

Fire Study – OPPO Patches

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
23	Burn	1	23 Aug 2001						
23	Burn	1	23 Aug 2001	2001	1	3	6	3	3
					2	9	7	4	6
					3	7	10	4	2
					4	3	10	1	2
					5	4	3	2	2
					6	6	12	2	4
					7	7	10	4	5
					8	11	10	11	5
					9	14	4	9	9
					10	MISSING			
23	Control	1	23 Aug 2001	2001	1	6	0	0	0
					2	8	7	4	3
					3	9	7	4	3
					4	17	3	2	9
					5	9	2	2	5
					6	7	0	1	2
					7	3	1	1	0
					8	4	0	3	0
					9	8	2	1	3
					10	9	4	2	5

Fire Study – OPPO Patches

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
23	Burn	2	23 Aug 2001	2001	1	8	5	7	6
23	Burn	2	23 Aug 2001	2001	2	4	13	3	3
23	Burn	2		2001	3	5	11	10	4
23	Burn	2		2001	4	0	4	0	0
23	Burn	2		2001	5	5	10	8	2
23	Burn	2		2001	6	9	8	11	5
23	Burn	2		2001	7	4	8	3	3
23	Burn	2		2001	8	2	10	1	1
23	Burn	2		2001	9	5	10	7	3
23	Burn	2		2001	10	4	3	3	2

→ out of five ones!

23	Control	2	23 Aug 2001	2001	1	12	4	4	5
23	Control	2	23 Aug 2001	2001	2	15	11	1	4
23	Control	2	23 Aug 2001	2001	3	6	4	4	1
23	Control	2	23 Aug 2001	2001	4	15	12	5	8
23	Control	2	23 Aug 2001	2001	5	10	4	5	5
23	Control	2	23 Aug 2001	2001	6	10	3	0	2
23	Control	2	23 Aug 2001	2001	7	5	10	3	1
23	Control	2	23 Aug 2001	2001	8	8	4	2	3
23	Control	2	23 Aug 2001	2001	9	5	16	3	3
23	Control	2	23 Aug 2001	2001	10	7	4	0	2

Fire Study – OPPO Patches

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
23	BURN	3	27 Aug 2001	2001	1	0	12	0	0
					2	17	2	1	5
					3	2	3	1	7
					4	0	0	0	0
					5	4	1	1	3
					6	0	4	0	0
					7	8	3	1	5
					8	6	3	0	0
					9	5	0	1	3
					10	13	5	1	2
23	BURN	4	27 Aug 2001	2001	1	8	4	1	4
					2	12	3	2	7
					3	5	5	0	4
					4	15	5	1	6
					5	4	5	0	3
					6	3	5	0	2
					7	0	6	0	0
					8	2	2	1	1
					9		(MISSING NAIL)		
					10		(MISSING NAIL)		

Fire Study - OPPO Patches

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
27	Control	4	29 Aug '01	2001	1	21	4	-	12
					2	2	10		1
					3	-	4	-	-
					4	3	5	-	2
					5	4	8	1	3
					6	11	6	-	7
					7	13	2	-	7
					8	11	2	-	6
					9	13	3	-	7
					10	3	3	-	2

Fire Study - OPPO Patches

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
27	Control	3	27 Aug 2001	2001	1	8	2	0	4
					2	20	4	1	9
					3	11	3	0	5
					4	19	9	2	6
					5	7	2	1	5
					6	18	6	3	8
					7	8	1	0	6
					8	8	2	1	8
					9	9	3	2	5
					10	(MISSING NAIL)			

Kaplan, Nicole

From: Augustine, David [David.Augustine@ars.usda.gov]
Sent: Wednesday, September 12, 2007 5:18 PM
To: Kaplan, Nicole
Cc: Milchunas, Dan
Subject: pawnee burn data

Nicole-

Sorry I keep missing you. I just have some questions about 3 types of data from these studies:

- 1) Cactus data – it appears that I only have data from the transect method (97-00), and that there is a problem with the methodology because the field crew collected the data differently in 97-98 versus 99-00. I'd like to discuss with you to see if I can confirm what really happened in the field. Also, I don't have any data collected using the circular quadrats, except for the 2000 burn. For that data set, the cactus quadrats appear to have been measured in Jan-2000, August-2000, and Jan-2001, but there is a bunch of missing data from the Jan-2001 measurements (would like to see if you have the data on paper somewhere). Finally, is there quadrat data for cactus from the burns in 2001 and 2002?
- 2) Shrub data – on this, I'm wondering 1) if any shrub data was collected from the 1998 and/or 2002 burns, and 2) there is a large amount of data missing from the controls on the 2001 burn – ~~any chance you have that on paper (control transects 3 and 4).~~
- 3) Plant N analyses – I have all the N data for the ANPP samples (collected at peak biomass), but Dan and I had also discussed some samples collected monthly for N analysis – do you know anything about this data?

I should be around the office most of tomorrow (thurs) until 2:30 if you have time to call.

Thanks!

david

David Augustine
Rangeland Resources Research Unit
USDA - ARS

Mailing Address:
Crops Research Laboratory
1701 Center Avenue
Fort Collins, CO 80526

Phone: (970) 492-7125
FAX: (970) 492-7160

* 97/98 - transect appo

99-02 quadrat method

summer 2001

01 & 02 Patch method
03 measurements for 02

1) April 01

2) x1 Shrub 98 burn.

2) x2 transects 3 & 4 controls for 2001 Burn are the same as the 2001 3 & 4 control transects.

③ yes - ^{users.} Milchunas s1 file
Seasonal N
99 & 00

post burn
2001

23 24 BURN 1 C1 24

24 B2

B2 24

27 B3

C3 27



2 B4

C4 27

nes

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # 3 Treatment Control Replicate # 1 Date 6/18/98 Year of Burn 98
West of rd #55

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1	1			1	1			0	1			0	1			0	1			1	1			2
2			1	2			1	1			1	1	1		0	1			1			1	1	
3		1					1	1			1	0			1	0	1			2	1			0
4	1			0	1			0	1			0			1	2	1			1	1			0
5			1	0			1	0	1			0			1	1	1			0		1		0
6			1	1	1			2			1	0			1	1	1			0		1		0
7			1	1			1	0			1	2			1	1	1			0		1		0
8			1	1			1	1	1			0	1			2	1			1		1	1	
9			1	1			1	0	1			2			1	1	1			0		1		0
10			1	1			1	1			1	1			1	0	1			1		1		0
11	1			0	1			2			1	3	1			0	1			1		1		0
12	1			0	1			0	1			0	1			0	1			0		1		0
13			1	0			1	0			1	0			1	0	1			0		1		0
14		1		0			1	0	1			0			1	0	1			0		1	1	
15	1			0	1			2	1			2			1	0	1			0		1		0
16	1			0	1			0			1	1			1	0	1			0		1		0
17	1			1	1			1	1			0	1			1	1			0	1			1
18			1	0	1			0	1			0	1			0	1			0		1		0
19		1		0	1			1	1			0			1	1	1			0		1	1	
20		1		0	1			2			1	1			1		1			0	1			0
END	35.2m				33.2m				28.1m				32.7m				58.7m				29.4m			

L = live, D = dead, I = injured, New = new pad

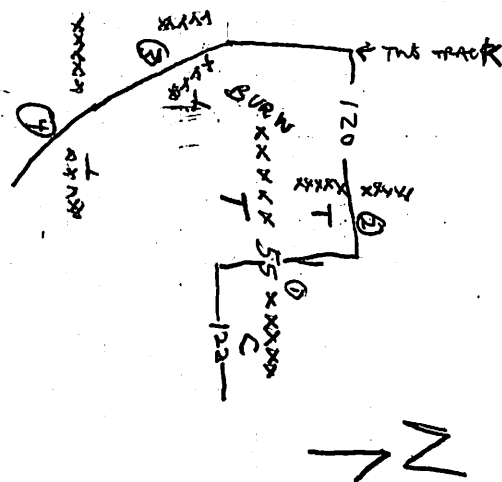
nes

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # 3 Treatment Burn Replicate # 1 Date 6/18/98 Year of Burn 98
 East off rd. 55

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1			1	1			1	6			1	1			1	1		1		0		1		0
2		1		6			1	1			1	1			1	0		1		0		1		0
3			1	1			1	0		1		0			1	1		1		0		1		0
4			1	1			1	1		1		0		1		0		1		0		1		0
5		1		0		1		0			1	1		1		0		1		0		1		0
6		1		0			1	1		1		0		1		0		1		0		1		0
7		1		0		1		0		1		0		1		0			1	1		1		0
8			1	2			1	1		1		0			1	1			1	1			1	1
9			1	1		1		0			1	1			1	1			1	1			1	1
10			1	1			1	1		1		0			1	1			1	1			1	0
11			1	1			1	1			1	1			1	1			1	2			1	0
12			1	0			1	1			1	2			1	1		1		0		1		0
13			1	1			1	1			1	1			1	1		1		0		1		0
14			1	0			1	0		1		0			1	0			1	0		1		0
15			1	0			1	0			1	1		1		0		1		0			1	0
16			1	0		1		0			1	1			1	1		1		0			1	1
17			1	0		1		0			1	0			1	1		1		0			1	1
18			1	0			1	1		1		0		1		0		1		0			1	1
19			1	0			1	1		1		0			1	1		1		0			1	1
20			1	1			1	1			1	1			1	1			1	1			1	1
END	14.9m				19.6m				23.3m				24.9m				58.7m				21.2m			

L = live, D = dead, I = injured, New = new pad



200

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # 3 Treatment Control Replicate # 2 Date 6/8/98 Year of Burn 98

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1			1	2	1			0	1			0			1	0	1			1	1			0
2			1	1			1	1	1			1			1	0	1			0	1			0
3			1	1			1	2	1			3	1			2	1			1	1			0
4			1	1			1	1	1			1	1			0		1		0			1	1
5			1	1			1	1	1			2	1			1	1			1			1	1
6	1			0	1			0	1			1	1			1		1		0	1			0
7			1	1			1	0	1			0	1			1	1			1	1			0
8	1			1	1			0		1		0		1		0	1			1	1			0
9	1			2	1			0		1		0	1			0	1			0			1	0
10	1			2			1	1	1			3	1			1	1			0			1	0
11	1			2	1			0	1			0	1			1	1			0	1			0
12	1			4	1			1	1			1	1			1		1		0	1			0
13	1			0	1			0	1			1		1		0	1			0			1	1
14	1			0			1	1	1			1	1			0	1			0			1	0
15	1			2			1	0	1			1	1			1	1			0	1			0
16	1		1	1			1	1	1			0		1		0	1			1	1			0
17	1			0			1	1	1			0		1		0	1			2	1			0
18	1			1			1	1	1			2	1			1	1			2			1	1
19	1			2			1	1	1			2	1			1	1			0	1			0
20	1			1			1	1	1			0	1			1	1			0			1	1
END	75.9m				55.0m				54.9m				38.8m				32.5m				29.7m			

L = live, D = dead, I = injured, New = new pad

nes

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # 3 Treatment Burn Replicate # 2 Date 6/18/98 Year of Burn 98

