

### **7.8. SCHOFIELD BARRACKS MILITARY RESERVATION (SBMR)**

#### **7.8.1. General Description.**

a. Location and Size. Schofield Barracks Military Reservation is located in central Oahu, west of the town of Wahiawa (pop. 18,000). SBMR extends from the Kamehameha Highway to the Waianae Mountain Range. SBMR is comprised of approximately 3587 hectares (8,863 acres), of which 1473 (3,640 acres) are ceded and 357 (882 acres) are fee simple.

b. Military Land Use. Schofield Barracks is the primary range complex for individual weapons qualification with limited light maneuver training areas. Lands used for maneuvers at Schofield Barracks Military Reservation (SBMR) include the cantonment area, maneuver training areas, ranges, and impact areas. Training and live-fire impact areas are situated west of the cantonment area.

c. Training Capabilities. The SBMR master plan designates two maneuver areas comprising 500 hectares (1,235 acres) as able to support maneuver training on the South Range, with an additional 609 hectares (1,506 acres) to support range and indirect fire activities, and a 1,125 hectares (2,780 acre) impact area. Small arms, machine gun, mortar, grenade, antitank, and limited short-range indirect fire artillery training are conducted in the firing ranges. The live-fire training facilities at SBMR are used year-round

#### d. Climate.

(1) Rainfall. The average rainfall varies with elevation and exposure; the averages inland at higher elevations of SBMR are considered representative of the island averages and usually exceed 127cm (50 in) annually, while the overall average for this subinstallation is 111cm (43.75 in). The spring/summer (April-October) monthly average is 4 to 9.6cm (1.63 to 3.78 in), and for fall/winter (November-March) months the range is 10.5 to 15.8cm (4.14 to 6.21 inches).

(2) Temperature. The annual average temperatures at Schofield Barracks Military Reservation range from 20.6° C (69° F) in January and February to 25° C (77.0° F) in August.

(3) Relative Humidity. Average RH from July 1999 to July 2002 measured by the SBMR RAWS was 81%. Over the same period, RH ranged from an average low of 75% in June to a high of 86% in December.

(4) Wind. Prevailing winds are northeasterly trade winds from 4 to 12 mph in the warmer summer months, and lighter southeasterly winds prevail in winter months.

e. Topography. The elevation at the SBMR ranges from 267m (660 ft) in the cantonment area to >1,214m (3,000 ft) in the Waianae Range (USACE and Nakata Planning Group 2000). Slopes of the mountains surrounding the impact area often greater than 20%.

**7.8.2. Vegetation Fuels Classification.**

The wildland fire fuel types found at SBMR have been categorized into eight classes (Figure 17 and Table 7.8.1). These classes were derived from the National Forest Fire Laboratory (NFFL) fuel behavior models as defined by Anderson (1982). For a full description of Oahu fuel types and their derivation see Section 3.5.

Table 7.8.1  
Fuel Types at SBMR

<i>Fuel Type</i>	<i>Fuel Model</i>	<i>Vegetation Classifications Included (Genus only)</i>
Short Alien Grassland	NFFL 2	<i>Andropogon</i>
Tall Alien Grassland	Guinea Grass Custom	<i>Leucaena/Panicum, Melinis/Panicum, Panicum</i>
Eucalyptus Forest	NFFL 10	<i>Eucalyptus, Melaleuca</i>
Ironwood Forest	NFFL 9	<i>Casuarina</i>
Mixed Forest	NFFL 8	<i>Metrosideros/Acacia koa/Dicranopteris</i>
Christmas Berry Shrublands	NFFL 5	<i>Schinus</i>
Kukui Forest	Kukui Custom	<i>Aleurites</i>
Developed/Denuded	None	<i>Agriculture, Urban Development, Bog, Open Water, Roads</i>

# Schofield Barracks Military Reservation Fuels

## Figure 17

### Legend

#### Fuels

-  Christmas Berry Shrublands
-  Developed/Denuded
-  Eucalyptus
-  Ironwood Forest
-  Kukui Forest
-  Mixed Forest
-  Short Alien Grassland
-  Tall Alien Grassland

