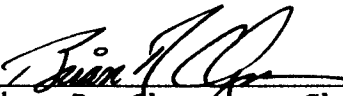


Professional Paper
THE MAMMALS OF
PADRE ISLAND, TEXAS

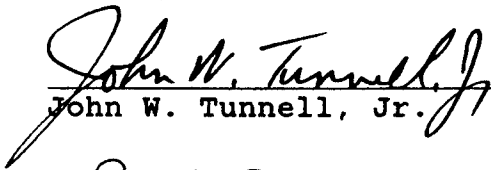
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April, 1988

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Format: Journal of Mammalogy

ABSTRACT. - A species list of mammals excluding cetaceans was constructed for Padre Island, Texas. Small mammals were trapped in Padre Island National Seashore. Regional museums were visited to examine mammals collected on the island. The literature was searched for records of mammals not collected during the project and not held in regional museums. A total of thirty three species were collected or have been reported in the literature from Padre Island or Mustang Island.

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THE MAMMALS OF PADRE ISLAND, TEXAS

Padre Island is a barrier island that is isolated from the mainland of Texas by the Laguna Madre, a 5- to 16-km wide hypersaline lagoon. Mustang Island lies immediately to the north of Padre Island and is connected by beach that has replaced the natural channel that separated the two islands. Mustang Island is separated from the mainland by Corpus Christi Bay which exceeds 30 km at its widest point. Padre and Mustang Islands extend for 210 km from South Padre Island to Port Aransas without a permanent natural break (Fig. 1). Island width varies from a few hundred meters to nearly 4 km. The Mansfield Shipping Channel was dredged through Padre Island in 1957 and separates "North" Padre Island from "South" Padre Island. The average elevation of Padre Island is approximately 3 m with a maximum dune elevation of approximately 15 m. The climate of the region is warm temperate to semi-arid. Temperatures (for Corpus Christi) range from -11°C (January 1899) to 40°C (July 1934). The mean January temperature at Corpus Christi is 14°C and the mean July temperature is 29°C (Gale Research, 1976). Rainfall averages 72 cm annually (Gale Research, 1976). Although Padre Island lies in the driest part of the Gulf coast, tropical storms may deposit as much as a half meter of

