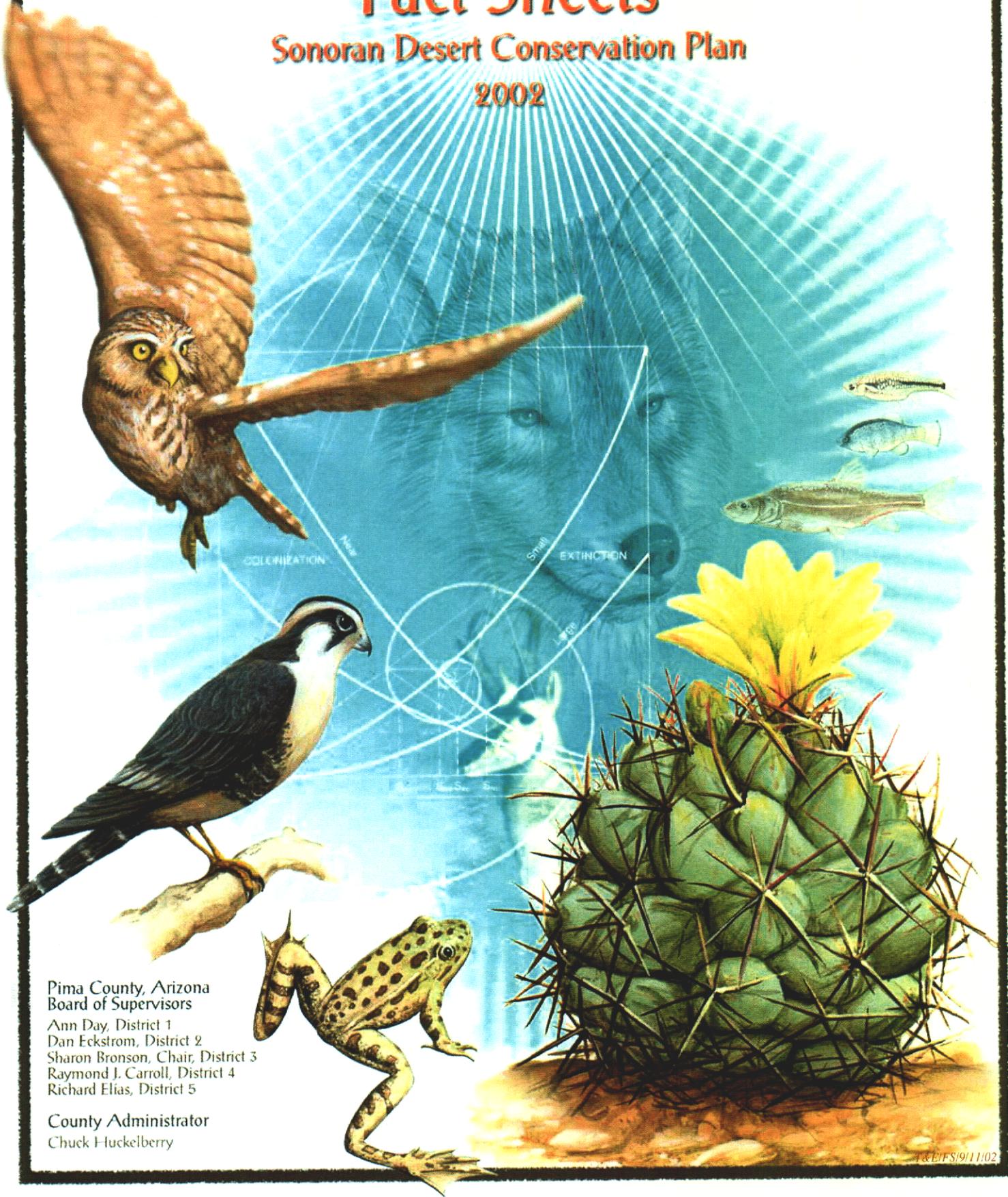


Threatened & Endangered Species Fact Sheets

Sonoran Desert Conservation Plan
2002



Pima County, Arizona
Board of Supervisors

Ann Day, District 1
Dan Eckstrom, District 2
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County Administrator
Chuck Huckelberry



MEMORANDUM

Date: September 11, 2002

To: The Honorable Chair and Members
Pima County Board of Supervisors

From: C.H. Huckelberry
County Administrator 

Re: **Fact Sheets for Threatened, Endangered and Priority Vulnerable Species**

To date the Sonoran Desert Conservation Plan for Kids has involved 125 educators, 35 school and youth group partners, over 9,300 youth, and 1,700 families in both classroom and outdoor education. County staff working on the Sonoran Desert Conservation Plan have taken the complex information of the planning process and simplified it into summaries, graphics, posters, games, coloring books and other material that appeals to a range of youth participants. Today I am forwarding two new sets of fact sheets that describe the threatened, endangered and priority vulnerable species of Pima County. For each plant or animal there is a physical description and full color illustration. The habitat, range, diet, status, and history of each species is also outlined. These fact sheets will be widely distributed through the youth participation program and they will be posted on the County webpage for the Sonoran Desert Conservation Plan in order to further engage the youth community in understanding the science and natural resources of Pima County.

Attachments

THREATENED AND ENDANGERED SPECIES IN PIMA COUNTY

Species designation:
ENDANGERED

Species designation:
THREATENED

Species designation:
CANDIDATE

ENDANGERED SPECIES

Section 3 of the Endangered Species Act of 1973 defines “**endangered species**” to mean any species which is “in danger of extinction throughout all or a significant portion of its range.”

THREATENED SPECIES

A species is “**threatened**” if it “is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.”

CANDIDATE SPECIES

“Taxa for which the Service has on file sufficient info on biological vulnerability and threats to support proposals to list them as endangered or threatened taxa.”



ACUÑA CACTUS

Echinomastus erectocentrus var. *acunensis*

Species designation:
CANDIDATE

Mature cacti vary in height from three to nine inches. The spines consist of two to three purplish central spines and twelve radial spines.

The central spines point upward.¹ The flowers range from pink to purple in color. The fruits are pale green.² The flowers have been observed to be pollinated by at least ten species of native bees.³

HABITAT

The Acuña cactus is found on well-drained knolls and gravel ridges at 1,300–2,000 feet elevation in the Sonoran desert scrub.

RANGE

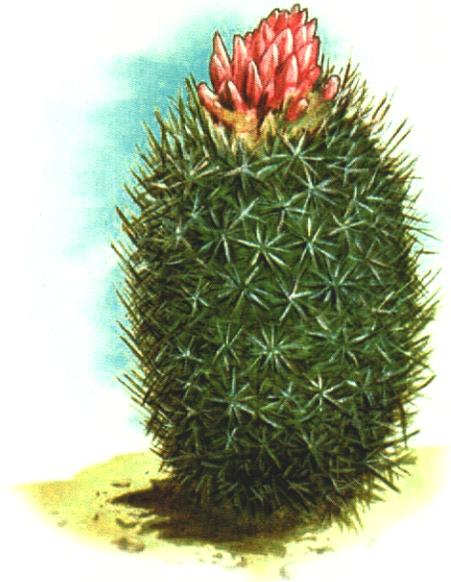
Historically, the cactus was found in Pinal, Pima, and possibly Maricopa Counties in Arizona, and in Sonora, Mexico. Currently, there are four known populations in Arizona.

STATUS

The Acuña cactus is a candidate species for the Threatened and Endangered list. The plant is protected by the Arizona Native Plant Law, and is protected for international trade by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).¹

ACUÑA CACTUS IN PIMA COUNTY

Of the four known populations in Arizona¹, three occur in Pima County on federal, state, and private lands. Organ Pipe National Monument has the largest and healthiest known population.³ The population may be threatened by illegal take and natural causes such as parasitism.³ A population may occur on Barry M. Goldwater Gunnery Range.¹



References

1. U.S. Fish and Wildlife Service. 1992. *Handbook of Arizona's Endangered, Threatened, and Candidate Plants*. U.S. Fish and Wildlife Service, Phoenix, Arizona. pp. 30.
2. Arizona Game and Fish Department. 1997. *Echinomastus erectocentrus* var. *acunensis*. *Heritage Data Management System*.
3. Johnson, R.A. 1992. "Pollination and reproductive ecology of acuña cactus, *Echinomastus erectocentrus* var. *acunensis*." *Int. J. Plant Science* 153(3):400-408. *Heritage Data Management System*.

BALD EAGLE

Haliaeetus leucocephalus



Species designation:
THREATENED

The bald eagle is a large raptor. The adults have the characteristic white head and tail and dark brown body.

Juveniles are completely dark brown and do not develop the white feathers until the fifth or sixth year. Adults average three feet tall, weigh ten to twelve pounds, and have a wingspan of seven feet.¹ Females are generally larger than males. The eagles mate for life, or until the death of their mate. Bald eagles may live up to thirty years in the wild.²

HABITAT

The southwestern bald eagle is found on rivers with an adequate prey base and nesting area. The home ranges generally exceed two miles along the river and half a mile wide on each side of the nest. The eagles build their nests in trees, cliffs, or pinnacles near the river.³

RANGE

The southwestern bald eagle historic range cannot be accurately determined. The current range extends through Oklahoma and Texas west of the 100th meridian, all of New Mexico and Arizona, and California along the border of the Lower Colorado River. The eagle may also range into Baja California and parts of mainland Mexico.

