

Wetlands Campaign

Description (alternative name – “What the Campaign does”)

The Wetlands Campaign focuses on the conservation of wetlands throughout Illinois, but with specific emphasis on priority natural divisions with the greatest wetland resources or potential (Schulthies and Eichholz 2014). More specifically, the Campaign will try to positively influence wetland SGNC through increases in wetland acreage, increasing wetland quality, or through wetland management.

Additionally, wetland supportive administrative policy may provide the greatest wetland habitat benefits at broad landscape scales. Conservation actions are focused to impact wildlife species, but secondary results will have positive effects on ecosystems, plant communities, and society.

Wetlands are important habitats that provide a number of valuable ecological services.

By holding drainage waters and moderating storm water runoff, wetlands help to dampen changes in water levels in rivers and streams, reducing flooding (Demissie and Khan 1993), and recharging groundwater supplies. When allowed to persist naturally in structure and function, wetlands provide locations where water and nutrients pool, wetlands are highly productive in plant and animal life. Similarly, by intercepting and slowly releasing runoff allows physical and biochemical treatment of sediment and other pollutants that severely degrade natural features and ecosystem services provided by wetland habitats.

Wetlands were once a dominant feature of the Illinois landscape, but have been reduced by more than 90% for agriculture, development, and other land uses (Dahl 2006). Of the remaining wetlands in Illinois, most have been highly degraded. Invasive plants and animals have reduced biodiversity and degraded the habitat structure and function of wetlands. Remaining wetlands are increasingly isolated from other wetlands and other quality habitats. Sedimentation has reduced wetland volume. Changes in hydrology and drainage have starved some wetlands of water and overwhelmed others. Wetlands are naturally dynamic systems, and are dependent on disturbance (both flood and drought) to remain healthy and functional. However, the type, rate and severity of changes have often been well outside of natural thresholds. Therefore, each of these stresses has reduced the ability of remaining wetlands to perform their ecosystem functions, including the provision of sustainable, diverse and abundant wildlife populations.

Despite changes in societal views of wetlands, some sectors continue to perceive wetlands negatively as breeding grounds for mosquitoes or undesirable animals and as wastelands or marginal areas for “productive” uses. Thus, pressure to drain, fill, or otherwise eliminate wetlands as well as resistance to restoration or establishment remains high in many areas. In light of the increasingly-known benefits of wetlands, a focused and persistent educational component may prove valuable to continue to raise public awareness of the benefits provided by wetlands. A number of regulations have emerged to protect remaining wetlands and mitigate for losses. Illinois’ Interagency Wetlands Act of 1989, for example, outlined a goal of no net loss of wetland acres or functional value due to state-supported activities. In addition to mitigation regulations, many agencies, organizations and programs encourage

the voluntary restoration of wetlands. In general, restored wetlands have lesser ecological function than natural wetlands, though restoration techniques are improving. Restoring wetlands to former function (e.g., wildlife habitat) may not be possible by simply restoring historic physical attributes or conditions. Adjacent systems and landscapes have also changed substantially through time, thus, simply mimicking historic features may not result in desired conditions. Despite these challenges, a number of large-scale partnership wetland restoration projects have been underway in Illinois, including the Cache River project in far southern Illinois, and the Emiquon Complex and Hennepin & Hopper Lakes on the middle Illinois River. These restorations have resulted in high quality wetland systems recognized by the international community for their importance (see Status, page 4; Ramsar 2014).

Where will the Wetlands Campaign be focused?

To determine priority places for the Wetlands Campaign to target, we relied heavily on a final report produced through a cooperative project between IDNR and SIU-C which outlined the spatial and energetic needs of several focal species and groups of wetland-dependent wildlife (Schulties and Eichholz 2013). Input from Wetlands Campaign Partners provided during an April 2013 meeting, subsequent correspondence, and expert opinion from the Campaign Lead and a number of other engaged partners determined three tiers in which to focus wetland conservation efforts (Appendix 1). These ranged from statewide (Tier 1), to priority natural divisions and individual high quality wetlands (Tier 2), to specific sites within priority natural divisions (Tier 3). The priority tiers are identified and are listed in the Actions section of the Wetlands Campaign below (page 11 and Appendix 1). Additionally, **Conservation Opportunity Areas (page XXX)** fall within several Tier 2 natural divisions and encompass several Tier 3 sites (highest priority).

Goals (alternative name – “What we want to accomplish”)

The primary goals of the Wetlands Campaign include increasing wetland habitat acreage, interconnectedness and quality in order to meet the requirements of SGCN, while promoting progressive, adaptable, sustainable, science-based management of existing wetlands to support all wetland wildlife. Achieving these goals will preserve natural features by restoring ecosystem processes that allow self-regulation, decrease habitat fragmentation and integrate best management practices on both public and private lands within selected opportunity areas. In addition, particular emphasis will be given to enhancing highly productive wetland and aquatic habitats to benefit wetland-dependent SGNC, especially migratory waterfowl and waterbirds. Management practices that emphasize high quality and highly productive wetland habitats and migratory birds will benefit all wetland-dependent species targeted within the IWAP.

Habitat Goals

- A net gain of 20% of marsh wetland types is achieved through restoration, enhancement and management. These should be concentrated in priority Natural Divisions.
- A net gain of 40% of combined wetland types is achieved in the river bottomlands natural divisions of Illinois, primarily the Illinois and Mississippi River Sand Areas, Lower Mississippi River

Bottomlands, Upper Mississippi River and Illinois River Bottomlands, Wabash River Border, and Coastal Plain.

- Review wetland habitat goals and deficits identified by the Upper Mississippi River and Great Lakes Regions Joint Venture needed to achieve focal species population goals. Implement strategies to reduce or eliminate deficits in Illinois.
- Sufficient ephemeral and fishless semi-permanent wetlands (i.e. vernal pools, prairie potholes, landscape depressions) to support objectives for dependent species of wildlife (e.g., dragonflies, amphibians).
- Moist-soil management or other natural wetland management strategies (e.g., hemi-marsh) adopted on public waterfowl management areas and other sites to increase wading bird, waterfowl, shorebird, and other wildlife use.
- Water quality is maintained or improved through habitat management (in wetlands and uplands) in order to support SGCN.
- Increased wetland education in targeted locations (e.g., areas under pressure for wetland loss, with high wetland restoration potential, or with chronic flooding issues associated with local streams or rivers) will increase support for wetlands and wetland management regimes that benefit wildlife and society.
- Total sediment delivery to wetlands is reduced through the use of buffers along streams, ditches and other waterways, use of conservation easements on highly erodible agricultural acreage, and adoption of other erosion control practices.
- The distribution and impact of detrimental wetland invasive species is stabilized or reduced by active management or other conservation action.
- High-quality examples of all wetland communities, including all Grade A and B Illinois Natural Areas Inventory sites, are protected, restored and managed within all natural divisions within which they occur (Need a Natural Inventories Citation).
- Increase wetland abundance to increase water storage capacity by 50% within targeted watersheds with persistent flooding issues (Demisse and Khan 1993). These wetlands should be structured to provide habitat for SGCN and function as natural systems where possible.

SGCN Goals

- Identify or develop monitoring programs for each focal species guild that are able to recognize population trends at statewide, or ideally, finer spatial scales (i.e., natural division). Existing surveys (e.g., Breeding Bird Survey) may meet these needs for some groups of species.

