

State Wildlife Incentive Grant Program

State of Illinois

State Wildlife Grant Proposal

PROJECT NUMBER: T-28 -M-1

PROJECT TITLE: Public Land Native Wildlife Habitat Restoration Project

PURPOSE/NEED:

The State of Illinois contains over 36 million acres, including more than 26,000 miles of streams. Illinois is divided into 14 Natural Divisions that describe the different physiographic and biotic communities found across the state (Schwegman 1973).

While Illinois supports a wide diversity of floral and faunal species, the current landscape now supports only a small fraction of the biodiversity and tremendous plant and animal populations that once existed. The Illinois Critical Trends Assessment Project (1994) and the Department of Natural Resources (2001) concluded that the natural ecosystems of Illinois are rapidly declining as a result of fragmentation and continual stress. Most agricultural land is in intensive monoculture covering 77.5% of the total land area of the state. In contrast, native grassland has declined. Less than 0.1% of the original tall grass prairie remains. Forested areas, while increasing, cover only 11% of the land area. Illinois has lost approximately 90% of its wetlands. The remaining natural wetlands now occupy 3.2% of Illinois, and only 6,800 acres are graded as high quality. Urban sprawl continues to threaten natural areas and other open spaces. Road construction, industrial discharges and the continued introduction of invasive exotic species, whether accidental or intentional, continue to cause stress on our natural systems. Most of the wetlands have been cleared, drained, or altered. Due to these changes in the landscape, the diversity, abundance and distribution of Illinois' floral and faunal species have suffered and diminished.

The General Assembly defines IDNR's powers and duties in Article 805 of the Civil Administrative Code, 20 ILCS 805/805-1 et seq., which provides the framework for IDNR operations. Article 805 states that "the Department has the power to take all measures necessary for the conservation, preservation, distribution, introduction, propagation, and restoration of fish, mussels, frogs, turtles, game, wild animals, wild fowls and birds." (20 ILCS 805-805-100). Section 805-225 authorizes the conservation of natural and scenic areas, and Section 805-225 authorizes the development of recreational areas and facilities.

The following excerpts are from the goals and objectives of the IDNR's "*STRATEGIC PLAN 2003-08, Strategic Issue 1 Natural and Cultural Resource Protection*" at <http://163.191.195.105/StrategicPlan/resource.htm>. Goals 1.1.1 and 1.1.2 have been established to direct the Department in addressing the issue of achieving sustainable ecosystems while meeting the broad array of other functions and responsibilities that the Department must address.

"Challenge 1.1

How can IDNR best restore, enhance, and sustain Illinois' natural and cultural resources for present and future generations?

Illinois' ecosystems (forests, lakes, rivers, wetlands, grasslands, and coastal estuaries) are vulnerable to disturbance, pollution, degradation and destruction as a result of human activities. Land use development patterns are a major stressor of ecosystems. Road building, stream

channelization, industrial discharges, farming, home building, and many other activities alter the natural environment. The introduction of exotic plant and animal species into the state also threatens native species and their ecosystems.

The impacts of change may be dramatic or subtle, abrupt or gradual. The cumulative impact from many small, unnoticed changes can result in habitat fragmentation and significantly diminish the capacity of ecosystems to renew themselves. Action needs to be taken to address these issues.

The IDNR has adopted an ecosystem-based strategy for managing the State's fish, wildlife, and plant resources. Management practices and methods that are the most effective in restoring ecosystem structure and function are being developed and implemented. Management activities include: prescribed burns of grasslands and forests, monitoring fish and wildlife populations utilizing a variety of surveys and census activities, protecting populations by establishing harvest and species protection regulations, and implementing population control efforts to address invasive/nuisance species. State-of-the-art information technologies are utilized to maintain resource databases to improve ecosystem management decision-making.

Goal 1.1.1 Protect and restore habitat.

