DRAFT EDUCATION AND RECREATION

MASTER PLAN

for

SOQUEL DEMONSTRATION

STATE FOREST

California Department of Forestry
and Fire Protection

Soquel, California
November 1996

This Education and Recreation Master Plan is intended to guide the development and maintenance of facilities and programs for education and recreation in Soquel Demonstration State Forest. This plan is written within the context of the SDSF General Forest Management Plan and is informed by a detailed recreation study completed in 1993 and by a yet unpublished education study conducted in 1996. These studies incorporate extensive citizen input about the education and recreation needs of SDSF and helped shape the structure of this plan. The hope and intent is that this Education and Recreation Master Plan will guide SDSF in its development as an inspirational and educational resource in the state of California.

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1. INTRODUCTION AND CONTEXT

The Role of Education and Recreation in Soquel Demonstration State Forest Relative to Other California Demonstration State Forests

The State of California's Demonstration Forests emphasize multiple objectives of forest management. Within the overall context of the multi-use emphasis, the relative importance of uses varies considerably from one California Demonstration State Forest to another. Although each major forest provides active timber harvest management, ecosystem management, education, and recreation, the attention given to each depends upon each forest's unique context and legislative directive.

Due to its urban location and specific legislative mandate, watershed management and forestry education will receive greater attention at Soquel Demonstration State Forest (SDSF) in comparison to other state forests. This mandate is an important factor in developing an education and recreation plan for the Forest. In this respect, SDSF is distinctive from other state forests. For example, Jackson Demonstration State Forest (JDSF), because of its size and productive timber resource, is managed to produce more marketable timber than the other state forests. Similarly, at Mountain Home State Forest (MHSF), recreation and ecosystem management receive relatively greater emphasis than

other uses. Figure 1 shows the relative locations of all the California Demonstration State Forests.

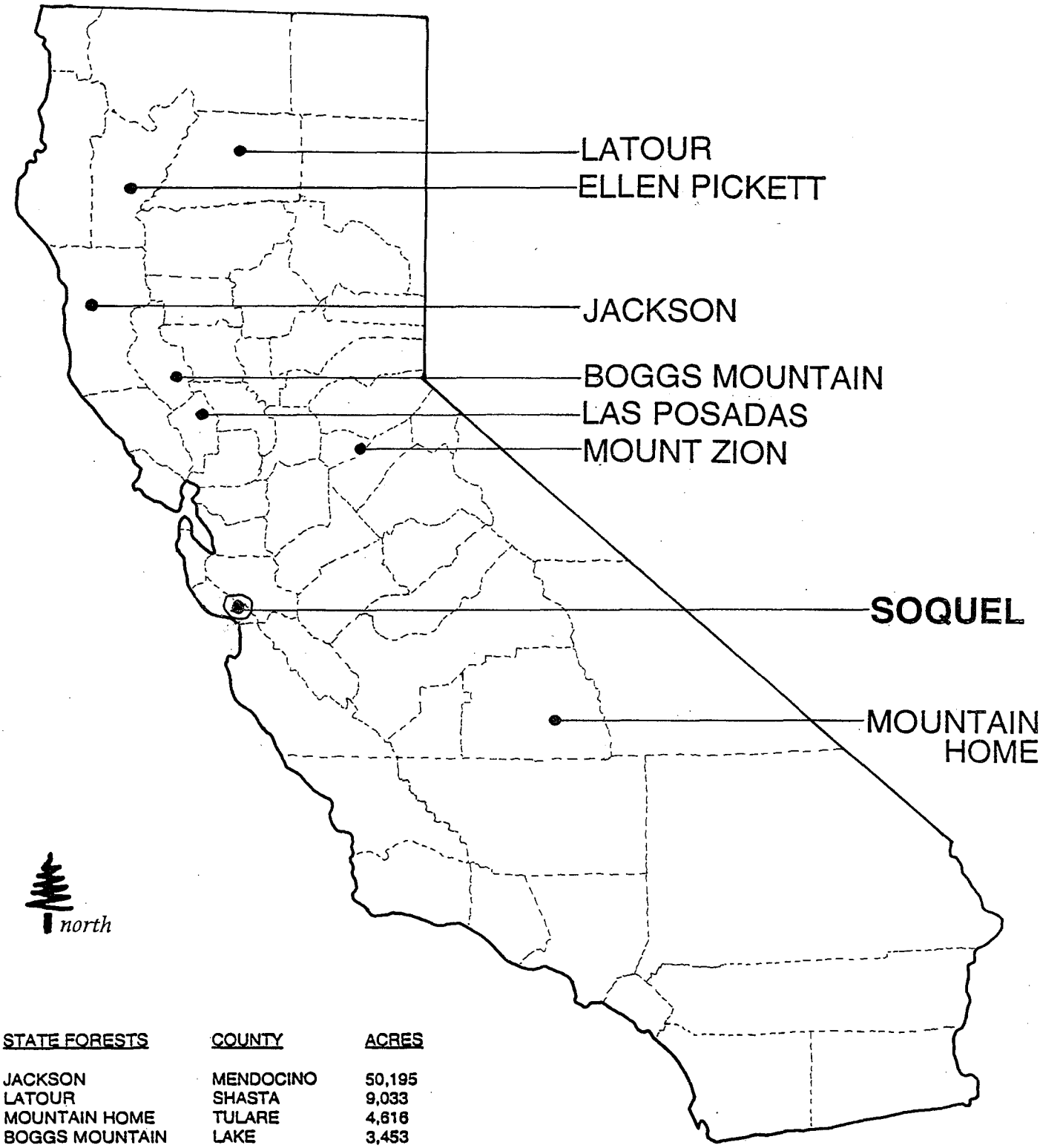
The Relationship of Education and Recreation to Other Uses in SDSF

Given its location and legislation, SDSF will place high management emphasis on ecosystem enhancement and forestry and watershed education, relative to other uses in the Forest. Timber production and recreation, on the other hand, will play important roles in SDSF management but will receive less management emphasis. Figure 2 shows the location of the 2,681-acre Soquel Demonstration State Forest within its immediate context. The following describes management emphases for each of the four primary uses in the Forest. The primary areas for management emphasis within SDSF are ecosystem enhancement, forestry and watershed education, demonstration timber harvesting, and recreation.

Ecosystem Enhancement

- Place a high emphasis on watershed management and aquatic habitat improvement.
- Repair, improve, and maintain habitats on site for species of plants and wildlife native to the Santa Cruz Mountains.

STATE FORESTS OF CALIFORNIA



STATE FORESTS	COUNTY	ACRES
JACKSON	MENDOCINO	50,195
LATOUR	SHASTA	9,033
MOUNTAIN HOME	TULARE	4,616
BOGGS MOUNTAIN	LAKE	3,453
SOQUEL	**SANTA CRUZ**	2,681
LAS POSADAS	NAPA	796
MOUNT ZION	AMADOR	164
ELLEN PICKETT	TRINITY	160

FIGURE 1

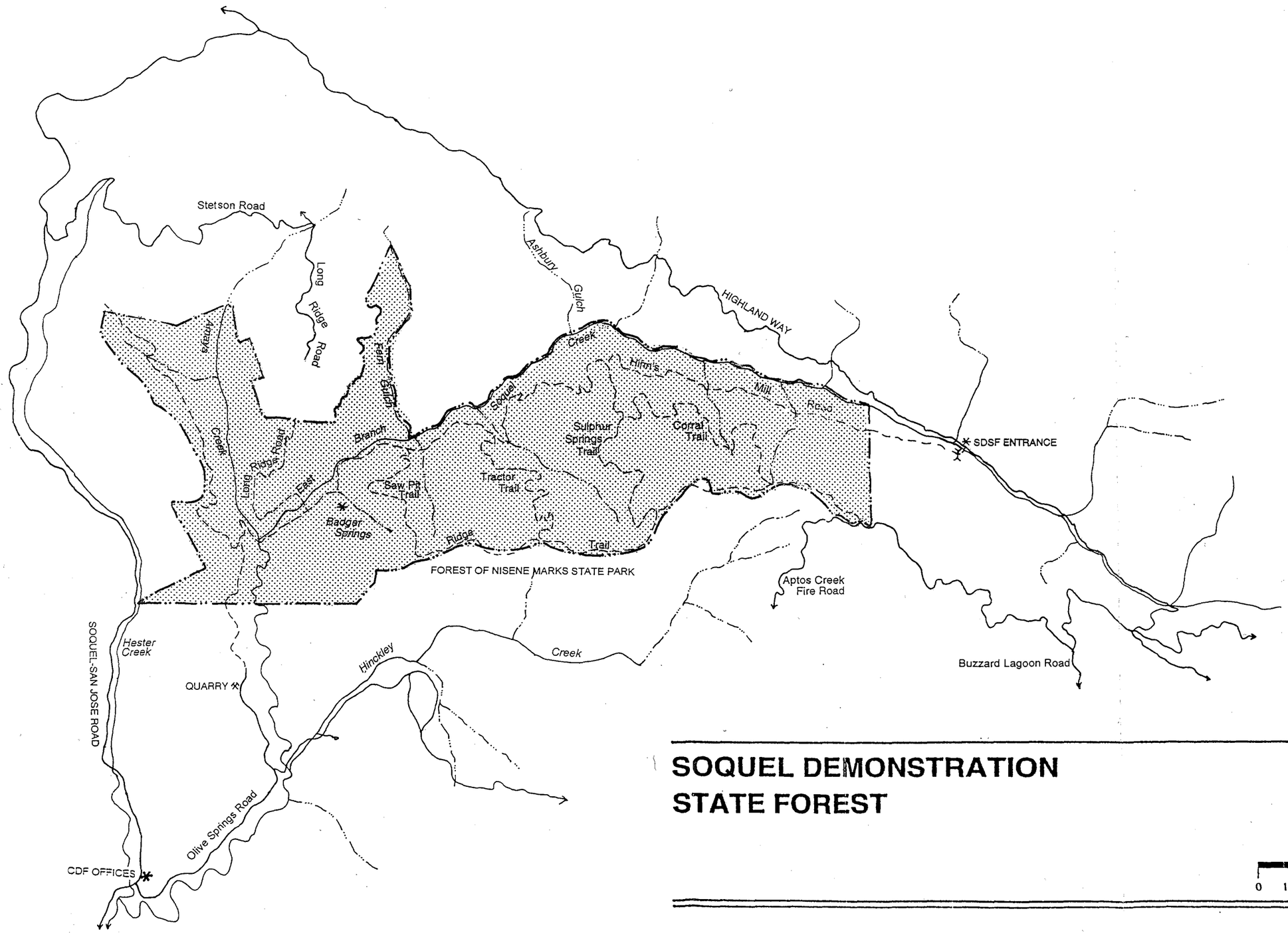


FIGURE 2

SOQUEL DEMONSTRATION STATE FOREST

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- Coordinate with other landowners to maintain habitats larger than the forest boundaries.
- Cooperate with other agencies to develop a watershed-wide management plan to reduce flooding, improve water quality and natural flow and create habitat for aquatic species and to create corridors for migration and habitat diversity.
- Improve and create habitat for fish on site, including but not limited to, stream channel modification.
- Provide an open environment for research.
- Conduct research to determine priorities for forestry management relative to ecosystem protection and enhancement.

Forestry and Watershed Education

- Provide staff to develop an educational and demonstration program.
- Develop a site-specific curriculum for forestry and watershed management education.
- Provide on-site facilities for forestry and watershed education.

- Host forest tours, outdoor classes, lectures, workshops, and conferences on sustainable forestry and watershed management.
- Interpret the results of research for both the general public and organized tour groups.

Demonstration Timber Harvesting

- Sustain the yield of timber production by harvesting each year no more than 35 percent of annual growth for the next ten years (until 2006).
- Expand the timber inventory base by approximately 1.7 million board feet per year.
- Demonstrate and experiment with a variety of demonstration timber harvesting techniques and technologies to determine future harvesting strategies.
- Protect old-growth trees, stands, and stream corridors consistent with the California Forest Practice Rules.
- Maintain a primary roadway system for year round access for forest administration, emergency response, demonstration timber harvesting, and other uses.

- Produce enough marketable timber to support the legislative mandate for research, watershed management, demonstration, education, and recreation.

Recreation

- Emphasize recreation activities that have an educational focus.
- Continue to provide multi-use trails that are shared by mountain bikers, hikers, equestrians, and others.
- Keep recreation facilities relatively rustic and distinguished from City parks.
- Develop an access and staging area that serves education and recreation purposes and reduces noise and trespass impacts on neighbors.
- Close trails and recreation areas when demonstration timber harvesting poses a safety concern for recreationists or close trails and recreation areas when recreation activities threaten the long-term health of the ecosystem.