Amphibians & Reptiles

- The distribution and abundance of reptile and amphibian populations are understood with confidence, and sentinel monitoring can identify conservation needs.
- Provide sufficient complexes of wetland habitat of varying types (i.e., ephemeral – semi-permanent) within suitable spatial distribution to support diverse herpetofauna through their life cycle within each priority Natural Division. These wetlands should be connected with corridors to facilitate movement and distribution.

Birds

- Breeding populations of Wilson's Snipe, Black Tern, Willow Flycatchers, and Marsh Wrens have increased by 50%. (Marsh, Vernal Pool)
- Recovery plans for state-listed wetland birds, including King Rail, Least Bittern, Black- and Yellow-crowned Night Herons, Forster's Tern, Common Gallinule, American Bittern, and Wilson's Phalarope, are developed. Habitat suitable to support at least two breeding populations of Black Rails is established. (Marsh, Sedge Meadow, Swamp)
- The number of multiple-species wading bird rookeries has increased by 25%. (Swamp, Bottomland forest)
- Implement shorebird monitoring during migration periods to track statewide trends. Provide sufficient shorebird habitat (e.g., mudflat) during spring and fall migration to meet Upper Mississippi River and Great Lakes Region Joint Venture objectives. (Potter et al. 2007a; Mudflat, Vernal Pool, Marsh)
- Achieve and maintain 1970's levels (i.e., a time period of high waterfowl abundance used to set NAWMP population goals; Havera 1999) of use-days by migrant duck populations (September-January) on important waterfowl areas in the Illinois and Mississippi River valleys (an increase of 18.5 million duck use-days, or 50%). Assuming average weather conditions and continental duck populations at North American Waterfowl Management Plan goals. (Marsh, Mudflat, Moist-soil)
- Increase *Athya spp.* (i.e., diving duck) abundance during fall migration in the Illinois River valley by 50% from 1.2 million to 1.8 million duck use-days annually. Lesser Scaup should account for half of this increase (300,000 DUD increase). (Marsh, Moist-soil)
- Support breeding duck densities of 5.0 pairs/sq. km or annual breeding Mallard population of 20,000 in the Glacial Lakes region of northeastern Illinois. (Marsh, associated upland)
- Maintain, where stable or increasing, or increase, where declining, statewide nesting populations of Wood Ducks, Hooded Mergansers (Sauer et al. 2014) and other wooded wetland dependent SGCN (e.g., Prothonotary Warbler). (Bottomland Forest, Swamp)

Status as of 2015 (alternative name – “Where we are as of 2015”)

Despite strides towards wetland conservation in a few strategic locations within Illinois, wetlands remain well below historic acreages (Dahl 2006), and goals set in the 2005 IWAP. This is reflected by several once common species classified and remaining as SGCN due to habitat limitations. Furthermore, Illinois experiences extreme fluctuations in stream flow due to wetland drainage, consolidation, and elimination (Bellrose et al. 1983, Demissie and Khan 1993). Flood pulses are more frequent and more pronounced (i.e., greater depth and duration) statewide, in nearly all watersheds. Flood pulses are not only more intense, but also occur during all periods of the year, as opposed to historic systems where spring rains and runoff drove dependable, annual flood pulses. While rivers, streams and their associated wetlands have become more unpredictable, many wetland systems have also been artificially stabilized, reducing the natural cycling that maintains quality, diversity and productivity. Wetland systems and other habitats they are interconnected with, continue to degrade in Illinois for a variety of reasons.

Education is necessary to help the public understand water management at local and landscape scales. Typically, pooled water not associated with waterbodies is treated as unacceptable, and every effort is made to move this water to ditches, streams and rivers as quickly as possible. This is true of municipalities as well as agricultural areas. However, this only exacerbates flooding in downstream areas. Many places where water pools were likely once natural wetlands that have been converted to other uses. Natural wetlands hold water and slowly release it to streams, rivers and groundwater, effectively storing precipitation or runoff. Flooding may still occur in unaltered wetland systems, but it is typically less intense and less frequent.

Six primary Actions were identified in the 2005 IWAP, and are presented here along with their current status. Some of these actions have been and continue to be addressed, while others have largely languished, making little progress. Note, these are Actions identified in the 2005 IWAP, and not necessarily reflective of specific Actions included in this update, although many are related.

1. *Improve the condition of existing natural and artificial wetlands.*

Status: As an indication of wetland importance, condition and quality, Illinois encompasses three wetlands that have been designated Wetlands of International Importance by the RAMSAR Convention. These include the Cache River and Cypress Creek wetlands in southern Illinois, and the Emiquon Complex and the Sue and Wes Dixon Waterfowl Refuge at Hennepin and Hopper Lakes along the middle Illinois River. The two sites along the Illinois River were dedicated in 2012 following restoration of wetlands once drained for agricultural production and contained within drainage and levee districts adjacent to the Illinois River. These wetland restorations, and the biological and ecological responses observed represent exceptional examples of wetland conservation potential, and are recognized as such by the international wetland community.

Since 2005, Ducks Unlimited has restored or enhanced 8,000 acres of wetland and 2,000 acres of associated upland habitat across Illinois, and protected another 6,400 acres of wetland habitat through fee-title acquisition, conservation easements, or long-term management agreements. Many of these projects improved water management capabilities as a strategy to enhance natural wetland functions, values and productivity. DU's wetland projects are most concentrated in the Upper Mississippi River & Illinois River Bottomlands, Lower Mississippi River Bottomlands and Northeastern Morainal Natural Divisions, all of which are identified as being statewide priorities. Ducks Unlimited's southern Illinois program is focused on building landscape-scale wetland complexes for migrating and wintering waterfowl in the Coastal Plain and Lower Mississippi Bottomlands natural divisions.

2. *Develop and manage additional wetland habitat.*

Status: Ducks Unlimited has acquired and developed approximately 750 acres of additional wetland habitat along the Illinois River, another 400 acres of wetland habitat along the Mississippi River, and 100 acres of wetlands in Northeast Illinois in partnership with the Illinois Department of Natural Resources, U.S. Fish and Wildlife Service, Natural Resources Conservation Service, U.S. Forest Service and local Forest Preserves/Conservation Districts.

Since 2006 812 acres have been enrolled in federal CP23 and CP9 in addition 4,185 acres of bottomland forest has been permanently protected through Illinois Conservation Reserve Enhancement Program (CREP).

National bird conservation plans step down goals through bird Joint Ventures. These Joint Ventures develop conservation plans using a panel of regional experts for each bird group. In Illinois, the Upper Mississippi River and Great Lakes Region Joint Venture (UMRGLR JV) has developed bird conservation plans for waterfowl (Soulliere et al. 2007a), shorebirds (Potter et al. 2007a), waterbirds (Soulliere et al. 2007b) and landbirds (Potter et al. 2007b). These plans develop habitat objectives based on regional population objectives for focal species. Population deficits (i.e., regional populations have not reached objectives), are assumed to be habitat driven, and habitat deficits are calculated to reach population objectives.