The IDNR incorporates a diverse, broad approach to protect and restore a variety of habitat types. This approach embraces several strategies that address habitat protection and restoration on public and private lands, including land acquisition, conservation easements, formal dedications, and voluntary-incentive based programs. A secondary benefit of habitat restoration work is the sequestration of carbon from the atmosphere (CO₂) through photosynthesis..."

Expected Outcomes

- 1. Improved ecosystem health.*
- 2. Increased biodiversity.*
- 3. Increased carbon sequestration.*

Performance Measures

- 1. Number of acres enhanced on public lands for wildlife habitat.*
- 2. Carbon sequestration based on acres (tons).*
- 3. Number of acres protected as dedicated Nature Preserves.*

Objectives

Objective 1.1.1.1 Protect and maximize quality habitat for all wildlife species and maintain the integrity of sensitive, high quality natural communities.

Objective 1.1.1.2 Develop a process which incorporates ecosystem management principles that can be used at any level of landscape planning to target the restoration of specific natural resources.

Objective 1.1.1.3 Protect habitat using formal dedications, e.g., Natural Preserve, Land & Water designations, and Natural Heritage Landmarks.

Objective 1.1.1.4 Propagate trees, shrubs and prairie grass seed in our nurseries and make available for restoring quality habitats..."

Goal 1.1.2 Manage plant and animal communities using ecosystem management principles.

The state has approximately 2200 known native plant species, 15 percent of which are categorized as endangered or threatened, meaning some species are becoming increasingly rare or even face possible extinction within the state's ecosystems. Illinois also has a diverse mix of animals including 59 types of native mammals, 196 species of fish, 297 kinds of birds, 61 species of reptiles, and 41 amphibian species.

The Illinois Endangered Species Protection Board (2004) lists 331 plants, 8 mammals, 32 fishes, 15 reptiles, and 52 invertebrates as either threatened or endangered in Illinois. The Board also maintains a "watch list", which identifies another 43 species whose status is unknown or are of special concern.

The downward population trends for these species must be reversed. This can be done through the development of recovery plans for individual species or for groups of species with similar ecological requirements. It is also important for the Department to be committed to an aggressive, comprehensive prevention strategy to provide protection for all native species, using ecosystem management principles.

Expected Outcomes

- 1. Improved ecosystem health.*
- 2. Stabilized or increased biodiversity.*
- 3. Increased protection for endangered and threatened species.*

Performance Indicators

- 1. Number of surveys conducted for specific plant and animal species.*
- 2. Number of at risk species evaluated to determine population trends.*

Objectives

Objective 1.1.2.1 Establish plant and animal species harvest and protection regulations and administrative rules and measure harvests annually.

Objective 1.1.2.2 Conduct surveys and census activities for targeted plant and animal species.

Objective 1.1.2.3 Develop & implement recovery plans for targeted endangered and threatened species and protect and restore the range of these species.

Objective 1.1.2.4 Develop and implement strategies to control or reduce invasive species.

Objective 1.1.2.5 Conduct prescribed burns using state-of-the-art methods.

Objective 1.1.2.6 Utilize state-of-the-art Geographic Information System technologies and highly trained staff to maintain resource databases to improve ecosystem management decision-making.

Objective 1.1.2.7 Develop and document scientifically based ecosystem practices for general use and access..."

The Department of Natural Resources has also submitted and had approved their Wildlife Action Plan (<http://dnr.state.il.us/orc/wildliferesources/theplan/home.htm>.) This plan outlines 654 species in greatest conservation need, including, 433 invertebrates, 79 fish, 14 amphibians, 23 reptiles, 85 birds, and 20 mammals. The plan also identifies habitat areas that demonstrate the greatest conservation need and potential. It also establishes specific conservation goals for the enhancement and protection of these sites. The plan identifies tools to achieve specific and broad conservation goals for forest, opens woodland/savanna/barrens, grassland, shrubland, wetland, lakes, ponds and streams. Besides fulfilling the legal requirements for receiving federal aid funding under WCRP and SWG, the CWCPS will support future grants, direct habitat programs, guide the management of IDNR sites and land acquisitions, and facilitate partner projects with federal, local and not-for-profit conservation organizations and private landowners. This plan will be useful for prioritizing allocations from the State Wildlife Grants Program, Federal Aid in Sportfish and Wildlife Restoration, waterfowl stamp, habitat stamp, furbearer fund, Wildlife Preservation Fund, C2000 Ecosystem Program, Natural Areas Acquisition Fund, and other sources. The following excerpts are from the goals and objectives of the Wildlife Action Plan.