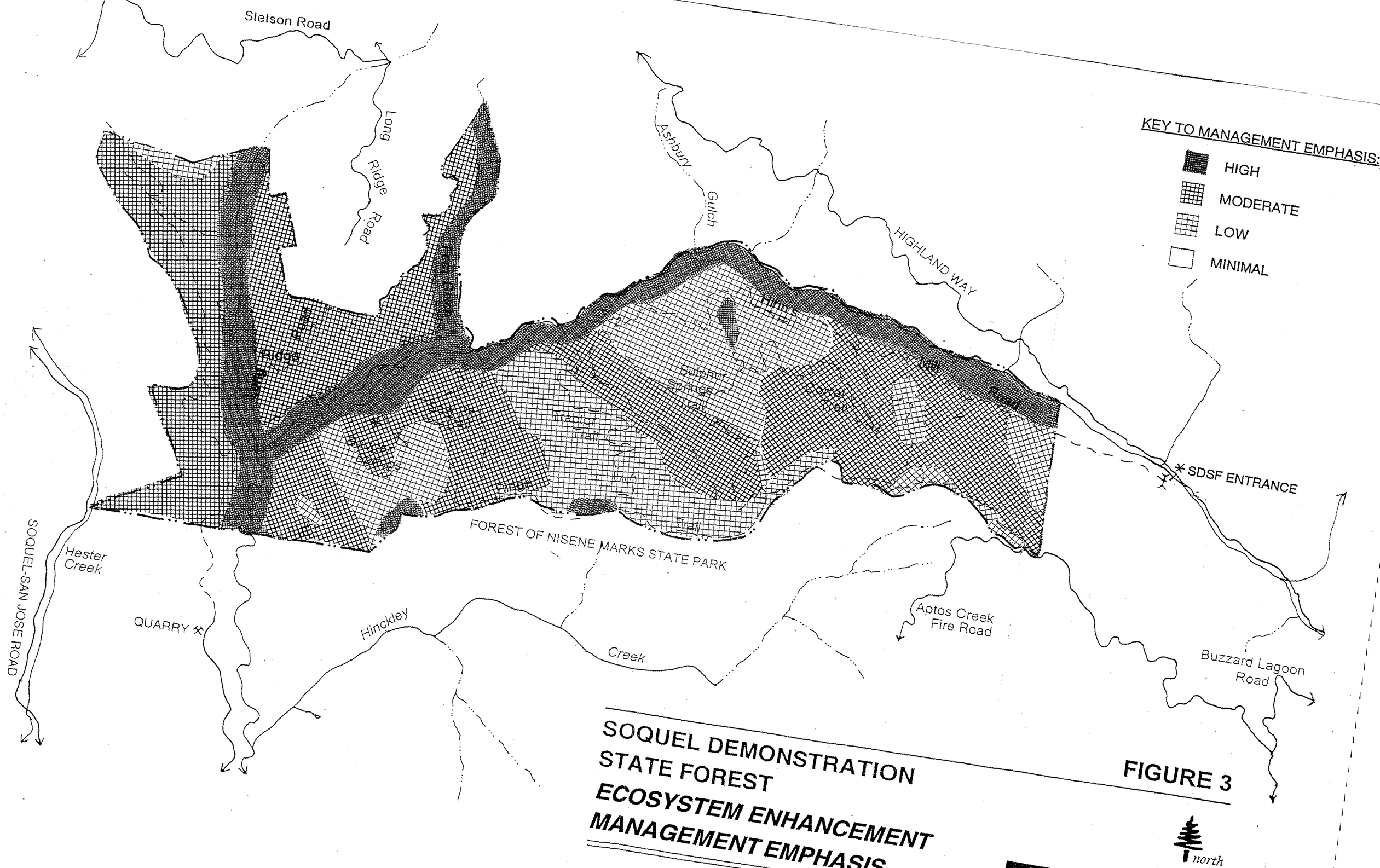
These characteristics are important to education and recreation planning in SDSF because they suggest the direction of appropriate education and recreation programs and facilities unique to the Forest.

Recreation in a Multi-use Mosaic

Although the four categories of management -- ecosystem enhancement, forestry and watershed education, demonstration timber harvesting, and recreation -- apply to the Forest as a whole, management priorities vary considerably from one part of the Forest to another. To identify those areas where specific management efforts should be focused a series of overlay maps were developed, shown in Figures 3 through 7.

For example, ecosystem enhancement is a management priority throughout SDSF. However, this enhancement is most critical in key habitat areas and areas affecting water quality. Stream corridors, concentrations of old-growth redwood, and unstable, steep slopes are some of the most sensitive areas in the Forest. Therefore, in these areas, ecosystem management and research will take precedent over other uses. Figure 3 identifies those areas where ecosystem enhancement will be focused.

Education activities will be similarly concentrated in specific areas of the Forest. For example, education activities will focus along stream corridors and in old-growth groves. These areas provide rich educational opportunities because of their diverse biological



SOQUEL DEMONSTRATION STATE FOREST
ECOSYSTEM ENHANCEMENT MANAGEMENT EMPHASIS

FIGURE 3

characteristics and historic uses. Additionally, flat areas with good public access are needed for the development of staging and educational areas. Staging areas are trail heads where parking and loading and unloading take place. Ideally, these sites will be located at the edge of the Forest where minimal ecosystem impact will occur. Therefore, the acquisition of a west-end staging area and education site is among SDSF's highest management priorities.

Other areas within the Forest, such as demonstration harvest sites and research sites, also offer education opportunities but these areas do not require an on-going, high management focus for education purposes. All educational priority areas are shown in Figure 4.

Recreational Forest use by mountain bikers, equestrians, hikers, and joggers is presently most intensive along Hihn's Mill Road, which parallels the East Branch of Soquel Creek. Several multi-use trails leading to and from this road and from The Forest of Nisene Marks State Park are also commonly used. As staging and day use areas are developed along the edges of the Forest, additional recreation activity will most likely occur in those areas. Because of the ease of accessibility from Soquel-San Jose Road, the proposed west-end access point will probably receive the greatest volumes of recreation use. In addition to potential and existing staging areas, Hihn's Mill Road and the multi-use trails are the only areas within the Forest requiring focused attention for recreation management. These areas are shown in Figure 5.

Management emphasis on timber harvesting in SDSF is moderate, but in some areas it takes precedence over recreational and educational uses. Timber production is limited in sensitive ecosystem management areas and in some areas used for recreation and educational purposes and is not permitted in areas designated for old-growth protection. Timber management, harvesting, and silvicultural research receive greater emphasis in other areas of the Forest. These areas are shown in Figure 6.

By overlaying these multiple land uses for ecosystem enhancement, forestry and watershed education, demonstration timber management, and recreation, and by weighing their relative priorities, a mosaic of "best land uses" emerges. For recreation, the "best land use" pattern consists of a spine along Hihn's Mill Road anchored on both ends of the Forest by staging areas. The proposed staging area located along Soquel-San Jose Road is designed as the primary recreation and education area, while the other staging area located off Highland Way would be used less due to its more remote location. The network of multi-use trials which connect Hihn's Mill Road to the Ridge Trail and provide access to The Forest of Nisene Marks State Park, complete the recreation mosaic.

Although recreation management will be a priority in these areas, in none of these areas is recreation the sole use. For example, the area near Badger Springs, attractive to hikers, bikers, and equestrians is also of critical importance for watershed protection, old-growth

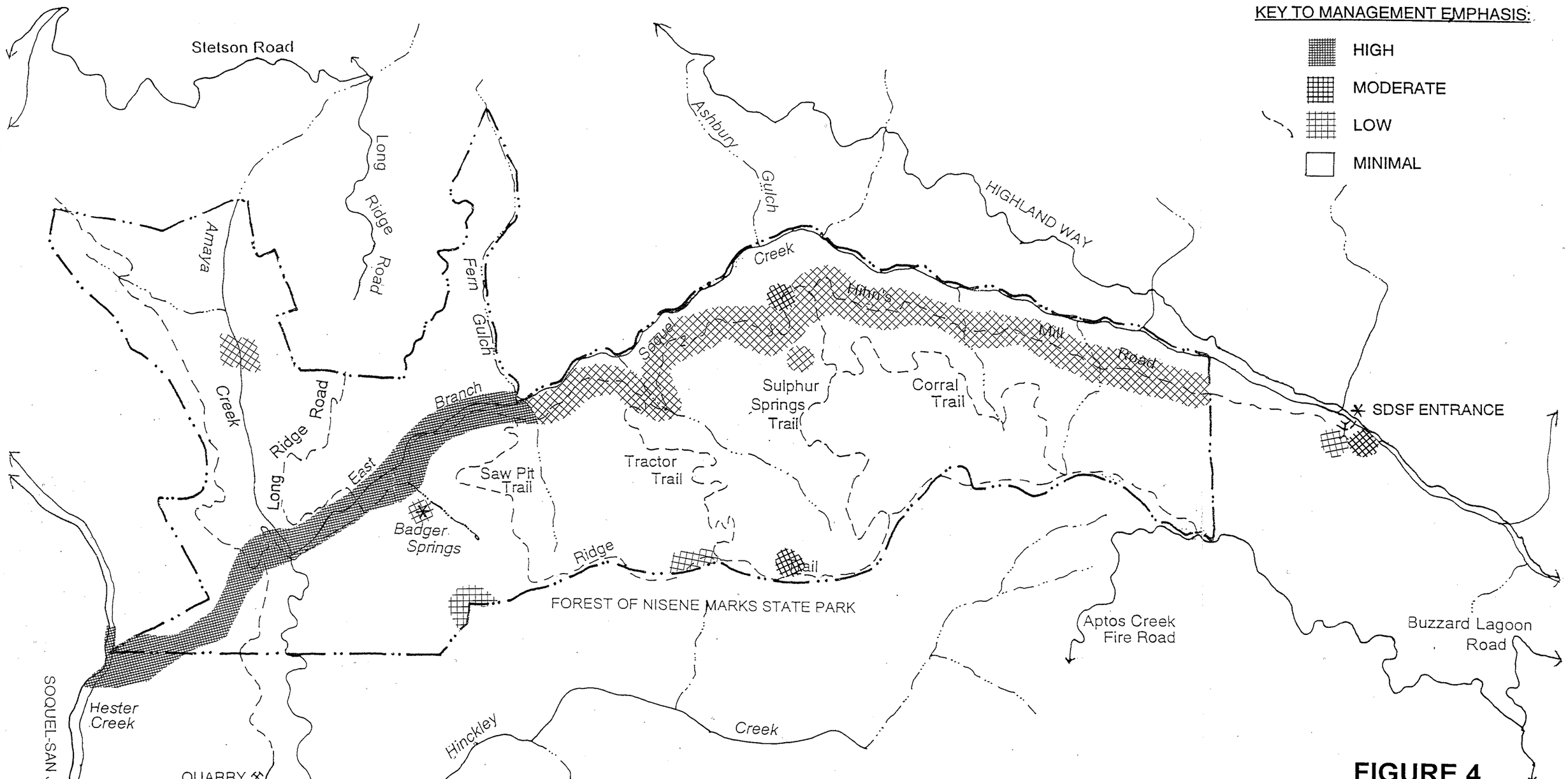
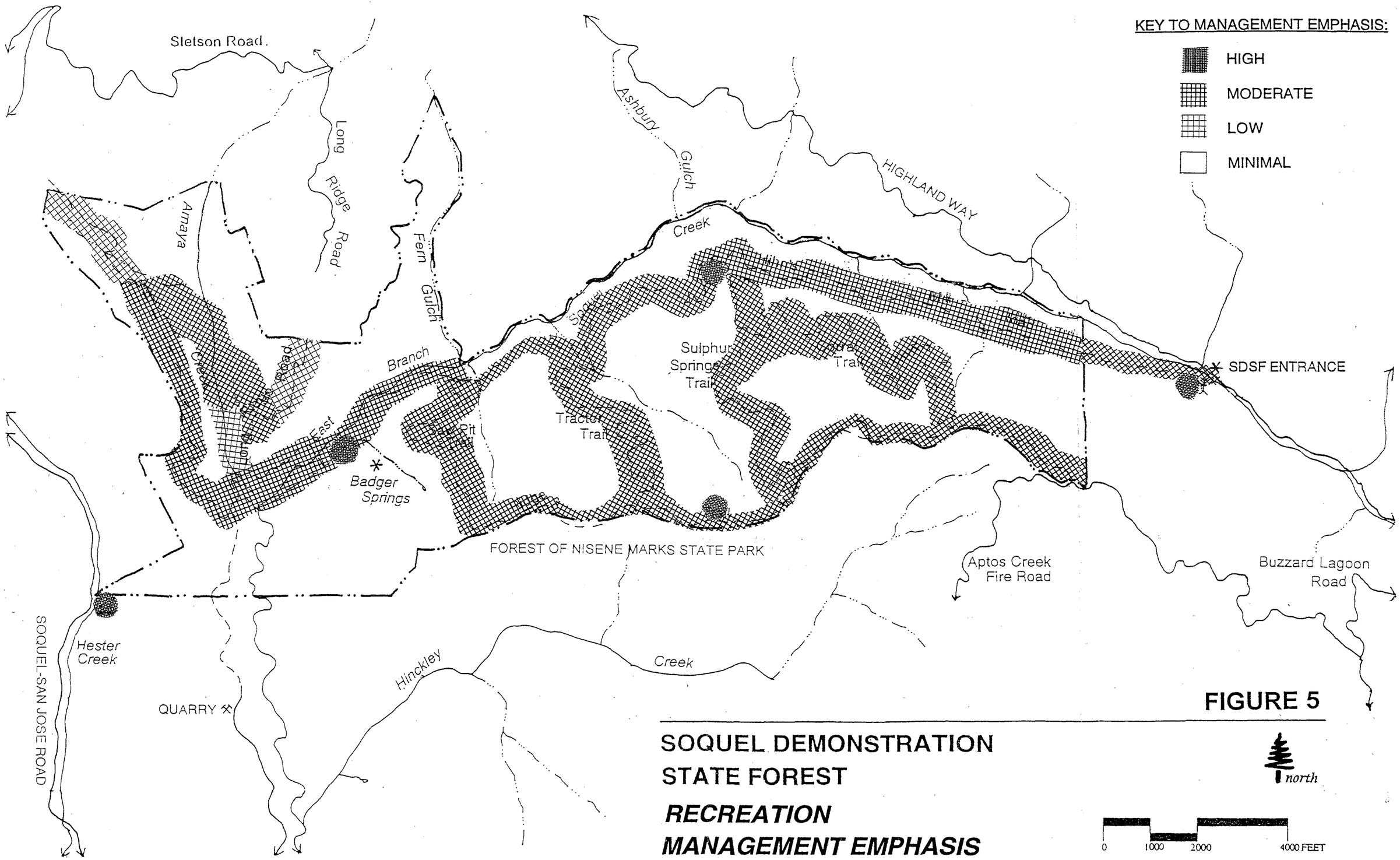


