

# UPPER MISSISSIPPI RIVER CONSERVATION OPPORTUNITY AREA WILDLIFE ACTION PLAN



A cooperative, inter-agency partnership for the implementation of the Illinois Wildlife Action Plan in the Upper Mississippi River Conservation Opportunity Area

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## Acronym List

AC	Augustana College
ACE	United States Army Corps of Engineers
AFT	American Farmland Trust
ALC	American Land Conservancy
AR	Apple River
BMP	Best Management Practices
CES	U of I Cooperative Extension Service
COA	Conservation Opportunity Area
CREP	Conservation Reserve Enhancement Program
CRP	Conservation Reserve Program
DU	Ducks Unlimited
EMP	Environmental Management Program
EQIP	Environmental Quality Incentives Program
EPA	Environmental Protection Agency
FSA	Farm Service Agency
FWS	United States Fish and Wildlife Service
GIS	Geographic Information System
GREDF	Great River Economic Development Foundation
GRLT	Great Rivers Land Trust
GTA	Galena Territory Association
HBLMMP	Hanover Bluff-Lost Mound-Mississippi Palisades
IAS	Illinois Audubon Society
IHPA	Illinois Historic Preservation Agency
IL DCEO	Illinois Department of Commerce and Economic Opportunity
IL DNR	Illinois Department of Natural Resources
IL WAP	Illinois Wildlife Action Plan
INPC	Illinois Nature Preserves Commission
INPS	Illinois Native Plant Society
INAI	Illinois Natural Areas Inventory
INHS	Illinois Natural History Survey
IRCD	Interstate Resource Conservation and Development
JDCF	Jo Daviess Conservation Foundation
LCC	Landscape Conservation Cooperative
LLW	Living Lands and Waters
LMHBMP	Lost Mound – Hanover Bluff – Mississippi Palisades
LMREP	La Moine River Ecosystem Partnership
LMHBMP	Lost Mound – Hanover Bluff – Mississippi Palisades
MCT	Mussel Coordination Team
MHP	McCulley Heritage Project
NGO	Non-government Organization

NGRREC	National Great River Research and Education Center
NLI	Natural Land Institute
NRCS	Natural Resources Conservation Service
NWILA	Northwest Illinois Audubon
NWILFA	Northwest Illinois Forestry Association
NWFR	National Wildlife and Fish Refuge
NWR	National Wildlife Refuge
NWTF	National Wild Turkey Federation
PC	Principia College
PF	Pheasants Forever
PLC	Prairie Land Conservancy
PM	Pere Marquette
PRN	Prairie Rivers Network
PHRCD	Prairie Hills Resource Conservation and Development
QC NAGs	Quad Cities Natural Area Guardians
QF	Quail Forever
QPD	Quincy Park District
QPF	Quincy Park Foundation
RA	River Action
RC&D	Resource Conservation and Development
SAFE	State Acres for Wildlife Enhancement
SC	Sierra Club
SGNC	Species in Greatest Need of Conservation
SFWA	State Fish and Wildlife Area
SNA	State Natural Area
SSRP	Streambank Stabilization and Restoration Program
SWCD	Soil and Water Conservation District
SWG	State Wildlife Grants Program
SWIRCD	Southwest Illinois Resource Conservation and Development
TNC	The Nature Conservancy
TNI	The Nature Institute
TPE	The Prairie Enthusiasts
TSI	Timber Stand Improvement
UI	University of Illinois
UMRCC	Upper Mississippi River Conservation Committee
UMRR	Upper Mississippi River Restoration
USDA	United States Department of Agriculture
USFS	United States Forest Service
WCRP	Wildlife Conservation and Restoration Program
WDF	Wisconsin Driftless Forest
WIU	Western Illinois University
WHIP	Wildlife Habitat Incentive Program
WPAS	Western Prairie Audubon Society
WRP	Wetland Reserve Program

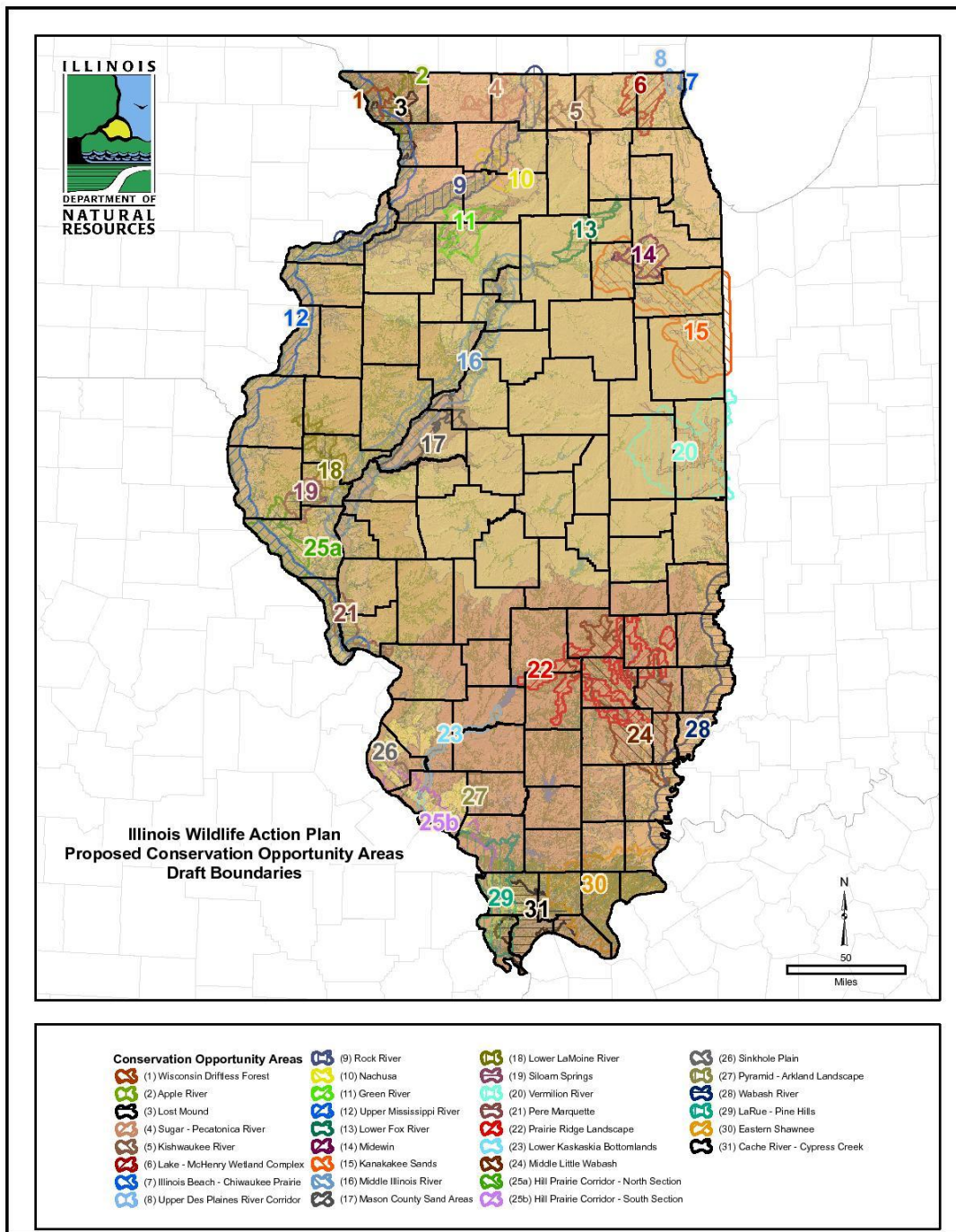
## **I. Introduction to Conservation Opportunity Areas**

In 2001, the U.S. Congress authorized the Wildlife Conservation and Restoration Program and the State Wildlife Grant Program. These programs were established to improve wildlife habitat stewardship and management with the goal of reducing the number of species requiring listing as threatened or endangered, lowering the overall costs associated with wildlife recovery, and addressing shortages in wildlife program funding.

The U.S. Fish and Wildlife Service (FWS) serves as the lead agency to manage these programs nationwide. The FWS mandates that the governing focus be wildlife species of greatest need of conservation (SGNC), and required all states to develop and maintain 10-year wildlife management plans.

In 2005, Illinois completed the Illinois Comprehensive Wildlife Conservation Plan, frequently referred to as the Illinois Wildlife Action Plan (IL WAP), after a collaborative effort between a large contingency of state and federal agencies, as well as non-governmental organizations (NGOs). The FWS subsequently approved the IL WAP, and it has since served as a guiding document that reflects statewide conservation priorities.

Ecologically unique landscapes of Illinois are characterized by 14 Natural Divisions of Illinois. The IL WAP recognizes high priority areas based on these natural divisions known as Conservation Opportunity Areas (COA). COAs represent high densities of wildlife habitat sites and unique areas critical to endangered and threatened wildlife species as well as those under threat of becoming endangered or threatened (SGNC – Species of Greatest Need of Conservation). Thirty-one COAs were developed to focus limited wildlife habitat resources at locations with significant existing or potential wildlife 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 (IL DNR, 2005). The ILWAP also identified 7 action campaigns to address statewide-scale priority actions and challenges: streams, forests, wetlands, farmland and prairies, invasive species, green cities, and land and water stewardship. ILDNR is currently appointing staff to lead these campaigns with the intention that these campaigns will complement efforts taking place within the COAs, but also efforts statewide.



**Figure 1. Illinois Conservation Opportunity Areas (IL DNR, 2005)**



## **II. Upper Mississippi River COA**

The Upper Mississippi River COA (UMR COA), as described in the IL WAP, extends for 401 miles along the eastern side (Illinois) of the Mississippi River from the northwestern tip of the state in Jo Daviess County to the northwestern part of Jersey County near the confluence of the Illinois and Mississippi rivers. The UMR COA also extends for approximately five miles “inland” from the Mississippi River to include the bottomlands (former floodplain) and a portion of the west-facing bluff for a total of 2005 square miles (over 1.28 million acres). There is an estimated 120,000 acres of land owned and/or managed for conservation within this COA. These include lands owned/managed by federal, state and municipal government, as well as various land trusts and other non-government organizations (NGOs). The UMR COA includes all or a portion of six other COAs: Driftless Forest, Lost Mound – Hanover Bluff – Mississippi Palisades, Apple River, Rock River, Hill Prairie, and Pere Marquette.

Due to the geographically large and linear nature of the UMR COA, and the fact that partners in various areas engaged in different levels of IL WAP implementation, plan organizers decided that the UMR COA should be split up into 4 distinct areas. The local partners working within the four areas later concurred that the divisions were the most efficient way to create a useful plan for the UMR COA.

In September 2010, various stakeholders met in four geographically separate areas (Savanna, Rock Island, Quincy and Pere Marquette State Park) to discuss the formulation of IL WAP implementation guidelines for the UMR COA. Stakeholders from the Quincy and Pere Marquette areas met again in September/October of 2011 to discuss goals for those areas. In the Quad Cities area, a steering committee made up of representatives from all major federal and state conservation agencies met every 2-3 months throughout 2011 to develop detailed goals and pursue additional resources to implement the plan.

Agencies and NGOs represented at these meetings included:

- Adams County NRCS
- Adams County Farm Service Agency (FSA)
- American Land Conservancy
- Augustana College
- Brown County NRCS
- Carroll County Farm Services Agency (FSA)
- Carroll County SWCD, Blackhawk Hills RC&D
- City of Quincy
- Fishers and Farmers Partnership
- Great River Economic Development Foundation
- Great Rivers Land Trust

Hancock County SWCD  
Henderson County SWCD  
Illinois Department of Commerce and Community Affairs  
Illinois Department of Natural Resources (IL DNR) Divisions of Natural Heritage Wildlife,  
Fisheries and Forestry  
FWS Partners for Fish and Wildlife Program  
FWS Upper Mississippi River National Wildlife and Fish Refuges  
Illinois Natural History Survey  
Illinois Nature Preserves Commission (INPC)  
Izaak Walton League  
Jo Daviess Conservation Foundation  
Jo Daviess County Soil and Water Conservation District (SWCD)  
Klingner and Associates  
National Great Rivers Research and Education Center  
Natural Lands Institute  
Northwaters Consulting  
Port Louisa National Wildlife Refuge  
Prairie Land Conservancy  
Prairie Rivers Network  
Private forestry consultants  
Private landowners  
Quad Cities Natural Area Guardians (NAGs)  
Quincy Park District  
Quincy Park Foundation  
Rock Island County SWCD  
Sierra Club  
The Nature Conservancy  
Treehouse Wildlife Center  
Western Illinois University  
Whiteside County Natural Resource Conservation Service (NRCS)

A contact list of potential stakeholders and meeting attendees is provided as an appendix. The IL WAP specifically recommends that local, landowner-based protection groups partner to help implement IL WAP goals for the COAs. Future meetings will engage local conservation groups and private landowners.

## **COAs Embedded within Upper Mississippi River COA**

### **Apple River**

The Apple River Conservation Opportunity Area (AR COA) consists of the primary watershed for the Apple River stretching from central Jo Daviess County into the northwestern tip of Carroll County. Only the southwestern portion, including the confluence of the Apple River with the Mississippi River, overlaps with the UMR COA. The principal focus of this COA involves protection and management of cool water and cold water streams for the benefit of rare fish species included on the IL WAP list of Species in Greatest Need of Conservation (SGNC). Protection of the groundwater and surface water runoff into these streams through management of natural habitats within the watershed is critical to maintaining water quality and cooler water temperatures. The Apple River Canyon State Park (1,802 acres) serves as the focal point for this COA.

### **Wisconsin Driftless Forest**

The “Driftless Area” of the upper Midwest encompasses approximately 20,000 square miles and extends across central and southwestern Wisconsin, southeastern Minnesota, and northeastern Iowa, and into the northwestern tip of Illinois. This portion of Illinois is identified as the Wisconsin Driftless Forest Conservation Opportunity Area (WDF COA) within the Illinois Wildlife Action Plan. The western portion of the WDF COA overlaps with the Upper Mississippi River COA. The WDF includes extensive forested bluff habitat from the town of Hanover, Illinois, northwest along the Mississippi River Bluffs to Galena and Illinois routes 20 and 84. The area is characterized by unique rugged karst topography with steep slopes and cliffs. The area also includes a rare karst community known as algific talus slopes. Within the WDF COA only two high quality algific talus slopes have been identified by the Illinois Natural Areas Inventory. The WDF boundaries include more than 2,200 acres of land owned by ILDNR and/or permanent easements of signed conservation management agreements with ILDNR and/or the Illinois Nature Preserves Commission (INPC) or nongovernmental conservation organizations. Protection of these unique natural communities through land protection programs and management of surrounding natural areas is critical to the long-term preservation of the algific slopes and the wildlife associated with these areas.

### **Lost Mound – Hanover Bluff – Mississippi Palisades**

The southwestern portion of the Lost Mound-Hanover Bluff-Mississippi Palisades Conservation Opportunity Area (LMHBMP COA) also overlaps with the Upper Mississippi River COA (Driftless Area). This COA encompasses approximately 80 square miles and extends from Hanover in southwestern Jo Daviess County southward along the bluffs

east of Rt. 84, and along the Mississippi River bottoms to Savanna in northwestern Carroll County. The area includes extensive forested bluff habitat as well as bottomland forest, sand prairie, and sand savanna associated with the Mississippi River floodplain. The COA links three prominent and large natural areas together: Savanna Army Depot, Hanover Bluff, and Mississippi Palisades; all of which are also included in the UMR COA. It includes a wide variety of habitat found within several Illinois Natural Divisions including: Wisconsin Driftless Area and the Upper Mississippi Natural Division. The COA boundaries include more than 14,300 acres of land owned by U.S. Fish and Wildlife Service (FWS), Illinois Department of Natural Resources (IL DNR), The Nature Conservancy (TNC), Natural Land Institute (NLI), Jo Daviess Conservation Foundation (JDCF) and The Prairie Enthusiasts (TPE). Approximately 250 additional acres of private lands are permanently protected through easements held by NLI (Appendix II). The COA provides specific, suitable habitat supporting at least 38 state-endangered and state-threatened (E/T) species of plants and animals. The majority of the lands in conservation ownership are receiving some natural areas management. Active land management as well as land acquisition will provide for habitat connections between the three large blocks of natural area habitat, and will provide long-term protection for a wide variety of rare natural communities as well as E/T species that rely on them.

### **Rock River**

The Rock River Conservation Opportunity Area (RR COA) covers the Rock River Watershed and extends southwest from north-central Illinois (Rockford area), to merge with the Mississippi River at Moline and Rock Island. The stakeholders within the Quad Cities Area of the UMR COA proposed to expand the boundary of the UMR COA to include the lower portion of the Rock River Watershed and the RR COA. The proposed expansion incorporates the Rock River and a 2.5 mile buffer on each side from Big Bend State Fish and Wildlife Area to the Mississippi River. This decision was made based on two factors: 1) the majority of the planning for the Rock River COA had been taking place with a focus on the upper watershed near Rockford and extended southwards into the sand prairies of Lee and Whiteside counties leaving the lower Rock River outside of the project area, and 2) streams biologists recognize a distinct biological difference between the stream habitat of the upper and lower Rock River with the division taking place near the Big Bend State Fish and Wildlife Area. The few large Illinois Natural Area Inventory (INAI) stream sites located at the confluence of the Rock and Mississippi rivers would benefit from a management perspective which considers the entire Lower Rock River along with the Mississippi River.

### **Hill Prairie – North Section**

The focal point for the North Section of the Hill Prairie Conservation Opportunity Area (HP COA) is the chain of west-facing blufftop hill prairies overlooking the vast floodplain of the Mississippi River in Pike County. The western portion of the HP COA section overlaps with the UMR COA and includes the west-facing bluffs with scattered hill

prairies and surrounding timber along with the vast floodplain managed as the Sny Levee District. While there are a few bottomland wetland natural areas located within the floodplain, the priority focus for the HP COA is the hill prairies scattered atop ridges of limestone cliffs also referred to as the Highway 96 Hill Prairie Complex. Though the North Section of the HP COA ends in the northwestern tip of Calhoun County, and the South Section does not begin until well south of the UMR COA, the same management goals persist southward from Pike County. These goals serve the various hill prairie and glade communities found on the bluffs of western and eastern Calhoun County and continue along the west-facing bluffs in Greene, Jersey, and Madison counties.

### **Pere Marquette**

As the name suggests, the Pere Marquette Conservation Opportunity Area (PM COA) is focused on the region around Pere Marquette State Park (8,141 acres) at the confluence of the Illinois and Mississippi Rivers. The state park is part of a larger area of forested uplands extending northwards from Jersey County into Greene County. The priority habitat goal is the management and expansion of the large block of forested habitat, supporting breeding and migratory songbirds and SGNC. Southern Calhoun County and areas along the lower reaches of the Illinois River include federal and state managed wetland units providing foraging and resting areas for migratory waterfowl and other waterbirds.

## **III. Plan Organization**

The objective of this COA plan is to collect input from a wide spectrum of local conservation partners to provide bottom-up and lateral approaches to better define and implement management actions at the local level. The plan is to be both strategic and prescriptive, describing the broad issues and specific actions to achieve identified goals and objectives.

In order to encourage more effective planning and involvement at the local level, the UMR COA has been broken into four distinct geographic areas based on urban centers, unique landscape features, and active partnerships currently operating within the COA. The COA was divided into the following areas: Driftless, Quad Cities, Quincy and Pere Marquette.

As most potential partners already have plans and goals for improving and sustaining wildlife habitat in this region, we seek to share information on these goals, determine challenges, and develop a better working relationship among partners by which we can help each other accomplish these established goals as well as future goals that arise.

Thus far, conservation stakeholders within the UMR COA have identified 2 major needs: 1) to more effectively network to share information and resources between

governmental agencies, NGOs and the private landowners in Illinois and promote multi-state partnerships with Iowa and Missouri, and 2) to develop shovel-ready projects and supplemental materials (maps, shared strategies and action plans) specific to the area and needs of the partners. The plan can be used to more effectively pool resources and seek funds to accomplish shared goals and objectives beginning with a 12-24 month time frame. The strategy is to engage as many stakeholders involved in wildlife habitat conservation within the UMR COA as possible and still effectively implement the IWAP.

When additional COAs overlap with the UMR COA, partners recommended that the portions of the overlapping COAs which lie within the UMR COA serve as priority areas. The IL WAP describes the significance of these other COAs in much greater detail compared to the UMR COA, most likely a testament to the large size and geographically and ecologically distinct differences from north to south. The IL WAP provides only a general statement concerning the UMR COA – “Priority resources: mussel and fish communities, migratory birds” (IL DNR, 2005, p. 219). Thus, a need for a step-down plan has been identified.

Proposed goals for the UMR COA, based on descriptions for the natural divisions and additional overlapping COAs, and from comments made by stakeholders at various meetings and personal communications, are presented on the proceeding pages. This plan refers extensively to the Natural Divisions of Illinois and to natural areas or sites on the Illinois Natural Areas Inventory (INAI). For those unfamiliar with these terms: the Natural Divisions of Illinois were developed by John Schwegman (former IL DNR Natural Heritage botanist) in 1974 to categorize areas of the state based on similar biological and geological characteristics. Much of the goals and priorities of the IL WAP are organized under the 15 different Natural Divisions of Illinois. The INAI is a listing, created in the late 1970s, of high priority sites in need of protection and management, as they contain unique biological or geologic features of statewide importance. Many of these sites contain high quality remnant vegetation communities, which reflect the flora found on the landscape prior to alteration from European settlement. The generic term “natural area” can either refer to an INAI site, a site with the potential to qualify for INAI listing, or one being managed with the goal of restoring it to provide a functional ecosystem for the benefit of native flora and fauna.

#### **IV. Vision Statement**

Based on local needs and available resources, we will implement the Illinois Wildlife Action Plan to achieve improved connectivity, extent, health, and sustainability of natural lands, waters and habitats, and stable or increasing populations of Species in Greatest Need of Conservation (SGNC) in our Conservation Opportunity Area (COA).

In the long-term, we envision a continuum of landscape-scale functioning ecosystems that are connected through corridors of suitable natural habitats, which sustain healthy

populations of SGNC. In practice, our vision will require both creation of new habitats and adaptive management of existing bottomland forests, prairies, streams and wetlands; upland sand prairies, sand savannas and woodlands, as well as hill prairies and forests in the upland bluffs. Our vision also recognizes that humans are an implicit part of our COA, and that economically viable, environmentally-sustainable communities translate into healthy natural communities that can protect and conserve SGNC. We will therefore seek to implement our vision through strategies that are both creative and dynamic, by forging new alliances for conservation and strengthening existing partnerships, and through the implementation of programs and projects that promote measurable progress towards conservation on the ground.