“IDNR has set the following habitat goals below for 2025. Goals for these major habitat types are compilations of habitat objectives derived for individual species or guilds. Note that habitat objectives are complimentary in nature, e.g., restoring and managing terrestrial habitats contributes to reduced sedimentation in wetlands and streams, and thus will benefit multiple habitats, SGNC, sport fishes and game animals.

Forest -

- 1. Implement improved forestry practices, including timber stand improvement, prescribed fire and invasive species control to enhance oak-dominance and maintain understory diversity on 1 million acres of forest.*
- 2. Increase statewide forest acreage by 350,000 acres, emphasizing restoration of floodplains and riparian corridors, increasing ecological connectivity among forests and other habitat patches, and reducing fragmentation of forests 500 acres and larger.*
- 3. High-quality examples of all forest communities are restored and managed within all natural divisions within which they occur.*
- 4. Urban forests are healthy and well-maintained.*

Open Woodland/Savanna/Barrens -

- 1. Extent and condition of open woodland, savanna, and barrens habitats are known and monitoring can identify conservation needs.*
- 2. Degraded habitats have been identified and restored as possible; small woodlots are managed as open woodlands/savannas as appropriate.*
- 3. High-quality examples of all open woodland, savanna and barren communities are restored and managed within all natural divisions within which they occur.*

Grassland -

- 1. An additional 1 million acres of grassland, emphasizing upland, treeless grasslands larger than 0.5 mile wide and ecological connectivity among grasslands and other habitat patches, are established and maintained.*
- 2. Wildlife-value (structure, floral diversity, disturbance regimes) of 1 million existing acres of grassland are enhanced.*
- 3. Five additional “ecological pattern” grassland Bird Conservation Areas (BCAs; see*

Fitzgerald et al. 2000) have been established.

- 4. Three wet prairie areas of 1,000 to 2,000 acres, connected by dispersal corridors, are restored and managed in the Grand Prairie natural division.*
- 5. At least 6 areas (300-500 acres each) of ephemeral wetlands and accompanying upland sand prairie habitat are restored and managed for Illinois chorus frogs in the inland sand areas.*
- 6. High-quality examples of all prairie communities are restored and managed within all natural divisions within which they occur.*

Shrub/successional -

- 1. Extent and condition of shrub/successional habitats are known and monitoring can identify conservation needs.*
- 2. Additional habitat has been established and is being managed.*
- 3. As appropriate, small woodlots and forests have native shrub-dominated, early successional edges and perennial herbaceous borders.*

Wetland -

- 1. A net gain of 20% of marsh wetland types is achieved through restoration, enhancement and management.*
- 2. A net gain of 40% of combined wetland types is achieved in the river bottomlands natural divisions of Illinois.*
- 3. Ephemeral and fishless semi-permanent wetlands (i.e. vernal pools, prairie potholes, landscape depressions) support objectives for dependent species of wildlife.*
- 4. Moist-soil management strategies adopted on public waterfowl management areas and other sites increase wading bird, waterfowl, shorebird, and other wildlife use.”*

To address the objectives of Goals 1.1.1 and 1.1.2 from IDNR’s “*STRATEGIC PLAN 2003-08, Strategic Issue 1 Natural and Cultural Resource Protection*” above, the IDNR has put in place a number of comprehensive programs and initiatives to address the loss of habitat; the spread of invasive, exotic species; improving and expanding quality habitat. The Illinois Endangered Species Protection Board (2004) lists 339 plants, 9 mammals, 31 fishes, 16 reptiles, 8 amphibians, 32 birds and 48 invertebrates as either threatened or endangered in Illinois. The Board also continually monitors populations of animals and plants that are not yet listed but are in question as to their status/designation.

