



Natural History Notes

This section includes general information and fact sheets about each of the animals in the bone box. In cases where Arizona has more than one species (such as deer), information is provided about all of the representatives even if skulls or hides of all species are not included in the box.

There are two types of fact sheets used. When available, “Wildlife Field Notes” are used. These are published in the Arizona Game and Fish Department’s award-winning magazine *Arizona Wildlife Views* and a different animal is featured in each issue. To learn more about this magazine, visit <http://www.azgfd.gov/magazine>. Electronic copies of the provided “Field Notes” are included on the Bone Box Resource DVD. Additional animals can be downloaded from the “Resources” section of our web site.

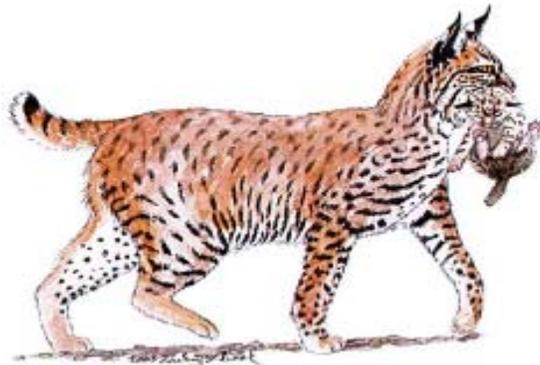
When “Wildlife Field Notes” are not available, the fact sheet comes from the “Mammals of Arizona” booklet. Published a number of years ago, this free booklet makes a great classroom resource. The full version can be found on the Bone Box Resource DVD in the resource trunk. You can also download it and two similar booklets from the “Resources” section of our website, <http://www.azgfd.gov/focuswild>.

Some of the animals in the bone box are common visitors to urban environments or other areas where people recreate. Sometimes this can be a problem. As a result, the Arizona Game and Fish Department provides numerous resources focused on “Living with Wildlife.” These resources can be found at a convenient website http://www.azgfd.gov/w_c/urban_wildlife.shtml. Electronic copies of many of these resources have also been put on the Bone Box Resource DVD.

NATURAL HISTORY NOTES

The Department's website provides a wealth of information about each of the animals in the bone box, including photos and videos. Please visit the following links to learn more:

- Beaver - http://www.azgfd.gov/h_f/game_bever.shtml
- Black bear - http://www.azgfd.gov/h_f/game_bear.shtml
- Bobcat - http://www.azgfd.gov/h_f/game_bobcat.shtml
- Coyote - http://www.azgfd.gov/h_f/game_coyote.shtml
- Cottontail rabbit - http://www.azgfd.gov/h_f/game_cottontail_rabbit.shtml
- Foxes - http://www.azgfd.gov/h_f/game_foxes.shtml
- Javelina - http://www.azgfd.gov/h_f/game_javelina.shtml
- Mountain lion - http://www.azgfd.gov/h_f/lion_splash.shtml
- Mule deer - http://www.azgfd.gov/h_f/game_mule.shtml
- Raccoon - http://www.azgfd.gov/h_f/game_raccoon.shtml
- Ringtail - http://www.azgfd.gov/h_f/game_ringtail.shtml
- White-tailed deer - http://www.azgfd.gov/h_f/game_cues.shtml



Black Bear

BY STAN CUNNINGHAM • ILLUSTRATION BY ZACKERY ZDINAK

Scientific Name: *Ursus americanus*.

From the Latin *ursus* meaning bear or “destroyer” and *americanus* referring to where this species is found. Early scientists recognized 18 subspecies, but used much less rigorous methods in making distinctions than those used today. Size and color differences do exist, however, throughout North America.

Description: Southwestern black bears average 28–33 inches at the shoulder when on four feet, and about 6 feet tall when standing up. Adult females average 145 pounds; males 275. Some males weigh more than 400 pounds, but they are rare. In the Southwest, 75 percent of black bears are actually dark or reddish brown or even blond. A black female may have both black and brown cubs, but they are all black bears.

Distribution: Black bears inhabit 38 states, 11 Canadian provinces, and seven Mexican states. In Arizona, they occupy southeastern, central, and northeastern mountain ranges. Due to less reliable food sources above the Mogollon Rim, density is half to a third of that found in central and southeastern Arizona. Interestingly, they are rarely seen in coniferous areas north of the Colorado River.

Habitat: Black bears inhabit most forest types, are common in interior chaparral adjacent to forests, and during prickly pear fruiting season, even use the Sonoran desert. Riparian areas are important in all vegetation types. They seek large trees, high cover, tree canopy of greater than 50 percent, and steep slopes. Large trees are important for cubs to avoid predation.

Biology: Hibernation is the central component of a black bear’s annual cycle. A hibernating bear generally does not drink, eat, defecate, or urinate for

up to seven months. During hibernation, metabolic activity is generated from energy stored in fat. A bear’s heart rate can drop to 8–10 beats per minute, lowering their metabolic rate 25–50 percent.

Breeding occurs in early summer, although fertilized embryos remain in the fallopian tubes and development does not begin until the female constructs or enters her den. If the female is healthy, the fetus implants in the uterine wall and a 90-day gestation period follows. If she is not in good shape, the fetuses abort. Cubs are born in January or early February and weigh only 8–10 ounces at birth. Litter size averages two.

During the breeding season, males travel long distances trying to impregnate as many females as possible. Females with yearlings or no cubs are receptive to males. Females with new cubs avoid males since they often kill cubs. It is assumed that male black bears recognize and do not kill their own cubs, but this has yet to be demonstrated.

