RECON, "Santa Clara River Corridor Habitat Assessment for Newhall Ranch" (1999; 1999B)

1999 Recon Habitat

1999

Original in Matt Carpenter's Office

SANTA CLARA RIVER CORRIDOR HABITAT ASSESSMENT FOR NEWHALL RANCH

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Introduction

The vegetation along the portion of the Santa Clara River on the Newhall Ranch property has been studied over the last decade to document existing biological resources present in the riparian habitats (RECON 1993 and 1996). Vegetation along the river is dynamic, subject to changes from floods, agricultural activities, and natural successional change. RECON conducted vegetation surveys along the river in the spring of 1999 to update changes in the distribution of riparian vegetation due the factors mentioned above. In addition, a habitat assessment was performed that characterized, in general, the structural and compositional characteristics of the various habitat patches. This habitat structure and composition information was used to assess the likelihood or potential for occurrence of various sensitive species that may occur along this portion of the river. The potential for mitigation (e.g., creation or enhancement of riparian habitat) along the river was also assessed. Together, all of the above information is to be used in the development of plans to manage the biological resources of the Santa Clara River on the Newhall Ranch property.

The Newhall Ranch property is located in the county of Los Angeles near the city of Santa Clarita (Figure 1). The Newhall Ranch Specific Plan area is located north and south of Highway 126 and west of Interstate 5 (Figure 2). The location of the Santa Clara River corridor, the study area for this report, is shown on Figure 3.

Methods

Existing vegetation maps were used as base maps to document changes in the distribution of vegetation communities on the Santa Clara River on Newhall Ranch. Aerial photographs with vegetation community overlays were taken in the field and vegetation changes were marked on these maps. Habitat patches were visited on foot to determine the structural and compositional characteristics of the vegetation and an initial assessment of the potential for the habitat patch to support various sensitive species was made. Potential mitigation opportunities along the river were also noted and mapped. The data collected on the habitats of the Santa Clara River on the Newhall Ranch property were incorporated into a geographic information system (GIS) database and used to conduct the habitat assessment for sensitive plant and wildlife species.

A. Habitat Structure

Habitat structure is an important factor in the evaluation of the quality of a particular habitat patch. In general, diversity in habitat structure leads to a greater diversity in wildlife species that a habitat patch can potentially support. Habitat patches that have an intact overstory and understory that are comprised of native plant species are usually

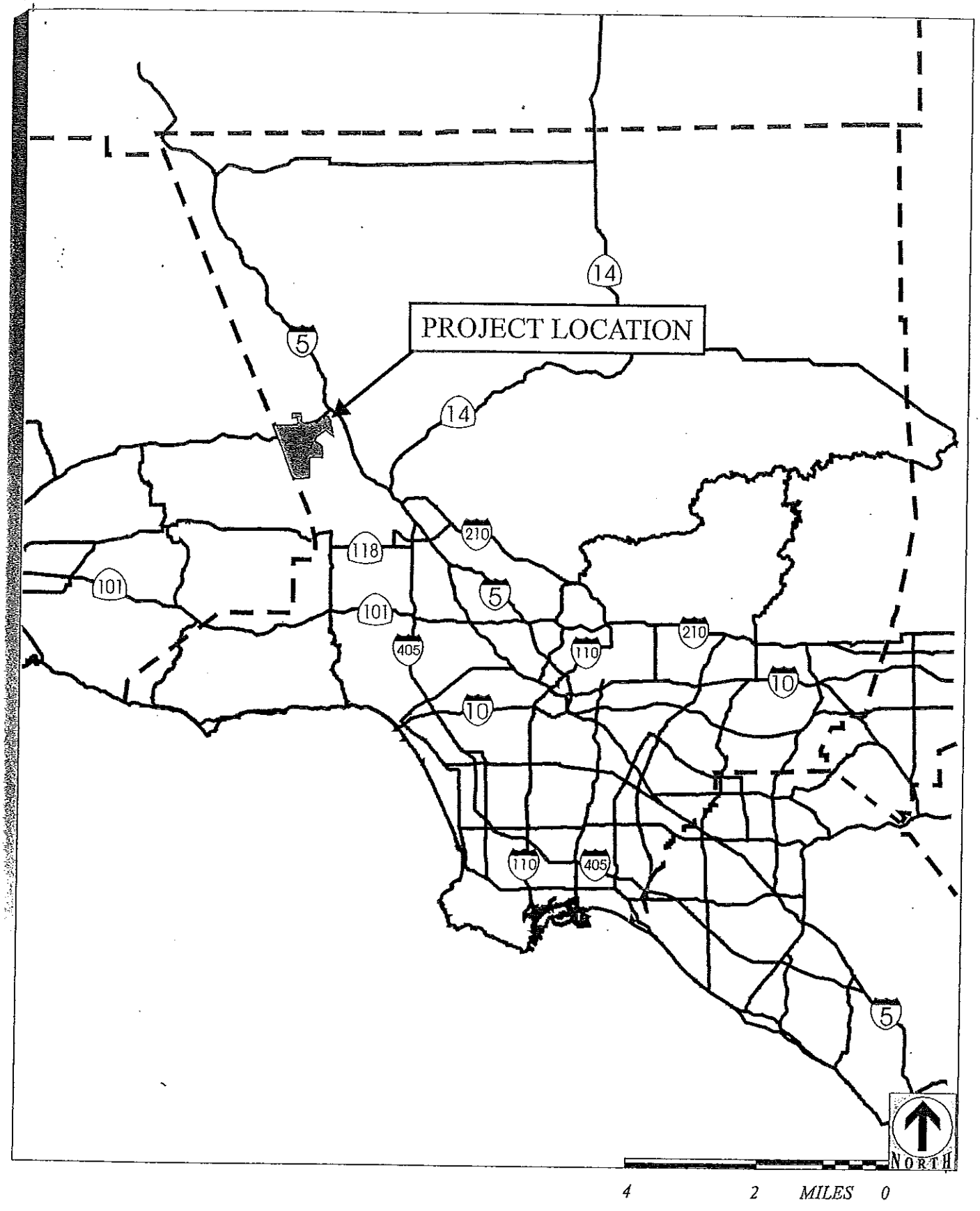

FIGURE 1

Regional Location of the Project

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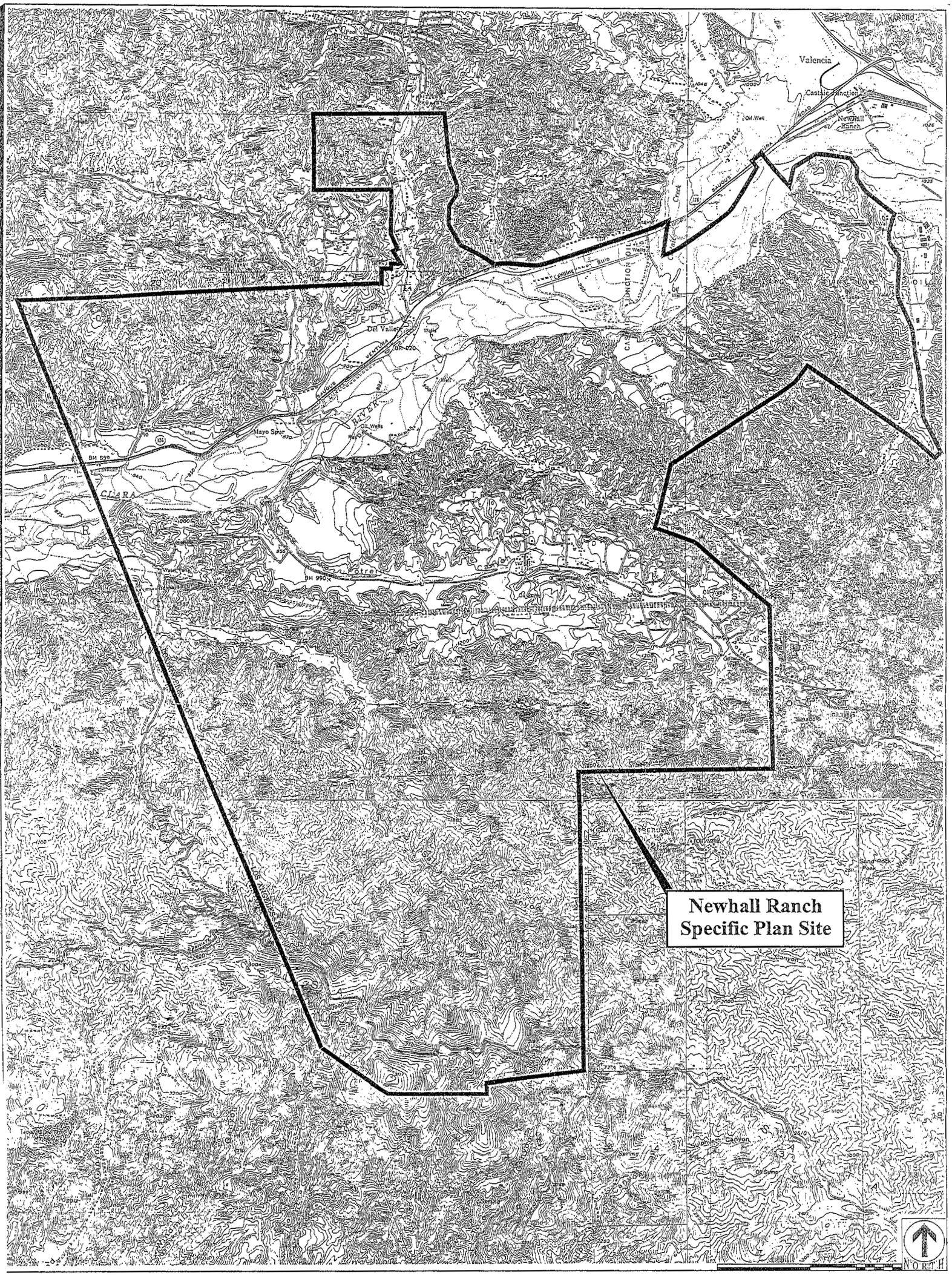

Map Source: U.S.G.S. 7.5 minute topographic maps, Newhall, Val Verde, Oat Mountain, and Simi Valley East

