold south-flowing California current meets the warmer north-flowing California Countercurrent and forms a large counter-clockwise eddy.

Point Conception defines the ecoregional boundary on the north, the Vizcaino Peninsula in Baja California on the south, and the bottom of the continental slope - roughly 3,000-4,000 meters depth – on the west (Figure 2). The inner Channel Islands are included in the ecoregion but the outer islands of San Miguel, Santa Rosa, and San Nicolas are surrounded by colder water that is more typical of the Northern California Ecoregion. The southern boundary of the ecoregion was extended south to Punta Abreojos at the bottom of the Vizcaino Peninsula. The waters surrounding Guadalupe Island, 250km west of the Mexican coast, are also included in the ecoregion. In total, the SCME spans some 14 million hectares with approximately 1/3 in U.S. territorial waters and 2/3 in Mexican territorial waters.

The marine environment of the SCME includes three major zones and their associated ecosystems: 1) bays and estuaries, 2) near-shore, and 3) off-shore. Bays and estuaries are partially enclosed bodies of water along the coast that are protected from the full force of ocean waves, winds, and storms. They form a transition zone from land to sea, fresh to salt water, and are critical as linkage areas for anadramous species such as steelhead. Bay and estuarine habitats often have coastal salt marshes on their margins, sustain high levels of productivity and support key life-stages of many species including shorebirds, clams and oysters, California halibut, crabs, Pacific herring, and gray whales. Near-shore habitats are found from the coastal high tide line off-shore to a depth of about 40 meters and include rocky intertidal, beaches, kelp beds, rocky reefs and broad expanses of sand and mud. They are home to species such as kelp bass, sheephead, halfmoon and olive rockfish, spiny lobster, abalone, seals and sea lions, and sea birds. Off-shore, benthic habitats include various seafloor features such as canyons, seamounts, and hard or soft bottoms that are home to diverse assemblages of invertebrates and numerous species of groundfish. Biogenic communities of sponges and deep sea corals form important deep sea habitats on the continental shelf and slope. Variation in factors such as water temperature, upwelling and currents determine areas of productivity where squid, anchovy, seabirds, and marine mammals congregate in the pelagic ecosystem. Many off-shore species tend to be highly mobile or migratory including sardines, salmon, tuna, albatross, shearwaters, sharks, and whales.

METHODS

This assessment was completed using methodology consistent with TNC's ecoregional planning approach (Groves et al. 2000). In general terms, the planning approach included:

- **Identifying and mapping conservation targets**: we compiled regional datasets for targets and mapped their presence and abundance using ArcInfo Geographic Information System (GIS) software.

- **Establishing conservation goals for each target**: we established conservation goals based on the distribution and abundance of targets, with consideration of historical distributions when possible.
- **Determining stratification and planning units:** we divided the ecoregion into subregions (or stratification units) that allowed us to set representation goals and further divided the subregions into hexagonal-shaped planning units.
- **Identifying suitability factors:** we identified areas that would not be considered very appropriate for conservation based on level of human impacts and assigned suitability factors to those areas.
- **Selecting conservation areas**: We identified a portfolio of marine conservation areas that best meet the biodiversity conservation goals using MARXAN software.

Through this approach we created a geo-referenced database and defined explicit methodology and criteria that make the planning process more transparent. This database also facilitates future refinement or revision to the assessment. Methods used in the ecoregional assessment are described in the following sections.

Conservation Targets

The first step in the ecoregional assessment was to define the conservation targets. These are the elements of biological diversity, such as systems, species, or processes that are used to identify areas with high conservation value. Because it is impossible to plan for all elements of biological diversity, we selected a subset of targets at multiple scales to best represent the biological diversity of the ecoregion.

Our analysis relies primarily on a coarse filter approach of identifying key ecological systems and habitats as targets, on the assumption that conservation of multiple viable examples of these will also conserve the majority of species. We evaluated observational data sets on marine species, especially mobile species, from the California Cooperative Oceanic Fisheries Investigations (CALCOFI), Environmental Sensitivity Index (ESI), and the U.S. Department of Interior Mineral Management Service (MMS) but found them to be insufficient for assessing current populations or distributions of species for conservation planning purposes. For selected mobile species, such as seabirds and marine mammals, we identified important areas, such as rookery sites, as the target.

Marine conservation targets for the SCME included:

- shoreline types (8 shoreline types)
- benthic habitats (64 modeled benthic habitat types)
- pelagic processes (upwelling zones)
- selected ecosystems (kelp beds, coastal marsh, seagrass)
- biologically significant areas (such as off-shore rocks and banks and other topographic features, marine mammal and seabird colonies)

In total, this assessment evaluated 104 conservation targets. Appendix II provides a summary list of conservation targets and sources of data. The conservations targets and the methodologies used to map them are described below.

Shoreline Types

The coastline of southern California has been classified into shoreline types as part of an Environmental Sensitivity Index program (NOAA 2000). Originally intended to guide clean-up efforts for oil spills, the Environmental Sensitivity Index (ESI) mapped 28 natural and 15 artificial shoreline types for the U.S. portion of the SCME. For the rocky shoreline, we included the sheltered or exposed classification from ESI. For many parts of the shoreline, ESI lists several shoreline types present; we prioritized among shoreline types and identified a single type at each location. Marshes, rocky shores/cliffs or platforms, and tidal flats (in that order) were given preference to other shoreline types when combinations were present. For the shoreline in Mexico, we used navigational charts from the U.S. Department of Defense National Imagery and

Mapping Agency (NIMA) and crosswalked coastline cartographic symbology into the same shoreline types as used for the U.S. portion. Cartographic symbology is defined in NOAA Chart. No. 1 (NOAA 2000). Not all shoreline types were represented in navigational chart symbology and much of the Baja shoreline was classified as unidentified.

We aggregated the natural shoreline types into eight shoreline conservation targets (Figure 3):

1. **Wave cut rocky platform**: includes primarily horizontal or near-horizontal rocky intertidal areas
2. **Exposed rocky shore or cliff**: includes exposed shallow or steeply sloped rocky shores or near vertical rocky cliffs
3. **Sheltered rocky shore or cliff**: includes sheltered shallow or steeply sloped rocky shores or near vertical rocky cliffs
4. **Sand beach**: includes fine, medium, and coarse grained sand beaches
5. **Gravel beach**: includes gravel beaches and mixed sand and gravel beaches
6. **Coastal marsh**: includes salt marsh and brackish marsh
7. **Tidal flats**: includes intertidal sand and mudflats
8. **Unidentified**: areas not classified.

Man-made structures and hardened shoreline (riprap, seawalls) were not considered targets but were mapped and included as "suitability" factors (see section on Suitability Index). The crosswalk of unique ESI types and Baja cartographic symbols to shoreline conservation targets is provided in Appendix III.

Benthic Habitats
Identification and distribution of seafloor or benthic habitats across the ecoregion was predicted using a model based on physiographic features including depth, topographic position, and substrate. Detailed methodology on development of the benthic habitat model is provided in Appendix IV. Depth was classified into four life zones similar to Allen and Smith (1988) but modified with feedback from our panel of marine scientists. The inner shelf (0-40m) includes the near-shore photic zone; the midshelf (40m to 200m) includes much of the continental shelf to the shelf/slope break; the mesobenthyl (200-700m) includes the shelf/slope break down to the depth of the oxygen minima zone; and the bathybenthal (>700m) includes the deep slope down to approximately 3500m depth. These depth zones were mapped for the ecoregion using digital elevation model (DEM) bathymetry compiled by California Department of Fish and Game (Figure 4a).

Topographic position was classified into four categories: ridge, slope, flats, and canyon. This classification was based on a topographic position index model developed by Weiss (2003), and similar to Iampietro and Kivitek (2002), and mapped for the ecoregion (Figure 4b). Substrate data were classified into four seafloor hardness types similar to Greene et al. (1999) and included hard substrates, soft substrates, mixed substrates, and unclassified substrates for which there were no data (Figure 4c). In Mexican waters, where substrate data were lacking, all substrates were considered unclassified.

Table 1: Benthic Habitat Model Inputs

Depth	Inner-shelf (0-40m) Mid-shelf (40-200m) Mesobenthal (200-700m) Bathybenthal (>700m)
Topographic Position	Ridge Slope Flats Canyon
Substrate	Hard Mixed Soft Unclassified / No Data

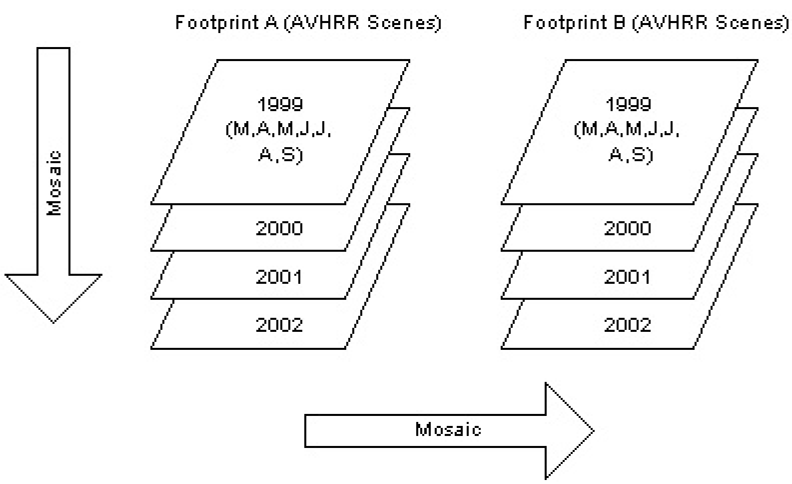
The resulting 4x4x4 model predicted 64 potential habitat types such as "Inner-shelf_flats_hard" (Table 1 and Appendix II). A few benthic habitat types were not present anywhere in the ecoregion based on our data sources and were removed from the targets list.

Ecological Processes

Off-shore, oceanographic processes such as currents, water masses, and temperature influence marine biodiversity. The importance of these processes and their predictability over time is leading to a greater emphasis on identifying consistent oceanographic features, such as oceanic fronts and upwelling areas, as important for conservation of the pelagic ecosystem (Pelagic Working Group 2002). For this planning effort, only areas of upwelling were included as conservation targets.

To identify recurring patterns of cold water as indicators of upwelling zones, we utilized 1999-2002 AVHRR (Advanced Very High Resolution Radiometer, 1.1 km resolution) data compiled by NOAA Coast Watch (west coast node) to derive average sea surface temperatures during the upwelling season (March – September). For this analysis we used the High Resolution Monthly Composites product from NOAA, which compiles AVHRR data by month for scene footprints that are approximately 300,000 Km2. The composites were created using night-time images only, computing median values.

A monthly composite for each month (March – September) and each year 99-02 was downloaded for a total of 96 files (6mo * 4years * 4 scenes). Original files were provided as binary raster format and were then converted to ArcView 3.2 using the Import Data Source function which produces an ArcInfo GRID. Each GRID file was then tiled (MOSAIC command) both vertically (to eliminate the effect of areas with no data which were effectively clouds) and horizontally to create a seamless spatial and temporal data set of the entire ecoregion.



In order to emphasize local variability in defining upwelling zones and because water temperatures gradually increase from north to south, these data were then clipped to subregions (see section on stratification units). For each subregion, upwelling was defined as the cells that had temperatures less than or equal to 2 standard deviations below the 4-year seasonal average (except for the southernmost subregion below Punta Eugenia where we used 1.5 standard deviations below the average due to weaker upwelling patterns). The following table shows subregions and temperatures used to define upwelling zones:

Table 2: Definition of upwelling zones by subregion

Subregion (Stratification Unit)	Mean Temperature (degrees C)	Upwelling Zone (degrees C)
Point Conception to Palos Verdes	14.28	Less than or equal to 11.85
Palos Verdes to US-Mexico border	14.89	Less than or equal to 13.03
US-Mexico border to Punta Santo Tomas	15.44	Less than or equal to 14.16
Punta Santo Tomas to Punta Baja	15.37	Less than or equal to 13.73
Punta Baja to Punta Eugenia	16.36	Less than or equal to 14.03
Punta Eugenia to Punta Abreojos	19.11	Less than or equal to 16.6
Guadalupe Island	No data	No upwelling defined

Our analysis indicated upwelling in the SCME is strongest along the coast in Mexico between Punta Banda and Punta Baja. Strong patterns of upwelling also appear off Point Conception in a convergence zone with the cooler waters of the Northern California Marine Ecoregion (see Figure 5).

Ecosystems

Some near-shore ecosystems are especially important for marine conservation due to the presence of high biodiversity, their importance as nursery grounds or critical habitat for threatened species, and their relatively high level of impact or degradation from human influences (Beck et al. 2003).

Estuaries play a key role as nursery habitat for many marine invertebrates and fish and as essential habitat for estuarine-dependent species. Along the California and Baja coast these features range from large estuaries such as Mugu Lagoon, San Quintin, and Ojo de Liebre to many small coastal lagoons where small streams meet the sea. Many estuaries in southern California have been significantly altered with hardened shorelines and dredging to maintain port and marina facilities. We initially mapped estuaries using data from the National Wetlands Inventory but found that we could not easily distinguish functioning estuaries from ports and harbors. We therefore assumed that the presence and abundance of eelgrass and coastal marsh were better indicators of functioning estuaries than the open water habitat and we used those estuarine systems as targets and surrogates for the entire estuary.

For the SCME, three ecosystem level targets were identified and mapped: coastal marsh, seagrass beds, and kelp beds.

- ***Coastal salt marsh***. Coastal salt marshes are found in bays and estuaries along the coast where they form a transition zone from land to sea and from fresh to salt water (see Figure 6a). They sustain high levels of productivity and support key life-stages of many species. Coastal salt marshes in the U.S. portion of the ecoregion were mapped as polygons based on California Department of Forestry (CDF) Fire and Resource Assessment Program (FRAP) multisource landcover data (CDF 2002, v.1) and the Natural Diversity Database (CDFG, 2003). In addition, coastal marsh was mapped as a linear shoreline feature based on NOAA ESI data. These polygon and linear features sometimes, but not always, overlap so it was decided to retain all sources of mapped data for coastal salt marshes.

  For Mexico, data on coastal salt marshes were obtained from vegetation maps for Baja from the Inventorio Forestal (SEMARNAT 2000) and mapped as polygons. Only areas with vegetation classified as "*vegetacion halofila y gipsofila*"and adjacent to mapped estuaries were included as coastal salt marsh. More detailed data from ProEsteros were used to map coastal marsh for San Quintin Bay; coastal marsh was mapped as areas ProEsteros classified as "estuarine intertidal flat, estuarine intertidal emergent lower littoral, and estuarine intertidal emergent upper littoral".

- ***Seagrass***. Seagrass habitats are among the most productive and biologically diverse ecosystems on the planet. A common type of seagrass called *Zostera* or eelgrass, grows under water in estuaries and in shallow coastal areas of the ecoregion. It helps prevent erosion and maintain stability near shore by anchoring sediment with its spreading rhizomes. Its leaves projecting upward have a slowing effect on water flow. Eelgrass provides food, breeding areas, and protective nurseries for fish, shellfish, crustaceans and many other animals.

The presence of eelgrass beds was mapped for each planning unit based on information from a variety of sources (see Figure 6a). For the U.S., data from NOAA ESI was used to map eelgrass beds. For Mexico, personal communication with David Ward of U.S. Geological Survey (Ward et al. 2003) and Sylvia Ibarra of the Centro de Investigacion Cientifica y de Education Superior de Ensenada (CICESE) provided information on general location of eelgrass beds. These were typically referenced to the locations of commonly known and named estuaries in Baja California. Without any other refined spatial reference we attributed the presence of eelgrass to the entire estuary polygon. Due to our lack of confidence in the areal extent of these data only the presence or absence of eelgrass within a planning unit was used in the planning effort.

- ***Kelp beds:*** Giant kelp beds are one of the most productive marine habitats along the coast of California and support a high diversity of fish and invertebrate species. Kelp beds also function as important nursery habitat for a variety of fish and invertebrate species. Kelp beds are characterized by a high degree of spatial and temporal variability. Studies have shown that distribution and abundance of kelp beds and successional processes are affected by climatic and oceanographic changes, as well as certain types of fisheries (Tegner et al 1997; Tegner and Dayton 2000). We used several data sets from multiple years to identify important areas of for kelp beds; these areas were mapped as areal coverages in the U.S. and as present within planning units for Mexico (see Figure 6a).

  Surveys conducted in California by CDFG in 1989, 1999, and 2002 provided mapped areal coverages for the U.S. portion of the ecoregion. Due to the importance of kelp beds and the inter-annual variability in their distribution and abundance, the kelp coverage in each of those three years was considered a separate kelp target. In addition, we were interested in identifying areas of high coverage of kelp that were persistent over the three years of the surveys; these areas may be more resilient over time and were treated as a unique target. For this "persistent" kelp target, planning units with kelp present in all three survey years were identified and areal coverage of kelp was calculated as the sum of coverages in all three years.

  For the Mexican portion of the ecoregion, we compiled Landsat TM data for 2000-2001 and conducted a Normalized Difference Vegetative Index (NDVI) analysis to identify surface kelp; these data were then used to map kelp along the Baja coast. In addition, data from a variety of published sources, including navigational charts, and fishing, surfing, and sailing guides for the region, from multiple years were compiled and used to create a separate shape file of mapped kelp. For both of these datasets, the confidence in measures of areal extent of kelp was low so goals were based only on the presence of kelp within a planning unit. Presence was defined as any planning unit that intersected mapped kelp. The two Baja kelp datasets, Landsat and published literature, were considered separate targets to improve confidence in identifying areas with kelp. These Baja kelp data were not considered sufficient to assess persistence over time.

Biologically Significant Areas

There are other areas that are considered important for growth, reproduction or survival of many species due to their role as nursery grounds, critical habitat, or topographic features around which mobile animals aggregate. The following biologically significant areas were identified as conservation targets:

1. ***Seamounts***. Seamounts are "mountains" rising from the ocean floor that do not break the water's surface. They are important and interesting for several reasons: seamounts

have a high degree of endemism, may be centers of speciation, and may act as "stepping stones" for the dispersal of species. They are also areas of high productivity that support important fisheries. According to the Baja to Bering database (MCBI, 2003) the Ferrel Seamount is the only true seamount in the SCME (see Figure 6a).

2. ***Shallow off-shore banks***: Shallow off-shore banks were included as targets for their importance for regional fisheries and benthic biodiversity. Off-shore banks are topographic features where migratory and highly mobile fish, such as tuna and marlin, congregate. All banks were mapped at the 200m contour line; shallow off-shore banks were defined as banks with depths of 200m or less and at least 10 miles off-shore. The areal coverage of these shallow off-shore banks was calculated as their area at the 200 m depth contour (see Figure 6a).

3. ***Near-shore canyon heads***: Canyon heads were considered areas of high biodiversity importance because of the presence of a steep elevation gradient, variation in benthic topography, and other factors that support biological richness. The heads of canyons, such as La Jolla canyon, Coronado Canyon, and others, running from near-shore to the off-shore were mapped as point locations. Only canyons with heads within 10 miles of shore were included (see Figure 6a).

4. ***Near-shore rocks***. Near-shore rocks and small islands are important habitat for a variety of marine life including seabirds and pinnipeds (see Figure 6a). Intertidal and subtidal portions of rocks also provide relatively protected habitat for fish and invertebrates. The tops of rocks may have vegetation that includes rare and endemic plants whose populations have declined on heavily grazed large islands and coastal areas. We used a comprehensive dataset compiled by the Bureau of Land Management for the California Coastal National Monument to identify rocks and islands for the California coastline. For Mexico, we derived a rocks and islands dataset from NIMA shoreline GIS data.

5. ***Steelhead stream outlet***. Coastal streams in the SCME are the southern limit of southern California steelhead evolutionarily significant unit (ESU). Steelhead are an anadramous salmonid that is born and reared in freshwater, migrates to the estuaries as juveniles, and moves into the marine environment to mature before returning to the freshwater streams to reproduce. Although historically found in more streams in southern California and Baja, steelhead are now limited to only a half-dozen rivers or streams where adequate flows and a lack of barriers allow them to migrate from the ocean to freshwater spawning beds. These streams include the Ventura River, Santa Clara River, Malibu Creek, Topanga Creek, and San Mateo Creek in California, and Rio Santo Domingo in Baja (see Figure 6a). Data on steelhead streams for the ecoregion were provided by NOAA (NOAA 1997 and NOAA 2001).

6. ***Pinniped rookeries and haul-outs***. Pinnipeds such as seals and sea lions consistently use the same areas year after year for breeding or hauling out to rest and warm; these rookeries and haul-outs are important for conservation of the species. Some species, such as the Guadalupe fur seal, are narrowly restricted and breed on only one or two islands. Data for pinniped rookeries and haul-outs were provided by NOAA (Mark Lowry, personal communication), and published sources (Lowry 2002). Where information was available, rookeries and haulouts were mapped for the following species: Guadalupe fur seal, Northern elephant seal, harbor seal, and California sea lion (see Figure 6b).

7. ***Seabird colonies***. The SCME supports a diverse assemblage of seabirds; many of which breed on off-shore islands, rocks, and coastal beaches. Many species of marine birds aggregate in distinct colonies for breeding. We identified seabird colony targets based on species restricted to or having a significant proportion of their breeding population in the ecoregion, species at the edge of their range, and species with threatened or endangered legal status (see Appendix V). The following species were included:
    - Laysan albatross

- Black-vented shearwater
- Leaches storm-petrel (several subspecies)
- Ashy storm-petrel
- Black storm-petrel
- Least storm-petrel
- Brown pelican
- Double-crested cormorant
- Elegant tern
- Least tern
- Pigeon guillemot
- Xantu's murrelet
- Cassin's auklet

For seabird targets in the SCME, we used available data on population estimates for seabird colonies at major nesting islands and coastal beaches as the major input. For the U.S portion of the ecoregion, we mapped population estimates from the USFWS survey reports on seabird colonies on islands, islets and beaches (Sowls et al. 1980; Carter et al 1992). For Mexico, we used the breeding population estimates provided by Wolf (2002) based on her literature review of available data. We mapped approximate locations of major colonies for target seabirds based on available information in literature searches; if more than one colony location within an island group were described the total breeding population estimate for the island group was divided among colony locations (Donlan et al. 1999; Carter et al. 1996; Jehl and Everett 1985; Palacios and Mellink 2000; Wolf 2002). If no specific information on colony location was found, the middle of the island or islet was considered the colony location (see Figure 6b).

8. ***Gray whale nursery***. Gray whales migrate between summer feeding grounds in the Bering Sea to winter calving areas in three lagoons on the Pacific coast of the Baja Peninsula. The northernmost breeding lagoon known as Scammon's Lagoon, or Laguna de Ojo de Liebre, is within the SCME (see Figure 6b). The nursery area is confined to shallow-water habitats inside the lagoon.

Conservation Goals

The ecoregional assessment approach involves setting conservation goals that define the number and spatial distribution of each conservation target needed to adequately conserve the target across the ecoregion. Goals have two components: a representation goal that specifies the number or amount of that target, and a stratification component that ensures that the target will be represented across the ecoregion.

Although there is no specific formula for how much habitat or how many populations are necessary to conserve a target, representation goals should be based on some measures of abundance and distribution (Groves et. al. 2000; Groves 2003). Generally, in terrestrial environments goals are set in the 30-40% range for ecosystems and communities with the assumption that those goals will capture 80-90% of species (Groves 2003). In the marine environment, lower goals may be more appropriate since the area around sites may continue to support species and ecosystems to a greater extent than in terrestrial environments (Beck 2003). It is also important to consider historical distributions and to select higher goals for species or systems whose abundance has been significantly diminished (such as coastal salt marsh in California).

For benthic habitat types identified using the habitat model, we evaluated the abundance of the habitat type in the ecoregion and set minimum conservation goals at 15% for very common targets and progressively ramped goals up to 30% uncommon benthic habitat types (Table 3). The benthic habitat model has not been validated for its accuracy nor have these benthic habitat types been correlated with biodiversity; for these reasons, relatively low goals were set.

Table 3: Representation Goals for SCME Benthic Habitat Conservation Targets

Benthic Habitat Types	Habitat abundance (as percent of ecoregional area)	Conservation goal
Very common types	>20%	15%
Common types	5-20%	20%
Uncommon	<5%	30%

For shoreline targets, goals were set based on relative abundance of the shoreline types in the ecoregion and ranged from 20-35% (Table 4). The ESI dataset was considered to be of high quality for the U.S.; there was more uncertainty and a larger proportion of "unidentified" shoreline types in the Mexican portion of the ecoregion.

Table 4: Representation Goals for SCME Shoreline Conservation Targets

Shoreline Types	Habitat abundance (as percent of ecoregional shoreline)	Conservation goal
Very common types	>20%	20
Common types	5-20%	25
Uncommon	<5%	35

Conservation goals were set from 25-100% for the remaining conservation targets (Table 5). Upwelling areas are very important for regional productivity that supports a wide variety of marine species and the goal was set at 35%. Many coastal and near-shore ecosystems, such as eelgrass beds, coastal salt marsh, and kelp beds, have experienced significant degradation or declines in recent history and higher goals were set for those targets (50-75%).

Goals for biologically significant targets were set in the 25-50% range. For seabird colonies, a goal of 50% of the estimated nesting population of each seabird species within each stratification unit was used. Those targets with extremely limited distributions, such as steelhead stream outlets and the gray whale nursery in Scammon's Lagoon (Ojo de Liebre) and the Guadalupe fur seal rookery on Guadalupe Island, were "locked in" as a 100% goal.

Table 5: Representation Goals for other SCME Conservation Targets

Target Type	Examples	Conservation Goal
Ecological Process	Upwelling areas	35%
Ecosystems	Coastal marsh, kelp, eelgrass	50-75%
Biologically significant areas	Off-shore rocks, shallow off-shore banks, near-shore canyon heads, pinniped haulouts and rookeries, seabird colonies	25-50%
	Steelhead streams, gray whale nursery, Guadalupe fur seal rookery	100%

Appendix II provides a summary of the representation goals for each conservation target.

Stratification and Planning Units

If marine ecological systems and habitats targets are to work as surrogates for conservation of most species, they must be conserved as part of dynamic seascapes and be represented sufficiently across environmental gradients to account for ecological and genetic variability. One way to achieve this is to define subregions within the ecoregion and to set representation goals within each of these "stratification units". Since marine habitats and species in the SCME gradually change in response to warming water temperatures north to south, conservation goals were stratified to ensure adequate distribution of targets. We identified seven subregions as stratification units, with input from our scientific review panel. We chose major headlands as the boundary between most units and extended these boundaries off-shore across the ecoregion following latitude. One exception was the general area around the international boundary between the US and Mexico where we had a major break in data availability; the stratification unit boundary in this area is irregular and follows the break in availability of off-shore substrate data. Another exception was Guadalupe Island; since it is isolated from the rest of the ecoregion by distance and very deep water it was treated as a separate stratification unit.

The following stratification units were identified for the ecoregion (Figure 7):

- Point Conception to Palos Verdes (Unit A)
- Palos Verdes to the U.S./Mexico border (Unit B)
- U.S./Mexico border to Punta Santo Tomas (Unit C)
- Punta Santa Tomas to Punta Baja (Unit D)
- Punta Baja to Punta Eugenia (Unit E)
- Punta Eugenia to Punta Abreojos (Unit F)
- Guadalupe Island and surrounding waters (Unit G)

Representation goals for targets were then stratified into these units to ensure examples from all seven subregions.

The ecoregion was divided into ~4,800 hexagonal planning units, each representing 3,500 hectares (Figure 7). Hexagons were chosen as planning units, rather than grids, because their shape allows for more natural appearing clumps based on the amount of boundary (six sides) shared among individual units. The size of the planning unit was chosen to be compatible with our terrestrial ecoregional assessment for the Southcoast, where units of this size were selected based on average watershed size and size of typical disturbance events. For marine planning, this size should also be sufficient to accommodate the genetic dispersal distances of many local taxa, as suggested by Kinlan and Gaines (2003).

Suitability Index

In addition to identifying conservation targets and goals, we developed a suitability index for the SCME to steer conservation area selection away from places likely to be heavily impacted by human use. We compiled spatial data for five types of impacts and generated a suitability map by counting the number of impacts within a planning unit. The suitability factors we assessed were:

1. Marinas / ports
2. Military dumping areas
3. Pollution outfalls
4. Artificial shoreline (eg. seawalls, riprap, and other manmade structures)
5. Marine toxic sites (eg. Palos Verdes shelf Superfund site)

All impacts were weighted similarly; for example, one kilometer of hardened shoreline was weighted the same as one pollution outfall or one marina. Planning units with no impacts were considered to have the highest suitability for conservation, and planning units with multiple impacts were considered the least suitable. Each planning unit was attributed with the total number of suitability factors and a summary suitability index (Figure 8). Most planning units had high suitability; planning units in and adjacent to major urban areas generally had lower suitability. As described further below, the MARXAN model evaluates planning units for their cost, in terms of suitability, relative to the amount of conservation targets that planning unit contributes towards achieving overall conservation goals.

Conservation Area Selection

Ecoregional planning identifies a set of conservation areas that together best capture the biodiversity of the region. The collection of conservation areas, the conservation portfolio, provides a guide for more detailed site planning and implementation of conservation strategies. The objective of the portfolio selection process is to ensure that conservation goals of representation and distribution for all targets are met with an efficient design that minimizes cost factors and total area.

MARXAN (v.1.8.0), a site-selection software tool (Ball and Possingham, 2000), was used to assemble a portfolio of marine conservation areas for the ecoregion. MARXAN uses an algorithm to design an efficient configuration of conservation areas that best meet conservation goals for all targets. Basic inputs to the MARXAN model are: (1) the conservation targets present and the amount of that target in each planning unit, (2) the suitability factors for each planning unit, and (3) the conservation goals for representation of each target in each stratification unit. The mapping of target abundance and distribution, calculation of suitability factors, and identification of conservation goals have been described in previous sections.

Given the inputs described above, the algorithm seeks to minimize total cost by selecting a set of planning units which include as many targets, as cheaply (relative to suitability) and in as compact as set of planning units as possible. We used the "simulated annealing" algorithm option in MARXAN. Under this option, the model begins with a random set of planning units, and then at each iteration randomly swaps planning units in and out of that set and measures the change in cost. The program evaluates 1,000,000 iterations and keeps the least cost configuration before moving on to the next selection set. As the process continues, the model becomes more selective in what constitutes a best configuration of planning units.

Other model settings that have to be selected before running MARXAN include selecting (1) the number of repeat runs, (2) the species penalty factor, which is the penalty for not meeting stated conservation goals, and (3) the boundary length modifier (BLM), a weighting factor which determines how much clumping or dispersion is favored in the model output. We ran the model many different times with the number of repeat runs ranging from 100 to 4800 and determined that 1000 repeat runs was sufficient. The species penalty factor was set at 1 for all targets. We experimented with BLMs ranging from .3 to .5 and selected a BLM of .36 as the optimal setting to achieving significant clumping and connectivity while still allowing for numerous distinct conservation areas that had biological relevance as seascapes.

