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COLLARED PECCARY RANGE EXPANSION IN NORTHWESTERN NEW MEXICO

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ABSTRACT—We report new records of collared peccary (*Pecari tajacu*) in New Mexico that document its continued northward expansion in the United States, in general, and in northwestern New Mexico, in particular. These records might represent the northernmost extent of its range in the Southwest. Collared peccaries in New Mexico typically occur in desert, rocky, and brushy foothill regions and riparian communities. On the Zuni Indian Reservation, animals were observed at elevations up to 2,335 m in piñon-juniper and ponderosa pine habitats. Climate might play an important role in range expansion and contraction as collared peccaries might migrate north during years of drought or mild winters in search of food or new habitat.

RESUMEN—Presentamos nuevos registros del pecarí de collar (*Pecari tajacu*) en Nuevo México que documentan su continua expansión al norte en los Estados Unidos en general, y en el noroeste de Nuevo México, en particular. Estos datos pueden representar la extensión más al norte de su rango en el suroeste. El pecarí de collar en Nuevo México suele ocurrir en zonas desérticas, parajes rocosos, y colinas con mucha vegetación y en comunidades riparias. En la Zuni Indian Reservation se han observado animales en elevaciones hasta 2,335 m en hábitats de piñón-enebro y pino ponderosa. Puede ser que el clima juegue un papel importante en la expansión y la contracción de su rango de distribución ya que el pecarí de collar puede migrar al norte durante años de sequía o inviernos templados en búsqueda de comida o hábitat nuevo.

The collared peccary (Tayassuidae: *Pecari tajacu*) is a generalist herbivore that ranges from central South America to the southwestern United States and inhabits grasslands, desert scrub communities, arid woodlands (Bissonette, 1999), and riparian habitat. Recently the collared peccary has been reported from Oklahoma in an area immediately adjacent to Texas (Stangl and Dalquest, 1990). Over the past 10 years, residents of the Zuni Indian Reservation in New Mexico have reported multiple sightings of the collared peccary on the Reservation (Table 1), which covers over 1,800 km² in McKinley and Cibola counties. We treated the initial reports with some skepticism because they were not accompanied by any physical evidence and a sighting of this species would have represented a considerable range expansion from the closest published record in New Mexico (Findley et al., 1975). However, in 1997 we discovered a complete mandible near the middle of the reservation, and in 2001, we

acquired a photograph of an adult female collared peccary that had been trapped in 1987 just east of the reservation (Table 1). The photograph is on file with the Zuni Fish and Wildlife Department. On the Zuni Indian Reservation, collared peccaries occurred at elevations up to 2,335 m in piñon-juniper (*Pinus edulis-Juniperus*) and ponderosa pine (*Pinus ponderosa*) habitats.

The earliest distribution map of collared peccaries in New Mexico of which we are aware was provided by Bailey (1905:58), in which he showed peccaries occurring in the "unsettled sandhill region of southeastern New Mexico" (present-day Eddy and Lea counties). This area is depicted as the northern tip of a continuous distribution area extending from southern Texas (Bailey, 1905). Mearns (1907) reported peccaries from several mountain ranges in southwestern New Mexico in areas presently within Hidalgo County. Ligon (1927) reported that the species occurred in the United States

TABLE 1.—Summary of collared peccary (*Pecari tajacu*) sightings on or near the Zuni Indian Reservation, New Mexico, 1979 to 2003.

