VI. PLAN OVERVIEW

A. SUMMARY OF PLAN

The Plan provides four broad categories of actions leading to conservation of the species of concern. Legal and Planning actions incorporate conservation and impact minimization at the design and approval stages of development. Enhancement Activities and Monitoring will be carried on over the long term to accomplish the goals of the HCP. The general details of these primary techniques are given in Chapter III.

B. PHASES OF THE CONSERVATION PLAN

The HCP for SBM is a long term program for conserving the ecology of SBM and preserving the principal populations of several endangered species. While the philosophical foundation of the plan is maximum feasible conservation, there is an opportunity on SBM to gradually enhance the habitat for the species of concern through grassland successional management and other tools. The immediate threats to the species are disturbance from the development of privately held lands and surrounding urban uses. These require mitigation and conservation actions apart from a large scale, long term habitat enhancement program.

The two basic activities -- development mitigation and habitat enhancement -- define two principal phases of the HCP. In addition, the HCP will undergo a start-up period which should be considered an initial phase for the purpose of budgeting and research planning. The phases are not distinct, rather the HCP program activities will shift emphasis in response to the development schedule and according to the plan's own research program. The approximate timing of the phases is listed below.

Phase	Period (years from start)
Start-up	0 - 3
Development Mitigation	0 - 8
Habitat Enhancement	5 - ?

HCP phases are important considerations in program planning and will be referenced in the detailed plans described in Volume Two. Briefly, the HCP phases help solve the budget problem of allocating largely fixed resources among the many areas and types of possible activities. Phasing also reflects the philosophical evolution of the plan to include direct habitat manipulation as more is known about the ecology of the species of concern and the overall ecology of SBM.

C. PLANNING AREA OVERVIEWS

The following are brief overviews of each Planning Area with regard to description and location, vegetation, proposed development projects, biological issues, and Habitat Conservation Plan objectives. Following each general

overview is an enhancement overview for each planning area which discusses timing, coordination with proposed projects, and specific enhancement measures. Detailed information for each Planning Area is incorporated in Volume Two of this Plan. The four Planning Areas are divided into Administrative Parcels which correspond to ownership, and the Administrative Parcels are further divided into Management Units which correspond to areas containing common conservation problems. The Table of Contents of Volume Two is included here for reference.

TABLE OF CONTENTS
VOLUME TWO

1. Guadalupe Hills

The Guadalupe Hills planning area includes that section of the Mountain north of Guadalupe Valley with its eastern border on Bayshore Boulevard, its western border in park lands and edged on the north by residential areas of San Francisco (see Figure VI-1). This area constitutes the lowest ridge of the Mountain, with moderately steep hills containing both grassland and brushland habitat. Exotics such as gorse and eucalyptus have also become well established (see Figure VI-2).

Development is now proposed for the Northeast Ridge, Rio Verde Estates, and Rio Verde Heights parcels, which includes the Carter-Martin Road Extension. Future land use for parcels V, W, X, Y, and Z is currently unknown. A list of the number of acres found in each of these parcels is presented in Table VI-2.

The Guadalupe Hills planning area contains the second largest butterfly colony on the Mountain (about 25% of the entire Mission Blue and 30% of the entire Callippe populations) and is subject to the greatest impact from development. The area has previously been disturbed by Guadalupe Canyon Parkway which now divides the colony, by extensive damage from off-road vehicle use, and by the uncontrolled spread of exotic plant species. Therefore the impact of development would be severe not only because of the number and placement of housing units and the increase in human activity, but also because it further decreases the natural value of this already disturbed habitat. In addition to the butterfly populations several grassland animals have been sighted in the Guadalupe.Hills, and rare and endemic plant habitat is known to exist on County Park lands near the quarry (Biological Study). The corridor between the Southeast Ridge and the Northeast Ridge, which is now limited to the brushy area at the west end of the valley, must be preserved for utilization by the species so as to maintain continuity between the colonies. Likewise, contiguity within the colony must be maintained.

In order to maintain colony continuity, the approach toward the Guadalupe Hills planning area with regard to habitat protection is to conserve habitat, maintain large amounts of contiguous habitat, and improve the quality of the Conserved Habitat. Habitat conservation techniques will include control of exotics (eucalyptus and gorse), revegetation of off-road vehicle cuts and graded areas, planning assistance, and protection against human encroachment.

