

WATERFOWL BLINDS IN THE SAN JOAQUIN VALLEY : DEATH TRAPS FOR ENDANGERED SPECIES

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ABSTRACT: Several areas in the San Joaquin Valley provide places to hunt waterfowl in years of high rainfall when alkali sink playas fill with water deep enough to make resting habitat for ducks and geese. Structures placed at the edges of playas to conceal hunters include large drums that are dug into the soil to ground level. When left uncovered, these structures are death traps for many small reptiles and mammals, including endangered species. In 1991, six blunt-nosed leopard lizards (*Gambelia sila*) were retrieved from blinds around two playas in land recently acquired by The Nature Conservancy (managed by the Center for Natural Lands Management) as part of the Semitropic Ridge Preserve. In addition, another survey in 1994 during the burying of these sunken blinds revealed numerous dead reptiles and small mammals. Included in remains that were identifiable were ten blunt-nosed leopard lizards and 17 Tipton kangaroo rats (*Dipodomys nitratooides nitratooides*), both state and federally-listed endangered species. I recommend that hunting clubs be informed of this problem and that active blinds be covered when not in use, and that abandoned blinds be removed or filled in.

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The San Joaquin Valley of California is located on the Pacific flyway of migrating waterfowl (Collier 1975). Before intensive agriculture and the alteration of water courses, the valley supported large numbers of ducks and geese (Medeiros 1992). Even today waterfowl are found in sufficient numbers for hunting to take place. Besides areas of permanent water, hunting of waterfowl occurs at alkali sink playas at several areas in the San Joaquin Valley. Playas provide resting habitat for ducks and geese in years of high rainfall when playas fill with water. Surrounding these playas are terrestrial alkali sink and saltbush vegetation that are habitat for several endangered species, including the blunt-nosed leopard lizard (*Gambelia sila*) and the Tipton kangaroo rat (*Dipodomys nitratooides nitratooides*). Some of the structures placed at the edges of playas to conceal hunters are large drums that are buried into the soil to ground level. When left uncovered, these structures are death traps for many small reptiles and mammals, including endangered species.

STUDY AREA AND METHODS

The Nature Conservancy has purchased several parcels of land south of the Kern National Wildlife Refuge in Kern County, California. This area is being managed by the Center for Natural Lands Management as part of the newly formed Semitropic Ridge Natural Area. This area is one of several preserves begun in the San Joaquin Valley to provide protected land for the long-term conservation of natural vegetation and endangered species. Within the existing boundaries of the Natural Area are several playas. At two of these playas, six 55-gallon drums had been sunk into the ground at ground level for use as waterfowl hunting blinds (Fig. 1). This was completed prior to purchase of the land by The Nature Conservancy.

I removed remains of reptiles and mammals from the bottom of each waterfowl blind 24 January 1994. I only removed either whole bodies, parts of bodies, or skulls. I did not remove all skeletal pieces because I could not use

these pieces to enumerate species. I did note any bones of species that I had not already found in the blinds from retrieved material. After the animal material was collected from the bottom of the blinds, the blinds were filled with dirt from the surrounding ground to prevent further entrapment of animals.

RESULTS

Three species of reptiles and five species of mammals were identified from the bottom of the waterfowl blinds (Table 1). Of the reptiles found, the most abundant species recorded was the blunt-nosed leopard lizard. Two of the ten blunt-nosed leopard lizards recovered were hatchlings, the others were yearlings or adults. The only snake species found was a small long-nosed snake (*Rhinocheilus lecontei*; Table 1), which measured approximately 25 cm total length.

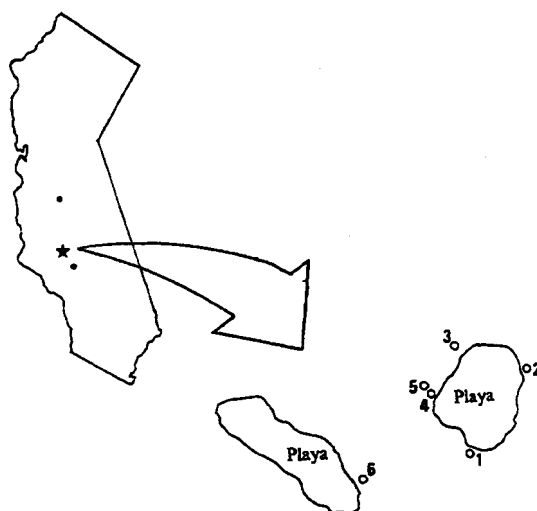


Fig. 1. Location of waterfowl blinds at two playas at the Semitropic Natural Area, Kern County, California (star), northwest of Bakersfield and south of Fresno (black dots).

