Voucher Specimens of the North American Collared Peccary (*Pecari angulatus*) in Oklahoma

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We describe two skulls of the North American collared peccary (*Pecari angulatus*) collected at separate locations in Tillman and Jefferson counties, Oklahoma. These skulls are the first voucher specimens for Oklahoma and extend the northern range limit of the species, which was previously described as Arizona, New Mexico, and north-central Texas.

The collared peccaries, formerly treated as a single species, *Pecari tajacu* (following Wilson and Reeder 2005), are distributed geographically from northern Argentina northward through Central America and Mexico to Texas, New Mexico, and Arizona. The North American population, which was recently separated taxonomically as *Pecari angulatus* (Groves and Grubb 2011), ranges farther north than its congeners and is limited by periodic extremes in cold weather at the northern-most range boundaries (Wilson and Ruff 1999). Though never documented in Oklahoma, both Caire et al. (1989) and Stangl et al. (1990) proposed that the species likely has a presence in the state. Stangl and Dalquest (1990) summarized the historical introductions of collared peccaries in the 1940's and 1950's by the Waggoner Ranch, which holds properties across several northern Texas counties (Archer, Baylor, Foard, Knox, Wichita, and Wilbarger) and verified its occurrence in north-central Texas with sightings and skull voucher specimens. They also noted observable sign left in the Red River floodplain in the southern edge of Tillman County, Oklahoma. Caire et al. (1989) noted a record of the species in Montague County, Texas and concluded that individuals or small groups of that Texas population might occasionally stray across the Red River into the southern margins of Jefferson County, Oklahoma. Here we describe two skulls collected in two separate counties in southern Oklahoma, thus providing the first specimen-based documentation of *P. angulatus* in the state.

The first skull was from a male collected approximately 1.2 km north of the Red River and 7 km south of Grandfield, Tillman County, Oklahoma during the winter of 2003 (no specific date available). This male was shot by a hunter (Charles Dodson) from among 15-20 peccaries that were foraging on snow-covered ground at a grain bait station set out the previous day to lure in the feral hog (*Sus scrofa*). Local habitat was a riparian transition zone characterized by native grasses, thickets of plum shrubs (*Prunus* spp.), and dense stands of green-briar (*Smilax* spp.). Based upon tooth wear patterns (Sowls 1961), we estimated this individual to be four to five years old at the time of collection. The skull was deposited in the Cameron University Museum of Zoology (CUMZ 1332). The same hunter observed a female accompanied by juveniles at the same site in the fall/winter of 2004, thus suggesting potential summer/fall mating which is consistent with Bissonette (1982) where 86% of a West Texas population mated between May and October.

The second specimen was a female shot by a hunter (Gill Griffen) on 24 December 2011 at approximately 1200 h in Jefferson County, Oklahoma approximately 4 km west of Waurika near the junction of state highways 70 and 79 and 5 km northeast of the Red River. The female was shot while foraging with five additional peccaries. The surrounding habitat was mesquite savanna, characterized by a vegetation assemblage that included honey mesquite (*Prosopis glandulosa*), native grasses such as little bluestem (*Schizachyrium scoparium*) and buffalo grass (*Buchloe dactyloides*), and prickly pear cactus (*Opuntia macrorhiza*). Estimated weight at the time of collection was 15-20 kilograms and age was estimated to be three years based on tooth wear (Sowls 1961). The skull was deposited in the Cameron University Museum of Zoology (CUMZ 1333).

Records presented here confirm the presence of the collared peccary in Oklahoma's southernmost counties bordering the Red River, as suggested by Caire et al. (1989) and Stangl and Dalquest (1990) and represent a potential range expansion. Habitats in these Oklahoma counties are similar to those in north-central Texas where collared peccary populations have become established and self-sustaining for over 60 years after introductions. Recent range expansions of the species have been documented in Arizona (Hoffmeister 1986), the Trans-Pecos of Texas (Stangl et al. 1993), and New Mexico (Albert et al. 2004). These range expansions have been attributed to both transplant efforts and changes in environmental conditions. Populations in northern peripheral habitats are known to follow periodic extinction during extremely cold winters and recolonization during mild winters or times of drought, where they move in search of resources (Albert et al. 2004). Our records indicate that small populations of collared peccaries do occur in Oklahoma although more information is needed before major conclusions can be made regarding the status of these populations. It is likely that these marginal populations follow patterns of extinction and recolonization but it is unclear if and/or to what degree other regulatory factors, such as the effects of competition with the feral hog and fluctuations in environmental conditions, affect Oklahoma populations. It is also unknown if any transplant efforts of peccaries have occurred in Oklahoma by hunting ranches or landowners to establish populations for future game hunting purposes.

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