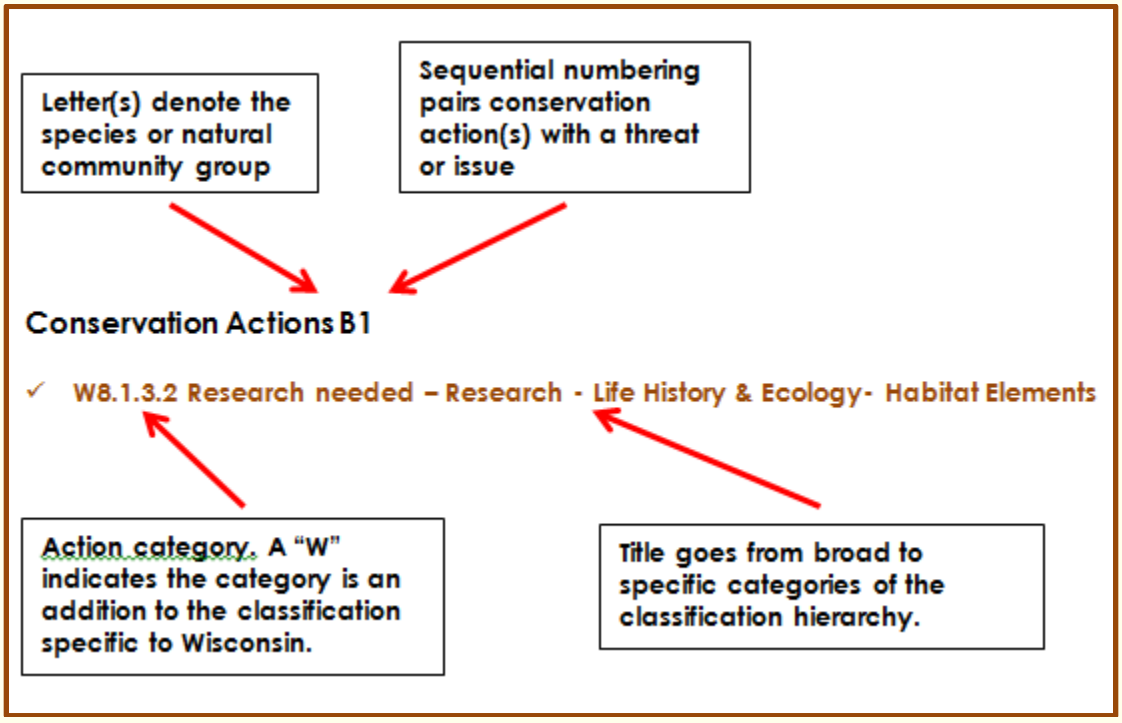
Threats/Issues and Conservation Actions for Bird Species of Greatest Conservation Need

This is a summary of threats or issues affecting the conservation of bird SGCN and actions that can be implemented at the source, or to address the effects of the source on the species or its habitat. Distinguishing the source of the impact from the effects or the changes that occur to the species and its habitat is important because the two typically need a different approach and set of conservation actions. For example, land development in grassland habitat may be an issue that has the effect of habitat loss. Conservation actions may be focused at the source of the activity, which is related to the location, type and extent of the development or the action can be focused on restoring or replacing habitat elsewhere or at the edge of the development. Multiple sources of impact may have the same or similar effects on species or habitat. Similar effects may be addressed collectively by a single action or suite of actions.

Conservation actions for most or all bird SGCN are organized according to categories in the Conservation Actions Classification based on the Open Standards threats and actions classification[1]. If the threat/issue and its associated conservation action(s) apply to one or a few species they are identified as such. Conservation actions overlapping in content or scope may be grouped under a single code. Coding and identification for each action category are explained further below.



[1] See the following website for the classifications. http://cmp-openstandards.org/tools/threats-and-actions-taxonomies/ (Search Terms: open standards conservation threats actions). The conservation actions classification is provided in Appendix 2.1.

More about how threats and issues or conservation actions were developed, opportunities to provide input on this topic, and how this information can be used to make conservation decisions can be found on the Conservation Actions and Effectiveness Monitoring page or in Sections 2 and 3.2 of the Wisconsin Wildlife Action Plan.

