4. Natural Communities Associated with Species of Greatest Conservation Need

4.1 Introduction and Background

This Section provides a discussion of natural community types and the Species of Greatest Conservation Need that use them. The information presented in this Section addresses Elements 2, 3 and 4 of the Eight Required Elements for State Wildlife Action Plans.

(2) Descriptions of locations and relative condition of key habitats and community types essential to conservation of species identified in the 1st element.

(3) Descriptions of problems which may adversely affect species identified in Element 1 or their habitats, and priority research and survey efforts needed to identify factors which may assist in restoration and improved conservation of these species and habitats.

(4) Descriptions of conservation actions determined to be necessary to conserve the identified species and habitats and priorities for implementing such actions.

Almost all Species of Greatest Conservation Need are classified as such in part, because the area of habitat suitable for their survival has been decreased or it has been degraded or fragmented below their tolerance and ability to adapt and sustain viable populations. Assessment and management of Species of Greatest Conservation Need within natural community types is the most effective way to sustain those that are declining because of habitat limitations. Other "non-habitat" causes for population declines (e.g., pollution) are discussed in Section 3 for plant SGCNs and each animal SGCN group.

Conservation planning for vertebrates and most plants can be done at the natural community (habitat), landscape, and ecoregional scales. Planning at these scales, however, has limited effectiveness for invertebrates, which often have specific microhabitat requirements that cannot be addressed adequately at these broader scales. On the other hand, planning at the natural community level should not exclude them because some natural community characteristics do influence the assemblage of invertebrates at a site—planning for and conserving biodiversity helps all species groups.

Eight Natural Community groups are summarized in this Section: 1) Aquatic, 2) Barrens, 3) Grassland, 4) Savanna, 5) Northern Forest, 6) Southern Forest, 7) Wetlands and 8) Miscellaneous Communities. Communities are discussed as groups because many threats and conservation actions are applicable to all types within a group; however, information and issues applicable to one community type are provided where appropriate and necessary. Natural communities included in the WWAP follow the Wisconsin Natural Heritage Inventory (NHI) classification. Once the WWAP revisions are

approved and development of conservation actions is completed in partnership with stakeholder groups, information will be incorporated into existing web content[1].

Each community group summary contains the following information:

- An overview of each natural community type and their association with Ecological Landscapes. Most of this information is taken from the Ecological Landscapes of Wisconsin report.[2]
- Information on the animal Species of Greatest Conservation Need associated with each natural community type and the Ecological Landscapes in which they occur.
- Issues[3] and conservation actions for each natural community type.

The Department's natural community ecologists authored the material on natural communities presented within this section with input from internal and external experts, professionals, and stakeholders. Additional details about the relationship between natural communities, ecological landscapes, and ecosystem management opportunities can be found in the Department's "Ecological Landscapes of Wisconsin" report[4].

4.2 Overview of Natural Community Status

The Wisconsin Natural Heritage Inventory documents occurrences of natural communities, but not all community types have received equivalent inventory attention. For widespread and common types, the focus has been on large, relatively undisturbed occurrences, or the older (and/or rarest) successional stages of many forest communities. For rare types such as mesic prairie and algific talus slope, efforts have been made to identify as many potentially viable examples as possible. Widespread and abundant communities that have seldom been considered conservation priorities, such as alder thicket or shrub-carr, have received less attention than other types. For types that are relatively recent in their identification as a distinct community type in Wisconsin (e.g., alvar), data on distribution and abundance may be incomplete. Other types have yet to be documented; new community types may emerge because of climate change and related influences. Information on abundance and distribution for some of the natural communities included in WWAP2 has been assessed using NatureServe's NHI methodology. These communities have been assigned SRanks similar to those used for plant and animal species and they are listed in Table 4.2.1 at the end of this Section according to the community group in which they are classified. These ranks give us an idea of the current status of the community. Future improvements to the WWAP that help us make decisions about priority conservation actions and areas include assigning ranks for communities that do not have them.

