WILDLIFE PROGRAM - NONGAME SUBPROGRAM

The purpose of the Nongame and Endangered Wildlife Management subprogram (NGEWM) is to protect, restore, preserve and maintain nongame and endangered wildlife as part of the natural diversity of Arizona and to provide opportunities for the public to enjoy nongame and endangered wildlife. "Nongame wildlife" is all wildlife except game mammals, game birds, furbearing animals, predatory animals and game fish. "Endangered wildlife," are those species listed by the Department as Tier 1a of *Species of Greatest Conservation Need* or by the U.S. Fish and Wildlife Service as endangered, threatened or a candidate for such status.

The Department's NGEWM was established in 1983 to address the needs of these species and the publics that are concerned about them for conservation, recreation, or other purposes. Much of Arizona's natural biological diversity is composed of nongame species, wildlife that is neither hunted nor fished in a traditional sense. However, the NGEWM also manages some species of wildlife that may be harvested, such as certain reptiles and amphibians. The NGEWM also focuses on wildlife that is imperiled, including those federally listed as endangered or threatened. Administrative oversight and the planning lead for NGEWM are vested in the Department's Nongame Branch located in Phoenix, but work units Department-wide, including all six regions, play a vital role.

Relatively few native species or subspecies of wildlife have been extirpated from Arizona since pre-settlement days. Even fewer have become extinct. In fact, most native species in Arizona are still abundant and offer tremendous recreational opportunities, whether through harvest or observation. However, some species are not abundant, and many are increasingly threatened by habitat degradation. The role of the NGEWM is to manage all nongame and endangered wildlife in Arizona, preferably using a landscape approach to maximize the benefits of management activities for multiple species. However, some species or taxonomic groups require focused attention. These comprise a significant portion of the subprogram's work effort and are described below.

The NGEWM utilizes a series of conservation tools and management practices as part of our management practices. Many of these tools are connected to the Endangered Species Act (ESA). These include but are not limited to: use of Section 6 funds for species recovery, development and implementation of species Recovery Plans, development and use of Candidate Conservation Agreements with Assurances and Safe Harbor Agreements. Additional resources and partnerships exist do to the development of the Statewide Comprehensive Wildlife Conservation Strategies (CWCS - also known as State Wildlife Action Plans or SWAP) that also make the state eligible for State Wildlife Grants (SWG).

Native Fish

The 36 native fishes of Arizona include 34 freshwater and 2 saltwater species. They range from inch-long topminnows to North America's largest minnow, the 6-foot long Colorado pikeminnow. Thirty-one of the native freshwater species still occur within portions of their historical ranges in Arizona. Of the other 3, the Monkey Springs pupfish is extinct, and the Yaqui catfish and Yaqui sucker no longer occur in Arizona, but still do in Mexico.

Because of human-induced habitat changes, most native fish now occupy a small portion of their former ranges, if they are present at all. Most species are identified as Species of Greatest

Conservation Need (Tier 1a and 1b in Arizona's Comprehensive Wildlife Conservation Strategy) and many are listed by the U.S. Fish and Wildlife Service as threatened or endangered under the Endangered Species Act, as amended in 1973. Several species, such as the bonytail chub, Colorado pikeminnow, and razorback sucker, have very small or senescent populations, or both, that must be supplemented through stocking programs to prevent them from being extirpated. For other species, such as loach minnow and spikedace, extirpation from several streams has already occurred but reintroduction may restore them to Arizona's landscape.

Although native fish still occur in most river drainages in Arizona, few streams support fish communities that are free from non-native species. Communities of as many as 10 native species probably occurred historically at several sites in the Gila River Basin. Today, the single richest site known is Aravaipa Creek, which still supports 7 species of native fish. However, Aravaipa is generally the exception in Arizona, where most streams with assemblages of 4 or more native species are rare and rapidly becoming even more so.

Crustaceans and Mollusks

Very little is known about Arizona's native crustaceans and mollusks. Although many species are apparently endemic to Arizona (found nowhere else), in comparison to other groups of wildlife 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.

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, U.S. Fish and Wildlife Service, and landowners for those locations.

Non-native crustaceans and mollusks—such as crayfish, New Zealand mudsnails, and Quagga mussels—are negatively impacting Arizona's aquatic habitats and native species. These exotics often have an unfair advantage over their native kin. 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. Crayfish are voracious predators and feed on aquatic vegetation, insects, snails, fish, frogs, and even gartersnakes. Resource agencies are struggling to find ways to control or eradicate these invaders. Public awareness is a key component to preventing these aquatic nuisance species from spreading into new areas.

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 sorely 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.

Populations of some species of amphibians and reptiles are smaller or more threatened than they were historically. Thirty-eight amphibians and reptiles are now Species of Greatest Conservation Need (Tier 1a and 1b). 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 into parts of its former distribution.

Four species of amphibians and reptiles in Arizona are listed by the U.S. Fish and Wildlife Service 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 all listed as threatened.

Conservation Agreements between the Department and various partners provide protection and management recommendations for the relict leopard frog, the Ramsey Canyon leopard frog and the flat-tailed horned lizard. The Department is operating under a 12-Step plan for reintroduction of Tarahumara frogs. A draft recovery plan and a Statewide Safe Harbor Agreement have been prepared for the Chiricahua leopard frog.

Nongame Birds

The list of birds documented as native to Arizona now stands at slightly more than 525 species. Roughly 475 are considered nongame species, and about 297 have been documented as breeding in the State. Seven non-native species have also become established here, through the actions of humans. Some, such as house sparrows and European starlings, have been here for so long and are so common that many people also think of them as natives.

Arizona's bird life includes many species that breed or winter elsewhere. Their numbers here thus reflect habitat availability on their distant wintering or summering grounds, as well as what they encounter during the rigorous test of twice-annual migrations. Arizona's neotropical migrants, which breed in the United States and/or Canada and winter primarily to the south, from Mexico to South America, total 237 species, of which 163 nest here regularly or irregularly. 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. 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 (Tier 1a and 1b). 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 (Tier 1a and 1b). Many raptors are also closely tied to riparian habitats for foraging or nest sites.

Nongame Mammals

Arizona has a diverse, abundant mammalian fauna. It includes many nongame species and a rich variety of game species. 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.

From almost any perspective, many nongame mammals in Arizona are 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. The ecology and distribution of some of these species, and many other small mammals, is also poorly known. 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 (Tier 1a and 1b). Nine are also federally listed as endangered under the ESA. Three of these species are extinct, and 5 have been extirpated from the State, although reintroduction efforts are underway for 2 (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.

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.

The Department has a long history of international collaborations that have contributed to the successful reintroduction of the Yaqui shiner, Yaqui catfish, and Gould’s turkey into Arizona. The International and Borderlands Projects program is housed under the Nongame Branch, but coordinates with other work units for game, research, fisheries, and environmental education partnerships collaborations.

OPERATIONAL APPROACHES

Common to All Nongame Subprogram Activities

1. Implement priority actions in approved or updated drafts of species recovery plans, conservation agreements, management plans, and CWCS strategies and information needs. (1.A.1-2., 1.A.4-6.)

2. Identify, restore and maintain priority habitats. Ensure connectivity of habitats and expand range where desirable and feasible. (1A.1, 3, 4, 5, 6)

3. Provide comment and recommendations for projects that have the potential to impact nongame wildlife populations. (1.A.5., 2.D.2.)

4. Assist in revising Commission Orders (C.O. 13, 14, 25, 40, 41, 42 & 43), rules and regulations regarding harvest of wildlife. (1.A.3.)

5. Contribute information for internal documents, Nongame Technical Reports, popular and peer-reviewed literature. (2.A.3.)

6. Seek internal and external grants and contract opportunities that support subprogram priorities. (3.A.6)

7. Complete biennial reviews to the Comprehensive Wildlife Conservation Strategy (State Wildlife Action Plan). (1.A.1-6.)

8. Maintain flexibility to address newly emerging conservation and management issues. (1.A.4.)

9. Develop and maintain diverse partnerships dedicated to the conservation of all nongame species and their habitats (1.A.3, 5; 1.B.1, 4-6; 2.A.1, 3, 2.D. 1-3)

10. Gather information on distribution and abundance of Arizona nongame wildlife. (1.A.1)

11. Remove non-native, undesired and unplanned species from wildlife habitats as needed for conservation and restoration efforts. (1.A.6., 2.C.4., 2.D.1-3.)

