APPENDIX B

BIOLOGICAL OPPORTUNITIES AND CONSTRAINTS REPORT

SAN LUIS REY RIVER PARK MASTER PLAN

SAN DIEGO COUNTY, CALIFORNIA

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PURPOSE

The County of San Diego Department of Parks and Recreation is pursuing, through the preparation of a Master Plan, the development of a vision for the San Luis Rey River Park. The Master Plan will establish the framework for the development of a river park within the eight-mile corridor of the San Luis Rey River between Interstate 15 (I-15) and the Old Bonsall Bridge. This Biological Opportunities and Constraints Report is being prepared in support of the San Luis Rey Riverpark Master Plan, to identify biological constraints and opportunities within the Master Plan Draft Core Study Area (CSA).

The goals and objectives of this Biological Opportunities and Constraints Report for the San Luis Rey River Park Master Plan are as follows:

Identify areas within the CSA boundary that have the least biological constraints to park development;

Identify areas within the CSA boundary that are important for preservation and that may be utilized as mitigation for project impacts to biological resources associated with park development as well as other development proposals in the area (i.e., widening of SR-76);

Identify areas within or adjacent to the CSA boundary that offer opportunities for habitat restoration/enhancement, which would improve the overall biological value of the San Luis Rey River corridor; and

Identify regulatory approvals associated with park development within the CSA.

METHODOLOGY

The majority of the CSA consists of privately held lands. Therefore, as access to private property could not be guaranteed, biological studies focused primarily on compiling and reviewing existing available data and reviewing recent aerial photographs of the CSA. This level of effort is consistent with the scope of work associated with the development of a Master Plan, which does not necessitate detailed field-level analysis. Data reviewed and utilized in the preparation of this opportunities and constraints report include:

Biological Study – San Luis Rey River: Arundo Control and Restoration from Keys Creek to College Blvd. (Mission Resource Conservation District 2004);

Draft North County Multiple Species Conservation Program (NCMSCP) Maps;

California Natural Diversity Database (2004);

U.S. Fish and Wildlife Service 2004 GIS Data (sensitive plant and wildlife data); and

County of San Diego Geographical Information Systems (GIS) Data including: Draft NCMSCP Pre-approved Mitigation Areas; Draft NCMSCP low, high and very

high habitat value areas; general vegetation communities; etc.

While detailed information was not available during the preparation of this report, this Biological Opportunities and Constraints Report acknowledges the future expansion and improvements to SR-76 within and adjacent to the CSA.

In addition to a review of the existing available biological data, Mooney · Jones & Stokes conducted general surveys of the CSA, which consisted primarily of driving all accessible areas of the CSA. However, limited field-level reconnaissance surveys, which consisted of walking portions of the CSA, were also conducted. Vegetation mapping was conducted using a high-resolution 2004 aerial photograph on which existing GIS vegetation data was overlaid. Field surveys were conducted to "spot check" the accuracy of the GIS data.

EXISTING CONDITIONS WITHIN THE CSA

The CSA for the proposed San Luis Rey River Park Master Plan consists of approximately 3,661 acres along an eight-mile corridor of the San Luis Rey River, extending from just east of I-15 to the Old Bonsall Bridge within the communities of Fallbrook and Bonsall, San Diego County (Figure 1). Existing land uses within and adjacent to the CSA consist primarily of residential development, agricultural development, and vacant land. The low, flat San Luis Rey River basin and adjacent steep slopes characterize the topography within the CSA.

The soil types within the CSA consist of: Altamont clay, Bonsall sandy loam, Cieneba coarse sandy loam, Cieneba very rocky coarse sandy loam, Cieneba rocky coarse sandy loam, Cieneba-Fallbrook rocky sandy loam, Fallbrook sandy loam, Fallbrook-Vista sandy loam, Grangeville sandy loam, Greenfield sandy loam, Los Posas fine sandy loam, Las Posas stony fine sandy loam, Placentia sandy loam, Ramona gravelly sandy loam, Ramona sandy loam, Redding cobbly loam, Riverwash, Steep gullied land, Tujunga sand, Visalia sandy loam, Vista coarse sandy loam, Vista rocky coarse sandy loam, and Wyman loam (Bowman 1973).

Regulatory Environment

Draft North County Multiple Species Conservation Program

The CSA is located outside of the currently approved boundaries of the County's Multiple Species Conservation Program (MSCP) Subarea Plan, but is within the Draft North County MSCP (NCMSCP) subarea of the County's MSCP. The NCMSCP will provide a regional conservation planning framework for the unincorporated portions of northwestern San Diego County. The overall goal of the MSCP is "to maintain and enhance biological diversity in the region and conserve viable populations of endangered, threatened, and key sensitive species and their habitats, thereby preventing local extirpation and ultimate extinction" (County of San Diego MSCP). The MSCP addresses the potential impacts of development to covered species and their habitats and creates a plan to mitigate for such impacts. As part of the development of the MSCP, the wildlife agencies [U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG)] and the County of San Diego develop a Habitat Evaluation Model map, which identifies areas of low, medium, high, and very high habitat value. The MSCP is designed to encourage development within lower habitat value areas and preservation within high and very high

habitat value areas or Pre-approved Mitigation Areas (PAMA).

The majority of the CSA has been identified as high and very high value habitat according to the Draft NCMSCP Habitat Evaluation Model (Figure 2) and has been located within a Draft PAMA (Figure 3). This ranking is due to the presence of sensitive habitat and listed species and proximity to the San Luis Rey River corridor. This corridor, and its associated vegetation communities, has been identified as an important preserve area for the NCMSCP. While there is no denying that the CSA contains sensitive biological resources and high value habitat, it should be noted that the NCMSCP Habitat and Evaluation Model and the Draft PAMAs were developed utilizing GIS technology and aerial photography and that data was not verified through field-level surveys. Therefore, on a parcel or project-specific level these designations may not be accurate (i.e., existing residential development may erroneously be included within an area classified as high value habitat).

Resource Protection Ordinance

The County of San Diego adopted the Resource Protection Ordinance (RPO) in 1991 to strengthen guidelines for development within the County's wetlands, wetland buffers, floodplains, steep slopes, sensitive biological habitats, and prehistoric and historic sites such that preservation of these sensitive lands would be guaranteed.

The RPO mandates the avoidance and preservation of RPO wetlands to the maximum extent feasible; any allowable impacts would require mitigation to ensure no-net-loss of RPO wetlands (i.e., for every acre impacted, one acre must be created).

The RPO applies to Tentative Parcel Maps, Tentative Maps, Major Use Permits, Site Plans, Administrative Permits, Vacations of Open Space Easements, and Certificates of Compliance filed pursuant to County Code Sections 81.616.1 and 81.616.2. According to the County of San Diego, this ordinance does not apply to park projects, as they are not required to pull any of the above-mentioned permits. However, the San Luis Rey River Park will still comply with local rules, regulations and ordinances.

Endangered Species Act

The USFWS is responsible for administering the Federal Endangered Species Act (ESA) of 1973, the goal of which is to conserve federally endangered and threatened species and their habitats. The CDFG is responsible for the protection of rare, threatened, and endangered plant and animal species pursuant to the California ESA. Impacts to threatened or endangered species require consultation with these agencies under the ESA to obtain "take" authorization. The term "take" is defined in the ESA as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Consultation with these agencies involves the preparation of a Biological Assessment which addresses impacts to listed species and their habitats and proposed conservation measures, and the issuance of a Biological Opinion which allows for the taking of listed species and outlines the conservation measures that must be implemented in association with the proposed action.

The County of San Diego is in the process of preparing the NCMSCP and has been meeting with the resource agencies to discuss incorporating the proposed San Luis Rey River Park project, and associated mitigation requirements, within the framework of the NCMSCP. If approved, this would eliminate the need for separate consultation with the resource agencies as discussed above.

Clean Water Act, Porter-Cologne Act, and Fish and Game Code

Wetlands and other waters (known to occur within the CSA) are considered to be sensitive biological resources and are protected by various federal, state, and local jurisdictions. The U.S Army Corps of Engineers (USACE)

and the Regional Water Quality Control Board (RWQCB) regulate waters of the U.S., including wetlands, under the authority of Sections 404 and 401, respectively, of the Clean Water Act (CWA). The term "waters of the U.S." encompasses many types of waters, including waters currently or historically used in interstate or foreign commerce; all waters subject to the ebb and flow of tides; all interstate waters including interstate wetlands; all other waters such as intrastate lakes, rivers, streams (including ephemeral and intermittent streams), mudflats, sandflats, wetlands, sloughs, etc., the use, degradation or destruction of which could affect interstate or foreign commerce; all impoundments of waters otherwise defined as waters of the U.S.; tributaries of waters of the U.S.; territorial seas; and wetlands adjacent to waters of the U.S. (USACE 1987). Under the Porter-Cologne Act, the RWQCB's jurisdiction also includes isolated wetlands and other waters that are not jurisdictional under the CWA. The CDFG takes jurisdiction over lakes, rivers, and streams under Section 1600 et seq. of the Fish and Game Code.

The USACE defines wetlands as areas that are dominated by hydrophytic plant species that exhibit wetland hydrology, and that have hydric soils. Areas that do not meet these criteria but exhibit a defined channel are considered non-wetland waters of the U.S. CDFG jurisdiction extends across the bed, banks, and channel of these features and includes areas beneath a riparian canopy, even if the canopy areas are well away from the stream channel (such as in riparian areas). CDFG jurisdiction may also extend to the edge of the 100-year floodplain. The RWQCB takes jurisdiction of waters of the U.S. as defined by the USACE as well as other surface waters, which include isolated wetlands (e.g., vernal pools) and stream channels.

Formal wetland delineations were not conducted within any portion of the CSA as part of this analysis. However, prior to project implementation wetland delineations would need to be conducted within each project site to identify (and quantify) proposed impacts to jurisdictional resources and associated proposed mitigation measures.

Vegetation Communities

Biological resources located within the approximately 3,661-acre CSA consist of eucalyptus woodland, disturbed habitat, agriculture, coastal sage scrub, southern mixed chaparral, coastal sage-chaparral scrub, non-native grassland, disturbed wetlands, open water (freshwater), non-vegetated channels, freshwater marsh, southern riparian forests, riparian woodlands, riparian scrubs, and coast live oak woodland. Urban/developed areas, consisting of existing roadways (i.e., I-15, SR-76, etc.), residential development, and commercial development are also located within the CSA. Although field-level mapping was not conducted for the entire approximately 3,661-acre CSA, a vegetation map was prepared utilizing a recent aerial photograph, existing available biological data, and limited field checks (Figures 4a-4d). Table 1 identifies general vegetation communities and estimated percent cover within each segment of the CSA.

Upland Vegetation Communities

Eucalyptus woodland consists of open to dense stands of eucalyptus trees, which are invasive, non-native species.

Disturbed habitat consists of previously disturbed areas that are either devoid of vegetation (dirt roads/trails) or support scattered non-native species such as mustard (Brassica sp.), radish (Raphanus sativus), tumbleweed (Salsola tragus), and star thistle (Centaurea sp.). While these species are non-native, they are not considered to be invasive species as they typically are found along the borders between native and naturalized vegetation communities and disturbed areas and do not typically out-compete adjacent vegetation communities.

Agricultural operations, consisting of avocados, row crops, nurseries, and equestrian facilities, are scattered throughout the CSA, both within

the upland areas north and south of the San Luis Rey River and within the 100-year floodplain of the river.

Coastal sage scrub consists of low, soft-woody shrubs, typically measuring 0.5-2 meters tall (Holland 1986). Species composition generally consists of California sagebrush (Artemisa californica), buckwheat (Eriogonum fasciculatum), black sage (Salvia mellifera), white sage (Salvia apiana), and laurel sumac (Malosma laurina).

Southern mixed chaparral consists of broad-leaved sclerophyll shrubs, 1.5-3 meters tall, forming dense often nearly impenetrable stands (Holland 1986). Common species composition of this habitat within San Diego County consists of scrub oak (Quercus berbidifolia), chamise (Adenostoma fasciculatum), lemonade berry (Rhus integrifolia), manzanita (Arctostaphylos sp.), white-stemmed lilac (Ceanothus leucodermis), and mission manzanita (Xylococcus bicolor).

Coastal sage-chaparral scrub is a transition community containing species typical of both southern mixed chaparral and Diegan coastal sage scrub such as chamise, California sagebrush, white sage, lilac (Ceanothus sp.), and laurel sumac.

Non-native grassland consists of a dense to sparse cover of annual grasses with flowering culms measuring approximately one meter high. Native wildflowers are often associated with this community, especially in years of favorable rainfall. Common plant species observed within non-native grasslands within San Diego County include wild barley (Hordeum murinum), rip-gut (Bromus diandrus), slender wild oat (Avena barbata), and foxtail (Bromus madritensis).

Coast live oak woodland consists of open or closed canopy woodland dominated by coast live oak (Quercus agrifolia). The coast live oak is an evergreen that may grow from 10 to 25 meters in height. Coast live oak woodland is the dominant oak woodland community in southern California and will often integrate with Engelmann oak woodland (Engelmann oak is a County Group D sensitive species). The shrub understory is often poorly developed but may include toyon (Heteromeles arbutifolia), currant (Ribes sp.), laurel sumac, and non-native grasses (Holland, 1986).

Riparian Vegetation Communities

Disturbed wetland consists of areas adjacent to riparian areas (areas within the San Luis Rey River corridor) that have been previously disturbed and currently support species such as castor bean (Ricinus communis), tamarisk (Tamarix sp.), giant reed (Arundo donax), and curly dock (Rumex crispus).

Open water consists of areas of open, standing water (e.g., ponds).

Non-vegetated channels consist of areas within the San Luis Rey River channel that are currently devoid of vegetation. These areas may also include the unofficial trails that currently exist within the San Luis Rey River, which presently are utilized by the community for equestrian, pedestrian, and off-road motorized vehicle activities. In addition, areas classified as non-vegetated channels may also represent currently disturbed areas within the drainage channel resulting from the historic mining and industrial uses within the floodplain.

Freshwater marsh consists of wetland areas dominated by herbaceous plants such as cattails (Typha spp.), bulrush (Scirpus spp.) and sedges (Carex spp.).

Southern riparian forest, riparian woodlands, and riparian scrub habitats consist of tall, open, broadleafed riparian forests, woodlands, and dense, broadleafed riparian thickets, respectively (Holland 1986). Common components of riparian forests/riparian scrub habitats include cottonwoods (Populus fremontii), sycamores (Platanus racemosa), willows (Sa-

lix spp.), and mule fat (Baccharis salicifolia). Non-native, invasive species typically found in riparian forests/scrub habitats and found throughout the San Luis Rey River include giant reed and tamarisk. In addition, while not mapped separately as disturbed wetland or disturbed habitat, existing unofficial trails are located throughout the areas classified as southern riparian forest, riparian woodlands, and riparian scrub.

Sensitive Species

Plant and animal species are considered sensitive if they have been listed as such by federal or state agencies or one or more special interest groups, such as the California Native Plant Society (CNPS) (Skinner and Pavlik 1994). The California Department of Fish and Game (CDFG) publishes separate comprehensive lists for plants and animals through the California Natural Diversity Database (CNDDB) (CDFG 2004). These include taxa officially listed by the state and federal governments as Endangered, Threatened, or Rare, and candidates for state or federal listing. The County also considers a list of narrow endemic plant species as sensitive biological resources.

Please see Attachment 1 for further discussion of the state, federal, County, and CNPS guidelines used to determine the sensitivity of resources.

Sensitive Plants

A record search of the CNDDB was conducted to identify sensitive plant species historically noted in the vicinity of the CSA (i.e., Bonsall Quadrangle). The search identified three sensitive plant species historically noted within the vicinity of the CSA including: San Diego ambrosia (Ambrosia pumila), Orcutt's pincushion (Chaenactis glabriuscula var. orcuttiana), and chaparral nolina (Nolina cismontana) (CNDDB 2004). Only one of these species, San Diego ambrosia, has historically been observed within (or immediately adjacent to) the CSA (Figures 5a-5d).

San Diego ambrosia. San Diego ambrosia, a federally endangered and CNPS List 1B species, occurs in Riverside, San Diego, and Baja California, Mexico. This herbaceous perennial of the sunflower family is found in chaparral, coastal scrub, grassland, and vernal pool communities. It occurs along creek beds, seasonally dry drainages, and floodplains usually in open areas that are on the periphery of willow woodlands. San Diego ambrosia persists where disturbance has been superficial. It generally blooms from May to September. San Diego ambrosia has potential to occur within the CSA, primarily in the following vegetation communities: coastal sage scrub, coastal sage-chaparral scrub, southern mixed chaparral, non-native grassland, and agricultural areas adjacent to the San Luis Rey River corridor.

Orcutt's pincushion. Orcutt's pincushion, a CNPS List 1B species, is associated with coastal bluff scrub and coastal dunes. The elevation range of this species is 3-100 meters AMSL. The species is not expected to occur within the CSA due to a lack of suitable habitat.

Chaparral nolina. Chaparral nolina, a CNPS List 1B species, is associated with chaparral and costal sage scrub habitats. This species is found primarily on sandstone and shale substrates between 140-1275 feet AMSL. Although not identified by the CNDDB as historically occurring within the CSA, this species has potential to occur due to the presence of suitable habitat requirements (i.e., soils and chaparral/sage scrub habitats).

Sensitive Wildlife

A record search of the CNDDB was conducted to identify sensitive wildlife species historically noted in the vicinity of the CSA (i.e., Bonsall Qudrangle). The search identified 18 sensitive wildlife species historically noted within the vicinity of the CSA including: arroyo toad (Bufo califonicus), coastal California gnatcatcher (Polioptila californica californica), least Bell's vireo (Vireo pusillus bellii), southwestern willow flycatcher (Empidonax traillii extimus), Stephens' kangaroo rat (SKR) (Dipodomys

stephensi), Cooper's hawk (Accipiter cooperii), southern California rufous-crowned sparrow (Aimophila ruficeps canescens), orange-throated whiptail (Cnemidophorus hyperythrus), coastal western whiptail (Cnemidophorus tigris multiscutatus), coastal cactus wren (Campylorhynchus brunneicapillus couesi), rosy boa (Lichanura trivirgata), northern red-diamond rattlesnake (Crotalus rubber ruber), yellow warbler (Dendroica petechia), Coronado skink (Eumeces skiltonianus interparietalis), yellow-breasted chat (Icteria virens), least bittern (Ixobrychus exilis), San Diego desert woodrat (Neotoma lepida intermedia), and the white-faced ibis (Plegadis chihi) (CNDDB 2004). All of these species, with the exception of the northern red-diamond rattlesnake, the Coronado skink, and the San Diego desert woodrat, have historically been observed within (or immediately adjacent to) the CSA (Figures 6a-6d).