FIGURE 4

SOQUEL DEMONSTRATION STATE FOREST

EDUCATION MANAGEMENT EMPHASIS


KEY TO MANAGEMENT EMPHASIS:
HIGH
MODERATE
LOW
MINIMAL
Sletson Road
Long Ridge Road
Amaya
Fern Gulch
Ashbury Gulch
Creek
HIGHLAND WAY
Sawyer
Sulphur Springs Trail
Spur Trail
Tractor Trail
Branch
East
Long Ridge Road
Pit Trail
Badger Springs
SDSF ENTRANCE
FOREST OF NISENE MARKS STATE PARK
Aptos Creek Fire Road
Buzzard Lagoon Road
Hester Creek
SOQUEL-SAN JOSE ROAD
QUARRY
Hinckley
Creek
FIGURE 5
SOQUEL DEMONSTRATION
STATE FOREST
RECREATION
MANAGEMENT EMPHASIS
north
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protection, education, and ecosystem management. This overlap of conditions requires a sensitive strategy to accommodate multiple objectives within the same place. A summary map of overlapping conditions throughout the Forest is shown in Figure 7. This analysis is important to education and recreation planning in Soquel Demonstration State Forest because it suggests not only the level of appropriate education and recreation development, but also the location of that development.

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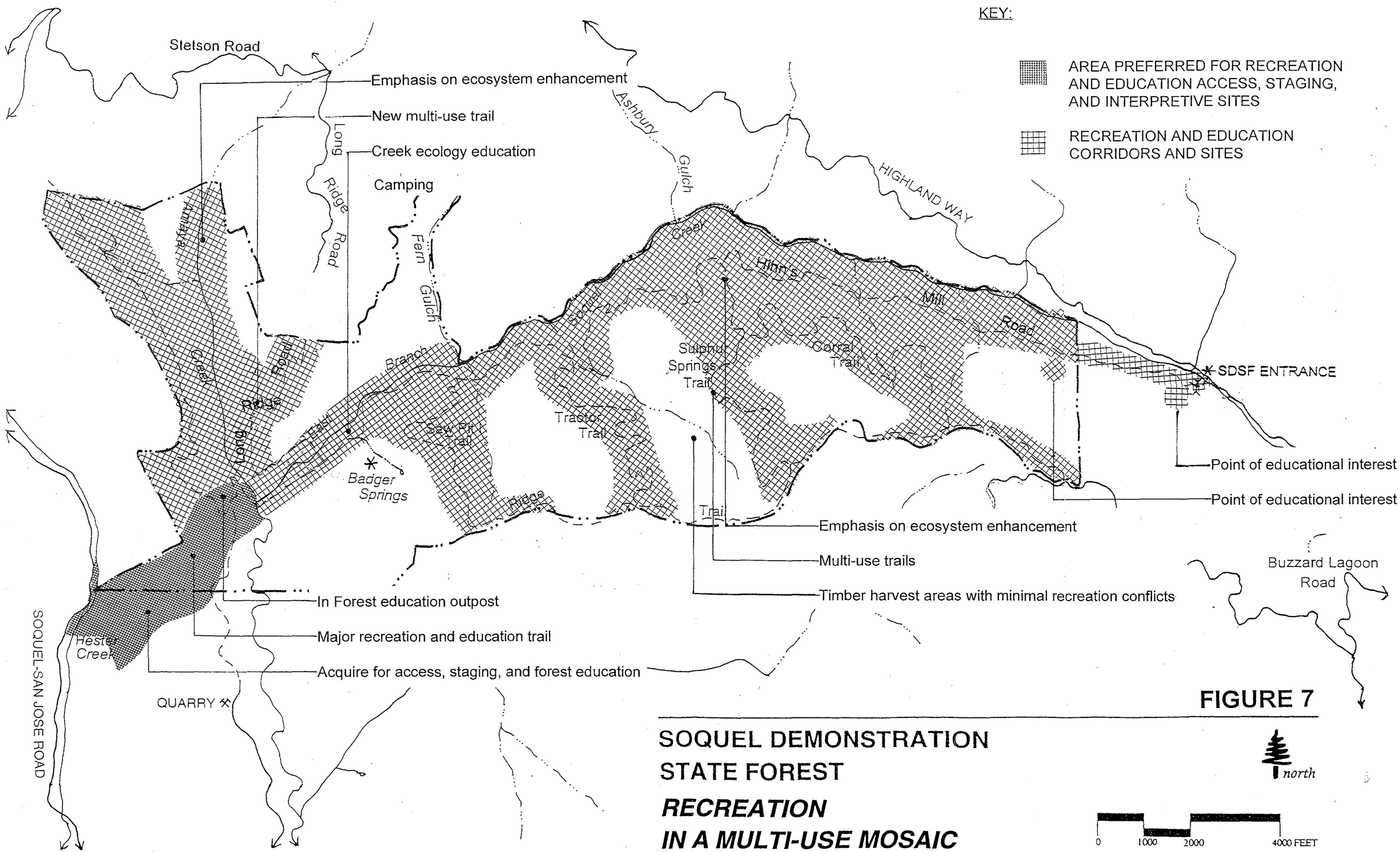

FIGURE 7

SOQUEL DEMONSTRATION STATE FOREST

RECREATION IN A MULTI-USE MOSAIC

2. GOALS AND OBJECTIVES

Goals

Soquel Demonstration State Forest is a unique resource to the State of California in that SDSF is a working forest, not a preserve. Many Californians, especially in more urban areas, are unaware of this distinction and do not understand how state forests are managed. The development of educational and recreational opportunities at SDSF provides a unique opportunity for people to learn about the complex nature of forests, forestry, and natural resource management.

SDSF was created in 1987 by Assembly Bill 1965. One of the main intents of this legislation is to show the public and public decision makers the balances and trade offs involved in land use and forest use decisions. This is especially important in a rapidly growing state where the trade offs between natural resources development and quality of life issues are increasingly complex. Because of SDSF's unique location in a semi-urban area and because of its educational mandate, SDSF has the potential to develop a statewide profile for discussion, debate, and learning about California's forests.

Under the mandate of this bill SDSF is required to accomplish four primary goals:

1. Provide watershed protection.
2. Provide public education programs.
3. Provide an open, educative environment.
4. Protect old-growth redwood trees.

This plan focuses on goals 2 and 3, and also includes the recreational aspects of the Forest. As with all principle forests in the State Forest system, recreation is an important goal. In the case of SDSF, recreational opportunities within the Forest complement the educational aspects of SDSF.

In terms of goal number 2, provide public education programs, AB 1965 identifies the compatibility of different rural land uses as the general theme for public education within the Forest. Specifically, this will include demonstration of sustained yield timber production and the historic development of timbering. Goals 1 and 4, watershed management and the protection of old-growth redwood trees, are also important aspects of education within SDSF.

In terms of goal number 3, the provision of an open educative environment, AB 1965 identifies six primary users that the Forest should target. They include 1) the public, 2) environmental groups, 3) elected officials, 4) environmental planners, 5) the education

community, and 6) the media. This broad audience requires multiple programs within SDSF.

Objectives

This plan identifies six objectives to meet the goals laid out for SDSF. They include:

1. Educate visitors on SDSF's history, forest management techniques, resource protection, forest ecology and research, connections to the broader region, and sense of wonder found in the natural environment.

2. Increase public understanding of forest management practices. Emphasize the complex nature of forests and forest management decisions.

3. Reach out to a wide range of audience levels, including elementary, middle, and high school age students, outdoor education students, college level students, researchers, recreationists, private loggers and property owners, media, environmental groups, environmental planners, elected officials, and the general public.

4. Provide a variety of educational opportunities ranging from educational group camping and organized tours to un-organized self-guided walks.

5. Provide for recreational opportunities which are oriented toward foot, bicycle, and equestrian traffic and include trails, roads, and picnic areas.

6. Ensure that visitors will have a safe, positive, and enjoyable experience that they will want to share with others.

Educative Environment

There are many different ways in which people learn. People can learn in an organized setting, or they can learn from the environment at their own pace in an un-organized manner. Both educational experiences are important at SDSF. For example, SDSF staff-lead field trips, teacher-led school groups, and university level research are organized educational opportunities within SDSF. School group overnight camping, outdoor schooling, forest management demonstrations, and forest classes or conferences are other examples of organized educational opportunities within the Forest.

Examples of un-organized educational experiences at SDSF include self-guided tours, interpretive placards, and notices on bulletin boards/kiosks. Anyone who comes to SDSF to hike or ride bikes or horses can casually learn from the educational and interpretive atmosphere created within the Forest. Additionally, volunteerism presents another opportunity for people to learn about the forest at SDSF. Volunteer assistance with stream restoration, trail maintenance, and forest research offers the public the opportunity to work with experienced staff to learn more about the ecological functions and management of the forest at SDSF.

This wide range of educational opportunities reflects the need for diverse educational programming at SDSF. The overarching goal within SDSF is to create an educative environment within the Forest. This means that whether a person comes to SDSF for an organized event or simply to hike or ride, they will come away from their experience having learned something.

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3. EXISTING AND PROJECTED USES

Education

Existing Use

To date SDSF has been used for relatively few organized educational activities. SDSF staff has been engrossed in simply getting the Forest "up and running," and only a limited amount of energy could be devoted to educational programming. Nonetheless, SDSF has initiated several promising avenues for educational programs within the Forest.

Site-specific curricula were developed by SDSF staff for the Forest and, occasionally, school groups have visited the Forest for forestry and watershed education purposes. At other times, the public has been invited to observe sustainable timber harvest practices within the Forest, and researchers have also worked in SDSF to monitor fisheries habitat and populations. Additionally, informational bulletin boards/kiosks exist in three locations within the Forest. Minimal informational and educational material is posted on these bulletin boards/kiosks for the casual Forest visitor. Although limited, all of these activities have been very well received indicating great potential for the development of educational programs in the future.

Projected Use

SDSF is an immediate educational resource for schools within Santa Cruz, Monterey, and Santa Clara counties. As more people become aware of the Forest and its potential educational opportunities, SDSF can expect increased demand from schools in neighboring counties for SDSF-led and SDSF-assisted educational field trips. A workshop held for educators in the Forest in October, 1996 has already spurred more demand for SDSF-led and SDSF-assisted field trips than current staff can respond to.

In addition to SDSF-led and SDSF-assisted field trips, the Draft Education Study conducted this fall also found a demand for internships and field projects for high school students enrolled in agriculture and forestry programs. There is also interest among college-level educators to utilize the Forest as an interpretive environment for understanding cultural impacts on the landscape, as well as for scientific research purposes[1].

In addition to these "traditional," organized educative uses of the Forest, there is a demand for "non-traditional," un-organized education opportunities. As discussed in further detail in the following Recreation section, education and recreation programs in SDSF are inextricably linked. Activities like self-guided trails provide recreational and educational benefits at the same time. Increasingly, the distinction between education and recreation will be blurred in SDSF.

[1] SDSF Draft Education Study, 1996, unpublished.

A final area of increased demand for educational opportunities at SDSF is for the media. Already, members of the local media have asked to be included in SDSF management and research activities in order to better understand how SDSF operates. Providing informational materials, as well as staff time to members of the media is clearly needed to meet the mandate of AB 1965. In the longer-term, SDSF will also need to find ways to meet the educational demands of environmental groups, elected officials, and environmental planners, in addition to the groups already mentioned.

Recreation

Existing Use

Current recreation use is focused on trails that connect SDSF to nearby public roads and The Forest of Nisene Marks State Park. Mountain biking, hiking, and horseback riding account for the majority of recreational use at SDSF. In 1994, approximately 3,800 users visited the Forest, as estimated in the SDSF General Forest Management Plan Draft Environmental Impact Report (EIR) of 1995. Picnicking and nature study occasionally occur, but most recreation activities at SDSF are limited because of poor access to the Forest and a lack of facilities.

Projected Use

Public use of SDSF has increased at an average rate of 44 percent per year since the transfer of SDSF to the California Department of Forestry and Fire Protection (CDF) in 1990. Mountain bikers are by far the largest user group, and, additionally, their usage has increased tenfold in this time period. By 2005 biking, hiking, and equestrian users are projected to increase to 8,000, 1,350, and 350 users per year, respectively. This plan accommodates those increases.