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[1] http://dnr.wi.gov/topic/endangeredresources/communities.asp (Search Terms: Wisconsin DNR Natural communities)
[2] http://dnr.wi.gov/topic/landscapes/ (Search Terms: Ecological Landscapes of Wisconsin)
[3] Threats, issues and challenges are used interchangeably in the WWAP. The first term has more common usage in conservation biology and planning; the latter two terms are a more moderate way to convey the same concepts to WWAP users.
[4] http://dnr.wi.gov/topic/landscapes/Handbook.html (Search Terms: Ecological Landscapes of Wisconsin)

Those natural communities with low ranks include those that were historically common but are now uncommon or rare or uncommon historically and still uncommon today. They are typically associated with rare and declining species. Some community types in this category are only found under special environmental conditions (e.g., calcareous fen, boreal rich fen, bracken grassland, sand prairie, and submergent aquatic - oligotrophic marsh). These should be given special attention because they often contain rare species and their long-term existence requires that specialized conditions be sustained. Other community types in this category are at the edge or outside their normal range (e.g., pine and hemlock relicts, boreal forests, bog relicts, southern tamarack swamp).

Geographically restricted natural communities, many of which are listed in the Miscellaneous Community Group, are only found in unique localized conditions at a few localities, and often contain many rare and declining species endemic to those conditions. Examples in this category are specialized communities found along the Great Lakes shoreline or only on exposed bedrock (e.g., Great Lakes beach, dune, and coastal fen; dry and moist cliffs; and bedrock glade).

Communities that were not present historically but are common now can be important to some Species of Greatest Conservation Need. For example, surrogate grasslands (e.g., pastures, hayfields, other grasslands of non-native species) have a similar structure to native grasslands and are important to many grassland birds. Agricultural fields can be a benefit to some species by providing nesting habitat, food, and cover. Bridges, chimneys, mines, and dredge spoil islands provide habitat for a number of species. The conversion of surrogate habitats may have an effect on some species (e.g., conversion of surrogate grasslands to row crops will have an impact on grassland birds; new housing being built without chimneys because of high efficiency furnaces could impact chimney swifts). In WWAP2, conifer plantation and transportation and utility corridors, were added to surrogate grasslands (there are now three surrogate or unnatural communities in the WWAP) to recognize the role these "communities" or habitat features have or may have in providing habitat for SGCN.

4.3 Management Considerations

Management of Species of Greatest Conservation Need and the natural communities that support them should be approached from an ecological community perspective and a landscape or regional scale. Managing for one species at a time is not cost-effective and often results in conflicting management efforts. Managing for communities in which a Species of Greatest Conservation Need resides will benefit many other species. If we pay attention to these other species needs within a community type, in addition to the needs of SGCN, we ensure that our management is cost-effective and benefits as many species as possible. This may also allow us to combine conservation objectives targeted for other wildlife species or habitats not covered by the WWAP.

Preserving what is left will most likely not meet the needs of natural community types and Species of Greatest Conservation Need. Many natural community types will require restoration to reestablish species composition or vegetation structure. This could

include restoring a missing, diminished, or altered ecological process or influence, such as fire or water flow. Sometimes surrogate communities can be used to meet the habitat requirements for some Species of Greatest Conservation Need. Representation of all successional stages associated with a given community type is an important consideration to ensure that those elements of diversity most in need of attention are maintained within a regional landscape. An important conservation action identified in this section is the need to undertake a landscape-scale conservation design analysis of community types and seral stages needed to sustain the most SGCN and their habitat. In WWAP2 improvements in this area were made by adding seral stages to some of the northern forest community types.

Since many community types occur along an environmental gradient, a complex of community types should be managed together when possible (e.g., a gradient or complex including submergent aquatic, southern sedge meadow, shrub-carr, southern tamarack, and upland forests). Or, when species with similar structure and landscape needs are a concern, communities with similar structure should be managed together to create large blocks of habitat (e.g., northern sedge meadow and pine-oak barrens for grassland species).