 Installation Boundary

 Bog

 Primary Roads

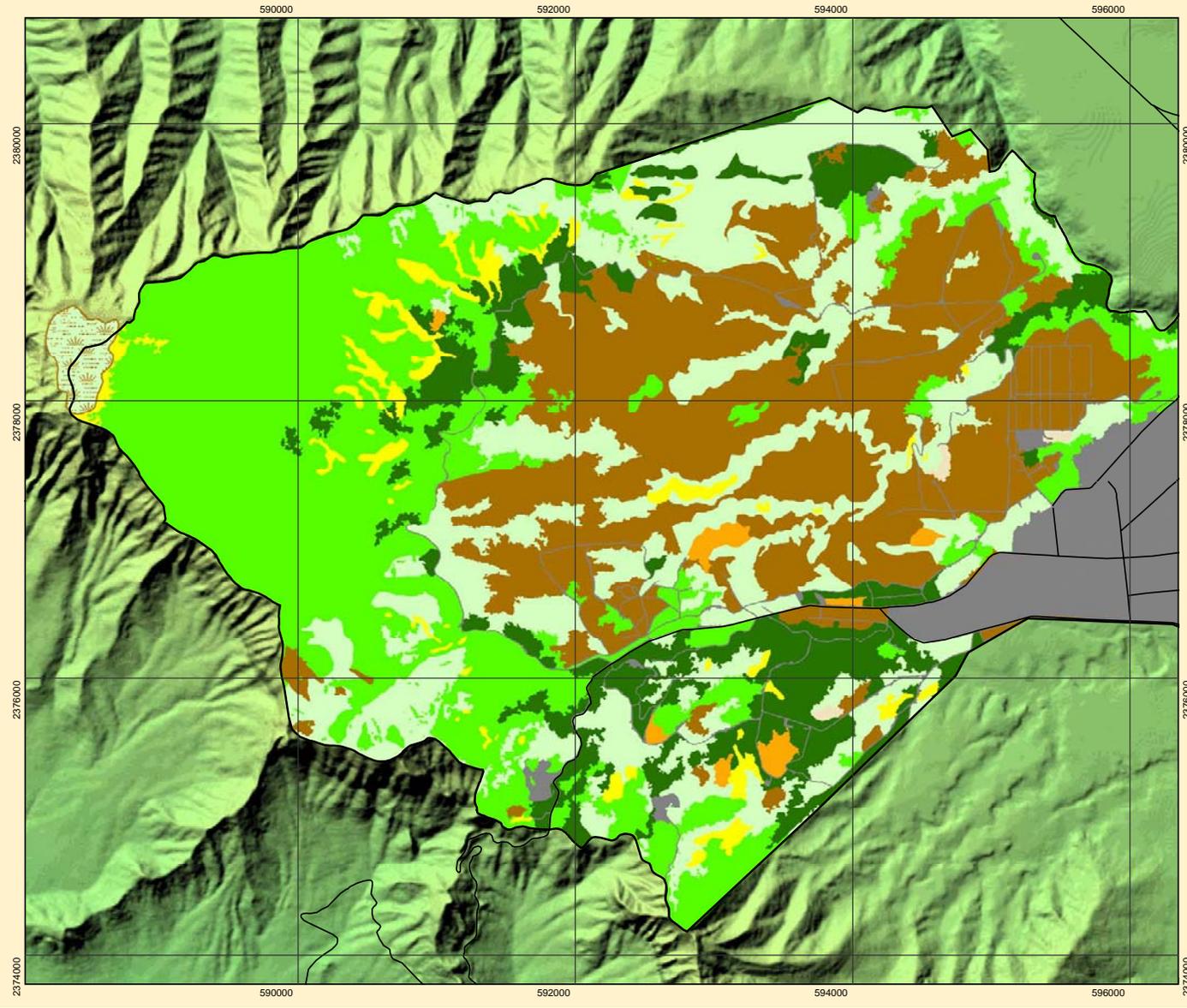


1:30,000

0 500 1,000 Meters

0 0.5 1 Mile

Data Source: Center for Environmental Management of Military Lands 2003  
IKONOS 4 meter Multispectral Imagery





**7.8.3 Fire History for SBMR.**

a. A fire history was compiled for Schofield Barracks to the extent possible utilizing fire records provided by the U.S. Army Hawaii (USARHAW) Range Division and the Federal Fire Department (FFD) (see Reference 7.8.1). There were frequent gaps in important information, particularly in the acreage burned and the ignition source.

b. Fire at Schofield Barracks has been frequent in the past decade due in large part to the installation's extensive use. Additionally, most types of ammunition, including highly fire prone munitions such as white phosphorous and tracers, are authorized for use. Few fires have burned outside of the firebreak road indicating that it is a substantial barrier to the spread of fire.

c. Significant points from the fire history are summarized below:

(1) The total number of fires per month illustrates that the end of the summer requires the greatest fire management vigilance, though there is also a fairly high incidence in March, April, and May.

