

STATE OF ARIZONA

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Arizona Game and Fish Department Heritage Fund 2008 Report to the Arizona Legislature

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Acknowledgments

The assistance of personnel throughout the Arizona Game and Fish Department, and our external cooperators, in preparing this report and conducting the activities reported herein is gratefully acknowledged.

Civil Rights Notification

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Project Funding

Article 6. Arizona Game and Fish Commission Heritage Fund

17-296. Definitions

In this article:

1. "Public access" means providing entry to publicly held lands for recreational use where such entry is consistent with the provisions establishing those lands.
2. "Sensitive habitat" means the specific areas within the geographical area historically or currently occupied by a species or community of species in which are found those physical or biological features essential to the establishment or continued existence of the species and which may require special management, conservation or protection considerations.
3. "Endangered species" means a species or subspecies of native Arizona wildlife whose population has been reduced due to any cause whatsoever to such levels that it is in imminent danger of elimination from its range in Arizona, or has been eliminated from its range in Arizona.
4. "Threatened species" means a species or subspecies of native Arizona wildlife that, although not presently in imminent danger of being eliminated from its range in Arizona, is likely to become an endangered species in the foreseeable future.
5. "Candidate species" means a species or subspecies of native Arizona wildlife for which habitat or population threats are known or suspected but for which substantial population declines from historic levels have not been documented.

6. "Urban wildlife" means the wildlife that occurs within the limits of an incorporated area or in close proximity to an urban area that receives significant impact from human use.
7. "Environmental education" means educational programs dealing with basic ecological principles and the effects of natural and man related processes on natural and urban systems and programs to enhance public awareness of the importance of safeguarding natural resources.
8. "Habitat evaluation" means the assessment of the status, condition and ecological value of habitat and subsequent recommendations of management, conservation or other protection measures, or mitigation measures, including but not limited to, recommendation of reasonable alternatives for the proposed projects that might otherwise affect the habitat under assessment.
9. "Habitat protection" means the process of protecting the quality, diversity, abundance, and serviceability of habitats for the purposes of maintaining or recovering populations of Arizona wildlife.

17-297. Arizona Game and Fish Commission Heritage Fund

- A. The Arizona game and fish commission heritage fund is established consisting of monies deposited from the state lottery fund pursuant to section 5-522 and interest earned on those monies.
- B. The fund shall be administered by the Arizona game and fish commission and is not subject to appropriation and expenditures from the fund are not subject to outside approval notwithstanding any provision of section 17-241 or 17-261 or any other statutory provision to the contrary. Monies received pursuant to section 5-522 shall be deposited directly with the Arizona game and fish commission heritage fund. On notice from the Arizona state game and fish commission, the state treasurer shall invest and divest monies in the fund as provided by section 35-313, and monies earned from investment shall be credited to the fund.
- C. All monies in the Arizona game and fish commission heritage fund shall be spent by the Arizona game and fish commission only for the purposes and in the percentages set forth in this article. In no event shall any monies in the fund revert to the state general fund and monies in the fund are exempt from the provisions of section 35-190 relating to lapsing of appropriations.
- D. The commission shall not use its rights of eminent domain to acquire property to be paid for with money from the Arizona game and fish commission heritage fund.

17-298. Expenditures from Fund; Purpose and Amounts; Annual Report

- A. Five per cent of the monies received pursuant to section 5-522 shall be spent on public access, including maintenance and operation expenses.
- B. Sixty per cent of the monies received pursuant to section 5-522 shall be spent on the identification, inventory, acquisition, protection and management, including maintenance and operations, of sensitive habitat. At least forty per cent of the monies available under this subsection shall be spent on the acquisition of sensitive habitat utilized by endangered, threatened and candidate species. The commission may dispose of any lands

acquired for use as habitat by an endangered, threatened or candidate species under this subsection when the species no longer qualifies as an endangered, threatened or candidate species. The Arizona game and fish commission shall dispose of the land in a manner consistent with the preservation of the species of concern. The disposal may include conservation easements and fee simple transfers with associated instruments of protection. The commission shall follow the guidelines established pursuant to section 37-803 relating to the disposition of real property by a state agency. In addition, disposal shall include a written agreement between the commission and the purchaser requiring the purchaser to incorporate management actions to ensure proper maintenance of the species of concern. Management actions may include maintenance of habitat, selective control of nonnative species, maintenance of genetic viability, monitoring of populations and habitat, coordinating conservation activities, funding conservation actions and assessing conservation progress.

- C. Fifteen per cent of the monies received pursuant to section 5-522 shall be spent on habitat evaluation or habitat protection.
- D. Fifteen per cent of the monies received pursuant to section 5-522 shall be spent on urban wildlife and urban wildlife habitat programs.
- E. Five per cent of the monies received pursuant to section 5-522 shall be spent on environmental education.
- F. All monies earned as interest on monies received pursuant to section 5-522 shall be spent only in the percentages and for the purposes described in subsections A through E of this section or for costs of administering the Arizona game and fish commission heritage fund in such amounts as determined by the Arizona game and fish commission.
- G. On or before December 31 each year the commission shall submit its annual report to the president of the senate, the speaker of the house of representatives and the chairmen of the senate and house of representatives committees on natural resources and agriculture, or their successor committees. The annual report shall include information on:
 - 1. The amount of monies spent or encumbered in the fund during the preceding fiscal year and a summary of the projects, activities and expenditures relating to:
 - (a) Property acquisition.
 - (b) Identification, inventory, protection and management of sensitive habitat.
 - (c) Habitat evaluation and protection.
 - (d) Urban wildlife.
 - (e) Environmental education.
 - (f) Public access.
 - 2. The number and location of parcels of property acquired during the preceding fiscal year.
 - 3. For personal and real properties acquired with fund monies during the preceding fiscal year, the amount of property tax revenue paid to each taxing jurisdiction during the last full tax year prior to acquisition.
 - 4. The amount of money spent from the fund during the preceding fiscal year for employee personal services.
 - 5. The number of full-time employees employed in the preceding fiscal year in connection with property acquisition, including survey, appraisal and other related activities.

6. The total number of full-time employees employed in the preceding fiscal year for the programs listed in subsections A through E of this section.
7. A list of the grants awarded during the preceding fiscal year including information on the recipients, purposes and amounts.

This Heritage Program Report to the Arizona Legislature is required under, and submitted in compliance with, Arizona Revised Statutes 17-298.G.

Property Acquisition

A total of four IIAPM eligible property offers were examined over this reporting period. Three property offers have been considered for acquisition by the Department beyond the preliminary review stage with one property acquired and one offer continuing to move through the acquisition process.

The Department acquired five properties totaling 2,575.84 acres that were funded in whole or part with Heritage fund dollars. The following is a list of properties the Department acquired:

Acres	Parcel	County
1,309 acres	Cibola Valley	La Paz
20.84 acres	Headstream & McVey	Yuma
795 acres	Coal Mine Springs Phase III	Santa Cruz
293 acres	Upper Verde River – Wells parcels	Yavapai
158 acres	Arlington – Richardson	Maricopa

Coal Mine Springs Phase III purchase included matching funds from the U.S. Fish and Wildlife Service.

