

BIOTA REPORT/BIOLOGICAL ASSESSMENT

Catalina Island Trails Project County of Los Angeles, California



Project No. R2015-01333 (Supervisory District 4)

SEA Names: Arrow Point, Ben Weston Beach, Black Point, Black Jack Mountain & Echo Lake, Cape Canyon, Cherry Valley, Cottonwood Canyon, Haypress Area, Little Harbor/Shark Harbor/Indian Head Point, Johnson's Landing, Middle Ranch Canyon, Mount Orizaba, Parson's Landing, Silver Peak, Skull Canyon, Sweetwater Canyon, Upper Descanso Canyon, Upper Isthmus Canyon

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SECTION 1.0 INTRODUCTION

This Biota Report has been prepared to support California Environmental Quality Act (CEQA) documentation for the proposed actions relating to the Catalina Island Trails (Project). This information has been reported in accordance with accepted scientific and technical standards that are consistent with the requirements of the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW).

1.1 PROJECT LOCATION

Santa Catalina Island is a 76 square mile (48,400 acres) island located 25 miles south of coastal Los Angeles, in Los Angeles County (Fig. 1). It is 20 miles long from west to east and has a maximum width of approximately 7.8 miles and an isthmus of just 0.4 mile. Elevation on the Island ranges from sea level to 2,100 feet with a rugged topography dominated by a northwest-southeast mountain range containing a series of lateral canyons. A narrow isthmus located at the community of Two Harbors geographically separates the island into two distinct sides; the larger East End comprising 84% of the entire island, and the smaller West End comprising the remaining 16%. The proposed *Catalina Trails Project* area is situated in the Santa Catalina Island North, Santa Catalina Island South, Santa Catalina Island East, and Santa Catalina Island West 7.5-minute United States Geological Survey (USGS) topographic quadrangles (1943 – photorevised 2010).

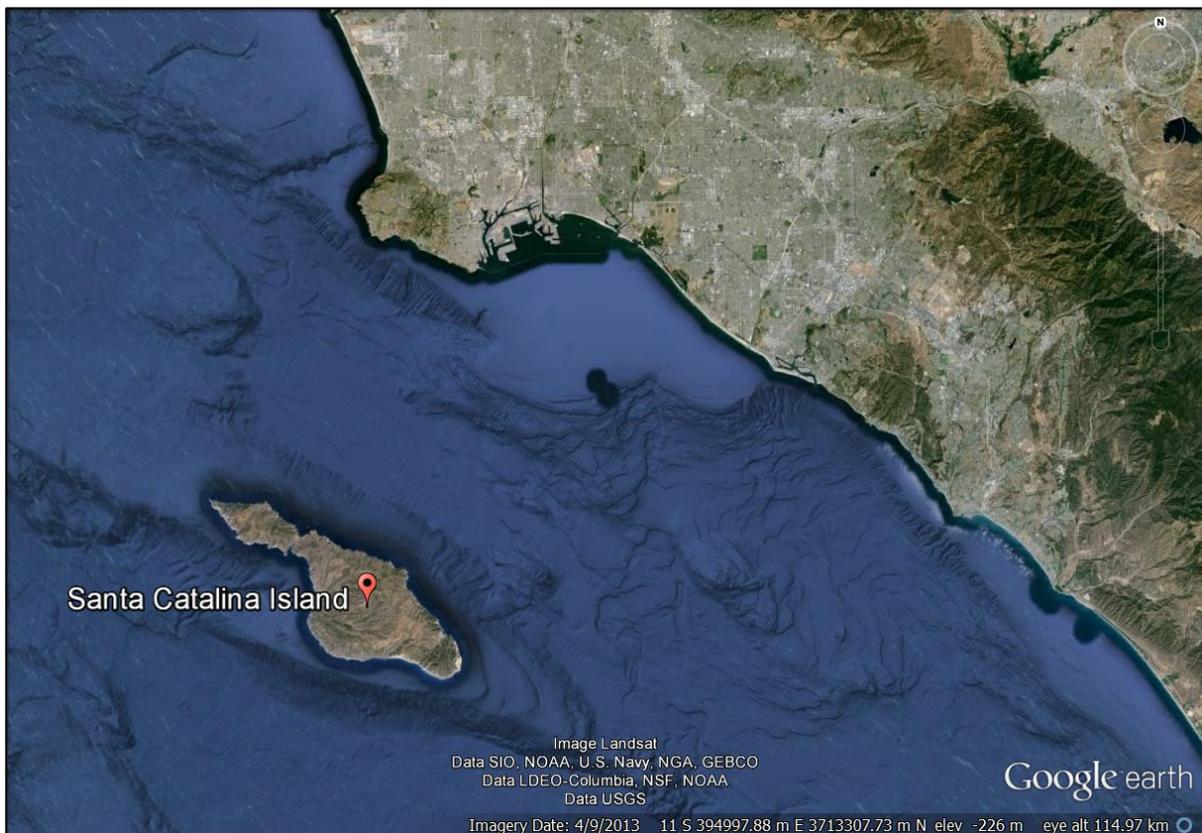


Figure 1. Catalina Island regional view.

1.1.1 **PROJECT DESCRIPTION**

The Catalina Island Conservancy whose mission is conservation, education and recreation, manages more than 42,000 acres of Catalina Island. As part of the Los Angeles County Open Space District, one of our shared goals is to provide sustainable and accessible nature-based recreation while balancing the conservation needs of the Island's sensitive ecology.

The Conservancy has identified a way to increase opportunities for LA County residents to experience and explore the breathtaking environment of Catalina Island. The *Catalina Trails* project will create 26.7 additional miles (in segments ranging from approximately 0.4 to 4.3 miles in length) of publicly accessible trails and will serve as a legacy of open space and outdoor experiences for the Open Space District. By leveraging the Conservancy's 42 year investment in its existing 144 mile trail system, which is accessed by over 18,000 users annually, *Catalina Trails* expands opportunities for exploration, exercise, and experiences in a wholly different setting, while supporting LA County's overall goal of providing one mile of trail per 1,000 residents.

Catalina Trails is a two year expansion project. It will employ local Avalon residents to the fullest extent possible and include employment for underserved youth from the Conservation Corps of Long Beach. New trails will be incorporated into our system, many connecting to public access-points, and others providing missing connectivity between trails and campsites. Development of new trail connections between existing trails results in an approximate 20% increase of the trails system. Updated trailheads with improved way-finding and eight additional public restrooms will improve access for hikers, the general public and specifically Fourth District residents' to Catalina's wildlands and outdoor recreational experiences. Hiking trails are Principal Permitted Uses under Title 22 (Sections 22.46.090(B)(3) and (4); Section 22.46.120(B)) and do not require a Conditional Use Permit (CUP). They are generally categorically exempt from CEQA but do require a Coastal Development Permit (CDP)¹.

The final proposed trail alignments were carefully selected by a team of Conservancy biologists following 6 months of rigorous on the ground surveys, mapping, and evaluation of more than 50 miles of proposed locations throughout the island. Many miles of trail were subsequently excluded based on physical criteria set forth in the County of Los Angeles Trails Manual (2011) or due to the presence of sensitive native vegetation, wildlife species, or cultural sites. All trails were surveyed for safety and the avoidance of hazards such as drop-offs and unstable terrain. To be selected, the trails had to have desired destinations, offer a positive user experience, and maximize sensory stimulation opportunities.

All 14 proposed trail segments totaling 26.7 miles will be designed, constructed, and maintained to maximize both environmental and economic sustainability. The Project will utilize already existing tertiary dirt roads with minimal vehicular traffic, unofficial human social trails, and/or bison-made paths that can be realigned and re-contoured to avoid steep grades, decrease erosion and soil loss, while avoiding sensitive biological and archaeological resources. The County of Los Angeles Trails Manual (2011) will be used as the primary reference guide for the proposed Project. This Trails Manual provides a process to ensure quality planning and design

¹ According to Table 3.3.1-1 in the *County of Los Angeles Trail Manual* (February 2011), the type of basic trail work and improvements proposed are covered by CEQA exemptions including restoration or decommissioning of existing trails and associated facilities (restrooms, kiosks, trailheads); replacement or reconstruction of existing trails or associated facilities located on the same site; installation of accessory or appurtenant structures (fences, kiosks, restrooms); routine maintenance of trails. Coverage under the exemption only requires the submission of documentation that the proposed project will not cause significant direct, indirect, or cumulative negative effects on the environment including rare, threatened or endangered species or potential to alter jurisdictional streams or wetlands.

that recognizes the opportunities and constraints represented by the physical environment; provides construction guidelines to ensure proper drainage and minimize erosion; and specifies maintenance procedures to ensure that trails are accessible, safe, and aesthetically pleasing.

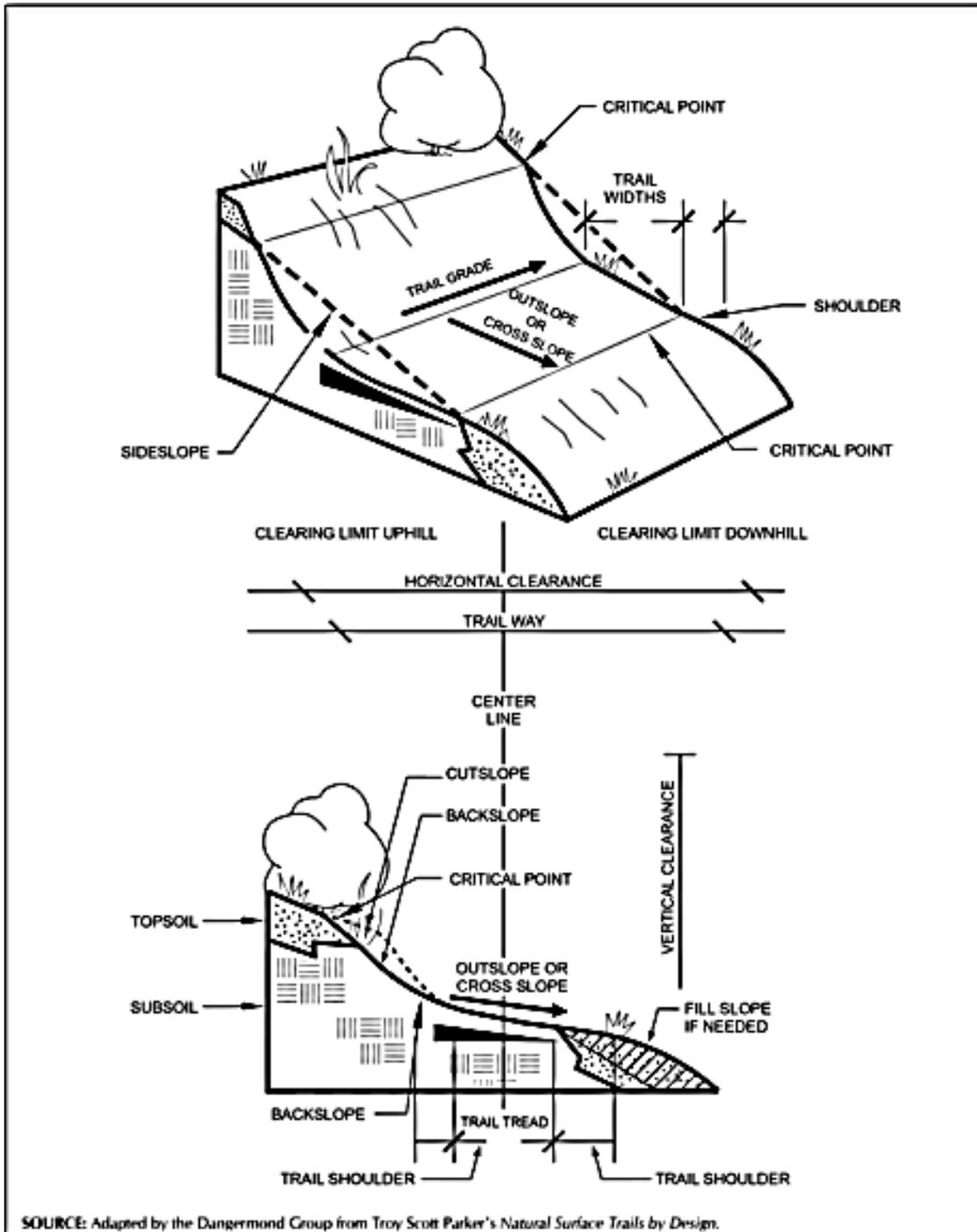
Trail alignments selected for this project have a sustainable grade, with an average grade of 10% or less, and not to exceed 20% for short sections depending on site specifics such as soil stability and side slope grade. These trails will not be aligned on the “fall line” the steepest route of descent or along flat ground; ideally trails will be aligned along the contour with frequent grade reversals. Gentle outsloping (2%-5%) of the trail tread will be combined with a 3-foot wide initial bench cut, a 35% cross slope, and a backslope angle of 54 degrees, to prevent water from pooling on the trails (Figure 2). All trail construction will be completed by crews of approximately 10 people using hand tools such as shovels, picks, pulaskis, spud bars, and lopping shears in order to greatly minimize any environmental impact. All surface soil displaced will remain on-site and no soil will be brought in from other areas of the island (Table 1).

Construction activities will take place beginning late spring 2016 and continue through early summer. Dry conditions and high daytime temperatures will halt construction by July until fall 2016. Construction will resume in early fall 2016 and continue through early summer 2017. Final trail completion will occur by December 2017.

Eight Romtec ADA compliant waterless restrooms will also be installed at high-use trailheads and campgrounds to provide infrastructural support to the proposed trails. Four single-stall restroom structures (10'-0" x 8'-6") will be installed at Cherry Cove, West Corrals, Ben Weston Trailhead, and at the Divide Road/Lone Tree Trail intersections, while four double-stall structures (14'-2" x 9'-6") will be installed at the Blackjack Campground, Haypress Recreation Area, Parsons Landing Campground, and Shark Harbor Campground (Figs. 3-9).

Three small staging areas have been identified at Parson's Landing, Airport in the Sky, and Middle Ranch (Figs. 10-12) for crew transport vehicles, restroom construction supplies, and tools. Each staging area is an existing parking area and will not be impacted by the limited use associated with this project.

Figure 13 and Table 2 show the proposed project in relation to the 18 Significant Ecological Areas (SEAs) and 36 Assessor Parcels that trails pass through.



SOURCE: Adapted by the Dangermond Group from Troy Scott Parker's *Natural Surface Trails by Design*.

Figure 2. Trail Structure Terminology, from Figure 4.1.1 of the *County of Los Angeles Trails Manual*.

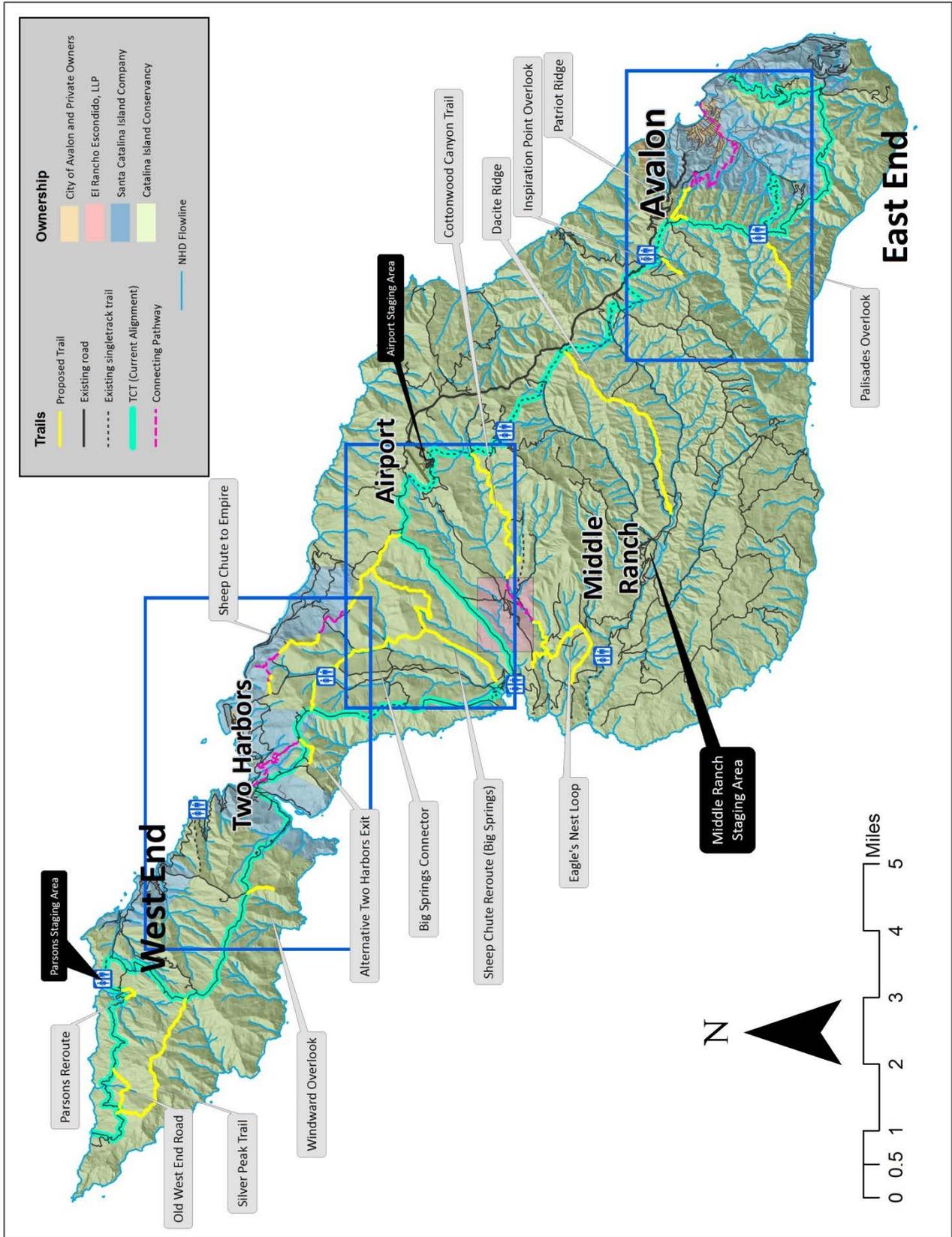


Figure 3. Catalina Trails Project overview.

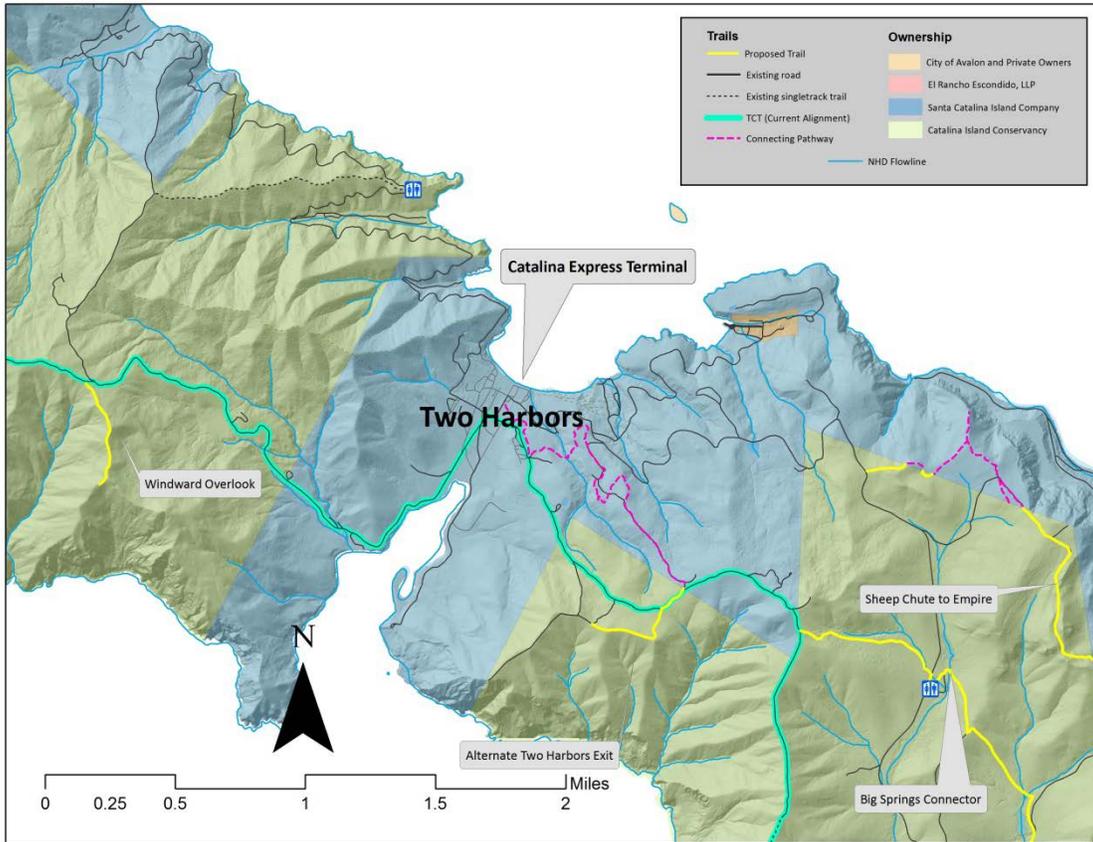


Figure 4. Two Harbors area expanded view.

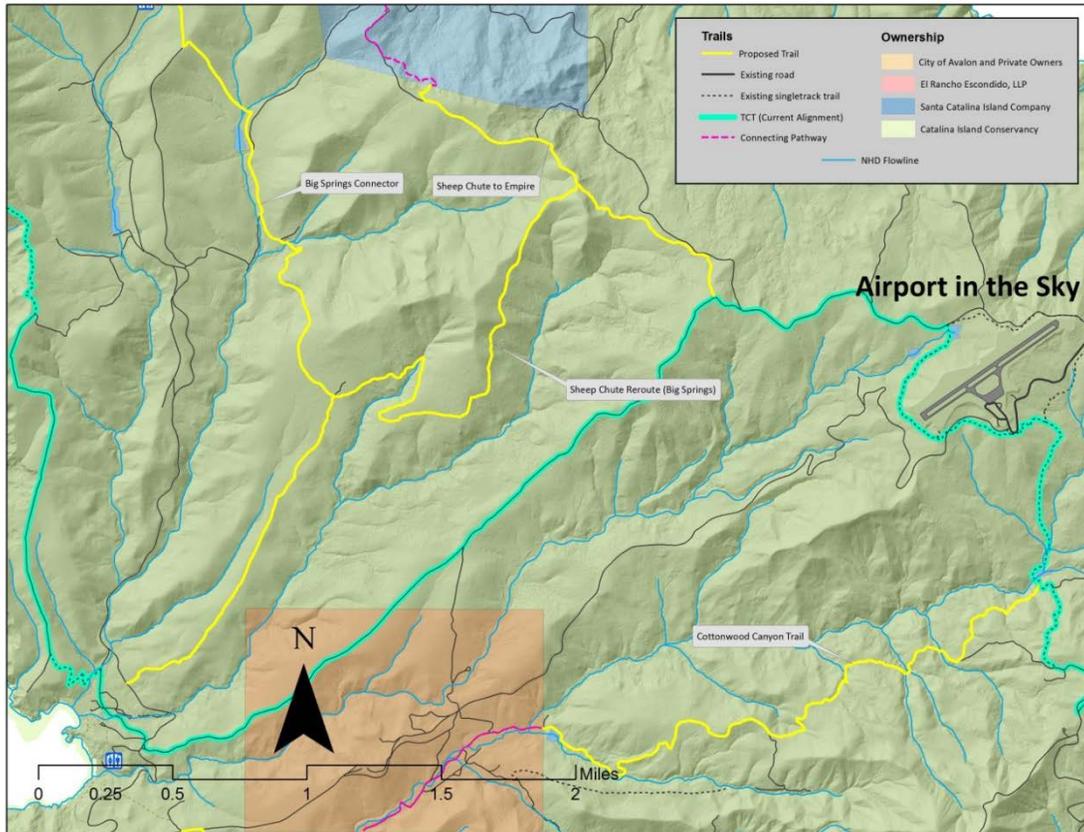


Figure 5. Airport area expanded view.

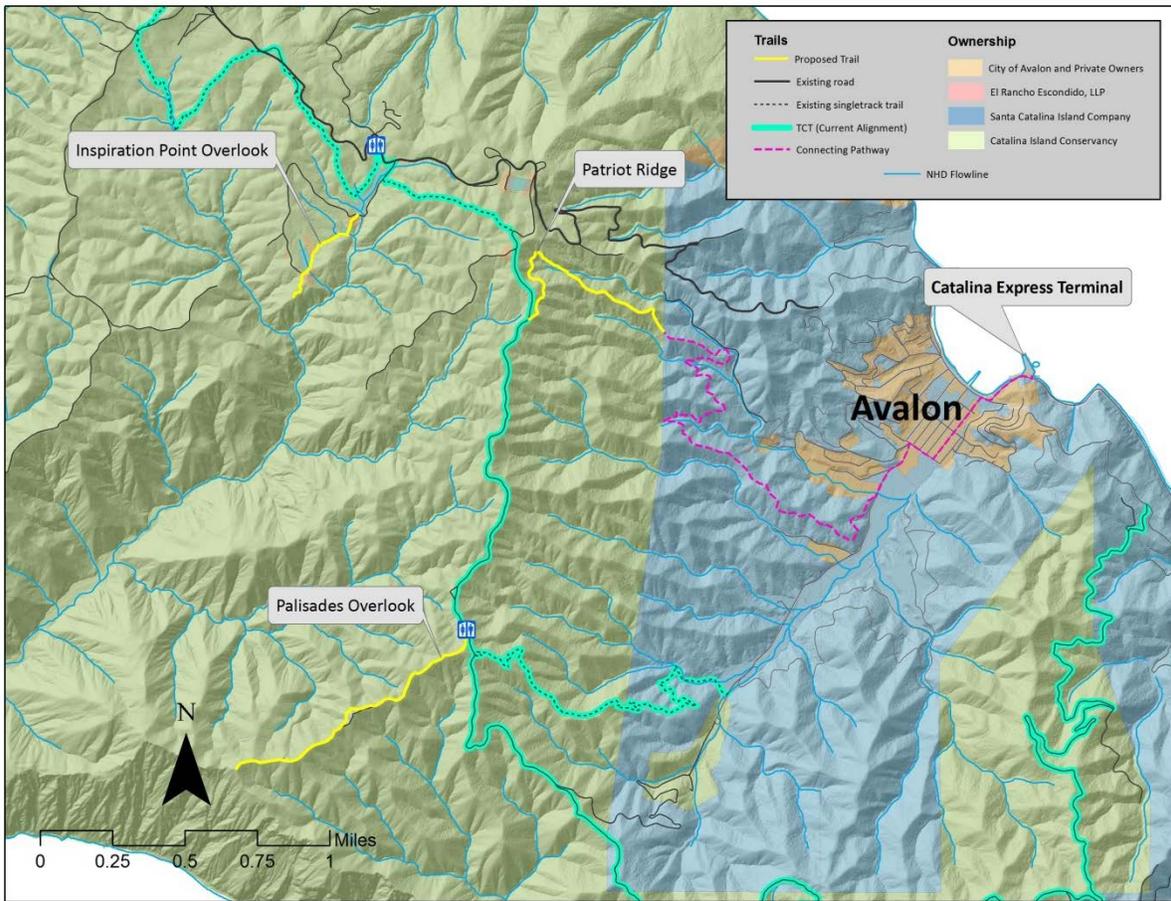


Figure 6. East End expanded view.



Figure 7. Parsons Reroute.

