APPENDIX E
TERRESTRIAL INVERTEBRATE SGCN SPECIES ACCOUNTS

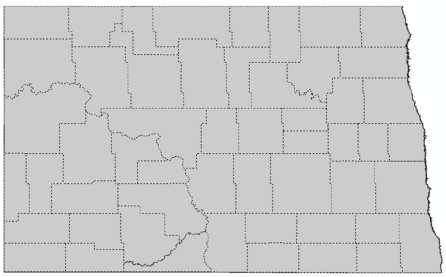
Contents

Terrestrial invertebrate SGCN and SGIN categories.

	Species of Greatest Conservation Need			Species of Greatest Information Need			
Common Name	**SGCN a. Regionally or globally imperiled**	**SGCN b. At-risk or declining, ND important**	**SGCN c. At-risk, expert review**	**SGIN d. Scientific knowledge deficient**	**SGIN e. Potentially stable in ND, declining in range**	**SGIN f. Potentially stable but life history trait vulnerability**	**SGIN g. Declining, ND significance uncertain**
Abbreviated Underwing			X				
Ainslie's Cuckoo Nomad Bee			X				
American Bumble Bee			X				
Badlands Tiger Beetle			X				
Broad-winged Skipper	X						
Dakota Skipper	X	X					
Dion Skipper	X						
Edwards' Hairstreak			X				
Ghost Tiger Beetle			X				
Hera Sheepmoth			X				
Hobomok Skipper			X				
Indiscriminate Cuckoo Bumble Bee			X				
Monarch Butterfly			X				
Mulberry Wing	X						
Northern Sandy Tiger Beetle			X				
Ottoe Skipper			X				
Poweshiek Skipperling	X						
Regal Fritillary		X	X				
Tawny Crescent			X				
Western Bumble Bee			X				
Whitney's Underwing	X		X				
Yellow Bumble Bee			X				
Yellow-banded Bumble Bee			X				
a crambid snout moth *Pyrausta pythialis*				X			
a leaf-cutter bee *Megachile dakotensis*							X
a mason bee *Osmia illinoensis*							X
a nomia bee *Nomia universitatis*							X
Apache Jumping Spider							X
Arogos Skipper							X
Ashton's Cuckoo Bumble Bee				X			X
Baird's Swallowtail				X			
Black-and-gold Bumble Bee				X			
Garita Skipperling				X			
Gray Copper					X		
Great Plains Tiger Beetle				X			

	Species of Greatest Conservation Need			Species of Greatest Information Need			
Common Name	**SGCN a. Regionally or globally imperiled**	**SGCN b. At-risk or declining, ND important**	**SGCN c. At-risk, expert review**	**SGIN d. Scientific knowledge deficient**	**SGIN e. Potentially stable in ND, declining in range**	**SGIN f. Potentially stable but life history trait vulnerability**	**SGIN g. Declining, ND significance uncertain**
Greenish Blue					X		
Greenish-white Grasshopper				X			
Juanita Sphinx Moth				X			
Large Marble							X
Leadplant Flower Moth				X			
Leonard's Skipper							X
Manitoba Oakworm Moth							X
Mead's Wood-Nymph				X			
Mormon Metalmark				X			
Nine-spotted Lady Beetle							X
Nude Yellow Loosestrife Bee							X
Pahaska Skipper							X
Persius Dusky Wing							X
Plains Branded Skipper				X			
Purplish Copper					X		
Rhesus Skipper							X
Ridings' Satyr				X			
Rusty-patched Bumble Bee							X
Sandy Tiger Beetle					X		
Silvery Blue					X		
Splendid Tiger Beetle							X
Strecker's Giant-skipper							X
Suckley's Cuckoo Bumble Bee							X
Susanna's Cellophane Bee				X			
Uncas Skipper							X

Abbreviated Underwing *Catocala abbreviatella*



Abbreviated Underwing possible range (light gray). Few state records. Specimen photo from University of Minnesota Insect Collection

Description/Identification: A medium-large moth with grayish/ brownish forewings and yellowish to orange hind wings. Both forewings and hind wings have dark markings. A thin straight line and a dark mark near the leading edge of the forewing and two transverse black bands on the hind wings.

Status: Resident.

Reason for SGCN Designation: SGCN (c). At-risk, expert review or recent assessment. Due to long-term and widespread habitat loss and fragmentation, the species has seen declines across its range.

Habitat: Typically found in dry prairies that includes its host plant, *Amorpha canescens* (leadplant).

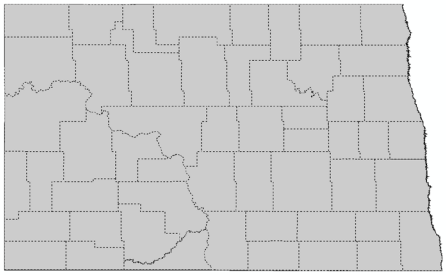
Threats: The loss of native prairies that contain leadplant is the primary cause for species decline. The species is also known for scattered and isolated populations across its range, leaving them more susceptible to extirpation due to catastrophic events such as wildfire and drought.

Research and Monitoring: Statewide pollinator surveys have been completed by the USFWS HAPET team and NDSU. Pollinator surveys should continue throughout the state to determine species range and population trends in ND.

Management Recommendations:

- Develop pollinator habitat.
- Protect and manage high quality native prairie.
- Develop connectivity between quality habitats.
- Include leadplant into plantings and restorations.

Ainslie's Cuckoo Nomad Bee *Epeolus ainsliei*



Ainslie's Cuckoo Nomad Bee possible range (light gray). No state records. Specimen photo from University of Minnesota Insect Collection

Description/Identification: A small bee with a black and white pattern on its abdomen and thorax. Because *e. ainsliei*, like all cuckoo bees, do not need to collect pollen for their young, they do not have hairy bodies.

Status: Possible resident.

