

**Central and Southern California
Fire Effects Monitoring Program
Annual Report
2002**



**Channel Islands National Park
Golden Gate National Recreation Area
Joshua Tree National Park
Pinnacles National Monument
Point Reyes National Seashore
Santa Monica National Recreation Area**

CENTRAL AND SOUTHERN CALIFORNIA FIRE EFFECTS MONITORING PROGRAM - 2002 ANNUAL REPORT

**Parks Included:
Channel Islands National Park
Golden Gate National Recreation Area
Joshua Tree National Park
Pinnacles National Monument
Point Reyes National Seashore
Santa Monica Mountains National Recreation Area**

INTRODUCTION

The Southern and Central California monitoring team began the season by carrying out the long-awaited move of our home base from Golden Gate N.R.A. to Point Reyes N.S. The crew is now happily ensconced in new quarters in the park's North district, in the historic RCA building. Also, after two years of being indirectly supervised by busy people, the hiring of the new fire ecologist, Brian Twedt, in late August brings the crew a new resource--someone to oversee and support our program, as well as to analyze the voluminous data we have produced.

The FMH plot load for 2002 was light for the six parks that the team monitors, totaling 70 re-reads plus 12 new plots. The largest group of plots read this year was at Channel Islands, where the five-year re-read was done of the park's 40 FMH plots, which are on Santa Rosa Island. But the plans for treating a large patch of fennel on Santa Cruz Island, and the accompanying installation of FMH plots, have again been put on hold while related problems are worked out.

At Golden Gate there were only three plots to do, five-year re-reads of redwood plots in Muir Woods. With the hiring of a new fire management officer this year, the park is just beginning to rebuild its wildland fire management program, after the departure in the last few years of the entire staff (including the monitors, as mentioned). In addition, vacancies in the resource management staff have contributed to the fact that the park has had little energy to focus on new burning projects. There is currently more of an emphasis on mechanical reduction of hazard fuels, and the fire effects crew carried out photomonitoring of a wildland urban interface project at GOGA, described below.

Joshua Tree has not installed any new plots, and the 12 existing ones are due for their ten-year re-read next year, in 2003.

Pinnacles has also had its share of staff turnover and accompanying shifts in direction, and has not planned any prescribed burns in the last couple of years. Two of the monitors made a visit there to monitor four plots: three five-year re-reads of brush plots, and one ten-year re-read in blue oak woodlands.

There were seven plots at Point Reyes to re-read, all of which were broom brush plots that had been recently burned. In addition, the crew was asked to install 12 plots in a unit that was planned to be burned to examine the effects of burning on *Holcus lanatus*, an insidious invasive exotic grass. The desire was for 7 burn and 5 control plots, in a relatively concentrated area. The request came late in the year, way past the time optimal for sampling grasslands, but with several reassurances that the burn would indeed happen this year, we set out in September to establish and read ten new and two existing plots. However the project never got off the ground, as the burn plan was not written.

Several burns did get carried out at Point Reyes, and three FMH plots were included in the burned acreage. All were French broom plots in Olema Valley. A fourth broom plot was rejected this year because it crossed one bare rocky drainage, and had its 30P end cut off by a second drainage (GEMO2 01 at McCurdy).

Santa Monica Mountains was the only other park in the network to do any burning this year, carrying out its large Cheeseboro Canyon prescribed burn (which unfortunately has had to be reduced to the areas that fell within Los Angeles County). Fifteen FMH transects in grass monitoring types were read in the unit before and/or after the burn, and the monitors also did five-year re-reads of four shrub transects in Zuma Canyon.

This year's crew was a team of four, including two seasonals. The crew shrank to three when the lead monitor, Ryan Tompkins, departed for another job in late August. The assistant lead monitor has since been filling in.

The light plot schedule allowed participation in other fire effects-related projects, as follows.

