# POINT REYES NATIONAL SEASHORE
# FIRE EFFECTS MONITORING PROGRAM
# 1999 ANNUAL REPORT

## PLOT NETWORK INFORMATION

**TABLE 1. Plot installation by plot type.**

| Number of Plots Installed Previous Years | | | | Number of Plots Installed 1999 | | | | Total Number Plots Installed | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| G | B | F | Total | G | B | F | Total | G | B | F | Total |
| 0 | 28<br>11-C | 2 | | 0 | 0 | 2 | 2 | 0 | 28<br>11-C | 4 | 43 |

**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 1999 and 2000.**

| Total Plots to Remeasure 2000 | | | | Total Plots Remeasurement 1999 | | | |
|---|---|---|---|---|---|---|---|
| G | B | F | Total | G | B | F | Total |
| 0 | 13 | 0 | 13 | 0 | 8<br>12-P | 0 | 20 |

**P = Immediate Postburn Remeasurements**

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

| Number of Plots | | | | | |
|---|---|---|---|---|---|
| 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
| 13 | ? | ? | ? | ? | ? |

Projected numbers of plots to be remeasured are difficult to project do to the uncertainty of prescribed burns to be conducted.

**TABLE 4. Projected plot installation**.

| Plots to be Installed 2000 | | | | Projected Total | | | |
|---|---|---|---|---|---|---|---|
| G | B | F | Total | G | B | F | Total |
| | 20 | 2 | 22 | | 48<br>11-C | 6 | 54<br>11-C |

The projected number of plots to install in 2000 are very rough estimates based on the need for additional transects in various monitoring types. See Appendix C for monitoring types in which plots may need to be installed.

**TABLE 5. Number of plots that have burned.**

| Total Plots Burned 1999 | | | | Total Plots Burned to Date | | | |
|---|---|---|---|---|---|---|---|
| G | B | F | Total | G | B | F | Total |
| 0 | 8 | 0 | 8 | 0 | 28<br>11-R<br>1-R<br>4-R | 0 | 28<br>11-R<br>1-R<br>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 |
|---|---|---|---|---|
| Immediate Postburn-01 | 0 | 27* | 0 | 27 |
| -02 | 0 | 16 | 0 | 16 |
| -03 | 0 | 5 | 0 | 5 |
| -04 | 0 | 4 | 0 | 4 |
| 1 Year Postburn-01 | 0 | 28 | 0 | 28 |
| -02 | 0 | 11 | 0 | 11 |
| -03 | 0 | 4 | 0 | 4 |
| 2 Year Postburn-01 | 0 | 23 | 0 | 23 |
| -02 | 0 | 10 | 0 | 10 |
| -03 | 0 | 4 | 0 | 4 |
| 3-Year Postburn | 0 | 11-C | 0 | 11-C |
| 4-Year Postburn | 0 | 3 | 0 | 3 |
| 5 Year Postburn | 0 | 16<br>11-C | 0 | 16<br>11-C |
| 10 Year Postburn | X | X | X | X |

**TABLE 7. Number of plots installed by monitoring type in 1999.**

| Monitoring Type Code | Monitoring Type Name | Number of Plots Installed in 1999 | 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 | 1 | 3 | -- |
| FPSME1D10 | Douglas fir forest | 1 | 1 | -- |
| | | TOTALS l | 32 | 11-C |
| | | | TOTAL all plots | 43 |

## 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**

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

Mean = mean of primary monitoring variable

S.D. = Standard Deviation

*CYSC plots 7 and 8 have not been included in minimum plot calculations being very dissimilar in composition to plots CYSC 1-6.

** GEMO plot 01 has not been included in minimum plot calculations it being unlike the remainder of the other plots within the monitoring type.

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

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

* LOPE plots 11 and 17 have not been included in minimum plot calculations being very dissimiliar in composition to the other 5 plots. 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.

See Appendix C for a detailed analysis of the data.