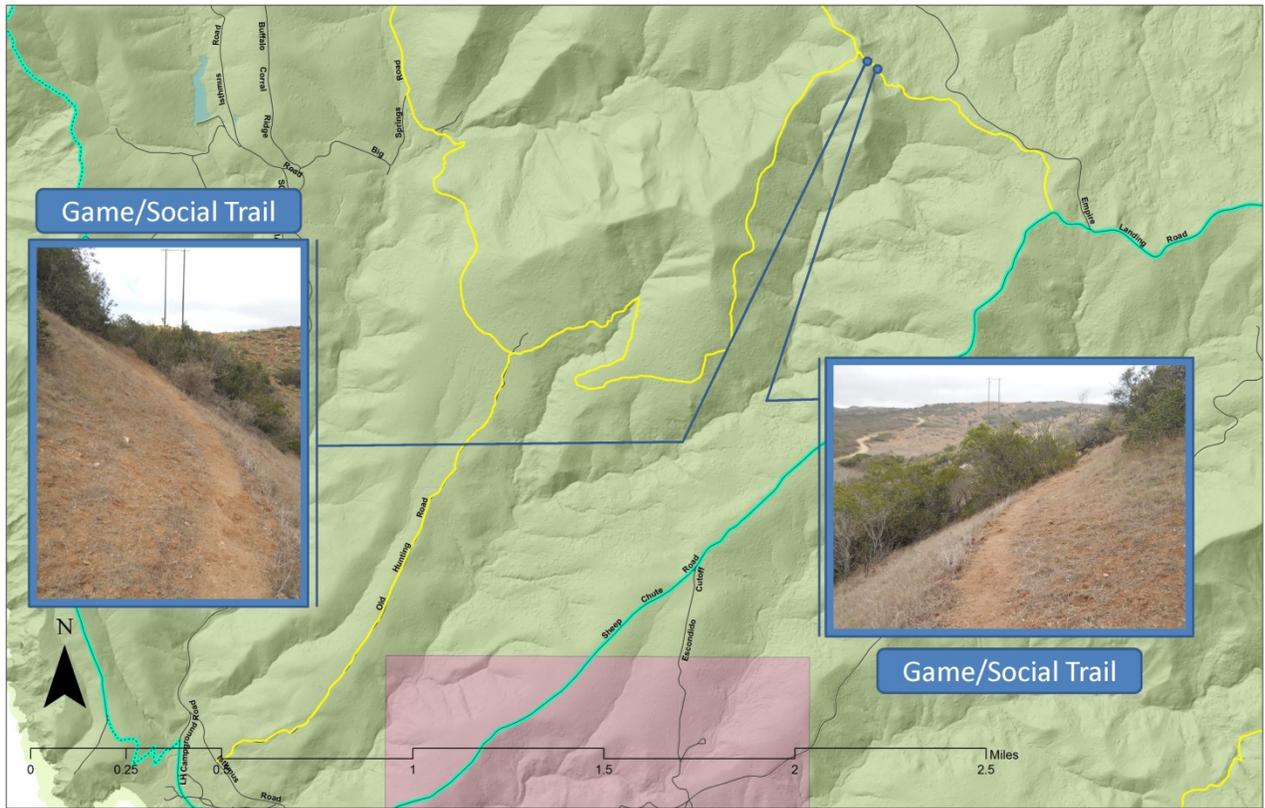


Figure 8. Sheep Chute Reroute (Big Springs).



Figure 9. Dacite Ridge realignment.

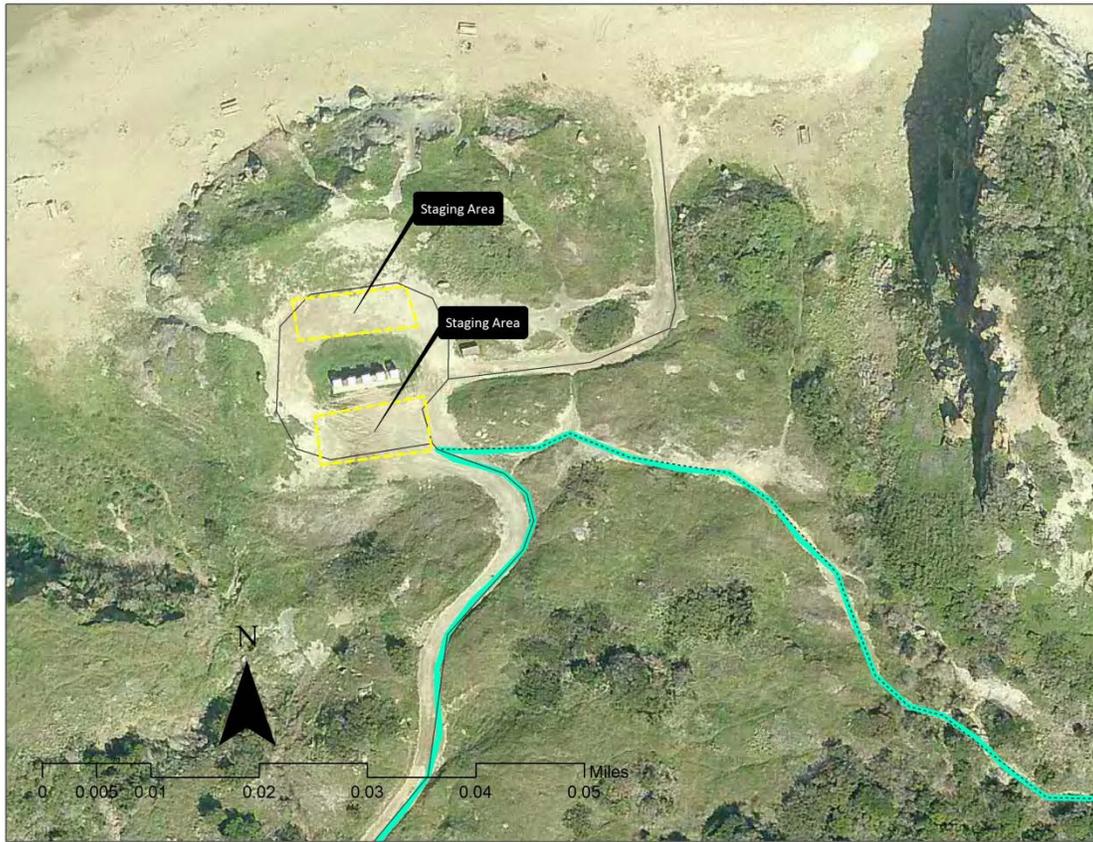


Figure 10. Parsons Landing staging area.

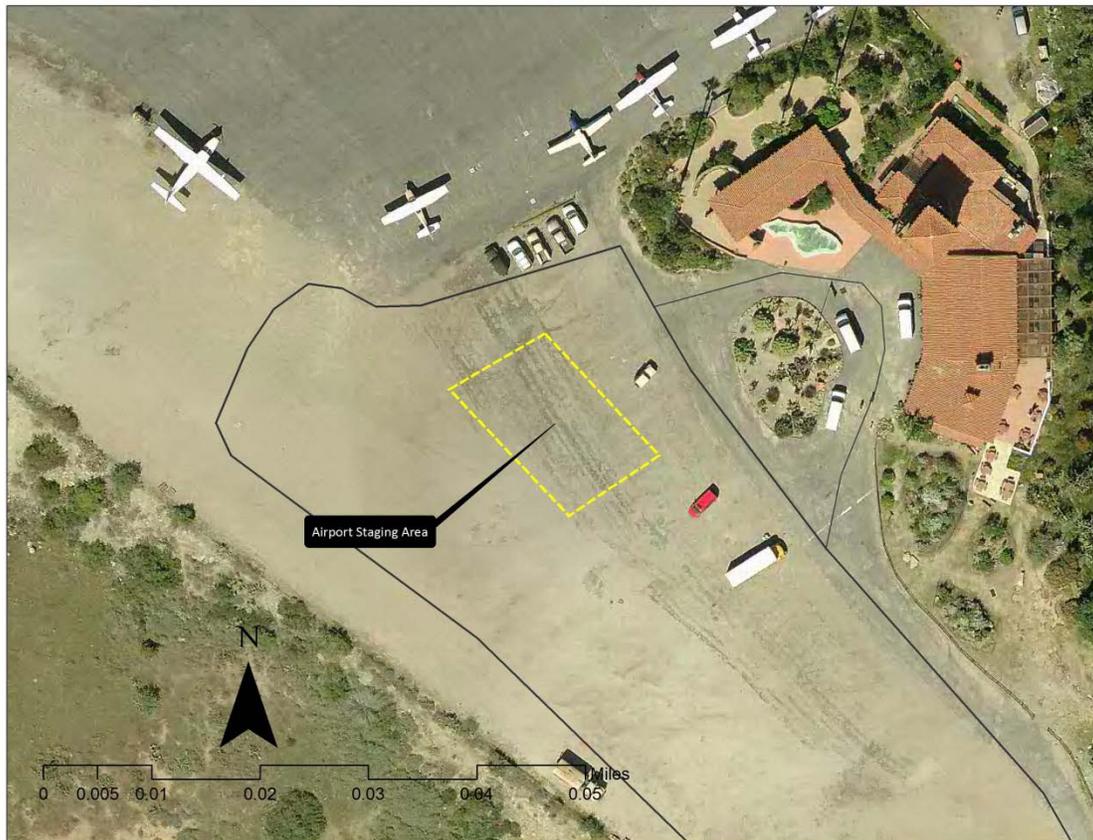


Figure 11. Airport in the Sky staging area.



Figure 12. Middle Ranch staging area.

Table 1. Proposed Catalina Trails construction mileage and acreage totals. Acreage assumes a 2 foot width for game/social trails and 12 foot width for tertiary dirt roads multiplied by length of trail segment.

Trail Name	Game/Social Trail	Tertiary		
		Dirt Road	Total Miles	Total Acres
Alternative Two Harbors Exit	-	0.49	0.49	0.72
Big Springs Connector	0.84	1.92	2.76	3.00
Cottonwood Canyon Trail	0.51	3.05	3.56	4.57
Dacite Ridge	1.81	1.68	3.49	2.88
Eagle's Nest Loop	-	2.42	2.42	3.51
Inspiration Point Overlook	0.41	-	0.41	0.10
Old West End Road	-	0.83	0.83	1.21
Palisades Overlook	0.17	0.89	1.07	1.34
Parsons Reroute	-	0.42	0.42	0.62
Patriot Ridge	0.91	-	0.91	0.22
Sheep Chute Reroute (Big Springs)	2.92	1.43	4.35	2.78
Sheep Chute to Empire	1.41	1.43	2.84	2.42
Silver Peak Trail	-	2.71	2.71	3.95
Windward Overlook	0.44	-	0.44	0.11
Total	9.43	17.27	26.70	27.41

Table 2. Los Angeles County Assessor Parcel Numbers (Map No. 59) in which the Catalina Trails Project occurs and the 18 associated Significant Ecological Area names. One SEA may span multiple parcels and some parcels may contain multiple SEAs.

Project Parcels	Parcel Lot No.	Parcel Acres	Significant Ecological Areas (SEA) Names
7480039001	90	452.0	
7480039005	94	378.5	Silver Peak
7480039008	97	471.2	Cherry Valley
7480039011	100	618.2	Parson's Landing; Arrow Point
7480039012	101	577.6	Silver Peak
7480039014	103	542.3	Silver Peak
7480039016	105	392.6	Black Point
7480040003	73	465.3	
7480040004	74	468.2	
7480040008	78	548.4	
7480040009	79	345.1	
7480040010	80	609.1	
7480040012	84	604.9	
7480040015	87	384.2	Upper Isthmus Canyon
7480040029	77	552.7	
7480041001	62	264.6	Skull Canyon
7480041012	81	331.7	
7480041040	69	496.2	Black Jack Mountain & Echo Lake
7480042010	38	493.9	
7480042011	39	570.4	
7480042013	48	506.0	Cape Canyon
7480042014	49	639.0	
7480042023	50	370.7	
7480042056	16	462.9	Haypress Area; Upper Descanso Canyon
7480042058	19	452.2	Haypress Area
7480043013	44	419.7	Middle Ranch Canyon; Ben Weston Beach; Sweetwater Canyon
7480043014	45	403.5	Middle Ranch Canyon
7480043016	56	556.8	Mount Orizaba
7480043017	57	340.3	
7480043018	58	317.1	Little Harbor / Shark Harbor/ Indian Head Point; Cottonwood Canyon; Sweetwater Canyon
7480043019	59	450.5	Little Harbor / Shark Harbor/ Indian Head Point
7480043020	60	591.7	
7480043021	61	477.7	
7480043025	40	413.3	
7480044001	10	635.8	
7480044002	11	501.7	

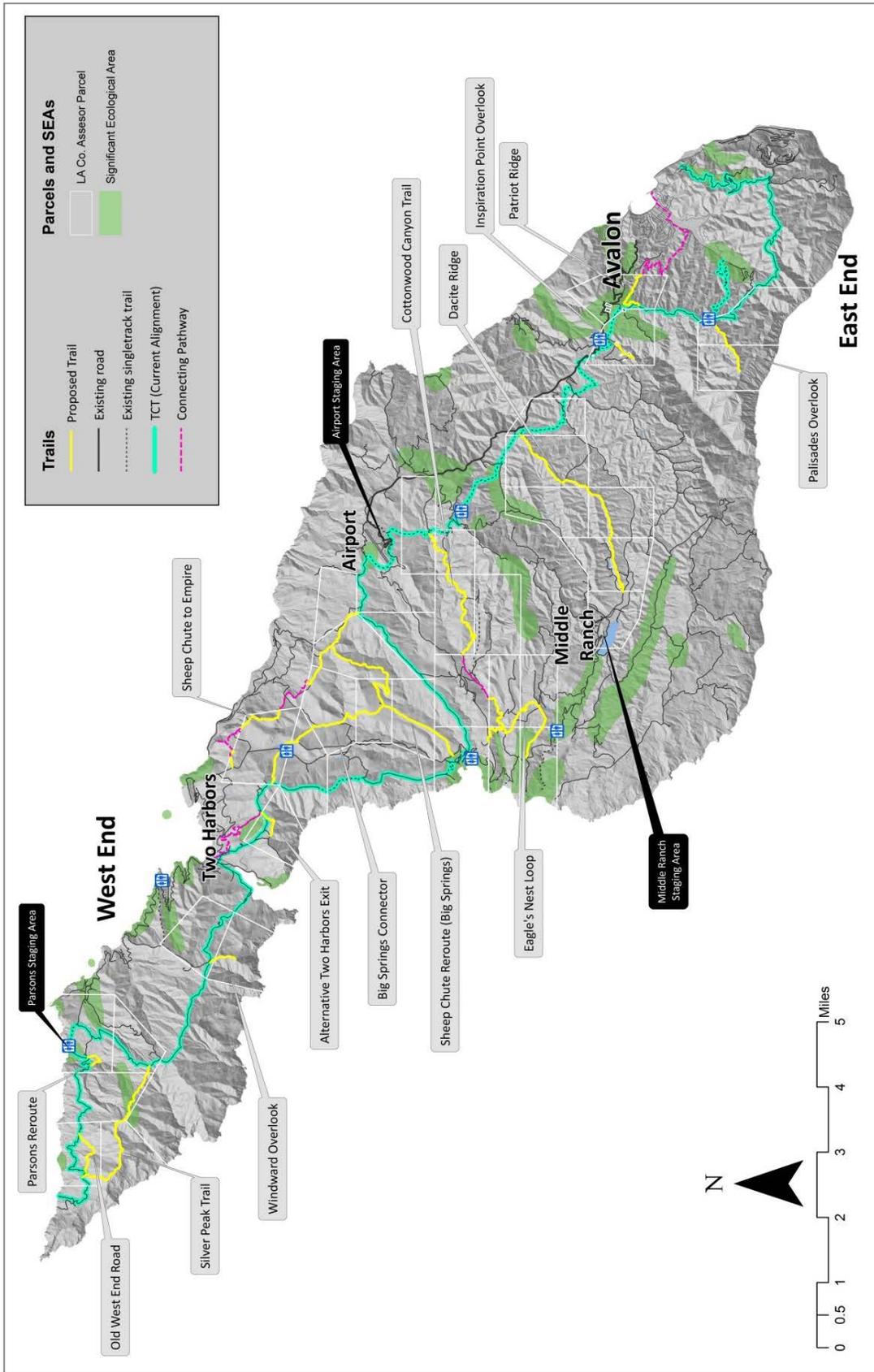


Figure 13. Catalina Trails Project Area with associated Parcels and SEAs identified.

1.1.2 REGIONAL ENVIRONMENTAL SETTING

Catalina Island experiences a Mediterranean climate characterized by mild, rainy winters and hot, dry summers. The temperature is moderated by the coastal influence of the Pacific Ocean, which creates mild conditions throughout most of the year. The most distinguishing characteristic of a Mediterranean climate is its seasonal precipitation. In Southern California, precipitation is characterized by brief, intense storms between November and March. It is not unusual for a majority of the annual precipitation to fall during a few storms over a short span of time. Rainfall patterns in the region are subject to extreme variations from year to year and longer-term wet and dry cycles. The average annual rainfall for the area is approximately 11.2 inches based on 1948–2005 averages (Catalina Island Conservancy unpublished).

Geologically, the island may be described as the upper portion of a fault block which rises approximately one mile from the ocean floor. The uppermost remnants of the fault block are visible as a single ridge which traverses the island from end to end without a marked break except at the isthmus. Mt. Orizaba and Mt. Blackjack are the most notable peaks along the ridge. The bedrock geology of the island is pretertiary metamorphic rock and, in this respect, Catalina differs from the other Channel Islands. This rock is the oldest known on the island or the adjacent ocean bed, and is visible in outcroppings on approximately one-half of the island.

The main portion of the island is composed of Franciscan complex rock, which is rare in Southern California. There are limestone deposits containing fossils of the Miocene Era and marine terrace deposits south of Little Harbor and along the edge of Avalon Canyon as well as wave terraces in the Salte Verde area. The surface of the island is generally dissected by steep, geologically youthful canyons which, in combination with the sharp ridges, create a generally rugged topography. The rugged shoreline of the island is generally characterized by high, precipitous sea-cliffs which reach a height of approximately 1,400 feet at the Palisades. The western end of the island contains a small, level coastal plain.

The principal plant communities on Catalina are non-native grassland, coastal sage scrub, island chaparral, southern riparian woodland, non-native herbaceous/non-native scrub, and non-native woodland (Sawyer et al. 2009; Knapp 2005).

1.2 REGULATORY SETTING

1.2.1 FEDERAL

Federal Endangered Species Act

The Federal Endangered Species Act of 1973 (FESA, 16 *United States Code* [USC] Section 153 et seq.) protects plants and animals that are listed by the federal government as “Endangered” or “Threatened”. The FESA is implemented by enforcing Sections 7 and 9 of the Act. A federally listed species is protected from unauthorized “take” pursuant to Section 9 of the FESA. “Take”, as defined by the FESA, means “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or to attempt to engage in any such conduct”. All persons are presently prohibited from taking a federally listed species unless and until (1) the appropriate Section 10(a) permit has been issued by the USFWS or (2) an Incidental Take Statement is obtained as a result of formal consultation between a federal agency and the USFWS pursuant to Section 7 of the FESA and the implementing regulations that pertain to it (50 *Code of Federal Regulations* [CFR] Section 402). “Person” is defined in the FESA as “an individual, corporation, partnership, trust, association, or any private entity; any officer, employee, agent, department or instrument of the federal

government; any State, Municipality, or political subdivision of the state; or any other entity subject to the jurisdiction of the United States”. The Project Applicant is a “person” for purposes of the FESA.

Section 404 and 401 of the Clean Water Act of 1972

Section 404 of the Clean Water Act (CWA, 33 USC 1251 et seq.) regulates the discharge of dredged or filled material into “waters of the U.S.,” including wetlands. “Waters of the U.S.” include navigable coastal and inland waters, lakes, rivers, streams, and their tributaries; interstate waters and their tributaries; wetlands adjacent to such waters; intermittent streams; and other waters that could affect interstate commerce. The U.S. Army Corps of Engineers (USACE) is the designated regulatory agency responsible for administering the 404 permit program and for making jurisdictional determinations. This permitting authority applies to all “waters of the U.S.” where the material has the effect of (1) replacing any portion of “waters of the U.S.” with dry land or (2) changing the bottom elevation of any portion of “waters of the U.S.”. These fill materials would include sand, rock, clay, construction debris, wood chips, and materials used to create any structure or infrastructure in “waters of the U.S.”. Dredge and fill activities are typically associated with development projects; water-resource related projects; infrastructure development and wetland conversion to farming; forestry; and urban development.

Under Section 401 of the CWA, an activity requiring a USACE Section 404 permit must obtain a State Water Quality Certification (or waiver thereof) to ensure that the activity will not violate established State water quality standards. The U.S. Environmental Protection Agency (USEPA) is the federal regulatory agency responsible for implementing the CWA. However, the State Water Resources Control Board (SWRCB), in conjunction with the nine California Regional Water Quality Control Boards (RWQCBs), has been delegated the responsibility for administering the Section 401 water quality certification program.

Migratory Bird Treaty Act of 1918

The Migratory Bird Treaty Act of 1918 (MBTA), as amended in 1972 (MBTA, 16 USC 703–711), makes it unlawful, unless permitted by regulations, to “pursue; hunt; take; capture; kill; attempt to take, capture or kill; possess; offer for sale; sell; offer to purchase; purchase; deliver for shipment; ship; cause to be shipped; deliver for transportation; transport; cause to be transported; carry or cause to be carried by any means whatever; receive for shipment, transportation, or carriage; or export, at any time, or in any manner, any migratory bird...for the protection of migratory birds...or any part, nest, or egg of any such bird” (16 USC 703). The MBTA protects all common wild birds found in the United States except the House Sparrow, Starling, feral Pigeon, and resident game birds such as pheasant, grouse, and wild turkey.

In 1972, the MBTA was amended to include protection for migratory birds of prey (e.g., raptors). The following six families of raptors that occur in North America were included in the amendment: *Accipitridae* (kites, hawks, and eagles), *Cathartidae* (New World vultures), *Falconidae* (falcons and caracaras), *Pandionidae* (ospreys), *Strigidae* (typical owls), and *Tytonidae* (barn owls). The provisions of the 1972 amendment to the MBTA protect all species and subspecies of these families.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (16 USC 668) provides for the protection of the bald eagle (*Haliaeetus leucocephalus*) and the golden eagle (*Aquila chrysaetos*) by prohibiting—except under certain specified conditions—the taking, possession, and commerce of these

two bird species. The 1972 amendments increased penalties for violating provisions of the Act and strengthened other enforcement measures. A 1978 amendment authorizes the Secretary of the Interior to permit the taking of golden eagle nests that interfere with resource development or recovery operations. A 1994 Memorandum (59 CFR 22953, April 29, 1994) from President William J. Clinton to the heads of Executive Agencies and Departments sets out the policy concerning collection and distribution of eagle feathers for Native American religious purposes.

1.2.2 STATE

California Endangered Species Act

Pursuant to the California Endangered Species Act (CESA, *California Fish and Game Code*, Section 2050 et seq.) and Section 2081 of the *California Fish and Game Code*, an Incidental Take Permit from the CDFW is required for projects that could result in the take of a State-listed Threatened or Endangered species. Under CESA, “take” is defined as an activity that would directly or indirectly kill an individual of a species, but the definition does not include “harm” or “harass”, as the federal act does. As a result, the threshold for take under the CESA is higher than that under the FESA. A CDFW-authorized Incidental Take Permit would be required where a project could result in the take of a State-listed Threatened or Endangered Species. The application for an Incidental Take Permit under Section 2081(b) has a number of requirements, including the preparation of a conservation plan, generally referred to as a Habitat Conservation Plan.

The State of California considers an Endangered Species to be one whose prospects of survival and reproduction are in immediate jeopardy; a Threatened Species as one present in such small numbers throughout its range that it is likely to become an Endangered Species in the near future in the absence of special protection or management; and a Rare Species as one present in such small numbers throughout its range that it may become Endangered if its present environment worsens. The Rare Species designation applies only to California native plants. The CESA authorizes the CDFW to issue permits authorizing incidental take of Threatened and Endangered Species. A California Species of Special Concern is an informal designation that the CDFW uses for some declining wildlife species that are not State Candidates for listing. This designation does not provide legal protection, but signifies that these species are recognized as special status by the CDFW.

California Environmental Quality Act

State law (*California Fish and Game Code*, Section 1802) confers upon the CDFW the trustee responsibility and authority for the public trust resource of wildlife in California. The CDFW may play various roles under the CEQA process. By State law, the CDFW has jurisdiction over the conservation, protection, and management of the wildlife, native plants, and habitat necessary to maintain biologically sustainable populations. The CDFW is responsible for consulting with CEQA lead and responsible agencies and provides the requisite biological expertise to review and comment upon environmental documents and impacts arising from project activities.

As a trustee agency, the CDFW has jurisdiction over certain resources held in trust for the people of California. Trustee agencies are generally required to be notified of CEQA documents relevant to their jurisdiction, whether or not these agencies have actual permitting authority or approval power over aspects of the underlying project (14 *California Code of Regulations* [CCR], Section 15386). The CDFW, as a trustee agency, must be notified of CEQA documents regarding projects involving fish and wildlife of the state, as well as Rare and Endangered native plants, wildlife areas, and ecological reserves. Although the CDFW, as a trustee agency, cannot approve or disapprove a project, CEQA lead and responsible agencies are required to consult with the

CDFW. The CDFW, as the trustee agency, has the authority to make recommendations regarding those resources held in trust for the people of California (*California Fish and Game Code*, Section 1802).

Threatened and Endangered Species

The *California Code of Regulations* (Sections 670.2 and 670.5) lists species, subspecies, and varieties of plants (Section 670.2) and animals (Section 670.5) that are designated as Threatened or Endangered (as defined by Section 2067 of the *California Fish and Game Code*) or Rare (as defined by Section 1901 of the *California Fish and Game Code*) in California.

California Fully Protected Species

Bird, mammal, reptile, amphibian, and fish species are defined as California Fully Protected Species in Sections 3511, 4700, 5050, and 5515 of the *California Fish and Game Code*. Fully protected animals may not be harmed, taken, or possessed.

Nesting Bird Protection

Nesting birds are protected in Sections 3503, 3503.5, and 3513 of the *California Fish and Game Code*. These sections state that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by or any regulation made pursuant to this code. Section 3503.5 explicitly provides protection for all birds of prey, including their eggs and nests. Section 3513 makes it unlawful to take or possess any migratory non-game bird as designated in the MBTA.

Native Plant Protection Act

The Native Plant Protection Act (*California Fish and Game Code*, Section 1900 et seq.) provides for the preservation, protection, and enhancement of Endangered or Rare native plants in California. These sections also allow for the adoption of regulations governing the taking, possession, propagation, transportation, exportation, importation, or sale of any Endangered or Rare native plants.

California Coastal Act

In 1976, the California State Legislature passed the California Coastal Act (CCA), which established a comprehensive coastal protection program and secured the California Coastal Commission's (CCC's) role as the state agency responsible for the protection of coastal resources. The CCA provides for the transfer of most of the authority to local governments through adoption and certification of Local Coastal Programs (LCPs). The LCPs contain the rules for future development and protection of coastal resources, including appropriate location, type, and scale of new or changed uses of land and water. Each LCP includes a land use plan and measures to implement the plan (such as zoning ordinances) (CCC 2014). Once an LCP has been certified, a local government may issue coastal development permits. The CCC is tasked with protection of coastal resources, including shoreline public access and recreation, lower-cost visitor accommodations, terrestrial and marine habitat protection, visual resources, landform alteration, agricultural lands, commercial fisheries, industrial uses, water quality, offshore oil and gas development, transportation, development design, power plants, ports, and public works. Development in the coastal zone usually requires a coastal development permit. Development activities include, but are not limited to, construction of buildings, divisions of land, and activities that change the intensity of use of land or public access to coastal waters. The CCC issues

coastal development permits, although a local agency takes over this responsibility once an LCP has been certified by the CCC (CCC 2001; Government Printing Office 1977).

California Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act of 1967 (Cal. Water Code § 13000, et seq.) requires the SWRCB and the nine RWQCBs to adopt water quality criteria to protect State waters. These criteria include the identification of beneficial uses, narrative and numerical water quality standards, and implementation procedures. The RWQCBs have the responsibility of granting NPDES permits for stormwater runoff from construction sites. In addition, the Porter-Cologne Act also covers non-federal waters of the State that may not be subject to requirements of the CWA, such as isolated waters. For fill or dredging impacts to only isolated waters of the State, the RWQCBs may issue Waste Discharge Requirements; otherwise, the CWA Section 401 Water Quality Certification typically addresses both waters of the State and waters of the United States.

Lake and Streambed Alteration Program

All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that support wildlife resources and/or riparian vegetation are subject to CDFW regulations, pursuant to Sections 1600 through 1616 of the *California Fish and Game Code*. Under Section 1602, it is unlawful for any person to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by CDFW as waters within their jurisdiction without first notifying CDFW of such activity. Additionally, a person cannot use any material from the streambeds without first notifying the CDFW of such activity. For a project that may affect stream channels and/or riparian vegetation regulated under Sections 1600 through 1616 of the *California Fish and Game Code*, CDFW authorization is required in the form of a Streambed Alteration Agreement.

1.2.3 LOCAL

Open Space Easement

In February 1974, the Santa Catalina Island Company granted a 50-year Open Space Easement (Gov. Code, § 65560, subd. (b)(2)) to Los Angeles County on 41,000 acres of Catalina.). Its expressed purpose is to "provide an opportunity for, and to encourage, access by the public, including without exclusion, civic, charitable, patriotic and religious groups and similar organizations to substantial portions of Santa Catalina Island for scenic, open-space and recreational purposes" and "to preserve portions of Santa Catalina Island for the protection of wildlife, plants and unique geological and archaeological sites" (Santa Catalina Island Company 1974). The 50-yr easement covers 41,000 of the Conservancy's 42,135 acres, which were to be "open to the general public, subject to reasonable restrictions concerning the needs of the land and necessary to the preservation of its unique qualities." Specifically, this meant there were to be no residential, commercial, or industrial structures, including hotel, inn, condominium, or rental apartments constructed in the easement area; no extraction of natural resources; and no timber cutting or harvesting of trees or natural growth.

