

April 2014

**Protocol
for
Incidental Take Permit and Authorization**

Ottoe Skipper (*Hesperia ottoe*)

Note

If carrying out a given protocol is not feasible, or multiple listed species in a given management area pose conflicts, contact the Bureau of Natural Heritage Conservation (NHC) at 608-264-6057. Staff in NHC will work with Science Services staff, species experts and managers to establish an acceptable protocol for a given site that will allow for incidental take without further legal consultation or public notice

I. Species Background Information

A. Status

State Status: Endangered

Number of Known Sites in Wisconsin: 5

Global Range: Their range is concentrated in a band that extends from southern Manitoba, eastern Montana, and western North Dakota, south along the high plains and foothills to central Colorado and northern Texas, and then east across South Dakota, Nebraska, and Kansas to southwestern Minnesota, western Iowa, and Missouri. Scattered populations occur further east in southeastern Minnesota, northeastern and east-central Iowa, southern Wisconsin, northern and west-central Illinois, northwestern Indiana, and southwestern Michigan, and formerly Ohio. The Ottoe skipper is highly local and uncommon to rare throughout most of its range (Dana 1991, Brock and Kaufman 2003).

B. Habitat

Larval host plants: The larval hostplants are a range of grasses, including fall witchgrass (*Leptoloma cognatum*), little bluestem (*Schizachyrium scoparium*), and sideoats gram (*Bouteloua curtipendula*), and eggs are sometimes deposited on adjacent vegetation.

General Habitat Description: High quality prairie remnants; dry to dry-mesic

hill prairies, sand prairies, and sand barrens.

Critical Habitat Features:

(1) Abundance of larval food plants in short growth structure and suitable nectar plants. Commonly used nectar plants include: bergemot (*Monarda fistulosa*), coreopsis (*Coreopsis palmata*), dwarf blazingstar (*Liatris cylindracea*), hoary vervain (*Verban stricta*), milkweeds (*Asclepias tuberosa*, *A. viridiflora*, *A. syriaca*), purple prairie clover (*Dalea purpurea*), mountain mint (*Pycnanthemum virginianum*), black-eyed susan (*Rudbeckia hirta*), and prickly pear cactus (*Opuntia* sp.).

(2) At least two or more acres of remnant open prairie vegetation (*see definition*) embedded within a larger individual remnant prairie of at least 10 acres OR embedded within a smaller remnant of at least 5 acres AND is within ¼ mile of another 5 acres remnant with 2 or more acres of remnant open prairie vegetation (*see definition*).

(3) Short grass structure

(4) Discontinuous sod (with numerous unvegetated areas due to bare sand or exposed bedrock) seems to have played a role in population persistence in WI.

Over-wintering habitat: same as above

C. **Life History**

Number of generations per year: Univoltine (one generation per year).

Over-wintering stage: Partially grown larva (usually 4th or 5th instar larvae).

Over-wintering location: Shelters in base of host plants

Adults active: Typically late June to late July.

Single season dispersal ability: This skipper is fairly mobile. Selby's intensive 1992 mark-recapture study showed that this species moved throughout prairie patches, and also as much as 1,774 m between prairie ridgetops separated by forested slopes and valleys. Dana (1991) also found that Ottoe skippers moved throughout his 63 ha study area. These results suggest that where Ottoe skippers occur in complexes of closely associated prairie fragments, dispersal between fragments could occur, but it is likely that population recovery will take longer if it depends on recolonization between fragments. Where Ottoe skippers occur on isolated prairie fragments, recolonization will necessarily have to occur from within those fragments. In both cases, due to the extreme rarity of this species, management should be planned accordingly (e.g., burning, grazing, or mowing only a portion of the fragment at any one time).

Immature Seasonal Activity: Once larvae emerge from eggs, they construct above ground leaf blade shelters of host plants. Larvae then feed on host plant

and host plants near constructed shelters for about the first 3 instar stages. Shelters are then constructed in the base of the host plant in autumn where larvae (4th -5th instar) remain in diapause until spring. Larvae then construct horizontal shelters (6th and 7th instar), and pupal chambers on the soil surface before emerging as adults. Timing of movement from host plant base shelters to soil surface shelters occurs in the spring.

II. Management Protocol For Authorized Incidental Take

If the management activity is for the purpose of recovering, maintaining, or improving the grassland, prairie, or savanna ecosystem that includes habitat for *H. ottoe*, then incidental take is allowed if these conditions are followed:

If screening indicates ottoe skipper records at the “site” (*see definition*), within the time period of 2005 to present OR there is evidence, based on critical habitat features, context, or other information leading to that conclusion then:

A. Burning

1. If no monitoring of *H. ottoe* is occurring, and

a. If burning in early spring (*see definition*),

Then you may burn up to a **20 ft wide linear band** of open prairie vegetation (*see definition*) around the perimeter of the unit between the core/center of the open prairie and the surrounding brush or woodland. Note: this linear band shall **exclude the core/center of the open prairie** vegetation while at the same time allow burning of the brush/open prairie interface.

b. If burning at other times of the year,

Then you may burn up to a **20 ft wide linear band** of open prairie vegetation (*see definition*) around the perimeter of the unit between the core of the open prairie and the surrounding brush or woodland **as long as at least ¾ of the open prairie vegetation has been unburned for at least the last 4 consecutive years**. Note: this linear band shall **exclude the core/center of the open prairie** vegetation while at the same time allow burning of the brush/open prairie interface.

