



CONSERVATION PLAN



Bishop Peak Natural Reserve

Natural Resources Protection Program
City of San Luis Obispo
990 Palm Street
San Luis Obispo, CA 93401



city of san luis obispo



Natural Resources Protection Program

www.slocity.org/naturalresources

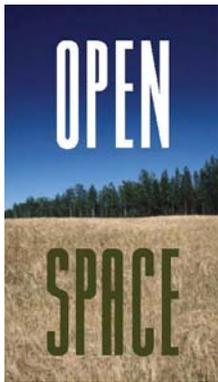
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*Bishop
Peak
Natural
Reserve is
a 352-
acre area
located
northwest
of the City
of San
Luis
Obispo.*

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Executive Summary

*Bishop Peak
Natural
Reserve is
the most
heavily used
of all the
City-owned
open space
lands.*

Bishop Peak Natural Reserve (BPNR) is a 352-acre area located northwest of the City of San Luis Obispo. The Reserve crosses City/County boundaries with 248 acres lying within the City limits and 104 acres in the County. Management of the Reserve is a joint City/County effort. The Reserve consists of three primary habitat types: live oak woodland, mixed scrub-chaparral, and grassland. Bishop Peak is an important local landmark readily identifiable with the San Luis Obispo area.

Important natural features:

BPNR contains a number of sensitive or otherwise important wildlife species, including:

Two species of raptor with sensitive status (White-tailed kite, and Coopers Hawk);
San Diego Desert Woodrat;
Loggerhead Shrike;
Western Skink; and
Ringneck Snake; and
Morro Shoulderband Snail*.

Management issues or concerns associated with BPNR:

BPNR is the most heavily used of all the City-owned open space lands; this presents a number of unique problems and challenges, including:

- The area around the pond concentrates foot traffic as trails from the Highland Drive and Patricia Drive trailheads converge at this point. The result of this concentration is a braided trail system and associated erosion problems.

- The ultimate goal for many hikers on BPNR is to reach the summit to experience the magnificent vistas of the City and Morros afforded from the vantage point. The trail system to the peak could be isolated by wildfire originating in the foothills, effectively trapping people at the peak with no safe route for descent.

The Conservation Plan addresses these and other issues by calling for:

- Habitat and restoration efforts concentrated in the region of the pond, and an evaluation of hard-scaping the trail system in this area.
- Development of a continuous emergency access route through the Reserve accessible from the public road system.
- Implementation of a feasibility study to identify possible wildfire refuge areas.

The thrust of this Conservation Plan is to strike an acceptable balance between protecting the existing resources on BPNR while providing for recreational use and public safety. At the same time proposed actions are respectful of the privacy of the residents adjoining the Reserve.



(*As of May 2004 the form of Morro Shoulderband Snail found in the vicinity of the City of San Luis Obispo is no longer recognized as 'Endangered' by the USFWS)

1. Introduction

Bishop Peak Natural Reserve (BPNR) is a 352-acre open space located in the northwest of the City of San Luis Obispo (Figure 1). The three-pointed summit is the tallest and most distinctive of the peaks that make up the string of Morros known locally as the Nine Sisters. BPNR is jointly managed by the City and County of San Luis Obispo. The Reserve is an important element of the local community's setting and character. It provides opportunities for enjoyment of the natural environment and is a favorite spot for hiking, picnicking, and rock climbing by local residents and students from nearby Cal Poly University.

1.1 Background*

The Morros are a series of igneous rock intrusions into the overlying rock that formed approximately 25 million years ago as part of the Franciscan Formation. They occupy a 40-square-mile area from Morro Rock (to the northwest in Morro Bay) to Islay Hill on the southeast side of the City of San Luis Obispo. These formations are not true volcanoes in that they did not erupt and spew lava or ash over the countryside. Instead, magma deep within the earth found a weak spot in the earth's crust, and pushed through the overlying rocks like toothpaste being squeezed out of a tube. The rocks of the Morros, a type of basalt known as dacite, are between 24 and 26 million years old. Since that time the overlying rocks have eroded away and the hard erosion-resistant dacite has

remained, leaving the prominent Morros that we see today. This material, like most volcanic rock, is quite resistant to erosion and thus leaves very steep sides and other features that contribute to the striking quality of the City of San Luis Obispo skyline.

Bishop Peak, tallest of the Morros, reaches an elevation of 1,546 feet above sea level.

1.2 History*

Bishop Peak was first given that title by Spanish missionaries who perceived a resemblance between the peak and the cap or miter worn by the bishops of the time. The peak together with other Morros has always been an area landmark. It has also been a source of some economic exploitation over the years, principally for stone. At least two and possibly three small quarry operations have gone on at various locations around the base of the peak over the years. The mountain was quarried most heavily during the late 1800's and early 1900's, when rock was removed to build the breakwater at Port San Luis. To haul the rock from Bishop Peak to the Port a narrow gauge railway was built from the Pacific Coast Line in San Luis Obispo, through the Avila Valley to Port San Luis.

(*Information adapted from the book 'Mountains of Fire' by S. L. Dickerson)



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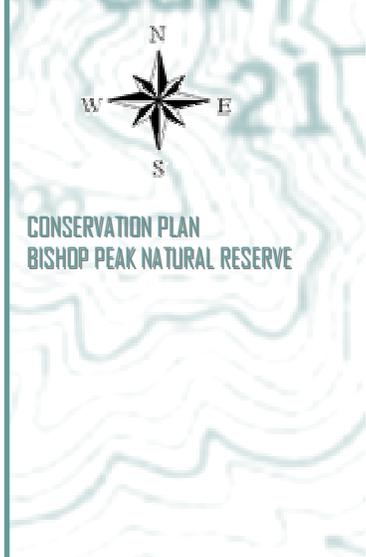
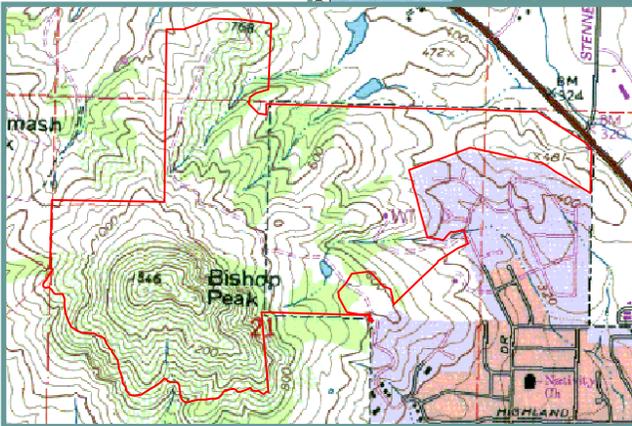
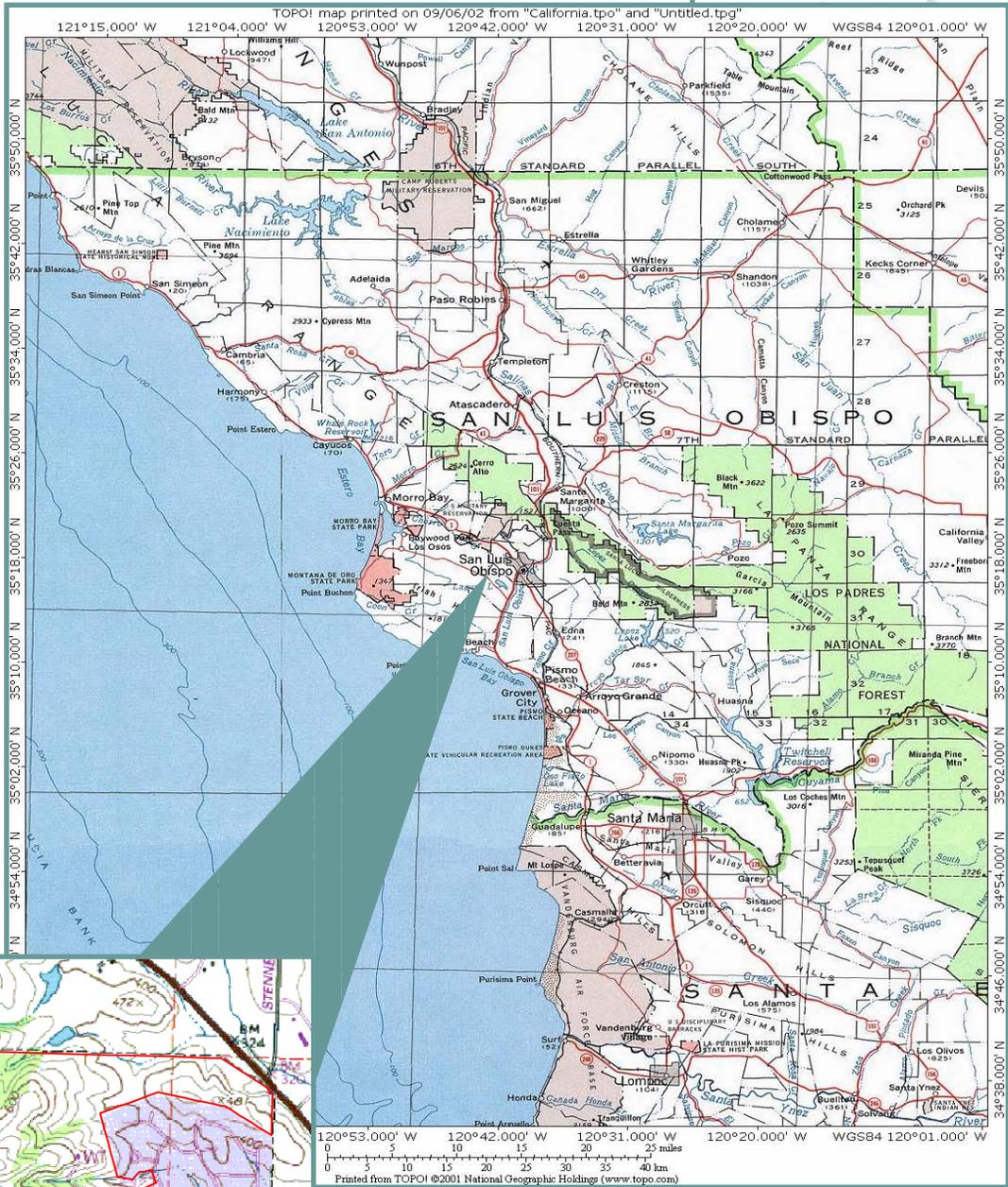
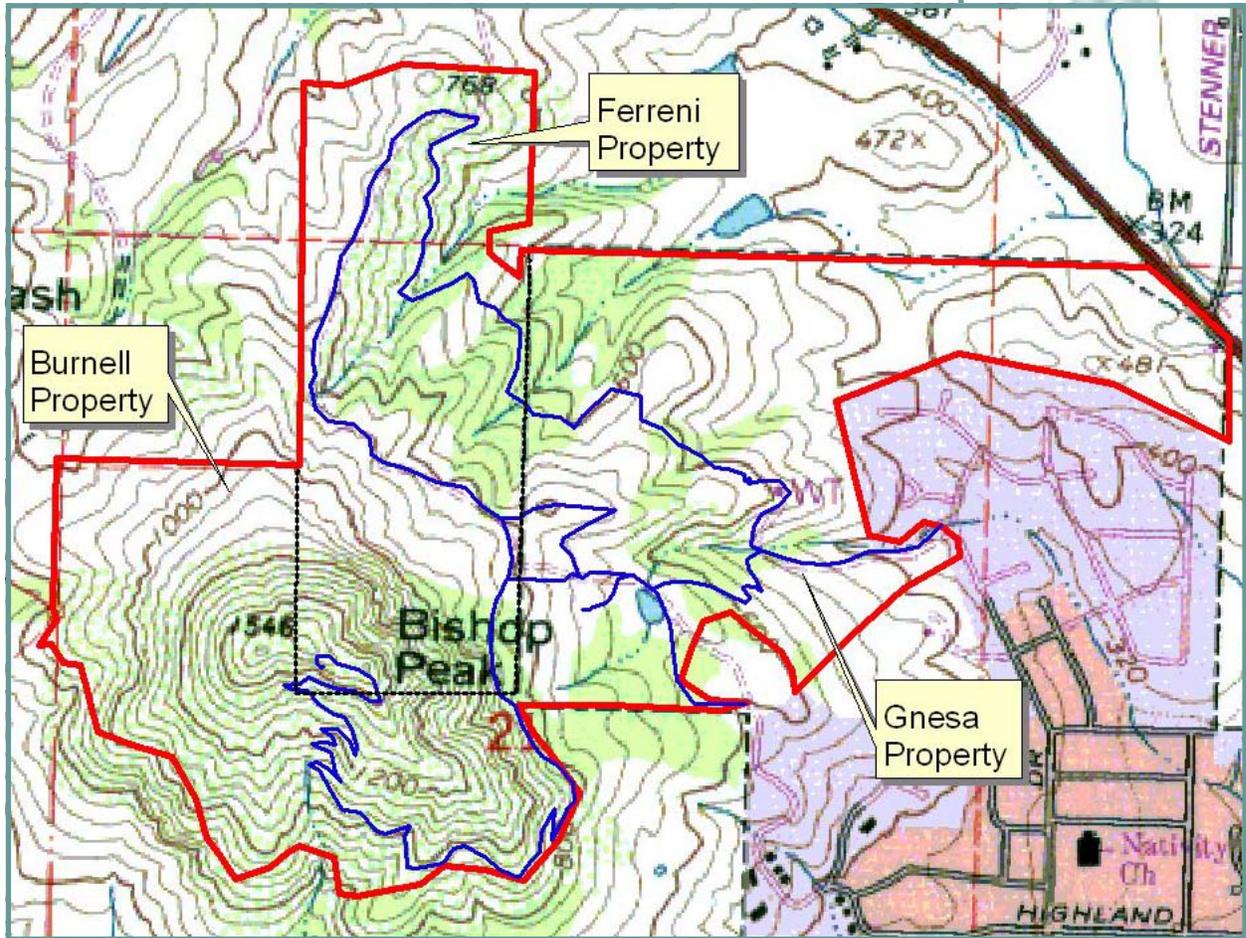


