

**POINT REYES NATIONAL SEASHORE
FIRE MONITORING PROGRAM
1998 YEAR-END REPORT**

The monitoring workload at Point Reyes was quite heavy in 1998 with a total of 36 transects remonitored completing the following:

- ▶ five-year postburn monitoring of the grassland and coastal scrub plots burned in the 1993 Elk Range burn
- ▶ five-year postburn monitoring of the grassland and coastal scrub *control* plots for the 1993 Elk Range burn
- ▶ two-year and four-year postburn monitoring of the transects located on MacDonald Ranch
- ▶ one-year postburn monitoring of the transects located at Divide Meadow, Strain Hill and McCurdy

The monitoring completed was in the three areas that have been the focus of the prescribed burn program since 1990: native grassland restoration, scotch broom control and french broom control. Analysis of the results of burning in each of these monitoring types is included in Appendix C.

In addition to the french broom control projects on Strain Hill and McCurdy, the prescribed burn area within Olema Valley was expanded to 240 acres with the Hagmeier, Camacho and Dogtown burn units. The primary objective of these burns was hazard fuel reduction with a second objective of french broom control. Since Highway 1 is a heavily used travel corridor there is a great potential for wildfire.

Several dense stands of french broom did occur on the Camacho and Dogtown units but the units were mowed before any fire effects transects could be installed. However, transects have been established in the french broom monitoring type at McCurdy and Strain Hill providing information on changes in cover and density of french broom as a result of mowing and burning.

In 1999, the monitoring workload will consist of:

- ▶ two-year postburn monitoring of the Divide Meadow, Strain Hill and McCurdy burn units
- ▶ the installation of new transects in newly proposed burns units.

A list of burns proposed in 1999 can be found on page 7. Most of these units will require the installation of several monitoring transects particularly within the Douglas fir forest on Firtop and Inverness Ridge and the Bishop Pine forest on Mount Vision. Several wildlife study plots have been established in the Firtop unit and it will be valuable to integrate the vegetation data collected from the fire effects plots with the wildlife data.

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TABLE 1. PLOT SUMMARY	Plot Type			TOTAL
	G	B	F	
Number of burn plots installed in previous years	0	28	2	30
Number of burn plots installed in 1998	0	0	0	0
Total number of burn plots installed	0	28	2	30 ¹
Total number of <i>control</i> plots installed	0	11	0	11 ²
Total number of plots installed	0	39	2	41
Number of plots rejected to date	0	0	0	0
Total number of valid plots	0	39	2	41
Total number of plots burned in 1998	0	0	0	0
Total number of plots burned to date	0	28	0	28³

TABLE 2. 1998 MONITORING SUMMARY	Plot Type			TOTAL
	G	B	F	
Number of plots installed in 1998	0	0	0	0
Number of burn plots read postburn in 1998	0	25	0	25
Number of <i>control</i> plots read in 1998	0	11	0	11
Number of burn plots read immediate postburn in 1998	0	0	0	0
Number of burn plots reread preburn in 1998	0	0	0	0
Number of <i>control</i> plots reread preburn in 1998	0	0	0	0
Total number of plots visited in 1998	0	36	0	36

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1. In 1997, four french broom (GEMO2) plots located at Strain Hill and McCurdy were removed from the plot totals for Golden Gate and added to Point Reyes.
 2. These eleven control plots were originally installed as burn plots. Four of these plots are located in the Chute Gulch burn unit, seven are located on Tomales Point. Since there currently are no plans to burn either of these units, the eleven plots are now serving as control plots.
 3. Though eleven plots have been burned more than once, each plot is counted only once in the plots burned to date totals. See #9 under "Monitoring Type Information".

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TABLE 3. 1999 MONITORING SUMMARY	Plot Type			TOTAL
	G	B	F	
Number of plots to be installed in 1999	0	4	8	12 ⁴
Number of burn plots to read postburn in 1999	0	6	0	6
Number of <i>control</i> plots to read postburn in 1999	0	0	0	0
Number of burn plots to reread preburn in 1999	0	0	0	0
Number of <i>control</i> plots to reread preburn in 1999	0	0	0	0
Total number of plots to be visited in 1999	0	10	8	18

TABLE 4. POSTBURN PLOT SUMMARY	Plot Type			TOTAL
	G	B	F	
Immediate Postburn 1	0	27 ⁵	0	42
2		11		
3		4		
1-Year Postburn 1	0	28	0	43
2		11		
3		4		
2-Year Postburn 1	0	24	0	33
2		9		
3-Year Postburn (control plots only)	0	11	0	11
4- Year Postburn	0	3	0	3
5-Year Postburn – burn plots	0	16	0	16
control plots	0	11	0	11

4. Estimated number only.

5. No immediate post data collected on LOPE 10.

PROGRAM INFORMATION

Staff Participants

The following persons participated in fire effects monitoring at Point Reyes National Seashore in 1998:

Jeanne Taylor, GOGA
Wende Rehlaender, GOGA
Greg Brown, GOGA
Paul Reeberg, PGBSSO
Pam Van der Leeden, PORE
Mehri Vahgti, PORE
Juan Quintana, Americorp

Length of Season

Reading of all plots was completed in 15 days. Data entry and slide labelling was completed in approximately two weeks. Data analysis was completed in two weeks.

