

Conservation Significance of the **Volcan Mountains, San Diego County**

Prepared by



and



Prepared for

Volcan Mountain Preserve Foundation
Julian, California

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Introduction

The mission of the Volcan Mountain Preserve Foundation (VMPPF) is conservation and stewardship of the majestic 15-mile long Volcan Mountains complex, situated within the Peninsular Ranges of Southern California (Figure 1). The emphasis of VMPPF is conserving natural habitats and the species they support, maintaining wilderness values and connections to adjacent open space, preserving archaeological sites, and encouraging natural history-based research and education.

Land conservation in the Volcan Mountains began in 1989; since that time, over 9,000 acres of the former Rutherford Ranch on Volcan Mountain have been acquired by public agencies and non-governmental organizations as protected open space, complemented by conservation of tens of thousands of acres of surrounding lands (Figure 2). However, approximately 1,800 acres of Rutherford Ranch in the heart of the range, between these conserved lands and the Santa Ysabel Indian Reservation on the western flank of the mountain, lie unprotected and are currently threatened with development of estate lots.

VMPPF requested that The Nature Conservancy (TNC) and Conservation Biology Institute (CBI) prepare a brief case statement that would provide the basis from which it can develop a focused conservation strategic plan. This case statement describes the landscape that is the inspiration for the VMPPF, with a focus on the privately held portions of Rutherford Ranch, by identifying regional conservation values and potential partners for conservation of these values within the context of existing opportunities.

Background

Historically, the Rutherford family was one of the major landowners in San Diego County, with vast holdings in the San Diego backcountry. The major stronghold of their ownership has been in the Volcan Mountains, where the family still maintains a cabin. While some parcels in this area have been sold for private homes, the majority of the Rutherford Ranch in the Volcan Mountains has been acquired for conservation in a process that The Trust for Public Land (TPL), in partnership with others, spearheaded over the past 15 years, complemented by conservation efforts adjacent to the Volcan Mountains complex (Table 1). In addition, over 4,000 acres of Rutherford property have been acquired for conservation to the south and west of Julian by the U.S. Forest Service in partnership with TPL.

Although the conservation achievement to-date on Rutherford Ranch has been remarkable, potential development of 58 20-50-acre estate lots on the remaining 1,800 acres, and associated indirect impacts, threaten the integrity of the existing conservation investment. Any development within the ranch would have profound consequences to this intact landscape and the resource values it supports. Adverse impacts will include habitat loss from the developed areas and roads, as well as for fuel management areas around structures, drawdown of groundwater and subsequent indirect impacts to aquatic habitats and vegetation communities, and indirect impacts to surrounding open space areas, including increased abundance of nonnative and human-tolerant plant and animal species, increased lighting and noise, changes in hydrology and water quality, increased human intrusion into remaining habitats, and looting and

vandalism of cultural resources. Furthermore, development will exacerbate management issues on surrounding lands conserved for their biological and cultural resource values and change fire management practices on these public lands.

Although VMPF expressed its desire to phase acquisition of parcels according to their biological value, Mr. Rutherford has stated that the easternmost parcels (east of the Hunters Camp) must be purchased first, or at least as part of a larger package. Thus, the sequencing of parcel acquisition is likely to be dictated by Mr. Rutherford based on location, rather than any differences in resource values. Furthermore, this document emphasizes that, while there may be differences in biological resources on individual parcels, the conservation value of the land is derived from its integrity as a whole, significance as a headwaters area, and geographic position relative to other conserved open space, as well as the resources it supports.

Table 1. Summary of habitat conservation on Rutherford Ranch in the Volcan Mountains complex and adjacent lands over the last 15 years.

| Agency | Approx. Acres |
|---|----------------------|
| San Diego County Parks & Recreation—Volcan Mountain | 2,645 |
| San Diego County Parks & Recreation—Santa Ysabel Ranch | 5,400 |
| California Department of Fish & Game/WCB—Volcan Mountain | 1,641 |
| California Department of Fish & Game/WCB—San Felipe Creek | 6,688 |
| Julian Community Services District | 19 |
| San Dieguito River Park JPA—Arkansas Canyon | 390 |
| San Dieguito River Park JPA—Volcan Mountain | 142 |
| San Dieguito River Valley Conservancy | 23 |
| Total | 16,948 |

Sources: B. Flewelling (TPL) and S. Hector (2003).

WCB = Wildlife Conservation Board; JPA = Joint Powers Authority.

Regional Resource Conservation Values

The conservation values of the Volcan Mountains are most appropriately assessed in the context of its contributions to the surrounding region, including the public lands and preserve system of San Diego County. Because of the mountains’ geographic location, maintaining the integrity of the resources of the landscape it defines is crucial to maintaining many ecological functions and processes in the surrounding region. Additional development on the ridge could significantly affect conservation values and ecological functions of the region and preclude many educational and research opportunities.

Conservation values and landscape functions of the Volcan Mountains include:

1. **Headwaters for 4 watersheds**—The headwaters of the San Dieguito River, San Luis Rey River, San Diego River, and San Felipe Creek originate in the Volcan Mountains complex (Figure 3). Protecting headwater areas is the single most effective way of maintaining downstream water quality and hydrologic functions of watersheds. Loss of natural watershed processes in headwater streams can cascade to areas far downstream of the source of the impact itself.

Geographically, Rutherford Ranch lies predominantly within the San Dieguito River watershed and drains via Santa Ysabel Creek to Lake Sutherland, a City of San Diego drinking water reservoir. However, water from Lake Sutherland is piped into the San Diego River watershed, draining into San Vicente Reservoir, another drinking water reservoir. Thus, runoff from Rutherford Ranch has the potential to affect the water quality and hydrology of the watersheds of Santa Ysabel Creek, San Diego River, San Felipe Creek, and two drinking water reservoirs.

