

**POINT REYES NATIONAL SEASHORE
FIRE EFFECTS MONITORING PROGRAM
2000 ANNUAL REPORT**

PLOT NETWORK INFORMATION

TABLE 1. Plot installation by plot type.

Number of Plots Installed Previous Years				Number of Plots Installed 2000				Total Number Plots Installed			
G	B	F	Total	G	B	F	Total	G	B	F	Total
0	28	4	32	0	0	0	0	0	28	4	32
	11-C		11-C						11-C		11-C

C = Control Plots

- The eleven control plots were originally installed as burn plots but since there are no current plans to burn either the Tomales Point or Chute Gulch burn units, the plots established in these units now serve as control plots.

TABLE 2. Plot remeasurements by plot type for 2000 and 2001.

Total Plots to Remeasure 2001				Total Plots Remeasurement 2000			
G	B	F	Total	G	B	F	Total
0	10	0	10	0	13	0	13

TABLE 3. Five-year projected number of plot remeasurements by year

Number of Plots					
2001	2002	2003	2004	2005	2006
10	2	24	10	0	?

Number of plots to be remeasured are difficult to project due to the uncertainty of prescribed burns to be conducted. Numbers listed above are based on completing YR05 and YR10 monitoring on plots that have burned prior to 2000.

TABLE 4. Projected plot installation.

Plots to be Installed 2001				Projected Total			
G	B	F	Total	G	B	F	Total
0	20	1	21		41	5	46
					11-C		11-C

The projected number of plots to install in 2001 are very rough estimates based on the need for additional transects in current monitoring types. See Appendix C, Table 17 for monitoring types in which plots could potentially be installed.

TABLE 5. Number of plots that have burned.

Total Plots Burned 2000				Total Plots Burned to Date			
G	B	F	Total	G	B	F	Total
0	0	0	0	0	28	0	28
					11-R		11-R
					1-R		1-R
					4-R		4-R

R = Reburns

Of the 43 plots making up the PORE monitoring program, 28 of those have burned at least once; 11 have burned twice; one has burned 3 times and four have burned 4 times.

TABLE 6. Postburn plot summary.

	G	B	F	Total
01-Immediate Postburn	0	27 ¹	0	27
02-Immediate Postburn	0	16	0	16
03-Immediate Postburn	0	5	0	5
04-Immediate Postburn	0	4	0	4
01-1-Year Postburn	0	28	0	28
02-1-Year Postburn	0	16	0	16
03-1-Year Postburn	0	5	0	5
04-1-Year Postburn	0	4	0	4
01-2 Year Postburn	0	23 ²	0	23
02-2-Year Postburn	0	11	0	11
03-2-Year Postburn	0	4	0	4
00-3-Year Postburn	0	11-C	0	11-C
01-4-Year Postburn	0	3	0	3
01-5 Year Postburn	0	14 ³	0	14
02-5-Year Postburn	0	5	0	5
00-5-Year Postburn	0	11-C	0	11-C
01-10 Year Postburn	0	3	0	3

¹ No 01-POST data collected for LOPE 10. Considered for rejection because plot was driven through several times during Rx burn. Decided to retain and collect all subsequent years of postburn data.

² No 01-YR02 data collected for CYSC 02, 04, 05, 06, GEMO2 02. Plots returned before 01-YR02 data collection.

³ No 01-YR05 data collected for BAPI 09, 10, CYSC 02, 04, 05, 06, 08, LOPE 04, 05, 06. Plots returned before 01-YR05 data collection.

TABLE 7. Number of plots installed by monitoring type in 2000.

Monitoring Type Code	Monitoring Type Name	Number of Plots Installed in 2000	Total Number of Plots Installed	
			Burn	Controls
BBAPI1D05	Northern Coastal Scrub	0	6	4-C
BCYSC1D05	Non-native grassland with scotch broom	0	8	--
BLOPE1D01	non-native grassland	0	10	7-C
BGEMO2D05	Non-native grassland with french broom	0	4	--
FPIMU1D05	Bishop Pine forest	0	3	--
FPSME1D10	Douglas fir forest	0	1	--
TOTALS			32	11-C
TOTAL all plots				43

- The eleven control plots were originally installed as burn plots but since there are no current plans to burn either the Tomales Point or Chute Gulch burn units, the plots established in these units now serve as control plots.

