Acknowledgments

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

Civil Rights Notification

The Department prohibits discrimination on the basis of race, color, sex, national origin, age, or disability in its programs and activities. If anyone believes they have been discriminated against in any of the Department’s programs or activities, including its employment practices, the individual may file a complaint alleging discrimination directly with the Arizona Game and Fish Department, Director’s Office, 5000 W. Carefree Highway, Phoenix, Arizona 85086; (623) 236-7290, or U.S. Fish and Wildlife Service, Office of Diversity and Inclusive Workforce Management, Public Civil Rights Accessibility & Disability Coordinator, 5275 Leesburg Pike, Falls Church, VA 22041; (703) 358-1724. If you require this document in an alternative format please contact the Arizona Game and Fish Department, Director’s Office as listed above or by calling TTY at 1-800-367-8939.

Project Funding

Title 17, Chapter 2, 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 5-572 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 5-572 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. Monies received pursuant to section 5-572 shall be spent as follows:

1. Five percent on public access, including maintenance and operation expenses.

2. Sixty percent on the identification, inventory, acquisition, protection and management, including maintenance and operations, of property with sensitive habitat. At least twenty percent of the monies available under this paragraph shall be spent to acquire property with sensitive habitat used by endangered, threatened and candidate species. Not more than twenty percent of the monies available under this paragraph may be spent on the operation and maintenance of the acquired property, including the acquired property's infrastructure. The commission may dispose of any lands acquired for use as habitat by an endangered, threatened or candidate species under this paragraph when the species no longer qualifies as an endangered, threatened or
candidiate 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.

3. Fifteen percent on habitat evaluation or habitat protection.
4. Fifteen percent on urban wildlife and urban wildlife habitat programs.
5. Five percent on environmental education.

B. All monies earned as interest on monies received pursuant to section 5-572 shall be spent only in the percentages and for the purposes described in subsection A 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.

C. On or before December 31, the commission shall submit its annual report to the president of the senate, the speaker of the house of representatives and the chairman of the senate and house of representatives committees on natural resources and agriculture, or their successor committees, and shall provide a copy of this report to the secretary of state. 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, operation and maintenance.
   (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 subsection A of this section.
7. A list of the grants awarded during the preceding fiscal year, including information on the recipients, purposes and amounts
Reporting Requirement

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

The Arizona Game and Fish Commission (Commission) did not purchase any property or acquire a conservation easement with Heritage Acquisition funding in FY 2019.

Pursuant to ARS 17-298 as authorized by Laws, 2016 Chapter 224, the Department obligated $316,000 of heritage acquisition funds for operation and maintenance of heritage properties.

There were two full-time employees working for the Department in the preceding fiscal year connected to property acquisitions. The Department expended a total of $197,016 for Habitat Evaluation and Protection Personnel Services for these activities.

HERITAGE IDENTIFICATION, INVENTORY, ACQUISITION, PROTECTION AND MANAGEMENT OF SENSITIVE SPECIES

Heritage Identification, Inventory, Acquisition, Protection and Management (IIAPM) funds are combined with other funding sources, like State Wildlife Grants (SWG) and Pittman-Robertson Funds, to implement a wide variety of projects identified in Arizona’s State Wildlife Action Plan (SWAP). This leveraging of funds magnifies the return on investment by accomplishing critical conservation work on Arizona’s native and sensitive species throughout Arizona. In most cases, IIAPM funds provide a fiscal foundation that enables or entices other sources to contribute to making a conservation concept a reality. The projects below are just a few examples of hundreds of projects enabled by IIAPM funds thus far in Arizona. Although none of these projects has been funded solely by Heritage, their success is clearly attributable to the program.

Bald Eagle Conservation
Heritage IIAPM funds have contributed significantly to the recovery and delisting of the bald eagle in Arizona. Arizona has used IIAPM funds to collect data on Arizona’s bald eagle population which has been used several times by the U.S. Fish and Wildlife Service (USFWS) to defend the decision to delist the species in Arizona. Without IIAPM funding supporting the collection of this critical biological data, pro-listing litigants would have likely succeeded in placing Arizona’s bald eagle population back on the Endangered Species List. Arizona’s future bald eagle monitoring and management will continue to rely heavily on Heritage funds.
Greater Phoenix Area Waterbird Survey

Greater Phoenix metropolitan area has become an ever increasing destination for wintering birds. Each year, more neighborhood lakes and golf course ponds are created, attracting wintering aquatic birds. Annual Coordinated Bird Monitoring surveys confirm that this urban area continues to attract a higher density and diversity of wintering aquatic birds than any other place of its size in Arizona. Heritage IIAPM funds help collect the data to lessen land use conflicts and to continue cooperative surveys that result in proactive wildlife management.