12. Assist in developing and revising planning documents, permits, and annual performance reports relevant to nongame wildlife management (1.A.3.)

Native Fish

General

1. Contribute to the Rangewide Conservation Agreement Native Fish Database. (1.A.1-2., 1.A.4., 2.D.3.)

2. Continue to develop a statewide fisheries management plan in coordination with regional Fish programs, Fisheries Branch, and Habitat Branch. (1.A.3., 2.D.3.)

3. Make up to 10 presentations a year at conferences, workshops, and other meetings to increase awareness and disseminate information about native fishes. (2.A.3., 2.D.2.)

Apache Trout

The activities listed below are in coordination with FOR1, FOR2, fisheries branch, and federal partners, and help meet objectives in the Apache Trout Recovery Implementation Plan.

1. Renovate up to 4 streams (South Fork Little Colorado River [LCR], Stinky Creek, lower East Fork LCR, and Conklin Creek). (1.A.4-6)

2. Repatriate stock in at least 6 streams (West Fork LCR, lower East Fork LCR, Conklin Creek, Snake Creek, South Fork LCR, and Stinky Creek). (1.A.5.)

3. Supplement wild stock in at least 1 stream (Hayground Creek). (1.A.5.)

4. Inspect 7 or more barriers (West Fork LCR, East Fork LCR, South Fork LCR, Snake Creek, Bear Wallow Creek, Fish Creek, and Hayground Creek). (1.A.1.)

5. Reintroduce or supplement wild stock of other native fishes in at least 4 Apache trout streams (East Fork LCR, Snake Creek, Hannagan Creek, and Bear Wallow Creek). (1.A.5.)

6. Monitor recovery stream populations for status or trends. (1.A.1-2.)

7. Prepare a de-listing proposal for the species in coordination with the USFWS. (1.A.1-3.)

8. Evaluate additional sites for introductions (Spring Creek and Rock Creek). (1.A.1-4)

Gila Trout

1. The activities listed below are in coordination with FOR1, FOR2, FOR5, FOR6, NGOs, and federal partners, and help meet objectives in the Gila Trout Recovery Plan.
2. Renovate at least 1 stream (Chitty Creek). (1.A.4-6.)

3. Repatriate at least 1 stream (Chitty Creek). (1.A.5.)

4. Supplement wild stock in at least 1 stream (Raspberry Creek). (1.A.5.)

5. Evaluate habitat potential for stocking in 4-7 streams (Dude Creek, West Fork Oak Creek, Pine Creek, Webber Creek, Ellison Creek, Sycamore Creek, and/or Blue River tributaries), dependent on workload and available staff. (1.A.1-2.)

6. Complete the collaborative Department-U.S. Fish and Wildlife Service-New Mexico Game and Fish Department study on angling mortality and submit for publication the results in a peer-reviewed journal. (1.A.2-3., 1.A.5.)

7. Provide recommendations on 4d rule stocking sites and harvest. (1.A.2-3., 1.B.1.)

Little Colorado Spinedace

1. Work with FOR1, FOR2, NGOs, and federal partners to establish and/or augment up to 5 refuge populations (at Flagstaff Arboretum, Winslow High School Pond, Silver Creek Hatchery, Grasslands Wildlife Area, and Raymond Wildlife Area). (1.A.5.)

2. Evaluate habitat potential for stocking or augmentation in up to 6 streams (Willow Creek, Gentry Creek, Turkey Creek, Beaver Creek, Dane Canyon, and Bear Canyon). (1.A.1-2.)

3. Develop a Safe Harbor Agreement (SHA) with the Porter Spring landowner. (1.A.3-6., 2.D.1-3.)

4. Work with FOR1, FOR2, and federal partners to monitor recovery stream populations for status or trends, dependent on workload and available staff. (1.A.1-2.)

Roundtail Chub / Headwater Chub

1. Establish and/or augment at least 1 refuge populations (at Raymond Wildlife Area). (1.A.5.)

2. Evaluate habitat potential for stocking or augmentation in at least 3 streams (West Clear Creek, Dude Creek, and Wet Beaver Creek). (1.A.1-2.)

3. Support the propagation program at Bubbling Ponds Fish Hatchery and stocking in the Verde River mainstem. (1.A.4-6.)

4. Work with FOR1, FOR2, FOR3, FOR6, NGOs, and federal partners to implement selected priority actions identified in the 3-Species Rangewide Agreement and the Statewide Conservation Agreement and Strategy for 6 species of suckers and chubs. (1.A.4-5., 2.C.4., 2.D.1-3.)

5. Work with FOR1, FOR2, FOR3, FOR6, NGOs, and federal partners to monitor populations in at least 5 streams (Burro Creek, Francis Creek, Conger Creek, Boulder Creek, and Spring Creek). (1.A.5.)

6. Develop and evaluate a standardized survey protocol. (1.A.2., 1.A.4-5., 2.A.3-4., 2.D.1-3.)

Flannelmouth / Bluehead / Zuni Bluehead / Little Colorado River Sucker

1. Work with FOR1, FOR2, FOR3, NGOs, and federal partners to implement selected priority actions identified in the 3-Species Rangewide Agreement and the Statewide Conservation Agreement and Strategy for 6 species of suckers and chubs. (1.A.4-5., 2.C.4., 2.D.1-3.)

Gila Chub

1. Establish at least 1 refuge population (Agua Fria lineage). (1.A.5.)

2. Assist USFWS in developing a Recovery Plan for the species. (1.A.4-6., 2.D.1-3.)

3. Evaluate habitat potential for stocking in at least 2 streams (Willow Spring and Josephine Canyon). (1.A.1-2.)

4. Work with FOR5, FOR6, NGOs, and federal partners to monitor known populations to determine status or trends, dependent on workload and available staff. (1.A.1-2.)

Spikedace / Loach Minnow

1. Work with FOR2, FOR3, FOR5, FOR6, and federal partners to monitor known populations to determine status or trends. (1.A.1-2.)

2. Support the propagation program at Bubbling Ponds Fish Hatchery. (1.A.4-6.)

3. Evaluate the habitat potential for stocking in at least 2 streams (Muleshoe Creek and Fossil Creek). (1.A.1-2.)

Topminnow / Pupfish

1. Establish and/or augment at least 1 refuge population (Cottonwood Spring lineage). (1.A.5.)

2. Evaluate habitat potential for stocking or augmentation in up to 10 sites (Howard Well, Posey Well, Mud Spring, and Hidden Water Spring, Willow Spring, Kolbe Ranch Artesian, White House Well, St David Escalante/Cienega, Little Joe Spring, and Sundt Pond). (1.A.1-2.)

3. Finalize and implement the Safe Harbor Agreement (SHA) with at least 10 non-federal landowners (to be determined). (1.A.3-6., 2.C.4., 2.D.1-3.)

4. Work with FOR5, FOR6, NGOs, federal, state, and county partners to monitor known populations to determine status or trends. (1.A.1-2.)

Longfin Dace / Speckled Dace / Desert Sucker / Sonora Sucker

1. Evaluate habitat potential for stocking or augmentation in up to 4 streams (Mineral Creek, Ash Creek, West East Fork LCR and Spur Cross). (1.A.1-2.)

2. Work with FOR5, FOR6, NGOs, federal, state, and county partners to establish and/or augment at least 3 refuge populations (to be determined), dependent on workload and available staff. (1.A.4-6.)

Virgin River Fishes (woundfin / Virgin chub)

1. Work with FOR2 and federal partners to monitor known populations to determine status or trends, dependent on workload and available staff. (1.A.1-2.)

