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, 1758)
COMMON NAME: Jaguar

SYNONYMS: *Felis onca*
OTHER COMMON NAMES: Blank Panther
Yaguar (Spanish)
Jaguarete (Spanish)
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: Pernambuco, Brazil

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

TAXONOMIC UNIQUENESS: The Jaguar is the only extant member of the genus *Panthera* in the western hemisphere. Nine subspecies formerly recognized (Wilson and Reeder 2005), with *P. onca arizonensis* occurring in Arizona and New Mexico (Hoffmeister 1986). However, molecular genetic analyses have revealed that subspecies recognition is not be warranted (Eizirik et al. 2001, Culver and Ochoa Hein 2016) and subspecies are no longer considered valid (ITIS 2024).

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) (Seymour 1989). Whitaker, Jr. (1997) reports weights of 119–300 lb (54–136 kg). Females usually are 10–20% smaller than males. The massive limbs are relatively short, and the body is deep-chested. 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 saggital crest may become well developed, especially in males and older individuals (Seymour 1989).

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 (Hoffmeister 1986, Seymour 1989). Occasional individual jaguars display a completely melanistic pelage with visible rosettes. These melanistic individuals are known primarily from the southern part of the range (U.S. Fish and Wildlife Service 2018). 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 (Seymour 1989).

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 700–900 g (Seymour 1989).

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 (Hofmeister 1986, Seymour 1989).

ILLUSTRATIONS: Color drawing (Burt and Grossenheider 1976: plate 8).
Black and white photo (Hoffmeister 1986)
Color photo (Whitaker, Jr. 1997: plate 267).
Color photo (Wilson and Ruff 1999)

TOTAL RANGE: Range extends from the southwestern United States to northern Argentina. Historically, the Jaguar occurred in 21 countries; the species now occurs in 19 countries, as they are believed to be extirpated from El Salvador and Uruguay (U.S. Fish and Wildlife Service 2018). Jaguars are estimated to occupy 51% of their historical range (Quigley et al. 2017, Jędrzejewski et al. 2018). The majority of Jaguars are concentrated in the Amazon Basin, with populations outside this area tending to be small and fragmented (U.S. Fish and Wildlife Service 2018). In the United States, historical records exist from southern California, Arizona, New Mexico, Texas, and possibly Louisiana (U.S. Fish and Wildlife Service 1997). Currently, Jaguars in the United States are only known in small numbers from south-central Arizona to extreme southwestern New Mexico.

RANGE WITHIN ARIZONA: Southeastern Arizona. Jaguars have been documented as far north as the Grand Canyon, and persisted in central Arizona as late as the early 1960's, when three were taken on the Fort Apache and San Carlos Indian Reservations. All occurrences since have been limited to southeastern Arizona. Since 1996 six, possibly seven, individual Jaguars have been documented in the U.S., in the Atascosa, Baboquivari, Chiricahua, Dos Cabezas,

Huachuca, Peloncillo, Santa Rita, and Whetstone Mountains in Cochise, Pima, and Santa Cruz Counties.

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: Pumas and Jaguars coexist throughout much of their ranges. Núñez et al. (2000) found that there was a high degree of overlap between diets of both species, but Pumas exhibited a broader food niche. Cascelli de Azevedo (2008) found that jaguars consumed less diverse and larger prey items than Pumas, while Hernandez-SaintMartin et al. (2013) reported that temporal segregation allowed coexistence of Puma and Jaguars. Jaguar home ranges vary from 10 to 959 square km, with smaller ranges reported from the rain forest and larger ones from open habitats (Hernandez-Santin 2007). In Arizona, home ranges have been estimated at 90 square km and 1359 square km (McCain and Childs 2008, Culver 2016). Jaguars have been characterized as primarily nocturnal, although more recent studies show evidence for crepuscular or cathemeral activity patterns negatively correlated with human and prey activity (Hernandez-SaintMartin et al. 2013, Núñez Pérez 2014). Hunting primarily occurs at night, and on the ground. They usually catch their prey by ambush or stalking and kill it by cervical dislocation or by crushing the nasal area (Hoffmeister 1986). 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 (Seymour 1989).

Jaguars usually are solitary, except during mating or when the young are still dependent on their mothers (Seymour 1989). 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 (Seymour 1989).