## **V. Climate Change**

During the planning process for this document, climate change, and the ramifications it has for habitat and SGNC deserves consideration when making management decisions in the COA. Complex interactions between climate, localized weather patterns, critical habitats and species pose an emerging set of challenges for natural resource managers. Research suggests that climate change will create new habitat conditions that will impact competition between native, and non-native invasive floral and faunal species; create new implications for highly fragmented habitats and the ability for species to expand their range (Wisconsin Initiative on Climate Change Impacts, 2011; Rahel and Olden, 2008). Many call for restoration of riparian habitats to create connectivity that will allow native species to adapt to changes in climate (Seavy et al., 2009).

Rahel and Olden (2008) posit that changing weather patterns, and an overall increase in the frequency of flood events will expand the pathways by which aquatic invasive species travel into waters where they previously did not exist. With warmer temperatures, cold water and hypoxic conditions over winter will become increasingly less effective at prohibiting the establishment of invasive species. Conversely, these changes in the aquatic environment can have a negative impact on cold-water invasive species, and allow warm-water natives to thrive (Rahel and Olden, 2008). Changing dynamics of species establishment and survival presents a challenge for those managing aquatic resources along the Mississippi River.

Habitat fragmentation must also be considered when changes in climate affect the ranges of SGNC. This is a complex, species specific issue; however, it is possible to assert that many terrestrial species will not be able to expand/shift their ranges in response to climate change if there are high levels of habitat fragmentation (Opdam and Wascher, 2004). According to Opdam and Wascher (2003), species inhabiting forest, freshwater marsh, and grassland habitats are most limited, due to the high level of fragmentation among these habitat types.

Climate change poses challenges for critical habitats and species, and managers will continue to confront the complex changes that occur as a result. Seavy et al. (2009) point to the importance of riparian habitats as vital pathways and corridors that will allow species to adapt to projected physical and environmental changes. The authors suggest that, in a changing climate, historical conditions may no longer provide an adequate benchmark in some areas. Riparian areas are often most resilient to change, and provide a link between aquatic and terrestrial habitats, increasing species mobility and providing localized, thermal refugia for fish species (Seavy et al., 2009). Climate change presents new, unique challenges for managers in the UMR COA; the abundance and diversity of species relies on managers to make informed decisions, and take into consideration changes in future habitat conditions.

## **VI. Illinois Wildlife Action Plan Conservation Campaigns**

In addition to COAs, the Illinois Wildlife Action Plan identifies seven Conservation Campaigns to address several urgent issues facing wildlife habitat in the state. In conjunction with the COAs, these campaigns are employed to implement priority actions in regards to habitat management. Each campaign is addressed in the goals and objectives of the UMR COA Action Plan.

### **Forest Campaign**

The Forest Campaign works to improve the quality of wooded habitats, open woodlands, savannas, barrens, and shrublands. The campaign has identified several priority concerns including: a decline in forest management, over harvesting, invasive species, a decline in the amount of riparian habitat, forest fragmentation, and increased human-wildlife conflict. The campaign has developed several actions to address these concerns by increasing the quality and quantity of native wooded habitats, especially along riparian corridors. The campaign also recognizes the importance of working with private landowners to increase forest stewardship on private lands (IL DNR, Wildlife Action Plan, 2005).

Working closely with the National Wild Turkey Federation, IL DNR staff have sought to improve forest habitat through reforestation projects, invasive species control, and prescribed burn management. While the campaign has yet to focus specifically on forest habitat within the UMR COA, there is strong interest in partnerships to improve the forest habitat within the Driftless Area, especially the wooded bluffslands from Hanover northwards within the Wisconsin Driftless Forest COA. Due to the steep topography and lack of agriculturally productive soils, much of the forested land remains intact providing opportunity for extensive forest corridor connection for the benefit of forest dependent wildlife species.



The IL WAP recommends that priorities for the UMR COA and embedded COAs include forest habitat for breeding and migratory birds, expansion of large forest blocks, and the creation of river to bluff corridors which frequently involve connecting floodplain forests to the timbered bluffs. The Lost Mound-Hanover Bluff-Mississippi Palisades corridor, as well as the large forests at Pere Marquette, is identified as top priorities. Milan Bottoms/Andalusia Slough, in Rock Island County is also mentioned as a priority for bald eagle roosting habitat. Although not mentioned specifically, the Cedar Glen Eagle Roost in Hancock County has continued to provide winter roost habitat for hundreds of bald eagles. Until recently, Cedar Glen regularly supported the highest concentrations of wintering eagles within the state. While it continues to provide critical habitat for large percentage of the winter eagle population, warmer winters and possible reduced food due impacts from Asian carp may by causing the eagles to disperse to other roost sites. Long Island in Adams County and several other large riverine islands (Clarksville, Drift, and Burlington) also provide key habitat for breeding and migratory birds.

### **Farmland & Prairie Campaign**

The Farmland and Prairie Campaign addresses key issues facing native prairie and agricultural communities throughout the state. This campaign emphasizes contrast between heavily disturbed lands (e.g., cropland) and small pockets of land that receive little management. Major issues regarding agricultural production include: contamination, runoff, erosion, and the destruction of riparian habitat. The campaign also identifies a lack of high-quality remnant prairie communities (IL DNR, Wildlife Action Plan, 2005).

The Farmland and Prairie Campaign Implementation Team is comprised of biologists from IL DNR Wildlife and Natural Heritage Divisions, The Nature Conservancy, Illinois Audubon, Pheasants Forever, National Audubon, NRCS, and the University of Illinois. The team has primarily focused on three goals identified in the IWAP including, 1) restore an additional million acres of grassland with an emphasis on uplands, while maintaining other treeless grasslands and habitat patches larger than 0.5 miles in width, 2) enhance the wildlife value of an existing million acres of grassland, and 3) establish five additional “ecological pattern” Bird Conservation Areas.

Most of the grassland wildlife focus areas are eligible for the continuous CRP CP38 practice – State Acres For Wildlife Enhancement (SAFE). To date, nearly 7000 acres have been enrolled, mostly in Tazewell, Montgomery, Livingston, McLean, and Ford Counties. There are a few large grassland wildlife focus/SAFE areas near the UMR COA including the Stephenson-Carroll-Ogle, Whiteside-Sand Prairie, Bureau, Henry, and Knox focus areas. Unfortunately, there have not been a large number of enrollments in those areas.

While there has been little focus on large grasslands within the UMR COA boundary, the opportunity to expand and improve grassland habitat exists in several locations,

especially those associated with the inland sands (Mississippi River and Illinois River Sands Natural Division) at Lost Mound and Ayers Sand Prairie (Driftless Area), Thomson-Fulton Sand Prairie in Carroll/Whiteside counties, and sand prairies and sand savannas of Big River State Forest in northern Henderson County.

### **Streams Campaign**

The Streams Campaign outlines several issues related to stream impairments. The campaign focuses on addressing issues related to pollution to agricultural runoff, sedimentation, riparian habitat degradation, declining aquatic animals, and the proliferation of invasive species. In addressing these issues, the campaign focuses on improving restoration efforts in high-quality ecological communities, while identifying and filling information gaps in regards to the health and distribution of native flora and fauna (IL DNR, Wildlife Action Plan, 2005).

Another issue identified by local stakeholders was the need for interagency cooperation with regards to management and restoration of tributaries and their impact on the Mississippi River. For example the U.S. Army Corps of Engineers (ACE) does extensive restoration and management on the main stem of the Mississippi River, but are often unable to work within the “upland streams” which have a great impact to the main stem as a result of sedimentation, agricultural runoff, and related issues associated with land management within the uplands. Cooperation between those land managers working in on stream rehabilitation in the uplands, especially the Natural Resource Conservation Service (NRCS) and Soil and Water Conservation District (SWCD), and those working in the floodplain, ACE and the U.S. Fish and Wildlife Service (FWS), is of critical importance. The IL DNR can play a role in mediating a working relationship between those that work on upland streams and those working within the main channel and associated floodplain.

Related to the main stem of the Mississippi River, it is worth pointing out that the upper portion of the Mississippi River which lies within the UMR COA (from Pool 11 to Pool 19) is different from that within the lower portion (Pool 20 – Pool 26). The upper/northern floodplain of the upper/northern portion of the Mississippi River is constrained by higher bluff walls (cliffs) located closer to the river with fewer levee districts protecting farmland as compared to the lower/southern portion. The confluence of the two different portions (Pool 19, just above the historic rapids at Lock and Dam 19 – Keokuk, Iowa) serves as a critical migratory foraging area for the vast majority of diving ducks passing through the Mississippi Flyway. Groups of 200,000 to 300,000 canvasbacks gather each fall between Montrose, Iowa and Nauvoo, Illinois to feed on the abundance of invertebrates. Lesser Scaup numbers can reach 500,000. Over the past decade waterfowl researchers have focused on the foraging area at Pool 19 to determine if a decline in scaup numbers is related to changes in their diet at this location (Afton, 2010). This divergent area, especially below Lock and Dam 20 has some of the world’s highest densities of Asian carp (Lohmeyer and Garvey, 2008). Extensive research on the

ecological impact of Asian carp on the Mississippi River system will remain a focus in this region.

### **Wetlands Campaign**

The Wetlands Campaign is devoted to the restoration of quality wetland habitat, as it provides a large number of ecological services. Over 90% of Illinois' wetlands have been drained and converted for the purposes of development and agricultural production. The campaign seeks to improve the quality of existing wetland habitat, develop new wetland habitats in priority areas, and increase efforts to educate the public on water quality and the ecological value of wetland habitat (IL DNR, 2005). The IL WAP identified the need to increase the amount of wetland habitat statewide by 10% and the need to increase the amount of marsh habitat by 20%. These habitat goals were incorporated into this plan in the hope that wetlands, particularly marsh habitat, will be a priority focus for this campaign.

While the Illinois River has an extensive network of backwater habitats managed for moist soil plants utilized by migratory waterfowl, these areas are lacking within the floodplain of the Mississippi River. This is due in part to differences between the Illinois and Mississippi rivers – the Mississippi being a much wider river, bound in the north by high bluffs, and with extensive agricultural production protected by massive levee systems in the southern portion. In many areas, waterfowl use within the UMR is restricted to the main channel with the exception of southern Calhoun County where the confluence with the Illinois River has provided excellent conditions for waterfowl foraging sites within the Mississippi River State Wildlife Area. Backwater sloughs and marshes in the northern reach (Pools 12, 13, 14, and 18) are current priorities for the ACE and FWS.

### **Invasive Species Campaign**

Exotic, invasive species threaten the health of native ecosystems throughout the state. The Invasive Species Campaign was developed to attain a better understanding of how invasive species are transmitted and proliferated. The campaign also seeks to identify effective measures to control the spread of invasive species and implement actions in key geographic areas to control them (IL DNR, Wildlife Action Plan, 2005).

In recent years, the push to develop area specific Cooperative Weed Management Areas (CWMA) within the UMR COA has been met with limited success. These locally driven efforts have the potential to organize groups of citizen volunteers and professionals for the purpose of prioritizing control of invasive species. Unfortunately, a lack of funding and human resources to devote to coordination for CWMA is providing a difficult challenge. The need to make strategic decisions to target limited funds to control invasive species in priority areas remains essential.

## **Land and Water Stewardship**

The Land and Water Stewardship Campaign was developed to improve management of land and water resources on private and public lands. Since much of the area of the state is in private ownership, the campaign realized the importance of implementing the IWAP on private lands to have a widespread impact. The campaign seeks to promote stewardship programs and education (IL DNR, Wildlife Action Plan, 2005).

Stewardship is necessary for the maintenance of forest, grassland, streams, and wetland habitats prioritized within other campaigns resulting in some overlap of tasks and priorities. Having a separate campaign focusing on land and water stewardship allows for the focus to shift to resource allocation, how management is implemented across various habitats within the landscape, and how public outreach and education is conducted to garner additional public support.

## **Species of Greatest Need of Conservation**

Although not treated as a separate campaign in the IL WAP, local partners within the UMR COA felt that planning efforts should address wildlife “Species of Greatest Need of Conservation” (SGNC) as a separate item. The IL WAP does address SGNC at length with respect to priority locations that are critical to the conservation of imperiled wildlife. The importance of various habitat types to SGNC is discussed within the IL WAP. Locations within the UMR COA identified by the IL WAP as having critical wildlife habitat included: upland forests within the Wisconsin Driftless Area and Pere Marquette State Park, wooded wetlands within the Great River National Wildlife Refuge (Long Island Division), and streams within the Rock River and the Upper Mississippi (above Keokuk, Iowa/Pool 19). While these areas have been identified in the IL WAP as critical habitats, it does not serve as a comprehensive list of habitats supporting SGNC. For example, the sand prairies occurring in the northern portion of the COA support a number of SGNC.

## **Green Cities Campaign**

Development has traditionally had an adverse impact on wildlife habitat throughout the state. The IWAP recognizes that development should occur in a way that minimizes these adverse impacts on the land, while promoting public access and use. The campaign seeks to implement wildlife habitat conservation efforts in developed areas, where possible, and promote water quality improvements through the use of green infrastructure (IL DNR, 2005).

This plan used urban population centers as a focal point for outreach to effectively get resources on the ground in more rural areas. For example, to get additional human resources necessary for management in northern Henderson and Mercer Counties, one

needs to use the organizing power of the masses found within the Quad Cities to recruit people to assist with prescribed burn crews, tree planting and other activities where additional labor is critical. Some of these urban areas have county forest preserves or municipal park districts. Thus far, these county and municipal resources have been underutilized and the cooperation with these and with local community colleges and universities is likely the best option to provide green planning in developed areas.

## **Cultural Resources**

Cultural resources were not addressed in the IL WAP; however, since its completion in 2005, protection of archaeological sites has been used within the UMR COA as a tool to enhance efforts for natural areas protection. Examples include: Wapello, Casper Bluff and Keough Mounds Land and Water Reserves in Jo Daviess County, and McFarland Hill Land and Water Reserve in Pike County. These sites were located within a priority area and protected based solely on their archaeological significance, with the exception of Wapello, which also included a small portion of the Apple River INAI site. Wapello and McFarland Hill represent Native American village sites and Casper Bluff and Keough Mounds protect some of the few remaining intact effigy mound complexes left in Illinois.

The Illinois Nature Preserves Commission (INPC) has the responsibility for protection of cultural resources within several pioneer cemeteries found within the Illinois Nature Preserves System. Only one of these cemeteries, found within Elton Fawks Bald Eagle Refuge Nature Preserve, is located within the UMR COA. Local partners working within the UMR COA were in agreement that Cultural Resources be treated as a campaign/priority goal in each of the 4 areas.

## **VII. Description of Areas within Upper Mississippi River COA**

The original boundary map developed for the UMR COA followed the Illinois side of the Mississippi River, extending five miles inland from the river (eastward). The COA extends southward from the Wisconsin border to five miles south of the confluence of the Illinois and Mississippi Rivers and Pere Marquette State Park. Detailed discussion on the boundaries of the UMR COA, for the purposes of the writing of this plan, were brought up by partners actively working in each of the four areas on goals identified in the IL WAP.

The following maps, presented after a brief description of each area, reflect those discussions. For the purpose of adjusting the UMR COA as a whole, the following changes were recommended: 1) incorporate the lower Rock River from Big Bend State Fish and Wildlife Area downstream to merge with the original UMR COA map, including 2.5 miles on each side of the Rock River; 2) expand the size of the eastern COA border to

include the west-facing bluffs in areas where the leveed floodplain exceeds 5 miles in width (primarily Pike County / Sny Levee District); 3) incorporate the southwestern half of the Pere Marquette COA into the UMR COA to include the priority upland forest block from Pere Marquette State Park to the Copperhead Hollow Unit and northward to include the ridgeline of hill prairies in Greene County before merging border with the original UMR COA to capture additional hill prairie and glades eastern in Calhoun County; 4) extend the southern end of the UMR COA, maintaining the 5 mile width to include the rest of the Mississippi River State Fish and Wildlife Area at Lock and Dam 26, as well as the chain of hill prairies extending through the west-facing bluffs of Jersey County into the northwestern tip of Madison County.

The partners within each of the four areas also requested modified projections of their respective portions of the map. In the case of the Driftless and Quad Cities areas, this resulted in some overlap. The overlap represents the work site obligations and priorities of the various partners working in the separate areas. FWS staff working in the Driftless Area are responsible for management of the Mississippi River wetlands extending from Jo Daviess County south to the northern tip of Rock Island County. This is known as the Upper Mississippi River National Wildlife and Fish Refuge and is under the jurisdiction of the Savanna FWS office.

The partners working in the Quad Cities area, including the Illinois Historic Preservation Agency and Interstate RC&D, have been focused on management of upland forest habitat from Rock Island County northward to Albany Mounds in Whiteside County. Currently, the work implemented by partners in the Driftless area extending southward remains exclusive to the Mississippi River wetlands and the Quad Cities partners northward involvement is restricted to the uplands so there is little if any actual overlap in the work areas. However, overlap between the different areas is not and should not be discouraged. Consultation and cooperation between partnerships and various agencies and NGOs working in single or multiple areas should always be encouraged.

## **Driftless Area**

The northern portion of the UMR COA consists of 3 natural divisions, as defined by the Natural Divisions of Illinois: Wisconsin Driftless, Upper Mississippi River and Illinois River Bottomlands and the Illinois River and Mississippi River Sand Areas (Figure 2). Of these the Wisconsin Driftless Division is most notable for its uniqueness when compared with the rest of Illinois. The “Driftless Area” contains many SGNC and listed endangered and threatened species that are not found anywhere else in the state.

The northernmost region of the UMR includes approximately 35,000 acres currently owned and/or managed for conservation, most of which also lies within 3 additional overlapping COAs: Lost Mound – Hanover Bluff – Mississippi Palisades (LMHBMP), Wisconsin Driftless Forest (WDF), and Apple River (AR). Partners within this region have

been actively utilizing the IL WAP and have implemented several State Wildlife Grant (SWG) projects since the completion of the IL WAP in 2005. The partners have chosen to focus on many of the goals identified in the IL WAP for these COAs. One of the primary goals has been to protect and/or acquire land within the LMHBMP COA to complete a river to bluff continuum of wildlife habitat from the Lost Mound Unit to Hanover Bluff to the Mississippi Palisades. These efforts have also focused on land acquisition and protection within the lower (downstream) portion of the Apple River (AR COA).

Secondary focus has been on protection and acquisition of the forested blufflands of the Wisconsin Driftless Forest (WDF COA) extending northwards from Hanover Bluff towards Galena with a special emphasis on contiguous forests, rare algific talus slope communities, and archaeologically significant effigy mound groups. Much of these efforts have been spearheaded by the Jo Daviess Conservation Foundation (JDCF) with the assistance of key partners including: IL DNR, FWS, The Prairie Enthusiasts (TPE), Natural Lands Institute (NLI), and the Conservation Guardians of Northwest Illinois (the Guardians).



Figure 2. Driftless Area of Upper Mississippi River COA (IL DNR, 2005)



## Quad Cities Area

The Quad Cities area forms the anchor of the next region of the UMR COA. This area consists of 3 natural divisions: Upper Mississippi and Illinois River Bottomlands, Illinois River and Mississippi River Sand Areas and the Middle Mississippi Border. It includes over 30,000 acres in conservation ownership and/or management (Figure 3).

Conservation efforts within the Quad Cities Area are largely guided by the efforts of the Interstate Resource Conservation and Development (Interstate RC&D), which has been actively organizing partnerships and seeking funds to implement projects related to IL WAP goals since 2008. The partners within this region have been focused on several key natural areas within the UMR COA including: Black Hawk State Historic Site/Black Hawk Forest Nature Preserve, Collinson Ecological Field Station/Josua Lindahl Hill Prairie Nature Preserve, Milan Bottoms, Indian Bluff Hill Prairie, Loud Thunder Forest Preserve, Illiniwek Forest Preserve, Elton Fawks Bald Eagle Refuge Nature Preserve, and Albany Mounds. All of these sites, with the exception of Illiniwek, Elton Fawk Refuge, and Albany Mounds, also lie within the lower (downstream) portion of the Rock River COA. Reducing the amount of stormwater runoff from urban areas and control of exotic and invasive plants have been top priority action items.

A U.S. Forest Service grant for hazardous fuels reduction was awarded to the Interstate RC&D to fund a \$242,000 project for the purpose of reducing hazardous fuels to aid in prescribed fire management and for invasive brush control at Black Hawk Nature Preserve and Josua Lindahl Hill Prairie Nature Preserve. Additional attempts to secure funding to support a prescribed fire alliance and the formal establishment of a Cooperative Weed Management Area (CWMA) are underway. River Action (RA), an NGO focused on recreational opportunities, public outreach, and green development within the Quad Cities has received a \$90,000 grant from the McKnight Foundation to enhance public use on natural areas and other “wild places” within the bi-state region.

Additional efforts by groups of fewer partners have focused on key natural areas south of the Quad Cities. These areas lack an urbanized base of human resources, but are none-the-less significant from a standpoint of providing critical wildlife habitat. These areas include: New Boston Marsh (Mercer County), Big River Sand Forest (Henderson County), associated privately-owned hill prairies within the bluffs, and other tracts of bottomland forest managed for wildlife habitat.

The planning for the Quad Cities portion of the UMR COA was done through the efforts of a steering committee consisting of 1-2 representatives from key government agencies (federal, state, and municipal) along with input from additional advisors within the represented agencies, and also from NGOs involved in conservation work within this portion of the UMR COA. The steering committee consisted of the following members: Stephen Johnson (ACE), Jon Duyvejonck (FWS), Joe Gates (NRCS), Matt Schramm and Marilyn Andress (RICO SWCD), Diane Tecic (IL DNR, Natural Heritage), Karen Rivera (IL

DNR, Fisheries), Scott Schaeffer (IL DNR, Wildlife), Angella Moorehouse (INPC), Jim King (Interstate RC&D), and Liz Haynes (CES). The output of the Quad Cities UMR COA steering committee was instrumental in the development of content for the overall COA plan.

