

Office of Resource Conservation

State of Illinois

Grant Segment/Proposal

Project Number: T-28-M-2

Project Title: Public Land Native Wildlife Habitat Restoration Project

Purpose:

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.

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.

The Department of Natural Resources has had approved their Wildlife Action Plan (<http://dnr.state.il.us/orc/wildliferesources/theplan/home.htm>). 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 Wildlife Action Plan outlines 654 species in greatest conservation need, including, 433 invertebrates, 79 fish, 14 amphibians, 23 reptiles, 85 birds, and 20 mammals. To conserve these species the plan identified Conservation Opportunity Areas. Conservation Opportunity Areas are locations with significant existing or potential wildlife and habitat resources, where partners are willing to plan, implement and evaluate conservation actions, where financial and human resources are available, and where conservation is motivated by an agreed-upon conservation philosophy and set of objectives.

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.

Some of these goals include:

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.

3. High-quality examples of all forest communities are restored and managed within all natural divisions within which they occur.

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.*
- 6. High-quality examples of all prairie communities are restored and managed within all natural divisions within which they occur.*

Wetland -

- 3. Ephemeral and fishless semi-permanent wetlands (i.e. vernal pools, prairie potholes, landscape depressions) support objectives for dependent species of wildlife.*

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.*
- 4. Promoting the increased use of prescribed fire and sustainable forestry practices*
- 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.*
- 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.*

Wetlands

- 1. Improve the condition of existing natural and artificial wetlands.*
- 3. Develop and manage additional wetland habitat*

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 Illinois' Wildlife Action Plan. This primarily includes sites that are 1) listed on the Illinois Natural Areas Inventory, 2) provide suitable habitat for threatened and endangered species, 3) provide suitable habitat for multiple species in greatest need of conservation, 3) are protected in perpetuity through an Illinois Nature Preserve program, 4) and are within a Conservation Opportunity Area.

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.

Need:

It is in the Division's best interest to invest these scarce resources in the most prudent manner. The return on this investment is extremely high. These natural communities and habitats are exceedingly rare (less than 0.07% of the Illinois landscape) and totally irreplaceable if allowed to degrade. Because of this, they have intrinsic values far above any market value assigned to them. By maintaining these areas we are providing natural Illinois ecosystems and the services they provide for current and future generations.

Objectives:

By the end of the grant period of June 30, 2013, the following activities will be accomplished:

- 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.
- Control targeted exotic species on 829 acres of sand savanna and wet prairie at Illinois Beach Nature Preserve, Lake County to continue providing quality habitat for 49 state and listed species.
- Create an additional approximately 400 acres of additional grassland for grassland nesting birds, construct a shallow water wetland to provide for additional breeding, foraging for marsh birds and migratory habitat for shorebirds and waterfowl, and erect osprey nesting platforms and barn owl boxes Pyramid State Park, Perry County.
- Restore and maintain 120 acres of upland forest at Stemler Cave Woods Nature Preserve, St. Clair County, Illinois.

- Restore and maintain 25 acres of dry mesic upland forest at Fogelpole Cave Nature Preserve, Monroe County, Illinois.
- Restore and maintain high quality prairie, wetland and savanna habitat at the 146 acre Wilmington Shrub Prairie Nature Preserve, Will County, through control of invasive and/or exotic species.

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 7 IDNR sites over the life of the grant.

Approach:

DNR and its partners will use Prescribed Fire, Invasive Woody Plant Control, Invasive Exotic Species Control, Erosion/sedimentation control, Boundary Protection/Fence Repair, Habitat Creation/Restoration: Planting, and Hydrology Restoration to increase and maintain high quality habitats. All vegetation management will follow the Illinois Nature Preserve Commission's Vegetation Management Guidelines. Specific guidelines are listed below.

- 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 or TNC's Burn Boss in a form and format consistent with IDNR prescribed burning policy. IDNR Plans are reviewed and approved by the Regional Forester and submitted to the Illinois Environmental Protection Agency for air quality related open burning permits. TNC permits are written by the burn boss and then approved by the State Burn Manager. 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 or contractor 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 on state owned property 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 sand savanna and sand forest habitats where native mesophytic vegetation (such as cherry) is replacing sand savanna or 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 on state owned land 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. This includes groundwater monitoring to verify the results of hydrologic restoration. It allows identification of impacted areas, verification of appropriate hydrologic regimes for specific vegetation communities, and assistance with active hydrologic management of a site, (i.e., measuring the effectiveness of weir settings to achieve target water levels). Monitoring wells also collect basic groundwater and surface-water levels that can be used to identify baseline conditions, identify impacted hydropatterns in plant communities of interest, and document post-construction results. The proposed projects might be greatly improved with the addition of groundwater monitoring, including making geologic borings, installing monitoring wells, and installing surface-water gauges (both manual and electronic) in selected locations for an integrated view of the site hydrology. Monitoring wells will be installed according to the methods of Miner and Simon (1997), which are constructed at shallow depths (2.5 ft) in order to identify saturation in the root zone of plant communities. Exact locations are to be chosen in the field, with emphasis on both high quality and degraded communities of interest, for comparison and identification of impacts. The locations are expected to be located along cross-sections through the westernmost square mile of the site. Deep monitoring wells (ca. 10 ft) will be used to identify the geologic units present and estimate infiltration capacity and determine effectiveness of proposed water control structures. All wells will be measured biweekly in spring, and monthly throughout the remainder of the year. Surface water will also be measured to determine the interaction between surface water and groundwater with staff gauges. Dataloggers will be used to measure surface-water levels at various locations. 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 acre in size. Ponds restored or created under this project will be constructed according to NRCS specifications.

Project Duration: October 1, 2010 – June 30, 2013

Location:

The Public Lands Initiative will be completed at Prairie Ridge State Natural Area, Illinois Beach Nature Preserve, Pyramid Arklands, Stemler Cave Woods Nature Preserve, Fogelpole Cave Nature Preserve and Wilmington Shrub Prairie Nature Preserve (Figure1).

