

BOBCAT FACT SHEET

Understanding Bobcat Management in Arizona

BACKGROUND

Distributed throughout the state, bobcats (*Lynx rufus*) are considered one of the most common predators in Arizona. They are particularly abundant in rugged and brushy habitats associated with Sonoran desert scrub and interior chaparral (Hoffmeister 1986). Classified as both a predator and a furbearer by the Arizona Game and Fish Department (department), bobcats are hunted and trapped for their fur which can be highly valued on the international fur market. However, state and federal oversight has been established to maintain long-term viable populations.

BEHAVIOR

Bobcats typically breed during winter and spring with most young born during the spring and early summer months (Crowe 1975, Fritts and Sealander 1978, Lawhead 1984). Females usually choose a secluded den, such as in a hollow tree, log, cave, or rocky crevice, to raise their litter of 2-4 kittens, and will often move their kittens around between multiple den sites (Young 1958, Gashwiler et al. 1961, Crowe 1975, Fritts and Sealander 1978, Bailey 1979, Nielsen and Woolf 2001). In more urban habitats, they have been known to den in backyards, using storage sheds, barns, and the spaces under buildings (Young 1958, Larivière and Walton 1997).

Bobcats are silent hunters, obtaining most of their food by stalking their prey (Young 1958). Although rodents and rabbits make up most of their diets, bobcats have been known to take prey as large as deer and pronghorn (Young 1958, Jones and Smith 1979, Delibes and Hiraldo 1987). They may also eat birds, reptiles, and other small mammals including skunks (Jones and Smith 1979, Delibes and Hiraldo 1987).

POPULATION

Solitary animals such as bobcats are often secretive and are therefore rarely seen. But they exist in large numbers across the continent. In fact, the U.S. population has been estimated to be between 2.3 and 3.6 million bobcats (Roberts and Crimmins 2010). In 2010, Arizona's statewide bobcat population was estimated to be between 62,000-66,000 (Roberts and Crimmins 2010). Arizona has documented some of the highest densities of bobcats in the western U.S. In central Arizona, the minimum estimated density of adult resident bobcats was 1 bobcat per 3.6-4.1 km² (Jones and Smith 1979, Lawhead 1984). Other western states with documented bobcat densities include Idaho (1 bobcat/23.3 km²), Oklahoma (1 bobcat/11 km²), Arkansas (1 bobcat/9.6 km²), Texas (1 bobcat/2.1 km²), and California (1 bobcat/10-20 km²; Zezulak and Schwab 1979, Rolley 1985, Koehler and Hornocker 1989, Rucker et al. 1989, Heilbrun et al. 2006). Although bobcat density varies widely, it appears to be related to prey availability and abundance, and the population may respond to changes in prey abundance by increasing or decreasing home range size and reproductive potential (Rolley 1985, Koehler and Hornocker 1989, Plowman et al. 2006). Analyses of annual harvest data, observation questionnaire data, prey abundance, "nuisance" complaints, and observations by field personnel continue to support previous research findings in Arizona that bobcat densities in the state remain high (Jones and Smith 1979, Lawhead 1984).

DATA COLLECTION

Although data on harvest levels can help inform managers about population trends, these numbers are influenced by hunting intensity which, in the case of bobcats, can be driven by international market values and interest by fur dealers (Wilson 2007). To monitor the bobcat population the department uses data derived from annual harvest and observation questionnaires to analyze long-term harvest trends and trends in observation rates. These data are collected from a sub-sample of hunters surveyed annually and from mandatory annual trapping reports. Since 2004, combined harvest has remained relatively stable with an average of 3,731 bobcats harvested annually. The department also requires successful bobcat trappers and anyone selling a bobcat pelt to purchase a numerically

unique, non-reusable seal and submit harvest information for each seal purchased. This has allowed the department to collect valuable data on bobcats resulting in more accurate harvest assessment.

To learn more about the bobcat population, trappers have been required since 2013 to submit jaws from bobcats harvested during the trapping season. Using teeth extracted from the jaws, the department determines the age of the bobcat at harvest from the tooth cementum layers (similar to counting tree rings). This technique has been used successfully to age bobcats, and provides a valuable set of information about the bobcat population (Crowe 1972; 1975, Fritts and Sealander 1978, Johnson et al. 1981, Knick et al. 1985). Establishing an accurate age for harvested bobcats provides a mechanism for understanding bobcat population dynamics and the relationship between harvest rates and population demographics. Age at harvest and sex ratio information serve as population trend indicators to assess the status of the bobcat population and to guide management approaches (Fritts and Sealander 1978, Utah Division of Wildlife 2007). Collecting data on the method of harvest and game management unit where harvested also allows the department to evaluate harvest distribution and density across the state. Enhancing understanding of harvest impacts on populations can lead to improved management strategies that provide opportunities for sustainable use while conserving populations.