RESULTS

A variety of spatial configurations of selected planning units can be used to meet conservation goals. Based on the 1000 repeat runs, output from the MARXAN program includes the "best" solution and the "summed solution". The best solution is the selection set with the minimum number of planning units that best meets conservation goals and is one result in the model's output (Figure 9). The summed solution describes how many times each planning unit was selected in all iterations and provides an indication of the conservation value or "irreplaceability" of each planning unit in the overall design (Figure 10).

Delineation of Conservation Areas

A relatively small number of planning units were needed to meet goals for rare and very rare targets and were selected consistently; however, for more common targets a variety of planning units could be incorporated into the design to meet goals. The summed solution shows how consistently planning units were selected to meet conservation objectives and was used to define the portfolio of marine conservation areas.

Delineation of conservation areas centered on planning units with high conservation value based on the summed solution. Planning units selected in 45% or more of the repeat runs in the summed solution were included in the final portfolio. The SCME portfolio represents 16% of the area of the ecoregion (755 planning units) and 42 % of the shoreline (Figure 11). The portfolio met most of the goals and came within 80% of meeting goals for 88% of the conservation targets and exceeded goals for many targets (Appendix VI). The only targets for which goals were not met were the California least tern in stratification unit A (Venice Beach colony was not selected) and a subset of modeled benthic habitats in each stratification unit.

Planning units included in the portfolio were aggregated into 47 conservation areas. Creating a portfolio of conservation areas using the planning units' geometry makes for a jagged edge of hexagon boundaries. In an effort to create a smoother boundary, and take into account the values of neighboring planning units outside the 45% cutoff, we used a focal neighborhood analysis. We calculated the mean value of the summed solution using a 3km neighborhood (expressed as a buffer). Three kilometers was chosen because it's roughly the size of the planning units and would thus account for values in adjacent planning units. This has the effect of smoothing the edges and incorporates the summed solution values of planning units adjacent to the 45% boundary. The smoothed conservation area boundaries are purely cartographic. All reporting of conservation targets is done using the hexagonal boundaries (i.e. the planning units that make up the conservation areas).

These conservation area boundaries should be considered approximate; more detailed site planning of these "seascapes" would be required to accurately map local marine biodiversity resources and to determine the most appropriate boundary for the conservation area. A list of each conservation area and the targets present in each area in the portfolio is provided in Appendix VII.

Qualitative Assessment of Threats and Opportunities

With numerous conservation areas and limited resources, it was necessary to set priorities for where TNC should focus initial conservation effort. To date there has not been a comprehensive threat assessment for the SCME and it is apparent that much more information on threats is needed before appropriate strategies can be developed for the entire ecoregion. A preliminary and qualitative assessment of threats and opportunities was completed for each conservation area, where there was readily available information, to identify areas where TNC and its partners could take actions that would make substantial progress abating threats or sustaining and improving biodiversity health. More detailed threat assessments should be completed on a site by site basis during conservation area planning. A summary of general threats, opportunities, and strategies across the ecoregion is described below.

Threats

The primary threats to conservation areas in the SCME include overfishing and destructive fishing, habitat loss and alteration, pollution, introduced species, and climate change. In addition, human disturbance of wildlife and altered freshwater hydrology are also important threats in more localized areas.

- ***Overfishing and Destructive Fishing***: Overfishing occurs when the quantity of fish harvested exceeds the amount that can be re-supplied by natural growth and reproduction. High quotas, poor regulation, lack of enforcement, bycatch, and destructive fishing gear can directly cause species declines and can lead to ecological imbalances in marine ecosystems (Tegner and Dayton 2000; Jackson et al. 2001; Dayton et al. 2002; Myers and Worm 2003). The emphasis on single-species fisheries management has not adequately protected many fished species nor the habitats they depend on. Populations of many large predatory fish are experiencing significant declines worldwide correlated with overfishing (Myers and Worm 2003). Populations of some rockfish species on the West Coast have dropped to less than 10 percent of their past levels (MacCall and He, 2002 in Pew, 2003). White abalone, the first marine invertebrate species to be listed under the Endangered Species Act, have been fished almost to extinction and are still threatened by poaching.

  Some fisheries, such as those using bottom trawling gears, destroy habitat in the course of normal fishing practices and can have a significant effect on marine biodiversity (Thrush and Dayton 2002). Many fisheries also have significant impacts on marine biodiversity due to large volumes of bycatch of non-commercial fish and invertebrate species that are thrown back dead as well as accidental catch of seabirds, turtles, and marine mammals. In southern California, recreational fishing is a significant factor and as much as 50% of the recreational fishing effort is focused on species associated with kelp forest habitats (CDFG 2000). Recreational fishing may be the primary source of fishing mortality for some targeted species (Schroeder and Love 2002).

- ***Habitat loss and alteration***: Habitat loss and alteration has directly affected many coastal ecosystems in southern California. Less than 10% of coastal wetland habitat remains in southern California; coastal marshes have been lost as a result of shoreline hardening, draining and filling of wetlands, and dredging. Large Pacific coast estuaries, such as San

Diego Bay, once contained vast wetlands and marine resources and are now largely urbanized or impacted by human population. Development of salt ponds and other industrial activities has impacted wetlands and lagoons around Guerrero Negro, Baja.

Rocky intertidal communities have been impacted over time by over-harvesting, trampling, and pollution. Beaches and other dynamic coastal systems have been impacted by alteration of sand/sediment transport, coastal development, and recreational use.

Kelp forests are important structural components of the near-shore environment and likely play a role as nursery habitats for many species (Beck et al. 2003). Loss of these important ecosystems affects many marine communities that are dependent on them. Climatic changes can have significant effects on kelp abundance and persistence (Tegner et al. 1997). In addition, the hunting or overharvest of urchin predators such as spiny lobster and sheepshead wrasses has resulted in significant declines in kelp abundance and increase in heavily grazed urchin barrens in southern California (Steneck and Carlton 2001). In addition, tens of thousands of wet tons of kelp canopy are harvested every year for their alginates; the effect of this harvest on the dynamics of species dependent on the kelp canopy is not known.

Repeated bottom trawling in offshore areas with fishing gear that drags across the ocean floor destroys benthic communities of sponges and corals and other invertebrates that provide important habitat structure for many species. Destructive bottom trawling is a significant threat to the complexity and biodiversity of these seabed communities (Thrush and Dayton 2002). The continental shelf environments of California have been trawled since 1876, more recently trawlers are moving into deeper waters of the shelf and slope. Trawling, primarily for groundfish, increased in the 1970s due to federal subsidies but groundfish landings have steadily declined in the last 20 years as the fishery is collapsing and is now subject to closures (Engel and Kvitek 1998).

- ***Marine pollution***: Pollution from land and sea-based sources releases inorganic and organic chemicals and nutrients into the ocean where they may accumulate to the extent that they may cause adverse impacts to species, communities, and the functioning of ecosystems. Sources of marine pollution include point sources such as oil spills, toxic waste dumps, cruise ships, and sewage treatment outfalls, as well as non-point sources such as urban and agricultural runoff. Most of the coastal watersheds in southern California are largely urbanized and have high amounts of impervious surfaces that result in polluted runoff reaching the near-shore marine environment. Oil and gas development in southern California waters and high levels of shipping traffic in the southern California bight are potentially significant sources of pollution. Marine debris or plastics are also increasingly a problem for seabirds and sea turtles. Many beaches in southern California are routinely closed for public health concerns as a result of high bacterial counts.

- ***Invasive species***: Exotic species that are invasive can crowd out native species, alter habitats, and introduce foreign pathogens. The rate of introduction of exotic marine species has risen exponentially over the past 200 years and shows no sign of leveling off (Carlton, 2001). Many introduced marine species arrive in ship ballast water or from improperly disposed home aquarium water. An invasive alga, *Caulerpa toxifolia*, which invaded and caused significant ecological and management problems in the Mediterranean, was recently found in two coastal lagoons in San Diego county and is now the focus of an eradication plan. More than 175 species of introduced marine invertebrates, fish, algae, and higher plants live in San Francisco Bay, one of the most invaded estuaries in the world (Cohen and Carlton, 1998; Cohen and Carlton, unpublished data in Pew Ocean Commission, 2003). Many of these species and others also pose a potential threat to southern California estuaries. On land, especially islands, feral domestic cats prey on many ground-dwelling shorebirds and seabirds.

- ***Climate change***: Climatic changes resulting from human use of fossil fuels will likely create drastic regional and global challenges. Global air temperature is expected to warm by 2.5 to 10.4oF (1.4 to 5.8oC) in the 21st century, affecting sea-surface temperatures and raising the global sea level by 4 to 35 inches (9 to 88 cm) (IPCC, 2001 in Pew, 2003). Climate change will likely modify the flow of energy and cycling of materials within marine ecosystems—in some cases, altering their ability to provide the ecosystem services many species depend upon. The California coastal environment may experience changes in productivity and distribution of near-shore species due to climate change.

- ***Human disturbance of wildlife***: Disturbance of seabirds, shorebirds, and marine mammals can occur from recreational activities (eg. boating, diving, surfing, and whale-watching), shore and island-based development and industries (eg. tourism, guano-mining) and military activities (eg. bombing, overflights, underwater sonar) especially when they occur near nursery or rookery areas.

- ***Altered hydrological regimes***: Alteration of freshwater systems from water diversions and barriers to fish passage may affect many anadromous species such as steelhead. Populations of southern steelhead are limited to less than a dozen small coastal streams in the SCME. In 1997, the NMFS listed the southern steelhead population as endangered. Other estuarine dependent species living in coastal lagoons, such as tidewater gobies, are also affected by reductions in freshwater input.

Opportunities

There is a growing recognition of the need for marine conservation efforts in the SCME. The California Current was identified by the World Wildlife Fund (WWF) as globally important and is also the focus of a Bering to Baja planning initiative (B2B). A working group of academic, agency, and non-governmental organizations was recently formed by the Point Reyes Bird Observatory (PRBO) to discuss conservation of the pelagic ecosystem of California (the Pelagic Working Group, 2002). PRBO is also initiating discussions of a California Current Joint Venture to focus on ecosystem management of the marine environment.

The near-shore environment of the U.S. (California) portion of the SCME is the focus of a statewide mandate to develop a network of marine protected areas (MPAs) in state waters through the Marine Life Protection Act, although that effort is currently stalled. In addition, the Marine Life Management Act calls for ecosystem management of California's marine resources. As a departure from single-species fisheries management, it provides impetus to protect marine wildlife and their habitat. The Channel Islands National Marine Sanctuary has recently engaged in a 5-year management plan review process. Through a stakeholder process, the California Fish and Game Commission designated a network of marine reserves within state waters in the Channel Islands sanctuary. The California Coastal National Monument was created in 2000 and protects more than 11,500 rocks and small islands above mean high tide within 12 nautical miles of shore. BLM is conducting a statewide effort to develop a management plan for the resources within the California Coastal National Monument.

Opportunities for TNC in the SCME include expansion of existing terrestrial conservation projects to include marine resources and developing new marine projects. TNC already has 3 project areas in the ecoregion including Santa Cruz Island, Santa Clara River, and San Quintin that could be expanded to focus on marine biodiversity conservation. In addition, as one of the few organizations conducting planning on an ecoregional scale in the SCME, TNC can play a unique role in developing approaches and strategies for cross-boundary and pelagic/open ocean conservation.

Strategies

Potential strategies to abate threats to the marine environment in the SCME include:

- **Ocean zoning** to establish multiple use areas straddling both federal and state waters; potential zones include "no take" areas, limited and responsible fishing areas, and areas protected from destructive or indiscriminant fishing methods
- **Market-oriented strategies** to promote conservation and to reduce fishing effort and fisheries impacts; promote the establishment of an Ocean Trust Fund

- **Policy initiatives** to promote ecosystem management of the California marine environment; promote the establishment of a new marine policy position within the Resources Agency
- **Acquisition of private land** in critical coastal habitats around estuaries and important steelhead streams
- **Leasing of submerged habitats**, such as kelp beds and subtidal lagoons, for scientific research and conservation purposes
- **Restoring critically imperiled ecosystems** such as coastal marshes, eelgrass beds, and kelp beds.
- **Restoring coastal streams for anadramous fish** through removal of fish barriers and enhancement of spawning habitat for steelhead in southern California
- **Developing and revising management plans** such as assisting BLM with developing a management plan and acquiring privately owned near-shore rocks that could be added to the monument
- **Abating land-based sources of threats** through watershed management and local coastal planning.

Partners

Many stakeholders are also recognizing the need for greater marine conservation effort in the SCME. Marine conservation and stewardship is the focus of many planning and implementation programs of government agencies and non-governmental organizations. Potential partners for marine conservation efforts in the SCME include:

- **U.S. Federal agencies** (NOAA/NMFS, Channel Islands National Marine Sanctuary; Department of Defense; BLM)
- **Mexican government agencies** (SEMARNAT, CONABIO, Mexican Navy)
- **California State agencies** (Department of Fish and Game, State Parks)
- **Recreation and commercial fishing groups** (United Anglers of Southern California, Pacific Coast Federation of Fisherman Association, Sportfishing Association of California)
- **Non-governmental organizations** (Environmental Defense, Ocean Conservancy, Natural Resources Defense Council, National Fish and Wildlife Federation, Point Reyes Bird Observatory, ProEsteros, Pronatura)
- **Academic institutions** (University of California at San Diego / Scripps, University of California at Santa Barbara, University of California at Santa Cruz, California State University at Monterey Bay, CICESE, PISCO, IMECOCAL).

Selection of Action Areas

In the absence of sufficient information to conduct a formal threat assessment for conservation areas in the ecoregion, the TNC planning team qualitatively evaluated biodiversity patterns, threats and opportunities and recommended seven action areas as initial priorities for the SCME. These included:

1. Point Conception
2. Ventura Coast
3. Northern Channel Islands (Santa Cruz Island, Anacapa Island)
4. Southern Channel Islands (Santa Catalina Island, Santa Barbara Island, San Clemente Island)
5. Cortes Bank / Bishop Rock
6. San Quintin
7. Guadalupe Island (northern and southern portion)

Point Conception

- **Location and size**: This 43,675 hectare conservation area includes the shoreline of Point Conception and extends off-shore in a southeasterly direction toward Santa Rosa Island.
- **Key Targets**: sand and gravel beaches; upwelling zone; off-shore rocks; kelp; wave-cut rocky platforms; harbor seal haulout; seabird colony (pigeon guillemot);

inner-shelf and mid-shelf hard and soft flats and slopes; mesobenthal soft and mixed flats and slopes; and harbor seal haulout

- **Threats**: Overfishing (high quotas, overharvest, targeting top predators, use of fish pots); coastal development (shoreline development); oil and gas development; and kelp harvest
- **Opportunities**: Link with terrestrial conservation efforts on Gaviota coast; public support; not many harbors; some existing protection on coast (Bixby and Hollister properties, Vandenberg military base)
- **Strategies**: Marine parks, zoning; move towards more sustainable fishery practices

Ventura Coast

- **Location and size**: The Ventura coast conservation area totals 17,541 hectares and includes the shoreline and near-shore habitats.
- **Key Targets**: Coastal salt marsh; steelhead stream; sand and gravel beaches; tidal flats; wave-cut rocky platform; off-shore rocks; sea bird colonies (California least tern); kelp; inner-shelf mixed slopes, flats, and canyons; mid-shelf flats
- **Threats**: Coastal development (increasing urbanization, in-water structures, and oil and gas development), overfishing, pollution (oil spills), altered freshwater flow (reduced freshwater input).
- **Opportunities**: TNC project area (mouth of Santa Clara River); link from Sespe wilderness to Santa Clara River to near-shore for steelhead; link to Long Term Ecological Research on land-based impacts in Santa Barbara channel.
- **Strategies**: Expand scope of TNC project; position to utilize LTER; devise threat abatement program for Santa Clara watershed.

Northern Channel Islands (Santa Cruz Island / Anacapa Island)

- **Location and Size**: The Santa Cruz Island/Anacapa Island conservation areas are in the northern Channel Islands and total 103,681 hectares together.
- **Key Targets**: Inner-shelf, mid-shelf, meso-benthal, and bathybenthal hard and mixed canyons, flats, ridges, slopes; seabirds (ashy storm petrels, brown pelicans, Cassin’s auklets, double-crested cormorants, pigeon guillemot, Xantu’s murrelets); sand and gravel beaches; rocky shores; off-shore rocks; eelgrass; and kelp beds; pinniped haulouts; near-shore canyon head
- **Threats**: Overfishing, destructive fishing; recreation (interactions with wildlife)
- **Opportunities**: CINMS and marine reserve network; work with agencies and academics on mapping & monitoring of effectiveness of new reserves; good fundraising venue.
- **Strategies**: TNC Santa Cruz Island - CINMS partnership; promote science-based approaches to assessing effects of no-take marine reserves; and create marine research station on Santa Cruz Island.

Southern Channel Islands (Santa Catalina Island, Santa Barbara Island, San Clemente Island)

- **Location and Size**: The Santa Catalina island conservation area, Santa Barbara Island conservation area, and the San Clemente Island conservation area have a combined size of 73,267 hectares.
- **Key Targets**: Diverse benthic habitats (Inner shelf, midshelf, mesobenthal and bathybenthal hard and soft canyons, ridges, slopes, and flats); near-shore canyon head; sand and gravel beaches; kelp beds; pinniped haulouts and rookeries; seabird colonies (ashy storm petrel, black storm petrel, brown pelican, Cassin’s auklet, double-crested cormorant, pigeon guillemot; Xantu’s murrelet); off-shore rocks; rocky platforms, shores and cliffs
- **Threats**: Overfishing (recreational and commercial fishing), coastal development, recreation and tourism
- **Opportunities**: Active and eager local community on Catalina Island; United Anglers of California is interested in area; small-scale local fisheries
- **Strategies**: Work with Catalina Island Conservancy, fishing associations, and other interested partners on ocean zoning based around Catalina Island; pilot ocean zoning

in area that crosses state and federal waters; evaluate effectiveness of limited-take reserves; work with DOD on improved protection of San Clemente resources; work with CINMS on mapping and monitoring of reserves at Santa Barbara Island

Cortes Bank / Bishop Rock

- **Location and Size**: This large 267,262 hectare conservation area includes the shallow submerged banks approximately 75 km southwest of San Clemente Island.
- **Key Targets**: Off-shore bank; upwelling; diverse benthic habitats (Inner shelf, midshelf, mesobenthal and bathybenthal hard and soft canyons, ridges, slopes, and flats).
- **Threats**: Overfishing / destructive fishing
- **Opportunities** Ocean zoning to protect off-shore resources from unsustainable harvest and destructive activities is gaining momentum as a strategy for federal waters. TNC should partner with resource users to determine viable conservation strategies
- **Strategies**: Ocean zoning

San Quintin

- **Location and Size**: This 121,555 hectare conservation area is in Mexico and includes San Quintin Bay, Isla San Martin, and the surrounding waters off-shore.
- **Key Targets**: Coastal salt marsh; eelgrass; tidal flats; steelhead outlet; sand beaches; exposed rocky cliff; kelp; sheltered rocky shore; upwelling zone; offshore rocks; seabird colonies (brown pelican, Cassin's auklet, double-crested cormorant, Xantu's murrelet); inner-shelf flats, mid-shelf ridges, slopes, and flats; mesobenthal ridges, slopes, canyons, and flats; bathybenthal ridges, slopes, canyons, and flats.
- **Threats**: Coastal development, pollution and water quality, altered freshwater input.
- **Opportunities**: Recognized by Mexican scientists as important ecological area; several potential partners active in the area; existing TNC project area; potential partnership with CICESE, IMECOCAL.
- **Strategies**: Expand scope of TNC project area to include near-shore marine environment.

Guadalupe Island

- **Location and Size**: The northern and southern Guadalupe Island conservation areas have a total area of 37,849 hectares.
- **Key Targets**: Guadalupe fur seal rookery; other pinniped rookeries; gravel beaches; offshore rocks; seabird colonies (black-vented shearwater, Laysan albatross, Cassin's auklet, Leaches storm petrel, Xantu's murrelet); mesobenthal ridges, slopes, and flats; bathybenthal ridges, canyons, and slopes.
- **Threats**: Overfishing / destructive fishing, human disturbance, introduced species and pathogens.
- **Opportunities**: Proposed biosphere reserve; TNC-Mexico Program priority; isolated from many threats
- **Strategies**: Mexican government partnership; assist marine park planning

Data Gaps and Data Limitations

For the ecoregional assessment, we relied primarily on large datasets that allowed us to map targets over the entire region. We relied heavily on a coarse-filter approach to identifying conservation targets; this approach may not adequately protect all species-level targets, especially wide-ranging ones. While more detailed data are available for some local areas that are well-studied, these types of data are best used for site-level conservation planning.

Based on the datasets and approach used, there were several data gaps or data limitations that should be considered important sources of uncertainty at the scale of the ecoregional assessment:

- **Inconsistency in data for U.S. versus Mexico**: The amount and quality of data available for the Baja, Mexico portion of the ecoregion was significantly less than for the U.S. portion. In particular, the lack of substrate data for benthic areas south of the border limited the application of the benthic habitat model for Baja waters. To resolve this, we set a stratification unit boundary (between stratification units B and C) based on the distribution of available substrate data rather than a biogeographic or political boundaries. By doing this, we hoped to avoid creating "artificial" benthic diversity that was based on differences in the datasets. A significant geologic study would be required to eliminate this source of uncertainty for the Baja portion of the ecoregion.

  In addition, at least 30% of the Baja shoreline was classified as "unidentified", due to the absence of a dataset comparable to ESI for the U.S. and limited symbology on available nautical charts. We resolved this by setting conservation goals for "unidentified" shoreline and assuming that we would get a variety of real shoreline targets within that classification. A focused survey of at least part of the Baja shoreline would reduce this source of uncertainty.

- **Lack of validation of the benthic habitat model**: The benthic types generated by the benthic habitat model play an important role in the MARXAN model because of the high number of benthic targets and the fact that they were often the only targets in off-shore areas. The accuracy of the benthic model (ie. whether a predicted habitat type is really present) has not been validated. In addition, the assumption that these benthic types can be correlated with measures of biodiversity has not been tested. A sampling effort to validate the model and correlate at least a subset of types with other measures of biodiversity would add value to the assessment.

- **Lack of information on regional threats:** A very qualitative assessment of threats was conducted based on readily available information for places that are well known or well-studied. However, both a regional assessment of threats to marine biodiversity and more site-specific information is needed to better identify the conservation areas that are most highly threatened. TNC's site planning approach, known as the 5-S framework, will be used to assess threats at selected action areas in the future. The 5-S framework (Low 2003) can be used to identify key s*ystems* (conservation targets and the attributes that maintain their viability), *stresses* (types of destruction, degradation or impairment threatening those systems), *sources* (agents generating the stresses), *strategies* (activities employed to abate threats), and measures of s*uccess* (measures of biodiversity health and threat abatement).

CONCLUSIONS

This assessment identifies a portfolio of marine conservation areas that represent the diversity of estuarine, near-shore and off-shore ecosystems of the region and is the first comprehensive assessment of marine biodiversity in U.S. and Mexican waters along the southern California and Baja California coasts. A total of 47 conservation areas were delineated that represent 16% of the area of ecoregion; these conservation areas together make up a conservation portfolio for the SCME. A preliminary and qualitative threats and opportunities assessment of these areas led to the identification of seven areas as TNC's highest priorities for conservation action: Point Conception, Ventura Coast, Northern Channel Islands, Southern Channel Islands, Cortes Bank, San Quintin, and Guadalupe Island.

With this assessment, TNC and its private and public partners can be confident that site level marine conservation activities are not isolated, but part of a larger conservation design for the region that meets specific conservation goals. The use of a site-selection tool such as MARXAN and the development of the underlying database facilitate an iterative approach to conservation planning.

The identification of these 47 conservation areas makes no presumption about the best strategies for conservation at these areas. TNC and its partners utilize a variety of strategies for marine conservation including habitat protection of nursery and spawning sites, coastal land and submerged land acquisition, elimination of destructive fishing practices, and reduction of nutrient and pollutant inputs. TNC has found that MPAs are appropriate strategies for the conservation of marine biodiversity in some areas. There are many forms and names of MPAs; however, most MPAs are designed to contain zones with different uses that preserve and enhance recreational, commercial, scientific, cultural, and conservation values. TNC recognizes that MPAs will only be successful if supported by the communities that surround them and the stakeholders that utilize them.

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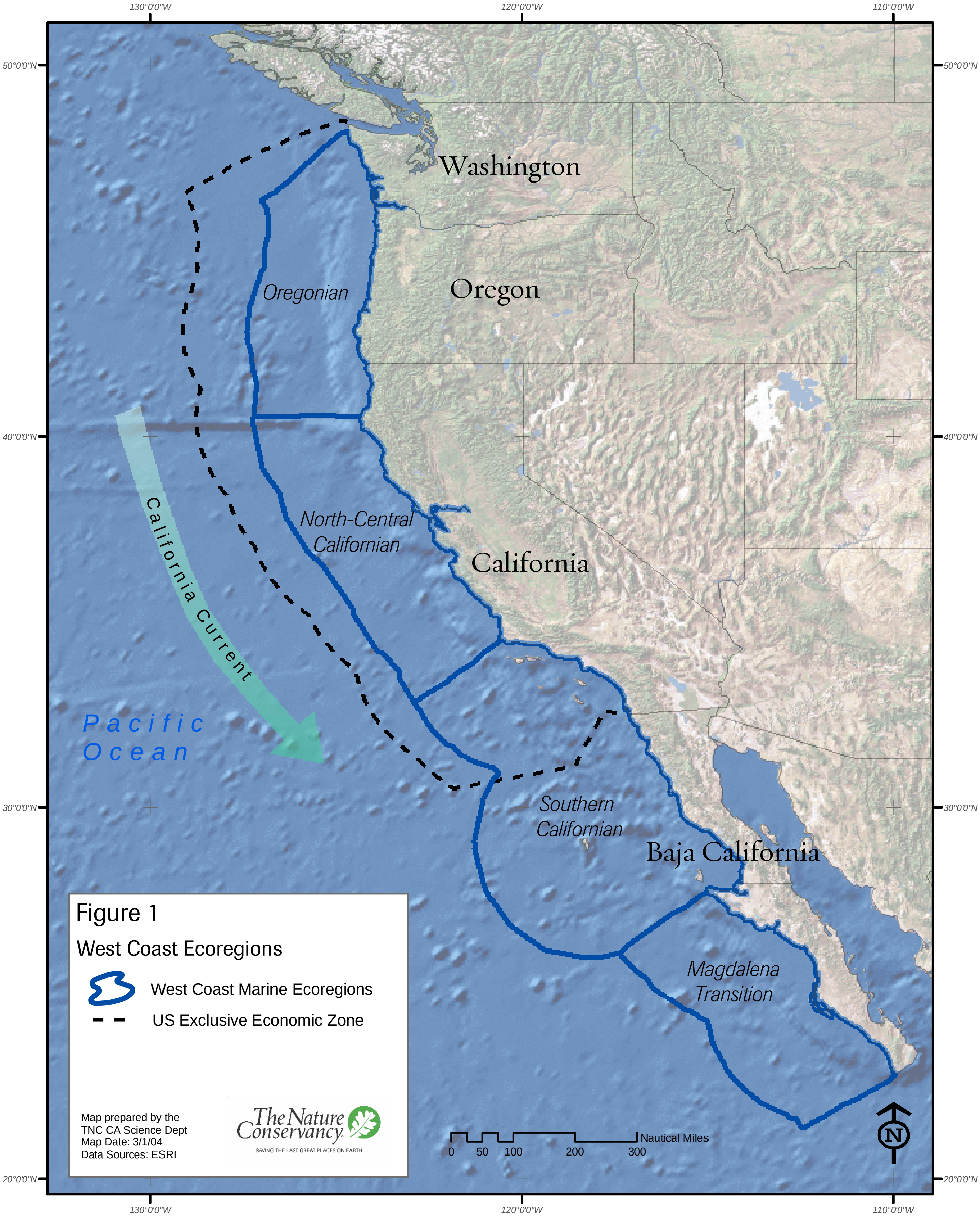
LIST OF FIGURES

West Coast Ecoregions and EEZ



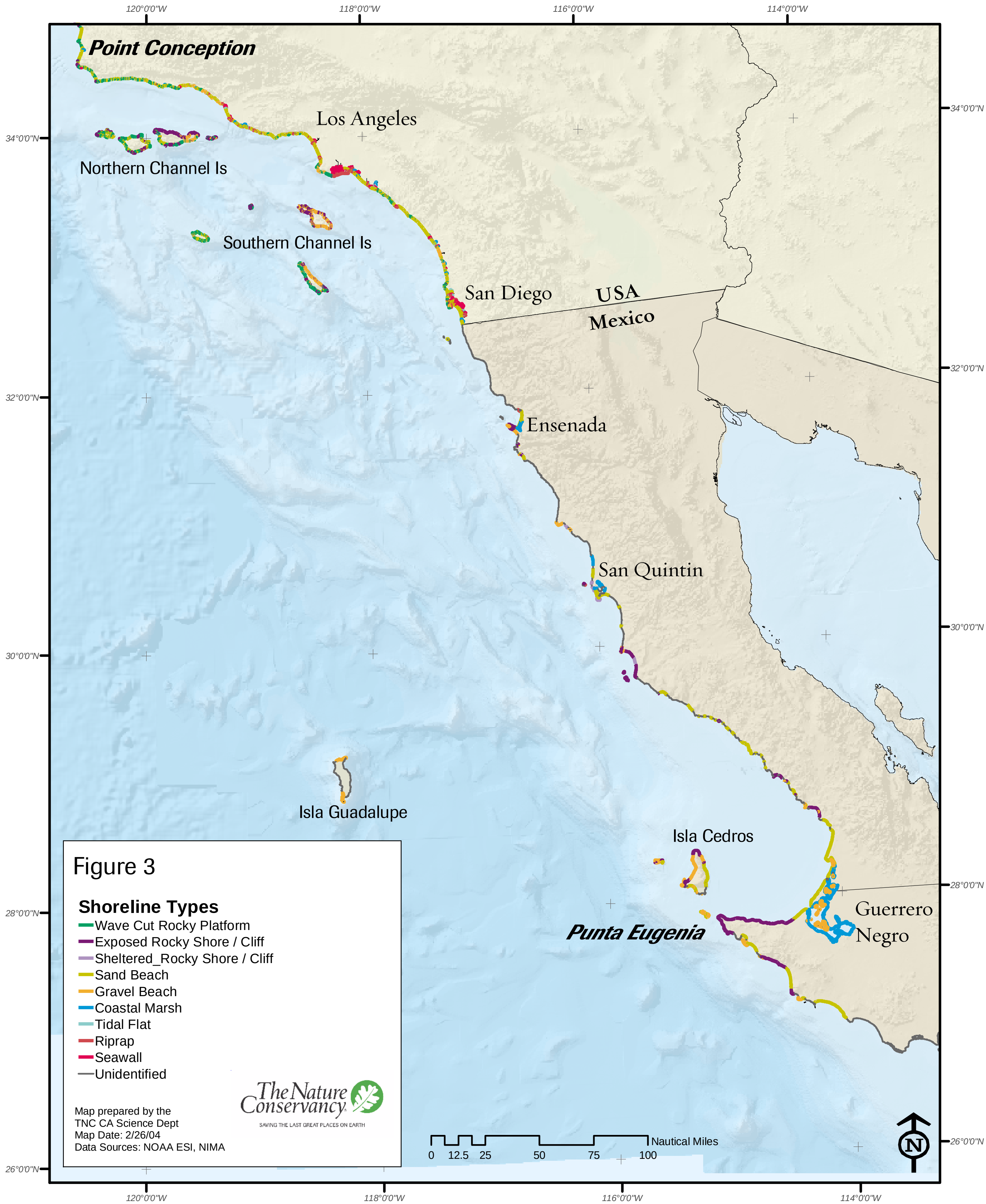
Southern California Marine Ecoregion

Figure 2

Ecoregion Boundary

Map prepared by the
TNC CA Science Dept
Map Date: 3/1/04
Data Sources: CDFG, CICESE

