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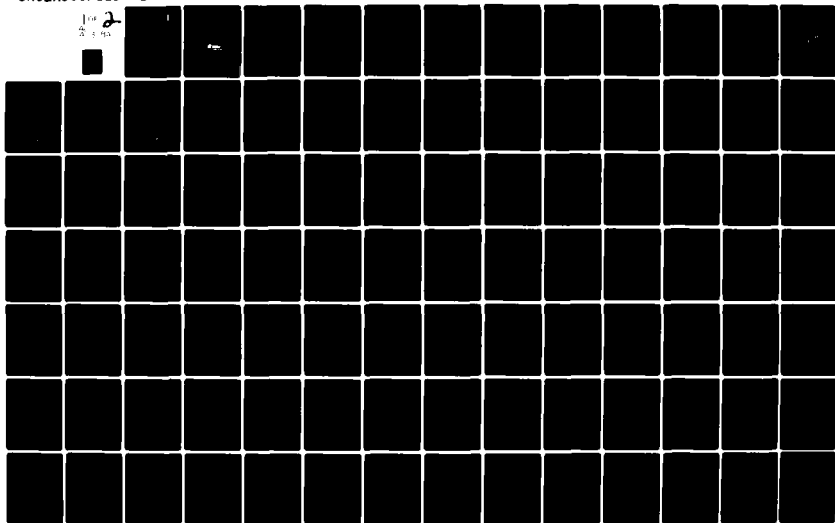
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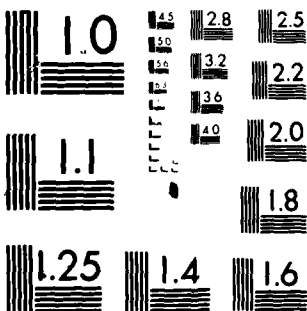
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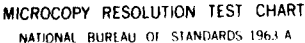


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MICROCOPY RESOLUTION TEST CHART
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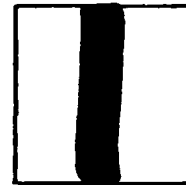
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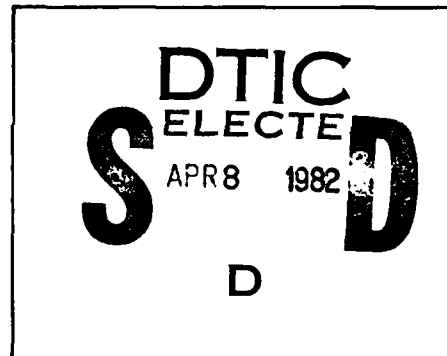
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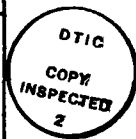
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SPRING SURVEY OF THE IOC VALLEYS

a supplement to

FIELD SURVEYS, IOC VALLEYS
VOLUMES II-I AND II-II
BIOLOGICAL RESOURCES SURVEY
DRY LAKE VALLEY, NEVADA
AND
PINE AND WAH WAH VALLEYS, UTAH

Prepared for:

U.S. DEPARTMENT OF AIR FORCE
Ballistic Missile Office (BMO)
Norton Air Force Base, California 92409

Prepared by:

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1

FOREWORD

This report was prepared for the Department of the Air Force, Ballistic Missile Office, in compliance with Contract No. FO-4704-80-C-0006. It is intended to be a supplement to Volumes II-I and II-II of the Field Surveys, IOC Valleys Biological Resources Survey in Dry Lake Valley, Nevada, and Pine and Wah Wah valleys, Utah.

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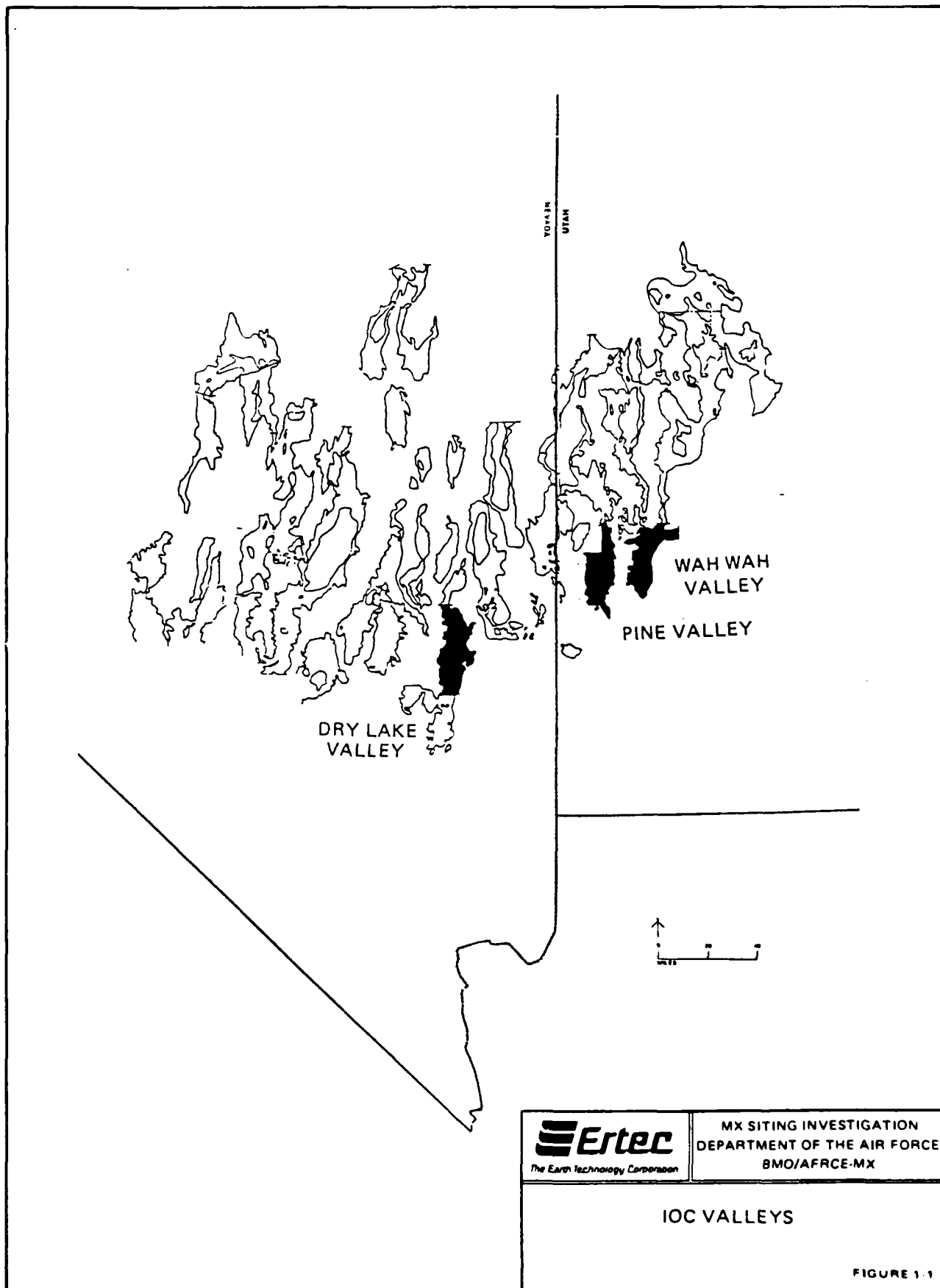
1.0 INTRODUCTION

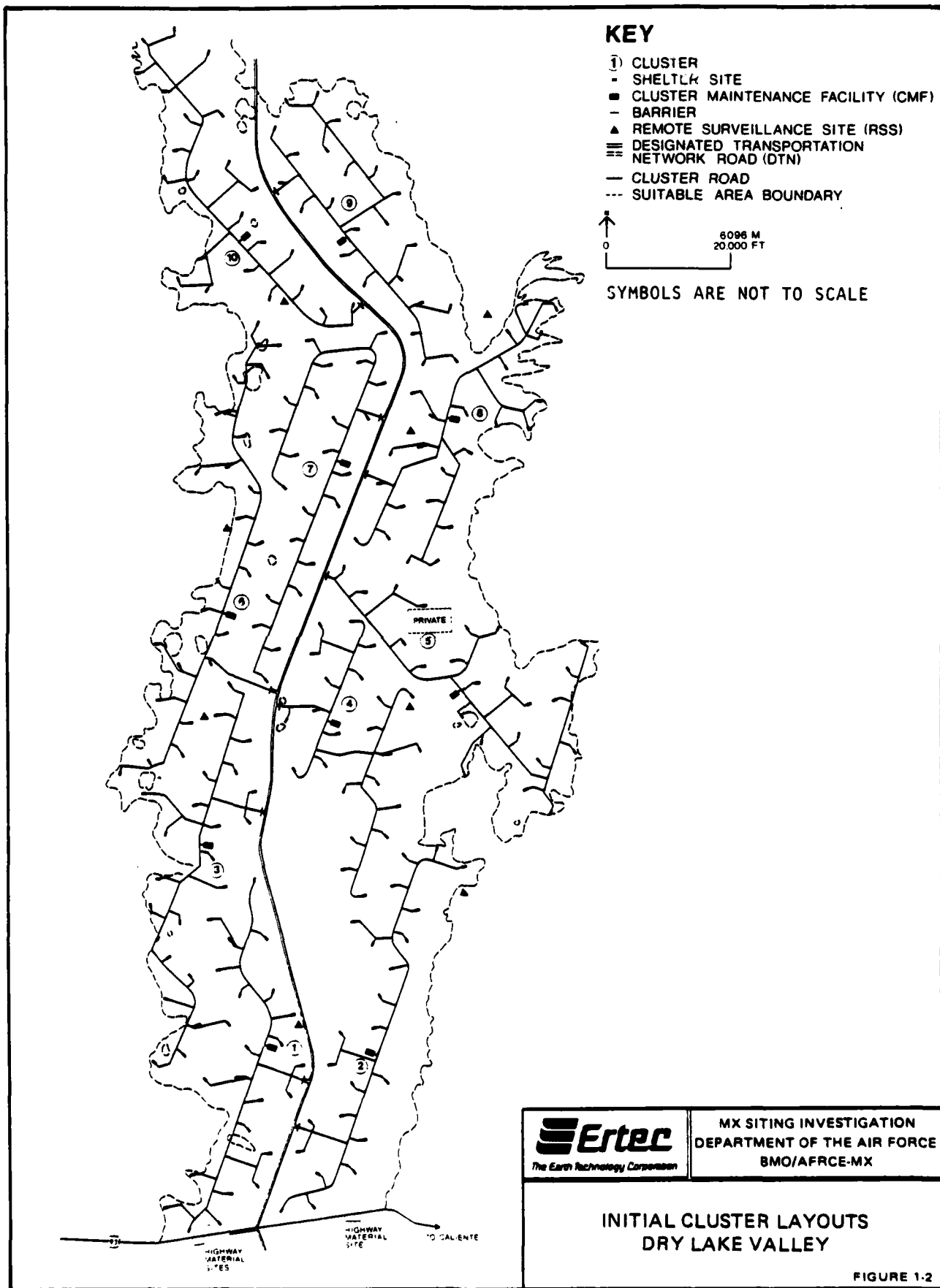
1.1 BACKGROUND

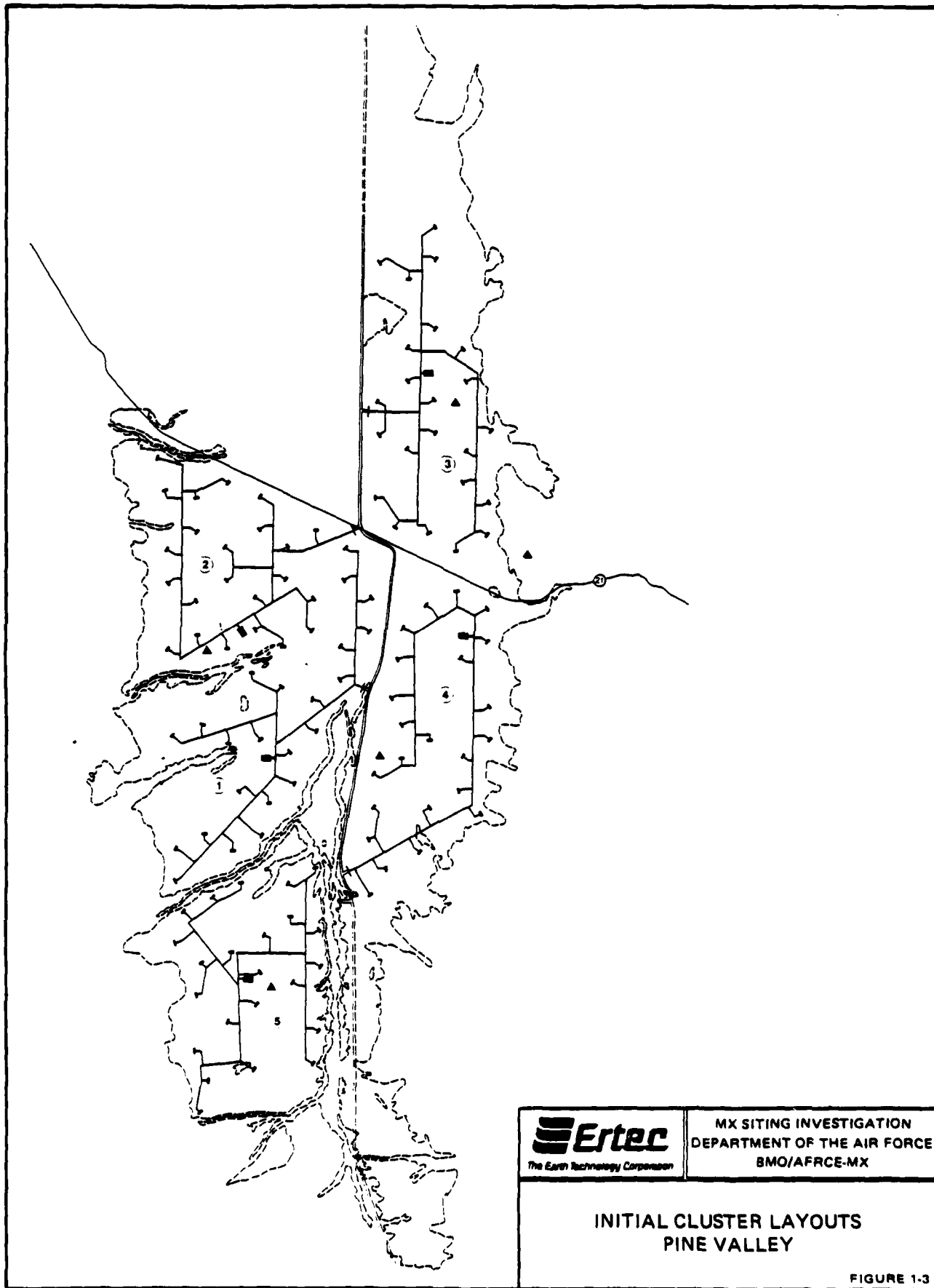
In April and May of 1980, the AFRCE proposed to initiate field studies in selected Nevada and Utah valleys for the purpose of testing cluster layout procedures and determining potential field problems in actual shelter siting. Dry Lake Valley, Nevada was selected because it was large enough to support 10 clusters and was relatively close to the proposed operational base (OB) in Coyote Spring Valley. Pine and Wah Wah valleys in Utah were selected because they were the closest valleys to the proposed OB sites near the towns of Beryl and Milford and, together, could support 10 clusters. The location of the study area valleys is shown in Figure 1-1. Approximate cluster layouts for the valleys are given in Figures 1-2 through 1-4. These have since been changed slightly to accommodate various ecological, cultural, geological, and other considerations.