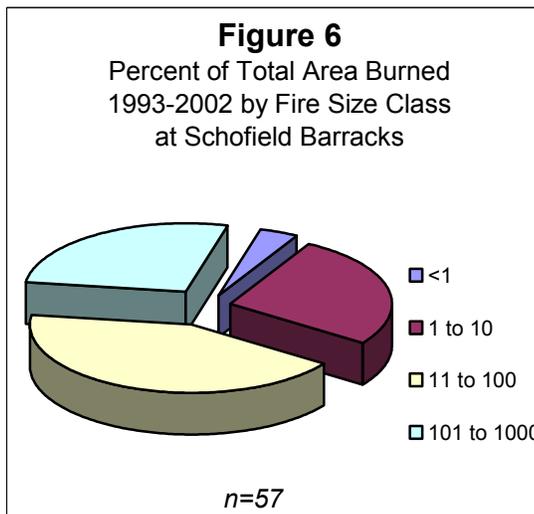
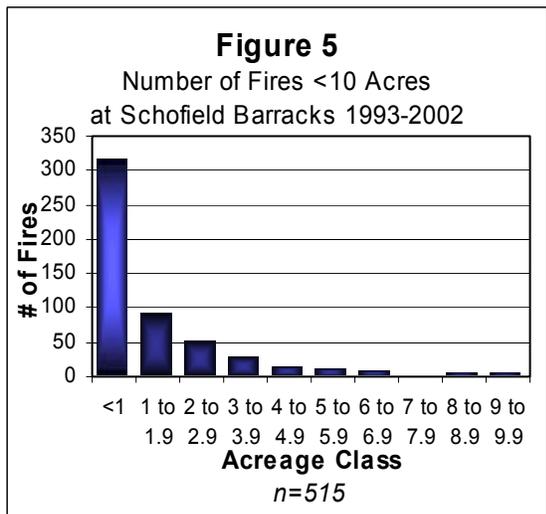
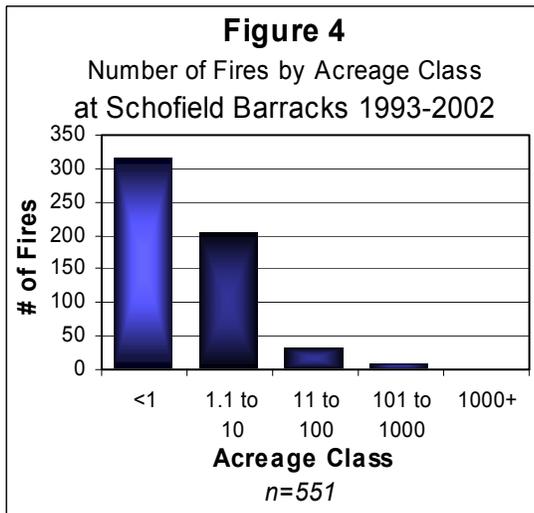
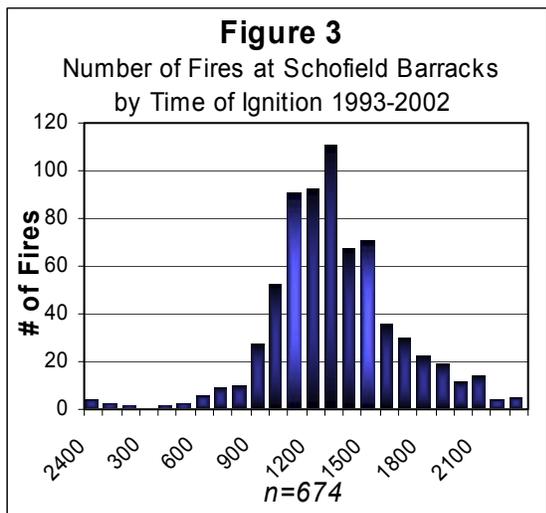
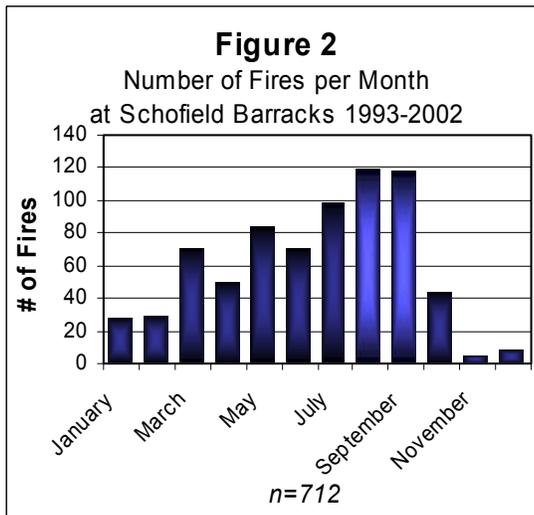
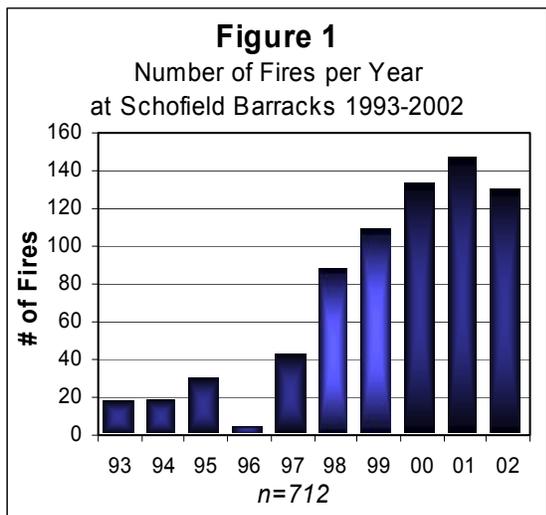
(2) Most fires were ignited between 1100 and 1500.

