W8 & W9

CCC-20-CD-03, CCC-20-RO-02

(LADWP)
November 04, 2020

EXHIBITS

Exhibit 1:	Vicinity Map
Exhibit 2:	Location of Properties
Exhibit 3:	Violation Photographs
Exhibit 4:	Memorandum from Dr. John Dixon, to Coastal Commission Ventura Staff, subject “Designation of ESHA in the Santa Monica Mountains”, March 25, 2003
Exhibit 5:	Biological Resources Impact Evaluation Temescal Ridge Pole Replacement Project prepared by Aspen Environmental Group prepared for Los Angeles Department of Water and Power, May 2020
Exhibit 6:	Aspen Environmental Group Impact Acreage Update for Temescal Ridge Pole Replacement project, August 13, 2020
Exhibit 7:	Notice of Violation Letter, August 16, 2019
Exhibit 8:	Notice of Intent to Commence Cease and Desist and Restoration Order Proceedings, March 2, 2020

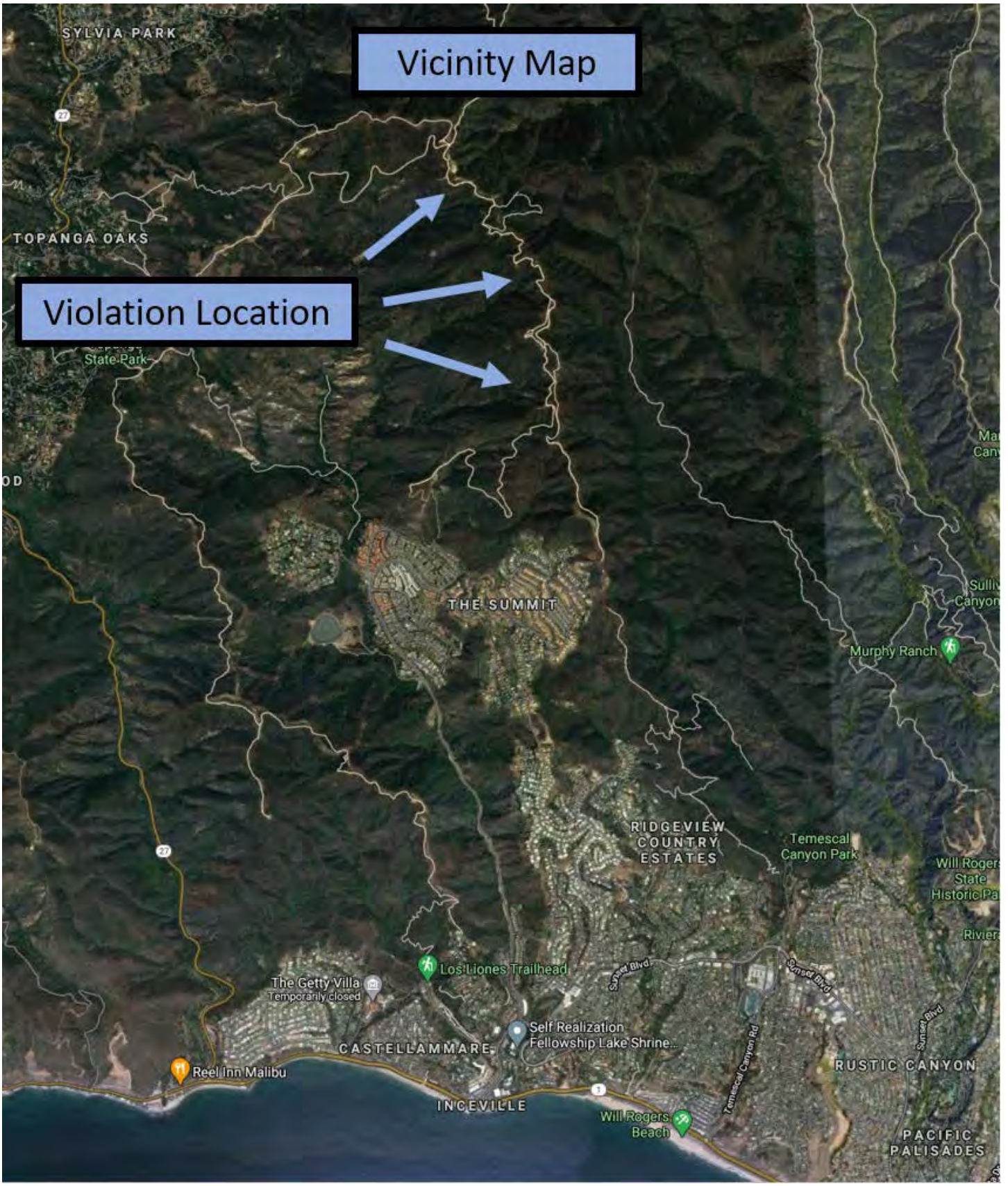

Exhibit 1
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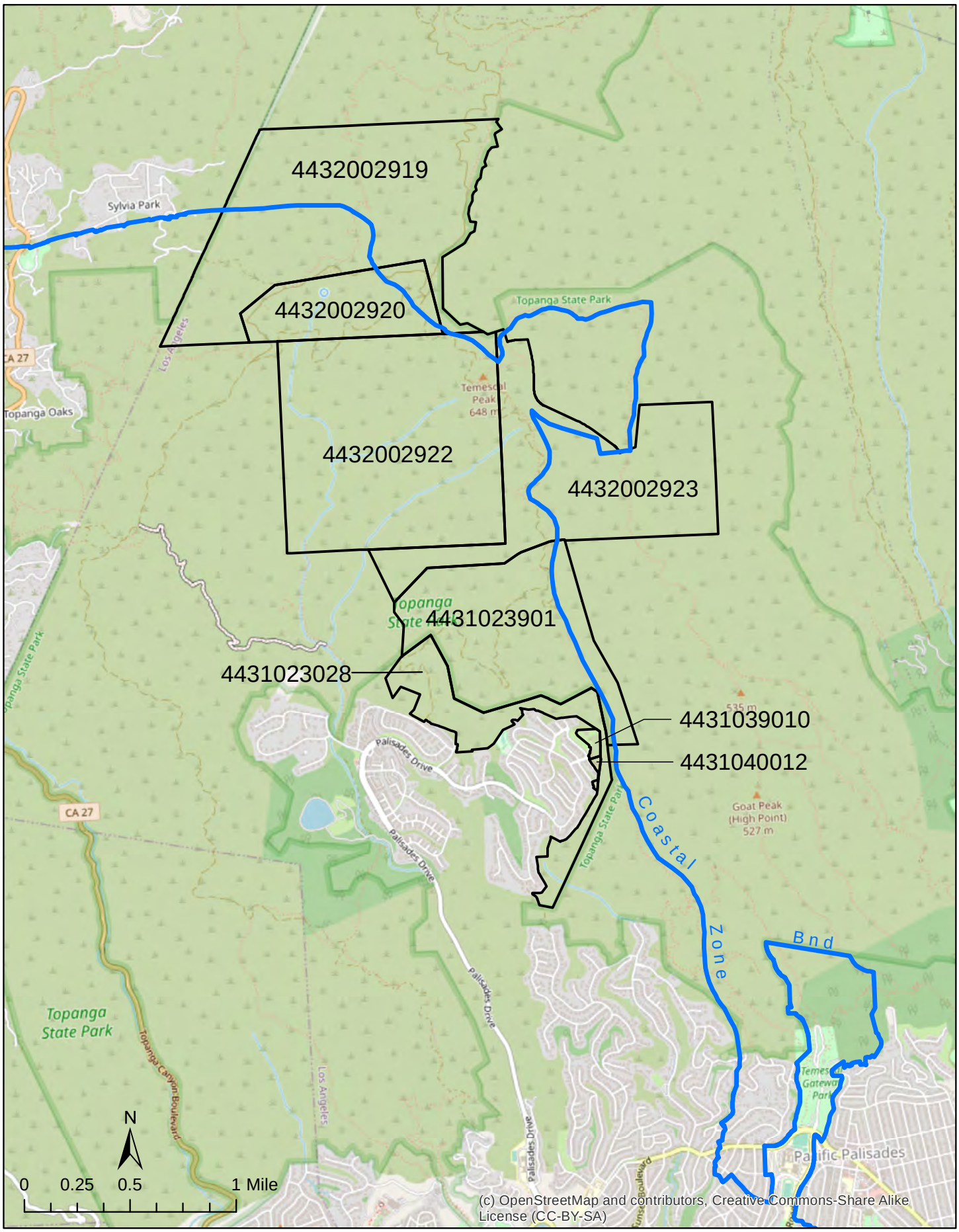

Impacted Parcels

Coastal Zone Boundary

CALIFORNIA COASTAL COMMISSION

Exhibit 2
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Violation Photographs

Example of graded Temescal Ridge Fire Road and Berms

Pre-Violation Braunton's Milk-vetch

Example of damaged habitat

Damaged Braunton's milk-vetch

Example of a graded spur road

Example of berm build up

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M E M O R A N D U M

FROM: John Dixon, Ph.D.
Ecologist / Wetland Coordinator

TO: Ventura Staff

SUBJECT: Designation of ESHA in the Santa Monica Mountains

DATE: March 25, 2003

In the context of the Malibu LCP, the Commission found that the Mediterranean Ecosystem in the Santa Mountains is rare, and especially valuable because of its relatively pristine character, physical complexity, and resultant biological diversity. Therefore, areas of undeveloped native habitat in the Santa Monica Mountains that are large and relatively unfragmented may meet the definition of ESHA by virtue of their valuable roles in that ecosystem, regardless of their relative rarity throughout the state. This is the only place in the coastal zone where the Commission has recognized chaparral as meeting the definition of ESHA. The scientific background presented herein for ESHA analysis in the Santa Monica Mountains is adapted from the Revised Findings for the Malibu LCP that the Commission adopted on February 6, 2003.

For habitats in the Santa Monica Mountains, particularly coastal sage scrub and chaparral, there are three site-specific tests to determine whether an area is ESHA because of its especially valuable role in the ecosystem. First, is the habitat properly identified, for example as coastal sage scrub or chaparral? The requisite information for this test generally should be provided by a site-specific biological assessment. Second, is the habitat largely undeveloped and otherwise relatively pristine? Third, is the habitat part of a large, contiguous block of relatively pristine native vegetation? This should be documented with an aerial photograph from our mapping unit (with the site delineated) and should be attached as an exhibit to the staff report. For those habitats that are absolutely rare or that support individual rare species, it is not necessary to find that they are relatively pristine, and are neither isolated nor fragmented.

Designation of Environmentally Sensitive Habitat in the Santa Monica Mountains

The Coastal Act provides a definition of “environmentally sensitive area” as: “Any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments” (Section 30107.5).

There are three important elements to the definition of ESHA. First, a geographic area can be designated ESHA either because of the presence of individual species of plants or animals or because of the presence of a particular habitat. Second, in order for an area to be designated as ESHA, the species or habitat must be either rare or it must be especially valuable. Finally, the area must be easily disturbed or degraded by human activities.

The first test of ESHA is whether a habitat or species is rare. Rarity can take several forms, each of which is important. Within the Santa Monica Mountains, rare species and habitats often fall within one of two common categories. Many rare species or habitats are globally rare, but locally abundant. They have suffered severe historical declines in overall abundance and currently are reduced to a small fraction of their original range, but where present may occur in relatively large numbers or cover large local areas. This is probably the most common form of rarity for both species and habitats in California and is characteristic of coastal sage scrub, for example. Some other habitats are geographically widespread, but occur everywhere in low abundance. California's native perennial grasslands fall within this category.

A second test for ESHA is whether a habitat or species is especially valuable. Areas may be valuable because of their "special nature," such as being an unusually pristine example of a habitat type, containing an unusual mix of species, supporting species at the edge of their range, or containing species with extreme variation. For example, reproducing populations of valley oaks are not only increasingly rare, but their southernmost occurrence is in the Santa Monica Mountains. Generally, however, habitats or species are considered valuable because of their special "role in the ecosystem." For example, many areas within the Santa Monica Mountains may meet this test because they provide habitat for endangered species, protect water quality, provide essential corridors linking one sensitive habitat to another, or provide critical ecological linkages such as the provision of pollinators or crucial trophic connections. Of course, all species play a role in their ecosystem that is arguably "special." However, the Coastal Act requires that this role be "especially valuable." This test is met for relatively pristine areas that are integral parts of the Santa Monica Mountains Mediterranean ecosystem because of the demonstrably rare and extraordinarily special nature of that ecosystem as detailed below.

Finally, ESHAs are those areas that could be easily disturbed or degraded by human activities and developments. Within the Santa Monica Mountains, as in most areas of southern California affected by urbanization, all natural habitats are in grave danger of direct loss or significant degradation as a result of many factors related to anthropogenic changes.

Ecosystem Context of the Habitats of the Santa Monica Mountains

The Santa Monica Mountains comprise the largest, most pristine, and ecologically complex example of a Mediterranean ecosystem in coastal southern California. California's coastal sage scrub, chaparral, oak woodlands, and associated riparian areas have analogues in just a few areas of the world with similar climate. Mediterranean ecosystems with their wet winters and warm dry summers are only found in five localities (the Mediterranean coast, California, Chile, South Africa, and south and southwest Australia). Throughout the world, this ecosystem with its specially adapted vegetation and wildlife has suffered severe loss and degradation from human development. Worldwide, only 18 percent of the Mediterranean community type remains undisturbed[1]. However, within the Santa Monica Mountains, this ecosystem is remarkably intact despite the fact that it is closely surrounded by some 17 million people. For example, the 150,000 acres of the Santa Monica Mountains National Recreation Area, which encompasses most of the Santa Monica Mountains, was estimated to be 90 percent free of development in 2000[2]. Therefore, this relatively pristine area is both large and mostly unfragmented, which fulfills a fundamental tenet of conservation biology[3]. The need for large contiguous areas of natural habitat in order to maintain critical ecological processes has been emphasized by many conservation biologists[4].

In addition to being a large single expanse of land, the Santa Monica Mountains ecosystem is still connected, albeit somewhat tenuously, to adjacent, more inland ecosystems[5]. Connectivity among habitats within an ecosystem and connectivity among ecosystems is very important for the preservation of species and ecosystem

[1] National Park Service. 2000. Draft general management plan & environmental impact statement. Santa Monica Mountains National Recreation Area – California.
[2] Ibid.
[3] Harris, L. D. 1988. Edge effects and conservation of biotic diversity. Conserv. Biol. 330-332. Soule, M. E, D. T. Bolger, A. C. Alberts, J. Wright, M. Sorice and S. Hill. 1988. Reconstructed dynamics of rapid extinctions of chaparral-requiring birds in urban habitat islands. Conserv. Biol. 2: 75-92. Yahner, R. H. 1988. Changes in wildlife communities near edges. Conserv. Biol. 2:333-339. Murphy, D. D. 1989. Conservation and confusion: Wrong species, wrong scale, wrong conclusions. Conservation Biol. 3:82-84.
[4] Crooks, K. 2000. Mammalian carnivores as target species for conservation in Southern California. p. 105-112 *in*: Keeley, J. E., M. Baer-Keeley and C. J. Fotheringham (eds), 2nd Interface Between Ecology and Land Development in California, U.S. Geological Survey Open-File Report 00-62. Sauvajot, R. M., E. C. York, T. K. Fuller, H. Sharon Kim, D. A. Kamradt and R. K. Wayne. 2000. Distribution and status of carnivores in the Santa Monica Mountains, California: Preliminary results from radio telemetry and remote camera surveys. p 113-123 *in*: Keeley, J. E., M. Baer-Keeley and C. J. Fotheringham (eds), 2nd Interface Between Ecology and Land Development in California, U.S. Geological Survey Open-File Report 00-62. Beier, P. and R. F. Noss. 1998. Do habitat corridors provide connectivity? Conserv. Biol. 12:1241-1252. Beier, P. 1996. Metapopulation models, tenacious tracking and cougar conservation. *In*: Metapopulations and Wildlife Conservation, ed. D. R. McCullough. Island Press, Covelo, California, 429p.
[5] The SMM area is linked to larger natural inland areas to the north through two narrow corridors: 1) the Conejo Grade connection at the west end of the Mountains and 2) the Simi Hills connection in the central region of the SMM (from Malibu Creek State Park to the Santa Susanna Mountains).

integrity. In a recent statewide report, the California Resources Agency[6] identified wildlife corridors and habitat connectivity as the top conservation priority. In a letter to governor Gray Davis, sixty leading environmental scientists have endorsed the conclusions of that report[7]. The chief of natural resources at the California Department of Parks and Recreation has identified the Santa Monica Mountains as an area where maintaining connectivity is particularly important[8].

The species most directly affected by large scale connectivity are those that require large areas or a variety of habitats, e.g., gray fox, cougar, bobcat, badger, steelhead trout, and mule deer[9]. Large terrestrial predators are particularly good indicators of habitat connectivity and of the general health of the ecosystem[10]. Recent studies show that the mountain lion, or cougar, is the most sensitive indicator species of habitat fragmentation, followed by the spotted skunk and the bobcat[11]. Sightings of cougars in both inland and coastal areas of the Santa Monica Mountains[12] demonstrate their continued presence. Like the "canary in the mineshaft," an indicator species like this is good evidence that habitat connectivity and large scale ecological function remains in the Santa Monica Mountains ecosystem.

The habitat integrity and connectivity that is still evident within the Santa Monica Mountains is extremely important to maintain, because both theory and experiments over 75 years in ecology confirm that large spatially connected habitats tend to be more stable and have less frequent extinctions than habitats without extended spatial structure[13]. Beyond simply destabilizing the ecosystem, fragmentation and disturbance

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[6] California Resources Agency. 2001. Missing Linkages: Restoring Connectivity to the California Landscape. California Wilderness Coalition, Calif. Dept of Parks & Recreation, USGS, San Diego Zoo and The Nature Conservancy. Available at: http://www.calwild.org/pubs/reports/linkages/index.htm

[7] Letters received and included in the September 2002 staff report for the Malibu LCP.

[8] Schoch, D. 2001. Survey lists 300 pathways as vital to state wildlife. Los Angeles Times. August 7, 2001.

[9] Martin, G. 2001. Linking habitat areas called vital for survival of state's wildlife Scientists map main migration corridors. San Francisco Chronicle, August 7, 2001.

[10] Noss, R. F., H. B. Quigley, M. G. Hornocker, T. Merrill and P. C. Paquet. 1996. Conservation biology and carnivore conservation in the Rocky Mountains. Conerv. Biol. 10: 949-963. Noss, R. F. 1995. Maintaining ecological integrity in representative reserve networks. World Wildlife Fund Canada.

[11] Sauvajot, R. M., E. C. York, T. K. Fuller, H. Sharon Kim, D. A. Kamradt and R. K. Wayne. 2000. Distribution and status of carnivores in the Santa Monica Mountains, California: Preliminary results from radio telemetry and remote camera surveys. p 113-123 in: Keeley, J. E., M. Baer-Keeley and C. J. Fotheringham (eds), 2nd Interface Between Ecology and Land Development in California, U.S. Geological Survey Open-File Report 00-62. Beier, P. 1996. Metapopulation models, tenacious tracking and cougar conservation. In: Metapopulations and Wildlife Conservation, ed. D. R. McCullough. Island Press, Covelo, California, 429p.

[12] Recent sightings of mountain lions include: Temescal Canyon (pers. com., Peter Brown, Facilities Manager, Calvary Church), Topanga Canyon (pers. com., Marti Witter, NPS), Encinal and Trancas Canyons (pers. com., Pat Healy), Stump Ranch Research Center (pers. com., Dr. Robert Wayne, Dept. of Biology, UCLA). In May of 2002, the NPS *photographed* a mountain lion at a trip camera on the Back Bone Trail near Castro Crest – Seth Riley, Eric York and Dr. Ray Sauvajot, National Park Service, SMMNRA.

[13] Gause, G. F. 1934. The struggle for existence. Balitmore, William and Wilkins 163 p. (also reprinted by Hafner, N.Y. 1964). Gause, G. F., N. P. Smaragdova and A. A. Witt. 1936. Further studies of interaction between predators and their prey. J. Anim. Ecol. 5:1-18. Huffaker, C. B. 1958. Experimental studies on

can even cause unexpected and irreversible changes to new and completely different kinds of ecosystems (habitat conversion)[14].

As a result of the pristine nature of large areas of the Santa Monica Mountains and the existence of large, unfragmented and interconnected blocks of habitat, this ecosystem continues to support an extremely diverse flora and fauna. The observed diversity is probably a function of the diversity of physical habitats. The Santa Monica Mountains have the greatest geological diversity of all major mountain ranges within the transverse range province. According to the National Park Service, the Santa Monica Mountains contain 40 separate watersheds and over 170 major streams with 49 coastal outlets[15]. These streams are somewhat unique along the California coast because of their topographic setting. As a "transverse" range, the Santa Monica Mountains are oriented in an east-west direction. As a result, the south-facing riparian habitats have more variable sun exposure than the east-west riparian corridors of other sections of the coast. This creates a more diverse moisture environment and contributes to the higher biodiversity of the region. The many different physical habitats of the Santa Monica Mountains support at least 17 native vegetation types[16] including the following habitats considered sensitive by the California Department of Fish and Game: native perennial grassland, coastal sage scrub, red-shank chaparral, valley oak woodland, walnut woodland, southern willow scrub, southern cottonwood-willow riparian forest, sycamore-alder woodland, oak riparian forest, coastal salt marsh, and freshwater marsh. Over 400 species of birds, 35 species of reptiles and amphibians, and more than 40 species of mammals have been documented in this diverse ecosystem. More than 80 sensitive species of plants and animals (listed, proposed for listing, or species of concern) are known to occur or have the potential to occur within the Santa Monica Mountains Mediterranean ecosystem.

The Santa Monica Mountains are also important in a larger regional context. Several recent studies have concluded that the area of southern California that includes the Santa Monica Mountains is among the most sensitive in the world in terms of the number of rare endemic species, endangered species and habitat loss. These studies have designated the area to be a local hot-spot of endangerment in need of special protection[17].

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predation: dispersion factors and predator-prey oscillations. Hilgardia 27:343-383. Luckinbill, L. S. 1973. Coexistence in laboratory populations of *Paramecium aurelia* and its predator *Didinium nasutum*. Ecology 54:1320-1327. Allen, J. C., C. C. Brewster and D. H. Slone. 2001. Spatially explicit ecological models: A spatial convolution approach. Chaos, Solitons and Fractals. 12:333-347.

[14] Scheffer, M., S. Carpenter, J. A. Foley, C. Folke and B. Walker. 2001. Catastrophic shifts in ecosystems. Nature 413:591-596.

[15] NPS. 2000. op.cit.

[16] From the NPS report (2000 op. cit.) that is based on the older Holland system of subjective classification. The data-driven system of Sawyer and Keeler-Wolf results in a much larger number of distinct "alliances" or vegetation types.

[17] Myers, N. 1990. The biodiversity challenge: Expanded hot-spots analysis. Environmentalist 10:243-256. Myers, N., R. A. Mittermeier, C. G. Mittermeier, G. A. B. da Fonseca and J. A. Kent. 2000. Biodiversity hot-spots for conservation priorities. Nature 403:853-858. Dobson, A. P., J. P. Rodriguez, W. M. Roberts and D. S. Wilcove. 1997. Geographic distribution of endangered species in the United States. Science 275:550-553.

Therefore, the Commission finds that the Santa Monica Mountains ecosystem is itself rare and especially valuable because of its special nature as the largest, most pristine, physically complex, and biologically diverse example of a Mediterranean ecosystem in coastal southern California. The Commission further finds that because of the rare and special nature of the Santa Monica Mountains ecosystem, the ecosystem roles of substantially intact areas of the constituent plant communities discussed below are "especially valuable" under the Coastal Act.

Major Habitats within the Santa Monica Mountains

The most recent vegetation map that is available for the Santa Monica Mountains is the map that was produced for the National Park Service in the mid-1990s using 1993 satellite imagery supplemented with color and color infrared aerial imagery from 1984, 1988, and 1994 and field review[18]. The minimum mapping unit was 5 acres. For that map, the vegetation was mapped in very broad categories, generally following a vegetation classification scheme developed by Holland[19]. Because of the mapping methods used the degree of plant community complexity in the landscape is not represented. For example, the various types of "ceanothus chaparral" that have been documented were lumped under one vegetation type referred to as "northern mixed chaparral." Dr. Todd Keeler-Wolf of the California Department of Fish and Game is currently conducting a more detailed, quantitative vegetation survey of the Santa Monica Mountains.

The National Park Service map can be used to characterize broadly the types of plant communities present. The main generic plant communities present in the Santa Monica Mountains[20] are: coastal sage scrub, chaparral, riparian woodland, coast live oak woodland, and grasslands.

Riparian Woodland

Some 49 streams connect inland areas with the coast, and there are many smaller drainages as well, many of which are "blue line." Riparian woodlands occur along both perennial and intermittent streams in nutrient-rich soils. Partly because of its multi-layered vegetation, the riparian community contains the greatest overall biodiversity of

[18] Franklin, J. 1997. Forest Service Southern California Mapping Project, Santa Monica Mountains National Recreation Area, Task 11 Description and Results, Final Report. June 13, 1997, Dept. of Geography, San Diego State University, USFS Contract No. 53-91S8-3-TM45.
[19] Holland R. F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. State of California, The Resources Agency, Dept. of Fish and Game, Natural Heritage Division, Sacramento, CA. 95814.
[20] National Park Service. 2000. Draft: General Management Plan & Environmental Impact Statement, Santa Monica Mountains National Recreation Area, US Dept. of Interior, National Park Service, December 2000. (Fig. 11 in this document.)

all the plant communities in the area[21]. At least four types of riparian communities are discernable in the Santa Monica Mountains: walnut riparian areas, mulefat-dominated riparian areas, willow riparian areas and sycamore riparian woodlands. Of these, the sycamore riparian woodland is the most diverse riparian community in the area. In these habitats, the dominant plant species include arroyo willow, California black walnut, sycamore, coast live oak, Mexican elderberry, California bay laurel, and mule fat. Wildlife species that have been observed in this community include least Bell's vireo (a State and federally listed species), American goldfinches, black phoebes, warbling vireos, bank swallows (State listed threatened species), song sparrows, belted kingfishers, raccoons, and California and Pacific tree frogs.

Riparian communities are the most species-rich to be found in the Santa Monica Mountains. Because of their multi-layered vegetation, available water supply, vegetative cover and adjacency to shrubland habitats, they are attractive to many native wildlife species, and provide essential functions in their lifecycles[22]. During the long dry summers in this Mediterranean climate, these communities are an essential refuge and oasis for much of the areas' wildlife.

Riparian habitats and their associated streams form important connecting links in the Santa Monica Mountains. These habitats connect all of the biological communities from the highest elevation chaparral to the sea with a unidirectional flowing water system, one function of which is to carry nutrients through the ecosystem to the benefit of many different species along the way.

The streams themselves provide refuge for sensitive species including: the coast range newt, the Pacific pond turtle, and the steelhead trout. The coast range newt and the Pacific pond turtle are California Species of Special Concern and are proposed for federal listing[23], and the steelhead trout is federally endangered. The health of the streams is dependent on the ecological functions provided by the associated riparian woodlands. These functions include the provision of large woody debris for habitat, shading that controls water temperature, and input of leaves that provide the foundation of the stream-based trophic structure.

The importance of the connectivity between riparian areas and adjacent habitats is illustrated by the Pacific pond turtle and the coast range newt, both of which are sensitive and both of which require this connectivity for their survival. The life history of the Pacific pond turtle demonstrates the importance of riparian areas and their associated watersheds for this species. These turtles require the stream habitat during

[21] Ibid.
[22] Walter, Hartmut. Bird use of Mediterranean habitats in the Santa Monica Mountains, Coastal Commission Workshop on the Significance of Native Habitats in the Santa Monica Mountains. CCC Hearing, June 13, 2002, Queen Mary Hotel.
[23] USFWS. 1989. Endangered and threatened wildlife and plants; animal notice of review. Fed. Reg. 54:554-579. USFWS. 1993. Endangered and threatened wildlife and plants; notice of 1-year petition finding on the western pond turtle. Fed. Reg. 58:42717-42718.

the wet season. However, recent radio tracking work[24] has found that although the Pacific pond turtle spends the wet season in streams, it also requires upland habitat for refuge during the dry season. Thus, in coastal southern California, the Pacific pond turtle requires both streams and intact adjacent upland habitats such as coastal sage scrub, woodlands or chaparral as part of their normal life cycle. The turtles spend about four months of the year in upland refuge sites located an average distance of 50 m (but up to 280 m) from the edge of the creek bed. Similarly, nesting sites where the females lay eggs are also located in upland habitats an average of 30 m (but up to 170 m) from the creek. Occasionally, these turtles move up to 2 miles across upland habitat[25]. Like many species, the pond turtle requires both stream habitats and the upland habitats of the watershed to complete its normal annual cycle of behavior. Similarly, the coast range newt has been observed to travel hundreds of meters into upland habitat and spend about ten months of the year far from the riparian streambed[26]. They return to the stream to breed in the wet season, and they are therefore another species that requires both riparian habitat and adjacent uplands for their survival.

Riparian habitats in California have suffered serious losses and such habitats in southern California are currently very rare and seriously threatened. In 1989, Faber estimated that 95-97% of riparian habitat in southern California was already lost[27]. Writing at the same time as Faber, Bowler asserted that, *"[t]here is no question that riparian habitat in southern California is endangered."*[28] In the intervening 13 years, there have been continuing losses of the small amount of riparian woodlands that remain. Today these habitats are, along with native grasslands and wetlands, among the most threatened in California.

In addition to direct habitat loss, streams and riparian areas have been degraded by the effects of development. For example, the coast range newt, a California Species of Special Concern has suffered a variety of impacts from human-related disturbances[29]. Human-caused increased fire frequency has resulted in increased sedimentation rates, which exacerbates the cannibalistic predation of adult newts on the larval stages.[30] In addition impacts from non-native species of crayfish and mosquito fish have also been documented. When these non-native predators are introduced, native prey organisms are exposed to new mortality pressures for which they are not adapted. Coast range

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[24] Rathbun, G.B., N.J. Scott and T.G. Murphy. 2002. Terrestrial habitat use by Pacific pond turtle in a Mediterranean climate. Southwestern Naturalist. (*in Press*).
[25] Testimony by R. Dagit, Resource Conservation District of the Santa Monica Mountains at the CCC Habitat Workshop on June 13, 2002.
[26] Dr, Lee Kats, Pepperdine University, personal communication to Dr J. Allen, CCC.
[27] Faber, P.A., E, Keller, A. Sands and B.M. Massey. 1989. The ecology of riparian habitats of the southern California coastal region: a community profile. U.S. Fish and Wildlife Service Biological Report 85(7.27) 152pp.
[28] Bowler, P.A. 1989. Riparian woodland: An endangered habitat in southern California. Pp 80-97 *in* Schoenherr, A.A. (ed.) Endangered plant communities of southern California. Botanists Special Publication No. 3.
[29] Gamradt, S.C., L.B. Kats and C.B. Anzalone. 1997. Aggression by non-native crayfish deters breeding in California newts. Conservation Biology 11(3):793-796.
[30] Kerby, L.J., and L.B. Kats. 1998. Modified interactions between salamander life stages caused by wildfire-induced sedimentation. Ecology 79(2):740-745.

newts that breed in the Santa Monica Mountain streams do not appear to have adaptations that permit co-occurrence with introduced mosquito fish and crayfish[31]. These introduced predators have eliminated the newts from streams where they previously occurred by both direct predation and suppression of breeding.

Therefore, because of the essential role that riparian plant communities play in maintaining the biodiversity of the Santa Monica Mountains, because of the historical losses and current rarity of these habitats in southern California, and because of their extreme sensitivity to disturbance, the native riparian habitats in the Santa Monica Mountains meet the definition of ESHA under the Coastal Act.

Coastal Sage Scrub and Chaparral

Coastal sage scrub and chaparral are often lumped together as "shrublands" because of their roughly similar appearance and occurrence in similar and often adjacent physical habitats. In earlier literature, these vegetation associations were often called soft chaparral and hard chaparral, respectively. "Soft" and "hard" refers to differences in their foliage associated with different adaptations to summer drought. Coastal sage scrub is dominated by soft-leaved, generally low-growing aromatic shrubs that die back and drop their leaves in response to drought. Chaparral is dominated by taller, deeper-rooted evergreen shrubs with hard, waxy leaves that minimize water loss during drought.

The two vegetation types are often found interspersed with each other. Under some circumstances, coastal sage scrub may even be successional to chaparral, meaning that after disturbance, a site may first be covered by coastal sage scrub, which is then replaced with chaparral over long periods of time.[32] The existing mosaic of coastal sage scrub and chaparral is the result of a dynamic process that is a function of fire history, recent climatic conditions, soil differences, slope, aspect and moisture regime, and the two habitats should not be thought of as completely separate and unrelated entities but as different phases of the same process[33]. The spatial pattern of these vegetation stands at any given time thus depends on both local site conditions and on history (e.g., fire), and is influenced by both natural and human factors.

In lower elevation areas with high fire frequency, chaparral and coastal sage scrub may be in a state of flux, leading one researcher to describe the mix as a "coastal sage-chaparral subclimax."[34] Several other researchers have noted the replacement of chaparral by coastal sage scrub, or coastal sage scrub by chaparral depending on fire

[31] Gamradt, S.C. and L.B. Kats. 1996. Effect of introduced crayfish and mosquitofish on California newts. Conservation Biology 10(4):1155-1162.
[32] Cooper, W.S. 1922. The broad-sclerophyll vegetation of California. Carnegie Institution of Washington Publication 319. 124 pp.
[33] Longcore, T and C. Rich. 2002. Protection of environmentally sensitive habitat areas in proposed local coastal plan for the Santa Monica Mountains. The Urban Wildlands Group, Inc., P.O. Box 24020 Los Angeles, CA 90024. (See attached comment document in Appendix).
[34] Hanes, T.L. 1965. Ecological studies on two closely related chaparral shrubs in southern California. Ecological Monographs 41:27-52.

history.[35] In transitional and other settings, the mosaic of chaparral and coastal sage scrub enriches the seasonal plant resource base and provides additional habitat variability and seasonality for the many species that inhabit the area.

Relationships Among Coastal Sage Scrub, Chaparral and Riparian Communities

Although the constituent communities of the Santa Monica Mountains Mediterranean ecosystem can be defined and distinguished based on species composition, growth habits, and the physical habitats they characteristically occupy, they are not independent entities ecologically. Many species of plants, such as black sage, and laurel sumac, occur in more than one plant community and many animals rely on the predictable mix of communities found in undisturbed Mediterranean ecosystems to sustain them through the seasons and during different portions of their life histories.

Strong evidence for the interconnectedness between chaparral, coastal scrub and other habitats is provided by "opportunistic foragers" (animals that follow the growth and flowering cycles across these habitats). Coastal scrub and chaparral flowering and growth cycles differ in a complimentary and sequential way that many animals have evolved to exploit. Whereas coastal sage scrub is shallow-rooted and responds quickly to seasonal rains, chaparral plants are typically deep-rooted having most of their flowering and growth later in the rainy season after the deeper soil layers have been saturated[36]. New growth of chaparral evergreen shrubs takes place about four months later than coastal sage scrub plants and it continues later into the summer[37]. For example, in coastal sage scrub, California sagebrush flowers and grows from August to February and coyote bush flowers from August to November[38]. In contrast, chamise chaparral and bigpod ceanothus flower from April to June, buck brush ceanothus flowers from February to April, and hoaryleaf ceanothus flowers from March to April.

Many groups of animals exploit these seasonal differences in growth and blooming period. The opportunistic foraging insect community (e.g., honeybees, butterflies and moths) tends to follow these cycles of flowering and new growth, moving from coastal sage scrub in the early rainy season to chaparral in the spring[39]. The insects in turn are followed by insectivorous birds such as the blue-gray gnatcatcher[40], bushtit, cactus wren, Bewick's wren and California towhee. At night bats take over the role of daytime insectivores. At least 12 species of bats (all of which are considered sensitive) occur in

[35] Gray, K.L. 1983. Competition for light and dynamic boundary between chaparral and coastal sage scrub. Madrono 30(1):43-49. Zedler, P.H., C.R. Gautier and G.S. McMaster. 1983. Vegetation change in response to extreme events: The effect of a short interval between fires in California chaparral and coastal sage scrub. Ecology 64(4): 809-818.
[36] DeSimone, S. 2000. California's coastal sage scrub. Fremontia 23(4):3-8. Mooney, H.A. 1988. Southern coastal scrub. Chap. 13 *in* Barbour, M.G. and J. Majors; Eds. 1988. Terrestrial vegetation of California, 2nd Edition. Calif. Native Plant Soc. Spec. Publ. #9.
[37] Schoenherr, A. A. 1992. A natural history of California. University of California Press, Berkeley. 772p.
[38] Dale, N. 2000. Flowering plants of the Santa Monica Mountains. California Native Plant Society, 1722 J Street, Suite 17, Sacramento, CA 95814.
[39] Ballmer, G. R. 1995. What's bugging coastal sage scrub. Fremontia 23(4):17-26.
[40] Root, R. B. 1967. The niche exploitation pattern of the blue-gray gnatcatcher. Ecol. Monog.37:317-350.

the Santa Monica Mountains[41]. Five species of hummingbirds also follow the flowering cycle[42].

Many species of 'opportunistic foragers', which utilize several different community types, perform important ecological roles during their seasonal movements. The scrub jay is a good example of such a species. The scrub jay is an omnivore and forages in coastal sage scrub, chaparral, and oak woodlands for insects, berries and notably acorns. Its foraging behavior includes the habit of burying acorns, usually at sites away from the parent tree canopy. Buried acorns have a much better chance of successful germination (about two-fold) than exposed acorns because they are protected from desiccation and predators. One scrub jay will bury approximately 5000 acorns in a year. The scrub jay therefore performs the function of greatly increasing recruitment and regeneration of oak woodland, a valuable and sensitive habitat type[43].

Like the scrub jay, most of the species of birds that inhabit the Mediterranean ecosystem in the Santa Monica Mountains require more than one community type in order to flourish. Many species include several community types in their daily activities. Other species tend to move from one community to another seasonally. The importance of maintaining the integrity of the multi-community ecosystem is clear in the following observations of Dr. Hartmut Walter of the University of California at Los Angeles:

> "Bird diversity is directly related to the habitat mosaic and topographic diversity of the Santa Monicas. Most bird species in this bio-landscape require more than one habitat for survival and reproduction." "A significant proportion of the avifauna breeds in the wooded canyons of the Santa Monicas. Most of the canyon breeders forage every day in the brush- and grass-covered slopes, ridges and mesas. They would not breed in the canyons in the absence of the surrounding shrublands. Hawks, owls, falcons, orioles, flycatchers, woodpeckers, warblers, hummingbirds, etc. belong to this group. Conversely, some of the characteristic chaparral birds such as thrashers, quails, and wrentits need the canyons for access to shelter, protection from fire, and water. The regular and massive movement of birds between riparian corridors and adjacent shrublands has been demonstrated by qualitative and quantitative observations by several UCLA students[44]."

