

SUPNAME  
Shull 4/21/87  
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APR 21 1987

In Reply Refer To:  
Region 2: SE

Memorandum

To: Steve Dobrott, Refuge Biologist/Team Leader, Buenos Aires MRR  
From: Alina Shull, Endangered Species Biologist  
Subject: Antelope Study Team Report Outline and Draft

RETURN TO ENDANGERED SPECIES

Here are my suggested changes to my part of the "Antelope Study Team Report" outline. I think we should keep the report as concise as possible and minimize information that is extraneous to the points that we have been asked to address. Therefore, I am suggesting the removal of 2. and 4. under I.A. and B. I also suggest that current status be discussed under II. A. and B.

Enclosed is a draft of my part (1.). Let me know what you think. I will be out of town from the afternoon of April 24 until April 29.

/s/ Alina Shull

Enclosure

AShull:kl 4/20/87 (dobrott.mem)

DRAFT

[include a good map]

Historic Range of the Sonoran Pronghorn

One of the purposes of the Pronghorn Study Team was to determine which pronghorn subspecies (Antilocapra americana sonoriensis or A. a. mexicana) historically occupied lands now included in the Buenos Aires National Wildlife Refuge. The historic range of the Sonoran pronghorn is uncertain and cannot be unequivocally determined with the available data. However, in this section we will present the information that is available.

Much of the uncertainty about the historic range is due to the small number of specimens and disagreement over the subspecies classification of at least one of those specimens.

The sonoriensis subspecies was named and described by Goldman in 1945 based on a female pronghorn from Sonora, Mexico (40 mi. N. Costa Rica, a ranch on the north side of the Rio de Sonora, southwest of Hermosillo). Goldman also examined a female specimen from Fort Buchanan (now Crittenden) in Santa Cruz Co., Arizona. Crittenden is just west of Sonoita, Arizona and east of the Altar Valley. Goldman classified this specimen as A. a. sonoriensis, although he noted that, on geographic grounds, specimens from southeastern Arizona could be expected to show morphological gradation towards A. a. mexicana.

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# DRAFT

Paradiso and Nowak (1971) say that "the female from Crittenden, Arizona, although probably referable to sonoriensis, appears intermediate between that race and mexicana in some characters." Hoffmeister (1987), however, thinks this specimen is referable to A. a. mexicana. He says that the skull of the Crittenden female is larger than the type female, yet the Crittenden female is younger than the type specimen. He also states, however, that the type specimen may be smaller than average for the subspecies. Hoffmeister (1987) described the range of the Sonoran pronghorn as "southwestern Arizona, south of the Bill Williams River and west of the Baboquivari Mountains" (Figure 1).

Hall (1981) refers the Crittenden specimen to A. a. sonoriensis. He refers to a specimen from the base of the Huachuca Mountains as A. a. mexicana and draws a line between the two to define their respective ranges (Figure 2).

In their 1981 Sonoran Pronghorn Special Report No. 10, the Arizona Game and Fish Department included a chapter on the "Historic Distribution of the Sonoran Pronghorn" by Phelps and Webb. The historic distribution that they present (Figure 3) resulted from examination of recorded observations of Sonoran pronghorn (including up to 200 antelope in the Altar Valley that they cite from Carr 1971) and an interpretation of their subspecies affinities based on ecological criteria. They include the Altar Valley in sonoriensis range.

# DRAFT

Carr's (1971) report of up to 200 pronghorn in the Altar Valley comes from a report by Arrington (1942) which he quotes as saying:

"Mr. Manual King, owner of the large Anvil Ranch lying northeast of Baboquivari Peak, has lived in Altar Valley since 1885.

"He states that until 1902 grass extended throughout the Valley from mountain slope to mountain slope with only an occasional tree. Antelope herds up to 200 ranged, principally at the edge of the mountains. The last band he recalls seeing was in 1906. It had approximately 30 members. Only occasional groups were seen after that and none at all since 1933."

Carr (1971) further says that "it is not definitely known if the pronghorn of Altar Valley were sonoriensis. It can be presumed they were. The easternmost range of sonoriensis has been placed at old Fort Crittenden, Arizona (Hall and Kelson 1959) some 40 miles to the east of Altar Valley. The Fort Crittenden pronghorn, however, is most likely a transition between A. a. mexicana and A. a. sonoriensis (Goldman, 1945)."

