APPENDIX E

THE FAUNAL REMAINS FROM THE AKE SITE

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Several thousand tooth and bone elements were examined from LA 13423. Most were greatly fragmented and thus unidentifiable other than to taxonomic class and general size category. A summary of taxa identified is given in Table E1, occurrence by stratigraphic level in Table E2, and the stratigraphic levels in which each identified group occurs in Table E3. Horizontal distribution is shown in Table E4.

The identified fauna include both ancient and modern material. In some cases, material obviously is recent--for example, the only identification of coyote (Canis latrans) is based on a fecal sample that is obviously modern. In most cases, however, there is little internal evidence of age. Most often, we can only assess the possibility of each taxon being intrusive by a consideration of habit and present ecology.

Some animals are, because of their lifestyles, liable to intrude into older sediments. These are the burrowers and users of burrows, and include snakes, spadefoot toads (Scaphiopus), cottontails (Sylvilagus), ground squirrels (Spermophilus), prairie dogs (Cynomys), pocket gophers (Thomomys), and kangaroo rats (Dipodomys).

Snakes are represented by a single vertebra unidentifiable to lower category. Many species burrow and other may regularly utilize rodent burrows for shelter or hunting.

Spadefoot toads regularly burrow into soft substrata for hibernation during the cold season and to prevent dessication during dry, hot

weather. The western spadefoot (Scaphiopus hammondi) is identified from the surface and may be represented from the 120-135 cm stratum; this species occurs in the general area now.

Cottontails (Sylvilagus) utilize burrows for protection and may be intrusive. One species or another utilizes almost every Southwestern habitat available today and in the past.

Ground squirrels (Spermophilus) regularly construct burrow systems and thus their remains commonly occur in older sediments. The single occurence (110-120 cm) most likely represents either the 13-lined ground squirrel (S. tridecemlineatus) or the golden-mantled ground squirrel (S. lateralis). The former occurs now on the San Agustin Plains and the latter to the south and southwest in the Black Range and the Mogollon Mountain Complex.

The prairie dog (Cynomys) specimens are too fragmentary for specific identification. Gunnison's prairie dog (C. gunnisoni) occurs throughout the area today (Findley, et al. 1975) and likely did also during the late and early post-Pleistocene (Harris and Findley 1964). A concentration of elements in the 130-140 cm level is interpreted as intrusive; these are probably the remains of one or two individual from an old burrow system. Nothing indicates the age of the other elements recovered.

Botta's pocket gopher (Thomomys bottae) occurs near the site today; although difficult to tell from the more northern T. talpoides on the basis of the elements recovered, the most diagnostic elements seem to indicate the present species. Pocket gophers are highly fossorial and commonly occur in older sediments.

Kangaroo rats (Dipodomys) spend much of their time in burrows. Both Ord's kangaroo rat (D. ordii) and the bannertailed kangaroo rat (D. spectabilis) now occur on the San Agustin Plains. The condition of some elements, particularly those of D. spectabilis, suggests they are intrusive; other elements give no clue regarding age.

The remaining faunal elements would not be expected to be intrusive because of burrow utilization (a possible exception is the bone tentatively identified as bird; however, the identification even at that level is too speculative to follow further).

Snails of the genus Succinea are widespread and common in the Southwest in terrestrial habitats; they also occur in aquatic situations.

Jack rabbit remains occurred on the surface and in the 90-100 cm level. The latter occurrence consisted of the well preserved hind portion of a skull. The excellent preservation leads to the suspicion that the material was intrusive; the species appears to be the same as that common in the area today (Lepus californicus).

The muskrat (Ondatra zibethicus), represented only by an innominate, almost certainly is not modern. Muskrats are indicative of permanent water with good growths of emergent vegetation. The nearest historic records are from the Rio Grande to the east and from the Upper Tularosa River, Catron Co. (Findley et al. 1975).

The grazing animals are represented only by small fragments of bone and teeth (excepting one obviously modern scapula from the surface). Most of the material indicates a large artiodactyl; on the basis of probable age, these are identified as representing bison (Bison sp.). The material is not separable morphologically from that of cattle (Bos sp.). Probably most or all of the "large mammal" identifications also pertain to this taxon. Particularly striking is the very high proportion of tooth enamel fragments relative to all other remains of this size class; assuming equal likelihood of preservation, little of the skeleton could have been present relative to the number of teeth.

