Santa Catalina Island [Coastal Resource Area]

Santa Catalina Island, part of the Channel Islands chain, is approximately 21 miles long and 8 miles wide. The Island consists of two parts connected by a low-lying isthmus at Two Harbors. The larger (southeastern) portion can be generally characterized by rolling hills with a gradual decent into the sea. The smaller (northwestern) portion is extremely steep and rugged with steep shoreline palisades. Level terrain on the Island is limited to the floors of a few large coastal canyons and areas, such as Avalon, Pebbly Beach, White's Landing, Middle Ranch, Two Harbors, and Emerald Bay. Mount Orizaba, which is located in the central portion of the Island, represents the highest peak at 2,069 feet above mean sea level (MSL).

The climate of the Island is similar to the mainland with wet mild winters and long dry periods. The majority of the Island is relatively undisturbed, consisting of grasslands, coastal sage scrub, woodlands, and chaparral. Disturbed areas include minor camping areas, paved roads, dirt roads, radio tower pads, reservoirs and a landfill.

Because of habitation, proximity to Los Angeles, the work of the Catalina Island Conservancy, and the Wrigley Marine Science Center, the Island has been studied more than any of the other California offshore islands, with national, state, and County recognition in many ways. Nationally, all of the many offshore rocks and islets within 12 nautical miles of the coast are part of the California Coastal National Monument, which is managed by the Bureau of Land Management in the U.S. Department of the Interior. Of the 64 State-recognized sensitive plants, 3 are federally endangered and 1 is federally threatened. Two vertebrates have federal status: the federal candidate marine bird Xantus' murrelet (*Synthliboramphus hypoleucus*) and the federally-endangered Santa Catalina Island fox (*Urocyon littoralis catalinae*). The fox has recently recovered from an epidemic of distemper by a combination of the luck, in that the northwestern population was so isolated and hardly suffered, and by managed captive breeding.

The State Water Resources Control Board has named a number of areas as ASBS (Area of Special Biological Significance) for the water quality and the coincident diversity of the marine resources. These are the Northwest Santa Catalina Island ASBS #25 (20.9 miles of coastline from Isthmus Cove to Catalina Head), the Southeast Santa Catalina Island ASBS #28 (2.9 miles centered on Seal Rocks), the Western Santa Catalina ASBS #26 (4 miles of coastline from Little Harbor south to Ben Weston Beach), and the Farnsworth Bank ASBS #27 (37 acres on a submerged pinnacle, about 60 feet deep at the top, and covered with many kinds of encrusting organisms, such as the purple hydrocoral *Allopora californica*).

The State has also designated a number of State Marine Conservation Areas (SMCA) and three *de facto* State Marine Reserves (SMR) around the Island. In these conservation areas, the take method and what may be fished is limited very specifically and differs for each area. (1) Centered on Farnsworth Bank is the Farnsworth Offshore SMCA that extends from 1 to 3 nautical miles offshore and (2) the Farnsworth Onshore SMCA that extends from the coastline to meet the Farnsworth Offshore SMCA about 1 nautical mile. (3) All of Cat Harbor on the south side of the Isthmus is in Cat Harbor SMCA with take restricted to recreational fishing for marine aquatic plants and finfish. (4) Arrow Point to Lion Head Point SMCA extends from mean high tide out to 1000 feet offshore. (5) Bird Rock SMCA is centered on Bird Rock off the northwest coast and extends from the offshore boundary of Blue Cavern SMCA to 3 nautical miles offshore, with boundaries drawn due N-S off the end points of Blue Cavern SMCA. (6) Blue Cavern SMCA is really a reserve, with no take allowed even of sport fish. (7) Long Point SMR has no take allowed,

which is usual for reserves. (8) Casino Point SMCA on the north end of Avalon Bay is really a reserve, with no take allowed. (9) Lover's Cove SMCA on the south side of Avalon Bay has common provisions, but includes the unusual one of the allowance of fish feeding (for the viewers on the glass-bottomed boats).

The California Department of Fish and Game maintains a list of sensitive species (all rare and uncommon), which includes those designated federally. There are 64 plants, 5 snails, and 5 vertebrates listed for the Island.

