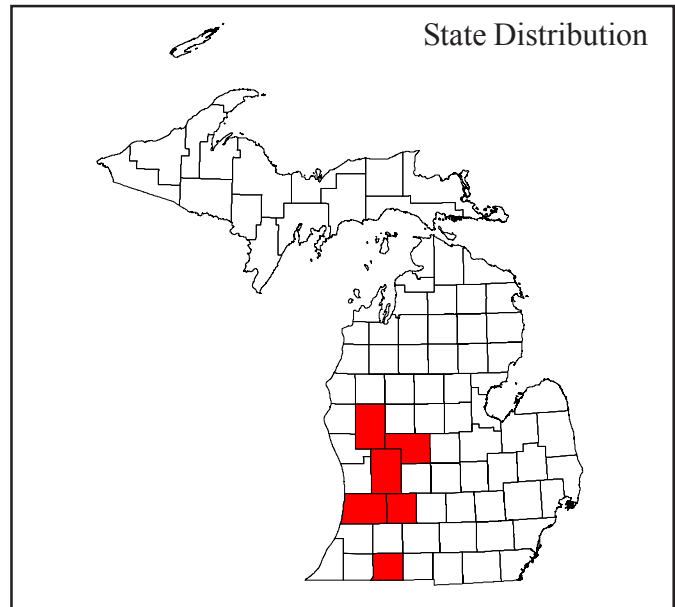
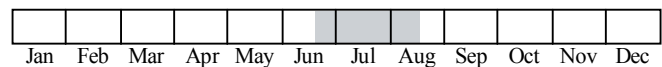




Photo by Robert Dana



Best Survey Period



**Status:** State threatened

**Global and state rank:** G3G4/S1S2

**Family:** HesperIIDae (skippers)

**Range:** The ottoe skipper is known from southern Manitoba south to north Texas and east through Nebraska and Kansas to central Illinois and southern Michigan (Opler et al. 1995). This skipper has been reported from 14 states and one Canadian Province.

**State distribution:** The ottoe skipper has been reported from 17 sites in six counties in southwest lower Michigan including Allegan, Barry, Kent, Montcalm, Newaygo, and St. Joseph. Most of these records are older; the only confirmed extant population of this skipper occurs in Allegan County. These skippers are very local in occurrence and are rarely found a great distance from their larval food plants.

**Recognition:** The ottoe skipper (Lepidoptera: HesperIIDae) has a wingspan between 29-41 mm (1.14-1.6 in). The male **uppersides are orange with brown borders and a black stigma** (specialized scent scales on the forewings). Females have uppersides bright brownish orange with several yellowish white spots. The **undersurface of the hindwing is yellow-orange**;

no markings in the male, sometimes with faint markings in the female (Nielsen 1999, Opler et al. 1995) In Michigan, a similar looking species flying during the time of ottoe is the Delaware skipper (*Atrytone delaware*). While both are orange dorsally, the Delaware skipper lacks the broad, gray terminal area found on the forewing of the male ottoe skipper. Behaviorally, the ottoe skipper is a much warier and faster flyer. The caterpillar of the ottoe skipper is greenish brown with a dark brown head and black prothorax (collar) (Layberry et al. 1998).

**Best survey time:** The single brooded, adult flight period for the ottoe skipper stretches from late June through mid-August, with the peak abundance occurring in early July in most years. The best way to survey for this species is by meandering thorough potential habitat while checking nectar sources or perches such as tall forbs and grasses. Adults are quite wary, flying swiftly and low to the ground when disturbed (Nielsen 1958, personal observations).

**Habitat:** In Michigan, the ottoe skipper occurs in remnant, dry sand prairies and open oak barrens where native warm season grasses occur. These areas are usually dominated by grasses such as little bluestem (*Schizachyrium scoparium*), poverty grass (*Danthonia spicata*), and fall witchgrass (*Leptoloma cognatum*).