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1			1	1			1	1			1	1			1	1	1			0			1	0
2			1	1			1	1		1		0		1		0			1	0		1		0
3		1		0			1	0			1	0		1		0	1			0		1		0
4			1	2			1	2	1			0			1	1			1	0		1		1
5			1	1			1	2		1		0		1		0	1			1			1	0
6			1	2		1		0			1	1		1		0		1		0			1	1
7		1		0		1		0			1	1			1	0			1	1			1	1
8		1		0		1		0		1		0			1	1		1		0			1	0
9		1		0			1	2			1	1			1	0		1		0			1	1
10		1		0			1	0		1		0			1	0			1	1			1	1
11		1		0			1	0			1	1			1	0			1	2		1		0
12			1	2			1	1		1		0			1	0		1		0			1	0
13		1		0			1	0		1		0		1		0		1		0		1		0
14		1		0			1	0			1	1		1		0			1	1		1		0
15			1	1			1	1			1	2			1	1			1	1			1	1
16			1	1		1		0		1		0			1	1		1		0		1		0
17			1	0		1		0		1		0			1	0			1	3			1	1
18		1		0		1		0			1	2			1	1			1	1			1	1
19		1		0		1		0			1	2			1	1			1	1			1	1
20			1	1			1	1	1			1			1	1			1	1		1		0
END	45.5m				12.5m				31.6m				21.3m				18.5m				24.5m			

L = live, D = dead, I = injured, New = new pad

SECTION: 3

REP 3

BURN STUDY - OPPO DENSITY AND HEALTH

TRT: CONTROL

Date 6/18/98

BURN
98

Transect 1 End 56.5 Transect 2 End 44.6 Transect 3 End 40.6

Pad#	L	D	I	NEW	Pl#	L	D	I	NEW	Pl#	L	D	I	NEW	Pl#
1	/			0		/			0		/			0	
2	/			0			/		0		/			0	
3		/		0			/		0			/		0	
4			/	0			/		0				/	0	
5		/		0				/	0				/	0	
6		/		0		/			0		/			0	
7		/		0		/			/			/		0	
8	/			/		/			2			/		0	
9	/			/		/			/			/		0	
10		/		0		/			0				/	0	
11		/		0			/		0				/	0	
12	/			/			/		0				/	0	
13		/		0			/		0				/	0	
14			/	0		/			4				/	0	
15		/		0		/			3			/		0	
16	/			0				/	1			/		0	
17	/			0		/			2			/		0	
18	/			/		/			/				/	/	
19	/			/		/			/			/		0	
20	/			3		/			/				/	2	
total															

L = live, D = dead, I = injured, New = new pad, Pl# = plant number

REP3

SECTION: 3

TREATMENT: BURN STUDY - OPPO DENSITY AND HEALTH

BURN
98Date 6/18/98
CONTROLTransect 4 End 34.8Transect 5 End 74.1Transect 6 End 56.8

Pad#	L	D	I	NEW	Pl#	L	D	I	NEW	Pl#	L	D	I	NEW	Pl#
1	/			/			/		0		/			/	
2	/			0		/			/		/			2	
3	/			0		/			0		/			/	
4	/			/		/			0		/			/	
5	/			0		/			/		/			0	
6	/			0		/			/			/		0	
7	/			0		/			/		/			0	
8		/		0		/			0		/			/	
9		/		0			/		0		/			0	
10		/		0			/		0		/			0	
11	/			2		/			0			/		0	
12	/			2		/			2		/			0	
13	/			/		/			0			/		0	
14	/			/		/			0		/			2	
15	/			/		/			0			/		0	
16	/			/		/			/			/		0	
17		/		0			/		0		/			0	
18	/			/				/	0			/		0	
19		/		/		/			/			/		0	
20		/		0		/			/				/	0	
total															

L = live, D = dead, I = injured, New = new pad, Pl# = plant number

res

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # 3 Treatment Burn Replicate # 3 Date 6/18/98 Year of Burn 98

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1	1			0	1			0	1			0		1	2			0			1			1
2	1			0	1			1			1	2		1	0		1		0			1		1
3	1			0			1	0			1	1		1	0		1		0		1			0
4			1	0			1	0	1			0	1		0		1		0		1			0
5	1			0			1	1			1	0		1	3			1	1		1			0
6			1	1			1	3			1	0			1	1		1	0		1			0
7			1	1			1	1	1		0	1			0			1	1			1		1
8	1			0			1	1			1	0	1			0		1	1		1			0
9			1	1			1	0			1	1		1	1		1		0		1			0
10			1	0	1			0			1	2	1			0		1	0			1		1
11			1	1			1	0	1			0		1	0			1	1			1		2
12			1	1			1	1			1	1	1			0		1	0			1		1
13			1	0			1	0			1	1		1	0		1		0			1		2
14			1	1	1			1			1	1		1	0			1	0			1		1
15	1			1			1	1	1		0	1			0			1	1			1		0
16	1			0	1			0	1			0		1	1			1	1			1		4
17			1	0	1			0			1	1		1	1		1		0			1		1
18	1			0	1			0			1	0	1			0		1	1			1		2
19			1	1			1	1			1	0		1	1		1		0			1		0
20			1	1	1			1			1	2		1	1			1	1			1		3
END	46.9 m				42.6 m				39.9 m				28.8 m				23.4 m				23.3 m			

L = live, D = dead, I = injured, New = new pad

nes

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # 3 Treatment Control Replicate # 4 Date 6/18/98 Year of Burn 98

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1		1		0		1		0	1			2	1			1	1			1		1		0
2		1		0	1			2	1			2	1			6	1			0	1			0
3	1			0	1		1	0	1			0	1			0	1			0			1	0
4	1			0		1		0	1			0	1			0	1			0			1	0
5		1		0	1			0		1		0	1			0	1			0			1	0
6	1			0	1			0	1			1	1			0	1			0			1	0
7	1			0		1		0	1			0	1			1	1			0			1	0
8	1			0	1			1	1			0	1			0	1			1	1			0
9	1			0	1			1	1			1	1			0	1			0	1			0
10		1		0		1		0	1			0	1			0		1		0			1	0
11			1	1		1		0	1			2	1			0	1			0			1	0
12	1			0		1		0	1			1		1		0	1			0			1	0
13		1		0	1			1	1			1		1		0	1			0			1	0
14			1	0	1			1	1			2	1			0	1			0			1	1
15	1			0	1			2	1			2	1			1	1			1			1	1
16	1			0	1			0	1			0	1			0	1			1			1	1
17			1	0	1			0	1			1		1		0	1			0			1	1
18	1			3		1		0	1			0	1			1	1			0			1	1
19		1		0	1			2	1			0	1			1	1			0			1	1
20	1			1	1			1	1			1	1			0	1			0			1	1
END	55.9 m				56.1 m				35.9 m				26.5 m				46.8 m				7.6 m			

L = live, D = dead, I = injured, New = new pad

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # 3 Treatment Burn Replicate # 4 Date 6/18/98 Year of Burn 98

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1			1	1			1	1			1	0	1		0		1		0		1		0	
2			1	0			1	1			1	1		1	2			1	1		1		0	
3			1	1			1	1			1	1		1	3			1	6			1	1	
4	1			1	1			0	1			0	1		0			1	1	1	1		1	
5			1	1	1			0	1			0		1	0			1	2		1		1	
6			1	1			1	2	1			0	1		0			1	1		1		0	
7		1		0			1	3	1			0	1		0		1		0			1	2	
8		1		0	1			0	1			0		1	0			1	0			1	1	
9			1	3			1	0	1			0		1	1		1		0			1	0	
10		1		0			1	0			1	0	1		0		1		0			1	1	
11		1		0	1			0	1			0	1		0			1	1		1		0	
12		1		0	1			0	1			0		1	1		1		0			1	1	
13		1		0			1	1	1			0	1		0			1	0		1		0	
14			1	1			1	1			1	1		1	1			1	1			1	5	
15			1	3			1	4			1	2		1	0			1	0			1	1	
16			1	3			1	0			1	1	1		0		1		0			1	1	
17			1	1			1	2			1	1	1		8			1	1			1	1	
18	1			0	1			0	1			0		1	0			1	1		1		0	
19			1	0	1			3	1			0		1	0		1		0			1	1	
20		1		0	1			0			1	1		1	1		1		0			1	0	
END	14.10m				17.8m				8.5m				12.5m				34.3m				41.1m			

L = live, D = dead, I = injured, New = new pad

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # _____ Treatment Burn Replicate # 1 Date 27 Sep. 1999 Year of Burn 1998

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1				1	1				1						1			1			1			
2		1			1				1				1				1							1
3				1	1				1				1				1					1		
4				1		1			1						1		1							1
5		1			1				1				1					1				1		
6				1	1				1						1				1			1		
7		1			1				1					1			1					1		
8				1	1					1					2		1							1
9	1						1				1			1				1				1		
10	1						1		1				1				1							1
11			1		1				1						1			1						1
12				1			1		1						1		1			1				
13				1	1				1				1						1			1		
14		1				1			1					1			1							1
15				2			1				1		1						1					1
16	1					1			1					1				1			1			
17	1				1						1				2			2			1			
18				1		1					1				1			1				1		
19		1					1		1				1					1						1
20				1	1				1				1					1			1			
END	23.9m				26.4m				24.6m				79.2m				64.8m				24.9m			

L = live, D = dead, I = injured, New = new pad

THEORY - DETERMINING THE MEAN

Example: The following data represents the number of hours spent studying for a test.