Date	Number of animals	Location	Latitude; Longitude	Elevation (m)	Observer
Fall 1979	1 adult	T9N, R19W, S28	34°58.7'N; 108°51.8'W	2,115	B. Martza
January 1987	1 adult*, 2 juveniles	T11N, R16W, S9	35°11.9'N; 108°32.0'W	2,256	D. Lambson
Fall 1991	15 to 20 adults	T9N, R16W, S30	34°58.7'N; 108°34.1'W	2,286	G. Yuselew
Fall 1994	group of 5	T8N, R17W, S12, SE ¹ / ₄	34°56.2'N; 108°34.9'W	2,335	A. Chopito
March 1997	1 adult	T10N, R16W, S7	35°6.6'N; 108°34.1'W	2,086	L. Enote
October 1997	4 adults	T11N, R18W, S36	35°8.4'N; 108°41.5'W	2,225	N. Luna
Summer 1997	1 adult	T10N, R18W, S2	35°7.5'N; 108°42.6'W	2,073	G. Yuselew
Summer 1997	6 adults	T10N, R17W, S10	35°6.6'N; 108°37.3'W	2,286	O. Seowtewa
Fall 1997	group of 7	T10N, R17W, S7	35°6.6'N; 108°40.5'W	2,030	A. Chopito
Summer 1999	1 adult, 3 juveniles	T11N, R17W, S10	35°11.9'N; 108°37.3'W	2,042	Sanchez
Summer 1999	unknown (group)	T10N, R18W, S12	35°6.6'N; 108°41.5'W	2,012	B. Waikaniwa
Summer 1999	8 adults	T8N, R20W, S6	34°57.1'N; 108°59.8'W	2,027	V. Tsethlikai
Summer 2001	12 adults, 4 juveniles	T8N, R20W, S6	34°57.1'N; 108°59.1'W	2,027	V. Tsethlikai

* Animal trapped and photographed.

in a narrow zone along the southern boundary of Arizona, New Mexico, and Texas, but it was most numerous in the extreme southwestern portion of New Mexico, with a few surviving in the sand country east of Carlsbad (probably Lea County), where they were formerly abundant. Bailey (1931) referred this latter group to *P. angulatus angulatus*, the Texas peccary, and referred the paler one in the southwestern part of the state to *P. a. sonoriensis*, the Yaqui peccary. In 1965, Donaldson (1967) estimated the range of collared peccaries to include portions of Catron, Grant, and Hidalgo counties in the southwestern part of the state and Eddy County in the southeastern part of the state, where they were said to be uncommon. The New Mexico Department of Game and Fish reintroduced the species in 1965 to the Guadalupe Mountains in Eddy County, and the animal has been regularly observed there in the past 10 years (K. N. Geluso, pers. comm.). The southwestern subspecies has spread east into Luna County and north into the Gila and San Francisco drainages in Catron County (Findley et al., 1975). Findley (1987) included Otero County as occupied range although we are not aware of any specimen records.

Additional specimens in the mammal collections of the Museum of Southwestern Biology (MSB; Appendix 1) and the New Mexico Museum of Natural History (NMMNH; Appendix 1) better define the known range of collared peccary in southwestern New Mexico and provide the first voucher specimens for Grant County (MSB 89185), Catron County (MSB 25146), and Cibola County (NMMNH 3859). Our specimen from the Zuni Indian Reservation documents the first occurrence in McKinley County, a range expansion of 370 km from the closest published record in Hidalgo County (Findley et al., 1975), and reveals a continued northward expansion in New Mexico (Fig. 1).

A similar northward expansion, helped in part by transplant efforts, seems to be occurring in Arizona and Texas. Hoffmeister (1986: 533) suggested that the range of the peccary in Arizona might have expanded in the past 40 years and their presence "north of the Mogollon Plateau may be a relatively recent event." Hoffmeister (1986) did not map many of the transplants that occurred in the state. However, Theimer and Keim (1994) mapped loca-

