FOREST CARNIVORE SURVEY REPORT

Spring 2002

Pacific Fisher 2002 (MHDSF)

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Mountain Home Demonstration State Forest
California Department of Forestry and Fire Protection
Tulare County, California

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1 Acknowledgements

Mountain Home Demonstration State Forest would like to thank the following individuals and organizations:

- Mountain Home Conservation Camp, California Department of Forestry and Fire Protection.

- Mike Kirkley of the Amador-El Dorado Unit of the California Department of Forestry and Fire Protection.

- The U.S. Forest Service, Sequoia National Forest, Tule River Ranger District.

2 Introduction

This report summarizes the 2002 Spring Season (April 28 to June 12) results of the Forest Carnivore Study conducted at Mountain Home Demonstration State Forest (MHDSF) as a continuation of the Fall 2001 Survey. The complete survey was last carried out in the Fall and Spring of 1992 and 1993 respectively. Target species were primarily the Pine Marten (*Martes Americana)* and Pacific Fisher *Martes pennanti* of the mustelidae family. The study follows the United States Forest Service (USFS) Survey Protocol for Forest Carnivores in Proposed Management Activity Areas (see Appendix A in the Fall 2001 Forest Carnivore Survey Report). The survey utilizes track plates as the primary detection device and camera units as the secondary detection device and is intended to be a short-term assessment of the presence of the target species.

Be advised that this report should be read in conjunction with the Fall 2001 Forest Carnivore Survey Report as it is intended only to present the Spring 2002 results and costs, identify the survey period and clarify logistics.

3 Purpose

Please refer to the Fall 2001 Forest Carnivore Survey Report.

4 Property Description

Please refer to the Fall 2001 Forest Carnivore Survey Report for a complete property description including History, Location and Boundaries, Topography, Climate, Vegetation, Water Resources, and Current Management.

5 Target Species Description

Please refer to the Fall 2001 Forest Carnivore Survey Report for a complete description of the Pine Marten and Pacific Fisher.

6 Supplies and Equipment

The supply and equipment quantities were based on our study in which no more than 16 stations were visited in a day, and no more than 31 stations were monitored during a survey period. On average, 5 additional pieces of each type of equipment were obtained as a precautionary measure.

6.1 Supplies

Supplies remained essentially the same as for the Fall 2001 Survey period; however there were a few minor changes based on experience from the first season. Some supplies were found to be unnecessary while others needed the quantities to be adjusted. Some were no longer needed since they were incorporated into equipment used again. Table 1 shows a checklist that has been modified to some extent from the Fall 2001 checklist to reflect these changes, and should be used to purchase supplies for future studies.

Table 1: Supply Checklist

List of Supplies		
✓	Quantity	Item and Description
	4	Black Permanent Markers
	3P, 8Y	Flagging (Pink and Yellow)
	15 rolls	8 1/2" x 11" Sheets Laminating Paper
	500 ft. ea.	Contact Paper (White and Clear)
	1 tank	Acetylene
	5 rolls	Masking Tape (3/4 in. x 37 yards)
	200	Latex Gloves
	1 pkg.	Bungee Cords (4 x 24", 2 x 30")
	4 pkgs	Hand wipes
	2 rolls	Duct Tape
	50+	Sandwich Bags
	150	Ziploc Freezer Bags
	200	Large Rubber Bands (Size 64)
	350	D-cell* or AA-cell Batteries
	25*	Ziploc Tupperware
	1	Foam Pad (2' wide x 5' long x 0.5" thick)
	40	Washers
	450	Sheet Rock Screws
	20	Wire Coat Hangers
	2 spools	Fishing Line (>20 lbs, 250 ft rolls)
	2 spools	Thread (black)
	150	24 exp 100 ISO 35mm or 110 Film
	2	Supply Boxes
	2	Hatchets
	2	Scissors
	2	Pliers/Wire Cutters
	2	Screwdrivers
	440	Stoppers (need 8 per track plate)
	1 bottle	Wood Glue (16 oz. bottle)
	180 lbs	Chicken
	120*	Wire End Connectors (60 Male, 60 Female)
	1	Full size back pack
	1	Medium back pack

* Need only when using 110 cameras
Items written in Red were bought and utilised in 2001 Fall and were used this year already incorporated into equipment.

6.2 Equipment

The major equipment change for 2002 was a switch over to 35mm cameras, 110 cameras were still used as spares. 35mm cameras can be easily purchased and film is readily available and less expensive. Also, the new cameras were self-advancing, allowing multiple pictures to be taken when an animal tugged the bait. Table 2 describes the pieces of equipment used, as well as an inventory of the number of pieces that we had, needed, and purchased or built for the Spring 2002 survey.

Table 2: Spring 2002 Equipment Estimates, Inventory, and Purchase List

List of Equipment				
Type	**Need**	**Have**	**Purchase/Build**	**Specifications**
Track Box	36	36	0	4-sided plywood box (10" x 10" x 32"--inside), 0.5 inch thick
Top/Bottom	72	72	0	12" x 32" with .5" x .25" groove .5" from side
Sides	72	72	0	10.5" x 32"
Track Plate	55	55	0	8" x 30", .063 gauge aluminum
Track Plate Box	2	2	0	Inside: 13 x 8 1/4 x 30 in.; Outside: 15 x 10 1/4 x 32 in.
Camera Unit	20	20	0	36", 2" x 2" post with a .5" x 2.75" x 6" wooden platform
Camera (110)	*	11	0	Concord 110 EF or CEF with internal, electronic flash
Camera Case	*	11	0	Foam camping pad cut to dimensions
Camera (35mm)	18	7	11	Vivitar BV 50
Camera Case	18	7	11 (1 pad)	Foam camping pad
Battery Pack	*	11	0	Open, plastic, D-cell battery pack

*No "Need" information in these cells because 110 cameras were used as spares

7 Preliminary Planning

The preliminary planning for the Spring 2002 Carnivore Survey took approximately two weeks. Less time than for 2001 since the survey plan remained the same and the project coordinator had been involved in the survey the previous year. Due to the staff familiarity with the project procedures it was possible to expedite some of the planning steps. For a complete description of the planning process see the Fall 2001 Forest Carnivore Survey Report.

The survey plan and map illustrating the survey area, management activity area,

and survey stations remained identical to the fall. There was also no change in the monitoring routes. MHDSF was granted permission to place stations on and to use access roads on federal lands by the USFS (see Appendix A for written correspondence).

The next step was to take an inventory (see Tables 1 and 2) of all the supplies and equipment, estimate what we would need, and make the necessary purchases. Appendix B includes contact information for vendors used. All equipment (track boxes, camera stands, track plates, cameras, and battery packs) was examined for damage and repaired if necessary. The grooves on the top and bottom track box pieces were widened for easier assembly. Lastly, backpacks and supply packs were restocked.

