

ARIZONA GAME AND FISH DEPARTMENT
HERITAGE ENVIRONMENTAL EDUCATION
& SCHOOLYARD PROGRAM

PREFERRED PROJECT TYPES FOR THE GRANT 2006 CYCLE

PROJECT EMPHASIS

Projects that utilize Arizona wildlife as a learning theme:

- *that are based upon sound methodology and strong principles of education and learning strategies*
- *that are transportable to other schools, school districts, and/or counties within Arizona*
- *that involve students in collecting scientific data on local wildlife issues and communicating the results of their studies.*
- *that strongly encourages hands-on learning*

TOPICS

Biodiversity as it relates to Arizona ecosystems or bioregions

Riparian or wetland ecosystems or grassland ecosystems in Arizona

Best management practices relative to management of Arizona's aquatic and/or terrestrial habitats

The Role of predator and prey within any Arizona ecosystem

SCHOOLYARD HABITAT

For the Schoolyard habitat program area, there are no major changes in the Eligible Activities as listed in the Grant Application Manual. We strongly encourage projects that involve the planning and design of more comprehensive habitat projects. *Students should play key roles* in these planning efforts. Also, we would not encourage Pond projects focused on raising endangered fish due to changes in federal regulations.

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ARIZONA GAME AND FISH DEPARTMENT

HERITAGE URBAN WILDLIFE/URBAN HABITAT SUBPROGRAM

PREFERRED PROJECT TYPES FOR THE 2006 GRANT CYCLE

Listed below are the types of project proposals the Department would like to see submitted under the Heritage Urban Wildlife Grant-In-Aid Program in 2006.

NOTE: To be eligible for Urban funding the project location must be within the corporate limits of an incorporated city or town, or within 5 miles (straight-line distance) of the boundary.

Management of Human Wildlife Conflict

Studies on methodologies for control of human/wildlife conflicts in urban areas.

Projects that analyze risk of human/wildlife conflicts under various planning and zoning scenarios, including development of recommendations and/or guidelines.

Projects that assess proactive measures to reduce the risk or incidence of human/wildlife conflicts in urban areas.

Partnerships

Projects that promote partnerships in the community that focus on habitat restoration or enhancement, or public enjoyment of wildlife in an urban setting, for example, enhancing wildlife viewing opportunities and offering educational seminars or information specific to wildlife in the urban setting.

Develop partnerships with communities to manage wildlife conflicts, including public education or outreach to address problems such as feeding and leaving pets unattended.

Wildlife Corridors and Buffers

Projects to improve or implement wildlife movement corridors that will help minimize the effects of habitat fragmentation in urban environments. This may include studying, or developing and implementing projects such as roadway or wash underpasses to maintain important wildlife travel corridors.

Projects that examine use of corridors, natural open spaces and their adjacent areas by predators such as mountain lions, black bear, coyote and bobcat.

Studies of Special Interest

Wildlife and habitat studies that address current issues are needed in the following categories:

- Corridors, natural open spaces and adjacent areas;
- Airports (bird-strike hazards);
- Projects that develop and implement a communication plan for informing the public about how to minimize human/wildlife conflicts in the urban setting including wildlife feeding. Communication plans could include a combination of workshops, newsletters, brochures, public meetings, and direct mail materials designed to educate the public, or to reach the public through the news media or other mass communication vehicles.
- Studies to enhance the public use/enjoyment wildlife in urban settings including backyards.

Human Dimensions and Economics

Assessment of public needs and wants regarding urban wildlife resources and recreational opportunities. May also include studies on the perceptual and economic value of urban wildlife resources.

Studies That Are Not Needed At This Time

Relocation studies for rattlesnakes, burrowing owls or tortoise, and raptor electrocution. Studies are completed or ongoing in these categories.

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HERITAGE PUBLIC ACCESS PROGRAM PREFERRED PROJECT TYPES 2006 Grant Cycle

Listed below are the types of project proposals the Department would like to see submitted under the Heritage Access Grant-In-Aid Program for the 2006 grant cycle.

- ❖ New wildlife-oriented recreational access (motorized or non-motorized) onto public or State Trust lands previously inaccessible to the public.
- ❖ Obtaining perpetual or other long-term rights-of-way to secure public access for wildlife oriented recreation where it may be jeopardized by potential land development or other land status changes.
- ❖ Public works projects providing new or enhanced recreational access opportunities on or to public lands for persons with disabilities.
- ❖ Public works projects providing new or enhanced recreational access opportunities on or to public lands through improved design and construction methods.
- ❖ Education and information outreach pertaining to public access in Arizona, including ethical and responsible use of private and public lands, and opportunities for volunteerism.
- ❖ Realignments of existing access routes to protect sensitive habitat areas.