In spite of their large size, Jaguars are shy and retiring. They seldom, if ever, attack man unless cornered or at bay. A wild male in Arizona was documented to be at least 15 years old, while two wild females in Jalisco were documented to be at least 12 and 13 years old (Johnson et al. 2011, U.S. Fish and Wildlife Service 2018). Therefore, the lifespan of the jaguar in the wild is estimated at 10–15 years (in captivity they have been reported to live up to over 20 years).

REPRODUCTION: Jaguars breed year-round range-wide, but tend to breed seasonally at the southern and northern ends of their range (Seymour 1989). In northern latitudes, Jaguars are thought to breed from December to January. Gestation is 101 days on average, 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 (Seymour 1989). 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 (Seymour 1989).

FOOD HABITS: In the U.S.-Mexico borderlands, peccaries (javelina) and deer are presumably dietary mainstays, though other available prey such as coatis and livestock are likely also taken (U.S. Fish and Wildlife Service 1997). In the northern most breeding population of jaguars in northeastern Sonora, Rosas-Rosas (2006) found that cattle made up 57% of diet biomass followed by white-tailed deer (23%) and collared peccary (5%). 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 (Seymour 1989).

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 (Seymour 1989). In the northern and southern periphery, they may occur in warmer, more arid habitat types, including oak-pine woodland. Jaguars prefer habitats associated with water, and may have been associated with the rivers and cienegas (marshes) once prominent in southern Arizona.

ELEVATION: Jaguars occur at elevations below 3000 meters (Quigley et al. 2017).

PLANT COMMUNITY: In northwestern Mexico and southwestern U.S jaguars have been documented in; thornscrub, desertscrub, chaparral, semidesert grassland, Madrean evergreen woodland, deciduous forest, and conifer forest (U.S. Fish and Wildlife Service 2018).

POPULATION TRENDS: Decreasing throughout range (Quigley et al. 2017). Decreasing in Arizona. No female jaguars have been detected in Arizona since 1963, and no cubs have been observed since 1910 (U.S. Fish and Wildlife Service 2018).

SPECIES PROTECTION AND CONSERVATION

Status definitions: https://bit.ly/hdms-status-definitions
Heritage Network Conservation Status Rank definitions: https://bit.ly/hdms-rank-definitions

ENDANGERED SPECIES ACT STATUS:	LE (USDI, FWS 1997) with CH.
STATE STATUS:	1 (AZGFD, AWCS 2022)
HERITAGE NETWORK STATUS:	G4 S1
OTHER STATUS:	P, Determined Endangered in Mexico (Secretaría de Medio Ambiente 2010) Near Threatened (IUCN, Quigley et al. 2017) Appendix I (CITES)

PREVIOUS STATUS

ENDANGERED SPECIES ACT STATUS: PE (USDI, FWS 1994)
STATE STATUS: 1A (AZGFD, SWAP 2012)
Endangered, as *Felis onca* (AZGFD, WSCA 1996 in prep)
Endangered, as *Felis onca* (AGFD, TNW 1988)

OTHER STATUS:

MANAGEMENT FACTORS: Establishment of a jaguar population in Arizona depends on three basic aspects, according to population modeling by Miller (2013):

1) a demographically robust core source population in Sonora,
2) suitable habitat in northern Sonora to maintain jaguars in the long-term and provide dispersal corridors to the border, and
3) a permeable border between Mexico and the U.S. which allows international dispersal.

The U.S. portion of the Borderlands Secondary Area has a low probability of population establishment without directed attention to improving these limiting factors.

Range wide habitat destruction, modification, and fragmentation are one of the two most significant threats to the jaguar (U.S. Fish and Wildlife Service 2018). Habitat loss and fragmentation is directly correlated to many other threats facing jaguars, such as genetic connectivity loss among populations, small and isolated populations which are more vulnerable to human persecution, decreased prey density which can lead to lower carrying capacity and/or increased interactions between jaguars and livestock. The other most significant threat to jaguars south of the U.S. border is illegal killing. Jaguars are killed both for illegal trade and in human-wildlife conflict situations. Despite protective legislation, jaguars are frequently shot on sight due to livestock depredation, competition with humans for prey, and/or fear (Nowell and Jackson 1996). Other threats include roads and highways, human-wildlife conflicts, fire, deforestation, human population growth, illegal and legal overharvesting of prey species, border issues (border fence, illegal activity, and law enforcement activity), loss of genetic diversity, and climate change (U.S. Fish and Wildlife Service 2018).