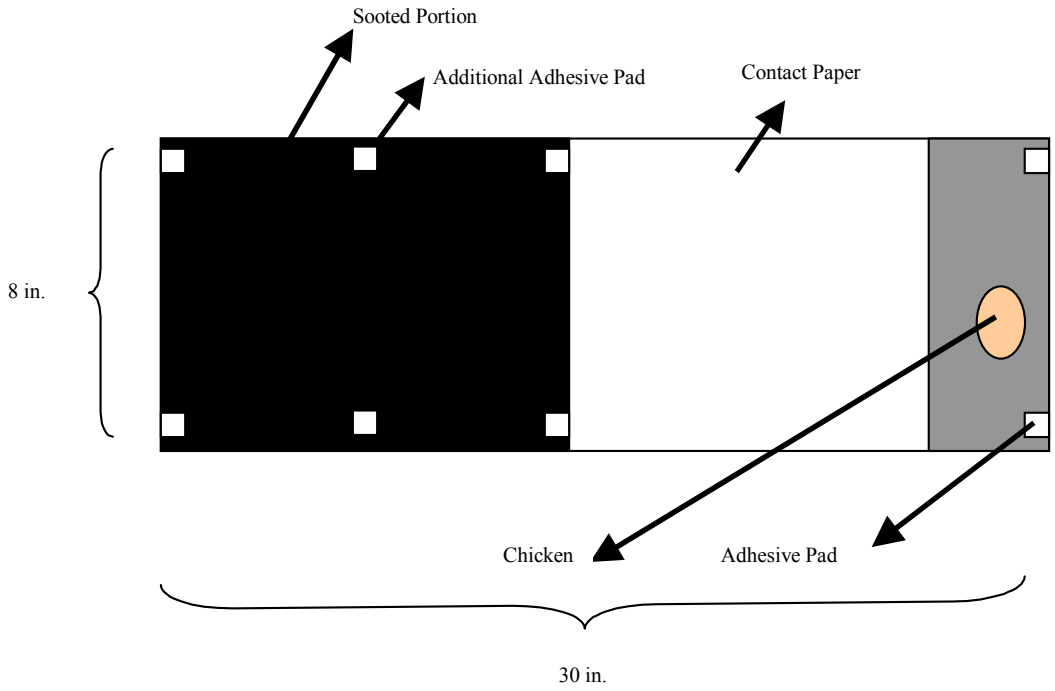
The same filing system was used as for the Fall 2001 study. This included one file folder for each monitoring station and files for the data sheets (see Appendix J in the Fall 2001 report): monitoring summary sheet, habitat data sheet, camera data sheet, target species summary sheet.

The Job Hazard Analysis (Appendix C) was edited for the new season and discussed with each staff member involved with the project prior to entering the field. Radio communication techniques were also reviewed at this time.

Each station was located and flagged exactly as in Fall 2001 and a box assembled, positioned and camouflaged. Habitat information was not collected as the data collected in the fall still applies.

Track plates were prepared exactly as in Fall 2001 except that an additional adhesive stopper was placed on the middle of each edge of the sooted part of the plate to provide more protection against rubbing. See Figure 1.

Figure 1: Completed Track Plate with additional adhesive stopper.



8 Survey Period Procedures

For precise survey period procedures see the Fall 2001 Forest Carnivore Survey Report. The only change made was that the lower elevation Western Survey Unit was monitored earlier in the survey period (specifically April 28 to May 21) due to snow conditions. The more remote Eastern Unit was monitored from May 20 to June12. These dates fell in the USFS protocol survey period of April 15 to July 15. The survey calendar in Appendix D illustrates station set up, the survey period, and route coordination. The same routes W1, W2, W3, W4, E1, E2, E3, and E4 (described in Appendix E in the Fall 2001 report) were used for each unit as in the Fall. Note that wet and snowy conditions for the first month required the use of a second All Terrain Vehicle (ATV)[1] on what would have been truck routes

[1] The individuals responsible for quad routes were enrolled in the ATV Rider Safety Training Course at Valley Cycle Bakersfield, CA.

under dry conditions. This ATV was borrowed from the Amador-El Dorado Unit, California Department of Forestry and Fire Protection.

8.1 Monitoring

Refer to 2001 Fall Carnivore Survey Report for monitoring techniques.

8.2 Track Identification

Refer to Fall 2001 Carnivore Survey Report for track identification procedures. However, note that there were some instances where tracks could be identified as a target species, but staff was unable to distinguish whether it was a marten or a fisher due to the unclear nature of the track. The formula mentioned in the Fall 2001 report could only be used when a clear right forefoot track was present. In these cases the track was simply identified as “target species” and used only for the purposes of setting up a camera. On the results sheet these were recorded as “TS” and were not included in any summary table totals. In total this occurred for only three track sheets.

8.3 Camera Set-up

Refer to Fall 2001 Carnivore Survey Report for camera Set-up procedures. It should be emphasized that it was extremely important that the camera units were set up with great caution. The slightest error resulted in the loss of a positive identification of a target species.

9 Total Project Costs

Table 3: Total Project Costs: Equipment, Supplies, Training and Labor.

Equipment and Supplies		Inventory		Quantity	Unit Price	Total
		Needed	Had	Bought		
	Track Box	36	36	0		
	Top/Bottom	72	72	0		
	Sides	72	72	0		
	Track Plate Box	2	2	0		
	Track-plates					
	Aluminum Plates	55	55	0		
	White Contact Paper	500 ft	300 ft	3 rolls	$ 6.50	$ 20.91
	Clear Contact Paper	446	328	7 rolls	$ 6.50	$ 48.80
	Stoppers		240	0		
	Acetylene	1 tank	1 tank	1	$ 30.00	$ 32.18
	Cameras					
	Camera Stand	20	20	0		
	110 Concord EF or CEF	? (Spares)	11	0		
	35mm Vivitar BV 50	18	7	11	$ 19.99	$ 235.83
	Camera Case (Foam Pad)	1	0.5	1	$ 10.00	$ 10.73
	Film					
	24 exp. 100 ASA 110	16	48	0	$ 2.50	$ -
	24 exp. IS0 100 35mm	131	5	134	$ 1.24	$ 178.21
	Film Processing					$ 181.82
	Battery Pack	? (Spares)	11	0		
	Wire-end connectors (60 male, 60 female)	? (Spares)	120	0		
	Batteries					
	AA-cell	256	0	288	$ 0.17	$ 52.51
	D-cell	86	164	0		
	Chicken ($1.09/Lb.)					
	Pounds	165.4	12.8	224.8 Lbs.	$ 1.09	$ 245.03
		618	48	(840 Wings)		
	Backpacks (1 large and 1 Medium)	2	2	0		
	Miscellaneous					
	Black Permanent Markers	4	0	4		
	Flagging (Pink and Yellow)	3P, 8Y	9P, 4Y	12Y		
	Masking Tape	5	8	0		
	Latex Gloves	200	200	0		
	Bungee Cords (assorted)	1pkg.	1 pkg.	0		
	Hand wipes	3	0	3		
	Duct Tape	2	2	0		
	Sandwich Bags	50+	50+	0		
	Ziploc Bags	150	30	120		
	Large Rubber Bands (size 64)	200	0	200		
	Ziploc Tupperware	5	3	10		
	Washers	40	40	0		
	Sheet Rock Screws	450	450	0		
	Fishing Line (> 20 Lbs.)	2	2	0		
	Thread	2	1	1		
	Supply Boxes	2	2	0		
	Hatchets	2	2	0		
	Scissors	2	2	0		
	Pliers/Wire Cutters	2	2	0		
	Screwdrivers	2	0	2		
						$ 75.00
	Track Filing System					
	Hanging File Folders	75	0	75		$ 23.59
	Filing Crates	3	1	2	$ 5.87	$ 12.59
Total						$ 1,117.19

Table 3 cont.: Total Project Costs: Equipment, Supplies, Training and Labor

Training				Quantity	Unit Price	Total
	ATV Safety Training					
	2 individuals			2	$ 25.00	$ 53.63
Total						$ 53.63

Labor +30%				Time (Hrs.)	Hourly Rate	Costs
	Forestry Aids					
	Planning and Report Preparation			160	$ 19.40	$ 3,104.00
	Monitoring			747	$ 19.40	$ 14,491.80
	Training			16	$ 19.40	$ 310.40
	Forestry Assistant I					
	Monitoring			52	$ 25.81	$ 1,342.12
	Forester II					
	Monitoring			12	$ 48.75	$ 585.00
	Report Review			4	$ 48.75	$ 195.00
Total						$ 20,028.32

Project Total:		$ 21,097.25

Appendix E includes calendars showing daily, weekly, and project totals for time logged for station monitoring, chicken supply, trackplates and contact paper used.

10 Survey Results

Note: The results of this survey were recorded on the Target Species Summary Sheets found in Appendix F.