## PROGRAM INFORMATION

### Staff Participants

Jeanne Taylor, GOGA
Wende Rehlaender, GOGA
Dina Robertson, GOGA

### 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 | 1.5 |
| Wende Rehlaender | various | various | 1.5 |
| Dina Robertson | various | various | 0.5 |

A total of 8 days (nearly 1 pay period) were spent in the field collecting data. Jeanne Taylor spent an additional 1/2 pay period completing the year-end report and Wende Rehlaender spent an additional 1/2 pay period completing the data entry and working on the PIMU and PSME monitoring type description sheets.

### Changes in Protocol

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.

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 will be entered.

**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 1998 report. New information added in 1999 is written in ***bold italics*** below the previous year's statement.

**EQUIPMENT INFORMATION**

1. All equipment, supplies and original data sheets are stored in Bldg. 1069 of the Fire Management Office at Golden Gate NRA.

2. The FMH program software and data is located on the Vegetation Management Specialist's computer in the Resource Management Office at Point Reyes. A duplicate set of data is located at the Fire Management Office at Golden Gate NRA and with Paul Reeberg at PGBSSO.

   *In 1998 a new version of the FMH program (ver. 3.10) was released. All data collected through the 1998 field season has been entered into the old FMH program (ver. 2.03c), and then converted into version 3.10. Beginning, with the 1999 season, all data entry will be done in version 3.10.*

   ***In 1999, the FMH program was taken off the vegetation management specialist's computer and laced on the PORE network. This allows the program to be accessed from any computer that is hooked up to the network at PORE. In 1999, all data entry was entered using version 3.10.1.4.***

   ***With the conversion to the new program it will be necessary to input all past years of data such FMH 1, 2, and 3 and various other information that can now be entered in the new version but could not be entered into the old version.***

3. The 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.

**MONITORING TYPE INFORMATION**

1. 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 2000 to include Fire Management Objectives, Fire Monitoring Objectives and desired confidence limits.***

2. 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.

3. 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.

4. 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.*

5. *Pinus remorata* has been changed back to *Pinus muricata* following the name changes in The Jepson Manual.

6. 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.

7. 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.

   ***In 1999, pole and brush data was collected in several different sample areas. Examination of the data will determine which sample area is optimum for these two variables within the monitoring type.***

8. When measuring height on resprouting vegetation postburn, height should be measured on the new growth and not the old growth.

9. Those plots which have burned twice are distinguished by the number 2 after the species code in the FMH database. They are BAPI2 (9, 10), LOPE2 (4, 5, 6), CYSC2 (2, 4, 5, 6, 8). Those plots which have burned three times are distinguished by the number 3 in the species code. They are CYSC3 (2, 4, 5, 6). One GEMO2 plot which has burn twice is distinguished by the code GEMO3.

***This is true in version 2.03c of the FMH software. With the release of the new FMH program (ver. 3.10) in 1998, there is now an easier way to tracks plots which have burned multiple times. In the new program, it is not necessary to change the index code. In the burn status column, the monitoring year is proceeded by a number to indicate whether the data was collected following the first, second or third burn. For example: 01-YR01 is the one-year postburn data collected following the first burn; 02-YR01 is the second one-year postburn data collected following the second burn.***

10. Plots BBAPI3D05 55, 56 and BCYSC4D05 53 (in 1995, CYSC3) found in the PORE subdirectory of the FMH program are not FMH plots but range plots on which brush density data was collected following FMH protocols.

***This data has been deleted from the FMH database being no longer needed.***

11. 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 hard to move data from one directory to another

*12.* Four french broom plots (GEMO2 1-4) were previously listed as part of the Golden Gate plot totals. Since these plots are on Golden Gate lands managed by Point Reyes and the burn units were proposed by the resource management division at Point Reyes, they have been moved to the Point Reyes plot totals.

***13.*** All data entered into the FMH program is still located in the GOGA subdirectory and must be moved to the PORE subdirectory. Plot BGEMO2D01 02 has burned twice and is indicated by the Index code BGEMO3D05 in version 2.03c of the FMH program. ***See number 9 above***

***The GEMO data was moved to the PORE database in 1999, all future data entry for these plots will be in the PORE database.***

14. In the GEMO2 (french broom) monitoring type, ***postburn***, french broom seedlings were counted in three $1m^2$ squares ($3m^2$) placed at 4-5m, 14-15m, and 24-25m. ***Preburn***, seedlings were counted in the entire 1m x30m ($30m^2$) brush belt. Therefore, the preburn and postburn densities cannot be compared using the FMH program.