Thus, the Mediterranean ecosystem of the Santa Monica Mountains is a mosaic of vegetation types linked together ecologically. The high biodiversity of the area results

[41] Letter from Dr. Marti Witter, NPS, dated Sept. 13, 2001, in letters received and included in the September 2002 staff report for the Malibu LCP.
[42] National Park Service. 1993. A checklist of the birds of the Santa Monica Mountains National Recreation Area. Southwest Parks and Monuments Assoc., 221 N. Court, Tucson, AZ. 85701
[43] Borchert, M. I., F. W. Davis, J. Michaelsen and L. D. Oyler. 1989. Interactions of factors affecting seedling recruitment of blue oak (*Quercus douglasii*) in California. Ecology 70:389-404. Bossema, I. 1979. Jays and oaks: An eco-ethological study of a symbiosis. Behavior 70:1-118. Schoenherr, A. A. 1992. A natural history of California. University of California Press, Berkeley. 772p.
[44] Walter, Hartmut. Bird use of Mediterranean habitats in the Santa Monica Mountains, Coastal Commission Workshop on the Significance of Native Habitats in the Santa Monica Mountains. CCC Hearing, June 13, 2002, Queen Mary Hotel.

from both the diversity and the interconnected nature of this mosaic. Most raptor species, for example, require large areas and will often require different habitats for perching, nesting and foraging. Fourteen species of raptors (13 of which are considered sensitive) are reported from the Santa Monica Mountains. These species utilize a variety of habitats including rock outcrops, oak woodlands, riparian areas, grasslands, chaparral, coastal sage scrub, estuaries and freshwater lakes[45].

When the community mosaic is disrupted and fragmented by development, many chaparral-associated native bird species are impacted. In a study of landscape-level fragmentation in the Santa Monica Mountains, Stralberg[46] found that the ash-throated flycatcher, Bewick's wren, wrentit, blue-gray gnatcatcher, California thrasher, orange-crowned warbler, rufous-crowned sparrow, spotted towhee, and California towhee all decreased in numbers as a result of urbanization. Soule[47] observed similar effects of fragmentation on chaparral and coastal sage scrub birds in the San Diego area.

In summary, all of the vegetation types in this ecosystem are strongly linked by animal movement and foraging. Whereas classification and mapping of vegetation types may suggest a snapshot view of the system, the seasonal movements and foraging of animals across these habitats illustrates the dynamic nature and vital connections that are crucial to the survival of this ecosystem.

Coastal Sage Scrub

"Coastal sage scrub" is a generic vegetation type that is inclusive of several subtypes[48]. In the Santa Monica Mountains, coastal sage scrub is mostly of the type termed "Venturan Coastal Sage Scrub." In general, coastal sage scrub is comprised of dominant species that are semi-woody and low-growing, with shallow, dense roots that enable them to respond quickly to rainfall. Under the moist conditions of winter and spring, they grow quickly, flower, and produce light, wind-dispersed seeds, making them good colonizers following disturbance. These species cope with summer drought by dying back, dropping their leaves or producing a smaller summer leaf in order to reduce water loss. Stands of coastal sage scrub are much more open than chaparral and contain a greater admixture of herbaceous species. Coastal sage scrub is generally restricted to drier sites, such as low foothills, south-facing slopes, and shallow soils at higher elevations.

[45] National Park Service. 1993. A checklist of the birds of the Santa Monica Mountains National Recreation Area. Southwest Parks and Monuments Assoc., 221 N. Court, Tucson, AZ. 85701. *and* Letter from Dr. Marti Witter, NPS, Dated Sept. 13, 2001, in letters received and included in the September 2002 staff report for the Malibu LCP.
[46] Stralberg, D. 2000. Landscape-level urbanization effects on chaparral birds: A Santa Monica Mountains case study. p 125-136 *in*: Keeley, J. E., M. Baer-Keeley and C. J. Fotheringham (eds), 2nd Interface Between Ecology and Land Development in California, U.S. Geological Survey Open-File Report 00-62.
[47] Soule, M. E, D. T. Bolger, A. C. Alberts, J. Wright, M. Sorice and S. Hill. 1988. Reconstructed dynamics of rapid extinctions of chaparral-requiring birds in urban habitat islands. Conserv. Biol. 2: 75-92.
[48] Kirkpatrick, J.B. and C.F. Hutchinson. 1977. The community composition of Californian coastal sage scrub. Vegetatio 35:21-33; Holland, 1986. op.cit.; Sawyer and Keeler-Wolf, 1995, op.cit.

The species composition and structure of individual stands of coastal sage scrub depend on moisture conditions that derive from slope, aspect, elevation and soil type. Drier sites are dominated by more drought-resistant species (e.g., California sagebrush, coast buckwheat, and *Opuntia* cactus). Where more moisture is available (e.g., north-facing slopes), larger evergreen species such as toyon, laurel sumac, lemonade berry, and sugar bush are common. As a result, there is more cover for wildlife, and movement of large animals from chaparral into coastal sage scrub is facilitated in these areas. Characteristic wildlife in this community includes Anna's hummingbirds, rufous-sided towhees, California quail, greater roadrunners, Bewick's wrens, coyotes, and coast horned lizards[49], but most of these species move between coastal sage scrub and chaparral during their daily activities or on a seasonal basis.

Of the many important ecosystem roles performed by the coastal sage scrub community, five are particularly important in the Santa Monica Mountains. Coastal sage scrub provides critical linkages between riparian corridors, provides essential habitat for species that require several habitat types during the course of their life histories, provides essential habitat for local endemics, supports rare species that are in danger of extinction, and reduces erosion, thereby protecting the water quality of coastal streams.

Riparian woodlands are primary contributors to the high biodiversity of the Santa Monica Mountains. The ecological integrity of those riparian habitats not only requires wildlife dispersal along the streams, but also depends on the ability of animals to move from one riparian area to another. Such movement requires that the riparian corridors be connected by suitable habitat. In the Santa Monica Mountains, coastal sage scrub and chaparral provide that function. Significant development in coastal sage scrub would reduce the riparian corridors to linear islands of habitat with severe edge effects[50], reduced diversity, and lower productivity.

Most wildlife species and many species of plants utilize several types of habitat. Many species of animals endemic to Mediterranean habitats move among several plant communities during their daily activities and many are reliant on different communities either seasonally or during different stages of the their life cycle. Without an intact mosaic of coastal sage scrub, chaparral, and riparian community types, many species will not thrive. Specific examples of the importance of interconnected communities, or habitats, were provided in the discussion above. This is an essential ecosystem role of coastal sage scrub.

A characteristic of the coastal sage scrub vegetation type is a high degree of endemism. This is consonant with Westman's observation that 44 percent of the species he sampled in coastal sage scrub occurred at only one of his 67 sites, which were

[49] National Park Service. 2000. Draft: General Management Plan & Environmental Impact Statement, Santa Monica Mountains National Recreation Area, US Dept. of Interior, National Park Service, December 2000.

[50] Environmental impacts are particularly severe at the interface between development and natural habitats. The greater the amount of this "edge" relative to the area of natural habitat, the worse the impact.

distributed from the San Francisco Bay area to Mexico[51]. Species with restricted distributions are by nature more susceptible to loss or degradation of their habitat. Westman said of this unique and local aspect of coastal sage scrub species in California:

> "While there are about 50 widespread sage scrub species, more than half of the 375 species encountered in the present study of the sage scrub flora are rare in occurrence within the habitat range. In view of the reduction of the area of coastal sage scrub in California to 10-15% of its former extent and the limited extent of preserves, measures to conserve the diversity of the flora are needed."[52]

Coastal sage scrub in southern California provides habitat for about 100 rare species[53], many of which are also endemic to limited geographic regions[54]. In the Santa Monica Mountains, rare animals that inhabit coastal sage scrub[55] include the Santa Monica shieldback katydid, silvery legless lizard, coastal cactus wren, Bell's sparrow, San Diego desert woodrat, southern California rufous-crowned sparrow, coastal western whiptail, and San Diego horned lizard. Some of these species are also found in chaparral[56]. Rare plants found in coastal sage scrub in the Santa Monica Mountains include Santa Susana tarplant, Coulter's saltbush, Blockman's dudleya, Braunton's milkvetch, Parry's spineflower, and Plummer's mariposa lily[57]. A total of 32 sensitive species of reptiles, birds and mammals have been identified in this community by the National Park Service.[58]

One of the most important ecological functions of coastal sage scrub in the Santa Monica Mountains is to protect water quality in coastal streams by reducing erosion in the watershed. Although shallow rooted, the shrubs that define coastal sage scrub have dense root masses that hold the surface soils much more effectively than the exotic annual grasses and forbs that tend to dominate in disturbed areas. The native shrubs of this community are resistant not only to drought, as discussed above, but well adapted to fire. Most of the semi-woody shrubs have some ability to crown sprout after

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[51] Westman, W.E. 1981. Diversity relations and succession in Californian coastal sage scrub. Ecology 62:170-184.
[52] Ibid.
[53] Atwood, J. L. 1993. California gnatcatchers and coastal sage scrub: The biological basis for endangered species listing. pp.149-166 *In*: Interface Between Ecology and Land Development in California. Ed. J. E. Keeley, So. Calif. Acad. of Sci., Los Angeles. California Department of Fish and Game (CDFG). 1993. The Southern California Coastal Sage Scrub (CSS) Natural Communities Conservation Plan (NCCP). CDFG and Calif. Resources Agency, 1416 9th St., Sacramento, CA 95814.
[54] Westman, W.E. 1981. op. cit.
[55] Biological Resources Assessment of the Proposed Santa Monica Mountains Significant Ecological Area. Nov. 2000. Los Angeles Co., Dept. of Regional Planning, 320 West Temple St., Rm. 1383, Los Angeles, CA 90012.
[56] O'Leary J.F., S.A. DeSimone, D.D. Murphy, P.F. Brussard, M.S. Gilpin, and R.F. Noss. 1994. Bibliographies on coastal sage scrub and related malacophyllous shrublands of other Mediterranean-type climates. *California Wildlife Conservation Bulletin* 10:1–51.
[57] Biological Resources Assessment of the Proposed Santa Monica Mountains Significant Ecological Area. Nov. 2000. Los Angeles Co., Dept. of Regional Planning, 320 West Temple St., Rm. 1383, Los Angeles, CA 90012.
[58] NPS, 2000, op cit.

fire. Several CSS species (e.g., *Eriogonum cinereum*) in the Santa Monica Mountains and adjacent areas resprout vigorously and other species growing near the coast demonstrate this characteristic more strongly than do individuals of the same species growing at inland sites in Riverside County.[59] These shrub species also tend to recolonize rapidly from seed following fire. As a result they provide persistent cover that reduces erosion.

In addition to performing extremely important roles in the Mediterranean ecosystem, the coastal sage scrub community type has been drastically reduced in area by habitat loss to development. In the early 1980's it was estimated that 85 to 90 percent of the original extent of coastal sage scrub in California had already been destroyed.[60] Losses since that time have been significant and particularly severe in the coastal zone.

Therefore, because of its increasing rarity, its important role in the functioning of the Santa Monica Mountains Mediterranean ecosystem, and its extreme vulnerability to development, coastal sage scrub within the Santa Monica Mountains meets the definition of ESHA under the Coastal Act.

Chaparral

Another shrub community in the Santa Monica Mountain Mediterranean ecosystem is chaparral. Like "coastal sage scrub," this is a generic category of vegetation. Chaparral species have deep roots (10s of ft) and hard waxy leaves, adaptations to drought that increase water supply and decrease water loss at the leaf surface. Some chaparral species cope more effectively with drought conditions than do desert plants[61]. Chaparral plants vary from about one to four meters tall and form dense, intertwining stands with nearly 100 percent ground cover. As a result, there are few herbaceous species present in mature stands. Chaparral is well adapted to fire. Many species regenerate mainly by crown sprouting; others rely on seeds which are stimulated to germinate by the heat and ash from fires. Over 100 evergreen shrubs may be found in chaparral[62]. On average, chaparral is found in wetter habitats than coastal sage scrub, being more common at higher elevations and on north facing slopes.

The broad category "northern mixed chaparral" is the major type of chaparral shown in the National Park Service map of the Santa Monica Mountains. However, northern mixed chaparral can be variously dominated by chamise, scrub oak or one of several species of manzanita or by ceanothus. In addition, it commonly contains woody vines and large shrubs such as mountain mahogany, toyon, hollyleaf redberry, and sugarbush[63]. The rare red shank chaparral plant community also occurs in the Santa Monica Mountains. Although included within the category "northern mixed chaparral" in

[59] Dr. John O'Leary, SDSU, personal communication to Dr. John Dixon, CCC, July 2, 2002
[60] Westman, W.E. 1981. op. cit.
[61] Dr. Stephen Davis, Pepperdine University. Presentation at the CCC workshop on the significance of native habitats in the Santa Monica Mountains. June 13, 2002.
[62] Keely, J.E. and S.C. Keeley. Chaparral. Pages 166-207 in M.G. Barbour and W.D. Billings, eds. North American Terrestrial Vegetation. New York, Cambridge University Press.
[63] Ibid.

the vegetation map, several types of ceanothus chaparral are reported in the Santa Monica Mountains. Ceanothus chaparral occurs on stable slopes and ridges, and may be dominated by bigpod ceanothus, buck brush ceanothus, hoaryleaf ceanothus, or greenbark ceanothus. In addition to ceanothus, other species that are usually present in varying amounts are chamise, black sage, holly-leaf redberry, sugarbush, and coast golden bush[64].

Several sensitive plant species that occur in the chaparral of the Santa Monica Mountains area are: Santa Susana tarplant, Lyon's pentachaeta, marcescent dudleya, Santa Monica Mountains dudleya, Braunton's milk vetch and salt spring checkerbloom[65]. Several occurring or potentially occurring sensitive animal species in chaparral from the area are: Santa Monica shieldback katydid, western spadefoot toad, silvery legless lizard, San Bernardino ring-neck snake, San Diego mountain kingsnake, coast patch-nosed snake, sharp-shinned hawk, southern California rufous-crowned sparrow, Bell's sparrow, yellow warbler, pallid bat, long-legged myotis bat, western mastiff bat, and San Diego desert woodrat.[66]

Coastal sage scrub and chaparral are the predominant generic community types of the Santa Monica Mountains and provide the living matrix within which rarer habitats like riparian woodlands exist. These two shrub communities share many important ecosystem roles. Like coastal sage scrub, chaparral within the Santa Monica Mountains provides critical linkages among riparian corridors, provides essential habitat for species that require several habitat types during the course of their life histories, provides essential habitat for sensitive species, and stabilizes steep slopes and reduces erosion, thereby protecting the water quality of coastal streams.

Many species of animals in Mediterranean habitats characteristically move among several plant communities during their daily activities, and many are reliant on different communities either seasonally or during different stages of their life cycle. The importance of an intact mosaic of coastal sage scrub, chaparral, and riparian community types is perhaps most critical for birds. However, the same principles apply to other taxonomic groups. For example, whereas coastal sage scrub supports a higher diversity of native ant species than chaparral, chaparral habitat is necessary for the coast horned lizard, an ant specialist[67]. Additional examples of the importance of an interconnected communities, or habitats, were provided in the discussion of coastal sage scrub above. This is an extremely important ecosystem role of chaparral in the Santa Monica Mountains.

Chaparral is also remarkably adapted to control erosion, especially on steep slopes. The root systems of chaparral plants are very deep, extending far below the surface and

[64] Ibid.
[65] Biological Resources Assessment of the Proposed Santa Monica Mountains Significant Ecological Area. Nov. 2000. Los Angeles Co., Dept. of Regional Planning, 320 West Temple St., Rm. 1383, Los Angeles, CA 90012.
[66] Ibid.
[67] A.V. Suarez. Ants and lizards in coastal sage scrub and chaparral. A presentation at the CCC workshop on the significance of native habitats in the Santa Monica Mountains. June 13, 2002.

penetrating the bedrock below[68], so chaparral literally holds the hillsides together and prevents slippage.[69] In addition, the direct soil erosion from precipitation is also greatly reduced by 1) water interception on the leaves and above ground foliage and plant structures, and 2) slowing the runoff of water across the soil surface and providing greater soil infiltration. Chaparral plants are extremely resistant to drought, which enables them to persist on steep slopes even during long periods of adverse conditions. Many other species die under such conditions, leaving the slopes unprotected when rains return. Since chaparral plants recover rapidly from fire, they quickly re-exert their ground stabilizing influence following burns. The effectiveness of chaparral for erosion control after fire increases rapidly with time[70]. Thus, the erosion from a 2-inch rain-day event drops from 5 yd^3/acre of soil one year after a fire to 1 yd^3/acre after 4 years.[71] The following table illustrates the strong protective effect of chaparral in preventing erosion.

Soil erosion as a function of 24-hour precipitation and chaparral age.

Years Since Fire	Erosion (yd^3/acre) at Maximum 24-hr Precipitation of:		
	2 inches	5 inches	11 inches
1	5	20	180
4	1	12	140
17	0	1	28
50+	0	0	3

Therefore, because of its important roles in the functioning of the Santa Monica Mountains Mediterranean ecosystem, and its extreme vulnerability to development, chaparral within the Santa Monica Mountains meets the definition of ESHA under the Coastal Act.

Oak Woodland and Savanna

Coast live oak woodland occurs mostly on north slopes, shaded ravines and canyon bottoms. Besides the coast live oak, this plant community includes hollyleaf cherry, California bay laurel, coffeeberry, and poison oak. Coast live oak woodland is more

[68] Helmers, H., J.S. Horton, G. Juhren and J. O'Keefe. 1955. Root systems of some chaparral plants in southern California. Ecology 36(4):667-678. Kummerow, J. and W. Jow. 1977. Root systems of chaparral shrubs. Oecologia 29:163-177.
[69] Radtke, K. 1983. *Living more safely in the chaparral-urban interface*. General Technical Report PSW-67. U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station, Berkeley, California. 51 pp.
[70] Kittredge, J. 1973. Forest influences — the effects of woody vegetation on climate, water, and soil. Dover Publications, New York. 394 pp. Longcore, T and C. Rich. 2002. Protection of environmentally sensitive habitat areas in proposed local coastal plan for the Santa Monica Mountains. (Table 1). The Urban Wildlands Group, Inc., P.O. Box 24020 Los Angeles, CA 90024. Vicars, M. (ed.) 1999. FireSmart: protecting your community from wildfire. Partners in Protection, Edmonton, Alberta.
[71] Ibid.

tolerant of salt-laden fog than other oaks and is generally found nearer the coast[72]. Coast live oak also occurs as a riparian corridor species within the Santa Monica Mountains.

Valley oaks are endemic to California and reach their southern most extent in the Santa Monica Mountains. Valley oaks were once widely distributed throughout California's perennial grasslands in central and coastal valleys. Individuals of this species may survive 400-600 years. Over the past 150 years, valley oak savanna habitat has been drastically reduced and altered due to agricultural and residential development. The understory is now dominated by annual grasses and recruitment of seedlings is generally poor. This is a very threatened habitat.

The important ecosystem functions of oak woodlands and savanna are widely recognized[73]. These habitats support a high diversity of birds[74], and provide refuge for many species of sensitive bats[75]. Typical wildlife in this habitat includes acorn woodpeckers, scrub jays, plain titmice, northern flickers, cooper's hawks, western screech owls, mule deer, gray foxes, ground squirrels, jackrabbits and several species of sensitive bats.

Therefore, because of their important ecosystem functions and vulnerability to development, oak woodlands and savanna within the Santa Monica Mountains met the definition of ESHA under the Coastal Act.

Grasslands

Grasslands consist of low herbaceous vegetation that is dominated by grass species but may also harbor native or non-native forbs.

California Perennial Grassland

Native grassland within the Santa Monica Mountains consists of perennial native needlegrasses: purple needlegrass, (Nassella pulchra), foothills needlegrass, (Nassella lepida) and nodding needlegrass (Nassella cernua). These grasses may occur in the same general area but they do not typically mix, tending to segregate based on slope

[72] NPS 2000. op. cit.
[73] Block, W.M., M.L. Morrison, and J. Verner. 1990. Wildlife and oak-woodland interdependency. *Fremontia* 18(3):72–76. Pavlik, B.M., P.C. Muick, S. Johnson, and M. Popper. 1991. *Oaks of California*. Cachuma Press and California Oak Foundation, Los Olivos, California. 184 pp.
[74] Cody, M.L. 1977. Birds. Pp. 223–231 *in* Thrower, N.J.W., and D.E. Bradbury (eds.). *Chile-California Mediterranean scrub atlas*. US/IBP Synthesis Series 2. Dowden, Hutchinson & Ross, Stroudsburg, Pennsylvania. National Park Service. 1993. A checklist of the birds of the Santa Monica Mountains National Recreation Area. Southwest Parks and Monuments Assoc., 221 N. Court, Tucson, AZ. 85701
[75] Miner, K.L., and D.C. Stokes. 2000. Status, conservation issues, and research needs for bats in the south coast bioregion. Paper presented at *Planning for biodiversity: bringing research and management together*, February 29, California State University, Pomona, California.

and substrate factors[76]. Mixed with these native needlegrasses are many non-native annual species that are characteristic of California annual grassland[77]. Native perennial grasslands are now exceedingly rare[78]. In California, native grasslands once covered nearly 20 percent of the land area, but today are reduced to less than 0.1 percent[79]. The California Natural Diversity Database (CNDDB) lists purple needlegrass habitat as a community needing priority monitoring and restoration. The CNDDB considers grasslands with 10 percent or more cover by purple needlegrass to be significant, and recommends that these be protected as remnants of original California prairie. Patches of this sensitive habitat occur throughout the Santa Monica Mountains where they are intermingled with coastal sage scrub, chaparral and oak woodlands.

Many of the raptors that inhabit the Santa Monica Mountains make use of grasslands for foraging because they provide essential habitat for small mammals and other prey. Grasslands adjacent to woodlands are particularly attractive to these birds of prey since they simultaneously offer perching and foraging habitat. Particularly noteworthy in this regard are the white-tailed kite, northern harrier, sharp-shinned hawk, Cooper's hawk, red-shouldered hawk, red-tailed hawk, golden eagle, American kestrel, merlin, and prairie falcon[80].

Therefore, because of their extreme rarity, important ecosystem functions, and vulnerability to development, California native perennial grasslands within the Santa Monica Mountains meet the definition of ESHA under the Coastal Act.

California Annual Grassland

The term "California annual grassland" has been proposed to recognize the fact that non-native annual grasses should now be considered naturalized and a permanent feature of the California landscape and should be acknowledged as providing important ecological functions. These habitats support large populations of small mammals and provide essential foraging habitat for many species of birds of prey. California annual grassland generally consists of dominant invasive annual grasses that are primarily of Mediterranean origin. The dominant species in this community include common wild oats (Avena fatua), slender oat (Avena barbata), red brome (Bromus madritensis ssp. Rubens), ripgut brome, (Bromus diandrus), and herbs such as black mustard (Brassica nigra), wild radish (Raphanus sativus) and sweet fennel (Foeniculum vulgare). Annual grasslands are located in patches throughout the Santa Monica Mountains in previously disturbed areas, cattle pastures, valley bottoms and along roadsides. While many of

[76] Sawyer, J. O. and T. Keeler-Wolf. 1995. A manual of California vegetation. California Native Plant Society, 1722 J St., Suite 17, Sacramento, CA 95814.
[77] Biological Resources Assessment of the Proposed Santa Monica Mountains Significant Ecological Area. Nov. 2000. Los Angeles Co., Dept. of Regional Planning, 320 West Temple St., Rm. 1383, Los Angeles, CA 90012.
[78] Noss, R.F., E.T. LaRoe III and J.M. Scott. 1995. Endangered ecosystems of the United States: a preliminary assessment of loss and degradation. Biological Report 28. National Biological Service, U.S. Dept. of Interior.
[79] NPS 2000. op. cit.
[80] NPS 2000. op. cit.

these patches are dominated by invasive non-native species, it would be premature to say that they are never sensitive or do not harbor valuable annual native species. A large number of native forbs also may be present in these habitats[81], and many native wildflowers occur primarily in annual grasslands. In addition, annual grasslands are primary foraging areas for many sensitive raptor species in the area.

Inspection of California annual grasslands should be done prior to any impacts to determine if any rare native species are present or if any rare wildlife rely on the habitat and to determine if the site meets the Coastal Act ESHA criteria.

Effects of Human Activities and Development on Habitats within the Santa Monica Mountains

The natural habitats of the Santa Monica Mountains are highly threatened by current development pressure, fragmentation and impacts from the surrounding megalopolis. The developed portions of the Santa Monica Mountains represents the extension of this urbanization into natural areas. About 54% of the undeveloped Santa Monica Mountains are in private ownership[82], and computer simulation studies of the development patterns over the next 25 years predict a serious increase in habitat fragmentation[83]. Development and associated human activities have many well-documented deleterious effects on natural communities. These environmental impacts may be both direct and indirect and include the effects of increased fire frequency, of fire clearance, of introduction of exotic species, and of night lighting.

Increased Fire Frequency

Since 1925, all the major fires in the Santa Monica Mountains have been caused by human activities[84]. Increased fire frequency alters plant communities by creating conditions that select for some species over others. Strong resprouting plant species such as laurel sumac, are favored while non-sprouters like bigpod ceanothus, are at a disadvantage. Frequent fire recurrence before the non-sprouters can develop and reestablish a seed bank is detrimental, so that with each fire their chances for propagation are further reduced. Resprouters can be sending up new shoots quickly, and so they are favored in an increased fire frequency regime. Also favored are weedy and invasive species. Dr. Steven Davis in his abstract for a Coastal Commission

[81] Holstein, G. 2001. Pre-agricultural grassland in Central California. Madrono 48(4):253-264. Stromberg, M.R., P. Kephart and V. Yadon. 2001. Composition, invasibility and diversity of coastal California grasslands. Madrono 48(4):236-252.
[82] National Park Service. 2000. Draft: General Management Plan & Environmental Impact Statement, Santa Monica Mountains National Recreation Area, US Dept. of Interior, National Park Service, December 2000.
[83] Swenson, J. J., and J. Franklin. 2000. The effects of future urban development on habitat fragmentation in the Santa Monica Mountains. Landscape Ecol. 15:713-730.
[84] NPS, 2000, op. cit.

Workshop stated[85] "*We have evidence that recent increases in fire frequency has eliminated drought-hardy non-sprouters from chaparral communities near Malibu, facilitating the invasion of exotic grasses and forbs that further exacerbate fire frequency*." Thus, simply increasing fire frequency from about once every 22 years (the historical frequency) to about once every 12 years (the current frequency) can completely change the vegetation community. This has cascading effects throughout the ecosystem.

Fuel Clearance

The removal of vegetation for fire protection in the Santa Monica Mountains is required by law in "Very High Fire Hazard Severity Zones"[86]. Fuel removal is reinforced by insurance carriers[87]. Generally, the Santa Monica Mountains are considered to be a high fire hazard severity zone. In such high fire hazard areas, homeowners must often resort to the California FAIR Plan to obtain insurance. Because of the high risk, all homes in "brush areas" are assessed an insurance surcharge if they have less than the recommended 200-foot fuel modification zone[88] around the home. The combination of insurance incentives and regulation assures that the 200-foot clearance zone will be applied universally[89]. While it is not required that all of this zone be cleared of vegetation, the common practice is simply to disk this zone, essentially removing or highly modifying all native vegetation. For a new structure not adjacent to existing structures, this results in the removal or modification of a minimum of three acres of vegetation[90]. While the directly impacted area is large, the effects of fuel modification extend beyond the 200-foot clearance area.

Effects of Fuel Clearance on Bird Communities

The impacts of fuel clearance on bird communities was studied by Stralberg who identified three ecological categories of birds in the Santa Monica Mountains: 1) local and long distance migrators (ash-throated flycatcher, Pacific-slope flycatcher, phainopepla, black-headed grosbeak), 2) chaparral-associated species (Bewick's wren, wrentit, blue-gray gnatcatcher, California thrasher, orange-crowned warbler, rufous-crowned sparrow, spotted towhee, California towhee) and 3) urban-associated species

[85] Davis, Steven. Effects of fire and other factors on patterns of chaparral in the Santa Monica Mountains, Coastal Commission Workshop on the Significance of Native Habitats in the Santa Monica Mountains. CCC Hearing, June 13, 2002, Queen Mary Hotel.
[86] 1996 Los Angeles County Fire Code Section 1117.2.1
[87] Longcore, T and C. Rich. 2002. Protection of environmentally sensitive habitat areas in proposed local coastal plan for the Santa Monica Mountains. The Urban Wildlands Group, Inc., P.O. Box 24020 Los Angeles, CA 90024. Vicars, M. (ed.) 1999. FireSmart: protecting your community from wildfire. Partners in Protection, Edmonton, Alberta.
[88] Fuel Modification Plan Guidelines. Co. of Los Angeles Fire Department, Fuel Modification Unit, Prevention Bureau, Forestry Division, Brush Clearance Section, January 1998.
[89] Longcore, T and C. Rich. 2002. Protection of environmentally sensitive habitat areas in proposed local coastal plan for the Santa Monica Mountains. The Urban Wildlands Group, Inc., P.O. Box 24020 Los Angeles, CA 90024.
[90] Ibid.

(mourning dove, American crow, Western scrub-jay, Northern mockingbird)[91]. It was found in this study that the number of migrators and chaparral-associated species decreased due to habitat fragmentation while the abundance of urban-associated species increased. The impact of fuel clearance is to greatly increase this edge-effect of fragmentation by expanding the amount of cleared area and "edge" many-fold. Similar results of decreases in fragmentation-sensitive bird species are reported from the work of Bolger et al. in southern California chaparral[92].

Effects of Fuel Clearance on Arthropod Communities

Fuel clearance and habitat modification may also disrupt native arthropod communities, and this can have surprising effects far beyond the cleared area on species seemingly unrelated to the direct impacts. A particularly interesting and well-documented example with ants and lizards illustrates this point. When non-native landscaping with intensive irrigation is introduced, the area becomes favorable for the invasive and non-native Argentine ant. This ant forms "super colonies" that can forage more than 650 feet out into the surrounding native chaparral or coastal sage scrub around the landscaped area[93]. The Argentine ant competes with native harvester ants and carpenter ants displacing them from the habitat[94]. These native ants are the primary food resource for the native coast horned lizard, a California "Species of Special Concern." As a result of Argentine ant invasion, the coast horned lizard and its native ant food resources are diminished in areas near landscaped and irrigated developments[95]. In addition to specific effects on the coast horned lizard, there are other Mediterranean habitat ecosystem processes that are impacted by Argentine ant invasion through impacts on long-evolved native ant-plant mutualisms[96]. The composition of the whole arthropod community changes and biodiversity decreases when habitats are subjected to fuel modification. In coastal sage scrub disturbed by fuel modification, fewer arthropod

[91] Stralberg, D. 2000. Landscape-level urbanization effects on chaparral birds: a Santa Monica Mountains case study. Pp. 125–136 *in* Keeley, J.E., M. Baer-Keeley, and C.J. Fotheringham (eds.). *2nd interface between ecology and land development in California*. U.S. Geological Survey, Sacramento, California.
[92] Bolger, D. T., T. A. Scott and J. T. Rotenberry. 1997. Breeding bird abundance in an urbanizing landscape in coastal Southern California. Conserv. Biol. 11:406-421.
[93] Suarez, A.V., D.T. Bolger and T.J. Case. 1998. Effects of fragmentation and invasion on native ant communities in coastal southern California. Ecology 79(6):2041-2056.
[94] Holway, D.A. 1995. The distribution of the Argentine ant (*Linepithema humile*) in central California: a twenty-year record of invasion. Conservation Biology 9:1634-1637. Human, K.G. and D.M. Gordon. 1996. Exploitation and interference competition between the invasive Argentine ant, (*Linepithema humile*), and native ant species. Oecologia 105:405-412.
[95] Fisher, R.N., A.V. Suarez and T.J. Case. 2002. Spatial patterns in the abundance of the coastal horned lizard. Conservation Biology 16(1):205-215. Suarez, A.V. J.Q. Richmond and T.J. Case. 2000. Prey selection in horned lizards following the invasion of Argentine ants in southern California. Ecological Applications 10(3):711-725.
[96] Suarez, A.V., D.T. Bolger and T.J. Case. 1998. Effects of fragmentation and invasion on native ant communities in coastal southern California. Ecology 79(6):2041-2056. Bond, W. and P. Slingsby. Collapse of an Ant-Plant Mutualism: The Argentine Ant (*Iridomyrmex humilis*) and Myrmecochorous Proteaceae. Ecology 65(4):1031-1037.

predator species are seen and more exotic arthropod species are present than in undisturbed habitats[97].

Studies in the Mediterranean vegetation of South Africa (equivalent to California shrubland with similar plant species) have shown how the invasive Argentine ant can disrupt the whole ecosystem.[98] In South Africa the Argentine ant displaces native ants as they do in California. Because the native ants are no longer present to collect and bury seeds, the seeds of the native plants are exposed to predation, and consumed by seed eating insects, birds and mammals. When this habitat burns after Argentine ant invasion the large-seeded plants that were protected by the native ants all but disappear. So the invasion of a non-native ant species drives out native ants, and this can cause a dramatic change in the species composition of the plant community by disrupting long-established seed dispersal mutualisms. In California, some insect eggs are adapted to being buried by native ants in a manner similar to plant seeds[99].

Artificial Night Lighting

One of the more recently recognized human impacts on ecosystem function is that of artificial night lighting as it effects the behavior and function of many different types of organisms[100]. For literally billions of years the only nighttime sources of light were the moon and stars, and living things have adapted to this previously immutable standard and often depend upon it for their survival. A review of lighting impacts suggests that whereas some species are unaffected by artificial night lighting, many others are severely impacted. Overall, most impacts are negative ones or ones whose outcome is unknown. Research to date has found negative impacts to plants, aquatic and terrestrial invertebrates, amphibians, fish, birds and mammals, and a detailed literature review can be found in the report by Longcore and Rich[101].

Summary

In a past action, the Coastal Commission found[102] that the Santa Monica Mountains Mediterranean Ecosystem, which includes the undeveloped native habitats of the Santa Monica Mountains, is rare and especially valuable because of its relatively pristine

[97] Longcore, T.R. 1999. Terrestrial arthropods as indicators of restoration success in coastal sage scrub. Ph.D. Dissertation, University of California, Los Angeles.
[98] Christian, C. 2001. Consequences of a biological invasion reveal the importance of mutualism for plant communities. Nature 413:635-639.
[99] Hughes, L. and M. Westoby. 1992. Capitula on stick insect eggs and elaiosomes on seeds: convergent adaptations for burial by ants. Functional Ecology 6:642-648.
[100] . Longcore, T and C. Rich. 2002. Protection of environmentally sensitive habitat areas in proposed local coastal plan for the Santa Monica Mountains. The Urban Wildlands Group, Inc., P.O. Box 24020 Los Angeles, CA 90024.
[101] Ibid, and Ecological Consequences of Artificial Night Lighting, Conference, February 23-24, 2002, UCLA Los Angeles, California.
[102] Revised Findings for the City of Malibu Local Coastal Program (as adopted on September 13, 2002) adopted on February 6, 2003.

character, physical complexity, and resultant biological diversity. The undeveloped native habitats within the Santa Monica Mountains that are discussed above are ESHA because of their valuable roles in that ecosystem, including providing a critical mosaic of habitats required by many species of birds, mammals and other groups of wildlife, providing the opportunity for unrestricted wildlife movement among habitats, supporting populations of rare species, and preventing the erosion of steep slopes and thereby protecting riparian corridors, streams and, ultimately, shallow marine waters.

The importance the native habitats in the Santa Monica Mountains was emphasized nearly 20 years ago by the California Department of Fish and Game[103]. Commenting on a Draft Land Use Plan for the City of Malibu, the Regional Manager wrote that, "It is essential that large areas of land be reclassified to reflect their true status as ESHAs. One of the major needs of the Malibu LUP is that it should provide protection for entire drainages and not just stream bottoms." These conclusions were supported by the following observations:

> "It is a fact that many of the wildlife species of the Santa Monica Mountains, such as mountain lion, deer, and raccoon, have established access routes through the mountains. They often travel to and from riparian zones and development such as high density residential may adversely affect a wildlife corridor.
>
> Most animal species that exist in riparian areas will, as part of their life histories, also be found in other habitat types, including chapparal (sic) or grassland. For example, hawks nest and roost in riparian areas, but are dependent on large open areas for foraging. For the survival of many species, particularly those high on the food chain, survival will depend upon the presence of such areas. Such areas in the Santa Monica Mountains include grassland and coastal sage scrub communities, which have been documented in the SEA studies as supporting a wide diversity of plant and animal life."

This analysis by the Department of Fish and Game is consonant with the findings of the Commission in the case of the Malibu LCP, and with the conclusion that large contiguous areas of relatively pristine native habitat in the Santa Monica Mountains meet the definition of ESHA under the Coastal Act.

[103] Letter from F. A. Worthley, Jr. (CDFG) to N. Lucast (CCC) re Land Use Plan for Malibu dated March 22, 1983.

Biological Resources Impact Evaluation
Temescal Ridge Pole Replacement Project

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Agreement No. 47446B, Task Order No. 26

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1. Introduction

This report was prepared by Aspen Environmental Group (Aspen) under contract to the Los Angeles Department of Water and Power (LADWP) to describe and quantify impacts to the federally listed Braunton's milkvetch (*Astragalus brauntonii*) and native vegetation at the Temescal Ridge Pole Replacement Project (project). Construction of the project removed Braunton's milkvetch and native vegetation along access roads on lands under the jurisdiction of the California Coastal Commission (CCC) and Topanga State Park (TSP). Based on field surveys and the evaluation described below an estimated 109 plants were removed by the access path and an additional 74 plants were removed by the access road. In total, 183 plants may have been removed by project activities. In addition to this study LADWP will prepare a Biological Resources Technical Report (BRTR) to address additional special-status biological resources within the project area. A Biological Assessment (BA) will also be required to address project impacts to federally listed species and will be used during formal consultation with the U.S. Fish and Wildlife Service (USFWS).

2. Project and Property Description

2.1 Project Description

The project includes replacing approximately 220 wooden power poles with new non-wood poles. The existing wooden poles were installed between 1935 and 1955 and are past their useful service life. The new poles range from 50 to 65 feet tall and are more resistant to high wind and fire threats. The new poles are rated to last approximately 100 years and will increase power system reliability. This project will also improve existing fire breaks and increase fire safety. Some portions of the project area are currently not accessible to vehicles.

The project includes replacing power poles in the canyon area along Mulholland Drive (Figure 1). Construction will occur in the following areas:

- Mulholland Drive between Greenbriar Drive East to Encino Hill Drive.
- Temescal Fire Road between Mulholland Drive to Split Rock Trailhead.
- Encino Reservoir North to Mulholland Drive.

The project will require clearing brush and widening trails to support access to the pole sites as needed. Crews will excavate holes and the new poles will be installed using a helicopter. The poles will be transported from the project staging yard located off Mulholland Drive, east of Greenbriar Dr.

Status of Work. The status of work on the project differs by land jurisdiction. The project has been completed along Mulholland drive from the eastern end near San Vincente Mountain Park to the last tower heading west before the start of TSP (see Photo 1, Attachment A). For most of the poles within TSP, new holes have been excavated next to the existing poles. These excavations have been covered pending the resumption of work. The access road has also been improved and new spur roads have been created to access the poles (see Photo 2, Attachment A). Work was suspended on the segment of the project that runs north from Mulholland Dr. towards Encino Reservoir (see Photo 3, Attachment A). Work on this segment includes access road maintenance, spur road clearing, and hole excavations.