10.1 West Survey

During the survey of the West Unit, 28 fisher tracks were collected at seven different detection stations. Photographs of fishers were collected at three stations. Six photographs of fishers were positively identified. Figure 2 is an example of one of these pictures.

Figure 2: Pacific Fisher at Station 41 MHDSF. Picture taken 05/05/02.

In addition, 63 marten tracks were collected at 15 different detection stations. Out of the 15 stations, photographs of martens were collected at 12. Twenty-eight photographs of martens were positively identified. Figure 3 is an example of a marten photograph. The results for both species are presented in Table 4.

Figure 3: Pine Marten at Station 25 MHDSF. Picture taken 5/21/02.

Both martens and fishers visited a total of four stations. Note that all tracks were carefully identified to the best of all staff's knowledge and ability, using all available resources including the track differentiation formula mentioned in the section of this report called "Track Identification". At one of these stations both marten and fisher tracks were found on the same piece of contact paper with a marten photo (Figure 4a) taken that visit. A fisher photo (Figure 4b) was taken three visits later.

Figure 4a: Pine Marten at Station 42 MHDSF; track-plate indicated that a Pacific Fisher also visited the same station between station monitoring visits. Picture taken 5/03/02.

Figure 4b: Pacific Fisher at Station 42 MHDSF. Picture taken 5/09/02.

Table 4: Spring 2002 West Side Survey Results

Station #	Visit 1 04/28-04/29	Visit 2 04/30-05/01	Visit 3 05/02-05/03	Visit 4 05/04-05/05	Visit 5 05/06-05/07	Visit 6 05/08-05/09	Visit 7 05/10-05/11	Visit 8 05/12-05/13	Visit 9 05/14-05/15	Visit 10 05/16-05/17	Visit 11 05/18-05/19	Visit 12 05/20-05/21
9						MAAM	MAAM		MAAM			
10												
11												
16												
17												
21		MAAM										
25						MAAM					MAAM	MAAM
26					MAAM		MAAM		MAAM			
27			MAAM			MAAM	MAAM	MAAM	MAAM			
31	MAAM	MAAM	MAAM	MAPE	MAAM		MAAM					
32		MAAM	MAAM	MAAM	MAAM	MAAM	MAAM	MAAM				
33			MAAM	MAAM	MAAM	MAAM	MAPE		MAAM			
34					MAAM	MAAM		MAAM	MAAM			
35				MAAM		MAAM	MAAM		MAAM	MAAM		MAAM
37	MAPE	MAPE	MAPE		MAPE	MAPE	MAPE					
38	MAAM		MAPE		MAPE		MAPE					
39						TS	MAAM	MAAM	TS	MAAM	MAAM	MAAM
40												
41		MAPE	MAPE	MAPE	MAPE	MAPE	MAPE	MAPE				
42	MAAM	TS	MAAM/PE	MAAM	MAPE	MAPE						
43												
45		MAPE	MAPE	MAPE	MAPE	MAPE	MAPE	MAPE				
46												
47												
48		MAAM	MAAM	MAAM	MAAM		MAAM	MAAM				
49												
50												
51												
52												
53			MAAM	MAAM	MAAM	MAAM	MAAM	MAAM				
55												

Key	
MAAM	Marten Tracks
MAPE	Fisher Tracks
	Marten Photo
	Fisher Photo

Summary	
Total MAAM Tracks	63
Total MAPE Tracks	28
Total MAAM Photos	28
Total MAPE Photos	6
Total un-diff target tracks	3
Total MAAM/PE Tracks	1

10.2 East Survey

During the survey of the East portion of the study area, no fishers were detected. Pine martens were detected at 15 stations. Due to repeated visits, 67 sets of marten tracks were collected at these stations. 14 out of the 15 stations had at least one photograph of a marten that visited during the survey period. A total of 32 photographs of martens were positively identified. The results are presented in Table 5.

Table 5: Spring 2002 East Side Survey Results

Station #	Visit 1 5/20 - 5/21	Visit 2 5/22 - 5/23	Visit 3 5/24 - 5/25	Visit 4 5/26 - 5/27	Visit 5 5/28 - 5/29	Visit 6 5/30 - 5/31	Visit 7 6/01 - 6/02	Visit 8 6/03 - 6/04	Visit 9 6/05 - 6/06	Visit 10 6/07 - 6/08	Visit 11 6/09 - 6/10	Visit 12 6/11 - 6/12
1		MAAM	MAAM	MAAM								
2					MAAM	MAAM						
3		MAAM	MAAM			MAAM						
4												
5												
6					MAAM	MAAM	MAAM	MAAM		MAAM	MAAM	
7												
8			MAAM					MAAM	MAAM			
12		MAAM	MAAM			MAAM						
13	MAAM			MAAM	MAAM		MAAM					
14												
15					MAAM	MAAM	MAAM	MAAM	MAAM	MAAM	MAAM	
18		MAAM	MAAM	MAAM		MAAM	MAAM	MAAM				
19												
20												
22												
23				MAAM	MAAM	MAAM	MAAM	MAAM	MAAM	MAAM		
24		MAAM		MAAM	MAAM	MAAM	MAAM	MAAM				
28												
29					MAAM		MAAM	MAAM	MAAM			
30	MAAM		MAAM		MAAM	MAAM	MAAM					
36												
44		MAAM		MAAM								
54				MAAM	MAAM		MAAM	MAAM	MAAM	MAAM		
56												

Key	
MAAM	Pine MartenTracks
MAPE	Fisher Tracks
	Marten Photo
	Fisher Photo

Summary	
Total MAAM Tracks	67
Total MAPE Tracks	0
Total MAAM Photos	32
Total MAPE Photos	0

10.3 Habitat Requirements

10.3.1 Elevation

Martens were detected at stations ranging from 5000 feet to 7000 feet in elevation. Fishers visited stations at lower elevations. The highest elevation visited by a fisher was 5950 feet and the lowest elevation was 4650. The four stations visited by both martens and fishers were at elevations ranging from 5150 feet to 5950 feet.

10.3.2 Canopy Closure

Martens were detected at stations ranging from 20 to 80 percent canopy closure. The most marten activity occurred at stations with 60 percent canopy closure. Fishers were detected at stations ranging from 40 to 70 percent canopy closure.

Table 6 lists the habitat data for each station and the target species that was detected.

Table 6: Target species detection related to habitat data.