The Department evaluated the value of wildlife habitat and assessed water rights, access, easements and potential conflicts while evaluating potential Heritage Fund acquisitions.

The Department continued to evaluate the water right contributions to the Zuni Settlement Agreement for Becker Lake, Grasslands, Sipe White Mountain and Wenima Wildlife Areas. The Department entered into a Joint Funding Agreement with the U.S. Geological Survey for the installation, operation and maintenance of eight stream flow gages to monitor stream flow at our Becker Lake and Wenima Wildlife Areas as well as other areas within the Little Colorado River. In addition, the Department purchased water rights with the Coal Mine Springs Phase III and Richardson properties.

Identification, Inventory, Acquisition, Protection and Management (IIAPM)

Much of Arizona's natural biological diversity is composed of nongame species, wildlife that is neither hunted nor fished in a traditional sense. However, some species of wildlife that may be harvested, such as certain reptiles and amphibians, are commonly thought of as nongame species. IIAPM focuses on wildlife or habitat that is sensitive (imperiled), including those federally listed as endangered or threatened.

The Department utilizes resources and partnerships to develop and implement of species Recovery Plans, Candidate Conservation Agreements with Assurances and Safe Harbor

Agreements. Conservation agreements are intended to meet a species' conservation needs before it becomes imperiled, thereby precluding the need to list the species under the ESA. The Department works with partners to develop a variety of conservation agreements and to further conservation actions for many native species.

Heritage IIAPM funds are used as required non-federal match for several federal grants including: Wildlife and Sport Fish Restoration Fund Grants, State Wildlife Grants (SWG), and Landowner Incentive Program Grants. The Department developed a Statewide Comprehensive Wildlife Conservation Strategies (CWCS) that identified species that are most imperiled and those species are referred to as Arizona's *Species of Greatest Conservation Need*.

Planning and Implementation of Plans

Using Heritage IIAPM funds the Department implemented priority actions in species recovery plans, conservation agreements, management plans, and the CWCS.

During the past year, the Department:

- Continued to implement the Arizona Bat Conservation Strategic Plan, a management plan that outlines goals and objectives for bat conservation statewide and implemented the Arizona Partners in Flight Bird Conservation Plan, which makes specific recommendations for the conservation of high priority bird species and habitats.
- Participated in recovery or other planning teams for the following species, assemblages, or systems: San Xavier talussnail, Ramsey Canyon leopard frog, Chiricahua leopard frog, Tarahumara frog, relict leopard frog, Sonoran tiger salamander, Sonoran and Mojave desert tortoises, Quitobaquito-Rio Sonoyta, peregrine falcon, statewide raptor management, cactus ferruginous pygmy owl, thick-billed parrot, jaguar, statewide small mammal conservation, Mount Graham red squirrel, bats, Sonoran Desert Conservation Plan, Malpai Borderlands Group, Habitat Conservation Planning (HCP) with Pima County and Town of Marana.
- Reviewed, revised, and wrote recovery plans and recovery plan addenda for: Chiricahua leopard frog, Sonoran tiger salamander, statewide raptor management, statewide small mammal conservation, and Mount Graham red squirrel.
- Implemented or conducted recovery actions, including: Chiricahua leopard frog, Tarahumara frog releases, Sonoran tiger salamander management, peregrine falcon post-delisting monitoring, cactus ferruginous pygmy-owl augmentation scoping, jaguar sighting investigations, Mount Graham red squirrel monitoring, lesser long-nosed bat surveys.
- Developed and/or implemented the following Conservation Agreements: continuation of Ramsey Canyon leopard frog, San Xavier talussnail, Statewide Conservation Agreement and Strategy (SCAS) for 6 species of native suckers and chubs [fish], jaguar, Townsend's big-eared bat, and Sonoran Desert Conservation Plan agreements.

Native Fish

The 36 native fishes of Arizona include 34 freshwater and two saltwater taxa. They range from inch-long topminnows to North America's largest minnow, the 6-foot long Colorado pikeminnow. Because of human-induced habitat changes, most native fish now occupy a small portion of their former ranges, if they are present at all. Desert pupfish, Yaqui catfish, beautiful shiner, Gila trout, and Colorado pikeminnow were previously extirpated from the state, but through re-establishment efforts, these species now occur within small portions of their historical ranges in Arizona. The Monkey Springs pupfish is extinct, and the Yaqui sucker is extirpated from Arizona, but still occurs in Mexico.

Most native fish are identified as *Species of Greatest Conservation Need* and many are listed by the U.S. Fish and Wildlife Service (USFWS) as threatened or endangered. Several species, such as the bonytail chub, Colorado pikeminnow, and razorback sucker, have very small or senescent populations that were supplemented through stocking programs to help prevent their loss.

Although native fish still occur in most river drainages in Arizona, most also include non-native and invasive species. Today, the single richest site known for native fish is Aravaipa Creek, which still supports seven species of native fish. However, most streams with assemblages of even four native species are rare and rapidly becoming even more so.

During the past year, the Department:

- Chemically renovated 3 streams in the White Mountains to remove non-native trout in this past year (South Fork Little Colorado River, Stinky Creek, and Conklin Creek). These streams are 3 of the 30 recovery streams needed to de-list the Apache trout; 25 other recovery streams were previously renovated.
- Implemented priority actions including reintroducing roundtail chub into Ash Creek. This was one of the highest priorities and the first conservation stocking of roundtail chub in Arizona. The Department also propagated roundtail chub at Bubbling Ponds Fish Hatchery and stocked them in the Verde River., and transferred chub brood stock from Bubbling Ponds to New Mexico for stocking in the Gila River.
- Furthered the recovery of threatened loach minnow and spikedace with efforts to establish additional wild populations at new sites. Loach minnow and spikedace captured from Aravaipa Creek, were transported via helicopter, and stocked into Redfield Canyon and Hot Springs Canyon in the Galiuro Mountains. Aravaipa Creek loach minnow and spikedace that were propagated at the Bubbling Ponds Research Facility over the last year were also stocked into Fossil Creek, Tonto National Forest.
- Finalized a Topminnow/Pupfish Safe Harbor Agreement, which was implemented in March 2008. Several sites have been evaluated for establishing new populations of these endangered fish species under the agreement. The Safe Harbor Agreement allows non-federal landowners to participate directly in recovery of topminnow and pupfish, while having minimal impact to the landowners.

- Desert pupfish were monitored at Tule Creek, North of Lake Pleasant and at Mud Springs, on the Tonto National Forest. These fish were stocked in late June 2007. Gila topminnow were stocked in October 2007 into the Muleshoe Ecosystem at Swamp Spring, Cherry Spring, and Secret Spring. Gila topminnow were stocked into Fossil Creek in November 2007.

Crustaceans and Mollusks

Very little is known about Arizona's native crustaceans and mollusks. Although many species are found only in Arizona they receive very little management attention. Taxonomic recognition and locality of discovery are often all that is known about them. Most native mollusks occur in isolated springs, rock slides, or other locations that have not been developed. There are 28 species of crustaceans and mollusks identified as *Species of Greatest Conservation Need*.

