Diets and Habitat Analyses of Mule Deer on the 200 Areas of The Hanford Site in Southcentral Washington

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DIETS AND HABITAT ANALYSES OF
MULE DEER ON THE 200 AREAS OF
THE HANFORD SITE IN
SOUTHCENTRAL WASHINGTON

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EXECUTIVE SUMMARY

Forty-four food items were identified in the fecal pellets of the mule deer (Odocoileus hemionus hemionus) on three areas of the Hanford Site. Microscopic analysis of plant fragments indicated that bitterbrush was the most common species occurring in the diets of deer from the B-C Cribs area. Russian thistle (Salsola kali) and goldenrod (Solidago sp.) were the most abundant plants found in the fecal pellets collected from B Pond and Gable Mountain Pond habitats, respectively. The similarity in diets among the habitats was low, ranging from 10% to 16%. Preference indices of forage plants among sites were not similar (7% to 19%), indicating that deer are selecting different food plants at each site, even though many plants are common to all three sites.

The B-C Cribs, B Pond and Gable Mountain Pond habitats were characterized for canopy cover and frequency of occurrence of plant species. Twelve species were sampled in the B-C Cribs and B Pond areas; 22 species were identified on the Gable Mountain site. The most commonly occurring plant was cheatgrass (Bromus tectorum) in all three sites. The similarity in frequency and canopy cover of plants was low among sites, indicating that each site is different if these two parameters are considered.

Mule deer inhabiting the Hanford Site can serve as a pathway for movement of radioactive material from low-level radioactive waste management areas to man. Maximum levels of ^{137}Cs found in deer pellet groups collected from B Pond and Gable Mountain Pond areas were 100 pCi/g and 128 pCi/g, respectively. Background levels were reported at B-C Cribs area. Maximum ^{90}Sr values found in deer pellets at B Pond were 107 pCi/g and 184 pCi/g at Gable Mountain Pond. These values indicate that mule deer are consuming radioactive materials through the forage plants at the B Pond and Gable Mountain Pond habitats.

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INTRODUCTION

On rangelands, knowledge of the diets of herbivores and the availability of forage plants aids in formulating better management programs for both plants and animals. The diets of mule deer (Odocoileus hemionus hemionus), a common herbivore on shrub-steppe rangeland of southcentral Washington, have been estimated by microhistological examination of fecal pellets. Food habits of the mule deer in eastern Oregon on bunchgrass rangeland have been reported by Edgerton and Smith (1971). Other studies of food habits of mule deer in bunchgrass rangelands have been reported by Nellis and Ross (1969), Lovaas (1958), Morris and Schwartz (1957), and Wilkins (1957).

The purpose of this study was to determine the dietary habits of mule deer at three locations on the 200 Area plateau of the Hanford Site in south-central Washington. The study area has not been grazed by livestock since 1943, but small mammals such as the black-tailed jackrabbit (Lepus californicus) and Townsend ground squirrel (Spermophilus townsendi) utilize the area.

METHODS

The study area is located on the Department of Energy's (DOE) Hanford Site in southcentral Washington on a large plain which slopes gently toward the Columbia River. This area is described as Artemesia tridentata/Poa sandbergii associations (Daubenmire, 1970). This community has been extensively invaded by alien annuals, especially cheatgrass (Bromus tectorum), which is the dominant understory species (Cline et al., 1977). The elevation is approximately 223 m, and the area has an average annual rainfall of 16 cm. The soils are primarily Rupert sands and Burbank loamy sand (Hajek, 1966). The topography is described as gently undulating.

Three study sites were selected, each differing in plant species composition. One site (Gable Mountain Pond) is located near a 71-acre man-made pond with dense riparian vegetation (Figure 1). The second study site (B Pond) is near a 45-acre man-made pond with sparse riparian vegetation. The third site (B-C Cribs area) is located in an area of sagebrush and Sandberg bluegrass. These study areas are near chemical separation and waste management operations associated with DOE's plutonium processing facilities.

Vegetation was analyzed for species composition, canopy cover by plant species, and frequency of occurrence. Four transects, adjacent and parallel to the shoreline of the ponds, were examined at each site. Transects sampled by Cline et al. (1977) in the B-C Cribs area were also used in this study. Canopy cover and frequency of occurrence were estimated by ocular examination at 50 (2 x 5 dm, 0.1 m²) plots, systematically spaced at 1-m intervals along each 50-m line transect (Daubenmire, 1959). Canopy cover and frequency of occurrence values were summarized for each line transect. All data were collected during May 4-10, 1977.

Deer fecal pellets were collected along repeated transects located randomly within the study sites. At Gable Mountain Pond and B Pond, four transects were located adjacent and parallel to the shoreline of the ponds. The first 10 pellet groupings (recent, less than a month old and old, one month to several years) encountered along the transect were collected and individually placed in paper bags for dietary analysis. Forty pellet groups were collected at each of the pond sites. At the B-C Cribs site, two transects were randomly located within the radiation control area, and the first 10 pellet groups encountered on each transect were collected for dietary analysis. A total of 100 pellet groups was collected from all three study sites. The pellets were dried at 70 °C for 48 hours and ground through a Wiley mill (1-mm screen) to make a homogeneous sample. All fecal pellet groups, both recent and old, were collected on either July 30 or August 4, 1976.

Five slides were prepared for each pellet group after the ground sample was washed over a 0.1-mm screen (Sparks and Malechek, 1968). The slides were prepared with Hertwig's solution and Hoyer's solution and dried for approximately 72 hr at 60 °C (Baumgartner and Martin, 1939).

FIGURE 1. Map Showing the Location of the Three Study Areas, B-C Cribs, B Pond, and Gable Mountain Pond on the Hanford Site.

The slides were examined microscopically to identify the plant fragments on the basis of epidermal cell characteristics and were compared to reference plant material prepared from plant specimens identified and collected from the study areas. Twenty microscope fields were examined on each slide. All identifiable fragments were recorded, as were the unknowns. Each pellet group was individually analyzed for radionuclides by gamma energy analysis using a sodium iodide (NaI) crystal. Those pellet groups with detectable ^{137}Cs were also analyzed for ^{90}Sr by U.S. Testing Company, Richland, WA.

Statistical analyses follow Snedecor and Cochran (1967). Kulczynski's similarity indices (Oosting, 1956) and Spearman's rank correlation coefficients (r_s) (Siegel, 1956) were calculated for diet and plant communities to determine the degree of association.

Preference indices were calculated by dividing the relative frequency of a plant species in the diet by the relative frequency in the habitat. All values were rounded to the nearest one-tenth unit. Preference indices as used here are regarded only as a guide to food preferences rather than as absolute values.

RESULTS

CHARACTERIZATION OF VEGETATION

Frequency of occurrence and canopy cover provided by plants within three study areas are presented in Table 1. A total of 12 species was sampled in the B-C Cribs and B Pond areas; 22 species were present on the Gable Mountain site. The most commonly occurring plant at all three sites was cheatgrass (Bromus tectorum). Tansy mustard (Descurainia pinnata) and Russian thistle (Salsola kali) were the most common forbs present at the B-C Cribs and B Pond areas, respectively. Matted cryptantha (Cryptantha circumscissa) was the most common forb at the Gable Mountain Pond study area. Big sagebrush (Artemesia tridentata) was abundant in the B-C Cribs and B Pond areas, and hopsage (Atriplex spinosa) was the dominant shrub at the Gable Mountain Pond area.

Grasses and grass-like plants provided 17%, 14% and 6% of the canopy cover on the Gable Mountain Pond, B Pond and B-C Cribs study areas, respectively (Table 1). Forbs contributed less canopy cover than the grasses and grass-like plants. Gable Mountain study area had the largest forb canopy cover, 10%. Forbs provided only 2% of the cover at the B-C Cribs area.

Shrubs dominated the three study areas, with the highest canopy cover occurring on the B-C Cribs site (17%) and the least at Gable Mountain Pond (5%). Sagebrush and hopsage were the major shrubs present on these areas. Canopy cover averaged 52% in the three areas; bare ground averaged approximately 48%. Further analyses are presented in Appendix A.

DEER DIETS

Forty-four plants were identified in the fecal pellets of deer collected from the three areas (Table 2). Frequency of occurrence values show that

TABLE 1. Frequency of Occurrence and Canopy Cover of Plants Within Three Habitat Sites Used by Mule Deer During 1977 on the Hanford Site

	Frequency of Occurrence (N=4) %		Canopy Cover (N=4)	
	B-C Crips	B Pond	B Pond	Gable Pond
	$\bar{X} \pm SE$	$\bar{X} \pm SE$	$\bar{X} \pm SE$	$\bar{X} \pm SE$
<u>Grasses and Grass-like Plants</u>				
Cheatgrass (<u>Bromus tectorum</u>)	51.0 $\pm$ 6.3	48.0 $\pm$ 16.9	46.5 $\pm$ 17.6	2.4 $\pm$ 0.7
Sandberg bluegrass (<u>Poa sandbergii</u>)	17.0 $\pm$ 5.1	25.0 $\pm$ 21.8	18.5 $\pm$ 17.8	3.4 $\pm$ 1.7
Sixweek fescue (<u>Festuca octoflora</u>)	6.5 $\pm$ 2.5	3.0 $\pm$ 1.9	4.0 $\pm$ 2.8	0.2 $\pm$ 0.1
Three stem bullrush (<u>Scirpus americanus</u>)			1.5 $\pm$ 1.5	<0.1
Big stem bullrush (<u>Scirpus</u> sp.)			2.5 $\pm$ 2.5	0.1 $\pm$ 0.1
Little stem bullrush (<u>Scirpus</u> sp.)			1.5 $\pm$ 1.5	0.6 $\pm$ 0.6
Total			6.0	13.7
				16.7
<u>Forbs</u>				
Tansy mustard (<u>Descurainia pinnata</u>)	11.0 $\pm$ 0.6	3.5 $\pm$ 2.9	7.5 $\pm$ 7.5	0.4 $\pm$ 0.1
Ragweed (<u>Ambrosia acanthicarpa</u>)	2.5 $\pm$ 1.5		5.5 $\pm$ 5.5	0.6 $\pm$ 0.5
Slimleaf goosefoot (<u>Chenopodium leptophyllum</u>)	2.0 $\pm$ 0.8			0.1 $\pm$ 0.1
Wing-nut cryptantha (<u>Cryptantha pterocarya</u>)	0.5 $\pm$ 0.5			<0.1
Russian thistle (<u>Salisola kali</u>)		47.0 $\pm$ 26.6	14.0 $\pm$ 8.4	3.1 $\pm$ 1.9
Jim Hill mustard (<u>Sisymbrium altissimum</u>)		21.0 $\pm$ 15.2	10.0 $\pm$ 6.6	1.5 $\pm$ 1.4
Buckwheat (<u>Eriogonum</u> spp.)	2.0 $\pm$ 1.1	17.5 $\pm$ 11.4	6.5 $\pm$ 6.5	1.2 $\pm$ 0.8
Matted cryptantha (<u>Cryptantha circumsissa</u>)	10.0 $\pm$ 3.6	2.5 $\pm$ 1.9	30.0 $\pm$ 23.5	0.4 $\pm$ 0.2
Threadleaf phacelia (<u>Phacelia linearis</u>)		1.0 $\pm$ 1.0	0	<0.1
Common mullen (<u>Verbascum thapsus</u>)		2.0 $\pm$ 2.0	0	2.5 $\pm$ 2.5
Pale comandra (<u>Comandra pallida</u>)	3.5 $\pm$ 2.4			0.4 $\pm$ 0.3

TABLE 1. Frequency of Occurrence and Canopy Cover of Plants Within Three Habitat Sites Used by Mule Deer During 1977 on the Hanford Site (contd)

	Frequency of Occurrence (N=4)			Canopy Cover (N=4)		
	B-C Crips	B Pond	Gable Pond	B-C Crips	B Pond	Gable Pond
Forbs (Cont.)	$\bar{X} \pm SE$	$\bar{X} \pm SE$	$\bar{X} \pm SE$	$\bar{X} \pm SE$	$\bar{X} \pm SE$	$\bar{X} \pm SE$
Wild lettuce (<u>Lactuca serriola</u>)			1.0 $\pm$ 1.0			<0.1
Draba (<u>Draba verna</u>)			4.5 $\pm$ 4.5			0.2 $\pm$ 0.2
Goatbeard (<u>Tragopogon dubius</u>)			0.5 $\pm$ 0.5			<0.1
Astragalus species (<u>Astragalus spp.</u>)			4.0 $\pm$ 2.4			0.2 $\pm$ 0.2
Yarrow (<u>Achillea millefolium</u>)			0.5 $\pm$ 0.5			<0.1
Fiddleneck (<u>Amsinckia lycopoides</u>)			0.5 $\pm$ 0.5			<0.1
Wallflower (<u>Erysimum asperum</u>)			1.5 $\pm$ 1.5			0.1 $\pm$ 0.1
Total				1.9	8.3	10.2
Shrubs						
Big sagebrush (<u>Artemesia tridentata</u>)	21.5 $\pm$ 4.0	8.5 $\pm$ 7.8	3.5 $\pm$ 3.5	16.5 $\pm$ 4.4	6.8 $\pm$ 6.1	2.1 $\pm$ 2.1
Green rabbitbrush (<u>Chrysothamnus viscidiflorus</u>)	2.0 $\pm$ 1.4			0.7 $\pm$ 0.5		
Hopsage (<u>Atriplex spinosa</u>)		1.5 $\pm$ 1.5	4.5 $\pm$ 4.5		0.9 $\pm$ 0.9	2.7 $\pm$ 2.7
Willow (<u>Salix spp.</u>)			1.5 $\pm$ 1.5			0.5 $\pm$ 0.5
Total				17.2	7.7	5.3
Others						
Total	97.0 $\pm$ 1.7	99.0 $\pm$ 1.0	100.0 $\pm$ 0.0	59.1 $\pm$ 7.7	41.6 $\pm$ 16.8	54.3 $\pm$ 8.3
Total dead	97.0 $\pm$ 1.3	47.0 $\pm$ 27.2	49.0 $\pm$ 28.3	53.4 $\pm$ 6.6	21.3 $\pm$ 12.9	28.2 $\pm$ 16.4
Cheatgrass dead		47.0 $\pm$ 27.2	24.5 $\pm$ 24.5		20.4 $\pm$ 12.5	13.9 $\pm$ 13.9
Sagebrush dead	4.5 $\pm$ 2.1			3.0 $\pm$ 1.4		
Unknown forbs		0.5 $\pm$ 0.5	0.5 $\pm$ 0.5		<0.1	<0.1

TABLE 2. Botanical Composition of Fecal Pellets Collected from Mule Deer During 1976 from Three Habitat Sites on the Hanford Site

	Frequency of Occurrence %		
	B-C Cribs (N=20)	B Pond (N=40)	Gable Pond (N=40)
	$\bar{X} \pm SE$	$\bar{X} \pm SE$	$\bar{X} \pm SE$
<u>Grasses and Grass-like Plants</u>			
Needle-and-thread (<i>Stipa comata</i>)	<0.5		
Sandberg bluegrass (<i>Poa sandbergii</i>)	<0.5	0.6 $\pm$ 0.3	<0.5
Bluebunch wheatgrass (<i>Agropyron spicatum</i>)			<0.5
Canary grass (<i>Phalaris arundinacea</i>)			0.6 $\pm$ 0.6
Three-awn (<i>Aristida</i> spp.)			<0.5
Cheatgrass (<i>Bromus tectorum</i>)	<0.5	1.7 $\pm$ 0.6	3.4 $\pm$ 1.1
Carex (<i>Carex</i> spp.)		<0.5	<0.5
Horsetail (<i>Equisetum</i> spp.)		<0.5	2.1 $\pm$ 1.1
Barneyard grass (<i>Echinochloa crusgallii</i>)		6.8 $\pm$ 1.3	
Muhly grass (<i>Muhlenbergia</i> sp.)			<0.5
Indian ricegrass (<i>Oryzopsis hymenoides</i>)			<0.5
Old witchgrass (<i>Panicum</i> sp.)		<0.5	<0.5
Cattail (<i>Typha latifolia</i>)			<0.5
Sand dropseed (<i>Sporobolus cryptandrus</i>)		<0.5	
<u>Forbs</u>			
Astragalus (<i>Astragalus</i> spp.)	<0.5	<0.5	1.9 $\pm$ 1.7
Bassia (<i>Bassia hyssopsfolia</i>)			4.4 $\pm$ 1.6
Tansy mustard (<i>Descurainia pinnata</i>)		<0.5	
Wild lettuce (<i>Lactuca serriola</i>)			1.9 $\pm$ 0.7
Bladderpod (<i>Lesquerella</i> sp.)			<0.5
Lupine (<i>Lupinus</i> spp.)		<0.5	<0.5
White sweet clover (<i>Melilotus alba</i>)	3.5 $\pm$ 2.2 ^(a)		23.2 $\pm$ 3.9
Microsteris (<i>Microsteris</i> sp.)		<0.5	
Evening-primrose (<i>Oenothera</i> spp.)	8.7 $\pm$ 3.5	0.9 $\pm$ 0.7	<0.5
Phlox (<i>Phlox longiflora</i>)			<0.5
Prickly pear (<i>Opuntia polycantha</i>)		<0.5	

(a) These plants are not expected to occur in the B-C Cribs area, which indicates deer would move into this area primarily from the B Pond site.

TABLE 2. Botanical Composition of Fecal Pellets Collected from Mule Deer During 1976 from Three Habitat Sites on the Hanford Site (contd)

	B-C Cribs(N=20)	B Pond (N=40)	Gable Pond (N=40)
	$\bar{X} \pm SE$	$\bar{X} \pm SE$	$\bar{X} \pm SE$
<u>Forbs (Contd)</u>			
Indian wheat (<i>Plantago purshii</i>)			<0.5
Willow-weed (<i>Epilobium paniculatum</i>)		<0.5	<0.5
Russian thistle (<i>Salsola kali</i>)	2.9 $\pm$ 0.7	75.5 $\pm$ 4.0	5.2 $\pm$ 2.2
Jim Hill mustard (<i>Sisymbrium altissimum</i>)			<0.5
Goldenrod (<i>Solidago</i> spp.)	1.4 $\pm$ 0.4 ^(a)	6.1 $\pm$ 1.9	39.7 $\pm$ 5.4
Globe mallow (<i>Sphaeralcea munroana</i>)	<0.5	10.9 $\pm$ 4.4	1.8 $\pm$ 1.0
Buttercup (<i>Ranunculus</i> spp.)			<0.5
Common mullen (<i>Verbascum thapsus</i>)	<0.5 ^(a)	1.9 $\pm$ 1.9	
<u>Shrubs</u>			
Big sagebrush (<i>Artemisia tridentata</i>)			<0.5
Bitterbrush (<i>Purshia tridentata</i>)	79.4 $\pm$ 7.3		2.2 $\pm$ 2.2
Gray Rabbitbrush (<i>Chrysothamnus nauseosus</i>)		<0.5	<0.5
Hopsage (<i>Atriplex spinosa</i>)			<0.5
Willow (<i>Salix</i> spp.)	18.1 $\pm$ 5.8 ^(a)	8.3 $\pm$ 2.8	32.3 $\pm$ 5.3
<u>Trees</u>			
Russian olive (<i>Elaeagnus angustifolia</i>)		10.9 $\pm$ 4.4	
<u>Others</u>			
Moss			<0.5
Seeds	1.2 $\pm$ 1.2	4.5 $\pm$ 1.6	1.6 $\pm$ 0.6
Unknown forb			<0.5
Unknown grass		<0.5	<0.5
Unknown sedge		<0.5	<0.5

(a) These plants are not expected to occur in the B-C Cribs area, which indicates deer would move into this area primarily from B Pond site.

bitterbrush was the most common species occurring in the diets of deer from the B-C Cribs area, comprising 79%. Russian thistle comprised 76% and goldenrod 40% in the diets of deer from B Pond and Gable Mountain Pond, respectively. Forbs provided the mainstay of the mule deer diet and were found more frequently in pellets from Gable Mountain and B Ponds than in pellets from the B-C Cribs site, in which shrubs appeared most often. Shrubs were secondary in importance at the B Pond and Gable Mountain sites, with the grasses and grasslike plants being least important to the mule deer diet. The average dietary composition based upon relative frequency at all sites consisted of 2% grasses, 43% shrubs, and 52% forbs.

Relative preference values are shown in Table 3. These indices are based on relative frequency values for plants occurring in the diets and in each of the study areas. When a plant species is scarce in the field but is found frequently in the fecal pellets of deer, it is assumed that this particular species of plants were preferred in each study area. Bitterbrush was the preferred species in the B-C Cribs area; both globe mallow and Russian olive were preferred in the B Pond area. Goldenrod was the preferred forage plant in the Gable Mountain Pond area. Cheatgrass was abundant in all areas but was not a preferred food item. However, Russian thistle was abundant in the deer diet and was sought by the deer foraging in the B-C Cribs sites. For additional information see Appendix B.

Similarity indices and rank-order correlation coefficients comparing dietary and habitat analyses of the three areas are presented in Table 4. Similarity indices show the similarity between categories occurring at the study sites, while rank-order correlation coefficients show relationships among the categories when the sites are compared. A strong relationship occurred in diets of deer between the B-C Cribs and Gable Mountain areas. This indicates that the food items were present in different amounts as indicated by similarity indices, but in the same relative proportions as shown by a significant correlation coefficient. Preference indices of forage plants consumed by deer showed low similarity indices when the three sites were compared, indicating that forage plants highly preferred at one site may not be sought at another site.

Similarity indices comparing frequency of occurrence of plants in the habitats among the sites were low, ranging from 23% to 28%. Significant rank-order correlations did occur when comparisons between B-C Cribs versus Gable Mountain Pond and B Pond versus Gable Mountain Pond were evaluated. This shows that these habitats were related in plant frequency. Canopy cover did not show any high similarity indices; however, a significant correlation did occur between B Pond and Gable Mountain Pond.

RADIONUCLIDE ANALYSIS OF FECAL PELLETS

Gamma-energy analyses were conducted on the 100 groups of deer fecal pellets for ^{144}Ce , ^{106}Ru , ^{137}Cs , ^{95}Zr , ^{54}Mn , ^{65}Zn , ^{40}K and ^{60}Co . Pellet groups ranging in age from very recent to very old were included in the analysis. The pellets were collected from the three study areas and a control area in

TABLE 3. Preference Indices of Mule Deer by Food Items on Three Areas of the Hanford Reservation

	<u>B-C Cribs</u>	<u>B Pond</u>	<u>Gable Mtn. Pond</u>
<u>Grasses and Grass-likes</u>			
Needle-and-thread	<1		
Sandberg bluegrass	<1	<1	<1
Bluebunch wheatgrass			2
Canary grass			6
Three-awn			<1
Cheatgrass	<1	<1	<1
Carex		2	3
Horse-tail		1	2
Barnyard grass		68	
Muhly grass			<1
Indian ricegrass			1
Old witchgrass		<1	<1
Cattail			<1
Sand dropseed		<1	
<u>Forbs</u>			
Astragalus	1	<1	19
Bassia			44
Tansy mustard		<1	
Wild lettuce			3
Bladderpod			<1
Lupine species		<1	<1
White sweet clover	35(a)		232
Microsteris		<1	
Evening primrose	87	9	2
Phlox			3
Prickly pear		<1	
Indian wheat			1
Willow-weed		2	<1
Russian thistle	29	3	1
Jim Hill mustard			<1
Goldenrod	14(a)	61	397
Globe mallow	1	109	18
Buttercup			3
Common mullen	1(a)	2	
<u>Shrubs</u>			
Big sagebrush			<1
Bitterbrush	794		22
Gray rabbit brush			<1
Hopsage			<1
Willow	181(a)	83	323
<u>Trees</u>			
Russian olive		109	
<u>Others</u>			
Moss			<1
Seeds	9(a)	45	16

(a) These plants are not expected to occur in the B-C Cribs area, which indicates deer would move into this area primarily from B Pond site.

TABLE 4. Average Similarity Indices (%) and Rank-Order Correlation Coefficients (r_s) of Mule Deer Diets, Preference Indices, Frequency of Occurrence and Canopy Cover When the Three Areas are Compared.

Category	B-C Cribs Versus B Pond			B-C Cribs Versus Gable Pond			B Pond Versus Gable Pond		
	n	$\bar{x} \pm SE$	r_s	n	$\bar{x} \pm SE$	r_s	n	$\bar{x} \pm SE$	r_s
Deer Diets	27	10 $\pm$ 4	+ 0.28	38	10 $\pm$ 4	+ 0.54 ^(a)	43	16 $\pm$ 4	+ 0.05
Forage Preference	27	12 $\pm$ 4	+ 0.17	38	7 $\pm$ 3	+ 0.40 ^(b)	43	19 $\pm$ 5	+ 0.01
Frequency of Occurrence	22	26 $\pm$ 8	+ 0.34	31	23 $\pm$ 6	+ 0.40 ^(b)	28	35 $\pm$ 8	+ 0.67 ^(a)
Canopy Cover	22	22 $\pm$ 6	+ 0.18	31	18 $\pm$ 6	+ 0.26	28	31 $\pm$ 7	+ 0.67 ^(a)

(a) Significant at $\alpha \leq 0.01$

(b) Significant at $\alpha \leq 0.05$

Deer Creek Canyon near Provo, Utah. The pellets used for radiochemical analysis were also used for the dietary analysis. Statistical comparisons followed the Bonferroni T-test statistical method (Miller, 1966). All tests were at the $p = 0.008$ level.

Table 5 presents the values for ^{144}Ce in the deer pellets. The average values are approximately the same for the three study sites with no statistical differences. Maximum values of 111 pCi/g and 99 pCi/g were detected in pellet groups collected from B Pond and Gable Mountain Pond study areas, respectively. Counting variability was high as shown by the negative data for the minimum values.

Ruthenium-106 values were higher ($p = 0.008$) in pellets collected from the B-C Cribs and Gable Mountain Pond areas than those in the control (Table 6). The B Pond and the control values were not significantly different statistically. The wide range of values indicates the variability found during the sample analysis.

Cesium-137 values are presented in Table 7. No differences in ^{137}Cs values were found between the pellets from the control and the B-C Cribs study area. Values for B Pond and Gable Mountain Pond averaged 15 pCi/g and 16 pCi/g, respectively, and were higher than the control. Maximum ^{137}Cs values were 100 pCi/g at B Pond and 108 pCi/g at Gable Pond. Variability among these samples was much lower as the maximum and minimum values indicate. Figure 2 presents the distribution of ^{137}Cs found in the deer fecal pellets. Most of the values are below 38 pCi/g, although five samples are found in the higher range of the spectra.

Table 8 presents values for ^{95}Zr in the pellets. No real differences are evident among the various locations, and the values appear to reflect world-wide fallout levels.

TABLE 5. Cerium-144 Content of Mule Deer Feces (pCi/g) Collected from the 200 Area Plateau, and Deer Creek, Utah.

<u>Location</u>	<u>n</u>	<u>$\bar{x} \pm SE$</u>	<u>Maximum</u>	<u>Minimum</u>
B-C Cribs	20	15.4 $\pm$ 6.2	70.8	-40.3 ^(a)
B Pond	40	22.3 $\pm$ 3.8	98.6	-15.5
Gable Mountain Pond	40	21.7 $\pm$ 6.2	110.6	-63.1
Control (Utah)	7	13.7 $\pm$ 8.9	46.0	-16.5

(a) Negative values are less than analytical background.

TABLE 6. Ruthenium-106 Content of Mule Deer Feces (pCi/g) Collected from the 200 Area Plateau and Deer Creek, Utah.

<u>Location</u>	<u>n</u>	<u>$\bar{x} \pm SE$</u>	<u>Maximum</u>	<u>Minimum</u>
B-C Cribs	20	57.3 $\pm$ 5.7	103.7	18.3
B Pond	40	5.8 $\pm$ 10.2	134.6	-105.0 ^(a)
Gable Mountain Pond	40	42.8 $\pm$ 6.0	148.7	-48.2
Control (Utah)	7	-27.7 $\pm$ 9.59	8.2	-57.7

(a) Negative values are less than analytical background.