Breeding Marshbird and Colonial Waterbird Surveys

Annual statewide surveys are conducted to assist in monitoring populations of marshbirds and nesting colonial waterbirds, some of which are Species of Greatest Conservation Need in Arizona. Heritage IIAPM funds support biologists that coordinate survey training workshops and the survey efforts of various agency biologists and volunteers. Data from these surveys are used to assess breeding population of rails, egrets, herons, and cormorants, including the endangered Yuma Ridgway's Rail and expanding and increasing population of neotropic cormorants.

California Condor

Heritage funding provides match to support recovery efforts for the endangered California condor. The Arizona Game and Fish Department (Department) continues to promote its successful voluntary lead reduction program by addressing the greatest challenge to condor recovery efforts: lead poisoning. In 2018, the condor educational programs reached around 7,000 Arizona residents and hunters. The benefits of this outreach are demonstrated by the Department’s innovative free non-lead ammunition program achieving a greater than 80% hunter participation rate since 2007. The 2019 program is ongoing and is currently on target to maintain a greater than 80% participation rate in this lead reduction program.

Sonoran Pronghorn Conservation

Funding from IIAPM is helping the Department save the fastest native land mammal in the United States, the endangered Sonoran pronghorn. Severe drought in the Southwest reduced the wild population in Arizona to an estimated 21 animals in 2002. Due to ongoing management efforts such as building waters, enhancing native habitats, and captive breeding pens, the most recent population estimate is 397. In the original herd south of Interstate 8, the population is holding steady at about 215 pronghorn. As a result of this success, the Department
established two more populations on the Kofa National Wildlife Refuge and on the Barry M Goldwater Range. Currently we estimate there are 127 pronghorn in the Kofa population, and an additional 55 in the Sauceda herd east of Highway 85. Favorable rainfall and good forage conditions have been sporadic over the entire range, leading to some populations increasing while others remain stable or slightly declining.

**Golden Eagle Baseline Surveys and Monitoring**

As a result of newly established permitting authorities under the Bald and Golden Eagle Protection Act (BGEPA), there is an emerging need to accurately assess the population size and trends of golden eagles. Compounding this need is the increased mandate for BGEPA permits on renewable energy resource development. Without baseline nest location, occupancy, and productivity data, the USFWS has a limited ability under the BGEPA to issue permits to ensure compliance. Heritage IIAPM funds are currently helping the Department collect the data on golden eagles to allow for the USFWS to issue permits for development. In 2019, after nine years of survey effort, the Department has confirmed over 290 occupied golden eagle breeding areas, a 1,920% increase over the number of known breeding areas when the rule was published. This information has been invaluable in evaluating siting of proposed renewable energy projects.

**Arizona Bat Conservation Partnership**

Over 50 percent of U.S. bat species are in some category of concern from emerging threats, such as fatalities at wind power facilities, unprecedented human activity and growth, climate change, and large-scale die-offs from a disease called white-nose syndrome. Arizona has one of the most diverse bat faunas in the United States with 28 species. Heritage IIAPM funding allows the Department to play a key role in creating partnerships to address these threats, with the common goal of conserving Arizona’s bat resources. Heritage IIAPM funds have been instrumental for tracking bat population status and trends and for monitoring changes in bat species distributions.

**Black-footed Ferret Conservation**

The Heritage IIAPM funded Black-footed Ferret Reintroduction Program in Arizona is working to achieve the population numbers required for down-listing the species from endangered to threatened, with the ultimate goal of meeting the state’s population objective for delisting. To achieve this goal, the Department finalized a statewide plan that will ensure federal regulatory obstacles do not hinder the Department from expanding the reintroduction effort to multiple areas throughout the state. Heritage IIAPM funds are being used to monitor the existing populations, to reintroduce new populations, survey their movements with telemetry and drones, and to conduct field studies to counter the species biggest threat; sylvatic plague.
Black-tailed Prairie Dog Monitoring

In an effort to preclude the need to list the species under the Endangered Species Act, in 2008 the Department reintroduced black-tailed prairie dogs into grasslands within the species’ historical range in the Las Cienegas National Conservation Area. Those efforts have grown into managing four colonies and a population of over 200 black-tailed prairie dogs. In 2017, Heritage IIAPM funds allowed for an additional reintroduction of 94 animals into Sands Ranch in partnership with Pima County, and have allowed management efforts to transition this fourth area into a healthy and expanding colony in its first two years. In addition to direct population enhancements, the Department, BLM and the Arizona Antelope Foundation partnered to aggressively implement habitat improvement projects to restore over 700 acres of grassland through mesquite tree removal and prescribed burns.

Arizona Important Bird Areas - Citizen Science

Heritage IIAPM funding facilitates the support of Arizona’s Important Bird Areas (IBA) Program. Launched in 2001, the Arizona program (co-administered by Tucson Audubon Society and Audubon Arizona in coordination with the Arizona Bird Conservation Initiative), identifies the most important sites for priority bird species and habitats, coordinates citizen-scientific bird inventory and monitoring, and promotes on-the-ground habitat projects. The IBA Program is closely tied to the Department’s SWAP strategies for conserving priority birds and for helping to keep common species common, by pursuing conservation actions to address stressors to habitats and to Species of Greatest Conservation Need. To date 48 IBAs have been identified in Arizona and include riparian and wetland habitats, southeastern “sky island” mountains, and grasslands. Fourteen of these IBAs are considered of global significance.