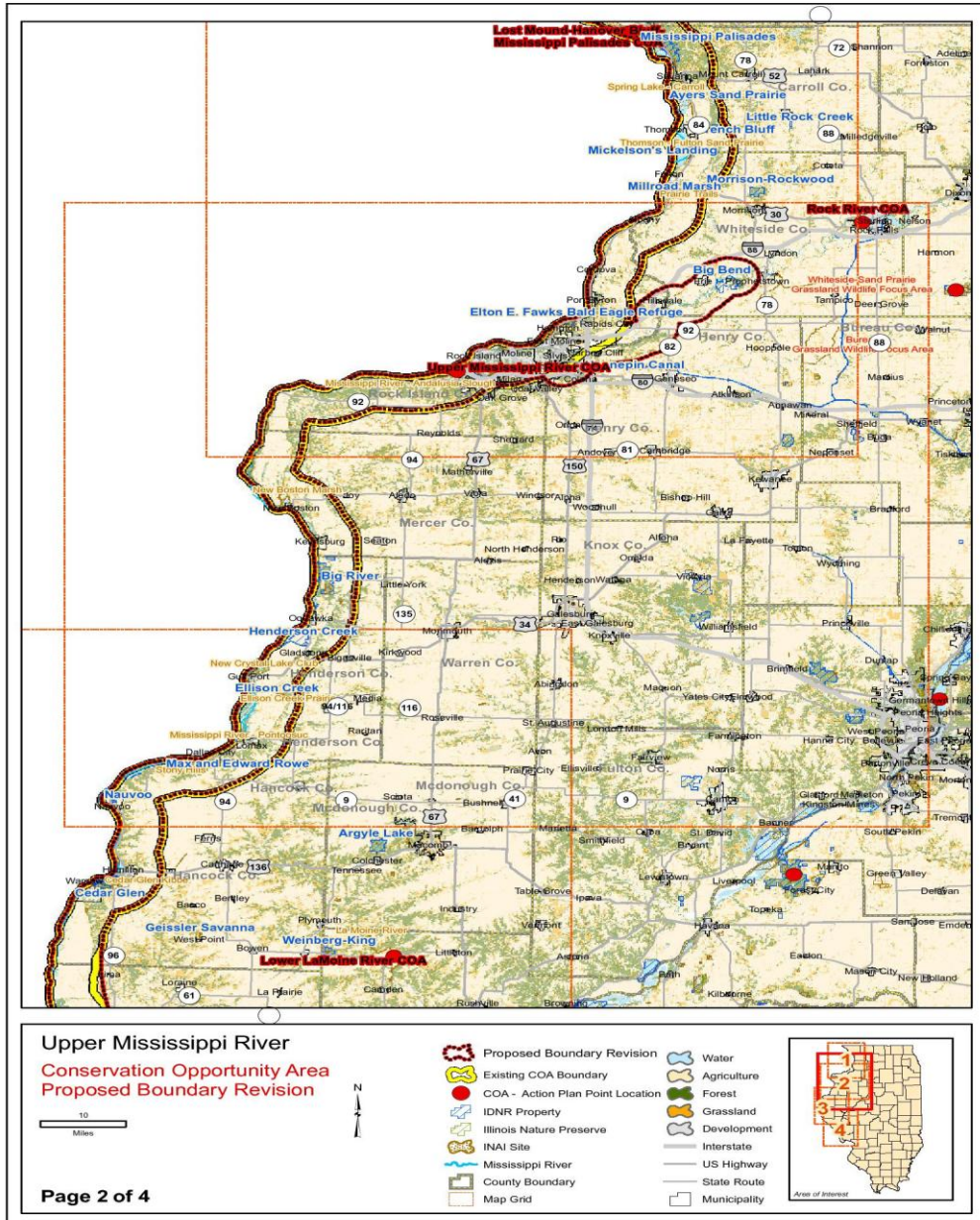


Figure 3. Quad Cities Area of Upper Mississippi River COA (IL DNR, 2005)

## Quincy Area

Heading southward, the next major urbanized center within the UMR COA is Quincy. There are two natural divisions within the Quincy Area: Upper Mississippi and Illinois River Bottomlands and the Middle Mississippi Border (Figure 4). The area includes over 19,000 acres in conservation ownership and/or management. While many of the potential partners in this area have been working independently, there is linkage to be made of these independent projects, most notably the habitat link from Quincy Bay (Quincy Park District) north to Long Island (FWS) and Bear Creek (Adams and Hancock county SWCD/NRCS; private landowners). The IL WAP also identifies the Upper Mississippi River near Keokuk, Iowa (Pool 19/Mississippi River – Nauvoo) as a priority area. Additional key wildlife habitat areas include: Cedar Glen/Kibbe Field Station (IL DNR, INPC, Western Illinois University) and Stony Hills – Dallas City Wetland (Prairie Land Conservancy, INPC, Hancock County NRCS, Dallas City), both located in Hancock County.

Prairie Land Conservancy (PLC), a regional land trust affiliated with Prairie Hills Resource Conservation and Development (RC&D), has been actively pursuing land protection within west-central Illinois for the past four years. PLC owns and manages Stony Hills Nature Preserve (196 acres) which serves as an anchor point for one of three focus areas within the Quincy UMR COA plan. The La Moine River Ecosystem Partnership (LMREP), organized as part of the IL DNR Conservation 2000 (C2000) program, has recently extended their coverage to include all of Hancock County.

Within the forested bluffs and adjacent floodplain forests south of Lock and Dam 19 (Keokuk, Iowa) lies the Cedar Glen/Kibbe Macrosite. This serves as a second focal point for the Quincy Area of the UMR COA. The IL DNR owns and manages the 1205-acre Cedar Glen Natural Area, which includes the Mississippi River Sand Hills Nature Preserve (45 acres), Cedar Glen Nature Preserve (617 acres), and the Cedar Glen Land and Water Reserve (270 acres). Western Illinois University (WIU) owns an additional 251 acres and maintains the Alice L. Kibbe Life Sciences Station with a focus on research pertaining to large river ecology.

The Quincy Park District (QPD) owns and manages 950 acres of park land within the city limits of Quincy. QPD has been actively working with the Quincy Park Foundation and the engineering firm, Klinginger and Associates, to support recreational activities and economic development based on eco-tourism concepts using goals which complement the IL WAP. The park district is in the early stages of learning about the IL WAP and how partnerships based on IL WAP can benefit area agencies and organizations with shared goals.

Outreach is needed to form a more cohesive coalition of partners within this area. The potential for cooperation with QPD lies in the corridor linkage between Quincy Bay northward to the Long Island wetland complex, owned by ACE and managed by ACE and



FWS, to Bear Creek. Hancock and Adams County SWCDs, in cooperation with the NRCS, completed an extension conservation plan for the Greater Bear Creek Watershed in 2005. There could be great benefits to the revitalization of this plan, incorporating the broader landscape to extend southward to include Long Island and Quincy Bay, along with efforts to increase inter-agency cooperation.

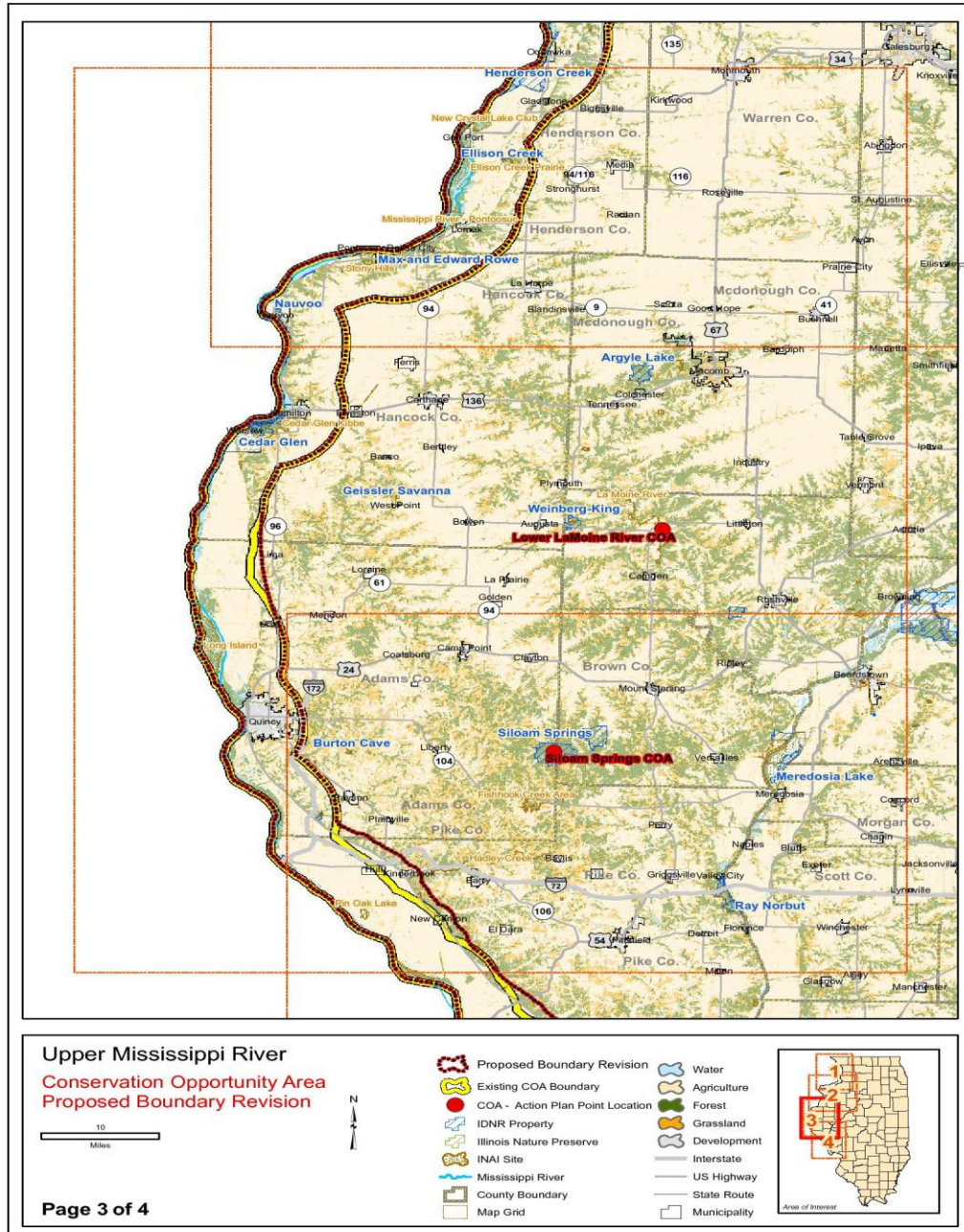


Figure 4. Quincy Area of Upper Mississippi River COA (IL DNR, 2005)

## **Pere Marquette Area**

The southernmost region of the UMR COA includes two additional COAs: Hill Prairie (North Section) and Pere Marquette (Figure 5). These COAs define the priority focus for this portion of the UMR COA. There are also two natural divisions within this area: Middle Mississippi Border (Driftless Section in far southern Pike and Calhoun Counties, and a glaciated section in Pike County east of the Illinois River), and the Upper Mississippi and Illinois River Bottomlands (Illinois River Section).

Since 2007, many of the partners working in this region have also participated in IL WAP planning for the Southwestern Illinois Wildlife Action Plan for the Hill Prairie Corridor (Hill Prairie COA South Section) and the Karst Sink Hole Plain COA; combined areas known as the Blufflands Conservation Corridor. There are over 32,000 acres of land owned and/or managed for conservation in the area. Partners within the Pere Marquette area recognized the need to restore hill prairie, glades, limestone cliffs and other blufftop communities under serious threat of woody invasion along much of the river bluffs. As the vast majority of the high priority blufflands remains in private ownership, outreach to obtain landowner support is essential. Additional resources including funding and improvements in strategic management will also be of benefit.

This portion of the COA has a diverse base of agency and NGO stakeholders actively managing land and water resources in area. The FWS manages the Two Rivers Wildlife Refuge, which provides a variety of aquatic, wetland, and floodplain forest habitat types. The southwestern part of Calhoun County, extending into eastern Jersey and Madison counties includes the Mississippi River State Fish and Wildlife Area (MRSFWA) managed by IL DNR. This large complex of wetlands consists of 16,875 acres managed for wetland habitat enhancement and public recreation. This management is made possible through a cooperative agreement with FWS and a cooperative lease with ACE. The MRSFWA provides essential resting and foraging habitat for migratory and wintering waterfowl and other waterbirds traveling through the Mississippi Flyway.

The 8141-acre Pere Marquette State Park, owned and managed by the IL DNR, also serves as a major focal point for this area of the COA, as it provides significant tracts of contiguous upland forest habitat. Linkage between the main portion of the state park with the Copperhead Hollow unit to the north and surrounding upland forest is a priority focus identified by the IL WAP as part of the Pere Marquette COA (IL DNR, 2005). There are also a number of private organizations that manage lands along the southern portion of the Pere Marquette Area which could provide much needed support for the forest connectivity and habitat enhancement of this focus area.

While the IL WAP speaks repeatedly about the need to connect the floodplains with the bluffs (river to bluff continuum concept), the partners within the Pere Marquette area felt that it was important to consider management of the upland forests unique from

the management of the floodplain forests and wetlands. A distinction between the uplands and bottomlands also exists in the priorities for which each are managed in Calhoun/Jersey counties. Public recreation plays an important role in the management decisions in this region, and management for waterfowl hunting and fishing differs from management for upland game (deer and turkey) hunting.



Figure 5. Pere Marquette Area of Upper Mississippi River COA (IL DNR, 2005)



## **VIII. Regional Goals and Objectives for the Upper Mississippi River COA**

Since this plan serves as a cooperative partnership between agencies and NGOs in the Upper Mississippi River COA, it was vital to develop goals and objectives that reflected conservation priorities for the region. To truly complement the IL Wildlife Action Plan, it was also necessary to ensure that the goals addressed each of the habitat conservation campaigns.

These broad-based goals served as a guide in the development of specific actions items for each of the four areas in the COA (Appendix I).

### **Forest Campaign**

**Goal 1 – Conserve, restore, and manage forest, woodland and savanna ecosystems and their ecological processes. Increase amount of functional native wooded habitat by 10%.**

Objective 1: Conserve large forest blocks and establish ecologically sustainable corridor routes to connect them.

Objective 2: Implement sustainable forestry practices on existing private and public wooded lands to enhance dominance of mast-producing trees and maintain diverse and healthy forest, woodland, and savanna communities.

Objective 3: Restore, sustain, and preserve high quality forest, woodland and savanna woodland natural communities.

Objective 4: Increase native forest, woodland and savanna acreage by expanding reforestation and tree planting activities.

### **Farmland and Prairie Campaign**

**Goal 2 – Conserve, restore, and manage native prairie ecosystems and their ecological processes, including grasslands and hill prairies and their adjacent bluff habitats.**

Objective 1: Restore, sustain, and preserve high quality prairie natural communities within natural divisions.

Objective 2: Manage existing native prairie communities (remnants), and restore additional areas of functional grasslands.

Objective 3: Restore the natural landscape continuum of a functional river to bluff ecosystem.



### **Streams Campaign**

**Goal 3 – Maintain integrity of stream and river ecosystems and their riparian corridors and improve water quality and connectivity, where appropriate, within the Upper Mississippi Watershed.**

Objective 1: Restore and maintain main stem (Mississippi River) and main stem-to-tributary connectivity on key local rivers and streams.

Objective 2: Restore, sustain, and preserve high quality stream natural communities with natural divisions.

Objective 3: Restore and maintain the natural stream dynamics and ecological processes within key streams, wetland communities, and watersheds to sustain essential habitat for wildlife “Species of Greatest Need of Conservation” (SGNC), especially migratory birds, mussel, and fish communities.

### **Wetland Campaign**

**Goal 4 – Restore, enhance, and manage wetland habitat within the river bottomlands to improve habitat quality for all wetland types with an emphasis on improving marsh communities by 20%. Monitor wildlife usage of targeted sites to determine success of restoration/improvement projects on wetland habitats.**

Objective 1: Restore and maintain targeted, high priority wetland communities to sustain essential habitat for SGNC, especially migratory birds, mussel and fish communities.

Objective 2: Restore and rehabilitate backwater wetlands to provide a diversity of topographic depths, with an emphasis on maintaining areas for overwintering fish survival within the main stem and backwaters of the Mississippi River.

Objective 3: Restore, sustain, and preserve high quality wetland natural communities within natural divisions.

### **Invasive Species Campaign**

**Goal 5 – Reduce the threat and impacts of invasive plants and animals throughout the COA and especially on high priority lands through active control, increasing the capacity to control, and increasing general awareness of the problem through education and outreach.**

Objective 1: Establish and/or maintain a Cooperative Weed Management Area (CWMA) to address invasive plants within the COA.

Objective 2: Promote the use of native plants throughout the COA.

Objective 3: Implement invasive species surveillance, monitoring and control by prioritizing work on high quality natural habitats, long-term protected lands, and large habitat blocks.

### **Land and Water Stewardship Campaign**

#### **Goal 6 – Improve the stewardship and protection of both public and private lands and waters in the COA.**

Objective 1: Create and/or maintain a fire alliance for each area of the COA to promote and expand the use of prescribed fire as a safe and effective management tool to restore local ecosystems.

Objective 2: Provide technical assistance, cost-sharing and other incentives for habitat restoration and management, invasive species control, use of prescribed fire and sustainable forestry techniques, as well as other forms of land stewardship on private lands.

Objective 3: Prioritize and increase focused stewardship on high quality natural communities within natural divisions.

### **Species of Greatest Need of Conservation (SGNC)**

#### **Goal 7 – Conserve the diversity of fish, wildlife, and plants, with a special focus on wildlife SGNC.**

Objective 1: Improve, enhance, and restore critical habitat for native migratory bird, fish and mussel populations.

Objective 2: Improve ecological processes of wetland habitats for the benefit of sensitive habitat-specific species.

Objective 3: Determine the status of listed wildlife and plant species and high quality vegetative communities identified by the Illinois Natural Areas Inventory (INAI).

### **Green Cities Campaign**

#### **Goal 8 – Integrate practices of sustainable community development through management and conservation of natural resources and wildlife.**

Objective 1: Manage conservation lands and waters within and adjacent to urban landscapes to provide wildlife-related recreational opportunities in balance with wildlife habitat needs. Increase public access for compatible recreation within conservation lands and waters, where appropriate.

Objective 2: Educate local residents to create a better understanding of the need to preserve natural communities and habitats, and the need to manage land and waters to maintain or improve water quality.

Objective 3: Provide, manage, and maintain a sustainable patchwork of natural habitats and agricultural uses.

### **Cultural Resources**

**Goal 9 – Protect and restore significant cultural resources including effigy mounds, Native American burial ceremonial and village sites, and pioneer cemeteries.**

Objective 1: Protect significant archaeological sites and other cultural resources.

Objective 2: Educate local citizens in the proper methods of caring for cultural sites.

## **IX. Conclusion**

The Upper Mississippi River Conservation Opportunity Area (UMR COA) Wildlife Action Plan reflects regional conservation priorities identified by a diverse group of natural resource managers. This document serves as a conservation tool for managers within the COA to guide implementation of the Illinois Wildlife Action Plan. It provides broad-based goals and objectives for managing habitat for Species in Greatest Need of Conservation throughout the region, while also providing more detailed, measurable action items for implementation at the local level.

Action item charts (Appendix I) were developed for each of the four areas of the UMR COA to guide coordinated management and implementation at the local level. The management actions included in the charts were identified as priorities by partners. Subsequently, recommendations have been provided in regards to personnel and financial resources for the implementation of each management action. The recommendations serve as a guide for potential needs and resources for the implementation and management of habitat projects, and are not meant to reflect mandatory assignment of duties or appropriation of resources.

To effectively implement the IWAP, it is necessary to ensure that the goals, objectives, and action items identified in this plan coincide with the priorities of the state Conservation Campaigns. Throughout the planning process, there has been active involvement by natural resource managers in the COA. Upon completion of the plan, it is vital to continue these coordination efforts to ensure the quality and connectivity of critical habitats at both regional and local levels. The purpose of this document is to serve the needs of individuals, agencies, and organizations involved in wildlife habitat conservation within the COA; therefore, the plan should be updated regularly (biennially for the action items) to reflect the ever-changing needs of those implementing the plan.

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### **Websites**

Illinois Natural Areas Inventory

Website for county listings of INAI sites:

[http://dnr.state.il.us/conservation/naturalheritage/pdfs/inai\\_list\\_website.pdf](http://dnr.state.il.us/conservation/naturalheritage/pdfs/inai_list_website.pdf)

Illinois Nature Preserves System

Website for county listings of INPC sites:

[http://dnr.state.il.us/conservation/naturalheritage/pdfs/nature\\_preserves\\_list\\_website.pdf](http://dnr.state.il.us/conservation/naturalheritage/pdfs/nature_preserves_list_website.pdf)

Illinois Natural Areas Divisions (GAP List)

Website for IL DNR Natural Heritage with background on Natural Divisions:

<http://dnr.state.il.us/conservation/naturalheritage/florafauna/document.htm>

Website for INAI Communities:

<http://www.plantbiology.siu.edu/Invasives/Community%20types.pdf>

Federal and State Endangered/Threatened Species (definition of site suitable habitat)

Website for county listings of E/T species:

[http://dnr.state.il.us/conservation/naturalheritage/pdfs/et\\_species\\_list\\_website.pdf](http://dnr.state.il.us/conservation/naturalheritage/pdfs/et_species_list_website.pdf)

Illinois Wildlife Action Plan

Website for IWAP: <http://dnr.state.il.us/ORC/WildlifeResources/theplan/>

Habitat Campaigns (information in IWAP)

Conservation Opportunity Areas (information in IWAP, draft maps available from IL DNR) Species of Greatest Need of Conservation

Website for SGCC:

<http://dnr.state.il.us/ORC/WildlifeResources/theplan/species.htm>

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Created by: Illinois Natural History Survey (Critical Trends Project)

Website: <http://www.inhs.uiuc.edu/cwe/rra/rra.html>

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## Appendix I. COA Regional Action Items

The following action items have been identified by partners working in the COA to fulfill the goals and objectives of the IWAP. They are intended to serve **only as recommendations**; therefore, estimated budgets and potential personnel are not to be viewed as mandatory for participation in the UMR COA effort. Appropriate interagency coordination and endorsement is integral to successfully carrying out the goals, objectives, and action items included in the UMR COA Wildlife Action Plan.

Another purpose of the action item charts is to document implementation of the IWAP, and for partners to share information about current and future habitat projects.