STATUS

The bald eagle has been proposed for delisting, but still receives full protection under the Endangered Species Act.

DIET

The eagle feeds largely on four kinds of fish: channel catfish, carp, Sonora sucker, and the desert sucker. Rabbits, coots, and other small mammals, birds, and other fish also make up part of the bird's diet.

REPRODUCTION

Breeding pairs begin nesting in November or December. The nest may be used year after year, eventually reaching nine feet in diameter and weighing as much as 2,000 pounds.² Two to three eggs are laid from January to March. The eggs hatch from February to April. The eaglets spend up to two months in the nest and four to six weeks on the home range before dispersing.

SOUTHWESTERN BALD EAGLE IN PIMA COUNTY

In January of 2002, a bald eagle took up residence on the northwest side of Tucson. The eagle, a very rare visitor to the Tucson area, was electrocuted by utility lines at the end of February 2002.



References

1. U.S. Fish and Wildlife Service Division of Endangered Species. Bald Eagle Species Account. 9/27/99 Web site: <http://www.fws.gov/r9endspp/lib/bimsab0h.html>
2. U.S. Fish and Wildlife Service. 1982. Bald Eagle Recovery Plan (Southwestern Population). U.S. Fish and Wildlife Service, Albuquerque, New Mexico. 65 pp.

CACTUS FERRUGINOUS PYGMY-OWL

Glaucidium brasilianum cactorum



Species designation:
ENDANGERED

The cactus ferruginous pygmy-owl is a small bird, averaging 6.5 inches in length and weighing 2.5 ounces.

Overall, the owl is reddish-brown with a cream-colored belly striped with the rufous coloring. The crown is lightly streaked and the eyes are yellow. Black and white spots on the nape suggest eye spots.¹ The owl has a relatively long tail and no ear tufts. This owl is diurnal. Its call, consisting of a monotonal 'put-put-put' note,² can be heard during dusk and dawn.

HABITAT

Current information allows only a broad general description of where the owl has historically and currently occurred in Arizona. The cactus ferruginous pygmy-owl occurs in a variety of habitats, including river bottom woodlands, mesquite bosques, desert scrub, and plains and desert grasslands.¹ Typical throughout these habitats are fairly dense woody thickets with trees and cacti large enough to provide nesting cavities.³

In the Sonoran desert scrub, the owl can be found in associations of ironwood, palo verde, mesquite, acacia, bursage, and columnar cactus such as saguaro and organ pipe.³

RANGE

Historically, this subspecies appears to be geographically isolated into eastern and western populations. The western population ranged from lowland, central Arizona to the states of Colima and Michoacan, Mexico. The eastern population ranged from southern Texas into the states of Tampulipas and Nuevo Leon, Mexico.¹

Currently, the cactus ferruginous pygmy-owl range is similar to the historic range, but the number of owls is much smaller.¹

DIET

The owl is an opportunistic predator feeding on what is available. The prey ranges from insects to mourning doves which outweigh the owl by two and a half times.

REPRODUCTION

The cactus ferruginous pygmy owl nests in cavities in trees or cacti such as the organ pipe or saguaro. The pygmy owl begins nesting activity late winter to early spring.³ Three to five eggs are laid in late April-May.² The eggs are incubated for about twenty-eight days. The young are fed by both parents. The young fledge twenty-seven to thirty days after hatching.²

STATUS

The cactus ferruginous pygmy-owl was listed as Federally Endangered in 1997. The species was listed because current and historical evidence suggests a significant population decline has occurred in Arizona, and that the owl has been nearly extirpated.

CACTUS FERRUGINOUS PYGMY OWL IN PIMA COUNTY

At one time, the pygmy owl was described as "of common occurrence," "not uncommon," and "fairly numerous" in southern Arizona.¹ Today, the owl numbers are very low and, until recently, very little was known about the owl. Some of the pygmy owls' habitat is found in the fastest growing areas of Tucson.



References

1. U.S. Fish and Wildlife Service. 1997. "Determination of Endangered Status for the Cactus Ferruginous Pygmy Owl in Arizona." Federal Register. Volume 62 (46).
2. Arizona Game and Fish Department. 1998. *Glaucidium brasilianum cactorum*. Heritage Data Management System.
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CHIRICAHUA LEOPARD FROG

Rana chiricahuensis



Species designation:
THREATENED

The Chiricahua leopard frog is a medium sized, stout bodied frog with green-brown skin, many spots on its back, and pale yellow to white skin below.¹

Adults are distinguished from other leopard frogs by their unique “salt and pepper” thigh pattern.

HABITAT

R. chiricahuensis is highly aquatic and can be found in rocky streams with deep rock-bound pools, ponds, earthen stock tanks, and permanent springs.¹ Surrounding upland vegetation includes oak and mixed oak and pine woodlands, and ranges into areas of chaparral, grassland, and desert.²

RANGE

This species is found in the mountain regions of central and southeastern Arizona, southwestern New Mexico, and the southeastern mountains of Arizona and adjacent Sonora, Mexico.² Specifically in Arizona, it is found in the montane central part of the state, east and south of the Mogollon Rim. It is also found in the southeastern montane sector and adjacent Sonora.² Elevational range is from 3,500 to 8,040 feet, and 1,219 to 4,023 feet at the Arizona/Mexico border.

REPRODUCTION

At low elevations, the frog breeds from mid-February through June, while at higher elevations breeding occurs from May until August.

DIET

The Chiricahua leopard frog feeds on many insects and fresh-water shrimp. Tadpoles feed on algae and other minute organisms.²

STATUS

Due to declining numbers, in August 2001, the U. S. Fish and Wildlife Service agreed with several conservation groups to list the Chiricahua leopard frog for protection under the Endangered Species Act. The frog was listed in 2002.

CHIRICAHUA LEOPARD FROG IN PIMA COUNTY

The Chiricahua leopard frog no longer exists in much of Pima County due to the destruction of habitat and introduction of species such as the bullfrog. *R. chiricahuensis* has been found in the Buenos Aires National Wildlife Refuge and Las Cienegas NCA, and the Santa Rita mountains. Protection of the remaining habitat is essential for the existence of the leopard frog in Pima County.

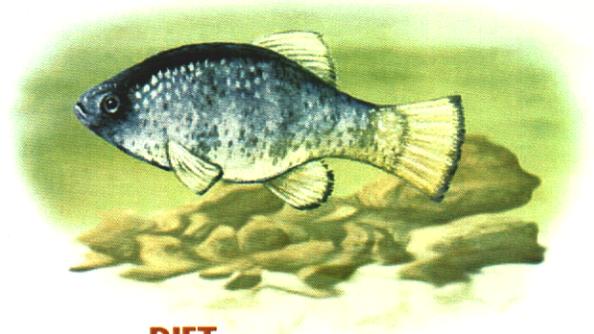


References

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2. Arizona Game and Fish Department. 1997. *Rana chiricahuensis*. Unpublished abstract, Heritage Data Management System. *Rana chiricahuensis*. Unpublished abstract, Heritage Data Management System.

DESERT PUPFISH

Cyprinodon macularius macularius



Species designation:
ENDANGERED

A small fish (approximately two inches long) with a smoothly rounded body shape and narrow, vertical dark bars on the sides. Breeding males are blue on the top and sides and have yellow to orange (sometimes red-orange) fins. Females and juveniles have tan to olive colored backs and silvery sides.¹ As compared to the Quitobaquito pupfish, the desert pupfish have a narrower head, mouth and body. The bottom fins are longer and the head tends to be deeper with the jaw longer than other pupfish populations.²

HABITAT

Pupfish occupy shallow waters of springs, small streams and marshes. They are often associated with areas with soft channel bottoms and clear water.³

RANGE

Historic range includes the lower Gila River basin, including the Gila, Santa Cruz, San Pedro, and Salt rivers as well as the lower Colorado River in Arizona, California and adjacent Mexican states from the vicinity of Needles downstream to the Gulf of California. Presently, the only remaining natural populations are found in a few sites in the Salton Sea drainage in California and the Colorado Delta in Baja California and Sonora, Mexico.⁴

BIOLOGY

Desert pupfish (and pupfish in general) can tolerate salinity levels three times that of seawater and temperatures that exceed 35(C)95(F). Pupfish can be tenacious if habitat is maintained and exotic fish are eliminated.¹

REPRODUCTION

Eggs are deposited randomly in a male's territory. Breeding males aggressively defend their territories during the breeding season. There is no direct parental care, but activities of the male may serve that purpose.

DIET

The Desert Pupfish is omnivorous; it eats small aquatic insects, crustaceans and plants.

STATUS

In 1986, the U. S. Fish and Wildlife Service listed the Desert Pupfish as "endangered" under the Endangered Species Act.⁵ The species is listed as a "Wildlife Species of Concern" by the Arizona Game and Fish Department (1996 in prep) and a "Sensitive" species by the U.S. Forest Service (1988).² A recovery plan has been developed for this species.

DESERT PUPFISH IN PIMA COUNTY

No natural populations remain in Pima County. The pupfish was eliminated from the Santa Cruz River at Tucson by 1904.⁶ The Santa Cruz River pupfish may have been genetically distinct from the surviving populations.⁷ A subspecies of the pupfish, the Quitobaquito pupfish, occurs in Quitobaquito Pond in Organ Pipe National Monument. Several facilities in Tucson including the Arizona Sonora Desert Museum, Tohono Chul Park, and the International Wildlife Museum have captive populations.

