DOLORES ARCHAEOLOGICAL PROGRAM TECHNICAL REPORTS

REPORT NUMBER: DAP-048

Faunal Studies - 1979

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Prepared for
Cultural Resources Mitigation Program: Dolores Project
Bureau of Reclamation, Upper Colorado Region
Contract No. 8-07-40-S0562

Under the supervision of
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Final Submission

26 February 1982

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ABSTRACT

Work accomplished by the Faunal Consultant and his staff during the reporting period (1 March 1979 to 29 February 1980) included both preliminary analysis and fieldwork. Preliminary analysis was performed by a small crew at Flagstaff; standard procedures developed for this type of analysis included a basic sort into taxonomic categories and recording of characteristics for each individual bone or group of bones by taxon. During this process, worked bone was separated from unworked bone and returned as promptly as possible to the central laboratory facility near Dolores for further analysis. The remainder of the bone was also returned to the central laboratory, after preliminary analysis, for storage. Fieldwork undertaken by the Faunal Consultant during the summer of 1979 included formal observation of birds and animals in the project area and operation of several trap lines. In addition, an archaeological site (Site 5MT4654) containing packrat middens in a cliff shelter was tested to obtain representative midden deposits. These are currently being analyzed by T. Van Devender, University of Arizona, to obtain data for paleoenvironmental reconstruction.

INTRODUCTION

This report summarizes the activities carried out by the Dolores Archaeological Program (D.A.P.) Faunal Consultant during the period 1 March 1979 to 29 February 1980.

Much of the work effort during the analytical year was directed toward study of faunal remains recovered during the 1978 and 1979 field seasons; preliminary analysis (that is, a taxonomic inventory) was completed on all 1978 and 1979 materials except those from Sites 5MT2854 and 5MT4644. Detailed analysis (descriptions of individual specimens or taxonomic lots) is also complete for all sites except Sites 5MT4475, 5MT2151, 5MT2192, 5MT2203, 5MT2242, 5MT2320, and 5MT4763. Appendixes have been prepared summarizing the results of these analyses, and these have been incorporated into the individual sites reports.

This report also describes the field activities of the Consultant during the summer of 1979 (22 May to 24 August). These activities included observing, trapping, and collecting animals endemic to the program area, coordinating with excavation field crews, and collecting packrat midden material for paleoenvironmental reconstruction at Site 5MT4654.

Analytical Procedures

Faunal remains recovered during excavation of archaeological sites as part of the Dolores Archaeological Program undergo the following initial processing and analytical procedures. First, the bones are inventoried and packed at the project laboratory and loaned to the Faunal Consultant. Next, under the direction of this individual, the bones are washed, sorted

into basic taxonomic categories, and recorded. Finally, the remains undergo a detailed analysis and are returned to the project laboratory facility.

The results of the original sort are recorded on the Preliminary Analysis Form (Figure 7.1); the form provides for a listing of total bone counts by taxon for each field provenience unit. Also recorded is the minimum number of individuals (MNI) represented per indentified species. MNIs are calculated by counting the most common element of either the left or right side for taxa indicative of genus and/or species.

Although most taxa indicate genus only, several may be interpreted as belonging to a particular species (Table 7.1). The total number of worked

Table 7.1 Taxa which are Interpreted as Belonging to a Particular Species

Taxa	Common Name	Scientific Name
Lepus	black-tailed jackrabbit	*Lepus californicus*
Cynomys	Gunnison's prairie dog	*Cynomys gunnisoni*
Marmota	yellow-bellied marmot	*Marmota flaviventris*
Erethizon	porcupine	*Erethizon dorsatum*
Castor	beaver	*Castor canadensis*
Lynx	bobcat	*Lynx rufus*
Odocoileus	mule deer	*Odocoileus hemionus*
Ovis	bighorn sheep	*Ovis canadensis*
Antilocapra	pronghorn	*Antilocapra americana*
Cervus	American elk	*Cervus canadensis*
Meleagris	common turkey	*Meleagris gallopavo*

bones for each site, provided at the bottom of the form, is taken from the totals in the taxonomic categories and does not represent a separate collection.

The detailed analysis involves the completion of the analysis card (Figure 7.2) for each bone or group of bones in a single taxon and the coding of this information on computer forms for entry into the D.A.P.

Figure 7.1 Preliminary Analysis Form.

Preliminary Analysis Form

	FS		FS		FS		FS	
Identification	No. Bones	MNI	No. Bones	MNI	No. Bones	MNI	No. Bones	MNI
Not Identifiable								
Identified								
Mammalia								
Lagomorpha								
Sylvilagus								
Lepus								
Rodentia								
Cynomys								
Spermophilus								
Marmota								
Thomomys								
Peromyscus								
Microtus								
Neotoma								
Erethizon								
Castor								
Sciuridae								
Cricetidae								
Carnivora								
Canidae								
Cania								
Fox, spp.								
Mustelidae								
Felidae								
Lynx rufus								
Artiodactyla								
Odocoileus								
Ovis								
Antilocapra								
Cervus								
Aves								
Falconiformes								
Galliformes								
Meleagris								
Grouse, spp.								
Passeriformes								
Amphibia								
Fish								
Worked Bone								

Center for Western Studies, Inc.

FS/Cat. No.

