MAMMALS OF THE HARTE RANCH AREA OF BIG BEND NATIONAL PARK,
BREWSTER COUNTY, TEXAS

FRANKLIN D. YANCEY, H. RICHARD W. MANNING, AND CLIDE JONES

ABSTRACT

A three-year study (1990-1992) on the mammals of the Harte Ranch area of Big Bend National Park was conducted. Forty-two species of mammals were documented to occur in this area. Descriptive accounts are presented for each species, which include comments regarding distribution, relative abundance, habitat preference, and reproductive biology. The mammalian diversity of the Harte Ranch area in comparison to other areas in the region is discussed.

Key words: Big Bend National Park, Harte Ranch, mammalian diversity, Rosillos Mountains.

INTRODUCTION AND METHODS

For a total of almost three years, we studied the biodiversity of mammals on the Harte Ranch area of Big Bend National Park. The Harte Ranch area is about 75,080 acres in size, and is located in the northwestern portion of Big Bend National Park. It is situated west of Persimmon Gap Ranger Station, north of the Peacock-Rosillos Ranch, and east of Terlingua Ranch.

This survey of mammals of the Harte Ranch area was carried out in accordance with the work of a unique Research Consortium organized by Dr. Milford Fletcher (National Park Service) and Dr. David Schumally (then of Texas A&M University). We made every effort to coordinate our field activities with those of the other members of the Research Consortium, which included surveys of invertebrates, amphibians, reptiles, birds, and plant communities.

Our major objectives were to determine the kinds of extant mammals on Harte Ranch, and to sample and observe mammals in as many of the microhabitats throughout the geographic area as possible. We employed standard methods of capturing and monitoring mammals as described by Jones et al. (1996). We concentrated our efforts on the use of Sherman live traps (over 10,000 trap-nights) which allowed for the release of animals captured that were not needed as voucher specimens. All field research activities were conducted in the most discrete manner possible in consideration of the sensitivities of the local human population in the region.
RESULTS

During our field research, 66 specific localities within the Harte Ranch section of Big Bend National Park were sampled (Table 1). These sampling data, supplemented with a variety of observational data, resulted in the documentation of 42 species of mammals at Harte Ranch (Table 2).

In the accounts that follow, 42 species of mammals that are known to occur to the Harte Ranch section of Big Bend National Park are treated. Although ordinal and familial headings are not utilized here, they are presented in Table 2. Accounts are presented in the currently accepted phylogenetic sequence through genera: species are arranged alphabetically within each genus. Scientific and vernacular names of taxa follow Manning and Jones (1968) and Baker et al. (2003). Linear measurements in these accounts are in millimeters. Specimens listed are deposited in the Collection of Recent Mammals at the Museum of Texas Tech University.

*Myotis yumanensis yumanensis*
(H. Allen 1884)

Only two specimens of *M. yumanensis* were obtained during this study. Both bats were captured in mist nets placed over water. According to Schmidly (1991), this bat usually forages near open water in lowland habitats. Testes of these bats, captured on 8 and 10 November, measured 1 x 1 and 2 x 1, respectively.

*Specimens examined* (2).—Mountain Lodge, Harte Ranch, 1; 0.6 mi. S, 1.5 mi. E Key Place, Harte Ranch, 1.

*Pipistrellus hesperus maximus*
Hatfield 1936

The western pipistrelle was the most common bat encountered during this study. Although specimens were obtained by use of mist nets set over water at only two localities, these mammals were observed flying about at dusk and dawn at numerous places in the study area, especially along roads and adjacent to Chalk Ridge. A female examined on 19 May contained two embryos (crown–rump length, 11); lactating females were collected on 19–21 July. Measurements of testes of males obtained in July and August ranged from 2 x 2 to 4 x 4, in October and November, testes of males measured from 1 x 1 to 3 x 2. Volant young-of-the-year pipistrelles were captured on 19–21 July.

*Specimens examined* (49).—Mountain Lodge, Harte Ranch, 48; Cedar Creek, 0.75 mi. E Twin Peaks, Harte Ranch, 1.

*Eptesicusfuscus pallidus*
Young 1908

A lactating female was captured on 20 July in a mist net placed over water. In the Big Bend of Texas, female big brown bats inhabit lowland areas during the summer months (Schmidly 1991).

*Specimens examined* (1).—Mountain Lodge, Harte Ranch, 1.

*Lasiurus cinereus cinereus*
(Pallisot de Beauvois 1796)

On two occasions during the night of 10 November, a hoary bat was observed in a mist net set over water; the bat escaped before it could be retrieved. According to Schmidly (1991) this species is restricted mostly to wooded, montane areas of the Big Bend.

*Specimens examined* (0).

*Corynorhinus townsendii pallascens*
(Miller 1897)

Two specimens of Townsend's big-eared bat were obtained during this study. A male, taken from inside a building on 8 November, had testes that measured 3 x 2. A non-gravid female was netted over water on 8 November.