In summary, the eastern edge of the Sonoran pronghorn's range appears to be somewhere around the Altar Valley. No data exist to conclusively determine where the eastern edge of its range ended. It is also possible that no definite edge occurred

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and that an intergrade between the two subspecies occurred in the Altar Valley.

Literature Cited

Arizona Game and Fish Department. 1981. The Sonoran Pronghorn Special Report No. 10. Federal Aid in Wildlife Restoration Act, Project W-53-R, Work Plan 1, Job 1.

Carr, J.N. 1971. Endangered species investigation, Sonoran pronghorn. Arizona Game and Fish Dept., Progress Report, Project N-53-R-20.

Goldman, E.A. 1945. A new pronghorn antelope from Sonora. Proc. Biol. Soc. Washington, 58:3-4.

Hall, E.R. 1981. The Mammals of North America. John Wiley & Sons. New York. Volume II.

Hoffmeister, D.F. 1986. Mammals of Arizona. University of Arizona Press.

Paradiso, J.L., and R.M. Nowak. 1971. Taxonomic status of the Sonoran pronghorn. J. Mammal. 52(4):855-858.

### Family Antilocapridae, Pronghorns

Pronghorn are usually placed in a separate family characterized by pronged or forked horns, horns present in both sexes, the straight bony core covered with a horn of fused "hairs," sheath shed and replaced annually, a vacuity separating the lacrimal from the nasal bones, and numerous scent glands. Ogara and Matson (1975) present evidence that these characters are not sufficiently distinctive to separate Antilocapridae from Bovidae and they would regard it as a subfamily of bovids. Additional data may be forthcoming to verify their contention. Dental formula  $0/3, 0/1, 3/3, 3/3$ .

#### *Antilocapra americana*—Pronghorn

**Range.** In Arizona, formerly throughout much of the state in meadows and fields up to the piñon-juniper zone, sometimes into ponderosa pine; presently absent or nearly so in the southeastern quarter and uncommon in the southwestern quarter. Transplanted to various places in the state, some specimens so planted have come from Arizona.

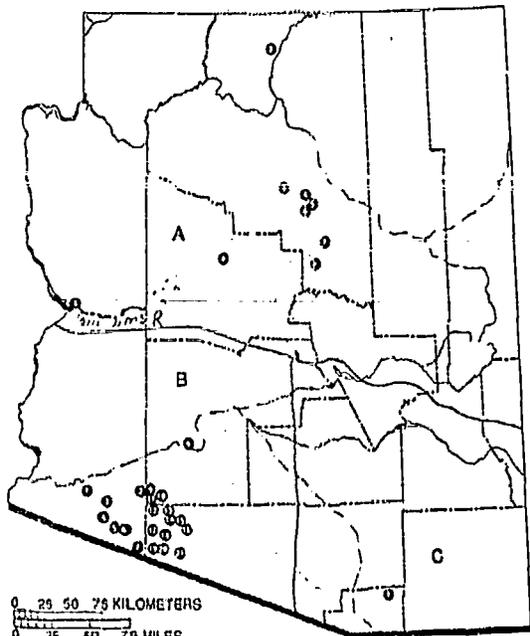
(Major body throughout sheath)

Figure 1.

8-legged, small-pronged sheath al- (Fig. 5.297); horny white areas of hair



Fig. 5.297. Male pronghorn, *Antilocapra americana*, New Mexico. Photograph from Arizona-Sonora Desert Museum.



Map 5.120. *Antilocapra americana*  
A. *A. a. americana*, B. *A. a. sonoriensis*, C. *A. a. mexicana*

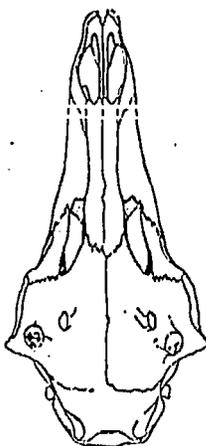
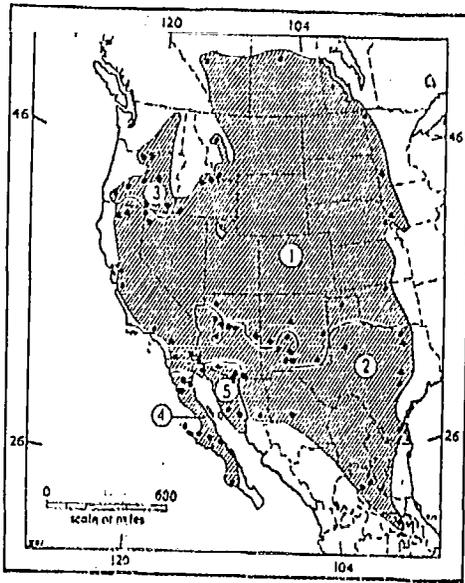