FAUNAL ANALYSIS CARD

Species
Element(s):
Identified by:
Site:
Provenience:

Date:

Burned: ____ completely; ____ partly
Worked:
Weight:
Cut marks and breakage:

Measurements:
Additional Comments:

Figure 7.2 Detailed analysis card filed with each bone or group of bones.

data-management system. Information recorded on the card includes the project catalogue number, specimen identification, element description, date of analysis and initials of analyst, basic site provenience information, description of worked bone (if applicable), description of cut marks and breakage (if present), measurement in millimeters of of complete bones, represented MNIs (if applicable), and additional comments when possible regarding other characteristics such as bone pathologies, immaturity, and season of death. At the completion of the detailed analysis, the bones are filed with the analysis card in wax bags, repacked in the original field bags and boxes, and returned to the D.A.P. laboratory for permanent storage. Worked bone is segregated during the analysis and returned separately to the central project laboratory for further study.

WORK LEVELS AND STAFFING

During the period 1 March 1979 to 29 February 1980, the Faunal Consultant spent a total of 73 person-days on the analysis procedures described above. The faunal assistant spent approximately 300 person-days in the completion of preliminary analyses for sites investigated in 1979 and in pursuing a literature search on faunal studies (described below). Personnel washing bones spent a total of 24 person-days.

Results of the Preliminary Analysis

Work accomplished for excavated sites as of 29 February 1980 is summarized in Table 7.2. In addition, the preliminary analysis has been completed on sites surface collected (during archaeological surveys) and tested in 1978 and 1979.

Sites surface collected in 1978 include Sites 5MT4449, 5MT4450, 5MT4491, 5MT4494, 5MT4497, 5MT4503, 5MT4527, 5MT4549, 5MT4551, 5MT4556, 5MT4597, 5MT4598, 5MT4600, 5MT4601, 5MT4602, 5MT4609, 5MT4610, 5MT4619, 5MT4635, 5MT4642, 5MT4644, and 5MT4658. Sites surface collected and/or tested in 1979 include Sites 5MT2162, 5MT2169, 5MT2670, 5MT2844, 5MT2848, 5MT2853, 5MT2857, 5MT4640, 5MT4651, 5MT4678, 5MT4683, 5MT4684, 5MT4690, 5MT4692, 5MT4720, 5MT4729, 5MT4748, 5MT4754, 5MT4761, 5MT4771, 5MT4792, 5MT4794, 5MT4796, 5MT5085, 5MT5101, and 5MT5108.

Summaries of the taxonomic sort according to individual sites are presented in Table 7.3. The relatively larger number of domestic dog and reptile bones at Site 5MT2854 reflect the recovery of articulated skeletons at this site. For more detailed discussions of the faunal assemblage recovered from each excavated site the reader should refer to the appropriate site reports.

Table 7.2 Status of Work Completed on Archaeological Sites Excavated by the D.A.P. in 1978 and 1979

Site	Inventory Sort	Detailed Analysis	Appendix Report Submitted
1978			
5MT2151	X	X	
5MT2191	X	X	X
5MT2193	X	X	
5MT2198	X	X	
5MT2202	X	X	
5MT2235	X	X	
5MT4475	X		
1979			
5MT0023	X		
5MT2151	X	X	
5MT2161	X		
5MT2192	X	X	X
5MT2193	X		
5MT2194	X		
5MT2203	X	X	X
5MT2236	X		
5MT2242	X	X	X
5MT2320	X	X	X
5MT2854			
5MT2858	X		
5MT4512	X		
5MT4545	X		
5MT4614	X		
5MT4644			
5MT4671	X		
5MT4682	X		
5MT4763	X	X	X

Table 7.3 Total Numbers of Bones from Excavated Sites Sorted into Basic Taxonomic Categories (Page 1 of 3)

Identification	Site 5MT0023 No. Bones	Site 5MT2161 No. Bones	Site 5MT2194 No. Bones	Site 5MT2854 No. Bones
Not Identifiable	49	4		122
Identified	1			
Mammalia	3487	666	34	1437
Lagomorpha	8	2		1
Sylvilagus	254	29	7	407
Lepus	137	25	1	98
Rodentia	41	10	2	110
Cynomys	13	6		42
Spermophilus	6	2		6
Marmota	14	7	17	30
Thomomys	14			11
Peromyscus	2	3		38
Microtus	7			18
Neotoma	7	3		7
Erethizon	10			1
Castor	13			
Sciuridae	22	2	3	27
Cricetidae	1	3		1
Carnivora	10	5		2
Canidae	9	2		
Cania	6	8		
Dog	5	1		342
Mustelidae	3			1
Felidae				
Lynx rufus	1			2
Artiodactyla	65	25	2	6
Odocoileus	165	27	3	5
Ovis	6		2	
Antilocapra	2	1		
Cervus		1		
Aves	26	8	1	54
Falconiformes	1			
Galliformes				2
Meleagris	1	1		13
Grouse, spp.	12	10		8
Passeriformes				4
Amphibia				
Reptilia	1			396
Worked Bone	83	18	6	20

Table 7.3 Total Numbers of Bones from Excavated Sites Sorted into Basic Taxonomic Categories (Page 2 of 3)