2. Evaluate the potential for repatriation of woundfin in at least 1 stream (Hassayampa). (1.A.5.)

3. Collaborate with Nevada, Utah, USFWS, and NPS regarding renovation efforts. (1.A.5)

Yaqui Drainage Fishes (Sonora chub / Yaqui topminnow / Mexican stoneroller)

1. Work with FOR5 and federal partners to monitor known populations to determine status or trends. (1.A.1-2.)

2. Establish a new population of Mexican stonerollers (at Turkey Creek). (1.A.5.)

Humpback Chub / Bonytail Chub / Razorback Sucker / Colorado Pikeminnow

1. Support the razorback and pikeminnow propagation program at Bubbling Ponds Fish Hatchery. (1.A.4-6.)

2. Assist Hualapai Tribe in establishing a humpback chub propagation program. (1.A.4-6., 2.C.4., 2.D.3.)

3. Assist in stocking suitable age classes of razorback suckers and Colorado pikeminnow in the Verde River mainstem. (1.A.4-6.)

4. Work with FOR2, FOR3, FOR4, FOR6, and federal partners to monitor known populations to determine status or trends. (1.A.1-2.)

5. Assist the USFWS and USBR in the evaluation of habitat and fishery of the Yuma Division in the lower Colorado River. (1.A.1-6)

6. Collaborate with USFWS and Basin states on revision of Recovery Goals. (1.A.5)

Crustaceans and Mollusks

General

1. Maintain crustacean and mollusk databases. (1.A.2.)

2. Remove non-native, undesired and unplanned species from wildlife habitats as needed for conservation and restoration efforts. (1.A.6., 2.C.4., 2.D.1-3.)

3. Make up to 5 presentations a year at conferences, workshops, and other meetings to increase awareness and disseminate information about crustaceans and mollusks. (2.A.3., 2.D.2.)

Kanab Ambersnail

1. Revise the Interim Conservation Plan with the USFWS and other cooperators. (1.A.3-6., 2.D.1-3.)

2. Monitor known Arizona populations to determine status or trends. (1.A.1-2.)

Page Springsnail

1. Finalize the Candidate Conservation Agreement with the USFWS. (1.A.3-6., 2.D.1-3.)

2. Search for or establish 1 new population within species historical range. (1.A.1.)

3. Monitor known populations to determine status or trends. (1.A.1-2.)

Three Forks Springsnail

1. Develop a Candidate Conservation Agreement with USFS and USFWS. (1.A.3-6., 2.D.1-3.)

2. Search for new populations in the White Mountains vicinity. (1.A.1.)

3. Work with FOR1 and federal partners to monitor known populations to determine status or trends. (1.A.1-2.)

Wet Canyon Talussnail

1. Continue baseline inventory of the species distribution and genetics (including con-specifics). (1.A.1-2.)

2. Evaluate the need to update the Conservation Agreement with USFS and USFWS. (1.A.3-6., 2.D.1-3.)

3. Work with federal partners to monitor known populations to determine status or trends. (1.A.1-2.)

San Xavier Talussnail

1. Update the Conservation Agreement with El Paso Natural Gas and USFWS. (1.A.3-6., 2.D.1-3.)

2. Work with FOR5 to monitor known populations to determine status or trends. (1.A.1-2.)

Other Mollusks of Conservation Concern (Kingman springsnail / Fossil springsnail / Huachuca springsnail / San Bernardino springsnail / Quitobaquito tryonia / California floater)

1. Work with FOR2, FOR3, FOR5, NGOs, and federal partners to conduct baseline inventory to determine status and distribution, dependent on workload and available staff. (1.A.1-2., 1.A.5.)

2. Train Department staff and cooperators in sampling protocols. (1.A.4-5., 2.A.3-4., 2.D.1-3.)

Crayfish / Quagga Mussel / New Zealand Mudsnail

1. Work with regional staff and cooperators to document new records of distribution. (1.A.1.)

2. Assist educators and school districts in environmental education on the impacts of invasive species. (1.A.4-5., 2.A.2-5., 2.D.2-3.)

3. Assist cooperators in crayfish eradication and control efforts at selected sites. (1.A.6., 2.A.1-6., 2.C.4., 2.D.1-3.)

4. Train Department staff, cooperators, and educators in crayfish trapping methods. (1.A.4-5., 2.A.2-5., 2.D.2-3.)

Amphibians and Reptiles

General

1. Maintain and update Riparian Herpetofauna Database. (1.A.2.)

2. Continue to develop a statewide ranid frog conservation plan. (1.A.3., 2.D.3.)

3. Continue to monitor the current distribution of chytrid fungus in populations of Arizona amphibians. Collect skin swabs for PCR analysis from subsamples of animals found at field sites during surveys. (1.A.1., 1.A.2.)

4. Remove non-native, undesired and unplanned species from wildlife habitats as needed for conservation and restoration efforts. (1.A.6., 2.C.4., 2.D.1-3.)

5. Make up to 10 presentations a year at conferences, workshops, and other meetings to increase awareness and disseminate information about amphibians and reptiles. (2.A.3., 2.D.2.)

Sonoran Tiger Salamander

1. Continue the Small-Scale Exotic Species Removal experiment. (1.A.1., 1.A.2., 1.A.5.)

2. Develop and distribute an educational brochure about the species. (2.A.3.)

3. Monitor known populations to determine status and trends. (1.A.1.)

Chiricahua Leopard Frog

The following emphasizes Chiricahua leopard frog field work in Recovery Units (RU) 2-6 (perform additional field work in RU 1 and 7 as needed).

1. Continue to coordinate with Chiricahua leopard frog Recovery Team and USFS group, and implement activities outlined in Chiricahua leopard frog Recovery Plan. (1.A.5.)

2. Continue to coordinate with other agencies, captive facilities, permittees and private landowners and create local conservation groups when appropriate. (1.A.5., 2.D.3.)

3. Enroll up to 10 landowners to the Safe Harbor Agreement (SHA) for Chiricahua leopard frogs (includes site evaluation). (1.A.6.)

4. Create a Chiricahua leopard frog SHA information sheet for distribution to interested landowners. Information sheet will summarize goals of the SHA, and provide important details on what it means to become involved in the program. (1.A.6.)

5. Create and print a SHA brochure for the general public. The brochure will have more basic information about the SHA program and Chiricahua leopard frog conservation. (2.A.3.)

6. Survey at least 20 extant or historical populations of Chiricahua leopard frogs to determine status and trends in Recovery Units (RU) 2 - 6 and in RU 1 and 7 as needed. (1.A.1., 1.A.2.)

7. Establish and maintain captive Chiricahua leopard frog colonies or refugia, and head start tadpoles. Continue collaborative efforts with Bubbling Ponds Fish Hatchery, Phoenix Zoo and Arizona Sonora Desert Museum. (1.A.4., 1.A.5.)

8. Establish or augment Chiricahua leopard frog populations at one or more sites. This process includes site selection and evaluation, site renovation (if necessary); collect frogs, eggs or tadpoles, rear tadpoles and frogs, and release tadpoles or frogs. (1.A.1., 1.A.4.)

Ramsey Canyon Leopard Frog

1. Implement the revised Candidate Conservation Agreement and Conservation Assessment and Strategy for Ramsey Canyon leopard frogs. (1.A.4., 1.A.5.)

2. Continue to monitor extant or historical populations of Ramsey Canyon leopard frogs to determine status and trends. (1.A.1.)

3. Contract with a wildlife design artist to create a Ramsey Canyon leopard frog interpretive sign to be installed in Hereford, Arizona. (2.A.3.)

4. Establish Ramsey Canyon leopard frogs in at least 3 additional sites in the Huachuca Mountains. (1.A.1., 1.A.4.)

Tarahumara Frog

1. Continue to coordinate with Tarahumara frog Conservation Team, and implement activities outlined in the Tarahumara frog 12-Step Re-establishment Procedure. (1.A.4., 1.A.5.)

2. Continue to coordinate with USFWS and USFS to achieve conservation goals for Tarahumara frogs. (1.A.5., 2.D.3.)

3. Monitor extant populations of Tarahumara frogs at least twice a year to determine status and trends. (1.A.1., 1.A.2.)

4. Evaluate at least one additional site to stock Tarahumara frogs. (1.A.1., 1.A.4.)

Relict Leopard Frog

1. Continue to coordinate with relict leopard frog Conservation Team, and implement activities outlined in the Conservation Agreement and Rangewide Conservation Assessment and Strategy. (1.A.4., 1.A.5.)

2. Continue to coordinate with other agencies, permittees and private landowners to achieve conservation goals for relict leopard frogs. (1.A.5., 2.D.3.)