2. **Landscape linkage**—The Volcan Mountains provide an east-west landscape linkage between protected lands in the desert and the San Dieguito River Valley, and a north-south linkage between Palomar Mountain State Park and adjacent U.S. Forest Service land, water district land around Lake Henshaw, and federal and state lands to the south in the Cuyamaca and Laguna Mountains (Figures 1 and 2). Connectivity of natural open space is widely regarded as an essential element of functional landscapes, and maintaining connectivity among conserved lands is a fundamental principle of conservation planning. Connectivity between habitats allows movement of demographic and genetic information, which is crucial to supporting species population dynamics and allowing evolutionary change, particularly in response to events such as catastrophic wildfires or long-term climate change. For example:

- a. Landscape-level connectivity is important for terrestrial species with large home ranges, such as mountain lions, to maintain an adequate area of habitat, and it is also critical for multi-generational dispersal of smaller animals and plant species.
- b. The Volcan Mountains are a stepping stone for high-elevation species between Cuyamaca Peak and Palomar Mountain (Figure 4). For example, in San Diego County and other parts of Southern California, the California spotted owl occurs as a series of small, relatively isolated populations in montane, late-seral stage, closed-canopy woodlands of oaks and conifers (Noon and McKelvey 1992, LaHaye et al. 1994, Unitt 2004).

As a result of habitat loss and fragmentation, decline in habitat quality due to development, adverse effects to its habitat from groundwater drawdown resulting from new rural development and use for bottled drinking water, and intolerance of human activity near nest sites, spotted owl populations in Southern California are declining, with only 25-50 pairs estimated in San Diego County. Because of their low numbers and narrow habitat requirements, spotted owls may be especially susceptible to habitat loss from fires and prolonged periods of drought. This species is nonmigratory in San Diego County, with juvenile owls dispersing only short distances from their natal territories. For these reasons, the continued presence of suitable habitat and breeding pairs of spotted owls in the Volcan Mountains may be critical to prevent extirpation of the species in San Diego County. Fragmentation of habitat, e.g., by development on Rutherford Ranch, could have significant impacts on owl dispersal and reproductive success in the region.

- c. Similarly, other montane species, such as Coulter pines and bigcone Douglas fir, rely on interconnected, high elevation stepping stones for their long-term

persistence. Development in the Volcan Mountains would further fragment the distribution of these species north of the international border (Figure 4).

3. **Landscape-scale functions**—Because the Volcan Mountains complex supports the headwaters of several watersheds, is part of a large and intact block of natural open space, and provides a landscape linkage, its conservation is critical to maintaining landscape-scale functions in the region. Ecosystems of plant and animal species and their habitats are maintained by dynamic processes that operate across large landscapes. These ecological processes include disturbances from fire, flood, and soil erosion and deposition, as well as nutrient and energy flow through food webs, population dynamics, gene flow, and species interactions such as predation and competition. Large, intact, and connected landscapes are crucial to maintaining these processes, and the Volcan Mountains are an important component of such a landscape in San Diego County.

The Volcan Mountains are part of a large intact landscape—approximately 52,000 acres bounded by Highway 79 on the west, Highway S2 on the north and east, and Highway 78 on the south. This landscape spans ecological gradients, provides species refugia in the face of infrequent, large-scale disturbances, such as catastrophic wildfires, and is linked to adjacent habitat blocks to maintain viable populations of large-area dependent species, such as mountain lions. From a conservation perspective, Noss et al. (1999) describe large intact landscapes that provide these functions as *core areas where conservation of biodiversity, ecological integrity, wilderness, or similar values takes precedence over other values and uses*.

4. **Viability of existing conservation investments**—Because it is integral to landscape-scale functions in the region, conservation of the Volcan complex is critical to maintaining the viability of previous conservation investments, including conservation investments in more fragmented coastal habitats that are ultimately linked to the Volcan Mountains. Federal, state, and local governments and private institutions have made significant conservation investments in the region (Figure 2). In fact, the Volcan Mountains sit at the eastern crest of the San Dieguito River Park, which extends 55 miles to the Pacific Ocean. Approximately 60,000 acres have been conserved within the River Park focused planning area (FPA), downstream of the Volcan Mountains (Figure 2). Land conserved as part of the Multiple Species Conservation Program (MSCP) in the San Dieguito River watershed is ultimately connected to the Volcan Mountains. Public lands in the Palomar and Cuyamaca mountains are connected to each other via the Volcan Mountains. The long-term value of these existing conservation investments relies on maintaining the lands' integrity and intact ecosystem functions by buffering them from habitat loss and degradation and maintaining connections to other intact areas.
5. **Biodiversity**—The Volcan Mountains support a remarkably rich and diverse flora, with more than 30 different native vegetation community types represented (Figure 5). Some of these communities, such as mixed oak/coniferous/bigcone/Coulter pine forests, occur only in somewhat isolated stands at the highest elevations of the Peninsular Ranges in San Diego County. Bigcone Douglas fir has a relatively narrow distribution in the Transverse and Peninsular Ranges. The Volcan Mountains are the southern limit of its

distribution. Mature stands of bigcone in mixed oak conifer forests provide habitat for the California spotted owl.

The Volcan Mountains also support diverse wetland communities, including riparian woodlands and riparian scrub, wet meadows and seeps, and freshwater marshes supported by springs on the ridge. Ironside Spring and Rock Spring, both on Rutherford Ranch, form the headwaters for the San Dieguito River watershed and contribute to maintaining the health of vegetation communities on Rutherford Ranch as well as conserved lands downstream.

6. **Viewshed**—Rutherford Ranch, with its highest elevation at 5,850 ft, is within the viewshed of every park and open space area within at least 12 miles (Figure 6), including the County of San Diego Santa Ysabel Ranch Open Space Preserve, the County's Volcan Mountain Open Space Preserve, San Dieguito River Park open space west of Highway 79, Cuyamaca Rancho State Park, the California Department of Fish and Game (CDFG) San Felipe Creek reserve, William Heise County Park, and the town of Julian. Development of large estate lots, particularly on the southwestern flank of Rutherford Ranch, would destroy the wilderness experience of these previous conservation investments (see example viewsheds from Kanaka Flats, on Santa Ysabel Ranch West (Figure 7a), and the town of Julian (Figure 7b).
7. **Cultural and historic resources**—Over 60 historic and prehistoric sites have been recorded on public lands in the Volcan Mountains, harboring an abundance of rock architectural structures, unique milling features (called Cuyamaca Ovals), pottery, trade items, and habitation areas (Hector 2003). Most of the habitation sites are on the western side of the ridge, overlooking the Santa Ysabel Valley and Julian. Many of the sites are associated with the travel route between the Anza-Borrego Desert, San Felipe Valley, and Cuyamaca Mountains through Arkansas Canyon. The Volcan Mountains have been the site for an educational and training program for volunteers, called the Volcan Mountain Preserve Archaeological Survey.