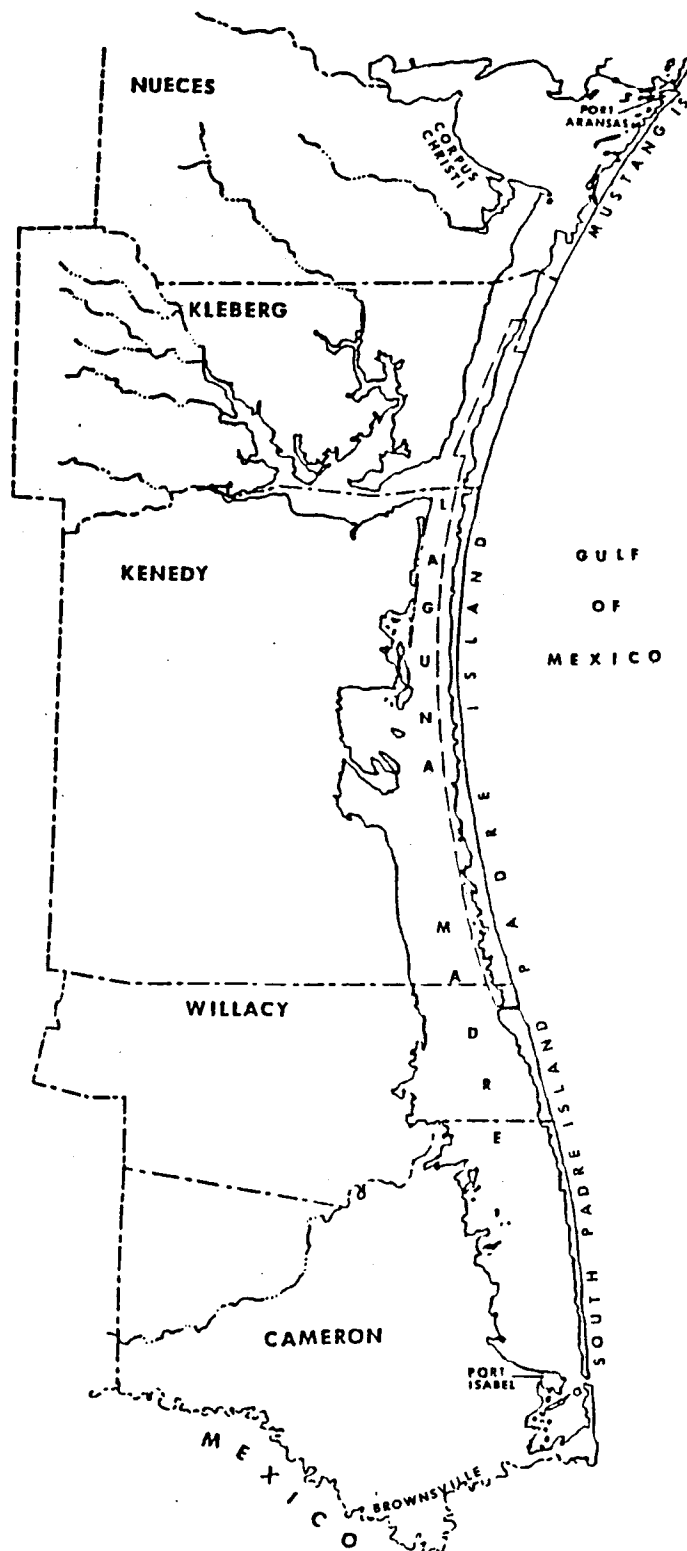


Figure 1. Coastal South Texas showing Padre Island and Mustang Island, associated water bodies and population centers referenced in the text.

precipitation on the island in a period of two or three days.

Padre Island is one of a series of Pleistocene barrier islands along the Texas Coast. Formed by fluctuating sea level and longshore currents, it has apparently been stable since the 1880's (Hill and Hunter, 1976). Hill and Hunter (1976) described in detail the geomorphology and Weise and White (1980) described briefly the geologic history of Padre Island.

Numerous workers have trapped mammals on Padre Island and studied the marine mammals that inhabit the Gulf of Mexico to the east of the island. True (1889) described two new species from the island. Bailey (1905) published a Biological Survey of Texas in which he included 15 species of mammals from Padre Island or Mustang Island. Baker and Lay (1938) report collecting 61 specimens of four rodent species in 100 traps in one night on Mustang Island. Kennedy et al. (1973) studies Dipodomys collected from Padre Island National Seashore. In the middle 1970's, Baker and Rabalais (1975) compiled a listing of mammals for inclusion in a biological survey of Padre Island National Seashore, but the survey was never completed or published. Published reports of Padre Island fauna have been of individual or small numbers of species but none have ever included a complete list of the mammals of Padre Island.

HABITAT TYPES OF PADRE ISLAND

Judd et al. (1977) described six habitat types on South Padre Island: (1)foreshore, (2)backshore, (3)primary dunes, (4)secondary dunes and vegetated flats, (5)tidal flats and (6)washovers. Drawe et al. (1981) and Lonard and Judd (1980) have published descriptions of the vegetation associated with these habitat types on South Padre Island. The six habitats are represented throughout the length of Padre Island and Mustang Island. Three of these habitats, the backshore, primary dunes and secondary dunes and vegetated flats were sampled for this project.

The foreshore is comprised of that portion of the beach over which the waterline migrates as the tide changes. Tidal flats are low areas on the lagoonal side of the island that are flooded by the hypersaline waters of the Laguna Madre during high tides. The tidal flats in the study area are limited to narrow bands of barren sand along the shore of the Laguna Madre. Washovers are flat expanses of sand created during storm tides or hurricanes. Recent washovers may contain water trapped when the tides recede. Many are completely devoid of vegetation. No washovers exist in the study area.

The backshore habitat is described by Judd et al. (1977) as extending from the berm at the high tide line to the seaward base of the primary dunes. The seaward edge of

this habitat is devoid of vegetation. Sesuvium portulacastrum grows nearest the berm. Uniola paniculata, Ipomoea stolonifera, Panicum amarulum, Ipomoea pes-caprae, and other species occur closer to the primary dunes. Total vegetative cover of this zone is less than 5%.

The primary dunes form a ridge and constitute an abrupt change in island contour. Vegetative density and diversity increase from the windward face to the leeward face. Ipomoea stolonifera, Uniola paniculata, and Croton punctatus comprise 89% of the windward vegetation as measured by relative frequency. Ground cover is approximately 7 per cent on South Padre Island (Judd et al. 1977). Ground cover on the leeward side of the primary dune ridge averages more than 20 percent and the variety of cover is greater (Judd et al., 1977). Dominant species are Ipomoea stolonifera, Uniola paniculata, Schizachyrium scoparium, and Croton punctatus.

The secondary dune and vegetated flat zone extends from the leeward base of the primary dunes virtually to the shore of the Laguna Madre. Several species of woody plants including Virginia Live Oak (Quercus virginiana) and Black Willow (Salix nigra), sedges (Cyperus sp., Fimbristylis sp. and Scirpus sp.), composites (Croptilon sp., Eupatorium sp.), legumes (Baptisia leucophaea, Cassia fasciculata) and grasses (Paspalum sp., Sporobolus sp.) are abundant. Accumulated rainwater forms ponds and marshes in this zone.

In the study area, much of the west side of this zone is covered by a large field of unstabilized, wind-blown dunes.

MATERIALS AND METHODS

Mammals were trapped in the northernmost 10 km of Padre Island National Seashore during a seven month period between June and December, 1984. Traps were set in eighteen locations to sample all microhabitats on the island (Figure 2).