Arroyo toad. The federally endangered arroyo toad occurs in sandy arroyos and river bottoms adjacent to marginal zones of willows and mule-fat on loose soil. For breeding, the arroyo toad is restricted to rivers and creeks of low stream gradient, usually in the range of 0 to 3% with persistent water. Breeding occurs along the edges and within streams and rivers with shallow, gravelly pools adjacent to sandy terraces. Terraces must be stable and usually possess a moderately well developed, scattered shrub and tree overstory typically containing mulefat, California sycamore, Fremont cottonwood, or coast live oak (Jennings and Hayes 1994). Arroyo toads may disperse into adjacent upland habitats including coastal sage scrub, chaparral, and grasslands. Although most arroyo toads remain on sandy terraces adjacent to breeding sites, some will remain in upland habitats if soil conditions are appropriate (that is, if the soils are friable and mostly sandy). The distribution of the arroyo toad is limited to coastal southern California and Baja California, Mexico.

Critical habitat was recently proposed by the USFWS for this species, and included the section of the San Luis Rey River located within the CSA as well as adjacent uplands. However, the final designated critical habitat for this species does not include any areas within or adjacent to the CSA.

Coastal California gnatcatcher. The coastal California gnatcatcher, a federally threatened species, is known to occur in San Diego County and is closely associated with coastal sage scrub habitats. The coastal California gnatcatcher occurs below 610 meters (2,000 feet) elevation in the coastal slopes of southern California from the Ventura County and the Los Angeles basin south to Baja California, Mexico. This species is an obligate, permanent resident of low sage scrub in arid washes, on mesas, and on slopes. Designated critical habitat for this species occurs within the CSA (Figure 7).

Least Bell's vireo. The least Bell's vireo, a federally endangered species, is known to occur in Santa Barbara, Riverside and San Diego Counties. The least Bell's vireo inhabits low riparian growth in the vicinity of water or in dry river bottoms. Nests are placed along margins of bushes or in twigs of willows, mule-fat, or mesquite. The least Bell's vireo has historically been recorded throughout the San Luis Rey River, portions of which, including the section along the CSA, are designated as critical habitat for this species (Figure 8).

Southwestern willow flycatcher. The southwestern willow flycatcher, a federally endangered species, is present in San Diego County in late spring and summer where it is known to breed in only a few locations (Unitt, 1984). The southwestern willow flycatcher nests in willow thickets in riparian woodlands. Typical plants associated with nest locations are willows, stinging nettle, baccharis, alder, ash, California wild rose, California blackberry, and wild grape. Although oaks are not a typical species for the willow flycatcher to nest in, a population on the San Luis Rey River is known to use oaks almost exclusively for nesting (Haas, pers. comm.). Three drainages in San Diego County support breeding southwestern willow flycatchers: Santa Margarita River, the

upper San Luis Rey River, and the San Dieguito River. Large portions of the CSA are located within proposed critical habitat for this species, which was recently proposed by the USFWS (Figure 9).

Stephens' kangaroo rat. SKR is a federally endangered and state threatened species known to occupy portions of Riverside and San Diego Counties. This species is typically associated with grasslands, fallow agricultural fields, and sparse coastal sage scrub vegetation types in areas with penetrable soils and a flat to moderately sloping topography.

Cooper's hawk. The Cooper's hawk, a California species of concern, is a common resident of San Diego County. This species is typically associated with woodlands, parks, or residential areas (unit 1984).

Southern California rufous-crowned sparrow. The rufous-crowned sparrow, a CDFG species of concern, is associated with steep and rocky areas or bunches of grass within coastal sage scrub habitats.

Orange-throated whiptail. The orange-throated whiptail, a CDFG species of concern, is found in dense strands of sage scrub, chamise chaparral, and floodplain areas.

Coastal western whiptail. The coastal whiptail, a federal species of concern, occupies the California coastal region from Ventura south to western Baja. It utilizes open sage scrub and mixed chaparral among otherwise moderate to dense vegetation.

Coastal cactus wren. This species, a CDFG species of concern, is associated with coastal sage scrub habitats and require tall opuntia cactus for nesting and roosting (CNDDB 2003).

Coastal rosy boa. This species, a federal species of concern, is found throughout San Diego County in dry, rocky, chaparral and desert habitats, usually near intermittent streams.

Northern red-diamond rattlesnake. The northern red-diamond rattlesnake, a CDFG and federal species of concern, is associated with rocky brushlands throughout San Diego County. This species, although not identified by the CNDDB as historically occurring within the CSA, has a high potential to occur due to the presence of suitable habitat.

Yellow warbler. The yellow warbler, a CDFG species of concern, is associated with riparian habitats. This species prefers areas dominated by willows, cottonwoods, sycamores, and alders for nesting and foraging.

Coronado skink. The Coronado skink, a California Species of Concern, inhabits mountainous areas of Baja California del Norte and adjoining areas of extreme southern San Diego County. Habitat for this species includes rocky areas within grasslands, open woodland and forest, and broken chaparral (Stebbins 1985; Behler and King 1979). This species, although not identified by the CNDDB as historically occuring within the CSA, has a moderate potential to occur due to the presence of potentially suitable habitat.

Yellow-breasted chat. The yellow-breasted chat is a CDFG species of concern associated with riparian woodlands.

Least bittern. The least bittern, a CDFG species of concern, nests colonially in marshlands and along the borders of ponds and reservoirs. Nests are typically located low in tules over water.

San Diego desert woodrat. This species, a CDFG species of concern, is found primarily in areas vegetated with scrub oak, oak, and chaparral. This species, although not identified by the CNDDB as historically occurring within

the CSA, has a moderate potential to occur due to the presence of potentially suitable habitat.

White-faced ibis. This species, a CDFG species of concern, is associated with shallow freshwater marsh habitats. Habitat requirements include dense tule thickets with areas of shallow water for foraging.

CONSTRAINTS WITHIN THE CSA

The literature/data search and biological surveys resulted in the identification of the following biological constraints within the CSA:

Sensitive riparian vegetation communities;

Sensitive upland vegetation communities;

Sensitive plant species (known and/or considered to have potential to occur);

Sensitive wildlife species (known and/or considered to have potential to occur);

Designated critical habitat for the coastal California gnatcatcher and the least Bell's vireo;

Proposed critical habitat for the southwestern willow flycatcher; and

Wetlands and/or waters under the jurisdiction of one ore more of the following agencies: USACE, CDFG, and RWQCB.

Vegetation communities present within the CSA can be grouped into the following general vegetation categories:

Wetlands;

Rare Uplands (which include native grasslands, coastal sage scrub, coastal sage-chaparral scrub, chaparral, and oak woodlands);

Common Uplands (which include agriculture, disturbed habitat, eucalyptus woodland and non-native grasslands); and

Urban/Developed areas.

Descriptions of each of the vegetation categories and associated constraints to development are outlined below.

Wetlands

Park development would be most constrained within areas classified as wetlands due to the presence of resources that are most strictly regulated by local, state and federal regulations. These areas consist of riparian vegetation communities including: disturbed wetlands, open water, non-vegetated channels, freshwater marsh, southern riparian forest, riparian woodlands, and riparian scrubs

(Figure 10a). Impacts to wetland vegetation communities would require mitigation at a ratio of 3:1 according to the County of San Diego's standard mitigation ratios for areas located outside of the MSCP, of which a minimum of 1:1 must be in the form of wetland creation (the remaining 2:1 may be in the form of enhancement). Areas classified as wetlands would likely fall under the jurisdiction of one of more of the following resource agencies: USACE, CDFG, and RWQCB. While the standard County ratio for wetlands is 3:1, the resource agencies may allow mitigation at ratios of 1:1 to 3:1. Permits and/or approvals from these agencies would be required in order to impact resources under their jurisdiction. The resource agencies, as well as the County, will also require wetland buffers, which typically range from 25 to over 200 feet. Wetland buffer areas have not been included within the areas mapped as wetlands.

While not limited to only areas classified as wetlands, all or portions of the areas classified as wetlands have been designated or are proposed to be designated as critical habitat for the California gnatcatcher, least Bell's vireo, and the southwestern willow flycatcher, all of which are known to occur within the CSA. Critical habitat was recently proposed by the USFWS for the arroyo toad, which included the section of the San Luis Rey River located within the CSA as well as adjacent uplands. Although the final designated critical habitat for this species does not include any areas within or adjacent to the CSA, this species is known to occur within the CSA. While the presence of listed species and their proposed/designated critical habitats does not eliminate all development potential within these areas, it does severely constrain the development potential of these areas as avoidance and minimization of impacts are required. In addition, impacts to these federally listed species and their critical habitat would require formal consultation with the resource agencies under the ESA. Impacts could consist of both direct impacts resulting from clearing of habitat and indirect impacts resulting from the isolating of areas of suitable/occupied habitat (for the arroyo toad) from the river channel or increased noise levels (for avian species). The resource agencies consider noise levels over 60 dBA to be a significant impact to sensitive avian species.

Rare Uplands

Areas classified as rare uplands consist of sensitive upland vegetation communities that, according to the County's standard mitigation ratios for areas located outside of the adopted MSCP, would typically require in-kind habitat preservation at ratios ranging from 1:1 to 3:1 for project impacts (i.e., coast live oak woodland, native grasslands, coastal sage scrub, coastal sage-chaparral scrub, and chaparral). Although some of these areas would require mitigation at the same ratio as wetlands, they are not considered as sensitive because impacts to these areas do not require habitat creation and these areas are not strictly regulated by state and federal laws.

Oak woodlands are known to provide suitable nesting habitat for sensitive raptor species (i.e., Cooper's hawk). Nests are less sensitive outside the breeding season when they are not in active use; some species however (e.g. raptors) often use the same nest sites over many years and the loss of inactive nests is considered to have an adverse effect. In order to avoid potential impacts to raptors during the nesting season, restrictions are typically placed on clearing/grading between February 1 through August 31 annually, unless pre-construction surveys by a qualified biologist determine no nesting raptors are located within 300 feet of grading/construction activities. Due to the sensitivity of oaks, the County also considers impacts within 50 feet of the oak canopy to be an impact to the oak.

Native grasslands, frequently indicated by species in the genus Nasella, are rare in southern California. They also provide suitable

habitat for sensitive plants and wildlife including raptors.

Coastal sage scrub and coastal sage-chaparral scrub are known to support sensitive species including, but not limited to, the California gnatcatcher and the coastal cactus wren. While not limited to only areas classified as rare uplands, portions of the areas classified as rare uplands have been designated as critical habitat for the California gnatcatcher (proposed/designated critical habitat for the southwestern willow flycatcher and the least Bell's vireo also occur within areas classified as rare uplands; critical habitat has not been proposed/designated for the coastal cactus wren – a CDFG species of concern). While the presence of listed species and their proposed/designated critical habitats does not eliminate all development potential within these areas, it does severely constrain the development potential of these areas as avoidance and minimization of impacts are required. In addition, impacts to this federally listed species and its critical habitat would require formal consultation with the resource agencies under the ESA. Impacts could consist of both direct impacts resulting from clearing of habitat and indirect impacts resulting from increased noise levels. The resource agencies consider noise levels over 60 dBA to be a significant impact to sensitive avian species.

Chaparral, while less than the other habitat types discussed above, is known to support sensitive plant and wildlife species, including San Diego ambrosia, chaparral nolina, orange-throated whiptail, and coastal western whiptail, which are discussed above.

Common Uplands

Areas classified as common uplands consist of upland vegetation communities that, according to the County's standard mitigation ratios for areas located outside of the adopted MSCP, would typically require in-kind habitat preservation at ratios ranging from 0.5:1 to 1:1 for project impacts (i.e., non-native grassland) or that typically would not require mitigation for project impacts (i.e., agriculture, disturbed habitat, and eucalyptus woodland).

While non-native grassland is typically not considered to be a sensitive vegetation community, it is known to provide suitable foraging habitat for several raptor species and is known to support sensitive species including the Stephens' kangaroo rat. Impacts to the federally listed Stephens' kangaroo rat, or other federally listed species, would require formal consultation with the resource agencies under the ESA.

Non-native grasslands located adjacent to the San Luis Rey River channel and within the 100-year floodplain, although not classified as wetlands, may fall under the jurisdiction of one or more of the following resource agencies: USACE, CDFG, and the RWQCB. These areas may support wetland hydrology and potentially hydric soils (wetland indicators) and, before recent or historic disturbance, may have supported riparian vegetation. If determined to fall under the jurisdiction of the resource agencies, permits and/or approvals from these agencies would be required prior to any impacts. Alternatively, due to their adjacency to the river, potential presence of wetland hydrology/hydric soils, and disturbed nature (i.e., past conversion from riparian vegetation), these sites would offer opportunities for wetland restoration/creation (Figures 11a-11d).

Agricultural areas and disturbed areas located adjacent to the San Luis Rey River channel and within the 100-year floodplain, although not classified as wetlands, may fall under the jurisdiction of one or more of the following resource agencies: USACE, CDFG, and the RWQCB. Some of these areas may support wetland hydrology and potentially hydric soils (wetland indicators) and, before recent or historic disturbance, may have supported riparian vegetation. If determined to fall under the jurisdiction of the resource agencies, permits and/or approvals from these agencies

would be required prior to any impacts. Alternatively, due to their adjacency to the river, potential presence of wetland hydrology/ hydric soils, and disturbed nature (i.e., past conversion from riparian vegetation), these sites would offer opportunities for wetland restoration/creation (Figures 11a-11d).

Eucalyptus woodlands are known to provide suitable nesting habitat for sensitive raptor species (i.e., Cooper's hawk). Nests are less sensitive outside the breeding season when they are not in active use; some species however (e.g. raptors) often use the same nest sites over many years and the loss of inactive nests is considered to have an adverse effect. In order to avoid potential impacts to raptors during the nesting season, restrictions are typically placed on clearing/grading between February 1 through August 31 annually, unless pre-construction surveys by a qualified biologist determine no nesting raptors are located within 300 feet of grading/construction activities.

While not limited to only areas classified as common uplands, all or portions of the areas classified as common uplands have been designated or are proposed to be designated as critical habitat for the California gnatcatcher, least Bell's vireo, and the southwestern willow flycatcher, all of which are known to occur within the CSA. Critical habitat was recently proposed by the USFWS for the arroyo toad, which included the section of the San Luis Rey River located within the CSA as well as adjacent uplands. Although the final designated critical habitat for this species does not include any areas within or adjacent to the CSA, this species is known to occur within the CSA. While the presence of listed species and their proposed/ designated critical habitats does not eliminate all development potential within these areas, it does severely constrain the development potential of these areas as avoidance and minimization of impacts are required. In addition, impacts to these federally listed species and their critical habitat would require formal consultation with the resource agencies under the ESA. Impacts could consist of both direct impacts resulting from clearing of habitat and indirect impacts resulting from the isolating of areas of suitable/occupied habitat (for the arroyo toad) from the river channel or increased noise levels (for avian species). The resource agencies consider noise levels over 60 dBA to be a significant impact to sensitive avian species.

Urban/Developed

Urban/developed areas consist of existing paved roadways and residential, recreational, and commercial development. According to the County's standard mitigation ratios, these areas would not require mitigation for impacts areas as they have low to no potential to support sensitive biological resources and therefore, do not present a constraint to development of park facilities from a biological perspective.

OPPORTUNITIES WITHIN THE CSA

The literature/data search and biological surveys resulted in the identification of the following biological opportunities within the CSA:

- Habitat preservation and long-term maintenance and management within the San Luis Rey River corridor;
- Removal of exotics (i.e., arundo) within the San Luis Rey River corridor; and
- Wetland restoration, enhancement, and creation within the San Luis Rey River corridor.

Approximately 62% of the CSA consists of sensitive riparian or upland vegetation communities (wetlands and rare uplands), while 38% consists of common uplands or existing development (common uplands and urban/developed). Sensitive vegetation communities provide opportunities for habitat preservation and management. The preservation in perpetuity of sensitive vegetation communities could fulfill habitat-based mitigation requirements for project impacts. For example, impacts to 50.0 acres of southern mixed chaparral could be mitigated through the preservation in perpetuity of 50.0 acres (1:1 ratio) of southern mixed chaparral.

The San Luis Rey River channel contains large patches of arundo, which is a non-native, invasive species. The Mission Resource Conservation District recently (2004) mapped the arundo located within portions of the San Luis Rey River, including the section of the river located within the CSA (Figure 12). The presence of arundo and other non-native invasive species within the San Luis Rey River channel provides opportunities for removal of exotic species, which could partially fulfill mitigation requirements (enhancement credit) for impacts to wetland vegetation communities. In addition, these areas, as well as areas within the 100-year floodplain for the San Luis Rey River that are currently disturbed, utilized for agricultural operations, or vegetated with non-native grasses (see Figures 11a-11d) provide opportunities for wetland restoration/enhancement and potentially wetland creation. These areas may support wetland hydrology and potentially hydric soils (wetland indicators) and, before recent or historic disturbance, likely supported riparian vegetation. Therefore, they would be ideal sites for wetland restoration and enhancement. However, as sensitive species (i.e., the arroyo toad) may currently be utilizing these areas, restoration/enhancement activities would need to be designed and implemented to avoid/minimize impacts to these species while providing increased/enhanced habitat areas.