Topminnow and Pupfish Safe Harbor Agreement Progress

Ranchers, private landowners, and local governments are helping recover some of Arizona’s endangered fishes through enrollment in a Safe Harbor Agreement (SHA). State Wildlife Grants and Heritage Funds enable the Department to oversee and monitor landowner-enrolled sites under the SHA for Gila and Yaqui topminnow and desert and Rio Sonoyta pupfish. To date, the Department has enrolled 24 participating landowners and stocked 43 refuge ponds for conservation, with two enrolled properties waiting to be stocked. An additional 11 landowners are pending enrollment. Loss and degradation of natural habitat, competition and predation by non-native fish, disease and parasites have impacted these fishes in the wild. SHA-enrolled populations help further recovery goals for these fish and provide a ready source of new fish for future stocking and repatriation efforts. These fish also provide a native solution to mosquito control in local and
rural neighborhoods; Pinal County is enrolled for this purpose. Research has demonstrated that topminnow are just as effective as nonnative mosquitofish in preying on mosquito larvae.

**Arizona Six Species of Native Fish Conservation Plan**

Under the Department’s leadership, the Arizona Six Species of Native Fish Conservation Plan was finalized in August 2015. This plan outlines conservation actions and priorities for roundtail chub, headwater chub, flannelmouth sucker, Little Colorado River sucker, bluehead sucker, and Zuni bluehead sucker. Since 2006, federal, state, tribal, and non-governmental organization partners worked together to implement conservation actions in the original Six Species Conservation Agreement and Strategy. In September 2015, eight of those partners, including the Department, reconfirmed their conservation commitments under the new plan. Arizona is one of the signatory member states to the 2006 Three Species Range-wide Conservation Agreement and Strategy for roundtail chub, flannelmouth sucker, and bluehead sucker. Arizona Heritage Funds have been used to plan and implement many of the state-led actions to improve the status and distribution of roundtail and headwater chub, bluehead sucker, and Little Colorado River sucker. Specific projects implemented in 2019 under this conservation plan included surveys, stockings, and nonnative fish removal efforts.

**Arizona Bird Conservation Initiative – Coordinated Bird Monitoring**

Continental and local declines in many bird populations have led to renewed international concern for the future of migratory and resident birds. Heritage funds are enabling the Department to create bird conservation partnerships with federal, tribal, state, and private land management entities statewide to establish monitoring projects which will contribute to regional and national efforts assessing bird population trends and reverse these declines. The projects include bird monitoring projects for: grassland species, Sonoran desert species, riparian species, waterbirds, colonial nesters, and nightjars.

**San Xavier Talussnail Strategic Conservation Plan Approved**

On May 15, 2019, the San Xavier Talussnail Strategic Conservation Plan was approved by Kinder Morgan/El Paso Natural Gas Company (the landowner), Arizona G&T Cooperative (the property leasee), U.S. Fish and Wildlife Service, and Arizona Game and Fish Department. The San Xavier talussnail is a native land snail with only a single known population in the world, found southwest of Tucson. The species and its habitat were successfully managed under two previous conservation agreements for the past 20 years. The partners have renewed their voluntary conservation commitments for the next 25 years under the new conservation plan. The Department oversees monitoring and management for this Species of Greatest Conservation Need in Arizona, using Arizona Heritage Funds and State Wildlife Grants.
New Page Springsnail Population Discovered at Hatchery

On May 30, 2019 a new Page springsnail population was discovered just north of the visitor parking lot on Page Springs Hatchery. This is the first new population of springsnails found in over 18 years of annual monitoring on the hatchery property. The Page springsnail is one of 13 known species of the genus Pyrgulopsis found in Arizona, and is identified as a Species of Greatest Conservation Need in Arizona. With this discovery there are now eight populations of the springsnail across both the Page Springs and Bubbling Ponds hatcheries. The Page springsnail is monitored and managed under a conservation agreement. In October 2015, the Page springsnail was removed as an ESA candidate species by the U.S. Fish and Wildlife Service.

International and Borderlands Program

Department staff organized two capacity building workshops in Sonora, Mexico focused on the use of trail cameras for wildlife monitoring and scientific studies. The first workshop took place in Hermosillo, Sonora on September 18th and 19th, and the second workshop took place on November 1st and 2nd in Moctezuma, Sonora at Universidad de la Sierra (UNISERRA). A combined total of 60 workshop participants ranging from college students, wildlife technicians, and biologists were introduced to topics such as study design, photo data processing, data analysis, proper data storage techniques; and, camera trap handling, programming, and deployment. The two-day workshops consisted of classroom sessions as well as hands-on interactive activities. The main instructor for both workshops was Dr. Jan Schipper, Director of Field Conservation Research/Arizona Center for Nature Conservation, Phoenix Zoo/ASU. Department staff also participated as workshop instructors.