A maximum of 56 Sherman Live Traps were available for use at any one time. During June, July and August 1984, 50 traps were set for one trap day each week. They were checked every three hours during darkness and every two hours during daylight hours. Trapped animals were toe-clipped according to the system described by Day et al. (1980) then released. No traps were set in September. Beginning in October, 56 Sherman Live Traps, two Hav-a-hart Rat Traps and three Victor Mole traps were set in the evening and checked only once in the morning and once the following evening. The traps were rotated from one site to another in order to sample as many habitats as possible.

A mist net was set adjacent to the pond south of the Bird Island Basin Road (Site N₁) for one night in October in such a way that the net was over the water. A second net was set for eight nights in late October and early

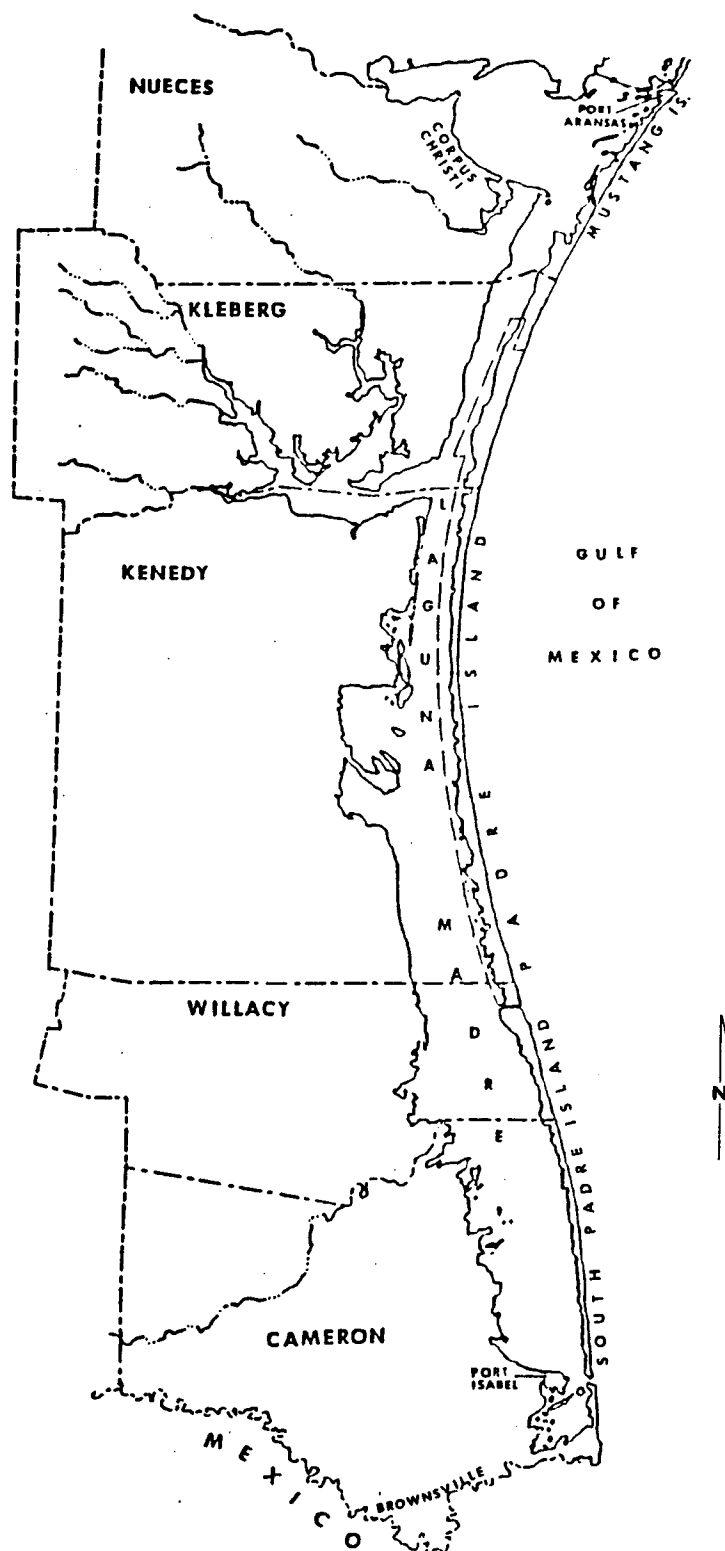


Figure 1. Coastal South Texas showing Padre Island and Mustang Island, associated water bodies and population centers referenced in the text.

November over a pond behind the Gulf Ranger Station (Site N₂). The pond behind the ranger station was less visible to the general public and it therefore allowed more leeway in times that the net was set and retrieved. Potential roost sites for bats were examined five mornings each week for six weeks from the first of October until mid-November 1984.

All collection efforts were limited to rodents, insectivores, and bats. Other mammals were documented photographically, through literature search or by documentation of road-killed specimens. No effort was made to document cetaceans because the occurrence of this group on Padre Island has been documented elsewhere (Schmidley, 1981).