Enhancement Overview for the Guadalupe Hills Planning Urea: Because of the extensive development proposed for this planning area, coordination of enhancement activities in the Conserved Habitat within various administrative parcels is important in order to offset the impact of major losses of habitat. Because these losses correspond to development phases, the overall enhancement activities for the planning area initially will be coordinated with these phases. There are two major development phases (I and II) proposed with the Northeast Ridge project. Because this parcel involves the largest area of habitat loss the short term enhancement phases will be within the same time frame as the major development phases. It appears that both the Rio Verde Estates Development and the Carter-Martin Road Extension will also fit into this scheme as development will likely begin in all areas at approximately the same time. Post development enhancement involves long term enhancement goals and will be considered as Phase III.

FIGURE VI - 1
PLANNING AREAS AND ADMINISTRATIVE PARCELS

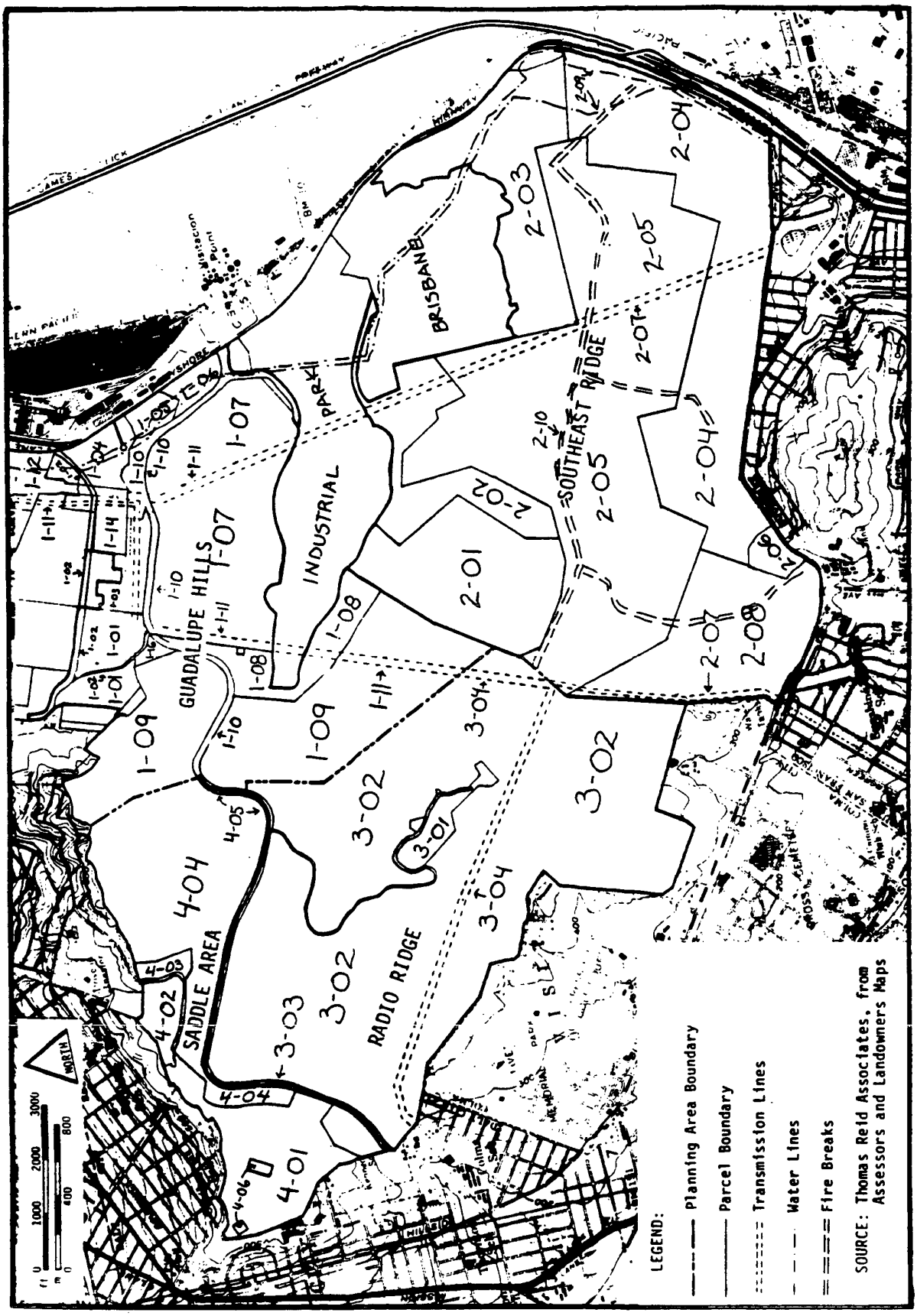

FIGURE VI - 2
PRIORITY AREAS FOR HABITAT ENHANCEMENT

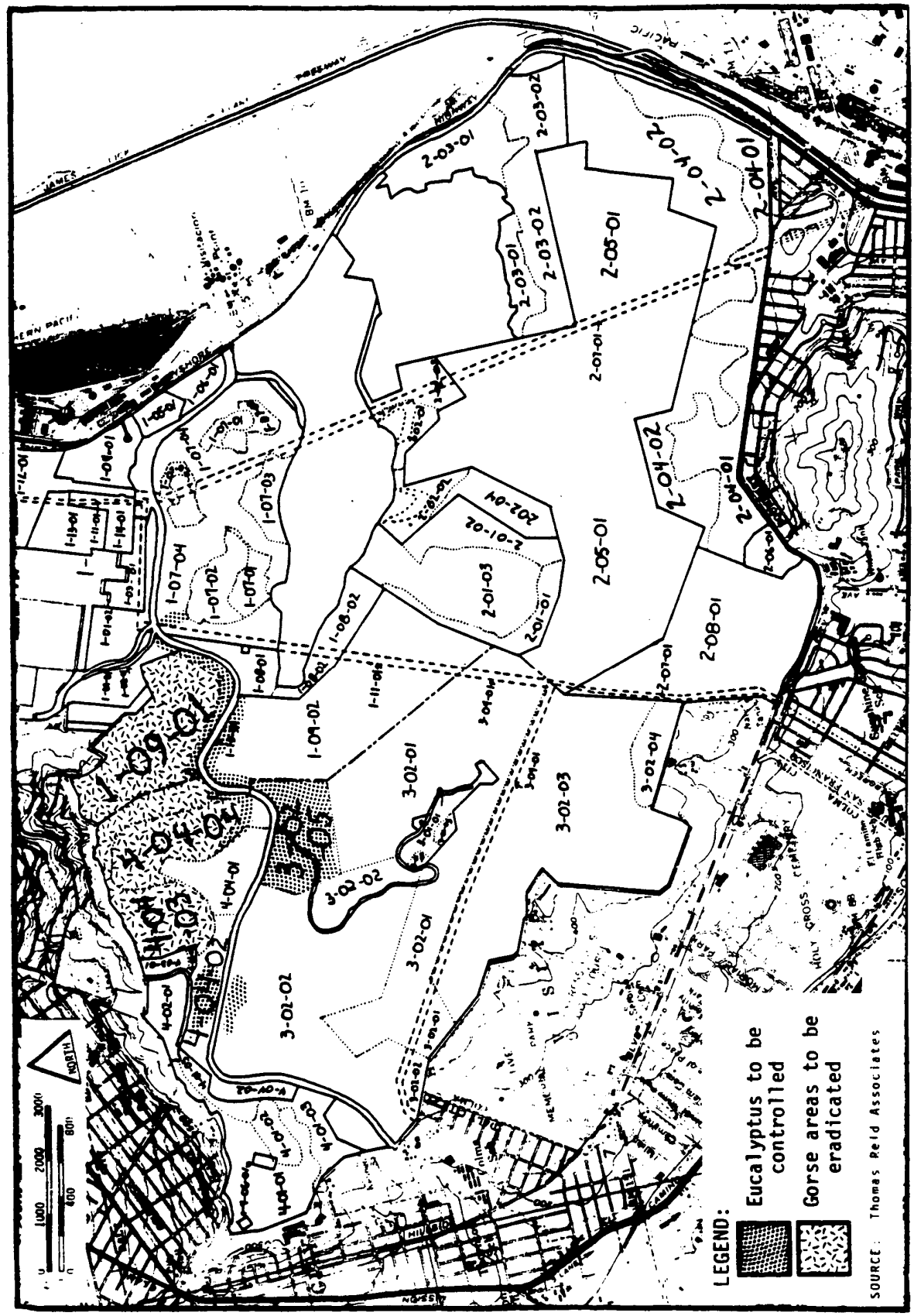

TABLE VI-1
LAND OWNERSHIP AND PLANNING RESPONSIBILITY

AREA / PARCEL	CURRENT OWNERSHIP	PLANNING RESPONSIBILITY	POLITICAL JURISDICTION
1. Guadalupe Hills			
01. Rio Verde Estates	VA	MENZOIAN	DC
02. Carter-Martin Road Extension	VA	DC	DC
03. Rio Verde Heights	MENZOIAN	MENZOIAN	DC
04. Parcel X	LEVINSON	LEVINSON	B
05. Parcel Y	ALISAL LAND CO.	ALISAL LAND CO.	B
06. Parcel 2	VA	CFHW	B
07. Northeast Ridge Project	VA	CFHW	SM/B
08. Guadalupe Valley West	VA	VA	SM/B
09. State Park	STATE	STATE/SM	SM
10. Guadalupe Canyon Parkway	SM	SM	SM/B
11. Transmission & Gas Line Easements		PG&E	CPUC
12. Pg&E Fee	PG&E	PG&E	CPUC/DC
13. Water Pipelines	S.F. WATER DEPT.	SF	SM
14. Parcel W	BANK OF AMERICA	DC	DC
15. Water Tank	G.V. MUNICIPAL IMP. DIST.	SM	SM/B
16. Parcel V	VA	VA	DC
2. Southeast Ridge			
