

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

Animal Abstract

Element Code: AMAJH01030

Data Sensitivity: Yes

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Leopardus pardalis*
COMMON NAME: Ocelot, Ocelote, Tigrillo, Painted leopard
SYNONYMS: *Felis pardalis*
FAMILY: Felidae

AUTHOR, PLACE OF PUBLICATION: 1758. Linnaeus, Syst. nat., ed. 10, 1:42. (*F. p. sonoriensis* 1925. Goldman, Jour. Mamm., 24:378, August 17).

TYPE LOCALITY: State of Veracruz (by restriction, J.A. Allen, Bull. Amer. Mus. Nat. Hist., 41:345, October 3, 1919). *F. p. sonoriensis*: type from Camoa, 800 ft., Rio Mayo, Sonora.

TYPE SPECIMEN:

TAXONOMIC UNIQUENESS: *Leopardus pardalis* is one of five species in genus *Leopardus*, which occurs or is thought to have once occurred in Arizona. *Leopardus pardalis* contains five subspecies, with *L. p. sonoriensis* reported in Arizona and Sonora Mexico, and *L. p. albescens* in Texas and eastern Mexico.

DESCRIPTION: A medium-sized slim cat, with body dimensions similar to a bobcat. The tail is about one-half the length of the head and body, and females are slightly smaller than males. In total length males range from 95.0 – 136.7 cm (37.4-53.82 in), females 92.0 – 120.9 cm (36.22-47.60 in); length of tail for males 28.0 – 40.0 cm (11.02-15.75 in), females 27.0 – 37.1 cm (10.63-14.60 in); weight for males 7.0 – 14.5 kg (15.43-31.96 lb), females 7.0 – 10.8 kg (15.43-23.81 lb). (Wilson & Ruff, 1999). The spots on this long tail cat do not have the rosettes of the Jaguar (*Panthera onca*). Ground colors of the upper pelage are grayish (subtle) to cinnamon brown. Dark markings form chain-like streaks, considered black-bordered elongated spots or nearly stripes than spots, running obliquely down sides. The head has small black spots and two black stripes on each cheek, and 4-5 parallel black stripes on neck. The backs of the rounded ears are black with a white central spot. Ground color of sides paler than dorsum, and under-parts and inner surfaces of limbs whitish; tail above marked with dark bars and blotches. Eye-shine is golden. The skull is similar to that of the bobcat but larger. Skull with elongated brainbox and prominent sagittal crest. The braincase is narrow across postorbital constriction, and the nasals long; skull has 30 teeth. They have 4 mammae.

Cahalane (1961) states that “no ocelot is exactly like another.” The color of different individuals of one species, even in the same neighborhood, varies greatly, all the way from

ruddy yellow to grayish. No coat patterns are exactly alike. One side of an ocelot does not match its other side. The lines, spots and rings run in a crazy pattern.”

AIDS TO IDENTIFICATION: Jaguar (*P. onca*) is much larger than *L. pardalis*, and marked almost entirely with rosettes. The ocelot is comparable in size to the Bobcat (*Lynx rufus*), but it is easily distinguished by its long tail and grayish or tawny coat covered with numerous dark spots and streaks. Their tracks are similar, but slightly larger and wider than the Bobcat’s, about 2-2.5 in (5.0-6.2 cm) long, equally wide and with forefoot larger than hind foot. The other spotted cat found in North America north of Costa Rica is the Margay (*Leopardus wiedii*). The Margay is smaller, roughly half the size of the Ocelot, has longer tail, longer than hind leg, and lacks the two prominent black check stripes. (Wilson & Ruff, 1999).

ILLUSTRATIONS:

Color drawing (Burt and Grossenheider, 1976: plate 8)

Color photo (Whitaker, Jr., 1996: plate 268)

Color photo (*in* Wilson & Ruff, 1999: p. 229)

Color photos, multiple photographers © (*in* IUCN-The World Conservation Union, 1996; Accessed 2004)

Color photo (adult ©Tom Smylie USFWS, and kittens © Linda Laack USFWS; *in* Texas Parks & Wildlife web species account, accessed 6/30/1999 & 01/14/2011).

TOTAL RANGE: Listed endangered throughout its range in the western hemisphere, where it ranges from southern Texas and southern Arizona, through Central and South America into northern Argentina and Uruguay. (U.S. Fish and Wildlife Service, 2010). On the fringes of its range, they occupy a very limited region in both the United States (remnant populations in southern Texas, and transient populations in southeastern Arizona) and Argentina.