3. Survey extant or historical populations of relict leopard frogs to determine status and trends. (1.A.1., 1.A.2.)

4. Monitor extant populations of relict leopard frogs to determine status and trends. (1.A.1., 1.A.2.)

5. Evaluate up to 5 sites for stocking or augmentation. (1.A.1., 1.A.4.)

Northern Leopard Frog

1. Continue to coordinate with USFWS, USFS, permittees and private landowners to achieve conservation goals for northern leopard frogs. (1.A.5., 2.D.3.)

2. Survey at least 10 extant or historical populations of northern leopard frogs to determine status and trends. (1.A.1., 1.A.2.)

3. Monitor extant populations of northern leopard frogs to determine status and trends. (1.A.1., 1.A.2.)

4. Collect tissues for range-wide genetic analyses. (1.A.2., 1.A.4.)

5. Continue to evaluate sites for stocking or augmentation in Apache-Sitgreaves National Forest, Coconino National Forest, Kaibab National Forest, BLM (Arizona Strip), and private lands. (1.A.1., 1.A.4.)

6. Develop refugia and rearing facilities, monitor release sites in House Rock Wildlife Area. (1.A.1., 1.A.2.)

Lowland Leopard Frog

1. Survey at least 10 extant or historical populations of lowland leopard frogs to determine status and trends. (1.A.1., 1.A.2.)

Plains Leopard Frog

1. Continue to coordinate with other agencies, permittees and private landowners to achieve conservation goals for plains leopard frogs. (1.A.5., 2.D.3.)

2. Survey up to 5 extant or historical populations of plains leopard frogs to determine status and trends. (1.A.1., 1.A.2.)

3. Evaluate up to 3 sites for stocking or augmentation. (1.A.1., 1.A.4.)

Bullfrog

1. Document new records of distribution. (1.A.1.)

2. Assist educators and school districts in environmental education on the impacts of invasive species. (1.A.4-5., 2.A.2-5., 2.D.2-3.)

3. Assist cooperators in bullfrog eradication and control efforts at selected sites. (1.A.6., 2.A.1-6., 2.C.4., 2.D.1-3.)

4. Train Department staff and cooperators in bullfrog removal methods. (1.A.4-5., 2.A.2-5., 2.D.2-3.)

Desert Tortoise

1. Plan and hold 5 Arizona Interagency Desert Tortoise Team (AIDTT) meetings to develop the Sonoran Desert Tortoise State Conservation Agreement and Strategy. (1.A.5., 2.D.3.)

2. Evaluate long-term desert tortoise monitoring plot protocols, timing and techniques. Test and apply range-wide survey techniques for desert tortoises. (1.A.3., 1.A.4.)

3. Continue to work with BLM to monitor up to 7 long-term desert tortoise plots. (1.A.1., 1.A.2, 1.A.5.)

4. Continue desert tortoise radio-telemetry project in FOR3 near the Black Mountains to gather ecological and behavioral information. Use data to develop and implement adaptive management practices for desert tortoise conservation. (1.A.1., 1.A.2.)

5. Collect data on distribution of desert tortoises in FOR3 near the Black Mountains to evaluate habitat selection with respect to soil characteristics. (1.A.1., 1.A.2.)

6. Continue conducting health assessments of desert tortoise in Arizona. Continue to collect blood samples from captive tortoises being held for adoption. Initiate health assessments of captive and wild tortoises in FOR4. (1.A.1., 1.A.2.)

7. Evaluate desert tortoise adoption programs protocols, regulations, recommendations, etc. Hold at least 2 meetings with partners and collaborators to discuss needs of adoption facilities, and establish a state-wide adoption procedure. (2.A.3., 2.D.3.)

8. Continue to monitor desert tortoise population at Sugarloaf Mountain, Tonto National Forest. (1.A.1., 1.A.2.)

9. As funding allows, support research efforts to evaluate effects of catastrophic wildfires on desert tortoise populations. (1.A.1., 1.A.2.)

Mud Turtles

1. Develop partnerships and work with partners to develop conservation goals and objectives for Arizona, yellow, and Sonoran mud turtle management. (2.D.3.)

2. Continue collaboration with CEDES, UA, ORPI to monitor Sonoyta mud turtles in Arizona and Mexico, and examine reproductive ecology and microhabitat use through annual mark-recapture surveys. (1.A.1., 2.D.3.)

3. Continue development of the Quitobaquito / Rio Sonoyta Conservation Assessment and Strategy, through participation in the Quitobaquito / Rio Sonoyta Working Group. (1.A.4., 2.D.3.)

4. Implement a monitoring plan for Arizona mud turtles using mark-recapture surveys. Initiate collaborative partnerships to continue monitoring efforts. (1.A.1., 1.A.5., 2.D.3.)

5. Implement a monitoring plan for Sonoran mud turtles using mark-recapture surveys. Initiate collaborative partnerships to continue monitoring efforts. (1.A.1., 1.A.5., 2.D.3.)

Box Turtles

1. Work with partners to develop conservation goals and objectives for box turtle management. (2.D.3.)

2. Develop monitoring plans for box turtles, and determine locations for monitoring plots. Implement the monitoring plan and begin surveying plots. (1.A.5., 2.D.3.)

Non-native Turtles

1. Participate in collaborative efforts to reduce the non-native turtle population at Papago Park, thus reducing the potential for accidental expansion of turtles into other areas. (1.A.4., 1.A.5., 2.D.3.)

2. Work with WMFS and Field Operations to identify populations of exotic turtles in urban and rural areas, and coordinate efforts to reduce or eliminate those populations when necessary. (1.A.1.)

Gartersnakes

1. Work with partners to develop conservation goals and objectives for narrow-headed and northern Mexican gartersnake recovery in Arizona. (1.A.4., 1.A.5., 2.D.3.)

2. Plan and hold 2-3 meetings with partners to discuss and establish a captive propagation program for narrow-headed and northern Mexican gartersnakes. (1.A.4., 2.D.3.)

3. Implement a provisional captive propagation program for narrow-headed and northern Mexican gartersnake. Establish 3-5 captive programs. During the first two years of the program refine captive husbandry techniques as necessary. Evaluate program success in two years. (1.A.1., 1.A.4.)

4. Investigate funding potential for genetic studies of narrow-headed and northern Mexican gartersnakes. (3.A.6.)

5. Work with internal and external partners to investigate potential techniques to control exotic predators, including crayfish and bullfrogs in gartersnake habitats. (1.A.4., 1.A.5., 2.D.3.)

6. Implement a monitoring program for northern Mexican gartersnakes at Page Springs and Bubbling Ponds hatcheries (AGFD) to obtain baseline demographic data and data that might explain how gartersnakes persist in the presence of non-native predators. (1.A.1.)

7. Work with external collaborators to initiate potentially long-term demographic studies for northern Mexican gartersnakes in southern Arizona. Obtain baseline data for snake population dynamics, and investigate possible causes for species decline. (1.A.1., 1.A.2., 2.D.3.)

8. Work with external collaborators to initiate potentially long-term demographic studies for narrow-headed gartersnakes along the Mogollon Rim/White Mtns. Obtain baseline data for snake population dynamics, and investigate possible causes for species decline. (1.A.1., 1.A.2., 2.D.3.)

9. Work with external collaborators to continue ongoing demographic study of narrow-headed gartersnakes in Oak Creek Canyon. (1.A.1., 1.A.2., 2.D.3.)

Shovel-nosed Snakes

1. Work with WMRS and external collaborators to obtain ecological information on Tucson shovel-nosed snakes. (1.A.1., 2.D.3.)

2. Work with external collaborators and volunteers to survey additional sites for shovel-nosed snakes, and to collect tissues for additional, detailed genetic analyses. (1.A.1., 2.D.3.)

Flat-tailed Horned Lizards

1. Continue to coordinate with the Flat-tailed Horned Lizard Management Oversight Group and Interagency Coordinating Committee to develop conservation goals and objectives for flat-tailed horned lizards. (1.A.4., 1.A.5., 2.D.3.)

2. Coordinate with WMRS and external cooperators to research health, movement patterns and survivorship rates of relocated flat-tailed horned lizards. (1.A.1., 1.A.2., 2.D.3.)