01. Quarry	QUARRY PRODUCTS	QUARRY PRODUCTS	SM/B
02. Owl & Buckeye Canyon	BOTTOMS	BOTTOMS	SM/B
03. Brisbane Acres	MULTIPLE OWNERS	MULTIPLE OWNERS	B
04. South Slope Project	VA	W.W. DEAN	SM/SSF
05. County Park	SM	SM	SM
06. Hillside School	SSF USD	SSF USD	SSF
07.Transmission & Gas Line Easements	PG&E	PG&E	CPUC
08. Juncus Ravine	VA	VA	SM
09. Water Pipelines	S.F. WATER DEPT.	SF	SM
10. Fire Breaks	CALIF. DEPT. OF FORESTRY	STATE	SM
3. Radio Ridge			
01. Antenna Sites	WATSON	WATSON	SM
02. County Park	SM	SM	SM
03. Guadalupe Canyon Parkway	SM	SM	SM
04. Transmission & Gas Line Easements	PG&E	PG&E	CPUC
4. Saddle			
01. Reservoir Hill Project	VA	PRESLEY, CA	DC/SM
02. Brisbane School Site	B SCH DIST	DC	SM/DC
03. ".47 Units"	VA	VA	SM/DC
04. State Park	STATE	STATE/SM	SM
05. Guadalupe Canyon Parkway	SM	SM	SM
06. Reservoir Hill Water Tanks	DC	DC	DC

B City Of Brisbane
Cfhw Cadillac-Fairview Homes West
Dc City Of Daly City
Sm County Of San Mateo
SSF CITY OF SOUTH SAN FRANCISCO
SSF USD S.S.F. UNIFIED SCHOOL DISTRICT
VA VISITACION ASSOCIATES