Department staff along with colleagues from Sonoran partner state agencies – CEDES and SAGARPHA - installed 60 trail cameras at two Wildlife Conservation Management Units in Sonora as part of a joint wildlife inventory and monitoring project. Additionally, Department staff, Mexican colleagues, and volunteers conducted preliminary bird and herpetological surveys at the same Wildlife Conservation Management Units in north-central Sonora.

Chiricahua Leopard Frog Recovery

The Department has been leading efforts for Chiricahua leopard frog recovery since the species was listed Threatened under the ESA in 2002. We have translocated frogs in 406 instances to 148 wild sites, many of which resulted from a close partnership with The Phoenix Zoo and their captive propagation program. These releases included an astounding 181 egg masses, 30,600 tadpoles, and 17,700 frogs. Along with partners, we have also removed invasive bullfrogs from hundreds of square miles of
Chiricahua leopard frog habitat. And, we have restored or improved almost 30 wetlands for the frogs, as well as other wildlife, and are continuing to improve other sites. About 25 non-federal participants (mostly ranches and other private landowners) and about 46,000 acres are enrolled in the Chiricahua leopard frog Safe Harbor Agreement. All of these activities continue, along with a comprehensive monitoring program and efforts to find new, suitable sites to which frogs can be stocked. The result has been an increase in numbers of Chiricahua leopard frog populations from 26 in 2002 to 156 currently. Heritage Funds are used as a match for State Wildlife Grants to implement these recovery efforts in Arizona.

**Mexican Gartersnake Recovery**

The Mexican gartersnake is listed threatened under the ESA. Throughout its Arizona distribution, this species faces threats from a loss of its native leopard frog prey base, as well as predation by exotic species, such as bullfrogs. Since 2009, the Department has worked with USFS and USFWS partners to restore natural wetlands in Scotia Canyon in the Huachuca Mountains, former habitat for Mexican gartersnakes. Part of that restoration effort included stocking these wetlands with native Chiricahua leopard frogs and Gila topminnow, both ESA listed and both natural prey for Mexican gartersnakes. In this past year, the Department, working in collaboration with the Arizona-Sonora Desert Museum, was able to translocate the first batch of captive-raised Mexican gartersnakes back into Scotia Canyon. Over the next several years, we will continue to augment that translocation and monitor its success. This project was highlighted in Arizona Wildlife Views.

**Sonoran Tiger Salamander Recovery**

The Sonoran tiger salamander was listed Endangered under the ESA in 1997. The Department completed a 10 year monitoring program that indicated that the salamander population, which is restricted to the vicinity of the San Rafael Valley in southeastern Arizona, was doing well. However, significant biological questions remained, and among the most critical questions were, where do the salamanders go when they leave the stock tanks that serve as breeding sites, and what threats do they face when on land? In 2019, a University of Arizona graduate student, funded through the Heritage Program and working in cooperation with Department staff, finished up a two year radio telemetry study designed to address these questions. From his study, we now know that these terrestrial salamanders face high mortality from predation and desiccation (i.e., being unable to find sufficiently moist refuges). We also know that they can travel long distances (up to a kilometer), and occupy fairly large home ranges (a little less than an acre on average). All of this confirms the importance of terrestrial habitat around breeding sites, and provides the Department and our land manager partners with the information we need to manage these salamanders to the point of down-listing to Threatened, and eventually to delisting, entirely.
IIAPM Heritage Data Management System (HDMS)

HDMS is part of a network of more than 90 Natural Heritage Programs and Conservation Data Centers in the western hemisphere. This information is made available to help Arizonans make prudent decisions weighing future development, economic growth, conservation, and environmental integrity.

During fiscal year 2019, Department staff entered 615 new records and updated an additional 822 records within the HDMS. In addition, Department staff wrote or updated 18 species abstracts and updated occurrence and predicted range maps for over 1000 species. Occurrence and status information were provided to 37 requests related to research, conservation actions, and development projects. One new species management guideline was created to guide avoidance and mitigation measures in the Online Environmental Review Tool.

The Online Environmental Tool was used for viewing Department data, creating maps, and receiving lists of species documented in a geographic area related to conservation, education, or development actions. Over 1,715 projects were submitted during FY 2019 for environmental compliance. (https://azgis2.esri.com)

We also partnered with Pinal County to add new data layers and analysis for project compliance in Pinal County.

The iMapInvasives web site for tracking invasive species continues to grow in users and data. The system is being updated to new technology expected to be done in late FY 2019. It has already increased the number of users and records entered by partners. (http://www.imapinvasives.org/arizonalogin)

We are also working with the Western Governors Association on invasive data management.

Department staff have finished digitizing species observation data related to Scientific Collecting Permits for the past 19 years; the dataset now has over 634,000 point observations to guide research and management decisions. Citizen Science efforts continue to be explored with our iNaturalist application having almost 73,000 records submitted by volunteers (https://www.inaturalist.org/projects/hdms-point-observation-database).
Department staff continued to increase other data sets to make sure the most current science is used in decisions. Department staff worked on a new tool for data visualization called the Dashboard. This is an internal application that allows one to view multiple data sources at once to make sound scientific decisions on research, environmental compliance, and species management. The new technology allows the viewing of data with online sources without having to actually obtain and manage it.