Station #	Target Species	MAAM Visits	MAPE Visits	Overstory			Midstory			Avg. DBH		Canopy Closure (%)			Elev-ation
				1st	2nd	3rd	1st	2nd	3rd	Over-story	Mid-story	Over-story	Mid-story	Total	
1	MAAM	3		WF	GS	***	WF	IC	***	20	6	30	40	40	7000
2	MAAM	2		GS	WF	SP	WF	SP	WT	40	10	60	70	80	6600
3	MAAM	3		WF	IC	SP	WF	IC	***	25	10	30	40	60	6450
6	MAAM	6		SP	WF	IC	WF	SP	IC	15	6	20	20	30	6400
8	MAAM	3		SP	WF	***	SP	WF	BO	28	10	10	30	40	6500
9	MAAM	3		PP	WF	SP	BO	IC	SP	20	8	10	20	20	6150
12	MAAM	3		WF	SP	PP	WF	IC	RF	26	16	20	20	30	6600
13	MAAM	4		WF	SP	RW	WF	SP	BO	30	8	30	30	60	6000
15	MAAM	7		IC	BO	RF	SP	IC	SO	18	6	20	40	50	6150
18	MAAM	6		PP	WF	SP	IC	PP	BO	20	5	20	30	38	5900
21	MAAM	2		GS	WF	***	PP	SP	***	120	16	40	50	60	6475
23	MAAM	7		SP	WF	***	WF	IC	SP	40	6	40	50	60	6450
24	MAAM	6		SP	WF	PP	WF	BO	IC	34	8	20	30	50	5750
25	MAAM	3		WF	SP	***	IC	WF	SP	18	8	30	20	50	5600
26	MAAM	3		SP	IC	WF	BO	PP	IC	26	15	20	20	40	6450
27	MAAM	5		WF	GS	***	WF	WT	CH	30	4	40	10	40	6300
29	MAAM	4		SP	RF	***	IC	WF	CLO	28	12	10	60	60	5750
30	MAAM	5		IC	PP	***	AL	DW	***	20	6	15	30	40	5000
31	MAAM/PE	5	1	WF	BO	IC	IC	WF	DW	20	7	40	40	60	5150
32	MAAM	7		WF	IC	BO	WF	IC	SP	26	8	50	50	80	5850
33	MAAM/PE	5	1	SP	WF	PP	WF	IC	BO	16	8	20	50	60	5950
34	MAAM	4		WF	SP	***	IC	SP	***	30	18	50	30	60	6100
35	MAAM	8		GS	WF	***	WF	IC	DW	42	5	40	40	50	6300
37	MAPE		6	WF	BO	IC	IC	WF	SP	20	12	10	40	50	5450
38	MAAM/PE	1	3	PP	IC	WF	IC	PP	BO	28	6	40	10	40	5500
39	MAAM	5		WF	GS	SP	IC	DW	***	26	12	50	20	60	5700
41	MAPE		7	PP	IC	BO	IC	WF	SO	24	10	20	50	70	4950
42	MAAM/PE	3	3	WF	BO	***	IC	SP	***	20	8	50	30	50	5200
44	MAAM	2		WF	SP	IC	WF	DW	***	30	7	60	30	80	5800
45	MAPE		7	WF	IC	BO	IC	***	***	26	16	40	50	60	4650
48	MAAM	7		WF	BO	***	WF	IC	***	12	6	60	50	80	5550
53	MAAM	7		WF	SP	PP	WF	PP	IC	20	8	10	50	60	6050
54	MAAM	6		WF	BO	IC	WF	IC	***	8	5	60	50	70	5700

Species Codes			
WF	White fir	BO	Black oak
SP	Sugar pine	CLO	Canyon live oak
GS	Giant sequoia	DW	Dogwood
RF	Red fir	CH	Chinquapin
PP	Ponderosa pine	SO	Scrub oak
IC	Incense cedar	WT	Whitethorn
AL	Alder		

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10.4 Fall 1992, Spring 1993, and Fall 2001 Comparison

10.4.1 Location of Stations Visited

Appendix G is a map illustrating which target species visited which stations for each of the four surveys.

10.4.2 Number of Stations Visited and Total Tracks and Photos Collected

Table 7 directly compares the number of stations visited by martens, fishers, and both target species for Fall 1992, Spring 1993, Fall 2001, and Spring 2002. It also illustrates the number of tracks and photos collected for each species since 1992.

Table 7: Fall 1992 & 2001 and Spring 1993 & 2002 Comparison

1992/1993 and 2001/2002 Results Comparison	Year/Season Totals			
	Fall 1992	Fall 2001	Spring 1993	Spring 2002
Stations Visited by MAAM	15	30	24	30
Stations Visited by MAPE	8	7	7	7
Total Stations Visited by MAAM and MAPE	4	5	3	4
Total MAAM Tracks	42	106	78	130
Total MAPE Tracks	19	23	23	28
Total MAAM Photos	14	50	15	60
Total MAPE Photos	8	12	9	6

Figure 5a shows how the number of stations visited by fishers changed over the years. Since the 1992 and 1993 studies we have had no stations visited by fishers on the East side. On the West side the number of stations visited by fishers has increased slightly since 1992 and remained constant since the fall. This has had the overall effect that the number of stations visited in total by fishers has remained fairly constant.

Figure 5a: Number of Stations Visited by Fishers for each of the 1992, 1993, 2001, and 2002 studies

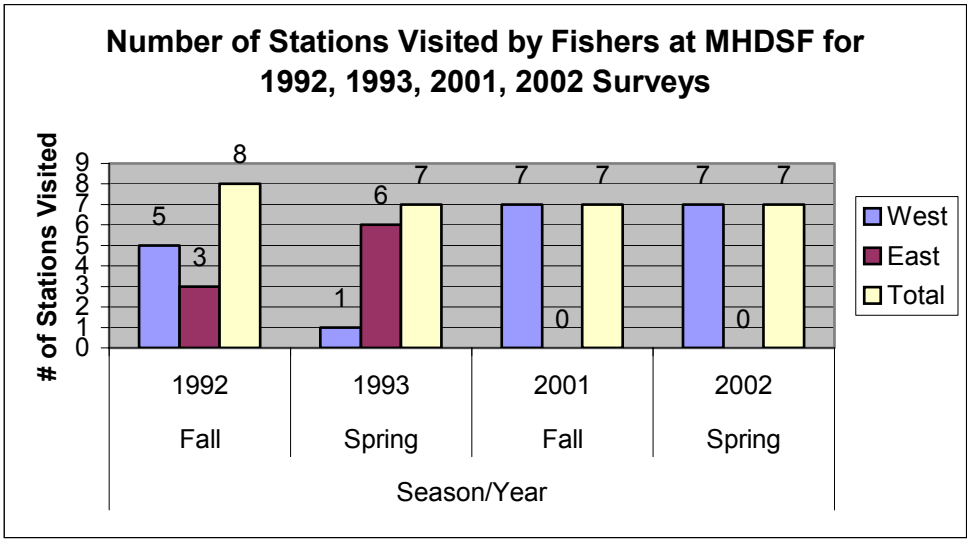


Figure 5b illustrates the number stations visited in the East, West, and total forest area by martens since 1992. Marten activity in the East and West survey units generally increased with small fluctuations having the overall effect of total marten activity increasing.

Figure 5b: Number of Stations Visited by Martens for each of the 1992, 1993, 2001, and 2002 studies

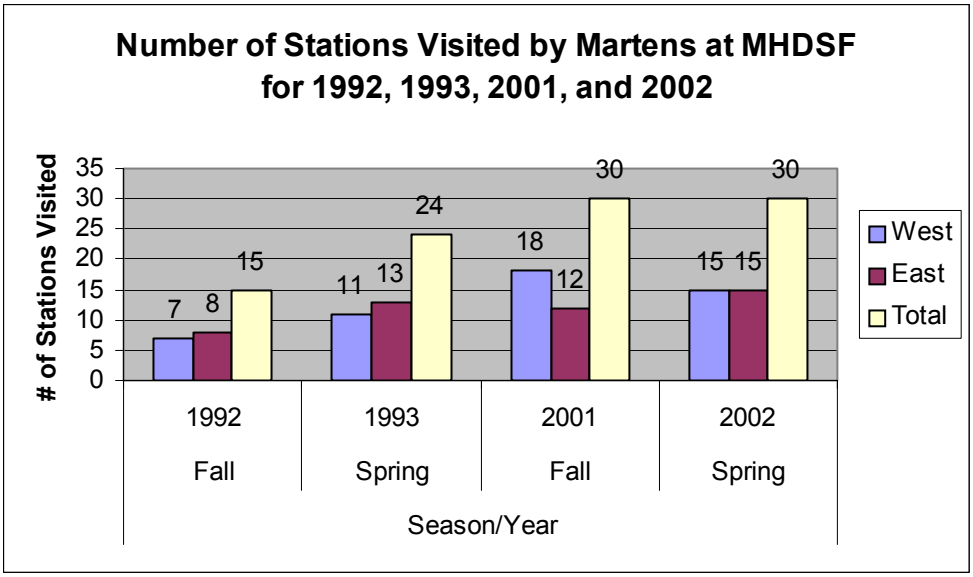


Figure 6: Bear at Station 31, MHDSF. Picture taken 5/9/02.

Figure 7: Crow at Station 21, MHDSF. Picture taken 5/10/02.