In Illinois, the major habitat deficits for wetland dependent birds include 7,300 hectares of shallow semi-permanent marsh, hemi-marsh for waterfowl (Soulliere et al. 2007a), 26,000 hectares of dry mudflat for shorebirds (Potter et al. 2007), and 900 hectares of shallow semi-permanent marsh, hemi-marsh for waterbirds (Soulliere et al. 2007b). Habitat deficits exist for other habitat types as well, but these represent the greatest deficit for each wetland bird guild. The Joint Venture tracks habitat accomplishments from its partners in each UMRGLR JV state. Illinois has reached 92.1% of its Marsh habitat goals, 16.6% of Open water/Beach goals, and only 3.5% of Mudflat/Shallows goals (Kahler 2014).

Since 2010 over 40 ephemeral wetlands have been created in the Illinois River and Mississippi River Sands Area Natural Division, specifically in Mason and Tazwell Counties to increase Illinois Chorus Frog habitat.

3. *Fill information gaps and develop conservation actions to address stresses.*

Status: The Wetlands Campaign initiated a review of wetland wildlife habitat requirements throughout Illinois (Schulthies and Eichholz 2014). This report identified important wetland regions to focus conservation efforts (i.e., focus Natural Divisions) in the locations that are most important for wetland dependent wildlife. Specific results indicated that wetland habitat requirements were greatest for palustrine forested wetlands, followed by palustrine deep marsh. Wetland habitat requirements were greatest for beavers and waterfowl, and least for marsh rice rats, swamp rabbits, and waterbirds. Deepwater habitat requirements were also highest for beavers and waterfowl, and deep marsh habitat is most lacking statewide. Habitat quality considerations may increase habitat deficits by decreasing the effective acreage of current wetland areas. Finally, because waterfowl abundance can be so large, their energetic demands are also so great, and diverse, that they overwhelm the habitat needs of all other species groups. If the habitat requirements are met for this group, then the habitat needs of all other species groups should be met as well.

Wightman Lake, a former Ducks Unlimited project now owned and managed by the Illinois Department of Natural Resources, serves as a demonstration site for wetland related restoration, management and research associated with the Illinois River. More than 100 natural resource professionals and private land managers have participated in DU led tours of the restored wetland, forest, and prairie habitat at this site. More opportunities exist to educate land managers about wetland management techniques utilizing demonstration sites like Wightman Lake.

A 2005 Wetlands Campaign goal identified increasing duck use-days by 38.9 million, or 147% from current averages (2005) in the Illinois and Mississippi River valleys. Current estimates indicate that this goal has been partially achieved; the deficit has been reduced by approximately 20.4 million use-days to a deficit of 18.5 million, requiring an increase of 50% to achieve the original goal.

Critical Trends Assessment Program has continued to monitor plant, bird, and arthropod communities at randomly selected wetlands throughout the state of Illinois. Since 2005, this has included sampling at least 150 wetland sites throughout the state, most of them twice.

In 2012, Illinois Natural History Survey personnel initiated monitoring of plant community structure and bird communities at select CREP wetland restoration sites.

A range-wide monitoring program has been implemented for the Illinois Chorus Frog beginning in 2015, and will continue for 10 years.

Illinois Natural History Survey personnel are examining use of temporary and seasonal wetlands developed on agricultural lands using drainage water management. This technique involves installing water control structures on agricultural drainage tile to manage these waters. Spring migrating American Golden Plovers use these areas extensively, and the technique does not impact agricultural production.

Illinois Natural History Survey personnel conducted statewide aerial surveys of wading bird rookeries in 2012 and 2014 and found an increase of 37% from previous estimates last recorded in 2001. Although rookeries increased, mean number of nests per colony decreased, and several colonies in perceived high quality areas were vacant (Hagy et al. 2014).

4. *Inter-agency cooperation and coordination to ensure wetland programs do not have conflicting objectives.*

Status: Numerous conservation entities representing federal, state, local government and non-profit organizations are working together in formal, or informal, partnerships to conserve vital wetland habitats through coordinated strategic action. Examples of these wetland focused partnerships include the Cache River Joint Venture, Middle Mississippi River Partnership, Friends of Hackmatack and the Middle Illinois River Conservation Partnership. IWAP Conservation Opportunity Area (COA) designations and objectives are utilized by many of these partnerships to help guide local conservation action.

5. *Emphasize multiple-resource benefits of wetland conservation.*

Status: Although the benefits of wetlands are well known and accepted among managers, researchers, and conservationists, many sectors of society may remain unfamiliar or uncertain about wetland necessity and importance. Agencies, organizations and other groups should work to provide consistent positive messaging about wetlands in order to increase the general public's knowledge of wetlands.

6. *Increase water quality education efforts in areas under high development pressure, and/or within fragile geographic zones (i.e., karst terrain).*

Status: Efforts to educate the public on wetlands issues are common, but may focus on specific segments of the population and not provide a comprehensive or standardized message. Targeted messaging may be the most effective means to educate specific groups about specific

issues. However, an understanding of basic wetland knowledge of wetlands among broad segments of society is needed to provide appropriate messaging. As part of the North American Waterfowl Management Plan, the waterfowl and wetland management community is currently conducting a nationwide evaluation of the public's wetland knowledge and attitudes. These results will likely shape the direction and messaging of wetland conservation toward non-wetland professionals in the future.

Stressors/Threats (alternative name – “What are our major challenges”)

Habitat Stresses

Extent/Fragmentation

- Destruction (drainage/filling; Stressors are *Extent, Fragmentation* and *Disturbance/Hydrology*) due to land conversion for expanding urban/suburban areas, and agriculture.
- Although greater than 90% of Illinois wetlands have already been lost, continued loss is an issue in many areas. This pressure largely stems from agricultural production and continued urban/suburban expansion.
 - Continued pressure from agricultural producers often focusses on removing any standing water from the landscape that could hinder crop production, such as delaying working ground in the spring due to wet conditions, or allowing water to pool while crops are standing.
 - Unfortunately, these actions taken by producers are still viewed as “land improvements” and are not only allowed, but often encouraged to bolster land values and crop production potential.
 - Pressure on wetlands from development largely stems from desires of residents near urban areas to own homes on their own lot of land, which continues to spread (sprawl) urban areas into the surrounding landscape.
 - In Illinois this is most pronounced around the Greater Chicago Metro Area, and the Northeastern Morainal natural division, but other areas of the state are not immune.
- Fiscal and societal barriers to restoration/rehabilitation.
- Monetary land values are high in many areas and land use pressure (i.e., use for other purposes, particularly agriculture and development) prevents further restoration/rehabilitation, or costs are prohibitive to large scale wetland projects.
 - This varies regionally, often by land value and dominant land use. Unfortunately, the areas with the greatest barriers to restoration or rehabilitation are also the areas with the greatest need for wetlands, in terms of habitat for wildlife, and to provide societal benefits (e.g., flood storage, ground water recharge, nutrient sequestration).

Composition

- Wetland degradation, or loss of wetland quality, continues to be a problem in many areas.
- Wetlands remain intact, but either some function is lost/limited, or habitat changes which limit suitability, prevents use by some species, or makes them less attractive.
 - Such issues include unnatural hydrology (growing season flooding, prolonged flooding, lack of drying;), water quality (clarity, oxygen saturation, temperature, etc.), invasive species (carps;), and sedimentation (clarity, depth, substrate firmness).