TABLE 7. Cesium-137 Content of Mule Deer Feces (pCi/g) Collected from the 200 Area Plateau and Deer Creek, Utah.

<u>Location</u>	<u>n</u>	<u>$\bar{x} \pm SE$</u>	<u>Maximum</u>	<u>Minimum</u>
B-C Cribs	20	1.6 ± 1.1	17.7	-4.4 ^(a)
B Pond	40	14.8 ± 2.9	99.6	-1.5
Gable Mountain Pond	40	16.0 ± 3.6	127.8	-3.9
Control (Utah)	7	0.5 ± 0.9	3.3	-2.1

(a) Negative values are less than analytical background.

TABLE 8. Zirconium-95 Content of Mule Deer Feces (pCi/g) Collected from the 200 Area Plateau and Deer Creek, Utah.

<u>Location</u>	<u>n</u>	<u>$\bar{x} \pm SE$</u>	<u>Maximum</u>	<u>Minimum</u>
B-C Cribs	20	-1.4 ± 0.5	2.9	-5.2 ^(a)
B Pond	40	-1.4 ± 1.1	11.5	-16.4
Gable Mountain Pond	40	2.1 ± 0.6	13.2	-3.5
Control (Utah)	7	-0.3 ± 3.9	15.1	-15.5

(a) Negative values are less than analytical background.

FIGURE 2. Cesium-137 Found in Mule Deer Pellets from B-C Cribs, B Ponds, and Gable Mountain Pond Areas on the Hanford Site

Manganese-54 in the pellets appears to be at background levels with no differences evident among locations (Table 9). Table 10 presents values for ^{65}Zn in the pellets. No real differences among locations are evident with the control pellets showing the highest average value of 9 pCi/g.

Values of ^{40}K , a naturally occurring radionuclide, were highest in pellets collected from B Pond, averaging 45 pCi/g (Table 11). The other two areas and the control had values at background levels. These differences probably reflect differences in the potassium content of forage and in the food habits of deer within the study areas.

TABLE 9. Manganese-54 Content of Mule Deer Feces (pCi/g)
Collected from the 200 Area Plateau and Deer
Creek, Utah.

<u>Location</u>	<u>n</u>	<u>$\bar{x} \pm \text{SE}$</u>	<u>Maximum</u>	<u>Minimum</u>
B-C Cribs	20	-0.1 ± 0.4	3.2	-2.4 ^(a)
B Pond	40	1.0 ± 0.3	5.1	-2.3
Gable Mountain Pond	40	-3.6 ± 0.5	3.2	-10.3
Control (Utah)	7	-2.9 ± 1.1	3.8	-5.1

(a) Negative values are less than analytical background.

TABLE 10. Zinc-65 Content of Mule Deer Feces (pCi/g) Collected
from the 200 Area Plateau and Deer Creek, Utah.

<u>Location</u>	<u>n</u>	<u>$\bar{x} \pm \text{SE}$</u>	<u>Maximum</u>	<u>Minimum</u>
B-C Cribs	20	-8.2 ± 1.3	5.2	-17.1 ^(a)
B Pond	40	4.6 ± 1.0	17.3	-11.7
Gable Mountain Pond	40	1.1 ± 0.7	8.8	-7.2
Control (Utah)	7	8.8 ± 1.8	14.1	2.7

(a) Negative values are less than analytical background.

TABLE 11. Potassium-40 Content of Mule Deer Feces (pCi/g)
from the 200 Area Plateau and Deer Creek, Utah.

Location	n	$\bar{x} \pm SE$	Maximum	Minimum
B-C Cribs	20	-10.1 ± 5.8	31.1	-64.0 ^(a)
B Pond	40	45.3 ± 5.3	97.4	-21.5
Gable Mountain Pond	40	-29.2 ± 5.3	34.3	-126.6
Control (Utah)	7	-10.2 ± 11.0	29.2	-47.3

(a) Negative values are less than analytical background.

Cobalt-average values did not exceed background levels at any of the three study areas or control (Table 12). Strontium-12 analysis was conducted on the 12 fecal pellet groups collected at the B Pond and Gable Mountain sites which showed the highest ^{137}Cs values among the total pellet groups sampled. Strontium-90 content in the pellet groups from the Gable Mountain area ranged from 2 to 184 pCi/g (Table 13). Pellet groups from B Pond ranged from 12 to 107 pCi/g.

Dietary analysis of the two pellet groups from the Gable Mountain Pond area which showed the highest ^{90}Sr values (20 and 184 pCi/g) revealed the following plant composition based on relative percentage values: willow (59%), white sweet clover (33%), goldenrod (7%), and carex (1%). Plants found in the five pellet groups collected from B Pond from ^{90}Sr analysis were: Russian thistle (70%), goldenrod (7%), barnyard grass (6%), globe mallow (5%), willow (4%), cheatgrass (3%), seeds (3%), and others (2%).

These analyses indicate that the plants located adjacent to the pond areas represent a potential mechanism for ^{90}Sr transport. Soil was not considered as a mechanism in these analyses since the soil particles were not detectable in the microscopic analysis of the diets. Additional information on ^{90}Sr content of plants adjacent to these areas is necessary for assessing the future need for vegetation control measures.

TABLE 12. Cobalt-60 Content of Mule Deer Feces (pCi/g)
Collected from the 200 Area Plateau and
Deer Creek, Utah.

<u>Location</u>	<u>n</u>	<u>$\bar{x} \pm SE$</u>	<u>Maximum</u>	<u>Minimum</u>
B-C Cribs	20	-0.2 ± 0.5	3.2	-4.4 ^(a)
B Pond	40	-0.7 ± 0.3	3.2	-6.6
Gable Mountain Pond	40	-0.6 ± 0.4	6.3	-6.6
Control (Utah)	7	-2.3 ± 1.2	1.5	-7.6

(a) Negative values are less than analytical background.

TABLE 13. Strontium-90 (pCi/g) Analysis of Deer Pellet Groups
Collected Adjacent to B Pond and Gable Mountain Pond
on the Hanford Site During 1976

<u>Location</u>	<u>Class</u>	<u>Diet No. (a)</u>	<u>Radiation No. (a)</u>	<u>Result (pCi/g)</u>
Gable Mountain Pond	Recent	49	406	3.9
Gable Mountain Pond	Old	42	410	5.1
Gable Mountain Pond	Recent	56	411	1.6
Gable Mountain Pond	Old	63	428	4.0
Gable Mountain Pond	Recent	79	434	6.1
Gable Mountain Pond	Recent	73	436	20.4
Gable Mountain Pond	Recent	76	437	184.3
B Pond	Recent	08	466	130.1
B Pond	Old	05	468	12.0
B Pond	Old	02	470	63.6
B Pond	Recent	25	488	50.7
B Pond	Recent	24	489	107.0

(a) Diet and radiation sample numbers are cross-referenced for more detail in Appendices B and C, (e.g., Diet analysis of pellet group 49 can be found in Appendix B. Additional radiation analyses for the same pellet group can be found under 406 in Appendix C).

DISCUSSION

In the arid region of southcentral Washington at the Hanford Site, mule deer are primarily found along the riparian habitat of the Columbia River (Hedlund, 1975). Deer are commonly found at Hanford near man-made ponds which contain effluent from nuclear waste operations. These ponds and surrounding vegetation provide a source of water, food and cover which are important in supporting wildlife. The Hanford Site supports a sizable population of mule deer that have been protected from hunting since 1943.

The amount of forage available to large herbivores is generally sparse in arid regions. Similarity indices show that the three study areas are not alike if frequency of occurrence and canopy cover of plants are considered. The number of plant taxa varied at each location with those areas near man-made ponds richest in species composition. B Pond and Gable Mountain Pond areas were more closely related in plant frequency and canopy cover than with vegetation in the B-C Cribs area.

Dietary habits of the mule deer in southcentral Washington on Artemisia tridentata/Poa sandbergii associations (Daubenmire, 1970) have not been reported in the literature. Most authors have reported dietary habits of mule deer on bunchgrass rangelands, which have some sagebrush and bitterbrush with understory species of bluebunch wheatgrass (Agropyron spicatum), cheatgrass and Sandberg bluegrass (Edgerton and Smith, 1971; Wilkins, 1957; Morris and Schwartz, 1957; Nellis and Ross, 1969; and Lovaas, 1958). These studies have been conducted in areas which receive more precipitation than the Hanford Site.

The mule deer select forbs as the mainstay of their diet at B Pond and Gable Mountain Pond areas. Shrubs were the second most common food item, while grasses were a minor portion of the total diet. At the B-C Cribs habitat, shrubs were the major food item found in the pellets, followed by forbs and grasses. In Montana, Wilkins (1957) found that summer forbs were the most important, that shrubs were of less importance, and that grass was least often eaten. Wilkins also found that bitterbrush was the most important species in the deers' diet during the fall. Edgerton (1971) in eastern Oregon showed that forbs were important in the spring. However, with the decline of spring forbs, the amounts of grasses and shrubs in the diets of deer increased sharply. During the fall, grasses and sedges were important while shrubs became a major constituent of the diets in forested areas.

At Hanford, six forage species provided the mainstay of the mule deer diet from the B Pond habitat, and three forage species made up most of the diet from B-Cribs area and Gable Mountain Pond habitat. Several species of plants were abundant in the habitat but were rarely eaten. These species were apparently unpalatable, although others were not eaten because more preferred species were available. Short et al. (1966) have shown that the normal and predictable variation in plant chemistry caused by seasonal changes in plant phenology and physiology have important implications in the nutrition and physiology of deer. These major forage species consumed by the deer may be related to the nutrient requirement of the animal.

The food items found in deer pellets from the B-C Cribs and Gable Mountain Pond habitats related more closely than those found at B Pond. Preference indices at the B-C Cribs and Gable Mountain Pond habitats showed the same general trends; the deer at both sites showed a significant relationship in forage preference. Generally these deer were selecting different foods at each site even though some plants were common to all sites. Cheatgrass was abundant to all three habitats, but dietary analysis indicated that it provided only a small part of the total diet. Generally seven plants were highly preferred and sought out in a far greater proportion than their availability within each of the three habitat types. Other forage plants were found in both the diet and habitats either in the same relative frequency or less in the diet than in the habitat, indicating that deer do not especially prefer these plants. The habitats are dissimilar in frequency of occurrence and canopy cover.

RADIONUCLIDES IN FECAL PELLETS OF DEER

Mule deer at Hanford are wide-ranging, as the tags collected from hunters by check stations indicate (Hedlund, 1975). Deer tags have been returned from hunter kills at Mattawa, 25 miles upstream, and from another 50 miles downstream near the confluence of the Columbia and Walla Walla rivers. The farthest documented distance that a Hanford deer was killed by a hunter was 70 miles away at Soap Lake.

Mule deer occupying areas on the Hanford Site where low-level radionuclide contamination is present, such as retired waste disposal trenches and cribs (O'Farrell and Gilbert, 1975; Klepper, et al., 1979) and ponds and streams (Cushing and Watson, 1974; Emery and McShane, 1978), have the potential for transporting radionuclides to surrounding areas. Concentrations of ^{137}Cs in deer fecal pellets averaged 1.6 (range 0-17.7) pCi/g at B-C Cribs, 14.8 (range 0-99.6) pCi/g at B-Pond and 16.0 (range 0-127.8) pCi/g at Gable Mountain Pond. The average ^{137}Cs concentration in feces from a control site (Utah) was 0.5 (range 0-3.3) pCi/g (Table 7).

Strontium-90 analysis of seven fecal pellet samples ranged from 1.6 to 184.3 pCi/g. Five samples from near B-Pond ranged from 12.0 to 130.1 pCi/g (Table 13). These data indicate that deer are ingesting radionuclides. Forage plants are a likely vehicle for the radioactive materials, but contaminated water is also a possibility. The absence of soil particles in microscope slide preparations used for dietary analysis indicates that direct ingestion of contaminated soil was probably not a major contributor to the radionuclide burden in the feces.

Analyzing deer pellets from many locations provides information on the levels of radioactive contaminants ingested by deer. Trapping programs at sensitive sites for whole body counting could provide reliable data on the same animal over several years. Monitoring environmental contaminants by analysis of deer fecal pellets is an attractive method since it would not harm the animal.

REFERENCES

- Baumgartner, L. L. and A. C. Martin. "Plant Histology as an Aid in Squirrel Food-habit Studies." J. Wildl. Manage. 3:266-268. 1939.
- Cline, J. F., D. W. Uresk and W. H. Rickard. "Plants and Soil of a Sagebrush Community on the Hanford Reservation." Northwest Sci. 51:60-70. 1977.
- Cushing, C. E. and D. G. Watson. "Aquatic Studies of Gable Mountain Pond." BNWL-1884. Battelle, Pacific Northwest Laboratories, Richland, WA. 1974.
- Daubenmire, R. "A Canopy-coverage Method of Vegetation Analysis." Northwest Sci. 33:43-64. 1959.
- Daubenmire, R. "Steppe Vegetation of Washington." Wash. Agric. Exp. Stn. Tech. Bull. 62. 131 pp. 1970.
- Edgerton, P. J. and J. G. Smith. "Seasonal Forage Use by Deer and Elk on the Starkey Experimental Forest and Range, Oregon." U.S. Forest Service Research Paper, PNW-112. 12 pp. 1971.
- Emery, R. M. and M. C. McShane. "Comparative Ecology of Nuclear Waste Ponds and Streams on the Hanford Site." PNL-2499. Pacific Northwest Laboratory, Richland, WA. 1978.
- Giles, R. H. "Wildlife Management Techniques," 3rd Ed., Rev., Wildlife Society, Wildlife Techniques Manual Committee, Washington, DC. 623 pp. 1969.
- Hajek, B. F. "Soil Survey - Hanford Project in Benton County, Washington." BNWL-234. Battelle, Pacific Northwest Laboratories, Richland, WA. 1977.
- Hedlund, J. D. "Tagging Mule Deer Fawns in South-central Washington, 1969-1974." Northwest Sci. 49:153-157. 1975.
- Klepper, B., L. E. Rogers, J. D. Hedlund, R. G. Schreckhise and K. R. Price. "Radiocesium Movement in a Gray Rabbitbrush Community." Proceedings of the Environmental Chemistry and Cycling Processes Symposium, D. C. Adriano and I. L. Brisbin, Jr. (ed), April 28-May 1, August, GA. CONF-760429, Savannah River Ecology Laboratory, Aiken, SC. NTIS, Springfield, VA. 1978.
- Lovaas, A. L. "Mule Deer Food Habits and Range Use, Little Belt Mountains, Montana." J. Wildl. Manage. 22:275-283. 1958.
- Messner, H. E., D. R. Dietz and C. E. Garrett. "A Modification of the Slanting Deer Fence." J. Range Manage. 26:233-235. 1973.
- Miller, R. G., Jr. "Simultaneous Statistical Inference." McGraw-Hill Book Company, New York, NY. 272 pp. 1966.
- Morris, M. S. and J. E. Schwartz. "Mule Deer and Elk Food Habits on the National Bison Range." J. Wildl. Manage. 21:189-193. 1957.

Nellis, C. H. and R. L. Ross. "Changes in Mule Deer Food Habits Associated with Herd Reduction." J. Wildl. Manage. 33:191-195. 1969.

O'Farrell, T. P. and R. O. Gilbert. "Transport of Radioactive Materials by Jackrabbits on the Hanford Reservation." Health Physics 29:9-15. 1975.

Oosting, H. J. "The Study of Plant Communities." W. H. Freeman and Company, San Francisco, CA. 440 pp. 1956.

Short, H. L., D. R. Dietz and E. E. Remmenga. "Selected Nutrients in Mule Deer Browse Plants." Ecology 4:222-229. 1966.

Siegel, S. "Non-parametric Statistics for the Behavioral Sciences." McGraw-Hill, NY. 312 pp. 1956.

Snedecor, G. W. and W. G. Cochran. "Statistical Methods." Iowa State Univ. Press, Ames. 593 pp. 1967.

Sparks, D. R. and J. C. Malechek. "Estimating Percentage Dry Weight in Diets Using Microscopic Technique." J. Range Manage. 21:264-265. 1968.

Wilkins, B. T. "Range Use, Food Habits, and Agricultural Relationships of Mule Deer, Bridger Mountains, Montana." J. Wildl. Manage. 21:159-169. 1957.

APPENDIX A

SUMMARIES OF CANOPY COVER AND OCCURRENCE FREQUENCY
BY PLANT SPECIES
FROM B-C CRIBS, B POND AND GABLE MOUNTAIN POND HABITATS

Listing of Plant Species and Code Names from
B-C Cribs, B Pond and Gable Mountain Areas

Grasses and Grass-like Plants

Code

Cheatgrass (<u>Bromus tectorum</u>)	Brte, Brte D (Dead)
Sandberg bluegrass (<u>Poa sandbergii</u>)	Pose, Posa
Sixweek fescue (<u>Festuca octoflora</u>)	Feoc
Three stem bullrush (<u>Scirpus americanus</u>)	Scam, BBR
Big stem bullrush (<u>Scirpus</u> spp.)	Scsp, BBR
Little stem bullrush (<u>Scirpus</u> spp.)	Scsp, LBR

Forbs

Pale comandra (<u>Comandra pallida</u>)	Copa
Buckwheat (<u>Eriogonum</u> spp.)	Ersp, Erni
Tansy mustard (<u>Descurania pinnata</u>)	Depi
Ragweed (<u>Ambrosia acanthicarpa</u>)	Amac, Amps
Slimleaf goosefoot (<u>Chenopodium leptophyllum</u>)	Chle
Wing-nut cryptantha (<u>Cryptantha pterocarya</u>)	Crpt.
Russian thistle (<u>Salsola kali</u>)	Saka
Jim hill mustard (<u>Sisymbrium altissimum</u>)	Sial
Matted cryptantha (<u>Cryptantha circumscissa</u>)	Crci
Threadleaf phacelia (<u>Phacelia linearis</u>)	Phli, Hydr
Common mullen (<u>Verbascum thapsus</u>)	Veth, Mull
Wild lettuce (<u>Lactuca serriola</u>)	Lase
Draba (<u>Draba verna</u>)	Drve
Goatbeard (<u>Tragopogon dubius</u>)	Trdu
Astragalus (<u>Astragalus</u> spp.)	Astr.
Yarrow (<u>Achillea millifolium</u>)	Acmi
Wall flower (<u>Erysimum asperum</u>)	Eras
Fiddleneck (<u>Amsinckia lycopsoides</u>)	Amly
Unknown	Unkl. Unkf

Shrubs

Big sagebrush (<u>Artemesia tridentata</u>)	Artr, Artr D (Dead)
Green rabbitbrush (<u>Chrysothamhus viscidiflorus</u>)	Chvi
Hopsage (<u>Atriplex spinosa</u>)	Atsp., Grsp.
Willow (<u>Salix</u> spp.)	Sasp, Salx.

Others

TOTAL	Totaled total of all species
TOTAL dead	Totaled total of all dead species
TOTAL	Total sum of above
N (0), N (1), N (2)	Diversity indicies
BC-1, BC-2, ---	These indicate line transects
BC = B-C Cribs Area	
BP = B Pond Area	
GMP = Gable Mountain Pond Area	

Summary of Canopy Cover (percent Cover by Species) at BC-Cribs

	BC-1(a)	BC-2(a)	BC-3(a)	BC-4(a)	MEAN	STAN ERR
TOTL	48.750	64.500	78.350	44.750	59.088	7.707
SUM X	2437.5	3225.5	3917.5	2237.5	2954.4	385.3
S X*X	186431.3	274462.5	340918.8	154056.3	238967.2	42449.9
SD	37.144	36.826	26.335	33.175	33.370	2.512
CV	.762	.571	.336	.741	.603	.099
SE	5.253	5.208	3.724	4.692	4.719	.355
95% U	58.783	74.447	85.463	53.711	68.101	8.385
95% L	38.717	54.553	71.237	35.789	50.074	7.028
DEAD	42.100	64.550	65.050	41.850	53.388	6.590
SUM X	2105.0	3227.5	3252.5	2092.5	2669.4	329.5
S X*X	147912.5	274468.8	255706.3	140868.8	204739.1	35081.5
SD	34.786	36.738	30.011	32.980	33.629	1.429
CV	.826	.569	.461	.788	.661	.087
SE	4.919	5.196	4.244	4.664	4.756	.202
95% U	51.496	74.473	73.156	50.758	62.471	6.976
95% L	32.704	54.627	56.944	32.942	44.304	6.204
BRTE	2.200	1.700	4.400	1.300	2.400	.692
SUM X	110.0	85.0	220.0	65.0	120.0	34.6
S X*X	1212.5	212.5	2987.5	162.5	1143.8	660.4
SD	4.450	1.178	6.420	1.262	3.327	1.282
CV	2.023	.693	1.459	.971	1.286	.292
SE	.629	.167	.908	.178	.471	.181
95% U	3.402	2.018	6.134	1.641	3.299	1.038
95% L	.998	1.382	2.666	.959	1.501	.345
ARTR	14.900	13.250	29.000	8.850	16.500	4.358
SUM X	745.0	662.5	1450.0	422.5	825.0	217.9
S X*X	64075.0	55656.3	140312.5	35456.3	73875.0	22945.4
SD	32.880	30.931	44.781	25.371	33.491	4.086
CV	2.207	2.334	1.544	2.867	2.238	.272
SE	4.650	4.374	6.333	3.588	4.736	.578
95% U	23.781	21.605	41.096	15.703	25.546	5.462
95% L	6.019	4.895	16.904	1.997	7.454	3.254
POSE	.950	8.100	4.100	.750	3.475	1.722
SUM X	47.5	405.0	205.0	37.5	173.8	86.1
S X*X	681.3	38062.5	5387.5	468.8	11150.0	9042.4
SD	3.603	26.643	9.633	2.999	10.719	5.515
CV	3.793	3.289	2.350	3.998	3.357	.368
SE	.510	3.768	1.362	.424	1.516	.780
95% U	1.923	15.297	6.702	1.560	6.370	3.212
95% L	-.023	.903	1.498	-.060	.580	.232
CRCI	1.000	.150	.100	.250	.375	.211
SUM X	50.0	7.5	5.0	12.5	18.8	10.5
S X*X	500.0	18.8	12.5	31.3	140.6	119.9
SD	3.030	.600	.495	.758	1.221	.606
CV	3.030	3.998	4.949	3.030	3.752	.460
SE	.429	.085	.070	.107	.173	.086
95% U	1.819	.312	.234	.455	.705	.374
95% L	.181	-.012	-.034	.045	.045	.047
COPA	.350	0.000	0.000	1.250	.400	.295
SUM X	17.5	0.0	0.0	62.5	20.0	14.8
S X*X	231.3	0.0	0.0	906.2	284.4	214.3
SD	2.143	0.000	0.000	4.111	1.564	.988
CV	6.124	0.000	0.000	3.289	2.353	1.477
SE	.303	0.000	0.000	.581	.221	.140
95% U	.929	0.000	0.000	2.360	.822	.562

(a) BC-1 indicates BC-Cribs transect 1, BC-2 indicates BC-Cribs transect 2, etc.

Summary of Canopy Cover (Percent Cover by Species) at BC-Cribs (contd.)

95% L	-.229	0.000	0.000	.140	-.022	.028
ERNI	.100	0.000	0.000	.100	.050	.029
SUM X	5.0	0.0	0.0	5.0	2.5	1.4
S X*X	12.5	0.0	0.0	12.5	6.3	3.6
SD	.495	0.000	0.000	.495	.247	.143
CV	4.949	0.000	0.000	4.949	2.474	1.429
SE	.070	0.000	0.000	.070	.035	.020
95% U	.234	0.000	0.000	.234	.117	.067
95% L	-.034	0.000	0.000	-.034	-.017	-.010
FEOC	.200	0.000	.150	.300	.163	.063
SUM X	10.0	0.0	7.5	15.0	8.1	3.1
S X*X	25.0	0.0	18.8	37.5	20.3	7.8
SD	.685	0.000	.600	.821	.526	.181
CV	3.426	0.000	3.998	2.736	2.540	.885
SE	.097	0.000	.085	.116	.074	.026
95% U	.385	0.000	.312	.522	.305	.111
95% L	.015	0.000	-.012	.078	.020	.014
DEPI	.750	.250	.300	.300	.400	.117
SUM X	37.5	12.5	15.0	15.0	20.0	5.9
S X*X	468.8	31.3	37.5	37.5	143.8	108.3
SD	2.999	.758	.821	.821	1.349	.550
CV	3.998	3.030	2.736	2.736	3.125	.299
SE	.424	.107	.116	.116	.191	.078
95% U	1.560	.455	.522	.522	.764	.266
95% L	-.060	.045	.078	.078	.036	-.031
ARTRD	1.950	3.750	6.400	0.000	3.025	1.361
SUM X	97.5	187.5	320.0	0.0	151.3	68.0
S X*X	9506.3	12543.8	26825.0	0.0	12218.8	5553.6
SD	13.789	15.545	22.487	0.000	12.955	4.709
CV	7.071	4.145	3.514	0.000	3.682	1.452
SE	1.950	2.198	3.180	0.000	1.832	.666
95% U	5.675	7.949	12.474	0.000	6.524	2.633
95% L	-1.775	-.449	.326	0.000	-.474	.089
AMPS	.350	0.000	0.000	2.050	.600	.490
SUM X	17.5	0.0	0.0	102.5	30.0	24.5
S X*X	231.3	0.0	0.0	9518.7	2437.5	2361.0
SD	2.143	0.000	0.000	13.783	3.982	3.306
CV	6.124	0.000	0.000	6.723	3.212	1.858
SE	.303	0.000	0.000	1.949	.563	.468
95% U	.929	0.000	0.000	5.773	1.675	1.383
95% L	-.229	0.000	0.000	-1.673	-.475	-.403
CHLE	.050	0.000	.300	.100	.113	.066
SUM X	2.5	0.0	15.0	5.0	5.6	3.3
S X*X	6.3	0.0	225.0	12.5	60.9	54.7
SD	.354	0.000	2.121	.495	.742	.471
CV	7.071	0.000	7.071	4.949	4.773	1.668
SE	.050	0.000	.300	.070	.105	.067
95% U	.146	0.000	.873	.234	.313	.193
95% L	-.046	0.000	-.273	-.034	-.088	-.062
CHVI	0.000	0.000	1.950	.900	.713	.464
SUM X	0.0	0.0	97.5	45.0	35.6	23.2
S X*X	0.0	0.0	9506.3	675.0	2545.3	2325.8
SD	0.000	0.000	13.789	3.598	4.347	3.260
CV	0.000	0.000	7.071	3.998	2.767	1.716
SE	0.000	0.000	1.950	.509	.615	.461
95% U	0.000	0.000	5.675	1.872	1.887	1.344
95% L	0.000	0.000	-1.775	-.072	-.462	-.417
CRPT	0.000	0.000	0.000	.050	.013	.013
SUM X	0.0	0.0	0.0	2.5	.6	.6
S X*X	0.0	0.0	0.0	6.3	1.6	1.6

SD	0.000	0.000	0.000	.354	.088	.088
CV	0.000	0.000	0.000	7.071	1.768	1.768
SE	0.000	0.000	0.000	.050	.013	.013
95% U	0.000	0.000	0.000	.146	.036	.036
95% L	0.000	0.000	0.000	-.046	-.011	-.011
TOTAL	113.650	156.250	190.100	102.800	140.700	20.104
SUM X	5682.5	7812.5	9505.0	5140.0	7035.0	1005.2
S X*X	1051568.8	1659556.3	2127537.5	824137.5	1415700.0	295623.1
SD	90.998	94.637	80.893	77.689	86.054	4.028
CV	.801	.606	.426	.756	.647	.085
SE	12.869	13.384	11.440	10.987	12.170	.570

Occurrence Frequency (%) by Plant Species From BC-Cribs

	BC-1	BC-2	BC-3	BC-4	MEAN	STAN ERR
TOTAL	94.000	94.000	100.000	100.000	97.000	1.732
DEAD	94.000	96.000	100.000	98.000	97.000	1.292
BRTE	38.000	68.000	46.000	52.000	51.000	6.351
ARTR	26.000	18.000	30.000	12.000	21.500	4.031
POSE	8.000	20.000	30.000	10.000	17.000	5.066
CRCI	20.000	6.000	4.000	10.000	10.000	3.559
COPA	4.000	0.000	0.000	10.000	3.500	2.363
ERNI	4.000	0.000	0.000	4.000	2.000	1.155
FEOC	8.000	0.000	6.000	12.000	6.500	2.500
DEPI	10.000	10.000	12.000	12.000	11.000	.577
ARTRD	2.000	8.000	8.000	0.000	4.500	2.062
AMPS	4.000	0.000	0.000	6.000	2.500	1.500
CHLE	2.000	0.000	2.000	4.000	2.000	.816
CHVI	0.000	0.000	2.000	6.000	2.000	1.414
CRPT	0.000	0.000	0.000	2.000	.500	.500

Summary of Canopy Cover (Percent Cover by Species) at B-Pond

	BP-1(a)	BP-2(a)	BP-3(a)	BP-4(a)	MEAN	STAN ERR
TOTL	22.300	10.400	86.450	47.450	41.650	16.812
SUM X	1115.0	520.0	4322.5	2372.5	2082.5	840.6
S X*X	32600.0	8800.0	385693.8	184928.8	153003.1	86821.2
SD	12.565	8.320	15.658	38.424	18.742	6.731
CV	.563	.800	.181	.810	.589	.147
SE	1.777	1.177	2.214	5.434	2.650	.952
95% U	25.694	12.647	90.679	57.829	46.712	18.630
95% L	18.906	8.153	82.221	37.071	36.588	14.994
BRTE	15.550	1.450	2.550	3.350	5.725	3.298
SUM X	777.5	72.5	127.5	167.5	286.3	164.9
S X*X	17318.8	931.2	2381.3	2106.3	5684.4	3890.8
SD	10.330	4.106	6.478	5.615	6.632	1.326
CV	.664	2.832	2.540	1.676	1.928	.488
SE	1.461	.581	.916	.794	.938	.188
95% U	18.340	2.559	4.300	4.867	7.516	3.656
95% L	12.760	.341	.800	1.833	3.934	2.940
SAKA	4.750	7.650	.050	0.000	3.113	1.878
SUM X	237.5	382.5	2.5	0.0	155.6	93.9
S X*X	2468.8	4893.8	6.3	0.0	1842.2	1171.5
SD	5.231	6.337	.354	0.000	2.980	1.636
CV	1.101	.828	7.071	0.000	2.250	1.624
SE	.740	.896	.050	0.000	.421	.231
95% U	6.163	9.362	.146	0.000	3.918	2.320
95% L	3.337	5.938	-.046	0.000	2.307	1.436

(a) BP-1 indicates B-Pond transect 1, BP-2 indicates B-Pond transect 2, etc.