Santa Catalina Island Local Coastal Plan (LCP)

One of the requirements of the California Coastal Act of 1976, which sets forth policies to guide new development and to improve public access to coastal areas, is the submission and approval of a Local Coastal Plan (LCP) for coastal areas such as Catalina. The Santa Catalina Island

Local Coastal Plan (*Ordinance 89-0148*) and the Santa Catalina Island Specific Plan (LADRP 1989) recognize and respond to the goals and requirements of the Open Space Easement Agreement, the Santa Catalina Island Conservancy and the California Coastal Act. It ensures that the vast majority of the Island will remain in its present natural state for future generations to enjoy.

Significant Ecological Areas (SEA)

In 1983 the Los Angeles County Board of Supervisors adopted the Santa Catalina Island Specific Plan which incorporated the Santa Catalina Island Significant Ecological Areas (SEAs) into the Santa Catalina Island Local Coastal Program. There are 34 areas on the Island that together comprise the Santa Catalina Island Significant Ecological Area. Los Angeles County requires special biological review of development on the Island if the project involves a parcel that has a designated SEA. These areas were all specified on the basis of significant island vegetation. The designated SEAs on the Island include: 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.

Los Angeles County Oak Tree Ordinance

The oak tree permit is established (a) to recognize oak trees as significant historical, aesthetic and ecological resources, and as one of the most picturesque trees in Los Angeles County, lending beauty and charm to the natural and manmade landscape, enhancing the value of property, and the character of the communities in which they exist; and (b) to create favorable conditions for the preservation and propagation of this unique, threatened plant heritage, particularly those trees which may be classified as heritage oak trees, for the benefit of current and future residents of Los Angeles County. It is the intent of the oak tree permit to maintain and enhance the general health, safety and welfare by assisting in counteracting air pollution and in minimizing soil erosion and other related environmental damage. The oak tree permit is also intended to preserve and enhance property values by conserving and adding to the distinctive and unique aesthetic character of many areas of Los Angeles County in which oak trees are indigenous. The stated objective of the oak tree permit is to preserve and maintain healthy oak trees in the development process (Ord. 88-0157 § 1, 1988; Ord. 82-0168 § 2 (part), 1982).

SECTION 2.0 SURVEY METHODS

This section describes the methods used to conduct a literature review; perform general and focused biological surveys; and assess the potential for each portion of the study or survey area to support special status species. The extent of the study or survey area depended on the survey methods used to determine the status of biological resources on the Project site. The survey area and methods used are described in more detail below.

2.1 LITERATURE REVIEW

A literature review was performed prior to the initiation of surveys to identify special status plants, wildlife, and habitats known to occur (or that historically occurred) in the vicinity of the study area. These searches included a review of the U.S. Geological Survey's (USGS') Santa Catalina North,

Santa Catalina South, Santa Catalina East, and Santa Catalina West 7.5-minute quadrangles in the California Native Plant Society's (CNPS) Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPS 2015) and the CDFW's California Natural Diversity Database (CNDDDB) (CDFW 2015). A review of FESA critical habitat documents was used to identify any portions of the study area occurring within proposed or designated critical habitat. Due to the CNDDDB lacking current and accurate wildlife data for Catalina, all previous biological documentation for the study area, including numerous peer-reviewed publications, the Conservancy's extensive 15-year geo-referenced wildlife sightings database, the annual USGS North American Breeding Bird Survey Reports covering 1988-1998 and 2012-2015 for Catalina, the Conservancy's bi-annual Land Bird Monitoring data (1999-2003), 15 years of Christmas Bird Counts (1988-2002), and the USGS Baseline Biodiversity Survey for Santa Catalina Island (2005) were reviewed prior to field surveys.

2.2 VEGETATION MAPPING AND GENERAL BIOLOGICAL SURVEYS

Vegetation Mapping: The vegetation classification system for Catalina Island was prepared in December 2000, based on review of five primary systems previously used for the Channel Islands and mainland California (Knapp 2000). The new classification system starts with the most complete and widely used system currently existing for California's Channel Islands, which groups plant assemblages into communities. The following description is summarized from (Knapp 2005).

The Conservancy commissioned aerial photographs from I.K. Curtis Services, Inc. (Burbank, California) in October of 2000. The orthorectified, mosaiced image was then used as a background in the Catalina Island Conservancy's Geographic Information System (GIS) and the vegetation polygons were digitized on-screen. Community delineation was done by an ecologist with detailed field-based knowledge of Catalina vegetation. Polygons were assigned to the most appropriate community type based on texture and color on the aerial photograph and on field knowledge of the vegetation and subsequent ground verification. The finished vegetation map identifies 15 different vegetation communities as well as three non-vegetated types (bare, bare streambed, and developed). The map builds on existing classification systems, with three additional nonnative plant communities (non-native woodland, non-native scrub, and non-native herbaceous) and one additional habitat type (bare streambeds) added. A list of the plant communities and the percent of the island covered for each is provided. The average polygon size is 3.6 ha for the detailed map and 6 ha for the generalized map, with a minimum mapping unit of 0.04 ha. Positional accuracy of the orthorectified image used to digitize the polygons was estimated at 5.59 m; this is well within the United States National Map Accuracy Standards (USGS 1947). The dominant three communities on the island are coastal sage scrub, island chaparral, and grassland (38.1, 29.4 and 19.5%, respectively). Bare ground also covers a significant portion of the island (9.4%). The island woodland community, dominated by one of three endemic and/ or characteristic island species (Catalina ironwood, island oak, and Catalina cherry), is rather limited on the island (0.5% of the island) and is a high priority for further (floristic-level) mapping and protection. Communities such as southern riparian woodland, southern beach & dune, and coastal marsh, which have been greatly reduced and altered on the mainland of southern California (Faber et al. 1989, Holland and Keil 1990), are also very limited on the island (0.34, 0.27 and 0.01% total cover, respectively) and are a high priority for protection and monitoring. Southern beach and dune polygons include both bare beach (sandy and rocky) areas as well as dunes, as greater distinctions could not be made from aerial photographs. Two communities were problematic to map: maritime cactus scrub and coastal bluff scrub. Maritime cactus scrub is a form of coastal scrub dominated by succulents and shrubs such as velvet cactus and cliff spurge (*Euphorbia misera*), which are rare both in California and on Catalina. This community is difficult to distinguish on aerial photographs and must be primarily mapped from the ground. One stand was mapped using existing rare plant locations for velvet cactus, however

more work is needed for this limited community. Coastal bluff scrub was also difficult to map, due to its often sparse nature, mixed growth forms (shrubs, perennial, and herbaceous species), and occurrence on steep shaded ocean bluffs. While forming significant cover measured vertically, this community occupies narrow areas as viewed aerially, and would be more appropriately mapped using a GPS from the shoreline. These difficult-to access bluffs have been a refuge against feral grazers and browsers on Catalina for many endemic plants, making coastal bluff scrub one of the better-preserved communities on the island (Thorne 1976)

Wildlife surveys: Avian species were identified by visual and auditory recognition during 9 days of trail surveying that took place October 7-9, 12-14, 16, and 19-20, 2015 by the Conservancy's Trails Coordinator and former wildlife biologist Kevin Ryan. Six of eleven proposed trail segments: Dacite Ridge, Patriot Ridge, Sheep Chute Reroute, Windward Overlook, Silver Peak Trail and Old West End Road were surveyed for common resident bird species and fall migrants/winter visitors as they began to arrive on the island. A breeding bird survey utilizing 50 points throughout the island was conducted June 1, 2015 by Conservancy wildlife biologist Tyler Dvorak as part of the annual USGS North American Breeding Bird Survey. Similarly burrowing owls were surveyed in conjunction with the Conservancy's annual mule deer spotlight surveys conducted July 6 and 7, 2015. Surveyors included wildlife biologists Julie King, Calvin Duncan, Tyler Dvorak, and Kevin Ryan.

General surveys for mammals were conducted during the day in conjunction with avian surveys on October 7-9,12-14,16,19-20, 2015 and included searching for and identifying diagnostic sign, including scat, footprints, and burrows. Taxonomy and nomenclature for wildlife generally follows Crother (2012) for amphibians and reptiles, American Ornithologists' Union (AOU 2011) for birds, and Bradley et al. (2014) for mammals.

Active searches for reptiles and amphibians included lifting, overturning, and carefully replacing rocks and debris along various sections of proposed trails. Individuals were also documented basking on rocks during the mid-morning hours.

2.3 FOCUSED BIOLOGICAL SURVEYS

Based on the known presence of several listed plant and animal species found throughout the island, Conservancy biologists conducted focused biological surveys in 2015 for special status plant species as well as the Catalina Island fox (*Urocyon littoralis catalinae*), Burrowing Owl (*Athene cunicularia*), and Townsend's big-eared bat (*Corynorhinus townsendii*), while the Institute for Wildlife Studies conducted annual Bald Eagle (*Haliaeetus leucocephalus*) surveys.

2.3.1 SPECIAL STATUS PLANT SPECIES

Initial Surveys for all proposed new trails (existing social and game trails) were conducted between the period of June 2015 through November 2015 by Catalina Conservancy's Plant Conservation Manager, Peter Dixon. All special status plant species were documented where they occurred within 50' of proposed alignments. Additional observation records from the California Natural Diversity Database (CNDDDB) and the Catalina Island Conservancy's rare plant mapping data were included in map overlay analysis for all proposed work areas.

2.3.2 CATALINA ISLAND FOX

Catalina Island Conservancy Director of Conservation and Wildlife Management Julie King (TE-090990-1; SCP No. SC-5821) was the principal investigator and was assisted by Catalina Conservancy wildlife biologists Calvin Duncan (TE-090990-1; SCP No. SC-9858) and Tyler

Dvorak (TE-090990-1; SCP No. SC-12152) during focused surveys for Catalina Island fox from September 28 to November 6, 2015. Surveys were completed in accordance with Catalina Island fox sampling protocol designed by the Institute for Wildlife Studies in 2004, adjusted and implemented by the Catalina Island Conservancy in 2005 – present, and documented in the USFWS Island Fox Recovery Plan (USFWS 2015).

Systematic island-wide transect trapping has been conducted annually since 1999. The number of traps utilized for this activity has been adjusted periodically over the years based on changes in the primary recovery/survey goals and success of the program. The 2015 survey was conducted from September 29 to November 6, 2015 utilizing 243 (166 East End; 77 West End) road-based trap sites placed across the island (Fig. 14). This main trapping effort was divided into six separate trap-lines consisting of 32-49 ($\bar{x} = 41$) trap sites per line. Each trap-line was set on Day 1; traps were checked within 5 hours of sunrise for 4 consecutive mornings, then the traps were subsequently removed on Day 5. The Study Area for this survey included the entire island (42,000 acres) with focused sampling overlapping with proposed project trails in the following locations: Palisades Overlook, Dacite Ridge, Cottonwood Canyon Trail, Patriot Ridge, Big Springs Connector, Windward Overlook Silver Peak Trail, Old West End Road, Parsons Reroute, and Sheep Chute to Empire.

All foxes were captured with single door live traps (Model #106, 23 x 23 x 66 cm; Tomahawk Live Trap Co., Tomahawk, WI), with the following modifications: (1) the top, and top edge of each side were covered with shade cloth to provide protection from sun, precipitation and wind; (2) bite bars, consisting of a 20-cm section of 1.8-cm-diameter polypropylene tubing attached to the inside of the trap with a flexible wire, were installed so that captured animals could bite something without damaging their teeth, and; (3) traps were constructed with 2.5 cm by 1.25 cm mesh instead of the standard 2.5 cm by 2.5 cm to reduce the incidence of tooth damage that may occur while a fox is in a trap. Dried grass was placed inside traps as bedding and vegetation was placed on and around traps to act as camouflage and to provide additional thermal protection. Each trap was baited with commercial cat kibble, canned wet cat food, and a loganberry lure. All traps were scrubbed and sterilized weekly after Day 5 of each trap-line to prevent potential disease and parasite transmission when the traps are moved to a new area the following week. Upon capture, foxes were weighed ($\pm 25g$), sexed, and aged. Age was determined by the relative wear and dentin exposure observed on the first upper molar (Wood 1958, Collins 1993) and foxes were placed in one of five age classes: pups (age class 0), juveniles/young adults (age class 1), adults (age class 2), mature adults (age class 3), and older adults (age class 4). After teeth and eyes were examined each fox was fitted with a muzzle. Additional information recorded included reproductive condition, presence of ectoparasites (e.g. fleas, ticks, lice), general physical condition, and evidence of infectious disease or traumatic injuries. All foxes captured for the first time were permanently marked with a 12.5 mm, 134.2 kHz passive integrated transponder tag (PIT tag; Biomark Inc., Boise, ID). PIT tags were inserted under the skin between the scapulae using a sterile single use syringe. Except for individuals requiring veterinary care, all foxes were released at the trap location immediately after handling. Due to Island foxes being relatively docile and not requiring immobilization or the use of anesthetic for handling, a complete examination (including PIT tagging, vaccinating, and radio collaring) required each fox to be in hand for less than 20 minutes. For each capture event the date, time and location using a global positioning system was recorded.

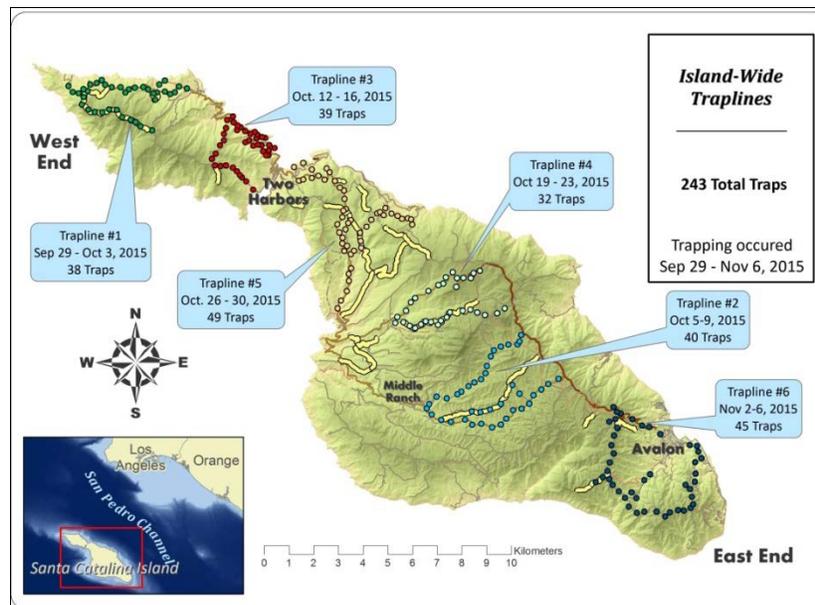


Figure 14. Catalina Island fox focused survey transect trap lines with proposed trails highlighted.

2.3.3 TOWNSEND'S BIG-EARED BAT

A day roost survey of 11 mine features was conducted by Julie King, Conservancy Director of Conservation and Wildlife Management during 2015 to determine if abandoned mines were being utilized by Townsend's big-eared bats (*Corynorhinus townsendii*), a State Species of Special Concern and a Candidate for State listing as Threatened. Mine features were surveyed at the same time for the Pallid bat (*Antrozous pallidus*), a state Species of Special Concern also known to use caves and mines for roosting. Survey areas were selected based on historic locations (1970's and earlier) and those documented by Brown and Berry (2002). Mine visits were conducted because Townsend's big-eared bats are rarely caught in nets or identified with an acoustic detector. Their vocal signals are emitted at such low frequency, they often escape detection using standard bat survey techniques. Because roost surveys offer the only viable survey method, and roost disturbance is such a critical issue with Townsend's big-eared bats, night vision goggles (ATN PVS7-3), a thermal imaging scope monocular (Pulsar HD19A), and a headlamp were utilized in order to limit entry of the surveyor to just the first 10 to 20 feet of an abandoned mine adit. These infrared and thermal imaging tools allowed the surveyor to "see" much deeper into a dark adit and detect bat presence through their heat signatures. In order to completely avoid disturbance when bat pups were non-volant, no mine entry occurred between March and August.

2.3.4 BALD EAGLE

Observations of adult eagles by the Institute for Wildlife Studies (IWS) staff begins annually in January or February at each of the known territories and weekly ground surveys are conducted to locate new nesting pairs (Fig. 15). During 2015, IWS monitored the chronology of nesting through incubation and chick-rearing with the use of spotting scopes and live streaming video cameras established prior to the breeding season at three active nests (West End, Twin Rocks, and Two Harbors). Those nests can be viewed online at http://www.iws.org/interactive_nestcams.html.

IWS staff entered each nest when the eagle chicks were approximately 8 weeks old to equip them with federal leg bands and orange patagial wing markers. IWS has the required Memorandum of Understanding and Scientific Collecting Permits (Permit #s SC-2485 [Peter

Sharpe] and SC-0932 [David Garcelon]) with the California Department of Fish and Wildlife to conduct bald eagle research on the California Channel Islands, a banding permit from the United States Geological Survey's Bird Banding Laboratory (# 21564) allowing them to band and radio-tag eagles. As a result of this long-term project, all eagles residing on Catalina have patagial wing markers, making identification of all individuals possible.

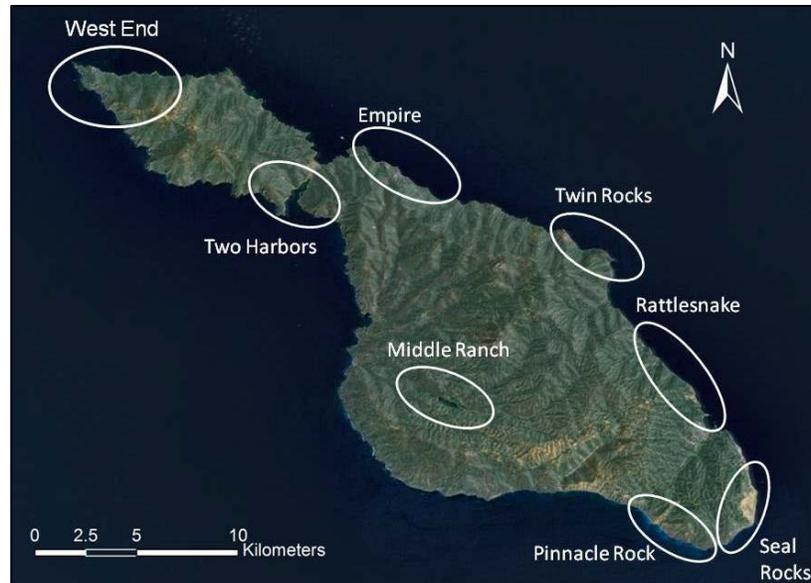


Figure 15. Bald eagle territories on Catalina Island during 2015.

2.3.5 BURROWING OWL

During 2007, and each year between 2012 and 2015 Conservancy wildlife biologists have conducted annual mule deer spotlight surveys for population estimation. Surveys were conducted along 74 miles of dirt road between July 6 and 10 annually (Fig. 16). All 4 routes were driven simultaneously and were repeated for either 4 consecutive nights (2007) or 2 consecutive nights (2012-2015). During all 5 years of these early July surveys, no burrowing owls were observed. Burrowing owls, common poorwills, and barn owls are species best surveyed for at night, so number observed, a GPS location, and age were specifically documented in conjunction with deer surveys. Burrowing owl nesting season surveys are recommended to occur between April 15 and July 15, so Conservancy spotlight surveys were within the CDFG guidelines. Similar deer spotlight surveys were conducted for 3 consecutive nights December 16-18, 2007 and 4 consecutive nights January 11-15, 2009. During these winter surveys, which fall within the burrowing owl winter survey protocol of December 1-January 31 (CDFG 1995), 59 burrowing owls were seen in January 2009 on all 4 routes, while 4 owls were observed in December 2007. These data further demonstrate the presence of owls as winter visitors and their absence as breeders.

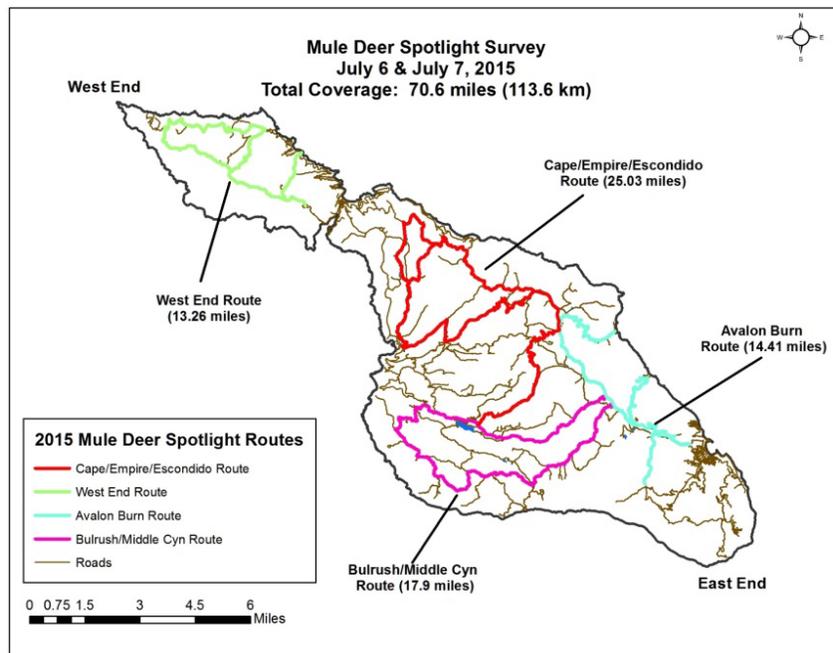


Figure 16. Annual mule deer spotlight survey routes that facilitate concurrent burrowing owl surveys.

SECTION 3.0 EXISTING BIOLOGICAL RESOURCES

This section describes the biological resources that occur or potentially occur in the study area. Vegetation types, wildlife populations and movement patterns, and special status plant (Table 3; Attachment A) and wildlife species that are either known to occur or have the potential to occur in the study area are discussed below.

3.1 VEGETATION TYPES AND OTHER AREAS

Eight vegetation communities were identified within the Project study area and have been classified based on the 2009 2nd Edition of Keeler-Wolf's *A Manual of California Vegetation* (CNPS 2009) and the 2005 *Vegetation community mapping on Santa Catalina Island using Orthorectification* created by Denise Knapp for the Catalina Island Conservancy. For the purposes of this Biological Assessment, the year 2002 vegetation communities designations (Knapp 2005) were used due to their highly resolved data specific to Catalina Island. The eight communities identified for the purposes of this report include the following with equivalent CNPS 2009 designations noted in parenthesis: Grassland (Purple Needle Grass Grassland), Coastal Sage Scrub (California Sagebrush Scrub), Island Chaparral (Island Scrub Oak Chaparral), Southern Riparian Woodland (Arroyo Willow Thickets/Mulefat Thickets), Non-native Herbaceous/Scrub, Non-native Woodland, Bare, and Developed (Fig. 17). Asterisks were placed next to non-native taxa, these include species native to California but introduced to Catalina Island.

3.1.1 VALLEY AND FOOTHILL GRASSLAND

This low, herbaceous community is composed of annual and perennial grasses and annual wildflowers. Within the project area grassland can be found on within or adjacent to several trail segments including Dacite Ridge, Eagles Nest Loop, Big Springs Reroute, and Palisades Overlook. Catalina Island still has significant remnants of native grasslands throughout the island, often forming a mosaic with coastal sage scrub and island chaparral communities. Common dominants of this native community include grasses such as needlegrass, one-sided bluegrass

(*Poa secunda*), and chaparral melic (*Melica imperfecta*), along with wildflowers such as fiddlenecks (*Amsinckia menziesii*), lilies (*Calochortus* spp.), Indian paintbrush (*Castilleja* spp.), owl's clover (*Castilleja exserta*), clarkia (*Clarkia* spp.), popcorn flower (*Cryptantha* spp.), poppies (*Eschscholzia* spp.), gilia (*Gilia* spp.), ground pink/ baby stars (*Linanthus* spp.) broom/clover/lotus (*Lotus* spp.), lupines (*Lupinus* spp.), clover (*Trifolium* spp.), wild onion (*Allium praecox*), locoweed (*Astragalus trichopodus*), golden stars (*Bloomeria crocea*), larkspur (*Delphinium parryi*), island shooting stars (*Dodecatheon clevelandii* ssp. *insulare*), blue dicks (*Dichelostemma capitatum*), coast goldfields (*Lasthenia californica*), tidy tips (*Layia platyglossa*), sanicle (*Sanicula arguta*), and blue-eyed grass (*Sisyrinchium bellum*) (Thorne 1976). Exotic annual-dominated grasslands predominate on the island, however, which are commonly composed of ripgut brome (**Bromus diandrus*), soft chess (**Bromus hordeaceus*), red brome (**Bromus madritensis*), false brome (**Brachypodium distachyon*), barley (**Hordeum* spp.), fescue (**Vulpia* spp.), and wild oats (**Avena* spp.), along with exotic forbs such as filaree (**Erodium* spp.) catchfly (**Silene gallica*), chickweed (**Stellaria media*), sow thistle (**Sonchus* spp.), bur-clover (**Medicago polymorpha*), cat's ear (**Hypochaeris glabra*), Scarlet pimpernel (**Anagallis arvensis*), and tocalote (**Centaurea melitensis*). The Valley and Foothill Grassland classification combines native with non-native dominated grasslands, as the two are not distinguishable from aerial photographs.

3.1.2 COASTAL SAGE SCRUB

The coastal sage scrub (CSS) community is dominated by low (two meters or less), soft-stemmed shrubs or suffrutescent herbs with thin leaves and shallow root systems (Holland & Keil 1990). These are drought-tolerant species which are often deciduous, losing some or all of their leaves during the dry summers and growing actively during winter and spring months (Holland & Keil 1990). Coastal sage scrub typically dominates dry, rocky, south-facing slopes. Large, unbroken stands of it are mapped on the Pacific side of the west end of the island and in the area between Little Harbor and the Isthmus. Approximately 22,000 acres of CSS are mapped on Catalina Island.

Within the project area, CSS can be found adjacent to most segments including, Palisades Overlook, Dacite Ridge, Eagle's Nest Loop, Big Springs Connector, and Silver Peak Trail. There are also large quantities of this community on the Pacific slopes west of the Airport-Little Harbor Road; on the slopes between Middle Canyon and Mounts Orizaba, Blackjack, and Banning; between the KBRT Road and the Divide Road; and on the Pacific side of the Divide Road. This community is also patchy in the Avalon Canyon watershed. In California, as much as 90% of this community has been lost to development, grazing, air pollution, and conversion, and "the remnants are habitat to a growing number of endangered plant taxa (Davis et al. 1994)."

Dominant and common plants in this community on Catalina Island include California sagebrush, California brickelbush (*Brickellia californica*), Catalina crossosoma, bush sunflower, St. Catherine's lace, bedstraw (*Galium* spp.), silver clover (*Lotus argophyllus* var. *argenteus*), island deerweed (*Lotus dendroideus*), silver bush lupine (*Lupinus albifrons*), red bush monkeyflower (*Mimulus aurantiacus*), cactus, bush mallow (*Malacothamnus fasciculatus* var. *catalinensis*), laurel sumac, lemonadeberry, black sage, white sage, island butterweed (*Senecio lyonii*), Wallace's solanum (*Solanum wallacei*), snowberry (*Symphoricarpos mollis*), morning glory (*Calystegia macrostegia*), and wild cucumber (*Marah macrocarpus* var. *major*) (Thorne 1976).

3.1.3 ISLAND CHAPARRAL

Hard-leaved (sclerophyllous) shrubs and dwarf trees characterize chaparral vegetation. The plants are often stiff and woody, forming impenetrable thickets, and may be broad-leaved or needle-leaved (Holland & Keil 1990). Chaparral can grow on a variety of substrates, which often

are shallow and rocky and of low fertility (Holland & Keil 1990). Island chaparral is found primarily on the Channel side of the island, on the west end, between Long Point and Empire Landing, in the vicinity of Swain's and Gallagher's Canyons, and in the Avalon Canyon watershed. There are also large stands in Bulrush canyon. Within the project area Chaparral was identified in the vicinity of trail segments; Patriot Ridge, Big Springs Connector, Parsons Reroute, Old West End Road, Sheep Chute to Empire and Cottonwood Canyon Trail.