FIGURE I
Bishop Peak Natural Reserve Regional Setting



0.1 0.2 Miles

- BPNR Boundary
- ⋯ Parcel Boundary
- Trail System



FIGURE 2
**Bishop Peak Natural Reserve
 Topography**

CONSERVATION PLAN
 BISHOP PEAK NATURAL RESERVE



All quarrying activities on the mountain were small or intermittent operations, and none succeeded in removing large quantities of material. Bishop Peak has long been perceived as a community landmark, and many parties were interested in protecting the peak to provide public access and to preserve its natural beauties forever.

In 1977 the heirs of the Gnesa Ranch donated the land above the 800-foot elevation (approximately 104 acres) to the State Parks Foundation; this land is now managed by the County of San Luis Obispo. In 1995, an additional 140 acres was donated to the City of San Luis Obispo as the Ferrini Ranch Open Space. In 1998, 108 acres was purchased from Ray Bunnell, and has brought the Bishop Peak Natural Reserve to its present size of approximately 352 acres. The property now has a trail system from the official access points at Patricia Drive and Highland Drive to the summit, a distance of two miles with an elevation gain of 1,000 feet. Another trail known as the Felsman Loop, traverses several canyons in the northern part of the Reserve and provides interesting views of oak woodland, chaparral, and coastal sage scrub, as well as attractive views of the surrounding area.

Management of BPNR is a joint program of the City and County of San Luis Obispo.

1.3 Legal Background

BPNR was acquired as several different parcels. Two of these parcels totaling 248 acres were acquired by the City of San Luis Obispo, the other 104 acres gifted to the State of California, but managed by the County of San Luis Obispo. Several conditions were attached to these acquisitions, two of which were donations, and those conditions are legally binding upon the City and County in the management of the Reserve. Among the conditions are:

Ferrini Open Space:

- Emergency Services: Yes
- Vehicular Maintenance Access: Yes
- Utilities: Yes
- Horses: No
- MTN Biking: No
- Foot Traffic: Yes

Bunnell Open Space:

- Emergency Services: Yes
- Vehicular Maintenance Access: Yes
- Utilities: Yes
- Horses: Yes
- Mtn Biking No.
- Foot Traffic: Yes

Gnesa Open Space

- Emergency Services: No
- Vehicular Maintenance Access: With Prior Permission
- Utilities: Not Required
- Horses: No
- MTN Biking: No
- Foot Traffic: Yes



In addition, horses boarded at the stables on the former Bunnell property have a right of use of the trails on the portion of the Reserve purchased from Ray Bunnell (shaded area Figure 3) as said trails existed at the time of the March 1998 purchase (Note: the trail to the top of Bishop Peak was not in existence at the time of purchase and is therefore not covered by this condition). No access points other than the three agreed to under the 'Easement and Boundary Maintenance Agreement' are permitted.

1.4 Plants & Wildlife

The rocky soils of BPNR, derived from volcanic parent material have been undisturbed for a long time, and have retained their original vegetation in pristine form. Many woody plants are found in the Reserve that are not found on the finer surrounding soils. Common vegetation types include oak woodland, grassland, coastal sage scrub, and chaparral.

The most prominent tree species in the Reserve are coast live oak and California bay, with an occasional sycamore indicating the site of a spring or seep. Beneath the oaks is the ubiquitous poison oak, the most common shrub found on the peak. Together with California blackberry this woodland understory creates some of the best wildlife habitat in the area. Common species of coastal sage scrub include: coyote brush, black sage, monkeyflower, and California sagebrush. These plants are aromatic, with clearly recognizable odors of sage or other minty smells. The hard or true chaparral is



generally found more in inland areas and is not common near the coast. However, in certain areas of BPNR and on the other Morros, chaparral species such as chamise, manzanita, mountain mahogany, toyon and ceanothus can sometimes be found.

The varied plant cover and the existence of steep rocky cliffs provides attractive habitat for a wide variety of birds, mammals, reptiles and other wildlife. Over 200 species of birds are found within the San Luis Obispo area, and perhaps as many as half of these may be found on Bishop Peak. Among the more notable bird species are golden eagles, bald eagles (which are occasionally sighted during the wintertime), hawks, owls, vultures, kestrels and other birds of prey. More commonly seen are the numerous jays, and a wide variety of perching birds.

Deer are fairly common on the peak, and foxes, coyotes, bobcats, and even mountain lions are occasionally encountered. At night, raccoons and opossums can often be seen around the base of the mountain or moving into urban areas from the cover provided by the dense brush of the mountain.

The varied plant cover and the existence of steep rocky cliffs provides attractive habitat for a wide variety of birds, mammals, reptiles and other wildlife.

1.5 Access

Highland Drive: - Parking: Use existing Street Parking only, no additional off street parking allowed
Pedestrian Traffic Only, Dogs on Leash, No Bikes, or Horses

Patricia Ave: - Parking: Use existing Street Parking only, no additional off street parking allowed
Pedestrian Traffic Only, Dogs on Leash, No Bikes, or Horses
Maintenance of Water Tank, Emergency services, and maintenance of trails as required.

Foothill Blvd: - Not a formal access point but is used heavily by the public.

Bishop Peak Ranch Northern Gate: - Not open to public. Access for Bishop Peak Ranch owners and guests, plus Emergency Services and maintenance

Bishop Peak Ranch Southern Gate: - Not open to public. Access for movement of cattle only, pedestrian Emergency Services and maintenance

Bishop Peak Ranch Middle Gate: - Not open to public. Access for movement of cattle only, pedestrian Emergency Services and maintenance.

Highway 1 Gate: - Access emergency services only, and access for cattle.

The reader is referred to the trail guide in Appendix 2 for details of the trail system and designated access points.

2. Inventory

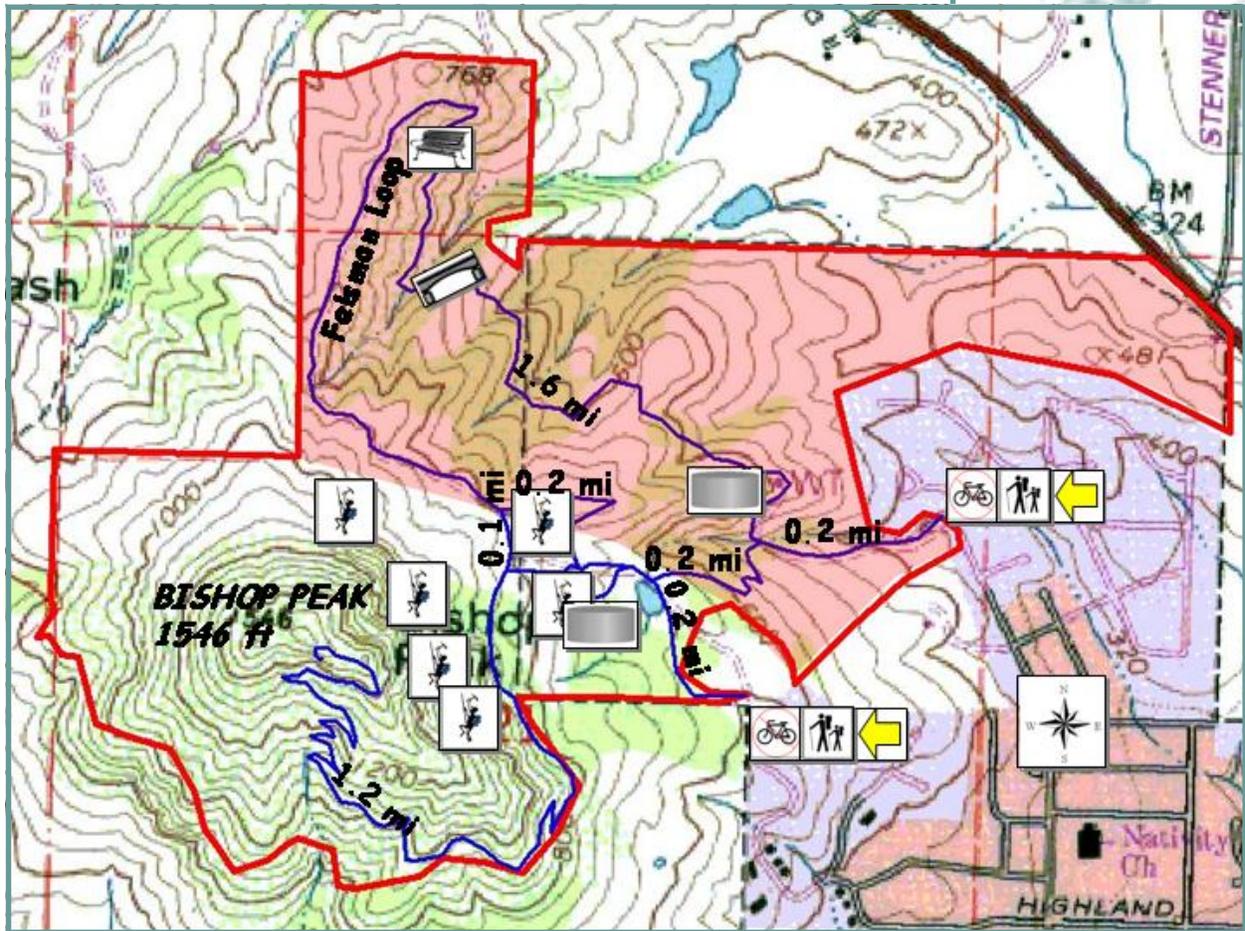
2.1 Physical Features

The reserve consists of the distinctive 1546 ft three-pointed peak to the southwest, with areas of chaparral and grassland below 800ft lying to the north and east.

Physical changes to the landscape resulting from past and present human activities include: 4.1 miles of established trail system; two water tanks; six established rock climbing areas; two authorized access points at Patricia Drive and Highland Drive. Natural physical features include the peak, and a small seasonal pond in the foothills east of the peak (see Figure 3).



Soils - Survey maps indicate that seven soil types are represented on BPNR (Figure 4). They are primarily dacite rock outcrops (63.25 acres), Lodo shale/clay loams (88.46 acres), Diablo complex soils (78.82 acres), and Gaviota fine sandy loams (63.50 acres). Smaller areas of Briones (20.75 acres), Los Osos (16.31 acres) and Salinas (2.72) soils are also present (see Appendix 1 for detailed soil descriptions).