The collections at Corpus Christi State University (CCSU) and Padre Island National Seashore (PINS) were searched and all records of mammals from Padre Island or Mustang Island were noted. The written catalog at Texas A&M University (Texas Cooperative Wildlife Collection, TCWC) was examined and some mammals listed in the catalog as having been collected on Padre Island or Mustang Island were examined.

A search of the literature for any records of mammals collected on Padre Island or Mustang Island was conducted and species records were recorded. I also included the observations that I made as a National Park Service

Naturalist on Padre Island over a period of nearly seven years (1978 - 1984).

RESULTS

Thirty-eight species of mammals (excluding cetaceans) representing twenty-two families in nine orders have been reported in the literature from Padre Island. Four orders are represented by single species. The order Rodentia, represented by fourteen species, is the most diverse order of mammals found on the island. Only 13 species are represented in local museums by specimens collected on Padre Island and deposited in the local museums.

A total of 33 individual rodents of 6 species were captured during the this project. In addition to the species trapped, five species were documented by sight or sign. Two of those were documented photographically.

The following species have been reported from Padre Island. All scientific and vernacular nomenclature and phylogenetic order follow Jones, et al. (1986). Measurements were recorded only for those specimens collected as a part of this project.

Didelphis virginiana Kerr

Virginia Opossum

Specimens examined. None.

Baker and Rabalais (1975) reported the presence of opossums on Padre Island. Allen (1901) reported specimens from Corpus Christi and Brownsville, but none from Padre Island. Gardner (1973) examined specimens of from Aransas, Nueces, Hidalgo, Willacy and Cameron counties, Texas, but none from Padre Island. I received two reports of this species at the Malaquite Pavilion from members of the National Seashore Staff. The partially consumed remains of an opossum were found at the pavilion in 1981, but no voucher specimen was retained.

Scalopus aquaticus Jackson

Eastern Mole

Specimens Examined. None.

The eastern mole was reported from Padre Island by Bailey (1905), Jackson (1915), Baker and Rabalais (1975) and Yates and Schmidley, (1977). I observed two specimens from the vicinity of the Malaquite Pavilion in 1980 and 1983. The first drowned during Hurricane Allen; the second

was found alive and was released after being photographed. Although no specimens were collected during the trapping efforts in 1984, numerous tunnels and surface extrusions of deep burrows were observed. The burrows and associated surface structures were described by Arlton and Holloran (1936) and Brown (1972). I observed burrows in the open sand (Site 4), in the moist soil near a pond (Site 6) and in soil exposed by fire (Site 7). This species apparently is common on the island and may be found on roads or high ground during flooding.

Pipistrellus subflavus subflavus (Cuvier)

Eastern Pipstrelle

Specimens Examined (1). Padre Island National Seashore, Mile-and-a-half Pumping Station (1.6 km south of the seashore boundary, 0.25 km east of Park Road 22), 1 (CCSU).

This specimen represented a record for Kleberg County, Texas, and was reported by Zehner (1985). It was found clinging to an interior wall of a building. This is the only reported occurrence of this species on Padre Island.

Lasiurus intermedius H. Allen

Greater Yellow Bat

Specimens Examined. None.

Miller (1897) and Bailey (1905) reported Lasiurus intermedius from south Padre Island and from Brownsville. Raun (1959) reported the occurrence of this species on Padre Island but provided no supporting information. Hall (1981) listed Padre Island as a marginal locality record for this species. I was unable to locate voucher specimens from Padre Island for verification.

Tadarida brasiliensis mexicana Saussure

Brazilian Free-tailed Bat

Specimens Examined (1). Padre Island National Seashore, Malaquite Pavilion, 1 (CCSU).

Bailey (1905) and Baker and Rabalais (1975) reported the Brazilian free-tailed bat from Padre Island. Glass (1982) stated that Padre Island is near edge of this species migratory flyway. This species is an irregular visitor to Padre Island. I have observed several of these bats resting in the Malaquite Pavilion or the Pins sewage

treatment plant during the spring and fall. None were found during the summer or fall of 1984.

Dasypus novemcinctus Peters

Nine-banded Armadillo

Specimens examined. None.

Bailey (1905) and Baker and Rabalais (1975) reported the armadillo from Padre Island. I observed a single dead specimen on the roadside 0.6 km south of the Nueces-Kleberg County line on September 9, 1983. I was unable to locate voucher specimens of this species from Padre Island.

Sylvilagus floridanus J. A. Allen

Eastern Cottontail

Specimens Examined. None.

The eastern cottontail has been reported from Padre Island by Raun (1959), Koepke (1969) and Baker and Rabalais (1975). No voucher specimens from Padre Island exist in local museums. Baker and Rabalais (1975) reported the cottontail on the basis of sightings whereas Raun (1959) based his reports on accounts by island residents.

Lepus californicus merriami Mearns

Black-tailed Jackrabbit

Specimens examined (2). Padre Island (Skull only), 1 (TCWC); Padre Island, 1 (CCSU).