Identification	Site 5MT2858 No. Bones	Site 5MT4512 No. Bones	Site 5MT4545 No. Bones	Site 5MT4614 No. Bones
Not Identifiable	1	1		24
Identified				
Mammalia	263	36	164	1242
Lagomorpha			3	10
Sylvilagus	18	59	24	375
Lepus	3	9	18	90
Rodentia		5	5	16
Cynomys	11	3	9	11
Spermophilus		2	1	3
Marmota			4	16
Thomomys	6	2	1	3
Peromyscus				
Microtus			3	3
Neotoma				4
Erethizon	1			5
Castor				3
Sciuridae	6	6	5	32
Cricetidae		6		9
Carnivora				1
Canidae		5		3
Cania				1
Fox, spp.				10
Mustelidae				3
Felidae				1
Dog	1	1		24
Artiodactyla	4			42
Odocoileus			11	38
Ovis				2
Antilocapra				1
Cervus				
Aves	2		1	20
Falconiformes				
Galliformes				
Meleagris				
Grouse, spp.	7		2	1
Passeriformes				
Amphibia				
Fish				
Worked Bone	3	1	18	22

Table 7.3 Total Numbers of Bones from Excavated Sites Sorted into Basic Taxonomic Categories (Page 3 of 3)

Identification	Site 5MT4644 No. Bones	Site 5MT4671 No. Bones	Site 5MT4682 No. Bones	
Not Identifiable	15	6		
Identified				
Mammalia	784	104		
Lagomorpha	27			
Sylvilagus	70	10		
Lepus	47	2	1	
Rodentia	10	5	1	
Cynomys	4		2	
Spermophilus	2			
Marmota	2	2		
Thomomys	20	2		
Peromyscus	30			
Microtus	1	1		
Neotoma	1			
Erethizon	7			
Castor				
Sciuridae	3		2	
Cricetidae				
Carnivora				
Canidae				
Cania			1	
Fox, spp.				
Mustelidae				
Felidae				
Lynx rufus				
Artiodactyla	55		2	
Odocoileus	25		1	
Ovis			1	
Antilocapra				
Cervus			1	
Aves	5		3	
Falconiformes				
Galliformes				
Meleagris				
Grouse, spp.	4		2	
Passeriformes	12			
Amphibia				
Fish				
Worked Bone	25		3	

Field Activities

During the summer of 1979 (22 May to 24 August), the Consultant spent 60 person-days working in the D.A.P. area. Activities during this period included observing, trapping, and collecting fauna in the area to establish current animal distributions and to obtain a collection of comparative skeletons; assisting site crew chiefs in collecting faunal remains from archaeological contexts; and testing Site 5MT4654 to obtain prehistoric packrat middens for analysis relating to paleoenvironmental reconstruction.

Three trap grids were set out in different ecological areas to obtain information on small-mammal (rodent) populations in specific habitats. Sherman live traps, 10 by 3 by 3 inches in size, were set out according to a grid system in each area for 10 nights. The grids consisted of 144 traps each, spaced 10 m apart, to form a lattice of 12 by 12 trap lines. The traps were baited with dried oats each afternoon and checked every morning and evening. Information recorded on captured specimens included identification, weight, approximate age, and sex. Specimens were marked by toe clipping and released. Analysis of these data, in relation to population estimates, has not yet been completed due to problems with trap kills and escapes.

Trap Grid 1 was located in the Sagehen Flats Locality near Site 5MT2235 (center of north half, Section 36, T38N, R16W), in shrubland consisting primarily of sage (*Artemesia tridentata*) with fendler (*Fendlera rupricola*). The land slope on the grid was 2-3° south. Species captured on this grid include deer mice (*Peromyscus maniculatus*), Apache pocket mice (*Perognathus apache*), and immature desert cottontail (*Sylvilagus audubonii*). Deer mice were the most common species captured; only 11

pocket mice were trapped during the 10-night period. Trapping on this grid took place from 15 June to 26 June.

Trap Grid 2 was located in the Sagehen Flats Locality about 500 m north of Site 5MT4475 (SE quarter of NW quarter, Section 30, T38N, R15W); ecologically, the trap area can be characterized as a pinyon-juniper woodland. Land slope on this grid was 2-3° east. Species captured include deer mice (P. maniculatus), Mexican woodrat (Neotoma mexicana), chipmunks (Eutamias spp.), and immature desert cottontail (S. audubonii). Trapping on this grid took place from 27 June to 12 July.

Trap Grid 3 was located in riparian and open meadow areas on the Dolores River floodplain (NW quarter, Section 7, T38N, R15W). Species captured included deer mice (P. maniculatus), chipmunks (Eutamias sp.), bushy-tailed woodrat (Neotoma cinerea), montane vole (Microtus montanus), and immature desert cottontail (S. audubonii). Trapping on this grid took place from 13 July to 24 July.

In addition to these grids, traps were set in selected locations in the Dolores Archaeological Program area, including sandstone cliffs on the slopes of the canyon system and an experimental garden being cultivated by the Environmental Studies Group. In the sandstone cliffs, brush mice (Peromyscus boylii), deer mice (P. maniculatus), and bushy-tailed woodrats (Neotoma cinerea) were captured. Only deer mice were captured in the experimental garden.

In general, the data from the trapping operations indicate a preference of Apache pocket mice for semi-arid open shrubland which is avoided by chipmunks and woodrats. These latter species prefer wooded areas and cliffs. In addition to species captured in traps, a number of

birds and mammals were observed in the D.A.P. area. A complete list of mammals and birds observed, collected, and trapped in the Dolores Archaeological Program area is presented in Table 7.4.