### Driftless Regional Action Items

**Goal 1: Conserve, restore, and manage forest, woodland and savanna ecosystems and their ecological processes. Increase amount of functional native wooded habitat by 10%.**

#### IL WAP Forest Campaign

**Objective 1: Conserve large forest blocks and establish ecologically sustainable corridor routes to connect them.**

	Action Item	Unit of Measure	Timeline	Budget	Personnel	Measure of Success
1.1.1	Reduce fragmentation of large contiguous forests (Mississippi Palisades - Hanover Bluff - Lost Mound north to Witkowski State Wildlife Area and Winston Tunnel).	Reforest 100 acres	end of CY 2013	\$50,000	IL DNR, JDCF, TNC, TPE, FWS, INPC	Complete reforestation planting on 100 acres
1.1.2	Refer local landowners to cost-share programs such as Environmental Quality Incentives Program (EQIP) and IL Forest Development Act Program	5 priority landowners contacted and referred to appropriate conservation program	end of CY 2013	\$3,000	INPC, JDCF	Increased enrollment in conservation programs in Jo Daviess, Whiteside, and Carroll Counties

1.1.3	Support efforts toward a Driftless Area Forest Legacy Program designation	Identify priority area and prepare Forest Legacy application	End of CY 2013	\$3,000	Blackhawk Hills RC&D, JDCF	Achieve designated area within Driftless Area of COA
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**Objective 2: Implement sustainable forestry practices on existing private and public wooded lands to enhance dominance of mast-producing trees and maintain diverse and healthy forest/woodland/savanna communities.**

	Action Item	Unit of Measure	Timeline	Budget	Personnel	Measure of Success
1.2.1	Prioritize invasive species control within high quality woodland habitat within conservation ownership/management. Work with partner agencies to enroll targeted lands into cost-share programs to accomplish restoration.	Treat 100 acres	end of CY 2013	\$50,000	IL DNR, JDCF, TPE, FWS, NRCS, SWCD, TNC, INPC	Enrollment in restoration programs for priority areas initiated; 100 acres treated for exotic/invasive species
1.2.2	Conduct prescribed burns on private and public forest/woodland lands and adjacent buffer.	Burn 250 acres	annually	\$70,000	IL DNR, JDCF, FWS, NRCS, SWCD, TNC, TPE, INPC	500 acres burned

**Objective 3: Restore, sustain and preserve high quality forest, woodland, and savanna natural communities.**

	Action Item	Unit of Measure	Timeline	Budget	Personnel	Measure of Success
1.3.1	Identify all INAI sites with Category 1 high quality forest/woodlands communities and assess protection and stewardship needs for each site.	Prepare chart listing site needs	end of CY 2013	\$3,000	INPC, IL DNR, JDCF, TNC	Completion of chart; map areas

1.3.2	Conduct targeted management at priority natural areas (focal area: Mississippi Palisades - Hanover Bluff - Lost Mound, Witkowski SWA, Winston Tunnel) to help sustain healthy forest communities by mitigating fuels that are hazardous to wildlife, re-introducing prescribed fire as a management tool, and controlling invasive woody species.	Treat 300 acres	end of CY 2013	\$100,000	FWS, IL DNR, JDCF, NLI, TNC, TPE, NRCS, SWCD	300 acres treated/actively managed
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**Objective 4: Increase native forest, woodland, and savanna acreage by expanding reforestation and tree planting activities.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
1.4.1	Identify priority focus areas for targeting additional reforestation activities through review of existing agency programs, GIS data, and census of landowner databases.	Prepare summary report on applicable programs, priorities focus areas, and willing landowners	end of CY 2013	\$2,000	JDCF, NLI, TNC, TPE, IL DNR, FWS, SWCD, NRCS, CES	Completion of report, with maps
1.4.2	Identify potential sources of funding for reforestation initiatives to enhance cost-share programs.	Prepare list of funding sources	end of CY 2013	\$1,000	CED, SWCD, NRCS, JDCF	Completion of list



**Goal 2: Conserve, restore, and manage native prairie ecosystems and their ecological processes, including grasslands and hill prairies and their adjacent bluff habitats.**

**IL WAP Farmland and Prairie Campaign**

**Objective 1: Restore, sustain and preserve high quality prairie natural communities within natural divisions (Upper Mississippi/Illinois River Bottomlands, Middle Mississippi Border, Rock River Hill Country, Illinois/Mississippi River Sand Area).**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
2.1.1	Prepare plan to restore "perched dunes" at Hanover Bluff and sand prairie and sand savanna ecosystem at Lost Mound to create habitat capable of maintaining viable populations of native habitat-specific grassland birds, including permanent residents and migratory species. Increase use of grassland habitat by 20% for migratory and breeding grassland sparrows, bobolinks and meadowlarks.	Write plan; collect baseline data on grassland bird population	end of CY 2013	\$ 40,000	FWS, IL DNR, INHS	plan completed; bird survey completed and summarized
2.1.2	Identify all Category 1 prairie INAI sites within the COA and within each natural division and assess protection and stewardship needs for each site.	Prepare chart listing sites and their needs	end of CY 2013	\$3,000	INPC, IL DNR, TNC, JDCF	Completion of chart, with map
2.1.3	Create and maintain landowner contact information for priority prairie sites.	Prepare and maintain spreadsheet	end of CY 2013	\$1,200	INPC, IL DNR Natural Heritage, JDCF, TPE, TNC	Completion of spreadsheet

**Objective 2: Manage existing native prairie communities (remnants) and restore additional areas of functional grasslands.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
2.2.1	Identify priority focus areas and work with willing landowners to obtain land protection and management agreements of existing prairie remnants.	Maintain list of sites, landowner contacts, potential funding sources	end of CY 2013	\$3,000	SWCD, NRCS, IL DNR, INPC, FWS Private Lands, JDCF, NLI, TNC	Completion of list
2.2.2	Implement management of prairie remnants using appropriate methods to control invasive plant species and promote health of grassland communities. <i>Focus efforts northeast of Galena (largest concentration of rare, remnant hill prairies in NW IL)</i>	Implement management on 20 acres; develop work plans for site(s)	end of CY 2013	\$50,000	SWCD, NRCS, IL DNR, INPC	Work plan completed, management implemented on 20 acres
2.2.3	Prioritize larger-scale grassland habitat projects (Lost Mound, Ayers Sand Prairie, Thomson-Fulton Sand Prairie) where new plantings can be added as buffer to protect and enhance the quality of native grassland habitats on a landscape scale. Target incentives and cost-share programs for new prairie restorations in these areas.	Identify and map landscape scale grassland priority areas; take steps to promote the targeting on incentives and cost-share programs for lands in priority focus area	end of CY 2013	\$10,000	IL DNR, NRCS, FWS, SWCD	Mapping completed; identify incentive/cost-share programs
2.2.4	Enhance capabilities of local natural resource managers and landowners to use prescribed fire as a management tool for restored and remnant prairie/grasslands.	Assist 4 managers/landowners with prescribed fire; host a prescribed fire training workshop	annually	\$10,000	IL DNR, FWS, JDCF, TNC, NRCS, SWCD, TPE, GTA	Assistance provided to 4 managers/landowners; 1 prescribed fire workshop held annually

**Objective 3: Restore natural landscape continuum of a functional river-to-bluff ecosystem.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
2.3.1	Prioritize restoration, management and protection activities for upland and bottomland habitat connection within the Mississippi Palisades - Hanover Bluff - Lost Mound complex. Create maps to include land ownership patterns. Determine potential funding requirements for project implementation.	Identify ownership types (private, public) within the MP-HB-LM complex. Identify potential funding sources for protection and habitat restoration.	by 2013	\$3,000	FWS, IL DNR, JDCF, NLI, TNC, TPE, SWCD, NRCS, CES	List of funding sources for natural community restorations and land protection should be part of larger plan to develop a working chart of funding sources, timelines, contacts for all conservation projects related to COA
2.3.2	Update or expand Hanover Bluff Ecosystem Plan to create a landscape-scale river to bluff management plan for the MP-HB-LM COA. Identify priority habitat corridor connections and implement restoration activities within this area.	Write plan; Initiate restoration activities	end of CY 2013	\$50,000	FWS, IL DNR, JDCF, NLI, TNC, TPE, SWCD, NRCS	Plan completed; restoration activities initiated

**Goal 3: Maintain integrity of stream and river ecosystems and their riparian corridors and improve water quality and connectivity, where appropriate, within the Upper Mississippi River Watershed.**

**IL WAP Streams Campaign**

**Objective 1: Restore and maintain main stem (Mississippi River) and main stem-to-tributary connectivity on key local rivers and streams.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
3.1.1	Identify location/watershed where opportunities exist for improvement of physical riparian and aquatic habitat connections between the main stem and key tributaries.	Identify and map priority watershed or stream segment; Identify potential project sites	by end of CY 2013	\$3,500	ACE, IL DNR, SWCD, EPA	Mapping completed; potential project sites for riparian restorations identified
3.1.2	Investigate the fisheries and mussel populations in tributaries to the Lower Rock River and the Mississippi River watersheds (consult 2011 Basin Survey).	Collect data from fisheries and mussel surveys	by end of CY 2013	\$30,000	ACE, IL DNR, INHS, FWS	Compile data in summary report and distribute to partners

**Objective 2: Restore, sustain and preserve high quality stream natural communities within natural divisions (Upper Mississippi/Illinois River Bottomlands, Middle Mississippi Border, Rock River Hill Country, Illinois/Mississippi River Sand Area).**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
3.2.1	Assess protection and stewardship needs for INAI high-quality streams (i.e., Upper and Lower Apple River).	Prepare chart listing sites and their needs	end of CY 2013	\$3,200	INPC, IL DNR, INHS	Completion of chart

**Objective 3: Restore and maintain the natural stream dynamics and ecological processes within key streams, wetland communities, and watersheds to sustain essential habitat for wildlife SGNC, especially migratory birds, mussel and fish communities.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
3.3.1	Collect baseline data on major streams. Identify major problem areas and develop strategies for restoration of these areas. Identify incised stream channels for potential EQIP riffle projects.	Gather and prepare data summary; Identify and map problem areas; Prepare brief report on potential strategies to restore problem areas	by end of CY 2013	\$5,000	IL DNR, ACE, SWCD, EPA, INHS	Data summary, mapping, report completed
3.3.2	Identify priority watershed/stream section and develop needed steps to establish a water and habitat quality monitoring program within this priority area. Include identification of gaps in baseline information and assessment of effectiveness of stream/watershed restoration efforts.	Identify and map priority site; Prepare report on strategies/needs for the establishment of a water and habitat quality monitoring program.	by end of CY 2013	\$5,000	IL DNR, ACE, SWCD, EPA, INHS	Completion of map and report.
3.3.3	Identify a high priority stream for which to develop and implement a pilot project to target existing federal and state incentive programs for erosion control and water quality improvement projects on private lands. Work with NRCS to potentially develop a 2 year plan for tributary restoration and to increase aquatic connectivity within priority stream watershed.	Identify and map priority stream/watershed; Prepare plan for pilot watershed project and work with willing landowners to begin implementation of BMPs for stream restoration	by end of CY 2013	\$100,000	SWCD, NRCS, IL DNR, EPA, INHS	Plan and map completed; BMP implementation initiated

**Goal 4: Restore, enhance and manage wetland habitat within the river bottomlands to improve habitat quality for all wetland types with the emphasis of improving marsh communities by 20%. Monitor wildlife usage of targeted sites to determine success of restoration/improvement projects on wetlands habitats.**

**IL WAP Wetland Campaign**

**Objective 1: Restore and maintain targeted, high priority wetland communities to sustain essential habitat for SGNC, especially migratory birds, mussels and fish communities.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
4.1.1	Create a new shallow water wetland to help improve local water quality and provide additional habitat for migratory waterfowl.	Creation of shallow water wetland	by end of CY 2013	\$12,000	SWCD, FWS, ACE	Wetland completed

**Objective 2: Restore and rehabilitate backwater wetlands to provide a diversity of topographic depths, with an emphasis on maintaining areas for overwintering fish survival within the main stem and backwaters of the Mississippi River.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
4.2.1	Implement EMP project at Pool 12 to create deeper water fish habitat (6 backwater lakes).	1 EMP project (2 phases)	by end of CY 2014	\$13 mil	ACE, FWS	Successful completion of project

**Objective 3: Restore, sustain and preserve high quality wetland natural communities within natural divisions (Upper Mississippi/Illinois River Bottomlands, Middle Mississippi Border, Rock River Hill Country, Illinois/Mississippi River Sand Area).**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
4.3.1	Identify potential Category I wetland INAI sites and assess protection and stewardship needs for each site.	Prepare chart listing sites and their needs	by end of CY 2013	\$3,000	INPC, INHS, IL DNR	Completion of chart, map areas

**Goal 5: Reduce the threat and impacts of invasive plants and animals throughout the COA and especially on high priority lands through active control, increasing capacity to control, and increasing general awareness of the problem through education and outreach.**

**IL WAP Invasive Species Campaign**

**Objective 1: Establish a Cooperative Weed Management Area (CWMA) to address invasive plants in the Driftless area of northwest Illinois.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
5.1.1	Identify and seek sustainable funding resources for a pilot CWMA in Jo Daviess County.	Submit grant requests; If funded, develop list of priority target invasive and map work priority areas	by end of CY 2013	\$40,000	JDCF, NLI, FWS, ACE, IL DNR, NRCS, SWCD	Grant awarded; list/mapping completed
5.1.2	Host local workshops and field days for private landowners and public agencies to promote awareness of invasive species and appropriate control measures.	Host 2 local workshops; minimum 50 participants; survey to gauge effectiveness of workshop	annually	\$3,000	CES	2 workshops held; 100 participants; productive feedback received

**Objective 2: Promote use of native plants throughout the COA.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
5.2.1	Host native plant sale. Distribute materials on the benefits of native plants.	Sell 2,000 native plants/300 packets of seed; distribute materials at 3 events	annually	\$6,000	TPE, NRCS, SWCD	500 plants 100 seed packets sold; materials distributed at 3 public events

**Objective 3: Implement invasive species surveillance, monitoring and control by prioritizing work on high quality natural habitats, long-term protected lands and large habitat blocks.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
5.3.1	Identify target invasive species within nature preserves, INAI sites, and adjacent buffer areas. Implement control measures at these sites to reduce population and seed production in these target species.	Prepare list of target species; Identify funding sources and other opportunities; Initiate efforts to reduce population size/seed production	by end of CY 2013	\$50,000	IL DNR, INPC, JDCF, NLI, TPE	List completed; funds identified; control measures taken for all priority species identified

**Goal 6: Improve the stewardship and protection of both public and private lands and waters in the COA.**

**IL WAP Land and Water Stewardship Campaign**

**Objective 1: Create a formal Fire Alliance for the Driftless area to promote and expand the use of prescribed fire as a safe and effective management tool to restore local ecosystems.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
6.1.1	Use prescribed fire to promote healthy natural areas throughout the footprint of the regional alliance.	treat 250 acres annually (see 1.2.2)	annually	\$70,000	INPC, IL DNR, FWS, JDCF, TPE	500 acres burned
6.1.2	Host an annual local RX fire workshop for private forest landowners to explain the benefits of fire for forest management and available assistance programs.	Pilot program initiated at forestry workshop; full program starting following year (see 2.2.4)	pilot program 2012; full program 2013	\$5,000	IL DNR, FWS, JDCF, SWCD	Full fire workshop program implemented (annual workshop for private landowners) established



6.1.3	Expand capabilities of volunteer prescribed fire crews through continual recruitment of new members and training/mentoring of new prescribed burn managers as appropriate. Identify new potential candidates for fire line leadership roles and offer opportunities for mentoring and apprenticeships of Illinois Prescribed Burn Manager certification requirements.	Identify 1-2 potential candidates for leadership roles; apprentice 1-2 to become prescribed burn managers	annually (as needed)	\$5,000	IL DNR, FWS, JDCF	Candidates identified, trained and apprenticed. Develop/mentor 1-2 new burn leaders or crew bosses annually
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**Objective 2: Provide technical assistance, cost-sharing and incentives for habitat restoration and management, invasive species control, use of prescribed fire and sustainable forestry techniques, and other forms of land stewardship on private lands.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
6.2.1	Implement invasive species control and/or TSI practices.	Treat 100 acres	annually	\$70,000	SWCD, NRCS, IL DNR, INPC, FWS, ACE	100 acres treated each year
6.2.2	Host habitat management workshops.	1 workshop for minimum of 50 participants; survey to gauge effectiveness of workshop	annually	\$3,000	IL DNR, FWS, JDCF, NRCS, SWCD, CES	Hold 1 workshop per year; minimum 50 participants; productive feedback received

**Objective 3: Prioritize and increase focused stewardship on high quality natural communities within natural divisions (Upper Mississippi/Illinois River Bottomlands, Middle Mississippi Border, Rock River Hill Country, Illinois/Mississippi River Sand Area).**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
6.3.1	Market land stewardship, demonstrated on private and public properties, to the local citizens to develop their understanding and support.	1 workshop for minimum of 50 participants; survey to gauge effectiveness of workshop (see 5.1.2; 6.2.2)	annually	\$3,000	IL DNR, FWS, JDCF, TNC, NLI	Hold 1 workshop per year; minimum 50 participants; productive feedback received

**Goal 7: Conserve diversity of fish, wildlife and plants, with a special focus on wildlife Species of Greatest Need of Conservation (SGNC).**  
**IL WAP SGNC**

**Objective 1: Improve, enhance and restore critical habitat for native migratory bird, fish and mussel populations.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
7.1.1	Monitor fish and mussel populations and migratory bird use to assess changes in density, diversity and habitat utilization and make recommendations to improve usage.	Prepare reports summarizing existing data, information gaps and recommendations for future monitoring and habitat preservation and restoration needs	by end of CY 2013	\$60,000	IL DNR, INHS, EPA, FWS	Finish reports and distribute to partners

7.1.2	Continue Mussel Coordination Team support of restoration of native mussel populations, especially propagation and re-colonization and monitoring of federally- and stated-listed native mussel species.	Assist MCT team and share data collected	by end of CY 2013	\$50,000	Mussel Coordination Team	Prepare summary report of data collected and success of propagation/re-colonization efforts and distribute to partners
7.1.3	Maintain forage areas within and adjacent to bottomland forests for migratory and breeding birds and winter roost sites for Bald Eagles.	manage 500 acres (water control, restricted use, forest management)	by end of CY 2013	\$100,000	FWS, ACE	500 acres managed
7.1.4	Monitor bird populations within the LM-HB-MP COA every 10 years. Prepare plan for vegetation monitoring.	baseline bird survey	by end of CY 2013	\$20,000	FWS, ACE, IL DNR, INHS	survey methods established; baseline data collected and summarized

**Objective 2: Improve ecological processes of wetland habitats for the benefit of sensitive habitat-specific species.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
7.2.1	Find researcher and seek funding to conduct 1-2 year study to identify and assess populations of herpeto fauna within Lost Mound Unit.	Identify research and submit grant request for funding	by end of CY 2013	\$20,000	FWS, IL DNR, INPC	Researcher identified, funding secured

**Objective 3: Determine status of listed wildlife and plant species and high quality plant communities identified by the INAI.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
7.3.1	Develop list of all known SGNC wildlife, plants of concern, and Category 1 high quality INAI communities found within the COA and distribute to partners.	Prepare list; distribute	by end of CY 2013	\$2,000	INPC, IL DNR	List prepared and distributed to all partners

**Goal 8: Integrate practices of sustainable community development through management and conservation of natural resources and wildlife.**

**IL WAP Green Cities Campaign**

**Objective 1: Manage conservation lands and waters within and adjacent to urban landscape to provide wildlife-related recreational opportunities in balance with wildlife habitat needs. Increase public access for compatible recreation within conservation land and waters, where appropriate.**

8.1.1	Identify public conservation lands where additional recreational opportunities could be initiated or enhanced.	Prepare of list of sites and recreational activities that could be added/expanded and provide recommendations to funding/resource needs for expanding programs	by end of CY 2013	\$50,000	IL DNR, FWS, NWTF	List of sites/activities and summary report of needs completed, implement plan
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8.1.2	Promote development and use of water trails (Summer of Paddling) within the Mississippi River, associated backwaters and larger tributaries (those appropriate for public use).	Host 2 canoe/kayak trips; create additional opportunities for canoe/kayak use; create public use maps for water trails	2012	\$60,000	FWS	2 events hosted; maps created/distributed; opportunities provided
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**Objective 2: Educate local residents to create a better understanding of the need to preserve natural communities and habitats and the need to manage land and waters to maintain or improve water quality.**

	Action Item	Unit of Measure	Timeline	Budget	Personnel	Measure of Success
8.2.1	Identify targeted focus areas and sites in which to offer educational workshops and materials to better inform citizens in critical areas of high developmental pressure.	Create list of focus areas, sites, opportunities and provide recommendations	by end of CY 2013	\$2,000	CES, JDCF, NLI, NRCS, SWCD	List and recommendations completed
8.2.2	Offer environmentally-based educational opportunities for students and adults.	Offer workshops, field trips, other public forum events	quarterly; 4 per year	\$8,000	CES, JDCF, NLI, NRCS, SWCD	Host 2 events annually
8.2.3	Host education and outreach booths to provide awareness, marketing and education for the general public by participating events such as "Bald Eagle Days", "Lawn and Garden Show", and "Earth Week Fair".	Participation in above events	annually	\$4,000	JDCF, TPE, CES	Participation in at least 2 events by 2013; then all 3 annually by 2014

**Objective 3: Provide, manage and maintain a sustainable patchwork of natural habitats and agricultural uses.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
8.3.1	Develop strategic plan for smart growth and infrastructure projects that protect or enhance important habitats, provide adequate green space and green infrastructure, minimize the need for additional infrastructure and minimize the loss of agricultural lands while allowing for economic development and human population growth.	Write plan	by end of CY 2013	\$15,000	CES, local community college	Plan completed

**Goal 9: Protect and restore significant cultural resources including Native American burial, ceremonial and village sites.**

**Cultural Resources**

**Objective 1: Protect significant archaeological sites and other cultural resources.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
9.1.1	Develop plan to restore effigy mounds and village sites on registered reserves while adhering to accepted archaeological practices. Restore the natural vegetation within these site, when practical, to resemble historic conditions.	Write restoration plan and initiate restoration of vegetation communities	by CY 2013	\$30,000	JDCF, INPC, IL DNR	Plan completed; implementation of plant community restoration initiated

9.1.2	Prepare and maintain a list for the future purpose of documenting and assessing the condition of important historic burial grounds and cemeteries in the COA.	Prepare list of known sites	by end of CY 2013	\$1,200	IL DNR, IHPA, INPC	Preliminary list prepared
9.1.3	Determine priority historic sites to nominate for National Registry of Historic Places.	Prepare list of candidate sites	by end of CY 2013	\$1,000	IL DNR, IHPA	Preliminary list prepared

**Objective 2: Educate local citizens in the proper methods of caring for cultural sites.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
9.2.1	Provide interpretive signage, brochures and other materials to inform the public and visitor to registered reserves of the significant cultural features.	Prepare/post signs; create new brochures and other materials	by end of CY 2013	\$15,000	JDCF	Interpretive signs posted and site specific cultural resource brochures available at 3 reserves

## Quad Cities Regional Action Items

**Goal 1: Conserve, restore, and manage forest, woodland and savanna ecosystems and their ecological processes. Increase amount of functional native wooded habitat by 10%.**

### IL WAP Forest Campaign

**Objective 1: Conserve large forest blocks and establish ecologically sustainable corridor routes to connect them.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
1.1.1	Identify suitable corridor and target programs and efforts to develop and improve woodland habitat	1 corridor; initiate efforts	end of CY 2013	\$4,000	IL DNR, SWCD, INPC, ACE, FWS	Corridor identified and mapped; program identified and implementation initiated