Threat/Issue B1

Habitat conversion is a primary issue facing bird Species of Greatest Conservation Need in Wisconsin. Many native birds have declined in range and abundance in the past 100 years due largely to converting native landscapes into other uses, which has the cumulative effect of habitat loss, fragmentation, and reduction in habitat quality. For example, continued loss and fragmentation of forest habitat in southern Wisconsin from housing and road development threatens many of our forest dwelling species. Similarly, grassland species suffer from loss and fragmentation of grassland habitat due to factors such as rural housing development and conversion of idle grassland (including pasture) to row crops or tree plantations. Additionally, shorebirds that utilize ephemeral mudflats and shallow-flooded fields for resting and feeding sites during spring and fall migration are threatened by the draining of this habitat for agriculture and housing development.

In the Open Standards threats classification development includes the footprint on the landscape during all phases of construction and operation. All types of residential, commercial, and agricultural development and the transportation and service corridors that link them can affect bird SGCNs. The relative significance of each of these sources depends, in part, on where they occurs in the state and how closely the development is associated with natural community types for which that SGCN species is found (i.e., the siting and intensity of the development are important factors to consider). For example, in Wisconsin, agricultural development is a more important issue for bird SGCNs in southwestern ecological landscapes; whereas commercial and residential development is a more important issue in south central and southeastern ecological landscapes.

Conservation Actions B1

✓W2.4 Land/water management - Comprehensive management
Restoration, management, and protection of, wetlands, and large blocks of forested and grassland habitat are the primary actions proposed for conserving bird Species of Greatest Conservation Need in Wisconsin.

✓W8.1.3.2 Research needed – Research - Life History & Ecology- Habitat Elements
✓8.3.4 Research needed - Research – Monitoring - Habitat Trends
✓W8.3.5 Research needed – Research – Monitoring - Effectiveness monitoring
Additional research is needed to adequately and more effectively work to conserve many species and their habitats. Research needs include surveys to identify critical conservation areas, long term monitoring to detect population trends, and specific

projects to determine habitat requirements and impacts of various habitat management strategies.

✓5.2 Law & policy- Policies and regulations- National (Federal), State and Tribal
✓7.2 External capacity building- Alliance and partnership development
It is also important to work closely with policy makers to keep programs that promote fallow agricultural land and wetland restoration in place, especially those that allow for permanent protection of habitats; and to support laws and policies that prevent degradation and fragmentation of habitats through activities such as rural home development in large, intact grassland areas. Creating and maintaining effective partnerships of agencies, non-governmental organizations, and the public are key to accomplishing many of these conservation actions.

Threat/Issue B2

As with different types of development, biological resource use such as timber harvesting can also alter bird habitat. The nature and extent of the effects on bird SGCNs not only depends on the footprint (i.e., where the activity is occurring), as noted above, but also in how habitat is managed.

Conservation Actions B2

✓8.2 Research needed- Research- Conservation planning
In the WWAP we attempted to explicitly recognize the importance of the diversity of forest age classes on our landscape by including seral stages in some of the northern forest community types. An important conservation action that follows from this is development of a forest landscape plan to design and estimate acreage goals for seral/developmental stages. These stages range from young to old for each ecological landscape in order to attempt to reach a balanced mosaic of forest age-classes that provide habitat for bird SGCNs. Additionally, interdisciplinary working groups could identify focal areas with the greatest opportunities to begin this effort based, in part, on the association and opportunity scores identified in the WWAP for all SGCN species.

✓1.1 Land/water protection- Site/area protection
✓8.2 Research needed-Research-Conservation Planning
In addition to forests, one can consider a landscape-scale approach to reserve design and management, where a full range of complementary natural communities and habitat types are interwoven in a mosaic, and occupy different positions along soil, topography, and moisture gradients. For example, in the Western Coulees and Ridges Ecological Landscape, there are opportunities for restoration and management of sandstone-influenced sites within a mosaic of oak opening, oak woodland and sand prairie communities, along with smaller patches containing oak forest, pine relicts, dry prairie, open shrubby barrens, and rock outcrops. Such planning efforts require cross-organization, -discipline, and -ownership planning efforts that can be very complex, but

the successful implementation of these efforts can be extremely beneficial for the conservation and restoration of natural communities and the SGCNs they support.