Bailey (1905) first reported the Jackrabbit from Padre Island. Subsequent records include Nelson (1909), Raun (1959) and Baker and Rabalais (1975). Jackrabbits were common along the Bird Island Basin road at night during the summer and fall of 1984. This species prefers the open dunes in the interior of the island to dense vegetation or the beach areas.

Spermophilus spilosoma annectens Merriam

Padre Island Ground Squirrel

Specimens Examined (14). Padre Island National Seashore, 7; Padre Island, 3 (CCSU); Padre Island, 4 (TCWC).

Merriam (1893) described this subspecies of Spermophilus on the basis of a specimen collected on Padre Island. Allen (1894), Bailey (1905), Baker and Lay (1938), Blair (1952), Smith (1973), Baker and Rabalais (1975) and Segers and Chapman (1984) also reported the presence of

Spermophilus spilosoma annectens on Padre Island. Seven Spermophilus were trapped during the summer of 1984. Spermophilus is abundant in the partially vegetated coastal dunes of Padre Island, but is seldom seen elsewhere.

I follow Segers and Chapman (1984) in assigning specimens from Padre Island to this subspecies. External measurements (mm) for a juvenile male are: total length, 215; length of tail, 76; hind foot, 31; left ear, 6.

Geomys personatus personatus True

South Texas Pocket Gopher

Specimens Examined (19). Padre Island, 4 (CCSU); Padre Island, 4; Mustang Island, 11 (TCWC).

True (1889) described this subspecies from Padre Island. Allen (1891), Bailey (1905), Baker and Lay (1938), Blair (1952), Raun (1959), Koepke (1969) and Baker and Rabalais (1975) also reported Geomys personatus personatus from Padre Island and Mustang Island. Although no specimens were trapped during this project, the mounds that this animal leaves on the surface were seen throughout the grasslands of the study area.

Perognathus flavus Baird

Baird's Pocket Mouse

Specimens examined. None.

Perognathus flavus was reported on Padre Island by Osgood (1900) and by Bailey (1905). Raun (1959) also reported this species, but without supporting details. I have located no other records of this species from the island and agree with Baker and Rabalais (1975) that it is rare on the island.

Dipodomys compactus compactus True

Padre Island Kangaroo Rat

Specimens Examined (25): Padre Island National Seashore, 3; Padre Island, 3; Mustang Island, 3 (CCSU); Padre Island, 8; Mustang Island, 5 (TCWC); Padre Island, 3 (PINS).

True described this species in 1889 on the basis of specimens from Padre Island. It was reported from Padre Island by Allen (1891), Bailey (1905), Baker and Lay (1938), Blair (1952) Baker and Rabalais (1975), and Baumgardner and Schmidley (1981). Kangaroo rats are normally abundant in the primary and secondary dunes and

vegetated flats on Padre Island in areas where vegetation cover density is low (<15%). It was the most abundant species documented during the summer and fall of 1984, both in numbers of captures and in the number of individuals trapped. A total of 16 individuals was taken with numerous multiple captures.

I follow Baumgardner and Schmidley (1981) in using the subspecies assigned by True. External measurements (mm) of two specimens (both male) taken are: total length, 230, 214; length of tail, 123, 104; hind foot, 33, 33; left ear, 13, 12.

Oryzomys palustris texensis J. A. Allen

Northern Rice Rat

Specimens Examined (1). Padre Island National Seashore Gulf Ranger Station, 1 (PINS).

Goldman (1918) reported Oryzomys from Padre Island. Hall (1981) listed a single specimen from Mansfield Pass area of Padre Island, Mansfield Channel. Padre Island National Seashore houses a specimen from an unspecified spoil island in the Laguna Madre. The individual taken from Padre Island was trapped at the corner of a research greenhouse on a manicured lawn adjacent to the ranger station.

I follow Hall (1981) in assigning this specimen to subspecies texensis. External measurements (mm) of the single specimen collected are: total length, 140; length of tail, 66; hind foot, 22; left ear 14. Measurements were taken from the live animal.

Reithrodontomys fulvescens intermedius J. A. Allen

Fulvous Harvest Mouse

Specimens Examined (5). Mustang Island, 1 (CCSU); Padre Island, 4 (PINS).

Bailey (1905), Howell (1914), Blair (1952), Raun (1959) and Baker and Rabalais (1975) have all reported Reithrodontomys fulvescens from Padre Island or Mustang Island. No Reithrodontomys were taken during this project.

Peromyscus leucopus (Woodhouse)

White-footed Mouse

Specimens Examined. None.

Bailey (1905) listed this species on Padre Island in the Biological Survey of Texas. Baker and Rabalais (1975) reported Peromyscus leucopus to be uncommon on the north end of Padre Island and speculated that it might be totally

absent from Mustang Island. No specimens of this species were trapped during this project.

Baiomys taylori taylori (Thomas)

Pygmy Mouse

Specimens Examined (4): Padre Island National Seashore, 2; Nueces Co, 1 (CCSU); Padre Island, 1 (PINS).