Southern California Marine Ecoregion



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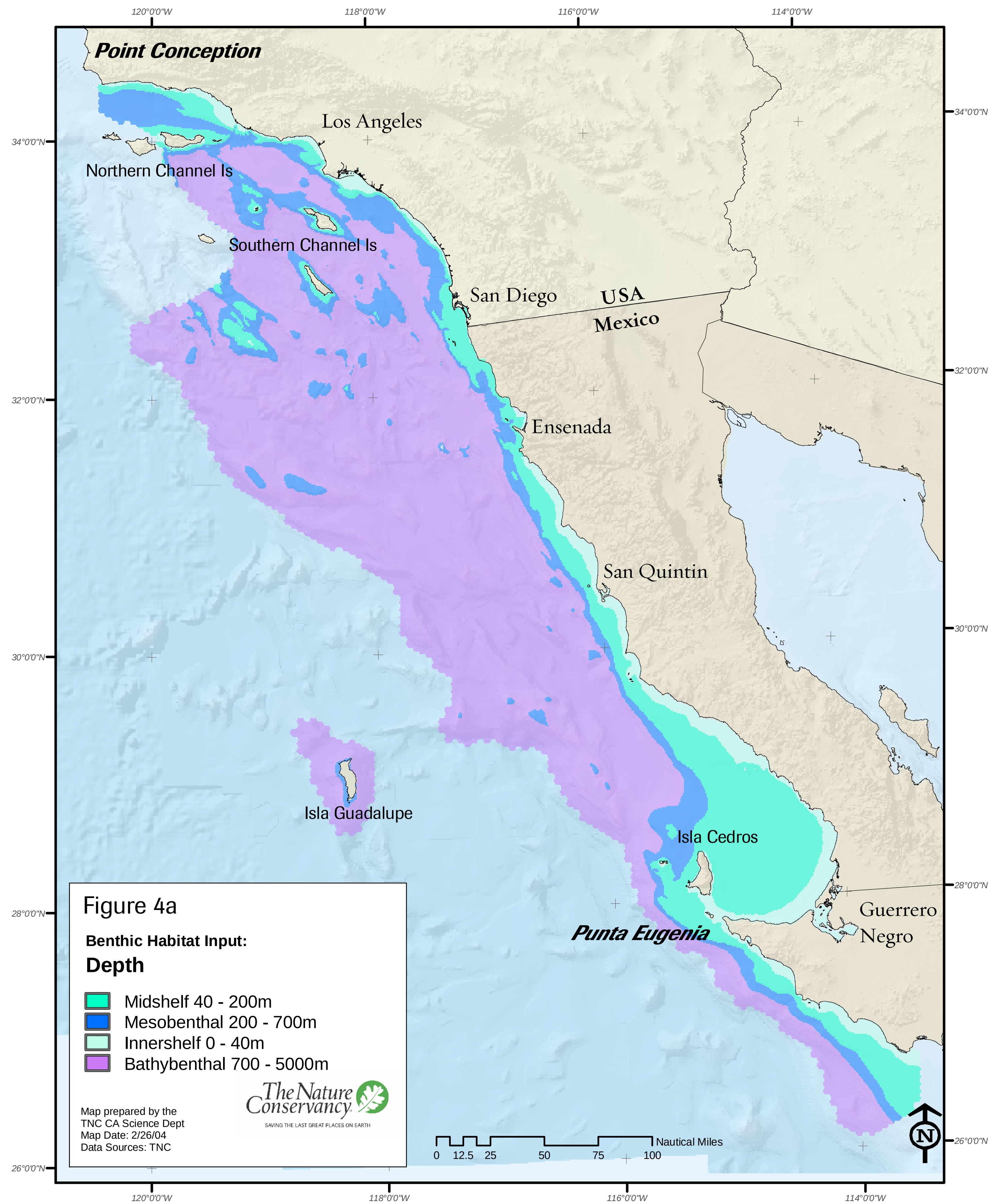

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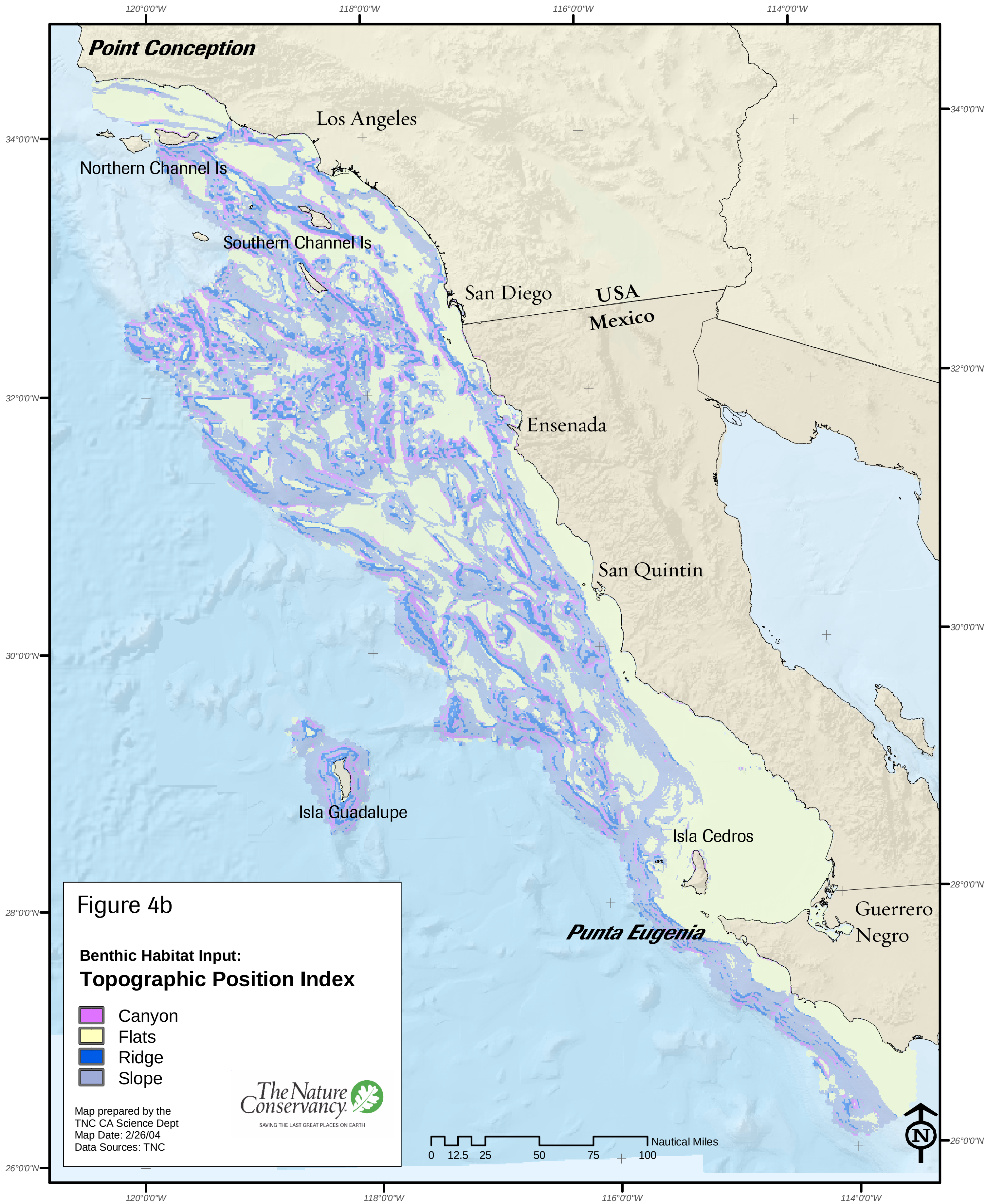


Figure 4b

Benthic Habitat Input:

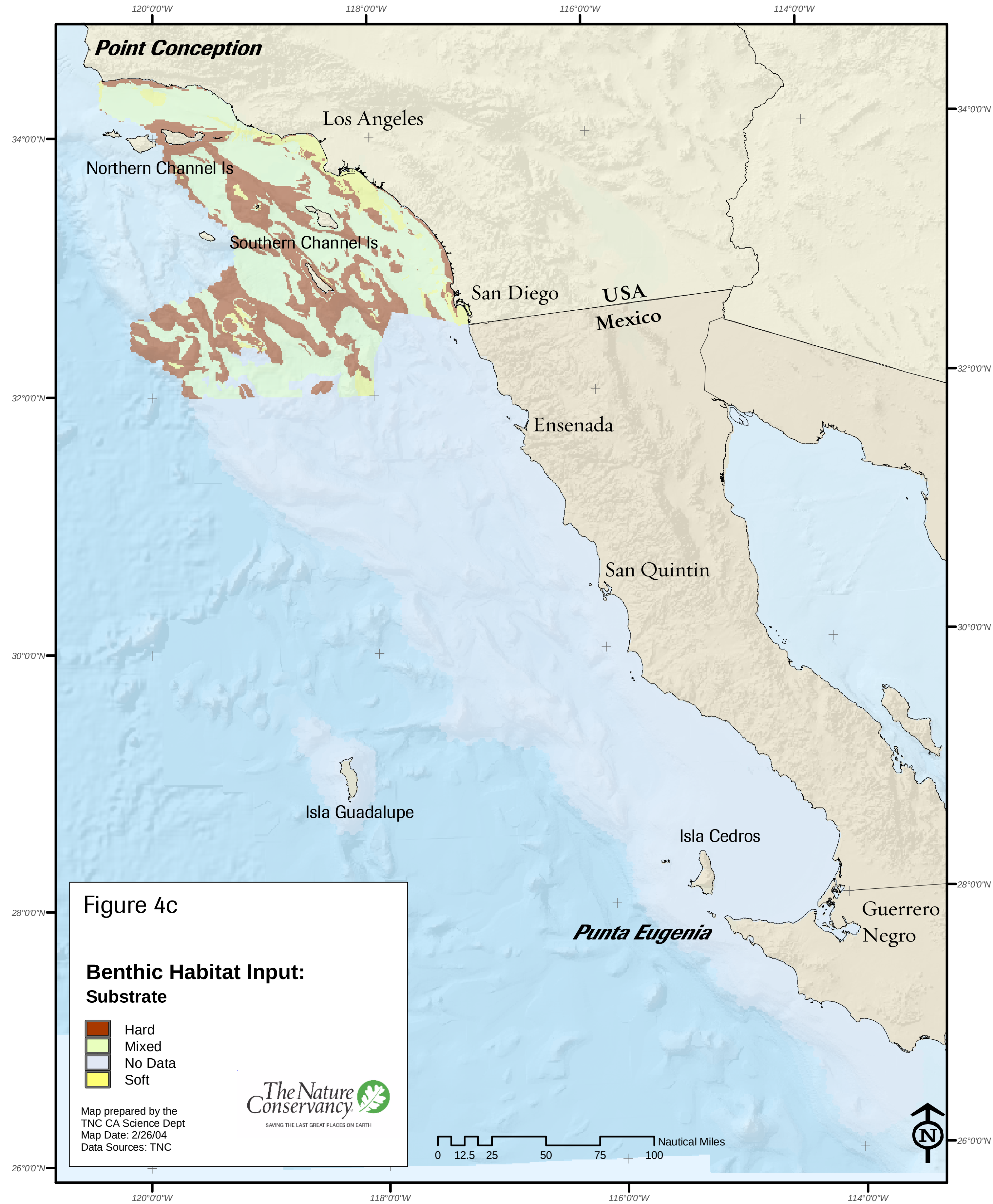
Topographic Position Index

- Canyon
- Flats
- Ridge
- Slope

Map prepared by the
TNC CA Science Dept
Map Date: 2/26/04
Data Sources: TNC

The Nature Conservancy
SAVING THE LAST GREAT PLACES ON EARTH

Southern California Marine Ecoregion



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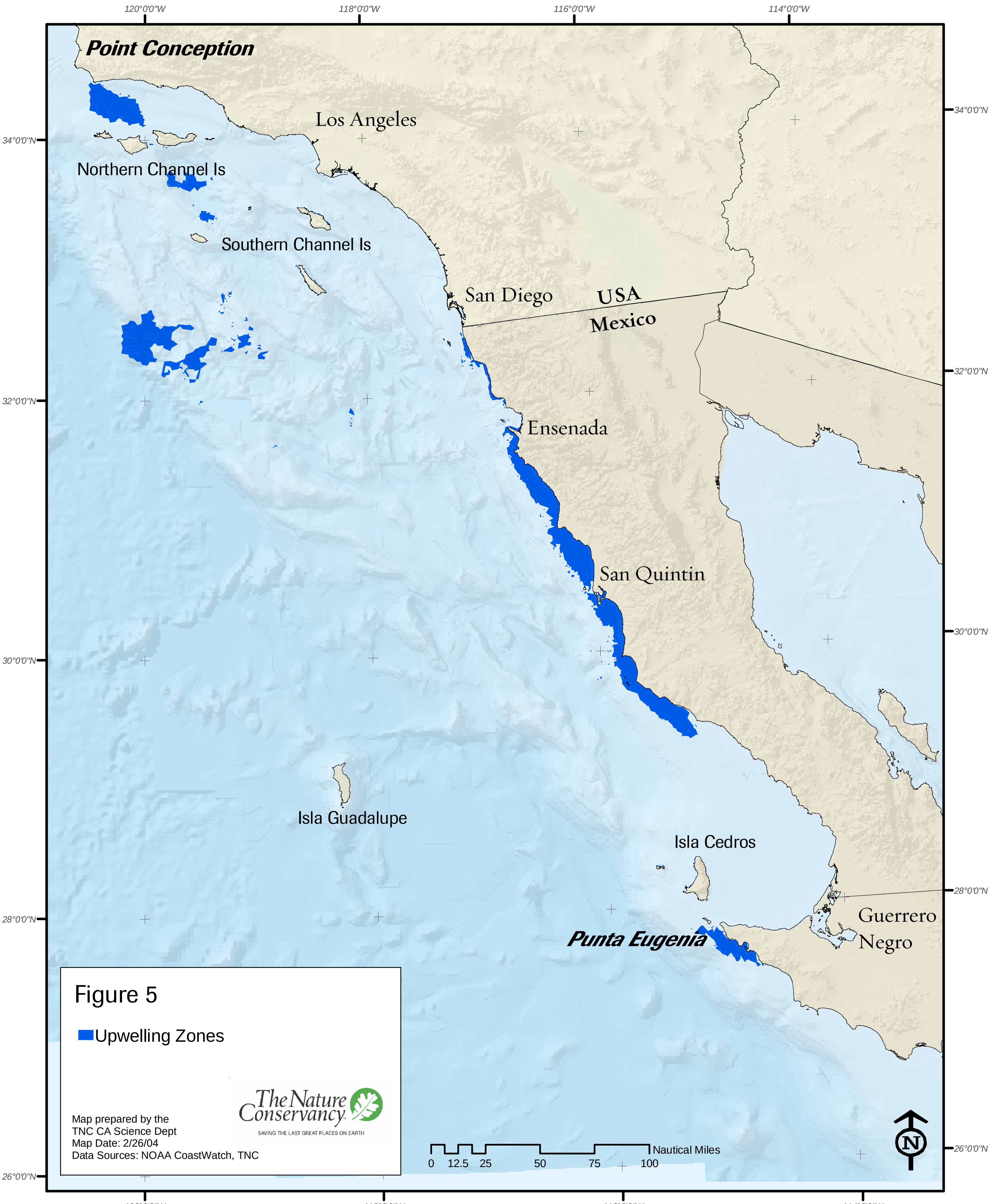

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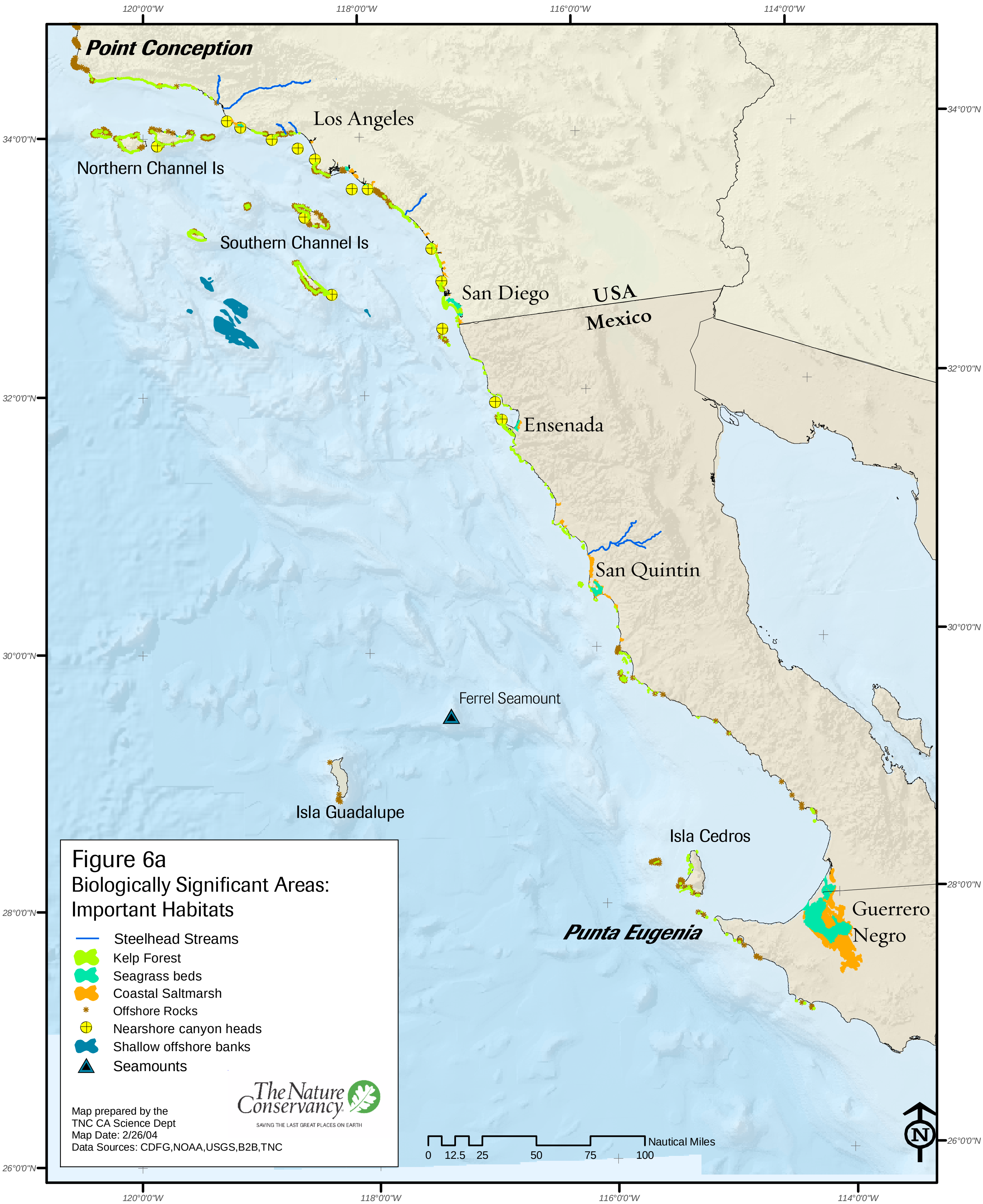

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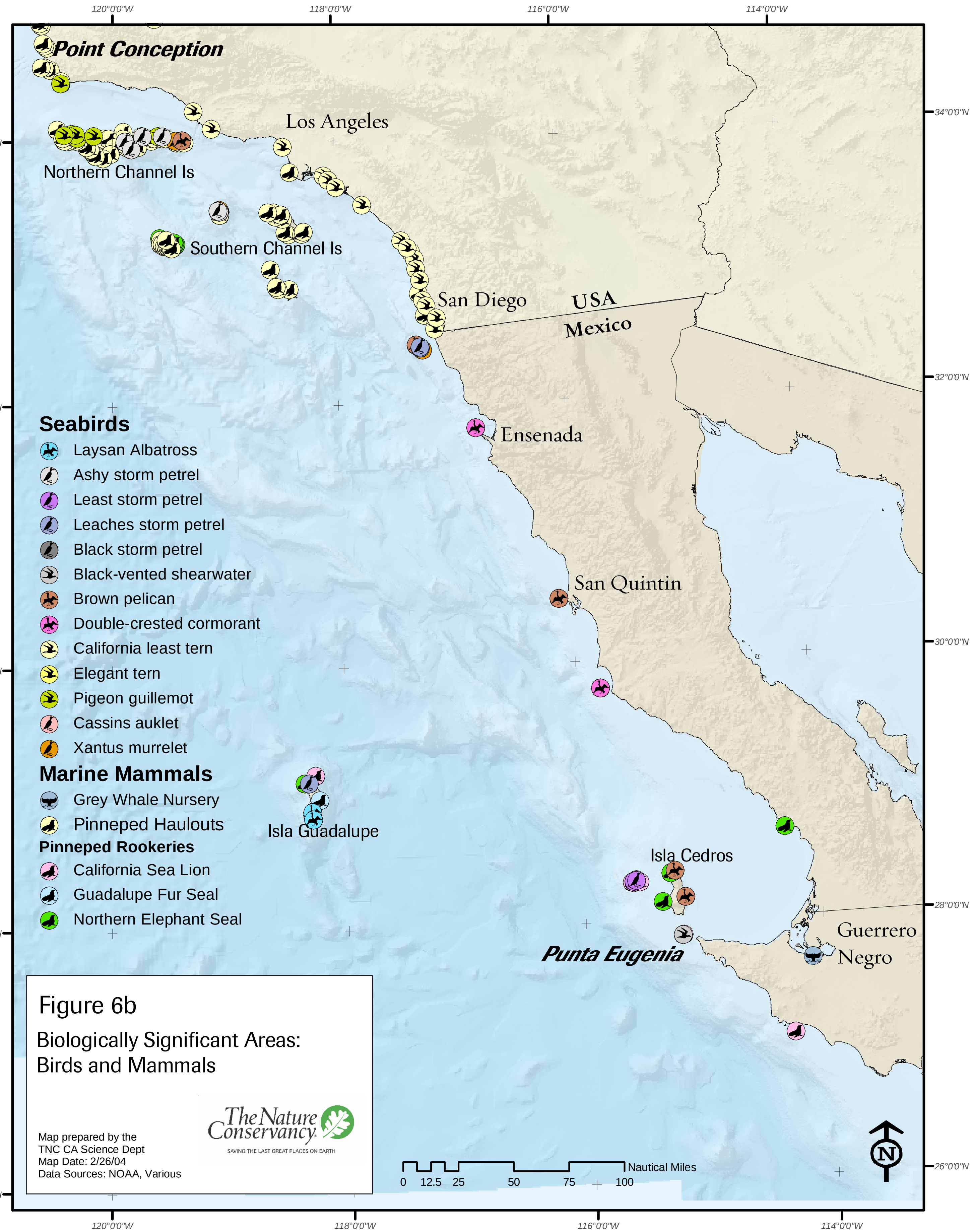

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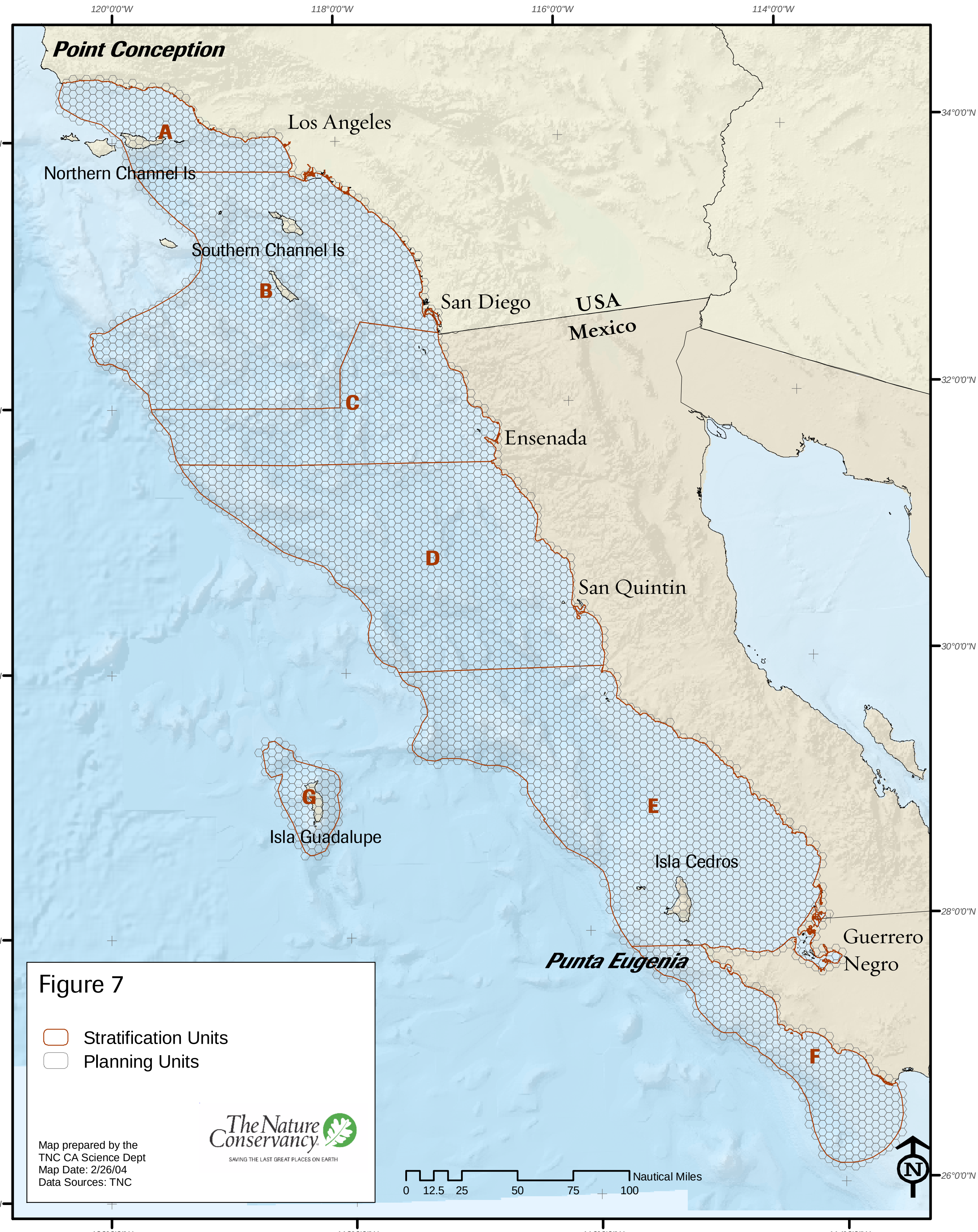

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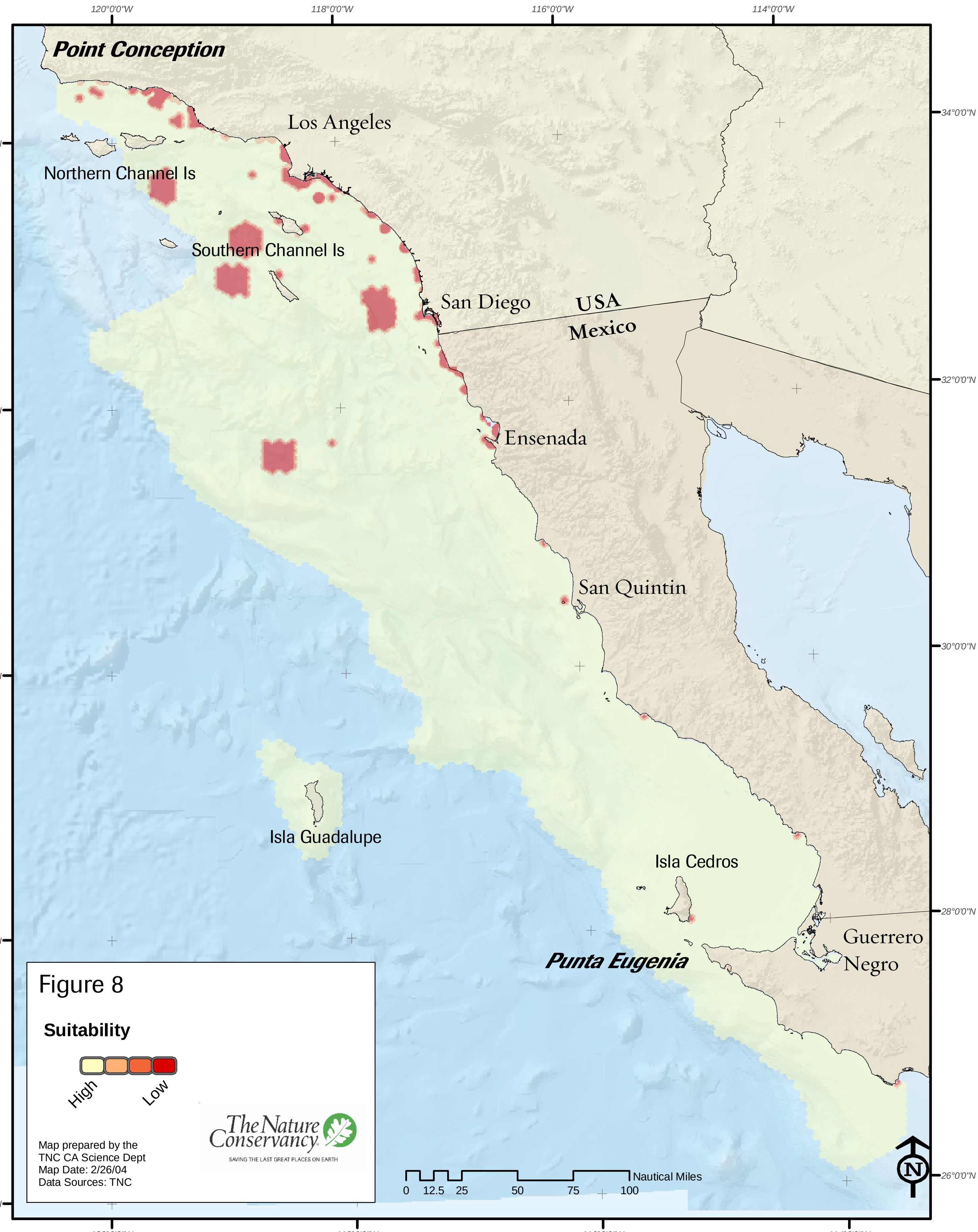