Threat/Issue B3

Many invasive plant species such as buckthorn, reed canary grass, purple loosestrife, and garlic mustard can degrade the quality of important nesting and foraging habitats. Once degraded, these areas can no longer support the diversity or abundance of birds, including SGCNs, that they once did. This threat manifests itself in different ways for bird SGCNs: nonnative invasive species, problematic native and nonnative species, and nonnative diseases and pests.

Non-native invasive species pose a significant conservation issue for bird SGCNs. Once they have been introduced or escaped into an area, these species often directly compete (and in many situations outcompete) native species that provide important habitat for bird SGCNs. They may also indirectly impact native plants by altering soil chemistry or moisture or light availability. In prairies, sweet clover or wild parsnip can spread over large areas, while in wetlands, clones of reed canary grass are particularly invasive. Eurasian water milfoil and curly-leaved pondweed have formed extensive patches in lakes throughout the state. Garlic mustard has spread throughout many forests in southern Wisconsin; although not as extensively in the north, garlic mustard can be locally abundant on many northern sites, and stopping its spread is a major concern.

Disease, pests, and herbivory can also change native plant community diversity and structure and, in turn, degrade important bird SGCN habitat. A number of forbs, including orchids and trilliums, are preferentially browsed by deer and rabbits. Overabundance of these browsers can result in low flowering and fruiting rates in target plants and eventually can lead to their extirpation as they are outcompeted by less frequently browsed species.

Conservation Actions B3

✓5.3 Law & policy- Private sector standards & codes
✓4.3.1 Education & awareness-Awareness & communications- General ecology, biology, habitat related to conservation needs
✓W2.2.2 Land/water management-Invasive/problematic species control-Control
✓W8.3.5 Research needed- Research- Monitoring- Effectiveness monitoring

Wisconsin's invasive species law (NR40) is a legislative response to this issue that creates a comprehensive, science-based system, with criteria to classify invasive species into two categories: "prohibited" and "restricted." From this legislation, an array of conservation actions have been, and continue to be, established including standards and practices for public and private industry sectors and recreational uses, awareness, and education. Early detection of new populations of non-native invasive species is a key strategy of successfully controlling them. Once an invasive species population has

become established, a land manager with relevant experience should be consulted for the most effective treatment techniques, which may include hand-pulling, cutting, burning, or herbicide. Follow-up monitoring should be conducted to gauge the efficacy of the treatment and identify future control efforts needed.

✓2.2 Land/water management- Invasive/problematic species control
✓2.4 Land/water management- Comprehensive management
Conservation actions for invasive species prevention and control within plant SGCN habitat are often included as part of comprehensive management for a site. This is because those measures used to control invasive species can be part of other restoration and management objectives (e.g., cutting to remove invasive species and open areas for establishment of native plants). Landowners, on the other hand, may focus conservation efforts entirely on invasive species control techniques such as hand cutting, brush mowing, conducting prescribed burns, and using managed grazing to control invasive species.

✓W8.3.4.2 Research needed- Research-Monitoring-Composition, Quality & Function
✓8.3.1 Research needed- Research- Monitoring- Population trends
Finally, potential impacts of abundant herbivores can be evaluated and monitored at a local level using ecological metrics, such as abundance or growth rates of sensitive species and monitoring of changes in plant community structure over time.

Threat/Issue B4

Anthropogenic-related factors such as direct predation by non-native animals (e.g., feral cats), competition from non-native birds (e.g., house sparrows and starlings), and collisions with structures, can negatively affect populations of many SGCN bird species.

Conservation Actions B4

✓W2.2.2 Land/water management- Invasive/problematic species control- Control
✓W2.2.1 Land/water management- Invasive/problematic species control- Prevention
✓W4.3.2 Education & awareness- Awareness & communications- Harvest, roadkill, or other sources of illegal, incidental mortality, nonlethal threats
The scope and type of actions necessary to abate the effects of non-native animals vary widely depending upon the non-native species in question. Non-native cats, both feral and outdoor pets, have significant impacts on bird populations and, combined with other factors, can be a source of significant risk for several bird SGCN species. The issue of non-native cat predation is one that has been researched and documented extensively; however, in most cases, compliance with actions that can decrease predation rates and occurrences is voluntary and it has proven difficult to obtain widespread public support. Nonetheless, many good outreach and education efforts are available such as the American Bird Conservancy's Cats Indoors program. Efforts should be made to distribute and promote this information.