TABLE VI – 2
ADMINISTRATIVE PARCEL - ACREAGE

	PRESENT		HCP			
	DIST	OS	CH	PERM	UNPLA	TOTAL
1. GUADALUPE HILLS						
01. RIO VERDE ESTATES		53	18	35		53
02. CARTER-MARTIN ROAD EXT.		8	4	4		8
03. RIO VERDE HEIGHTS		19	11	8		19
04. PARCEL X		28			28	28
05. PARCEL Y		11	4	7		11
06. PARCEL Z				11		11
07. NORTHEAST RIDGE PROJECT		230	138	92		230
08. GUADALUPE VALLEY WEST		49	49			49
09. STATE & COUNTY PARK		288	288			288
10. GUADALUPE CANYON PARKWAY	28	6	6			34
11. TRANSMISSION AND GAS LINES						40*
12. P G & E		34			34	34
13. WATER PIPELINES						9*
14. PARCEL W		14			14	14
15. WATER TANK, GVH	1					1
16. PARCEL V		3			3	3
TOTAL	29	743	521	146		783
2. SOUTHEAST RIDGE						
01. QUARRY	78	70	70			148
02. OWL & BUCKEYE CANYON		91	76	15		91
03. BRISBANE ACRES		154			154	154
04. SOUTH SLOPE PROJECT		337	211	126		337
05. COUNTY PARK		575	575			575
06. HILLSIDE SCHOOL	13					13
07. TRANSMISSION LINE						35*
08. JUNCUS RAVINE		162	162			162
09. WATER PIPELINES						12*
10. FIRE BREAKS						
TOTAL	91	1389	1094	141	154	1480
3. RADIO RIDGE						
0l. ANTENNA SITES	6	16	15	1		22
02. COUNTY PARK		885	885			885
03. GUADALUPE CANYON PARKWAY	14					14
04. TRANSMISSION LINE						28*
TOTAL	20	901	900	1	0	921
4. SADDLE						
01. RESERVOIR HILL PROJECT		104	31	73		104
02. BRISBANE SCHOOL SITE		19			19	19
03. "47 UNITS"		9	2	7		9
04. STATE PARK		204	204			204
05. GUADALUPE CANYON PARKWAY	14					14
06. WATER TANKS, RESERVOIR HILL	3					3
TOTAL	17	336	237	80	19	353
GRAND TOTAL	185	3380	2752	368	260	3537

LEGEND
DIST: presently disturbed area
CH: conserved habitat under HCP
PERM: permanently disturbed area under HCP
UNPLA: unplanned as of May 1982
OS: existing open space area
* easement not added into totals

Enhancement during the first phase will be limited to the creation or extension of corridor areas by thinning existing patches of exotics, and stopping the spread of both brush and exotics by eliminating seedlings which are invading open areas. The second phase will concern the control of extensive colonies of exotics in other areas with lesser corridor value, and revegetation of areas where the exotics were eliminated. Long term enhancement goals include continued brush and exotic species management and introduction of host plants into new areas. All enhancement activities mentioned below will be done by the Plan Operator. Certain activities should take place as soon as possible in order to be effective in offsetting habitat loss due to development, therefore land owners should give the Plan Operator permission to perform the activities prior to formal granting of easement or dedication of their land: The phases are as follows:

Phase I -- 1983-1984
Phase II - 1985-1986
Phase III - 1987 on

Specific Enhancement Measures for Phase I:

a. Thin eucalyptus along Eucalyptus Road as indicated in Figure VI-2 in Management Unit 1-07-04 to open up a corridor into the Saddle Area and Guadalupe Valley West Administrative Parcel.
b. Thin eucalyptus along Guadalupe Canyon Parkway as indicated in Figure VI-2 within Management Units 1-09-01, 1-09-02, and 1-O1-02 in order to facilitate movement between the Saddle, Guadalupe Hills and the Southeast Ridge Planning Areas.
c. Begin gorse eradication experiments as indicated in Figure VI-2 in Management Unit 1-09-01 to determine most effective method of elimination.
d. Check the growth of brush and exotics by eliminating seedlings .in Management Units 1-07-04, 1-09-Ol,and 1-09-02.
e. Monitor these areas during the flight season of both butterflies to assess the success of the enhancement activities.

Specific Enhancement Measures for Phase II:

a. Continue thinning of eucalyptus as necessary to open up additional corridors in units 1-09-01 and 1-09-02.
b. Continue gorse eradication in unit 1-09-01.
c. Enhance suitable areas on which gorse had previously existed with host plant or other native species.
d. Continue gorse eradication until it is totally eliminated from the planning areas.
e. Monitor these areas to determine success and future needs.