No literature records for this species exist from Padre Island although Baker and Rabalais (1975) report Baiomys taylori from northern Padre Island and from Mustang Island. Two pygmy mice were trapped and released during the summer of 1984. Both were collected in dense grass. No measurements were taken.

Onychomys leucogaster longipes Merriam

Short-tailed Grasshopper Mouse

Specimens Examined (14). Padre Island, 6 (PINS); Padre Island, 3; Mustang Island, 5 (TCWC).

Onychomys leucogaster was first reported from Padre Island by Baker and Lay (1938). Blair (1952), Raun (1959), Koepke (1969), Baker and Rabalais (1975) and Hall (1981) have also reported this species from Padre Island or

Mustang Island. No Onychomys were trapped during the course of this project.

Sigmodon hispidus berlandieri Baird

Hispid Cotton Rat

Specimens Examined (13). Padre Island National Seashore, 7; Mustang Island, 2; Nueces Co., 1 (TCWC); Padre Island, 2 (PINS).

Bailey (1905), Blair (1952), Raun (1959), Mascarello et al. (1974) and Baker and Rabalais (1975) all listed specimens of Sigmodon hispidus from Padre Island. Sigmodon is a common rodent on Padre Island. Those trapped tended to be associated with human habitation (5 out of 7). Two trapped under the PINS Ranger Station. Sigmodon has been reported as a nuisance in storage areas by National Seashore residents.

I follow Hall (1981) in assigning these specimens to subspecies berlandieri. External measurements (mm) of the two animals collected are: total length, 283, 246; length of tail, 128, 106; left hind foot, 30, 26; left ear, 17, 17. Both animals were females.

Rattus rattus (Linnaeus)

Black Rat

Specimens Examined. None.

Baker and Rabalais (1975) reported the black rat from both Padre Island and Mustang Island. No voucher specimens from Padre or Mustang Islands are held in local museums and no black rats were trapped or observed during the course of this project.

Rattus norvegicus (Berkenhout)

Norway Rat

Specimens Examined. None.

Baker and Lay (1938) reported the Norway rat from Mustang Island. Koepke (1969) reported this species from Padre Island and Baker and Rabalais (1975) reported it from both islands. No voucher specimens from either island exist in local museums and none were trapped or observed during the course of this project.

Mus musculus Linnaeus

House Mouse

Specimens Examined (3): Padre Island National Seashore, 1; Mustang Island, 1 (CCSU); Padre Island, 1 (PINS).

Baker and Lay (1938) reported Mus from Mustang Island. Blair (1952) also reported Mus from Mustang Island. Raun (1959) and Koepke (1969) reported the house mouse from Padre Island. A single Mus was collected in the Malaquite Pavilion in December, 1984. This specimen was silver-grey. The normal color for this species is grey-brown.

Myocastor coypus (Molina)

Nutria

Specimens Examined. None.

Baker and Rabalais (1975) reported the nutria on Padre Island on the basis of a stranded specimen on the shore of the Laguna Madre and sightings in fresh water ponds near Malaquite Beach. They question its status as a resident species. No voucher specimens exist in local museums from Padre Island or Mustang Island. The nutria was not observed during this project.

Canis latrans texensis Bailey

Coyote

Specimens Examined (2). Padre Island, 2 (CCSU).

Blair (1952) reported coyotes from Mustang Island. Raun (1959), Koepke (1969) and Baker and Rabalais (1975) reported the coyote from Padre Island. No effort was made to trap or collect coyotes during this project because of permit limitations. However, I have observed and photographed the coyote many times on Padre Island in numerous locations. Photographs are deposited in the Padre Island National Seashore slide collection. Copies of slides will be deposited at CCSU as part of the final report on this project. The coyote is the largest permanent resident mammal of the island other than man. It may be seen in all habitats in the early morning or late evening throughout the year and is a frequent visitor to the Malaquite campground where it scavenges for food scraps.

Urocyon cinereoargenteus (Schreber)

Gray Fox

Specimens Examined. None.

Baker and Rabalais (1975) reported a single unverified sighting of the gray fox on Padre Island. There are no other reports of this species on either Padre Island or Mustang Island. It is unlikely that the gray fox is resident on either island.

Procyon lotor fuscipes Mearns

Raccoon

Specimens examined. None.

Bailey (1905), Goldman (1950), Raun (1959) and Baker and Rabalais (1975) all reported the raccoon from Padre Island. No attempts to trap raccoons were made during this project because of collecting permit limitations. A single raccoon was found in a trash dumpster near Site 17 on several occasions, however, and was photographed before being released. Color slides are deposited in the Padre Island National Seashore photograph collection and copies of these slides will be deposited at CCSU as part of the final report on this project.

Taxidea taxus Baird

Badger

Specimens Examined. None.

Baker and Lay (1938), Schantz (1949), Raun (1959), Koepke (1969), Long (1972) and Baker and Rabalais (1975) all reported the badger from Padre Island or Mustang Island. No badgers were trapped or seen during this project. No voucher specimens from Padre Island or Mustang Island exist in the local museums. However, I saw a badger crossing Park Road 22 north of the Gulf Ranger Station at mid morning in May, 1978. Details of the sighting were not recorded, but the rarity of the sighting made enough of an impression to be remembered.