There is additional demand for picnicking and nature study, and, like educational activities, these uses will likely increase as facilities and access are improved. In addition to these "traditional" recreation pursuits, demand for "non-traditional" recreation related to educational programs is also likely to increase. Such "non-traditional" educative recreation include activities such as observing logging demonstrations and volunteer assistance in stream monitoring and trail maintenance, as well as self-guided tours. All of these activities are distinctively popular in SDSF as local community members increasingly consider seeing and doing "real" work as recreational.

In summary, there will continue to be demand for trail oriented recreation from mountain bikers, hikers, and horse riders; there will be increased drop-in use for picnic and nature study, when access and facilities are developed; and there will be increased non-traditional recreation uses related to education. Users will continue to be nearby

neighbors and regional residents. This plan anticipates approximately 10,000 recreation users per year by 2005.

Education and Recreation Facilities

The Forest and existing trails provide most of the needed settings for education and recreation without adding new facilities. However, some new facilities will be required to accommodate the projected users' needs described above. These facilities will retain a rustic feel. The short term user requirements include the following:

FACILITY	REQUIREMENTS & PARAMETERS
Interpretive Trails	1/4 to one mile
Hiking, Biking, Equestrian Trails	Existing 3 miles of single-track trail, plus the construction of 1 additional single-track trail
Trail Parking	Existing parking area on the east end and 30 spaces on the west end
Toilets	At staging and camping areas
Picnic Tables	Existing picnic tables at Badger Springs and Sulphur Springs, plus picnic tables located at staging areas and educational group camping area
Trash Receptacles	At staging areas
Educational Group Camping Area	One campsite for 40 to 45 people, including an outdoor classroom
Bulletin Boards/Kiosks	At 3 existing locations, plus one at the west end entrance
Drinking Water	At major trail intersections and staging areas, only if provided and monitored by user groups
Emergency Phones	Pay phone at Soquel-San Jose Road and solar phones at Highland entrance and the intersection of Hihn's Mill Road and Sulphur Springs Road

In addition to the short-term education and recreation needs outlined in the preceding list, this plan anticipates additional long-term needs for different user groups over the next ten years. The following table projects Forest user needs for the next ten years by describing the projected user groups and the intensity of their use, the projected numbers of users, the forest management needs and staging requirements of each user group, and the areas of particular interest to those user groups. Because of the concentration of use, SDSF staff will focus management efforts in the areas designated as "Special Areas of Interest in SDSF."

Table 1: Estimates of Users' Ten Year Projected Needs

User Group & Intensity of Use	# Users per Year	Estimated Distance and Time Spent in SDSF	Forest Management Needs	Requirements for Staging	Special Areas of Interest in SDSF
School Groups *day use*	100 groups	0-5 miles Half day or all day	Hands-on educational opportunities, points of interest along trails, picnic facilities, Hihn's Mill Road improvements, development of an educational site	Car, van or bus parking or CDF drop-off, toilets, water, maps with trails and elevation	Educational areas, Badger Springs, ridge views, Sulphur Springs, Paddock's Mill, logging areas, Crazy Tree, weir, old-growth redwood groves, confluence of Amaya and Soquel Creeks

Educational School Groups *overnights*	20 groups*	2-5 days	Same as above, plus development of a site with flat areas for camping and safe fire spot	Secure overnight parking or CDF drop-off, toilets, water, maps with trails and elevation	Same as above
Researchers	5-20 Projects	1-7 days with possible repeat visits	Undisturbed study areas, equipment storage, camping, water	Parking, toilets, water, trash receptacles, maps with trails and elevation	Access to a particular area of interest
Hikers *moderate*	1,100	3-5 miles 2-6 hours	Picnic facilities, loop trails, forest information, self-guided tours, brochures	Car parking, toilets, water, maps with trails and elevation	Badger Springs, ridge view points, Sulphur Springs, old-growth redwood groves
Hikers *serious*	250	6-12 miles 4-6 hours	Same as above	Same as above	Same as above
Mtn. Bikers *moderate*	3,000	10-15 miles Half day	Well maintained trails, loop trails, water, picnic facilities	Car parking, water, toilets, maps with trails and elevation, bike racks at staging areas	Ridge views, Badger Springs
Mtn. Bikers *serious*	5,000	20-40 miles All day	Well maintained trails, single-track trails, loop trails, water, picnic facilities	Same as above	Climb to the ridge and views, Badger Springs
Equestrians	350	15 miles All day	Hitching posts, water, picnic facilities	Trailer parking, toilets, horse watering trough, maps with trails and elevation	Badger Springs, Sulphur Springs, ridge views

* The SDSF General Forest Management Plan Draft EIR sets the educational overnight limit initially at 12 groups per year, which may increase to 20 groups if funds for management become available.

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4. ACCESS AND STAGING AREAS

Inadequate access to SDSF is the single greatest obstacle in meeting the mandate to provide education and recreation experiences in the Forest. Steep topography, landslides, narrow and winding roads, concerns for neighbors' privacy, and private properties at key locations render the Forest inaccessible to most of the public.

Present public access is limited to three points, all of which are problematic. One point of access is by way of the Ridge Trail, where hikers and bikers can enter SDSF through The Forest of Nisene Marks State Park (TFNMSP). This is an excellent joint use of public lands for hardy trail users, but this is not a practical access point for the casual Forest user. Additionally, equestrians and automobile access are excluded. Horses are prohibited in the upper part of TFNMSP, and the parking area in the TFNMSP is over ten miles from SDSF.

Another point of access for hikers, bikers, and equestrians is via Amaya Creek Road and Comstock Mill Road. However, neighbors dispute the public's right to this access. In addition to this right-of-way dispute, Comstock Mill Road is extremely narrow, winding, and relatively unimproved. The steep topography along Comstock Mill Road, and the issues just mentioned, preclude the development of this area into an appropriate access and staging area for the general public.

The third point of access into SDSF is from Highland Way via an easement across Redwood Empire property at the northeast end of the Forest. This is presently the only access option for vehicles and vehicular staging for SDSF. The easement allows automobile access and parking, but this access point is extremely remote and inaccessible much of the time due to recurrent landslides along Highland Way. Highland Way follows the San Andreas Rift Zone, and landslides have blocked this road for the greater part of the past three years.

In addition to these problematic access points, some members of the public trespass through the quarry and other private properties to enter or exit SDSF. This condition has created problems for neighbors, and has become a source of conflict between SDSF and those neighbors. Lack of adequate access and private property issues have been primary complaints of people trying to use the Forest. SDSF would like to be a "good neighbor" and alleviate the problem of trespass. Siting of an easily accessible and reliable entrance is the quickest and most direct solution to this problem.

In sum, inaccessibility has severely limited the use of SDSF and is a source of conflict that occupies staff time. None of the existing access points allows the Department of Forestry and Fire Protection to meet its legislated mandate which requires the provision of public education illustrating compatible land uses and forestry practices and the provision of a coast redwood environment resource for the use, enjoyment, and education

of the public. The improvement of access is paramount to the fulfillment of SDSF's legislated mandate.

An access point is needed that provides the following:

1. An ingress and egress point for present and future school groups, hikers, bikers, and equestrians which reduces conflicts with neighbors over trespass and noise disturbances.
2. Easy public access into the Forest from an all-weather road.
3. Natural amenities for educational and recreational use, including picnic areas, interpretive walks, and support facilities that are accessible to the entire public.
4. Enough suitable land for staging areas for educational and recreational use.
5. Access to points in the Forest of major education and recreation value.

A map showing the areas in the Forest of major education and recreation value, as discussed in Number 5 above, is shown in Figure 8. Over a dozen possible access and staging area locations were identified and evaluated, and the most feasible possibilities are shown in Figure 9. The conclusions of the analysis regarding access are as follows:

- The best possible access and staging area is what is known as the Noren-CHY site. It consists of the Noren property of approximately nine acres and a part of the CHY property of approximately 70 acres (to be determined) north of the quarry. Together,

these properties meet all of the criteria to create an access point and staging area fundamental to achieving the legislated mandate.

Acquisition of these properties would allow access to areas in the Forest essential to education and recreation programs, provide a location for present and future educational activities, provide access for the general public from an all-weather road, resolve conflicts with neighbors regarding recreationist trespassing, and provide a place with high natural amenity value for recreational day use that is also accessible to people of limited physical abilities. Additionally, acquisition of these properties would resolve problems associated with the public trespass through the quarry and other sites. Most importantly, the acquisition of these properties would enable SDSF to meet its legislated mandates splendidly.

- **Recommendation 4.1** Acquire the nine-acre Noren and approximately 70-acre CHY properties through purchase and/or trade as the primary access point into SDSF. This acquisition is one of CDF's highest priorities and is essential for the education and recreation program and other SDSF programs to succeed. If this acquisition proves unfeasible, SDSF should acquire one of the other potential access points. Although less desirable, several of these alternative sites could meet many of the access criteria established in the previous section.