Hydrology

- Unseasonable flooding

- Floods exceeding the variability in timing, magnitude and duration of those that regularly occurred prior to human induced changes)
- reduces wetland quality by preventing or hindering growth of favorable vegetation adapted to historic conditions.
- May favor undesirable plants and animals (i.e., Asian carps),
- Eliminate habitat at critical times of the annual cycle for some dependent wildlife species.
- Exacerbated by increased water volume entering the river systems more rapidly through increased over-land or subsurface flows (i.e., runoff in developed areas and agricultural drainage), increased weather and precipitation variability due to climate change, and stream channelization.
- Unnatural Hydrologic Stability
 - Wetlands must cycle through periodic drying and flooding over appropriate (natural or artificial) time periods to affect vegetation and wetland substrates in order to retain their natural character or meet design specifications.
 - While some wetlands experience regular flooding and stable water levels, they may rarely experience drying which consolidates substrates, promotes some favorable plant species growth, and increases nutrient cycling and wetland productivity.
 - Artificial stabilization that deviates from pre-disturbance flooding and flow regimes, or a desired artificial water regime in natural or intensively managed wetland systems through stream flow manipulation and other processes further reduces the quality of an already scarce resource.

Pollution

- Sediment carried from uplands and stream bank and bed instability in runoff continues to increase siltation
 - Reduces: depth, clarity, substrate firmness and ability of submersed and emergent vegetation to establish roots in many wetlands.
- Thermal Pollution
 - Warm water inflows from many sources degrade or change wetland systems
- Chemical Pollution
 - Direct point source pollution as well as non-point source chemicals entering wetlands degrade systems and negatively impact wetland dependent species.
- Biological Pollution
 - Wastewater treatment plants inundated by floodwaters
 - Raw sewage flowing into waterways during significant runoff events.

Invasive Species

- Stress natural systems and species through predation, competition, or habitat alteration.
 - Non-native invasive plants often outcompete natives, disrupting wetland habitats, negatively impacting many wetland dependent species.
 - Invasive animals can further degrade habitat or displace native animal species.
- Diseases may stress species through direct mortality or reduced fitness.
- The following Invasive Species are of primary concern for the Wetlands Campaign:
 - Phragmites (*Phragmites australis*)
 - Reed canarygrass (*Phalaris arundinacea*)

- Purple loosestrife (*Lythrum salicaria*)
- Narrow-leaved and hybrid cattails (*Typha angustifolia* and *T. xglauca*)
- Disease/pathogens for herpetofauna such as *Ranavirus* and Chytrid fungus (*Batrachochytrium dendrobatidis*)
- Common and grass carp (*Cyprinus carpio* and *Ctenopharyngodon idella*)

Focal Species in Greatest Conservation Need (alternative name – “What wildlife species are we focusing on”)

Wood Duck

- Breeding, migration
- Bottomland Forest, Swamp, Marsh
- All priority natural divisions (Coastal Plain, Illinois and Mississippi River Sand Areas, Lower Mississippi River Bottomlands, Northeastern Morainal, Upper Mississippi and Illinois River Bottomlands, Wabash River Border)

Black Tern

- Breeding, migration
- Marsh
- Northeastern Morainal, Upper Mississippi and Illinois River Bottomlands

Lesser Scaup

- Migration
- Marsh, Emergent Wetland
- Illinois and Mississippi River Sand Areas, Lower Mississippi River Bottomlands, Northeastern Morainal, Upper Mississippi and Illinois River Bottomlands, Wabash River Border

Black-crowned Night Heron

- Breeding, migration
- Swamp, Marsh
- Coastal Plain, Illinois and Mississippi River Sand Areas, Lower Mississippi River Bottomlands, Northeastern Morainal, Upper Mississippi and Illinois River Bottomlands, Wabash River Border

Wilson’s Snipe

- Breeding, migration
- Marsh, Vernal Pool, Mudflat
- Coastal Plain, Illinois and Mississippi River Sand Areas, Lower Mississippi River Bottomlands, Northeastern Morainal, Upper Mississippi and Illinois River Bottomlands, Wabash River Border

Short-billed Dowitcher

- Migration
- Mudflat , Marsh, Vernal Pool
- Coastal Plain, Illinois and Mississippi River Sand Areas, Lower Mississippi River Bottomlands, Northeastern Morainal, Upper Mississippi and Illinois River Bottomlands, Wabash River Border

Muskrat

- Full life cycle
- Marsh, Swamp, Riparian

- Lower Mississippi River Bottomlands, Northeastern Morainal, Upper Mississippi and Illinois River Bottomlands, Wabash River Border

Blanding's Turtle

- Full life cycle
- Marsh, Sedge Meadow
- Northeastern Morainal

Illinois Chorus frog

- Full life cycle
- Marsh, Vernal Pool
- Illinois and Mississippi River Sand Areas

Odonates

- Full life cycle
- Marsh, Swamp, Bog, Fen, Sedge Meadow, Panne, Seep & Spring, Vernal Pool
- Coastal Plain, Illinois and Mississippi River Sand Areas, Lower Mississippi River Bottomlands, Northeastern Morainal, Upper Mississippi and Illinois River Bottomlands, Wabash River Border

Actions (alternative name – “What we need to do”)

Illinois has lost over 90% of its original wetlands (Dahl 2006), with the majority of remaining wetlands clustered in relatively small spatial areas within six natural divisions. For this reason, wetland work throughout the state should be considered (Tier 1 prioritization, Appendix 1). Special attention should be given to large acreages, wetland complexes (i.e., clusters of individual wetlands) that create critical habitat where relatively little exists, or connectivity to existing wetlands that may increase wildlife value. Many wetland dependent wildlife species (i.e., birds) are highly mobile, and are able to find and exploit habitat patches, even isolated patches significant distances from other suitable habitat are used. Wetland habitat loss and degradation has become so prevalent throughout the state, restoration must not neglect any opportunities at any spatial scale, but priority must be given to those sites that produce the greatest landscape-scale benefits for targeted SGCNs.

Universal Management Recommendations

- Conserve (protect, restore, rehabilitate, construct) wetlands throughout Illinois.
- Promote wetland enhancement and management that increases wetland quality through vegetation establishment, management and manipulation.
- Promote vegetated wetlands, especially marsh wetland types, identified by Upper Mississippi River Great Lakes Region Joint Venture as greatest habitat deficit (Soulliere et al. 2007) which support more focal SGCN than other wetland types.
- Promote natural habitat management (e.g., moist-soil, hemi-marsh) for managed wetlands as opposed to flooded row crops often used for waterfowl hunting management.
- Support wetland conservation policy and regulations that offer additional protection, funding for conservation, or otherwise benefits wetland habitats and the species that depend on them.