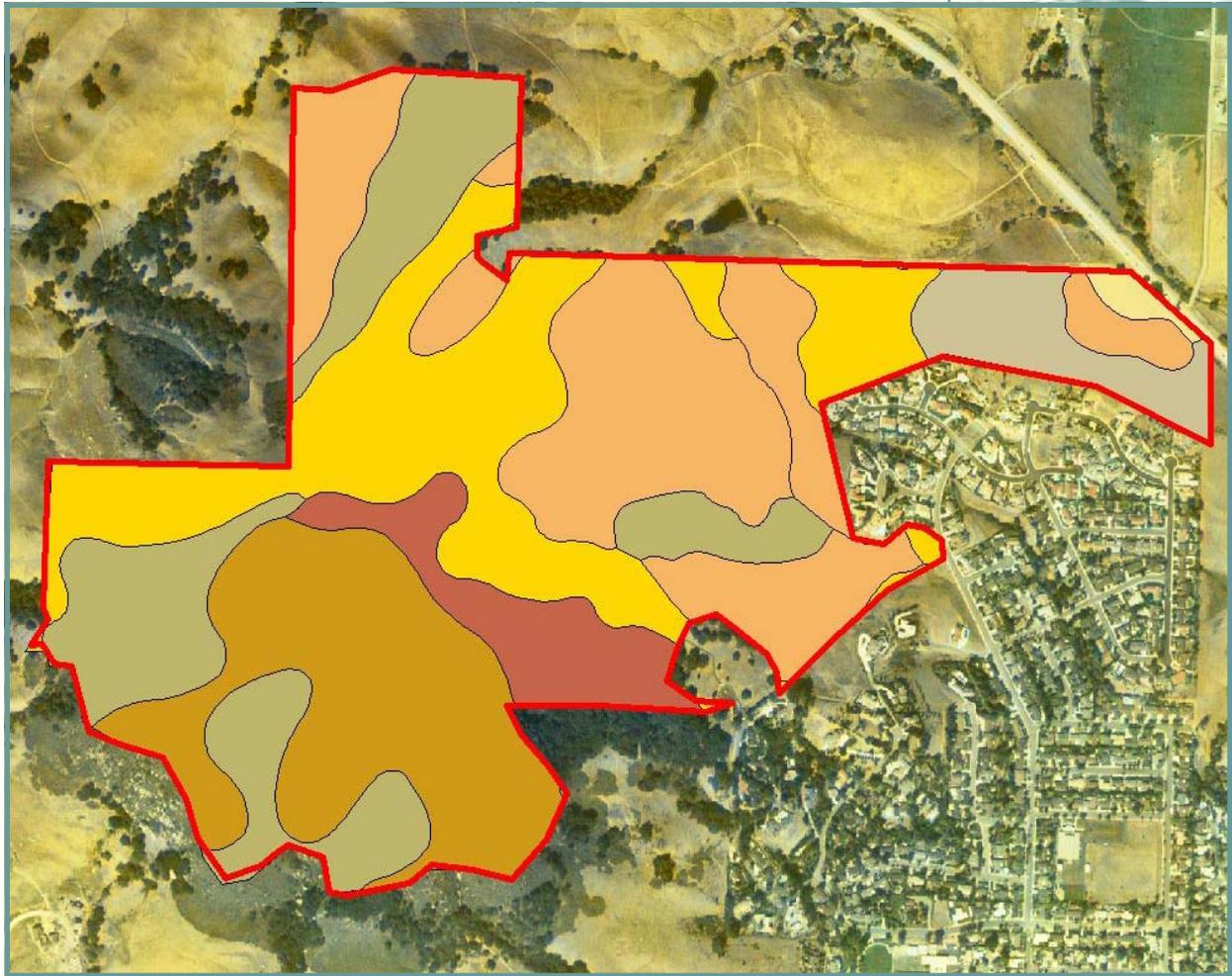


0.1 0.2 Miles



FIGURE 3
Bishop Peak Natural Reserve
Physical Features

CONSERVATION PLAN
 BISHOP PEAK NATURAL RESERVE



- Soil Types
- BRIONES
 - DIABLO
 - GAVIOTA
 - LODO
 - LOS OSOS VARIANT
 - ROCK OUTCROP
 - SALINAS

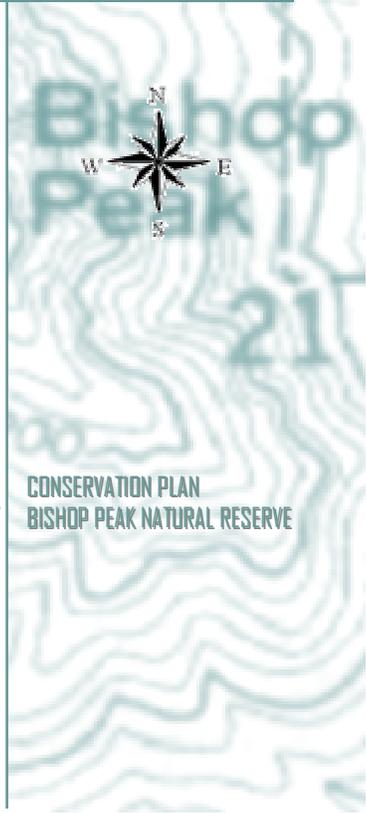


FIGURE 4
**Bishop Peak Natural Reserve
 Soil Types**

CONSERVATION PLAN
 BISHOP PEAK NATURAL RESERVE

2.2 Cultural/Historic Features

A rich and diverse assemblage of cultural and historic resources are present within the BPNR. Eleven separate cultural resources have been identified ranging in age from recent historic to prehistoric, possibly in excess of several thousand years. A report detailing the specifics of each site and its location has been prepared (Betrand and Betrand, 1997); a copy of which is available from the City of San Luis Obispo only by written request.

2.3 Biological Features

BPNR encompasses a mosaic of woodland, grassland, and scrub habitats that encircle Bishop Peak and extend upward to merge with its rocky facade. These natural communities support a diverse assemblage of plants and animals. Wildlife surveys of BPNR were conducted between November 2002 and June 2003. Representative areas of scrub, live oak woodland, and grassland habitats were sampled using standard survey methods.

A variety of bird, mammal, reptile, amphibian, and invertebrate species were observed or detected during the surveys. Dense undergrowth of poison oak (*Toxicodendron diversilobum*) and/or thick scrub vegetation limited the areas above 800 feet in elevation that were accessible for surveying. Wildlife observations in these areas were made from footpaths



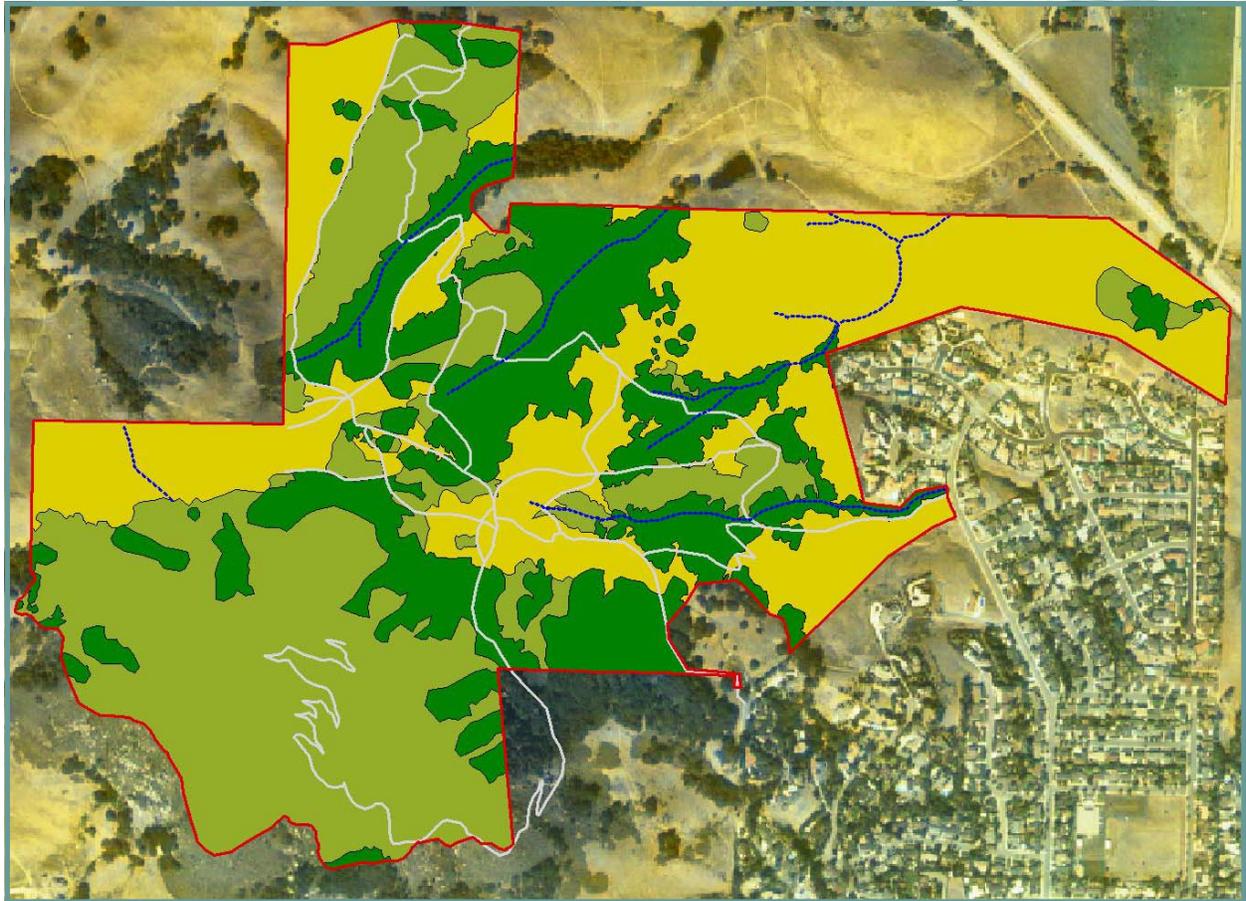
and game trails. The detailed wildlife report in Appendix 3 presents a list of wildlife species identified in the field during surveys and those described as occurring within, or directly adjacent to BPNR by Ostrowski (1979).

2.4 Dominant Vegetative Communities

Three broadly defined native vegetative communities are dominant habitat types within BPNR. These include live oak woodland, mixed scrub-chaparral, and grassland habitats. The locations and coverage of each of these communities is shown in Figure 5. Mixed scrub/chaparral habitat and grassland habitat occupy roughly equal areas of BPNR (37 and 36 percent, respectively). Approximately 27 percent of the area within BPNR is occupied by oak woodland habitat. The composition and abundance of dominant species within each community is variable.



Eleven separate cultural resources have been identified ranging in age from recent historic to prehistoric.



0.1 0.2 Miles

-  BPNR Boundary
-  BPNR Trails
-  Seasonal stream
-  Oak Woodland
-  Grassland
-  Scrub/Chaparral



CONSERVATION PLAN
BISHOP PEAK NATURAL RESERVE

FIGURE 5
**Bishop Peak Natural Reserve
Habitat Types**

Mixed Scrub-Chaparral Habitat -

Scrub vegetation occupies nearly 129 acres of BPNR. This community is variable with observed differences likely resulting from differences in soil type, location/exposure, topography, and degree of disturbance (including fire). Scrub habitat recovering from recent brush fires is encountered along a ridge in the north-eastern region of BPNR. Although the species composition, abundance, and density/height of the community varies, the dominant vegetative components within scrub-chaparral habitats generally include:

- California sagebrush (*Artemisia californica*)
- Black sage (*Salvia mellifera*)
- Coyote brush (*Baccharis pilularis*)
- Chamise (*Adenostoma fasciculatum*)
- Toyon (*Heteromeles arbutifolia*)
- Coast live oak (*Quercus agrifolia*)
- Deerweed (*Lotus scoparius*)
- Poison oak (*Toxicodendron diversilobum*)
- Monkeyflower (*Mimulus aurantiacus*)
- Wedgeleaf ceanothus/buck brush (*Ceanothus cuneatus* var. *cuneatus*)
- Wild buckwheat (*Eriogonum fasciculatum*)

A variety of less common flowering plants and shrubs were found during surveys of the scrub/chaparral habitat. These include fuchsia-flowered gooseberry (*Ribes speciosum*), Indian paintbrush (*Castilleja* sp.), morning glory (*Calystegia* sp.), blue dicks (*Dichelostemma pulchella*), goldenrod (*Solidago occidentalis*), and coast silktassel (*Garrya elliptica*).