Historically, they ranged from Arkansas to Arizona south to Paraguay, Uruguay, and northern Argentina. This included eastern, central, and southern Texas, and possibly Louisiana. In USFWS (2010), “Fossils of ocelots have been reported from the U.S., primarily in California, Arizona, and Florida (Navarro-Lopez 1985)...There are no fossil records for Texas, but ocelot probably occurred there in prehistoric times and may have ranged over much of the southern U.S. (Navarro-Lopez 1985).”

RANGE WITHIN ARIZONA: At one time thought to be extirpated from the state, (Southeastern Arizona [Pima, Santa Cruz, and Cochise counties]). *L. pardalis* was recently documented in southeastern Arizona, from a photograph taken in Cochise County. In April of 2010, a specimen found DOR along highway 60 between Superior and Globe was collected, sent to Oregon for DNA testing, and determined to be a wild adult Ocelot. On February 8, 2011, a young healthy male was treed on a local ranch in the Huachuca Mountains. Photos were taken and the cat was allowed to leave the area.

In 1985, Brown (*in* Harwell and Siminski 1986 draft) believed that the ocelot may be repeating the northward expansion of the javelina, coati-mundi, and other neo-tropical

invaders into the San Pedro River Valley, Arizona. There may be a good possibility with the establishment of the TNC (The Nature Conservancy) San Pedro River Preserve, and the BLM (Bureau of Land Management) San Pedro River Natural Conservation Area that this is occurring. Both these management areas occur east of the Huachuca Mountains.

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: Ocelots are generally nocturnal, though it is not uncommon to see them during the day. They spend their days lying quietly in the branches of large trees and come out to hunt after dark. Though normally solitary, they frequently travel and hunt in pairs, probably as mates, maintaining contact and signaling each other with cries like those of domestic cats. Ocelots are good climbers and inhabit forested or brushy areas. They swim well, and often hunt along streams.

Texas studies suggest home ranges of about one square mile, although this may vary due to prey abundance. Wilson & Ruff (1999) report male territories of 4-18 square km, varying in size by habitat and season. Females occupy a smaller home range of 2-11 square km within the territory of a single male, though one or more females often occupy a single male's territory. Because of their mild manner, they are easily trapped or shot, and therefore is the most frequently hunted cat in Latin America.

REPRODUCTION: Minimum breeding age for females estimated to vary from 10 to 11 months in captives, to 18 months in captive and wild ocelots. Seasonality of breeding not known, but newborn kittens has been reported from every month of the year (Wilson & Ruff, 1999). It is thought that most births occur in September through January. Gestation averages 70-80 days, with 1-2 young born (3 exceptionally), fully furred with eyes closed. The natal den is usually a bare area in a dense thicket, though dens in caves, logs, and hollow trees have been reported. The female raises her young without any help from the male. When young are about two months old, they begin to accompany the mother on hunting forays. They remain dependent on her for meals for several months. Off spring remain on the mother's home range for the first years. At this time, young males disperse, probably forced out by the resident adult male. Females linger on and may settle on a portion of the mother's home range or on a neighboring site after reaching sexual maturity at 15-22 months. (Wilson & Ruff, 1999).

FOOD HABITS: Diet changes with the season throughout its range, but consists of a wide variety of small vertebrates and large invertebrates. Prey items include mammals, birds, reptiles, amphibians, fish, insects, and land crabs. Rodents are generally the principal food item. (Wilson & Ruff, 1999). They are known to eat armadillos, lesser anteaters, squirrel monkeys, and land tortoises. Ocelots hunt both on the ground and in trees, sometimes even catching birds perched in trees.

HABITAT: A habitat specialist that lives in areas of dense cover or vegetation, and high prey populations (Sunquist 2002, in USFWS 2010), avoiding open country. This suggests its use

of a narrow range of microhabitats. In Arizona and Sonora, little is known about ocelot habitat use. Lopez Gonzalez et al. (2003) found 27 of the 36 records (75%) of ocelots in Sonora were associated with tropical or subtropical habitat, namely subtropical thornscrub, tropical deciduous forest, and tropical thornscrub. Only males (11.1% of the total records) were recorded in temperate oak and pine-oak woodland. In south Texas, the species occurs predominantly in dense thornscrub communities (Navarro-Lopez 1985, Tewes 1986, Laack 1991; all in USFWS 2010). Much of the Lower Rio Grande Valley has been altered for agricultural and urban development (Jahrsdoerfer and Leslie 1988), with <1% of south Texas supporting extremely dense thornscrub that is used by ocelots (Tewes and Everett (1986). (USFWS 2010). Ocelots used primarily forest or woody communities in Tamaulipas, Mexico (Caso 1994, in USFWS 2010).