A few elements from the surface seem to indicate the presence of a smaller artiodactyl, possibly pronghorn or domestic sheep/goat. None such material is identifiable even to family, however.

A few small tooth fragments (120-135 cm level) are tentatively identified as horse (Equus sp.). Extinction of native horses generally is considered to antedate the Folsom hunters. If so, and the identification is correct, the choices are intrusion from older deposits or from historic times; both are possibilities. Even if the material is aged correctly, we would hesitate to state the presence of horse on such fragmentary material in a critical case.

In summary, a large portion of the identified fauna consists of burrowing forms whose association with Folsom material is suspect. This portion of the fauna occurs now in the area and, although most members also may have been present in Folsom times, this cannot be demonstated. In addition, one non-burrowing taxon (Lepus) indicated by its preservation that it probably is intrusive. Fairly certainly associated with the Folsom material are the snail, muskrat, and bison. Horse could be associated.

Table E1. Taxa Identified from La 13423

Scientific Name	Common Name
Succinea sp.	Snail
Scaphiopus hammondi	Western Spadefoot Toad
Serpentes	Snake
? Aves	? Bird
Sylvilagus sp.	Cottontail
Lepus sp.	Jack Rabbit
Lepus cf. californicus	Jack Rabbit, cf. Black-tailed
Spermophilus tridecemlineatus or S. lateralis	13-lined Ground Squirrel or Golden-mantled Ground Squirrel
Cynomys sp.	Prairie dog
Thomomys cf. bottae	Pocket Gopher, cf. Botta's
Dipodomys cf. ordii	Kangaroo Rat, cf. Ord's
Dipodomys spectabilis	Banner-tailed Kangaroo Rat
Ondatra zibethicus	Muskrat
Cf. Canis latrans	Cf. Coyote
Artiodactyla, small or medium	Small or Medium Artiodactyl
Bison and/or Bos	Bison and/or Cattle
Bison sp.	Bison
Cf. Equus	Cf. Horse

Table E2. Summary of Fauna from LA 13423 by Stratigraphic Level.

Level	Taxa
Surface	Succinea sp.
	Scaphiopus hammondi
	? Aves
	Sylvilagus sp.
	Lepus sp.
	Cynomys sp.
	Thomomys cf. bottae
	Dipodomys cf. ordii
	Dipodomys spectabilis
	Cf. Canis latrans
	Artiodactyla, cf. small or medium
	Bison and/or Bos
30-40 cm	Mammalia, large
40-50 cm	Mammalia, large
50-60 cm	Mammalia, large
60-70 cm	Mammalia, large
70-80 cm	Cf. Bison
80-90 cm	Mammalia, large
	Cynomys sp.
90-100 cm	Lepus cf. californicus
	Ondatra zibethicus
	Artiodactyla, medium or large
100-110 cm	Thomomys cf. bottae
	Artiodactyla, cf. large
100-120 cm	Succinea sp.
110-120 cm	Spermophilus tridecemlineatus or
	S. lateralis
	Bison sp.
120 cm	Dipodomys spectabilis

120-130 cm	Rodentia
	Bison sp.
120-135 cm	? *Scaphiopus*
	Cf. *Cynomys*
	Cf. *Equus*
130 cm	*Dipodomys spectabilis*
130-140 cm	*Sylvilagus* sp.
	Cynomys sp.
	Dipodomys cf. *ordii*
	Bison sp.
140-150 cm	Mammalia, large
	Dipodomys spectabilis
150 cm	Mammalia, medium
	Bison sp.
160-170 cm	Serpentes
	Mammalia, medium
	Mammalia, large
	Cynomys sp.
197-180 cm	Mammalia, medium
	Thomomys cf. *bottae*
	Bison sp.
180-190 cm	Mammalia, medium
	Mammalia, large
	Thomomys cf. *bottae*
190 cm	*Cynomys* sp.
190-200 cm	Gastropoda (snail)
	Mammalia, medium
	Mammalia, large
	Thomomys cf. *bottae*
200-210 cm	Mammalia, medium
	Mammalia, large
	Cynomys sp.