Fig. 5.298. Dorsal view of skull, *Antilocapra americana*, Nevada.

present, especially on the rump, sides of face, two bands on throat, underparts, and part way up sides; otherwise color of animal yellowish tan except for blackish on top of nose; skull with lacrimal and nasal bones separated by vacuity [Fig. 5.298]; exceptionally fast runners.



Map 541. *Antilocapra americana*.

- Guide to subspecies
- |                           |                              |
|---------------------------|------------------------------|
| 1. <i>A. a. americana</i> | 3. <i>A. a. oregona</i>      |
| 2. <i>A. a. mexicana</i>  | 4. <i>A. a. peninsularis</i> |
|                           | 5. <i>A. a. sonoriensis</i>  |

Antil *Figure 2* ↑  
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 ornia; Cañon Santa Rosalia dity; Vizcaino

*Antilocapra americana sonoriensis* Goldman

1945. *Antilocapra americana sonoriensis* Goldman, Proc. Biol. Soc. Washington, 58:3, March 21, type from 40 mi. N Costa Rica, a ranch on N side Rio de Sonora, SW of Hermosillo, Sonora.

MARGINAL RECORDS.—Arizona: near Cipriano Well, Organ Pipe Cactus National Monument; Crittenden. Sonora: Hermosillo; type locality; Santa Rosa Valley, near Monument 183. The well-marked, diagnostic, cranial characters for both sexes of this subspecies are described by Paradise and Nowak (1971:855-858).

FAMILY BOVIDAE—Bovids

Frontal appendages hollow, nondeciduous, horny sheaths supported by bony cores, frequently present in both sexes. Upper canines absent; lower canines with simple crowns; cheek-

teeth frequently hypsodont. Lateral toes always incomplete, sometimes absent; lower ends of lateral metacarpals absent. Gall bladder usually present; placenta with numerous cotyledons.

KEY TO NORTH AMERICAN GENERA OF BOVIDAE

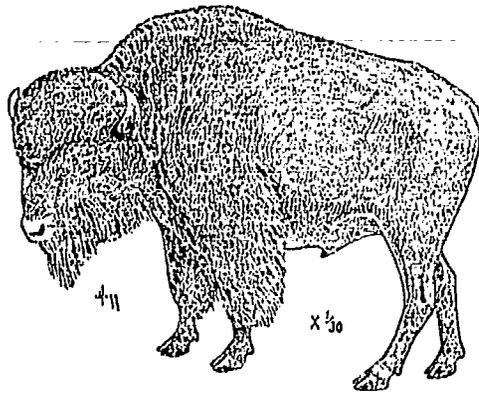
1. Total length more than 2000; length of skull more than 350; length of maxillary tooth-row more than 120.
  2. Tail longer than 300; horns smooth, conical; accessory column on inner side of molars not reduced; paroccipital processes widely separated from condyles. . . . . *Bison*, p. 1108
  - 2'. Tail shorter than 150; horns rugose, flattened at base; accessory column on inner side of molars reduced; paroccipital processes not widely separated from condyles. . . . . *Oribos*, p. 1112
- 1'. Total length less than 2000; length of skull less than 350; length of maxillary tooth-row less than 120.
  3. Tail longer than 150; lachrymal pits absent; horns less than 6 in. in circumference at base. . . . . *Oreamnos*, p. 1110
  - 3'. Tail shorter than 150; lachrymal pits present; horns more than 6 in. in circumference at base. . . . . *Ovis*, p. 1113

Genus *Bison* Hamilton-Smith—*Bison*

1847. *Bison* Hamilton-Smith, in Griffith, The animal kingdom . . . by the Baron Cuvier . . . , 5:373. Type, *Bos bison* Linnaeus.