Along with the trapping activities, the Consultant periodically visited the archaeological excavations. Assistance was provided to the crews in use of the Burial Form and in general collection of faunal materials. Environmental Studies personnel, assigned to each site or group of sites and in charge of plant remains collected at the sites, were asked to record additional information on bone as it was recovered in situ. This information includes any rodent disturbances identified, stratigraphic positon of bone materials, and relative amounts of bone recovered from each provenience. Although not usually recorded in detail, this information can be used to formulate better-conceived interpretations of faunal remains recovered during site excavations. A more detailed program for recording faunal data will be proposed for future excavations in the D.A.P. area. Further discussion on the burial form and collection techniques can be found in Appendix A.

The Faunal Consultant also completed test excavations of a small cave, Site 5MT4654, in order to obtain plant and bone material incorporated in solidified packrat middens to be used for paleo-environmental studies in the Dolores Archaeological Program area. A report on these test excavations is currently filed at the Dolores Archaeological Program and should be referred to for more details. Five recovered middens are currently being analyzed by Dr. Thomas Van Devender, Department of Geosciences, University of Arizona, and C-14 samples from the middens have been submitted for dating. This project is viewed as a pilot for a more detailed and extensive program of midden analysis from

Table 7.4 Mammals and Birds Observed, Collected, or Trapped in the D.A.P. Area During the Period 22 May to 24 August 1979 (Page 1 of 5)

Common Name	Scientific Name
MAMMALS:	
little brown myotis	Myotis lucifugus
desert cottontail	Sylvilagus audubonii
black-tailed jackrabbit	Lepus californicus
least chipmunk	Eutamias minimus
Colorado chipmunk	Eutamias quadrivittatus
yellow-bellied marmot	Marmota flaviventris
rock squirrel	Spermophilus variegatus
Golden-mantled ground squirrel	Spermophilus lateralis
Gunnison's prairie dog	Cynomys gunnisoni
red squirrel	Tamiasciurus hudsonicus
valley pocket gopher	Thomomys bottae
Apache pocket mouse	Perognathus apache
beaver	Castor canadensis
deer mouse	Peromyscus maniculatus
brush mouse	Peromyscus boylii
pinyon mouse	Peromyscus truei
Mexican woodrat	Neotoma mexicana
bushy-tailed woodrat	Neotoma cinerea
montane vole	Microtus montanus
long-tailed vole	Microtus longicaudus
muskrat	Ondatra zibethicus
porcupine	Erethizon dorsatum
coyote	Canis latrans
raccoon	Procyon lotor
black bear	Ursus americanus
long-tailed weasel	Mustela frenata
striped skunk	Mephitis mephitis
American elk	Cervus canadensis
mule deer	Odocoileus hemionus

Table 7.4 Mammals and Birds Observed, Collected, or Trapped in the D.A.P. Area During the Period 22 May to 24 August 1979 (Page 2 of 5)

Common Name	Scientific Name
BIRDS:	
great blue heron	Ardea herodias
black-crowned night heron	Nycticorax nycticorax
Canada goose	Branta canadensis
mallard	Anas platyrhynchos
green-winged teal	Anas crecca carolinensis
cinnamon teal	Anas cyanoptera
American wigeon	Anas americana
ruddy duck	Oxyura jamaicensis
turkey vulture	Cathartes aura
goshawk	Accipiter gentilis
sharp-skinned hawk	Accipiter striatus
Cooper's hawk	Accipiter cooperii
red-tailed hawk	Buteo jamaicensis
golden eagle	Aquila chrysaetos
northern harrier	Circus cyaneus
American kestrel (sparrow hawk)	Falco sparverius
ring-necked pheasant	Phasianus colchicus torguatos
American coot	Fulica americana
killdeer	Charadrius vociferus
common snipe	Capella gallinago
spotted sandpiper	Actitis macularia
mourning dove	Zenaida macroura
great horned owl	Bubo virginianus
poorwill	Phalaenoptilus nuttallii
common nighthawk	Chordeiles minor
white-throated swift	Aeronautes saxatalis
broad-tailed hummingbird	Selasphorus platycercus
belted kingfisher	Megaceryle alcyon
common (red-shafted) flicker	Colaptes auratus cafer
Lewis' woodpecker	Asyndesmus lewis

Table 7.4 Mammals and Birds Observed, Collected, or Trapped in the D.A.P. Area During the Period 22 May to 24 August 1979 (Page 3 of 5)

Common Name	Scientific Name
yellow-bellied sapsucker	Sphyrapicus varius
hairy woodpecker	Dendrocopos villosus
ash-throated flycatcher	Myiarchus cinerascens
Say's phoebe	Sayornis saya
hammond's flycatcher	Empidonax hammondii
dusky flycatcher	Empidonax hammondii
olive-sided flycatcher	Contopus mesoleucus
western wood pewee	Contopus sordidulus
horned lark	Eremophila alpestris
violet-green swallow	Tachycineta thalassina
tree swallow	Tachycineta bicolor
rough-winged swallow	Riparia ruficollis
barn swallow	Hirundo rustica erus
cliff swallow	Hirundo pyrrhonota
Steller's jay	Cyanocitta stelleri
scrub jay	Aphelocoma coerulescens
black-billed magpie	Pica pica
common raven	Corvus corax
common crow	Corvus brachyrhynchos
pinyon jay	Gymnorhinus cyanocephalus
black-capped chickadee	Parus atricapillus
mountain chickadee	Parus gambili
white-breasted nuthatch	Sitta carolinensis
pygmy nuthatch	Sitta pusilla
house wren	Troglodytes aedon
Bewick's wren	Thryomanes bewickii
rock wren	Salpinctes obsoletus
long-billed marsh wren	Cistothorus palustris
catbird	Dumetella carolinensis
American robin	Turdus migratorius
hermit thrush	Cathanus guttatus