Summary of Canopy Cover (Percent Cover by Species) at B-Pond (contd.)

SIAL	5.600	.250	.200	0.000	1.513	1.364
SUM X	280.0	12.5	10.0	0.0	75.6	68.2
S X*X	4450.0	31.3	25.0	0.0	1126.6	1107.8
SD	7.669	.758	.685	0.000	2.278	1.805
CV	1.369	3.030	3.426	0.000	1.956	.790
SE	1.085	.107	.097	0.000	.322	.255
95% U	7.672	.455	.385	0.000	2.128	1.851
95% L	3.528	.045	.015	0.000	.897	.876
ERSP	1.300	3.600	0.000	0.000	1.225	.849
SUM X	65.0	180.0	0.0	0.0	61.3	42.4
S X*X	725.0	3825.0	0.0	0.0	1137.5	912.0
SD	3.615	8.052	0.000	0.000	2.917	1.912
CV	2.781	2.237	0.000	0.000	1.254	.733
SE	.511	1.139	0.000	0.000	.413	.270
95% U	2.277	5.775	0.000	0.000	2.013	1.365
95% L	.323	1.425	0.000	0.000	.437	.332
FEOC	.100	0.000	0.000	.200	.075	.048
SUM X	5.0	0.0	0.0	10.0	3.8	2.4
S X*X	12.5	0.0	0.0	25.0	9.4	6.0
SD	.495	0.000	0.000	.685	.295	.175
CV	4.949	0.000	0.000	3.426	2.094	1.248
SE	.070	0.000	0.000	.097	.042	.025
95% U	.234	0.000	0.000	.385	.155	.095
95% L	-.034	0.000	0.000	.015	-.005	.001
CRCI	.050	0.000	0.000	.200	.063	.047
SUM X	2.5	0.0	0.0	10.0	3.1	2.4
S X*X	6.3	0.0	0.0	25.0	7.8	5.9
SD	.354	0.000	0.000	.685	.260	.164
CV	7.071	0.000	0.000	3.426	2.624	1.688
SE	.050	0.000	0.000	.097	.037	.023
95% U	.146	0.000	0.000	.385	.133	.092
95% L	-.046	0.000	0.000	.015	-.008	.003
HYDR	0.000	.100	0.000	0.000	.025	.025
SUM X	0.0	5.0	0.0	0.0	1.3	1.3
S X*X	0.0	12.5	0.0	0.0	3.1	3.1
SD	0.000	.495	0.000	0.000	.124	.124
CV	0.000	4.949	0.000	0.000	1.237	1.237
SE	0.000	.070	0.000	0.000	.017	.017
95% U	0.000	.234	0.000	0.000	.058	.058
95% L	0.000	-.034	0.000	0.000	-.008	-.008
UNKL	0.000	.050	0.000	0.000	.013	.013
SUM X	0.0	2.5	0.0	0.0	.6	.6
S X*X	0.0	6.3	0.0	0.0	1.6	1.6
SD	0.000	.354	0.000	0.000	.088	.088
CV	0.000	7.071	0.000	0.000	1.768	1.768
SE	0.000	.050	0.000	0.000	.013	.013
95% U	0.000	.146	0.000	0.000	.036	.036
95% L	0.000	-.046	0.000	0.000	-.011	-.011
MULL	0.000	.200	0.000	0.000	.050	.050
SUM X	0.0	10.0	0.0	0.0	2.5	2.5
S X*X	0.0	25.0	0.0	0.0	6.3	6.3
SD	0.000	.685	0.000	0.000	.171	.171
CV	0.000	3.426	0.000	0.000	.856	.856
SE	0.000	.097	0.000	0.000	.024	.024
95% U	0.000	.385	0.000	0.000	.096	.096
95% L	0.000	.015	0.000	0.000	.004	.004

Summary of Canopy Cover (Percent Cover by Species) at B-Pond (contd.)

TOTLD	0.000	0.000	52.500	32.850	21.338	12.956
SUM X	0.0	0.0	2625.0	1642.5	1066.9	647.8
S X*X	0.0	0.0	188962.5	105281.3	73560.9	45776.7
SD	0.000	0.000	32.309	32.364	16.168	9.335
CV	0.000	0.000	.615	.985	.400	.243
SE	0.000	0.000	4.569	4.577	2.287	1.320
95% U	0.000	0.000	61.227	41.592	25.705	15.477
95% L	0.000	0.000	43.773	24.108	16.970	10.434
BRTED	0.000	0.000	51.050	30.650	20.425	12.506
SUM X	0.0	0.0	2552.5	1532.5	1021.3	625.3
S X*X	0.0	0.0	187843.8	95556.3	70850.0	45034.6
SD	0.000	0.000	34.267	31.489	16.439	9.508
CV	0.000	0.000	.671	1.027	.425	.256
SE	0.000	0.000	4.846	4.453	2.325	1.345
95% U	0.000	0.000	60.306	39.156	24.865	15.074
95% L	0.000	0.000	41.794	22.144	15.985	9.938
POSE	0.000	0.000	29.700	2.400	8.025	7.247
SUM X	0.0	0.0	1485.0	120.0	401.3	362.4
S X*X	0.0	0.0	67425.0	5550.0	18243.8	16445.9
SD	0.000	0.000	21.816	10.363	8.045	5.200
CV	0.000	0.000	.735	4.318	1.263	1.033
SE	0.000	0.000	3.085	1.466	1.138	.735
95% U	0.000	0.000	35.593	5.199	10.198	8.652
95% L	0.000	0.000	23.807	-.399	5.852	5.843
ATSP	0.000	0.000	3.700	0.000	.925	.925
SUM X	0.0	0.0	185.0	0.0	46.3	46.3
S X*X	0.0	0.0	12537.5	0.0	3134.4	3134.4
SD	0.000	0.000	15.553	0.000	3.888	3.888
CV	0.000	0.000	4.204	0.000	1.051	1.051
SE	0.000	0.000	2.200	0.000	.550	.550
95% U	0.000	0.000	7.901	0.000	1.975	1.975
95% L	0.000	0.000	-.501	0.000	-.125	-.125
ARTR	0.000	0.000	1.950	25.200	6.788	6.155
SUM X	0.0	0.0	97.5	1260.0	339.4	307.7
S X*X	0.0	0.0	9506.3	105412.5	28729.7	25659.0
SD	0.000	0.000	13.789	38.772	13.140	9.141
CV	0.000	0.000	7.071	1.539	2.152	1.679
SE	0.000	0.000	1.950	5.483	1.858	1.293
95% U	0.000	0.000	5.675	35.673	10.337	8.624
95% L	0.000	0.000	-1.775	14.727	3.238	3.686
DEPI	0.000	0.000	.050	.300	.088	.072
SUM X	0.0	0.0	2.5	15.0	4.4	3.6
S X*X	0.0	0.0	6.3	37.5	10.9	9.0
SD	0.000	0.000	.354	.821	.294	.194
CV	0.000	0.000	7.071	2.736	2.452	1.669
SE	0.000	0.000	.050	.116	.042	.028
95% U	0.000	0.000	.146	.522	.167	.124
95% L	0.000	0.000	-.046	.078	.008	.019
TOTAL	49.650	23.700	228.200	142.600	111.038	46.654
SUM X	2482.5	1185.0	11410.0	7130.0	5551.9	2332.7
S X*X	152631.3	45912.5	2816887.5	1700575.0	1179001.6	664080.6
SD	24.485	19.075	65.951	118.135	56.911	22.937
CV	.493	.805	.289	.828	.604	.130
SE	3.463	2.698	9.327	16.707	8.048	3.244
95% U	56.264	28.852	246.014	174.510	126.410	52.850
95% L	43.036	18.548	210.386	110.690	95.665	40.459

Relative Cover and Species Diversity of M.O. Hill in Ecology (1973)

	BP-1	BP-2	BP-3	BP-4	MEAN	STAN ERR
TOTL	.449	.439	.379	.333	.400	.027
BRTE	.313	.061	.011	.023	.102	.071
SAKA	.096	.323	.000	0.000	.105	.076
SIAL	.113	.011	.001	0.000	.031	.027
ERSP	.026	.152	0.000	0.000	.045	.036
FEOC	.002	0.000	0.000	.001	.001	.001
CRCI	.001	0.000	0.000	.001	.001	.000
HYDR	0.000	.004	0.000	0.000	.001	.001
UNKL	0.000	.002	0.000	0.000	.001	.001
MULL	0.000	.008	0.000	0.000	.002	.002
TOTLD	0.000	0.000	.230	.230	.115	.066
BRTEd	0.000	0.000	.224	.215	.110	.063
POSE	0.000	0.000	.130	.017	.037	.031
ATSP	0.000	0.000	.016	0.000	.004	.004
ARTR	0.000	0.000	.009	.177	.046	.044
DEPI	0.000	0.000	.000	.002	.001	.001
TOTAL	49.650	23.700	228.200	142.600	111.038	46.654
N(0)	7.000	8.000	10.000	9.000	8.500	.645
N(1)	3.701	3.699	4.366	4.615	4.095	.234
N(2)	3.102	3.089	3.789	4.131	3.528	.259

Occurrence Frequency (%) by Plant Species From B-Pond

	BP-1	BP-2	BP-3	BP-4	MEAN	STAN ERR
TOTL	100.000	100.000	100.000	96.000	99.000	1.000
BRTE	96.000	18.000	34.000	44.000	48.000	16.872
SAKA	90.000	96.000	2.000	0.000	47.000	26.589
SIAL	66.000	10.000	8.000	0.000	21.000	15.155
ERSP	22.000	48.000	0.000	0.000	17.500	11.413
FEOC	4.000	0.000	0.000	8.000	3.000	1.915
CRCI	2.000	0.000	0.000	8.000	2.500	1.893
HYDR	0.000	4.000	0.000	0.000	1.000	1.000
UNKL	0.000	2.000	0.000	0.000	.500	.500
MULL	0.000	8.000	0.000	0.000	2.000	2.000
TOTLD	0.000	0.000	98.000	90.000	47.000	27.185
BRTEd	0.000	0.000	100.000	88.000	47.000	27.246
POSE	0.000	0.000	90.000	10.000	25.000	21.794
ATSP	0.000	0.000	6.000	0.000	1.500	1.500
ARTR	0.000	0.000	2.000	32.000	8.500	7.848
DEPI	0.000	0.000	2.000	12.000	3.500	2.872

Summary of Canopy Cover (Percent Cover by Species) at Gable Mtn. Pond

	GP-1(a)	GP-2(a)	GP-3(a)	GP-4(a)	MEAN	STAN ERR
TOTL	42.400	41.450	77.100	56.350	54.325	8.321
SUM X	2120.0	2072.5	3855.0	2817.5	2716.3	416.0
S X*X	128825.0	108231.3	314737.5	218543.8	192584.4	47237.0
SD	28.189	21.346	18.907	34.928	25.843	3.610
CV	.665	.515	.245	.620	.511	.094
SE	3.987	3.019	2.674	4.940	3.655	.511
95% U	50.014	47.216	82.207	65.785	61.305	9.296
95% L	34.786	35.684	71.993	46.915	47.345	7.345
BRTE	38.650	6.100	.050	4.600	12.350	8.861
SUM X	1932.5	305.0	2.5	230.0	617.5	443.0
S X*X	122918.8	6012.5	6.3	8900.0	34459.4	29544.6
SD	31.373	9.205	.354	12.651	13.395	6.528
CV	.812	1.509	7.071	2.750	3.035	1.404
SE	4.437	1.302	.050	1.789	1.894	.923
95% U	47.124	8.586	.146	8.017	15.968	10.624
95% L	30.176	3.614	-.046	1.183	8.732	7.097
CRCI	.650	28.900	0.000	.350	7.475	7.143
SUM X	32.5	1445.0	0.0	17.5	373.8	357.1
S X*X	456.3	55062.5	0.0	43.8	13890.6	13724.3
SD	2.980	16.476	0.000	.876	5.083	3.849
CV	4.585	.570	0.000	2.504	1.915	1.039
SE	.421	2.330	0.000	.124	.719	.544
95% U	1.455	33.350	0.000	.587	8.848	8.183
95% L	-.155	24.450	0.000	.113	6.102	6.103
SAKA	1.850	0.000	0.000	1.050	.725	.449
SUM X	92.5	0.0	0.0	52.5	36.3	22.5
S X*X	981.3	0.0	0.0	506.3	371.9	235.6
SD	4.066	0.000	0.000	3.034	1.775	1.046
CV	2.198	0.000	0.000	2.890	1.272	.748
SE	.575	0.000	0.000	.429	.251	.148
95% U	2.948	0.000	0.000	1.870	1.204	.732
95% L	.752	0.000	0.000	.230	.246	.167
SIAL	2.200	0.000	0.000	.550	.688	.521
SUM X	110.0	0.0	0.0	27.5	34.4	26.0
S X*X	1400.0	0.0	0.0	256.3	414.1	334.1
SD	4.861	0.000	0.000	2.218	1.770	1.156
CV	2.210	0.000	0.000	4.033	1.561	.975
SE	.687	0.000	0.000	.314	.250	.163
95% U	3.513	0.000	0.000	1.149	1.166	.833
95% L	.887	0.000	0.000	-.049	.209	.208
3BR	0.000	.440	0.000	0.000	.100	.100
SUM X	0.0	20.0	0.0	0.0	5.0	5.0
S X*X	0.0	237.5	0.0	0.0	59.4	59.4
SD	0.000	2.164	0.000	0.000	.541	.541
CV	0.000	5.410	0.000	0.000	1.353	1.353
SE	0.000	.306	0.000	0.000	.077	.077
95% U	0.000	.985	0.000	0.000	.246	.246
95% L	0.000	-.185	0.000	0.000	-.046	-.046

(a) GP-1 indicates Gable Mtn. Pond transect 1, GP-2 indicates Gable Mtn. Pond transect 2, etc.

Summary of Canopy Cover (Percent Cover by Species) at Gable Mtn. Pond (contd.)

ERSP	0.000	1.650	0.000	0.000	.413	.413
SUM X	0.0	82.5	0.0	0.0	20.6	20.6
S X*X	0.0	956.3	0.0	0.0	239.1	239.1
SD	0.000	4.091	0.000	0.000	1.023	1.023
CV	0.000	2.479	0.000	0.000	.620	.620
SE	0.000	.579	0.000	0.000	.145	.145
95% U	0.000	2.755	0.000	0.000	.689	.689
95% L	0.000	.545	0.000	0.000	.136	.136
LASE	0.000	.100	0.000	0.000	.025	.025
SUM X	0.0	5.0	0.0	0.0	1.3	1.3
S X*X	0.0	12.5	0.0	0.0	3.1	3.1
SD	0.000	.495	0.000	0.000	.124	.124
CV	0.000	4.949	0.000	0.000	1.237	1.237
SE	0.000	.070	0.000	0.000	.017	.017
95% U	0.000	.234	0.000	0.000	.058	.058
95% L	0.000	-.034	0.000	0.000	-.008	-.008
UNK2	0.000	.050	0.000	0.000	.013	.013
SUM X	0.0	2.5	0.0	0.0	.6	.6
S X*X	0.0	6.3	0.0	0.0	1.6	1.6
SD	0.000	.354	0.000	0.000	.088	.088
CV	0.000	7.071	0.000	0.000	1.768	1.768
SE	0.000	.050	0.000	0.000	.013	.013
95% U	0.000	.146	0.000	0.000	.036	.036
95% L	0.000	-.046	0.000	0.000	-.011	-.011
DRVE	0.000	.950	0.000	0.000	.238	.238
SUM X	0.0	47.5	0.0	0.0	11.9	11.9
S X*X	0.0	493.8	0.0	0.0	123.4	123.4
SD	0.000	3.026	0.000	0.000	.756	.756
CV	0.000	3.185	0.000	0.000	.796	.796
SE	0.000	.428	0.000	0.000	.107	.107
95% U	0.000	1.767	0.000	0.000	.442	.442
95% L	0.000	.133	0.000	0.000	.033	.033
FEOC	0.000	.100	0.000	.300	.100	.071
SUM X	0.0	5.0	0.0	15.0	5.0	3.5
S X*X	0.0	12.5	0.0	37.5	12.5	8.8
SD	0.000	.495	0.000	.821	.329	.201
CV	0.000	4.949	0.000	2.736	1.921	1.198
SE	0.000	.070	0.000	.116	.047	.028
95% U	0.000	.234	0.000	.522	.189	.125
95% L	0.000	-.034	0.000	.078	.011	.016
TRDU	0.000	.300	0.000	0.000	.075	.075
SUM X	0.0	15.0	0.0	0.0	3.8	3.8
S X*X	0.0	225.0	0.0	0.0	56.3	56.3
SD	0.000	2.121	0.000	0.000	.530	.530
CV	0.000	7.071	0.000	0.000	1.768	1.768
SE	0.000	.300	0.000	0.000	.075	.075
95% U	0.000	.873	0.000	0.000	.218	.218
95% L	0.000	-.273	0.000	0.000	-.068	-.068
BBR	0.000	2.400	0.000	0.000	.600	.600
SUM X	0.0	120.0	0.0	0.0	30.0	30.0
S X*X	0.0	3487.5	0.0	0.0	871.9	871.9
SD	0.000	8.081	0.000	0.000	2.020	2.020
CV	0.000	3.367	0.000	0.000	.842	.842
SE	0.000	1.143	0.000	0.000	.286	.286
95% U	0.000	4.583	0.000	0.000	1.146	1.146
95% L	0.000	.217	0.000	0.000	.054	.054

Summary of Canopy Cover (Percent Cover by Species) at Gable Mtn. Pond (contd.)

SALX	0.000	1.800	0.000	0.000	.450	.450
SUM X	0.0	90.0	0.0	0.0	22.5	22.5
S X*X	0.0	3037.5	0.0	0.0	759.4	759.4
SD	0.000	7.661	0.000	0.000	1.915	1.915
CV	0.000	4.256	0.000	0.000	1.064	1.064
SE	0.000	1.083	0.000	0.000	.271	.271
95% U	0.000	3.869	0.000	0.000	.967	.967
95% L	0.000	-.269	0.000	0.000	-.067	-.067
LBR	0.000	.400	0.000	0.000	.100	.100
SUM X	0.0	20.0	0.0	0.0	5.0	5.0
S X*X	0.0	237.5	0.0	0.0	59.4	59.4
SD	0.000	2.164	0.000	0.000	.541	.541
CV	0.000	5.410	0.000	0.000	1.353	1.353
SE	0.000	.306	0.000	0.000	.077	.077
95% U	0.000	.985	0.000	0.000	.246	.246
95% L	0.000	-.185	0.000	0.000	-.046	-.046
ASTR	0.000	.650	0.000	.250	.225	.153
SUM X	0.0	32.5	0.0	12.5	11.3	7.7
S X*X	0.0	456.3	0.0	31.3	121.9	111.7
SD	0.000	2.980	0.000	.758	.934	.705
CV	0.000	4.585	0.000	3.030	1.904	1.144
SE	0.000	.421	0.000	.107	.132	.100
95% U	0.000	1.455	0.000	.455	.477	.344
95% L	0.000	-.155	0.000	.045	-.027	-.037
ACMI	0.000	.050	0.000	0.000	.013	.013
SUM X	0.0	2.5	0.0	0.0	.6	.6
S X*X	0.0	6.3	0.0	0.0	1.6	1.6
SD	0.000	.354	0.000	0.000	.088	.088
CV	0.000	7.071	0.000	0.000	1.768	1.768
SE	0.000	.050	0.000	0.000	.013	.013
95% U	0.000	.146	0.000	0.000	.036	.036
95% L	0.000	-.046	0.000	0.000	-.011	-.011
TOTLD	0.000	0.000	61.300	51.650	28.238	16.421
SUM X	0.0	0.0	3065.0	2582.5	1411.9	821.1
S X*X	0.0	0.0	237875.0	199693.8	109392.2	63636.7
SD	0.000	0.000	31.941	36.786	17.182	9.969
CV	0.000	0.000	.521	.712	.308	.182
SE	0.000	0.000	4.517	5.202	2.430	1.410
95% U	0.000	0.000	69.928	61.586	32.879	19.114
95% L	0.000	0.000	52.672	41.714	23.596	13.729
POSE	0.000	0.000	13.600	.300	3.475	3.376
SUM X	0.0	0.0	680.0	15.0	173.8	168.8
S X*X	0.0	0.0	17637.5	225.0	4465.6	4390.9
SD	0.000	0.000	13.085	2.121	3.802	3.135
CV	0.000	0.000	.962	7.071	2.008	1.703
SE	0.000	0.000	1.850	.300	.538	.443
95% U	0.000	0.000	17.134	.873	4.502	4.222
95% L	0.000	0.000	10.066	-.273	2.448	2.529
BRTEd	0.000	0.000	55.600	0.000	13.900	13.900
SUM X	0.0	0.0	2780.0	0.0	695.0	695.0
S X*X	0.0	0.0	219162.5	0.0	54790.6	54790.6
SD	0.000	0.000	36.308	0.000	9.077	9.077
CV	0.000	0.000	.653	0.000	.163	.163
SE	0.000	0.000	5.135	0.000	1.284	1.284
95% U	0.000	0.000	65.407	0.000	16.352	16.352
95% L	0.000	0.000	45.793	0.000	11.448	11.448

Summary of Canopy Cover (Percent Cover by Species) at Gable Mtn. Pond (contd.)