Catalina's chaparral is most common on north- and east-facing slopes and in protected canyons (Thorne 1976). It is characterized by island scrub oak, chamise, Catalina manzanita (*Arctostaphylos catalinae*), felt-leaf ceanothus (*Ceanothus arboreus*), island big-pod ceanothus (*Ceanothus megacarpus* var. *insularis*), island mountain-mahogany, Catalina crossosoma, island bush poppy (*Dendromecon harfordii*), red bush monkeyflower, Trask's yerba santa (*Eriodictyon traskiae*), toyon (*Heteromeles arbutifolia*), fragrant pitcher sage (*Lepechinia fragrans*), laurel sumac, island redberry (*Rhamnus pirifolia*), lemonadeberry (*Rhus integrifolia*), Wallace's nightshade (*Solanum wallacei*), and mission manzanita (*Xylococcus bicolor*) (Thorne 1976).

Fire in combination with browsing pressure may have significantly affected the composition of island chaparral. Island endemic species such as Wallace's nightshade (CNPS 1.B), island rush-rose (*Helianthemum greenei*, FT), and island tree poppy (CNPS 1.B) are of particular conservation concern.

3.1.4 SOUTHERN RIPARIAN WOODLAND

The few permanent streams on Catalina support riparian woodland dominated by dense, winter-deciduous tree species. Arborescent species such as black cottonwood (*Populus balsamifera* var. *trichocarpa*), California sycamore (**Platanus racemosa*), and willows (*Salix* spp.) dominate, along with elderberry, Fremont cottonwood (*Populus fremontii*), and shrubs and vines such as coyote bush, mule fat, California wild rose (*Rosa californica*), California blackberry (*Rubus ursinus*), snowberry (*Symphoricarpos mollis*), poison oak, virgin's bower (*Clematis ligusticifolia*), heart-leaved penstemon (*Keckiella cordifolia*), honeysuckle (*Lonicera* spp.), wild cucumber, and desert wild grape (*Vitis girdiana*) (Thorne 1976). Herbaceous species typical of riparian communities include Western ragweed (*Ambrosia psilostachya*), mugwort (*Artemisia douglasiana*), rye (*Elymus* spp.), yerba buena (*Satureja douglasii*), hoary nettle (*Urtica dioica* ssp. *holosericea*), vervain (*Verbena lasiostachys*), and cocklebur (*Xanthium* spp.) (Thorne 1976).

Within the project area the proposed Cottonwood Canyon Trail is partially within Southern Riparian Woodland, however this trail segment occurs on existing roads or trail and would not impact vegetation.

3.1.5 NON-NATIVE HERBACEOUS/NON-NATIVE SCRUB

Some areas are dominated by invasive species such as fennel (**Foeniculum vulgare*), harding grass (*Phalaris aquatica*), and mustards (**Brassica*, **Raphanus*, and **Hirschfeldia* spp.), or Flax-leaved broom (*Genista linifolia*). These areas are classified as Non-Native Herbaceous (where cover is primarily annuals), or Non-native Scrub in areas invaded by Flax-leaved broom. Non-native scrub occurs along the Patriot Ridge trail segment, which is alternately classified as Chaparral. Non-native Herbaceous cover is found in the former hayfields at Middle Ranch, the terminus of the Dacite Ridge trail segment.

The Catalina Habitat Improvement and Restoration Program (CHIRP) actively manages up to 64 target invasive species along roads, trails and dispersal corridors. A 60 meter weed free buffer for roads and a 10 meter buffer for trails are maintained on all Conservancy roads and trails.

3.1.6 NON-NATIVE WOODLAND

A variety of non-native trees dominate discrete areas on Catalina Island, where they were planted as part of a “reforestation” program by the California Department of Forestry in the 1930s and 1940s, to line steep roads, or at areas of settlement. These stands form distinct habitats with different wildlife values, and are important to distinguish. They include coniferous species such as pines (**Pinus spp.**), cypresses (**Cupressus spp.**), and cedars (**Calocedrus decurrens**, **Cedrus deodara**), as well as broadleaved species such as eucalyptus (**Eucalyptus spp.**). Discrete stands of this community are found at Blackjack camp, upper Cape Canyon, upper Middle Canyon, near the Banning House Lodge, at Haypress Reservoir, at Wrigley Reservoir, and around Avalon. No new trail segments occur within Non-native woodland.

3.1.7 BARE GROUND

There are large areas on Catalina Island that do not support significant amounts of vegetation. These may be rocky, eroded, or disturbed areas. They often can be important habitat for rare species that do not compete well with other plants or are adapted to thrive in resource-poor conditions.

3.1.8 DEVELOPED

Developed areas are either devoid of vegetation or are planted with ornamental species. Major locations include Avalon, Two Harbors, Rancho Escondido, Airport-in-the-Sky, Empire Landing, and major coves along the Channel side of the island.

Table 3: Special-Status Plants in the Vicinity of the Project Area, Catalina Island, CA

Common Name	Scientific Name	Agency Status (Federal/State/CRPR/ Other)	Likelihood of Occurrence in Project Area. Habitat
Aphanisma	<i>Aphanisma blitoides</i>	--/--/1B.2	POSSIBLE. Coastal bluff scrub, coastal dunes, coastal scrub-sandy soils.
Beach spectaclepod	<i>Dithyrea maritima</i>	--/ST/1B.1	UNLIKELY/UNCONFIRMED. Coastal dunes, coastal scrub-sandy soils. No dune area within project area.
Bright green dudleya	<i>Dudleya virens ssp. virens</i>	--/--/1B.2	PRESENT. Coastal bluff scrub-rocky.
California box-thorn	<i>Lycium californicum</i>	--/--/4.2	PRESENT. Coastal bluffs, coastal-sage scrub; < 150 m. Mainly occurs on windward side of island.
California dissanthelium	<i>Dissanthelium californicum</i>	--/--/1B.2	POSSIBLE. Coastal sage scrub.
Catalina crossosoma	<i>Crossosoma californicum</i>	--/--/1B.2	PRESENT. Chaparral, coastal scrub-rocky.
Catalina Island dudleya	<i>Dudleya virens ssp. hassei</i>	--/--/1B.2/IE	POSSIBLE. Coastal bluff scrub-rocky.
Catalina Island mountain mahogany	<i>Cercocarpus traskiae</i>	FE/SE/1B.1/IE	UNLIKELY. Dry, rocky soils. 100-250m. Known from one small population not within project area.
Catalina mariposa lily	<i>Calochortus catalinae</i>	--/--/4.2	POSSIBLE. Heavy soil, open grassland or shrubland; <700m.
Chaparral ragwort	<i>Senecio aphanactis</i>	--/--/2.2	POSSIBLE. Chaparral, cismontane woodland, coastal scrub.
Chaparral rein orchid	<i>Piperia cooperi</i>	--/--/4.2	POSSIBLE. Generally dry sites, scrub, woodland, forest; < 1500 m.
Cliff spurge	<i>Euphorbia misera</i>	--/--/2.2	UNLIKELY. Rocky slopes, coastal bluffs; < 500 m. Known from one population on Catalina, on the Windward side of the Island, not in project area
Coast woolly-heads	<i>Nemacaulis denudata var. denudata</i>	--/--/1B.2	UNLIKELY/UNCONFIRMED. Coastal dunes. Not within project area.
Coulter's saltbush	<i>Atriplex coulteri</i>	--/--/1B.2	PRESENT. Coastal bluff, coastal dunes, coastal scrub, valley and foothill grasslands.
Davidson's saltscale	<i>Atriplex serenana var. davidsonii</i>	--/--/1B.2	PRESENT. Coastal bluff scrub, coastal scrub; alkaline soils.
Decumbent goldenbush	<i>Isocoma menziesii var. decumbens</i>	--/--/1B.2	UNLIKELY. Sandy soil, chaparral, coastal scrub, leeward side of dunes, hillsides, arroyos; < 200 m. Known from one locality near Avalon not in project area.
Engelmann oak	<i>Quercus</i>	--/--/4.2	UNLIKELY/UNCONFIRMED. Slopes,

Table 3: Special-Status Plants in the Vicinity of the Project Area, Catalina Island, CA

Common Name	Scientific Name	Agency Status (Federal/State/CRPR/ Other)	Likelihood of Occurrence in Project Area. Habitat
	<i>engelmannii</i>		foothills, woodland; < 1300 m.
Fragrant pitcher sage	<i>Lepechinia fragrans</i>	--/--/4.2	UNLIKELY. Chaparral; < 1100 m. Not observed in initial survey.
Greene's dudleya	<i>Dudleya greenei</i>	--/--/4.2	UNLIKELY/UNCONFIRMED. Coastal cliffs, rocky outcrops; < 200 m. Only collected once on Catalina, in 1950.
Island buckwheat	<i>Eriogonum grande var. grande</i>	--/--/4.2	UNLIKELY. Sand; < 300 m. Not observed in project area.
Island ceanothus	<i>Ceanothus megacarpus var. insularis</i>	--/--/4.3	UNLIKELY. Dry, shrubby slopes, canyons near coast; <600m. Not observed in project area.
Island deerweed	<i>Acmispon (Lotus) dendroideus var. dendroideus</i>	--/--/4.2	POSSIBLE. Bluffs, inland canyons, open sites near ocean; < 350 m.
Island green dudleya	<i>Dudleya virens ssp. insularis</i>	--/--/1B.2	PRESENT. Coastal bluff scrub, coastal scrub-rocky.
Island jepsonia	<i>Jepsonia malvifolia</i>	--/--/4.2	PRESENT. Rocky outcrops, clay slopes; < 1000 m.
Island mountain- mahogany	<i>Cercocarpus betuloides var. blancheae</i>	--/--/4.3	UNLIKELY. Chaparral; <600m. Not observed in project area.
Island oak	<i>Quercus tomentella</i>	--/--/4.2	UNLIKELY. Canyons, slopes, woodland; < 600 m. Not observed in project area.
Island poppy	<i>Eschscholzia ramosa</i>	--/--/4.3	POSSIBLE. Open places, especially chaparral; 0-300m.
Island redberry	<i>Rhamnus pirifolia</i>	--/--/4.2	PRESENT. Coastal-sage scrub, chaparral.
Island rush-rose	<i>Helianthemum greenei</i>	FT --/--/1B.2	PRESENT. Chaparral, open ridges and slopes with dry rocky slopes.
Island scrub oak	<i>Quercus pacifica</i>	--/--/4.2	PRESENT. Slopes, ridges, canyons, chaparral, coastal scrub, oak woodland, pine forest; < 610 m.
Island tarplant	<i>Deinandra clementina</i>	--/--/4.3	POSSIBLE. Dry slopes, bluffs, rocky areas; <200m.
Lyon's pentachaeta	<i>Pentachaeta lyonii</i>	FE/SE /1B.1	POSSIBLE. Coastal habitats; ± 150 m.
Nevin's woolly sunflower	<i>Constancea nevinii</i>	--/--/1B.3	UNLIKELY. Coastal bluff, coastal scrub. Known from several small coastal areas, not observed in project area.
Nevin's gilia	<i>Gilia nevinii</i>	--/--/4.3	POSSIBLE. Rocky, grassy slopes, coastal. canyons; 20–400 m.
Nuttall's island	<i>Galium nuttallii ssp.</i>	--/--/4.3	PRESENT. Chaparral, groves of pine

Table 3: Special-Status Plants in the Vicinity of the Project Area, Catalina Island, CA

Common Name	Scientific Name	Agency Status (Federal/State/CRPR/ Other)	Likelihood of Occurrence in Project Area. Habitat
bedstraw	<i>Insulare</i>		or <i>Lyonothamnus</i> ; 300–400 m.
Palmer's grapplinghook	<i>Harpagonella palmeri</i>	--/--/4.2	POSSIBLE. Dry sites in chaparral, coastal scrub, grassland; < 450 m.
Red sand- verbena	<i>Abronia maritima</i>	--/--/4.2	PRESENT. Coastal dunes; <100m. Only known from windward shore between Ben Weston Beach and Little Harbor.
Robinson's pepper-grass	<i>Lepidium virginicum var. robinsonii</i>	--/--/1B.2	POSSIBLE. Dry soils, scrub; < 500 m.
Round-leaved filaree	<i>California macrophylla</i>	--/--/1B.1	POSSIBLE. Cismontane woodland, valley and foothill grassland.
Santa Barbara honeysuckle	<i>Lonicera subspicata var.subspicata</i>	--/--/1B.2	UNLIKELY. Chaparral. Not observed in project area.
Santa Catalina figwort	<i>Scrophularia villosa</i>	--/--/1B.2	PRESENT. Chaparral, coastal scrub.
Santa Catalina Island bedstraw	<i>Galium catalinense ssp. catalinense</i>	--/--/1B.2/IE	PRESENT. Chaparral, coastal scrub.
Santa Catalina Island buckwheat	<i>Eriogonum giganteum var. giganteum</i>	--/--/4.3/IE	POSSIBLE. Gravel; < 450 m.
Santa Catalina Island currant	<i>Ribes viburnifolium</i>	--/--/1B.2	PRESENT. Chaparral, cismontane woodland.
Santa Catalina Island desert- thorn	<i>Lycium brevipes var. hassei</i>	--/--/1B.1	PRESUMED EXTERPATED. Coastal bluff scrub, coastal scrub.
Santa Catalina Island ironwood	<i>Lyonothamnus floribundus ssp. floribundus</i>	--/--/1B.2/IE	UNLIKELY. Broadleaf upland forest, chaparral, cismontane woodland. Not observed in project area.
Santa Catalina Island manzanita	<i>Arctostaphylos catalinae</i>	--/--/1B.2/IE	PRESENT. Chaparral (volcanic).
Santa Catalina Island monkeyflower	<i>Mimulus traskiae</i>	--/--/1A	PRESENT in 1901 near Avalon. Presumed extinct. Coastal scrub.
Santa Cruz Island winged rockcress	<i>Sibara filifolia</i>	FE --/--/1B.2	POSSIBLE. Coastal scrub-rocky, volcanic.
Seaside calandrinia	<i>Cistanthe maritima</i>	--/--/4.2	POSSIBLE. Sandy soil, sea bluffs; <300m.
Short-lobed broomrape	<i>Orobanche parishii ssp. Brachyloba</i>	--/--/4.2	POSSIBLE. Sandy soil near ocean, on shrubs such as <i>Isocoma menziesii</i> ; < 300 m.

Table 3: Special-Status Plants in the Vicinity of the Project Area, Catalina Island, CA

Common Name	Scientific Name	Agency Status (Federal/State/CRPR/ Other)	Likelihood of Occurrence in Project Area. Habitat
Showy island snapdragon	<i>Gambelia [Galvezia] speciosa</i>	--/--/1B.2	UNLIKELY. Coastal scrub-rocky. Not observed in project area.
Small-flowered smicroseris	<i>Microseris douglasii var. platycarpa</i>	--/--/4.2	POSSIBLE. Inland clay soils, grassland, often near vernal pools or serpentine outcrops; < 1000 m.
Small-flowered morning glory	<i>Convolvulus simulans</i>	--/--/4.2	POSSIBLE. Wet clay, serpentine ridges; 30-700m.
South coast saltscale	<i>Atriplex pacifica</i>	--/--/1B.2	Possible. Coastal bluff scrub, coastal dunes, coastal scrub, playas.
South island bush-poppy	<i>Dendromecon harfordii var. rhamnoides</i>	--/--/1B.2	UNLIKELY. Chaparral, cismontane woodland, coastal scrub. Not observed in project area.
Southern island clover	<i>Trifolium palmeri</i>	--/--/4.2	POSSIBLE. Grassy areas near ocean; < 15 m.
Southern island mallow	<i>Malva assurgentiflora ssp. glabra</i>	--/--/1B.1	UNLIKELY. Coastal bluff scrub. Only known from two offshore islets.
Southern tarplant	<i>Centromadia parryi ssp. australis</i>	--/--/1B.1	POSSIBLE/UNCONFIRMED. Marshes and swamps, valley and foothill grassland, vernal pools.
Velvet cactus	<i>Bergerocactus emoryi</i>	--/--/2.2	PRESENT. Sandy soils, dry hills along coast; <100m. Known from several small populations.
Vernal barley	<i>Hordeum intercedens</i>	--/--/3.2	PRESENT. Vernal pools, dry, saline streambeds, alkaline flats; < 1000 m.
Wallace's nightshade	<i>Solanum wallacei</i>	--/--/1B.1	POSSIBLE. Chaparral, cismontane woodland.
Western dichondra	<i>Dichondra occidentalis</i>	--/--/4.2	POSSIBLE. Slopes, headlands, generally under shrubs; 50-500m.
Wooly seablite	<i>Suaeda taxifolia</i>	--/--/4.2	PRESENT. Coastal bluffs, margins of salt marshes; < 15 m. Not within project area.

Source: CDFW, Special Vascular Plants, Bryophytes, and Lichens List (7/2012); Catalina Island Conservancy (10/2012); California Natural Diversity Database (CNDDB), October 2012.

KEY:

FE=Federally Endangered

FT=Federally Threatened

SE=State Endangered

ST=State Threatened

IE=Santa Catalina Island Endemic

California Native Plant Society (CNPS) California Rare Plant Rank (CRPR):

1A: Plants presumed extinct in California

1B: Plants rare, threatened, or endangered in California and elsewhere

2: Plants rare, threatened, or endangered in California, but more common elsewhere.

3: Plants about which we need more information.

Table 3: Special-Status Plants in the Vicinity of the Project Area, Catalina Island, CA

Common Name	Scientific Name	Agency Status (Federal/State/CRPR/ Other)	Likelihood of Occurrence in Project Area. Habitat
4: Plants of limited distribution, a watch list.			
CRPR Threat Ranks:			
0.1 - Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)			
0.2 – Fairly endangered in California (20-80% occurrences threatened)			
0.3 – Not very endangered in California (<20% of occurrences threatened or no current threats known)			

3.2 COMMON WILDLIFE

The study area is comprised primarily of native habitats and provides suitable habitat for the majority of Catalina's native wildlife species. Common wildlife species observed or expected to occur in the study area are discussed below.

3.2.1 AMPHIBIANS

The Island has two common species of native amphibians. One, the garden slender salamander (*Batrachoseps major major*), is known to frequent a great variety of habitats and shows an affinity toward oak woodland and chaparral habitats on Catalina Island (Backlin et al. 2004). Garden slender salamanders were documented throughout the Project area by Backlin et al. during monthly surveys conducted February 2002 through December 2004 (salamanders detected during winter only) and during non-standardized herp surveys by Julie King following a December 2015 rain event.

The Baja California tree frog (*Pseudacris hypochondriaca hypochondriaca*) is the only native frog on Santa Catalina Island, and choruses of these frogs can be heard commonly throughout the island. Though it is frequently found in low-lying vegetation near slow moving water, it commonly occurs in upland habitat quite some distance from water. Backlin et al. (2004) captured them in non-native grassland, coastal sage scrub, oak woodland and chaparral habitat types throughout the island and Project area during the spring and winter seasons.

The non-native American bullfrog was also observed by Backlin et al. and can negatively affect native amphibian species populations. They are commonly found in man-made livestock ponds and perennial wetland areas throughout the island and were seen/heard in Cottonwood Canyon, Inspiration Point Overlook, and Eagle's Nest Loop sections of the project area during December 2015 surveys.

3.2.2 REPTILES

Santa Catalina Island's relatively large size and close proximity to shore allow for a high probability of colonization from the mainland (Wilcox 1978). This is likely one contributing reason why more species of reptiles and amphibians occur on Santa Catalina Island than on any of the other California Channel Islands (Schoenherr et al. 1999). Catalina's native reptiles include five snake species and three lizard species. Although no focused surveys were conducted for reptile species during other 2015 wildlife surveys, the following common reptile species were commonly observed in the study area by Conservancy biologists when walking the proposed trails to map all potential alignments and vegetation: Western side-blotched lizard (*Uta stansburiana elegans*), San Diego alligator lizard (*Elgaria multicarinata webbiai*), Coronado skink (*Plestiodon skiltonianus interparietalis*), San Diego gopher snake (*Pituophis catenifer annectens*), California kingsnake (*Lampropeltis californiae*), and Southern Pacific rattlesnake (*Crotalus oreganus helleri*). These

species were also commonly captured throughout the island by Backlin et al. (2004). The San Bernardino ringneck snake (*Diadophis punctatus modestus*) is less commonly observed and was not detected during preliminary surveys, but seven individuals were captured by Backlin et al. (2004) near the proposed Big Springs Connector trail, Alternative Two Harbors Exit trail, and Blackjack Campground.

The Santa Catalina garter snake (*Thamnophis hammondi* ssp.) and California Mountain kingsnake (*Lampropeltis zonata*) are rarely observed on the island and were not detected during preliminary surveys. The California Mountain kingsnake is only known from three documented records occurring in 1910, 1999, and 2015, so little is known about its status on the island. Similarly, the last documented sighting of the garter snake occurred in 2010.

3.2.3 BIRDS

A variety of bird species are expected to be resident in the study area. These resident species use habitats in the study area throughout the year while other species are present only during certain seasons. For example, the White-crowned Sparrow (*Zonotrichia leucophrys*) is a very common and abundant winter visitor to the island and is present throughout the project site. This species however migrates to more northerly regions during spring to breed and, as a result, will be absent from the study area and island during the summer season (Collins and Jones 2015).

The following bird species were observed during fall bird surveys and are expected to be residents in the study area: California Quail (*Callipepla californica catalinensis*), Killdeer (*Charadrius vociferus*), Mourning Dove (*Zenaida macroura*), Allen's Hummingbird (*Selasphorus sasin sedentarius*), Acorn Woodpecker (*Melanerpes formicivorus*), Northern Flicker (*Colaptes auratus*), Black Phoebe (*Sayornis nigricans*), Common Raven (*Corvus corax*), Horned Lark (*Eremophila alpestris insularis*), Rock Wren (*Salpinctes obsoletus*), Bewick's Wren (*Thryomanes bewickii catalinae*), Northern Mockingbird (*Mimus polyglottos*), Dusky Orange-crowned Warbler (*Oreothlypis celata sordida*), San Clemente Spotted Towhee (*Pipilo maculatus clementae*), Western Meadowlark (*Sturnella neglecta*), House Finch (*Haemorhous mexicanus clementis*), and Lesser Goldfinch (*Carduelis psaltria*).

Migratory species that are summer only residents in the study area include the Pacific-slope Flycatcher (*Empidonax difficilis insulicola*), Ash-throated Flycatcher (*Myiarchus cinerascens*), Barn Swallow (*Hirundo rustica*), Chipping Sparrow (*Spizella passerina*), Black-headed Grosbeak (*Pheucticus melanocephalus*), and Hooded Oriole (*Icterus cucullatus*) (Collins and Jones 2015).

Wintering species that would be expected to occur at only that season in the study area and were observed during October 2015 bird surveys include the Hermit Thrush (*Catharus guttatus*), Cedar Waxwing (*Bombycilla cedrorum*), Say's Phoebe (*Sayornis saya*), Warbling Vireo (*Vireo gilvus*), Red-breasted Nuthatch (*Sitta canadensis*), Ruby-crowned Kinglet (*Regulus calendula*), Yellow-rumped Warbler (*Setophaga coronata*), Savannah Sparrow (*Passerculus sandwichensis*), Fox Sparrow (*Passerella iliaca*), White-crowned Sparrow (*Zonotrichia leucophrys*), and Golden-crowned Sparrow (*Zonotrichia atricapilla*), and Dark-eyed Junco (*Junco hyemalis*) (Collins and Jones 2015).

Raptors (birds of prey) observed or heard (i.e. Saw-whet owl at night) in the study area include Bald Eagle (*Haliaeetus leucocephalus*), Red-tailed Hawk (*Buteo jamaicensis*), American Kestrel (*Falco sparverius*), Burrowing Owl (*Athene cunicularia*), and Northern Saw-whet Owl (*Aegolius acadicus*). All of these raptor species, except for the Bald Eagle have the potential to nest in the study area.

3.2.4 MAMMALS

There are only 5 ground-dwelling mammal species native to Catalina Island (all are Catalina Island endemics), and all can be found within the study area. These include the Catalina Island fox (*Urocyon littoralis catalinae*), Catalina California ground squirrel (*Otospermophilus beecheyi nesioticus*), Catalina Island deer mouse (*Peromyscus maniculatus catalinae*), Catalina harvest mouse (*Reithrodontomys megalotis catalinae*), and Catalina Island shrew (*Sorex ornatus willetti*). Feral cats (*Felis catus*), American bison (*Bison bison*) (N=132), and mule deer (*Odocoileus hemionus*) (N=1,474; 7.6 deer/km²) (Stapp 2015) have all been introduced to the island and are present throughout the study area. The Catalina California ground squirrel is prolific throughout the island in years of above-average precipitation, yet is most abundant in open grassland or developed areas. This species is commonly captured incidentally during annual island-wide fox trapping activities and those captures provide data on annual trends in their population size (King and Duncan 2015).

Eight bat species have been documented to occur on Catalina and may use any portion of the study area as foraging habitat. Yuma myotis (*Myotis yumanensis*) and California myotis (*Myotis californicus*) species are considered to be ubiquitous throughout the island (Brown and Berry 2002) and roosting and foraging areas would be expected to occur within the study area.

3.3 WILDLIFE MOVEMENT

Wildlife movement activities usually fall into one of three movement categories: (1) dispersal (e.g., juvenile animals from natal areas or individuals extending range distributions); (2) seasonal migration; and (3) movements related to home range activities (e.g., foraging for food or water, defending territories or searching for mates, breeding areas, or cover). A number of terms such as “travel route”, “wildlife corridor”, “habitat linkage”, and “wildlife crossing” have been used in various wildlife movement studies to refer to areas in which wildlife move from one area to another.

- **Travel Route** – a landscape feature (such as a ridgeline, drainage, canyon, or riparian strip) within a larger natural habitat area that is used frequently by animals to facilitate movement and to provide access to necessary resources (e.g., water, food, cover, den sites).
- **Wildlife Corridor** – a piece of habitat, usually linear in nature that connects two or more habitat patches that would otherwise be fragmented or isolated from one another. Wildlife corridors are usually bound by urban land areas or other areas unsuitable for wildlife. The corridor generally contains suitable cover, food, and/or water to support species and to facilitate movement while in the corridor. Larger, landscape-level corridors (often referred to as “habitat linkages” or “landscape linkages”) can provide both transitory and resident habitat for a variety of species.
- **Habitat Linkage** – a narrow band of habitat that connects similar habitats, thereby facilitating dispersal of species that occupy such habitat types. These linkages connect the natural processes that are associated with the habitat.
- **Wildlife Crossing** – a small, narrow area, relatively short in length and generally constricted in nature that allows wildlife to pass under or through an obstacle or barrier that otherwise hinders or prevents movement. Crossings typically are man-made and include culverts, underpasses, drainage pipes, and tunnels to provide access across or under roads, highways, pipelines, or other physical obstacles. These often represent “choke points” along a movement corridor, which may impede wildlife movement and increase the risk of predation.

In a large open space area such as Catalina Island, where there are few or no man-made or naturally occurring physical constraints to wildlife movement, wildlife corridors (as defined above) may not exist. Given an open space area that is both large enough to maintain viable populations of species and to provide a variety of travel routes (e.g., canyons, ridgelines, trails, riverbeds, and others), wildlife will use these “local” routes while searching for food, water, shelter, and mates and will not need to cross into other large open space areas. Based on their size, location, vegetative composition and availability of food, some of these movement areas (e.g., large drainages and canyons) are used for longer lengths of time and serve as source areas for food, water and cover, particularly for small- and medium-sized animals. This is especially true if the travel route is within a larger open space area.

Wildlife is able to move relatively unimpeded throughout Catalina Island due to its lack of development and contiguity of relatively undisturbed native habitat. A series of three five-foot tall wire fences were installed across the island to assist in the eradication of invasive feral animals in the 1990s. This fencing remains in place; however, its design allows the majority of island wildlife to bypass it. Smaller animals such as the Island fox, Catalina California ground squirrel, deer mouse and harvest mouse can move under or through it due to the 6x6-inch mesh size, while larger introduced animals such as mule deer and bison can jump over.

Dispersal distances are typically shorter in insular animal populations compared to non-island populations (Sullivan 1977), and the dispersal distances of Island foxes are also less than for other small canids. For Catalina Island foxes, one of the most important movement behaviors is dispersal, where an individual permanently leaves a natal or previous home range to establish a new home range. It appears that when populations are at normal to high densities, young (non-reproductive) foxes disperse only short distances or stay within their natal range. Roemer et al. (2001) found that of six juvenile foxes radio-collared on Santa Cruz Island, five moved a mean distance of only 1.0 km, and only one left its natal range, moving a distance of 3.6 km. This is similar to what King and Duncan (unpublished Conservancy data) have found when analyzing pup dispersal distances in 539 juvenile Catalina Island foxes between 2000 and 2013. Mean dispersal distance for 264 females caught as pups in Year 1 and recaptured as juveniles in Year 2 was 0.471 km. Similarly and the mean dispersal distance of 275 male pups between Year 1 and year 2 was 1.61 km (Fig.18). Juvenile foxes disperse annually between September and November as their parents prepare for the onset of the next breeding season, however this is not considered “seasonal migration” as would be typical of some mainland species such as elk or deer. Activities associated with trail realignment and restroom installation will not impede the ability of juvenile foxes to disperse into new areas.