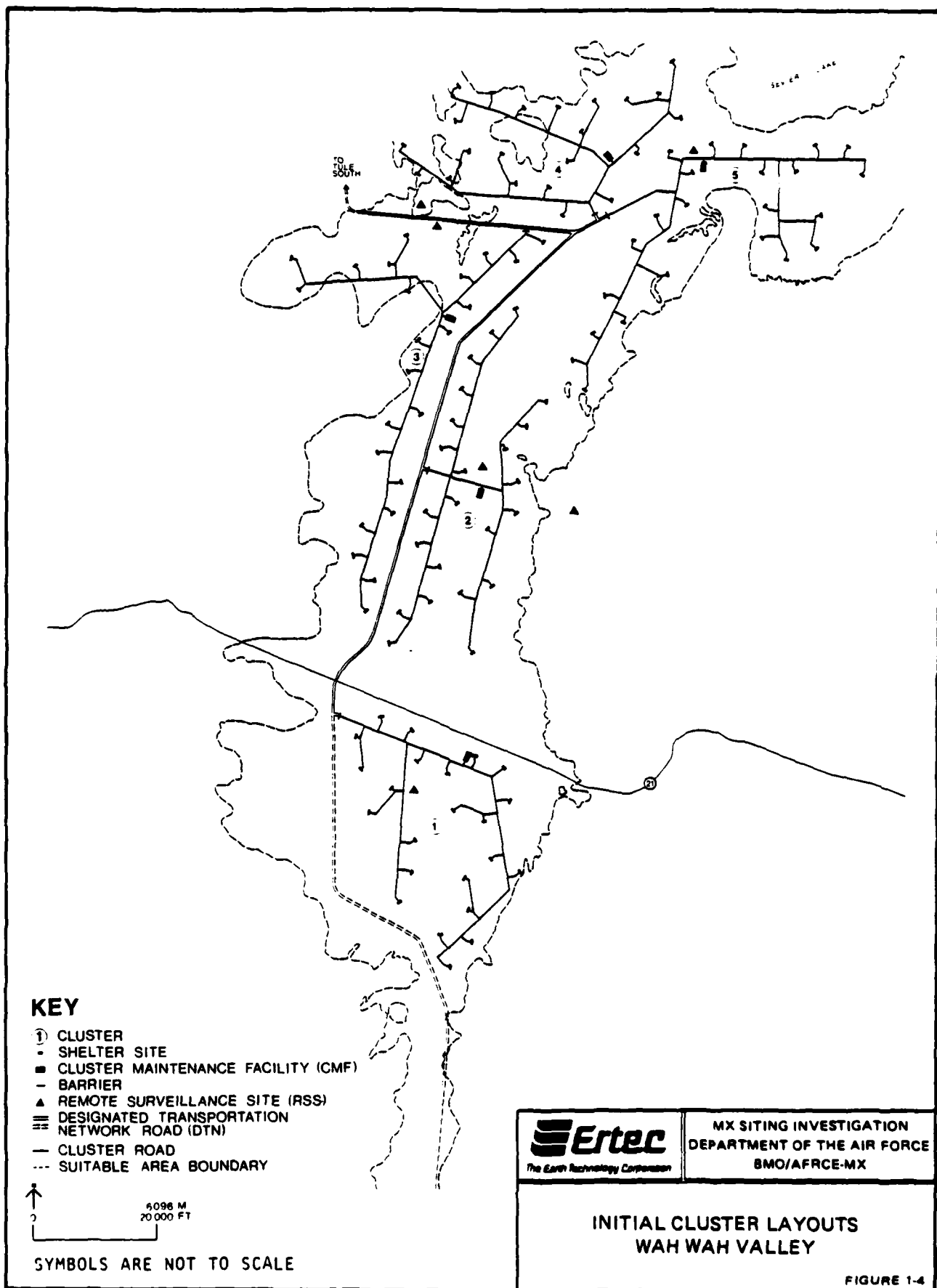
According to present Air Force plans, there is to be an Initial Operating Capability (IOC) of 10 clusters by mid-1986. There is a high likelihood that shelter construction would start either in Dry Lake Valley, or in Pine and Wah Wah valleys. For this reason, the field surveys of these valleys are referred to as the IOC field surveys.

The results of the IOC field surveys have been previously published in three volumes. Volume I presents an overview of the program, evaluates the procedures and summarizes the findings. Volume II, parts I and II, describe the biological resources in Dry Lake Valley and Pine and Wah Wah valleys,









respectively. Volume III describes the cultural resources and is similarly divided.

1.2 PURPOSE

Because of seasonal differences, no biological survey will provide complete identification of all plants and wildlife if limited to a single season. Wildlife use of an area is often seasonal due to migrations to and from spring and winter ranges for breeding, to obtain food, or for other reasons. Even without migratory or seasonal movements, species activity may vary greatly from season to season, and hibernation or aestivation may prevent observation of an animal during certain seasons.

Plant life is also often seasonal, and annual plants are frequently absent or unidentifiable in later months of the year. Many species are identifiable only while flowering. Since the period of flowering varies with the species, it is difficult to obtain a complete list of plant species unless several seasons are sampled. In years of very low rainfall, several years may even be necessary, since some species will not germinate without sufficient precipitation.

The initial IOC survey was undertaken in Dry Lake Valley, Nevada, from September through December 1980, and in Pine and Wah Wah valleys, Utah, from November 1980 through March 1981. Because of the season, a number of annual plant species were identified only to the genus level in that survey. Several of these were considered to be possible threatened, endangered, or sensitive species. The purpose of the spring survey was to allow the identification of these and additional plant species

which were absent or unidentifiable during the initial IOC surveys. While it was recognized that some species do not always germinate on an annual basis, and that it is never possible to observe all species simultaneously in flower, it was felt that the majority of plant species in question could be identified during the spring survey. Additional wildlife information was also desired to more completely determine seasonal trends.

This report is intended to serve only as an addendum to the initial IOC report. As such, the background research, previous field survey methodology, analysis, and conclusions are not repeated here. Data from the spring survey should be considered only in conjunction with findings presented in the previous report.

2.0 METHODOLOGY

2.1 SITE SELECTION

Four hundred and sixty Horizontal Shelter Sites (HSSs), 20 Cluster Maintenance Facilities (CMFs), 18 Remote Surveillance Sites (RSSs), 39 miles of Designated Transportation Network (DTN) and 20 miles of cluster roads were inventoried in the fall survey.

Species lists were compiled for each facility site, and those which contained unidentified species or varieties that could be threatened, endangered (T&E), or sensitive species were determined.

The habitats and requirements of known T&E species were then reviewed to determine which species would have greater likelihood of being present in the IOC valleys. Species which were known to require specific habitats such as hot springs or limestone outcrops, which were not present on the MX facilities' sites, were also noted.

The sites which had reasonable possibility of containing T&E or sensitive species were then selected for resurvey. One hundred and nine sites in Dry Lake Valley, 43 sites in Pine Valley, and 57 sites in Wah Wah Valley (slightly less than one half of the original locations) were selected for resurvey. No RSSs were resurveyed because the RSSs were no longer a consideration by spring. The DTN was not resurveyed because the few species unidentified on the DTN appeared to be the same as those unidentified on nearby shelter sites, and the shelter sites were more quickly and easily relocated and in the same habitat as the transects on the DTN.

2.2 FIELD SURVEY METHODS

The spring survey was undertaken in Dry Lake, Nevada from June 8 through 16, 1981, and in Pine and Wah Wah valleys from June 22 through July 2, 1981. Personnel used in the fall survey were used in the spring survey as well, to make use of their expertise, provide consistency in data collection, and increase efficiency of the resurvey.

Field crew used 1:62,500 topographic maps to determine the general vicinity of the shelter sites, and 7.5 minute USGS maps plus their previous experience to relocate the exact sites. Rebar monuments placed during the original IOC survey allowed the field crew to positively identify the site locations and determine the shelter and survey area orientation.

Once on site, two biologists and two botanists systematically walked the length of the survey area at approximately 25 meter intervals as was done in the fall survey. All plant species and wildlife sign or sightings were recorded. Special care was taken to note small annual plants. In most cases, although the optimum flowering period had passed, remaining reproductive structures or dried flowers allowed identification of the species.

2.3 EXPERT IDENTIFICATION

Some species were not easily identified because they were early blooming or late blooming species, and plants had not yet flowered, or were past the optimum identification period. These specimens were collected and sent to recognized experts for identification.

Unidentified Penstemon sp. and Asclepias sp. were sent to Noel Holmgren of the New York Botanical Garden for identification. Rupert Barneby, also of the New York Botanical Garden, was consulted for information on Astragalus sp.

All species were not in flower during the survey. Taxonomic problems occur with a number of species which are closely related and different to distinguish when floral parts are absent. Sphaeralcea ambigua can be easily confused with S. parvifolia; Opuntia erinacea and O. polycantha, Sitanion hystrix and S. jubatum, Gutierrezia microcephala and G. sarothrae, and Erioneuron puchellum and Blepharidachne keenei are also very similar in structure when flowers are not present. In cases such as these, the plant was simply identified to the genus level. Thus, gutierrezia sp. in the results tables does not indicate a new species, but merely that distinction could not be made between two similar species at that time. In some cases, such as the genus Machaeranthera, there is also disagreement as to status. According to Kartesz and Kartesz (1980), M. canescens and M. leucanthemifolia are now in synonymy, while others believe they are distinct species.

3.0 RESULTS

3.1 DRY LAKE VALLEY VEGETATION

Sixteen plants previously identified to the genus level were further identified to the species level during the survey. These included three species of Eriogonum, a genus having many species. However, none of the three species were found to be threatened, endangered, or sensitive species.

Twenty three genera not observed during the fall survey were identified, most to the species level, and varieties of three previously observed species were also identified. None of these, with the exception of Coryphantha vivipara, was a species of concern. C. vivipara was confirmed to be variety rosea, a species Currently Under Review, Category 2, in the 1980 Federal Register. A new extension of Asclepias eastwoodiana was recorded. It is known only from Lander, Esmeraldo, and Nye counties, and has not been previously recorded from Lincoln County (Mozingo and Williams, 1980).

Plant species observed on the resurveyed Dry Lake facilities sites are listed in Tables 3-1 through 3-10. One species, Astragalus ceramicus is a new record for the state (Barneby, 1981).

TABLE 3-1

PLANT SPECIES OBSERVED ON RESURVEYED
 DRY LAKE CLUSTER 1 SITES
 June 1981

Species	Shelter site							
	2	3	6	7	9	10	11	12
ASTERACEAE								
<u>Artemisia spinescens</u>	X	X	X	X	X	X	X	X
<u>Artemisia tridentata</u>	X				X		X	
<u>Baileya pleniradiata</u>						X		
<u>Chrysothamnus greenei</u>	X	X	X	X	X	X	X	X
<u>Chrysothamnus nauseosus</u>	X							
<u>Gutierrezia sarothrae</u>	X							
<u>Gutierrezia sp.</u>	X		X	X		X		
<u>Machaeranthera canescens</u>	X	X	X	X	X	X		X
<u>Psathyrotes annua</u>	X							
<u>Stephanomeria exigua</u>	X							
<u>Tetradymia axillaris</u>	X	X			X			
<u>Tetradymia glabrata</u>	X	X	X	X	X	X	X	X
<u>Tetradymia spinosa</u>								X
BORAGINACEAE								
<u>Cryptantha sp.</u>	X							
<u>Lappula occidentalis</u>	X							X
BRASSICACEAE								
<u>Caulanthus pilosus</u>		X					X	
<u>Descurainia pinnata</u>		X				X		X
<u>Descurainia sp.</u>	X				X	X	X	
<u>Lepidium montanum var.</u> <u>turbinatus</u>				X				X
<u>Lepidium sp.</u>			X	X				X
<u>Sisymbrium altissimum</u>	X				X	X	X	
<u>Stanleya pinnata</u>					X		X	
CACTACEAE								
<u>Coryphantha vivipara</u>							X	
<u>Opuntia echinocarpa</u>		X	O	X	X		X	X
<u>Opuntia erinacea</u>					X			
<u>Opuntia sp.</u>				X	X			

TABLE 3-1 (Cont.)

Species	Shelter site							
	2	3	6	7	9	10	11	12
CHENOPODIACEAE								
<u>Atriplex canescens</u>		X	X	X				X
<u>Ceratoides lanata</u>	X	X	X	X		X	X	X
<u>Grayia spinosa</u>	X	X		X	X	X	X	X
<u>Halogeton glomeratus</u>			X					
<u>Salsola iberica</u>			X					
EPHEDRACEAE								
<u>Ephedra nevadensis</u>	X				X		X	
LAMIACEAE								
<u>Salvia dorrii</u>	X							
LOASACEAE								
<u>Mentzelia sp.</u>	X							
MALVACEAE								
<u>Sphaeralcea grossulariifolia</u>			X					
<u>Sphaeralcea spp.</u>	X	X	X	X	X	X	X	X
ONAGRACEAE								
<u>Camissonia sp.</u>	X							
POACEAE								
<u>Bromus tectorum</u>		X		X				X
<u>Erioneuron pulchellum</u>							X	
<u>Hilaria jamesii</u>	X	X		X	X	X	X	X
<u>Oryzopsis hymenoides</u>	X	X	X	X	X	X	X	X
<u>Sitanion hystrix</u>	X		X	X	X	X		X
<u>Sporobolus cryptandrus</u>			X					
<u>Sporobolus sp.</u>	X							
POLEMONIACEAE								
<u>Langlosia sp.</u>	?							

TABLE 3-1 (Cont.)

Species	Shelter site							
	2	3	6	7	9	10	11	12
POLYGONACEAE								
<u>Eriogonum deflexum</u>						X		
<u>Eriogonum nidularium</u>	X							
<u>Eriogonum shockleyi</u>						X		
SCROPHULARIACEAE								
<u>Mimulus spissus</u>	X							
SOLANCEAE								
<u>Lycium andersonii</u>							X	

TABLE 3-2

PLANT SPECIES OBSERVED ON RESURVEYED
 DRY LAKE CLUSTER 2 SITES
 June 1981

Species	Shelter site			
	5	9	13	19
AGAVACEAE				
<u>Yucca brevifolia</u>	X			
ASTERACEAE				
<u>Artemisia spinescens</u>	X	X	X	X
<u>Baileya pleniradiata</u>	X	X		
<u>Brickellia oblongifolia</u>	X			
<u>Chrysothamnus greenei</u>		X	X	X
<u>Chrysothamnus sp.</u>	X			
<u>Machaeranthera canescens</u>	X	X	X	
<u>Tetradymia glabrata</u>	X			
BORAGINACEAE				
<u>Lappula occidentalis</u>		X		X
BRASSICACEAE				
<u>Caulanthus pilosus</u>	X			
<u>Lepidium montanum</u>			X	
<u>Stanleya pinnata</u>	X			
CACTACEAE				
<u>Opuntia echinocarpa</u>	X		X	
<u>Opuntia erinacea</u>	X		X	X
CHENOPODIACEAE				
<u>Atriplex canescens</u>	X	X		X
<u>Ceratoides lanata</u>	X	X	X	X
<u>Grayia spinosa</u>	X			
<u>Halogeton glomeratus</u>			X	
<u>Salsola iberica</u>			X	
FABACEAE				
<u>Astragalus lentiginosus</u>	X		X	

TABLE 3-2 (Cont.)

Species	Shelter site			
	5	9	13	19
MALVACEAE				
<u>Sphaeralcea</u> spp.	X	X		X
POACEAE				
<u>Erioneuron pulchellum</u>	X	X		
<u>Hilaria jamesii</u>	X	X	X	X
<u>Oryzopsis hymenoides</u>	X		X	X
<u>Sporobolus cryptandrus</u>	X	X	X	X
POLYGONACEAE				
<u>Eriogonum deflexum</u>			X	
SCROPHULARIACEAE				
<u>Castilleja chromosa</u>	X			
SOLANACEAE				
<u>Lycium andersonii</u>	X			

TABLE 3-3

PLANT SPECIES OBSERVED ON RESURVEYED
 DRY LAKE CLUSTER 3 SITES
 June 1981

Species	Shelter site															
	1	2	3	4	5	9	10	11	12	14	18	19	20	21	22	23
AGAVACEAE																
<u>Yucca baccata</u>		X						X								
ASTERACEAE																
<u>Ambrosia eriocentra</u>			X		X											
<u>Artemisia spinescens</u>				X	X				X		X	X	X	X	X	
<u>Artemisia tridentata</u>	X	X	X		X	X	X			X						
<u>Baileya pleniradiata</u>				X												
<u>Brickellia oblongifolia</u>		X			X					X						
<u>Chrysothamnus greenei</u>		X	X	X		X	X	X	X	X	X	X	X	X	X	
<u>Chrysothamnus nauseosus</u>					X											
<u>Chrysothamnus viscidiflorus</u>		X		X		X				X						
<u>Dyssodia cooperi</u>			X			X										
<u>Erigeron pumilus</u>					X						X					
<u>Gutierrezia sp.</u>											X	X				
<u>Leucelene ericoides</u>		X														
<u>Lygodesmia sp.</u>												X	?			
<u>Machaeranthera canescens</u>					X				X		X	X	X	X	X	X
<u>Tetradymia axillaris</u>						X	X				X	X	X			
<u>Tetradymia glabrata</u>	X	X	X	X	X	X			X	X	X		X			
<u>Tetradymia spinosa</u>				X								X	X	X		
<u>Viguiera multiflora</u>		X			X					X			X			
BRASSICACEAE																
<u>Caulanthus pilosus</u>			X	X												
<u>Descurainia pinnata</u>												X				
<u>Descurainia sp.</u>										X					X	
<u>Stanleya pinnata</u>				X												
CACTACEAE																
<u>Coryphantha vivipara</u>																
var. <u>rosea</u>										X						
<u>Echinocereus engelmannii</u>					X											
<u>Opuntia echinocarpa</u>	X	X	X			X	X	X	X	X						
<u>Opuntia erinacea</u>			X	X		X			X			X		X		X
<u>Opuntia sp.</u>												X	X		X	X

TABLE 3-3 (Cont.)