Figure 8: Gray fox at Station 25, MHDSF. Picture taken 5/12/02.

12 Bibliography

Please refer to the Fall 2001 Carnivore Report for a list of reference materials.

Appendix A

Letter to and Reply from: Sequoia National Forest, Tule River Ranger District, U.S. Forest Service.

STATE OF CALIFORNIA-THE RESOURCES AGENCY GRAY DAVIS, Governor

DEPARTMENT OF FORESTRY AND FIRE PROTECTION
Mt. Home Demonstration State Forest
P.O. Box 517
Springville, CA 93265
(559) 539-2321 Summer/539-2855 Winter

April 8, 2002

Del Pengilly
Tule River Ranger District
Sequoia National Forest
32588 Highway 190, Springville, CA 93265

Attention: Del Pengilly

Re: Permission to access United States Forest Service land for survey project purposes;

Mountain Home State Forest is conducting the Spring portion of a carnivore survey project for a time period of approximately 2 months beginning the week of April 22, 2001.*

56 survey detection stations have been mapped throughout the State Forest on an approximate half-mile grid. Some of the stations fall on U.S. Forest Service land where state and federal land border. We are asking your permission to set up these stations (consisting of a plywood baited track box and a possible camera set up) and to access the stations every two days on federal land.

We will be accessing stations on foot and by ATV. On foot we will be using the Eastside, Griswald and Redwood Crossing trails. Furthermore, we would like your permission to travel and clear (if necessary) the following roads for use with an ATV:

19S12	Dome Rock Road
20S92	Old Fraiser Grade
19S20	Brownie Meadow Road
19S29	Copper Mine Road
20S70	Coburn Mill Road
See Map	"Power-line Road"

We carried out the Fall portion in September and October of last year with your full cooperation which was very much appreciated.

Thank-you for your time.

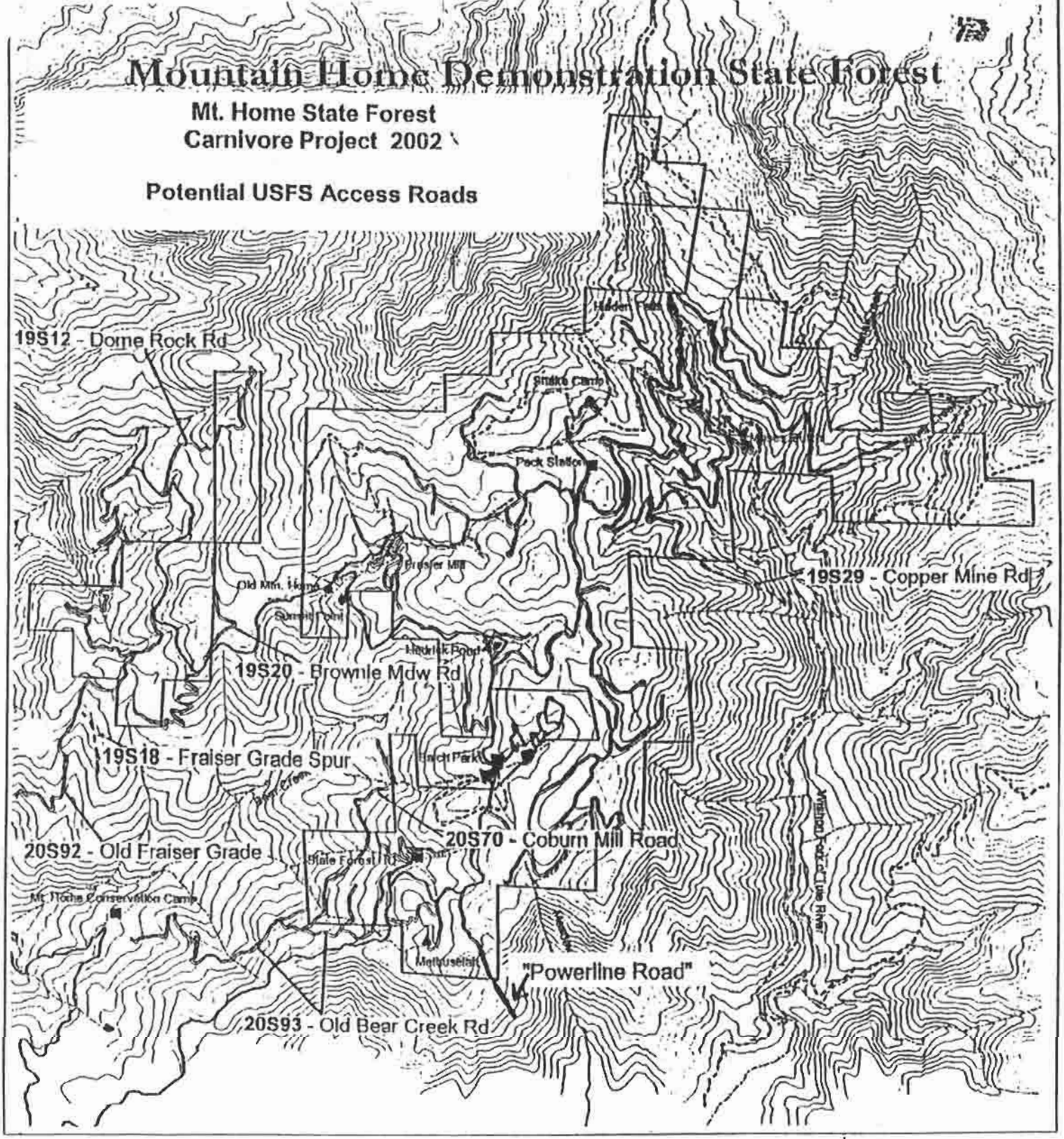
Sincerely,

José M. Medina
Forest Manager

Mountain Home Demonstration State Forest

Mt. Home State Forest
Carnivore Project 2002

Potential USFS Access Roads



Legend

- Buildings
- Campgrounds
- Picnic Areas
- Ponds
- Creeks
- Trails
- County Roads
- Unimproved Roads
- State Forest Boundary

N W E S

0.5 0 0.5 Miles

Contour Interval: 100 feet
Scale 1:50000

B. Kong
09/2001

California Department of Forestry and Fire Protection

Mountain Home Demonstration State Forest

Tulare County, California

United States Department of Agriculture
Forest Service
Giant Sequoia National Monument
Sequoia National Forest
Tule River Ranger District
Hot Springs Ranger District
32588 Highway 190
Springville, CA 93265
(559) 539-2607 TDD Ext 212

File Code: 5460

Date: April 15, 2002

Jose Medina
Forest Manager
Mt. Home Demonstration State Forest
P.O. Box 517
Springville, CA 93265

Dear Jose:

Your request for authorization to travel and clear the Forest Service roads necessary to conduct a carnivore study is approved. Your letter of April 8, 2002 requested use of the following roads:

19S12	Dome Rock Road
20S92	Old Frasier Grade
19S20	Brownie Meadow Road
19S29	Copper Mine Road
20S70	Coburn Mill Road
	Power-line Road

Our request is that when you clear these roads listed above, please clean the full width of the drivable surface rather than just the width of the ATV.

If you have any questions, please contact Tom Burns at 539-2607, ext 230.

