ARIZONA STATUS REPORT

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Historical records indicate Merriam's elk (Cervus canadensis merriami) was the species native to Arizona prior to the turn of the century. Little is known of its distribution since it is believed the Merriam elk became extinct by the late 1890's. Cochrum (1960) documents the collection of three specimens in Arizona. One specimen was reported collected at the confluence of the Little Colorado and Colorado River on the eastern boundary of the Grand Canyon National Park. Another was reported collected from the Santa Catalina Mountains north of Tucson, and a third came from Hannagan Meadow in Greenlee County adjacent to the Arizona-New Mexico border. Davis (1973) reported elk north of the Colorado River on the Paria Plateau. The origin of these animals is unknown, but it is felt they were not Merriam's elk. This is the only instance of elk being reported north of the Colorado River in Arizona. Otherwise the major distribution of Merriam's elk was similar to the current distribution of the introduced Rocky Mountain elk (Cervus c. nelsoni).

Arizona's elk population is believed to be a result of intensive transplant efforts during the early 1900's. During this period Rocky Mountain elk were moved from Montana and Wyoming and released in Arizona. They were released primarily along the Mogollon Rim, which is thought to be the major habitat of the Merriam's elk.

Today elk are found primarily in the ponderosa pine (Pinus ponderosa) mixed conifer vegetative communities and the adjacent pinyon-juniper (Pinus sp.-Juniperus sp.) communities along the Mogollon Rim. Distribution extends from the Arizona-New Mexico border west, along the Mogollon Rim to a point east of Ash Fork. A northern extension of the distribution exists in the Flagstaff area and terminates on the south rim of the Grand Canyon. Three disjunct populations exist. One is found on the Hualapai Indian Reservation in Mojave County and a second is located in the Hualapai Mountains also in Mojave County. The third is located east of Globe in Gila County, Arizona.

The majority of Arizona's elk herds occur on lands which are under the jurisdiction of the United States Forest Service.

Habitat

Typically elk occupy a distinct summer and winter range in Arizona. Summer range is found at elevations ranging from 5,500 to 11,000 feet. Vegetation at these elevations ranges from ponderosa pine at lower elevations to fir and spruce (Abies sp. and Picea sp.) at the highest elevations. Winter range vegetative cover varies considerably, but is typically pinyon-juniper woodland. Winter range is generally found adjacent to summer range, often within drainages formed by canyons.

Migration to winter range occurs after the first major snowfall of the winter. In the southwest the first major winter storm might not occur until January. Elk generally remain on winter range until late April. Total distance of migration rarely exceeds several miles. Often it only involves moving from a north exposure to a south exposure.
Elk appear to be establishing themselves as year long residents on some of the more typical winter range. In one extreme instance a herd has established itself on a year long basis in a shrub-grass vegetative community east of Flagstaff, Arizona.

**Management Problems**

**Timber Harvest.** Timber practices in Arizona have been based primarily on a shelterwood, modified shelterwood, or strip cut harvest principle. The overall effect of timber harvest to date appears to have been beneficial to elk, however, the short term effects of logging and related constructions are not fully evident or understood. A recently concluded cooperative study by the Arizona Game and Fish Department and Coconino National Forest determined elk distribution was not influenced by vehicular travel but solely climatic conditions (Neff pers. comm.). These results were clouded because vehicular travel in the unrestricted areas was minimal except during hunting seasons.

**Grazing.** Elk range conditions are fair to good at present. Work is underway to improve these conditions. During the past 12 months three major livestock allotment reduction adjustments on elk range have been undertaken by the United States Forest Service. To date one adjustment is finalized and the remaining two should be completed within 12 months.

It became evident, early in 1975, that livestock and elk were abusing the winter range in several locations south of Flagstaff. As a result, antlerless elk permits were increased 100 percent in three game management units south of Flagstaff during 1976. It appears the increased harvest may have alleviated some of the range abuse.

**Encroachment.** During the past fifteen years several valuable meadow lands have been lost to summer home developments. Developments appear to have been impeded slightly by the state of the national economy. The Arizona Game and Fish Department purchased several critical habitat areas, which were destined to be lost to development. However, in the early seventies austere budgets terminated further purchases.