Important Definitions. Throughout this report "access road" is used to describe the road that runs throughout the project area and provides access to the wooden poles. Clearing of the access road included blading the road, widening the road, clearing vegetation, and in some locations pushing soil off the road

into adjacent vegetation. “Access path” or spur roads refer to the location where equipment left the access road and widened a footpath along a ridgeline near the southern end of the project area (see Photo 4, Attachment A) to access specific poles off of the main access road. The access path had very little soil disturbance and primarily resulted in the removal of above ground vegetation. The differences between these two clearance methods are important when we discuss impacts to Braunton’s milkvetch. Additional roads were also created to gain access to several of the poles. These roads are included with the access road impact calculations because in these cases all vegetation was removed, and grading occurred in most locations.

2.2 Project Location

The project is located in Los Angeles County within the eastern portion of the Santa Monica Mountains. Specifically, the project is located north of Pacific Coast Highway (State Route 1), south of U.S. Highway 101, east of Topanga Canyon Road (State Route 27), and west of Interstate 405 (Figure 1). Approximately 3.14 miles of the project area are within the Coastal Zone and are designated as an Environmentally Sensitive Habitat Areas (ESHA). Approximately 3.6 miles of the project area are also within TSP, beyond the coastal zone. The topography of the project area is gently sloped along a series of ridgelines with steeper slopes immediately adjacent to the access road. The distribution line alignment crosses over several steep canyons but generally follows the route of the access road. The project area ranges in elevation from 1,000 feet above mean sea level (AMSL) near Encino Reservoir to approximately 2,060 feet AMSL near Temescal Peak. The project area can be found on the Topanga and Canoga Park, California United States Geological Survey (USGS) 7.5’ Quadrangles.

3. Methods

3.1 Literature Review

To better understand the natural history of Braunton’s milkvetch Aspen conducted an overview of the species and reviewed all available literature sources. This included the following key sources:

- Ecology and Distribution of Braunton's milkvetch (*Astragalus brauntonii*) and Lyon's pentachaeta (*Pentachaeta lyonii*) (Fotheringham and Keeley, 1998);
- Variation Among Populations of the Endangered Plant, *A. Brauntonii* (Bowman-Prideaux, 2011);
- Braunton’s milk-vetch (*Astragalus brauntonii*) 5-Year Review: Summary and Evaluation (USFWS, 2009);
- *Astragalus brauntonii* species profile on the Fire Effects Information System (Sclafani, 2006);
- California Natural Diversity Database (CNDDB) (CDFW, 2020);
- The California Consortium of Herbaria (CCH, 2020); and
- Personal communications with local experts and agency staff.

3.2 Braunton’s Milkvetch Impact Assessment

Aspen biologists Justin Wood, Scott White, Chris Huntley, Shaun Kehrmeyer, Jacob Aragon, and Chris Polinski completed field work as part of the impact assessment. Field survey dates, survey personnel, and tasks completed are listed below (Table 1).

Table 1. Field Survey Dates, Personnel, and Tasks		
Justin Wood, Scott White, Chris Huntley	January 17, 2020	Initial site visit with LADWP
Justin Wood, Shaun Kehrmeyer, Jacob Aragon	January 30, 2020 January 31, 2020 February 11, 2020 February 12, 2020	Braunton's milkvetch impact assessment
Shaun Kehrmeyer, Chris Polinski	February 18, 2020 March 3, 2020	CNDDB site visits
Chris Polinski	March 4, 2020 March 11, 2020	CNDDB site visits
Justin Wood, Chris Huntley	March 31, 2020	Vegetation map verification
Justin Wood	May 13, 2020	Focused botanical survey

3.2.1 Impacts to Braunton's milkvetch

To quantify impacts to Braunton's milkvetch along the access path within the northern polygon of CNDDB occurrence 15, Aspen biologists walked the perimeter of the access path and placed pin flags at every location where the alignment turned. These locations were recorded using a Trimble Geo7 GPS unit which recorded an average accuracy of less than 0.5 meters. This accuracy allowed Aspen to create a highly-accurate outline of the access path. Once the pin flags had been placed and the GPS data collected, bright colored twine was placed along the boundary to ensure that plants were only inventoried either in or outside of the access path. In addition, a 6-meter buffer was added to the access path boundary in the field. The width of the buffer was selected because it was approximately twice the width of the access path and it extended up and downslope to capture natural variability in the occurrence. The 6-meter buffer was added by measuring 6 meters with a tape measure and adding different color flags to mark the boundary in the field. The same method was used to map the access road that contained suitable carbonate soils in the vicinity of the access path (Figure 2A).

To quantify the number of Braunton's milkvetch impacted by project activities the biologists inventoried the number of plants within the access path and within the 6-meter buffer. This was completed using a series of 1-square-meter-plots (see Photo 5, Attachment A). Each plot was placed either within the access path or within the buffer and all live and dead plants were counted and categorized into one of the following size/reproduction classes:

- < 2 cm (presumed 2019-2020 seedling)
- 2-5 cm (presumed 2018-2019 seedling)
- 5-15 cm (presumed 2-year age class)
- > 15 cm, single-stemmed, not reproductive
- > 15 cm, single-stemmed, evidence of flowering or fruiting last spring
- > 15 cm, multi-stemmed, not reproductive
- > 15 cm, multi-stemmed, evidence of flowering or fruiting last spring

A GPS point was collected for each plot and the number of plants within each plot was recorded on data forms and entered into the GPS file. All plants in and adjacent to the access path and the access road were inventoried using the same methodology.

Substrate (soils and rock) was tested within each plot using several drops of 10-percent Hydrochloric Acid (HCl). When HCl is placed on calcium carbonate ($CaCO_3$) substrates a chemical reaction occurs and there is a visible bubbling and fizzing due to the release of carbon dioxide (CO_2) from the chemical reaction:

$CaCO_3 + 2HCl \rightarrow CaCl_2 + H_2O + CO_2$ (see Photos 6 and 7, Attachment A). This is a reliable field method to test for calcium carbonate soils. The limits of carbonate soils were mapped along the access path and access roads (Figure 2A). In addition to testing the substrates in the field, soil and geology maps for the area were reviewed (NRCS, 2020 and Yerkes and Campbell, 2005).

3.2.2 Update of Temescal Ridge Population

Aspen biologists revisited CNDDB occurrences 14, 15, 17, and 43 which are in close proximity to the project area. At each occurrence, the biologists collected data on plant locations with the Trimble Geo7 GPS. A single point was collected for all plants within one meter of one another and the count of plants was recorded in the GIS data file. Plants beyond one meter of the GPS point were captured in an additional GPS point and plant count. The biologists walked all accessible areas supporting Braunton's milkvetch and searched adjacent habitat within 10-meters of all plants observed. The biologists also hiked to adjacent locations (i.e. Occ. No. 17) to search for additional plants. Substrate throughout each occurrence was checked with the HCl to determine if the soils were calcium carbonate.

3.2.3 Update of populations within Los Angeles and Ventura Counties

To better understand the response of Braunton's milkvetch to wildfires, Aspen biologists reviewed all CNDDB records for this species and revisited selected locations in Los Angeles and Ventura Counties that were burned in the 2018 Woolsey Fire. The biologists estimated the number of plants at each occurrence and plant density plots were sampled at locations with more than 1,000 plants. Several representative 5-square-meter plots were placed within the occupied habitat where all Braunton's milkvetch were counted to determine a density of plants per $25m^2$. The limits of the occurrence were mapped on a tablet in the field using Collector for ArcGIS, a mobile data collection application. The density was calculated from this data and applied to the extent of the occurrence to determine an estimated number of plants. This is a very rough estimate since the density of plants within each occurrence was variable, but it was a quick assessment method to provide an approximate number of plants at occurrences with greater than 1,000 plants. Substrate at each occurrence was also checked with HCl to determine if the soils were calcium carbonate. The biologists also recorded additional observations of plants throughout the region as new CNDDB occurrences or new features (i.e. polygons) of existing CNDDB features if the new features were within 0.25-miles of the existing occurrences.

3.3 Vegetation Impact Assessment

Impacts to vegetation occurred throughout much of the project area where access roads were widened for construction access and to increase existing fire breaks. A field verification of the vegetation was completed by Aspen on March 31, 2020 (Table 1). Vegetation was preliminarily mapped using GIS vegetation data provided by the National Park Service (CDFW and CNPS, 2006). This vegetation data included both alliance and association levels of vegetation as described in A Manual of California Vegetation (Sawyer et al. 2009). During the field verification, all portions of the project area were assessed and compared to hard-copy maps. The biologists used a combination of vehicle and pedestrian surveys to ensure that vegetation polygons were accurate and correctly classified. Notes were also taken on the species of plants present in each vegetation type within the project area. Data was also collected at ten locations along Temescal Ridge Trail to determine the amount of dirt that was pushed downslope and slid under the canopy of adjacent chaparral. The average amount of additional impacts to vegetation adjacent to Temescal Canyon Fire Rd. and to the spur road traveling north towards Encino Reservoir averaged 1.66 meters (1.97 meters of the west side of the road and 1.35 meters on the east side of the road). This

additional impact area has been incorporated into the vegetation mapping along Temescal Canyon Fire Rd. and the Encino Reservoir spur road.

Following the field visit, the hard-copy maps were digitized in ArcGIS (Version 10.7). Aspen GIS Specialists purchased November 2019 aerial imagery of all project impact areas and mapped the extent of the disturbed areas that existed prior to the start of the project. This included hiking trails, unpaved access roads, paved access roads, and other infrastructure. Using the difference between these two mapped areas, we were able to calculate to the total acreage of project impacts. The minimum mapping unit is approximately 0.1 acre (about 4,400 square feet) and vegetation boundaries are accurate to approximately 10 feet. There are several caveats to consider when mapping vegetation and any vegetation map is subject to imprecision for several reasons:

1. Vegetation types tend to intergrade on the landscape so that there are no true boundaries in the vegetation itself. In these cases, a mapped boundary represents best professional judgment.
2. Vegetation types as they are named and described tend to intergrade; that is, a given stand of real-world vegetation may not fit into any named type in the classification scheme used. Thus, a mapped and labeled polygon is given the best name available in the classification, but this name does not imply that the vegetation unambiguously matches its mapped name.
3. Vegetation tends to be patchy. Small patches of one named type are often included within mapped polygons of another type. The size of these patches varies, depending on the minimum mapping units and scale of available aerial imagery.

4. Results

4.1 Literature Review

Braunton's milkvetch was named by Samuel Parish in 1903 after botanist Ernest Braunton and was formally described by Rupert Barneby (Parish, 1903 as cited in Skinner, 1991). It was described based on a type specimen collected near Sherman in Los Angeles County (Skinner, 1991). It was listed as endangered by the USFWS in 1997 (USFWS, 1997). It has a California Rare Plant Rank (CRPR) of 1B.1 but is not formally listed by the California Department of Fish and Wildlife (CDFW; 2020). It has a Global (G) rank of G2 and a State (S) rank of S2 (CDFW 2020).

Braunton's milkvetch is a short-lived perennial plant in the pea family (Fabaceae). Individual plants have a lifespan of two to three years, although some individuals may live five years or more if conditions are favorable, and then plants are not visible again until the next disturbance (Fotheringham and Keeley, 1998). It is typically an erect plant that can grow up to 1.5 meters and is covered in dense white hairs (Baldwin et al. 2012). It typically has purple flowers and un-inflated seed pods. It typically occurs in dry, open chaparral vegetation (Skinner, 1991). Historically it was believed to grow in gravelly clay soils overlaying granite sandstone, but more recently it has become apparent that it grows on carbonate soils derived from scattered limestone lenses (Skinner, 1991). These limestone soils are best described as marine-derived, calcium rich sediments which occurs in scattered locations in the hills surrounding the Los Angeles basin (Bowman-Prideaux, 2011). It occasionally occurs on non-carbonate soils at down-wash sites near other known occurrences, although survivorship of plants may be reduced on non-carbonate soils (Mistretta, 1992; Fotheringham and Keeley, 1998; Landis, 2005).

Braunton's milkvetch is a disturbance-adapted species (Fotheringham and Keeley, 1998). In early descriptions of the species is was mentioned that it grows in "brushy places, firebreaks, etc." in the hills bordering the Los Angeles Plain (Munz, 1974). The most well-studied occurrence of Braunton's milkvetch

is located along Temescal Ridge in TSP. This occurrence in particular seems to be maintained by on-going erosion, trail maintenance, and vegetation clearance (Landis, 2007). This is similar to what has been observed at other occurrences such as those in Coal Canyon of the Santa Ana Mountains and in the foothills of Monrovia where plants occur primarily along maintained dirt roads and other areas that have been disturbed.

Braunton's milkvetch is a fire adapted species that typically requires heat or scarification to trigger germination. It establishes quickly after disturbances that remove other plant competitors and stimulates germination of dormant seeds (Fotheringham and Keeley, 1998). In a previous study it was shown that all seed from the population near Monrovia required scarification or heating to initiate any germination (Bowman-Prideaux, 2011). The same study showed that approximately 20 percent of the seeds from the Temescal Ridge population did not require any special treatment and germinated using only water (Bowman-Prideaux, 2011). This suggests that the Temescal Ridge population may have diverged from other populations as a result of on-going routine impacts from vegetation management (i.e. fuel break management). Very little data has been collected on Braunton's milkvetch population dynamics following wildfires. In general, populations are largest following fires (USFWS, 1997; Fotheringham and Keeley, 1998). Following the Topanga Fire in 2005 and the Corral Fire in 2007, numerous previously unidentified populations of *A. brauntonii* where found which demonstrated that known populations may cover more area than previously thought with seeds hidden in the soil seed bank (Landis, 2007). This was seen at CNDDB occurrence 7 in the Burro Flats area of the Simi Hills where the occurrence was estimated to have 3 plants along an access road in 1999 (CDFW, 2020). In 2006, following a wildfire the occurrence was estimated to be 33,500 plants and then dropped to about 100 plants in 2011 (CDFW, 2020).

Critical habitat for Braunton's milkvetch was proposed and finalized in 2006 (USFWS, 2006a and 2006b). The final rule designated 6 units of critical habitat covering approximately 3,300 acres. Critical habitat is defined as any areas within the designated critical habitat units that provide the Primary Constituent Elements (PCEs) for the species which include the following for Braunton's milkvetch:

1. Carbonate limestone soils derived from marine sediment;
2. Low proportion (<10%) of shrub cover directly around the plant;
3. Periodic disturbances that stimulate seed germination (e.g., fire, flooding) and reduce vegetative cover.

Project impacts to Braunton's milkvetch are located within the Pacific Palisades critical habitat unit (USFWS, 2006b). Approximately 1.17 acres of the access road and 0.44 acres of the access path are within designated critical habitat.

4.2 Braunton's Milkvetch Impact Assessment

The impact assessment for Braunton's milkvetch included an evaluation of impacts to plants within the access path and access road. It also included an inventory of plants within the Temescal Ridge population composed of CNDDB occurrences 14, 15, and 17. In addition, data was collected for other occurrences within Los Angeles and Ventura County that were burned in the 2018 Woolsey Fire.

4.2.1 Direct loss of Braunton's Milkvetch

Project impacts resulted in approximately 0.34 acres of disturbance to suitable soils along the access path (Figure 2A). Project impacts also resulted in approximately 0.56 acres of impacts to suitable soils along the access road (Figure 2A). The 6-meter buffer along the edge of the access path is approximately 0.93 acres and the buffer along the edge of the access road is approximately 0.70 acres (Figure 2A). The number

of Braunton's milkvetch documented within the access path and access road are shown below in Table 2. The size variability of plants within the project area varied from seedlings about 1 centimeter tall to plants well over 1.5 meters in height (see Photos 8 and 9, Attachment A).

Table 2. Braunton's Milkvetch Plants Within the Impact Areas and 6-meter Buffer.

Size Class	Access Path	Access Path 6-m buffer	Access Road	Access Road 6-m buffer
< 2 cm	1	6	0	0
2-5 cm	4	28	0	4
5-15 cm	17	97	0	20
>15 cm, living, single-stemmed, not reproductive	1	123	0	50
>15 cm, living, single-stemmed, evidence of flowering or fruiting last spring	0	5	1	0
>15 cm, living, multi-stemmed, not reproductive	2	50	0	28
>15 cm, living, multi-stemmed, evidence of flowering or fruiting last spring	1	75	0	4
<15 cm, dead, rooted in place	0	1	0	1
<15 cm, dead, not rooted in place	0	0	0	0
>15 cm, dead, single-stemmed, not reproductive	0	0	0	2
>15 cm, dead, single-stemmed, evidence of flowering or fruiting last spring, rooted in place	0	0	0	0
>15 cm, dead, single-stemmed, evidence of flowering or fruiting last spring, not rooted in place	0	0	0	0
>15 cm, dead, multi-stemmed, not reproductive, rooted in place	0	2	0	0
>15 cm, dead, multi-stemmed, not reproductive, not rooted in place	0	0	0	0
>15 cm, dead, multi-stemmed, evidence of flowering or fruiting last spring, rooted in place	3	42	1	5
> 15 cm, dead, multi-stemmed, evidence of flowering or fruiting last spring, not rooted in place	0	1	1	0
Dead plants that have been dead for more than one growing season	14	109	0	7
Total live plants	26	384	1	106
Total dead plants	17	155	2	15
Total all plants	43	539	3	118

Using the abundance data above and the acreages of the impact areas and buffers we estimated the plant density (Table 3). The density data was used to estimate the number of plants that likely occurred in the disturbance footprint and were removed during construction. To determine the final estimate of plants impacted, the difference between this number and the number of plants still present in the impact area was calculated (Table 3).

Table 3. Braunton's Milkvetch Project Impacts

Location	Live Plants Observed	Impact Area (acres)	Plant Density (plants/acre)	Plants Expected (buffer density x area)	Estimated Plants Impacted (expected – present)
Access Path	26	0.35	74.29	134.75	108.75
Access Path Buffer	385	1.00	385.00	--	--
Access Road	7	0.51	13.73	81.24	74.24
Access Road Buffer	137	0.86	159.30	--	--

Based on our evaluation an estimated 183 may have been removed by project activities. This includes 109 plants that were removed on the access path and 74 plants that were removed on the access road.

Additional Plant Expression: During a site visit on March 31, 2020 additional seedlings were observed within the access road and access path that had not previously been observed during the census work (see Photo 10, Attachment A). These seedlings appear to have germinated following significant precipitation that fell in the region between March 10 and March 23 when the region received approximately 5.85 inches of rainfall (Weather Underground, 2020). A total of 550 seedling were observed within the access road and an additional 199 seedlings were observed within the access path (Figure 2B).

4.2.2 Update of Temescal Ridge Population Size

In addition to collecting detailed information on the number of plants present in and adjacent to the access road and access path, Aspen biologists visited CNDDB occurrences 14, 15, and 17 to evaluate the size of the population that was impacted by the project (Figure 3). Occurrence 43 was also evaluated as discussed below. Occurrence 15 is located at the southern end of the project area along Temescal Ridge Trail and is mapped as four distinct locations in the CNDDB (CDFW, 2020). It was first recorded in 1987 and at that time 1 plant was reported (CDFW, 2020). Since that time the occurrence has fluctuated to as low as 134 plants in 2010 in the northern polygon to as high was 2,121 plants throughout the occurrence in 2007 (CDFW, 2020). It is unclear whether this fluctuation is due to different survey extents or differing level of effort by the surveyors. In 2020, Aspen biologists mapped a total of 1,852 plants in the occurrence within a portion of the previously mapped occurrence and also in new areas that were not previously mapped (Figure 3). Additional plants were not seen in the southern-most polygon in occurrence 15.

Occurrence 14 is located approximately 0.9 miles west of the project area along Trailer Canyon Fire Road and includes three polygons. It was first recorded in 1987 and at that time was estimated at approximately 200 plants (CDFW, 2020). Since that time the occurrence has fluctuated to 0 plants in 1996 and 1997 and back up to 89 plants in 2007 when the site was last surveyed (CDFW, 2020). It is unclear whether this fluctuation is due to different survey extents or differing level of effort by the surveyors. In 2020, Aspen biologists mapped a total of 186 plants in one of the three polygons (Figure 3). Many of these plants were growing along a dirt road and within an area that had recently been cleared as a fire break. Additional plants were not seen in the third polygon to the east or in the southern portion of the western-most polygon.

Occurrence 17 is composed of two points that are located approximately 0.6 miles south of the project area along Temescal Ridge Trail and Temescal Canyon Trail. The occurrence was first recorded in 1978 following a wildfire and plants were seen in the eastern portion of the occurrence from 1979 to 1981 (CDFW, 2020). Since that time the occurrence has fluctuated to 0 plants in 1986 to as many as 45 plants in the western portion of the occurrence in 2006 (CDFW, 2020). It is unclear whether this fluctuation is due to different survey extents or differing level of effort by the surveyors. In 2020, Aspen biologists were unable to locate any Braunton's milkvetch in occurrence 17 and it appears that maintenance of the fuel break in the vicinity has ended. It is likely that additional plants would be present if the vegetation was removed or if the area burned in a wildfire.

Occurrence 43 is composed of a single point approximately 1.3 miles north of occurrence 15 within the project area. This occurrence was recorded by Teagan Loew in 2014 and was recorded as a "small group of plants along the road" (CDFW, 2020). Aspen biologists visited the location and were unable to find any Braunton's milkvetch. They also tested the soil and found no indication of carbonate soils. Mr. Wood e-mailed Teagan Loew on February 4, 2020 regarding the locality of occurrence 43. Mr. Loew recalled parking off of Palisades Court and walking up the Trailer Canyon Fire Road. Teagan provided a photo that

was taken with his iPhone on May 17, 2014 at 2:24 pm that was geotagged with the following coordinates 34°05'3.58" N, 118°33'33.46" W (see Photo 11, Attachment A). Based on this information it was determined that the location reports to CNDDB was not accurate and the observation was made within occurrence 14. Aspen will update this occurrence in the CNDDB and on Calflora where the original observation was recorded.

Based on the 2020 inventory of Braunton's milkvetch conducted by Aspen an estimated 2,038 plants were detected in the immediate vicinity of the project area. Based on the ecology of this species and observations at other locations following wildfires or disturbance, it is assumed that many more plants remain dormant in the seed bank where suitable soils are present. It is likely that if the site were to burn or be subject to other vegetation thinning activities many more plants would be present. To this point, follow up surveys conducted to verify vegetation mapping detected another 749 emerging Braunton's milkvetch in the disturbance area (550 in the road and 199 within the access path). Because these plants were not detected during the initial data collection, they were not included in the total number of plants detected. In addition, it is assumed that many of these plants will be lost through human trampling, competition from weedy annuals, or other disturbance. Nonetheless they indicate that the species is present in the seedbank and is recruiting onto the more recently disturbed landscape.

4.2.3 Update of Populations within Los Angeles and Ventura Counties

CNDDB Occurrences

A total of 3 CNDDB occurrences (Occ. No. 6, 16, 24) are within eastern Los Angeles County in the hills above Monrovia and Arcadia. These occurrences are located along the Clamshell Truck Trail in an area that hasn't burned in recent years. Most of the recent observations at these occurrences have been located along maintained road shoulders. We do not expect any significant changes in these populations at this time. In the future when these areas burn, we would expect to see large numbers of plants germinating in response to the fire.

A total of 4 CNDDB occurrences (4, 10, 41, and 42) are within Orange County. Three of these occurrences are in the northern Santa Ana Mountains in the vicinity of Clay Mine Canyon, Gypsum Canyon, and Coal Canyon. One of these occurrences is located in Fremont Canyon near Santiago Creek.

A total of 36 CNDDB occurrences are within Los Angeles and Ventura Counties in the vicinity of the Santa Monica Mountains and surrounding areas (CDFW, 2020). These cover a large geographic area from Long Grade Canyon near Camarillo in the west to Beverly Hills in the east. They extend from coastal occurrences in Malibu to inland population near Simi Valley. Some of these occurrences (i.e. Occ. No. 1) are considered extirpated because they are in areas of heavy development and have not been seen for many years. Other occurrences (i.e. Occ. No. 2) are based on old collections that provided very little detail on the actual collection locations and are highly uncertain. These collections may be erroneous or should actually be attributed to other occurrences. Still others (i.e. Occ. No. 3) are likely wash-downs and are unlikely attributed to established populations.

Of the occurrences that are expected to be extant, three occurrences (Occ. No. 8, 18, and 34) have not been observed in many years and are expected to be present following future wildfires. Others were not visited because they are on private property (i.e. Occ. No. 7 and 19) or are within the Santa Monica Mountains National Recreation Area (Occ. No. 27 and 32). Occurrences 31, 33, 38, 40, 45, 48, and 50-53 are within the Woolsey Fire burn area but access was difficult, and these sites were not visited. Aspen

biologists were able to revisit occurrences 11, 20, 22, 23, 25, 28-30, 36, 37, and 46 which are provided below in Table 4.

Table 4. Visited CNDDB Occurrences

Occ. No.	Location	Last Observation (year)	Last Observation (number of plants)	2020 Observation (number of plants)
11	North of Kanan Rd., along Medea Creek,	2015	1	An estimated 5,000,000 plants observed within approximately 120 acres. Some portions of this occurrence had extremely high density of 435 plants per 25-square-meters (see Photo 12 in Attachment A).
20	Oak Park, 1.2 to 1.5 miles north of Ventura/Los Angeles County line.	2015	1	This occurrence was not burned in the Woolsey Fire. No plants observed in previous CNDDB locations, but two plants were observed in new location 680 feet west of intersection of Doubletree Rd. and Deerhill Rd.
22	Oakbrook Regional Park	2012	Rare	An estimated 2,300,000 plants observed within approximately 160 acres. Occurrence is nearly continuous with Occ. No. 25.
23	Dayton Canyon 1.3 air miles W of the intersection of March Ave and Justice	1999	14 (8 Removed in 1999)	Approximately 5,000 plants.
25	3.6-3.75 mi N of Triunfo Corner	2012	1	Unable to revisit the eastern portion of the occurrence. Western polygons connect with Occ. No. 22 described above.
28	Bus canyon	2006	16	Unable to revisit the three CNDDB locations. An estimated 1,500 plants mapped at three new locations approximately 500 feet north on the CNDDB locations.
29	Ahmanson ranch	1998	1	Revisited but unable to locate.
30	Edison easement	2007	18	68 plants observed at CNDDB location, 13 additional plants observed 960 feet north of location, and 60 additional plants observed approximately 1,500 feet to the northeast.
36	Kanan Road, W of intersection with Rayburn Street	2011	Rare	Two plants observed just north of CNDDB point. Western-most point has been developed. New polygon with ±200 plants observed north of western-most point.
37	Dayton Canyon, 0.6 mile W of Valley Circle Blvd & Roscoe Blvd Intersection	2006	1581	Partially removed by development and unable to survey remaining areas.
46	Approximately 0.7 air mile SE of Simi Peak	2016	5	±85,000 plants within two polygons.

iNaturalist Observations

iNaturalist is an on-line database that the public can upload photographs of any live organism in a natural environment. iNaturalist has 71 observations of Braunton's milkvetch that have been uploaded since 2013 when the first observation of this species was made to this database (iNaturalist.org. 2020). Special-status species observations are obscured in iNaturalist to reduce risk to these sensitive species. CDFW is currently adding iNaturalist observations to the CNDDB. Aspen contacted CDFW botanist, Katie Ferguson to obtain unobscured GIS data for the iNaturalist observations. Approximately 59 of these observations are in or are immediately adjacent to existing CNDDB occurrences. The remaining 12 observations are in new localities as described below:

- One new observation within TSP along the Backbone Trail, approximately 0.3 miles east of the project area.
- Two new observations along Temescal Ridge Trail approximately 0.25 miles south of Occ. No. 17.
- One new observation near Leo Carrillo State Park, approximately 5.8 miles west of Occ. No. 27.
- Six new observations in and around Oak Park near Occ. Nos. 11, 22, and 30.
- Two new observations along Bell Canyon Road, approximately 0.7 miles south of Occ. No. 23.

CNDDB Updates

The CNDDB has not updated records for most of the Braunton's milkvetch occurrences since 2016. Aspen obtained all unpublished CNDDB data forms through Ms. Ferguson and these records are summarized below:

- An observation of eight plants within Lang Creek within Occ. No. 25 in October 2019.
- An observation of approximately 3,121 plants within Occ. No. 23 and 37 in June 2019.
- An observation of approximately 31,154 plants within Occ. No. 11 in September 2019.
- An observation of approximately 200 plants approx. 1,000 feet south of Occ. No. 37 in June 2019.
- An observation of approximately 30,000 plants in Occ. No. 7 in 2010.
- An observation of approximately 100 plants within a new location at Occ. No. 15 in July 2018.
- A new observation of approximately 22 plants within Gypsum Canyon in May 2019.
- An observation of approx. 971 plants within Occ. No. 4. between April and June 2019.
- An observation of one plant within Occ. No. 16 in October 2019.

Yorba Linda

In 2010, a new occurrence of Braunton's milkvetch was observed on a property in the city of Yorba Linda near Chino Hills State Park. Approximately 400 plants were observed on the property in 2010. This occurrence was included in a 2013 Biological Resources Technical Report for the Esperanza Hills Specific Plan (Glenn Lukos Associates, Inc., 2013). This occurrence was never reported to the CNDDB.

4.3 Vegetation Impact Assessment

Vegetation within the project area is dominated by a mosaic of chaparral vegetation along with smaller patches of woodland and coastal sage scrub b. Vegetation within the project area is provided in Figure 4 and further described below. Impacts to these vegetation types, including the additional 1.66-meter average buffer, are provided below (Table 5). Impacts to vegetation within the coastal zone and Topanga State Park is provided below (Table 6). It is important to note that the acreage impacts described in Table 6 provide the amount of land impacted within each jurisdiction. Because the coastal zone overlaps the TSP in many areas the acreages are not additive. The breakdown of impacts is presented in the bullets and diagram below.

- The project had direct and indirect impacts to 27.04 acres of vegetation.
- Of the 27.04 acres, the project had direct impacts to 18.19 and indirect impacts to 8.85 acres of buffer vegetation (18.19 + 8.85 = 27.04 acres).
- Of the 27.04 acres, the project had direct impacts to 11.1 and indirect impacts to 7.96 acres of buffer vegetation located within the TSP (11.1 + 7.96 = 19.06 acres).
- Of the 19.06 acres of impacts to the TSP, 5.44 direct and 3.94 buffer acres (5.44 + 3.76 = 9.38 acres) overlap with lands under the jurisdiction of the Coastal Commission.
- Of the 27.04 acres, the project had direct impacts to 5.69 and indirect impacts to 3.94 acres of buffer vegetation located within the Coastal Zone.
    - Of these impacts, 0.25 acres of direct and 0.18 acres of buffer area do not occur within the TSP.
- If you do not count the impacts to overlapping lands separately the project had direct impacts to 11.35 and indirect impacts to 8.14 acres of buffer vegetation (11.35 + 8.14 = 19.49 acres) of combined CC and TSP lands.
- Approximately 7.42 acres do not occur within the Coastal Zone or TSP.

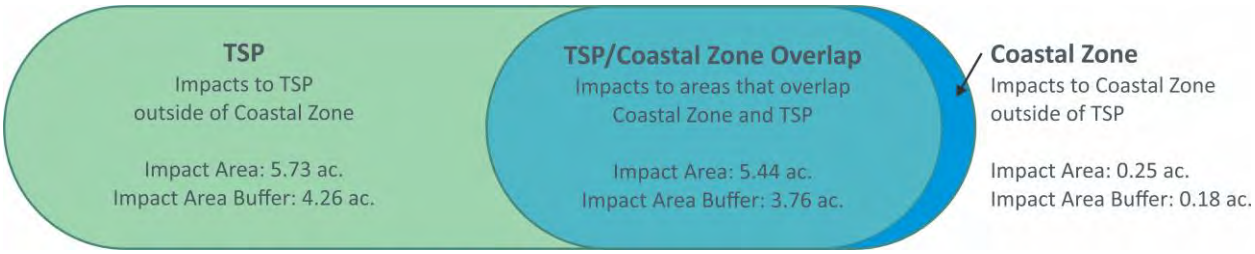

Table 5: Acreage of Vegetation and Land Cover Impacts within the Project Area and Impact Buffer

Vegetation or Cover Types	Project Area (Acres)	Project Area Buffer (Acres)	Total Project Impact (Acres)
California walnut groves	0.44	0.17	0.61
Chamise chaparral	0.13	0.04	0.17
Bigpod ceanothus chaparral	7.35	4.57	11.92
Holly leaf cherry - toyon - greenbark ceanothus chaparral	0.74	0.39	1.13
Laurel sumac scrub	2.08	0.7	2.78
Scrub oak chaparral	0.15	0.02	0.17
Scrub oak-chamise chaparral	0.06	0.0	0.06
California buckwheat scrub	1.16	0.35	1.51
Bush mallow scrub	0.27	0.06	0.33
Black sage scrub	0.08	00.	0.08
Firebreak early seral undifferentiated vegetation mapping unit	5.73	2.55	8.28
Total	18.19	8.85	27.04

Table 6: Acreage of Vegetation and Land Cover Impacts within the Coastal Zone and TSP				
Vegetation or Cover Types	Coastal Zone[1]		Topanga State Park	
	Impact Area (Acres)	Impact Area Buffer (Acres)	Impact Area (Acres)	Impact Area Buffer (Acres)
California walnut groves	0.0	0.0	0.06	0.07
Chamise chaparral	0.0	0.0	0.04	0.04
Bigpod ceanothus chaparral	2.86	1.96	5.77	4.26
Holly leaf cherry - toyon - greenbark ceanothus chaparral	0.25	0.21	0.24	0.27
Laurel sumac scrub	0.24	0.19	0.50	0.29
Scrub oak chaparral	0.0	0.0	0.00	0.00
Scrub oak-chamise chaparral	0.0	0.0	0.00	0.00
California buckwheat scrub	0.30	0.18	0.67	0.35
Bush mallow scrub	0.07	0.06	0.00	0.00
Black sage scrub	0.0	0.0	0.00	0.00
Firebreak early seral undifferentiated vegetation mapping unit	1.97	1.34	3.82	2.68
Total by Category[1]	5.69	3.94	11.1	7.96
[1] Acreage calculations of the Coastal Zone and TSP are not additive. Except for a small area, the Coastal Zone is located within the TSP.				

California walnut groves (*Juglans californica* Forest & Woodland Alliance)
This woodland vegetation is characterized by the presence of southern California black walnut (*Juglans californica*). Coast live oak (*Quercus agrifolia*) are also present in the canopy of the California walnut groves but in much lower numbers. Understory shrub species include California sagebrush (*Artemisia californica*), purple sage (*Salvia leucophylla*), and western poison oak (*Toxicodendron diversilobum*). Some portions of the California walnut groves also have an understory of herbaceous forbs and grasses. Within the project area the California walnut groves are growing on north-facing slopes and ridgelines (see Photo 13, Attachment A). It is mapped at one location at the northern end of the project area and at a second location on a north-facing slope near the southern end of the project area (Figure 4). California walnut groves have a state rank of S3 which is recognized as sensitive by CDFW (CDFW, 2018).

Chamise chaparral (*Adenostoma fasciculatum* Shrubland Alliance)
This chaparral vegetation is dominated by chamise (*Adenostoma fasciculatum*). Additional chaparral shrubs such as California lilacs (*Ceanothus* sps.), Eastwood manzanita (*Arctostaphylos glandulosa*), and toyon (*Heteromeles arbutifolia*). Chamise chaparral forms dense stands of vegetation with very little understory vegetation. Chamise chaparral is present at several locations along Mulholland Drive.

Bigpod ceanothus chaparral (*Ceanothus megacarpus* Shrubland Alliance)
This chaparral vegetation is dominated by bigpod ceanothus chaparral (*Ceanothus megacarpus*). Other species such as coast live oak, greenbark ceanthus (*Ceanothus spinosus*), Laurel sumac (*Malosma laurina*), toyon, and California bay (*Umbellularia californica*) are also present but in lower numbers. The understory made shrubs and herbs such as canyon sunflower (*Venegasia carpesioides*), California sagebrush, western poison oak, and wood fern (*Dryopteris arguta*). Bigpod ceanothus was the most abundant vegetation type impacted by the project.

Holly leaf cherry - toyon - greenbark ceanothus chaparral (*Prunus ilicifolia - Heteromeles arbutifolia - Ceanothus spinosus* Shrubland Alliance)
This chaparral vegetation is dominated by toyon and greenbark ceanothus within the project area. Other shrubs such as bigpod ceanothus, Laurel sumac, Eastwood manzanita, chamise, California bay are also present but in lower abundance. The understory is composed of species such as wood fern, canyon sunflower, and heart leaved keckiella (*Keckiella cordifolia*). Holly leaf cherry - toyon - greenbark ceanothus chaparral is most common on north-facing slopes within the project area (see Photo 14, Attachment A). The portions of the project area that were previously mapped as Greenbark Ceanothus Shrubland Alliance and Toyon Shrubland Alliance have been merged into this new vegetation type based on updates in *A Manual of California Vegetation* (CNPS, 2020).

Laurel sumac scrub (*Malosma laurina* Shrubland Alliance)
This scrub vegetation is dominated by Laurel sumac. Other shrubs such as California lilacs, sages (*Salvia* sps.), and chamise are also present in low numbers. This vegetation is more open than other chaparral types and tends to form stands that may be best classified as coastal sage scrub. Laurel sumac scrub is present along the southern end of the Temescal Canyon Fire Road and along the northern spur road towards Encino Reservoir.

Scrub oak chaparral (*Quercus berberidifolia* Shrubland Alliance)
This chaparral vegetation is dominated by scrub oak (*Quercus berberidifolia*). Other species such as chamise, coast live oak, and California lilacs are also present in lower abundance. Scrub oak chaparral forms dense stands on ridgelines and north-facing slopes. It is most common on the north-facing slopes within the project area along Mulholland Drive (see Photo 15, Attachment A).

Scrub oak - chamise chaparral (*Quercus berberidifolia - Adenostoma fasciculatum* Shrubland Alliance)
This chaparral vegetation is co-dominated by scrub oak and chamise. It is similar in form and function to scrub oak chaparral described above and is differentiated by the co-dominance of chamise. It is also most common on the north-facing slopes within the project area along Mulholland Drive.

California buckwheat scrub (*Eriogonum fasciculatum* Shrubland Alliance)
This coastal sage scrub vegetation is dominated by California buckwheat (*Eriogonum fasciculatum*). Other shrubs and bunchgrasses such as sages, deerweed (*Acmispon glaber*), saw toothed goldenbush (*Hazardia squarrosa*), and needlegrasses (*Stipa* sps.). It is a dense vegetation type that is made up of lower stature shrubs than those in chaparral vegetation types discussed above. California buckwheat scrub is present at several scattered locations throughout the project area.

Bush mallow scrub (*Malacothamnus fasciculatus - Malacothamnus* spp. Shrubland Alliance)
This scrub vegetation is dominated by chaparral bush mallow (*Malacothamnus fasciculatus*). Other trees and shrubs such as southern California walnut, Laurel sumac, California sagebrush, and sages are also present in lower abundance. This vegetation is more open than other chaparral types and tends to form stands that may be best classified as coastal sage scrub. Bush mallow scrub is present along the northwestern-most portion of the project area near the staging area.

Black sage scrub (*Salvia mellifera* Shrubland Alliance)
This coastal sage scrub vegetation is dominated by black sage (*Salvia mellifera*). Other species such as purple sage (*Salvia leucophylla*), California buckwheat, and chaparral bush mallow are also present in lower numbers. It is a dense vegetation type that is made up of lower stature shrubs than those in chaparral vegetation types discussed above. Black sage scrub is present along the northwestern-most portion of the project area near the staging area.