Cubs generally remain with their mothers 14–18 months, denning with them the second winter. The bond is broken when adult females come into estrus. Young bears, especially immature males, must leave to avoid encounters with adult males and often disperse long distances. Conversely, female bear cubs often establish their home range adjacent to their mother’s. Natural life expectancy of black bears varies regionally, but 20 years or more in the wild is not uncommon.

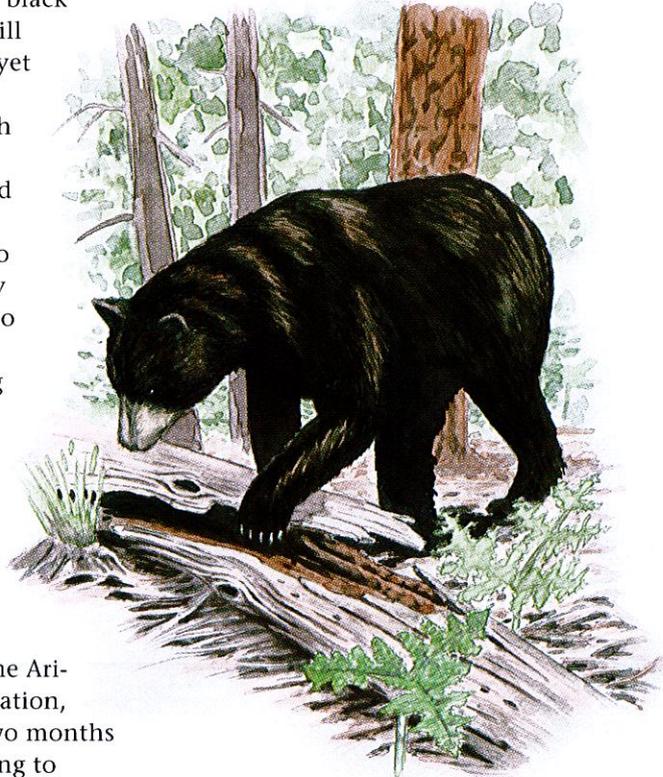
More than 75 percent of the Arizona black bear’s diet is vegetation, primarily grass for the first two months after leaving the den, switching to

early maturing fruits and animal matter (primarily insects) in midsummer, and important mast species late summer and fall. Areas that provide several species of acorns are premium habitat.

Status: Increased interest by hunters prompted the reinstatement of black bears as big game animals in 1968. The most important restriction in black bear hunting is the female quota system, which closes a hunt unit after a certain number of females have been taken.

Management: Because of their high selection for cover, research on the effects of forest thinning is important for the preservation of black bear habitat.

Research biologist Stan Cunningham has focused his career on the study of large mammals, including mountain lions, bighorn sheep, and black bears.

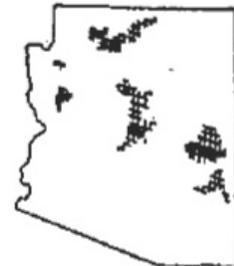


Beaver: *Castor canadensis*

Spanish name: castor; nutria

Description: The largest rodent in North America, weighing up to 80 pounds. Beaver fur is dense, fine and rich brown in color. Hind feet are webbed and the tail is broad, flat and hairless. They can reach 3-4 feet in length and 15 inches in height.

Range: Most major rivers and streams of the state.



Habitat: Mountain and desert streams or rivers having cottonwood, willow, or aspen nearby.

Niche: An aquatic herbivore, feeding almost exclusively on the bark of trees. Semi-nocturnal. Beaver are preyed upon by larger carnivores.

Life History: Following a four-month gestation period a litter of 1-4 kits are born in late spring or early summer. Life span may be 10-12 years.

Comments: Beavers change the environment to suit their needs by constructing dams. They are found in many desert rivers such as the Salt, Verde, Colorado, and Gila. Formerly found in the Santa Cruz, and others. They are also found in high mountain lakes and streams.



Bobcat

SCIENTIFIC NAME: *Lynx rufus*. From the Latin *lynx* meaning “light,” in reference to its shining eyes, and *rufus* meaning red, which refers to its sometimes reddish color. Scientists describe 11-14 subspecies of bobcats, with *Lynx rufus baileyi* only occurring in Arizona. Bobcats also are called wildcats, bay lynx, catamounts, barred bobcats, pallid bobcats, red lynx, and cat lynx.

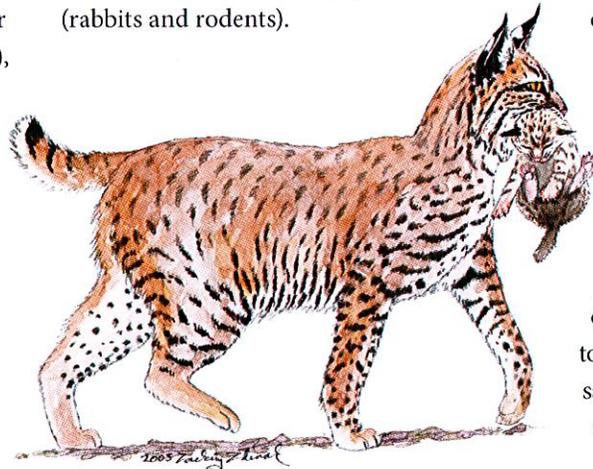
DESCRIPTION: The bobcat is named for its short “bobbed” tail (4-8 inches long), which is its most distinguishable feature. Bobcats are medium-sized cats—2-2 1/2 feet long and weighing from 12 to 30 pounds (males are larger than females). They have conspicuous side whiskers and a neck ruff; fur colors range from reddish tan to gray with whitish undersides and mottled dark spots. Their long erect ears are tipped with black tufts.

DISTRIBUTION: Bobcats are distributed throughout Arizona and are found in all habitat types. Bobcats are frequent visitors in urban areas. They are distributed throughout the rest of the United States, but are more frequently found in the western states.