*Specimens examined* (2).—Key Place, Harte Ranch, 1; 0.6 mi. S, 1.5 mi. E Key Place, Harte Ranch, 1.
<table>
<thead>
<tr>
<th>Table 1:</th>
<th>Geocentric of geographic localities, Hart Ranch. Big Bend National Park</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Mountain Lodge, Yimba Ranch.</td>
</tr>
<tr>
<td>2.</td>
<td>0.75 mi. N, Mountain Lodge, Hart Ranch.</td>
</tr>
<tr>
<td>3.</td>
<td>0.25 mi. N, 2.25 mi. W Mountain Lodge, Hart Ranch</td>
</tr>
<tr>
<td>4.</td>
<td>0.5 mi. N, 2.25 mi. W Mountain Lodge, Hart Ranch</td>
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<tr>
<td>5.</td>
<td>0.5 mi. N, 2.5 mi. W Mountain Lodge, Hart Ranch</td>
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<tr>
<td>6.</td>
<td>0.5 mi. N, 2 mi. W Mountain Lodge, Hart Ranch</td>
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<tr>
<td>7.</td>
<td>0.5 mi. N, 1.5 mi. W Mountain Lodge, Hart Ranch</td>
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<tr>
<td>8.</td>
<td>0.5 mi. N, 0.5 mi. W Mountain Lodge, Hart Ranch</td>
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<tr>
<td>9.</td>
<td>0.5 mi. N, 2.75 mi. E Mountain Lodge, Hart Ranch</td>
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<tr>
<td>2.1 mi.</td>
<td>N, 3.2 mi. E Mountain Lodge, Hart Ranch</td>
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<tr>
<td>1.75 mi.</td>
<td>N, 1.5 mi. E Mountain Lodge, Hart Ranch</td>
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<tr>
<td>1.5 mi. N, 2 mi. E Mountain Lodge, Hart Ranch.</td>
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<tr>
<td>1.5 mi. N, 0.5 mi. E Mountain Lodge, Hart Ranch.</td>
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<tr>
<td>1.5 mi. N, 0.75 mi. E Mountain Lodge, Hart Ranch.</td>
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<tr>
<td>1.5 mi. N, 0.5 mi. E Mountain Lodge, Hart Ranch.</td>
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<tr>
<td>2.5 mi. W Mountain Lodge, Hart Ranch.</td>
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<tr>
<td>0.5 mi. S Mountain Lodge, Hart Ranch.</td>
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<tr>
<td>0.5 mi. S, 2.5 mi. W Mountain Lodge, Hart Ranch.</td>
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<tr>
<td>1 mi. S, 2.5 mi. W Mountain Lodge, Hart Ranch.</td>
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<td>1.25 mi. S, 2.5 mi. W Mountain Lodge, Hart Ranch.</td>
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<tr>
<td>1.5 mi. S, 2.75 mi. W Mountain Lodge, Hart Ranch.</td>
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<tr>
<td>2 mi. S, 0.5 mi. E Mountain Lodge, Hart Ranch.</td>
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<tr>
<td>1.5 mi. N, 6.4 mi. E Mountain Lodge, Hart Ranch.</td>
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<tr>
<td>0.5 mi. N, 3.8 mi. W Mountain Lodge, Hart Ranch.</td>
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<tr>
<td>Key Piece, (Hart Ranch.</td>
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<tr>
<td>3.1 mi. N, 3.9 mi. E Key Piece, Hart Ranch.</td>
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<td>0.4 mi. N, 0.8 mi. E Key Piece, Hart Ranch.</td>
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<td>0.4 mi. N, 1.5 mi. E Key Piece, Hart Ranch.</td>
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<td>0.25 mi. N, 0.25 mi. E Key Piece, Hart Ranch.</td>
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<td>0.5 mi. S, 1.5 mi. E Key Piece, Hart Ranch.</td>
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<tr>
<td>0.5 mi. S, 1.5 mi. E Key Piece, Hart Ranch.</td>
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<tr>
<td>1.5 mi. N, 1 mi. W Headquarters, Hart Ranch</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 2:</th>
<th>Checklist of mammals known to occur on the Hart Ranch section of Big Bend National Park.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order Chiroptera — Bats</td>
<td></td>
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<tr>
<td>Family Vespertilionidae (vespertilionid bats)</td>
<td></td>
</tr>
<tr>
<td>Myotis yumanensis (Yuma myotis)</td>
<td></td>
</tr>
<tr>
<td>Pipistrellus hesperus (western pipistrelle)</td>
<td></td>
</tr>
<tr>
<td>Episemys fuscus (big brown bat)</td>
<td></td>
</tr>
<tr>
<td>Lasiusus cuneus (hoary bat)</td>
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</tr>
<tr>
<td>Corynorhammus townsendii (Townsend’s big-eared bat)</td>
<td></td>
</tr>
<tr>
<td>Antrozous pallidus (pallid bat)</td>
<td></td>
</tr>
<tr>
<td>Family Molossidae (free-tailed bats)</td>
<td></td>
</tr>
<tr>
<td>Tadarida brasiliensis (Brazilian free-tailed bat)</td>
<td></td>
</tr>
</tbody>
</table>

Order Lagomorpha — Lagomorphs |
Family Leporidae (hares and rabbits) |
Sylvilagus audubonii (desert cottontail) |
Lepus californicus (black-tailed jackrabbit) |

Order Rodentia — Rodents |
Family Sciuridae (squirrels and allies) |
Ammospermophilus interpres (Texas antelope squirrel) |
Spermophilus spilonotus (spotted ground squirrel)
<table>
<thead>
<tr>
<th>Family</th>
<th>Genus</th>
<th>Species</th>
<th>Common Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Squirrel</td>
<td>Spermophilus variegatus</td>
<td>(rock squirrel)</td>
<td></td>
</tr>
<tr>
<td>Family Geomyidae (pocket gophers)</td>
<td>Geomys bursarius</td>
<td>(yellow-faced pocket gopher)</td>
<td></td>
</tr>
<tr>
<td>Family Heteromyidae (pocket mice and kangaroo rats)</td>
<td>Perognathus flavus</td>
<td>(florkey pocket mouse)</td>
<td></td>
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<tr>
<td></td>
<td>Chaetodipus eremicus</td>
<td>(Chihuahuan Desert pocket mouse)</td>
<td></td>
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<tr>
<td></td>
<td>Chaetodipus nelsoni</td>
<td>(Nelson's pocket mouse)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dipodomys merriami</td>
<td>(Merriam's kangaroo rat)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dipodomys ordii</td>
<td>(Ord's kangaroo rat)</td>
<td></td>
</tr>
<tr>
<td>Family Muridae (mice and rats)</td>
<td>Reithrodontomys megalotis</td>
<td>(western harvest mouse)</td>
<td></td>
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<tr>
<td></td>
<td>Peromyscus boylii</td>
<td>(brush mouse)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Peromyscus eremicus</td>
<td>(sands mouse)</td>
<td></td>
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<tr>
<td></td>
<td>Peromyscus leucopus</td>
<td>(white-footed mouse)</td>
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<tr>
<td></td>
<td>Peromyscus maniculatus</td>
<td>(deer mouse)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Peromyscus polionotus</td>
<td>(white-anaked mouse)</td>
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<tr>
<td></td>
<td>Onychomys leucogaster</td>
<td>(Mearns' grasshopper mouse)</td>
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<tr>
<td></td>
<td>Sigmodon hispidus</td>
<td>(hispad cotton rat)</td>
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<tr>
<td></td>
<td>Neotoma micropus</td>
<td>(Mexican woodrat)</td>
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</tr>
<tr>
<td></td>
<td>Neotoma lepida</td>
<td>(southern plains woodrat)</td>
<td></td>
</tr>
<tr>
<td>Family Erethizontidae (New World porcupines)</td>
<td>Erethizon dorsatum</td>
<td>(porcupine)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Order</th>
<th>Family</th>
<th>Genus</th>
<th>Common Name</th>
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</thead>
<tbody>
<tr>
<td>Carnivora</td>
<td>Canidae</td>
<td>Canis familiaris</td>
<td>(dog)</td>
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<tr>
<td></td>
<td>Caninae</td>
<td>Canis lupus</td>
<td>(coyote)</td>
</tr>
<tr>
<td></td>
<td>Ursinae</td>
<td>Ursus americanus</td>
<td>(common gray fox)</td>
</tr>
<tr>
<td></td>
<td>Procyonidae</td>
<td>Procyon</td>
<td>(铲齿狐)</td>
</tr>
<tr>
<td></td>
<td>Bionarcestes astutus</td>
<td>(tingtail)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Procyon lotor</td>
<td>(common raccoon)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mustelidae</td>
<td>Mustela</td>
<td>(mustela)</td>
</tr>
<tr>
<td></td>
<td>Mustela</td>
<td>M. frenata</td>
<td>(long-tailed weasel)</td>
</tr>
<tr>
<td></td>
<td>Family Mephitidae (skunks)</td>
<td>Mephitis</td>
<td>(striped skunk)</td>
</tr>
<tr>
<td></td>
<td>Family Felidae (cats)</td>
<td>Felis</td>
<td>(mountain lion)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lynx</td>
<td>(bobcat)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Order</th>
<th>Family</th>
<th>Genus</th>
<th>Common Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Artiodactyla</td>
<td>Cervidae</td>
<td>Cervus</td>
<td>(elk)</td>
</tr>
<tr>
<td></td>
<td>Bovidae</td>
<td>Odocoileus</td>
<td>(male deer)</td>
</tr>
<tr>
<td></td>
<td>Antilocapridae</td>
<td>Pronghorn</td>
<td>(pronghorn)</td>
</tr>
<tr>
<td></td>
<td>Bovidae</td>
<td>Capra</td>
<td>(Barbary sheep)</td>
</tr>
</tbody>
</table>