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: In the United States, Critical Habitat for the jaguar is designated in six critical habitat unites in the United States, of which five occur in Arizona:

1. Unit 1, Baboquivari Unit, approximately 25,549 ha in the Baboquivari Mountains;

2. Unit 2, Atascosa Unit, approximately 58,624 ha in the Tumacacori, Atascosa, and Pajarito Mountains;
3. Unit 3, Patagonia Unit, approximately 121,164 ha in the Santa Rita, Patagonia, and Huachuca Mountains, and in the Canelo Hills
4. Unit 4, Whetstone Unit, approximately 33,003 ha in the Whetstone Mountains, including connections to the Santa Rita and Huachuca Mountains.
5. Unit 5, Peloncillo Unit, approximately 20,699 ha in the Peloncillo Mountains (Arizona and New Mexico)

Critical habitat carries consultative requirements in the U.S. under section 7 of the ESA with regard to adverse modification.

On 5/30/2024, The U.S. Fish and Wildlife Service published a final rule removing 64,797 acres of the jaguar critical habitat designation in compliance with a court ruling vacating portions of the designation (U.S. Fish and Wildlife Service 2024a). The remaining critical habitat acreage is approximately 640,124 acres in Pima, Santa Cruz, and Cochise counties. The final rule is in response to a lawsuit challenging the 2014 designation and the revision took effect immediately when filed by the Arizona District Court on Aug. 11, 2023 (U.S. Fish and Wildlife Service 2024b).

The Jaguar Conservation Agreement between 16 entities that was implemented through a Memorandum of Agreement. The 16 include: Arizona Game and Fish Department (AZGFD), 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. The AZGFD, NMDGF, and USFWS are the lead agency signatories. The original Conservation Assessment and Strategy was replaced with a revised Jaguar Conservation Assessment for Jaguars in Arizona, New Mexico, and northwestern Mexico, which was finalized in January 2011.

As part of the Conservation Agreement, the Jaguar Conservation Team (JAGCT), which overseas the Jaguar Management Program, was created. This team has made several conservation-related accomplishments, including; collaboration with Mexico on jaguar conservation, a jaguar-based educational curriculum for local schools, a jaguar detection project, a system for evaluating and archiving siting reports, evaluations of present and historical habitat, a rural outreach program, and public forums. Activity has virtually ceased since February 2009, due to legal and other proceedings following the death of a jaguar captured by an AZGFD contractor in south-central Arizona, though the AZGFD intends to reconvene in the near future.

In 2010, the USFW convened the binational Jaguar Recovery Team to develop a Jaguar Recovery Plan and to guide and implement jaguar recovery. The Jaguar Recovery Plan was finalized July 2018 (U.S. Fish and Wildlife Service 2018).

In 2011, U.S. Customs and Border Protection provided funding to the USFWS to implement jaguar monitoring and recovery efforts in the U.S. to help offset effects of border security on the jaguar.

Such a small portion of the jaguar's range occurs in the U.S. that it is anticipated recovery of the species will rely primarily on actions that occur outside of the U.S. Range-wide conservation efforts have included the 2009 International Jaguar Symposium, The Jaguar Corridor Initiative developed by the organization Panthera, the Atlantic Forest Biodiversity Vision developed by Paraguay, Brazil, and Argentina, programs funded by the USFWS's Wildlife Without Borders Latin American and the Caribbean program, and Mexico has instigated extensive land conservation, public outreach, and surveying efforts. 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.

Range-wide, the status and conservation needs of the jaguar need to be assessed; Genetic fitness must be assessed and maintained or improved; Native prey populations must be assessed and maintained or improved; Quantity, quality, and connectivity of habitat must be protected, restored, and assessed; Effects of expanding human development must be minimized and mitigated; Direct human-caused mortality of jaguars must be minimized, long-term conservation must be ensured through funding, public education and outreach, and partnerships, and; Recovery must be monitored and recovery tasks revised in accordance with adaptive management practices.

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

REFERENCES:

Arizona Game and Fish Department. 1988. Threatened native wildlife in Arizona. Arizona Game and Fish Department Publication. Phoenix, Arizona. 32 pages.