Two important challenges to landscape and natural community level conservation:

Potential conflicts when managing for multiple species and habitats - Managing landscapes for multiple habitats and/or to meet the needs of multiple species can be difficult at best. For example, how can a prairie be burned to promote habitat for some bird species when the fire itself could affect invertebrate populations that are isolated within the burn area. Sustainable systems maintain genetic, species, community and landscape diversity—planning, diverse objectives, collaboration and compromise are needed at all levels.

Considering SGCN with few or no moderate or high natural community or ecological landscape association scores – These species are notable as having only "blank" or "L" marked in the association scores presented at the end of Sections 3.1 to 3.6. SGCN are, by definition, rare and/or declining. They may be well-known or easily recognized, or they may be something that few people have ever seen. These species are exceedingly rare and highlight the need to interpret the natural community information with caution. There are rare species with many "L" association scores that may be habitat generalists associated with many habitats at low numbers OR as with invertebrates, the scale at which natural communities are assessed do not distinguish the microhabitat characteristics that distinguish their distribution.

Table 4.2.1 State Conservation Assessment Ranks (SRanks) Assigned to Natural Communities Using NatureServe NHI Methods

Community Group	Community	SRank*
Aquatic (lakes-rivers)	Coldwater streams	
Aquatic (lakes-rivers)	Coolwater streams	
Aquatic (lakes-rivers)	Lake Michigan	
Aquatic (lakes-rivers)	Lake Superior	
Aquatic (lakes-rivers)	Large Lake--deep, hard, drainage	S3
Aquatic (lakes-rivers)	Large Lake--deep, hard, seepage	S2
Aquatic (lakes-rivers)	Large Lake--deep, soft and very soft, seepage	
Aquatic (lakes-rivers)	Large Lake--deep, soft, drainage	S1
Aquatic (lakes-rivers)	Large Lake--shallow, hard and very hard (marl), drainage	
Aquatic (lakes-rivers)	Large Lake--shallow, hard, seepage	SU
Aquatic (lakes-rivers)	Large Lake--shallow, soft, drainage	S3
Aquatic (lakes-rivers)	Large Lake--shallow, soft, seepage	S4
Aquatic (lakes-rivers)	Riverine Impoundment	
Aquatic (lakes-rivers)	Riverine Lake - Pond	SU
Aquatic (lakes-rivers)	Small Lake--hard, bog	S2
Aquatic (lakes-rivers)	Small Lake--meromictic	S1
Aquatic (lakes-rivers)	Small Lake--Other	SU
Aquatic (lakes-rivers)	Small Lake--soft, bog	S4
Aquatic (lakes-rivers)	Spring Pond, Lake--Spring	
Aquatic (lakes-rivers)	Springs and Spring Runs (Hard)	S4
Aquatic (lakes-rivers)	Springs and Spring Runs (Soft)	SU
Aquatic (lakes-rivers)	Warmwater rivers	
Aquatic (lakes-rivers)	Warmwater streams	
Barrens	Great Lakes Barrens	S1
Barrens	Oak Barrens	S2
Barrens	Pine Barrens	S2
Barrens	Sand Barrens	SU
Grassland	Bracken Grassland	S2
Grassland	Dry Prairie	S3
Grassland	Dry-mesic Prairie	S2
Grassland	Mesic Prairie	S1
Grassland	Sand Prairie	S2
Grassland	Surrogate Grasslands	SNR
Grassland	Wet Prairie	SU
Grassland	Wet-mesic Prairie	S2