Ocelots in south Texas prefer shrub communities with canopy covers >95%, and avoided areas of 50-75% canopy cover. (Horne 1998, in USFWS 2010). Important microhabitat features chosen include canopy height (>2.4 m) and vertical cover (89% visual obscurity at 1-2 m). Ground cover used, was characterized by a high percentage of coarse woody debris (50%) and very little herbaceous ground cover (3%) (Horne 1998, in USFWS 2010).

ELEVATION: Generally found at elevations below 4,000 ft (1,200 m).

PLANT COMMUNITY: In Texas, ocelots occur in the dense thorny chaparral of the Rio Grande valley, with dominant species consisting of mesquite (*Prosopis glandulosa*), *Acacia* spp., *Condalia* spp., granjeno (*Celtis pallida*), cenizo (*Leucophyllum texanum*), and white brush (*Aloysia texana*) (Tewes and Schmidly, 1987).

POPULATION TRENDS: Unknown. According to the 2010 Draft Recovery Plan (U.S. Fish and Wildlife Service), the Texas population currently has fewer than 50 ocelots, found in 2 separated populations in southern Texas, at the northern limit of the species' distribution. As of February 2010, there were fewer than 25 total known individuals in the 2 populations in south Texas, with the possibility that more individuals inhabit surrounding ranches. "A third and much larger population of the Texas/Tamaulipas ocelot (*L. p. albescens*) occurs in Tamaulipas, Mexico, but is geographically isolated from ocelots in Texas. In November 2009, an ocelot (*L. p. sonoriensis*) was documented in Arizona (in Cochise County) with the use of camera traps (Sky Island Alliance 2010, unpubl. data)." In April 2010, a young male ocelot was found dead on the road near Globe, Arizona. Genetic analysis determined that the specimen was not of captive origin. (Arizona Game and Fish Department 2010, unpubl. data). The last known ocelot in Arizona, prior to these findings, was lawfully shot on Pat Scott Peak in the Huachuca Mountains in 1964 (Hoffmeister 1986, Lopez Gonzalez et al. 2003). In addition to these sightings, a number of ocelots have been documented just south of the U.S. border in Sonora, Mexico. (U.S. Fish and Wildlife Service, 2010).

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: LE (USDI, FWS 1982)

AGFD Animal Abstract
STATE STATUS:

-5-

Leopardus pardalis

1A (AGFD SWAP 2012)
[WSC, AGFD, WSCA in prep]
[State Endangered AGFD, TNW 1988]
P, Determined Endangered in Mexico
(NORMA Oficial Mexicana NOM-059-
SEMARNAT-2010)
[Endangered in Mexico (LEGEPA 1994)]

OTHER STATUS:

MANAGEMENT FACTORS: Management units have been set for two cross-border areas, the Texas/Tamaulipas Management Unit (TTMU) and the Arizona/Sonora Management Unit (ASMU). Establishing management units is a useful tool for species occurring across wide ranges with multiple populations, varying ecological pressures, or different threats in different parts of their range. In using this approach, the U.S. Fish and Wildlife Service were able to set recovery goals for each unit, and will be able to measure their contribution toward recovery. (U.S. Fish and Wildlife, 2010).

According to USFWS (2010), "Habitat conversion, fragmentation, and loss comprise the primary threats to the ocelot today. Human population growth and development continue throughout the ocelot's range. In Texas, more than 95% of the dense thornscrub habitat in the Lower Rio Grande Valley has been converted to agriculture, rangelands, or urban land uses. ...Connectivity among ocelot populations or colonization of new habitats is inhibited by road mortality among dispersing ocelots. Issues associated with border barrier development and patrolling the boundary between the United States and Mexico further exacerbate the isolation of Texas and Arizona ocelots from those in Mexico. ...Commercial exploitation and illegal hunting were significant threats to the species when the ocelot was originally listed. ...the harvest and export of ocelots has significantly declined and is controlled by the Convention on International Trade of Endangered Species (CITES)."

PROTECTIVE MEASURES TAKEN: Listed as Endangered throughout its range in the western hemisphere. Adoption of illegal hunting laws throughout majority of range. Creation of Recovery plan for U.S. populations in 1990, and initiation of the revision of 1990 Recovery Plan in 2010 (USFWS Draft).