Based on the field surveys, the literature review, and experience with other projects with similar biological issues, general recommendations for park development include the following:

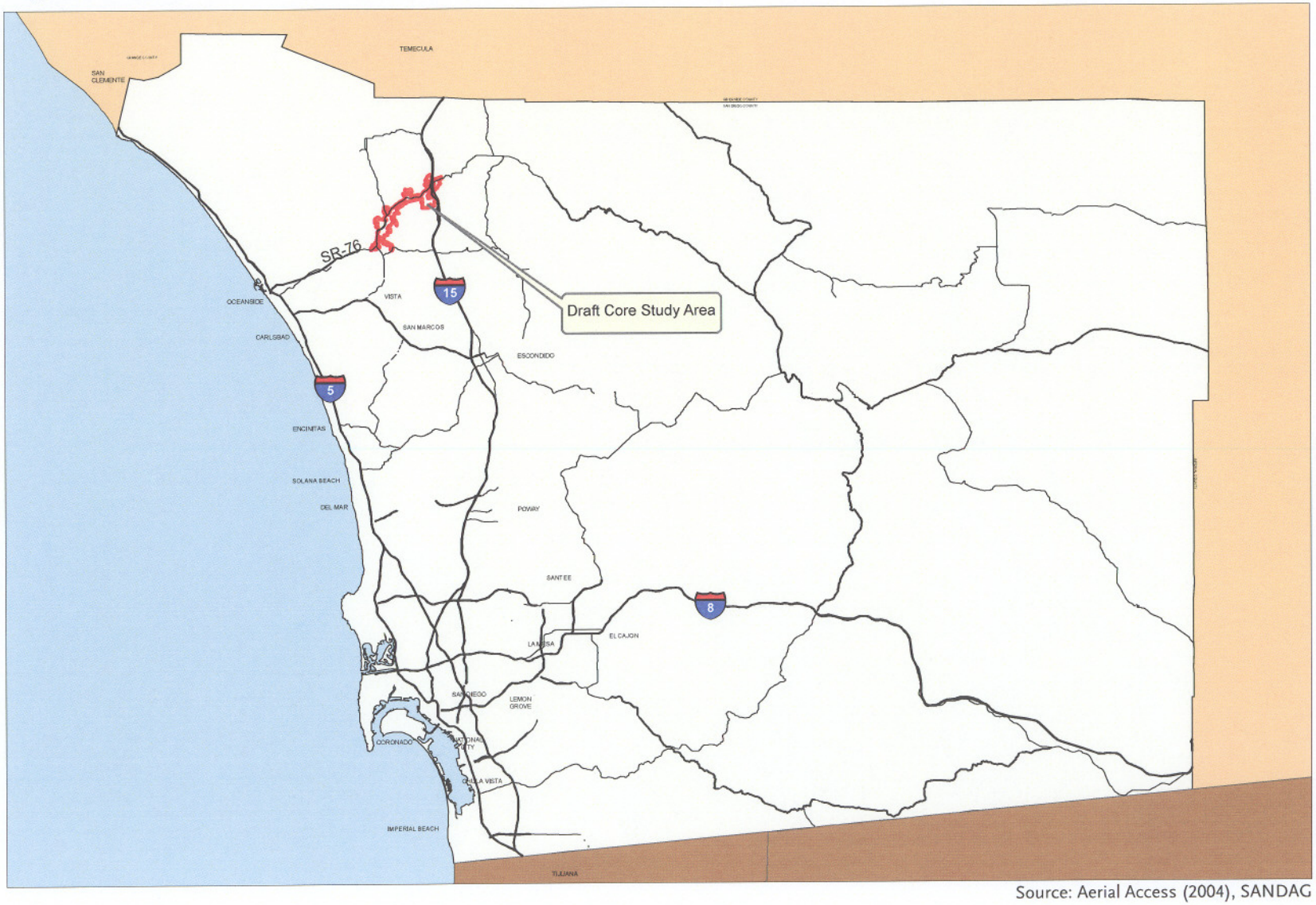
- The preservation, restoration, and long-term maintenance/management of areas classified as wetlands and areas supporting sensitive plant and wildlife species and their proposed/designated critical habitat while providing some access to, and interpretation of, the river corridor's biological resources (i.e., passive recreation);
- Strategies for the removal of non-native, invasive species within the San Luis Rey River corridor (See Figure 12);
- Wetland enhancement/restoration efforts on areas identified as opportunity sites for wetland creation/enhancement (see Figures 11a-11d);
- Focus the placement of active Tier A park sites and programming (i.e., parking lots, staging areas, active recreation, etc.) within areas of lower sensitivity levels (i.e., common uplands); and

To the extent feasible while still meeting the park goals, focus the placement of passive park development (Tiers B and C – interpretive kiosks, bird watching platforms, etc.) within areas of lower sensitivity levels (i.e., common uplands). Passive park programming located within areas classified as wetlands should be placed within areas of current or previous disturbance and carefully designed to minimize impacts on sensitive biological resources including sensitive plant and wildlife species and their proposed/ designated critical habitat.

The recommendations listed above general recommendations for park planning and were used as tools to guide the development of the Master Plan alternatives. These recommendations, and associated figures, do not represent specific boundaries where park program elements are precluded. It is anticipated that negotiations with the resource agencies will ultimately determine what park features are acceptable within specific areas of the CSA. Concerns likely to be raised by the resource agencies include: any impact, whether resulting from active park programming (play fields, etc.) or passive park programming (picnic tables, trails, etc.), to jurisdictional resources (USACE wetlands and non-wetland waters, RWQCB waters, and CDFG streambeds) and impacts to federally listed species or their proposed/designated critical habitat. It should be noted that project-level analysis will ultimately be required to determine exact impacts to sensitive vegetation communities, sensitive species and their proposed and designated critical habitats, and jurisdictional wetlands/waters. Mitigation measures will also need to be identified that will reduce impacts to below a level of significance.

FIGURE 1

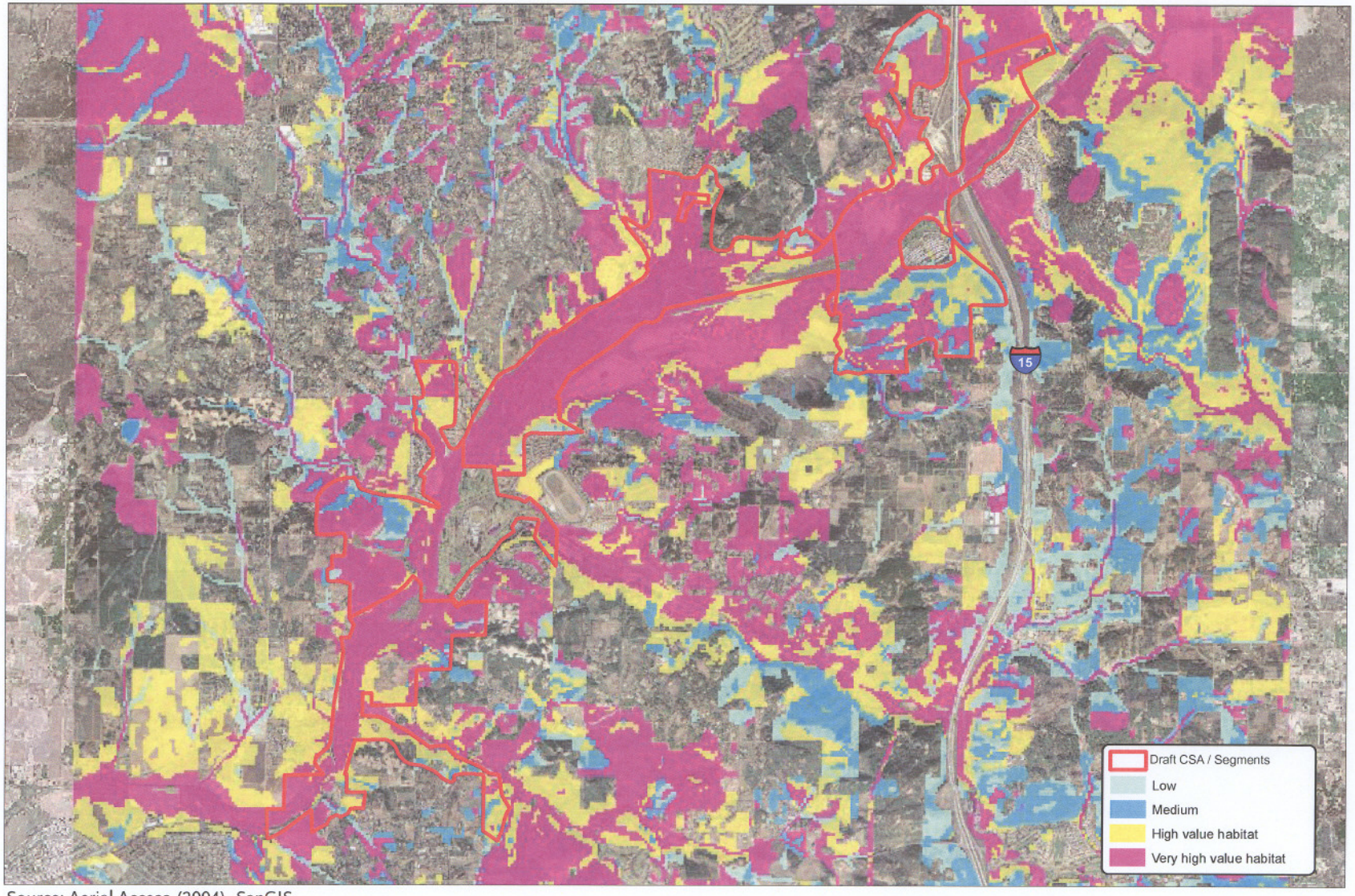
Regional Location



Source: Aerial Access (2004), SANDAG

FIGURE 2

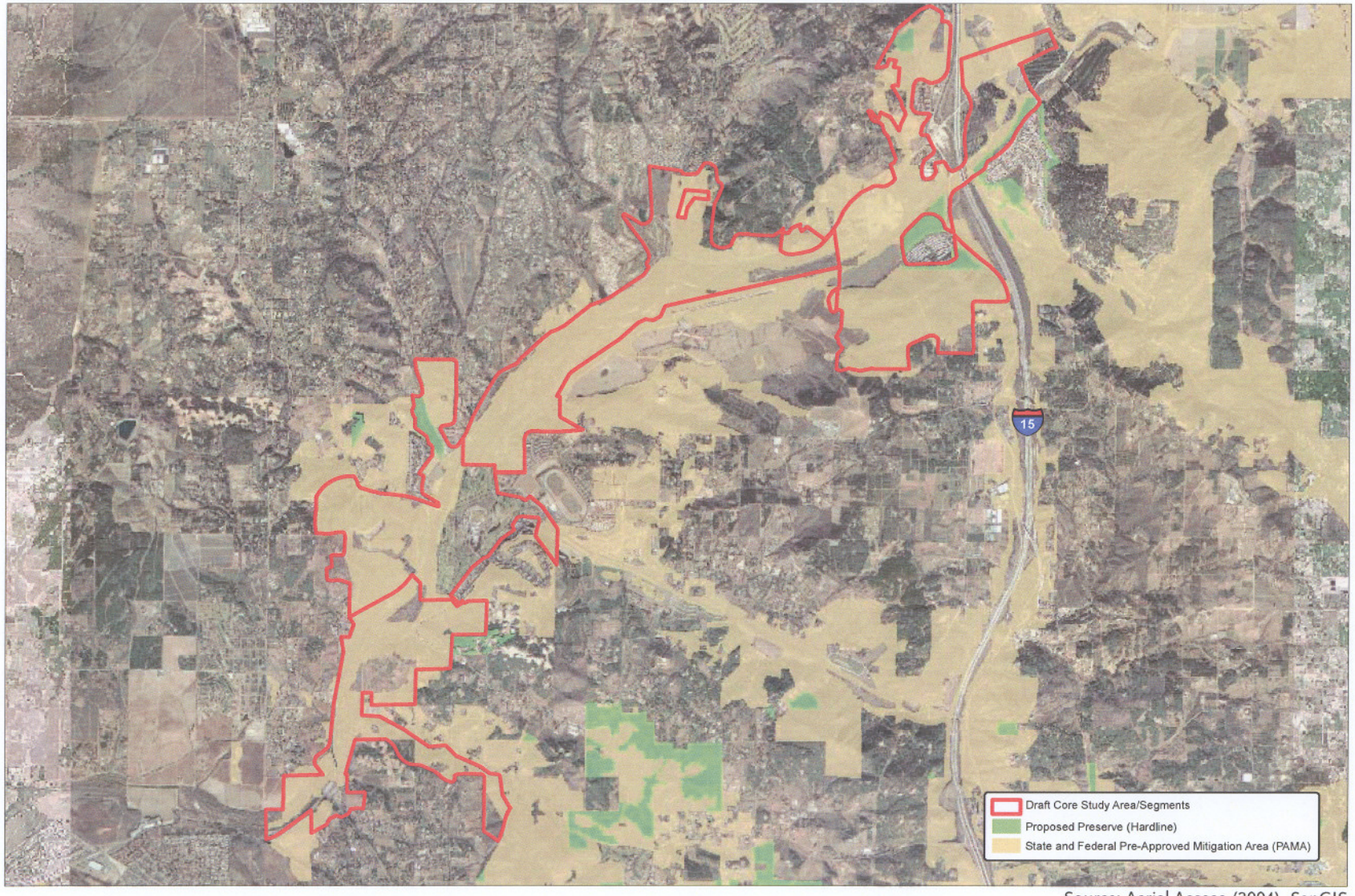
Draft North County MSCP - Habitat Evaluation Model



Source: Aerial Access (2004), SanGIS

FIGURE 3

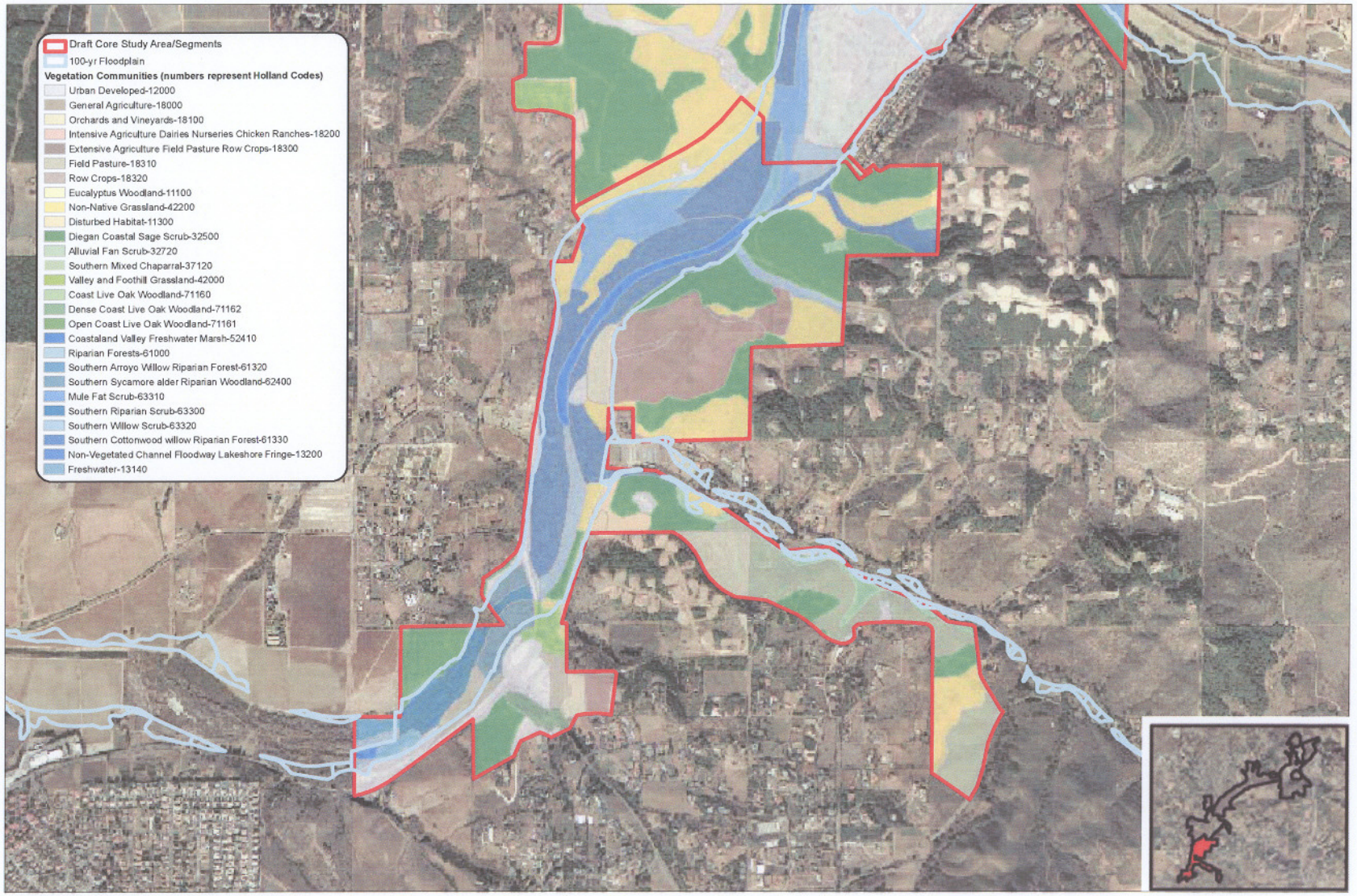
Draft North County MSCP - Pre-Approved Mitigation Areas