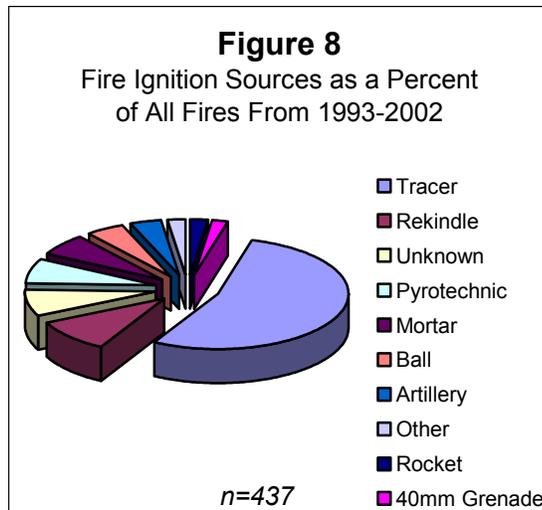
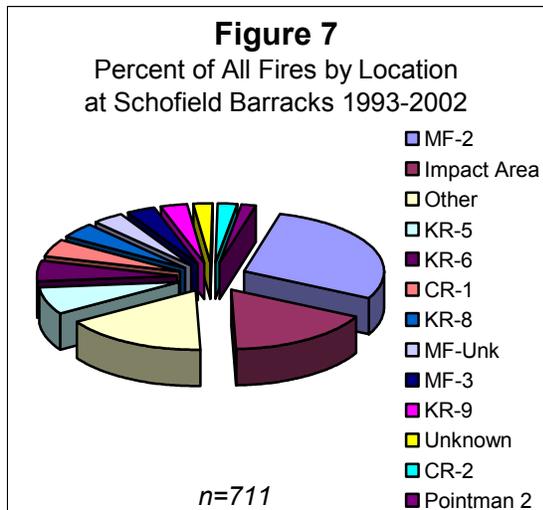
(3) Median fire size is 0.2 hectares (0.5 acres). Only a fraction of the fires that recorded acreage were larger than 10 acres and the largest fire on record was 121 hectares (300 acres). However, the paucity of large fire records is due at least in part to incomplete record keeping.