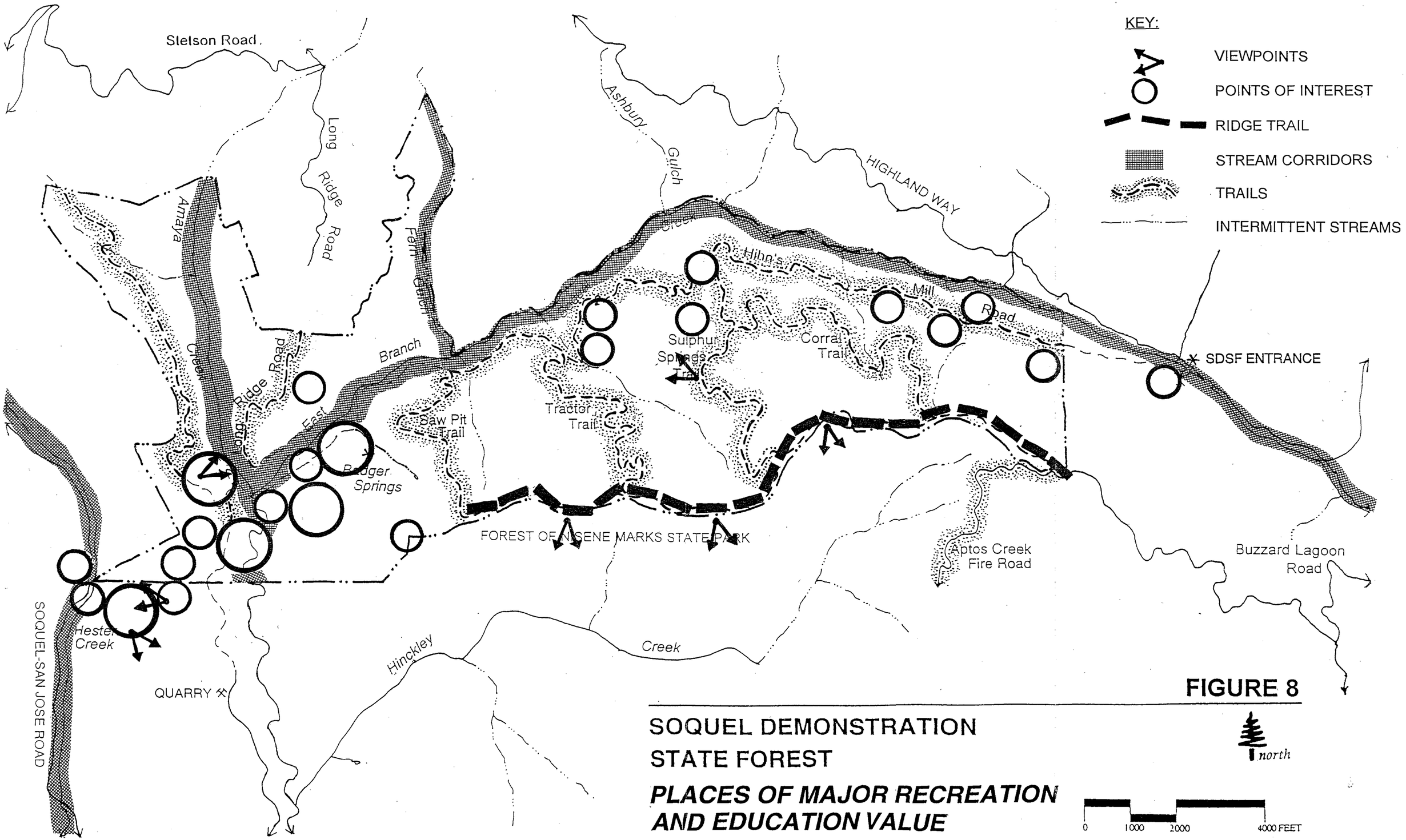

FIGURE 8

SOQUEL DEMONSTRATION STATE FOREST

PLACES OF MAJOR RECREATION AND EDUCATION VALUE

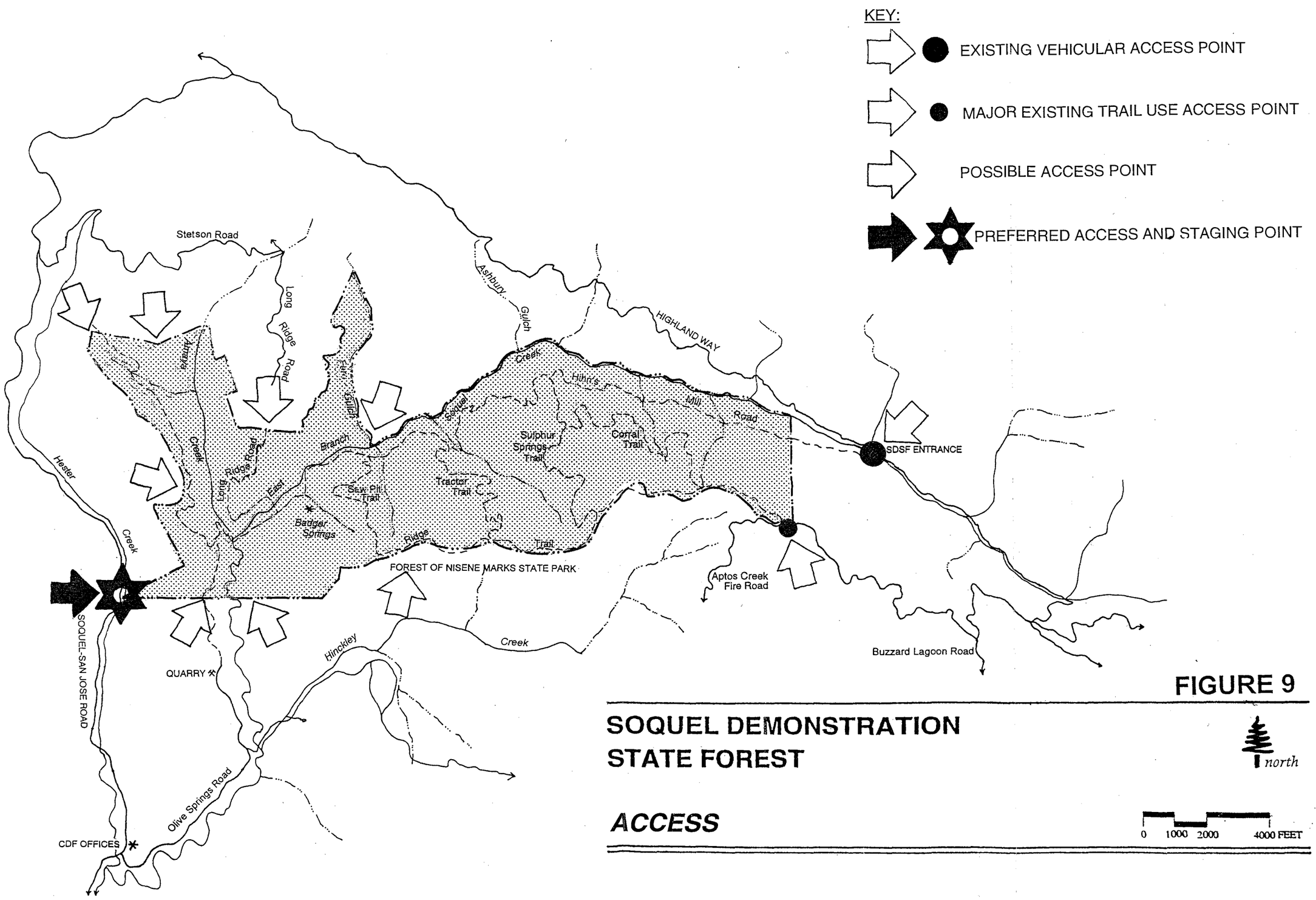

FIGURE 9

SOQUEL DEMONSTRATION STATE FOREST

ACCESS

- **Recommendation 4.2** Maintain and improve the east-end access and staging area off Highland Way for administrative access, educational programs, and recreation. Maintenance and improvement of the Highland Way entrance and establishment of an entrance off of Soquel-San Jose Road would serve to create an all-weather administrative and emergency access into SDSF from both the east and west ends.

- **Recommendation 4.3** CDF should maintain its policy of prohibiting private vehicular traffic within SDSF. Exceptions for research, administration, and forest education should be authorized by the Forest Manager. Additionally, CDF should maintain its prohibition of off-road motorized vehicles in the Forest.

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5. EDUCATIONAL PROGRAMMING

SDSF is ideally situated within an easy driving distance of both the Monterey and south San Francisco Bay areas. This means that education and demonstration opportunities developed at the Forest can reach a large number of urban and semi-urban residents in California. Educational programs developed for SDSF are intended to be informative and fun with as many hands-on experiences as possible. The objective of these programs is to introduce target groups to the history of the Forest, forest management practices, resource protection, forest ecology and research, and the inspirational wonder of nature. Additionally, these programs will demonstrate the ways in which timber management, forestry education, public recreation, and environmental protection can be interrelated and compatible land uses.

Education and Demonstration

SDSF's multi-layered educational objectives will be accomplished through a variety of organized, un-organized, and volunteer activities. As discussed in Section 2, *Goals and Objectives*, there are three basic types of educational opportunities at SDSF: organized, un-organized, and volunteer. Volunteer activities include assistance with stream restoration, trail maintenance, and forest research. Examples of un-organized educational activities at SDSF include self-guided tours, interpretive placards, and notices on bulletin

boards/kiosks. Finally, SDSF staff-lead field trips, school group overnight camping, and forest management demonstrations are examples of organized activities at SDSF.

Forest management demonstrations are particularly unique to SDSF. These demonstrations provide an opportunity to view protection, management, and utilization of renewable resources as these activities are carried out at SDSF. Demonstrations are one of the most direct means by which visitors can experience SDSF as a "working forest." During these demonstrations, strong emphasis will be placed on environmental protection in the discussions of forest management principles and techniques. Some examples of forest demonstrations include cable and horse logging operations, fisheries protection and enhancement, and erosion control.

Target Groups

When fully developed the SDSF education program will provide educational opportunities to the six audience groups targeted by AB 1965 -- the general public, environmental groups, elected officials, environmental planners, the education community, and the media. In order to meet the legislated mandate to provide forestry and watershed management education , specialized staffing, programs, and facilities will be required at SDSF. There is presently no site within the Forest to locate these facilities.

To date, educational programming has focused on the education community and the general public. Because both of these user groups have already expressed a significant

demand for educational opportunities in the Forest, educational program development will continue to address the educational needs of these two groups into the foreseeable future. In the short term the immediate educational needs of the education community and the general public can be met with relatively few facilities. In the longer term, however, permanent educational facilities will be needed. With these facilities SDSF will be better able to meet the needs of the education community and general public, as well as environmental groups, elected officials, environmental planners, and the media.

Education Community

The education community is comprised of elementary, middle, and high school age students, as well as outdoor school students and college-level students and researchers. In general, educational programming for these groups will be organized. This means that SDSF staff will play a direct role in the educational experiences of these groups. In addition to these organized events, teachers and their students may also incorporate un-organized or volunteer educational opportunities into their visit to the Forest. For example, elementary and middles school groups may complement SDSF staff-led field trips with the independent use self-guided tours, interpretive placards, and notices. Alternatively, high school and college-level students may incorporate volunteer activities such as stream monitoring into their field work. Educational opportunities targeted to the education community are shown in the list below.

Educational Opportunities: Education Community

Organized	Un-organized	Volunteer
1. Staff-led school groups	1. Self-guided tours	1. Volunteer stream restoration
2. Teacher-led school groups	2. Educational placards	2. Volunteer research assistance
3. University-level research	3. Notices on bulletin boards/kiosks	
4. School group overnight camping		
5. Outdoor schooling		
6. Logging demonstrations		
7. Docent-led tours		
8. Conferences		

A considerable amount of up-front SDSF staff time will be required for the development of materials and curriculum for both organized and un-organized educational programs. Once developed, un-organized educational features, such as a self-guided tour, interpretive placards, and informative notices will only require periodic maintenance and updating. However, organized educational programs will require constant oversight by SDSF staff in terms of outreach and event coordination and presentation. Volunteer activities will also require SDSF staff time in terms of outreach and coordination.

Site-specific curricula will be a very important part of SDSF's organized educational program. The Draft Education Study[2], which focused predominantly on the education

[2] Ibid.

needs of elementary, middle, and high school age students, identifies five general themes for education within the Forest. They include:

1. *Forest History*: Local history including old logging practices.
2. *Ecological Processes*: Plants and animals and ecosystems.
3. *Forest Management*: Watershed, fisheries, and timber management.
4. *Regional Connections*: Watershed management and urban/rural interactions.
5. *"Spirit of the Forest"*: Awe of nature and environmental philosophy and ethics.

These general themes are intended to form a structure with which to approach education within the Forest. Educational opportunities will not be relegated into any one of these categories. There are many opportunities for integration of one topic area into another. For example, watershed management, a key aspect of education at SDSF and an area of interest to many teachers, falls across all five of the topic areas listed above.

In addition to these themes, specific sites have also been identified as well suited to forest interpretation. These sites were selected with the need for ease of access for school groups along existing trails and for diversity of educational opportunities within a single site. The identified sites include the creek crossing near the confluence of Amaya and Soquel creeks, the Badger Springs picnic area, the Crazy Tree at the juncture of Tractor

Trail and Hihn's Mill Road, the weir along Hihn's Mill Road, and the Sulphur Springs picnic area.

A class can prepare for a visit to SDSF in several ways. One proposed method of preparation is to make a standard set of slides and a script available to teachers on loan from SDSF. This way teachers may visually introduce their students to SDSF before their field trip. This slide show can be supplemented by an in-class presentation by SDSF staff, as, in the past, SDSF staff have been available for such in-class presentations. Finally, a teach-the-teacher program is proposed for SDSF to further supplement pre-trip preparations.

Teach-the-teacher programs are a means by which teachers can instruct their students within the forest without relying on SDSF staff. During a teach-the-teacher workshop, teachers learn about both general forest topics as well as specific ecological and management features related to SDSF. After completing training, teachers may bring their classes into the Forest for non-staffed instructional field trips. Teach-the-teacher programs are beneficial in that they free SDSF staff to attend to other forest management activities and also allow teachers the opportunity to build on their own training.

Site-specific curricula developed for SDSF will include both pre- and post-activities in addition to the activities and instruction that take place at SDSF. Collaboration with the Santa Cruz History and Natural History Museums, previous land owners, private

individuals, and neighbors will further help enrich the experience of student visits to SDSF as old photographs, logging memorabilia, and oral histories are incorporated into the curricula. This historical information will also complement the educational experiences of the general public visiting SDSF.

General Public

The general public is comprised of current users -- hikers, mountain bikers, equestrians, and joggers --, as well as "non-users" as identified in the Recreation Study. Additionally, "land owners" are targeted as members of the general public that SDSF would like to reach in its educational programs. Educational experiences for the general public include all three forms of educational opportunities within the Forest: organized, un-organized, and volunteer activities. SDSF staff will need to be present during all organized and

volunteer activities. Educational opportunities targeted to the general public are shown in the list below.

Education Opportunities: General Public

Organized	Un-organized	Volunteer
1. Logging demonstrations	1. Self-guided tours	1. Volunteer stream monitoring
2. Land management demonstrations	2. Interpretive placards	2. Volunteer trail maintenance
3. Docent-led tours	3. Notices on bulletin boards/kiosks	
4. Conferences	4. Hiking, biking, and horse-back riding	

Private land owners are an important audience for education and demonstrations at SDSF. The objective for this target group is to demonstrate innovative techniques for management, protection, and enhancement of forest lands. In addition to workshops, seminars, newsletters, and brochures, forest demonstrations will be the primary means of education for private land owners. Some of the demonstration opportunities in the Forest include:

Demonstration Opportunities

1. Silvicultural Systems
2. Tractor/Cable Harvesting Operations
3. Disease and Insect Management
4. Recreation Management
5. Reforestation Methods
6. Fisheries Protection and Management
7. Fisheries Protection/Enhancement
11. Erosion Control
12. Hardwood Management
13. Growth and Yield
14. Riparian Management
15. Cumulative Effects
16. Fuelwood Management
17. Prescribed Burning

8. Road Construction/Maintenance
9. Old-Growth Redwood Protection
10. Watershed Protection
18. Habitat Enhancement
19. Fire Protection

Since mountain bikers comprise such a large percentage of current users at SDSF and are expected to increase significantly in the future, an interpretive approach needs to be developed which specifically targets this user group. To accomplish this goal a self-guided tour tailored to both mountain bikers and equestrians is proposed. This self-guided tour would be much longer than the short self-guided tour proposed for people who plan to spend half a day or less at SDSF. The mountain bike/equestrian self-guided tour would be designed with "users in motion" in mind. This means that the route recognizes the need to locate interpretive sites at locations where users usually stop in the course of their ride, as well as places where riders can stop safely.

The mountain bike/equestrian self-guided tour provides a way of educating riders about the ecological and management features of SDSF, encouraging a sense of stewardship through greater appreciation of the Forest, and encouraging responsible riding through the incorporation of rules, regulations, and trail etiquette into the self-guided tour brochure. Preliminary research conducted in the Draft Education Study indicates that there is broad support among mountain bike riders and equestrians for a self-guided tour tailored to them.[3] Although mountain bikers and equestrians are the targeted group of this self-guided tour, this does not preclude other user groups from taking advantage of the self-

[3] Ibid.

guided tour. As with most of the educational programs proposed for SDSF, one program will satisfy the needs of several target audiences.