Approximately 720,000 acres of the state of Illinois is in public ownership. These acres are entirely devoted to natural resource management. The Illinois Natural Areas Inventory (INAI) identifies 363,284 acres as having significant natural communities that serve as habitat for a multitude of wildlife species, including endangered and threatened plants and animals. A portion of this acreage is publicly owned. The Illinois Nature Preserves Commission has dedicated 44,085 acres as Nature Preserves and enrolled another 33,521 acres Land and Water Reserves Program throughout the state. Through these programs, permanent easements are established solely for conservation purposes. The need for restoration of these protected and/or public lands for wildlife habitat far exceeds available funding.

Similarly, IDNR’s *Wildlife Action Plan* developed priority conservation strategies for Illinois habitats to meet these ambitious conservation goals listed above. These include:

Forests

- 1. Maintain and enhance the composition of Illinois’ forested habitats*

2. *Expected increases in statewide forest acreage (the continuation of an 80-year trend) should emphasize restoring floodplains and riparian corridors, ecological connectivity, and reducing fragmentation.*
3. *Develop and expand programs to assist private forest owners in managing forest resources.*
4. *Promoting the increased use of prescribed fire and sustainable forestry practices will require a campaign of marketing, demonstration areas on public and private forests, technical assistance, professional training, access to fire equipment, cooperation with fire protection districts, and reform or clarification of liability issues.*
5. *Local and state authorities must cooperate to develop zoning criteria and local greenway plans that protect important habitats and ensure “smart growth.”*
6. *Fill information gaps and develop conservation actions to address stresses*
7. *Restore and manage high-quality examples of all forest, savanna and barrens communities in all natural divisions within which they occur*

Grasslands

1. *Through incentives-based programs and technical assistance, establish or restore grassland, early successional/shrub, wetland, and riparian habitat.*
2. *Through incentives-based programs and technical assistance, moderate disturbance regimes and enhance the condition of farmland habitats.*
3. *Restore and manage native prairie communities and populations of imperiled and extirpated prairie wildlife.*
4. *Emphasize multiple-resource benefits of conservation in agricultural landscapes.*
5. *Inter-agency cooperation and coordination to ensure agricultural programs do not have conflicting objectives.*
6. *Fill information gaps and develop conservation actions to address stresses.*
7. *At local, county and regional scales, involve stakeholders in discussions of long-term land use planning to meet agricultural, conservation, economic, residential and recreational needs.*
8. *Clarification or change in liability statutes to promote private land access.*

Wetlands

1. *Improve the condition of existing natural and artificial wetlands.*
2. *adopt moist-soil management strategies on public waterfowl management areas and other sites that increase wading bird, waterfowl, shorebird, and other wildlife use*
3. *Develop and manage additional wetland habitat*
4. *Fill information gaps and develop conservation actions to address stresses, inter-agency cooperation and coordination to ensure wetland programs do not have conflicting objectives*
5. *Emphasize multiple-resource benefits of wetland conservation.*
6. *Increase water quality education efforts in areas under high development pressure and/or within fragile geographic zones (i.e. karst terrain)*

Funds approved through this grant will be used to expand the restoration and stewardship of high quality wildlife

habitats on publically owned lands to meet the goals and objectives set forth in the IDNR's STRATEGIC PLAN 2003-08, Strategic Issue 1 Natural and Cultural Resource Protection and Illinois' Wildlife Action Plan. This project will include species protection and recovery efforts for specific wildlife populations. Target species include endangered or threatened species in Illinois as well as many listed as "species in greatest conservation need" within the Wildlife Action Plan. Habitat protection, habitat management, surveys to locate extant populations, monitoring of the effects of management practices and improving natural resource databases are examples of the types of activities done under this effort. The management and restoration of rare habitat types that contain unique assemblages of wildlife will also be targeted among different physiographic divisions. The focus of this initiative is suitable IDNR-owned sites. Projects will include habitat expansion, protection and stewardship, management for state and federal endangered and threatened species, and invasive species management.