- ❖ At SAMO in April, the assistant lead monitor helped to design, establish, and sample additional fire effects plots in the Cheeseboro burn unit, using methods that were similar to FMH.
- ❖ In July the team (with additional assistance from other park staff members) completed the one-year sampling of the 25 plots (200 quadrats) comprising a fire effects research study on Scotch broom at PORE. After one of the seasonals had entered a large chunk of the data for this project, the assistant lead discovered that the Microsoft Access database had fatal design problems, since a "date" field was not linked to the data (a serious oversight for a multi-year project). She re-created and redesigned the database and imported the data. Two plots at each of the five sites were supposed to have been burned, however despite prep work and attempts at coordination with fire management staff, they were not. The regional inclination is to discontinue this project; a final decision is awaited.

- ❖ In August the monitors collected 17 coyote brush (*Baccharis pilularis*) shrubs, bagging them by height layer and by dead versus live. This is a continuation of the study comparing methods of estimating coyote brush biomass, which the crew participated in last year. This year the nearly 180 bags containing our samples were delivered to Will Russell and his USGS staff at their Fort Cronkhite office, along with the drying oven and other equipment. They plan to carry out the rest of the project, including drying, weighing, and entering data.
- ❖ In September we used digital photographs and GPS to monitor several eucalyptus groves at GOGA that were slated for removal as part of a hazard fuel reduction/exotic tree removal project at the wildland urban interface. Photopoints were established and pictures taken. The GPS points and related data were stored in ArcView, joining the other geographical information collected for this project. The photomonitoring was in lieu of establishing FMH plots—since the tree removal was going to completely change the habitat type and heavily disturb the site, it was felt that photomonitoring was a more appropriate method of recording change for this project.
- ❖ After all the FMH work was done, the two seasonals had time available, and were able to spend 11 days working with a pair of fuel mappers. This mapping project aims to characterize forest habitats at PORE and GOGA by collecting data on tree species composition, density, diameter, and height, and fuel loading.

The fire effects monitors participated in a two-day burn at SAMO (lead and assistant lead), and in five burns over ten days at PORE (assistant lead and seasonals). The crew acted as the fire monitors and also assisted with other aspects of the operations. Burn reports were written for all PORE burns by the assistant lead monitor, with help from the seasonals. The two seasonals both completed their Fire Effects Monitor (FEMO) task books, trained and signed off by the assistant lead. With the Western Region Mobilization Center disbanded, and with the inability to hook up with PORE's fire crew (despite desires being expressed), the monitors were unable to participate in any wildfires during this busy fire year, a great disappointment.

PLOT NETWORK INFORMATION

Table 1 shows the number of FMH plots that have been established at each of the six parks. Since there are no "G" (grass type) plots in any of the network's parks, those columns have been deleted from the table. As the table shows, new plots were only installed in one park (PORE) in 2002. The number of new plots established was actually 10, but because one old plot was rejected this year, the net total is the 9 shown in the table. It is likely that if the burn unit within which these ten and two others occur does burn next year, that the plots will be re-read in the spring, since the quality of the fall-collected data is dubious. One burn plot at CHIS (NAPU 09) was also rejected because a two-track that had been the burn unit boundary crossed it. Half of the plot was not even inside the burn unit, however the main concern was the disturbance caused by the two-track that crossed it.

As mentioned above, only PORE and SAMO conducted prescribed burns in 2002. No new FMH transects were burned at either park. Most of the parks in the network are not currently planning prescribed burns so do not have the need for new plots, nor will immediate post-burn reads need to be done. Of the two parks that have been doing some burning, SAMO has been using already-installed FMH plots and non-FMH plots to monitor its burns, and PORE has been burning in areas that have few or no plots. Hopefully at PORE transects can be added next year to some of the Olema Valley burn units to monitor fire effects on French broom and on native versus non-native grasses.

TABLE 1. Plot installation by plot type.