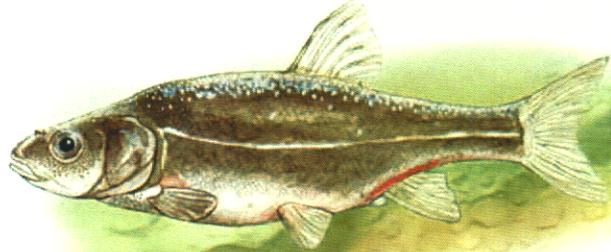
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2. Arizona Game and Fish Department. *Unpublished Abstract, Heritage Data Management System*. April 1999
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6. Zander, M. and Jennings M. 1986. *Site Specific Water Quality Criteria Study for the Santa Cruz River*. Harding Lawson Associates. Job No. 17.144.010.01. p. 73
7. Minckley, W.L., Robert Rush Miller, and Steven Mark Norris. 2002. "Three New Pupfish Species, *Cyprinodon* (Telostei, *Cyprinodontidae*), from Chihuahua, Mexico, and Arizona, USA." *Copeia*. Vol. 2002, No. 3. pp. 687-705.



GILA CHUB

Gila intermedia



PROPOSED *Species designation:* ENDANGERED

A moderately chunky, dark colored minnow which can reach lengths of up to ten inches; females are normally larger than males with the latter rarely larger than six inches. Breeding males will have red or orange on the belly and sides, with yellow on the cheeks, lips, and the bottoms of paired fins on larger fish.¹

HABITAT

Gila chub are normally found in the headwaters of smaller streams cienegas, springs and marshes of the Gila River basin.² They utilize diverse habitats based on the time of year and their age. Adults have been collected from deep pools with heavy vegetation along the margins and undercut banks. Young Gila chub have been collected from riffles, pools and undercut banks. In larger stream systems, they utilize heavily vegetated backwaters for cover and feeding.

RANGE

The Gila chub is historically found in headwater streams of the Gila River drainage in Arizona, New Mexico and likely in the San Pedro and Santa Cruz River systems in Sonora, Mexico. The Gila chub is currently thought to be extirpated from New Mexico.²

BIOLOGY

Gila chub were commonly found in association with Gila topminnow, desert and sonora suckers, and longfin and speckled dace.

REPRODUCTION

Gila chub probably mature in their second to third year. Reproduction primarily occurs in the late spring and into summer. Spawning may occur over beds of submerged, aquatic vegetation. Actively breeding fish become fire-red along surfaces near the belly and the eyes become yellow to yellow-orange.¹

DIET

Gila chub are omnivorous, preferring to eat terrestrial and aquatic insects. At larger sizes they may eat other fish (they have been known to consume speckled dace and other small fish). Larger adults feed during the evening and early morning hours. Juveniles will feed throughout the day, mostly on insects and algae.

STATUS

Since 1997, the Gila chub has been a candidate for listing under the Endangered Species Act by the U.S. Fish and Wildlife Service.³ In August 2002, the U.S. Fish and Wildlife Services released a proposed rule listing the Gila chub as endangered.

GILA CHUB IN PIMA COUNTY

The Gila chub is presently known from the following drainages: Cienega Creek, Sabino Canyon, and Redfield Canyon. The only population considered secure and stable occurs in Cienega Creek.

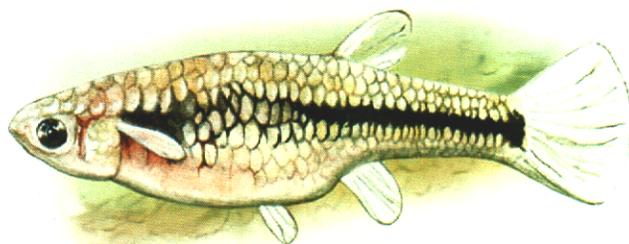


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GILA TOPMINNOW

Poeciliopsis occidentalis occidentalis



Species designation:
ENDANGERED

The Gila topminnow is a small (approximately two inches long), guppy-like fish. The body is generally tan to olive in color, with the back usually dark while the underbelly is often white. A fairly thick, dark band occurs along both sides of the fish. Breeding males are generally dark to jet black in color.¹

HABITAT

Gila topminnow occupy headwater springs and vegetated margins and backwater areas of intermittent and perennial streams and rivers. Adults tend to congregate in areas of moderate current, below riffles and along the margins of flowing streams in accumulated algae mats.¹ Topminnows can withstand water temperatures from near freezing to 100°F. They can also live in a fairly wide range of salinity, ranging from tap water to sea water.

RANGE

Gila topminnow once occupied aquatic habitats below 5,000 feet elevation throughout the Gila River drainage in New Mexico, Arizona and Mexico. Presently, this species occurs in known ranges of Mexico and several localities in the Gila River drainage in Arizona. Some areas contain reintroduced populations.²

BIOLOGY

At one time, the Gila topminnow was the most common fish found in the Gila River basin. Its numbers have been greatly reduced due to the introduction of other fish species, especially the mosquitofish. With their high reproductive rates and long breeding season, Gila topminnow can rapidly expand into new habitats devoid of nonnative fish species.

REPRODUCTION

Gila topminnow are live-bearers. The reproductive season normally occurs from April through November, but young may be produced year-round in thermally stable springs. During breeding, some males become dark and exhibit aggressive breeding

behavior, while others become black but still attempt to mate inconspicuously with females. The typical brood consists of 10–15 young, with larger broods produced during the summer. Young produced early in the breeding season may reach sexual maturity in a few weeks to several months. An individual's life span is approximately one year, but this appears to be dependent on the time of year in which it was born.¹

DIET

Gila topminnows are omnivorous. They likely utilize a broad spectrum of food such as crustaceans and vegetable material but will feed voraciously on aquatic insect larvae, especially mosquitoes, when abundant.

STATUS

In 1967, the Gila topminnow was listed by the U.S. Fish and Wildlife Service as "endangered" under the Endangered Species Act.³

GILA TOPMINNOW IN PIMA COUNTY

Historically, Gila topminnow occurred all along the Santa Cruz and San Pedro rivers. Records indicate that the species was eliminated from the Santa Cruz River near Tucson by 1904.⁴ Currently, this species is found in the upper reach of Cienega Creek within the Las Cienegas NCA, and in the spring of 2002 was found downstream in Cienega Creek Natural Preserve.

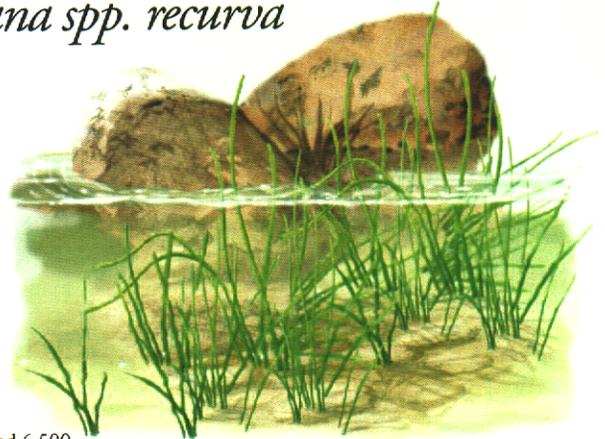


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1. Minckley, W. L. 1973. *Fishes of Arizona*. Arizona Game and Fish Department, Phoenix. pp. 186-192
2. Arizona Game and Fish Department. Unpublished Abstract, Heritage Data Management System. April 1999
3. USDI, Fish and Wildlife Service. 1967. *Federal Register* 32:4001
4. Zander, M. and Jennings M. 1986. *Site Specific Water Quality Criteria Study for the Santa Cruz River*. Harding Lawson Associates. Job No. 17,144,010.01. p. 73

HUACHUCA WATER UMBEL

Lilaeopsis schaffneriana spp. *recurva*



Species designation:
ENDANGERED

Lilaeopsis schaffneriana spp. *recurva* is a herbaceous, semi-aquatic perennial. It has bright green leaves that are hollow and cylindrical, and grow straight up from creeping roots. The leaves are often one to two inches high, but may reach up to eight inches in favorable conditions.¹ Three to ten small flowers appear on umbels rising from the root.² *Lilaeopsis* reproduces both sexually through the flowers, and asexually through the root.

HABITAT

The water umbel is found between 4,000 and 6,500 feet in cienegas, springs, and other healthy riverine systems.² The water umbel appears to benefit from intermediate flooding to inhibit competition.³ The plant is usually found in water with a depth of two to six inches.

RANGE

The Huachuca water umbel has been documented in twenty-three sites in Santa Cruz, Cochise, and Pima Counties, Arizona, and in Sonora, Mexico.⁴ It is no longer found in six of the sites, and the seventeen left occur on the San Pedro River, Santa Cruz River, Rio Yaqui, and Rio Sonora.³ The water umbel may expand into optimal habitat conditions in southeastern Arizona or northern Mexico.

STATUS

On January 6, 1997, the Huachuca water umbel was listed as endangered. In July of 1999, critical habitat was designated for the species in Cochise and Santa Cruz counties.

