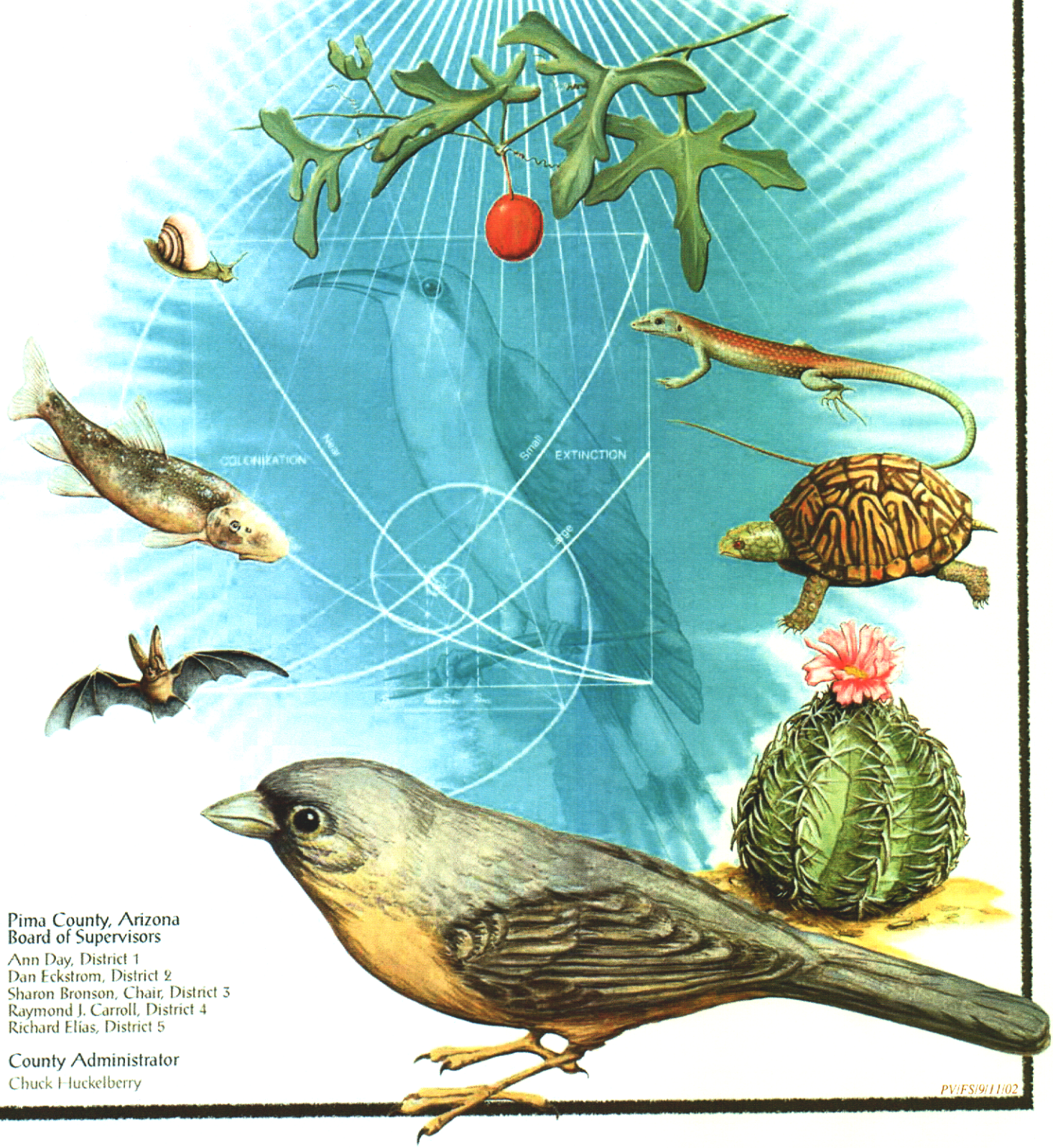
Priority Vulnerable Species Fact Sheets

Sonoran Desert Conservation Plan

2002



Pima County, Arizona
Board of Supervisors

Ann Day, District 1
Dan Eckstrom, District 2
Sharon Bronson, Chair, District 3
Raymond J. Carroll, District 4
Richard Elías, District 5

County Administrator

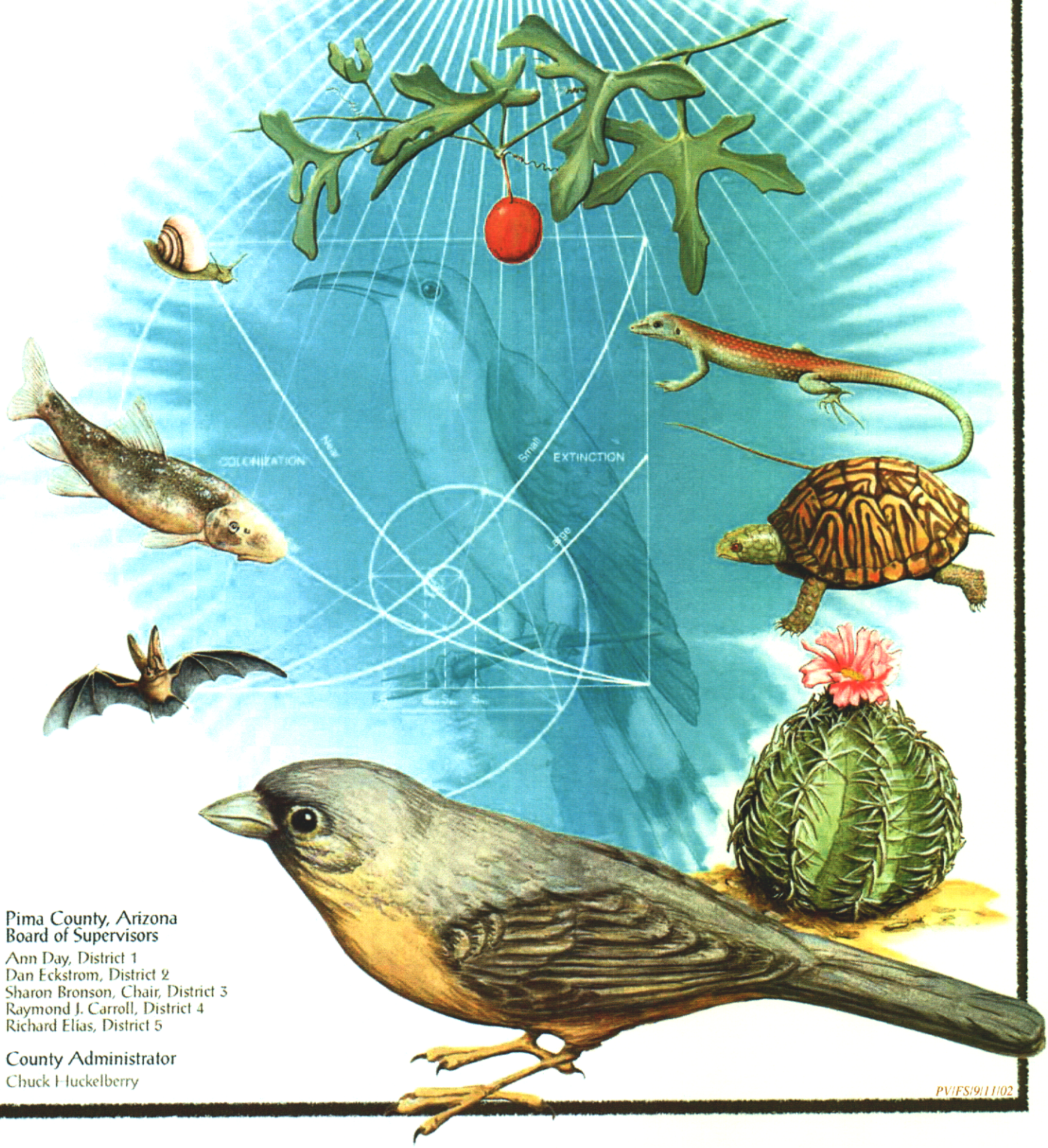
Chuck Huckelberry

PV/FS/9/11/02

Priority Vulnerable Species Fact Sheets

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County Administrator
Chuck Huckelberry

PVIFS/9/11/02

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

SONORAN DESERT CONSERVATION PLAN (SDCP) PRIORITY VULNERABLE SPECIES

SDCP
PRIORITY VULNERABLE

PRIORITY VULNERABLE SPECIES

Priority Vulnerable Species are species recognized by the Science and Technical Advisory Team (STAT) and the local scientific community as a vulnerable species in Pima County. The species included on these fact sheets have been recommended for consideration by the STAT as potentially covered under the Section 10 Permit.



Sonoran Desert Conservation Plan
SPECIES
FACT SHEETS

ABERT'S TOWHEE

Pipilo aberti



SDCP
PRIORITY VULNERABLE

The Abert's towhee is a large sparrow with gray-brown upper parts and pinkish-brown underparts. The face is dark brown with a light bill. Unlike many birds, the plumage between the sexes is identical.

HABITAT

The Abert's towhee is found in mesquite bosques and cottonwood-willow associations with an understory of dense shrubs.

RANGE

The Abert's towhee occurs in brushy riparian habitat within the Lower Sonora zone. It occurs in southeastern California, southern Nevada, southwestern Utah, central Arizona, southwestern New Mexico, and northern Sonora. In Arizona, the towhee can be found in suitable habitat along rivers, streams, and washes.

DIET

Abert's towhee feeds on insects and seeds.

REPRODUCTION

Abert's towhees are monogamous and usually mate for life. The mated pair has a year-round territory which serves as its foraging ground and nesting area. Abert's towhees have two broods per year, usually during the spring and late summer. The female lays two to five eggs which are pale blue with dark brown markings. A new brood is started about nine weeks after the first nest is started.

