Large Grasslands

Michigan's Wildlife Action Plan2015-2025

Today's Priorities, Tomorrow's Wildlife

Contents

What Are Large Grasslands?

Grasslands are dominated by grasses and have few to no trees or shrubs. Historically, they were formed in areas where there was a lack of woody growth due to low quality soils, too little rainfall, and sometimes fires. They were also maintained on good soils through frequent fires by Native Americans. Grasslands today are either remnants of these historical Grasslands, or remnants of farm fields left fallow or uncultivated, or they occur due to other changing land uses. As a result, Grasslands can be comprised of native or non-native plants and have different grass to forb ratios, heights, and densities. Many are dependent on distrubance to set back forest succession. While largescale conversion of lands to agricultural monocultures can negatively affect wildlife populations, well-managed hayfields and pastures can contribute to grassland bird conservation, particularly when the managed areas are adjacent to natural grassland habitat. For some grassland species, the size of the habitat is often a critical limiting factor. Large Grassland complexes provide a variety of habitats across the successional gradient of grassland vegetation types. The focal species identified in this mini-plan rely on larger-sized habitats (>25 ha).

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What Uses Large Grasslands?

Focal species in bold

Cottontail Rabbit

Northern Bobwhite

Ring-necked Pheasant

Upland Sandpiper

White-tailed Deer

Henslow's Sparrow

Monarch Butterfly

Dickcissel

Why Are Large Grasslands Important?

Grasslands deceive the untrained eye. From a distance, they appear to be a chaotic riot of weeds or simply a useless field waiting to be converted to a better, more valuable, purpose but a canny watcher knows better. A Grassland can provide the biofuels to heat a home or power a car; can feed our beef cattle and dairy cows and support a bison farm. A grassland can shelter broods of Ring-necked Pheasant and Northern Bobwhite Quail and provide critical habitat for some of our rarest species like Henslow's Sparrow; can provide year-round support for the pollinators that our crops depend on; can pull carbon dioxide out of the air and convert it into food for White-tailed Deer and Cottontail Rabbits. Grasslands can contain the tallgrass species we associate with the vast prairies that used to occupy the Great Plains; they can contain rich mixes of shorter grasses and wildflowers; and they can be simpler constructs planted by Michigan's farmers to meet their own commercial needs. Conservation of these large working landscapes ensures that wildlife and open spaces are safeguarded.

What is the Health of Large Grasslands?

Across the United States, native grasslands, especially large native grasslands, have been lost almost completely since European settlement (Samson and Knopf 1994; Noss et al. 1995) through development, agriculture, and reforestation. Michigan's remaining grasslands are typically small, isolated, and lack sufficient plant species diversity and disturbance to provide habitat for many important grassland species; large grasslands are virtually gone. Furthermore, Michigan agricultural grasslands (hay, pasture, and forage) have also declined from 2.1 million acres in 2007 to 1.5 million in 2012 (USDA 2012). Enrollment in the Conservation Reserve Program has also decreased from 331,622 acres in 1994 to

175,185 in 2014 (USDA 2015). Continued fragmentation of the landscape and these habitat complexes is detrimental to many area-sensitive birds.

Goals

- Increase the size and quality of grassland complexes in southern Michigan for focal species. [PRI, JV]

Call Out Box: Get Engaged!

Check out these citizen science opportunities:
Michigan Butterfly Network
Monarch Larva Monitoring Project
Bumble Bee Watch
eBird

What Are the Large Grassland Focal Species?

Where are we now and what we think we can realistically achieve over the next 10 years.

Henslow's Sparrow (Ammodramus henslowii) –

State Endangered

Henslow's Sparrows are small, inconspicuous, olive-brown birds that can sometimes be heard singing all night. They are reluctant to fly when disturbed and often run through the grass to escape from threats (Cornell Lab of Ornithology 2015). These birds are monogamous and build nests close to the ground (Robins 1971). This obligate grassland bird requires a minimum of about 75 acres and prefers areas with tall, dense grass with scattered forbs, and a well-developed litter layer with standing dead vegetation (Norris 2014a). An estimated 6,200 acres of suitable habitat is needed to sustain 5,000 pairs of Henslow's sparrow (Potter et al. 2007). This species experienced range-wide population declines between the 1960s and the mid-1980s. Since then the population has stabilized and shown growth in some regions (Cooper 2012). In Michigan, the North American Breeding Bird Survey data shows a 5.65% annual decline

between 2002 and 2012 (Sauer et al. 2014). Declines appear to be continuing. The current estimated population in Michigan is 5,000 birds (Partners in Flight Science Committee 2013).