HUACHUCA WATER UMBEL IN PIMA COUNTY

The umbel was once found near Tucson. In July of 1855, a man named Julius Froebel wrote of the Santa Cruz river just outside of Tucson, "...rapid brook, clear as crystal, and full of aquatic plants, fish, and tortoises of various kinds, flowed through a small meadow covered with shrubs."³ The conditions Froebel described no longer exist near Tucson. As much as 85–95 percent of the riparian habitat has been lost in Arizona over the past 100 years and up to 85 percent of Arizona's plants and animals are negatively affected by this loss of riparian habitat.⁵

In Pima County, the water umbel was last seen in the Empire Gulch in the Empire-Cienega allotment, by Dr. Peter Warren in 1996.⁴ While a return visit did not produce any umbel sightings, potential habitat is prevalent along Cienega Creek.⁴ Recently, the Huachuca water umbel was found in a small patch along Cienega Creek in the county reserve and in Bingham Cienega Natural Preserve.

With development of the Pima County Native Plant Nursery, the Huachuca water umbel may be grown for re-establishment to suitable sites.



References

1. National Wildlife Refuge Service Files/Species Accounts. August 30, 1999. *Lilaeopsis schaffneriana* spp. *recurva*, Huachuca water umbel.
2. U.S. Fish and Wildlife Service. 1998. *Threatened Species of Arizona*. Arizona Ecological Field Service Office, Phoenix, AZ. pp 13-14.
3. U.S. Fish and Wildlife Service. 1999. "Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Huachuca Water Umbel, a Plant." *Federal Register*. Volume 64, Number 132.
4. Roller, Tricia. 1998. "The Huachuca Water Umbel." *The Arizona Riparian Council*. Volume 11, Number 2.
5. *Water Resources and the Sonoran Desert Conservation Plan*. July 1999.

JAGUAR

Panthera onca arizonensis



Species designation:
ENDANGERED

The jaguar (*Panthera onca*) is the largest cat native to the Western Hemisphere. It is characterized by yellowish-brown fur with dark rosette markings. The lower region of the tail is ringed in black and the tips of the ears have black edges.

Jaguars are powerfully built, with large heads and strong limbs. The weight of an adult male averages around 120–200 pounds, while the females weigh slightly less.

HABITAT

The jaguar's habitat varies from wet lowland habitats on its center range to arid habitats along its northern range.

RANGE

The jaguar can be a far ranging animal, traveling distances up to 500 miles. They may become sedentary depending on availability of food. The jaguar is territorial and marks its boundaries with scents. The home range of the jaguar is between 10 and 40 square kilometers.¹ In North America, the historic range of the jaguar included Arizona up to the Grand Canyon and the mountains south of it, southwest New Mexico, and southeast California. The current range is considered by many to include Mexico, Central America, and as far south as Argentina in South America.²

REPRODUCTION

Jaguars breed year round with about a 100-day gestation period. A litter of one to four cubs is usually produced, with the average being two cubs. Cubs remain with their mother for two years. A female jaguar matures at three years, a male at four years of age.

DIET

The jaguar's diet includes up to eighty-five species. Some prey species include the javelina, deer, turtle, birds, fish, and livestock. On the U.S. and Mexico borderlands, javelina and deer are presumed to be the jaguar's primary food source.

STATUS

On July 22, 1997, the U.S. Fish and Wildlife Service granted endangered status to the jaguar throughout

its range under the Endangered Species Act of 1973. The jaguar is now listed endangered in the United States, Mexico, and Central and South America. In the United States, illegal shooting is the greatest threat to the jaguar.²

JAGUARS IN PIMA COUNTY

In Arizona, there have been at least 64 jaguars killed since 1900. Within the past twenty years, several confirmed sightings have occurred in Pima County. In 1988, a jaguar was observed in Altar Valley and in the Baboquivari Mountains March of 1996, a jaguar was spotted and confirmed with video and photographs. In 2001, a young male jaguar was documented by a motion activated camera south of Tucson, near the Mexican border. Unconfirmed sightings have been reported in the Buenos Aires National Wildlife Refuge.

Southeastern Pima County has been included as potential habitat for the jaguar (as designated by the Jaguar Conservation Committee).³ Possible habitat sites have been identified as south of I-10, and includes mountain ranges in southeast Arizona and as far west as the Baboquivari Mountains. The Rincon Mountains have also been included for several reasons: 1) the historic presence of jaguars, 2) the funnel effect created by the Rincons, Santa Rita, and Empire mountains, 3) the connecting corridor to the Empire Mountains (currently used by other big predators).⁴

In order to thrive or even persist in Arizona, the jaguar needs to be protected from death by shooting or traps. An adequate food base and movement corridors connected to source populations in Mexico are needed.



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2. Doddridge, Joseph. "Endangered and Threatened Wildlife and Plants; Final Rule to Extend Endangered Status for the Jaguar in the United States." *Federal Register*. July 22, 1997. Vol 62, No. 140. pp 9147-39157.
3. Summary notes on Jaguar Habitat Committee Meeting. June 29, 1998.
4. Jaguar Conservation Team Final Summary Notes. July 30, 1998.
5. www.gf.state.az.us/frames/fishwild/jaguar.htm

JAGUARUNDI

Felis jagouaroundi tolteca



Species designation:
ENDANGERED

The jaguarundi is a relatively small cat whose weight averages about sixteen to twenty pounds. They have short legs, long bodies, and an especially long tail. Their small head, short ears, and long body have given the jaguarundi the nickname the "otter cat." Unlike the jaguar and ocelot, the jaguarundi has a solid coat color ranging from dark brown to a reddish chestnut color.

HABITAT

The jaguarundi occupies a variety of different habitats. It can be found in tropical rainforests, savannah grasslands, and dense thorn scrub. It is usually associated with thick undercover and running water.

RANGE

Historically, the jaguarundi ranged from southern Texas, southeastern Arizona, southern Mexico, and Central and South America. The range of the jaguarundi has remained much the same, but with a smaller distribution of the cats. Much of the jaguarundis' range is threatened by human encroachment.

REPRODUCTION

Jaguarundis reach sexual maturity at two to three years and may breed twice a year. The gestation period is about seventy days, after which a litter of two to three kittens are born. The kittens are spotted at birth, but the spots soon disappear.

DIET

The jaguarundi has been found to be mainly a diurnal (daytime) hunter, although occasionally noted to hunt at dusk. It feeds on ground dwelling birds, rodents, and reptiles.

STATUS

On June 24, 1976, the jaguarundi was included as a federally endangered animal under the Endangered Species Act of 1973. The jaguarundi does not have a specific recovery plan, although it would benefit from the same habitat preservation as for the ocelot recovery.¹

JAGUARUNDIS IN PIMA COUNTY

The jaguarundi is a very secretive animal and does not give itself away easily. While it is a diurnal hunter, it shies away from open spaces, preferring dense cover. Sightings of this animal have been documented, though no photograph or specimen of a jaguarundi has ever been recorded in Arizona.²



References

1. U.S. Fish and Wildlife Service. *Listed Cats of Texas and Arizona Recovery Plan (With Emphasis on the Ocelot)*. Albuquerque, New Mexico. 1990.
2. Brown, D.E. & Carlos A. Lopez Gonzales. 1999. *Journal of the Arizona-Nevada Academy of Science*. Vol. 32 pp 155-157

KEARNEY'S BLUE STAR

Amsonia kearneyana



Species designation:
ENDANGERED

Kearney's Blue Star is a perennial herb which grows to about 2.5 feet high and three feet wide.¹

Stems are produced from the root with alternating bright green leaves. White flowers form between April and May. The fruits develop June through August, and are dispersed by floodwater.¹

HABITAT

The plants grow in coarse soil along a partially shaded dry wash at an elevation of 3,600 to 3,800 feet.² The wash is lined with desert riparian trees and shrubs, such as Arizona walnut, catclaw acacia, and velvet mesquite.¹ Surrounding the wash is Sonoran desert scrub and transitional grassland.²

RANGE

A. kearneyana is found in a west facing drainage wash in the Baboquivari Mountains. Currently, only one natural population of Kearney's blue star exists in South Canyon. Sycamore Canyon in the Baboquivari Mountains once had a population in the 1940s, but it is no longer found there.¹ An introduced population in Brown Canyon was planted in 1988, 1989, and 1992. Potential habitats in the Baboquivari Mountains exist in other west-facing drainage washes.²

STATUS

This species is listed endangered and has an approved recovery plan. It is protected as a Highly Safeguarded Species by the Native Plant Law. Species in this category may not be removed from their habitat without a permit from the Arizona Department of Agriculture. While the Arizona Native Plant Law does not apply on the Indian Reservation, it does apply to wild collected plants that are transported off the Reservation.²

KEARNEY'S BLUE STAR IN PIMA COUNTY

The Kearney's blue star is located on the Baboquivari Mountains on the Tohono O'odam Nation, Pima County, Arizona. Few plants remain in South Canyon. Currently, the population in Brown Canyon has about 40– 50 remaining plants with low levels of reproduction. About ten sub-populations of naturally occurring plants have been found on surrounding BLM land.³

The plant is threatened by habitat degradation, damage by flooding, and low reproduction rates.² The plant's recovery plan outlines the steps taken to ensure the survival of this species, such as introducing the population in Brown Canyon.