DATA ANALYSIS

Minimum plot calculations

For those monitoring types where minimum plots have been met the numbers have been bolded. Confidence limits have not been established for any of the monitoring types, therefore, both 80% and 90% confidence limits have been included for comparison

**TABLE 8. Results of minimum plot calculations by monitoring type and monitoring type variable
BURN PLOTS**

Monitoring Type	Monitoring Type Variable	# of plots	Mean± S.D.	Minimum Plot Calculation	
				80%/25	90%/25
BBAPI1D05	1° % Relative cover of <i>Baccharis pilularis</i>	6	25.2±10.8	6	12
BCYSC1D05	1° % Relative cover of <i>Cytisus scoparius</i>	6 ⁴	8.7±4.3	8	16
BLOPE1D01	1° % Relative cover of <i>Lolium perenne</i>	10	16.4±8.8	9	16
	2° % Relative cover of native species		34.5±15.1	6	10
BGEMO2D05	1° % Relative cover of <i>Genista monspessulana</i>	3 ⁵	21.0±11.3	16	39
BPIMU1D05	1° Density of overstory <i>Pinus muricata</i>	3	326.7/ha ± 135.8	10	24
BPSME1D10	1° Density of overstory <i>Pseudostuga menziesii</i>	1	--	--	--

Mean = mean value of monitoring type variable

S.D. = Standard Deviation

⁴ CYSC 07 and 08 not included in minimum plot calculations being dissimilar in composition to plots CYSC 1-6

⁵ GEMO 01 not included in minimum plot calculations being dissimilar in composition to plots GEMO 2-4

**TABLE 8. Results of minimum plot calculations by monitoring type and monitoring type variable
CONTROL PLOTS**

Monitoring Type	Monitoring Type Variable	# of plots	Mean± S.D.	Minimum Plot Calculation	
				80%/25	90%/25
BBAPI1D05	1° % Relative cover of <i>Baccharis pilularis</i>	4	22.0±4.3	2	3
BLOPE1D01	1° % Relative cover of <i>Lolium multiflorum</i>	5*	24.9±10.6	7	13
	2° Percentage of native species		31.5±8.8	3	6

- LOPE plots 11 and 16 have not been included in minimum plot calculations being dissimilar in composition to the other 5 plots. LOPE 11 and 16 have a significant native grass component whereas plots 12, 13, 14, 15 and 17 do not. Note also that although they are called LOPE plots, *Lolium multiflorum* is the more common of the two *Lolium* species and was the species used to calculate minimum plots.

DATA ANALYSIS NEEDED

SCOTCH BROOM (BCYSC1D05)

- Divide Meadow,
 - CYSC 07 – burned 2x
 - CYSC 08 – burned 3x, 3x pulled, 1x cut
- MacDonald Ranch
 - CYSC 01, 03 – burned 2x; #x mowed?
 - CYSC 02, 04, 05, 06 – burned 4x; #x mowed?

FRENCH BROOM (BGEMO2D05)

- McCurdy
 - GEMO2 01 – burned 1x, cut 1x, mowed 2x
 - GEMO2 02 – burned 2x, pulled 1x, 3x mowed?
- Strain Hill
 - GEMO2 03 – burned 2x, mowed 2x?
 - GEMO2 04 – burned 2x, mowed 2x?