(4) The greatest number of fires have been ignited at MF-2, in the impact area, and at KR-5. These three locations were responsible for almost half of all fires.

(5) The most significant cause of ignitions at Schofield Barracks has been tracers, which account for just over 50% of all recorded fires.

Reference 7.8.1  
SBMR Fire History





**7.8.4 Resource Protection.**

a. Biological Sensitive Areas (BSA). There are six natural resource management units within SBMR: North Haleauau Management Unit, Mt. Kaala Management Unit, Banana Gulch Management Unit, North Mohiakea Management Unit, South Mohiakea Management Unit, and Puu Hapapa Management Unit (see Figure SBMR-2 in the SBMR SOP, Appendix 1). There are also seven Biologically Significant Areas designated at SBMR, three BSA-1, three BSA-2, and one BSA-31, all of which are located on the ridges surrounding the impact area.

b. Protected Species. Twenty-two federally listed plant species have been documented at SBMR<sup>1</sup>. Three federally listed animal species have been documented at SBMR (Table 7.8.3). Nearly all of these species occur outside of areas normally used for training.

c. Cultural Resources. SBMR has at least 89 known archeological sites (excluding the cantonment area) or resources including a Heiau or Hawaiian temple, non- or semi-irrigated agricultural sites, irrigated agricultural sites, and habitation sites<sup>2</sup>.

<sup>1</sup> Biological Assessment for Endangered Species Act, Section 7 Consultation on Routine Military Training and Transformation of the Second Brigade to a Stryker Brigade Combat Team, 25<sup>th</sup> Infantry Division (Light), U.S. Army Hawaii. Various Sites, Island of Oahu. 21 March, 2003.

<sup>2</sup> Zulick, L. and D. Cox. 2000. Cultural Resource Management, Army Sub-Installations, U.S. Army Garrison Hawaii (2 vols.). Research Corporation of the University of Hawaii, Army Natural Resource Center, Bldg. 1595, Schofield Barracks, Hawaii.

**CHAPTER 7 – FIRE MANAGEMENT AREAS – SBMR**

d. Wildfire Prevention Analysis

(1) Three wildfire areas have been designated based on existing and planned firebreaks and roads. The cantonment area was not included. Each area was assigned an ignition potential, hazard, and value based upon the best currently available information. The resulting Pre-Suppression Priority map shows that the impact area is at highest risk (Figure 18).

Unit A – Impact Area

Ignition - High High frequency of live-fire  
 Hazard - High Heavy fuel load of *Panicum maximum* and *Melinis minutiflora*  
 Value - Low No known threatened or endangered species exist in the impact area

Unit B – South Range

Ignition - Moderate Heavy military activity, but much lower frequency of live-fire  
 Hazard - Moderate Areas of heavy fuels, but roads compartmentalize the area  
 Value - Moderate Some listed species at higher elevations, mostly degraded habitat

Unit C – Northern and Western SBMR

Ignition - Low No military training, little human activity  
 Hazard - Moderate Lower elevations contain fire prone fuels, lack of access, firebreaks, or roads make containment difficult  
 Value - High Many listed species throughout

(2) By assigning values of 0, 1, and 2 to the low, moderate, and high designations respectively, and adding the values for ignition potential, hazard, and value, a priority level for each area has been determined.

Table 7.8.2  
 SBMR Pre-Suppression Priority

<i>Map Label</i>	<i>Location</i>	<i>Pre-Suppression Priority</i>
Unit A	Impact Area	4
Unit B	South Range	3
Unit C	Northern & Western SBMR	3