ATSP	0.000	0.000	10.850	0.000	2.713	2.713
SUM X	0.0	0.0	542.5	0.0	135.6	135.6
S X*X	0.0	0.0	41593.8	0.0	10398.4	10398.4
SD	0.000	0.000	26.995	0.000	6.749	6.749
CV	0.000	0.000	2.488	0.000	.622	.622
SE	0.000	0.000	3.818	0.000	.954	.954
95% U	0.000	0.000	18.142	0.000	4.535	4.535
95% L	0.000	0.000	3.558	0.000	.890	.890
DEPI	0.000	0.000	0.000	1.000	.250	.250
SUM X	0.0	0.0	0.0	50.0	12.5	12.5
S X*X	0.0	0.0	0.0	312.5	78.1	78.1
SD	0.000	0.000	0.000	2.315	.579	.579
CV	0.000	0.000	0.000	2.315	.579	.579
SE	0.000	0.000	0.000	.327	.082	.082
95% U	0.000	0.000	0.000	1.625	.406	.406
95% L	0.000	0.000	0.000	.375	.094	.094
AMAC	0.000	0.000	0.000	.550	.138	.138
SUM X	0.0	0.0	0.0	27.5	6.9	6.9
S X*X	0.0	0.0	0.0	68.8	17.2	17.2
SD	0.000	0.000	0.000	1.046	.262	.262
CV	0.000	0.000	0.000	1.902	.476	.476
SE	0.000	0.000	0.000	.148	.037	.037
95% U	0.000	0.000	0.000	.833	.208	.208
95% L	0.000	0.000	0.000	.267	.067	.067
AMLY	0.000	0.000	0.000	.050	.013	.013
SUM X	0.0	0.0	0.0	2.5	.6	.6
S X*X	0.0	0.0	0.0	6.3	1.6	1.6
SD	0.000	0.000	0.000	.354	.088	.088
CV	0.000	0.000	0.000	7.071	1.768	1.768
SE	0.000	0.000	0.000	.050	.013	.013
95% U	0.000	0.000	0.000	.146	.036	.036
95% L	0.000	0.000	0.000	-.046	-.011	-.011
ERAS	0.000	0.000	0.000	.400	.100	.100
SUM X	0.0	0.0	0.0	20.0	5.0	5.0
S X*X	0.0	0.0	0.0	237.5	59.4	59.4
SD	0.000	0.000	0.000	2.164	.541	.541
CV	0.000	0.000	0.000	5.410	1.353	1.353
SE	0.000	0.000	0.000	.306	.077	.077
95% U	0.000	0.000	0.000	.985	.246	.246
95% L	0.000	0.000	0.000	-.185	-.046	-.046
ARTR	0.000	0.000	0.000	8.650	2.163	2.163
SUM X	0.0	0.0	0.0	432.5	108.1	108.1
S X*X	0.0	0.0	0.0	33181.3	8295.3	8295.3
SD	0.000	0.000	0.000	24.512	6.128	6.128
CV	0.000	0.000	0.000	2.834	.708	.708
SE	0.000	0.000	0.000	3.466	.867	.867
95% U	0.000	0.000	0.000	15.271	3.818	3.818
95% L	0.000	0.000	0.000	2.029	.507	.507
TOTAL	85.750	85.300	218.500	126.050	128.900	31.357
SUM X	4287.5	4265.0	10925.0	6302.5	6445.0	1567.9
S X*X	525318.8	446575.0	2785987.5	1129306.3	1221796.9	543238.6
SD	56.724	41.100	90.224	82.669	67.679	11.400
CV	.662	.482	.413	.656	.553	.063
SE	8.022	5.812	12.760	11.691	9.571	1.612
95% U	101.072	96.402	242.871	148.380	147.181	34.436
95% L	70.428	74.198	194.129	103.720	110.619	28.278

Occurrence Frequency (%) by Plant Species From Gable Mtn. Pond

	GP-1	GP-2	GP-3	GP-4	MEAN	STAN ERR
TOTL	100.000	100.000	100.000	100.000	100.000	0.000
BRTE	88.000	48.000	2.000	48.000	46.500	17.576
CRCI	6.000	100.000	0.000	14.000	30.000	23.509
SAKA	34.000	0.000	0.000	22.000	14.000	8.446
SIAL	28.000	0.000	0.000	12.000	10.000	6.633
3BR	0.000	6.000	0.000	0.000	1.500	1.500
ERSP	0.000	26.000	0.000	0.000	6.500	6.500
LASE	0.000	4.000	0.000	0.000	1.000	1.000
UNK2	0.000	2.000	0.000	0.000	.500	.500
DRVE	0.000	18.000	0.000	0.000	4.500	4.500
FEOC	0.000	4.000	0.000	12.000	4.000	2.828
TRDU	0.000	2.000	0.000	0.000	.500	.500
BBR	0.000	10.000	0.000	0.000	2.500	2.500
SALX	0.000	6.000	0.000	0.000	1.500	1.500
LBR	0.000	6.000	0.000	0.000	1.500	1.500
ASTR	0.000	6.000	0.000	10.000	4.000	2.449
ACMI	0.000	2.000	0.000	0.000	.500	.500
TOTLD	0.000	0.000	100.000	96.000	49.000	28.302
POSE	0.000	0.000	72.000	2.000	18.500	17.840
BRTED	0.000	0.000	98.000	0.000	24.500	24.500
ATSP	0.000	0.000	18.000	0.000	4.500	4.500
DEPI	0.000	0.000	0.000	30.000	7.500	7.500
AMAC	0.000	0.000	0.000	22.000	5.500	5.500
AMLY	0.000	0.000	0.000	2.000	.500	.500
ERAS	0.000	0.000	0.000	6.000	1.500	1.500
ARTR	0.000	0.000	0.000	14.000	3.500	3.500

Computer Program for Summary of Vegetation Data

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1      PROGRAM COVER (INPUT, OUTPUT, CARDS, TAPES5=INPUT, TAPE6=OUTPUT,
      + TAPE8=CARDS)
      DIMENSION TITLE (12)
      DIMENSION COV (50,12), FREQ (50,12), CODE (7), NAME (50), KARD (50)
5      DIMENSION SSX (50,12), SSXX (50,12), SD (50,12), SE (50,12), CV (50,12)
      DIMENSION CI95U (12), CI95L (12)
      DIMENSION ISTNM (7)
      COMMON /A/ LINES
      DIMENSION TOLIN (50,12)
10     C      COVER CALCULATES SEVERAL STATISTICS ON EACH SPECIES AND
      C      LINE, AND DIVERSITY INDICES OF HILL ECOL. 1973. THE
      C      DATA ARE IN GROUPS OF LINES. THE NUMBER OF PLOTS PER
      C      LINE AND TITLES FOR EACH LINE PRECEED EACH GROUP. DATA FOR
      C      A LINE IS FOLLOWED BY A 9999 CARD, EXCEPT THE LAST. GROUPS
15     C      ARE FOLLOWED BY A $$$$ CARD, EXCEPT THE LAST.
      C
      C      IN THE ARRAYS, 50 REFS THE SPECIES EXCEPT IN TOLIN WHERE
      C      50 REFS TO THE NUMBER OF PLOTS PER LINE.
      C      12 REFS TO THE MAX NUMBER OF LINES PER GROUP (10)
20     C      PLUS ONE FOR MEAN AND ONE FOR SE.
      C
      C      BY RONALD H. SAUER      DEC 1976
      C
      DATA CODE/0., 2.5., 15., 37.5, 62.5, 85., 97.5/
25     DATA ISTNM/5H$SUM X,5HS X*X, 5H$D ,5H$CV ,5H$E ,5H95% U,5H95% L
      +/
20     CONTINUE
      DO 30 I=1,50
      DO 30 J=1,12
30     COV (I,J)=0.
      FREQ (I,J)=0.
      SSX (I,J)=0.
      SSXX (I,J)=0.
      SD (I,J)=0.
35     CV (I,J)=0.
      SE (I,J)=0.
      TOLIN (I,J)=0.
30     CONTINUE
      DO 40 J=1,50
40     NAME (J)=4H
      NSPS=0
      C      READ THE NUMBER OF PLOTS IN EACH LINE IN CURRENT GROUP
      READ (5,50) NPLTS
50     FORMAT (I3)
45     WRITE (6,60) NPLTS
60     FORMAT (1H1,* THE NUMBER OF PLOTS IN THE CURRENT GROUP = *,
      1  I3)
      C      READ THE TITLES FOR EACH GROUP (8 CHARACTERS LONG)
      READ (5,70)(TITLE (I), I=1,10)
50     70     FORMAT (10A8)
      L=1
80     READ (5,90) KSP,M,MM,MMM,KARD
90     FORMAT (A5,A9,A10,A6,50I1)
      IF (EOF (5), NE. 0) GO TO 150
55     WRITE (6,100) KSP,M,MM,MMM,KARD
100    FORMAT (1H,A5,A9,A10,A6,50I1)
      IF (KSP.EQ.5H$SS$) GO TO 150

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Computer Program for Summary of Vegetation Data

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        IF (KSP.EQ.5H9999 ) L=L+1
        IF (L.GT.10) GO TO 150
60      IF (KSP.EQ.5H9999 ) GO TO 80
        C      CATALOG SPECIES NUMBER ID OR DETERMINE ID NUMBER IF
        C      SPECIES PREVIOUSLY CATALOGED
        IF (NSPS.EQ.0) GO TO 120
        DO 110 K=, NSPS
65      KP=K
        IF (KSP.EQ.NAME (K)) GO TO 130
110     CONTINUE
120     CONTINUE
        NSPS=NSPS+1
70     NAME (NSPS)=KSP
        KP=NSPS
130     CONTINUE
        SX=SXX=F=0.
        DO 140 K=1, NPLTS
75     IF (KARD(K).EQ.0) KARD (K)=0
        I=KARD(K)+1
        IF (I.GT.1) F=F+1.
        TEMP=CODE (I)
        C      SUM ALL SPECIES IN PLOT K, LINE L INTO TOLIN(K,L)
80     TOLIN(K,L)=TOLIN (K,L)+TEMP
        SX=SX+TEMP
        SXX=SXX+TEMP*TEMP
140     CONTINUE
        FREQ(KP,L)=F*100./NPLTS
85     COV(KP,L)=SX/NPLTS
        SSX(KP,L)=SX
        SSXX(KP,L)=SXX
        H=NPLTS
        TEMP=SXX-SX*SX/H
90     SD(KP,L)=SQRT (TEMP/(H-1))
        CV (KP,L)=SD (KP,L)/COV (KP,L)
        SE (KP,L)=SD (KP,L)/SQRT (H)
        GO TO 80
150     CONTINUE
95     LINES=L
        NAME (NSPS+1)=5HTOTAL
        NAME (NSPS+2)=5HN(0)
        NAME (NSPS+3)=5HN(1)
        NAME (NSPS+4)=5HN (2)
100    TITLE (LINES+1)=8H MEAN
        TITLE (LINES+2)=8HSTAN ERR
        JJ=LINES+2
        I1=NSPS+1
        I2=NSPS+2
105    I3=NSPS+3
        I4=NSPS+4
        C      TOTAL COVER FOR EACH PLOT
        DO 170 L=1, LINES
110    SX=0.
        SXX=0.
        DO 160 JKS=1, NPLTS
        TEMP=TOLIN(JKS,L)

```

Computer Program for Summary of Vegetation Data

```

SX=SX+TEMP
SXX=SXX+TEMP*TEMP
115      160 CONTINUE
          SSX (I1,L)=SX
          SSXX (I1,L)=SXX
          H=NPLTS
          TEMP=SXX-SX*SX/H
120      SD (I1,L)=SQRT (TEMP/(H-1.))
          CV (I1,L)=SD (I1,L)/(SX/H)
          170 SE (I1,L)=SD (I1,L)/SQRT(H)
C          TOTAL ALL SPECIES IN A GROUP.
          DO 180 L=1, LINES
125      DO 180 K=1, NSPS
          180 COV (I1,L)=COV (I1,L)+COV (K,L)
C          CALCULATE MEAN AND STANDARD ERROR FOR PERCENT COVER FOR EACH SPECIES
          CALL STER (COV,1,I1)
          CALL STER (SSX,1,I1)
130      CALL STER (SSXX,1,I1)
          CALL STER (SD,1,I1)
          CALL STER (CV,1,I1)
          CALL STER (SE,1,I1)
C          PRINT THE COVER PERCENTS
135      WRITE (6,190) (TITLE (I), I=1,JJ)
          190 FORMAT (1H1,T50,*PERCENT COVER BY SPECIES*,//,10X,12A10)
          DO 220 K=a,I1
          WRITE (6,240) NAME (K), (COV(K,L),L=1,JJ)
          WRITE (6,200) ISTNM (1), (SSX(K,L),L=1,JJ)
140      WRITE (6,200) ISTNM (2), (SSXX(K,L),L=1,JJ)
          200 FORMAT (2H ,A6,12F10.1)
          WRITE (6,230) ISTNM (3), (SD(K,L),L=1,JJ)
          WRITE (6,230) ISTNM (4), (CV(K,L),L=1,JJ)
          WRITE (6,230) ISTNM (5), (SE(K,L),L=1,JJ)
145      DO 210 JK=1,JJ
          CI95U (JK)=COV (K,JK)+SE (K,JK)*1.910
          CI95L (JK)=COV (K,JK)-SE (K,JK)*1.910
          210 CONTINUE
          WRITE (6,230) ISTNM (6), (CI95U(LL),LL=1,JJ)
150      WRITE (6,230) ISTNM (7), (CI95L (LL),LL=1,JJ)
          220 CONTINUE
          230 FORMAT (2H ,A6,12F10.3)
          240 FORMAT (1H ,A6,12F10.3)
C          CHANGE % COVER TO RELATIVE COVER.
155      DO 250 L=1, LINES
          DO 250 K=1, NSPS
          250 COV (K,L)=COV (K,L)/COV (I1,L)
C          CALCULATE DIVERSITY INDICES ACCORDING TO HILL IN 1973 ECOLOGY
C          N(A) = (SUM OF P**A)**(1./(1.-A))
160      C          A=0 IS NUMBER OF SPECIES.
C          A = 1 IS EXP (SHANNONS ENTROPY)
C          A = 2 IS 1/SIMPSONS MODIFIED INDEX.
C
165      C          A=0 OR N(O)
          A=0
          DO 270 L=1, LINES
          SUM=0
          DO 260 K=1, NSPS
170      IF (COV (K,L).GT.0) SUM=SUM+COV (K,L)**A
          260 CONTINUE

```

Computer Program for Summary of Vegetation Data

```

270 COV (I2,L)=SUM** (1./(1.-A))
C
C
175 ... N (1)
A=1
DO 290 L=1, LINES
SUM=0
DO 280 K=1, NSPS
TEMP=COV (K,L)
180 IF (TEMP.GT.0) SUM=SUM+TEMP*A LOG (TEMP)
280 CONTINUE
290 COV (I3,L)=EXP (-SUM)
C
C
185 N (2)
A=2.
DO 310 L=1, LINES
SUM=0.
DO 300 K=1, NSPS
TEMP=COV (K,L)
190 IF (TEMP.GT.0) SUM=SUM+TEMP**A
300 CONTINUE
310 COV (I4,L)=SUM** (1./(1./A))
C
C
195 CALCULATE MEAN AND STANDARD ERROR
CALL STER (COV,1,I4)
C
PRINT RESULTS
WRITE (6,320) (TITLE(I), I=1,JJ)
320 FORMAT (1H1, T50. *RELATIVE COVER AND SPECIES DIVERSITY OF M.O. HILL
+IN ECOLOGY (1973)*,/,10X,12A10)
200 DO 330 K=1, I4
330 WRITE (6,240) NAME (K), (COV(K,L), L=1,JJ)
C
C
WRITE TOTAL PERCENT, N(0), N(1), AND N(2) OUT FOR PLOTTING LATER.
DO 370 J=1, LINES
205 370 WRITE (8,360) TITLE (J), (COV(L,J), L=I1,I4)
360 FORMAT (A10,4E13.6)
C
C
FREQUENCY
C
210 CALCULATE MEAN AND STANDARD ERROR FOR FREQUENCY
CALL STER (FREQ,1, NSPS)
WRITE (6,340) (TITLE (I), I=1,JJ)
340 FORMAT (1H1,T50.*FREQUENCY*,/,10X, 12A10)
DO 350 K=1, NSPS
350 WRITE (6,240) NAME (K), (FREQ(K,L),L=1, JJ)
215 IF (KSP.EQ.4H$$$$) GO TO 20
END
1 SUBROUTINE STER (DATA, N1, N2)
COMMON /A/ LINES
DIMENSION DATA (50,12)
DO 30 K=N1, N2
5 SUMX=SUMXX=0.
DO 20 L=1, LINES
TEMP=DATA (K,L)
SUMX=SUMX+TEMP
20 SUMXX=SUMXX+TEMP*TEMP

```

Computer Program for Summary of Vegetation Data