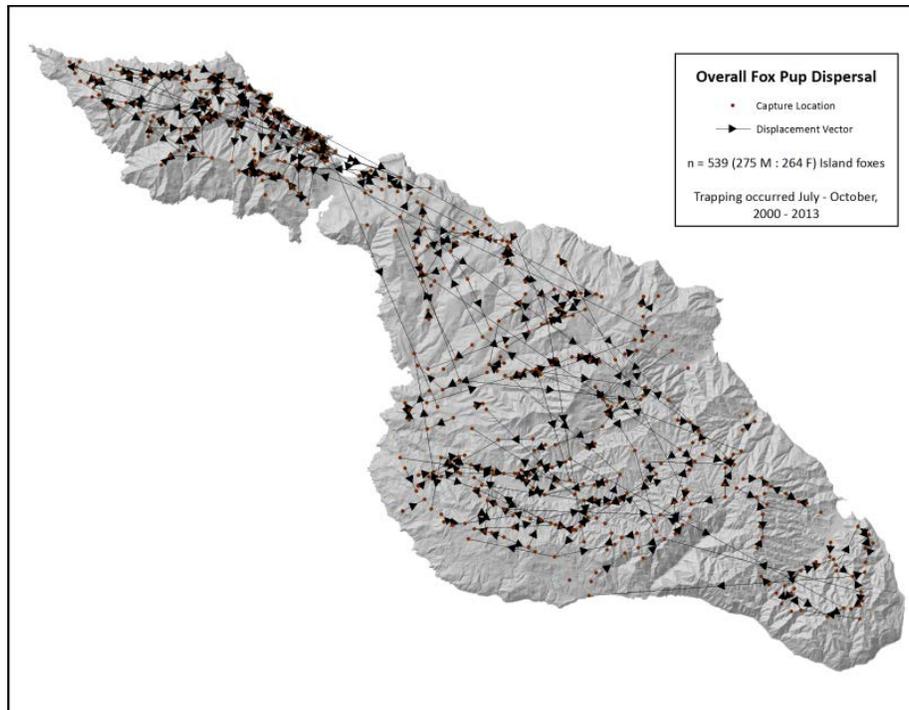


Figure 18. Juvenile Catalina Island fox dispersal distances 2000-2013.

In addition to its resident species, Catalina Island serves as a stopover site for many spring and fall migrating birds, as well as an overwintering site. The majority of Catalina is open space with relatively contiguous and varying habitat types, thus corridors and habitat linkages do not play as much of a role for birds as they might in more developed locales. The impact of the project on those habitat characteristics will be less than significant.

3.4 **SPECIAL STATUS BIOLOGICAL RESOURCES**

The following section addresses special status biological resources reported from the Island. These resources include plant and wildlife species that have been afforded special status and/or are recognized by federal and State resource agencies, as well as private conservation organizations. In general, the principal reason an individual taxon (i.e., species, subspecies, or variety) is given such recognition is the documented or perceived decline or limitations of its population size, geographic range, and/or distribution resulting in most cases from habitat loss. This list includes species reported by the CNDDDB, CDFW, and CNPS and is supplemented with species from the Catalina Island Conservancy's databases of plant and wildlife occurrences.

3.4.1 **SPECIAL STATUS SPECIES**

“Special-status” refers to those plant and animal species that meet one or more of the following criteria:

- Listed by the USFWS or CDFW as Threatened or Endangered, proposed for listing as Threatened or Endangered, or that are candidates for listing as Threatened or Endangered.
 - “Critical Habitat” was designated. The USFWS through the Endangered Species Act defines critical habitat as “a specific geographic area(s) that contains

features essential for the conservation of a threatened or endangered species and that may require special management and protection. Critical habitat may include an area that is not currently occupied by the species but that will be needed for its recovery.” A critical habitat designation typically has no impact on property or developments that do not involve a Federal agency, such as a private landowner developing a property that involves no Federal funding or permit. However, when such funding or permit is needed, the impacts to critical habitat are considered during the consultation with the USFWS.

- Considered “Endangered, Rare, or Threatened” as defined by the CEQA Guidelines. The CEQA Guidelines state that a species of animal or plant is Endangered when its survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors. A species is Rare when either “(A) although not presently threatened with extinction, the species is existing in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens; or (B) the species is likely to become endangered within the foreseeable future throughout all or a portion of its range and may be considered ‘Threatened’ as that term is used in the Federal Endangered Species Act.”
- Animal species designated as “Species of Special Concern” or “Fully Protected” by the CDFW. Although these species are not listed as Threatened or Endangered, the CDFW recommends protecting them because populations of these species are generally declining and they could be listed as Threatened or Endangered (under the California Endangered Species Act [CESA]) in the future.
- Plants included on Lists 1 or 2 of the CNPS. These species are included because the CNPS is recognized by the CDFW as an authority on the status of Rare plant species in California. Furthermore, the criteria for placement on List 1 or List 2 are similar to criteria that CDFW and USFWS use for species considered as candidates for listing or that are already listed as Threatened or Endangered.
- Animals included on the CDFW List of Special Animals, Los Angeles County Sensitive Bird Species list, the California Western Bat Working Group list of High, Medium, and Low conservation priority bat species; and the Xerces Society Red List of pollinators.
- Trees, habitats, or other resources protected by local policies and ordinances or otherwise considered of local concern.
- Plants included in the LA County Title 22, Santa Catalina Island Natural Resources Management Plan (1980) Appendix G. Rare Catalina Native Plants

3.4.2 SPECIAL STATUS PLANT SPECIES

Twenty-seven rare species were documented during focused surveys conducted in the vicinity of

project area including seven List 1B.2 (CRPR) species and one Federally Threatened plant. All 27 of the target species are identified below in Table 4 along with their regulatory status and segment where they occur within the Project study area. At the request of SEATAC, plants listed on pp. II 86-87 of the Local Coastal Plan and Appendix G of the Specific Plan were also analyzed for their potential to occur within the Project study area and are included in Table 4. Below is a brief description of each of the List 1B and Federal or State Listed plant species observed.

Santa Catalina Island manzanita, *Arctostaphylos catalinae*

The Santa Catalina Island manzanita is endemic to Catalina Island and is on List 1B.2 (CNPS). It is a shrub usually exceeding 2 meters (6.6 ft) in height, sometimes taking a treelike form up to 5 meters (16 ft) tall. It is glandular and covered in white bristles. The leaves also have fine bristles. The dull, light green blades are up to 5 centimeters long by 3 wide. Occurs on volcanic outcrops, ridges and maritime chaparral between an elevation of 100-600 m, and flowers between December and February. Several individuals were found in the vicinity of the Cottonwood Canyon trail. Trail alignments were adjusted to avoid any impacts to existing plants and no seedlings or plants were detected within the trail footprint area. Most of the trail segment occurs on existing road.

Coulter's saltbush, *Atriplex coulteri*

Coulter's saltbush is native to coastal southern California and northern Baja California, where it is quite rare and occurs on List 1B.2 (CNPS). It grows in areas of saline and alkaline soils, such as ocean bluffs. This is a perennial herb producing leaning or erect reddish green stems and branches generally under 50 centimeters tall. The gray scaly leaves are no bigger than 2 centimeters long and are oval in shape. The plant has male and female inflorescences which are small hard clusters of flowers. The brown seeds are less than 2 millimeters wide. Several individuals were found on bare ridgetops near the proposed Sheep Chute to Empire trail segment. This trail segment occurs mostly on existing road which will not impact existing plants in the vicinity. Perennial plants near existing game trails should be identified prior to work and avoided but adjusting trail alignments.

Catalina crossosoma, *Crossosoma californicum*

Crossosoma californicum is native to San Clemente and Santa Catalina Islands, two of the Channel Islands of California, as well as Guadalupe Island off the coast of Baja California. It is also known from one location on the mainland California coast at the Portuguese Bend Nature Preserve, on the Palos Verdes Peninsula of Los Angeles County. It occurs on List 1B.2 (CNPS). *Crossosoma californicum* is a shrub or small tree sprawling to a maximum height of 5 meters (16 ft). The stem is intricately divided into many thorn-tipped branches lined with veiny, pale green, oval-shaped to rounded leaves up to 9 centimeters long. The species produces solitary flowers with round white petals, each one to 1.5 centimeters long. At the center are numerous stamens and 1-5 free carpels. *Crossosoma* is somewhat common and widespread on Catalina Island and was located in the vicinity of Dacite Ridge and Big Springs Connector trail segments.

Island rush-rose, *Helianthemum greenei*

Island rush-rose is a rare species of flowering plant in the rock-rose family which is Federally Threatened and occurs on CNPS List 1B.2. It is endemic to the Channel Islands of California, where it grows in the chaparral of the rocky seaside slopes. It is present on three of the eight islands, where it has historically been threatened by feral herbivores is making a gradual recovery. It is a federally listed threatened species. This wildflower is an erect perennial herb reaching a maximum height near 30 centimeters. Its leafy stem is mostly green, with new growth and inflorescences at the top often appearing red in color. The leaves are narrow, linear, and pointed, up to three centimeters long. The inflorescence is generally a panicle, producing many buds which open into golden yellow flowers one to two centimeters wide. Each rock-rose flower

has five rounded petals over five smaller, fuzzy-haired sepals. The fruit is an oval-shaped capsule half a centimeter wide. Plants identified in the vicinity of the Inspiration Point Overlook Trail represent a known population which is protected with a fenced enclosure to prevent impacts from feral animals and humans. No disturbance from the trail work on existing social trails is expected.

Santa Catalina Island currant, *Ribes viburnifolium*

Santa Catalina Island Currant is found in Southern California in the United States, especially on Santa Catalina Island in the Channel Islands, and also in northern Baja California in Mexico. It is a rare member of the California coastal sage and chaparral plant community and occurs on CNPS List 1B.2. *Ribes viburnifolium* grows low to the ground, extending long reddish stems horizontally. The leaves are dark green and shiny on their top surfaces, and lighter green or yellowish and leathery on the undersides. The leaves have glands which exude a sticky, citrus-scented sap. Clusters of deep red flowers bloom in late winter and into early spring. The plant yields small red fruits later in the spring. Several plants were observed in the vicinity of the Sheep Chute to Empire trail segment. No disturbance to existing plants is expected from trail building activities.

Santa Catalina figwort, *Scrophularia villosa*

Santa Catalina figwort is a species of flowering plant in the figwort family which is rare and occurs on CNPS List 1B.2. It is endemic to the Channel Islands of California, where it is known only from Catalina and San Clemente Islands. It grows in coastal sage scrub and chaparral habitat. It is a shrub growing between one and two meters tall. A single plant was observed adjacent to the existing game trail on the Sheep Chute to Empire Trail segment. No impacts to existing plants are expected from trail work.

Santa Catalina Island bedstraw, *Galium catalinense ssp. catalinense*

Santa Catalina Island bedstraw is a rare species endemic to Catalina Island and on CNPS list 1B.2. It typically it grows along the coastal bluffs. It is a shrub growing erect to about 1 meter in maximum height with a rigid stem lined with whorls of four leaves each. The hairy leaves are generally lance-shaped and 1 to 2.5 centimeters long. The inflorescence emerging from leaf axils is a dense cluster of whitish flowers. Within the project area it was found near the vicinity of the proposed Cherry Cove restroom. There are approximately 20 mapped localities across Catalina Island with a significant density of occurrences in chaparral slopes on the channel side of the Island's west end.

Table 4. Special Status Plant Species Observed within the Project Area

<u>Scientific Name</u>	<u>Common Name</u>	<u>Lifeform</u>	<u>RPR (CNPS)</u>	<u>State Rank</u>	<u>Global Rank</u>	<u>CESA</u>	<u>FESA</u>	<u>Location</u>
<i>Abronia maritima</i>	red sand-verbena	perennial herb	4.2	S3	G4	-	-	Shark Harbor (restroom)
<i>Arctostaphylos catalinae</i>	Santa Catalina Island manzanita	perennial evergreen shrub	1B.2	S2.2	G2	-	-	Cottonwood Canyon Trail, Inspiration Point Overlook
<i>Atriplex coulteri</i>	Coulter's saltbush	perennial herb	1B.2	S2	G2	-	-	Sheep Chute to Empire

Table 4. Special Status Plant Species Observed within the Project Area

<u>Scientific Name</u>	<u>Common Name</u>	<u>Lifeform</u>	<u>RPR (CNPS)</u>	<u>State Rank</u>	<u>Global Rank</u>	<u>CESA</u>	<u>FESA</u>	<u>Location</u>
<i>Bergerocactus emoryi</i>	Velvet cactus	perennial stem succulent	2B.2	S2.1	G2G3	-	-	Shark Harbor (restroom)
<i>Brodiaea jolonensis</i>	chaparral cluster-lily	perennial herb	-	-	-	-	-	Inspiration Point Overlook
<i>Castilleja foliolosa</i>	woolly paintbrush	perennial herb	-	-	-	-	-	Dacite Ridge
<i>Crossosoma californicum</i>	Catalina crossosoma	perennial deciduous shrub	1B.2	S2	G2	-	-	Dacite Ridge, Big Springs Connector
<i>Dichondra occidentalis</i>	western dichondra	perennial rhizomatous herb	4.2	S3.2	G4	-	-	Windward Overlook
<i>Eriastrum filifolium</i>	lavender woolly star	annual herb	-	-	-	-	-	Dacite Ridge
<i>Ericameria palmeri</i>	Palmer's goldenbush	shrub	-	-	-	-	-	Windward Overlook
<i>Eriogonum giganteum var. giganteum</i>	St. Catherine's lace	Shrub	4.3	S2.2	G2T2	-	-	Cherry Cove (restroom)
<i>Galium catalinense ssp. catalinense</i>	Santa Catalina Island bedstraw	shrub	1B.2	S2S3	G4T2	-	-	Cherry Cove (restroom)
<i>Galium nuttallii ssp. insulare</i>	Nuttall's island bedstraw	perennial herb	4.3	S3.3	G5	-	-	Dacite Ridge
<i>Helianthemum greenei</i>	island rush-rose	perennial evergreen shrub	1B.2	S2	G2	-	FT	Inspiration Point Overlook
<i>Heteromeles arbutifolia</i>	toyon	shrub or tree	-	-	-	-	-	Dacite Ridge
<i>Hordeum intercedens</i>	vernal barley	annual herb	3.2	S3S4	G3G4	-	-	Sheep Chute to Empire
<i>Jepsonia malvifolia</i>	island jepsonia	perennial herb	4.2	S4	G4	-	-	Big Springs Connector

Table 4. Special Status Plant Species Observed within the Project Area

<u>Scientific Name</u>	<u>Common Name</u>	<u>Lifeform</u>	<u>RPR (CNPS)</u>	<u>State Rank</u>	<u>Global Rank</u>	<u>CESA</u>	<u>FESA</u>	<u>Location</u>
<i>Lycium californicum</i>	California box-thorn	perennial shrub	4.2	S4	G4	-	-	Big Springs Connector
<i>Malacothamnus fasciculatus var. catalinensis</i>	Santa Catalina Island bush mallow	shrub	4.2	S3	G3	-	-	Big Springs Connector
<i>Plagiobothrys acanthocarpus</i>	adobe popcornflower	annual herb	-	-	-	-	-	Sheep Chute to Empire
<i>Quercus pacifica</i>	island scrub oak	perennial evergreen shrub	4.2	S4	G4	-	-	Big Springs Connector
<i>Rhamnus pirifolia</i>	island redberry	perennial evergreen tree	4.2	S3.2	G3	-	-	Dacite Ridge
<i>Ribes viburnifolium</i>	Santa Catalina Island currant	perennial evergreen shrub	1B.2	S2?	G2	-	-	Sheep Chute to Empire
<i>Scrophularia villosa</i>	Santa Catalina figwort	perennial shrub	1B.2	S3	G3	-	-	Sheep Chute to Empire, Cherry Cove (restroom)
<i>Sueda taxifolia</i>	woolly seablite	perennial shrub	4.2	S2S3	G3	-	-	Shark Harbor (restroom)
<i>Trifolium depauperatum</i>	dwarf sack clover	annual herb	-	-	-	-	-	Sheep Chute to Empire
<i>Trifolium gracilentum</i>	pin point clover	annual herb	-	-	-	-	-	Inspiration Point Overlook

STATUS RANKING

FE = Federally Endangered

FT = Federally Threatened

CE = California Endangered

CT = California Threatened

CALIFORNIA RARE PLANT RANK (CRPR)**CNPS 1A** = Plants Presumed Extinct in California**CNPS 1B** = Plants Rare, Threatened, or Endangered in California and Elsewhere**CNPS 2** = Plants Rare, Threatened, or Endangered in California, but More Common Elsewhere**CNPS 3** = Plants About Which We Need More Information-a Review List**CNPS 4** = Plants of Limited Distribution – a Watch List

Table 4. Special Status Plant Species Observed within the Project Area

<u>Scientific Name</u>	<u>Common Name</u>	<u>Lifeform</u>	<u>RPR (CNPS)</u>	<u>State Rank</u>	<u>Global Rank</u>	<u>CESA</u>	<u>FESA</u>	<u>Location</u>
STATE RANKING								
The state rank (S-rank) is assigned much the same way as the global rank, but state ranks refer to the imperilment status only within California's state boundaries.								
S1 = Critically Imperiled—Critically imperiled in the state because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state/province.								
S2 = Imperiled—Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province.								
S3 = Vulnerable—Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.								
S4 = Apparently Secure—Uncommon but not rare; some cause for long-term concern due to declines or other factors.								
S5 = Secure—Common, widespread, and abundant in the state.								
GLOBAL RANKING								
SPECIES OR NATURAL COMMUNITY LEVEL								
G1 = Critically Imperiled—At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.								
G2 = Imperiled—At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.								
G3 = Vulnerable—At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors.								
G4 = Apparently Secure—Uncommon but not rare; some cause for long-term concern due to declines or other factors.								
G5 = Secure—Common; widespread and abundant.								

Provisions for Subsequent Surveys

Due to the timing of the Initial Study it is unlikely that many of the Plant Species of Special Concern would be detected due to their life history or climactic variables such as drought. Two species which are listed as either Federal or State Endangered, and eight which occur on CNPS Lists 1B are annual species or otherwise would be difficult or impossible to detect during the period of the initial survey. For this reason, it is imperative that subsequent surveys are conducted during the flowering period of these target species. A list of these highly ranked species not detected, including their flowering time and habitat information, is attached on Table 5. The presumed period to conduct surveys for these target species is between January and July. Several subsequent visits to the project area may be necessary to confirm the absence of these listed species from the project area.

Table 5: Special Status Plant Species not observed which require additional focused surveys

Species Name, Common Name	Rank (CNPS, State, Federal)	Habitat	Elevation (ft)	Flowering time	Likelihood of Occurrence
<i>Centromadia parryi</i> ssp. <i>australis</i> Southern tarplant	CNPS 1B	Marshes and swamps, valley and foothill grassland, vernal pools	0 – 1,400	May- November	POSSIBLE – Suitable grassland habitat is present in the Project study area. A reported occurrence on Santa Catalina Island needs confirmation.
<i>Pentachaeta lyonii</i> (formerly <i>Chaetopappa lyonii</i>) Lyon's pentachaeta	CNPS 1B, SE, FE	Chaparral, coastal scrub, grasslands	100 – 2,070	March- August	POSSIBLE – (CNDDDB) records indicate that the species has been observed recently from one locality near

Species Name, Common Name	Rank (CNPS, State, Federal)	Habitat	Elevation (ft)	Flowering time	Likelihood of Occurance
					two harbors. Known from bare ridgetop soils.
<i>Lepidium virginicum</i> var. <i>robinsonii</i> Robinson's pepper-grass	CNPS 1B	Chaparral, coastal scrub	3 – 2,900	January-July	POSSIBLE – Suitable chaparral and coastal scrub habitat is present in the Project study area. Species is known to occur on the Channel Islands.
<i>Sibara filifolia</i> Santa Cruz Island rock cress	CNPS 1B, FE	Coastal scrub – rocky	200 – 1,000	March-April	POSSIBLE – Suitable coastal scrub habitat is present in the Project study area. This taxa is known from three locations on Santa Catalina Island not near the project area.
<i>Aphanisma blitoides</i> aphanisma	CNPS 1B	Coastal bluff scrub, coastal dunes, coastal scrub/sandy soils	3 – 1,000	March-June	POSSIBLE – Coastal scrub habitat is present in the project area. However, this species has a very limited distribution restricted to coastal bluffs.
<i>Atriplex pacifica</i> South coast saltscale	CNPS 1B	Coastal bluff scrub, coastal dunes, coastal scrub, playas	0 – 460	March-October	POSSIBLE – Suitable coastal scrub habitat is present in the Project study area.
<i>Atriplex serenana</i> var. <i> davidsonii</i> Davidson's saltbush	CNPS 1B	Coastal bluff scrub, coastal scrub/alkaline soils	30 – 660	April-October	POSSIBLE – Suitable coastal scrub habitat is present in the project study area
<i>Dissanthelium californicum</i> California dissanthelium	CNPS 1B	Coastal scrub	15 – 1,650	March-May	POSSIBLE – Suitable coastal scrub habitat is present in the project study area
STATUS CODES			POTENTIAL FOR OCCURRENCE		
Federal and State Designations		CNPS Designations		O = Observed	
FE =	Federally listed Endangered	1A =	Presumed extinct in California	P = Possible	
FT =	Federally listed Threatened	1B =	Rare, threatened, or endangered in California	U = Unlikely	
SE =	State listed Endangered				
ST =	State listed Threatened				

3.4.3 SPECIAL STATUS WILDLIFE

Based on the results of literature reviews, in-house Conservancy survey documents, CDFW's *List of Special Animals* (CDFW 2016), CDFW's *State and Federally Listed Endangered and Threatened Animals of California* (CDFW 2016), various USFWS Federal Register notices regarding listing status of wildlife species, and the Los Angeles County Sensitive Bird Species Analysis 2009 (LASBSWG 2009), 15 Special Status wildlife species have been reported from the Project area. Table 6 provides a list of these species, their listing status, and their potential to occur in the study area.

Focused surveys for sensitive wildlife were performed for the island fox (FE, ST), Bald Eagle (DL/SE; conducted by the Institute for Wildlife Studies), Townsend's big-eared bat (SSC/SC) and pallid bat (SSC-in conjunction with Townsend's surveys), however no focused surveys were conducted for species not listed as Threatened or Endangered. Table 6 summarizes all sensitive wildlife species that have the potential to occur within the project area based on previously recorded occurrences and the presence of suitable habitat in the vicinity of the Project study area. This table does not include sensitive species that are known from the Island, but are not expected to occur within the project area based on a lack of suitable habitat (i.e. true seabirds such as the Scripps's Murrelet (formerly Xantus's) and Ashy Storm-Petrel, or shorebirds such as Snowy Plovers and Brown Pelicans. A brief description of each of the sensitive animal species with the potential to occur on the site follows Table 6.

Table 6. Special Status Animals Known to Occur in the Catalina Trails Project Area

Common Name	Scientific Name	Agency Status (Federal/State/Other)	Habitat and Likelihood of Occurrence
Reptiles			
Santa Catalina garter snake ^{1,2,4}	<i>Thamnophis hammondii ssp.</i>	--/SSC/--	LOW POTENTIAL to occur. Found within or near permanent fresh water, typically adjacent to streams with rocky beds lined with willows and other riparian vegetation. Previously documented along lower Cottonwood Canyon and Eagles Nest Loop proposed trails.
California ¹ Mountain Kingsnake	<i>Lampropeltis zonata</i>	--/SSC/--	HABITAT PRESENT; LOW POTENTIAL to occur. Only 3 records for the species on the island: 1910, 1999, and 2015. A habitat generalist, found in diverse habitats including oak-pine woodlands, riparian woodland, chaparral, manzanita, and coastal sage scrub. Unconfirmed if breeding population on the island.
Birds			
Bald Eagle ^{1,2,4}	<i>Haliaeetus leucocephalus</i>	DL/SE/--	PRESENT. Fairly common resident. Inhabits sea coasts and man-made reservoirs. Present in Middle Ranch area adjacent to proposed Dacite Ridge trail. Observed during December 2015.

Table 6. Special Status Animals Known to Occur in the Catalina Trails Project Area

Common Name	Scientific Name	Agency Status (Federal/State/Other)	Habitat and Likelihood of Occurrence
Burrowing Owl ^{1,4}	<i>Athene cunicularia</i>	--/SSC/--	PRESENT. Fairly common winter visitor. Burrows in open, well drained terrain with short, sparse vegetation. Inhabits grasslands, sagebrush scrub, agricultural areas, earthen levees and berms, and coastal uplands. Observed during December 2015.
Catalina California Quail ¹	<i>Callipepla californica catalinensis</i>	--/SSC/E	PRESENT. Common resident. Open area of coastal sage scrub, chaparral, oak woodlands along canyon bottoms, and shady north-facing slopes. Observed during October 2015 surveys.
Catalina Hutton's Vireo ^{1,4}	<i>Vireo huttoni unitti</i>	--/SSC/E	PRESENT. Common resident. Oak woodland, and riparian woodland, primarily in low trees and scrub. Observed during October 2015 surveys.
Island Loggerhead Shrike ^{1,4}	<i>Lanius ludovicianus anthonyi</i>	--/SSC/IE	PRESENT. Fairly common permanent resident. Utilize dry, open habitats with sparse vegetation, including grasslands, and abandoned agricultural fields. Not observed, but numerous prior records confirm presence.
San Clemente Spotted Towhee ¹	<i>Pipilo maculatus clementae</i>	--/SSC/IE	PRESENT. Very common resident. Shrubland/chaparral, conifer woodland, hardwood woodland, mixed woodland, and riparian. Observed during October 2015 surveys.
Horned Lark ⁴	<i>Eremophila alpestris insularis</i>	--/--/SBL	PRESENT. Fairly common resident. Favor bare, dry ground and areas of short, sparse vegetation; Not observed but prior records confirm presence.
Western Meadow Lark ⁴	<i>Sturnella neglecta</i>	--/--/SBL	PRESENT. Common resident. Inhabit grasslands and agricultural areas. Nest on the ground, often in small dips or hollows, such as those created by cow (bison) footprints. Nests are typically under dense vegetation and can be very difficult to find. Observed during October 2015 surveys.
Mountain Bluebird ⁴	<i>Sialia currucoides</i>	--/--/SBL	PRESENT. Irregular winter visitor. (non-breeding). Winter habitat includes open grassland with sparse vegetation. Has been previously observed by CIC staff along Sheep Chute Reroute trail.

Table 6. Special Status Animals Known to Occur in the Catalina Trails Project Area

Common Name	Scientific Name	Agency Status (Federal/State/Other)	Habitat and Likelihood of Occurrence
Mammals			
Pallid bat ^{1,5}	<i>Antrozous pallidus</i>	--/SSC/LM	HABITAT PRESENT, MODERATE POTENTIAL to occur on site, not observed during 2015 surveys. Rocky canyons, grassland, shrubland, woodland, caves.
Townsend's big-eared bat ^{1,5}	<i>Corynorhinus townsendii</i>	--/SSC & SC (E or T)/H	PRESENT. Caves, mines, buildings and tunnels within native oak and ironwood forests, island chaparral communities. Observed during February & October 2015 surveys of adjacent mines.
Santa Catalina Island shrew ^{1,2}	<i>Sorex ornatus willetti</i>	--/SSC/E/Rare	HABITAT PRESENT, MODERATE POTENTIAL to occur. Inhabits riparian areas. Previously documented (2002-2004) near Cottonwood Cyn trail & Eagles Nest Loop trail.
Santa Catalina Island fox ^{1,2,3}	<i>Urocyon littoralis catalinae</i>	FE/ST/E	PRESENT. Inhabits all habitat types found on Santa Catalina Island, but is most abundant in woodland and chaparral. Observed during 2015 surveys.

Sources: 1=CDFW, Special Animals List (1/2016); 2=California Natural Diversity Database (CNDDDB), October 2015; 3=CDFW State & Federally Listed Endangered & Threatened Animals of California (1/2016); 4=Los Angeles County Sensitive Bird Species List (1/2009); 5=Western Bat Working Group priority codes (1/2016).