One mollusk, the Kanab ambersnail, is federally listed as endangered. It occurs in the Grand Canyon, and at another site in southern Utah. Two other species, the Wet Canyon talussnail and the San Xavier talussnail, are known to be represented by single endemic populations in southern Arizona. These talussnail populations are being managed under separate conservation agreements between the Department, USFWS, and landowners. Proactive action, such as implementation of conservation agreements, is beneficial, as many Arizona crustaceans and mollusks appear to be likely candidates to be listed under the ESA.

Non-native crustaceans and mollusks, such as crayfish, New Zealand mudsnails, and Quagga mussels, are negatively impacting Arizona's aquatic habitats and native species. Mudsnails and Quagga mussels have very high reproductive potentials and can quickly become well established as the dominant species within an ecosystem, out-competing native aquatic snails and freshwater mussels, and disrupting the food chain for other species. Crayfish are voracious predators and feed on insects, snails, fish, frogs, snakes and vegetation. Resource agencies are struggling to find ways to control these invaders as eradication is not feasible. Public awareness is a key component to preventing these aquatic nuisance species from spreading into new areas.

During the past year, the Department:

- Located a new population of the Page springsnail within species historical range. A survey of Spring Creek, on private land in the Page Springs area found a previously unknown population. The Page springsnail is an ESA candidate species.
- Worked with partners and established a refuge population of Three Forks springnails at the Phoenix Zoo with a founding stock of over 400 individuals from the Boneyard Bog Management unit.
- Signed the San Xavier Talussnail Conservation Agreement with USFWS Southwest Transmission Cooperative Incorporated and El Paso Natural Gas Company. The San Xavier talussnail is an ESA candidate species.
- Conducted a baseline inventory of other mollusks. The California floater, Arizona's only native freshwater mussel, was surveyed at Boneyard Creek in August 2007 with agency

partners. Live specimens were collected for captive propagation at the Arizona-Sonoran Desert Museum.

Amphibians and Reptiles

The distribution and status of many of Arizona's 26 species of native amphibians and 107 species of native reptiles are not well known. Management decisions for most species must therefore be based on suspected distribution and abundance. Population trend data are needed to determine the status of most species.

Many Arizona amphibians and reptiles are abundant and seasonally conspicuous, including spadefoot toads; whiptail, side-blotched, and tree lizards; gopher and king snakes; and diamondback and Mohave rattlesnakes. Bullfrogs, a non-native species widely introduced for food and sport, have become widespread and locally abundant, often to the detriment of native animals. Thirty-eight amphibians and reptiles are now *Species of Greatest Conservation Need*. One species, the relict leopard frog, was for several years thought to be extinct, but was rediscovered in Nevada and Arizona. Another, the Tarahumara frog, was extirpated from Arizona in 1983, but has recently been reintroduced.

Four species of amphibians and reptiles in Arizona are listed as threatened or endangered. The Sonoran tiger salamander is endangered; the Chiricahua leopard frog, New Mexico ridge-nosed rattlesnake, and Mohave Desert population of the desert tortoise are listed as threatened.

Conservation Agreements between the Department and various partners provided protection and management recommendations for the relict leopard frog, the Ramsey Canyon leopard frog and the flat-tailed horned lizard, a candidate species under the ESA. The Department started the 12-Step plan for reintroduction of Tarahumara frogs. Staff also drafted a recovery plan and a Statewide Safe Harbor Agreement for the Chiricahua leopard frog.

During the past year, the Department:

- Monitored Sonoran tiger salamander populations at over 60 sites in the San Rafael Valley. In addition, the Department produced a full-color brochure to educate and inform the public about Sonoran tiger salamander conservation.
- Collaborated with multiple agencies, private landowners and grazing permittees in recovery activities for Chiricahua leopard frogs. Three Chiricahua leopard frog stakeholder group meetings served as a forum to address questions and concerns regarding the impacts of the federal listing and to develop on-the-ground recovery efforts in Arizona recovery units. Also, local recovery groups coordinated to develop and implement work plans for six management areas within the frog's range.
 - Implemented recovery activities including surveyor training, improving habitat, conducting surveys of historical, potential or extant populations, collecting and captive rearing of egg masses, and reintroducing nearly 2,000 tadpoles and young frogs to 9 sites.

- The Statewide Chiricahua Leopard Frog Safe Harbor Agreement (SHA) was signed and implemented in 2006, and last year five landowners signed certificates of inclusion under the SHA, enrolling a total of 22,586 acres of land non-federal lands for conservation of Chiricahua leopard frogs.
- Monitored the population of reintroduced Tarahumara frogs in the Santa Rita Mountains. Although surveys detected frogs and tadpoles, few individuals have been seen, and the habitat remains in poor condition following floods and sedimentation that occurred after a 2005 fire. Testing of frogs captured on site documented the presence of the fungal disease chytridiomycosis, which is thought to be negatively impacting frog populations world-wide. The Department assessed the suitability of four historical localities as future reestablishment sites, but they were rejected because they lacked perennial water or contained non-native bullfrogs.
- Performed surveys at 15 sites and found northern leopard frogs at 11 sites. Twelve localities were assessed to determine their suitability as future reestablishment sites. Regional staff and cooperators also collected tissue samples from 6 sites for DNA analysis. The Department continues to cooperate with USFWS and the U.S. Forest Service (USFS) to maintain a rearing facility at the Rocky Mountain Research Station fish lab. Staff monitored release sites in the House Rock Wildlife Area. The northern leopard frog was petitioned for listing as threatened or endangered under the ESA in 2006.
- Participated with USFS, USFWS and other cooperators in a successful effort to remove bullfrogs from Scotia Canyon, and nearby sites in the Huachuca Mountains, thus improving opportunities for conservation of native aquatic wildlife. Bullfrogs were also opportunistically removed from aquatic sites in the San Rafael Valley during Sonoran tiger salamander monitoring, and from sites in the Pajarito/Atascosa Mountains. Removal of non-native species has been inadequate to meet conservation objectives.
- Contracted desert tortoise surveys in five long-term monitoring plots. Populations on each of the plots remained stable when compared to previous surveys, and the populations also appeared healthy with no evidence of exposure to upper respiratory tract disease. In April 2008, the Department entered into an Interagency Service Agreement with the University of Arizona to create a new monitoring strategy for the Sonoran population of desert tortoises. These projects are funded through IIAPM matching a Challenge Cost Share Agreement with the Bureau of Land Management (BLM). Although not during the reporting period it is notable that the Sonoran Desert population of desert tortoises was petitioned for listing as threatened or endangered under the ESA in October 2008.
- Revised the statewide desert tortoise adoption program guidelines in cooperation with the Arizona-Sonora Desert Museum and Phoenix Herpetological Society. The Department transferred Phoenix area desert tortoise adoptions to the Phoenix Herpetological Society.