```
10      SE2= (SUMXX- (SUMX*SUMX)/LINES)/(LINES*(LINES-1)
      SE=SQRT (SE2)
      AVE=SUMX/LINES
      DATA (K,LINES+1)=AVE
      DATA (K,LINES+2)=SE
15      30  CONTINUE
      RETURN
      END
```


APPENDIX B

DEER DIETS BY PELLET GROUP COLLECTED
AT B-C CRIBS, B POND AND GABLE MOUNTAIN POND HABITATS

Plant Codes Used for 1976 Deer Samples for Diet Analyses:

AGRO - Agropyron spicatum
ANDR - Phalaris arundinacea
ARIS - Aristida spp.
ARTE - Artemisia tridentata
ASTR - Astragalus spp.
BAHY - Bassia hyssopifolia
BROM - Bromus tectorum
CARE - Carex spp.
CHNA - Chrysothamnus nauseosus
DEPI - Descurainia pinnata
ECCR - Echinochloa crusgallii
EQUI - Equisetum spp.
GRSP - Atriplex spinosa
LACT - Lactuca serriola
LESQ - Lesquerella spp.
LICH - Lichen
LUPI - Lupinus spp.
MELI - Melilotus alba
MICR - Microsteris spp.
MOSS - Moss
MUHL - Muhlenbergia spp.
OENO - Oenothera spp.
ORHY - Oryzopsis hymenoides
PANI - Panicum spp.
PHLO - Phlox longiflora
OPUN - Opuntia polyacantha
PLPU - Plantago purshii
POA - Poa sandbergii
PUTR - Purshia tridentata
RAPH - Epilobium paniculatum
SAKA - Salsola kali
SALX - Salix spp.
SEED - Seed
SHEP - Elaeagnus angustifolia
SIAL - Sisymbrium altissimum
SOLI - Solidago spp.
SPHA - Sphaeralcea munroana
STIP - Stipa comata
TYPH - Typha latifolia
UNKF - Unknown forb
UNKG - Unknown grass
UNKS - Unknown sedge
VETH - Verbascum thapsus
ROM - Ranunculus spp.

Codes Used for Site (Transect) with Corresponding Diet and
Radiation Sample Numbers and Age of Deer Pellet Groups
Collected on the Hanford Reservation During 1976 (contd)

B POND

<u>Site</u>	<u>Diet No.</u>	<u>Radiation No.</u>	<u>Age</u>	<u>Date Collected</u>
BP1	001	467	Recent	7-30-76
BP1	002	470	Old	7-30-76
BP1	003	464	Fresh	7-30-76
BP1	004	463	Old	7-30-76
BP1	005	468	Old	7-30-76
BP1	006	461	Recent	7-30-76
BP1	007	462	Fresh	7-30-76
BP1	008	466	Recent	7-30-76
BP1	009	469	Fresh	7-30-76
BP1	010	465	Recent	7-30-76
BP2	011	478	Old	7-30-76
BP2	012	474	Old	7-30-76
BP2	013	479	Fresh	7-30-76
BP2	014	471	Old	7-30-76
BP2	015	476	Fresh	7-30-76
BP2	016	477	Fresh	7-30-76
BP2	017	473	Recent	7-30-76
BP2	018	480	Recent	7-30-76
BP2	019	475	Recent	7-30-76
BP2	020	472	Old	7-30-76
BP3	021	486	Recent	7-30-76
BP3	022	484	Recent	7-30-76
BP3	023	482	Recent	7-30-76
BP3	024	489	Recent	7-30-76
BP3	025	488	Recent	7-30-76
BP3	026	487	Recent	7-30-76
BP3	027	481	Recent	7-30-76
BP3	028	490	Recent	7-30-76
BP3	029	483	Recent	7-30-76
BP3	030	485	Old	7-30-76
BP4	031	493	Old	7-30-76
BP4	032	498	Recent	7-30-76
BP4	033	497	Recent	7-30-76
BP4	034	499	Old	7-30-76
BP4	035	496	Old	7-30-76
BP4	036	492	Recent	7-30-76
BP4	037	495	Recent	7-30-76
BP4	038	500	Recent	7-30-76
BP4	039	494	Old	7-30-76
BP4	040	491	Recent	7-30-76

Codes Used for Site (Transect) with Corresponding Diet and
Radiation Sample Numbers and Age of Deer Pellet Groups
Collected on the Hanford Reservation During 1976 (contd)

GABLE MOUNTAIN POND

<u>Site</u>	<u>Diet No.</u>	<u>Radiation No.</u>	<u>Age</u>	<u>Date Collected</u>
GM1	041	402	Recent	7-29-76
GM1	042	410	Old	7-29-76
GM1	043	404	Old	7-29-76
GM1	044	403	Old	7-29-76
GM1	045	405	Old	7-29-76
GM1	046	407	Old	7-29-76
GM1	047	401	Old	7-29-76
GM1	048	409	Old	7-29-76
GM1	049	406	Recent	7-29-76
GM1	050	408	Old	7-29-76
GM2	051	412	Old	7-29-76
GM2	052	415	Old	7-29-76
GM2	053	420	Recent	7-29-76
GM2	054	418	Old	7-29-76
GM2	055	413	Recent	7-29-76
GM2	056	411	Recent	7-29-76
GM2	057	417	Old	7-29-76
GM2	058	419	Old	7-29-76
GM2	059	416	Old	7-29-76
GM2	060	414	Old	7-29-76
GM3	061	430	Old	7-29-76
GM3	062	424	Fresh	7-29-76
GM3	063	428	Old	7-29-76
GM3	064	429	Old	7-29-76
GM3	065	425	Recent	7-29-76
GM3	066	423	Recent	7-29-76
GM3	067	426	Recent	7-29-76
GM3	068	421	Recent	7-29-76
GM3	069	427	Old	7-29-76
GM3	070	422	Recent	7-29-76
GM4	071	433	Old	7-30-76
GM4	072	438	Fresh	7-30-76
GM4	073	436	Recent	7-30-76
GM4	074	435	Recent	7-30-76
GM4	075	431	Recent	7-30-76
GM4	076	437	Recent	7-30-76
GM4	077	439	Old	7-30-76
GM4	078	440	Old	7-30-76
GM4	079	434	Recent	7-30-76
GM4	080	432	Old	7-30-76

Codes Used for Site (Transect) with Corresponding Diet and
Radiation Sample Numbers and Age of Deer Pellet Groups
Collected on the Hanford Reservation During 1976

B-C CRIBS

<u>Site</u>	<u>Diet No.</u>	<u>Radiation No.</u>	<u>Age</u>	<u>Date Collected</u>
BC1	081	448	Old	8-4-76
BC1	082	444	Old	8-4-76
BC1	083	445	Recent	8-4-76
BC1	084	443	Old	8-4-76
BC1	085	450	Recent	8-4-76
BC1	086	446	Recent	8-4-76
BC1	087	441	Recent	8-4-76
BC1	088	447	Old	8-4-76
BC1	089	449	Old	8-4-76
BC1	090	442	Recent	8-4-76
BC2	091		Old	8-4-76
BC2	092	453	Old	8-4-76
BC2	093	452	Recent	8-4-76
BC2	094	451	Old	8-4-76
BC2	095	456	Old	8-4-76
BC2	096	460	Old	8-4-76
BC2	097	454	Recent	8-4-76
BC2	098	459	Old	8-4-76
BC2	099	457	Old	8-4-76
BC2	100	458	Old	8-4-76

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 4 FOOD
SPECIES

BP-1 DIET SAMPLE 1		RADIATION SAMPLE NO. 467
FOOD SPECIES	FREQUENCY	DENSITY
SALX	13.000	.1393
SAKA	73.0000	1.3093
ECCR	7.0000	.0726
CHNA	3.0000	.0305
FOOD SPECIES	REL FREQ	REL DENS
SALX	13.5417	8.9752
SAKA	76.0417	84.3846
ECCR	7.2917	4.6771
CHNA	3.1250	1.9631

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 8 FOOD
SPECIES

BP-1 DIET SAMPLE 2		RADIATION SAMPLE NO. 470
FOOD SPECIES	FREQUENCY	DENSITY
SAKA	80.0000	1.6094
SOLI	35.0000	.4308
SEED	5.0000	.0513
OENO	1.0000	.0101
SHEP	1.0000	.0101
BROM	1.0000	.0101
SPHA	1.0000	.0101
ECCR	2.0000	.0202
FOOD SPECIES	REL FREQ	REL DENS
SAKA	63.4921	74.7909
SOLI	27.7778	20.0186
SEED	3.9683	2.3836
OENO	.7937	.4670
SHEP	.7937	.4670
BROM	.7937	.4670
SPHA	.7937	.4670
ECCR	1.5873	.9388

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 5 FOOD
SPECIES

BP-1 DIET SAMPLE 3		RADIATION SAMPLE NO. 464
FOOD SPECIES	FREQUENCY	DENSITY
SAKA	97.0000	3.5066
ECCR	3.0000	.0305
BROM	1.0000	.0101
SEED	4.0000	.0408
POA	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
SAKA	91.5094	97.4602
ECCR	2.8302	.8466
BROM	.9434	.2793
SEED	3.7736	1.1346
POA	.9434	.2793

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 6 FOOD
SPECIES

BP-1 DIET SAMPLE 4		RADIATION SAMPLE NO. 463
FOOD SPECIES	FREQUENCY	DENSITY
SAKA	88.0000	2.1203
SOLI	30.0000	.3567
ECCR	5.0000	.0513
BROM	3.0000	.0305
SALX	4.0000	.0408
SEED	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
SAKA	67.1756	81.2497
SOLI	22.9008	13.6680
ECCR	3.8168	1.9656
BROM	2.2901	1.1672
SALX	3.0534	1.5643
SEED	.7634	.3851

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 4 FOOD
SPECIES

BP-1 DIET SAMPLE 5		RADIATION SAMPLE NO. 468
FOOD SPECIES	FREQUENCY	DENSITY
SAKA	96.000	3.2189
ECCR	3.0000	.0305
SPHA	8.0000	.0834
SOLI	2.0000	.0202
FOOD SPECIES	REL FREQ	REL DENS
SAKA	88.0734	96.0022
ECCR	2.7523	.9084
SPHA	7.3394	2.4868
SOLI	1.8349	.6025

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 6 FOOD
SPECIES

BP-1 DIET SAMPLE 6		RADIATION SAMPLE NO. 461
FOOD SPECIES	FREQUENCY	DENSITY
SOLI	38.0000	.4780
SAKA	68.0000	1.1394
SALX	10.0000	.1054
ECCR	15.0000	.1625
BROM	4.0000	.0408
SEED	2.0000	.0202
FOOD SPECIES	REL FREQ	REL DENS
SOLI	27.7372	24.5603
SAKA	49.6350	58.5414
SALX	7.2993	5.4132
ECCR	10.9489	8.3498
BROM	2.9197	2.0973
SEED	1.4599	1.0380

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 5 FOOD
SPECIES

BP-1 DIET SAMPLE 7		RADIATION SAMPLE NO. 462
FOOD SPECIES	FREQUENCY	DENSITY
VETH	75.0000	1.3863
SAKA	75.0000	1.3863
SOLI	50.0000	.6931
ECCR	9.0000	.0943
SEED	2.0000	.0202
FOOD SPECIES	REL FREQ	REL DENS
VETH	35.5450	38.7206
SAKA	35.5450	38.7206
SOLI	23.6967	19.3603
ECCR	4.2654	2.6342
SEED	.9479	.5643

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 6 FOOD
SPECIES

BP-1 DIET SAMPLE 8		RADIATION SAMPLE NO. 466
FOOD SPECIES	FREQUENCY	DENSITY
SAKA	75.0000	1.3863
SEED	8.0000	.0834
BROM	19.0000	.2107
ECCR	25.0000	.2877
SOLI	9.0000	.0943
SALX	3.0000	.0305
FOOD SPECIES	REL FREQ	REL DENS
SAKA	53.9568	66.2396
SEED	5.7554	3.9841
BROM	13.6691	10.0686
ECCR	17.9856	13.7460
SOLI	6.4748	4.5063
SALX	2.1583	1.4554

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 3 FOOD
SPECIES

BP-1 DIET SAMPLE 9		RADIATION SAMPLE NO. 469
FOOD SPECIES	FREQUENCY	DENSITY
SAKA	97.000	3.5066
ECCR	4.0000	.0408
SOLI	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
SAKA	95.0980	98.5700
ECCR	3.9216	1.1475
SOLI	.9804	.2825

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 6 FOOD
SPECIES

BP-1 DIET SAMPLE 10		RADIATION SAMPLE NO. 465
FOOD SPECIES	FREQUENCY	DENSITY
SALX	42.0000	.5447
ECCR	30.0000	.3567
SAKA	45.0000	.5978
SOLI	9.0000	.0943
VETH	1.0000	.0101
BROM	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
SALX	32.8125	33.7574
ECCR	23.4375	22.1036
SAKA	35.1563	37.0487
SOLI	7.0313	5.8446
VETH	.7813	.6228
BROM	.7813	.6228

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 6 FOOD
SPECIES

BP-2 DIET SAMPLE 11		RADIATION SAMPLE NO. 478
FOOD SPECIES	FREQUENCY	DENSITY
SPHA	95.0000	2.9957
SOLI	14.0000	.1508
SEED	6.0000	.0619
SAKA	9.0000	.0943
ECCR	3.0000	.0305
POA	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
SPHA	74.2188	89.6054
SOLI	10.9375	4.5113
SEED	4.6875	1.8508
SAKA	7.0313	2.8209
ECCR	2.3438	.9111
POA	.7813	.3006

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 7 FOOD
SPECIES

BP-2 DIET SAMPLE 12		RADIATION SAMPLE NO. 474
FOOD SPECIES	FREQUENCY	DENSITY
SOLI	15.0000	.1625
SALX	9.0000	.0943
SAKA	75.0000	1.3863
SEED	14.0000	.1508
SPHA	5.0000	.0513
BROM	10.0000	.1054
OENO	2.0000	.0202
FOOD SPECIES	REL FREQ	REL DENS
SOLI	11.5385	8.2463
SALX	6.9231	4.7854
SAKA	57.6923	70.3416
SEED	10.7692	7.6529
SPHA	3.8462	2.6027
BROM	7.6923	5.3461
OENO	1.5385	1.0251

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 7 FOOD
SPECIES

BP-2 DIET SAMPLE 13		RADIATION SAMPLE NO. 479
FOOD SPEICES	FREQUENCY	DENSITY
SAKA	67.0000	1.1087
SPHA	72.0000	1.2730
ECCR	10.0000	.1054
SOLI	3.0000	.0305
SEED	2.0000	.0202
BROM	1.0000	.0101
SALX	4.0000	.0408
FOOD SPECIES	REL FREQ	REL DENS
SAKA	42.1384	42.8299
SPHA	45.2830	49.1773
ECCR	6.2893	4.0703
SOLI	1.8868	1.1767
SEED	1.2579	.7805
BROM	.6289	.3883
SALX	2.5157	1.5770

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 5 FOOD
SPECIES

BP-2 DIET SAMPLE 14		RADIATION SAMPLE NO. 471
FOOD SPECIES	FREQUENCY	DENSITY
SAKA	76.2295	2.6593
SEED	12.0000	.1278
ECCR	13.0000	.1393
SOLI	2.0000	.0202
MICR	2.0000	.0202
FOOD SPECIES	REL FREQ	REL DENS
SAKA	76.2295	89.6351
SEED	9.8361	4.3089
ECCR	10.6557	4.6941
SOLI	1.6393	.6810
MICR	1.6393	.6810

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 8 FOOD
SPECIES

BP-2 DIET SAMPLE 15		RADIATION SAMPLE NO. 476
FOOD SPECIES	FREQUENCY	DENSITY
SAKA	66.0000	1.0788
SPHA	65.0000	1.0498
ECCR	12.0000	.1278
POA	4.0000	.0408
SEED	1.0000	.0101
SHEP	4.0000	.0408
BROM	1.0000	.0101
OPUN	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
SAKA	42.8571	45.5528
SPHA	42.2078	44.3288
ECCR	7.7922	5.3978
POA	2.5974	1.7237
SEED	.6494	.4244
SHEP	2.5974	1.7237
BROM	.6494	.4244
OPUN	.6494	.4244

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 5 FOOD
SPECIES

BP-2 DIET SAMPLE 16		RADIATION SAMPLE NO. 477
FOOD SPECIES	FREQUENCY	DENSITY
SAKA	88.0000	2.1203
SALX	22.0000	.2485
ECCR	5.0000	.0513
SEED	3.0000	.0305
POA	10.0000	.1054
FOOD SPECIES	REL FREQ	REL DENS
SAKA	68.7500	82.9577
SALX	17.1875	9.7213
ECCR	3.9063	2.0069
SEED	2.3438	1.1918
POA	7.8125	4.1223

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 4 FOOD
SPECIES

BP-2		RADIATION
DIET SAMPLE		SAMPLE NO.
17		473
FOOD SPECIES	FREQUENCY	DENSITY
SAKA	91.0000	2.4079
SOLI	5.0000	.0513
ECCR	3.0000	.0305
DEPI	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
SAKA	91.0000	96.3275
SOLI	5.0000	2.0519
ECCR	3.0000	1.2185
DEPI	1.0000	.4021

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 5 FOOD
SPECIES

BP-2		RADIATION
DIET SAMPLE		SAMPLE NO.
18		480
FOOD SPECIES	FREQUENCY	DENSITY
SAKA	91.0000	2.4079
OENO	27.0000	.3147
POA	1.0000	.0101
SEED	1.0000	.0101
ECCR	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
SAKA	75.2066	87.4724
OENO	22.3140	11.4324
POA	.8264	.3651
SEED	.8264	.3651
ECCR	.8264	.3651

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 4 FOOD
SPECIES

BP-2		RADIATION
DIET SAMPLE		SAMPLE NO.
19		475
FOOD SPECIES	FREQUENCY	DENSITY
SPHA	99.0000	4.6052
SAKA	8.0000	.0834
BROM	1.0000	.0101
OENO	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
SPHA	90.8257	97.8032
SAKA	7.3394	1.7708
BROM	.9174	.2134
OENO	.9174	.2134

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 7 FOOD
SPECIES

BP-2		RADIATION
DIET SAMPLE		SAMPLE NO.
20		472
FOOD SPECIES	FREQUENCY	DENSITY
SAKA	93.0000	1.6094
ASTR	1.0000	.0101
ECCR	18.0000	.1985
SEED	3.0000	.0305
POA	3.0000	.0305
EQUI	1.0000	.0101
SOLI	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
SAKA	74.7664	84.7537
ASTR	.9346	.5293
ECCR	16.8224	10.4505
SEED	2.8037	1.6040
POA	2.8037	1.6040
EQUI	.9346	.5293
SOLI	.9346	.5293

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 6 FOOD
SPECIES

BP-3 DIET SAMPLE 21	RADIATION SAMPLE NO. 486	
FOOD SPECIES	FREQUENCY	DENSITY
SAKA	71.0000	1.2379
SALX	24.0000	.2744
ECCR	13.0000	.1393
CARE	4.0000	.0408
BROM	3.0000	.0305
PANI	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
SAKA	61.2069	71.4335
SALX	20.6897	15.8368
ECCR	11.2069	8.0363
CARE	3.4483	2.3557
BROM	2.5862	1.7577
PANI	.8621	.5800

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 4 FOOD
SPECIES

BP-3 DIET SAMPLE 22	RADIATION SAMPLE NO. 484	
FOOD SPECIES	FREQUENCY	DENSITY
SPHA	82.0000	1.7148
SAKA	22.0000	.2485
ECCR	11.0000	.1165
SALX	2.0000	.0202
FOOD SPECIES	REL FREQ	REL DENS
SPHA	70.0855	81.6572
SAKA	18.8034	11.8315
ECCR	9.4017	5.5492
SALX	1.7094	.9620

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBWERVED FIELDS, 5 SLIDES AND 8 FOOD
SPECIES

BP-3 DIET SAMPLE 23	RADIATION SAMPLE NO. 482	
FOOD SPECIES	FREQUENCY	DENSITY
SAKA	91.0000	2.4079
SOLI	3.0000	.0305
SALX	21.0000	.2357
CARE	1.0000	.0101
BROM	1.0000	.0101
UNKG	1.0000	.0101
SEED	2.0000	.0202
ECCR	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
SAKA	75.2066	88.0570
SOLI	2.4793	1.1139
SALX	17.3554	8.6202
CARE	.8264	.3675
BROM	.8264	.3675
UNKG	.8264	.3675
SEED	1.6529	.7388
ECCR	.8264	.3675

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 5 FOOD
SPECIES

BP-3 DIET SAMPLE 24	RADIATION SAMPLE NO. 489	
FOOD SPECIES	FREQUENCY	DENSITY
SAKA	96.0000	3.2189
RAPH	3.0000	.0305
UNKG	3.0000	.0305
SEED	3.0000	.0305
CARE	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
SAKA	90.5660	96.9452
RAPH	2.8302	.9174
UNKG	2.8302	.9174
SEED	2.8302	.9174
CARE	.9434	.3027

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 5 FOOD
SPECIES

BP-3 DIET SAMPLE 25	RADIATION SAMPLE NO. 488	
FOOD SPECIES	FREQUENCY	DENSITY
SPHA	9.0000	.0943
SAKA	28.0000	.3285
SEED	2.0000	.0202
SALX	10.0000	.1054
ECCR	5.0000	.0513
FOOD SPECIES	REL FREQ	REL DENS
SPHA	16.6667	15.7271
SAKA	51.8519	54.7807
SEED	3.7037	3.3690
SALX	18.5185	17.5697
ECCR	9.2593	8.5536

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 6 FOOD
SPECIES

BP-3 DIET SAMPLE 26	RADIATION SAMPLE NO. 487	
FOOD SPECIES	FREQUENCY	DENSITY
SAKA	92.0000	2.5257
SEED	14.0000	.1508
SALX	2.0000	.0202
ECCR	9.0000	.0953
EQUI	1.0000	.0101
BROM	2.0000	.0202
FOOD SPECIES	REL FREQ	REL DENS
SAKA	76.6667	89.5230
SEED	11.6667	5.3458
SALX	1.6667	.7161
ECCR	7.5000	3.3428
EQUI	.8333	.3562
BROM	1.6667	.7161

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 8 FOOD
SPECIES

BP-3 DIET SAMPLE 27	RADIATION SAMPLE NO. 481	
FOOD SPECIES	FREQUENCY	DENSITY
SAKA	89.0000	2.2073
SEED	1.0000	.0101
OENO	2.0000	.0202
ECCR	2.0000	.0202
POA	3.0000	.0305
CARE	1.0000	.0101
EQUI	2.0000	.0202
SOLI	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
SAKA	88.1188	94.7941
SEED	.9901	.4316
OENO	1.9802	.8676
ECCR	1.9802	.8676
POA	2.9703	1.3081
CARE	.9901	.4316
EQUI	1.9802	.8676
SOLI	.9901	.4316

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 6 FOOD
SPECIES

BP-3 DIET SAMPLE 28	RADIATION SAMPLE NO. 490	
FOOD SPECIES	FREQUENCY	DENSITY
SAKA	87.0000	2.0402
SEED	10.0000	.1054
BROM	7.0000	.0726
ECCR	5.0000	.0513
ASTR	1.0000	.0101
SOLI	3.0000	.0305
FOOD SPECIES	REL FREQ	REL DENS
SAKA	76.9912	88.3230
SEED	8.8496	4.5612
BROM	6.1947	3.1416
ECCR	4.4248	2.2205
ASTR	.8850	.4351
SOLI	2.6549	1.3186

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 8 FOOD
SPECIES

BP-3 DIET SAMPLE 29		RADIATION SAMPLE NO. 483
FOOD SPECIES	FREQUENCY	DENSITY
SALX	9.0000	.0943
SAKA	90.0000	2.3026
ECCR	6.0000	.0619
SEED	5.0000	.0513
SOLI	1.0000	.0101
CHNA	1.0000	.0101
SPCR	2.0000	.0202
BROM	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
SALX	7.8261	3.6834
SAKA	78.2609	89.9300
ECCR	5.2174	2.4166
SEED	4.3478	2.0033
SOLI	.8696	.3925
CHNA	.8696	.3925
SPCR	1.7391	.7890
BROM	.8696	.3925

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 4 FOOD
SPECIES

BP-4 DIET SAMPLE 31		RADIATION SAMPLE NO. 493
FOOD SPECIES	FREQUENCY	DENSITY
SAKA	55.0000	.7985
SEED	63.0000	.9943
RAPH	4.0000	.0408
SOLI	11.0000	.1165
FOOD SPECIES	REL FREQ	REL DENS
SAKA	41.3534	40.9467
SEED	47.3684	50.9843
RAPH	3.0075	2.0933
SOLI	8.2707	5.9757

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES, AND 6 FOOD
SPECIES

BP-3 DIET SAMPLE 30		RADIATION SAMPLE NO. 485
FOOD SPECIES	FREQUENCY	DENSITY
SAKA	91.0000	2.4079
POA	1.0000	.0101
LUPI	1.0000	.0101
UNKG	6.0000	.0619
UNKS	2.0000	.0202
SEED	4.0000	.0408
FOOD SPECIES	REL FREQ	REL DENS
SAKA	86.6667	94.3942
POA	.9524	.3940
LUPI	.9524	.3940
UNKG	5.7143	2.4256
UNKS	1.9048	.7920
SEED	3.8095	1.6003

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 4 FOOD
SPECIES

BP-4 DIET SAMPLE 32		RADIATION SAMPLE NO. 498
FOOD SPECIES	FREQUENCY	DENSITY
SAKA	87.0000	2.0402
SALX	25.0000	.2877
SOLI	2.0000	.0202
BROM	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
SAKA	75.6522	86.5176
SALX	21.7391	12.1995
SOLI	1.7391	.8567
BROM	.8696	.4262

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 3 FOOD
SPECIES

BP-4 DIET SAMPLE 33		RADIATION SAMPLE NO. 497
FOOD SPECIES	FREQUENCY	DENSITY
SAKA	95.0000	2.9957
SALX	5.0000	.0513
SOLI	4.0000	.0408
FOOD SPECIES	REL FREQ	REL DEN
SAKA	91.3462	97.0168
SALX	4.8077	1.6611
SOLI	3.8462	1.3220

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 6 FOOD
SPECIES

BP-4 DIET SAMPLE 34		RADIATION SAMPLE NO. 499
FOOD SPECIES	FREQUENCY	DENSITY
SAKA	94.0000	2.8134
SALX	8.0000	.0834
ECCR	6.0000	.0619
CARE	1.0000	.0101
SPHA	1.0000	.0101
BROM	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
SAKA	84.6847	94.1312
SALX	7.2072	2.7898
ECCR	5.4054	2.0702
CARE	.9009	.3363
SPHA	.9009	.3363
BROM	.9009	.3363

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 4 FOOD
SPECIES

BP-4 DIET SAMPLE 35		RADIATION SAMPLE NO. 496
FOOD SPECIES	FREQUENCY	DENSITY
SAKA	96.0000	3.2189
SEED	6.0000	.0619
SALX	4.0000	.0408
ECCR	2.0000	.0202
FOOD SPECIES	REL FREQ	REL DENS
SAKA	88.8889	96.3223
SEED	5.5556	1.8516
SALX	3.7037	1.2216
ECCR	1.8519	.6046

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 6 FOOD
SPECIES

BP-4 DIET SAMPLE 36		RADIATION SAMPLE NO. 492
FOOD SPECIES	FREQUENCY	DENSITY
SAKA	94.0000	2.8134
ECCR	7.0000	.0726
SOLI	1.0000	.0101
UNKS	2.0000	.0202
SEED	3.0000	.0305
BROM	2.0000	.0202
FOOD SPECIES	REL FREQ	REL DENS
SAKA	86.2385	94.8267
ECCR	6.4220	2.4460
SOLI	.9174	.3387
UNKS	1.8349	.6809
SEED	2.7523	1.0266
BROM	1.8349	.6809

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 7 FOOD
SPECIES

BP-4 DIET SAMPLE		RADIATION SAMPLE NO.
37		495
SAKA	87.0000	2.0402
SALX	8.0000	.0834
BROM	3.0000	.0305
SOLI	2.0000	.0202
ECCR	3.0000	.0305
OENO	1.0000	.0101
SEED	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
SAKA	82.8571	91.7026
SALX	7.6190	3.7478
BROM	2.8571	1.3691
SOLI	1.9048	.9081
ECCR	2.8571	1.3691
OENO	.9524	.4517
SEED	.9524	.4517

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 4 FOOD
SPECIES

BF-4 DIET SAMPLE		RADIATION SAMPLE NO.
38		500
FOOD SPECIES	FREQUENCY	DENSITY
SALX	100.0000	*****
SAKA	22.0000	.2485
CARE	1.0000	.0101
BROM	2.0000	.0202
FOOD SPECIES	REL FREQ	REL DENS
SALX	80.0000	*****
SAKA	17.6000	89.1455
CARE	.8000	3.6060
BROM	1.6000	7.2485

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 4 FOOD
SPECIES

BP-4 DIET SAMPLE		RADIATION SAMPLE NO.
39		494
FOOD SPECIES	FREQUENCY	DENSITY
SAKA	74.0000	1.3471
ECCR	35.0000	.4308
SALX	6.0000	.0619
BROM	3.0000	.0305
FOOD SPECIES	REL FREQ	REL DENS
SAKA	62.7119	72.0287
ECCR	29.6610	23.0342
SALX	5.0847	3.3085
BROM	2.5424	1.6287

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 2 FOOD
SPECIES

BP-4 DIET SAMPLE		RADIATION SAMPLE NO.
40		491
FOOD SPECIES	FREQUENCY	DENSITY
SAKA	98.0000	3.9120
SEED	2.0000	.0202
FOOD SPECIES	REL FREQ	REL DENS
SAKA	98.0000	99.4862
SEED	2.0000	.5138

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 072976
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 5 FOOD
SPECIES

GM-1 DIET SAMPLE 41		RADIATION SAMPLE NO. 402
FOOD SPECIES	FREQUENCY	DENSITY
SALX	63.0000	.9943
MELI	21.0000	.2357
BROM	11.0000	.1165
SOLI	6.0000	.0619
SAKA	5.0000	.0513
FOOD SPECIES	REL FREQ	REL DENS
SALX	59.4340	68.1145
MELI	19.8113	16.1489
BROM	10.3774	7.9835
SOLI	5.6604	4.2390
SAKA	4.7170	3.5140

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 072976
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 5 FOOD
SPECIES

GM-1 DIET SAMPLE 42		RADIATION SAMPLE NO. 410
FOOD SPECIES	FREQUENCY	DENSITY
SOLI	88.0000	2.1203
MELI	16.0000	.1744
LACT	3.0000	.0305
RAPH	2.0000	.0202
BAHY	2.0000	.0202
FOOD SPECIES	REL FREQ	REL DENS
SOLI	79.2793	89.6335
MELI	14.4144	7.3707
LACT	2.7027	1.2877
RAPH	1.8018	.8541
BAHY	1.8018	.8541

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 072976
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 8 FOOD
SPECIES

GM-1 DIET SAMPLE 43		RADIATION SAMPLE NO. 404
FOOD SPECIES	FREQUENCY	DENSITY
SOLI	87.0000	2.0402
UNKF	12.0000	.1278
SAKA	4.0000	.0408
LACT	2.0000	.0202
BROM	2.0000	.0202
EQUI	2.0000	.0202
MELI	2.0000	.0202
SPHA	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
SOLI	77.6786	88.7154
UNKF	10.7143	5.5586
SAKA	3.5714	1.7751
LACT	1.7857	.8785
BROM	1.7857	.8785
EQUI	1.7857	.8785
MELI	1.7857	.8785
SPHA	.8929	.4370

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 072976
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 3 FOOD
SPECIES

GM-1 DIET SAMPLE 44		RADIATION SAMPLE NO. 403
FOOD SPECIES	FREQUENCY	DENSITY
SOLI	99.0000	4.6052
MELI	11.0000	.1165
UNKF	2.0000	.0202
FOOD SPECIES	REL FREQ	REL DENS
SOLI	88.3929	97.1164
MELI	9.8214	2.4575
UNKF	1.7857	.4260

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 072976
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 5 FOOD
SPECIES

GM-1 DIET SAMPLE 45		RADIATION SAMPLE NO. 405	
FOOD SPECIES	FREQUENCY	DENSITY	
SALX	59.0000	.8916	
BAHY	49.0000	.6733	
MELI	22.0000	.2485	
SOLI	5.0000	.0513	
MUHL	1.0000	.0101	
FOOD SPECIES	REL FREQ	REL DENS	
SALX	43.3824	47.5583	
BAHY	36.0294	35.9165	
MELI	16.1765	13.2531	
SOLI	3.6765	2.7360	
MUHL	.7353	.5361	

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 072976
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 5 FOOD
SPECIES

GM-1 DIET SAMPLE 46		RADIATION SAMPLE NO. 407	
FOOD SPECIES	FREQUENCY	DENSITY	
SOLI	90.0000	2.3026	
MELI	9.0000	.0943	
EQUI	9.0000	.0943	
LACT	11.0000	.1165	
ORHY	1.0000	.0101	
FOOD SPECIES	REL FREQ	REL DENS	
SOLI	75.0000	87.9591	
MELI	7.5000	3.6027	
EQUI	7.5000	3.6027	
LACT	9.1667	4.4516	
ORHY	.8333	.3839	

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 120. OBSERVED FIELDS, 6 SLIDES AND 11 FOOD
SPECIES

GM-1 DIET SAMPLE 47		RADIATION SAMPLE NO. 401	
FOOD SPECIES	FREQUENCY	DENSITY	
SOLI 25	20.8333	.2336	
MELI 34	28.3333	.3331	
BROM 2	1.6667	.0168	
LACT 19	15.8333	.1742	
EQUI 13	2.5000	.0253	
BAHY 25	20.8333	.2336	
SALX 8	6.6667	.0690	
CHNA 1	.8333	.0084	
SAKA 4	3.3333	.0339	
SPHA 3	2.5000	.0253	
ORYZ 1	.8333	.0084	
FOOD SPECIES	REL FREQ	REL DENS	
SOLI	20.0000	20.1424	
MELI	27.2000	28.7238	
BROM	1.6000	1.4491	
LACT	15.2000	14.8619	
EQUI	2.4000	2.1829	
BAHY	20.0000	20.1424	
SALX	6.4000	5.9486	
CHNA	.8000	.7215	
SAKA	3.2000	2.9230	
SPHA	2.4000	2.1829	
ORYZ	.8000	.7215	

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 072976
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 8 FOOD
SPECIES

GM-1 DIET SAMPLE 48		RADIATION SAMPLE NO. 409	
FOOD SPECIES	FREQUENCY	DENSITY	
MELI	38.0000	.4780	
LACT	20.0000	.2231	
SOLI	56.0000	.8210	
EQUI	7.0000	.0726	
BROM	2.0000	.0202	
SALX	3.0000	.0305	
CARE	5.0000	.0513	
ORHY	1.0000	.0101	
FOOD SPECIES	REL FREQ	REL DENS	
MELI	28.7879	28.0088	
LACT	15.1515	13.0743	
SOLI	42.4242	48.1024	
EQUI	5.3030	4.2520	
BROM	1.5152	1.1837	
SALX	2.2727	1.7846	
CARE	3.7879	3.0052	
ORHY	.7576	.5889	

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 072976
WITH 100. OBSERVED FIELD, 5 SLIDES AND 4 FOOD
SPECIES

GM-1 DIET SAMPLE 49	RADIATION SAMPLE NO. 406	
FOOD SPECIES	FREQUENCY	DENSITY
SALX	60.0000	.9163
MELI	46.0000	.6162
UNKS	1.0000	.0101
SAKA	2.0000	.0202
FOOD SPECIES	REL FREQ	REL DENS
SALX	55.0459	58.6340
MELI	42.2018	39.4301
UNKS	.9174	.6431
SAKA	1.8349	1.2928

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 072976
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 7 FOOD
SPECIES

GM-1 DIET SAMPLE 50	RADIATION SAMPLE NO. 408	
FOOD SPECIES	FREQUENCY	DENSITY
MELI	77.0000	1.4697
SALX	15.0000	.1625
BAHY	5.0000	.0513
SAKA	3.0000	.0305
SOLI	3.0000	.0305
OENO	1.0000	.0101
SEED	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
MELI	73.3333	83.2910
SALX	14.2857	9.2104
BAHY	4.7619	2.9069
SAKA	2.8571	1.7262
SOLI	2.8571	1.7262
OENO	.9524	.5696
SEED	.9524	.5696

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 072976
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 2 FOOD
SPECIES

GM-2 DIET SAMPLE 51	RADIATION SAMPLE NO. 412	
FOOD SPECIES	FREQUENCY	DENSITY