Role of the Volcan Mountain Preserve Foundation

The VMPF has taken the first step in catalyzing protection and management of natural resources in the Volcan Mountains by identifying the regional significance of this landscape to conservation in San Diego County, as summarized in this document. Subsequent development of a conservation strategic plan for the organization will serve to energize and focus the efforts of the group. The strategic plan should not only address funding strategies for conservation, but also articulate the roles of the VMPF in the local community as well as the broader conservation community in San Diego County and the state. VMPF should consider its contributions to the following:

1. Outreach to promote the regional resource values of the Volcan Mountains and their contributions to the area.
2. Public/private partnerships for acquisition of Rutherford Ranch.

3. Volunteer base to facilitate management of the Volcan Mountains open space as a single landscape.
4. Watchdog or Friends' group to monitor land uses in and adjacent to conserved open space in the region.
5. Participant in fire management, including tree removal and disposal.
6. Public education programs about the protection and management of natural and cultural resources.
7. Outreach to academic institutions to encourage nature study and coordinate research opportunities.

Potential Partners for Conservation of Rutherford Ranch

Because of the scarcity and competitiveness of funding, and the size and economic value of the remaining privately held land in the Volcan Mountains, specifically the 1,800 acres of Rutherford Ranch, funding for conservation will need to be leveraged through a number of separate but coordinated funding strategies and partnerships that take advantage of the varied interests in the natural resource values and opportunities of this land. The following agencies and conservation groups have missions that could be implemented through conservation of this last inholding in the Volcan Mountains complex. The challenge for the VMPF will be to make the case with each potential partner and to mobilize resources and support for a coordinated conservation effort.

California Department of Fish and Game

The CDFG has a unique opportunity to acquire the 272-acre parcel supporting the Hunters Camp on Rutherford Ranch (Figure 8). There are about 40 camp sites clustered within this parcel, each with water and power. Current revenue from rental of the camp sites totals \$2,750 per year. Acquisition of the Hunters Camp would fulfill a regional obligation of CDFG Wildlife Programs and Fisheries Programs to maintain wildlife and fisheries resources and support public hunting and fishing activities in the region.

Furthermore, approximately 450 acres of Rutherford Ranch are within the San Felipe Creek watershed (Figure 8). Conservation of land within the upper watershed on Rutherford Ranch will protect the conservation values of land already acquired by CDFG for conservation.

California Department of Parks and Recreation

Preventing development through additional conservation in the Volcan Mountains will preserve the scenic and wilderness values for which the Desert District is so valued, ensure further buffering of existing state park lands to the east and south, and enhance this core biological resource area in the center of San Diego County that links the Anza-Borrego Desert to the coastal watersheds. Furthermore, the educational and research values of the cultural and historic resources in the Volcan complex would fill a geographic gap in the State Park system's preserve portfolio.

The Rutherford Ranch property offers unparalleled opportunities for wilderness vistas in all directions, including the existing holdings of the state parks system. Volcan Road provides hiking access to all portions of the property, and the microwave tower facility (Figure 8), also owned by Rutherford, provides a ready-made opportunity for conferences, classrooms, and an interpretive center for scientists, school children, and other visitors.

City of San Diego Water Department and State Water Resources Control Board

The City of San Diego has nine raw drinking water reservoirs, including Sutherland and San Vicente, which capture local rainwater and runoff and supply up to 20% of the City's water supply. The reservoirs also store water that is piped in from regional aqueducts to provide the balance of the water supply. Thus, the reservoirs are critical components of the regional water supply system. Recent studies have identified runoff from urban land uses, construction projects, and related development activities in the watersheds as the largest sources of pollution to the reservoirs. As nearly all the watershed lands draining into these reservoirs are located outside of the City's jurisdiction, the City currently has little ability to influence or guide land use decisions in these areas.

The State Water Resources Control Board has acknowledged that protection of high integrity watershed resources in upstream areas is the most cost-effective way of preventing degradation of downstream water resources, as demonstrated by conservation of habitats threatened by development in the Santa Maria Creek basin. In addition, the City of San Diego Water Department has partnered with the San Dieguito River Valley Conservancy to conserve land above Sutherland Reservoir. Similar strategies could be used to conserve land on Rutherford Ranch, where runoff has the potential to affect the water quality and hydrology of the watersheds of Santa Ysabel Creek, San Diego River, San Felipe Creek, and two drinking water reservoirs.

County of San Diego

The County's system of Open Space Reserves, managed by the Department of Parks and Recreation, provides public access to wildland areas while protecting the biological and cultural resources of these lands. Conservation of the 1,800-acre Rutherford Ranch would ensure that the County's 2,494-acre Volcan Mountain Open Space Preserve and 5,400-acre Santa Ysabel Open Space Reserve remain as wilderness areas, unfragmented by development. Funding for the acquisition of Volcan Mountain and Santa Ysabel Ranch was provided in part by grants from the Federal Transportation Enhancement Act and the State Wildlife Conservation Board for the purposes of wildlife habitat preservation, restoration and management, wildlife-oriented education and research, and public uses consistent with wildlife habitat preservation. Conservation of Rutherford Ranch is critical to conserving these values.

The County of San Diego recently launched its planning for the East County MSCP, which will complete the County's natural resources planning in the unincorporated area. Along with the other conserved open space in this region of East County, conservation of Rutherford Ranch will complete a core area for this program. While the Rutherford Ranch is proposed for 1 dwelling unit/80 acres in the General Plan 2020 amendment, the property already has been divided into more than 70 legal parcels. Development and associated fuel management requirements on these

parcels would significantly increase direct human modifications, indirect impacts, and habitat management requirements for other open space reserves in this area.