Firebreak Early Seral Undifferentiated Vegetation Mapping Unit

Firebreak early seral undifferentiated vegetation was used as a broad vegetation type to map areas that were previously impacted by firebreak creation and maintenance. This is a diverse vegetation type that varies from heavily disturbed non-native grasslands to relatively intact coastal sage scrub vegetation (see Photo 16, Attachment A). Some portions of this vegetation type match the following vegetation types:

- Wild oats and annual brome grasslands (*Avena* spp. - *Bromus* spp. Herbaceous Semi-Natural Alliance);
- Sawtooth golden bush scrub (*Hazardia squarrosa* Shrubland Alliance);
- California sagebrush scrub;
- California buckwheat scrub;
- Black sage scrub; and
- Laurel sumac scrub.

5. Summary and Conclusions

Construction activities resulted in the removal of native vegetation and individual Braunton's milkvetch. Disturbance to topsoil may also have resulted in the loss or degradation of the seedbank for Braunton's milkvetch through mechanical removal or compaction. To assess these effects, the LADWP conducted a study to evaluate and quantify impacts to native vegetation, individual Braunton's milkvetch, and the local occurrence/population of this species. In addition, LADWP conducted research and inspected known occurrences of this species in the broader region to evaluate the plants response to the Wooley fire and to provide information on the distribution of the species. Based on this study the following data was collected.

Impacts to Vegetation

- 18.19 acres of vegetation was removed during construction.
- 11.1 acres of vegetation was removed, and 7.96 acres of buffer vegetation was affected in the TSP.
- Of the 27.04 acres the project had direct impacts to 5.69 and impacts to 3.94 acres of buffer vegetation located within the Coastal Zone. Of these impacts only 0.25 acres of direct and 0.18 acres of buffer area do not occur with TSP.
- 5.73 acres of the 18.19 acres (32 percent) consisted of early seral vegetation associated with previously disturbed or cleared fire breaks.
- 5.69 acres of 18.19 acres (30 percent) of vegetation was removed and 3.94 acres of buffer vegetation disturbed in the Coastal Zone and is considered ESHA.
- Of this 5.69 acres 1.98 acres (35 percent) consisted of early seral vegetation associated with previously disturbed or cleared fire breaks.

Impacts and Population Data for Braunton's Milkvetch

- Approximately 2,038 Braunton's milkvetch were detected in and adjacent to the project disturbance area (Temescal Ridge area). This includes plants associated with Occurrence 14 (186 plants) and Occurrence 15 (1,852 plants).
- Approximately 183 individual Braunton's milkvetch were removed from the road and access path during construction. These included a range of size and age classes.
- The removal of 183 plants constitute a loss of approximately 11.14 percent of the local occurrence that was detected during the 2020 surveys.
- Approximately 0.86 acres of occupied Braunton's milkvetch habitat was disturbed.
- Approximately 1.61 acres of Braunton's milkvetch Designated Critical Habitat was disturbed.

- Approximately 749 emerging Braunton's milkvetch were detected during late March surveys and an additional 327 plants were detected during early May surveys. These plants occur in the disturbed areas including the road and access path area. These plants appear to be seedlings that are exhibiting post disturbance recruitment.
- These new seedlings are separate from the 2,038 plants detected and utilized for the assessment of impacts and appear to be of higher density when compared to existing plant densities in the area.
- It is assumed that some of these plants will not persists due to disturbance from hikers, vehicles, competition with weeds, competition with other Braunton's milkvetch, and other stressors.

Preliminary Conclusions

Based on the 2020 inventory of Braunton's milkvetch an estimated 2,038 plants were detected in the immediate vicinity of the project area. Based on the ecology of this species and observations at other locations following wildfires or disturbance, it is assumed that many more plants remain dormant in the seed bank where suitable soils are present. It is likely that if the site were to burn or be subject to other vegetation thinning activities many more plants would be present. To this point, follow up surveys conducted in March and May detected another 1076 emerging Braunton's milkvetch in the disturbance area (725 in the road and 351 within the access path). Because these plants were not detected during the initial data collection, they were not included in the total number of plants detected. In addition, it is assumed that many of these plants will be lost through human trampling, competition from weedy annuals and other Braunton's milkvetch, or other disturbance. Nonetheless they indicate that the species is present in the seedbank and is recruiting onto the more recently disturbed landscape.

Additionally, data collected and analyzed in this study suggest that Braunton's milkvetch has experienced a significant positive response from the Woolsey Fire in 2018. Our surveys detected a huge abundance of plants germinating in the region and numerous new locations are being recorded. Similarly, following the Topanga Fire in 2005 and the Corral Fire in 2007, numerous previously unidentified populations of Braunton's milkvetch where found which demonstrated that known populations may cover more area than previously thought with seeds hidden in the soil seed bank (Landis, 2007). This was seen at CNDDB occurrence 7 in the Burro Flats area of the Simi Hills where the occurrence was estimated to have 3 plants along an access road in 1999 (CDFW, 2020). In 2006, following a wildfire the occurrence was estimated to be 33,500 plants and then dropped to about 100 plants in 2011 (CDFW, 2020). Likewise, in 2020, Aspen biologists mapped a total of 186 plants growing along a dirt road and within an area that had recently been cleared as a fire break at occurrence 3. This data, and previous information on the ecology of this plant, suggests that many of the plants within a given population remain dormant in the seed bank for many years and express only after some disturbance event.

This suggests that the population along Temescal Ridge is likely larger than what was observed in 2020 or in the previous years since the listing of Braunton's milkvetch. Although the project impacted approximately 183 plants, approximately 11 percent of the plants assumed to be present in 2020, impacts as a whole are low when compared as a percentage of the local occurrence.

The information in this study have been provided to provide context and to assist in the evaluation of impacts from the project. LADWP is committed to ongoing dialogue and looks forward to collaborating with the resource agencies to develop mitigation that is proportional to the affects to the species and habitat.

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Attachment 1 – Figures

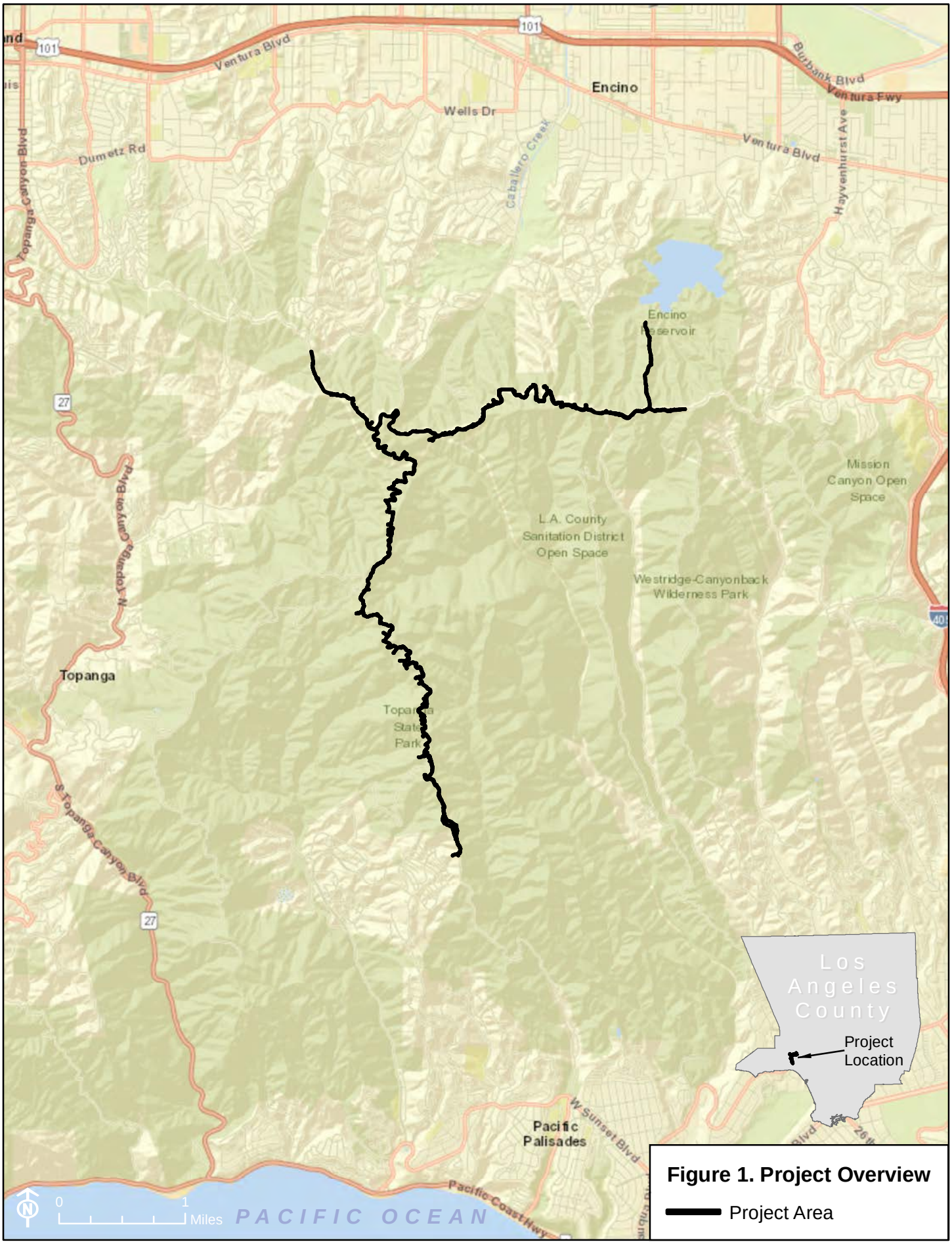

Figure 1. Project Overview

Project Area

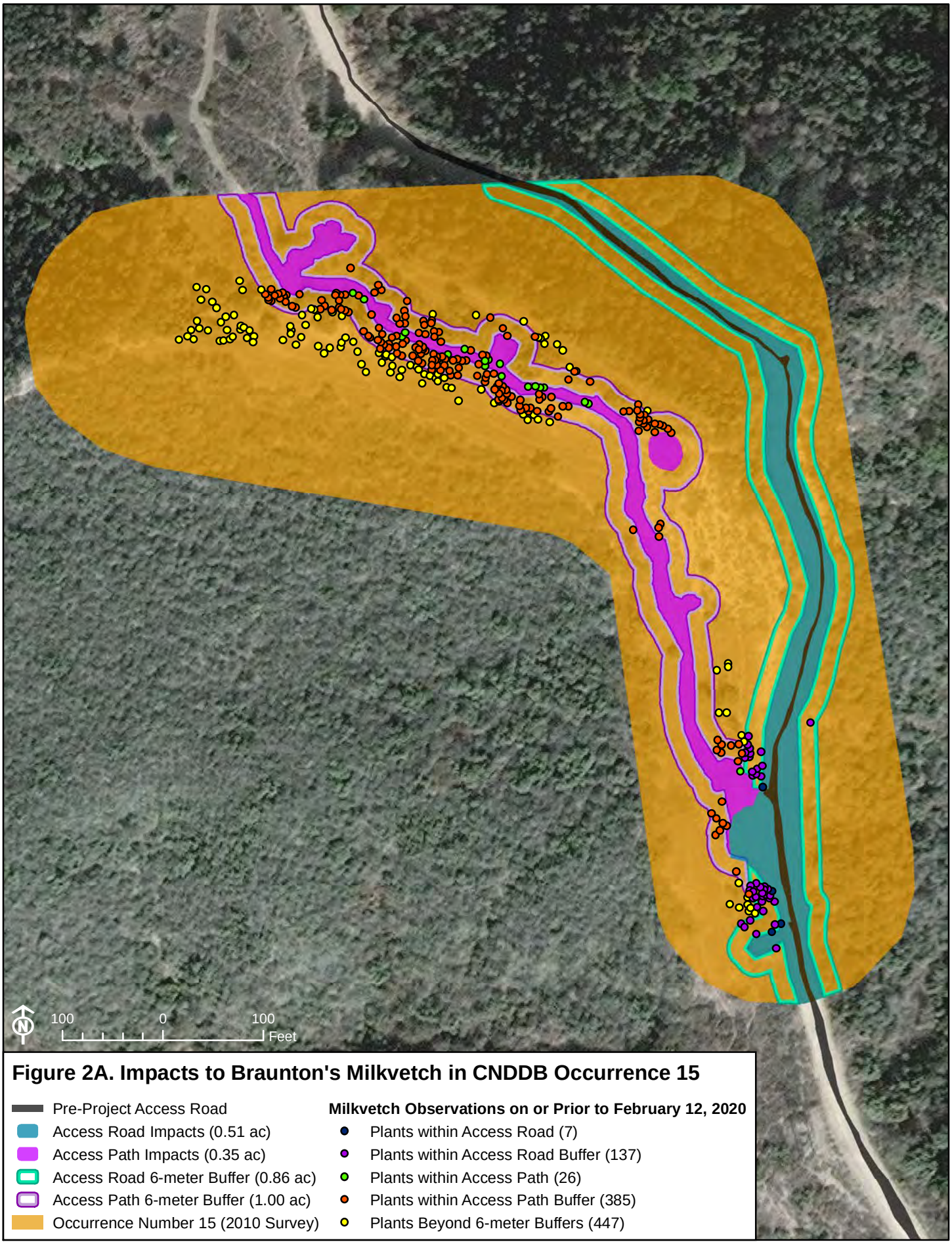

Figure 2A. Impacts to Braunton's Milkvetch in CNDDB Occurrence 15

- Pre-Project Access Road
- Access Road Impacts (0.51 ac)
- Access Path Impacts (0.35 ac)
- Access Road 6-meter Buffer (0.86 ac)
- Access Path 6-meter Buffer (1.00 ac)
- Occurrence Number 15 (2010 Survey)

Milkvetch Observations on or Prior to February 12, 2020

- Plants within Access Road (7)
- Plants within Access Road Buffer (137)
- Plants within Access Path (26)
- Plants within Access Path Buffer (385)
- Plants Beyond 6-meter Buffers (447)

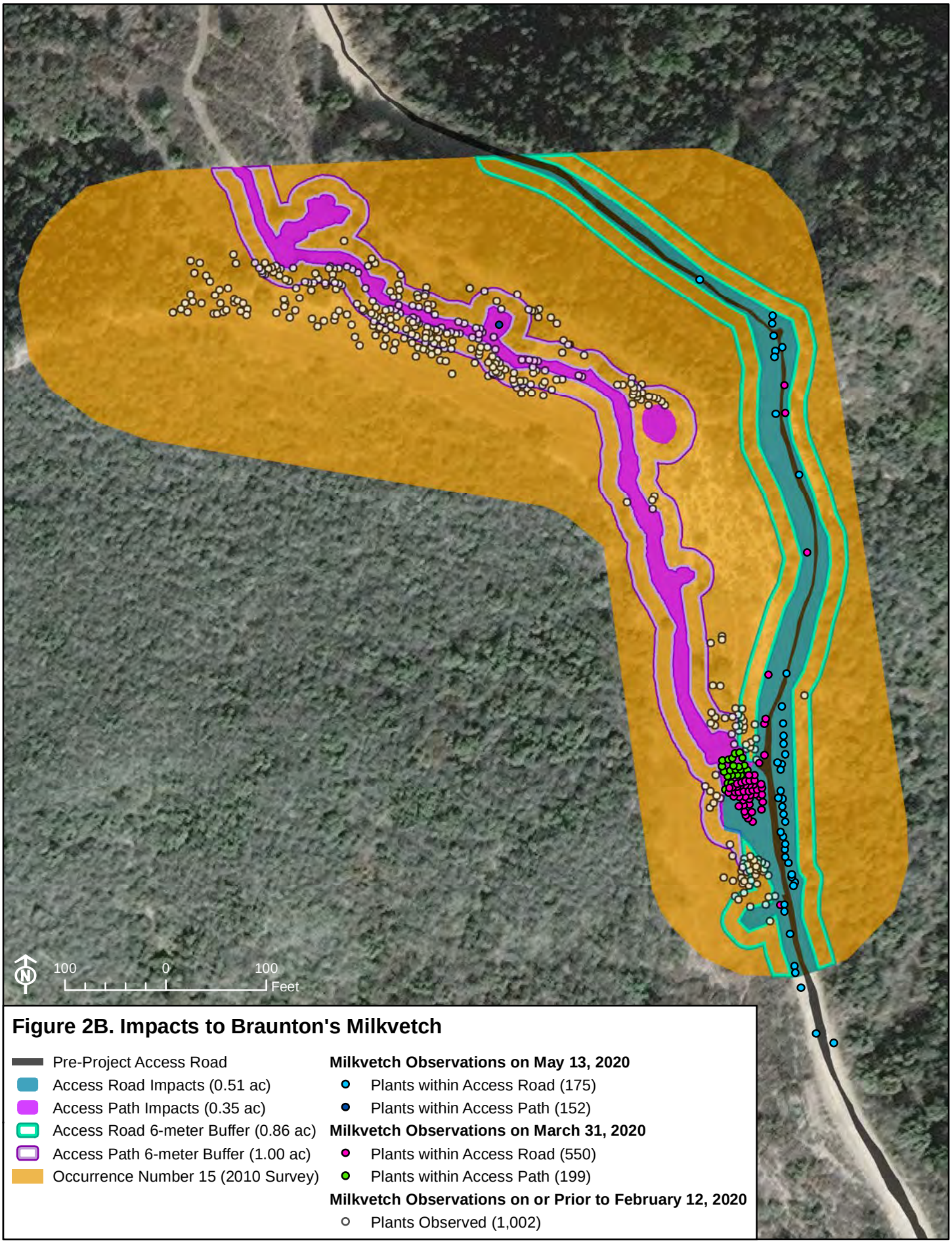

Figure 2B. Impacts to Braunton's Milkvetch

- Pre-Project Access Road
- Access Road Impacts (0.51 ac)
- Access Path Impacts (0.35 ac)
- Access Road 6-meter Buffer (0.86 ac)
- Access Path 6-meter Buffer (1.00 ac)
- Occurrence Number 15 (2010 Survey)

Milkvetch Observations on May 13, 2020

- Plants within Access Road (175)
- Plants within Access Path (152)

Milkvetch Observations on March 31, 2020

- Plants within Access Road (550)
- Plants within Access Path (199)

Milkvetch Observations on or Prior to February 12, 2020

- Plants Observed (1,002)

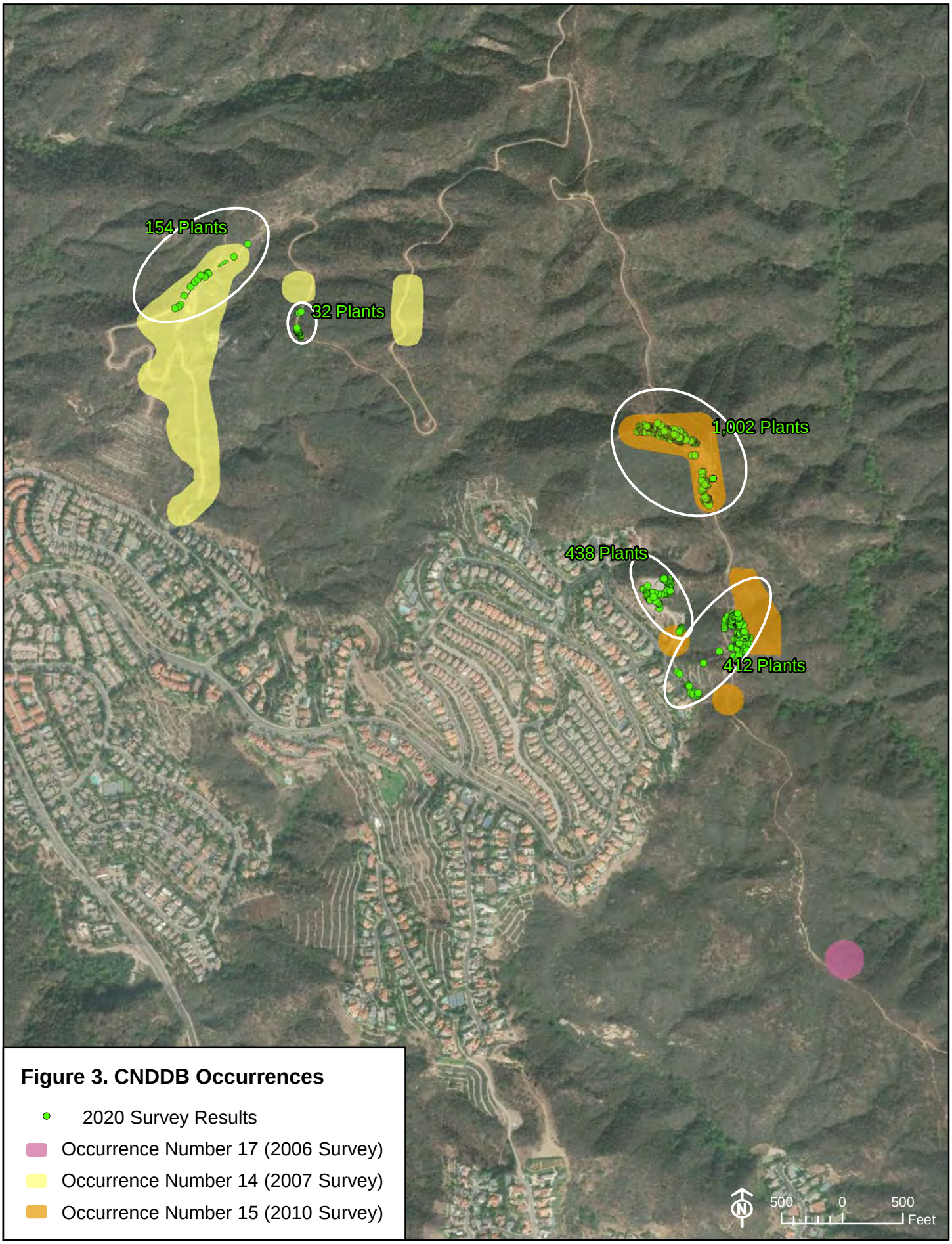

Figure 3. CNDDB Occurrences

- 2020 Survey Results
- Occurrence Number 17 (2006 Survey)
- Occurrence Number 14 (2007 Survey)
- Occurrence Number 15 (2010 Survey)

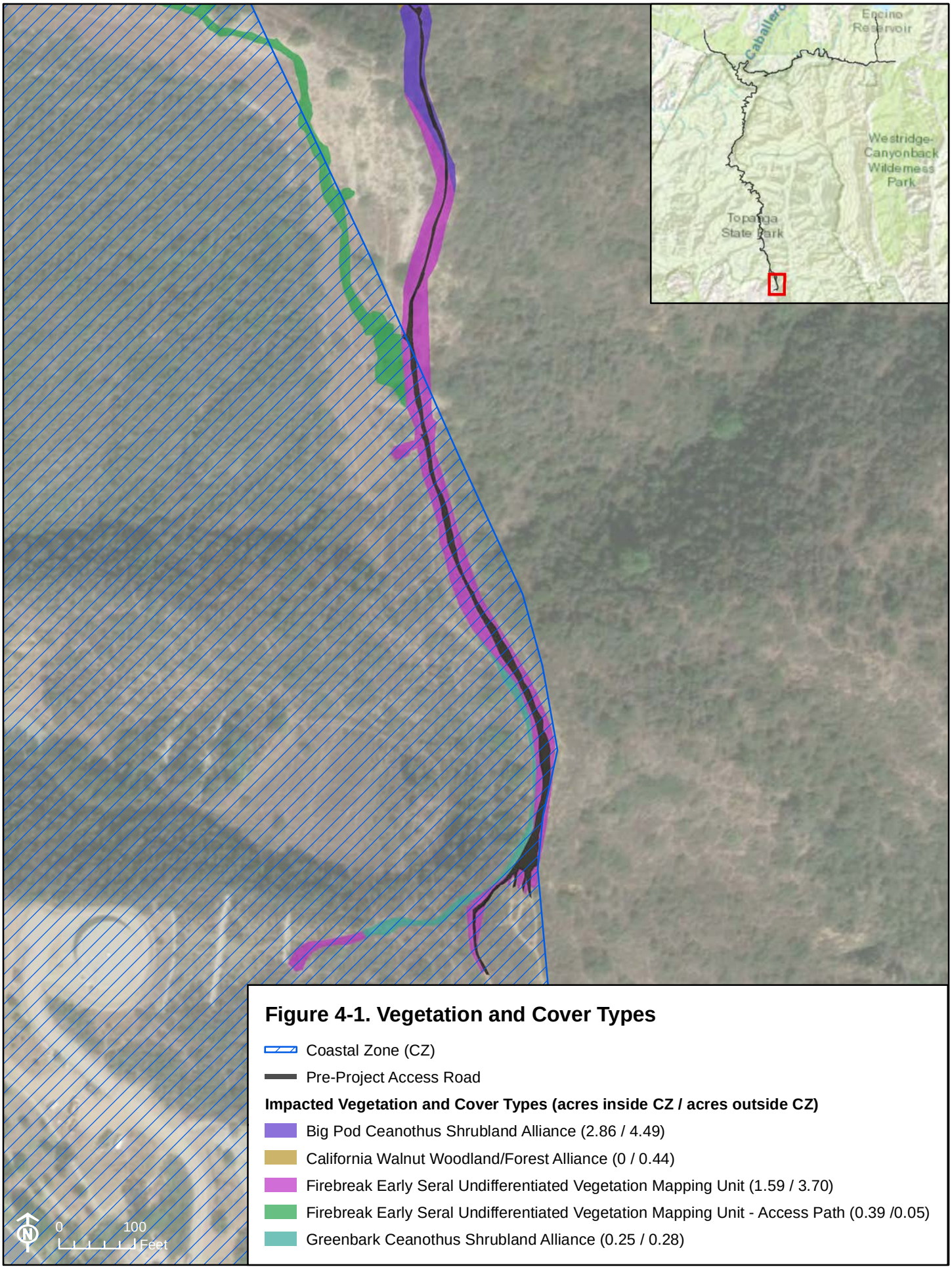

Figure 4-1. Vegetation and Cover Types

Coastal Zone (CZ)

Pre-Project Access Road

Impacted Vegetation and Cover Types (acres inside CZ / acres outside CZ)

Big Pod Ceanothus Shrubland Alliance (2.86 / 4.49)

California Walnut Woodland/Forest Alliance (0 / 0.44)

Firebreak Early Seral Undifferentiated Vegetation Mapping Unit (1.59 / 3.70)

Firebreak Early Seral Undifferentiated Vegetation Mapping Unit - Access Path (0.39 /0.05)

Greenbark Ceanothus Shrubland Alliance (0.25 / 0.28)

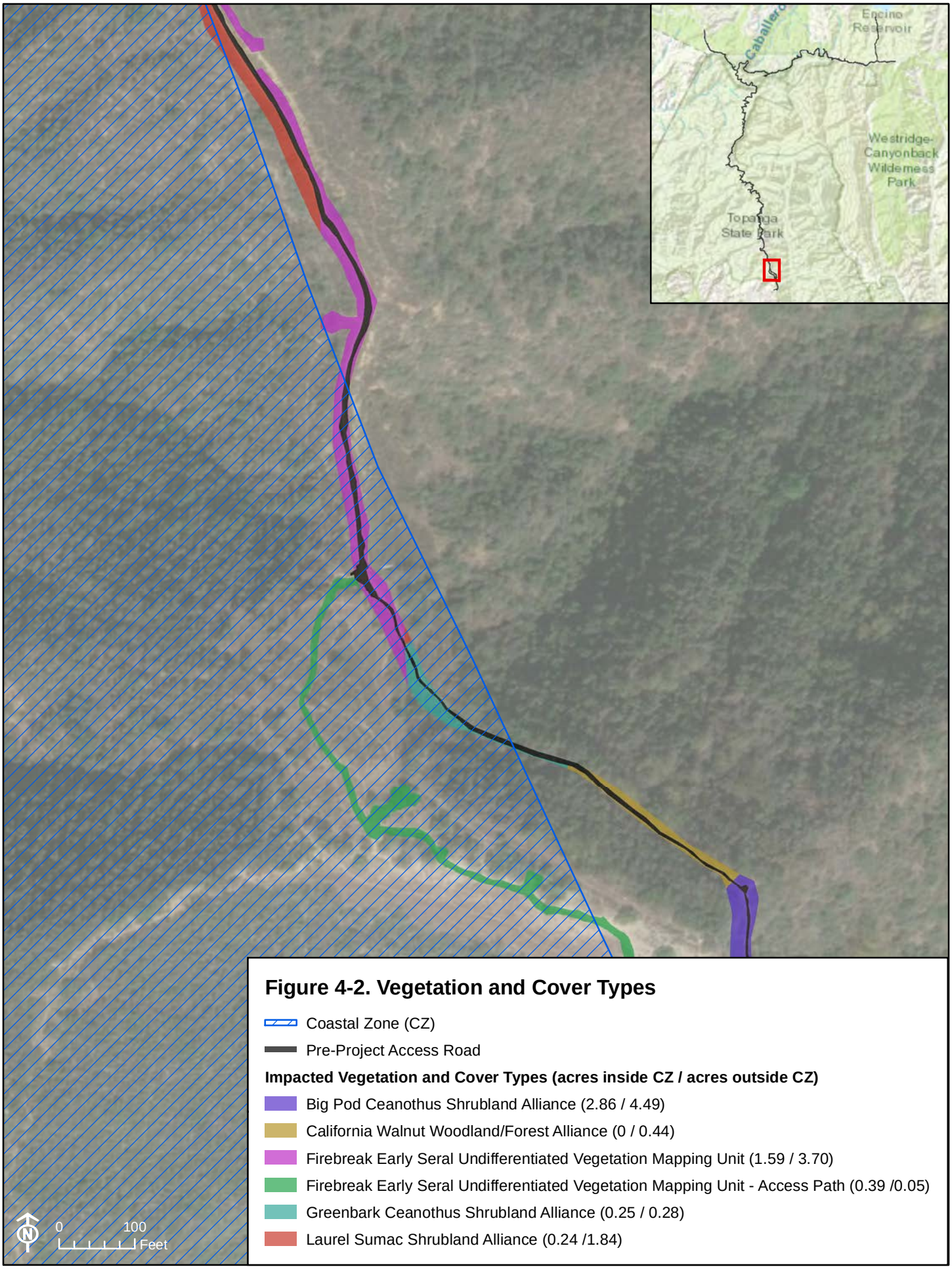

Figure 4-2. Vegetation and Cover Types

Coastal Zone (CZ)

Pre-Project Access Road

Impacted Vegetation and Cover Types (acres inside CZ / acres outside CZ)

Big Pod Ceanothus Shrubland Alliance (2.86 / 4.49)

California Walnut Woodland/Forest Alliance (0 / 0.44)

Firebreak Early Seral Undifferentiated Vegetation Mapping Unit (1.59 / 3.70)

Firebreak Early Seral Undifferentiated Vegetation Mapping Unit - Access Path (0.39 /0.05)

Greenbark Ceanothus Shrubland Alliance (0.25 / 0.28)

Laurel Sumac Shrubland Alliance (0.24 /1.84)

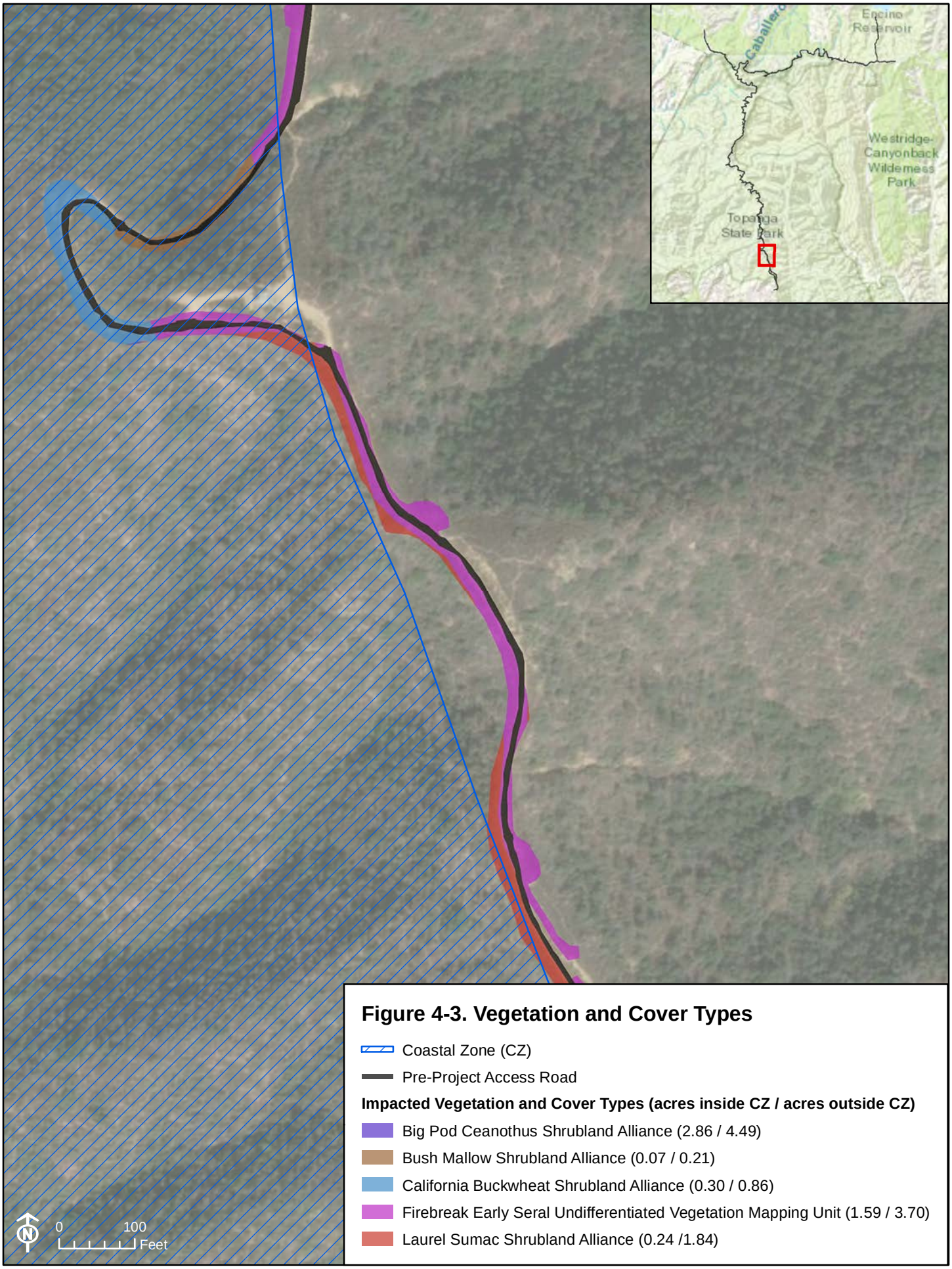

Figure 4-3. Vegetation and Cover Types

Coastal Zone (CZ)

Pre-Project Access Road

Impacted Vegetation and Cover Types (acres inside CZ / acres outside CZ)

Big Pod Ceanothus Shrubland Alliance (2.86 / 4.49)

Bush Mallow Shrubland Alliance (0.07 / 0.21)

California Buckwheat Shrubland Alliance (0.30 / 0.86)

Firebreak Early Seral Undifferentiated Vegetation Mapping Unit (1.59 / 3.70)

Laurel Sumac Shrubland Alliance (0.24 /1.84)

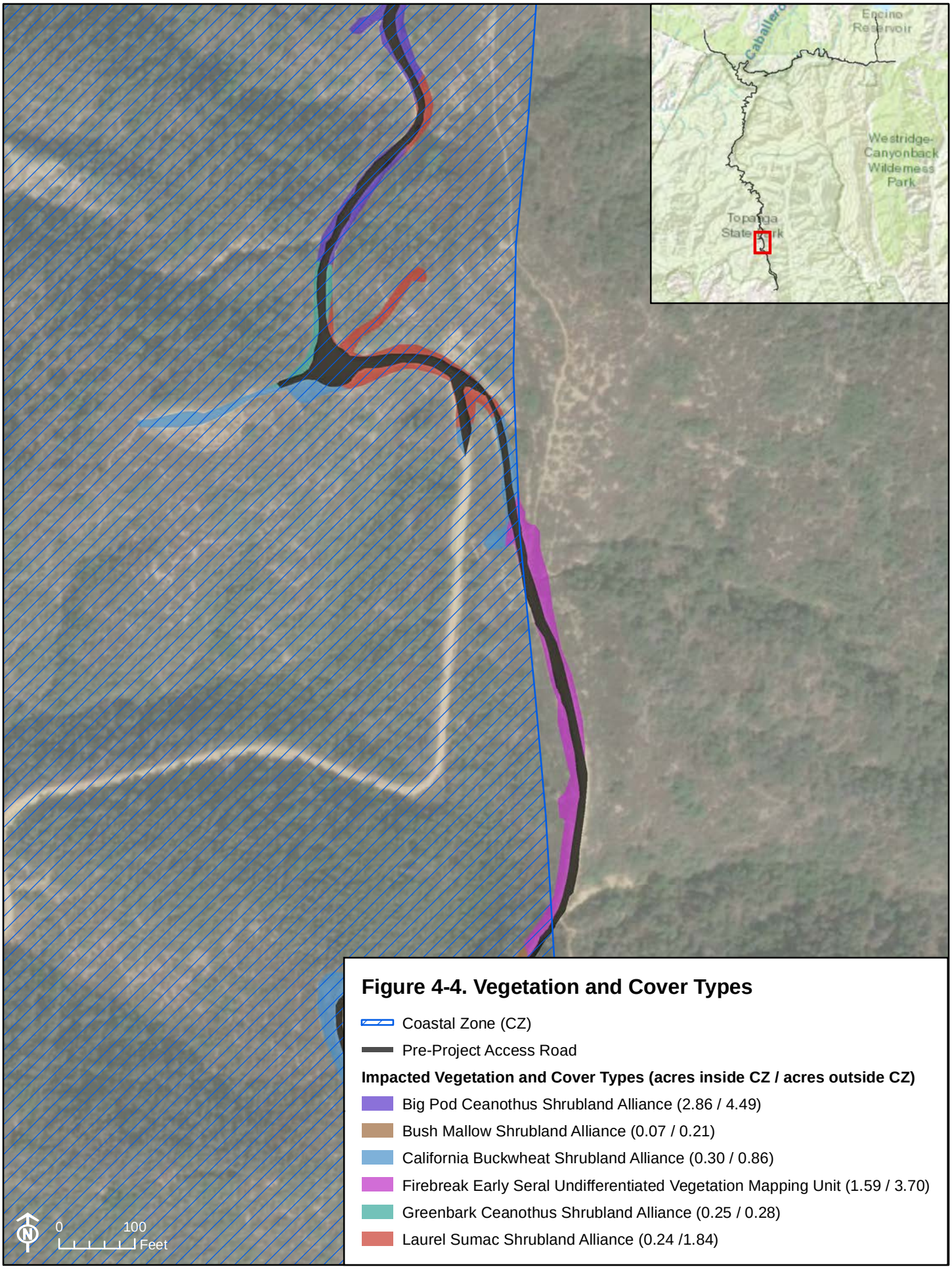

Figure 4-4. Vegetation and Cover Types

Coastal Zone (CZ)

Pre-Project Access Road

Impacted Vegetation and Cover Types (acres inside CZ / acres outside CZ)