- **Recommendation 5.1** Hire an Education Coordinator whose duties address the following specific recommendations:
    - 5.1 a) Develop a program for outreach and information distribution to SDSF's various user groups including slide shows on the Forest that can be loaned, flyers for specific events, newsletters, and the posting information about the Forest on the Internet.
    - 5.1 b) Establish working relationships with educators and their students.
    - 5.1 c) Collect existing curriculum related to forestry education, and coordinate with existing programs such as the Monterey Bay Salmon and Trout Education Program (STEP) and the Equity Leadership Program in Resource Management sponsored by Swanton Pacific Ranch.
    - 5.1 d) Develop curricula that is site-specific to SDSF.
    - 5.1 e) Coordinate with Santa Cruz History and Natural History Museums, previous land owners, private individuals, and neighbors to develop a library of old photographs, logging memorabilia and oral histories.
    - 5.1 f) Develop self-guided tours -- one that is short and targeted towards visitors who plan to spend half a day or less at SDSF and another longer one targeted towards mountain bikers, equestrians, and serious hikers.

- 5.1 g) Develop and implement an interpretive plan which includes interpretive placards and informational notices on bulletin boards/kiosks.
- 5.1 h) Develop and coordinate teach-the-teacher programs.
- 5.1 i) Oversee campground use by school groups and prepare teachers and parents for emergency situations while using the overnight campsite.
- 5.1 j) Organize volunteers until a Volunteer Coordinator can be hired. See Recommendation 6.2.

- **Recommendation 5.2** Do a follow-up study to specifically determine what facilities and what sizes and quantities are most needed to most effectively teach about forestry and watershed management. Some facilities have been tentatively identified through the research for the recreation plan. Local, regional, and international demand for these various facilities needs to be determined. For example, a site feasibility study needs to be completed for a Forestry Education Center which provides SDSF office space, a resource library, research laboratory, classrooms, space for educational displays, meeting rooms, sleeping areas, dining areas, and an auditorium. Cost estimates need to be compiled, and potential partners in the Forestry Education Center need to be identified. The County Outdoor Education School may be one such partner. The follow-up study should accomplish each of these tasks.

- **Recommendation 5.3** Continue and expand the successful SDSF-led school education programs and logging operation tours.

- **Recommendation 5.4** Develop a technique to monitor the success of educational programs implemented at SDSF. This may include suggestion cards at the Forest headquarters and rating forms given to all group visitors to SDSF.

- **Recommendation 5.5** Determine the additional, specific educational needs of environmental groups, elected officials, environmental planners, and the media.

6. STAFF

Current staff at SDSF consists of two full time employees -- the Forest Manager and Assistant Forest Manager --, one half time administrative employee, and one full time seasonal employee. With less than four full time employees working at the SDSF office, there are not enough staff hours to meet the basic tenets of the SDSF mandate, let alone the growing demand for SDSF-assisted and SDSF-led educational field trips. In addition to the extra labor hours, the educational aspects of the increase in demand for Forest education requires special expertise.

- **Recommendation 6.1** Hire an Education Coordinator as described in the Recreation and Education section. This action will allow existing staff to concentrate on other management and recreation needs while the Education Coordinator develops and manages education programs for SDSF.

- **Recommendation 6.2** Hire a Volunteer Coordinator once the SDSF Education Program is established. This position will be responsible for organizing and overseeing Forest volunteers and volunteer activities. These activities include stream monitoring and restoration events, trail maintenance days, Forest walks, lectures, and historic preservation of documents and artifacts related to the Forest. The focus of the

Volunteer Coordinator is to work with people in and around the Soquel area and to nurture SDSF as a place of community.

7. CAMPING

Although there are several facilities nearby that provide camping, demand for camping at these facilities and at SDSF is likely to rise, given the increasing urban population in the region. SDSF can serve this demand in a unique way, by providing camping for groups who have specific interests in educational programs centered around forestry and watershed management. Such groups might include public school classes, environmental organizations, scouts and other outdoor groups, such as Big Brothers and Sisters and other urban service clubs, and college and forest researchers. Possible campsite locations in SDSF are shown in Figure 10.

- **Recommendation 7.1** Develop only one site, to be used exclusively for education oriented group camping, when funds and staff become available. This camp site should include space for approximately forty campers, toilets, water for fire protection, an outdoor classroom, and parking for visitors and emergency vehicles. Drinking water and trash receptacles would not be provided. Groups will be expected to pack their trash out. The campsite should provide access to educational trails, points of interest, Soquel Creek, and old-growth redwood ecologies. Additionally, campground development should be on a site that provides the best possible educational opportunities without loss of biodiversity in the watershed ecosystem.

Develop secondary campground sites only if overuse of the primary campsite compromises the ecological integrity of the watershed.

- **Recommendation 7.2** Camping should be available to groups with interest in educational programs centered around forestry and watershed management. Camping at SDSF would be limited to such groups and by reservation only. Criteria for approval of groups, criteria for approval of specific education programs to be conducted in association with camping, and request forms for camping permits would be maintained by SDSF staff.

- **Recommendation 7.3** Initially, camping should be limited to 12 groups per year. Use could be increased to accommodate 20 groups per year over the period of the General Forest Management Plan if adequate resources become available for campground management.[4] Based on available personnel and facilities, the maximum length of stay should initially be two to five nights. Campground use will be generally restricted to the drier months from April through October.[5]

- **Recommendation 7.4** Overnight camping and campfires would be allowed only in designated campground areas by permit only. Campfires should be allowed only in the constructed, cleared fire ring. Campfires should be prohibited during CDF designated periods of high and extreme fire risk. Campers should be informed of

[4] SDSF Draft EIR, July 1995, p. 2-14.
[5] Ibid.

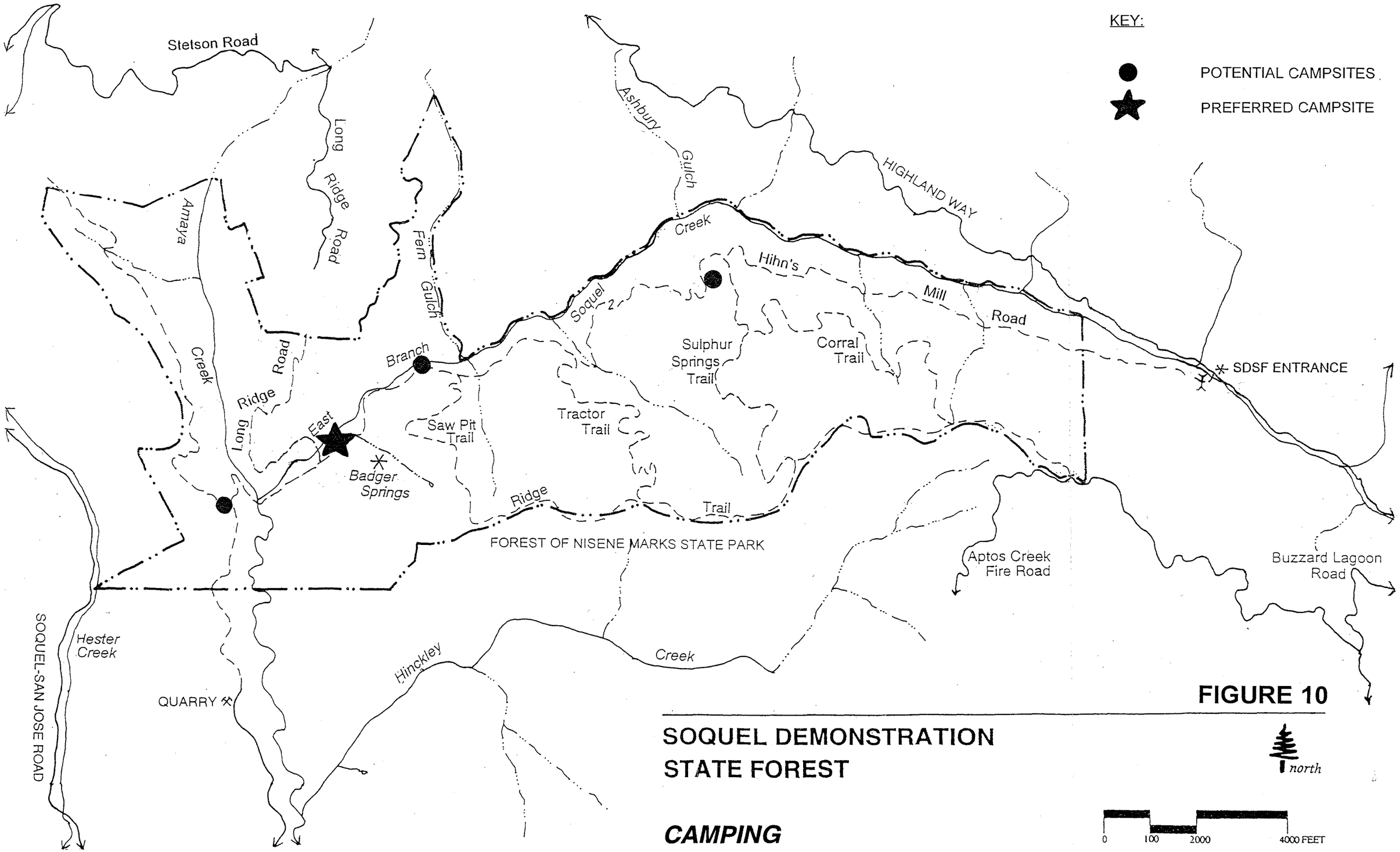

FIGURE 10

SOQUEL DEMONSTRATION STATE FOREST

CAMPING

campfire permit requirements. A water storage tank would be placed in the camp site for quick response to any potential fire danger. Additionally, the campground would be designed and maintained to reduce the potential for fire hazard through the clearing of low branches and downed woody debris.

- **Recommendation 7.5** Educational group camping orientation should include an emphasis on the sensitive nature of riparian areas and the need to limit human impact in and along creeks. Additionally, fire prevention precautions should be included in this orientation.

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8. EVENTS

Some California State Forests accommodate special events, such as equestrian endurance rides and mountain bike races. These events attract from fifty to several hundred people. Such events are not currently feasible in SDSF because of several factors: 1) the lack of an adequate staging area, 2) potential use conflicts between Forest visitors and event participants, 3) potential safety hazards to other users, and 4) limited staff to oversee special events. These concerns may need to be addressed in the future. However, because SDSF's legislated mandate is to provide educational opportunities, events planning should not be a priority at this time.

- **Recommendation 8.1** Permit special events once an adequate staging area has been developed, concerns for user safety and biodiversity loss have been addressed, staff is available, and educational facilities are developed and operating.

- **Recommendation 8.2** Special events should focus primarily on the educational aspects of SDSF, including topics such as ecology, forest practices, the watershed, and wildlife. Special events should contribute funds or resources toward SDSF goals or mission.

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9. VOLUNTEERS

The 1993 Recreation Study and the 1996 Draft Education Study confirmed that there are a large number of potential volunteers who are eager to assist in education and recreation programs at SDSF with . Volunteers are important as they nurture a sense of community around the Forest through their energy, efforts, and enthusiasm. Volunteers can provide a variety of services from trail construction, patrol, and maintenance to docent-guided tours and community outreach.

In the field volunteer docents can provide visitors with information on current events, facilities, vegetation and wildlife, cultural history, and rules and regulations. Ideally, these volunteers will have training in first aid and be able to radio for help in case of an emergency. Volunteers can also assist in research and monitoring programs and maintenance and construction projects.

- **Recommendation 9.1** Develop an outreach plan to identify potential volunteer groups and individuals and match them with tasks. This could include the establishment of a "Friends of Soquel Forest" group in addition to a "Friends of Soquel Trails" group. These tasks could be undertaken by the Education Coordinator until the Volunteer Coordinator is hired. See Recommendation 6.2.

- **<u>Recommendation 9.2</u>** Provide training to familiarize volunteers with the history of the state forest system, SDSF's history and objectives, rules and regulations, patrol procedures, and interpretive skills. General training will also include more specific information relating to SDSF's access routes, vegetation, wildlife, and research and monitoring objectives.

10. SIGNAGE

Within any natural resource area that is used by the public, there are different types of signs, or "signage", that are used in different locations to convey different appropriate messages. The following list includes the four types of signage that are important in SDSF:

1. *Identification and welcoming*: Signs which identify SDSF and welcome public use and enjoyment of the Forest.
2. *Directional*: Signs with trail names and distance in miles to distinctive points within the Forest.
3. *Rules*: Signs which designate allowable and prohibited activities within SDSF.
4. *Educational*: Signs conveying interpretive information are of three types 1) interchangeable notices and displays posted on informational bulletin boards, 2) permanent, all-weather placards and 3) markers referring the Forest user to a self-guided tour pamphlet.

SDSF staff has carefully created signage in the Forest that provides essential information yet is unobtrusive. This approach is appropriate given that various users perceive signage in the Forest quite differently. Non-users who responded to the recreation survey rank educational signs as the most important change that would make SDSF a better place to use; bikers and equestrians consider such signage much less important. Similarly, non-users, hikers, and adjacent property owners want marked, self-guided tours but bikers and equestrians rank such improvements among the lowest priorities. All user and nonuser groups rank better directional signage as a relatively important improvement. A map showing proposed signage is shown in Figure 11.