Sincerely,

Del Pengilly

DEL PENGILLY
District Ranger

Appendix B

List of Vendors and Contacts

Contacts

Contact	Telephone Number	Address	Regarding...
West Olive Welding	559-782-0127	1440 W. Olive, Porterville	Track Plates
Wal Mart	559-783-8195	1250 W. Henderson, Porterville	Supplies
Smart & Final	559-784-1449	1289 W. Olive, Porterville	Chicken
Costco	559-625-5887	3750 S. Mooney, Visalia	Chicken
Town & Country	559-784-6439	1310 W. Olive, Porterville	Chicken
J & R Meat Co.	559-781-3792	24 S. Cobb, Porterville	Chicken
Radio Shack	559-781-4970	1140 W. Henderson, Porterville	Camera Unit Supplies
Cardon's Camera Shop	559-781-4067	197 N. Main. Porterville	Cameras and Film
Dave Dulitz	559-539-2019	Springville	Questions
Robin Galloway	559-539-2607 extension. 280	USFS, Hwy 190, Springville	Questions
Valley Cycle	661-324-0768	3808 Chester Ave, Bakersfield	ATV training
Longs Drugs "Kathy Rector"	559-781-4920	1155 W. Henderson, Porterville	Cameras

Appendix C

Spring 2002 Job Hazard Analysis

DEPARTMENT OF FORESTRY AND FIRE PROTECTION

STATE OF CALIFORNIA

JOB HAZARD ANALYSIS / PROJECT SAFETY WORK PLAN

IIPP-2 (Rev. 3/96)

FOR: [x] PROJECT [ ] WORK AREA [ ] JOB SAFETY CLASS DESCRIPTION: CARNIVORE SURVEY	PREPARED BY: Erica Reuter	DATE PREPARED: 4/10/02	PAGE 1 OF 4

MAJOR STEPS / TASK DESCRIPTION	POTENTIAL HAZARDS	HAZARD PREVENTION STEPS
Projects: List the work steps in the order they will occur Work Areas: List tasks associated with the work area Job Safety Class: List tasks associated with employee classification	After each step or task list the possible hazards created by equipment, environment and/or people.	After each hazard note precautions to be taken. Include safe work conditions, safe work practices, and personal protective equipment.
DRIVING TO & FROM SURVEY STATIONS	DRIVING ACCIDENTS	Drive defensively, to the extreme right. Assume other drivers will drive on your portion of the roadway. Stay alert for pedestrians walking on the road. Do not stop on blind curves under any circumstances. Park off the roadway if possible. Use hazard lights if necessary. Maintain the passenger compartment free of clutter so as not to interfere with safe operation of the vehicle. Insure all objects are secured to prevent flying projectiles during a sudden stop.
	MECHANICAL FAILURES	Inspect vehicles for mechanical problems that could lead to accidents. Follow regular maintenance schedules required.
	LOGGING TRUCKS & EQUIPMENT	Be aware of logging trucks and equipment on roadway. Turn off engine and listen for trucks on narrow roads. Back up if necessary to allow truck to pass on narrow road.
LOCATING STARTING POINT, WALKING TO, AND MONITORING STATIONS.	TRIPPING, FALLING, SPRAINS, AND CUTS	Choose footing carefully, hike at a safe pace, wear required 8" minimum boots, and walk on downhill side of stubs. Wear gloves to minimize cuts on hands from falling. Carry first aid kit.

[ ] Hazard Prevention Steps (column 3) have been used to develop a Code of Safe Practices [IIPP-3].
[ ] Code of Safe Practices [IIPP-3] Or [ ] Job Hazard Analysis [IIPP-2] is used to train employees before they perform the work.
[ ] Job Safety Surveys [IIPP-4] are used to evaluate employee safety performance in accordance with this document.

SIGNATURE OF SUPERVISOR DATE

DEPARTMENT OF FORESTRY AND FIRE PROTECTION

STATE OF CALIFORNIA

JOB HAZARD ANALYSIS / PROJECT SAFETY WORK PLAN

IIPP-2 (Rev. 3/96)

FOR: [x] PROJECT [ ] WORK AREA [ ] JOB SAFETY CLASS DESCRIPTION: CARNIVORE SURVEY	PREPARED BY: Erica Reuter	DATE PREPARED: 4/10/02	PAGE 2 OF 4

MAJOR STEPS / TASK DESCRIPTION	POTENTIAL HAZARDS	HAZARD PREVENTION STEPS
Projects: List the work steps in the order they will occur. Work Areas: List tasks associated with the work area Job Safety Class: List tasks associated with employee classification	After each step or task list the possible hazards created by equipment, environment and/or people.	After each hazard note precautions to be taken. Include safe work conditions, safe work practices, and personal protective equipment.
LOCATING STARTING POINT, WALKING TO, AND MONITORING STATIONS (Cont.)	BEES, SCORPIONS, SNAKES, AND WILD ANIMALS	Stay alert. Carry medication if allergic to bee stings. If threatened by bees, try not to run, walk away quickly. If attacked by bees, stay calm and apply cool water. If severely allergic radio for medical assistance immediately. If bitten by snake, apply cool water and stay calm. Radio for medical attention immediately. If approached by wild animals, stay calm and do not run. Position yourself so that there is a tree between you and the animal. Face the animal and slowly walk away. Make yourself appear as large as possible.
	SNAGS AND WIDOW MAKERS	Observe overhead surroundings. Listen for snapping/cracking noises. Avoid walking underneath or near dead and dying trees. Wear a hard hat!
	EYE INJURIES	Be aware of branches, twigs, and stubs at eye level. Walk with head down when going through dense brush or areas with low branches. Wear eye protection.
	CUTS AND PUNCTURES	Be careful when using tools with sharp edges and points. Evaluate equipment to ensure that it is functional and safe prior to entering the field.

[ ] Hazard Prevention Steps (column 3) have been used to develop a Code of Safe Practices [IIPP-3]
[ ] Code of Safe Practices [IIPP-3] Or [ ] Job Hazard Analysis [IIPP-2] is used to train employees before they perform the work.
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DEPARTMENT OF FORESTRY AND FIRE PROTECTION

STATE OF CALIFORNIA

JOB HAZARD ANALYSIS / PROJECT SAFETY WORK PLAN

IIPP-2 (Rev. 3/96)

FOR: [x] PROJECT [ ] WORK AREA [ ] JOB SAFETY CLASS DESCRIPTION: CARNIVORE SURVEY	PREPARED BY: Erica Reuter	DATE PREPARED: 4/10/02	PAGE 3 OF 4

MAJOR STEPS / TASK DESCRIPTION	POTENTIAL HAZARDS	HAZARD PREVENTION STEPS
Projects: List the work steps in the order they will occur. Work Areas: List tasks associated with the work area Job Safety Class: List tasks associated with employee classification	After each step or task list the possible hazards created by equipment, environment and/or people.	After each hazard note precautions to be taken. Include safe work conditions, safe work practices, and personal protective equipment.
LOCATING STARTING POINT, WALKING TO, AND MONITORING STATIONS (Cont.)	EXTREME WEATHER CONDITIONS	Be prepared for hot, cold, or wet weather. Hydrate yourself prior to and during the hike to stations. Keep extra water and rain gear on hand. In the event of a severe overhead storm, postpone survey until it is safe to continue.
	WORKING AFTER SUNSET	Carry a flashlight and extra layers of warm clothing.
SOOTING TRACK PLATES	CUTS AND BURNS	Wear gloves to protect hands from sharp edges of aluminum plates. Position torch so that it is in front of you and hose is free of kinks/tangles. Turn off torch when repositioning body or materials.
	EXPLOSIONS	Observe hose, fittings, and nozzle for leaks. Check pressure gauges for proper amount of pressure. Make sure that oxygen is not being supplied to torch. Stand to side of gauges when adjusting acetylene valve and pressure regulator. Bleed the lines after use and set gauges to zero. Wear gloves and safety glasses.

[ ] Hazard Prevention Steps (column 3) have been used to develop a Code of Safe Practices [IIPP-3].
[ ] Code of Safe Practices [IIPP-3] Or [ ] Job Hazard Analysis [IIPP-2] is used to train employees before they perform the work.
[ ] Job Safety Surveys [IIPP-4] are used to evaluate employee safety performance in accordance with this document.