3. Implement the rangewide strategy. (1.A.1., 1.A.2., 2.D.3.)

Nongame Birds

General

1. Coordinate with the Watchable Wildlife Program to continue development of the statewide birding trail system. (1.A.6., 1.B.1, 4-6; 2.A.3,5; 2.D.1-3)

2. Support and participate in up to 4 annual nature and birding festivals or International Migratory Bird Day events. (1.B.5; 2.A.1, 3, 5)

Arizona Birds Conservation Initiative

1. Continue to develop and maintain diverse partnerships dedicated to the conservation of all birds and their habitats in part by organizing at least 1 annual Arizona Bird Conservation Initiative (ABCI) meeting/per year. (1.A.3, 5, 1.B.1, 3; 2.A.1, 5, 2.D.1-3)

2. Hold up to 2 meetings annually for each of the 6 ABCI Regions to serve as a forum for information sharing and coordination via with all bird conservation partners. (1.A.3, 5, 1.B.1, 3; 2.A.1, 5, 2.D.1-3)

3. Begin drafting ABCI Bird Conservation Implementation Plan. (1.A.3, 5; 1.B.1, 4-6; 2.A.1, 3, 2.D. 1-3)

4. Publish ABCI Newsletter at least biannually, and update the ABCI educational display. (1.A.3, 5; 1.B.1, 4-6; 2.A.1, 3)

5. Continue development of the statewide Arizona Coordinated Bird Monitoring Program (AZCBM) that will provide long-term population trend data and evaluate the effects of management actions and stressors. (1.A.3, 5; 1.B.1, 4-6; 2.A.1, 3, 2.D.1-3)

6. Support and promote existing training workshops that will assist in the implementation of the AZCBM Program. (1.A.2)

7. Organize up to 5 AZCBM meetings/per year. (1.A.3, 5, 1.B.1, 3; 2.A.1, 5, 2.D.1-3)

8. Draft AZCBM Program framework document. (1.A.3, 5; 1.B.1, 4-6; 2.A.1, 3, 2.D. 1-3)

9. In cooperation with other agencies and NGO entities implement developed components of the AZCBM Program by coordinating and conducting statewide monitoring and inventory surveys/counts for: Clapper rail and other marshbirds, active nests of colonial breeding aquatic birds, wintering aquatic birds, willow flycatchers, yellow-billed Cuckoo, and other riparian species surveys. (1.A.1-2, 5)

10. Create a statewide AZCBM database, and integrate existing AGFD-wide bird monitoring databases into this new statewide AZCBM database. (1.A.1-2, 4; 2.D.3)

11. Continue support for Audubon's Important Bird Areas (IBA) Program through close coordination (in monitoring and conservation efforts) and participation in IBA Technical Committee meetings. (1.A.3, 5, 1.B.1, 3; 2.A.1, 5, 2.D.1-3)

12. Coordinate the planning and implementation of bird conservation through active participation in Audubon's IBA Program, Sonoran and Intermountain West Joint Ventures, Partners in Flight (PIF) Western Working Group and other similar groups. (1.A.3, 5, 1.B.1, 3; 2.A.1, 5, 2.D.1-3)

13. Continue support of the Audubon Society's Christmas Bird Count Program through participation in up to 5 counts. (1.A.1-2, 5, 1.B.1)

14. Maintain state level coordination of the North American Breeding Bird Survey to assist in monitoring the status and trends of North American bird populations. (1.A.1-2, 5, 1.B.1)

15. Depending on availability of funds, implement recommendations for the conservation of high priority bird species or habitats as identified by the Arizona PIF Bird Conservation Plan or any of the 4 national bird initiatives through the ABCI Grants Program. (1.A.4-5; 2.D.1-3)

16. Develop and seek funding for proposals to restore riparian for riparian obligate species. (3.A.5)

Raptors (all)

1. Finalize and implement an Arizona Raptor Management Database to track population trends of all raptor species. (1.A.3, 5; 1.B.1, 4-6; 2.A.1, 3, 2.D. 1-3)

2. Follow the established Nongame Commission Order Process to solicit and incorporate internal and external recommendations for Commission Order 25, including Sport falconry. (1.A.2-3, 1.B.1)

3. Finalize and implement through ABCI Committees the monitoring protocols and management recommendations of the Arizona Raptor Management Plan when appropriate and feasible. (1.A.3, 5; 1.B.1, 4-6; 2.A.1, 3, 2.D. 1-3)

Peregrine Falcon

1. Develop and implement recommendations and guidelines for management of peregrine falcons and their habitats. (1.A.2-3, 5, 1.B.1)

2. Implement the 5-year post-delisting monitoring protocol for peregrine falcons by conducting statewide occupancy and reproductive surveys at random sites designated by the USFWS in 2009. (1.A.4-5; 2.D.1-3)

3. Monitor urban peregrine falcon population growth and trends. (1.A.1-2, 5)

Bald Eagle

1. Coordinate bald eagle breeding area closures as needed to protect breeding attempts and habitat. (1.A.1-2, 5)

2. To the extent possible with available funds, implement the management strategies of the Conservation Assessment and Strategy for the Bald Eagle in Arizona. (1.A.4-5; 2.D.1-3)

3. Conduct appropriate bald eagle management and monitoring activities, including the Arizona Bald Eagle Nestwatch Program, nest search, demography studies, winter count, and occupancy-recruitment assessment flights. (1.A.4-5; 2.D.1-3)

4. Collect and analyze bald eagle eggs, eggshells, carcasses, and prey species for mortality and contaminant analysis when possible. (1.A.4-5; 2.D.1-3)

5. Implement public relations and outreach techniques for bald eagles including internet cameras, and media events and documentaries at selected nest sites. (1.A.3, 5; 1.B.1, 4-6; 2.A.1, 3, 2.D. 1-3)

6. Meet with members of the Southwestern Bald Eagle Management Committee twice a year to discuss field season progress, modify field and data protocols, set work schedules for the following field season, develop and implement recommendations and guidelines for management of the species and its habitats. (1.A.3, 5, 1.B.1, 3; 2.A.1, 5, 2.D.1-3)

Common Black Hawk / Swainson's Hawk/ Northern Goshawk / Golden Eagle

1. Survey and monitor common populations and their habitat when appropriate and feasible. (1.A.1-2, 5)

2. Develop and implement recommendations and guidelines for the management of populations and their habitats. (1.A.4-5; 2.D.1-3)

Mexican Spotted Owl / Cactus Ferruginous Pygmy-Owl / Burrowing Owl

1. Develop and implement recommendations and guidelines for management of populations and their habitats. (1.A.4-5; 2.D.1-3)

2. Participate in Recovery Team and Working Group meetings to develop and implement management recommendations and actions as appropriate for Mexican Spotted owls and its habitats. (1.A.3, 5; 1.B.1, 4-6; 2.A.1, 3, 2.D. 1-3)

3. Identify, coordinate, and participate in interagency surveys, research, habitat and population monitoring, and other field studies using approved protocols for Mexican Spotted owls when necessary. (1.A.1-2, 5)

4. Conduct surveys in areas of previous cactus ferruginous pygmy-owl locations, sightings, and suitable habitat as appropriate. (1.A.1-2, 5)

5. Conduct monitoring of cactus ferruginous pygmy-owl nest sites at certain locations to determine nesting chronology and behavior. (1.A.1-2, 5)

6. When appropriate and feasible, establish and monitor artificial nest boxes for cactus ferruginous pygmy-owls in suitable habitat in cooperation with landowners. (1.A.4-5; 2.D.1-3)

7. Participate in or implement various cactus ferruginous pygmy-owl demographic studies, which may include: banding of offspring, trapping and transmitter deployment, and genetic analysis. (1.A.1-2, 5)

8. Participate in or implement various burrowing owl demographic studies which may include banding of offspring and resighting adults, productivity surveys, and nest site and habitat monitoring. (1.A.1-2, 5)

9. Create and monitor burrowing owl artificial nest sites for productivity and nest site fidelity when feasible. (1.A.1-2, 5)

Northern Aplomado Falcon

1. Continue to participate in Northern aplomado falcon recovery efforts through participation in working group meetings. (1.A.1, 2, 5)