Park	Number of Plots Installed Previous Years			Number of Plots Installed 2002			Total Number Plots Installed		
	B	F	Total	B	F	Total	B	F	Total
CHIS	17 (24C)	0	17 (24C)	-1	0	0	16 (24C)	0	16 (24C)
GOGA	78 (24C)	12	90 (24C)	0	0	0	78 (24C)	12	90 (24C)
JOTR	10 (2C)	0	10 (2C)	0	0	0	0	0	10 (2C)
PINN	54	16	70	0	0	0	54	16	70
PORE	28 (11C)	4	32 (11C)	4 (5C)	0	4 (5C)	32 (16C)	4	36 (16C)
SAMO	82 (2C)	11 (1C)	93 (3C)	0	0	0	82 (2C)	11 (1C)	93 (3C)

C = Control Plot

Table 2 shows the number of plots read at each park in 2002, and the number planned for 2003. In contrast to 2002, 2003 will be a fairly big year, because many five- and ten-year old plots will be up for re-reads. This reflects the fact that although each park has had one or more burns in the past, all but two parks have done no burning at all in the last five years.

TABLE 2. Plot remeasurements by plot type for 2002 and 2003.

Park	Total Plots to Remeasure 2003				Total Plots Remeasured in 2002			
	G	B	F	Total	G	B	F	Total
CHIS	0	0	0	0	0	16 (24C)	0	16 (24C)
GOGA	0	35	1	36	0	0	3	3
JOTR	0	10 (2C)	0	10 (2C)	0	0	0	0
PINN	0	4	3	7	0	3	1	4
PORE	0	39	0	39	0	7 (3P)	0	7 (3P)
SAMO	0	37	0	37	0	15 (5P)	0	15 (5P)

C = Control Plots

P = Immediate Postburn Remeasurements

Table 3 shows the number of plots projected to be read over the next five years. It is important to remember though, that this table assumes no additional burns of new or established plots over these several years. These numbers could easily change, because hopefully there will continue to be burning, and a demand for new plots. The current management direction leans more towards mechanical methods rather than fire as a way to reduce fuels, and the monitors are anticipating being involved with plots that monitor change after these other treatments. This prospect is especially likely since many the network's parks are at the wildland-urban interface.

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

Park	2004	2005	2006	2007	2008
CHIS	0	0	0	17 24-C	0
GOGA	0	18 5-C	11	5	12
JOTR	0	0	0	0	0
PINN	4 2-C	0	0	3	0
PORE	4	0	12	2	0
SAMO	0	22	0	5	8

Table 4 shows the number of new plots planned for 2003, and the totals for each park once these new plots have been added. Staff members at each of the parks have been queried, but at present the only plans for new plots in 2003 are a set each at PORE and SAMO. In both parks 20 plots have been proposed, but the number is tentative. As mentioned above, at PORE it is felt that three plots are probably not adequate to assess fire's effects on French broom. A figure of 10 burn plots and 10 controls has been suggested, but plans are not yet firm. SAMO would like to monitor mechanical reduction of coastal sage scrub and/or possibly install new plots in the Cheeseboro burn unit, which is slated for a re-burn in 2003.

TABLE 4. Projected plot installation.

Park	Plots to be Installed 2003				Projected Total			
	G	B	F	Total	G	B	F	Total
CHIS	0	0	0	0	0	16 (24C)	0	16 (24C)
GOGA	0	0	0	0	0	78 (24C)	12	90 (24C)
JOTR	0	0	0	0	0	10 (2C)	0	10 (2C)
PINN	0	0	0	0	0	54	16	70
PORE	0	10 (10C)	0	10 (10C)	0	42 (26C)	4	46 (26C)
SAMO	0	10 (10C)	0	10 (10C)	0	92 (12C)	11 1C)	103 (13C)

Table 5 shows the difference between the amount of work we had planned to do this year, and the actual amount that we did do. Workload difference is expressed as numbers of plots read. For the most part the numbers are zero, meaning that predicted and actual were the same. CHIS has a “-1” because one brush burn plot was eliminated this year, as mentioned. At PORE the number is “+12” because 12 new plots were installed that we hadn’t known about when planning for the season. This year, fire management personnel have been requested to let the monitors know early on if new plots will be needed. We also didn’t know about the SAMO Cheeseboro burn until early spring, so the “+11” listed below are the plots that we re-read in preparation for that burn.