Specific Enhancement Measures for Phase III:

a. Allow eucalyptus not previously thinned to naturally senesce and die out where not desired; control seedling growth so the stands do not spread.
b. Where eucalyptus are desired (i.e., for park uses) and do not inhibit butterfly movement insure that they are being properly managed.

c. Continue brush control when and where necessary to facilitate butterfly movement.
d. Continue gorse eradication until it is totally eliminated from the planning area.
e. Continue enhancing areas previously containing gorse with host plant or other native species.
f. Continue to monitor all enhancement areas to determine future needs.

2. Southeast Ridge

The Southeast Ridge planning area extends from Bayshore Boulevard on the east to the transmission line west of the Quarry and from Hillside Boulevard on the south to the quarry road in Guadalupe Valley on the north. It constitutes the eastern half of the main ridge of the Mountain and includes such features as the Quarry, transmission lines, an antenna site and Hillside School (Figure VI-1). The area is characterized by steep slopes= the northfacing side is primarily brushland with patches of grassland and some woodland habitat, while the south-facing side is predominantly grassland.

The parcels which are currently proposed for development include the South Slope, County Park, and Quarry. Future development may be proposed for owl and Buckeye Canyons and Brisbane Acres. The transmission line stands as a separate parcel and no changes are proposed within it at this point. The acreage of these parcels is listed in Table VI-5.

The majority of the San Bruno Mountain populations of the Mission Blue and Callippe Silverspot are found on the upper slopes of the Southeast Ridge. For this reason grading is an important concern; it should be minimized and be well monitored in order not to destroy habitat essential to the insects. Another important concern is the contiguity between this colony and the rest of the Mountain, including areas around the quarry and at the western end of Guadalupe Valley. A third concern is whether increased human activity in the area will increase the potential for accidental fires and vandalism and threaten the habitats of the butterflies and other species found there, including endemic plants.

The initial approach to the upper slopes of the Southeast Ridge Planning Area is to leave them untreated (see Glossary), with perhaps introduction of brush management at a later stage. The conservation of maximum open space within and between colonies will be one point of concern in the design of the habitat conservation approach. In development areas grading will be minimized, erosion prevention implemented, fire and vandalism control increased, and constructive landscaping encouraged (i.e. landscaping with host plants or fire retardant vegetation). These techniques are explained in the section of this plan entitled "Habitat Enhancement Techniques" (fn Chapter III) and their applications for each management unit are described below.

Enhancement Overview for the Southeast Midge Planning Area: The Southeast Ridge currently provides extensive areas of prime habitat for the butterflies of concern which will remain as open space within the County Park. Because development is proposed in low grade habitat areas only, no short term enhancement is necessary to improve the quality or extend areas of habitat.

Long term enhancement, however, may be necessary to control expansion of brush, exotics, and poison oak, especially on the north-facing slopes of the main ridge. The poison oak is particularly a problem in this planning area as it is difficult to eradicate except by fire, and in this area fire control could be a problem because of the steep slopes and high fuel load. Long term goals of dealing with this problem should include research and experimentation into the most effective brush and poison oak control methods, and restoration of these areas afterwards. Rock spreading and seeding of host plants may provide long term habitat for the Mission Blue and for this reason may be a very effective restoration tool in this planning area.

Another long term problem within the Southeast Ridge Planning Area is invasion of annual grasses in areas where lupine and violet exists. These grasses eventually outcompete the lupine and overgrow the violet making them inaccessible to gravid females. Re-introduction of grazing in these areas could eliminate the problem as the grass would be closely cropped by the grazing animals. Most grazing animals do not eat larger lupines as they contain certain chemicals which make them unpalatable.

Specific Long Term Enhancement Measures:

a. Experiment with the most effective means to eradicate poison oak and brush in Management Units 2-OS-O1 and 2-03-02, then eliminate it in areas where it appears to be taking over valuable habitat.
b. Experiment with rock spreading and seeding of host plants in the areas in (a) above: if successful do it on a larger scale.
c. Experiment with the re-introduction of grazing in Management Units 205-01 and 2-04-02f if successful continue indefinitely.
d. Monitor all experimentation areas for success in expanding or maintaining butterfly habitat.