GRASSLAND – Elk Range (BLOPE1D01)

- RX9002 LOPE 1, 2, 3 – burned 1x
- RX9001, LOPE 4, 5, 6 – burned 2x
- Elk Range 3, LOPE 7, 8, 9, 10 – burned 1x
- Tomale Point Controls, LOPE 12, 13, 14, 15, 17 ; LOPE 11, LOPE 16 - unburned

NORTHERN COASTAL SCRUB (BBAPI1D05)

- RX9001 – BAPI 9, 10 – burned 2x
- Elk Range 3 – BAPI 11, 22, 23, 24 – burned 1x
- Chute Gulch Controls – BAPI 1, 6, 28, 30 – unburned

Minimum Plot Numbers Achieved

Initial Interpretation of the Data

Actions to be Taken Based on this Data Analysis

Additional Analyses Needed

PROGRAM INFORMATION

Staff Participants

Jeanne Taylor, GOGA
Wende Rehlaender, GOGA
Steven Bekedam, GOGA
Mari Danz, GOGA
Peggy Herzog, PORE

Length of Season

TABLE 9. Number of pay periods in field season devoted to fire effects.

Monitor	Starting Date	Ending Date	# of Pay Periods
Jeanne Taylor	various	various	2.5
Wende Rehlaender	various	various	1.5
Steven Bekedam	various	various	1.0
Mari Danz	various	various	2.0
Total number of pay periods all persons			7.0

All monitoring of FMH transects was completed in 0.5 pay periods. Another 0.5 pay period was spent GPSing all plot locations and remapping the transects at McDonald Ranch. Jeanne Taylor spent an additional pay period completing the year-end report and completing the error checking of the FMH database.

Wende Rehlaender spent 0.5 pay period completing the data entry of all 2000 data.

Mari Danz spent 1.5 pay periods downloading and correcting the GPS data and exporting it to ArcView. She also created a template for producing burn unit maps with all plot locations.

Changes in Protocol

Vegetation height data was not collected in 2000. It was decided to discontinue collecting height data since the data is not being utilized and is not vital to monitoring change over time.

A summary of the changes in protocol made by year can be found in the following section.

SUMMARY OF CHANGES IN PROTOCOL, 1990 – 2000

BRUSH BELT – Age classes

1991 - Age classes were instituted for brush species. The age classes were:

M=Mature

R = Recruit

S= Sapling/Adolescent

1992 – Age class codes were changed to:

M = mature

R = resprout

S = Seedling

dbase changes

In order to make the data current with the 1992 codes, ~~all S's have been changed to M's~~ in the database and any R's were changed to S's. Plots affected: BAPI 09, 10, 23, 28, LOPE 01, 02, 03, 05, 08, 09, 10

BRUSH BELT – Plants no longer counted in brush belt

1990 – Brush density data collected for Salal (*Gaultheria shallon*)

dbase changes

deleted all entried of GASH 3/20/01

1992 – Brush density data no longer collected for Poison oak. Plant is rhizomatous and discreet individuals cannot be determined

dbase changes

All entries for TODI have been deleted from the brush belts on all BAPI and LOPE plots.

BRUSH BELT - Belt widths

1993 - The brush belt on LOPE plots was reduced from 3 meters to 2 meters. The change was made because it was determined that sufficient brush density data could be obtained with a 2 meter brush belt. However, this creates a problem with comparison with brush density data collected prior to 1993.

Plots affected:

LOPE 04, 05, 06

PREBURN, 01-YR01, 01-YR02 – 3 meters

02-YR01, 02-YR02, 02-YR05 – 2 meters

LOPE 07

PREBURN - 3 meters

01-YR01, 01-YR02, 01-YR05 – 2 meters

LOPE 08, 09, 10

PR01 – 3 meters

PREBURN , 01-YR01, 01-YR02, 01-YR05 – 2 meters

1995/2000 – Brush belt data collected in both 3 meters and 2 meters. Plots affected:

LOPE 01, 02, 03

PREBURN, 01-YR01, 01-YR02 – 3 meters only

01- YR05, 01-YR10 – 3 meter and 2 meter data

dbase changes

The three meter brush belt data was converted to 2 meter data by multiplying the 3 meter counts by $\frac{2}{3}$ 3/19/01.