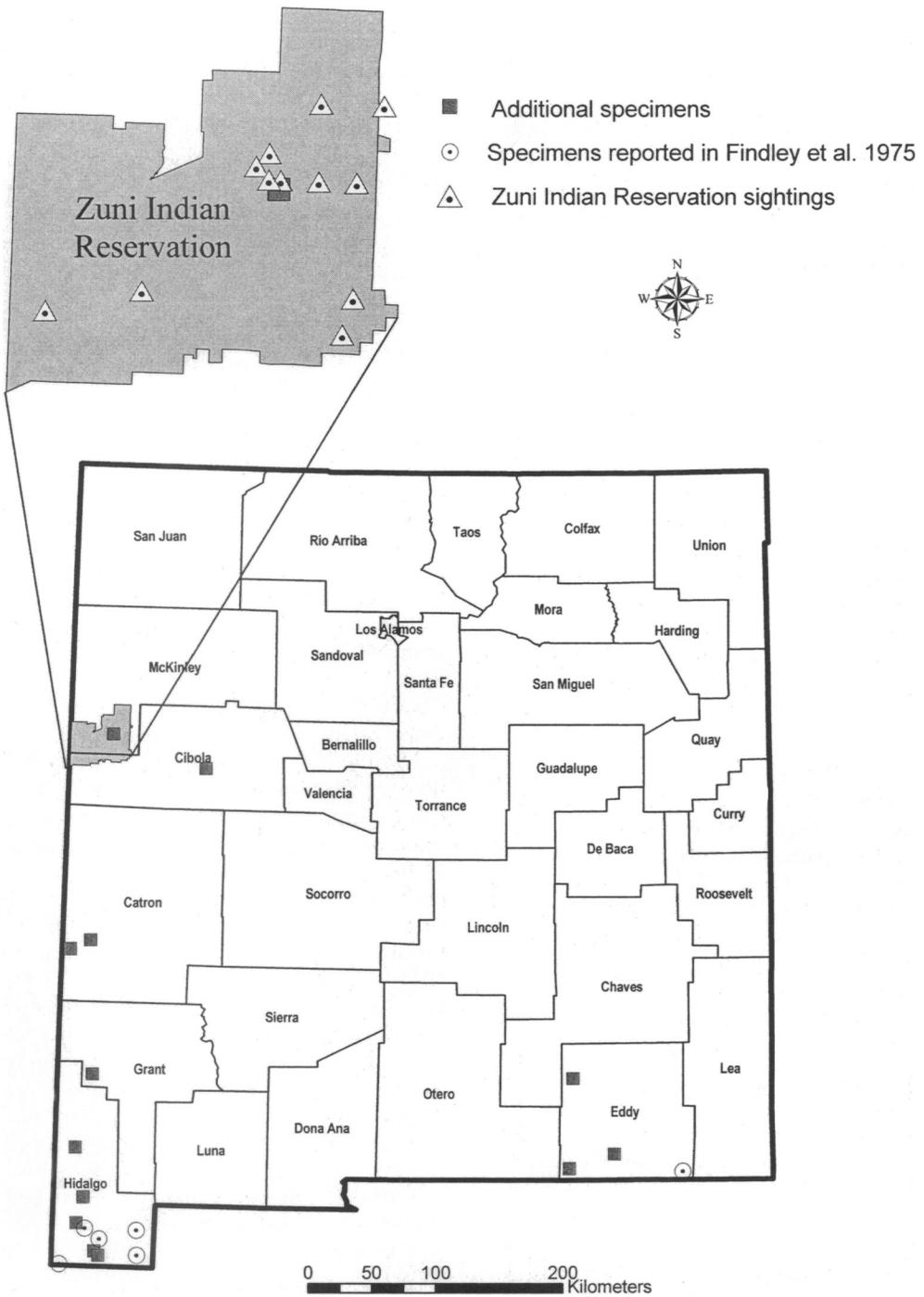


FIG 1—Distribution of the collared peccary (*Pecari tajacu*) in New Mexico based on voucher specimens and sightings on the Zuni Indian Reservation (inset).

tions where the Arizona Department of Game and Fish transplanted peccaries that were originally captured in southern portions of the state. Two of these locations represent the northernmost locations in Arizona, but we do not know if these transplants were successful.

