

**ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM**

Animal Abstract

Element Code: AMAJH02010

Data Sensitive: Yes

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Panthera onca* Linnaeus
COMMON NAME: Jaguar, Blank panther, yaguar, jaguarete (Spanish)
SYNONYMS: *Felis onca*
FAMILY: Pantherinae (=Felidae)

AUTHOR, PLACE OF PUBLICATION: *Felis onca* Linnaeus, 1758: 42. *Felis onca arizonensis* Goldman, Proc. Biol. Soc. Wash. 45: 144. 1932.

TYPE LOCALITY: For Species *Panthera onca* (under *Felis onca*) “America meridionali”; restricted to Pernambuco, Brazil by Thomas (1911). For subspecies *Panthera onca arizonensis* (under *Felis onca arizonensis*), Cibecue, Navajo County, Arizona, in 1924.

TYPE SPECIMEN: Subspecies *Panthera onca arizonensis*, collected under *Felis onca arizonensis* by J. Funk in 1924, Navajo County, Arizona (USNM 244507).

TAXONOMIC UNIQUENESS: Eight subspecies are recognized (largely following Pocock, 1939, and not Cabrera, 1957) under *Panthera onca*, with *P. onca arizonensis* occurring in Arizona and New Mexico. *Panthera onca veraecrucis* is reported from Texas.

DESCRIPTION: This member of the cat family is allied with the “roaring” cats (African lion, tiger, and leopards), and is the largest cat native to the Western Hemisphere. This large heavy-bodied cat measures 3.7-4.8 ft (1.13-1.5 m) in head and body, while the tail measures 1.5-2.3 ft (0.5-0.7 m). Height at shoulder measures 2.3-2.5 ft (0.7-0.8 m), hind foot 9-12 in (22-30 cm), and weight is 150-225 lb (68-101 kg). Whitaker, Jr. (1997) reports weights of 119-300 lb (54-136 kg). Females usually are 10-20% smaller than males. There are five toes on each forefoot, the pollex or first toe is smaller and set above the others. Each hind foot has four toes, the first being represented only by a tiny vestigial metatarsal bone. Each digit including the pollex has a sharp retractile claw. Skull is robust, relatively short, broad in the rostrum (more so in males than females), and wide in the zygomatic arches, with 30 teeth (canines large). The sagittal crest may become well developed, especially in males and older individuals.

This yellowish to tawny cat is uniformly spotted with black. Horizontal rows of spots on the sides and back form rosettes, a ring of black with a small black spot in the center; belly white with black spots. Occasional individual jaguars display a completely melanistic pelage with visible rosettes. Legs, head, and tail have smaller, solid spots, usually giving way to

incomplete bands near end of the tail. Ears are small, rounded, without tufts, and black on the back with small white or buff central spots. Pelage is rather short and bristly. The black pupil is round and the iris is golden to reddish yellow. There are four mammae. The os penis is a cylindrical or conical rod that is little ossified and quite variable.

Cubs have a long, coarse, woolly pelage, pale buff in color, and heavily marked with round black spots that may have pale-colored centers. They also have black stripes on their faces at birth. They take adult coloration around 7 months of age. Cubs are about 40 cm (16 in) long at birth, with a mass of 700 to 900 g.

AIDS TO IDENTIFICATION: Mountain Lion (*Puma concolor*) is unspotted, Ocelot (*Leopardus pardalis*) is smaller, and Margay (*Felis wiedi*) is much smaller and lacks rosettes. Although the mountain lion stands taller at the shoulder, it is considerably narrower through the body and neck, and far less heavily muscled than the jaguar.

ILLUSTRATIONS: Color drawing (Burt and Grossenheider 1976: plate 8).
Color photo (Whitaker, Jr. 1997: plate 267).
Color photo (Wilson 1999)
Color photo (In http://www.gf.state.az.us/w_c/jaguar_management.shtml)
Color photo (In <http://lynx.uio.no/catfolk//onca-01.htm>)
Color photo of South America melanistic color phase (In <http://www.bigcatrescue.org/jaguar.htm>)
Line drawing of Jaguar and Leopard coat pattern (In <http://www.bigcatrescue.org/jaguar.htm>)

TOTAL RANGE: Mexico to Brazil and northern Patagonia. Very rare in the United States: southern Arizona, New Mexico and southern Texas.