Hours	Frequency	Midpoint	Frequency	Midpoint	Frequency	Midpoint	Frequency	Midpoint
1	1	1	2	2	3	3	4	4
2	2	2	3	3	4	4	5	5
3	3	3	4	4	5	5	6	6
4	4	4	5	5	6	6	7	7
5	5	5	6	6	7	7	8	8
6	6	6	7	7	8	8	9	9
7	7	7	8	8	9	9	10	10
8	8	8	9	9	10	10	11	11
9	9	9	10	10	11	11	12	12
10	10	10	11	11	12	12	13	13
11	11	11	12	12	13	13	14	14
12	12	12	13	13	14	14	15	15
13	13	13	14	14	15	15	16	16
14	14	14	15	15	16	16	17	17
15	15	15	16	16	17	17	18	18
16	16	16	17	17	18	18	19	19
17	17	17	18	18	19	19	20	20
18	18	18	19	19	20	20	21	21
19	19	19	20	20	21	21	22	22
20	20	20	21	21	22	22	23	23
21	21	21	22	22	23	23	24	24
22	22	22	23	23	24	24	25	25
23	23	23	24	24	25	25	26	26
24	24	24	25	25	26	26	27	27
25	25	25	26	26	27	27	28	28
26	26	26	27	27	28	28	29	29
27	27	27	28	28	29	29	30	30
28	28	28	29	29	30	30	31	31
29	29	29	30	30	31	31	32	32
30	30	30	31	31	32	32	33	33
31	31	31	32	32	33	33	34	34
32	32	32	33	33	34	34	35	35
33	33	33	34	34	35	35	36	36
34	34	34	35	35	36	36	37	37
35	35	35	36	36	37	37	38	38
36	36	36	37	37	38	38	39	39
37	37	37	38	38	39	39	40	40
38	38	38	39	39	40	40	41	41
39	39	39	40	40	41	41	42	42
40	40	40	41	41	42	42	43	43
41	41	41	42	42	43	43	44	44
42	42	42	43	43	44	44	45	45
43	43	43	44	44	45	45	46	46
44	44	44	45	45	46	46	47	47
45	45	45	46	46	47	47	48	48
46	46	46	47	47	48	48	49	49
47	47	47	48	48	49	49	50	50
48	48	48	49	49	50	50	51	51
49	49	49	50	50	51	51	52	52
50	50	50	51	51	52	52	53	53
51	51	51	52	52	53	53	54	54
52	52	52	53	53	54	54	55	55
53	53	53	54	54	55	55	56	56
54	54	54	55	55	56	56	57	57
55	55	55	56	56	57	57	58	58
56	56	56	57	57	58	58	59	59
57	57	57	58	58	59	59	60	60
58	58	58	59	59	60	60	61	61
59	59	59	60	60	61	61	62	62
60	60	60	61	61	62	62	63	63
61	61	61	62	62	63	63	64	64
62	62	62	63	63	64	64	65	65
63	63	63	64	64	65	65	66	66
64	64	64	65	65	66	66	67	67
65	65	65	66	66	67	67	68	68
66	66	66	67	67	68	68	69	69
67	67	67	68	68	69	69	70	70
68	68	68	69	69	70	70	71	71
69	69	69	70	70	71	71	72	72
70	70	70	71	71	72	72	73	73
71	71	71	72	72	73	73	74	74
72	72	72	73	73	74	74	75	75
73	73	73	74	74	75	75	76	76
74	74	74	75	75	76	76	77	77
75	75	75	76	76	77	77	78	78
76	76	76	77	77	78	78	79	79
77	77	77	78	78	79	79	80	80
78	78	78	79	79	80	80	81	81
79	79	79	80	80	81	81	82	82
80	80	80	81	81	82	82	83	83
81	81	81	82	82	83	83	84	84
82	82	82	83	83	84	84	85	85
83	83	83	84	84	85	85	86	86
84	84	84	85	85	86	86	87	87
85	85	85	86	86	87	87	88	88
86	86	86	87	87	88	88	89	89
87	87	87	88	88	89	89	90	90
88	88	88	89	89	90	90	91	91
89	89	89	90	90	91	91	92	92
90	90	90	91	91	92	92	93	93
91	91	91	92	92	93	93	94	94
92	92	92	93	93	94	94	95	95
93	93	93	94	94	95	95	96	96
94	94	94	95	95	96	96	97	97
95	95	95	96	96	97	97	98	98
96	96	96	97	97	98	98	99	99
97	97	97	98	98	99	99	100	100
98	98	98	99	99	100	100	101	101
99	99	99	100	100	101	101	102	102
100	100	100	101	101	102	102	103	103
101	101	101	102	102	103	103	104	104
102	102	102	103	103	104	104	105	105
103	103	103	104	104	105	105	106	106
104	104	104	105	105	106	106	107	107
105	105	105	106	106	107	107	108	108
106	106	106	107	107	108	108	109	109
107	107	107	108	108	109	109	110	110
108	108	108	109	109	110	110	111	111
109	109	109	110	110	111	111	112	112
110	110	110	111	111	112	112	113	113
111	111	111	112	112	113	113	114	114
112	112	112	113	113	114	114	115	115
113	113	113	114	114	115	115	116	116
114	114	114	115	115	116	116	117	117
115	115	115	116	116	117	117	118	118
116	116	116	117	117	118	118	119	119
117	117	117	118	118	119	119	120	120
118	118	118	119	119	120	120	121	121
119	119	119	120	120	121	121	122	122
120	120	120	121	121	122	122	123	123
121	121	121	122	122	123	123	124	124
122	122	122	123	123	124	124	125	125
123	123	123	124	124	125	125	126	126
124	124	124	125	125	126	126	127	127
125	125	125	126	126	127	127	128	128
126	126	126	127	127	128	128	129	129
127	127	127	128	128	129	129	130	130
128	128	128	129	129	130	130	131	131
129	129	129	130	130	131	131	132	132
130	130	130	131	131	132	132	133	133
131	131	131	132	132	133	133	134	134
132	132	132	133	133	134	134	135	135
133	133	133	134	134	135	135	136	136
134	134	134	135	135	136	136	137	137
135	135	135	136	136	137	137	138	138
136	136	136	137	137	138	138	139	139
137	137	137	138	138	139	139	140	140
138	138	138	139	139	140	140	141	141
139	139	139	140	140	141	141	142	142
140	140	140	141	141	142	142	143	143
141	141	141	142	142	143	143	144	144
142	142	142	143	143	144	144	145	145
143	143	143	144	144	145	145	146	146
144	144	144	145	145	146	146	147	147
145	145	145	146	146	147	147	148	148
146	146	146	147	147	148	148	149	149
147	147	147	148	148	149	149	150	150
148	148	148	149	149	150	150	151	151
149	149	149	150	150	151	151	152	152
150	150	150	151	151	152	152	153	153
151	151	151	152	152	153	153	154	154
152	152	152	153	153	154	154	155	155
153	153	153	154	154	155	155	156	156
154	154	154	155	155	156	156	157	157
155	155	155	156	156	157	157	158	158
156	156	156	157	157	158	158	159	159
157	157	157	158	158	159	159	160	160
158	158	158	159	159	160	160	161	161
159	159	159	160	160	161	161	162	162
160	160	160	161	161	162	162	163	163
161	161	161	162	162	163	163	164	164
162	162	162	163	163	164	164	165	165
163	163	163	164	164	165	165	166	166
164	164	164	165	165	166	166	167	167
165	165	165	166	166	167	167	168	168
166	166	166	167	167	168	168	169	169
167	167	167	168	168	169	169	170	170
168	168	168	169	169	170	170	171	171
169	169	169</						

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # _____ Treatment Control Replicate # 1 Date 27 Sep. 1999 Year of Burn 1998

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1	1				1							1	1							1				1
2				1				1				1	1							1				1
3	1							1				1	1				1							2
4			1					1	1				1	1			1							1
5		1			1						1		1				1							1
6				1				1	1				1						1		1			
7			1					2	1						1		1							1
8				1		1						1	1						1					1
9				1	1							1			1		1							2
10				1				1	1				1						1					2
11				1				1				1			1				1					1
12				2				1	1					1					2	1				
13				1				1				1			1		1				1			
14				1				1	1						1		1							1
15				1			1					2			1				1					1
16				1	1							1			1		1							1
17				1				1				1	1					1						1
18		1						1	1						1				1					1
19				1				1				1			1				1		1			
20				1				1	1				1						1	1				
END	15.4m				16.5m				28.9m				13.0m				25.0m				13.1m			

L = live, D = dead, I = injured, New = new pad

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # _____ Treatment Burn Replicate # 2 Date 27 Sep. 1999 Year of Burn 1998

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1		I				I				I			I					I						I
2	I						I			I			I					I					I	
3	I						I					I					I						I	
4			I			I					I			I				I					I	
5			I				I			I				I			I							I
6				I				I		I						I					I			
7		I						I			I			I				I				I		
8		I					I				I				I			I					I	
9			I					I			I				I			I						I
10				I			I			I					I			I					I	
11				I		I						I			I			I				I		
12				I				I		I				I				I				I		
13			I					I			I			I			I					I		
14				I			I			I					I			I						I
15				I				I			I			I			I					I		
16		I					I					I			I				I		I			
17	I							I			I			I					I		I			
18		I						I				I			I			I						I
19			I				I		I					I			I				I			
20			I				I			I			I				I				I			
END	<u>32.2</u> m				<u>30.9</u> m				<u>15.9</u> m				<u>12.6</u> m				<u>14.4</u> m				<u>19.9</u> m			

L = live, D = dead, I = injured, New = new pad

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # _____ Treatment Control Replicate # 2 Date 27 Sep 1999 Year of Burn 1998

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1																								
2																								
3																								
4																								
5																			2					
6																			2					
7																								
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
END	69.4 _m				87.4 _m				15.7 _m				75.8 _m				09.7 _m				13.1 _m			

L = live, D = dead, I = injured, New = new pad

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # _____ Treatment Control Replicate # 3 Date 27 Sep. 1999 Year of Burn 1998

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1																								
2										3														
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
END	<u>35.9</u> m				<u>46.2</u> m				<u>51.3</u> m				<u>45.3</u> m				<u>05.0</u> m				<u>12.9</u> m			

L = live, D = dead, I = injured, New = new pad

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # _____ Treatment Burn Replicate # 3 Date 27 Sep. 1997 Year of Burn 1998

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1							2																	
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
END	<u>35.4</u> m				<u>21.1</u> m				<u>52.7</u> m				<u>11.7</u> m				<u>20.9</u> m				<u>29.4</u> m			

L = live, D = dead, I = injured, New = new pad

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # _____ Treatment Burn Replicate # 4 Date 27 Sep 1999 Year of Burn 1998

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1																								
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9							2																	
10																								
11																								
12																								
13																								
14										2														
15																								
16																								
17			2																					
18			3																					
19																								
20																								
END	16.4m				15.2m				17.6m				18.6m				34.8m				59.7m			

L = live, D = dead, I = injured, New = new pad

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # _____ Treatment Control Replicate # 4 Date 27 Sep 1999 Year of Burn 1998

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1																								
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
END	<u>21.0</u> m				<u>14.3</u> m				<u>11.2</u> m				<u>17.5</u> m				<u>12.0</u> m				<u>13.8</u> m			

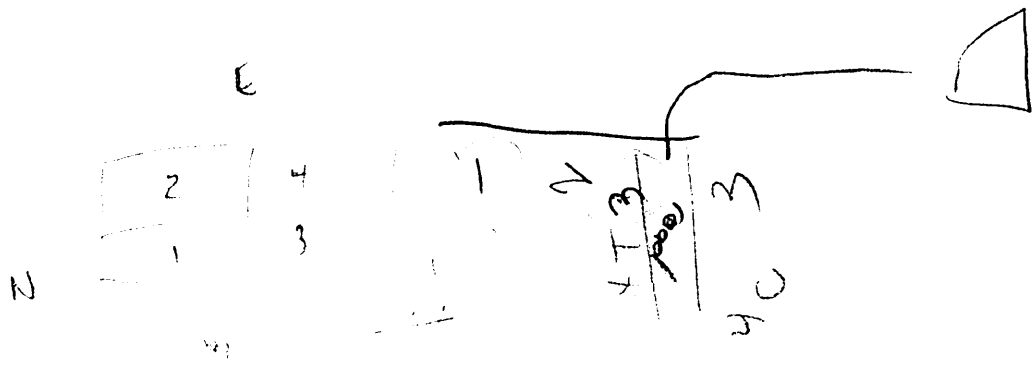
L = live, D = dead, I = injured, New = new pad

Cactus Line Transects - USFS Fire Study

There are four replicate sites on each of a burned and unburned treatment for each year's newly burned area and control. Sampling of the previous years' burn and control site will also be conducted. Therefore, it is important to differentiate the two sites by indicating the burn-section number on each data sheet, and date the sheets for the current date of sampling to differentiate the two years that the sites will be sampled. Replicate, paired (burned and control) sites are numbered 1, 2, 3, and 4 by ordering from northwest to southeast locations.

Six transects are located by placing a meter tape parallel to, and 4m from, the previously, randomly located clip-plot cages (3) and the shrub canopy transects (3). Transects are numbered consecutively from east to west, or north to south. The first 20 cactus cladodes (pads) encountered are recorded as either live (green), dead (black/brown), or injured (yellow) by placing a "1" in the "L", "D", or "I" column on the data sheet (only one condition per cladode). All new-growth cladodes emerging from that cladode are counted, and the number entered in the "NEW" column on the data sheet. After 20 cladodes are evaluated, the length of the transect is determined by reading the meter tape (rounded off to the nearest 0.1m) at the point half way between the 20th and the 21st pad on the transect line.

After completing the field sampling, the crew leader must organize the data sheets in order, and check to see that all sites, treatments, transects, and cladodes have been sampled. When all are accounted for, the crew leader will write "CHECKED" followed by their initials on the first page, upper-right corner, of the data sheet. Clipped data sheets are then given to the site manager.