**Heritage Property Operations and Maintenance:**

As defined in Title 17, not more than twenty percent of the Heritage IIAPM funds may be spent on the operation and maintenance of the acquired property, including the acquired property’s infrastructure. In Fiscal Year 2019 the Department obligated $316,000 for operation and maintenance for projects on acquired properties, as authorized by Laws, 2016 Chapter 224.

**Whitewater Draw Wildlife Area Conservation Moist Soil Units**

Whitewater Draw Wildlife Area provides habitat for the bald eagle (winter population) and is one of the only areas in the state still inhabited by a disjunct population of plains leopard frogs. It is a popular location among bird watchers due to its winter roosting and loafing habitat for approximately 20,000 sandhill cranes annually, and habitat for waterfowl, shore birds, upland game birds, songbirds, and raptor species. The property’s moist soil units (MSU) augment existing sensitive habitat for plains leopard frogs and provide foraging habitat for bald eagle as well as important habitat for various migrating waterfowl and shore birds. The MSU’s were previously dry most months due to excessive seepage and lack of water. Through additional soil compaction and new solar powered well pump, the MSU’s are now kept wet except for needed annual maintenance, providing increased habitat availability.

**White Mountain Grasslands Wildlife Area - Little Colorado (LC) Spinedace Refugia Pond Well**

Following the dry winter of 2018-2019, there was no surface water available to keep the LC spinedace refugia pond full, and the well that had been relied upon to supply the pond with supplemental water went dry. The well was assessed, and it was determined that it would not be feasible to deepen the well. As a result, there was an immediate need to find an alternative, reliable water source. A new 8 inch well was drilled to a depth of 600 feet, unfortunately, that depth did not reach sufficient water.

**White Mountain Grasslands Prescribed Burn**

To enhance grassland habitat for sensitive grassland species, reduce fuel loads, and restore a more natural fire return interval to this fire adapted ecosystem, a prescribed burn was implemented on approximately 300 acres of the White Mountain Grasslands Wildlife Area (WMGWA). The burn was conducted in partnership with the AZ Department of Forestry and Fire Management, which used the opportunity as a training exercise for their personnel.
White Mountain Grasslands Wildlife Area - Wiltbank Reservoir Headgate Repair
Wiltbank Reservoir is a key component of the surface water rights associated with the White Mountain Grasslands Wildlife Area. The headgate needed repair and the reservoir dam required extensive maintenance to ensure safety and functionality. Heritage funds were expended to repair the Wiltbank Reservoir headgate and dam.

Becker Lake-Little Colorado River Water Diversion Structure and Habitat Maintenance
Key to the utilization of this water is the ditch diversion structure located in the Little Colorado River. This structure required repair, was inefficient, and in constant need of maintenance. During this reporting period, Heritage funds were used for the preparation of engineering designs, as well as Army Corps of Engineers permitting for the reconstruction of the diversion structure. Reconstruction of the diversion structure is planned for future fiscal years.

Sipe White Mountain Wildlife Area Diversion Irrigation Piping - Phase I
An earthen irrigation ditch over one (1) mile long transports water from Rudd Creek to McKay Reservoir and experiences significant water loss and seepage. Funds were used to pipe portions of this ditch to improve water delivery (reduce water loss), thus helping to ensure maintenance of critical water levels within McKay Reservoir. This also benefited waterfowl, nongame species, wildlife and reduced water diversions from Rudd Creek, which was beneficial to the Little Colorado spinedace and New Mexico meadow jumping mice. To date, approximately 600 feet of pipe has been installed. Additional ditch piping is planned for future fiscal years.
HABITAT EVALUATION AND PROTECTION

As defined in Title 17, Heritage Evaluation and Protection funds shall be spent on programs that provide assessment of the status, condition and ecological value of habitat and subsequent recommendations of management, conservation, mitigation or other protection measures, including but not limited to; recommendation of reasonable alternatives for the proposed projects that might otherwise affect the habitat under assessment; in addition to protecting the quality, diversity, abundance, and serviceability of habitats for the purposes of maintaining or recovering population of Arizona wildlife.

Specifically this fiscal year, Department staff conducted the following Heritage associated activities:

- Participated in Western Association of Fish and Wildlife Agencies Monarch Working Group, to prepare a Monarch Conservation Plan in support of habitat improvements that will benefit pollinators, birds, and other species.
- Coordinated with the Southwest Monarch Study and National Fish and Wildlife Foundation (NFWF) to plan habitat improvements for numerous Department Wildlife Areas that would benefit pollinators, birds, and other species.