Management Resources

- Fredrickson, L. H. and T. S. Taylor. 1982. Management of seasonally flooded impoundments for wildlife. U.S. Fish and Wildlife Service Resource Publication 148. http://scholar.google.com/scholar_url?url=http://www.dtic.mil/cgi-bin/GetTRDoc%3FAD%3DADA323232&hl=en&sa=X&scisig=AAGBfm1zqGNpxHM5BHyAhpybFvd08m0FRg&nossl=1&oi=scholar
- Nelms, K. D. 2007. Wetland management for waterfowl handbook. Natural Resource Conservation Service. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_016986.pdf
- Upper Mississippi River and Great Lakes Region Joint Venture Bird Conservation Plans. 2007. (Implementation Plan, Landbird Habitat Conservation Strategy, Shorebird Habitat Conservation Strategy, Waterfowl Habitat Conservation Strategy, Waterbird Habitat Conservation Strategy) <http://www.uppermissgreatlakesjv.org/Plans.htm>
- North American Waterfowl Management Plan <http://www.fws.gov/birds/management/bird-management-plans/north-american-waterfowl-management-plan/plan-documents.php>
- North American Breeding Bird Survey <https://www.pwrc.usgs.gov/bbS/>

Targeted Actions

Actions in this section are targeted toward priority natural divisions. The Wetlands Campaign Partners targeted six natural divisions (*Tier 2* locations; Figure 1, Appendix 1) based on their importance to wetland wildlife, wetland users, existing wetland habitat, and wetland habitat potential (Schulthies and Eichholz 2014). Targeted Actions should be focused within these natural divisions to have the greatest impact on SGCN. These natural divisions include: Coastal Plain, Illinois River and Mississippi River Sand Areas, Lower Mississippi River Bottomlands, Upper Mississippi River and Illinois River Bottomlands, Northeastern Morainal, and Wabash River Border. Other regions that warrant high priority consideration include the Middle Mississippi River Border natural division and the lower Kaskaskia River from the Carlyle Lake dam to its mouth at the Mississippi River. Additionally, several large reservoirs were believed to meet the criterion for inclusion in Tier 2 despite being located outside priority natural divisions. These include: Carlyle Lake, Clinton Lake, Crab Orchard Lake, Rend Lake, and Lake Shelbyville.

The highest priority sites (*Tier 3*) include specific sites within the Tier 2 Natural Divisions ranked as high priority. Not all sites received Tier 3 ranking due to wetland quality, potential wetland quality, habitat value, management capability, wildlife use, and other considerations. Tier 3 sites typically offer moderate to high quality wetland habitat, or have high habitat potential, have significant wetland wildlife use, wetland constituent use, and can significantly impact wetland dependent wildlife, particularly SGCN.

Sites considered highest priority, by natural division, are included in Appendix 1 (page 23).

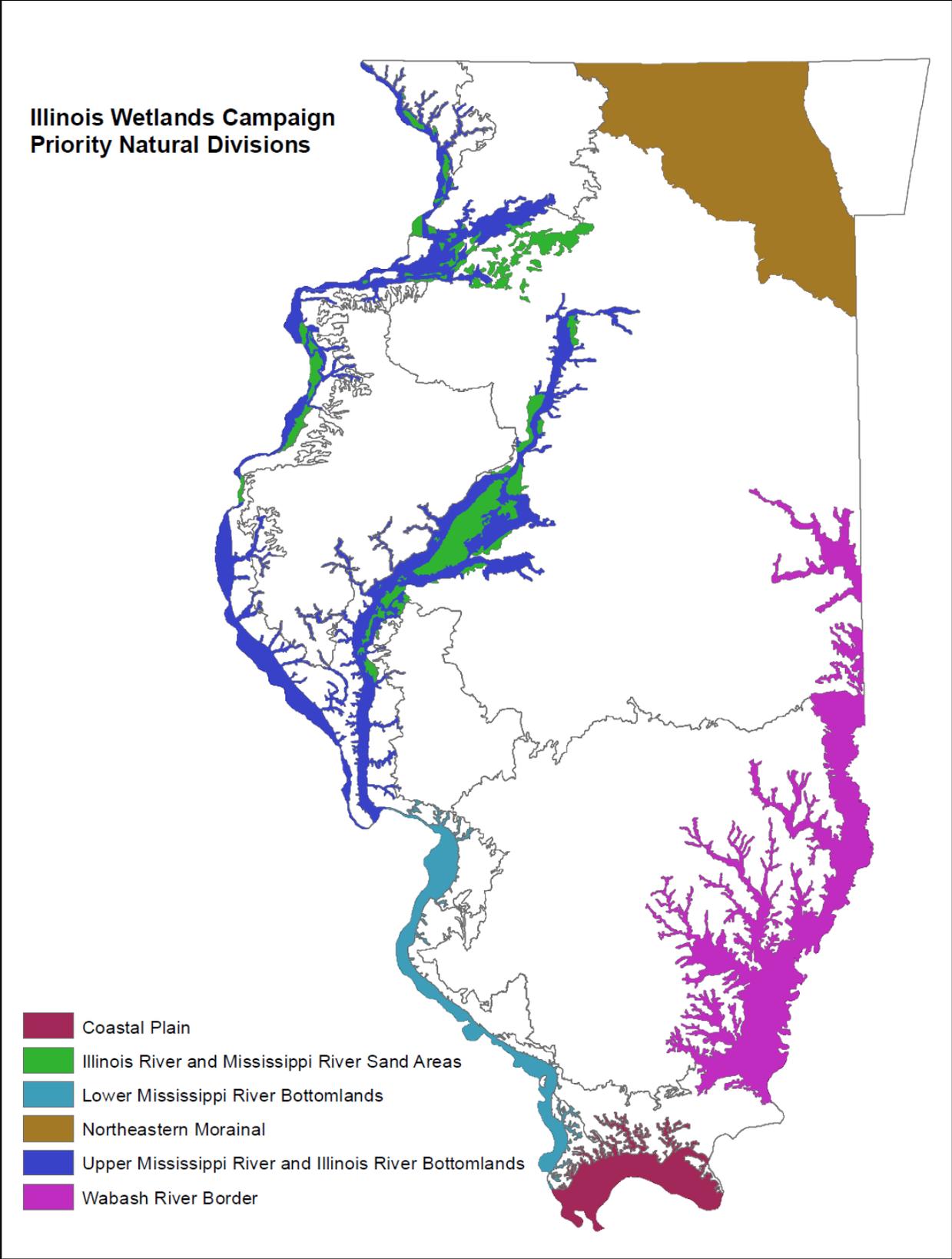


Figure 1. Wetlands Campaign six priority natural divisions.

Targeted actions and acreage goals in this section assume 2015 wetland acreages, quality, and that significant wetland loss does not occur during the implementation period. If significant losses occur, quality continues to degrade or is found to be too poor to support wetland SGCN, acreages need to be revised upward to account for additional lost or degraded habitat.

Habitat Actions

1. Acquire and protect existing wetlands or restorable wetlands.

Need: Degradation of wetlands and/or conversion of wetlands to other uses continues despite educational efforts, regulatory protection, and voluntary incentives that are intended to encourage private landowners to preserve, maintain, and manage wetland habitats on their property. Also, very few private landowners are sufficiently motivated to restore prior converted wetlands on their property to their fullest function and value.