Forest Legacy Program

The California Department of Forest and Fire Protection (CDF), in cooperation with CDFG, manages an 1,100-acre Legacy Forest on the northern border of Rutherford Ranch (Figure 8). Construction of homes in the area would not only destroy habitat and increase the risk of fires but would also force CDF and CDFG to manage the Legacy forest differently, to ensure protection of life and property. Therefore, CDF would like to expand the Legacy Forest, through acquisition of adjacent land on Rutherford Ranch, using funds from the federal Forest Legacy Program. The purpose of the federal Forest Legacy Program is to protect environmentally important forestland threatened with conversion to non-forest uses. Priority is given to lands that can be effectively protected and managed and that have important scenic, recreational, timber, riparian, fish and wildlife, watershed protection, open space, and other cultural and environmental values. Rutherford Ranch has already qualified for this program. Federal funds are limited to 75% of the value of the land, with the remaining portion contributed by non-federal matching funds. Landowner contributions may be part of the match.

CDF would like to designate its ownership on Volcan Mountain as a State Demonstration Forest, which would make this the only State Demonstration Forest in Southern California (J. Calvert, personal communication). These forests provide research and demonstration projects on forest management, while providing public recreation opportunities, fish and wildlife habitat, and watershed protection.

San Dieguito River Valley Conservancy and San Dieguito River Park

The San Dieguito River Valley Conservancy is a nonprofit non-governmental organization that supports the work of the San Dieguito River Park Joint Powers Authority (JPA), a governmental body, in acquiring land and developing volunteers for the 55-mile San Dieguito River Park. The JPA for the River Park incorporates the entire watershed of the San Dieguito River Valley, its major tributary canyons, and a linkage over the Volcan Mountains to Anza-Borrego Desert State Park. Together, the Conservancy and the JPA have made enormous conservation investments in the San Dieguito River watershed, with 60,000 acres of the 80,000-acre JPA in some form of protected ownership, including approximately 550 acres on Volcan Mountain and in Arkansas Canyon. All 1,800 acres of the Rutherford Ranch are within the JPA for the River Park; approximately 1,450 acres of the ranch are within the San Dieguito River watershed.

The River Park Concept Plan (SDRP 2002) identifies Landscape Unit N as the area containing Ironside Spring, the headwaters of Santa Ysabel Creek and the San Dieguito River, the slopes and peak of Volcan Mountain, the eastern end of the Santa Ysabel Creek drainage, and a portion of the San Felipe Valley and its western slopes. Park proposals for this unit involve acquisition of remaining private lands and using the existing roads within Rutherford Ranch (Figure 8) for implementation of the Coast-to-Crest Trail. In deference to the pristine character of the landscape, vehicular access would be prohibited, with exceptions for access to privately owned inholdings. Non-vehicular access would be controlled to limit the total number of users per day

or to limit access to guided tours. A way-station is proposed for this unit that would tell the story of how a river is formed.

San Diego River Conservancy, San Diego River Park Foundation, and San Diego River Park

The San Diego River Conservancy was established in 2002 by an act of the California Legislature to preserve, restore, and enhance the San Diego River area, the *Birthplace of California*. The San Diego River Conservancy and the San Diego River Park Foundation are dedicated to conservation of the wildlife, recreation, water, cultural, and community values of the San Diego River watershed, including a river-long park and hiking trails, stretching 52 miles from the headwaters in the Volcan Mountains to the Pacific Ocean. The San Diego River Park itself does not have boundaries, as it is envisioned to be a string of gems, with each having its own independent boundary (Rob Hutsel, personal communication).

The San Diego River Park Conceptual Plan (SDRPF 2002) provides design recommendations for each reach of the river. Recommendations for the Headwaters Reach include:

- Protect and enhance cultural and historic resources through coordination with the local Kumeyaay Indian Reservations, National Forest, State Parks, and the town of Julian State Historic Landmark.
- Preserve the free-flowing character of the river and its tributaries to prevent further alteration of sediment transport processes.
- Prevent increased runoff and decreased groundwater infiltration by limiting impermeable surfaces and facilitating public education about the impacts of runoff.
- Prevent deterioration of water quality by maintaining and enhancing native habitat and educating the public about how their actions affect water quality downstream.
- Provide management strategies to counteract the effects of fire suppression.
- Encourage habitat protection and restoration, including Wilderness and Wild and Scenic River Designations for the river.
- Maintain connectivity for wildlife into the San Diego River corridor.
- Create opportunities for environmental education with academic institutions and the public.
- Create opportunities for connections to existing trails in the Cleveland National Forest, Cuyamaca Rancho State Park, TransCounty Trail, National Recreational Trail, and the Inaja Memorial Picnic Ground.
- Provide additional recreational opportunities.

The Nature Conservancy

TNC's conservation efforts in the mountainous inland area of San Diego County focus on expanding the existing system of parks and public lands to link up protected habitat areas from

the coast to the mountains to the desert. By safeguarding key watersheds in this region, including the Sweetwater River watershed to the south, TNC will help secure a continuing supply of safe, clean water to the citizens of San Diego County and enrich the quality of life for millions of people in Southern California. The Eastern San Diego Mountains Project Initial Assessment (TNC 1999) identified Engelmann oak woodland, native grasslands, montane meadows, and riparian forests as priority vegetation communities in the region. Conservation of Rutherford Ranch would contribute to achieving these goals.