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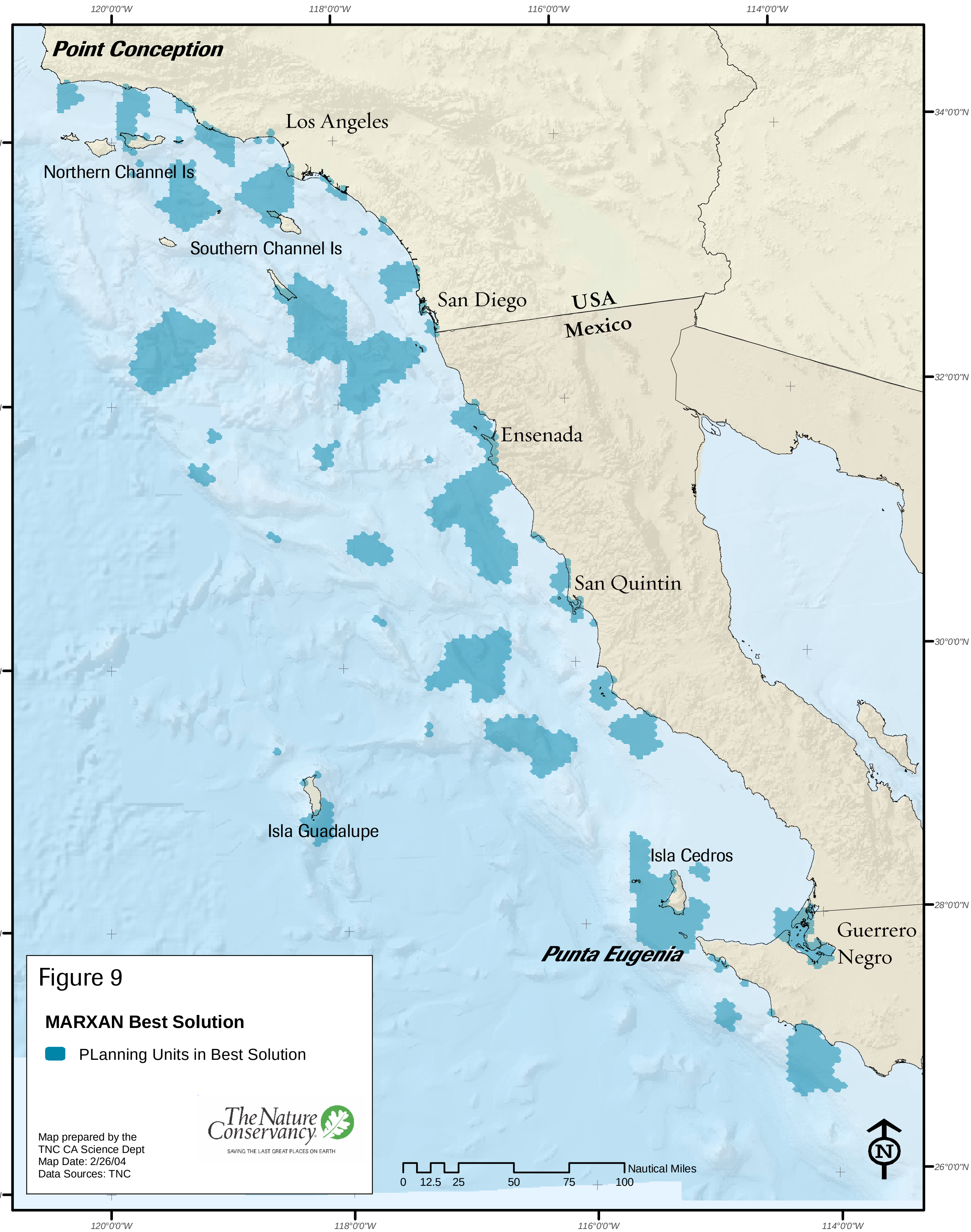

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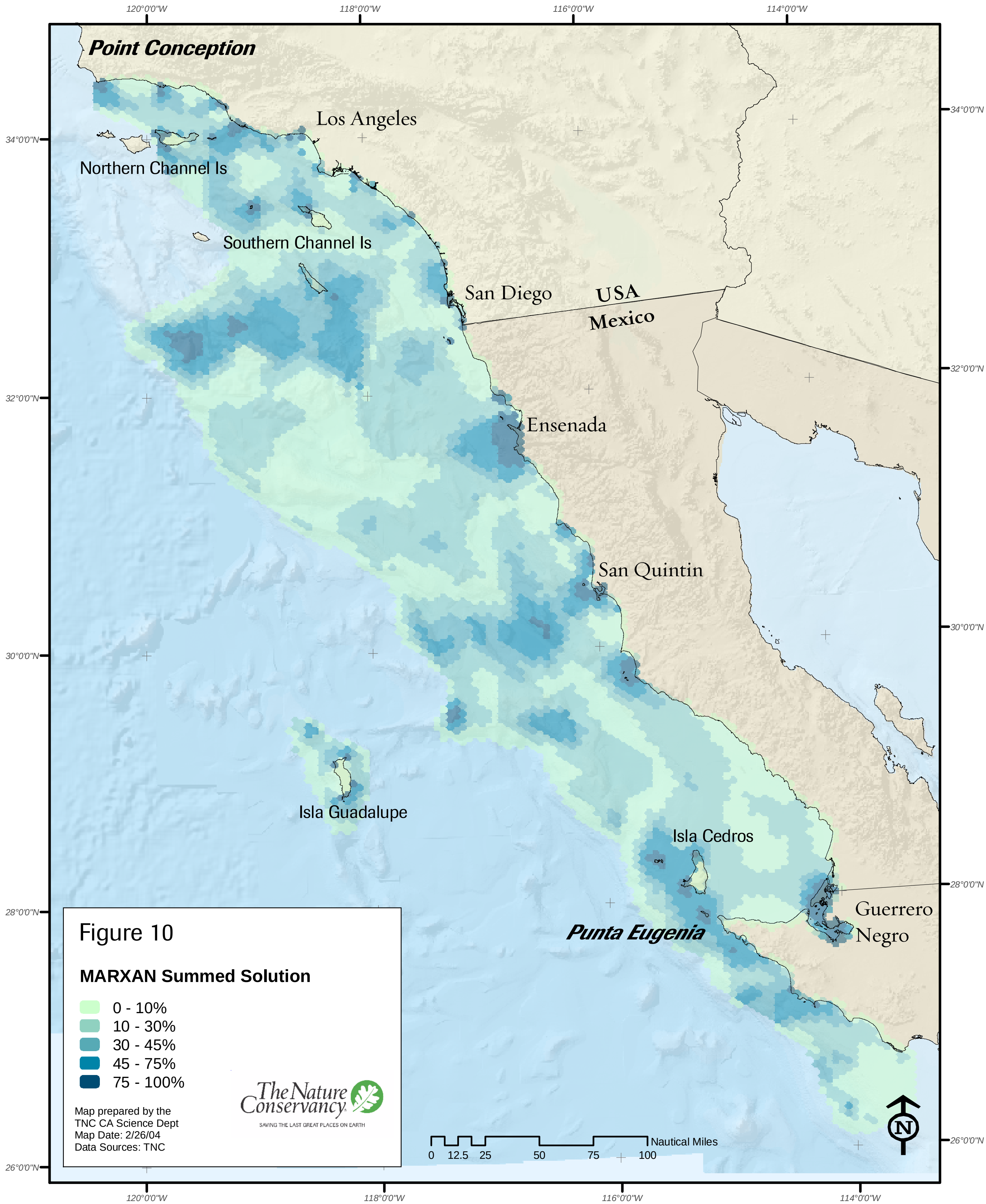

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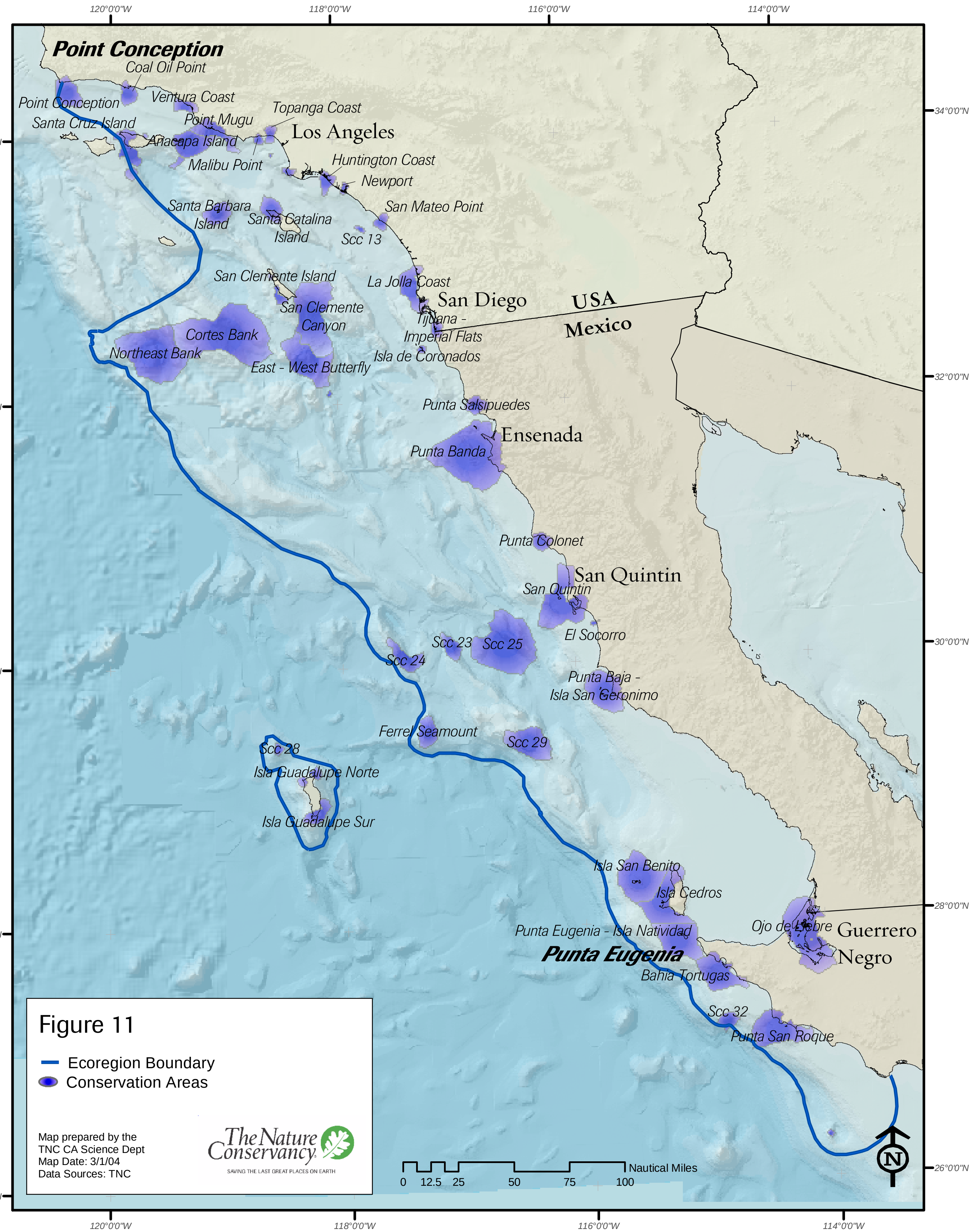

LIST OF APPENDICES

Appendix I: Marine Planning Peer Review Workshop Participants

A peer review workshop of the draft plan was held at the National Center for Ecological Analysis and Synthesis (NCEAS), University of California, Santa Barbara on June 10, 2003. The following individuals participated in the workshop:

Workshop participants:

Name (last, first)	Specialty	Affiliation	Contact
Airame, Satie	Marine planning	CINMS	Channel Islands National Marine Sanctuary 113 Harbor Way, Suite 150 Santa Barbara, CA 93109-2315 (805) 884-1468 satie.airame@noaa.gov
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APPENDIX II: CONSERVATION TARGETS AND GOALS FOR THE SOUTHERN CALIFORNIA MARINE ECOREGION

Target Type	Conservation Target	Data Source	Conservation Goal (Percent)	Units
Shoreline Types	Wave cut rocky platform	ESI	35	kilometers
	Exposed rocky shore / cliff	ESI	25	kilometers
	Sheltered rocky shore / cliff	ESI	35	kilometers
	Sand beach	ESI	20	kilometers
	Gravel beach	ESI	25	kilometers
	Tidal flats	ESI	35	kilometers
	Unidentified Shoreline	ESI	20	kilometers
Ecological Process	Upwelling	NOAA Coastwatch	35	Presence/ absence
Ecosystems	Kelp	CDFG (1989, 1999, 2002 coverages), Landsat (2000, 2001), other Baja sources	50	hectares
	Coastal salt marsh / Marsh	CDF, CDFG / ESI	75	hectares / kilometers
	Eelgrass	ESI / Ward; Ibarra	50	Presence / Absence
Biologically Significant Areas	Seamount	Baja to Bering CD	100	Presence / Absence
	Off-shore rocks	BLM	35	Counts
	Shallow off-shore bank	DEM from CDFG	50	Hectares
	Near-shore canyon head	DEM from CDFG	50	Presence / Absence
	Steelhead outlet	NOAA/CDFG	100	Presence / Absence
	Pinniped rookery_Guadalupe fur seal	NOAA	50	Presence / Absence
	Pinniped rookery_Northern elephant seal	NOAA	50	Presence / Absence
	Pinniped rookery_CA sea lion	NOAA	50	Presence / Absence
	Pinneped haulout (harbor seals and various species)	NOAA	25	Presence / Absence
	Gray whale nursery	NOAA	100	Presence / Absence
	Bird colony: Ashy storm petrel	Sowls et al 1980; Carter et al 1992	50	Individuals
	Bird colony: Black storm petrel	Sowls et al 1980; Carter et al 1992	50	Individuals
	Bird colony: Brown pelican	Sowls et al 1980; Carter et al 1992	50	Individuals
	Bird colony: Least tern	Sowls et al 1980; Carter et al 1992	50	Individuals
	Bird colony: Double-crested cormorant	Sowls et al 1980; Carter et al 1992	50	Individuals
	Bird colony: Elegant tern	Sowls et al 1980; Carter et al 1992	50	Individuals
	Bird colony: Cassin's auklet	Sowls et al 1980; Carter et al 1992	50	Individuals

	Bird colony: Xantu's murrelet	Sowls et al 1980; Carter et al 1992	50	Individuals
	Bird colony: Laysan albatross	Wolf 2002	50	Individuals
	Bird colony: Leaches storm-petrel	Sowls et al 1980; Carter et al. 1992; Wolf 2002	50	Individuals
	Bird colony: Least storm-petrel	Wolf 2002	50	Individuals
	Bird colony: Pigeon guillemot	Sowls et al 1980; Carter et al 1992	50	Individuals
	Bird colony: Black-vented shearwater	Wolf 2002	50	Individuals
Benthic Habitat Types	INNER SHELF (0-40m) CANYON_UNCLASSIFED	Benthic Habitat Model	30	Hectares
	INNER SHELF (0-40m) CANYON_HARD	Benthic Habitat Model	30	Hectares
	INNER SHELF (0-40m) CANYON_MIXED	Benthic Habitat Model	30	Hectares
	INNER SHELF (0-40m) CANYON_SOFT	Benthic Habitat Model	30	Hectares
	INNER SHELF (0-40m) SLOPE_UNCLASSIFIED	Benthic Habitat Model	30	Hectares
	INNER SHELF (0-40m) SLOPE_HARD	Benthic Habitat Model	30	Hectares
	INNER SHELF (0-40m) SLOPE_MIXED	Benthic Habitat Model	30	Hectares
	INNER SHELF (0-40m) SLOPE_SOFT	Benthic Habitat Model	30	Hectares
	INNER SHELF (0-40m) FLATS_UNCLASSIFIED	Benthic Habitat Model	30	Hectares
	INNER SHELF (0-40m) FLATS_HARD	Benthic Habitat Model	30	Hectares
	INNER SHELF (0-40m) FLATS_MIXED	Benthic Habitat Model	30	Hectares
	INNER SHELF (0-40m) FLATS_SOFT	Benthic Habitat Model	30	Hectares
	INNER SHELF (0-40m) RIDGE_UNCLASSIFIED	Benthic Habitat Model	30	Hectares
Benthic Habitat Types (cont.)	INNER SHELF (0-40m) RIDGE_HARD	Benthic Habitat Model	30	Hectares
	INNER SHELF (0-40m) RIDGE_MIXED	Benthic Habitat Model	30	Hectares
	INNER SHELF (0-40m) RIDGE_SOFT	Benthic Habitat Model	30	Hectares
	MID-SHELF (40-200m) CANYON_UNCLASSIFIED	Benthic Habitat Model	30	Hectares
	MID-SHELF (40-200m) CANYON_HARD	Benthic Habitat Model	30	Hectares
	MID-SHELF (40-200m) CANYON_MIXED	Benthic Habitat Model	30	Hectares
	MID-SHELF (40-200m) CANYON_SOFT	Benthic Habitat Model	30	Hectares
	MID-SHELF (40-200m) SLOPE_UNCLASSIFIED	Benthic Habitat Model	30	Hectares
	MID-SHELF (40-200m) SLOPE_HARD	Benthic Habitat Model	30	Hectares
	MID-SHELF (40-200m) SLOPE_MIXED	Benthic Habitat Model	30	Hectares

	MID-SHELF (40-200m) SLOPE_SOFT	Benthic Habitat Model	30	Hectares
	MID-SHELF (40-200m) FLATS_UNCLASSIFIED	Benthic Habitat Model	20	Hectares
	MID-SHELF (40-200m) FLATS_HARD	Benthic Habitat Model	30	Hectares
	MID-SHELF (40-200m) FLATS_MIXED	Benthic Habitat Model	30	Hectares
	MID-SHELF (40-200m) FLATS_SOFT	Benthic Habitat Model	30	Hectares
	MID-SHELF (40-200m) RIDGE_UNCLASSIFIED	Benthic Habitat Model	30	Hectares
	MID-SHELF (40-200m) RIDGE_HARD	Benthic Habitat Model	30	Hectares
	MID-SHELF (40-200m) RIDGE_MIXED	Benthic Habitat Model	30	Hectares
	MID-SHELF (40-200m) RIDGE_SOFT	Benthic Habitat Model	30	Hectares
	MESOBENTHAL (200-700m) CANYON_UNCLASSIFIED	Benthic Habitat Model	30	Hectares
	MESOBENTHAL (200-700m) CANYON_HARD	Benthic Habitat Model	30	Hectares
	MESOBENTHAL (200-700m) CANYON_MIXED	Benthic Habitat Model	30	Hectares
	MESOBENTHAL (200-700m) CANYON_SOFT	Benthic Habitat Model	30	Hectares
	MESOBENTHAL (200-700m) SLOPE_UNCLASSIFIED	Benthic Habitat Model	30	Hectares
	MESOBENTHAL (200-700m) SLOPE_HARD	Benthic Habitat Model	30	Hectares
	MESOBENTHAL (200-700m) SLOPE_MIXED	Benthic Habitat Model	30	Hectares
	MESOBENTHAL (200-700m) SLOPE_SOFT	Benthic Habitat Model	30	Hectares
	MESOBENTHAL (200-700m) FLATS_UNCLASSIFIED	Benthic Habitat Model	30	Hectares
	MESOBENTHAL (200-700m) FLATS_HARD	Benthic Habitat Model	30	Hectares
	MESOBENTHAL (200-700m) FLATS_MIXED	Benthic Habitat Model	30	Hectares
	MESOBENTHAL (200-700m) FLATS_SOFT	Benthic Habitat Model	30	Hectares
	MESOBENTHAL (200-700m) RIDGE_UNCLASSIFIED	Benthic Habitat Model	30	Hectares
	MESOBENTHAL (200-700m) RIDGE_HARD	Benthic Habitat Model	30	Hectares
	MESOBENTHAL (200-700m) RIDGE_MIXED	Benthic Habitat Model	30	Hectares
	MESOBENTHAL (200-700m) RIDGE_SOFT	Benthic Habitat Model	30	Hectares
	BATHYBENTHAL (700-5000m) CANYON_UNCLASSIFIED	Benthic Habitat Model	20	Hectares
	BATHYBENTHAL (700-5000m) CANYON_HARD	Benthic Habitat Model	30	Hectares
	BATHYBENTHAL (700-5000m) CANYON_MIXED	Benthic Habitat Model	30	Hectares

	BATHYBENTHAL (700-5000m) CANYON_SOFT	Benthic Habitat Model	30	Hectares
	BATHYBENTHAL (700-5000m) SLOPE_UNCLASSIFIED	Benthic Habitat Model	15	Hectares
	BATHYBENTHAL (700-5000m) SLOPE_HARD	Benthic Habitat Model	30	Hectares
	BATHYBENTHAL (700-5000m) SLOPE_MIXED	Benthic Habitat Model	30	Hectares
	BATHYBENTHAL (700-5000m) SLOPE_SOFT	Benthic Habitat Model	30	Hectares
	BATHYBENTHAL (700-5000m) FLATS_UNCLASSIFIED	Benthic Habitat Model	20	Hectares
	BATHYBENTHAL (700-5000m) FLATS_HARD	Benthic Habitat Model	30	Hectares
	BATHYBENTHAL (700-5000m) FLATS_MIXED	Benthic Habitat Model	20	Hectares
	BATHYBENTHAL (700-5000m) FLATS_SOFT	Benthic Habitat Model	25	Hectares
	BATHYBENTHAL (700-5000m) RIDGE_UNCLASSIFIED	Benthic Habitat Model	20	Hectares
	BATHYBENTHAL (700-5000m) RIDGE_HARD	Benthic Habitat Model	30	Hectares
	BATHYBENTHAL (700-5000m) RIDGE_MIXED	Benthic Habitat Model	30	Hectares
	BATHYBENTHAL (700-5000m) RIDGE_SOFT	Benthic Habitat Model	30	Hectares

APPENDIX III
Crosswalk of ESI and Baja Navigational Chart Symbology with Shoreline Types

Shore code	Source	ESI - NIMA Description	TNC Classification	Suitability Factor?
10/7	ESI 2002	Salt Marshes/Exposed Tidal Flats	Marsh	
10/9	ESI 2002	Salt Marshes/Sheltered Tidal Flats	Marsh	
10	ESI 2002	Salt Marshes	Marsh	
1A/3	ESI 2002	Exposed Rocky Cliffs/Fine- to Medium-Grained Sand Beaches	Exposed rocky shore or cliff	
1A	ESI 2002	Exposed Rocky Cliffs	Exposed rocky shore or cliff	
1B/2	ESI 2002	Exposed Seawall/Wave Cut Rocky Platform	Wave cut rock platform	Yes
1B/3/2	ESI 2002	Exposed Seawall/Fine- to Medium-Grained Sand Beaches/Wave Cut Rocky Platforms	Wave cut rock platform	Yes
1B/3	ESI 2002	Exposed Seawall/Fine- to Medium-Grained Sand Beaches	Sand beach	Yes
1B/4	ESI 2002	Exposed Seawall/Coarse-Grained Sand to Granule Beaches	Sand beach	Yes
1B/5	ESI 2002	Exposed Seawall/Mixed Sand and Gravel Beaches	Gravel beaches	Yes
1B/6A/3	ESI 2002	Exposed Seawall/Exposed Tidal Flats/Fine- to Medium-Grained Sand Beaches	Tidal flat	Yes
1B/6A	ESI 2002	Exposed Seawall/Exposed Tidal Flats	Tidal flat	Yes
1B	ESI 2002	Exposed Seawall	Seawall	Yes
2/3	ESI 2002	Wave Cut Rocky Platforms/Fine- to Medium-Grained Sand Beaches	Wave cut rock platform	
2	ESI 2002	Wave Cut Rocky Platforms	Wave cut rock platform	
3/2	ESI 2002	Fine- to Medium-Grained Sand Beaches/Wave Cut Rocky Platforms	Wave cut rock platform	
3	ESI 2002	Fine- to Medium-Grained Sand Beaches	Sand beach	
4/1A	ESI 2002	Coarse-Grained Sand to Granule Beaches/Exposed Rocky Cliffs	Exposed rocky shore or cliff	
4/2	ESI 2002	Coarse-Grained Sand to Granule Beaches/Wave Cut Rocky Platforms	Wave cut rock platform	
4	ESI 2002	Coarse-Grained Sand to Granule Beaches	Sand beach	
5/2	ESI 2002	Mixed Sand and Gravel Beaches/Wave Cut Rocky Platforms	Wave cut rock platform	
5/3/2	ESI 2002	Mixed Sand and Gravel	Wave cut rock	

		Beaches/Fine- to Medium-Grained Sand Beaches/Wave Cut Rocky Platform	platform	
5/3	ESI 2002	Mixed Sand and Gravel Beaches/Fine- to Medium-Grained Sand Beaches	Sand beach	
5	ESI 2002	Mixed Sand and Gravel Beaches	Gravel beach	
6A/2	ESI 2002	Gravel Beaches/Wave Cut Rocky Platforms	Wave cut rock platform	
6A/3/2	ESI 2002	Gravel Beaches/Fine- to Medium-Grained Sand Beaches/Wave Cut Rocky Platform	Wave cut rock platform	
6A/3	ESI 2002	Gravel Beaches/Fine- to Medium-Grained Sand Beaches	Gravel beach	
6A/4	ESI 2002	Gravel Beaches/Coarse-Grained Sand to Granule Beaches	Gravel beach	
6A/5	ESI 2002	Gravel Beaches/Mixed Sand and Gravel Beaches	Gravel beach	
6A/9	ESI 2002	Gravel Beaches/Sheltered Tidal Flats	Tidal flat	
6A	ESI 2002	Gravel Beaches	Gravel beach	
6B/2	ESI 2002	Riprap/Wave Cut Rocky Platforms	Wave cut rock platform	Yes
6B/3/2	ESI 2002	Riprap/Fine- to Medium-Grained Sand Beaches/Wave Cut Rocky Platforms	Wave cut rock platform	Yes
6B/3	ESI 2002	Riprap/Fine- to Medium-Grained Sand Beaches	Sand beach	Yes
6B/4	ESI 2002	Riprap/Coarse-Grained Sand to Granule Beaches	Sand beach	Yes
6B/5	ESI 2002	Riprap/Mixed Sand and Gravel Beaches	Gravel beach	Yes
6B/6A/3	ESI 2002	Riprap/Exposed Tidal Flats/Fine- to Medium-Grained Sand Beaches	Tidal flat	Yes
6B/6A	ESI 2002	Riprap/Exposed Tidal Flats	Tidal flat	Yes
6B	ESI 2002	Riprap	Riprap	Yes
7	ESI 2002	Exposed Tidal Flats	Tidal flat	
8A	ESI 2002	Sheltered Rocky Shores	Sheltered rocky shore or cliff	
8B	ESI 2002	Sheltered Man-Made Structures	Seawall	Yes
9/10	ESI 2002	Sheltered Tidal Flats/Salt Marshes	Marsh	
9	ESI 2002	Sheltered Tidal Flats	Tidal flat	
C3-6	NOAA Chart 1	Steep rocky coast sandy	Exposed rocky shore or cliff	
C3-7	NOAA Chart 1	Steep rocky coast stony	Exposed rocky shore or cliff	
C33	NOAA Chart 1	Marsh	Marsh	
C3	NOAA Chart 1	Steep rocky coast	Exposed rocky shore or cliff	
C5	NOAA	Flat Coast	Unidentified	

	Chart 1			
C6-33	NOAA Chart 1	Sandy Shore & small marsh	Marsh	
C6	NOAA Chart 1	Sandy Shore	Sand beach	
C7	NOAA Chart 1	Stony Shore	Gravel beach	
C8	NOAA Chart 1	Sandhills/dunes	Sand beach	
F4.2	NOAA Chart 1	Riprap	Riprap	Yes
J20	NOAA Chart 1	Gravel Seabed	Gravel beach	
J21	NOAA Chart 1	Intertidal Rocky Seabed	Sheltered rocky shore or cliff	
U	NOAA Chart 1	Unclassified	Unidentified	

APPENDIX IV
Methods for Developing a Benthic Habitat Model for the Southern California Marine Ecoregion

In an effort to create a wall to wall surrogate for bottom type habitats we used bathymetric and substrate data to develop a benthic habitat model. This approach to modeling coarse scale habitats provides promise in areas of the world where comprehensive thematic mapping of the seafloor has not occurred. The primary input is bathymetry which is available (albeit sometimes at coarse scale) for most of the coastal areas of the world. Use of the benthic habitat model assumes that benthic habitat types can serve as a surrogate or coarse filter for the conservation of the majority of bottom-dwelling species in an ecoregion. In addition, the use of numerous benthic types as targets in the planning approach also assumes that there is a correlation between biodiversity and benthic habitat complexity. The benthic habitat model has not been validated nor have these assumptions been tested. The use of benthic habitats as conservation targets in the MARXAN model tends to focus our conservation areas around geographies with a high degree or variability amongst these benthic habitat types.

Methods

The benthic habitat model for the SCME was created using two inputs: bathymetry and substrate type. From the bathymetric data two inputs are derived – topographic position index and depth ranges. Substrate types were mapped using existing data (Greene et al 1999). The derivation of the inputs and the development of the model are described below.

1. Bathymetry and derived inputs:

Bathymetry for the California marine environment was compiled by the California Department of Fish and Game. The dataset incorporates all the bathymetric mapping efforts in California, at a variety of scales. The version used in our analysis is dated August 7, 2000 and is ArcInfo GRID format. This grid file was made from 75 original tiled digital elevation models (DEM) that were put into one grid mosaic and resampled at a 200 meters scale of resolution. These DEM mosaics were produced by Teale Data Center from a contract with the Department of Fish and Game, funded by the Resources Agency.