Arizona Game and Fish Department. 1996, in prep. Wildlife of special concern in Arizona. Arizona Game and Fish Department Publication. Phoenix, Arizona. 32 pages.

Arizona Game and Fish Department. 2012. Arizona's State Wildlife Action Plan 2012-2022. Arizona Game and Fish Department, Phoenix, Arizona. 233 pages.

Arizona Game and Fish Department. 2022. Arizona Wildlife Conservation Strategy: 2022-2032. Arizona Game and Fish Department, Phoenix, Arizona. 378 pages.

Burt, W.H. and R.P. Grossenheider. 1976. A field guide to the Mammals: North America north of Mexico, 3rd ed. Houghton Mifflin Company. New York. pp. 77-79, plate 8.

Cascelli de Azevedo, F. C. 2008. Food habits and livestock depredation of sympatric jaguars and pumas in the Iguaçu National Park Area, South Brazil. Biotropica 40:494-500. https://doi.org/10.1111/j.1744-7429.2008.00404.x

Culver, M. 2016. Jaguar surveying and monitoring in the United States (ver. 1.1, November 2016): U.S. Geological Survey Open-File Report 2016–1095, 228 pp. Available at: http://dx.doi.org/10.3133/ofr20161095. Accessed April 26, 2018.

Culver, M., and A. Ochoa Hein. 2016. Jaguar taxonomy and genetic diversity for southern Arizona, United States, and Sonora, Mexico: U.S. Geological Survey Open-File Report 2016-1109, 20 pp. Available at: http://dx.doi.org/10.3133/ofr20161109.

Eizirik, E., J. H. Kim, M. Menotti-Raymond, P. G. Crawshaw, S. J. O'Brien, and W. E. Johnson. 2001. Phylogeography, population history and conservation genetics of jaguars (*Panthera onca*, Mammalia, Felidae). Molecular Ecology 10:65-79. https://doi.org/10.1046/j.1365-294X.2001.01144.x

Goldman, E.A. 1932. The jaguars of North America. Proceedings of the Biological Society. of Washington. 45:143-146.

Hernandez-Santin, L. 2007. Movements and range sizes of jaguars in Paraguay based on GPS telemetry. MS Thesis. Sul Ross State University, Texas. 125 pages.

Hernández-SaintMartín, A. D., O. C. Rosas-Rosas, J. Palacio-Núñez, L. A. Tarango-Arámbula, F. Clemente-Sánchez, and A. Hoogesteijn-Reúl. 2013. Activity patterns of jaguar, puma and their potential prey in San Luis Potosí, México. Acta Zoológica Mexicana 29(3):520-533.

Hoffmeister, D. F. 1986. Mammals of Arizona. The University of Arizona Press, Tucson, Arizona. 602 pages.

Integrated Taxonomic Information System. 2024. The Integrated Taxonomic Information System (ITIS) on-line database, 13 August 2024 version. https://www.itis.gov, CC0, https://doi.org/10.5066/F7KH0KBK

Jędrzejewski, W., H. S. Robinson, M. Abarca, K. A. Zeller, G. Velasquez, E. A. D. Paemelaere, J. F. Goldberg, E. Payan, R. Hoogesteijn, E. O. Boede, K. Schmidt, M. Lampo, A. L. Viloria, R. Carreño, N. Robinson, P. M. Lukacs, J. J. Nowak, R. Salom-Pérez, F. Castañeda, V. Boron, and H. Quigley. 2018. Estimating large carnivore populations at global scale based on spatial predictions of density and distribution – Application to the jaguar (Panthera onca). PLoS ONE 13(3): e0194719. https://doi.org/10.1371/journal.pone.0194719

Johnson, T. B., W. E. Van Pelt, and J. N. Stuart. 2011. Jaguar conservation assessment for Arizona, New Mexico and Northern Mexico. Nongame and Endangered Wildlife Program, Arizona Game and Fish Department, Phoenix. 81 pages.

McCain, E. B., and J. L. Childs. 2008. Evidence of resident jaguars (*Panthera onca*) in the southwestern United States and the implications for conservation. Journal of Mammalogy 89(1):1-10. https://doi.org/10.1644/07-MAMM-F-268.1

Miller, P. S. 2013. Population viability analysis for the Jaguar (*Panthera onca*) in the Northwestern Range. Final report. U.S. Fish and Wildlife Service, Tucson, Arizona.