SIGNATURE OF SUPERVISOR DATE

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7540-130-0156

DEPARTMENT OF FORESTRY AND FIRE PROTECTION

STATE OF CALIFORNIA

JOB HAZARD ANALYSIS / PROJECT SAFETY WORK PLAN

IIPP-2 (Rev. 3/96)

FOR: [x] PROJECT [ ] WORK AREA [ ] JOB SAFETY CLASS DESCRIPTION: CARNIVORE SURVEY	PREPARED BY: Erica Reuter	DATE PREPARED: 4/10/02	PAGE 4 OF 4

MAJOR STEPS / TASK DESCRIPTION	POTENTIAL HAZARDS	HAZARD PREVENTION STEPS
Projects: List the work steps in the order they will occur. Work Areas: List tasks associated with the work area. Job Safety Class: List tasks associated with employee classification.	After each step or task list the possible hazards created by equipment, environment and/or people.	After each hazard note precautions to be taken. Include safe work conditions, safe work practices, and personal protective equipment.
USE OF ATV	MECHANICAL FAILURES	Inspect ATV for problems prior to use. Observe regular required maintenance.
	OPERATING ACCIDENTS	Drive cautiously. Assume that other vehicles will be using the road. Approach blind corners attentively. Lean forward on steep uphill grades, lean back on steep downhill grades, lean uphill on sideslopes, and lean into turns. Wear helmet, gloves, and safety glasses.
	LOADING/UNLOADING ACCIDENTS	Secure loading ramp properly. Load and unload with both legs on one side of ATV. Ensure that vehicle tires are in line with ramp. Wear helmet.

[ ] Hazard Prevention Steps (column 3) have been used to develop a Code of Safe Practices [IIPP-3].
[ ] Code of Safe Practices [IIPP-3] Or [ ] Job Hazard Analysis [IIPP-2] is used to train employees before they perform the work.
[ ] Job Safety Surveys [IIPP-4] are used to evaluate employee safety performance in accordance with this document.

SIGNATURE OF SUPERVISOR DATE

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7540-130-0156

Appendix D

Survey Calendar

April 2002

Sun	*Mon*	*Tue*	*Wed*	*Thu*	*Fri*	*Sat*
	1	**2**	**3**	**4**	**5**	**6**
7	**8**	**9**	**10**	**11**	**12**	**13**
14	**15**	**16**	**17**	**18** Set up boxes	**19** Set up boxes	**20**
21	**22** Set up boxes	**23** Set up boxes	**24**	**25**	**26** **Set up bait** Set W1 & W2	**27** **Set up bait** Set W3 & W4
28 **Visit 1** Check W1 & W2	**29** **Visit 1** Check W3 & W4	**30** **Visit 2** Check W1 & W2				

May 2002

Sun	*Mon*	*Tue*	*Wed*	*Thu*	*Fri*	*Sat*
			1 **Visit 2** Check W3 & W4	**2** **Visit 3** Check W1 & W2	**3** **Visit 3** Check W3 & W4	**4** **Visit 4** Check W1 & W2
5 **Visit 4** Check W3 & W4	**6** **Visit 5** Check W1 & W2	**7** **Visit 5** Check W3 & W4	**8** **Visit 6** Check W1 & W2	**9** **Visit 6** Check W3 & W4	**10** **Visit 7** Cam W1 & W2	**11** **Visit 7** Cam W3 & W4
12 **Visit 8** Cam W1 & W2	**13** **Visit 8** Cam W3 & W4	**14** **Visit 9** Cam W1 & W2	**15** **Visit 9** Cam W3 & W4	**16** **Visit 10** Cam W1 & W2	**17** **Visit 10** Cam W3 & W4	**18** **Visit 11** Cam W1 & W2 **Set up bait** Set E3 & E4
19 **Visit 11** Cam W3 & W4 **Set up bait** Set E1 & E2	**20** **Visit 12** Cam W1 & W2 **Visit 1** Check E3 & E4	**21** **Visit 12** Cam W3 & W4 **Visit 1** Check E1 & E2	**22** **Visit 2** Check E3 & E4	**23** **Visit 2** Check E1 & E2	**24** **Visit 3** Check E3 & E4	**25** **Visit 3** Check E1 & E2
26 **Visit 4** Check E3 & E4	**27** **Visit 4** Check E1 & E2	**28** **Visit 5** Check E3 & E4	**29** **Visit 5** Check E1 & E2	**30** **Visit 6** Check E3 & E4	**31** **Visit 6** Check E1 & E2	

June 2002

Sun	*Mon*	*Tue*	*Wed*	*Thu*	*Fri*	*Sat*
						1 **Visit 7** Cam E3 & E4
2 **Visit 7** Cam E1 & E2	**3** **Visit 8** Cam E3 & E4	**4** **Visit 8** Cam E1 & E2	**5** **Visit 9** Cam E3 & E4	**6** **Visit 9** Cam E1 & E2	**7** **Visit 10** Cam E3 & E4	**8** **Visit 10** Cam E1 & E2
9 **Visit 11** Cam E3 & E4	**10** **Visit 11** Cam E1 & E2	**11** **Visit 12** Cam E3 & E4	**12** **Visit 12** Cam E1 & E2	**13**	**14**	**15**
16	**17**	**18**	**19**	**20**	**21**	**22**
23	**24**	**25**	**26**	**27**	**28**	**29**
30						

Appendix E

Calendars illustrating daily, weekly, and project totals for time logged for station monitoring, chicken supply, trackplates and contact paper used.

2002 Spring Survey Time Log: April 18 to June 10

ER, MM, MDM = Forestry Aid Hours

AF = Forestry Assistant hours

JM = Forest Manager Hours

Red = Set up hours

Blue = West Side monitoring hours

Green = East Side monitoring hours

April														Hours		
Sun		Mon		Tues		Wed		Thurs		Fri		Sat		Forestry Aids	Forestry Assistant	Forest Manager
								18 ER		19 ER		20		16		
21		22 ER		23 ER		24		25		26 ER	MM	27 ER	MM	56		
28 ER	AF	29 ER	MM	30 ER	JM									36	12	8

May														Hours		
Sun		Mon		Tues		Wed		Thurs		Fri		Sat		Forestry Aids	Forestry Assistant	Forest Manager
						1 ER	JM/ MM	2 MDM	MM	3 MDM	MM	4 MDM	MM	68		4
5 MDM	MM	6 ER	MDM	7 ER	AF	8 AF	ER	9 MDM	MM	10 MDM	MM	11 ER		100	16	
12 MDM		13 MM	R/ MDM	14 MM	ER/ MDM	15 MM	ER/ MDM	16 MM	ER/ MDM	17 ER		18 MM	ER	140		
19 MM	ER	20 ER	MDM	21 MDM	ER	22 MM	ER	23 MDM	MM	24 ER	MM	25 MDM	AF	116	12	
26 AF	MDM	27 MM	ER	28 MM	ER	29 ER	MDM	30 MM	ER	31 MDM	MM			92	12	

June														Hours		
Sun		Mon		Tues		Wed		Thurs		Fri		Sat		Forestry Aids	Forestry Assistant	Forest Manager
												1 ER	MM	24		
2 MDM	ER	3 MM	MDM	4 ER	MDM	5 MM		6 MDM/ AB		7 MM		8 MDM		94		
9		10 MM		11		12		13		14		15		5		
													Total:	747	52	12

Spring 2002 Chicken Supply: Daily, Weekly and Project Totals

April														
Sun		Mon		Tues		Wed		Thurs		Fri		Sat		Weekly Total
								18		19		20		
21		22		23		24		25		26 6	7	27 8	8	31
28 8	7	29 8	8	30 8	8									47

May														
Sun		Mon		Tues		Wed		Thurs		Fri		Sat		Weekly Total
						1 11	10	2 9	9	3 12	11	4 10	8	80
5 14	11	6 10	8	7 15	11	8 10	9	9 15	11	10 4	8	11 10	6	142
12 2	8	13 10		14 8		15 6		16 8		17 4		18 4	12	56
19 4	13	20 5	7	21 6	7	22 6	8	23 6	7	24 7	10	25 9	7	102
26 7	10	27 9	8	28 9	10	29 9	8	30 8	8	31 10	4			100