**Antilocapra pallida pallida**

(Le Conte 1856)

The palid bunt was found commonly from March through September during this study, especially in association with man-made structures and open water. Before the collapse of the structure, the old adobe house at the former headquarters of the Harte Ranch was an important night roost for these bats. Pregnant females (embryo crown-to-rump length, 23-26) were obtained on 19 and 22 May, respectively. Lactating females were present on 19-21 July. Testes of a male captured in March measured 3 x 3; bats obtained in May had testes that ranged in size from 2 x 1 to 6 x 2. A male examined in August had testes that measured 9 x 5. Volant young-of-the-year palid bats were present in July and August.

**Tadarida brasiliensis mexicana**

(Saussure 1860)

Brazilian free-tailed bats were captured in mist nets set over water from March through November. As a result of the well-known segregation of sexes in these bats, females were obtained only in March (3), October (2), and November (1). Measurements of testes of males ranged from 2 x 1 to 6 x 3; animals with the larger testes were obtained in September, October, and November.

**Species examined (59).—Mountain Lodge, Harte Ranch, 59.**
Sylviáugas australión minor  
(Mearns 1896)

On the Harte Ranch, the desert cottontail is found primarily in xeric lowlands, especially in Nine Point Draw and its tributaries. It seems that these mammals are especially wary in the area; they are not found far from cover. Desert cottontails were rare during the first two years of this study. However, in May and June of 1992, they were abundant, and many young animals were observed. Lactating females were taken in March, May, and August. A female with six fetuses (crown-rump length, 35), one with three fetuses (crown-rump length, 12), and a female with two fetuses (crown-rump length, 35) were collected in March, May, and August, respectively. Testes of males collected in March through November measured from 27 x 17 to 50 x 20. A male taken on 8 November exhibited fresh winter pelage.

Specimens examined (12).—Mountain Lodge, Harte Ranch, 1; 2 mi. N Mountain Lodge, Harte Ranch, 2; 1.5 mi. N Mountain Lodge, Harte Ranch, 1; 0.5 mi. N, 1.5 mi. W Mountain Lodge, Harte Ranch, 1; 1.25 mi. N, 1 mi. E Mountain Lodge, Harte Ranch, 1; 1.5 mi. N, 0.4 mi. E Mountain Lodge, Harte Ranch, 1; 1.5 mi. N, 0.5 mi. E Mountain Lodge, Harte Ranch, 3; 3.75 mi. N, 1.5 mi. E Mountain Lodge, Harte Ranch, 1; 0.25 mi. N Key Place, Harte Ranch, 1; 4 mi. S Persimmon Gap Ranger Station, Harte Ranch, 1.

Lepus californicus rixiensis  
Waterhouse 1848

The black-tailed jackrabbit is a widespread and often common inhabitant of the study area, especially in open creosote bush and mesquite grasslands. Although no precise census data are available, it seems that this hare was increasing in numbers in the area during the last year of our study. Reproductive data gathered on L. californicus included a female with one fetus (crown-rump length, 28) collected in July, one with three fetuses (crown-rump lengths, 40) obtained in August, and a female containing two fetuses (crown-rump length, 38) examined in September. Lactating females were collected in March, July, and August. Testes of adult males measured in June were 42 x 19, whereas males collected in August had testes that were 25 x 10, 28 x 8, and 50 x 18, respectively.

Specimens examined (18).—Mountain Lodge, Harte Ranch, 1; 1 mi. N Mountain Lodge, Harte Ranch, 2; 0.25 mi. N, 2.25 mi. W Mountain Lodge, Harte Ranch, 1; 1.5 mi. S, 2.75 mi. W Mountain Lodge, Harte Ranch, 1; 1.5 mi. N, 2 mi. E Mountain Lodge, Harte Ranch, 1; 1.75 mi. N, 2.75 mi. E Mountain Lodge, Harte Ranch, 1; 0.5 mi. S, 1.5 mi. E Key Place, Harte Ranch, 1; 0.25 mi. N Key Place, Harte Ranch, 1; 1.5 mi. N, 2.6 mi. E Key Place, Harte Ranch, 1; Headquarters, Harte Ranch, 3; 0.7 mi. N, 0.1 mi. Headquarters, Harte Ranch, 1; 4.25 mi. S, 1.25 mi. W Persimmon Gap Ranger Station, Harte Ranch, 1; 4 mi. S, 2 mi. E Persimmon Gap Ranger Station, Harte Ranch, 1; 4 mi. S, 0.5 mi. E Persimmon Gap Ranger Station, Harte Ranch, 1.

Anomuspermophilus isoperes  
(Merritt 1890)

The Texas antelope squirrel is not common on the Harte Ranch. Animals were observed on several occasions along the road in the vicinity of Key Place, and near the western boundary of the area, but none were collected. As with several other kinds of mammals in the area, we were impressed with the wariness exhibited by this species.

Specimens examined (0).

Spermophilus spilotomas marginatus  
Bailey 1890

Spotted ground squirrels occur predominantly in habitats on coarse, sandy-gravelly soils in the area. These animals also are wary; they seldom ventured far from cover of shrubs and grasses. Information obtained on reproduction in this species includes females collected in September with four and seven placental scars, respectively. A male obtained in May had testes that measured 22 x 13; measurements of testes of an animal collected in September were 13 x 7. A male examined on 21 May exhibited distinct molting of the pelage. Some of these ground squirrels taken in September and October had extensive deposits of fat.