3. Radio Ridge

The western half of the main ridge of San Bruno Mountain constitutes the Radio Ridge Planning Area. Its boundaries are Hillside Boulevard on the south and west, Guadalupe Canyon Parkway on the north and west and both the Guadalupe Hills and Southeast Ridge planning areas on the east (Figure VI-1).

This planning area is almost entirely composed of County parklands and includes the peak of the Mountain, the radio towers, the pike base, and assorted transmission line corridors. The terrain is characterized by steep, brush covered slopes with large expanses of exotic species fn some parts (e.g. the eucalyptus grove along Guadalupe Canyon Parkway). Patches of grassland are located throughout the planning area, but they are largely being outcompeted by encroaching brush and exotics.

Existing developments in the Radio Ridge planning area include the radiotowers, the pike base (which is now used by the San Mateo Parks and Recreation Department), and new park trails. Recently a plan to construct receiver and transmitter/receiver sites has been proposed in the vicinity of the radio towers.

The Radio Ridge planning area contains habitat suitable to the Mission Blue, Callippe and San Bruno Elfin butterflies. Rare and endemic plants are also located in this brushland/grassland area. Therefore, the biological concerns with regard to Radio Ridge consist primarily of protecting this habitat from the encroachment of exotic plant species and damage resulting from human activity (i.e. vandalism, accidental fires, miscellaneous construction).

The habitat conservation approach to Radio Ridge is initially to leave the area untreated, and to monitor the expansion of exotics and human encroachment. After obtaining results in other areas on the Mountain, implementation of brush and exotic management may be appropriate, otherwise as little manipulation as possible is recommended.

Enhancement Overview for the Radio Ridge Planning Urea: Enhancement of the Radio Ridge Planning Area will be attained primarily through the eradication or thinning of present exotics and the continued control of exotic invasion. Two major concerns at this time are the gorse which is starting to invade the roadcuts and the ridgetop, and the immense grove of eucalyptus at the entrance to the park (Management Unit 3-02-OS).

As in the other Planning Areas, the enhancement process should occur in phases. The first phase (short term) will involve the initial eradication of gorse and eucalyptus seedlings while the second phase (long term) involves the continued control of exotic invasion and selective thinning of the eucalyptus grove for corridor enhancement. The long term may also include brush control if this action is warranted.

The first phase of enhancement activities for the Radio Ridge Planning Area should include the following:

a. The eradication of gorse seedlings. The key to handling the gorse problem is to take early control of it and prevent the loss of large areas of existing habitat due to the spread of this plant. Therefore, in this phase of enhancement the gorse seedlings must be eliminated.
b. Initiate a program to control the spread of the eucalyptus groves indicated in Figure VI-2 by removing the seedlings on the outer edge of each grove. This is particularly important for the grove at the entrance to the park because of its already large size and its vicinity to habitat and corridor areas.

The second phase, or long term, activities for this Planning Area should include:

a. Continued removal of invading seedlings of both the eucalyptus and gorse in order to control their spread.
b. Thinning of the eucalyptus grove, particularly the section of the grove which extends northeast around the bend of Guadalupe Canyon Parkway in order *to* open a corridor between the Saddle Planning Area and the rest of SBM.
c. Monitoring the spread of brush; if it appears that sensitive habitat areas or corridors are *to* be affected by encroaching brush, control of its spread should be implemented.

4. Saddle

The Saddle Planning Area consists of the western half of the open space to the north of Guadalupe Canyon Parkway. It shares its eastern boundary with the Guadalupe Hills planning area while on the west and north it is bordered by residential sections of Daly City (Figure VI-1). It includes the State parklands, Reservoir Hill, the Brisbane School Site and the parcel called "47 Units". Reservoir Hill is considered to be in the Saddle planning area because it is a part of the land mass northwest of Guadalupe Canyon Parkway which was formerly contiguous with the County park lands, and because the two areas are so biologically similar.

The Saddle Planning Area is made up of rolling hills which are marked by ORV damage and sites of illegal dumping. The area is primarily a disturbed grassland with many introduced species, including gorse, eucalyptus and other evergreen trees. There are some spots, however, which are well populated with native bunchgrass.