- **Recommendation 10.1** Provide a roadside sign identifying SDSF and welcoming users at the major west-end access point after this land is acquired. Work with Caltrans to install locational signs to direct visitors to facilities and parking. Signs will be placed to ensure safe ingress and egress from Forest staging areas. Smaller, directional signs to staging areas and points of interest should be located near the roadside sign. Positioning of these signs will significantly diminish the potential for trespass on private property. Provide a roadside sign identifying SDSF and welcoming users at the Highland Way entrance.

- **Recommendation 10.2** Provide kiosks that identify SDSF, welcome users, list available facilities, and post rules and etiquette at each of the major entrances to the Forest. These kiosks should be located at the access point to be acquired on the west

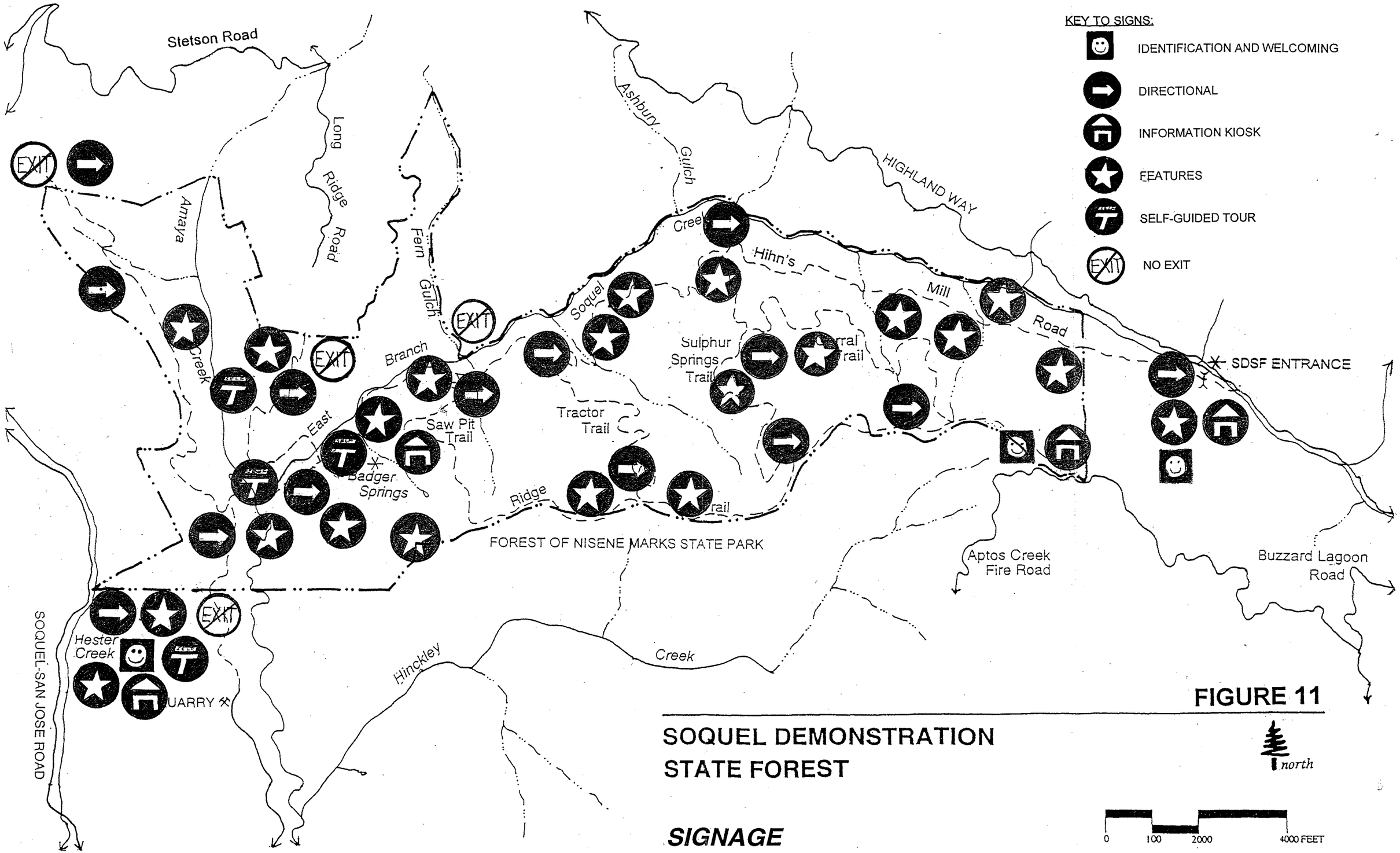

FIGURE 11

SOQUEL DEMONSTRATION STATE FOREST

SIGNAGE

end, in addition to the Badger Springs picnic area, the parking area off Highland Way, and on the Ridge Trail from The Forest of Nisene Marks State Park (TFNMSP). In addition, these kiosks should have information on programmed activities and provide brochures, trail maps, and self-guided tour pamphlets.

- **Recommendation 10.3** Continue to provide simple directional signage at intersections of all major trails in SDSF. Coordinate signage with TFNMSP and other neighbors to increase the use of the legitimate trail system and to reduce the occurrence of trespass.

- **Recommendation 10.4** Provide interpretive placards for a few points of interest in SDSF. These signs should be limited to no more than one dozen features so as not to clutter the Forest with signage.

- **Recommendation 10.5** Continue to provide and update a Forest trails and features map with accurate general information, etiquette, and rules.

- **Recommendation 10.6** Provide self-guided tour pamphlets that are keyed to points of interest within the Forest and a simple sign system of numbers along the self-guided tour trails. These numbers should be incised on low posts clearly visible for users and unobtrusive to others.

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11. INFORMAL DAY USE

Informal day use is an important aspect of SDSF's goal to provide easily accessible educational opportunities at the Forest. This type of use includes short, drop-in visits where people come to relax, picnic, and hike. "Un-organized" education can be part of this experience through self-guided tours, placards, and posted notices on bulletin boards.

Because there is a lack of easily accessible and reliable automobile access and staging areas, informal day use at SDSF is very low. When property for an access point and staging area on the west end is acquired and developed, people presently unable to use the Forest's more strenuous and remote trails will likely come to picnic, go on short self-guided tours, play along the creek, and learn about the forest. Since informal day use is an important draw for current "non-users," efforts should be taken to develop this access.

- **Recommendation 11.1** Acquire property as described in the Section 4, Access, Recommendation 4.1.

- **Recommendation 11.2** Provide signage and brochures as described in the Section 10, Signage.

- **Recommendation 11.3** Provide a self-guided trail, along with an explanatory pamphlet. The trail should be accessible to people with limited mobility. See Section 13, Trails, Recommendation 13.5.

- **Recommendation 11.4** At the proposed west-end staging area provide four to six picnic tables and a picnic area that can be expanded to accommodate a group of 40 in the future. Toilets, parking for approximately 30 cars, and a public telephone should also be provided.

- **Recommendation 11.5** The access off Highland Way is presently an important entry point into the Forest for recreation users. Maintain this staging area for parking and access from the east side of the Forest. Provide several picnic tables near the parking area, so that people may also use this area for informal day use when this entrance is accessible. If day use increases, a toilet may be necessary at this entrance.

Recommendation 11. 6 Through pamphlets and notices on bulletin boards/kiosks alert SDSF visitors to the sensitive nature of riparian zones and the need to protect these areas, as well precautions visitors can take to prevent fires within the Forest.

- **Recommendation 11.7** Conduct on-going patrols of riparian areas including those with existing facilities to enforce prohibitions on vandalism and other damage to

riparian habitat related to public use. Implement additional restrictions on public use as needed. (Refer to SDSF General Management Plan, Appendix C).

- **Recommendation 11.8** Record and compile descriptions of all reported nuisances caused by public users at SDSF or on adjacent ownership including, but not limited to, trespass, vandalism, littering, and noise. Implement additional restrictions on public use as needed. (Refer to SDSF General Management Plan, Appendix C).

- **Recommendation 11.9** Compile annual estimates of public use of SDSF in user days using camping records, surveys, and other information. (Refer to SDSF General Management Plan, Appendix C.)

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12. WATERSHED MANAGEMENT

The Soquel Creek watershed encompasses 42 square miles and contains many different land uses, including urban and exurban development, major roads, State Parks land, private timberland, a quarry, agricultural lands, and 2,681 acres of forest land within SDSF. The headwaters of Soquel Creek lie just outside of SDSF. These conditions provide a unique opportunity for watershed management education and research in SDSF and other lands in the watershed. Figure 12 shows the Soquel Creek watershed relative to SDSF.

- **Recommendation 12.1** Coordinate with other landowners to maintain habitats larger than the Forest boundaries.

- **Recommendation 12.2** Coordinate with other agencies and groups to develop watershed-wide management activities to reduce flooding, improve water quality and natural flow, monitor conditions, and create habitat for aquatic species.

- **Recommendation 12.3** As stated in the Section 5, Educational Programming, watershed education is a main objective of SDSF's education program. Watershed

education will focus on site-specific characteristics within the Forest , as well as on issues that effect the watershed as a whole, beyond the SDSF boundaries.

- **Recommendation 12.4** Recreation activities in SDSF will be designed, maintained, and monitored for minimal disturbance of ecosystems within the Soquel watershed.

SOQUEL CREEK WATERSHED

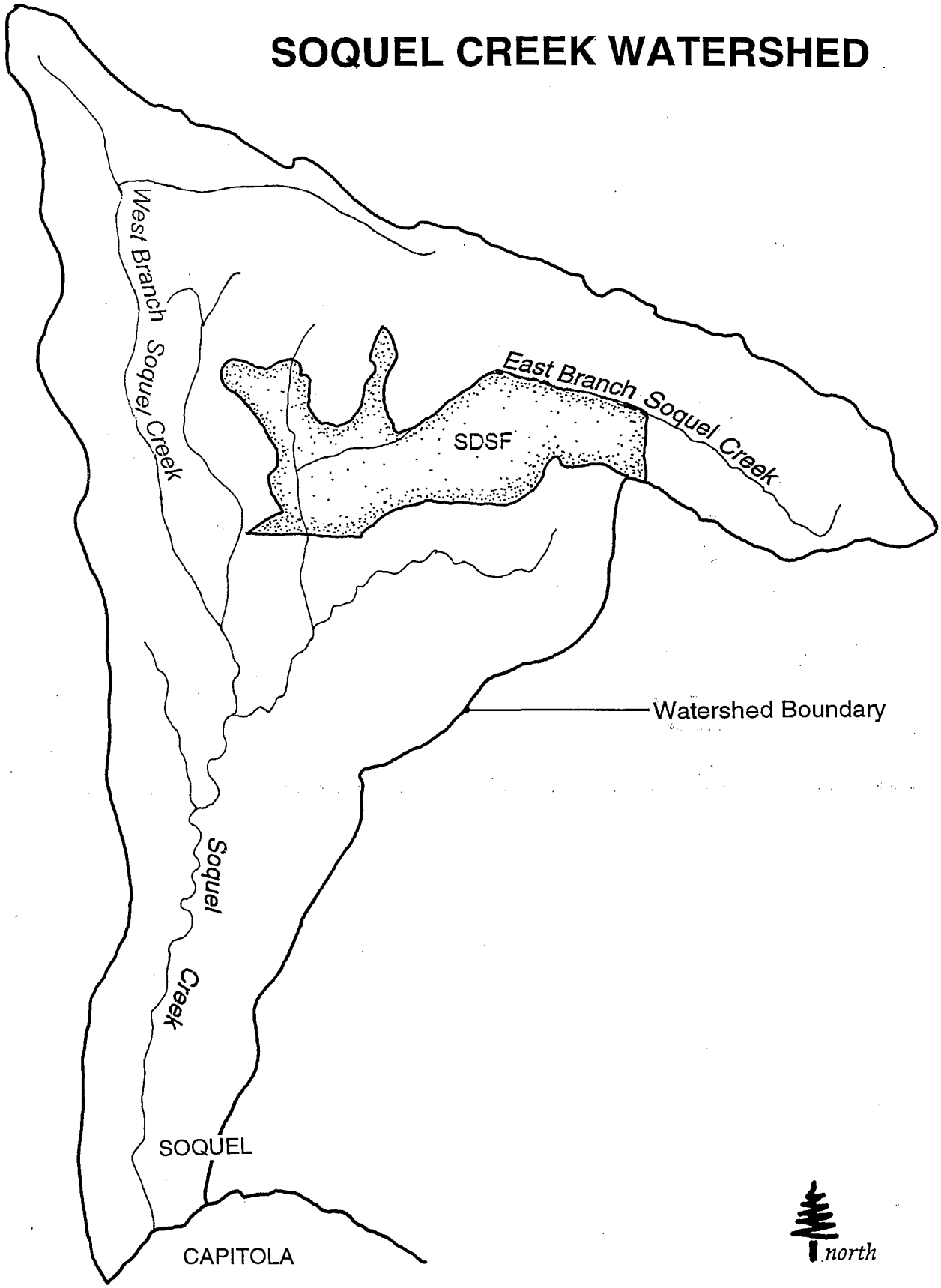

FIGURE 12

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13. TRAILS

Trail use presently accounts for the vast majority of the recreational activity in SDSF and, not surprisingly, those users rank "more trails" as the single most important change that would make SDSF a better place to recreate. In the 1993 Recreation Study, surveyed users also ranked "trail connections to other public lands" and "multi-use trails" among the top five changes that would improve recreation at SDSF. Among users, there is disagreement about the desirability of trails for specific uses.