References

1. U.S. Fish and Wildlife. 1993. *Kearney's Blue Star Amsonia kearneyana Recovery Plan*. U.S. Fish and Wildlife Service, Albuquerque, New Mexico.
2. U.S. Fish and Wildlife. 1998. *Threatened and Endangered Species of Arizona*. Arizona Ecological Service Field Office, Phoenix, AZ. pp 17-18.
3. Falk, Mima. U.S. Fish and Wildlife Service. Personal Communication. July 2001.

LESSER LONG-NOSED BAT

Leptonycteris curasoae yerbavuenae



Species designation:
ENDANGERED

The lesser long-nosed bat is a medium sized bat. Adults have yellow-brown or gray fur above, and rusty brown fur below. It has a very minute tail, small ears, and a triangular noseleaf jutting from the end of its nose.

HABITAT

In the United States, lesser long-nosed bats are typically found in the desert scrub habitat. Roosting occurs in caves, abandoned buildings and mines which are usually located at the base of mountains where food sources are present.

RANGE

Historically, the lesser long-nosed bat ranged from central Arizona and southwest New Mexico through much of Mexico and El Salvador. Currently, the bat ranges from the Picacho and Agua Dulce Mountains in Arizona to southwestern New Mexico, and includes the coasts of Mexico. It is a migratory species that spends summers in Arizona and New Mexico.

DIET

The lesser long-nosed bat is one of the three North American bats that feeds almost exclusively on fruit and nectar from night-blooming columnar cacti such as saguaro and organ pipe. Agave flowers also play a principal role in the bat's diet. By eating the nectar, pollen, and fruit of these species of plants, the bat is an important pollinator.

REPRODUCTION

The population ecology of the lesser long-nosed bat is not well studied. In Arizona and Sonora, female bats give birth during the month of May. Females join a maternity roost where pups are born. From birth, the pups have well-developed feet that allow it to hang in the roost while the mothers leave to feed.

STATUS

On August 30, 1988, the lesser long-nosed bat was listed as endangered throughout Mexico and Arizona. A recovery plan is approved for the bat.

LESSER LONG-NOSED BAT IN PIMA COUNTY

Much of *Leptonycteris curasoae yerbavuenae* range occurs in Pima County including several major maternity roosts. The bat is a "keystone mutualist" because of its role as a pollinator. Without the bats to pollinate numerous species of cacti and agave, many fear the desert ecosystem would begin to decline. Protection of the lesser long-nosed bat would contribute to preserving the dominant plant forms of the Sonoran Desert.



Reference

1. U.S. Fish and Wildlife Service. 1994. Lesser Long-Nosed Bat Recovery Plan.

MASKED BOBWHITE

Colinus virginianus ridgewayi

Species designation:
ENDANGERED

The adult male masked bobwhite has a deep cinnamon colored breast and a black head and throat. Some may have a white stripe traveling from the eye down to the neck and other varying patches of white on the head and throat.

The males have crown feathers that darken with age. The rest of the plumage is an array of black, brown, cinnamon, white, and buff feathers in a pattern similar to other bobwhite species.¹ The female bobwhite has plumage that is mottled brown, black, and white, with a pale cinnamon colored throat.

HABITAT

The masked bobwhite inhabits savannah grasslands where grass and shrubs provide sufficient ground cover.

RANGE

Historically, the masked bobwhite ranged from the grassy plains of southern Arizona to Sonora, Mexico. Currently, reintroduced populations of bobwhite reside in Buenos Aires National Wildlife Refuge (NWR) and two ranches in Sonora.²

DIET

The masked bobwhite incorporates many indigenous plants in its diet.¹ During fall, winter, and early spring, the seeds of the whiteball Acacia (*Acacia angustissima*) seem to make up much of the bird's diet. Berries and small fruits are also incorporated when available. Insects are eaten for protein during the breeding season.¹

REPRODUCTION

The masked bobwhite begins nesting with the start of the monsoon season. Bobwhites form monogamous pairs, with both partners helping to protect the nest and raise the young. The nest is formed in a shallow depression on the ground, well camouflaged in its surroundings. The female will lay ten to twenty eggs, from which about eleven chicks will hatch.¹ The family stays together until late spring.



STATUS

The masked bobwhite is listed under the Endangered Species Act of 1973. It is also protected by the Lacey Act. The U.S. Fish and Wildlife Service has an approved recovery plan with a goal of introducing self-maintained populations in Arizona and Sonora, and eventually delisting the species.

MASKED BOBWHITES IN PIMA COUNTY

The masked bobwhite was first discovered in Pima County, Arizona in the 1860s. With destructive cattle grazing and several years of drought, the bird virtually disappeared from the state by the early 1900s.³ In Arizona, the Buenos Aires NWR is the only verifiable site for the masked bobwhite. With careful management and the reestablishment of native grasslands, the masked bobwhite can make a comeback.



References

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2. Buenos Aires National Wildlife Refuge, U.S. Fish and Wildlife Service. March 1995. Masked Bobwhite Recovery Plan.
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MEXICAN GRAY WOLF

Canis lupus baileyi



Species designation:
ENDANGERED

The Mexican gray wolf is a large dog-like carnivore, weighing between sixty and eighty pounds. The wolf has a fur coat of reddish brown, buff, black, and gray, with a white chin and throat.

HABITAT

Canis lupus baileyi once inhabited oak and pine/juniper savannahs and mixed conifer woodlands above 4,000 feet. The wolf avoided desert areas and may have used wooded riparian areas as travel corridors.

RANGE

Historically, the wolf ranged in southeastern Arizona, southwest New Mexico, much of Mexico, and southwestern Texas. Currently, the Mexican wolf is considered extirpated from its historic range in the southwestern United States. Research has not confirmed the existence of the wolf in Mexico since 1980.¹

REPRODUCTION

Wolves have one litter per year. Mating takes place in February. The female digs a den under a rock ledge, roots of a large tree, or under a bush. The den is lined with leaves and fur. In April, five to six pups are born. They are nursed for five to six weeks and then begin to feed on solid food.

DIET

The Mexican wolf feeds on deer, elk, javelina, bighorn sheep, pronghorn antelope, rabbits and small rodents. The wolf may also take livestock when other prey sources are scarce.

STATUS

The Mexican gray wolf was listed as endangered in 1976. In 1982, a recovery plan was approved with the goal of establishing a self-reliant population of 100 wolves within a 5,000 square mile area.² As of January 1997, the captive population included 148



animals.¹ Beginning in March of 1998, a nonessential experimental population of wolves was reintroduced to the Blue Range Wolf Recovery Area consisting of the Apache and Gila National Forests in Arizona and New Mexico.¹

STATUS IN PIMA COUNTY

As far back as 1909, the Arizona Daily Star predicted the elimination of the wolf by 1910. "It is believed that another year will see the complete elimination of the wolf in Pima County.... The wolves that have been seen during the past year were matured animals, showing that the wolf is not breeding in this locality."³ The wolf was believed to be extirpated from Arizona by the 1950s. The northeastern edge of Pima County falls under the boundary line for the wolves experimental range.⁴ If the wolves' recovery program is successful, and the wolves spread out according to experts' predictions, the Santa Catalina and Rincon Mountains may become home to 'el lobo.'



References

1. U.S. Fish and Wildlife Service. January 12, 1998. "Endangered and Threatened Wildlife and Plants; Establishment of a Nonessential Experimental Populations of the Mexican Gray Wolf in Arizona and New Mexico." *Federal Register*. Volume 63, Number 7.
2. U.S. Fish and Wildlife Service. 1982. *Mexican Wolf Recovery Plan*. U.S. Fish and Wildlife Service, Albuquerque, New Mexico.
3. *Arizona Daily Star*. April 9, 1909. From the Ted Knipe Collection. Arizona Historical Library.
4. U.S. Fish and Wildlife Service. Spring 1998. *Endangered and Threatened Species of Arizona*. Arizona Ecological Service Field Office, Phoenix, AZ. pp. 115-116. *Federal Register*. Volume 63, Number 7.

MEXICAN SPOTTED OWL

Strix occidentalis lucida

Species designation:
THREATENED

The Mexican spotted owl is one of three subspecies of *S. occidentalis*. The owl is about nineteen inches long, with a wingspan averaging 3.3 feet.¹ It has brown upper-parts spotted with patches of white.¹ The owl has large dark eyes, and lacks ear tufts. The legs and feet are fully feathered.²

HABITAT

The Mexican spotted owl occurs in a variety of habitats, consisting of mature montane forests, shady canyons, and steep canyons. The key components in montane forests appear to be characteristics common in old-growth forests: uneven-age stands with high canopy closure and tree density, fallen logs and snags.²

RANGE

The Mexican spotted owl has the largest geographic distribution of any of the *S. occidentalis* subspecies.³ Historically, the owl ranged from the southern Rocky Mountains in Colorado; the Colorado Plateau in southern Utah; southward through Arizona, New Mexico, and far western Texas; in Mexico through the Sierra Madre Occidental and Oriental mountains and the southern end of the Mexican Plateau. Presently, the owl's range reflects the historic range, but owl numbers are much reduced and habitat is patchy.