Source: Aerial Access (2004), SanGIS

FIGURE 4a

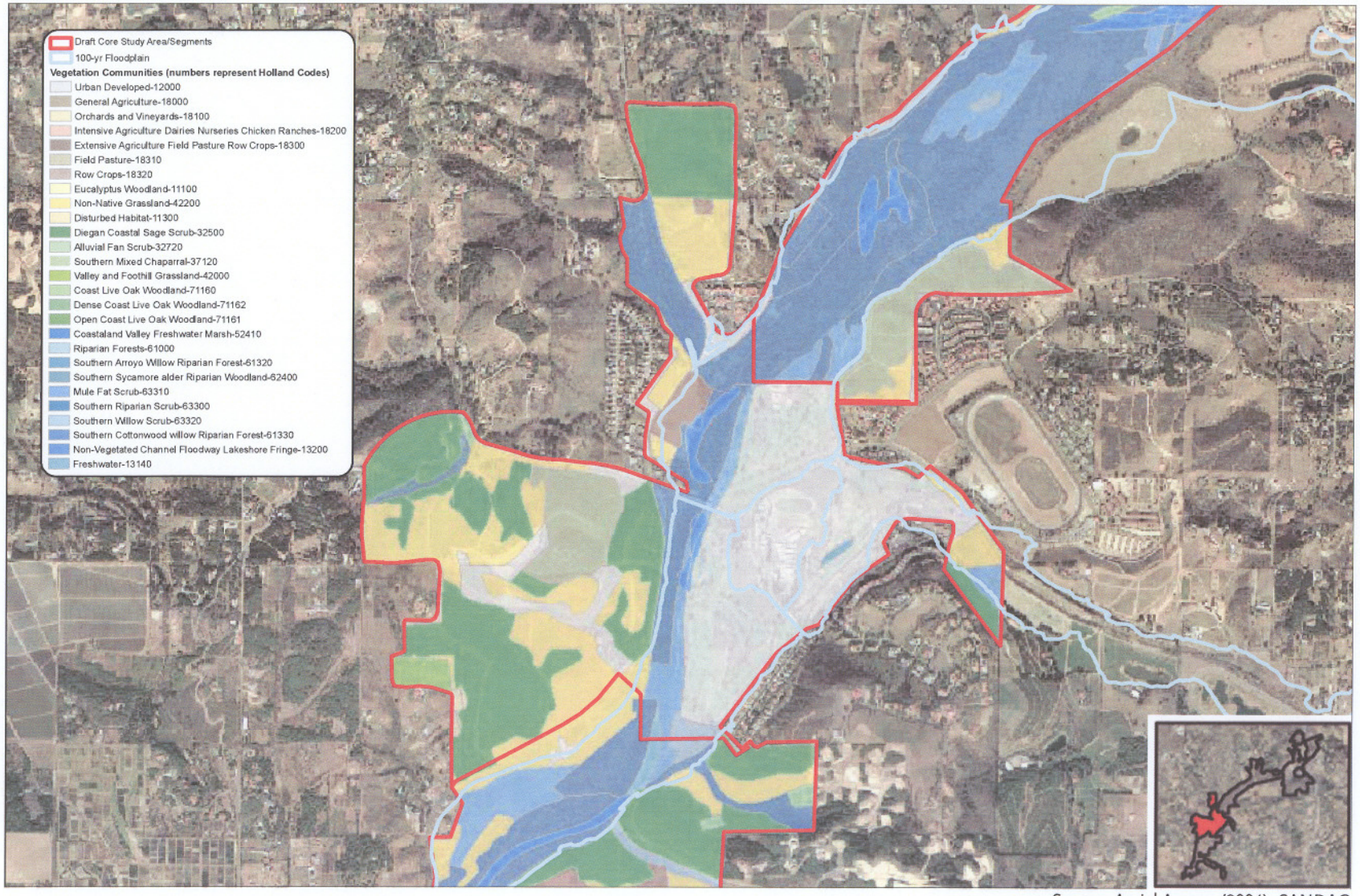
Vegetation Communities - (Segment 1)



Source: Aerial Access (2004), SANDAG

FIGURE 4b

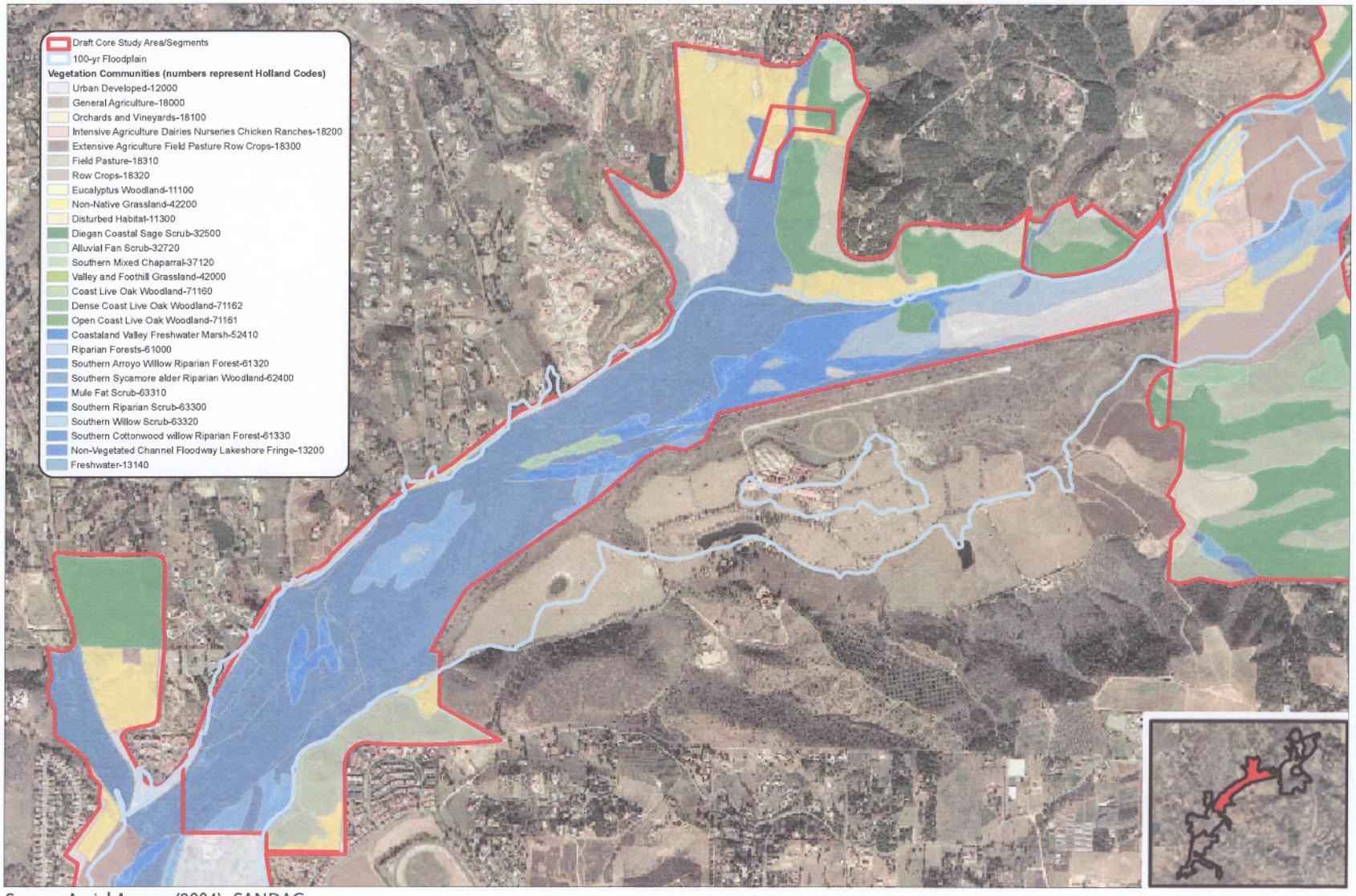
Vegetation Communities - (Segment 2)



Source: Aerial Access (2004), SANDAG

FIGURE 4c

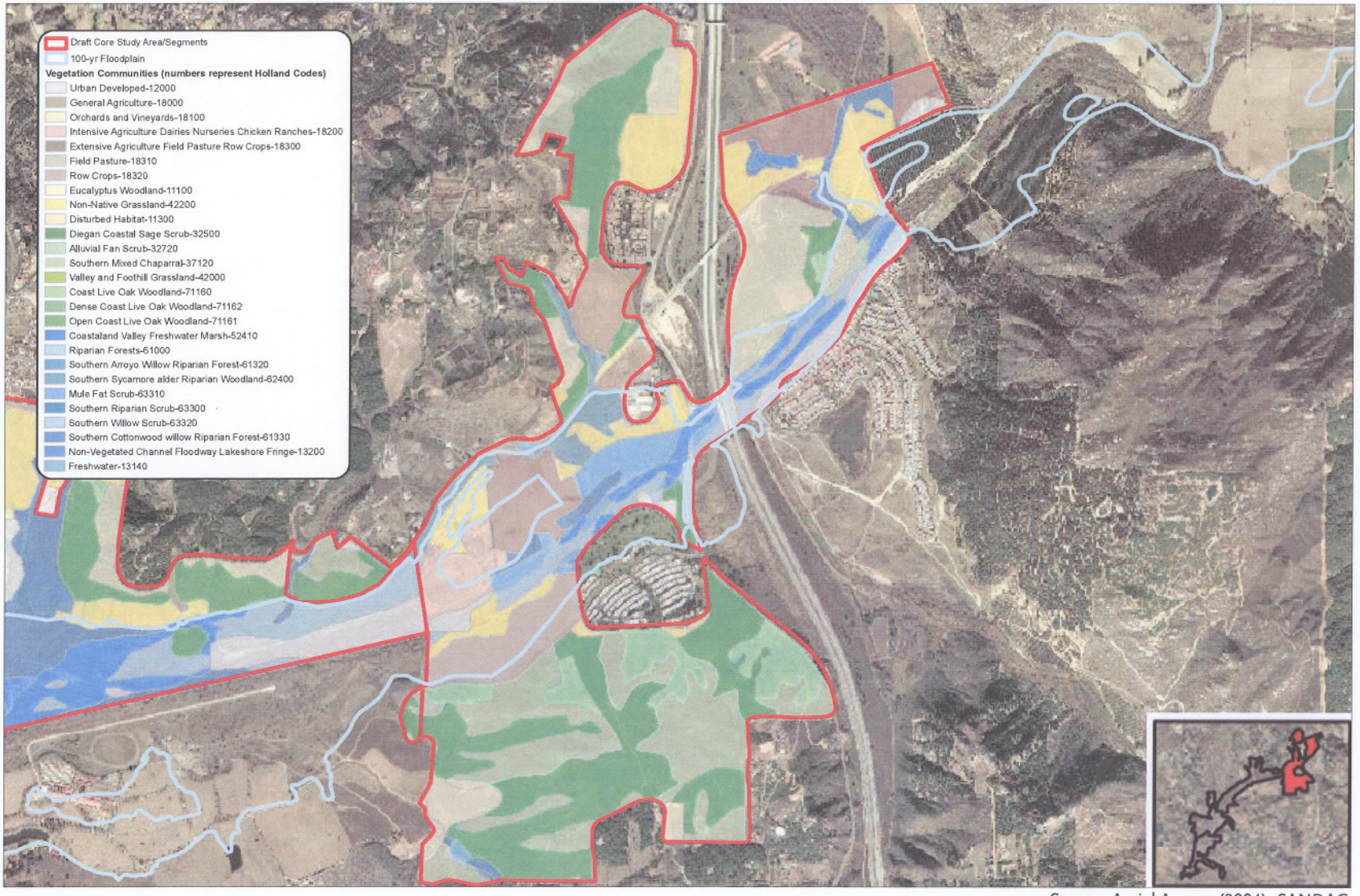
Vegetation Communities - (Segment 3)



Source: Aerial Access (2004), SANDAG

FIGURE 4d

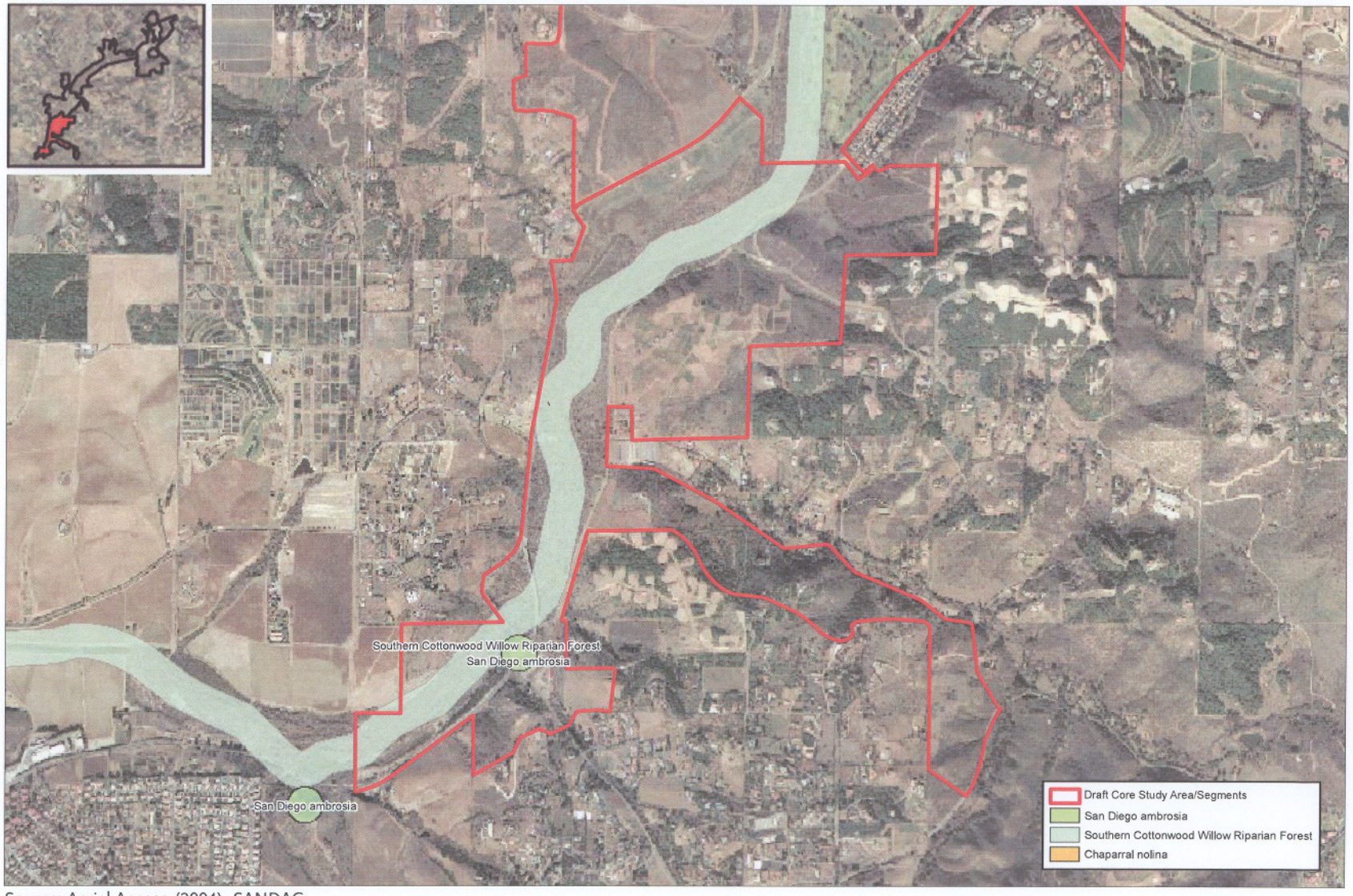
Vegetation Communities - (Segment 4)



Source: Aerial Access (2004), SANDAG

FIGURE 5a

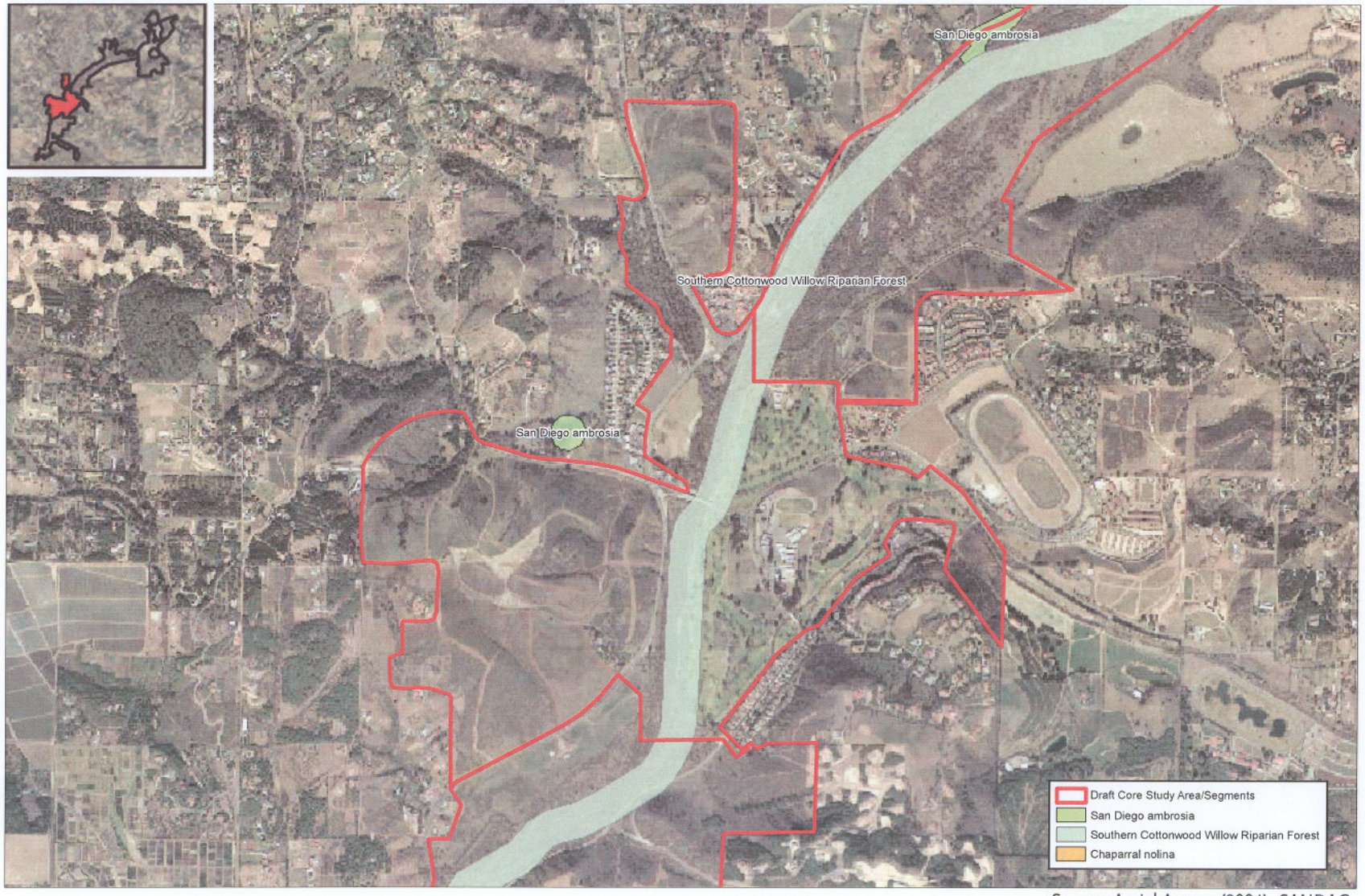
Sensitive Plant Locations- (Segment 1)