OBJECTIVES:

The grant will be broken into four segments, June 2006 thru December 2008, Jan 2009 thru December 2009, Jan 2010 thru December 2010, and Jan 2011 thru December 2011, totaling a five year grant agreement. The four segments are necessary to complete the tasks as well as to meet the state match through other grants and in-kind services.

By the end of the first segment of this grant period of December 31, 2008, the following activities will be accomplished:

- Protect 3145 acres of high quality natural areas at Harlem Hills Nature Preserve and Rock Cut State Park, Winnebago County by constructing approximately 2 miles of permanent fencing along all inadequately fenced boundaries. Conduct boundary surveys whenever the line is in question.
- Restore hydrology to 2500 acres of rare sand prairies and savannas at Iroquois State Wildlife Area Land and Water Reserve and Hooper Branch Savanna NP, Iroquois County.
- Restore and/or maintain prairie and savanna habitats at the 16,550 acre Jim Edgar Panther Creek State Fish and Wildlife, in Cass County by the removal of invasive and exotic woody species.
- Maintain and restore approximately 200 acres of forest and restore over 30 acres of agricultural fields and old field to prairie at Jubilee College State Park, Peoria County to restore habitat for area sensitive forest and grassland species as well as the state threatened Franklin's ground squirrel and short-eared owl.
- Provide, restore and maintain 3600 acres of grassland habitat at Prairie Ridge Sanctuary, Marion and Jasper Counties that provide habitat to 26 state endangered species, 5 watch list species and 5 area sensitive grassland species.
- Create two wetlands and restore prairie, and savanna habitat at Starved Rock State Park, LaSalle County to restore hydrologic function above a natural area canyon system in Starved Rock Nature Preserve.
- Create ≥ 8 ephemeral wetlands at Mount Vernon Game Propagation Center and Rend Lake State Fish and Wildlife Area, Jefferson County to provide direct benefits to the crawfish frog, listed as a Critical Species for the Southern Till Plain. The project will also benefit non-game indicator species for the region, including southern leopard frog, cricket frog, chorus frog, spring peeper, and smallmouth salamander.
- Provide habitat for the northern harrier, Wilson's snipe, American bittern and American woodcock, listed as

Species in Greatest Need of Conservation by Illinois' Comprehensive Wildlife Conservation Plan by creating a 4.5 acre ephemeral wetland and controlling exotic/invasive woody plants at Silver Springs State Fish and Wildlife Area (SSSFWA), Kendall County.

- Create/restore ≥ 40 acres of diverse wetland habitats (i.e., sedge meadows; ephemeral and permanent wetlands) at Union County Conservation Area, Union County to provide direct benefits to the Mississippi kite, Mississippi green water snake, mud snake, bald eagle and common moorhen, all listed as critical species for Lower Mississippi River Bottomlands.
- Create 15 acres of additional wetland habitat at Stephen A. Forbes State Park, Marion County.
- Create three 1-acre ponds at Cypress Pond State Natural Area, Johnson County to provide watershed protection and slow run-off to mimic pre-settlement hydroperiod.
- Create/restore shallow ponds and ephemeral wetlands for the state endangered Illinois mud turtle and state threatened Stroecker's chorus frog at Sparks Pond State Natural Area, Rollo Prairie State Natural Area, Illinois Sand Areas Land and Water Reserve and/or Sand Ridge State Forest, Mason County.
- Create a large shallow water wetland at Jim Edgar Panther Creek State Fish and Wildlife Area, Cass County, Illinois.