Goals

- Stabilize population trend. [HS]

Grasshopper Sparrow (Ammodramus savannarum) –

Special Concern

Another small brown bird, the Grasshopper Sparrow gets its name not only from its insect diet, but also from its insect-like song (Cornell Lab of Ornithology 2015). These sparrows are area-sensitive and typically prefer habitats between 25 and 75 acres in size, consisting of clumped tall grasses with bare ground interspersed and moderately deep litter (Norris 2014b). In Michigan, there was a non-significant population decrease from 1980 to 2007 (Sauer et al. 2014) with a current population estimate of 180,000 birds (Partners in Flight Science Committee 2013). There is continued concern for the species, however, due to many decades of population declines across its range.

Goals

- Stabilize or increase population trend.

Dickcissel (Spiza americana) –

Special Concern

Dickcissels are relatively large sparrow-like birds. The males have a bright yellow breast with a black "V" and rusty shoulders. These birds are long distance migrants, wintering in Venezuela. Dickcissels prefer grassland complexes larger than 25 acres consisting of dense cover, moderately tall vegetation (10-60 inches) for singing perches, and 2-6 inches of moderately deep litter (Norris 2014c). These birds will use fallow fields, hay fields, old fields, pastures that are lightly grazed, and Conservation Reserve Program lands. Therefore the timing of mowing is an important management consideration (Norris 2014c). Michigan's population estimate is 4,000 breeding birds (Partners in Flight Science Committee 2013). A significant negative population trend has been reported (Potter et al. 2007), although the short-term trend appears to be relatively stable and declines may be due to the small number of survey routes used in the trend estimate (Sauer et al. 2014).

Goals

- Stabilize or increase population trend.

Monarch Butterfly (Danaus plexippus)

Monarch Butterflies are famous for their migration from their wintering grounds in the Sierra Nevada Mountains of Mexico to many eastern states and Canada, including Michigan. During the summer northward migration, the first three generations of Monarchs live only two to six weeks, but the fourth generation can live up to 9 months and will then migrate south for the winter. It is an amazing lifecycle and a spectacle to see during their migrations south because tens of thousands of individuals will land on a single tree. The overwintering population of monarchs has declined over the last twenty years leading to a petition to place the Monarch on the federal threatened and endangered species list. In Michigan, current evidence suggests populations have stayed stable (Badgett and Davis 2015).

Goals

- Increase outreach efforts on the Monarch Butterfly highlighting what people can do to aid conservation.
- Establish baseline status and distribution.

Call Out Box: How Vulnerable are Focal Species to Climate Change?

Hoving et al. (2013) determined climate vulnerabilities for focal species. These grassland species may be relative winners with climate change.

Climate vulnerabilities are based on projected changes in the abundance or range of a species by 2050.

	Climate Vulnerability
Henslow's Sparrow	Stable
Dickcissel	Increase
Grasshopper Sparrow	Stable
Monarch Butterfly	Not Assessed

What are the Conservation Threats and Actions?

Major threats that need to be addressed and key actions that need to be implemented over the next 10 years

Threats to Habitat

Invasive & Other Problematic Species, Genes & Diseases

- Invasive plants outcompete native plants and change the structure of habitats needed for focal species (Kost et al. 2007).

Natural Systems Modifications

- Loss of natural disturbance regimes such as fire and large grazers that set back forest succession (Kost et al. 2007).
- Agricultural, suburban and urban development, and forest succession fragment large grassland complexes (Kost et al. 2007; Cooper 2012).

Residential & Commercial Development

- Conversion to suburban and/or urban land uses (Kost et al. 2007; Cooper 2012).

Agriculture & Aquaculture

- Incompatible agricultural practices.
- Reduction of acres enrolled in the Conservation Reserve Program as commodity prices increased and lease payments remain unchanged have reduced available habitat for focal species. Further, changes in the program away from whole field enrollments towards buffer strips to enhance water quality have decreased field size, which can be problematic for the focal species (Cooper 2012).

Conservation Actions for Habitat

Land & Water Management

H1. Increase size of existing large grassland complexes within open landscapes and consider removing hedgerows. [PIF2; PIF3, SWR]

H2. Manage for structural and grassland successional diversity across the landscape. [PBMP, NWP]

H3. Increase forbs component and use local genotypes when planting. [PBMP, NWP]

H4. Conduct habitat management to mimic natural disturbance regimes using fire and large grazers at different times of year. [CC-1.3; PBMP; PIF; PIF2]

H5. Prioritize and conduct targeted invasive species management. [TIS]

H6. Implement invasive species decontamination and prevention protocols. [CC-1.4; TIS]

H7. Continue early detection and response efforts for invasive species. [CC-7.3; TIS]

Raising Awareness

H8. Promote voluntary best management practices for stopping the introduction and spread of invasive species by recreational users, researchers, and industry. [TIS]

H9. Promote management of large grassland habitats and the positive impacts it has on improving hunting experiences. [NWP]

H10. Increase education on using fire as a management tool at different times of year.

H11. Work with land planners and local governments to encourage grassland conservation.