- Completed a second year of Mexican gartersnake monitoring at Page Springs and Bubbling Ponds hatcheries, where the population of Mexican gartersnakes appears to be relatively stable. Five snakes were removed from the population and transferred to a captive propagation program, and DNA tissue samples were collected from 12 individuals. In May 2008 the USFWS initiated a 12-month status review of Mexican gartersnakes; populations of narrow-headed gartersnakes are also in serious decline.
 - The Department and USFWS co-lead the Gartersnake Conservation Working Group, biologists from agencies, non-governmental organizations and academia, to develop goals for conservation of both species. The Department worked with several cooperators to develop captive husbandry and propagation techniques, and collected several snakes of both species and brought them into captivity

Nongame Birds

The list of birds documented as native to Arizona now stands at approximately 535 species. Roughly 480 are considered nongame species, and about 300 have been documented as breeding in the State. Seven non-native species have also become established here. Some, such as house sparrows and European starlings, have been here for so long and are so common that many people think of them as natives.

Arizona's bird life includes many species that breed or winter elsewhere. Their numbers here are impacted by habitat availability on their distant wintering or breeding grounds, as well as what they encounter during their rigorous twice-annual migrations. Arizona's neotropical migratory birds, which breed in the United States and/or Canada and winter to the south, in Mexico or South America, total 237 species, of which 163 have nested here. Research across the United States suggests that populations of many of these species are declining, primarily due to loss or alteration of habitat. Two species of neotropical migrants, the southwestern willow flycatcher and Yuma clapper rail, are federally listed as endangered. Other birds that occur in Arizona including the brown pelican, least tern, wood stork, and masked bobwhite are also federally listed as endangered.

Thus far, 44 species of birds of prey (raptors) have been documented in Arizona, of which 37 breed annually. Four species are federally-listed as threatened or endangered; 13 are identified as *Species of Greatest Conservation Need*. Two species have been extirpated: the aplomado falcon, and the California condor (which is now being reintroduced in northern Arizona). Conversely, short-tailed hawk is a recent natural arrival.

The greatest variety of species, and often numbers, of nongame birds in Arizona occurs in lowland riparian forest and woodland in the southern third of the State. However, these habitats declined so severely in the 1800s and 1900s that the species occupying them comprise more than half the 35 non-raptorial birds identified as *Species of Greatest Conservation Need*. Many raptors are also closely tied to riparian habitats for foraging or nest sites.

During the past year, the Department:

- Developed and maintained diverse partnerships dedicated to the conservation of all birds and their habitats. Continued the statewide Arizona Coordinated Bird Monitoring

Program (AZCBM) in partnerships with federal, state, volunteer and NGO entities to provide long-term population trend data. Monitored and inventoried: marsh birds, active nests of colonial breeding aquatic birds, wintering aquatic birds, and riparian bird species.

- Provided staff and funding for the North American Breeding Bird Survey and the AZ Important Birds Area programs. ABCI Grants Program also provided funding to various projects addressing bird and habitat conservation priorities.
- Coordinated and conducted bald eagle management and monitoring activities including the Arizona Bald Eagle Nestwatch Program, nest search, demography studies, winter count, and occupancy-recruitment assessment flights. Participated in the winter count along with Salt River Project, federal agencies, White Mountain Apache Tribe, non-profit organizations (Audubon Society chapters, Heritage Park Zoological Sanctuary), and volunteers. The winter count documented 185 bald eagles on 96 of 102 standardized survey routes. This total falls well short of the average of 319 wintering eagles, but this number is highly variable from year to year depending upon weather.
- Developed and implemented recommendations and guidelines for management of peregrine falcons and their habitats along with the USFS and the Arizona Climbing Coalition including forest closures at select sites. Monitored urban peregrine falcons breeding on Camelback Mountain and in downtown Phoenix.
- Continued to participate and review USFS guidelines for Forest Restoration and the Management Guidelines for the northern goshawk in the Southwest Region.
- Held several coordination meetings to address management actions and led implementation of conservation efforts. The Arizona Burrowing Owl Working Group produced and distributed two documents entitled *Burrowing Owl Management Guidelines for Municipalities in Arizona*, and *Burrowing Owl Project Clearance Guidance for Landowners*. They also provided two workshops to train private contractors on the survey protocol and their responsibilities under State and Federal Law.
- Participated in all activities associated with reintroduction of California condors, including lead reduction efforts, public education and outreach, field work, correspondence with cooperators, meeting and conference attendance. The Department and its partners continued to evaluate condor lead exposure levels and implement lead reduction efforts to enhance reintroduction efforts. Lead exposure in condors continues to be the primary factor affecting the success of the reintroduction program. The Department continued its voluntary lead reduction efforts within condor range. The 2007 program resulted in voluntary participation from eighty-three percent of Kaibab hunters: 62% used non-lead ammunition, while 21% used lead ammunition but turned in their gut pile. This was the program's highest compliance rate to date (50% in 2005 and 60% in 2006). As of June 2008, there were 63 free-flying condors in Arizona with over 50% of Arizona's condor population of potential breeding age (>5 years old). Seven wild-hatched chicks have fledged since 2003, with 6 still alive in the wild and an additional 1-2 chicks in nests this year.

- Conducted willow flycatcher surveys at Wenima and Arlington Wildlife Areas. No breeding birds have been detected at these two Wildlife Areas. Also coordinated with other groups involved with willow flycatcher surveys near Roosevelt Lake and in the lower San Pedro River and Winkelman area. These areas remain the largest populations of willow flycatchers, at least on non-tribal lands, in the state.
- Surveyed Yuma clapper rail, black rail and other marsh bird and monitored and assessed habitat, documenting multiple marsh bird species. Established sites were surveyed within the lower Salt, Gila, Agua Fria, Hassayampa and Colorado River drainages in Maricopa, Yuma, and La Paz Counties.

Nongame Mammals

Arizona has a diverse, abundant mammalian fauna. Each part of Arizona harbors at least one kind of mammal unusual enough to be a delightful surprise when encountered in the field. Known distribution and taxonomy of 134 native and 11 introduced mammals are documented in Arizona.

The ecology and distribution of some of many other small mammals, is poorly known. Entire species complexes, such as the voles, gophers, and several genera of mice have yet to be definitively addressed with modern molecular genetic techniques. Among those in need of field study are the water shrew, jumping mouse, and several species of pocket mice.

Thirty-four Arizona mammals are identified as *Species of Greatest Conservation Need*. Nine are also federally listed as endangered. Three of these species are extinct, and five have been extirpated from the State, although reintroduction efforts are underway for two (black-footed ferret and Mexican wolf). Most other imperiled species have very small, local populations that face a variety of threats. Some species are tied to riparian or native grassland communities.

During the past year, the Department:

- Worked with diverse partnerships to conserve small mammals and their habitats, and made progress on development of a Small Mammal Conservation Plan. Developed and began implementing a statewide Gunnison's prairie dog management plan in association with federal, state, and private partners. Actively participated in prairie dog conservation teams and working groups to accomplish goals identified in Conservation Agreements and Wildlife Action Plans. Conducted inventories to determine the distribution of Gunnison's prairie dogs in two areas in northern Arizona. Made progress on re-establishment of black-tailed prairie dogs in Arizona, with translocations planned for fall 2008.
- Continued to implement the Arizona Bat Conservation Strategic Plan. The Department implements priorities through partnerships and a small grant program. Seven conservation projects were funded and implemented addressing priorities identified by in the Arizona Bat Conservation Strategic Plan. Work funded included bat monitoring at Picacho Peak State Park, a wildlife escape ramp building workshop, bat bark monitoring project, statistical analysis of bat monitoring data, and purchase of lesser long-nosed bat monitoring equipment.