Heritage Habitat Evaluation and Protection funding supports a realty program that includes acquisition, disposals, and exchanges; existing property and water rights tracking; land and water use fees associated with Commission owned property; drafting and execution of land use agreements on Commission owned properties; drafting and execution of land use agreements with federal, state, local government, and private property; project review on Commission owned property; and maintenance of property and water right information. The Department completed the following activities as a function of the program.

- Made voluntary contributions in lieu of taxes on all eligible Commission-owned properties; contributions included $34,699.14 to ten counties with $12,456.46 paid to eight counties from Heritage IIAPM non-acquisition funds.
- Scheduled water deliveries with the Bureau of Reclamation for Lower Colorado River-Multi-Species Conservation Plan leased land at the Cibola Valley Conservation and Wildlife Area.
- Renewed two existing land use agreements on Heritage Acquisition funded properties, including a one-year renewal of a Cooperative Agreement on EC Bar Ranch for the previous landowner to assist with property management, as well as a renewed Right of Entry to allow the Arizona Department of Water Resources to continue monitoring the groundwater level in an existing well on the Whitewater Draw Wildlife Area.
- Executed two new agreements on Heritage Acquisition funded properties, including a Cooperative License Agreement on the Arlington Wildlife Area for a neighboring farmer to use a portion of the wildlife area for farming and to grow a food plot for wildlife, as well as a License Agreement to allow an adjacent landowner bridge access for cattle to cross Nutrioso Creek on the EC Bar Ranch property.
- Paid administrative fees associated with Commission owned water rights, including assessments from the Norviel decree, canal companies, and irrigation districts.
HERITAGE URBAN WILDLIFE

Human-Wildlife Conflicts
Department personnel recorded over 5,321 calls related to human-wildlife conflicts across the state, of which nearly half of the calls continue to be associated with the Phoenix and Tucson metro areas. The number reflects a 550 call increase from FY18. Callers were given information on identifying what is attracting wildlife to their homes or neighborhoods as well as methods for minimizing the conflicts. Once residents learned ways to effectively deal with wildlife around their homes, most residents were generally tolerant of the wildlife living among them and began to enjoy viewing wildlife from a distance. For communities experiencing chronic issues, Department staff conducted presentations, held discussions with residents on how to resolve conflicts with wildlife, provided Department personnel to respond to human-wildlife interactions where there was an immediate public safety risk and/or the homeowner was not able to resolve the conflict on their own through self-help measures. Public outreach and education continues to be a Department priority in passing along tools for homeowners to learn how to live with wildlife. For instance, the Department produced a brochure available in print and online titled, “Keep Wildlife Wild, Please Don’t Feed” which has been helpful to individuals frustrated by wildlife frequenting their homes.

Urban Law Enforcement
Intentional feeding of wildlife continues to be a problem in Arizona’s urban areas. Statewide, there were 101 calls to the Operation Game Thief Hotline reporting illegal feeding of wildlife. Department personnel continue to send “no feeding” letters warning residents that, not only is feeding wildlife unlawful (violation of A.R.S. 13-2927), it can be detrimental to the wildlife the residents are trying to help. This law currently applies only to Maricopa, Pinal, and Pima counties. Regional personnel continue to educate residents about the dangers of feeding wildlife through individual contacts, community presentations on “Living with Urban Wildlife”, and through all printed and online materials about coexisting with native wildlife.

In addition, Department Officers are frequently tasked with investigating reports of violations associated with the unlawful collection, injuring, or killing of wildlife within urban areas. The types of violations vary from individuals unlawfully collecting reptiles from the mountain parks to shooting birds of prey that reside in residential neighborhoods.
HERITAGE ENVIRONMENTAL EDUCATION

As defined in Title 17, Heritage Environmental Education funds shall be spent on 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.

Professional Educator Development
Department staff excels in developing and delivering professional educator trainings on mission-consistent topics. During the last reporting period we interacted with more than 250 educators. Hundreds more accessed our professional development materials (e.g., resource trunks, lesson plans) through the Department’s “Focus Wild Arizona” webpages. These resources and our presentations (in person and via the internet) provide classroom educators with an opportunity to learn about wildlife management and conservation, habitat, technology, science inquiry, Heritage grants, biological careers, and a variety of other topics.

Staff funded by Heritage dollars also participated on a variety of agency and nongovernmental boards and committees that provide support and resources to the educator communities throughout the state, such as: Arizona Association for Environmental Education as part of their statewide Environmental Literacy Community of Practice and the Arizona Science Education Leaders Association, and various school districts. Staff partnered with the Department of Corrections to improve their education, outreach and services available to juvenile inmates. The Department also collaborated with the State Lottery to develop a short video highlighting the impacts of the Heritage Fund. Staff also disseminated information of interest to educators through small and large group presentations at local, regional, and national meetings. This included booths at local education fairs at the Arizona-Sonora Desert Museum and OdySea Aquarium. The Department delivered a professional development presentation for educators at the National Science Teachers Association Regional conference.