STATUS

The Abert's towhee has experienced a population decline over the last 150 years, most likely due to habitat loss. Many riparian areas, preferred habitat for the towhee, have been cleared or altered by human use. Lowered water tables have dried streams and reduced the dense vegetation. Salt cedar, an invasive exotic species, provides less than optimal habitat and now covers much of the towhees' range. The Abert's towhee is experiencing much of the same habitat loss as the endangered southwestern willow flycatcher and would benefit from habitat protection for the endangered species.[1]

ABERT'S TOWHEE IN PIMA COUNTY

At one time, many of the riparian habitats of Pima County were home to the Abert's towhee. The destruction of these habitats has caused a decline in the populations of the towhee. Protection and restoration of the remaining riparian habitats are important for the towhee, as well as many other species of animals.

Sonoran Desert Conservation Plan
SPECIES FACT SHEETS

References

1. *Tweit, R.C., and D.M. Finch. 1996. Abert's Towhee (Pipilo alberti). The Birds of North America, No. 111 (A. Poole and F. Gill, eds.). The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, D.C.*

ALLEN' S BIG-EARED BAT

Idionycteris phyllotis



SDCP
PRIORITY VULNERABLE

The Allen's big-eared bat is a tawny colored bat about two inches in length with a wingspan ranging from 12 to 14 inches. The bat has large ears, one and one half inches, with two fleshy lobes, called lappets, projecting forward from the base of the ears. The bat can protect its ears by folding and coiling the ears into "ram's horns" which lay along the sides of the bat's neck.

HABITAT

In Arizona, this bat is known to roost in abandoned mine shafts, most often in ponderosa pine, pinyon juniper Mexican woodland, and riparian areas of sycamores, cottonwoods and willows. This species is often found near boulder piles, cliffs, rocky outcroppings, or lava flows.

RANGE

The bat is found in elevations from 2,600 to 9,800 feet, though most individuals are found between 3,500 and 7,500 feet. Allen's big-eared bats are known to range from the Colorado River Valley of Arizona to New Mexico and the central highlands of Mexico. Within Arizona, this species is best known to occur along the Mogollon Rim and adjacent mountain ranges. Records of occurrence exist in the following counties: Mohave, Coconino, Yavapai, Gila, Graham, and Cochise.

DIET

This species of bat is primarily insectivorous, feeding primarily on soft-bodied insects such as small moths, soldier beetles, dung beetles, leaf beetles, roaches, and flying ants.

REPRODUCTION

Little is known about the reproductive history of this species. In Arizona, females form maternity colonies in early summer. Young are born in mid- to late July, and begin to fledge by the end of July. Maternity roosts are known in the Kingman area and in the vicinity of Aravaipa Canyon.

STATUS

The Allen's big-eared bat is a Federal Species of Concern. The Western Bat Working Group rates this species as imperiled or at high risk of imperilment.

ALLEN'S BIG-EARED BAT IN PIMA COUNTY

There are no records for this species in Pima County. It has been included in the Sonoran Desert Conservation Plan because of the possibility that it may be found here. A likely place to look for this species would be the San Pedro River and mine tunnels along the river side of the Catalina Mountains in northeastern Pima County.

Sonoran Desert Conservation Plan

SPECIES FACT SHEETS

References

1. *Recon. 2001. Draft Priority Vulnerable Species. Analysis and Review of Species Proposed for Coverage by the Multiple-Species Conservation Plan. Pima County Administrator's Office.*

ARIZONA SHREW

Sorex arizonae



SDCP
PRIORITY VULNERABLE

Shrews are the smallest land mammals known.[1] The Arizona shrew is a medium-sized shrew, measuring four inches long and weighing 0.1 to 0.2 ounces.[1] The fur is short, dense, and velvet- like, the color ranging from pale gray to grayish-brown.[2] The snout is long and pointed, the eyes are small, and the ears are very inconspicuous.[3]

HABITAT

The shrew is found primarily in rocky, narrow canyons[1] with riparian areas bordered by pine-oak forests, usually near surface water.[3] Dense leaf litter and downed logs provide cover for foraging shrews.[1]

RANGE

The Arizona shrew ranges from the mountains of southeastern Arizona (the Huachuca, Santa Rita, and Chiricahua mountains), the Animas Mountains in New Mexico, and the Sierra Madre Occidental of Chihuahua, Mexico.[3]

DIET

Like moles and hedgehogs, the shrew is an insectivore.[1] Shrews have a very high metabolic rate, and in order to avoid starvation, the shrew must consume one to two times its body weight daily. The shrew mainly feeds on insects, but is a voracious eater and will consume anything it can subdue, including earthworms, centipedes, snails, mice, and sometimes other shrews. The shrew locates its prey by using echolocation. The high clicks can confuse prey, making it easier to capture. The shrew also has mildly venomous saliva, which helps it overpower larger prey such as mice.[1]

REPRODUCTION

Shrews are active year round. A female shrew can breed at three months old.[1] The gestation period lasts twenty to twenty-five days, after which five to seven young are born.[2] After about three weeks, the young shrews are weaned and taught to hunt. During this phase of development, a behavior called caravanning is exhibited. The young grab the base of the tail of the preceding individual, forming a train behind the mother. It is thought that this behavior allows the young shrews to safely explore and familiarize themselves with their surroundings.[1]

STATUS

The Arizona shrew is included on the Arizona Game and Fish Department's draft list of Wildlife of Special Concern. The shrew is also called Sensitive by the U.S. Forest Service.

ARIZONA SHREW IN PIMA COUNTY

The Arizona shrew is sensitive to habitat loss and degradation related to livestock grazing and development of recreation sites.[2] The shrew appears to have very narrow habitat requirements and disturbance may seriously jeopardize this species.[2]

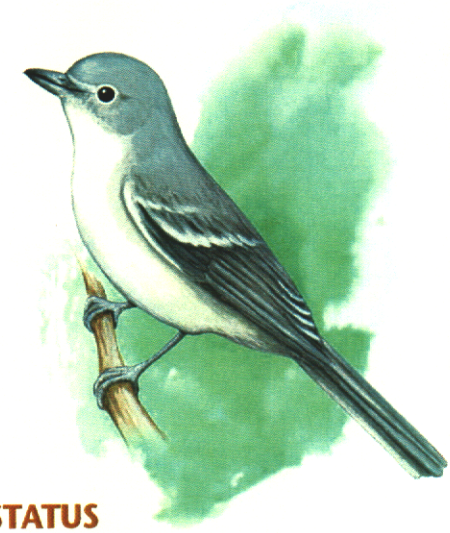
Sonoran Desert Conservation Plan
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1. *Van Pelt, William E. "Arizona Shrew (Sorex arizonae)." AZGF Nongame Field Notes. 8/23/99 Web site: www.gf.az.us/frames/fishwild/ngame_n.htm*
2. *BISON-M Taxonomy. Arizona Shrew (Sorex arizonae). 11/26/99 Web site: www.fw.vt.edu/fishex/nmex_main/species/050685.htm*
3. *Arizona Game and Fish Department. 1997. Sorex arizonae. Heritage Data Management System.*

BELL'S VIREO

Vireo bellii



SDCP
PRIORITY VULNERABLE

The Bell's vireo is a small four inch bird with drab gray-green plumage above and white to yellow plumage below. The bird has a white eye ring and two pale wing bars. The feet and bill are bluish-gray.[1] As a vireo, it is identified by having a thickened bill, heavy legs, and lethargic behavior. The song is somewhat harsh and squeaky, sounding like: zheedle zheedle zheedle zhoo? (pause) zheedle zheedle zheedle zhee! The song has been likened to someone asking a question, and then answering it himself.[2]

HABITAT

Bell's vireo inhabits lowland riparian areas with willows, mesquite, and seepwillows. The vireo prefers dense, low, shrubby vegetation in riparian areas.[1] *V. bellii* is threatened by loss of habitat from agriculture, grazing, urbanization, and groundwater pumping. Decline of Bell's vireo has been observed in Arizona.[1]

RANGE

V. bellii breeds in North America and winters south of the United States-Mexico border. The breeding range includes southern California, Arizona, New Mexico, the central Great Plains and the Midwest southward to northern Mexico. Bell's vireo winters in Central and South America.

DIET

The vireo is an insectivore, feeding on caterpillars, beetles, bees and wasps, and small spiders. They move about slowly, taking food from branches and leaves.[1]

REPRODUCTION

V. bellii breeds May through July. Three to five white, speckled eggs are laid in a small, bowl-shaped nest. Cowbird nest parasitism affects up to seventy percent of all nests.[1] Bell's vireo abandons the nest if parasitized, and reproductive success is lowered. Severe weather and predation also affects productivity.[1]

STATUS

Bell's vireo is listed as a migratory bird under the Migratory Bird Treaty Act.

BELL'S VIREO IN PIMA COUNTY

Bell' s vireo has been observed in the Cienega Creek Natural Preserve,[3] and along the effluent-dominated Santa Cruz River.[4] This species also occurs in Saguaro National Park, Organ Pile National Monument, Buenos Aires National Wildlife Refuge, Tucson Mountain Park, and Colossal Cave.

Sonoran Desert Conservation Plan
SPECIES FACT SHEETS

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1. *BISON-M. 1997. "Bell's Vireo (Vireo bellii)." New Mexico Game and Fish Department.*
2. *Peterson 1961, et al BISON-M. 1997. "Bell's Vireo (Vireo bellii)." New Mexico Game and Fish Department.*
3. *Pima County Parks and Recreation Department. Cienega Creek Natural Preserve Bird Checklist. 9/3/92.*
4. *Pima County Flood Control District and ENTRANCO. 1998. Biological Studies: High Plains Effluent Recharge Project Marana, Pima County, Arizona. Appendix B.*

BURROWING OWL

Athenes cunicularа



SDCP
PRIORITY VULNERABLE

The burrowing owl is a small owl, measuring 7.5 to 10 inches tall, with long legs suitable for running or walking.[1] The owl has brown upper parts with white spotting on the back, wings, and head.[2] The chest is white with dark barring, fading to spotting on the belly. The owls have a white chin stripe followed by a black neck stripe.[3] The eyes and beak are yellow.