Specimens examined (8).—0.5 mi. S, 2.5 mi. W Mountain Lodge, Harte Ranch, 1; 2 mi. N, 3.2 mi. E Mountain Lodge, Harte Ranch, 1; 0.25 mi. N, 0.25 mi.
mi: E Key Place, Harte Ranch, 3; 0.4 mi. N, 0.2 mi. E Key Place, Harte Ranch, 1; 0.4 mi. N, 0.8 mi. E Key Place, Harte Ranch, 1; 0.4 mi. N, 1.2 mi. E Key Place, Harte Ranch, 1.

*Spermophilus variegatus grammatus*  
(Say 1823)

Rock squirrels were observed in the vicinity of Buttrill Spring and on rocky outcrops on the western slopes of the Rociolos Mountains; however, no specimens of this taxon were collected. In addition to being uncommon in the area, these squirrels were extremely wary.

Specimens examined (0).

*Cratogeomys castanops clarkii*  
(Baird 1855)

Yellow-faced pocket gophers were found in deep, sandy soils of the lowlands in the western portion of the study area. In addition these animals were located in shallow, rocky soils in the vicinity of Mountain Lodge. Sehnidly (1977) reported that these gophers require tussocks of a depth of seven to eight inches, suggesting that *C. castanops* should be distributed more widely in the area than our records indicate. A female obtained in September contained three fetuses (crown-rump length, 49). Measurements of testes of a male collected in November were 7 x 5. Animals taken in May, September, and November exhibited evidence of molting.

Specimens examined (5).—Mountain Lodge, Harte Ranch, 2; 0.75 mi. N Mountain Lodge, Harte Ranch, 1; 1 mi. S, 2.5 mi. W Mountain Lodge, Harte Ranch, 1; 1.25 mi. S, 2.5 mi. W Mountain Lodge, Harte Ranch, 1.

*Perognathus flavus gilvus*  
(Osgood 1900)

The silky pocket mouse was one of the more common small rodents encountered throughout the study area. Although not especially abundant in any given place at any given time, this heteromyid was obtained in numerous habitats on both sandy and rocky substrates during the course of this study. Our perceptions of the habitat preferences of this rodent coincide with those determined by Porter (1962). Pregnant females were taken in March (4 fetuses, crown-rump length, 7), July (3 fetuses, crown-rump length, 4), and August (6 fetuses, crown-rump length, 3; 3 fetuses, crown-rump length, 5; 4 fetuses, crown-rump length, 10; 3 fetuses, crown-rump length, 11; 4 fetuses, crown-rump length, 12; 2 fetuses, crown-rump length, 18). Lactating females also were collected in August. Measurements of testes of males taken in various months were recorded as follows: March, 4 x 2; May, 6 x 3; July, 2 x 2, 3 x 2, 5 x 4, 7 x 4; August, 2 x 2, 1 x 2, 2 x 2, 4 x 2, 4 x 3; November, 2 x 1. Animals undergoing seasonal molt were examined in July and August.

Specimens examined (64).—Mountain Lodge, Harte Ranch, 7; 2.5 mi. N, 4 mi. W Mountain Lodge, Harte Ranch, 2; 1.3 mi. N, 4 mi. W Mountain Lodge, Harte Ranch, 1; 1.25 mi. S, 2.75 mi. W Mountain Lodge, Harte Ranch, 9; 1.5 mi. S, 2.75 mi. W Mountain Lodge, Harte Ranch, 1; 1.1 mi. S, 3.8 mi. W Mountain Lodge, Harte Ranch, 6; 1 mi. N, 0.5 mi. E Mountain Lodge, Harte Ranch, 4; 0.5 mi. S, 1.5 mi. E Key Place, Harte Ranch, 2; Headquarters, Harte Ranch, 1; 0.25 mi. N, 1 mi. E Headquarters, Harte Ranch, 1; 0.5 mi. N, 1.4 mi. W Headquarters, Harte Ranch, 1; 4 mi. S Persimmon Gap Ranger Station, Harte Ranch, 1; 4 mi. S, 1 mi. E Persimmon Gap Ranger Station, Harte Ranch, 2; 4 mi. S, 0.5 mi. E Persimmon Gap Ranger Station, Harte Ranch, 1; 1.25 mi. S, 1.25 mi. E Persimmon Gap Ranger Station, Harte Ranch, 9; Southeast Windmill, 5 mi. S, 0.5 mi. E Persimmon Gap Ranger Station, Harte Ranch, 1; 0.1 mi. N, 1.5 mi. E Twin Peaks, Harte Ranch, 4; Cedar Creek, 0.25 mi. E Twin Peaks, Harte Ranch, 10; Cedar Creek, 0.8 mi. S, 0.4 mi. E Twin Peaks, Harte Ranch, 1.

*Chaetodipus eremicus,*  
(Mearns 1898)

In accordance with the preferences of habitats of this pocket mouse reported by Porter (1962), we found the Chihuahuan Desert pocket mouse in all kinds of vegetation in habitats on rock-free, sandy soils (and occasionally on gravel) where we sampled mammals during this study. This mouse was the most abundant heteromyid collected during our field work at Harte Ranch. Females carrying fetuses were obtained in
March (3 fetuses, crown-rump length, 1.5; 5 fetuses, crown-rump length, 6); May (6 fetuses, crown-rump length, 4); June (8 fetuses, crown-rump length, 2; 6 fetuses, crown-rump length, 7); July (2 fetuses, crown-rump length, 3); August (4 fetuses, crown-rump length, 5; 4 fetuses, crown-rump length, 12; 5 fetuses, crown-rump length, 1); September (4 fetuses, crown-rump length, 10), and November (3 fetuses, crown-rump length, 13). Ranges of measurements of testes of males were recorded as follows: March: 7 x 4 - 11 x 6; June: 3 x 2 - 8 x 4; July: 3 x 1 - 7 x 3; August: 6 x 4 - 10 x 4; September: 4 x 2 - 6 x 3; November: 3 x 1, 4 x 1. Moltning was noted in specimens obtained during July and August.