FIGURE 2

Project Vicinity

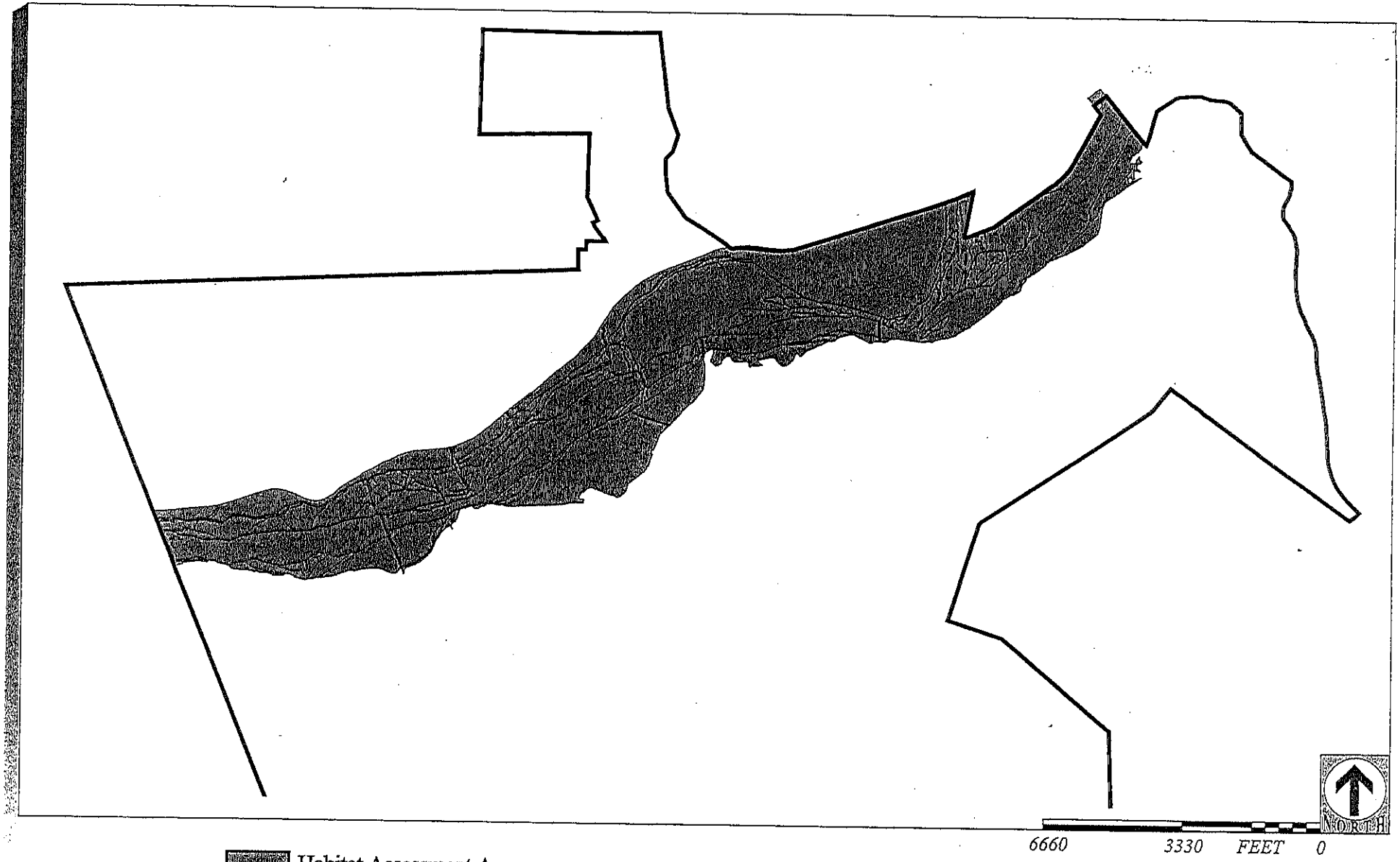

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FIGURE 3

Location of Santa Clara River Habitat Assessment Area

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higher quality than habitat patches that lack these layers or are disturbed. The assessment of the overstory and understory of habitat patches along the Santa Clara River on the Newhall Ranch property is described below.

1. Overstory

The overstory component of habitat structure was assessed by visual estimates of tree cover and numbers. Three categories were used to assess the overstory of a particular habitat patch. These categories are No Trees, Low Density Trees, and High Density Trees.

a. No Trees in Overstory

Habitat patches that lacked trees were determined to lack a significant overstory and thus a major habitat structural layer. For some wildlife and plant species, the presence of a tree layer is not as important as other habitat characteristics. For example, fish may take advantage of the shade that trees cast over the river; however, shade cast from herbaceous species may serve the same function.

b. Low Density Trees in Overstory

Habitat patches that had some trees, but in relatively low numbers or at a low density (i.e., spread out over the habitat patch), were placed in the Low Density Trees category. These habitat patches provided some overstory structure, but lack substantial tree canopy cover. The overall quality of a habitat patch in this category is dependent on the intactness of the understory, level of disturbance, and species composition, particularly the presence of non-native plant species. Wildlife species, such as certain birds, can use habitats with few trees depending on the species of tree and other habitat characteristics.

c. High Density Trees in Overstory

Habitat patches that have a relatively high number and density of trees were placed in the High Density Trees category. These habitat patches have developed an overstory layer composed of large mature trees with a well-developed canopy layer. Although overall habitat quality is dependent on the development and composition of the understory, habitat patches that are comprised of a well-developed tree layer tend to support a larger number of riparian bird species than patches with fewer trees. Some sensitive riparian bird species, such as the least Bell's vireo and southwestern willow flycatcher, require a well-developed overstory layer in addition to a well-developed understory layer.

2. Understory

The understory of a particular habitat patch is that portion of the plant community that grows beneath the canopy of the dominant structural layer (overstory), usually a tree or shrub layer. In tree-dominated habitat patches (e.g., willow woodland) the understory

may be made up of a shrub and herbaceous layer. Shrub-dominated habitat patches (e.g., mule fat scrub) may only have a herbaceous understory. Some habitat patches lack an understory layer all together. The composition of the plant species in the understory is also important to habitat quality. An understory layer comprised of native plant species is more valuable to wildlife than one comprised of non-native species. Three categories were used to evaluate the development of an understory layer: Open, Moderately Dense, and Dense.

a. Open Understory

Habitat patches that lacked an understory layer or had an understory layer that was at a relatively low density were placed in the Open category. This category included riparian woodlands that lacked or had a very open shrub layer, and riparian woodlands and scrubs (shrub-dominated habitats) with only an herbaceous layer made up of annual grasses. An open understory may favor certain wildlife and plant species, but exclude other species dependent on characteristics of this layer for survival. For example, least Bell's vireo prefer habitat with some level of an overstory and a well-developed understory to provide the proper conditions to forage and breed.

b. Moderately Dense Understory

Habitat patches with a well-developed tree layer but a moderately dense understory layer of shrubs and herbs were placed in the Moderately Dense category. In general, a person could walk easily beneath the tree canopy weaving between the open shrub and herb layers. The understory in habitat patches in this category usually had experienced some sort of disturbance (i.e., flood, cattle grazing) that has decreased the density of the native species comprising this layer. The percentage of total vegetation cover from non-native plants species is an important factor for overall habitat quality in a disturbed understory because wildlife species prefer native plant cover. Wildlife species diversity is not only limited by an open understory, but could be further affected by the plant species composition. An understory comprised of strictly non-native species supports a lower diversity of wildlife than a predominantly native understory.

c. Dense Understory

Habitat patches with a well-developed tree and shrub layer were put in the Dense Understory category. In general, it was difficult to walk beneath the tree canopy due to the density of the shrubs and sometimes the herbaceous layer. Scrubs with a well-developed native herbaceous layer were also put in this category. Wildlife use of habitat patches in this category is generally high due to the diversity of vertical structure in the plant community. Plant species composition of the understory layer affects the overall quality of the habitat patch. Some habitat patches had well-developed tree layers and a dense understory layer, but the understory was comprised on predominantly non-native

species (i.e., *Arundo donax*). Other patches had a dense shrub understory, but lacked an herbaceous layer.

3. Species Composition

As previously mentioned, the plant species that make up a particular structural layer in a habitat patch is important not only to the overall quality of the habitat, but to which species may use a particular habitat. Higher diversity and numbers of native plant species in the structural layers, in general, promotes higher quality habitat and greater diversity of wildlife species. The establishment of non-native species in the structural layers of a habitat decreases the quality of the habitat for use by wildlife. Native wildlife species often do not use non-native plants such as tamarisk or giant cane for foraging and breeding sites. Other wildlife such as rodents and other small mammals may use non-native species for cover, but do not depend on these species as food sources.

The species composition of the habitat patches along the Santa Clara River on the Newhall Ranch property was assessed during the field surveys. The relative cover of the dominant plant species in the different structural layers were used to determine the relative species composition of the habitat. The plant species composition information was used in determining overall habitat quality along with the understory and overstory assessments discussed above.

B. Potential Mitigation Sites

The Specific Plan for Newhall Ranch specifies as one of the mitigation options that wetland and riparian mitigation will be conducted in suitable places along the Santa Clara River. Initially, the focus was on converting agricultural lands in the floodplain of the river back to wetland and riparian habitats. As a part of this study, more specific mitigation sites were categorized along the river. Three mitigation potential categories were used; areas suitable for Creation of habitat, areas suitable for Enhancement of existing habitat, and existing quality habitat areas where no restoration is required (None category).

1. Habitat Creation

Habitat creation areas were identified in the Santa Clara River floodplain where the existing native habitat is heavily disturbed. Most, if not all, native riparian species have been removed and the site was either under active agriculture, heavily grazed, or disturbed by other developments (e.g., roads, farm buildings, staging areas). These sites have the potential to be physically altered to create the proper hydrologic conditions conducive to the establishment of wetland and other riparian plant species.

2. Habitat Enhancement

Habitat patches that are more or less intact, but have some low level of disturbance were placed in the Enhancement category. These sites, in general, lacked a substantial tree or shrub layer or, in some cases, have an understory comprised of mostly non-native plant species. These situations allow the opportunity to enhance the existing habitat through the removal of undesirable non-native plant species and the re-introduction of native riparian plants for the benefit of wildlife use and overall habitat quality.

3. Existing High Quality Habitats

Some habitat patches do not offer creation or enhancement opportunities because the existing habitat values are high. The tree, shrub, and herbaceous layers, when present, are intact and composed of predominantly native plant species. These sites are the most valuable for conservation because they represent the relatively undisturbed habitat condition for the river.