Species	Shelter site															
	1	2	3	4	5	9	10	11	12	14	18	19	20	21	22	23
CHENOPODIACEAE																
<u>Atriplex canescens</u>					X								X	X	X	X
<u>Atriplex confertifolia</u>												X				
<u>Ceratoides lanata</u>				X					X		X	X	X	X	X	X
<u>Grayia spinosa</u>		X	X	X	X	X		X	X	X	X		X	X	X	X
<u>Halogeton glomeratus</u>												X				
<u>Salsola iberica</u>												X				
CUPRESSACEAE																
<u>Juniperus osteosperma</u>	X						X									
EPHEDRACEAE																
<u>Ephedra nevadensis</u>	X	X	X	X		X	X	X		X						
EUPHORBIACEAE																
<u>Euphorbia cicutarium</u>										X						
<u>Euphorbia fendleri</u>			X													
<u>Euphorbia</u> sp.	X			X						X						
FABACEAE																
<u>Astragalus lentiginosus</u>	X	X	X	X	X	X	X	X		X	X	X	X	X		
<u>Astragalus</u> sp.							X			X	X	X	X			X
HYDROPHYLLACEAE																
<u>Phacelia crenulata</u>				X	X						X					
MALVACEAE																
<u>Sphaeralcea grossulariifolia</u>						X										
<u>Sphaeralcea</u> spp.	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X
NYCTAGINACEAE																
<u>Mirabilis</u> sp.		X	X							X	X		X			

TABLE 3-3 (Cont.)

Species	Shelter site															
	1	2	3	4	5	9	10	11	12	14	18	19	20	21	22	23
ONAGRACEAE																
<u>Camissonia boothii</u>		X		X	X					X						
<u>Oenothera</u> sp.															X	
POACEAE																
<u>Aristida purpurea</u>					X						X		X	X	X	
<u>Bromus tectorum</u>					X				X		X	X	X	X	X	X
<u>Erioneuron pulchellum</u>								X			X				X	
<u>Erioneuron</u> sp.								X	X							
<u>Hilaria jamesii</u>	X		X	X	X	X			X	X	X	X	X	X	X	X
<u>Oryzopsis hymenoides</u>			X	X		X	X		X		X	X	X	X	X	X
<u>Sitanion hystrix</u>					X	X	X		X	X			X	X	X	
<u>Sporobolus cryptandrus</u>												X		X		
<u>Sporobolus</u> sp.									X		X	X	X	X	X	X
POLEMONIACEAE																
<u>Gilia</u> sp.											X					
POLYGONACEAE																
<u>Eriogonum deflexum</u>									X			X		X	X	X
<u>Eriogonum shockleyi</u>			X													
<u>Eriogonum</u> sp.					X			X				X		X	X	X
ROSACEAE																
<u>Cowania mexicana</u>		X			X											
SCROPHULARIACEAE																
<u>Mimulus spissus</u>					X											
SOLANACEAE																
<u>Lycium andersonii</u>			X	X	X		X									

TABLE 3-4

PLANT SPECIES OBSERVED ON RESURVEYED
 DRY LAKE CLUSTER 4 SITES
 June 1981

Species	Shelter site												
	1	2	3	4	5	14	15	16	19	21	23		
ASTERACEAE													
<u>Artemisia spinescens</u>	X			X	X			X	X				
<u>Artemisia tridentata</u>					X				X				
<u>Brickellia oblongifolia</u>												X	
<u>Chrysothamnus greenii</u>				X	X	X						X	
<u>Chrysothamnus sp.</u>	X							X					
<u>Gutierrezia microcephala</u>			X	X								X	
<u>Gutierrezia sp.</u>					X					X			
<u>Leucelene ericoides</u>			X									X	
<u>Machaeranthera canescens</u>	X				X	X	X	X	X	X	X		
<u>Tetradymia axillaris</u>			X										
<u>Tetradymia glabrata</u>			X		X	X		X				X	
<u>Tetradymia spinosa</u>	X												
<u>Viguiera multiflora</u>				X									
BORAGINACEAE													
<u>Cryptantha sp.</u>												X	
<u>Lappula occidentalis</u>								X		X			
BRASSICACEAE													
<u>Caulanthus pilosus</u>								X				X	
<u>Descurainia sp.</u>	X									X			
<u>Lepidium montanum</u>													
var. <u>canescens</u>			X		X	X	X	X	X				
<u>Lepidium montanum</u>	X										X		
<u>Stanleya pinnata</u>			X										
CACTACEAE													
<u>Opuntia erinacea</u>				X	X		X		X				
<u>Sclerocactus pubispinus</u>	X												
CHENOPODIACEAE													
<u>Atriplex canescens</u>						X		X		X	X		
<u>Atriplex confertifolia</u>	X	X	X	X		X		X	X	X			
<u>Ceratoides lanata</u>	X			X	X	X	X	X		X	X		
<u>Halogeton glomeratus</u>	X				X								
<u>Kochia americana</u>	X	X	X			X		X	X	X			
<u>Salsola iberica</u>												X	
<u>Sarcobatus vermiculatus</u>		X	X						X				
<u>Suaeda torreyana</u>		X											

TABLE 3-4 (Cont.)

Species	Shelter site												
	1	2	3	4	5	14	15	16	19	21	23		
EUPHORBIACEAE													
<u>Euphorbia</u> sp.													X
FABACEAE													
<u>Astragalus chamaemeniscus</u>													
<u>Astragalus lentiginosus</u>													X
<u>Astragalus ceramicus</u>													X
MALVACEAE													
<u>Sphaeralcea</u> sp.	X		X	X	X	X	X	X	X	X			
ONAGRACEAE													
<u>Oenothera</u> sp.					X						X		
POACEAE													
<u>Aristida purpurea</u>						X							
<u>Bromus tectorum</u>				X			X						X
<u>Hilaria jamesii</u>	X				X			X					X
<u>Oryzopsis hymenoides</u>	X			X	X		X	X	X				X
<u>Sitanion hystrix</u>	X	X				X	X		X	X			X
<u>Sporobolus cryptandrus</u>				X	X		X						
<u>Sporobolus</u> sp.	X												
POLEMONIACEAE													
<u>Ipomopsis congesta</u>									X				X
<u>Leptodactylon pungens</u>								X					X
POLYGONACEAE													
<u>Eriogonum cernuum</u>				X	X		X						
<u>Eriogonum deflexum</u>					X		X						
<u>Eriogonum microthecum</u>													X
SCROPHULARIACEAE													
<u>Penstemon</u> sp.						X		X					

TABLE 3-5

PLANT SPECIES OBSERVED ON RESURVEYED
 DRY LAKE CLUSTER 5 SITES
 June 1981

Species	Shelter site							
	5	8	14	16	17	18	19	20
AGAVACEAE								
<u>Yucca baccata</u>								X
ASTERACEAE								
<u>Artemisia nova</u>					X	X	X	X
<u>Artemisia spinescens</u>					X			X
<u>Artemisia tridentata</u>	X							
<u>Baileya pleniradiata</u>		X			X			
<u>Brickellia oblongifolia</u>		X			X	X	X	X
<u>Chrysothamnus sp.</u>	X	X	X		X	X	X	X
<u>Gutierrezia sarothrae</u>		X						
<u>Gutierrezia sp.</u>	X	X	X		X	X	X	X
<u>Leucelene ericoides</u>					X			
<u>Machaeranthera canescens</u>	X	X	X		X	X	X	X
<u>Senecio sp.</u>								X
<u>Tetradymia axillaris</u>	X	X						X
<u>Tetradymia glabrata</u>	X	X	X		X	X	X	X
<u>Viguiera multiflora</u>	X				X	X	X	X
BORAGINACEAE								
<u>Crypthantha sp.</u>		X			X			
<u>Lappula occidentalis</u>	X	X			X	X	X	
BRASSICACEAE								
<u>Descurainia sp.</u>	X							
<u>Lepidium montanum</u>		X			X	X		
<u>Lepidium sp.</u>						X		
<u>Streptanthus cordatus</u>								X
CACTACEAE								
<u>Coryphantha vivipara</u>						X		
<u>Opuntia echinocarpa</u>	X	X			X	X	X	X
<u>Opuntia erinacea</u>		X	X		X	X	X	X

TABLE 3-5 (Cont.)

Species	Shelter site							
	5	8	14	16	17	18	19	20
CHENOPODIACEAE								
<u>Atriplex canescens</u>	X	X	X	X		X	X	X
<u>Ceratoides lanata</u>	X	X	X	X	X	X	X	
<u>Chenopodium</u> sp.	X							
<u>Grayia spinosa</u>	X		X	X	X	X	X	X
<u>Salsola iberica</u>	X		X					X
EPHEDRACEAE								
<u>Ephedra nevadensis</u>		X	X	X	X	X	X	X
EUPHORBIACEAE								
<u>Euphorbia</u> sp.					X			
FABACEAE								
<u>Astragalus newberryi</u>					X			
LAMACEAE								
<u>Salvia dorrii</u>						X		
MALVACEAE								
<u>Sphaeralcea grossulariifolia</u>				X		X		
<u>Sphaeralcea</u> spp.	X	X		X	X		X	X
NYCTAGINACEAE								
<u>Mirabilis</u> sp.		X						
ONAGRACEAE								
<u>Gaura coccinea</u>						X		
<u>Oenothera</u> sp.					X			X
OROBANCHACEAE								
<u>Orobanche corymbosa</u>							X	X

TABLE 3-5 (Cont.)

Species	Shelter site							
	5	8	14	16	17	18	19	20
POACEAE								
<u>Aristida purpurea</u>			X	X	X	X	X	X
<u>Bromus tectorum</u>	X	X	X	X	X	X	X	X
<u>Hilaria jamesii</u>		X	X	X	X	X	X	X
<u>Oryzopsis hymenoides</u>	X	X	X	X	X	X	X	X
<u>Sitanion hystrix</u>	X	X		X	X	X	X	
<u>Sporobolus</u> sp.	X	X	X		X	X	X	X
<u>Tridens</u> sp.				X	X			
POLEMONIACEAE								
<u>Langloisia setosissima</u>					X	X		
<u>Phlox</u> sp.		X			X	X		
POLYGONACEAE								
<u>Eriogonum cernuum</u>					X			
<u>Eriogonum deflexum</u>				X	X			
<u>Eriogonum inflatum</u>		X				X		X
<u>Eriogonum pusillum</u>		X				X		
<u>Eriogonum</u> sp.	X	X			X	X		
ROSACEAE								
<u>Cowania mexicana</u>						X		
SCROPHULARIACEAE								
<u>Castilleja</u> sp.					X		X	X

TABLE 3-6

PLANT SPECIES OBSERVED ON RESURVEYED
 DRY LAKE CLUSTER 6 SITES
 June 1981

Species	Shelter site									
	1	5	6	14	15	16	17	21	23	
AGAVACEAE										
<u>Yucca baccata</u>			X				X			
ASTERACEAE										
<u>Ambrosia</u> sp.						X				
<u>Artemisia spinescens</u>	X	X	X		X	X	X	X	X	
<u>Artemisia tridentata</u>	X	X	X			X				
<u>Baileya pleniradiata</u>			X	X						
<u>Brickellia oblongifolia</u>			X	X						
<u>Chaenactis</u> sp.			X	X	X	X				
<u>Chrysothamnus viscidiflorus</u>	X	X	X				X			
<u>Chrysothamnus</u> sp.				X	X	X		X	X	
<u>Dyssodia cooperi</u>				X		X				
<u>Encelia virginensis</u>				?	X					
<u>Erigeron pumilus</u>			X							
<u>Gutierrezia</u> sp.	X							X		
<u>Hymenoclea salsola</u>		X	X		X	X				
<u>Leucelene ericoides</u>					X					
<u>Machaeranthera canescens</u>				X	X			X	X	
<u>Malacothrix</u> sp.					X	X				
<u>Pectis papposa</u>						X				
<u>Psathyrotes annua</u>				X						
<u>Stephanomeria exigua</u>			X		X	X				
<u>Tetradymia axillaris</u>	X	X	X	X		X			X	
<u>Tetradymia glabrata</u>	X	X	X	X			X		X	
<u>Viguiera multiflora</u>	X				X			X	X	
BORAGINACEAE										
<u>Crypthantha</u> sp.			X							
<u>Lappula occidentalis</u>						X				
BRASSICACEAE										
<u>Caulanthus pilosus</u>	X		X				X	X	X	
<u>Descurainia pinnata</u>						X				
<u>Lepidium</u> sp.	X	X	X	X	X				X	
<u>Stanleya pinnata</u>								X	X	

TABLE 3-6 (Cont.)

Species	Shelter site									
	1	5	6	14	15	16	17	21	23	
CACTACEAE										
<u>Echinocereus engelmannii</u>				X						
<u>Opuntia echinocarpa</u>	X	X		X	X					
<u>Opuntia erinacea</u>		X			X	X	X			
CHENOPODIACEAE										
<u>Atriplex canescens</u>	X	X				X		X	X	
<u>Atriplex confertifolia</u>								X		
<u>Ceratoides lanata</u>								X	X	
<u>Grayia spinosa</u>	X	X	X	X	X	X	X	X	X	
<u>Kochia americana</u>								X		
<u>Salsola iberica</u>				X						
CUPRESSACEAE										
<u>Juniperus osteosperma</u>				X						
EPHEDRACEAE										
<u>Ephedra nevadensis</u>	X	X	X	X	X	X	X			
FABACEAE										
<u>Astragalus chamaemeniscus</u>				X						
<u>Astragalus lentiginosus</u>	X	X	X		X	X	X	X	X	
GERANIACEAE										
<u>Erodium cicutarium</u>	X					X	X			
HYDROPHYLLACEAE										
<u>Phacelia crenulata</u>					X					
MALVACEAE										
<u>Sphaeralcea sp.</u>	X	X		X	X			X	X	
NYCTAGINACEAE										
<u>Mirabilis sp.</u>	X	X	X	X	X	X		X	X	

TABLE 3-6 (Cont.)

Species	Shelter site									
	1	5	6	14	15	16	17	21	23	
ONAGRACEAE										
<u>Camissonia</u> sp.						X		?		
<u>Oenothera</u> sp.		?			X	X		X		
POACEAE										
<u>Aristida purpurea</u>			X	X					X	
<u>Bromus rubens</u>						X				
<u>Bromus tectorum</u>		X	X	X	X	X		X	X	
<u>Erioneuron pulchellum</u>			X	X	X	X	X			
<u>Hilaria jamesii</u>		X	X	X		X		X	X	
<u>Muhlenbergia porteri</u>			X	X	X	X				
<u>Oryzopsis hymenoides</u>			X	X	X	X	X	X	X	
<u>Sitanion hystrix</u>		X	X	X		X	X	X	X	
<u>Sporobolus cryptandrus</u>				X				X	X	
POLEMONIACEAE										
<u>Gilia</u> sp.						X				
POLYGONACEAE										
<u>Eriogonum cernuum</u>									X	
<u>Eriogonum deflexum</u>									X	
<u>Eriogonum nidularium</u>		X		X		X				
<u>Eriogonum pusillum</u>		X								
<u>Eriogonum</u> sp.						X				
ROSACEAE										
<u>Cowania mexicana</u>						X	X			
SCROPHULARIACEAE										
<u>Castilleja chromosa</u>		X					X			
SOLANACEAE										
<u>Lycium andersonii</u>		X	X	X	X	X	X		X	

TABLE 3-7

PLANT SPECIES OBSERVED ON RESURVEYED
 DRY LAKE CLUSTER 7 SITES
 June 1981

Species	Shelter site										
	2	6	8	9	10	11	13	14	22		
ASTERACEAE											
<u>Artemisia spinescens</u>	X					X		X	X		
<u>Artemisia tridentata</u>						X					
<u>Brickellia oblongifolia</u>	X	X	X	X				X			
<u>Chaenactis</u> sp.	X	X		X		X	X	X			
<u>Chrysothamnus nauseosus</u>						X					
<u>Chrysothamnus</u> sp.	X	X	X	X	X	X	X	X	X		
<u>Gutierrezia</u> sp.		X	X		X	X		X			
<u>Leucelene ericoides</u>	X	X	X	X	X	X	X	X			
<u>Machaeranthera canescens</u>	X	X	X	X	X	X	X	X	X		
<u>Senecio</u> sp.										X	
<u>Tetradymia glabrata</u>	X	X	X	X	X	X	X	X	X		
<u>Tetradymia spinosa</u>		X			X			X	X		
<u>Viguiera multiflora</u>						X					
BRASSICACEAE											
<u>Descurainia</u> sp.			X			X					
<u>Lepidium montanum</u>	X	X	X	X	X	X		X	X		
<u>Sisymbrium altissimum</u>		X	X			X			X		
<u>Stanleya pinnata</u>	X	X	X	X		X					
CACTACEAE											
<u>Opuntia erinacea</u>					X	X		X	X		
CHENOPODIACEAE											
<u>Atriplex canescens</u>	X	X	X	X	X	X	X	X	X		
<u>Atriplex confertifolia</u>	X	X	X		X	X		X	X		
<u>Ceratoides lanata</u>	X	X	X	X	X	X	X	X	X		
<u>Grayia spinosa</u>						X	X				
<u>Kochia americana</u>			X			X		X	X		
<u>Salsola iberica</u>	X										
EPHEDRACEAE											
<u>Ephedra nevadensis</u>	X		X	X	X	X			X		

TABLE 3-7 (Cont.)