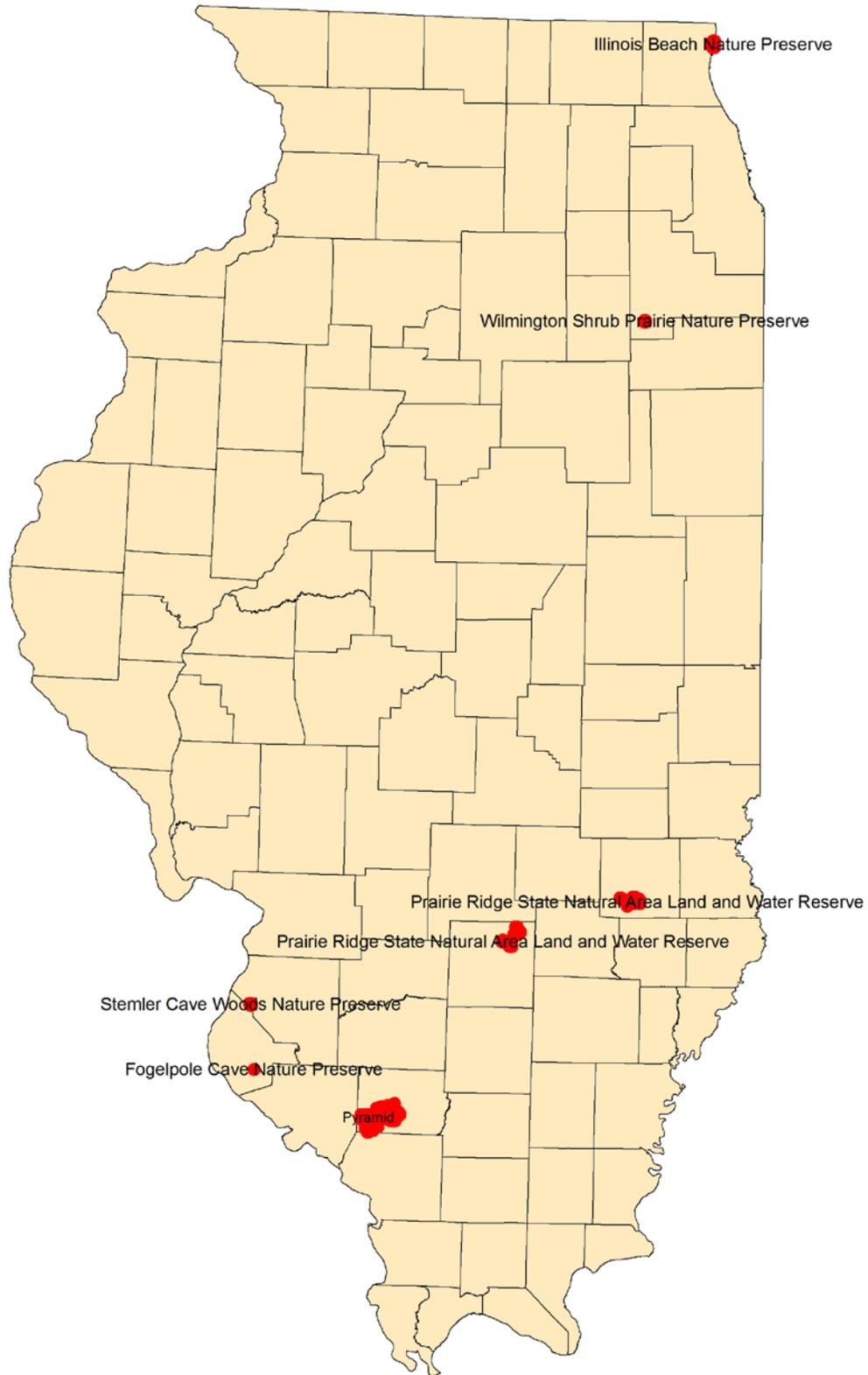


Figure 1. Six sites scattered across the state are included in the Public Lands Initiative T-28-M-2.

APPENDICES:

- A. Grassland habitat restoration project at Prairie Ridge State Natural Area
- B. High quality sand savanna and wet prairie restoration at Illinois Beach Nature Preserve.
- C. Autumn Olive Control at Pyramid State Park - Arkland Complex
- D. Exotic species control at Stemler Woods Nature Preserve in St. Clair County, Illinois
- E. Exotic species control at Fogelpole Cave Nature Preserve in Monroe County, Illinois
- F. Exotic Species control at Wilmington Shrub Prairie, Will County, Illinois

Related Grants:

Pyramid State Park had projects that were funded through R-6-1 and T-5-M-1. However, these projects have been completed.

Compliance

The IDNR will use its CERP (Comprehensive Environmental Review Process) as a tool to aid the Department in meeting NEPA compliance for the project outlined under this grant proposal. It is the Department's policy to require CERP applications for all land disturbing activities unless those activities are covered by CERP exemptions.

All planned activities will also be in compliance with the Endangered Species Act. All determinations and documentation will be in accordance with the current established U.S. Fish and Wildlife Service protocols for section 7.

All planned activities will be in compliance with the National Historic Preservation Act and the Council on Historic Preservation Act. All determinations and documentation will be in accordance with the terms of the Programmatic Agreement, as amended, effective September 23, 2002.

When applicable, those planned activities which involve a floodplain and/or jurisdiction wetlands will be done in accordance with Presidential Executive Orders 11988 and 11990.

When applicable, those planned activities which involve programs and/or site improvements will be done in accordance with Section 504 of the Rehabilitation Act and the Americans with Disabilities Act.

When applicable, those planned activities which involve the use of pesticides, herbicides or other comparable chemicals will be done in accordance with current state and federal regulations to assure the safe and legal application of those chemicals. All chemicals will be applied in accordance with the manufacturers label instructions. All persons applying chemicals will be licensed by the Illinois Department of Agriculture as a chemical operator along with a licensed applicator, in accordance with Illinois state law.

Grant Proposal Support Documentation:

The following documents are attached in support of this grant proposal:

1. Application for Federal Assistance (Standard Form 424)
2. Grant Agreement - Budget Information
3. Federal Aid Section 7 Evaluation Form
4. Illinois Clearinghouse Response per Federal Executive Order 12372
5. NEPA Compliance Checklist and Environmental Assessment
6. Location Map (See Figure 1).

Project Budget - Total

	Federal Share	State Share	Total
Contractual	\$184,426.00	\$148,326.00	\$332,752.00
Commodities	\$10,000.00	\$12,000.00	\$22,000.00
Personnel	\$9,2000.00	\$43,300.00	\$52,500.00
Total	\$203,626.00	\$203,626.00	\$407,252.00

Contractual Services:

DNR and its partners will hire qualified contractors to complete Prescribed Fire, Invasive Woody Plant Control, Invasive Exotic Species Control, Erosion/sedimentation control, Boundary Protection/Fence Repair, Habitat Creation/Restoration: Planting, and Hydrology Restoration.

Commodities:

DNR and its partners utilize commodity funds to purchase approved herbicide

Personnel:

Personnel services will be in-kind match by IDNR personnel via prescribed burning, woody invasive vegetation control, exotic invasive species control, habitat creation/restoration: Planting, and grant administration of the specific jobs.

Personnel:

The following IDNR personnel will be the primary staff implementing the Public Lands Initiative T-28-M-2. They will be doing the administration and direct contact with landowners and contractors. Other Office of Resource Conservation and Land Management staff may be involved in limited site specific project implementation.

Eric L. Smith - Project Manager
District Natural Heritage Biologist
301 South Date Street
Gibson City, IL 60936
217-784-4730 EXT 225
Eric.L.Smith@illinois.gov

Robert Szafoni
Illinois Natural Areas Project Manager
1660 West Polk Avenue
Charleston, Illinois 61920
(217) 345 - 2420
Robert.Szafoni@illinois.gov

Literature Cited:

- Admiraal, A.N., M.J. Morris, T.C. Brooks, J.W. Olson and M.V. Miller. 1997. Illinois wetland restoration & creation guide. Illinois Natural History Survey Special Publication 19. Illinois Natural History Survey, Champaign, Illinois, USA.
- Biebighauser, T.R. 2002. A guide to creating vernal ponds. USDA Forest Service, Morehead, Kentucky, USA.
- Illinois Department of Energy and Natural Resources 1994. The Changing Illinois Environment: Critical Trends. Summary Report and Volumes 1-7 Technical Report. Illinois Department of Energy and Natural Resources. Springfield. 242 p.
- Illinois Department of Natural Resources. 2005. Illinois Comprehensive Wildlife Conservation Plan-Strategy. Illinois Department of Natural Resources. Version 1.0. xxv+353 pp.
- Illinois Department of Natural Resources. 2001. Critical Trends in Illinois Ecosystems. Department of Natural Resources. Springfield. 112 p.
- Partners in Amphibian and Reptile Conservation. 2002. Habitat management guidelines for amphibians and reptiles of the Midwest. Purdue University, Fort Wayne, Indiana, USA.
- Schwegman, J. E., G. B. Fell, M. Hutchison, W. M. Shepherd, G. Paulson, and J. White. 1973. Comprehensive plan for the Illinois Nature Preserves System. Part 2, The Natural Divisions of Illinois. Illinois Nature Preserves Commission. Rockford. 32 p + map.
- Szafoni, R.E., C.A. Phillips, S.R. Ballard, R.A. Brandon and G. Kruse. 2002. Illinois Landowner's Guide to Amphibian Conservation. Illinois Natural History Survey Special Publication 22. Illinois Natural History Survey, Champaign, Illinois, USA.

Appendix A

Job Title: Job 1. Prairie Ridge State Natural Area grassland habitat restoration project.

Job Leader: Scott Simpson
Prairie Ridge State Natural Area
4295 N. 1000th St.
Newton, IL 62448
ssimpson@illinois.gov
618-783-2685

Purpose/need:

Prairie Ridge State Natural Area (an INAI site), at nearly 3,800 acres, contains two of the five significant grasslands in Illinois, and a key site for grassland birds in the Midwest (Figure E). Grassland birds have shown more consistent, steeper, and more geographically widespread declines than any other group of North American birds, primarily due to loss of grassland habitat. The response of flora and fauna to habitat restoration and conservation at Prairie Ridge State Natural Area has been well documented. This site provides critical habitat for 78 of the Species in Greatest Need of Conservation identified in the Illinois Wildlife Action Plan, including 26 state listed species (17 endangered and 9 threatened) (Table E). Among these are breeding populations of 8 state endangered and 3 state threatened birds species, 2 state endangered and 1 state threatened plant species and two state threatened reptile species. Unique to any site in the state, all 10 area sensitive grassland birds species found in Illinois occur at Prairie Ridge, eight with breeding populations. The 2004 National Audubon State of the Birds Report lists 10 species nesting in Illinois among the 26 species undergoing population declines of greater than 66% from 1966-2003. Of those 10 species, eight are among the key nesting birds at Prairie Ridge State Natural Area, including Henslow's sparrow, loggerhead shrike and grasshopper sparrow. Prairie Ridge has been formally designated an Important Bird Area for nesting populations of ten special concern species, concentrations of migratory shorebirds, and concentrations of wintering grassland raptors. Prairie Ridge provides habitat for 23 Species of Concern identified by Partners in Flight, 15 species of Regional Conservation Concern listed by the US Fish & Wildlife Service, and 20 of National Audubon's Watch list Species. Of special importance is the fact that Prairie Ridge hosts Illinois' only breeding population of greater prairie chickens and the states largest breeding populations of northern harriers and short-eared owls.