FIRE STUDY - OPPO DENSITY AND HEALTH

Section # 1 Treatment Burn Replicate # 2 Date 6/18/98 Year of Burn 97

*South (along fence)

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1		1		0			1	1		1		0			1	2	1			0		1		0
2		1		0			1	1		1		0			1	2		1		0		1		0
3	1			1			1	2			1	1			1	5		1		0			1	3
4	1			0			1	4	1			1		1	1	1			1	1			1	2
5			1	2	1			0			1	1			1	2	1			0			1	1
6			1	1		1		0			1	1			1	1	1			3			1	1
7	1			2			1	2	1			3	1			2			1	0		1		0
8			1	2			1	3	1			1	1			1			1	4			1	2
9			1	1		1	1	1		1				1		0			1	3			1	1
10			1	1		1		0			1	1			1	1			1	5		1		0
11			1	2			1	3			1	1	1			1			1	2			1	2
12	1			2	1				1			2			1	2			1	2		1		0
13		1		0			1	3			1	1			1	2		1		0	1			2
14		1		0	1			0	1			1			1	2	1			1		1		0
15			1	4	1			0	1			0	1			1	1			2			1	2
16			1	1		1		0	1			0			1	0			1	2		1		0
17	1			0		1		2	1			3	1			0	1			2	1			1
18			1	1			1	1			1	0	1			0			1	3	1			1
19			1	3			1	3			1	0	1			0			1	1			1	2
20	1			4			1	1			1	3			1	1		1		0			1	1
END	13.9m				18.4m				12.1m				13.6m				11.9m				8.5m			

L = live, D = dead, I = injured, New = new pad

ne

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # 1 Treatment Control Replicate # 3 Date 6/18/78 Year of Burn 97

*NORTH MOST ALONG FENCE

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1	1			2	1			2	1			0	1			1			1	1		1		0
2			1	0	1			2			1	0	1			2		1		0			1	1
3			1	0			1	1			1	0			1	1		1		0			1	1
4			1	1			1	3	1			0	1			3			1	1			1	3
5			1	1			1	1	1			0			1	1			1	1			1	2
6			1	2			1	2	1			0	1			0			1	1	1			3
7			1	3	1			0	1			0	1			0			1	1	1	1		2
8			1	3			1	2	1			0			1	1			1	1	1	1		1
9			1	2			1	1	1			1	1			0		1		0	1			3
10	1			0	1			0	1			0	1			0	1			3	1			0
11	1			1			1	1	1			1	1			0			1	2	1			1
12			1	2	1			0	1			2	1			1	1			0			1	0
13			1	3	1			0	1			0			1	1			1	2			1	0
14	1			0			1	1	1			1	1			2	1			0			1	0
15			1	4	1			1	1			0	1			3			1	2			1	3
16			1	1	1			1	1			0			1	0	1			0		1		0
17	1			0	1			1	1			0			1	1	1			0		1		0
18	1			0	1			0	1			0	1			0			1	3		1		0
19			1	1	1			0	1			0			1	3			1	2			1	1
20	1			0	1			2	1			2			1	0			1	0			1	2
END	21.0m				15.7m				11.9m				11.8m				8.2m				6.8m			

L = live, D = dead, I = injured, New = new pad

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # 1 Treatment Burn Replicate # 3 Date 6/18/98 Year of Burn 97

NORTH MOST ALONG FENCE

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1			1	4			1	2		1		0		1		0		1		0		1		1
2		1		0			1	1		1		0			1	0		1		1		1		1
3	1			1		1		0			1	2			1	1		1		0		1		2
4	1			1			1	1		1		3			1	1			1	0		1		3
5		1		0		1		0			1	1			1	1			1	0			1	1
6	1			1			1	1		1		1			1	0			1	1			1	2
7			1	1			1	3			1	0		1		0		1		1			1	1
8			1	2			1	1		1	1	2		1		0		1		1			1	1
9		1		0			1	1		1	1	0			1	2			1	0		1		3
10			1	1			1	1		1	1	0			1	1		1		0		1		1
11			1	0		1		0		1		1		1		0		1		1			1	2
12			1	3	1			1		1	1	1			1	0		1		1		1		0
13			1	2			1	1		1	1	1		1		0		1		1			1	1
14		1		0	1			1		1	1	0			1	1		1		2			1	1
15			1	1		1		0		1	1	0		1		1			1	0			1	5
16			1	2		1		0		1	1	1			1	1		1		0			1	1
17	1			1		1		0		1		1			1	1		1		0		1		0
18	1			0		1		0			1	0			1	2		1		0			1	0
19	1			1			1	1		1		0		1		1			1	0		1		0
20	1			1			1	1			1	0			1	2		1		0		1		0
END	17.9m				15.6m				8.2m				9.2m				6.7m				8.4m			

L = live, D = dead, I = injured, New = new pad

nes

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # 1 Treatment Control Replicate # 3 Date 6/18/98 Year of Burn 97

SE SITE, WHICH IS OFF THE ROAD

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1		4		0			1	3		1		0			1	0			1	2		1		0
2		1		0			1	0	1			2			1	2	1			1			1	2
3		1		0			1	1			1	3			1	1			1	1			1	1
4		1		0			1	2			1	1			1	1	1			2	1			1
5			1	3			1	2			1	2	1		1		1			0	1			1
6			1	3			1	0		1		0	1		1		1			0			1	1
7			1	3			1	0	1			2	1		1		1			2			1	0
8			1	0			1	1			1	1	1		1		1			3			1	0
9			1	1			1	1			1	2	1		1		1			1	1			1
10		1		0			1	1	1			1	1		2		1			2			1	0
11			1	1			1	1			1	1	1		2		1			2	1			0
12	1			1			1	1		1		0	1		1		1			2			1	1
13			1	0			1	1			1	1	1		3		1			1			1	0
14			1	3			1	1			1	2	1		3		1			0	1			0
15	1			3		1		0	1			2	1		1		1			0	1			2
16	1			2	1			1	1			1	1		1		1			0	1			2
17	1			3			1	1	1			1			1	0	1			2			1	0
18	1			2			1	1	1			1			1	1		1		0			1	0
19	1			2			1	1			1	0			1	1	1			0			1	3
20			1	2		1		0		1		0			1	1		1		0			1	2
END	24.3m				26.4m				26.6m				22.9m				38.2m				25.0m			

L = live, D = dead, I = injured, New = new pad

nes

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # 1 Treatment Burn Replicate # 3 Date 6/18/98 Year of Burn 97

SE, WHICH IS OFF THE ROAD (m) (d)

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1			1	0			1	1		1		0			1	1			1	1			1	1
2		1		1			1	2	1			1		1	3			1	1	1			1	
3			1	1			1	2			1	0		1	3			1	2	1			1	
4			1	0			1	2	1			1		1	2	1		0			1	2		
5			1	0		1		0			1	3		1	1		1	0			1	3		
6	1		1	1	1			1			1	0		1	3		1	0			1	0		
7	1		1	0			1	2			1	2		1	3			1	1	1			1	
8		1	1	0			1	1			1	1		1	3			1	2	1			1	
9			1	0			1	3			1	2	1		2			1	1			1	0	
10	1		1	1	1			1			1	1	1		1			1	1	1			1	
11	1			1		1		0			1	0			1	2			1	1			1	1
12		1	1	1			1	1			1	2	1			1		1	1	1			1	1
13			1	1			1	1			1	1			1	1			1	1			1	2
14			1	0			1	3			1	3	1		2			1	1			1	0	
15			1	1			1	1			1	1	1		1		1	1			1	0		
16			1	1			1	1			1	2			1	3			1	1			1	2
17			1	2			1	1			1	1	1		3			1	1			1	2	
18			1	2			1	1			1	2	1		1			1	2			1	2	
19			1	1			1	2			1	1			1	0			1	1			1	3
20			1	1			1	0			1	2			1	3			1	2	1		0	
END	299 m				43.0 m				26.0 m				17.8 m				20.2 m				25.8 m			

L = live, D = dead, I = injured, New = new pad

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # 1 Treatment Control Replicate # 2 Date 6/18/98 Year of Burn 97

*South (along fence)

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1		1		0		1		0	1			2			1	3	1					1		0
2		1		0			1	1		1		0	1			2	1		1	1		1		0
3		1		0		1		0		1		0	1			2	1			1		1		0
4	1			2		1		0	1			1	1			2	1			1		1		0
5		1		0			1	2		1		0	1			0	1			1		1		0
6	1			1			1	1	1			1	1			3	1			0		1		0
7			1	1			1	1			1	2	1			0	1			3		1		0
8			1	1			1	1	1			1			1	1			1	0		1		0
9	1			0			1	1			1	3	1			1			1	0		1		0
10	1			0			1	3	1		1	1	1			2			1	0			1	1
11			1	2	1			2	1			1			1	2			1	4	1			2
12		1		0		1		0	1			0	1			1		1		0			1	1
13		1		0	1			0	1			1			1	2	1			0			1	1
14		1		0		1		0			1	2	1			0	1			0		1		0
15	1			0	1			1	1			3	1			0			1	2		1		0
16	1			2	1			0	1			2	1			3	1			0			1	0
17	1			0			1	1	1			0	1			3	1			0			1	1
18	1			1			1	2			1	0			1	2	1			0			1	3
19	1			0	1			0	1			0			1	2	1			2	1			2
20			1	0			1	3		1		0		1		0	1			0	1			3
END	9.5m				14.4m				16.7m				5.7m				10.3m				16.9m			

L = live, D = dead, I = injured, New = new pad

nes

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # 1 Treatment Control Replicate # 4 Date 6/18/78 Year of Burn 97
*Most West

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1	1			2			1	1	1			1	1			1		1	0		1			0
2			1	1			1	1			1	1			1	1			1	1			1	0
3			1	0	1			0			1	0			1	2			1	2	1		1	0
4			1	1			1	1			1	0			1	1	1			2	1			2
5			1	0			1	2			1	2			1	0			1	2	1			0
6			1	1			1	1			1	1			1	0			1	4			1	1
7			1	0			1	2	1		0			1	1		1			2			1	1
8			1	0			1	2			1	0			1	2	1			2	1			1
9			1	2			1	3			1	1			1	1	1			2			1	1
10			1	3			1	0	1		0	1		1					1	1			1	2
11			1	2			1	1	1		1			1	0		1			0			1	1
12	1			0			1	0			1	1	1		0		1			0			1	0
13	1			0			1	0			1	1	1		1		1			0			1	0
14	1			0			1	0			1	2			1	1	1			0			1	0
15			1	1	1		1	0			1	1			1	2			1	2			1	1
16			1	1			1	0			1	1			1	1			1	1			1	0
17			1	2			1	0			1	1			1	1			1	1			1	0
18	1			2			1	0	1		0	1		1			1			3			1	0
19	1			1			1	1			1	0	1		1				1	2			1	0
20	1			2			1	2	1		0			1	0		1			0			1	1
END	15. 1m				7. 1m				12. 2m				23. 1m				12. 2m				25. 5m			

L = live, D = dead, I = injured, New = new pad

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # 1 Treatment Burn Replicate # 4 Date 6/18/98 Year of Burn 97
 * Most West

