

# PRONGHORN MANAGEMENT IN CALIFORNIA

L. BUD PYSHORA, Department of Fish and Game, 601 Locust Street, Redding, CA 96001

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**Abstract:** In the early 1800's California's Central Valley possibly contained as dense a population of pronghorn (*Antilocapra americana*) as anywhere in the west. The discovery of gold and the resultant miners who used pronghorn for food, had a severe impact on this species. By 1923, California's pronghorn population was reduced to slightly over 1,000 animals. Within the next 15 to 20 years the San Joaquin and Southern desert populations had been extirpated, however populations in four northeastern counties had increased to an estimated 6,000-7,000 animals. The winter of 1951-1952 was severe and large losses of pronghorn occurred, so that by 1960 only 1,780 animals were counted during the winter census. Since then population growth has continued to increase to a 1986 estimate of 7,250 animals. The northeastern California pronghorn range has been divided into six herd units and population goals have been established for each herd. Herd sizes are controlled by harvesting or by relocating surplus animals.

Pronghorn (*Antilocapra americana*) were once abundant and widespread in California (Fig. 1). Newberry (1855) reported they were "found in herds literally of thousands" in the San Joaquin Valley. With the advent of the Gold Rush and the associated market hunting, agricultural development and farming, the pronghorn was almost extirpated. By 1923, California's most abundant big game species was reduced to an estimated 1,057 pronghorn in six widely separated areas (Nelson 1925): 982 in the northeast and 75 in southern California. By 1940, Stokes (1947) indicated that all but the northeastern California population had disappeared.

From the low years in the early 1920's the northeastern population significantly increased from 982 animals to a 1936 population estimated between 6,000 and 7,000 head (Stokes 1947). A decrease in grazing by domestic livestock, predator control efforts and an increased emphasis on game law enforcement were thought to be primary reasons for the increase. During the winter of 1951-52, a prolonged heavy snow pack making forage unavailable devastated pronghorn numbers (Pyshora 1977). The decline continued from 1952 to 1960 to a contemporary low of 1,780 animals. Since 1960 the population has increased to over 7,250 in northeastern California (Fig. 2). In 1938 research was initiated on pronghorn in California. Management of this population has included various research and management actions that have resulted in an effective management system for this species.

### PRONGHORN POPULATIONS

#### Census Data

Initial attempts at pronghorn census were by automobile, horseback and on foot. Accuracy of this census is questionable because pronghorn are mobile, access to them limited and duplication in counting unavoidable. Possibly the first investigation of California's pronghorn was reported by Nelson (1925) (Table 1).

In 1939, a cooperative interstate annual census of California, Idaho, Nevada and Oregon populations

avoided duplicate counts of antelope (Springer 1950). The annual Interstate Antelope Conference was initiated from this cooperative effort and continues today.

Stokes (1947) initiated California's first systematic aerial census of pronghorn as part of Pittman-Robertson Project PR-12-R in January of 1942. Within the same year legislative action was taken permitting sport hunting of pronghorn which had been prohibited since 1883.

In 1953, Pittman-Robertson Project PR-41-R was established to study northeastern California pronghorn. Seasonal habitat preference, migration corridors, herd ratio surveys, disease occurrence, fawning habitat preference, parturition and location of seasonal ranges were some of the facets of this research. This project was terminated in 1955 and regional wildlife management unit personnel assumed primary management responsibility.

An aerial herd composition survey began in 1953 and is annually flown in July. All known pronghorn summer range is flown and animals classified as bucks, does or fawns. Beginning in 1982, aerial surveys were also used to locate fawning areas by mapping the observed location of single does and does with fawns. This flight takes place in early June.

In 1977 a status report, The Pronghorn Antelope in Northeastern California was published (Pyshora 1977). This was followed in 1978 by an unpublished report by Shimamoto (1979) in which she examined past and present population dynamics, evaluated the accuracy of the data collection methods, assessed future management alternatives and generated a computer model. In 1982 the Pronghorn Antelope Management Plan was completed by Pyshora. This plan divided the northeastern California population into six herds and set population goals for each herd (Fig. 3).

Currently, census surveys are taken annually, usually in January by fixed wing aircraft. The pilot and two observers fly transects over all known pronghorn winter range counting all animals seen. A complete census of the Northeastern California population is attempted.

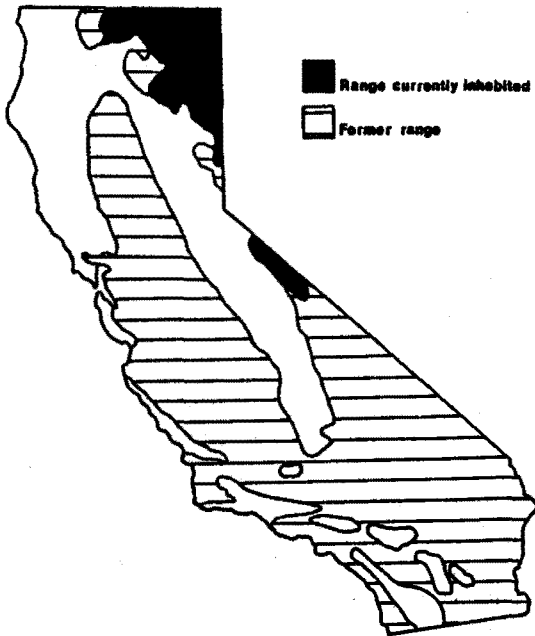


Fig. 1. Range of pronghorn in California (from Pyshora 1982).