Reason for SGCN Designation: SGCN (c). At-risk, expert review, or recent assessment. *E. ainsliei*, like all cuckoo bees, display kleptoparasitic behavior of laying their eggs in the nests of other bee species. So they are depending on healthy prairies that can support not only their species, but the species they nest parasitize as well.

Habitat: Typically found in drier prairies where its host species, *Colletes susannae* and *Colletes americanus* are found.

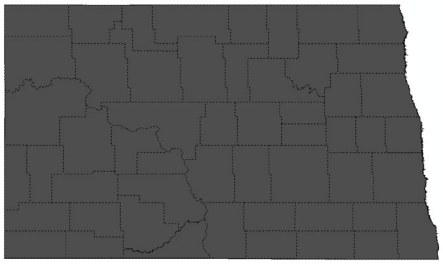
Threats: Cuckoo bees are kleptoparasitic and depend on other bee species to host their young. Declines of host species play a large role in the declines of cuckoo bees. The loss of foraging and nesting habitat, as well as the widespread use of pesticides, may also negatively impact the current populations. Other threats include habitat degradation and fragmentation, naturals pests and diseases, and climate change.

Research and Monitoring: Statewide pollinator surveys have been completed by the USFWS HAPET team and NDSU. Pollinator surveys should continue throughout the state to determine species presence in ND.

Management Recommendations:

- Develop pollinator habitat.
- Protect and manage high quality native prairie.
- Develop connectivity between quality habitats.
- Promote healthy grazing systems to fight mat forming grasses such as Kentucky Blue grass (as both of this species known hosts are ground nesting bees).

American Bumble Bee *Bombus pennsylvanicus*



American Bumble Bee primary range (dark gray)
Photo: American bumble bee, Judy Gallagher, CC 2.0
https://www.fws.gov/media/american-bumble-bee

Description/Identification: Relatively large. Queens are mostly black while worker bees have fuzzy yellow and black abdomens with a black tail. They also have long faces, with the hair on top of their heads being black.

Status: Resident.

Reason for SGCN Designation: SGCN (c). At-risk, expert review or recent assessment. Under review for federal protection through the Endangered Species Act. Due to threats such as habitat loss, pesticides, and disease, the species has seen sharp declines, which are most pronounced in the northern parts of its range.

Habitat: Typically found in prairies, occasionally forest edges or even urban areas. American Bumble Bees are associated with native prairies that include species such as milkvetches, prairie clovers, sunflowers, and goldenrods.

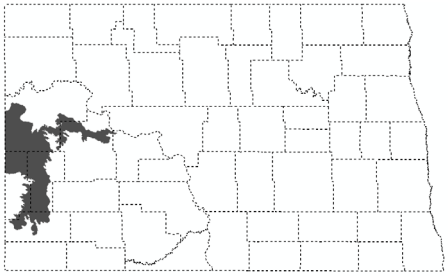
Threats: Bumble Bees face a number of threats, likely all of which have played a role in population declines. This species used to be common and widespread but the introduction of pathogens from introduced commercial bumble bees severely declined its population. The loss of foraging and nesting habitat, as well as the widespread use of pesticides, continues to negatively impact the current populations. Other threats include habitat degradation and fragmentation, naturals pests and diseases, and climate change.

Research and Monitoring: Statewide pollinator surveys have been completed by the USFWS HAPET team and NDSU. Pollinator surveys should continue throughout the state to determine species range and population trends in ND.

Management Recommendations:

- Develop pollinator habitat.
- Protect and manage high quality native prairie.
- Develop connectivity between quality habitats.
- Reduce pesticide use.
- Promote native forb plantings within both agricultural and urban landscapes.

Badlands Tiger Beetle *Cicindela decemnotata*



Badlands Tiger Beetle primary range (dark gray). Few state records. Specimen photo from University of Minnesota Insect Collection

Description/Identification: The Badlands tiger beetle is approximately 12-14 mm and most often a shade of metallic green. Occasionally it appears purple to reddish. Their wing casings have whiteish markings, with the middle one displaying as a line curving posteriorly at a sharp angle toward the midline. The underside is metallic green to blue-green.

Status: Resident.

Reason for SGCN Designation: SGCN (c). At-risk, expert review or recent assessment. This species is globally ranked G4, Apparently Secure; however, it is considered Vulnerable (S3) in North Dakota. Limited data has created difficulty in assessing the state's population and trends.

Habitat: These beetles live in soil burrows found in sparsely vegetated areas such as open ground, dunes, badlands, sagebrush steppe, dirt paths, and grasslands with minimal vegetation.

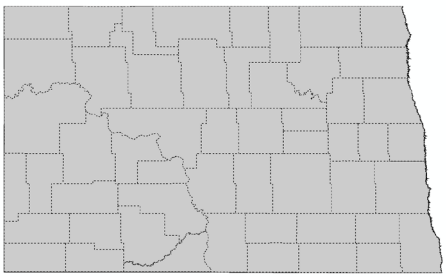
Threats: The species can be negatively impacted by overgrazing. The larvae take two years to develop to adults and larval burrows are particularly susceptible to trampling.

Research and Monitoring: A survey of the cicindelid species of Theodore Roosevelt National Park was conducted from 2001-2003. The only current state records come from these survey efforts. Increased survey efforts are needed to gain a better understanding of this species distribution and population trends.

Management Recommendations:

- Protect and manage healthy badlands habitats.
- Ensure occupied areas and areas of suitable habitat are managed with appropriate grazing times and stocking levels.

Broad-winged Skipper *Poanes viator*



Broad-winged Skipper possible range (light gray). Few possible state records. Specimen photo from University of Minnesota Insect Collection

Description/Identification: Small tan to orangish brown skipper. The underside of the hind wings has a thick pale (yellowish) streak in the center, a single spot above the streak and typically several spots below. Males typically have dark forewings with several orange marks. Female forewings are similar, but their marks are smaller and whitish.

Status: Possible resident.