- Discussed the findings of a northern Arizona bat roost survey with USFS biologists including resulting monitoring needs and management recommendations. The group agreed to meet to coordinate monitoring efforts at bat roosts, in particular those with Townsend's big-eared bats.
- Provided assistance to numerous homeowners who called regarding bat issues at their residences. Continued coordination with the Tonto National Forest to install a bat-compatible gate on Dacite Mine in the Superstition Wilderness area. Dacite is known to provide roost habitat for 5 species of bats. Worked with BLM, the City of Peoria, and a developer to install a bat-friendly closure at Sunrise Relief mine, in Peoria, to protect a winter roost of California leaf-nosed bats while securing the site for human safety reasons. Increased coordination with the State Mine Inspector's Office and landowners to evaluate mines being considered for closure and provided recommendations in terms of closure methods depending on evidence of bat and/or other wildlife use.
- Conducted and coordinated management activities for the endangered Sonoran pronghorn. Monitored Sonoran pronghorn with aerial radio telemetry flights and ground tracking. Completed a range-wide survey in Mexico. Three-hundred-sixty pronghorn in 33 different groups were observed. The population estimate is 404 pronghorn, which was lower than recent years (634 in 2006 and 684 in 2004). Managed a captive breeding pen, 27 fawns were produced in the pen during the 2008 fawning season. Maintained and irrigated four forage enhancement sites to benefit Sonoran pronghorn and maintained, expanded and/or hauled water to eight waters within Sonoran pronghorn range. Coordinated with other agencies to build a new forage enhancement on the Barry M. Goldwater Range to benefit Sonoran pronghorn using the western most parts of the range. Worked on the preliminary steps to implement another smaller captive breeding pen within historic habitat of Sonoran pronghorn in Arizona. Establishing a second population is identified as a priority action in the Sonoran pronghorn recovery plan.
- Monitored Mexican wolf movements via aerial/ground telemetry and tracking to determine survival, dispersal, territories, population size, reproduction and recruitment. We intensively monitor wolves during hunting seasons and conduct outreach with hunters and campers to minimize any potential conflicts between recreationists and wolves.
- Monitored a reintroduced population of black-footed ferrets in the Aubrey Valley, which is stable and comprised of wild-born animals. Monitored the population using large biannual spotlighting events to survey for black-footed ferrets and assess over winter survival, obtain minimum baseline population estimates, and capture and tag young. Additional smaller spotlighting efforts are implemented monthly on an "as needed" basis to assess both biological and social criteria (e.g. identifying number and location of litters, documenting long-term survival of wild born ferrets, searching for previously unoccupied areas, secondarily these smaller efforts provided opportunities for local residents to get involved, and offered educational opportunities). A large spotlighting effort in March 2008, yielded 24 total captures – all wild born ferrets.

- Mapped prairie dog towns to determine the number of colony acres and estimated density on the Espee Ranch. The goal of this second reintroduction effort in Arizona is to establish a free ranging and self-sustaining population of black-footed ferrets on the Espee Ranch without negatively impacting land uses, lifestyles, or incomes of local residents. Forty-four black-footed ferrets were released on the Espee Ranch in 2007. Six ferrets were wild born animals translocated from the Aubrey Valley. The remaining animals were captive bred and were preconditioned for release in either New Mexico or Colorado. Considerations used in the release of ferrets included: selecting release locations in high density prairie dogs areas; sex ratio; room for dispersal of juveniles within high quality areas; and allowing 200 acres for each animal.
- Requested fifteen captive-bred black-footed ferrets from USFWS to be released on the Espee Ranch in the spring of 2008. These animals will be held over the winter in preconditioning pens in the Aubrey Valley and bred in the spring using matrices to maximize genetic diversity. Pregnant females will be released mid-gestation, which coincides with prairie dog births; several males will also be released.
- Continued to implement management and conservation activities identified in the Mount Graham red squirrel Recovery Plan, including the implementation of a pilot project for captive rearing. Coordinated and participated in the fall and spring surveys and participated with the Pinaleno Science Collaborators group, providing input on various forest restoration activities and their potential impacts to the squirrels.

National, International and Borderlands Wildlife Collaborations

Arizona's borders do not confine our partnerships. Conservation of some species can only be accomplished through cooperation with neighboring states and countries. Some of our migratory birds and bats require partnerships with even more distant entities. Longstanding efforts by government and private cooperators to conserve North America's waterfowl are well known, and have been highly successful. More recently, Canada and several Central and South American countries have joined with Mexico, Arizona, and our neighboring states in efforts to manage songbirds and other "neotropical migrants" that may only winter or breed here in Arizona, or perhaps just stop over briefly during spring or fall migration. Similar national and international conservation efforts are just beginning for amphibians, reptiles, and bats.

During the past year, the Department:

- Signed a Memorandum of Understanding (MOU) with Mexico's Secretariat of Environment and Natural Resources (SEMARNAT by its Spanish acronym) for: 1) wildlife conservation, management and health; 2) research; 3) environmental education; 4) professional training; 5) animal exchange; and 6) habitat analysis and enhancement.
- Participated at the 2008 meeting of the U.S./Canada/Mexico Trilateral Committee for Wildlife and Ecosystem Management and Conservation (Trilateral), held in Veracruz, Veracruz, México. Representatives from New Mexico, Texas, and the Association of Fish and Wildlife agencies also participated. Participants at the Trilateral were asked to prepare three-year strategic plans for jaguar, Mexican wolf, cactus ferruginous pygmy-

- Coordinated with Sonora on the following projects: 1) provide technical training to Sonora fisheries biologists regarding fish hatcheries operations; 2) transfer a wild jaguar from Sonora to the Phoenix Zoo; 3) provided training on law enforcement techniques for wildlife managers from Sonora; and 4) provided technical review of the mule and white-tailed deer management plans developed by Sonora. Follow up meetings and field work is being scheduled to achieve the goals of these discussions.
- Provided hands-on training to two aquaculture technicians from Sonora's Institute of Aquaculture. The technicians learned about the various management techniques utilized at hatcheries with regards to trout species as well as warm water fishes. The visit was part of the Arizona-Mexico Commission 2007-2008 Aquatic Species Work Plan Personnel Exchange Program.
- Coordinated bi-annual survey of pronghorn in Sonora, Mexico. Captured and put Global Positioning Satellite (GPS) radio collars on four pronghorn in the Pinacate Biosphere Reserve area. All these activities support the Sonoran Pronghorn Recovery Plan.
- Supported thick-billed parrot management in Mexico and the Translocation Project. Collaborators in Mexico continued to: 1) search for potential nesting sites and to monitor and manage known breeding populations in northern Mexico (State of Chihuahua); 2) implemented protection of known nesting locations; 3) assessed potential habitats along the Chihuahua/Sonora border as possible translocation sites; 4) monitored breeding locations, and foraging and watering sites within accessible areas of their known range; and 5) evaluated the feasibility of thick-billed parrot reintroductions in cooperation with the Department.
- Collaborated with Mexican partners to evaluate two known breeding sites in Chihuahua for comparison to potential sites in Arizona. Small scale translocations within Mexico have provided valuable insight into potential strategies.
- Conserved jaguars through the Jaguar Conservation Team. The Team uses a voluntary scientifically based conservation effort. Documented the presence of jaguars in Arizona and New México using remote cameras and from reports from Team members.
- Cooperated with Dr. Glenn Proudfoot (Vassar College New York) and Sonora's Commission of Ecology and Sustainable Development to collect blood tissue specimens from 119 adult pygmy-owls in Sinaloa and Sonora Mexico. These specimens are being processed for genetic analysis to assess population differences between regions.
- Assisted in the completion of a new pupfish refuge pond at the Center for Desert and Ocean Studies (CEDO by its Spanish acronym) in Rocky Point, Mexico. The pond at CEDO was filled and stocked with pupfish and longfin dace collected from the Rio Sonoyta near Aguajita Wash; additional longfin dace were stocked at the Pinacate