Approximately two-thirds of the SCME extends into Baja California. The southernmost point of the ecoregion was defined as Punta Abreojos. Bathymetric data for Mexico was provided by Alejandro Hinohosa's GIS lab at CICESE, Ensenada, Baja California Mexico. These data may have originated from the Mexican Navy, but metadata and details are scarce. The original data provided by Mr. Hinohosa's lab was in raw binary format with a cellsize of 500m. These data were first converted to ArcInfo GRID format using ArcView 3.2 import binary raster function and then resampled to 200m and reprojected to California Albers.

Bathymetry was postclassified into two major inputs to the benthic habitat model – Topographic Position Index and Depth Ranges

1.1 Topographic Position Index.
The Topographic Position Index (TPI) compares the elevation of a given cell in a DEM to the mean elevation of a specified neighborhood around that cell. The units are meters above or below this neighborhood average. Since the only input required is a digital elevation model, it can be readily generated for most geographies (Weiss 2001)

The general formula was:

TPI<scale> = DEM – mean (DEM neighborhood at that scale).

Where DEM is a digital elevation model, and <scale> is the outer radius/distance of the neighborhood in map units.

Implemented in ESRI Arc/Info GRID, the formula became

TPI<scale> = DEM – focalmean (DEM, neighborhood shape, neighborhood size in cells)

For example, using a 30m DEM and a continuous circular neighborhood:

TPI150 = DEM – focalmean (DEM, circle, 5)

In the case of the California Current bathymetric data, an annulus (donut) neigborhood was used due to the large spatial scale ~200m. The annulus has the effect of de-emphasizing immediately surrounding cells and is most appropriate for the level of our data. After experimentation with multiple sizes of annuli, we chose a radius of 2000m or 10 cells. This sufficiently captured landscape distinctions at a level of detail appropriate for ecoregional scale analysis and the level of input data. The final formula implemented in ArcInfo GRID was:

TPI2000 = DEM – focalmean(int((DEM, annulus, 8, 10) + 0.5))

This represents a donut 10 cells wide, with an outer diameter of 10 * 200m = ~2000m and an inner diameter of 8 * 200m = 1600m. Using the "integerizing" function takes advantage of more efficient storage; we added 0.5 since the GRID int() function truncates the value.

Positive TPI values represent locations that are higher than the average of their surroundings, while negative TPI values represent locations that are lower than their surroundings. TPI values near zero are either flat areas, where the slope is near zero; or areas of constant slope, where the slope of the point is significantly greater than zero. (Weiss 2001)

The output of TPI is then postclassified via standard deviations and slope to create 4 discrete categories that approximate landscapes features:

Grid Value	Description	Breakpoints
40	ridge	> mean + 1 STDEV
20	slope	>= -1.0 STDEV , =< 1 STDV, slope >= 5 deg
30	flats	>= -0.5 STDV, =< 0.5 STDV , slope <= 5 deg
10	canyons	< -1.0 STDV

Using standard deviation units as the class thresholds guarantees (assuming a normal distribution of topographic position values) that a fixed proportion of the landscape will be assigned to each class, thus providing a relative measure of slope position. Implemented in ArcInfo GRID:

```
 &sv g = TPI2000
 &describe %g%
  &sv hbrk = [round [calc %GRD$MEAN% + %GRD$STDV%]]
  &sv mhbrk = [round [calc %hbrk% / 2]]
  &sv lbrk = [round [calc %GRD$MEAN% - %GRD$STDV%]]
  &sv mlbrk = [round [calc %lbrk% / 2]]

/* calculate slope position in 4 categories
  IF (%g% > %hbrk%) sp4_%g%  = 40
    ELSE IF (%g% >= %lbrk% and %g% <= %hbrk% and slopei > 5) sp4_%g% = 20
    ELSE IF (%g% >= %lbrk% and %g% <= %hbrk% and slopei <= 5) sp4_%g% = 30
    ELSE IF  (%g%  < %lbrk%) sp4_%g% = 10
  ENDIF
```

For more details see: *Topographic Position Index (TPI) and Landforms Classification Working draft, Feb. 2001* Andrew Weiss, Indus Corp [or contact Andy Weiss at aweiss@tnc.org]

1.2 Depth Ranges
The output of the TPI model was then combined with specific depth ranges. Depth ranges were classified into four categories similar to Allen and Smith (1998). Those were refined with feedback from a panel of marine scientists convened for the review of a interim version of the ecoregional assessment held at the National Center for Ecological Analysis and Synthesis (NCEAS) in Santa Barbara California.

Depth ranges were as follows:

Grid Value	Class	Definition
200	Inner shelf	0-40m
300	Mid shelf	40-200m
400	Mesobenthal	200-700m
500	Bathybenthal	700-5000m

These depth ranges were implemented in ArcInfo GRID using the RECLASS function with the bathymetric DEM as input.

2. Substrate Types
Substrate or induration types we added to the benthic habitat model in an effort to add more bottom type specificity based on existing spatial data. Whereas the TPI and depth ranges are inferred from the bathymetric DEM and are available for the entire ecoregion, substrate types have been mapped thematically for roughly 11,054,305 of the 26,854,914 ha (41%) that make up both the Northern and Southern California Current marine ecoregions.

The California continental shelf geologic data set compiled and mapped by Gary Greene and others (Greene et al 1999) incorporates available information on seafloor substrate types for the region. The data series is comprised of seven adjacent but discrete maps with boundaries of seafloor types depicted as polygon themes. This effort resulted in a digital version of continental shelf geology based on maps originally produced by the Division of Mines and Geology, the U.S. Geological Survey, and the California Coastal Commission. The data covers the region from the Oregon border to Mexico and from the coastline to the edge of the continental shelf.

For the purposes of developing the benthic habitat model, only the BOTTOM field, which is a short description of bottom induration types, was used. The unique list of bottom types were crosswalked to integer values for incorporation into the benthic habitat model such that

Grid Value	Bottom
0	No Data
1	Hard
2	Mixed
3	Soft

Original data were ESRI format shapefiles which were first crosswalked to numeric values, then converted to a GRID with a 200m cellsize, consistent with the bathymetric DEM data.

3. Creating the Benthic Habitat Model
The benthic habitat model was developed using three inputs including TPI, depth classes, and substrate type which were each assigned integer values:

TPI
40 = RIDGE
20 = SLOPE
30 = FLATS

10 = CANYON

DEPTH
200 = INNER_SHELF_0-40m
300 = MID_SHELD_40-200m
400 = MESOBENTHA_200-700m
500 = BATHYBENTHAL_700-5000m

SUBSTRATE
0 = NO_DATA
1 = HARD
2 = MIXED
3 = SOFT

Creating the benthic habitat model was simply a matter of adding all the inputs together resulting in all possible combinations of inputs represented as a single integer. For example

241 = INNER_SHELF_0-40m_RIDGE_HARD

Implemented in ArcInfo GRID:

EMU = TPI + DEPTH + SUBSTRATE

The resultant grid tracks all unique combinations of inputs resulting in 64 (4x4x4) unique benthic habitat types for the California Current marine ecoregion. Attribute values were stored in a look up table that tracks individual as well as combined values for each input such that the final GRID can be displayed on individual input types or other unique combinations. A final check was conducted to determine whether all 64 modeled benthic habitat types were present in the ecoregion; a few types were not present and were removed as targets.

APPENDIX V
Status of Bird and Marine Mammal Species Included in Biologically Significant Areas

Biologically Significant Area	**Common Name**	**Scientific Name**	**Legal Status In U.S. [1] / California[2]**	**Legal Status in Mexico[3]**	**Global Rank**
Seabird Colony	Ashy storm petrel	*Oceanodroma homochroa*	FSC	THR	G2S2 (rookery sites)
	Black storm petrel	*Oceanodroma melania*		THR	G2S1 (rookery site)
	Leaches storm-petrel	*Oceanodroma leucorhoa chapmani*		THR	
		O.l. socorroensis		END	
		O.l. cheimomnestes		THR	
	Least storm petrel	*Oceanodroma microsoma*		THR	
	Elegant tern	*Sterna elegans*	FSC	Special protection	G2S1 (nesting colony)
	California least tern	*Sterna antillarum browni*	FE / SE, CDFG Fully Protected	END	G4T2T3S2 S3 (nesting colony)
	Double-crested cormorant	*Phalacrocorax auritus*			G5S3 (rookery site)
	Brown pelican	*Pelecanus occidentalis californicus*	FE / SE, CDFG Fully protected		G4T3S1S2 (nesting colony)
	Pigeon Guillemot	*Cepphus columba*			
	Xantu's murrelet	*Synthliboramphus hypoleucus*	SCT	END	G3G4S3 (nesting colony)
	Cassin's auklet	*Ptychoramphus aleuticus*		THR	
	Black-vented shearwater	*Puffinus opisthomelas*		END	
	Laysan albatross	*Diomedea immutablis*		THR	
Steelhead stream outlet	Steelhead (Southern CA ESU)	*Onchorhynchus mykiss*	FE	Special protection	
Gray whale nursery	Gray whale	*Eschrichtius robustus*	Delisted, MMPA	Special protection	
Guadalupe fur seal rookery	Guadalupe fur seal	*Arctocephalus townsendii*	FT, MMPA / ST, CDFG Fully protected	END	G1S1

Pinniped haulouts and rookeries	Northern elephant seal	*Mirounga angustirostris*	MMPA / CDFG fully protected	THR	
	Northern fur seal	*Callorhinus ursinus*	MMPA		
	Harbor seal	*Phoca vitulina*	MMPA	Special protection	
	California sea lion	*Zalophus californianus*	MMPA	Special protection	

Notes:

1. Legal status in U.S.: FT= Federal Threatened, FE = Federal Endangered, FC = Federal candidate, FSC= federal species of concern, MMPA = Marine Mammal Protection Act. Source: Natural Diversity Database (NDDB)
2. Legal status in California: ST = State Threatened, SE = State Endangered, SCT = State Candidate for Threatened status. Source: NDDB
3. Legal status in Mexico: END = Endangered; THR = Threatened. Source: Instituto Nacional de Ecologia (http://www.ine.gob.mx/ueajei/norma59k.html)
4. Global Rank based on NDDB.

APPENDIX VI
Conservation Goals Achieved in Portfolio

Target Name_Stratification Unit	Goal (%)	Goal Amount[1]	Total Amount in Strat-ification Unit	Amount Held[2]	Amount Held (%)	Percent of Goal Achieved[3]	Target Goal Met?[4]
Exposed_Rocky_shore_or_cliff_A	25	29	114	66	57.9	227.6	yes
Exposed_Rocky_shore_or_cliff_B	25	25	96	53	55.2	212.0	yes
Exposed_Rocky_shore_or_cliff_C	25	6	24	24	100.0	400.0	yes
Exposed_Rocky_shore_or_cliff_D	25	1	4	4	100.0	400.0	yes
Exposed_Rocky_shore_or_cliff_E	25	55	221	73	33.0	132.7	yes
Exposed_Rocky_shore_or_cliff_F	25	16	64	26	40.6	162.5	yes
Gravel_Beach_A	25	18	73	22	30.1	122.2	yes
Gravel_Beach_B	25	37	149	44	29.5	118.9	yes
Gravel_Beach_C	25	4	14	14	100.0	350.0	yes
Gravel_Beach_D	25	4	14	14	100.0	350.0	yes
Gravel_Beach_E	25	69	276	223	80.8	323.2	yes
Gravel_Beach_F	25	8	31	26	83.9	325.0	yes
Gravel_Beach_G	25	9	35	24	68.6	266.7	yes
Sand_beach_A	20	40	199	72	36.2	180.0	yes
Sand_beach_B	20	44	218	72	33.0	163.6	yes
Sand_beach_C	20	4	20	7	35.0	175.0	yes
Sand_beach_D	20	10	50	41	82.0	410.0	yes
Sand_beach_E	20	53	266	49	18.4	92.5	yes
Sand_beach_F	20	18	90	15	16.7	83.3	yes
Sheltered_Rocky_shore_or_cliff_A	35	1	1	1	100.0	100.0	yes
Sheltered_Rocky_shore_or_cliff_B	50	1	2	1	50.0	100.0	yes
Sheltered_Rocky_shore_or_cliff_D	35	8	23	17	73.9	212.5	yes
Sheltered_Rocky_shore_or_cliff_E	29	2	7	4	57.1	200.0	yes
Tidal_Flat_A	35	3	9	7	77.8	233.3	yes
Tidal_Flat_B	35	19	53	26	49.1	136.8	yes
Unidentified Shoreline_B	20	1	5	5	100.0	500.0	yes
Unidentified Shoreline_C	20	32	158	56	35.4	175.0	yes
Unidentified Shoreline_D	20	43	216	62	28.7	144.2	yes
Unidentified Shoreline_E	20	44	221	41	18.6	93.2	yes
Unidentified Shoreline_F	20	32	161	38	23.6	118.8	yes
Unidentified Shoreline_G	20	18	92	36	39.1	200.0	yes
Wave_cut_rock_platform_A	35	38	108	47	43.5	123.7	yes
Wave_cut_rock_platform_B	35	39	112	54	48.2	138.5	yes
Upwelling_A	35	9	27	10	37.0	111.1	yes
Upwelling_B	35	20	58	26	44.8	130.0	yes

APPENDIX VI
Conservation Goals Achieved in Portfolio

Target Name_Stratification Unit	Goal (%)	Goal Amount[1]	Total Amount in Strat-ification Unit	Amount Held [2]	Amount Held (%)	Percent of Goal Achieved [3]	Target Goal Met?[4]
Upwelling_C	35	2	5	4	80.0	200.0	yes
Upwelling_D	35	22	62	19	30.6	86.4	yes
Upwelling_E	35	13	38	12	31.6	92.3	yes
Upwelling_F	35	5	15	15	100.0	300.0	yes
Coastal_saltmarsh(area)_A	75	500	666	529	79.4	105.8	yes
Coastal_saltmarsh(area)_B	75	1273	1697	1260	74.2	99.0	yes
Coastal_saltmarsh(area)_C	75	569	758	689	90.9	121.1	yes
Coastal_saltmarsh(area)_D	75	2392	3189	2573	80.7	107.6	yes
Coastal_saltmarsh(area)_E	75	28574	38098	32022	84.1	112.1	yes
Marsh_ESI (linear)_A	75	18	24	21	87.5	116.7	yes
Marsh_ESI (linear)_B	75	62	82	59	72.0	95.2	yes
Marsh_ESI (linear)_C	75	18	24	20	83.3	111.1	yes
Marsh_ESI (linear)_D	75	22	29	29	100.0	131.8	yes
Marsh_ESI (linear)_E	75	320	426	340	79.8	106.3	yes
Eelgrass_A	50	3	6	4	66.7	133.3	yes
Eelgrass_B	50	5	10	5	50.0	100.0	yes
Eelgrass_C	50	2	3	2	66.7	100.0	yes
Eelgrass_D	50	2	4	4	100.0	200.0	yes
Eelgrass_E	50	21	41	31	75.6	147.6	yes
Kelp_CDFG_2002_A	50	449	897	427	47.6	95.1	yes
Kelp_CDFG_2002_B	50	707	1414	936	66.2	132.4	yes
Kelp_CDFG_1989_A	50	518	1035	527	50.9	101.7	yes
Kelp_CDFG_1989_B	50	1061	2122	1466	69.1	138.2	yes
Kelp_CDFG_1999_A	50	67	134	89	66.4	132.8	yes
Kelp_CDFG_1999_B	50	234	468	354	75.6	151.3	yes
Kelp_Persistent_CDFG_89-99-02_A	50	443	886	511	57.7	115.3	yes
Kelp_Persistent_CDFG_89-99-02_B	50	590	1179	1022	86.7	173.2	yes
Kelp_Baja_TNC_2002_B	50	2	4	4	100.0	200.0	yes
Kelp_Baja_TNC_2002_C	50	9	17	10	58.8	111.1	yes
Kelp_Baja_TNC_2002_D	50	13	25	14	56.0	107.7	yes
Kelp_Baja_TNC_2002_E	50	20	40	25	62.5	125.0	yes
Kelp_Baja_TNC_2002_F	50	4	8	7	87.5	175.0	yes
Kelp_Baja_TNC_2003_C	50	10	19	10	52.6	100.0	yes
Kelp_Baja_TNC_2003_D	50	11	21	13	61.9	118.2	yes
Kelp_Baja_TNC_2003_E	50	11	22	14	63.6	127.3	yes
Bird_colony_Ashy Storm Petrel_A	50	39	78	38	48.7	97.4	yes
Bird_colony_Ashy Storm Petrel_B	50	148	295	295	100.0	199.3	yes

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Target Name_Stratification Unit	Goal (%)	Goal Amount[1]	Total Amount in Strat-ification Unit	Amount Held [2]	Amount Held (%)	Percent of Goal Achieved [3]	Target Goal Met?[4]
Bird_colony_Ashy Storm Petrel_C	50	15	30	30	100.0	200.0	yes
Bird_colony_Black Storm Petrel_B	50	75	150	150	100.0	200.0	yes
Bird_colony_Black Storm Petrel_C	50	251	501	501	100.0	199.6	yes
Bird_colony_Black Storm Petrel_E	50	290000	580000	580000	100.0	200.0	yes
Bird_colony_Brown Pelican_A	50	1258	2516	2516	100.0	200.0	yes
Bird_colony_Brown Pelican_B	50	87	174	174	100.0	200.0	yes
Bird_colony_Brown Pelican_C	50	1791	3582	1791	50.0	100.0	yes
Bird_colony_Brown Pelican_D	50	90	180	180	100.0	200.0	yes
Bird_colony_Brown Pelican_E	50	1857	3714	3264	87.9	175.8	yes
Bird_colony_Black-vented Shearwater_E	35	54019	154340	154340	100.0	285.7	yes
Bird_colony_Black-vented Shearwater_G	50	2500	5000	3750	75.0	150.0	yes
Bird_colony_Cassin's Auklet_A	50	135	270	170	63.0	125.9	yes
Bird_colony_Cassin's Auklet_B	50	110	220	220	100.0	200.0	yes
Bird_colony_Cassin's Auklet_D	50	2500	5000	5000	100.0	200.0	yes
Bird_colony_Cassin's Auklet_E	50	42667	85334	85334	100.0	200.0	yes
Bird_colony_Cassin's Auklet_G	50	200	400	400	100.0	200.0	yes
Bird_colony_Double-crested Cormorant_A	50	66	132	132	100.0	200.0	yes
Bird_colony_Double-crested Cormorant_B	50	67	134	134	100.0	200.0	yes
Bird_colony_Double-crested Cormorant_C	50	115	230	230	100.0	200.0	yes
Bird_colony_Double-crested Cormorant_D	50	600	1200	1200	100.0	200.0	yes
Bird_colony_Double-crested Cormorant_E	50	191	381	331	86.9	173.3	yes
Bird_colony_Elegant Tern_B	50	1450	2900	2900	100.0	200.0	yes
Bird_colony_Laysan Albatross_G	50	193	386	386	100.0	200.0	yes

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Target Name_Stratification Unit	Goal (%)	Goal Amount[1]	Total Amount in Strat-ification Unit	Amount Held [2]	Amount Held (%)	Percent of Goal Achieved [3]	Target Goal Met?[4]
Bird_colony_Leaches Storm Petrel_C	50	100	200	200	100.0	200.0	yes
Bird_colony_Leaches Storm Petrel_E	50	600000	1200000	1200000	100.0	200.0	yes
Bird_colony_Leaches Storm Petrel_G	50	3500	7000	5250	75.0	150.0	yes
Bird_colony_Least Storm Petrel_E	50	135000	270000	270000	100.0	200.0	yes
Bird_colony_Least Tern_A	50	188	376	61	16.2	32.4	no
Bird_colony_Least Tern_B	50	815	1629	816	50.1	100.1	yes
Bird_colony_Pigeon Guillemot_A	50	25	49	40	81.6	160.0	yes
Bird_colony_Pigeon Guillemot_B	50	60	120	120	100.0	200.0	yes
Bird_colony_Xantu's Murrelet_A	50	2	3	3	100.0	150.0	yes
Bird_colony_Xantu's Murrelet_B	50	1590	3180	3180	100.0	200.0	yes
Bird_colony_Xantu's Murrelet_C	50	1875	3750	2750	73.3	146.7	yes
Bird_colony_Xantu's Murrelet_D	50	125	250	250	100.0	200.0	yes
Bird_colony_Xantu's Murrelet_E	50	1350	2700	2700	100.0	200.0	yes
Bird_colony_Xantu's Murrelet_G	50	1150	2300	2300	100.0	200.0	yes
Grey_whale_nursery_E	100	2	2	2	100.0	100.0	yes
Nearshore_canyon_head_A	50	3	5	3	60.0	100.0	yes
Nearshore_canyon_head_B	50	3	5	4	80.0	133.3	yes
Nearshore_canyon_head_C	50	2	3	2	66.7	100.0	yes
Offshore_Rocks_A	35	132	378	300	79.4	227.3	yes
Offshore_Rocks_B	35	88	251	151	60.2	171.6	yes
Offshore_Rocks_C	35	2	6	5	83.3	250.0	yes
Offshore_Rocks_D	35	1	1	1	100.0	100.0	yes
Offshore_Rocks_E	35	27	77	61	79.2	225.9	yes
Offshore_Rocks_F	35	4	12	12	100.0	300.0	yes
Offshore_Rocks_G	35	2	5	5	100.0	250.0	yes
Offshore_Shallow_Bank_B	50	37693	75386	44949	59.6	119.3	yes
Pinniped_Haulout_A	25	19	76	56	73.7	294.7	yes
Pinniped_Haulout_B	25	15	61	40	65.6	266.7	yes
Pinniped_Rookery_CA Sea Lion_C	50	1	2	1	50.0	100.0	yes
Pinniped_Rookery_CA Sea Lion_E	50	3	6	6	100.0	200.0	yes

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Target Name_Stratification Unit	Goal (%)	Goal Amount[1]	Total Amount in Strat-ification Unit	Amount Held [2]	Amount Held (%)	Percent of Goal Achieved [3]	Target Goal Met?[4]
Pinniped_Rookery_CA Sea Lion_F	35	1	1	1	100.0	100.0	yes
Pinniped_Rookery_CA Sea Lion_G	35	1	1	1	100.0	100.0	yes
Pinniped_Rookery_Guadalupe Fur Seal_G	35	1	1	1	100.0	100.0	yes
Pinniped_Rookery_No. Elephant Seal_B	50	2	4	4	100.0	200.0	yes
Pinniped_Rookery_No. Elephant Seal_E	50	2	3	2	66.7	100.0	yes
Pinniped_Rookery_No. Elephant Seal_G	35	1	1	1	100.0	100.0	yes
Seamount_E	100	1	1	1	100.0	100.0	yes
Steelhead_outlet_A	100	5	5	5	100.0	100.0	yes
Steelhead_outlet_B	100	1	1	1	100.0	100.0	yes
Steelhead_outlet_D	100	1	1	1	100.0	100.0	yes
BATHYBENTHAL_700-5000m_CANYON_HARD_A	30	1864	6212	1584	25.5	85.0	yes
BATHYBENTHAL_700-5000m_CANYON_HARD_B	30	45796	152652	50476	33.1	110.2	yes
BATHYBENTHAL_700-5000m_CANYON_MIXED_A	30	5834	19448	4720	24.3	80.9	yes
BATHYBENTHAL_700-5000m_CANYON_MIXED_B	30	70087	233624	70624	30.2	100.8	yes
BATHYBENTHAL_700-5000m_CANYON_NO_DATA_C	20	41274	206372	14680	7.1	35.6	no
BATHYBENTHAL_700-5000m_CANYON_NO_DATA_D	20	66331	331656	48608	14.7	73.3	no
BATHYBENTHAL_700-5000m_CANYON_NO_DATA_E	20	39387	196936	19008	9.7	48.3	no
BATHYBENTHAL_700-5000m_CANYON_NO_DATA_F	20	10494	52472	5664	10.8	54.0	no
BATHYBENTHAL_700-5000m_CANYON_NO_DATA_G	20	12089	60444	7184	11.9	59.4	no
BATHYBENTHAL_700-5000m_CANYON_SOFT_A	30	68	228	228	100.0	335.3	yes
BATHYBENTHAL_700-5000m_CANYON_SOFT_B	25	2742	10156	2592	25.5	94.5	yes
BATHYBENTHAL_700-5000m_FLATS_HARD_A	30	124	412	144	35.0	116.1	yes

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Target Name_Stratification Unit	Goal (%)	Goal Amount[1]	Total Amount in Strat-ification Unit	Amount Held [2]	Amount Held (%)	Percent of Goal Achieved [3]	Target Goal Met?[4]
BATHYBENTHAL_700-5000m_FLATS_HARD_B	30	19913	66376	20884	31.5	104.9	yes
BATHYBENTHAL_700-5000m_FLATS_MIXED_A	20	25930	129648	14204	11.0	54.8	no
BATHYBENTHAL_700-5000m_FLATS_MIXED_B	20	169449	847244	93548	11.0	55.2	no
BATHYBENTHAL_700-5000m_FLATS_NO_DATA_C	20	129043	645216	38020	5.9	29.5	no
BATHYBENTHAL_700-5000m_FLATS_NO_DATA_D	20	199024	995120	65976	6.6	33.1	no
BATHYBENTHAL_700-5000m_FLATS_NO_DATA_E	20	113215	566076	49268	8.7	43.5	no
BATHYBENTHAL_700-5000m_FLATS_NO_DATA_F	20	9392	46960	1676	3.6	17.8	no
BATHYBENTHAL_700-5000m_FLATS_NO_DATA_G	20	3122	15608	3488	22.3	111.7	yes
BATHYBENTHAL_700-5000m_FLATS_SOFT_B	25	2436	9368	4044	43.2	166.0	yes
BATHYBENTHAL_700-5000m_RIDGE_HARD_A	30	973	3244	1044	32.2	107.3	yes
BATHYBENTHAL_700-5000m_RIDGE_HARD_B	30	46505	155016	48144	31.1	103.5	yes
BATHYBENTHAL_700-5000m_RIDGE_MIXED_A	30	437	1456	544	37.4	124.5	yes
BATHYBENTHAL_700-5000m_RIDGE_MIXED_B	30	14273	47576	13364	28.1	93.6	yes
BATHYBENTHAL_700-5000m_RIDGE_NO_DATA_C	20	34406	172028	6664	3.9	19.4	no
BATHYBENTHAL_700-5000m_RIDGE_NO_DATA_D	25	81016	300060	66908	22.3	82.6	yes
BATHYBENTHAL_700-5000m_RIDGE_NO_DATA_E	30	55328	184428	41388	22.4	74.8	no
BATHYBENTHAL_700-5000m_RIDGE_NO_DATA_F	30	14286	47620	11604	24.4	81.2	yes
BATHYBENTHAL_700-5000m_RIDGE_NO_DATA_G	30	15556	51852	13624	26.3	87.6	yes

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Target Name_Stratification Unit	Goal (%)	Goal Amount[1]	Total Amount in Strat-ification Unit	Amount Held[2]	Amount Held (%)	Percent of Goal Achieved[3]	Target Goal Met?[4]
BATHYBENTHAL_700-5000m_RIDGE_SOFT_A	30	1	4	4	100.0	400.0	yes
BATHYBENTHAL_700-5000m_RIDGE_SOFT_B	30	362	1208	620	51.3	171.3	yes
BATHYBENTHAL_700-5000m_SLOPE_HARD_A	30	4350	14500	2628	18.1	60.4	no
BATHYBENTHAL_700-5000m_SLOPE_HARD_B	30	121868	406228	120916	29.8	99.2	yes
BATHYBENTHAL_700-5000m_SLOPE_MIXED_A	30	12126	40420	6040	14.9	49.8	no
BATHYBENTHAL_700-5000m_SLOPE_MIXED_B	30	151622	505408	131628	26.0	86.8	yes
BATHYBENTHAL_700-5000m_SLOPE_NO_DATA_C	15	90461	603076	10060	1.7	11.1	no
BATHYBENTHAL_700-5000m_SLOPE_NO_DATA_D	15	215849	1438996	88664	6.2	41.1	no
BATHYBENTHAL_700-5000m_SLOPE_NO_DATA_E	15	177779	1185196	52544	4.4	29.6	no
BATHYBENTHAL_700-5000m_SLOPE_NO_DATA_F	15	58334	388896	20016	5.1	34.3	no
BATHYBENTHAL_700-5000m_SLOPE_NO_DATA_G	15	36535	243564	13760	5.6	37.7	no
BATHYBENTHAL_700-5000m_SLOPE_SOFT_A	30	115	384	384	100.0	333.9	yes
BATHYBENTHAL_700-5000m_SLOPE_SOFT_B	20	4846	24232	5536	22.8	114.2	yes
INNER_SHELF_0-40m_CANYON_HARD_A	30	1484	4948	1536	31.0	103.5	yes
INNER_SHELF_0-40m_CANYON_HARD_B	30	686	2288	1096	47.9	159.8	yes
INNER_SHELF_0-40m_CANYON_MIXED_A	30	254	848	460	54.2	181.1	yes
INNER_SHELF_0-40m_CANYON_MIXED_B	30	464	1548	504	32.6	108.6	yes
INNER_SHELF_0-40m_CANYON_NO_DATA_A	30	7	24	20	83.3	285.7	yes
INNER_SHELF_0-40m_CANYON_NO_DATA_C	30	996	3320	1616	48.7	162.2	yes