Species	Shelter site										
	2	6	8	9	10	11	13	14	22		
EUPHORBIACEAE											
<u>Euphorbia</u> sp.		X	X	X	X	X		X			
FABACEAE											
<u>Astragalus lentiginosus</u>		X	X	X	X	X				X	
<u>Astragalus newberryi</u>							X				
<u>Astragalus</u> sp.		X	X			X					
GERANIACEAE											
<u>Erodium cicutarium</u>				X							
MALVACEAE											
<u>Sphaeralcea</u> spp.		X	X		X	X	X		X		X
ONAGRACEAE											
<u>Gaura coccinea</u>			X								
<u>Oenothera</u> sp.							X				
POACEAE											
<u>Bromus tectorum</u>						X			X		
<u>Hilaria jamesii</u>		X	X	X	X	X	X	X	X	X	
<u>Hordeum</u> sp.		X	X			X	X	X	X	X	
<u>Oryzopsis hymenoides</u>		X	X	X	X	X	X	X	X	X	
<u>Sitanion hystrix</u>		X	X	X	X	X	X	X	X	X	
POLEMONIACEAE											
<u>Gilia</u> sp.			X				X		X		
POLYGONACEAE											
<u>Eriogonum cernuum</u>					X	X	X				
<u>Eriogonum deflexum</u>		X		X		X					
<u>Eriogonum microthecum</u>					X				?		
<u>Eriogonum</u> sp.		X			X						
SCROPHULARIACEAE											
<u>Penstemon</u> sp.		X	X	X	X	X	X	X	X	X	

TABLE 3-8

PLANT SPECIES OBSERVED ON RESURVEYED
 DRY LAKE CLUSTER 8 SITES
 June 1981

Species	Shelter site													
	1	2	5	6	8	9	11	12	14	17	18	20	21	22
AGAVACEAE														
<u>Yucca baccata</u>								X			X		X	
ASCLEPIADACEAE														
<u>Asclepias eastwoodiana</u>	X													
ASTERACEAE														
<u>Ambrosia sp.</u>	X													
<u>Artemisia nova</u>										X	X	X		
<u>Artemisia spinescens</u>		X	X	X	X	X	X	X	X	X				
<u>Artemisia tridentata</u>						X		X	X	X	X	X	X	X
<u>Brickellia oblongifolia</u>	X													
<u>Chaenactis sp.</u>	X				X				X					
<u>Chrysothamnus greenii</u>							X							
<u>Chrysothamnus nauseosus</u>						X					X			
<u>Chrysothamnus nauseosus</u>														
<u>spp. turbinatus</u>	X													
<u>Chrysothamnus viscidiflorus</u>								X	X	X	X	X	X	X
<u>Chrysothamnus sp.</u>	X	X	X	X	X									
<u>Erigeron pumilus</u>										X	X	X	X	X
<u>Gutierrezia sp.</u>	X			X		X		X	X	X	X			X
<u>Leucelene ericoides</u>	X			X				X			X			
<u>Lygodesmia juncea</u>							X							
<u>Machaeranthera canescens</u>	X	X	X	X	X	X	X	X		X				
<u>Psathyrotes annua</u>													X	
<u>Senecio sp.</u>								X		X	X	X		
<u>Stephanomeria exigua</u>														X
<u>Tetradymia axillaris</u>				X	X			X			X			
<u>Tetradymia glabrata</u>	X		X					X	X		X	X		
<u>Tetradymia spinosa</u>	X	X	X	X										
<u>Viguiera multiflora</u>				X		X	X			X	X		X	X
BORAGINACEAE														
<u>Cryptantha circumcissa</u>									X					
<u>Cryptantha sp.</u>								X	X	X	X	X		
<u>Lappula occidentalis</u>	X	X	X	X	X					X				X

TABLE 3-8 (Cont.)

Species	Shelter site													
	1	2	5	6	8	9	11	12	14	17	18	20	21	22

BRASSICACEAE

<u>Caulanthus crassicaulis</u>													X	
<u>Caulanthus pilosus</u>		X												
<u>Descurainia pinnata</u>	X													
<u>Descurainia sp.</u>		X	X			X	X		X					
<u>Lepidium montanum</u>		X	X		X									
<u>Lepidium sp.</u>									X	X				
<u>Sisymbrium altissimum</u>		X												
<u>Sisymbrium sp.</u>		X												
<u>Streptanthus cordatus</u>										X	X	X	X	

CACTACEAE

<u>Coryphantha vivipara</u>					X					X				
<u>Echinocereus engelmannii</u>											X		X	
<u>Opuntia echinocarpa</u>				X				X	X	X	X	X	X	X
<u>Opuntia erinacea</u>			X	X	X	X	X				X		X	

CHENOPODIACEAE

<u>Atriplex canescens</u>	X	X	X	X	X	X	X		X		X	X		X
<u>Atriplex confertifolia</u>	X	X	X			X								
<u>Ceratoides lanata</u>	X	X	X	X	X	X	X		X	X	X			
<u>Grayia spinosa</u>			X					X	X	X				X
<u>Kochia americana</u>		X												
<u>Salsola iberica</u>				X	X	X	X							

CUPRESSACEAE

<u>Juniperus osteosperma</u>													X	
------------------------------	--	--	--	--	--	--	--	--	--	--	--	--	---	--

EPHEDRACEAE

<u>Ephedra nevadensis</u>				X				X	X	X	X	X	X	X
---------------------------	--	--	--	---	--	--	--	---	---	---	---	---	---	---

EUPHORBIACEAE

<u>Euphorbia sp.</u>	X							X						X
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TABLE 3-8 (Cont.)

Species	Shelter site													
	1	2	5	6	8	9	11	12	14	17	18	20	21	22
FABACEAE														
<u>Astragalus calycosus</u>											X	X		
<u>Astragalus lentiginosus</u>							X	X	X					X
<u>Astragalus newberryi</u>								X		X	X	X		X
<u>Astragalus</u> sp.	X										?			
<u>Dalea searlsiae</u>													X	
<u>Psoralea</u> sp.								X						
GERANIACEAE														
<u>Erodium cicutarium</u>													X	
HYDROPHYLLACEAE														
<u>Phacelia crenulata</u>		X							X					
LINACEAE														
<u>Linum perenne</u>										X	X			X
MALVACEAE														
<u>Sphaeralcea grossulariifolia</u>					X		X							
<u>Sphaeralcea</u> spp.	X	X		X	X	X	X	X	X	X	X		X	X
NYCTAGINACEAE														
<u>Mirabilis</u> sp.								X	X	X	X		X	X
ONAGRACEAE														
<u>Camissonia boothii</u>	X								X				X	X
<u>Oenothera caespitosa</u>											?			
<u>Oenothera</u> sp.	X				X	X								X
OROBANCHACEAE														
<u>Orobanche</u> sp.										X		X	X	X

TABLE 3-8 (Cont.)

Species	Shelter site														21	22
	1	2	5	6	8	9	11	12	14	17	18	20				
POACEAE																
<u>Aristida purpurea</u>	X															
<u>Bromus tectorum</u>	X	X	X	X	X	X	X		X	X	X		X	X		
<u>Erioneuron pulchellum</u>				X				X	X							
<u>Hilaria jamesii</u>	X	X	X	X	X		X		X	X	X		X	X		
<u>Hordeum sp.</u>	X	X				X										
<u>Oryzopsis hymenoides</u>	X	X	X	X	X	X	X	X	X	X	X	X		X		
<u>Sitanion hystrix</u>	X	X	X			X	X		X	X	X		X	X		
<u>Sporobolus cryptandrus</u>						X	X		X	X	X					
<u>Sporobolus sp.</u>	X			X	X											
<u>Stipa comata</u>										X	X					
POLEMONIACEAE																
<u>Gilia sp.</u>	X													X		
POLYGONACEAE																
<u>Eriogonum cernuum</u>	X	X	X				X		X							
<u>Eriogonum deflexum</u>			X			X			X							
<u>Eriogonum inflatum</u>				X												
<u>Eriogonum ovalifolium</u>												X	X			
ROSACEAE																
<u>Cowania mexicana</u>										X	X	X	X	X		
<u>Prunus fasciculata</u>										X	X		X			
SCROPHULARIACEAE																
<u>Castilleja chromosa</u>											X	X				
<u>Mimulus spissus</u>									X					X	X	
<u>Penstemon caespitosus</u>															X	
<u>Penstemon palmeri</u>										X					X	
<u>Penstemon sp.</u>	X															
SOLANACEAE																
<u>Lycium andersonii</u>								X		X	X			X		

TABLE 3-9

PLANT SPECIES OBSERVED ON RESURVEYED
 DRY LAKE CLUSTER 9 SITES
 June 1981

Species	Shelter site																	
	1	2	3	4	5	6	7	9	11	12	13	14	15	16	18			
AGAVACEAE																		
<u>Yucca baccata</u>												X			X			
ASTERACEAE																		
<u>Ambrosia sp.</u>																X		
<u>Artemisia spinescens</u>	X		X	X	X	X	X			X						X		
<u>Artemisia tridentata</u>	X					X	X		X	X	X	X	X	X	X	X		
<u>Baileya pleniradiata</u>																X		
<u>Brickellia sp.</u>							X											
<u>Chrysothamnus greenei</u>	X														X			
<u>Chrysothamnus viscidiflorus</u>															X			
<u>Chrysothamnus sp.</u>					X	X	X	X	X	X	X	X	X		X	X		
<u>Cirsium sp.</u>								X										
<u>Erigeron aphanactis</u>															X			
<u>Erigeron pumilus</u>							X											
<u>Gutierrezia sp.</u>	X							X										
<u>Leucelene ericoides</u>						X	X					X						
<u>Lygodesmia sp.</u>						X												
<u>Machaeranthera canescens</u>			X	X	X	X	X	X	X	X		X	X	X	X	X		
<u>Malacothrix sp.</u>	X																	
<u>Stephanomeria exigua</u>				X	X			X			X							
<u>Tetradymia glabrata</u>	X				X	X	X			X	X	X	X	X				
BORAGINACEAE																		
<u>Cryptantha sp.</u>								X		X		X				X		
<u>Lappula occidentalis</u>			X	X	X	X												
<u>Tiquilia nuttallii</u>															X			
BRASSICACEAE																		
<u>Caulanthus pilosus</u>											X				X			
<u>Descurainia sp.</u>					X	X	X	X	X	X	X					X		
<u>Sisymbrium altissimum</u>						X												
<u>Stanleya pinnata</u>												X						
<u>Streptanthella longirostris</u>											X				X			

TABLE 3-9 (Cont.)

Species	Shelter site																	
	1	2	3	4	5	6	7	9	11	12	13	14	15	16	18			
CACTACEAE																		
<u>Coryphantha vivipara</u>											-		X	X				
<u>Opuntia echinocarpa</u>									X			X		X				
<u>Opuntia erinacea</u>		X	X	X	X	X	X	X							X			
CHENOPODIACEAE																		
<u>Atriplex canescens</u>		X	X	X	X	X		X										
<u>Ceratoides lanata</u>		X	X	X	X	X	X	X		X	X					X		
<u>Chenopodium</u> sp.								X										
<u>Grayia spinosa</u>						X	X	X	X	X	X				X	X		
CUPRESSACEAE																		
<u>Juniperus osteosperma</u>																X		
EPHEDRACEAE																		
<u>Ephedra nevadensis</u>									X		X	X	X	X				
FABACEAE																		
<u>Astragalus chamaemeniscus</u>									X	?	?	X	X	?	?			
<u>Astragalus lentiginosus</u>						X	X	X				X	X	X				
<u>Astragalus newberryi</u>														X				
LOASACEAE																		
<u>Mentzelia</u> sp.		X			X			X										
MALVACEAE																		
<u>Sphaeralcea</u> sp.		X		X	X	X	X	X		X		X	X	X	X			
NYCTAGINACEAE																		
<u>Mirabilis</u> sp.																X		
ONAGRACEAE																		
<u>Camissonia brevipes</u>		X																
<u>Camissonia boothii</u>						X												
<u>Oenothera</u> sp.						X		X		X	X				X	X		

TABLE 3-9 (Cont.)

Species	Shelter site																	
	1	2	3	4	5	6	7	9	11	12	13	14	15	16	18			
OROBANCHACEAE																		
<u>Orobanche</u> sp.						X	X											
POACEAE																		
<u>Aristida purpurea</u>								X	X	X	X	X	X	X	X			
<u>Bromus tectorum</u>	X	X			X	X		X	X	X			X	X	X			
<u>Erioneuron pilosum</u>					X													
<u>Hilaria jamesii</u>			X	X		X	X	X	X	X	X			X	X			
<u>Oryzopsis hymenoides</u>	X	X	X	X	X	X					X				X	X		
<u>Sitanion hystrix</u>	X	X			X	X	X	X	X	X	X	X						
<u>Sporobolus contractus</u>								X										
<u>Sporobolus cryptandrus</u>	X	X	X	X				X		X				X		X		
<u>Sporobolus</u> sp.					X	X	X											
<u>Stipa comata</u>									X		X					X		
POLEMONIACEAE																		
<u>Gilia</u> sp.						X					X				X	X		
POLYGONACEAE																		
<u>Eriogonum cernuum</u>					X			X								X		
<u>Eriogonum deflexum</u>						X	X			X								
<u>Eriogonum pusillum</u>									X			X						
<u>Eriogonum</u> sp.	X															X		
SCROPHULARIACEAE																		
<u>Castilleja chromosa</u>																		
<u>Castilleja</u> sp.						X												
SOLANACEAE																		
<u>Lycium andersonii</u>													X					
<u>Malacothrix</u> sp.					X													

TABLE 3-10

PLANT SPECIES OBSERVED ON RESURVEYED
 DRY LAKE CLUSTER 10 SITES
 June 1981

Species	Shelter site										
	1	2	3	7	11	18	19	20	21	22	23
AGAVACEAE											
<u>Yucca baccata</u>								X			
ASTERACEAE											
<u>Artemisia spinescens</u>	X	X	X	X	X	X		X	X		
<u>Artemisia tridentata</u>	X		X	X	X	X	X	X	X	X	X
<u>Brickellia oblongifolia</u>			X								
<u>Chaenactis</u> sp.						X					
<u>Chrysothamnus greenei</u>	X	X	X	X	X	X	X	X	X	X	X
<u>Erigeron pumilus</u>			X			X		X	X		
<u>Gutierrezia</u> sp.		X	X					X	X		
<u>Leucelene ericoides</u>			X							X	X
<u>Machaeranthera canescens</u>	X	X	X	X	X	X	X	X	X		
<u>Senecio</u> sp.									X		X
<u>Stephanomeria exigua</u>			X							X	
<u>Tetradymia axillaris</u>		X	X	X	X	X	X			X	
<u>Tetradymia glabrata</u>	X			X	X					X	
<u>Tetradymia spinosa</u>	X										
<u>Townsendia</u> sp.										X	
<u>Viguiera multiflora</u>	X							X		X	
BORAGINACEAE											
<u>Cryptantha</u> sp.								X	X	X	X
<u>Lappula occidentalis</u>	X	X			X	X	X	X		X	
BRASSICACEAE											
<u>Caulanthus pilosus</u>						X					
<u>Descurainia</u> sp.	X		X	X	X	X					X
<u>Lepidium montanum</u>								X			
<u>Lepidium</u> sp.							X				
<u>Sisymbrium altissimum</u>	X		X	X	X	X	X				
<u>Streptanthus cordatus</u>									X	X	
CACTACEAE											
<u>Opuntia echinocarpa</u>							X		X	X	
<u>Opuntia erinacea</u>	X	X	X	X	X	X	X	X	X	X	X

TABLE 3-10 (Cont.)

Species	Shelter site										
	1	2	3	7	11	18	19	20	21	22	23
CHENOPODIACEAE											
<u>Atriplex canescens</u>	X			X	X		X	X	X	X	X
<u>Ceratoides lanata</u>	X	X	X	X	X	X	X	X	X		
<u>Chenopodium</u> sp.					X		X				
<u>Grayia spinosa</u>	X	X	X	X	X	X	X			X	X
<u>Salsola iberica</u>	X						X				
CUPRESSACEAE											
<u>Juniperus osteosperma</u>										X	X
EPHEDRACEAE											
<u>Ephedra nevadensis</u>			X	X	X	X	X	X	X	X	X
FABACEAE											
<u>Astragalus calycosus</u>									X	X	
<u>Astragalus lentiginosus</u>	X		X		X	X	X				X
<u>Astragalus minthorniae</u>											X
<u>Astragalus newberryi</u>		X	X	X				X	X	X	X
<u>Astragalus</u> sp.						X	X		X	X	X
LINACEAE											
<u>Linum perenne</u>				X							
<u>Linum</u> sp.							X		X		X
MALVACEAE											
<u>Sphaeralcea</u> spp.	X	X	X	X	X	X	X	X	X	X	X
NYCTAGINACEAE											
<u>Mirabilis</u> sp.					X		X				
ONAGRACEAE											
<u>Oenothera</u> sp.			X		X	X	X	X			

TABLE 3-10 (Cont.)