Preserve Headquarters north of Rocky Point. The project was a joint effort between personnel from the Pinacate Biosphere Reserve in Sonora, USFWS, the Department and private individuals.

- Participated at the annual simultaneous counts for lesser long-nosed bat in the Pinacate Biosphere Reserve, Mexico.

Habitat Evaluation and Protection

The Department utilized Heritage Habitat Evaluation and Protection funds to work with the federal land management agencies on habitat projects and land and resource planning issues. The Department reviewed and participated in the development of several federal land management policies, land and resource management plans, and special land designations (e.g., new National Monuments and Conservation Areas and Wilderness proposals).

The Department:

- Identified potential projects that could benefit livestock grazing operations, wildlife habitats and/or recreational opportunities on grazing allotments, and worked on Forest Health and Forest Restoration planning. Commented on federal planning and travel management rule. Cooperated with the Tonto National Forest to monitor the Fossil Creek restoration project.
- Cooperated with federal agencies to identify important resource values and management opportunities on lands within the Barry M. Goldwater Range that have been relinquished by the Department of Defense through the Military Lands Withdrawal Act of 1999. These lands (particularly the Sand Tank Mountains) represent very important areas for maintaining and enhancing wildlife populations in southwestern Arizona. Most of this area is now within the designated Sonoran Desert National Monument.
- Reviewed and commented on draft Biological Assessments and Biological Opinions during formal consultation processes. Coordinated with USFWS to review and evaluate species proposed for listing and/or critical habitat designations.
- Drafted an Environmental Assessment (EA) for the out sport fish stocking program. The sport fish stocking program provides recreational fishing opportunities at over 163 locations in Arizona. Completion of the EA is necessary to ensure continued sport fish stocking for Arizona anglers.
- Cooperated with federal and state agencies mitigation plans to minimize and/or replace the wildlife habitat values lost as a result of permits issued. In-lieu fees from the Army Corps of Engineers were deposited Department's Mitigation Trust Account, for projects where on-site mitigation was not feasible. These funds can only be used to restore of riparian habitat.

- Confirmed a commitment with the Department of Defense and USFWS to complete and implement Integrated Natural Resource Management Plans (INRMPs) for various military installations in Arizona. Participated in the Lower Colorado River Multi-Species Conservation Program (MSCP). Project staff completed a plan that considers current water use and optimizes future water use to accommodate conservation of habitat, recovery of species, and reduces the likelihood of additional ‘threatened/endangered’ species listings."
- Worked with the Rio Salado Environmental Restoration Project to restore habitats once found along the Salt River to a naturally functioning river, manage flooding issues and secure a long-term commitment of water.
- Reviewed transportation, development, energy, and other growth-related projects to address potential impacts to wildlife resources and develop mitigation measures to reduce those impacts. Reviewed 3,055 proposed project’s documents.
- Developed wildlife planning guidelines for urban development to provide community planners and developers with tools to accommodate growth while protecting wildlife and wildlife habitat. This included a wildlife friendly scorecard that ties closely to the Governor’s Smart Growth Initiative. Initiated development of wind development guidelines to minimize impacts to wildlife.
- Coordinated with other agencies to complete the 2008 Arizona Invasive Species Management Plan (AISMP). The AISMP was filed with the Arizona Governor’s office on June 30, 2008. The AISMP is focused on five strategic concepts: Leadership & Coordination, Research & Information Management, Anticipation and Outreach, control and Management, and Funding. Implemented the “Don’t Move a Mussel” campaign, encouraging the public to eliminate aquatic hitchhikers, specifically quagga/zebra mussels.
- Continued development of a spatial data repository to reduce the amount of time spent acquiring data, reduce data redundancy, provide current datasets and facilitate GIS use throughout the agency.
- Provided information and distribution maps for several endangered species, GIS information on special status species; updates of element occurrence and technical assistance and data interpretation. Served on technical teams for NatureServe and compiled up-to-date lists of special status elements from the HDMS database for private and governmental project proponents during project planning in reviews of the proposed projects.
- Enhanced an online environmental review tool The free, web-based, Arizona Online Environmental Review Tool generates a multi-page report showing special status species that could be impacted in a proposed project area, a description of critical habitat in the area, general recommendations on potential actions, and a list of other state, federal or tribal agencies with which follow-up may be needed. Through the

Tool, the Department tracked and considered cumulative impacts from land and water projects to fish and wildlife resources.

Heritage Urban

Heritage Urban funds are used for a diverse array of wildlife management- and human-wildlife interaction-related activities. Highlighted activities funded with Heritage Urban Funds are described below.

In urban areas human-wildlife interaction and conflicts aren't unusual, especially in areas close to open space or natural areas. The Department developed a partnership with the Town of Paradise Valley to implement a Community Action Plan to address human-wildlife conflicts using an integrated management approach. The Paradise Valley Police Department triages wildlife calls and provides information and self-help solutions to residents. Department assisted and advised Paradise Valley as they created a comprehensive, collaborative plan to respond to public conflicts with wildlife.

The Department printed materials on nuisance wildlife issues and potential solutions, and made them available to the public; participated on live morning radio shows to heighten problem wildlife awareness and conflict resolution procedures. Efforts included a "Be Bear Aware" effort that focused on how to deal with nuisance bears. Staff also rewrote and updated a *Living with Bear* brochure, and had 40,000 copies printed and distributed.

The Department started collaborating with Western Association of Fish and Wildlife Agencies for a human dimensions study: "People and Places." Human-wildlife conflict data is collected and used in coordination with demographic information to determine where, when, and how human-wildlife conflict reduction efforts need to be concentrated.

Department personnel developed a partnership with the City of Flagstaff to provide reclaimed water in two riparian sections of the Rio de Flag which increased flows to an urban youth fishery at Frances Short Pond. This also resulted in increased acreage of native riparian wildlife habitat in an urban greenway and public access for wildlife viewing site development.

The Department continued its partnership with Coconino County Parks and Recreation to implement Open Space and Parks Programs by evaluating lands important as wildlife habitat; working with the County to identify lands important for future open space initiatives and implementing wildlife viewing plans for their open space parks.