Reason for SGCN Designation: SGCN (a). Regionally or globally imperiled. This species is thought to be imperiled in North Dakota, despite a global ranking of G5 (secure).

Habitat: Marshes, wet meadows, and wetlands that contain its host plants (sedges, common reed. The species may also be found visiting nearby grasslands, plantings/gardens for nectar.

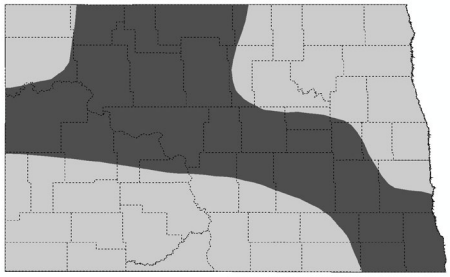
Threats: Loss of habitat by draining and cropping/developing wetlands is likely the key driver of population declines.

Research and Monitoring: Statewide pollinator surveys have been completed by the USFWS HAPET team and NDSU. Pollinator surveys should continue throughout the state to determine species presence in ND.

Management Recommendations:

- Protect and manage existing wetlands.
- Develop and pollinator habitat (floral resources) adjacent to wetlands.
- Restore wetlands and use known host plants in adjacent seedings.
- Reduce pesticide use.

Dakota Skipper *Hesperia dacotae*



Dakota Skipper primary (dark gray) and possible (light gray) range. Photo: Luke Toso/USFWS

Description/Identification: Small non-descript butterfly. Ventral wing ranges from a golden color in males to a darker brown in females with some light markings. Can be confused with the Ottoe skipper in which it shares habitat preferences.

Status: Resident.

Reason for SGCN Designation: SGCN (a). Regionally or globally imperiled. SGCN (b). At-risk or declining, ND important. Listed as Threatened by the USFWS. Loss of habitat is the driving concern. North Dakota plays an important role in recovery of the species.

Habitat: High quality, undisturbed native prairie. Dakota Skippers can be found in two types of habitats: One is a more mesic prairie consisting mostly of big and little bluestem and flowers such as wood lily, harebell, smooth camas, blazing star, and goldenrod. The second type is an upland prairie with vegetation that thrives in drier conditions such as needlegrasses (porcupine grass and needle-and-thread grass), side oats grama, and little bluestem with abundant purple coneflower, purple prairie clover, blazing star, and blanket flower.

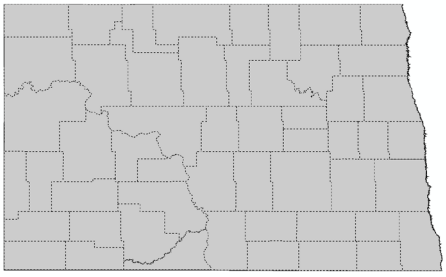
Threats: The loss of native prairie is the primary cause for this species decline. Dakota Skipper are also absent from native grasslands that are intensely grazed or often burned. Lack of management to suitable sites which allows encroachment of invasive species is also a problem. This species does not have the ability to move great distance so suitable sites may be absent of Dakota Skipper from lack of immigration from other populations. The use of herbicide for weed control at certain times of the year in native prairie tracts may be a detriment by reducing nectar sources for the butterfly. Insecticide use near populations may also a factor.

Research and Monitoring: A Conservation Status was developed by Royer and Marrone for North Dakota and South Dakota in 1992. Royer, USFWS, and the USFS all conducted early surveys in the late 90s and early 2000s. The USFWS and the USFS continue to monitor known populations. The ND Natural Resources Trust, in collaboration with the Dakota Skipper Recovery Council, has received multi-year funding to monitor known populations and survey for new populations. Survey efforts should continue, even increase, if recovery goals are going to be met.

Management Recommendations:

- Protect and manage high quality native prairie.
- Protect and manage known populations.
- Develop pollinator habitat.
- When using prescribed fire to manage do not burn entire area of know population. Use techniques to promote patchy burns. Burn prior to May 1 when possible.
- Delay haying of habitat until after end of adult flight. Leave 8 inches of structure to provide over-wintering cover. Do not hay entire occupied site each season when possible.
- Limit the duration and intensity of grazing in Dakota Skipper habitat. Do not graze habitat for entire season and manage for 8 inches of structure. Spring grazing is preferable. Avoid grazing of nectar sources during the flight period.
- Avoid broadcast spraying of pesticides and herbicides at known sites to minimize loss of adults and nectar sources.
- Monitor known inhabited sites.

Dion Skipper *Euphyes dion*



Dion Skipper possible range (light gray). Few possible state records. Specimen photo from University of Minnesota Insect Collection

Description/Identification: Males: The upperside of the forewing has a wide dark brown border with an orange area in the center and a black stigma. Females: The forewing is mostly dark brown with several light yellowish-orange spots.

Status: Possible resident.

Reason for SGCN Designation: SGCN (a). Regionally or globally imperiled.

Habitat: Marshes, wet meadows, swamps, wetlands, and mesic grasslands.

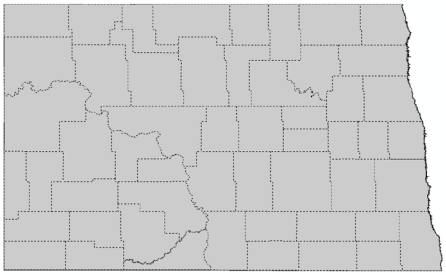
Threats: Loss of habitat by draining and cropping/developing wetlands is likely the key driver of population declines.

Research and Monitoring: Statewide pollinator surveys have been completed by the USFWS HAPET team and NDSU. Pollinator surveys should continue throughout the state to determine species presence in ND.

Management Recommendations:

- Protect and manage existing wetlands.
- Develop and pollinator habitat (floral resources) adjacent to wetlands.
- Restore wetlands and use known host plants in adjacent seedings.
- Reduce pesticide use.