SOLI	100.0000	*****
BROM	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
SOLI	99.0099	*****
BROM	.9901	*****

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 072976
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 8 FOOD
SPECIES

GM-2 DIET SAMPLE 52	RADIATION SAMPLE NO. 415	
FOOD SPECIES	FREQUENCY	DENSITY
SOLI	72.0000	1.2730
SAKA	13.0000	.1393
SEED	17.0000	.1863
AGRO	2.0000	.0202
BROM	4.0000	.0408
MELI	4.0000	.0408
BAHY	2.0000	.0202
LACT	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
SOLI	62.6087	73.5539
SAKA	11.3043	8.0468
SEED	14.7826	10.7664
AGRO	1.7391	1.1673
BROM	3.4783	2.3588
MELI	3.4783	2.3588
BAHY	1.7391	1.1673
LACT	.8696	.5807

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 072976
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 11 FOOD
SPECIES

GM-2 DIET SAMPLE 53		RADIATION SAMPLE NO. 420
FOOD SPECIES	FREQUENCY	DENSITY
MELI	46.0000	.6162
SOLI	46.0000	.6162
ANDR	23.0000	.2614
BAHY	3.0000	.0305
UNKS	8.0000	.0834
LACT	1.0000	.0101
BROM	2.0000	.0202
SALX	17.0000	.1863
SEED	1.0000	.0101
POA	1.0000	.0101
LESQ	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
MELI	30.8725	33.2299
SOLI	30.8725	33.2299
ANDR	15.4362	14.0950
BAHY	2.0134	1.6426
UNKS	5.3691	4.4966
LACT	.6711	.5420
BROM	1.3423	1.0895
SALX	11.4094	10.0485
SEED	.6711	.5420
POA	.6711	.5420
LESQ	.6711	.5420

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 072976
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 7 FOOD
SPECIES

GM-2 DIET SAMPLE 54		RADIATION SAMPLE NO. 418
FOOD SPECIES	FREQUENCY	DENSITY
SOLI	33.0000	.4005
MELI	44.0000	.5798
SALX	44.0000	.5798
LACT	5.0000	.0513
SPHA	7.0000	.0726
BROM	1.0000	.0101
CARE	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
SOLI	24.4444	23.5011
MELI	32.5926	34.0253
SALX	32.5926	34.0253
LACT	3.7037	3.0100
SPHA	5.1852	4.2586
BROM	.7407	.5898
CARE	.7407	.5898

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 072976
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 5 FOOD
SPECIES

GM-2 DIET SAMPLE 55		RADIATION SAMPLE NO. 413
FOOD SPECIES	FREQUENCY	DENSITY
MELI	96.0000	3.2189
SALX	83.0000	1.7720
CARE	1.0000	.0101
BROM	1.0000	.0101
SAKA	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
MELI	52.7473	64.1085
SALX	45.6044	35.2910
CARE	.5495	.2002
BROM	.5495	.2002
SAKA	.5495	.2002

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 072976
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 6 FOOD
SPECIES

GM-2 DIET SAMPLE 56		RADIATION SAMPLE NO. 411
FOOD SPECIES	FREQUENCY	DENSITY
MELI	94.0000	2.8134
SALX	65.0000	1.0498
PHLO	8.0000	.0834
UNKF	1.0000	.0101
TYPH	2.0000	.0202
BROM	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
MELI	34.9708	70.5661
SALX	38.0117	26.3317
PHLO	4.6734	2.0914
UNKF	.5848	.2521
TYPH	1.1696	.5067
BROM	.5848	.2521

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 072976
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 6 FOOD
SPECIES

GM-2 DIET SAMPLE 57		RADIATION SAMPLE NO. 417
FOOD SPECIES	FREQUENCY	DENSITY
SALX	50.0000	.6931
SOLI	22.0000	.2485
ASTR	66.0000	1.0788
LACT	2.0000	.0202
SEED	9.0000	.0943
MELI	2.0000	.0202
FOOD SPECIES	REL FREQ	REL DENS
SALX	33.1126	32.1626
SOLI	14.5695	11.5288
ASTR	43.7086	50.0577
LACT	1.3245	.9374
SEED	5.9603	4.3761
MELI	1.3245	.9374

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 072976
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 7 FOOD
SPECIES

GM-2 DIET SAMPLE 58		RADIATION SAMPLE NO. 419
FOOD SPECIES	FREQUENCY	DENSITY
MELI	13.0000	.1393
SOLI	69.0000	1.1712
SALX	14.0000	.1508
LACT	3.0000	.0305
SPHA	3.0000	.0305
OENO	1.0000	.0101
ARIS	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
MELI	12.5000	9.0296
SOLI	66.3462	75.9381
SALX	13.4615	9.7792
LACT	2.8846	1.9749
SPHA	2.8846	1.9749
OENO	.9615	.6517
ARIS	.9615	.6517

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 072976
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 6 FOOD
SPECIES

GM-2 DIET SAMPLE 59		RADIATION SAMPLE NO. 416
FOOD SPECIES	FREQUENCY	DENSITY
PUTR	86.0000	1.9661
SEED	7.0000	.0726
MELI	4.0000	.0408
SOLI	2.0000	.0202
LACT	1.0000	.0101
UNKF	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
PUTR	85.1485	92.7495
SEED	6.9307	3.4235
MELI	3.9604	1.9257
SOLI	1.9802	.9530
LACT	.9901	.4741
UNKF	.9901	.4741

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 072976
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 8 FOOD
SPECIES

GM-2 DIET SAMPLE 60		RADIATION SAMPLE NO. 414
FOOD SPECIES	FREQUENCY	DENSITY
MELI	21.0000	.2357
SALX	13.0000	.1393
SOLI	41.0000	.5276
SEED	7.0000	.0726
SPHA	1.0000	.0101
LACT	3.0000	.0305
BAHY	1.0000	.0101
EQUI	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
MELI	23.8636	22.7576
SALX	14.7727	13.4449
SOLI	46.5909	50.9397
SEED	7.9545	7.0063
SPHA	1.1364	.9703
LACT	3.4091	2.9407
BAHY	1.1364	.9703
EQUI	1.1364	.9703

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 7 FOOD
SPECIES

GM-3 DIET SAMPLE 61		RADIATION SAMPLE NO. 430
FOOD SPECIES	FREQUENCY	DENSITY
SOLI	30.0000	.3567
SALX	41.0000	.5276
MELI	48.0000	.6539
BROM	5.0000	.0513
BAHY	21.0000	.2357
EQUI	1.0000	.0101
SAKA	2.0000	.0202
FOOD SPECIES	REL FREQ	REL DENS
SOLI	20.2703	19.2225
SALX	27.7027	28.4361
MELI	32.4324	35.2425
BROM	3.3784	2.7644
BAHY	14.1892	12.7040
EQUI	.6757	.5417
SAKA	1.3514	1.0888

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 7 FOOD
SPECIES

GM-3 DIET SAMPLE 62		RADIATION SAMPLE NO. 424
FOOD SPECIES	FREQUENCY	DENSITY
MELI	45.0000	.5978
SALX	15.0000	.1625
SOLI	17.0000	.1863
BAHY	30.0000	.3567
SAKA	5.0000	.0513
BROM	3.0000	.0305
LACT	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
MELI	38.7931	42.8507
SALX	12.9310	11.6487
SOLI	14.6552	13.3554
BAHY	25.8621	25.5651
SAKA	4.3103	3.6765
BROM	2.5862	2.1832
LACT	.8621	.7204

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 5 FOOD
SPECIES

GM-3 DIET SAMPLE 63		RADIATION SAMPLE NO. 428
FOOD SPECIES	FREQUENCY	DENSITY
SOLI	29.0000	.3425
MELI	9.0000	.0943
SAKA	70.0000	1.2040
SALX	5.0000	.0513
BAHY	2.0000	.0202
FOOD SPECIES	REL FREQ	REL DENS
SOLI	25.2174	20.0021
MELI	7.8261	5.5079
SAKA	60.8696	70.3144
SALX	4.3478	2.9956
BAHY	1.7391	1.1799

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 8 FOOD
SPECIES

GM-3 DIET SAMPLE 64		RADIATION SAMPLE NO. 429
FOOD SPECIES	FREQUENCY	DENSITY
BROM	34.0000	.4155
SOLI	40.0000	.5108
EQUI	39.0000	.4943
SEED	5.0000	.0513
LUPI	1.0000	.0101
AGRO	4.0000	.0408
ARTE	1.0000	.0101
MELI	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
BROM	27.2000	26.9307
SOLI	32.0000	33.1081
EQUI	31.2000	32.0368
SEED	4.0000	3.3245
LUPI	.8000	.6514
AGRO	3.2000	2.6458
ARTE	.8000	.6514
MELI	.8000	.6514

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 7 FOOD
SPECIES

GM-3 DIET SAMPLE 65		RADIATION SAMPLE NO. 425
FOOD SPECIES	FREQUENCY	DENSITY
SOLI	88.0000	2.1203
BROM	5.0000	.0513
MELI	2.0000	.0202
PIPU	6.0000	.0619
MOSS	1.0000	.0101
SAKA	1.0000	.0101
LACT	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
SOLI	84.6154	92.8399
BROM	4.8077	2.2460
MELI	1.9231	.8846
PIPU	5.7692	2.7093
MOSS	.9615	.4401
SAKA	.9615	.4401
LACT	.9615	.4401

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 4 FOOD
SPECIES

GM-3 DIET SAMPLE 66		RADIATION SAMPLE NO. 423
FOOD SPECIES	FREQUENCY	DENSITY
SOLI	97.0000	3.5066
MELI	5.0000	.0513
BROM	1.0000	.0101
ARTE	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
SOLI	93.2692	98.0046
MELI	4.8077	1.4336
BROM	.9615	.2809
ARTE	.9615	.2809

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 6 FOOD
SPECIES

GM-3 DIET SAMPLE 67		RADIATION SAMPLE NO. 426
FOOD SPECIES	FREQUENCY	DENSITY
MELI	15.0000	.1625
SOLI	71.0000	1.2379
SAKA	8.0000	.0834
SEED	3.0000	.0305
BROM	6.0000	.0619
ARTE	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
MELI	14.4231	10.2461
SOLI	68.2692	78.0422
SAKA	7.6923	5.2568
SEED	2.8846	1.9203
BROM	5.7692	3.9010
ARTE	.9615	.6336

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELD, 5 SLIDES AND 6 FOOD
SPECIES

GM-3 DIET SAMPLE 68		RADIATION SAMPLE NO. 421
FOOD SPECIES	FREQUENCY	DENSITY
SALX	69.0000	1.1712
MELI	35.0000	.4308
SPHA	18.0000	.1985
BROM	3.0000	.0305
SOLI	3.0000	.0305
EQUI	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
SALX	53.4884	62.5837
MELI	27.1318	23.0195
SPHA	13.9535	10.6045
BROM	2.3256	1.6276
SOLI	2.3256	1.6276
EQUI	.7752	.5371

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 8 FOOD
SPECIES

GM-3 DIET SAMPLE 69		RADIATION D. SAMPLE NO. 427
FOOD SPECIES	FREQUENCY	DENSITY
SOLI	91.0000	2.4079
BAHY	14.0000	.1508
LACT	2.0000	.0202
RAPH	2.0000	.0202
MELI	5.0000	.0513
BROM	1.0000	.0101
SALX	1.0000	.0101
SPHA	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
SOLI	77.7778	89.8280
BAHY	11.9658	5.6264
LACT	1.7094	.7537
RAPH	1.7094	.7537
MELI	4.2735	1.9135
BROM	.8547	.3749
SALX	.8547	.3749
SPHA	.8547	.3749

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 8 FOOD
SPECIES

GM-3 DIET SAMPLE 70		RADIATION SAMPLE NO. 422
FOOD SPECIES	FREQUENCY	DENSITY
SALX	82.0000	1.7148
MELI	7.0000	.0726
SOLI	21.0000	.2357
SIAL	1.0000	.0101
OENO	2.0000	.0202
BAHY	1.0000	.0101
BROM	1.0000	.0101
SAKA	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
SALX	70.6897	82.3039
MELI	6.0345	3.4831
SOLI	18.1034	11.3138
SIAL	.8621	.4824
OENO	1.7241	.9697
BAHY	.8621	.4824
BROM	.8621	.4824
SAKA	.8621	.4824

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 6 FOOD
SPECIES

GM-4 DIET SAMPLE 71		RADIATION SAMPLE NO. 439
FOOD SPECIES	FREQUENCY	DENSITY
SOLI	47.0000	.6349
SALX	39.0000	.4943
BAHY	7.0000	.0726
PANI	1.0000	.0101
BROM	4.0000	.0408
MELI	11.0000	.1165
FOOD SPECIES	REL FREQ	REL DENS
SOLI	43.1193	46.3702
SALX	35.7798	36.1024
BAHY	6.4220	5.3004
PANI	.9174	.7341
BROM	3.6697	2.9816
MELI	10.0917	8.5114

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 8 FOOD
SPECIES

GM-4 DIET SAMPLE 72		RADIATION SAMPLE NO. 438
FOOD SPECIES	FREQUENCY	DENSITY
SALX	58.0000	.8675
SPHA	37.0000	.4620
SOLI	15.0000	.1625
MELI	26.0000	.3011
OENO	1.0000	.0101
LACT	1.0000	.0101
BROM	1.0000	.0101
BAHY	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
SALX	41.4286	47.3175
SPHA	26.4286	25.2015
SOLI	10.7143	8.8645
MELI	18.5714	16.4237
OENO	.7143	.5482
LACT	.7143	.5482
BROM	.7143	.5482
BAHY	.7143	.5482

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 4 FOOD
SPECIES

GM-4 DIET SAMPLE 73		RADIATION SAMPLE NO. 436
FOOD SPECIES	FREQUENCY	DENSITY
SALX	80.0000	1.6094
MELI	45.0000	.5978
SOLI	3.0000	.0305
CARE	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
SALX	62.0155	71.6011
MELI	34.8837	26.5967
SOLI	2.3256	1.3551
CARE	.7752	.4471

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 7 FOOD
SPECIES

GM-4 DIET SAMPLE 74		RADIATION SAMPLE NO. 435
FOOD SPECIES	FREQUENCY	DENSITY
SALX	60.0000	.9163
BROM	31.0000	.3711
SOLI	14.0000	.1508
SAKA	20.0000	.2231
MELI	5.0000	.0513
BAHY	3.0000	.0305
SEED	4.0000	.0408
FOOD SPECIES	REL FREQ	REL DENS
SALX	43.7956	51.3646
BROM	22.6277	20.8008
SOLI	10.2190	8.4547
SAKA	14.5985	12.5088
MELI	3.6496	2.8754
BAHY	2.1898	1.7075
SEED	2.9197	2.2884

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 8 FOOD
SPECIES

GM-4 DIET SAMPLE 75		RADIATION SAMPLE NO. 431
FOOD SPECIES	FREQUENCY	DENSITY
MELI	15.0000	.1625
SOLI	77.0000	1.4697
SALX	1.0000	.0101
SAKA	48.0000	.6539
BROM	4.0000	.0408
UNKG	1.0000	.0101
BAHY	1.0000	.0101
ROM	10.0000	.1054
FOOD SPECIES	REL FREQ	REL DENS
MELI	9.5541	6.5999
SOLI	49.0446	59.6834
SALX	.6369	.4081
SAKA	30.5732	26.5559
BROM	2.5478	1.6578
UNKG	.6369	.4081
BAHY	.6369	.4081
ROM	6.3694	4.2787

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 8 FOOD
SPECIES

GM-4 DIET SAMPLE 76		RADIATION SAMPLE NO. 437
FOOD SPECIES	FREQUENCY	DENSITY
MELI	40.0000	.5108
SALX	72.0000	1.2730
OENO	1.0000	.0101
BAHY	4.0000	.0408
SOLI	8.0000	.0834
BROM	1.0000	.0101
CARE	2.0000	.0202
MOSS	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
MELI	31.0078	26.0845
SALX	55.8140	65.0020
OENO	.7752	.5132
BAHY	3.1008	2.0845
SOLI	6.2016	4.2578
BROM	.7752	.5132
CARE	1.5504	1.0316
MOSS	.7752	.5132

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 7 FOOD
SPECIES

GM-4 DIET SAMPLE 77		RADIATION SAMPLE NO. 439
FOOD SPECIES	FREQUENCY	DENSITY
SALX	94.0000	2.8134
SOLI	23.0000	.2614
SEED	8.0000	.0834
ASTR	9.0000	.0943
BROM	1.0000	.0101
MELI	1.0000	.0101
UNKF	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
SALX	68.6131	85.7063
SOLI	16.7883	7.9621
SEED	5.8394	2.5401
ASTR	6.5693	2.8730
BROM	.7299	.3062
MELI	.7299	.3062
UNKF	.7299	.3062

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 6 FOOD
SPECIES

GM-4 DIET SAMPLE 78		RADIATION SAMPLE NO. 440
FOOD SPECIES	FREQUENCY	DENSITY
SALX	71.0000	1.2379
SOLI	18.0000	.1985
BROM	4.0000	.0408
MELI	9.0000	.0943
PHLO	2.0000	.0202
GRSP	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
SALX	67.6190	77.2845
SOLI	17.1429	12.3899
BROM	3.8095	2.5486
MELI	8.5714	5.8881
PHLO	1.9048	1.2613
GRSP	.9524	.6275

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 5 FOOD
SPECIES

GM-4 DIET SAMPLE 79		RADIATION SAMPLE NO. 434
FOOD SPECIES	FREQUENCY	DENSITY
SALX	100.0000	*****
MELI	5.0000	.0513
BROM	3.0000	.0305
SPHA	1.0000	.0101
EQUI	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
SALX	90.9091	*****
MELI	4.5455	50.3600
BROM	2.7273	29.9095
SPHA	.9091	9.8675
EQUI	.9091	9.8675

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 073076
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 7 FOOD
SPECIES

GM-4 DIET SAMPLE 80		RADIATION SAMPLE NO. 432
FOOD SPECIES	FREQUENCY	DENSITY
SOLI	53.0000	.7550
EQUI	10.0000	.1054
SALX	15.0000	.1625
SAKA	22.0000	.2485
BAHY	4.0000	.0408
MELI	3.0000	.0305
BROM	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
SOLI	49.0741	55.8162
EQUI	9.2593	7.7889
SALX	13.8889	12.0145
SAKA	20.3704	18.3679
BAHY	3.7037	3.0178
MELI	2.7778	2.2517
BROM	.9259	.7430

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 080476
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 5 FOOD
SPECIES

BC-1 DIET SAMPLE 81		RADIATION SAMPLE NO. 448
FOOD SPECIES	FREQUENCY	DENSITY
PUTR	77.0000	1.4697
SALX	34.0000	.4155
OENO	21.0000	.2357
SPHA	2.0000	.0202
POA	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
PUTR	57.0370	68.3199
SALX	25.1852	19.3158
OENO	15.5556	10.9579
SPHA	1.4815	.9392
POA	.7407	.4672

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 080476
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 5 FOOD
SPECIES

BC-1 DIET SAMPLE 82		RADIATION SAMPLE NO. 444
FOOD SPECIES	FREQUENCY	DENSITY
PUTR	46.0000	.6162
OENO	59.0000	.8916
SALX	15.0000	.1625
SOLI	2.0000	.0202
SAKA	4.0000	.0408
FOOD SPECIES	REL FREQ	REL DENS
PUTR	36.5079	35.5904
OENO	46.8254	51.4979
SALX	11.9048	9.3870
SOLI	1.5873	1.1669
SAKA	3.1746	2.3578

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 080476
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 3 FOOD
SPECIES

BC-1 DIET SAMPLE 83		RADIATION SAMPLE NO. 445
FOOD SPECIES	FREQUENCY	DENSITY
PUTR	100.0000	*****
SAKA	5.0000	.0513
ASTR	2.0000	.0202
FOOD SPECIES	REL FREQ	REL DENS
PUTR	93.4579	*****
SAKA	4.6729	71.7429
ASTR	1.8692	28.2571

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 080476
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 3 FOOD
SPECIES

BC-1 DIET SAMPLE 84		RADIATION SAMPLE NO. 443
FOOD SPECIES	FREQUENCY	DENSITY
PUTR	100.0000	*****
SALX	2.0000	.0202
SOLI	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
PUTR	97.0874	*****
SALX	1.9417	66.7791
SOLI	.9709	33.2209

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 080476
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 5 FOOD
SPECIES

BC-1 DIET SAMPLE 85		RADIATION SAMPLE NO. 450
FOOD SPECIES	FREQUENCY	DENSITY
PUTR	100.000	*****
BROM	1.0000	.0101
SAKA	3.0000	.0305
SALX	4.0000	.0408
OENO	2.0000	.0202
FOOD SPECIES	REL FREQ	REL DENS
PUTR	90.9091	*****
BROM	.9091	9.8985
SAKA	2.7273	29.9990
SALX	3.6364	40.2051
OENO	1.8182	19.8974

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 080476
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 5 FOOD
SPECIES

BC-1 DIET SAMPLE 86		RADIATION SAMPLE NO. 446
FOOD SPECIES	FREQUENCY	DENSITY
SALX	96.0000	3.2189
SOLI	4.0000	.0408
MELI	3.0000	.0305
SAKA	3.0000	.0305
BROM	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
SALX	89.7196	96.6436
SOLI	3.7383	1.2256
MELI	2.8037	.9145
SAKA	2.8037	.9145
BROM	.9346	.3018

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 080476
WITH 100. OBSERVED FIELDS, 5 SLIDES 3 FOOD
SPECIES

BC-1 DIET SAMPLE 87		RADIATION SAMPLE NO. 441
FOOD SPECIES	FREQUENCY	DENSITY
PUTR	100.0000	*****
BROM	1.0000	.0101
SALX	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
PUTR	98.0392	*****
BROM	.9804	50.0000
SALX	.9804	50.0000

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 080476
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 4 FOOD
SPECIES

BC-1 DIET SAMPLE 88		RADIATION SAMPLE NO. 447
FOOD SPECIES	FREQUENCY	DENSITY
PUTR	94.0000	2.8134
SOLI	3.0000	.0305
OENO	3.0000	.0305
SALX	3.0000	.0305
FOOD SPECIES	REL FREQ	REL DENS
PUTR	91.2621	96.8542
SOLI	2.9126	1.0486
OENO	2.9126	1.0486
SALX	2.9126	1.0486

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 080476
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 4 FOOD
SPECIES

BC-1 DIET SAMPLE 89		RADIATION SAMPLE NO. 449
FOOD SPECIES	FREQUENCY	DENSITY
PUTR	66.0000	1.0788
OENO	34.0000	.4155
SALX	8.0000	.0834
SOLI	2.0000	.0202
FOOD SPECIES	REL FREQ	REL DENS
PUTR	60.0000	67.5138
OENO	30.9091	26.0037
SALX	7.2727	5.2182
SOLI	1.8182	1.2643

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 080476
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 4 FOOD
SPECIES

BC-1 DIET SAMPLE 90		RADIATION SAMPLE NO. 442
FOOD SPECIES	FREQUENCY	DENSITY
PUTR	100.0000	*****
SALX	8.0000	.0834
SAKA	4.0000	.0408
OENO	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
PUTR	88.4956	*****
SALX	7.0796	62.1074
SAKA	3.5398	30.4066
OENO	.8850	7.4861

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 080476
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 8 FOOD
SPECIES

BC-2 DIET SAMPLE 91		RADIATION SAMPLE NO. 455
FOOD SPECIES	FREQUENCY	DENSITY
SALX	30.0000	.3567
MELI	37.0000	.4620
PUTR	40.0000	.5108
VETH	1.0000	.0101
SOLI	4.0000	.0408
BROM	2.0000	.0202
OENO	2.0000	.0202
SAKA	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
SALX	25.6410	24.9272
MELI	31.6239	32.2907
PUTR	34.1880	35.7005
VETH	.8547	.7024
SOLI	3.4188	2.8530
BROM	1.7094	1.4119
OENO	1.7094	1.4119
SAKA	.8547	.7024

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 080476
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 6 FOOD
SPECIES

BC-2 DIET SAMPLE 92		RADIATION SAMPLE NO. 453
FOOD SPECIES	FREQUENCY	DENSITY
SALX	38.0000	.4780
PUTR	61.0000	.9416
SEED	23.0000	.2614
SAKA	8.0000	.0834
OENO	5.0000	.0513
SOLI	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
SALX	27.9412	26.1832
PUTR	44.8529	51.5742
SEED	16.9118	14.3156
SAKA	5.8824	4.5670
OENO	3.6765	2.8095
SOLI	.7353	.5505

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 080476
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 3 FOOD
SPECIES

BC-2		RADIATION
DIET SAMPLE		SAMPLE NO.
93		452
FOOD SPECIES	FREQUENCY	DENSITY
PUTR	100.0000	*****
OENO	17.0000	.1863
SOLI	2.0000	.0202
FOOD SPECIES	REL FREQ	REL DENS
PUTR	84.0336	*****
OENO	14.2857	90.2181
SOLI	1.6807	9.7819

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 080476
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 4 FOOD
SPECIES

BC-2		RADIATION
DIET SAMPLE		SAMPLE NO.
94		451
FOOD SPECIES	FREQUENCY	DENSITY
PUTR	100.0000	*****
OENO	25.0000	.2877
SOLI	1.0000	.0101
SAKA	6.0000	.0619
FOOD SPECIES	REL FREQ	REL DENS
PUTR	75.7576	*****
OENO	18.9394	79.9988
SOLI	.7576	2.7948
SAKA	4.5455	17.2064

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 080476
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 5 FOOD
SPECIES

BC-2		RADIATION
DIET SAMPLE		SAMPLE NO.
95		456
FOOD SPECIES	FREQUENCY	DENSITY
PUTR	100.0000	*****
SAKA	10.0000	.1054
SOLI	3.0000	.0305
SALX	1.0000	.0101
OENO	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
PUTR	86.9565	*****
SAKA	8.6957	67.5733
SOLI	2.6087	19.5351
SALX	.8696	6.4458
OENO	.8696	6.4458

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 080476
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 2 FOOD
SPECIES

BC-2		RADIATION
DIET SAMPLE		SAMPLE NO.
96		460
FOOD SPECIES	FREQUENCY	DENSITY
PUTR	99.0000	4.6052
SALX	8.0000	.0834
FOOD SPECIES	REL FREQ	REL DENS
PUTR	92.5234	98.2216
SALX	7.4766	1.7784

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 080476
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 5 FOOD
SPECIES

BC-2 DIET SAMPLE 97		RADIATION SAMPLE NO. 454
FOOD SPECIES	FREQUENCY	DENSITY
PUTR	100.0000	*****
SALX	31.0000	.3711
OENO	2.0000	.0202
SEED	1.0000	.0101
SAKA	5.0000	.0513
FOOD SPECIES	REL FREQ	REL DENS
PUTR	71.9424	*****
SALX	22.3022	81.9831
OENO	1.4388	4.4636
SEED	.7194	2.2205
SAKA	3.5971	11.3328

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 080476
WITH OBSERVED FIELDS, 5 SLIDES AND 4 FOOD
SPECIES

BC-2 DIET SAMPLE 98		RADIATION SAMPLE NO. 459
FOOD SPECIES	FREQUENCY	DENSITY
PUTR	100.0000	*****
SAKA	2.0000	.0202
SALX	2.0000	.0202
MELI	4.0000	.0408
FOOD SPECIES	REL FREQ	REL DENS
PUTR	92.5926	*****
SAKA	1.8519	24.8718
SALX	1.8519	24.8718
MELI	3.7037	50.2564

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 080476
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 7 FOOD
SPECIES

BC-2 DIET SAMPLE 99		RADIATION SAMPLE NO. 457
FOOD SPECIES	FREQUENCY	DENSITY
SALX	71.0000	1.2379
MELI	25.0000	.2877
PUTR	4.0000	.0408
SAKA	4.0000	.0408
SOLI	5.0000	.0513
STIP	1.0000	.0101
OENO	1.0000	.0101
FOOD SPECIES	REL FREQ	REL DENS
SALX	63.9640	73.7447
MELI	22.5225	17.1383
PUTR	3.6036	2.4319
SAKA	3.6036	2.4319
SOLI	4.5045	3.0557
STIP	.9009	.5987
OENO	.9009	.5987

DIET ANALYSIS FOR CONSUMER ODHE ON DATE 080476
WITH 100. OBSERVED FIELDS, 5 SLIDES AND 3 FOOD
SPECIES

BC-2 DIET SAMPLE 100		RADIATION SAMPLE NO. 458
FOOD SPECIES	FREQUENCY	DENSITY
PUTR	100.000	*****
SALX	9.0000	.0943
SAKA	2.0000	.0202
FOOD SPECIES	REL FREQ	REL DENS
PUTR	90.0901	*****
SALX	8.1081	82.3578
SAKA	1.8018	17.6422

Computer Diet Analysis Program

PROGRAM DIET

by Ronald H. Sauer

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1      PROGRAM DIET (INPUT, OUTPUT, TAPES=INPUT, TAPE6=OUTPUT)
      DIMENSION FREQ (100), DENS (100, NAME (100)), ISPS (28), IDATA (28)
      DIMENSION DATA (28)
5      C . . . UP TO 4 CARDS MAY BE USED FOR EACH SLIDE. LAST CARD FOR SLIDE
      C . . . MUST HAVE A BLANK IN COL 80. OTHER CARDS FOR SAME SLADE MUST HAVE A 1 IN
      C . . . COL 80.
      C . . .
      C . . . PLACE A BLANK CARD AT THE END OF EACH GROUP (CONSUMER SPECIES,
      C . . . DATE OR WHATEVER) TO BE ANALYZED.
10     C . . .
      C . . . INITIALIZE COUNTERS AND VARIABLES
85     TOTFQ=TOT DENS=0.
      NSLIDS=NNAME=0
      TFLDS=0
15     DO 10 J=1,100
      FREQ (J)=0.
      DENS (J)=1000000000.
      C . . . DENS IS INITIALIZED TO A VALUE THAT WILL BLOW THE OUTPUT FORMAT TO
      C . . . INDICATE WHEN FREQUENCY WAS 100 PERCENT AND DENSITY WAS INDETERMINATE.
20     NAME (J)=10H
      CONTINUE
      CONTINUE
30     DO 32 JJ=1,28
      ISPS (JJ)=10H
25     IDATA (JJ)=0
32     CONTINUE
      READ (5,100) MDATE, MCONS, IFLDS, (ISPS (J), IDATA (J), J=1,7), IFOLLOW
100    FORMAT (3X, A6, 6X, A4, I3, 8X, 7(A4,I3), I1)
      IF (EOF (5). NE. 0) GO TO 90
30     IF (IFOLLOW.NE. 9 ) READ (5,105) (ISPS(J), IDATA (J), J= 8,14), IFOLLOW
      IF EOF (5) .NE. 0 ) STOP "ERROR 1"
      IF (IFOLLOW. GT. 0) READ (5,105) (ISPS (J), IDATA (J), J=15,21), IFOLLOW
      IF EOF (5) .NE. 9 ) STOP "ERROR 2"
      IF (IFOLLOW. GT. 0) READ (5,105) (ISPS (J), IDATA (J), J=22,28), IFOLLOW
35     IF ( EOF (5) .NE. 0) STOP "ERROR 3"
105    FORMAT (30X,7 (A4,I3), I1)
      IF (MCONS.EQ. 4H ) GO TO 35
      NCONS=MCONS
      NDATE=MDATE
40     DO 15 K=1,28
15     DATA (K)=IDATA (K)
      TFLDS=TFLDS+IFLDS
      C . . . COUNT SLIDES
      NSLIDS=NSLIDS+1
45     C . . . NNAME IS THE NUMBER OF OBSERVED FOOD SPECIES, WHICH ARE STORED IN NAME
      C . . . LOG IN THE FOOD SPECIES NAMES IF NECESSARY, AND ACCUMULATE OBSERVATIONS.
      DO 20 J=1,28
      IF (ISPS (J).EQ.4H ) GO TO 25
      DO 40 JK=1,NNAME
50     KEEP=JK
      IF (ISPS (J).EQ.NAME (JK)) GO TO 50
40     CONTINUE
      NNAME=NNAME+1
      NAME (NNAME)=ISPS (J)
55     FREQ (NNAME)=DATA (J)
      GO TO 20
50     FREQ (KEEP)=FREQ (KEEP)+DATA (J)

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```

20      CONTINUE
25      CONTINUE
60      GO TO 30
      C . . . SUMMARIZE THE DATA FOR THE CONSUMER SPECIES
35      CONTINUE
          DO 70 J=1,NNAME
          FREQ (J)=FREQ (J)/TFLDS*100.
65      TOTFQ=TOTFQ+FREQ (J)
          IF (FREQ (J).GE.100.) GO TO 70
          DENS (J)=ALOG(-1./((FREQ (J)/100.-1.))
          TOTDENS=TOTDENS+DENS (J)
70      CONTINUE
70      WRITE (6,220)NCONS,NDATE,TFLDS,NSLIDS,NNAME
220     FORMAT (1H1,* DIET ANALYSIS FOR CONSUMER *,A4,* ON DATE *, A6, 1X,
1*WITH*,F8.0,* OBSERVED FIELDS*,I4* SLIDES AND *,I3,* FOOD SPECIES
2*)
      WRITE (6,200)
75      200     FORMAT (///,* FOOD SPECIES    FREQUENCY    DENSITY*)
          DO 80 K=1,NNAME
80      WRITE (6,210)NAME (K), FREQ (K), DENS (K)
210     FORMAT (1H, 3X, A4, 9X, F10.4, 2X, F7.4)
          DO 75 K=1,NNAME
80      FREQ (K)=FREQ (K)/TOTFQ*100.
          DENS (K)=DENS (K)/TOTDENS*100.
75      CONTINUE
          WRITE (6,230)
230     FORMAT (///,* FOOD SPECIES    REL FREQ REL DENS*)
85      DO 76 J=1, NNAME
          WRITE (6,210) NAME (J), FREQ (J), DENS (J)
76      CONTINUE
          GO TO 85
90      CONTINUE
90      END