CHANGES IN PROTOCOL

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. Therefore, the preburn and postburn densities cannot be compared.

In 1995, an average height of the vegetation at the sample point was recorded. In 1996, after consultation with Paul Reeberg, PGBSSO Fire Effects Specialist, 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.

RECOMMENDED CHANGES IN PROTOCOL

None at this time.

Most of the information contained in the next two sections is repeated from the 1997 year-end report, however, some additions and corrections have been made. Changes made in 1998 are written below the previous year's statement in italics.

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.

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.
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.

MONITORING TYPE INFORMATION (cont.)

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.
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 have been proposed by the resource management division at Point Reyes, they have been moved to the Point Reyes plot totals.

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.*

STATUS OF FIVE-YEAR BURN PLAN

Point Reyes does not currently have a five-year burn plan. The Point Reyes Fire Management plan is in the process of being rewritten wherein a new five-year burn plan will be developed. A two-year burn plan was developed in 1998 and several of the proposed burns were completed in 1998. Those burns not completed in 1998 are proposed for 1999 and are listed in Table 6. Several new projects proposed in 1999 are listed in Table 7. All prescribed burns completed since 1990 are listed in Table 8.

TABLE 6. PROPOSED BURNS 1999

Higher Priority (listed alphabetically)				
BURN NAME	ACRES	# FMH Plots	FIRE EFFECTS MONITORING TYPE	PRIMARY BURN OBJECTIVE
Bird Observatory (PRBO)	35	0	northern coastal scrub with encroaching douglas fir	Douglas Fir containment, hazard fuel reduction
Bolinas Ridge*	40	6	maritime chaparral	Hazard fuel reduction along boundary
Christmas Tree	6	0	none	Monterey Pine eradication, fuel reduction along Sir Francis Drake
Divide Meadow	1	2	scotch broom scrub/non-native grassland	Broom eradication
Firtop	55	0	Douglas fir forest	Hazard fuel reduction
McCurdy*	133	2	grassland with french broom scrub	Exotic species eradication, fuel reduction along Highway One
McDonald	335	6	non-native perennial grassland/scotch broom scrub/northern coastal scrub	Broom eradication, finish the 1998 burn
Strain Hill*	105	2	grassland with french broom scrub	Exotic species eradication, fuel reduction along Highway One
Vision	18	0	Bishop Pine/northern coastal scrub	Hazard fuel reduction along the Vision road lower switchbacks
Wittenburg	70	0	Douglas fir forest	Hazard fuel reduction
Lower Priority (listed alphabetically)				
Firtop 2	16	0	Douglas fir forest	Hazard fuel reduction
Grossi ranch	60	0	Bishop Pine forest/northern coastal scrub	Hazard fuel reduction along seashore boundary
Wittenburg 2	62	0	Douglas fir forest	Hazard fuel reduction
BeeBee Ranch	70	0	non-native grassland	exotic species reduction/range improvement/hazard fuel
E-Ranch	2	0	non-native grassland	exotic species removal/range improvement

*On Golden Gate lands administered by Point Reyes.

TABLE 7. NEW PROJECTS PROPOSED IN 1999

BURN NAME	ACRES	# FMH Plots	FIRE EFFECTS MONITORING TYPE	PRIMARY BURN OBJECTIVE
Camacho Creek		0		
Highway 1 - Randall Unit		0	french broom scrub	exotic plant eradication
Highway 1 - R. Giacomini Unit		0	yellow star thistle	exotic plant eradication
Mesa Road/Palomarin		0	french broom scrub	exotic plant eradication

TABLE 8. PRESCRIBED BURNS COMPLETED, 1990 - 1998 (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	-- ⁶	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 ⁷	Northern coastal scrub (crushed)	Range improvement
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

⁶ Prior to 1998 considered a GOGA burn; all data located in GOGA database

⁷ Range transects installed

TABLE 8. PRESCRIBED BURNS COMPLETED, 1990 - 1998 (cont.)