Prairie Ridge State Natural Area is located in the SW portion of Jasper County, approximately 5 miles SW of Newton, IL and in the NE portion of Marion County both NE and south of Kinmundy, IL.

DIRECTIONS TO OFFICE: Driving East from Effingham or West from Newton on Route 33 turn south on Bogota Road (990N 900E) and go 4 miles to first curve in road. Go straight off of curve to crossroads (600N 900E), turn left (east) for 1 mile or first crossroads (600N 1000E) then turn right (south) and go 1 3/4 miles to white house with wire fence.

From Route 130 turn west at St. Marie Road (600N 1390E) and go 4 miles to (600N 1000E) then turn south (left) and go 1 3/4 miles to white house with wire fence.

Objective:

Provide, restore and maintain 3600 acres of grassland habitat at Prairie Ridge Sanctuary, Marion and Jasper Counties that provide habitat to 78 of the Species in Greatest Need of Conservation identified in the Illinois Comprehensive Wildlife Conservation Plan, including 26 state endangered species, 5 watch list species and 5 area sensitive grassland species.

Approach:

IDNR personnel and contractors will implement of grassland and wetland habitat development that will include the following practices: prescribed fire, invasive woody plant control, invasive exotic species control, erosion/sedimentation control, boundary protection/fence repair, habitat creation/restoration: planting, and hydrology restoration. This type of will management will occur throughout the site. Descriptions of these practices are in the body of the grant proposal.

Budget:

Line Item	Federal Share	State Share	Project Total
Contractual	\$88,426.00	\$56,326.00	\$144,752.00
Commodities	\$0.00	\$0.00	\$0.00
Personnel	\$0.00	\$32,100.00	\$32,100.00
Total	\$88,426.00	\$88,426.00	\$176,852.00

Table A. Species in Greatest Need of Conservation Prairie Ridge State Natural Area, Jasper and Marion Counties (IDNR, Wildlife Action Plan).

<u>Common Name</u>	<u>Scientific Name</u>
Birds	
Henslow's sparrow	<i>Ammodramus henslowii</i> (ST)
LeConte's Sparrow	<i>Ammodramus leconteii</i>
Nelson's sharp-tailed sparrow	<i>Ammodramus nelsoni</i>
Grasshopper sparrow	<i>Ammodramus savannarum</i>
American black duck	<i>Anas rubripes</i>
Great egret	<i>Ardea alba</i>
Short-eared owl	<i>Asio flammeus</i> (SE)
Lesser scaup	<i>Aythya affinis</i>
Canvasback	<i>Aythya valisineria</i>
Upland sandpiper	<i>Bartramia longicauda</i> (SE)
American bittern	<i>Botaurus lentiginosus</i> (SE)
Red-shouldered hawk	<i>Buteo lineatus</i>
Broad-winged hawk	<i>Buteo platypterus</i>
Smith's longspur	<i>Calcarius pictus</i>
Stilt sandpiper	<i>Calidris himantopus</i>
Chuck-will's -widow	<i>Caprimulgus carolinensis</i>
Whip-poor-will	<i>Caprimulgus vociferus</i>
Brown creeper	<i>Certhia americana</i>
Chimney swift	<i>Chaetura pelagica</i>
Black tern	<i>Chlidonias niger</i> (SE)
Common nighthawk	<i>Chordeiles minor</i>
Northern harrier	<i>Circus cyaneus</i> (SE)
Marsh wren	<i>Cistothorus palustris</i>
Sedge wren	<i>Cistothorus platensis</i>
Yellow-billed cuckoo	<i>Coccyzus americanus</i>
Black-billed cuckoo	<i>Coccyzus erythrophthalmus</i>
Northern flicker	<i>Colaptes auratus</i>
Northern bobwhite	<i>Colinus virginianus</i>
Yellow rail	<i>Coturnicops noveboracensis</i>
Trumpeter swan	<i>Cygnus buccinator</i>
Cerulean warbler	<i>Dendroica cerulea</i> (ST)
Prairie warbler	<i>Dendroica discolor</i>
Bobolink	<i>Dolichonyx oryzivorus</i>
Little blue heron	<i>Egretta caerulea</i> (SE)
Snowy egret	<i>Egretta thula</i> (SE)
Willow flycatcher	<i>Empidonax trailli</i>
Acadian flycatcher	<i>Empidonax virescens</i>
Rusty blackbird	<i>Euphagus carolinus</i>
Peregrine falcon	<i>Falco peregrinus</i> (ST)
Common moorhen	<i>Gallinula chloropus</i> (ST)
Wilson's snipe	<i>Gallinago delicatata</i>
Sandhill crane	<i>Grus canadensis</i> (ST)
Bald eagle	<i>Haliaeetus leucocephalus</i> (ST)
Wood thrush	<i>Hylocichla mustelina</i>

Table A (Con't). Species in Greatest Need of Conservation Prairie Ridge State Natural Area, Jasper and Marion Counties (IDNR, Wildlife Action Plan).

Common Name

Scientific Name

Yellow-breasted chat	Icteria virens
Least bittern	Ixobrychus exilis (SE)
Loggerhead shrike	Lanius ludovicianus (ST)
Short-billed dowitcher	Limnodromus griseus
Hooded merganser	Lophodytes cucullatus
Red-headed woodpecker	Melanerpes erythrocephalus
Yellow-crowned night-heron	Nyctanassa violacea (SE)
Black-crowned night-heron	Nycticorax nycticorax (SE)
Kentucky warbler	Oporonis formosus
Osprey	Pandion haliaetus (SE)
Savannah sparrow	Passerculus sandwichensis
Wilson's phalarope	Phalaropus tricolor
American golden-plover	Pluvialis dominica
Pied-billed grebe	Podilymbus podiceps
Prothonotary warbler	Protonotaria citrea
King rail	Rallus elegans (SE)
American woodcock	Scolopax minor
Ovenbird	Seiurus aurocapillus
Dickcissel	Spiza americana
Field sparrow	Spizella pusilla
Brown thrasher	Toxostoma rufum
Greater yellowlegs	Tringa melanoleuca
Greater prairie-chicken	Tympanuchus cupido (SE)
Barn-owl	Tyto alba (SE)
Blue-winged warbler	Vermiforma pinus
Bell's vireo	Vireo belli

Mammals

Least weasel	Mustela nivalis
Muskrat	Ondatra zibethicus
American badger	Taxidea taxus

Reptiles

Crayfish frog	Rana areolata
Wood frog	Rana sylvatica
Kirtland's snake	Clonophis kirtlandii (ST)
Blanding's turtle	Emydoidea blandingii (ST)
Ornate box turtle	Terrapene omata

SE = State Endangered

ST = State Threatened

Figure A1. Sites at Prairie Ridge State Natural Area, Jasper County, Illinois.