HABITAT

Burrowing owls are associated with burrowing animals.[3] The owl breeds in grasslands, prairies, and open areas of human disturbance, such as golf courses, cemeteries, and airports.[4]

RANGE

Historically, the owl ranged in Canada, the United States west of the Mississippi River, and Mexico.[4] Currently, the range is much the same, though habitat in many areas has been reduced. This species is migratory throughout most of its range, breeding in North America and wintering south of the border in Mexico south to Guatemala and El Salvador.

DIET

The owl feeds on insects, small rodents, lizards, and birds.

REPRODUCTION

The burrowing owl breeds March through July. The owl nests in a burrow made by prairie dogs, gophers, squirrels, foxes, turtles, or other burrowing animals. The burrow is lined with cow chips, horse dung, grasses, and feathers. The owl can lay up to eleven eggs, but a brood of three to six is more common. The eggs are incubated for about twenty-eight days. The young owlets fledge after forty-two days, usually in September.[4]

The mortality rate for the owl is high due to predators, starvation, and parasites. The mortality rate for juvenile owls is seventy percent and nineteen percent for adults. The overall mortality rate for the species is thirty-five percent.[4]

STATUS

The burrowing owl is listed as a migratory bird under the Migratory Bird Treaty Act. This species is declining throughout its range.[4] Human efforts to control squirrels and prairie dogs have resulted in owl poisoning and nest site loss. Beneficial management practices include limiting habitat disturbance and allowing controlled livestock grazing.[4]

BURROWING OWL IN PIMA COUNTY

This bird is rare in Pima County. The majority of known active burrows in the Tucson area are on Davis-Monthan Air Force Base, and the Santa Cruz River floodplain.

Sonoran Desert Conservation Plan
SPECIES FACT SHEETS

References

1. *Kielder Water Bird of Prey Centre. "Burrowing Owl (Athene cunicularia)." 12/14/99 Web site: http://www.discoverit.co.uk/falconry/burrow.htm*
2. *Patuxent Bird Identification Center. "Burrowing Owl Athene cunicularia." 12/14/99 Web site: http://www.mbr pwrc.usgs.gov/id/framlst/1dtips/h3780id.html*
3. *The Raptor Center. "Burrowing Owl." 12/14/99 Web site: http://www.raptor.cvm.umn.edu/newwebdev/raptor/rfacts/burrow.html*
4. *New Mexico Game and Fish. "Burrowing Owl (Athene cunicularia hypugaea)." BISON-M Taxonomy.*

CALIFORNIA LEAF-NOSED BAT

Macrotus californicus



SDCP
PRIORITY VULNERABLE

The California leaf-nosed bat is a brown bat with a wingspan of 13.5 inches. The ears are 1.0 to 1.5 inches long and are joined together near the base. The bat has a short tail which extends about 0.5 inches. This species has an erect, lanceolate nose-leaf.

HABITAT

The California leaf-nosed bat is known from caves, mines, and rock shelters, mostly in Sonoran desert scrub. Roost sites are usually located near foraging areas.

RANGE

This species ranges from southern California, southern Nevada, across the southwestern half of Arizona and southward to the southern tip of Baja California, northern Sinaloa, and southwestern Chihuahua, Mexico. In Arizona, the California leaf-nosed bat occurs in Sonoran desert scrub from south of the Mogollon Plateau.

DIET

The California leaf-nosed bat feeds on large flying insects, including grasshoppers, moths, and flying beetles. The bat can catch prey in flight, or may glean forage from vegetation and on the ground. The bat seizes its prey from above, transporting it to a night roost to feed.

REPRODUCTION

Male bats establish courtship areas called leks in mines or caves. Females enter the lek and select a male. Fertilization takes place in fall, though embryological development is delayed through the winter until March when development continues normally. Females congregate in maternity roosts and give birth during May and June. Females nurse their young for one month, at which point the young can fly and forage for themselves.

STATUS

The California leaf-nosed bat is Federal Species of Concern, an Arizona Game and Fish Department Wildlife of Special Concern, Forest Service Sensitive, and is ranked by the Western Bat Working Group (WBWG) as red/high. The red/high designation is given to species that are imperiled or are at high risk of imperilment. The WBWG recommends these species be given the highest priority for funding, planning, and conservation actions.

CALIFORNIA LEAF-NOSED BAT IN PIMA COUNTY

This species has been known to occur in the Coronado National Forest, Organ Pipe National Monument, Cabeza Prieta National Wildlife Refuge, Tucson Mountain Park, and Colossal Cave Mountain Park. All roosts are considered significant, and all roosts should be protected. The most important threat potentially affecting this species is human disturbance to roosts.

Sonoran Desert Conservation Plan
SPECIES FACT SHEETS

References

1. *Recon. 2001. Draft Priority Vulnerable Species. Analysis and Review of Species Proposed for Coverage by the Multiple-Species Conservation Plan. Pima County Administrator's Office.*

DESERT BOX TURTLE

Terrapene ornata luteola



SDCP
PRIORITY VULNERABLE

T.o. luteola **is a land turtle that has a hinged shell design, allowing it to completely enclose itself within its shell. The shell is high and rounded, and marked with radiating lines of black or brown on a background of yellow.[1] As the desert box turtle ages, the markings fade and many older individuals become a uniform yellow, tan, or straw in color.[2] Male turtles have red irises and the first nail on each hind toe is turned in.[1]**

HABITAT

The desert box turtle is found in arid and semi-arid regions, on plains, grasslands, and in pastures. It prefers open prairies with herbaceous cover.[3] This species requires easily penetrated soil for nesting, resting, and hibernating. The box turtle is associated with prairie dog towns.[3]

RANGE

T.o. luteola ranges throughout southeastern Arizona, much of New Mexico, southwestern Texas, and northern Mexico.[2]

DIET

The desert box turtle is omnivorous, feeding on plant and animal tissue. Much of the diet consists of insects, although the turtle will eat berries, young shoots, leaves, and occasionally carrion.[3] The box turtle often searches under cow dung for beetles and other insects.[1]

REPRODUCTION

The male desert box turtle reaches sexually maturity at eight to nine years, the female matures at ten or eleven years.[2] Courtship and mating usually take place in the spring, immediately after awakening from hibernation. Female box turtles can retain the sperm from mating for several years. Nesting occurs from May to July. Clutch size ranges from two to eight eggs, and incubation lasts about seventy days.[4]

STATUS

T.o. luteola has no federal or state listing. Box turtles may be collected from the wild with a valid Arizona Hunting License and are subject to the Arizona Game and Fish Department's wildlife regulations.[4]

DESERT BOX TURTLE IN PIMA COUNTY

This species occurs in Las Cienegas Conservation Area, in the Santa Cruz River near Sahuarita, and Altar Valley. Pima County is the westernmost edge of range for this species.[5]

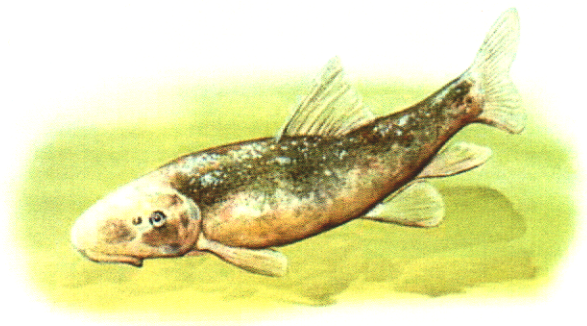
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2. *Dawson, Jeff. 1998. "Western Box Turtle." 12/22/99 Web site: http://www.geocities.com/Heartland/Plains/3550/wbox01.html*
3. *New Mexico Game and Fish Department. 1997. BISON-M Taxonomy. 12/22/99 Web site: http://www.fw.vt.edu/fishex/nmex_main/species/030415.htm*
4. *Arizona-Sonora Desert Museum Tortoise Adoption Program. 1997. "Natural History and Husbandry of the Desert Box Turtle." 12/22/99 Web site: http://www.desertmuseum.org/exh_boxturtleinfo.htmlSources*
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DESERT SUCKER

Catostomus clarki



SDCP
PRIORITY VULNERABLE

The desert sucker (*Catostomus clarki*) is native to Arizona. Depending on habitat, fish can be 8 to 31 inches in length and can weigh up to a little over four pounds. The body is sharply bi-colored: olive-brown on top and deep-yellow below. Scales on the upper half have dark spots which form faint, dashed lines. The sucker's lower lip is about three times as thick as the upper lip. Many people confuse large individuals with carp because of similar coloration. This species was used extensively as food by primitive man along streams of the Gila basin, and it presently provides considerable sport for bow-and-arrow and snagging enthusiasts. It also will take a baited hook and gives a slow, determined struggle when taken on light tackle.[1]

HABITAT

The desert sucker can be found in a variety of habitats from warm water rivers to trout streams. It prefers rivers or streams that have deep and quiet, rocky or gravely pools. This species is intolerant of lake conditions created by dams.

RANGE

The desert sucker occurs in suitable habitats of the lower Colorado River, downstream from the Grand Canyon, generally including tributary streams of the Gila River drainage upstream of Gila, Arizona along with the Virgin River basin in Utah, Arizona and Nevada. The "historic range" included Arizona, New Mexico, Nevada, Utah and Mexico.

BIOLOGY

Experimental studies suggest that the desert sucker has a lower tolerance to reduced oxygen than other native stream fishes.