Table 7.4 Mammals and Birds Observed, Collected, or Trapped in the D.A.P. Area During the Period 22 May to 24 August 1979 (Page 4 of 5)

Common Name	Scientific Name
western bluebird	Sialia mexicana
mountain bluebird	Sialia currucoides
blue-gray gnatcatcher	Polioptila caerulea
ruby-crowned kinglet	Regulus calendula
starling	Sturnus vulgaris
Hutton's vireo	Vireo huttoni
solitary vireo	Vireo solitarius
warbling vireo	Vireo gilvus
Virginia's warbler	Helminthophila ruficapill
Grace's warbler	Dendroica graciae
yellow warbler	Dendroica petechia
Audubon's warbler	Dendroica ceronata
MacGillivray's warbler	Oporornis tolmiei
yellowthroat	Geothlypis trichas
yellow-breasted chat	Icteria virens
western meadowlark	Sturnella neglecta
yellow-headed blackbird	Xanthocephalus xanthocephalus
redwinged blackbird	Agelaius phoeniceus
hooded oriole	Icterus cucullatus
northern oriele	Icterus galbula
Brewer's blackbird	Euphagus cyanocephalus
brown-headed cowbird	Molothrus ater
western tanager	Piranga ludoviciana
black-headed grosbeak	Pheuticus ludovicianus
blue grosbeak	Guiraca caeulea
Indigo bunting	Passerina cyanea
Lazuli bunting	Passerina amoena
house finch	Carpodacus mexicana
pine siskin	Spinus pinus
American goldfinch	Spinus tristis
lesser goldfinch	Spinus osaltria

Table 7.4 Mammals and Birds Observed, Collected, or Trapped in the D.A.P. Area During the Period 22 May to 24 August 1979 (Page 5 of 5)

Common Name	Scientific Name
green-tailed towhee	*Pipilo chlorurus*
rufous-sided towhee	*Pipilo erythrophthalmus*
vesper sparrow	*Pooecetes gramineus*
chipping sparrow	*Spizella passerina*
Brewer's sparrow	*Spizella breweri*
song sparrow	*Melospiza melodia*

the D.A.P. area. The ultimate goal of the project is to construct vegetation maps of the area for periods prior to, during, and after the Anasazi occupation.

Miscellaneous Studies

Another project currently in progress and being carried out by the faunal assistant is a literature search for references dealing with faunal utilization by historic tribes in the greater Southwest. Each reference will be recorded on a form to be entered into the D.A.P. computer system. These references will aid in faunal interpretations based on archaeological data.

Conclusion

To date, the D.A.P. faunal studies program is still involved in preliminary analysis. Only identification and description of archaeological faunal remains can be reported. However, these results alone indicate some new and interesting patterns in Anasazi faunal exploitation. Several species, which have not been previously identified from archaeological sites in southwestern Colorado, have occurred in D.A.P. sites. These include a pika (*Ochotona princeps*) bone from Site 5MT2235; marten (*Martes americana*), spotted skunk (*Spilogale putorius*), ringtail (*Bassariscus astutus*), and pygmy owl (*Glaucidium gnoma*) bones from Site 5MT2151; and spotted ground squirrel (*Spermophilus spilosoma*) remains from several sites on Sagehen Flats. The full importance and significance of these animals, in relation to prehistoric ecology and environment, cannot be realized until all data have been analyzed. Nevertheless, these species indicate possible prehistoric environmental

and ecological shifts and/or variations in Anasazi faunal-procurement patterns. When all data are analyzed and entered in the D.A.P. computer system, a program of advanced analysis will be formulated to answer questions posed in the program's general reseach design.

APPENDIX A

THE D.A.P. RESEARCH DESIGN IN RELATION TO FAUNAL STUDIES

In order to answer the specific questions posed in the D.A.P. research design related to faunal studies, the following procedures have been initiated.

Field Collection

The manner in which faunal remains are recovered from archaeological contexts is extremely important to the D.A.P. research design. Two procedures not usually carried out in archaeological excavations have been incorporated into the D.A.P. Excavation Manual. The first involves a Burial Form (Figure 7.A.1, Table 7.A.1) which is filled out when an animal skeleton consisting of at least one-half the entire skeleton is encountered in the site. The form provides information on the stratigraphic position and orientation of the skeleton and on related cultural features. This information may be useful for addressing questions on prehistoric faunal utilization, ceremonial significance of animals, and importance of domesticates.

The second unusual procedure in the D.A.P.'s field collection of faunal remains is recording of data on isolated bones in a provenience. This includes information on the presence or absence of rodent disturbances, locations of bone clusters other than animal skeletons in a provenience, and relative abundance of animal bones per provenience. These data will also aid in interpretations of faunal utilization by the Anasazi and in the separation of cultural and noncultural bone.

Analysis

Detailed analysis of all faunal remains recovered at D.A.P. includes computerization of information on breakage patterns, cut marks, bone

pathologies, age of individual species at time of death based on bone growth and tooth eruption, and measurements of complete elements. Intra- and intersite analysis of this information should provide data on faunal utilization, activity loci, butchering patterns, and faunal-procurement cycles.