Three meter brush belt data entered under index code BLOPE1D01 and is stored in the main POREMISC directory.

PSME and PIMU

1999 – In the establishment of the PSME and PIMU plots a variety of sample area sizes were used for overstory, poles and brush variables in order to assess the variation in sample area size on density estimates. After examination of the data, a determination will be made as to which sample area size is optimum for each monitoring type.

dbase changes

PSME 01 (FIRTOP)

Brush belt data collected in three belt widths

0 - 0.5m.....entered in FPSME1D10

0 - 1.0m.....entered in FPSME2D10

0 - 2.0m.....entered in FPSME3D10

The PSME2 and PSME3 data is stored in the POREMISC directory.

PIMU 03 (VISION)

Brush density data *not* collected in 0.5 meter belt width which is the width specified in the monitoring type protocols for PIMU. In brush data sheet in database “Was data taken = N” for FPIMU1D05 03.

Brush density data collected in :

0-1m..... entered in FPIMU2D05

0-2m..... entered in FPIMU3D05

0-5m..... entered in FPIMU4D05

0-10m..... entered in FPIMU5D05

The above data stored in POREMISC directory.

50 METER TRANSECT

PIMU 02

The Q3-Q2 transect was read rather than the Q4-Q1.

dbase changes

Cannot correct. Transect must be reread

FUELS TRANSECTS

1990 – PIMU plots fuels transects different lengths

Dbase changes

Cannot make any changes. Transects need to be resampled.

BURN SEVERITY

1993 – BAPI 10, 01-POST

dbase changes

Deleted 100 severity points; re-entered 7 points.

1996/1997 – GEMO plots had burn severity data collected on 100 points rather than 7 points. Plots

affected: GEMO 01, 01-POST
 GEMO 02, 02-POST
 GEMO 03, 01 POST
 GEMO 04, 01-POST

dbase changes

Deleted 100 point data, re-entered 7 points. Used data from 0.3m, 5.1m, 9.9m, 15.0m, 20.1m, 24.9m, 30.0m. Chose data from points closest to standard sample points.

SEEDLING COUNTS

1997 – GEMO2 Monitoring type

 PREBURN – seedlings counted in 1m x 30m = 30m²

 YR01, YR02 – seedling counted in three 1m² frames = 3m²

dbase changes

Seedling counts collected in the 3m² area were multiplied by 10 to extrapolate counts to 30m². The data was entered in the brush belt data sheet and deleted from the herbaceous density data sheet.

VEGETATION HEIGHT

2000 – Vegetation height was no longer collected. The data has not been utilized to date and is not of critical value.

Recommended Changes in Protocol

In the french broom and scotch broom monitoring types, there has not been a consistent treatment of all transects. A more systematic treatment method must be developed for all sites. Some transects have burned two years in a row, some every other year, some two years in a row then a break of three years. On occasion, cutting or pulling has occurred on transects and monitors have not been notified. *Without a consistent treatment plan the value of the transect data diminishes. A consistent and long term treatment plan is needed in these monitoring types.*

Changes in Protocol following a Program Review

Point Reyes has not received a program review.

Most of the information contained in the following two sections is repeated from the 1999 report. New information added in 2000 is written in *bold italics* below the previous year's statement.

EQUIPMENT/SOFTWARE/GIS INFORMATION

1. All equipment, supplies and original data sheets are stored in Bldg. 1069 of the Fire Management Office at Golden Gate NRA.
2. In 1999, the FMH program was taken off the vegetation management specialist's computer and placed on the PORE network. This allows the program to be accessed from any computer that is hooked up to the network at PORE. Beginning in 1999, all data entry has been entered using version 3.10.1.4. A duplicate set of data is located in Bldg. 1069 of the Fire Management Office at Golden Gate NRA, with the regional FMH coordinator, Paul Reeberg, at PGBSSO and with the fire ecologist, Peggy Herzog, at Point Reyes
3. On the computers at GOGA, the Point Reyes data is in the PORE subdirectory. Make sure you are in the correct directory when entering new data. It is difficult to move data from one directory to another
4. All plots were GPS'd in 2000. The data was successfully downloaded, corrected and exported to ArcView. See Appendix D. for GIS/GPS File Organization at Golden Gate. All related files are also stored with the GIS specialist at PORE at **S:/GIS/PFDATA/FMHPORE**

Plots PIMU 02 and 03 should be reGPS'd in 2001 if time permits. When plot locations are overlaid on topoquads the locations do not seem correct.