Of the five species of mammals recorded, the Tipton kangaroo rat was found most often (17), although almost as many Heermann's kangaroo rats (*D. heermanni*) were found (12). The three unidentified kangaroo rats lacked hind limbs used to distinguish between Heermann's and Tipton kangaroo rats (Williams et al. 1993), and skull measurements were equivocal. However, I believe that two of the three unidentified kangaroo rats were probably Tipton kangaroo rats, based on skull size. Only skeletal pieces of desert cottontails (*Sylvilagus auduboni*) and black-tailed jackrabbits (*Lepus californicus*) were found, but pieces were found in all six blinds (Table 1).

DISCUSSION

The waterfowl blinds that I inspected in January 1994 unintentionally functioned as pitfall traps for some reptiles and mammals that occur in the Semitropic Ridge Natural Area. In particular, these blinds captured a number of endangered blunt-nosed leopard lizards and Tipton kangaroo rats. Besides the ten blunt-nosed leopard lizards that I found in 1994, six more leopard lizards were retrieved from these blinds in 1991 (John Karges, The Nature Conservancy, pers. comm.). The side-blotched lizard (*Uta stansburiana*) is an abundant lizard in the San Joaquin Valley, but I did not find it within the blinds. The lack of

Table 1. Number of individuals of identifiable species found in the bottom of six waterfowl blinds 24 January 1994 at the Semitropic Ridge Natural Area, Kern County, California. Remains of numerous rabbits and hares were found in all blinds and are denoted by an X.

Species	Waterfowl Blind					
	#1	#2	#3	#4	#5	#6
Reptiles						
Western Whiptail (<i>Cnemidophorus tigris</i>)						2
Blunt-nosed Leopard Lizard (<i>Gambelia sila</i>)		4	1	3		2
Long-nosed Snake (<i>Rhinocheilus lecontei</i>)						1
Mammals						
San Joaquin Pocket Mouse (<i>Perognathus i. inornatus</i>)	1	1	1		1	
Heermann's Kangaroo Rat (<i>Dipodomys heermanni</i>)	2		2		7	1
Tipton Kangaroo Rat (<i>Dipodomys n. nitratoides</i>)	5	5	6		1	
Unidentified Kangaroo Rat (<i>Dipodomys</i> sp.)	1		2			
Lagomorph (<i>Sylvilagus</i> and <i>Lepus</i>)	X	X	X	X	X	X
Striped Skunk (<i>Mephitis mephitis</i>)	1					

captures of this species is probably due to its small mass that allows it to cling to the relatively rough surface of the walls of the blinds. Side-blotched lizards have been caught on the Elkhorn Plain in 5-gallon buckets made of plastic, which are smooth-surfaced (Germano and Williams, California State University, Bakersfield and California State University, Stanislaus, unpubl. data). Other lizards that potentially occur at this site include the coast horned lizard (*Phrynosoma coronatum*) and the Gilbert skink (*Eumeces gilberti*; Stebbins 1985). The lack of captures of these lizards may be due to their relative rarity at this site. The only snake captured was a small long-nosed snake. Other snakes that are relatively abundant in this area are western rattlesnakes (*Crotalus viridis*), gopher snakes (*Pituophis melanoleucus*), common kingsnakes (*Lampropeltis getulus*), and San Joaquin coachwhips (*Masticophis flagellum ruddocki*). Snakes, in general, have the ability to avoid pit-fall traps because of their slow deliberate movement, however, several San Joaquin coachwhips were found in a pipeline trench in the Kern Front oil field in 1992 (Germano et al. 1993).

The blinds trapped all three heteromyid rodents that occur at this site, and the numbers of remains probably reflects the relative abundance of these three species. The bones of cottontails and jackrabbits in all of the blinds also is indicative of the high abundance of lagomorphs in certain years. Deer mice (*Peromyscus maniculatus*) and southern grasshopper mice (*Onychomys torridus*) also can be abundant in some years but neither were found in these traps. Both species have been captured in 5-gallon buckets on the Elkhorn Plain (Williams and Germano, California State University, Stanislaus and California State University, Bakersfield, unpubl. data). I have also captured California voles (*Microtus californicus*) and western harvest mice (*Reithrodontomys megalotis*) in pitfall traps south of this site at Goose Lake (Germano, California State University, Bakersfield, unpubl. report). Both species are relatively rare and usually are captured in more mesic habitats.

I do not know when specimens I removed from these blinds died, but I did retrieve bodies that I believe were only a few days old and others a few months old, based on the condition of the specimens. Some specimens, especially all the lagomorphs and the striped skunk (*Mephitis mephitis*), could have been in these blinds for more than a year. However, because of the intact nature of most of the reptiles and rodents that I collected, I suspect that these animals were in the blinds for less than a year.

Waterfowl blinds are not a major threat to populations of mammals or reptiles in the San Joaquin Valley, even to those species that are endangered. Blunt-nosed leopard lizards and Tipton kangaroo rats are not endangered because the absolute number of individuals is small. They are endangered because much of their habitat has been destroyed (Germano and Williams 1992, Williams and Germano 1992). However, the loss of animals in waterfowl blinds is unnecessary and can be prevented easily. I recommend that hunting clubs be informed of this problem and that active blinds be covered when not in use and that abandoned blinds be removed or filled in.

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