DIET

The owl's diet consists of rodents, birds, lizards, insects, and occasionally bats.¹ The spotted owl hunts by 'perching and diving.'² The owl will spend minutes, even hours, perched on a branch waiting for prey to venture near. When prey is spotted, the owl swoops down and grabs the prey with its talons.²

REPRODUCTION

Mating begins mid-February to March and egg-laying follows in April to May. The owls usually use nests built by other animals. The female lays one to three eggs which are incubated for twenty-eight to thirty-two days.¹ The young owlets fledge in June, thirty-four to thirty-six days after hatching. By October, the young are fully independent.²



STATUS

The Mexican spotted owl was listed threatened April 14, 1993. A recovery plan was approved for the owl in December 1995.

MEXICAN SPOTTED OWL IN PIMA COUNTY

Pima County is included in the Basin and Range-West area of the Mexican spotted owl recovery plan.⁴ This area ranks third highest in the U.S. for known Mexican spotted owl populations. The owl has been found in the Santa Catalina, Rincon, Whetstone, and Santa Rita Mountains.² The threats to the owl in this region include catastrophic wildfire, recreation, and grazing.⁴ Due to the suppression of fire and the build up of fuel loads, wildfire is viewed as the primary threat to the owl in Pima County. Vast numbers of people enjoy recreational activities which has led to the continuing creation of facilities used for recreational purposes. This construction can potentially alter owl habitat. Cattle grazing may impact the owl by destroying riparian habitats that the owl may use as dispersal corridors. This may inhibit gene flow among populations. New approaches to forest service management need to be implemented to ensure the long-term survival of the Mexican spotted owl.⁴



Reference

1. Arizona Game and Fish Department. 1998. *Strix occidentalis lucida*. Heritage Data Management System.
2. BISON-M Taxonomy. October 16, 1997. Mexican Spotted Owl (*Strix occidentalis lucida*).
3. Heck, Jennifer. June 30, 1993. Mexican Spotted Owls: Federal Protection. Congressional Research Service. Washington D.C.
4. U.S. Fish and Wildlife Service. 1995. Recovery plan for the Mexican spotted owl: Vol. I. Albuquerque, New Mexico. 172 pp.

MOUNTAIN PLOVER

Charadrius montanus



PROPOSED *Species designation:* THREATENED

The mountain plover is a migratory bird that winters in Arizona. It is a small bird (seven inches) that resembles a killdeer. The winter plumage is light brown with a lighter colored breast.¹ The bill is black and the feet are a yellow-brown color.²

HABITAT

Mountain plovers seek dry, disturbed, or intensively grazed, open, flat tablelands.³ Bare ground, short vegetation, and flat topography are the key links in mountain plover habitat.¹ Historically, the plover has nested on black-tailed prairie dog towns.¹ Currently, the mountain plover is associated with heavily grazed areas (near stock tanks)¹, recently plowed ground, semi-desert, and prairie-dog towns.³ In some sites, the plover has been seen to nest near or under tall grass for shade.¹ The mountain plover is one of the nine bird species endemic to the North American grasslands. Endemic grassland bird species have been declining significantly, and the mountain plover's decline has been greater than most.¹

RANGE

During the breeding season (late March to mid-June), most mountain plovers are found in Colorado and Montana. Breeding also occurs in Wyoming, New Mexico, Arizona, Nebraska, Utah, Kansas, Oklahoma, and Texas.¹ Mountain plovers winter mainly in the grasslands and cultivated fields of California, and to a lesser extent are found wintering in Arizona, Texas, and Mexico.¹

DIET

The mountain plover primarily feeds on insects, such as grasshoppers, beetles, and crickets.

REPRODUCTION

Mountain plovers often make their nests next to something conspicuous, such as a cow patty or a pile of rocks. The nest is a shallow depression in the ground, thinly lined with materials found nearby. The plover lays three camouflaged eggs which are incubated for twenty-eight days.⁴ Chicks can run and catch their food soon after hatching. They reach adult size thirty-five days after hatching, though they still cannot fly.⁴ Many eggs are lost due to predation and hail damage while many chicks are lost to predation from peregrine falcons, golden eagles, foxes, and loggerhead shrikes.

STATUS

U.S. Fish and Wildlife Service has proposed listing the mountain plover as a threatened species.

THE MOUNTAIN PLOVER IN PIMA COUNTY

The mountain plover has been reported to winter in southeastern Arizona.¹ Small numbers of mountain plovers have been seen feeding in the Marana area.⁵ The mountain plover's decline has been linked to the destruction, modification, or reduction of its range. Prairie dog reduction, and conversion of grassland to cropland are both factors that have led to the conversion of suitable grassland to unsuitable land for plover use.



References

1. U.S. Fish and Wildlife. February 16, 1999. "Endangered and Threatened Wildlife and Plants: Proposed Threatened Status for the Mountain Plover." *Federal Register*. Vol. 64(30). pp. 7587-7601.
2. Audubon, John James. *Birds of America*. 9/24/99 Web site: <http://employeeweb.myxa.com/rrrb/Audubon/VolVoo553.html>.
3. Knopf, Fritz L. 1996. *The Birds of North America*. No.211. 9/24/99 Web site: <http://www.birdsofna.org/excerptsl/mplover.html>.
4. *The Mountain Plover*. 9/24/99 Web site: <http://npg.ngpc.state.ne.us/wildlife/plover.html>
5. Gyurko, Dorothy. April 1999. "Mountain Plover: A New Threatened Species." Tucson Audubon Society.

NICHOL TURK'S HEAD CACTUS

Echinocactus horzonthalonius var. nicholii

Species designation:
ENDANGERED

The Nichol Turk's head cactus ranges from blue-green to yellow-green. It is a barrel cactus, reaching a maximum height of 18 inches and diameter of eight inches.¹ It has eight ribs which spiral on the trunk. Spines are found on the ridges of the plant, with three central spines and five radial spines.¹ The flowers are bright purple and bloom from April to May. The fruits are covered with white, wooly hairs.² This cactus is very slow-growing, taking ten years to reach a height of two inches.³

HABITAT

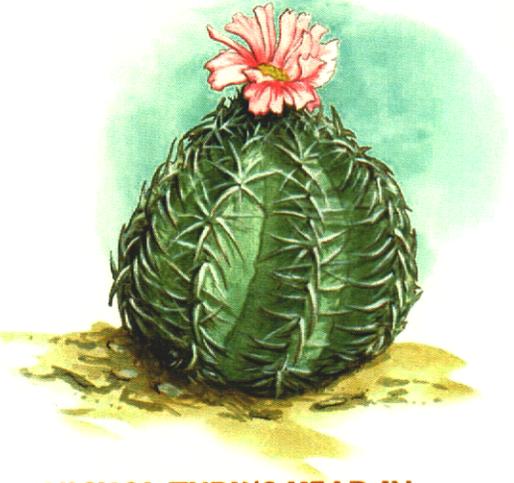
This species occurs in semi-arid Sonoran desert scrub. It persists on limestones outcropping and limestone derived soils in incline terraces, saddles, and alluvial fans at elevations from 2,400 to 4,100 feet.¹

RANGE

The range of the Nichol Turk's Head Cactus is restricted to the Vekol and Waterman Mountains in Arizona and to a population in the Sierra del Viejo Mountains of northwestern Sonora, Mexico.¹

STATUS

This species was listed endangered in 1976 and has an approved recovery plan. It is also protected from international trade by the Convention on International Trade in Endangered Species of Wild Fauna and Flora and by the Arizona Native Plant Law.² The cactus is threatened by mining, off-road vehicle use, collecting, and in some cases, human encroachment.



NICHOL TURK'S HEAD IN PIMA COUNTY

The cactus occurs in the Waterman Mountains of north-central Pima County.² In these mountains, mining, off-road vehicles, and collectors have negatively affected several populations of Nichol Turk's head. In order to remove this species from the endangered species list, natural populations of this plant must be maintained, protected, and if possible, enhanced.¹

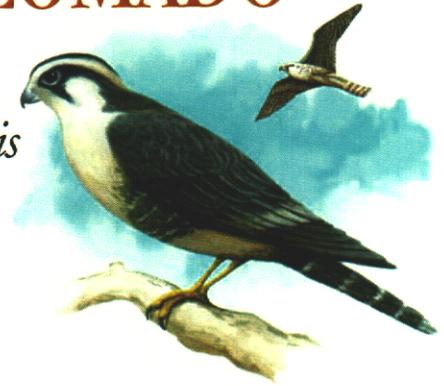


References

1. U.S. Fish and Wildlife Service. 1986. Nichol Turk's Head Cactus (*Echinocactus horzonthalonius var. nicholii*) Recovery Plan. Albuquerque, New Mexico.
2. U.S. Fish and Wildlife Service. 1998. Threatened and Endangered Species of Arizona. Arizona Ecological Service Field Office. Phoenix, AZ. pp. 21-22.
3. Arizona Game and Fish Department. 1994. *Echinocactus horzonthalonius var. nicholii*. Unpublished abstract compiled and edited by the Heritage Data Management System, Arizona Game and Fish Department, Phoenix, AZ. Albuquerque, New Mexico.

NORTHERN APLOMADO FALCON

Falco femoralis septentrionalis



Species designation:
ENDANGERED

This slender, long-tailed falcon is moderate in size (15–18 inches in length and a three-foot wingspan) and has a plumage that is very distinct in pattern and coloration. The aplomado falcon's underparts are much darker in color (blackish) than all other falcons found in the United States.

The tail is banded with white and black (or gray) stripes. A distinctive white line is located below the black cap on its head.