```


Original Diet Data

B-Pond Site and Transect-Pellet Group No.

073076	ODHE	20BP1-0091SAKA	20ECCR	2SOLI	1			
073076	ODHE	20BP1-0092SAKA	19ECCR	1	SEED	1		
073076	ODHE	20BP1-0093SAKA	19	SOLI	1			
073076	ODHE	20BP1-0094SAKA	20ECCR	1	SEED	1		
073076	ODHE	20BP1-0095SAKA	19		SEED	1		
073076	ODHE	20BP1-0051SAKA	20ECCR	1SPHA	2			
073076	ODHE	20BP1-0055SAKA	18SOLI	2SPHA	3			
073076	ODHE	20BP1-0054SAKA	19	SPHA	2			
073076	ODHE	20BP1-0053SAKA	19	SPHA	1			
073076	ODHE	20BP1-0052SAKA	20ECCR	2SPHA	3			
073076	ODHE	20BP1-0021SAKA	16SOLI	8SEED	1OENO	1SHEP	1	
073076	ODHE	20BP1-0022SAKA	16SOLI	5	BROM	1SPHA	1ECCR	3
073076	ODHE	20BP1-0023SAKA	17SOLI	9SEED	2BROM	1SPHA	1ECCR	2
073076	ODHE	20BP1-0024SAKA	13SOLI	7SEED	2	SPHA	3ECCR	3
073076	ODHE	20BP1-0025SAKA	18SOLI	6	OENO	1SPHA	1	
073076	ODHE	20BP1-0031SAKA	19ECCR	2BROM	1SEED	2		
073076	ODHE	20BP1-0032SAKA	19SEED	1				
073076	ODHE	20BP1-0033SAKA	20POA	1				
073076	ODHE	20BP1-0034SAKA	19ECCR	1SEED	1			
073076	ODHE	20BP1-0035SAKA	20					
073076	ODHE	20BP1-0011SALX	2SAKA	16ECCR	2CHNA	1		
073076	ODHE	20BP1-0012SALX	2SAKA	6ECCR	4			
073076	ODHE	20BP1-0013SALX	4SAKA	17ECCR	1			
073076	ODHE	20BP1-0014SALX	2SAKA	16				
073076	ODHE	20BP1-0015SALX	3SAKA	18CHNA	2			
073076	ODHE	20BP1-0071VETH	14SAKA	15SOLI	11ECCR	1SEED	1	
073076	ODHE	20BP1-0072VETH	17 SAKA	16SOLI	12ECCR	2		
073076	ODHE	20BP1-0073VETH	13SAKA	16SOLI	7ECCR	3		
073076	ODHE	20BP1-0074VETH	19VETH	18SOLI	9ECCR	1		
073076	ODHE	20BP1-0075VETH	12SAKA	10SOLI	11ECCR	2SEED	1	
073076	ODHE	20BP1-0081SAKA	18SEED		4ECCR	4SOLI	2	
073076	ODHE	20BP1-0082SAKA	13SEED	2BROM	3ECCR	5SOLI	2	
073076	ODHE	20BP1-0083SAKA	14SEED	1BROM	7ECCR	3SOLI	3SALX	2
073076	ODHE	20BP1-0084SAKA	16SEED	1BROM	4ECCR	8SALX	1	
073076	ODHE	20BP1-0085SAKA	14SEED	2BROM	1ECCR	5SOLI	2	
073076	ODHE	20BP1-0061SOLI	11SAKA	16SALX	2ECCR	1BROM	1SEED	1
073076	ODHE	20BP1-0062SOLI	7SAKA	13SALX	4ECCR	4BROM	1	
073076	ODHE	20BP1-0063SOLI	3SAKA	17SALX	1ECCR	4BROM	1	
073076	ODHE	20BP1-0064SOLI	11SAKA	12SALX	ECCR	3BROM	1SEED	1
073076	ODHE	20BP1-0065SOLI	6SAKA	10SALX	2ECCR	3		
073076	ODHE	20BP1-0041SAKA	16SOLI	3ECCR	1BROM	1		
073076	ODHE	20BP1-0042SAKA	17SAKA	6ECCR	1BROM	1SALX	1	
073076	ODHE	20BP1-0043SAKA	19SOLI	5ECCR	2SEED	1		
073076	ODHE	20BP1-0044SAKA	17SOLI		1			
073076	ODHE	20BP1-0045SAKA	19SOLI	5ECCR	1SALX	3		
073076	ODHE	20BP1-0101SALX	12ECCR	5SAKA	6SOLI	1		
073076	ODHE	20BP1-0102SALX	10ECCR	7SAKA	7SOLI	2VETH	1BROM	1
073076	ODHE	20BP1-0103SALX	10ECCR	3SAKA	11SOLI	3		
073076	ODHE	20BP1-0104SALX	5ECCR	7SAKA	12SOLI	2		
073076	ODHE	20BP1-0105SALX	5ECCR	8SAKA	9SOLI	1		

073076	ODHE	20BP2-0161SAKA	18SALX	3					
073076	ODHE	20BP2-0162SAKA	19SALX	2ECCR	1				
073076	ODHE	20BP2-0163SAKA	18SALX	5ECCR	1SEED	1			
073076	ODHE	20BP2-0164SAKA	14SALX	7ECCR	2SEED	2POA	1		
073076	ODHE	20BP2-0165SAKA	19SALX	5ECCR	1				
073076	ODHE	20BP2-0171SAKA	18SOLI	1ECCR	1DEPI	1			
073076	ODHE	20BP2-0172SAKA	19SOLI	0	DEPI	1			
073076	ODHE	20BP2-0173SAKA	18SOLI	1					
073076	ODHE	20BP2-0174SAKA	18SOLI	2	DEPI	1			
073076	ODHE	20BP2-0175SAKA	18SOLI	1ECCR	2				
073076	ODHE	20BP2-0141SAKA	20SEED	2					
073076	ODHE	20BP2-0142SAKA	19SEED	1ECCR	3				
073076	ODHE	20BP2-0143SAKA	18SEED	2ECCR	5SOLI	1MICR	1		
073076	ODHE	20BP2-0144SAKA	18SEED	3ECCR	1SOLI	1MICR	1		
073076	ODHE	20BP2-0145SAKA	18SEED	4ECCR	4				
073076	ODHE	20BP2-0111SPHA	19SOLI	3SEED	2SAKA	3ECCR	1		
073076	ODHE	20BP2-0112SPHA	20SOLI	3SEED	1SAKA	3ECCR	1		
073076	ODHE	20BP2-0113SPHA	19SOLI	5	SAKA	2			
073076	ODHE	20BP2-0114SPHA	18SOLI	1SEED	1SAKA	2	OENO	1	
073076	ODHE	20BP2-0115SPHA	19SOLI	2SEED	2SAKA	1ECCR	1POA	1	
073076	ODHE	20BP2-0201SAKA	16ASTR	1ECCR	7SEED	2			
073076	ODHE	20BP2-0202SAKA	16POA	2ECCR	5				
073076	ODHE	20BP2-0203SAKA	16POA	1ECCR	5				
073076	ODHE	20BP2-0204SAKA	15	ECCR	3SEED	2			
073076	ODHE	20BP2-0205SAKA	17EQUI	1ECCR	1SEED	1SOLI	1		
073076	ODHE	20BP2-0191SPHA	20SAKA	1					
073076	ODHE	20BP2-0192SPHA	19SAKA	3BROM	1				
073076	ODHE	20BP2-0193SPHA	20SAKA	2					
073076	ODHE	20BP2-0194SPHA	20SAKA	1					
073076	ODHE	20BP2-0195SPHA	20SAKA	1OENO	1				
073076	ODHE	20BP2-0181SAKA	19OENO	6POA	1				
073076	ODHE	20BP2-0182SAKA	16OENO	7SEED	1				
073076	ODHE	20BP2-0183SAKA	19OENO	2					
073076	ODHE	20BP2-0184SAKA	19OENO	4					
073076	ODHE	20BP2-0185SAKA	18OENO	8ECCR	1				
073076	ODHE	20BP2-0151SAKA	18SPHA	11ECCR	1POA	1			
073076	ODHE	20BP2-0152SAKA	15SPHA	13ECCR	2POA	2SEED	1SHEP	2	
073076	ODHE	20BP2-0153SAKA	11SPHA	16					
073076	ODHE	20BP2-0154SAKA	13SPHA	12ECCR	3BROM	1OPUN	1		
073076	ODHE	20BP2-0155SAKA	9SPHA	13ECCR	6POA	1SHEP	2		
073076	ODHE	20BP2-0121SOLI	4SALX	3SAKA	15SEED	2SPHA	1BROM	2	
073076	ODHE	20BP2-0122SOLI	3SALX	1SAKA	15SEED	4SPHA	2BROM	2OENO	1
073076	ODHE	20BP2-0123SOLI	1SALX	1SAKA	14SEED	1SPHA	1BROM	4	
073076	ODHE	20BP2-0124SOLI	4SALX	1SAKA	17SEED	2SPHA	1OENO	1	
073076	ODHE	20BP2-0125SOLI	3SALX	3SAKA	14SEED	5BROM	2		

073076	ODHE	20BP2-0131SAKA	12SPHA	11ECCR	2SOLI	1SEED	1	
073076	ODHE	20BP2-0132SAKA	14SPHA	14ECCR	2SOLI	1		
073076	ODHE	20BP2-0133SAKA	9SPHA	16ECCR	4BROM	1SALX	1	
073076	ODHE	20BP2-0134SAKA	13SPHA	15ECCR	2SOLI	1SALX	3SEED	1
073076	ODHE	20BP2-0135SAKA	19SPHA	16	SOLI	1SALX	2	
073076	ODHE	20BP3-0271SAKA	17SEED	1OENO	2ECCR	1POA	2CARE	1
073076	ODHE	20BP3-0272SAKA	17EQUI	1SOLI	1ECCR	1POA	1	
073076	ODHE	20BP3-0273SAKA	18		ECCR	3POA	2	
073076	ODHE	20BP3-0274SAKA	18	SOLI	1ECCR	1POA	1CARE	1
073076	ODHE	20BP3-0275SAKA	19EQUI	1				
073076	ODHE	20BP3-0251SPHA	5SAKA	9SEED	2SALX	10ECCR	5	
073076	ODHE	20BP3-0252SPHA	1SAKA	11	SALX	15ECCR	2SOLI	1
073076	ODHE	20BP3-0253	SAKA	9	SALX	13ECCR	6	
073076	ODHE	20BP3-0254SPHA	3SAKA	8	SALX	12ECCR	5	
073076	ODHE	20BP3-0255	SAKA	6	SALX	13ECCR	2CARE	2
073076	ODHE	20BP3-0221SPHA	17SAKA	4ECCR	4			
073076	ODHE	20BP3-0222SPHA	17SAKA	1ECCR	3			
073076	ODHE	20BP3-0223SPHA	16SAKA	7	SETA	1POA	1	
073076	ODHE	20BP3-0224SPHA	17SAKA	6ECCR	2SALX	2		
073076	ODHE	20BP3-0225SPHA	15SAKA	4ECCR	2			
073076	ODHE	20BP3-0241SAKA	19RAPH	1UNKG	1			
073076	ODHE	20BP3-0242SAKA	19SEED	1				
073076	ODHE	20BP3-0243SAKA	19RAPH	1UNKG	1SEED	1		
073076	ODHE	20BP3-0244SAKA	20					
073076	ODHE	20BP3-0245SAKA	19RAPH	1UNKG	1SEED	1CARE	1	
073076	ODHE	20BP3-0301SAKA	14POA	1LUPI	1UNKG	3		
073076	ODHE	20BP3-0302SAKA	19UNKG	3UNKS	1SEED	1		
073076	ODHE	20BP3-0303SAKA	19UNKS	1SEED	1			
073076	ODHE	20BP3-0304SAKA	19SEED	2				
073076	ODHE	20BP3-0305SAKA	20					
073076	ODHE	20BP3-0211SAKA	15SALX	4ECCR	1CARE	1		
073076	ODHE	20BP3-0212SAKA	13SALX	6ECCR	2BROM	1PANI	1	
073076	ODHE	20BP3-0213SAKA	15SALX	6ECCR	4CARE	1		
073076	ODHE	20BP3-0214SAKA	14SALX	6ECCR	4			
073076	ODHE	20BP3-0215SAKA	14SALX	2ECCR	2CARE	2BROM	2	
073076	ODHE	20BP3-0291SALX	1SAKA	18ECCR	1			
073076	ODHE	20BP3-0292SALX	2SAKA	18ECCR	1SEED	2SOLI	1	
073076	ODHE	20BP3-0293SALX	2SAKA	17ECCR	2SEED	1CHNA	1	
073076	ODHE	20BE3-0294SALX	3SAKA	19ECCR	1SEED	1SPCR	2BROM	1
073076	ODHE	20BP3-0295SALX	1SAKA	18ECCR	1SEED	1		
073076	ODHE	20BP3-0231SAKA	20SOLI	1				
073076	ODHE	20BP3-0232SAKA	19SALX	2SOLI	1CARE	1BROM	1	
073076	ODHE	20BP3-0233SAKA	17SALX	5UNKG	1SEED	1		
073076	ODHE	20BP3-0234SAKA	18SALX	7ECCR	1SOLI	1SEED	1	
073076	ODHE	20BP3-0235SAKA	17SALX	7				

073076	ODHE	20BP3-0261SAKA	20SEED	3SALX	1			
073076	ODHE	20BP3-0262SAKA	20SEED	3SALX	1ECCR	4		
073076	ODHE	20BP3-0263SAKA	18SEED	2EQUI	1ECCR	2		
073076	ODHE	20BP3-0264SAKA	16SEED	4BROM	1			
073076	ODHE	20BP3-0265SAKA	18SEED	2BROM	1ECCR	3		
073076	ODHE	20BP3-0281SAKA	17SEED	2BROM	3			
073076	ODHE	20BP3-0282SAKA	18SEED	2ECCR	2			
073076	ODHE	20BP3-0283SAKA	17SEED	1BROM	1ECCR	2ASTR	1	
073076	ODHE	20BP3-0284SAKA	20SEED	3BROM	1SOLI	1		
073076	ODHE	20BP3-0285SAKA	15SEED	2BROM	2ECCR	1SOLI	2	
073076	ODHE	20BP4-0361SAKA	20ECCR	2				
073076	ODHE	20BP4-0362SAKA	19ECCR	2				
073076	ODHE	20BP4-0363SAKA	17ECCR	1SOLI	1UNKS	1SEED	2BROM	1
073076	ODHE	20BP4-0364SAKA	19ECCR	2				
073076	ODHE	20BP4-0365SAKA	19UNKS	1SEED	1BROM	1		
073076	ODHE	20BP4-0311SAKA	12SEED	14RAPH	2SOLI	4		
073076	ODHE	20BP4-0312SAKA	11SEED	15RAPH	1SOLI	3		
073076	ODHE	20BP4-0313SAKA	8SEED	9RAPH	1SOLI	4		
073076	ODHE	20BP4-0314SAKA	11SEED	16	SOLI	1		
073076	ODHE	20BP4-0315SAKA	13SEED	9	SOLI	1		
073076	ODHE	20BP4-0401SAKA	19SEED	1				
073076	ODHE	20BP4-0402SAKA	20					
073076	ODHE	20BP4-0403SAKA	20					
073076	ODHE	20BP4-0404SAKA	20SEED	1				
073076	ODHE	20BP4-0405SAKA	19SEED					
073076	ODHE	20BP4-0331SAKA	19SALX	2				
073076	ODHE	20BP4-0332SAKA	20					
073076	ODHE	20BP4-0333SAKA	19SOLI	2				
073076	ODHE	20BP4-0334SAKA	17SOLI	1SALX	2			
073076	ODHE	20BP4-0335SAKA	20SOLI	1SALX	1			
073076	ODHE	20BP4-0341SAKA	18SALX	4ECCR	1			
073076	ODHE	20BP4-0342SAKA	20SALX	1ECCR	2			
073076	ODHE	20BP4-0343SAKA	17SALX	1ECCR	1CARE	1SPHA	1	
073076	ODHE	20BP4-0344SAKA	19SALX	1ECCR	2			
073076	ODHE	20BP4-0345SAKA	20SALX	1BROM	1			
073076	ODHE	20BP4-0391SAKA	13ECCR	7SALX	4BROM	2		
073076	ODHE	20BP4-0392SAKA	16ECCR	6SALX	1			
073076	ODHE	20BP4-0393SAKA	14ECCR	6				
073076	ODHE	20BP4-0394SAKA	14ECCR	9SALX	1BROM	1		
073076	ODHE	20BP4-0395SAKA	17ECCR	7	BROM	1		
073076	ODHE	20BP4-0381SALX	20SAKA	6				
073076	ODHE	20BP4-0382SALX	20SAKA	3				
073076	ODHE	20BP4-0383SALX	20SAKA	4				
073076	ODHE	20BP4-0384SALX	20SAKA	5CARE	1BROM	1		
073076	ODHE	20BP4-0385SALX	20SAKA	4BROM	1			

073076	ODHE	20BP4-0371SAKA	18SALX	3BROM	1SOLI	1		
073076	ODHE	20BP4-0372SAKA	19ECCR	1BROM	1			
073076	ODHE	20BP4-0373SAKA	16SALX	1OENO	1			
073076	ODHE	20BP4-0374SAKA	16SALX	2BROM	1ECCR	2SEED	1	
073076	ODHE	20BP4-0375SAKA	18SALX	2SOLI	1			
073076	ODHE	20BP4-0321SAKA	18SALX	5				
073076	ODHE	20BP4-0322SAKA	16SALX	6SOLI	1			
073076	ODHE	20BP4-0323SAKA	20SALX	5				
073076	ODHE	20BP4-0324SAKA	16SALX	5				
073076	ODHE	20BP4-0325SAKA	17SALX	4SOLI	1BROM	1		
073076	ODHE	20BP4-0351SAKA	17SEED	1SALX	1			
073076	ODHE	20BP4-0352SAKA	19SEED	1SALX	1ECCR	1		
073076	ODHE	20BP4-0353SAKA	20SEED	2				
073076	ODHE	20BP4-0354SAKA	20SEED	1				
073076	ODHE	20BP4-0355SAKA	20SEED	1SALX	2ECCR	1		

BC-Cribs Site and Transect-Pellet Group No.

080476	ODHE	20BC1-0821PUTR	8OENO	12SALX	5SOLI	2		
080476	ODHE	20BC1-0822PUTR	7OENO	14SALX	5SAKA	1		
080476	ODHE	20BC1-0823PUTR	9OENO	14SALX	1			
080476	ODHE	20BC1-0824PUTR	10OENO	10SALX	2SAKA	1		
080476	ODHE	20BC1-0825PUTR	12OENO	9SALX	2SAKA	2		
080476	ODHE	20BC1-0811PUTR	13SALX	10OENO	3SPHA	1		
080476	ODHE	20BC1-0812PUTR	17SALX	4OENO	3			
080476	ODHE	20BC1-0813PUTR	17SALX	7OENO	5			
080476	ODHE	20BC1-0814PUTR	14SALX	7OENO	6SPHA	1POA	1	
080476	ODHE	20BC1-0815PUTR	16SALX	6OENO	4			
080476	ODHE	20BC1-0831PUTR	20SAKA	2				
080476	ODHE	20BC1-0832PUTR	20SAKA	1				
080476	ODHE	20BC1-0833PUTR	20SAKA	1ASTR	1			
080476	ODHE	20BC1-0834PUTR	20SAKA	1				
080476	ODHE	20BC1-0835PUTR	20ASTR	1				
080476	ODHE	20BC1-0861SALX	20SOLI	2				
080476	ODHE	20BC1-0862SALX	17MELI	2SAKA	3			
080476	ODHE	20BC1-0863SALX	19SOLI	1MELI	1			
080476	ODHE	20BC1-0864SALX	20BROM	1				
080476	ODHE	20BC1-0865SALX	20SOLI	1				
080476	ODHE	20BC1-0841PUTR	20					
080476	ODHE	20BC1-0842PUTR	20					
080476	ODHE	20BC1-0843PUTR	20					
080476	ODHE	20BC1-0844PUTR	20SALX	2				
080476	ODHE	20BC1-0845PUTR	20SOLI	1				
080476	ODHE	20BC1-0891PUTR	12OENO	7SALX	4SOLI	1		
080476	ODHE	20BC1-0892PUTR	15OENO	4SALX	2			
080476	ODHE	20BC1-0893PUTR	13OENO	8SALX	1SOLI	1		
080476	ODHE	20BC1-0894PUTR	15OENO	6SALX	1			
080476	ODHE	20BC1-0895PUTR	11OENO	9				

080476	ODHE	20BC1-0881PUTR	20SOLI	1			
080476	ODHE	20BC1-0882PUTR	20				
080476	ODHE	20BC1-0883PUTR	15SOLI	2OENO	3		
080476	ODHE	20BC1-0884PUTR	20SALX	2			
080476	ODHE	20BC1-0885PUTR	19SALX	1			
080476	ODHE	20BC1-0851PUTR	20BROM	1SAKA	1SALX	1	
080476	ODHE	20BC1-0852PUTR	20OENO	1			
080476	ODHE	20BC1-0853PUTR	20SAKA	1SALX	1		
080476	ODHE	20BC1-0854PUTR	20SALX	2			
080476	ODHE	20BC1-0855PUTR	20SAKA	1OENO	1		
080476	ODHE	20BC1-0901PUTR	20SALX	2			
080476	ODHE	20BC1-0902PUTR	20SALX	2			
080476	ODHE	20BC1-0903PUTR	20SALX	1SAKA	1		
080476	ODHE	20BC1-0904PUTR	20SALX	1SAKA	1OENO	1	
080476	ODHE	20BC1-0905PUTR	20SALX	2SAKA	2		
080476	ODHE	20BC1-0871PUTR	20				
080476	ODHE	20BC1-0872PUTR	20BROM	1			
080476	ODHE	20BC1-0873PUTR	20				
080476	ODHE	20BC1-0874PUTR	20SALX	1			
080476	ODHE	20BC1-0875PUTR	20				
080476	ODHE	20BC2-0921SALX	8PUTR	9SEED	4SAKA	2OENO	2
080476	ODHE	20BC2-0922SALX	8PUTR	13SEED	4SAKA	1	
080476	ODHE	20BC2-0923SALX	5PUTR	13SEED	1OENO	1SOLI	1
080476	ODHE	20BC2-0924SALX	9PUTR	12SEED	9SAKA	1OENO	2
080476	ODHE	20BC2-0925SALX	8PUTR	14SEED	5SAKA	4	
080476	ODHE	20BC2-0961PUTR	20SALX	2			
080476	ODHE	20BC2-0962PUTR	20SALX	1			
080476	ODHE	20BC2-0963PUTR	20SALX	1			
080476	ODHE	20BC2-0964PUTR	20SALX	2			
080476	ODHE	20BC2-0965PUTR	19SALX	2			
080476	ODHE	20BC2-0941PUTR	20OENO	5SOLI	1		
080476	ODHE	20BC2-0942PUTR	20OENO	6			
080476	ODHE	20BC2-0943PUTR	20OENO	3			
080476	ODHE	20BC2-0944PUTR	20OENO	6SAKA	3		
080476	ODHE	20BC2-0945PUTR	20OENO	5SAKA	3		
080476	ODHE	20BC2-0931PUTR	20OENO	4			
080476	ODHE	20BC2-0932PUTR	20OENO	5			
080476	ODHE	20BC2-0933PUTR	20OENO	2SOLI	1		
080476	ODHE	20BC2-0934PUTR	20OENO	4SOLI	1		
080476	ODHE	20BC2-0935PUTR	20OENO	2			
080476	ODHE	20BC2-0991SALX	14MELI	5PUTR	1SAKA	2	
080476	ODHE	20BC2-0992SALX	15MELI	5SOLI	1STIP	1	
080476	ODHE	20BC2-0993SALX	14MELI	5SOLI	2PUTR	1SAKA	2
080476	ODHE	20BC2-0994SALX	15MELI	5SOLI	1PUTR	1OENO	1
080476	ODHE	20BC2-0995SALX	13MELI	5SOLI	1PUTR	1	

080476	ODHE	20BC2-0911SALX	5MELI	6PUTR	10VETH	1		
080476	ODHE	20BC2-0912SALX	5MELI	6PUTR	9SOLI	2BROM	1OENO	1
080476	ODHE	20BC2-0913SALX	6MELI	4PUTR	12SOLI	1		
080476	ODHE	20BC2-0914SALX	10MELI	7PUTR	3SOLI	1BROM	1OENO	1SAKA 1
080476	ODHE	20BC2-0915SALX	4MELI	14PUTR	6			
080476	ODHE	20BC2-1001PUTR	20					
080476	ODHE	20BC2-1002PUTR	20SALX	3				
080476	ODHE	20BC2-1003PUTR	20SALX	2				
080476	ODHE	20BC2-1004PUTR	20SALX	2				
080476	ODHE	20BC2-1005PUTR	20SALX	2SAKA	2			
080476	ODHE	20BC2-0971PUTR	20SALX	4				
080476	ODHE	20BC2-0972PUTR	20SALX	9OENO	2			
080476	ODHE	20BC2-0973PUTR	20SALX	5SEED	1SAKA	3		
080476	ODHE	20BC2-0974PUTR	20SALX	7SAKA	2			
080476	ODHE	20BC2-0975PUTR	20SALX	6				
080476	ODHE	20BC2-0951PUTR	20SAKA	1SOLI	1SALX	1		
080476	ODHE	20BC2-0952PUTR	20SAKA	4SOLI	1			
080476	ODHE	20BC2-0953PUTR	20SAKA	1OENO	1			
080476	ODHE	20BC2-0954PUTR	20SAKA	2SOLI	1			
080476	ODHE	20BC2-0955PUTR	20SAKA	2				
080476	ODHE	20BC2-0981PUTR	20SAKA	1				
080476	ODHE	20BC2-0982PUTR	20SALX	2				
080476	ODHE	20BC2-0983PUTR	20MELI	2				
080476	ODHE	20BC2-0984PUTR	20MELI	1				
080476	ODHE	20BC2-0985PUTR	20MELI	1SAKA	1			

Gable Mtn. Pond Site and Transect-Pellet Group No.

