

Natural History of Jaguars



Jaguars in Arizona

The jaguar is listed as endangered throughout its range by the U.S. Fish and Wildlife Service. The Arizona Game and Fish Department (AZGFD) classifies jaguars as Endangered and a species of special concern.ⁱ

By the early 20th century, jaguars had been essentially eliminated from the U.S., targeted for removal by government agents, livestock owners and hunters.ⁱⁱ Jaguars occurred in southern Texas as recently as 1948. Records from Arizona and New Mexico from the 1900s were primarily of single animals that were killed.ⁱⁱⁱ That changed in 1996 when two different male jaguars were photographed in southwestern New Mexico and Arizona.^{iv}

The two sightings were the first of seven individual male jaguars observed in southern Arizona and New Mexico since 1996.^v Two jaguars, nicknamed Macho B and El Jefe, gained significant media attention after being photographed multiple times in southern Arizona.

The recent sightings indicate that jaguars are beginning to recolonize their historic U.S. habitat. Protecting these wild cats and their contiguous habitat between the U.S. and Mexico is critical now more than ever to ensure the re-establishment of their populations in Arizona.

Physical characteristics

The jaguar is the largest wild cat in the Western Hemisphere and the third largest in the world as well as the only cat in North America that roars.^{vi} Their size varies widely and can measure 3.7 to 4.8 feet in head and body, while the tail measures 1.5 to 2.3 feet when fully grown.^{vii} Adult jaguars have robust, muscular build and can weigh between 119 and 300 pounds.^{viii} Females are usually 10-20% smaller than males.

The jaguar's background color varies from buff-gray, yellow, cinnamon and tawny-orange, with white or cream underparts.^{ix} The body is covered with large, block-like markings or rosettes that usually enclose smaller black spots. The lower limbs and underparts are covered in large black spots and blotches. The ears are small and rounded, with black on the back and small white or buff central spots.^x

Melanism is a dominant, inherited trait that occurs in some jaguars, with black individuals most common in humid lowland rainforest.^{xi} The same pattern of rosettes can be visible in light.

Jaguar kittens have long, coarse, woolly fur that is pale buff in color and heavily marked with round, black spots with pale-colored centers. They also have black stripes on their faces at birth. Kittens take adult coloration around seven months of age.^{xii}

Jaguars in the wild typically live to be no more than 15-16 years old.^{xiii}

Habitat & range

Jaguars can be found in a variety of forested and wooded habitats but show 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 wooded grasslands and oak-pine woodland.^{xiv} Jaguars also occur in dense scrubland and woodland associated with watercourses and mountainous terrain.

Jaguars tend to avoid open areas with poor cover as well as agricultural land or other human-modified habitats.^{xv} They typically occupy altitudes from sea level to more than 8,000 feet.^{xvi}

In Arizona and New Mexico, jaguars typically occur in habitats ranging from desert grassland to montane-conifer forest. Unlike most cats, jaguars like water and were probably closely associated with the rivers and cienegas (marshes) once prominent in southern Arizona.^{xvii}

Home range: A jaguar's home range is a fixed area that includes necessary resources for life, such as hunting opportunities and denning sites where mothers can rear their kittens.^{xviii}

Male and female jaguars establish home ranges, with male ranges being larger than those of female jaguars. Home range size varies widely and largely depends on habitat type and prey availability. Studies have documented numerous ranges, from 30 to 47 km² (approx. 12 to 18 square miles) in Venezuela and Brazil to 1291 km²

(approx. 499 square miles) in Paraguay.^{xxix} A male jaguar in Arizona used 1,359 km² (approx. 525 square miles) from 2004-2007.^{xx}

While jaguars are solitary cats, their home ranges can have significant overlap with both sexes.^{xxi} This leads to multiple interactions between these territorial cats. Even so, aggressive interactions between adults are rare.^{xxii} Density estimates vary widely, from 1 to 11 jaguars per 100km².^{xxiii}