KEY:

FE=Federally Endangered
 FC=Federal Candidate
 DL=Federal Delisted
 SE=State Endangered
 ST=State Threatened

SC=State Candidate (Endangered/Threatened)
 CFP=California Fully Protected
 SSC=California Species of Special Concern
 E=Santa Catalina Island Endemic

IE=Island Endemic
 Rare = Rare species, State ranking as rare
 SBL=LA Co Audubon Sensitive Bird List
 H,M,L=Western Bat Working Group priority codes: High, Medium, Low

Not Likely to Occur – There are no present or historical records of the species occurring within or in the vicinity (within 3 miles) of the project action area and the diagnostic habitats strongly associated with the species do not occur within or in the immediate vicinity of the action area. The Site is above or below the recognized elevation limits for this species.

Low Potential to Occur – There is a historical record of the species in the vicinity of the project action area and potentially suitable habitat exists within the action area, but existing conditions, such as density of cover, prevalence of non-native species, evidence of disturbance, limited habitat area, isolation, and/or soil type substantially reduce the possibility that the species may occur.

Moderate Potential to Occur – The diagnostic habitats associated with the species occur within or in the vicinity of the project action area, but there is not a recorded occurrence of the species in the project vicinity (within 3 miles). Some species that contain extremely limited distributions may be considered moderate, even if there is a recorded occurrence in the immediate vicinity.

High Potential to Occur – There is both suitable habitat associated with the species and a historical record of the species within or in the vicinity of the project action area (within 3 miles).

Present – The species was observed within the project action area at the time of the field surveys or during a previous biological survey.

Santa Catalina Garter Snake (SSC)

The Santa Catalina two-striped garter snake (*Thamnophis hammondi ssp.*) appears to be exceedingly rare on Catalina Island. Due to the paucity of records and apparently limited habitat this snake is listed by the California Department of Fish and Wildlife as a Species of Special Concern. Only 15 sightings of two-striped garter snakes have been made by researchers since

2000, with the last known sighting in 2008. This species is semi-aquatic, and closely tied to riparian areas. Its limited range on Catalina is likely due to the lack of suitable wetland habitat for this species on the island. This species also faces the threat of predation from bullfrogs and feral cats, which are both exotic species currently found on Catalina. Four consistent years of drought (2012-2015) have resulted in all but one man-made reservoir on the island going dry, which most likely has had a severe negative impact on this rare species. There is an extremely low probability of the species occurring within the project area, and if present, would only occur in wet areas of lower Cottonwood Canyon, adjacent to, yet outside of the project area.

California Mountain Kingsnake (SSC)

The California mountain kingsnake (*Lampropeltis zonata*) has been reported only a few times from the island. C. F. Holder (1910) first reported it on the island between Little Harbor and the Isthmus and described it as "... a beautiful coral snake with alternate rings of red and black". In 1999, a photograph was taken by Scott Panzer of an animal at Black Jack Campground. Most recently, on April 26, 2015 a photograph and video were taken of an adult island fox killing and consuming a California mountain kingsnake along the Wrigley Memorial Trail (Hansen et al. 2015) outside of Avalon (adjacent to the proposed Palisades Overlook Trail). It is highly unlikely however that the California mountain kingsnake will be present within the project area.

Bald Eagle (DL/SE)

Bald eagles (*Haliaeetus leucocephalus*) once bred on all 8 of the California Channel Islands, but the population was extirpated by the early 1960s (Kiff 1980), likely due to the introduction of the organochlorine pesticide DDT into the Southern California Bight. DDE (a DDT metabolite) levels have been found to be inversely correlated with eggshell thickness and productivity in bald eagles (Hickey and Anderson 1968, Wiemeyer et al. 1984). The Institute for Wildlife Studies (IWS) initiated reintroduction efforts on Catalina Island by releasing of 33 young eagles from hacking towers between 1980 and 1986. Breeding attempts in 1987 and 1988 failed (Garcelon et al. 1989) and mean levels of DDE in egg remains removed from nests were twice as high as that which has been shown to cause complete reproductive failure (Wiemeyer et al. 1984). From 1989 through 2008, the reintroduced population on Catalina was maintained by placing artificial eggs in nests and removing the weakened eggs for artificial incubation. Sixty-six chicks were fostered into active nests and 21 additional birds were released from hacking towers. Foster chicks were from mainland wild nests (4 chicks), produced by captive adults at the Avian Conservation Center (ACC) at the San Francisco Zoo (38 chicks) or hatched from eggs removed from the Catalina nests and artificially incubated (24 chicks). IWS expanded bald eagle restoration to the northern Channel Islands beginning in 2002 with the release of 61 eagles from hacking towers on Santa Cruz Island over a 5-year period. In 2006, two pairs on Santa Cruz successfully hatched and fledged one chick each (Sharpe 2007), the first known bald eagle chicks to hatch naturally in the wild on the California Channel Islands since 1950 (Miller 1950). As a result of increased hatching success during artificial incubation and natural breeding on Santa Cruz, IWS began leaving eggs in some Catalina nests in 2007 and discontinued egg removals altogether in 2009. The number of breeding pairs on the Channel Islands is slowly increasing and year-round monitoring continues to take place. In 2015, there were 8 known pairs defending territories on Santa Catalina Island (Fig. 14), with a total of 5 chicks fledging from 3 of 8 nests. Twins were produced at the Seal Rocks nest, and single chicks were produced at the Two Harbors, and Rattlesnake nests.

Although the bald eagle may forage in the vicinity of the Catalina Trails project from time to time, it is not expected to nest within the project area based on the lack of suitable nesting habitat and historical records from the island (Sharpe 2015). The Middle Ranch pair nest adjacent to Thompson Reservoir (aka McGee Lake) and may be observed flying over the lower section of the

proposed Dacite Ridge trail. A 500m buffer is placed around the nest during the breeding season (January-July) each year to restrict human disturbance to the nest.

Burrowing Owl (SSC)

The Burrowing Owl (*Athene cunicularia*) is possibly a rare breeder on Santa Catalina Island, but its main presence is as a winter migrant when it shows up in significant numbers each season. Land Bird Monitoring conducted biannually (fall and spring) between 1999-2007 at 80 locations throughout the island resulted in only 3 individual owls being documented (all during fall surveys). Its habitat includes primarily grassland and areas of short or sparse vegetation. The presence of burrows, commonly excavated by Catalina California ground squirrels, is also an important habitat feature. The Burrowing Owl's diet consists of insects, small rodents, birds, amphibians, reptiles, and carrion (Gervais, Rosenberg, and Comrack 2008). This state Species of Special Concern has no official nationwide designation. It is listed as endangered in Canada and falls under protection by the Migratory Bird Treaty Act (MBTA). Burrowing Owls are regularly seen at or near various trails associated with the Project during fall and winter.

California Quail (SSC)

The Catalina California Quail (*Callipepla californica catalinensis*) is endemic to the California Channel Islands (Grinnell and Miller 1944). Whether quail on Santa Catalina Island are native or were introduced is currently unresolved. Specimens collected in the late 1880s and 1890s and Dickey and van Rossem's (1922) morphological evaluation of *C. c. catalinensis* both support Grinnell's (1906) statement that early island residents considered quail to be native. Johnson (1972), however, hypothesized that Native Americans introduced quail to the island around 12,000 years ago, which is consistent with the lack of genetic divergence of quail on Santa Catalina Island from those on the mainland (Zink et al. 1987). The Catalina California Quail occurs year-round on Catalina and breeds from mid-February until mid-July. On Santa Catalina, quail occupy areas of open scrub (coastal sage scrub and chaparral) and oak woodlands along canyon bottoms and on shady north-facing slopes (Grinnell and Miller 1944). Quail on the island are "widely distributed", and considered a "very common resident" (Grinnell and Miller 1944, Collins and Jones 2015). Data from Variable Circular Plot (VCP)-based monitoring surveys also indicate that quail are widespread and abundant on Santa Catalina. Land Bird Monitoring efforts (1999-2003) during breeding season recorded an average of 4.7 (2.7-11.1) quail per VCP station and detected *catalinensis* at an average of 56.3% (36.3%-85.0%) of all stations (CIC unpubl. data). Further evidence that quail are numerous on Catalina are averages of 110 birds on a single USGS Breeding Bird Survey route from 2012 to 2015 ($n = 4$ yrs) making them the most common breeding bird species, and 6.9 (range = 1.0-16.9) birds per party hour during 15 years (1988-2002) of Christmas Bird Counts.

Hutton's Vireo (SSC)

The Catalina Hutton's Vireo (*Vireo huttoni unitti*) is an endemic subspecies unique to Catalina Island and a California Species of Special Concern. It inhabits oak woodlands and oak dominated chaparral. This vireo mainly feeds on insects while gleaning its prey from among the leaves and twigs of the oak canopy. It is also known to utilize some vegetative food sources on Catalina such as the fruits of poison oak (*Toxicodendron diversilobum*), elderberry (*Sambucus mexicana*), and Island redberry (*Rhamnus pirifolia*). Little is known about the population of Hutton's Vireo on Catalina due to the lack of research from which to gain knowledge of trends or population density. It is an uncommon resident that has been recorded through formal census in very small numbers during USGS Breeding Bird Surveys (BBS), Land Bird Monitoring efforts, and Christmas Bird Counts. For example, the BBS data available for Hutton's Vireo on Catalina are as follows: 1988,

2; 1989, 5; 1990, 1; 1991, 3; 1992, 1; 1993, 4; 1994, 3, 1995-1996, no data; 1997, 4; 1998, 0; 2012, 0; 2013, 4; 2014, 5; 2015, 4. This inconspicuous bird has unique habitat requirements and earlier than usual timing for singing and nesting during the spring breeding season. Generic survey methods most likely under represent this species on Catalina Island.

Island Loggerhead Shrike (SSC)

The Island Loggerhead Shrike (*Lanius ludovicianus anthonyi*) is a subspecies endemic to the Channel Islands of California and is a California Species of Special Concern. The San Clemente Loggerhead Shrike (*Lanius ludovicianus mearnsi*) from neighboring San Clemente Island is federally listed as Endangered. San Clemente Shrikes have been recorded on Catalina, identified as such by colored leg bands. The actual amount of exchange and migration between the various island populations is unknown. This passerine is a unique predator which hunts from perches and preys upon an array of species from insects up to other small birds. Shrike habitat on Catalina includes grasslands interspersed with shrubs and suitable perches, as well as coastal sage scrub and areas of relatively open island chaparral. Some habitat within and adjacent to the Trails project site (Sheep Chute Reroute, Eagles Nest Loop, Big Springs Connector trail sections) is of high quality to Island Loggerhead Shrikes. This has been documented by multiple and consistent sightings at these locations for this species which is rare island-wide. Formal study of the population trends for Island Loggerhead Shrikes on Catalina is lacking, but the bird is clearly a rare resident breeder with consistent and relatively low numbers of sightings from year to year. For the greater species as a whole, Loggerhead Shrike populations have experienced continent wide declines in recent decades. Competition with other species that are more tolerant of human generated disturbance and changes to the landscape is a notable contributing factor to this population decline.

San Clemente Spotted Towhee (SSC)

The San Clemente Spotted Towhee (*Pipilo maculatus clementae*) is endemic to two of the California Channel Islands. Historically, the San Clemente Spotted Towhee was resident only on Santa Rosa, Santa Catalina, and San Clemente islands, it has since been extirpated on San Clemente Island due to habitat degradation by non-native herbivores. Since the 1970s, towhees have been described as “fairly common” to “very common” on Santa Catalina (Collins and Jones 2015). Today, San Clemente Towhees are widely distributed and relatively numerous on the island. Towhee numbers on Santa Catalina averaged 78 (range =74-84, $n = 4$ yrs) individuals on a single Breeding Bird Survey route from 2012 to 2015 (CIC unpublished data), ranking as the second most common breeding bird documented, and 1.2 (range = 0.3–2.2) birds per party hour during 15 years (1988–2002) of Christmas Bird Counts. Land Bird Monitoring efforts (1999-2003) during breeding season recorded an average of 2.4 (range = 2.2–2.6) towhees per VCP station and detected *clementae* at an average of 72.5% (range = 69%–81%) of the 80 stations (CIC unpubl. data). San Clemente Spotted Towhees are closely tied to the distribution of suitable dense chaparral that contains well-developed leaf litter and humus sheltered by overhead branches and foliage (Grinnell and Miller 1944). Spotted Towhees consume a variety of invertebrate prey from among the shrubs and leaf litter, as well as small fruits and seeds.

Pallid Bat (SSC)

The only pallid bat that has been captured on Catalina was a female roosting in a house in Avalon in May 1935 (von Bloeker, 1967). For a very colonial species, finding an isolated female during the breeding season is unusual. As an example, pallid bats are found roosting in large numbers in the barns of the Central Valley on nearby Santa Cruz Island (Brown, 1980). They forage on or near the ground on large arthropods, including scorpion, solpugids, beetles,

grasshoppers, cicadas, katydids and sphinx moths (Hermanson and O'Shea 1983). Radio-telemetry (Brown and Grinnell 1980) and the known behavior of favored prey items suggest pallid bats fly close to the ground, and land on the ground to capture prey. This species apparently locates prey primarily by listening (Bell 1982), although they use echolocation to navigate and assess habitat. Between foraging bouts, pallid bats congregate in night roosts in trees, mines, buildings and under bridges where they leave guano and the remains of scorpions, katydids, sphinx moths, Jerusalem crickets, and/or beetles. Elytra of June beetles (a favorite pallid bat food) were found along with their distinctive guano in a shallow prospect below lower Cottonwood Canyon reservoir in 2002 (Brown and Berry 2002). Although Brown and Berry netted in the area, they did not capture this species or hear the distinctive audible social signals. Pallid bat guano was also found by Brown and Berry in the basement at the Banning House at the Isthmus and in a propane storage bunker northwest of the Isthmus.

Townsend's big-eared bat (SSC, SC)

Townsend's big-eared bats were at one time common along coastal southern California (Kruttsch 1948), but habitat destruction and human disturbance are responsible for severe population declines throughout the state (Pierson and Rainey 1996). Human entry into roosts can cause abandonment, with females sometimes leaving their pups behind (P. Brown, pers. obs.). *Corynorhinus* is a USFWS and CDFG Species of Special Concern and was added as a Candidate for State listing as Threatened in 2013, but there are little current data to assess population status and trends. Past studies however have shown a broad-ranging decline in the species through large parts of its range in the western United States. The census by Pierson and Rainey (CDFG 1998) in California, conducted from 1987 to 1991, found substantial population declines over the previous 40 years, with a 52% loss in the number of maternity colonies, a 44% decline in the number of available roosts, a 55% decline in the total number of animals (primarily adult females), and a 32% decrease in the average size of remaining colonies. Fate of roosts sites was related to the type of roost, with 88% of roosts in buildings no longer available, and 50% of roosts in caves and 57% in mines no longer used. Surveys conducted in 2000 on Catalina Island by Brown and Berry (2003) documented a small colony of eight individuals in the Silver Peak mine and single bats flying out of several other Avalon mines after dark. Focused surveys by Conservancy biologist Julie King in February 2015 documented Townsend's big-eared bats utilizing four additional mine locations (Cherry Cove, 4th of July Cove, and two Cottonwood Canyon prospects), with three of these occurring in close proximity to the proposed project.

Unlike many cave-roosting bat species, Townsend's big-eared bat only roosts in the open, often hanging from walls and ceilings (CDFG 1998). In the summer maternity roosts, females roost in the warm parts of caves and buildings in clusters (Kunz and Martin 1982). The census of maternity roosts in California found an overall mean colony size of about 112 individuals (CDFG 1998), while males appear to roost solitarily near the maternity roosts. In winter, roosting occurs solitarily or in small clusters, and Townsend's big-eared bat may share hibernacula with other bat species (Kunz and Martin 1982). Assessing and characterizing hibernacula is more difficult than maternity sites because individuals tend to move among different sites during a hibernation season (CDFG 1998). Similar to maternity roosts, hibernacula are typically caves, or cave analogues, but differ in often being L-shaped, with vertical and horizontal entrances that generate a "cold sink" with significant air flow. Consistent with the literature for the species, hibernacula used in California often represent the coldest non-freezing temperature available.

Townsend's big-eared bats forage for insects in a variety of habitats, primarily between the canopy and mid-canopy of forests, woodlands, and riparian zones, but also in sagebrush shrubsteppe (Fellers and Pierson 2002). Fellers and Pierson (2002) noted that Townsend's big-eared bats avoided foraging in grasslands. Most foraging occurs in relatively close proximity to

the day roost.

Reproduction by Townsend's big-eared bats in California is fairly well known, based on a study by Pearson et al. (1952). Breeding begins in autumn, with peak breeding in November through February. Females store the sperm until ovulation in the spring, which may occur during and after females leave hibernation. Upon leaving hibernation, females form maternity colonies in the late spring and early summer; males during this period appear to roost singly. Female maternity groups are stable and faithful to roost sites that may be used by several generations. Females remain in the natal group while males disperse after their first summer (CDFG 1998). Maternity roosts break up in August.

Santa Catalina Shrew (SSC)

The Santa Catalina shrew (*Sorex ornatus willetti*) is an endemic subspecies on Catalina and is a state species of special concern. It typically inhabits riparian areas and other habitats which provide ample ground cover and invertebrate prey. Between 1941 and 2003 there were only 15 sightings or captures of this subspecies documented (Brylski et al. 1996; Aarhus 2003). During 2004 expanded trapping efforts yielded 21 captures (Aarhus 2004). Subsequent studies have not been conducted during the past eleven years and two additional shrew specimens (2008, 2012) have been documented. The 2012 specimen was found in an area of the Island well outside the known distribution and within a marginal habitat type. It is possible that the specimen was transported away from its original location by a predator; nevertheless, little is known about the shrew distribution or habitat association on Catalina. Individuals observed in Cottonwood Canyon occurred in maritime cactus scrub, chaparral adjacent to a creek, and riparian habitat (Aarhus 2003). Santa Catalina shrew has potential to occur within the Study Area due to the presence of suitable habitat and known occurrences within one mile of the Study Area. It can be difficult to determine population abundance for shrews, since they are notoriously difficult to capture, except by the use of pitfall arrays (Schoenherr et al., 1999, Laakkonen, et al., 2003).

Catalina Island Fox (ST/FE)

The Santa Catalina Island fox (*Urocyon littoralis catalinae*) is federally listed as Endangered and is State listed as Threatened (USFWS 2004). It inhabits all vegetation communities located on Santa Catalina Island, with no Critical Habitat designated by USFWS (USFWS 2005). This small (1.8 - 3.5 kg) omnivorous canid inhabits six of the eight California Channel Islands. This species has been isolated from its closest mainland relative, the gray fox (*Urocyon cinereoargenteus*) for approximately 9,200 years (Hofman et al. 2015), with genetic evidence supporting separation of the species into six distinct subspecies, each inhabiting a single island (Gilbert et al. 1990, Collins 1993, Rick et al. 2009).

Catalina Island was home to an estimated 1,342 adult island foxes (*Urocyon littoralis catalinae*) in 1990. Nine years later, fox sightings declined and reports of dead or dying foxes increased. An island-wide trapping effort was initiated after a fox carcass tested positive canine distemper virus (CDV). In 1999, only 10 foxes were captured east of the Two Harbors isthmus during 1,046 trap nights. A multi-faceted conservation plan was implemented in 2000 to conserve the Santa Catalina population of island fox. Initial recovery actions took place from 2000 to 2005, and resulted in 22 juvenile foxes translocated from the unaffected West End of the island to the depopulated eastern portion, 37 pups produced and released from the captive breeding facility, and >80% of the wild fox population vaccinated against CDV. Since 2006, fox recovery activities have included an annual, island-wide population survey, vaccination of 300 foxes / year, weekly mortality monitoring of 50 radio-collared individuals, blood sampling to monitor the prevalence of CDV, veterinary treatment to injured foxes, and public outreach. Low mortality rates, successful

breeding in the wild, and mitigation of the original cause of decline allowed for Catalina's fox population to grow to an estimated 1,115 adults by 2012 and to be considered biologically recovered. The outbreak of another virulent canine disease on Santa Catalina Island, such as CDV or rabies, continues to be the greatest threat to the long-term survival of *U. l. catalinae* due to its restricted distribution, small population size, and the continued presence of domestic dogs on the island (King et al. 2014).

SECTION 4.0 PROJECT IMPACTS

4.1 INTRODUCTION

The following sections discuss the permanent and temporary, direct and indirect effects associated with the proposed Project. The significance of impacts to sensitive biological resources and mitigation required to reduce these impacts and effects is dependent on the sensitivity and associated legal status of the species in accordance with guidelines set forth in CEQA. These effects and impacts are discussed in more detail as they relate to CEQA in the following sections.

4.2 SIGNIFICANCE CRITERIA

The criteria for determining significant impacts on biological resources were developed in accordance with Section 15065(a) of the CEQA Guidelines, which states that a project may have a significant effect on the environment if the project has the potential to:

- Substantially degrade the quality of the environment;
- Substantially reduce the habitat of a wildlife species;
- Cause a wildlife population to drop below a self-sustaining level;
- Threaten to eliminate a plant or animal community; and/or
- Reduce the number or restrict the range of an endangered, rare, or threatened species.

An evaluation of whether an impact on biological resources would be substantial must consider both the resource itself and how that resource fits into a regional or local context. A substantial impact is an impact that diminishes, or results in the loss of, a sensitive biological resource or that significantly conflicts with local, state or federal resource conservation plans, goals, and/or regulations. Sometimes impacts can be locally adverse, but not significant. In such a case, the impacts may result in an adverse alteration of a local biological resource, but they may not substantially diminish or result in the permanent loss of an important resource on a population- or region-wide basis.

The following thresholds of significance are based on Appendix G of the CEQA Guidelines. Implementation of the Proposed Action may have potentially significant adverse impacts on biological resources if it would result in any of the following:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by the CDFW or the USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the CDFW or the USFWS;
- Have a substantial adverse effect on State or federally protected wetlands as defined by USACE, CDFW, RWQCB, or California Coastal Commission, including but not limited to marsh, coastal, etc., through direct removal, filling, hydrological interruption, or other

means;

- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources such as a tree preservation policy or ordinance; and/or
- Conflict with the provisions of any adopted HCP, Natural Community Conservation Plan, or other approved local, regional, or State HCP.

Definition of Impacts

Biological resources may be either directly or indirectly impacted by a project. Direct and indirect impacts may be either permanent or temporary in nature. These impacts are defined below.

Direct Impacts: Any alteration, disturbance, or destruction of biological resources that would result from project-related activities such as clearing, grubbing, and grading is considered a direct impact. Examples include clearing vegetation encroaching into wetlands, diverting surface water flows, fragmenting wildlife habitat, and the loss of individual species and/or their associated plant communities.

Indirect Impacts: As a result of project-related activities, biological resources may also be affected in an indirect manner. Examples include elevated noise levels, nighttime lighting, soil compaction, increased human activity, decreased water quality, the introduction of invasive wildlife (i.e., domestic cats and dogs) and plants, disruptions in local movement patterns for wildlife, and elevated fugitive dust levels that reduces plant photosynthesis, growth, and reproduction.

Permanent Impacts: All impacts that result in the irreversible removal of biological resources are considered permanent. Examples include constructing a building or permanent road on an area containing biological resources.

Temporary Impacts: Any impacts considered to have reversible effects on biological resources can be viewed as temporary. Examples include nighttime lighting, increased human activity, the generation of fugitive dust during construction, or the removal of vegetation for construction activities and subsequently allowing the natural vegetation to recolonize the impact area.

4.3 DIRECT IMPACTS

Extensive planning occurred on behalf of biological resources to achieve the execution of the proposed project. Conservancy staff biologists were on hand through the planning process to review and inform project staff of possible constraints. Several iterations of proposed alignments were considered with the consideration of biological resources playing a key role in the ultimate decision of where and how to design the proposed trail system and associated restroom placement. The Conservancy manages extensive geo-spatial data which is used to monitor biological resources and inform best operational practices across the organization. Every effort was made to ensure the integrity of biological and cultural resources, while adding amenities for recreation on Catalina Island.

4.3.1 VEGETATION IMPACTS

Implementation of the Project will result in direct and permanent loss of 4.83 acres of native vegetation (including habitat classified as 'bare') and temporary impacts to 1.59 acres of native vegetation within the project area through clearing, grading and trail building. Permanent impacts include 1.07 acres of grassland disturbed, 0.31 acres of chaparral disturbed, 0.94 acres of coastal

sage scrub and 2.51 bare acres, which may support sensitive species. Temporary impacts included areas of soil movement (cut/fill) with hand tools; a portion of which will be allowed to revegetate naturally. Calculations were derived using ArcGIS spatial analysis tools to calculate the area (planar) of new trails assuming 3' width (including existing social and game trails) specific to each vegetation type based on the vegetation map (Knapp 2005) where disturbance is expected. Trails following existing tertiary roads where no change to the footprint of the road is expected were omitted from this analysis.

Under CEQA guidelines, direct permanent impacts to vegetation communities include the permanent loss of vegetation from direct and permanent construction related activities and development associated with a Project. Project-related impacts to vegetation communities are generally considered adverse, but less than significant, because the Project is not expected to reduce these vegetation communities to below self-sustaining levels, including the wildlife and plant species that are dependent on these vegetation communities. Impacts to rock outcrop and bare ground/streambed are not considered significant. Coastal sage scrub and grassland may be considered sensitive plant communities by the CDFW and therefore impact to these communities may be considered significant. However as described, the permanent impacts to these communities should not be considered substantial and will not significantly reduce the extent of these habitats across the Island.

No soil movement or trail construction will occur within the protected zone of any oak tree as required per Title Chapter 22.56 of the County of Los Angeles Zoning Code. The protected zone includes the area within the dripline of an oak tree extending there from a point at least 5 feet outside the drip line, or 15 feet from the trunk(s) of a tree, whichever is greater. Similarly, no oak branch trimming will take place as part of this proposed Project, resulting in no oak impact.

Table 7. Impacts to Vegetation Types and Other Areas Mapped Within the Study Area

Trail Name	Acres			
	Grassland	Chaparral	Coastal Sage Scrub	Bare
Big Springs Connector	0.10	0.03	0.07	-
Cottonwood Canyon Trail	0.08	0.04	-	-
Dacite Ridge	0.25	-	0.17	-
Empire Overlook to Shark Harbor	0.03	0.01	0.01	
Inspiration Point Overlook	0.05	0.02	-	0.03
Palisades Overlook	0.04	-	-	-
Patriot Ridge	-	0.11	0.10	-
Sheep Chute Reroute (Big Springs)	0.27	0.09	0.31	0.02
Sheep Chute to Empire	0.12	-	0.16	-
Windward Overlook	-	-	0.08	0.02
Haypress Restroom	0.02	-	-	0.70
Shark Harbor Restroom	-	-	0.04	0.68
Black Jack Restroom	-	-	-	0.42
Parson's Landing Restroom	0.09	-	-	0.63
Totals	1.07	0.31	0.94	2.51

Table 8. Vegetation community impacts associated with Trails construction and restroom installation, which includes LA County Department of Forestry vegetation modification zones.

Vegetation Community	Existing (acres)	Permanent Impact (acres)	Temporary Impact (acres)	Total Impact (acres)
Grassland	8,944	1.07	0.3531	1.4231
Chaparral	13,734	0.31	0.1023	0.4123
Coastal Sage Scrub	17,860	0.94	0.3102	1.2502
Bare	4,414	2.51	0.8283	3.3383
Totals	44,952	4.83	1.5939	6.4239

4.3.2 COMMON WILDLIFE

To assess impacts on wildlife, the total impact on particular vegetation types that provide habitat for wildlife was assessed. The following discussion of wildlife impacts focuses on the common species occurring in the study area that may be affected by the Project.

General Habitat and Wildlife Loss

Native vegetation provides valuable nesting, foraging, roosting, and denning opportunities for a variety of wildlife species. While impacts to most common wildlife from implementation of the Project are not expected to be significant due to the permanent loss of 4.83 acres being spread linearly over 26.7 miles, a variety of common bird species, including raptors, are expected to nest in habitats within or in the vicinity of the Project disturbance area and may be directly or indirectly affected by Project implementation. The federal Migratory Bird Treaty Act (MBTA) protects migratory birds, their nests, and eggs. If construction occurs during the peak bird nesting season (i.e., February 1 to August 15), it could impact nesting birds protected by the MBTA. The loss of any active bird or raptor nest would be considered a potentially significant impact. Implementation of MM BIO-2, which calls for the protection of nesting birds, would reduce these potentially significant impacts to a level that is considered less than significant.