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Target Name_Stratification Unit	Goal (%)	Goal Amount[1]	Total Amount in Strat-ification Unit	Amount Held [2]	Amount Held (%)	Percent of Goal Achieved [3]	Target Goal Met?[4]
INNER_SHELF_0-40m_CANYON_NO_DATA_D	30	176	588	384	65.3	218.2	yes
INNER_SHELF_0-40m_CANYON_NO_DATA_E	30	1362	4540	1492	32.9	109.5	yes
INNER_SHELF_0-40m_CANYON_NO_DATA_F	30	612	2040	1324	64.9	216.3	yes
INNER_SHELF_0-40m_CANYON_SOFT_A	30	410	1368	852	62.3	207.8	yes
INNER_SHELF_0-40m_CANYON_SOFT_B	30	148	492	188	38.2	127.0	yes
INNER_SHELF_0-40m_FLATS_HARD_A	30	5248	17492	7652	43.7	145.8	yes
INNER_SHELF_0-40m_FLATS_HARD_B	30	5282	17608	4288	24.4	81.2	yes
INNER_SHELF_0-40m_FLATS_MIXED_A	30	12190	40632	13520	33.3	110.9	yes
INNER_SHELF_0-40m_FLATS_MIXED_B	30	2659	8864	2328	26.3	87.6	yes
INNER_SHELF_0-40m_FLATS_NO_DATA_A	30	1	4	4	100.0	400.0	yes
INNER_SHELF_0-40m_FLATS_NO_DATA_C	30	1140	3800	1076	28.3	94.4	yes
INNER_SHELF_0-40m_FLATS_NO_DATA_D	30	43745	145816	49596	34.0	113.4	yes
INNER_SHELF_0-40m_FLATS_NO_DATA_E	30	131681	438936	126408	28.8	96.0	yes
INNER_SHELF_0-40m_FLATS_NO_DATA_F	30	43556	145188	33816	23.3	77.6	no
INNER_SHELF_0-40m_FLATS_SOFT_A	30	4450	14832	4516	30.4	101.5	yes
INNER_SHELF_0-40m_FLATS_SOFT_B	30	9744	32480	8964	27.6	92.0	yes
INNER_SHELF_0-40m_RIDGE_HARD_A	30	313	1044	812	77.8	259.4	yes
INNER_SHELF_0-40m_RIDGE_HARD_B	30	196	652	432	66.3	220.4	yes
INNER_SHELF_0-40m_RIDGE_MIXED_A	30	235	784	644	82.1	274.0	yes
INNER_SHELF_0-40m_RIDGE_MIXED_B	30	196	652	236	36.2	120.4	yes
INNER_SHELF_0-40m_RIDGE_NO_DATA_C	30	28	92	92	100.0	328.6	yes
INNER_SHELF_0-40m_RIDGE_NO_DATA_E	30	150	500	404	80.8	269.3	yes

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Target Name_Stratification Unit	Goal (%)	Goal Amount[1]	Total Amount in Strat-ification Unit	Amount Held [2]	Amount Held (%)	Percent of Goal Achieved [3]	Target Goal Met?[4]
INNER_SHELF_0-40m_RIDGE_SOFT_A	30	68	228	92	40.4	135.3	yes
INNER_SHELF_0-40m_RIDGE_SOFT_B	30	88	292	256	87.7	290.9	yes
INNER_SHELF_0-40m_SLOPE_HARD_A	30	1570	5232	1836	35.1	116.9	yes
INNER_SHELF_0-40m_SLOPE_HARD_B	30	1369	4564	1496	32.8	109.3	yes
INNER_SHELF_0-40m_SLOPE_MIXED_A	30	166	552	224	40.6	134.9	yes
INNER_SHELF_0-40m_SLOPE_MIXED_B	30	344	1148	376	32.8	109.3	yes
INNER_SHELF_0-40m_SLOPE_NO_DATA_A	30	6	20	20	100.0	333.3	yes
INNER_SHELF_0-40m_SLOPE_NO_DATA_C	15	490	3264	1068	32.7	218.0	yes
INNER_SHELF_0-40m_SLOPE_NO_DATA_D	30	83	276	256	92.8	308.4	yes
INNER_SHELF_0-40m_SLOPE_NO_DATA_E	30	1264	4212	1516	36.0	119.9	yes
INNER_SHELF_0-40m_SLOPE_NO_DATA_F	30	290	968	896	92.6	309.0	yes
INNER_SHELF_0-40m_SLOPE_SOFT_A	30	324	1080	364	33.7	112.3	yes
INNER_SHELF_0-40m_SLOPE_SOFT_B	30	970	3232	1304	40.3	134.4	yes
MESOBENTHAL_200-700m_CANYON_HARD_A	30	2839	9464	2268	24.0	79.9	no
MESOBENTHAL_200-700m_CANYON_HARD_B	30	11887	39624	10072	25.4	84.7	yes
MESOBENTHAL_200-700m_CANYON_MIXED_A	30	3456	11520	4124	35.8	119.3	yes
MESOBENTHAL_200-700m_CANYON_MIXED_B	30	5213	17376	5128	29.5	98.4	yes
MESOBENTHAL_200-700m_CANYON_NO_DATA_C	30	4920	16400	7960	48.5	161.8	yes
MESOBENTHAL_200-700m_CANYON_NO_DATA_D	30	1022	3408	1592	46.7	155.8	yes
MESOBENTHAL_200-700m_CANYON_NO_DATA_E	30	1331	4436	2112	47.6	158.7	yes
MESOBENTHAL_200-700m_CANYON_NO_DATA_F	30	964	3212	2160	67.2	224.1	yes

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Target Name_Stratification Unit	Goal (%)	Goal Amount[1]	Total Amount in Strat-ification Unit	Amount Held [2]	Amount Held (%)	Percent of Goal Achieved [3]	Target Goal Met?[4]
MESOBENTHAL_200-700m_CANYON_SOFT_A	30	2014	6712	3112	46.4	154.5	yes
MESOBENTHAL_200-700m_CANYON_SOFT_B	30	2118	7060	2168	30.7	102.4	yes
MESOBENTHAL_200-700m_FLATS_HARD_A	30	1290	4300	1464	34.0	113.5	yes
MESOBENTHAL_200-700m_FLATS_HARD_B	30	15083	50276	9956	19.8	66.0	no
MESOBENTHAL_200-700m_FLATS_MIXED_A	30	48650	162168	28644	17.7	58.9	no
MESOBENTHAL_200-700m_FLATS_MIXED_B	30	16513	55044	10440	19.0	63.2	no
MESOBENTHAL_200-700m_FLATS_NO_DATA_C	30	2854	9512	2328	24.5	81.6	yes
MESOBENTHAL_200-700m_FLATS_NO_DATA_D	15	1687	21092	2160	10.2	128.0	yes
MESOBENTHAL_200-700m_FLATS_NO_DATA_E	30	42490	141632	43568	30.8	102.5	yes
MESOBENTHAL_200-700m_FLATS_NO_DATA_F	30	2513	8376	3288	39.3	130.8	yes
MESOBENTHAL_200-700m_FLATS_NO_DATA_G	30	1973	6576	3160	48.1	160.2	yes
MESOBENTHAL_200-700m_FLATS_SOFT_A	30	5755	19184	3876	20.2	67.4	no
MESOBENTHAL_200-700m_FLATS_SOFT_B	30	11353	37844	6284	16.6	55.4	no
MESOBENTHAL_200-700m_RIDGE_HARD_A	30	4747	15824	4200	26.5	88.5	yes
MESOBENTHAL_200-700m_RIDGE_HARD_B	30	48317	161056	40112	24.9	83.0	yes
MESOBENTHAL_200-700m_RIDGE_MIXED_A	30	666	2220	1280	57.7	192.2	yes
MESOBENTHAL_200-700m_RIDGE_MIXED_B	30	8267	27556	11212	40.7	135.6	yes
MESOBENTHAL_200-700m_RIDGE_NO_DATA_C	30	8671	28904	10036	34.7	115.7	yes
MESOBENTHAL_200-700m_RIDGE_NO_DATA_D	20	7890	39448	6832	17.3	86.6	yes

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MESOBENTHAL_200-700m_RIDGE_NO_DATA_E	30	12254	40848	10972	26.9	89.5	yes
MESOBENTHAL_200-700m_RIDGE_NO_DATA_F	30	3707	12356	1976	16.0	53.3	no
MESOBENTHAL_200-700m_RIDGE_NO_DATA_G	30	3788	12628	5400	42.8	142.6	yes
MESOBENTHAL_200-700m_RIDGE_SOFT_A	30	583	1944	1076	55.3	184.6	yes
MESOBENTHAL_200-700m_RIDGE_SOFT_B	30	1019	3396	1368	40.3	134.2	yes
MESOBENTHAL_200-700m_SLOPE_HARD_A	30	7394	24648	4632	18.8	62.6	no
MESOBENTHAL_200-700m_SLOPE_HARD_B	30	75173	250576	55160	22.0	73.4	no
MESOBENTHAL_200-700m_SLOPE_MIXED_A	30	16177	53924	12868	23.9	79.5	no
MESOBENTHAL_200-700m_SLOPE_MIXED_B	30	28920	96400	23912	24.8	82.7	yes
MESOBENTHAL_200-700m_SLOPE_NO_DATA_C	30	14438	48128	15964	33.2	110.6	yes
MESOBENTHAL_200-700m_SLOPE_NO_DATA_D	25	32344	124400	29000	23.3	89.7	yes
MESOBENTHAL_200-700m_SLOPE_NO_DATA_E	30	54636	182120	36296	19.9	66.4	no
MESOBENTHAL_200-700m_SLOPE_NO_DATA_F	30	52580	175268	46764	26.7	88.9	yes
MESOBENTHAL_200-700m_SLOPE_NO_DATA_G	30	852	2840	1104	38.9	129.6	yes
MESOBENTHAL_200-700m_SLOPE_SOFT_A	30	4777	15924	5752	36.1	120.4	yes
MESOBENTHAL_200-700m_SLOPE_SOFT_B	30	9265	30884	7224	23.4	78.0	no
MID_SHELF_40-200m_CANYON_HARD_A	30	1206	4020	1904	47.4	157.9	yes
MID_SHELF_40-200m_CANYON_HARD_B	30	449	1496	840	56.1	187.1	yes
MID_SHELF_40-200m_CANYON_MIXED_A	30	113	376	352	93.6	311.5	yes

APPENDIX VI
Conservation Goals Achieved in Portfolio

Target Name_Stratification Unit	Goal (%)	Goal Amount[1]	Total Amount in Strat-ification Unit	Amount Held [2]	Amount Held (%)	Percent of Goal Achieved [3]	Target Goal Met?[4]
MID_SHELF_40-200m_CANYON_MIXED_B	30	1105	3684	1524	41.4	137.9	yes
MID_SHELF_40-200m_CANYON_NO_DATA_C	30	1517	5056	2640	52.2	174.0	yes
MID_SHELF_40-200m_CANYON_NO_DATA_D	30	55	184	184	100.0	334.5	yes
MID_SHELF_40-200m_CANYON_NO_DATA_E	30	763	2544	1784	70.1	233.8	yes
MID_SHELF_40-200m_CANYON_NO_DATA_F	30	97	324	324	100.0	334.0	yes
MID_SHELF_40-200m_CANYON_SOFT_A	30	294	980	712	72.7	242.2	yes
MID_SHELF_40-200m_CANYON_SOFT_B	30	134	448	192	42.9	143.3	yes
MID_SHELF_40-200m_FLATS_HARD_A	30	13883	46276	11792	25.5	84.9	yes
MID_SHELF_40-200m_FLATS_HARD_B	30	17657	58856	27520	46.8	155.9	yes
MID_SHELF_40-200m_FLATS_MIXED_A	30	18956	63188	6200	9.8	32.7	no
MID_SHELF_40-200m_FLATS_MIXED_B	30	6060	20200	8820	43.7	145.5	yes
MID_SHELF_40-200m_FLATS_NO_DATA_C	20	18787	93936	18444	19.6	98.2	yes
MID_SHELF_40-200m_FLATS_NO_DATA_D	20	42922	214612	37648	17.5	87.7	yes
MID_SHELF_40-200m_FLATS_NO_DATA_E	20	293169	1465844	151428	10.3	51.7	no
MID_SHELF_40-200m_FLATS_NO_DATA_F	20	71386	356932	64976	18.2	91.0	yes
MID_SHELF_40-200m_FLATS_SOFT_A	30	5971	19904	5928	29.8	99.3	yes
MID_SHELF_40-200m_FLATS_SOFT_B	30	9890	32968	9336	28.3	94.4	yes
MID_SHELF_40-200m_RIDGE_HARD_A	30	3762	12540	3396	27.1	90.3	yes
MID_SHELF_40-200m_RIDGE_HARD_B	30	8747	29156	9748	33.4	111.4	yes

APPENDIX VI
Conservation Goals Achieved in Portfolio

Target Name_Stratification Unit	Goal (%)	Goal Amount[1]	Total Amount in Strat-ification Unit	Amount Held [2]	Amount Held (%)	Percent of Goal Achieved [3]	Target Goal Met?[4]
MID_SHELF_40-200m_RIDGE_MIXED_A	30	1012	3372	1164	34.5	115.0	yes
MID_SHELF_40-200m_RIDGE_MIXED_B	30	6198	20660	8096	39.2	130.6	yes
MID_SHELF_40-200m_RIDGE_NO_DATA_C	30	5729	19096	6004	31.4	104.8	yes
MID_SHELF_40-200m_RIDGE_NO_DATA_D	30	1447	4824	2080	43.1	143.7	yes
MID_SHELF_40-200m_RIDGE_NO_DATA_E	30	2082	6940	3300	47.6	158.5	yes
MID_SHELF_40-200m_RIDGE_NO_DATA_F	30	2338	7792	2816	36.1	120.4	yes
MID_SHELF_40-200m_RIDGE_SOFT_A	30	2233	7444	3480	46.7	155.8	yes
MID_SHELF_40-200m_RIDGE_SOFT_B	30	1967	6556	2164	33.0	110.0	yes
MID_SHELF_40-200m_SLOPE_HARD_A	30	5478	18260	5164	28.3	94.3	yes
MID_SHELF_40-200m_SLOPE_HARD_B	30	7057	23524	11032	46.9	156.3	yes
MID_SHELF_40-200m_SLOPE_MIXED_A	30	6584	21948	5572	25.4	84.6	yes
MID_SHELF_40-200m_SLOPE_MIXED_B	30	10198	33992	12048	35.4	118.1	yes
MID_SHELF_40-200m_SLOPE_NO_DATA_C	30	7205	24016	12052	50.2	167.3	yes
MID_SHELF_40-200m_SLOPE_NO_DATA_D	30	7007	23356	7652	32.8	109.2	yes
MID_SHELF_40-200m_SLOPE_NO_DATA_E	30	8740	29132	14732	50.6	168.6	yes
MID_SHELF_40-200m_SLOPE_NO_DATA_F	30	7931	26436	10588	40.1	133.5	yes
MID_SHELF_40-200m_SLOPE_SOFT_A	30	4385	14616	4548	31.1	103.7	yes
MID_SHELF_40-200m_SLOPE_SOFT_B	30	2339	7796	3164	40.6	135.3	yes

Notes:

1. Amount of target (in kilometers, hectares, or individuals) needed to meet goal

APPENDIX VI
Conservation Goals Achieved in Portfolio

Target Name_Stratification Unit	Goal (%)	Goal Amount[1]	Total Amount in Strat-ification Unit	Amount Held [2]	Amount Held (%)	Percent of Goal Achieved [3]	Target Goal Met?[4]
2. Amount of target in portfolio							
3. Percent = 100% if goal exactly met; percent >100% if target "overconserved";							
percent <100% if target underconserved relative to goal							
4. A goal for a target was considered met if amount held exceeded 80% of goal							

APPENDIX VII
Conservation Areas and Targets Present

Conservation Area	Target Name_Stratification Unit	Amount[1]
Anacapa Island	BATHYBENTHAL_700-5000m_CANYON_HARD_A	404
Anacapa Island	BATHYBENTHAL_700-5000m_CANYON_MIXED_A	600
Anacapa Island	BATHYBENTHAL_700-5000m_FLATS_HARD_A	144
Anacapa Island	BATHYBENTHAL_700-5000m_FLATS_MIXED_A	11896
Anacapa Island	BATHYBENTHAL_700-5000m_RIDGE_HARD_A	776
Anacapa Island	BATHYBENTHAL_700-5000m_RIDGE_MIXED_A	44
Anacapa Island	BATHYBENTHAL_700-5000m_SLOPE_HARD_A	1884
Anacapa Island	BATHYBENTHAL_700-5000m_SLOPE_MIXED_A	3980
Anacapa Island	Bird_colony_Brown Pelican_A	2516
Anacapa Island	Bird_colony_Double-crested Cormorant_A	132
Anacapa Island	Bird_colony_Pigeon Guillemot_A	10
Anacapa Island	Bird_colony_Xantu's Murrelet_A	1
Anacapa Island	Exposed_Rocky_shore_or_cliff_A	22
Anacapa Island	Gravel_Beach_A	6
Anacapa Island	INNER_SHELF_0-40m_RIDGE_HARD_A	672
Anacapa Island	INNER_SHELF_0-40m_SLOPE_HARD_A	328
Anacapa Island	Kelp_CDFG_2002_A	15
Anacapa Island	Kelp_CDFG_1989_A	25
Anacapa Island	MESOBENTHAL_200-700m_CANYON_HARD_A	68
Anacapa Island	MESOBENTHAL_200-700m_CANYON_MIXED_A	3592
Anacapa Island	MESOBENTHAL_200-700m_CANYON_SOFT_A	900
Anacapa Island	MESOBENTHAL_200-700m_FLATS_HARD_A	1460
Anacapa Island	MESOBENTHAL_200-700m_FLATS_MIXED_A	4544
Anacapa Island	MESOBENTHAL_200-700m_FLATS_SOFT_A	388
Anacapa Island	MESOBENTHAL_200-700m_RIDGE_HARD_A	1312
Anacapa Island	MESOBENTHAL_200-700m_RIDGE_MIXED_A	952
Anacapa Island	MESOBENTHAL_200-700m_RIDGE_SOFT_A	516
Anacapa Island	MESOBENTHAL_200-700m_SLOPE_HARD_A	1208
Anacapa Island	MESOBENTHAL_200-700m_SLOPE_MIXED_A	8636
Anacapa Island	MESOBENTHAL_200-700m_SLOPE_SOFT_A	2816
Anacapa Island	MID_SHELF_40-200m_CANYON_SOFT_A	64
Anacapa Island	MID_SHELF_40-200m_FLATS_HARD_A	2184
Anacapa Island	MID_SHELF_40-200m_RIDGE_HARD_A	1484
Anacapa Island	MID_SHELF_40-200m_RIDGE_MIXED_A	252
Anacapa Island	MID_SHELF_40-200m_RIDGE_SOFT_A	1020
Anacapa Island	MID_SHELF_40-200m_SLOPE_HARD_A	2444
Anacapa Island	MID_SHELF_40-200m_SLOPE_MIXED_A	36
Anacapa Island	MID_SHELF_40-200m_SLOPE_SOFT_A	820
Anacapa Island	Offshore_Rocks_A	253
Anacapa Island	Pinniped_Haulout_A	14
Anacapa Island	Wave_cut_rock_platform_A	6
Bahia Tortugas	BATHYBENTHAL_700-5000m_FLATS_NO_DATA_F	1540
Bahia Tortugas	BATHYBENTHAL_700-5000m_RIDGE_NO_DATA_F	12
Bahia Tortugas	BATHYBENTHAL_700-5000m_SLOPE_NO_DATA_F	2216
Bahia Tortugas	Exposed_Rocky_shore_or_cliff_F	17
Bahia Tortugas	Gravel_Beach_F	21
Bahia Tortugas	INNER_SHELF_0-40m_CANYON_NO_DATA_F	908
Bahia Tortugas	INNER_SHELF_0-40m_FLATS_NO_DATA_F	11680
Bahia Tortugas	INNER_SHELF_0-40m_SLOPE_NO_DATA_F	536
Bahia Tortugas	Kelp_Baja_TNC_2002_F	3
Bahia Tortugas	MESOBENTHAL_200-700m_CANYON_NO_DATA_F	960

APPENDIX VII
Conservation Areas and Targets Present

Conservation Area	Target Name_Stratification Unit	Amount[1]
Bahia Tortugas	MESOBENTHAL_200-700m_FLATS_NO_DATA_F	2736
Bahia Tortugas	MESOBENTHAL_200-700m_RIDGE_NO_DATA_F	356
Bahia Tortugas	MESOBENTHAL_200-700m_SLOPE_NO_DATA_F	22228
Bahia Tortugas	MID_SHELF_40-200m_CANYON_NO_DATA_F	20
Bahia Tortugas	MID_SHELF_40-200m_FLATS_NO_DATA_F	17224
Bahia Tortugas	MID_SHELF_40-200m_RIDGE_NO_DATA_F	1648
Bahia Tortugas	MID_SHELF_40-200m_SLOPE_NO_DATA_F	5168
Bahia Tortugas	Offshore_Rocks_F	9
Bahia Tortugas	Sand_beach_F	4
Bahia Tortugas	Unidentified Shoreline_F	21
Bahia Tortugas	Upwelling_F	9
Coal Oil Point	Coastal_salt_marsh_A	86
Coal Oil Point	Eelgrass_A	2
Coal Oil Point	Exposed_Rocky_shore_or_cliff_A	1
Coal Oil Point	INNER_SHELF_0-40m_FLATS_HARD_A	1300
Coal Oil Point	INNER_SHELF_0-40m_FLATS_MIXED_A	368
Coal Oil Point	INNER_SHELF_0-40m_SLOPE_HARD_A	384
Coal Oil Point	Kelp_CDFG_2002_A	130
Coal Oil Point	Kelp_CDFG_1989_A	103
Coal Oil Point	Marsh_A	3
Coal Oil Point	MESOBENTHAL_200-700m_CANYON_MIXED_A	44
Coal Oil Point	MESOBENTHAL_200-700m_CANYON_SOFT_A	208
Coal Oil Point	MESOBENTHAL_200-700m_FLATS_MIXED_A	2092
Coal Oil Point	MESOBENTHAL_200-700m_FLATS_SOFT_A	1304
Coal Oil Point	MESOBENTHAL_200-700m_SLOPE_MIXED_A	2136
Coal Oil Point	MESOBENTHAL_200-700m_SLOPE_SOFT_A	296
Coal Oil Point	MID_SHELF_40-200m_FLATS_HARD_A	316
Coal Oil Point	MID_SHELF_40-200m_FLATS_MIXED_A	3476
Coal Oil Point	MID_SHELF_40-200m_RIDGE_MIXED_A	496
Coal Oil Point	MID_SHELF_40-200m_SLOPE_MIXED_A	2008
Coal Oil Point	Offshore_Rocks_A	1
Coal Oil Point	Pinniped_Haulout_A	1
Coal Oil Point	Sand_beach_A	9
Coal Oil Point	Tidal_Flat_A	1
Coal Oil Point	Wave_cut_rock_platform_A	6
Cortes Bank	BATHYBENTHAL_700-5000m_CANYON_HARD_B	8724
Cortes Bank	BATHYBENTHAL_700-5000m_CANYON_MIXED_B	15316
Cortes Bank	BATHYBENTHAL_700-5000m_CANYON_SOFT_B	360
Cortes Bank	BATHYBENTHAL_700-5000m_FLATS_HARD_B	4500
Cortes Bank	BATHYBENTHAL_700-5000m_FLATS_MIXED_B	21988
Cortes Bank	BATHYBENTHAL_700-5000m_RIDGE_HARD_B	8256
Cortes Bank	BATHYBENTHAL_700-5000m_RIDGE_MIXED_B	1548
Cortes Bank	BATHYBENTHAL_700-5000m_RIDGE_SOFT_B	40
Cortes Bank	BATHYBENTHAL_700-5000m_SLOPE_HARD_B	46376
Cortes Bank	BATHYBENTHAL_700-5000m_SLOPE_MIXED_B	49116
Cortes Bank	BATHYBENTHAL_700-5000m_SLOPE_SOFT_B	200
Cortes Bank	INNER_SHELF_0-40m_FLATS_HARD_B	696
Cortes Bank	INNER_SHELF_0-40m_RIDGE_HARD_B	256
Cortes Bank	INNER_SHELF_0-40m_SLOPE_HARD_B	272
Cortes Bank	MESOBENTHAL_200-700m_CANYON_HARD_B	3900
Cortes Bank	MESOBENTHAL_200-700m_CANYON_MIXED_B	332

APPENDIX VII
Conservation Areas and Targets Present

Conservation Area	Target Name_Stratification Unit	Amount[1]
Cortes Bank	MESOBENTHAL_200-700m_CANYON_SOFT_B	2020
Cortes Bank	MESOBENTHAL_200-700m_FLATS_HARD_B	2960
Cortes Bank	MESOBENTHAL_200-700m_FLATS_MIXED_B	12
Cortes Bank	MESOBENTHAL_200-700m_FLATS_SOFT_B	4360
Cortes Bank	MESOBENTHAL_200-700m_RIDGE_HARD_B	12020
Cortes Bank	MESOBENTHAL_200-700m_RIDGE_MIXED_B	404
Cortes Bank	MESOBENTHAL_200-700m_RIDGE_SOFT_B	728
Cortes Bank	MESOBENTHAL_200-700m_SLOPE_HARD_B	29628
Cortes Bank	MESOBENTHAL_200-700m_SLOPE_MIXED_B	1312
Cortes Bank	MESOBENTHAL_200-700m_SLOPE_SOFT_B	5476
Cortes Bank	MID_SHELF_40-200m_CANYON_HARD_B	20
Cortes Bank	MID_SHELF_40-200m_CANYON_MIXED_B	20
Cortes Bank	MID_SHELF_40-200m_CANYON_SOFT_B	40
Cortes Bank	MID_SHELF_40-200m_FLATS_HARD_B	16764
Cortes Bank	MID_SHELF_40-200m_FLATS_MIXED_B	8036
Cortes Bank	MID_SHELF_40-200m_FLATS_SOFT_B	1448
Cortes Bank	MID_SHELF_40-200m_RIDGE_HARD_B	4556
Cortes Bank	MID_SHELF_40-200m_RIDGE_MIXED_B	4260
Cortes Bank	MID_SHELF_40-200m_RIDGE_SOFT_B	420
Cortes Bank	MID_SHELF_40-200m_SLOPE_HARD_B	3968
Cortes Bank	MID_SHELF_40-200m_SLOPE_MIXED_B	4140
Cortes Bank	MID_SHELF_40-200m_SLOPE_SOFT_B	1304
Cortes Bank	Offshore_Shallow_Bank_B	44949
Cortes Bank	Upwelling_B	4
East - West Butterfly	BATHYBENTHAL_700-5000m_CANYON_HARD_B	9812
East - West Butterfly	BATHYBENTHAL_700-5000m_CANYON_MIXED_B	14092
East - West Butterfly	BATHYBENTHAL_700-5000m_CANYON_SOFT_B	1960
East - West Butterfly	BATHYBENTHAL_700-5000m_FLATS_HARD_B	1748
East - West Butterfly	BATHYBENTHAL_700-5000m_FLATS_MIXED_B	7536
East - West Butterfly	BATHYBENTHAL_700-5000m_FLATS_SOFT_B	144
East - West Butterfly	BATHYBENTHAL_700-5000m_RIDGE_HARD_B	8656
East - West Butterfly	BATHYBENTHAL_700-5000m_RIDGE_MIXED_B	7152
East - West Butterfly	BATHYBENTHAL_700-5000m_RIDGE_SOFT_B	208
East - West Butterfly	BATHYBENTHAL_700-5000m_SLOPE_HARD_B	16444
East - West Butterfly	BATHYBENTHAL_700-5000m_SLOPE_MIXED_B	15500
East - West Butterfly	BATHYBENTHAL_700-5000m_SLOPE_SOFT_B	1576
East - West Butterfly	MESOBENTHAL_200-700m_CANYON_MIXED_B	212
East - West Butterfly	MESOBENTHAL_200-700m_FLATS_HARD_B	8
East - West Butterfly	MESOBENTHAL_200-700m_FLATS_MIXED_B	1656
East - West Butterfly	MESOBENTHAL_200-700m_RIDGE_HARD_B	3548
East - West Butterfly	MESOBENTHAL_200-700m_RIDGE_MIXED_B	8548
East - West Butterfly	MESOBENTHAL_200-700m_SLOPE_HARD_B	172
East - West Butterfly	MESOBENTHAL_200-700m_SLOPE_MIXED_B	2492
El Socorro	Coastal_salt_marsh_D	140
El Socorro	INNER_SHELF_0-40m_FLATS_NO_DATA_D	2952
El Socorro	Kelp_Baja_TNC_2002_D	1
El Socorro	Kelp_Baja_TNC_2003_D	1
El Socorro	Sand_beach_D	3
El Socorro	Unidentified Shoreline_D	3
El Socorro	Upwelling_D	1
Ferrel Seamount	BATHYBENTHAL_700-5000m_CANYON_NO_DATA_E	6020

APPENDIX VII
Conservation Areas and Targets Present

Conservation Area	Target Name_Stratification Unit	Amount[1]
Ferrel Seamount	BATHYBENTHAL_700-5000m_RIDGE_NO_DATA_E	15856
Ferrel Seamount	BATHYBENTHAL_700-5000m_SLOPE_NO_DATA_E	11852
Ferrel Seamount	MESOBENTHAL_200-700m_RIDGE_NO_DATA_E	1288
Ferrel Seamount	Seamount_E	1
Huntington Coast	Bird_colony_Elegant Tern_B	2000
Huntington Coast	Bird_colony_Least Tern_B	338
Huntington Coast	Coastal_salt_marsh_B	650
Huntington Coast	Eelgrass_B	1
Huntington Coast	Gravel_Beach_B	1
Huntington Coast	INNER_SHELF_0-40m_FLATS_SOFT_B	8296
Huntington Coast	Marsh_B	24
Huntington Coast	MESOBENTHAL_200-700m_CANYON_SOFT_B	72
Huntington Coast	MESOBENTHAL_200-700m_SLOPE_HARD_B	4
Huntington Coast	MESOBENTHAL_200-700m_SLOPE_SOFT_B	104
Huntington Coast	MID_SHELF_40-200m_CANYON_SOFT_B	120
Huntington Coast	MID_SHELF_40-200m_FLATS_SOFT_B	764
Huntington Coast	MID_SHELF_40-200m_RIDGE_SOFT_B	116
Huntington Coast	MID_SHELF_40-200m_SLOPE_HARD_B	252
Huntington Coast	MID_SHELF_40-200m_SLOPE_SOFT_B	892
Huntington Coast	Nearshore_canyon_head_B	1
Huntington Coast	Sand_beach_B	13
Huntington Coast	Tidal_Flat_B	4
Isla Cedros	Bird_colony_Brown Pelican_E	450
Isla Cedros	Bird_colony_Double-crested Cormorant_E	50
Isla Cedros	Exposed_Rocky_shore_or_cliff_E	26
Isla Cedros	Gravel_Beach_E	54
Isla Cedros	INNER_SHELF_0-40m_CANYON_NO_DATA_E	1492
Isla Cedros	INNER_SHELF_0-40m_FLATS_NO_DATA_E	13252
Isla Cedros	INNER_SHELF_0-40m_SLOPE_NO_DATA_E	836
Isla Cedros	Kelp_Baja_TNC_2002_E	10
Isla Cedros	Kelp_Baja_TNC_2003_E	6
Isla Cedros	MESOBENTHAL_200-700m_FLATS_NO_DATA_E	2344
Isla Cedros	MID_SHELF_40-200m_CANYON_NO_DATA_E	1576
Isla Cedros	MID_SHELF_40-200m_FLATS_NO_DATA_E	56516
Isla Cedros	MID_SHELF_40-200m_SLOPE_NO_DATA_E	3036
Isla Cedros	Offshore_Rocks_E	18
Isla Cedros	Pinniped_Rookery_No. Elephant Seal_E	2
Isla Cedros	Sand_beach_E	10
Isla Cedros	Unidentified Shoreline_E	20
Isla de Coronados	Bird_colony_Ashy Storm Petrel_C	30
Isla de Coronados	Bird_colony_Black Storm Petrel_C	501
Isla de Coronados	Bird_colony_Brown Pelican_C	1791
Isla de Coronados	Bird_colony_Leaches Storm Petrel_C	200
Isla de Coronados	Bird_colony_Xantu's Murrelet_C	2500
Isla de Coronados	Kelp_Baja_TNC_2002_C	1
Isla de Coronados	MID_SHELF_40-200m_FLATS_NO_DATA_C	3516
Isla de Coronados	Offshore_Rocks_C	3
Isla de Coronados	Pinniped_Rookery_CSL_C	1
Isla de Coronados	Unidentified Shoreline_C	12
Isla Guadalupe Norte	BATHYBENTHAL_700-5000m_CANYON_NO_DATA_G	2164
Isla Guadalupe Norte	BATHYBENTHAL_700-5000m_RIDGE_NO_DATA_G	3852