Big Pod Ceanothus Shrubland Alliance (2.86 / 4.49)

Bush Mallow Shrubland Alliance (0.07 / 0.21)

California Buckwheat Shrubland Alliance (0.30 / 0.86)

Firebreak Early Seral Undifferentiated Vegetation Mapping Unit (1.59 / 3.70)

Greenbark Ceanothus Shrubland Alliance (0.25 / 0.28)

Laurel Sumac Shrubland Alliance (0.24 /1.84)

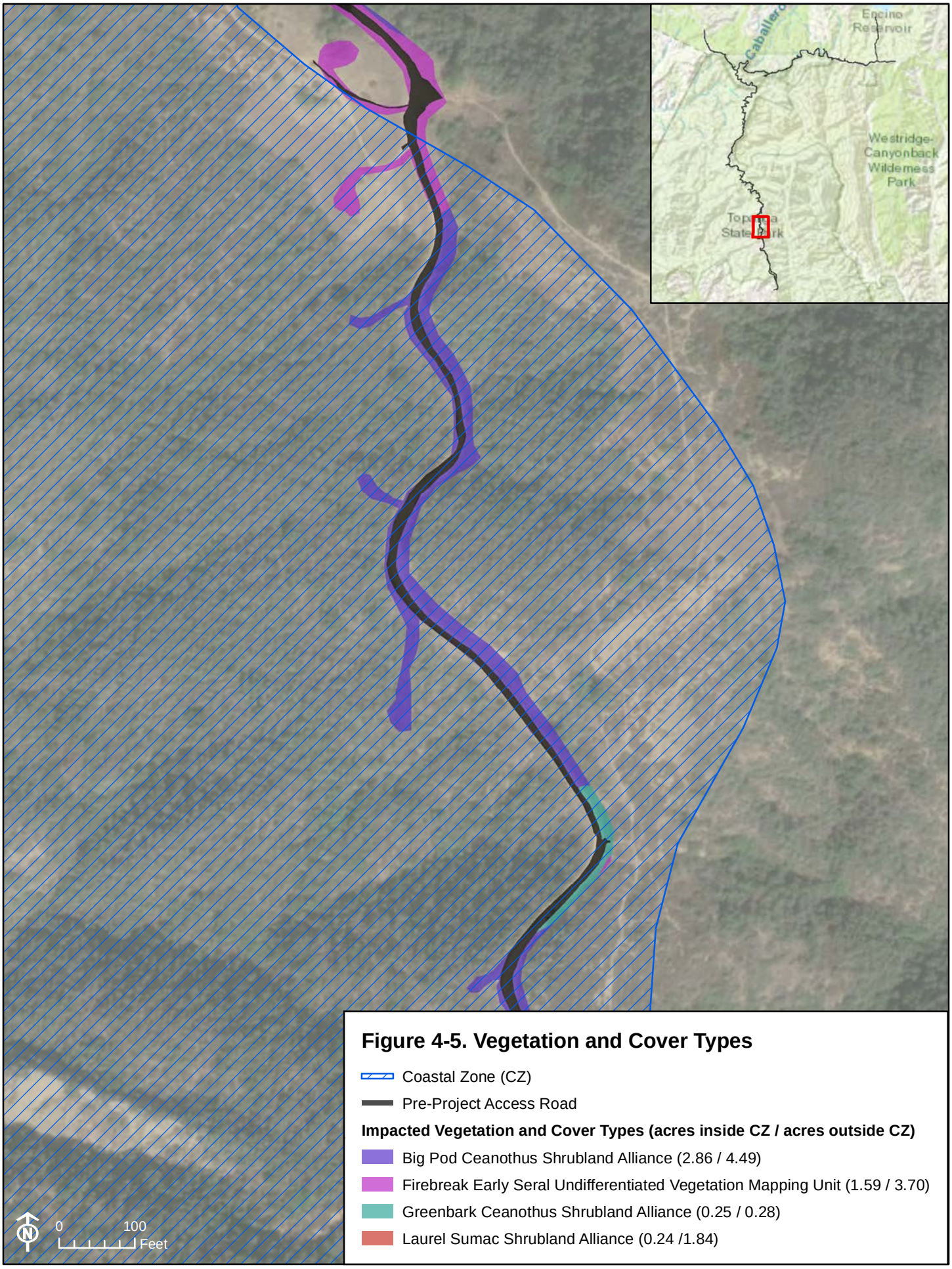

Figure 4-5. Vegetation and Cover Types

Coastal Zone (CZ)

Pre-Project Access Road

Impacted Vegetation and Cover Types (acres inside CZ / acres outside CZ)

Big Pod Ceanothus Shrubland Alliance (2.86 / 4.49)

Firebreak Early Seral Undifferentiated Vegetation Mapping Unit (1.59 / 3.70)

Greenbark Ceanothus Shrubland Alliance (0.25 / 0.28)

Laurel Sumac Shrubland Alliance (0.24 /1.84)

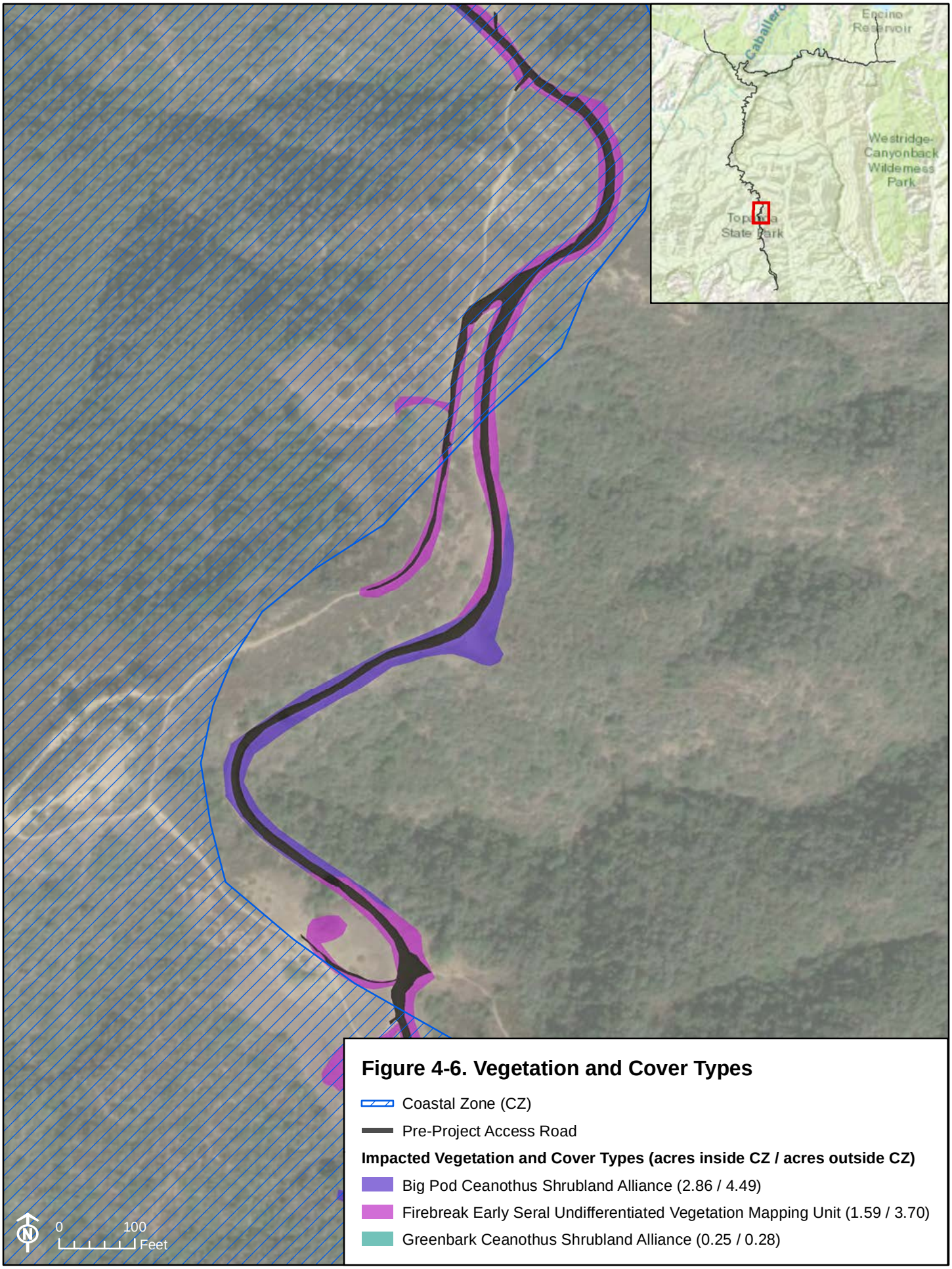

Figure 4-6. Vegetation and Cover Types

Coastal Zone (CZ)

Pre-Project Access Road

Impacted Vegetation and Cover Types (acres inside CZ / acres outside CZ)

Big Pod Ceanothus Shrubland Alliance (2.86 / 4.49)

Firebreak Early Seral Undifferentiated Vegetation Mapping Unit (1.59 / 3.70)

Greenbark Ceanothus Shrubland Alliance (0.25 / 0.28)

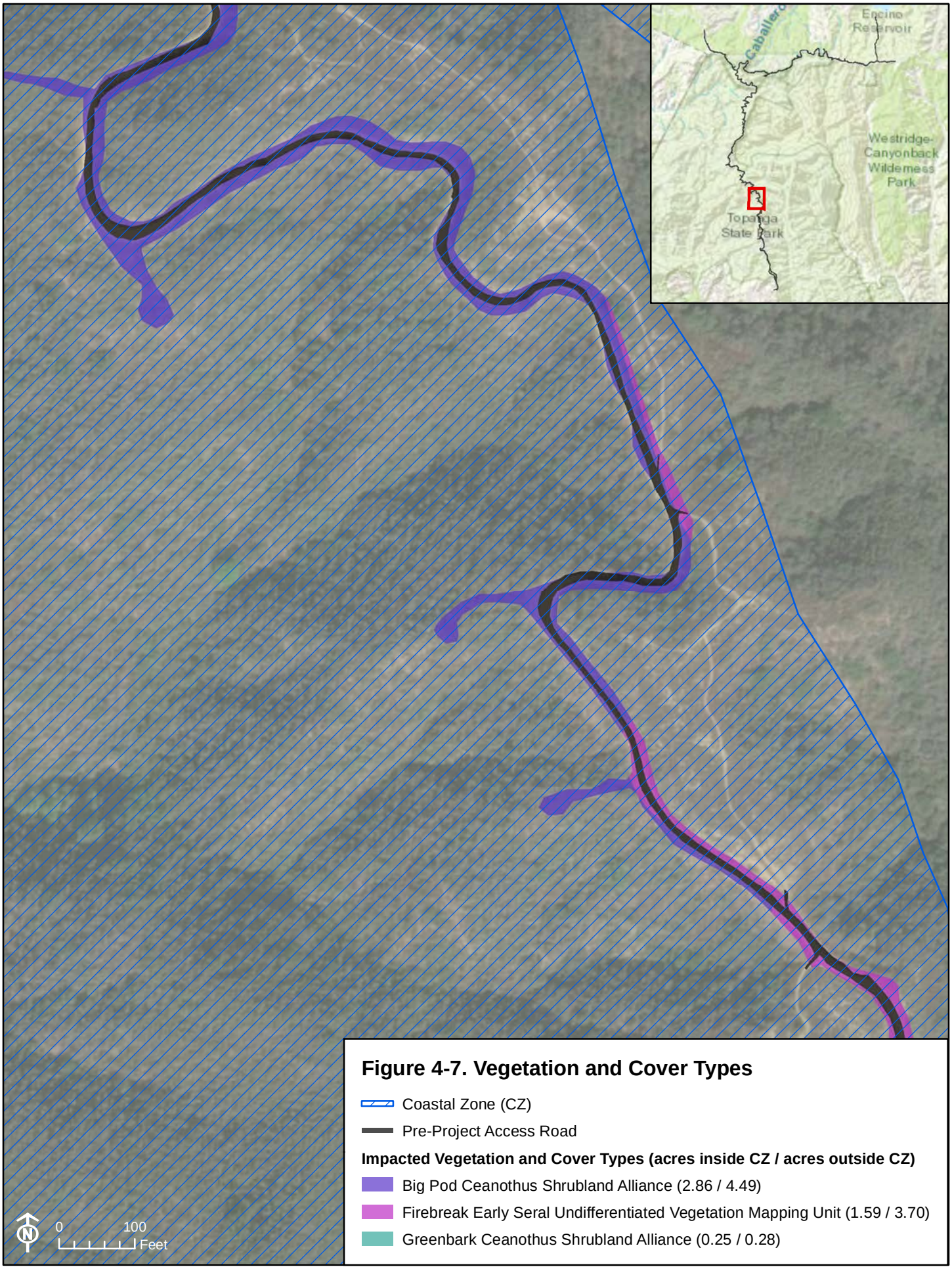

Figure 4-7. Vegetation and Cover Types

Coastal Zone (CZ)

Pre-Project Access Road

Impacted Vegetation and Cover Types (acres inside CZ / acres outside CZ)

Big Pod Ceanothus Shrubland Alliance (2.86 / 4.49)

Firebreak Early Seral Undifferentiated Vegetation Mapping Unit (1.59 / 3.70)

Greenbark Ceanothus Shrubland Alliance (0.25 / 0.28)

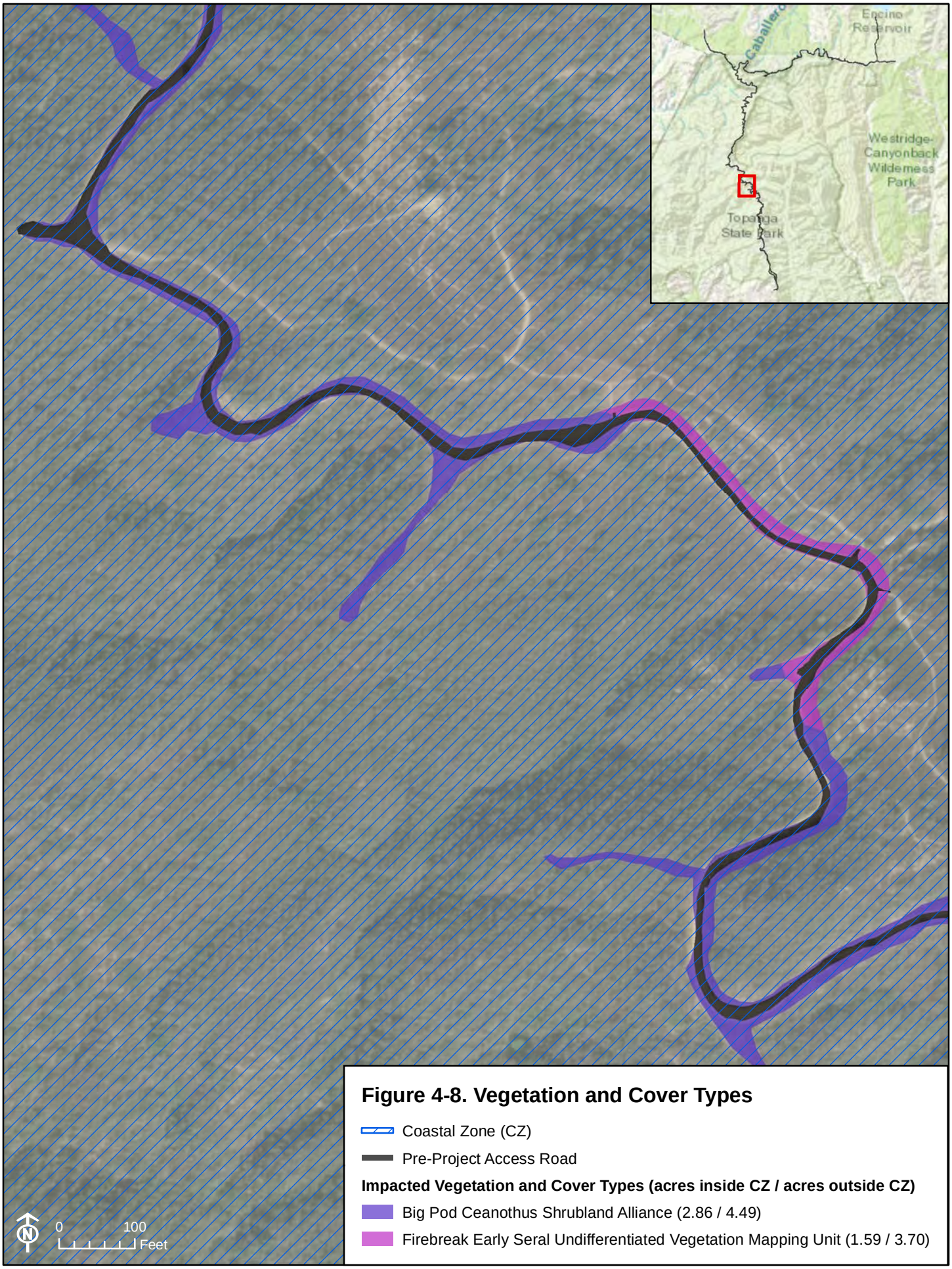

Figure 4-8. Vegetation and Cover Types

Coastal Zone (CZ)

Pre-Project Access Road

Impacted Vegetation and Cover Types (acres inside CZ / acres outside CZ)

Big Pod Ceanothus Shrubland Alliance (2.86 / 4.49)

Firebreak Early Seral Undifferentiated Vegetation Mapping Unit (1.59 / 3.70)

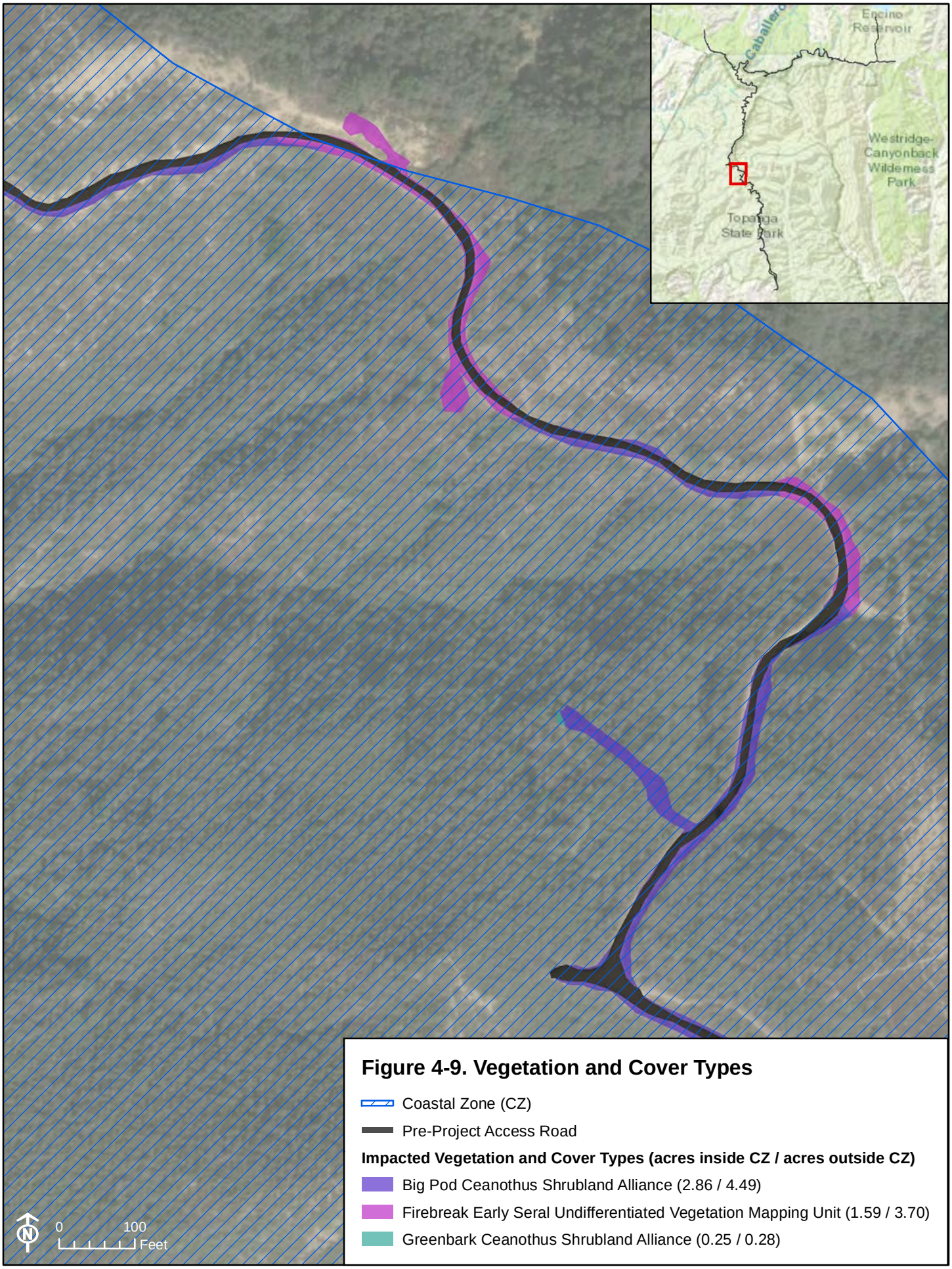

Figure 4-9. Vegetation and Cover Types

Coastal Zone (CZ)

Pre-Project Access Road

Impacted Vegetation and Cover Types (acres inside CZ / acres outside CZ)

Big Pod Ceanothus Shrubland Alliance (2.86 / 4.49)

Firebreak Early Seral Undifferentiated Vegetation Mapping Unit (1.59 / 3.70)

Greenbark Ceanothus Shrubland Alliance (0.25 / 0.28)

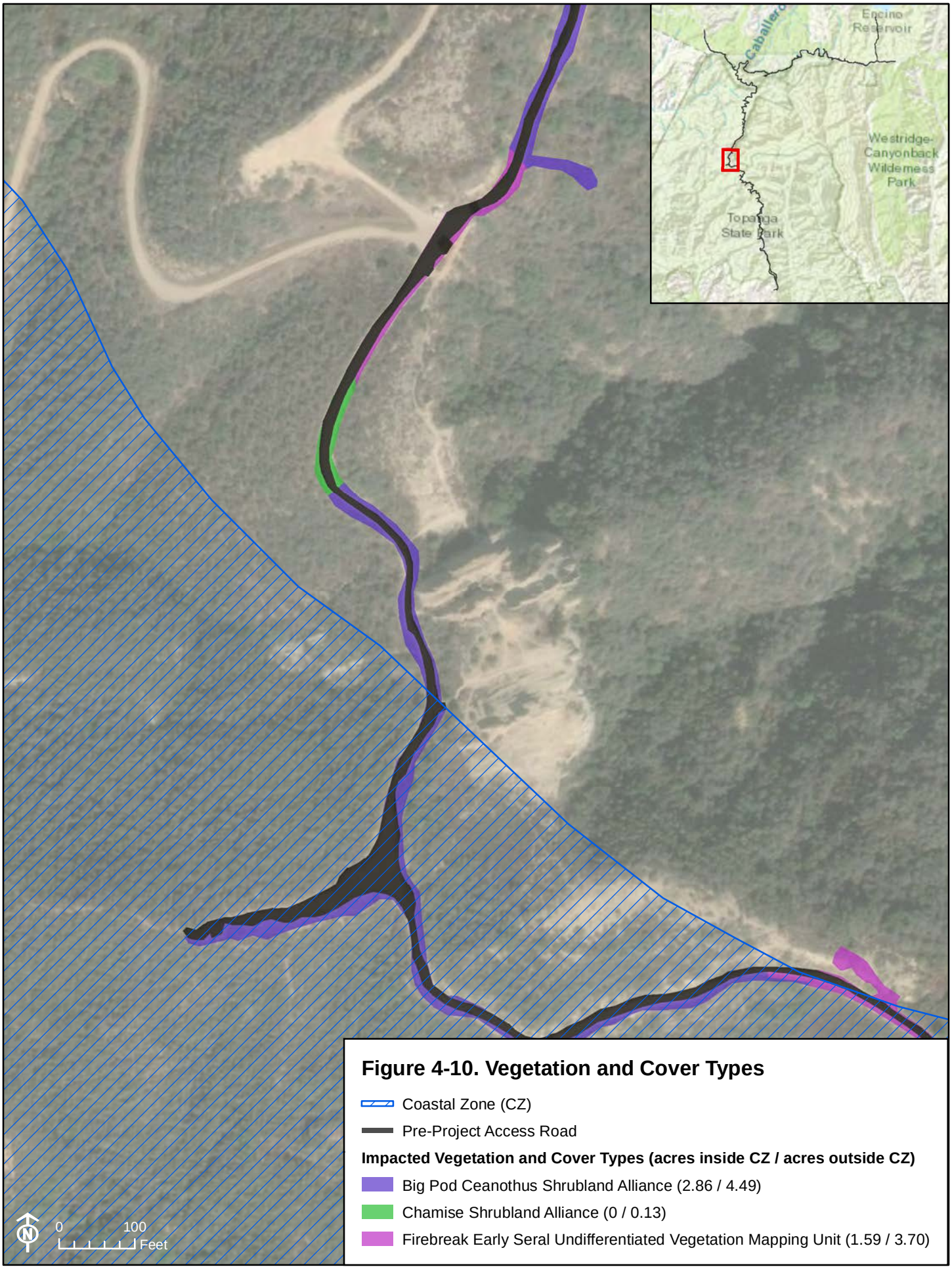

Figure 4-10. Vegetation and Cover Types

Coastal Zone (CZ)

Pre-Project Access Road

Impacted Vegetation and Cover Types (acres inside CZ / acres outside CZ)

Big Pod Ceanothus Shrubland Alliance (2.86 / 4.49)

Chamise Shrubland Alliance (0 / 0.13)

Firebreak Early Seral Undifferentiated Vegetation Mapping Unit (1.59 / 3.70)

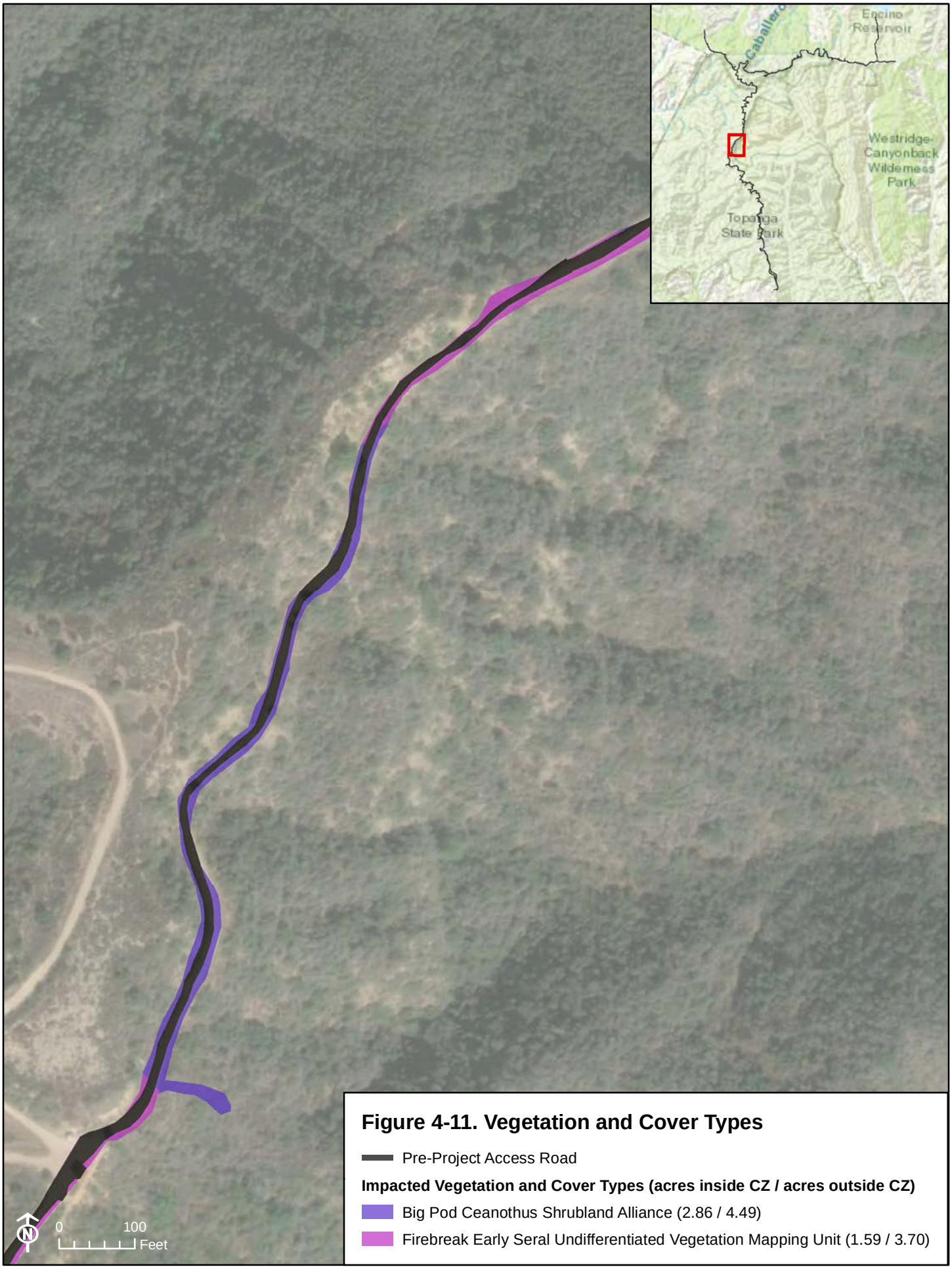

Figure 4-11. Vegetation and Cover Types

Pre-Project Access Road

Impacted Vegetation and Cover Types (acres inside CZ / acres outside CZ)

Big Pod Ceanothus Shrubland Alliance (2.86 / 4.49)

Firebreak Early Seral Undifferentiated Vegetation Mapping Unit (1.59 / 3.70)

Figure 4-12. Vegetation and Cover Types

Pre-Project Access Road

Impacted Vegetation and Cover Types (acres inside CZ / acres outside CZ)

Big Pod Ceanothus Shrubland Alliance (2.86 / 4.49)

Firebreak Early Seral Undifferentiated Vegetation Mapping Unit (1.59 / 3.70)

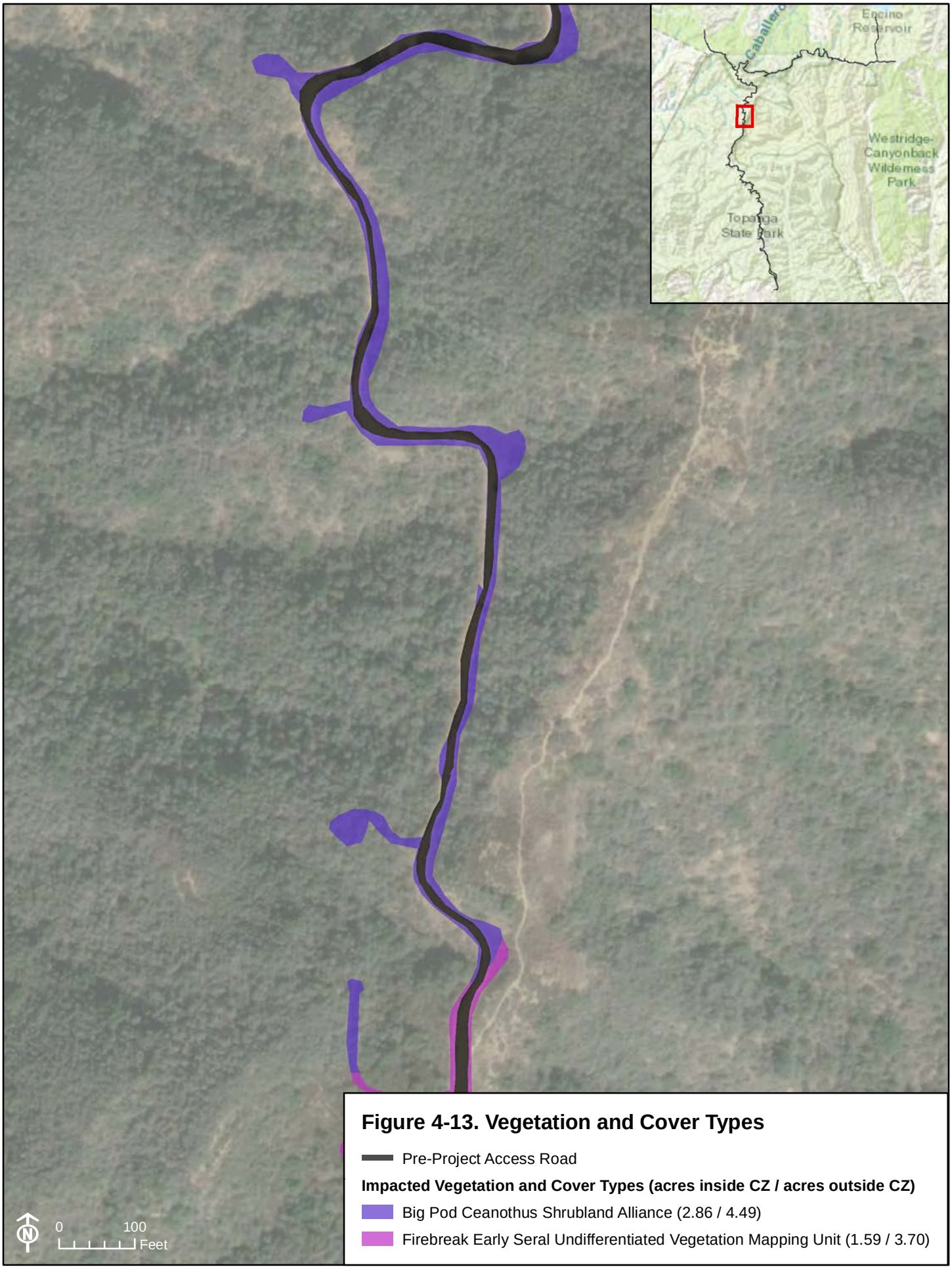

Figure 4-13. Vegetation and Cover Types

Pre-Project Access Road

Impacted Vegetation and Cover Types (acres inside CZ / acres outside CZ)

Big Pod Ceanothus Shrubland Alliance (2.86 / 4.49)

Firebreak Early Seral Undifferentiated Vegetation Mapping Unit (1.59 / 3.70)

Figure 4-14. Vegetation and Cover Types

Pre-Project Access Road

Impacted Vegetation and Cover Types (acres inside CZ / acres outside CZ)

Big Pod Ceanothus Shrubland Alliance (2.86 / 4.49)

Greenbark Ceanothus Shrubland Alliance (0.25 / 0.28)

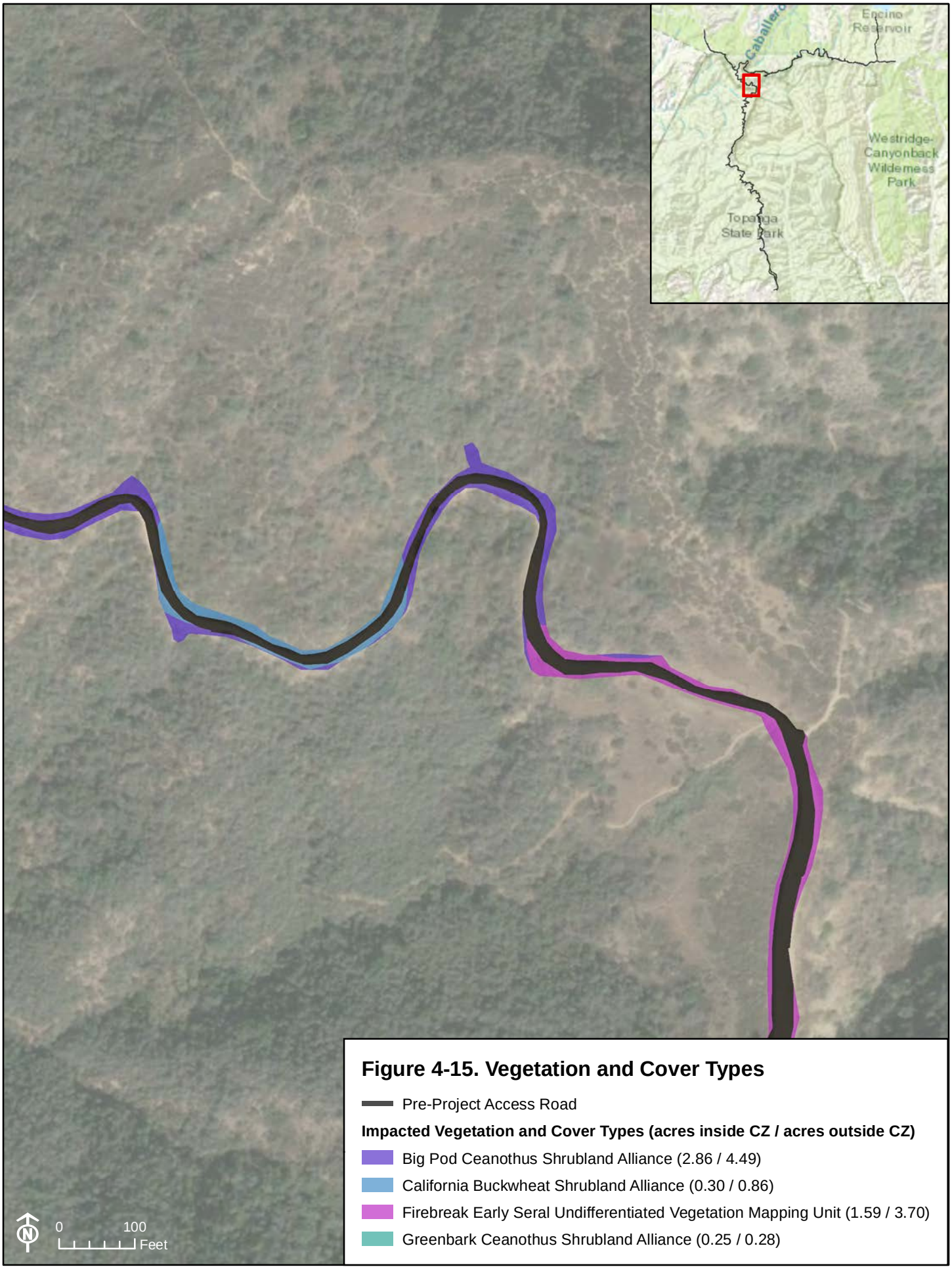

Figure 4-15. Vegetation and Cover Types

Pre-Project Access Road

Impacted Vegetation and Cover Types (acres inside CZ / acres outside CZ)

- Big Pod Ceanothus Shrubland Alliance (2.86 / 4.49)
- California Buckwheat Shrubland Alliance (0.30 / 0.86)
- Firebreak Early Seral Undifferentiated Vegetation Mapping Unit (1.59 / 3.70)
- Greenbark Ceanothus Shrubland Alliance (0.25 / 0.28)