A new analysis procedure will also be tested involving unidentifiable bone fragments and the identification of activity areas. Little has been accomplished with unidentifiable fragments of bone from archaeological sites in North America. Unfortunately, these fragments often comprise the bulk of bone recovered from a site. The D.A.P. will test the feasibility of drawing additional information from these fragments by bone weights. Weights of burned and unburned unidentifiable fragments will be recorded from each provenience at one site, Site 5MT4475. These weights will allow comparison of the relative abundance of this bone from specific areas in the site. Preliminary analysis of faunal remains from this site indicates that certain proveniences contain large amounts of this bone, compared to little or no bone in other areas. Relative comparison of these data may aid in the identification of butchering and food-processing areas within the site. If this analysis procedure is successful for Site 5MT4475, it will become standard procedure for all major sites excavated in the D.A.P. area.

Figure 7.A.1 Burial Form.

DOLORES ARCHAEOLOGICAL PROJECT
U.S. Bureau of Reclamation

BURIAL FORM

Recorder

Date

Sector

Locality

State

County

Site Number

Burial Number

Feature Type

Feature Number

PROVENIENCE LABEL

Study Unit Type

Study Unit Number

Surface Type

Surface Number

F.S. Numbers

Subdatum

PHYSICAL DATA (Grave)

Description:

Grave Type

Disturbance

MATRIX Hue

Value

Chroma

F/A Position

F/A Type

Surf. Type

DIMENSIONS (cm) Length

Width

Height

Depth (cm)

PHYSICAL DATA (skeleton)

Description:

Articulation

Flexure

Arm

Head

Position

Abnormalities

Deposition

Tentative Species I.D.

Condition

Compass Orientation (long axis)

Inclination

DIMENSIONS (cm) Length

Width

Height

CULTURAL CONTEXT AND INFERENCE

Description:

Burial Type

Stratigraphic Context/Origin

Status

DIRECT (internal) ASSOCIATIONS
Include Grave Goods

Description	Code	Type	Number

BURIAL FORM Page 2

Site: State ☐☐ County ☐☐ Number ☐☐☐☐☐

Burial Number ☐☐☐

CULTURAL CONTEXT (continued)

EXTERNAL ASSOCIATIONS

	Code	Type	Number
	F		
	F		
	F		
	F		
	F		
	F		
	U		
	H		
	C		

DATES

Evidentiary ☐☐☐☐☐

Evidence ☐☐ ☐☐

Inferential ☐☐☐☐☐

Basis ☐☐

SAMPLES

Photographs

Roll Index	Exp. No.

Special Specimens

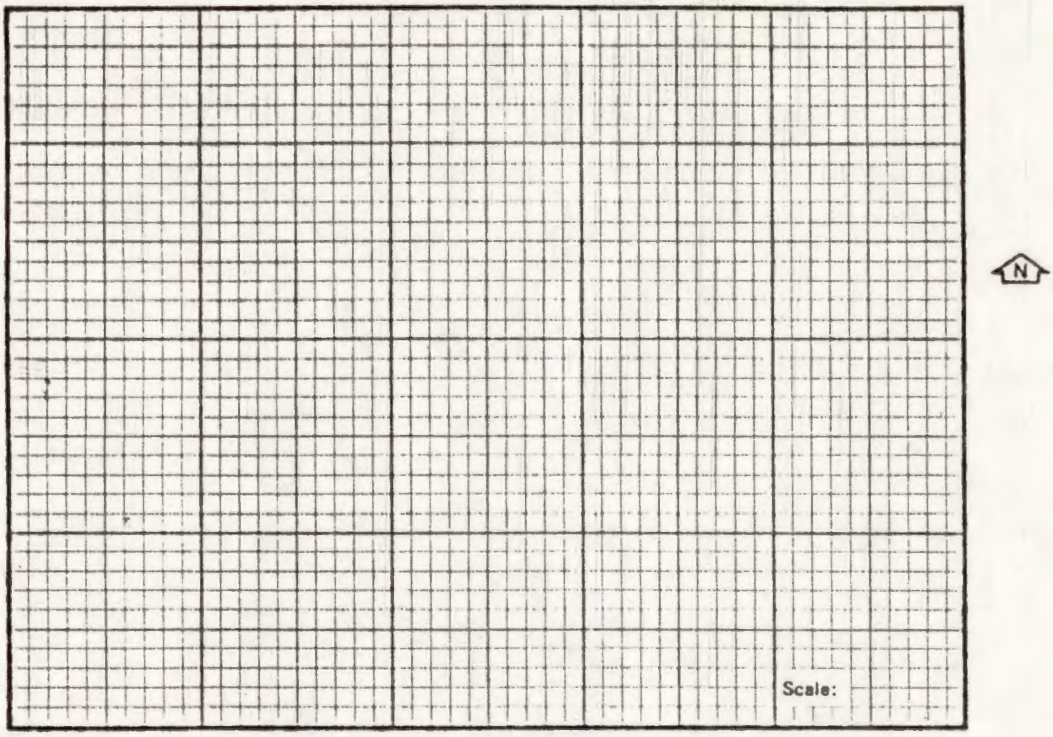
Sample Type	Number	Standard

NOTES/INSTRUCTIONS:

	State	County	Number
Site			

Burial No.