2. Assist New Mexico and Peregrine Fund re-establishment efforts by investigating sighting reports of aplomado falcons in Arizona. (1.A.1, 2, 5)

Thick-billed Parrot

1. Continue planning and implementation of the Thick-billed Parrot Translocation Project. (1.A.3, 5; 1.B.1, 4-6; 2.A.1, 3, 2.D. 1-3)

California condors

2. Continue with all activities associated with repatriation of Arizona with California condors. (1.A.4-5; 2.D.1-3)

3. Coordinate and implement voluntary lead reduction efforts within the condor range, including the non-lead ammunition program and hunter outreach efforts. (1.A.4-5; 2.D.1-3)

4. Assist The Peregrine Fund in conducting appropriate condor management and monitoring activities, including: condor releases; radio and satellite telemetry monitoring; nest monitoring; condor trapping and treatment for lead exposure; behavior monitoring; and mortality analysis. (1.A.4-5; 2.D.1-3)

5. Implement public relations and outreach efforts including educational presentations, field trips, wildlife fairs, and media events. (1.A.4-5; 2.D.1-3)

6. Coordinate communication among project cooperators through regular condor updates and correspondence. (1.A.4-5; 2.D.1-3)

7. Meet with members of the Southwest Condor Working Group and Condor Field Crew Working Group twice yearly to discuss condor program progress, modify field and data protocols, and develop and implement recommendations and guidelines for management of the species and its habitat. (1.A.4-5; 2.D.1-3)

8. Participate in or implement appropriate condor related research when feasible. (1.A.4-5; 2.D.1-3)

9. Participate in condor recovery team meetings and professional conferences. (1.A.4-5; 2.D.1-3)

Southwestern willow flycatcher

1. Coordinate statewide surveys in cooperation with various agencies and organizations.(1.A.1-2, 5)

2. Update, maintain, and incorporate into AZCBM datebase being developed under ABCI the willow flycatcher interagency (AGFD, USBR, USFWS, USGS) database with survey and nest data. (1.A.1-2, 5)

Yuma clapper and black rail

1. Conduct, coordinate, or otherwise participate in surveys and monitoring and habitat assessments, using established protocols documenting multiple marsh bird species. (1.A.1, 2, 5)

2. Survey areas subject to channel maintenance during the breeding season, to document nesting and to monitor changes associated with river management activities. (1.A.1, 2, 5)

3. Participate in the Yuma Clapper Rail Recovery Team and other working groups to develop and implement recommendations and guidelines for management (including survey, monitoring, research, etc.) of the species and its habitats. (1.A.1, 2, 5)

Nongame Mammals

General

1. Make presentations at conferences, workshops, and other meetings to increase awareness about nongame mammals. Make up to 10 presentations a year. (2.A.3; 2.D.2)

2. Support and participate in 10 wildlife festivals and other outreach opportunities annually to promote nongame mammals conservation (includes regional presentations).(1.B.5; 2.A.1, 3, 5)

3. Include nongame mammals in Watchable Wildlife opportunities. (1.A.6; 1.B.1; 4-6; 2.A.3, 5; 2.D.1-3)

Small Mammals

1. Continue to develop and maintain diverse partnerships dedicated to the conservation of all small mammals and their habitats by disseminating the small mammal conservation plan to federal, state and private partners and potential cooperators. Send out up to 50 copies of the plan upon completion. (1.A.3, 5; 1.B.1, 4-6; 2.A.1, 3, 2.D. 1-3)

2. Develop and implement a statewide Gunnison's prairie dog management plan in association with federal, state, and private partners. Finalize plan by December of 2007. (1.A.3, 5; 1.B.1, 4-6; 2.A.1, 3, 2.D. 1-3)

3. Finish drafting Small Mammal Conservation Plan. Hold a public review and comment period. (1.A.3, 5; 1.B.1, 4-6; 2.A.1, 3, 2.D. 1-3)

4. Coordinate the planning and implementation of small mammal conservation through active participation in Western Association of Fish and Wildlife Agencies Prairie Dog Conservation team and the White-tailed and Gunnison's prairie dog working group. Participate in at least 2 conference calls or national meetings a year. (1.A.3, 5; 1.B.1, 4-6; 2.A.1, 3, 2.D. 1-3)

5. Depending on availability of funds, implement recommendations on research and conservation of high priority small mammal species or habitats as identified by the Small Mammal Conservation Plan, Conservation Agreements, or the CWCS. (1.A.4-5; 2.D.1-3)

6. In cooperation with state, federal, and private partners implement components of all recovery plans, the CWCS, Conservation Agreements, and the Small Mammal Plan by coordinating and conducting statewide monitoring and inventory surveys/counts, and habitat identification for: various small mammals such as Gunnison's prairie dog, water shrews, and jumping mice (1.A.1-2, 5)

7. Continue planning for a coordinated small-mammal monitoring program in Arizona to: 1) provide long-term population trend data and 2) evaluate the effects of management actions and stressors. (1.A.1-2, 5)

8. Identify appropriate areas and techniques for coordinated small mammal monitoring program for as many high priority species as time and resources allow. Identify areas and techniques for up to 5 priority species a year. (1.A.4-5; 2.D.1-3)

9. Conduct inventories to determine distribution of high priority small mammal species as described in the small mammal conservation plan or the CWCS. Initiate inventories for up to 5 priority species a year. (1.A.1-2, 5)

10. Create a statewide small mammal occurrence and monitoring database. Work with intra-agency partners to develop a streamlined database process for input of information. (1.A.3, 5; 1.B.1, 4-6; 2.A.1, 3, 2.D. 1-3)

11. Continue with all activities associated with repatriation of Arizona with black-tailed prairie dogs. (1.A.4-5; 2.D.1-3)

<u>Sonoran pronghorn</u>

1. Continue radio-telemetry flights and ground tracking and monitoring of the previously radio- and satellite-collared Sonoran pronghorns. (1.A.1, 4-5; 2.D.1-3)

2. Coordinate and conduct other management activities, such as habitat manipulations and captive breeding for release of animals to increase wild populations. (1.A.1, 4-5; 2.D.1-3)

3. Develop and implement recommendations and guidelines for management (including survey, monitoring, research, design, and construction of on-site captive breeding pens, etc.) of the species and its habitats. (1.A.1, 4-5; 2.D.1-3)

4. Participate in the Sonoran pronghorn recovery Team. (1.A.4-5; 2.D.1-3)

Mexican wolf

1. Monitor wolf movements via aerial/ground telemetry and tracking to determine survival, dispersal, territories, population size, reproduction and recruitment. (1.A.1, 4-5; 2.D.1-3)

2. Establish prey characteristics and daily movements of 3-4 wolf packs during winter through daily flights. Use a helicopter to count and capture wolves for year end count. (1.A.1, 4-5; 2.D.1-3)

3. Maintain a minimum of 1/3 of all known wolves with radio collars, as equally distributed among all of the packs as possible, with an emphasis on placing radio collars on uncollared packs. (1.A.1, 4-5; 2.D.1-3)

4. Intensively monitor wolves during hunting seasons and conduct outreach with hunters and campers. (1.A.1, 4-5; 2.D.1-3)

5. Investigate depredation reports within 24 hrs of being reported and begin management actions immediately, if needed(1.A.1, 4-5; 2.D.1-3)

6. Investigate all reports of wolves through phone interviews and/or field visits. Promptly investigate and manage nuisance wolves in Arizona; assist with operations on the Fort Apache Indian Reservation and in New Mexico (depending on availability). (1.A.1, 4-5; 2.D.1-3)

7. Participate in regional, IFT, Adaptive Management Oversight Committee (AMOC) and Working Group (AMWG), and cooperator meetings. (1.A. 4-5; 2.D.1-3)

8. Produce 12 monthly updates, completed by the first week of the following month. (1.A.3, 5; 1.B.1, 4-6; 2.A.1, 3, 2.D.1-3)

9. Provide at least 20 presentations to stakeholders and interested people. Ten presentations will be to Ranger Districts; seven presentations will be offered to County Commission Meetings. (1.A.3, 5; 1.B.1, 4-6; 2.A.1, 3, 2.D.1-3)