- a. Federal, state, local government and non-profit conservation organizations that have a conservation mission which includes wetland habitat preservation may purchase existing /restorable wetlands in fee-title, or protect them under a permanent conservation easement, in order to maintain wetland habitat in perpetuity.
- b. Prioritization of wetland acquisition and protection is desirable to more efficiently achieve wetland and wildlife conservation objectives. When prioritizing wetland acquisition and protection, consideration may be given to:
 - i. Expanding existing protected lands to establish/protect large wetland complexes;
 - ii. Creating habitat “corridors” to connect already protected wetland sites;
 - iii. High quality, rare, declining, vulnerable, or threatened wetlands;
 - iv. Wetland habitats critical to specific wildlife species or needed to achieve specific wildlife conservation objectives;
 - v. Land costs and alternative conservation actions.
- c. Engage unconventional partners (e.g., Illinois Department of Transportation), who may conduct significant wetland conservation activities (e.g., mitigation banking), but may not focus efforts on maximizing benefits to SGCN.

Outcomes: Protecting existing wetlands is usually a more economically and ecologically sound approach than restoring or rehabilitating wetlands after conversion. Implementing these strategies will result in stabilizing wetland acres within Illinois, which is an essential first step towards increasing wetland acres to positively influence SGCN at statewide or broader scales.

2. Enhance habitat quality of existing wetlands.

Need: Wetland quality has likely declined statewide over the course of several decades (Stafford et al. 2010). These declines are not consistent throughout the state and among natural divisions; they are exacerbated by many factors along large rivers (Mills et al. 1966, Bellrose et al. 1979, 1983), but may impact all wetland systems.

- a. Manage wetlands to promote native plant communities by removing, reducing or controlling invasive species, especially:
 - i. Phragmites, purple loosestrife, reed canary-grass, Eurasian water milfoil, water hyacinth, narrow-leaf cattail, and others ([see Invasives Campaign, Page XXX](#)).
 - ii. Common carp, grass carp, silver carp, bighead carp and other non-native fish.

- b. Timber stand improvement of bottomland forest
 - i. Reduce shade tolerant soft woods (i.e., cotton wood, green ash, silver maple, willow)
 - ii. Increase mast producing hardwoods (i.e., oak, hickory, pecan) within floodplain sites that will support these tree species
 - iii. Manage for diversity of stand density, age, and structure utilizing strategies that promote natural regeneration where appropriate (Knutson et al. 1996).
- c. Reduction of undesirable plant species (river bulrush, cattail, perennial smartweed, etc.) in managed wetlands, manage for desirable seed producing annual plants.
- d. Use disturbance (e.g., water level manipulation, prescribed fire, mechanical manipulation, herbicide) to control encroaching undesirable woody vegetation in open wetland types, and undesirable herbaceous plants where appropriate.
- e. Increase historically abundant habitats, and duplicate historic habitat complexity and juxtaposition within wetlands (Stafford et al. 2010)
- f. Restore submersed aquatic vegetation to backwater lakes and wetlands along Illinois and Mississippi Rivers (Bellrose et al. 1983).
- g. Increase water depth, water clarity, and substrate firmness of appropriate bottomland lakes and wetland management impoundments through consolidation of sediments by repeated annual dewatering and drying.
- h. Reduce sediment inputs into streams, rivers, and wetlands from row crop field through minimum tillage, vegetated waterways, buffers, and wetland restoration.
- i. Maintain and increase water control in lakes and wetlands within river floodplains through managed or partial connections which will isolate habitats from growing-season floods yet allow movement of aquatic species when appropriate.

Outcomes: Increasing wetland quality will simultaneously increase wetland habitat diversity and spatial arrangement within wetlands, more closely mimicking historic wetland conditions (Stafford et al. 2010). Many wetland dependent wildlife species were more abundant and more widely distributed under historic conditions, thus, managing for these lost wetland attributes will facilitate conservation of SGCN and other wildlife species.

3. Restore shallow wetlands.

Need: Shallow wetlands are often promote greater primary productivity and can be more important than larger more permanent wetlands to many wildlife species. They are also more easily eliminated from the landscape through drainage or filling, thus, are more imperiled. Additionally, herptiles are less mobile than some other wetland wildlife groups (i.e., birds), thus, depend on habitats that are more spatially clustered. Herptiles' require a diversity of interconnected habitat types within a landscape context to provide for habitat needs at every stage of their life cycle (Phillips et al. 1999).

- a. Plug ditches and drain tiles in agricultural areas to allow altered shallow wetlands to hold water for greater time periods and dewater naturally.
- b. Provide wetland habitat assemblages that support diverse herpetofauna communities.
 - i. Restore ephemeral and other largely fishless, seasonal wetlands, including 5-10 per Illinois Department of Natural Resources region per year on public lands, for migratory shorebirds and waterfowl, amphibians, and other wildlife, focusing

initially on Wabash Border, Coastal Plain, Illinois River and Mississippi River Sand Areas and Northeastern Morainal natural divisions to benefit amphibian SGCN.

- ii. To maintain or increase occupancy of Illinois Chorus Frogs, increase the number of ephemeral wetlands and upland sand prairie habitat in the Mason County COA (Illinois River and Mississippi River Sand Areas) by 10% (approximately 100 wetlands) during the next 10 years.
 - iii. Provide diverse wetland habitats in close spatial proximity with upland buffers and corridors that provide for all herptile life stages.
 - iv. Delay wetland dewatering until mid-summer to allow successful reproduction in spring and early summer.
- c. Restore basin marshes in the Northeastern Morainal natural division and stream-side marshes in floodplain areas.
 - d. Use incentive-based, or voluntary programs (such as private land easement programs) and with technical assistance to establish shallow water wetlands on private lands.
 - e. Continue development of programs to better manage drainage water on agricultural lands through installation of water control structures on drain systems, this will provide additional water to crops (benefiting producers or land owners) while reducing agricultural runoff, and habitat for migratory waterbirds during appropriate times of the year (i.e., primarily spring migration).
 - f. Work towards eliminating wetland habitat deficits identified by Upper Mississippi River and Great Lakes Region Joint Venture Shorebird, Waterbird, and Waterfowl conservation plans (Soulliere et al. 2007a, b, Potter et al. 2007a).

Outcomes: Establishing additional shallow wetlands will greatly increase total available wildlife habitat for a variety of species, including herpetiles, positively influencing their populations. Additionally, these wetlands will greatly improve the surface water storage capacity of the landscape to reduce flooding, nutrient sequestration and contribute to groundwater recharge. Private land is essential in making significant progress.

4. Manage existing wetlands to maximize wildlife benefits.

Need: Despite large wetland losses within Illinois, remaining wetland acreage is often not managed to maximize wildlife benefits (Stafford et al. 2011). Managed wetlands often focus on attracting individual species for hunting (i.e., planting and flooding corn to attract mallards), which greatly reduces wetland quality and limits value to most wetland dependent species. Impoundments managed for row crops must be drained early in, or prior to the growing season, often before spring migrants have departed and prior to herpetile reproduction (i.e., in winter or early spring). These wetland units must be kept dry throughout the growing season to support row crops, often fertilizer and herbicides are used, and row crops provide very little habitat for most wetland dependent wildlife species, and essentially no habitat for SGCN.

- a. Maintain water in managed wetlands through mid- to late-spring to maximize wetland habitat availability for a variety of species and mimic historic flooding regimes.