Schofield Barracks Military Reservation  
Pre-Suppression Priority

Figure 18

Legend

Pre-Suppression Priority

- None
- Low
- Moderate
- High
- Very High

- Installation Boundary
- Ranges

- Bog

Roads

- Primary
- Secondary
- Tertiary
- Unimproved

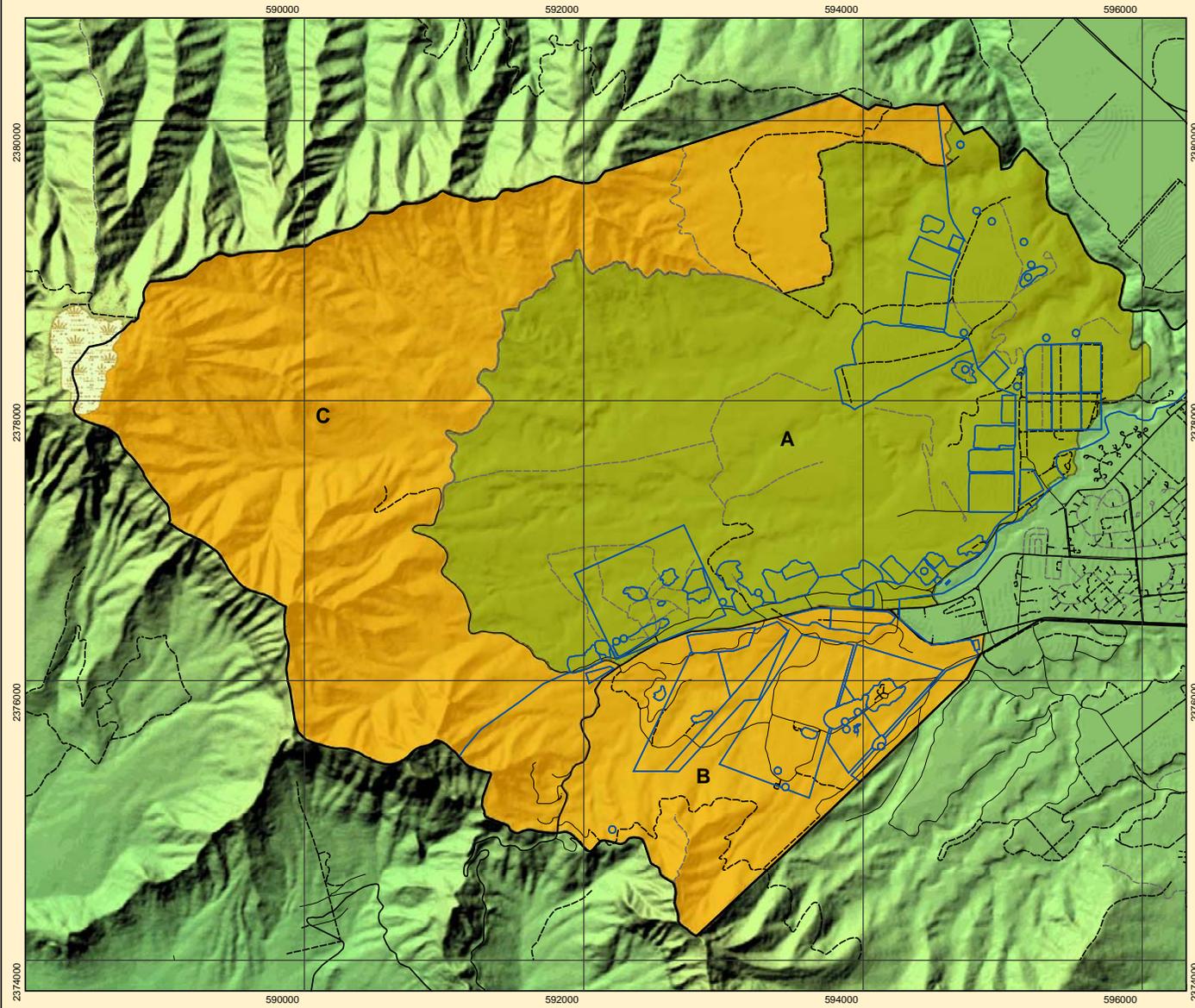


1:30,000

0 500 1,000 Meters

0 0.5 1 Mile

Data Source: Center for Environmental Management of Military Lands 2003





**7.8.5. Fire Protection.**

a. Firebreak System.

(1) There are one existing firebreak and two planned firebreaks at SBMR (Figure 19).

a. The existing break surrounds the impact area and has been in place for many years. Where necessary, it will be upgraded to standard.

b. The first proposed firebreak will surround the MF ranges and connect to firing point 308. Two alternatives are being studied at this time. One or both of them will be constructed depending on feasibility, defensibility, and funding.

c. The second proposed firebreak will contain south range using existing roads. These roads will be improved to firebreak standards

b. Fuels Modification. Several fuels management projects are planned for SBMR

(1) Prescribed burning has been conducted in the past and will continue in the future, primarily within the impact area. A future goal is to compartmentalize the impact area to facilitate this objective. Should the Army Transformation occur, the opportunity to establish control lines within parts of the impact area will present itself when areas are cleared of UXO to install new ranges.