These funds are not intended for projects conducted inside urban areas unless they provide new and tangible access to the public. Any proposals intended inside urban areas that do not meet the aforementioned criteria should apply through the Heritage Urban Wildlife/Urban Habitat subprogram. Research projects are not applicable for this funding source.

Where appropriate and feasible, projects should be designed and constructed to accommodate persons with disabilities.

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**Heritage Grant Application Manual Supplement:
Sensitive Elements Eligible for
IIAPM Grant Proposals Submitted in 2005**

Final May 31, 2005

The sensitive elements (e.g. species and habitats) for which Identification, Inventory, Acquisition, Protection, and Management (IIAPM¹) grant proposals may be submitted in 2005 are listed in this document.

Any proposal not in full compliance with the following guidance will be rejected:

Proposals will only be accepted for the element-specific objectives listed on the following pages.

Proposals must address at least one of the listed elements and one or more of the listed Grant Proposal Objectives for that element.

The element(s) and objective(s) on which a proposal is focused and the project deliverables must be clearly identified in the proposal.

Proposals are often more competitive (in terms of funding consideration) when they address more than one listed sensitive element, and when they provide comparable information for other (non-listed) wildlife and/or habitats in the project area.

Our intent is to fund projects that will give the greatest return for the Heritage funds invested.

Please contact the Department's IIAPM Wildlife Management Project Leader or Assistant Project Leaders (602 789-3500) regarding any questions about elements or objectives eligible this year.

Note: the list of *Wildlife of Special Concern in Arizona* that is referenced several times in this document is available from the Department's Nongame Branch (2221 West Greenway Road, Phoenix, Arizona 85023-4399; phone 602 789-3507; fax 602 789-3926) or by download from the

Department's website (<http://www.azgfd.gov/>).

¹ The IIAPM component of the Department's Heritage Program was previously known as IIPAM. The "new" IIAPM is, however, identical in terms of program structure and function to the long-standing IIPAM. The change in name and abbreviation to IIAPM was mandated by the Governor's Regulatory Review Council in 2002. The Department regrets any confusion this change may cause, as countless existing Department documents will reference the program IIPAM until and unless they are revised and updated over the coming years.

Wildlife Elements	Grant Proposal Objectives
Mammals	
Bats: Miscellaneous	<p>A. Through field surveys and literature review, determine critical foraging habitat requirements for any or all of the following species: Allen's lappet-browed bat, California leaf-nosed bat, lesser long-nosed bat, Mexican long-tongued bat, occult little brown bat, silver-haired bat, southwestern myotis, spotted bat, Townsend's big-eared bat, Underwood's mastiff bat, western mastiff bat, western red bat, and/or western yellow bat.</p> <p>B. Design and/or implement roosting and/or foraging habitat enhancements for winter roosts and maternity colonies of: Allen's lappet-browed bat, California leaf-nosed bat, lesser long-nosed bat, Mexican long-tongued bat, occult little brown bat, silver-haired bat, southwestern myotis, spotted bat, Townsend's big-eared bat, Underwood's mastiff bat, western mastiff bat, western red bat, and/or western yellow bat.</p> <p>C. Projects that facilitate the implementation of the Arizona Bat Conservation Strategic Plan available at http://www.azgfd.gov/.</p>
Jaguar	<p>A. Design and/or implement habitat enhancements recommended by the Jaguar Conservation Team available at http://www.azgfd.gov/.</p> <p>B. Projects that facilitate the implementation of the Jaguar Conservation Agreement</p>
Jackrabbit, Antelope	<p>A. Evaluate historic and current occurrence through field surveys and searches of pertinent literature and museum records.</p> <p>B. Assess habitat use, population status, and population trends.</p> <p>C. Identify management needs.</p>
Pronghorn (all subspecies)	<p>A. Public information activities, materials, and/or plans on open space planning and its benefits to pronghorn in suburban/rural development areas, statewide.</p> <p>B. (1) Research and development of criteria for habitat enhancement in grasslands ecosystems, with particular emphasis on grasslands restoration in juniper invasion areas. (2) Research on pronghorn habitat on the Anderson Mesa. (3) Determine the quantity and quality of herbaceous ground cover needed to help increase fawn recruitment in Colorado Plateau grassland habitats in northern Arizona.</p>
Shrew, Water	<p>A. (1) Conduct repeatable surveys to determine distribution and abundance. (2) Determine breeding habitat selection and preference, including patch-size requirements. (3) Identify habitat requirements and management guidelines.</p>
Wolf, Mexican	<p>A. Public outreach activities and materials per the AGFD-approved communication plan, available at http://www.azgfd.gov/: for Mexican wolf conservation; wolf-related ecotourism in the Southwest; and interactions between/among wolves, other wildlife, livestock, and people.</p> <p>B. Determine impacts of predation by bears, coyotes, lions, and wolves on elk and deer populations in the Mexican Wolf Blue Range Recovery Area in Arizona and New Mexico as those populations impact Arizona.</p> <p>C. Develop new and more efficient methods for confirming presence of wolves and estimating population sizes.</p> <p>D. Other activities as recommended by the Mexican Wolf Adaptive Management Oversight Committee, available at http://www.azgfd.gov/</p>
Tree squirrels (specifically Mexican fox squirrel and Arizona gray squirrel).	<p>A. General status, population census, and life history information.</p>

