

Memorandum

o Ernest E. Lusk

Date : January 12, 1982

Subject: Summary of Plague Surveillance
and Suppression, Lassen
Volcanic National Park,
1967-1981

rom : Charles R. Smith

Plague Surveillance and Control, Lassen Volcanic National Park, 1967-1981

Man/days

1. Plague surveillance and control was conducted during the period July 26 to September 6, 1966 in Lassen Park following the discovery of a plague positive chipmunk. Accurate man/hour records were not kept during this emergency episode.
2. March 9, 1967. Plague surveillance, Manzanita Lake area preliminary investigation and observations 2
3. June 12-15, 1967. Plague surveillance, Manzanita Lake area
240 trap nights
76 animals processed
12 flea pools submitted
13 sera submitted
VBCB, 2 persons x 4 days 8
Lab results: All fleas and sera negative
4. July 17-21, 1967. Plague surveillance
Summit Lake, Hat Creek, Lower Twin Lakes, Lost Creek Organizational Camp, Reflection Lake, Table Mountain, Badger Flat.
386 trap nights
37 animals processed
17 flea pools submitted
21 rodent sera submitted
VBCB, 4 persons x 4½ days 18
USNPS, 1 person x 3 days 3
Lab results: 3 positive chipmunk sera
5. August 24, 1967. Plague surveillance, Manzanita Lake area
road counts and observations
VBCB, 1 person x 1 day 1
6. October 17-19, 1967. Plague surveillance, Badger Flat,
Summit Lake, Hat Creek
216 trap nights
25 animals processed
10 flea pools submitted
23 rodent sera submitted
VBCB 2 persons x 3 days 6

California Dept. of
Public Health
(Plague)

Lab results: All fleas and sera negative.

7. June 20, 1968. Plague surveillance - Manzanita Lake, Summit Lake Campgrounds - road counts and observations
VBCB, 1 person x 1 day 1
8. October 24, 1968. Plague surveillance - Manzanita Lake, Summit Lake - road counts
VBCB, 1 person x 1 day 1
9. July 29-30, 1970. Plague surveillance - Manzanita Lake, Summit Lake, Butte Lake Campgrounds - road counts
VBCB, 1 person x 2 days 2
10. June 16, 1972. Plague surveillance - Manzanita Lake area - road counts
VBCB, 1 person x 1 day 1
11. August 28, 1973. Plague surveillance - Manzanita Lake, Butte Lake, Summit Lake - road counts
VBCB, 1 person x 1 day 1
12. July 2, 1974. Plague surveillance - Manzanita Lake area - road counts
VBCB, 1 person x 2 days 2
13. August 21-22, 1974. Plague surveillance, Drakeshed, Juniper Lake - road counts
VBCB, 2 persons x 2 days 4
14. August 7, 1975. Plague surveillance, Butte Lake area
VBCB, 1 person x 1 day 1
15. September 5, 1975. Plague surveillance, Manzanita Lake, Craggs Campground, Summit Lake - road counts
VBCB, 1 person x 1 day 1
16. May 20-25, 1976. Plague surveillance, Manzanita Lake, Butte Lake - road counts
VBCB, 1 person x 2 days 2
17. July 1, 1976. Plague surveillance, Manzanita Lake, Summit Lake - road count
VBCB, 1 person x 1 day 1