Forehead short, broad; muzzle narrowed; nasals pointed, not reaching premaxillae; nasal opening composed of premaxillae, maxillae, and nasals; orbits tubular, composed of frontals, lachrymals, and jugals; molars with style between anterior and posterior lobes; both sexes having permanent horns. Dentition, i 2 c 2 p 2 m 2.

*Bison bison*  
*Bison*



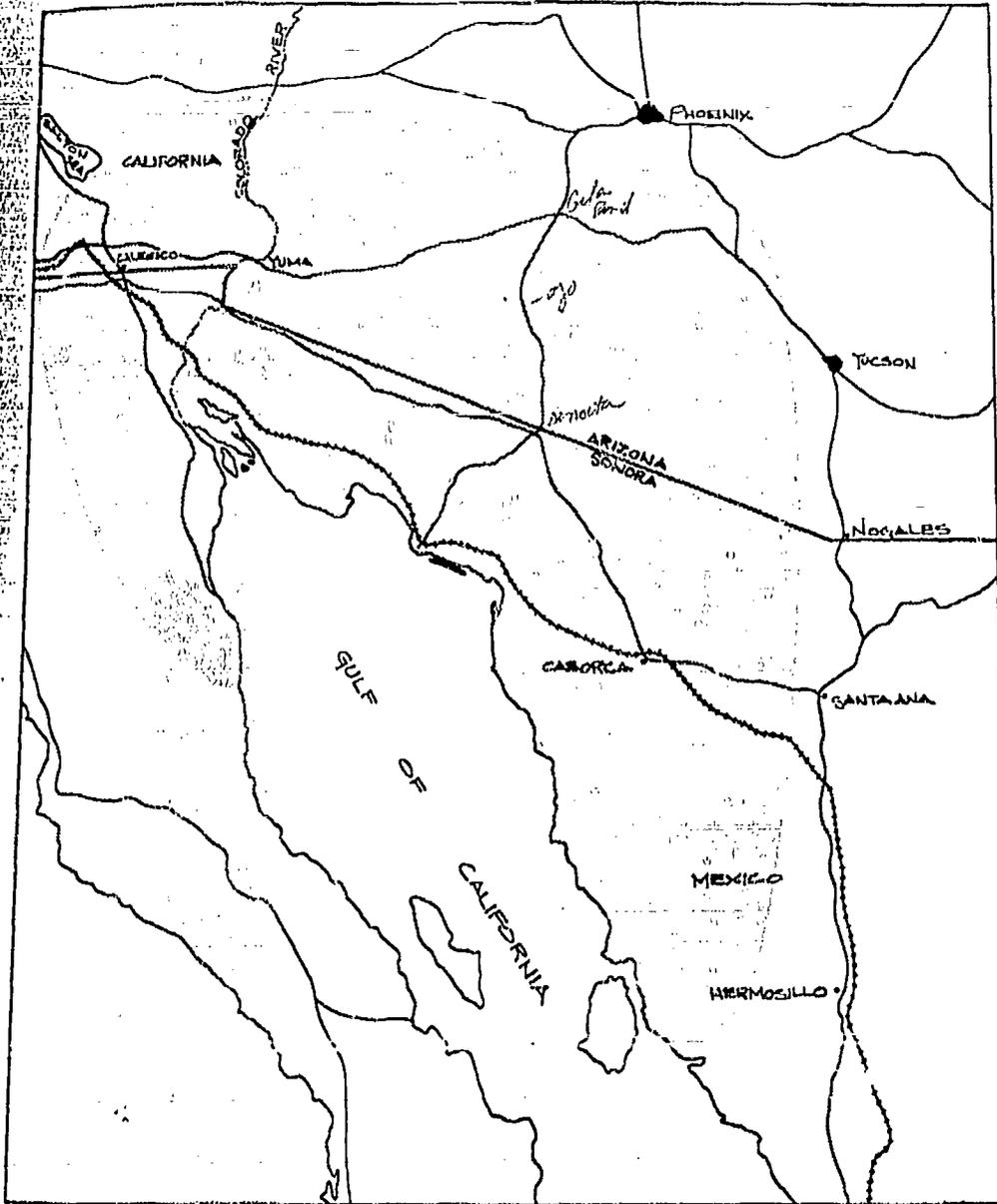


Figure 3.

tribution of Sonoran pronghorn.