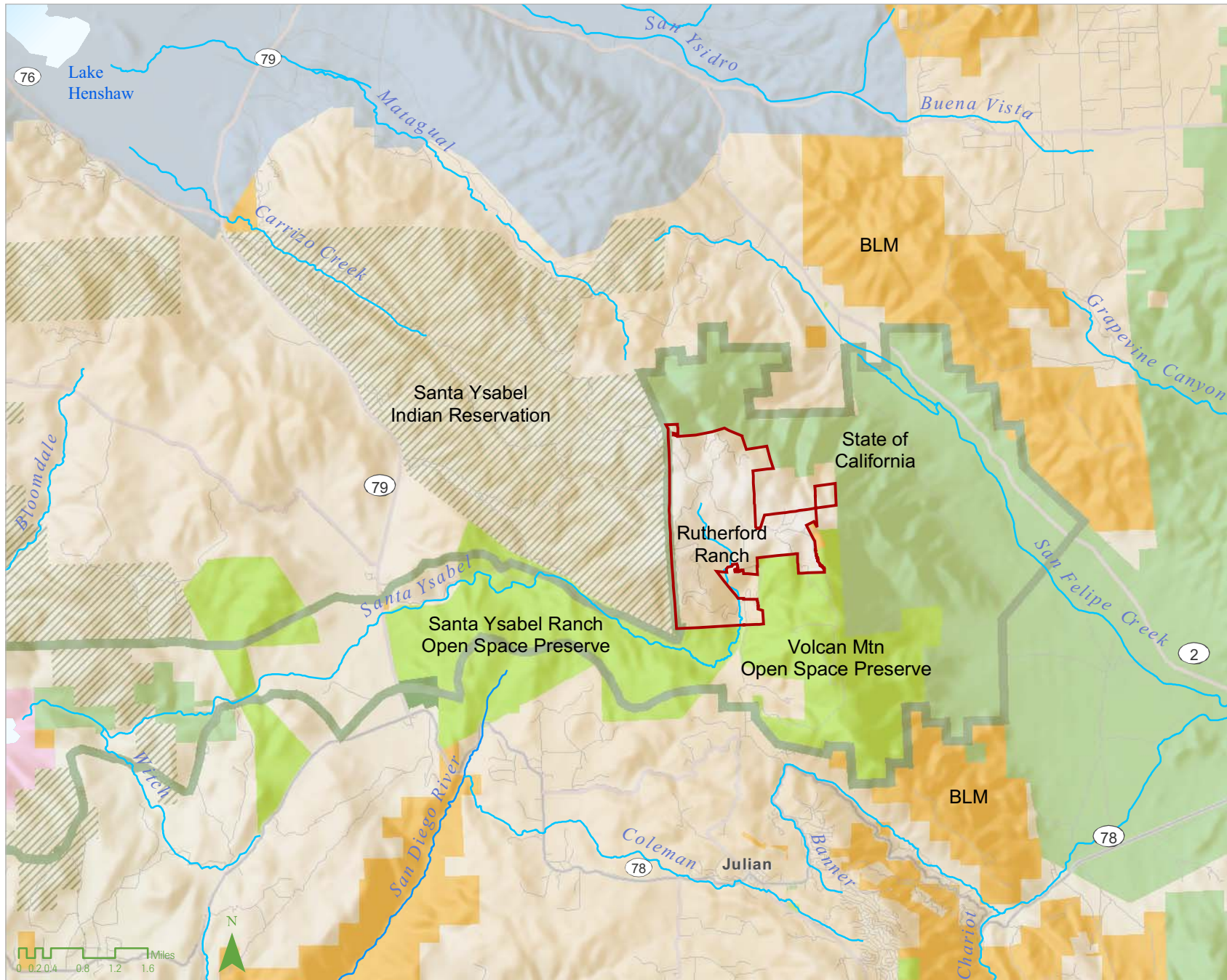
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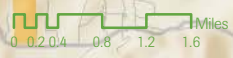
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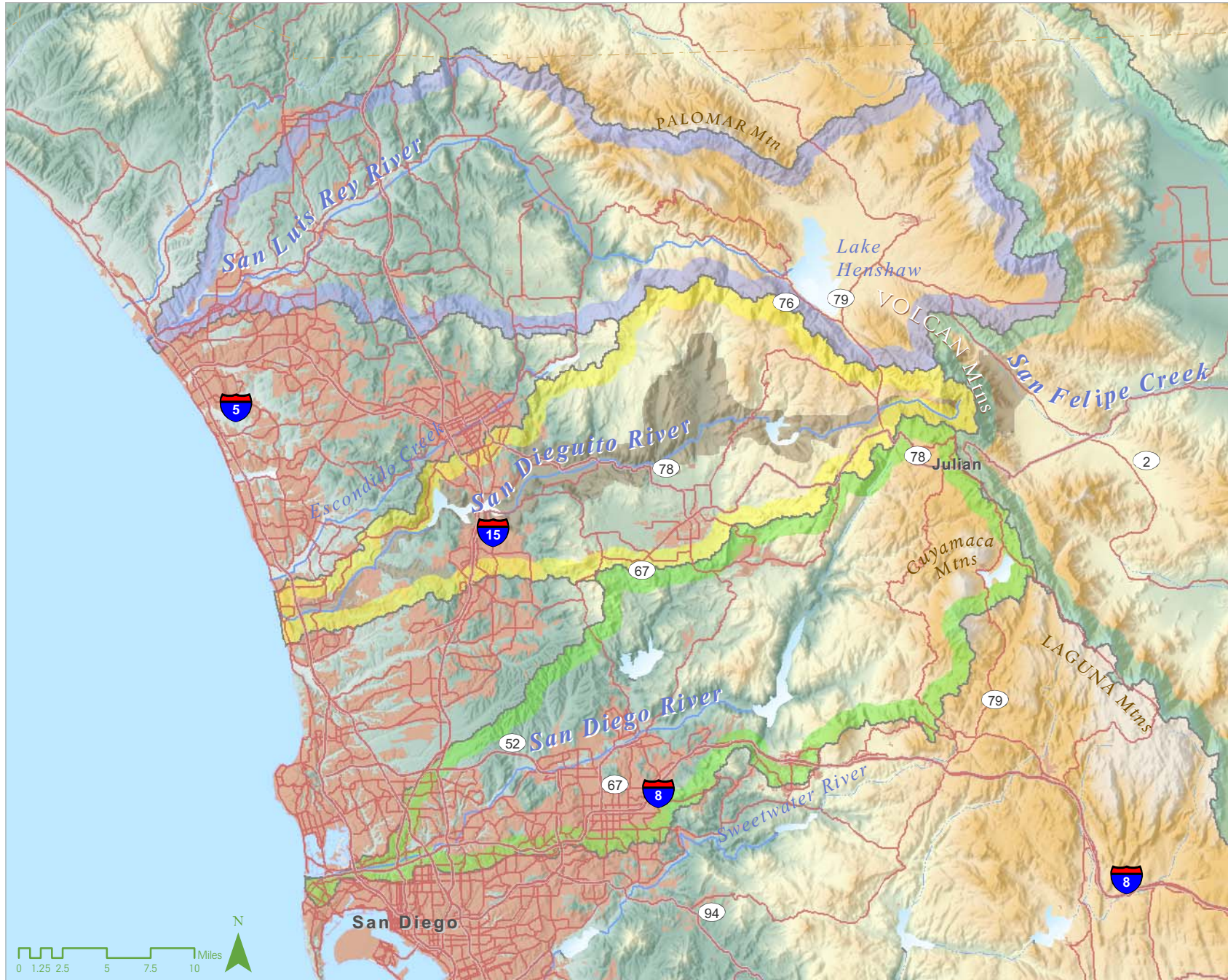