HABITAT: Although found in all Arizona habitat types, the highest bobcat population densities are found in Sonoran desert-scrub, Great Basin conifer woodland, and chaparral habitats. In general, bobcats prefer areas with rocky terrain, thick cover, and abundant prey populations.

BIOLOGY: Bobcats’ primary prey is cot-

ontail rabbits and jackrabbits. Unlike their cousins the lynx, however, bobcats often prey on other species—rodents, reptiles (including rattlesnakes), birds, and, less frequently, ungulates such as mule deer, whitetail deer, javelina, and pronghorn. Bobcats can be active at any time, but are considered to have a crepuscular (dawn and dusk) activity peak. This activity pattern is based on activity patterns of most of their prey species (rabbits and rodents).



Home ranges vary greatly in size based on the quality of the habitat and the sex of the bobcat, but are found to range from about 1 to 20 square kilometers. Bobcats will mark their home ranges by deposits of urine, feces, and scrapes.

Bobcats become sexually mature at 12 to 24 months of age. The peak breeding period is late winter or early spring, with birth following 50 to 60 days later. Litter sizes are generally two to four kittens. Young disperse from their mothers at age 1.

STATUS: Bobcats are designated as both furbearers and predators in Arizona, and are considered abundant throughout the state

in appropriate habitat. Bobcats are often harvested for their furs, which can be quite valuable. Although they are not threatened, bobcats are listed under Appendix II of the Convention on International Trade in En-

Bobcats are distributed throughout Arizona and are found in all habitat types.

dangered Species of Wild Fauna and Flora (CITES) because of their similarity to other threatened species and the commercial value of their pelts. Arizona, along with several other states, has demonstrated to the U.S. Fish and Wildlife Service that the management and harvest of bobcats within Arizona is not detrimental to the species, and continued harvest and sale of bobcat pelts is currently allowed under the CITES agreement.

MANAGEMENT: Harvest of bobcats is allowed during the trapping season and the sport-hunting season for predators and furbearers. Last year there were about 265 bobcats harvested through a combination of trapping and hunting. The Arizona Game and Fish Department monitors bobcat population and harvest by periodically assessing the population age structure through tooth analysis and through hunter surveys. The Department’s Research Branch is currently testing bobcat survey methods, such as track and scent-post surveys for future use. 🐾

■ Pat Barber is the Game Branch’s predator and furbearer biologist.

Coyote: *Canis latrans*

Spanish name: coyote

Description: Very dog-like, with pointed muzzle and sharp, erect ears. The fur is thick, fairly long and coarse, grayish or tawny; underparts lighter. The bushy tail is often tipped with black. Height: 18-24 inches, length: 32-40 inches, weight: 20-40 pounds.

Range: Statewide

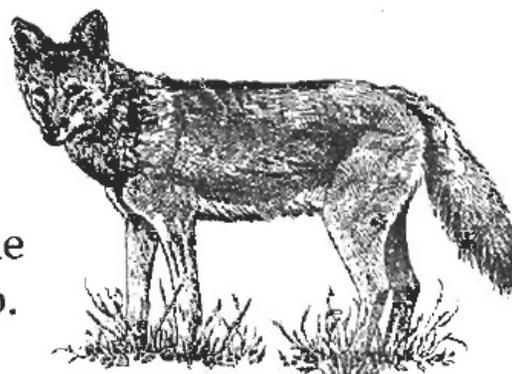
Habitat: Perhaps the most adaptable animal in the state. Lives in the driest deserts, pine forests, and within city limits.



Niche: A predator that preys on nearly every prey species – but who also eats a wide variety of plant and insect material, scavenges garbage cans, and readily eats carrion. Coyotes are occasionally preyed upon by lions.

Life History: An average litter contains 4-5 pups, but like most dogs, can have many more. Pups are born in spring.

Comments: Coyotes have more than held their own despite extreme pressure from humans in the past. Now nearly every state has a coyote population. History tells us there were no coyotes east of the Mississippi River 200 years ago.



Mule Deer: *Odocoileus hemionus*

Spanish names: venado bura; bura; venado;
venado mula

Description: A large deer that may weigh more than 200 pounds. The summer coat varies from yellowish to reddish; winter coat is dark gray. Insides of legs, underparts and rump are whitish. The short, stumpy tail is tipped with black. Males (bucks) have branched or forked antlers.

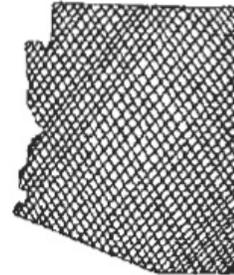
Range: Most of the state, from the highest mountains to the low desert plains.

Habitat: Forest, chaparral and desert scrub communities.

Niche: A large herbivore whose diet varies depending on season, vegetative type where it lives, and climatic conditions. Deer are preyed upon by large predators, particularly mountain lions.