4.3.3 SPECIAL STATUS BIOLOGICAL RESOURCE IMPACTS

Special Status Plant Species

As described in the Initial Study and review of Species of Special Concern there are several plant species which occur within the project area. In every case, great effort was taken during the project planning phase to avoid direct impacts to these known individuals or populations. These measures include the realignment of trails, which occurred numerous times during the planning phase of the project. Additionally, plant protective fencing is already in place for many of the known listed species within the project area. However even with the best intentions disturbance may occur which could affect rare plant species. The known perennial plant Species of Conservation Concern include, Santa Catalina Island manzanita, Coulter's saltbush, Catalina crossosoma, Island rush-rose, Santa Catalina Island Currant and Santa Catalina figwort. Due to the narrow width of the trails (approximately 2') and conspicuous presence of these perennial species, it is believed that disturbance to the species can be avoided altogether. However some guidelines are outlined in the mitigation section to avoid unintended consequences.

Several annual species of Conservation Concern were not detected during the initial study due to the timing of initial surveys and ongoing drought conditions. There is a low likelihood that these species occur within the project area; however provisions are in place to ensure that surveys are

completed during the spring during potential flowering times. Of the 8 annual species not detected, all flower between January and July. At least 3 subsequent surveys during this time period will be conducted where suitable habitat for target species occurs.

In order to avoid potential project impacts, implementation of MM BIO-1 would reduce these potentially significant impacts to a level that is considered less than significant.

Change in Usage Impacts to Sensitive Vegetation Communities and Plants

The increased usage of proposed Trails on Catalina Island and the surrounding area may result in direct impacts to sensitive vegetation communities and plants in the area. Users of the trails may disregard signage and trample the sage scrub habitat or travel off-trail and damage other areas of sensitive habitat or individual rare plants. Erosion may be enhanced where off trail hiking occurs and additional social trails may be an unintended result of new trail building. In addition, greater access to interior trails will provide a new pathway for invasive plant introduction and dispersal. In order to avoid potential project impacts, enforcement of the Conservancy's hiking permit by Conservancy Rangers as described in MM BIO-6 as well as treatment of incipient weed populations as summarized in MM BIO-7 would reduce these potentially significant impacts to a level that is considered less than significant.

Impacts to Special Status Wildlife Species

Reptiles

Although no focused surveys were conducted for the Catalina two-striped garter snake (SSC) or the California mountain kingsnake (SSC), there are very few records of either of these species on the island, despite three of the Conservancy's wildlife biologists living and working in the island's interior for over a decade. Most recently, follow-up focused surveys for both species were conducted by USGS biologist Adam Backlin on May 23-26, 2008 since he was unable to catch either species during his prior monthly trapping conducted from February 2002 – December 2004 (Backlin 2005). He was again unsuccessful at observing or capturing either snake species in 2008. Due to their extreme rarity, these two snakes are not expected to occur in the study area. Project implementation therefore, would not result in impacts to these two species and no mitigation is required.

Birds

The Migratory Bird Treaty Act provides legal protection for almost all breeding bird species occurring in the U.S. and restrictions would be required such as preconstruction surveys to determine nesting activity or conducting work outside of the standard bird breeding season typically February 1 to September 15 to the extent feasible. Temporary, indirect impacts due to construction activities, such as increased noise disturbance to birds during the breeding season would affect all species on-site. Other impacts, such as increased human presence (i.e. construction contractors and post-construction: hikers) would also adversely affect species. With implementation of mitigation, these impacts would be reduced to a less than significant level.

The Loggerhead Shrike, California Quail, Hutton's Vireo and San Clemente Spotted Towhee, are all California Species of Special Concern, and are likely to occur throughout the Project area. Where present, these species would be expected to forage over grassland (shrike and quail), chaparral (towhee), and oak woodland (vireo). Project implementation would result in limited alteration or loss of these habitats, and would be considered locally adverse, but not substantial enough to warrant a finding of significance under Section 15380 of the State CEQA Guidelines

and no mitigation is required. The loss of an active nest of these species, or any other native bird species protected by the MBTA however, would be considered a potentially significant impact. Implementation of MM BIO-2 would reduce these potentially significant impacts to a level that is considered less than significant.

The Burrowing Owl is a common winter visitor to Catalina and is not expected to breed, however wintering birds do use burrows for protection and shelter during their stopover. In order to avoid potential project impacts to their burrows through direct disturbance, implementation of MM BIO-2 and MM BIO-3 would reduce these potentially significant impacts to a level that is considered less than significant. Temporary indirect impacts include increased human activity and the potential for hikers to be accompanied by off-leash dogs and would be mitigated to less than significant through MM BIO-6.

The Mountain Bluebird is a winter visitor (non-breeder) to Catalina. It is listed as a Los Angeles County Sensitive Bird Species due to its reliance on open fields and grasslands that are very restricted in mainland Los Angeles County as a result of urban development. Project construction impacts to Mountain Bluebirds would be comprised of brief disturbances to foraging caused by increased human noise if trail construction takes place along sections of Sheep Chute Reroute and Big Springs connector during the winter. These impacts would be locally adverse, but less than significant. Similarly the Horned Lark and Western Meadowlark, also on the Los Angeles County Sensitive Bird Species list require open areas with short vegetation, sparse brush, and a preponderance of bare ground for nesting. Although many of the major habitat types in Los Angeles County's coastal slope have been conserved in natural parks and open spaces, almost all of the sparsely vegetated flatlands that constitute typical habitat for larks have been built upon. Catalina therefore offers an abundance of undisturbed open areas for nesting. Both species are common residents on the Island. Direct project impacts to horned larks and western meadowlarks may take place in the way of disturbance around ground nest areas during the nesting season and would be considered significant. Implementation of MM BIO-2 would reduce these potentially significant impacts to a level that is considered less than significant.

Mammals

Townsend's big-eared bat and Pallid bat focused survey results

Blackjack Mine: The only remaining opening to this once extensive mine excavated in the 1920s is a shaft that was too dangerous to enter (vertical shaft, approximately 250 feet deep) when surveyed on February 26, 2015. This mine does not appear to have any lateral workings that would serve as bat habitat. This mine is approximately 30 m from the existing Trans-Catalina Trail and 330 m from a proposed new waterless restroom at Blackjack Campground. Based on historical surveys by Brown (2002) and the current condition of the mine, No Townsend's big-eared bats or pallid bats are expected to use this mine and will not be impacted by the trail or restroom portions of the project.

Cottonwood Canyon prospects: Two short historic mine workings, approximately 25 feet long, are located across from one another below lower Cottonwood Canyon reservoir, approximately 120m and 170m respectively from the proposed Cottonwood Canyon Trail/ Eagles Nest Loop trail junction. Upon inspection on February 21, 2015, a single adult Townsend's was observed roosting in the rear of the south-facing prospect. A second lone adult was documented in the north-facing prospect. In 2002, Brown and Berry found pallid bat guano and beetle elytra in the south-facing prospect, but that was not detected during the 2015 survey. Direct impacts to either species are not expected as the two prospects are outside of the project work area and are not visible from the proposed project trails. Indirect impacts may include increased human activity in

the area and the potential for visitors to investigate the mine prospects if they leave the trail, thereby disturbing any roosting bachelors. Implementation of MM BIO-4 would reduce the potential for disturbance of roosting bats at the two Cottonwood prospects.

Cherry Cove Mines: Three abandoned mine adits (horizontal entrances) are located at Cherry Cove (Camp Cherry Valley, Boy Scouts of America), one along the west end low road, one north of the salina, and one behind the maintenance shop. Due to the high human disturbance at these mines (Boy Scout tours used to take place inside), bat-friendly gates were installed by the Conservancy during February 2015 to provide safe roosting habitat for Townsend's big-eared bats that may begin using the adits once the human disturbance was excluded. A single adult Townsend's was observed during initial gate measurement surveys that took place on December 30, 2014. The bat was hibernating in the adit along the road, while no bats were documented utilizing any of the three adits prior to construction on February 24-25, 2015. The ambient temperature inside the adit in February was 63F at 14:20, so hibernation would not have been occurring due to the warm daytime temperatures. The adit locations are approximately 4160 m (2.5 miles) from the known Boushay colony, and Townsend's are known to fly up to 5 km (3 miles) to forage at night (Brown et al. 1994), so these adits are well within their travel distance to begin utilizing. A temperature/humidity logger was installed during gate construction and it will be downloaded in February 2016 and the adit re-surveyed for the presence of Townsend's. A waterless Romtek restroom will be installed along the west end low road that skirts the edge of Cherry Cove and its installation and use will not impact any potential Townsend's or pallid bat colonies at Cherry Cove. Implementation of MM BIO-4 would reduce the potential for disturbance of roosting bats at the Cherry Cove (Salina) adit.

Silver Peak Mine: The Silver Peak Mine adit in Boushay Canyon shelters a small maternal colony of Townsend's big-eared bats. A bat friendly gate was installed by the Conservancy in September 2002 in order to protect the colony and prevent human disturbance. The colony moves to an unknown location in the winter (Brown and Berry 2002) so we did not survey this protected mine. This mine adit is well hidden from view and is located approximately 800 m northeast of Silver Peak Trail, so no impact to this colony is expected as it lies well outside of the project area.

West End Ridge Mines: One of the two mine adits has collapsed, eliminating any potential for bat occupancy. The second mine was inspected on February 26 and October 16, 2015, but due to the unsafe entrance, survey observation was limited to the first 20 feet. While no Townsend's were observed, the adit appeared to offer excellent habitat and high potential for occupancy with low levels of human disturbance. Earlier iterations of the proposed trails alignments incorporated a ridgeline social trail just above the mine adit, however Conservancy biologists subsequently removed that section from the proposal due to the potential for Townsend's disturbance and human safety risks. A third vertical shaft southeast of these two adits was also inspected, but appeared too shallow and exposed to be used by bats. Due to removing this section of trail from the proposed project, there should be no impact to bats using these locations.

4th of July Cove Mines: Three abandoned mine adits are present at 4th of July Cove, with two along the west end low road and one that is being used for supply storage behind a staff residence. The two adits along the road are boarded up and do not allow access to people or Townsend's big-eared bats. These adits were thoroughly checked after removing the boards in February 2015 with no evidence of bat use. The third adit (in camp) has a wooden gate blocking much of the entrance, but allows for Townsend's to come and go along the upper 12 inches of open space. A single adult male Townsend's was observed using it as a day roost on October 15, 2015. This adit is currently used for building material storage by the manager of the 4th of July Yacht Club (not on Conservancy property) so disturbance is frequent, preventing use by female bats. This however likely represents an important bachelor roost for a few individuals and is only

540m from the adits at Cherry Cove. This mine will not be impacted by any aspect of the proposed trails project (Fig. 19).

The Pallid bat and Townsend's big-eared bat have the potential to occur in the Project area and vicinity for foraging and/or roosting. Trail and restroom construction activities would only occur during daylight hours; therefore, foraging would continue to be available over the construction areas throughout the duration of construction and would remain unchanged following completion of the Project. The combined permanent loss of 4.83 acres and the temporary impacts to 1.59 acres of native vegetation would remove very limited amounts of potential foraging habitat for these two highly-mobile protected bat species. Due to the limited acreage lost relative to the amounts available elsewhere in the Project region, this loss of potential bat foraging habitat would be considered locally adverse, but not substantial enough to warrant a finding of significance under Section 15380 of the State CEQA Guidelines. Both bat species use abandoned mines and caves for day roosts, hibernation (if temperatures are low enough to do so), and for pupping, and these features will not be impacted by proposed Project activities. Townsend's big-eared bats are very sensitive to human disturbances, and a single disturbance of a maternity roost or hibernation site may cause abandonment (Zeiner et al. 1990; Kunz and Martin 1982). Implementation of MM BIO-4 would reduce the potential for disturbance of roosting bats at the Cherry Cove (Salina) adit and two Cottonwood prospects.

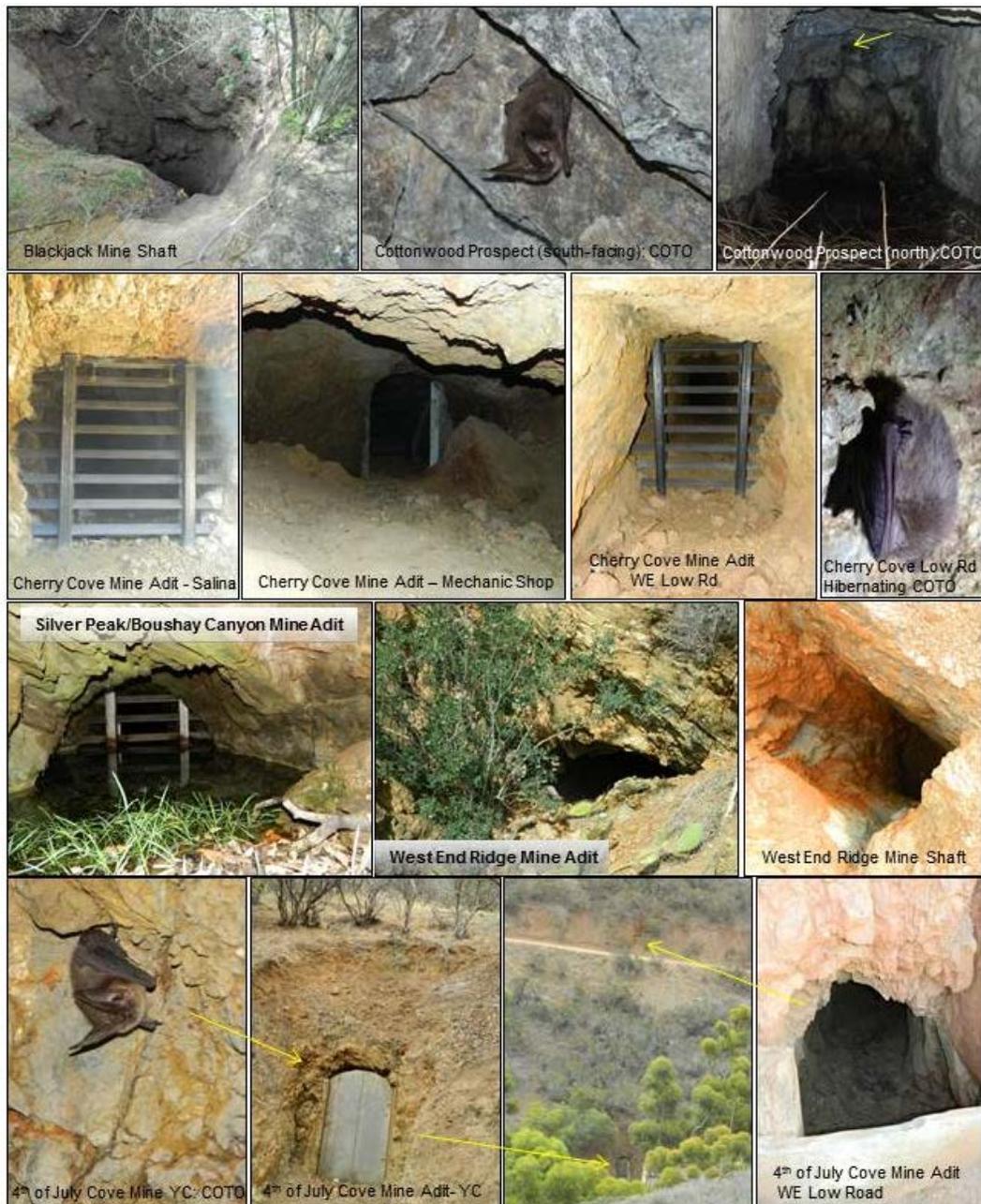


Figure 19. Several of the mine features visited during Townsend's big-eared bat (COTO) and Pallid bat focused surveys.

Island fox focused survey results

During the 6-week (972 trap nights) standardized island-wide trapping effort that took place September 29, 2015 – November 6, 2015, 339 individual foxes (234 East End; 105 West End) were captured a total of 505 times in 208 of 243 traps (Fig. 20, Table 9). Individuals were captured on average, 1.49 times (SD=0.76, range= 1-4) during the 6-week period. A total of 85 pups were captured during 2015 compared to 19 in 2014 and 68 in 2013. The increased precipitation during 2015 (average 7.8 inches) compared to only 3.88 inches received during 2014 is believed to have contributed to increased pup survival.

Capture data was analyzed via the Windows® program DENSITY 5.0 (Efford 2008). DENSITY

analyzes closed population spatially explicit capture-recapture data from arrays (e.g. trap lines) of passive detectors (e.g. live traps) (Efford, Dawson and Robbins 2004). The maximum likelihood density estimate was calculated as 9.33 foxes/km² (SE=1.01, 95% CI:7.55-11.53, model g0(h2)s(h2)). The all-ages density was then multiplied by the land area (194.14 km²) to calculate the 2015 Island-wide fox population (all ages) estimate of 1,812.

An adult-only population estimate was also calculated for input into the “Island Fox Recovery Tracking Tool” used by USFWS to determine if recovery criteria have been met (USFWS 2015). The adult-only maximum likelihood density estimate was calculated as 6.19 foxes/km² (SE=0.75, 95% CI: 7.01-9.98, model g0(h2)s(h2)). The density was then multiplied by the island’s total land area (194.14 km²) to calculate the 2015 Island-wide adult fox population estimate of 1,201.

Table 9. Island fox capture results (n=339) for island-wide systematic trapping conducted from September 29 – November 6, 2015.

Subpopulation	No. Adult males	No. Adult females	Total No. Adults	No. Male pups	No. Female pups	Total No. Pups	Total
WEST END	36	37	73	17	15	32	105
EAST END	89	92	181	28	25	53	234
Total	125	129	254	45	40	85	339

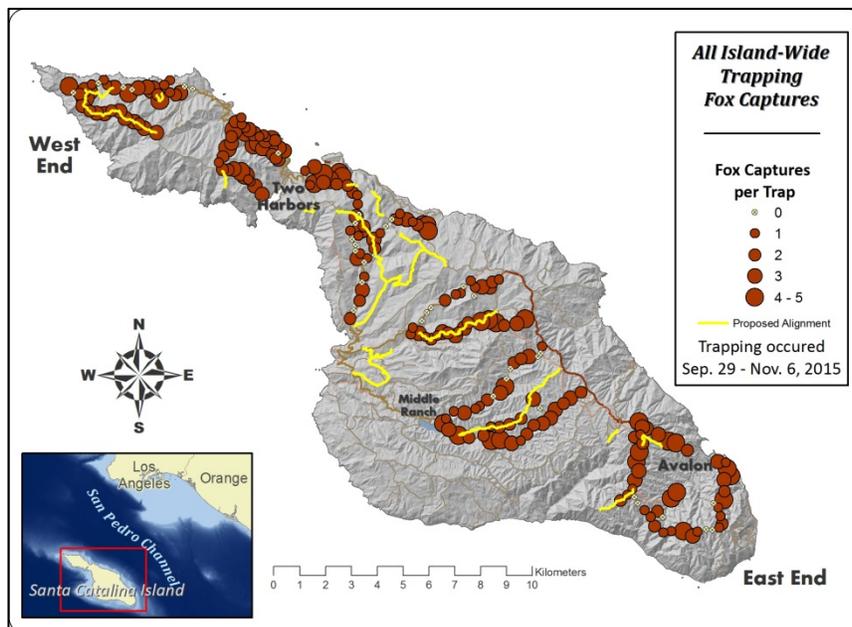


Figure 20. Trap locations (n=243) and fox captures documented during the 2015 annual trapping survey conducted on Catalina Island from September 29 – November 6, 2015. Proposed trails shown in yellow. Right: an adult male island fox during a standard trapping health check.

Catalina Island foxes are present and occur at high densities throughout the proposed project area. Activities associated with the Trails Project should not have any impact on Island fox dispersal distances or daily travel routes. Foxes often prefer traveling along existing trails as they provide the least amount of topographic resistance in moving from one area to another. Island foxes did not evolve with predators on the island, so they do not need to rely on vegetation cover for hiding and escape to the same extent as gray foxes would on the mainland. Island foxes utilize all vegetation communities on the Island, including non-native grassland, woodland, riparian areas, coastal sage scrub and chaparral (Drake 2013, King et al. 2014). The composition

of resources varies between habitats, but all vegetation communities on the island support some foxes, and there are few areas that are not contained within at least one fox's home range. By implementing MM BIO-5 direct impacts should be mitigated to less than significant.

4.4 INDIRECT IMPACTS

4.4.1 NOISE IMPACTS

Noise levels in the Project Work Areas would be expected to increase over present levels during construction of the project. For example, construction of the waterless restrooms may include short-term use of a small excavator and small cement mixer. Noise associated with Trail work may include rock pounding and earth scraping by hand tools as well as talking by groups of 10 people. During construction, temporary noise impacts have the potential to disrupt foraging, nesting, roosting, and/or denning activities for wildlife species occurring within or adjacent to project Work Areas. Wildlife species stressed by noise may disperse from the habitat located in the vicinity of the project site. Because the Project Work Areas are limited in extent, this impact is considered adverse, but less than significant and no mitigation would be required. However, if raptor species are nesting in the vicinity of the project work areas during construction, they may be temporarily displaced by construction noise. Indirect noise impacts on these species would be considered significant because nesting birds are protected by the *California Fish and Game Code*. Impacts on active nests would be reduced to a less than significant level with implementation of MM BIO-2, which calls for nesting bird surveys and species-appropriate buffer zones.

Eight waterless restroom facilities would be created by project implementation. Operational noise would be expected to be the same as current levels however because these will be placed at already existing high-use areas such as campgrounds, trailheads, and near youth camps. Therefore, there would be no impact as a result of operational noise.

4.4.2 INCREASED DUST AND URBAN POLLUTANTS

Surface soil movement with picks and shovels as well as the digging of eight holes by a mini-excavator to place the restroom collection tanks in would disturb soils and result in the accumulation of dust on the surface of the leaves of trees, shrubs, and herbs within or immediately adjacent to Project work areas. The respiratory function of the plants in these areas could be impaired if dust accumulation is excessive. Because the project work areas are limited in extent, this indirect impact is not considered adverse and is less than significant. Therefore, no mitigation would be required.

No dust or urban pollutants would be expected during operation of the Project. Therefore, there would be no impact and no mitigation would be required.

4.4.3 INVASIVE EXOTIC PLANT SPECIES

The Project would also result in indirect and temporary impacts to both common and sensitive vegetation immediately surrounding the Project disturbance area including potential introduction of invasive or weedy species, moderate soil erosion, and runoff which could compromise plant respiration, photosynthesis, and growth in vegetation communities not directly removed from within or adjacent to the Proposed Action Area.

It is the mission of the Conservancy's Catalina Habitat Improvement and Restoration Program's (aka: CHIRP) invasive plant project to prioritize and manage invasive species using the most effective and economical adaptive management techniques to protect the Island's unique natural

and cultural resources. Of the 255 naturalized, non-native plant species, seventy-six species are considered invasive that threaten the Island's native species and its unique habitats. The Conservancy witnessed an enormous population expansion of several highly ranked invasive plant species, such as fennel, on the west end of the Island when bison were excluded and several ungulate species were removed. To address this conservation challenge, in 2003 the Conservancy developed an invasive plant management plan in order to protect the Island's natural resources from the impacts of invasive plants (Attachment C). This successful program continues today and will respond and treat any high-priority spreading or incipient weeds that appear post-construction. Implementation of MM BIO-7 would reduce these potentially significant indirect impacts to a level that is considered less than significant.

4.4.4 HUMAN ACTIVITY

The impacts of increased human recreational activity on birds and their habitat are generally negative. A review of the recreation ecology literature published in English language academic journals identified 69 papers from 1978 to 2010 that examined the effect of these activities on birds. Sixty-one of the papers (88%) found negative impacts, including changes in bird physiology (all 11 papers), immediate behavior (37 out of 41 papers), as well as changes in abundance (28 out of 33 papers) and reproductive success (28 out of 33 papers) (Steven et al. 2011). It is clear, that non-motorized nature based recreation has negative impacts on a diversity of birds from a range of habitats in different climatic zones and regions of the world. Human disturbances regimes however, vary in duration, intensity and periodicity which will alter the significance of their impacts on wildlife.

Similarly, the negative impacts of new corridors created by the trails themselves, used by predators of birds and their nests, have been shown (Miller et al. 1998).

Additional indirect impacts associated with new trails and restrooms, include ravens and scavengers such as Island foxes being attracted to the area by human subsidized food and trash. Twenty-eight wildlife-proof trash/recycling receptacles were installed in 2015 by the Conservancy at multiple high-use areas on the island, including Parson's Landing, Shark Harbor, and Haypress Recreation Area (Fig. 21). The Conservancy is seeking funds to continue installing additional receptacles at all eight proposed restroom locations to mitigate the impact of human food on Island foxes.



Figure 21. Three of six wildlife-proof trash and recycling receptacles installed at Parson's Landing Campground in 2015.

Increased numbers of companion animals, primarily dogs, coincide with increases in human activity in the Island's interior. Catalina Island is the only Channel Island that permits dogs on the land. Despite the fox population plummeting in the 1990s from canine distemper virus, as well as State, County, City of Avalon, and Conservancy leash laws, few people voluntarily comply when hiking in Catalina's interior. Off-leash dogs have resulted in a minimum of five (reported) foxes being attacked and killed since 2000. Similarly, the possibility for disease introduction through improperly disposed of dog fecal waste may have dire consequences for Island foxes; naïve to most domestic canid pathogens.

The Conservancy requires that hikers obtain a free hiking permit from one of four island locations before hiking in the island's interior. Hiking permits include a list of rules and regulations (Attachment D) which include the need for dogs to be vaccinated and leashed at all times, fecal waste to be picked up, and not feeding wildlife. The Conservancy employs four rangers (2 full-time, 2 part-time) to patrol the interior roads and trails so that they may respond to emergencies, enforce Conservancy regulations, and provide assistance to visitors when needed. The use of rangers as described in MM BIO-6 and the Conservancy's hiking permit regulations (Attachment D), would decrease the potentially significant indirect impacts of human activity on island foxes to less than significant.

SECTION 5.0 MITIGATION MEASURES

Mitigation Measures

Sensitive Plants

No mitigation measures are expected with the exception of the described MM BIO-1 and the completion of the subsequent surveys for plant Species of Special Concern as described. Should inadvertent impacts occur to sensitive species, the Conservancy is mandated by its charter to self-mitigate those impacts as determined based on the best available science and optimal allocation of resources.

Fuel Modification Plans associated with proposed restrooms are expected to require three zones of vegetation modification as required by Los Angeles County Department of Forestry. A setback zone (Zone A) of 30' tangent to proposed structures is typical were vegetation is cleared to bare soil. A thinning zone (Zone B) of up to 100' may be required were target species must be removed surrounding the larger double-stall structures (Figs. 22-25). Some impacts to existing vegetation included listed species may occur within either the setback zone or thinning zone. However to avoid unintended removal of sensitive species or habitat the Conservancy has mapped and flagged all listed species which should be avoided during construction and subsequent maintenance of brush clearance areas. None of the listed species occurring in these areas are expected to be considered 'target species' according to LA County Fire. Many species are such as Island green liveforever (*Dudleya virens ssp insularis* list 1B.2)) are succulent or otherwise herbaceous plants which should not contribute significantly to fuel loads in these areas.