- LAND OWNERSHIP**
-  BUREAU OF INDIAN AFFAIRS
 -  FEDERAL
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 -  IRRIGATION DISTRICT
- REGIONAL PARKWAY**
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LAND OWNERSHIP FROM SANGIS PARCELS, 2005.
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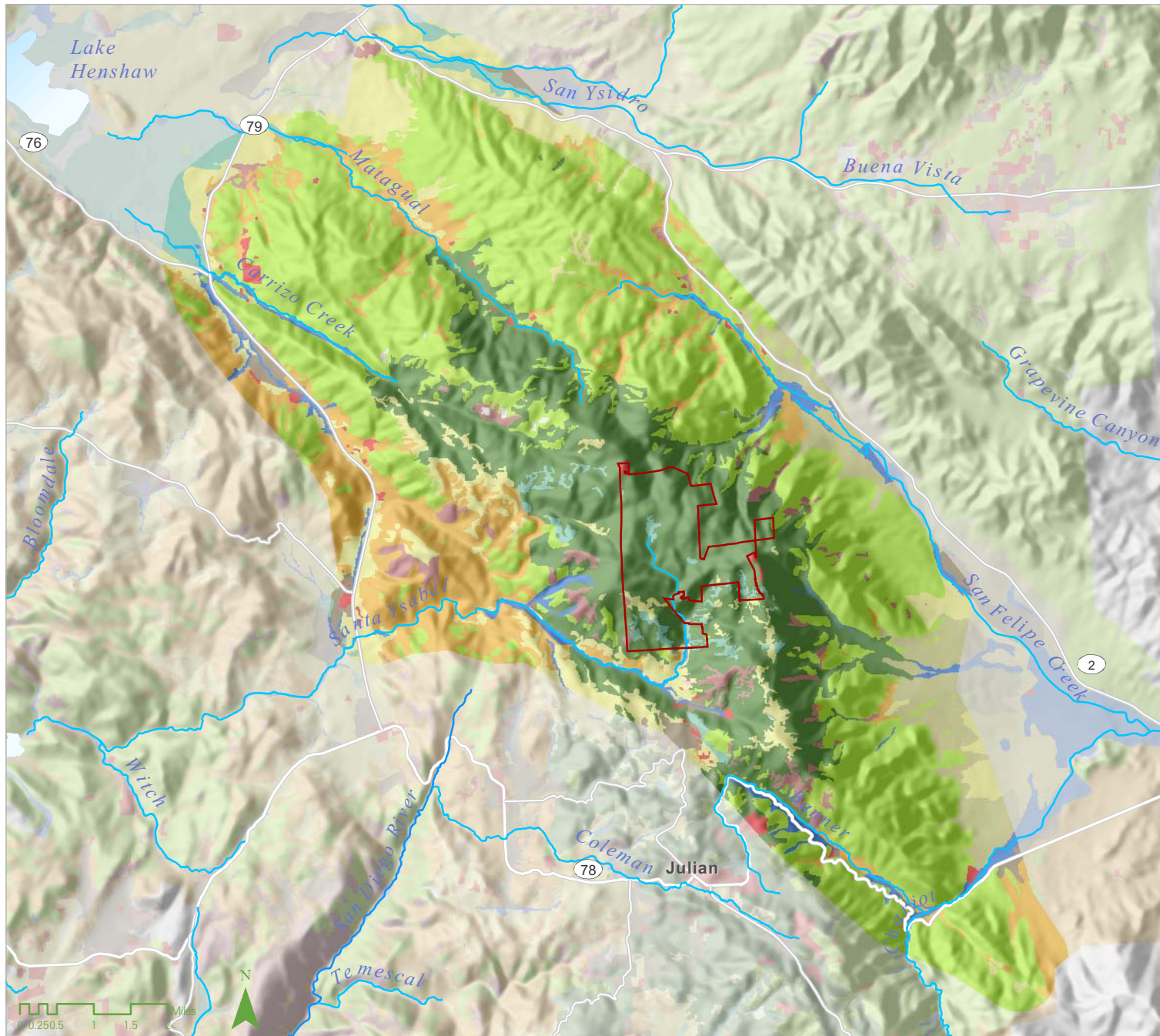