California Audubon has designated the Island and its surrounding waters to about 0.8 miles offshore as part of the Northern Channel Islands Globally Important Bird Area (IBA).

The County requires special biological review of development on the Island if the project involves a parcel that has a designated Significant Ecological Area (SEA). These areas were all specified on the basis of significant island vegetation, and in a few cases, included marine algae. There are 37 designated SEAs on the Island: Arrow Point; Avalon Canyon; Toyon Canyon; Ben Weston Beach-Mills Landing-Sentinel Rock; Bird Rock; Black Point, Black Jack Mountain and Echo Lake; Blue Cavern Point-Fishermans Cove; Buffalo Springs Reservoirs; Bulrush Canyon; Cactus Peak; Cape Canyon; Cherry Valley; Cottonwood Canyon; Descanso Canyon; Fourth of July Cove; Gallagher Canyon; Geiger Coves; Haypress Area-Hamilton Canyon; Indian Rock; Isthmus; Isthmus Canyon; Johnsons Landing; Little Harbor-Shark Harbor-Indian Head Point; Middle Ranch Canyon; Mount Orizaba; Parsons Landing; Pebbly Beach Canyon; Renton Mine Road; Silver Peak; Skull Canyon; Sweetwater Canyon; White Cove; and Wild Boar Gully.

Vegetation

Vegetation on the Island is composed of a large variety of plant community types. The rugged topography, steep and rocky shoreline, and generally undisturbed condition of the Island has produced a unique diversity of vegetative communities. Historically, the Island was mostly brushland dominated by chamise (*Adenostoma fasciculatum*) and island ceanothus (*Ceanothus megacarpus* var. *insularis*) on the northern slopes, and California sagebrush (*Artemisia californica*) and Santa Catalina Island buckwheat (*Eriogonum giganteum* var. *giganteum*) on the south-facing slopes. Following the introduction of feral herbivores (goats, pigs, deer, and bison), this brushland was replaced in most areas by island scrub oak (*Quercus pacifica*), laurel sumac (*Malosma laurina*), toyon (*Heteromeles arbutifolia*), lemonadeberry (*Rhus integrifolia*), black sage (*Salvia mellifera*), and white sage (*S. apiana*), which dominate today. The lack of a significant fire history and minimal differences in vegetation along elevation gradients (due to an abundance of moisture) has resulted in slope orientation as a major determinant for species presence/absence.

Plant communities on the Island were classified using standard methodology and terminology. Most of the communities discussed correspond directly with those listed in Holland's Preliminary Descriptions of the Terrestrial Natural Communities of California (1986 and 1992 update). Other communities are named based on dominant species within them and/or commonly used terminology. Descriptions and general locations of each plant community on the Island, including maritime succulent scrub, southern coastal bluff scrub, island chaparral, island oak woodland, ironwood woodland, island cherry woodland, non-native grassland, native grassland, and disturbed are given below.

In recent years, ecologists have refined previous vegetation classification approaches to define communities primarily by their constituent plant assemblages, and have now widely adopted the classification system described by Sawyer, Keeler-Wolf and Evens in A Manual of California Vegetation,

Second Edition 2009 (MCV). This has become the accepted standard recognized by the California Department of Fish and Game, the California Native Plant Society and the United States Fish and Wildlife Service.

The important difference between current and earlier methods is that earlier classifications were based on a variety of factors, such as physiographic features, as in the case of vernal pools; or by specific plants, as in the case of coast live oak woodland; or by the use of commonly accepted terms, as in chaparral. In the MCV, plant communities are defined with more precision as botanical alliances where one, or occasionally two, plant species are dominant or co-dominant with a host of other possible associated plants. The MCV lists no one plant community called chaparral because in habitats of this type any one of a variety of shrubs can be dominant and influence the character of the vegetation. For example, in a location where chamise (*Adenostoma fasciculatum*) is predominant it is classified as an *Adenostoma fasciculatum* Shrubland Alliance, while close by greenbark ceanothus (*Ceanothus spinosus*) may emerge as the most common shrub and this is termed a *Ceanothus spinosus* Shrubland Alliance.