TABLE 5. Workload difference between the planned workload and actual work accomplished, in terms of number of plots read.

Workload Difference in 2002				
Park	G	B	F	Total
CHIS	0	-1	0	-1
GOGA	0	0	0	0
JOTR	0	0	0	0
PINN	0	0	0	0
PORE	0	+12	0	+12
SAMO	0	+11	0	+11

Note: In some of the following tables there are a few differences in plot totals in various categories as compared with tables in year-end reports for 2000 and 2001. Although it would have been easier to plug in the old numbers, almost all were re-counted to check their accuracy. In some cases errors had crept in over the years, and every attempt was made this year to fix any accounting mistakes, though some may remain.

Table 6 shows the number of plots at each park that has burned. At GOGA, PORE, and SAMO, some of the plots have burned more than once; these numbers are listed below each burned-once total, and are followed by an "R." Some plots at PORE and SAMO have re-burned two or more times (for a total of three or more burns for a plot), which is indicated by the number before the "R." Thus at PORE after the 2002 season, 27 plots have burned, and of those, 16 have reburned as follows: 6 have reburned once, 6 reburned twice, and 4 reburned four times.

In previous year-end reports there were numbers for SAMO in the "G" column, because there are 21 plots that started out and were first burned as "G" or grass-type plots. However they have been considered brush plots since the addition of a brush belt in 1996, and are counted elsewhere in the report under this category, so have been moved to the "B" column here. Including the 2002 season, at SAMO 50 plots brush have burned, and of those, 23 have re-burned, 19 of them once more, and 4 twice more. And nine of the eleven burned oak woodland plots have burned a second time.

TABLE 6. Number of plots that have burned.

Park	Total Plots Burned 2002				Total Plots Burned to Date			
	G	B	F	Total	G	B	F	Total
CHIS	0	0	0	0	0	17	0	17
GOGA	0	0	0	0	0	33 9-R	7	36 9-R
JOTR	0	0	0	0	0	10	0	10
PINN	0	0	0	0	0	9	5	14
PORE	0	0	0	0	0	27 6-R 6-2R 4-4R	0	27 6-R 6-2R 4-4R
SAMO	0	0 1-R 4-2R	0	0 1-R 4-2R		50 19-R 4-2R	11 9-R	61 28-R 4-2R

R = Reburns

Tables 7a through 7f show post-fire plot summaries for the six parks. The values shown are the number of re-reads at each time period. Some plots have burned more than once, which is indicated by the first number on each line in the first column. The plots have not undergone any other types of treatments, so the line for “Immediate Non-Fire” has been deleted from each table. Control plots are also shown, with a “00” for number of times burned.

At Channel Islands there has been only one burn, in 1997 (Table 7a). One burn plot was rejected in 2002, which is why the number of plots is one less than in previous year-end reports. Some of the control plots were not found and read in earlier years, but all were read at the 5-year re-read in 2002 (note how the number of control plots seems to grow with time).

TABLE 7a. Post-fire plot summary for Channel Islands N.P.

	G	B	F	Total
Immediate Postburn	--	16	--	16
01 – 1 Year Postburn	--	16	--	16
00 – 1 Year Postburn		20-C	--	20-C
01 – 2 Year Postburn	--	16	--	16
00 – 2 Year Postburn		23-C		23-C
01 – 5 Year Postburn	--	16	--	16
00 – 5 Year Postburn		24-C		24-C
01 – 10 Year Postburn	--	--	--	--

Golden Gate has carried out eleven burns over the years, though no new areas have been burned since 1998, and no burns at all have been done since that time either. But in contrast to neighboring PORE, GOGA has burned seven forest plots, mostly in Muir Woods (Table 7b, next page). A few of the numbers are different in this table than they were in the '00 and '01 year-end reports (which were identical to each other). Also, many of the control plots from the table appear to have been read at non-standard status times, however the calendar year of the reading is often the same as that for corresponding burn plots. The difference arises because the burn sometimes occurred more than one year from the “PRE” date, putting control and burn plots on different schedules.