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| <p>18. July 21-22, 1976. Plague surveillance, Manzanita Lake, Craggs Campground, Summit Lake - road counts
VBCB, 2 persons x 1 day</p> | <p>2</p> |
| <p>19. September 14-15 and 21-22, 1976. Plague surveillance, Manzanita Lake, Craggs Campground, Summit Lake
210 trap nights
63 animals processed
14 flea pools submitted
45 rodent sera submitted
VBCB, 2 persons x 4 days
Lab results: 3 positive carcasses, 1 positive flea pool
Note: Campgrounds at Craggs closed for remainder of season.</p> | <p>8</p> |
| <p>20. April 26-29 and May 2-3, 1977. Plague surveillance. Manzanita Lake, Craggs, Lost Creek Campgrounds
344 trap nights
33 animals processed
19 flea pools submitted
29 rodent sera submitted
VBCB, 2 persons x 6 days
Lab results: 2 positive rodent sera</p> | <p>12</p> |
| <p>21. May 31-June 3, 1977. Plague surveillance, Manzanita Lake, Craggs Campground, Butte Lake.
309 trap nights
82 animals processed
12 flea pools submitted
20 sera submitted
VBCB, 2 persons x 4 days</p> | <p>8</p> |
| <p>22. July 12-14, 1977. Additional plague surveillance, Manzanita Lake and Craggs Campgrounds
217 trap nights
69 animals processed
17 flea pools submitted
18 sera submitted
VBCB, 2 persons x 3 days
Lab results: 1 sera positive chipmunk, Craggs Campground</p> | <p>6</p> |
| <p>23. August 22, 1977. Plague control at Manzanita Lake Campground
VBCB, 5 people x 3 days
2 people x 1 day
USNPS, 5 people x 2 days</p> | <p>10
2
10</p> |
| <p>24. August 21-22, 1977. Plague surveillance, Butte Lake
166 trap nights
51 animals processed
9 flea pools submitted
28 sera submitted
VBCB, 2 persons x 2 days</p> | <p>4</p> |

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| <p>25. August 22-24, 1977. Plague surveillance, Craggs, Lost Creek and Summit Lake Campgrounds
 115 trap nights
 55 animals processed
 15 flea pools submitted
 4 sera submitted
 VBCB, 4 persons x 3 days
 Lab results: 1 positive sera, chipmunk</p> | <p>12</p> |
| <p>26. August 29-31, 1977. Post-treatment, Manzanita Lake Campground
 245 trap nights
 69 animals processed
 VBCB, 3 persons x 3 days</p> | <p>9</p> |
| <p>27. May 31-June 1, 1978. Plague surveillance, Manzanita Lake Campground
 186 trap nights
 39 animals processed
 5 flea pools submitted
 12 rodent sera submitted
 VBCB, 3 persons x 2 days
 Lab results: 1 positive pine squirrel, 1 positive chipmunk sera</p> | <p>6</p> |
| <p>28. June 6-7, 1978. Plague surveillance, Craggs and Lost Creek Camping areas
 154 trap nights
 57 animals processed
 11 flea pools submitted
 6 rodent sera submitted
 VBCB, 2 persons x 2 days
 Lab results: 2 positive chipmunk sera</p> | <p>4</p> |
| <p>29. July 27-28, 1978. Plague surveillance, Butte Lake area
 73 trap nights
 33 animals processed
 3 flea pools submitted
 VBCB, 3 persons x 2 days
 Lab results: Negative</p> | <p>6</p> |
| <p>30. August 1-4, 1978. Plague control, Manzanita Lake and Craggs Campgrounds
 VBCB, 3 persons x 4 days
 USNPS, 4 persons x 3 days</p> | <p>12
12</p> |
| <p>31. August 14-16, 1978. Post-treatment, Manzanita Lake and Craggs Campground
 VBCB, 2 persons x 3 days
 VBCB, 5 persons x 2 days
 USNPS, 4 persons x 1 day
 250 trap nights
 64 captures</p> | <p>6
10
4</p> |

Note: Flea index computed separately, for each campground.