10. Maintain AGFD Web site with current information by updating weekly and continue development of curriculum pages. (1.A.3, 5; 1.B.1, 4-6; 2.A.1, 3, 2.D.1-3)

11. Provide sufficient signage and information at all closures. (1.A.3, 5; 1.B.1, 4-6; 2.A.1, 3, 2.D.1-3)

12. Conduct at least 1 AGFD public education field experience designed for local communities. (1.A.3, 5; 1.B.1, 4-6; 2.A.1, 3, 2.D.1-3)

Black-footed Ferret

1. In accordance with the reintroduction plan, release protocol, and the USFWS-approved annual allocation proposal, propagate, release, monitor, and manage ferrets on site. (1.A.1, 4-5; 2.D.1-3)

2. Identify potential reintroduction sites on the basis of prairie dog colony area, colony juxtaposition, total area of colony complexes, burrow density and land use and ownership. (1.A.1, 4-5; 2.D.1-3)

3. Participate in the USFWS Black-footed Ferret Recovery Implementation Team (BFFRIT), and other ferret management groups. (1.A.1, 4-5; 2.D.1-3)

4. Monitor and manage the site for diseases, using methods endorsed by BFFRIT. (1.A.1, 4-5; 2.D.1-3)

Mount Graham red squirrel

1. Implement management and conservation activities identified in Recovery Plan. (1.A.1, 4-5; 2.D.1-3)

2. Coordinate the semiannual Midden Count, in accordance with established protocol. (1.A.1, 4-5; 2.D.1-3)

3. Evaluate the Midden Count protocol and make recommendations for improvement. (1.A.1, 4-5; 2.D.1-3)

4. Monitor construction and research activities associated with the Steward Observatory Astrophysical Project. (1.A.1, 4-5; 2.D.1-3)

5. Participate in the Mount Graham Red Squirrel Study Committee and Recovery Team. (1.A.1, 4-5; 2.D.1-3)

6. Conduct other management activities as necessary. (1.A.1, 4-5; 2.D.1-3)

7. Develop and implement recommendations and guidelines for management (including survey, monitoring, research, etc.) of the species and its habitats. (1.A.1, 4-5; 2.D.1-3)

Jaguar and ocelot

1. Identify, survey and evaluate potential habitat, focusing initially on areas from which most ocelot and jaguar sightings have been reported. (1.A.1, 4-5; 2.D.1-3)

2. Continue monitoring for the presence using remote censusing cameras. (1.A.1, 4-5; 2.D.1-3)

3. Implement the Jaguar Conservation Agreement and its association conservation strategies for Arizona, New Mexico, and Mexico. (1.A.1, 4-5; 2.D.1-3)

Bats

1. Continue to work with Regions and external partners towards a more coordinated bat monitoring effort; emphasize long-term population trend data collection; evaluate the effects of management actions. Species to focus on for monitoring and surveys include: lesser long-nosed bat roost surveys; Townsend's big-eared bat; California leaf nosed bat winter vs. summer roosts; resurvey historical Mexican free-tailed roosts; red bat surveys; *Eumops underwoodi*; bat hibernacula; bat migration routes. (1.A.1-3, 5; 1.B.1, 4-6; 2.A.1, 3, 2.D.1-3)

2. To the extent possible with available funds, implement priority actions identified in the Arizona Bat Conservation Strategic Plan by working with external cooperators through the Arizona Bat Conservation Partnership Grants Program. Depending on cooperative opportunities and funding, develop at least 1 bat information kiosk. (1.A.4-5; 2.D.1-3)

3. Continue to support and contribute to the Western Bat Working Group through coordination and participation at meetings and conference calls. Support the North American Bat Conservation Partnership by taking a leadership role in revitalizing national bat conservation efforts. Produce a minimum of 2 Arizona Bat Resource Group newsletters annually to distribute to interested parties and website posting. (1.A.3, 5; 1.B.1, 4-6; 2.A.1, 3, 2.D.1-3)

4. Plan a workshop to review and revise the Arizona Bat Conservation Strategic Plan. . (1.A.3, 5; 1.B.1, 4-6; 2.A.1, 3, 2.D.1-3)

5. Provide leadership for lesser long-nosed bat recovery cooperative group; organize and coordinate annual counts at maternity and late summer roosts; implement management recommendations and actions from lesser long-nosed bat recovery plan. . (1.A.3, 5; 1.B.1, 4-6; 2.A.1, 3, 2.D.1-3)

6. Maintain statewide AZ Bats Database. Investigate database upgrades to ensure that it is useful and efficient, including: inclusion on the Department's Intranet page; inclusion of a spatial component to illustrate capture and roost locations; the potential to make the database available to partners on the Web. (1.A.3, 5; 1.B.1, 4-6; 2.A.1, 3, 2.D. 1-3)

7. Provide comment and recommendations for projects that have the potential to impact bat populations. Provide adaptive management recommendations in cases where the incorporation of bat structures (bridge modifications, bat houses, bat-friendly gates) can provide alternatives to lost habitat. Depending on opportunities and funding, comment on a minimum of 5 environmental assessments annually and work with a minimum of 3 partner agencies annually to incorporate bat-friendly structures. (1.A.3, 5; 1.B.1, 4-6; 2.A.1, 3, 2.D. 1-3)

National, International and Borderlands

National

1. Continue with active participation and leadership on wildlife management committees, including but not limited to those established by Association of Fish And Wildlife Agencies, Western Association of Fish And Wildlife Agencies, the National Flyway Council and the Pacific Flyway, Wildlife Diversity Program Managers, Sonoran Joint Venture, etc. (1.A.1., 1.A.5., 2.C.4., 2.D.1-3.)

Borderlands and International

2. Support and continue coordination regarding binational and trinational wildlife collaborations under the US/Mexico/Canada Trilateral Committee for Wildlife and Ecosystem Conservation and Management. (1.A.1., 1.A.5., 2.C.4., 2.D.1-3.)

3. Support and continue coordination regarding binational wildlife collaborations under the U.S.-Mexico Border Governors Conference. (1.A.1., 1.A.5., 2.C.4., 2.D.1-3.)

4. Support and continue coordination regarding binational wildlife collaborations under the Arizona-Mexico Commission. (1.A.1., 1.A.5., 2.C.4., 2.D.1-3.)

5. Identify priority species of common conservation concern among U.S. and Mexico border states. (1.A.1., 1.A.5., 2.C.4., 2.D.1-3.)

6. Continue to develop an MOU with Mexico's Secretariat of Environment and Natural Resources. (1.A.4-5., 2.D.1-3.)

7. Continue with the capacity building and training program for wetlands conservation that supports the mission of the North American Waterfowl Management Plan. (1.A.4-5., 2.C.4., 2.D.1-3.)

8. Continue with the capacity building and training program for wildlife management to the northern border agencies in Mexico. (1.A.4-5., 2.C.4., 2.D.1-3.)

9. Continue working with Regions 4 and 5 on borderland wildlife issues. (1.A.3., 1.A.5.)

10. Develop a borderland wildlife conservation plan. (1.A.3., 2.D.1., 2.D.3.)

11. Provide comment and recommendations for projects that have the potential to reestablish wildlife species in Arizona that still exist in Mexico. (1.A.5., 2.D.1-2.)

12. Assist in maintaining and updating AGFD Database with information and records of wildlife species shared with Mexico. (1.A.2.)

13. Support and participate in wildlife festivals and other outreach opportunities to promote international wildlife collaborations. (1.B.1., 2.A.3.)

14. Provide comment and recommendations for potential acquisition of Tarahumara frogs and desert pupfish to reinforce existing wild populations in Arizona. (1.A.5., 2.D.1-2.)

15. Continue assisting with the planning and implementation of the Thick-billed Parrot Translocation Project. (1.A.1-2., 1.A.4-5., 1.B.5.)

16. Assist partners with binational research and monitoring efforts for: the Sonoran pronghorn, jaguar, Mexican wolf, desert tortoise, Sonoyta mud turtle, cactus ferruginous pygmy-owl, lesser long-nosed bat, flat-tailed horned lizard, and black and Yuma clapper rail. (1.A.1-2., 1.A.4-5., 1.B.5.)