**Objective 2: Implement sustainable forestry practices on existing private and public wooded lands to enhance dominance of mast-producing trees and maintain diverse and healthy forest, woodland, and savanna communities.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
1.2.1	Identify high priority woodland habitat in need of invasive species control. Work with partner agencies to enroll targeted lands into cost-share programs to accomplish restoration.	treat 100 acres	end of CY 2013	\$50,000	QC NAGs, SWCD, INPC, IL DNR, FWS, ACE	Woodland sites identified; enrollment in restoration programs for priority areas initiated; 100 acres treated for exotic/invasive species.
1.2.2	Conduct prescribed burns on private and public forest/woodland lands and adjacent buffer.	burn 250 acres	annually	\$70,000	QC NAGs, SWCD, INPC, IL DNR, FWS	500 acres burned



**Objective 3: Restore, sustain and preserve high quality forest, woodland, and savanna natural communities.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
1.3.1	Identify all INAI sites with Category 1 high quality forest/woodlands communities and assess protection and stewardship needs for each site.	prepare chart listing site needs	end of CY 2013	\$3,000	INPC, IL DNR	Completion of chart; map areas
1.3.2	Conduct targeted management at priority natural areas (Black Hawk Forest, Lindahl Hill Prairie) to help sustain healthy forest communities by mitigating fuels that are hazardous to wildlife, re-introducing prescribed fire as a management tool, and controlling invasive woody species.	as defined by US Forest Service Hazardous Fuels Grant (Phase 1)	by August 2013	\$100,000	RC&D, RICO SWCD, IL DNR, INPC, IHPA, QC NAGs	Completion of grant

**Objective 4: Increase native forest/woodland acreage by expanding reforestation and tree planting activities.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
1.4.1	Identify priority focus areas for targeting additional reforestation activities through review of existing agency programs, GIS data, and census of landowner databases.	Prepare summary report on applicable programs, priorities focus areas, and willing landowners	end of CY 2013	\$2,000	SWCD, NRCS, RC&D, Augustana College, WIU	Completion of report, with maps
1.4.2	Identify potential sources of funding for reforestation initiatives to enhance cost-share programs.	Prepare list of funding sources	end of CY 2013	\$1,000	CED, SWCD, NRCS, RC&D	Completion of list

**Goal 2: Conserve, restore, and manage native prairie ecosystems and their ecological processes, including grasslands and hill prairies and their adjacent bluff habitats.**

**IL WAP Farmland and Prairie Campaign**

**Objective 1: Restore, sustain and preserve high quality prairie natural communities within natural divisions (Upper Mississippi/Illinois River Bottomlands, Middle Mississippi Border, Rock River Hill Country, Illinois/Mississippi River Sand Area).**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
2.1.1	Identify all Category 1 prairie INAI sites within the COA and within each natural division and assess protection and stewardship needs for each site.	prepare chart listing sites and their needs	end of CY 2013	\$3,000	INPC, IL DNR	Completion of chart, with map
2.1.2	Create and maintain landowner contact information for priority prairie sites.	prepare and maintain spreadsheet	end of CY 2013	\$1,200	INPC, IL DNR Natural Heritage	Completion of spreadsheet

**Objective 2: Manage existing native prairie communities (remnants) and restore additional areas of functional grasslands.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
2.2.1	Identify priority focus areas and work with willing landowners to obtain land protection and management agreements of existing prairie remnants.	Maintain list of sites, landowner contacts, potential funding sources	end of CY 2013	\$3,000	SWCD, NRCS, IL DNR, INPC, FWS Private Lands	Completion of list
2.2.2	Implement management of prairie remnants using appropriate methods to control invasive plant species and promote health of grassland communities.	Implement management on 20 acres; develop work plans for site(s)	end of CY 2013	\$50,000	SWCD, NRCS, IL DNR, INPC	Work plan completed, management implemented on 20 acres

2.2.3	Identify priority areas for larger-scale grassland habitat projects where new plantings can be linked to other native grassland habitats on a landscape scale. Target incentives and cost-share programs for new prairie restorations in these areas.	Identify and map landscape scale grassland priority areas; take steps to promote the targeting on incentives and cost-share programs for lands in priority focus area.	end of CY 2013	\$10,000	NRCS, FWS, SWCD	Mapping completed; identify incentive/cost-share programs.
2.2.4	Enhance capabilities of local natural resource managers and landowners to use prescribed fire as a management tool for restored and remnant prairie/grasslands.	Assist 4 managers/landowners with prescribed fire; host a prescribed fire training workshop	annually	\$20,000	QC NAGs, SWCD, RC&D	Assistance provided to 4 managers/landowners; 1 prescribed fire workshop held annually.

**Objective 3: Restore natural landscape continuum of a functional river-to-bluff ecosystem.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
2.3.1	Identify at least one suitable location for an upland and bottomland habitat connection, to include land ownership patterns and potential funding requirements for project implementation.	Identify and map river to bluff corridor including ownership types (private, public); Identify potential funding sources for protection and habitat restoration	by 2013	\$2,000	FWS, SWCD, NRCS, IL DNR, ACE, RC&D, CES	Mapping completed; Potential funding identified.

2.3.2	Develop a specific river to bluff management plan for identified priority location and implement restoration activities within this area.	Write plan; Initiate restoration activities	end of CY 2013	\$20,000	FWS, SWCD, NRCS, IL DNR, ACE, RC&D	Plan completed; restoration activities initiated
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**Goal 3: Maintain integrity of stream and river ecosystems and their riparian corridors and improve water quality and connectivity, where appropriate, within the Upper Mississippi River Watershed.**

**IL WAP Streams Campaign**

**Objective 1: Restore and maintain main stem (Mississippi River) and main stem-to-tributary (Mississippi River and Lower Rock River) connectivity on key local rivers and streams.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
3.1.1	Identify location/watershed where opportunities exist for improvement of physical riparian and aquatic habitat connections between the main stem and key tributaries.	Identify and map priority watershed or stream segment; Identify potential project sites	by end of CY 2013	\$2,500	ACE, IL DNR, SWCD, EPA	Mapping completed; potential project sites for riparian restorations identified
3.1.2	Investigate the fisheries and mussel populations in tributaries to the Mississippi River watershed.	Collect data from fisheries and mussel surveys	by end of CY 2013	\$30,000	ACE, IL DNR, INHS, FWS	Compile data in summary report and distribute to partners

**Objective 2: Restore, sustain and preserve high quality stream natural communities within natural divisions (Upper Mississippi/Illinois River Bottomlands, Middle Mississippi Border, Rock River Hill Country, Illinois/Mississippi River Sand Area).**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
3.2.1	Identify all INAI high quality stream sites and assess protection and stewardship needs for each site.	prepare chart listing sites and their needs	end of CY 2013	\$1,200	INPC, IL DNR, INHS	Completion of chart

**Objective 3: Restore and maintain the natural stream dynamics and ecological processes within key streams, wetland communities, and watersheds to sustain essential habitat for wildlife SGNC, especially migratory birds, mussel and fish communities.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
3.3.1	Collect baseline data on major streams. Identify major problem areas and develop strategies for restoration of these areas. Identify incised stream channels for potential EQIP riffle projects.	Gather and prepare data summary; Identify and map problem areas; Prepare brief report on potential strategies to restore problem areas	by end of CY 2013	\$5,000	IL DNR, ACE, SWCD, EPA, INHS	Data summary, mapping, report completed
3.3.2	Identify priority watershed/stream section and develop needed steps to establish a water and habitat quality monitoring program within this priority area. Include identification of gaps in baseline information and assessment of effectiveness of stream/watershed restoration efforts.	Identify and map priority site; Prepare report on strategies/needs for the establishment of a water and habitat quality monitoring program	by end of CY 2013	\$5,000	IL DNR, ACE, SWCD, EPA, INHS	Completion of map and report

3.3.3	Identify a high priority stream for which to develop and implement a pilot project to target existing federal and state incentive programs for erosion control and water quality improvement projects on private lands. Work with NRCS to potentially develop a 2 year plan for tributary restoration and to increase aquatic connectivity within priority stream watershed.	Identify and map priority stream/watershed; Prepare plan for pilot watershed project and work with willing landowners to begin implementation of BMPs for stream restoration	by end of CY 2013	\$100,000	SWCD, NRCS, IL DNR, EPA, INHS	Plan and map completed; BMP implementation initiated
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**Goal 4: Restore, enhance and manage wetland habitat within the river bottomlands to improve habitat quality for all wetland types with the emphasis of improving marsh communities by 20%. Monitor wildlife usage of targeted sites to determine success of restoration/improvement projects on wetlands habitats.**

**IL WAP Wetland Campaign**

**Objective 1: Restore and maintain targeted, high priority wetland communities to sustain essential habitat for SGNC, especially migratory birds, mussels and fish communities.**

	Action Item	Unit of Measure	Timeline	Budget	Personnel	Measure of Success
4.1.1	Create a new shallow water wetland at Milan Bottoms reserve (NLI property) to help improve local water quality and provide additional habitat for migratory waterfowl.	Creation of shallow water wetland	by end of CY 2013	\$12,000	SWCD, NLI, QC NAGs	Wetland completed

**Objective 2: Restore and rehabilitate backwater wetlands to provide a diversity of topographic depths, with an emphasis on maintaining areas for overwintering fish survival within the main stem and backwaters of the Mississippi River.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
4.2.1	Implement EMP projects at Huron Island (Pool 18) to create deeper water fish habitat.	1 EMP project	by end of CY 2014	\$2.5 mil	ACE, FWS	Successful completion of project

**Objective 3: Restore, sustain and preserve high quality wetland natural communities within natural divisions (Upper Mississippi/Illinois River Bottomlands, Middle Mississippi Border, Rock River Hill Country, Illinois/Mississippi River Sand Area).**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
4.3.1	Identify all Category I wetland INAI sites and assess protection and stewardship needs for each site.	Prepare chart listing sites and their needs	by end of CY 2013	\$3,000	INPC, IL DNR	Completion of chart, map areas

**Goal 5: Reduce the threat and impacts of invasive plants and animals throughout the COA and especially on high priority lands through active control, increasing capacity to control, and increasing general awareness of the problem through education and outreach.**

**IL WAP Invasive Species Campaign**

**Objective 1: Establish a Cooperative Weed Management Area (CWMA) to address invasive plants in the Quad Cities area and adjacent counties in Illinois.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
5.1.1	Identify and seek sustainable funding resources for a pilot CWMA in Rock Island County. Inventory key species and map invasive species to develop work priorities for Phase II of project (implementation of targeted control measures).	Submit grant requests; If funded, develop list of priority target invasive and map work priority areas	by end of CY 2013	\$200,000	RC&D, QC NAGs, FWS, SWCD, IL DNR, INPC	Grant awarded; list/mapping completed.

5.1.2	Host local workshops and field days for private landowners and public agencies to promote awareness of invasive species and appropriate control measures.	Host 2 local workshops; minimum 100 participants; survey to gauge effectiveness of workshop	annually	\$3,000	RC&D, QC NAGs, FWS, SWCD, IL DNR, INPC	2 workshops held; 100 participants; productive feedback received
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**Objective 2: Promote use of native plants throughout the COA.**

	Action Item	Unit of Measure	Timeline	Budget	Personnel	Measure of Success
5.2.1	Host native plant sale. Distribute materials on the benefits of native plants.	Sell 2,000 native plants/300 packets of seed; distribute materials at 3 events	annually	\$6,000	QC NAGs, INPS	1,000 plants 100 seed packets sold; materials distributed at 3 public events

**Objective 3: Implement invasive species surveillance, monitoring and control by prioritizing work on high quality natural habitats, long-term protected lands and large habitat blocks.**

	Action Item	Unit of Measure	Timeline	Budget	Personnel	Measure of Success
5.3.1	Identify target invasive species within nature preserves, INAI sites, and adjacent buffer areas. Implement control measures at these sites to reduce population and seed production in these target species.	Prepare list of target species; Identify funding sources and other opportunities; Initiate efforts to reduce population size/seed production	by end of CY 2013	\$50,000	INPC, SWCD, RC&D, NAGs	List completed; funds identified; control measures taken for all priority species identified



**Goal 6: Improve the stewardship and protection of both public and private lands and waters in the COA.**

**IL WAP Land and Water Stewardship Campaign**

**Objective 1: Create a formal Fire Alliance for the Quad Cities area, and adjacent counties, to promote and expand the use of prescribed fire as a safe and effective management tool to restore local ecosystems.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
6.1.1	Use prescribed fire to promote healthy natural areas throughout the footprint of the regional alliance.	treat 250 acres annually (see 1.2.2)	annually	\$70,000	SWCD, RC&D, QC NAGs, INPC, IL DNR, FWS	500 acres burned
6.1.2	Host basic wildfire training (S130/S190/I100) and at least one advanced class to sustain core competencies of the Rx fire crews and train fire crew members.	Host minimum of 2 classes (see 2.2.4)	annually	\$6,000	IL DNR, FWS, SWCD, QC NAGs	Hold 2 fire classes annually
6.1.3	Host an annual local RX fire workshop for private forest landowners to explain the benefits of fire for forest management and available assistance programs.	Pilot program initiated at forestry workshop; full program starting following year	pilot program 2012; full program 2013	\$5,000	IL DNR, FWS, SWCD, QC NAGs	Full fire workshop program implemented (annual workshop for private landowners) established

6.1.4	Expand capabilities of volunteer prescribed fire crews through continual recruitment of new members and training/mentoring of new prescribed burn managers as appropriate. Identify new potential candidates for fire line leadership roles and offer opportunities for mentoring and apprenticeships of Illinois Prescribed Burn Manager certification requirements.	Identify 1-2 potential candidates for leadership roles; apprentice 1-2 to become prescribed burn managers	annually (as needed)	\$5,000	IL DNR, FWS, SWCD, QC NAGs, INPC	Candidates identified, trained and apprenticed. Develop/mentor 1-2 new burn leaders or crew bosses annually
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**Objective 2: Provide technical assistance, cost-sharing and incentives for habitat restoration and management, invasive species control, use of prescribed fire and sustainable forestry techniques, and other forms of land stewardship on private lands.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
6.2.1	Implement invasive species control and/or TSI practices.	Treat 100 acres	annually	\$70,000	SWCD, NRCS, IL DNR, INPC, FWS, ACE	100 acres treated each year
6.2.2	Host habitat management workshops.	1 workshop for minimum of 50 participants; survey to gauge workshop effectiveness	annually	\$3,000	SWCD, RC&D, QC NAGs, IL DNR	Hold 1 workshop per year; minimum 50 participants; productive feedback received

**Objective 3: Prioritize and increase focused stewardship on high quality natural communities within natural divisions (Upper Mississippi/Illinois River Bottomlands, Middle Mississippi Border, Rock River Hill Country, Illinois/Mississippi River Sand Area).**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
6.3.1	Market land stewardship, demonstrated on private and public properties, to the local citizens to develop their understanding and support.	1 workshop for minimum of 50 participants; survey to gauge effectiveness of workshop (see 5.1.2; 6.2.2)	annually	\$3,000	SWCD, RC&D, QC NAGs, IL DNR	Hold 1 workshop per year; minimum 50 participants; productive feedback received

**Goal 7: Conserve diversity of fish, wildlife and plants, with a special focus on wildlife Species of Greatest Need of Conservation (SGNC).**  
**IL WAP SGNC**

**Objective 1: Improve, enhance and restore critical habitat for native migratory bird, fish and mussel populations.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
7.1.1	Monitor fish and mussel populations and migratory bird use to assess changes in density, diversity and habitat utilization and make recommendations to improve usage.	Prepare reports summarizing existing data, information gaps and recommendations for future monitoring and habitat preservation and restoration needs	by end of CY 2013	\$60,000	IL DNR, INHS, EPA, FWS	Finish reports and distribute to partners

7.1.2	Continue Mussel Coordination Team support of restoration of native mussel populations, especially propagation and re-colonization and monitoring of federally- and stated-listed native mussel species.	Assist MCT team and share data collected	by end of CY 2013	\$50,000	Mussel Coordination Team	Prepare summary report of data collected and success of propagation/re-colonization efforts and distribute to partners
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**Objective 2: Improve ecological processes of wetland habitats for the benefit of sensitive habitat-specific species.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
7.2.1	Find researcher and seek funding to conduct 1-2 year study to identify and assess populations of herpeto fauna within Milan Bottoms and Andalusia Island areas.	Identify research and submit grant request for funding	by end of CY 2013	\$20,000	FWS, IL DNR, INPC	Researcher identified, funding secured

**Objective 3: Determine status of listed wildlife and plant species and high quality plant communities identified by the INAI.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
7.3.1	Develop list of all known SGNC wildlife, plants of concern, and Category 1 high quality INAI communities found within the COA and distribute to partners.	Prepare list; distribute	by end of CY 2013	\$2,000	INPC, IL DNR	List prepared and distributed to all partners

**Goal 8: Integrate practices of sustainable community development through management and conservation of natural resources and wildlife.**  
**IL WAP Green Cities Campaign**

**Objective 1: Manage conservation lands and waters within and adjacent to urban landscape to provide wildlife-related recreational opportunities in balance with wildlife habitat needs. Increase public access for compatible recreation within conservation land and waters, where appropriate.**

8.1.1	Identify public conservation lands where additional recreational opportunities could be initiated or enhanced.	Prepare of list of sites and recreational activities that could be added/expanded and provide recommendations to funding/resource needs for expanding programs	by end of CY 2013	\$50,000	IL DNR, RICO FPD, RA	List of sites/activities and summary report of needs completed, implement plan
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**Objective 2: Educate local residents to create a better understanding of the need to preserve natural communities and habitats and the need to manage land and waters to maintain or improve water quality.**

	Action Item	Unit of Measure	Timeline	Budget	Personnel	Measure of Success
8.2.1	Identify targeted focus areas and sites in which to offer educational workshops and materials to better inform citizens in critical areas of high developmental pressure.	Create list of focus areas, sites, opportunities and provide recommendations	by end of CY 2013	\$2,000	RA, CES, SWCD, RC&D	List and recommendations completed
8.2.2	Offer environmentally-based educational opportunities for students and adults.	Offer workshops, field trips, other public forum events	quarterly; 4 per year	\$8,000	SWCD, QC NAGs, CES, RA	Host 4 events annually

8.2.3	Host education and outreach booths to provide awareness, marketing and education for the general public by participating events such as "Bald Eagle Days", "Lawn and Garden Show", and "Earth Week Fair".	Participation in above events	annually	\$4,000	SWCD, QC NAGs, RC&D, CES	Participation in at least 2 events by 2013; then all 3 annually by 2014
8.2.4	Create 4 new educational kits for elementary students that educators could borrow to promote awareness and education of subject matter content supporting the sustainability of natural resources.	Number of times kits are checked out (goal 3X per year for each kit)	by end of CY 2013	\$2,000	RC&D, SWCD, QC NAGs, CES	4 kits created in 2012; kits available and each checked out a minimum of 3X annually

**Objective 3: Provide, manage and maintain a sustainable patchwork of natural habitats and agricultural uses.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
8.3.1	Develop strategic plan for smart growth and infrastructure projects that protect or enhance important habitats, provide adequate green space and green infrastructure, minimize the need for additional infrastructure and minimize the loss of agricultural lands while allowing for economic development and human population growth.	Write plan	by end of CY 2013	\$15,000	RA, RC&D, AC	Plan completed

8.3.2	Establish a local land trust to serve the Quad Cities and adjacent counties in Illinois and Iowa.	Develop By-Laws, Strategic Plan, Incorporate and Register with IRS	by end of CY 2013	\$40,000	RC&D, QC NAGs, Iowa Natural Heritage Foundation, INPC, NLI	Land Trust Registered and capable of accepting conservation easements
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**Goal 9: Protect and restore significant cultural resources including Native American burial, ceremonial and village sites, and pioneer cemeteries.**

**Cultural Resources**

**Objective 1: Protect significant archaeological sites and other cultural resources.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
9.1.1	Prepare and maintain a list for the future purpose of documenting and assessing the condition of important historic burial grounds and cemeteries in the COA.	Prepare list of known sites	by end of CY 2013	\$1,200	IL DNR, IHPA, INPC	Preliminary list prepared
9.1.2	Determine priority historic sites to nominate for National Registry of Historic Places.	Prepare list of candidate sites	by end of CY 2013	\$1,000	IL DNR, IHPA	Preliminary list prepared

**Objective 2: Educate local citizens in the proper methods of caring for cultural sites.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
9.2.1	Host lecture on issue of historic cemetery preservation.	Host 1 lecture at Heritage Interpretive Center or other	by end of CY 2013	\$1,000	IL DNR, IHPA	Lecture offered at public forum

## Quincy Regional Action Items

**Goal 1: Conserve, restore, and manage forest, woodland, and savanna ecosystems and their ecological processes. Increase amount of functional native wooded habitat by 10%.**

### IL WAP Forest Campaign

**Objective 1: Conserve large forest blocks and establish ecologically sustainable corridor routes to connect them.**

	Action Item	Unit of Measure	Timeline	Budget	Personnel	Measure of Success
1.1.1	Reduce fragmentation of large contiguous forests within 3 focal areas (Quincy Bay - Long Island - Bear Creek; Cedar Glen; Stony Hills) through the development of landscape-scale plans to target programs and efforts to improve woodland habitat and connectivity of forest blocks.	reforest 100 acres	end of CY 2013	\$50,000	ACE, FWS, NRCS, SWCD, IL DNR	complete reforestation planting on 100 acres

**Objective 2: Implement sustainable forestry practices on existing private and public wooded lands to enhance dominance of mast-producing trees and maintain diverse and healthy forest, woodland,- and savanna communities.**

	Action Item	Unit of Measure	Timeline	Budget	Personnel	Measure of Success
1.2.1	Prioritize invasive species control within high quality woodland habitat within conservation ownership/management. Work with partner agencies to enroll targeted lands into cost-share programs to accomplish restoration.	treat 100 acres	end of CY 2013	\$50,000	ACE, FWS, IL DNR, INPC, WIU, PLC, NRCS, SWCD	Enrollment in restoration programs for priority areas initiated; 100 acres treated for exotic/invasive species



1.2.2	Conduct prescribed burns on private and public forest/woodland lands and adjacent buffer.	burn 150 acres	end of CY 2013	\$50,000	IL DNR, INPC, FWS, PLC	150 acres burned
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**Objective 3: Restore, sustain and preserve high quality forest, woodland, and savanna natural communities.**

	Action Item	Unit of Measure	Timeline	Budget	Personnel	Measure of Success
1.3.1	Identify all INAI sites with Category 1 high quality forest/woodlands communities and assess protection and stewardship needs for each site.	prepare chart listing site needs	end of CY 2013	\$3,000	INPC, IL DNR, JDCF, TNC	Completion of chart; map areas
1.3.2	Conduct targeted management at priority natural areas (focal areas: Long Island, Cedar Glen, Stony Hills) to help sustain healthy forest communities by mitigating fuels that are hazardous to wildlife, re-introducing prescribed fire as a management tool, and controlling invasive woody species.	treat 200 acres	end of CY 2013	\$80,000	ACE, FWS, IL DNR, INPC, PLC, WIU, NRCS, SWCD	200 acres treated/actively managed