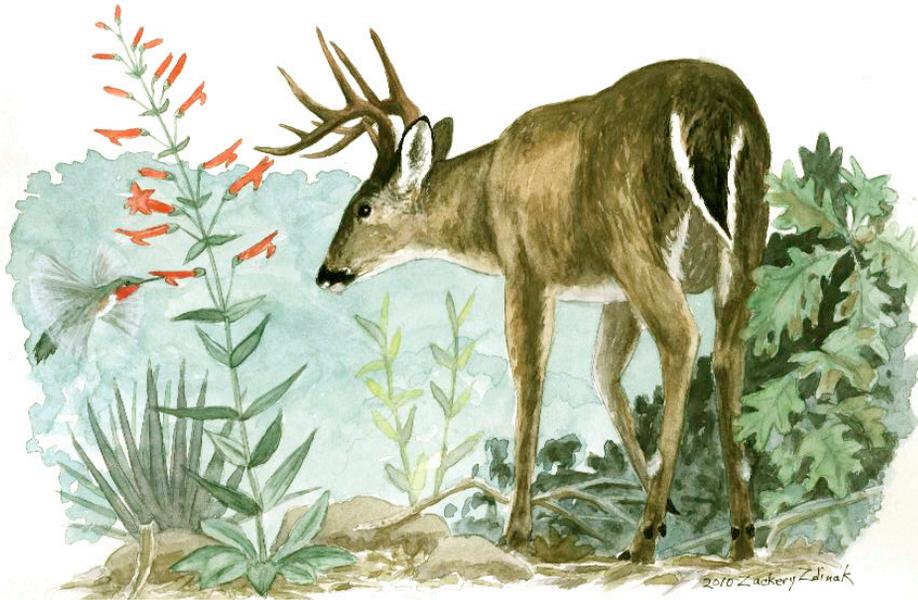
Life History: Fawns, usually twins, are born in midsummer. Deer may live to 10 years in the wild but average only 3 to 3 ½ years.

Comments: This deer is named for its large ears. Bucks grow and shed new antlers annually. The main forks of the antlers are equally branched.



Coues' White-tailed Deer

ILLUSTRATION BY ZACKERY ZDINAK



SCIENTIFIC NAME: *Odocoileus virginianus couesi*. The genus name *Odocoileus* is derived from the Greek words *odous*, which means “tooth,” and *koilos*, which means “hollow.” This is a reference to the hollow teeth of deer. The species name *virginianus* is a Latinism meaning “from Virginia,” for the region where the type specimen was collected for naming. The subspecies *couesi* is in reference to naturalist Elliot Coues, who described this species in great detail in 1875. The common name “Coues” often is mispronounced “cooz,” but it is properly pronounced “cows.”

These deer do not live in large herds, but tend to remain in small groups or as individual animals.

DESCRIPTION: The Coues' white-tailed deer is a smaller subspecies of the white-tails of the eastern United States. Coues' whitetails stand 28–32 inches high at the shoulder and measure about 56 inches

from head to tail. A large, mature male can weigh up to 125 pounds and mature females weigh up to 80 pounds, but the average weight is less.

The deer's coat is grayish in winter and closer to mahogany in summer. When fleeing perceived danger, whitetail deer display the prominent, bright white outside edge and underside of their broad, triangular, flag-shaped tail (hence their common name). White hair encircles the eyes and muzzle. Fawns are born with white spots across their back, which disappear after a couple of months. The antlers of a mature male Coues' whitetail buck differ from those of a mule deer in that they have one main beam that curves forward and individual tines that branch off the main beam. Coues' whitetails are extremely wary.

DISTRIBUTION: In Arizona, Coues' whitetails can be found from the White Mountains west along the Mogollon Rim to central Arizona, and in suitable habitats in southeastern and southcentral Arizona. Their range also enters southwestern New Mexico and northern Mexico.

HABITAT: Occupying a wide variety of habitats at elevations of 3,000–10,000 feet, Coues' whitetails show preference for the lower third of that range. Habitat types include upper Sonoran desertscrub, oak-juniper woodland, chaparral, ponderosa pine and mixed-conifer forest. Reliable water sources are necessities within their habitats.

BIOLOGY: These deer do not live in large herds, but tend to remain in small groups or as individual animals. The breeding season, or “rut,” occurs in December and January. Polygamous bucks continually search for receptive does and will challenge other males for access to females. Does give birth to twin fawns in late July and August.

Only males of this species produce antlers. Bucks cast their antlers in late spring and immediately begin to grow a new set, which are fully formed by early October.

Whitetail deer are browsers: They prefer forbs, but also consume shrubs, mast, cacti fruits and grasses.

STATUS: The overall population of Coues' whitetails has declined during the past 20 years, but this has not been nearly as steep as the declines seen in mule deer. At present, the population is stable. This is a hunted species with a relatively stable harvest.

MANAGEMENT NEEDS: The extended drought has been the biggest factor affecting the habitats on which these deer rely. Other factors include human encroachment and climate change. The challenge is to protect, preserve and enhance existing critical habitats, so that when precipitation returns to normal levels, this species will flourish and expand in number and range. 🦌

■ Johnathan O'Dell is the Arizona Game and Fish Department's statewide wildlife specialist for game species.

Gray Fox

BY TERRY B. JOHNSON • ILLUSTRATION BY ZACKERY ZDINAK

SCIENTIFIC NAME: *Urocyon cinereoargenteus*. Genus derived from the Greek *uro*, for tail, and *kyon*, meaning dog. Specific epithet formed from the Greek words for ash-colored (*cinereus*) and silver (*argenteus*).

DESCRIPTION: Adult gray foxes are even smaller than coyotes. They stand about 14-15 inches tall at the shoulder, and measure about 32-44 inches from nose to base of the 16- to 18-inch tail. They weigh just 6-10 pounds in the Southwest. Females are slightly smaller than males. In both sexes, the fur is coarse and mostly gray in color, with flashes of reddish along the sides of the neck, flanks, legs, and underside of tail. The belly and undersides are typically buffy. The tail is variable, but always tipped black. The face is distinctive: a rather long, narrow muzzle that is set off by relatively large, triangular ears.

HABITAT: Generally occupies more open habitats, from low desert at 100-foot elevation or lower well up into brushy and sparsely wooded, rocky slopes and canyons up to and above 9,000 feet in elevation. Plant communities most often occupied include desertscrub, desert grassland, chaparral, and oak and pine woodland. Urban settings with ample cover also often provide safe haven.