Source: Aerial Access (2004), SANDAG

FIGURE 5b

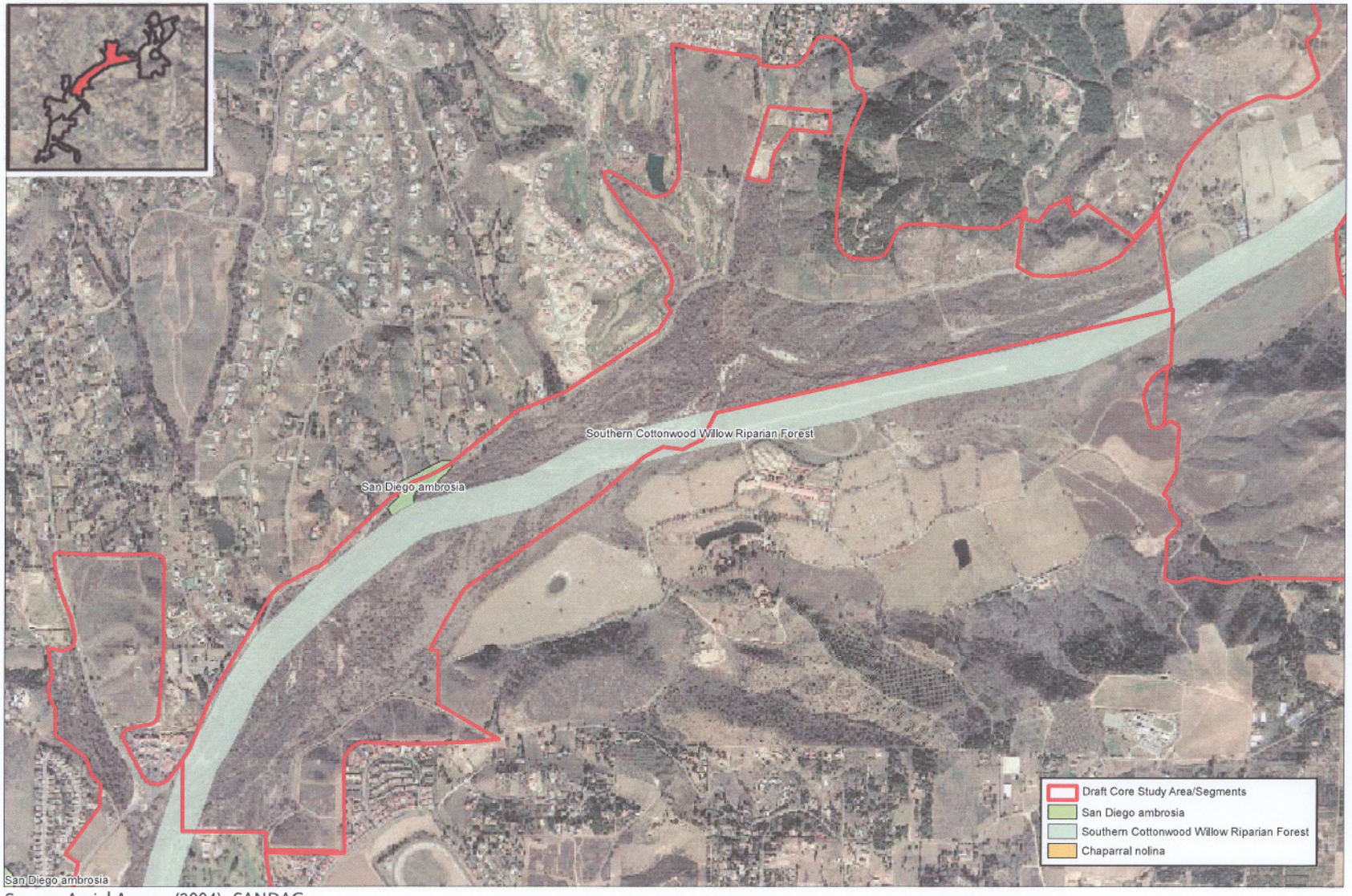
Sensitive Plant Locations - (Segment 2)



Source: Aerial Access (2004), SANDAG

FIGURE 5c

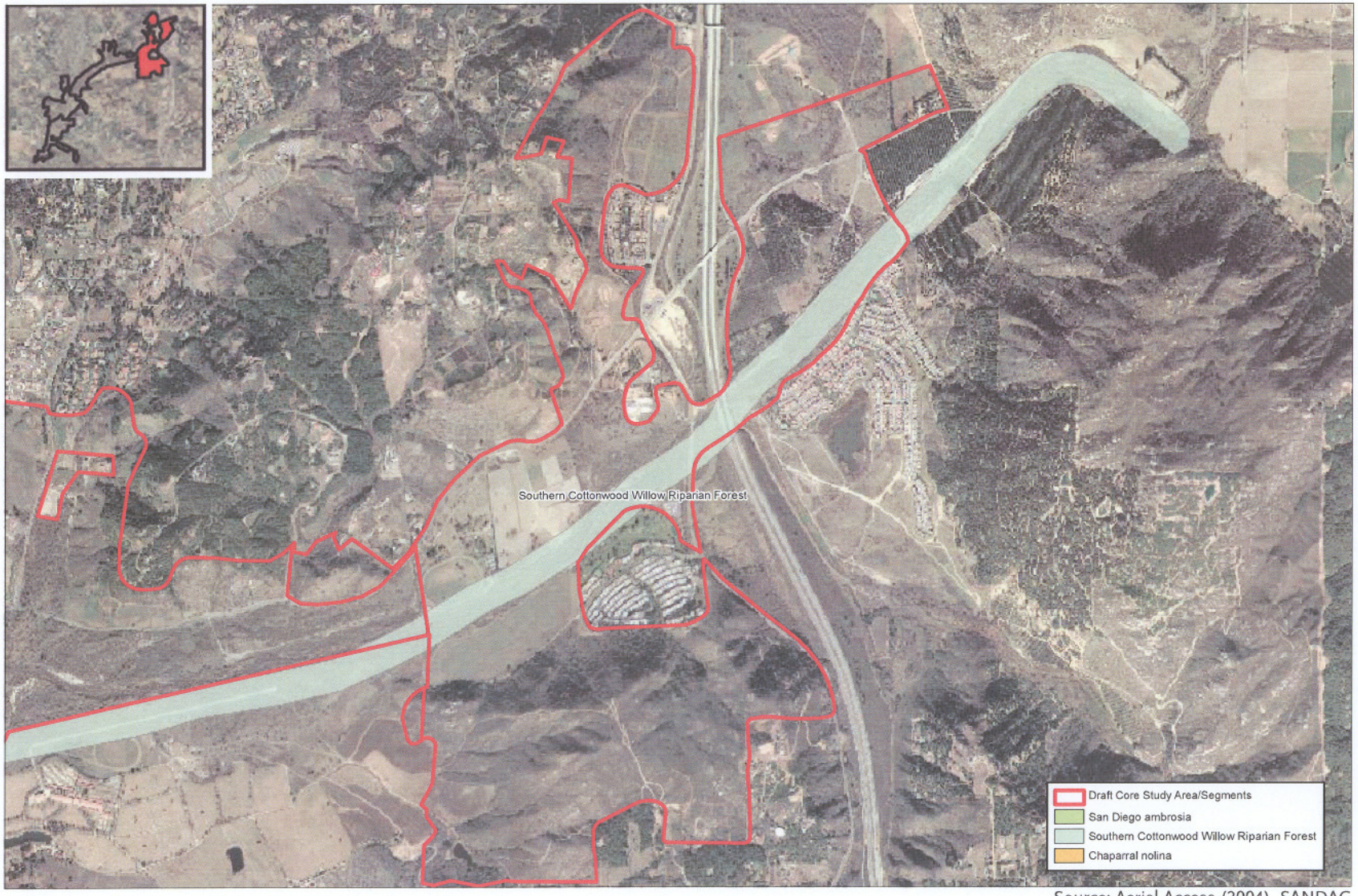
Sensitive Plant Locations - (Segment 3)



Source: Aerial Access (2004), SANDAG

FIGURE 5d

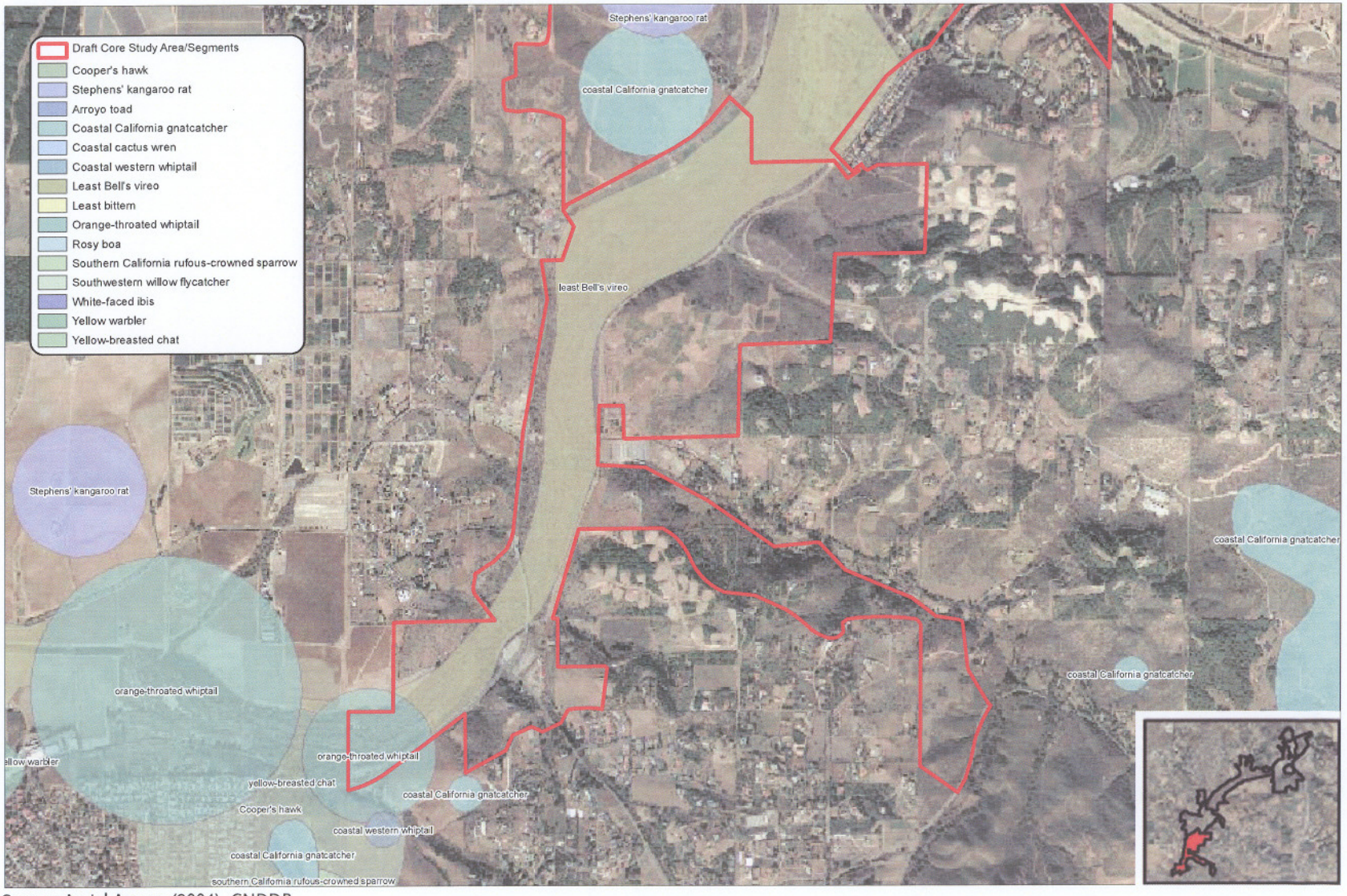
Sensitive Plant Locations - (Segment 4)



Source: Aerial Access (2004), SANDAG

FIGURE 6a

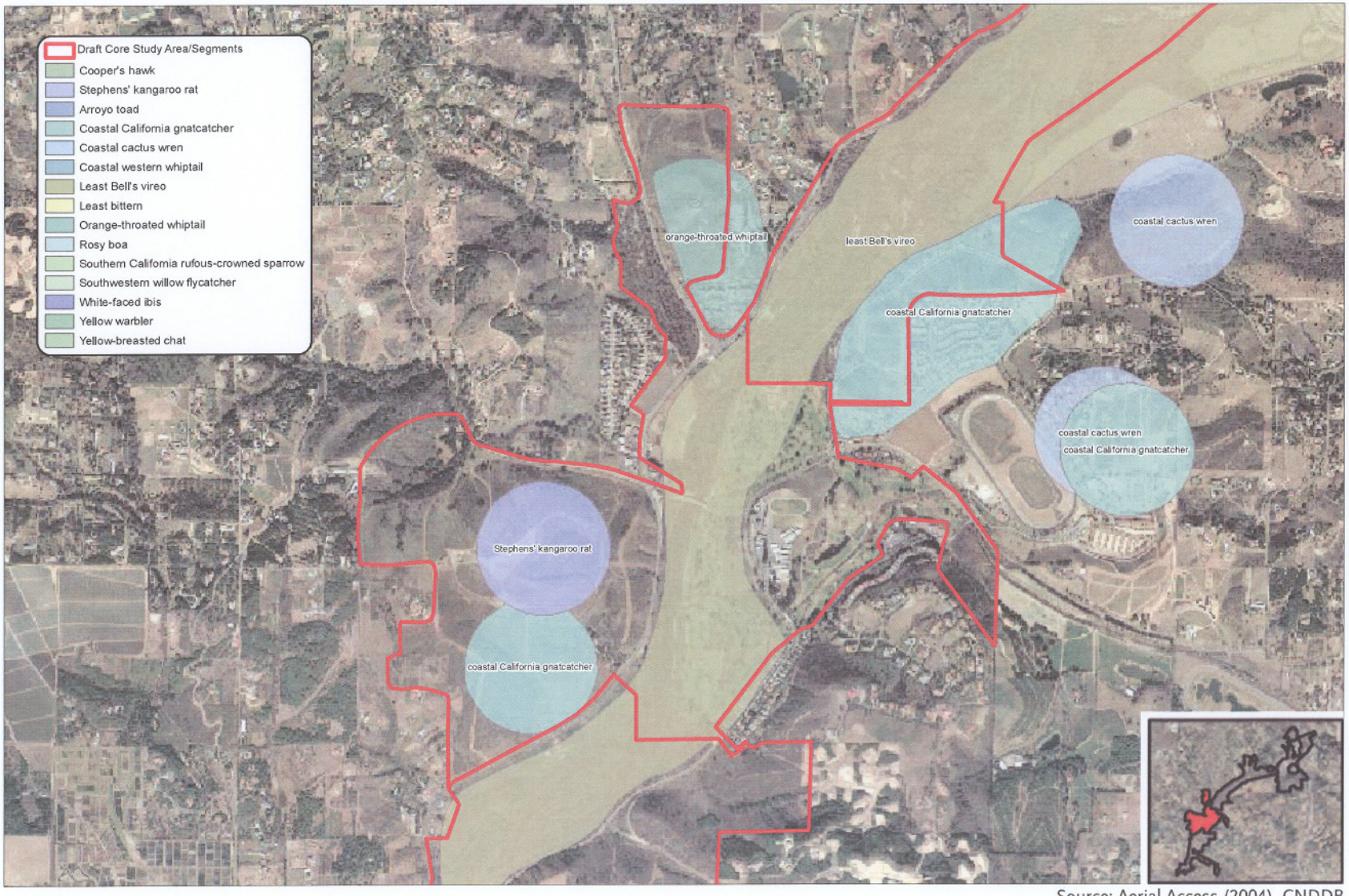
Sensitive Wildlife Locations - (Segment 1)



Source: Aerial Access (2004), CNDDB

FIGURE 6b

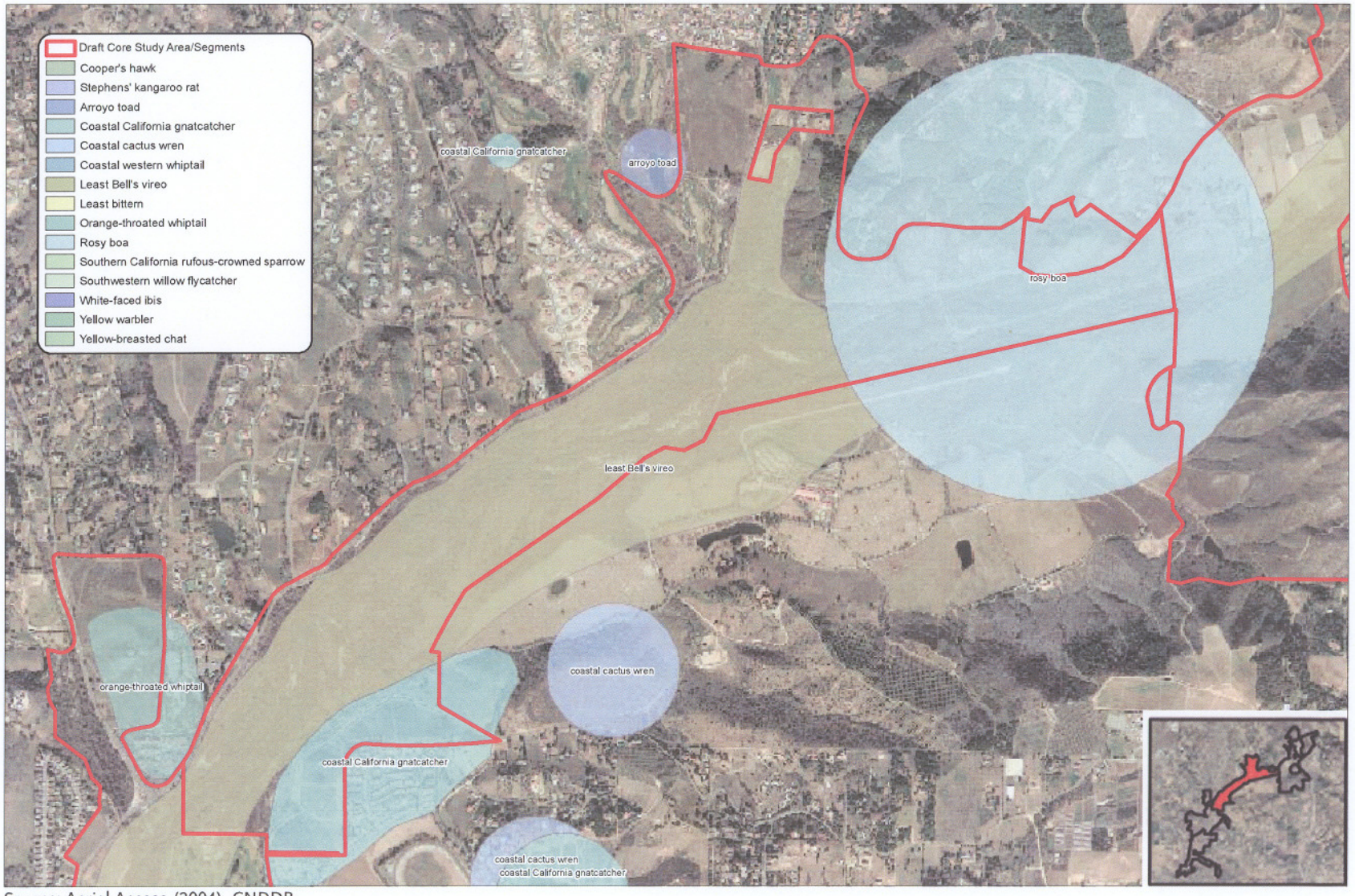
Sensitive Wildlife Locations - (Segment 2)