Species	Shelter site										
	1	2	3	7	11	18	19	20	21	22	23
OROBANCHACEAE											
<u>Orobanche</u> sp.								X	X	X	X
PINACEAE											
<u>Pinus monophylla</u>					X						X
POACEAE											
<u>Aristida purpurea</u>			X	X		X					
<u>Bouteloua gracilis</u>										X	
<u>Bromus tectorum</u>	X	X	X	X	X	X		X	X		
<u>Hilaria jamesii</u>	X	X	X	X	X	X	X	X	X	X	
<u>Hordeum</u> sp.	X				X						
<u>Oryzopsis hymenoides</u>	X	X	X	X	X	X	X	X	X	X	
<u>Sitanion hystrix</u>	X	X	X	X	X	X	X	X	X	X	X
<u>Sporobolus contractus</u>			X								
<u>Sporobolus cryptandrus</u>	X	X			X			X			
<u>Sporobolus</u> sp.	X	X	X	X	X			X			
<u>Stipa comata</u>	X							X	X	X	
POLEMONIACEAE											
<u>Phlox</u> sp.						X					
POLYGONACEAE											
<u>Eriogonum cernuum</u>										X	
<u>Eriogonum deflexum</u>	X	X			X	X					
<u>Eriogonum inflatum</u>								X			
<u>Eriogonum nidularium</u>		X									
<u>Eriogonum shockleyi</u>										X	
<u>Eriogonum</u> sp.		X								X	
ROSACEAE											
<u>Cowania mexicana</u>										X	X
SCROPHULARIACEAE											
<u>Castilleja</u> sp.								X	X		X
<u>Penstemon</u> sp.								X			

3.2 DRY LAKE VALLEY WILDLIFE

Mammal species or sign observed in Dry Lake Valley were all species common to the area. Coyote sign, kit fox sign, gopher mounds, badgers, and blacktailed jackrabbits comprised the majority of the mammal species observed. Mule deer sign was observed on one site in Cluster 8. Large and small burrows scattered throughout the valley indicated the presence of other, unidentified mammal species. Sign of cattle and horses were also common.

Horned larks and sparrows were the most common bird species observed in the valley. Ravens, ferruginous hawks, nighthawks, mockingbirds, mourning doves, black-tailed gnatcatchers, owls and golden eagles were also observed. Burrowing owls were noted on three sites.

Reptile sightings were limited to six species of lizards and two species of snakes.

Due to the wide variation in the number of sites resurveyed from cluster to cluster, it was not possible to accurately compare the clusters' ability to support a variety of wildlife.

No threatened or endangered species were observed, although a number of species, migratory birds, or raptors were observed. Animal sign and sightings on the resurveyed Dry Lake sites are listed in Tables 3-11 through 3-20.

TABLE 3-11
ANIMAL SIGN AND SIGHTINGS
DRY LAKE VALLEY CLUSTER 1 RESURVEY
June 1981

	Shelter Site Number										
	2	3	6	7	9	10	11	12			
<u>Mammals</u>											
Domestic Cattle			X	X				X			
Coyote	X										
Kit fox den (inactive)	1										
Blacktailed jackrabbit	P	1		P	2	P	2	P			
Desert cottontail	P										
Badger den (active)								1			
Large mammal burrows	X					X					
Small mammal burrows		X	X	X			X				
<u>Birds</u>											
Unidentified Passerines					2						
Horned lark	P	P	P	P	P	P	P	P			
Ferruginous hawk	P										
Brewer's sparrow		P									
<u>Reptiles</u>											
Desert horned lizard									P		
Zebra-tailed lizard	P										
Whiptail lizard	P	P	P	2	P	P	P	P	P		
Side-blotched lizard		1		1							

P = Present.

X = Sign.

Number = Actual count.

TABLE 3-12
ANIMAL SIGN AND SIGHTINGS
DRY LAKE VALLEY CLUSTER 2 RESURVEY
June 1981

	Shelter Site Number			
	5	9	13	19
<u>Mammals</u>				
Domestic cattle		X	X	
Blacktailed jackrabbit	3			X
Rabbit	X	X		
Small mammal burrows	X		X	X
<u>Birds</u>				
Horned lark	P	3	1	3
Raven	P			
<u>Reptiles</u>				
Lizard burrows		X	X	
Desert horned lizard		1		
Whiptail lizard	2			
Leopard lizard	2		3	
Side-blotched lizard		1		2

P = Present.
X = Sign.
Number = Actual count.

TABLE 3-13

ANIMAL SIGN AND SIGHTINGS
 DRY LAKE VALLEY CLUSTER 3 RESURVEY
 June 1981

	1	2	3	4	5	9	10	11	12	14	18	19	20	21	22	23
Shelter Site Number																
Mammals																
Domestic cattle				X	X											
Coyote		X		X				X		X			X			
Badger den (inactive)						P	P	1	1	2	4	4		1	1	
Blacktailed jackrabbit	1		2											3		
Desert cottontail		1	P		1											
Rabbit	X	X	X	X	X	X	X	X								
Horse							X									
Large mammal burrows		X										X				
Small mammal burrows	X	X	X	X	X	X	X	X					X			
Birds																
Brown-headed cowbird					1											
Sage sparrow										1						
Horned lark		8	6	3	2				P		P	P	P	P	P	P
Black-throated sparrow					P									2		3
Common nighthawk		2														
Reptiles																
Collared lizard					1											
Unidentified lizard			1													
Zebra-tailed lizard																
Whiptail lizard		6	P	14	P	2	12	1	4	5	P	6	P	P	P	9
Leopard lizard	1			1			1									
Side-blotched lizard			2		2	11						1			8	4
Desert Horned Lizard														1	P	
Great Basin rattlesnake															2	

P = Present.

X = Sign.

Number = Actual count.

TABLE 3-14

ANIMAL SIGN AND SIGHTINGS
 DRY LAKE VALLEY CLUSTER 4 RESURVEY
 June 1981

	Shelter Site Number												
	1	2	3	4	5	14	15	16	19	21	23		
<u>Mammals</u>													
Domestic cattle			X		X		X		X				
Coyote	X						X						
Blacktailed jackrabbit					P	1				4			
Rabbit	X	X	X	X	X	X		X	X	X	X		
Large mammal burrows					X			X					
Small mammal burrows			X	X		X	X				X		
<u>Birds</u>													
Horned lark	P	P	P	1	8	8	15	10	6	13	P		
<u>Reptiles</u>													
Lizard holes					X			X			X		
Desert horned lizard						1							
Whiptail lizard	2			2	7		1		1	2			
Leopard lizard	1	2	1										
Side-blotched lizard	1				1	1							

P = Present.

X = Sign.

Number = Actual count.

TABLE 3-15

ANIMAL SIGN AND SIGHTINGS
 DRY LAKE VALLEY CLUSTER 5 RESURVEY
 June 1981

	5	8	14	15	16	17	18	19	20
	Shelter Site Number								
<u>Mammals</u>									
Domestic cattle				X			X		
Coyote							1	1	
Badger den									
Blacktailed jackrabbit		9	1		1		1	1	1
Small mammal burrows							X		
<u>Birds</u>									
Horned lark	P		P	P	P		P	P	P
Black-throated sparrow								2	
Burrowing owl							X		
<u>Reptiles</u>									
Desert horned lizard					1				
Whiptail lizard		1	1	5	4		2	4	2
Leopard lizard		1		2	1		4	3	1
Side-blotched lizard		3	9		1				
P = Present. X = Sign. Number = Actual count.									

TABLE 3-16
ANIMAL SIGN AND SIGHTINGS
DRY LAKE VALLEY CLUSTER 6 RESURVEY
June 1981

	1	5	6	14	15	16	17	21	22	23
Mammals										
Domestic cattle								X		X
Coyote				X		X		X		
Blacktailed jackrabbit	1		1	3	5	4	1		4	
Desert cottontail	2					1			1	
Rabbit	X	X	X	X	X	X	X	X		X
Horse										
Large mammal burrows										X
Small mammal burrows	X	X					X	X		X
Birds										
Mockingbird					2					
Horned lark		2						P		2
Black-throated sparrow	P	2	2		4	1				
Sage sparrow	2		2		3					
Common nighthawk	1				5		2			
Reptiles										
Lizard holes						X				
zebra-tailed lizard	1									
Whiptail lizard	5	2	2	3	2	4	3	5	8	
Leopard lizard						3		3	1	
Side-blotched lizard	2	1			1	1		5	10	
Desert horned lizard									1	

P = Present.

X = Sign.

Number = Actual count.

TABLE 3-17

ANIMAL SIGN AND SIGHTINGS
 DRY LAKE VALLEY CLUSTER 7 RESURVEY
 June 1981

	Shelter Site Number										
	2	6	8	9	10	11	13	14	22		
<u>Mammals</u>											
Coyote			X		X	X		?	X		
Kit fox					X						
Blacktailed jackrabbit		3	3	2	3	1	1	1	5		
Rabbit				X							
Gopher mounds (active)								P			
Large mammal burrows								X			
Small mammal burrows	X							X			
<u>Birds</u>											
Horned lark	P	P	P	P	P	P			P		
Black-throated sparrow		1									
Unidentified sparrow		1									
Mourning dove							2				
<u>Reptiles</u>											
Desert horned lizard	2				2		1				
Whiptail lizard	6			1	5	3	5	5	5		
Leopard lizard	5		4		3		1		3		
Side-blotched lizard	1	1					1				
P = Present. X = Sign. Number = Actual count.											

TABLE 3-18

ANIMAL SIGN AND SIGHTINGS
 DRY LAKE VALLEY CLUSTER 8 RESURVEY
 June 1981

	1	2	5	6	8	9	11	12	14	17	18	20	21	22
Mammals														
Domestic cattle							X	X	X	X	X	X	X	X
Mule deer														
Coyote					X			X						
Blacktailed jackrabbit	5	3	2			5		3	1	1	2	2	1	
Desert cottontail									2					
Rabbit							X	X	X	X	X	X	X	X
Horse								X			X	X		X
Large mammal burrows														X
Small mammal burrows			X	X	X		X	X	X	X	X	X	X	X
Birds														
Horned lark	P	P	P	P	P	P	P	1	2	4	5	1	3	6
Black-throated sparrow														5
Black-tailed gnatcatcher	2													
Brewer's sparrow		1												
Burrowing owl													1	
Sage sparrow										P				P
Reptiles														
Short-horned lizard														1
Unidentified horned lizard						1				1				
Desert horned lizard														
Whiptail lizard	4	2							3	6	12	2	1	
Leopard lizard	1	3				1		5	1			2		1
Side-blotched lizard					5	7	1	1	3	2	2	2	5	2

P = Present.

X = Sign.

Number = Actual count.

TABLE 3-19

ANIMAL SIGN AND SIGHTINGS
 DRY LAKE VALLEY CLUSTER 9 RESURVEY
 June 1981

	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
<u>Mammals</u>																	
Domestic cattle	X	X	X	X			X	X	X	X	X		X		X		
Coyote								1									
Coyote den (active)										1							
Blacktailed jackrabbit			1		9	8				1	2	2	4		4		2
Desert cottontail										2	1		2	1			
Rabbit	X	X	X				X	X	X	X	X	X	X	X	X		X
Horse		X	X										X	X			X
Large mammal burrows																	
Small mammal burrows	X				X	X	X					X		X	X		
<u>Birds</u>																	
Horned lark	18	9	8	P		P	P	3	2	2	P		4		P		35
Black-throated sparrow					1												
Burrowing owl																	
Brewer's sparrow						1											
Golden eagle	3																
Sage sparrow							1			3		1			P		2
Owl											X						
Common nighthawk										2							
Sparrow nest (3 eggs)										P							
Raven																	
Unidentified species													1		5		
<u>Reptiles</u>																	
Desert horned lizard					1												
Whiptail lizard	4		X	X	5	10	14		2	4	8	5	4	4			3
Lizard holes						X		X		X							X
Leopard lizard						3	2		1			1	1				2
Side-blotched lizard	2		2	1	1	1	1	1	1		1						

P = Present.

X = Sign.

Number = Actual count.

TABLE 3-20

ANIMAL SIGN AND SIGHTINGS
 DRY LAKE VALLEY CLUSTER 10 RESURVEY
 June 1981

	Shelter Site Number												
	1	2	3	7	10	18	19	20	21	22	23		
Mammals													
Coyote		X				X	X						
Blacktailed jackrabbit	1	3	2		3	6	14	2	4	2			
Rabbit						X							
Kangaroo rat burrows		5											
Small mammal burrows	X	X	X			X	X			X			
Birds													
Common nighthawk								2					
Horned lark	P	P	P	P	P	P		P	P	P	P		
Black-throated sparrow	2	3					2		2	1			
Unidentified sparrow							1						
Unidentified nest (inactive)			1										
Reptiles													
Sagebrush lizard								10					
Desert horned lizard					2	1							
Gopher snake													
Lizard hole	3												
Whiptail lizard		2	1	3	3	4	15	1		7	3		
Leopard lizard	1			2	2		4	1		1			
Side-blotched lizard	3	17	14		4	3		1	2	3			

P = Present.

X = Sign.

Number = Actual count.

3.3 PINE VALLEY VEGETATION

Nineteen species previously identified to the genus level were further identified to the species level during the survey. Eighteen genera not identified during the fall survey were identified, most to the species level.

A population of approximately 25 individuals of Sphaeralcea caespitosa, a species listed as Currently Under Review, Category 1, in the 1980 Federal Register, was observed on site 4/10. A large population of Penstemon nanus, a Category 2 species, was observed on the same site.

Coryphantha vivipara was positively identified as variety rosea, a species listed as Currently Under Review, Category 2. It was found on several sites: 3/6 (4 plants), 3/9 (1 plant), 4/7 (15 plants), and 4/9 and 4/10 (1 plant each).

Plant species identified on the Pine Valley sites are listed in Tables 3-21 through 3-25.

TABLE 3-21

PLANT SPECIES OBSERVED ON RESURVEYED
PINE CLUSTER 1 SITES
June - July 1981

Species	Shelter site					
	3	4	10	14	16	21
ASTERACEAE						
<u>Artemisia nova</u>				X		X
<u>Artemisia spinescens</u>		X				X
<u>Artemisia tridentata</u>						X
<u>Chrysothamnus greenei</u>			X	X		
<u>Chrysothamnus sp.</u>	X		X		X	X
<u>Gutierrezia sarothrae</u>			X			
<u>Machaeranthera canescens</u>	X		X		X	
BORAGINACEAE						
<u>Lappula occidentalis</u>		X		X		X
BRASSICACEAE						
<u>Descurainia sp.</u>		X		X	X	X
<u>Lepidium montanum</u>						X
<u>Physaria chambersii</u>						X
CACTACEAE						
<u>Opuntia erinacea</u>			X	X		X
CHENOPODIACEAE						
<u>Atriplex canescens</u>		X				
<u>Ceratoides lanata</u>	X	X	X	X	X	X
<u>Grayia spinosa</u>		X				X
<u>Salsola iberica</u>	X	X	X	X		
EPHEDRACEAE						
<u>Ephedra nevadensis</u>			X	X	X	X

TABLE 3-21 (Cont.)

Species	Shelter site					
	3	4	10	14	16	21
FABACEAE						
<u>Astragalus lentiginosus</u>	X	X	X		X	X
<u>Astragalus newberryi</u>					X	
<u>Astragalus mollissimus</u>			X			
<u>Astragalus sp.</u>			X			
HYDROPHYLLACEAE						
<u>Phacelia crenulata</u>						X
LOASACEAE						
<u>Mentzelia sp.</u>		X				
MALVACEAE						
<u>Sphaeralcea grossulariifolia</u>	X			X		
<u>Sphaeralcea sp.</u>	X	X		X	X	X
POACEAE						
<u>Aristida purpurea</u>	X	X				X
<u>Bouteloua gracilis</u>				X	X	X
<u>Bouteloua sp.</u>						X
<u>Bromus tectorum</u>	X	X			X	X
<u>Erioneuron sp.</u>	X					
<u>Hilaria jamesii</u>	X	X	X		X	X
<u>Oryzopsis hymenoides</u>	X	X	X	X	X	X
<u>Sitanion hystrix</u>		X		X	X	X
<u>Stipa comata</u>			X	X	X	X
POLEMONIACEAE						
<u>Leptodactylon pungens</u>				X		
POLYGONACEAE						
<u>Eriogonum cernuum</u>	X				X	X
<u>Eriogonum microthecum</u>				X		
<u>Eriogonum ovalifolium</u>				X		
<u>Eriogonum sp.</u>				X		

TABLE 3-22

PLANT SPECIES OBSERVED ON RESURVEYED
PINE CLUSTER 2 SITES
June - July 1981

Species	Shelter site						CMF 2
	4	11	12	13	14	18	
ASTERACEAE							
<u>Artemisia spinescens</u>						X	
<u>Chaenactis</u> sp.	X					X	
<u>Chrysothamnus greenii</u>		X	X	X			X
<u>Chrysothamnus</u> sp.	X					X	
<u>Machaeranthera canescens</u>	X	X	X	X	X	X	X
<u>Tetradymia glabrata</u>						X	
<u>Tetradymia spinosa</u>	X					X	
<u>Townsendia</u> sp.						X	
BORAGINACEAE							
<u>Lappula occidentalis</u>						X	
BRASSICACEAE							
<u>Descurainia</u> sp.						X	
<u>Lepidium montanum</u>	X		X			X	
<u>Physaria chambersii</u>						X	
<u>Sisymbrium altissimum</u>	X					X	
<u>Stanleya pinnata</u>	X					X	
CACTACEAE							
<u>Opuntia erinacea</u>	X	X	X	X			X
CHENOPODIACEAE							
<u>Atriplex canescens</u>			X		X		X
<u>Atriplex confertifolia</u>	X					X	
<u>Ceratoides lanata</u>	X	X	X	X	X	X	X
<u>Grayia spinosa</u>		X	X	X		X	
<u>Halogeton glomeratus</u>	X					X	
<u>Salsola iberica</u>	X	X	X	X	X	X	X
EPHEDRACEAE							
<u>Ephedra nevadensis</u>		X		X	X		X

TABLE 3-22 (Cont.)