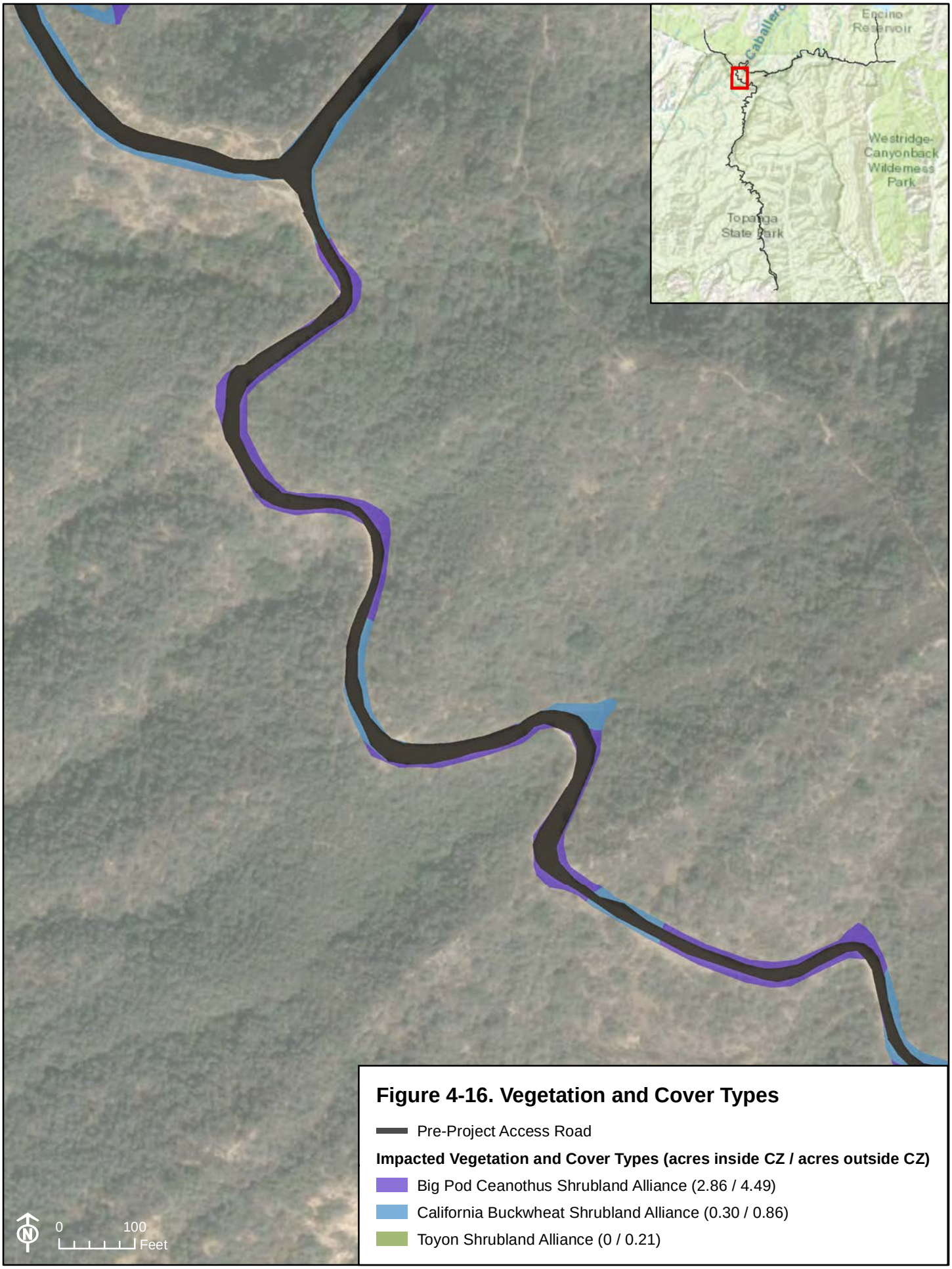

Figure 4-16. Vegetation and Cover Types

Pre-Project Access Road

Impacted Vegetation and Cover Types (acres inside CZ / acres outside CZ)

Big Pod Ceanothus Shrubland Alliance (2.86 / 4.49)

California Buckwheat Shrubland Alliance (0.30 / 0.86)

Toyon Shrubland Alliance (0 / 0.21)

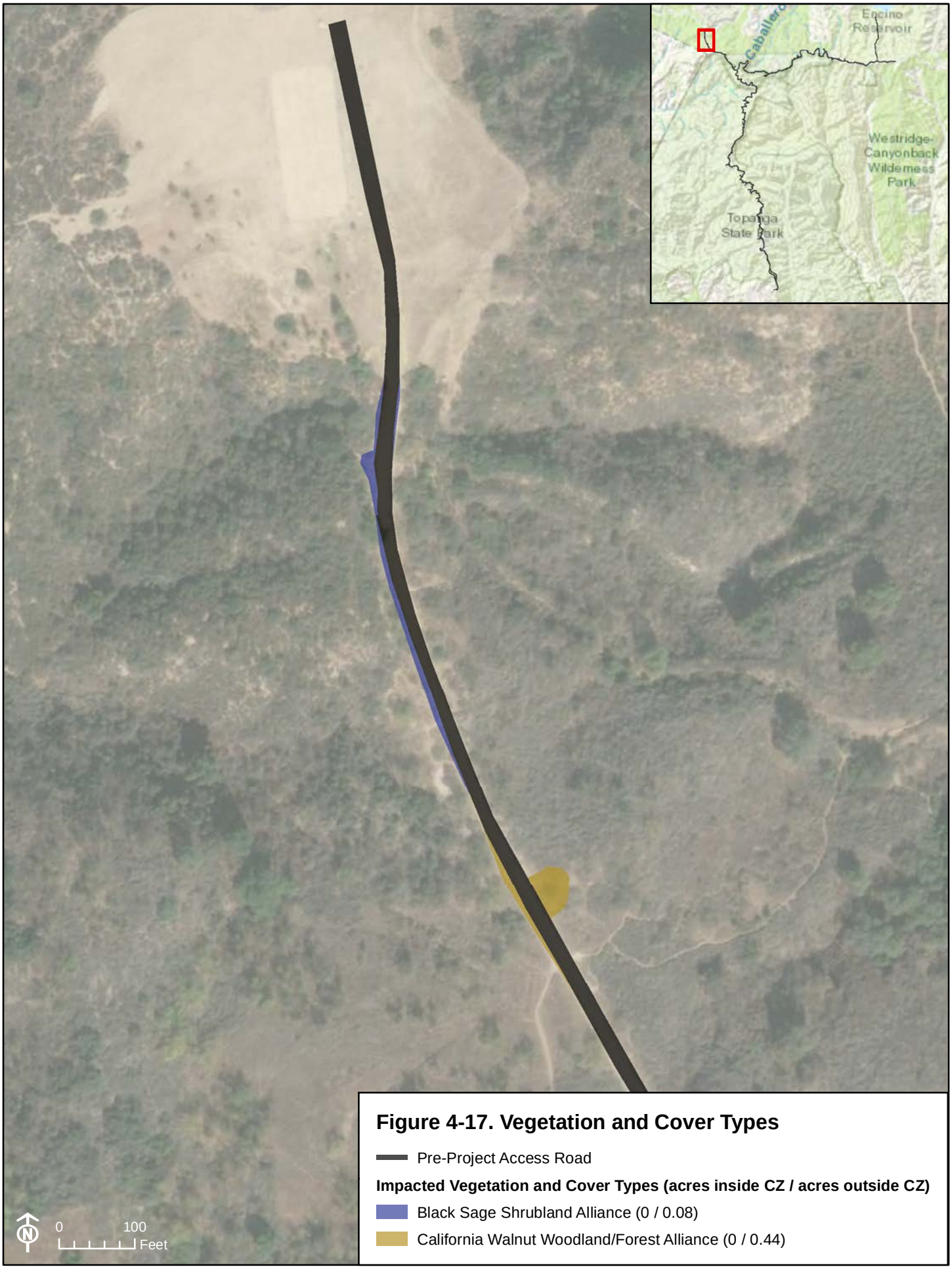

Figure 4-17. Vegetation and Cover Types

Pre-Project Access Road

Impacted Vegetation and Cover Types (acres inside CZ / acres outside CZ)

Black Sage Shrubland Alliance (0 / 0.08)

California Walnut Woodland/Forest Alliance (0 / 0.44)

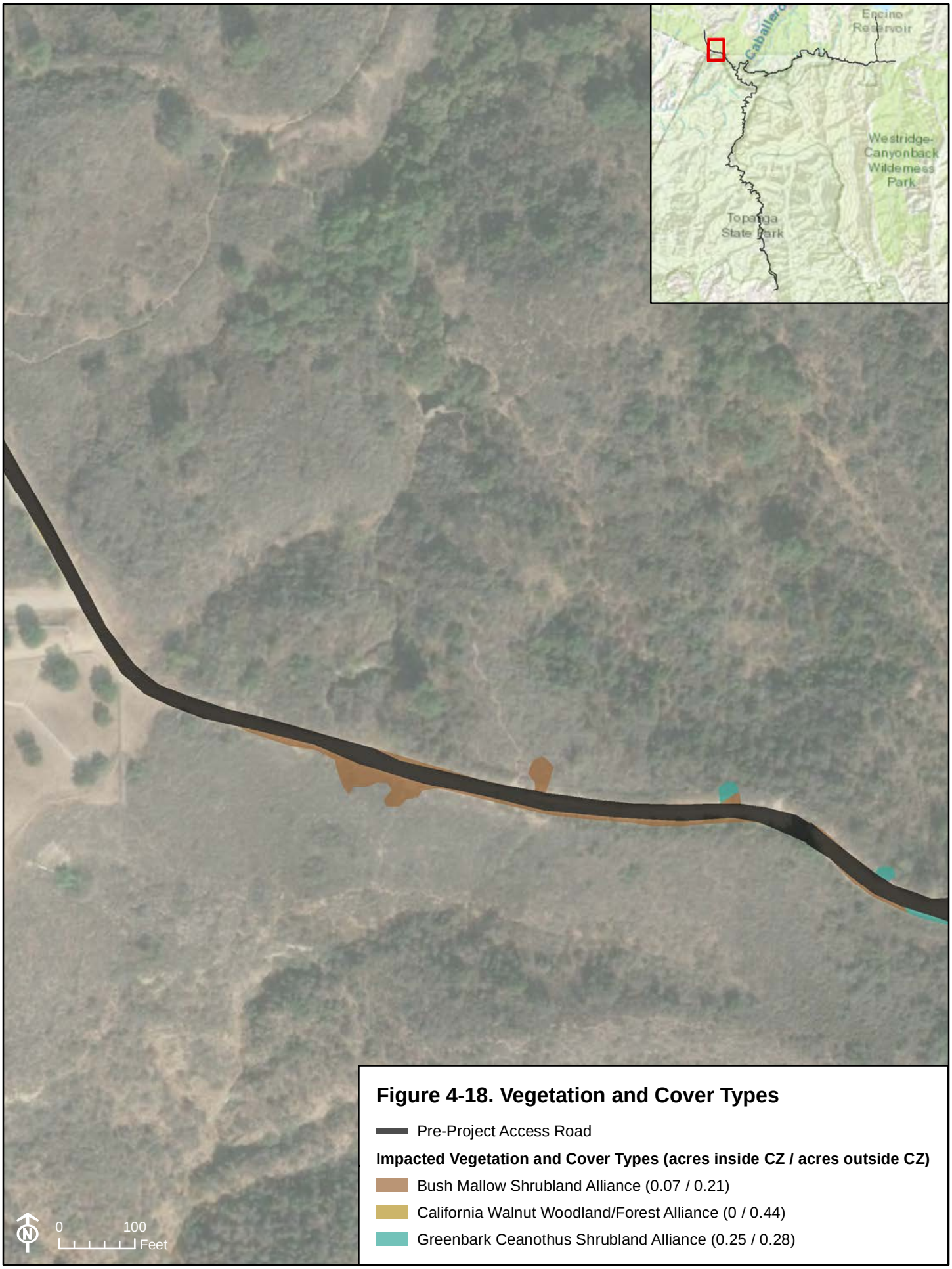

Figure 4-18. Vegetation and Cover Types

Pre-Project Access Road

Impacted Vegetation and Cover Types (acres inside CZ / acres outside CZ)

Bush Mallow Shrubland Alliance (0.07 / 0.21)

California Walnut Woodland/Forest Alliance (0 / 0.44)

Greenbark Ceanothus Shrubland Alliance (0.25 / 0.28)

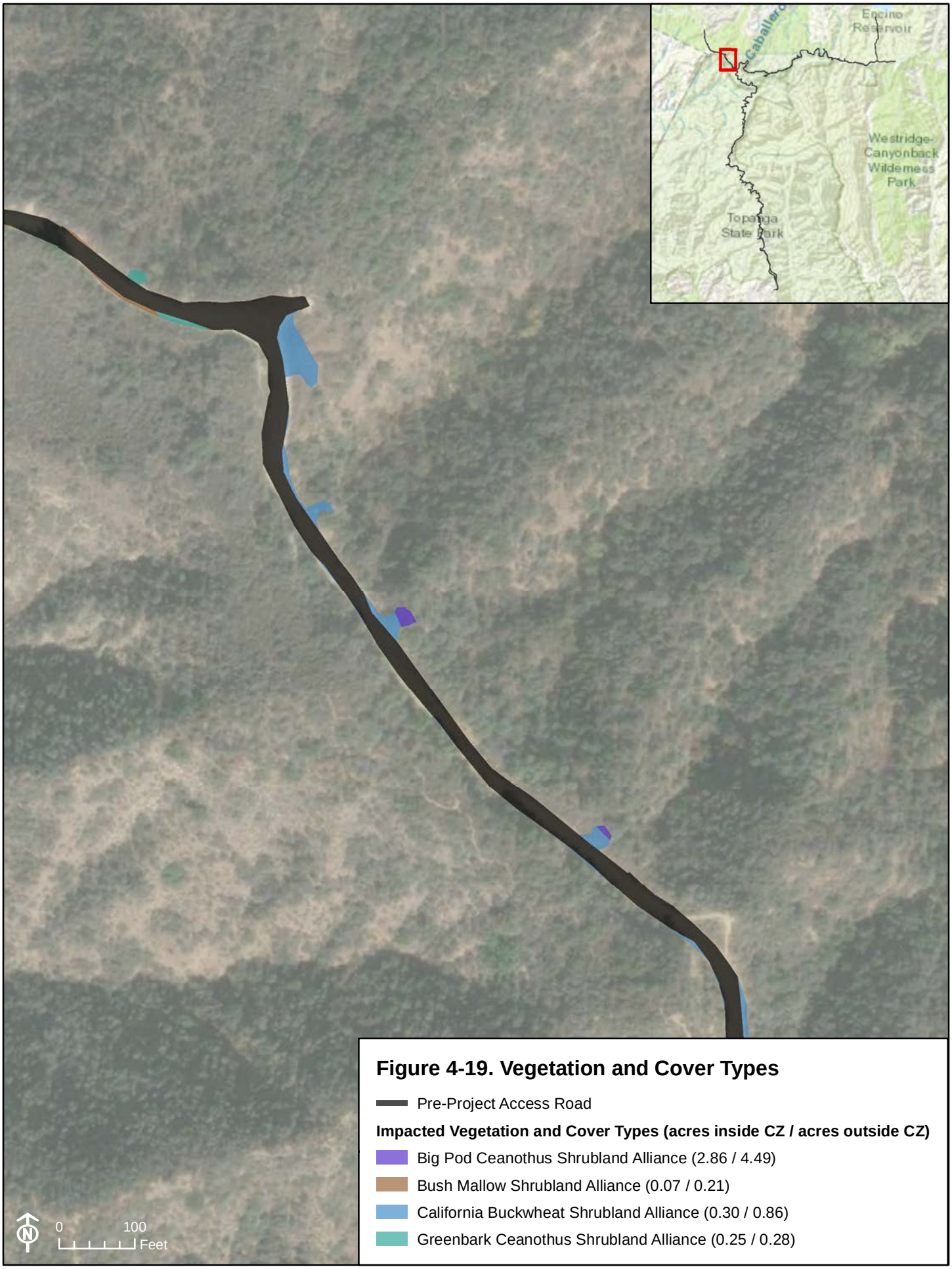

Figure 4-19. Vegetation and Cover Types

Pre-Project Access Road

Impacted Vegetation and Cover Types (acres inside CZ / acres outside CZ)

- Big Pod Ceanothus Shrubland Alliance (2.86 / 4.49)
- Bush Mallow Shrubland Alliance (0.07 / 0.21)
- California Buckwheat Shrubland Alliance (0.30 / 0.86)
- Greenbark Ceanothus Shrubland Alliance (0.25 / 0.28)

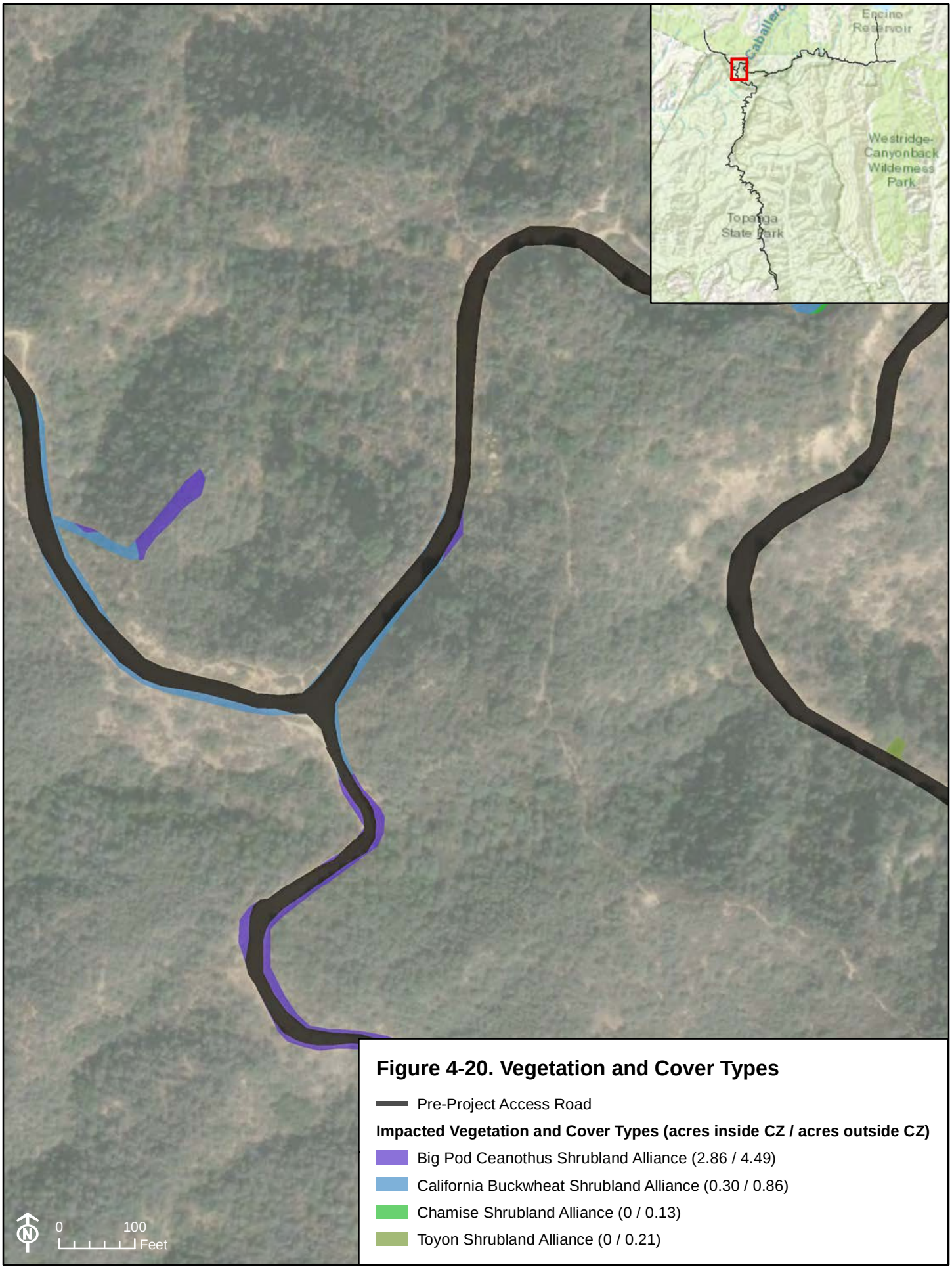

Figure 4-20. Vegetation and Cover Types

Pre-Project Access Road

Impacted Vegetation and Cover Types (acres inside CZ / acres outside CZ)

- Big Pod Ceanothus Shrubland Alliance (2.86 / 4.49)
- California Buckwheat Shrubland Alliance (0.30 / 0.86)
- Chamise Shrubland Alliance (0 / 0.13)
- Toyon Shrubland Alliance (0 / 0.21)

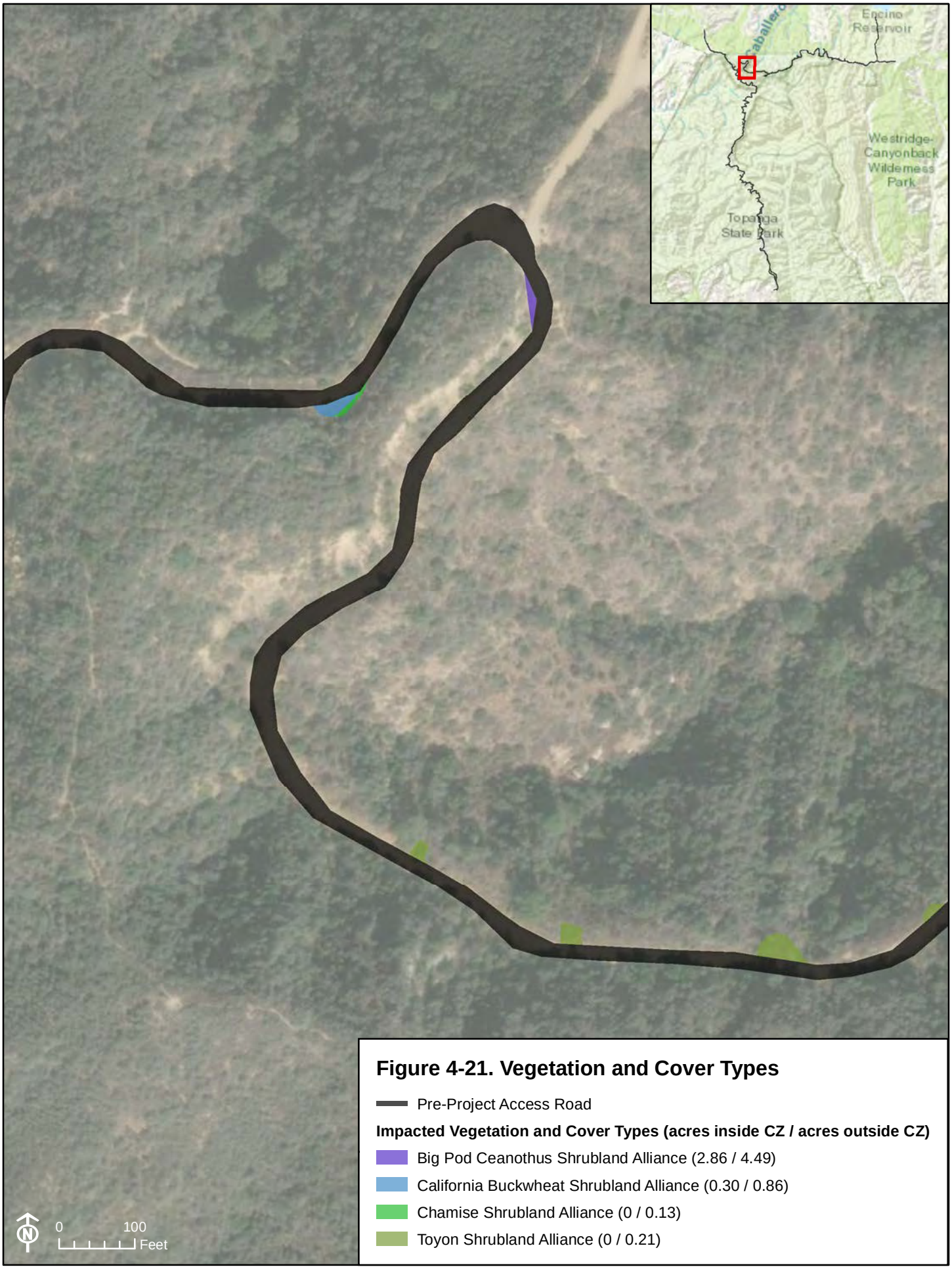

Figure 4-21. Vegetation and Cover Types

Pre-Project Access Road

Impacted Vegetation and Cover Types (acres inside CZ / acres outside CZ)

- Big Pod Ceanothus Shrubland Alliance (2.86 / 4.49)
- California Buckwheat Shrubland Alliance (0.30 / 0.86)
- Chamise Shrubland Alliance (0 / 0.13)
- Toyon Shrubland Alliance (0 / 0.21)

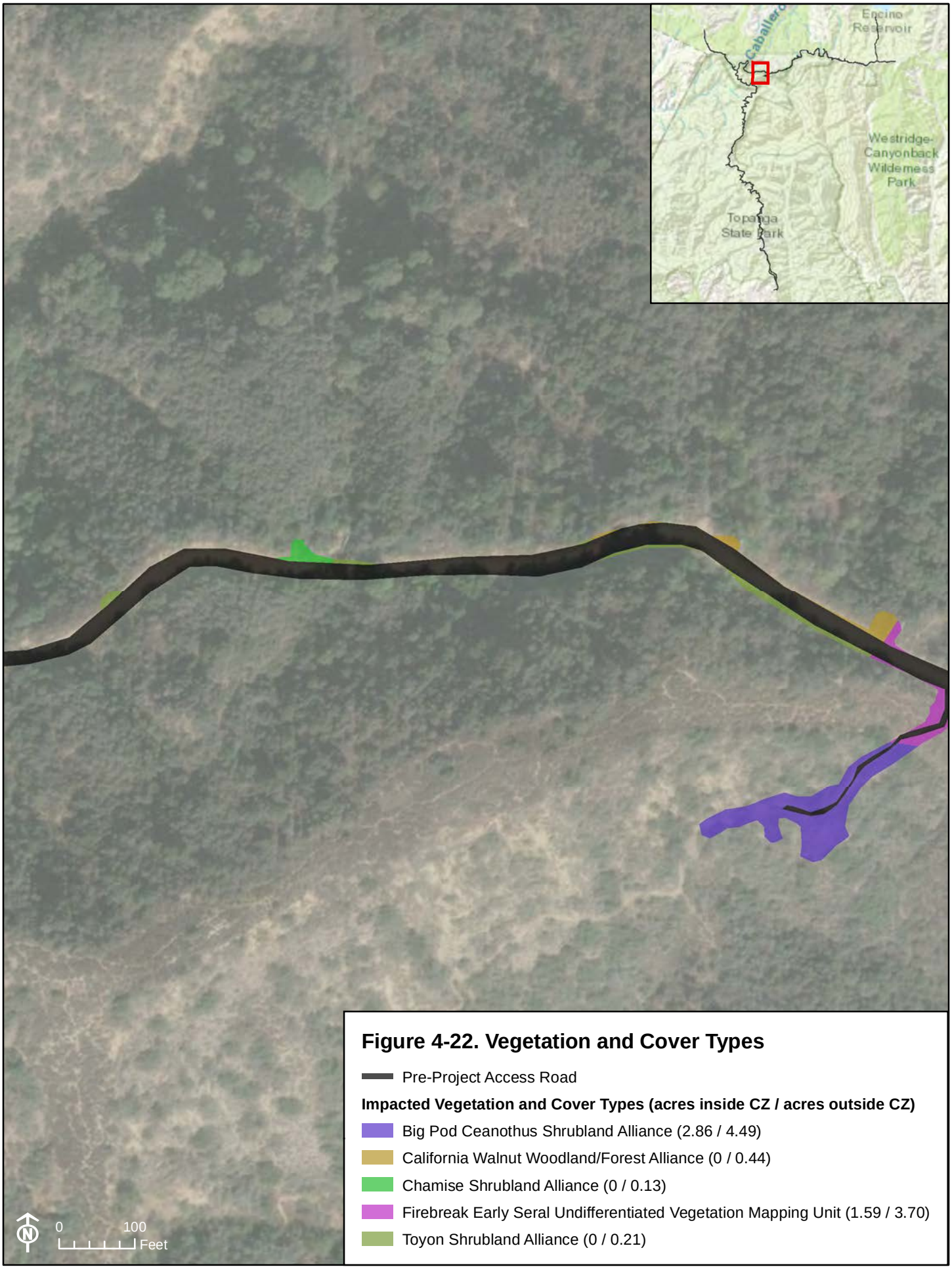

Figure 4-22. Vegetation and Cover Types

Pre-Project Access Road

Impacted Vegetation and Cover Types (acres inside CZ / acres outside CZ)

- Big Pod Ceanothus Shrubland Alliance (2.86 / 4.49)
- California Walnut Woodland/Forest Alliance (0 / 0.44)
- Chamise Shrubland Alliance (0 / 0.13)
- Firebreak Early Seral Undifferentiated Vegetation Mapping Unit (1.59 / 3.70)
- Toyon Shrubland Alliance (0 / 0.21)

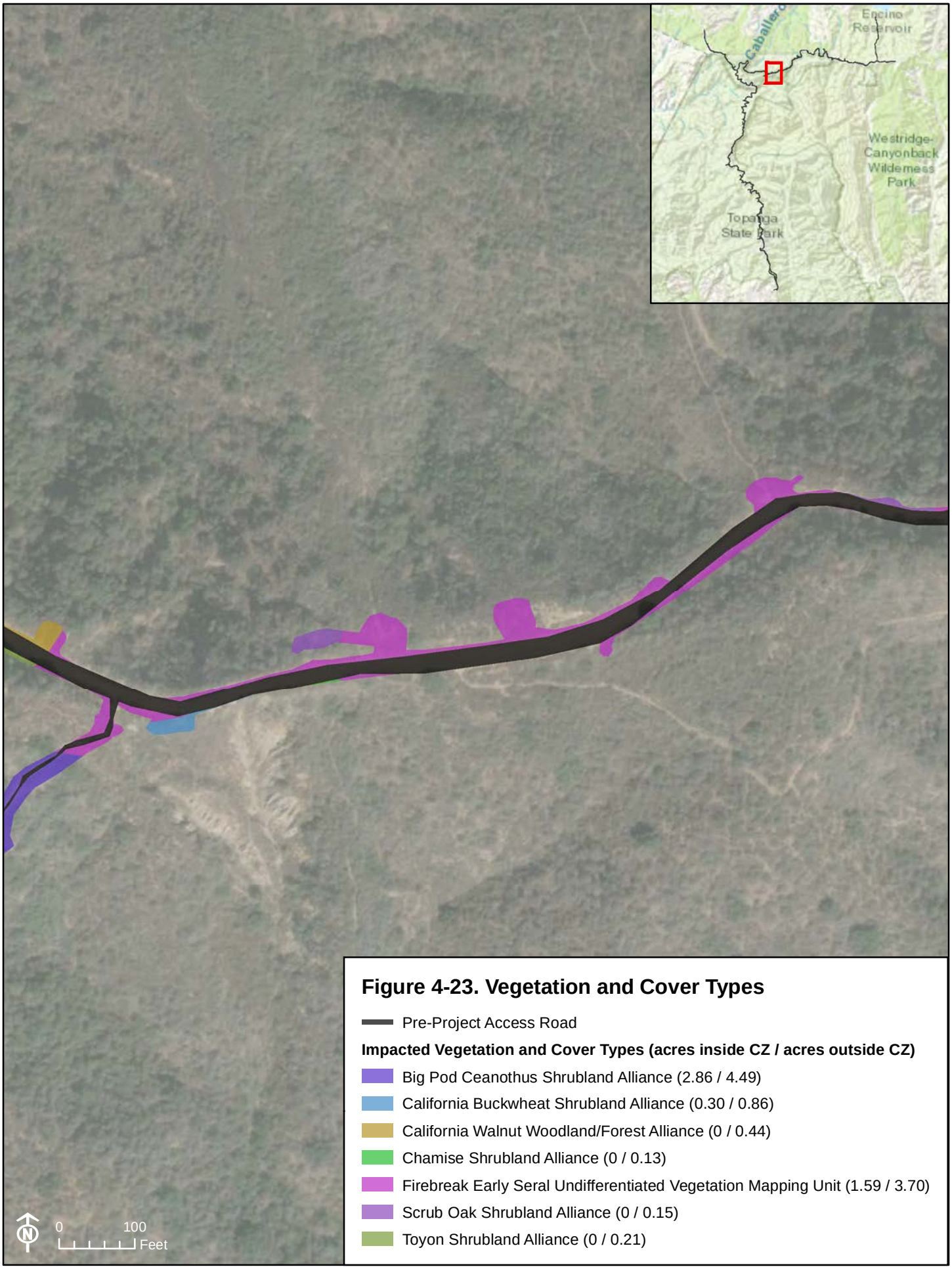

Figure 4-23. Vegetation and Cover Types

Pre-Project Access Road

Impacted Vegetation and Cover Types (acres inside CZ / acres outside CZ)

- Big Pod Ceanothus Shrubland Alliance (2.86 / 4.49)
- California Buckwheat Shrubland Alliance (0.30 / 0.86)
- California Walnut Woodland/Forest Alliance (0 / 0.44)
- Chamise Shrubland Alliance (0 / 0.13)
- Firebreak Early Seral Undifferentiated Vegetation Mapping Unit (1.59 / 3.70)
- Scrub Oak Shrubland Alliance (0 / 0.15)
- Toyon Shrubland Alliance (0 / 0.21)

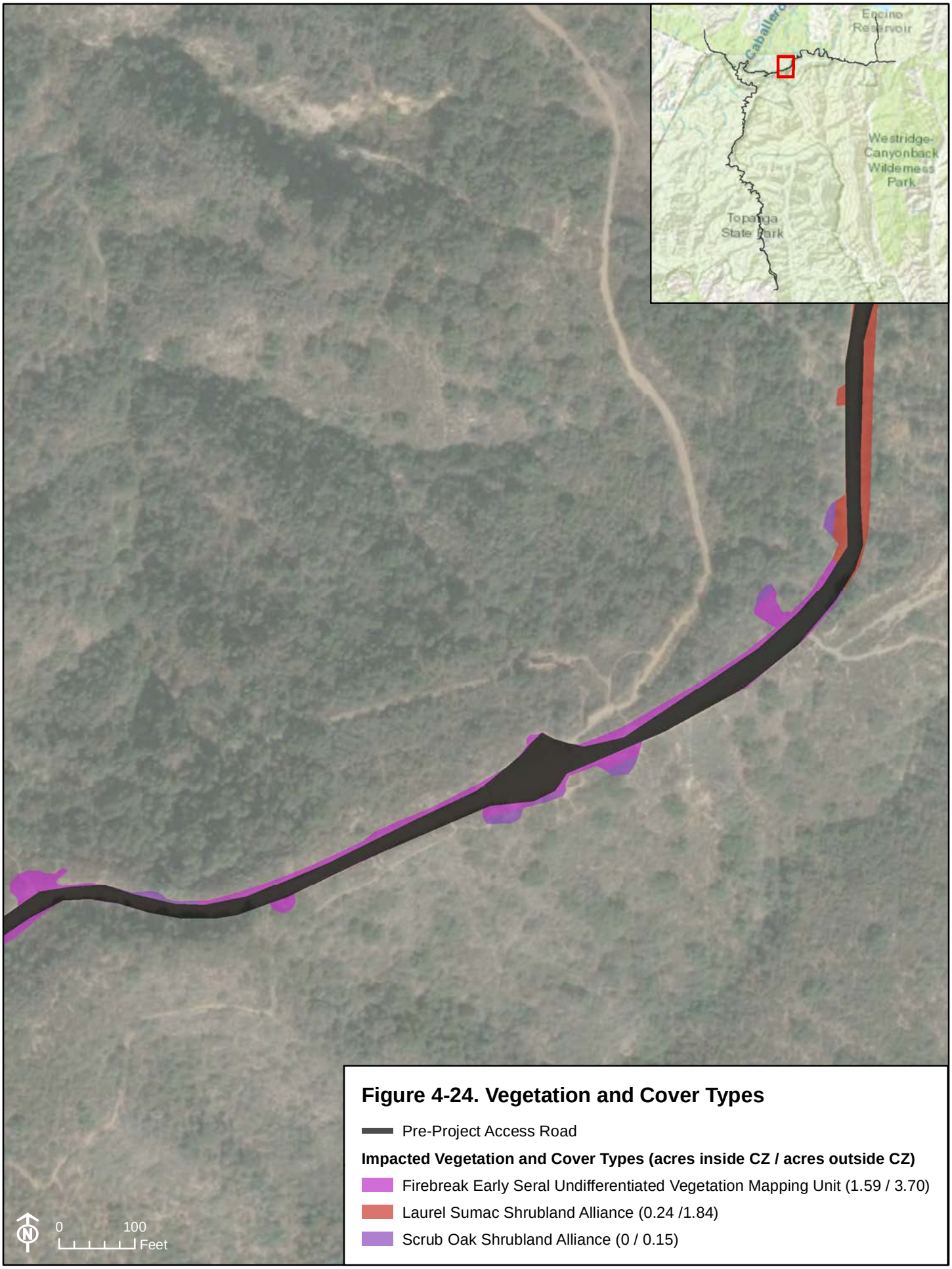

Figure 4-24. Vegetation and Cover Types

Pre-Project Access Road

Impacted Vegetation and Cover Types (acres inside CZ / acres outside CZ)

Firebreak Early Seral Undifferentiated Vegetation Mapping Unit (1.59 / 3.70)

Laurel Sumac Shrubland Alliance (0.24 /1.84)

Scrub Oak Shrubland Alliance (0 / 0.15)