- i. Spring migration habitat and food resources may be limited for many species. Maintaining water through spring migration may greatly benefit migratory species, including waterfowl (Lesser Scaup), wading birds (Black-crowned Night Heron), and shorebirds (Short-billed Dowitcher, Wilson's Snipe), and resident herpetiles (Illinois Chorus Frog), and mammals (Muskrat; Erb and Perry 2003).
 - ii. Delay flooding of some managed moist soil until late winter or early spring for spring-migrating waterfowl, especially diving ducks (Greer et al. 2007).
 - b. Adopt moist-soil, or other natural wetland management strategies on public waterfowl management areas and other sites to increase wading bird, waterfowl, shorebird, and other wildlife use.
 - c. Reduce acreage of wetlands planted to row crops and other planted waterfowl food plots.
 - i. Natural vegetation can be managed, enhanced, or supplemented to produce abundant waterfowl foods that are more nutritious, often more preferred, more persistent, and used by a greater number of species (Fredrickson and Taylor 1982, Loesch and Kaminski 1989).
 - ii. Moist-soil management allows wetlands to be inundated for longer during the growing season which benefits more species of wildlife and provide more functions and values of wetlands (Fredrickson and Taylor 1982).
 - iii. Plant with a purpose: when disturbance is necessary in moist-soil wetlands to set back succession (i.e., 1 in 3-5 years), tillage followed by planting "grassy corn" (minimal herbicide and fertilizer, wide row spacing, and late planting date to encourage natural vegetation to grow between corn rows) or millet may be used.

Outcomes: Maximize benefits of available wetland habitat for a variety of wildlife species. Wetlands that can be intensively managed should provide the best and most preferred habitat used by targeted SGCN, and implementing these changes will facilitate this goal.

5. Restore historic hydrology to wetlands associated with large rivers.

Need: The hydrology of large rivers in Illinois has been altered for commercial navigation, cropland protection, and other purposes (Bellrose et al. 1983, Havera 1999). These alterations have largely led to a decrease in wetland quality and quantity, and have altered natural processes which made wetlands associated with rivers excellent wildlife habitat (Mills et al. 1966, Bellrose et al. 1979, Havera 1999). Although altering large river hydrology to mimic historic flows is difficult, wetland management regimes should promote natural hydrological cycles where possible, and the conservation community may be able to induce change in some systems (Konrad 2010).

- a. Implement wetland management practices which mimic historic wet/dry cycles annually and over longer time periods. This should include spring flooding of appropriate magnitude and duration followed by slow drawdown throughout summer, and shallow fall flooding annually, with periodic complete drying to mimic drought, and deep water

to mimic flooding, preferably following several years of drawdown, which may support submersed aquatic vegetation.

- b. Utilize managed connections between streams, rivers and floodplain wetlands when such connectivity will enhance wetland values, functions and quality and/or when the risks of wetland degradation by sediments and other pollutants, invasive species, and water level fluctuations associated with unhealthy streams and rivers can be controlled, minimized or reversed by management intervention.

Outcomes: Mimicking historic hydrology should result in habitat types and vegetation assemblages that are most beneficial to wildlife along major rivers.

6. Manage at least 1,000 acres of wetland habitat in the Wabash Border natural division.

Need: The Wabash Border natural division has been identified as an important migratory corridor and stopover location during spring and fall migration, and an important region for resident wetland wildlife. Additionally, this area remains one of the last major rivers with a largely intact floodplain (i.e., not separated by levees) and wetlands have the ability to fluctuate naturally with flood pulses and drying.

- a. Wetland habitat should exist in complexes interspersed with other bottomland habitats including grasslands and forests to benefit the greatest number of SGCN.
- b. Wetland habitat should be emergent marsh, following natural hydrologic regimes and timing for the area.

Outcomes: These habitat assemblages will benefit a variety of SGCN during breeding, migration and wintering periods, including Wood Duck, Lesser Scaup, Short-billed Dowitcher, Black-crowned Night Heron, Wilson's Snipe, Muskrat, and Odonates.

Policy/Advocacy Actions

7. Support state and national wetland conservation legislation.

Need: Wetlands are imperiled nationwide, and legislation impacting wetland policy and conservation will facilitate wetland conservation in Illinois as well.

- a. Protection of isolated wetlands through legislation preventing draining, filling, and destroying wetlands on private land. Implementation of an incentive or easement program for protecting farmable wetlands (USFWS SWAP).
- b. Reduced restrictions on levee construction/creation to encourage partial wetland connectivity along large river floodplains.
- c. Review and update floodplain inundation risk maps to more accurately characterize flood frequency zones (e.g., 100-year floodplain).
- d. Use U.S. Fish and Wildlife Service Small Wetland Acquisition Program as a model for farmable wetland conservation in Illinois. An easement agreement is entered by the landowner and USFWS; drainage features (e.g., tiles and ditches) are removed. Landowners may farm anything that is dry enough whenever possible, but drainage is not allowed, and land remains in private ownership. This is a popular and successful program.

Outcomes: Greater protection for wetlands or funding for wetland conservation in Illinois and throughout the nation.

8. Adopt/support agricultural practices which are less detrimental to wetlands and wildlife.
Need: Many practices on modern farms are detrimental to wetlands either directly (e.g., drainage), or indirectly (e.g., sedimentation). Slight modifications that do not significantly impact yield or production can make large differences if implemented at large scales.
 - a. Support policies that reduce agricultural chemicals entering wetlands and waterways which negatively impact aquatic ecosystems locally and continentally.
 - b. Implement lateral drainage to reduce nitrogen, phosphorus, and herbicide and pesticide runoff into waterways.
 - c. Install water control structures on drain tile to hold water at times of the year when it is beneficial to crops or to wildlife.
 - d. Establish field buffers to limit sediment and other undesirable runoff into waterways and wetlands and provide linear habitat for wildlife.
 - e. Support policies linking crop insurance to conservation practices.
 - f. Reexamine agricultural producer subsidies to provide greater benefits to those who provide wetlands and wildlife habitat on their properties and reduce benefits for those who do not.
 - g. Restore farmable wetlands and allow seasonal wetlands within floodplains and uplands to maintain surface hydrology and slow water movement to streams and rivers and capture sediments.

Outcomes: Agricultural producers own and manage the majority of land in Illinois. Implementing small changes across broad areas will have measurable impacts on wildlife habitat and populations. Work with producer groups to identify strategies that will be acceptable or beneficial to producers and provide benefits to wetland dependent species.

9. Adopt/support economic and social development planning and strategies which are less detrimental to wetlands and wildlife.

Need: Similar to agricultural areas throughout the state, urban and exurban areas continue to expand and negatively impact native habitats, including wetlands. Initiating strategies for development that facilitate natural habitats, rather than eliminate them will greatly benefit SGCN in these areas.

- a. *See Green Cities Campaign*

Outcomes: Eco-friendly development and green infrastructure will benefit SGCN and human populations in urban and exurban environments.

10. Facilitate interagency communication to provide consistent messaging and information about wetlands and other wildlife habitats.

Need: Agencies often have conflicting messages to media, the public, agricultural producers and other entities regarding wetlands and other wildlife habitat. Attitudes among people outside the conservation community regarding wetlands and other habitat types is likely

inconsistent and poorly understood, potentially as an effect of misinformation or preconceived notions.

Outcomes: Positively influence the perception of wildlife habitats among constituents and society outside of the conservation community. Facilitate cooperation among and within state and federal agencies to provide accurate information and strengthen public support for conservation actions.