210-220 cm	Mammalia, large
	Cynomys sp.
210-220 cm	Mammalia, large
	Cf. *Sylvilagus*
220-230 cm	Mammalia, large
	Geomyidae (pocket gopher)
230-240 cm	*Cynomys* sp.
240 cm	Mammalia, medium
250 cm	Mammalia, medium
	Rodentia

Table E3. Stratigraphic Distribution of Each Taxon from LA 13423.

Gastropoda (snails)
- Surface
- 100-120 cm

Scaphiopus hammondi
- Surface

? *Scaphiopus*
- 120-135 cm

Serpentes
- 160-170 cm

? Aves
- Surface

Mammalia, medium
- 150 cm
- 180-190 cm
- 190-200 cm
- 200-210 cm
- 240 cm
- 250 cm

Mammalia, large
- 34-40 cm
- 40-50 cm
- 50-60 cm
- 60-70 cm
- 80-90 cm
- 140-150 cm
- 160-170 cm
- 180-190 cm
- 190-200 cm
- 200-210 cm
- 210-220 cm
- 220-230 cm

Sylvilagus sp.
- Surface
- 130-140 cm
- 210-220 cm

Lepus sp.
- Surface

Lepus cf. *californicus*
- 90-100 cm

Rodentia
- 120-130 cm
- 250 cm

Spermophilus tridecemlineatus or *S. lateralis*
- 110-120cm

Cynomys sp.
Surface

80-90- cm
120-135 cm
130-140 cm
160-170 cm
190 cm
200-210 cm
230-240 cm

Geomyidae (pocket gopher)
220-230 cm

Thomomys cf. *bottae*
Surface
100-110 cm
170-180 cm
180-190 cm
190-200 cm

Dipodomys cf. *ordii*
Surface
130-140 cm

Dipodomys spectabilis
Surface
120 cm
130 cm
140-150 cm

Ondatra zibethicus
90-100 cm

Cf. *Canis latrans*
Surface

Artiodactyla, small or medium
Surface

Artiodactyla, medium or large
90-100 cm

Artiodactyla, cf. large
100-120 cm

Bison and/or *Bos*
Surface

Bison sp.
70-80 cm
110-120 cm
120-130 cm
130-140 cm
150 cm
170-180 cm

Cf. *Equus*
120-135 cm

Table E4. Horizontal Distribution of Faunal Elements. The numerical portions of the grid designations are given for each identification category (e.g., 608/28 = SW608 NW28). Items originally recorded as "Mammalia, medium or large" have been combined with "Mammalia, large."

LEVEL	FAUNA	GRID		
SURFACE	*Succinea* sp.	608/28	666/48	728/25
		740/109	745/56	748/60
		1290/128	1292/25	
	Amphibia or Reptilia	1054/66		
	Amphibia, cf. toad	1213/102		
	Scaphiopus sp.	1243/82		
	Scaphiopus hammondi	1229/70		
	? Aves	608/28		
	Mammalia	770/44	1046/65	1209/100
		1210/101	1222/97	1290/63
		1292/25	1295/78	
	Mammalia, small	1053/64	1209/104	1215/102
		1216/104	1230/88	1233/88
		1239/115		
	Mammalia, small or medium	1201/101	1201/102	1204/101
		1212/103	1214/98	1214/99
		1215/102	1216/103	1220/97
	Mammalia, medium	475/37	614/39	744/102
		1051/70	1206/102	1207/100
		1207/101	1207/104	1208/100
		1209/101	1209/102	1212/99
		1215/105	1222/96	1271/50
		1277/23	1290/63	1294/98