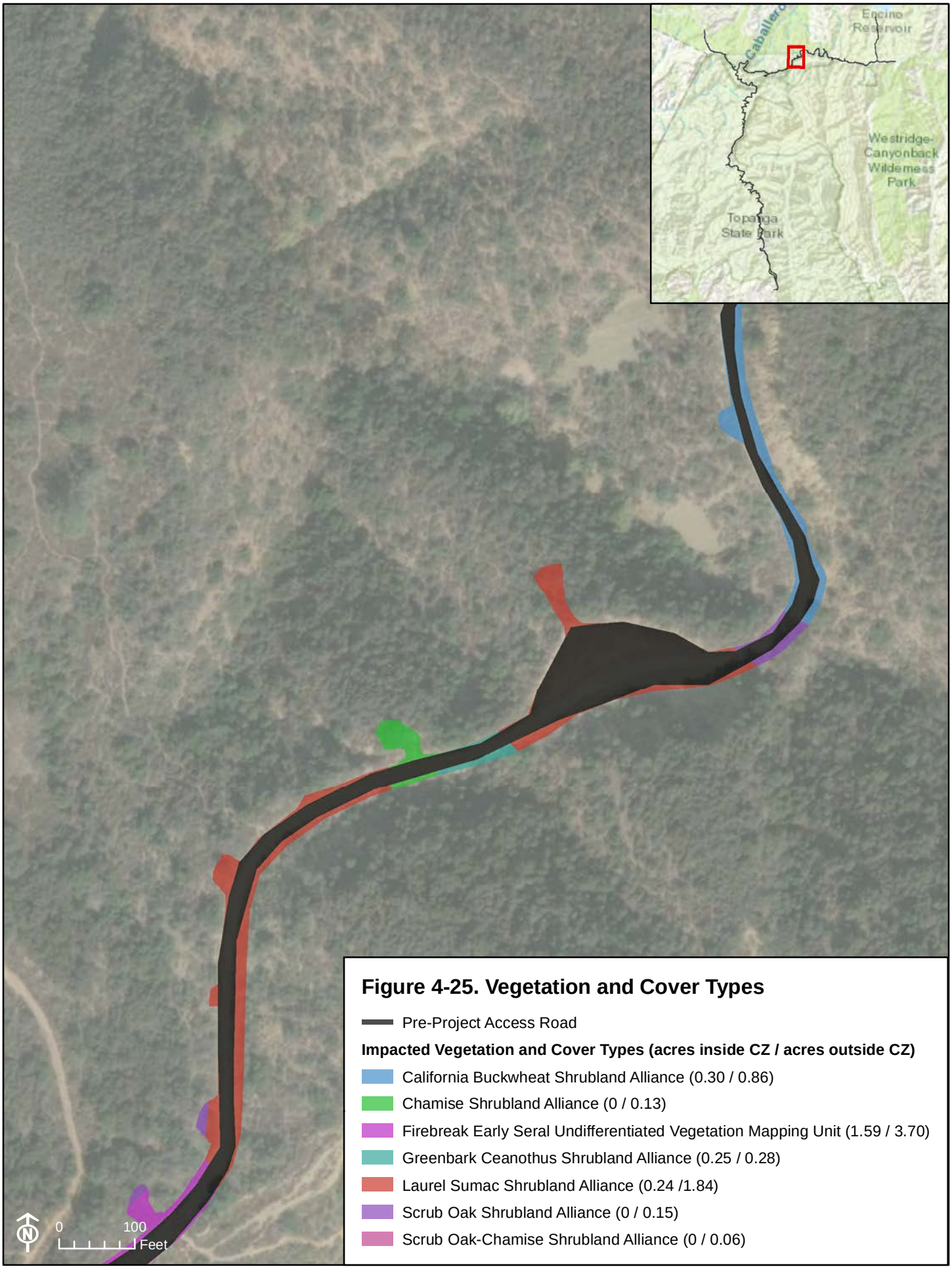

Figure 4-25. Vegetation and Cover Types

Pre-Project Access Road

Impacted Vegetation and Cover Types (acres inside CZ / acres outside CZ)

- California Buckwheat Shrubland Alliance (0.30 / 0.86)
- Chamise Shrubland Alliance (0 / 0.13)
- Firebreak Early Seral Undifferentiated Vegetation Mapping Unit (1.59 / 3.70)
- Greenbark Ceanothus Shrubland Alliance (0.25 / 0.28)
- Laurel Sumac Shrubland Alliance (0.24 /1.84)
- Scrub Oak Shrubland Alliance (0 / 0.15)
- Scrub Oak-Chamise Shrubland Alliance (0 / 0.06)

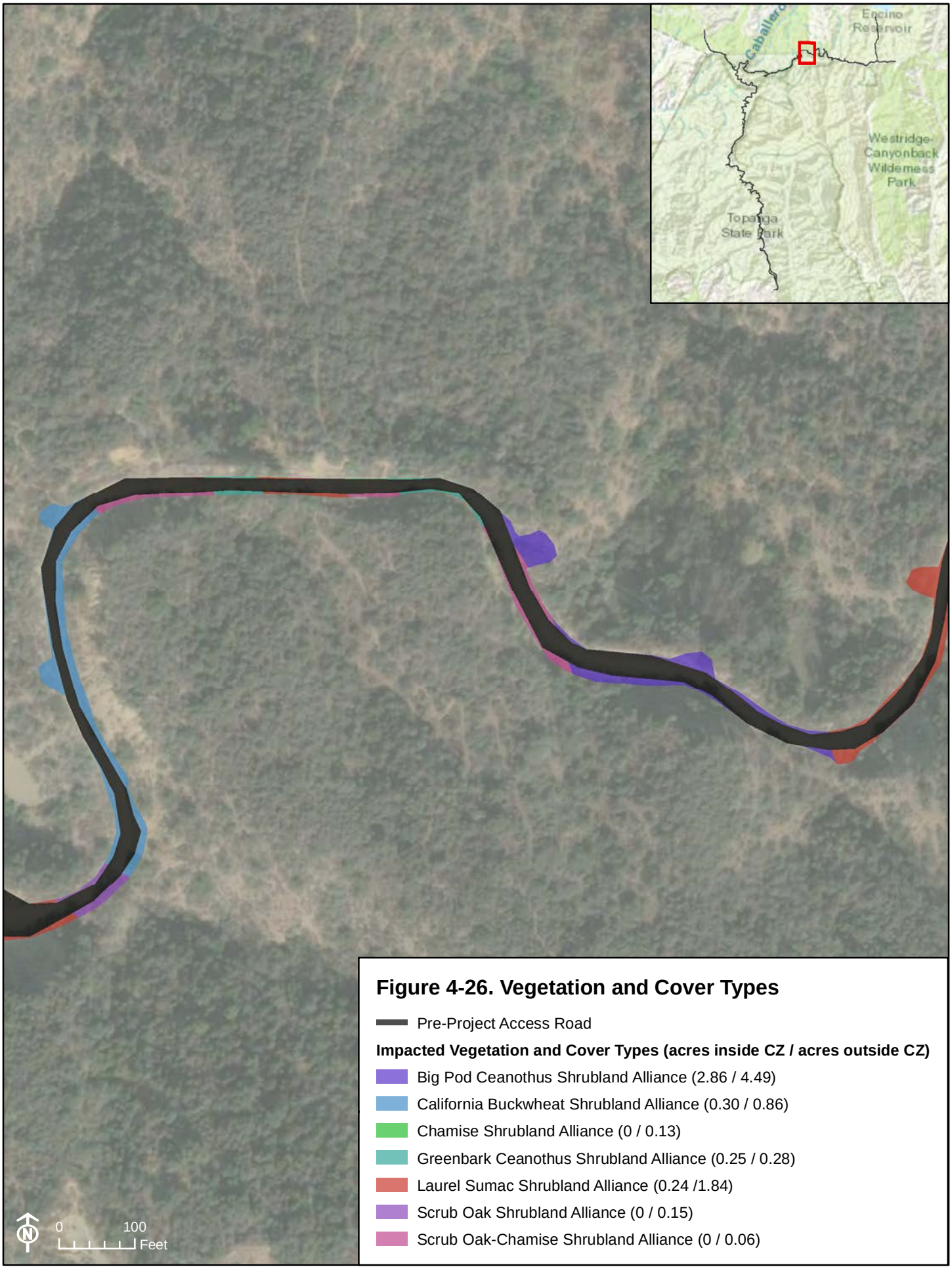

Figure 4-26. Vegetation and Cover Types

Pre-Project Access Road

Impacted Vegetation and Cover Types (acres inside CZ / acres outside CZ)

- Big Pod Ceanothus Shrubland Alliance (2.86 / 4.49)
- California Buckwheat Shrubland Alliance (0.30 / 0.86)
- Chamise Shrubland Alliance (0 / 0.13)
- Greenbark Ceanothus Shrubland Alliance (0.25 / 0.28)
- Laurel Sumac Shrubland Alliance (0.24 /1.84)
- Scrub Oak Shrubland Alliance (0 / 0.15)
- Scrub Oak-Chamise Shrubland Alliance (0 / 0.06)

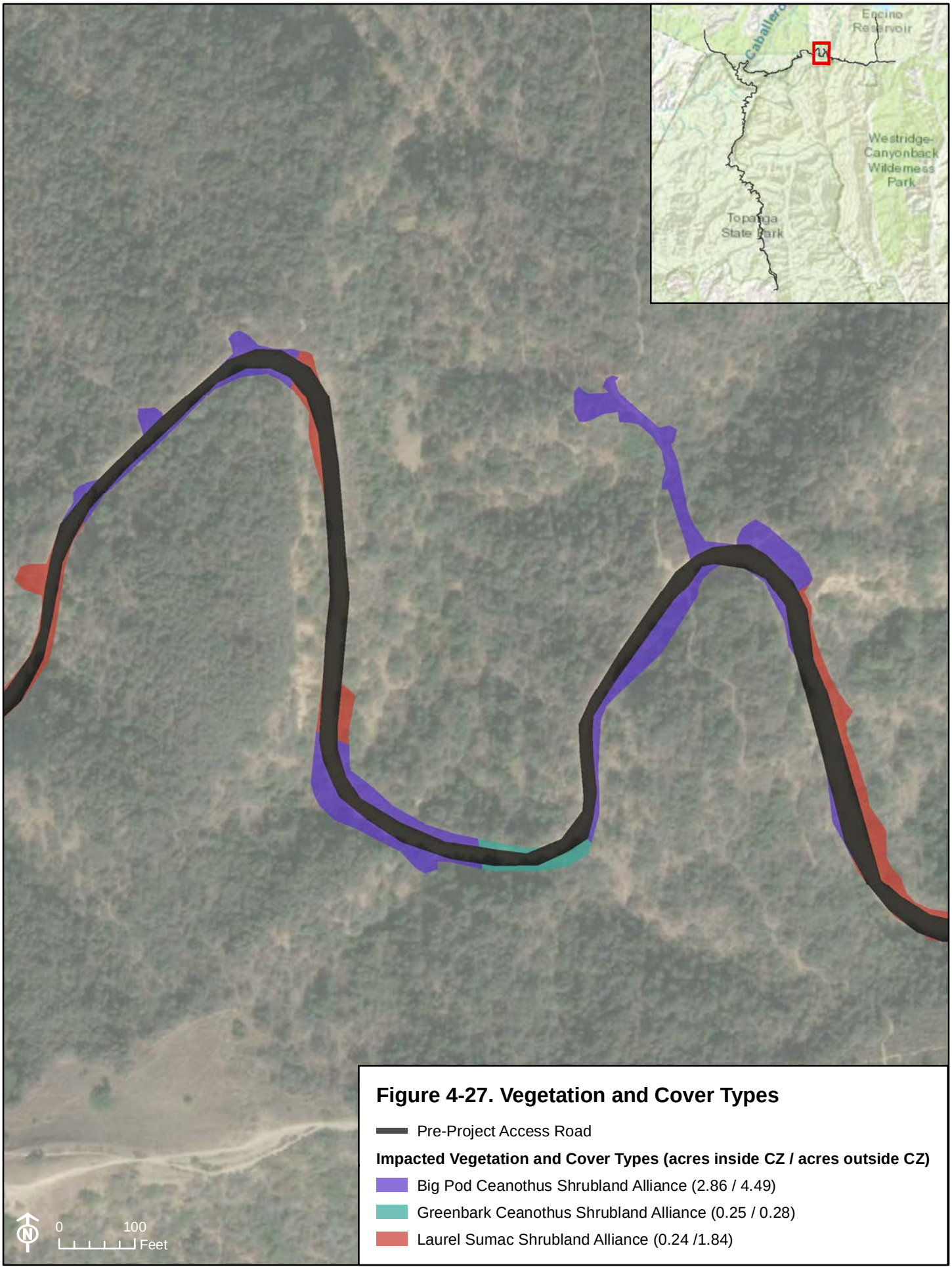

Figure 4-27. Vegetation and Cover Types

Pre-Project Access Road

Impacted Vegetation and Cover Types (acres inside CZ / acres outside CZ)

Big Pod Ceanothus Shrubland Alliance (2.86 / 4.49)

Greenbark Ceanothus Shrubland Alliance (0.25 / 0.28)

Laurel Sumac Shrubland Alliance (0.24 /1.84)

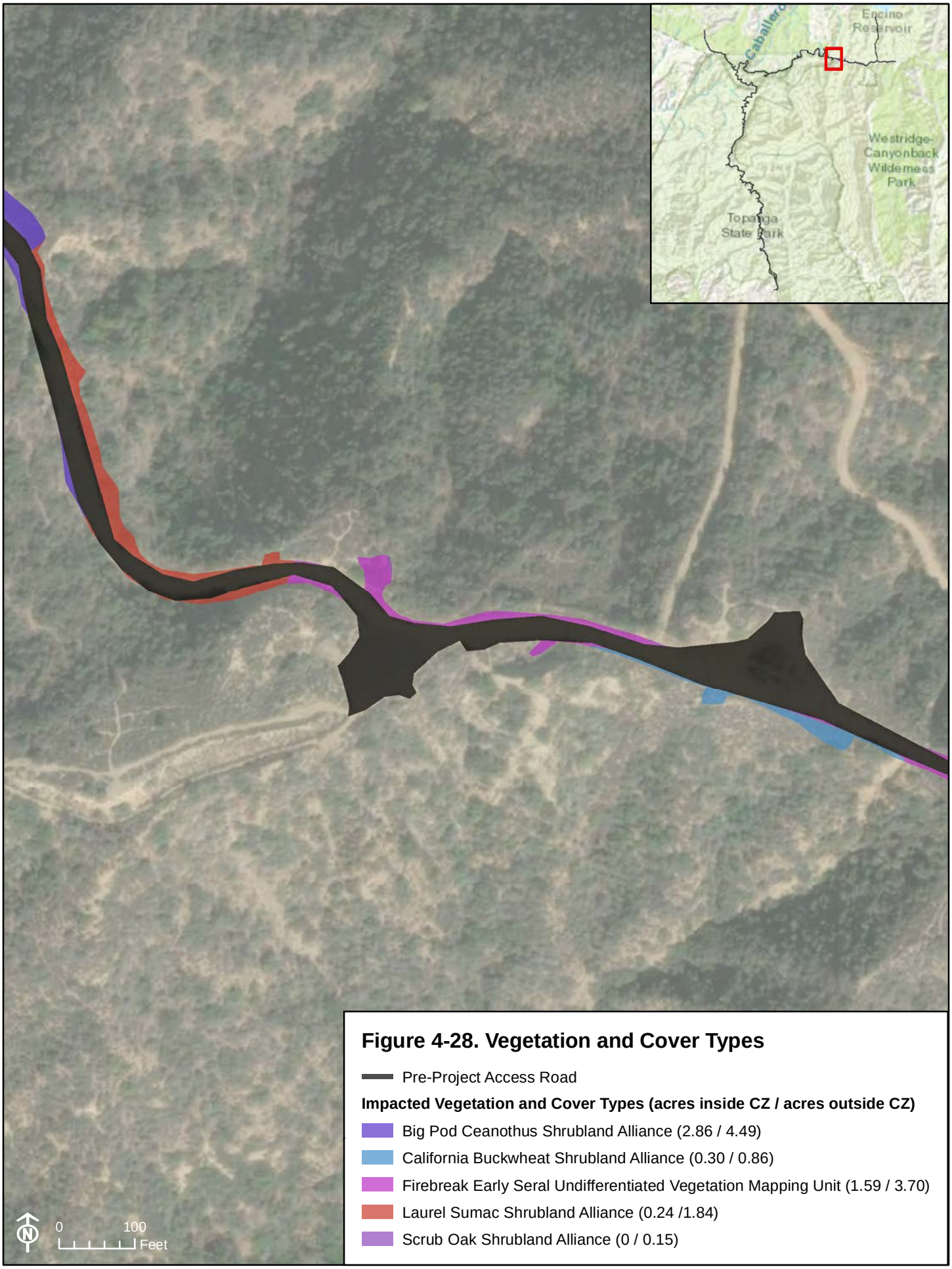

Figure 4-28. Vegetation and Cover Types

Pre-Project Access Road

Impacted Vegetation and Cover Types (acres inside CZ / acres outside CZ)

- Big Pod Ceanothus Shrubland Alliance (2.86 / 4.49)
- California Buckwheat Shrubland Alliance (0.30 / 0.86)
- Firebreak Early Seral Undifferentiated Vegetation Mapping Unit (1.59 / 3.70)
- Laurel Sumac Shrubland Alliance (0.24 /1.84)
- Scrub Oak Shrubland Alliance (0 / 0.15)

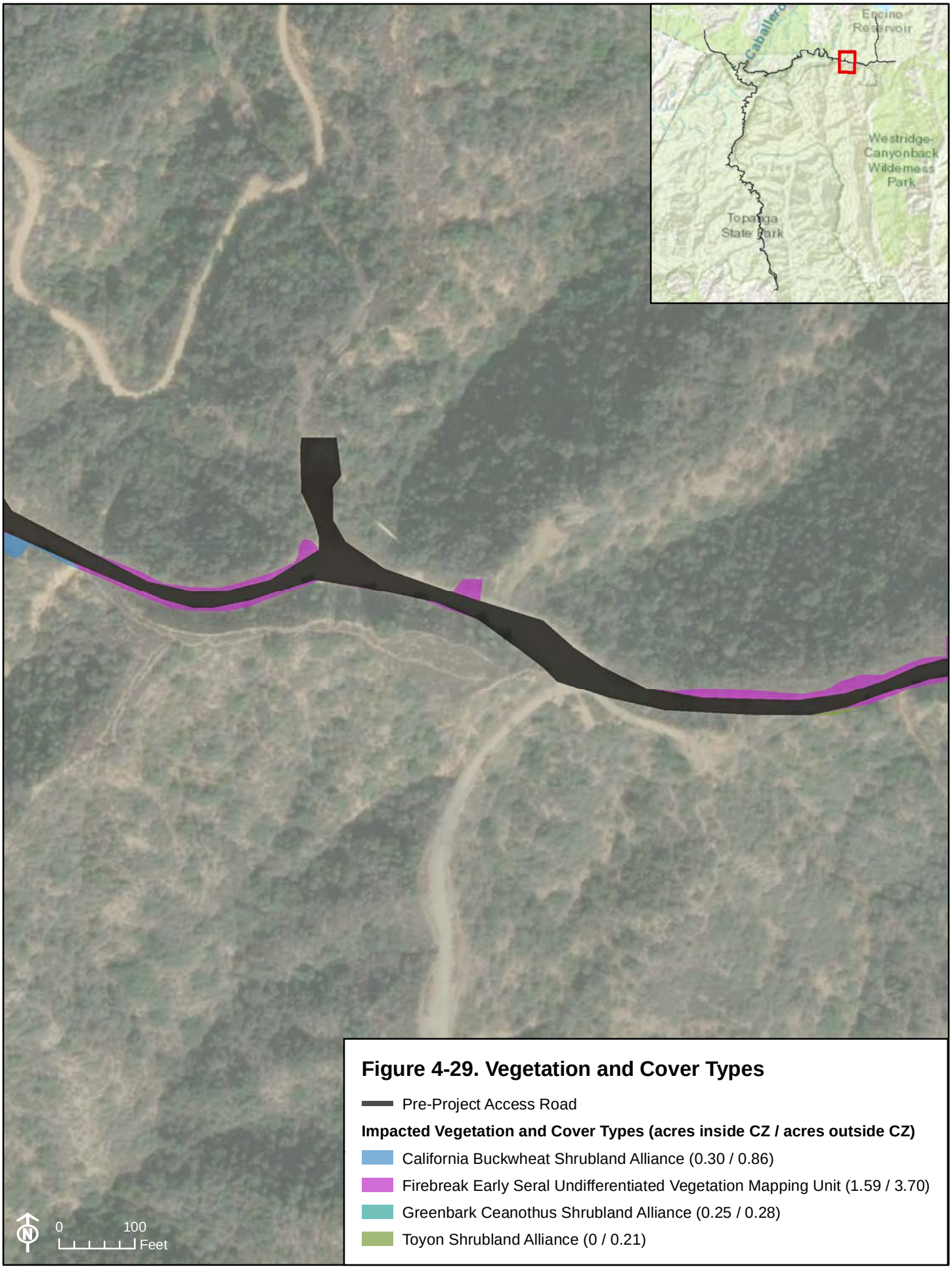

Figure 4-29. Vegetation and Cover Types

Pre-Project Access Road

Impacted Vegetation and Cover Types (acres inside CZ / acres outside CZ)

- California Buckwheat Shrubland Alliance (0.30 / 0.86)
- Firebreak Early Seral Undifferentiated Vegetation Mapping Unit (1.59 / 3.70)
- Greenbark Ceanothus Shrubland Alliance (0.25 / 0.28)
- Toyon Shrubland Alliance (0 / 0.21)

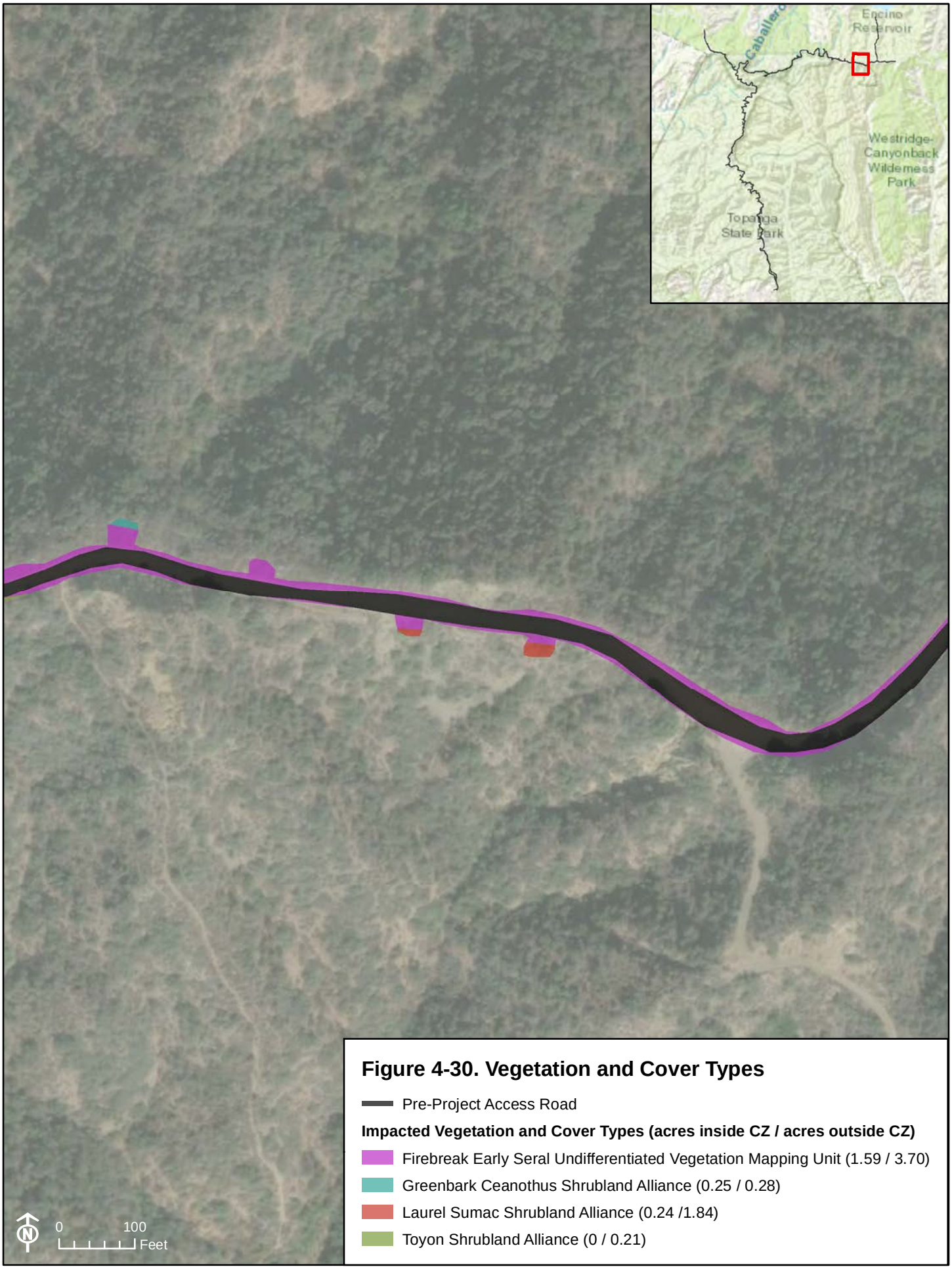

Figure 4-30. Vegetation and Cover Types

Pre-Project Access Road

Impacted Vegetation and Cover Types (acres inside CZ / acres outside CZ)

- Firebreak Early Seral Undifferentiated Vegetation Mapping Unit (1.59 / 3.70)
- Greenbark Ceanothus Shrubland Alliance (0.25 / 0.28)
- Laurel Sumac Shrubland Alliance (0.24 /1.84)
- Toyon Shrubland Alliance (0 / 0.21)

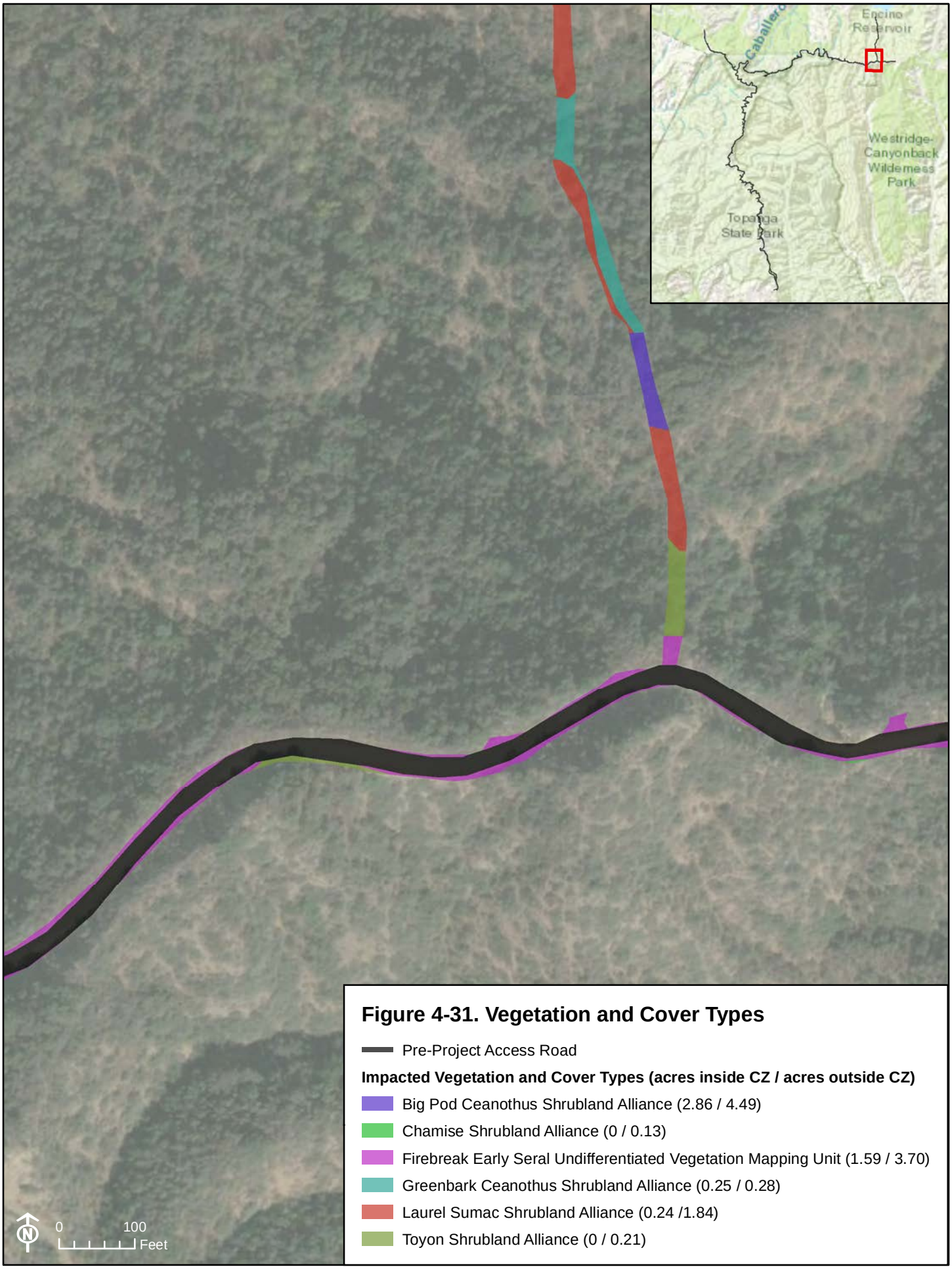

Figure 4-31. Vegetation and Cover Types

Pre-Project Access Road

Impacted Vegetation and Cover Types (acres inside CZ / acres outside CZ)

- Big Pod Ceanothus Shrubland Alliance (2.86 / 4.49)
- Chamise Shrubland Alliance (0 / 0.13)
- Firebreak Early Seral Undifferentiated Vegetation Mapping Unit (1.59 / 3.70)
- Greenbark Ceanothus Shrubland Alliance (0.25 / 0.28)
- Laurel Sumac Shrubland Alliance (0.24 /1.84)
- Toyon Shrubland Alliance (0 / 0.21)

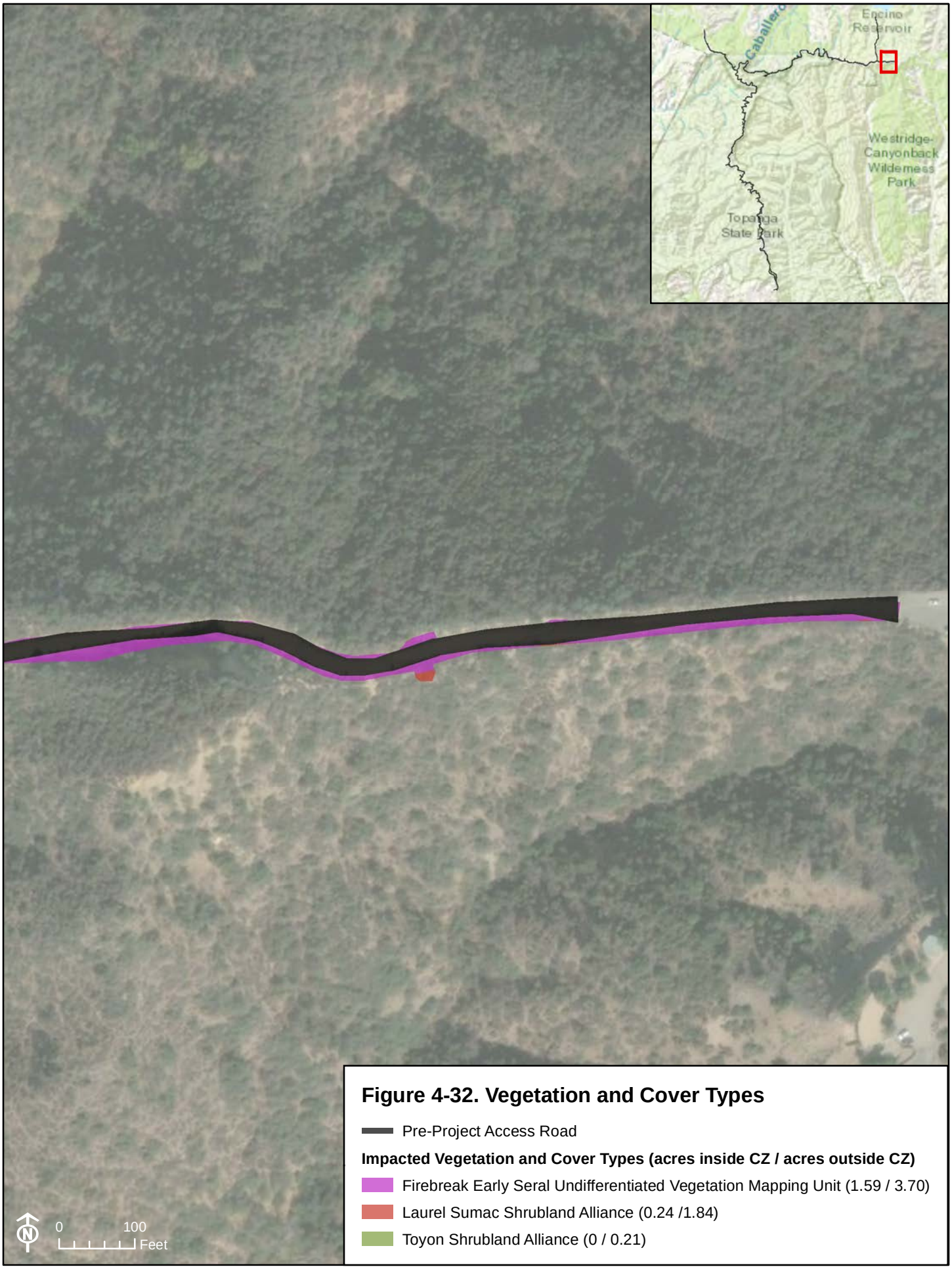

Figure 4-32. Vegetation and Cover Types

Pre-Project Access Road

Impacted Vegetation and Cover Types (acres inside CZ / acres outside CZ)

Firebreak Early Seral Undifferentiated Vegetation Mapping Unit (1.59 / 3.70)

Laurel Sumac Shrubland Alliance (0.24 /1.84)

Toyon Shrubland Alliance (0 / 0.21)

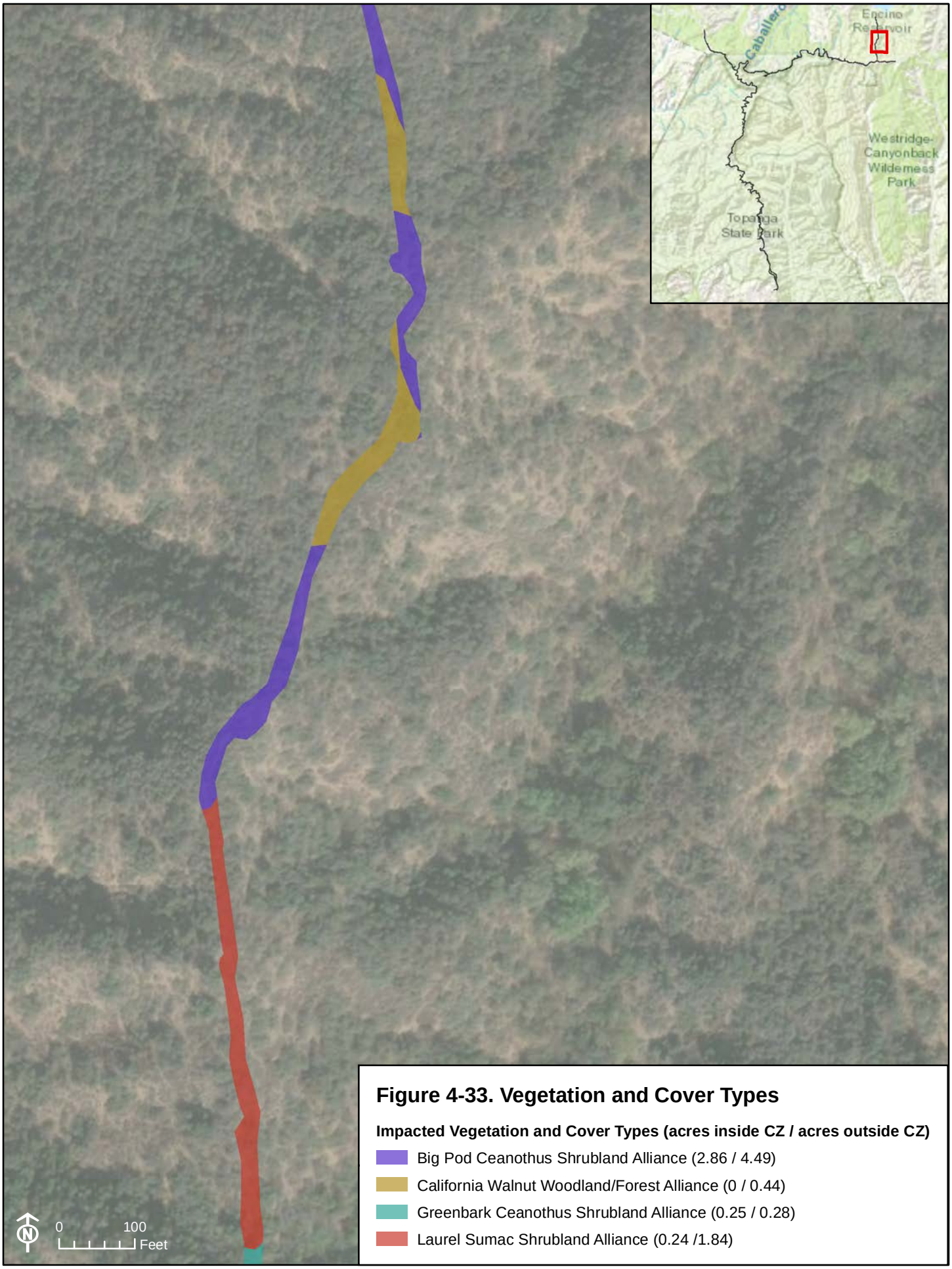

Figure 4-33. Vegetation and Cover Types

Impacted Vegetation and Cover Types (acres inside CZ / acres outside CZ)

- Big Pod Ceanothus Shrubland Alliance (2.86 / 4.49)
- California Walnut Woodland/Forest Alliance (0 / 0.44)
- Greenbark Ceanothus Shrubland Alliance (0.25 / 0.28)
- Laurel Sumac Shrubland Alliance (0.24 /1.84)

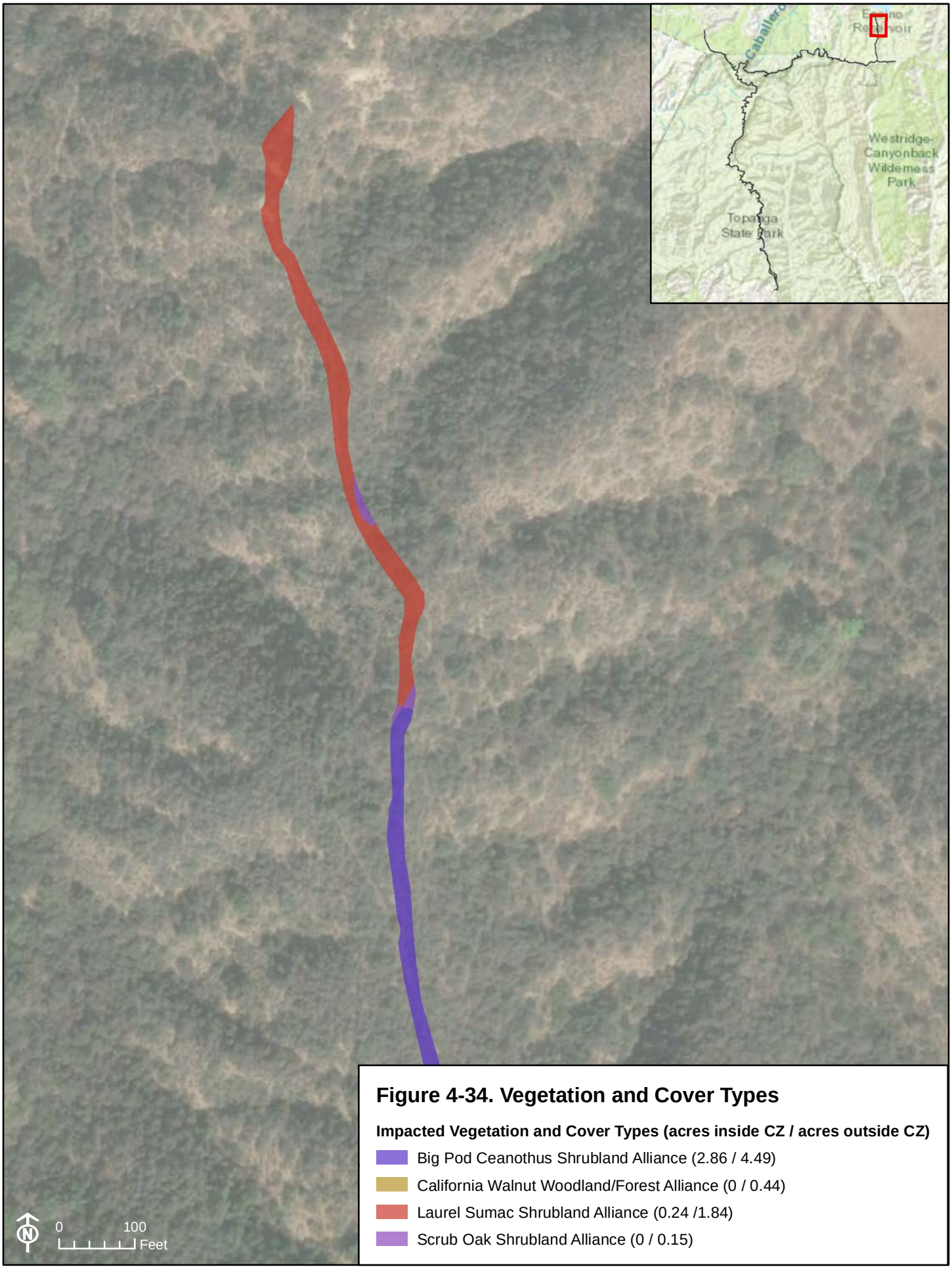

Figure 4-34. Vegetation and Cover Types

Impacted Vegetation and Cover Types (acres inside CZ / acres outside CZ)

- Big Pod Ceanothus Shrubland Alliance (2.86 / 4.49)
- California Walnut Woodland/Forest Alliance (0 / 0.44)
- Laurel Sumac Shrubland Alliance (0.24 /1.84)
- Scrub Oak Shrubland Alliance (0 / 0.15)

Attachment 2 – Photo Exhibit

Photo 1. East-facing view of the completed portion of the project area along Mulholland Dr.