The transition to the new MCV format is ongoing. Not all alliances have been fully described and new ones are still being recognized. As such, a significant amount of field work and site surveying for accuracy would be needed to verify all existing alliances on the Island, as well as extensive research to define every alliance in the new MCV plant communities' format. The more familiar nomenclatures will continue to be used for the Island when appropriate.

An effort has been made to conform to this new format. Descriptions and general locations of each plant community as described in the California Channel Islands Species Recovery Plan (USFWS, 1984) appear below. The plant communities correspond to classifications used in that document. Each was considered baseline information and evaluated for the potential presence of alliances as described in the MCV. Alliances with matching profiles of given criteria are listed. In many cases only with further investigation can the presence of some alliances be confirmed. In addition, it should be noted that not all alliances are listed within this description, as many alliances have yet to be defined and new alliances are still being discovered. Descriptions and general locations of the each plant community present on the Island are given below.

<u>Maritime Succulent Scrub</u>: A low, open scrub of soft-leaved shrubs and herbs with a rich admixture of stem and leaf succulents occurring on steep coastal slopes. This community is dominated by California sagebrush and coastal prickly-pear (*Opuntia littoralis*), which is located mainly on the exposed, dry south-facing slopes typically with well-drained soils. Other species associated with this community include Catalina crossosoma (*Crossosoma californica*), California brittle-bush (*Encelia californica*), Santa Catalina Island buckwheat, bedstraw (*Galium* spp.), island broom (*Acmispon dendroideus* var. *dendroideus*), laurel sumac, lemonadeberry, and black sage.

Corresponding MCV communities:

Artemisia californica (California sagebrush scrub) Shrubland Alliance
Opuntia littoralis (coast prickly pear scrub) Shrubland Alliance
Encelia californica (California brittle bush scrub) Shrubland Alliance
Deinandra clementina-Eriogonum giganteum (island buckwheat-island tar plant scrub) Provisional Shrubland Alliance
Malosma laurina (laurel sumac scrub) Shrubland Alliance
Rhus integrifolia (lemonade berry scrub) Shrubland Alliance
Salvia mellifera (black sage scrub) Shrubland Alliance

Southern Coastal Bluff Scrub**:** A low scrub community adapted to exposed areas with nearly constant winds and high salt content. It consists of the largest reservoir of sensitive species and island endemics due to its location within inaccessible areas. This community is dominated by giant coreopsis (*Leptosyne gigantea*), Catalina crossosoma, *Dudleya* spp., Santa Catalina Island buckwheat, and island tarplant (*Deinandra clementina*) (David Carroll and Associates (DCA), 1994). Southern coastal bluff scrub, which occurs on the precipitous cliff, faces typically near the mouths of canyons and adjacent to some of the Island's disturbed areas on the steep seaward (east-facing) slopes and bluffs.

Corresponding MCV communities:

Leptosyne gigantea (giant coreopsis scrub) Shrubland Alliance
Deinandra clementina-Eriogonum giganteum (island buckwheat-island tar plant scrub) Provisional Shrubland Alliance

Island Chaparral**:** Consists of tall broad-leafed shrubs that form a dense cover on steep slopes. Dominant species found within this community include island and MacDonald's scrub oaks (*Quercus pacifica* and *Q. macdonaldii*), feltleaf ceanothus (*Ceanothus arboreus*), chamise, island red berry, and Santa Catalina Island manzanita (*Arctostaphylos catalinae*). Island chaparral occupies canyon bottoms, most of the higher elevations, and steep, north-facing slopes.

Corresponding MCV communities:

Quercus pacifica (island scrub oak chaparral) Shrubland Alliance
Ceanothus megacarpus (big pod ceanothus chaparral) Shrubland Alliance
Adenostoma fasciculatum (chamise chaparral) Shrubland Alliance

Island Oak Woodland: Dominated by canyon oak (*Quercus chrysolepis*) with a poorly developed shrub layer, which includes wild blackberry (*Rubus ursinus*), poison oak, heart-leaved penstemon (*Keckiella cordifolia*), and southern chaparral honeysuckle (*Lonicera subspicata* var. *denudata*). Some island oak woodlands along riparian habitat include scattered arroyo willows (*Salix lasiolepis*). This community occurs in relatively moist, protected canyon bottoms with rich alluvial soils.