BURN DATE	BURN NAME	ACRES	# FMH plots	FIRE EFFECTS MONITORING TYPE	BURN OBJECTIVES
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 ⁸	None	Hazard fuel; Monterey Pine reduction
10/08/98	Lime Kiln	2	0	Non-native grassland/french broom scrub	French broom/hazard fuel reduction
10/9 - 10/30/98	Hagmaier	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 ⁹	Hemlock	Hemlock/hazard fuel reduction
10/22 & 11/2/98	MacDonald	192	6 ¹⁰	Non-native perennial grassland/scotch broom scrub	Scotch broom reduction

⁸ Transects established by resource management

⁹ Photopoints installed

¹⁰ Plots established but did not burn in 1998 RX burn

TABLE 9. BURNS UNITS PROPOSED PRIOR TO 1999, NEVER BURNED

YEAR PROPOSED	BURN NAME	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. MINIMUM PLOT CALCULATIONS

BURN PLOTS

Monitoring Type	<i>Dominant Species</i>	# of plots	Minimum Plots	
			% confidence = 0.95	
			R= 20	R= 25
BAPI	<i>Baccharis pilularis</i>	10	17	11
CYSC	<i>Cytisus scoparius</i>	6	16	10
GEMO2	<i>Genista monspessulana</i>	4	52	33
LOPE	<i>Lolium perenne</i>	17	60	39
PIMU	<i>Pinus muricata</i>	2	43	28

For brush plots, the number of minimum plots is calculated on the % relative cover of the dominant species. For forest plots, overstory tree density is the variable used to calculate minimum plots. Minimum plot calculations have been made using preburn data from all plots installed per monitoring type except in the CYSC monitoring type. Two plots installed in 1994 (CYSC 07, 08) have been placed in this monitoring type because Scotch broom was the target species in the burn unit in which they were installed. However, the species composition on the two plots is not similar enough to the original six plots to be included when calculating minimum number of plots.

APPENDIX B. PLOTS CLASSIFIED BY BURN UNIT AND MONITORING TYPE

Monitoring Type	Vegetation Type	Dominant Species	PlotType	Current Plots
BAPI1	northern coastal scrub	<i>Baccharis pilularis</i>	B	8*
BAPI2	northern coastal scrub (burned twice)	<i>Baccharis pilularis</i>	B	2
CYSC1	scotch broom/northern coastal scrub/non-native grassland	<i>Cytisus scoparius/ Baccharis pilularis/ Holcus lanatus</i>	B	3
CYSC2	scotch broom/northern coastal scrub/non-native grassland (burned twice)	<i>Cytisus scoparius/ Baccharis pilularis/ Agrostis alba</i>	B	1
CYSC3	scotch broom/northern coastal scrub/non-native grassland (burned three times)	<i>Cytisus scoparius/ Baccharis pilularis/ Agrostis alba</i>	B	4
GEMO2	french broom/non-native grassland/native grassland	<i>Genista monspessulana/ Avena barbata/ Nassella pulchra</i>	B	3
GEMO3	french broom/non-native grassland/native grassland (burned twice)	<i>Genista monspessulana/ Avena barbata/ Nassella pulchra</i>	B	1
LOPE1	non-native grassland	<i>Lolium perenne</i>	B	14**
LOPE2	non-native grassland (twice burned)	<i>Lolium perenne</i>	B	3
PIMU1	bishop pine forest	<i>Pinus muricata</i>	F	2
TOTAL				41

* Four of the eight plots are serving as control plots

** Seven of the fourteen plots are serving as control plots

APPENDIX C. DATA ANALYSIS

SCOTCH BROOM (BCYSC1D05)

- > Divide Meadow
- > MacDonald Ranch

FRENCH BROOM (BGEMO2D05)

- > McCurdy
- > Strain Hill

GRASSLAND – Elk Range (BLOPE1D01)

- > 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 (BBAPI1D05)

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

Of the two species, french broom is the more fire resistant plant and thus more difficult to treat. During the first series of burns in french broom it was found that standing french broom did not burn. Because of the density of the broom canopy within a stand, there is often little fine fuel to carry the fire. Even with a significant fine fuel understory the french broom plants are not particularly flammable. This fact has necessitated first mowing the broom and allowing it to cure prior to burning. Though these combined treatments kill adult plants they do not prevent seedling establishment the following year. Data collected from the fire effects transects established within the burn units have shown very high seedling counts postburn. Treating the mature broom does prevent the yearly addition of new seed to the seed bank and the continued spread of current stands.

Of the two broom species, scotch broom appears to be more sensitive to fire. From observations made postburn on the MacDonald Ranch it appears the mature Scotch broom plants can be killed by scorching without completely consuming the canopy.