Photo 2. Typical view of the access road within Topanga Canyon State Park.

Photo 3. North-facing view of the access road heading north towards Encino Reservoir.

Photo 4. Typical view of the access path impacts within Braunton's milkvetch Occ. No. 15.

Photo 5. Typical view of 1-meter plot used to inventory Braunton's milkvetch within the impact area and 6-meter buffers.

Photo 6. Typical positive HCl test for calcium carbonate soils.

Photo 7. Typical negative HCl test for calcium carbonate soils.

Photo 8. Large (>1.5 meters) Braunton's milkvetch observed within the project area.

Photo 9. Small (<1 centimeter) Braunton's milkvetch observed within the project area.

Photo 10. Dense Braunton's milkvetch seedlings along the access road on March 31, 2020.

Photo 11: Photo provided by Teagan Loew on February 4, 2020.

Photo 12. Dense patch of Braunton's milkvetch observed at Occ. No. 11 on February 19, 2020.

Photo 13. Typical California walnut groves within the northwest portion of the project area.

Photo 14. Typical holly leaf cherry - toyon - greenbark ceanothus chaparral on a north-facing slope within the project area.

Photo 15. Typical scrub oak chaparral on a north-facing slope within the project area.

Photo 16. Typical firebreak early seral undifferentiated vegetation within the project area.

PROJECT MEMORANDUM
TEMESCAL RIDGE POLE REPLACEMENT PROJECT

Date: August 13, 2020
To: Nadia Parker
From: Justin Wood
Subject: Impact Acreage Update for Temescal Ridge Pole Replacement Project (Agreement No. 47446B, Project No. 3421.026)

Aspen Environmental Group (Aspen) completed a reassessment of vegetation impacts associated with the Temescal Ridge Pole Replacement Project (project). This project memorandum summarizes these changes and references the Temescal Ridge Impact Assessment prepared by Aspen and submitted to Los Angeles Department of Water and Power (LADWP) on May 27, 2020.

Initial mapping of project impacts was completed during May of 2020 and was digitized based on a 50-centimeter resolution aerial image captured on November 12, 2019 by the GeoEye-1 satellite. At that time, this was the only aerial image available that showed the project impacts. During July of 2020, a high-resolution aerial image from July 2019 became available. This aerial image provided more detailed imagery of the project area and allowed our team to refine project-related impacts. Based on this review, direct impacts within Topanga State Park (TSP) and the Coastal Zone (CZ) increase slightly while indirect impacts decrease.

Impacts to vegetation within TSP, CZ, and the project area are presented in Table 1 (below). Table 1 is intended to replace Table 5 from the Temescal Ridge Impact Assessment. Table 2 (below) depicts the total acreages of impacts within TSP and the CZ and is intended to replace Table 6 from the Temescal Ridge Impact Assessment.

The breakdown of impacts is presented in the Venn Diagram and tables, below.

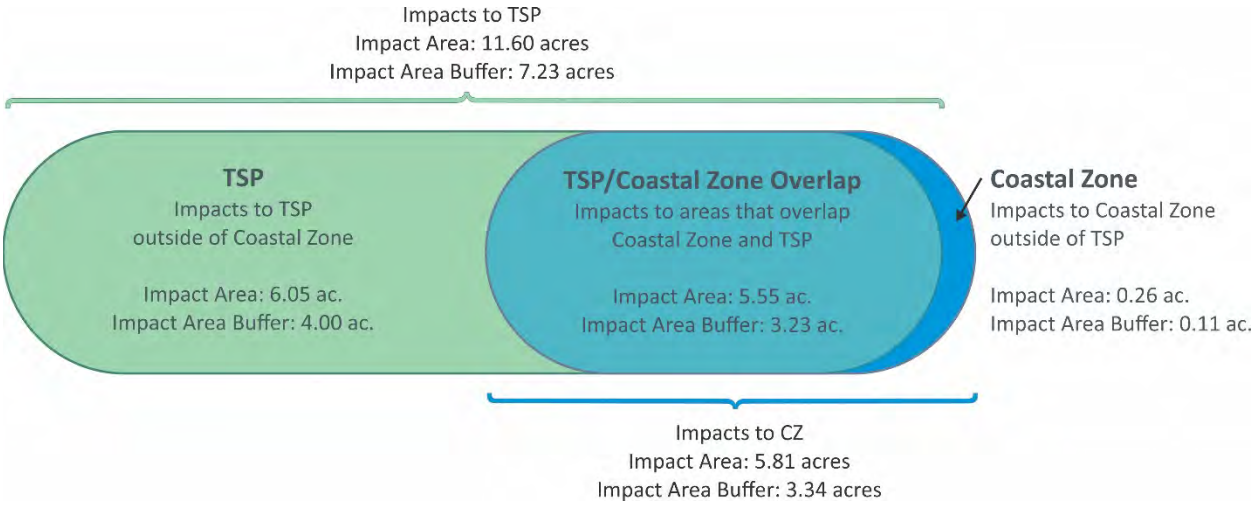

Table 1: Acreages of Vegetation and Land Cover Impacts within the Project Area and Impact Buffer			
Vegetation or Cover Types	Project Area (Acres)	Project Area Buffer (Acres)	Total Project Impact (Acres)
California walnut groves	0.50	0.06	0.56
Chamise chaparral	0.16	0.04	0.20
Bigpod ceanothus chaparral	7.63	3.90	11.54
Holly leaf cherry - toyon - greenbark ceanothus chaparral	0.93	0.26	1.16
Laurel sumac scrub	2.20	0.33	2.53
Scrub oak chaparral	0.16	0.0	0.16
Scrub oak-chamise chaparral	0.08	0.00	0.08
California buckwheat scrub	1.19	0.28	1.47
Bush mallow scrub	0.29	0.05	0.34
Black sage scrub	0.08	0.00	0.08
Firebreak early seral undifferentiated vegetation mapping unit	6.09	2.44	8.53
Total	19.31	7.36	26.67

Table 2: Updated Acreage of Vegetation and Land Cover Impacts within the Coastal Zone and TSP				
Vegetation or Cover Types	Coastal Zone[1]		Topanga State Park	
	Impact Area (Acres)	Impact Area Buffer (Acres)	Impact Area (Acres)	Impact Area Buffer (Acres)
California walnut groves	0.00	0.00	0.10	0.06
Chamise chaparral	0.00	0.00	0.04	0.04
Bigpod ceanothus chaparral	2.91	1.75	5.99	3.89
Holly leaf cherry - toyon - greenbark ceanothus chaparral	0.27	0.17	0.29	0.22
Laurel sumac scrub	0.24	0.19	0.52	0.32
California buckwheat scrub	0.26	0.12	0.63	0.28
Bush mallow scrub	0.07	0.05	0.07	0.05
Firebreak early seral undifferentiated vegetation mapping unit	2.06	1.06	3.97	2.37
Total by Category[1]	5.81	3.34	11.60	7.23

[1] Acreage calculations of the Coastal Zone and TSP are not additive. Except for a small area, the Coastal Zone is located within the TSP.

CALIFORNIA COASTAL COMMISSION
SOUTH COAST AREA OFFICE
301 E. OCEAN BLVD, SUITE 300
LONG BEACH, CA 90802
(562) 590-5071

Sent via Email and Regular U.S. Mail

August 16, 2019

Brian Noble
Project Manager
Los Angeles Department of Water and Power
PO Box 51111
Los Angeles, CA 90051-0100

Re: Unpermitted removal of major vegetation in and adjacent to Topanga State Park, Los Angeles County, CA

Dear Mr. Noble:

As you may know, the California Coastal Act[1] was enacted by the State Legislature in 1976 to provide long-term protection of California's 1,100-mile coastline through implementation of a comprehensive planning and regulatory program designed to manage conservation of coastal resources and development within the coastal zone. The California Coastal Commission ("Commission") is the state agency created by, and charged with administering the Coastal Act. In making its permit and land use planning decisions, the Commission carries out Coastal Act policies, which, amongst other goals, protect against loss of life and property from coastal hazards; provide maximum public access to the sea; protect natural landforms; protect scenic landscapes and views of the sea; and seek to protect and restore sensitive habitats, including in Topanga State Park.

Although we are aware that the utility pole replacement project that is at the center of the situation at hand was undertaken for important fire safety purposes, the removal of an endangered plant species, as described below, does not appear to have been consistent with the Coastal Act or necessary for the implementation of the project. We are also concerned with the scope of native vegetation that was removed for the project, and we are interested in ensuring that areas of native vegetation are restored, and all impacts to Environmentally Sensitive Habitat Areas are mitigated for, as required pursuant to the Coastal Act. Furthermore, our staff is coordinating with the U.S. Fish and Wildlife Service and the California Department of Parks and Recreation on this matter.

Our staff has confirmed that unpermitted development including but not limited to 1) grading of spur roads; 2) landform alteration; and 3) removal of major vegetation has been undertaken by the Los Angeles Department of Water and Power ("LADWP") in Topanga State Park and on adjacent properties. A majority of the vegetation that was removed belongs to the southern

[1] The Coastal Act is codified in sections 30000 to 30900 of the California Public Resources Code. All further section references are to that Code, and thus, to the Coastal Act, unless otherwise indicated.

maritime chaparral and coastal sage scrub communities. Ecologically significant vegetation, such as the vegetation impacted here, constitutes major vegetation for the purposes of the Coastal Act, as described in more detail below. Southern maritime chaparral and coastal sage scrub are entire ecosystems that not only includes a wide variety of plants, but also insects, mammals, and birds, many of which are very rare. Southern maritime chaparral and coastal sage scrub are an Environmentally Sensitive Habitat Area ("ESHA")[2] and they were substantially adversely impacted by the above described activities. One component of southern maritime chaparral habitat is Braunton's Milk-Vetch, a plant species listed as federally endangered under Endangered Species Act ("ESA") by the U.S. Fish and Wildlife Service, and is also ESHA itself. Braunton's Milk-Vetch was removed along with the chaparral. As a result, Braunton's Milk-Vetch was substantially adversely impacted by the above described unpermitted development. Braunton's Milk-Vetch is afforded special protection against potential impacts to their already scarce and sparsely dispersed habitat areas by the habitat protection policies for ESHA under the Coastal Act, as well as other laws such as the federal ESA.[3] Protecting southern maritime chaparral, coastal sage scrub, and remaining Braunton's Milk-Vetch habitat is a high priority for the Commission.

The property wherein the majority of the unpermitted development took place is located within Topanga State Park and is described as Assessor's Parcel Number (APN) 4431-023-901. A portion of this parcel, including areas where the unpermitted development occurred, is located in the Coastal Zone. Furthermore, the unpermitted development at issue also occurred on APN 4431-023-028, a property that is deed restricted for open space uses only, and which is wholly located in the Coastal Zone.

Unpermitted Development

Commission staff has researched our permit files and concluded that no coastal development permit has been issued for the development undertaken by LADWP described above. Pursuant to Section 30600(a), any person wishing to perform or undertake development in the Coastal Zone must first obtain a coastal development permit (CDP), in addition to any other permit required by law.

"Development" is defined, in relevant part, by Coastal Act Section 30106 as:

"Development" means, on land, in or under water, the placement or erection of any solid material or structure; discharge or disposal of any dredged material or of any gaseous, liquid, solid, or thermal waste; grading, removing, dredging, mining, or extraction of any materials; change in the density or intensity of use of land, including, but not limited to, subdivision pursuant to the Subdivision Map Act (commencing with Section 66410 of the Government Code), and any other division of land, including lot splits, except where the land division is

[2] *See* Coastal Act sections 30107.5 for definition of "Environmental Sensitive [Habitat] Area" and 30240 for ESHA protection policy. *See* also discussion further below.
[3] Though laws such as the federal ESA may support ESHA designation and protections under the Coastal Act, designation and protections for ESHA under the Coastal Act are not necessarily constrained by or dependent upon the status of the resources under any other law. In other words, the Coastal Act provides an independent basis for designating and protecting resources as ESHA, notwithstanding any other applicable law.

brought about in connection with the purchase of such land by a public agency for public recreational use; change in the intensity of use of water, or of access thereto; construction, reconstruction, demolition, or alteration of the size of any structure, including any facility of any private, public, or municipal utility; and the removal or harvest of major vegetation other than for agricultural purposes, kelp harvesting, and timber operations....(emphasis added)

The activities undertaken by LADWP including: 1) grading of spur roads; 2) landform alteration; and 3) removal of major vegetation, constitute development under the Coastal Act.
Any development activity conducted in the Coastal Zone, unless otherwise exempt, which is not the case here, without a valid CDP constitutes a violation of the Coastal Act. In some cases, certain activities related to removal of existing utility poles are exempt under the Coastal Act. However, pursuant to Section 13252 of the Commission's Regulations, the removal of existing utility poles is not exempt if the proposed activity would have a risk of substantial adverse impact on ESHA, which, as described in more detail below, the development which was actually undertaken did in fact result in substantial adverse impacts to the Braunton's Milk-Vetch, coastal sage scrub and southern maritime chaparral ESHA onsite. The purpose of a permit being required prior to the undertaking of development is, in large part, to provide for an opportunity to, in coordination with the Coastal Commission, design and/or condition the proposed work in a way so as to avoid unintended consequences and harms to coastal resources protected under the Coastal Act such as occurred here.

Although Commission staff may support potential ultimate outcomes of the project, e.g. replacement of hazardous utility poles within ESHA as consistent with the objectives of the Coastal Act, and would process an application for replacement of such utility poles accordingly, it is critical to ensure through the CDP process that any such development is sited and designed to avoid removal of southern maritime chaparral and Braunton's Milk-Vetch, and scheduled to avoid coinciding with the breeding season of protected species to ensure consistency with ESHA protection policies of the Coastal Act. The CDP process did not occur prior to the commencement of the activities at issue. To the contrary, unfortunately, the subject development commenced during bird breeding season and has resulted in substantial adverse impacts to southern maritime chaparral and Braunton's Milk-Vetch.

Environmentally Sensitive Habitat Areas on the Property

The Coastal Act affords utmost protection to ESHAs within the Coastal Zone. ESHA is defined in Coastal Act Section 30107.5, as follows:

"Environmentally sensitive area" means any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.

Maritime chaparral and coastal sage scrub are sensitive plant communities that are very limited in distribution among the coastal and inland mountains of Southern California. Southern maritime chaparral and coastal sage scrub communities have been observed by Commission staff on site. These plant communities are considered by the U.S. Fish and Wildlife Service and the

California Department of Fish and Wildlife as "sensitive" or "special status." The plant communities found in Topanga State Park serve important ecosystem functions, such as providing habitat for Braunton's Milk-Vetch, which itself is a federally-endangered special status plant. The southern maritime chaparral and coastal sage scrub communities have been severely impacted by agricultural activities, urbanization, disruption of natural fire regimes, and competition from invasive species. These rare plant communities are now confined to coastal and a few inland areas of Southern California and Baja, Mexico. The U.S. Fish and Wildlife Service reports that urbanization and agricultural conversion have caused the destruction of an estimated 82 to 93 percent of southern maritime chaparral[4] an estimated 85 to 90 percent of coastal sage scrub[5] vegetation in California. As evidenced by the discussion above, the southern maritime chaparral and coastal sage scrub communities are rare, especially valuable because of its special nature or role in the ecosystem, and easily degraded by human activities. Furthermore, the portion of Topanga State Park where the above described unpermitted development occurred was designated as Critical Habitat for the Braunton's Milk-Vetch by the U.S. Fish and Wildlife Service in 2006. Consequently, at the project site in Topanga State Park coastal sage scrub and southern maritime chaparral meets the definition of ESHA under the Coastal Act.

Enforcement Remedies

While we are hopeful that we can resolve this matter amicably, please be advised that the Coastal Act has a number of potential remedies to address violations of the Coastal Act, including the following: in some cases, violations involving unpermitted development may be resolved administratively through restoration of any damaged resources. Restoration of the site requires Commission authorization, in order to ensure the restoration is undertaken in a way that is appropriate with respect to Coastal Act resource protection, including ESHA policies, and to avoid any further harm to the resources. Section 30811 provides the Coastal Commission the authority to issue a restoration order to address violations at a site. Section 30810 states that the Coastal Commission may also issue a cease and desist order. It is staff's preference to work with parties cooperatively to issue consent orders that comprehensively resolve the Commission's claims under the Coastal Act.

Section 30809 states that if the Executive Director of the Commission determines that any person has undertaken, or is threatening to undertake, any activity that may require a permit from the Coastal Commission without first securing a permit, the Executive Director may issue an order directing that person to cease and desist. A cease and desist order under Section 30809 may be subject to terms and conditions that are necessary to avoid irreparable injury to the area or to ensure compliance with the Coastal Act.

Resolution

[4] U.S. Fish and Wildlife Service. 1996. Determination of endangered or threatened status for four southern maritime chaparral plant taxa from coastal southern California and northwestern Baja California, Mexico. Federal Register 61(195): 52370-52384

[5] U.S. Fish and Wildlife Service. 1993. Determination of threatened status for the California Gnatcatcher. Federal Register 58(59): 16742-16757

We would like to coordinate with LADWP to resolve these violations. In order to resolve this matter, we request that you agree to restore the areas impacted by the unpermitted development at issue, and in doing so, incorporate on-site mitigation measures for restoration of any native vegetation that has been impacted, including but not limited to, coastal sage scrub, southern maritime chaparral and Braunton's Milk-Vetch. The specific ultimate parameters of restoration and mitigation to resolve the violation will require Commission authorization. As a first step, please quantify for Commission staff's review the extent of the impacts to all native vegetation that has resulted from the activities that have occurred on the project site within both (APN's) 4431-023-901 and 4431-023-028, as well as identifying whether there are any impacts that you deem to be unavoidable, that would occur as result of activities that LADWP wishes to undertake on the project site within the Coastal Zone to complete the pole removal project pursuant to Commission authorization, which would address the entirety of the project. (In other words, if, even upon designing the required work with Commission oversight in accordance with ESHA protection policies for southern maritime chaparral and Braunton's Milk-Vetch, the objective of the proposed work would unavoidably result in impacts to the southern maritime chaparral and Braunton's Milk-Vetch onsite.) Any areas that are proposed to be impacted by future activities will also need to be designed to be restored and the impacts mitigated for. Please contact me by no later than **August 27, 2019** to discuss these next steps in resolving this matter.

Thank you for your attention to this matter. We look forward to working with you to resolve this matter. If you have any questions regarding this letter or the pending enforcement case, please feel free to contact me at 562-590-5071.

Sincerely,

Jordan Sanchez
Enforcement Officer

cc: Lisa Haage, Chief of Enforcement, CCC
Andrew Willis, Enforcement Supervisor, CCC
Amber Dobson, District Manager, CCC
Mark Elvin, U.S. Fish and Wildlife Service
Danielle LeFleur, California Department of Parks and Recreation
Tina Shim, Deputy City Attorney, LADWP
Charles Holloway, LADWP
Surfview Estates LLC

CALIFORNIA COASTAL COMMISSION
45 FREMONT, SUITE 2000
SAN FRANCISCO, CA 94105-2219
FAX (415) 904-5400
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VIA CERTIFIED MAIL and REGULAR MAIL

March 2, 2020

Martin L. Adams
General Manager and Chief Engineer
Los Angeles Department of Water and Power
111 N. Hope Street, Room 1520
Los Angeles, CA 90012

Subject:	**Notice of Intent to Commence Cease and Desist Order and Restoration Order Proceedings**
Violation No.:	V-5-19-0109
Location:	Five parcels owned by California State Parks in Topanga State Park – Los Angeles County Assessors' Parcel Numbers ("APNs") 4431-023-901; APN 4432-002-922; APN 4432-002-923; APN 4432-002-920; APN 4432-002-923; and three adjacent privately-owned properties: APN 4431-023-028; APN 4431-039-010; APN 4431-040-012.
Violation Description:	Unpermitted development in violation of resource protection provisions and permitting requirements of the Coastal Act, including, but not limited to: grading/creating new roads; grading and expansion of an existing fire road; depositing graded material; creating berms; removing major vegetation, including vegetation in an environmentally sensitive habitat area that contained numerous individual specimens of Braunton's milk-vetch, a species federally listed as endangered; and disrupting the Braunton's milk-vetch's critical habitat.

Dear Mr. Adams:

California Coastal Commission ("Commission") staff appreciates the Los Angeles Department of Water and Power's ("LADWP") willingness to work cooperatively towards resolution of the Coastal Act[1] violations listed above that are located in and around Topanga State Park, more specifically on California State Parks property at APN 4431-023-901; APN 4432-002-922; APN 4432-002-923; APN 4432-002-920; APN 4432-002-923 and on adjacent private property located at APN 4431-023-028; APN 4431-039-010; and

[1] The Coastal Act is codified in California Public Resources Code sections 30000 to 30900. All further references are to the Public Resources Code, and thus to the Coastal Act, except where specified that the reference is made to the Commission's regulations.

APN 4431-040-012 ("Properties"). As my staff has expressed to your staff, we would like to continue to work with LADWP to amicably resolve the above violations and we remain open to discussing the consensual resolution of the matter through a proposed Consent Cease and Desist Order and Consent Restoration Order ("Consent Orders"). The Consent Orders would be brought to the Commission for its approval at a formal hearing. Given the ongoing resource impacts, we would like to move toward restoration of the area as expeditiously as possible.

Prior to bringing an order to the Commission (be it a consent or contested order), the Commission's regulations require notification of our initiation of formal proceedings.[2] In accordance with those regulations, this letter notifies you of my intent, as the Executive Director of the Commission, to commence formal enforcement proceedings to address the Coastal Act violations noted above by bringing a proposal to the Commission for the issuance of either a consent or regular Cease and Desist Order and Restoration Order. The intent of this letter is not to discourage or supersede productive settlement discussions; rather, it is to provide formal notice of our intent to resolve these issues through the order process that in no way precludes a consensual resolution. My staff remains ready and willing to continue working with LADWP towards a mutually acceptable outcome. However, please note that should we be unable to reach an amicable resolution in a timely manner, this letter also lays the foundation for Commission staff to initiate a formal hearing before the Commission unilaterally. In a unilateral hearing Commission staff would propose an order directing LADWP to cease all unpermitted activity, restore all impacted areas, and mitigate for temporal losses of habitat, among other potential actions.

Background

This case involves damage to coastal resources and development performed without a Coastal Development Permit ("CDP") by the Los Angeles Department of Water and Power inside Topanga State Park and on adjacent private properties. On or about March of 2019, LADWP began the process to replace 220 wooden power poles with stronger, more fire-resistant steel poles. This power pole replacement project was conducted from Mulholland Drive in the Encino/Tarzana area (outside the Coastal Zone)[3] south along the Temescal Fire road and into Topanaga State Park and Pacific Palisades (within the Coastal Zone). In order to access the existing power poles for replacement, LADWP substantially widened an existing fire road and graded new "spur" roads, or offshoots, from the main fire road -- directly through an environmentally sensitive habitat area ("ESHA"). Impacted within this ESHA were numerous individual specimens of Braunton's milk-vetch,[4] a plant species the United States Fish and Wildlife Service ("USFWS") lists as federally endangered under the Endangered Species Act.[5] LADWP undertook these activities, which are "development" as that term is defined by the Coastal Act, without a CDP or any other authorization from the Coastal Commission, despite the significant amount of development taking place within the Coastal Zone.

[2] See Sections 13181 and 13191 of Title 14 of the California Code of Regulations. (Procedures for Notice of Intent to commence proceedings).
[3] Section 30103 of the Coastal Act defines Coastal Zone.
[4] Scientific name *Astragalus Brauntonii.*
[5] 16 U.S.C. Ch. 35 § 1531 et seq.; 50 C.F.R. 17.12(h) (listing).

The unpermitted development conducted by LADWP caused significant harm within the Coastal Zone as it damaged and destroyed ecologically important vegetation that constitutes "major vegetation." The new graded roads and widened existing road went directly through coastal chaparral and coastal sage scrub communities -- both of which are rare and important ecosystems that support and include a wide variety of coastally important plants, insects, mammals, and birds. Because of their importance to coastal ecosystems, the Commission classifies coastal chaparral and coastal sage scrub in this area as ESHA.[6] In addition, Braunton's milk-vetch is a component of coastal chaparral and wherever it occurs the commission also classifies the particular area as ESHA. The coastal chaparral and coastal sage scrub habitat, including the remaining Braunton's milk-vetch habitat, located on the Properties is afforded the highest protections under the Coastal Act and therefore such protection is a high priority for the Commission.

A brief timeline of events are as follows: On or around March of 2019, LADWP began a power pole replacement project from the Palisades Highlands community in Pacific Palisades to Mulholland Drive in the Encino/Tarzana area of the San Fernando Valley. On July 7, 2019, a member of the public (who is familiar with the Braunton's milk-vetch) was hiking on the properties and observed LADWP's ongoing project. The next day that same member of the public sent LADWP an e-mail message alerting LADWP of the presence of the Braunton's milk-vetch in the area where LADWP was working. In an e-mail message response, LADWP thanked the person for bringing the presence of the plant to their attention; despite this, however, eight days later, that same hiker visited the site and discovered LADWP crews had continued work and, in doing so, additionally damaged numerous individual specimens of Braunton's milk-vetch

On July 25, 2019, a conservation analyst for the California Native Plant Society informed Commission staff that the LADWP's power pole replacement project appeared to be partially in the Coastal Zone and that the development undertaken by LADWP appeared to significantly disrupt ESHA and an endangered species. On July 31, 2019, Commission staff sent an e-mail message to LADWP to inform its staff that they must cease all development in the Coastal Zone unless and until LADWP obtained a CDP from the Commission for the work. At this time, Commission staff also informed LADWP that almost all of the area where development occurred is ESHA and provides habitat for the federally-listed endangered species. On August 14, 2019, Charles Holloway, of LADWP Environmental Affairs, called Commission staff and committed to resolve the matter. On August 16, 2019, Commission District Enforcement Officer Jordan Sanchez sent a notice of violation letter to LADWP notifying LADWP of the specific violations on the Properties and describing the process to resolve the matter; three days later LADWP sent a letter pledging to work with the Commission towards a mutual resolution. On August 28, 2019, Coastal Commission staff met in person with LADWP, USFWS, and State Parks to discuss the next steps. On January 28, 2020, LADWP, USFWS, California State Parks, and Coastal Commission staff had a conference call to discuss a new survey LADWP is currently conducting to determine the full extent of the damage. LADWP staff indicated its willingness to resolve the situation.

[6] *See* Coastal Act sections 30107.5 for definition of "Environmental Sensitive [Habitat] Area" and 30240 for ESHA protection policy.

Violations of the Coastal Act

LADWP violated the Coastal Act by undertaking development without the required coastal development permit, and by undertaking development inconsistent with the Coastal Act, that caused continuing resource damages, and that was inconsistent with the resource protection policies of the Coastal Act including causing a significant disruption of ESHA.

Unpermitted Development

"Development" is broadly by Coastal Act Section 30106, in relevant part,

> "Development" means, on land, in or under water, the placement or erection of any solid material or structure. . . grading, removing, dredging, mining, or extraction of any materials. . .and the removal or harvesting of major vegetation other than for agricultural purposes, kelp harvesting, and timber operations . . .

The unpermitted development addressed herein includes but is not limited to: grading/creating new roads; grading and expansion of an existing fire road; depositing graded material; creating berms; removing "major vegetation" including vegetation that constituted an environmentally sensitive habitat area, including numerous individual specimens of Braunton's milk-vetch. LADWP undertook this without authorization under the Coastal Act.[7]

As a baseline, all of the development for the project occurred in ESHA. ESHA, as interpreted by the Commission, is major vegetation and therefore any removal of ESHA is development under the Coastal Act. Ergo, when LADWP created numerous new roads through grading, they were not only violating the Coastal Act through the very act of "developing" those roads, but also by removing major vegetation through grading (the mechanical act of grading also necessarily includes the destruction of any plant matter on the surface of the soil). This principle is the same for the expansion of the existing fire road – when LADWP graded the road to widen it, they also removed major vegetation. Another instance of development, and subsequently removal of major vegetation, occurred when LADWP placed "solid fill" in the form of the soil generated from the grading into berms on the side of the road. Not only was the act of placing and erecting berms along the side of the road development, it also further removed major vegetation because it crushed and damaged plants by burying them.

Further, very little development is allowed within ESHA; only uses dependent on ESHA (for example, a hiking trail) are allowed even with a permit. Development adjacent to ESHA must be sited and designed to prevent impacts that would significantly degrade ESHA. (§ 30240(a), (b).)

Significant Disruption to and Environmentally Sensitive Habitat Areas

The Properties that are the subject of this matter are situated entirely within an Environmentally Sensitive Habitat Area. The Commission recognizes coastal sage scrub and coastal chaparral communities as ESHA in this location of the Santa Monica

[7] Section 13252 of the Commission's Regulations states that repair and maintenance of existing development is not exempt if the proposed activity is located in, or within 50 feet of, ESHA.

Mountains. The Commission's responsibility to protect coastal sage scrub and coastal chaparral is established by the habitat protection policies of the Coastal Act, namely Section 30240.

Coastal chaparral and coastal sage scrub habitats are sensitive plant communities that are distributed in a limited manner among the coastal and inland mountains of southern California.[8] Commission staff has observed, and the initial Biological Survey submitted by LADWP in November documented, the coastal chaparral and coastal sage scrub plant communities on the Properties.

These plant communities found on the Properties serve important ecosystem functions. One of those functions is to provide habitat for the endangered Braunton's milk-vetch. These coastal chaparral and coastal sage scrub communities are rare and especially valuable because of their special nature and role in the ecosystem that is easily destroyed by human activities. Furthermore, the portion of Topanga State Park where the above described unpermitted development occurred was designated as Critical Habitat for the Braunton's milk-vetch by the U.S. Fish and Wildlife Service in 2006.[9] For all these reasons, the Commission considers this area ESHA. Section 30240 of the Coastal Act allows only dependent uses within ESHA, and prevents allowable development within adjacent areas from causing significant disruption to the ESHA.

Cease and Desist Order

As mentioned above, we are very encouraged by LADWP's recent efforts to reach an amicable resolution of this matter and are hopeful we can do so by working towards an agreed-upon consent order. Again, if we are to settle this matter, such actions still must be addressed through this formal order process (whether through a consent or unilateral action). The following is a required step in providing you with the notice required under the Commission's Regulations; it in no way is intended to subvert the recent, productive conversations that your staff has been having with Commission staff.

The Commission's authority to issue Cease and Desist Orders is set forth in Section 30810(a) of the Coastal Act, which states, in part:

> If the commission, after public hearing, determines that any person … has undertaken, or is threatening to undertake, any activity that (1) requires a permit from the commission without securing the permit or (2) is inconsistent with any permit previously issued by the commission, the commission may issue an order directing that person or governmental agency to cease and desist.

Section 30810(b) of the Coastal Act states that the cease and desist order may be subject to terms and conditions that the Commission determines are necessary to ensure compliance with the Coastal Act, including removal of any unpermitted development or material.

[8] National Park Service. 2000. Draft general management plan & environmental impact statement. Santa Monica Mountains National Recreation Area – California.
[9] USFWS. 2006. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for *Astragalus brauntonii* and *Pentachaeta lyonia*; Final Rule. Federal Register Vol. 71; No. 219: 66374-423. November 14.

Section 30600(a) of the Coastal Act states that, in addition to obtaining any other permit required by law, any person wishing to perform or undertake any development in the Coastal Zone must obtain a CDP. "Development" is defined by Section 30106 of the Coastal Act as follows:

> "Development" means, on land, in or under water, the placement or erection of any solid material or structure; discharge or disposal of any dredged material or of any gaseous, liquid, solid, or thermal waste; grading, removing, dredging, mining, or extraction of any materials; change in the density or intensity of use of land…and any other division of land, including lot splits…change in the intensity of use of water, or of access thereto…

The various instances of unpermitted actions (as listed above) clearly constitute "development" within the meaning of the above-quoted definition and therefore are subject to the permit requirement of Section 30600(a). A CDP was not sought or issued to authorize the unpermitted development. As the unpermitted development and activities undertaken by the LADWP are inconsistent with the Coastal Act, the criterion for issuance of a cease and desist order under Section 30810(a) of the Coastal Act is thus satisfied.

For these reasons, I am issuing this Notice of Intent to commence cease and desist order proceedings. The procedures for the issuance of cease and desist orders are described in Sections 13180 through 13188 of the Commission's regulations, which are in Title 14 of the California Code of Regulations. As previously mentioned, our strong preference is that we these resolve these matters in a consensual agreement between LADWP and the Commission.

Restoration Order

The Commission's authority to issue Restoration Orders is set forth in Section 30811 of the Coastal Act, which states, in part:

> In addition to any other authority to order restoration, the commission…may, after a public hearing, order restoration of a site if it finds that the development has occurred without a Coastal development permit from the commission…, the development is inconsistent with this division, and the development is causing continuing resource damage.

Pursuant to Section 13191 of the Commission's regulations, I have determined that the activities specified in this letter meet the criteria of Section 30811 of the Coastal Act, based on the following:

1. "Development," as that term is defined by section 30106 of the Coastal Act, has occurred without a CDP from the Commission.

2. This unpermitted development is inconsistent with the resource protection policies of the Coastal Act, including, but not necessarily limited to:

    a. Coastal Act Section 30231 (biological productivity and water quality),

b. Coastal Act Section 30240 (protection of environmentally sensitive habitat areas).

c. Coastal Act Section 30251 (scenic and visual qualities), and

d. Coastal Act Section 30253 (hazards/geologic stability)

3. The unpermitted development remains in place and therefore continues to cause resource damage, which is defined by Section 13190 of the Commission's regulations as: "any degradation or other reduction in quality, abundance, or other quantitative or qualitative characteristic of the resource as compared to the condition the resource was in before it was disturbed by unpermitted development." The unpermitted development continues to exist, and therefore, it continues to cause damage to resources and prevent the Coastal Act resources that were displaced from re-establishing, and it continues to cause degradation and reduction in quality of surrounding resources as compared to their condition before the unpermitted development occurred.

For the reasons stated above, I am therefore issuing this "Notice of Intent" letter to commence proceedings for a Restoration Order before the Commission in order to compel the restoration of the Property. The procedures for the issuance of Restoration Orders are described in Sections 13190 through 13197 of the Commission's regulations, which are codified in Title 14 of the California Code of Regulations.

Civil Liability and Exemplary Damages

The Coastal Act also includes a number of penalty provisions that may be applicable. Section 30820(a)(1) provides for civil liability to be imposed on any person who performs or undertakes development without a CDP and/or that is inconsistent with any CDP previously issued by the Commission in an amount that shall not exceed $30,000 and shall not be less than $500, for each instance of development that is in violation of the Coastal Act. Section 30820(b) provides that additional civil liability may be imposed on any person who performs or undertakes development without a CDP and/or that is inconsistent with any CDP previously issued by the Commission when the person intentionally and knowingly performs or undertakes such development. Civil liability under Section 30820(b) shall be imposed in an amount not less than $1,000 per day and not more than $15,000 per day, for each violation and for each day in which each violation persists. Section 30821.6 also provides that a violation of an order of the Commission can result in civil liabilities of up to $6,000 for each day in which each violation persists. Lastly, Section 30822 provides for additional exemplary damages for intentional and knowing violations of the Coastal Act or a Commission Cease and Desist Order.

Response Procedure

In accordance with Sections 13181(a) and 13191(a) of the Commission's regulations, you have the opportunity to respond to the Commission staff's allegations as set forth in this notice of intent to commence Cease and Desist Order and Restoration Order proceedings by completing the enclosed statement of defense ("SOD") form. The SOD form should be

directed to the attention of Logan Tillema, at the address listed on the letterhead, and must be received not later than March 23, 2020.

However, should this matter be resolved via a Consent Order, an SOD form would not be necessary. In any case and in the interim, staff would be happy to accept any information you wish to share regarding this matter. The Executive Director may extend the deadlines for submittal of the SOD form to specifically allow additional time to discuss terms of a Consent Order and to help resolve this matter amicably. Again, given the impacts on a protected species as well other coastal resources, resolving this matter as quickly as possible is critical. Commission staff currently intends to schedule the hearings for the Cease and Desist Order and Restoration Order for the Commission's May or July 2020 hearing.

Resolution

As my staff has discussed with you, we would like to work with you to resolve these issues amicably through the Consent Order process. Such a process provides an opportunity to resolve these issues through mutual agreement. While requiring compliance with the Coastal Act, a Consent Order gives you additional input into the process and could potentially allow you to negotiate a penalty amount with Commission staff to resolve your associated civil liabilities. A Consent Order would provide you with a framework in which to permanently resolve this matter and thereby resolve the complete violation without any further formal legal action. We are hopeful that we can find a mutually agreeable resolution to resolve this matter.

Another benefit of a Consent Order is that in a consent proceeding, Commission staff will be presenting and recommending approval of an agreement between you and staff rather than addressing the violations through a contested hearing. Alternatively, if we are not able to reach a consensual resolution, we will need to proceed with a unilateral order at the next available hearing. Again, should we settle this matter, you do not need to expend the time and resources to fill out and return the SOD form mentioned above in this letter.

If you have any questions regarding this letter or the enforcement case, please call Logan Tillema at (415) 904-5272.

Sincerely,

John Ainsworth
Executive Director

cc: Mark Sedlacek, Director of Environmental Affairs LADWP
Nadia Parker, Supervisor Environmental Planning and Assessment LADWP
Mark Elvin, Biologist United States Fish and Wildlife Service
Danielle LeFer, Acting Senior Environmental Scientist California State Parks

Lisa Haage, Chief of Enforcement
Justin Buhr, Statewide Enforcement Supervisor
Logan Tillema, Headquarters Enforcement Analyst
Robin Mayer, Senior Attorney

Enclosures: Statement of Defense Form for Cease and Desist Order and Restoration Order