Coast Live Oak Woodland Habitat -

Areas identified as coast live oak woodland occupy approximately 97 acres of BPNR and are present on many of the north and east facing hillsides and swales. Oak woodland habitat also extends up into the Reserve along a few of the drainage swales located on the scrub-chaparral dominated southern exposure of Bishop Peak. As with scrub-chaparral habitats, the species composition, density, and height of the coast live oak community is variable. Generally, coast live oak woodland along the eastern and northern exposures of the peak is dominated by a mixed coast live oak/California bay-laurel community. A mixed coast live oak/toyon community vegetates southern exposures and the drier (upper) areas within drainage swales. The dominant species identified within coast live oak woodland include:

- Coast live oak (*Quercus agrifolia*)
- California bay-laurel (*Umbellularia californica*)
- Toyon (*Heteromeles arbutifolia*)
- Poison Oak (*Toxicodendron diversilobum*)
- Coffeeberry (*Rhamnus californica*)
- Sycamore (*Platanus racemosa*)
- Monkeyflower (*Mimulus aurantiacus*)
- Blackberry (*Rubus vitifolius*)
- Wood fern (*Dryopteris arguta*)
- Blue elderberry (*Sambucus mexicana*)



Coyote Brush



Chamise



Coast Live Oak



Wood Fern



Toyon



Grassland
habitat
occupies
approximately
126 acres
within BPNR.

Understory vegetation is generally sparse beneath the oak canopy but includes poison oak, blackberry, monkeyflower, ferns, and grasses. Fuchsia-flowered gooseberry, hummingbird sage (*Salvia spathacea*), and shooting stars (*Dodecatheon spp.*) are among the flowering plants encountered in oak woodland habitats.

Grassland Habitat - Grassland habitat occupies a combined area of approximately 126 acres within BPNR. The grasslands consist of a variable mixture of native and non-native grass species, wildflowers, and forbs. Generally, grasslands along the lower slopes appear to be dominated by annual grasses. Purple needlegrass (*Stipa pulchra*) is the most common native grass species in the Reserve and the following species are prevalent:

- Foxtail barley (*Hordeum murinum*)
- Ryegrass (*Lolium multiflorum*)
- Common wild oats (*Avena fatua*)
- Ripgut brome (*Bromus diandrus*)
- Hummingbird sage (*Salvia spathacea*)
- Mustard (*Brassica nigra*)
- Wild rose (*Rosa californica*)

A variety of native wildflowers are observed blooming in grassland areas, including: buttercup (*Ranunculus californicus*); Goldenstar (*Bloomeria crocea*); soap plant (*Chlorogalum pomeridanum*); mariposa lily (*Calochortus spp.*); California poppy (*Eschscholzia californica*); chocolate lily (*Fritillaria biflora*);



and blue dicks (*Dichelostemma capitatum*).

2.5 Wildlife Survey

The three broad habitat types identified within BPNR support a diversity of wildlife species. Most of the species observed or detected during wildlife surveys are relatively common inhabitants of scrub-chaparral, oak woodland, and grassland habitat. However, five special-status wildlife species were encountered, including: Cooper's hawk (*Accipiter cooperii*); white-tailed kite (*Elanus leucurus*); loggerhead shrike (*Lanius ludovicianus*); San Diego desert woodrat (*Neotoma lepida intermedia*); and Morro shoulderband snail* (*Helminthoglypta walkeriana var. morroensis*). Additionally, several species of local concern were encountered during surveys. These included ringneck snake (*Diadophis punctatus*), western skink (*Eumeces skiltonianus*), yellow-rumped warbler (*Dendroica coronata*), Olive-sided flycatcher (*Contopus borealis*), greater roadrunner (*Geococcyx californianus*), rufous-crowned sparrow (*Aimophila ruficeps*), and monarch butterfly (*Dananus plexippus*). A summary of the wildlife species identified is presented in the following section; further information relative to their observed distribution is included in Appendix 3.

(*As of May 2004 the form of Morro Shoulderband Snail found in the vicinity of the City of San Luis Obispo is no longer recognized as 'Endangered' by the USFWS)

Birds - The varied habitats within BPNR offer food, shelter, and roosting/nesting sites for a wide variety of bird species. A total of 55 bird species were identified during surveys including three special status species. Table 1 presents a list of the bird species identified. Undoubtedly many more resident and migratory bird species would be detected with a more extensive seasonal sampling effort.

A Cooper's hawk was observed on two occasions, once in oak woodland habitat near the Highland Drive access trail and once in an oak woodland area near the northern extent of the Reserve. On both occasions the hawk appeared to be hunting. A



white-tailed kite was observed in both grassland (perching and foraging) and oak woodland (perching) habitats in the northeastern region of BPNR on several occasions. Nesting white-tailed kites and Cooper's hawks are listed in the CNDDDB

as fully protected in California and as migratory non-game birds of management concern by the United States Fish and Wildlife Service (USFWS). Another federal and state special concern species, loggerhead shrike, has been observed in BPNR in recent years. A single loggerhead shrike was sighted in a sycamore tree near Highway 1 (across from Stenner Creek Road) in 2000. Additionally, BPNR supports a variety of warblers, wrens, vireos, flycatchers, and native sparrows that are considered species of local concern.

Mammals - A total of seventeen mammal species were observed dur-

ing wildlife surveys (Table 2). Scrub/chaparral habitats appeared to support the greatest diversity of mammal species. Mule deer (*Odocoileus herionus*) were encountered in each of the habitat types sampled and woodrat nests were common in chaparral and oak woodland areas.



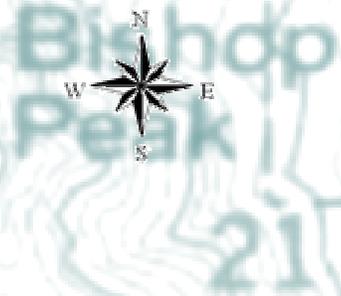
Two species of woodrat, the dusky-footed woodrat (*Neotoma fuscipes macrotis*) and the San Diego desert woodrat (*Neotoma lepida intermedia*), were identified in BPNR during small mammal trapping efforts (Figure 6). The San Diego desert woodrat is a federal and state species of special concern. Positive identification of the sub-species of dusky-footed woodrat encountered on Bishop Peak was not determined, however, it is not believed to be a special concern species. Bishop Peak is situated several miles to the southeast of the described range of the Monterey dusky-footed woodrat, which is a special concern species.

Bats (Order *Chiroptera*) were detected by sound in a rock crevice near the top of Bishop Peak, however, their taxa could not be determined. Numerous rock crevices suitable for roosting bats are present in BPNR as well as an abundant prey base for special status species such as the pallid bat (*Antrozous pallidus*).



0.1 0.2 Miles

- San Diego desert woodrat
- ▲ Loggerhead shrike
- △ White-tailed kite
- ▲ Cooper's hawk
- ⊙ Western skink
- Ringneck snake
- Live Morro Shoulderband Snail
- Morro Shoulderband Snail Shell
- Open Space Boundary



CONSERVATION PLAN
BISHOP PEAK NATURAL RESERVE

FIGURE 6
**Bishop Peak Natural Reserve
Sensitive Species**

Table 1. List of birds identified during wildlife surveys of BPNR showing habitats in which the species were observed.

Scientific Name	Common Name	Scrub and Chaparral	Live Oak Woodland	Grassland
<i>Accipiter cooperii</i>	Cooper's hawk		√	
<i>Aeronautes saxatalis</i>	White-throated swift	√	√	
<i>Aimophila ruficeps</i>	Rufous-crowned sparrow	√		
<i>Anas platyrhynchos</i>	Mallard		in stock pond	
<i>Aphelocoma californica</i>	Western scrub-jay	√	√	
<i>Buteo lineatus</i>	Red-shouldered hawk		√	
<i>Buteo jamaicensis</i>	Red-tailed hawk	√	√	√
<i>Callipepla californica</i>	California quail	√	√	
<i>Catherpes mexicanus</i>	Canyon wren	√		
<i>Calypte anna</i>	Anna's hummingbird	√		
<i>Carduelis tristis</i>	American goldfinch	√		
<i>Carpodacus mexicanus</i>	House finch	√		√
<i>Cathartes aura</i>	Turkey vulture	√		
<i>Catharus ustulatus</i>	Swainson's thrush	√	√	
<i>Chamaea fasciata</i>	Wrentit	√		
<i>Chondestes grammacus</i>	Lark sparrow	√		
<i>Colaptes auratus</i>	Northern flicker		√	
<i>Columba livia</i>	Rock dove (pigeon)		√	
<i>Contopus borealis</i>	Olive-sided flycatcher	√		
<i>Corvus brachyrhynchos</i>	American crow		√	√
<i>Dendroica coronata</i>	Yellow-rumped warbler		√	
<i>Dendroica townsendi</i>	Townsend's warbler		√	
<i>Elanus leucurus</i>	White-tailed kite	√	√	√
<i>Euphagus cyanocephalus</i>	Brewer's blackbird			√
<i>Falco sparverius</i>	American kestrel		√	√
<i>Geococcyx californianus</i>	Greater roadrunner	√		
<i>Hirundo pyrrhonta</i>	Cliff swallow			√
<i>Junco hyemalis</i>	Dark-eyed junco	√	√	
<i>Lanius ludovicianus</i>	Loggerhead shrike			√
<i>Meleagris gallopavo</i>	Wild turkey			√
<i>Mimus polyglottis</i>	Northern mockingbird	√	√	

Table 1. List of birds identified during wildlife surveys of BPNR showing habitats in which the species were observed. (Continued)

Scientific Name	Common Name	Scrub and Chaparral	Live Oak Woodland	Grassland
<i>Parus inornatus</i>	Plain (oak) titmouse	√		
<i>Parus rufescens</i>	Chestnut-backed chickadee		√	
<i>Phalaenoptilus nuttallii</i>	Common poorwill			√
<i>Picoides villosus</i>	Hairy woodpecker		√	
<i>Pipilo crissalis</i>	California towhee	√	√	
<i>Pipilo erythrophthalmus</i>	Spotted towhee	√	√	
<i>Poliophtila caerulea</i>	Blue-gray gnatcatcher	√		
<i>Psaltiriparus minimus</i>	Bushtit	√	√	
<i>Regulus calendula</i>	Ruby-crowned kinglet		√	
<i>Sialia mexicana</i>	Western bluebird		√	√
<i>Sayornis nigricans</i>	Black phoebe	√	√	
<i>Selasphorus sasin</i>	Allen's hummingbird	√		
<i>Spizella passerina</i>	Chipping sparrow	√		√
<i>Sterna</i> sp.	U.I. tern			
<i>Sturnella neglecta</i>	Western meadowlark			√
<i>Thryomanes bewickii</i>	Bewick's wren		√	
<i>Toxostoma redivivum</i>	California thrasher	√		
<i>Turdus migratorius</i>	American robin			√
<i>Tyto alba</i>	Barn owl		√	
<i>Vireo huttoni</i>	Hutton's vireo		√	
<i>Vermivora celata</i>	Orange-crowned warbler	√	√	
<i>Zenaida macroura</i>	Mourning dove	√		√
<i>Zonotrichia atricapilla</i>	Golden-crowned sparrow	√	√	√
<i>Zonotrichia leucophrys</i>	White-crowned sparrow	√		√

Table 2. List of mammals identified during wildlife surveys of BPNR showing habitats in which the species were observed or detected.