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1		1		0			1	1	1			1		1		0			1	0			1	1
2		1		0			1	1			1	3			1	1			1	0			1	2
3			1	3			1	1	1			2			1	2		1		0	1			0
4	1			0			1	1	1			0	1		0		1			0			1	0
5			1	2			1	1			1	1			1	1			1	2			1	1
6			1	3			1	1		1		0			1	0			1	1			1	1
7	1			1			1	2		1		0			1	1		1		0			1	1
8			1	1	1			0			1	1			1	1			1	3			1	1
9	1			0			1	1			1	3			1	1			1	1			1	2
10			1	1			1	0	1			0			1	0			1	2			1	2
11			1	2			1	0			1	3	1			0			1	3			1	2
12	1			1	1			0			1	1			1	1	1			0			1	0
13	1			0	1			0			1	1			1	2			1	2			1	2
14			1	1			1	0			1	1			1	2			1	2			1	1
15	1			0			1	2		1		0			1	1	1			0			1	2
16		1		0			1	0		1		0			1	2			1	2	1			1
17			1	3			1	0			1	1			1	2	1			0			1	1
18	1			0			1	1			1	1			1	0			1	2			1	1
19	1			2			1	0		1		0			1	0	1			0			1	1
20			1	1			1	2		1		0			1	1	1			0			1	2
END	14.2m				27.1m				12.9m				24.4m				10.6m				35.1m			

L = live, D = dead, I = injured, New = new pad

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # _____ Treatment Burn Replicate # 1 Date 22 SEP. 1999 Year of Burn 1999
Allenbaugh wcr #45

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1																								
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
END	<u>25.9</u> m				<u>39.4</u> m				<u>26.7</u> m				<u>17.3</u> m				<u>23.8</u> m				<u>40.5</u> m			

L = live, D = dead, I = injured, New = new pad

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # _____ Treatment Control Replicate # 1 Date 22 Sep 1993 Year of Burn 1999
Allenbaugh wcr #45

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1																								
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
END	<u>24.7m</u>				<u>47.8m</u>				<u>42.7m</u>				<u>44.3m</u>				<u>44.7m</u>				<u>24.4m</u>			

L = live, D = dead, I = injured, New = new pad

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # Jackpot Treatment Burn Replicate # 2 Date 22 Sep. 1999 Year of Burn 1999
WCR #112

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1																								
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
END	31.5m				20.6m				13.4m				13.4m				22.3m				46.9m			

L = live, D = dead, I = injured, New = new pad

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # _____ Treatment Control Replicate # 2 Date 22 Sep. 1999 Year of Burn 1999
Jackpot WCR # 112

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1																								
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
END	<u>30.8m</u>				<u>29.2m</u>				<u>26.3m</u>				<u>9.8m</u>				<u>19.0m</u>				<u>7.0m</u>			

L = live, D = dead, I = injured, New = new pad

BURN STUDY - OPPO DENSITY AND HEALTH

Plot Wild Horse-Control-Rep3
1999 Burn wcr # 96
 Transect 1 End 2.0

Date 22 Sept. 1999

Transect 2 End 3.9

Transect 3 End 1.7

Pad#	L	D	I	NEW	Pl#	L	D	I	NEW	Pl#	L	D	I	NEW	Pl#
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															
16															
17															
18															
19															
20															
total															

L = live, D = dead, I = injured, New = new pad, Pl# = plant number

BURN STUDY - OPPO DENSITY AND HEALTH

Plot Wild Horse-Control-Rep 3
1999 Burn Wcr # 96
 Transect 4 End 3.3

Date 22 Sept. 1999

Transect 5 End 9.7

Transect 6 End 9.6

Pad#	L	D	I	NEW	Pl#	L	D	I	NEW	Pl#	L	D	I	NEW	Pl#
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															
16															
17															
18															
19															
20															
total															

L = live, D = dead, I = injured, New = new pad, Pl# = plant number

BURN STUDY - OPPO DENSITY AND HEALTH

Plot Wild Horse - Burn-Rep 3

Date 22 Sept. 1999

1999 Burn wcr#96

Transect 1 End 10.0

Transect 2 End 5.7

Transect 3 End 8.1

Pad#	L	D	I	NEW	Pl#	L	D	I	NEW	Pl#	L	D	I	NEW	Pl#
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															
16															
17															
18															
19															
20															
total															

L = live, D = dead, I = injured, New = new pad, Pl# = plant number

BURN STUDY - OPPO DENSITY AND HEALTH

Plot Wild Horse-Burn-Rep3
1999 Burn #4 wcr # 96
 Transect 4 End 4.6

Date 22 Sept 1999

Transect 5 End 6.6

Transect 6 End 5.2

Pad#	L	D	I	NEW	Pl#	L	D	I	NEW	Pl#	L	D	I	NEW	Pl#
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															
16															
17															
18															
19															
20															
total															

L = live, D = dead, I = injured, New = new pad, Pl# = plant number

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # _____ Treatment Control Replicate # 4 Date 27 Sept. 1999 Year of Burn 1999
Owl Creek wcr #108

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
PAD	L	D	I	NEW	L	D	I	NEW	L	D	I	NEW	L	D	I	NEW	L	D	I	NEW	L	D	I	NEW
1																								
2																								
3																								
4															3									
5								2																
6																								
7																								
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																			2					
20																								
END	66.5m				54.2m				95.6m				112.0m				151.6m				43.1m			

L = live, D = dead, I = injured, New = new pad

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # _____ Treatment Burn Replicate # 4 Date 27 Sept. 1999 Year of Burn 1999
Owl Creek WCR # 108

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1		1				1					1			1									1	
2				1		1						1											1	
3				1		1					1										1			
4				1		1						1									1			
5		1				1						1											2	
6		1						1				1									1			
7		1						1						1							1			
8		1						1						1							1			
9		1						1						1							1			
10		1						1						1							1			
11		1						1						1							1			
12		1						1						1							2			
13		1						1						1							1			
14		1						1						1							1			
15		1						1						1							1			
16		1						1						1							3			
17		1						1						1							1			
18		1						1						1									1	
19		1						1						1							1			
20		1						1						1									1	
END	27.2m				44.2m				68.4m				42.8m				122.5m				98.1m			

L = live, D = dead, I = injured, New = new pad

transects ran ^{along} S. side of the cages.

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # _____ Treatment Burn Replicate # Jackpot Date 9 Aug 2000 Year of Burn 1999

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1																								
2																								
3																								
4																								
5																								
6																								
7																								
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10																								
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
END	<u>14.5m</u>				<u>5.6m</u>				<u>15.7m</u>				<u>5.5m</u>				<u>8.4m</u>				<u>5.7m</u>			

L = live, D = dead, I = injured, New = new pad

Jackpot

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # _____ Treatment Control Replicate # Jackpot Date 9 Aug 2000 Year of Burn 1999

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1																								
2																								
3																								
4																								
5																								
6																								
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11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
END	<u>4.4m</u>				<u>7.0m</u>				<u>13.7m</u>				<u>3.6m</u>				<u>7.4m</u>				<u>13.1m</u>			

L = live, D = dead, I = injured, New = new pad

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # _____ Treatment BURN Replicate # WILD Date 9 AUG Year of Burn 1999
HORSE

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1	/				/				/				/				/						/	
2	/				/				/				/				/				/			
3	/				/				/				/				/				/			
4	/				/				/				/				/				/			
5	/				/				/				/				/				/			
6	/				/				/				/				/				/			
7	/				/				/				/				/				/			
8			/				/				/		/						/		/			
9	/				/				/				/				/				/			
10		/			/				/					/			/					/		
11	/						/				/		/						/			/		
12			/		/				/				/		/		/				/			
13			/		/				/				/						/		/			
14			/		/				/				/						/		/			
15		/			/				/				/				/				/			
16	/						/					/	/				/				/			
17	/				/				/				/				/					/		
18			/		/				/					/					/		/			
19	/				/				/				/						/		/			
20			/		/				/				/		/		/				/		/	
END	<u>8.25m</u>				<u>4.9m</u>				<u>5.8m</u>				<u>4.5m</u>				<u>2.4m</u>				<u>3.0m</u>			

L = live, D = dead, I = injured, New = new pad

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # _____ Treatment Control Replicate # wild Horse Date 9 Aug 2008 Year of Burn 1999

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1																								
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
END	4.25m				0.8m				1.2m				1.7m				4.0m				6.5m			

L = live, D = dead, I = injured, New = new pad

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # _____ Treatment Burn Replicate # Aw Date 09 Aug 2000 Year of Burn 1999

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1				1		1			1					1					1			1		
2	1				1				1					1			1					1		
3			1					1	1							1	1					1		
4	1				1				1				1				1					1		
5	1				1				1				1				1					1		
6	1				1				1						1		1					1		
7	1							1		1				1					1			1		
8		1						1	1					1					1					1
9		1						1	1				1					1				1		
10				1				1			1					1						1		
11		1						1		1					1			1				1		
12	1				1				1					1				1						1
13			1					1	1					1				1					1	
14	1				1				1				1				1					1		
15				1				1	1					1				1				1		
16		1						1			1				1			1						1
17		1						1	1						1			1				1		
18				2	1				1					1				1				1		
19	1				1				1				1					1						1
20	1				1				1						1			1				1		
END	<u>15.2</u> m				<u>35.6</u> m				<u>42.4</u> m				<u>54.2</u> m				<u>113.2</u> m				<u>45.8</u> m			

L = live, D = dead, I = injured, New = new pad

48.5
43.2
5.3
113.2
2.2
45.6

FIRE STUDY - OPPO DENSITY AND HEALTH

09 Aug

Section # _____ Treatment Control Replicate # 0w1 Date 2000 Year of Burn 1999

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1																								
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9															3									
10																								
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
END	111.0 m				51.3 m				71.0 m				48.4 m				73.5 m				106.9 m			

L = live, D = dead, I = injured, New = new pad

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # _____ Treatment Burn Replicate # Allenbaugh Date 10 Aug 2007 Year of Burn 1999

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1																								
2																								
3																								
4																								
5																								
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11																								
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13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
END	<u>21.9m</u>				<u>16.95m</u>				<u>7.5m</u>				<u>18.3m</u>				<u>17.3m</u>				<u>19.8m</u>			

L = live, D = dead, I = injured, New = new pad

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # _____ Treatment Control Replicate # _____ Date Allenbaugh 10 Aug 2000 Year of Burn 1999

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1																								
2																								
3																								
4																								
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13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
END	<u>19.4m</u>				<u>18.8m</u>				<u>24.05m</u>				<u>5.95m</u>				<u>16.25m</u>				<u>25.92m</u>			

L = live, D = dead, I = injured, New = new pad

Allenbough = Rep 1

Jackpot = Rep 2

Wild Horse = Rep 3

Owl Creek = Rep 4

L. Hartley
N. Kaplan

BURN STUDY - OPPO DENSITY AND HEALTH

Plot 3C for 2001
~~4C for 2000~~

Date April 6 2001

Transect 1 End _____ Transect 2 End _____ Transect 3 End _____

Pad#	L	D	I	NEW	L	D	I	NEW	Pl#	L	D	I	NEW	Pl#
1	3	4												
2	18	13	1											
3	15		2											
4	17	2												
5	2		5											
6	18	3	1											
7	7	2	7											
8	4	1	1											
9	9	4	2											
10	7	3	2											
11														
12														
13														
14														
15														
16														
17														
18														
19														
20														
total														

L = live, D = dead, I = injured, New = new pad, Pl# = plant number

L. Hartley
N. Kaplan

D:SGS-LTER Field Station/Field Studies/Burn Studies/Cactus Study/Cactus Line Transect-FireStudy-datasht

BURN STUDY - OPPO DENSITY AND HEALTH

Plot 4C for 2001

Date April 6, 2001

3C for 2000

Transect 1 End _____ Transect 2 End _____ Transect 3 End _____

Pad#	L	D	I	NEW	L	D	I	NEW	Pl#	L	D	I	NEW	Pl#
1	27	6	5											
2	5	16	6											
3	2	1	5											
4	0	8	3											
5	4	1	1											
6	5	13	2											
7	10	8	3											
8	13	4	1											
9	9	3	1											
10	11	3	6											
11														
12														
13														
14														
15														
16														
17														
18														
19														
20														
total														