Additional protective measures taken include the expansion of two National Wildlife Refuges in south Texas, and their ongoing restoration efforts to restore agricultural lands to native thornscrub. The acquisition of thousands of acres of land by the Nature Conservancy (TNC) to help protect ocelot habitat, and create corridors between existing habitats. The purchase in 2003 of a 4,047 ha ranch in northern Sonora, Mexico by the Mexican non-profit group, Naturalia, to help protect the jaguars and its habitat. Ocelots also occur there and will benefit from this protection. In 2008 Naturalia purchased an additional 14,164 ha making an 18,211 ha preserve called the Northern Jaguar Reserve. In northern Sonora, the Rancho El Aribabi where ocelot has been observed, is seeking to be recognized as a national reserve. In 2006, the USFWS approved a Safe Harbor Agreement (SHA) to encourage restoration of private lands to provide suitable habitat for the ocelot and to provide connectivity between areas currently occupied by ocelot. In 2005, a new USDA-Natural Resources Conservation

Services standard was written which describes how to establish thornscrub on cropland for the benefit of the ocelot. This program provides a financial incentive for landowners to restore ocelot habitat on their property. (USFWS, 2010).

RECOVERY STRATEGY The strategy as outlined in the USFWS 2010 draft Recovery Plan, “involves: the assessment, protection, reconnection, and restoration of sufficient habitat to support viable populations of the ocelot in the borderlands of the U.S. and Mexico; the reduction of effects of human population growth and development to ocelot survival and mortality; the maintenance or improvement of genetic fitness, demographic conditions, and health of the ocelot; the assurance of long-term viability of ocelot conservation through partnerships, the development and application of incentives for landowners, application of existing regulations, and public education and outreach; the use of adaptive management, in which recovery is monitored and recovery tasks are revised by the USFWS in coordination with the Ocelot Recovery Implementation Team as new information becomes available; and the support of international effort to ascertain the status and conserve the ocelot south of Tamaulipas and Sonora.”

SUGGESTED PROJECTS: Little is known about the ocelot population in the ASMU. Field studies are needed to estimate the current population, examine population density, demographics, habitat use, food habits, and spatial ecology. Challenges (threats) to the ocelot concerning border issues such as fencing, lighting, U.S. Border Patrol and illegal immigrant activities including vehicle and pedestrian traffic, and habitat alteration to facilitate law enforcement and reduce illegal immigration into the U.S. are increasing. These challenges can be addressed through interagency cooperation and research. Recovery planning for the ASMU should focus on basic research that details habitat suitability, distribution, and threats. (USFWS, 2010). Authors of the USFWS 2010 draft Ocelot Recovery Plan recognize that many of the issues facing current ocelot populations in Texas will pertain to ocelots that may be in Arizona, or in populations that occur in Sonora. They also recognize that dramatic climatic and landscape differences will dictate original research and conservation planning for the ASMU.

LAND MANAGEMENT/OWNERSHIP: USFS, BLM, TNC, Private.

SOURCES OF FURTHER INFORMATION

REFERENCES:

- Arizona Game and Fish Department. 1988. Threatened and native wildlife in Arizona. Arizona Game and Fish Department Publication, Phoenix, AZ. p. 24.
- Arizona Game and Fish Department. In prep. Wildlife of special concern in Arizona. Arizona Game and Fish Department Publication. Phoenix, Arizona. 26 pp.
- Arizona Game and Fish Department. 2012. Arizona's State Wildlife Action Plan 2012-2022. Phoenix, AZ.
- Brown, D.E. 1986. Tigrillo - The Southwest's Mystery Cat. Unpublished Chapter. pp. 49-55.