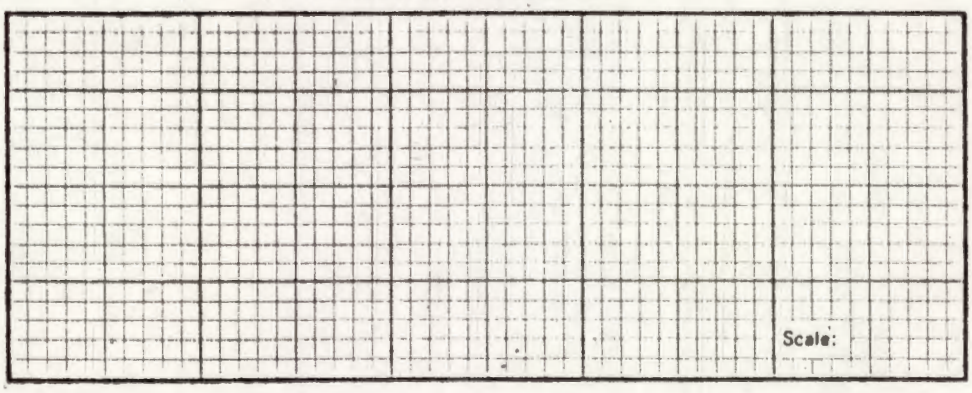
Burial Sketch Plan View



N

Indicate on Plan View the Location of Cross Section

Burial Sketch Cross Section



Comments or Additional Observations _____

Table 7.A.1 Coding Guidelines for the D.A.P. Burial Form (Page 1 of 5)

I. Heading (recorder, site number, date, sector, locality, burial number, feature number). Use standard D.A.P. codes, leave burial number blank (to be filled in by physical anthropologist).

II. Provenience Label. Use codes from appropriate field provenience forms.

III. Physical Data (Grave).

A. 0 - Not applicable
1 - Indeterminate
2 - Pit (pit excavated for burial)
3 - Modified feature
4 - Unmodified feature
5 - Cultural surface
6 - Other surface
7 - Ceramic vessel
8 - Cave or crack

B. Disturbance
0 - Not applicable
1 - Indeterminate
2 - Rodent
3 - Erosion
4 - Machinery
5 - Vandal (historic)
6 - Prehistoric cultural agency
7-8 - Unassigned
9 - Other

C. Matrix, Munsell Color. Values from Munsell chart.

D. Surface type. From F.S. format.

E. F/A position and type. From F.S. format.

F. Dimensions. Dimensions in cm and 10ths of cm.

G. Depth of grave. Distance from subdatum to bottom of grave (in cm and 10ths of cm).

IV. Physical Data (Skeleton).

A. Articulation
0 - Not applicable
1 - Indeterminate
2 - Articulated
3 - Semi-articulated
4 - Disarticulated
5 - Bundle
6-8 - Unassigned
9 - Other

Table 7.A.1 Coding Guidelines for the D.A.P. Burial Form (Page 2 of 5)

B. Position of Skeleton (Flexure)
- 0 - Not applicable
- 1 - Indeterminate
- 2 - Extended
- 3 - Semi-flexed
- 4 - Flexed
- 5-8 - Unassigned
- 9 - Other

C. Position, arm (code for human only)
- 0 - Not applicable (animal)
- 1 - Indeterminate
- 2 - Along side
- 3 - Crossed on pelvis
- 4 - Folded on chest
- 5 - Hands to face
- 6 - Around legs
- 7-8 - Unassigned
- 9 - Other

D. Position, head (code for animal and human)
- 0 - Not applicable
- 1 - Indeterminate
- 2 - Lateral (on side)
- 3 - Anterior
- 4 - Caudal
- 5 - Cranial
- 6-8 - Unassigned
- 9 - Other

E. Abnormalities
- 00 - Not applicable
- 01 - Indeterminate
- 02-09 Unassigned
- 10 - In situ weapon: arrow point
- 11 - In situ weapon: spear point
- 12-18 - Unassigned
- 19 - In situ weapon: other
- 20 - Stains: hematite
- 21-28 - Unassigned
- 29 - Stains: other
- 30 - Burning: entire grave, intense
- 31-38 - Unassigned
- 39 - Burning: other
- 40 - Post-mortem modification: dismemberment
- 41 - Post-mortem modification: bones fragmented, cultural agency
- 42 - Post-mortem modification: cut marks
- 43-48 - Unassigned
- 49 - Post-mortem modification: other
- 50 - Other skeletal abnormalities: missing limb or digit (describe)
- 51 - Other skeletal abnormalities: dental (describe)

Table 7.A.1 Coding Guidelines for the D.A.P. Burial Form (Page 3 of 5)

E. Abnormalities (cont.)
52-98 - Unassigned
99 - Other

F. Deposition (code for animal and human)
0 - Not applicable
1 - Indeterminate
2 - Supine
3 - Prone
4 - Lying on side
5 - Seated
6 - Standing
7-8 - Unassigned
9 - Other

G. Tentative I.D.
0 - Not applicable
1 - Indeterminate
2 - Human
3 - Dog
4 - Turkey
5 - Rodent
6 - Artiodactyl
7-8 - Unassigned
9 - Other

H. Condition of skeleton
0 - Not applicable
1 - Indeterminate
2 - Poor (all bones friable, use PVA)
3 - Fair (> 50% friable, use PVA)
4 - Good (< 50% friable, no PVA)
5 - Excellent (few or no friable bones, no PVA)
6-8 - Unassigned
9 - Other

I. Compass Orientation (long axis). In degrees.

J. Inclination (vertical axis). In degrees. (Vertical w/head at bottom = 180°; horizontal = 90°; vertical w/head at top = 0°.)