These two facts—non-matching numbers and non-standard reads—appear to be related. The 2000 year-end report states, under “Changes in Protocol,” that the status sequence for control plots was changed from matching the years of the burn plots, to being based on the number of years since the “PRE” reading. Despite this note however, the status for the affected plots was only changed on the master plot list spreadsheet, and not in the FMH database. This seems to have confused the next lead monitor, because in

preparing the list of plots to read in 2002 (apparently from the database and not from the spreadsheet), he crossed out “00 yr 10” for several plots whose “PRE” was in 1992, and wrote “00 yr 07.” (Their “year 01” read was in 1996, “year 02” in 1997, etc.) Thus, those plots did not get read this year (this applies to NAPU 29C, BRDI 24C, NAPU 23C, and NAPU 24C).

Another source of discrepancies was that two plots, BAPI 27 and BAPI 29, were in the Tennessee/Coastal burn unit that burned in 1993, but the two plots didn’t burn. So, they were more or less treated as controls. According to FMH protocols however, a plot that is within a burn unit and which is not intentionally avoided, is a burn plot, whether or not fire moved through it. This mistake has been corrected.

TABLE 7b. Post-fire plot summary for Golden Gate N.R.A.

	G	B	F	Total
01 – Immediate Postburn	--	35	8	43
02 – Immediate Postburn		9		9
01 – 1 Year Postburn	--	35	8	43
02 – 1 Year Postburn		9		9
00 – 1 Year Postburn		6-C		6-C
01 – 2 Year Postburn	--	35	8	43
02 – 2 Year Postburn		9		9
00 – 2 Year Postburn		7-C		7-C
00 – 3 Year Postburn	--	4-C	--	4-C
00 – 4 Year Postburn	--	9-C	--	9-C
01 – 5 Year Postburn	--	27	7	34
00 – 5 Year Postburn		14-C		15-C
00 – 6 Year Postburn	--	2-C	--	2-C
00 – 7 Year Postburn	--	2-C	--	2-C
00 – 8 Year Postburn	--	6-C	--	6-C
01 – 9 Year Postburn	--	2	--	2
00 – 9 Year Postburn		2-C		2-C
01 – 10 Year Postburn	--	2	--	2
00 – 10 Year Postburn		2-C		2-C

Joshua Tree has carried out one prescribed burn, in 1992, but no further plans for burns have yet been proposed for this desert park (Table 7c). The 10-year re-reads of the plots will be done in the coming spring.

TABLE 7c. Post-fire plot summary for Joshua Tree N.P.

	G	B	F	Total
Immediate Postburn	--	10	--	10
01 – 1 Year Postburn	--	10	--	10
00 – 1 Year Postburn		2C		2C
01 – 2 Year Postburn	--	10	--	10
00 – 2 Year Postburn		2C		2C
01 – 5 Year Postburn	--	10	--	10
00 – 5 Year Postburn		2C		2C
10 Year Postburn	--	--	--	--

Of the 70 FMH plots at Pinnacles, only 14, or 20% have burned (Table 7d), and of these only four plots burned in prescribed burns, all in the chamise chaparral monitoring type. Immediate post-burn data were not collected for two of the plots.

TABLE 7d. Post-fire plot summary for Pinnacles N.M.

	G	B	F	Total
Immediate Postburn	--	7	5	12
1 Year Postburn	--	9	5	14
2 Year Postburn	--	9	5	14
5 Year Postburn	--	8	2	10
10 Year Postburn	--	--	1	1

At Point Reyes some plots have burned up to five times, as seen below in Table 7e. Since some of the same plots keep burning over and over, relatively few have made it to the 5- and 10-year postburn status. A lot of the burning done in the park is to try to control exotic broom species. The goal is to burn broom-infested areas every two years, which is the reason for the high number of re-burns.