Development proposed for the Saddle includes residential units on Reservoir Hill, the Brisbane School Site, '47 units" and park facilities on park lands. Existing development includes two water tanks on Reservoir Hill, the roads which lead up to Reservoir Hill, and one delapidated road within the State Park.

The Mission Blue colony on Reservoir Hill is the only colony of endangered butterfly in the Saddle (it contains 2% of the entire population) and may be extirpated by development. The remainder of this planning area does not provide much butterfly habitat for either Mission Blue or Callippe as it is primarily disturbed grassland and introduced woodland. Eradication or management of introduced species and re-introduction of the butterfly host plants are two of the biological tools proposed for this area, especially with regard to providing corridors of movement with other colonies so enhanced habitat in the Saddle Planning Area is open to colonization.

Since the Saddle contains such low grade butterfly habitat and is mostly disturbed, there exists the opportunity to try enhancement techniques and attempt to manipulate the environment to reclaim the unique ecology of the Mountain (i.e. chaining, burning, seeding, etc.). Therefore, the approach to the Saddle Planning Area is to proceed with proposed techniques of habitat enhancement in appropriate areas and accomplish some of the experimentation that is required.

Overview of Enhancement Activities for the Saddle Planning Area: Successful enhancement of the Saddle Planning Area hinges on the eradication of the exotics which have invaded the area. Two problem areas have been identified: the gorse on the main ridge of the park (Management Units 4-04-03 and 4-04-04) and the large grove of eucalyptus along Guadalupe Canyon Parkway (Unit 4-0402). The evergreens which line the old road in the park are not marked for eradication because of their usefulness to the park= they may need to be thinned, however, and their spread into adjoining grassland should be controlled.

In order to lessen the burden of work demanded at one time and insure that particularly important areas receive thorough treatment, the enhancement measures should take place in phases. Phasing of eradication activities in some areas will also minimize the chances that erosion will occur. The first phase, to be achieved in the short term, will include the elimination of gorse and eucalyptus seedlings and the initiation of a

complete eradication program to dispose of exotics in designated areas. The second phase involves more long term goals. Generally these goals are the completion of the above program by managing the spread of eucalyptus, and eliminating gorse to the extent that the native grassland is able to return and corridors between retained habitat areas are re-opened.

For the short term (phase one) the activities recommended for enhancement are as follows:

a. In Management Unit 4-04-02, an area not proposed for park development (e.g. trails), thinning of the large grove of eucalyptus trees indicated in Figure VI-2 should be started, with the first step being the elimination of seedlings on the periphery of the grove.
b. In Management Unit 4-04-03, the area which comprises the rain hiking/bicycle trail network, as many of the gorse and eucalyptus seedlings as possible should be eliminated (See Figure VI-2).
c. In Management Unit 4-04-04, which is the area designated to contain the majority of the park facilities, the exotics (gorse especially) should be eradicated during construction activities (Figure VI-2). If the park facility is not going to be built for another year or two, this area could be used for immediate experimentation of eradication techniques. The eucalyptus seedlings along Guadalupe Canyon Parkway, across from the County Park and Guadalupe Valley West areas should also be thinned so that the area can eventually be opened up for corridor use.

Phase two will consist of the following activities which should help achieve the long term goals of exotic eradication. In all areas the long term goal is to not only remove the exotics but also to control re-infestation by continually eliminating the invading plants.

a. The grove of trees in Management Unit 4-04-02 should eventually be thinned to the extent that it can be utilized as a corridor. It may be easiest to start a specific corridor area along the grove where it meets Crocker Avenue. If feasible, enhancement of the corridor with host plants may be one of the future activities.
b. Once an efficient method of gorse eradication is established the large patches of gorse in Management Unit 4-04-03 should be eliminated and reclaimed as butterfly habitat. This area could provide the sites needed for reclamation experimentation.
c. Once the gorse has been eradicated from Management Unit 4-04-04, host plants and native species should be re-introduced into the area, especially on sites denuded by removal of the exotics or grading. The grove of eucalyptus immediately adjacent to Guadalupe Canyon Parkway in this Unit should also be thinned to widen the area available as a corridor which will continue across Guadalupe Canyon Parkway into the County Park and Guadalupe Valley West Administrative Parcels.