June														
Sun		Mon		Tues		Wed		Thurs		Fri		Sat		Weekly Total
												1 6	6	12
2 10	4	3 4	2	4 4	4	5 8		6 6		7 2		8 6		48
9		10		11		12		13		14		15		0
														618

Spring 2002 Trackplate and Contact Paper: Daily, Weekly, and Projects Totals

Red = West Side Survey
Blue = East Side Survey

April

Sun		Mon		Tues		Wed		Thurs		Fri		Sat		Weekly Total
								18		19		20		
21		22		23		24		25		26		27		31
28		29		30										46

May

Sun		Mon		Tues		Wed		Thurs		Fri		Sat		Weekly Total
						1		2		3		4		62
5		6		7		8		9		10		11		88
12		13		14		15		16		17		18		34
19		20		21		22		23		24		25		90
26		27		28		29		30		31				65

June

Sun		Mon		Tues		Wed		Thurs		Fri		Sat		Weekly Total
												1		6
2		3		4		5		6		7		8		24
9		10		11		12		13		14		15		0
													Total White Contact Paper used	446

Appendix F

Target Species Summary Sheets for Pacific Fisher (MAPE) and Pine Marten (MAAM)

Target Species Summary Sheet

Target Species: Martes americana

Crew Leader: Erica Reuter **Page:** 1 of 2
Address: Mountain Home Demonstration State Forest, P.O. Box 517, Springville CA, 93265
Phone and DG address: Summer: 559 539 2321 Winter: 559 539 2855
Survey Area and Location: Mountain Home Demonstration State Forest
Survey Period: Spring 2002
Total number of Track-plates used: 446 **Number with Target Species Tracks:** 130
Total number of Cameras used: 168 **Number with Target Species Photos:** 60
Suspected number of Individuals: 30

Year: 2002	Station Number															
	9	21	25	26	27	31	32	33	34	35	38	39	42	48	53	1
Track-plate (T) or Camera (C) or both (T&C)	T	T/C	T/C	T/C	T/C	T/C	T/C	T	T/C	T/C	T	T/C	T/C	T/C	T/C	T/C
Date of First Detection	8-May	30-Apr	8-May	6-May	2-May	29-Apr	30-Apr	3-May	7-May	5-May	29-Apr	11-May	29-Apr	1-May	3-May	23-May
Census Nights (CN) before first detection	12	4	12	10	6	2	4	6	10	8	2	14	2	4	6	4
CNs before second detection	2	10	10	4	6	2	2	2	2	4		2	4	2	2	2
...third	4		2	4	2	2	2	2	4	2		4	2	2	2	2
...fourth					2	4	2	2	2	2		2		2	2	
...fifth					2	4	2	6		2		2		2	2	
...sixth							2			2				2	2	
...seventh							2			2				2	2	
...eighth										2						
Nearest station with a detection	26	27	26	25	21	32	33	53	35	34	32	48	48	39	33	2
Distance to that nearest station	0.75 Mi	0.5 Mi	0.5 Mi	0.5 Mi	0.5 Mi	0.5 Mi	0.5 Mi	0.5 Mi	0.5 Mi	0.5 Mi	0.5 Mi	0.5 Mi	0.5 Mi	0.5 Mi	0.5 Mi	0.5 Mi

Comments: Station 39: First target species detection on 5/9/02, but unable to dicern whether marten or fisher. On 5/15/02 also unable to distinguish between marten or fisher tracks.

Census Night (CN): one detection device operating for one night. Because the detection stations are checked every other day, if the track-plate or camera is functional, each visit represents two CNs. When there is a camera and a track-plate at the same station count only 2 CNs per visit. If for some reason, the track-plate or camera/track-plate station was not functional since the last visit, 0 CNs have elapsed.

Target Species Summary Sheet

Target Species: Martes americana

Crew Leader: Erica Reuter **Page:** 2 of 2
Address: Mountain Home Demonstration State Forest, P.O. Box 517, Springville CA, 93265
Phone and DG address: Summer: 559 539 2321 Winter: 559 539 2855
Survey Area and Location: Mountain Home Demonstration State Forest
Survey Period: Spring 2002
Total number of Track-plates used: 446 **Number with Target Species Tracks:** 130
Total number of Cameras used: 168 **Number with Target Species Photos:** 60+G69
Suspected number of individuals: 30

Year: 2002	Station Number															
	2	3	6	8	12	13	15	18	23	24	29	30	44	54		
Track-plate (T) or Camera (C) or both (T&C)	T	T/C	T/C	T/C	T/C	T/C	T/C	T/C	T/C	T/C	T/C	T/C	T/C	T/C		
Date of First Detection	29-May	23-May	29-May	25-May	23-May	20-May	29-May	22-May	26-May	22-May	28-May	20-May	22-May	26-May		
Census Nights (CN) before first detection	10	4	10	6	4	2	10	4	8	4	10	2	4	8		
CNs before second detection	2	2	2	10	2	6	2	2	2	4	4	4	4	2		
...third		6	2	2	6	2	2	2	2	2	2	4		4		
...fourth			2			4	2	4	2	2	2	2		2		
...fifth			4				2	2	2	2		2		2		
...sixth			2				2	2	2	2				2		
...seventh							2		2							
...eighth																
Nearest station with a detection	3	2	13	15	13	6	23	24	15	29	24	29	30	23		
Distance to that nearest station	0.5 Mi	0.5 Mi	0.5 Mi	0.5 Mi	0.5 Mi	0.5 Mi	0.4 Mi	0.5 Mi	0.4 Mi	0.5 Mi	0.5 Mi	0.5 Mi	1.4 Mi	0.5 Mi		

Comments: None

Census Night (CN): one detection device operating for one night. Because the detection stations are checked every other day, if the track-plate or camera is functional, each visit represents two CNs. When there is a camera and a track-plate at the same station count only 2 CNs per visit. If for some reason, the track-plate or camera/track-plate station was not functional since the last visit, 0 CNs have elapsed.

Target Species Summary Sheet

Target Species: Martes pennanti

Crew Leader: Erica Reuter **Page:** 1 of 1
Address: Mountain Home Demonstration State Forest, P.O. Box 517, Springville CA, 93265
Phone and DG address: Summer: 559 539 2321 Winter: 559 539 2855
Survey Area and Location: Mountain Home Demonstration State Forest
Survey Period: Spring 2002
Total number of Track-plates used: 446 **Number with Target Species Tracks:** 28
Total number of Cameras used: 168 **Number with Target Species Photos:** 6
Suspected number of individuals: 7

Year: 2002	Station Number															
	31	33	37	38	41	42	45									
Track-plate (T) or Camera (C) or both (T&C)	T	T	T	T/C	T/C	T/C	T									
Date of First Detection	5-May	11-May	29-Apr	3-May	1-May	3-May	1-May									
Census Nights (CN) before first detection	8	14	2	6	4	6	4									
CNs before second detection			2	4	2	4	2									
...third			2	4	2	2	2									
...fourth			4		2		2									
...fifth			2		2		2									
...sixth			2		2		2									
...seventh					2		2									
...eighth																
Nearest station with a detection	37	38	41	37	37	45	42									
Distance to that nearest station	0.5 Mi	0.75 Mi	0.5 Mi	0.5 Mi	0.5 Mi	0.5 Mi	0.5 Mi									

Comments: None

Census Night (CN): one detection device operating for one night. Because the detection stations are checked every other day, if the track-plate or camera is functional, each visit represents two CNs. When there is a camera and a track-plate at the same station count only 2 CNs per visit. If for some reason, the track-plate or camera/track-plate station was not functional since the last visit, 0 CNs have elapsed.

Appendix G

Map illustrating which target species visited which stations for each survey carried out in 1992, 1993, 2001 and 2002 respectively.

NOT AVAILABLE