Edwards' Hairstreak *Satyrium edwardsii*



Edwards/ Hairstreak possible range (light gray). Few state records. Photo: Barnes, Dr. Thomas G./USFWS

Description/Identification: The underside of the hindwings are mostly a pale gray-brown with a band of dark brown ovals outlined in white. There are submarginal orange crescents, a blue tailspot that does not tipped/outlined in orange, and a single tail.

Status: Resident.

Reason for SGCN Designation: SGCN (c). At-risk, expert review or recent assessment. This species has a global rank of G4 (apparently secure); however, it is vulnerable to possibly extirpated in the majority of its US range.

Habitat: Woodland edges, savannas, tree rows and other areas which offer both its host plant (oaks) and nectar resources.

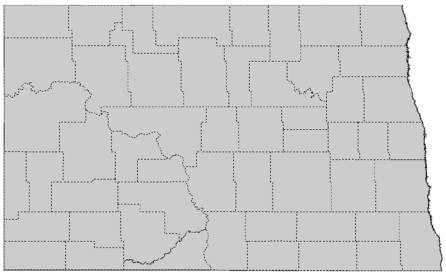
Threats: Loss of habitat and the use of pesticides are likely the main drivers of population declines.

Research and Monitoring: Statewide pollinator surveys have been completed by the USFWS HAPET team and NDSU. Pollinator surveys should continue throughout the state to determine species range and population trends in ND.

Management Recommendations:

- Develop pollinator habitat.
- Protect and manage high quality native prairie and oak woodlands.
- Develop connectivity between quality habitats.
- Reduce pesticide use.

Ghost Tiger Beetle *Cicindela lepida*



Ghost Tiger Beetle possible range (light gray). No state records. Specimen photo from University of Minnesota Insect Collection

Description/Identification: Small, mostly off-white in color, with brown markings at the center of the wing covers. The head and thorax are reddish-brown to greenish and the legs are a pale off-white to yellow color.

Status: Possible resident.

Reason for SGCN Designation: SGCN (c). At-risk, expert review or recent assessment. This species is ranked vulnerable at both the statewide and global scale.

Habitat: Sand dunes and sparsely vegetated areas with highly sanded soils.

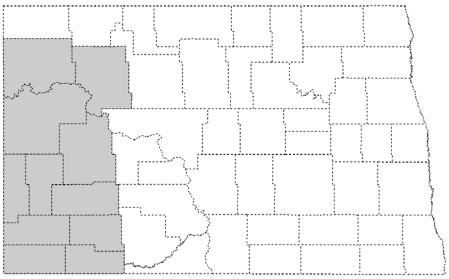
Threats: This is a strict specialist species, depending on sand dunes. The loss and degradation of these habitats is likely the primary driver of population declines.

Research and Monitoring: Minimal Cicindela surveys have been conducted throughout the state. Targeted surveys should be implemented throughout the state to determine species presence in ND.

Management Recommendations:

- Protect and manage sand dunes, sandy outcrops, and areas of suitable habitat.
- Limit grazing, driving, or other activities in areas where the species has been identified.

Hera Sheepmoth *Hemileuca hera*



Hera Sheepmoth possible range (light gray). Very few state records. Specimen photo from University of Minnesota Insect Collection

Description/Identification: White and black patterned wings, including a crescent to bean shaped spot on each wing. Head and thorax have orange hairs.

Status: Resident.

Reason for SGCN Designation: SGCN (c). At-risk, expert review or recent assessment. This species is ranked G5 (secure); however, 4 of the 5 states/provinces with a rank consider this species vulnerable or critically imperiled.

Habitat: Sagebrush steppe to shortgrass prairies that include its host plant (sagebrush).

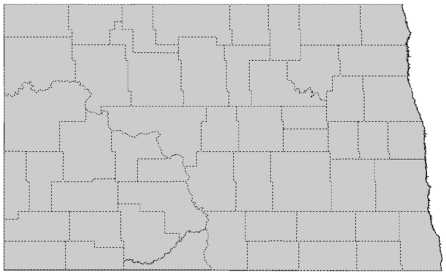
Threats: Habitat loss, degradation, and fragmentation are likely the primary drivers of population declines.

Research and Monitoring: Statewide pollinator surveys have been completed by the USFWS HAPET team and NDSU. Pollinator surveys should continue throughout the state to determine species range in ND.

Management Recommendations:

- Develop pollinator habitat.
- Protect and manage sagebrush habitat.
- Develop connectivity between quality habitats.
- Reduce pesticide use.

Hobomok Skipper *Lon hobomok*



Hobomok Skipper possible range (light gray). Few state records. Specimen photo from University of Minnesota Insect Collection

Description/Identification: The upperside of male skippers is mostly yellowish to orange with dark brown to black borders and no stigma. The underside of the hindwing has a grayish margin. Female is similar, with the upperside being a lighter/duller orange. A second variation of the female is mostly purple-black with dull white spots.

Status: Resident.

Reason for SGCN Designation: SGCN (c). At-risk, expert review or recent assessment.

Habitat: Grasslands, woodland edges, edges of bogs, wetlands, and streams, and areas where host plant and nectar resources are available, including parks and urban plantings.

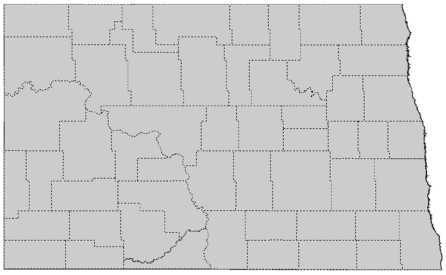
Threats: The loss and degradation of native prairie and habitat fragmentation are the primary causes for species decline.

Research and Monitoring: Statewide pollinator surveys have been completed by the USFWS HAPET team and NDSU. Pollinator surveys should continue throughout the state to determine species range and population trends in ND.

Management Recommendations:

- Develop pollinator habitat.
- Protect and manage high quality native prairie.
- Develop connectivity between quality habitats.
- Reduce pesticide use.