Wildlife Elements	Grant Proposal Objectives
Birds	
Birds: Plains Grassland Assemblage	<p>A. Field surveys and literature search of breeding and wintering populations in Sonoita and San Rafael grasslands, Sulphur Springs Valley, and Altar Valley: compile historical and current occurrence and abundance information, conduct 2-season sampling (winter and breeding season), assess effects of land-use practices, and provide site and habitat-specific management recommendations.</p> <p>B. Field surveys and literature search of breeding and wintering populations in or within 30 air-line miles of the Department’s Grassland Wildlife Area: compile historical and current occurrence and abundance information, conduct 2-season sampling (winter and breeding season), assess effects of land-use practices, and provide site and habitat-specific management recommendations.</p>
Goshawk, Northern	<p>A. Breeding-season survey (two complete seasons) of all known and suspected nests in Arizona south of the Gila River to determine nest-site location, occupancy, productivity, and to identify land-use practices and other factors that may be influencing site success.</p> <p>B. Evaluate all existing productivity data available to the Department to identify statewide population trends and to determine sustainable levels of harvest for falconry use.</p> <p>C. Evaluate impacts of fire, fire management, or forest restoration projects on goshawk territory occupancy and productivity; provide post-fire or post-treatment status information on affected populations; and provide habitat management recommendations to mitigate impacts of fire and or forest restoration projects.</p>
Owl, Mexican Spotted	<p>A. Research into prey base response to: (a) prescribed fire, (b) forest thinning operations, (c) retention of downed woody debris after forest thinning operations, (d) any other forest restoration practice or treatment; and/or (e) grazing by ungulates (native or nonnative).</p>
Golden Eagle	<p>A. Field surveys and literature search to determine historical and current occurrence, population status and trends, habitat use, effects of land-use practices, and management needs.</p> <p>B. Field surveys to determine current occurrence, productivity, trends, and effects of land-use practices and management needs in northeastern Arizona.</p>
Arizona Partners in Flight plan	<p>A. Projects that implement priorities identified in the AZ Partners in Flight Plan, available at http://www.azgfd.gov/.</p>
Riparian Raptors (Northern gray hawk and common black hawk)	<p>A. Gather current status, life history, and demography information.</p>

Wildlife Elements	Grant Proposal Objectives
Reptiles	
Tortoise, Desert	A. Using AGFD-approved protocols, conduct population sampling at one or more AGFD-selected permanent study plots in the Sonoran Desert and/or Mohave Desert. B. Research on population viability, genetics, disease, and behavioral. C. Research on the effectiveness of fencing, culverts, and other mitigation measures.
Mexican and narrow-headed garter snake	A. Identify key population stressors, such as seasonal habitat use, activity patterns and periods and home range size.
Horned Lizard, Flat-tailed	A. Using AGFD-approved (existing) protocols, conduct inventories sufficient to provide a baseline for future evaluations of trends in abundance and distribution range-wide in Arizona. Results to include relative abundance by site-of-occurrence, habitats of occurrence (mapped with GIS technology and denoting land ownership), and recommendations for monitoring and management. B. Determine effects of roads, off-road driving, and agricultural pesticides on abundance, dispersal, and habitat. Use results to provide management recommendations to eliminate or mitigate negative impacts.
Herps General	A. Inventory amphibians and reptiles on the Arizona Strip in northern Coconino and Mohave counties.

