

Elk

Natural History

Elk were at one time thinly distributed in Arizona from the White and Blue mountains westward along the Mogollon Rim to near the San Francisco Peaks. These native elk were eliminated sometime prior to 1900. In February 1913, private conservationists released 83 elk from Yellowstone National Park into Cabin Draw near Chevelon Creek. These, and two other transplants of Yellowstone elk in the 1920s—one south of Alpine, and another north of Williams—were great successes, and Arizona's elk population has now grown to approximately 24,000 post-hunt adults as of 2003.

Mountain meadows, ponderosa pine woodlands, spruce-fir forests, and other high elevation habitats between 7,000 and 10,500 feet elevation constitute the elk's principal summer range. Elk are rarely found more than one-half mile from water and tend to stay on the summer range as long as possible, arriving early in the year and remaining until forced down by deep snow. Their winter range, which is usually between 5,500 and 6,500 feet elevation, is more limited in extent and may only comprise about 10 percent of the animal's total habitat. Here, in the pinyon-juniper zone, elk remain until melting snows allow them to migrate upward.

Elk have distinct summer and winter coats, which they shed in late summer and spring, respectively. In winter, the head, belly, neck, and legs are dark brown, and the sides and back are a grayish-brown; the rump patch is a yellowish color bordered by a dark brownish stripe. While females are usually somewhat lighter in color than bulls, both sexes have heavy dark manes. In summer, the coat becomes a deep reddish brown. Elk have little to no undercoat, giving them a sleek, muscular appearance.

Calves are born between late May and early June after an 8-month gestation period. They are dark russet in color with white spots on the back and sides. Newly born calves weigh an average of nearly 30 pounds, with males averaging 4 pounds more than females. Twins are extremely rare.

When the time comes to give birth, a cow will drive off her previous year's calf and separate from the herd to seek out an area of dense cover for a nursery. Within hours after birth, the newborn is able to move and is led from the birthing spot to a safer place. After a week, the mother will band with other cow elk, and after two to three weeks, the calves, now able to run, will join the herd. Some of these matriarchal bands may number in the hundreds. By September, the calves will have shed their spotted coats and will be behaving much like their mothers.

An elk's natural life span is about 14 to 16 years for males and 15 to 17 for females, even though tagged animals of more than 25 years old have been documented.

Antler development and size is a function of age, the older, larger bulls having the most developed antlers. Old bulls shed their antlers between January and March, and yearling males sometime between March and June. As soon as antlers are shed, new ones begin growing, so it is possible to see yearlings with old spikes and bulls in velvet at the same time. The antlers continue to grow for a period ranging from 90 days for yearlings to 150 days for adult bulls.

By early August, antler growth is complete. The now dry velvet is stripped off the hardened antlers in a matter of hours as the bull polishes them against trees. By early September, the bull is in the rut, and bugling and harem formation occurs. Harems may number up to 30, depending on the size and vigor of the bull, but usually average 15 to 20.

A large bull may weigh up to 1,200 pounds, but most range between 600 to 800 pounds. The live weight of mature cows ranges from 450 to 600 pounds. Elk evolved as distance runners and can approach speeds of 40 mph for short periods, and maintain speeds of nearly 30 mph for longer periods. They are also strong swimmers—even calves can swim more than a mile—and high jumpers, a 10-foot fence may not stop an adult.

Elk are grass-eating animals, and one of the requirements of feeding in open country is to always be on the alert for danger. As herd animals, some elk can always be watching for predators while the others feed.

Hunt History

As with many game species in Arizona, elk hunting has had its ups and downs. With native elk having been extirpated, the closed season imposed by the territorial legislature in 1893 was too little too late. The releases of Yellowstone elk between 1913 and 1929 were successful, however, and in 1935 the population was deemed sufficient to support a limited, 266-permit bull hunt. One hundred and forty-five elk were harvested, and hunts were continued every year through 1943. Because of World War II, no season was conducted in 1944 or 1945, but a limited hunt, which included the issuance of the first cow elk permits, was again authorized in 1946. Elk hunting opportunities expanded almost annually as biologists and ranchers feared that Arizona's elk population might now "rise out of control." These concerns culminated in 1953 when 6,288 permits were issued and 1,558 elk were taken—more than 1,000 of which were cows. Because of concerns about the "slaughter," elk permits were greatly curtailed in 1954 and remained below 5,000 until 1965, when more than 6,000 permits were again authorized. By 1967, elk permit numbers were exceeding 7,000, and the annual harvest exceeded 1,500 elk. Once again, elk permits were gradually lowered, although new hunts, including archery hunts, were being initiated.