Scientific Name	Common Name	Scrub and Chaparral	Live Oak Woodland	Grassland
<i>Canis latrans</i>	Coyote	√		√
Order Chiroptera	Bat	√		
<i>Didelphis marsupialis</i>	Opossum		√	
<i>Peromyscus boylei</i>	Brush mouse	√	√	
<i>Peromyscus californicus</i>	California mouse	√		
<i>Peromyscus maniculatus</i>	Deer mouse	√	√	
<i>Procyon lotor</i>	Raccoon		√	
<i>Mephitis mephitis</i>	Striped skunk	√		
<i>Microtus californicus</i>	California meadow mouse	√		√
<i>Neotoma fuscipes macrotis</i>	Dusky-footed woodrat	√	√	
<i>Neotoma lepida intermedia</i>	San Diego desert woodrat	√	√	
<i>Odocoileus herionus</i>	Mule deer	√	√	√
<i>Sciurus griseus</i>	Western gray squirrel		√	
<i>Spermophilus beecheyi</i>	California ground squirrel			√
<i>Sylvilagus bachmani</i>	Brush rabbit	√		
<i>Thomomys bottae</i>	Botta's pocket gopher	√		√
<i>Urocyon cinereoargenteus</i>	Gray fox	√	√	

Reptiles- Five reptile species were encountered during wildlife surveys including two species of local concern; ringneck snake and western skink (Figure 6). The reptile species identified during the survey are listed in Table 3. Western fence lizard (*Sceloporus occidentalis*) was the most commonly encountered reptile and was present in all of the surveyed habitat types. The western skink appeared to be relatively abundant in grassland areas on the eastern and northern exposures of the peak.



(*Helminthoglypta walkeriana*). A total of five live Morro shoulderband snails (MSS) and 12 empty shells were found during surveys of

BPNR. All of the shells and two live snails were found within grassland habitat in the eastern region of the Reserve. Live specimens were also encountered beneath rocks in grassland habitat located between the stock pond (near Highland Drive) and the Patricia Drive access gate (Figure 6). A related but more widely distributed terrestrial snail species, Big Sur shoulderband snail (*Helminthoglypta umbilicata*), was also encountered in BPNR. A number of live Big Sur shoulderband snails, as well as empty shells, were found during surveys.

Amphibians - Two amphibian species, Pacific tree frog (*Hyla regilla*) and California slender salamander (*Batrachoseps attenuatus*) were en-



Other invertebrates noted during surveys include various butterflies, bees, centipedes, millipedes, spiders, crickets, scorpions, and several ant species. Monarch butterflies were observed within the Reserve, however, no over-wintering sites were identified during surveys.

countered during surveys. Both species were found in greatest abundance in grassland areas, although they were also observed in oak woodland habitat. Pacific tree frog larvae and juveniles were present in the stock pond near the Highland Drive access point and in ephemeral pools associated with two of the larger watercourses that drain the northern areas of the peak.

Invertebrates - A variety of invertebrates were identified during surveys including one special status terrestrial snail species, the federally endangered Morro shoulderband snail*

(*As of May 2004 the form of Morro Shoulderband Snail found in the vicinity of the City of San Luis Obispo is no longer recognized as 'Endangered' by the USFWS)

Table 3. List of reptiles identified during wildlife surveys of BPNR showing habitats in which the species were observed.

Scientific Name	Common Name	Scrub and Chaparral	Live Oak Woodland	Grassland
<i>Diadophis punctataus</i>	Ringneck snake		√	√
<i>Elgaria multicaeratus</i>	Southern alligator lizard			√
<i>Eumeces skiltonianus</i>	Western skink			√
<i>Pituophis melanoleucus</i>	Gopher snake			√
<i>Sceloporus occidentalis</i>	Western fence lizard	√	√	√

Table 4. List of invertebrates identified during wildlife surveys of BPNR showing habitats in which the species were observed.

Scientific Name	Common Name	Scrub and Chaparral	Live Oak Woodland	Grassland
<i>Dananus plexippus</i>	Monarch butterfly	√		
<i>Eleodes</i> sp.	Stink beetle	√		√
<i>Gryllus pennsylvanicus</i>	Field cricket	√		√
<i>Helix aspersa</i>	European garden snail			√
<i>Helminthoglypta walkeriana</i> var. <i>morroensis</i>	Morro shoulderband snail*			√
<i>Helminthoglypta umbilicata</i>	Big Sur shoulderband snail			√
<i>Latrodectus mactans</i>	Black widow spider			√
<i>Lygaeus kalmii</i>	Common milkweed bug	√		√
<i>Nymphalis antiopa</i>	Mourning-cloak butterfly	√		
<i>Stenoplematus fuscus</i>	Jerusalem cricket			√
<i>Vespula</i> sp.	Yellow jacket			√

(*As of May 2004 the form of Morro Shoulderband Snail found in the vicinity of the City of San Luis Obispo is no longer recognized as endangered by the USFWS)

3. Goals & Recommendations

This Conservation Plan also aims to accommodate the desires and wishes of the general public for BPNR, as well as addressing the general goals of the City's Open Space Element.

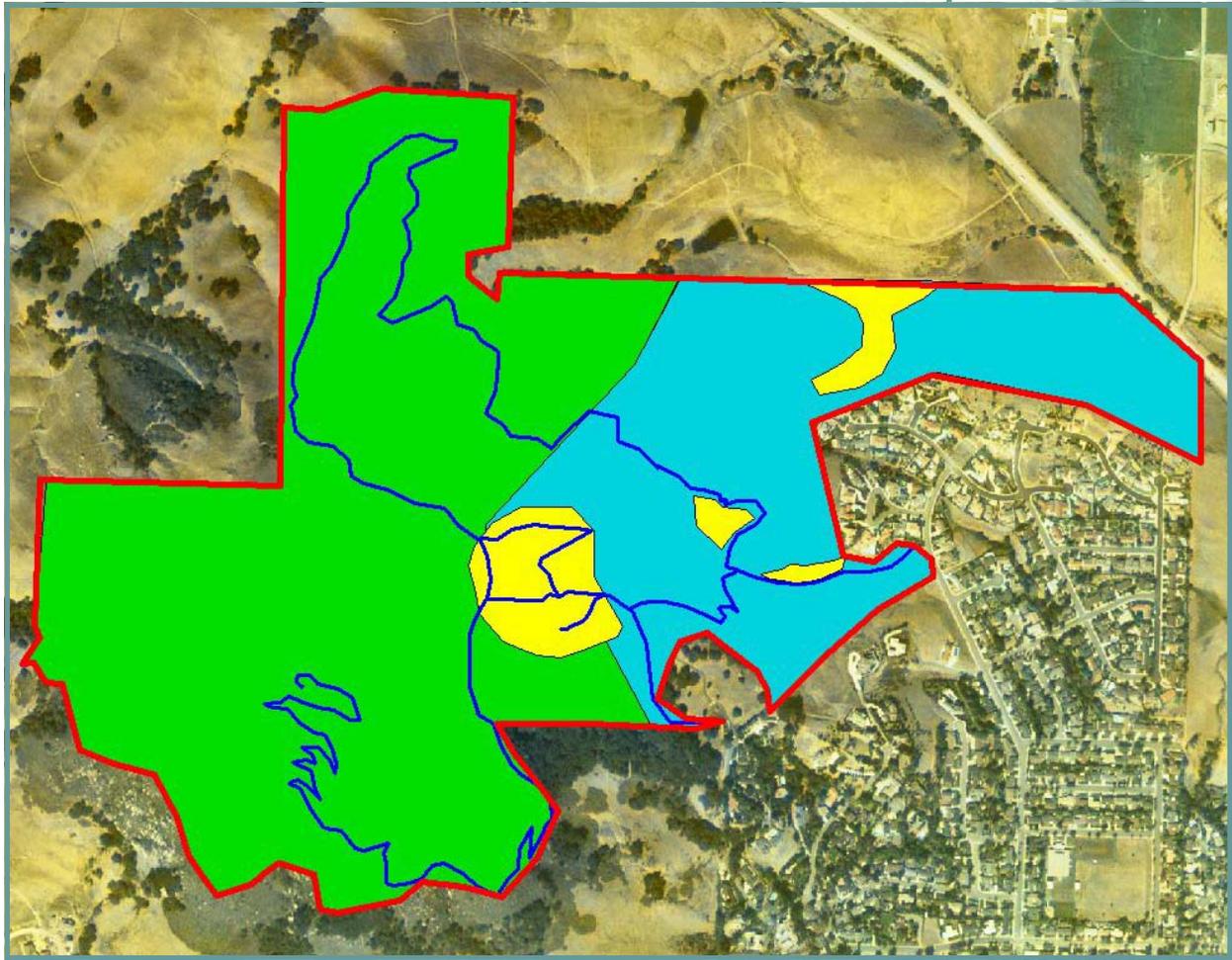
The document “*Conservation Guidelines for Open Space Lands of the City of San Luis Obispo*” describes City-adopted management guidelines and policies designed to achieve the stated goals of the City’s Open Space Element (i.e., OS1.1.1-OS1.1.4). The goals relevant to BPNR are:

- 3.1 To conserve, enhance, and restore natural plant communities; to protect sensitive and endangered plant species and their habitats; and to maintain biodiversity of native plants and animals.
- 3.2 To provide the public with a safe and pleasing natural environment in which to pursue passive recreational activities, while maintaining the integrity of the resource and minimizing the impact on the wildlife and habitats represented.
- 3.3 To preserve and restore creeks, wetlands and ephemeral seeps or springs in a natural state, and provide suitable habitat to all native aquatic and riparian species. To minimize the impacts of harmful activities, such as the release of pollutants, while maintaining the creek system as a means of conveying storm water within urban areas.
- 3.4 To conserve and protect native plant and animal species and enhance their habitats, in order to maintain viable wildlife populations within balanced ecosystems.

Goals 3.1-3.4 will be achieved by the identification and appropriate management of land use designations within BPNR as described in “*Conservation Guidelines for Open Space Lands of the City of San Luis Obispo*”. Land use designations for BPNR are shown on the system map in Figure 7.

This Conservation Plan also aims to accommodate the desires and wishes of the general public for BPNR, as well as addressing the general goals of the City’s Open Space Element. The points detailed below are a result of input solicited from members of the public during workshops and other public meetings held to discuss the future management of BPNR.

- 3.5 Wildlife habitat enhancements should be implemented whenever possible (enhancement to California quail habitat was specifically identified as requiring attention as local residents have noticed a reduction in quail numbers on the property in recent years).
- 3.6 Information guides should be prepared informing local residents and users of the characteristics of the wildlife and habitats represented in BPNR, and measures that can be taken to preserve wildlife and habitat. A webpage dedicated to BPNR was agreed to be a suitable medium for the dissemination of this information.
- 3.7 The current ban on mountain biking on BPNR should continue.



-  **Boundary**
-  **Trails**
-  **Restoration Area**
-  **Management Area**
-  **Habitat Area**

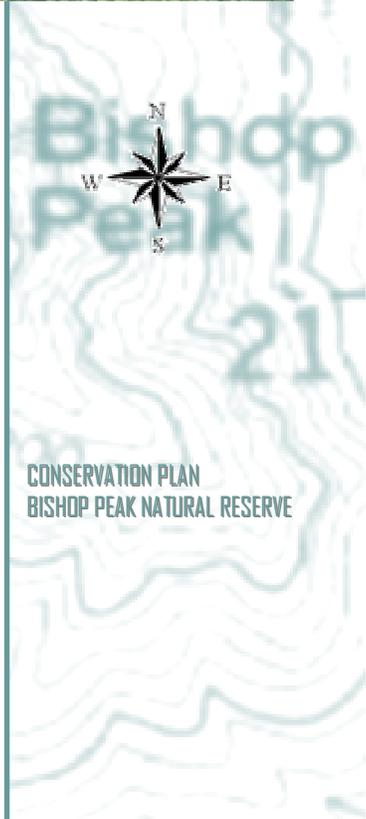


FIGURE 7
**Bishop Peak Natural Reserve
 Land Use Designations**

CONSERVATION PLAN
 BISHOP PEAK NATURAL RESERVE

3.8 The City should encourage Cal Poly University to address problems associated with the sports complex lights. There are concerns that the complex is currently a source of light pollution for BPNR.

3.9 The area of BPNR designated as 'Habitat' during the land use designation process should be maximized.

3.10 The City should explore methods of 'people management' (i.e. changes in user behavior) in addressing impacts to resources resulting from over use of BPNR.