Wildlife Elements	Grant Proposal Objectives
<u>Amphibians</u>	
Salamander, Sonora Tiger	<p>A. Field surveys (using radiotelemetry and other mark-release-recapture techniques) to determine (a) dispersal distances, movement corridors, seasonality, and frequency; and (b) hibernation/estivation site preferences and distances from water bodies, of metamorphosed Sonoran tiger salamander in the San Rafael Valley and surrounding mountains.</p> <p>B. Develop a Population Viability Analysis (PVA) or Population Viability Habitat Analysis (PVHA), using available demographic and dispersal information, to estimate the likelihood of extinction, assess relative threats, compare alternative management strategies, and make management recommendations.</p>
Frogs, ranid (native)	<p>A. Design and/or implement habitat enhancements to increase habitat suitability, including removal of exotic predators and increasing permanency of intermittent streams, at historical and/or current sites of occurrence.</p> <p>B. Develop and distribute public outreach activities and materials stressing the impacts to native amphibians from nonnative predators, disease, pollution and other mortality causes.</p> <p>C. Design and implement research to address specific objectives outlined in <u>recovery plans, conservation and reestablishment proposals.</u></p>
Frog, Leopard (Rio Grande)	<p>A. Identify and field-test specific mechanisms (techniques, etc.) for controlling (including eradicating) Rio Grande leopard frogs to promote conservation of native species of leopard frogs.</p>

Wildlife Elements	Grant Proposal Objectives
Fish	
Fish: Miscellaneous	<ul style="list-style-type: none"> A. Identify mechanisms for isolating populations of native fish from nonnative predators and competitors for purposes of conservation. B. Develop an integrated native fish and sport fish management plan for the Upper Salt River (above Roosevelt Lake) and its tributaries. C. Develop an integrated native fish and sport fish management plan for the Upper Verde River and its tributaries.
Chub, Gila	<ul style="list-style-type: none"> A. Site-specific conservation agreements and management plans for extant populations. B. Design and/or implement habitat enhancement and restoration activities.
Chub, Sonora	<ul style="list-style-type: none"> A. (1) Santa Cruz County: Design and/or implement habitat enhancement and restoration activities in the Sycamore and/or California Gulch drainages. (2) Write a fisheries renovation plan for the California Gulch drainage.
Pupfish, Desert	<ul style="list-style-type: none"> A. Design and/or implement habitat enhancement and restoration activities at extant sites or at sites upon approved by AGFD for reintroduction.
Spinedace, Virgin	<ul style="list-style-type: none"> A. Design and/or implement habitat enhancement and restoration activities pursuant to the AGFD-approved Virgin Spinedace Conservation Agreement.
Spinedace, Little Colorado River	<ul style="list-style-type: none"> A. Design and/or implement habitat enhancement and restoration activities pursuant to the AGFD-approved East Clear Creek Watershed Strategy for Little Colorado Spinedace and Other Riparian Species. B. Design and/or implement habitat enhancements and restoration activities at extant sites or at sites approved by AGFD for reintroduction.
Topminnow, Sonoran (includes Gila and Yaqui subspecies)	<ul style="list-style-type: none"> A. Design and/or implement habitat enhancement and restoration activities at AGFD-approved sites.
Chub, Roundtail/headwater; Sucker, Flannelmouth/Little Colorado River; Sucker, Bluehead/Zuni	<ul style="list-style-type: none"> A. Design and/or implement habitat enhancements and restoration activities at extant sites or at sites approved by AGFD for reintroduction pursuant to the Three Species Conservation Agreement.