WATERSHEDS FROM CALWATER 2.2
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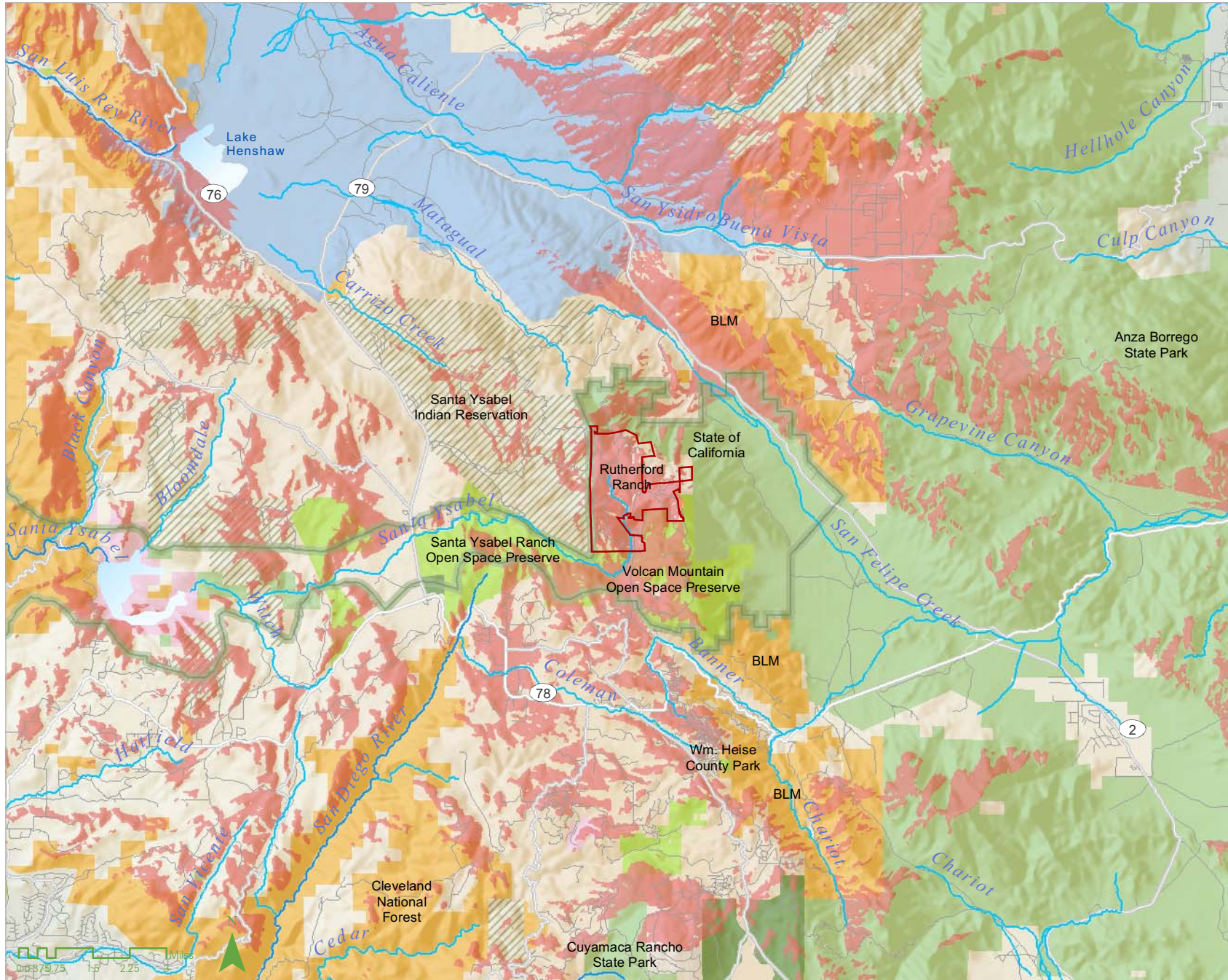
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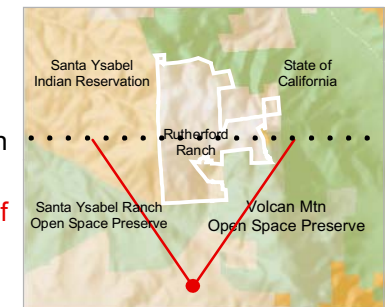
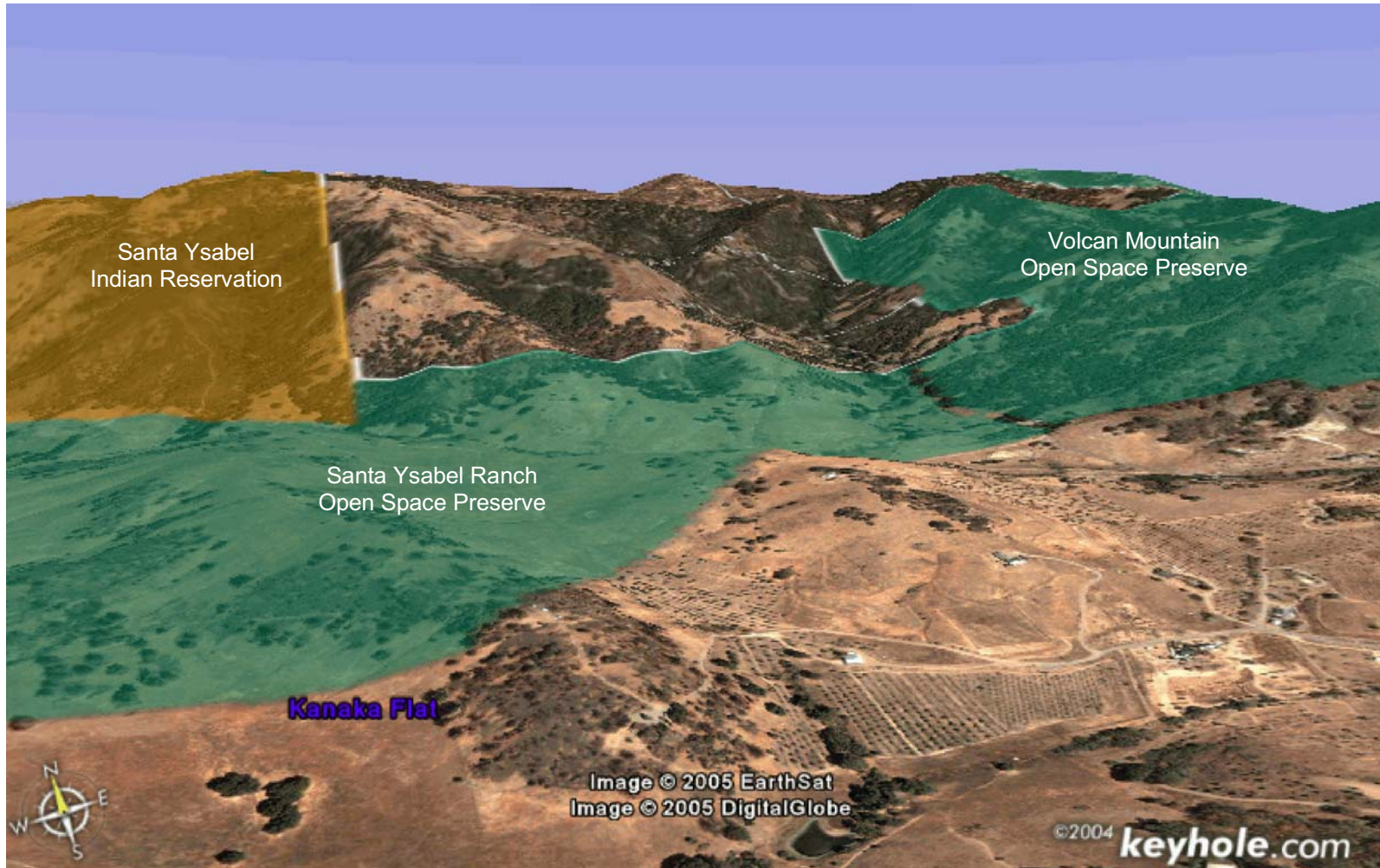
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- ▭ CONIFEROUS FOREST
 - LOWER MONTANE CONIFEROUS FOREST
 - MIXED OAK/CONIFEROUS/BIGCONE/COULTER
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 - NORTHERN MIXED CHAPARRAL
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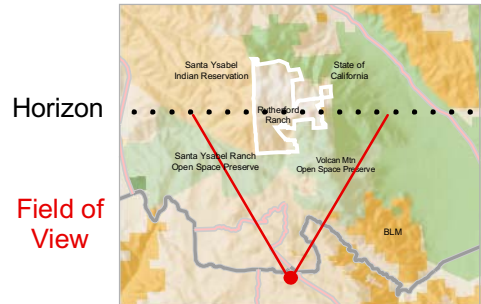
LANDUSE FROM SANDAG, 1995