**Objective 4: Increase native forest, woodland, and savanna acreage by expanding reforestation and tree planting activities.**

	Action Item	Unit of Measure	Timeline	Budget	Personnel	Measure of Success
1.4.1	Identify priority focus areas for targeting additional reforestation activities through review of existing agency programs, GIS data, and census of landowner databases.	Prepare summary report on applicable programs, priorities focus areas, and willing landowners	end of CY 2013	\$2,000	ACE, FWS, IL DNR, PLC, NRCS	Completion of report, with maps

1.4.2	Identify potential sources of funding for reforestation initiatives to enhance cost-share programs.	Prepare list of funding sources	end of CY 2013	\$1,000	ACE, FWS, IL DNR, PLC, NRCS	Completion of list
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**Goal 2: Conserve, restore, and manage native prairie ecosystems and their ecological processes, including grasslands and hill prairies and their adjacent bluff habitats.**

**IL WAP Farmland and Prairie Campaign**

**Objective 1: Restore, sustain and preserve high quality prairie natural communities within natural divisions (Upper Mississippi/Illinois River Bottomlands, Middle Mississippi Border, Rock River Hill Country, Illinois/Mississippi River Sand Area).**

	Action Item	Unit of Measure	Timeline	Budget	Personnel	Measure of Success
2.1.1	Identify all Category 1 prairie INAI sites within the COA and within each natural division and assess protection and stewardship needs for each site.	prepare chart listing sites and their needs	end of CY 2013	\$3,000	INPC, IL DNR	Completion of chart, with map
2.1.2	Create and maintain landowner contact information for priority prairie sites.	prepare and maintain spreadsheet	end of CY 2013	\$1,200	INPC, IL DNR Natural Heritage, PLC	Completion of spreadsheet

**Objective 2: Manage existing native prairie communities (remnants) and restore additional areas of functional grasslands.**

	Action Item	Unit of Measure	Timeline	Budget	Personnel	Measure of Success
2.2.1	Identify priority focus areas and work with willing landowners to obtain land protection and management agreements of existing prairie remnants.	Maintain list of sites, landowner contacts, potential funding sources	end of CY 2013	\$3,000	SWCD, NRCS, IL DNR, INPC, FWS Private Lands, PLC	Completion of list

2.2.2	Implement management of prairie remnants using appropriate methods to control invasive plant species and promote health of grassland communities.	Implement management on 20 acres; develop work plans for site(s)	end of CY 2013	\$50,000	IL DNR, INPC, SWCD, NRCS, PLC, WIU	Work plan completed, management implemented on 20 acres
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**Objective 3: Restore natural landscape continuum of a functional river-to-bluff ecosystem.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
2.3.1	Prioritize restoration, management and protection activities for upland and bottomland habitat connection within the 3 focal areas: Quincy Bay - Long Island - Bear Creek; Cedar Glen; Stony Hills. Create maps to include land ownership patterns. Determine potential funding requirements for project implementation.	Identify ownership types (private, public) within the MP-HB-LM complex. Identify potential funding sources for protection and habitat restoration	by 2013	\$9,000	ACE, FWS, IL DNR, INPC, WIU, PLC, SWCD, NRCS, CES	List of funding sources for natural community restorations and land protection should be part of larger plan to develop a working chart of funding sources, timelines, contacts for all conservation projects related to COA
2.3.2	Update or prepare ecosystem plan to create a landscape-scale river to bluff management plan for Quincy Bay - Long Island - Bear Creek; Cedar Glen; Stony Hills. Identify priority habitat corridor connections and implement restoration activities within this area.	Write plan; Initiate restoration activities	end of CY 2013	\$50,000	ACE, FWS, IL DNR, INPC, WIU, PLC, SWCD, NRCS	Plan completed; restoration activities initiated

**Goal 3: Maintain integrity of stream and river ecosystems and their riparian corridors and improve water quality and connectivity, where appropriate, within the Upper Mississippi River Watershed.**

**IL WAP Streams Campaign**

**Objective 1: Restore and maintain main stem (Mississippi River) and main stem-to-tributary (Mississippi River and Lower Rock River) connectivity on key local rivers and streams.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
3.1.1	Identify location/watershed where opportunities exist for improvement of physical riparian and aquatic habitat connections between the main stem and key tributaries.	Identify and map priority watershed or stream segment; Identify potential project sites	by end of CY 2013	\$3,500	ACE, IL DNR, SWCD, EPA	Mapping completed; potential project sites for riparian restorations identified
3.1.2	Investigate the fisheries and mussel populations in tributaries to the Lower Rock River and the Mississippi River watersheds.	Collect data from fisheries and mussel surveys	by end of CY 2013	\$30,000	ACE, IL DNR, INHS, FWS, WIU	Compile data in summary report and distribute to partners

**Objective 2: Restore, sustain and preserve high quality stream natural communities within natural divisions (Upper Mississippi/Illinois River Bottomlands, Middle Mississippi Border, Rock River Hill Country, Illinois/Mississippi River Sand Area).**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
3.2.1	Identify all INAI high quality stream sites and assess protection and stewardship needs for each site.	prepare chart listing sites and their needs	end of CY 2013	\$3,200	INPC, IL DNR, INHS	Completion of chart

**Objective 3: Restore and maintain the natural stream dynamics and ecological processes within key streams, wetland communities, and watersheds to sustain essential habitat for wildlife SGNC, especially migratory birds, mussel and fish communities.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
3.3.1	Collect baseline data on major streams. Identify major problem areas and develop strategies for restoration of these areas. Identify incised stream channels for potential EQIP riffle projects.	Gather and prepare data summary; Identify and map problem areas; Prepare brief report on potential strategies to restore problem areas	by end of CY 2013	\$5,000	IL DNR, ACE, SWCD, EPA, INHS	Data summary, mapping, report completed
3.3.2	Identify priority watershed/stream section and develop needed steps to establish a water and habitat quality monitoring program within this priority area. Include identification of gaps in baseline information and assessment of effectiveness of stream/watershed restoration efforts.	Identify and map priority site; Prepare report on strategies/needs for the establishment of a water and habitat quality monitoring program	by end of CY 2013	\$5,000	IL DNR, ACE, SWCD, EPA, INHS	Completion of map and report
3.3.3	Identify a high priority stream for which to develop and implement a pilot project to target existing federal and state incentive programs for erosion control and water quality improvement projects on private lands. Work with NRCS to potentially develop a 2 year plan for tributary restoration and to increase aquatic connectivity within priority stream watershed.	Identify and map priority stream/watershed; Prepare plan for pilot watershed project and work with willing landowners to begin implementation of BMPs for stream restoration	by end of CY 2013	\$100,000	IL DNR, ACE, SWCD, EPA, INHS	Plan and map completed; BMP implementation initiated

**Goal 4: Restore, enhance and manage wetland habitat within the river bottomlands to improve habitat quality for all wetland types with the emphasis of improving marsh communities by 20%. Monitor wildlife usage of targeted sites to determine success of restoration/improvement projects on wetlands habitats.**

**IL WAP Wetland Campaign**

**Objective 1: Restore and maintain targeted, high priority wetland communities to sustain essential habitat for SGNC, especially migratory birds, mussels and fish communities.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
4.1.1	Seek options for restoration of additional floodplain (moist soil foraging sites) habitat for migratory waterfowl including the potential for floodplain easements for landowners within the Hunt-Lima Drainage District.	prepare report summarizing potential options for moist soil wetland habitat restorations	by end of CY 2013	\$20,000	IL DNR, FWS, ACE, NRCS, SWCD, PLC, LMREP	Report completed

**Objective 2: Restore and rehabilitate backwater wetlands to provide a diversity of topographic depths, with an emphasis on maintaining areas for overwintering fish survival within the main stem and backwaters of the Mississippi River.**

**Objective 3: Restore, sustain and preserve high quality wetland natural communities within natural divisions (Upper Mississippi/Illinois River Bottomlands, Middle Mississippi Border, Rock River Hill Country, Illinois/Mississippi River Sand Area).**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
4.3.1	Identify all Category I wetland INAI sites in Quincy area and assess protection and stewardship needs for each site.	Prepare chart listing sites and their needs	by end of CY 2013	\$3,000	INPC, IL DNR	Completion of chart, map areas

**Goal 5: Reduce the threat and impacts of invasive plants and animals throughout the COA and especially on high priority lands through active control, increasing capacity to control, and increasing general awareness of the problem through education and outreach.**

**IL WAP Invasive Species Campaign**

**Objective 1: Establish a Cooperative Weed Management Area (CWMA) to address invasive plants in the Quincy area.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
5.1.1	Identify and seek sustainable funding resources for a pilot CWMA in Hancock and Adams counties.	Submit grant requests; If funded, develop list of priority target invasive and map work priority areas	by end of CY 2013	\$40,000	PLC, LMREP, WIU, IL DNR, INPC, FWS, ACE, NRCS, SWCD	Grant awarded; list/mapping completed
5.1.2	Host local workshops and field days for private landowners and public agencies to promote awareness of invasive species and appropriate control measures.	Host 2 local workshops; minimum 100 participants; survey to gauge effectiveness of workshop	annually	\$3,000	IL DNR, INPC, PLC, WIU, NRCS	1 workshops held; 100 participants; productive feedback received

**Objective 2: Promote use of native plants throughout the COA.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
5.2.1	Host native plant sale. Distribute materials on the benefits of native plants.	Sell 300 native plants/30 packets of seed; distribute materials at local outreach events	Sell 300 native plants/30 packets of seed	\$6,000	NRCS, SWCD, WPA	300 plants 30 seed packets sold; materials distributed at public events

**Objective 3: Implement invasive species surveillance, monitoring and control by prioritizing work on high quality natural habitats, long-term protected lands and large habitat blocks.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
5.3.1	Identify target invasive species within nature preserves, INAI sites, and adjacent buffer areas. Implement control measures at these sites to reduce population and seed production in these target species.	Prepare list of target species; Identify funding sources and other opportunities; Initiate efforts to reduce population size/seed production	by end of CY 2013	\$50,000	IL DNR, INPC, PLC, WIU, ACE, FWS	List completed; funds identified; control measures taken for all priority species identified

**Goal 6: Improve the stewardship and protection of both public and private lands and waters in the COA.**

**IL WAP Land and Water Stewardship Campaign**

**Objective 1: Create a formal Fire Alliance for the Quincy area to promote and expand the use of prescribed fire as a safe and effective management tool to restore local ecosystems.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
6.1.1	Use prescribed fire to promote healthy natural areas throughout the COA.	treat 150 acres annually (see 1.2.2)	by end of CY 2013	\$50,000	FWS, IL DNR, INPC, PLC	150 acres burned
6.1.2	Expand capabilities of volunteer prescribed fire crews through continual recruitment of new members and training/mentoring of new, certified prescribed burn managers as appropriate.	Identify 1-2 potential candidates for leadership roles; apprentice 1 to become prescribed burn manager	by end of CY 2013	\$5,000	INPC, IL DNR, PLC	Candidates identified, trained and apprenticed. Develop/mentor 1 new burn leader or crew boss



**Objective 2: Provide technical assistance, cost-sharing and incentives for habitat restoration and management, invasive species control, use of prescribed fire and sustainable forestry techniques, and other forms of land stewardship on private lands.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
6.2.1	Implement invasive species control and/or TSI practices.	Treat 100 acres	annually	\$70,000	SWCD, NRCS, IL DNR, INPC, FWS, ACE	100 acres treated each year
6.2.2	Host habitat management workshops.	1 workshop for minimum of 50 participants; survey to gauge effectiveness of workshop	annually	\$3,000	IL DNR, FWS, JDCF, NRCS, SWCD, CES	Hold 1 workshop per year; minimum 50 participants; productive feedback received

**Objective 3: Prioritize and increase focused stewardship on high quality natural communities within natural divisions (Upper Mississippi/Illinois River Bottomlands, Middle Mississippi Border, Rock River Hill Country, Illinois/Mississippi River Sand Area).**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
6.3.1	Market land stewardship, demonstrated on private and public properties, to the local citizens to develop their understanding and support.	1 workshop for minimum of 50 participants; survey to gauge effectiveness of workshop (see 5.1.2; 6.2.2)	annually	\$3,000	IL DNR, NRCS, LMREP, PLC, CES	Hold 1 workshop per year; minimum 50 participants; productive feedback received

**Goal 7: Conserve diversity of fish, wildlife and plants, with a special focus on wildlife Species of Greatest Need of Conservation (SGNC).**

**IL WAP SGNC**

**Objective 1: Improve, enhance and restore critical habitat for native migratory bird, fish and mussel populations.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
7.1.1	Monitor fish and mussel populations and migratory bird use to assess changes in density, diversity and habitat utilization and make recommendations to improve usage.	Prepare reports summarizing existing data, information gaps and recommendations for future monitoring and habitat preservation and restoration needs	by end of CY 2013	\$60,000	IL DNR, INHS, EPA, FWS	Finish reports and distribute to partners
7.1.2	Continue Mussel Coordination Team support of restoration of native mussel populations, especially propagation and re-colonization and monitoring of federally- and stated-listed native mussel species.	Assist MCT team and share data collected	by end of CY 2013	\$50,000	Mussel Coordination Team	Prepare summary report of data collected and success of propagation/re-colonization efforts and distribute to partners
7.1.3	Maintain forage areas within and adjacent to bottomland forests for migratory and breeding birds and winter roost sites for Bald Eagles.	Manage 500 acres (water control, restricted use, forest management)	by end of CY 2013	\$100,000	FWS, ACE	500 acres managed
7.1.4	Monitor breeding bird populations within the Long Island Complex every 10 years. Prepare plan for vegetation monitoring.	baseline bird survey	by end of CY 2013	\$20,000	FWS, ACE, IL DNR, INHS	survey methods established; baseline data collected and summarized

**Objective 2: Improve ecological processes of wetland habitats for the benefit of sensitive habitat-specific species.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
7.2.1	Find researcher and seek funding to conduct 1-2 year study to identify and assess populations of herpeto fauna in Quincy area of COA	Identify research and submit grant request for funding	by end of CY 2013	\$20,000	FWS, IL DNR, INPC	Researcher identified, funding secured

**Objective 3: Determine status of listed wildlife and plant species and high quality plant communities identified by the INAI.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
7.3.1	Develop list of all known SGNC wildlife, plants of concern, and Category 1 high quality INAI communities found within the COA and distribute to partners.	Prepare list; distribute	by end of CY 2013	\$2,000	INPC, IL DNR, INHS	List prepared and distributed to all partners

**Goal 8: Integrate practices of sustainable community development through management and conservation of natural resources and wildlife.**  
**IL WAP Green Cities Campaign**

**Objective 1: Manage conservation lands and waters within and adjacent to urban landscape to provide wildlife-related recreational opportunities in balance with wildlife habitat needs. Increase public access for compatible recreation within conservation land and waters, where appropriate.**

8.1.1	Prepare of list of sites and recreational activities that could be added/expanded and provide recommendations to funding/resource needs for expanding programs.	Prepare of list of sites and recreational activities that could be added/expanded and provide recommendations to funding/resource needs for expanding programs	by end of CY 2013	\$50,000	QPD, QPF, PLC, IL DNR, FWS, NWTF	List of sites/activities and summary report of needs completed, implement plan. Additional trails completed
8.1.2	Promote development and use of water trails (Summer of Paddling) within the Mississippi River, associated backwaters and larger tributaries (those appropriate for public use).	Host 2 canoe/kayak trips; create additional opportunities for canoe/kayak use; create public use maps for water trails	2012	\$60,000	FWS	2 events hosted; maps created/distributed; opportunities provided

**Objective 2: Educate local residents to create a better understanding of the need to preserve natural communities and habitats and the need to manage land and waters to maintain or improve water quality.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
8.2.1	Identify targeted focus areas and sites in which to offer educational workshops and materials to better inform citizens in critical areas of high developmental pressure.	Create list of focus areas, sites, opportunities and provide recommendations	by end of CY 2013	\$2,000	CES, QPD, PLC, LMREP, NRCS, SWCD	List and recommendations completed
8.2.2	Offer environmentally-based educational opportunities for students and adults.	Offer workshops, field trips, other public forum events	2 per year	\$8,000	CES, PLC, WIU, LMREP, WPAS, NRCS, SWCD	Host 4 events annually.
8.2.3	Host education and outreach booths to provide awareness, marketing and education for the general public by participating events such as "Bald Eagle Days", "Lawn and Garden Show", and "Earth Week Fair".	Participation in above events	annually	\$4,000	PLC, LMREP, WPAS, CES	Participation in at least 2 events by 2013; then all 3 annually by 2014

**Objective 3: Provide, manage and maintain a sustainable patchwork of natural habitats and agricultural uses.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
8.3.1	Develop strategic plan for smart growth and infrastructure projects that protect or enhance important habitats, provide adequate green space and green infrastructure, minimize the need for additional infrastructure and minimize the loss of agricultural lands while allowing for economic development and human population growth.	Write plan	by end of CY 2013	\$15,000	CES, WIU, local community college	Plan completed

**Goal 9: Protect and restore significant cultural resources including Native American burial, ceremonial and village sites and pioneer cemeteries.**

**Cultural Resources**

**Objective 1: Protect significant archaeological sites and other cultural resources.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
9.1.1	Prepare and maintain a list for the future purpose of documenting and assessing the condition of important historic burial grounds and cemeteries in the COA.	Prepare list of known sites	by end of CY 2013	\$1,200	IL DNR, IHPA, INPC	Preliminary list prepared
9.1.2	Determine priority historic sites to nominate for National Registry of Historic Places.	Prepare list of candidate sites	by end of CY 2013	\$1,000	IL DNR, IHPA	Preliminary list prepared

**Objective 2: Educate local citizens in the proper methods of caring for cultural sites.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
9.2.1	Provide interpretive signage, brochures and other materials to inform the public and visitor to registered reserves of the significant cultural features (Indian Mounds Park).	Prepare/post signs; create new brochures and other materials	by CY 2013	\$5,000	QPD	Interpretive signs posted

## Pere Marquette Regional Action Items

**Goal 1: Conserve, restore, and manage forest, woodland and savanna ecosystems and their ecological processes. Increase amount of functional native wooded habitat by 10%.**

### IL WAP Forest Campaign

**Objective 1: Conserve large forest blocks and establish ecologically sustainable corridor routes to connect them.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
1.1.1	Identify suitable corridor within Pere Marquette COA and target programs and efforts to develop and improve woodland habitat	1 corridor; initiate efforts	end of CY 2013	\$4,000	ACE, FWS, IL DNR, INPC	Corridor identified and mapped; program identified and implementation initiated.
1.1.2	Identify two sites within Pere Marquette State Park that provide suitable, contiguous habitat for SGNC.	Sites identified; implement forest management	end of CY 2013		IL DNR, INPC	Sites identified and implementation initiated

**Objective 2: Implement sustainable forestry practices on existing private and public wooded lands to enhance dominance of mast-producing trees and maintain diverse and healthy forest, woodland, and savanna communities.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
1.2.1	Identify high priority woodland habitat in need of invasive species control. Work with partner agencies to enroll targeted lands into cost-share programs to accomplish restoration.	treat 100 acres	end of CY 2013	\$50,000	ACE, FWS, IL DNR, INPC, NRCS	Woodland sites identified; enrollment in restoration programs for priority areas initiated; 100 acres treated for exotic/invasive species.