HABITAT

The aplomado falcon is typically a species of open habitats in North and Central America, ranging from coastal prairie and other grasslands through tropical savanna to open woodlands containing oaks and pines.¹ In Arizona, this species most likely occurred in desert grasslands (at relatively low elevations) adjacent to shrubby habitats.

RANGE

This species ranges (or ranged) from the southwestern United States to the southernmost portion of South America. It was largely extirpated in the United States by the 1930s, but a reintroduction program was instituted in southern Texas in 1985 and may be extended to Arizona and/or New Mexico in the future.

BIOLOGY

The aplomado falcon is reported to be a rapid and graceful flyer, but it also spends a lot of time perched or on the ground.³ Hunting is performed both by ambush and during extended flights, sometimes with the pursuit of prey continuing on foot. Pairs of these falcons will hunt cooperatively, with the male typically flying overhead and the female below. This species is also attracted to fires that flush out insects and other prey which are usually taken and consumed by the falcon while flying. These falcons are powerful fliers capable of taking fast-flying birds.²

REPRODUCTION

The aplomado falcon usually nests in trees or tall shrubs where it uses the nests of other birds such as the Chihuahuan raven (*Corvus cryptoleucus*) and Swainson's hawk (*Buteo swainsonii*). Females will lay a clutch of three to four eggs which are whitish in appearance with small brown spots.¹

DIET

The prey of this species is varied, consisting mostly of insects and small birds.

STATUS

F. f. septentrionalis was listed as "Endangered" on March 27, 1986. A Federal Recovery Plan was drafted in 1989, however the species has since disappeared from Arizona.⁴ In 1996, the Arizona Game and Fish Department listed the aplomado falcon as an Arizona Species of Special Concern.⁵

APLOMADO FALCON IN PIMA COUNTY

Before 1890, the aplomado falcon was a fairly common summer, and possibly permanent, resident in southeastern Arizona. Since this time, the species has not occurred in the state. The last recorded observation in Pima County was near Tucson prior to 1910.⁶

References

1. New Mexico Department of Game and Fish et al. 1997. BISON-M New Mexico Species List/Species Accounts. <http://www.fw.vt.edu/wfishex/nmex/species/040380.htm>.
2. New Mexico Department of Game and Fish. 1991. Handbook of Species Endangered in New Mexico. 1991. New Mexico Department of Game and Fish, Santa Fe, NM.
3. Hubbard, J.P., Conway, M.C., Campbell, H., Schmitt, G., and Hatch, M.D. 1979. Handbook of Species Endangered in New Mexico. New Mexico Department of Game and Fish.
4. Arizona Game and Fish Department (AGFD). 1995. Recovery Plans and Conservation Agreements for Listed and Candidate Species in Arizona. Heritage Data Management System (HDMS). Phoenix, Arizona.
5. Arizona Game and Fish Department (AGFD). 1996. Wildlife of Special Concern in Arizona (Public Review Draft). Phoenix, Arizona, 85023-4399.
6. Lusk, fide Visser, Auk 27, 1910281



OCELOT

Felis pardalis

Species designation:
ENDANGERED

The ocelot is often referred to as one of the most beautiful of cats, with a graceful body and long, powerful legs. The coat is creamy yellow marked with rosettes and spots which tend to run parallel to the sides of its body. The head has bold, black spots and bars. The tail is ringed and tipped with black. It is a medium sized cat weighing from 12–30 pounds, and its length varies from 30–41 inches.

HABITAT

The ocelot inhabits a wide range of habitats. It can be found in tropical forests, savannah grasslands, and dense thorn scrub. In Arizona, its presence is usually found in desert scrub communities. The unifying factor is the presence of thick undercover.

RANGE

Historically, the ocelot ranged from most of Texas, southeastern Arizona as far as Fort Verde, much of Mexico, and Central and South America. The current range is similar, but with a much smaller distribution of ocelots.

REPRODUCTION

Females can begin to breed at 18 to 22 months, while males begin breeding at 15 to 30 months. The gestation period is 79 to 85 days with a litter of 1–2 kittens produced.

DIET

The ocelot is primarily a nocturnal hunter. Its diet consists of small to medium sized animals, such as rabbits, mice and birds.

STATUS

On July 2, 1982, the ocelot was included as a federally endangered animal under the Endangered Species Act of 1973. In Arizona, the ocelot is protected by order of Arizona Game and Fish Commission. Also, under Arizona Wildlife Regulation, the ocelot is considered "prohibited wildlife." Therefore, "live" taking, possession, importation, exportation, etc., are generally regulated.¹ The ocelot does have a recovery plan, yet the degrees of implementation in Arizona are unknown.



OCELOTS IN PIMA COUNTY

The ocelot is primarily a nocturnal creature and stays close to dense cover during the day. Sightings of this animal tend to be very rare. Since 1980, one ocelot may have been trapped around the Sasabe area (Brown 1985b, et.al. in U.S. Fish and Wildlife Service). Very little is known about the status of the ocelot in Pima County; but since recent reports of ocelot sightings have occurred in Pima County, the ocelot should be further studied. Habitat destruction, human disturbance, and illegal trapping and shooting may present a problem for the ocelot.



References

1. U.S. Fish and Wildlife Service. *Listed Cats of Texas and Arizona Recovery Plan (With Emphasis on the Ocelot)*. Albuquerque, New Mexico. 1990.

PIMA PINEAPPLE CACTUS

Coryphantha scheeri var. *robustispina*

Species designation:
ENDANGERED

The Pima pineapple cactus is a round plant, measuring four to eighteen inches tall and three to seven inches wide.

The spines are in clusters, with one central hooked spine surrounded by several smaller, straight spines.¹ The cactus can be a single entity or may be found in clusters. Silky yellow flowers appear in July with the onset of the monsoon season. The fruit is oval, green and sweet.¹ The Pima pineapple cactus is sparsely distributed with densities lower than one plant per four acres.²

HABITAT

The cactus grows in semidesert grassland and in Sonoran desert scrub between an elevation of 2,300 and 5,000 feet.² It often occurs in open areas on flat ridge tops.¹

RANGE

The cactus is found in southeast Arizona in Santa Cruz and Pima counties, and in north central Sonora. In Arizona, the majority of the cactus' range is in Pima County.²

STATUS

The Pima pineapple cactus is listed as an endangered species. It is also protected by the Arizona Native Plant Law, and as a Forest Service Sensitive Species.³ It is protected from international trade by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).



PIMA PINEAPPLE CACTUS IN PIMA COUNTY

The majority of the cactus' range in Arizona falls in Pima County. Threats to this species include loss of habitat due to urban development, off-road vehicle use, road construction, livestock grazing, and agriculture and mining.¹ Nonnative grasses alter the habitat which prevents establishment of the cactus.² Illegal collecting also poses a threat to this species. Efforts have been made within Pima County to control threats to the cactus. Buenos Aires National Wildlife Refuge had a prescribed burn around the cactus to control nonnative grass species.² After a population of Pima pineapple cactus was found at the Pima County Motorsports Park near Tucson, Pima County Parks and Recreation fenced the cacti, leaving room for the known population and for population expansion.

In June 2002, the Pima County Board of Supervisors set aside 590 acres as a mitigation bank for the Pima pineapple cactus.



References

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3. U.S. Fish and Wildlife. 1992. *Handbook of Arizona's Endangered, Threatened, and Candidate Plants*. Phoenix, AZ. pp. 23. *robustispina*. Unpublished abstract compiled and edited by the Heritage Data Management System, AZ Game and Fish Department, Phoenix, AZ.

SONORAN PRONGHORN

Antilocapra americana sonoriensis

Species designation:
ENDANGERED

The Sonoran Pronghorn is a desert subspecies of the antelope family.

Upper parts of the Pronghorn are tan; the underpart, rump, and two bands across the neck are white. The male has two black cheek patches and black horns. Both sexes have horns; males have larger horns. Males weigh 100–130 pounds, females weigh 75–100 pounds. Pronghorn are well adapted for speed and predator detection. Their long, slender legs and efficient respiratory system allow them to run as fast as 60 miles per hour. Antelope have evolved in an environment with little to no drinking water. They drink when water is available; otherwise, their water needs appear very low.¹



HABITAT

Within the Sonoran desert, the pronghorn is found in broad, alluvial valleys separated by granite mountains and mesas. Vegetation is scarce throughout most the Sonoran pronghorn's habitat due to little and sporadic rainfall.

RANGE

Historically, the Pronghorn inhabited southwest Arizona and the northern part of Sonora, Mexico. Specifically, the Sonoran pronghorn was thought to inhabit from Hermosillo to Kino Bay in Mexico, to Highway 15 to the east, to Altar Valley and the Tohono O'odam Nation to the north, and to Imperial Valley, California, to the west.¹ Presently, a small population of antelope survive in the arid flatlands of southwestern Arizona and Mexico.

REPRODUCTION

Does are ready to mate at 16 months and bucks are ready by one year of age. The Sonoran pronghorn breed from July through September.² Gestation is about 245 days. At birth, fawns weigh from five to seven pounds.

DIET

The Sonoran pronghorn feeds on herbs, cacti, and desert grasses. Similar to cows, the pronghorn has a rudiment stomach, or a four-part stomach. This is especially beneficial to the antelope because it allows for the digestion of roughly textured foods (cacti and other desert plants) and allows for a high level of water retention.

STATUS

The Sonoran pronghorn has been listed federally endangered since June 2, 1970.