APPENDIX VII
Conservation Areas and Targets Present

Conservation Area	Target Name_Stratification Unit	Amount[1]
Isla Guadalupe Norte	BATHYBENTHAL_700-5000m_SLOPE_NO_DATA_G	3728
Isla Guadalupe Norte	Gravel_Beach_G	5
Isla Guadalupe Norte	MESOBENTHAL_200-700m_FLATS_NO_DATA_G	932
Isla Guadalupe Norte	MESOBENTHAL_200-700m_RIDGE_NO_DATA_G	2048
Isla Guadalupe Norte	MESOBENTHAL_200-700m_SLOPE_NO_DATA_G	60
Isla Guadalupe Norte	Offshore_Rocks_G	1
Isla Guadalupe Norte	Pinniped_Rookery_CA Sea Lion_G	1
Isla Guadalupe Norte	Pinniped_Rookery_No. Elephant Seal_G	1
Isla Guadalupe Norte	Unidentified Shoreline_G	13
Isla Guadalupe Sur	BATHYBENTHAL_700-5000m_CANYON_NO_DATA_G	4712
Isla Guadalupe Sur	BATHYBENTHAL_700-5000m_RIDGE_NO_DATA_G	4488
Isla Guadalupe Sur	BATHYBENTHAL_700-5000m_SLOPE_NO_DATA_G	8636
Isla Guadalupe Sur	Bird_colony_Black-vented Shearwater_G	3750
Isla Guadalupe Sur	Bird_colony_Cassin's Auklet_G	400
Isla Guadalupe Sur	Bird_colony_Laysan Albatross_G	386
Isla Guadalupe Sur	Bird_colony_Leaches Storm Petrel_G	5250
Isla Guadalupe Sur	Bird_colony_Xantu's Murrelet_G	2300
Isla Guadalupe Sur	Gravel_Beach_G	19
Isla Guadalupe Sur	MESOBENTHAL_200-700m_FLATS_NO_DATA_G	2228
Isla Guadalupe Sur	MESOBENTHAL_200-700m_RIDGE_NO_DATA_G	3352
Isla Guadalupe Sur	MESOBENTHAL_200-700m_SLOPE_NO_DATA_G	1044
Isla Guadalupe Sur	Offshore_Rocks_G	4
Isla Guadalupe Sur	Pinniped_Rookery_Guadalupe Fur Seal_G	1
Isla Guadalupe Sur	Unidentified Shoreline_G	23
Isla San Benito	BATHYBENTHAL_700-5000m_CANYON_NO_DATA_E	80
Isla San Benito	BATHYBENTHAL_700-5000m_FLATS_NO_DATA_E	9324
Isla San Benito	BATHYBENTHAL_700-5000m_RIDGE_NO_DATA_E	80
Isla San Benito	BATHYBENTHAL_700-5000m_SLOPE_NO_DATA_E	2628
Isla San Benito	Bird_colony_Black Storm Petrel_E	580000
Isla San Benito	Bird_colony_Brown Pelican_E	2364
Isla San Benito	Bird_colony_Black-vented Shearwater_E	1200
Isla San Benito	Bird_colony_Cassin's Auklet_E	75334
Isla San Benito	Bird_colony_Double-crested Cormorant_E	126
Isla San Benito	Bird_colony_Leaches Storm Petrel_E	
Isla San Benito	Bird_colony_Least Storm Petrel_E	270000
Isla San Benito	Bird_colony_Xantu's Murrelet_E	2200
Isla San Benito	Exposed_Rocky_shore_or_cliff_E	7
Isla San Benito	Gravel_Beach_E	28
Isla San Benito	INNER_SHELF_0-40m_FLATS_NO_DATA_E	764
Isla San Benito	INNER_SHELF_0-40m_RIDGE_NO_DATA_E	244
Isla San Benito	INNER_SHELF_0-40m_SLOPE_NO_DATA_E	544
Isla San Benito	Kelp_Baja_TNC_2002_E	2
Isla San Benito	MESOBENTHAL_200-700m_CANYON_NO_DATA_E	2044
Isla San Benito	MESOBENTHAL_200-700m_FLATS_NO_DATA_E	40012
Isla San Benito	MESOBENTHAL_200-700m_RIDGE_NO_DATA_E	4428
Isla San Benito	MESOBENTHAL_200-700m_SLOPE_NO_DATA_E	28480
Isla San Benito	MID_SHELF_40-200m_CANYON_NO_DATA_E	208
Isla San Benito	MID_SHELF_40-200m_FLATS_NO_DATA_E	19636
Isla San Benito	MID_SHELF_40-200m_RIDGE_NO_DATA_E	2352
Isla San Benito	MID_SHELF_40-200m_SLOPE_NO_DATA_E	6892
Isla San Benito	Offshore_Rocks_E	20

APPENDIX VII
Conservation Areas and Targets Present

Conservation Area	Target Name_Stratification Unit	Amount[1]
Isla San Benito	Pinniped_Rookery_CA Sea Lion_E	4
La Jolla Coast	Bird_colony_Least Tern_B	298
La Jolla Coast	Coastal_salt_marsh_B	233
La Jolla Coast	Eelgrass_B	2
La Jolla Coast	Exposed_Rocky_shore_or_cliff_B	2
La Jolla Coast	Gravel_Beach_B	8
La Jolla Coast	INNER_SHELF_0-40m_CANYON_HARD_B	156
La Jolla Coast	INNER_SHELF_0-40m_CANYON_MIXED_B	16
La Jolla Coast	INNER_SHELF_0-40m_CANYON_SOFT_B	64
La Jolla Coast	INNER_SHELF_0-40m_FLATS_HARD_B	1056
La Jolla Coast	INNER_SHELF_0-40m_FLATS_SOFT_B	108
La Jolla Coast	INNER_SHELF_0-40m_SLOPE_HARD_B	964
La Jolla Coast	INNER_SHELF_0-40m_SLOPE_SOFT_B	292
La Jolla Coast	Kelp_CDFG_2002_B	575
La Jolla Coast	Kelp_CDFG_1989_B	597
La Jolla Coast	Kelp_CDFG_1999_B	353
La Jolla Coast	Kelp_CDFG_Persistent_89-99-02_B	1010
La Jolla Coast	Marsh_B	7
La Jolla Coast	MESOBENTHAL_200-700m_CANYON_HARD_B	652
La Jolla Coast	MESOBENTHAL_200-700m_CANYON_MIXED_B	2360
La Jolla Coast	MESOBENTHAL_200-700m_CANYON_SOFT_B	8
La Jolla Coast	MESOBENTHAL_200-700m_FLATS_MIXED_B	4092
La Jolla Coast	MESOBENTHAL_200-700m_FLATS_SOFT_B	1448
La Jolla Coast	MESOBENTHAL_200-700m_RIDGE_HARD_B	192
La Jolla Coast	MESOBENTHAL_200-700m_RIDGE_MIXED_B	152
La Jolla Coast	MESOBENTHAL_200-700m_SLOPE_HARD_B	592
La Jolla Coast	MESOBENTHAL_200-700m_SLOPE_MIXED_B	10340
La Jolla Coast	MESOBENTHAL_200-700m_SLOPE_SOFT_B	1472
La Jolla Coast	MID_SHELF_40-200m_CANYON_HARD_B	156
La Jolla Coast	MID_SHELF_40-200m_CANYON_MIXED_B	264
La Jolla Coast	MID_SHELF_40-200m_CANYON_SOFT_B	24
La Jolla Coast	MID_SHELF_40-200m_FLATS_HARD_B	6500
La Jolla Coast	MID_SHELF_40-200m_FLATS_MIXED_B	4
La Jolla Coast	MID_SHELF_40-200m_FLATS_SOFT_B	5520
La Jolla Coast	MID_SHELF_40-200m_RIDGE_HARD_B	1592
La Jolla Coast	MID_SHELF_40-200m_RIDGE_MIXED_B	568
La Jolla Coast	MID_SHELF_40-200m_RIDGE_SOFT_B	224
La Jolla Coast	MID_SHELF_40-200m_SLOPE_HARD_B	1160
La Jolla Coast	MID_SHELF_40-200m_SLOPE_MIXED_B	976
La Jolla Coast	MID_SHELF_40-200m_SLOPE_SOFT_B	236
La Jolla Coast	Nearshore_caynon_head_B	1
La Jolla Coast	Offshore_Rocks_B	18
La Jolla Coast	Pinniped_Haulout_B	4
La Jolla Coast	Sand_beach_B	31
La Jolla Coast	Tidal_Flat_B	7
La Jolla Coast	Wave_cut_rock_platform_B	15
Malibu Point	Coastal_salt_marsh_A	3
Malibu Point	Exposed_Rocky_shore_or_cliff_A	1
Malibu Point	INNER_SHELF_0-40m_CANYON_HARD_A	108
Malibu Point	INNER_SHELF_0-40m_FLATS_HARD_A	280
Malibu Point	INNER_SHELF_0-40m_FLATS_SOFT_A	1004

APPENDIX VII
Conservation Areas and Targets Present

Conservation Area	Target Name_Stratification Unit	Amount[1]
Malibu Point	INNER_SHELF_0-40m_SLOPE_HARD_A	24
Malibu Point	Kelp_CDFG_2002_A	13
Malibu Point	Kelp_CDFG_1989_A	9
Malibu Point	MID_SHELF_40-200m_FLATS_SOFT_A	1184
Malibu Point	MID_SHELF_40-200m_RIDGE_SOFT_A	280
Malibu Point	MID_SHELF_40-200m_SLOPE_SOFT_A	20
Malibu Point	Offshore_Rocks_A	28
Malibu Point	Sand_beach_A	4
Malibu Point	Steelhead_outlet_A	1
Malibu Point	Wave_cut_rock_platform_A	1
Newport	Coastal_salt_marsh_B	34
Newport	Eelgrass_B	1
Newport	INNER_SHELF_0-40m_FLATS_HARD_B	184
Newport	INNER_SHELF_0-40m_FLATS_MIXED_B	16
Newport	INNER_SHELF_0-40m_SLOPE_HARD_B	16
Newport	Marsh_B	10
Newport	Sand_beach_B	8
Newport	Tidal_Flat_B	11
Northeast Bank	BATHYBENTHAL_700-5000m_CANYON_HARD_B	22200
Northeast Bank	BATHYBENTHAL_700-5000m_CANYON_MIXED_B	29440
Northeast Bank	BATHYBENTHAL_700-5000m_CANYON_SOFT_B	172
Northeast Bank	BATHYBENTHAL_700-5000m_FLATS_HARD_B	3576
Northeast Bank	BATHYBENTHAL_700-5000m_FLATS_MIXED_B	31748
Northeast Bank	BATHYBENTHAL_700-5000m_FLATS_SOFT_B	28
Northeast Bank	BATHYBENTHAL_700-5000m_RIDGE_HARD_B	22900
Northeast Bank	BATHYBENTHAL_700-5000m_RIDGE_MIXED_B	2768
Northeast Bank	BATHYBENTHAL_700-5000m_RIDGE_SOFT_B	124
Northeast Bank	BATHYBENTHAL_700-5000m_SLOPE_HARD_B	29044
Northeast Bank	BATHYBENTHAL_700-5000m_SLOPE_MIXED_B	27056
Northeast Bank	BATHYBENTHAL_700-5000m_SLOPE_SOFT_B	1784
Northeast Bank	MESOBENTHAL_200-700m_CANYON_HARD_B	688
Northeast Bank	MESOBENTHAL_200-700m_FLATS_HARD_B	2348
Northeast Bank	MESOBENTHAL_200-700m_RIDGE_HARD_B	16528
Northeast Bank	MESOBENTHAL_200-700m_SLOPE_HARD_B	2168
Northeast Bank	Upwelling_B	22
Ojo de Liebre	Coastal_salt_marsh_E	32022
Ojo de Liebre	Eelgrass_E	31
Ojo de Liebre	Gravel_Beach_E	126
Ojo de Liebre	Grey_whale_nursery_E	2
Ojo de Liebre	INNER_SHELF_0-40m_FLATS_NO_DATA_E	66392
Ojo de Liebre	Marsh_E	340
Ojo de Liebre	Sand_beach_E	36
Ojo de Liebre	Unidentified Shoreline_E	10
Palos Verdes Point	Exposed_Rocky_shore_or_cliff_B	1
Palos Verdes Point	Gravel_Beach_B	8
Palos Verdes Point	INNER_SHELF_0-40m_CANYON_SOFT_B	124
Palos Verdes Point	INNER_SHELF_0-40m_FLATS_SOFT_B	460
Palos Verdes Point	INNER_SHELF_0-40m_RIDGE_SOFT_B	108
Palos Verdes Point	INNER_SHELF_0-40m_SLOPE_SOFT_B	488
Palos Verdes Point	Kelp_CDFG_1989_B	122
Palos Verdes Point	MESOBENTHAL_200-700m_CANYON_HARD_B	48

APPENDIX VII
Conservation Areas and Targets Present

Conservation Area	Target Name_Stratification Unit	Amount[1]
Palos Verdes Point	MESOBENTHAL_200-700m_CANYON_SOFT_B	36
Palos Verdes Point	MESOBENTHAL_200-700m_RIDGE_HARD_B	20
Palos Verdes Point	MESOBENTHAL_200-700m_SLOPE_HARD_B	308
Palos Verdes Point	MID_SHELF_40-200m_CANYON_SOFT_B	8
Palos Verdes Point	MID_SHELF_40-200m_FLATS_HARD_B	36
Palos Verdes Point	MID_SHELF_40-200m_FLATS_SOFT_B	448
Palos Verdes Point	MID_SHELF_40-200m_RIDGE_HARD_B	744
Palos Verdes Point	MID_SHELF_40-200m_RIDGE_SOFT_B	896
Palos Verdes Point	MID_SHELF_40-200m_SLOPE_HARD_B	52
Palos Verdes Point	MID_SHELF_40-200m_SLOPE_SOFT_B	380
Palos Verdes Point	Offshore_Rocks_B	28
Palos Verdes Point	Pinniped_Haulout_B	1
Palos Verdes Point	Wave_cut_rock_platform_B	6
Point Conception	Bird_colony_Pigeon Guillemot_A	29
Point Conception	Exposed_Rocky_shore_or_cliff_A	3
Point Conception	Gravel_Beach_A	1
Point Conception	INNER_SHELF_0-40m_FLATS_HARD_A	2476
Point Conception	INNER_SHELF_0-40m_FLATS_SOFT_A	68
Point Conception	INNER_SHELF_0-40m_SLOPE_HARD_A	300
Point Conception	INNER_SHELF_0-40m_SLOPE_SOFT_A	36
Point Conception	Kelp_CDFG_2002_A	70
Point Conception	Kelp_CDFG_1989_A	224
Point Conception	Kelp_CDFG_1999_A	24
Point Conception	Kelp_CDFG_Persistent_89-99-02_A	272
Point Conception	MESOBENTHAL_200-700m_FLATS_MIXED_A	22008
Point Conception	MESOBENTHAL_200-700m_FLATS_SOFT_A	2184
Point Conception	MESOBENTHAL_200-700m_SLOPE_MIXED_A	1840
Point Conception	MESOBENTHAL_200-700m_SLOPE_SOFT_A	724
Point Conception	MID_SHELF_40-200m_FLATS_HARD_A	2860
Point Conception	MID_SHELF_40-200m_FLATS_MIXED_A	2264
Point Conception	MID_SHELF_40-200m_FLATS_SOFT_A	1360
Point Conception	MID_SHELF_40-200m_SLOPE_HARD_A	236
Point Conception	MID_SHELF_40-200m_SLOPE_MIXED_A	2984
Point Conception	MID_SHELF_40-200m_SLOPE_SOFT_A	884
Point Conception	Offshore_Rocks_A	5
Point Conception	Pinniped_Haulout_A	3
Point Conception	Sand_beach_A	6
Point Conception	Upwelling_A	10
Point Conception	Wave_cut_rock_platform_A	16
Point Mugu	BATHYBENTHAL_700-5000m_CANYON_HARD_A	84
Point Mugu	BATHYBENTHAL_700-5000m_CANYON_MIXED_A	1072
Point Mugu	BATHYBENTHAL_700-5000m_CANYON_SOFT_A	204
Point Mugu	BATHYBENTHAL_700-5000m_FLATS_MIXED_A	2292
Point Mugu	BATHYBENTHAL_700-5000m_SLOPE_HARD_A	12
Point Mugu	BATHYBENTHAL_700-5000m_SLOPE_MIXED_A	696
Point Mugu	BATHYBENTHAL_700-5000m_SLOPE_SOFT_A	8
Point Mugu	Bird_colony_Least Tern_A	24
Point Mugu	Coastal_salt_marsh_A	430
Point Mugu	Eelgrass_A	1
Point Mugu	Exposed_Rocky_shore_or_cliff_A	2
Point Mugu	Gravel_Beach_A	3

APPENDIX VII
Conservation Areas and Targets Present

Conservation Area	Target Name_Stratification Unit	Amount[1]
Point Mugu	INNER_SHELF_0-40m_CANYON_SOFT_A	852
Point Mugu	INNER_SHELF_0-40m_FLATS_HARD_A	12
Point Mugu	INNER_SHELF_0-40m_FLATS_MIXED_A	3124
Point Mugu	INNER_SHELF_0-40m_FLATS_SOFT_A	1592
Point Mugu	INNER_SHELF_0-40m_RIDGE_MIXED_A	644
Point Mugu	INNER_SHELF_0-40m_RIDGE_SOFT_A	92
Point Mugu	INNER_SHELF_0-40m_SLOPE_MIXED_A	200
Point Mugu	INNER_SHELF_0-40m_SLOPE_SOFT_A	328
Point Mugu	Kelp_CDFG_2002_A	82
Point Mugu	Kelp_CDFG_1989_A	67
Point Mugu	Marsh_A	18
Point Mugu	MESOBENTHAL_200-700m_CANYON_HARD_A	80
Point Mugu	MESOBENTHAL_200-700m_CANYON_MIXED_A	488
Point Mugu	MESOBENTHAL_200-700m_CANYON_SOFT_A	1764
Point Mugu	MESOBENTHAL_200-700m_RIDGE_HARD_A	456
Point Mugu	MESOBENTHAL_200-700m_RIDGE_MIXED_A	328
Point Mugu	MESOBENTHAL_200-700m_RIDGE_SOFT_A	416
Point Mugu	MESOBENTHAL_200-700m_SLOPE_HARD_A	788
Point Mugu	MESOBENTHAL_200-700m_SLOPE_MIXED_A	256
Point Mugu	MESOBENTHAL_200-700m_SLOPE_SOFT_A	1712
Point Mugu	MID_SHELF_40-200m_CANYON_MIXED_A	352
Point Mugu	MID_SHELF_40-200m_CANYON_SOFT_A	428
Point Mugu	MID_SHELF_40-200m_FLATS_HARD_A	308
Point Mugu	MID_SHELF_40-200m_FLATS_MIXED_A	376
Point Mugu	MID_SHELF_40-200m_FLATS_SOFT_A	2152
Point Mugu	MID_SHELF_40-200m_RIDGE_HARD_A	140
Point Mugu	MID_SHELF_40-200m_RIDGE_MIXED_A	416
Point Mugu	MID_SHELF_40-200m_RIDGE_SOFT_A	2040
Point Mugu	MID_SHELF_40-200m_SLOPE_HARD_A	432
Point Mugu	MID_SHELF_40-200m_SLOPE_MIXED_A	544
Point Mugu	MID_SHELF_40-200m_SLOPE_SOFT_A	2224
Point Mugu	Nearshore_caynon_head_A	1
Point Mugu	Offshore_Rocks_A	1
Point Mugu	Pinniped_Haulout_A	3
Point Mugu	Sand_beach_A	25
Point Mugu	Tidal_Flat_A	4
Point Mugu	Wave_cut_rock_platform_A	3
Punta Baja - Isla San Geronimo	BATHYBENTHAL_700-5000m_CANYON_NO_DATA_E	220
Punta Baja - Isla San Geronimo	BATHYBENTHAL_700-5000m_SLOPE_NO_DATA_E	476
Punta Baja - Isla San Geronimo	Bird_colony_Cassin's Auklet_E	10000
Punta Baja - Isla San Geronimo	Bird_colony_Double-crested Cormorant_E	40
Punta Baja - Isla San Geronimo	Bird_colony_Xantu's Murrelet_E	500
Punta Baja - Isla San Geronimo	Exposed_Rocky_shore_or_cliff_E	40
Punta Baja - Isla San Geronimo	INNER_SHELF_0-40m_FLATS_NO_DATA_E	25148
Punta Baja - Isla San Geronimo	INNER_SHELF_0-40m_RIDGE_NO_DATA_E	160
Punta Baja - Isla San Geronimo	INNER_SHELF_0-40m_SLOPE_NO_DATA_E	136
Punta Baja - Isla San Geronimo	Kelp_Baja_TNC_2002_E	8
Punta Baja - Isla San Geronimo	Kelp_Baja_TNC_2003_E	8
Punta Baja - Isla San Geronimo	MESOBENTHAL_200-700m_CANYON_NO_DATA_E	68
Punta Baja - Isla San Geronimo	MESOBENTHAL_200-700m_RIDGE_NO_DATA_E	1684
Punta Baja - Isla San Geronimo	MESOBENTHAL_200-700m_SLOPE_NO_DATA_E	5500

APPENDIX VII
Conservation Areas and Targets Present

Conservation Area	Target Name_Stratification Unit	Amount[1]
Punta Baja - Isla San Geronimo	MID_SHELF_40-200m_FLATS_NO_DATA_E	34088
Punta Baja - Isla San Geronimo	MID_SHELF_40-200m_RIDGE_NO_DATA_E	948
Punta Baja - Isla San Geronimo	MID_SHELF_40-200m_SLOPE_NO_DATA_E	4804
Punta Baja - Isla San Geronimo	Offshore_Rocks_E	21
Punta Baja - Isla San Geronimo	Pinniped_Rookery_CA Sea Lion_E	1
Punta Baja - Isla San Geronimo	Sheltered_Rocky_shore_or_cliff_E	4
Punta Baja - Isla San Geronimo	Unidentified Shoreline_E	11
Punta Baja - Isla San Geronimo	Upwelling_E	12
Punta Banda	BATHYBENTHAL_700-5000m_CANYON_NO_DATA_C	14680
Punta Banda	BATHYBENTHAL_700-5000m_CANYON_NO_DATA_D	2856
Punta Banda	BATHYBENTHAL_700-5000m_FLATS_NO_DATA_C	38020
Punta Banda	BATHYBENTHAL_700-5000m_FLATS_NO_DATA_D	11612
Punta Banda	BATHYBENTHAL_700-5000m_RIDGE_NO_DATA_C	6664
Punta Banda	BATHYBENTHAL_700-5000m_RIDGE_NO_DATA_D	2688
Punta Banda	BATHYBENTHAL_700-5000m_SLOPE_NO_DATA_C	10060
Punta Banda	BATHYBENTHAL_700-5000m_SLOPE_NO_DATA_D	10200
Punta Banda	Bird_colony_Double-crested Cormorant_C	230
Punta Banda	Bird_colony_Xantu's Murrelet_C	250
Punta Banda	Coastal_salt_marsh_C	689
Punta Banda	Eelgrass_C	2
Punta Banda	Exposed_Rocky_shore_or_cliff_C	24
Punta Banda	Exposed_Rocky_shore_or_cliff_D	2
Punta Banda	Gravel_Beach_C	14
Punta Banda	Gravel_Beach_D	1
Punta Banda	INNER_SHELF_0-40m_CANYON_NO_DATA_C	1012
Punta Banda	INNER_SHELF_0-40m_CANYON_NO_DATA_D	356
Punta Banda	INNER_SHELF_0-40m_FLATS_NO_DATA_C	1076
Punta Banda	INNER_SHELF_0-40m_FLATS_NO_DATA_D	4664
Punta Banda	INNER_SHELF_0-40m_RIDGE_NO_DATA_C	92
Punta Banda	INNER_SHELF_0-40m_SLOPE_NO_DATA_C	996
Punta Banda	INNER_SHELF_0-40m_SLOPE_NO_DATA_D	196
Punta Banda	Kelp_Baja_TNC_2002_C	9
Punta Banda	Kelp_Baja_TNC_2002_D	3
Punta Banda	Kelp_Baja_TNC_2003_C	7
Punta Banda	Kelp_Baja_TNC_2003_D	4
Punta Banda	Marsh_C	20
Punta Banda	MESOBENTHAL_200-700m_CANYON_NO_DATA_C	7084
Punta Banda	MESOBENTHAL_200-700m_CANYON_NO_DATA_D	728
Punta Banda	MESOBENTHAL_200-700m_FLATS_NO_DATA_C	2320
Punta Banda	MESOBENTHAL_200-700m_FLATS_NO_DATA_D	1892
Punta Banda	MESOBENTHAL_200-700m_RIDGE_NO_DATA_C	9956
Punta Banda	MESOBENTHAL_200-700m_RIDGE_NO_DATA_D	2140
Punta Banda	MESOBENTHAL_200-700m_SLOPE_NO_DATA_C	15388
Punta Banda	MESOBENTHAL_200-700m_SLOPE_NO_DATA_D	18980
Punta Banda	MID_SHELF_40-200m_CANYON_NO_DATA_C	2008
Punta Banda	MID_SHELF_40-200m_CANYON_NO_DATA_D	184
Punta Banda	MID_SHELF_40-200m_FLATS_NO_DATA_C	12888
Punta Banda	MID_SHELF_40-200m_FLATS_NO_DATA_D	15464
Punta Banda	MID_SHELF_40-200m_RIDGE_NO_DATA_C	5476
Punta Banda	MID_SHELF_40-200m_RIDGE_NO_DATA_D	416
Punta Banda	MID_SHELF_40-200m_SLOPE_NO_DATA_C	9956

APPENDIX VII
Conservation Areas and Targets Present

Conservation Area	Target Name_Stratification Unit	Amount[1]
Punta Banda	MID_SHELF_40-200m_SLOPE_NO_DATA_D	4260
Punta Banda	Nearshore_canyon_head_C	1
Punta Banda	Offshore_Rocks_C	2
Punta Banda	Sand_beach_C	7
Punta Banda	Sand_beach_D	7
Punta Banda	Unidentified Shoreline_C	28
Punta Banda	Unidentified Shoreline_D	15
Punta Banda	Upwelling_C	4
Punta Banda	Upwelling_D	5
Punta Colonet	Coastal_salt_marsh_D	222
Punta Colonet	Gravel_Beach_D	13
Punta Colonet	INNER_SHELF_0-40m_CANYON_NO_DATA_D	20
Punta Colonet	INNER_SHELF_0-40m_FLATS_NO_DATA_D	10492
Punta Colonet	INNER_SHELF_0-40m_SLOPE_NO_DATA_D	60
Punta Colonet	Kelp_Baja_TNC_2002_D	4
Punta Colonet	Kelp_Baja_TNC_2003_D	4
Punta Colonet	MID_SHELF_40-200m_FLATS_NO_DATA_D	104
Punta Colonet	Sheltered_Rocky_shore_or_cliff_D	4
Punta Colonet	Unidentified Shoreline_D	12
Punta Colonet	Upwelling_D	3
Punta Eugenia - Isla Natividad	Bird_colony_Brown Pelican_E	450
Punta Eugenia - Isla Natividad	Bird_colony_Black-vented Shearwater_E	153140
Punta Eugenia - Isla Natividad	Bird_colony_Double-crested Cormorant_E	115
Punta Eugenia - Isla Natividad	Gravel_Beach_E	15
Punta Eugenia - Isla Natividad	INNER_SHELF_0-40m_FLATS_NO_DATA_E	20852
Punta Eugenia - Isla Natividad	INNER_SHELF_0-40m_FLATS_NO_DATA_F	3364
Punta Eugenia - Isla Natividad	Kelp_Baja_TNC_2002_E	5
Punta Eugenia - Isla Natividad	MID_SHELF_40-200m_FLATS_NO_DATA_E	41188
Punta Eugenia - Isla Natividad	MID_SHELF_40-200m_FLATS_NO_DATA_F	27988
Punta Eugenia - Isla Natividad	MID_SHELF_40-200m_SLOPE_NO_DATA_F	276
Punta Eugenia - Isla Natividad	Offshore_Rocks_E	2
Punta Eugenia - Isla Natividad	Pinniped_Rookery_CA Sea Lion_E	1
Punta Eugenia - Isla Natividad	Sand_beach_E	3
Punta Eugenia - Isla Natividad	Upwelling_F	6
Punta Salsipuedes	INNER_SHELF_0-40m_CANYON_NO_DATA_C	604
Punta Salsipuedes	INNER_SHELF_0-40m_SLOPE_NO_DATA_C	72
Punta Salsipuedes	Kelp_Baja_TNC_2003_C	3
Punta Salsipuedes	MESOBENTHAL_200-700m_CANYON_NO_DATA_C	876
Punta Salsipuedes	MESOBENTHAL_200-700m_FLATS_NO_DATA_C	8
Punta Salsipuedes	MESOBENTHAL_200-700m_RIDGE_NO_DATA_C	80
Punta Salsipuedes	MESOBENTHAL_200-700m_SLOPE_NO_DATA_C	576
Punta Salsipuedes	MID_SHELF_40-200m_CANYON_NO_DATA_C	632
Punta Salsipuedes	MID_SHELF_40-200m_FLATS_NO_DATA_C	2040
Punta Salsipuedes	MID_SHELF_40-200m_RIDGE_NO_DATA_C	528
Punta Salsipuedes	MID_SHELF_40-200m_SLOPE_NO_DATA_C	2096
Punta Salsipuedes	Nearshore_canyon_head_C	1
Punta Salsipuedes	Unidentified Shoreline_C	16
Punta San Roque	BATHYBENTHAL_700-5000m_CANYON_NO_DATA_F	2240
Punta San Roque	BATHYBENTHAL_700-5000m_RIDGE_NO_DATA_F	3728
Punta San Roque	BATHYBENTHAL_700-5000m_SLOPE_NO_DATA_F	8740
Punta San Roque	Exposed_Rocky_shore_or_cliff_F	9