Though the focus is on the increase or decrease of broom, it must be considered what is happening overall to plant community. All of the stands be treated so far are found in grassland. In some areas there is a considerable native grass

As always the is the secondary interest of enhancing the native grass and forb composition. The monitorig transects will monitoring whether this is the case and also detect the shift to non-natives.

TABLE 8. PRESCRIBED BURNS COMPLETED, 1990 - 1998 (sorted alphabetically by burn unit name)

BURN DATE(S)	BURN NAME	ACRES	# FMH plots	FIRE EFFECTS MONITORING TYPE	BURN OBJECTIVES
08/15/95	Bolinas/Fairfax	46	4	Non-native grassland/ native grassland	Native grassland improvement/ exotic grass reduction
10/29/98	Comacho	20	0	Non-native grassland/ french broom scrub	French broom/ hazard fuel reduction
11/03/94 07/07/97	Divide Meadow	1	2	Non-native annual grassland/ scotch broom scrub	Scotch broom reduction
10/28/98	Dogtown	34	0	Non-native grassland/ french broom scrub	French broom/ hazard fuel reduction
10/25/93	Elk Range 3	100	8	Non-native annual grassland/ northern coastal scrub	Native grassland improvement/ exotic grass reduction
08/22/95	Grossi West-C	3	0	Northern coastal scrub	Range improvement
10/98	Hagmaier	186	0	Non-native grassland/ french broom scrub	French broom/ hazard fuel reduction
09/14/93 11/02/94 10/16/96	MacDonald Ranch (South Unit)	100	4	Non-native perennial grassland/ northern coastal scrub scotch broom scrub	Scotch broom reduction
11/03/94	MacDonald Ranch (North Unit)	100	2	Non-native perennial grassland/ northern coastal scrub/ scotch broom scrub	Scotch broom reduction
10/22 & 11/2/98	MacDonald Ranch	192	0	Non-native perennial grassland/ scotch broom scrub	Scotch broom reduction
10/08/98	Hemlock	30	0 ¹¹	None	Hemlock/ hazard fuel reduction
09/23/98	Limantour	60	0 ¹²	None	Hazard fuel/ Monterey Pine reduction
06/21/96 07/07/97 10/08/98	Lime Kiln	2	0	Non-native annual grassland/ french broom scrub	French broom reduction
09/20/96 Sept/Oct'97	McCurdy	158	2	Non-native annual grassland/ french broom scrub	French broom reduction
10/22/96	McIssac	10	0 ¹³	Northern coastal scrub (crushed)	Range improvement
11/07/90	RX9001	25	5	Non-native grassland/ northern coastal scrub	Native grassland improvement/ exotic grass reduction
11/08/90	RX9002	26	3	Non-native grassland	Native grassland improvement/ exotic grass reduction
10/97	Strain Hill	108	2	Non-native annual grassland/ french broom scrub	French broom reduction

¹¹ Photopoints established

¹² Transects installed by vegetation management crew

¹³ Range transects installed

DATE: April 5, 1999
TO: Barbara Moritsch
FROM: Jeanne Taylor
RE: FMH year-end reports

Barbara –

Just wanted to give you a few highlights of the FMH year-end report. In large part it is a cataloguing of what was done each year with tallies of plot totals. Generally, I state things pretty briefly on what we did and what we will do, only touching on some of the larger whys and what happened on the introductory page.

Though I would recommend (and appreciate it) if you read the whole thing I want to draw your attention to a few pages that summarize the number of plots installed at PORE and where they are located. If you look at page 12, Appendix B. Plots classified by Burn Unit and Monitoring Type, there is a concise synopsis of the total number of plots by monitoring type. Turn the page and you come to a list of the transects in each burn unit with each of their monitoring dates. So for example if you wanted to know how many plots are at McCurdy just look down the list until you find McCurdy and you'll see GEMO2 plots 01 and 02 are in that unit.

Actually, the information from each of these sheets is contained on the prescribed fire history map. I hope this map gives a good visual image of where burning has been concentrated and where it is proposed and help you as you are developing your proposal. I have a few ideas of how fire may be applied but won't go into them in detail here. I was hoping you would have a chance to look this information over this week, then when we meet next week you will have had time to become familiar with the program.

On page 18 is a list of data sets to be analyzed. Divide Meadow and MacDonald Ranch are the only completed summaries. McCurdy is nearly completed and for Strain Hill, I have included only a single graph of the herbaceous data. Following the yellow page are all the data sets from the LOPE plots out on the Elk Range. I'm sorry that the data is not graphed but I did not have time to do it in Excel and the current version of the FMH program I have is not graphing correctly. It's a tremendous amount of information to look through but at least you have it. The BAPI data is the only data missing. I will get that to you next week.

So I hope you have time this week to absorb the information and next week we can talk about what it means and how in can be improved and so forth.

See you on 4/12.