Species	Shelter site						CMF 2
	4	11	12	13	14	18	
FABACEAE							
<u>Astragalus lentiginosus</u>	X	X	X	X	X	X	
<u>Astragalus mollissimus</u>		X	X	X	X		X
HYDROPHYLLACEAE							
<u>Phacelia crenulata</u>	X					X	
MALVACEAE							
<u>Sphaeralcea grossulariifolia</u>		X	X		X		X
<u>Sphaeralcea</u> sp.	X	X		X	X	X	
ONAGRACEAE							
<u>Camissonia</u> sp.						X	
POACEAE							
<u>Aristida purpurea</u>	X					X	
<u>Bouteloua gracilis</u>				X			
<u>Hilaria jamesii</u>	X	X			X	X	
<u>Oryzopsis hymenoides</u>	X	X	X	X	X	X	X
<u>Sitanion hystrix</u>	X	X	X			X	
<u>Sporobolus</u> sp.							X
<u>Stipa comata</u>		X		X	X	X	X
POLEMONIACEAE							
<u>Leptodactylon pungens</u>		X					
POLYGONACEAE							
<u>Eriogonum cernuum</u>	X	X	X	X		X	X
<u>Eriogonum deflexum</u>	X					X	
<u>Eriogonum</u> sp.			X	X			X
ROSACEAE							
<u>Prunus fasciculata</u>						X	

TABLE 3-23

PLANT SPECIES OBSERVED ON RESURVEYED
PINE CLUSTER 3 SITES
June - July 1981

Species	Shelter site													
	3	6	7	8	9	10	13	15	18	19	20	21	22	23
AGAVACEAE														
<u>Yucca</u> sp.					X									
ASTERACEAE														
<u>Ambrosia</u> sp.						X	X				X	X	X	X
<u>Artemisia</u> <u>spinescens</u>	X	X	X		X			X	X					
<u>Brickellia</u> <u>oblongifolia</u>					X				X					
<u>Chaenactis</u> sp.			X		X			X	X	X				
<u>Chrysothamnus</u> <u>greenei</u>	X	X	X	X	X	X	X				X		X	X
<u>Chrysothamnus</u> <u>nauseosus</u>			X		X	X								
<u>Chrysothamnus</u> <u>nauseosus</u> spp. <u>turbinatus</u>							X							
<u>Chrysothamnus</u> <u>viscidiflorus</u>							X					X		
<u>Cirsium</u> sp.			X											
<u>Erigeron</u> <u>pumilus</u>			X		X									
<u>Gutierrezia</u> <u>sarothrae</u>	X	X	X		X				X	X				
<u>Leucelene</u> <u>ericoides</u>													X	
<u>Machaeranthera</u> <u>canescens</u>	X	X	X	X	X		X		X	X	X		X	
<u>Malacothrix</u> <u>sonchoides</u>						X	X							X
<u>Senecio</u> sp.									X					
<u>Stephanomeria</u> <u>exigua</u>						X								X
<u>Stephanomeria</u> sp.			X		X					X	X	X	X	X
<u>Tetradymia</u> <u>axillaris</u>					X				X					
<u>Tetradymia</u> <u>spinosa</u>				X				X	X	X				
<u>Townsendia</u> sp.		X			X				X					
BORAGINACEAE														
<u>Cryptantha</u> sp.			X											X
<u>Lappula</u> <u>occidentalis</u>	X	X	X		X				X					
<u>Tiquilia</u> <u>nuttallii</u>						X					X	X		
BRASSICACEAE														
<u>Descurainia</u> sp.	X			X		X	X	X						
<u>Lepidium</u> <u>montanum</u>	X	X	X		X				X	X				
<u>Physaria</u> <u>chambersii</u>		X	X		X			X	X					

TABLE 3-23 (Cont.)

Species	Shelter site													
	3	6	7	8	9	10	13	15	18	19	20	21	22	23
CACTACEAE														
<u>Coryphantha vivipara</u>			X			X								
<u>Opuntia erinacea</u>	X	X	X	X	X					X	X		X	X
CHENOPODIACEAE														
<u>Atriplex canescens</u>					X	X	X			X	X	X	X	X
<u>Atriplex confertifolia</u>	X	X	X	X	X			X	X					
<u>Ceratoides lanata</u>	X	X	X	X	X				X	X	X		X	X
<u>Grayia spinosa</u>					X			X	X	X			X	
<u>Halogeton glomeratus</u>	X	X	X	X	X			X		X	X		X	
<u>Kochia americana</u>					X	X			X					
<u>Salsola iberica</u>	X	X	X	X		X	X	X	X	X	X	X	X	X
<u>Sarcobatus vermiculatus</u>					X									
EPHEDRACEAE														
<u>Ephedra nevadensis</u>		X	X		X				X				X	
FABACEAE														
<u>Astragalus lentiginosus</u>					X	X		X		X	X	X	X	
<u>Astragalus mollissimus</u>											X			
<u>Astragalus sp.</u>						X						X	X	
HYDROPHYLLACEAE														
<u>Phacelia crenulata</u>		X	X	X	X			X	X		X		X	X
LOASACEAE														
<u>Mentzelia sp.</u>						X								
MALVACEAE														
<u>Sphaeralcea grossulariifolia</u>						X	X				X	X	X	X
<u>Sphaeralcea sp.</u>	X	X	X		X	X			X	X			X	
NYCTAGINACEAE														
<u>Abronia sp.</u>						X	X						X	X

TABLE 3-23 (Cont.)

Species	Shelter site													
	3	6	7	8	9	10	13	15	18	19	20	21	22	23
ONAGRACEAE														
<u>Oenothera pallida</u>						X	X				X	X	X	X
PAPAVERACEAE														
<u>Argemone munita</u>					X									
POACEAE														
<u>Aristida purpurea</u>			X	X		X	X	X	X	X	X	X	X	X
<u>Bouteloua gracilis</u>			X			X			X					
<u>Bouteloua sp.</u>						X			X					
<u>Bromus tectorum</u>		X	X	X		X			X					
<u>Erioneuron sp.</u>									X	X				
<u>Hilaria jamesii</u>		X	X	X	X	X	X	X	X	X	X	X	X	X
<u>Oryzopsis hymenoides</u>		X	X	X	X	X	X	X	X	X	X	X		X
<u>Sitanion hystrix</u>		X	X	X		X				X				
<u>Sporobolus airoides</u>						X								
<u>Sporobolus contractus</u>			X			X	X	X			X	X	X	X
<u>Sporobolus cryptandrus</u>				X		X		X	X					
<u>Stipa comata</u>		X	X		X		X	X		X		X	X	X
<u>Stipa coronata</u>									X					
<u>Stipa sp.</u>		X	X	X	X	X	X	X		X	X		X	X
POLEMONIACEAE														
<u>Gilia sp.</u>						X								
<u>Leptodactylon pungens</u>						X								
POLYGONACEAE														
<u>Eriogonum cernuum</u>		X		X	X				X	X	X	X		
<u>Eriogonum deflexum</u>			X						X	X				
<u>Eriogonum sp.</u>						X	X					X	X	
ROSACEAE														
<u>Prunus fasciculata</u>						X	X					X		X

TABLE 3-24

PLANT SPECIES OBSERVED ON RESURVEYED
PINE CLUSTER 4 SITES
June - July 1981

Species	Shelter site						
	1	7	9	10	12	14	22
ASTERACEAE							
<u>Artemisia nova</u>	X	X		X			
<u>Artemisia spinescens</u>							X
<u>Brickellia oblongifolia</u>		X					
<u>Chaenactis sp.</u>				X			
<u>Chrysothamnus nauseosus</u>	X	X		X			
<u>Chrysothamnus sp.</u>	X	X		X			X
<u>Gutierrezia sarothrae</u>	X		X	X	X	X	
<u>Gutierrezia sp.</u>	X	X	X	X	X	X	X
<u>Erigeron pumilus</u>				X	X	X	
<u>Leucelene ericoides</u>	X						
<u>Iva axillaris</u>	X						
<u>Haplopappus acaulis</u>	X						
<u>Hymenopappus filifolia</u>		X					
<u>Machaeranthera canescens</u>					X	X	
<u>Senecio multilobatus</u>				X			
<u>Tetradymia sp.</u>				X			
<u>Townsendia sp.</u>					X		
BORAGINACEAE							
<u>Cryptantha sp.</u>				X			
<u>Lappula occidentalis</u>		X	X	X	X	X	X
BRASSICACEAE							
<u>Descurainia sp.</u>				X			
<u>Lepidium montanum</u>		X		X	X		X
<u>Lepidium densiflorum</u>					X	X	
<u>Sisymbrium altissimum</u>							X
CACTACEAE							
<u>Coryphantha vivipara</u>	X	X	X	X			
<u>Opuntia erinacea</u>	X	X	X	X	X	X	X
<u>Opuntia sp.</u>	X			X			

TABLE 3-24 (Cont.)

Species	Shelter site						
	1	7	9	10	12	14	22
CHENOPODIACEAE							
<u>Atriplex canescens</u>	X	X		X			X
<u>Atriplex confertifolia</u>					X	X	
<u>Ceratoides lanata</u>	X	X	X	X	X	X	X
<u>Grayia spinosa</u>	X						
<u>Halogeton glomeratus</u>					X	X	X
<u>Salsola iberica</u>					X	X	
CUPRESSACEAE							
<u>Juniperus osteosperma</u>			X				
EPHEDRACEAE							
<u>Ephedra nevadensis</u>	X	X	X	X		X	
FABACEAE							
<u>Astragalus lentiginosus</u>	X						
<u>Astragalus newberryi</u>	X	X		X			
<u>Astragalus calycosus</u>			X				
HYDROPHYLLACEAE							
<u>Phacelia crenulata</u>						X	
MALVACEAE							
<u>Sphaeralcea caespitosa</u>				X			
<u>Sphaeralcea grossulariifolia</u>	X	X		X	X	X	
<u>Sphaeralcea sp.</u>		X	X		X	X	X
NYCTAGINACEAE							
<u>Mirabilis sp.</u>	X						
ONAGRACEAE							
<u>Oenothera sp.</u>				X			

TABLE 3-24 (Cont.)

Species	Shelter site						
	1	7	9	10	12	14	22
PAPAVERACEAE							
<u>Argemone munita</u>				X			
POACEAE							
<u>Agropyron smithii</u>	X						
<u>Aristida purpurea</u>	X				X		
<u>Bouteloua gracilis</u>	X	X	X	X		X	X
<u>Bromus tectorum</u>	X	X	X		X	X	X
<u>Erioneuron pilosum</u>				X			
<u>Hilaria jamesii</u>	X				X	X	X
<u>Oryzopsis hymenoides</u>	X	X	X	X	X	X	X
<u>Sitanion hystrix</u>	X	X		X	X	X	X
<u>Sporobolus cryptandrus</u>			X		X	X	
<u>Sporobolus flexuosus</u>			X				
<u>Sporobolus sp.</u>	X	X	X			X	
<u>Stipa comata</u>	X	X	X	X			
<u>Stipa sp.</u>	X	X	X	X			X
<u>Vulpia octoflora</u>			X				
POLEMONIACEAE							
<u>Gilia polycladon</u>						X	
<u>Leptodactylon pungens</u>						X	
POLYGONACEAE							
<u>Eriogonum cernuum</u>							X
<u>Eriogonum deflexum</u>						X	X
<u>Eriogonum ovalifolium</u>	X			X			
<u>Eriogonum shockleyi</u>				X			
<u>Eriogonum sp.</u>						X	
SCROPHULARIACEAE							
<u>Penstemon nanus</u>				X			

TABLE 3-25

PLANT SPECIES OBSERVED ON RESURVEYED
PINE CLUSTER 5 SITES
June - July 1981

Species	Shelter site						
	2	8	11	12	13	16	23
ASTERACEAE							
<u>Artemisia nova</u>		X				X	X
<u>Artemisia spinescens</u>	X						X
<u>Artemisia tridentata</u>	X	X	X	X	X	X	X
<u>Chaenactis douglasii</u>		X	X	X		X	
<u>Chaenactis sp.</u>		X	X	X		X	
<u>Chrysothamnus sp.</u>	X	X	X	X	X	X	X
<u>Erigeron pumilus</u>						X	
<u>Leucelene ericoides</u>					X		
<u>Machaeranthera canescens</u>						X	
<u>Townsendia sp.</u>		X					
BORAGINACEAE							
<u>Cryptantha sp.</u>		X		X		X	
<u>Lappula occidentalis</u>			X				
BRASSICACEAE							
<u>Arabis holboelli</u>						X	
<u>Arabis sp.</u>		X					
<u>Descurainia sp.</u>		X	X	X	X	X	
<u>Physaria chambersii</u>	X		X	X		X	X
<u>Sisymbrium altissimum</u>	X	X	X	X			X
<u>Streptanthus cordatus</u>		X				X	
CACTACEAE							
<u>Opuntia erinacea</u>	X	X	X	X	X	X	X
CHENOPODIACEAE							
<u>Ceratoides lanata</u>	X	X					
<u>Grayia spinosa</u>	X	X			X		X

TABLE 3-25 (Cont.)

Species	Shelter site						
	2	8	11	12	13	16	23
CUPRESSACEAE							
<u>Juniperus osteosperma</u>				X	X	X	
EPHEDRACEAE							
<u>Ephedra nevadensis</u>	X	X	X	X	X	X	X
FABACEAE							
<u>Astragalus lentiginosus</u>	X	X	X	X	X	X	X
<u>Astragalus newberryi</u>	X						
<u>Astragalus calycosus</u>						X	
HYDROPHYLLACEAE							
<u>Phacelia crenulata</u>	X						X
MALVACEAE							
<u>Sphaeralcea grossulariifolia</u>					X		
<u>Sphaeralcea sp.</u>	X	X		X	X		X
PINACEAE							
<u>Pinus monophylla</u>						X	
OROBANCHACEAE							
<u>Orobanche sp.</u>		X					
POACEAE							
<u>Aristida purpurea</u>	X	X		X	X		X
<u>Bouteloua gracilis</u>	X			X			X
<u>Hilaria jamesii</u>	X	X		X	X		X
<u>Oryzopsis hymenoides</u>	X	X	X	X	X	X	X
<u>Sitanion hystrix</u>	X	X	X	X	X	X	X
<u>Stipa sp.</u>	X	X		X			X

TABLE 3-25 (Cont.)

Species	Shelter site						
	2	8	11	12	13	16	23
POLEMONIACEAE							
<u>Gilia</u> sp.		X	X				X
<u>Ipomopsis congesta</u>							X
POLYGONACEAE							
<u>Eriogonum cernuum</u>							X
<u>Eriogonum microthecum</u>							X
<u>Eriogonum ovalifolium</u>	X	X	X	X	X		X
SCROPHULARIACEAE							
<u>Penstemon confusus</u>		X		X	X		X

3.4 PINE VALLEY WILDLIFE

Mammal species observed in Pine Valley were all species common to the area. The majority of mammals or mammal sign observed were coyote, antelope, kit fox and black-tailed jackrabbit. Antelope sign was especially abundant in Clusters 4 and 5, and one mule deer was observed in Cluster 5. Numerous large and small burrows indicated the presence of other, unidentified mammal species throughout the valley. The Cluster 5 area appeared to support a greater number of mammal species than the other clusters, even though the number of sites resurveyed was fewer. This supports observations made during the initial survey.

Bird species or sign observed included Brewer's and black-throated sparrows, horned larks, flickers, nighthawks, sage grouse, mourning doves, an unidentified buteo and a burrowing owl. Four of the 7 sites in Cluster 5 showed evidence of sage grouse use. Nearly twice as many bird species were noted in Cluster 5, in spite of the fact that only 7 sites were surveyed in this Cluster compared to as many as 13 sites in other clusters. Again, this supports the observations of the fall survey concerning the relatively greater importance of this cluster to a variety of wildlife.

Reptiles observed were limited to 4 species of lizards, all commonly found in the desert environment.

No threatened or endangered species were observed, although many animals protected as game species, furbearers, or migratory birds were observed in the valley. Animal sign and sightings on the Pine Valley sites are listed in Tables 3-26 through 3-30.