DISTRIBUTION: West Coast (scrub and mountains) of the United States through the American Southwest and throughout the states east of the Great Plains. Also occurs in southern Canada and southward into Mexico. Occurs virtually statewide in Arizona.

BIOLOGY: Gray fox biology is pretty well known. Adults den in hollow trees, cavities under logs and bushes,

rock crevices, and sometimes burrows—both self-excavated and appropriated from other species. Some dens are well up in trees (to 30 feet or more), reflecting this species' ability to climb trees with surprising alacrity. Gray foxes sometimes leap from tree limb to tree limb, in a manner more typically associated with tree squirrels.

Like most foxes, gray foxes are territorial. They mark their territorial boundaries with urine, feces, and with scent from glands on either side of the anus. The scent gland products are quite pungent, and the odor may seem reminiscent of skunk.

Breeding occurs from January to April. Litters average two to seven pups, born about 51 to 53 days after impregnation. The kits emerge from the den at 5 weeks of age, and stay with the parents for another 10 to 11 weeks. Then they become independent and may wander far and wide. Sexual maturity occurs at about 1 year of age.

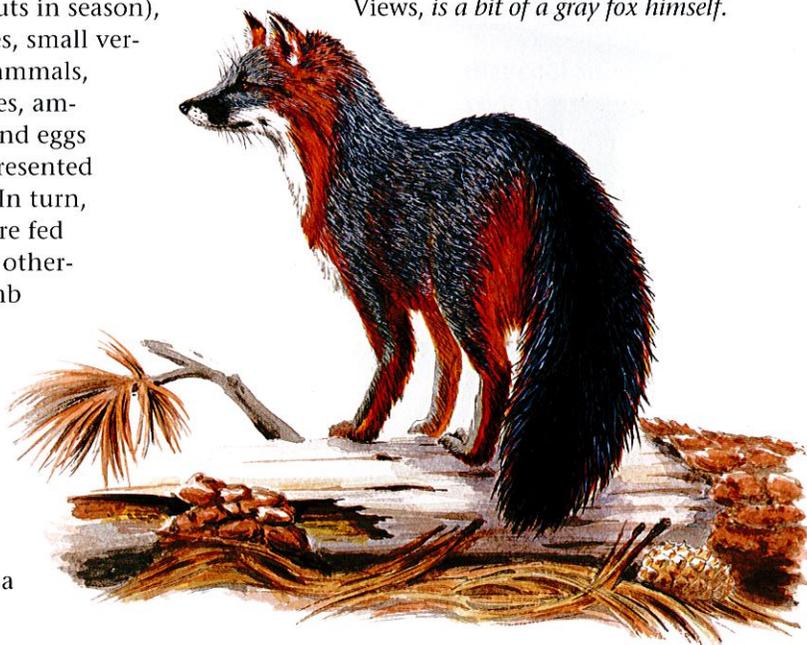
Gray foxes forage widely (day or night), and their tastes are varied. Plant material (especially fruits and nuts in season), invertebrates, small vertebrates (mammals, birds, reptiles, amphibians), and eggs are well represented in the diet. In turn, gray foxes are fed upon by, or otherwise succumb to, golden eagles, coyotes, bobcats, and any other predator of sufficient size to pose a threat.

A variety of diseases are associated with gray foxes, including rabies—outbreaks of which have recently been noted in southern Arizona, the Flagstaff area, and other parts of the state. Canine distemper can be a real problem where unvaccinated domestic dogs are allowed to run free.

STATUS: The gray fox is not on the Department's list of *Wildlife of Special Concern in Arizona*, nor is it being considered for federal listing. The species is considered quite common here; no population declines have been noted, other than short-term, local die-offs associated with disease outbreaks. Take by hunters and trappers is regulated by the Department; the numbers of gray foxes harvested each year seems more closely aligned with fur prices than with anything else.

MANAGEMENT NEEDS: None. 🦊

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Terry B. Johnson, chief of the Department's Nongame and Endangered Wildlife Program and regular contributor to Wildlife Views, is a bit of a gray fox himself.



Kit Fox

SCIENTIFIC NAME: Two species of arid-land foxes, the kit fox (*Vulpes macrotis*) and the swift fox (*Vulpes velox*), were initially considered to be similar but separate. Recently the two have been grouped as a single species (*Vulpes velox*) with two subspecies, *V. v. macrotis* (kit fox) and *V. v. velox* (swift fox). Swift foxes are not found in Arizona, but inhabit the central prairies as far west as Colorado and New Mexico.

Kit foxes are the smallest wild canines in North America. *Vulpes* is Latin for “fox,” *velox* is Latin for “swift,” and *macrotis* is a Latin word derived from Greek words meaning “long ears.”

DESCRIPTION: Adult kit foxes usually weigh 3–5 pounds. Males average 4 pounds, slightly heavier than females (3.7 pounds). Overall coat color is pale, ranging from buff to gray with seasonal variations. Fur on shoulders and front legs is distinctly reddish, the bushy tail is gray-black and darkest on the tip, and underparts are white. Adults have abundant white-tipped guard hairs that give them a “grizzled” appearance. Overall length from nose to tail tip is 1.9–2.8 feet. Ears appear large relative to the body and head, and are larger than those of other small North American canids.

DISTRIBUTION: Kit foxes inhabit arid regions and are most common in low-elevation, desert-like habitats in the western United States. In Arizona, they are distributed widely across the southern, western and northeastern portions of the state.

HABITAT: Throughout their range, kit foxes are primarily associated with desert shrub or shrub-grass habitats. They appear not to need free-standing water, meeting their water requirement through metabolic processes instead. Dens are vitally important to kit foxes, providing more moderate habitat temperatures in both summer and winter, a factor that greatly reduces the animal’s water needs.