1.2.2	Conduct prescribed burns on private and public forest/woodland lands and adjacent buffer.	burn 250 acres	annually	\$70,000	IL DNR, INPC, FWS	500 acres burned
1.2.3	Facilitate planting and management of oak/hickory forest type for the provision of upland habitat.				ACE, IL DNR, INPC, FWS	

**Objective 3: Restore, sustain and preserve high quality forest, woodland, and savanna natural communities.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
1.3.1	Identify all INAI sites with Category 1 high quality forest/woodlands within the Pere Marquette Area and assess protection and stewardship needs for each site.	prepare chart listing site needs	end of CY 2013	\$3,000	IL DNR, INPC	Completion of chart; map areas
1.3.2	Conduct targeted management at priority natural areas to help sustain healthy forest communities by mitigating fuels that are hazardous to wildlife, re-introducing prescribed fire as a management tool, and controlling invasive woody species.	as defined by US Forest Service Hazardous Fuels Grant (Phase 1)	by August 2013	\$100,000	IL DNR, INPC	Completion of grant

**Objective 4: Increase native forest, woodland, and savanna acreage by expanding reforestation and tree planting activities.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
1.4.1	Identify priority focus areas for targeting additional reforestation activities through review of existing agency programs, GIS data, and census of landowner databases.	Prepare summary report on applicable programs, priorities focus areas, and willing landowners	end of CY 2013	\$2,000	ACE, FWS, IL DNR, INPC, NRCS	Completion of report, with maps
1.4.2	Identify potential sources of funding for reforestation initiatives to enhance cost-share programs.	Prepare list of funding sources	end of CY 2013	\$1,000	IL DNR, INPC, NRCS	Completion of list

**Goal 2: Conserve, restore, and manage native prairie ecosystems and their ecological processes, including grasslands and hill prairies and their adjacent bluff habitats.**

**IL WAP Farmland and Prairie Campaign**

**Objective 1: Restore, sustain and preserve high quality prairie natural communities within natural divisions (Upper Mississippi/Illinois River Bottomlands, Middle Mississippi Border).**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
2.1.1	Identify all Category 1 prairie INAI sites within the COA and within each natural division and assess protection and stewardship needs for each site.	prepare chart listing sites and their needs	end of CY 2013	\$3,000	IL DNR, INPC	Completion of chart, with map
2.1.2	Create and maintain landowner contact information for priority prairie sites.	prepare and maintain spreadsheet	end of CY 2013	\$1,200	IL DNR, INPC	Completion of spreadsheet

**Objective 2: Manage existing native prairie communities (remnants) and restore additional areas of functional grasslands.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
2.2.1	Identify priority focus areas and work with willing landowners to obtain land protection and management agreements of existing prairie remnants.	Maintain list of sites, landowner contacts, potential funding sources	end of CY 2013	\$3,000	IL DNR, INPC, NRCS	Completion of list
2.2.2	Encourage hill prairie managers to remove woody materials to create “wind pathways” for efficient and successful restoration	Implement management on 20 acres	end of CY 2012	\$3,000	IL DNR, INPC, FWS, GRLT, TNI, NRCS	Materials removed from 20 acres of prairie
2.2.3	Promote native prairie diversity through interseeding of locally collected seed.	Implement interseeding on private and public prairie sites	end of CY 2013	\$1,000	IL DNR, INPC, FWS, GRLT, TNI	Interseeding implemented on private and public prairie sites
2.2.4	Advocate for research on effective strategies to control rhizomatous shrubs.		end of CY 2013		IL DNR, INPC, Principia College	
2.2.5	Implement management of prairie remnants using appropriate methods to control invasive plant species and promote health of grassland communities.	Implement management on 20 acres; develop work plans for site(s)	end of CY 2013	\$50,000	IL DNR, INPC, FWS, GRLT, TNI	Work plan completed, management implemented on 20 acres

2.2.6	Identify priority areas for larger-scale grassland habitat projects where new plantings can be linked to other native grassland habitats on a landscape scale. Target incentives and cost-share programs for new prairie restorations in these areas.	Identify and map landscape scale grassland priority areas; take steps to promote the targeting on incentives and cost-share programs for lands in priority focus area	end of CY 2013	\$10,000	IL DNR, INPC, FWS, GRLT, TNI	Mapping completed; identify incentive/cost-share programs
2.2.7	Enhance capabilities of local natural resource managers and landowners to use prescribed fire as a management tool for restored and remnant prairie/grasslands.	Assist 4 managers/landowners with prescribed fire; host a prescribed fire training workshop	annually	\$20,000	IL DNR, INPC, FWS, GRLT, TNI	Assistance provided to 4 managers/landowners; 1 prescribed fire workshop held annually

**Objective 3: Restore natural landscape continuum of a functional river-to-bluff ecosystem.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
2.3.1	Identify at least one suitable location for an upland and bottomland habitat connection, to include land ownership patterns and potential funding requirements for project implementation.	Identify and map river to bluff corridor including ownership types (private, public); Identify potential funding sources for protection and habitat restoration	by 2013	\$2,000	IL DNR, INPC, FWS, GRLT, TNI	Mapping completed; Potential funding identified

2.3.2	Develop a specific river to bluff management plan for identified priority location and implement restoration activities within this area.	Write plan; Initiate restoration activities	end of CY 2013	\$20,000	IL DNR, INPC	Plan completed; restoration activities initiated
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**Goal 3: Maintain integrity of stream and river ecosystems and their riparian corridors and improve water quality and connectivity, where appropriate, within the Upper Mississippi River**

**IL WAP Streams Campaign**

**Objective 1: Restore and maintain main stem (Mississippi River) and main stem-to-tributary (Mississippi River and Lower Illinois River) connectivity on key local rivers and streams.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
3.1.1	Identify location/watershed where opportunities exist for improvement of physical riparian and aquatic habitat connections between the main stem and key tributaries.	Identify and map priority watershed or stream segment; Identify potential project sites	by end of CY 2013	\$2,500	ACE, FWS, IL DNR, INPC	Mapping completed; potential project sites for riparian restorations identified
3.1.2	Investigate the fisheries and mussel populations in tributaries to the Illinois River and the Mississippi River watersheds.	Collect data from fisheries and mussel surveys	by end of CY 2013	\$30,000	ACE, FWS, IL DNR, INPC	Compile data in summary report and distribute to partners

**Objective 2: Restore, sustain and preserve high quality stream natural communities within natural divisions (Upper Mississippi/Illinois River Bottomlands, Middle Mississippi Border).**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
3.2.1	Identify all INAI high quality stream sites and assess protection and stewardship needs for each site.	prepare chart listing sites and their needs	end of CY 2013	\$1,200	IL DNR, INPC	Completion of chart

**Objective 3: Restore and maintain the natural stream dynamics and ecological processes within key streams, wetland communities, and watersheds to sustain essential habitat for wildlife SGNC, especially migratory birds, mussel and fish communities.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
3.3.1	Collect baseline data on major streams. Identify major problem areas and develop strategies for restoration of these areas. Identify incised stream channels for potential EQIP riffle projects.	Gather and prepare data summary; Identify and map problem areas; Prepare brief report on potential strategies to restore problem areas	by end of CY 2013	\$5,000	ACE, FWS, IL DNR, INPC	Data summary, mapping, report completed
3.3.2	Identify priority watershed/stream section and develop needed steps to establish a water and habitat quality monitoring program within this priority area. Include identification of gaps in baseline information and assessment of effectiveness of stream/watershed restoration efforts.	Identify and map priority site; Prepare report on strategies/needs for the establishment of a water and habitat quality monitoring program	by end of CY 2013	\$5,000	ACE, FWS, IL DNR, INPC	Completion of map and report

3.3.3	Identify a high priority stream for which to develop and implement a pilot project to target existing federal and state incentive programs for erosion control and water quality improvement projects on private lands. Work with NRCS to potentially develop a 2 year plan for tributary restoration and to increase aquatic connectivity within priority stream watershed.	Identify and map priority stream/watershed; Prepare plan for pilot watershed project and work with willing landowners to begin implementation of BMPs for stream restoration	by end of CY 2013	\$100,000	ACE, FWS, IL DNR, INPC	Plan and map completed; BMP implementation initiated
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**Goal 4: Restore, enhance and manage wetland habitat within the river bottomlands to improve habitat quality for all wetland types with the emphasis of improving marsh communities by 20%. Monitor wildlife usage of targeted sites to determine success of restoration/improvement projects on wetlands habitats.**

**IL WAP Wetland Campaign**

**Objective 1: Restore and maintain targeted, high priority wetland communities to sustain essential habitat for SGNC, especially migratory birds, mussels and fish communities.**

	Action Item	Unit of Measure	Timeline	Budget	Personnel	Measure of Success
4.1.1	Create a new shallow water wetland to help improve local water quality and provide additional habitat for migratory waterfowl.	Creation of shallow water wetland	by end of CY 2013	\$12,000	ACE, FWS	Wetland completed

**Objective 2: Restore and rehabilitate backwater wetlands to provide a diversity of topographic depths, with an emphasis on maintaining areas for overwintering fish survival within the main stem and backwaters of the Mississippi River.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
4.2.1	Implement habitat projects along the river that restore the natural flood regime and encourage diversity of native flora and fauna (i.e., Rip Rap Landing Prairie)	1 EMP project	by end of CY 2014	\$2.5 mil	ACE, FWS	Successful completion of project

**Objective 3: Restore, sustain and preserve high quality wetland natural communities within natural divisions (Upper Mississippi/Illinois River Bottomlands, Middle Mississippi Border).**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
4.3.1	Identify all Category I wetland INAI sites and assess protection and stewardship needs for each site.	Prepare chart listing sites and their needs	by end of CY 2013	\$3,000	IL DNR, INPC, FWS	Completion of chart, map areas

**Goal 5: Reduce the threat and impacts of invasive plants and animals throughout the COA and especially on high priority lands through active control, increasing capacity to control, and increasing general awareness of the problem through education and outreach.**

**IL WAP Invasive Species Campaign**

**Objective 1: Establish a Cooperative Weed Management Area (CWMA) to address invasive plants in the Pere Marquette area and adjacent counties in Illinois.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
5.1.1	Identify and seek sustainable funding resources for the Gateway CWMA in Madison, Jersey, and Calhoun Counties.	Submit grant requests	by end of CY 2013		IL DNR, INPC, FWS, SWIRCD	Grant awarded



5.1.2	Inventory key species and map invasive species to develop work priorities for the implementation of targeted control measures.	Develop list of priority target invasive and map work priority areas	by end of CY 2013	\$200,000	IL DNR, INPC, FWS, TNI	List/mapping completed
5.1.3	Host local workshops and field days for private landowners and public agencies to promote awareness of invasive species and appropriate control measures.	Host 2 local workshops; minimum 100 participants; survey to gauge effectiveness of workshop	annually	\$3,000	IL DNR, INPC, FWS, TNI, NRCS	2 workshops held; 100 participants; productive feedback received

**Objective 2: Promote use of native plants throughout the COA.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
5.2.1	Host native plant sale. Distribute materials on the benefits of native plants.	Sell 2,000 native plants/300 packets of seed; distribute materials at 3 events	annually	\$6,000	ACE, FWS, NRCS, SWCD, IL DNR	1,000 plants 100 seed packets sold; materials distributed at 3 public events

**Objective 3: Identify and implement invasive species surveillance, monitoring and control by prioritizing work on high quality natural habitats, long-term protected lands and large habitat blocks.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
5.3.1	Identify target invasive species within nature preserves, INAI sites, and adjacent buffer areas. Implement control measures at these sites to reduce population and seed production in these target species.	Prepare list of target species; Identify funding sources and other opportunities; Initiate efforts to reduce population size/seed production	by end of CY 2013	\$50,000	ACE, FWS, NRCS, SWCD, IL DNR, INPC	List completed; funds identified; control measures taken for all priority species identified

**Goal 6: Improve the stewardship and protection of both public and private lands and waters in the COA.**

**IL WAP Land and Water Stewardship Campaign**

**Objective 1: Create a formal Fire Alliance for the Pere Marquette area, and adjacent counties, to promote and expand the use of prescribed fire as a safe and effective management tool to restore local ecosystems.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
6.1.1	Use prescribed fire to promote healthy natural areas throughout the footprint of the regional alliance.	treat 250 acres annually (see 1.2.2)	annually	\$70,000	FWS, NRCS, IL DNR, TNI, GRLT	500 acres burned
6.1.2	Host basic wildfire training (S130/S190/I100) and at least one advanced class to sustain core competencies of the Rx fire crews and train fire crew members.	Host minimum of 2 classes (see 2.2.4)	annually	\$6,000	IL DNR, INPC, SWIRCD, TNI	Hold 2 fire classes annually.
6.1.3	Host an annual local RX fire workshop for private forest landowners to explain the benefits of fire for forest management and available assistance programs.	Pilot program initiated at forestry workshop; full program starting following year (see 2.2.4)	pilot program 2012; full program 2013	\$5,000		Full fire workshop program implemented (annual workshop for private landowners) established

6.1.4	Expand capabilities of volunteer prescribed fire crews through continual recruitment of new members and training/mentoring of new prescribed burn managers as appropriate. Identify new potential candidates for fire line leadership roles and offer opportunities for mentoring and apprenticeships of Illinois Prescribed Burn Manager certification requirements.	Identify 1-2 potential candidates for leadership roles; apprentice 1-2 to become prescribed burn managers	annually (as needed)	\$5,000	IL DNR, INPC, SWIRCD, TNI	Candidates identified, trained and apprenticed. Develop/mentor 1-2 new burn leaders or crew bosses annually
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**Objective 2: Provide technical assistance, cost-sharing and incentives for habitat restoration and management, invasive species control, use of prescribed fire and sustainable forestry techniques, and other forms of land stewardship on private lands.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
6.2.1	Implement invasive species control and/or TSI practices.	Treat 100 acres	annually	\$70,000	IL DNR, INPC, SWIRCD, TNI, GRLT	100 acres treated each year
6.2.2	Host habitat management workshops.	1 workshop for minimum of 50 participants; survey to gauge effectiveness of workshop	annually	\$3,000	IL DNR, INPC, FWS, NRCS	Hold 1 workshop per year; minimum 50 participants; productive feedback received

**Objective 3: Prioritize and increase focused stewardship on high quality natural communities within natural divisions (Upper Mississippi/Illinois River Bottomlands, Middle Mississippi Border).**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
6.3.1	Market land stewardship, demonstrated on private and public properties, to the local citizens to develop their understanding and support.	1 workshop for minimum of 50 participants; survey to gauge effectiveness of workshop (see 5.1.2; 6.2.2)	annually	\$3,000	IL DNR, INPC, NRCS	Hold 1 workshop per year; minimum 50 participants; productive feedback received

**Goal 7: Conserve diversity of fish, wildlife and plants, with a special focus on wildlife Species of Greatest Need of Conservation (SGNC).**  
**IL WAP SGNC**

**Objective 1: Improve, enhance and restore critical habitat for native migratory bird, fish and mussel populations.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
7.1.1	Monitor fish and mussel populations and migratory bird use to assess changes in density, diversity and habitat utilization and make recommendations to improve usage.	Prepare reports summarizing existing data, information gaps and recommendations for future monitoring and habitat preservation and restoration needs	by end of CY 2013	\$60,000	ACE, FWS, IL DNR, INPC	Finish reports and distribute to partners

7.1.2	Continue Mussel Coordination Team support of restoration of native mussel populations, especially propagation and re-colonization and monitoring of federally- and stated-listed native mussel species.	Assist MCT team and share data collected	by end of CY 2013	\$50,000	Mussel Coordination Team	Prepare summary report of data collected and success of propagation/re-colonization efforts and distribute to partners
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**Objective 2: Improve ecological processes of wetland habitats for the benefit of sensitive habitat-specific species.**

	Action Item	Unit of Measure	Timeline	Budget	Personnel	Measure of Success
7.2.1	Find researcher and seek funding to conduct 1-2 year study to identify and assess populations of herpeto fauna within the Mississippi River State Fish and Wildlife Area.	Identify research and submit grant request for funding	by end of CY 2013	\$20,000	ACE, FWS, IL DNR, INPC	Researcher identified, funding secured
7.2.2	Identify sites to provide semi-permanent and permanently flooded aquatic and wetland habitat for dependent SGNC.	Sites identified	by end of CY 2013	\$2,000	ACE, FWS, IL DNR, INPC	Sites identified; restoration and management implemented

**Objective 3: Determine status of listed wildlife and plant species and high quality plant communities identified by the INAI.**

	Action Item	Unit of Measure	Timeline	Budget	Personnel	Measure of Success
7.3.1	Develop list of all known SGNC wildlife, plants of concern, and Category 1 high quality INAI communities found within the COA and distribute to partners.	Prepare list; distribute	by end of CY 2013	\$2,000	IL DNR, INPC	List prepared and distributed to all partners

**Goal 8: Integrate practices of sustainable community development through management and conservation of natural resources and wildlife.**  
**IL WAP Green Cities Campaign**

**Objective 1: Manage conservation lands and waters within and adjacent to urban landscape to provide wildlife-related recreational opportunities in balance with wildlife habitat needs. Increase public access for compatible recreation within conservation land and waters, where appropriate.**

8.1.1	Identify public conservation lands where additional recreational opportunities could be initiated or enhanced.	Prepare of list of sites and recreational activities that could be added/expanded and provide recommendations to funding/resource needs for expanding programs	by end of CY 2013	\$50,000	ACE, FWS, IL DNR, INPC	List of sites/activities and summary report of needs completed, implement plan
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**Objective 2: Educate local residents to create a better understanding of the need to preserve natural communities and habitats and the need to manage land and waters to maintain or improve water quality.**

	Action Item	Unit of Measure	Timeline	Budget	Personnel	Measure of Success
8.2.1	Identify targeted focus areas and sites in which to offer educational workshops and materials to better inform citizens in critical areas of high developmental pressure.	Create list of focus areas, sites, opportunities and provide recommendations	by end of CY 2013	\$2,000	IL DNR, INPC, NRCS	List and recommendations completed
8.2.2	Offer environmentally-based educational opportunities for students and adults.	Offer workshops, field trips, other public forum events	quarterly; 4 per year	\$8,000	IL DNR, INPC, NRCS	Host 4 events annually

**Objective 3: Provide, manage and maintain a sustainable patchwork of natural habitats and agricultural uses.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
8.3.1	Develop strategic plan for smart growth and infrastructure projects that protect or enhance important habitats, provide adequate green space and green infrastructure, minimize the need for additional infrastructure and minimize the loss of agricultural lands while allowing for economic development and human population growth.	Write plan	by end of CY 2013	\$15,000	IL DNR, INPC, SWIRCD	Plan completed

**Goal 9: Protect and restore significant cultural resources including Native American burial, ceremonial and village sites and pioneer cemeteries.**

**Cultural Resources**

**Objective 1: Protect significant archaeological sites and other cultural resources.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
9.1.1	Prepare and maintain a list for the future purpose of documenting and assessing the condition of important historic burial grounds and cemeteries in the COA.	Prepare list of known sites	by end of CY 2013	\$1,200	IL DNR, IHPA, INPC	Preliminary list prepared
9.1.2	Determine priority historic sites to nominate for National Registry of Historic Places.	Prepare list of candidate sites	by end of CY 2013	\$1,000	IL DNR, IHPA, INPC	Preliminary list prepared

**Objective 2: Educate local citizens in the proper methods of caring for cultural sites.**

	<b>Action Item</b>	<b>Unit of Measure</b>	<b>Timeline</b>	<b>Budget</b>	<b>Personnel</b>	<b>Measure of Success</b>
9.2.1	Host lecture on historic site preservation.	Host 1 lecture	by end of CY 2013	\$1,000	IL DNR, IHPA, INPC	Lecture offered at public forum



## Appendix II. Conservation Lands within Upper Mississippi River COA

<b>Driftless Area</b>	<b>Acreage</b>	<b>Ownership</b>
Upper Mississippi River NWFR	39,829	FWS
Hanover Bluff Nature Preserve	550.48	DNR/TNC (115.56 ac)
Hanover Bluff Land and Water Reserve	249.47	DNR
Hanover Forest Land and Water Reserve	34.643	NLI
Dimke - Hanover Bluff	93.28	private (NLI easement)
Speaker - Hanover Bluff	26.37	private (NLI easement)
Vickery - Hanover Bluff	36.37	private (NLI easement)
Hanover Bluff NLI Property		NLI
Wapello Land and Water Reserve	78.74	JDCF
Casper Bluff / Casper Bluff Land and Water Reserve	85	JDCF
Keough Mounds Land and Water Reserve	34.68	JDCF
Beuhler Preserve	25.25	private (JDCF easement)
Galena Gateway Park	100	JDCF
Apple River Property	108	JDCF
Horseshoe Mound	40.19	private (NLI easement)
Richardson - Horseshoe Mound	35	private (JDCF easement)
Presidential Manor (6 contiguous easements)	54.24	private (JDCF easement)
Otis Property	52	private (JDCF easement)
Orr Property	52.4	private (JDCF easement)
Lenstra Property	142.46	private (JDCF easement)
Great Mississippi River Ridge	138.397	private (NLI easement)
Nichols Property		private (NLI easement)
Mississippi Palisades State Park	2500	DNR
Savanna South Railroad Prairie	44	BNSF Railroad Co.
Rice Algific Slope Natural Heritage Landmark	25	private
Princess Mine Algific Slope Natural Heritage Landmark	2	private
Asgard Natural Heritage Landmark	2	private
Ayers Sand Prairie Nature Preserve	115	DNR
Thomson-Fulton Sand Prairie	212	DNR
Thomson-Fulton Railroad Prairie	23	BNSF Railroad Co.

Thomson Sand Prairie	320	FWS
Prairie Trails Natural Heritage Landmark	47	private
Ralls Woods Land and Water Reserve (Falling Down HP)	105	DNR
French Bluff	344	DNR
Otter Creek (NLI easement?)		private
Witkowski State Wildlife Area	1309.324	DNR
Winston Tunnel	226.96	DNR
Gramercy Park	10	City of East Dubuque
Hanley Savanna	154.231	The Prairie Enthusiasts
Primm's Pond	120	DNR
Lost Mound - 3 parcels	97	DNR
<b>TOTAL</b>	<b>34972.49</b>	

**Quad Cities Area**

	<b>Acreage</b>	<b>Ownership</b>
Andalusia Slough Recreation Area	3400	FWS
Milan Bottoms	92	NLI
Boston Bay / New Boston Marsh	920	
Keithsburg [wetlands]	1400	
Black Hawk State Historic Site / Nature Preserve	205	IHPA
Indian Bluff Forest Preserve	192	RICOFPD
Collinson Ecological Field Station / Lindahl Nature Preserve	80	Augustana College
Elton Fawks Bald Eagle Refuge NP	174	DNR
Loud Thunder Forest Preserve	1621	RICOFPD
Ralph Martin Forest Preserve	240	RICOFPD
Illiniwek Forest Preserve	206	RICOFPD
Great River Trail		
Ben Williamson Park	40	
Blanchard Island Recreation Area		
Dorrance Park		

Fisherman's Corner		
Greenvalley Park	250	
Niabi Zoo and Forest Preserve	221	RICOFPD
Smith's Island		
Steel Dam and Hennepin Canal Lake 30		
Sunset Park	300	
Sylvan Island	28	
Denkin Park		
Upper Mississippi River Wildlife and Fish Refuges		FWS
Big River State Forest	2900	DNR
Putney's Landing		DNR
Henderson Creek Wetland		DNR
Hennepin Canal	400	DNR
Albany Mounds	233	IHPA
Millroad Marsh		
FWS easements (Mercer Co.)		private
Bald Bluff Hill Prairie	160	private
Tartan Bluff Hill Prairie Natural Heritage Landmark	40	private
North Henderson Creek Hill Prairie	10	private
Delabar-Pruett Hill Prairie Natural Heritage Landmark	15	private
Eisenmeyer Sand Prairie Natural Heritage Landmark	15	private
Ellison Creek	20	DNR
New Crystal Lake Club Natural Heritage Landmark	1335	private
Pool 16	5800	
Pool 17	4000	
Pool 18	5800	
<b>TOTAL</b>	<b>30097</b>	

<b>Quincy Area</b>	<b>Acreage</b>	<b>Ownership</b>
Gardner / Long Island	1450	COE/FWS
Quincy Bay	148	
Bear Creek (CRP, other ag programs)		private
Quinssippi Island	130	

Indian Mounds Park	37	QPD
Gardner Park	43	QPD
Cedar Creek Trail		QPD
Nauvoo State Park	148	DNR
Nauvoo Flats Wildlife Sanctuary		DNR
Dallas City Wetland	20	City of Dallas City
Stony Hills Nature Preserve / Jamar Haven LWR	196	PLC
Max & Edward Rowe Tract	30.5	DNR
Reed Wildlife State Habitat Area		DNR
Cedar Glen State Natural Area	1205	DNR
Alice Kibbe Field Station	251	WIU
Mississippi River Sand Hills Nature Preserve		DNR
Geode Glen Park		City of Warsaw
Pool 21	8500	COE
Pool 22	6900	COE
Fall Creek Scenic Overlook (Fall Creek Gorge)	222.38	DNR
<b>TOTAL</b>	<b>19280.88</b>	

<b>Pere Marquette</b>	<b>Acreage</b>	<b>Ownership</b>
Two Rivers NWR (Apple Creek, Batchtown, Calhoun, Gilbert Lk, Portage Island, Clarksville Island)	9361	FWS
Del Air	1730	FWS
Piasa Island	400	
Stump Lake; Glades / 12 mile Island (Pool 26)	223	
Swan Lake	4835	
Clarksville Island		
Big Britches Natural Heritage Landmark	145	private
Grubb Hollow Nature Preserve	50	DNR
North New Canton Hill Prairie	10	private
Walnut Grove Hill Prairie NHL	50	private
Jennings Family Hill Prairie NP	29	private
McNabb Hollow		private
Helmbold Slough WMA (Pool 26)	729	DNR

Fuller Lake WMA	1100	DNR
Calhoun Point WMA (Pool 26)	2215	DNR
Red's Landing WMA (Pool 25)	1100	DNR
Rip Rap Landing	200	DNR
Pool 24	10,200	ACE
Pool 25		ACE
Principia Hill Prairie - East Natural Heritage Landmark	475	private
Principia Hill Prairie - West Natural Heritage Landmark	80	private
McCulley Heritage Project	940	private
Kopp's Glade Natural Heritage Landmark	26	private
Swarnes Hill Prairie Natural Heritage Landmark	8	private
<b>TOTAL</b>	<b>33906</b>	

### Appendix III. Contacts for the Upper Mississippi River COA

<b>Driftless Area Contacts</b>				
<b>Last Name</b>	<b>First Name</b>	<b>Organization/ Agency</b>	<b>E-mail</b>	<b>Phone</b>
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Anderson	Alan	FWS, Lost Mound Site Manager	<a href="mailto:alan_anderson@fws.gov">alan_anderson@fws.gov</a>	815-273-3184
Anderson	Eric	Natural Land Institute/ Quad Cities Natural Area Guardians	<a href="mailto:nlibluff@gmail.com">nlibluff@gmail.com</a>	309-644-1969
Arnold	Tom	Northwest IL Forestry Association	<a href="mailto:info@nifatrees.org">info@nifatrees.org</a>	
Beissel	Tom	IL DNR Region 1 Wildlife Biologist	<a href="mailto:tom.beissel@illinois.gov">tom.beissel@illinois.gov</a>	815-625-2968
Bell	John	Jo Daviess County NRCS, District Conservationist	<a href="mailto:john.bell@il.usda.gov">john.bell@il.usda.gov</a>	815-858-3418 x 3
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<b>Quad Cities Area Contacts</b>				
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


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## Appendix IV. Species of Greatest Need of Conservation (SGNC) for Upper Mississippi River COA

Illinois Wildlife Action Plan Species Selection Criteria	
The following criteria are being used to select these priority species: (i.e.,SGNC)	
1. All species listed as threatened or endangered in Illinois, including federally listed species that occur within the State.	
2. Species with a global conservation rank indicator of G1, G2, or G3.	
3. Species is rare (small or low population size, density or range) or has significantly declined in abundance or distribution from historical levels.	
4. Species is dependent upon a rare or vulnerable habitat for one or more life history needs (breeding, migration, wintering).	
5. Species is endemic to Illinois, or the Illinois population is disjunct from the rest of the species' range.	
6. Illinois' population of a species represents a significant proportion of the species' global population.	
7. Species is representative of broad array of other species found in a particular habitat.	
8. Species' status is poorly known, but available evidence suggests conservation concern.	