Geographic range: Jaguars exist in 18 countries in Latin America, from Mexico to Argentina. They are primarily distributed in northern and central South America east of the Andes, from the northern Andes in Columbia to the Brazilian highlands (Fig. 1).^{xxiv}

Despite their broad range, jaguars have been eradicated from at least 40 percent of their historic range and are extinct in Uruguay and El Salvador. While the rare individual has been spotted in the US, there has not been evidence of a breeding population in the US in more than 50 years.^{xxv}

In the mid-1800s, the jaguar's distribution extended from southern Brazil and Argentina north throughout South America and Central America, and along the coasts and the western mountains of Mexico into the southwestern U.S. as far north as the Grand Canyon.^{xxvi} Historical records in the U.S. extended much further. Today, the northern-most known population of jaguars is centered about 140 miles south of the U.S.-Mexico border, in Sonora. Any jaguars that occur in the U.S. borderlands almost certainly belong to that population.

Prey types & hunting methods

Jaguars have a diverse diet with at least 85 recorded prey species. They prefer large-bodied prey but the natural absence of large deer herds and wild cattle in South America often results in the hunting of smaller animals.^{xxvii} Capybara and peccaries (javelina) are frequently the most important prey species where they occur. Reptiles also make up a large part of their diet, especially caimans and iguanas, freshwater turtles and tortoises, nesting marine turtles and large boas including anacondas.

Jaguars along the U.S.-Mexico border eat a wide variety of prey, including white-tailed deer, coatis, javelina and desert tortoises.^{xxviii}

Jaguars will prey on domestic livestock, including cattle and horses, and, rarely, pets. Jaguar attacks on humans result from extreme provocation. Verified, unprovoked attacks are extremely unusual.^{xxix}

Figure 1: Current jaguar range



Jaguars hunt at night, dawn and dusk. They can hunt both on the ground and in water. They usually catch their prey by stalking or ambush. Jaguars have the strongest bite force proportionally compared to all big cats and kill either by crushing the back of the skull or with a suffocating throat bite.^{xxx} They often scavenge, including from cattle carcasses, but are often mistakenly blamed for the death of the cattle.^{xxxi}

Jaguars occasionally move their kill to a more secluded or protected place, rarely in a tree, but usually make no attempt to hide (cache) their kills like mountain lions do.^{xxxii}

Rearing of young

Jaguars breed year-round across their range and reproduction is not limited to a particular season.^{xxxiii} Gestation lasts for about 100 days, with litter size ranging from 1-4 cubs (usually 2). Young are born in dens and caves, dense brush or other heavy cover. Weaning begins at around 10

weeks and suckling typically ceases by four to five months. Kittens become independent at 16-24 months.^{xxxiv}

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 kittens are nearly one-year old. Kittens remain dependent for nearly two years. Females begin sexual activity at about three years of age, males at four.^{xxxv}

Dispersal is poorly known but it appears that, like mountain lions and other wild cats, females settle close to their natal range while males disperse more widely.^{xxxvi}

Threats to survival

Habitat conversion for forestry, livestock and agriculture is the main threat to the species. Trophy hunting of jaguars is illegal through its range, although Jaguars may be accidentally trapped or chased by hunting hounds.^{xxxvii} Illegal killing, primarily from intense persecution by ranchers, continues to be a major threat throughout much of the jaguar's range.^{xxxviii}

In Arizona, large-scale human development, such as mining projects, will increasingly destroy and fragment jaguars' essential habitat and threaten their persistence.^{xxxix}

As human development increases, jaguar habitats are lost or fragmented, isolating populations and jeopardizing genetic integrity of the species. Additionally, lack of natural prey, like deer and peccaries, due to overhunting by humans, contributes to population declines and forces jaguars to prey on domestic animals, further fueling human-jaguar conflict.^{xl}

For jaguars to thrive or even to persist in Arizona, they must be protected from human-caused mortalities. They must also have an adequate prey base, access to large, suitable habitat and movement corridors to connect with source populations in northern Mexico.^{xli} Models indicate that roughly half of Arizona and New Mexico could support jaguars, if that habitat is protected and conserved.^{xlii}

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