Corresponding MCV communities:

Quercus chrysolepis (canyon live oak forest) Forest Alliance

Island Ironwood Forest: An upland community characterized by a dominance of Catalina ironwood (*Lyonothamnus floribundus* ssp. *floribundus*). The Island endemic is a broad-leaved tree and occurs in groves of 50-100 trees located along the north- and east-facing slopes (DCA 1994). Other species occasionally associated with the ironwood forest include island scrub oak and Santa Catalina Island manzanita. The understory is sparse, supporting a number of herbaceous annuals and ferns. This community is typically found in protected canyons with rich alluvial soils in the northern portion of the Island.

Corresponding MCV communities:

Lyonothamnus floribundus (Catalina ironwood groves) Woodland Special Stands

Island Cherry Woodland: An open, dense woodland dominated by Catalina cherry (*Prunus ilicifolia* ssp.

lyonii) with an understory consisting of Santa Catalina figwort (*Scrophularia villosa*), cudweed (*Gnaphalium* spp.), common chickweed (*Cerastium glomeratum*), wild cucumber (*Marah macrocarpa*), Santa Catalina Island bushmallow (*Malacothamnus fasciculatus* var. *catalinensis*), island morning-glory (*Calystegia macrostegia* ssp. *amplissima*), and many of weedy forb and grass species. This community occurs mostly along riparian habitats and in valley/canyon bottoms in the northern portion of the Island.

Corresponding MCV communities:

Prunus ilicifolia (Holly leaf cherry chaparral) Shrubland Alliance

Grassland: Consist of low, herbaceous vegetation that are dominated by grasses, but generally also harbor native forbs and bulbs as well as naturalized annual forbs. Non-native grassland consists of dominant invasive annual grasses that are primarily of Mediterranean origin. Dominant species found within this community include slender oats (*Avena barbata*), wild oats (*A. fatua*), ripgut brome (*Bromus diandrus*), red brome (*B. madritensis* ssp. *rubens*), and wild mustards (*Brassica*, *Hirschfeldia*, and *Sisymbrium* spp.). Non-native grasslands are located in small patches throughout the Island; along many of the ridges and gentle slopes with shallow clay or clay loam substrates; and in more significant acreage, on rolling hills in the southeastern portion of the Island. Native grassland consists of at least 10 percent cover of native grass species with the remaining coverage similar to non-native grasslands. Small patches of native grassland can be found on the Island mostly mixed with non-native grasslands.

Corresponding MCV communities:

Avena (*barbata*, *fatua*) (Wild oats grasslands) Semi-Natural Herbaceous Stands
Bromus (*diandrus*, *hordeaceus*)-*Brachypodium distachyon* (Annual brome grasslands) Semi-Natural Herbaceous Stands
Bromus rubens-*Schismus* (*arabicus*, *barbatus*) (Red brome or Mediterranean grass grasslands) Semi-Natural Herbaceous Stands
Brassica nigra and other mustards (Upland mustards) Semi-Natural Herbaceous Stands

Disturbed Areas: Areas that either completely lack vegetation or are dominated by ruderal species within developed areas. Vegetation typically include horehound (*Marrubium vulgare*) and tree tobacco (*Nicotiana glauca*). Several disturbed areas occur throughout the Island and take the form of residential developments, paved roads, fire breaks, dirt access roads, trails, and other similarly disturbed areas.

Corresponding MCV communities: None at this time.

Wildlife

Wildlife on the Island is diverse and abundant due to the large acreage of natural open space and the diversity of habitat types. While a few wildlife species are entirely dependent on a single vegetative community, the vegetation communities within the area and adjoining areas constitute a functional ecosystem for a variety of wildlife species.

The analysis of invertebrates is severely limited due to the lack of data. The Island, however, supports healthy populations of a diverse assortment of countless invertebrate species. Amphibian populations are generally abundant and diverse due to the high moisture content provided under the shade of woodlands and the abundance of drainages. Many essential reptilian habitat characteristics are present. These include open habitats that allow free movement and high visibility and small mammal burrows for cover and escape from predators and extreme weather. These characteristics as well as the variety of

habitat types present are likely to support a wide variety of reptilian species.