During the other segments, additional projects on public land will be added. Projects will be solicited from district wildlife ecologists and restoration ecologists. The approach for new projects will not change from those written into this proposal. Projects will be selected in part, based upon their ability to protect endangered, threatened, or conservation priority species, whether the projects improve rare or declining habitats, whether the project maintains or improves already existing high quality sites, as well as how the project fits into IDNR's Wildlife Action Plan and STRATEGIC PLAN 2003-08.

EXPECTED RESULTS OR BENEFITS:

Wildlife habitat in Illinois is fragmented into small tracts and subject to detrimental external pressures, such as non-compatible land use, pollution, invasive and exotic species, etc. These projects strive to improve this situation. The key benefit of these projects is the opportunity it affords the IDNR to expand efforts currently under way to create, preserve and enhance Illinois' wildlife habitat on public lands.

The habitat restoration at state sites has the expected benefit of increased wildlife habitat establishment and restoration on approximately 25 IDNR sites over the life of the grant.

APPROACH:

The IDNR and non-governmental organizations will direct the habitat restoration efforts on these sites. Consulting and contractual services will also be needed on several projects.

Three sites within this grant (Rend Lake FWA, Stephen Forbes FWA and Cypress Pond SNA) also receive funding through federal W-76-D funds. Coordination will be necessary to ensure there is no overlap between funds on a site and that both projects can continue simultaneously for the greatest resource benefit. Coordination among the Office of Resource Conservation (Divisions of Natural Heritage, Wildlife, Forestry, Fisheries, Lands, and Law Enforcement) will occur through the Departments programmatic system and the annual plan of work meetings.

District Resource Staff complete bi-monthly programmatic time sheets. Work time will thus be allocated to projects with different funding sources accurately and accordingly to federal and state standards. The annual plan of work meetings occur yearly to address all management activities conducted on public owned sites as well as available funding sources. These meetings allow for the disciplines to work together on projects by looking at project overlap, efficiency in accomplishing project goals, and the overall benefits of various projects. This is all accomplished while clarifying which management activities are coded to particular funding sources.

- Prescribed Fire

Details - Prescribed fire involves the planned application of fire to meet specific management goals. Prescribed fire may be used to control the invasion or spread of exotic invasive species, control succession, maintain herbaceous habitats including prairies and some wetlands, and promote the regeneration of some woodland species. The prescribed burning activities include planning, preparation, implementation and evaluation of the prescribed burn and its impacts. Planning includes the development of a written prescription by the IDNR's District Heritage Biologist in a form and format consistent with IDNR prescribed burning policy. Plans are reviewed and approved by the Regional Forester and submitted to the Illinois Environmental Protection Agency for air quality related open burning permits. Planners will acquire any other open burning permits or authorizations required within the jurisdiction appropriate to the site. Preparation includes the maintenance of fire equipment, assembly, training and briefing of crews, construction of control lines and notification of neighbors. Implementation includes all activities related to the actual burning of the site. Prescribed burns will be conducted by a district resource manager that meets the IDNR qualifications as a burn boss. Only persons who have received the minimum training standards under IDNR policy for participation prescribed burning will assist in conducting the burn. Evaluation includes the preparation of a burn report as per IDNR prescribed burning policy and procedures and any systematic review of impacts of the fire on a site. All prescribed fires will be approved through the annual site resource planning process and included on the site's annual plan of work.