Prairie Ridge Sanctuary

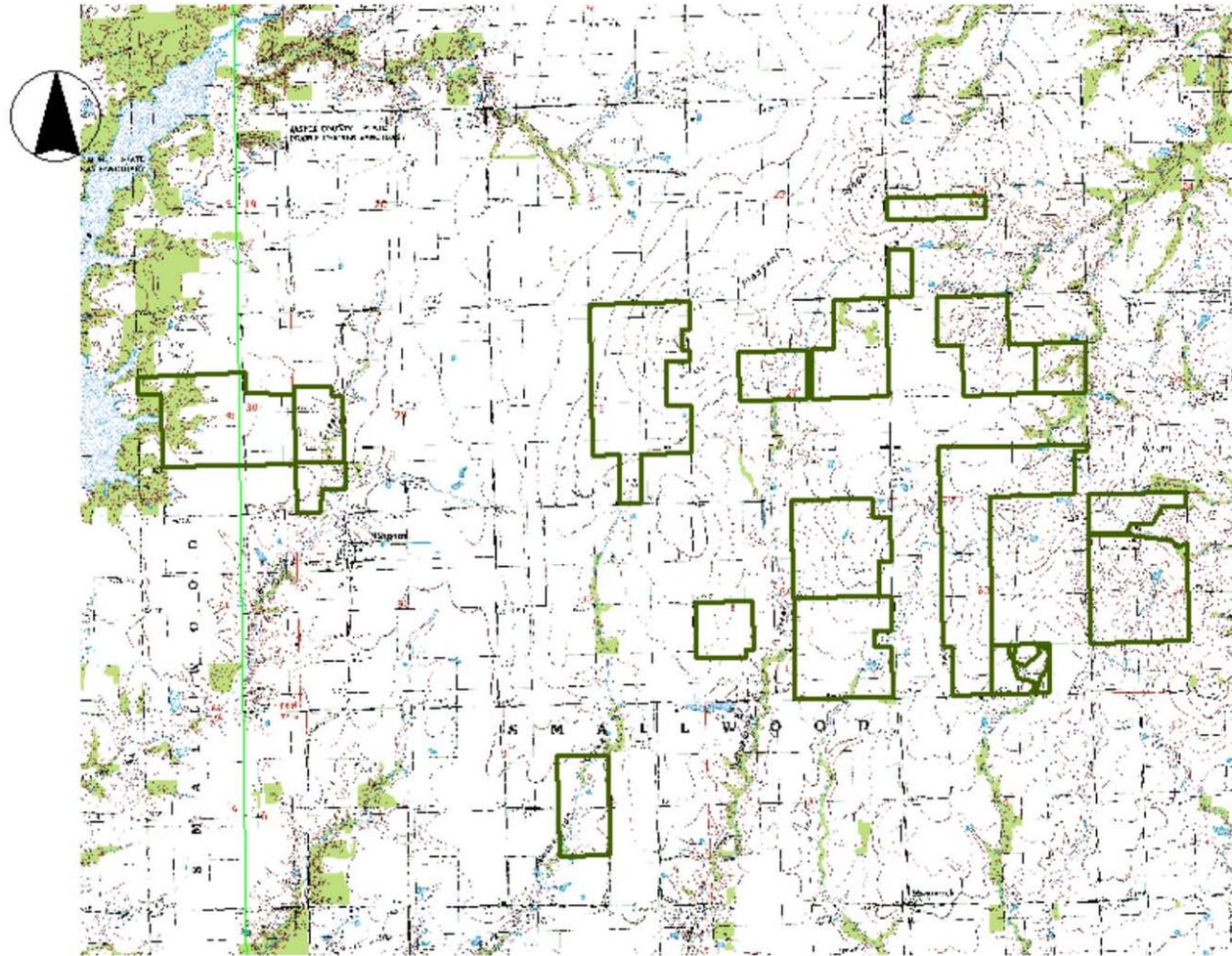
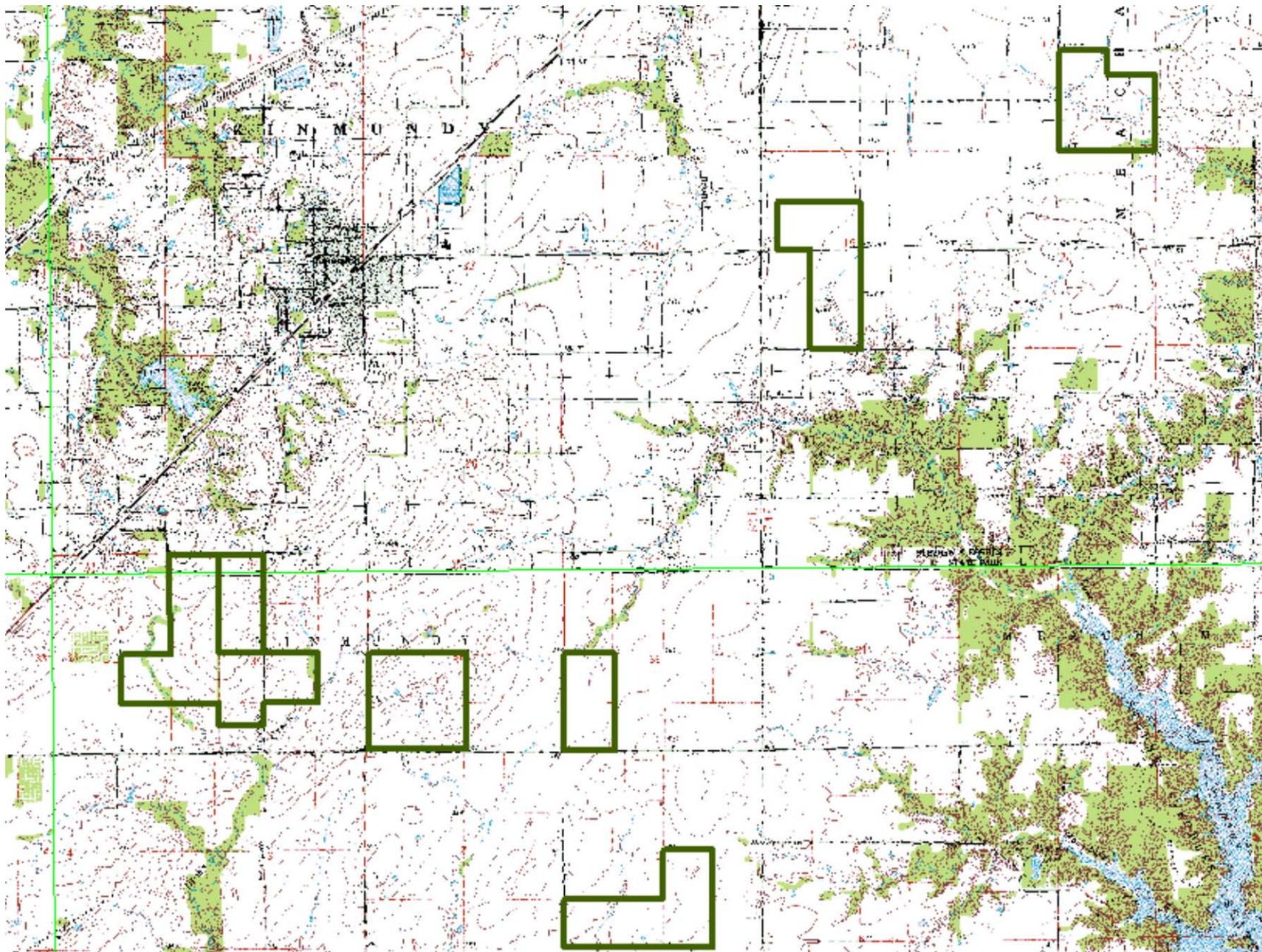


Figure A2. Sites at Prairie Ridge State Natural Area, Marion County, Illinois



Appendix B

Job Title: Job 2. High quality sand savanna and wet prairie restoration at Illinois Beach Nature Preserve.

Job Leader: Brad Semel
Chain O' Lakes State Park
8916 Wilmot Road
Spring Grove, IL 60081
815-675-2386.1 EXT 317
brad.semel@illinois.gov

Purpose/need: Illinois Beach, dedicated in 1964, was the first Illinois Nature Preserve. In 1980, the area was also designated as a National Natural Landmark. Illinois Beach is one of the richest, biologically diverse areas in the state. The preserve lies within the Lake Michigan Dune Section of the Northeastern Morainal Natural Division. The complex dune and swale topography resulted from the decline in water levels of ancient Lake Chicago following the last glacial period. The site includes 6 miles of some of the most pristine and natural shoreline in the state of unparalleled aesthetic and biological importance. Thirteen distinct natural communities were identified by the original Illinois Natural Areas Inventory, including lakeshore, foredune, sand prairie, sand savanna, fen, panne, sedge meadow, marsh and pond. These natural communities support over 500 plant species and a large variety of animal species. Illinois Beach State Park contains habitat for 51 state endangered and threatened species, and habitat for 4 federally listed species, including Pitchers thistle, Piping Plover and Karner Blue Butterfly. The globally rare Great Lakes pannes are habitat for the Eastern Prairie Fringed Orchid.

Infestations of Cypress spurge, Canada thistle, phragmites, reed canary grass, narrow leaved cattail, buckthorn, and crown vetch have been carefully mapped and remain a serious threat to the remnant high quality sand savanna and wet prairie plant communities. These aggressive exotics threaten extant populations of state-listed endangered and threatened species. In addition, these species continue to threaten areas where recent restoration efforts have involved clearing of woody invasive species.