REPRODUCTION

The desert sucker spawns in riffles during late winter or early spring. After hatching, juveniles gather in quiet pools near the banks and move to swifter waters as they mature. Hybrids have been reported between Sonora and Desert suckers.[2]

DIET

Young desert suckers feed primarily on the larvae of aquatic insects. Adults feed mostly on aquatic plants and parts of plants present along the stream bottom. Feeding is performed predominantly by scraping plant materials off of rocks and small stones.

STATUS

In 1994, the Desert sucker was listed in the Federal Register as a Category 2 species for consideration to be listed as threatened or endangered.[3] In 1996, the U.S. Fish and Wildlife Service (USFWS) changed the listing of "Federal Candidate" species. The "Category" designation was eliminated and species listed under Categories 2 and 3 were no longer considered candidates for listing under the Endangered Species Act. Currently, this species is now classified by the USFWS as a "Species of Concern."[2]

DESERT SUCKER IN PIMA COUNTY

The desert sucker once occurred throughout Arizona, including the Santa Cruz River watershed. This species was eliminated from the area near Tucson by 1937.[4] The desert sucker is currently extirpated from all of Pima County, but may still exist along the Santa Cruz River upstream of the county line.

Sonoran Desert Conservation Plan
SPECIES FACT SHEETS

References

1. *Minckley, W. L. 1973. Fishes of Arizona. Arizona Game and Fish Department, Phoenix. pp. 186-192*
2. *New Mexico Department of Game and Fish, et al. 1998. BISON-M: New Mexico Species List/Species Accounts. http://www.fw.vt.edu/fishex/states/nm.htm*
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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*

GENTRY INDIGO BUSH

Dalea tentaculoides



SDCP
PRIORITY VULNERABLE

D. tentaculoides **is a shrubby perennial herb growing from a woody root crown.[1] It can grow up to six and a half feet tall, but usually remains shorter. Young branches are green and turn brown with age. The leaves are compound, with nine to seventeen leaflets.[2] The flowers are small, pea-like, and rose-purple in color.[1]**

HABITAT

D. tentaculoides grows on canyon bottoms at elevations ranging from 3600 to 4400 feet.[2] The plant occurs in disturbance prone environments, and is subject to periodic flooding.[1]

RANGE

This species occurs in southern Arizona and may extend into Mexico. The plant has been found in several locations in Pima and Santa Cruz Counties, and one population has been found in Mexico.[3] Historically, the species had been found in the Coyote and Baboquivari Mountains in Pima County.[4]

STATUS

D. tentaculoides is a U.S. Fish and Wildlife Service "Species of Concern." In January 2002, the Center for Biological Diversity filed a petition to list the Gentry Indigo Bush as an endangered species. It is protected under the Arizona Native Plant Law and considered "sensitive" by the Regional Forester.

GENTRY INDIGO BUSH IN PIMA COUNTY

The majority of *D. tentaculoides* range falls within Pima County. Threats to this species includes grazing, trampling of plants by recreationists, and flooding.[1] Two populations of *D. tentaculoides* have been found on the Tohono O'odham Reservation.[2] The Baboquivari Mountains have been identified as a priority conservation area for this species. [5]

Sonoran Desert Conservation Plan
SPECIES FACT SHEETS

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2. *Desert Botanical Garden. 1999. "Dalea tentaculoides Gentry Indigo Bush." 12/22/99 Web site: www.dbg.org/index.htm*
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4. *U.S. Fish and Wildlife Service. 1992. Handbook of Arizona's Endangered, Threatened, and Candidate Plants. Pp. 3*
4. *U.S. Fish and Wildlife Service. 1992. Handbook of Arizona's Endangered, Threatened, and Candidate Plants. Pp. 36.*
5. *RECON. 2001. Priority Vulnerable Species. Pima County Administration*
6. *Dalea tentaculoides. Heritage Data Management System.*

GROUND SNAKE

Sonora semiannulata



SDCP
PRIORITY VULNERABLE

The Ground Snake is a small (8-18 inches long) crossbanded, striped or plain colored snake with a head that is only slightly larger than its neck.[1] The top of the snake may be brown, reddish, orange or gray. The sides are lighter than the top and the bottom is whitish or yellowish. The dorsal pattern in this species varies greatly: 1) dark crossbands may encircle the body, form saddles on the top or be reduced to a single band around the neck; 2) dark crossbands may be entirely absent; 3) some populations (along the lower Colorado River) have broad beige, red or orange stripes and gray or bluish gray sides.[1]

HABITAT

S. semiannulata is a secretive nocturnal snake of arid and semiarid lands where the soil may be rocky, gravelly, or sandy and has some subsurface moisture.[1] It will frequent river bottoms, desert flats and rock hillsides where there are pockets of loose soil. Vegetation is usually sparse, as on sagebrush plains and cresote bush desert, but along the Colorado River the snake is found among thickets of mesquite and willows.[1] In Pima County, a valley form of *S. semiannulata* is found in desert grassland with clay loams or heavy, silty clay loams.

RANGE

The species occurs from the Snake River region of southwest Idaho to the tip of Baja California, and from southeastern California to east-central Texas. The species is found in elevations ranging from sea level to 6,000 feet.[1]

REPRODUCTION

The Ground Snake will lay a clutch of 4–6 eggs in late June or July which will hatch in about two months.[2]

DIET

This species eats spiders, scorpions, centipedes crickets, grasshoppers and insect larvae.[1]

STATUS

Currently, there is no federal or state status identified for the Ground Snake.

GROUND SNAKE IN PIMA COUNTY

The main concern in Pima County is for the valley form of Ground Snake found in the tobasa grassland of the Tohono O'Odham Nation. Small numbers of this form, which may be a subspecies, are found with more common forms of *S. semiannulata*. A population in Marana is unique and abundant enough to be of special interest.[3]

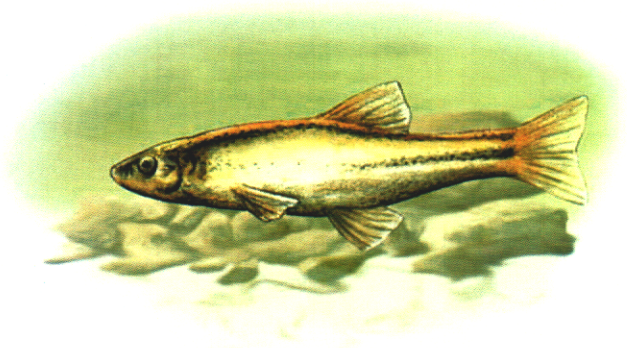
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LONGFIN DACE

Agosia chrysogaster



SDCP
PRIORITY VULNERABLE

This fish is among the hardiest of native fish. The longfin dace is a small (less than 4 inches long) silvery minnow with a dark back and white on the belly. A dark band will sometimes be located along the sides just above the mid-section and iridescent gold flecks may develop on the upper sides of both sexes. Breeding males have some yellow on the lower parts of their paired fins.

HABITAT

Longfin dace tend to occupy relatively small streams. The range of habitat is widespread, from intermittent low-desert streams to clear and cool brooks at higher elevations.

RANGE

Longfin dace are native to the Gila, Bill Williams, Yaqui, Magdelena and Sonotya drainages. These fish have been introduced into the Virgin River basin in Arizona and the Zuni River, Mimbres River and Rio Grande Basin in New Mexico. These fish are highly opportunistic, moving rapidly through flowing water during periods of high runoff and travelling amazing distances in a relatively short amount of time.[1]

BIOLOGY

"It has a remarkable capability to disperse into new habitats, appearing a few hours or days after flow reestablishes in formerly dry stream channels. Longfin dace were once recorded to survive in tiny volumes of water beneath mats of filamentous algae, then reproduce a few days after when summer rain rejuvenated the stream."[2]

REPRODUCTION

Longfin dace may spawn throughout the year, but primarily in the spring. In the Colorado River Basin, longfin dace create saucer-shaped depressions where the eggs are deposited and newly hatched young. This fish is among the hardiest of native fish. The longfin dace is a small (less than 4 inches long) silvery minnow with a dark back and white on the belly. A dark band will sometimes be located along the sides just above the midsection and iridescent gold flecks may develop on the upper sides of both sexes. Breeding males have some yellow on the lower parts of their paired fins for a brief time.[2]

DIET

Longfin dace are omnivorous, feeding on various aquatic invertebrates and plants depending on the availability.

STATUS

Currently, the longfin dace is considered by the U.S. Fish and Wildlife Service (USFWS) as a "Species of Concern."[3] The term "Species of Concern" should be considered as a term-of-art that describes the entire realm of taxa whose conservation status may be of concern to the USFWS, but does not have any official status.

LONGFIN DACE IN PIMA COUNTY

Currently, longfin dace are known to occur in Pima County along the perennial waters of Cienega Creek, Buehman Canyon (near the San Pedro River), and the upper reach of the Cañada del Oro. Historically, this fish occurred all along the Santa Cruz River from Santa Cruz County to the Pinal County Line (Minckley, 1973). Longfin dace disappeared from the Santa Cruz River near Tucson by 1950.[4]

Sonoran Desert Conservation Plan
SPECIES FACT SHEETS

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LOWLAND LEOPARD FROG

Rana yavapaiensis



SDCP
PRIORITY VULNERABLE

The lowland leopard frog has brown to green skin with spots on its back, and yellow skin on the bottom. The legs are striped.[1]

HABITAT

This species is generally restricted to permanent waters below elevations of 3,000 feet. It is found in small to medium streams, and occurs in small springs, stock ponds, and occasionally in large rivers. Populations typically occur in aquatic systems with surrounding desert scrub, semidesert grassland, or evergreen woodland.

RANGE

The lowland leopard frog is found in drainages of the lower Colorado river and its tributaries in Nevada, Arizona, extreme northeast Baja Calilfornia, and northern Sonora.[2] Specifically in Arizona, it is found in drainage of the Virgin River, the Colorado River near Yuma, and west, central and southeast Arizona, south of the Mogollon Rim.