Table E4. p 2

LEVEL	FAUNA	GRID		
SURFACE	Mammalia, large	475/37	475/53	479/57
		481/61	603/59	608/28
		608/52	612/9	614/39
		615/1	615/19	615/35
		616/30	617/27	672/15
		682/32	682/34	683/38
		682/39	689/42	690/173
		703/22	706/10	728/25
		740/150	742/103	745/25
		747/108	750/129	760/25
		770/44	850/71	868/164
		870/165	916/198	922/167
		932/94	1002/53	1003/58
		1005/56	1019/70	1202/901
		1207/102	1208/101	1209/102
		1209/103	1209/104	1210/99
		1210/100	1211/100	1212/104
		1212/107	1215/107	1216/99
		1218/97	1220/96	1223/100
		1233/88	1235/86	1237/83
		1237/84	1238/83	1238/85
		1238/86	1239/83	1239/84
		1239/85	1240/83	1244/81
		1260/16	1271/167	1273/100
		1277/22	1278/97	1283/15
		1290/29	1290/63	1294/87
		1295/97	1295/98	1295/103
		1296/96	1296/97	1296/98
		1296/99	1296/100	1296/101
		1296/102	1296/104	1297/96
		1297/97	1297/98	1297/99
SURFACE	Mammalia, large (continued)	1297/100	1297/101	1297/105
		1298/96	1298/98	1298/99
		1298/100	1298/101	1298/102
		1298/103	1299/91	1299/92
		1299/93	1299/94	1299/95
		1299/96	1299/97	1299/98
		1299/99	1299/100	1299/101
		1299/105	1300/91	1300/92
		1300/93	1300/94	1300/95
		1300/96	1300/98	1300/99
		1300/100	1300/101	1300/103
		1301/93	1301/94	1301/95
		1302/94	1302/95	1303/95
		1304/95	1305/100	1306/95
		1308/93	1308/94	1945/156
		1963/141		

Table E4. p 3

Cf. Sylvilagus or Lepus	1054/60
Sylvilagus sp.	645/26 1297/100
Cf. Lepus	398/94 1945/156
Lepus sp.	614/39 615/135 715/18 1052/70 1212/104 1235/87
Rodentia, small or medium	1210/101
Rodentia, medium	1209/103 1212/99 1235/87 1243/87
Sciuridae, medium	1295/54
Cynomys sp.	688/37 1210/102 1312/87
Geomyidae	1217/97 1222/96 1299/194
Cf. Thomomys	728/25 1208/100
Thomomys cf. bottae	932/94 1207/101 1210/101 1296/97 1300/91
Dipodomys cf. ordii	599/68
Dipodomys spectabilis	1229/85
Cf. Canis latrans	728/25
Artiodactyla	741/29 932/94 1211/100 1308/94
Artiodactyla, cf. small or medium	590/72

Table E4. p 4

	Artiodactyla, medium	690/184
	Artiodactyla, medium or large	926/95 217/104 1299/104
	Artiodactyla, large	997/50 1280/152 1290/43 1290/128
	Bovidae, large	728/25
	Bison and/or *Bos*	1240/86
30-40 CM	Mammalia, large	1050/64 1293/97
40-50 CM	Mammalia, large	1293/97
50-60 CM	Mammalia, large	1293/97 1294/95
60-70 CM	Mammalia, large	1294/97
70=80 CM	Mammalia, large	1294/97 1305/92 1306/92
	Artiodactyla, large	1310/89
	Cf. *Bison*	1305/89 1308/89
80-90 CM	Mammalia, large	1293/97 1294/97 1303/94 1304/94 1309/91 1312/91
	Cynomys sp.	1293/97
90-100 CM	Mammalia, large	1299/91 1299/92 1300/91 1304/94 1305/92 1306/93 1307/93
	Lepus cf. *californicus*	1311/9
	Ondatra zibethicus	1304/94
	Artiodactyla, medium or large	1294/97 1295/97
100-110 CM	Mammalia, large	1295/97 1296/97 1301/93 1302/94 1305/92 1305/95 1306/92 1306/93 1307/91 1307/93 1307/94