	On IWAP SGNC list & Listed in Middle Mississippi Border Natural Division (Critical, Emphasis Game, Non-game Indicator)			
	On IWAP SGNC list & Listed in UMR & Illinois River Bottomlands Natural Division (Critical, Emphasis Game, Non-game Indicator)			
	On IWAP SGNC list & Listed in Illinois River & Mississippi River Sand Areas Natural Division (Critical, Emphasis Game, Non-game Indicator)			
	On IWAP SGNC list & Listed in Wisconsin Driftless Natural Division (Critical, Emphasis Game, Non-game Indicator)			
	Not color-coded = Listed as SGNC			
ST= State Threatened; SE= State Endangered; FT= Federally Threatened; FE= Federally Endangered				
<b>INVERTEBRATES</b>				
<b>Mollusks</b>		<i>T &amp; E Species</i>	<i>Nat. Div. Species Designation (Critical, Emphasis, Nongame)</i>	
spindle lymnaea	<i>Acella haldemani</i>			
slippershell mussel	<i>Alasmidonta viridis</i>	ST	(Critical)	
rock pocketbook	<i>Arcidens confragosus</i>			

midland slitsnail	<i>Cincinnatia integra</i>			
purple wartyback	<i>Cyclonaias tuberculata</i>	ST		
spectaclecase mussel	<i>Cumberlandia monodonta</i>	SE		
Iowa Pleistocene snail	<i>Discus macclintocki</i>	FE SE	(Critical)	
butterfly	<i>Ellipsaria lineolata</i>	ST		
elephant-ear mussel	<i>Elliptio crassidens</i>	ST		
spike	<i>Elliptio dilatata</i>	ST		
snuffbox mussel	<i>Epioblasma triquetra</i>	SE		
carinate pillsnail	<i>Euchemotrema (= Stenotrema) hubrichti</i>			
Hoosier amnicola	<i>Fontigens aldrichi</i>			
Hydrobiid cavesnail	<i>Fontigens antroecetes</i>			
ebonyshell	<i>Fusconaia ebena</i>	ST		
snaggletooth snail	<i>Gastrocopta rogersensis</i>			
Higgins eye	<i>Lampsilis higginsii</i>	FE SE		
creek heelsplitter	<i>Lasmigona compressa</i>			
fluted-shell	<i>Lasmigona costata</i>			
black sandshell	<i>Ligumia recta</i>	ST	(Critical)	
armored rocksnail	<i>Lithasia armigera</i>			
Shawnee rocksnail	<i>Lithasia obovata</i>			
varicose rocksnail	<i>Lithasia verrucosa</i>			
Ozark mantleslug	<i>Megapallifera ragsdalei</i>			
	<i>Micromenetus sampsoni</i>			
Louisiana ambersnail	<i>Oxyloma salleanum</i>			
domed supercoil	<i>Paravitrea significans</i>			
orange-foot pimpleback	<i>Plethobasus cooperianus</i>	FE SE		
sheepnose mussel	<i>Plethobasus cyphus</i>	SE		
rugged hornsnail	<i>Pleurocera alveare</i>			
fat pocketbook pearly mussel	<i>Potamilus capax</i>	FE SE		
moss pyrg	<i>Pyrgulopsis scalariformis</i>			
monkeyface	<i>Quadrula metanerva</i>			
salamander mussel	<i>Simpsonaias ambigua</i>	SE		
sandbar pebblesnail	<i>Somatogyryus depressus</i>			

coldwater pondsnail	<i>Stagnicola woodruffi</i>			
eightfold pinecone	<i>Strobilops affinis</i>			
spotted ambersnail	<i>Succinea forsheyi</i>			
rivercliff threetooth	<i>Triodopsis discoidea</i>			
baffled three-tooth	<i>Triodopsis fradulenta</i>			
purplecap valvata	<i>Valvata perdepressa</i>			
multirib vallonina	<i>Vallonia gracilicosa</i>			
ellipse	<i>Venustaconcha ellipsiformis</i>			
rotund mysterysnail	<i>Viviparus intertextus</i>			
olive mysterysnail	<i>Viviparus subpurpureus</i>			
sharp wedge	<i>Xolotrema obstrictum</i>			
dull gloss	<i>Zonitoides limatulus</i>			
<b>Crustaceans</b>				
	<i>Batrachus brachycaudus</i>			
crayfish	<i>Cambarus laevis</i>			
a cave obligate isopod	<i>Caecidotea beattyi</i>			
a cave obligate isopod	<i>Caecidotea bicrenata</i>			
isopod	<i>Caecidotea lesliei</i>	SE		
a cave obligate isopod	<i>Caecidotea packardi</i>			
a cave obligate isopod	<i>Caecidotea spatulata</i>	SE		
	<i>Caecidotea tridentata</i>			
anomalous spring amphipod	<i>Crangonyx anomalus</i>	SE		
amphipod	<i>Crangonyx packardi</i>	SE		
a cave obligate copepod	<i>Diacyclops clandestinus</i>			
Illinois cave amphipod	<i>Gammarus acherondytes</i>	FE SE		
Bousfield's amphipod	<i>Gammarus bousfieldi</i>			
Illinois crayfish	<i>Orconectes illinoisensis</i>			
Indiana crayfish	<i>Orconectes indianensis</i>	SE		
Kentucky crayfish	<i>Orconectes kentuckiensis</i>	SE		
shrimp crayfish	<i>Orconectes lancifer</i>	SE		
bigclaw crayfish	<i>Orconectes placidus</i>	SE		

crayfish	<i>Orconectes stannardi</i>				
Iowa amphipod	<i>Stygobromus iowae</i>	SE	(Critical)		
subtle cave amphipod	<i>Stygobromus subtilis</i>				
<b>Insects</b>					
cobweb skipper	<i>Hesperia metea</i>	ST	(Critical)		
Ottoo skipper	<i>Hesperia ottoe</i>	ST	(Critical)		
regal fritillary	<i>Speyeria idalia</i>	ST	(Critical)	(Critical)	
gorgone checkerspot	<i>Chlosyne gorgone</i>		(Critical)		
prairie walking stick	<i>Diaperomera velii</i>		(Critical)		
leafhopper	<i>Polyamia herbida</i>		(Critical)		
leafhopper	<i>Polyamia obtecta</i>		(Critical)		
Edward's hairstreak	<i>Satyrrium edwardsii</i>		(Critical)		
leafhopper	<i>Scaphytopius cinereus</i>		(Critical)		
lead plant flower moth	<i>Schinia lucens</i>		(Critical)		
<b>VERTEBRATES</b>					
<b>Fishes</b>					
lake sturgeon	<i>Acipenser fulvescens</i>	SE			
American eel	<i>Anguilla rostrata</i>				
brown bullhead	<i>Ameiurus nebulosis</i>				
western sand darter	<i>Ammocrypta clara</i>	SE			
eastern sand darter	<i>Ammocrypta pellucida</i>	ST			
largescale stoneroller	<i>Campostoma oligolepis</i>		(Critical)		
highfin carpsucker	<i>Carpoides velifer</i>				
longnose sucker	<i>Catostomus catostomus</i>	ST			
flier	<i>Centrarchus macropterus</i>				
cisco or lake herring	<i>Coregonus artedi</i>	ST			
lake whitefish	<i>Coregonus clupeaformis</i>				
mottled sculpin	<i>Cottus bairdi</i>				
banded sculpin	<i>Cottus carolinae</i>		(Critical)		

lake chub	<i>Couesius plumbeus</i>				
crystal darter	<i>Crystallaria asprella</i>				
brook stickleback	<i>Culaea inconstans</i>				
blue sucker	<i>Cycleptus elongatus</i>				
blacktail shiner	<i>Cyprinella venusta</i>				
banded pygmy sunfish	<i>Elassoma zonatum</i>				
gravel chub	<i>Erimystax x-punctatus</i>	ST			
lake chubsucker	<i>Erimyzon sucetta</i>				
northern pike - native stocks	<i>Esox lucius</i>				
muskellunge-native stocks	<i>Esox masquinongy</i>				
bluebreast darter	<i>Etheostoma camurum</i>	SE			
bluntnose darter	<i>Etheostoma chlorosomum</i>				
fringed darter	<i>Etheostoma crossopterus</i>				
Iowa darter	<i>Etheostoma exile</i>	ST			
Harlequin darter	<i>Etheostoma histrio</i>	SE			
cypress darter	<i>Etheostoma proelaire</i>				
spottail darter	<i>Etheostoma squamiceps</i>				
spring cavefish	<i>Forbesichthys agassizi</i>				
banded killifish	<i>Fundulus diaphanus</i>	ST			
starhead topminnow	<i>Fundulus dispar</i>	ST			
cypress minnow	<i>Hybognathus hayi</i>	SE			
bigeye chub	<i>Hybopsis amblops</i>	SE			
pallid shiner	<i>Hybopsis amnis</i>	SE			
northern brook lamprey	<i>Ichthyomyzon fossor</i>	SE			
silver lamprey	<i>Ichthyomyzon unicuspis</i>				
least brook lamprey	<i>Lampetra aepyptera</i>	ST			
American brook lamprey	<i>Lampetra appendix</i>				
redspotted sunfish	<i>Lepomis miniatus</i>	ST			
bantam sunfish	<i>Lepomis symmetricus</i>	ST			
ribbon shiner	<i>Lythrurus fumeus</i>				
sturgeon chub	<i>Macrhybopsis gelida</i>	SE			
sicklefin chub	<i>Macrhybopsis meeki</i>				

smallmouth bass	<i>Micropterus dolomieu</i>		(Emphasis Game)	(Emphasis Game)	
spotted bass	<i>Micropterus punctulatus</i>				
river redhorse	<i>Moxostoma carinatum</i>	ST			
black redhorse	<i>Moxostoma duquesnei</i>				
greater redhorse	<i>Moxostoma valenciennesi</i>	SE			
fourhorn sculpin	<i>Myoxocephalus quadricornis</i>				
river chub	<i>Nocomis micropogon</i>	SE			
pugnose shiner	<i>Notropis anogenus</i>	SE			
bigeye shiner	<i>Notropis boops</i>	SE			
ghost shiner	<i>Notropis buchani</i>				
ironcolor shiner	<i>Notropis chalybaeus</i>	ST			
blackchin shiner	<i>Notropis heterodon</i>	ST			
blacknose shiner	<i>Notropis heterolepis</i>	SE			
taillight shiner	<i>Notropis maculatus</i>	SE			
Ozark minnow	<i>Notropis nubilus</i>		(Critical)		
rosyface shiner	<i>Notropis rubellus</i>				
silverband shiner	<i>Notropis shumardi</i>				
weed shiner	<i>Notropis texanus</i>	SE			
mountain madtom	<i>Noturus eleutherus</i>				
slender madtom	<i>Noturus exilis</i>		(Critical)		
northern madtom	<i>Noturus stigmosus</i>	SE			
pugnose minnow	<i>Opsopoeodus emilae</i>				
yellow perch	<i>Perca flavescens</i>				
trout-perch	<i>Percopsis omiscomaycus</i>				
southern redbelly dace	<i>Phoxinus erythrogaster</i>		(Non-game Indicator)	(Non-game Indicator)	
North American paddlefish	<i>Polyodon spathula</i>		(Critical)		
blacknose dace	<i>Rhynchichthys atratulus</i>				
longnose dace	<i>Rhynchichthys cataractae</i>		(Critical)		
	<i>Salvelinus fontinalis</i>				
lake trout	<i>Salvelinus namaycush</i>				
pallid sturgeon	<i>Scaphirhynchus albus</i>	FE SE			

shovelnose sturgeon	<i>Scaphirhynchus platorhynchus</i>			
sauger	<i>Stizostedion canadense</i>			
walleye	<i>Stizostedion vitreum</i>		(Emphasis Game)	
central mudminnow	<i>Umbra limi</i>			
<b>Amphibians</b>				
Jefferson salamander	<i>Ambystoma jeffersonianum</i>	ST		
blue-spotted salamander	<i>Ambystoma laterale</i>			
silvery salamander	<i>Ambystoma platineum</i>	SE		
mole salamander	<i>Ambystoma talpoideum</i>			
spotted dusky salamander	<i>Desmognathus conanti</i>	SE		
eastern narrowmouth toad	<i>Gastrophryne carolinensis</i>	ST		
four-toed salamander	<i>Hemidactylium scutatum</i>	ST	(Critical)	
mudpuppy	<i>Necturus maculosus</i>			
Illinois chorus frog	<i>Pseudacris streckeri illinoensis</i>	ST	(Critical/ Non-game Indicator)	
crayfish frog	<i>Rana areolata</i>			
pickerel frog	<i>Rana palustris</i>			
wood frog	<i>Rana sylvatica</i>			
<b>Reptiles</b>				
smooth softshell turtle	<i>Apalone mutica</i>		(Critical)	
Kirtland's snake	<i>Clonophis kirtlandii</i>	ST		
timber rattlesnake	<i>Crotalus horridus</i>	ST	(Critical)	(Critical)
Blanding's turtle	<i>Emydoidea blandingii</i>	ST		
western hognose snake	<i>Heterodon nasicus</i>	ST	(Critical)	
Illinois mud turtle	<i>Kinosternon flavescens</i>	SE	(Critical)	
eastern mud turtle	<i>Kinosternon subrubrum</i>			
n. copperbelly watersnake	<i>Nerodia erythrogaster neglecta</i>			
slender glass lizard	<i>Ophisaurus attenuatus</i>			
eastern massasauga	<i>Sistrurus catenatus catenatus</i>	FC SE		
ornate box turtle	<i>Terrapene ornata</i>		(Critical/Non-game Indicator)	
lined snake	<i>Tropidoclonion lineatum</i>	ST		(Critical)

<b>Birds</b>					
Henslow's sparrow	<i>Ammodramus henslowii</i>		(Non-game Indicator)		
LeConte's sparrow	<i>Ammodramus leconteii</i>				
Nelson's sharp-tailed sparrow	<i>Ammodramus nelsoni</i>				
grasshopper sparrow	<i>Ammodramus savannarum</i>		(Non-game Indicator)		
American black duck	<i>Anas rubripes</i>				
great egret	<i>Ardea alba</i>		(Critical/Non-game Indicator)		
short-eared owl	<i>Asio flammeus</i>	SE	(Critical)		
lesser scaup	<i>Aythya affinis</i>		(Critical)		
canvasback	<i>Aythya valisineria</i>		(Critical)		
upland sandpiper	<i>Bartramia longicauda</i>	SE	(Critical)	(Critical)	
ruffed grouse	<i>Bonasa umbellus</i>				
American bittern	<i>Botaurus lentiginosus</i>	SE	(Critical)		
red-shouldered hawk	<i>Buteo lineatus</i>				
broad-winged hawk	<i>Buteo platypterus</i>				
Swainson's hawk	<i>Buteo swainsoni</i>	SE			
Smith's longspur	<i>Calcarius pictus</i>				
stilt sandpiper	<i>Calidris himantopus</i>				
chuck-will's-widow	<i>Caprimulgus carolinensis</i>		(Non-game Indicator)		
whip-poor-will	<i>Caprimulgus vociferus</i>				
brown creeper	<i>Certhia americana</i>		(Critical)		
chimney swift	<i>Chaetura pelagica</i>				
piping plover	<i>Charadrius melodus</i>	FE SE			
black tern	<i>Chlidonias niger</i>	SE			
common nighthawk	<i>Chordeiles minor</i>		(Critical/ Non-game Indicator)		
northern harrier	<i>Circus cyaneus</i>	SE	(Critical)	(Critical)	
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>	SE		
northern flicker	<i>Colaptes auratus</i>			
northern bobwhite	<i>Colinus virginianus</i>		(Critical)	(Critical)
yellow rail	<i>Coturnicops noveboracensis</i>			
trumpeter swan	<i>Cygnus buccinator</i>			
cerulean warbler	<i>Dendroica cerulea</i>	ST	(Critical)	
prairie warbler	<i>Dendroica discolor</i>			
bobolink	<i>Dolichonyx oryzivorus</i>		(Non-game Indicator)	
little blue heron	<i>Egretta caerulea</i>	SE	(Critical)	
snowy egret	<i>Egretta thula</i>	SE	(Critical)	
willow flycatcher	<i>Empidonax traillii</i>			
Acadian flycatcher	<i>Empidonax virescens</i>			
rusty blackbird	<i>Euphagus carolinus</i>			
peregrine falcon	<i>Falco peregrinus</i>	FE ST		
common moorhen	<i>Gallinula chloropus</i>	ST		
Wilson's snipe	<i>Gallinago delicatata</i>		(Critical)	
whooping crane	<i>Grus americana</i>			
sandhill crane	<i>Grus canadensis</i>	ST		
bald eagle	<i>Haliaeetus leucocephalus</i>	FT ST	(Critical)	
worm-eating warbler	<i>Helmitheros vermiforma</i>			
wood thrush	<i>Hylocichla mustelina</i>		(Non-game Indicator)	
yellow-breasted chat	<i>Icteria virens</i>		(Non-game Indicator)	
Mississippi kite	<i>Ictinia mississippiensis</i>	SE		
least bittern	<i>Ixobrychus exilis</i>	ST	(Critical)	
loggerhead shrike	<i>Lanius ludovicianus</i>	ST	(Critical)	(Critical)
black rail	<i>Laterallus jamaicensis</i>	SE	(Critical)	
short-billed dowitcher	<i>Limnodromus griseus</i>			
Swainson's warbler	<i>Limnothlypis swainsonii</i>	SE		
hooded merganser	<i>Lophodytes cucullatus</i>			
red-headed woodpecker	<i>Melanerpes erythrocephalus</i>		(Critical/ Non-game Indicator)	(Critical/

					Non-game Indicator)
yellow-crowned night-heron	<i>Nyctanassa violacea</i>	SE			
black-crowned night-heron	<i>Nycticorax nycticorax</i>	SE	(Critical)		
Connecticut Warbler	<i>Oporornis agilis</i>				
Kentucky warbler	<i>Oporornis formosus</i>				
osprey	<i>Pandion haliaetus</i>	SE	(Critical)		
savannah sparrow	<i>Passerculus sandwichensis</i>		(Non-game Indicator)		
Wilson's phalarope	<i>Phalaropus tricolor</i>	SE			
American golden-plover	<i>Pluvialis dominica</i>				
pie-billed grebe	<i>Podilymbus podiceps</i>				
prothonotary warbler	<i>Protonotaria citrea</i>		(Critical/ Non-game Indicator)		
king rail	<i>Rallus elegans</i>	SE	(Critical)		
American woodcock	<i>Scolopax minor</i>		(Emphasis Game)		
ovenbird	<i>Seiurus aurocapillus</i>		(Non-game Indicator)		
dickcissel	<i>Spiza americana</i>		(Non-game Indicator)	(Non-game Indicator)	
field sparrow	<i>Spizella pusilla</i>				
least tern	<i>Sterna antillarum</i>	FE SE			
Forster's tern	<i>Sterna forsteri</i>	SE			
common tern	<i>Sterna hirundo</i>	SE			
Bewick's wren	<i>Thryomanes bewickii</i>	SE			
brown thrasher	<i>Toxostoma rufum</i>		(Non-game Indicator)		
greater yellowlegs	<i>Tringa melanoleuca</i>				
buff-breasted sandpiper	<i>Tryngites subruficollis</i>				
barn owl	<i>Tyto alba</i>	SE	(Critical)		
blue-winged warbler	<i>Vermiforma pinus</i>				
Bell's vireo	<i>Vireo belli</i>				
yellow-headed blackbird	<i>Xanthocephalus xanthocephalus</i>	SE			

<b>Mammals</b>					
river otter	<i>Lontra canadensis</i>		(Critical)		
bobcat	<i>Lynx rufus</i>		(Critical)	(Critical)	(Critical)
woodland vole	<i>Microtus pinetorum</i>				
least weasel	<i>Mustela nivalis</i>				
gray bat	<i>Myotis grisescens</i>	FE SE			
Indiana bat	<i>Myotis sodalis</i>	FE SE	(Critical)		
muskrat	<i>Ondatra zibethicus</i>		(Emphasis Game)	(Emphasis Game)	
Franklin's ground squirrel	<i>Spermophilus franklinii</i>	ST			
American badger	<i>Taxidea taxus</i>			(Critical)	
gray fox	<i>Urocyon cinereoargenteus</i>		(Emphasis Game)	(Critical)	(Emphasis Game)