Wildlife Elements	Grant Proposal Objectives
Crustaceans and Mollusks	
Miscellaneous	<p>A. Field surveys and literature search to determine historical and present occurrence, population status and trends, and management needs of one or more of the following elements: Arizona cave amphipod, California floater, Gila tryonia.</p> <p>B. (1) Research on how one or more of the following elements respond to specific land management practices, and on their population genetics, taxonomic validity, and habitat requirements: Arizona cave amphipod or California floater.</p> <p>(2) Research the impacts of non-native crayfish on aquatic <i>Wildlife of Special Concern in Arizona</i> and recommend specific management actions to eliminate or mitigate the impacts.</p> <p>(3) Research, develop, and test methods to effectively eradicate or suppress non-native crayfish within the range of aquatic <i>Wildlife of Special Concern in Arizona</i>.</p>
Springsnails	<p>A. Field surveys and literature search to determine historical and present occurrence, population status and trends, and management needs of one or more of the following elements: Fossil springsnail, Kingman springsnail, Verde Rim springsnail, Huachuca springsnail.</p> <p>B. Research on how one or more of the following elements respond to specific land management practices, and on their population genetics, taxonomic validity, and habitat requirements: Fossil springsnail, Kingman springsnail, Three Forks springsnail, Verde Rim springsnail, Huachuca springsnail.</p> <p>C. Site-specific management plans for lands harboring one or more of the following elements: Fossil springsnail, Verde Rim springsnail, Huachuca springsnail.</p> <p>D. Design and/or implement habitat enhancements that address the needs of one or more of the following elements: Fossil springsnail, Kingman springsnail, Verde Rim springsnail, Page springsnail.</p>
Talussnails (includes Mountainsnails)	<p>A. Field surveys and literature search to determine historical and present occurrence, population status and trends, and management needs of one or more of the following elements: Pinaleno mountainsnail, Pinaleno talussnail.</p> <p>B. Research on how one or more the following elements respond to specific land management practices, and on their population genetics, taxonomic validity, and habitat requirements: Pinaleno mountainsnail, Pinaleno talussnail, San Xavier talussnail, Wet Canyon talussnail.</p> <p>C. Site-specific management plans for lands harboring one or more of the following elements: Pinaleno mountainsnail, Pinaleno talussnail.</p> <p>D. Design and/or implement habitat enhancements that address the needs of one or more of the following elements: San Xavier talussnail, Wet Canyon talussnail.</p>

Community/Other Elements	Grant Proposal Objectives
<u>Habitat Types²</u>	
Rocky Mountain Alpine and Subalpine Grassland (141.4)	<p>A. Field surveys and literature search to determine relative abundance of, and habitat use by, insectivores and ground-dwelling rodents in Rocky Mountain Alpine and Subalpine Grasslands in the White Mountains.</p> <p>B. Investigate impacts of the wildfires occurring in 2003 or 2004 on habitats that were occupied by species listed by AGFD as <i>Wildlife of Special Concern in Arizona</i>; assess post-fire population status of such species; study aspen regeneration; and provide fire-impact mitigation measure recommendations for such species and the habitats they occupy post-fire or occupied pre-fire.</p>
Sonoran Riparian Forest, Mesquite Series (224.52)	<p>A. Inventory, map, and assess conservation needs of mesquite bottomland forests.</p>
Plains Interior Marshland (242.3) and Madrean Marshland (243.5)	<p>A. Develop site-specific management plans for lands harboring Plains Interior Marshland or Madrean Marshland.</p>
Great Basin and Plains Grassland and Semidesert Grassland	<p>A. Develop strategies for conservation of Great Basin and Plains Grassland (142.1) and Semidesert Grassland (143.1) to offset habitat and wildlife population fragmentation.</p> <p>B. Investigate impacts of the wildfires on habitats that were occupied by species listed by AGFD as <i>Wildlife of Special Concern in Arizona</i>; assess post-fire population status of such species; and provide fire-impact mitigation measure recommendations for such species and the habitats they occupy post-fire or occupied pre-fire.</p>
Aspen	<p>A. Investigate aspen regeneration as a result of the 2003 and 2004 Thomas, Largo, Steeple and/or KP wildfires. Monitor aspen regeneration rates, wild ungulate utilization levels on aspen, and aspen survival rates.</p>
Other	Grant Proposal Objectives
Non-native invasive species (e.g. Bull frogs and crayfish).	<p>A. Research habitat selection criteria and maximum range movements to determine adequate buffer distances from at-risk native fish, reptile, and amphibian populations. Test feasibility and methods of population control.</p>
Significant Caves	<p>A. Develop site-specific management plans for caves with significant crustacean, mollusk, bat, and/or other wildlife values.</p> <p>B. Implement habitat enhancement, renovation, and restoration activities for caves with significant crustacean, mollusk, bat, and/or other wildlife values. Examples: gating to control access; reinforcing weathering zones.</p>

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Document Sensitive Elements List for 2005.20050531.doc

²The parenthetical numbers below are references to: Brown, D.E., C.H. Lowe, and C.P. Pase. 1980. A digitized classification system for the biotic communities of North America, with community (series) and association examples for the Southwest. *Journal of the Arizona-Nevada Academy of Science* 14 (Suppl. 1):1-16.