TABLE 3-26

ANIMAL SIGN AND SIGHTINGS
PINE VALLEY CLUSTER 1 RESURVEY
June - July 1981

	Shelter Site Number							
	3	4	10	14	16	20	21	
<u>Mammals</u>								
Domestic cattle	X	X						
Badger den	2				1			
Blacktailed jackrabbit		1	1	1			3	
Rabbit			X	X	X		X	
Large mammal burrows								
Small mammal burrows	X	X			X			
<u>Birds</u>								
Horned lark	P	P	7	4	P	P		
<u>Reptiles</u>								
Desert horned lizard					1			
Whiptail lizard	3		1		3		1	
Side-blotched lizard	4				3		2	
P = Present.								
X = Sign.								
Number = Actual Count.								

ANIMAL SIGN AND SIGHTINGS
PINE VALLEY CLUSTER 2 RESURVEY
June - July 1981

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TABLE 3-28

ANIMAL SIGN AND SIGHTINGS
PINE VALLEY CLUSTER 3 RESURVEY
June - July 1981

	3	6	7	8	9	10	12	13	15	18	19	20	21	22	23
<u>Mammals</u>															
Kit fox				X											
Kit fox den (active)					1										
Blacktailed jackrabbit				1						1			1	2	
Rabbit	X	X		X	X			X	X		X		X	X	X
Large mammal burrows							X								
Small mammal burrows	X	X	X				X			X	X	X		X	X
<u>Birds</u>															
Horned lark						4	1		P	P	P	11	P		1
Black-throated sparrow	P	P	P	P											
Mourning dove	1				1										1
Unidentified buteo						2							2		
<u>Reptiles</u>															
Whiptail lizard			3	5		5		3			2	2	1	1	
Leopard lizard		1	2								3	1		1	1
Side-blotched lizard	12	14	18	2	20		2			19	3	4	3	2	
Desert horned lizard												4			

P = Present.

X = Sign.

Number = Actual Count.

TABLE 3-29

ANIMAL SIGN AND SIGHTINGS
PINE VALLEY CLUSTER 4 RESURVEY
June - July 1981

	Shelter Site Number									
	1	7	9	10	12	14	22			
<u>Mammals</u>										
Antelope	X				X	X	X			
Coyote				X						
Badger den (active)							1			
Blacktailed jackrabbit	1	1	1	2						
Rabbit	X	X					X			
Small mammal burrows			X	X	X	X	X			
<u>Birds</u>										
Horned lark	P			P	P	P	P			
Black-throated sparrow		P	P							
<u>Reptiles</u>										
Leopard lizard							1			
Side-blotched lizard	3	4	4	4	1	20	7			
P = Present.										
X = Sign.										
Number = Actual Count.										

TABLE 3-30

ANIMAL SIGN AND SIGHTINGS
PINE VALLEY CLUSTER 5 RESURVEY
June - July 1981

	Shelter Site Number									
	2	8	11	12	13	16	23			
Mammals										
Antelope	X		X	X	X		X		X	
Coyote	X	X					X		X	
Blacktailed jackrabbit	5	2	1	5						
Rabbit	X	X	X	X	X		X		X	
Mule deer										1
Chipmunk			1							
Small mammal burrows				X	X					
Birds										
Brewer's sparrow				3					P	
Horned lark	P	P	P	P						
Sage sparrow		1								
Sage grouse		X		X	X				X	
Common nighthawk			4		3					
Mourning dove							2			
Common flicker					2					
Reptiles										
Whiptail lizard	2			1						1
Leopard lizard	2									3
Side-blotched lizard	1	1	3	3	5					2

P = Present.

X = Sign.

Number = Actual Count.

3.5 WAH WAH VALLEY VEGETATION

Thirteen plants previously identified to the genus level were further identified to the species level, and 19 additional genera not observed during the fall survey were identified, most to the species level.

A large population of Eriogonum natum, a species Currently Under Review, Category 1, in the 1980 Federal Register, was observed on site 5/13 and tentatively identified from CMF.

Coryphantha vivipara was definitely identified as variety rosea, a Currently Under Review Category 2 species in the 1980 Federal Register. Single individuals were observed on sites 5/6 and 5/23. An unidentified individual, probably also variety rosea, was found on site 2/10.

Plant species identified on Wah Wah Valley sites are listed in Tables 3-31 through 3-35.

TABLE 3-31

PLANT SPECIES OBSERVED ON RESURVEYED
WAH WAH CLUSTER 1 SITES
June - July 1981

Species	Shelter site					
	12	13	17	21	22	23
ASTERACEAE						
<u>Artemisia nova</u>						X
<u>Artemisia spinescens</u>					X	
<u>Artemisia tridentata</u>				X	X	
<u>Chaenactis</u> sp.	X			X		X
<u>Chrysothamnus greenei</u>		X				
<u>Chrysothamnus nauseosus</u>					X	
<u>Chrysothamnus</u> sp.		X	X	X	X	X
<u>Gutierrezia</u> sp.				X	X	
<u>Machaeranthera canescens</u>	X					
BORAGINACEAE						
<u>Lappula occidentalis</u>	X					
BRASSICACEAE						
<u>Descurainia</u> sp.	X				X	
<u>Lepidium montanum</u>					X	
CACTACEAE						
<u>Opuntia erinacea</u>	X	X	X	X	X	X
CHENOPODIACEAE						
<u>Atriplex canescens</u>				X	X	X
<u>Ceratoides lanata</u>	X	X	X	X	X	X
<u>Grayia spinosa</u>	X				X	
<u>Kochia scoparia</u>	X					
<u>Halogeton glomeratus</u>			X			
<u>Salsola iberica</u>	X	X	X	X	X	
EPHEDRACEAE						
<u>Ephedra nevadensis</u>			X	X	X	X

TABLE 3-31 (Cont.)

Species	Shelter site					
	12	13	17	21	22	23
FABACEAE						
<u>Astragalus chamaemeniscus</u>				X		
<u>Astragalus lentiginosus</u>		X	X	X	X	X
<u>Astragalus newberryi</u>					X	X
<u>Astragalus</u> sp.			X			
LOASACEAE						
<u>Mentzelia</u> sp.	X					
MALVACEAE						
<u>Sphaeralcea grossulariifolia</u>	X	X	X			
<u>Sphaeralcea</u> sp.	X	X	X	X	X	X
ONAGRACEAE						
<u>Oenothera</u> sp.	X					
POACEAE						
<u>Aristida purpurea</u>			X	X	X	
<u>Bromus tectorum</u>	X	X	X	X	X	X
<u>Hilaria jamesii</u>	X	X	X	X	X	X
<u>Oryzopsis hymenoides</u>	X	X	X	X	X	X
<u>Sitanion hystrix</u>	X			X	X	X
<u>Sporobolus cryptandrus</u>	X			X		X
<u>Sporobolus</u> sp.	X		X			
<u>Stipa comata</u>				X	X	X
<u>Stipa</u> sp.		X				
POLEMONIACEAE						
<u>Gilia polycladon</u>	X					
<u>Gilia</u> sp.	X				X	X
<u>Leptodactylon pungens</u>					X	
<u>Phlox</u> sp.					X	

TABLE 3-31 (Cont.)

Species	Shelter site					
	12	13	17	21	22	23
POLYGONACEAE						
<u>Eriogonum cernuum</u>	X				X	
<u>Eriogonum microthecum</u>					X	
<u>Eriogonum ovalifolium</u>					X	

TABLE 3-32

PLANT SPECIES OBSERVED ON RESURVEYED
WAH WAH CLUSTER 2 SITES
June - July 1981

Species	Shelter site						
	1	9	10	11	12	15	21
ASTERACEAE							
<u>Artemisia spinescens</u>	X	X	X	X	X		
<u>Chaenactis douglassii</u>		X					X
<u>Chrysothamnus greenii</u>							X
<u>Chrysothamnus sp.</u>	X	X	X	X	X	X	X
<u>Gutierrezia sarothrae</u>						X	
<u>Gutierrezia sp.</u>			X			X	
<u>Leucelene ericoides</u>						X	
<u>Machaeranthera canescens</u>		X	X	X	X		
<u>Tetradymia glabrata</u>		X	X	X	X	X	
<u>Tetradymia spinosa</u>	X	X		X	X		
<u>Tetradymia sp.</u>						X	
<u>Townsendia florifer</u>	X				X		
BORAGINACEAE							
<u>Cryptantha sp.</u>		X	X	X	X		
<u>Lappula occidentalis</u>	X						X
<u>Lappula sp.</u>	X	X	X	X	X		X
BRASSICACEAE							
<u>Descurainia pinnata</u>	X						
<u>Descurainia sp.</u>	X	X	X	X	X		X
<u>Lepidium densiflorum</u>	X					X	
<u>Lepidium montanum</u>	X	X	X	X	X	X	X
<u>Lepidium sp.</u>		X					
<u>Sisymbrium altissimum</u>				X		X	
<u>Stanleya pinnata</u>		X		X			
CACTACEAE							
<u>Opuntia erinacea</u>	X	X	X			X	X
<u>Coryphantha vivipara</u>			X				
CHENOPODIACEAE							
<u>Atriplex canescens</u>			X	X		X	X
<u>Atriplex confertifolia</u>	X	X	X	X	X	X	
<u>Ceratoides lanata</u>	X	X	X	X	X	X	X

TABLE 3-32 (Cont.)

Species	Shelter site						
	1	9	10	11	12	15	21
CHENOPODIACEAE (Cont.)							
<u>Halogeton glomeratus</u>	X	X		X	X		
<u>Kochia americana</u>	X	X					
<u>Salsola iberica</u>	X						X
<u>Suaeda torreyana</u>		X					
EPHEDRACEAE							
<u>Ephedra nevadensis</u>		X	X	X		X	
EUPHORBIACEAE							
<u>Euphorbia</u> sp.			X	X			
FABACEAE							
<u>Astragalus lentiginosus</u>	X		X	X	X		X
<u>Astragalus</u> sp.						X	
HYDROPHYLLACEAE							
<u>Phacelia crenulata</u>				X			
LOASACEAE							
<u>Mentzelia</u> sp.	X						
MALVACEAE							
<u>Sphaeralcea grossulariifolia</u>	X	X	X	X	X	X	X
<u>Sphaeralcea</u> sp.		X	X	X	X	X	
NYCTAGINACEAE							
<u>Abronia fragrans</u>			X				
ONAGRACEAE							
<u>Oenothera</u> sp.				X			

TABLE 3-32 (Cont.)

Species	Shelter site						
	1	9	10	11	12	15	21
POACEAE							
<u>Aristida purpurea</u>						X	
<u>Bromus tectorum</u>	X	X	X	X	X	X	X
<u>Hilaria jamesii</u>	X	X	X	X	X	X	X
<u>Oryzopsis hymenoides</u>	X	X	X	X	X	X	X
<u>Sitanion hystrix</u>		X					
<u>Sporobolus cryptandrus</u>							X
POLEMONIACEAE							
<u>Gilia</u> sp.				X			X
<u>Leptodactylon pungens</u>			X	X			
<u>Leptodactylon</u> sp.			X	X			
POLYGONACEAE							
<u>Eriogonum cernuum</u>	X			X			
<u>Eriogonum deflexum</u>							X
<u>Eriogonum microthecum</u>			X	X			
<u>Eriogonum shockleyi</u>			X	X	X		
<u>Eriogonum</u> sp.	X					X	
SCROPHULARIACEAE							
<u>Penstemon dolius</u>				X			

TABLE 3-33

PLANT SPECIES OBSERVED ON RESURVEYED
WAH WAH CLUSTER 3 SITES
June - July 1981

Species	Shelter site																		CMF3
	2	3	4	6	7	8	10	11	12	13	14	15	18	21	22	23			
ASTERACEAE																			
<u>Ambrosia</u> sp.																			X
<u>Artemisia</u> nova						X	X					X			X	X			
<u>Artemisia</u> spinescens	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X			X
<u>Chaenactis</u> sp.			X		X	X	X	X			X	X	X						
<u>Chrysothamnus</u> greenei									X										X
<u>Chrysothamnus</u> nauseosus																	X		
<u>Chrysothamnus</u> sp.	X	X	X	X	X	X	X	X	X	X		X		X	X	X			X
<u>Gutierrezia</u> sarothrae																X	X		
<u>Gutierrezia</u> sp.		X	X	X	X	X	X	X	X	X		X	X			X	X		
<u>Erigeron</u> pumilus																X			
<u>Leucelene</u> ericoides									X										
<u>Machaeranthera</u> canescens				X		X		X	X		X	X		X	X				X
<u>Stephanomeria</u> exigua														X					
<u>Stephanomeria</u> sp.	X	X	X					X											X
<u>Tetradymia</u> axillaris								X									X		
<u>Tetradymia</u> glabrata	X	X	X	X	X	X	X	X	X	X	X	X		X		X			X
<u>Tetradymia</u> spinosa	X	X	X	X	X	X	X				X		X	X	X				
<u>Townsendia</u> florifer					X	X	X				X		X		X				
<u>Townsendia</u> sp.			X	X	X	X		X				X							
BORAGINACEAE																			
<u>Cryptantha</u> sp.					X	X	X	X	X	X		X							
<u>Lappula</u> occidentalis									X	X		X	X	X					X
BRASSICACEAE																			
<u>Caulanthus</u> crassicaulis											X		X						
<u>Caulanthus</u> pilosus																			X
<u>Descurainia</u> sp.	X	X	X		X	X	X	X	X	X	X		X						X
<u>Lepidium</u> montanum	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				X
<u>Malcolmia</u> africana						X													
<u>Sisymbrium</u> altissimum																X			X
<u>Sisymbrium</u> sp.	X	X			X	X	X												
<u>Stanleya</u> pinnata			X							X	X								X

TABLE 3-33 (Cont.)

Species	Shelter site																	CMF3
	2	3	4	6	7	8	10	11	12	13	14	15	18	21	22	23		
CACTACEAE																		
<u>Echinocereus engelmannii</u>					X													
<u>Opuntia erinacea</u>	X	X	X	X	X	X		X				X		X	X	X		
CHENOPODIACEAE																		
<u>Atriplex canescens</u>				X	X												X	
<u>Atriplex confertifolia</u>	X	X	X	X	X	X	X		X		X	X	X	X	X	X	X	
<u>Ceratoides lanata</u>	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	
<u>Grayia spinosa</u>			X	X				X									X	
<u>Halogeton glomeratus</u>	X		X			X	X	X	X	X	X	X	X	X	X		X	
<u>Kochia americana</u>				X			X				X							
<u>Salsola iberica</u>	X		X			X		X			X					X	X	
<u>Sarcobatus vermiculatus</u>	X																	
EPHEDRACEAE																		
<u>Ephedra nevadensis</u>		X	X	X	X	X	X	X	X	X	X	X		X		X	X	
EUPHORBIACEAE																		
<u>Euphorbia</u> sp.			X							X								
FABACEAE																		
<u>Astragalus lentiginosus</u>	X	X	X	X	X			X			X	X		X			X	
<u>Astragalus newberryi</u>							X		X			X				X		
<u>Astragalus</u> sp.	X								X								X	
GERANIACEAE																		
<u>Erodium cicutarium</u>		X	X				X											
HYDROPHYLLACEAE																		
<u>Phacelia crenulata</u>			X						X								X	
MALVACEAE																		
<u>Sphaeralcea grossulariifolia</u>		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
<u>Sphaeralcea</u> sp.	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		

TABLE 3-33 (Cont.)

Species	Shelter site																	CMF3
	2	3	4	6	7	8	10	11	12	13	14	15	18	21	22	23		
ONAGRACEAE																		
<u>Oenothera</u> sp.								X										
POACEAE																		
<u>Aristida purpurea</u>			X			X	X					X						
<u>Bromus tectorum</u>	X	X	X	X	X	X	X			X	X	X	X	X	X	X	X	
<u>Erioneuron</u> sp.		X								X	X							
<u>Hilaria jamesii</u>		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
<u>Oryzopsis hymenoides</u>	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
<u>Bouteloua gracilis</u>		X																
<u>Sitanion hystrix</u>		X	X	X	X	X	X	X	X				X	X	X		X	
<u>Sporobolus cryptandrus</u>																X		
<u>Sporobolus</u> sp.													X	X		X		
<u>Stipa comata</u>																	X	
<u>Stipa</u> sp.		X				X							X		X		X	
POLEMONIACEAE																		
<u>Gilia</u> sp.									X								X	
<u>Ipomopsis congesta</u>									X									
<u>Leptodactylon pungens</u>		X				X	X			X	X						X	
<u>Leptodactylon</u> sp.		X			X	X				X								
POLYGONACEAE																		
<u>Eriogonum cernuum</u>		X						X										
<u>Eriogonum deflexum</u>		X		X				X	X			X						
<u>Eriogonum microthecum</u>						X	X										X	
<u>Eriogonum shockleyi</u>						X	X			X	X		X					
<u>Eriogonum</u> sp.												X		X				
SCROPHULARIACEAE																		
<u>Penstemon dolius</u>												X						

TABLE 3-34

PLANT SPECIES OBSERVED ON RESURVEYED
WAH WAH CLUSTER 4 SITES
June - July 1981

Species	Shelter site												
	1	5	6	9	10	11	13	14	17	18	20	21	23
ASTERACEAE													
<u>Ambrosia</u> sp.													X
<u>Artemisia nova</u>					X								X
<u>Artemisia spinescens</u>	X	X		X	X		X	X	X	X	X		X
<u>Chaenactis</u> sp.		X							X				
<u>Chrysothamnus greenei</u>	X		X	X		X	X	X	X	X	X	X	X
<u>Chrysothamnus</u> sp.	X		X	X	X	X	X	X	X	X	X	X	X
<u>Erigeron pumilus</u>										X			
<u>Gutierrezia sarothrae</u>				X	X		X					X	X
<u>Machaeranthera canescens</u>	X			X					X		X	X	X
<u>Malacothrix sonchoides</u>										X			
<u>Stephanomeria exigua</u>				X			X			X		X	X
<u>Tetradymia glabrata</u>	X	X	X	X	X	X		X		X	X	X	X
<u>Townsendia florifer</u>							X				X		
BORAGINACEAE													
<u>Cryptantha</u> sp.	X	X		X	X		X				X		X
<u>Lappula occidentalis</u>	X	X		X	X	X		X	X	X	X		
<u>Tiquilia nuttallii</u>		X											
BRASSICACEAE													
<u>Caulanthus crassicaulis</u>			X				X						
<u>Caulanthus pilosus</u>	X	X					X		X				
<u>Descurainia pinnata</u>		X		X						X			
<u>Descurainia</u> sp.	X	X	X	X						X			
<u>Lepidium montanum</u>	X	X		X	X	X	X	X	X	X	X	X	X
<u>Sisymbrium altissimum</u>												X	
<u>Stanleya pinnata</u>					X							X	X
CACTACEAE													
<u>Opuntia erinacea</u>				X		X	X						
CHENOPODIACEAE													
<u>Atriplex canescens</u>	X						X			X		X	X
<u>Atriplex confertifolia</u>	X	X		X	X	X	X		X		X	X	X
<u>Ceratoides lanata</u>	X	X				X	X	X	X	X	X	X	X

TABLE 3-34 (Cont.)