3.11 Impacts on viewsheds both of, and from, BPNR should be avoided (e.g. the use of orange snow fencing to delineate restoration areas should be avoided).

3.12 Both grazing and wildfire preparedness plans should be prepared for BPNR.

3.13 Fuel management below the peak should be performed routinely. Cattle grazing and prescribed burning were suggested as appropriate means of fuel management.

3.14 Risks to the public from wildfire should be assessed and addressed. Suggestions for risk reduction included the establishment of a helipad close to the peak and the establishment of marked and maintained 'wildfire refuge areas'.

3.15 The prospect of armoring (by paving or other means) trails as a means of keeping users on designated trails should be ex-

plored as a means of addressing the erosion problems caused by bootleg trails, trail braiding, and switchback cutting (*the public response to this suggestion was mixed with proponents for and against the idea*).

3.16 Public support for addressing scenic problems associated with the 'P' which was painted on the rock face.

3.17 Photo-points should be established within the first year of implementation of the Conservation Plan to provide a 'baseline' for resource condition.

3.18 Further outreach efforts should be made to Cal Poly University to help with restoration efforts on BPNR and to educate students on proper conduct while using the Reserve.

3.19 Maintenance of the scenic quality of resources at the pond area should be a priority.

3.20 The City should be more diligent in management of brush on BPNR, this could cause a fire hazard.

3.21 Use of BPNR during hours of darkness should be discouraged due to issues with vandalism and potential for fires.

- 3.22 Vegetation along Highland Drive should be trimmed, this may have traffic safety implications due to a reduction in visibility resulting from overhanging vegetation. Suggestion to widen Highland drive to address parking issues associated with BPNR.
- 3.23 More Ranger staff hours should be added to manage the heavy user load on BPNR.
- 3.24 Rock climbing activities on BPNR should not interfere with raptor nesting. Impacts on lichens and vegetation at access points to climbing routes should also be monitored.
- 3.25 There should be no increase in the current level of horse traffic in BPNR due to the detrimental impact of heavy use on the resource.
- 3.26 In grazing plans prepared for BPNR recovery of young oak trees should be identified as an objective of grazing.
- 3.27 The establishment of a connection road across the site for emergency and maintenance access that will eliminate the requirement for access through the Brittany Court development at the end of Highland Drive should be considered.

4. Conservation Plan

The Conservation Plan describes how the City and County of San Luis Obispo intend to manage BPNR to fulfill adopted goals and recommendations of the community for the property. The land use designations proposed for BPNR are shown on the system map (Figure 7). The general day-to-day management of these areas will be in accordance with direction in the City-adopted document “*Conservation Guidelines for Open Space Lands of the City of San Luis Obispo*”. The Conservation Plan also describes a series of tasks that will be implemented in order to achieve more specific goals and recommendations.

4.1 SYSTEM MAP

The land use designations proposed for BPNR are shown in Figure 7. Three designations are represented:

1. Habitat: 225 acres (64%)
2. Management/Trail Corridor: 110 acres (30%)
3. Restoration: 20 acres (6%)

(‘Agricultural’ and ‘Cultural/Historic’ designations are not represented/recognized within the boundaries of BPNR)

In keeping with the City/County commitment to the conservation of native wildlife and vegetation, 64% of BPNR has been designated as ‘Habitat’. This figure will increase slightly as restoration projects are completed and land is upgraded.

4.2 NEEDS ANALYSIS

The following tasks will be undertaken over the next 5-7 years to accomplish goals and address the recommendations described in Section 3.

To achieve goals 3.1-3.4 BPNR will be managed in accordance with City-adopted policies described in “*Conservation Guidelines for Open Space Lands of the City of San Luis Obispo*”. The reader is referred to this document for specific details of how these policies relate to land use designations identified on the system map (Figure 7), and an explanation of how policies are identified in the following discussion (e.g. LV7; HA12, etc).

Many of the policies described in “*Conservation Guidelines for Open Space Lands of the City of San Luis Obispo*” are designed to be protective of City-owned resources by restricting activities that may have a negative impact (e.g. prohibition of trail construction in ‘Habitat’ areas [HA12]). Providing such limitations are observed, implementation of restrictions is primarily a passive affair requiring no active management or changes in prevailing conditions or activities. However, other recommendations do require active management and will result in changes in management practices or altered resource conditions. These are:*

4.2.1 Restoration of wildlife habitat is considered an integral part of management, maintenance, and restoration of all City-owned open spaces. Habitat enhancements will be implemented as opportunities and funding arise. Special grant funding will be sought for habitat enhancement projects (3.5).

4.2.2 A ban on mountain biking is a legally binding condition of some of the parcels and the high usage by foot traffic makes it unsafe. Therefore the City/County shall continue to enforce the current ban on mountain biking in the Reserve (3.7).

4.2.3 A stated goal of the City’s Open Space Element is to ‘*Protect resources (such as creeks, sensitive habitat, and agriculture), and be sensitive to the factors which allow these resources to remain viable*’ (OS 1.1.2). This shall be achieved by maximization of the area designated as ‘Habitat’ within BPNR (3.9).

4.2.4 City-adopted policy relating to the protection of viewsheds on City-owned open space is described by item HA12 in the document “*Conservation Guidelines for Open Space Lands of the City of San Luis Obispo*” (3.11; 3.19).

4.2.5 City-adopted policy relating to the development of grazing and wildfire management plans is described by items LV1 and LV9 in the document “*Conservation Guidelines for Open Space Lands of the City of San Luis Obispo*” (3.12; 3.20).

4.2.6 City-adopted policy relating to the management of vegetative fuel on City-owned open spaces is described by items LV8 and LV9 in the document “*Conservation Guidelines for Open Space Lands of the City of San Luis Obispo*” (3.13; 3.20).

*(Note: The specific goal or recommendation identified in Section 3 that is addressed by the proposed action is given in parentheses)

‘Protect resources (such as creeks, sensitive habitat, and agriculture), and be sensitive to the factors which allow these resources to remain viable’

4.2.7 The City of San Luis Obispo Municipal Code, item 12.22.050B states: *‘Presence in Open Space Lands Restricted to Certain Hours - No Overnight Usage. Open space lands where public access is permitted shall be open to the public from dawn to dusk. It shall be unlawful to enter or remain within such lands between one hour after sunset and one hour before sunrise of the following day without approval from the director’*. Presence in BPNR outside of stated hours of use is a violation of this regulation, and enforcement is a matter for the City’s police department (3.21).

4.2.8 The City-adopted policy relating to the closure of rock climbing routes on City-owned open spaces is described by item HA9 in the document *“Conservation Guidelines for Open Space Lands of the City of San Luis Obispo”* (3.24).

4.2.9 Horses boarded at the stables on the former Bunnell property have a legal right of use of the trails on the portion of the Reserve purchased from Ray Bunnell (i.e. shaded area Figure 3) . No other stable has rights to use the property, nor is there indication that horse traffic from the Bunnell stable will increase significantly above its present level. The City does not anticipate that the level of horse traffic using BPNR will increase significantly within the time-frame of this Conservation Plan (3.25).



4.2.10 The grazing plan for BPNR is described in Section 6 (3.26).

4.2.11 The letter ‘P’ painted on the east-facing slope of Bishop Peak during the 1960’s is viewed as an eyesore by some local residents. However, others believe that it is now a part of the community’s character and heritage. The City and County have explored the possibility of removing this graffiti with local rock climbers. There have been previous attempts to remove/alter it which were unsuccessful, including an ill fated attempt to haul up a compressor/sandblaster. From a safety perspective, removal of the graffiti would be a very dangerous task. Sandblasting would probably be the only viable means of removal. The compressor would have to be carried up to the summit with a gas-powered generator to run it. The work would have to be performed from the top

down using ropes and harnesses. There are no commercial/heavy duty anchors above the ‘P’ to anchor from and a contractor would have to create his own anchor system. Due to the technical and dan-

gerous nature of the process the prospect of a local climber volunteering to perform this task is low (3.16).

4.2.12 The City and County of San Luis Obispo have jointly published an information leaflet entitled “Bishop Peak Natural Reserve” (Appendix 4), which outlines rules of use of the Reserve and gives information on history, biology and geology. This information will be supplemented by the creation of a webpage dedicated to BPNR on which more detailed up-to-date information can be posted (3.6).

4.2.13 The City and County of San Luis Obispo will work with Cal Poly to address problems relating to lighting from sports complex disturbing wildlife on BPNR (3.8).

4.2.14 BPNR is the most heavily used open space in the area and regular ranger patrols are essential to minimize user behavior that is detrimental to the resource. At present the City of San Luis Obispo commits approximately 500 man-hours annually to patrol/maintenance of BPNR, with an additional 150 hours being supplied by the County. As funding resources become available patrol hours should be increased to a minimum of 1000 man-hours annually (3.10; 3.23); with up to 1/3 of this labor being provided by the County.

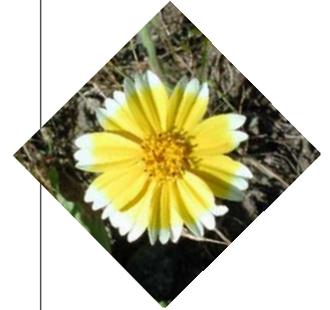
4.2.15 The establishment of a helipad close to the peak has been investigated and was deemed to be infeasible due to the lack of a suitable location. However, the City and County in coordination with

the City Fire Department and CDF will explore the feasibility of establishing sign-posted ‘wildfire refuge zones’ within BPNR (3.14).

4.2.16 Paving (hardscaping) of portions of the Bishop Peak Trail will be evaluated as a method to address the user impact induced erosion problems in the pond area when all other reasonable methods (such as exclusion fencing and public education) have been exhausted. If the evaluation concludes that paving of the area is necessary then all specifications regarding length of trail to be paved, materials used etc, will be identified in the 5-7 year update of this conservation plan (3.15).

4.2.17 Photo-points have been identified (see Section 4.7) to establish a pictorial record of the status of the resource over time (3.17).

4.2.18 The City and County have produced a body of educational materials about BPNR, including: a color brochure, webpage (<http://www.slocity.org/naturalresources/bishop.asp>), and trailhead signage. It is a concern of the public that the Reserve is not publicized in such a way as to attract large numbers of additional, non-local, tourists to an already heavily used resource. City Natural Resources staff are of the opinion that the information currently available strikes the appropriate balance between public education and active promotion of the Reserve.



*City of San
Luis Obispo
commits
approx. 500
man-hours
annually to
patrol/
maintenance
of BPNR.*



Further efforts will be made to educate Cal Poly students about responsible use of the Reserve. Campus media outlets such as the 'Mustang Daily' will be utilized for this purpose whenever possible (3.18).

- 4.2.19 The vegetation that overhangs Highland Drive is on private property. The City arborist will assess if this vegetation poses a safety risk to motorists using Highland Drive, and if so enforcement action may be taken to address the problem (3.22).
- 4.2.20 The development of a continuous emergency / maintenance road traversing BPNR with multiple access points is discussed in the 'Wildfire Preparedness Plan' in Section 4.5 (3.27).

In addition...

- 4.2.21 The ongoing program to control infestations of Purple and Yellow Star thistle, and Distaff thistle will continue. The methods of control utilized will be in accordance with the Integrated Pest Management (IPM) policy described in item LV12 of the appendix to the document "*Conservation Guidelines for Open Space Lands of the City of San Luis Obispo*."
- 4.2.22 City staff will monitor public parking for access to Bishop Peak Natural Reserve at the Highland Avenue and Patricia Drive accesses. If problems or complaints are raised by the adjacent neighborhoods,

staff will advise the neighborhoods about the City's parking permit district program and of other potential actions which may be pursued to address those concerns.

4.3 Implementation Strategy

The priority and order in which these tasks shall be implemented is detailed below. Each task has been designated to staff from the City's Natural Resources Program (NR), Parks and Recreation Department (PR), or other City/County staff.

Ongoing Tasks

Tasks 4.2.1-4.2.11 are general maintenance activities or activities that the City has decided not to implement for the reasons stated. Maintenance activities will be implemented on a regular or 'as needed' basis throughout the 5-7 years covered by this Conservation Plan (NR/PR).