Other conservation actions to reduce the effects from non-native species can include a variety of programs. For example, localized, targeted brown-headed cowbird control can be implemented in areas where the birds are a direct threat to an SGCN species such as Kirtland's warbler.

The actions necessary to address the issue of collisions vary depending upon the location and type of structure that is posing the threat. As an illustration, appropriately siting wind turbines in areas that are not major migration corridors for birds and utilizing bird friendly glass in the construction of new buildings can both significantly reduce mortality events from collisions.

Threat/Issue B5

Contamination of habitats from heavy metals such as lead, and chemicals including PCBs and DDT, both in Wisconsin and on wintering grounds in Central and South America, are well documented threats to the conservation of many bird species. Synthetic chemicals in the natural system can negatively influence bird species themselves as well as water quality and invertebrate prey species.

Conservation Actions B5

✓W2.2.2 Land/water management- Invasive/problematic species control- Control
✓W4.3.2 Education & awareness- Awareness & communications- Harvest, roadkill, or other sources of illegal, incidental mortality, nonlethal threats
Actions to address this issue fall into a combination of awareness and education, use of chemicals to control invasive species, and prevention. Avoid pesticide use that may impact bird SGCN species. Limit the use of chemicals and pesticides in grassland habitats because of known effects on reproduction and other aspects of biology. Integrated pest management practices that consider natural biological processes and biopesticides, preventative cultural practices, and emphasis on control, are important components of these actions.

Threat/Issue B6

The succession of grassland habitats to shrubland and woodland, and changes in species composition due to altered fire regimes, impact habitat quality and quantity for grassland bird SGCN, including changes in food abundance and variety, soil temperature and composition, and an increased predator abundance, all of which adversely affect bird SGCN survival.

Conservation Actions B6

✓W2.4 Land/water management- Comprehensive management
Maintain and restore oak barrens and sand-, dry-, or dry mesic -prairie habitats in suitable landscapes by rotating management throughout the property and across years or seasons and using a variety of management techniques, such as timber harvests, prescribed fire, mowing, grazing, and herbicide applications to minimize negative impacts from any specific or individual management techniques. Expanding grassland acreage on appropriate sites by reducing tree and brush cover of prairies by burning, grazing, or mowing enables larger patches of suitable grassland habitat for grassland bird SGCNs.

Threat/Issue B7

The lack of information on status, distribution, population trends, habitat use and requirements, species interaction, and other factors is needed to adequately and more effectively work to conserve many bird SGCN species and their habitats. Some bird SGCNs are faced with interspecific competition from other sympatric species due to shifting ranges, causing interactions that tend to favor the more aggressive and, most often, the more common species. Examples include genetic swamping due to the blue-winged warbler and the SGCN golden-winged warbler interbreeding, and the range expansion of the brown-headed cowbird into areas where bird SGCN species are not adapted to deal with nest parasitism.

Conservation Actions B7

✓W7.2.1 External capacity building-Alliance and partnership development- Research
✓8.1.2 Research needed- Research-Population size- distribution & past trends
✓8.1.3 Research needed- Research- Life history & ecology
Despite birds being generally well-researched, information is still needed for bird Species of Greatest Conservation Need. Continued work should be done to develop partnerships with academic staff and biologists to research bird SGCN distribution, population size, habitat use, and mortality factors as a basis for developing an effective management and conservation strategy in species where there is a lack of sufficient knowledge. One outcome of this life history and habitat research should be clearer options for restoring and maintaining important habitat elements for declining and rare bird species in the state.

Research should be done to better determine habitat relationships and SGCN interactions with other species (e.g., range overlap) to ensure successful management and conservation. Interdisciplinary planning is needed among forestry sector and forest community stakeholders as well as agricultural sector and grassland/savanna/barrens community stakeholders to develop design objectives for diverse landscapes that consider a range of development and conservation opportunities and objectives.