Wildlife Center
The Department’s Wildlife Center is primarily supported with Heritage Urban funds. The Center provides specialized care for confiscated wildlife and for the Department’s collection of non-releasable animals (animal ambassadors) which travel with staff to various public outreach programs throughout the state. With the support of cooperating veterinarians, the Center provides care for a variety of wildlife including birds, mammals, and reptiles.

During the reporting period, the Department broke ground on the new Wildlife Center building. This building will provide a space to treat confiscated wildlife and care for our animal ambassador collection as well as the hundreds of tortoises that are surrendered annually to the adoption program. The new building will provide a home for several of our animal ambassadors as well as much needed onsite office space in addition to a meeting area for our ever growing number of volunteer educators and wildlife caretakers.
Desert Tortoise Adoption Program
The Department’s Tortoise Adoption Program continues to provide a valuable service for Arizona citizens and tortoise owners. The Heritage Fund provides some funding for the program. For generations, homeowners in Arizona’s desert communities (Tucson, Phoenix, Yuma, and Kingman) have kept desert tortoises as pets in their backyards or enclosures. To ensure unwanted desert tortoise pets are not released to the wild, potentially spreading pathogens or parasites to a resident population and endangering the life of the pet tortoise, the Department created an adoption program. The Department adopted out 374 desert tortoises during the reporting period. Approximately 40% of the tortoises received required veterinary treatment for malnutrition, respiratory diseases, bladder stones, or traumatic injuries. Once the treatment plan is completed and the tortoises deemed healthy by the Department’s consulting veterinarians they are adopted out to new families.

Adoptions occur throughout the warmer season, typically from April through September. The Department in cooperation with volunteer consulting veterinarians, also hold a “pre-hibernation clinic” in early Fall of each year, at half the normal cost, to ensure pet tortoises are healthy enough to survive the winter. The clinic raised several thousand dollars for the adoption program.

School Programs
Heritage Environmental Education funds are utilized to deliver education programs to K-12 schools. Students from throughout the state participated in “hands-on” wildlife education activities through summer camps, classroom presentations and field-based research events.

The Department’s largest school outreach efforts are directed toward 4th graders. More than 6,900 students in 78 schools throughout the state participated in a wildlife education program correlated to Arizona’s Academic Content standards. This program focuses on animal adaptations and uses live animals to better illustrate the concepts presented to the students.

For a fourth year in a row, the Department, in cooperation with Wildlife for Tomorrow Foundation, held the “Wildlife and Outdoor Recreation Summer Camp”. Camp activities included live wildlife presentations, archery, kayaking, owl pellet dissection, and more. Out of the 80 children who participated, 25 were given scholarships based on their family’s household income.
Environmental/Wildlife Outreach

Department staff and volunteers interacted with more than 63,000 individuals at numerous public festivals, fairs, events, and camps throughout the state. In addition, Department staff regularly promotes wildlife education through live media appearances and print media interviews as well as social media avenues. Some examples of some of the larger public events the Department participated in include:

• AZGFD Outdoor Expo
• Verde Valley Birding and Nature Festival
• Payson Wildlife Fair
• High Country Hummers
• Science Rocks Summer Camp
• Camp Courage for Burns and Trauma
• Pinetop Fall Art Festival
• Southwest Birding and Nature Festival
• Children’s Learn and Play Festival

The two most noteworthy events Department staff participated in during the reporting period (in regards to extraordinary public attendance) were the AZGFD Outdoor Expo and the Children’s Learn and Play Festival. Public attendance at these two events alone exceeded 50,000 visitors. To help inspire an appreciation of Arizona’s wildlife and habitat to visitors at the public outreach events, the Department incorporates live, unreleasable wildlife from its Wildlife Center into nearly all outreach presentations. The Department’s live “animal ambassadors” include a variety of hawks, eagles, owls, reptiles, and rodents. For most visitors, this is the first time they have ever experienced wildlife so close, which further enhances the mission of the Department.
HERITAGE PUBLIC ACCESS

Public Lands Access (Heritage Public Access)
The Landowner Relations Program oversees the Department’s recreational access efforts by which the Department collaboratively enhances opportunities for the public to enjoy wildlife. This is accomplished by identifying lands and waters that are closed to the public or that do not have sufficient access, then work with all interested parties to meet recreation and other access needs.

Fiscal year 2019 was a successful year with significant accomplishments. The Department completed 18 recreational stewardship agreements, including one new road bypass project securing access to landlocked public lands. This fiscal year the Department also allocated $407,000 of federal funds and $400,000 of Game and Fish funding towards securing access. The projects funded with these federal dollars are included in this report as accomplishments due to the fact that the staff’s developing these projects were funded through the Heritage budget. These efforts secured access to an additional 34,500 acres for the public to enjoy for wildlife related recreation. In total, the Department had 85 access agreements where 4.563 million acres had access secured through Department efforts. The Respect program provided signs to 38 ranches, new kiosks/sign-in boxes to 13 ranches and swinging gates to 11 ranches. The Department assisted with 48 Adopt-A-Ranch events which included 883 volunteers totaling 47,500 volunteer hours. These volunteer hours represent in-kind match that contributes to the Heritage Access resources for projects that secure access for Arizona’s citizens.