TABLE 7e. Post-fire plot summary for Point Reyes N.S.

	G	B	F	Total
01 – Immediate Postburn	--	26 ¹	--	26
02 – Immediate Postburn		16		16
03 – Immediate Postburn		10		10
04 – Immediate Postburn		4		4
05 – Immediate Postburn		4		4
01 – 1 Year Postburn	--	27	--	27
02 – 1 Year Postburn		16		16
03 – 1 Year Postburn		10		10
04 – 1 Year Postburn		4		4
05 – 1 Year Postburn		4		4
01 – 2 Year Postburn	--	22	--	22
02 – 2 Year Postburn		16		16
03 – 2 Year Postburn		5		5
04 – 2 Year Postburn		4		4
00 – 3 Year Postburn	--	11C	--	11C
01 – 4 Year Postburn	--	3	--	3
01 – 5 Year Postburn	--	14	--	14
02 – 5 Year Postburn		6		6
00 – 5 Year Postburn		11C		11C
01 – 10 Year Postburn	--	3	--	3

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

At SAMO, like GOGA, there are some plots read in non-standard years (Table 7f on next page). And although there are 96 currently accepted plots at this park, there are another 21 plots listed as “rejected.” SAMO’s fire ecologist has been working to untangle the intricacies of the park’s plot set-up. The reason for the QUAG plots being read at unusual time is that the two once-burned plots were controls for the twice-burned ones for a while, but in 2000 their re-read schedule was changed so that the years were counted from the date of the first burn. Also, the status was corrected to “01” (once burned) from “02.”

As with Table 6, plots formerly listed as “G” plots were called “B” (brush) plots here, since that is what they have long been. Thus the “G” column is empty. Of the five post-burn reads we did this year, four were 03 POST, and one 02 POST. There is a discrepancy between the table below and the 2000 report, for two plots that were not counted as having burned twice. ARCA 21 burned only a little bit near 0P, and fire did not get into QUAG 05 at all, but since they were inside their burn units, both should have been counted as having burned twice. The status of the two plots in subsequent years was based on one burn; the numbers below have been corrected to reflect the plots’ twice-burned status.

In 1995 some reads are missing because there was a lack of time to do them when the park was visited.

TABLE 7f. Post-fire plot summary for Santa Monica Mountains N.R.A.

	G	B	F	Total
01 – Immediate Postburn	--	50	11	61
02 – Immediate Postburn		23	9 ¹	32
03 – Immediate Postburn		4	0	4
01 – 1 Year Postburn	--	50	11	61
02 – 1 Year Postburn		22	8 ²	30
01 – 2 Year Postburn	--	41	8	49
02 – 2 Year Postburn		22	8	30
01 – 3 Year Postburn	--	0	2	2
00 – 3 Year Postburn		2-C	1-C	3-C
01 – 4 Year Postburn	--	0	2	2
00 – 4 Year Postburn		1-C	1-C	2-C
01 – 5 Year Postburn	--	18	0	18
02 – 5 Year Postburn		21	8	29
00 – 5 Year Postburn		2-C	1-C	3-C
01 – 6 Year Postburn	--	1	0	1
00 – 6 Year Postburn		3-C	1-C	4-C
01 – 7 Year Postburn	--	2	3	5
02 – 7 Year Postburn		7	0	7
01 – 9 Year Postburn	--	1	0	1
00 – 9 Year Postburn		2-C	1-C	3-C
01 – 11 Year Postburn	--	1	--	1
00 – 11 Year Postburn		1-C	--	1-C

¹ QUAG didn't burn in second burn, but was in unit, so should be counted as twice-burned.

² QUAG 05 not read except for line, so not counted here.

Tables 8a-8f show the number of plots in each monitoring type for each park, and also which types the newly installed plots (if there were any) fell in. The number of control plots is also presented.