Habitat Assessment

Using the habitat information and GIS database technology, the habitat patches along the Santa Clara River on the Newhall Ranch property were assessed for the potential to support various sensitive plant and wildlife species. Sensitive species considered in the assessment were chosen from a list of potential species complied for the entire Newhall Ranch property during past surveys (Dames and Moore 1993; RECON 1996). Those species with the potential to occur in riparian habitats found along the Santa Clara River were selected. Emphasis was placed on assessment of habitat for federal and state listed endangered or threatened species and state species of special concern. A list of species considered in this study is provided (Table 1).

The distribution of the existing vegetation communities found along the Santa Clara River on the Newhall Ranch property gives the baseline for location of particular habitat types (Figure 4). The condition of the overstory and understory , as ranked by this study, provide the community structure data used in the assessment of the potential for a habitat patch to support a particular sensitive species (Figures 5 and 6).

A series of GIS overlays were produced showing the distribution of potential habitat for the sensitive species considered in this study (Figures 7-15). General habitat characteristics for each species were used in determining which habitat patches had the potential to support the particular plant or animal. Some species were grouped together because their habitat characteristics overlapped. For example, fish species all require permanent water which occurs in the channel area of the river so they were grouped together. Some riparian bird species were also grouped based on their similar habitat needs.

TABLE 1
SENSITIVE SPECIES WITH THE POTENTIAL FOR OCCURRENCE WITHIN THE SANTA CLARA RIVER CORRIDOR ON NEWHALL RANCH PROPERTY

Scientific and Common Name	Status			General Habitat
	Federal	State	CNPS	
Plants				
Berberis (Mahonia) nevinii Nevin's barberry	FE	SE	1B	Chaparral, cismontane woodlands, coastal sage scrub, and riparian scrub; associated with sandy or gravelly soils below 2,000 ft.
Boykinia rotundifolia Round-leaf boykinia			4	Mesic chaparral and riparian woodland habitats.
Dodecahema leptoceras Slender-horned spineflower	FE	SE	1B	Alluvial scrub vegetation; associated with older successional phases in open sandy, flood deposited rivers and washes.
Fish				
Gasterosteus aculeatus williamsoni Unarmored threespine stickleback	FE	SE		Streams with slow moving pools.
Gila orcuttii Arroyo chub		SSC		Streams with riffles and pools.
Catostomus santaanae Santa Ana sucker		SSC		Streams with high velocity currents.
Amphibians				
Bufo microscaphus californicus Arroyo southwestern toad	FE	SSC		Open areas of streams with sand bars, cobbles; overflow pools; low current velocity; may occur in adjacent upland habitats after breeding.

TABLE 1
SENSITIVE SPECIES WITH THE POTENTIAL FOR OCCURRENCE WITHIN THE SANTA CLARA RIVER CORRIDOR ON NEWHALL RANCH PROPERTY
(continued)

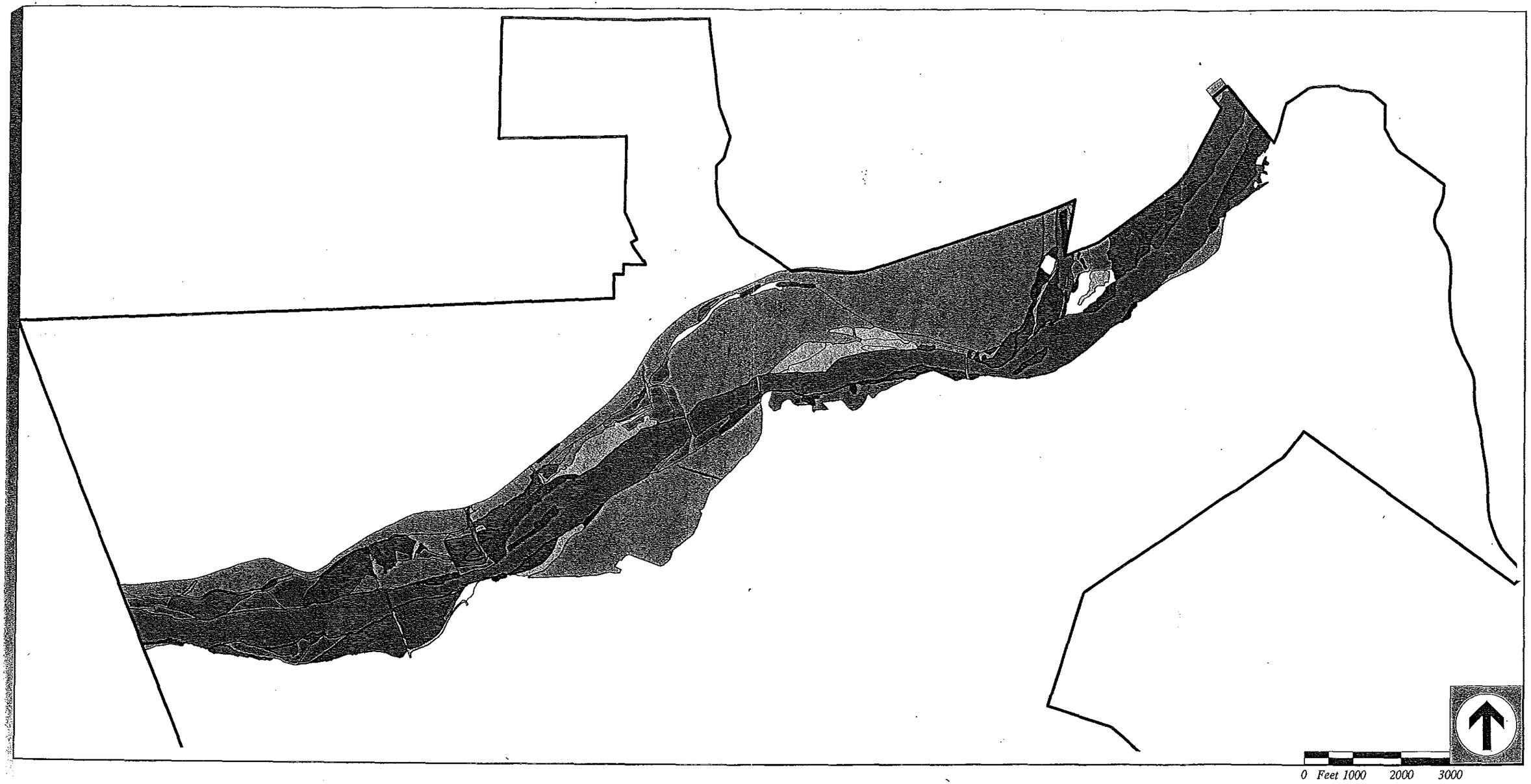
Scientific and Common Name	Status			General Habitat
	Federal	State	CNPS	
Amphibians (cont.)				
Rana aurora draytonii California red-legged frog	FT	SSC		Streams with dense, shrubby aquatic vegetation.
Scaphiopus hammondii Western spadefoot				Upland habitats with seasonal pools.
Reptiles				
Clemmys marmorata pallida Southwestern pond turtle		SSC		Streams, ponds with basking sites.
Thamnophis hammondii Two-striped garter snake		*		Uses streamside sites in summer and coastal sage scrub and adjacent grassland habitats in winter.
Birds				
Accipiter striatus Sharp-shinned hawk		SSC		Riparian habitats.
Accipiter cooperi Cooper's hawk		SSC		Variety of woodland and semi-open habitats near water.
Coccyzus americanus occidentalis Western yellow-billed cuckoo	SE			Dense riparian habitats.
Empidonax trailii extimus Southwestern willow flycatcher	FE	SE		Willow thickets in floodplains.

TABLE 1
SENSITIVE SPECIES WITH THE POTENTIAL FOR OCCURRENCE WITHIN THE SANTA CLARA RIVER CORRIDOR ON NEWHALL RANCH PROPERTY
(continued)

Scientific and Common Name	Status			General Habitat
	Federal	State	CNPS	
Birds (cont.)				
Vireo bellii pusillus Least Bell's vireo	FE	SE		Dense, riparian habitats.
Agelaius tricolor Tricolored blackbird		SSC		Marshland habitats.
Icteria virens Yellow-breasted chat		SSC		Dense riparian habitats.
Dendroica petechia brewsteri Yellow warbler		SSC		Riparian habitats.

Status

FE = Listed endangered by the federal government
FT = Listed threatened by the federal government
SE = Listed endangered by the state of California
SSC = California Department of Fish and Game Species of Special Concern
* = Taxa listed with an asterisk fall into one or more of the following:
- Taxa considered endangered or rare under Section 15380(d) of CEQA guidelines
- 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 in California at an alarming rate



Alluvial scrub
Arrowweed scrub
Mule fat scrub
Successional mule fat scrub
Elderberry scrub
Southern cottonwood/willow riparian forest
Southern willow riparian woodland
Southern willow scrub
Coast live oak woodland
Valley freshwater marsh
Great Basin scrub
Coastal sage scrub
Grassland
Agricultural and other developed uses
Disturbed
Newhall Ranch boundary