5. Slides for the most recent monitoring date are stored in the burn unit folders which contain all original data sheets. All previous years slides are stored in the black two drawer file cabinet in Bldg. 1068, Fire Management Office, Fort Cronkhite.

INNOVATIONS

METADATA

MONITORING TYPE INFORMATION

1. All original data sheets for each plot are located in the grey filing cabinet in Bldg. 1069, Fire Management Office, GGNRA. Data sheets for each plot are located in the corresponding burn unit folder.

Approximately half of all data sheets were photocopied in 2000. The duplicates are currently stored in Bldg. 1069, Fort Cronkhite, GGNRA.

2. All future visits to the plots should follow the protocols as listed on the Monitoring type description sheets. These sheets are located in the top file drawer of the grey filing cabinet in Bldg. 1069.

All monitoring type description sheets require revision in 2001 to include Fire Management objectives, Fire Monitoring Objectives and desired confidence limits.

FMH-4s must be written for the following monitoring types:

BCYSC1D05 – Scotch broom

BGEMED05 – French broom

3. The declination used in all mapping and compass work was 16° East. Although most of the problems with earlier compass directions, and plot azimuths, have been fixed there still might be some unforeseen problems. For this reason it should be noted that a declination of 23° East was used in the 1990 monitoring season.
4. In 1995, an average height of the vegetation at the sample point was recorded. In 1996, after consultation with Paul Reeberg, FMH regional coordinator, height was recorded at the highest point on the sampling rod where the vegetation touched. The protocol followed in 1996 was the same protocol used in all years other than 1995.

In 2000, height data was no longer collected.

5. The FMH species code list has been updated to correspond with the name changes found in The Jepson Manual. A list of all name changes has been made and can be found in the SPECIES CODE LIST file in the top drawer of the grey filing cabinet where the blank data forms are stored.
6. All BRDI1 plots have been changed to LOPE1 plots in Point Reyes. This is due to the greater frequency of *Lolium perenne* in the areas sampled. All of the index plot location data sheets and the computer files have been changed.

New tags were attached to the stakes in 1996. The old tags have been left on for reference.

Many stakes were found to be missing tags when the plots were GPS'd. New tags were made and placed on the stakes in 2000.

5. The brush belt width has been reduced from 3 meters to 2 meters in the LOPE monitoring type. In 1995, five-year postburn monitoring was completed on LOPE plots 1, 2 and 3. Since these plots had only 3 meter belt data, brush density was collected for both 2 and 3 meter.

The same procedure was followed in 2000 when collecting the 01-YR10 data.

7. On all future reads, herbaceous data on PIMU1 plots should be collected on only the Q4-Q1 side of the transect. Belt density should be read 1 meter wide on the Q4-Q1 side of the plot. These changes were made due to the dense nature of the understory.
5. In 1999, several new plots were established in the PSME and PIMU monitoring types. Several different sample area sizes were used for overstory, poles and brush variables in order to assess the variation in sample area size on density estimates. After examination of the data, a determination will be made as to which sample area size is optimum for each monitoring type.
12. In the GEMO2 (french broom) monitoring type, **postburn**, french broom seedlings were counted in three 1m² squares (3m²) placed at 4-5m, 14-15m, and 24-25m. **Preburn**, seedlings were counted in the entire 1m x30m (30m²) brush belt. Seedling counts collected in the 3m² area have been multiplied by 10 to extrapolate to the density in 30m². This data is entered in the brush belt data sheet.
6. In the GEMO and CYSC monitoring types, several plots have had burn severity data collected at both 7 points and 100 points. It has been decided that 7 points is an adequate number of sample points in both types. For those plots where 100 points was collected, only those points that fall closest to the frames used for 7 point severity has been entered.