Specific Tasks

Years 1-2

- Create a webpage dedicated to BPNR (task 4.2.12; NR).
- Discuss the issue of light pollution from the Cal Poly sports fields with the appropriate university representative (task 4.2.13; NR/PR).
- Establish appropriate photo-points to monitor resource status over time (task 4.2.17; NR).
- Assess the vegetation overhanging Highland Drive as a potential hazard to motorists and take action as appropriate (task 4.2.19; NR/City Arborist).
- Outreach to Cal Poly University using media such as the 'Mustang Daily' newspaper and by attending on-campus environmental awareness fairs (4.2.18; NR/PR).

- Develop a continuous emergency access/maintenance road with access from the public highway system (task 4.2.20; NR/PR/County).
- Assess the feasibility of establishing wildfire refuge areas at the peak. If found appropriate, clearly post these areas (task 4.2.15; NR/PR/City Fire/CDF).

Years 3-4

- Install educational materials in the form of notice boards or informational booths at the trailhead (task 4.2.18; NR/PR/County).
- Create a two-pasture system to accommodate the modified grazing system as described in the grazing plan (task 4.2.10; NR. Section 4.4).

Years 5-7

- Address any continuing erosion and trail braiding problems currently existing at the pond area where trails originating at Patricia Dr. and Highland Dr. converge. Hardscape the trails in this region if deemed appropriate (task 4.2.16; NR/PR).

As Funds/Opportunities Become Available

- Increase annual Ranger patrol hours at BPNR to 1000 (task 4.2.14; PR); with up to 1/3 of time being provided by the County of San Luis Obispo

4.4 Grazing Plan

Livestock grazing will be permitted on the Ferrini Open Space portion of BPNR.

The Ferrini Open Space was a donation to the City of San Luis Obispo. A condition of the donation was that the donor could continue his traditional use of the site for livestock grazing for ten years. The ten-year period will expire in summer 2005. Following such expiration, a new

grazing plan will be implemented as follows:

- The area will be divided by fencing into two pastures, lower pasture and upper pasture.
- Vegetation management objectives for the upper pasture will be to control amount of residual dry matter (RDM) at the end of the growing season to approximately 1,500 pounds per acre. This will be accomplished by permitted livestock grazing from about March 15 to the end or near-end of the growing season (about June 15). Numbers of livestock will be based upon NRCS soil survey data for the area.
- Vegetation management objectives for the lower pasture will be to provide fuel reduction to the adjacent residential area, and to control amount of residual dry matter (RDM) at the end of the growing season to approximately 800 pounds per acre, with lower values near the boundary with private developed land, and higher values elsewhere. This will be accomplished by permitted livestock grazing from about March 15 to the beginning or near-beginning of the following growing season (about November 1). Numbers of livestock will be based upon NRCS soils survey data for the area.
- Livestock will not be within BPNR from approximately November 1 to approximately March 15, to allow full establishment of new growth and minimize soil damage from trampling during the winter. Livestock will not be within the upper pasture from approximately June 15 to March 15, to minimize potential conflict with recreational use and to allow full establishment of new growth and minimize soil damage from trampling during the winter.



Five areas have been identified that will receive specific treatment with respect to fighting wildfires

- The overall acreage currently subject to grazing is about 140 acres; this includes about 40 acres of brush and woodland that is not contributing to the forage resource. About 30 of these acres would be fenced if necessary; however, they are currently only lightly used by livestock and this use would decline under the proposed program. Of the remaining 110 acres, about 30 would be in the lower, more heavily used pasture, and 70 in the upper pasture. RDM at the end of the grazing period under the proposal would be less than currently, and considerably less than currently in the upper pasture, which is estimated at between 600 and 800 pounds per acre at the end of the grazing period.

- Grazing use will be monitored to ensure that management objectives are being met. This will be done through ocular estimates of standing crop biomass, and the establishment and monitoring of permanent transects to determine species composition and forage production within the pastures. A goal of the program will be to maintain native bunchgrasses and forbs, measured as a percent cover by the transect measurements.

- An enclosure will be constructed to control livestock access into the unnamed creek in the lower pasture, and permit revegetation of that feature with willows, oaks and other appropriate vegetation.

- The stock pond in the upper pasture will be partially fenced to permit establishment of appropriate vegetation on the banks, while still allowing livestock access to the water.



- The small spring above Anacapa Court will be fenced to preclude livestock access and encourage native vegetation establishment.

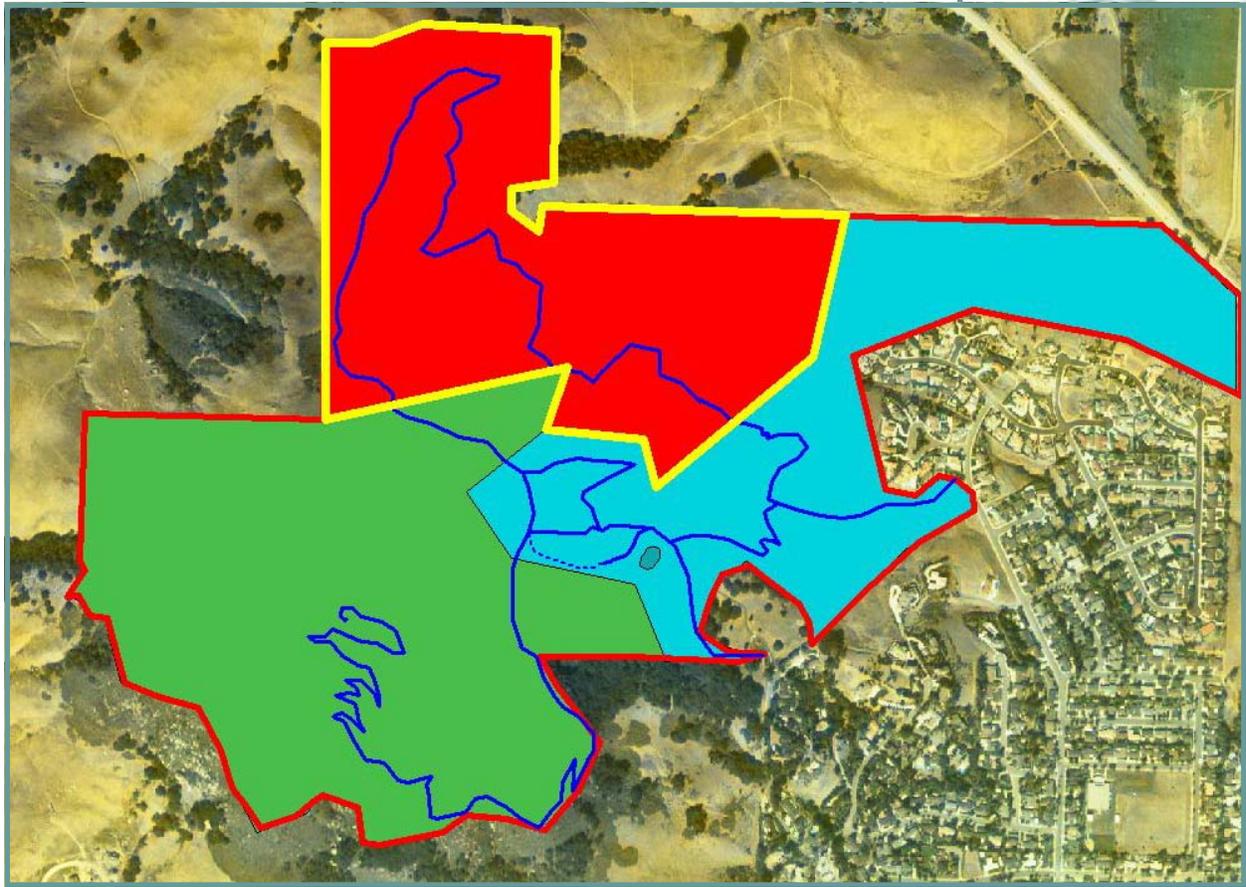
4.5 Wildfire Preparedness Plan

The City document “*Conservation Guidelines for Open Space Lands of the City of San Luis Obispo*” recommends that a Wildfire Preparedness Plan be developed for City open space lands. After consultation with the City’s Fire Department and CDF, five areas have been identified that will receive specific treatment with respect to fighting wildfires and prescribed burning (Figure 8). The process of identification of these areas takes into account a number of factors, including: the topography of the land; proximity to urban developments; vegetation type; and the presence of sensitive species. The areas are:

Potential prescribed burning area – areas identified as supporting a high load of vegetative fuel that could be safely reduced by burning under prescribed weather and wind conditions.

Fuel management area – areas adjacent to the urban/wildland interface that could not be safely burned in a controlled manner. These areas will require active pruning, mowing and/or other active management of the vegetation (including livestock

grazing) to reduce fuel loads adjacent to developed properties.



0.1 0.2 Miles

-  Boundary
-  Trails
-  Proposed Trails
-  Potential Prescribed Burn Area
-  Habitat Sensitive Firefighting Area
-  Active Firefighting Area
-  Water
-  Fuel Management Area

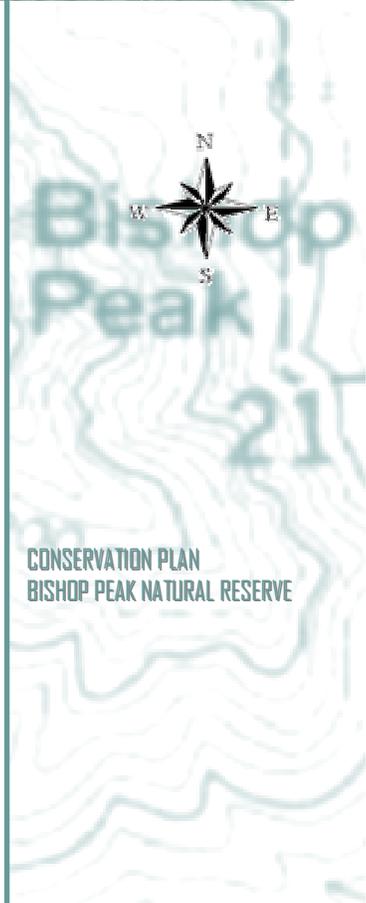


FIGURE 8
**Bishop Peak Natural Reserve
 Wildfire Preparedness Plan**

CONSERVATION PLAN
 BISHOP PEAK NATURAL RESERVE



City staff believe that construction of this portion of the access road

is essential ensure the continued safety of people using the Reserve.

Active firefighting area – areas acting as a buffer between the surrounding urban developments and the pristine habitat lying to the west but still within the BPNR. Active firefighting techniques such as the use of heavy machinery and cutting of fuel breaks can be used to isolate property from an advancing wildfire. These areas have also been identified because the physical resources and topography are conducive to successful restoration efforts following a wildfire.

Passive (habitat sensitive) firefighting area – areas of important wildlife habitat, mostly on steep hillsides. These areas are also somewhat removed from urban development. They are particularly sensitive to aggressive firefighting techniques such as the use of heavy machinery. Therefore, wherever practicable, firefighting strategies in these areas should be limited to low impact, habitat friendly methods.

Construction of continuous emergency/maintenance road – at the present time, vehicular access to portions of BPNR which experience high maintenance and occasional emergency access is poor. This is particularly problematic in the area of the pond. A ¼ mile of new jeep road connecting the upper Bunnell Road to the road from Brittany Court (Highland Drive), which reaches Highway 1, will be constructed. This will create a continuous emergency/maintenance road access across the property. Due to two recent fires on the open space and the level of heavy use the area receives,

4.6 Fiscal Statement

The fiscal impact of the adoption of the Bishop Peak Conservation Plan is expected to be minor. It will consist of maintaining the patrol and maintenance of the property at basically its existing level (unless supplemental funding becomes available), and the implementation of several small-scale capital improvements. The latter include:

- Construction of connectors between the two existing roads on the property, to permit establishment of a single, through fire road on the site;
- Revegetation and restoration of areas in the vicinity of the pond, the unnamed tributary to Stenner Creek, and two other locations within the site (See Figure 7).

None of these projects is considered costly. The fire road connector is anticipated to cost \$5,000 to \$10,000 and would be paid out of maintenance funds from the Natural Resources, Ranger program, and Fire Department monies.