15. 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.

**STATUS OF FIVE-YEAR BURN PLAN**

Point Reyes does not currently have a five-year burn plan. The Point Reyes Fire Management Plan is to be rewritten in 2000 at which time a new five-year burn plan will be developed. Since 1996, burns have been planned on a year-to-year basis. Prescribed burns proposed for year 2000 are list in Table 10. Prescribed burns completed since 1990 are listed in Table 11.

## TABLE 10 PROPOSED BURNS 2000

| Burn Name | Acres | # FMH Plots | Fire Effects Monitoring Type | Primary burn objectives |
|---|---|---|---|---|
| **Higher Priority (listed alphabetically)** | | | | |
| Bolinas Ridge* | 40 | 6 | maritime chaparral | Hazard fuel reduction ; rare plant enhancement |
| 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 |
| Firtop | 66 | 1 | Douglas fir forest | Hazard fuel reduction |
| Hagmaier | 186 | 0 | non-native grassland | Exotic species eradication; Hazard fuel reduction along Highway 1 |
| Hemlock | 30 | 0 Photopts | none | 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 |
| Randall | 13 | 0 | non-native grassland | French broom eradication hazard fuel reduction |
| Star Thistle (Giacomini) | 10 | 0 | none | Hazard fuel reduction; exotic species eradication |
| Tree Farm | 8 | 0 | none | Hazard fuel reduction, S-130 Training |
| Vision | 18 | 1 | Bishop Pine/northern coastal scrub | Hazard fuel reduction along Mt. Vision road lower switchbacks |
| **Lower priority (listed alphabetically)** | | | | |
| Beebe | 53 | 0 | 0 | Hazard fuel reduction |
| Lower Fairfax | 50 | 0 | 0 | French broom eradication; hazard fuel reduction |
| **RESEARCH BURNS** | | | | |
| Home I & II | 44 | -- | ? | elimination of scotch broom with both mechanical and fire treatments |
| Rogers I & II | 17 | -- | ? | ? |
| Tomales Point | TBA | -- | ? | ? |

*****On Golden Gate lands administered by Point Reyes

## TABLE 11. PRESCRIBED BURNS COMPLETED, 1990 - 1999 (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 |
| 08/15/95 | Bolinas/Fairfax | 46 | --[1] | Native/non-native grassland | Native grassland improvement |
| 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[2] | Northern coastal scrub (crushed) | Range improvement |

[1] Prior to 1998 considered a GOGA burn; all data located in GOGA database
[2] Range transects installed

**TABLE 11. PRESCRIBED BURNS COMPLETED, 1990 - 1999 (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 |
| a 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[3] | 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[4] | Hemlock | Hemlock/hazard fuel reduction |
| 10/22 & 11/2/98 | MacDonald | 192 | 6[5] | 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 |
| 10/26/99 | Lime Kiln | 7 | 0 | Non-native grassland/french broom scrub | French broom/hazard fuel reduction |

[3] Transects established by resource management
[4] Photopoints installed
[5] Plots established but did not burn in 1998 RX burn

## TABLE 11. PRESCRIBED BURNS COMPLETED, 1990 - 1999 (sorted by year completed)

| Burn Date | Burn Name | Acres | # FMH plots | Fire Effects Monitoring Type | Burn Objectives |
|---|---|---|---|---|---|
| 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 1999, 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 2000/ADDITIONAL WORK