Table 8a shows that there are actually more control plots than burn plots at CHIS, particularly in the ARCA monitoring type. This is because the burn unit boundaries were changed on the day of the burn, putting four ARCA “burn” plots outside the unit. And the tenth NAPU burn plot was rejected this year, as mentioned above. The four unburned ARCA plots fell well outside the redrawn burn unit boundary, so were converted to control plots.

TABLE 8a. Number of plots installed by monitoring type at CHIS.

Monitoring Type Code	Monitoring Type Name	Number of Plots Installed in 2002	Total Number of Plots Installed	
BARCA1DO5	Coastal Sage Scrub	0	7	14-C
BNAPU1D01	Coastal Grassland	0	9	10-C
Totals			16	24-C
Total number of plots			40	

Table 8b (next page) shows the plots by monitoring type at GOGA. Although two of the BAPI plots have in the past been included in the “Tennessee Valley Controls” group, and have been read as control plots, they are technically burn plots since they were located inside a burn unit. Thus they are listed in the “burn” column below. Of the grassland plots, one BRDI plot at Milagra Ridge and two BRDI2 plots at Mori Point were not found in 2000 when the plots were visited to GPS them. Although it is believed that the stakes were pulled, these plots are still included in the numbers below.

As of the now, no burning at GOGA has ever been done in several of the monitoring types, and thus the plots in these types generally have not been visited beyond a “PRE” or maybe a “PR01” read. These types are: ARCA, ARGL, FEAR, HIIN, and UMCA. Also, there is but a single plot in each of three types: ARCA, EUGL, and HIIN. Decisions need to be made by managers about what is of interest at GOGA, and corresponding plots either eliminated or their numbers added to, depending on the focus. Also, in addition to the three grassland plots with missing stakes, there is a list of ten plots at GOGA that have been rejected. The stakes for these plots remain in the field and need to be removed if the plots are no longer going to be read.

TABLE 8b. Number of plots installed by monitoring type at GOGA.

Monitoring Type Code	Monitoring Type Name	Number of Plots Installed in 2002	Total Number of Plots Installed	
			B	C
BARCA1D05	Northern Coastal Scrub	0	1	0
BARGL1D04	Maritime Chaparral	0	4	0
BBAPI1D05	Northern Coastal Scrub	0	11	7
BBRDI1D01	Annual Non-native Grassland	0	25	3
BBRDI2D01	Annual Non-native Grassland	0	5	3
BCAPY1D03	Non-native Thistle	0	5	0
FEUGL1D10	Eucalyptus Forest	0	1	0
BHIIN1D01	Non-native Mustard	0	1	0
BNAPU1D01	Northern Coastal Prairie	0	16	9
BPHAQ1D03	Perennial Non-native Grassland	0	6	2
BFEAR1D03	Perennial Non-native Grassland	0	4	0
FSESE1D10	Redwood Forest	0	7	0
FUMCA1D10	Bay Woodland	0	4	0
Totals			90	24-C
Total number of plots			114	

Table 7c shows that all existing plots at JOTR are in one monitoring type.

TABLE 7c. Number of plots installed by monitoring type at JOTR.

Monitoring Type Code	Monitoring Type Name	Number of Plots Installed in 2002	Total Number of Plots Installed	
			B	C
BCORA1D05	Black Brush Scrub	0	10	2
Total number of plots			12	

PINN also has relatively few monitoring types (Table 7d). There are no control plots. However, very few plots (20%) have ever burned, so if there is an interest, some of these could be re-read as controls to monitor change over time without fire in these ecosystems. The bulk of the plots were set up more than a decade ago, in 1989 and 1990.

TABLE 7d. Number of plots installed by monitoring type at PINN.

Monitoring Type Code	Monitoring Type Name	Number of Plots Installed in 2002	Total Number of Plots Installed
BADFA1D04	Chamise chaparral	0	26
BCECU1D04	Mixed chaparral	0	28
FQUDO1D01	Blue oak woodland	0	16
Total number of plots			70

Table 7e shows the plots by monitoring type at PORE, and indicates that 10 new LOPE plots were installed and one GEMO2 plot rejected in 2002. There is probably an inadequate number of GEMO2 plots, and there are plans to address this deficit next year. The PIMU and PSME types have few plots, but the five-year prescribed burning plan calls for burning in these forests. If these burns do come about, more plots will need to be added. There also is an interest in having more control plots for areas to be burned in the future.