(2) Mechanical, hand, and chemical treatments are in use and planned for all of the firebreaks. The objective of these treatments is to minimize fuels alongside the firebreak and expand its effective width. Herbicides will be used in accordance with all applicable laws and regulations.

**7.8.6. Budget**

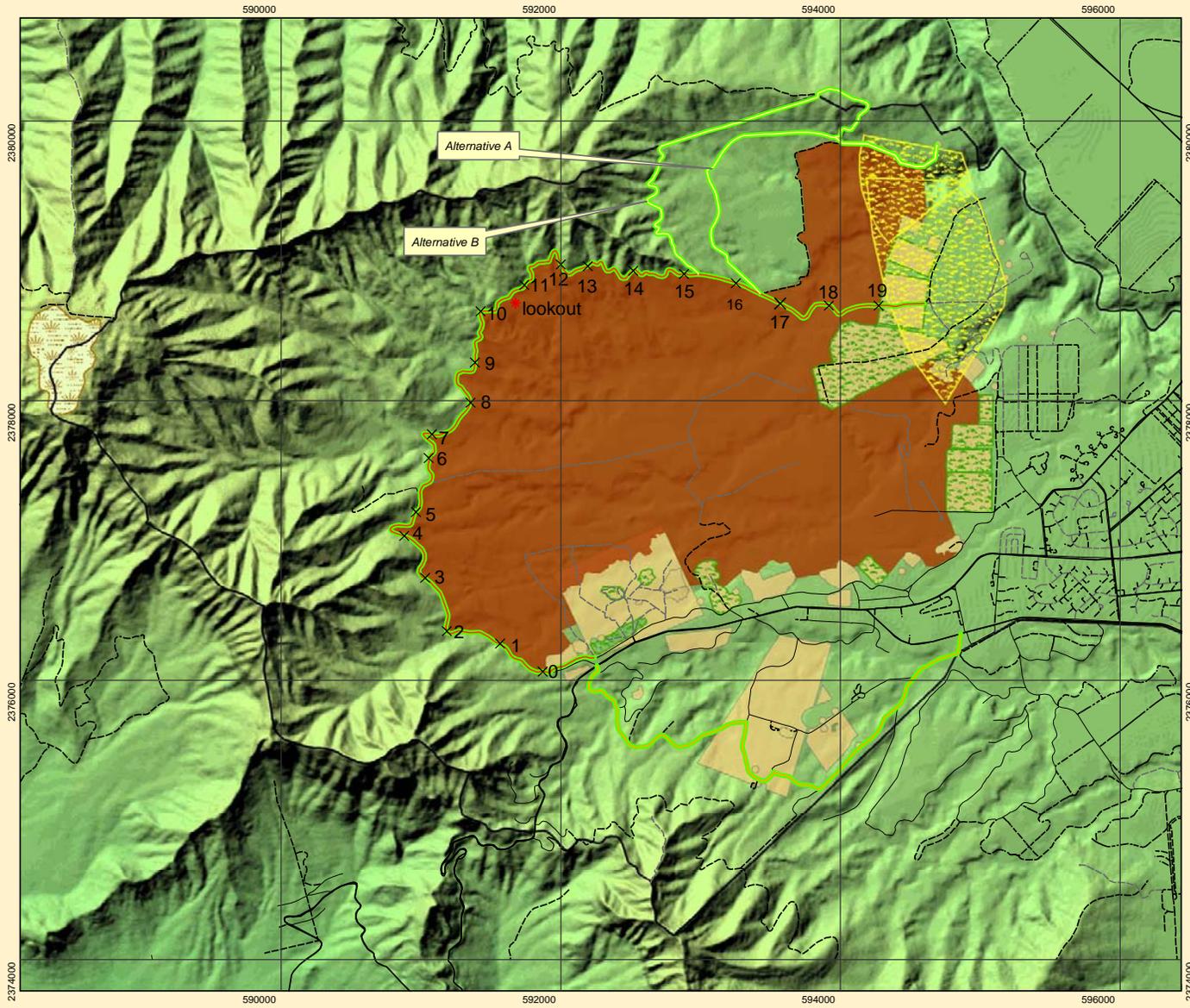
PROJ/FEWR NO.	PROJECT TITLE	EST COST (x \$1000)	FUNDED BY	FY
NA010682J	Construct New SB Dip Pond	60	DPW TCCC	O3
SBMR 03-01	SBCT Prescribed Burn/Aerial Herbicide	245	IFSO	O3
TA100103J	Construct New Firebreak McCarthy Flats	75	DPW TCCC	O4
TA100113J	Upgrade SB Firebreak Fixed RAWS Unit	18	DPW ENV	O4
	<b>Total</b>	<b>398</b>		