The U. S. Forest Service Land Exchange Program is currently active and is in the process of obtaining an important tract of elk summer range north of Flagstaff.

**Illegal Taking.** Illegal taking of elk appears on the upswing. In 1975 over 10 percent of the bulls harvested in one elk hunt area were taken illegally. The increase in illegally taken elk apparently is a result of improved vehicular capabilities and high intensity spot lights.

**Predation.** Predation does not appear to be an important factor in Arizona elk herds at this time.

**Disease.** Blindness in elk as a result of the blood parasite *Elaeophora schneideri* is currently a problem in Arizona elk herds.

(Neff, Don. Game Research Biologist, AZ Game & Fish Dept.)
Smith (1969) reported infection rates as high as 85 percent. Blind elk were recovered for laboratory examination and study and information was obtained from animals checked during operation of a hunter check station. Elk managers in eastern Arizona believe elk blindness may be the single most important limiting factor in several elk herds along the Mogollon rim (O'Neil pers. comm.).

**Population Status**

Elk herds in Arizona appear to be stable at present. Slight gains in total numbers appear to be occurring in the western range, but are being offset by losses in the eastern range. The state's population is estimated at about 12,000 animals.

During the past three years, statewide calf survival success has averaged 60 calves per 100 cows. During the same period bull:cow ratios have averaged 32 bulls per 100 cows.

**Research Status**

Two elk research projects are currently active in Arizona. One involves determining elk use on experimental watersheds in the ponderosa pine and pinyon-juniper types. This project is near completion. Data are currently being compiled. The second project involves marking and monitoring elk movements. The objective of this project is to determine discreteness of elk herds within specific game management units.

To date 119 elk have been trapped and marked on the summer range south of Winslow. The majority were trapped during the summer of 1976. Trapping was accomplished by the use of four corral traps (2 portable and 2 permanent) utilizing salt as bait. Winter trapping was started in January 1977, south of Flagstaff. Two permanent traps are in operation. Leafy alfalfa hay is being used as bait. Trapping success has been hampered by lack of snow.

**Seasons and Harvest**

Arizona's first elk season was held in 1934. Two hundred sixty-six hunters participated in the hunt.

All elk hunts held in Arizona are on a permit basis. Permits are obtained through a computerized drawing administered by the Arizona Game & Fish Department. Permits are available to both residents and nonresidents.

Several seasons are available for the sportsman to choose from. An early firearms season in late September, a late firearms season during the first week of December, and an archery season, sixteen days in length, held in early September provide a wide selection. Firearm seasons vary in length. The early season is six days in length while the late season is nine days.

As previously stated, all hunting is on a permit-only basis. Firearm hunters are eligible to apply every third year after obtaining a permit. Archery hunters are eligible to apply each year for archery permits; however, an archer must wait three years to apply for a firearms permit after obtaining an archery permit.

(O'Neil, John. Regional Game Specialist, AZ Game & Fish Dept.)
Firearms Hunt Statistics. During the period 1971-75 a mean of 6,190 firearm elk permits were issued annually. As a result a mean of 5,734 hunters hunted annually in Arizona. The above hunters harvested an annual mean of 1,255 animals (826 bulls, 333 cows, and 96 calves) during this period. The harvest resulted in a mean annual hunt success of 22 percent.

Archery Hunt Statistics. The archery elk season was begun in 1972. It is unique in that archery deer, bear, lion, turkey, squirrel and rabbit seasons run concurrently. No special permit is needed for the taking of the above species, but a tag is required for each of the big game species. Archery antelope season (permit only basis) is open during the same time period. This affords the archer maximum opportunity to take any of several species of wildlife. Archery elk permit numbers have increased since the first archery season in 1972. In 1972, 750 permits were issued, and in 1976, 2,201 permits were issued. Likewise, the harvest has also increased from 22 animals in 1972 to 120 animals in 1976. Hunt success increased from 3.2 percent to 5.5 percent in this period. During 1976 hunters took 79 bulls of which 60 percent had branched antlers and 37 percent were 5 x 5 or larger.

Literature Cited