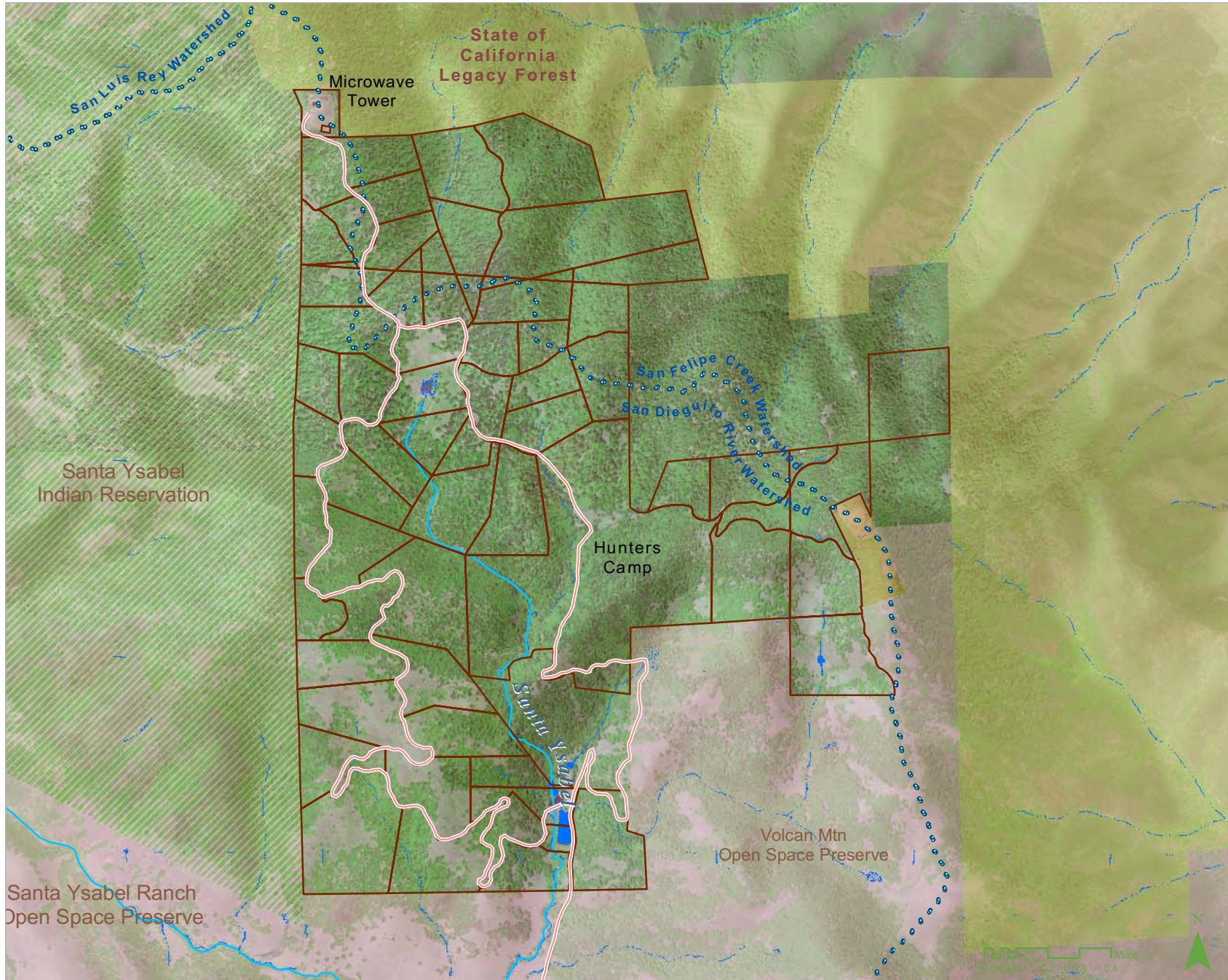


- RUTHERFORD RANCH
- VIEWSHED**
- AREAS FROM WHICH RUTHERFORD RANCH IS VISIBLE (WITHIN 12 MILES)
- LAND OWNERSHIP**
- BUREAU OF INDIAN AFFAIRS
- FEDERAL
- CITY
- COUNTY
- STATE
- THE NATURE CONSERVANCY
- IRRIGATION DISTRICT
- REGIONAL PARKWAY**
- SAN DIEGUITO RIVER PARK FPA

VIEWSHED CREATED USING ARCGIS 9.1
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- VOLCAN ROAD
- ⋯ WATERSHED BOUNDARY
- ▭ PARCELS
- LAND OWNERSHIP
- ▨ BUREAU OF INDIAN AFFAIRS
- FAA
- COUNTY
- STATE



LAND OWNERSHIP FROM SANGIS
PARCELS, 2005.