By the mid-1980s, elk, and elk permit numbers, were again headed upward. This trend culminated in 1994, when nearly 11,000 elk were harvested—a number unimaginable just 20 years earlier. Since then, elk numbers and harvests have remained at a high level with more than 9,800 elk taken in 1999. This situation is expected to continue for the foreseeable future as wildlife managers and land managers continue to be concerned about habitat quality and elk-livestock competition.

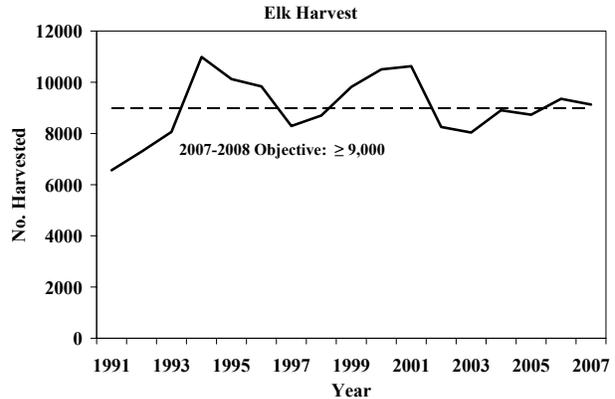
Management Needs

Research Needs

Elk Operational Approaches

Below are approaches for guiding the management of Arizona Game Species. In all the approaches listed below, annual harvest objectives were derived from past harvest estimates and recent habitat conditions. In all cases, these harvest objectives are well within the range of sustainable harvest. Survey and harvest data is located in the current version of [Hunt Arizona](#).

1. Increase post-hunt population trends statewide when consistent with the [Statewide Elk Management Plan](#) (1.A.1-1.A.6). Address local issues in regional sections of the Statewide Elk Management Plan that may impact localized populations, despite current statewide population levels (1.B.6-1.B.9).
2. Maintain annual harvest at 9,000 or greater (1.B.1-1.B.3, 1.B.6-1.B.7).
3. Provide recreational opportunity for 20,000 or more hunters per year (1.B.1-1.B.3).
4. Provide 100,000 hunter days or greater each year (1.B.1-1.B.3).
5. Maintain bull:cow ratios statewide according to [hunt guidelines](#) (1.A.1-1.A.6).
6. Maintain existing occupied habitat, with emphasis on retention of medium and high quality habitat and maintain linkages between habitats (1.A.1-6).
7. All areas occupied by elk will be analyzed under standardized criteria and classified into one of three separate management zones: standard population management, winter range population management, and limited population management. A limited population management zone will be further defined as managing for a sustainable (not growing) population or extremely low to no abundance. Each management zone will have specific management objectives and harvest alternatives that can be selected to achieve management objectives. The management zones also have specific goals regarding private land conflict resolution and action alternatives that may be selected to address those conflicts. See the section below titled “Elk Management Zones”.
8. Manage for low elk abundance in areas managed primarily for mule deer (1.A.1-1.A.6).
9. Design hunt recommendations that address population management objectives and substantiated depredation complaints (1.A.1-1.A.6, 1.B.6-1.B.9).
10. In Game Management Units managed under Alternative Elk Management in the [Hunt Guidelines](#), offer bull hunting opportunities that emphasize harvest bulls with larger antler size, reduced hunter densities, and higher hunter success (1.A.1-1.A.6).
11. Use standardized surveys, population estimation, and harvest data to assist in permit recommendations. Base management on population targets, herd units, and habitat objectives (1.A.1-1.A.6).
12. Population modeling may be used in making elk hunt recommendations. Additional analysis should be conducted to facilitate improved accuracy and precision of population models, especially in the areas of survey methodology to provide accurate age and sex ratios and annual survival rates for bulls, cows and calves (pre-hunt to pre-hunt). Improved survey methods and efforts will be implemented as appropriate.
13. Use forage monitoring in areas where forage resource use or allocations are established or excess herbivory by elk is believed to adversely affect sensitive, threatened, or endangered



species or their habitats. Forage monitoring data collection efforts will be designed and implemented under standard and scientifically sound principles.

14. Develop cooperative action plans, including monitoring, with property owners, lessees, and land management agencies to minimize elk-livestock interactions (1.A.1-1.A.6, 1.B.6-1.B.9).
15. Coordinate with tribal authorities for elk management (1.A.1-1.A.6, 2.D.1-2.D.3).
16. Issue permits in consideration of demand rates for various weapon types (1.B.1-1.B.3, 2.A.1). [Splitting the Pie](#) Wildlife Views article.
17. [Local Habitat Partnership Committees](#) will identify ways to manage and enhance habitat through partnerships with public agencies, property owners and lessees, and wildlife conservation organizations, and help maintain communication among individuals interested in elk management (1.A.1-1.A.6, 2.D.1-2.D.3).
18. Use the [Statewide Elk Management Plan](#), which will be reviewed as part of the hunt recommendation process every 2 years by the Commission, to direct elk management goals and objectives (1.A.1-1.A.6).
19. Develop and implement a standardized survey protocol that produces survey-generated population estimates (1.A.1-1.A.6).
20. Coordinate with the Arizona Department of Transportation to determine the extent of vehicle-elk collisions and to identify possible mechanisms by which to reduce the incidence or severity of such collisions (1.A.1-1.A.6, 2.D.1-2.D.4).
21. Update elk distribution maps within the Department's Geographic Information System databases, as needed but recommend a minimum of every 10 years.