Indiscriminate Cuckoo Bumble Bee *Bombus insularis*



Indiscriminate Cuckoo Bumble Bee possible range (light gray). Very few state records. Specimen photo from University of Minnesota Insect Collection

Description/Identification: Females have yellow faces and T3 and T4 with some yellow along the sides. Males are variable, often T1-T3 are yellow, with a little yellow on T4 and T5. Thorax has a black band between the wings.

Status: Possible resident.

Reason for SGCN Designation: SGCN (c). At-risk, expert review or recent assessment.

Habitat: Native prairie, sagebrush steppe and other shrublands, meadows, and woodland edges.

Threats: Cuckoo bees are kleptoparasitic and depend on other bee species to host their young. Declines of host species play a large role in the declines of cuckoo bees. The loss of foraging and nesting habitat, as well as the widespread use of pesticides, may also negatively impact the current populations. Other threats include habitat degradation and fragmentation, naturals pests and diseases, and climate change.

Research and Monitoring: Statewide pollinator surveys have been completed by the USFWS HAPET team and NDSU. Pollinator surveys should continue throughout the state to determine species range and abundance in ND.

Management Recommendations:

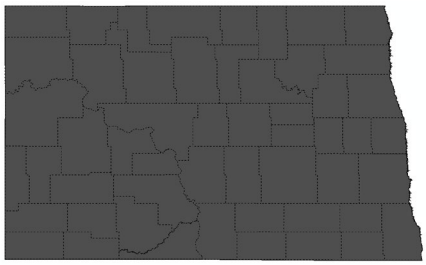
- Develop pollinator habitat.
- Protect and manage high quality native prairie.
- Develop connectivity between quality habitats.
- Reduce pesticide use.

Monarch Butterfly *Danaus plexippus*

Description/Identification: Most recognizable by their orange wings with black and white markings. The outer edge of the wing is black with patterns of white spots.

Status: Summer resident, migratory.

Reason for SGCN Designation: SGCN (c). At-risk, expert review or recent assessment. Listed as Threatened by the USFWS. Loss of native prairie habitat containing milkweed (species host plant) is driving concern.



Monarch primary range (dark gray).

Habitat: Monarchs are typically found in areas with a high number of nectar sources. While domestic plants are used native flowers are preferred. Monarchs in the caterpillar stage rely exclusively on milkweed so areas with high density of milkweed will contain both caterpillars and adult Monarchs. Monarchs are found throughout North Dakota. Areas with a higher density of native prairie would be more likely to support Monarchs.

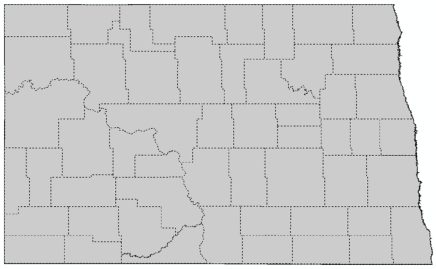
Threats: The loss of habitats that contain milkweed is the primary cause for this species decline. Loss of habitat with high quality nectar sources for adults, such as native prairie is also a concern. Because this species migrates great distances, connectivity between useable habitats is also a concern. The use of herbicide for weed control at certain times of the year in native prairie tracts may also be a detriment by reducing nectar sources for the butterfly. Insecticide use near populations may also be a factor.

Research and Monitoring: Statewide pollinator surveys have been completed by the USFWS HAPET team and NDSU. Both provided data on presence/distribution of Monarch butterflies across the state. Continued survey efforts to better understand population trends in ND should be pursued.

Management Recommendations:

- Develop pollinator habitat.
- Protect and manage high quality native prairie.
- Develop connectivity between quality habitats.
- Delay haying of habitat until after end of adult flight.
- Plant milkweed and native nectar plants to improve habitat.
- Avoid broadcast spraying of pesticides and herbicides at known sites to minimize loss of adults and nectar sources.

Mulberry Wing *Poanes massasoit*



Mulberry Wing possible range (light gray). Very few state records. Specimen photo from University of Minnesota Insect Collection

Description/Identification: A small skipper with dark brown to black rounded wings. Males usually have dark forewings without any lighter marks where females typically have yellowish spots. The hindwings have a large light yellow irregular pattern.

Status: Possible resident.

Reason for SGCN Designation: SGCN (a). Regionally or globally imperiled. Though this species has a global rank of Apparently Secure, it has been observed to be declining in the western edge of its range, including North Dakota. Though there are very few historical records in the state, it is considered Imperiled and a species of concern.

Habitat: The Mulberry Wing is associated with more mesic habitats, including wet meadows, bogs, marshes, wetland and small stream riparian areas, and wet roadsides.

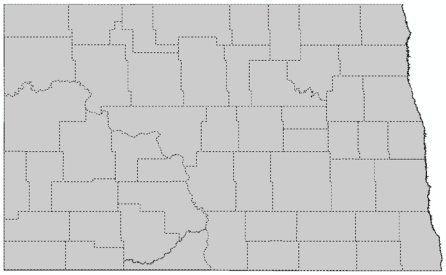
Threats: As a wetland specialist, this skipper is highly threatened by the drainage of wetlands and loss of wetland habitat across its range. The use of herbicide and pesticides may also be a factor in population declines.

Research and Monitoring: Statewide pollinator surveys have been completed by the USFWS HAPET team and NDSU. Pollinator surveys should continue throughout the state to determine species presence in ND.

Management Recommendations:

- Protect and manage native wetlands.
- Minimize draining and developing wetland habitats.
- Include its host plant, Carex stricta, and other Carex species in wetlands plantings.
- Include nectar rich plants in wetland plantings.

Northern Sandy Tiger Beetle *Cicindela limbata nympha*



Northern Sandy Tiger Beetle possible range (light gray). Very few state records. Specimen photo from University of Minnesota Insect Collection

Description/Identification: Small beetles that are mostly an off-white color with a dark reddish-brown head and thorax. Each wing cover also has a dark brown stripe along it.