RANGE WITHIN ARIZONA: Southeastern Arizona. Jaguars persisted in central Arizona as late as the early 1960's, when three were taken on the Fort Apache and San Carlos Indian Reservations. Individuals were reported from southeastern Arizona into the 1970's and 1980's. In 1996, photographs documented two individuals from the Baboquivari Mountains, Pima County, and the Peloncillo Mountains, Cochise County. Another individual was documented in 2001 and 2003 west of Nogales.

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: Pumas and jaguars are known to have overlapping ranges and little interaction; they seem to mutually avoid one another (this is not the case of jaguar and ocelot). Separation between pumas and jaguars appears to be based upon prey selection with jaguars selecting larger prey items. Their home range varies from 10 to 170 square km, with smaller ranges reported from the rain forest and larger ones from open habitats. They climb trees quite well. Jaguars have been characterized as primarily nocturnal, although radio telemetry

has shown that they are often active during the daytime, with activity peaks around dawn and dusk (IUCN-The World Conservation Union, 1996). Hunting primarily occurs at night, and on the ground. They usually catch their prey by stalking or ambush and kill it by cervical dislocation or by crushing the nasal area. They rarely kill by biting the throat or by asphyxiation as do the tiger or leopard. They sometimes move their kill to a more secluded or protected place, rarely in a tree, but usually make no attempt to hide their kill as do pumas.

Jaguars usually are solitary, except during mating or when the young are still dependent on their mothers. They are not known to migrate regularly, although lone males have been known to roam hundreds of kilometers. Local adjustments of range may take advantage of seasonal changes in habitat. Urination, scent marking, deposition of feces, and tree raking may function in communication or as territory markers.

In spite of their large size, jaguars are shy and retiring. They seldom, if ever, attack man unless cornered or at bay. In the wild, they have been reported to live as long as 11-12 years, while in captivity they have been reported to live up to over 20 years.

REPRODUCTION: The breed year-round range-wide, but at the southern and northern ends of their range there is evidence for a spring breeding season. In northern latitudes, jaguars are thought to breed from December to January. Gestation is about 100 days, with litter size ranging from 1-4 cubs (usually 2). Young are born in April-May, in dens in caves, dense brush or other heavy cover. They are covered with woolly fur, are heavily spotted at birth, and have their eyes closed. When about 6 weeks old, they are as large as house cats and begin to follow their parents about. The parent's mate at least for the season of parenthood, and both cooperate in rearing the young, although most of the burden falls on the mother. The family unit is maintained until the cubs are nearly a year old. Cubs remain with their mother for nearly 2 years. Females begin sexual activity at about 3 years of age, males at 4.

FOOD HABITS: In the U.S.-Mexico borderlands, peccaries (javelina) and deer are presumably dietary mainstays, as they are in Jalisco, Mexico. Range-wide, the list of prey taken by jaguars includes more than 85 species, such as javelina, armadillos, caimans, turtles, birds, fish, and various species of livestock.

HABITAT: These large cats are known from a variety of habitats, showing a high affinity to lowland wet habitats, typically swampy savannas or tropical rain forests. In the northern and southern periphery, they may occur in warmer, more arid habitat types, including oak-pine woodland. Unlike most cats, jaguars like water and were probably closely associated with the rivers and cienegas (marshes) once prominent in southern Arizona.

ELEVATION: Recent sightings in Arizona were recorded at 5,200 and 5,700 feet (1586 and 1739 meters).

PLANT COMMUNITY: Desert scrub to pine-oak woodland.

POPULATION TRENDS: Since 1890, more than 60 jaguars have been documented from Arizona.