- Invasive Woody Plant Control

Details - Invasive woody plant control is the planned mechanical removal, elimination or thinning of woody plant material that has invaded a project area. Invasive woody plants may also be controlled by the use of prescribed fire (see above). Invasive woody plant control is used in prairies, particularly hill prairies where surrounding native woody vegetation is encroaching. In savanna and wetland habitats, woody vegetation control can be used to control shrubs and trees that have increased in density and are shading out rare species found in these habitats. It may also be used to restore upland forest habitats where native mesophytic vegetation (such as maple) is replacing upland forest vegetation due to a long history of fire suppression. Control methods will include removal or thinning of target invasive woody plants depending on the management goals. The control methods applied in a site shall be those that will be effective in meeting the desired goal, have a minimal adverse impact on non-target species, and are cost efficient. Those methods will include mechanical cutting or removal of brush with tractor mounted mowers, bulldozer, hand operated brush cutters, and chainsaws, application of appropriate herbicides using cut stem, injection, basal bark and foliar methods, or a combination of methods. All methods of control of invasive woody plants will be done in ways consistent with methods described in the Illinois Nature Preserves Commission's Vegetation Management Guidelines. All activities, supplies and equipment needed to plan, implement and evaluate a woody plant control effort at a project site will be included. All invasive woody plant control will be approved through the annual site resource planning process and included on the site's annual plan of work.

- Invasive Exotic Species Control

Details - Invasive exotic species are species not native to a region which invade native habitats, disrupting the function of these habitats and causing the elimination of or stress to native species populations. Invasive exotic species control is the planned removal, elimination or reduction in these populations of invasive exotic species.

Invasive exotic species include woody and herbaceous plants, and animals. The control methods applied in a project site shall be those that will be effective in meeting the desired goal, have a minimal adverse impact on non-target species, and are cost efficient. Invasive exotic woody plant species will be controlled using the methods outlined above for woody plant control. Herbaceous plant species will be controlled using mechanical methods such as pulling or mowing as appropriate, or by the application of herbicides in accordance with state and federal law by licensed applicators. Control of invasive exotic animal populations will include lethal methods such as: trapping; shooting; plus, trap & euthanasia. All methods of control of invasive exotic species will be done in ways consistent with methods described in the Illinois Nature Preserves Commission's Vegetation Management Guidelines. All activities, supplies and equipment needed to plan, implement and evaluate an invasive exotic species control effort at a project site will be included. All invasive exotic species control will be approved through the annual site resource planning process and included on the site's annual plan of work.

- Erosion/sedimentation control

Details - The control of erosion or sedimentation resulting from unnatural disturbances will be undertaken at some project sites. Erosion and sedimentation can lead to the direct elimination of habitat for at-risk species. The erosion control methods applied in a project site shall be those that will be effective in meeting the desired goal, have a minimal adverse impact on native species, and are cost efficient. Methods to be employed may include a combination of planting of native covers and installation of appropriate structures. Recommendations of the local NRCS personnel will be sought and considered for implementation. All appropriate local, state and federal laws will be followed. Erosion/sedimentation control projects will be evaluated at least one year after the installation. All activities and materials needed to plan, implement and evaluate erosion/sedimentation control projects may be included in this practice.

- Boundary Protection/Fence Repair

Details - Project sites may be impacted from external intrusions from people, off road vehicles and activities of adjacent land owners. These intrusions can cause direct harm to resources within a preserve or may result in increased erosion, or spread of exotic invasive species. Boundary protection includes the finding, delineating and marking of boundaries. Boundary protection may also include the construction or repair of a fence or barrier to prevent an illegal intrusion that damages natural resources. All activities and supplies needed to implement boundary protection may be included in this project. Land surveys will be conducted by licensed land surveyors.