Kit foxes are almost entirely nocturnal. They produce a series of alarm, fear or distress sounds, including barking, to alert other kit foxes of danger.

BIOLOGY: Kit foxes primarily eat small mammals (particularly rodents such as kangaroo mice, pocket mice and wood rats), but these opportunistic predators may prey on numerous species of mammals, birds, reptiles and insects. The number of kit foxes and the density of kit fox and prey populations fluctuate as a result of unreliable desert precipitation.

Kit foxes are almost entirely nocturnal. They produce a series of alarm, fear or distress sounds, including barking, to alert other kit foxes of danger. They growl to intimidate other kit foxes or other canid species.

The breeding season occurs during December and January, with three to six pups born during February and March. Pups are independent of their parents at 4–5 months of age. Pair formation begins during

October and November, with pairs remaining together at least until young are weaned. Males seem to provide most of the food for females and litters during pup rearing. Females are very attentive to young pups.

Kit foxes may live to be 8 or 9 years old, but generally, 90 percent to 95 percent of a population is less than 5 years old. Their primary sources of mortality include vehicles, great horned owls, bobcats and coyotes. Juveniles typically have a lower survival rate than adults.

STATUS: Though kit fox populations have declined in recent years due to drought and local habitat disturbance, they are still common throughout their range in Arizona.

MANAGEMENT NEEDS: Kit foxes fill a unique niche in Arizona, inhabiting arid regions with sparse vegetation. These habitats have undergone extensive modification over the past century, and the abundance of kit foxes has declined substantially in many areas. As with other species that rely on fragile desert environments, the kit fox’s greatest management need is for humans to identify and preserve these habitats. 🦊

■ Ron Day is the predator and furbearer biologist for the Arizona Game and Fish Department.



ILLUSTRATION BY ZACKERY ZDINAK



Javelina

BY JOHN PHELPS, GAME BRANCH, AND
TERRY B. JOHNSON, NONGAME BRANCH
ILLUSTRATION BY NATHAN REDWOOD

SCIENTIFIC NAME: *Tayassu tajacu*. Both the genus and specific epithet are of native Brazilian origin, probably meaning “gnawer of roots” and “peccary,” which in turn means “one who makes paths through the forest.” Known in Central and South America as the “collared peccary,” derived from pale collar of hair across the shoulders and upper back. “Javelina,” which applies to the more northerly populations, is derived from the Arabic *jabali* or *jabaliy*, meaning spear, a reference to the weapon (javelin) historically used to hunt wild boars.

DESCRIPTION: Javelina are not rodents, as some people believe. Although generally referred to as “New World pigs,” technically they are not pigs, either. They are best described as “pig-like.” Arizona javelina average 19-inches tall at the shoulder and 35 inches from snout to vent; weight 35 to 60 pounds. Reds (piglets or piglings) are several inches tall and about as long. Newborns weigh about one pound. Javelina hair is coarse, wiry, and variably colored, ranging from pale gray to dark brown or black. Seasonal molts affect pelage color. Reds are reddish-brown (hence the name) or tan, with a dark stripe down the middle of the back.

DISTRIBUTION: From Argentina north to Arizona, New Mexico, and Texas. In Arizona, from the southeastern corner west to Cabeza Prieta National Wildlife Refuge, north to Cataract Canyon, and along (mostly below) the

Mogollon Rim. Distribution here has increased in recent decades, perhaps in conjunction with a general warming trend in winter temperatures.

HABITAT: Sonoran or Chihuahuan desertscrub vegetation at elevations below 3,500 feet, upward through riparian canyons and semidesert grasslands to scrub oak, chaparral, and open oak-pine woodland at 4,500-6,000 feet. Sometimes occurs in other vegetation types (e.g., open pine forest edges) at higher elevations. Caves, overhangs, mine shafts, and similar cover are essential for refuge from harsh weather and cold nights. Tropical in origin and cannot tolerate cold weather, lacking the guard hairs that insulate many other mammals against the cold.

BIOLOGY: In Arizona, the javelina’s year-round breeding season peaks in January-March. Gestation lasts 145 days. Birthing peaks in June-August, with litters of one to four (average two). The precocial young move with the herd within hours of birth. Weaning occurs at six weeks. A scent gland at the base of the spine secretes a strong musky-smelling oil. Javelina have terrible eyesight, but their hearing and sense of smell are excellent.

Herds average eight to nine animals (of any age class), but may contain as many as 37. Average herd home range is about one square mile. Season (weather), availability of food and water, and presence of other herds dictate herd movements. A portion of the home range is defended against other herds. The initial herd response to danger is usually sudden flight, at speeds of up to 25 mph. Sows with reds may also retreat to cover while other herd members try to drive off a non-human predator.



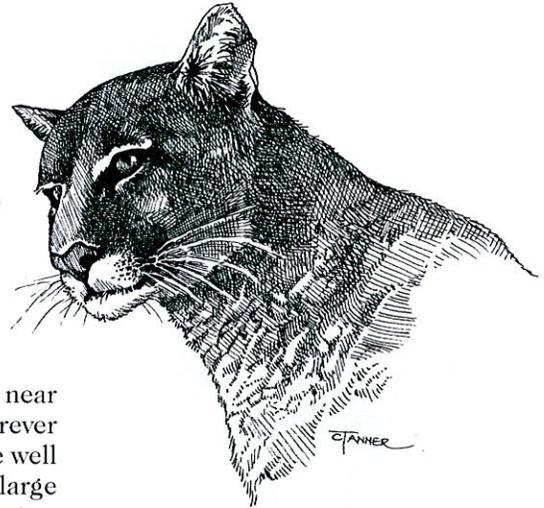
The javelina’s pig-like snout, razor-sharp canines, and powerful grinding teeth and jaws reflect the animal’s food habits. Javelina are mainly herbivorous, but may consume animal matter as it becomes available. They root for bulbs and tubers, and nibble spine-laden prickly pear cactus pads with seeming impunity. Succulent plants of any type, green grass, acorns, cactus fruits, and beans from mesquites and other leguminous shrubs and trees are also diet mainstays.