Table E4. p 5

	Thomomys cf. bottae	1296/97
	Artiodactyla, medium or large	1313/89
	Artiodactyla, large	1305/89
100-120 CM	Succinea sp.	1293/9
105/120 CM	Artiodactyla, large	1294/97
110-120 CM	Mammalia, large	1242/83 1297/97 1300/91 1300/93 1301/91 1301/92 1301/93 1302/91 1302/92 1302/93 1302/94 1303/92 1303/94 1304/91 1304/92 1304/93 1304/95 1305/91 1305/92 1305/94 1305/95 1306/91 1306/93 1306/94 1307/91 1307/93 1307/94 1308/93 1312/88
	Spermophilus tridecemlineatus or lateralis	1304/92
	Artiodactyla, medium or large	1229/93
	Artiodactyla, large	1301/92 1305/89
	Bison sp.	1301/91 1301/92 1302/92 1305/94 1306/94 1312/88
120 CM	Dipodomys spectabilis	1228/81
120-130 CM	Mammalia, large	1298/97 1299/92 1299/93 1299/95 1300/93 1303/91 1307/92 1307/93 1307/94 1308/91 1308/92 1309/92
	Rodentia	1297/97
	Sciuridae	1297/98
	Artiodactyla, large	1300/91 1300/95 1301/91 1301/93 1302/92 1303/91 1304/92 1305/90 1305/92 1306/91 1307/89 1307/90 1307/94 1308/93 1308/94 1309/93 1311/92 1312/87 1312/88 1313/92

Table E 4. p 6

	Bison sp.	1302/91 1303/91 1304/91 1305/90 1306/89 1306/92 1306/94 1306/95 1308/92 1309/90 1310/92 1310/93
120-135 CM	Anura, ? *Scaphiopus*	1295/97
	Mammalia, large	1293/97 1295/97
	Cf. *Cynomys*	1294/97
	Cf. *Equus*	1293/97
120-137 CM	Artiodactyla, large	1308/90
130 CM	Mammalia, large	1306/90
	Dipodomys spectabilis	1228/81
	Bison sp.	1306/90
130-140 CM	Mammalia	1297/97
	Mammalia, small or medium	1296/102 1298/191 1299/101 1300/104 1314/86
	Mammalia, large	754/98 1296/100 1296/103 1297/99 1297/100 1298/101 1298/105 1298/130 1299/94 1299/96 1299/97 1299/100 1299/101 1299/105 1300/1 1300/93 1300/95 1300/102 1300/104 1308/92 1312/192 1314/87 1314/89
	Sylvilagus sp.	1296/99 1299/98
	Rodentia, medium	1296/103 1300/104
	Cynomys sp.	1296/104 1297/105 1298/102 1299/93
	Dipodomys cf. *ordii*	1226/82
	Artiodactyla, large	1299/103 1312/90 1313/90 3114/86 1314/87
	Bison sp.	1298/100 1299/94 1309/91 1314/90

Table E 4. p 7

140-150 CM	Mammalia, large	1312/89
	Dipodomys spectabilis	1226/82 1227/81
150 CM	Mammalia, medium	1324/81
	Bison sp.	1230/84
160 CM	Serpentes	1226/88
160-170 CM	Mammalia, medium	1237/115
	Mammalia, large	1224/83 1237/113
	Cynomys sp.	1237/113
160-190 CM	Mammalia, large	1234/84
170-180 CM	Mammalia, medium	1229/89
	Mammalia, large	1231/84 1231/90
	Thomomys cf. *bottae*	1238/114
	Bison sp.	1229/89
180-190 CM	Mammalia, medium	1227/88
	Mammalia, large	1230/89 1235/84
	Thomomys cf. *bottae*	1238/114
190 CM	*Cynomys* sp.	1226/88
190-200 CM	Gastropoda	1226/90
	Mammalia, medium	1232/85 1235/90
	Mammalia, large	1232/84 1234/84 1234/85 1235/84
	Thomomys cf. *bottae*	1226/89
200-210 CM	Mammalia, small or medium	1232/88 1234/88 1236/90
	Mammalia, medium	1236/88
	Mammalia, large	1232/84 1233/84 1233/88 1234/83 1234/84 1234/87 1235/85 1235/88 1236/85 1236/86 1237/83 1237/84 1238/83

Table E 4. p 8

	Cynomys sp.	1238/83		
210-220 CM	Mammalia, medium	1235/87		
	Mammalia, large	1235/86	1236/83	1236/86
		1237/84	1237/85	1238/85
	Cf. Sylvilagus	1235/87		
220 CM	Mammalia, large	1247/37	1238/87	
220-230 CM	Mammalia, large	1243/83		
	Geomyidae	1241/83		
230-240 CM	Cynomys sp.	1241/85		
240 CM	Mammalia, medium	1242/87		
250 CM	Mammalia, medium	1245/87		
	Rodentia	1245/87		