Illinois Beach Nature Preserve is located between Zion and Waukegan Illinois, along the Lake Michigan lakeshore in Lake County.

DIRECTIONS TO OFFICE: From Zion, take Sheridan Road south about 1 mile to Wadsworth

Objective:

Restore and maintain 829 acres of sand savanna and wet prairie at Illinois Beach Nature Preserve, Lake County to continue providing quality habitat for 55 state and federal listed species.

Approach:

IDNR personnel and contractors will continue implementation of invasive exotic species control and prescribed fire throughout the site. Descriptions of these practices are in the body of the grant proposal.

Budget:

Line Item	Federal Share	State Share	Project Total
Contractual	\$16,000.00	\$16,000.00	\$32,000.00
Commodities	\$0.00	\$0.00	\$0.00
Personnel	\$0.00	\$0.00	\$0.00
Total	\$16,000.00	\$16,000.00	\$32,000.00

Figure B.1 State Threatened and Endangered Species and Number of Statewide Occurrences for Species Known to Occur at Illinois Beach State Park Nature Preserve. **=Federally Endangered
 *=Federally Threatened

NATURAL COMMUNITIES

<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>	<u>STATEWIDE OCCURRENCES</u>
BEACH	BEACH/SHOREDUNES, GREAT LAKES TYPE	2
DRY-MESIC SAND PRAIRIE	HIGH PRAIRIE, MIDWEST TYPE	19
DRY SAND PRAIRIE	DRY SAND PRAIRIE, MIDWEST TYPE	12
DRY SAND SAVANNA	BARRENS, CENTRAL MIDWEST TYPE	10
FOREDUNE	BEACH/SHOREDUNES, GREAT LAKES TYPE	2
MARSH (N)	PERMANENT MARSH, CENTRAL MIDWEST TYPE	37
MESIC SAND PRAIRIE	MOIST SAND PRAIRIE, MIDWEST TYPE	16
PANNE	ALKALINE SHOREDUNES POND/MARSH, GREAT LAKES TYPE	2
	POND (N)	22
SEDGE MEADOW	WET MEADOW, CENTRAL MIDWEST TYPE	33
SEEP	RICH FORESTED FEN, LOWER MIDWEST TYPE	25
WET-MESIC SAND PRAIRIE	MOIST SAND PRAIRIE, MIDWEST TYPE	6
WET SAND PRAIRIE	WET PRAIRIE, MIDWEST TYPE	5

VERTEBRATE ANIMALS

<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>	<u>STATEWIDE OCCURRENCES</u>
AMMODRAMUS HENSLOWII	HENSLOW'S SPARROW	26
BARTRAMIA LONGICAUDA	UPLAND SANDPIPER	47
CATOSTOMUS CATOSTOMUS	LONGNOSE SUCKER	3
CHARADRIUS MELODUS	PIPING PLOVER	1**
CLONOPHIS KIRTLANDII	KIRTLAND'S SNAKE	22
COREGONUS ARTEDI	CISCO OR LAKE HERRING	1
EMYDOIDEA BLANDINGII	BLANDING'S TURTLE	31
IXOBRYCHUS EXILIS	LEAST BITTERN	32
KINOSTERNON FLAVESCENS	ILLINOIS MUD TURTLE	14
NYCTICORAX NYCTICORAX	BLACK-CROWNED NIGHT-HERON	29

INVERTEBRATE ANIMALS

<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>	<u>STATEWIDE OCCURRENCES</u>
AFLEXIA RUBRANURA	REDVEINED PRAIRIE LEAFHOPPER	6
INCISALIA POLIOS	HOARY ELFIN	1
LYCAEIDES MELISSA SAMUELIS	KARNER BLUE BUTTERFLY	1**
PARAPHLEPSIUS LUPALUS	LEAFHOPPER	1

PLANTS

<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>	<u>STATEWIDE OCCURRENCES</u>
AGALINIS SKINNERIANA	PALE FALSE FOXGLOVE	11
AMMOPHILA BREVILIGULATA	MARRAM GRASS	6
ARCTOSTAPHYLOS UVA-URSI	BEARBERRY	4
ASTER FURCATUS	FORKED ASTER	21
CAKILE EDENTULA	SEA ROCKET	7
CALOPOGON TUBEROSUS	GRASS PINK ORCHID	19
CAREX AUREA	GOLDEN SEDGE	6
CAREX GARBERI	ELK SEDGE	2
CAREX TRISPERMA	THREE-SEEDED SEDGE	2
CAREX VIRIDULA	LITTLE GREEN SEDGE	13
CASTILLEJA SESSILIFLORA	DOWNY YELLOW PAINTED CUP	7
CEANOOTHUS OVATUS	REDROOT	6
CHAMAESYCE POLYGONIFOLIA	SEASIDE SPURGE	6
CIRSIUM PITCHERI	DUNE THISTLE	1*
DROSELA ROTUNDIFOLIA	ROUND-LEAVED SUNDEW	7
ELEOCHARIS OLIVACEA	CAPITATE SPIKE RUSH	1
HYPERICUM KALMIANUM	KALM ST. JOHN'S-WORT	6
JUNCUS ALPINUS	RICHARDSON'S RUSH	4
JUNIPERUS COMMUNIS	GROUND JUNIPER	10
JUNIPERUS HORIZONTALIS	TRAILING JUNIPER	2
LECHEA INTERMEDIA	PINWEED	9
OROBANCHE FASCICULATA	CLUSTERED BROOMRAPE	3
PINUS BANKSIANA	JACK PINE	1
PLATANThERA CLAVELLATA	WOOD ORCHID	6
PLATANThERA FLAVA VAR HERBIOLA	TUBERCLED ORCHID	9
PLATANThERA LEUCOPHAEA	PRAIRIE WHITE-FRINGED ORCHID	21*
PLATANThERA PSYCODES	PURPLE-FRINGED ORCHID	4
POGONIA OPHIOGLOSSOIDES	SNAKE-MOUTH	7
POPULUS BALSAMIFERA	BALSAM POPLAR	5
RHAMNUS ALNIFOLIA	ALDER BUCKTHORN	2
RUBUS PUBESCENS	DWARF RASPBERRY	8
RHYNCHOSPORA ALBA	BEAKED RUSH	7
SALIX SERISSIMA	AUTUMN WILLOW	3
SALIX SYRTICOLA	DUNE WILLOW	2
SCIRPUS MICROCARPUS	REDDISH BULRUSH	1 ^a
TRIGLOCHIN MARITIMUM	COMMON BOG ARROW GRASS	13
TRIGLOCHIN PALUSTRE	SLENDER BOG ARROW GRASS	15
TOFIELDIA GLUTINOSA	FALSE ASPHODEL	8
UTRICULARIA CORNUTA	HORNED BLADDERWORT	2
UTRICULARIA INTERMEDIA	FLATLEAF BLADDERWORT	8
UTRICULARIA MINOR	SMALL BLADDERWORT	4

Figure B1. Illinois Beach State Park is located along the lakeshore of Lake Michigan in Lake County. The Illinois Beach Nature Preserve is located in the southern 1/2 of the park.