STATUS: Javelina are widespread and relatively common in Arizona. The population cycles up and down with weather patterns and occasional disease outbreaks. Statewide surveys indicate a relatively stable population subject to local changes. The javelina has never been a candidate for federal listing as threatened or endangered and is not a state species of special concern.

MANAGEMENT NEEDS: The javelina is managed as a “big game” animal in Arizona. Predation, weather, disease, and habitat condition control their numbers. Special management is sometimes needed in agricultural areas to minimize crop depredation, and in urban settings to resolve local conflicts or to provide movement corridors that connect increasingly fragmented patches of javelina habitat. 🦏

Mountain Lion

BY TERRY B. JOHNSON, NONGAME BRANCH CHIEF
ART BY CINDI TANNER



SCIENTIFIC NAME: *Felis concolor*. Genus from Latin *felis* meaning a cat. Derivation of specific epithet unclear; translates from Latin as "dwell with," perhaps an indication of its ubiquity in historical times.

DESCRIPTION: Adults 70 to 190 pounds in weight and 5.5 to 7.5 feet in length (including 1.5- to 3-foot tail). Height at shoulders 26 to 31 inches. Females smaller than males, in length and weight. Adults typically uniformly tawny to grayish overall. Dark brown to blackish along sides of nose and backs of ears. Tail tipped dark brown to black. Melanotic individuals uncommon. Kittens spotted. Eyeshine greenish gold.

DISTRIBUTION: From Southern Canada to southern South America (Patagonia). Largely eliminated from eastern U.S. Essentially statewide in Arizona, though much less common in southwestern corner. In Arizona, found from ca. 75 feet above sea level (near Yuma) to above 9,000 feet (in many areas).

HABITAT: Most commonly inhabits rocky foothills, canyons, and mountains. Known from low-elevation desert scrub to high-elevation conifer forests.

BIOLOGY: Once among the most widely distributed terrestrial mammals, the mountain lion is known by many common names, including panther, puma, and cougar. Although typically a secretive and elusive animal, by any name it is well

known in terms of biology.

Mountains lions are at or near the top of the food web wherever they occur. Their 30 teeth are well suited to tearing flesh. The large canines are especially impressive. Their prey are mainly deer and other medium to small mammals, but also include elk, desert tortoises, and a variety of other wildlife, livestock, and domestic animals. Kills are often cached (covered with scraped-up vegetation and leaf litter), with the lion returning again and again to feed. In turn, they are killed by humans (mainly) and other mountain lions, but also sometimes by wolves, bears, or even porcupine quills).

The cougar's home range can be huge. Ten or so animals may occupy 100 square miles, but individuals may overlap considerably. Wanderers may turn up almost anywhere. Dispersing individuals may move 100 miles or more from their natal grounds. Feeding areas may include 25 or more square miles.

Chiefly nocturnal, but cougars may be active at any time. They do not hibernate. They often den in caves or overhung cliffs, but may use any well-concealed spot, such as a fallen log or exposed root ball.

At 2 or 3 years of age, mountain lions are capable of breeding. They mate only briefly, not for life. After ca. 90 days of gestation, the female bears two to six kittens (usually two). Most young are born in spring to midsummer. The young stay with the female for a year,

sometimes two, as they learn to hunt. Females breed every two or three years.

STATUS: As a species the mountain lion is not endangered. In Arizona, the statewide population may exceed 3,000. Thus, it is not included on the Department's draft list of *Wildlife of Special Concern in Arizona* (AGFD in prep.), and is not listed or proposed for listing by the U.S. Fish and Wildlife Service as endangered or threatened. One putative subspecies, the Yuma puma (*Felis concolor browni*) has been considered a candidate for federal listing, but its taxonomic validity is questionable at best.

MANAGEMENT NEEDS: Its needs are few: sufficient habitat to support healthy prey populations, and sufficient wild country to afford minimal contact with humans and their livestock and domestic animals. Movement corridors between backcountry habitats are essential to gene flow, but many are increasingly becoming difficult gauntlets for transient lions to survive. Education is needed to help humans recognize the invaluable ecological role played by mountain lions. Enhanced awareness of how humans should behave in lion country is also needed. 🐾

Desert Cottontail

SCIENTIFIC NAME: *Sylvilagus audubonii*. From the Latin *sylva* meaning “woodland” and *lagos* meaning “hare.” The word *audubonii* refers to John James Audubon, an early American naturalist, hunter and wildlife artist.

DESCRIPTION: One of three cottontail species found in Arizona, this is the most abundant and widespread. Back fur typically is reddish to brownish to grayish, usually tipped with black. The belly is white. The top of the tail is black, but the underside is white; hence the name “cottontail.” Cottontails with paler back fur tend to live in drier climates. Compared to

The desert cottontail is a popular small game animal, particularly with young hunters.

its distant cousins the jackrabbits, the desert cottontail has shorter legs and smaller feet. Its hind feet are significantly larger than its front feet. It has extremely large ears, which helps to distinguish it from eastern and mountain cottontail species.