**TABLE 14. PLOTS TO BE REMONITORED IN 2000**

| Plot Name/# | Burn Unit | Most recent read | Burn Status in 2000 | |
|---|---|---|---|---|
| CYSC 01 | McDonald | 07/07/99 | 02-YR01 | |
| CYSC 02 | McDonald | 06/25/98 | 04-YR01 | |
| CYSC 03 | McDonald | 07/07/99 | 02-YR01 | |
| CYSC 04 | McDonald | 06/25/98 | 04-YR01 | |
| CYSC 05 | McDonald | 06/25/98 | 04-YR01 | |
| CYSC 06 | McDonald | 06/25/98 | 04-YR01 | |
| CYSC 07 | Divide Meadow | 06/10/99 | 02-YR01 | |
| CYSC 08 | Divide Meadow | 06/10/99 | 03-YR01 | |
| GEMO 03 | Strain Hill | 07/06/99 | 02-YR01 | |
| GEMO 04 | Strain Hill | 07/06/99 | 02-YR01 | |
| LOPE 01 | RX9002 (Overlook) | 05/08/95 | 01-YR10 | |
| LOPE 02 | RX9002 (Overlook) | 05/26/95 | 01-YR10 | |
| LOPE 03 | RX9002 (Overlook) | 05/08/95 | 01-YR10 | |

## 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 finalized for BGEMO2D05, FPIMU1D05, FPSME1D10

### Database

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

- Monitoring Type Description Sheets (FMH-4)
- Plot Location Data Sheets (FMH-5)
- Species on the side (FMH-23)

The ARGL data needs to imported from the GOGA database into the PORE database. Since Point Reyes administers these Golden Gate lands, the ARGL data should be contained in both databases.

### Error checking

A thorough error checking of the PORE database was done in April 1999, however, the process can be done again.

Plots GEMO2 01-04 and CYSC 07, 08 have had immediate postburn severity data collected at 7 points and 100 points: The 100 point data needs to be deleted and 7 points re-entered

### 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.

## APPENDIX C. PLOTS TO INSTALL IN 2000

Plots to be installed in 2000 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.

**Potential new monitoring types and installation sites:**

CESO - Start thistle, Olema Valley (Giacomini)
HOLA - Non-native grassland/velvet grass, Olema Valley
Treated units: Highway 1 Omnibus; McCurdy, Strain Hill:
Untreated units: ??
HOLA2? - Bishop Pine/northern coastal scrub/velvet grass, Mt. Vision
PSME2? - Douglas Fir/northern coastal scrub, PRBO (On back burner in 2000)

**Existing monitoring types which may need boosting of the plot network:**

CYSC - Scotch broom, MacDonald Ranch
GEMO- French broom, Olema Valley –
Untreated units: Randall, Lower Fairfax, Mesa Road-Palomarin*, (*On back burner in 2000)
Treated units with no previous monitoring: Camacho, Dogtown, Lime Kiln,
PSME - Douglas fir, Firtop
ARGL - Maritime Chaparral, Bolinas Ridge (On back burned in 2000)

**TABLE 15. PLOTS TO INSTALL , 2000**

| Monitoring Type | # of plots to install | Burn Unit | Comments |
|---|---|---|---|
| **TREATED SITES** | | | |
| HOLA | 2? | McCurdy? | |
| HOLA | 2? | Strain Hill? | |
| HOLA | 2? | Divide Meadow? | |
| HOLA | 4? | Highway Omnibus? | |
| GEMO2 | 2? | Dogtown? | |
| GEMO2 | 2? | Camacho? | |
| CYSC | 2? | McDonald? | Research plan for CYSC; may be no need to install new monitoring plots |
| **UNTREATED SITES** | | | |
| CESO | 2? | Giacomini | should consider modeling project on PINN CESO research burn |
| GEMO2 | 2? | Randall? | |
| PSME | 2 | Firtop | Only type with definite plan to install plots in 2000 |

## APPENDIX D. DATA ANALYSIS NEEDED

SCOTCH BROOM (B**CYSC1**D05)

- Divide Meadow
- MacDonald Ranch

FRENCH BROOM (B**GEMO2**D05)

- McCurdy
- Strain Hill

GRASSLAND – Elk Range (B**LOPE1**D01)

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

NORTHERN COASTAL SCRUB (B**BAPI1**D05)

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

*FROM 1999REPO*

**Minimum Plot Calculations**

- **Minimum Plot Numbers Achieved**
-

**Initial Interpretation of the Data**

**Actions to be Taken Based on this Data Analysis**

**Additional Analyses Needed**