Source: Aerial Access (2004), CNDDB

FIGURE 6c

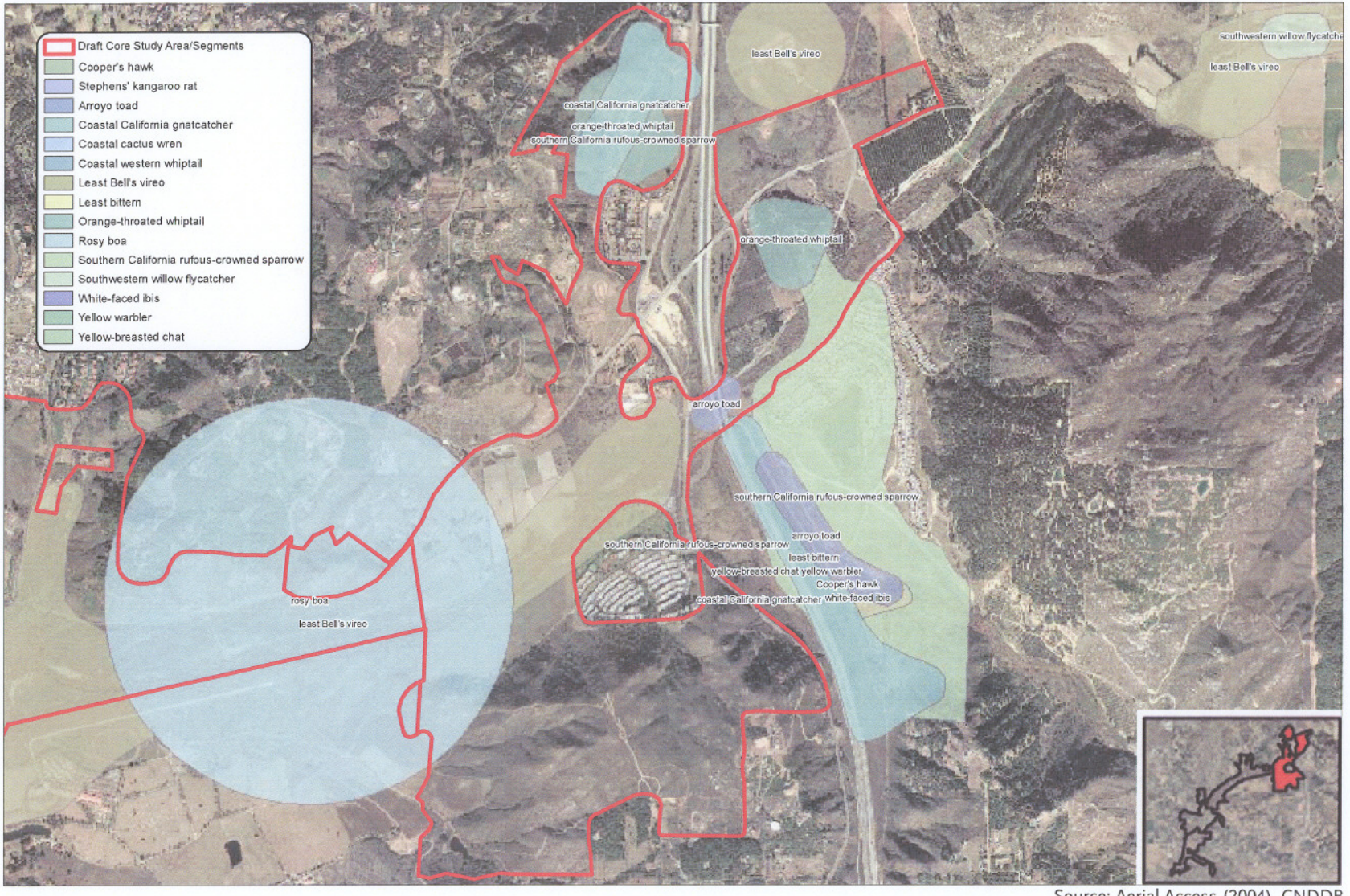
Sensitive Wildlife Locations - (Segment 3)



Source: Aerial Access (2004), CNDDB

FIGURE 6d

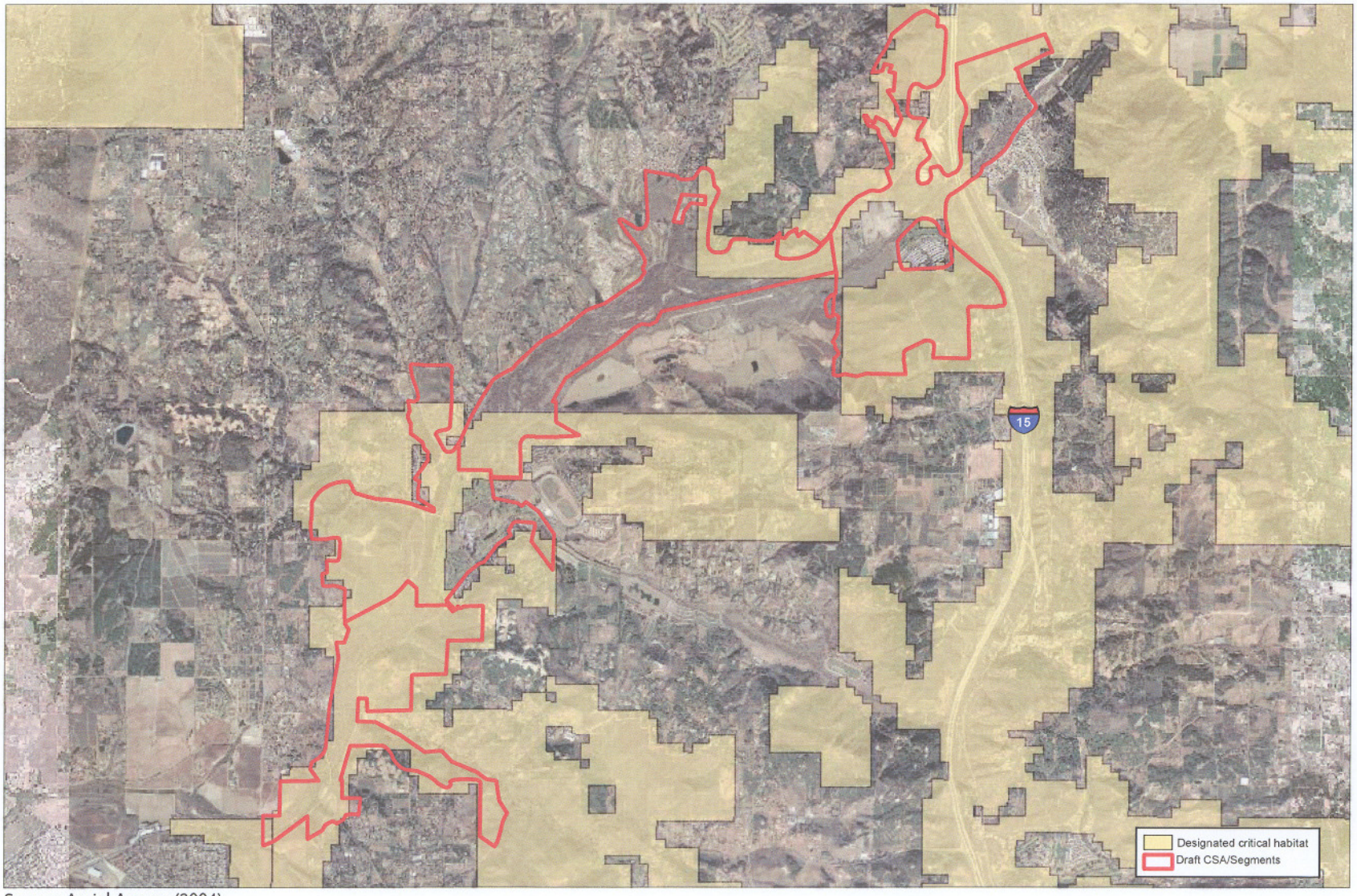
Sensitive Wildlife Locations - (Segment 4)



Source: Aerial Access (2004), CNDDB

FIGURE 7

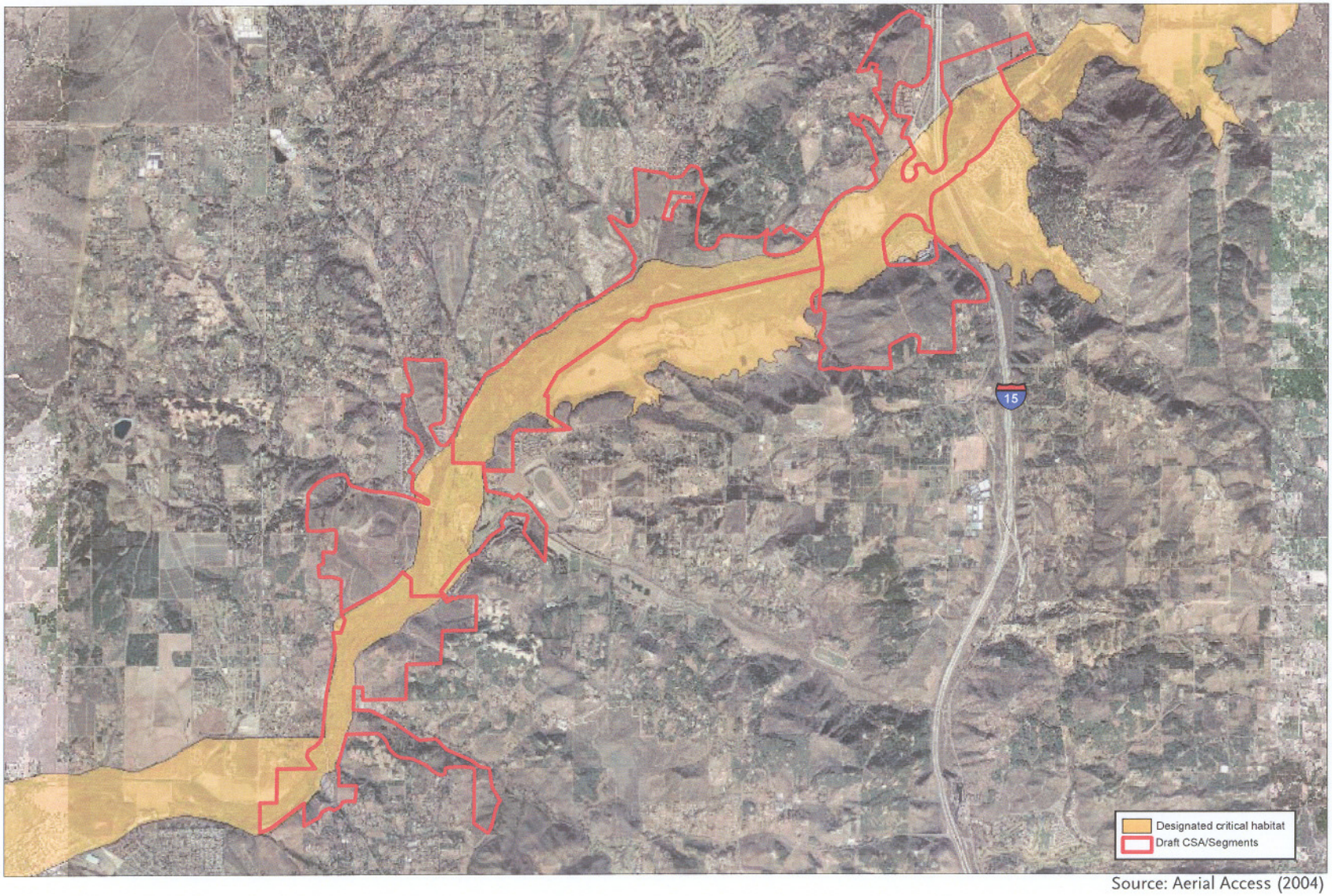
Coastal California Gnatcatcher - Designated Critical Habitat



Source: Aerial Access (2004)

FIGURE 8

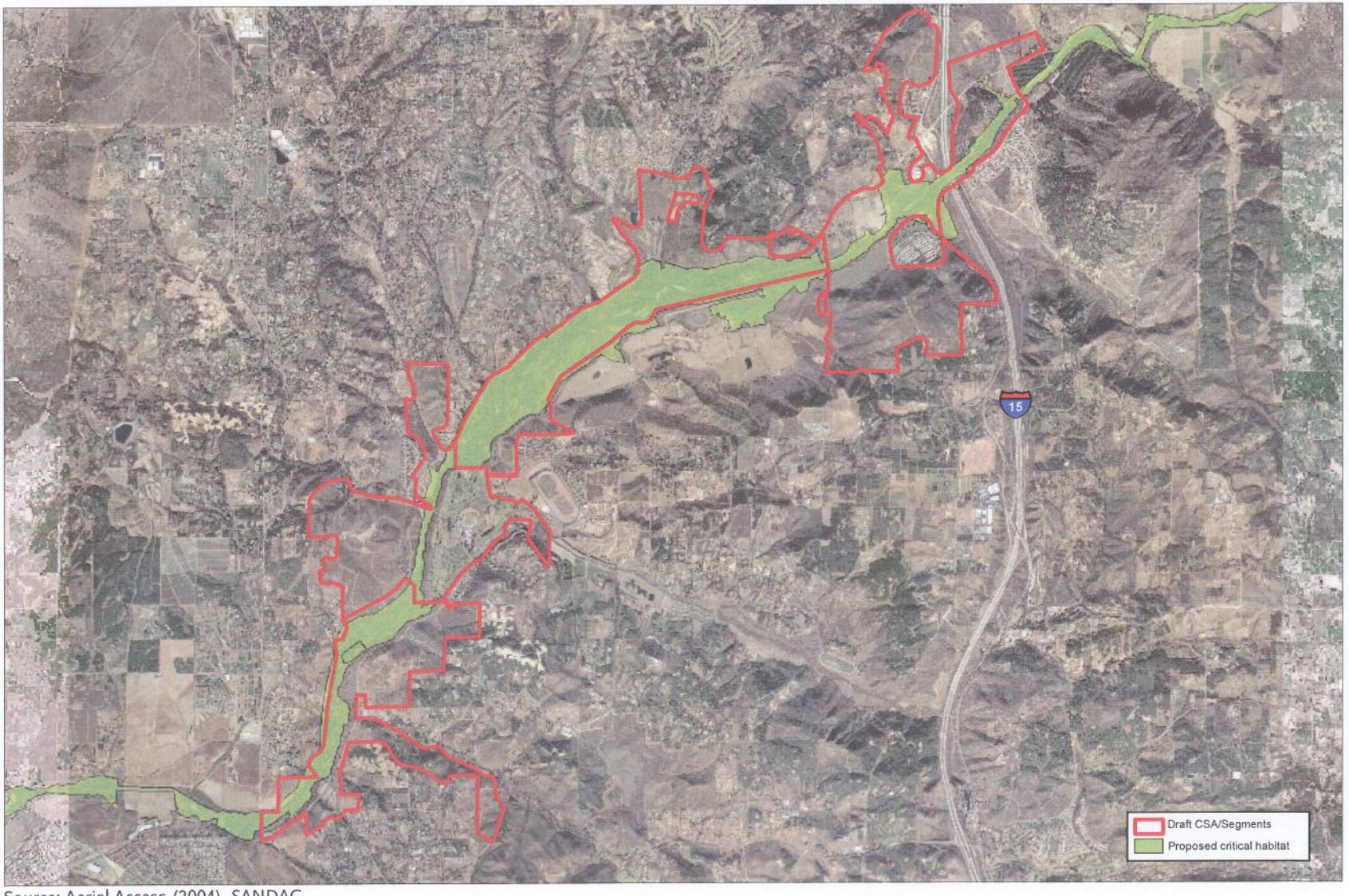
Least Bell's Vireo - Designated Critical Habitat



Source: Aerial Access (2004)