Many urbanites enjoy recreation activities that are close to home, including fishing. The Urban Fishing Program is supported by four funding sources, with every \$1 in Heritage Urban dollars used as required non-federal match for \$3 in Federal Sport Fish Restoration funds. The other funding comes from the municipalities that participate and by anglers that purchase urban fishing licenses. The Department worked with municipalities to manage 21 designated Urban Fishing waters. Although sales of Urban Fishing Licenses was down more than 17.5%, new license classes were offered that include urban fishing privileges. Combined Urban Fishing License sales with the sales of the new classes of licenses resulted in a record number of anglers (40,881) licensed to fish designated urban waters in 2007.

The Urban Fishing Stocking Process was awarded a 2007 Showcase in Excellence Award by the Arizona Quality Alliance in January 2008. This award validated the quality performance of the

fish stocking process and the methods that have been put in place to ensure fish arrive in the right amounts, right sizes, in healthy condition and on time.

Three Wildlife Managers are assigned to the Phoenix and Tucson metroplexes. These officers responded to high volumes of wildlife-related issues, offered assistance with and regulation of wildlife-related recreational opportunities and addressed the publics' wildlife-related concerns. During the early dove season, officers worked at known prior problem areas to proactively address expected violations. The officers also dealt with human wildlife conflicts including, responding to nuisance wildlife calls, offering advice to individuals perceiving issues with wildlife to minimize or eliminate the problems. During this period, 1,670 law enforcement patrol hours were expended in designated urban areas. Urban enforcement efforts resulted in citations being issued for various offenses committed in urban areas. The offenses included:

<u>Offense</u>	<u># of Citations</u>	<u>Offense</u>	<u># of Citations</u>
Big Game	11	Fish/Aquatic	53
Migratory Birds	20	Special Licenses	2
Other Wildlife	9	Off-Highway Vehicles	31
License Fraud	2	Boating	1
Other Title 17 (Wildlife Laws)	4	Other Titles	8

The Department participated in the planning, coordination, staffing, and provided some funding for six major wildlife/birding/nature festivals. Over 10,000 people attended the six events. Public wildlife viewing workshops were held statewide. These workshops typically included classroom education and a field trip to use what was learned. Bald eagle, elk, bison, Mexican wolf and desert bighorn sheep natural history/wildlife viewing workshops attracted 100-150 attendees each. A Summer Watchable Wildlife Speaker Series is being developed for the public. The Department sponsored basic "how-to" wildlife viewing workshops statewide. Topics included the ethics of wildlife viewing and the importance of practicing them to ensure minimal impacts to wildlife or the environment. These programs are geared towards urban residents as they outnumber rural residents when participating in wildlife watching activities.

Preceding the 2007 National Watchable Wildlife Conference held in Tucson, the Department organized and led a wildlife viewing meeting that brought several states together to discuss national wildlife-viewing recreation policy, issues and opportunities.

Staff developed a wildlife viewing web page for the Department's website that includes a calendar of wildlife viewing-related events (festivals, workshops, etc.), wildlife viewing tools, tips, and techniques, and information on the economic benefits of wildlife viewing.

Heritage Environmental Education

Department staff manned informational booths and provided educational presentations on Arizona's Wildlife, and promoted the Focus Wild Arizona online curriculum and resources. Focus Wild offers environmental-linked curricula that are tied to Arizona's education standards.

The Department's Wildlife Building located on the Arizona State Fairgrounds was open during the Arizona State Fair. Information about Arizona's wildlife resources and other outdoor recreation opportunities are shared with a diverse audience including school students during the fair's run.

Encouraged schools to participate in the 4th grade Adaptations classroom presentations and over 65 Arizona schools participated. Additionally, staff conducted workshops for approximately 500 educators on using Focus Wild Arizona Curriculum to improve science literacy, integrate geography into science education, using "bone box" resource trunks in the classroom and impacts of invasive species.

Staff renovated the Focus Wild Arizona website and added pod-casts to increase dissemination of information to teachers, parents and students regarding upcoming events, programs, curriculum and resources. Increased the number of members subscribed to the Focus Wild Arizona educators listserv.

Staff also offered field based "hands-on" educational programs including workshops focused on using inquiry instruction in wildlife biology, crayfish capture techniques, a watchable wildlife bird identification field activity an educational field experience for the general public at a Mexican Wolf Workshop at Sipe Wildlife Area, an environmental science camp for the Science Rocks! Summer Camp Program in conjunction with the Deer Valley Unified School District, and a Conservation Workshop on Mt. Graham.

Co-chaired and assisted in the development of test questions for the wildlife portion of the National and Arizona Envirothon competition, and coordinated the development of new programs, lesson plans, curriculum (North American Model of Wildlife Management and Trout in the Classroom) and professional development opportunities.

The Department produced a 13 week television series, which aired statewide on PBS network and cable systems. The *Arizona Wildlife Views* television show production staff was nominated in 2008 for an Emmy Award (National Academy of Television Arts and Sciences), for the "Arizona Wildlife Views – Show 1" in the Environment Program category

Heritage Environmental Education funds support the production of the *Arizona Wildlife Views* bi-monthly magazine. The magazine features an educational series, "Focus: Wild Arizona" that offers lessons/learning activities for youth and teachers. Copies of the magazine are provided to all school libraries in Arizona. Other articles provide advice on where to go to observe wildlife and how to be environmental responsible when recreating in natural areas.

Environmental Education funds also were used to produce Heritage Fund bookmarks that feature various Arizona species of special concern and information about that species; a Raptors of Arizona poster, a desert tortoise adoption brochure, bald eagle brochure and reprinting the popular Bats of Arizona poster.

Public Lands Access

The Public Lands Access Program oversees the Department's public access efforts by which the Department collaboratively enhances opportunities for the public to enjoy wildlife by identifying lands and waters that are closed to the public or that do not have sufficient access and work with all interested parties to meet recreation and other access needs.

The Department's Heritage funded access efforts included:

- **Cradle Ranch Access Project:** The Department provided \$21,000 towards this project in exchange for 5 years of hunter access to the ranches. This funding was matched by \$189,000 of National Resource Conservation Service (NRCS) funding and landowner efforts. This project included working with the rancher, and NRCS for a grassland restoration and some wildlife waters on the ranch.
- **Elkhorn Ranches:** The Department provided \$15,000 towards this project in exchange for 3 years of hunter access to the ranches. Access through this ranch was a priority to ensure access to nearly half of the Department's Game Management Unit 36B. The project included working with the landowner to improve 100 acres of grassland and provide year round water for wildlife on the ranch.
- **Catalyst Paper Company:** This project ensured access across private property to U.S. National Forest land beyond. The Department provided \$50,000 towards this project in exchange for 10 years of hunter access to the ranches. This project included providing funding to Catalyst Paper to build dikes to use water disposed by the paper plant to create moist soil units for waterfowl, provide water for wildlife, and potentially create riparian habitat for several riparian obligate species.
- **Wengert Ranch Access Project:** The Department provided \$21,000 towards a project that entailed working with the rancher, and NRCS to provide funding for several wildlife waters on the ranch. This funding was matched by \$180,000 of NRCS funding and landowner efforts in exchange for 5 years of hunter access to the ranches.
- **O'Haco Ranch Access Extension:** The Department provided \$14,000 towards this project in exchange for an extension of 1 year of hunter access through the ranch to U.S. Forest Service lands beyond the ranch. This project included working with the landowner to ensure that 2 wells will keep water in 8 drinkers on a year round basis for wildlife.