REPRODUCTION

R. yavapaiensis breeds February through April, and depending on conditions, sometimes in the fall.[1] Eggs hatch in 3 to 18 days, and tadpoles from winter – spring eggs usually transform into frogs in June – August of the same year.

DIET

The frog feeds on small insects. As a tadpole, it feeds on algae, plant tissue, and small insects.[2]

STATUS

The lowland leopard frog is a state candidate for threatened species in Arizona and is a U.S. Fish and Wildlife Service Species of Concern. It appears on the Forest Service Sensitive Species List.

LOWLAND LEOPARD FROG IN PIMA COUNTY

The lowland leopard frog is no longer found in much of Pima County due to the destruction of habitat, possible water pollution, and introduced species such as the bullfrog. It is found in the Tanque Verde, Pantano, Rincon, and Cienega Creek watersheds. Protection of the remaining habitat is essential for the existance of the frog in Pima County.

Sonoran Desert Conservation Plan

SPECIES FACT SHEETS

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

MERRIAM'S MESQUITE MOUSE

Peromyscus merriami



SDCP
PRIORITY VULNERABLE

Merriam's mesquite mouse is a pale-gray mouse with cream-colored underparts. It measures five and a half to six inches long with the tail included.[1] The tail is bi-colored and makes up more than half the length of the mouse.[1]

HABITAT

The mesquite mouse was once common in mesquite forests called bosques.[2] It has also been found in dense brush in the low desert, associated with mesquite.[3]

RANGE

The mesquite mouse occupies Pinal, Pima, and Santa Cruz counties, Arizona, and areas farther south into Mexico.

DIET

The mouse feeds on mesquite pods and other seeds when available.[2]

REPRODUCTION

Not much is known about the breeding habits of this mouse. Wild-caught mice have been observed to be pregnant at various times during the year. It is assumed that from the age of four months and for the next two years, a female mesquite mouse can have one litter per month.[3]

STATUS

The mesquite mouse is a Wildlife Species of Concern in Arizona.

MERRIAM'S MESQUITE MOUSE IN PIMA COUNTY

The mesquite mouse has a small range in Pima County. The mouse has been found in areas of Organ Pipe National Monument, Sabino Canyon, Arivaca, Baboquivari Mountains, San Xavier and Fort Lowell.[3] The mouse depends on mesquite bosques for food and shelter. Mesquite bosques are declining due to increased water use, grazing, and harvesting the wood for fuel use. According to Donald Hoffmeister, author of *Mammals of Arizona*, "the fate of mesquite mice in Arizona is precarious."

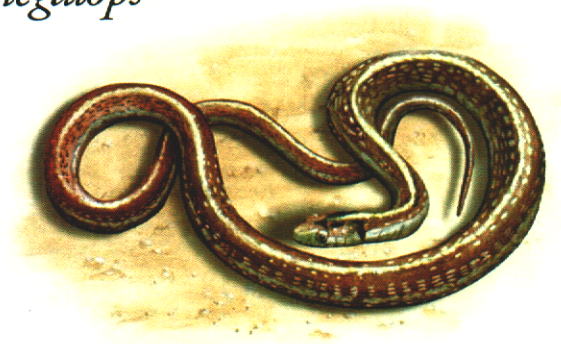
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MEXICAN GARTER SNAKE

Thamnophis eques megalops



SDCP
PRIORITY VULNERABLE

The Mexican garter snake is a stout-bodied snake ranging from eighteen to forty inches in length. It is brown or greenish-brown with a yellowish back stripe and another stripe running parallel to each side. Large brown patches on the head are separated from the mouth by a greenish crescent.

HABITAT

The Mexican garter snake is found in desert-grassland cienegas, in or along streams in valley floors, and occasionally in desert and lower oak woodland habitats.

RANGE

The snake ranges from central and southeastern Arizona to Oaxaca, Mexico. The range in Arizona is from the southeast corner of the San Rafael and Sonoita grasslands to Arivaca. It can also be found along the Agua Fria, Oak Creek, and Verde Rivers, and along some parts of the Salt and Black Rivers.[1]

REPRODUCTION

The Mexican garter snake is live-bearing, with up to twenty-five young born. Births usually take place from June to July.

DIET

The snake eats fish, frogs, and small mammals. The snake is a predator of leopard frogs.

STATUS

The Mexican garter snake is considered a Species of Concern by the U.S. Fish and Wildlife Service, and is also a Wildlife Species of Concern in Arizona.

MEXICAN GARTER SNAKE IN PIMA COUNTY

The Mexican garter snake has been found in the Baboquivari and Cienega Creek areas in Pima County. The snake is preyed upon by bullfrogs, an exotic species which is causing the decline of many native species. Other threats to the snake include habitat degradation and destruction. Historically, the snake occurred in the Santa Cruz and Rillito rivers.[2]

Sonoran Desert Conservation Plan

SPECIES FACT SHEETS

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2. *Recon. 2001. Priority Vulnerable Species. Pima County Administrator's Office, Tucson, AZ.*

MEXICAN LONG-TONGUED BAT

Choeronycteris mexicana



SDCP
PRIORITY VULNERABLE

The Mexican long-tongued bat is a medium-sized nectar-eating bat with a leaf- like flap of skin at the tip of a long, slender nose. The bat has a fourteen inch wingspan and weighs 0.7 pounds.[1] It has medium-sized ears and a very small tail. The color is brown to grayish-brown on the upperparts, and paler below. The bat has a very long, bristle-like tongue, which it uses to sip nectar from various types of agave and cacti.[1]

HABITAT

In Arizona, Mexican long-tongued bats are found in mine tunnels, caves, rock fissures, even buildings from the lower edge of the oak zone through the pine-oak woodland to the pine-fir belt. Vegetation in the vicinity of the roost site includes ocotillo, yucca, agave, manzanita, evergreen oak, and juniper. The bat has a tendency to roost in well-lighted portions of the roost site.[1] The bat is most frequently found in elevations from 4,000 to 6,000 feet.[2]

RANGE

The range of the bat includes Arizona, California, New Mexico, Texas, Mexico, and Central and South America. In Arizona, the bats are found from the Chiricahuas to the Santa Catalinas, Peloncillo, Animas, and Baboquivaris Mountains. The bat winters in Mexico and breeds in the United States.

DIET

The feeding habits of the Mexican long-tongued bat are not very well known. They feed largely on nectar and pollen from agave and night-blooming cacti, such as saguaros and organ pipe cacti, and may also eat insects. They have also been seen feeding from hummingbird feeders.[1]

REPRODUCTION

The population ecology of the bat is not well studied. In Arizona, young are born during the last half of June to the first days of July.[1] Females give birth to a single pup which is capable of flight after the first three weeks.

STATUS

The Mexican long-tongued bat is considered a Federal Species of Concern and is recognized as Forest Service Sensitive, as well as Arizona Game and Fish Department Wildlife of Special Concern.[2]

MEXICAN LONG-TONGUED BAT IN PIMA COUNTY

Much of the Mexican-long tongued bat range occurs in Pima County, including several maternity roosts in Colossal Cave Mountain Park.[3] The bat has been called a "keystone mutualist" because of its role as a pollinator. Threats to this species include disturbance by humans and loss of foraging habitat.[1]

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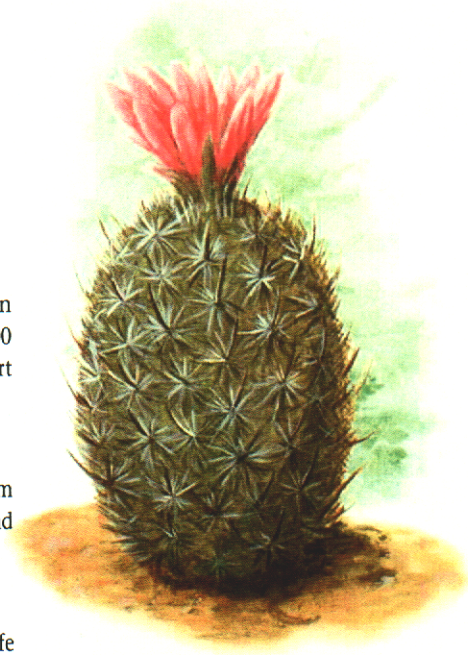
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NEEDLE SPINED PINEAPPLE CACTUS

Echinomastus erectocentrus var. erectocentrus



SDCP
PRIORITY VULNERABLE

The needle spined pineapple cactus is a single stem cactus growing from six to twelve inches high. One to two reddish-brown central spines are surrounded by eleven to fifteen radial spines.[1] The flowers are pink, with bright red stigma lobes. The fruit is green, drying to tan.

HABITAT

This species grows on hills, alluvial fans, and in valleys in rocky limestone soils from 3,000 to 4,300 feet in the Sonoran desert scrub and semidesert grassland.[2]

RANGE

The needle spined pineapple cactus occurs from south-central to southeastern Arizona, in Pima and Cochise Counties.[1]

STATUS

This species is considered a U.S. Fish and Wildlife "Species of Concern," considered "sensitive" by the Regional Forester, and is salvage restricted by the Arizona Native Plant Law.

NEEDLE SPINED PINEAPPLE CACTUS IN PIMA COUNTY

The needle spined pineapple cactus occurs east of Tucson near Vail, and is found within the Cienega Creek Natural Preserve and Colossal Cave Mountain Park.[2] Concerns for this species include collection for cactus trade and urbanization.[1]

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SPECIES FACT SHEETS

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2. *U.S. Fish and Wildlife Service. 1992. Handbook of Arizona's Endangered, Threatened, and Candidate Plants. pp.51*

ORGAN PIPE SHOVEL-NOSED SNAKE

Chionactis palarostris organica



SDCP
PRIORITY VULNERABLE

The Organ Pipe Shovel-nosed Snake is a subspecies of the Sonoran shovel-nosed snake (*C. palarostris*). It is a relatively small (10-17 inches long), dark and light banded snake with a shovel-shaped snout which is flatter than most other snakes. The body is whitish or yellow in color with black, yellow (or whitish) and red crossbands. Most of the black bands encircle the body. The red, saddle-like bands may vary in width from the same size as the black bands to approximately three times wider.[1] Like other shovel-nosed snakes, *C. p. organica* is harmless to humans.