During 2013 and 2014, 2,834 bobcat teeth were aged. Juvenile bobcats (≤ 1 year old) made up 27.6% of the number harvested and adults (≥ 2 years old) represented 72.3% of the harvest (Figure 1). Females and males comprised 41.1% and 58.9% of the harvest, respectively (Figure 2). The average age of bobcats harvested was 3.7 years old ($M=3.9$; $F=3.6$). Using information derived from several studies that describe population demographics for harvested and unharvested bobcat populations, the impact of harvest on bobcat populations in Arizona can be evaluated (Crowe 1975, Fritts and Sealander 1978, Rolley 1985, Knick 1990). The slightly higher proportion of males in the harvest and the older age distribution of the harvest likely reflect a lightly to moderately harvested population (Crowe 1975, Fritts and Sealander 1978).

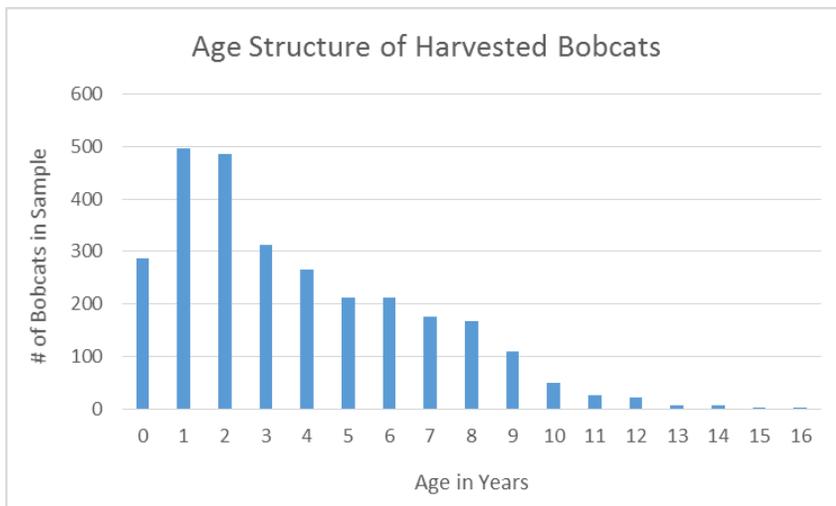


Figure 1. Age structure of all bobcats harvested during the 2013 and 2014 seasons.

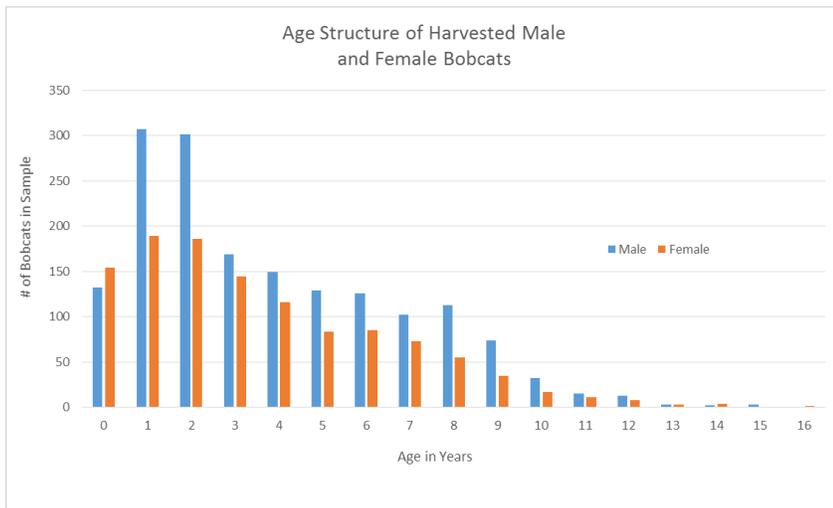


Figure 2. Age structure of male and female bobcats harvested during the 2013 and 2014 seasons.

Effective bobcat management in Arizona requires continued monitoring of harvest and population demographics and maintaining sustainable harvest management regulations. The department will continue to monitor and evaluate local and statewide bobcat populations.

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