LINKAGES TO OTHER OPERATIONAL PLANS

Off Highway Vehicle Program:
The NGEWM works with the Off Highway Vehicle program to ensure all nongame management issues are considered relative to the operation of off highway vehicles. Some of the more significant linkages are listed below.

Protection of habitat
Promote awareness of terrestrial nuisance species and how to prevent their spread
Area closures (e.g. bald eagle and WIFL breeding areas)

Watercraft Program:
The NGEWM works with the Watercraft program to ensure all nongame management issues are considered relative to the operation of watercraft. Some of the more significant linkages are listed below.

- Promote awareness of aquatic nuisance species and how to prevent their spread
- Area closures (e.g. bald eagle and WIFL breeding areas)

Business Administration Program:
The NGEWM works very closely with the Business Administration program regarding Human Resources, Financial Management, Internet Technology, and Asset Management. Some of the more significant linkages are listed below.

- Comply with all legal hiring practices for NGEWM personnel
- Maintain an administrative staff to support the Nongame subprogram, including efforts to ensure payroll and purchasing strategic objectives are met.
- Maintain a process to develop annual Job Statements that tier down from this Operational Plan and provide an outline for annual Performance Reports. These reports will contain performance measures and metrics that not only evaluate our implementation efforts, but can also be rolled up and combined with other work unit performance measure data to evaluate E5 (Section 6), W-95, SWG (Implementation and Planning), Heritage IIAPM, Heritage Urban, Nongame Check-off, Nongame Donation Accounts and WCF objectives.
- Coordinate with the USFWS per our MOA; hold quarterly meetings and track projects.
- Maintain Department library

Sportfish Subprogram:
The NGEWM has a significant programmatic connection to the Sportfish subprogram, as both must work closely to determine appropriate uses for aquatic habitats in Arizona. To the extent allowable by funding source regulations, nongame and sportfish personnel work cooperatively in all levels of management for the programs, including planning and implementation of activities in the field. Most operational approaches taken by the NGEWM that are directly connected to the Sportfish subprogram are described above. Some of the more significant linkages are listed below.

- Collaborate in developing a statewide fisheries management plan
- Collaborate in developing watershed-based fisheries management approaches
- Assist in removing non-native, undesired, and unplanned for species from aquatic habitats as needed for conservation or restoration purposes.
- Promote awareness of aquatic nuisance species, prevention, rapid response, and management.
- Assist in revising Commission Order 40 fishing regulations
- Assist in revising Commission Orders 41 and 42 (aquatic amphibians and reptiles; crustaceans and mollusks)
- Collaborate on implementing native sport fish recovery and conservation efforts
- Evaluate potential impacts to native fishes from proposed sport fish stockings (EA Checklist reviews)
- Coordinate requests for propagation of and/or holding of native fishes and amphibians using our state hatchery facilities for conservation and restoration efforts
- Collaborate on Fish Habitat Partnerships (National Fish Habitat Action Plan, Western Native Trout Initiative)
- Collaborate and partner on habitat enhancements at a watershed scale
- Collaborate and partner on conservation of native wildlife on hatchery properties (Page springsnail, gartersnakes, etc)
- Uses of hatchery facilities as watchable wildlife sites
- Collaborate on implementation of State Comprehensive Wildlife Conservation Strategies (Wildlife Action Plans) as they relate to aquatic habitats
- Collaborate on Bald Eagle management, particularly as it relates to fishing
- Collaborate on actions related to crayfish, invasive snails and mussels
- Support efforts to utilize ESA rule 4(d) rule to allow for recreational use of Gila and Apache trout populations

Game Subprogram:
The NGEWM has a limited programmatic connection to the Game subprogram; however there are a few operational processes that the subprograms interact with each other on a fairly regular basis. Most operational approaches taken by the NGEWM that are directly connected to the game subprogram are described above. Some of the more significant linkages are listed below.

Cooperative participation in the Pacific Flyway and related bird management activities
Provide management recommendations and input on Commission Orders 13, 14 and 23

Habitat Project:

- Provide input and review of project evaluations (that is: EA checklists) that potentially affect nongame wildlife
- Provide input and review of "Bluesheet Tasks" that potentially affect nongame wildlife
- Submit species occurrence records and other wildlife population information (including edits to HDMS abstracts) to the HDMS
- Provide input, review, and assistance in baseline surveys of potential land acquisitions that may benefit nongame wildlife
- Work with the Habitat project to develop and implement GIS products and analyses

Research Project:

- Provide input, Nongame prioritization recommendations, and review of nongame related Research activities
- Coordinate and assist in planning and implementing Central Arizona Project Fund-Transfer Program fish projects
- Coordinate and assist in planning and implementing research contract projects (for example: Arizona Wildlife Habitat Linkages or non-listed native fish stocking of Apache trout streams)
- Work with the Research project to develop and implement GIS products and analyses
- Coordinate the Captive breeding program for CFPO

Watchable Wildlife Project:

The NGEWM has a very strong connection to the Watchable Wildlife (W.W.) project as the coordinator for the program is housed within the Nongame Branch. However, the W.W. program is a significant enough program in itself, as well as one that crosses many programmatic areas, and therefore has its own chapter in the Operational Plan. Many of the W.W. outreach activities that the NGEWM participates in that are also considered W.W. are found in the Operational Approaches listed above.

Information Project:

The NGEWM has a very strong connection to the Information project in that the NGEWM works closely with the Information project to provide information related to nongame and endangered wildlife management to the public. Some of the more significant linkages are listed below.

- Provide project-related or wildlife information for mass media inquiries
- Review and edit Department press releases for Nongame topics
- Support and participate in wildlife festivals and other outreach opportunities to promote nongame wildlife conservation.
- Develop or assist with information on Arizona Wildlife Views magazine articles
- Assist with information and video opportunities for Arizona Wildlife Views television show episodes

Education Project:
The NGEWM has a very strong connection to the Education project in that the NGEWM works closely with the Education project to provide educational opportunities related to nongame and endangered wildlife management to the public. Some of the more significant linkages are listed below.

- Provide Department presentations to educators, students, and special interest groups
- Assist in public outreach for the Department at the annual State Fair, outdoor expositions, and other promotional events

Law Enforcement Project:
The NGEWM has a strong connection to the Law Enforcement project in that the NGEWM works closely with the Law Enforcement project in several important programmatic areas. In addition to providing oversight to the Scientific Collection Permit process, the NGEWM provides input to any laws, regulations, etc. which may impact nongame and endangered wildlife management. Some of the more significant linkages are listed below.

- Process and review Scientific Collecting Permit applications and proposals, and recommend specific permit stipulations when applicable
- Review Scientific Collecting Permit annual reports
- Review Wildlife Holding Permit applications and proposals, and recommend specific permit stipulations when applicable
- Provide input and review of statutory rules and regulations for wildlife
- Provide input and review for Nongame-related Commission Orders
- Provide Nongame program training to Wildlife Manager trainees
- Assist in the identification and placement of confiscated restricted wildlife

In addition, NGEWM relies on law enforcement actions to achieve wildlife management goals. The following activities are considered highest priority from a NGEWM perspective.

- Reptile and amphibian collection and commercialization
- Season closures (e.g. Prairie dog season)
- Unlawful stocking or spread of invasive species (crayfish, bullfrogs, Quagga mussels)
- Area or harvest closures (e.g. bald eagle and WIFL breeding areas, and renovation sites such as Fossil Creek)

Development Project:
The NGEWM works with the Development project to ensure all nongame management issues are considered relative to development projects as well as to facilitate public access. Some of the more significant linkages are listed below.

- Provide opportunities for private landowners to participate in wildlife conservation programs which may facilitate public access
- Provide input and review of habitat modification projects that potentially affect nongame wildlife

Wildlife Area Project:
The NGEWM works with the Wildlife Area project to ensure all nongame management issues are considered relative to the development, maintenance, and operation of Department Wildlife Management areas. Some of the more significant linkages are listed below.

- Provide input to Wildlife Area management plans relative to their acquisition, development and use for nongame and endangered wildlife management
- Coordinate with Hatchery personnel for propagation of and/or holding of native fishes for wildlife areas
- Continue inventory of nongame populations on select Wildlife Area properties