*Specimens examined* (179).—Mountain Lodge, Harte Ranch, 5; 1.5 mi. S, 2.75 mi. W Mountain Lodge, Harte Ranch, 5; 0.5 mi. N, 2 mi. W Mountain Lodge, Harte Ranch, 1; 2.5 mi. N, 4 mi. W Mountain Lodge, Harte Ranch, 2; 1.3 mi. N, 4 mi. W Mountain Lodge, Harte Ranch, 4; 2.5 mi. W Mountain Lodge, Harte Ranch, 3; Crazy Windmill, 0.7 mi. S, 3.2 mi. W Mountain Lodge, Harte Ranch, 2; 1 mi. N, 0.5 mi. E Mountain Lodge, Harte Ranch, 2; 1.5 mi. N, 0.5 mi. E Mountain Lodge, Harte Ranch, 1; 1 mi. N, 0.5 mi. E Mountain Lodge, Harte Ranch, 3; Headquarters, Harte Ranch, 4; 0.5 mi. N Headquarters, Harte Ranch, 2; 0.75 mi. N Headquarters, Harte Ranch, 6; 1.25 mi. E Headquarters, Harte Ranch, 14; 2.5 mi. N, 1 mi. W Headquarters, Harte Ranch, 6; Buttrill Spring, Harte Ranch, 3; 0.1 mi. W Antelope Lodge, Harte Ranch, 1; Key Place, Harte Ranch, 1; 0.5 mi. S, 1.5 mi. E Key Place, Harte Ranch, 7; 1.4 mi. S, 3.4 mi. E Key Place, Harte Ranch, 5; Bone Spring, Harte Ranch, 1; 4 mi. S Persimmon Gap Ranger Station, Harte Ranch, 6; 4 mi. S, 0.5 mi. W Persimmon Gap Ranger Station, Harte Ranch, 1; 4.25 mi. S, 1.25 mi. W Persimmon Gap Ranger Station, Harte Ranch, 1; 4.25 mi. S, 1.75 mi. W Persimmon Gap Ranger Station, Harte Ranch, 8; 5 mi. S, 2.5 mi. W Persimmon Gap Ranger Station, Harte Ranch, 8; 2.2 mi. N, 7.25 mi. W Persimmon Gap Ranger Station, Harte Ranch, 6; North Windmill, 1 mi. N, 7 mi. W Persimmon Gap Ranger Station, Harte Ranch, 2; 2.2 mi. N, 6.3 mi. W Persimmon Gap Ranger Station, Harte Ranch, 4; Coyote Tank, 0.25 mi. N, 6.6 mi. W Persimmon Gap Ranger Station, Harte Ranch, 7; 4 mi. S, 0.5 mi. E Persimmon Gap Ranger Station, Harte Ranch, 2; 4 mi. S, 1 mi. E Persimmon Gap Ranger Station, Harte Ranch, 5; Southeast Windmill, 5.1 mi. S, 0.5 mi. E Persimmon Gap Ranger Station, Harte Ranch, 3; Cedar Creek, 0.8 mi. S, 0.4 mi. E Twin Peaks, Harte Ranch, 2.

*Chionodryas nelsoni canescens* (Merriam 1904)

Nelson's pocket mouse occurs in habitats on gravelly and rocky substrates within the study area. Precise habitats of this heptameryx in the Big Bend area were described in detail by Portal (1962). We found pregnant females of this species only in June (3 fates, crown-rump length, 5; 4 fates, crown-rump length, 3) and August (5 fates, crown-rump length, 8). Testes of males taken through the year were measured as follows: March: 8 x 4, 4; May: 12 x 6; June: 8 x 4, July: 11 x 4, 9 x 4, 8 x 3; August: 3 x 1, 4 x 2, 5 x 2; September: 5 x 2, 6 x 3, 6 x 4. Young-of-the-year were collected in July and August. Based on examination of specimens obtained, molting of pelage seemingly takes place in late summer (July, August).

*Specimens examined* (121).—Mountain Lodge, Harte Ranch, 25; 0.5 mi. N, 0.1 mi. W Mountain Lodge, Harte Ranch, 10; 0.3 mi. N, 2 mi. W Mountain Lodge, Harte Ranch, 7; 1 mi. N Mountain Lodge, Harte Ranch, 1; 2.5 mi. N, 4 mi. W Mountain Lodge, Harte Ranch, 1; 1 mi. S, 0.5 mi. E Mountain Lodge, Harte Ranch, 7; Buttrill Spring, Harte Ranch, 33; 0.5 mi. S, 1.5 mi. E Key Place, Harte Ranch, 11; 1.4 mi. S, 3.4 mi. W Key Place, Harte Ranch, 5; 0.5 mi. S, 1.5 mi. W Headquarters, Harte Ranch, 7; 4.25 mi. S, 1.25 mi. W Persimmon Gap Ranger Station, Harte Ranch, 1; 1 mi. E Persimmon Gap Ranger Station, Harte Ranch, 1; 1 mi. S, 0.5 mi. E Persimmon Gap Ranger Station, Harte Ranch, 1; 0.1 mi. N, 1.5 mi. E Twin Peaks, Harte Ranch, 4; Cedar Creek, 0.75 mi. E Twin Peaks, Harte Ranch, 3; Cedar Creek, 0.8 mi. E, 0.4 mi. E Twin Peaks, Harte Ranch, 4.

*Dipodomyia merriami ambigua*

Merriam 1890

Merriam's kangaroo rat was associated most commonly with gravelly and rocky soils, but with a wide array of types of vegetation. Reproductive data gathered on this species at/bed pregnant females taken in March (3 fetuses, crown-rump length, 12),
May (2 fetuses, crown-rump length, 6), July (2 fetuses, crown-rump length, 15), August (2 fetuses, crown-rump length, 29; 4 fetuses, crown-rump length, 4; 3 fetuses, crown-rump length, 3), September (3 fetuses, crown-rump length, 17), October (2 fetuses, crown-rump length, 6), and November (5 fetuses, crown-rump length, 10; 2 fetuses, crown-rump length, 14). Like females, males exhibited reproductive activity throughout most of the year: some measurements of testes were as follows: March (11 x 8; 10 x 6), July (11 x 6; 12 x 6), August (11 x 6), September (14 x 7; 10 x 5), October (16 x 8), November (11 x 6; 15 x 5). Young-of-the-year Merriam's kangaroo rats were collected in August. It is of interest that one of the young D. merriami obtained in August had cheeks and the entire venter covered with yellow pollen. Seeds, as well as insects and green vegetation, are the major food items of this rat (Schuchly 1977).

**Specimens examined (88)** — Mountain Lodge, Harte Ranch, S; 1.5 mi. S, 2.75 mi. W Mountain Lodge, Harte Ranch, 18; 0.25 mi. N, 2.25 mi. W Mountain Lodge, Harte Ranch, 2; 1.3 mi. N, 4 mi. W Mountain Lodge, Harte Ranch, 2; 2.5 mi. N, 4 mi. W Mountain Lodge, Harte Ranch, 3; 0.3 mi. N, 2 mi. W Mountain Lodge, Harte Ranch, 1; 1.1 mi. S, 3.8 mi. W Mountain Lodge, Harte Ranch, 5; 1 mi. N, 0.5 mi. E Mountain Lodge, Harte Ranch, 2; Headquarters, Harte Ranch, 1; 2.5 mi. N, 1 mi. W Headquarters, Harte Ranch, 2; 0.25 mi. N, 1 mi. E Headquarters, Harte Ranch, 1; 2.5 mi. E Key Place, Harte Ranch, 2; 1.4 mi. S, 3.4 mi. E Key Place, Harte Ranch, 1; 4 mi. S Persimmon Gap Ranger Station, Harte Ranch, 7; 4 mi. S, 0.5 mi. E Persimmon Gap Ranger Station, Harte Ranch, 9; 4 mi. S, 1 mi. E Persimmon Gap Ranger Station, Harte Ranch, 4; 2.25 mi. S, 1.25 mi. W Persimmon Gap Ranger Station, Harte Ranch, 1; 5 mi. S, 2.5 mi. W Persimmon Gap Ranger Station, Harte Ranch, 4; 2.5 mi. S, 0.5 mi. W Persimmon Gap Ranger Station, Harte Ranch, 1; 2.2 mi. N, 7.25 mi. W Persimmon Gap Ranger Station, Harte Ranch, 2; 2.5 mi. N, 6.3 mi. W Persimmon Gap Ranger Station, Harte Ranch, 3; 1 mi. N, 1 mi. E Twin Peaks, Harte Ranch, 2; Cedar Creek, 0.75 mi. E Twin Peaks, Harte Ranch, 4.