2. If monitoring of *H. ottoe* is occurring¹,

Then you may burn up to a **50 ft wide linear band** of open prairie vegetation (*see definition*) around the perimeter of the unit between the core of the open prairie and the surrounding brush or woodland **OR** you may burn up to ¼ of the total open prairie vegetation (*see definition*), **as long as at least ¾ of the open prairie vegetation has been unburned for at least the last 4 consecutive years**. Note: this linear band shall **exclude the core/center of the open prairie** vegetation while at the same time allow burning of the brush/open prairie interface.

¹ *At least 2 years of baseline monitoring must occur before burning begins, and the monitoring must follow protocol acceptable to the DNR Bureaus of Natural Heritage Conservation and Science Services.*

B. Mowing/Haying

1. If no monitoring of *H. ottoe* is occurring, and
 - a. If mowing/haying once between April 1st and Sept. 30th,

Then you may cut up to 1/10th of the site's total dry to dry-mesic prairie habitat at a minimum cut height of 4" above the ground.
 - b. If mowing/haying between Oct. 1st and March 31st,

Then you may cut up to 1/3 of the site's total dry to dry-mesic prairie habitat at a minimum cut height of 4" above the ground.
2. If monitoring of *H. ottoe* is occurring¹ and,
 - a. If mowing/haying once between April 1st and Sept. 30th,

Then you may cut up to 1/5th of the site's total dry to mesic prairie habitat at a minimum cut height of 4" above the ground.
 - b. If mowing/haying between Oct. 1st and March 31st,

Then you may cut up to 1/2 of the site's total dry to mesic prairie habitat at a minimum cut height of 4" above the ground.

¹ *At least 2 years of baseline monitoring must occur before cutting/mowing begins, and the monitoring must follow protocol acceptable to the DNR Bureaus of Natural Heritage Conservation and Science Services.*

C. Selective Tree/Brush Cutting

Selective hand cutting/brushing may be used to maintain or restore a site. If heavy equipment is used, it must be restricted to brush/shrub dominated areas to the greatest extent possible. **Host plants must not be buried under cut materials.**

D. Grazing

1. If no monitoring of *H. ottoe* is occurring,

Then you may **lightly graze** at a maximum density of 1 head cattle or 1 horse or 6 sheep for 3.5 acres, on up to **1/10th** of the site's total **open prairie vegetation (see definition)** per year.

2. If monitoring of *H. ottoe* is occurring¹,

Then you may **lightly graze** at a maximum density of 1 head cattle or 1 horse or 6 sheep for 3.5 acres, on up to **1/5th** of the site's total **open prairie vegetation** per year (*see definition*) with the grazed area rested for at least two years.

OR

Then you may use **moderate to heavy grazing** at a maximum density of 1.5 head of cattle per acre or comparable numbers of other herbivores up to **1/10** of the site's total **open prairie vegetation (see definition)** per year with the grazed area rested for at least two years.

OR

Then you may use **high intensity grazing/browsing with goats** on up to **1/10** of the site's total **open prairie vegetation (see definition)** per year with the grazed/browsed portion of the open prairie vegetation rested for at least two years.

E. Herbicide use

Herbicides may be used for spot treatment of woody growth and herbaceous invasives. Broadcast spraying of invasives is allowed as long as native prairie grasses are not being affected.

Presence/Absence Survey Protocol

For Presence/Absence Surveys for Ottoe skipper:

Surveys must be conducted by personnel with the expertise to identify ottoe skipper adults.

Survey at least 20 minutes per acre of habitat per person over a minimum of two flight seasons.

Survey period: Adult flight season; typically late June to late July.

Weather conditions: Survey above 70 degrees F. Survey on sunny or partially sunny days. Do not survey during rain or high winds.

Time of day: Survey between 10:00 AM and 5:00 PM.

Number of site visits: Survey 2 times during the flight season for two consecutive seasons.

Survey method: Person(s) walk through all areas of open prairie vegetation on the site paying particular attention to nectar plants and hilltop locations where males are known to gather. In more level terrain such as that found on sand prairie/barrens habitats, pay particular attention to nectar plant concentrations especially along roadsides and depressions.

Definitions

Site: Patch of remnant prairie vegetation ottoe skipper record(s) occur at. If the area straddles a property line, the different ownerships must be considered different sites, unless ottoe skipper survey/management agreements exist between the owners.

Early Spring: Any time prior to the 7th day after the first opening of pasque flowers (*Anemone patens*) on the site. If no pasque flowers are on site, the closest population with a slope aspect similar to the site in question may be used.

Open prairie vegetation: Area dominated by remnant open prairie that may contain some scattered shrub patches or scattered juniper/red cedar but generally has an open line of sight across patch.

References

Selby, G. 2005. Ottoe Skipper (*Hesperia ottoe* W.H. Edwards): A Technical Conservation Assessment. Report for the USDA Forest Service, Rocky Mountain Region, Species Conservation Project.

Dana, R.P. 1991. Conservation management of the prairie skippers *Hesperia dacotae* and *Hesperia ottoe*: basic biology and threat of mortality during prescribed burning in spring. Minnesota Agric. Exp. Sta. Bull. 594-1991. St. Paul, MN. 63 pp.

Swengel, A.B. and S.R. Swengel. 2013. Decline of *Hesperia ottoe* (Lepidoptera: Hesperiiidae) in Northern Tallgrass Prairie Preserves. *Insects* 2013, 4, 663-682