Mephitis mephitis Gray

Striped Skunk

Specimens Examined. None.

Howell (1901) and Baker and Rabalais (1975) reported the striped skunk from Padre Island. There are no voucher specimens from Padre Island or Mustang Island in local museums. The striped skunk must be extremely rare within the boundaries of the National Seashore since there have

been no reported encounters with the more than 750,000 visitors who come to Padre Island each year.

Conepatus leuconotus Merriam

Gulf Coast Hog-nose Skunk

Specimens Examined. None.

Bailey (1905) reported the hog-nose skunk to be rare on Padre Island at the turn of the century. Raun (1959) was the only other author to report this species from Padre Island and his report was apparently based on Bailey. There are no voucher specimens of Conepatus from Padre Island in local museums.

Monachis tropicalis Gray

West Indian Seal

Specimens Examined. None.

Gunter (1947) reported sight records of Monachis tropicalis from South Padre Island on the jetties of the Brazos Santiagos Pass. The records date from 1932. Monachis tropicalis is now considered to be extinct along the Gulf Coast (Schmidley and Melcher, 1974).

Felis onca Linnaeus

Jaguar

Specimens Examined. None.

Baker and Rabalais (1975) listed an unverified visitor report of a jaguar with two cubs in the vicinity of Mansfield Channel on Padre Island.

Felis concolor Goldman

Mountain Lion

Specimens Examined. None.

Baker and Rabalais (1975) reported the mountain lion from Padre Island on the basis of a reported sighting 29 km south of Bob Hall Pier in the winter of 1966. They mention other reports without supporting details. John W. Tunnell Jr. (pers. comm.) photographed mountain lion tracks at Coyote Pass, 45 km north of Mansfield Pass on Padre Island in 1966. No evidence of this species was seen during the course of this project or during the time I spent as a park naturalist on Padre Island.

Felis pardalis Linnaeus

Ocelot

Specimens Examined. None.

An unidentified visitor reported seeing an ocelot running along the water's edge on the gulf side of Padre Island in 1982. The report was made to park dispatch personnel but was not verified.

Felis rufus (Schreber)

Bobcat

Specimens Examined. None.

Baker and Rabalais (1975) reported a single unsubstantiated record of a bobcat along Park Road 53 near Packery Channel in the oak motte in 1965. Tunnell (pers. comm.) reported sighting a bobcat in the same vicinity on Padre Island in 1967. I did not find any other records of this species.

Trichechus manatus (Harlan)

Caribbean Manatee

Specimens Examined. None.

Gunter (1941) reported the manatee from along the Texas coast with specific records from the Laguna Madre between Padre Island and the mainland. Baker and Rabalais (1975) reported this species on the basis of three second-hand sightings of the manatee in the surf. One manatee skeleton was collected from Copano Bay in 1928 and is housed at TCWC (1528).

Sus scrofa Linnaeus

Wild Boar

Specimens Examined. None.

Baker and Rabalais (1975) reported the presence of feral boars on Padre Island as late as 1972. The wild boar is common on the mainland and may be considered to be an occasional visitor to the island.

Tayassu tajacu (Cope)

Collared Peccary

Specimens Examined. None.

Baker and Rabalais (1975) reported the collared peccary as an occasional visitor to Padre Island. I received a report of four collared peccaries on the Laguna Madre side of the island during the Christmas Bird Count on January 2, 1983. There is a single collared peccary skull in the PINS collection, but there is no locality data with the specimen.

Odocoileus virginianus (Boddaert)

White-tailed Deer

Specimens Examined. None.

Koepke (1969) and Baker and Rabalais (1975) report the white-tailed deer from Padre Island. Deer are common on the King Ranch on the mainland across the Laguna Madre and they are known to wander onto the island on occasion. The National Park Service receives several sighting reports of deer from visitors each year. I have never seen deer on the island, but have seen their tracks in the sand along

the shore of the Laguna Madre. White-tailed deer may be considered occasional visitors to the island.

Boselaphus tragocamelus

Nilgai

Specimens Examined. None.

The Nilgai is an east-Indian antelope that has been introduced to the King Ranch in South Texas for sport hunting. It is occasionally seen on the island when it crosses the Laguna Madre. There are no voucher specimens from the island, but sightings are documented in the National Seashore records and photo files.

DISCUSSION

The number of animals trapped during this project was small. Baker and Lay (1938) trapped more rodents in 100 trap nights than I was able to trap in 1000. There are a number of possible reasons for the disparity in results. Baker and Lay set traps only along the primary dune line - the zone where I obtained the highest success rate. Baker and Lay set their traps in April. Natural food levels are

at a minimum and rodent activity is high in April as the animals come out of dormancy.

Trapping for this project was done between the middle of June and the end of December, the time of year when natural food levels are highest. Abundance of food reduces the numbers of animals that will enter a trap for food (Smith and Blessing, 1969; Teska, 1980).