In Texas, collared peccaries have expanded their range north to the Red River and east at least to the Brazos River (Davis and Schmidly, 1994). Hall (1981) showed the northern extent of collared peccary in Texas to be Montague County, but no voucher specimens were known from this region until Stangl and Dalquest (1990) reported the first vouchers from Jack County in 1987 and Wichita County in 1990. These northern records, however, are probably the result of introductions and not a result of natural expansion, because the species was reported to have been introduced west of Montague County in the 1950s (Dalquest, 1968). Although collared peccaries continue to occupy the northern tier of counties in Texas (Schmidly, 2002), former populations to the south and east seem to have declined (Schmidly, 2002). Natural expansions of the collared peccary continue to the west, however, and include the Trans-Pecos Central Range in western Texas (Stangl et al., 1993).

Climate might play an important role in range expansion and contraction. Collared peccaries might periodically migrate north during years of drought or mild winters in search of food or new habitat. Subjected to periods of snow and cold weather, their survival likely depends on their behavioral adaptability, because they have few anatomical or physiological adaptations to extremes in heat or cold (Sowls, 1997). Zervanos (2002) recently showed that collared peccaries from dry environments have relatively larger kidneys than those from mesic environments and concluded that renal structures are flexible in response to environmental variation. Behavioral adaptations to escape winter cold include making beneficial use of microclimates within their habitat. For example, they have been observed using caves and tunnels in the Tucson Mountains and basking in the sun during cold mornings in the winter (Sowls, 1997). Despite these adaptations, some populations probably undergo periodic extinction and repopulation and, thus, might be limited in how far or how

quickly their populations can expand northward.

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- CATRON COUNTY: S. U. Canyon, 5 mi S, 3 mi W Reserve (MSB 25146); Blue Range Wilderness Area, Apache National Forest, junction W Fork Pueblo Creek and Pueblo Creek, W. S. Mountain Trail 43 (MSB 89025). CIBOLA COUNTY: El Malpais National Conservation Area, 200 yards N entrance La Ventana Natural Arch, Highway 117, mile marker 39 (NMMNH 3859). EDDY COUNTY: 6.2 mi S Hope (MSB 86326); Carlsbad Caverns National Park, 0.33 mi W, 0.32 mi N Whites City (MSB 66727); 2 mi S El Paso Gap (NMMNH 4006). GRANT COUNTY: Gila River at mouth of Nichols Canyon (MSB 89185). HIDALGO COUNTY: Animas Mountains, Indian Creek Mill, T33S R18W Sec. 8 (MSB 46381); Animas Mountains, Joyce Mill, T33S R18W Sec. 22, 5,025 feet elevation (MSB 49695); NM 338, 7 mi S Interstate Highway 10 (MSB 71340); Gray Ranch, 31°38.71'N, 108°50.95'W (MSB 85584); 5.6 miles S Animas on NM 338, 4,500 feet elevation (MSB 85585). MCKINLEY COUNTY: Zuni Indian Reservation, T10N R18W Sec. 12, 1,951 feet elevation (MSB 124035).

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APPENDIX I—Localities and catalog numbers of additional voucher specimens in the Museum of Southwestern Biology (MSB) and the New Mexico Museum of Natural History (NMMNH) shown in Fig. 1.

VERTEBRATE INVENTORY OF RICHLAND CREEK WILDLIFE MANAGEMENT AREA IN EASTERN TEXAS

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ABSTRACT—Terrestrial habitats of Richland Creek Wildlife Management Area, Texas, were surveyed for vertebrate diversity in 1998 and 1999. During the 2-year sampling period, 10 species of amphibians, 20 species of reptiles, and 23 species of mammals were collected or observed. These actions represent an effort of Texas Parks and Wildlife to inventory the fauna of state-owned property. This information will begin to form a baseline to assess future management decisions.

RESUMEN—Llevamos a cabo un inventario de los vertebrados en hábitats terrestres del Richland Creek Wildlife Management Area, Texas, durante 1998 y 1999. Durante los dos años del periodo de muestreo, observamos o colectamos 10 especies de anfibios, 20 especies de reptiles, y 23 especies de mamíferos. Estas acciones representan un esfuerzo de Texas Parks and Wildlife para hacer un inventario de la fauna en las propiedades del estado. Esta información será la base para evaluar futuras decisiones de manejo de recursos naturales.