Status: Possible resident.

Reason for SGCN Designation: SGCN (c). At-risk, expert review or recent assessment. This tiger beetle is ranked T4 (apparently secure subspecies); however, 3 of the 4 states/provinces with a rank consider this species vulnerable or critically imperiled.

Habitat: Sand dunes and sparsely vegetated areas with highly sanded soils

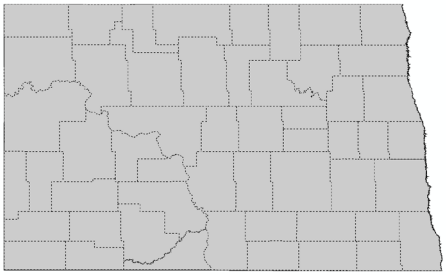
Threats: This is a strict specialist species, depending on sand dunes. The loss and degradation of these habitats is likely the primary driver of population declines.

Research and Monitoring: Minimal Cicindela surveys have been conducted throughout the state. Targeted surveys should be implemented throughout the state to determine species range and abundance in ND.

Management Recommendations:

- Protect and manage sand dunes, sandy outcrops, and areas of suitable habitat.
- Limit grazing, driving, or other activities in areas where the species has been identified.

Ottoe Skipper *Hesperia ottoe*



Ottoe Skipper possible range (light gray). Few state records. Specimen photo from University of Minnesota Insect Collection

Description/Identification: A larger skipper, with females being larger than males. The upper wings are a bright orangish brown. The males have a dark brown to black edging along the outer margins. They also have a narrow black band containing stigma (specialized scent scales used in courtship) on the center of the forewing. Both have a yellow (sometimes orange) lower wing surface with males being unmarked and females with faint spots.

Status: Resident.

Reason for SGCN Designation: SGCN (c). At-risk, expert review or recent assessment. Globally ranked G3 (vulnerable). Loss of prairie is the main driver for population declines. Most remaining populations are associated with small, isolated prairie fragments with a high risk of local extinction.

Habitat: The Ottoe skipper typically prefers dry-mesic mixed-grass prairies. Preferred habitat typically includes species such as little bluestem, side-oats grama, and prairie dropseed. This species is associated with non-degraded native grasslands.

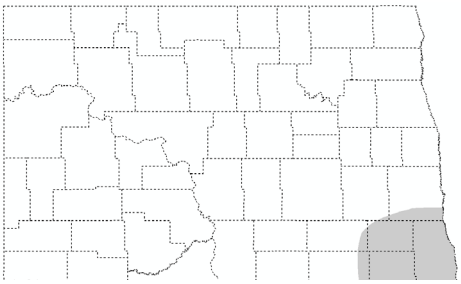
Threats: The loss and degradation of native prairies is the primary cause for species decline. However, some studies have indicated a sensitivity to grazing as well, and heavy grazing pressure can also lead to declines. The species is also known for scattered and isolated populations across its range, leaving them more susceptible to extirpation due to catastrophic events such as wildfire and drought.

Research and Monitoring: Statewide pollinator surveys have been completed by the USFWS HAPET team and NDSU. Pollinator surveys should continue throughout the state to determine species range and population trends in ND.

Management Recommendations:

- Protect and manage high quality native prairie.
- Protect and manage known populations.
- Develop pollinator habitat.
- Limit the duration and intensity of grazing in suitable habitat. Do not graze habitat for entire season.
- Avoid broadcast spraying of pesticides and herbicides at known sites to minimize loss of adults and nectar sources.

Poweshiek Skipperling *Oarisma poweshiek*



Poweshiek Skipperling possible/uncommon range (light gray).
Photo: Vince Cavalieri/USFWS

Description/Identification: Small butterfly measuring an inch in length. Its dorsal side is a dark brown with an orange head and wing margins. The undersides of the wings are lighter in color with prominent white veins.

Status: Possible resident.

Reason for SGCN Designation: SGCN (a). Regionally or globally imperiled. Listed as Endangered by the USFWS. Loss of habitat is the driving concern.

Habitat: Poweshiek Skipperling is found in high quality native tracts of tall and mixed grass prairie. Bluestem is indicative of the habitat. Purple Coneflower is often found in these sites as well. Preferred areas are considered wet-to-dry prairie with mesic hillsides near low moist areas within undisturbed habitat. The Poweshiek Skipperling is considered extirpated within North Dakota. Three sites have been proposed as critical habitat by the USFWS in Sargent and Richland counties.

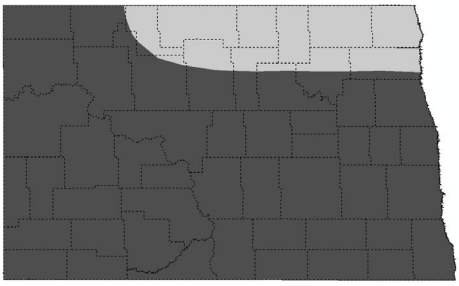
Threats: The loss of native prairie is the primary cause for this species decline. Poweshiek Skipperling are also absent from native grasslands that are intensely grazed or often burned. Lack of management to suitable sites which allows encroachment of invasive species is also a problem. This species does not have the ability to move great distance so suitable sites may be absent of Dakota Skipper from lack of immigration from other populations.
The use of herbicide for weed control at certain times of the year in native prairie tracts may also be a detriment by reducing nectar sources for the butterfly. Insecticide use near populations may also a factor.

Research and Monitoring: The USFWS will continue to monitor previously occupied sites in North Dakota. Previously, Royer surveyed 29 sites in North Dakota for Dakota Skipper and Poweshiek Skipperling. Royer and Marrone also developed a conservation status of the Poweshiek Skipperling for the USFWS in 1992. Continued monitoring of potential sites for presence of Poweshiek Skipperling is recommended.