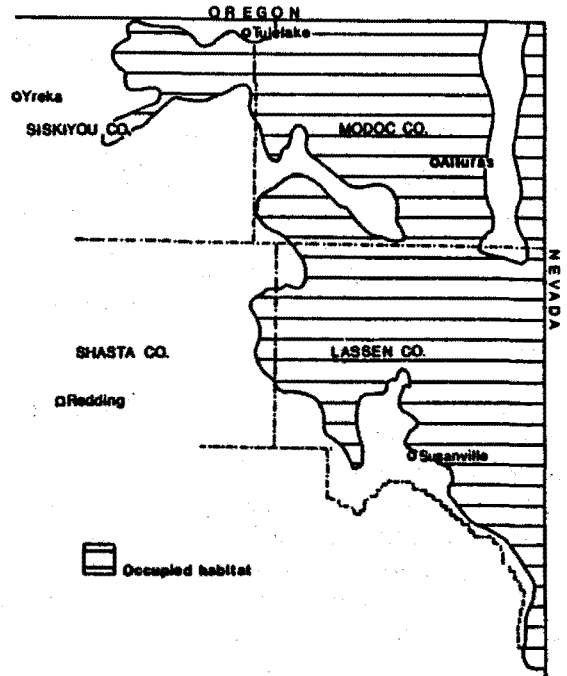


Fig. 2. Pronghorn distribution in northeastern California.

Winter ranges are flown at elevations between 61 m to 152 m (200 to 500 ft) with transects approximately 800 m (0.5 mile) apart. When a group of antelope is located, low level over-flights cause the animals to “line out.” The pilot increases altitude and approaches the lined-out herd from the rear. All observers and the pilot attempt to count the group. When observers reach agreement on the group’s actual number, transect flying is resumed. In recent years, Department planes equipped with STOL (short takeoff and landing) wing modifications permit slower flying speed. This feature allows more time to count a group of antelope while passing over them.

Very large groups of antelope, from 200 to 600 animals, may require several over-flights before a total is agreed upon. Photographs have been taken and later

compared to visual counts to determine if significant discrepancies occur. Because no significant difference was found between the two methods visual counts are used exclusively. Northeastern California pronghorn have increased four fold since 1960 (from 1960 to 1986) (Fig. 4). Data from 1944 through 1948 may be somewhat inflated because California observers often made a census of antelope in northeastern Nevada as far east as Gerlach.

**Herd Composition**

Annual aerial herd composition surveys determine ratios of males to females and young of the year survival. Herd composition data give excellent indicators of population vigor and provide a basis for setting special hunt quotas.

Herd composition surveys are similar to the winter

Table 1. Estimated numbers and location of pronghorn in California in 1923 (Nelson 1925)

Approximate area	County	Number of animals
Mount Dome	Siskiyou	118
Northern and eastern Lassen Co.	Lassen	864
West San Joaquin Valley	Fresno	29
Antelope Valley	Kern and Los Angeles	11
Between Camps and Imperial	Imperial and San Diego	5
Between Granite Wells and Randsburg	San Bernardino	30
	Total	1,057







program.

Presently, one landowner qualifies to hunt pronghorn under this program. To protect the resource and the public's interest, only those pronghorn produced by virtue of a landowner's management efforts, over and above the population occurring on the land at the inception of the program, are considered for harvest. In 1986, the participating landowner was granted three private land management tags.

#### RANGE EXTENSION

Range extensions to the south and west of the main inhabited area have been occurring naturally over the past 25 years as the pronghorn population increased. This is one way in which historic unoccupied rangeland can be filled. However, when the range is not adjacent to the main population, managers have successfully used trapping and relocating to fill unoccupied range.

In 1947, California initiated a program to reestablish pronghorn into historic range (Stokes 1952). In the winter of 1947, 32 animals were trapped and relocated from Lassen County to Mono County. During the winter of 1949-50, 113 additional pronghorn were taken from Lassen County and released in Adobe Valley, Mono County. A census of the Mono County release site in 1951 showed 141 pronghorns on this new range. In 1982, 1984 and 1985 three additional releases were made in Mono County, totaling about 134 animals.

Since initiation of the relocation program, several statewide surveys for possible pronghorn relocation sites have been made. Dasmann (1952) reported that except for the Mono County site, he found no suitable areas. Jones (1954) surveyed 16 sites in California and reported that except for the Providence-Mid-Hills and Mono County areas, all these sites were in country unsuitable for the American antelope.

California's Pronghorn Antelope Management Plan (Pyshora 1982) recommended that historic ranges be resurveyed for suitable release sites. The Tejon Ranch in Kern and Los Angeles counties was surveyed in 1984 and judged to be suitable range. In February 1985, 51 pronghorn from Modoc county were released with preliminary indications showing a good chance of success. Four additional areas were surveyed for reintroduction in January 1985, two in Glenn county and two in San Luis Obispo county. Suitable sites were located in both counties.

Pronghorn numbers in excess of herd population

goals can be used for transplanting. Capture sites are usually areas where crop depredation occurs. Population goals in the pronghorn management plan were established to retain herds at a productive level, and at the same time keep crop depredation by pronghorn at levels tolerated by landowners. Landowners in potential relocation sites are enthusiastic about pronghorn releases on their land and offer to cooperate in relocation.

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