HABITAT

C. p. organica is a snake of arid lands. In Arizona, it occurs in upland desert in the palo verde-saguaro association. The ground surface may be rocky or sandy, but is generally coarser and more irregular than that occupied by the Western Shovel-nosed Snake (*C. occipitalis*).[1]

RANGE

The Organ Pipe Shovel-nosed Snake is only found in extreme southern Arizona, mainly in the Organ Pipe Cactus National Monument and along the Sonoyta-Ajo road to about 25 miles north of the border with Mexico. Other species of the Sonoran Shovel-nosed Snake occur in Sonora to south of Hermosillo, Mexico.[1]

REPRODUCTION

The Organ Pipe Shovel-nosed Snake will normally lay a clutch of 2–4 eggs during the summer.

DIET

The diet consists of cockroaches, crickets, spiders, scorpions, centipedes and other insects.

STATUS

Currently, there is no federal status identified for the Organ Pipe Shovel-nosed Snake.

ORGAN PIPE SHOVEL-NOSED SNAKE IN PIMA COUNTY

C. p. organica currently exists within the Organ Pipe Cactus National Monument and the surrounding area. Its protection is based primarily upon management practices employed within the monument's boundaries.

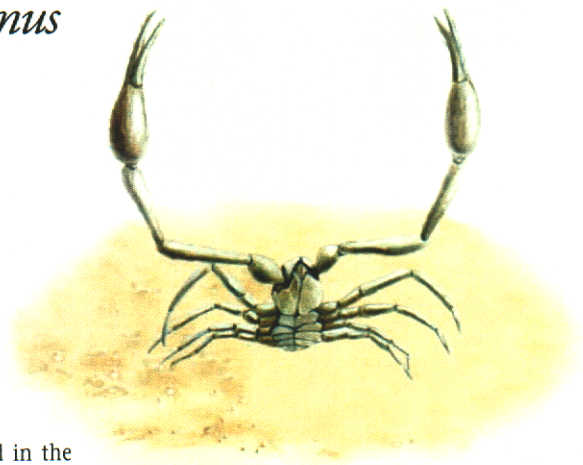
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PSEUDOSCORPION SP.

Albiorix anophthalmus



SDCP
PRIORITY VULNERABLE

The pseudoscorpion is a ferocious looking creature, although it is only three millimeters (0.12 inches) long. A pseudoscorpion is a miniaturized version of a scorpion. Though lacking the scorpion's formidable tail, the pseudoscorpion is venomous. *A. anophthalmus* adults develop a gray swath across the upper abdomen which appears more striking in males. The rest of the body varies from light brown to tan. As well as being the largest *Albiorix* species known, it is also the only known eyeless species.

HABITAT

This species of pseudoscorpion is found in the interior of the cave, within a zone of complete darkness, and where temperature and humidity remain constant. The pseudoscorpion is found under small pieces of broken limestone rock scattered throughout the interior of the cave.

RANGE

A. anophthalmus is found in the Arkenstone Cave, Pima County, Arizona.

DIET

This species of pseudoscorpion is involved in an elaborate food chain. The pseudoscorpion feeds on macroscopic invertebrates which feed on the mold that grows on cricket guano.

STATUS

Currently, there is no federal or state status identified for this species.

ALBIORIX ANOPHTHALMUS IN PIMA COUNTY

It appears *A. anophthalmus* is a highly endemic species. This species of pseudoscorpion was discovered relatively recently, in the Arkenstone Cave. While there are other caves in the vicinity of the Arkenstone Cave, no other *Albiorix* have been found in them. Cave environments are usually very stable, with the creatures inhabiting them well adapted to cave life. These environments may also be sensitive to human disturbance, both inside and outside of the cave. Protection of these environments may be necessary to maintain cave dwelling species.

Sonoran Desert Conservation Plan

SPECIES FACT SHEETS

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PALE TOWNSEND'S BIG-EARED BAT

Plecotus townsendii pallescens



SDCP
PRIORITY VULNERABLE

P.t. pallescens **can be distinguished from all other western bats by a two-pronged, glandular lump on the nostrils, and by large, rabbit-like ears.[1] This species is a medium-sized bat with buffy brown dorsal fur and paler underparts.**

HABITAT

P.t. pallescens roosts in caves, lava tubes, and abandoned mines.[2] Shelters in which the bats have been found range from the low, arid desert, to the fir zone in upper elevations.[1] In winter, the bats hibernate in cold caves and mines in the upland and mountains from the Grand Canyon to the southeastern part of Arizona.[2]

RANGE

The historic range of *P.t. pallescens* includes Arizona, California, Colorado, Idaho, Kansas, Montana, North Dakota, Nebraska, New Mexico, Oklahoma, South Dakota, and Mexico. The distribution of the bat seems to be determined by the availability of caves or cave-like roosting habitat.[1] The bat is widespread throughout Arizona, but not common anywhere and least common in the northeastern grasslands and the southwestern desert areas.[2]

DIET

P.t. pallescens feeds on insects, mainly moths. The bat is a "late flyer," emerging almost an hour after sunset.[1] The bat feeds near forested areas, gleaning insects off plant leaves or in flight.

REPRODUCTION

Mating occurs from October to February. The female stores the sperm until spring when fertilization occurs. Gestation length varies from 56–100 days.[1] In Arizona, pregnant females congregate in maternity colonies, usually in warmer areas of the cave. The maternity colonies are formed in March or April. Most young are born in June and are weaned and flying by mid-July.[2]

STATUS

P.t. pallescens is a U.S. Fish and Wildlife Service "Species of Concern."[1] *P.t. pallescens* is a relatively sedentary creature, and has demonstrated a high degree of site fidelity.[1] The bat typically roosts in highly visible clusters near the mouth of the roost site. Habitat loss, vandalism, and disturbance by cave explorers can cause permanent abandonment of the site.[1] Low reproductive potential, high longevity, and high roost fidelity make this species populations highly sensitive to roost threats.[1]

PALE TOWNSEND'S BIG-EARED BAT IN PIMA COUNTY

The Baboquivari Mountains have one of the largest summer colonies of the Pale Townsend's Big-Eared Bat in Arizona.[1] The bat is also found in Colossal Cave, Tucson Mountina Park, Organ Pipe National Monument, and Saguaro National Park. Because *P.t. pallescens* is extremely sensitive to human disturbance and has a low reproduction rate, it is a species that requires special protection.[1]

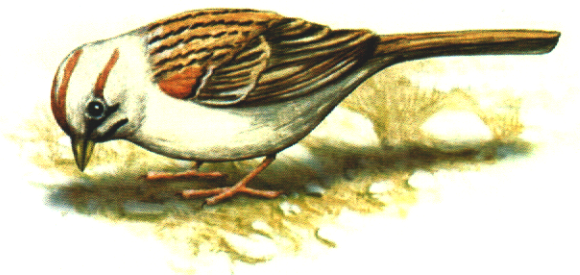
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RUFOUS-WINGED SPARROW

Aimophila carpalis



SDCP
PRIORITY VULNERABLE

The rufous-winged sparrow is a slender sparrow with a gray face and a brown streak which extends behind the eyes.[1] The back is brown with darker streaks, while the belly is pale gray. The wings and crown are rust colored. The sparrow has a yellow, conical bill, and a long, brown tail.[2]

HABITAT

The rufous-winged sparrow inhabits desert grasslands scattered with thorn bushes, bunch grasses, mesquite, or cholla. It also occurs in washes with sandy bottoms and vegetated slopes, brushy irrigation ditches, and creeks bordered by broad-leaved trees, mesquite, grasses, and weeds. The sparrow prefers grassy areas with scattered shrubs that are thorny and dense.[3]

RANGE

A. carpalis is a year-round resident from south-central Arizona south into Mexico.[3]

DIET

During the breeding season, *A. carpalis* feeds on a variety of insects caught on the wing or gleaned off plant surfaces. At other times, the bird eats grass and weed seeds.[3]

REPRODUCTION

A. carpalis breeds during the monsoon months of July and August.[4] The nest is built low to the ground in the edges of bushes such as hackberry, palo verde, cholla cacti, or mesquite.[3] The average clutch size is four, and the sparrow can have two broods per year.[2]

STATUS

This species is listed as a migratory bird under the Migratory Bird Treaty Act.