A maximum of 56 Sherman Live Traps were available for this project. In an effort to sample as many habitats as possible, these traps were divided between several habitats each time that they were set. A maximum of twenty-five traps was set in any one habitat with ten being the usual number. Concentrating more traps in each habitat and sampling one habitat at a time might have produced more successes. However, trapping success did not increase when 25 traps were set in enlarged quadrats in the backshore zone or in the vegetated flats.

Rainfall for the two years immediately prior to the beginning of this project and for the duration of the project was below normal. Water levels in the four ponds that hold water year-round were low. The ephemeral ponds were dry. With little water available, some species might be less numerous than in years of normal rainfall and fewer captures would therefore occur. Exceptions to this generalization would be those species such as Dipodomys compactus and Spermophilus spilosoma that are adapted to

xeric conditions. Non xeric-adapted rodents that were captured would be expected to be more numerous near sources of water. Five of the seven Sigmodon, the Oryzomys and the Mus were captured in association with human habitations or work areas. Both food and water are available at these sites regardless of natural rainfall conditions.

Of the species detected through observation or sign, two (Geomys personatus and Scalopus aquaticus) spend virtually their entire lives underground where humidity approaches 100 per cent. Their requirements for free water are very low. The other three species (Lepus californicus, Procyon lotor and Canis latrans) are free ranging and may travel several kilometers to find water. However, the sightings of these species that occurred during the study were all within 1.5 km of permanent water.

Sightings of white-tailed deer (Odocoileus virginiana), collared peccary (Tayassu tajacu) or nilgai (Boselaphus tragocamelus) are periodically reported to the National Seashore staff by visitors. The staff also receives reports of large cats from time to time. All of these species are found on the island at irregular intervals, but they do not remain on the island as residents. As the Laguna Madre fills in, travel between the mainland and the island becomes easier for those animals that can cross several kilometers of bare sand.

Sightings of the larger animals that are found on the mainland may be expected to become more frequent.

Many species require specific habitat conditions for continued existence in an area. In some cases these conditions may be present in very localized areas of the island. An example is the preference of Peromyscus leucopus for brushy habitat. Such habitat is found only on the very north tip of Padre Island, which is the locality reported by Baker and Rabalais (1975) for this species.

Accessibility is a major factor affecting which species have been recorded from Padre Island. This island is 189 km long, yet even today, 150 km of that length is accessible only by walking or by four-wheel drive vehicle. Many of the animals that have been reported are from sightings well away from the accessible portions of the island. True, Bailey and other early workers often made efforts to explore and document areas that had not been previously observed. Later workers have tended to work in more accessible areas or to sample remote areas opportunistically. Most of the rodents accessioned in the PINS collection were collected on random trips to Mansfield Channel or to spoil islands in the Laguna Madre. Baker and Lay (1938), Kennedy et al. (1973), Baker and Rabalais (1975) and others collected almost exclusively from areas of the island that are accessible by road. Two species that have been reported in the past (Trichechus manatus and

Monachis tropicalis are now considered to be extinct on the Texas coast (Schmidley and Melcher, 1974). Both were documented by Gunter (1941, 1947) on the basis of earlier chance observations by others.

The majority of species that have been reported from Padre Island have been reported on the basis of unvouchered sightings or have been catalogued into collections of non-local institutions. For instance, both Schantz (1949) and Long (1972) refer to badger (Taxidea taxus) specimens from Padre Island, but neither listed the repository for the specimens. I was unable to locate voucher specimens of this species from Padre Island. Many previous collections from Padre Island or Mustang Island were made when the islands were in private ownership and local records of these collections do not exist.

In some instances, a species may have colonized Padre Island or Mustang Island, but have later been eradicated from the islands. Perognathus flavus and Conepatus leuconotus may be such species. Perognathus flavus was reported by Osgood (1900) and Bailey (1905) and Conepatus leuconotus by Bailey (1905). The only other record of either species from Padre Island is Raun (1959) who apparently obtained his information from the literature rather than from field work.

The heavy use of the island for grazing and as a bombing range has destroyed habitat types that favor deer,

collared peccaries, and the various species of large cats that are native to the region. These animals may have been permanent residents of the island in the past, but must now be considered to be visitors. More noxious species such as the skunks may have been eradicated by deliberate acts in addition to the intensive adverse use of the land.

ACKNOWLEDGEMENTS

Logistic support for this project was provided in part by the National Park Service, Padre Island National Seashore. Library assistance was given by the Welder Wildlife Foundation, Sinton Texas.

Miss Heidi Ludwig assisted with trapping from June through August of 1984. Mr. Robert Whistler provided duplicate copies of reference materials and a list of mammals in the Padre Island National Seashore collection after the lists were lost during a move.

Dr. John W. Tunnell Jr. and Dr. Bart Cook III showed great patience and friendship during this project. Finally, my committe chairman, Dr. Brian R. Chapman has provided guidance and encouragement, without which I could not have finished this project.

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