K. Dimensions. In cm and 10ths of cm.

V. Cultural Context and Inference.

A. Burial Type
00 - Not applicable
01 - Indeterminate
02-09 - Unassigned
10 - Fragmentary: not further specified
11 - Fragmentary: primary inhumation
12 - Fragmentary: secondary inhumation

Table 7.A.1 Coding Guidelines for the D.A.P. Burial Form (Page 4 of 5)

A. Burial Type (cont.)
13-17 - Unassigned
18 - Fragmentary: cremation
19 - Fragmentary: other
20 - Single: not further specified
21 - Single: primary inhumation
22 - Single: secondary inhumation
23-27 - Unassigned
28 - Single: cremation
29 - Single: other
30 - Double: not further specified
31 - Double: primary inhumation
32 - Double: secondary inhumation
33-37 - Unassigned
38 - Double: cremation
39 - Double: other
40 - Multiple (articulated): not further specified
41 - Multiple: primary inhumation
42 - Multiple: secondary inhumation
43-47 - Unassigned
48 - Multiple: cremation
49 - Multiple: other
50 - Mass (disarticulated): not further specified
51 - Mass: primary inhumation
52 - Mass: secondary inhumation
53-57 - Unassigned
58 - Mass: cremation
59 - Mass: other
60-98 - Unassigned
99 - Other

B. Status. From Social Correlates Coding (Architectural Inference Form.

C. Stratigraphic Context/Origin.
00 - Not applicable
01 - Indeterminate
02-09 - Unassigned
10 - During first occupation (element): not further specified
11 - First occupation: on surface
12 - First occupation: above surface
13 - First occupation: subsurface
14-18 - Unassigned
19 - First occupation: other
20 - Subsequent occupation (element): not further specified
21 - Subsequent occupation: on surface
22 - Subsequent occupation: above surface
23 - Subsequent occupation: subsurface
24-28 - Unassigned
29 - Subsequent occupation: other
30 - Intrusive (post-abandonment): not further specified
31-38 - Unassigned

Table 7.A.1 Coding Guidelines for the D.A.P. Burial Form (Page 5 of 5)

C. Stratigraphic Context/Origin.
39 - Intrusive: other
40-89 - Unassigned
90 - Not cultural: not further specified
91 - Not cultural: animal in burrow
92 - Not cultural: animal, accidental
93 - Not cultural: human, accidental
94-98 - Unasigned
99 - Other

D. Direct (internal) Associations, including grave goods, Code. (Record actual PL #s as opposed to number of PLs.)
P - Point location
F - Feature

E. Direct (internal) Associations, type and number. From P.L. Log Feature Form.

F. External Associations, Code
F - Feature
A - Activity
U - Use area
H - Household cluster
C - Community cluster

G. External Associations, type and number. From Feature Form Coding, Activity Areas Coding Form.

H. Dates. Evidentiary and inferential. Five-place BP date (from 1950) when burial was interred.

VI. Samples.
A. Photo. Roll index and sample number. From photo catalogue.

B. Sample type and number. From sample logs.

VII. Notes/Instructions. Special notes or instructions for lab or physical anthropologist.

VIII. Burial Sketch Plan View and Cross-Section. Per D.A.P. standard procedures.

IX. Comments or Additional Observations. Include summary statement and additional inferences.

PVA - Polyvinyl acetate

the D.A.P. area. The ultimate goal of the project is to construct vegetation maps of the area for periods prior to, during, and after the Anasazi occupation.

Miscellaneous Studies

Another project currently in progress and being carried out by the faunal assistant is a literature search for references dealing with faunal utilization by historic tribes in the greater Southwest. Each reference will be recorded on a form to be entered into the D.A.P. computer system. These references will aid in faunal interpretations based on archaeological data.

Conclusion

To date, the D.A.P. faunal studies program is still involved in preliminary analysis. Only identification and description of archaeological faunal remains can be reported. However, these results alone indicate some new and interesting patterns in Anasazi faunal exploitation. Several species, which have not been previously identified from archaeological sites in southwestern Colorado, have occurred in D.A.P. sites. These include a pika (*Ochotona princeps*) bone from Site 5MT2235; marten (*Martes americana*), spotted skunk (*Spilogale putorius*), ringtail (*Bassariscus astutus*), and pygmy owl (*Glaucidium gnoma*) bones from Site 5MT2151; and spotted ground squirrel (*Spermophilus spilosoma*) remains from several sites on Sagehen Flats. The full importance and significance of these animals, in relation to prehistoric ecology and environment, cannot be realized until all data have been analyzed. Nevertheless, these species indicate possible prehistoric environmental

and ecological shifts and/or variations in Anasazi faunal-procurement patterns. When all data are analyzed and entered in the D.A.P. computer system, a program of advanced analysis will be formulated to answer questions posed in the program's general reseach design.

APPENDIX A

THE D.A.P. RESEARCH DESIGN IN RELATION TO FAUNAL STUDIES

In order to answer the specific questions posed in the D.A.P. research design related to faunal studies, the following procedures have been initiated.

Field Collection

The manner in which faunal remains are recovered from archaeological contexts is extremely important to the D.A.P. research design. Two procedures not usually carried out in archaeological excavations have been incorporated into the D.A.P. Excavation Manual. The first involves a Burial Form (Figure 7.A.1, Table 7.A.1) which is filled out when an animal skeleton consisting of at least one-half the entire skeleton is encountered in the site. The form provides information on the stratigraphic position and orientation of the skeleton and on related cultural features. This information may be useful for addressing questions on prehistoric faunal utilization, ceremonial significance of animals, and importance of domesticates.

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