STATUS OF FIVE-YEAR BURN PLAN

Point Reyes does not currently have a five-year burn plan. The Point Reyes Fire Management Plan was scheduled to be rewritten in 2000 but due to the loss of the Fire Management Officer has not been completed. Since 1996, burns have been planned on a year-to-year basis. Due to the moratorium on prescribed burning in 2000, no prescribed burns were conducted in 2000. Therefore, those burns proposed for 2000 are now proposed for 2001. Proposed burns are listed in Table 10. Prescribed burns completed since 1990 are listed in Table 11.

TABLE 10 PROPOSED BURNS 2001				
Higher Priority (listed alphabetically)				
Burn Name	Acres	# FMH Plots	Fire Effects Monitoring Type	Primary burn objectives
Beebe	60	0	non-native grassland	Hazard fuel reduction, WUI
Camacho	20	0	grassland with french broom scrub	French broom eradication; fuel reduction along Highway One
Dogtown	34	0	grassland with french broom scrub	French broom eradication; fuel reduction along Highway One
Hagmaier	46	0	non-native grassland	Exotic species eradication; Hazard fuel reduction along Highway 1
Rift Zone	30	0	non-native grassland	Exotic species eradication; Hazard fuel reduction along Highway 1
McCurdy	122	2	grassland with french broom scrub	French broom eradication; fuel reduction along Highway One
McDonald	106	6	non-native perennial grassland/scotch broom scrub/northern coastal scrub	Scotch broom eradication
Strain Hill	105	2	grassland with french broom scrub	French broom eradication; fuel reduction along Highway One
Tree Farm	8	0	none	Hazard fuel reduction, S-130 Training
Lower priority (listed alphabetically)				
Firtop	66	1	Douglas fir forest	Hazard fuel reduction
Randall	13	0	non-native grassland	French broom eradication hazard fuel reduction
PRBO	56	0		Hazard fuel reduction, research, WUI
RESEARCH BURNS				
Home 1 - 5	108	--	'--	elimination of scotch broom with both mechanical and fire treatments
Rogers	9	--	'--	elimination of scotch broom with both mechanical and fire treatments
McDonald 2	146	--	'--	elimination of scotch broom with both mechanical and fire treatments

*On Golden Gate lands administered by Point Reyes

TABLE 11. PRESCRIBED BURNS COMPLETED, 1990 - 2000 (sorted by year completed)

Burn Date	Burn Name	Acres	# FMH plots	Fire Effects Monitoring Type	Burn Objectives
11/07/90	RX9001	25	5	Non-native grassland/northern coastal scrub	Native grassland improvement/exotic grass reduction
11/08/90	RX9002 (Overlook burn)	26	3	Non-native grassland	Native grassland improvement/exotic grass reduction
10/25/93	RX9302 Elk Range 3	100	13	Non-native annual grassland/northern coastal scrub	Native grassland improvement/exotic grass reduction
09/14/93	RX-9303 MacDonald Ranch	100	4	Non-native perennial grassland/ northern coastal scrub/ scotch broom scrub	Scotch broom reduction
11/02/94	RX-9401 Heims Ranch, Phase II	100	4	Non-native perennial grassland northern coastal scrub/ scotch broom scrub	Scotch broom reduction
11/03/94	RX-9402 Heims Ranch	100	2	Non-native perennial grassland/ northern coastal scrub/ scotch broom scrub	Scotch broom reduction
11/03/94	RX-9403 Divide Meadow	0.5	2	Non-native annual grassland/ scotch broom scrub	Scotch broom reduction
08/22/95	RX-9501 Grossi 95C	3	0	Northern coastal scrub	Range improvement
06/21/96	RX-9601 Lime Kiln	1	0	Non-native annual grassland/ french broom scrub	French broom reduction
09/20/96	RX-9602 McCurdy	35	1	Non-native annual grassland/ french broom scrub	French broom reduction
10/16/96	RX-9603 Heims Ranch II	100	4	Non-native perennial grassland/ northern coastal scrub scotch broom scrub	Scotch broom reduction
10/22/96	RX-9604 McIssac	10	0 ¹	Northern coastal scrub (crushed)	Range improvement