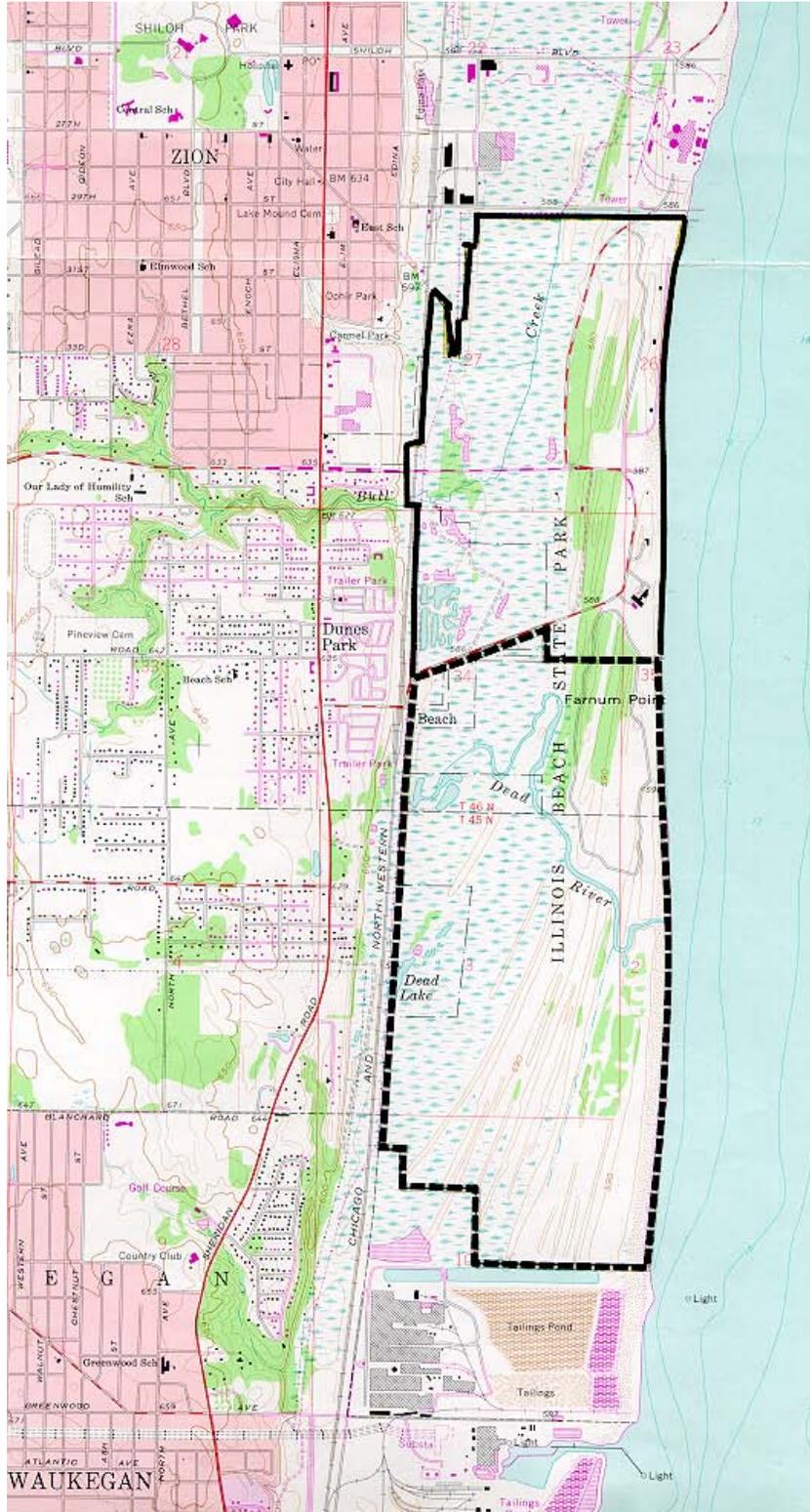


Figure B2. Locations of exotic species control in the northern unit.



Figure B3. Locations of exotic species control in the southern unit.



Appendix C

Job Title: Job 10: Autumn Olive Control at Pyramid State Park - Arkland Complex

Job Leader: Terry L. Esker
Illinois Department of Natural Resources
Division of Natural Heritage
4295 N. 1000th St.
Newton, IL 62448
618-783-2685
Fax: 618-783-8416
Terry.Esker@illinois.gov

Purpose: Pyramid State Park - Arkland Landscape in Perry County, Illinois is one of the largest expanses of contiguous grassland in the state. Its capacity to support threatened and endangered species, most particularly grassland birds, is significant in Illinois. All of these species are associated with the grassland, shrubland and/or wetland communities. This site provides habitat for 39 Conservation Priority Species identified in the Comprehensive Wildlife Conservation Plan for Illinois. Included are 16 state listed species, 8 area sensitive grassland species, 20 partners in flight species of concern, 18 USFWS Regional Conservation Concern Species, 12 National Audubon Watch List Species and 11 Regional Forester Sensitive Animals. Exotic and invasive plant species pose the greatest single threat to the restoration and management of this grassland and wetland complex. If left unchecked, these exotic species will dominate the landscape and reduce critical grassland & wetland habitat. Autumn olive (*Elaeagnus umbellata*) has been identified as the single greatest threat to the grassland communities on this complex. Autumn olive control efforts will concentrate on areas that will provide the most benefit to grassland birds. The lack of secure nesting structures has limited the ability of ospreys and barn owls to utilize the site for breeding, additional shallow water wetlands will provide more wetland habitat for marsh birds..

Objectives: To provide approximately 400 acres of additional grassland for grassland nesting birds, construct a shallow water wetland to provide for additional breeding, foraging for marsh birds and migratory habitat for shorebirds and waterfowl, and erect osprey nesting platforms and barn owl boxes.

Approach: IDNR personnel and contractors will complete exotic invasive species removal and construct a shallow wetland wetland. Descriptions of these practices are in the body of the grant proposal.

Budget:

Line Item	Federal Share	State Share	Project Total
Contractual	\$55,000.00	\$55,000.00	\$110,000.00
Commodities	\$10,000.00	\$10,000.00	\$20,000.00
Personnel	\$9,200.00	\$9,200.00	\$18,400.00
Total	\$74,200.00	\$74,200.00	\$148,400.00

Table C1. Species of Special Concern documented at Pyramid State Park - Arkland Complex, Perry County, Illinois.

Species		State Status	Documented
<i>Ammodramus henslowii</i>	Henslow's Sparrow	Endangered	Breeding
<i>Asio flammeus</i>	Short eared owl	Endangered	Breeding
<i>Bartramia longicauda</i>	Upland Sandpiper	Endangered	Breeding
<i>Circus cyaneus</i>	Northern Harrier	Endangered	Breeding
<i>Egretta thula</i>	Little Blue Heron	Endangered	Foraging
<i>Pandion haliaetus</i>	Osprey	Endangered	Migration
<i>Rallus elegans</i>	King Rail	Endangered	Breeding
<i>Tyto alba</i>	Common Barn Owl	Endangered	Breeding
<i>Falco peregrinus</i>	Peregrine Falcon	Threatened	Migration
<i>Gallinula chloropus</i>	Common Moorhen	Threatened	Breeding
<i>Grus canadensis</i>	Sandhill Crane	Threatened	Migration
<i>Haliaeetus leucocephalus</i>	Bald Eagle	Threatened	Breeding
<i>Ixobrychus exilis</i>	Least Bittern	Threatened	Breeding
<i>Lanius ludovicianus</i>	Loggerhead Shrike	Threatened	Breeding
<i>Oryzomys palustris</i>	Rice Rat	Threatened	Breeding

Area Sensitive Species: bobolink, savanna sparrow, eastern meadowlark, grasshopper sparrow, and sedge wren in addition to those listed above

Species included in Illinois' Comprehensive Wildlife Conservation Plan: LeConte's sparrow, grasshopper sparrow, American black duck, great egret, short-eared owl, chimney swift, yellow-billed cuckoo, northern bobwhite, willow flycatcher, Wilson's snipe, orchard oriole, Baltimore oriole, yellow-breasted chat, least bittern, hooded merganser, red-headed woodpecker, yellow-crowned night heron, double-crested cormorant, pied billed grebe, American woodcock, dickcissel, field sparrow, brown thrasher, greater yellowlegs, and Bell's vireo in addition to some of those listed above .

Figure C1. Exotics species, primarily autumn olive, were treated in three units totaling 400 acres at Pyramid State Park in Perry County.