Management Recommendations:

- Develop pollinator habitat.
- Protect and manage high quality native prairie.
- When using prescribed fire to manage do not burn entire area of know population. Use techniques to promote patchy burns. Burn prior to May 1 when possible.
- Delay haying of habitat until after end of adult flight. Leave 8 inches of structure to provide over-wintering cover. Do not hay entire occupied site each season when possible.
- Limit the duration and intensity of grazing in Dakota Skipper habitat. Do not graze habitat for entire season and manage for.

Regal Fritillary *Argynnis idalia*



Regal Fritillary primary (dark gray) and possible/uncommon (light gray) range. Photo: Regal fritillary butterfly on a common milkweed, Jill Haukos/Konza Prairie Biological Station, CC 4.0, https://www.fws.gov/media/regal-fritillary-butterfly-common-milkweed

Description/Identification: Forewings orange with black bars running between veins. Hind wings are darker orange to black with a pattern of white spots present.

Status: Resident.

Reason for SGCN Designation: SGCN (b). At-risk or declining, ND important. SGCN (c). At-risk, expert review or recent assessment. Loss and fragmentation of prairie habitat is the driving concern.

Habitat: Regal Fritillary is typically found in tall-grass prairie remnants and other native prairie habitats. Regal Fritillary larva relies exclusively on native violets as a food source. Areas with high density of violets will contain both caterpillars and adults. In North Dakota, the southeast quarter of the state provides the best habitat remaining for this species but may be encountered state- wide in patches of quality habitat.

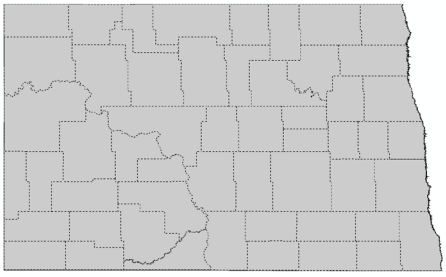
Threats: *Habitat:* The loss of native habitat especially those that contain violets is the primary cause for this species decline. Loss of habitat with high quality nectar sources for adults, such as native prairie is also a concern. Connectivity between useable habitats is a concern.
Other Natural or Manmade Factors: The use of herbicide for weed control at certain times of the year in native prairie tracts may be a detriment by reducing nectar sources for the butterfly. Insecticide use near populations may also a factor.

Research and Monitoring: Most recently, statewide pollinator surveys have been completed by the USFWS HAPET team and NDSU. Both provided data on presence/distribution of Regal Fritillary butterflies across the state. Royer also previously surveyed butterflies at a number of sites in North Dakota. Pollinator surveys should continue throughout the state to determine species range and population trends in ND.

Management Recommendations:

- Develop pollinator habitat.
- Protect and manage high quality native prairie.
- Develop connectivity between quality habitats.
- Delay haying of habitat until after end of adult flight.
- Plant native nectar plants to improve habitat.
- Include native violets in prairie restorations and seedings.
- Avoid broadcast spraying of pesticides and herbicides at known sites to minimize loss of adults and nectar sources.

Tawny Crescent *Phyciodes batesii*



Tawny Crescent possible range (light gray).No state records.
Specimen photo from University of Minnesota Insect Collection

Description/Identification: The Tawny Crescent looks similar to several other crescents. It has black and white antennal knobs, the upperside of the wings are dark brown with a pale orange to yellow postmedian band and an orange submarginal band on the forewing. The underside of the forewing is yellow with a black marking. The underside of the hindwing is yellow with light markings. The females also having black submarginal dots.

Status: Possible resident.

Reason for SGCN Designation: SGCN (c). At-risk, expert review or recent assessment. Considered Vulnerable both Globally (G3) and locally (statewide - S3).

Habitat: This species is found in a variety of habitats across its range. Moist meadows, mesic grasslands wetland complexes, and riparian areas to dry, sandy grasslands, woodland edges, and roadsides.

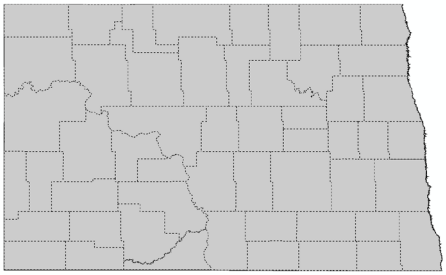
Threats: The loss, degradation, and fragmentation of native prairie is the primary cause for this species decline. This species may also be sensitive to overgrazing.

Research and Monitoring: Statewide pollinator surveys have been completed by the USFWS HAPET team and NDSU. Pollinator surveys should continue throughout the state to determine species presence in ND.

Management Recommendations:

- Develop pollinator habitat.
- Protect and manage high quality native prairie.
- Develop connectivity between quality habitats.
- Plant native nectar plants and host plants (asters).

Western Bumble Bee *Bombus occidentalis*



Western Bumble Bee possible range (light gray). Very few state records. Photo: Western bumblebee Bombus occidentalis on goldenrod in Wallowas_Rich Hatfield.JPG, Rich Hatfield/Xerces Society, Copyrighted, All Rights Reserved - Used by Permission, https://www.fws.gov/media/western-bumblebee-bombus-occidentalis-goldenrod-wallowasrich-hatfieldjpg

Description/Identification: Can be rather variable in appearance. Frequently, the front part of the thorax is yellow with the back part and the start of the thorax being black. In one variant, several T2 and T3 are yellow with reddish orange hairs on T5. In another, most of the tergums are black, with sparse white hairs at the end of T4 and T5 all white. In another, the front of the thorax and behind the wings is yellow while the abdomen may have a combination of yellow and white hairs.

Status: Possible resident.

Reason for SGCN Designation: SGCN (c). At-risk, expert review or recent assessment.

Habitat: This species can be found in native and planted grasslands, forest edges, along roadsides, and even suburban and agricultural areas where floral resources are available.