**Dipodomys ordii obscurus**

(J. A. Allen 1903)

Ord's kangaroo rat was not common during the tenure of our work on Harte Ranch. This rat was encountered only on sandy soils associated with arroyos and roads. Females carrying fetuses were obtained only in August (3 fetuses, crown-rump length, 5; 3 fetuses, crown-rump length, 6; 2 fetuses, crown-rump length, 29). Ranges of measurements of testes of males taken were recorded as follows: May, 10 x 6; August, 6 x 4 - 12 x 7; September, 9 x 3 - 16 x 10. A juvenile *D. ordii* was taken in July. Some animals examined in August exhibited molting of pelage.

**Specimens examined (20).—** 1.25 mi. S, 2.75 mi. W Mountain Lodge, Harte Ranch, 10; 1.5 mi. S, 2.75 mi. W Mountain Lodge, Harte Ranch, 3; 1.1 mi. S, 3.8 mi. W Mountain Lodge, Harte Ranch, 2; 0.3 mi. N, 2 mi. W Mountain Lodge, Harte Ranch, 1; 1.2 mi. N, 4 mi. W Mountain Lodge, Harte Ranch, 2; 0.4 mi. N, 1.2 mi. E Key Place, Harte Ranch, 1; Southeast Windmill, 5.1 mi. S, 0.5 mi. E Persimmon Gap Ranger Station, Harte Ranch, 1.

**Reithrodontomys megalotis megalotis**

(Baird 1858)

The western harvest mouse was encountered rather sporadically in the area during this study. This rodent preferred bajadas in lowlands, with rank vegetation that provides a rather thick thatch of ground cover. Harvest mice were most common in areas adjacent to earthen tanks and catch basins where water periodically accumulated. Gravid females were recorded in March (3 fetuses, crown-rump length, 20), September (4 fetuses, crown-rump length, 4; 7 fetuses, crown-rump length, 3), and October (4 fetuses, crown-rump length, 4). Some measurements of testes of males were recorded as follows: March, 6 x 3, 8 x 3, 7 x 3, 4 x 2; June, 7 x 3, 7 x 4, 5 x 3; September, 10 x 5, 9 x 5, 8 x 2; October, 3 x 2, 4 x 2.

**Specimens examined (30).—** Buttrill Spring, Harte Ranch, 1; Crazy Windmill, 0.7 mi. S, 0.2 mi. W Mountain Lodge, Harte Ranch, 2; 0.25 mi. N, 1 mi. E
The brush mouse was the least common member of the genus Peromyscus that was encountered during our study. This species was found only in dense, shrubby vegetation in the bottom of the ravine adjacent to the outflow from Buttrill Spring. An adult female had 3 fetuses (crown-rump length, 21). An adult male had testes that measured 13 x 7. One subadult exhibited molting of the pelage.

*Specimens examined (5).—Buttrill Spring, Harte Ranch, 5.*

**Peromyscus eremicus eremicus**

(Baird 1850)

The cactus mouse was the most common of all members of the genus *Peromyscus* present in the study area. The preferred habitats of this species were slopes with large yuccas, cacti, shrubs, and grasses. It is of interest to note that a large number of these mice were taken from within the man-made structure at Mountain Lodge. Information on reproduction of cactus mice includes the following: females collected in March consisted from 2 to 4 fetuses (crown-rump length, 3 - 12); May, 3 fetuses (crown-rump length, 3); July, 2 fetuses (crown-rump length, 5 - 18); August, 2 to 4 fetuses (crown-rump length, 3 - 18); September, 2 to 3 fetuses (crown-rump length, 3 - 13); and November, 3 to 4 fetuses (crown-rump length, 6 - 9). Males were reproductively active in all months of the year; measurements of testes ranged from 8 x 3 to 10 x 6. Yecrates were found in nests in March and August. Molting of pelage was observed in specimens obtained from August through October.

*Specimens examined (100).—Mountain Lodge, Harte Ranch, 39; 0.5 mi. N, 2 mi. W Mountain Lodge, Harte Ranch, 1; 0.3 mi. N, 2 mi. W Mountain Lodge, Harte Ranch, 6; 2.5 mi. N, 4 mi. W Mountain Lodge, Harte Ranch, 5; 1 mi. S, 3.8 mi. W Mountain Lodge, Harte Ranch, 3; 2 mi. S, 0.5 mi. W Mountain Lodge, Harte Ranch, 3; Buttrill Spring, Harte Ranch, 2; 0.3 mi. W Airport Lodge, Harte Ranch, 7; Headquarers, Harte Ranch, 1; 2.5 mi. N, 1 mi. W Headquarers, Harte Ranch, 2; 0.5 mi. N, 1 mi. E Headquarers, Harte Ranch, 1; 0.5 mi. S, 1.5 mi. E Key Place, Harte Ranch, 5; 4 mi. S Persimmon Gap Ranger Station, Harte Ranch, 2; 3 mi. S, 0.5 mi. E Persimmon Gap Ranger Station, Harte Ranch, 2; 4.25 mi. S, 1.25 mi. W Persimmon Gap Ranger Station, Harte Ranch, 4; 2.2 mi. N, 7.25 mi. W Persimmon Gap Ranger Station, Harte Ranch, 3; 2.2 mi. N, 6.3 mi. W Persimmon Gap Ranger Station, Harte Ranch, 7; 0.1 mi. N, 1.5 mi. E Twin Peaks, Harte Ranch, 7; Cedar Creek, 0.75 mi. E Twin Peaks, Harte Ranch, 2; Cedar Creek, 0.8 mi. S, 0.4 mi. E Twin Peaks, Harte Ranch, 1.*

**Peromyscus leucopus texanus**

(Woodhouse 1853)

The white-footed mouse was most abundant in lowland areas of creosote scrub, especially in places where vegetation (grasses, forbs) occurred among the creosote bushes. Pregnant females were examined in March (4 - 6 fetuses, crown-rump length, 3 - 19), May (3 - 6 fetuses, crown-rump length, 10 - 12), September (3 - 5 fetuses, crown-rump length, 11 - 16), and October (4 fetuses, crown-rump length, 4). Lactating females were taken in each of these months also. Males exhibited evidence of reproductive activity in all months of the year; measurements of testes ranged from 6 x 3 to 18 x 7.