Livelihood, Economic & Moral Incentives

H12. Promote enrollment in Farm Bill programs and, where possible, provide additional financial incentives to be competitive with commodity prices. [CC-1; SWR; HS-3.2; PIF3]

H13. Promote and work with landowner incentive programs like the U.S. Fish and Wildlife Service's partners program, Michigan Department of Natural Resources private lands program, etc. [CC-1.2; SWR]

H14. Promote Farm Bill biologist program that provides technical guidance to private landowners on grassland management and conservation. [CC-1.2]

Conservation Designation & Planning

H15. Use easements and acquisitions to conserve or increase large grassland complexes. [SWR]

H16. Work with the Michigan Technical Committee of the Farm Bill to develop options for larger field size, increasing plant diversity and structure through seed mixes, a diversity of management practices, etc.

Research & Monitoring

H17. Determine if Michigan should be planting more southern genotypes and species to adapt to changes in climate and, if so, what seed mixes should be promoted. [CC-2.2, 2.3]

H18. Develop or use existing system to better track management and collaborations across the landscape. [SWR]

H19. Use and promote the Midwest Invasive Species Information Network (MISIN) to monitor invasive species. [CC-7.3; LMBCS-6.3; TIS]

Institutional Development

H20. Promote landowner cooperatives for grassland habitat. [PRI]

Threats to All Focal Species

Invasive & Other Problematic Species, Genes & Diseases

- Brown-headed Cowbird nest parasitism (Norris 2014a; Norris 2014b; Norris 2014c).
- Pale and black swallowwort is a population sink for Monarch Butterfly (Casagrande and Dacey 2007).

Natural Systems Modifications

- Fragmentation and increased predation due to edge effects (Norris 2014a).

Agriculture & Aquaculture

- Incompatible mowing regimes can decrease nesting success by disturbing nesting birds, destroying eggs, or killing chicks (Norris 2014a; Norris 2014b; Norris 2014c).
- Pesticides may significantly impact populations of focal species close to agricultural fields (Norris 2014a; Norris 2014b).

Conservation Actions for All Focal Species

Land & Water Management

S1. Promote and implement *Agricultural Practices that Conserve Grassland Birds* booklet, including bird friendly mowing practices. [CGB; SWR; HS-3.3; PIF3]

S2. Identify and control black and pale swallowwort in cooperation with Cooperative Invasive Species Management Areas.

Raising Awareness

S3. Support Monarch Butterfly education and conservation efforts.

S4. Promote best management practices for land managers to aid Monarch Butterfly conservation.

S5. Promote seed sources with a diversity of milkweed species. [PBMP]

Research & Monitoring

S6. Implement standardized monitoring and evaluation protocol for grassland management to determine effects on grassland birds.
S7. Determine if herbicides or pesticides are impacting focal species.

What Additional Conservation Actions Are Needed?

These additional conservation actions were identified by partners and should be addressed as resources become available.

Raising Awareness

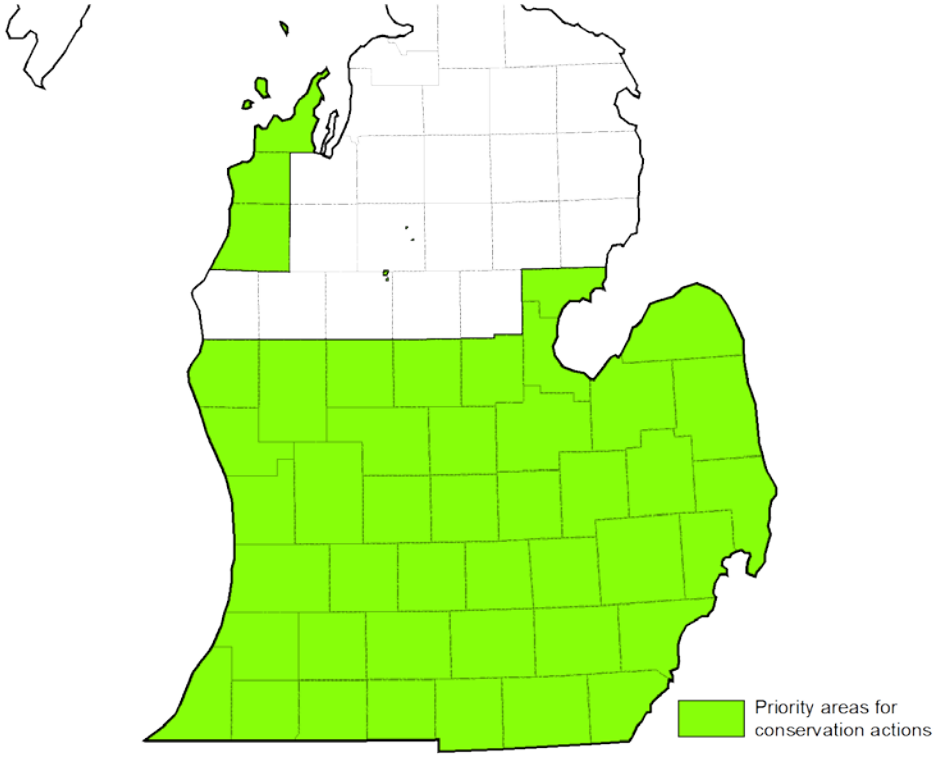
1. Work with the Farm Service Agency to emphasize the value of pollinators and their habitats, and promote milkweed species diversity.
2. Work with birding organizations to support their education on habitat management.
3. On managed lands (state owned, land conservancy, etc.) use signs to educate visitors about habitat management and focal species.