072976	ODHE	20GM1-0491SALX	15MELI	7UNKS	1			
072976	ODHE	20GM1-0492SALX	11MELI	9SAKA	1			
072976	ODHE	20GM1-0493SALX	11MELI	12				
072976	ODHE	20GM1-0494SALX	10MELI	10				
072976	ODHE	20GM1-0495SALX	13MELI	8SAKA	1			
072976	ODHE	20GM1-0501MELI	19SALX	3BAHY	1			
072976	ODHE	20GM1-0502MELI	12SALX	4BAHY	1SAKA	2SOLI		2
072976	ODHE	20GM1-0503MELI	12SALX	5BAHY	2SAKA	1OENO		1
072976	ODHE	20GM1-0504MELI		2BAHY	1SEED	1		
072976	ODHE	20GM1-0505MELI	18SALX	1SOLI	1			
072976	ODHE	20GM1-0441SOLI	20MELI	1				
072976	ODHE	20GM1-0442SOLI	20MELI	2UNKF	1			
072976	ODHE	20GM1-0443SOLI	20MELI	4				
072976	ODHE	20GM1-0444SOLI	19MELI	2				
072976	ODHE	20GM1-0445SOLI	20MELI	2UNKF	1			
072976	ODHE	20GM1-0411SALX	15MELI	4BROM	2SOLI	1		
072976	ODHE	20GM1-0412SALX	14MELI	4BROM	1	SAKA		1
072976	ODHE	20GM1-0413SALX	13MELI	3BROM	2SOLI	3SAKA		3
072976	ODHE	20GM1-0414SALX	10MELI	5BROM	3SOLI	1SAKA		2
072976	ODHE	20GM1-0415SALX	11MELI	5BROM	3SOLI	1		

072976	ODHE	20GM1-0431SOLI	10UNKF	1SAKA	1LACT	1BROM	1EQUI	1	
072976	ODHE	20GM1-0432SOLI	15UNKF	4SAKA	1MELI	1SPHA	1		
072976	ODHE	20GM1-0433SOLI	20BROM	1					
072976	ODHE	20GM1-0434SOLI	17UNKF	4SAKA	1MELI	1EQUI	1		
072976	ODHE	20GM1-0435SOLI	16UNKF	3SAKA	1LACT	1			
072976	ODHE	20GM1-0481MELI	6LACT	3SOLI	13EQUI	3BROM	1SALX	1	
072976	ODHE	20GM1-0482MELI	13LACT	3SOLI	13EQUI	1CARE	2		
072976	ODHE	20GM1-0483MELI	6LACT	7SOLI	11EQUI	3BROM	1SALX	1ORHY	1
072976	ODHE	20GM1-0484MELI	8LACT	3SOLI	9SALX	1CARE	2		
072976	ODHE	20GM1-0485MELI	5LACT	4SOLI	10CARE	1			
072976	ODHE	20GM1-0421SOLI	20MELI	3LACT	1				
072976	ODHE	20GM1-0422SOLI	14MELI	4LACT	2RAPH	1BAHY	1		
072976	ODHE	20GM1-0423SOLI	19MELI	1					
072976	ODHE	20GM1-0424SOLI	16MELI	6BAHY	1				
072976	ODHE	20GM1-0425SOLI	19MELI	2RAPH	1				
072976	ODHE	20GM1-0461SOLI	18MELI	4EQUI	3LACT	1			
072976	ODHE	20GM1-0462SOLI	15MELI	1EQUI	2LACT	4			
072976	ODHE	20GM1-0463SOLI	19MELI	1EQUI	2LACT	4ORHY	1		
072976	ODHE	20GM1-0464SOLI	18MELI	3EQUI	2LACT	2			
072976	ODHE	20GM1-0465SOLI	20	EQUI	1LACT	2			
072976	ODHE	20GM1-0451SALX	13BAHY	8MELI	7SOLI	3			
072976	ODHE	20GM1-0452SALX	12BAHY	15MELI	4SOLI	2MUHL	1		
072976	ODHE	20GM1-0453SALX	12BAHY	10MELI	4	BROM	3		
072976	ODHE	20GM1-0454SALX	17BAHY	7MELI	1				
072976	ODHE	20GM1-0455SALX	5BAHY	9MELI	6				
073076	ODHE	20GM1-0471SOLI	4MELI	9BROM	1LACT	3EQUI	2BAHY	5SALX	3
073076	ODHE	20GM1-0471CHNA	1						
073076	ODHE	20GM1-0472SOLI	3MELI	9LACT	5BAHY	5SALX	1		
073076	ODHE	20GM1-0473SOLI	6MELI	4LACT	3BAHY	7SALX	1SAKA	1SPHA	3
073076	ODHE	20GM1-0474SOLI	8MELI	6LACT	3BAHY	5SALX	2SAKA	1EQUI	
073076	ODHE	20GM1-0474BROM	1						
073076	ODHE	20GM1-0475SOLI	4MELI	6LACT	5BAHY	3SALX	1SAKA	2ORYZ	1
072976	ODHE	20GM2-0561MELI	18SALX	14PHLO	1				
072976	ODHE	20GM2-0562MELI	20SALX	13PHLO	1UNKF	1			
072976	ODHE	20GM2-0563MELI	18SALX	11PHLO	3TYPH	1			
072976	OCHE	20GM2-0564MELI	18SALX	14PHLO	1TYPH	1			
072976	ODHE	20GM2-0565MELI	20SALX	13PHLO	2BROM	1			
072976	ODHE	20GM2-0531MELI	10SOLI	12ANDR	6BAHY	2			
072976	ODHE	20GM2-0532MELI	10SOLI	9ANDR	5UNKS	2LACT	1BROM	2SALX	3
072976	ODHE	20GM2-0533MELI	5SOLI	11ANDR	7BAHY	1UNKS	1SALX	4SEED	1
072976	ODHE	20GM2-0534MELI	10SOLI	9ANDR	2UNKS	3SALX	2POA	1	
072976	ODHE	20GM2-0535MELI	11SOLI	5ANDR	3UNKS	2SALX	8LESQ	1	
072976	ODHE	20GM2-0591PUTR	18SEED	1MELI	1				
072976	ODHE	20GM2-0592PUTR	17SEED	3MELI	2SOLI	1LACT	1		
072976	ODHE	20GM2-0593PUTR	18SEED	1	SOLI	2SPHA	1		
072976	ODHE	20GM2-0594PUTR	15SEED	1	SOLI	2			
072976	ODHE	20GM2-0595PUTR	18SEED	1MELI	1SOLI	1UNKF	1		

072976	ODHE	20GM2-0521SOLI	16SAKA	2SEED	2AGRO	1BROM	1MELI	2	
072976	ODHE	20GM2-0522SOLI	13SAKA	2SEED	5BAHY	2			
072976	ODHE	20GM2-0523SOLI	15SAKA	2SEED	4BROM	1LACT	1		
072976	ODHE	20GM2-0524SOLI	15SAKA	3SEED	4AGRO	1			
072976	ODHE	20GM2-0525SOLI	13SAKA	4SEED	2MELI	2BROM	2		
072976	ODHE	20GM2-0551MELI	19SALX	18					
072976	ODHE	20GM2-0552MELI	20SALX	17CARE	1				
072976	ODHE	20GM2-0553MELI	20SALX	16					
072976	ODHE	20GM2-0554MELI	18SALX	16BROM	1SAKA	1			
072976	ODHE	20GM2-0555MELI	19SALX	16					
072976	ODHE	20GM2-0511SOLI	20						
072976	ODHE	20GM2-0512SOLI	20						
072976	ODHE	20GM2-0513SOLI	20						
072976	ODHE	20GM2-0514SOLI	20						
072976	ODHE	20GM2-0515SOLI	20BROM	1					
072976	ODHE	20GM2-0541SOLI	9MELI	8SALX	8LACT	1SPHA	1BROM	1	
072976	ODHE	20GM2-0542SOLI	6MELI	14SALX	7LACT	1			
072976	ODHE	20GM2-0543SOLI	6MELI	6SALX	11LACT	1SPHA	2		
072976	ODHE	20GM2-0544SOLI	6MELI	10SALX	8CARE	1			
072976	ODHE	20GM2-0545SOLI	6MELI	6SALX	10LACT	2SPHA	4		
072976	ODHE	20GM2-0581MELI	1SOLI	18SALX	1				
072976	ODHE	20GM2-0582MELI	4SOLI	13SALX	3				
072976	ODHE	20GM2-0583MELI	2SOLI	13SALX	3LACT	2SPHA	1		
072976	ODHE	20GM2-0584MELI	5SOLI	13SALX	4SPHA	1			
072976	ODHE	20GM2-0585MELI	1SOLI	12SALX	3LACT	1SPHA	1OENO	1ARIS	1
072976	ODHE	20GM2-0601MELI	3SALX	5SOLI	13SEED	2			
072976	ODHE	20GM2-0602MELI	4SALX	3SOLI	9SEED	2SPHA	1LACT	2BAHY	1
072976	ODHE	20GM2-0603MELI	7SALX	2SOLI	8SEED	1EQUI	1		
072976	ODHE	20GM2-0604MELI	3SALX	3SOLI	11SEED	2LACT	1		
072976	ODHE	20GM2-0605MELI	4	SOLI	14LACT	3			
072976	ODHE	20GM2-0571SALX	10SOLI	5ASTR	10LACT	1			
072976	ODHE	20GM2-0572SALX	11SOLI	4ASTR	18SEED	2			
072976	ODHE	20GM2-0573SALX	12SOLI	5ASTR	11SEED	3			
072976	ODHE	20GM2-0574SALX	8SOLI	3ASTR	12SEED	2LACT	1MELI	1	
072976	ODHE	20GM2-0575SALX	9SOLI	5ASTR	15SEED	2MELI	1		
073076	ODHE	20GM3-0681SALX	14MELI	5SPHA	3BROM	1			
073076	ODHE	20GM3-0682SALX	14MELI	9SPHA	3				
073076	ODHE	20GM3-0683SALX	14MELI	8SPHA	4SOLI	2EQUI	1		
073076	ODHE	20GM3-0684SALX	12MELI	6SPHA	7BROM	1SOLI	1		
073076	ODHE	20GM3-0685SALX	15MELI	7SPHA	1BROM	1			
073076	ODHE	20GM3-0631SOLI	8MELI	3SAKA	10				
073076	ODHE	20GM3-0632SOLI	7MELI	1SAKA	15SALX	1			
073076	ODHE	20GM3-0633SOLI	6MELI	3SAKA	12				
073076	ODHE	20GM3-0634SOLI	5MELI	1SAKA	17SALX	2BAHY	2		
073076	ODHE	20GM3-0635SOLI	3MELI	1SAKA	16SALX	2			

073076	ODHE	20GM3-0671MELI	3SOLI	13SAKA	3SEED	1			
073076	ODHE	20GM3-0672MELI	4SOLI	15SAKA	1BROM	2			
073076	ODHE	20GM3-0673MELI	5SOLI	14SAKA	2BROM	1			
073076	ODHE	20GM3-0674MELI	2SOLI	15SAKA	1BROM	2			
073076	ODHE	20GM3-0675MELI	1SOLI	14SAKA	1SEED	2BROM	1ARTE	1	
073076	ODHE	20GM3-0641BROM	12SOLI	9EQUI	5SEED	1			
073076	ODHE	20GM3-0642BROM	5SOLI	7EQUI	6SEED	1LUP	1AGRO	3	
073076	ODHE	20GM3-0643BROM	7SOLI	10EQUI	8SEED	1			
073076	ODHE	20GM3-0644BROM	6SOLI	7EQUI	11SEED	1AGRO	1ARTE	1MELI	1
073076	ODHE	20GM3-0645BROM	4SOLI	7EQUI	9SEED	1			
073076	ODHE	20GM3-0691SOLI	20BAHY	1LACT	1RAPH	1			
073076	ODHE	20GM3-0692SOLI	14BAHY	5MELI	1LACT	1BROM	1SALX	1	
073076	ODHE	20GM3-0693SOLI	20BAHY	2MELI	2RAPH	1			
073076	ODHE	20GM3-0694SOLI	20BAHY	3MELI	1				
073076	ODHE	20GM3-0695SOLI	17BAHY	3MELI	1SPHA	1			
073076	ODHE	20GM3-0611SOLI	7SALX	8MELI	11BROM	1			
073076	ODHE	20GM3-0612SOLI	8SALX	7MELI	9BAHY	3EQUI	1		
073076	ODHE	20GM3-0613SOLI	6SALX	6MELI	9BAHY	9SAKA	1		
073076	ODHE	20GM3-0614SOLI	3SALX	8MELI	8BAHY	6BROM	1		
073076	ODHE	20GM3-0615SOLI	6SALX	12MELI	11BAHY	3BROM	3SAKA	1	
073076	ODHE	20GM3-0651SOLI	17BROM	3MELI	2				
073076	ODHE	20GM3-0652SOLI	17PIPU	1					
073076	ODHE	20GM3-0653SOLI	17PIPU	2MOSS	1				
073076	ODHE	20GM3-0654SOLI	17PIPU	2BROM	1SAKA	1			
073076	ODHE	20GM3-0655SOLI	20PIPU	1BROM	1LACT	1			
073076	ODHE	20GM3-0661SOLI	20MELI	1					
073076	ODHE	20GM3-0662SOLI	20						
073076	ODHE	20GM3-0663SOLI	18MELI	3					
073076	ODHE	20GM3-0664SOLI	20						
073076	ODHE	20GM3-0665SOLI	19MELI	1BROM	1ARTE	1			
073076	ODHE	20GM3-0701SALX	16MELI	2SOLI	2SIAL	1			
073076	ODHE	20GM3-0702SALX	16MELI	1SOLI	4				
073076	ODHE	20GM3-0703SALX	16MELI	1SOLI	5				
073076	ODHE	20GM3-0704SALX	18MELI	1SOLI	4OENO	1BAHY	1		
073076	ODHE	20GM3-0705SALX	16MELI	2SOLI	6OENO	1BROM	1SAKA	1	
073076	ODHE	20GM3-0621MELI	10SALX	1SOLI	2BAHY	6SAKA	1BROM	1	
073076	ODHE	20GM3-0622MELI	5SALX	3SOLI	4BAHY	9SAKA	1LACT	1	
073076	ODHE	20GM3-0623MELI	5SALX	6SOLI	6BAHY	5			
073076	ODHE	20GM3-0624MELI	11SALX	3SOLI	2BAHY	5SAKA	3BROM	2	
073076	ODHE	20GM3-0625MELI	14SALX	2SOLI	3BAHY	5			
073076	ODHE	20GM4-0791SALX	20MELI	2					
073076	ODHE	20GM4-0792SALX	20BROM	2SPHA	1				
073076	ODHE	20GM4-0793SALX	20MELI	1					
073076	ODHE	20GM4-0794SALX	20MELI	1					
073076	ODHE	20GM4-0795SALX	20MELI	1BROM	1EQUI	1			

073076	ODHE	20GM4-0751MELI	3SOLI	13SALX	1SAKA	3BROM	2		
073076	ODHE	20GM4-0752MELI	4SOLI	13BROM	2UNKG	1BAHY	1		
073076	ODHE	20GM4-0753MELI	3SOLI	18SAKA	2				
073076	ODHE	20GM4-0754MELI	2SOLI	17SAKA	4ROM	1			
073076	ODHE	20GM4-0755MELI	3SOLI	16SAKA	3				
073076	ODHE	20GM4-0781SALX	13SOLI	6BROM	1				
073076	ODHE	20GM4-0782SALX	14SOLI	4BROM	1MELI	4PHLO	1		
073076	ODHE	20GM4-0783SALX	13SOLI	3BROM	1MELI	3			
073076	ODHE	20GM4-0784SALX	20SOLI	1					
073076	ODHE	20GM4-0785SALX	11SOLI	4BROM	1MELI	2PHLO	1GRSP	1	
073076	ODHE	20GM4-0801SOLI	11EQUI	2SALX	5SAKA	5BAHY	2		
073076	ODHE	20GM4-0802SOLI	15EQUI	1SALX	2SAKA	4BAHY	1MELI	1	
073076	ODHE	20GM4-0803SOLI	9EQUI	3SALX	5SAKA	2	MELI	1	
073076	ODHE	20GM4-0804SOLI	10EQUI	1SALX	2SAKA	7	MELI	3	
073076	ODHE	20GM4-0805SOLI	8EQUI	3SALX	1SAKA	4BAHY	1MELI	2BROM	1
073076	ODHE	20GM4-0741SALX	12BROM	6SOLI	4SAKA	1MELI	1BAHY	3	
073076	ODHE	20GM4-0742SALX	13BROM	9SOLI	3SAKA	3MELI	1SEED	3	
073076	ODHE	20GM4-0743SALX	14BROM	6SOLI	1SAKA	6MELI	1		
073076	ODHE	20GM4-0744SALX	11BROM	4SOLI	4SAKA	6			
073076	ODHE	20GM4-0745SALX	10BROM	6SOLI	2SAKA	4SEED	1MELI	2	
073076	ODHE	20GM4-0771SOLI	10SALX	7BAHY	3PANI	1BROM	1		
073076	ODHE	20GM4-0772SOLI	10SALX	9BAHY	1MELI	2			
073076	ODHE	20GM4-0773SOLI	10SALX	10BAHY	1MELI	3BROM	1		
073076	ODHE	20GM4-0774SOLI	11SALX	4BAHY	1MELI	4			
073076	ODHE	20GM4-0775SOLI	6SALX	9BAHY	1MELI	2BROM	2		
073076	ODHE	20GM4-0761MELI	12SALX	12OENO	1BAHY	1			
073076	ODHE	20GM4-0762MELI	7SALX	15SOLI	1BROM	1CARE	2		
073076	ODHE	20GM4-0763MELI	7SALX	15SOLI	3MOSS	1			
073076	ODHE	20GM4-0764MELI	6SALX	17SOLI	3BAHY	1			
073076	ODHE	20GM4-0765MELI	8SALX	13SOLI	1BAHY	2			
073076	ODHE	20GM4-0721SALX	11SPHA	8SOLI	2MELI	3OENE	1LACT	1	

APPENDIX C

RADIOLOGICAL DATA
OF MULE DEER PELLET GROUPS COLLECTED AT
B-C CRIBS, B POND, GABLE MOUNTAIN POND AND DEER CREEK, PROVO, UTAH

Radiation Data (dpm/g) of Deer Pellet Groups Collected from the
Gable Mountain Pond Habitat with Radiation Number and
Corresponding Diet Number.

¹⁴⁴ Ce	¹⁰⁶ Ru	¹³⁷ Cs	⁹⁵ Zr	⁵⁴ Mn	⁶⁵ Zn	⁴⁰ K	⁶⁰ Co	Rad. No.	Diet No.
56.280	130.300	-5.380	5.480	-9.110	-12.100	-146.000	5.276	401	47
76.410	107.800	14.240	11.870	-8.810	12.440	-11.000	-2.270	402	41
20.700	78.600	9.648	6.052	-7.390	1.651	-17.600	-.440	403	44
14.200	139.100	1.968	5.991	-9.720	-6.210	76.230	4.625	404	43
53.860	84.230	33.150	9.989	-16.400	16.910	-91.300	-1.040	405	45
17.550	198.300	97.040	5.923	-18.700	19.450	-110.000	-7.410	406	49
25.850	201.100	15.940	29.210	-22.800	8.571	10.670	09.470	407	46
17.730	68.600	48.620	10.260	-12.500	18.190	-69.800	5.157	408	50
27.710	330.000	18.790	11.960	-12.700	2.423	-8.800	14.030	409	48
18.520	63.100	76.450	7.126	-11.800	8.076	-98.100	.822	410	42
23.230	178.600	64.280	14.710	-13.200	10.380	-30.800	.788	411	56
166.700	105.200	19.060	10.650	-16.500	-15.300	-43.500	4.065	412	51
-3.850	148.200	39.080	10.880	-14.900	8.642	-72.200	-4.800	413	55
146.400	99.310	28.530	9.689	-3.110	17.220	-161.000	-2.710	414	60
7.072	69.520	.152	13.250	-15.000	-15.900	-127.000	6.042	415	52
44.290	62.110	25.770	-3.830	-12.400	-3.150	-70.500	-.043	416	59
245.500	222.800	46.880	17.830	-7.560	.215	-6.730	-4.150	417	57
137.900	161.500	31.630	9.377	-9.600	-7.740	-2.580	-8.620	418	54
189.600	191.000	13.700	1.931	2.035	-2.350	-74.500	-4.360	419	58
182.300	192.800	39.060	6.674	-14.900	.977	40.300	-6.860	420	53
109.900	133.500	25.090	-5.520	-10.700	11.320	-7.120	-.229	421	68
9.295	63.720	21.920	2.784	-12.600	-11.800	-93.800	6.530	422	70
15.220	61.950	-1.990	-3.000	-.901	-7.090	-73.500	-.852	423	66

Radiation Data (dpm/g) of Deer Pellet Groups Collected from the
Gable Mountain Pond Habitat with Radiation Number and
Corresponding Diet Number (Contd).

^{144}Ce	^{106}Ru	^{137}Cs	^{95}Zr	^{54}Mn	^{65}Zn	^{40}K	^{60}Co	Rad. No.	Diet No.
24.190	101.100	4.893	-6.940	-8.630	8.103	-54.700	-.757	424	62
116.900	142.000	-4.690	2.929	-9.100	4.226	30.100	-14.600	425	65
30.250	51.160	7.847	7.497	-12.100	2.236	-89.800	2.823	426	67
76.010	77.920	-8.630	4.248	-10.100	-4.030	-20.200	-4.000	427	69
83.970	35.230	283.800	10.060	-8.680	10.070	-21.300	5.433	428	63
211.100	138.600	37.840	16.080	-14.300	9.785	-37.000	5.433	429	64
145.700	182.400	15.220	.506	-14.000	7.445	-5.270	-9.310	430	61
-88.900	-18.300	6.795	-7.660	-1.250	-1.750	-161.000	-.793	431	75
-37.200	32.050	30.940	-6.450	2.067	-7.850	-51.700	-3.980	432	80
-140.000	-25.000	33.310	-7.470	1.056	-2.780	-281.000	-6.070	433	71
-125.000	-53.800	66.640	-5.080	-1.220	10.170	-186.000	-2.010	434	79
-10.500	23.190	34.190	-4.420	.352	-9.460	-263.000	.703	435	74
-91.400	-107.000	78.790	-6.150	7.026	15.940	-65.500	-1.990	436	73
96.720	106.000	134.100	12.750	-.481	-8.830	-87.400	-1.760	437	76
21.000	18.200	22.170	-3.450	2.532	-2.740	-20.500	-3.170	438	72
55.930	9.951	10.980	-7.830	4.072	11.330	-30.600	-10.700	439	77
-48.700	-5.350	7.777	-5.070	2.306	-.518	-62.200	-1.050	440	78

Radiation Data (dpm/g) of Deer Pellet Groups Collected from the
B-C Cribs Habitat with Radiation Number and Corresponding Diet Number.

^{144}Ce	^{106}Ru	^{137}Cs	^{95}Zr	^{54}Mn	^{65}Zn	^{40}K	^{60}Co	Rad. No.	Diet No.
-89.500	40.710	3.961	-1.350	4.376	.819	-70.700	-3.630	441	87
17.010	107.200	3.272	-5.850	-3.360	-9.690	-75.200	-7.320	442	90
8.567	44.020	17.710	-5.920	.961	-3.170	-39.400	-2.330	443	84
21.130	100.900	39.380	6.417	7.212	-13.900	-117.000	4.205	444	82
-79.900	53.920	-2.230	-8.680	3.208	11.510	-142.000	-9.620	445	83
29.440	125.300	-3.140	-10.300	.231	-2.460	-78.900	-9.780	446	86
15.230	84.930	6.800	-7.100	3.502	-24.000	-2.750	3.872	447	88
21.240	98.060	-.682	-.630	-.083	-23.300	-67.000	7.073	448	81
92.650	160.900	-.632	3.470	-5.350	-30.900	-1.290	2.226	449	89
109.800	230.300	-.225	-.873	-3.310	-26.300	69.140	-1.920	450	85
58.360	205.700	1.834	-1.920	-3.130	-15.800	47.320	-6.020	451	94
157.200	189.000	-1.640	-9.850	-5.370	-38.000	13.310	4.978	452	93
-2.890	88.840	-3.340	1.065	-2.870	-11.500	18.550	-1.100	453	92
85.110	221.900	-9.690	-.940	1.303	-38.000	51.200	-3.370	454	97
7.405	98.470	4.328	1.155	-3.320	-24.400	-40.500	5.739	455	91
107.300	185.000	1.089	-11.500	.280	-27.100	38.900	-1.590	456	95
2.573	135.900	-9.090	-4.540	-2.020	-17.400	8.890	1.128	457	99
106.100	109.800	5.007	-3.190	2.510	-19.500	3.275	3.435	458	100
17.520	119.600	7.469	-4.250	2.186	-27.900	-11.700	1.971	459	98
-.986	143.400	12.140	.718	.192	-22.500	-50.900	2.649	460	96

Radiation Data (dpm/g) of Deer Pellet Groups Collected from the
B Pond Habitat with Radiation Number and Corresponding Diet Number.

¹⁴⁴ Ce	¹⁰⁶ Ru	¹³⁷ Cs	⁹⁵ Zr	⁵⁴ Mn	⁶⁵ Zn	⁴⁰ K	⁶⁰ Co	Rad. No.	Diet No.
5.296	145.000	5.163	-3.270	-2.230	-26.000	-37.600	1.413	461	6
91.230	169.300	54.680	-3.370	-5.080	-24.900	5.981	-6.870	462	7
106.800	150.500	54.440	3.803	2.765	-16.000	50.090	-1.760	463	4
44.410	95.490	14.930	-4.670	-2.530	-18.900	4.335	7.149	464	3
61.180	-149.000	17.600	-23.800	8.929	22.990	149.800	-3.020	465	10
15.000	-109.000	62.690	-15.200	9.546	14.030	181.800	.552	466	8
-34.400	-200.000	22.630	-34.700	5.497	38.260	170.500	-.798	467	1
-13.500	-161.000	61.890	-17.500	3.240	35.160	176.800	-2.530	468	5
-6.240	-128.000	15.460	-17.700	3.669	13.210	38.430	3.400	469	9
64.150	-87.800	94.260	-9.720	2.302	10.480	196.000	-1.140	470	2
113.000	-8.080	55.900	-12.600	11.290	23.660	163.000	-4.160	471	14
49.370	-118.000	31.410	-15.900	4.903	26.140	132.600	.968	472	20
111.200	26.190	36.200	-2.970	5.611	8.806	176.100	-.106	473	17
-16.100	-207.000	11.160	-24.200	7.281	31.670	173.300	.364	474	12
18.600	-152.000	17.200	-11.300	3.010	16.090	168.500	-1.210	475	19
136.100	27.460	22.850	-6.280	6.558	20.910	146.500	-2.370	476	15
77.530	-130.000	15.090	-18.100	4.028	21.270	105.900	.007	477	16
26.320	-35.500	17.200	-8.210	1.488	14.160	95.660	-3.020	478	11
10.330	-108.000	21.760	-18.300	3.317	18.470	139.800	4.002	479	13
-9.420	-155.000	10.600	-15.000	4.258	10.930	88.390	7.116	480	18
125.600	-112.000	6.646	-30.300	5.192	21.260	186.000	2.230	481	27
-26.900	-233.000	26.150	-36.300	7.349	16.010	216.300	4.212	482	23
14.390	-13.500	15.130	8.570	-1.130	3.805	73.810	1.121	483	29
1.671	54.240	10.920	12.590	-3.030	15.240	-47.800	-.414	484	22

Radiation Data (dpm/g) of Deer Pellet Groups Collected from the
B Pond Habitat with Radiation Number and Corresponding Diet Number (Contd).

<u>¹⁴⁴Ce</u>	<u>¹⁰⁶Ru</u>	<u>¹³⁷Cs</u>	<u>⁹⁵Zr</u>	<u>⁵⁴Mn</u>	<u>⁶⁵Zn</u>	<u>⁴⁰K</u>	<u>⁶⁰Co</u>	<u>Rad. No.</u>	<u>Diet No.</u>
108.00	224.700	17.580	17.120	4.859	7.885	168.300	-8.060	485	30
22.020	40.360	12.760	2.164	-2.840	7.820	27.250	-3.320	486	21
95.820	74.210	19.810	5.640	-2.300	8.567	27.370	-3.400	487	26
67.940	184.100	221.000	-.772	1.412	19.140	111.500	-14.600	488	25
44.120	91.270	142.600	14.640	-4.550	15.290	12.340	.585	489	24
97.950	83.770	15.920	6.353	-.356	1.076	72.900	-1.490	490	28
-3.060	56.140	25.280	7.185	-2.010	5.779	7.772	-5.070	491	40
102.600	140.200	4.826	11.960	-3.130	7.552	70.530	-2.980	492	36
63.450	283.200	12.550	13.510	8.912	11.190	154.300	-11.600	493	31
38.280	51.270	24.190	16.370	.064	10.800	68.510	-3.440	494	39
4.290	41.890	8.576	11.150	-.176	1.627	27.380	-.617	495	37
52.570	78.570	32.480	9.544	-3.960	.579	101.900	-4.570	496	35
27.380	-18.800	7.144	9.103	.556	14.390	122.200	.469	497	33
46.420	35.610	-3.430	18.960	-2.880	-6.950	-37.200	5.122	498	32
218.800	298.700	51.380	25.540	9.702	3.712	207.200	-7.120	499	34
25.660	285.300	18.050	12.970	3.728	6.494	123.500	-9.550	500	38

Radiation Data (dpm/g) of Deer Pellet Groups Collected from
Deer Creek, Provo, Utah Used as a Control.

^{144}Ce	^{106}Ru	^{137}Cs	^{95}Zr	^{54}Mn	^{65}Zn	^{40}K	^{60}Co
-36.700	-14.000	7.220	9.664	-9.360	6.747	-1.350	-7.500
-31.900	-51.100	7.346	-34.500	-8.200	30.060	-105.000	-3.310
23.160	-128.000	-3.980	-21.100	-6.740	20.780	-57.900	-2.100
43.190	-97.500	4.036	-.895	-11.300	16.580	64.870	-16.900
80.650	18.200	-.416	-7.350	-9.150	31.190	56.340	-9.440
32.800	-34.300	-4.680	33.550	-8.360	5.974	-61.500	3.276
102.200	-124.000	-2.090	16.160	8.450	25.320	-53.400	.864

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