FIGURE 9

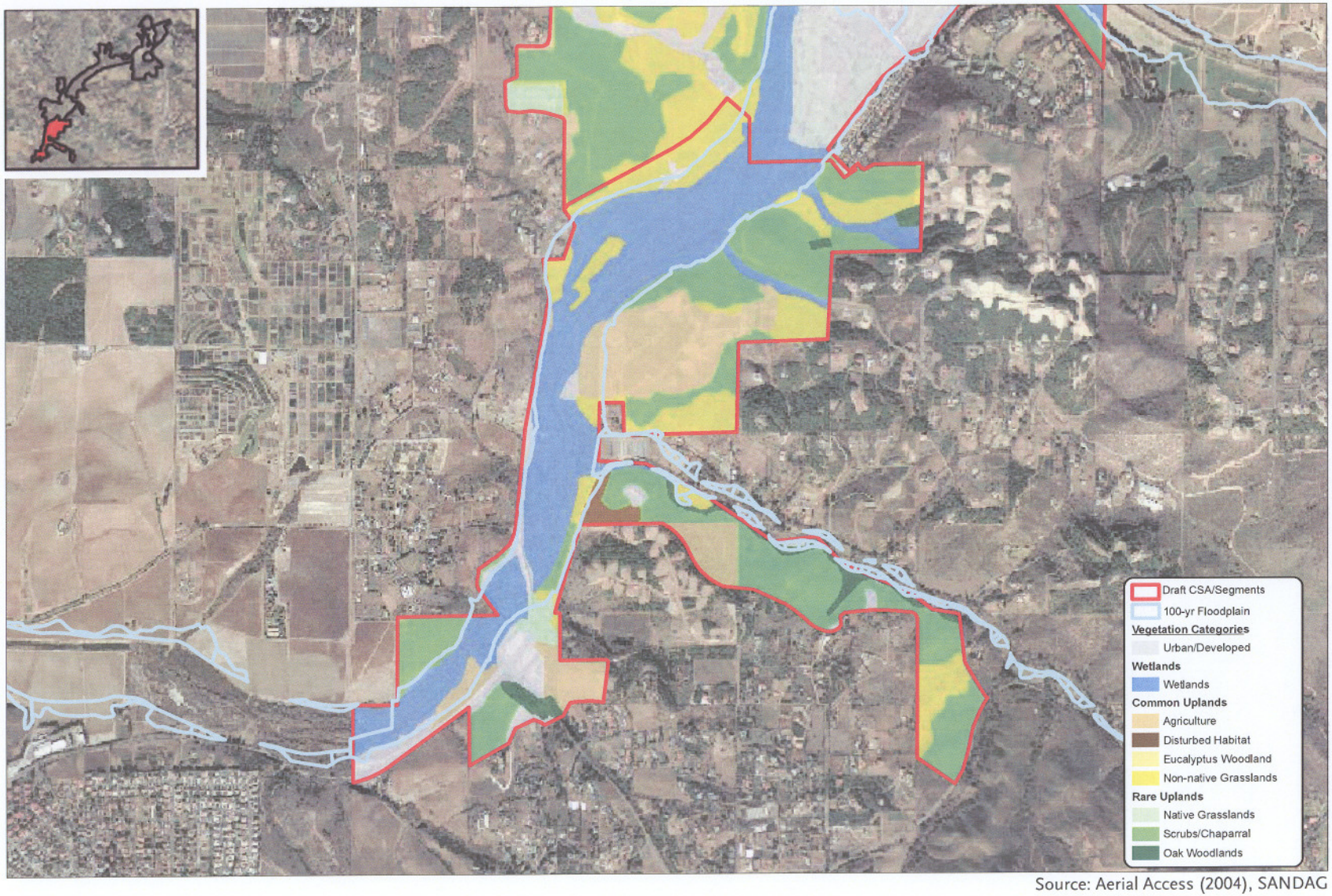
Southwestern Willow Flycatcher - Proposed Critical Habitat



Source: Aerial Access (2004), SANDAG

FIGURE 10a

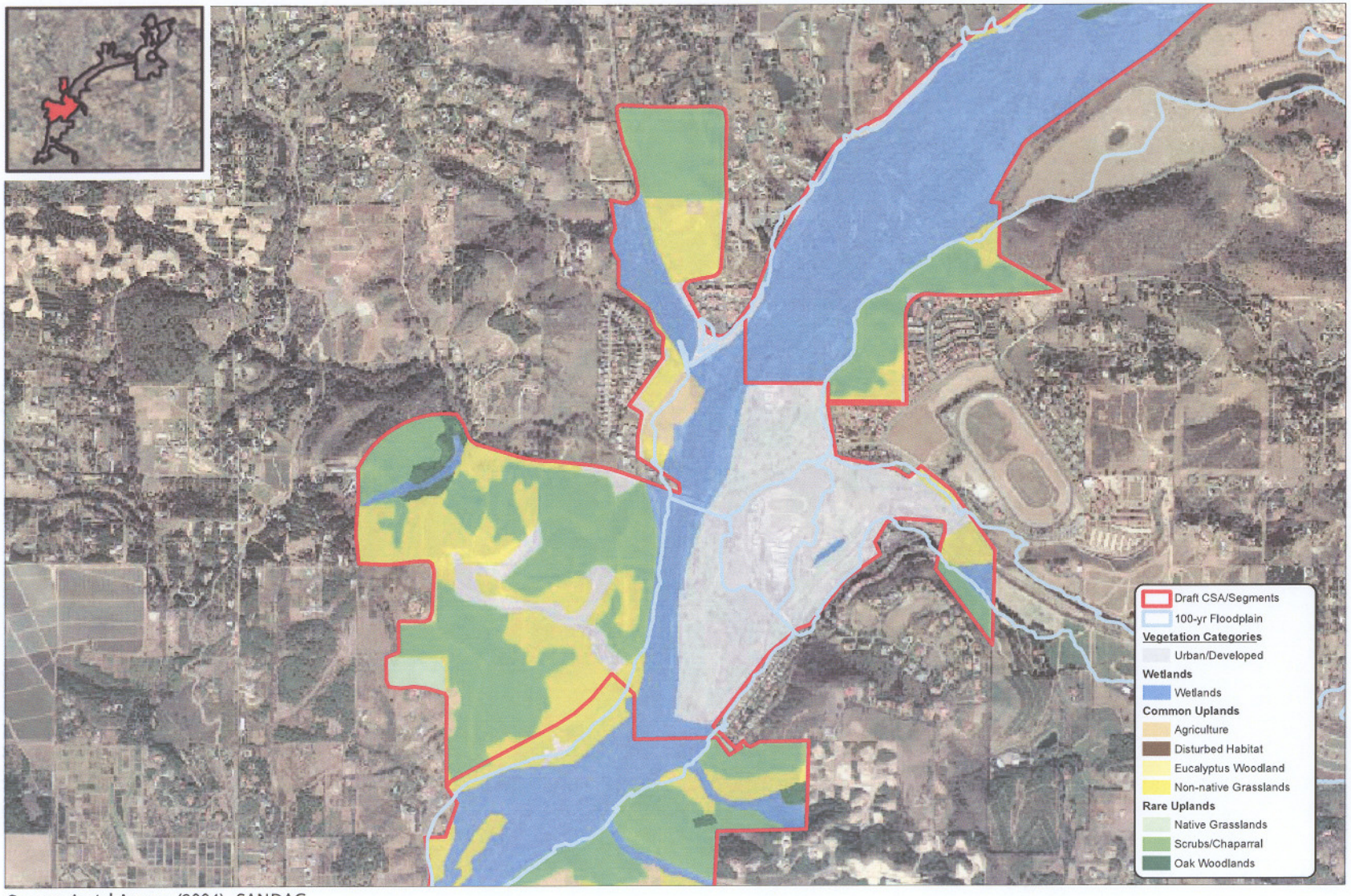
Generalized Vegetation - (Segment 1)



Source: Aerial Access (2004), SANDAG

FIGURE 10b

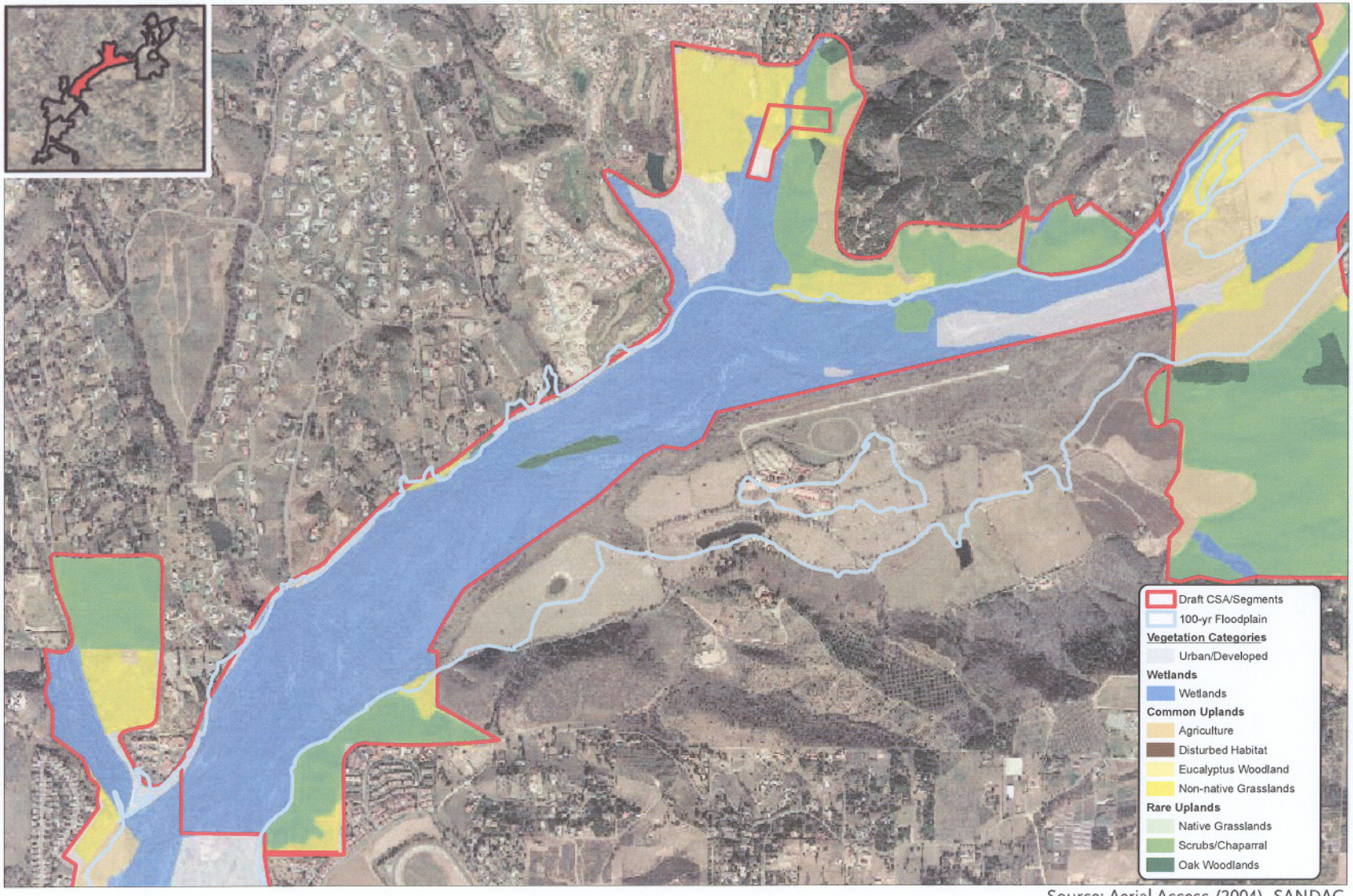
Generalized Vegetation - (Segment 2)



Source: Aerial Access (2004), SANDAG

FIGURE 10C

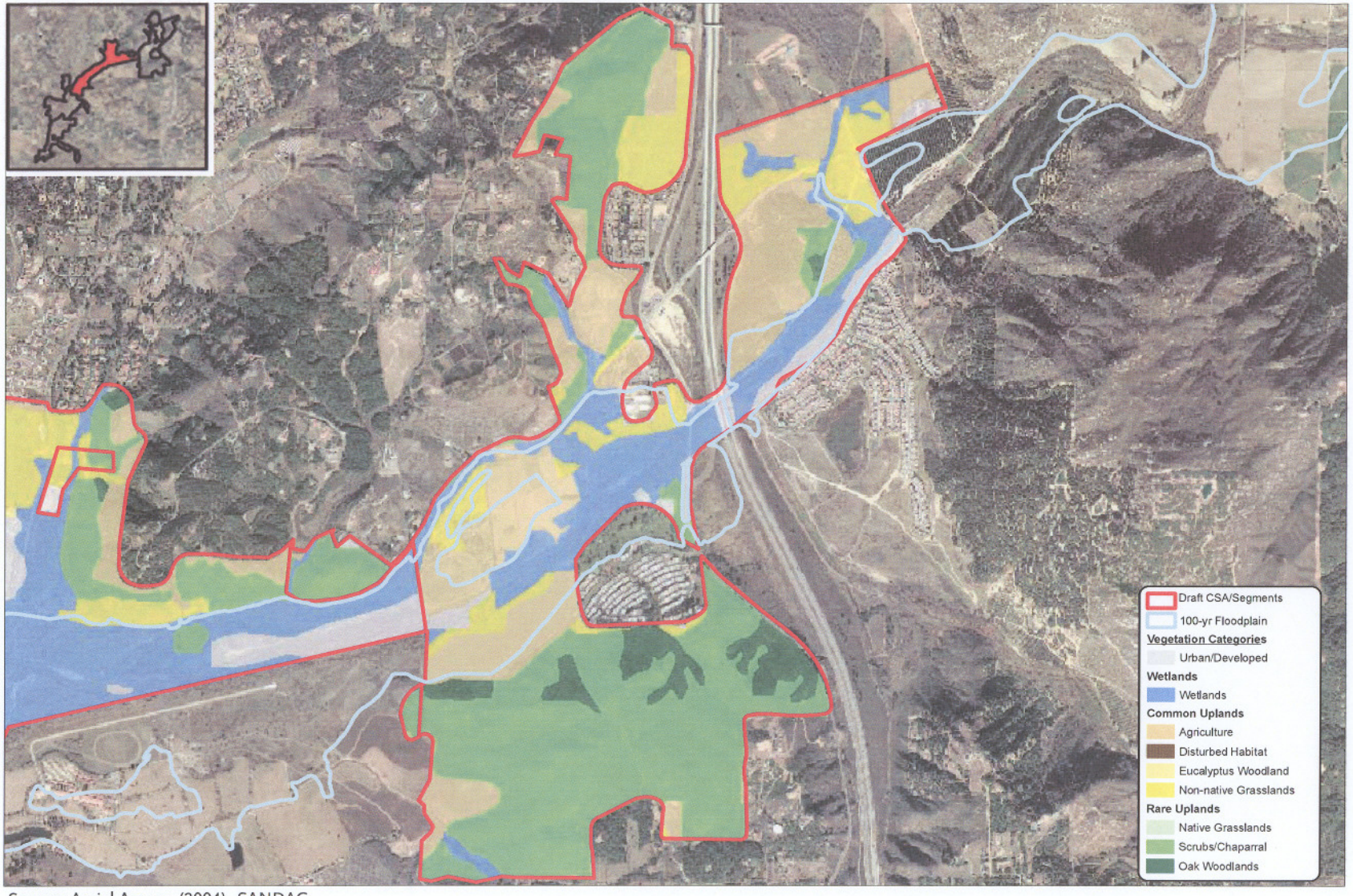
Generalized Vegetation - (Segment 3)



Source: Aerial Access (2004), SANDAG

FIGURE 10d

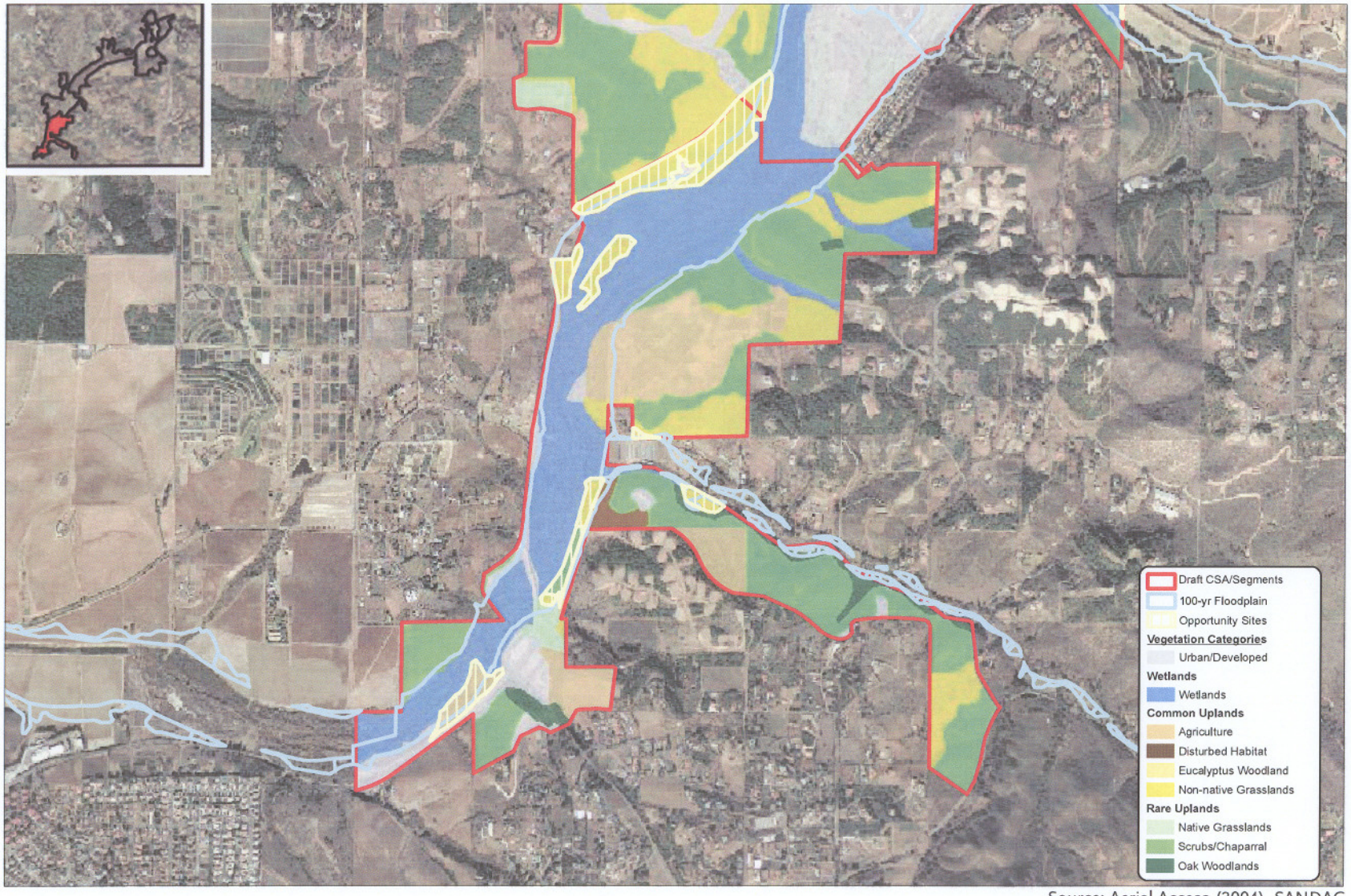
Generalized Vegetation - (Segment 4)