DISTRIBUTION: Desert cottontails are the most numerous and widespread cottontail in the western United States and central Mexico. They are found from northern Montana south to the State of Puebla in Mexico, and from the Dakotas, Nebraska, Kansas, Oklahoma and Texas west to California.

This rabbit is documented in every county in Arizona.

HABITAT: The desert cottontail lives in a wide variety of habitat types and elevations, but occupies more arid areas than other cottontails. In Arizona, this rabbit is probably most abundant in thick desert scrub, chaparral or pinyon-juniper stands associated with rocky cover. However, desert cottontails are common in nearly all habitats in Arizona, except in mixed-conifer forests and other habitat types above 7,500 feet in elevation. At these higher elevations, it is replaced by the smaller mountain cottontail (*Sylvilagus nuttallii*). The desert cottontail completely overlaps the range of the eastern cottontail (*Sylvilagus floridanus*) in Arizona.

BIOLOGY: Desert cottontails are extremely prolific, breeding from January to September or, in warmer localities in Arizona, year-round. They build a shallow excavated “nest” in the ground, lined with grasses and their own fur. Two or three young are born after a 28-day gestation period. Females average five litters per year, and juvenile females reach sexual maturity 80 days following birth.

Desert cottontails feed on grasses, forbs, shrubs and even acorns. Though they

can receive their moisture needs from the foods they consume, cottontails will drink free water when they find it.

Adapted to harsh desert environments, this rabbit’s physiology minimizes overheating and water loss. Large ears dissipate heat when temperatures are extreme, and a higher-than-normal lethal body temperature allows it to survive in some of the hottest locations in North America.

The abundance and density of desert cottontails can fluctuate dramatically in response to precipitation and habitat condition. Documented densities of desert cottontails range from 0.6 per acre in “bad” years to more than six rabbits per acre in favorable conditions.

Precipitation, and corresponding habitat conditions, regulate desert cottontail abundance. The list of predators that feed on cottontails is long; from snakes, hawks, owls and eagles to foxes, coyotes, bobcats, mountain lions, black bears and humans. Predation does not regulate cottontail populations; rather, predators (other than humans) are more greatly influenced by the number of rabbits.

STATUS: The desert cottontail is a popular small game animal, particularly with young hunters. In Arizona, hunters harvest around 80,000 cottontails (all species combined) a year.

MANAGEMENT NEEDS: There are no special management needs for this abundant and adaptable rabbit, so long as habitats receive protection from development. 🐾

■ Formerly the small game biologist for the Arizona Game and Fish Department and a frequent contributor to this magazine, Mark Zornes has returned to Wyoming.



Jackrabbit: Blacktailed: *Lepus californicus*
Antelope: *Lepus alleni*
Spanish name: liebre

Description: Blacktailed: A large hare with very long, black-tipped ears and long, powerful hind legs. Usually gray with a black tail and white underparts. Weight: 5-8 pounds. Antelope: A large hare with ears even larger than the blacktailed jackrabbit. Ears do not have black tips. Gray, with white underparts and white patches on the sides, which “flash” as it runs. Weight: 6-8 pounds.

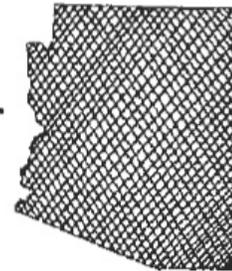
Range: Blacktailed: Statewide. Allen’s: Central one-third of southern Arizona.

Habitat: Blacktailed: Adapted to most environments of the state, but prefers open, semi-shrubby areas. Allen’s: Open grassland and desert scrub.

Niche: Both species are herbivores, preyed upon by all larger predators including hawks, eagles, and coyotes.

Life History: Jackrabbit young are born furred, in contrast to the naked cottontail young. Two young are born in each of about four litters per year.

Comments: Both jackrabbits are found in some areas of south-central Arizona.



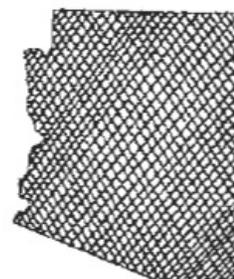
Raccoon: *Procyon lotor*

Spanish name: mapache; osito lavador

Description: A medium-sized mammal with thick, grayish-brown fur. The head is marked by a prominent black facemask. The tail is bushy with black rings. Raccoon front feet look and function like small hands.

Range: Most of the state, within range of water.

Habitat: Primarily river and stream bottoms, lakeshores, and swampy areas.



Niche: Raccoons are nocturnal omnivores, feeding largely on animal material, but readily using fruits, nuts, berries, corn, and other farm produce. Preyed upon by coyote, bobcat, lion, and great horned owl.

Life History: Litters of 2 to 7 young are usually born in spring.

Comments: One of the most adaptable animals of Arizona. Raccoons have learned to adapt to many human land uses such as farming, urbanization, and campgrounds.



Ringtail: *Bassariscus astutus*

Spanish name: cacomixtle

Description: A small, slender mammal with a small head, large ears and eyes, short legs, and a long, bushy, ringed tail. Brownish to grayish in color, pale underparts. The tail is blackish with white bands. Ringtails may reach 30 inches in length (including tail), 6 inches in height and weigh about 2 to 2 ½ pounds.

Range: Statewide

Habitat: A canyon dweller, living near water.

Niche: A small, nocturnal carnivore, which feeds on rodents, reptiles, insects, and birds. Larger predators, including the great horned owl, prey upon it.

Life History: Litters of 2-4 are born in late spring and early summer. Ringtails live up to 8 years in captivity.

Comments: Often called the “ringtailed cat” – it is not a cat, but a member of the same family as the raccoon and coati. Another common name is “miner’s cat” from its habit of taking up residence in buildings or mines, including miners’ cabins – even when occupied by the miner.