Nowell, K. and P. Jackson. 1996. Wild cats. Status survey and conservation action plan. IUCN/SSC Cat Specialist Group, Gland, Switzerland and Cambridge, United Kingdom. 383 pages.

Núñez, R., B. Miller, and F. Lindzey. 2000. Food habits of jaguars and pumas in Jalisco, Mexico. Journal of Zoology 252:373-379. https://doi.org/10.1111/j.1469-7998.2000.tb00632.x

Núñez Pérez, R. 2014. Efecto de la actividad antropogénica en la abundancia y comportamiento del jaguar (*Panthera onca*, Linnaeus 1758) en la costa de Jalisco, México. Doctoral Thesis, Universidad Nacional Autónoma de México, México, D.F. 179 pages.

Quigley, H. B., and P. G. Crawshaw, Jr. 1992. A conservation plan for the jaguar *Panthera onca* in the Pantanal region of Brazil. Biological Conservation 61:149-157.

Quigley, H., Foster, R., Petracca, L., Payan, E., Salom, R. & Harmsen, B. 2017. *Panthera onca* (errata version published in 2018). The IUCN Red List of Threatened Species 2017: e.T15953A123791436. https://dx.doi.org/10.2305/IUCN.UK.2017-3.RLTS.T15953A50658693.en. Accessed on 12 November 2024.

Rosas-Rosas, O. C. 2006. Ecological status and conservation of jaguars *(Panthera onca*) in northeastern Sonora, Mexico. PhD dissertation. New Mexico State University, Las Cruces,New Mexico.

Secretaría de Medio Ambiente y Recursos Naturales. 2010. NORMA Oficial Mexicana NOM-059-SEMARNAT-2010, Protección ambiental-Especies nativas de México de flora y fauna silvestres-Categorías de riesgo y especificaciones para su inclusión, exclusión o cambio-Lista de especies en riesgo.

Seymour, K. L. 1989. *Panthera onca*. Mammalian Species 340:1-9. https://doi.org/10.2307/3504096

USDI, Fish and Wildlife Service. 1994. Endangered and threatened wildlife and plants; proposed endangered status for the jaguar in the United States; proposed rule. Federal Register 59(133):35674-35679.

USDI, Fish and Wildlife Service. 1997. Endangered and threatened wildlife and plants: final rule to extend endangered status for the jaguar in the United States, final rule. Federal Register 62(140): 39147-39157.

USDI, Fish and Wildlife Service. 2018. Jaguar recovery plan (*Panthera onca*). Region 2, Southwest Region. Albuquerque, New Mexico.

USDI, Fish and Wildlife Service. 2024a. Endangered and threatened wildlife and plants; revision of the critical habitat designation for the jaguar in compliance with a court order; final rule. Federal Register 89:46822-46824.

USDI, Fish and Wildlife Service. 2024b. U.S. Fish and Wildlife Service finalizes revisions to jaguar critical habitat in Arizona. FWS.gov. https://www.fws.gov/press-release/2024-05/service-finalizes-revisions-jaguar-critical-habitat arizona#:~:text=%E2%80%93%20The%20U.S.%20Fish%20and%20Wildlife,Santa%20Cruz%2C%20and%20Cochise%20counties.>. Accessed 12 Nov 2024.

Whitaker, Jr., J.O. 1996. National Audubon Society field guide to North American mammals. Alfred A. Knopf. New York. p. 798, plate 267.

Wilson, D. E. and D. M. Reeder, editors. 2005. Mammal species of the world: a taxonomic and geographic reference. Third edition. The Johns Hopkins University Press, Baltimore, Maryland. Two volumes. 2,142 pages. Available online at: https://www.departments.bucknell.edu/biology/resources/msw3/

Wilson, D.E. & S. Ruff. 1999. The Smithsonian book of North American mammals. Smithsonian Institution Press. Washington D.C. 750 pages.

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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."

Revised: 1999-06-30 (SMS)
2004-06-11 (AMS)
2004-06-15 (BVP)
2020-10-09 (KSL)
2023-03-12 (MBL)
2024-11-12 (CPS)