Species	Shelter site												
	1	5	6	9	10	11	13	14	17	18	20	21	23
CHENOPODIACEAE (Cont.)													
<u>Grayia spinosa</u>												X	
<u>Halogeton glomeratus</u>	X	X	X	X	X	X	X	X	X	X	X	X	X
<u>Kochia americana</u>				X	X		X					X	
<u>Salsola iberica</u>	X	X	X					X	X	X	X	X	X
<u>Suaeda torreyana</u>												X	
EPHEDRACEAE													
<u>Ephedra nevadensis</u>	X	X	X	X	X	X	X	X	X	X	X	X	X
EUPHORBIACEAE													
<u>Euphorbia</u> sp.						X							
FABACEAE													
<u>Astragalus lentiginosus</u>	X	X	X	X	X			X		X			
<u>Astragalus</u> sp.								X					
HYDROPHYLLACEAE													
<u>Phacelia crenulata</u>		X						X	X				
LINACEAE													
<u>Linum perenne</u>						X							
LOASACEAE													
<u>Mentzelia albicaulis</u>						X							
MALVACEAE													
<u>Sphaeralcea</u>													
<u>grossulariifolia</u>	X	X		X	X		X	X	X	X	X	X	X
<u>Sphaeralcea</u> sp.	X				X			X		X	X		X

TABLE 3-34 (Cont.)

Species	Shelter site												
	1	5	6	9	10	11	13	14	17	18	20	21	23
NYCTAGINACEAE													
<u>Abronia fragrans</u>										X			
POACEAE													
<u>Aristida purpurea</u>			X									X	
<u>Bromus tectorum</u>		X	X	X			X				X	X	
<u>Distichlis spicata</u>				X							X		
<u>Hilaria jamesii</u>	X	X	X	X	X	X	X	X	X	X	X	X	X
<u>Oryzopsis hymenoides</u>	X	X	X		X	X	X	X	X	X	X	X	X
<u>Sitanion hystrix</u>		X								X		X	
<u>Stipa comata</u>												X	
POLEMONIACEAE													
<u>Gilia polycladon</u>									X	X			
<u>Gilia sp.</u>	X											X	X
<u>Ipomopsis congesta</u>				X								X	
<u>Leptodactylon pungens</u>	X										X	X	X
POLYGONACEAE													
<u>Eriogonum deflexum</u>										X			
<u>Eriogonum microthecum</u>												X	X
<u>Eriogonum shockleyi</u>				X	X						X	X	X
SANTALACEAE													
<u>Comandra umbellata</u>				X								X	

TABLE 3-35

PLANT SPECIES OBSERVED ON RESURVEYED
WAH WAH CLUSTER 5 SITES
June - July 1981

Species	Shelter site																	
	1	2	3	4	5	6	7	12	13	14	18	20	21	23	CMF5			
AGAVACEAE																		
<u>Yucca</u> sp.										X								
ASTERACEAE																		
<u>Artemisia nova</u>	X	X			X	X	X											
<u>Artemisia spinescens</u>		X	X					X	X	X						X		
<u>Artemisia tridentata</u>					X								X	X				
<u>Chaenactis</u> sp.					X	X					X					X		
<u>Chrysothamnus</u> sp.		X	X	X	X	X	X	X				X	X			X		
<u>Gutierrezia sarothrae</u>	X	X	X	X	X	X	X	X	X	X	X		X	X				
<u>Iva axillaris</u>										X								
<u>Leucelene ericoides</u>			X															
<u>Lygodesmia</u> sp.	X			X										X				
<u>Machaeranthera canescens</u>				X			X											
<u>Stephanomeria</u> sp.		X	X		X													
<u>Tetradymia axillaris</u>			X	X				X										
<u>Tetradymia glabrata</u>	X	X	X	X	X	X		X	X	X			X	X		X		
<u>Tetradymia spinosa</u>			X	X		X	X	X	X	X	X		X			X		
<u>Townsendia florifer</u>					X					X						X		
<u>Tragopogon dubius</u>										X								
BORAGINACEAE																		
<u>Cryptantha</u> sp.		X			X		X	X	X					X		X		
<u>Lappula occidentalis</u>		X	X		X			X	X	X	X	X				X		
BRASSICACEAE																		
<u>Descurainia</u> sp.					X			X	X	X		X				X		
<u>Lepidium montanum</u>	X	X	X	X			X	X	X	X		X				X		
<u>Malcolmia africana</u>			X															
<u>Sisymbrium altissimum</u>					X		X	X	X	X	X	X	X			X		
<u>Stanleya pinnata</u>					X		X											

TABLE 3-35 (Cont.)

Species	Shelter site														
	1	2	3	4	5	6	7	12	13	14	18	20	21	23	CMF5
CACTACEAE															
<u>Coryphantha vivipara</u>						X								X	
<u>Echinocereus engelmannii</u>	X			X	X		X			X	X			X	
<u>Opuntia erinacea</u>	X	X	X	X		X				X	X	X	X	X	
CHENOPODIACEAE															
<u>Atriplex canescens</u>	X	X	X												X
<u>Atriplex confertifolia</u>	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<u>Ceratoides lanata</u>	X	X	X	X	X	X	X	X	X	X		X	X	X	X
<u>Grayia spinosa</u>	X														
<u>Halogeton glomeratus</u>		X					X	X	X	X					X
<u>Kochia americana</u>		X	X			X	X	X	X						X
<u>Salsola iberica</u>												X			
<u>Suaeda torreyana</u>							X								
EPHEDRACEAE															
<u>Ephedra nevadensis</u>	X	X	X	X	X	X	X	X	X	X	X		X	X	
EUPHORBIACEAE															
<u>Euphorbia sp.</u>			X		X		X								
FABACEAE															
<u>Astragalus newberryi</u>		X	X												
<u>Astragalus toinus</u>							X								
<u>Astragalus sp.</u>										X					
GERANIACEAE															
<u>Erodium cicutarium</u>	X			X		X					X	X	X	X	
LINACEAE															
<u>Linum perenne</u>							X								

TABLE 3-35 (Cont.)

Species	Shelter site														
	1	2	3	4	5	6	7	12	13	14	18	20	21	23	CMF5
MALVACEAE															
<u>Sphaeralcea grossulariifolia</u>			X		X	X	X	X	X		X				X
<u>Sphaeralcea</u> sp.	X	X	X	X		X		X	X	X	X	X			X
ONAGRACEAE															
<u>Oenothera</u> sp.				X					X						X
POACEAE															
<u>Aristida purpurea</u>	X	X		X	X	X		X			X	X	X	X	
<u>Bromus tectorum</u>	X	X	X	X	X	X		X	X	X	X	X	X	X	X
<u>Hilaria jamesii</u>	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<u>Oryzopsis hymenoides</u>	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<u>Poa sandbergii</u>												X		X	
<u>Poa</u> sp.													X		
<u>Sitanion hystrix</u>	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<u>Sporobolus cryptandrus</u>			X												
<u>Stipa</u> sp.				X		X	X						X	X	
POLEMONIACEAE															
<u>Ipomopsis congesta</u>					X	X	X	X							
<u>Leptodactylon pungens</u>			X		X		X				X				
<u>Phlox</u> sp.							X								
POLYGONACEAE															
<u>Eriogonum microthecum</u>			X		X		X								
<u>Eriogonum natum</u>									X						X
<u>Eriogonum shockleyi</u>		X	X		X	X	X								X
<u>Eriogonum</u> sp.							X								
SANTALACEAE															
<u>Comandra umbellata</u>		X	X		X		X			X					

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3.6 WAH WAH VALLEY WILDLIFE

Mammal species observed in Wah Wah Valley were all species common to the area. The majority of the mammals observed included black-tailed jackrabbits, kit fox, badgers, coyotes, antelope and ground squirrels. Domestic cattle sign were observed in Clusters 3 and 5. Numerous large and small burrows indicated the presence of other unidentified mammal species throughout the valley.

Bird species observed included horned larks, black throated, sage, and Vesper's sparrows, ravens, golden eagles, and night-hawks. Grouse pellets were tentatively identified on site 4/20.

Reptile sightings were limited to six species of lizards and a Great Basin Rattlesnake.

Because of the wide variation in the number of sites resurveyed an accurate comparison of species numbers within the clusters could not be made.

No threatened or endangered wildlife were observed, although many species protected as game species, furbearers, migratory birds, or raptor species were observed in the valley. Animal sign and sightings on the Wah Wah Valley sites are listed in Tables 3-36 through 3-40.

TABLE 3-36

ANIMAL SIGN AND SIGHTINGS
WAH WAH VALLEY CLUSTER 1 RESURVEY
June - July 1981

	Shelter Site Number									
	12	13	17	21	22	23				
<u>Mammals</u>										
Antelope	X	X	X							
Blacktailed jackrabbit					1					
Horse					X					
Small mammal burrows	X		X	X	X					
<u>Birds</u>										
Horned lark		3	11	6	2	2				
<u>Reptiles</u>										
Whiptail lizard		2	2							
Side-blotched lizard	2	3	6	1	6	5				
Leopard lizard			1		1					

X = Sign.
Number = Actual Count.

TABLE 3-37

ANIMAL SIGN AND SIGHTINGS
WAH WAH VALLEY CLUSTER 2 RESURVEY
June - July 1981

	Shelter Site Number										
	1	9	10	11	12	15	21				
<u>Mammals</u>											
Badger				X							
Blacktailed jackrabbit	1	1	6	2		1					
Rabbit		X	X	X	X		X				
Ground squirrel					X						
Large mammal burrows			X			X					
Small mammal burrows	X	X	X	X	X	X	X				
<u>Birds</u>											
Horned lark	6	1	4	P	7		P				
<u>Reptiles</u>											
Whiptail lizard	5	6	1	1	1						
Leopard lizard	1	2	3							2	
Side-blotched lizard	1	1								2	
P = Present.											
X = Sign.											
Number = Actual Count											

TABLE 3-38

ANIMAL SIGN AND SIGHTINGS
WAH WAH VALLEY CLUSTER 3 RESURVEY
June - July 1981

	2	3	4	5	6	7	8	9	10	11	12	13	14	15	18	21	22	CMF3
Mammals																		
Domestic cattle	X												X	X			X	
Antelope										X								
Coyote						X												
Kit fox							X											
Kit fox den (active)	X																	
Badger	X																	
Blacktailed jackrabbit	X	X	5	1	3	2				4	3	3	3	3		1		8
Rabbit	X	X	X	X	X	X	X		X	X	X	X	X	X		X		X
Ground squirrel						1				1		1						
Large mammal burrows							X					X			X	X		X
Small mammal burrows	X	X	X	X	X	X				X					X			
Birds																		
Golden eagle															X			
Horned lark	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	2	P	
Black-throated sparrow																		
Sage sparrow	3															2		24
Raven						2												
Nighthawk						1												
Vesper's sparrow										1				1				
Reptiles																		
Whiptail lizard	6	3	7	6	9	1	2	6				2	3			2		1
Leopard lizard	2		2	3	1							1			5	1	1	
Short-horned lizard	3		1													1	1	1
Side-blotched lizard	2	13	10	1	1	2	1		3		3	1			2	1	4	5

P = Present.

X = Sign.

Number = Actual Count.

TABLE 3-39

ANIMAL SIGN AND SIGHTINGS
WAH WAH VALLEY CLUSTER 4 RESURVEY
June - July 1981

	1	5	6	9	10	11	13	14	17	18	20	21	23
Shelter Site Number													
<u>Mammals</u>													
Antelope							X				X	X	
Coyote							X						
Badger					X								
Blacktailed jackrabbit	4	3	19		1	1	1	2	2	3	5	7	3
Rabbit	X	X	X	X	X	X	X	X	X	X	X	X	X
Ground squirrel												1	
Large mammal burrows			X		X								
Small mammal burrows				X	X	X		X		X			
<u>Birds</u>													
Horned lark					P	P			P	P	P		
Sage sparrow													
Grouse (pellets)						X					?		
Black-throated sparrow													2
<u>Reptiles</u>													
Whiptail lizard	2	1			2	5	3	1		1	2	2	6
Leopard lizard	1	5				1	1	2		2		3	4
Side-blotched lizard	2	2				8	1	2	4		5		3
Desert horned lizard					1	2						1	

P = Present.

X = Sign.

Number = Actual Count.

? = Tentative identification.

TABLE 3-40

ANIMAL SIGN AND SIGHTINGS
WAH WAH VALLEY CLUSTER 5 RESURVEY
June - July 1981

	1	2	3	4	5	6	7	12	13	14	18	20	21	23	CMF5
<u>Mammals</u>															
Domestic cattle		X													
Antelope					X										
Kit fox den (active)															
Badger den		X						X		X		X			?
Badger															2
Blacktailed jackrabbit				2	3	2	4	2	2	2	1	1	1	4	1
Weasel															1
Rabbit		X	X	X		X	X	X	X	X	X	X	X	X	X
Ground squirrel		1													
Kangaroo rat															
Large mammal burrows					X			X		X					3
Small mammal burrows		X	X	X	X	X	X	X		X	X	X			
<u>Birds</u>															
Raven															
Horned lark		P	P	P	P	P	P	P	P	P	P	P	P	P	P
Black-throated sparrow					3										
Golden eagle					1										
<u>Reptiles</u>															
Great Basin rattlesnake				1											
Collared lizard															1
Whiptail lizard		3	5		4		1	1				1			1
Leopard lizard		6	3		3		1								
Side-blotched lizard		1	7	29	12	10	1	2		4	9	4	3		
Desert horned lizard		1		1											

P = Present.

X = Sign.

Number = Actual Count.

4.0 SUMMARY

The spring survey identified a number of plant species previously not identifiable or identified only to the genus level during the fall survey. Of these, none were threatened or endangered species, although several species listed as Currently Under Review in the 1980 Federal Register were observed.

Coryphantha vivipara was confirmed to be variety rosea, a Currently Under Review, category 2 plant. It was found in all three valleys, but a relatively high number (15) were found only on site 4/7 in Pine Valley. All other sites contained only a few scattered individuals.

A population of 25 individuals of Sphaeralcea caespitosa, a species Currently Under Review, category 1, was found on site 4/10 in Pine Valley.

A large population of Penstemon nanus, a species Currently Under Review, Category 2, was observed on site 4/10 in Pine Valley.

A large population of Eriogonum natum, a category 1 plant, was tentatively identified from Site 5/13 and CMF 5 in Wah Wah Valley.

One species, Astragalus ceramicus, is a new record for the State of Nevada.

A range extension was noted for Asclepias eastwoodiana. In Nevada it was known only from Nye and Lander counties, and has not been previously sighted in Lincoln County.

A complete listing of all species in an area will be obtained only if a number of surveys are made over a period of several years, to allow for non-germination of some species in dry years. However, it is felt that the fall and spring surveys together provide a reasonably complete listing of vegetation on the IOC valley facilities sites.

The spring survey also provided additional wildlife observations, but nothing unexpected. No threatened or endangered wildlife species were observed on or in the vicinity of the sites. Although a number of protected game species such as antelope, mule deer, and sage grouse, furbearers such as kit fox, and a number of protected bird species were observed.

This report should be viewed only as an addendum to volumes II-I and II-II, Field Surveys, IOC Valleys Biological Resources Survey, Dry Lake Valley, Nevada, and Pine and Wah Wah valleys, Utah. These volumes should be consulted in order to place spring survey data into the proper context.

APPENDIX A

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APPENDIX B

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