\*See Annex I for the sustainment budget

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Schofield Barracks Military Reservation  
Firebreaks and Fuels Management

Figure 19



Legend

- Existing Firebreak
- Proposed MF Firebreak
- Proposed SR Firebreak
- 1/4 Mile Marker
- Lookout
- Potential Prescribed Burning
- Herbicides
- Mowed Areas**
  - Approximation for SBCT
  - Currently Mowed
- Installation Boundary
- Ranges
- Bog
- Roads**
  - Primary
  - Secondary
  - Tertiary
  - Unimproved



1:30,000

0 500 1,000  
Meters

0 0.5 1  
Mile

Data Source: Center for Environmental Management of Military Lands 2003  
USARHAW IFSO



**CHAPTER 7 – FIRE MANAGEMENT AREAS – SBMR**

Table 7.8.3  
 Federally Listed Endangered and Threatened Species  
 At Schofield Barracks Military Reservation\*

<b>Plants:</b>		
<b>Federal Status</b>	<b>Common Name</b>	<b>Scientific Name</b>
Endangered	None	<i>Abutilon sandwicense</i>
Endangered	`Ala `alahua, mahoe	<i>Alectryon macrococcus</i> var. <i>macrococcus</i>
Endangered	None	<i>Alsinidendron trinerve</i>
Endangered	`Oha, haha, `ohawai	<i>Cyanea acuminata</i>
Endangered	`Oha, haha, `ohawai	<i>Cyanea grimesiana</i> spp. <i>obatae</i>
Endangered	Haha, `ohawai	<i>Cyanea lanceolata</i> spp. <i>calycina</i>
Endangered	Haha, `ohawai	<i>Delissea subcordata</i>
Endangered	None	<i>Diellia falcata</i>
Endangered	Mehamehame	<i>Flueggea neowawraea</i>
Endangered	Nanu, na`u	<i>Gardenia mannii</i>
Endangered	None	<i>Hesperomannia arborescens</i>
Threatened	Aupaka	<i>Isodendron longifolium</i>
Endangered	Kamakahala	<i>Labordia cyrtandrae</i>
Endangered	`Anaunau, naunau, kunana	<i>Lepidium arbuscula</i>
Endangered	`Oha, haha, `ohawai	<i>Lobelia oahuensis</i>
Endangered	None	<i>Phyllostegia hirsuta</i>
Endangered	None	<i>Phyllostegia kaalaensis</i>
Endangered	None	<i>Phyllostegia mollis</i>
Endangered	Ale	<i>Plantago princeps princeps</i>
Endangered	None	<i>Schiedea hookeri</i>
Endangered	None	<i>Schiedea kaalae</i>
Endangered	Olopu, pamakani	<i>Viola chamissoniana</i> spp. <i>Chamissoniana</i>

<b>Animals:</b>		
<b>Federal Status</b>	<b>Common Name</b>	<b>Scientific Name</b>
Endangered	Pupu Kuahiwi, Pupu Kanioe, Kahuli	<i>Achatinella mustelina</i>
Endangered	Oahu `Elepaio	<i>Chasiempis sandwichensis ibidus</i>
Endangered	`Ope`ape`a, Hawaiian hoary bat	<i>Lasiurus cinereus semotus</i>

\*According to Biological Assessment for Endangered Species Act, Section 7 Consultation on Routine Military Training and Transformation of the Second Brigade to a Stryker Brigade Combat Team, 25<sup>th</sup> Infantry Division (Light), U.S. Army Hawaii. Various Sites, Island of Oahu. 21 March, 2003.