L = live, D = dead, I = injured, New = new pad, Pl# = plant number

Fire Study - OPPO Patches

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
23	B	1	04 SEPT 2002	2001	1	13	3	3	Ø
			04 SEP 2002		2	5	3	2	1
					3	4	1	2	1
					4	0	1	0	0
					5	7	2	4	4
					6	12	11	4	6
					7	4	10	1	2
					8	2	6	1	Ø
					9	6	5	2	1
					10	4	3	Ø	2

new sprout.
injured
counted
in live

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
23	C	1	04 SEP 2002	2001	1	20	2	3	5
					2	15	4	1	2
					3	7	2	2	3
					4	24	16	9	6
					5	6	7	2	Ø
					6	7	8	4	1
					7	4	4	2	1
					8	11	1	0	3
					9	6	5	2	3
					10	4	2	3	3

new sprout
counted in
live

Fire Study – OPPO Patches

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
23	B	2	04 SEP 2001	2001	1	6	5	3	1
					2	10	3	4	0
					3	10	6	2	2
					4	2	8	0	0
					5	0	0	0	0
					6	8	14	1	0
					7	4	3	2	1
					8	14	5	3	5
					9	16	8	4	0
					10	0	11	0	0
Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
23	C	2	04 SEP 2001	2001	1	6	3	3	0
					2	3	15	2	0
					3	12	10	4	5
					4	10	7	3	2
					5	10	15	3	1
					6	7	4	3	0
					7	0	1	0	0
					8	8	1	0	2
					9	10	0	2	0
					10	10	3	3	1

Fire Study – OPPO Patches

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
27	C	3	2002 04SEP	2001	1	4	3 3	1	2
	↓			↓	2	13	7	3 3	3
					3	24	3	3	2
					4	nail	missing		—
					5	6	8	2	1
					6	8	5	2	0
					7	16	9	5	2
					8	5	10	2	0
					9	2	7	3	0
	↓			↓	10	11 1	6	3 4	1
Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
27	C	4	04SEP2002	2001	1	17	6	6	0
	↓	↓	↓	↓	2	3	4	0	2
					3	0	6	0	0
					4	0	4	0	0
					5	4	6	1	0
					6	4	7	1	0
					7	7	8	1	1
					8	14	7	2	0
					9	10	4 4	2	2
	↓	↓	↓	↓	10	12 4	13	3	3

Fire Study – OPPO Patches

Section	Treatment	Rep 4	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
23	B	3	04 SEP 2002	2001	1	0	2	0	0
					2	9	4 4	5	5
					3	4	3 5	2	0
					4	8	6	2	1 1
					5	3	4	2	0
					6	5	1 1	2	0
					7	0	3	0	0
					8	2	2	0	0
					9	0	6	0	0
					10	6	7	1	3

Section	Treatment	Rep 3	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
23	B	3	04 SEP 2002	2001	1	0	4	0	0
					2	20	6	3 4	1
					3	9	3	1	0
					4	0	0	0	0
					5	5	4	0	3 1
					6	0	1 2	0	0
					7	9	5	1	0
					8	0	7	0	0
					9	6	3	1	0
					10	6	6	5	1 0

Fire Study – OPPO Patches

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
23	Burn	1	23 Aug 2001						
23	Burn	1	23 Aug 2001	2001	1	3	6	3	3
↓	↓	↓	↓	↓	2	9	7	4	6
↓	↓	↓	↓	↓	3	7	10	4	2
↓	↓	↓	↓	↓	4	3	10	1	2
↓	↓	↓	↓	↓	5	4	3	2	2
↓	↓	↓	↓	↓	6	6	12	2	4
↓	↓	↓	↓	↓	7	7	10	4	5
↓	↓	↓	↓	↓	8	11	10	11	5
↓	↓	↓	↓	↓	9	14	4	9	9
↓	↓	↓	↓	↓	10	MISSING —			
23	Control	1	23 Aug 2001	2001	1	6	0	0	0
↓	↓	↓	↓	↓	2	8	7	4	3
↓	↓	↓	↓	↓	3	9	7	4	3
↓	↓	↓	↓	↓	4	17	3	2	9
↓	↓	↓	↓	↓	5	9	2	2	5
↓	↓	↓	↓	↓	6	7	0	1	2
↓	↓	↓	↓	↓	7	3	1	1	0
↓	↓	↓	↓	↓	8	4	0	3	0
↓	↓	↓	↓	↓	9	8	2	1	3
↓	↓	↓	↓	↓	10	9	4	2	5

Fire Study – OPPO Patches

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr	out of live ones!
23	Burn	2	23 Aug 2001	2001	1	8	5	7	6	
23	Burn	2	23 Aug 2001	2001	2	4	13	3	3	
23	Burn	2		2001	3	5	11	10	4	
23	Burn	2		2001	4	0	4	0	0	
23	Burn	2		2001	5	5	10	8	2	
23	Burn	2		2001	6	9	8	11	5	
23	Burn	2		2001	7	4	8	3	3	
23	Burn	2		2001	8	2	10	1	1	
23	Burn	2		2001	9	5	10	7	3	
23	Burn	2	✓	2001	10	4	3	3	2	
23	Control	2	23 Aug 2001	2001	1	12	4	4	5	
23	Control	2	23 Aug 2001	2001	2	15	11	1	4	
23	Control	2	23 Aug 2001	2001	3	6	4	4	1	
23	Control	2	23 Aug 2001	2001	4	15	12	5	8	
23	Control	2	23 Aug 2001	2001	5	10	4	5	5	
23	Control	2	23 Aug 2001	2001	6	10	3	0	2	
23	Control	2	23 Aug 2001	2001	7	5	10	3	1	
23	Control	2	23 Aug 2001	2001	8	8	4	2	3	
23	Control	2	23 Aug 2001	2001	9	5	16	3	3	
23	Control	2	23 Aug 2001	2001	10	7	4	0	2	

Fire Study - OPPO Patches

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
23	BURN	3	27 Aug 2001	2001	1	0	12	0	0
					2	17	2	1	5
					3	2	3	1	7
					4	0	0	0	0
					5	4	1	1	3
					6	0	4	0	0
					7	8	3	1	5
					8	6	3	0	0
					9	5	0	1	3
					10	13	5	1	2
23	BURN	4	27 Aug 2001	2001	1	8	4	1	4
					2	12	3	2	7
					3	5	5	0	4
					4	15	5	1	6
					5	4	5	0	3
					6	3	5	0	2
					7	0	6	0	0
					8	2	2	1	1
					9	(MISSING NAIL)			
					10	(MISSING NAIL)			

Fire Study - OPPO Patches

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
27	Control	4	29 Aug '01	2001	1	21	4	-	12
					2	2	10		1
					3	-	4	-	-
					4	3	5	-	2
					5	4	8	1	3
					6	11	6	-	7
					7	13	2	-	7
					8	11	2	-	6
					9	13	3	-	7
					10	3	3	-	2

Fire Study - OPPO Patches

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
27	Control	3	27 Aug 2001	2001	1	8	2	0	4
					2	20	4	1	9
					3	11	3	0	5
					4	19	9	2	6
					5	7	2	1	5
					6	18	6	3	8
					7	8	1	0	6
					8	8	2	1	8
					9	9	3	2	5
					10	(MISSING NAIL)			

File = oppo 9900

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # 26 Treatment Control Replicate # NE Date 1/18/00 Year of Burn 00
Reburn

Onadity
A
D

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1	13	2																						
2	23	4																						
3	10	7																						
4	9	2																						
5	16	8																						
6	10	3																						
7	7	3	1																					
8	9	6																						
9	6	4																						
10	14	2	1																					
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
END	_____.m				_____.m				_____.m				_____.m				_____.m				_____.m			

L = live, D = dead, I = injured, New = new pad

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # 20 Treatment Burn Replicate # NE Date 1/18/00 Year of Burn 00

Transect	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1	7																							
2	9	1																						
3	12	5	1																					
4	9	5																						
5	10	3	1																					
6	11	2	2																					
7	18																							
8	18	4	2																					
9	11	2	1																					
10	8	2	1	1																				
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
END	_____ m				_____ m				_____ m				_____ m				_____ m				_____ m			

L = live, D = dead, I = injured, New = new pad

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # 26 Treatment Control Replicate # NW Date 1/18/00 Year of Burn 00

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1	13	7																						
2	16	1	2																					
3	7	2																						
4	17	3	2																					
5	11	2																						
6	7	1	2																					
7	8		1																					
8	15	2	2																					
9	16	2	2	1																				
10	21	1	3																					
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
END	_____ m				_____ m				_____ m				_____ m				_____ m				_____ m			

L = live, D = dead, I = injured, New = new pad

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # 26 Treatment Burn Replicate # NW Date 1/18/00 Year of Burn 07

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1	18	0	3																					
2	12	0	3																					
3	16	1	1																					
4	23	2	5																					
5	9	1	1																					
6	19	1																						
7	16	5																						
8	14	0	1																					
9	22	2	1																					
10	19	6	0																					
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
END	_____ m				_____ m				_____ m				_____ m				_____ m				_____ m			

L = live, D = dead, I = injured, New = new pad

FIRE STUDY - OPPO DENSITY AND HEALTH

#4
 Section # 26 Treatment Control Replicate # WS Date 1/18/00 Year of Burn 00

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1	13	7																						
2	15	5																						
3	21	2																						
4	20	2																						
5	7	1	1																					
6	15	5																						
7	12	4																						
8	8	3																						
9	19	4		1																				
10	13	1	1																					
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
END	_____.m				_____.m				_____.m				_____.m				_____.m				_____.m			

L = live, D = dead, I = injured, New = new pad

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # 26 Treatment Burn Replicate # WS⁴ Date 1/15/00 Year of Burn 00

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
<u>Q</u> <u>P</u> <u>A</u> <u>D</u>	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1	9	1	0																					
2	13	3	0																					
3	22	3	0																					
4	11	7	0																					
5	27	6	0																					
6	11	3	0																					
7	8	2	1																					
8	12	2	0																					
9	14	4	0																					
10	8	5	0																					
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
END	_____ m				_____ m				_____ m				_____ m				_____ m				_____ m			

L = live, D = dead, I = injured, New = new pad

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # 26 Treatment Control Replicate # 3 WN Date 1/18/00 Year of Burn 00

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1	2	3																						
2	1	8	1																					
3	1	5	1																					
4	1	5	3																					
5	2	3	9																					
6	1	6	5																					
7	1	5	8																					
8	1	3	4	1																				
9	1	1	3	1																				
10	2	8	2	3																				
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
END	_____ m				_____ m				_____ m				_____ m				_____ m				_____ m			

L = live, D = dead, I = injured, New = new pad

Cactus Line Transects - USFS Fire Study

There are four replicate sites on each of a burned and unburned treatment for each year's newly burned area and control. Sampling of the previous years' burn and control site will also be conducted. Therefore, it is important to differentiate the two sites by indicating the burn-section number on each data sheet, and date the sheets for the current date of sampling to differentiate the two years that the sites will be sampled. Replicate, paired (burned and control) sites are numbered 1, 2, 3, and 4 by ordering from northwest to southeast locations.

Six transects are located by placing a meter tape parallel to, and 4m from, the previously, randomly located clip-plot cages (3) and the shrub canopy transects (3). Transects are numbered consecutively from east to west, or north to south. The first 20 cactus cladodes (pads) encountered are recorded as either live (green), dead (black/brown), or injured (yellow) by placing a "1" in the "L", "D", or "I" column on the data sheet (only one condition per cladode). All new-growth cladodes emerging from that cladode are counted, and the number entered in the "NEW" column on the data sheet. After 20 cladodes are evaluated, the length of the transect is determined by reading the meter tape (rounded off to the nearest 0.1m) at the point half way between the 20th and the 21st pad on the transect line.