Forbs commonly found in ottoe habitat include blazing star (*Liatris aspera*), prickly pear cactus (*Opuntia humifusa*), common milkweed (*Asclepias syriaca*), butterflyweed (*Asclepias tuberosa*) various asters (*Aster* spp.), black-eyed susan (*Rudbeckia hirta*), lupine (*Lupinus perrennis*) and dotted monarda (*Monarda punctata*).

**Biology:** The ottoe skipper has a single generation each year, with adult males emerging before females in late June and July; females may be found as late as early August in some years. Males typically perch on flowers and occasionally on low plants or the ground; they sometimes patrol. In Michigan adults readily nectar on *Opuntia*, *Centaurea*, and *Asclepias*. Eggs are typically laid near the base of the host plant or on other plants in close proximity to hostplants (Dana 1991). In Michigan, females have been observed ovipositing on fall witchgrass (Nielsen 1958). In other parts of its range females have been reported to oviposit on little bluestem (Opler and Krizek 1984), and on the flower heads of two coneflower species *Echinacea angustifolia* in Minnesota (Dana 1991) and *E. pallida* in Illinois (McGuire 1982). The larvae emerge in 8-12 days, feeding first upon their eggshell. Larvae then construct feeding shelters by fastening two or more blades of grass together with silk into a narrow tube several centimeters above the soil surface (Dana 1991). Larvae then feed on the free distal portion on the blades forming the shelter and filling the lower ends with frass. The shelter is abandoned when the two processes converge leaving a frass filled tube usually 4-6 cm long (Dana 1991). Larvae construct two or three leaf-blade shelters before moving to buried shelters in late summer (where fourth instar larvae hibernate) (Dana 1991).

**Conservation/management:** Habitat protection and enhancement are essential to the conservation and long-term survival of the ottoe skipper in Michigan. Habitat destruction from off-road vehicles, agricultural and silvicultural practices, and development continues to threaten this species. Immediate action should be taken to protect existing populations from further habitat degradation and loss. Fire suppression has encouraged the closing of formerly open-canopied oak and oak-pine barrens and reduced the size and quality of adjoining sand prairies. Managing the prairie and barrens communities, especially through carefully controlled,

prescribed burns, is critical to the long-term survival of the skipper. Prior to beginning a burn management program, the location and extent of habitat use of populations of the ottoe skipper and other rare plant and animal species should be determined. Burn management units should be established with special attention to microgeographic variation in the distribution of rare species and their host plants (Opler 1981). Dividing sites into several management units, burned in a rotation, should assure that a substantial fraction of the population be unexposed to fire in any prescribed burn. For division to be effective, however, actual skipper habitat within a site has to be determined so that it will be divided among the units (Dana 1991). Fall burning may pose a greater risk than spring burns because it may catch a substantial fraction of the ottoe caterpillars still in elevated shelters (Dana 1991). It could also have an additional impact of increased stress on overwintering larvae deprived of the insulating value of litter and dead vegetation, which helps to hold snow cover (Ehrenreich and Aikman 1963).

**Research needs:** In Michigan the ottoe skipper has not been seen in recent years at many of the sites so a first step would be to re-survey for them. Additional habitat, particularly in Newaygo and Oceana counties, should be systematically surveyed as well. Most of the research on this species has been conducted in Minnesota (Dana 1991) therefore, more life history studies need to be conducted in the Great Lakes region before specific management recommendations can be provided. Studies should focus on larval ecology, population dynamics, dispersal capabilities of adults, and information on habitat requirements other than foodplants. Very site specific studies should look at where the skipper occurs on the site before any burn regimens are implemented. Any information on speed of recolonization after prescribed burns would be useful. More precise information as to what date the larvae move to underground hibernacula is needed. This information can be used to better time burns or schedule grazing/mowing rotations.

**Related abstracts:** oak-pine barrens, prairie smoke, Karner blue butterfly

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