TABLE 7e. Number of plots installed by monitoring type at PORE.

Monitoring Type Code	Monitoring Type Name	Number of Plots Installed in 2002	Total Number of Plots Installed	
			B	C
BBAPI1D05	Northern Coastal Scrub	0	6	4-C
BCYSC1D05	Non-native Grassland with Scotch Broom	0	8	--
BGEMO2D05	Non-native Grassland with French Broom	-1	3	--
BLOPE1D01	Non-native Grassland	10	16	11-C
FPIMU1D05	Bishop Pine Forest	0	3	--
FPSME1D10	Douglas Fir Forest	0	1	--
Totals			37	15-C
Total number of plots			52	

Table 7f (next page) shows the monitoring types at SAMO. One confusing thing at SAMO is that many of the plots have had their names changed. They started as one monitoring type, then were switched to another, and in many cases were later switched again to the original type. A few more changes may need to be made, and some tidying up done. NAPU 05 was read this year for the first time since 1996, but it had very little *Nassella*, so needs to be either rejected or converted to something else. Also there are several monitoring types that have only one plot: BRNI, ARGL, and MALA; there are only two SAME plots. A couple of these conversions resulted from plots not having enough cover of the dominant species for the monitoring type. For example MALA 01 started out as ARCA 15; SAME 02 and ARGL 02 were originally ADSP (*Adenostoma sparsifolium*) plots; and SAME 01 began as ADFA 14.

Table 7f looks a little more impressive than it actually is. The table says that there are five CESP plots, but only one has been read beyond the "PRE" read in 1992, and that one plot was hard to find at five years in this spiny chaparral type. The ten-year read is next year. The story is similar for other brush types. Of the eleven CEME plots, only three have been read more than once, and five of seventeen ADFA plots are active. Some of these plots apparently were installed without a particular burn in mind, as they have "not yet designated" listed under "burn unit." Some of these could be read as controls if desired, as the park has only a couple of control plots. The table does not show the 28 plots that have been rejected for various reasons at this park.

The new fire management plan is in progress, and hopefully when burning objectives are refined, plot desires can be sharpened as well. As mentioned, the (relatively new) fire ecologist has been working to clean up the plot arrangement, and as seen, she has her work cut out for her.

TABLE 7f. Number of plots installed by monitoring type at SAMO.

Monitoring Type Code	Monitoring Type Name	Number of Plots Installed in 2002	Total Number of Plots Installed	
			B	C
BAVFA1D01	Non-native Annual Grassland Dominated by <i>Avena fatua</i>	0	11	1-C
BBRDI1D01	Non-native Annual Grassland Dominated by <i>Bromus diandrus</i>	0	10	0
BBRNI1D01	Non-native Annual Grassland Dominated by <i>Brassica nigra</i>	0	0	1-C
BNAPU1D01	Native Perennial Grassland	0	8	0
FQUAG1D02	Oak Woodland	0	11	1-C
BARCA1D05	Coastal Sage Scrub	0	16	0
BADFA1D04	Chamise Chaparral	0	17	0
BARGL1D04	Eastwood Manzanita Chaparral	0	1	0
BCEME1D04	Big-pod Ceanothus Chaparral	0	11	0
BCESP1D04	Mixed Chaparral	0	5	0
BMALA1G05	Coastal Sage Scrub Dominated by <i>Malosma laurina</i>	0	1	0
BSAME1D04	Black Sage Chaparral	0	2	0
TOTALS			93	3-C
Total number of plots			96	

This section of the year-end report prepared by:
Wende Rehlaender, Assistant Lead Monitor
Point Reyes National Seashore (415) 464-5286
December, 2002