SONORAN PRONGHORN IN PIMA COUNTY

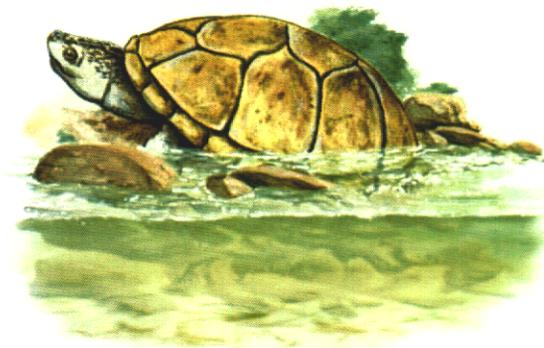
Only two groups of Sonoran pronghorn species remain: one in Sonora, Mexico, and one in Arizona. The current distribution of pronghorn in Arizona lies predominately in Pima County. The antelope's present range lies in the Barry M. Goldwater Range, Organ Pipe Cactus National Monument, and Cabeza Prieta National Wildlife Refuge, with occasional sightings in Bureau of Land Management lands.³ The Sonoran pronghorn numbers are very low, with only 150 (estimated) in Arizona, and 250 (estimated) in Mexico. The possibility of *A. a. sonoriensis* extinction looms near if adequate protection and planning is not implemented. U.S. Fish and Wildlife has developed a Sonoran pronghorn recovery plan, with the goal of eventually removing the pronghorn from the federally endangered list.

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SONOYTA MUD TURTLE

Kinosternon sonoriense longifemorale



Species designation:
CANDIDATE

The Sonoyta mud turtle (*Kinosternon sonoriense longifemorale*) is a subspecies of Sonoran mud turtle (*Kinosternon sonoriense*). Its head and neck are brown or olive on top, contrasting with plain yellow or cream color below. The head and neck are also heavily mottled with contrasting light and dark markings. The throat has nipple-like projections. The shell, which is olive or brown in color, normally contains 23 marginal shields. The shell is elongated and high, slightly concave or flat on top with a single keel down the middle and no flaring on the edges.¹

HABITAT

K. s. longifemorale are found in springs, ponds and waterholes of intermittent stream.

RANGE

K. sonoriense occur along the Gila River drainage of central and southeast Arizona, Laguna Dam and in Yuma County and Big Sandy-Burro River drainages. The only known location in Pima County of *K. s. longifemorale* is in Quitobaquito Spring.²

BIOLOGY

When handled, this turtle gives off a musky odor, hence they are sometimes called "stinkpots" or "stinking jims." The odor glands are located on each side of the body where the skin meets the underside of the shell.¹

REPRODUCTION

The Sonoyta mud turtle will lay a clutch of 2-9 eggs from May to September. The eggs are buried in soil on land.²

DIET

This species eats a variety of food including insects, crustaceans, snails, fish, frogs and some plant materials.

STATUS

In 1997, the U.S. Fish and Wildlife Service listed the Sonoyta mud turtle as a "candidate" for listing under the Endangered Species Act.³

SONOYTA MUD TURTLE IN PIMA COUNTY

The Sonoyta mud turtle is currently restricted to Quitobaquito Spring, which is located in the Organ Pipe Cactus National Monument in Pima County, Arizona.



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SOUTHWESTERN WILLOW FLYCATCHER

Empidonax traillii extimus



Species designation:
ENDANGERED

The Southwestern Willow Flycatcher is a small bird standing six inches high and weighing half an ounce.¹ It has a green-gray back and wings, a white throat, a light olive breast, and a pale yellow belly.² It is most recognized by its calls: a sharp whiff or a “sneezy witch-pew or fitz-bew.”³

HABITAT

The Southwestern Willow Flycatcher occurs in dense riparian habitats along streams, rivers, and other wetlands. At low elevations, the flycatcher breeds in stands of dense cottonwood, willow, and tamarisk thickets, as well as other lush woodland areas near water.³ At higher elevations, it occurs in pure stands of Geyer willow.³ The destruction of riparian habitats has caused a severe decline in the populations of the southwestern willow flycatcher.⁴ This sub-species exists only in fragmented and scattered locations throughout the state.

RANGE

Historically, the breeding range reached from southern California, southern Nevada, southern Utah, Arizona, New Mexico, western Texas, southwestern Colorado, and northwestern Mexico.⁴ The flycatcher is a migratory bird with little known about its winter range. It is currently thought that it winters in Mexico, Central America, and northern South America. Currently, the breeding range for the flycatcher is similar to the historic range, though much of the riparian habitat in the southwest has been destroyed due to agricultural and urban development.

DIET

The Southwestern Willow Flycatcher is an insectivore, taking insects from the air, or picking them from the foliage.⁴

REPRODUCTION

The Southwestern Willow Flycatcher is present on breeding grounds by mid-May. By late May, nests are built, usually in a branched tree fork near the water. Typically, three eggs are laid and then incubated for 12–13 days. Breeding success is heavily affected by predation and brown-headed cowbird parasitism.³

STATUS

The Southwestern Willow Flycatcher was declared endangered March 29, 1995, under the Endangered Species Act of 1973. It is included on the Arizona Game and Fish Department’s draft version of Wildlife of Special Concern in Arizona. The species does have an approved recovery plan and designated critical habitat.

SOUTHWESTERN WILLOW FLYCATCHER IN PIMA COUNTY

At one time, many of the riparian habitats of Pima County were home to *E.t. extimus*. The San Pedro River has been designated as critical habitat for the Southwestern Willow Flycatcher, including sections in Pima County.⁴ Restoration and protection of the remaining riparian habitats in Pima County are essential for the reestablishment of the southwestern willow flycatcher.

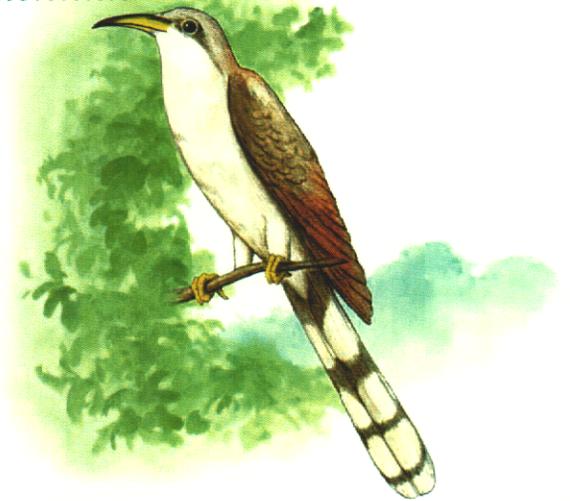


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WESTERN YELLOW-BILLED CUCKOO

Coccyzus americanus occidentalis



Species designation:
CANDIDATE

The western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) is a long and slender bird with relatively short, dark legs. The plumage is grayish-brown on top and white below. The primary feathers on the wings are rufous (orange-brown) in color, and there is a bold, black and white pattern under the tail. The lower mandible on the bill is yellow. Juveniles, which hold their plumage well into the fall, have a much paler pattern on the tail; and the bill may show little to no yellow. The "song sounds hollow and wooden, a rapid staccato kuk-kuk-kuk that usually slows and descends to a kakakowlp-kowlp ending."¹



HABITAT

In Arizona, the western yellow billed cuckoo will use streamside cottonwood, willow groves and large mesquite bosques for migrating and breeding. This species may be rarely observed as transient in desert and urban settings.²

RANGE

The total range for *C. a. occidentalis* is quite large. It nests anywhere from southern Canada, south through the United States to the Florida Keys, central America and southern Baja California. This species winters in South America to central Argentina and Uruguay. In Arizona, the western yellow billed cuckoo can be found in the southern, central and extreme northeastern areas.²

BIOLOGY

Breeding often coincides with outbreaks of cicadas and tent caterpillars. This species may lay more eggs in good prey-abundant years with the extra eggs possibly laid in other birds' nests.²

REPRODUCTION

Both the male and female nest, often in willow or mesquite thickets, from 4–30 feet above the ground. The nest is a stick platform, thinly lined with leaves, mesquite and cottonwood strips, grass and catkins with a little depression to hold the eggs. The nest is well concealed by the surrounding foliage. The yellow-billed cuckoo will lay 3–4 unmarked, pale greenish-blue eggs. Incubation usually lasts 4–11 days with the eggs changing color to greenish-yellow. The young hatch out of the eggs synchronously. The male will feed the first fledgling, while the female will feed the remaining young until they leave the nest in 7–8 days.²

DIET

The diet for the western yellow-billed cuckoos consists of hairy caterpillars, bird eggs, frogs, lizards, ants, beetles, wasps, flies, berries and fruit. The parents will feed their young by regurgitating insects.²

STATUS

Due to general population declines in all areas, the western yellow-billed cuckoo is currently petitioned for listing under the Endangered Species Act. The Arizona Game and Fish Department currently listed the species as "State Threatened"³ and a "Wildlife of Special Concern."⁴

WESTERN YELLOW-BILLED CUCKOO IN PIMA COUNTY

Small numbers of this species have been observed in riparian woodlands (Cienega Creek and San Pedro River corridors) and pecan groves (Santa Cruz River) in eastern Pima County. Protection and restoration of healthy riparian habitats is essential to the continued existence of this species in Pima County as well as the rest of the country.

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