THE RUFOUS-WINGED SPARROW IN PIMA COUNTY

This species was first discovered in 1872, near old Fort Lowell, Tucson, where it was described as "very common."[1] In 1881, the sparrow was found "sparingly about Tucson and Camp Lowell. It inhabited the mesquite thickets, keeping closely hidden in the bunches of 'sacaton' grass, from which, when flushed, it flew into the branches above." After 1886, verified species records were exceedingly rare. The species was considered extinct in Arizona due to overgrazing. The rufous-winged sparrow was rediscovered in 1936, the first record in over fifty years.[1] The sparrow now has records throughout much of eastern Pima County; in Canoa Ranch, Madera Canyon, Santa Rita and Santa Catalina Mountains, and in areas around Tucson.[1] Loss of habitat as a result of overgrazing and urban development is believed to have had the greatest effect on populations.[4]

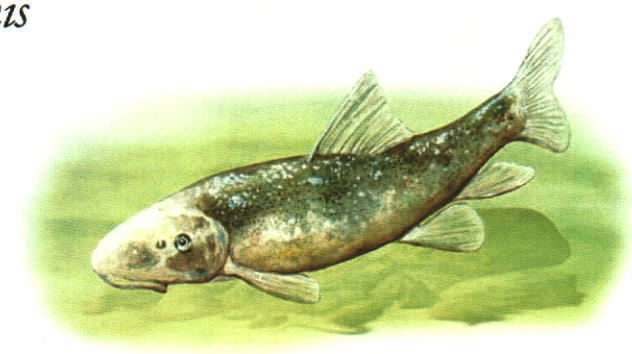
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SONORA SUCKER

Catostomus insignis



SDCP
PRIORITY VULNERABLE

The Sonora sucker is native to Arizona. Depending on habitat, suckers can be from 8 to 31 inches in length and can weigh up to a little over four pounds. The body is sharply bi-colored: yellow-brown on the top and a deep-yellow below. Scales on the upper half have dark spots which form faint, dashed lines. The sucker's most distinct feature is the lower lip which is about 3 times as thick as the upper lip. Large individuals can be confused with carp because of similar coloration. Primitive man along streams of the Gila basin used the sucker extensively as food. Presently, it provides sport for bow-and-arrow and snagging enthusiasts. It will take a baited hook and gives a slow, determined struggle when taken on light tackle.[1]

HABITAT

The Sonora sucker can be found in a variety of habitats from warm water rivers to trout streams. It prefers rivers or streams that have deep and quiet, rocky or gravely pools. This species is intolerant of lake conditions created by dams.

RANGE

The Sonora sucker is widespread in the Gila and Bill Williams river basins of Arizona. The "historic range" included Arizona, New Mexico and Mexico.

REPRODUCTION

The Sonora sucker begins spawning in riffles during the late winter and continues through midsummer. The female is usually attended by two males. After hatching, juveniles gather in quiet pools near the banks and move to swifter waters as they mature. Hybrids have been reported between Sonora and Desert suckers.[2]

DIET

Catostomus insignis is an omnivore, feeding on aquatic insects and plants found in shallow pools. This species will occasionally ingest sand to obtain plant and animal particles for food. Seeds of cottonwood trees are taken seasonally, with large fish lifting their heads clear of the water to clumsily "suck" at seeds that accumulate behind obstructions. Juveniles will feed along the margins of streams upon tiny crustaceans and plant materials.[1]

STATUS

In 1994, the Sonora sucker was listed in the Federal Register as a Category 2 species for consideration to be listed as threatened or endangered.[3] In 1996, the U. S. Fish and Wildlife Service (USFWS) changed the listing of "Federal Candidate" species. The "Category" designation was eliminated and species listed under Categories 2 and 3 were no longer considered candidates for listing under the Endangered Species Act. Currently, this species is now classified by the USFWS as a "Species of Concern."[2]

SONORA SUCKER IN PIMA COUNTY

The Sonora sucker once occurred throughout Arizona, including the Santa Cruz River watershed. This species was eliminated from the area near Tucson by 1937.[4] The Sonora sucker no longer exists in Pima County, but may still exist along the Santa Cruz River upstream of the county line.

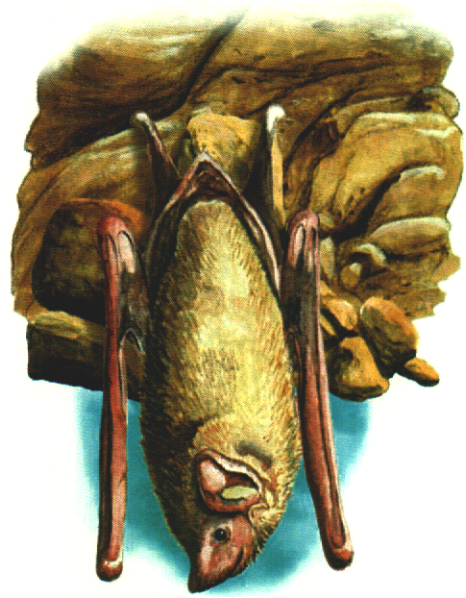
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SOUTHERN YELLOW BAT

Lasiurus ega



Species designation:
SPECIAL CONCERN

This species is a small to medium sized bat with short round ears and dense fur. The fur is usually yellowish in color, but can range from yellow-orange to brownish-gray.

HABITAT

The southern yellow bat is typically associated with trees.[1] In the urban areas of Tucson and Phoenix, the preferred habitat of the bat are Washington fan palms.[2]

RANGE

L. ega is found in southern California, southern Arizona, southern Texas, and throughout tropical and subtropical Latin America.[3] In Arizona, the bat is found year-round.

DIET

The bat is a nocturnal species, foraging one to two hours after sunset. They feed on small to medium-sized flying insects.[4] They usually feed near their roost, and go no farther than necessary for water.[1]

REPRODUCTION

This species mates between August and October. The female bat stores the sperm in the uterus until spring when fertilization occurs. Estimated gestation is 80–90 days, and average litter size is two to three pups.[5]

STATUS

The southern yellow bat is listed as an Arizona Species of Special Concern.[1] The bat falls under the protection of Commission Order 14 which states no bat may be taken dead or alive.[6]

SOUTHERN YELLOW BAT IN PIMA COUNTY

Threats to this species includes loss and degradation of riparian habitat, burning of native palms, and possibly pruning of urban palms.[1]

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SWAINSON'S HAWK

Buteo swainsoni



SDCP
PRIORITY VULNERABLE

The Swainson's hawk is a medium-sized hawk with dark brown plumage and a brown breast, pale belly, and a white patch under the bill.[1]

HABITAT

The Swainson's hawk prefers open habitats, such as grasslands with trees and shrubs for perching, irrigated meadows, and edges between two habitat types. The hawk may be found in arid habitats throughout the western United States. It nests in riparian areas, roadside trees and telephone poles, and occasionally near urban areas.[2]

RANGE

B. swainsoni is a migratory bird. The hawk's breeding range is restricted to western North America, from Alaska and western Canada south into northern Mexico. The hawk winters in Argentina.[3]

DIET

The hawk is a versatile and opportunistic predator, feeding on insects, small mammals, birds, and reptiles.[4] The Swainson's hawk will take advantage of certain farming activities such as plowing by either perching on the ground or diving down onto prey that has been stirred up by the tractor.[2]

REPRODUCTION

The Swainson's hawk begins nesting in late March.[4] The nest is made with large sticks, twigs, brambles, and grass, and is lined with feathers, fresh bark, leaves, flowers, and down.[3] The female lays two to three eggs. Both sexes care for the eggs. The young leave the nest 33 to 37 days after hatching.[3]

MIGRATION

B. swainsoni travels in large flocks from the nesting areas south to their winter grounds in Argentina.[4] The hawk leaves North America by early October and arrives in South America by November. Spring migration usually begins in March.[4] The annual trip ranges from 11,000 to 17,000 miles.[1]

STATUS

The Swainson's hawk is a Federal Species of Concern, and is protected by the Migratory Bird Treaty Act. It is also an Arizona Wildlife Species of Special Concern. This hawk is considered "forest sensitive" by the Regional Forester.

SWAINSON'S HAWK IN PIMA COUNTRY

Since the 1940s, populations of the Swainson's hawk have declined by ninety percent.[2] Key reasons for this decline are loss of native nesting and foraging habitat, and changes in land uses from agricultural to urban. The most critical factor is the loss of many suitable nesting trees within preferred riparian habitat.[3] Another reason for decline is the threat from insecticide use in Argentina, a practice killing over 10,000 birds in 1995.[2]

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SPECIES
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TUMAMOC GLOBEBERRY

Tumamoca macdougalii



SDCP
PRIORITY VULNERABLE

The Tumamoc globeberry (*Tumamoca macdougalii*) is a delicate vine with lacy leaves in the squash family. The plants are found under trees or shrubs which act as nurse plants and provide physical support for the vines. The stems arise from large tuber-like roots, beginning in late summer in response to summer rains, and continue growing until November. The round, fleshy, bright red fruits are relished by javelina and other wildlife.

HABITAT

This vine grows in the Arizona Upland subdivision of Sonoran Desert scrub. It is associated with a variety of nurse plants and in settings ranging from sandy valley bottoms to rocky bajada slopes.

RANGE

The range of this species extends as far north as southern Pinal and Maricopa counties, Arizona, south into Sonora, Mexico. Easternmost populations are located in Tucson and the western limits occur in Organ Pipe Cactus National Monument.

STATUS

In 1986, the species was listed as endangered. In June 1993, the U.S. Fish and Wildlife Service proposed to delist the species, largely on the basis of a survey and study in the United States and Mexico contracted by the Bureau of Reclamation (BLM).[1] Given its large range, the number of known populations, the remote habitat, ability to withstand some habitat degradation, and nonspecific habitat needs, the U.S. Fish and Wildlife Service has determined that the Tumamoc globeberry does not warrant the protection of the Act.[2] This species is considered "salvage restricted" under the Arizona Native Plant Law.

TUMAMOC GLOBEBERRY IN PIMA COUNTY

The Bureau of Land Management has established permanent plots to monitor Tumamoc globeberry through 1998. The monitoring plots are located on BLM-managed land in the Avra Valley. Coronado National Forest is continuing to collect data for the population in the Santa Catalina Mountains which is the only population on National Forest lands.[1] Other studied populations are those found along the CAP canal right-of-way, or in preserves constructed as part of the CAP construction process. Monitoring is occuring for some known populations by U.S. Fish and Wildlife Service and contractors.