The scrubland, woodland, riparian, and grassland habitats provide foraging and cover habitat for year-round residents, seasonal residents, and migrating song birds. In addition, several year-round water sources and abundant raptor foraging, perching, and nesting habitat are located throughout the area. The combination of these resources as well as the confluence of many community types provides for a high diversity of bird species. Unlike other taxonomic groups, mammal populations are diverse and reflective of the unique island habitat types.

Wildlife Movement

Wildlife movement occurs throughout the Island. Concentrated movement corridors or bottlenecks are uncommon on the Island due to the abundance of uninterrupted open space and the lack of disturbed areas. In general, movement takes place in large drainages, along ridgelines, and along dirt roads. However, the small isthmus at Two Harbors represents a significant reduction in the ability for animals to move freely between the two parts of the Island. Movement across the isthmus has been further restricted by human encroachment of the Two Harbors community and Island visitors. Although a lack of movement across the isthmus may isolate some animal populations and reduce the genetic diversity on either side, this division has provided a unique opportunity for restoration by isolating and removing feral animals from the Island.

Sensitive Biological Resources

The statuses of rare plants are hierarchically categorized by the CNPS using a rank and decimal system. The initial category level of Rare Plant Rank is indicated by ranks 1A (presumed extinct in California), 1B (rare or endangered in California and elsewhere), 2 (rare or endangered in California but more common elsewhere), 3 (more information needed, a review list), and 4 (limited distribution). In cases where the CNPS has further identified the specific threat to the species, a decimal or Threat Code is added: .1 (seriously endangered in California), .2 (fairly endangered in California) or .3 (not very endangered in California).

The following special-status plant taxa have been reported or have the potential to occur on Santa Catalina Island, based on known habitat requirements and geographic range information:

Baja rock lichen (*Graphis saxorum*) CDFG Special Plants List
Red sand-verbena (*Abronia maritima*) RPR 4.2
Island broom (*Acmispon dendroideus* var. *dendroideus*) RPR 4.2
Aphanisma (*Aphanisma blitoides*) RPR 1B.1
Santa Catalina Island manzanita (*Arctostaphylos catalinae*) RPR 1B.2
Coulter's saltbush (*Atriplex coulteri*) RPR 1B.2
South Coast saltscale (*Atriplex pacifica*) RPR 1B.2
Davidson's saltscale (*Atriplex serenana* var. *davidsonii*) RPR 1B.2
Golden-spined cereus (*Bergerocactus emoryi*) RPR 2.2
Round-leaved filaree (*California macrophylla*) RPR 1B.1
Island ceanothus (*Ceanothus megacarpus* var. *insularis*) RPR 4.3
Southern tarplant (*Centromadia parryi* ssp. *australis*) RPR 1B.1
Island mountain-mahogany (*Cercocarpus betuloides* var. *blancheae*) RPR 4.3
Catalina Island mountain-mahogany (*Cercocarpus traskiae*) FE, SE, RPR 1B.1
Seaside cistanthe (*Cistanthe maritima*) RPR 4.2