Elk Management Zones

I. Standard Population Management Zone

- A. Zone Description: Areas of summer and winter range where the presence of elk is desired for the long-term maintenance of elk populations at levels that provide for diverse recreational opportunities.
- B. Management Objective: Maintain elk population at levels that provide diverse recreational opportunities, while avoiding adverse impacts to the species, its habitat, or the habitat of other wildlife, and with minimal substantiated depredation complaints.
- C. Harvest Guidelines: Population surveys will be conducted and the survey data used to determine appropriate annual harvest of elk in standard population management zones. Population surveys will be conducted and harvest recommendations made in accordance with species management guidelines, hunt guidelines, and the Statewide Elk Management Plan.
- D. Private land conflict resolution: The goal for conflict resolution regarding elk damage to private land within standard population management zones will be to reduce conflicts with elk while ensuring continued maintenance of elk populations at desired levels.
- E. Harvest Alternatives:
 1. Limited permit-tag bull, antlerless or any elk fall hunts.
 2. Population management hunts: restricted nonpermit-tag for bull, antlerless or any elk.

II. Winter-Range Population Management Zone

- A. Zone Description: Winter-range areas of standard population management zones where the presence of spring through fall elk populations results in unacceptable levels of

conflict with other public or private resources. Winter-range population management zones will be managed for winter elk use only.

- B. Management Objective: Manage to substantially reduce or eliminate spring through fall (generally April through October) elk populations to enhance habitat quality for wintering elk, and to reduce or eliminate conflicts with other public or private resources during spring through fall months.
- C. Harvest Guidelines: Population surveys may not apply in determining appropriate annual harvest of resident elk within winter-range management zones. The Statewide Elk Management Plan may include alternative methodologies that may be used for indexing populations within winter-range management zones. Harvest recommendations will be made in accordance with hunt guidelines and the Statewide Elk Management Plan. Hunting seasons for winter-range management zones will be listed under limited population management zone hunts within the Arizona Hunting Regulations.
- D. Private land conflict resolution: The goal for conflict resolution regarding elk damage to private land within winter-range elk management zones will be to reduce or eliminate conflicts with elk during spring through fall months while attempting to reduce conflicts with elk during the winter.
- E. Harvest Alternatives:
 - 1) Limited permit-tag bull, antlerless or any elk fall hunts.
 - 2) Population management hunts: nonpermit-tag for bull, antlerless or any elk.
 - 3) Unlimited nonpermit-tag antlerless elk hunts occurring during any portion of the spring through fall (April-October).
 - Maximum removal of resident elk from winter-range areas.
 - Facilitates hunting by local area residents who will likely be more effective at locating and taking elk desired for harvest.

III. Limited Population Management Zone

- A. Zone Description: Areas where the presence of elk is not essential to the long-term maintenance of elk populations or management of other wildlife species is a higher priority. Elk populations within limited population management zones will be managed for minimum levels of conflict with other public or private resources. A limited population management zone will be managed for either a sustainable (not growing) population or extremely low to no abundance.
- B. Management Objective: Manage elk populations to reduce or eliminate conflicts with other public, private or wildlife resources by maintaining low population densities, or eliminating populations, as deemed appropriate.
- C. Harvest Guidelines: Population surveys may not apply in determining appropriate annual harvest of elk within limited management zones. the Statewide Elk Management Plan may include alternative methodologies that may be used for indexing populations within limited population management zones. Harvest recommendations will be made in accordance with hunt guidelines and the Statewide Elk Management Plan. Hunting seasons for limited population management zones will be listed under limited population management zone hunts within the Arizona Hunting Regulations.
- D. Private land conflict resolution: The goal for conflict resolution regarding elk damage to private land within limited population elk management zones will be to reduce or eliminate all conflicts with elk.
- E. Harvest Alternatives:

1. Limited permit-tag bull, antlerless or any elk fall hunts.
2. Population management hunts: nonpermit-tag for bull, antlerless or any elk.
3. Population management hunts: restricted nonpermit-tag elk hunts occurring concurrent with other permitted big game hunts in specified Game Management Units authorized by Commission Order. These elk nonpermit-tags would be available for hunters possessing permit-tags for other big game species and would be valid concurrently with the other big game species hunt.
4. Unlimited nonpermit-tag antlerless elk hunts occurring during any portion of the year.