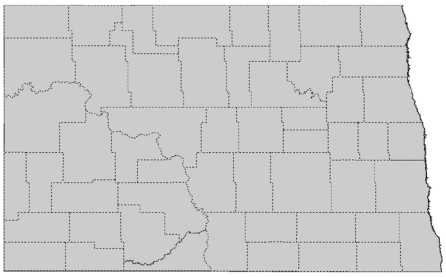
Threats: Bumble Bees face a number of threats, likely all of which have played a role in population declines. The introduction of pathogens from introduced commercial bumble bees, the loss of foraging and nesting habitat, and the widespread use of pesticides continue to negatively impact current populations. Other threats include habitat degradation and fragmentation, naturals pests and diseases, and climate change.

Research and Monitoring: Statewide pollinator surveys have been completed by the USFWS HAPET team and NDSU. Pollinator surveys should continue throughout the state to determine species range and abundance in ND.

Management Recommendations:

- Develop pollinator habitat.
- Protect and manage high quality native prairie.
- Develop connectivity between quality habitats.
- Plant native nectar plants to improve habitat.
- Avoid broadcast spraying of pesticides and herbicides at known sites to minimize loss of adults and nectar sources.

Whitney's Underwing *Catocala whitneyi*



Whitney's Underwing possible range (light gray). Few state records. Specimen photo from University of Minnesota Insect Collection

Description/Identification: A medium to large moth with gray forewings with brown shading and two distinct black markings. The hindwings are yellow with two black bands running down them.

Status: Possible resident.

Reason for SGCN Designation: SGCN (a). Regionally or globally imperiled.

Habitat: Dry-mesic prairies, woodland edges, savannas, shrublands and other habitats where its host plant is found (leadplant, *Amorpha canescens*).

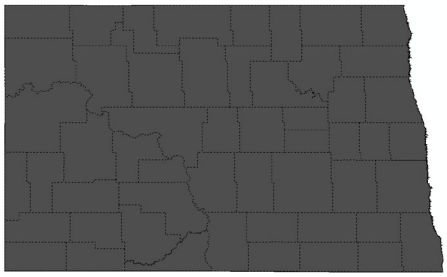
Threats: The loss and degradation of native grasslands and shrublands, as well as habitat fragmentation, are the primary causes for species decline.

Research and Monitoring: Statewide pollinator surveys have been completed by the USFWS HAPET team and NDSU. Pollinator surveys should continue throughout the state to determine species range and abundance in ND.

Management Recommendations:

- Develop pollinator habitat.
- Protect and manage high quality native prairie.
- Use host plant in native grass seedings where applicable.
- Plant native nectar plants to improve habitat.

Yellow Bumble Bee *Bombus fervidus*



Yellow Bumble Bee primary range (dark gray). Specimen photo from University of Minnesota Insect Collection

Description/Identification: Most recognizable for often being almost entirely covered in yellow hairs except the last segments of the thorax. The thorax is mostly yellow with a thin black band across it and T1-T4 (and T5 in males) are yellow as well.

Status: Resident.

Reason for SGCN Designation: SGCN (c). At-risk, expert review or recent assessment. Globally ranked G3 (vulnerable).

Habitat: This species can be found in native and planted grasslands, forest edges, along roadsides, and even suburban and agricultural areas where floral resources are available.

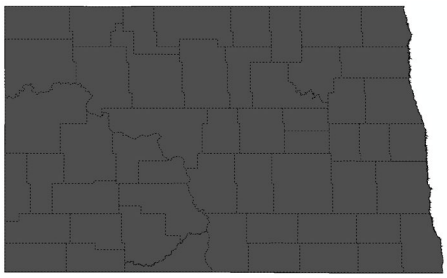
Threats: Bumble Bees face a number of threats, likely all of which have played a role in population declines. The introduction of pathogens from introduced commercial bumble bees, the loss of foraging and nesting habitat, and the widespread use of pesticides continue to negatively impact current populations. Other threats include habitat degradation and fragmentation, naturals pests and diseases, and climate change.

Research and Monitoring: Statewide pollinator surveys have been completed by the USFWS HAPET team and NDSU. Pollinator surveys should continue throughout the state to determine species range and population trends in ND.

Management Recommendations:

- Develop pollinator habitat.
- Protect and manage high quality native prairie.
- Develop connectivity between quality habitats.
- Plant native nectar plants to improve habitat.
- Avoid broadcast spraying of pesticides and herbicides at known sites to minimize loss of adults and nectar sources.

Yellow-banded Bumble Bee *Bombus terricola*



Yellow-banded Bumble Bee primary range (dark gray).
Photo: Yellow-banded bumble bee, Thomas Wood, CC-NC 2.0, https://www.fws.gov/media/yellow-banded-bumble-bee

Description/Identification: These bumble bees often have very round bodies with short, broad abdomens. All adults have black yeads and yellow on the front part of the thorax. Males often have a yellow "mustache". T1 is black, T2 and T3 are yellow, and the rest are black, with T5 frequently having a light fringe of yellow as well.

Status: Resident.

Reason for SGCN Designation: SGCN (c). At-risk, expert review or recent assessment.

Habitat: This species prefers undisturbed grasslands, meadows, and woodland edges. They are often associated with landscapes that include an abundance of floral resources. Nest sites are located underground.

Threats: Bumble Bees face a number of threats, likely all of which have played a role in population declines. The introduction of pathogens from introduced commercial bumble bees, the loss of foraging and nesting habitat, and the widespread use of pesticides continue to negatively impact current populations. Other threats include habitat degradation and fragmentation, naturals pests and diseases, and climate change.

Research and Monitoring: Statewide pollinator surveys have been completed by the USFWS HAPET team and NDSU. Pollinator surveys should continue throughout the state to determine species range and population trends in ND.

Management Recommendations:

- Develop pollinator habitat.
- Protect and manage high quality native prairie.
- Develop connectivity between quality habitats.
- Plant native nectar plants to improve habitat.
- Avoid broadcast spraying of pesticides and herbicides at known sites to minimize loss of adults and nectar sources.