¹ Range transects installed

TABLE 11. PRESCRIBED BURNS COMPLETED, 1990 - 2000 (sorted by year completed)

Burn Date	Burn Name	Acres	# FMH plots	Fire Effects Monitoring Type	Burn Objectives
07/07/97	RX-9701 Lime Kiln	2	0	Non-native annual grassland/ french broom scrub	French broom reduction
07/07/97	RX-9702 Divide Meadow	1	1	Non-native annual grassland/ scotch broom scrub	Scotch broom reduction
Sept/Oct '97	RX-9703 McCurdy	157.5	2	Non-native annual grassland/ french broom scrub	French broom reduction
10/24, 28, 29/97	RX-9704 Strain Hill	108	2	Non-native annual grassland/ french broom scrub	French broom reduction
09/23/98	Limantour	60	0 ²	None	Hazard fuel; Monterey Pine reduction
10/08/98	Lime Kiln	2	0	Non-native grassland/french broom scrub	French broom/hazard fuel reduction
10/98 10/30/98	Hagmeier	186	0	Non-native grassland/french broom scrub	French broom/hazard fuel reduction
10/29/98	Comacho	20	0	Non-native grassland/french broom scrub	French broom/hazard fuel reduction
10/28/98	Dogtown	34	0	Non-native grassland/french broom scrub	French broom/hazard fuel reduction
10/08/98	Hemlock	30	0 ³	Hemlock	Hemlock/hazard fuel reduction
10/22 & 11/2/98	MacDonald	192	6 ⁴	Non-native perennial grassland/scotch broom scrub	Scotch broom reduction
07/16/99	Divide Meadow	2	2	Non-native annual grassland/ scotch broom scrub	Scotch broom reduction
10/4-5/99	McDonald Ranch	290	6	Non-native annual grassland/ scotch broom scrub	Scotch broom reduction

² Transects established by resource management

³ Photopoints established

⁴ Plots established but did not burn in 1998 burn

TABLE 11. PRESCRIBED BURNS COMPLETED, 1990 - 2000 (sorted by year completed)

Burn Date	Burn Name	Acres	# FMH plots	Fire Effects Monitoring Type	Burn Objectives
10/26/99	Lime Kiln	7	0	Non-native grassland/french broom scrub	French broom/hazard fuel reduction
10/28 & 11/4/99	Strain Hill	132	2	Non-native grassland/french broom scrub	French broom/hazard fuel reduction

TABLE 12 BURN UNITS PROPOSED PRIOR TO 2000, NEVER BURNED

Year Proposed	BurnName	Acres	# FMH plots	Fire Effects Monitoring Type	Burn Objectives
1990	Chute Gulch	85	4	Northern coastal scrub	Elk habitat improvement
1990	Mount Vision	2	2	Bishop Pine Forest	Hazard fuel reduction
1992	Tomales Point	200	7	Non-native perennial grassland	Native grassland improvement
1998	K Ranch	50	0	?	Range improvement

APPENDIX A. Transects/plots classified by burn unit and monitoring type.

See attached Excel file for plots classified by burn unit and monitoring type.