32. June 5-6, 1979. Plague surveillance, Manzanita Lake	
288 trap nights	
52 animals processed	
14 rodent sera submitted	
VBCB, 2 persons x 2 days	4
Lab results: 1 sero-positive chipmunk	
33. June 7-8, 1979. Plague surveillance, Craggs and Lost Creek	
Camping areas	
150 trap nights	
40 animals processed	
5 flea pools submitted	
5 rodent sera submitted	
VBCB, 2 persons x 2 days	4
34. July 22-23, 1980. Plague surveillance, Manzanita Lake	
150 trap nights	
67 animals processed	
10 flea pools submitted	
35 sera submitted	
VBCB, 3 persons x 2 days	6
Lab results: 2 sero-positive chipmunks	
35. July 24-25, 1980. Plague surveillance, Craggs and Lost Creek	
Camping Areas	
160 trap nights	
44 animals processed	
8 flea pools submitted	
21 sera submitted	
VBCB, 3 persons x 2 days	6
36. September 14-15, 1981. Plague investigation, Manzanita	
Lake	
144 trap nights	
51 animals processed	
10 flea pools submitted	
9 sera submitted	
VBCB, 1 person x 2 days	2
County Health, 2 persons x 2 days	4
Lab results: 1 positive ground squirrel; 2 sero-positive chipmunks.	

Summary of Man/Days

Surveillance

Vector Biology Control Branch	122
Other agencies	7

Control

Vector Biology Control Branch	49
Other agencies	26

Flea Indexes for Corresponding Surveillance or
Control Episode, Lassen Volcanic National Park

19. Plague Surveillance, Crags Campground, Lassen National Park
 September 22, 1976

Host	N	# Infested	%	# Fleas	Flea Index
<u>Spermophilus lateralis</u>	5	5/5	100	49	9.8
<u>Eutamias townsendii</u>	4	2/4	50	10	2.5
<u>Eutamias speciosus</u>	1	0/1	0	0	0.0
<u>Eutamias amoenus</u>	1	1/1	100	2	2.0
Total	11				

Manzanita Lake Campground

<u>S. lateralis</u>	1	0/1	0	0	0.0
<u>E. townsendii</u>	5	4/5	80	18	3.6
<u>E. amoenus</u>	3	2/3	67	12	4.0
<u>P. maniculatus</u>	10	7/10	70	13	1.3
<u>T. douglasii</u>	1	1/1	100	6	6.0
Total	20				

Summit Lake Campground

<u>S. lateralis</u>	8	6/8	75	37	4.6
<u>E. speciosus</u>	11	9/11	81	18	1.6
<u>P. maniculatus</u>	4	3/4	75	5	1.2

21.

Plague Surveillance, Manzanita Lake Campground
June 1, 1977

Host	N	# Infested	%	# Fleas	Flea Index
<u>S. lateralis</u>	16	14/16	87.5	66	4.12
<u>E. townsendii</u>	3	2/3	67	8	2.66
<u>E. amoenus</u>	2	2/2	100	4	2.00
<u>P. maniculatus</u>	7	5/7	71	19	2.71
Total	28				

Note: Used as a pre-treatment index for control

26.

Post-treatment, Manzanita Lake Campground
August 31, 1977

<u>S. lateralis</u>	33	6/33	18	7	0.21
<u>Eutamias sp.</u>	15	7/15	47	16	1.10
<u>P. maniculatus</u>	8	2/8	25	2	0.25
Total	56				

27.

Pre-treatment, Manzanita Lake Campground
June 1, 1978

<u>S. lateralis</u>	21	13/21	61	37	1.76
<u>E. townsendii</u>	11	9/11	89	25	2.27
<u>T. douglasii</u>	2	1/2	50	1	0.5
<u>P. maniculatus</u>	5	2/5	40	2	0.4
Total	39				

28.

Pre-treatment, Craggs Campground
June 8, 1978

<u>S. lateralis</u>	32	29/32	90	136	4.24
<u>Eutamias</u>	6	4/6	66	11	1.83
<u>P. maniculatus</u>	3	2/3	66	3	1.00
Total	43				

31.

Post-treatment, Manzanita Lake and Craggs Campgrounds

Host	N	# Infested	%	# Fleas	Flea Index
<u>S. lateralis</u>	29	9/29	31	11	0.37
<u>Eutamias</u>	8	6/8	75	10	1.25
<u>P. maniculatus</u>	4	2/4	50	4	1.0

Craggs

<u>S. lateralis</u>	16	9/16	56	14	0.87
<u>Eutamias</u>	7	4/7	57	7	1.00