Research Actions

11. Conduct research to gain a greater understanding of wetland ecology, wetland wildlife and the relationship between wildlife and wetlands in Illinois.

Need: Although the body of knowledge regarding wetlands and wildlife is extensive, there are many areas that remain unknown, and new questions are continually arising as habitats are degraded or restored, wildlife populations change, or research or management results lead to additional questions. The ability to investigate these issues is fundamental to our ability to effectively manage populations and habitats in an ever changing environment.

Specific research topics include, but are not limited to:

- Gain a greater understanding of wetland quality throughout the state.
- Conduct research to better understand wetland hydrology throughout the state.
- Conduct research and monitoring to better understand wildlife and wetland habitat relationships, especially at the landscape level within Tier 2 and Tier 3 wetland areas.
- Understand the effects of waterfowl management activities on other wetland-dependent wildlife.
- Compare traditional row crops, grassy corn, and moist-soil on managed areas for wildlife.
- Evaluate the assumption that filling waterfowl habitat deficits will support all other wetland-dependent species.
- Harvest of waterfowl and furbearers provides a suitable metric for measuring waterfowl abundance in the spring and relative habitat conservation priorities.
- Assess tradeoffs for focal species in wetland management practices (e.g., emergent marsh, moist-soil, grassy corn, food plots, passive management, bottomland forest planting, etc.), which practices benefit the most species?
- Effects of hunting and management to support fall hunting on food for spring-migrating ducks. Does hunting limit use and conserve food for spring migration?
- Address the influence of subsurface drainage (drain tiles and groundwater depletion), groundwater withdrawal (especially where irrigation is prevalent), & groundwater depletion on statewide wetland hydrology.
- Evaluate drainage water management for spring migration habitat for shorebirds, impacts on agricultural production and feasibility of broad implementation.

Outcomes: Furthering our understanding of wetland wildlife and the systems they depend on will inform species and habitat management at local, natural division and landscape scales, leading to more effective conservation of SGCN.

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Appendix 1. Wetlands Campaign Priority Tiers in Illinois.

To rank priority sites for the Wetlands Campaign, we will rely heavily on the planning document written by Schulties and Eichholz (A multi-scale wetland conservation plan for Illinois, 2013), input from Wetlands Campaign Partners provided during an April 2013 meeting and subsequent correspondence, and expert opinion from the Campaign Lead and a small number of other engaged partners.

Here, we present a 3 tiered ranking, including justification, for wetland conservation in Illinois. We anticipate significant revision to this ranking as additional information is gathered and wetland conservation priorities are refined.

Tier 1 – Low priority.

Tier 1 includes any wetland habitat in the state of Illinois. Illinois has lost over 90% of its original wetlands, with the majority of remaining wetlands clustered in relatively small spatial areas. For this reason, wetland work throughout the state should be considered, with special attention given to large acreages, wetland complexes that create critical habitat where relatively little exists, or connectivity to existing wetlands that may increase wildlife value. Many wetland dependent wildlife species (i.e., birds) are highly mobile, and are able to find and exploit habitat patches, even isolated patches significant distances from other suitable habitat are used.

Tier 2 – High priority.

Tier 2 includes any sites that fall within important natural divisions as determined by A Multi-scale Wetland Conservation Plan for Illinois (Schulthies and Eichholz 2013). This document used information on wetland dependent wildlife abundance and harvest to rank natural divisions throughout the state (Figures 1 and 2). Additionally, the Wetlands Campaign Partners determined at their April 2013 meeting that 2 additional natural divisions should be included. These areas likely did not have significant abundance or harvest data to increase their ranking, but Partner consensus was that these areas are indeed very important to wetland dependent wildlife. Based on these criteria, wetlands within the following natural divisions will be included in Tier 2:

Coastal Plain

Illinois River and Mississippi River Sand Areas

Lower Mississippi River Bottomlands

Upper Mississippi River and Illinois River Bottomlands

The two additional natural divisions that should be included are the:

Northeastern Morainal

Wabash River Border

Partners debated including the lower Kaskaskia River floodplain (Mississippi River to Carlyle Lake dam). This area includes many high quality wetlands, and has high wetland potential. Wetlands in this area have been deemed priority in other Illinois wetland conservation plans (Ducks Unlimited, The Nature

Conservancy, IDNR Conservation Opportunity Area), thus, may warrant inclusion here as well.

Finally, some of our most important wetlands in terms of wildlife value and constituent use are large reservoir lakes and the associated wetlands scattered throughout the state. Although these wetlands serve as islands, as opposed to complexes, the wetlands associated with the lakes may be extensive, and form a relatively large, although isolated, complex.

The sites that should be considered in this tier include:

Carlyle Lake
Rend Lake
Lake Shelbyville
Clinton Lake
Crab Orchard Lake

Tier 3 – Highest Priority

Tier 3 includes specific sites within the Tier 2 Natural Divisions ranked as high priority. Not all sites received Tier 3 ranking due to wetland quality, potential wetland quality, habitat value, management capability, wildlife use, and other considerations. Tier 3 sites typically offer moderate to high quality wetland habitat, or have high habitat potential, have significant wetland wildlife use, wetland constituent use, and can significantly impact wetland dependent wildlife, particularly species in greatest need of conservation.

Sites considered highest priority, by natural division, include:

Northeastern Morainal –

Black Crown Marsh
Chain O'Lakes State Park
Redwing Slough/Deer Lake State Natural Area
Des Plaines State Fish and Wildlife Area (SFWA)
Mazonia SFWA
Momence Wetlands
Goose Lake Prairie State Natural Area/Morris Wetlands
Hackmatack National Wildlife Refuge (state purchase area)

Upper Mississippi and Illinois River Bottomlands

Anderson Lake SFWA
Banner Marsh SFWA
Donnelley SFWA
Lake DePue SFWA
Marshall SFWA
Mississippi River Pools 12, 13, 14, 16, 17, 18, 19, 21, 22, 24 (State and Federal)
Rice Lake SFWA
Spring Lake SFWA
Woodford SFWA

Clear Lake SFWA
Mississippi River SFWA (and satellites)
Meredosia Lake SFWA and Meredosia NWR
Sanganois SFWA
Weinberg King SFWA (Spunky Bottoms Unit)
Hennepin and Hopper Lakes (Wes and Sue Dixon Waterfowl Refuge)
Chautauqua NWR (Including Cameron-Billsbach Unit)
Emiquon Preserve and Emiquon NWR
Two Rivers NWR

Lower Mississippi River Bottomlands

Cape Bend SFWA
Horseshoe Lake State Park
Kaskaskia River SFWA
Middle Mississippi River NWR
Kidd Lake State Natural Area
Union County SFWA
Oakwood Bottoms (Shawnee National Forest)
Big Muddy Bottoms (Shawnee National Forest)
LaRue Swamp (Shawnee National Forest)
East Cape Wetlands (Shawnee National Forest)

Coastal Plain

Cache River State Natural Area
Cypress Creek NWR
Cypress Pond State Natural Area
Deer Pond State Natural Area
Dog Island State Wildlife Management Area
Horseshoe Lake SFWA
Mermet Lake SFWA

Wabash River Boarder

Beall Woods State Park
Embarrass River Bottoms State Habitat Area