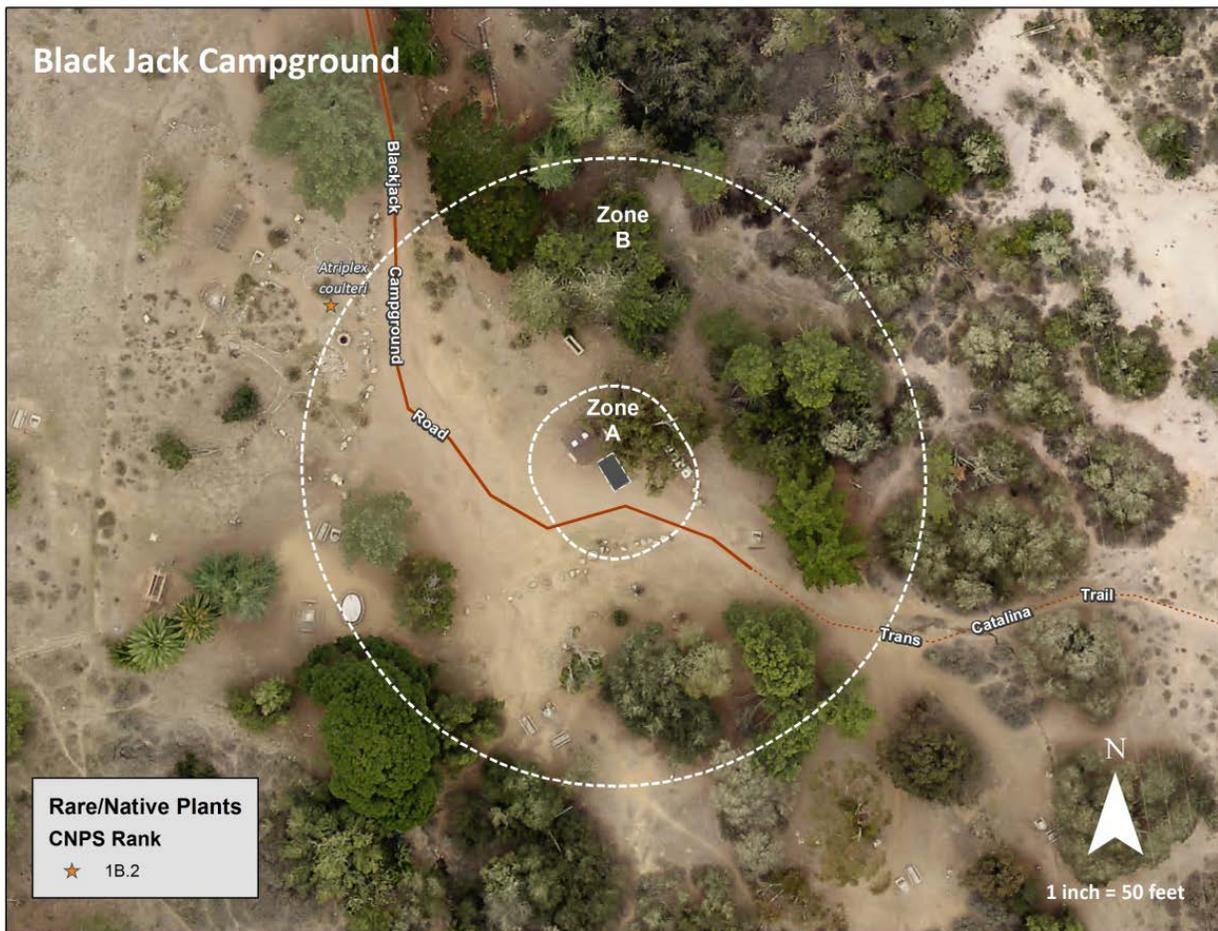


Figure 22. Proposed Blackjack Campground double-stall waterless restroom location with Zone A (30') and Zone B (100') fuel modification zones shown as required by Los Angeles County Department of Forestry.

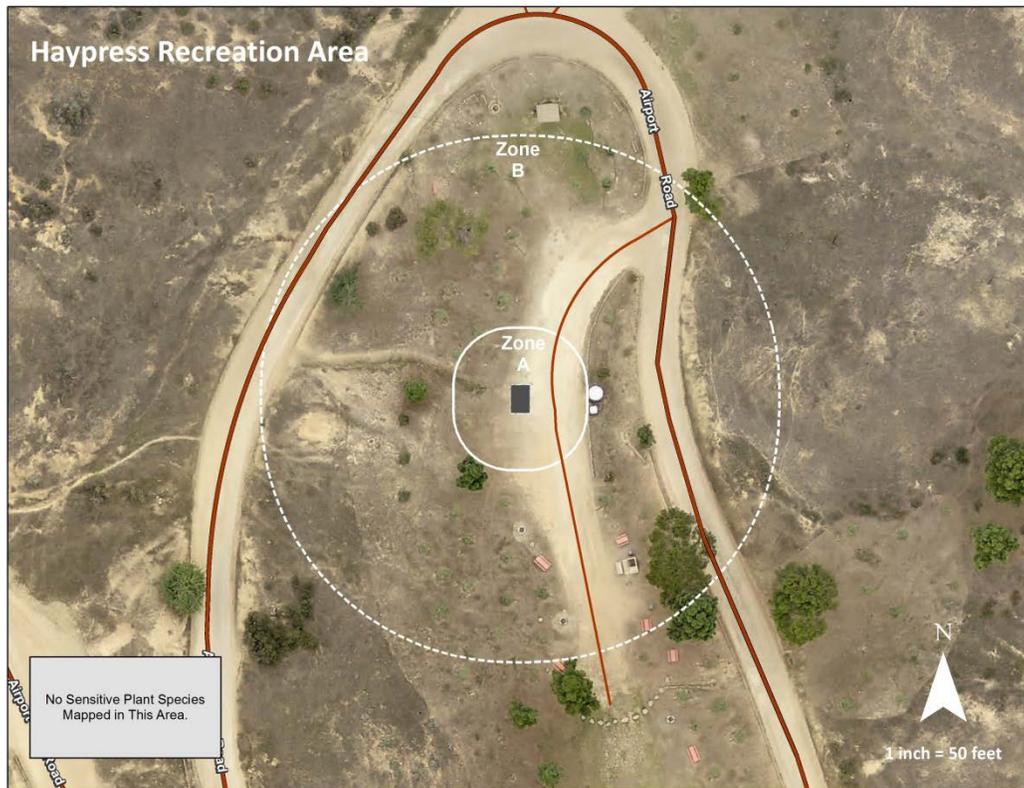


Figure 23. Proposed Haypress Recreation Area double-stall waterless restroom location with Zone A (30') and Zone B (100') fuel modification zones shown as required by Los Angeles County Department of Forestry.



Figure 24. Proposed Parson's Landing Campground double-stall waterless restroom location with Zone A (30') and Zone B (100') fuel modification zones shown as required by Los Angeles County Department of Forestry.

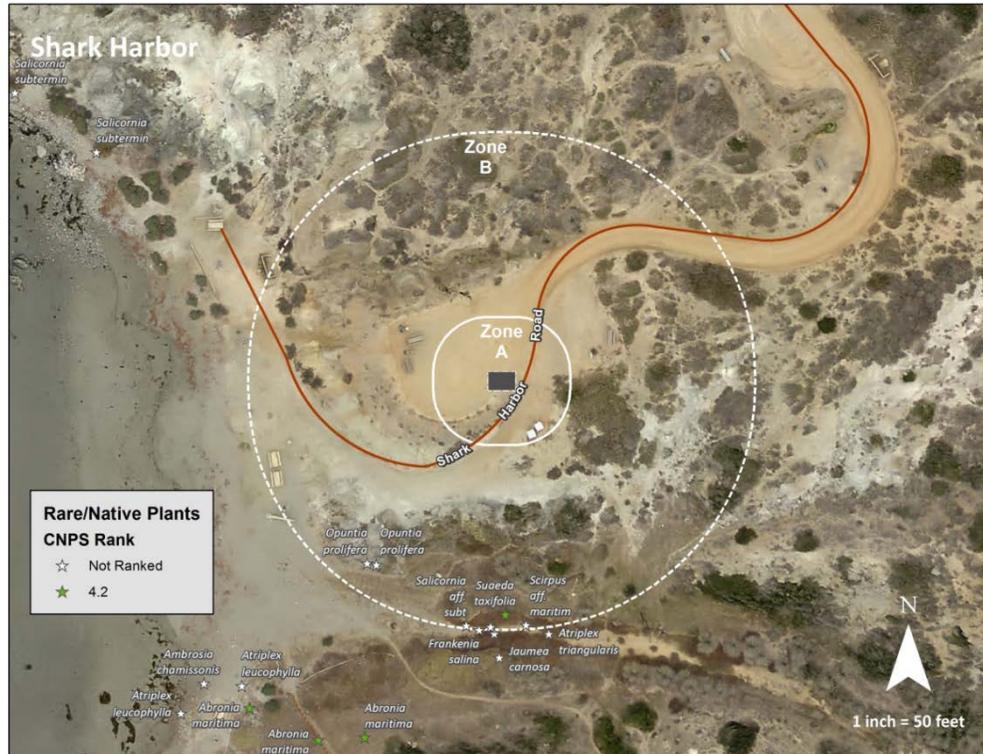


Figure 25. Proposed Shark Harbor double-stall waterless restroom location with Zone A (30') and Zone B (100') fuel modification zones shown as required by Los Angeles County Department of Forestry.

This section lists Mitigation Measures (MMs) for the Project. Strategies to mitigate each impact to a less than significant level are identified and described below.

MM BIO-1 A qualified Biologist will monitor construction activities during initial ground disturbance in previously undisturbed native plant communities. The biologist will have the authority to stop work and will immediately contact the Conservancy and other appropriate agencies if unintentional effects to sensitive species occur. Prior to the start of construction activities, the Biologist shall confirm that the limits of the Project Work Areas will be clearly delineated to prevent inadvertent impacts to adjacent areas.

A biologist will conduct a sensitive resources training session that includes information on potential sensitive resources within the Project disturbance area for all project personnel prior to project implementation.

All vehicles operated within all project areas will be inspected daily and maintained, if necessary, to avoid leaks of fuel, hydraulic fluids, oil, or coolants.

Work areas will be kept clean and carefully controlled of waste products at all work sites to avoid attracting predators, such as foxes, ravens, feral cats, and any other wildlife species.

All work will be jointly supervised by the Conservancy's Facilities and Conservation Departments.

MM BIO-2 The Project shall be conducted in compliance with the conditions set forth in the Migratory Bird Treaty Act (MBTA) and *California Fish and Game Code* with methods approved by the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW) to protect active bird/raptor nests. To the maximum extent feasible, vegetation removal shall occur during the non-breeding season for nesting birds (generally late September to early February) and nesting raptors (generally early July to late January) to avoid impacts to nesting birds and raptors. If the nature of the Project requires that work would be initiated during the breeding season for nesting birds (February 1 to September 30) and nesting raptors (February 1 to June 30), in order to avoid direct impacts on active nests, a pre-construction survey shall be conducted by a qualified Biologist for nesting birds and/or raptors within 3 days prior to clearing of any vegetation (i.e., within 300 feet for nesting birds and within 500 feet for nesting raptors). If the Biologist does not find any active nests within or immediately adjacent to the impact area, the vegetation clearing/construction work shall be allowed to proceed.

If the Biologist finds an active nest within or immediately adjacent to the construction area and determines that the nest may be impacted or breeding activities substantially disrupted, the Biologist shall delineate an appropriate buffer zone around the nest depending on the sensitivity of the species and the nature of the construction activity. Any nest found during survey efforts shall be mapped on the construction plans. The active nest shall be protected until nesting activity has ended. To protect any nest site, the following restrictions to construction activities shall be required until nests are no longer active, as determined by a qualified Biologist: (1) clearing limits shall be established within a buffer around any occupied nest (the buffer shall be 100–300 feet for nesting birds and 300–500 feet for nesting raptors), unless otherwise determined by a qualified Biologist and (2) access and surveying shall be restricted within the buffer of any occupied nest, unless otherwise determined by a qualified Biologist. Encroachment into the buffer area around a known nest shall only be allowed if the Biologist determines that the proposed activity would not disturb the nest occupants. Construction can proceed when the qualified Biologist has determined that fledglings have left the nest or the nest has failed.

Due to the linear nature of trails construction, if the Biologist determines that the work crews can “skip” or move beyond a delineated nesting buffer area and continue working further down the trail, returning to finish the “skipped” segment weeks later (post fledging), work can continue while avoiding significant impacts.

MM BIO-3 A pre-construction burrowing owl survey will take place within a month before earth disturbance (construction). The surveys will be conducted by a qualified Biologist as close to the actual construction initiation date as possible. Surveys will be conducted by walking suitable habitat on the project sites in areas within 150 m (500 ft) (where possible) of the project impact zone.

Potential project impacts to owls that are detected utilizing burrows will be avoided by ensuring there is no disturbance within 50 m (160 ft) of occupied burrows during the nonbreeding season of September 1 through January 31 or within 75 meters (approximately 250 ft) during the breeding season of February 1 through August 31. No owls will be moved away from the disturbance area and no passive or active relocation of owls will occur. Similarly, no burrows of any kind will be

destroyed. All mitigation will include avoidance.

MM BIO-4 A qualified Biologist shall conduct a pre-construction bat occupancy assessment at the Cherry Cove (Salina) mine adit prior to construction of a waterless restroom facility 425 feet in elevation above the mine. A bat-friendly gate was installed during February 2015, so it is unconfirmed as of January 2016 if bats have begun to utilize this mine. Restroom construction will not take place during the bat maternity roost season (March 1- August 1) if a maternal colony has been confirmed by a Biologist through non-invasive outflight counts with night-vision goggles and thermal imaging scopes. If no outflights occur over two consecutive nights, an interior survey of the adit will take place during the day to confirm the absence of bats. If no bats are present, the Biologist will approve construction proceeding.

The two Cottonwood Prospects are not long enough (~25 feet) to support a maternal colony, however they do provide roosting habitat for bachelors. Trail crews doing trail realignment using hand tools, will be instructed not to leave the construction site to investigate either Prospect when working on the lower portions of the Cottonwood Trail segment. The Prospects are well-hidden by vegetation and steep topography, so would likely go unnoticed. No trees will be removed or limbed as part of the Project, so surveys for tree roosting bats is not necessary.

MM BIO-5 Implementation of the following mitigation measures and construction management requirements would ensure that the proposed project completely avoids impacts to the Catalina Island fox:

- A Catalina Island Fox Construction Crew Educational Program must be prepared and implemented prior to construction. The Educational Program will include but not be limited to the items listed below:
 - Construction activity must be completed during the daylight hours (typically from 7:00a.m. to 4:00 p.m.) and construction activities must be avoided during the dawn (from two hours before sun-up to one hour after sun-up) and dusk periods (from 1 hour before sundown to 2 hours after sundown).
 - Construction activities should be avoided during the spring months (March 1 to July 1), which constitute the pupping season for this species.
 - Vehicles driving to and from each location must maintain a safe driving speed of 25 miles per hour or less to greatly reduce the possibility of any vehicle strikes.
 - The feeding of the Catalina Island fox shall be prohibited; this includes leaving food, trash, or trash cans on-site.
 - No dogs shall accompany workers on-site.
- No holes or trenches shall be left open and uncovered overnight that may trap or harm any Catalina Island fox. If a hole or trench cannot be filled prior to the end of the workday, the hole or trench will be covered with a plywood sheet and plastic sheeting extending several feet beyond the plywood will also be installed. A layer of soil will be placed along the edges of the plywood to eliminate all gaps and to prevent any foxes from entering the hole or trench. All trenches shall be equipped with escape ramps at times when persons are not present on-site. Each morning, the plywood

sheet will be removed and the hole or trench checked for any fox prior to continuing with construction activities. In the event that a fox is killed or falls in a hole and needs removal, a Conservancy wildlife biologist legally permitted (Julie King, Calvin Duncan or Tyler Dvorak) to handle Islands foxes shall be contacted immediately, at (310) 510-1299 x230, x232, or x233 (office) or 310-510-3102 (home).

- No containers exceeding 5 gallons in capacity may be left on site without a secure lid in order to avoid entrapment by a fox or drowning by a fox should the container fill with water during a rain event.
- If any Catalina Island fox is observed in the project action area or immediate vicinity (within 100 feet), then construction activities should stop until the fox has moved out of the immediate area (within a 150-foot buffer). Depending on the location (human areas such as campgrounds and youth camps), foxes may be very bold and persistent in approaching people to obtain/steal food. If habituated foxes are within 20 feet, crews are encouraged to clap their hands and yell to provide negative feedback and prevent further habituation. No objects such as rocks are ever to be thrown at a fox when trying to scare it out of an area.
- When trail construction is conducted away from a tertiary road where an enclosed vehicle is not available to store food securely, trail crews are to transport all food items for the day in their backpacks, so all food on site will be contained prior to lunch breaks and all wrappers and trash will be returned to their packs and hiked out at the end of each day. No trash or trash receptacles will be left on site.

MM BIO-6 Conservancy "Hiking Rules and Regulations" (see appendix C Hiking Rules) including issuance of permits will be enforced to avoid unintended impacts. The Conservancy will staff a minimum of 4 rangers to act as policy and law enforcement with cooperation from the LA County Sheriff's Department.

MM BIO-7 New trails will be monitored for new introductions of target invasive species in the year following construction and on a 3 year schedule subsequently. Target invasive species will be treated or removed within a 60 m buffer on roads and 10 m buffer for trails following the Conservancy's Invasive Plant Management Plan framework (Attachment C, Knapp 2007.)

SECTION 6.0 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Implementation of all the MMs listed above will mitigate biological impacts to a level that is considered less than significant.

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SECTION 8.0 CONTRIBUTING PERSONNEL

Peter Dixon (Plant Conservation Manager) holds a Bachelor degree in Landscape Architecture from the University of Oregon with a focus on Ecological Design and Restoration Planning. Since 2008 he has managed habitat restoration and ex-situ plant conservation projects at the Conservancy's Ackerman Native Plant Nursery facility, including collection and documentation of federally and state listed species. Dixon is a third generation nurseryman and an active member of the California Native Plant Society, Southern California Botanists and International Plant Propagators Society.

- CDFW Plant Voucher Collecting Permit no. 2081 (a)-15-022-V

Julie King (Director of Conservation & Wildlife Management) received her Bachelor of Science degree in Ecology and Evolution at the University of California, Santa Barbara in 1997 and completed her Master of Biological Sciences at California State University, Los Angeles in 2004. Julie has extensive experience working with several species of wildlife including swift fox, island fox, black bears, burrowing owls, fox squirrels, mule deer, and bison, and has led all of the Conservancy's wildlife programs for the last eleven years. Her research and management interests have included population sampling techniques and technology, species distribution, native and invasive species interactions, endangered species recovery, disease prevalence surveys, vaccine antibody persistence, and wildlife fertility control.

- USFWS TE permit #090990-1
- MOU with CDFW for Catalina Island fox Recovery activities
- CDFW Scientific Collecting Permit for Island foxes SC-5821

Calvin Duncan (Wildlife Biologist) received a technical diploma in Renewable Resource Management from Lethbridge College in 1999 and earned his Bachelor of Science degree in Wildlife and Fisheries Management at the University of Northern British Columbia, Canada in 2002. He is currently enrolled in a Master of Biological Science program at California State University Fullerton with an emphasis in wildlife fertility control and has worked as a wildlife biologist for more than 12 years. During his time as a biologist Calvin has worked with a variety of wildlife species including, waterfowl, sea birds, black bears, bobcats, island foxes, bald eagles, mule deer, and bison. Calvin has co-managed several wildlife programs during his eight years with the Catalina Conservancy and has been responsible for completing tasks at all levels including study design, planning, fundraising, implementation and manuscript publication.

- USFWS TE permit #090990-1
- MOU with CDFW for Catalina Island fox Recovery activities
- CDFW Scientific Collecting Permit for Island foxes SC-9858

Tyler Dvorak (Wildlife Biologist) completed his Bachelor of Science degree in Philosophy and Environmental Ethics at the University of Wisconsin in 2010 and has worked for the Conservancy for the past five years as a field technician. His duties have included annual breeding bird surveys, Scripps's Murrelet spotlight surveys, capture/banding and nest searches, Ashy Storm-Petrel nest monitoring, and island fox capture and vaccination.

- USFWS TE permit #090990-1
- MOU with CDFW for Catalina Island fox Recovery activities
- CDFW Scientific Collecting Permit for Island foxes SC-12152

Kevin Ryan (Conservancy Trails Coordinator; former wildlife biologist) Completed his B.S. degree in Wildlife at Humboldt State University. Kevin worked as a wildlife biologist on various projects that included mist netting, banding and nest searching for the endangered Hawaiian Palila, conducting Marbled Murrelet surveys, breeding bird surveys, Spotted Owl, and Ruffed and Blue Grouse monitoring prior to coming to work on Catalina Island in 2000 overseeing the feral pig removal program. Upon feral animal project completion, Kevin began managing the Conservancy's trail program in 2007.

ATTACHMENT A- TABLE OF SENSITIVE SPECIES IMPACTS MATRIX

Species Scientific Name Common Name	<i>Arctostaphylos catalinae</i> , Santa Catalina manzanita	<i>Atriplex coulteri</i> , Coulter's atriplex	<i>Crossosoma californicum</i> , Catalina crossosoma	<i>Helianthemum greenei</i> Island rush rose	<i>Ribes viburnifolium</i> , Catalina currant	<i>Scrophularia villosa</i> Island bee plant
Habitat present and species is reasonably expected to occur on-site? (YES/NO)	YES	YES	YES	YES	YES	YES
Species impacted directly by habitat loss? (YES/NO)	NO	NO	NO	NO	NO	NO
Habitat loss substantial? (YES/NO)	NO	NO	NO	NO	NO	NO
Species impacted indirectly on adjacent lands by edge effects? (YES/NO)	NO	NO	NO	NO	NO	NO
Potential to eliminate species on-site? (YES/NO)	NO	NO	NO	NO	NO	NO
Potential to reduce population size below self-sustaining levels? (YES/NO)	NO	NO	NO	NO	NO	NO
Potential for substantial reduction in numbers of individuals? (YES/NO)	NO	NO	NO	NO	NO	NO
Potential restriction of range of rare or endangered species? (YES/NO)	NO	NO	NO	NO	NO	NO
Impact significant? (YES/NO)	NO	NO	NO	NO	NO	NO
Mitigation	NONE	NONE	NONE	NONE	NONE	NONE

ATTACHMENT A- TABLE OF SENSITIVE SPECIES IMPACTS MATRIX CONT.

Species Scientific Name Common Name	<i>Pentachaeta lyonii</i> Lyon's pentachaeta	<i>Sibara filifolia</i>, Island rockcress	<i>Aphanisma blitoides</i>, Aphanisma	<i>Atriplex pacifica</i>, Pacific saltbush	<i>Atriplex serenana var. davidsonii</i> Davidson's saltbush
Habitat present and species is reasonably expected to occur on-site? (YES/NO)	NO (fall survey only)	NO (fall survey only)	NO (fall survey only)	NO (fall survey only)	NO (fall survey only)
Species impacted directly by habitat loss? (YES/NO)	NO	NO	NO	NO	NO
Habitat loss substantial? (YES/NO)	NO	NO	NO	NO	NO
Species impacted indirectly on adjacent lands by edge effects? (YES/NO)	NO	NO	NO	NO	NO
Potential to eliminate species on-site? (YES/NO)	NO	NO	NO	NO	NO
Potential to reduce population size below self-sustaining levels? (YES/NO)	NO	NO	NO	NO	NO
Potential for substantial reduction in numbers of individuals? (YES/NO)	NO	NO	NO	NO	NO
Potential restriction of range of rare or endangered species? (YES/NO)	NO	NO	NO	NO	NO
Impact significant? (YES/NO)	NO	NO	NO	NO	NO
Mitigation	Subsequent Survey, Jan-July	Subsequent Survey, Jan-July	Subsequent Survey, Jan-July	Subsequent Survey, Jan-July	Subsequent Survey, Jan-July

ATTACHMENT A - TABLE OF SENSITIVE SPECIES IMPACTS MATRIX CONT.

Species Scientific Name Common Name	<i>Dissantheium californicum</i> California dissantheium	<i>Centromadia parryi</i> ssp. Australis Southern tarplant	<i>Lepidium virginicum</i> var. <i>robinsonii</i> Robinson's pepper-grass	<i>Bergerocactus emoryi</i> velvet cactus	<i>Galium catalinense</i> ssp. <i>catalinense</i> Santa Catalina Island bedstraw
Habitat present and species is reasonably expected to occur on-site? (YES/NO)	NO (fall survey only)	NO (fall survey only)	NO (fall survey only)	YES	YES
Species impacted directly by habitat loss? (YES/NO)	NO	NO	NO	NO	NO
Habitat loss substantial? (YES/NO)	NO	NO	NO	NO	NO
Species impacted indirectly on adjacent lands by edge effects? (YES/NO)	NO	NO	NO	NO	NO
Potential to eliminate species on-site? (YES/NO)	NO	NO	NO	NO	NO
Potential to reduce population size below self- sustaining levels? (YES/NO)	NO	NO	NO	NO	NO
Potential for substantial reduction in numbers of individuals? (YES/NO)	NO	NO	NO	NO	NO
Potential restriction of range of rare or endangered species? (YES/NO)	NO	NO	NO	NO	NO
Impact significant? (YES/NO)	NO	NO	NO	NO	NO
Mitigation	Subsequent Survey, Jan-July	Subsequent Survey, Jan-July	Subsequent Survey, Jan-July	NONE	NONE

ATTACHMENT A- TABLE OF SENSITIVE SPECIES IMPACTS MATRIX CONT.

Species Scientific Name Common Name	<i>Thamnophis hammondi</i> ssp Santa Catalina garter snake	<i>Haliaeetus leucocephalus</i> Bald Eagle	<i>Callipepla californica catalinensis</i> California Quail	<i>Athene cunicularia</i> Burrowing Owl	<i>Lanius ludovicianus anthonyi</i> Island Loggerhead Shrike
Habitat present and species is reasonably expected to occur on-site? (YES/NO)	Habitat present only along Cottonwood Canyon; Low occupancy potential	Habitat present near Middle Ranch; YES on site- flying over	YES	Habitat present; observed on site; winter visitor	YES
Species impacted directly by habitat loss? (YES/NO)	YES; Not due to project-due to 4 yrs of drought	NO	NO	YES but not on Catalina Island	NO
Habitat loss substantial? (YES/NO)	YES; Not due to project-due to 4 years of drought	NO	NO	NO	NO
Species impacted indirectly on adjacent lands by edge effects? (YES/NO)	NO	NO	NO	NO	NO
Potential to eliminate species on-site? (YES/NO)	NO	NO	NO	NO	NO
Potential to reduce population size below self-sustaining levels? (YES/NO)	NO	NO	NO	NO	NO
Potential for substantial reduction in numbers of individuals? (YES/NO)	NO	NO	NO	NO	NO
Potential restriction of range of rare or endangered species? (YES/NO)	NO	NO	NO	NO	NO
Impact significant? (YES/NO)	NO	NO	NO	NO	NO
Mitigation	NO	500m buffer around active nests	200' Nest buffer	160' active burrow buffer non-breeding Sept 1-Jan 31; 250' breeding Feb 1-Aug 31	200' Nest buffer

ATTACHMENT A- TABLE OF SENSITIVE SPECIES IMPACTS MATRIX CONT.

Species Scientific Name Common Name	<i>Vireo huttoni unitti</i> Hutton's Vireo	<i>Eremophila alpestris insularis</i> Horned Lark	<i>Sialia currucoides</i> Mountain Bluebird	<i>Pipilo maculatus clementae</i> San Clemente Spotted Towhee	<i>Sturnella neglecta</i> Western Meadowlark
Habitat present and species is reasonably expected to occur on-site? (YES/NO)	YES	YES	YES	YES	YES
Species impacted directly by habitat loss? (YES/NO)	NO	YES but not on Catalina Island	YES but not on Catalina Island	NO	YES but not on Catalina Island
Habitat loss substantial? (YES/NO)	NO	NO	NO	NO	NO
Species impacted indirectly on adjacent lands by edge effects? (YES/NO)	NO	NO	NO	NO	NO
Potential to eliminate species on-site? (YES/NO)	NO	NO	NO	NO	NO
Potential to reduce population size below self-sustaining levels? (YES/NO)	NO	NO	NO	NO	NO
Potential for substantial reduction in numbers of individuals? (YES/NO)	NO	NO	NO	NO	NO
Potential restriction of range of rare or endangered species? (YES/NO)	NO	NO	NO	NO	NO
Impact significant? (YES/NO)	NO	NO	NO	NO	NO
Mitigation	200' Nest buffer	200' Nest buffer	NO	200' Nest buffer	200' Nest buffer

ATTACHMENT A- TABLE OF SENSITIVE SPECIES IMPACTS MATRIX CONT.

Species Scientific Name Common Name	<i>Antrozus pallidus</i> Pallid bat	<i>Corynorhinus townsendii</i> Townsend's big-eared bat	<i>Myotis yumanensis</i> Yuma myotis	<i>Urocyon littoralis catalinae</i> Santa Catalina Island fox	<i>Sorex ornatus willetti</i> Santa Catalina Island Shrew
Habitat present and species is reasonably expected to occur on-site? (YES/NO)	Foraging habitat present; Low roosting occupancy potential on site	Foraging habitat present; Low roosting occupancy potential on site	YES; Low roosting occupancy potential on site	YES	Habitat present only along Cottonwood Cyn, Big Springs and Eagles Nest Loop; Low occupancy potential
Species impacted directly by habitat loss? (YES/NO)	NO	NO	NO	NO	NO
Habitat loss substantial? (YES/NO)	NO	NO	NO	NO	NO
Species impacted indirectly on adjacent lands by edge effects? (YES/NO)	NO	NO	NO	NO	NO
Potential to eliminate species on-site? (YES/NO)	NO	NO	NO	NO	NO
Potential to reduce population size below self-sustaining levels? (YES/NO)	NO	NO	NO	NO	NO
Potential for substantial reduction in numbers of individuals? (YES/NO)	NO	NO	NO	NO	NO
Potential restriction of range of rare or endangered species? (YES/NO)	NO	NO	NO	NO	NO
Impact significant? (YES/NO)	NO	NO	NO	NO	NO
Mitigation	NONE	No restroom construction during Mar 1- Aug 1 if bats are present at Cherry Mine (Salina)	NONE	300' Den buffer	NONE