People who do not presently use SDSF are also an important potential constituency of the Forest. SDSF's mandate requires that the Forest reach out to the general public. Therefore, the opinions of current "non-users" are also important in the development of SDSF's recreation plan.

According to the 1993 Recreation Study, "non-users" were surveyed by mail. "Non-users" also consider trails important and rank "marked, self-guided walks" as one of the most important improvements to the Forest that would make SDSF a better place to use. Educational trails, easily accessible and with toilets and picnic tables, would likely bring recreationists who do not presently use the Forest, but whose interests match the goals of

the legislated mandate. Table 2 on the following page shows the results of a survey taken from the Recreation Study done in 1993, and shows the ranking of changes that would make SDSF a better place to use.

Since CDF began forest management in 1990, SDSF Staff have worked closely with trail users to increase and improve trails in the Forest. Special attention has been given to create loop trails which connect the Ridge Trail from The Forest of Nisene Marks State Park to Hihn's Mill Road which serves as the major trail through the Forest. All trails are multi-use -- Ridge, Sawpit, Tractor, Sulphur Springs and Corral -- and have been engineered and built by SDSF staff to control erosion and bicycle speed, and to ensure user safety. A map of existing and proposed trails in SDSF is shown in Figure 13.

- **Recommendation 13.1** Maintain existing trails for multi-use including hiking, biking, and equestrian use. Single-track trails, no more than five feet in width, should remain single-track. User responsibility for safety and trail etiquette should be emphasized in trail brochures.

- **Recommendation 13.2** Create a new trail that forms a loop north of the confluence of Amaya and Soquel Creeks. This trail should be single-track, multi-use, and engineered for hikers, bikers, and equestrians. This trail would create a loop which will help minimize conflicts between users and neighboring private property. As with other trails in the Forest, this trail should be well signed.

TABLE 2: Recreation Study Survey Results

All Resp.	All Users	Non-Users	Mt. Bikers	Hikers	Eque-strians	Prop. Owners	
1	1	3	1	1	1	3	more trails
1	2	1	2	1	2	6	trail connections to other public lands
2	4	1	6	3	6	2	signs pointing out things of interest
3	3	9	4	2	3	1	leave it like it is
4	6	1	12	4	11	2	marked, self-guided walks
4	4	6	3	10	7	11	multi use trails
5	7	2	10	8	8	7	toilets
5	5	4	7	5	7	8	better directional signage
5	5	5	6	6	4	4	better public access to reduce trespass
6	5	6	5	11	5	12	trails for specific uses
7	8	3	8	7	9	5	newsletter about Forest programs and research
8	6	8	7	9	10	10	limited logging
9	9	6	9	10	9	11	public programs teaching forest ecology and management
10	8	9	8	10	7	15	camping facilities
11	11	5	13	13	9	9	picnic tables
11	10	7	11	13	12	10	opportunities for volunteers to be involved
11	10	6	14	12	12	16	environmental education center
12	11	9	13	12	13	12	opportunities to learn about timber management
12	12	7	15	14	15	13	docent-led hikes
13	12	9	14	16	15	14	openings to view out
14	12	10	16	15	16	16	forester-led tours
15	12	13	11	16	14	17	fewer rules
16	14	11	18	17	15	16	fire pits
17	13	12	18	17	11	19	reservation-only group camp
18	15	13	17	18	16	18	more rangers
19	16	13	19	19	17	20	more rules
792	453	339	237	230	77	144	sample size
81	99	57	99	99	100	76	% who responded to the question

Notes: Subgroups aren't mutually exclusive. The "1" means that this change was checked more frequently than other changes by that user group.

- **Recommendation 13.3** Install additional signage to keep trail users from entering private property. Note locations on Figures 11 and 13.

- **Recommendation 13.4** Determine interest among organized trail user groups for forming a "Friends of Soquel Trails" group who would maintain, patrol, improve trails, and do research on trail use and areas for developing additional trails. This group would also provide docent led tours. Improvements that could be accomplished through volunteer-led efforts might include building the new Amaya trail and providing drinking water and signage.

- **Recommendation 13.5** If and when the CHY-Noren property is acquired, create a marked, self-guided walking trail on the west end of the Forest adjacent to Soquel-San Jose Road. The emphasis of this trail would be general Forest education, watershed management, riparian area protection, and innovative forestry practices in SDSF. Additionally, this trail should invite further educational recreation use of SDSF. This trail should be developed in conjunction with picnic tables, parking, and toilets, with a major segment accessible to people with limited mobility.

- **Recommendation 13.6** When the CHY- Noren property is acquired, develop educational trails from the major staging area near Soquel-San Jose Road to Soquel Creek. These trails should have limited interpretive signage, but should maintain interest as a learning-hiking trail. There should be sites along the trails for

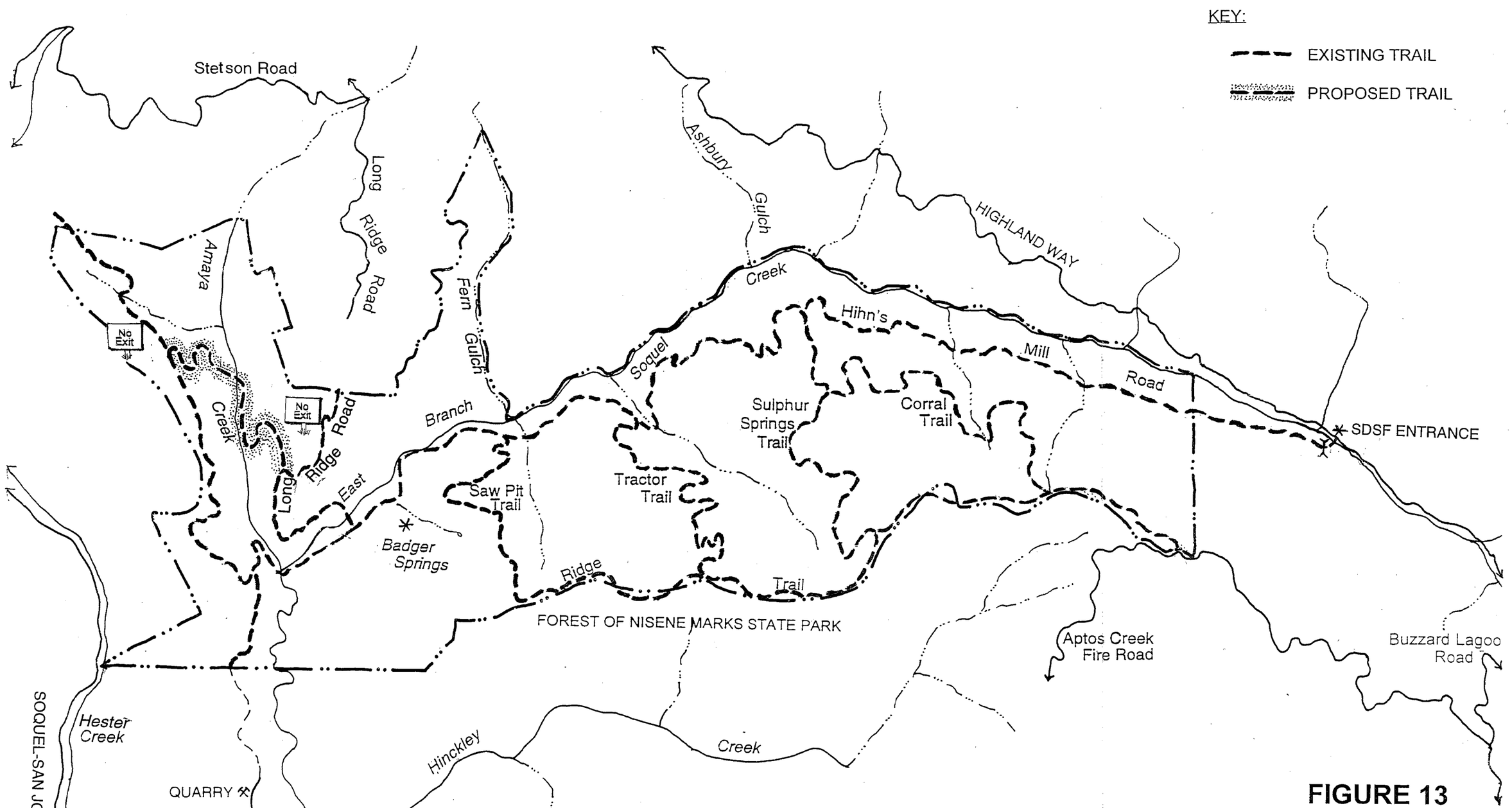

FIGURE 13

SOQUEL DEMONSTRATION STATE FOREST

north

TRAILS

0 1000 2000 4000 FEET

concentrated outdoor education, research, and demonstration. Signage should stress the sensitive nature of stream corridors and riparian areas, and the need to limit impacts on the environment.

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14. COORDINATION WITH THE FOREST OF NISENE MARKS STATE PARK

One of the unique aspects of recreation in SDSF is the large percentage of users who, in the same outing, hike or bike both in SDSF and TFNMSP. Although operating under different mandates and with different rules, the staff of these two agencies have created well coordinated recreation programs. Continued coordination with TFNMSP is crucial, especially as user groups change and as State Forest and State Park staff must respond to different user needs. This may also include educational needs in the future.

- **Recommendation 14.1** Continue to coordinate SDSF recreation activities and facilities with TFNMSP so as to maintain user satisfaction and safety and adhere to the mandates of both agencies.

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15. DEMONSTRATION TIMBER HARVESTING AND ECOLOGICAL MANAGEMENT

From time to time, education and recreation uses may conflict with demonstration timber harvesting and/or ecological management in SDSF. Trails or other education and recreation areas may need to be temporarily closed during timber harvests because of safety concerns. Additionally, high use areas may need to be temporarily closed because of ecological damage to the area, flooding, or landslides.

- **Recommendation 15.1** Close trails and other education and recreation areas when there is a danger to public safety from demonstration timber harvesting, flooding, or landslides.

- **Recommendation 15.2** Close trails and other education and recreation areas when use is creating ecological damage.

- **Recommendation 15.3** When appropriate, incorporate the development of education and recreation facilities and trails into timber harvest contracts.

- **Recommendation 15.4** During periods of extreme fire danger, usually from July through October, SDSF will follow the Ranger Unit's Red Flag Alert Plan. Steps

from the Red Flag Plan to be employed include increasing patrols of the Forest, posting red flag alert signs, providing Forest visitors with information on daily fire danger levels and fire prevention precautions, and reducing the number of visitors in the Forest by posting the area as closed.

16. HUNTING AND FISHING

Presently, hunting is not allowed in SDSF. The Forest is relatively small, close to urban areas, and surrounded by residential, park, agriculture, and quarrying land uses that are incompatible with traditional hunting. At the same time, SDSF managers realize that the demand for areas where the general public can hunt may be, in some instances, compatible with SDSF ecosystem management needs. As an example, a limited hunt might be adequate to control the ecosystem damage done by feral pigs.

In addition to a prohibition on hunting, the east branch of Soquel Creek is closed to angling according to regulations adopted by the California Fish and Game Commission.

- **Recommendation 16.1** Allow a limited archery feral pig hunt in SDSF, by permit only, as needed to limit ecosystem damage caused by feral pigs. Ecosystem damage should be determined by SDSF field research and monitoring. Any hunting programs would be administered by the Department of Fish and Game, with a restricted season. Department of Fish and Game will determine the extent and scope of any hunts, including the feasibility of nocturnal hunts.

- **Recommendation 16.2** Consider other hunting possibilities at a later date if and when local studies indicate a need to control a wildlife population to prevent serious ecosystem damage.

APPENDIX A: REFERENCES

1. California Department of Forestry and Fire Protection (CDF), 1993. *Soquel Demonstration State Forest (SDSF) Draft General Forest Management Plan*, Soquel, CA.

2. CDF, 1996. *Soquel Demonstration State Forest (SDSF) General Forest Management Plan*, Soquel, CA.

3. CDF, 1993. *Watershed Assessment for the East Branch of Soquel Creek*, Sacramento, CA.

4. University of California at Berkeley, Center for Environmental Design Research, 1993. *SDSF Recreation Study Final Report*, Berkeley, CA.

5. University of California at Berkeley, Center for Environmental Design Research, 1996. *SDSF Draft Education Study*, unpublished report, Berkeley, CA.

6. Jones and Stokes Associates, Inc., July 1995. *Draft Environmental Impact Report for SDSF General Forest Management Plan*, Sacramento, CA.

7. Center for Public Archaeology, California State University, Northridge, 1992. *Archaeological and Historical Survey of SDSF*, Northridge, CA.

8. Holland, Keil, Kelly, and Hanson, 1992. *Preliminary Biological Assessment of SDSF*, Santa Cruz County, CA.

9. California Department of Conservation, Division of Mines and Geology, 1992. *Geology, Slope Stability, and Earthquake Damage in SDSF*, Soquel, CA.

10. California Public Resources Code, Sections 4660 and 4799.3.

11. California Code of Regulations, 1400-1439, 1500-1503, 1510-1511.