*Peromyscus maniculatus hooveri* Osburn 1904

This deer mouse was taken in lowland habitats, usually in areas that were relatively open with regard to vegetation. Pregnant females were collected in March (4 fetuses, crown-rump length, 4), August (4 fetuses, crown-rump length, 5), September (5 fetuses, crown-rump length, 6; 6 fetuses, crown-rump length, 4). Measurements of testes of males obtained in several months were as follows: March, 10 x 6.9 x 4; June, 8 x 3; August, 11 x 4; October, 10 x 5.

*Specimens examined (26).—2.5 mi. N, 4 mi. W Mountain Lodge, Hart Ranch, 1; 0.7 mi. S, 3.2 mi. W Mountain Lodge, Hart Ranch, 2; 1.25 mi. S, 2.75 mi. W Mountain Lodge, Hart Ranch, 3; 1.1 mi. S, 3.8 mi. W Mountain Lodge, Hart Ranch, 1; 1.4 mi. N, 3.4 mi. E Key Place, Hart Ranch, 1; 0.25 mi. N, 1.1 mi. E Headquarters, Hart Ranch, 1; 1.25 mi. E Headquarters, Hart Ranch, 1; North Windmill, 1 mi. N, 7 mi. W Persimmon Gap Ranger Station, Hart Ranch, 2; Coyote Tank, 0.25 mi. N, 6.6 mi. W Persimmon Gap Ranger Station, Hart Ranch, 8; 2.2 mi. N, 6.3 mi. W Persimmon Gap Ranger Station, Hart Ranch, 6.

*Peromyscus peckii laccatus* Bailey 1906

The white-ankled mouse was collected on a rocky slope with fairly open vegetation above the outflow from Buttrill Spring, as well as on a rock-strewn area on Rosillos Peak. A female obtained in October contained 4 fetuses (crown-rump length, 4). Measurements of testes of males taken in May ranged from 6 x 3 to 11 x 3; animals examined in August had testes that ranged in measurements from 10 x 5 to 14 x 8.

*Specimens examined (17).—Buttrill Spring, Hart Ranch, 11; Rosillos Peak, Hart Ranch, 6.

*Oryzomys argenita argenita* Mearns 1896

Schmidly (1937) reported that Mears’ grasshopper mouse was extremely rare in the Big Bend region, based, in part, on only a single specimen known at that time from Big Bend National Park. This mouse was reported to occur in lowland habitats in association with *D. versum* (Schmidly 1977). However, we also found this grasshopper mouse on sandy substrates, with open vegetation, in association with *D. ordii*. Pregnant females were captured in March (4 fetuses, crown-rump length, 6; 4 fetuses, crown-rump length, 8), July (4 fetuses, crown-rump length, 12), and August (4 fetuses, crown-rump length, 10). A lactating female was taken in September. Measurements of testes of males were recorded as follows: May, 9 x 5, 20 x 9; July, 11 x 6; September, 10 x 3, 7 x 3; November, 8 x 3. Young animals were observed in May, June, September, and November.

*Specimens examined (13).—Mountain Lodge, Hart Ranch, 1; 1.3 mi. N, 4 mi. W Mountain Lodge, Hart Ranch, 3; 0.3 mi. N, 2 mi. W Mountain Lodge, Hart Ranch, 2; 2.5 mi. N, 4 mi. W Mountain Lodge, Hart Ranch, 1; 1.25 mi. S, 2.75 mi. W Mountain Lodge, Hart Ranch, 1; 1.5 mi. S, 2.75 mi. W Mountain Lodge, Hart Ranch, 5; Crazy Windmill, 0.7 mi. S, 3.2 mi. W Mountain Lodge, Hart Ranch, 2; Coyote Tank, 2.5 mi. N, 4 mi. W Persimmon Gap Ranger Station, Hart Ranch, 1; 0.1 mi. N, 1.5 mi. E Twin Peaks, Hart Ranch, 1.

*Sigmodon hispidus berlandieri* Baird 1855

The hispid cotton rat was found commonly in thick vegetation in lowland areas, especially in the vicinity of earthen tanks and catch basins where water periodically accumulated. However, this mammal also occasionally was taken in open creosote shrub areas, as well as in rocky habitats, such as at the base of Chalk Ridge. Gravid females were observed in March (7 fetuses, crown-rump length, 8), August (8 fetuses, crown-rump length, 10), and September (6 fetuses, crown-rump length, 15). Males were reproductively
active throughout most of the year; measurements of testes ranged from 8 x 4 in March to 30 x 12 in September.


Neotoma mexicanus mexicanus
Baird 1855

Only one specimen of the Mexican woodrat was obtained during this study. The animal was collected from among large rocks on Rosillio Peak.

Specimens examined (1).—Rosillos Peak, Harte Ranch, 1.

Neotoma micropus conescens
J. A. Allen 1891

The southern plains woodrat is well known for its habits of constructing "houses," or middens, consisting of piles of sticks, cacti, and debris (Schmidtly 1977). However, we did not observe any such "houses" during our work in the area studied, although we searched constantly for these structures. These woodrats are associated mostly with creosote scrub-grassland habitats. Pregnant females were obtained in March (3 fetuses, crown-rump length, 30), May (3 fetuses, crown-rump length, 50), July (2 fetuses, crown-rump length, 25), and August (3 fetuses, crown-rump length, 40). A lactating female was taken in September. Some measurements of testes of adult males were recorded as follows: June, 18 x 8; July, 15 x 8; 15 x 10; August, 19 x 14, 17 x 8; September, 12 x 6; October, 15 x 6.


Erethizon dorsatum dorsatum
Brandt 1835

Schmidtly (1977) reported that the porcupine was increasing in both geographic range and numbers of animals in the Trans-Pecos. In December, we observed a porcupine along the road at a place near an earthen tank about 0.4 mi. N, 0.8 mi. E Key Place on the Harte Ranch. No specimens of this taxon were collected.

Specimens examined (0).

Canis latrans texensis
Barley 1905

Coyotes were common in a variety of habitats throughout the study area. Sightings indicate these carnivores are abundant especially in the northern portion of Harte Ranch, such as in the vicinity of North Windmill. However, these mammals can be heard almost nightly from Mountain Lodge and along Chalk Ridge. No coyotes were collected during this study.