FIGURE 4

Existing Vegetation of the Santa Clara River Habitat Assessment Area

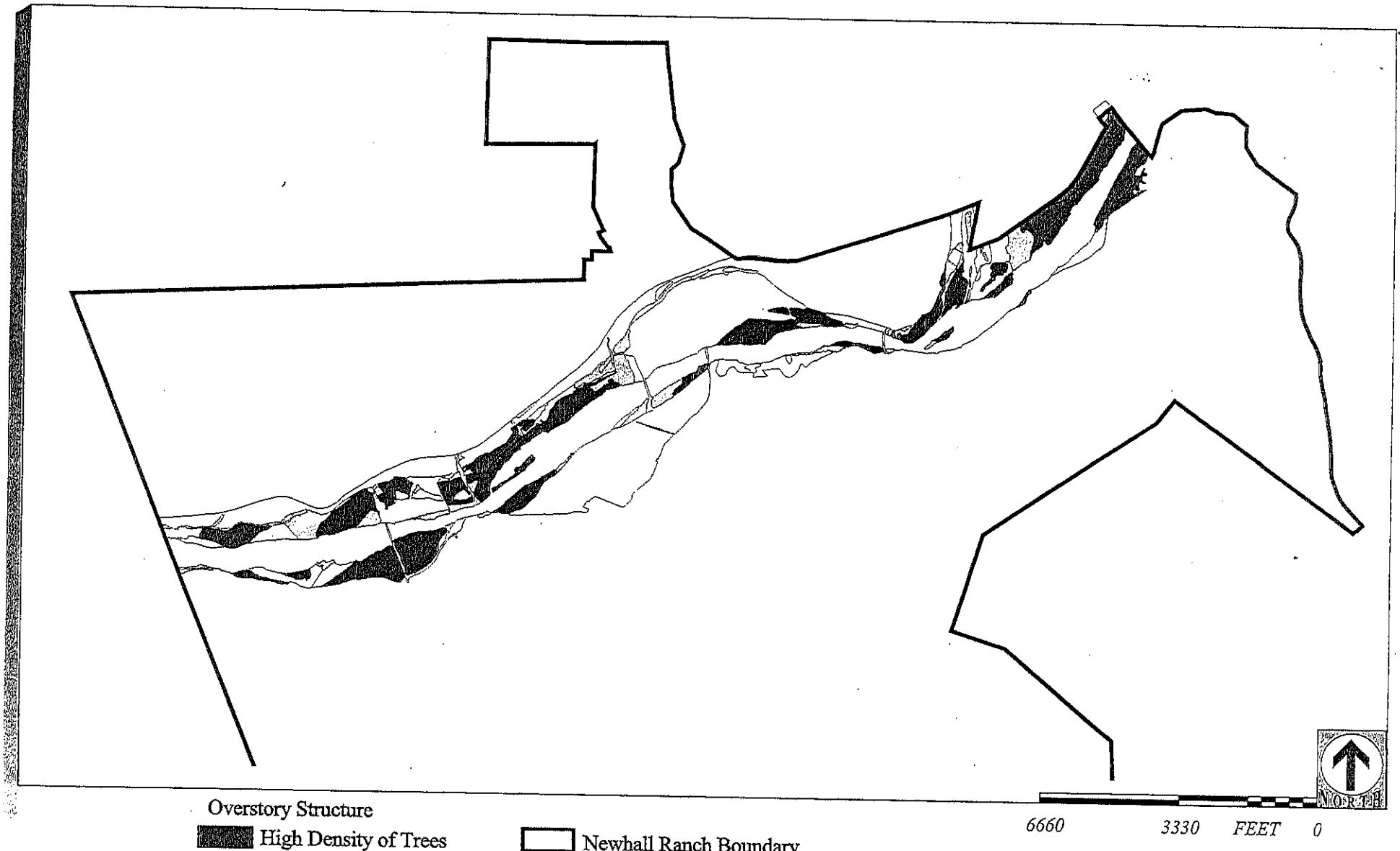


FIGURE 5

Habitat Assessment-Overstory Layer

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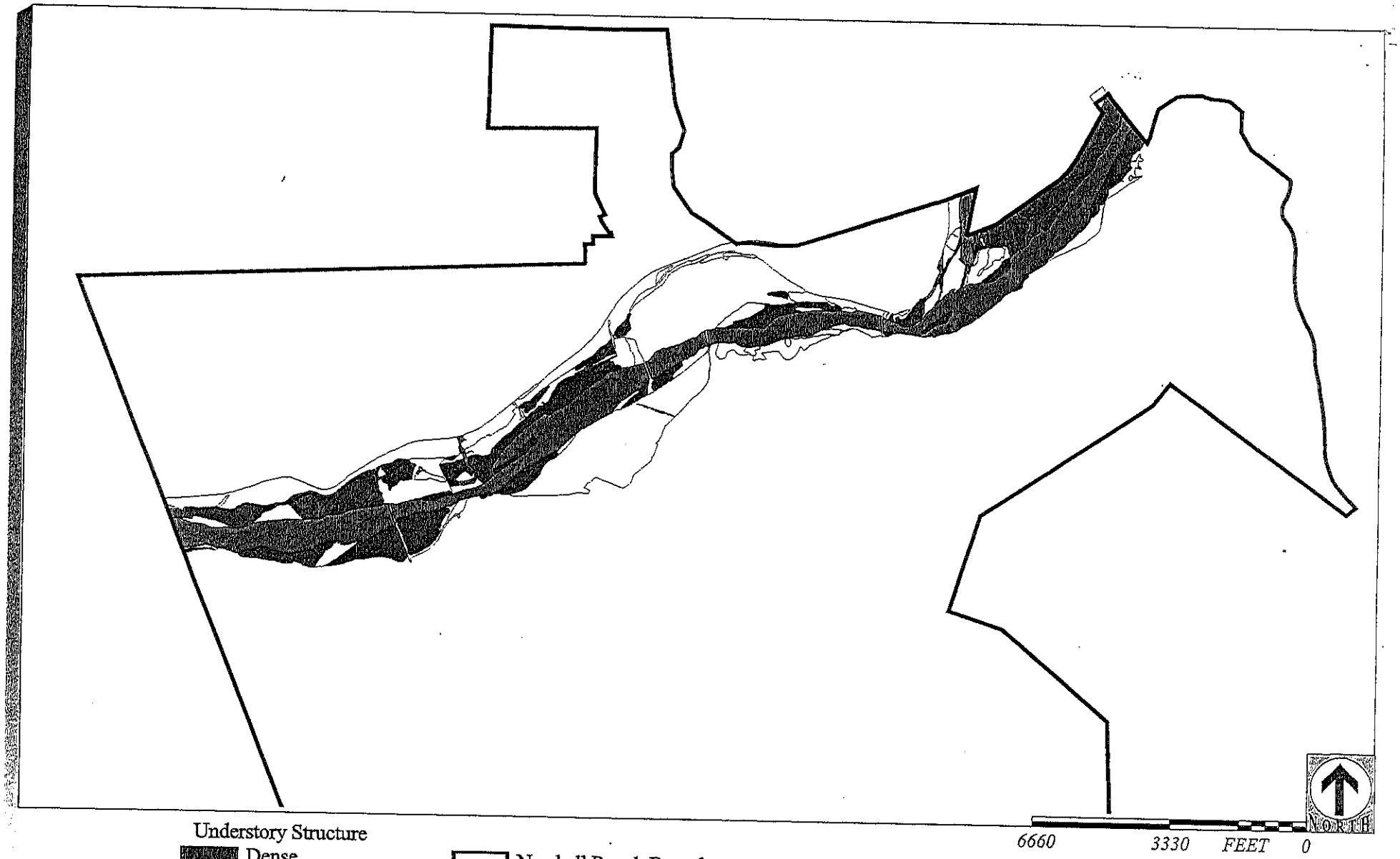

FIGURE 6

Habitat Assessment-Understory Layer

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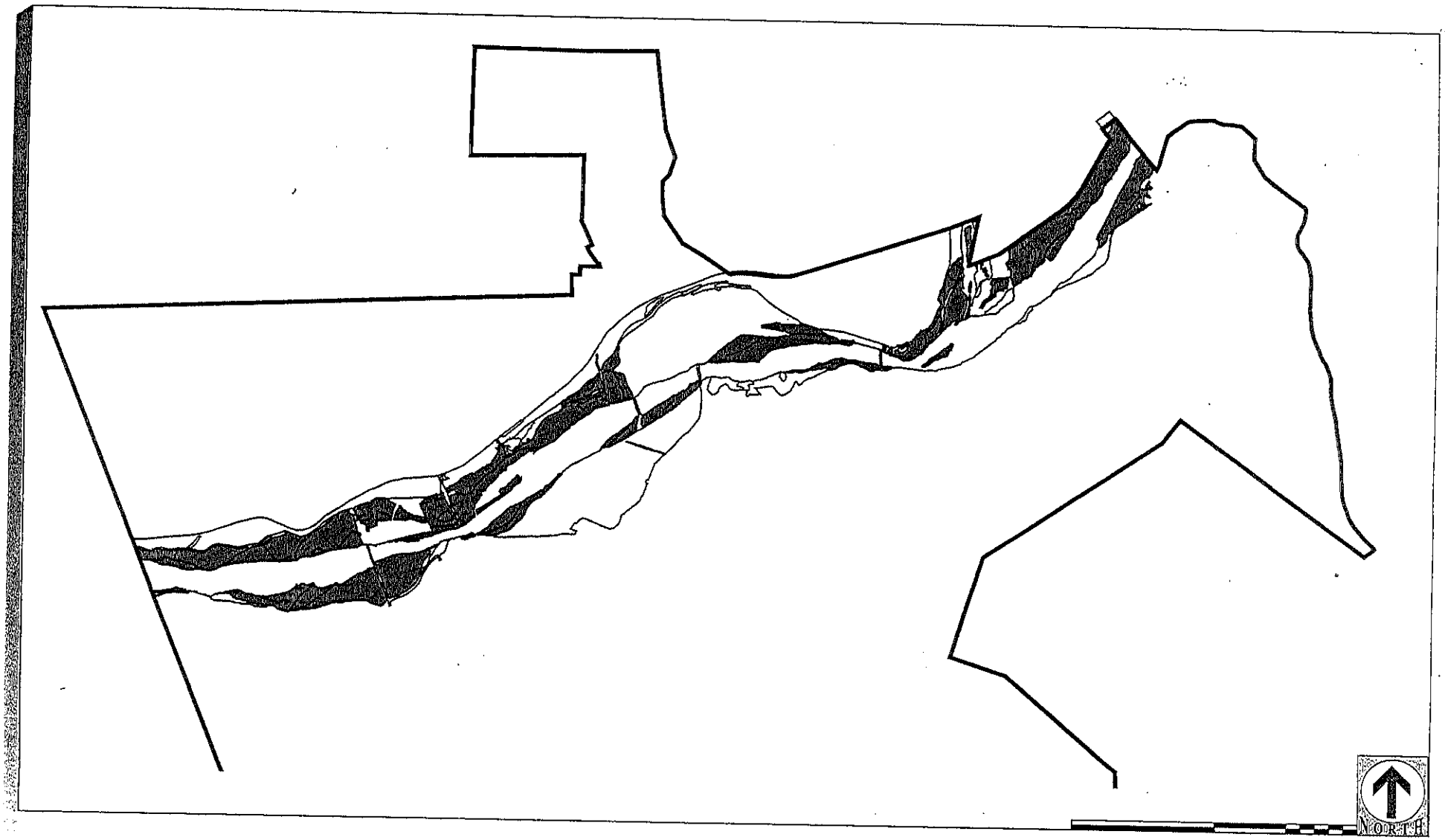