- Habitat Creation/Restoration: Planting

Details - Native habitats required to support target species have been lost or degraded. By restoring and increasing the amount of habitat at a project site, we can improve the viability of populations in those locations. In addition to the use of prescribed burns, woody plant control and invasive exotic species control mentioned above, planting is an effective way to restore habitats. Where elements of a particular native habitat exist, seeds may be collected on site and replanted within the project site. If there are sites with insufficient reproduction of desirable native species or where important species components are missing, then habitat may be recreated using plant material from off site. All habitat creation/restoration projects will comply with the IDNR, INPC and Endangered Species Protection Board joint policy on translocation of plant materials. Species planted shall be native to the region where the project site is located. Habitats should be established only on areas where there are appropriate soils. Existing high quality habitats shall not be adversely impacted by habitat creation projects. Collection for restorations shall be from sites where landowners have given their permission and there will be no adverse impact on native populations. Restorations for prairie habitats may include native grasses and forbs. Restorations for forest, savanna, and barren habitats may include appropriate native trees, shrubs, grasses and herbs. Restorations for wetland, riparian and aquatic habitats may include appropriate native trees, shrubs, grasses, herbs and aquatic plants. All activities included in planning, obtaining plant material, planting and evaluating the success of habitat creation/restoration: planting will be included in this practice. All invasive woody plant control will be approved

through the annual site resource planning process and included on the site's annual plan of work. All planting projects will be approved through the annual site resource planning process and included on the site's annual plan of work.

- Hydrology Restoration

Details - Changes in hydrology can impact the viability of target species. No streams or other bodies of water will be impacted. All work will be done in hydrologically isolated areas or in such a way that they will not impact the movement of aquatic organisms. All hydrologic restorations will be done in accordance with local, state and federal laws and in consultation with the local NRCS office. All activities included in planning, implementing and evaluating the success of hydrology restoration projects will be included in this practice. All hydrologic restoration will be approved through the annual site resource planning process and included on the site's annual plan of work.

Wetland restoration will be limited to the removal of previously placed fill or drain tiles in existing wetland basins as well as the addition of water control structures. The maximum surface area of disturbance for the restoration of a wetland will be less than 5 acres. There will be no more than 5 wetlands restored by the removal of fill at any project site.

Wetland creation will be limited to the creation of low berms or depressions designed to capture precipitation or groundwater, as well as the addition of water control structures. Where porous soil exists, clay or synthetic liners will be allowed to be placed. These practices are described in greater detail by publications such as *A Guide to Creating Vernal Ponds* (Biebighauser 2002), *Habitat Management Guidelines for Amphibians and Reptiles of the Midwest* (Partners in Amphibian and Reptile Conservation 2002) and the *Illinois Landowner's Guide to Amphibian Conservation* (Szafoni et al. 2002). The wetlands constructed under this project will consist of an earthen berm with a maximum height of four (4) feet. The maximum surface area of disturbance for the construction of a wetland will be fifteen (15) acres. There will be no more than 16 wetlands constructed at any project site.

Pond restoration and creation will be limited to areas ≤ 3 acres in size. Ponds restored or created under this project will be constructed according to NRCS specifications.

LOCATION:

The Public Land Native Wildlife Habitat Restoration Project sites will be statewide on public lands. Projects will be conducted at Jim Edgar Panther Creek State Fish and Wildlife Management Area, Iroquois County State Wildlife Area Land and Water Reserve, Hooper Branch Savanna Nature Preserve, Prairie Ridge State Natural Area, Green River State Wildlife Area, Harlem Hills Nature Preserve, Rock Cut State Park, Jubilee College Forest Nature Preserve, Jubilee College State Park, Starved Rock State Park, Rend Lake State Fish and Wildlife Area, Mount Vernon Game Propagation Center, Silver Springs State Fish and Wildlife Area, Union County Conservation Area, Stephen A. Forbes State Park, Cypress Pond State Natural Area, Sparks Pond State Natural Area, Rollo Prairie State Natural Area, Illinois Sand Areas Land and Water Reserve, and Sand Ridge State Forest. Specific locations are provided in Appendices A-M for all work locations. Detailed topographic maps are also provided to better illustrate the terrain at and near the project area.

Specific Public Land Native Wildlife Habitat Restoration Project sites for the additional segments of this proposal will be included with the grant agreement in each year. projects contain work related to this project.

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District Heritage Biologists, Wildlife Biologists, and/or the site manager will be tasked with implementing and coordinating projects at the site level. Names of those job leaders are included with the individual projects within the grant agreement.

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