

Dakota Skipper Survey Protocol

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Objective

To document the presence and location of Dakota skippers across TNC preserves in Minnesota, North Dakota and South Dakota. Number of individuals will be recorded but this protocol is not designed to provide a formal estimate of abundance.

Environmental Conditions for Survey

Survey effort will be confined to times and ambient conditions in which butterflies are active. Generally, surveys should be conducted between 09:30 and 18:00 in July, and between 10:00 and 17:00 in August (all times CDT). Other factors will sometimes make survey outside these limits acceptable. Ambient conditions affecting butterfly activity include air temperature, wind speed, and sky cover. As a general rule, air temperature should be between 20° and 37°C (68°-99°F), average wind speed no greater than 19 kph (12 mph) (Beaufort scale 3), and sky cover mostly sunny. No one of these restrictions is determinative by itself (e.g., activity will occur at lower air temperatures if it is sunny and calm), and the surveyor will need to assess whether the particular combination of conditions permits butterflies to be active and detectable. Survey work should be suspended when this is not the case and only resumed when suitable conditions return. No survey work should be done if there is any precipitation.

Survey Method

Survey will be by visual search for adults while traversing the site on foot. The surveyor will need to be able to recognize habitats where the target species are likely to occur and to determine the search route accordingly. TNC will provide a GIS shapefile with a suggested route for each site, but this will be only for general guidance. The surveyor will be free to deviate from this route based on assessment of habitat conditions as long as the distance traversed is approximately equal to that of the suggested route. On-site assessment may determine that the suggested route is completely inappropriate; in such cases the surveyor will determine what is appropriate.

Surveyors will be expected to be able to reliably identify all the target species on sight; inspection of netted individuals may be necessary from time to time, but most species determinations need to be made without this time-consuming step. The surveyor will record time of day, air temperature, average wind speed and highest gust during a one-minute measurement, and sky cover at the beginning of the survey effort and at the end. If survey work is suspended for a time and then resumed because of temporarily unfavorable conditions, the beginning and end times of the suspension(s) should be recorded. The survey route will be recorded as a track log using a suitable GPS device set to record at intervals no greater than 10 sec. All observations of target species will be recorded, including the sex if possible, time, and location, the last two using the GPS device. Recording behavior and habitat features of the location is optional. The surveyor will provide the GPS device and any electronic device used for data entry in the field (hand-held computer, tablet, etc.).

If Dakota skippers are observed at a site, it should be vouchered photographically, if possible. Photographs of a single individual will be acceptable, and these may be netted specimens. For photography, insects may be held in a transparent container, or temporarily anesthetized with CO₂ and released after recovery (only a few minutes at most).

Deliverables

At the end of the season, the surveyor should provide to TNC the following:

- GPS track log files showing the routes (and distance) for each survey (preferably already converted to an ESRI shapefile)
- GPS points of Dakota skipper locations (preferably already converted to an ESRI shapefile), including any associated data such as date, time and sex.
- A final report detailing the results from each day of surveys including all of the recorded environmental data, observations, notes and any voucher photographs. Maps should be included when deemed useful.