The Landowner Compact Program
The Department began a new program called the Landowner Compact in 2013 that was designed to make an impact on the behavior of people recreating on private lands. In Fiscal Year 2019, the Department enrolled a new property into the Compact. The Coronado Dairy is unique in that it focuses on opportunity for upland bird and small game hunting opportunity. The Compact is not appropriate for every landowner or every ranch in the state, but it has been a successful program with 13 landowners currently enrolled.

To learn more about the program, visit https://www.azgfd.com/landowner-compact/.
Private and Land Locked Public Areas Opened for the Public - Statewide Perspective

GIS analysis of private, state trust and landlocked public lands secured for public access through cooperative agreements showed 4.563 million acres (pink in below map) at the end of the reporting cycle September 30, 2019.
Project Highlight - Jhus Canyon Road Bypass
The Department provided funding to the US Forest Service to construct a new road on an existing perpetual easement to bypass a portion of private property ensuring access onto the USFS lands beyond the property in perpetuity.
OTHER REPORT REQUIREMENTS

The Department received $10 million from lottery revenues for Heritage funded programs. Expenditures totaled approximately $7.1 million in FY2019. The following information represents Department expenditures in fiscal year 2019:

Heritage funds spent for:

(a) Property acquisition $396,113
(b) Identification, inventory, protection & management of sensitive species $3,300,126
(c) Habitat evaluation and protection $1,413,166 ($850,000 was used to match Federal grants)
(d) Urban wildlife $1,227,794
(e) Environmental education $258,119
(f) Public access $387,298

The Department spent $2,213,762 for employee personnel services and $954,745 for employee related expenses on 51.5 FTEs.

1. No parcels of property were acquired during FY 2019. The Department obligated $316,000 for operation and maintenance projects on acquired properties.

2. There were two full-time employees working for the Department in the preceding fiscal year connected to property acquisitions. A third full-time employee associated with water right acquisitions was hired and worked during the last quarter of FY 2019. These employees also work on and charge other funding sources other than Heritage acquisition.

3. For the 2019 Heritage Grant Cycle the Department received 38 applications and awarded 19 Heritage Grants totaling $330,731 in Heritage Funds. Below is a listing of the grants awarded:

**Outdoor Education:**

- **Gilbert Public Schools, Superstition Springs Elementary:** awarded $800 for “Second Grade Butterfly Wonderland Field Trip”

- **Arizona Trail Association:** awarded $2,500 for “Arizona Trail Associations Seeds of Stewardship Wildlife Bonanza”

- **Washington Elementary School District, Orangewood Elementary School:** awarded $1,000 for “Orangewood Wildlife Studies”

- **Grand Canyon Youth:** awarded $1,500 for “Outdoor Education along the Wild and Scenic Verde River”

**Environmental Education:**

- **Arizona Sonora-Desert Museum:** awarded $10,000 for “Earth Conservation Internship”

- **Northern Arizona University:** awarded $2,745 for “Discovering the hidden voices of Arizona’s Vocal Rodents”
Schoolyard Habitat:

- **Douglas Unified School District**: awarded $2,936 for “Mobile working tables and viewing benches for Douglas High School Land Lab”
- **Topock Elementary School District**: awarded $2,190 for “Tortoise Enclosure Kiosk”
- **Cave Creek Unified School District, Sonoran Trails Middle School**: awarded $9,844 for “Schoolyard Wildlife Habitat”

Public Access:

- **Arizona Trail Association**: awarded $20,000 for “Arizona Trail Sahuarita Road Trail Head”
- **Cochise County**: awarded $30,000 for “Geronimo Trail’s Route to Public Lands II”

Urban:

- **City of Show Low**: awarded $9,100 for “The Meadow Trail”
- **Save our Mountains Foundation**: awarded $10,000 for “Interactive Trail Signage for the North Mountains Preserve”
- **Tucson Audubon Society**: awarded $12,000 for “Bringing Habitat Home – Creating Urban Bird Habitat”
- **Coalition for Sonoran Desert Protection**: awarded $18,560 for “Safe Passages for Wildlife on I-10 East”
- **Audubon Arizona**: awarded $6,600 for the project titled "Birds and Bikes”

**Identification, Inventory, Acquisition, Protection and Management of Sensitive Habitats (IIAPM):**

- **Northern Arizona University**: awarded $71,498 for “Connectivity and Barriers to New Mexico Jumping Mice Movements”
- **Western State Colorado University**: awarded $52,300 for “Assessing the Phylogeographic structure of bluehead sucker (Catostomus Pantosteus discobulus) and flannelmouth sucker (Catostomus latipinnis) in the Little Colorado River drainage using modern DNA sequencing techniques and morphological analyses”
- **Arizona Board of Regents, Northern Arizona University**: awarded $67,158 for “Historical and contemporary trends in Ranavirus infections within threatened Rana Chiricahuensis populations”