Specimens examined (0).
**Urocyon cinereoargenteus scotti**
Means 1891

Based on our observations of animals, common gray foxes are most abundant on the lower slopes north of the Posillos Mountains. For example, animals were seen several times in the vicinity of Key Place and near Mountian Lodge. No specimens of this taxon were collected.

*Specimens examined (0).*

**Bassaricyon astutus flavus**
Rhoads 1894

Ringtail signs (feces) were noted in numerous areas, especially in the vicinity of Buttrill Spring and along Chalk Ridge. It is assumed that the ringtail is present throughout the study area in rocky habitats.

*Specimens examined (1).—Mountain Lodge, Harte Ranch, 1.*

**Procyon lotor mexicanus**
Baird 1858

The unmistakable tracks of the common raccoon were seen in mud and sand along Cedar Creek at a place 0.75 mi. E Twin Peaks at the western boundary of the study area. This omnivorous mammal may be more common along watercourses in the region than our observations indicate. No specimens of this taxon were collected.

*Specimens examined (0).*

**Mustela frenata neomexicana**
(Barber and Cockrell 1898)

The long-tailed weasel is rare in the Trans-Pecos region of Texas (Schmidly 1977); it occurs mostly in areas close to permanent water.

*Specimens examined (1).—0.75 mi. N Mountain Lodge, Harte Ranch, 1.*

**Mephitis mephitis varius**
Gray 1837

Although common in Texas, the striped skunk is less numerous in parts of the Trans-Pecos region than elsewhere in the state (Schmidly 1977; Jones and Jones 1992). It occurs usually in association with agricultural areas and in the vicinity of human habitations. We observed striped skunks only on two occasions during this study.

*Specimens examined (1).—Key Place, Harte Ranch, 1.*

**Puma concolor transpamphylia**
Goldman 1928

The mountain lion is common in many parts of Big Bend National Park and the Trans-Pecos area (Waid 1990), as well as in some other parts of Texas (Bigony 1993). No mountain lions were collected or observed directly during this study. However we observed fresh tracks of a large and small animal (perhaps a female and cub) in the mud of a temporary pond at a place 4.25 mi. S and 1.75 mi. W Persimmon Gap Ranger Station.

*Specimens examined (0).*

**Lynx rufus texensis**
J. A. Allen 1895

Bobcats are fairly common in the Trans-Pecos region (Schmidly 1977), especially in the vicinity of rocky areas. We observed only two of these mammals during this study, both were seen along the road, one about 3 mi. E Mountain Lodge, and the other near the western boundary of Harte Ranch. No specimens of this taxon were collected.

*Specimens examined (0).*
Tayassu tajacu angulatus
(Coupe 1889)

Herds of the collared peccary often were seen, indicating they are common in the study area. Signs (tracks, feces, rotted areas) and animals have been seen throughout the lowland portions of Harte Ranch. These animals were concentrated especially in arroyos and near sources of water in the area.

Specimens examined (1).—1.5 mi. N. 0.75 mi. E Mountain Lodge, Harte Ranch, 1.

Cervus elaphus nelsoni
Bailey 1935

An antlered male was observed in the area just to the northwest of Mountain Lodge. In addition, a cow and calf were seen in Nine Point Draw just outside of the western boundary of the study area. The elk observed at Harte Ranch may have wandered from the groups of these animals that have been introduced into either the Guadalupe or Davis mountains in recent times. No specimens of this taxon were collected.

Specimens examined (0).

Odocoileus hemionus crooki
(Mearns 1897)

Based on sightings, mule deer are common on the Harte Ranch. Animals (bucks, does, fawns) have been observed on numerous occasions in all habitats of the area, especially on the lower slopes and lowlands adjacent to the Rosillos Mountains. Signs (tracks, feces) and these animals seem common especially adjacent to sources of water. No specimens of mule deer were collected.

Specimens examined (0).

Aristocarpa americana mexicana
Merriam 1901

The creosotebush-grassland habitat in the eastern portion of the study area seemingly are the preferred habitats of pronghorn on the Harte Ranch. Pairs and small groups of up to six animals have been seen in this region. No specimens of this taxon were collected.

Specimens examined (0).

Ammotragus lervia
(Pallas 1777)

A male Barbary sheep was observed in the high country south of Mountain Lodge and in the vicinity of Rosillos Peak. Signs (tracks, feces) of this introduced species (native of North Africa) have been observed above Buttrill Spring. According to Traylor (1985), the total population of Barbary sheep in the wild in Texas exceeds 5000 animals. No specimens of Barbary sheep were collected during this study.

Specimens examined (0).

DISCUSSION

Schmidly (1977) listed a total of 96 species of mammals that may have inhabited the Trans-Pecos area within the past 100 years of those 96 species, 42 were found to occur on the Harte Ranch section of Big Bend National Park. These 42 species represent 66% of the 70 species of mammals known to occur within Big Bend National Park in its entirety (Boreau and Bryan 1942; Eysterla 1973; Anonymous 1989; Jones et al. 1993). Given the relatively small area of the Harte Ranch, these 42 species indicate a considerable amount of diversity. Furthermore, it is probable that further field research in the area will result in the discovery of additional species of mammals that inhabit the Harte Ranch section of Big Bend National Park.

Other reports on the bats of Big Bend National Park (Eysterla 1975) and adjacent areas (Schmidly 1977, 1991; Yancey 1996) suggest a considerably more abundant and diverse bat fauna in the Big Bend region than was noted during this study. The species composition of a bat community is influenced by the availability of roosting sites (day, night), as well as the abundance...
of food items and permanent sources of water (Findley 1963), and each of these factors may have played a role in the scarcity of bats at Harte Ranch. We have observed that some roosting places for bats, especially man-made structures, in the area have been impacted greatly by human disturbance. Vandalism and theft of some of these structures have reduced the numbers of roosting sites available for this important group of mammals.

Although elk and Barbaty sheep were observed in the area, the paucity of introduced mammals is rather interesting. For example, it is noteworthy that no specimens of either Mox or Rattus were obtained during the time of our intensive sampling of mammals in the area.

Some interesting trends in the composition of the mammalian fauna of the Harte Ranch area were noted during the course of our study. For example, during the first year of fieldwork, specimens of Sigmodon and Peromyscus were difficult to obtain anywhere. However, these particular kinds of small mammals seemed relatively abundant in appropriate habitats during subsequent years of sampling. Incidentally, it is our perception that many species of mammals have become more abundant and widespread in the area of Harte Ranch. This could be related to the removal of livestock and corresponding recovery of habitats.

Based on some of the aforementioned comments in the accounts of species, we were impressed with the levels of warniness exhibited by some mammals, such as desert cottontails and members of the family Scirridae. These habits of warniness by these mammals could be the result of presences from predators, such as coyotes, bobcats, hawks, owls, and snakes. Also, we noted throughout our study that casings of expended firearm cartridges were common along the main road through the Harte Ranch.

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