Other Report Requirements

The Department acquired five properties totaling 2,575.84 acres funded in whole or part with Heritage fund dollars. The following is a list of properties the Department acquired and the estimated taxes paid during the year prior to acquisition:

Acres	Parcel	County	Estimated Prior Year Taxes Paid
1,309 acres	Cibola Valley	La Paz	\$N/A*
20.84 acres	Headstream & McVey	Yuma	\$167.00
795 acres	Coal Mine Springs Phase III	Santa Cruz	\$168.86
293 acres	Upper Verde River – Wells parcels	Yavapai	\$350.80
158 acres	Arlington – Richardson	Maricopa	\$347.86

During the reporting period using Heritage funds the Department:

- Spent for:
 - (a) Property acquisition \$9,600,420**
 - (b) Identification, inventory, protection and management of sensitive habitat \$3,934,394
 - (c) Habitat evaluation and protection \$1,978,361
 - (d) Urban wildlife \$1,832,839
 - (e) Environmental education \$622,620
 - (f) Public access \$594,182

*Owned by Mohave County so no taxes were paid as per statute.

**includes carry forward of \$3,503,217 + Soda Springs refund of \$3,782,420

- Spent \$3,820,123 for employee personal services, and \$1,480,050 for employee related expenses.
- Employed 3 full-time employees in connection with property acquisition.
- Employed 81.25 full-time employees for all of the Heritage funded programs.
- Awarded grants totaling \$672,227 (details follow on the next page).

The Arizona Game and Fish Department awarded grants for seventeen projects in the last annual competitive Heritage Grant process. Additionally, the Arizona Game and Fish Commission authorized Heritage funding for Arizona Bird Conservation Initiative and Bat Conservation Grants. The total amount awarded for grants from Heritage funds was \$672,227.

IIAPM –Total Awarded was \$306,882

New Mexico State University, “*Desert Tortoise as Tree Rings: A Stable Isotope approach to Nutritional Ecology.*” The amount awarded was \$59,543.

New Mexico State University, “*Inventory of the Meadow Jumping Mouse in Arizona.*” The amount awarded was \$79,778.

University of Arizona, “*California Floater Genetics.*” The amount awarded was \$ 8,176.

University of Arizona, “*Managing Rails with Fire in Arizona.*” The amount awarded was \$63,755.

Northern Arizona University, “*Estimating Survival of Translocated Gunnisons Prairie Dogs*” The amount awarded was \$45,630.

Urban –Total Awarded was \$104,518

Pima County, “*Viewing Blinds at Catalina Regional Park.*” The amount awarded was \$26,950.

Pima County, “*Wildlife Viewing Guides*” The amount awarded was \$19,368

Maricopa County, “*White Tank Regional Park Nature Pond.*” The amount awarded was \$48,200.

Town of Pinetop-Lakeside, “*Pinetop Lakeside Watchable Wildlife Guide.*” The amount awarded was \$ 10,000.

Schoolyard Habitat (Funded with Urban) Total Awarded was \$37,500

Yuma School District, “*Desert Mesa Hands-On Wildlife Habitat.*” The amount awarded was \$8,168.

Flagstaff Arts and Leadership Academy, “*Pollinator Habitat Garden.*” The amount awarded was \$ 9,720.

San Fernando School District, “*Desert Grassland Wildlife Habitat*” The amount awarded was \$9,612

Tucson Unified School District, “*White School Desert Wildlife Habitat and Outdoor Learning Center*” The amount awarded was \$ 10,000.

Environmental Education Total Awarded was \$8,735

Tanque Verde Unified School District, “*AGUA CALIENTE ELEMENTARY SCHOOL BONE BOX.*” THE AMOUNT AWARDED WAS \$1,235.

Maricopa County Parks and Recreation, “*Lake Pleasant Desert Outdoor Center Environmental Education Microscopes.*” The amount awarded was \$7,500.

Public Access – Total Awarded was \$50,000

Cochise County, “*Coffman Road Access Project*” The amount awarded was \$40,600.

University of Arizona, “*Design Guidelines for Public Access and Along Airport Wash.*” The amount awarded was \$ 9,400.

Arizona Bird Conservation Initiative Grants (Funded with IIAPM) \$129,130

Desert Rivers Audubon Society, *Promote appreciation of native birds through the Gilbert Riparian Preserve Important Bird Area Family Walks Program.* The amount awarded was \$1,300.

Wild at Heart, *Install artificial burrows to provide habitat for displaced burrowing owls.* The amount awarded was \$6,000.

Apache-Sitgreaves National Forest, *Enhance riparian wildlife habitat at West Chevelon Canyon.* The amount awarded was \$16,200.

Ken Wilkins, *Monitor raptor populations of the Aubrey Valley to increase knowledge of their diversity, relative abundance, and seasonal distribution.* The amount awarded was \$6,630.

Tucson Audubon Society, *Develop a web-accessible bird monitoring database for Important Bird Areas.* The amount awarded was \$9,000.

Apache-Sitgreaves National Forest, *Monitor bird populations’ responses to forest management activities.* The amount awarded was \$9,000.

Point Reyes Bird Observatory, *Study potential OHV impacts on bird communities of dry wash woodlands.* The amount awarded was \$21,000.

University of Arizona, *Quantify the effects of surface water depletion and vegetation health on Arizona’s riparian birds.* The amount awarded was \$20,000.

Great Basin Bird Observatory, *Design and implement a surveying framework for long term monitoring of Arizona's riparian birds*. The amount awarded was \$40,000.

Bat Conservation Grants (Funded with IIAPM) \$35,462

Bat Research and Consulting, *Monitoring bat populations to obtain baseline data at Picacho Peak State Park*. The amount awarded was \$4,081.

University of Arizona, *Statistical Analysis of bat mist netting data at Organ Pipe Cactus National Monument and nearby protected Sonoran desert landscapes*. The amount awarded was \$5,750.

U.S. Fish and Wildlife Service, *Video monitoring equipment to monitor lesser long-nosed bats at roosts in southeastern Arizona and northern Mexico*. The amount awarded was \$3,630.

Bat Conservation International, *Water development escape ramp building workshop targeting landowners to construct and install escape ramps to protect bats and other wildlife from drowning in water catchments*. The amount awarded was \$2,530.

U.S. Forest Service, *Monitoring artificial roost structures (bat bark and bridge roost enhancements) and assessing the influence of these structures in Central AZ*. The amount awarded was \$8,400.

Bat Research and Consulting and Department of Defense, *Construct two bat friendly gates at Wellton Hills, Barry M. Goldwater Range, to protect habitat for California leaf-nosed bats*. The amount awarded was \$8,071.

National Park Service, Grand Canyon National Park, *Anabat acoustic equipment to assist with inventory and monitoring bat habitat within Grand Canyon National Park*. The amount awarded was \$3,000.