After completing the field sampling, the crew leader must organize the data sheets in order, and check to see that all sites, treatments, transects, and cladodes have been sampled. When all are accounted for, the crew leader will write "CHECKED" followed by their initials on the first page, upper-right corner, of the data sheet. Clipped data sheets are then given to the site manager.

- * A second study was conducted on the 2000 burn + control sites. After the burn, 10 clumps of Oppo were marked and numbered on each of the 4 burns and controls. Find each marked clump and record the # of pads in each of the following categories: Live, Dead, Injured, New - use $\frac{1}{4} m^2$ frame & count pads within *
- * Need New data sheet for oppo patch Study before 2001 Field Season.

Project Summary Sheet – Year 2000

Project Name Burn Studies - Cactus

Project Number PNG

Principal Investigator(s) Milchunas

Dates of Data Collection 8-10 August 2000

Location of study area(s) 2000 Burns are at the junction of CR 114 and CR 45. See map on reverse

Full Names of Data Collectors Laurel Hartley, Nicole Kaplan, Katie Woodmansee, Patrick Ray, Zach Deegan, Matt Cooper

Summary of Data Collected (How are data sheets organized? How many pages are in each section? etc.)

Cactus Line Transect Study

- For the 2000 Burn, there is one page of data for each treatment (Burn + Control) in each replicate (1-4) for a total of 8 pages.
- For the 1999 Burn, there is one page of data for each treatment (Burn + Control) in each replicate (Allenbaugh, Jackpot, Owl, Wildhorse). Total of 8 pages

Cactus Patch Study

- For the 2000 Burn, there is one page of data for each treatment (Burn + Control) in each replicate (1-4) for a total of 8 pages.
- This study was not conducted on the 1999 Burns

Shrub Study

- For the 2000 Burn, there is one page of data for each replicate (1-4) for a total of 4 pages
- For the 1999 Burn, there is one page of data for each replicate (Allenbaugh, Jackpot, Owl, Wildhorse). Total of 4 pages

* For some shrubs, the dead material was interspersed in the middle of the live material. Where this occurred, there is a note on the data sheet.

* Our protocol is attached to this document.

* Are there GPS coordinates for these burns?

Date copies of data sheets were sent to PI(s) _____

Date copies of data sheets were sent to SGS-LTER office _____

Names of any other persons given copies of data sheets _____

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # _____ Treatment Control Replicate # 1 Date Aug 8 Year of Burn 2000
2000

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1																								
2																								
3																								
4																								
5																								
6																								
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11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
END	<u>26.9m</u>				<u>24.7m</u>				<u>25.4m</u>				<u>27.3m</u>				<u>20.1m</u>				<u>31.5m</u>			

L = live, D = dead, I = injured, New = new pad

FIRE STUDY - OPPO DENSITY AND HEALTH using transect

Section # 1 Treatment Burn Replicate # 1 Date 8 Aug 2000 Year of Burn 2000

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1																								
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
END	17.1m				36.5m				19.4m				39.8m				11.8m				36.9m			

L = live, D = dead, I = injured, New = new pad

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # _____ Treatment Burn Replicate # 2 Date 8 Aug 2000 Year of Burn 2000

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1																								
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
END	<u>35.7m</u>				<u>30.5m</u>				<u>28.7m</u>				<u>54.4m</u>				<u>52.0m</u>				<u>49.6m</u>			

L = live, D = dead, I = injured, New = new pad

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # _____ Treatment Control Replicate # 2 Date 8 Aug 2000 Year of Burn 2000

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1																								
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
END	<u>29.5</u> m				<u>19.1</u> m				<u>25.6</u> m				<u>30.2</u> m				<u>26.8</u> m				<u>38.5</u> m			

L = live, D = dead, I = injured, New = new pad

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # _____ Treatment Control Replicate # 3 Date 8 Aug 2000 Year of Burn 2000

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1																								
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
END	35.15m				31.0m				06.35m				17.1m				17.25m				24.3m			

L = live, D = dead, I = injured, New = new pad

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # _____ Treatment Burn Replicate # 3 Date 8 Aug 2000 Year of Burn 2000

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1																								
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
END	≈ 101. m				≈ 70. m				18.4 m				32.4 m				34.9 m				53.2 m			

L = live, D = dead, I = injured, New = new pad

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # _____ Treatment Control Replicate # 4 Date 08 Aug 2000 Year of Burn 2000

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1																								
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
END	79.3m				15.8m				64.3m				65.7m				72.3m				38.6m			

L = live, D = dead, I = injured, New = new pad

FIRE STUDY - OPPO DENSITY AND HEALTH

08 Aug

Section # _____ Treatment Burn Replicate # 4 Date 2000 Year of Burn 2000

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1																								
2																					1			
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
END	<u>34.7m</u>				<u>54.9m</u>				<u>39.7m</u>				<u>100.0m</u>				<u>43.5m</u>				<u>80.1m</u>			

L = live, D = dead, I = injured, New = new pad

Patch
FIRE STUDY - OPPO ~~DENSITY AND HEALTH~~

Section # _____ Treatment Control Replicate # 1 Date Aug 8 2000 Year of Burn 2000

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1	1	18	0	0																				
2	19	4	3	2																				
3	8	5	2	0																				
4	5	4	3	0																				
5	11	4	2	7																				
6	0	4	3	0																				
7	7	1	0	0																				
8	0	1	4	0																				
9	2	4	2	0																				
10	10	5	2	1																				
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
END	_____ m				_____ m				_____ m				_____ m				_____ m				_____ m			

L = live, D = dead, I = injured, New = new pad

FIRE STUDY - OPPO DENSITY AND HEALTH

*using
quarter frame*

Section # 1 Treatment Burn Replicate # 1 Date Aug 8 2000 Year of Burn 2000

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1	0	3	4	2																				
2	2	2	2	0																				
3	3	1	4	4																				
4	2	8	3	2																				
5	3	7	5	3																				
6	3	2	6	1																				
7	2	0	7	4																				
8	2	1	4	3	5																			
9	2	4	1	1																				
10	4	7	3	2																				
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
END	_____.m				_____.m				_____.m				_____.m				_____.m				_____.m			

L = live, D = dead, I = injured, New = new pad

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # _____ Treatment Control Replicate # 2 Date 8 Aug 2000 Year of Burn 2000

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1	6	7	2	3																				
2	13	0	3	0																				
3	5	0	0	1																				
4	12	2	2	3																				
5	4	5	2	0																				
6	4	3	1	3																				
7	6	1	1	0																				
8	5	4	3	3																				
9	15	1	2	1																				
10	15	5	1	0																				
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
END	_____. m				_____. m				_____. m				_____. m				_____. m				_____. m			

L = live, D = dead, I = injured, New = new pad

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # _____ Treatment Burn Replicate # 2 Date 8 Aug 2000 Year of Burn 2000

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1	2	4	6	3																				
2	4	5	4	1																				
3	5	7	7	1																				
4	2	1	5	2																				
5	3	5	2	0																				
6	1	6	3	0																				
7	2	1	6	1																				
8	3	2	1	0																				
9	3	6	7	0																				
10	1	8	6	0																				
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
END	_____.m				_____.m				_____.m				_____.m				_____.m				_____.m			

L = live, D = dead, I = injured, New = new pad

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # _____ Treatment Control Replicate # 3 Date Aug 8 2000 Year of Burn 2000

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1	10	2	5	0																				
2	4	5	2	0																				
3	3	2	3	0																				
4	3	3	6	0																				
5	11	2	3	0																				
6	3	5	5	0																				
7	5	4	5	0																				
8	7	3	6	0																				
9	5	2	2	0																				
10	3	7	5	0																				
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
END	_____ m				_____ m				_____ m				_____ m				_____ m				_____ m			

L = live, D = dead, I = injured, New = new pad

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # _____ Treatment Burn Replicate # 2 Date 8 Aug 2000 Year of Burn 2000

couldn't find
#2
used
random
patch

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1	0	8	3	0																				
2	0	0	6	0																				
3	0	7	3	4																				
4	0	5	4	1																				
5	1	2	5	0																				
6	1	6	6	1																				
7	1	6	4	1																				
8	2	6	8	4																				
9	4	3	7	5																				
10	2	3	8	0																				
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
END	_____. m				_____. m				_____. m				_____. m				_____. m				_____. m			

L = live, D = dead, I = injured, New = new pad

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # _____ Treatment Control Replicate # 4 Date 08 Aug 2000 Year of Burn 2000

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1	7	5	0	0																				
2	16	4	0	0																				
3	22	1	0	3																				
4	18	1	0	0																				
5	6	2	0	1																				
6	19	3	0	0																				
7	14	2	0	2																				
8	4	3	2	0																				
9	16	4	0	0																				
10	16	2	0	0																				
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
END	_____ m				_____ m				_____ m				_____ m				_____ m				_____ m			

L = live, D = dead, I = injured, New = new pad

FIRE STUDY - OPPO DENSITY AND HEALTH

Section # _____ Treatment Burn Replicate # 4 Date 08 Aug 2000 Year of Burn 2000

	Transect 1				Transect 2				Transect 3				Transect 4				Transect 5				Transect 6			
P A D	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W	L	D	I	N E W
1	2	2	4	0																				
2	3	10	7	1																				
3	1	4	5	1																				
4	3	0	4	0																				
5	3	4	7	5																				
6	2	2	6	0																				
7	1	0	5	1																				
8	2	3	8	0																				
9	2	3	5	0																				
10	2	0	5	1																				
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
END	_____ m				_____ m				_____ m				_____ m				_____ m				_____ m			

L = live, D = dead, I = injured, New = new pad

26	Burn	4	27 Aug 2001	2000	1	3	4	1	3
					2	6	6	2	5
					3	4	5	0	3
					4	5	4	0	2
					5	8	6	0	5
					6	6	6	0	4
					7	4	5	0	2
					8	1	3	0	0
					9	9	3	1	6
					10	11	3	0	6

FS BURN
OPPO PATCHES

Fire Study - OPPO Patches

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
26	Burn	1	27 Aug 2001	2000	1	5	5	0	3
					2	0	4	0	0
					3	8	7	0	4
					4	3	3	1	1
					5	5	3	1	3
					6	6	7	0	3
					7	0	2	0	0
					8	2	2	0	2
					9	0	2	0	0
					10	8	4	0	5
26	Burn	2	27 Aug 2001	2000	1	1	5	0	1
					2	7	5	0	3
					3	10	6	0	5
					4	11	10	1	6
					5	4	6	1	3
					6	0	1	0	0
					7	2	2	1	1
					8	13	4	1	6
					9	10	0	0	4
					10	3	2	0	2

Fire Study – OPPO Patches

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
26	BURN	3	27 AUG 2001	2000	1	0	4	0	0
					2	5	1	0	3
					3	15	5	0	7
					4	7	3	1	4
					5	MISSING	NAIL	—	—
					6	9	5	0	4
					7	7	5	0	3
					8	4	6	0	5
					9	MISSING	NAIL	—	—
					10	0	0	0	0
					1				
					2				
					3				
					4				
					5				
					6				
					7				
					8				
					9				
					10				

NO CACTUS W/IN RING!