APPENDIX VII
Conservation Areas and Targets Present

Conservation Area	Target Name_Stratification Unit	Amount[1]
Punta San Roque	Gravel_Beach_F	5
Punta San Roque	INNER_SHELF_0-40m_CANYON_NO_DATA_F	416
Punta San Roque	INNER_SHELF_0-40m_FLATS_NO_DATA_F	18772
Punta San Roque	INNER_SHELF_0-40m_SLOPE_NO_DATA_F	360
Punta San Roque	Kelp_Baja_TNC_2002_F	4
Punta San Roque	MESOBENTHAL_200-700m_CANYON_NO_DATA_F	1200
Punta San Roque	MESOBENTHAL_200-700m_FLATS_NO_DATA_F	552
Punta San Roque	MESOBENTHAL_200-700m_RIDGE_NO_DATA_F	1224
Punta San Roque	MESOBENTHAL_200-700m_SLOPE_NO_DATA_F	20816
Punta San Roque	MID_SHELF_40-200m_CANYON_NO_DATA_F	304
Punta San Roque	MID_SHELF_40-200m_FLATS_NO_DATA_F	19764
Punta San Roque	MID_SHELF_40-200m_RIDGE_NO_DATA_F	1168
Punta San Roque	MID_SHELF_40-200m_SLOPE_NO_DATA_F	5144
Punta San Roque	Offshore_Rocks_F	3
Punta San Roque	Pinniped_Rookery_CA Sea Lion_F	1
Punta San Roque	Sand_beach_F	11
Punta San Roque	Unidentified Shoreline_F	17
San Clemente Canyon	BATHYBENTHAL_700-5000m_CANYON_HARD_B	9200
San Clemente Canyon	BATHYBENTHAL_700-5000m_CANYON_MIXED_B	10812
San Clemente Canyon	BATHYBENTHAL_700-5000m_CANYON_SOFT_B	24
San Clemente Canyon	BATHYBENTHAL_700-5000m_FLATS_HARD_B	10992
San Clemente Canyon	BATHYBENTHAL_700-5000m_FLATS_MIXED_B	29676
San Clemente Canyon	BATHYBENTHAL_700-5000m_FLATS_SOFT_B	176
San Clemente Canyon	BATHYBENTHAL_700-5000m_RIDGE_HARD_B	8264
San Clemente Canyon	BATHYBENTHAL_700-5000m_RIDGE_MIXED_B	1844
San Clemente Canyon	BATHYBENTHAL_700-5000m_SLOPE_HARD_B	28064
San Clemente Canyon	BATHYBENTHAL_700-5000m_SLOPE_MIXED_B	39548
San Clemente Canyon	BATHYBENTHAL_700-5000m_SLOPE_SOFT_B	224
San Clemente Canyon	Exposed_Rocky_shore_or_cliff_B	5
San Clemente Canyon	INNER_SHELF_0-40m_CANYON_HARD_B	36
San Clemente Canyon	INNER_SHELF_0-40m_RIDGE_HARD_B	76
San Clemente Canyon	INNER_SHELF_0-40m_SLOPE_HARD_B	44
San Clemente Canyon	Kelp_CDFG_2002_B	22
San Clemente Canyon	Kelp_CDFG_1989_B	32
San Clemente Canyon	Kelp_Baja_TNC_2002_B	3
San Clemente Canyon	MESOBENTHAL_200-700m_CANYON_HARD_B	1528
San Clemente Canyon	MESOBENTHAL_200-700m_CANYON_MIXED_B	8
San Clemente Canyon	MESOBENTHAL_200-700m_CANYON_SOFT_B	32
San Clemente Canyon	MESOBENTHAL_200-700m_FLATS_HARD_B	1032
San Clemente Canyon	MESOBENTHAL_200-700m_FLATS_SOFT_B	28
San Clemente Canyon	MESOBENTHAL_200-700m_RIDGE_HARD_B	4032
San Clemente Canyon	MESOBENTHAL_200-700m_RIDGE_MIXED_B	8
San Clemente Canyon	MESOBENTHAL_200-700m_RIDGE_SOFT_B	636
San Clemente Canyon	MESOBENTHAL_200-700m_SLOPE_HARD_B	5264
San Clemente Canyon	MESOBENTHAL_200-700m_SLOPE_MIXED_B	48
San Clemente Canyon	MESOBENTHAL_200-700m_SLOPE_SOFT_B	172
San Clemente Canyon	MID_SHELF_40-200m_CANYON_HARD_B	68
San Clemente Canyon	MID_SHELF_40-200m_FLATS_HARD_B	264
San Clemente Canyon	MID_SHELF_40-200m_RIDGE_HARD_B	672
San Clemente Canyon	MID_SHELF_40-200m_RIDGE_MIXED_B	120
San Clemente Canyon	MID_SHELF_40-200m_SLOPE_HARD_B	440

APPENDIX VII
Conservation Areas and Targets Present

Conservation Area	Target Name_Stratification Unit	Amount[1]
San Clemente Canyon	MID_SHELF_40-200m_SLOPE_MIXED_B	168
San Clemente Canyon	Nearshore_caynon_head_B	1
San Clemente Canyon	Offshore_Rocks_B	5
San Clemente Canyon	Pinniped_Haulout_B	1
San Clemente Canyon	Sand_beach_B	2
San Clemente Canyon	Wave_cut_rock_platform_B	4
San Clemente Island	Exposed_Rocky_shore_or_cliff_B	6
San Clemente Island	Gravel_Beach_B	6
San Clemente Island	INNER_SHELF_0-40m_CANYON_HARD_B	848
San Clemente Island	INNER_SHELF_0-40m_FLATS_HARD_B	28
San Clemente Island	INNER_SHELF_0-40m_SLOPE_HARD_B	140
San Clemente Island	Kelp_CDFG_2002_B	205
San Clemente Island	Kelp_CDFG_1989_B	523
San Clemente Island	MESOBENTHAL_200-700m_CANYON_HARD_B	172
San Clemente Island	MESOBENTHAL_200-700m_CANYON_MIXED_B	320
San Clemente Island	MESOBENTHAL_200-700m_FLATS_HARD_B	484
San Clemente Island	MESOBENTHAL_200-700m_RIDGE_HARD_B	560
San Clemente Island	MESOBENTHAL_200-700m_RIDGE_MIXED_B	64
San Clemente Island	MESOBENTHAL_200-700m_SLOPE_HARD_B	1800
San Clemente Island	MESOBENTHAL_200-700m_SLOPE_MIXED_B	1400
San Clemente Island	MID_SHELF_40-200m_CANYON_HARD_B	596
San Clemente Island	MID_SHELF_40-200m_FLATS_HARD_B	3288
San Clemente Island	MID_SHELF_40-200m_FLATS_MIXED_B	76
San Clemente Island	MID_SHELF_40-200m_RIDGE_HARD_B	436
San Clemente Island	MID_SHELF_40-200m_RIDGE_MIXED_B	920
San Clemente Island	MID_SHELF_40-200m_SLOPE_HARD_B	2240
San Clemente Island	MID_SHELF_40-200m_SLOPE_MIXED_B	464
San Clemente Island	Offshore_Rocks_B	19
San Clemente Island	Pinniped_Haulout_B	3
San Clemente Island	Pinniped_Rookery_No. Elephant Seal_B	1
San Clemente Island	Sand_beach_B	1
San Clemente Island	Wave_cut_rock_platform_B	19
San Mateo Point	Coastal_salt_marsh_B	56
San Mateo Point	Gravel_Beach_B	1
San Mateo Point	INNER_SHELF_0-40m_CANYON_HARD_B	56
San Mateo Point	INNER_SHELF_0-40m_FLATS_HARD_B	2188
San Mateo Point	INNER_SHELF_0-40m_FLATS_MIXED_B	2076
San Mateo Point	INNER_SHELF_0-40m_SLOPE_MIXED_B	4
San Mateo Point	Kelp_CDFG_2002_B	75
San Mateo Point	Kelp_CDFG_1989_B	104
San Mateo Point	MESOBENTHAL_200-700m_SLOPE_MIXED_B	320
San Mateo Point	MID_SHELF_40-200m_FLATS_MIXED_B	408
San Mateo Point	MID_SHELF_40-200m_SLOPE_MIXED_B	2308
San Mateo Point	Sand_beach_B	4
San Mateo Point	Steelhead_outlet_B	1
San Mateo Point	Wave_cut_rock_platform_B	3
San Quintin	BATHYBENTHAL_700-5000m_CANYON_NO_DATA_D	6848
San Quintin	BATHYBENTHAL_700-5000m_FLATS_NO_DATA_D	2404
San Quintin	BATHYBENTHAL_700-5000m_RIDGE_NO_DATA_D	4196
San Quintin	BATHYBENTHAL_700-5000m_SLOPE_NO_DATA_D	10324
San Quintin	Bird_colony_Brown Pelican_D	180

APPENDIX VII
Conservation Areas and Targets Present

Conservation Area	Target Name_Stratification Unit	Amount[1]
San Quintin	Bird_colony_Cassin's Auklet_D	5000
San Quintin	Bird_colony_Double-crested Cormorant_D	1200
San Quintin	Bird_colony_Xantu's Murrelet_D	250
San Quintin	Coastal_salt_marsh_D	2211
San Quintin	Eelgrass_D	4
San Quintin	Exposed_Rocky_shore_or_cliff_D	2
San Quintin	INNER_SHELF_0-40m_CANYON_NO_DATA_D	8
San Quintin	INNER_SHELF_0-40m_FLATS_NO_DATA_D	31488
San Quintin	Kelp_Baja_TNC_2002_D	6
San Quintin	Kelp_Baja_TNC_2003_D	4
San Quintin	Marsh_D	29
San Quintin	MESOBENTHAL_200-700m_CANYON_NO_DATA_D	864
San Quintin	MESOBENTHAL_200-700m_FLATS_NO_DATA_D	268
San Quintin	MESOBENTHAL_200-700m_RIDGE_NO_DATA_D	3244
San Quintin	MESOBENTHAL_200-700m_SLOPE_NO_DATA_D	10020
San Quintin	MID_SHELF_40-200m_FLATS_NO_DATA_D	22080
San Quintin	MID_SHELF_40-200m_RIDGE_NO_DATA_D	1664
San Quintin	MID_SHELF_40-200m_SLOPE_NO_DATA_D	3392
San Quintin	Offshore_Rocks_D	1
San Quintin	Sand_beach_D	31
San Quintin	Sheltered_Rocky_shore_or_cliff_D	13
San Quintin	Steelhead_outlet_D	1
San Quintin	Unidentified Shoreline_D	32
San Quintin	Upwelling_D	10
Santa Barbara Island	BATHYBENTHAL_700-5000m_RIDGE_HARD_B	64
Santa Barbara Island	BATHYBENTHAL_700-5000m_SLOPE_HARD_B	532
Santa Barbara Island	Bird_colony_Ashy Storm Petrel_B	295
Santa Barbara Island	Bird_colony_Black Storm Petrel_B	150
Santa Barbara Island	Bird_colony_Brown Pelican_B	174
Santa Barbara Island	Bird_colony_Cassin's Auklet_B	220
Santa Barbara Island	Bird_colony_Double-crested Cormorant_B	134
Santa Barbara Island	Bird_colony_Pigeon Guillemot_B	120
Santa Barbara Island	Bird_colony_Xantu's Murrelet_B	3180
Santa Barbara Island	Exposed_Rocky_shore_or_cliff_B	12
Santa Barbara Island	Gravel_Beach_B	3
Santa Barbara Island	INNER_SHELF_0-40m_FLATS_HARD_B	136
Santa Barbara Island	INNER_SHELF_0-40m_FLATS_MIXED_B	236
Santa Barbara Island	INNER_SHELF_0-40m_FLATS_SOFT_B	92
Santa Barbara Island	INNER_SHELF_0-40m_RIDGE_HARD_B	100
Santa Barbara Island	INNER_SHELF_0-40m_RIDGE_MIXED_B	188
Santa Barbara Island	INNER_SHELF_0-40m_RIDGE_SOFT_B	148
Santa Barbara Island	INNER_SHELF_0-40m_SLOPE_HARD_B	60
Santa Barbara Island	INNER_SHELF_0-40m_SLOPE_MIXED_B	132
Santa Barbara Island	INNER_SHELF_0-40m_SLOPE_SOFT_B	172
Santa Barbara Island	Kelp_CDFG_2002_B	5
Santa Barbara Island	Kelp_CDFG_1989_B	25
Santa Barbara Island	MESOBENTHAL_200-700m_CANYON_HARD_B	2856
Santa Barbara Island	MESOBENTHAL_200-700m_CANYON_MIXED_B	1252
Santa Barbara Island	MESOBENTHAL_200-700m_FLATS_HARD_B	1724
Santa Barbara Island	MESOBENTHAL_200-700m_FLATS_MIXED_B	40
Santa Barbara Island	MESOBENTHAL_200-700m_RIDGE_HARD_B	3172

APPENDIX VII
Conservation Areas and Targets Present

Conservation Area	Target Name_Stratification Unit	Amount[1]
Santa Barbara Island	MESOBENTHAL_200-700m_RIDGE_MIXED_B	32
Santa Barbara Island	MESOBENTHAL_200-700m_RIDGE_SOFT_B	4
Santa Barbara Island	MESOBENTHAL_200-700m_SLOPE_HARD_B	11860
Santa Barbara Island	MESOBENTHAL_200-700m_SLOPE_MIXED_B	680
Santa Barbara Island	MID_SHELF_40-200m_FLATS_HARD_B	668
Santa Barbara Island	MID_SHELF_40-200m_FLATS_MIXED_B	32
Santa Barbara Island	MID_SHELF_40-200m_FLATS_SOFT_B	8
Santa Barbara Island	MID_SHELF_40-200m_RIDGE_HARD_B	1748
Santa Barbara Island	MID_SHELF_40-200m_RIDGE_MIXED_B	372
Santa Barbara Island	MID_SHELF_40-200m_RIDGE_SOFT_B	508
Santa Barbara Island	MID_SHELF_40-200m_SLOPE_HARD_B	2920
Santa Barbara Island	MID_SHELF_40-200m_SLOPE_MIXED_B	976
Santa Barbara Island	MID_SHELF_40-200m_SLOPE_SOFT_B	348
Santa Barbara Island	Offshore_Rocks_B	64
Santa Barbara Island	Pinniped_Haulout_B	24
Santa Barbara Island	Pinniped_Rookery_No. Elephant Seal_B	3
Santa Barbara Island	Sand_beach_B	1
Santa Barbara Island	Wave_cut_rock_platform_B	6
Santa Catalina Island	BATHYBENTHAL_700-5000m_CANYON_HARD_B	540
Santa Catalina Island	BATHYBENTHAL_700-5000m_CANYON_MIXED_B	964
Santa Catalina Island	BATHYBENTHAL_700-5000m_FLATS_HARD_B	68
Santa Catalina Island	BATHYBENTHAL_700-5000m_FLATS_MIXED_B	1676
Santa Catalina Island	BATHYBENTHAL_700-5000m_RIDGE_HARD_B	4
Santa Catalina Island	BATHYBENTHAL_700-5000m_RIDGE_MIXED_B	52
Santa Catalina Island	BATHYBENTHAL_700-5000m_SLOPE_HARD_B	456
Santa Catalina Island	BATHYBENTHAL_700-5000m_SLOPE_MIXED_B	408
Santa Catalina Island	Exposed_Rocky_shore_or_cliff_B	27
Santa Catalina Island	Gravel_Beach_B	17
Santa Catalina Island	INNER_SHELF_0-40m_CANYON_MIXED_B	488
Santa Catalina Island	INNER_SHELF_0-40m_RIDGE_MIXED_B	48
Santa Catalina Island	INNER_SHELF_0-40m_SLOPE_MIXED_B	240
Santa Catalina Island	Kelp_CDFG_2002_B	47
Santa Catalina Island	Kelp_CDFG_1989_B	59
Santa Catalina Island	MESOBENTHAL_200-700m_CANYON_HARD_B	228
Santa Catalina Island	MESOBENTHAL_200-700m_CANYON_MIXED_B	644
Santa Catalina Island	MESOBENTHAL_200-700m_FLATS_HARD_B	1288
Santa Catalina Island	MESOBENTHAL_200-700m_FLATS_MIXED_B	1600
Santa Catalina Island	MESOBENTHAL_200-700m_RIDGE_HARD_B	40
Santa Catalina Island	MESOBENTHAL_200-700m_RIDGE_MIXED_B	2004
Santa Catalina Island	MESOBENTHAL_200-700m_SLOPE_HARD_B	3364
Santa Catalina Island	MESOBENTHAL_200-700m_SLOPE_MIXED_B	7140
Santa Catalina Island	MID_SHELF_40-200m_CANYON_MIXED_B	1240
Santa Catalina Island	MID_SHELF_40-200m_FLATS_MIXED_B	264
Santa Catalina Island	MID_SHELF_40-200m_RIDGE_MIXED_B	1856
Santa Catalina Island	MID_SHELF_40-200m_SLOPE_MIXED_B	3016
Santa Catalina Island	Nearshore_canyon_head_B	1
Santa Catalina Island	Offshore_Rocks_B	17
Santa Catalina Island	Pinniped_Haulout_B	7
Santa Catalina Island	Sand_beach_B	3
Santa Catalina Island	Sheltered_Rocky_shore_or_cliff_B	1
Santa Catalina Island	Tidal_Flat_B	1

APPENDIX VII
Conservation Areas and Targets Present

Conservation Area	Target Name_Stratification Unit	Amount[1]
Santa Catalina Island	Wave_cut_rock_platform_B	1
Santa Cruz Island	BATHYBENTHAL_700-5000m_CANYON_HARD_A	1096
Santa Cruz Island	BATHYBENTHAL_700-5000m_CANYON_MIXED_A	3048
Santa Cruz Island	BATHYBENTHAL_700-5000m_CANYON_SOFT_A	24
Santa Cruz Island	BATHYBENTHAL_700-5000m_FLATS_MIXED_A	16
Santa Cruz Island	BATHYBENTHAL_700-5000m_RIDGE_HARD_A	268
Santa Cruz Island	BATHYBENTHAL_700-5000m_RIDGE_MIXED_A	500
Santa Cruz Island	BATHYBENTHAL_700-5000m_RIDGE_SOFT_A	4
Santa Cruz Island	BATHYBENTHAL_700-5000m_SLOPE_HARD_A	732
Santa Cruz Island	BATHYBENTHAL_700-5000m_SLOPE_MIXED_A	1364
Santa Cruz Island	BATHYBENTHAL_700-5000m_SLOPE_SOFT_A	376
Santa Cruz Island	Bird_colony_Ashy Storm Petrel_A	38
Santa Cruz Island	Bird_colony_Cassin's Auklet_A	170
Santa Cruz Island	Bird_colony_Pigeon Guillemot_A	1
Santa Cruz Island	Bird_colony_Xantu's Murrelet_A	2
Santa Cruz Island	Eelgrass_A	1
Santa Cruz Island	Exposed_Rocky_shore_or_cliff_A	37
Santa Cruz Island	Gravel_Beach_A	6
Santa Cruz Island	INNER_SHELF_0-40m_CANYON_HARD_A	1292
Santa Cruz Island	INNER_SHELF_0-40m_CANYON_NO_DATA_A	20
Santa Cruz Island	INNER_SHELF_0-40m_FLATS_HARD_A	3080
Santa Cruz Island	INNER_SHELF_0-40m_FLATS_NO_DATA_A	4
Santa Cruz Island	INNER_SHELF_0-40m_RIDGE_HARD_A	140
Santa Cruz Island	INNER_SHELF_0-40m_SLOPE_HARD_A	780
Santa Cruz Island	INNER_SHELF_0-40m_SLOPE_NO_DATA_A	20
Santa Cruz Island	Kelp_CDFG_2002_A	97
Santa Cruz Island	Kelp_CDFG_1989_A	82
Santa Cruz Island	Kelp_CDFG_1999_A	65
Santa Cruz Island	Kelp_CDFG_Persistent_89-99-02_A	239
Santa Cruz Island	MESOBENTHAL_200-700m_CANYON_HARD_A	2112
Santa Cruz Island	MESOBENTHAL_200-700m_FLATS_HARD_A	4
Santa Cruz Island	MESOBENTHAL_200-700m_RIDGE_HARD_A	2432
Santa Cruz Island	MESOBENTHAL_200-700m_RIDGE_SOFT_A	144
Santa Cruz Island	MESOBENTHAL_200-700m_SLOPE_HARD_A	2632
Santa Cruz Island	MESOBENTHAL_200-700m_SLOPE_SOFT_A	192
Santa Cruz Island	MID_SHELF_40-200m_CANYON_HARD_A	1904
Santa Cruz Island	MID_SHELF_40-200m_FLATS_HARD_A	4568
Santa Cruz Island	MID_SHELF_40-200m_RIDGE_HARD_A	1596
Santa Cruz Island	MID_SHELF_40-200m_SLOPE_HARD_A	2032
Santa Cruz Island	Nearshore_canyon_head_A	1
Santa Cruz Island	Offshore_Rocks_A	11
Santa Cruz Island	Pinniped_Haulout_A	35
Santa Cruz Island	Sand_beach_A	9
Santa Cruz Island	Sheltered_Rocky_shore_or_cliff_A	1
Santa Cruz Island	Wave_cut_rock_platform_A	14
Santa Monica Canyon	MESOBENTHAL_200-700m_CANYON_HARD_A	8
Santa Monica Canyon	MESOBENTHAL_200-700m_CANYON_SOFT_A	240
Santa Monica Canyon	MESOBENTHAL_200-700m_SLOPE_HARD_A	4
Santa Monica Canyon	MESOBENTHAL_200-700m_SLOPE_SOFT_A	12
Santa Monica Canyon	MID_SHELF_40-200m_CANYON_SOFT_A	220
Santa Monica Canyon	MID_SHELF_40-200m_FLATS_HARD_A	1556

APPENDIX VII
Conservation Areas and Targets Present

Conservation Area	Target Name_Stratification Unit	Amount[1]
Santa Monica Canyon	MID_SHELF_40-200m_FLATS_SOFT_A	536
Santa Monica Canyon	MID_SHELF_40-200m_RIDGE_HARD_A	176
Santa Monica Canyon	MID_SHELF_40-200m_RIDGE_SOFT_A	140
Santa Monica Canyon	MID_SHELF_40-200m_SLOPE_HARD_A	20
Santa Monica Canyon	MID_SHELF_40-200m_SLOPE_SOFT_A	600
Santa Monica Canyon	Nearshore_canyon_head_A	1
SCC_13	BATHYBENTHAL_700-5000m_FLATS_MIXED_B	924
SCC_13	BATHYBENTHAL_700-5000m_FLATS_SOFT_B	2324
SCC_13	MESOBENTHAL_200-700m_FLATS_HARD_B	112
SCC_13	MESOBENTHAL_200-700m_FLATS_MIXED_B	3040
SCC_13	MESOBENTHAL_200-700m_FLATS_SOFT_B	448
SCC_13	MESOBENTHAL_200-700m_SLOPE_MIXED_B	180
SCC_17	BATHYBENTHAL_700-5000m_CANYON_SOFT_B	76
SCC_17	BATHYBENTHAL_700-5000m_FLATS_SOFT_B	1372
SCC_17	BATHYBENTHAL_700-5000m_RIDGE_SOFT_B	248
SCC_17	BATHYBENTHAL_700-5000m_SLOPE_SOFT_B	1752
SCC_23	BATHYBENTHAL_700-5000m_CANYON_NO_DATA_D	4808
SCC_23	BATHYBENTHAL_700-5000m_FLATS_NO_DATA_D	1796
SCC_23	BATHYBENTHAL_700-5000m_RIDGE_NO_DATA_D	11432
SCC_23	BATHYBENTHAL_700-5000m_SLOPE_NO_DATA_D	6432
SCC_24	BATHYBENTHAL_700-5000m_CANYON_NO_DATA_D	2860
SCC_24	BATHYBENTHAL_700-5000m_CANYON_NO_DATA_E	2152
SCC_24	BATHYBENTHAL_700-5000m_FLATS_NO_DATA_D	1864
SCC_24	BATHYBENTHAL_700-5000m_FLATS_NO_DATA_E	80
SCC_24	BATHYBENTHAL_700-5000m_RIDGE_NO_DATA_D	12612
SCC_24	BATHYBENTHAL_700-5000m_RIDGE_NO_DATA_E	4380
SCC_24	BATHYBENTHAL_700-5000m_SLOPE_NO_DATA_D	10716
SCC_24	BATHYBENTHAL_700-5000m_SLOPE_NO_DATA_E	3940
SCC_25	BATHYBENTHAL_700-5000m_CANYON_NO_DATA_D	31236
SCC_25	BATHYBENTHAL_700-5000m_CANYON_NO_DATA_E	2596
SCC_25	BATHYBENTHAL_700-5000m_FLATS_NO_DATA_D	48300
SCC_25	BATHYBENTHAL_700-5000m_FLATS_NO_DATA_E	27072
SCC_25	BATHYBENTHAL_700-5000m_RIDGE_NO_DATA_D	35980
SCC_25	BATHYBENTHAL_700-5000m_RIDGE_NO_DATA_E	1564
SCC_25	BATHYBENTHAL_700-5000m_SLOPE_NO_DATA_D	50992
SCC_25	BATHYBENTHAL_700-5000m_SLOPE_NO_DATA_E	3936
SCC_25	MESOBENTHAL_200-700m_RIDGE_NO_DATA_D	1448
SCC_28	BATHYBENTHAL_700-5000m_CANYON_NO_DATA_G	308
SCC_28	BATHYBENTHAL_700-5000m_FLATS_NO_DATA_G	3488
SCC_28	BATHYBENTHAL_700-5000m_RIDGE_NO_DATA_G	5284
SCC_28	BATHYBENTHAL_700-5000m_SLOPE_NO_DATA_G	1396
SCC_29	BATHYBENTHAL_700-5000m_CANYON_NO_DATA_E	7940
SCC_29	BATHYBENTHAL_700-5000m_FLATS_NO_DATA_E	12792
SCC_29	BATHYBENTHAL_700-5000m_RIDGE_NO_DATA_E	19508
SCC_29	BATHYBENTHAL_700-5000m_SLOPE_NO_DATA_E	29712
SCC_29	MESOBENTHAL_200-700m_FLATS_NO_DATA_E	1212
SCC_29	MESOBENTHAL_200-700m_RIDGE_NO_DATA_E	3572
SCC_29	MESOBENTHAL_200-700m_SLOPE_NO_DATA_E	2316
SCC_32	BATHYBENTHAL_700-5000m_CANYON_NO_DATA_F	3276
SCC_32	BATHYBENTHAL_700-5000m_FLATS_NO_DATA_F	136
SCC_32	BATHYBENTHAL_700-5000m_RIDGE_NO_DATA_F	5352

APPENDIX VII
Conservation Areas and Targets Present

Conservation Area	Target Name_Stratification Unit	Amount[1]
SCC_32	BATHYBENTHAL_700-5000m_SLOPE_NO_DATA_F	8208
SCC_32	MESOBENTHAL_200-700m_RIDGE_NO_DATA_F	396
SCC_32	MESOBENTHAL_200-700m_SLOPE_NO_DATA_F	3720
SCC_34	BATHYBENTHAL_700-5000m_CANYON_NO_DATA_F	148
SCC_34	BATHYBENTHAL_700-5000m_RIDGE_NO_DATA_F	2512
SCC_34	BATHYBENTHAL_700-5000m_SLOPE_NO_DATA_F	852
Tijuana - Imperial Flats	Bird_colony_Elegant Tern_B	900
Tijuana - Imperial Flats	Bird_colony_Least Tern_B	180
Tijuana - Imperial Flats	Coastal_salt_marsh_B	287
Tijuana - Imperial Flats	Eelgrass_B	1
Tijuana - Imperial Flats	INNER_SHELF_0-40m_FLATS_SOFT_B	8
Tijuana - Imperial Flats	INNER_SHELF_0-40m_SLOPE_SOFT_B	352
Tijuana - Imperial Flats	Kelp_CDFG_2002_B	7
Tijuana - Imperial Flats	Kelp_CDFG_1989_B	4
Tijuana - Imperial Flats	Kelp_CDFG_1999_B	1
Tijuana - Imperial Flats	Kelp_CDFG_Persistent_89-99-02_B	12
Tijuana - Imperial Flats	Kelp_Baja_TNC_2002_B	1
Tijuana - Imperial Flats	Marsh_B	18
Tijuana - Imperial Flats	MID_SHELF_40-200m_FLATS_SOFT_B	1148
Tijuana - Imperial Flats	MID_SHELF_40-200m_SLOPE_SOFT_B	4
Tijuana - Imperial Flats	Sand_beach_B	9
Tijuana - Imperial Flats	Tidal_Flat_B	3
Tijuana - Imperial Flats	Unidentified Shoreline_B	5
Topanga Coast	INNER_SHELF_0-40m_CANYON_HARD_A	136
Topanga Coast	INNER_SHELF_0-40m_FLATS_HARD_A	504
Topanga Coast	INNER_SHELF_0-40m_FLATS_SOFT_A	1852
Topanga Coast	INNER_SHELF_0-40m_SLOPE_HARD_A	20
Topanga Coast	Kelp_CDFG_1989_A	1
Topanga Coast	MID_SHELF_40-200m_FLATS_SOFT_A	696
Topanga Coast	Sand_beach_A	4
Topanga Coast	Steelhead_outlet_A	2
Topanga Coast	Wave_cut_rock_platform_A	1
Ventura Coast	Bird_colony_Least Tern_A	37
Ventura Coast	Coastal_salt_marsh_A	10
Ventura Coast	Gravel_Beach_A	6
Ventura Coast	INNER_SHELF_0-40m_CANYON_MIXED_A	460
Ventura Coast	INNER_SHELF_0-40m_FLATS_MIXED_A	10028
Ventura Coast	INNER_SHELF_0-40m_SLOPE_MIXED_A	24
Ventura Coast	Kelp_CDFG_2002_A	20
Ventura Coast	Kelp_CDFG_1989_A	16
Ventura Coast	MID_SHELF_40-200m_FLATS_MIXED_A	84
Ventura Coast	Offshore_Rocks_A	1
Ventura Coast	Sand_beach_A	15
Ventura Coast	Steelhead_outlet_A	2
Ventura Coast	Tidal_Flat_A	2

Notes:
1. Amount held in conservation area; units described in Appendix 2