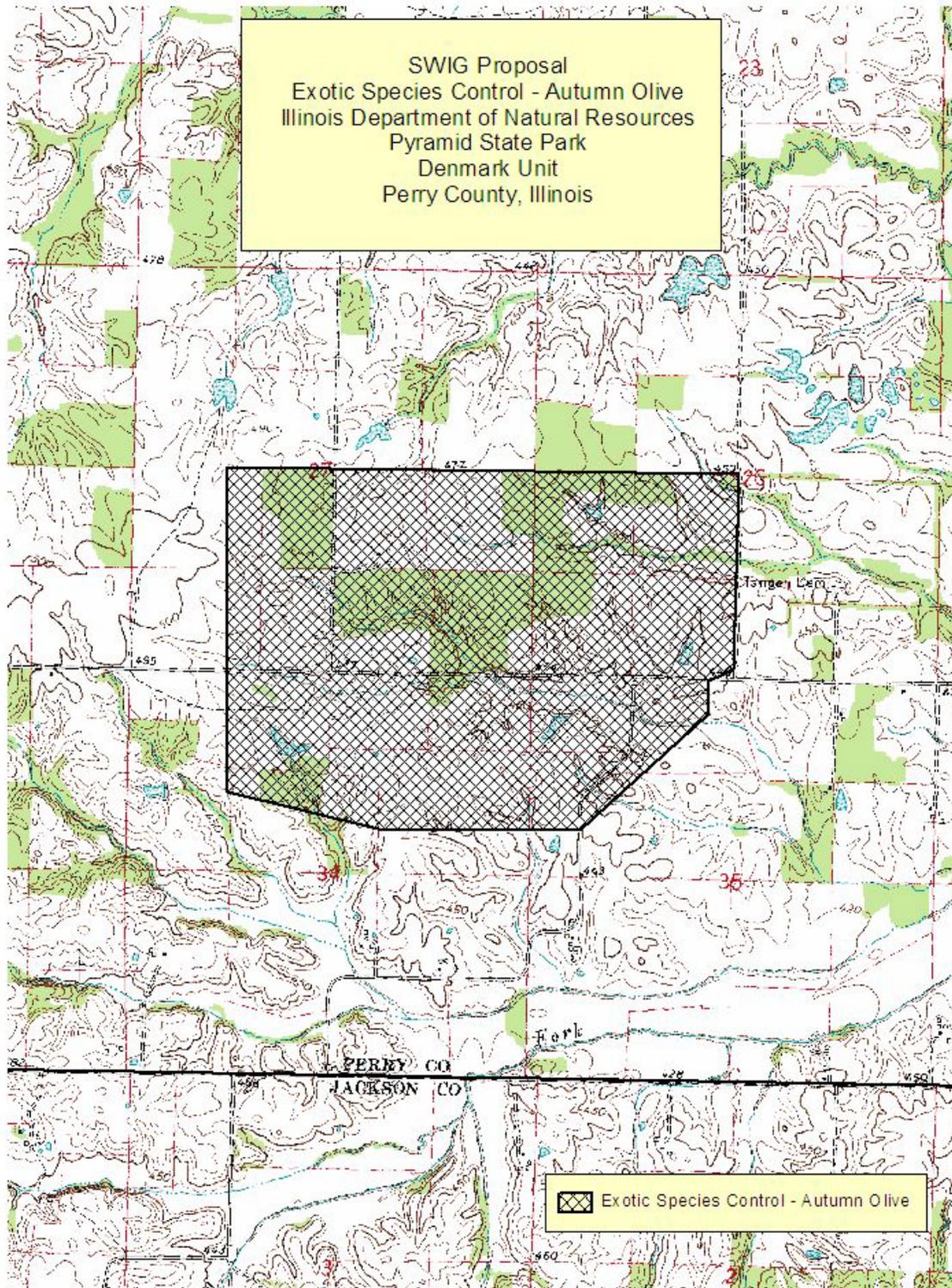
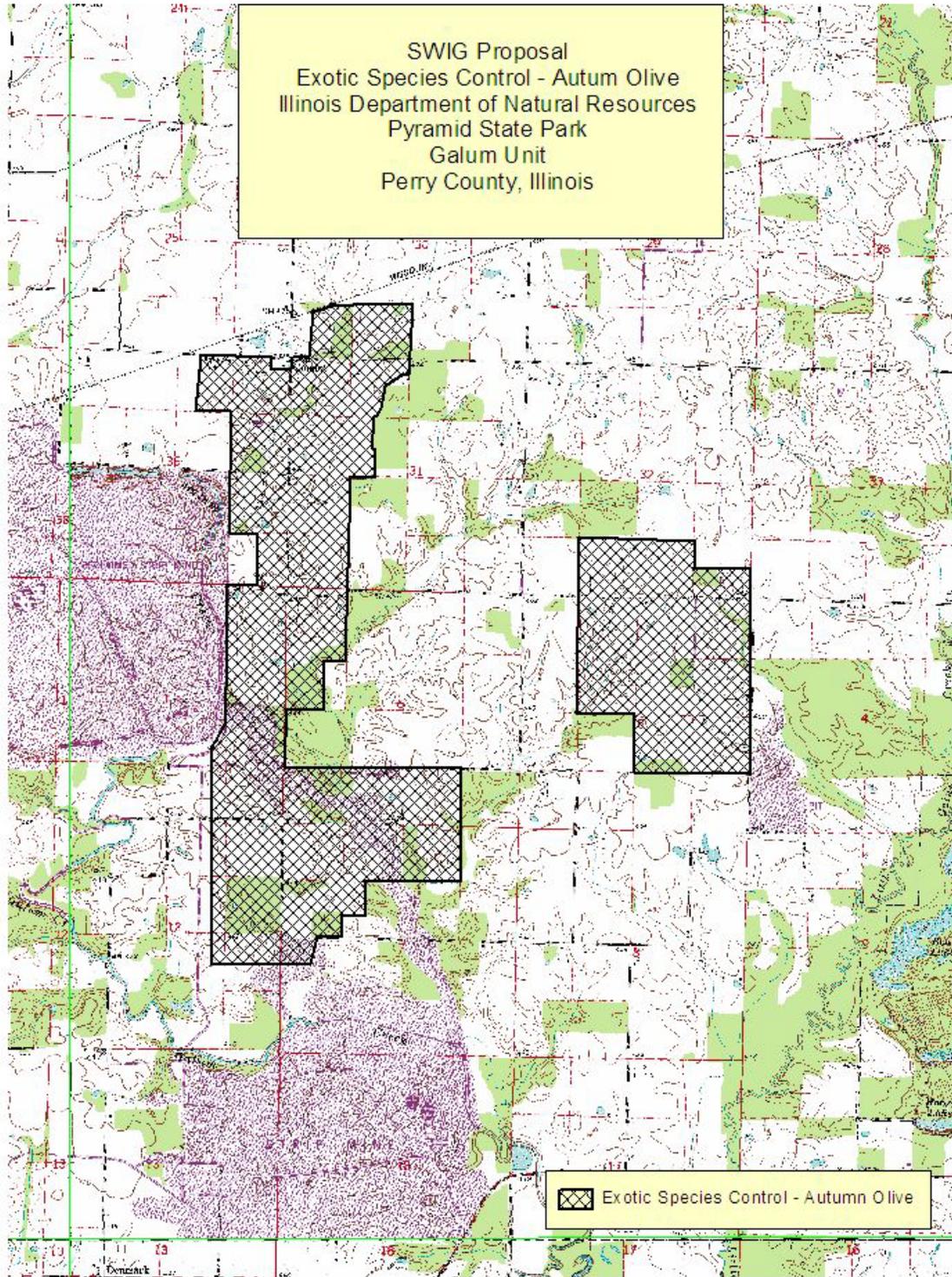


Figure C2. There were two major units treated in the Galum Unit of Pyramid State Park in Perry County Illinois.



Appendix D

Job Title: Job 4. Exotic species control at Stemler Woods Nature Preserve in St. Clair County, Illinois.

Job Leader: Martin Kemper
Natural Heritage Biologist
One Main Street Drive
Sparta, IL 62286
618-295-2877
Martin.Kemper@illinois.gov

Purpose/need: Stemler Cave Woods Nature Preserve is a 120 acre old growth forest remnant is located on a sinkhole plain near the entrance to Stemler Cave. The site contains mesic upland forest, dry-mesic upland forest, and dry upland forest. The dry upland forest community contains white oak, post oak, red oak, pignut hickory and white ash. Several sinkholes create localized variations in topography and microclimate, resulting in a change in the species composition of the forest near these sites. White and black oaks are most common on the upper two-thirds of the sinkhole while red oak is common in the lower one-third of these depressions.

Located in St Clair County, Stemler Cave Woods Can be reached by taking Highway 158 two miles to a county road from Millstadt. Turn north on this road and go two miles (the road goes north 0.5 mile, then west 0.5 mile then north again for 1 mile). Turn west on this county road and go 0.5 mile.

Objective: Restore and maintain 120 acres of upland forest at Stemler Cave Woods Nature Preserve, St. Clair County, Illinois.

Approach: IDNR personnel and contractors will continuation implementation of invasive exotic species control and prescribed fire. This type of will management will occur throughout the site. Descriptions of these practices are in the body of the grant proposal.