Habitat Assessment Area

Potential Habitat for the Least Bell's Vireo

Newhall Ranch Boundary

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FIGURE 7

Habitat Assessment-Least Bell's Vireo

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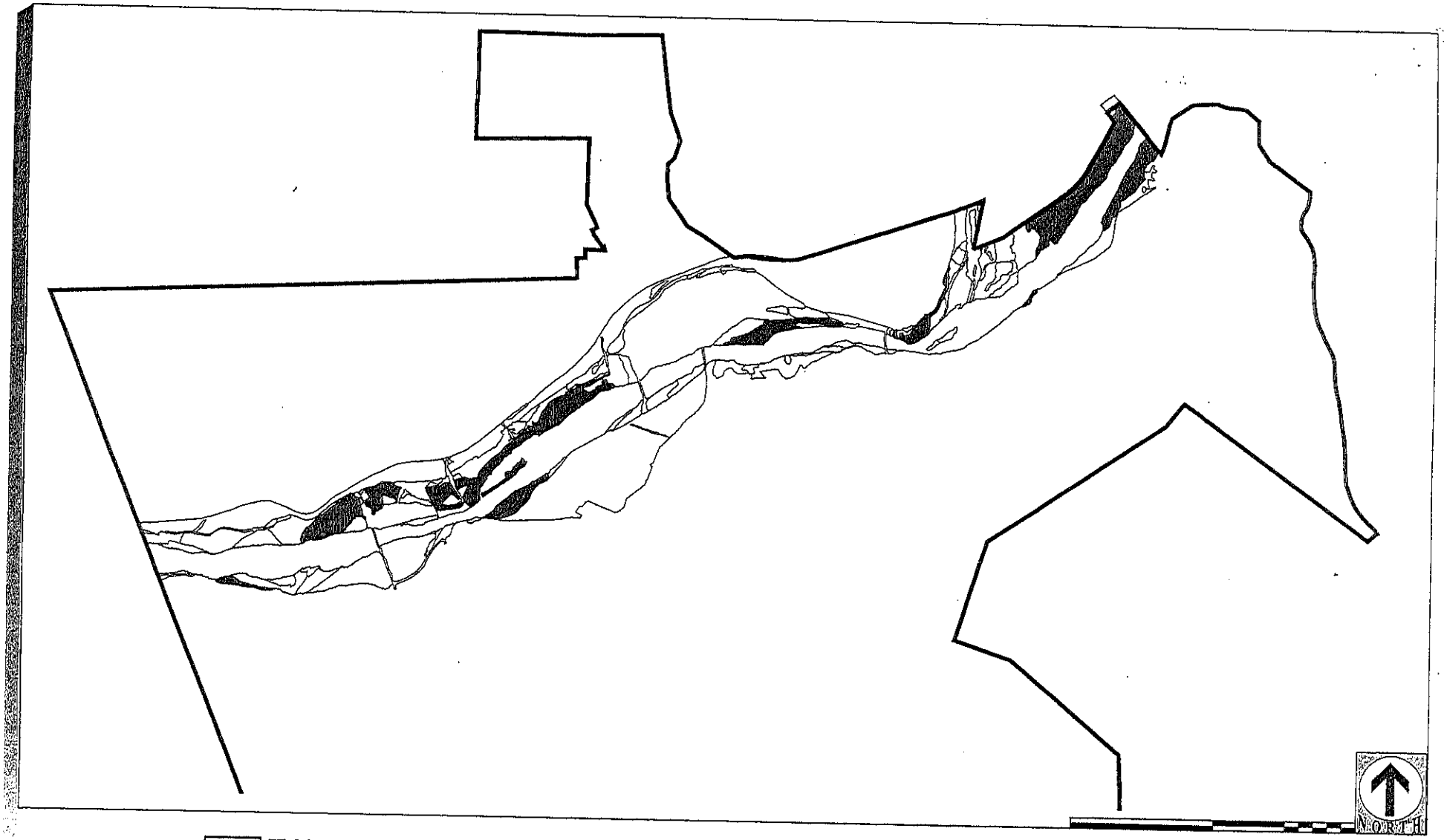

Habitat Assessment Area

Potential Habitat for the Southwestern Willow Flycatcher

Newhall Ranch Boundary

FIGURE 8

Habitat Assessment-Southwestern Willow Flycatcher

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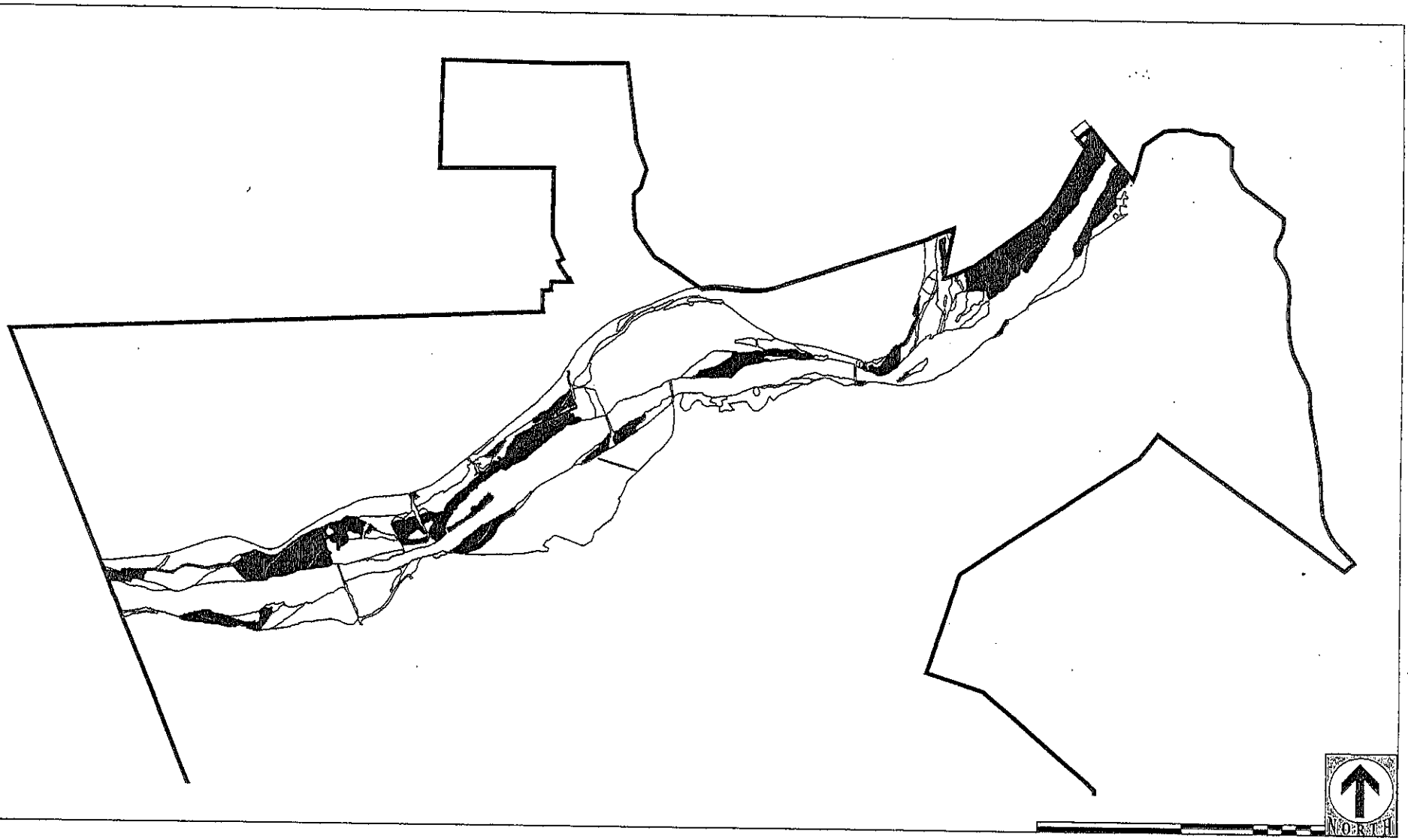

Habitat Assessment Area

Potential Habitat for Yellow-breasted Chat

Newhall Ranch Boundary

FIGURE 9

Habitat Assessment-Yellow-breasted Chat

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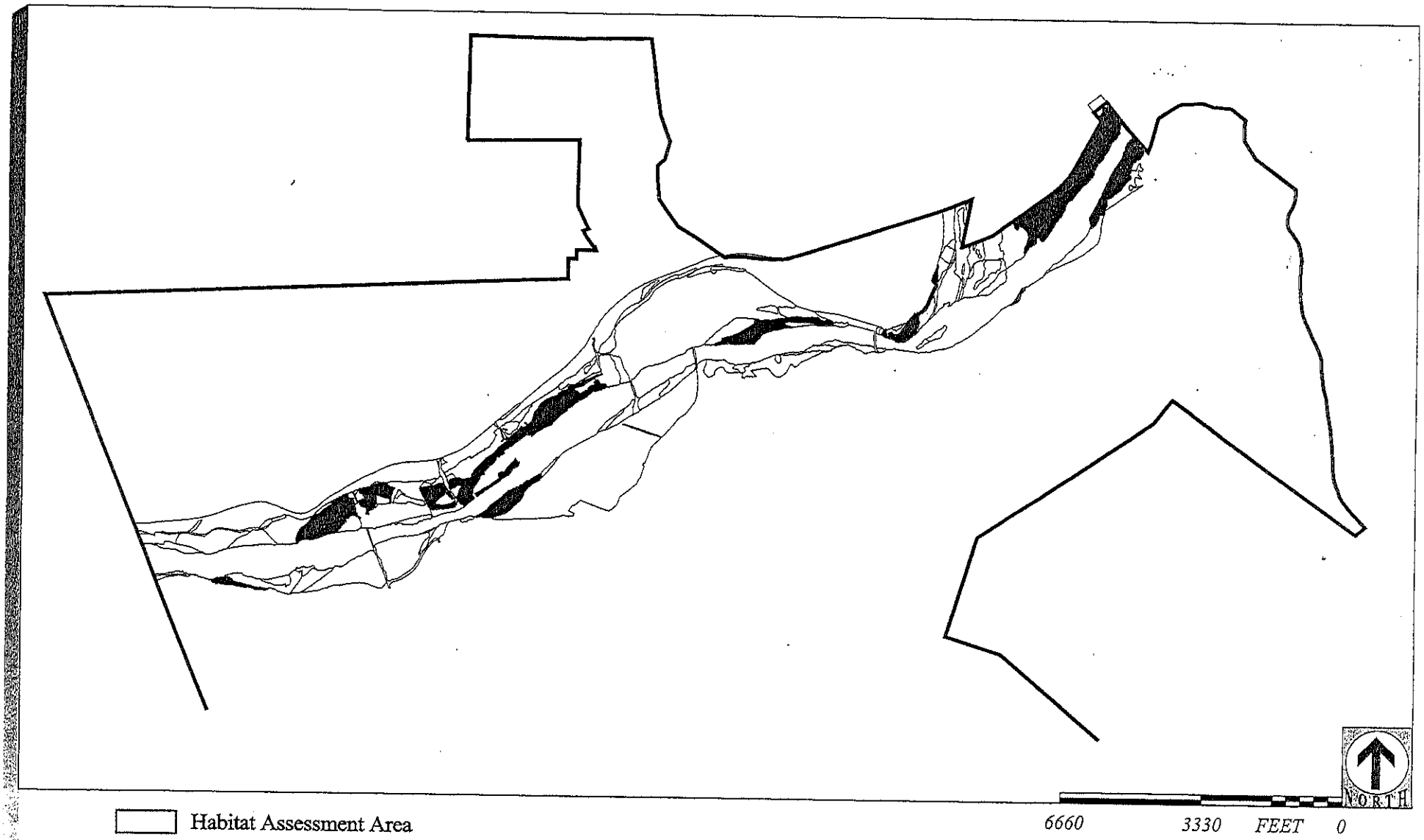