- Burt, W.H. and R.P. Grossenheider. 1964. A field guide to the mammals. Houghton Mifflin Company. Boston, Mass. 284pp.
- Cahalane, V.H. 1961. Mammals of North America. The MacMillan Company. New York. pp. 278-282.
- Davis, W.B. 1974. The Mammals of Texas. Bulletin No. 41. Texas Parks and Wildlife Department. Austin, Texas. 131-132.
- Hall, E.R. 1981. The Mammals of North America, Vol II, Sec Ed. John Wiley and Sons. New York. p. 1043.
- Hall, E.R. and K.R. Kelson. 1959. The Mammals of North America, Vol II. The Ronald Press Company. New York. p. 959.
- Harwell, G. and D. Siminski. 1986. Recovery Plan for the Listed Cats of Arizona and Texas, Technical Draft. Arizona-Sonora Desert Museum, Tucson, Arizona. pp. 1-65.
- Hoffmeister, D.F. 1986. Mammals of Arizona. The University of Arizona Press, Tucson. pp. 520-521.
- IUCN-World Conservation Union. 1996. CSG Species Account: Ocelot (*Leopardus pardalis*). Accessed 1/8/2004.
- Jones, et al. 1997. North American Mammals North of Mexico. Texas Tech Univ. Leopold, A.S. 1959. Wildlife of Mexico: The Game Birds and Mammals. pp. 470-473.
- Leopold, A. Starker. 1959. Wildlife of Mexico, The game birds and mammals. Publisher unknown. 470-473.
- Ley General del Equilibrio Ecologico (LEGEPA). Document listing ocelot with endangered status in Mexico (nom-ecol-059/94). (Vargus and Huerta 2001).
- NatureServe. 2003. NatureServe Explorer: An online encyclopedia of life [web application]. Version 1.8. NatureServe, Arlington, Virginia. Available: <http://www.natureserve.org/explorer>. (Accessed: January 8, 2004).
- Ocelot. Available: <http://dspace.dial.pipex.com/agarman/ocelot.htm>.
- Ocelot. Available: <http://www.fws.gov/southwest/es/arizona/Ocelot.htm>.
- San Antonio Zoo. 1999. Online Abstract: Ocelot (*Felis pardalis*). Available: <http://www.sazoo-aq.org/ocelot.htm>.
- Schmidly, D.J. 1977. The Mammals of Trans-Pecos Texas, including Big Bend National Park and Guadalupe Mountains National Park. Texas A & M University Press, College Station and London. 156-157.
- 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.
- Southwest Center Species Database. Available: <http://www.sw-center.org/swcbd/dbase/ocelot.html>.
- Spicer, R.B. 1987. Non-game Field Note: Ocelot (Tigrillo). Arizona Game and Fish Department.
- Tewes, M.E. and D.J. Schmidly. 1987. The neotropical felids: jaguar, ocelot, margay, and jaguarondi. In M. Novak, J. Baker, M.E. Obbard and B. Malloch (eds.). Wild Furbearer Management and Conservation in North America. Ministry of Natural Resources, Ontario. 697-711.

Texas Parks and Wildlife: Nature, Endangered and Threatened Species; Species account - Ocelot. Accessed 06/30/1999 and 01/14/2011

<http://www.tpwd.state.tx.us/nature/endang/ocelot.htm>.

U.S. Fish and Wildlife Service. 1990. Listed cats of Texas and Arizona recovery plan (with emphasis on the ocelot). U.S. Fish and Wildlife Service, Region 2, Albuquerque, New Mexico.

U.S. Fish and Wildlife Service. 2010. Draft Ocelot (*Leopardus pardalis*) Recovery Plan, First Revision. U.S. Fish and Wildlife Service, Southwest Region, Albuquerque, New Mexico.

USDI, Fish and Wildlife Service. 1982. Endangered and Threatened Wildlife and Plants; Endangered Status for U.S. Population of the Ocelot, Final Rule. Federal Register 47(140): 31670-31672.

Whitaker, Jr. J.O. 1996. National Audubon Society Field Guide to North American Mammals, revised edition. Alfred A. Knopf, New York. pp. 794-796.

Wilson, and Reeder. 1993. Mammals Species of the World. Smithsonian Institute Press.

Wilson, D. E., and S. Ruff, (Eds.). 1999. The Smithsonian Book of North American Mammals. Smithsonian Institute Press, *in association with the American Society of Mammalogists*. Washington and London. P. 228-229.

MAJOR KNOWLEDGEABLE INDIVIDUALS:

ADDITIONAL INFORMATION:

Felis = cat, from Latin; *pardalis* = leopard-like, from Greek. Common name derived from Indian word for jaguar. Tigrillo is Spanish for small tiger.

Revised: 1999-07-01 (SMS)
2000-07-18 (SMS)
2004-01-24 (AMS)
2010-02-17 (SMS)

To the user of this abstract: you may use the entire abstract or any part of it. We do request, however, that if you make use of this abstract in plans, reports, publications, etc. that you credit the Arizona Game and Fish Department. Please use the following citation:

Arizona Game and Fish Department. 20XX (= **year of last revision as indicated at end of abstract**). X...X (= **taxon of animal or plant**). Unpublished abstract compiled and edited by the Heritage Data Management System, Arizona Game and Fish Department, Phoenix, AZ. X pp.