Revegetation projects may be funded internally or may utilize grant fund sources. Overall cost of the revegetation programs is expected to be in the \$25,000 range.

The fire preparedness plan has certain minor maintenance costs associated with it. Specifically, periodic pruning of vegetation in a limited area, and the periodic removal of downwood within 200 feet of the Reserve boundary where it is adjacent to residential property. For the most part, however, the fire preparedness plan would utilize livestock grazing as the primary management tool, as most of the lands identified as fuel management areas are non-native grasslands most appropriately managed by proper range management techniques.

There is interest in increasing the ranger presence at BPNR. Currently the City ranger force expends about 6 hours per week at BPNR on patrol and an average of an additional 4 hours per week in maintenance. There is a possibility of an increase in County ranger presence to augment City staff; however, at this time funding is not available to increase staffing levels for BPNR.

4.7 Photo-points and Monitoring

A series of 10 photo-points have been established at sensitive areas within the BPNR (Figure 9). The purpose of establishing such points is to build a pictorial record of how the status of the resource is changing over time. This will allow managers to make informed decisions about actions that should be taken to address issues relating to overuse of the reserve and associated impacts to the resource. Individual photo-points are identified

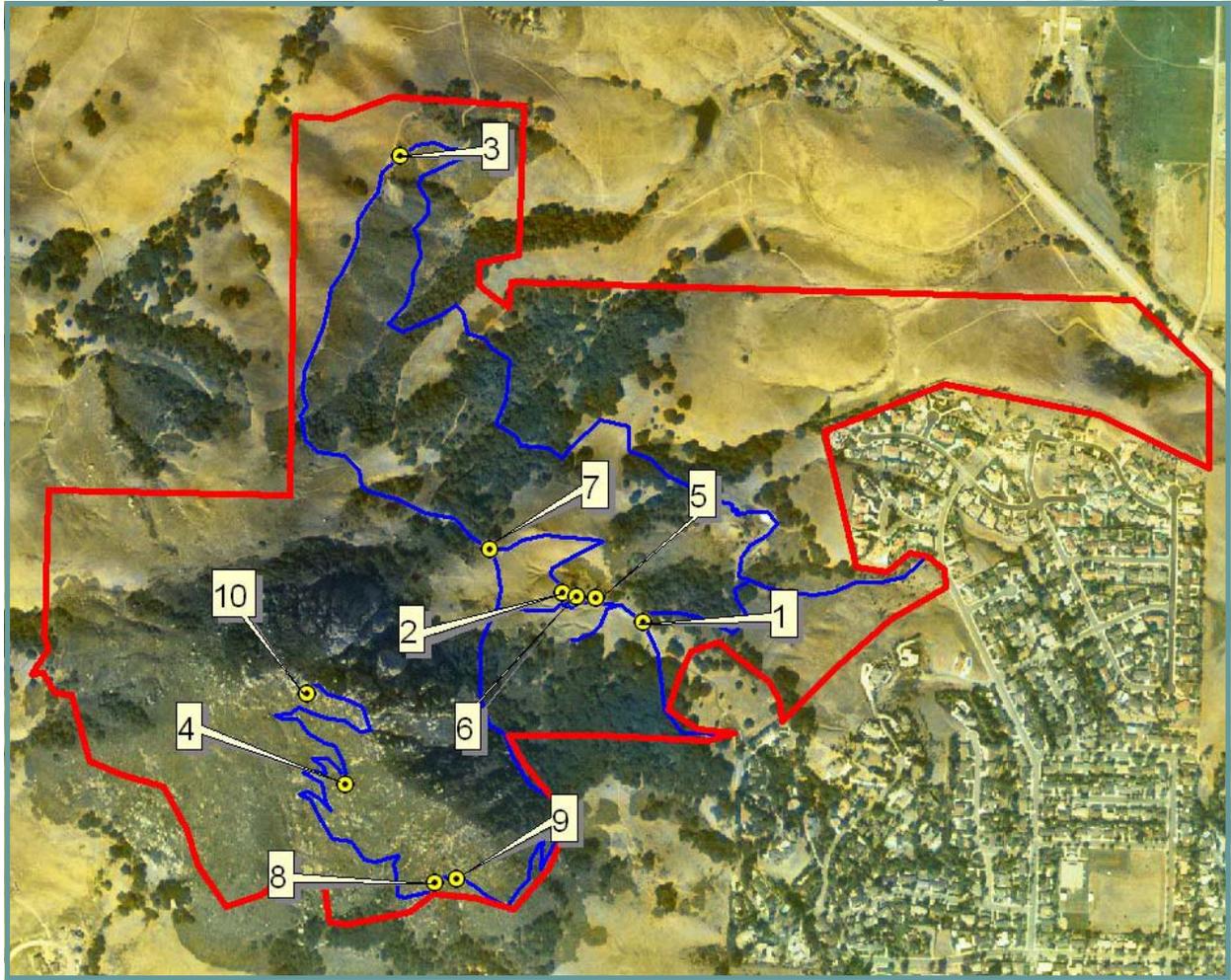
using a system of coordinates, bearings, and the date to identify the location, direction and time of each photograph. It is recommended that annual photographs are taken on approximately the same date to give an accurate record of the status of the resource during comparable times of the year.

Photo-point 1: An area of high traffic in the region of the stock pond where the trails from the Patricia Drive and Highland Drive access points meet. The concentration of foot traffic in this area has resulted in trail braiding, erosion problems, and has prevented the establishment of native shrubs and trees. Recent restoration efforts have fenced large portions of the open grassland areas adjacent to the stock pond, and planted native vegetation. The success of these efforts will be monitored from this photo point.

Photo-point 2: The main access trail for both the Felsman loop trail and the Peak trail, it experiences very heavy traffic. This photo point will monitor the status of this heavily used portion of the trail system and increases in trail width and/or braiding of the trail in this area.

Photo-point 3: An area of the Felsman loop trail that is currently experiencing a small degree of gully formation and width expansion on the main trail. This photo point will monitor any deterioration in this portion of the trail system over time.





0.1 0.2 Miles

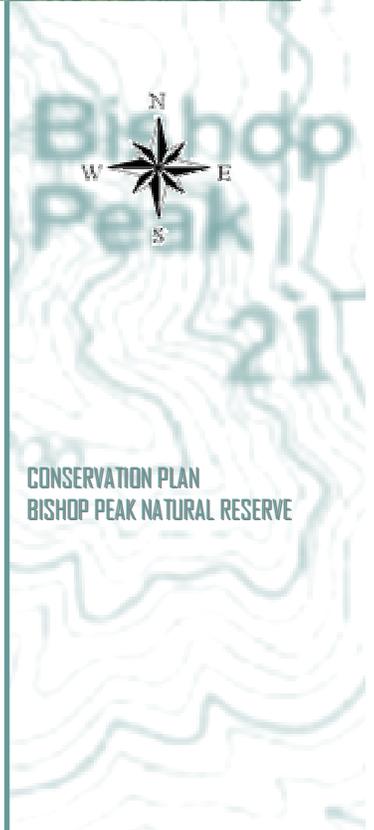


FIGURE 9
**Bishop Peak Natural Reserve
 Photopoints**

CONSERVATION PLAN
 BISHOP PEAK NATURAL RESERVE

Photo-point 4: A Series of switchbacks ascending towards the peak, this area of the trail system is particularly susceptible to erosion due to the steep terrain, and high levels of use it experiences from users who summit the mountain.

Photo-point 5: A shortcut trail which has developed close to the pond area in the foot hills of the peak. This area should be monitored carefully and restorative activities implemented to either make the shortcut the official trail or concentrate use on to the existing official trail.

Photo-point 6: A popular bouldering rock in the BPNR foothills. Heavy use of this area has resulted in the elimination of all native vegetation around the rock and erosion of top soil has resulted.



Photo-point 7: Trail-head for the Bishop Peak trail, this is a very heavily used section of the Bishop Peak trail, and should be monitored for increases in trail width and braiding of the trail.

Photo-point 8: Junction of the bootleg trail originating from the unofficial access point on Foothill Drive, and the official Bishop Peak trail. This junction of two heavily used trails is an area of heavy foot traffic and should be monitored for increases in trail width, braiding and erosion problems.

Photo-point 9: The bootleg trail originating from the unofficial access point on Foothill Drive, this trail is very steep and has no switchbacks. This trail is very prone to erosion

problems and should be closely monitored for signs of gully formation and expansion in width.

Photo-point 10: The ridge trail is very heavily used by hikers who summit the peak. As of 2003, the trail was in good repair, having narrow width and good growth of trailside vegetation. Due to the heavy use in this area, the ridge trail should be closely monitored for signs of deterioration.

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Appendix 1.

Soil Descriptions

Los Osos loams occur above the sandstone and shale in the mélangé (Franciscan Formation). Los Osos clay loams appear dark grayish brown and fine textured at the surface. Underneath they are primarily brown to yellowish brown heavy clay loam. They have relatively slow permeability, are well drained, and have medium runoff. The effective rooting depth is 20 to 40 inches. The pH is slightly to medium acid to neutral. Vegetation is mostly annual grasses and forbs with some perennial grasses, coastal sagebrush (*Artemisia californica*), and coast live oak (*Quercus agrifolia*).

Diablo complex soils are formed from weathered sandstone, shale, and conglomerate. The surface layers include brown gravelly loam underneath un-decomposed leaves. Beneath is a light yellowish brown gravelly loam over bedrock. Maymen sandy loams have relatively slow permeability, are well drained, and have medium runoff. The effective rooting depth is approximately 15 inches, with a few large woody roots that grow through the rocky substrate to 60 inches in depth. Maymen soils are medium to strongly acidic. Vegetation is usually open stands of chaparral consisting of chamise (*Adenostoma fasciculatum*), scrub oak (*Quercus berberidifolia*), and, in protected sites, scattered coast live oak (*Quercus agrifolia*).

Gaviota soils are a brown to dark grayish brown fine sandy loam, developed from light yellowish brown sandstone. They have moderately rapid permeability, are well drained,

and have medium to rapid runoff. Their effective rooting depth is from six to 20 inches. They are medium acid to neutral. Uncultivated areas have a cover of annual grasses and forbs. Steeper areas usually have a cover of brush.

Obispo-rock outcrop often support soils which are very dark gray at the surface. Beneath the top layer is black, yellowish brown, or olive colored serpentinite. This soil type has very slow permeability. Obispo rock-outcrops are very well drained and have rapid to very rapid runoff. Their effective rooting depth is between eight and 20 inches. Their pH ranges from moderately alkaline to neutral. The sparse vegetative cover on Obispo-rock outcrops and associated soils consists of scattered shrubs such as leather oak (*Quercus durata*), toyon (*Heteromeles arbutifolia*), and sagebrush (*Artemisia fasciculatum*), as well as grasses and forbs.

Lodo is a grayish brown to very dark grayish brown shaly clay loam over dark grayish brown hard shale. It has moderate permeability, is somewhat excessively drained, and has medium to rapid runoff. The effective rooting depth is from four to 20 inches. It is slightly acid. Native vegetation is primarily chaparral, with some buckwheat (*Eriogonum fasciculatum*) and scattered oaks (*Quercus spp.*). Naturalized cover includes annual grasses and forbs.

Salinas soils are typically deep and well drained, formed in alluvium or weathered from sandstone and shale. Salinas soils are found on alluvial plains, fans, and terraces and have slopes of 0 to 9 percent. Salinas soils are found at elevations of 50 to 2,000 feet. The climate is dry subhumid mesothermal with cool to warm rainless summers with some fog and cool moist winters. Mean annual precipitation is 12 to 20 inches. They are well drained soils, with slow to medium runoff and moderately slow permeability.

Briones formation typically consists of distinctly bedded, gray to white, fine-grained sandstone and siltstone. Sandstone beds are as thin as 5 to 10 cm, with 2 to 10 cm thick shale interbeds. These are interbedded with massive fine-grained sandstone beds as much as five meters thick. The middle part of the Formation consists of indistinctly bedded, white, fine- to coarse-grained sandstone, conglomeratic sandstone, and massive shell-hash conglomerate (shell beds).

Shell-hash conglomerate is made up of interlocking mollusk and barnacle shells and shell fragments in a white calcareous sandstone matrix.