Habitat Assessment Area

Potential habitat for the yellow-billed cuckoo

Newhall Ranch Boundary

FIGURE 10

Habitat Assessment-Yellow-billed Cuckoo

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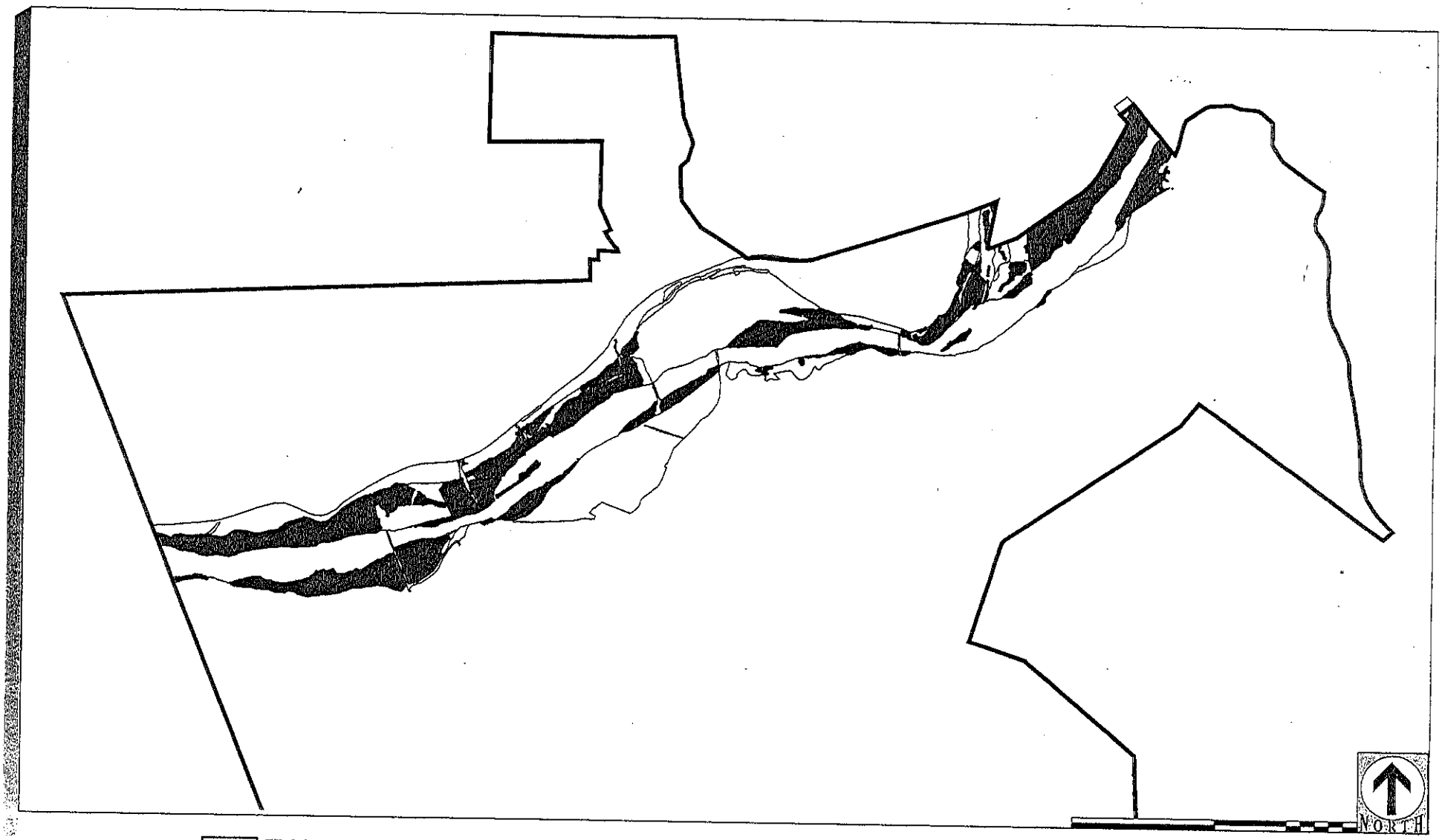

Habitat Assessment Area

Potential Habitat for Sensitive Riparian Birds

Newhall Ranch Boundary

FIGURE 11

Habitat Assessment-Other Riparian Birds

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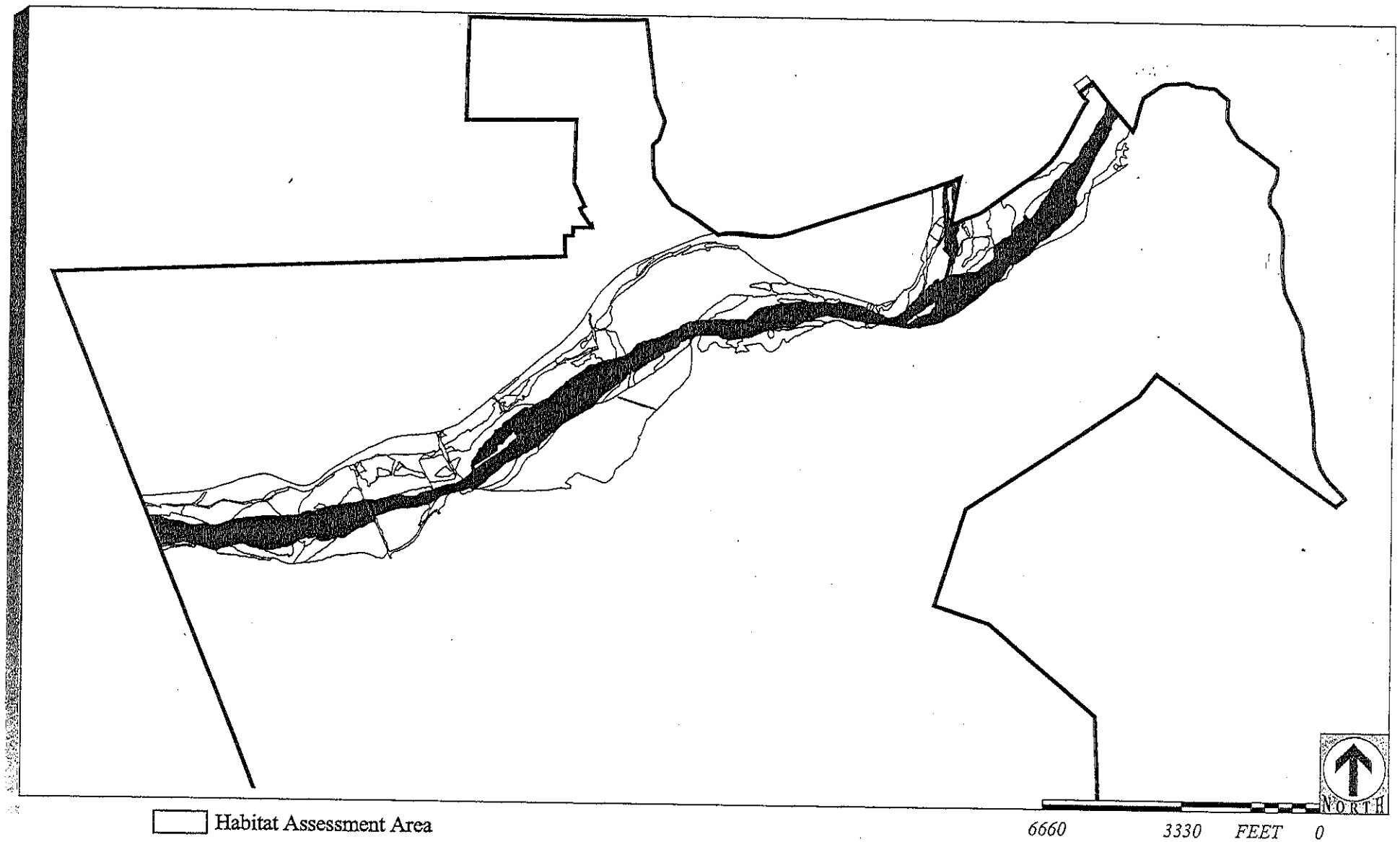