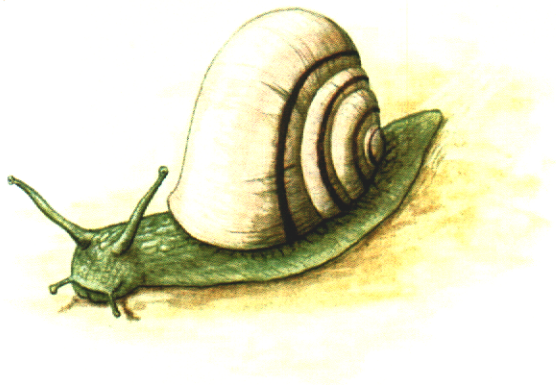
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TALUSSNAIL



SDCP
PRIORITY VULNERABLE

The talussnail is a rock snail usually found in taluses or "slides" of coarse broken rock. The snails are generally found in crevices one to several feet below the surface, sealed to stones by their mucus. The shell is usually thin and globular. The shells of *Sonorella* are weakly differentiated, and species are usually separated by location and male genitalia. The shell of the talussnail averages over half an inch tall and almost an inch wide. *Sonorella* are distributed from Arizona, southern New Mexico, western Texas, and southward into northwestern Chihuahua and northeastern Sonora. They can be found from arid, lower elevation foothills to wooded canyons at elevations of 8,000 to 10,000 feet.

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BAGNARA'S TALUSSNAIL

Sonorella bagnarai

RANGE/HABITAT

The Bagnara's talussnail is found in the Rincon Mountains, below the northeast summit of Rincon Peak, at an elevation of 8,000 to 8,200 feet.

KITT PEAK TALUSSNAIL

Sonorella xanthenes

RANGE/HABITAT

The species is found near the top of Kitt's Peak, in a humid area at the foot of cliffs. The area is near the head of a stream, under scattered rocks among sticks and leaves in oak brush, at an elevation of 5,500 feet. It has also been collected in several ravines of the north slope of the Peak at elevations ranging from 6,200 to 6,700 feet.

PAPAGO TALUSSNAIL

Sonorella papagorum

RANGE/HABITAT

This species is located in Black Mountain, nine miles south of Tucson. The snail is found deep within slopes covered with slides of black basalt at an elevation on 3,200 feet. Vegetation found near the slopes consists of ocotillo, mesquite, cat-claw, and palo verde.

TALUSSNAILS IN PIMA COUNTY

Talussnails generally have a very narrow range and are usually restricted to a particular mountain range. Destruction or disturbance of talus slopes may lead to the extinction of a talussnail species. Listed below are several talussnail species known only from Pima County.

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TUCSON SHOVEL-NOSED SNAKE

Chionactis occipitalis klauberi



SDCP
PRIORITY VULNERABLE

The Tucson shovel-nosed snake is a subspecies of the western shovel-nosed snake (*C. occipitalis*). It is a relatively small (10–17 inches long), dark and light banded snake with a shovel-shaped snout which is flatter than most other snakes. The body is whitish or yellow in color with dark brown or black crossbands which are saddle-like or encircle the body. A secondary set of small, brown or red bands are located between the primary bands.[1] Like other shovel-nosed snakes, *C. o. klauberi* is harmless to humans.

HABITAT

Tucson shovel-nosed snakes are restricted to the desert, occurring primarily in its driest parts. The primary habitat is sandy-silty flats on valley floors and, where they occur in southern Arizona and southwestern California, sand dunes.[2] This species will also frequent washes and rocky hillsides where there are sand gullies or pockets of sand among the rocks.[1] There may be limited vegetation, consisting mostly of creosote, desert grasses, cacti, mesquite and other shrubs.

RANGE

The Tucson shovel-nosed snake is found only in the deserts of south-central Arizona (within Pima and Pinal counties). Other subspecies of western shovel-nosed snakes can be found from southwest Nevada to the upper end of the Gulf of California and from southern Arizona to the base of the mountains in southern California.[1]

BIOLOGY

C. o. klauberi is a burrowing and surface crawling species that can "swim" rapidly through loose sand. Its "smooth scales, inset lower jaw, nasal valves and angular abdomen are adaptations for 'sand swimming' which consists of wriggling through sand rather than tunneling into it."[1] It will usually stay underground during the heat of the day and roam the desert surface when temperatures are moderate (dusk, dawn and night). It leaves smooth, sinusoidal wave-like tracks on loose soil between shrubs.[2]

REPRODUCTION

Tucson shovel-nosed snakes will lay a clutch of two to four eggs during the summer.

DIET

The diet consists of cockroaches, crickets, spiders, scorpions, centipedes, buried moth larvae and other insects.

STATUS

Currently, there is no federal or state status identified for the Tucson shovel-nosed snake. However, it may warrant protection under the Endangered Species Act sometime in the near future due to a decline in its habitat.

TUCSON SHOVEL-NOSED SNAKE IN PIMA COUNTY

C. o. klauberi was formerly found in Avra Valley but is believed to be eliminated from this area due to habitat loss. Most of its range now lies in southern Pinal County. The Tucson shovel-nosed snake exists only in lowland valley floors which are rapidly diminishing due to clearing for agriculture and development. Preservation of this habitat is the biggest factor in halting the decline of this subspecies and insuring its continued absence from the Endangered Species Act.

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WESTERN RED BAT

Lasiurus blossevillii



SDCP
PRIORITY VULNERABLE

This species is a medium sized bat with short round ears and a dense fur. The fur is yellow to bright orange, with the ends tipped in white. The wings are black with an average wingspan of twelve inches. The bat weighs one fourth to half an ounce.[1]

HABITAT

L. blossevillii is found in riparian areas at mid-elevations (2400-7200 feet). It occurs among broadleaf woodlands where it roosts during the day.

RANGE

The western red bat has the widest distribution of any American bat, ranging from Canada through the United States east and west of the Great Plains, and south to Panama and South America.[2] During winter, it migrates south where it hibernates. In Arizona, it is a summer visitor, ranging all over the state in various areas except the desert.

DIET

The bat is a nocturnal species, foraging one to two hours after sunset and often going until the morning. They feed on moths, beetles, flying ants, and occasionally crickets.[1] They usually feed near their roost, and go no farther than necessary for water.[3]

REPRODUCTION

This species mates between August and October. The female bat stores the sperm until spring when fertilization occurs. Gestation is about 65 days, and litters average two pups.[1] The young are usually flying by three to four weeks of age.

STATUS

Due to loss of habitat, *L. blossevillii* was listed as an Arizona Species of Special Concern. The red bat falls under the protection of Commission Order 14, which states no bat may be taken dead or alive.[1]

WESTERN RED BAT IN PIMA COUNTY

In Arizona, western red bats occur "primarily along riparian corridors among oaks, sycamores and cottonwoods in central and southeastern Arizona."[3] Loss of riparian habitats may have a negative effect on the bat. In order to keep the bat in Pima County, restoration and protection of the remaining riparian habitat is essential.

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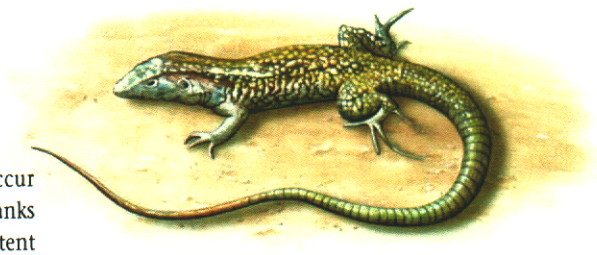
WHIPTAIL LIZARD

Cnemidophorus burti



RED-BACKED WHIPTAIL

Cnemidophorus burti xanthonotus



GIANT SPOTTED WHIPTAIL

Cnemidophorus burti stictogrammus

SDCP
PRIORITY VULNERABLE

The spotted whiptail (*C. burti*) is has a long body and tail, and rapid movements. *C. burti* has two recognized subspecies in Arizona: the red-backed whiptail (*C. burti xanthonotus*) and the giant spotted whiptail (*C. burti stictogrammus*). *C.b. stictogrammus* grows to 3.5 to 5.5 inches. The upperpart of the lizard is usually medium to grayish brown and may have a reddish tint on the head and neck Adults have large spots with little to no side striping. *C.b. xanthonotus* does not grow as large as *C.b. stictogrammus*. The upperpart is reddish with the coloring abruptly stopping at the sides. The sides and upperparts of the neck, legs, and feet are grayish-green or bluish.

HABITAT

C.b. stictogrammus and *C.b. xanthonotus* occur among dense, shrubby vegetation near the banks of semi-arid permanent streams and intermittent streams.

RANGE

C.b. stictogrammus ranges from southern and southeastern Arizona, extreme southwestern New Mexico, and Sonora, Mexico. *C.b. xanthonotus* ranges from the Ajo Mountain area in Pima County, to the Sierra Estrella in Maricopa County, Arizona.

DIET

Both subspecies of lizards feed on beetles, scorpions, spiders, and other small arthropods.

LIFE HISTORY

Both subspecies are active during the day, foraging in litter and dense vegetation to find insects. The lizards are active spring through autumn and hibernate during the winter. During the summer, the female lays a clutch of one to four eggs.

STATUS

C.b. stictogrammus and *C.b. xanthonotus* are listed as a "Species of Concern" by U. S. Fish and Wildlife Service. Both subspecies are being tracked by the Arizona Game and Fish Department's Heritage Data Management System (HDMS). Under the HDMS, *C.b. stictogrammus* is ranked "S3=Uncommon or Restricted," while *C.b. xanthonotus* was ranked "S2=Rare." Both subspecies may be threatened with habitat degradation.

WHIPTAIL LIZARD IN PIMA COUNTY

The giant spotted whiptail is found in the Sabino Canyon Recreation Area, Tanque Verde Canyon, Agua Caliente Wash, and the Santa Cruz River floodplain. In 2001, a population of giant spotted whiptails was found near the west branch of the Santa Cruz River. The red-backed whiptail occurs in western Pima County, in the Organ Pipe Cactus National Monument and in the Tohono O'odham Nation. Because the known distribution of this species is so limited, all Pima County populations should be considered significant.

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SPECIES FACT SHEETS

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