Research & Monitoring

4. Determine methods to increase plant diversity when using a drill during habitat management.
5. Conduct literature review on the impacts of seeding/disking/fire/mowing/herbicides on birds, invasive species, and plant diversity to inform management; then conduct research to fill information gaps.
6. Assess survival and productivity of Monarch Butterfly in Michigan.

Where Are There Places for Partnership?

This map was designed by partners to help them connect around important places for focal species. Working together on conservation actions on a voluntary basis provides great benefits to wildlife and people.



This map is based on the Pheasant Restoration Initiative and partner priorities.

How Will We Monitor?

Assessing status and measuring progress towards goals.

Habitat

- Work with partners to track management and size of grasslands in areas identified in *Places for Partnerships*.

Henslow's Sparrow, Grasshopper Sparrow, Dickcissel



- Continue annual North American Breeding Bird Survey to track population trends.
- Continue the Michigan Breeding Bird Atlas.
- Use citizen science programs, such as eBird, to help assess distribution and relative abundance.
- Continue to update element occurrences in the state's Natural Heritage Database.

Monarch Butterfly

- Use citizen science programs, such as the Michigan Butterfly Network and Monarch Larva Monitoring Project, to help assess distribution and relative abundance.

How Does This Plan Link With Other Conservation Plans?

There has been a multitude of relevant planning efforts across the state and country over the past ten years. Bracketed superscripts throughout the Wildlife Action Plan indicate where the conservation action, goal, or monitoring strategy aligns with those from another plan. For conservation plans with distinct objectives, the objective or strategy number is also included. This linking of plans is meant to facilitate the expansion of partnerships.

[CC] National fish, wildlife and plants climate adaptation strategy (National Fish, Wildlife and Plants Climate Adaptation Partnership 2012)

[CGB] Agricultural practices that conserve grassland birds (Hyde and Campbell 2012)

[HS] Status assessment and conservation plan for the Henslow's Sparrow (*Ammodramus henslowii*) (Cooper 2012)

[JV] Upper Mississippi River and Great Lakes Region Joint Venture landbird habitat conservation strategy (Potter et al.2007)

[PBMP] Pollinator-friendly BMPs for Federal Lands (USFS 2015)

[SWR] Wildlife Division southwest regional habitat guidance – grassland complexes (MDNR 2015)

[NWP] National wild pheasant conservation plan (Midwest Pheasant Study Group 2012)

[NWR] Shiawassee National Wildlife Refuge comprehensive conservation plan (USFWS 2001)

[PIF] Partners in Flight North American landbird conservation plan (Rich et al. 2004)

[PIF2] Partners in Flight bird conservation plan for the boreal hardwood transition (Bird Conservation Region 12 – U.S. Portion) (Matteson et al. 2009)

[PIF3] Partners in Flight bird conservation plan for the Upper Great Lakes Plain (Physiographic area 16). (Knutson et al. 2001)

[PRI] Pheasant Restoration Initiative landowners guide (Michigan Pheasant Restoration Initiative 2015)

[TIS] Michigan Terrestrial Invasive Species State Management Plan (MDNR in draft)

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About The Wildlife Action Plan

Today's Priorities, Tomorrow's Wildlife

Every state has a Wildlife Action Plan, which taken together create a national conservation strategy for safeguarding wildlife and their habitats for current and future generations. Each state's action plan is uniquely designed to serve the needs of that state. These plans provide a framework for proactive conservation and management of fish and wildlife before they become imperiled, which is more straightforward, cost-efficient, and effective.

Michigan's Wildlife Action Plan was developed by conservation partners across the state. It provides information about those species in greatest conservation need. The plan is organized by chapters or mini-plans. Each mini-plan outlines priorities for the next 10 years. The mini-plans detail priority habitats and focal species of greatest conservation need, status of species and habitats, critical threats, needed conservation actions, places for partnerships, monitoring needs, and goals. This is one of 15 mini-plans. For more information about how the plan was built and to read other mini-plans, please visit:www.michigan.gov/dnrwildlifeactionplan.