Nevin's woolly sunflower (*Constancea nevinii*) RPR 1B.3
Small-flowered morning-glory (*Convolvulus simulans*) RPR 4.2
Catalina crossosoma (*Crossosoma californicum*) RPR 1B.2
Island tarplant (*Deinandra clementina*) RPR 4.3
South island bush-poppy (*Dendromecon harfordii* var. *rhamnoides*) RPR 1B.1
Western dichondra (*Dichondra occidentalis*) RPR 4.2
Beach spectaclepod (*Dithyrea maritima*) ST, 1B.1
Greene's dudleya (*Dudleya greenei*) RPR 4.2
Catalina Island dudleya (*Dudleya virens* ssp. *hassei*) RPR 1B.2
Island green dudleya (*Dudleya virens* ssp. *insularis*) RPR 1B.2
Bright green dudleya (*Dudleya virens* ssp. *virens*) RPR 1B.2
Santa Catalina Island buckwheat (*Eriogonum giganteum* var. *giganteum*) RPR 4.3
Island buckwheat (*Eriogonum grande* var. *grande*) RPR 4.2
Island poppy (*Eschscholzia ramosa*) RPR 4.3
Cliff spurge (*Euphorbia misera*) RPR 2.2
Santa Catalina Island bedstraw (*Galium catalinense* ssp. *catalinense*) RPR 1B.2
Nuttall's island bedstraw (*Galium nuttallii* ssp. *insulare*) RPR 4.3
Showy island snapdragon (*Gambelia speciosa*) RPR 1B.2
Nevin's gilia (*Gilia nevinii*) RPR 4.3
Palmer's grapplinghook (*Harpagonella palmeri*) RPR 4.2
Island rush-rose (*Helianthemum greenei*) FT, RPR 1B.2
Decumbent goldenbush (*Isocoma menziesii* var. *decumbens*) RPR 1B.2
Island jepsonia (*Jepsonia malvifolia*) RPR 4.2
Southern island mallow (*Lavatera assurgentiflora* ssp. *glabra*) RPR 1B.1
Fragrant pitcher sage (*Lepechinia fragrans*) RPR 4.2
Santa Barbara honeysuckle (*Lonicera subspicata* var. *subspicata*) RPR 1B.2
Santa Catalina Island desert-thorn (*Lycium brevipes* var. *hassei*) RPR 1B.1
California box-thorn (*Lycium californicum*) RPR 4.2
Santa Catalina Island ironwood (*Lyonothamnus floribundus* ssp. *floribundus*) RPR 1B.2
Small-flowered microseris (*Microseris douglasii* ssp. *platycarpha*) RPR 4.2
Santa Catalina Island monkeyflower (*Mimulus traskiae*) RPR 1A
Coast woolly-heads (*Nemacaulis denudata* var. *denudata*) RPR 1B.2
Short-lobed broomrape (*Orobanche parishii* ssp. *brachyloba*) RPR 4.2
Lyon's pentachaeta (*Pentachaeta lyonii*) FE, SE, RPR 1B.1
Engelmann oak (*Quercus engelmannii*) RPR 4.2
Island scrub oak (*Quercus pacifica*) RPR 4.2
Island oak (*Quercus tomentella*) RPR 4.2
Island redberry (*Rhamnus pirifolia*) RPR 4.2
Santa Catalina Island currant (*Ribes viburnifolium*) RPR 1B.2
Santa Catalina figwort (*Scrophularia villosa*) RPR 1B.2
Chaparral ragwort (*Senecio aphanactis*) RPR 2.2
Santa Cruz Island rock cress (*Sibara filifolia*) FE, RPR 1B.1
Wallace's nightshade (*Solanum wallacei*) RPR 1B.1
Woolly seablite (*Suaeda taxifolia*) RPR 4.2
Southern island clover (*Trifolium palmeri*) RPR 4.2
Catalina mariposa lily (*Calochortus catalinae*) RPR 4.2
California dissanthelium (*Dissanthelium californicum*) RPR 1B.2
Vernal barley (*Hordeum intercedens*) RPR 3.2

Chaparral rein orchid (*Piperia cooperi*) RPR 4.2

The following special-status animal species are reported or are likely to be present on Santa Catalina Island based on habitat requirements and known range attributes:

Santa Catalina lancetooth (*Haplotrema catalinense*) CDFG Special Animals List
Shepard's snail (*Pristiloma shepardae*) CDFG Special Animals List
Catalina mountainsnail (*Radiocentrum avalonense*) CDFG Special Animals List
San Clemente Island blunt-top snail (*Sterkia clementina*) CDFG Special Animals List
Sandy beach tiger beetle (*Cicindela hirticollis gravida*) CDFG Special Animals List
Santa Catalina garter snake (*Thamnophis hammondii* ssp.) CDFG Special Animals List
Bald eagle (*Haliaeetus leucocephalus*) SE, CDF, CDFG Fully Protected
Xantus' murrelet (*Synthliboramphus hypoleucus*) FC, BCC, ST, ABC
Santa Catalina Island shrew (*Sorex ornatus willetti*) SSC
Santa Catalina Island fox (*Urocyon littoralis catalinae*) FE, ST