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FIGURE 12

Habitat Assessment-Arroyo Southwestern Toad and Southwestern Pond Turtle

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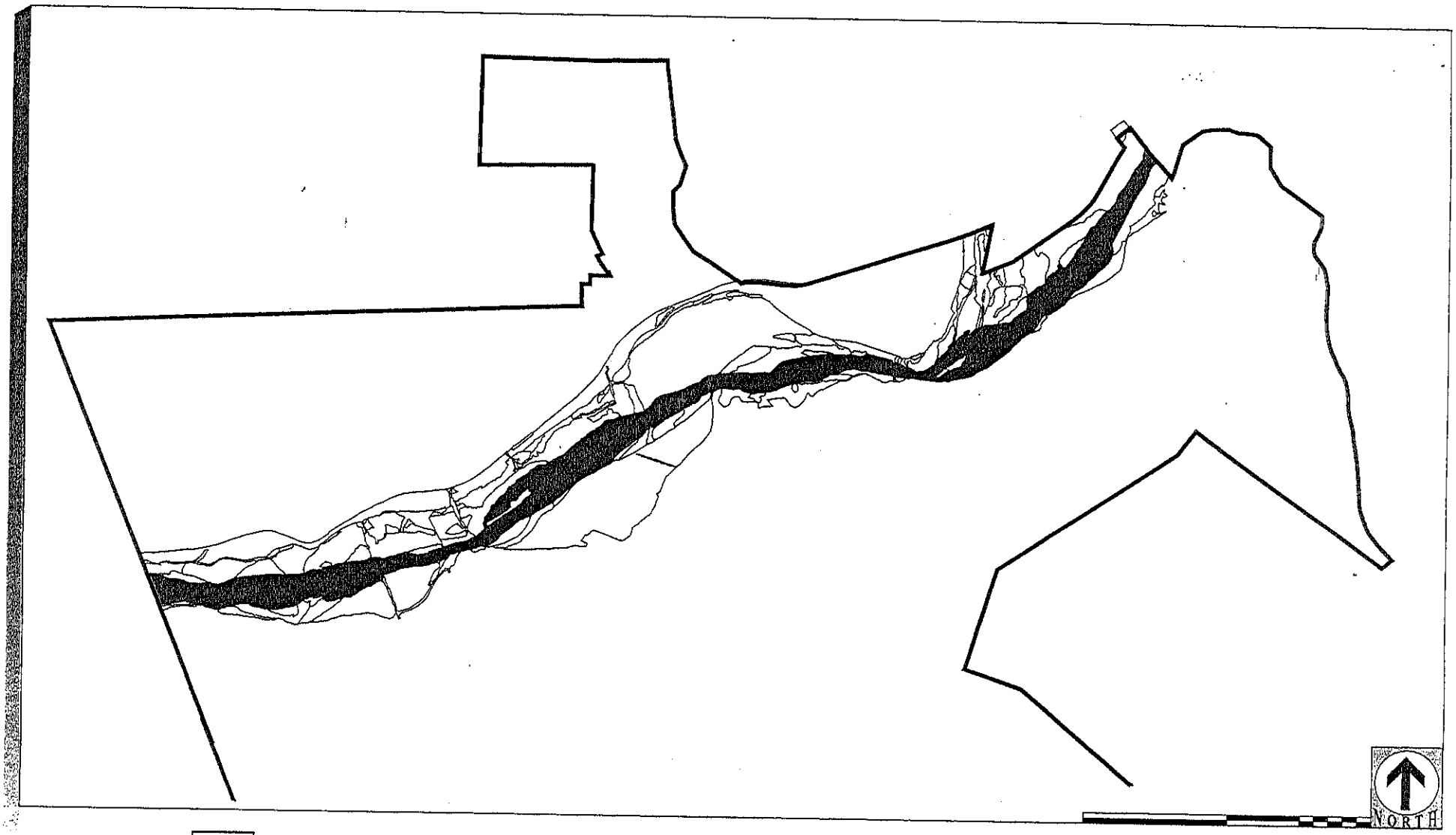

Habitat Assessment Area

Potential Habitat for the Unarmored Three-spined Stickleback, Arroyo Chub, and Santa Ana Sucker

Newhall Ranch Boundary

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FIGURE 13

Habitat Assessment-Unarmored Threespine Stickleback, Arroyo Chub and Santa Ana Sucker

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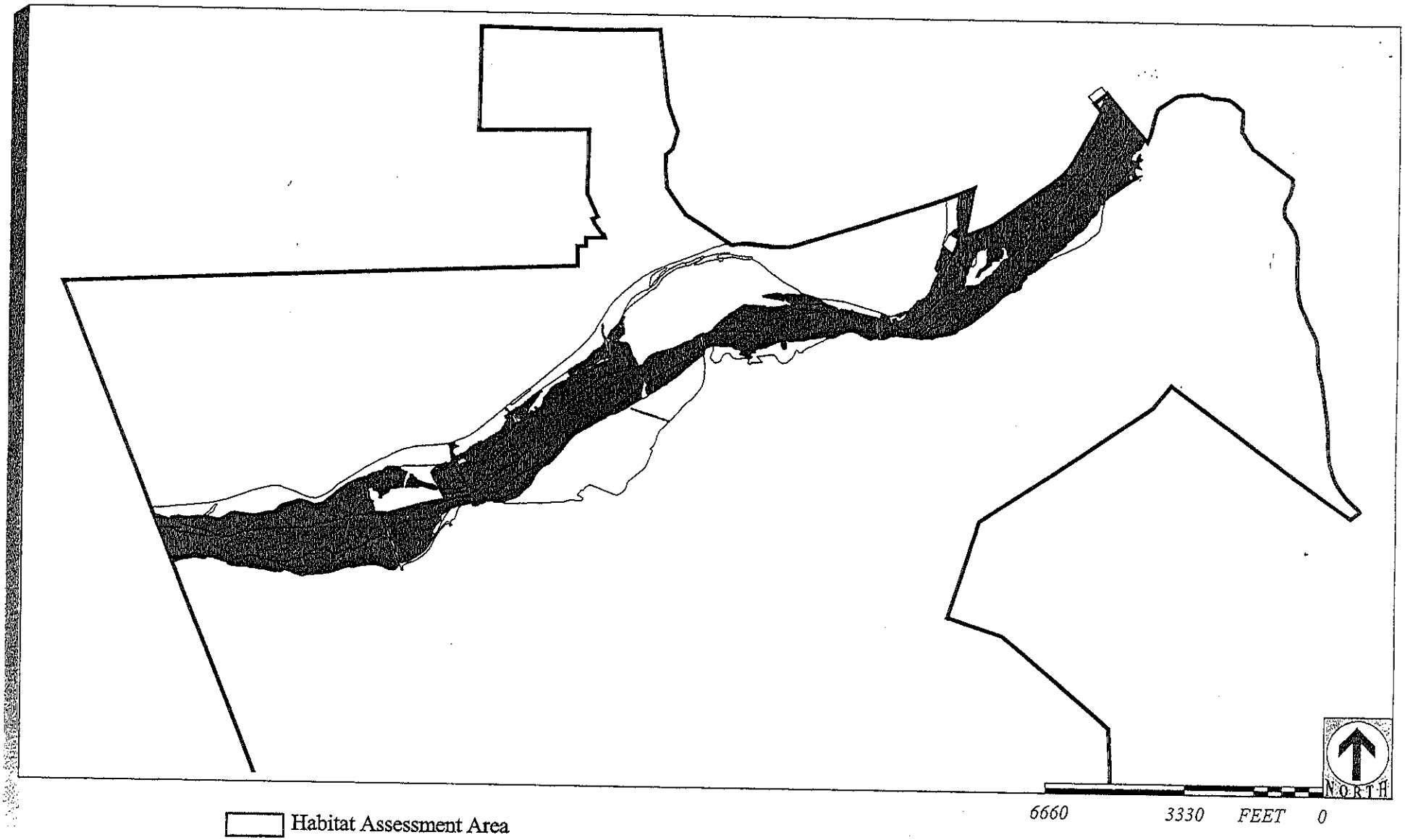

Habitat Assessment Area

Potential Habitat for Two-striped Garter Snake

Newhall Ranch Boundary

FIGURE 14

Habitat Assessment-Two-striped Garter Snake

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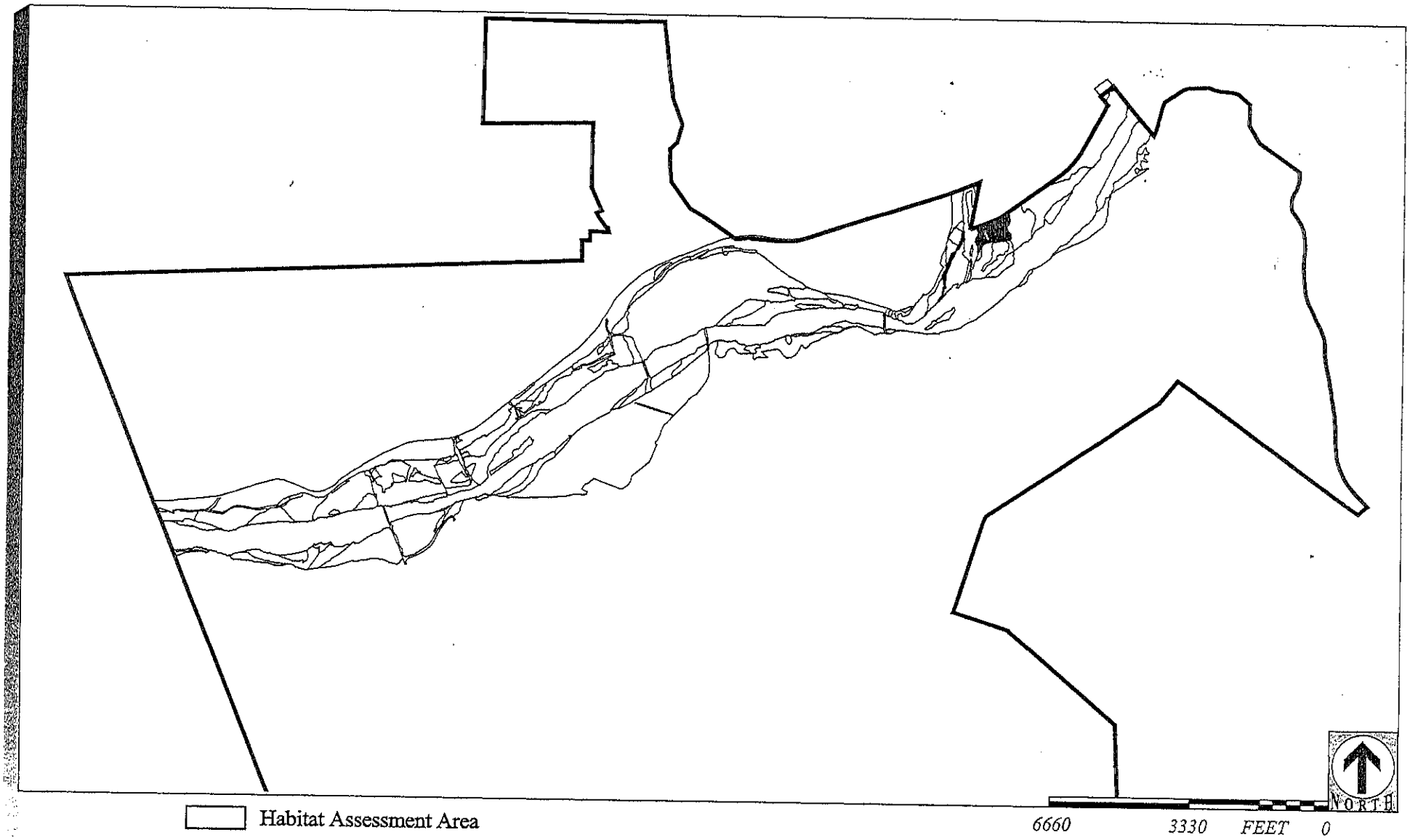