Budget:

Line Item	Federal Share	State Share	Project Total
Contractual	\$4,000.00	\$4,000.00	\$8,000.00
Commodities	\$0.00	\$0.00	\$0.00
Personnel	\$0.00	\$0.00	\$0.00
Total	\$4,000.00	\$4,000.00	\$8,000.00

Table D1. Species in greatest need of conservation at Stemler Cave Woods Nature Preserve in Monroe County Illinois

Common Name	Scientific Name	Status
Fontigens antroecetes	Hydrobiid Cave Snail	State Endangered
Caprimulgus vociferus	Whip-poor-will	SGNC
Coccyzus americanus	Yellow-billed cuckoo	SGNC
Colaptes auratus	Northern flicker	SGNC
Colinus virginianus	Northern bobwhite	SGNC
Hylocichla mustelina	Wood thrush	SGNC
Icteria virens	Yellow breasted chat	SGNC
Melanerpes erythrocephalus	Red-headed woodpecker	SGNC
Scolopax minor	American woodcock	SGNC
Spizella pusilla	Field sparrow	SGNC
Toxostoma rufum	Brown thrasher	SGNC
Urocyon cinereoargenteus	Gray fox	SGNC

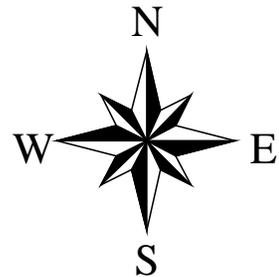
Figure D1. Exotics species will be controlled in a majority of Stemler Cave Woods Nature Preserve in St. Clair County, Illinois.

Stemler Cave Woods

2009 Invasives Control Treatment Units



0.3 0 0.3 0.6 Miles



-  2009 naaf invasives control treatment units
-  site boundary (from NH database)

Appendix E

Job Title: Job 5. Exotic species control at Fogelpole Cave Nature Preserve in Monroe County, Illinois.

Job Leader: Martin Kemper
Natural Heritage Biologist
One Main Street Drive
Sparta, IL 62286
618-295-2877
Martin.Kemper@illinois.gov

Purpose/need: Fogelpole Cave Nature Preserve is one of the largest and least disturbed cave systems in Illinois. Several miles of underground streams drain approximately 10,000 acres of sinkhole plain in southern Monroe County, an area that is geologically similar to the Ozark region of Missouri. The cave supports a large and diverse animal populations, including several bat species, and an outstanding invertebrate cave fauna. The Indiana bat, a federally endangered species, is known to inhabit the cave. The Federally listed bat is known from the site as is the Illinois Cave amphipod, an Illinois endangered species. A newly discovered species of beetle is known only from this site.

Located in Monroe County, the site can be access by taking Highway 3 south 2.5 miles from Waterloo, IL to a county road (Kaskaskia Rd.). Turn southwest on this road and go 6.25 miles to another county road. Turn east on this road and go 1 mile to another county road. Turn south on this road and go 0.5 mile.

Objective: Restore and maintain 25 acres of dry mesic upland forest at Fogelpole Cave Nature Preserve, Monroe County, Illinois.

Approach: IDNR personnel and contractors will continuation implementation of invasive exotic species control and prescribed fire. This type of will management will occur throughout the site. Descriptions of these practices are in the body of the grant proposal.

Budget:

Line Item	Federal Share	State Share	Project Total
Contractual	\$4,000.00	\$4,000.00	\$8,000.00
Commodities	\$0.00	\$0.00	\$0.00
Personnel	\$0.00	\$0.00	\$0.00
Total	\$4,000.00	\$4,000.00	\$8,000.00

Species in Greatest Need of Conservation at Fogelpole Cave Nature Preserve

Colinus virginianus Northern bobwhite
Scolopax minor American woodcock
Spizella pusilla Field sparrow
Toxostoma rufum Brown thrasher
Myotis grisescens Gray bat

Appendix F

Job Title: Job 6. Exotic Species control at Wilmington Shrub Prairie, Will County, Illinois

Job Leader: Dan Kirk
Natural Heritage Biologist
Silver Springs State Park
13608 Fox Road
Yorkville, IL 60560
630-553-1372
Dan.Kirk@illinois.gov

Purpose/need: Wilmington Shrub Prairie is an 146 acre Nature Preserve owned by the Illinois Department of Natural Resources. (Figure F). The site consists of mesic sand prairie, wet-mesic prairie, dry-mesic sand savanna, sedge meadow, shrub prairie, marsh and successional field habitats. Wilmington Shrub Prairie supports a diverse assemblage of plants and animals including two state endangered plants (Table F1 & F2).

Most of the Wilmington Shrub Prairie is recovering from past grazing by livestock, but approximately 60 acres of high quality vegetation still exists (41 percent of the site). Ditching during the 1930's lowered the water table allowing woody vegetation to invade the area. Non-native woody vegetation such as common buckthorn (*Rhamnus cathartica*), Amur honeysuckle (*Lonicera maackii*), multiflora Rose (*Rosa multiflora*), and autumn olive (*Elaeagnus umbellata*) along with the native red-osier dogwood (*Cornus stolonifera*) and silver maple (*Acer saccharinum*) are encroaching into much of the prairie and sedge meadow because of fire suppression. Woody vegetation control is needed in order to return the area's ecosystems to their former healthy condition. Prescribed burns have suppressed some small woody species but mechanical control is necessary to eliminate larger species.

Wilmington Shrub Prairie is located in Will County, Illinois. From Braidwood, take Highway 113 east 3 miles to a county road. Turn north on the road and go 1.5 miles. The preserve is on the west side of the road.

Objective: Restore and maintain 50 acres of high quality prairie, wetland and savanna at Wilmington Shrub Prairie Nature Preserve, Will County, through control of invasive and/or exotic species. This will include follow-up treatment on 35 acres of the 75 acres previously treated during T-5-M-1 and 15 new additional acres.

Approach: IDNR personnel and contractors will implement a program to reduce and control woody species. The primary practices to be applied will include prescribed fire, invasive woody plant control, and invasive exotic species control. Descriptions of these practices are in the body of the grant proposal.

Budget:

Line Item	Federal Share	State Share	Project Total
Contractual	\$17,000.00	\$13,000.00	\$30,000.00
Commodities	\$0.00	\$2,000.00	\$2,000.00
Personnel	\$0.00	\$2,000.00	\$2,000.00
Total	\$17,000.00	\$17,000.00	\$34,000.00

Table F1: Illinois endangered and threatened species of Wilmington Shrub Prairie Nature Preserve, Will County

Common Name	Scientific Name
Running Ground Pine	<i>Lycopodium clavatum</i>
Bristly Blackberry	<i>Rubus setosus</i>
Regal fritillary	<i>Speyeria idalia</i>

Table F2: Prairie insects other than endangered and threatened species known to occur at Wilmington Shrub Prairie Nature Preserve.

Common Name	Species	Host Plant
Common roadside skipper	<i>Amblyscirtes vialis</i>	native grasses
Dion skipper	<i>Euphyes dion</i>	<i>Carex</i>
Black dash	<i>Euphyes conspicua</i>	<i>Carex</i>
Two-spotted skipper	<i>Euphyes bimacula</i>	<i>Carex</i>
Broad-winged skipper	<i>Poanes viator</i>	<i>Carex</i>
Byssus skipper	<i>Problema byssus</i>	<i>Andropogon</i>
Crossline skipper	<i>Polites origines</i>	native grasses
Dreamy duskywing	<i>Erynnis icelus</i>	<i>Salix</i>
Southern cloudwing	<i>Thorybes bathyllus</i>	legumes
Acadian hairstreak	<i>Satyrium acadica</i>	<i>Salix</i>
	<i>Lycaena thoe</i>	<i>Polygonum</i>
Purplish copper	<i>Lycaena helloides</i>	<i>Polygonum</i>
Silver bordered fritillary	<i>Boloria selene myrina</i>	<i>Viola spp</i>
Meadow fritillary	<i>Boloria bellona</i>	<i>Viola spp</i>
Regal fritillary	<i>Speyeria idalia</i>	<i>Viola spp</i>
	<i>Speyeria aphrodite</i>	<i>Viola spp</i>
	<i>Lethe eurydice</i>	<i>Carex</i>
moth	<i>Hydraecia stramentosa</i>	<i>Scophularia marilandica</i>
	<i>Oligia obtusa</i>	Sedges
Sensitive fern borer moth	<i>Papaipema inquaesita</i>	<i>Onoclea</i>
	<i>Papaipema silphii</i>	<i>Silphium</i>
Osunda borer moth	<i>Papaipema speciosissima</i>	<i>Osmunda</i>
Praeclara underwing	<i>Catocala praeclara</i>	<i>Pyrus</i>
Similar underwing	<i>Catocala similis</i>	<i>Quercus</i>
Goldenrod flower moth	<i>Schinia nundina</i>	<i>Solidago</i>

Figure 1. Wilmington Shrub Prairie is located three miles south of Braidwood, IL in Will County.