Source: Aerial Access (2004), SANDAG

FIGURE 11a

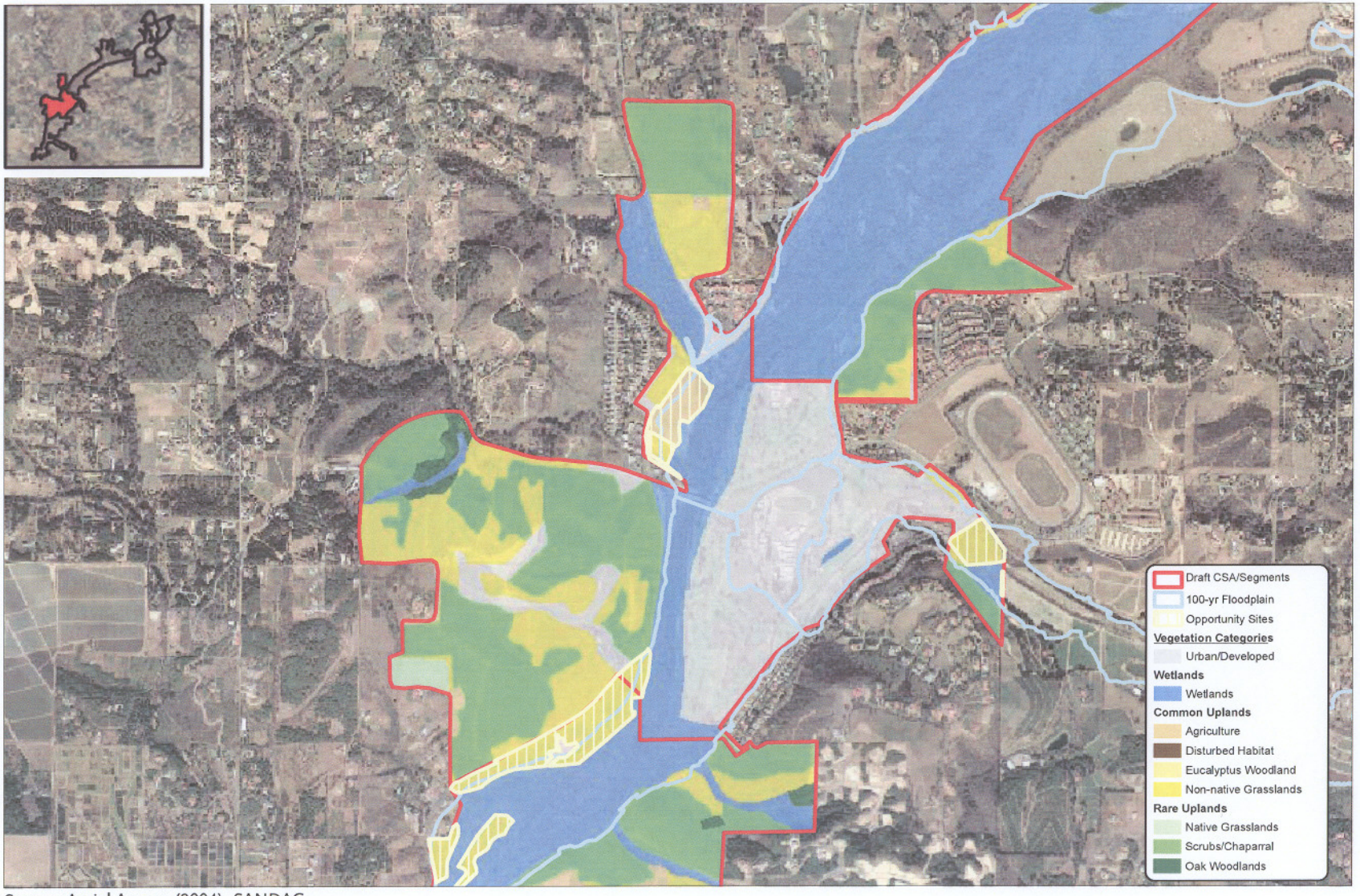
Wetland Creation/ Enhancement Opportunity Sites - (Segment 1)



Source: Aerial Access (2004), SANDAG

FIGURE 11b

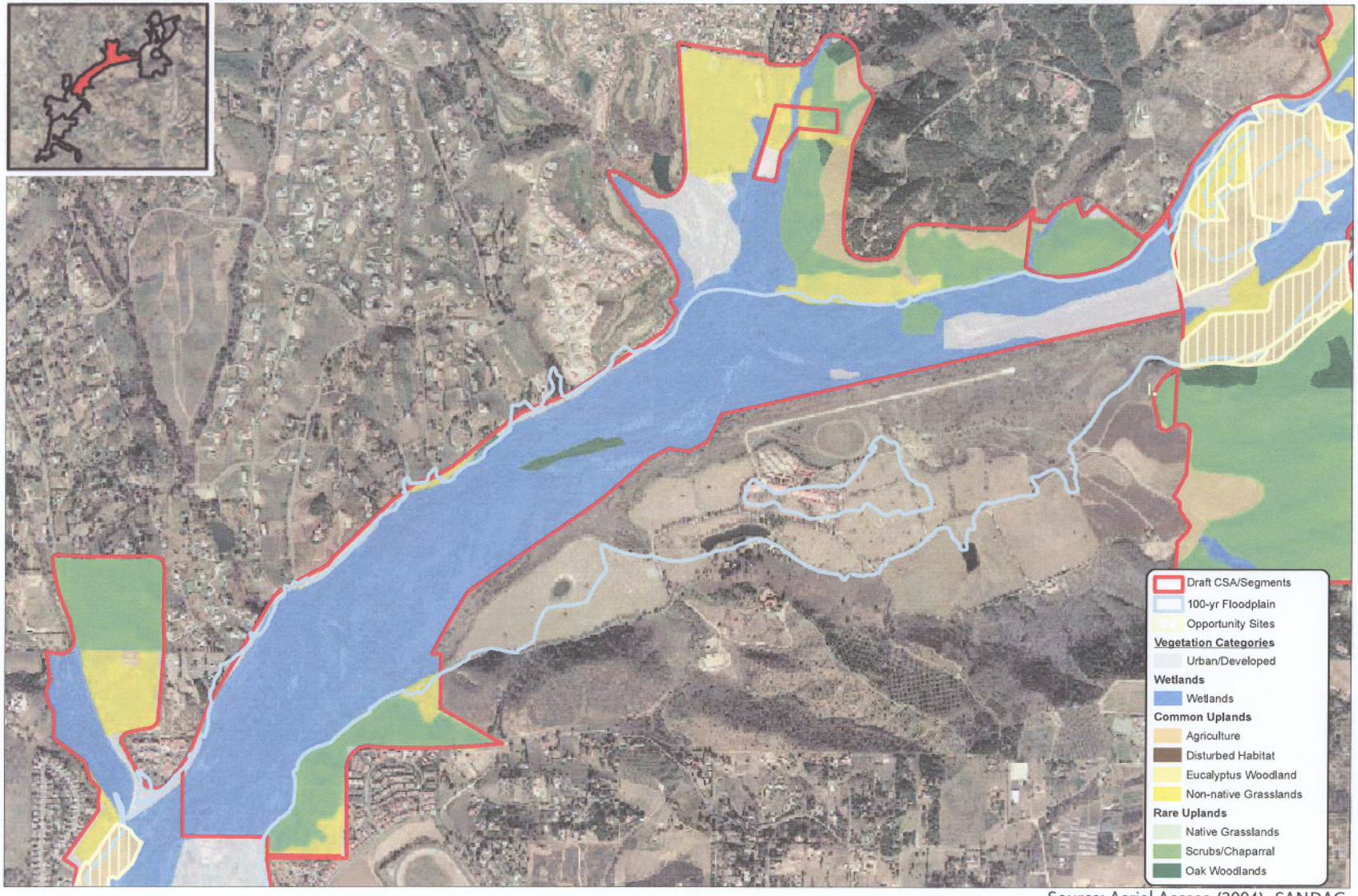
Wetland Creation/ Enhancement Opportunity Sites - (Segment 2)



Source: Aerial Access (2004), SANDAG

FIGURE 11c

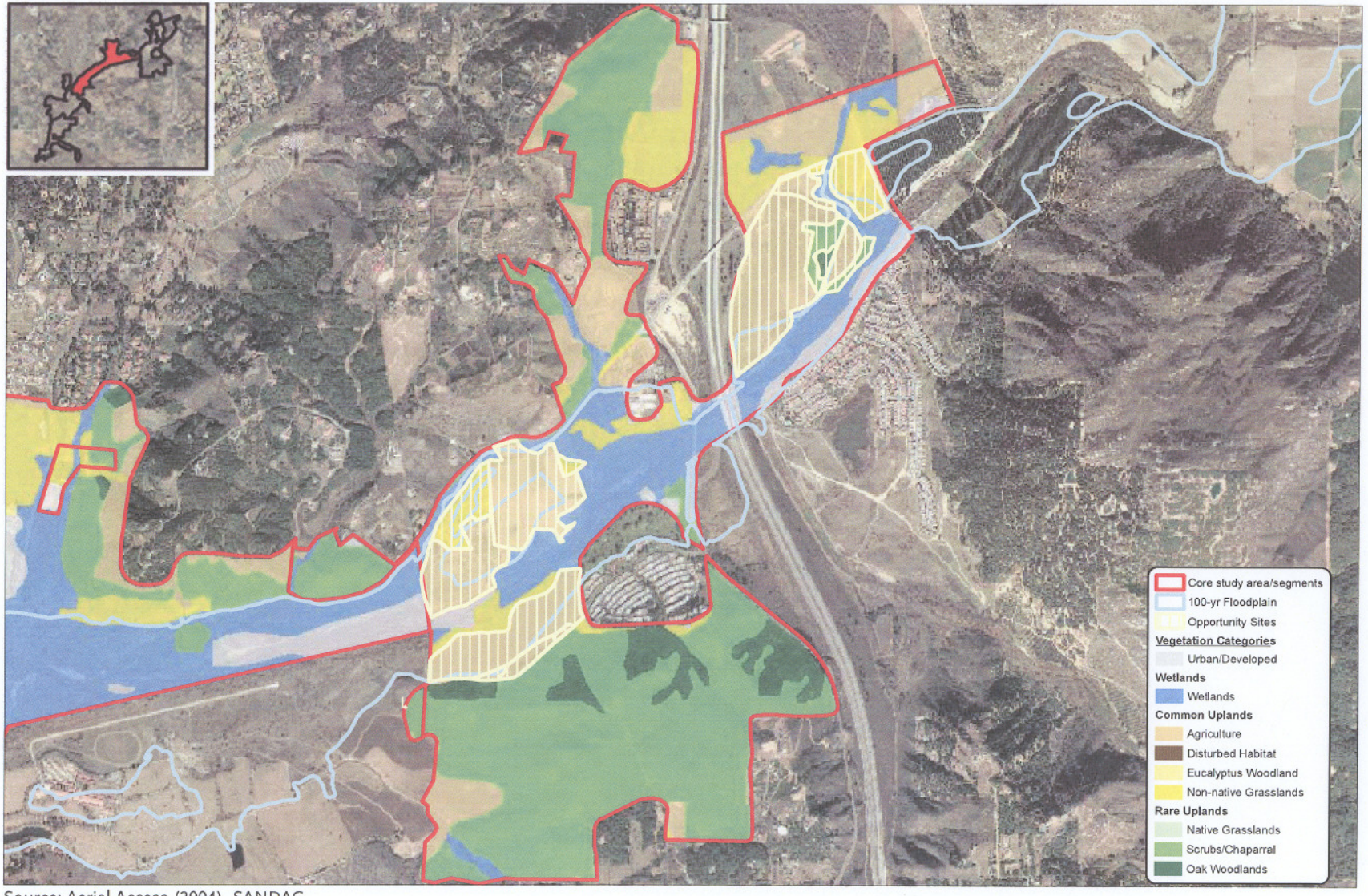
Wetland Creation/ Enhancement Opportunity Sites - (Segment 3)



Source: Aerial Access (2004), SANDAG

FIGURE 11d

Wetland Creation/ Enhancement Opportunity Sites - (Segment 4)



Source: Aerial Access (2004), SANDAG

FIGURE 12

Arundo Locations

Source: SANDAG and Mission Resource Conservation District

Table 1. Vegetation Communities and Percent Cover Within the Core Study Area

Habitat Type	Holland Code	Total Acreage On Site				% Cover On Site			
		Segment 1	Segment 2	Segment 3	Segment 4	Segment 1	Segment 2	Segment 3	Segment 4
Eucalyptus Woodland	11100	--	--	3	--	--	--	< 1	--
Disturbed Habitat	11300	7	--	--	--	<1	--	--	--
Urban/Developed	12000	45	262	89	42	6	32	9	
Freshwater	13140	6	2	--	2	< 1	< 1	--	
Non-vegetated Channel	13200	15	11	80	32	2	1	8	
General Agriculture	18000	--	--	2	31	--	--	< 1	
Orchards and Vineyards	18100	30	4	30	126	4	< 1	3	
Intensive Agriculture (dairies, nurseries, chicken ranches)	18200	--	--	--	30	--	--	--	
Extensive Agriculture (field pasture/row crops)	18300	68	14	--	81	10	2	--	
Field Pasture	18310	12	--	--	--	2	--	--	--
Row Crops	18320	1	--	1	47	< 1	--	< 1	
Diegan Coastal Sage Scrub	32500	145	199	87	269	20	24	9	
Alluvial Fan Scrub	32720	--	--	--	3	--	--	--	
Southern Mixed Chaparral	37120	56	40	57	190	8	5	6	
Valley and Foothill Grassland	42000	7	9	--	--	1	1	--	--
Non-native Grassland	42200	102	152	92	123	14	19	10	
Coastal and Valley Freshwater Marsh	52410	--	--	--	3	--	--	--	
Riparian Forests	61000	<1	--	--	--	< 1	--	--	--
Southern Arroyo Willow Riparian Forest	61320	4	--	--	--	< 1	--	--	--
Southern Cottonwood Willow Riparian Forest	61330	113	80	397	31	16	10	42	
Southern Sycamore Alder Riparian Woodland	62400	14	5	13	33	2	< 1	1	
Southern Riparian Scrubs	63300	19	--	--	--	3	--	--	--
Southern Willow Scrub	63320	22	4	52	29	3	< 1	5	
Mule Fat Scrub	63310	26	26	41	43	4	3	4	
Coast Live Oak Woodland	71160	13	1	9	61	2	< 1	1	
Dense Coast Live Oak Woodland	71162	6	--	--	--	< 1	--	--	--
Open Coast Live Oak Woodland	71161	--	9	--	--	--	1	--	--
Subtotals		**711**	**819**	**953**	**1178**	**100%**	**100%**	**100%**	**100%**
TOTAL		3661				100%			

PLANT AND ANIMAL SENSITIVITY GUIDELINES

Listings by U.S. Fish & Wildlife Service (USFWS) and California Department of Fish and Game (CDFG) carry regulatory authority, while other listings herein are generally advisory in nature and serve to monitor and inform.

FEDERAL = U.S. FISH & WILDLIFE SERVICE

FE Federal Endangered Species. Listed as Endangered by the federal government under the Endangered Species Act of 1975. Taxa that are in danger of becoming extinct throughout all or a significant portion of their range.

FT Federal Threatened Species. Listed as Threatened by the federal government under the Endangered Species Act of 1973. Taxa which are likely to become Endangered in the foreseeable future in the absence of special protection.

PT/PE Proposed Federal Threatened or Endangered Species. Proposed species are those for which a proposed rule to list as Endangered or Threatened has been published in the Federal Register.

FC Federal Candidate Species. Former Federal Candidate, Category 1 species for which the USFWS has sufficient biological information to support a proposed rule to list, but issuance of the proposed rule is precluded.

FS Federal Species of Concern. Former Federal Candidate, Category 2 species for which existing information suggested listing, but substantial information to support a proposed rule was lacking. No longer maintained by the USFWS, however, such species are the pool from which future candidates for listing will be drawn.

STATE = CALIFORNIA DEPARTMENT OF FISH AND GAME

CE California Endangered Species. A native California taxa which is in serious danger of becoming extinct throughout all or a significant portion of its range (CDFG Code 2062).

CT California Threatened Species. A native California taxa which, although not presently threatened with extinction, is likely to become an Endangered species in the foreseeable future in the absence of special protection and management efforts (CDFG Code 2967).

CP California Fully Protected Species. Taxa which fall under special protection within the CDFG Codes (3511, 3700, 4800, 4900, 5000, 5050, 5515).

CA California Special Animals. Taxa listed as Special Animals fall into one or more of the following categories:

Taxa that are biologically rare, very restricted in distribution, or declining throughout their range.

Population(s) in California that may be peripheral to the major portion of a taxon's range, but which are threatened with extirpation within California.

Taxa closely associated with a habitat that is declining rapidly in California (e.g., wetlands, riparian, old growth forests).

CS California Species of Special Concern. Taxa for which sufficient information exists which warrants concern over that species' status and may warrant future listing as Threatened or Endangered. Protective status falls under State government Code 66474.

COUNTY = COUNTY OF SAN DIEGO

Group A Plants rare, threatened or endangered in California and elsewhere.

Group B Plants rare, threatened or endangered in California, but more common elsewhere.

Group C Plants which may be quite rare, threatened, or endangered in California but more common elsewhere.

Group D Plants of limited distribution and are uncommon, but not presently rare or endangered.

CNPS = CALIFORNIA NATIVE PLANT SOCIETY

List 1A Plants presumed extinct in California.

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

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

List 3 Plants about which more information is needed (a review list).

List 4 Plants of limited distribution (a watch list).

AS = AUDUBON SOCIETY

BL **Blue List.** The Blue List includes species showing signs of nonclyclical population declines or range contractions in North America (Tate 1986).

Th **Threatened.** Status is accorded to those species/subspecies which have undergone dramatic, noncyclical, long-term population declines in San Diego County, to the point where the situation has reached the critical level throughout their range (Everett 1979).

De **Declining.** Status is given to species whose San Diego County breeding populations have been steadily reduced, or in some cases extirpated (Everett 1979).

Se **Sensitive.** Those species for which declines in San Diego County have not been documented, but are regarded as such because of: (a) extremely localized or limited distribution; (b) sensitivity to disturbance; (c) actual or impending destruction of essential habitat; or, (d) lack of sufficient data on current or past status which significantly increased the potential for serious reduction of a local population (Everett 1979).

SDHS = SAN DIEGO HERPETOLOGICAL SOCIETY

En **Endangered.** The population and habitat distribution have been reduced to such a widespread extent that the species is unable to reproduce at a normal rate and is imminently near extinction throughout the majority of its remaining San Diego County distribution.

Th **Threatened.** The species has had a significant population depletion and/or habitat destruction and is potentially endangered in San Diego County, but is presently reproducing at or near normal where it still occurs.

St **Stable.** Those species/subspecies whose San Diego County population levels appear to be holding their own.

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