FIGURE 15

Habitat Assessment-Slender-horned Spineflower

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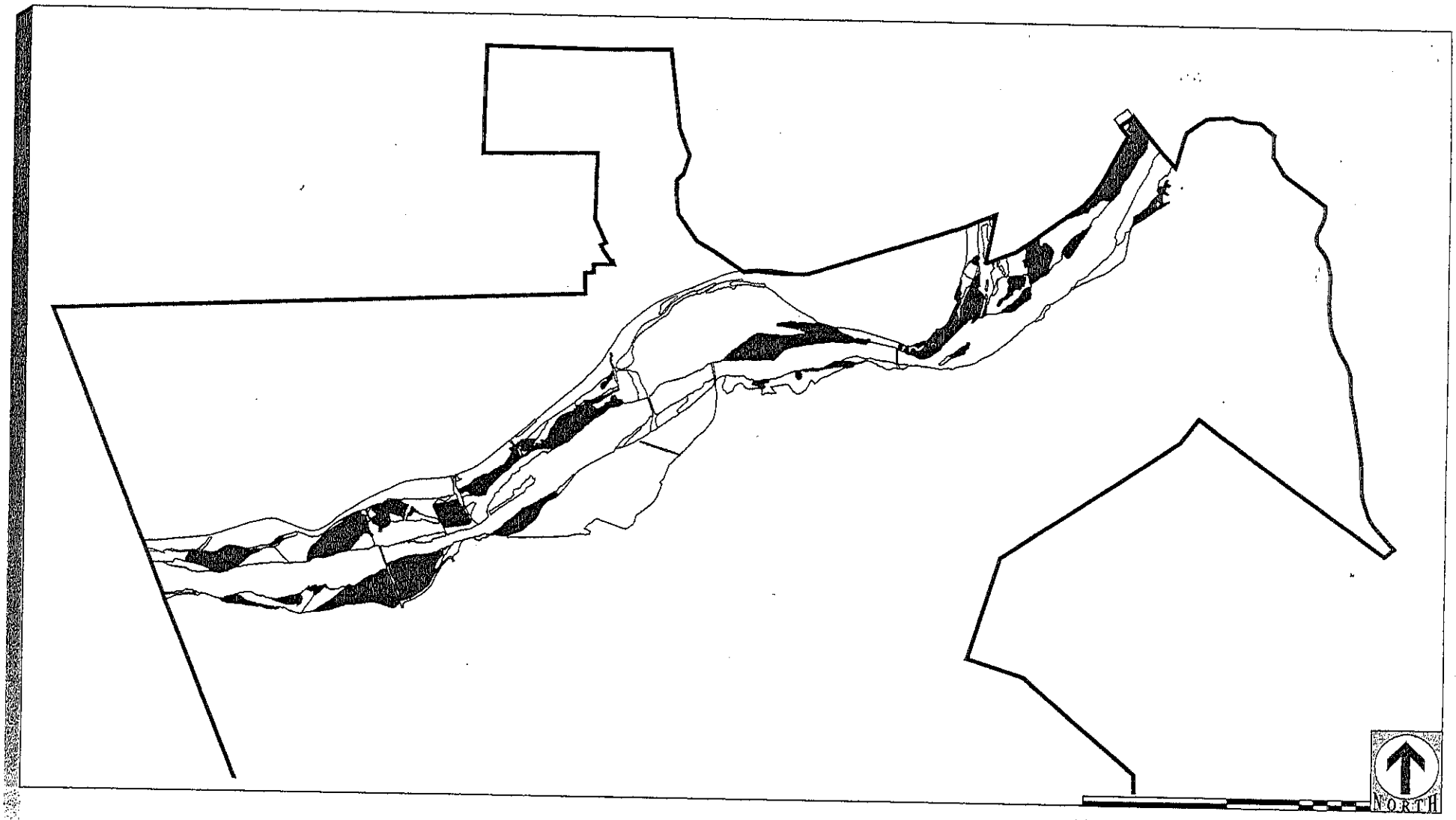

Habitat Assessment Area

Potential Habitat for Round-leaf Boykinia and Nevin's Barberry

Newhall Ranch Boundary

2599\graphics\habases-plants

FIGURE 16

Habitat Assessment-Other Sensitive Plants

The diverse habitat types and community structures that occur along the Santa Clara River on the Newhall Ranch property have the potential to support a variety of sensitive plant and wildlife species based on the habitat assessment conducted for this report. The potential to support sensitive species is highest where native riparian habitats have well-developed community structure. Areas with the lowest potential occur where the native vegetation has been removed or disturbed. These areas can be the focus of mitigation efforts to create and restore the native vegetation and community structure needed to support wildlife. The distribution of potential mitigation areas on the Santa Clara River on the Newhall Ranch property shows that mitigation opportunities exist to improve the riparian corridor for habitat and wildlife (Figure 17).

Management of the River Corridor

Management of the Santa Clara River corridor on the Newhall Ranch property can be refined from the Specific Plan based on the information provided in this assessment. High quality habitat patches can be expanded through mitigation programs (i.e., conversion of agricultural lands to wetlands) to enhance the overall condition of the riparian corridor. Disturbed habitat patches can be restored (i.e., removal of non-native plants, enhancement of the over- or understory) to also improve the habitat quality of the riparian corridor. Management practices that allow the establishment of native species along the river and control the active and passive uses of the corridor by people will produce a natural-looking river environment that can be enjoyed by those living in or visiting the area. Natural resources will be protected and opportunities for sensitive species to continue to exist or expand into this portion of the Santa Clara River will be conserved with a well-developed plan, which considers the existing habitat quality and opportunities to create, enhance, and manage the riparian corridor.

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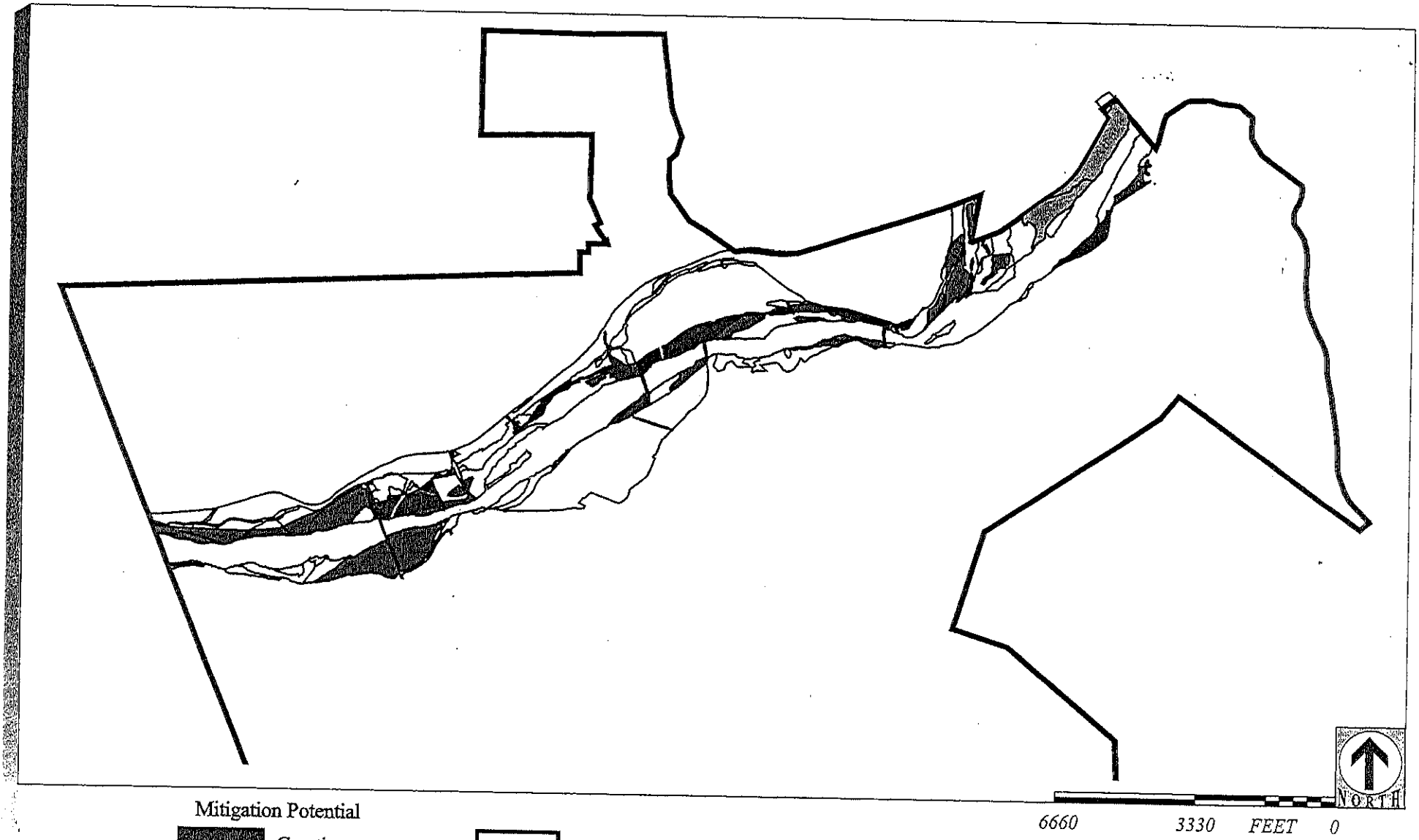

FIGURE 17

Habitat Assessment-Mitigation Potential

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