Community Group	Community	SRank*
Miscellaneous	Algific Talus Slope	S1
Miscellaneous	Alvar	S1
Miscellaneous	Bedrock Glade	S3
Miscellaneous	Bedrock Shore	S2
Miscellaneous	Caves and Subterranean Cultural	SU
Miscellaneous	Clay Seepage Bluff	S2
Miscellaneous	Dry Cliff	S4
Miscellaneous	Glaciere Talus (Felsenmeer)	S2
Miscellaneous	Great Lakes Alkaline Rockshore	S2
Miscellaneous	Great Lakes Beach	S2
Miscellaneous	Great Lakes Dune	S2
Miscellaneous	Great Lakes Ridge and Swale	S2
Miscellaneous	Inland Beach	S3
Miscellaneous	Lacustrine Mud Flat	SU
Miscellaneous	Moist Cliff	S4
Miscellaneous	Transportation-Utility Corridor	
Northern Forest	Aspen-Birch	
Northern Forest	Black Spruce Swamp	S3?
Northern Forest	Boreal Forest	S2
Northern Forest	Conifer Plantation	
Northern Forest	Forested Seep	S2
Northern Forest	Mesic Cedar Forest	S1
Northern Forest	Mesic Floodplain Terrace	S2
Northern Forest	Northern Dry Forest--late seral	S3
Northern Forest	Northern Dry Forest--mid-seral	
Northern Forest	Northern Dry Forest--young seral	
Northern Forest	Northern Dry Mesic--late seral	S3
Northern Forest	Northern Dry Mesic--mid-seral	
Northern Forest	Northern Dry Mesic--young seral	
Northern Forest	Northern Hardwood Swamp	S3
Northern Forest	Northern Mesic Forest--early seral	
Northern Forest	Northern Mesic Forest--late seral	S4
Northern Forest	Northern Mesic Forest--mid seral	
Northern Forest	Northern Mesic Forest--young seral	
Northern Forest	Northern Wet Forest	S4
Northern Forest	Northern Wet-mesic Forest	S3S4
Northern Forest	Tamarack Swamp (poor)	S3
Savanna	Cedar Glade	S4
Savanna	Oak Opening	S1

Community Group	Community	SRank*
Savanna	Oak Woodland	S1?
Southern Forest	Central Sands Pine - Oak Forest	S3
Southern Forest	Floodplain Forest	S3
Southern Forest	Hemlock Relict	S2
Southern Forest	Pine Relict	S2
Southern Forest	Southern Dry Forest	S3
Southern Forest	Southern Dry-mesic Forest	S3
Southern Forest	Southern Hardwood Swamp	S2
Southern Forest	Southern Mesic Forest	S3
Southern Forest	Southern Tamarack Swamp (rich)	S3
Southern Forest	White Pine - Red Maple Swamp	S2
Wetland	Alder Thicket	S4
Wetland	Bog Relict	S3
Wetland	Boreal Rich Fen	S2
Wetland	Calcareous Fen	S3
Wetland	Central Poor Fen	S3
Wetland	Coastal Plain Marsh	S1
Wetland	Emergent Marsh	S4
Wetland	Emergent Marsh - Wild Rice	S3
Wetland	Ephemeral Pond	SU
Wetland	Floating-leaved Marsh	S4
Wetland	Interdunal Wetland	S1
Wetland	Moist Sandy Meadow	SU
Wetland	Muskeg	S4
Wetland	Northern Sedge Meadow	S3
Wetland	Open Bog	S4
Wetland	Patterned Peatland	S1
Wetland	Poor Fen	S3
Wetland	Riverine Mud Flat	SU
Wetland	Shore Fen	S2
Wetland	Shrub Carr	S4
Wetland	Southern Sedge Meadow	S3
Wetland	Submergent Marsh	S4
Wetland	Submergent Marsh - Oligotrophic	S3

*Natural community SRanks have definitions similar to those used to rank species. Natural communities ranked "SU" do not have enough information to rank them and are similar to SGCN RankingSINs in that targeted surveys and inventory are needed to define the ranking factors. Natural communities without ranks are surrogate, anthropogenic communities, early stage forest or aquatic communities new to the WWAP.

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