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: LE (USDI, FWS 1997)
[PE USDI, FWS 1996]
[PE USDI, FWS 1994]

STATE STATUS: WSC (AGFD, WSCA In prep)
[State Endangered AGFD, TNW 1988]

OTHER STATUS: Appendix I (CITES)
Near Threatened (IUCN)

MANAGEMENT FACTORS: For jaguars to persist in Arizona, they must be protected from being killed (poaching) and they must have an adequate prey base and movement corridors from source populations in Mexico. Abundance of prey and suitable resting sites are probably more important than a particular vegetation type. The core population in western Mexico must also be sufficient to provide for dispersal into the U.S.-Mexico borderlands. As cattle ranching has spread, jaguar populations have dwindled or been locally extirpated because of hunting by ranchers or because they have lost their natural prey. The most urgent conservation issue for the jaguar throughout its range is the rancher's intolerance of them, while the second is habitat destruction.

PROTECTIVE MEASURES TAKEN: There is a Conservation Agreement between 16 entities that was implemented through a Memorandum of Agreement. The 16 include: Arizona Game and Fish Department, Arizona Department of Agriculture, Arizona State Land Department, Cochise County (AZ), Pima County (AZ), Santa Cruz County (AZ), U.S. Forest Service, Bureau of Land Management, New Mexico Department of Game and Fish, New Mexico Department of Agriculture, New Mexico State Land Office, Hidalgo Soil and Conservation District, Otero County, U.S. Department of Agriculture, and National Park Service.

As part of the Conservation Agreement, the Jaguar Conservation Team (JAGCT), which oversees the Jaguar Management Program, was created. Arizona Game and Fish Department is a member of this team and the current chair. The JAGCT is a broad-based group of agencies and individuals from state, federal, and local governments, private individuals, and other entities with an interest in jaguar conservation. Activities of the JAGCT include: a compilation of scientific literature and occurrence information; development of a handling and kill verification protocol; and description of procedures for livestock reimbursement from depredating jaguars. Members have assessed the risk to jaguars from various predator control methods, and have formed various working teams to deal with other issues related to conservation of the jaguar.

In Belize, the government aided by the WWF (World Wildlife Fund), have set aside 150 square miles of rain forest in the Cockscomb Basin Wildlife Preserve, which currently provides a protected environment for around 200 jaguars, the largest concentration of the wild cats species in the world. The WWF is also providing aid to protect some of the remaining rain forests areas of South America, which provide a refuge for the majority of the remaining jaguar population.

SUGGESTED PROJECTS: Field research, especially on habitat use and movement patterns, in Arizona, New Mexico, and Mexico is needed to provide a sound basis for management decisions.

LAND MANAGEMENT/OWNERSHIP: Bureau of Land Management; Department of Defense; National Park Service; USFS - Coronado National Forest; State Land Department; Private.

SOURCES OF FURTHER INFORMATION

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MAJOR KNOWLEDGEABLE INDIVIDUALS:

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ADDITIONAL INFORMATION:

The species name *onca*, comes from Greek for hook or barb.

The jaguar was worshiped by various South and Central American cultures such as the Aztecs, Mayas, Olmecs, Toltecs, Zaptopecs, and Nahualistics. The name jaguar is apparently borrowed from one of the Tupi-Guarani languages: it was originally “yaguara” which means “wild beast that overcomes its prey at a bound.” The Portuguese names for the jaguar are “onca verdadeira” and “onca pintada.” The Spanish name is “el tigre.”

The Borderlands Jaguar Detection Program of the Wildlife Conservation Society is designed to detect the presence of neo-tropical felids. If jaguars are to be allowed to have the chance to establish a breeding population in Southern Arizona, it is important to monitor habitat use of immigrating jaguars and other large carnivores indigenous to the area. Non-invasive methods such as camera traps, track transects and hair snares are being used. Important next steps include: conducting field surveys to monitor carnivore movement, concentrating on the basins between sky island mountain ranges in order to identify and help protect wildlife travel corridors. Seek funding to conserve or purchase critical jaguar breeding habitat, already identified in Sonora, Mexico, in order to persevere the gene pool of jaguars that migrate into Southern Arizona and New Mexico. Encourage studies that would seek out possible solutions to the illegal immigration problem along the southern border of the United States.

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