APPENDIX B. PLOTS TO BE REMONITORED IN 2001/ADDITIONAL WORK

TABLE 14. PLOTS TO BE REMONITORED IN 2001

Plot Name/#	Burn Unit	Most recent read	Burn Status in 2001
CYSC 01	McDonald*	06/29/00	02-YR02
CYSC 02	McDonald	07/06/00	04-YR02
CYSC 03	McDonald	06/29/00	02-YR02
CYSC 04	McDonald	07/06/00	04-YR02
CYSC 05	McDonald	07/06/00	04-YR02
CYSC 06	McDonald	07/06/00	04-YR02
CYSC 07	Divide Meadow*	06/22/00	02-YR02
CYSC 08	Divide Meadow	06/22/00	03-YR02
GEMO 03	Strain Hill	07/13/00	02-YR02
GEMO 04	Strain Hill	07/13/00	02-YR02

*Retake overview shots of Divide Meadow and McDonald Ranch. See slide file.

ADDITIONAL WORK

Monitoring Type Description Sheets

- All current FMH-4s need updating to include Fire Management Objectives, Monitoring Objectives, and desired confidence limits.
- FMH-4s need to be written for the following monitoring types:
 - BCYSC1D05 – Scotch Broom
 - BGEMO2D05 – French Broom
- FMH-4s need to be finalized for FPIMU1D05, FPSME1D10

Database

With upgrade to version 3.10.1.4 of the FMH program the following data needs to be entered

- FMH 1, 2, 3 data
- Monitoring Type Description Sheets (FMH-4)
- Plot Location Data Sheets (FMH-5) *currently cannot enter this data into the FMH program*

Error checking

All error checking completed in Feb 2001 with the exception of the following:

- review of the “Species on the side” data entry questions
- review of the Species Code List checking for duplicate codes, native/non-native errors, etc...

APPENDIX B. PLOTS TO BE REMONITORED IN 2001/ADDITIONAL WORK

ADDITIONAL WORK (cont.)

Voucher specimens

- Numerous voucher specimens need identification and inclusion in the FMH voucher collection. When positive identifications are made, changes must be made to both the hard data sheets and in the database.

Species Code List

- The current list needs to be reviewed eliminating duplicate codes and spelling errors. As voucher specimens are identified some unknown codes should be eliminated. Consolidation of some unknowns should be made, such as LICH 1, 2, 3, GRAS 1, 2, 3, MOSS 1, 2, 3.
- The list must be compared with the GOGA list to insure that the same code is used for the same plant.
- In 2001, standard U.S. plant codes may be adopted

GPSing of plots locations

Plots needed to be GPS'd: PIMU 02, 03

These plots were GPS'd in 2000, however, when plotted the location seems incorrect.
All other plots are O.K.

APPENDIX C. PLOTS TO INSTALL IN 2001

Plots to be installed in 2001 will be determined after consultation with the Fire Ecologist, the Prescribed Fire Specialist and Vegetation Management Specialist. Several areas of the monitoring program need close examination by the fire ecologist. These are monitoring types that do not have adequate sample sizes; have plots within the monitoring type that have had varying treatments; or burn units that have been burned and have had no monitoring conducted.

TABLE 15. Existing monitoring types which may need boosting of the plot network

CYSC	Scotch broom	McDonald Ranch	<i>No need for additional FMH plots because of research project begun in 2000</i>
GEMO2	French Broom	Olema Valley	Untreated units: Randall, Lower FairFax, Palomarin
GEMO3	French Broom	Olema Valley	Treated units: Camacho, Dogtown, Lime Kiln
PSME	Douglas Fir	Inverness Ridge	Firtop
ARGL	Maritime chaparral	Bolinas Ridge	<i>On back burned in 2000</i>

TABLE 16. PLOTS TO POTENTIALLY INSTALL , 2001

Monitoring Type	# of plots to install	Burn Unit	Comments
TREATED SITES			
Native grassland?	2?	McCurdy?	
Native grassland?	2?	Strain Hill?	
HOLA	2?	Divide Meadow?	
HOLA	4?	Highway Omnibus?	
GEMO3	2?	Lime Kiln?	
GEMO3	2?	Dogtown?	
GEMO3	2?	Camacho?	Grazed by cattle
UNTREATED SITES			
GEMO2	2?	Randall?	Grazed by cattle
PSME	1?	Firtop	<i>Burn unit became low priority in 2001</i>