Preburn

Fire Study - OPPO Patches

Feb 7 2002

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
4	B	1	2/7/02						
4	B	1		02	1	6	2	0	0
					2	13	11	0	0
					3	15	5	0	0
					4	14	5	0	0
					5	12	7	0	0
					6	9	8	1	0
					7	11	5	0	0
					8	12	3	0	0
					9	25	6	1	
					10	18	7	1	
4	U	1	2/7/02	02	1	2	3	0	0
					2	11	5	0	0
					3	23	4	0	0
					4	8	6	1	0
					5	12	4	0	1
					6	7	2	1	0
					7	13	9	2	2
					8	13	4	2	0
					9	12	9	2	1
					10	15	4	3	0

Fire Study – OPPO Patches

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
4	B	2	2/7/02						
4	B	2	2/7/02	02	1	28	12	1	2
					2	11	5	2	0
					3	42	8	3	0
					4	37	10	2	0
					5	19	18	2	1
					6	11	9	2	0
					7	21	12	3	0
					8	30	11	3	0
					9	16	15	2	0
					10	26	17	4	0
4	U	2	2/7/02	02	1	12	5	2	0
					2	15	5	3	0
					3	14	7	3	0
					4	9	8	2	0
					5	9	3	2	0
					6	22	10	2	0
					7	13	3	0	0
					8	13	2	0	1
					9	8	22	2	0
					10	7	11	3	0

Fire Study – OPPO Patches

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
4	B	3	2/2/02		1	30	9	4	1
					2	22	15	1	0
					3	24	10	2	1
					4	20	7	3	0
					5	13	8	2	0
					6	36	21	4	0
					7	31	7	3	0
					8	44	9	4	1
					9	33	8	3	0
					10	55	6	2	1
4	U	3	2/7/02		1	42	12	6	0
					2	25	25	2	0
					3	30	7	7	0
					4	29	15	4	2
					5	19	21	4	0
					6	26	5	1	3
					7	21	23	6	1
					8	24	18	5	0
					9	13	8	3	0
					10	49	23	3	2

Fire Study – OPPO Patches

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
4	B	4	2/7/02		1	54	14	4	0
					2	40	12	2	0
					3	45	10	3	0
					4	28	7	2	0
					5	27	18	3	1
					6	23	10	1	0
					7	28	3	3	0
					8	14	8	4	0
					9	19	4	1	0
					10	29	16	3	0
4	K	4	2/7/02		1	20	15	1	0
					2	19	13	2	0
					3	24	12	2	2
					4	22	14	7	0
					5	21	11	6	0
					6	26	8	4	2
					7	36	13	5	1
					8	28	22	4	0
					9	19	9	1	0
					10	23	9	2	0

pre - burn - burn - oppo2

Fire Study - OPPO Patches

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
4	C	1	8/22/02	02	1	3	2	0	1
					2	12	6	1	6
					3	22	6	1	8
					4	15	5	0	5
					5	18	6	2	4
					6	12	7	2	0
					7	25	13	5	4
					8	13	3	0	5
					9	18	9	2	3
					10	22	4	1	4

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
4	B	1	8/22/02	02	1	1	3	2	1
					2	8	4	7	8
					3	8	19	7	8
					4	4	11	4	4
					5	0	6	0	0
					6	1	3	1	1
					7	8	18	0	8
					8	3	7	0	3
					9	10	9	10	10
					10	4	13	0	4

Fire Study - OPPO Patches

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
4	C	2	8/22/02	02	1	7	6	1	0
					2	0	16	0	0
					3	15	6	2	5
					4	13	12	6	7
					5	14	5	1	5
					6	17	9	8	7
					7	19	5	1	7
					8	20	0	1	10
					9	17	21	1	7
					10	7	15	2	8

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
4	B	2	8/22/02	02	1	4	12	10	4
					2	Stake Removed by rattle			
					3	0	9	0	0
					4	0	28	0	1
					5	4	19	5	4
					6	0	7	0	0
					7	0	9	1	0
					8	4	12	1	4
					9	3	8	5	3
					10	8	8	1	8

Fire Study - OPPO Patches

8-23-02 C. Megason

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
4	Control	3	8/23/02	02	1	44	15	7	13
					2	38	15	4	17
					3	38	13	8	17
					4	30	13	7	10
					5	18	11	3	9
					6	27	4	3	18
					7	14	13	6	5
					8	20	10	3	11
					9	18	7	2	11
	✓	✓	✓	✓	10	31	8	5	18

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
4	Burn	3	8/23/02	02	1	6	12	5	6
					2	6	11	9	5
					3	5	10	6	5
					4	2	12	3	2
					5	6	7	5	6
					6	0	16	4	0
					7	1	7	0	1
					8	32	10	6	18
	✓	✓	✓	✓	9	12	10	3	6
					10	1	11	7	3

Fire Study - OPPO Patches

8-23-02 C. Negleson

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
4	Burn	4	8/23/02	02	1	12	17	25	7
					2	6	17	15	6
					3	3	20	6	3
					4	1	16	0	1
					5	1	14	3	1
					6	9	20	0	9
					7	Nail Pulled out By Cows			
					8	1	6	3	1
					9	3	2	1	1
	✓	✓	✓		10	12	17	10	9

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
4	Control	4	8/23/02	02	1	23	19	7	10
					2	28	16	4	15
					3	36	14	6	20
					4	26	15	4	9
					5	25	11	7	9
					6	29	14	4	8
					7	40	12	5	19
	✓	✓	✓	✓	8	31	22	5	11
					9	23	7	4	7
					10	21	10	1	10

Fire Study – OPPO Patches

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
26 SW	Burn	2	11 Aug 03	2003	1	11	3	3	
					2	19	1	5	
					3	12	4	1	
					4	16	13	2	
					5	5	—	—	
					6	7	3	—	
					7	15	8	3	
					8	5	0	3	
					9	3	2	1	
					10				

P4

P10

1?

P2

P7

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
26 SW	Burn	1	11 Aug 2003	2003	1	8	6	2	
					2	8	1	2	
					3	3	0	0	
					4	8	0	2	
					5	7	0	2	
					6	11	2	1	
					7	2	0	0	
					8	13	0	2	
					9	35	2	5	
					10				

uprooted

Cows graze the site → missing stakes and tags

Fire Study - OPPO Patches

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
26SW	BURN	4	8.11.03	2003	1	6	1	3	—
					2	—	2	* No other OPPO plds found @ Marker	
					3	16	—	5	—
					4	13	3	8	
					5	3	—	5	—
					6	5	1	3	
					7	3	2	1	
					8	9	2	6	
					9	16	3	3	
					10	4	1	2	

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
26SW	BURN	3	8-11-03	2003	1	9	+	5	
					2	13	2	8	
					3	6	1	6	
					4	11	1	5	
					5	6	3	8	
					6	3	2	3	
					7	17	2	6	
					8	10	—	2	
					9	9	3	4	
					10	6	—	2	

sites were grazed during summer

Fire Study – OPPO Patches

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
	C	2	8-11-03	03	1	5	2	8	—
	↓	↓	↓	↓	2	16	—	1	1
	↓	↓	↓	↓	3	Stake was pulled out + lying flat on ground			
	↓	↓	↓	↓	4	8	6	1	3
	↓	↓	↓	↓	5	11	2	1	—
	↓	↓	↓	↓	6	14	9	2	—
	↓	↓	↓	↓	7	20	1	2	—
	↓	↓	↓	↓	8	34	2	2	1
	↓	↓	↓	↓	9	6	4	1	—
	↓	↓	↓	↓	10	18	—	1	—

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
	C	1	8-11-03	03	1	4	—	1	—
	↓	↓	↓	↓	2	19	7	4	—
	↓	↓	↓	↓	3	7	2	1	—
	↓	↓	↓	↓	4	25	3	4	—
	↓	↓	↓	↓	5	8	6	1	1
	↓	↓	↓	↓	6	11	3	4	—
	↓	↓	↓	↓	7	5	—	2	—
	↓	↓	↓	↓	8	18	6	3	—
	↓	↓	↓	↓	9	11	—	2	—
	↓	↓	↓	↓	10	32	6	7	—

cattle grazed on sites

Fire Study – OPPO Patches

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
	C	4	8.11.03	2003	1	8	6	2	
					2	7	1	2	
					3	12	5	2	
					4	15	3	1	
					5	4	4	2	
					6	7	0	1	
					7	7	1	2	
					8	64	14	1	
					9	11	3	2	
					10	10	4	1	

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
	C	3	8.11.03	2003	1	10	1	1	
					2	38	5	2	
					3	9	0	0	
					4	11	0	1	
					5	33	5	3	
					6	32	2	1	
					7	13	3	0	
					8	8	6	0	
					9	9	1	2	
					10	29	2	0	

* Cows grazed at both C3 & C4

Fire Study - OPPO Patches

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr	% Burn
26SW	Burn	1	13 Feb 03	2003	1	19	7	1	n/a	80%
		1			2	7	0	2	+	40
		1			3	7	0	1	+	Annual - 100%
		1			4	11	2	0	+	80
		1			5	9	2	3	+	60
		1			6	6	4	4	+	10
		1			7	4	2	1	+	40
		1			8	3	2	1	+	50
		1			9	11	1	0	+	50
		1			10	22	1	12	+	70

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr	% Burn
26SW	Burn	2	13 Feb 03	2003	1	22	-	4	-	0
					2	5	1	1	-	80
					3	6	-	4	-	20
					4	15	-	2	-	60
					5	8	6	-	-	0
					6	23	2	8	-	75
					7	5	2	4	-	90
					8	13	2	7	-	20
					9	3	-	2	-	30
					10	3	3	1	-	20

Fire Study - OPPO Patches

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr	% Burn
26SW	Burn	3	13 Feb 03	2003	1	6	-	3	-	20
					2	12	4	2	-	20
					3	5	1	2	-	70
					4	7	2	-	-	40
					5	11	2	6	-	100
					6	6	1	2	-	80
					7	14	1	2	-	30
					8	9	3	2	-	30
					9	5	-	4	-	75
					10	4	-	1	-	50

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr	% Burn
26SW	Burn	4	13 Feb 03	2003	1	7	-	4	-	30
					2	4	3	3	-	50
					3	11	2	1	-	40
					4	18	2	7	-	50
					5	9	-	5	-	30
					6	6	-	2	-	75
					7	2	2	1	-	0
					8	8	6	3	-	10
					9	16	7	4	-	60
					10	3	-	-	-	80

Fire Study – OPPO Patches

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
	C	2	16 Apr 2003	2003	1	12	15	2	—
					2	8	1	4	—
					3	13	3	2	—
					4	10	6	1	—
					5	7	5	0	—
					6	11	6	2	—
					7	12	1	0	—
					8	18	0	2	—
					9	7	0	0	—
	✓	✓	✓	✓	10	8	0	1	—

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
	C	1	13 Apr 2003	2003	1	3	0	1	—
					2	12	12	5	—
					3	5	—	2	—
					4	10	1	5	—
					5	5	3	—	—
					6	7	1	5	—
					7	2	1	2	—
					8	15	10	3	—
					9	6	—	2	—
	✓	✓	✓	✓	10	20	5	—	—

Fire Study - OPPO Patches

S. Blocker
J. Weaver

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
	C	4	29 Apr 2003	2003	1	6	1	1	
					2	5	1	1	
					3	8	7	2	
					4	7	2	3	
					5	4	2	4	
					6	4	4	2	
					7	6	1	2	
					8	32	6	6	
					9	3	2	5	
					10	8	1	2	

Section	Treatment	Rep	Date	Yr of Burn	Quadrat	Live	Dead	Injured	New Spr
	C	3	29 Apr 2003	2003	1	8	2	—	
					2	31	4	4	
					3	5	1	1	
					4	7	2	1	
					5	24	7	3	
					6	26	14	4	
					7	5	1	2	
					8	6	2	3	
					9	6	3	1	
					10	19	—	1	