

Michigan Nightjar Survey

Reporting Office: Seney NWR

Species: Whip-poor-will (*Antrostomus vociferus*) and Common Nighthawk (*Chordeiles minor*)

JUSTIFICATION AND OBJECTIVES

Nightjars are an understudied group of bird species and parts of Michigan may be important for different species, such as Whip-poor-will and Common Nighthawk. In fact, data from this survey has indicated that the route run on the Creighton Truck Trail on the western periphery of the refuge (adjacent to the Wilderness Area) has one of the greatest encounter rates for both species in Michigan.

This survey is led by Michigan Natural Features Inventory (MNFI), with funding from USFWS. These data will be used to track population trends and to identify areas where these species may still be relatively abundant, in order to guide land protection, habitat management, and future research efforts.

Seney NWR started this survey in 2010.

STATISTICAL CONSIDERATIONS

None known.

DATA COLLECTION PROCEDURES

Data forms and instructions are provided yearly by MNFI. The survey route consists of 10 survey points spaced 1 mile apart, using established USGS Breeding Bird Survey (BBS) routes as a basis. Thus, this survey is done at the starting point of the Creighton Truck Trail BBS route, with stops at every other BBS stop.

Nightjar Survey Route on Creighton Truck Trail, Seney National Wildlife Refuge (NAD83)		
Stop Number	Latitude	Longitude
1	46.34550000	-86.25937000
2	46.33212000	-86.26155000
3	46.31763000	-86.26147000
4	46.30315000	-86.26157000
5	46.29150000	-86.26632000
6	46.27880000	-86.26090000

7	46.26547000	-86.25434000
8	46.25250000	-86.24753000
9	46.23903000	-86.24191000
10	46.22736000	-86.23154000

Seasonal and Daily Timing:

Nightjars are more vocal during the period around a full moon, and relatively quiet when the moon is poorly illuminated (e.g., cloudy skies) or below the horizon. For this reason, surveys are restricted based on lunar and weather conditions. **SURVEYS MUST BE CONDUCTED DURING PERIODS WHEN THE FACE OF THE MOON IS AT LEAST 50% ILLUMINATED (“quarter moon”) AND ABOVE THE HORIZON.**

Begin each survey at least 15 min after sunset and end no later than 15 min before sunrise.

Each route packet will include sunset and moonrise times: www.sunrisesunset.com/

Surveys should NOT be conducted in overcast conditions (e.g., the moon is mostly obscured), when precipitation is stronger than an intermittent light drizzle, or if wind speed averages >8 miles per hour. **Optimal windows for surveys change yearly, but this information is provided by MNFI each year. **SURVEYS CANNOT BE CONDUCTED OUTSIDE THESE DATES****

DATA ANALYSIS AND REPORTING

These instructions are referenced to the headings on the Nightjar Survey Form. Please report data as accurately and completely as possible, and complete a separate form for each route on each survey date. **If two observers are actively surveying during a single outing, these observers should use separate data sheets and record data entirely independent of each other** (i.e., do not discuss what you are hearing during the point or alter your data form after the count in light of information received from your survey partner). You also may want to conduct a test run on a date prior to your scheduled survey to become familiar with the survey techniques and data form.

Route # and Name: This should be on the map you receive from your state coordinator

Observer: Record your name here. *Remember, if two observers, use separate data sheets.*

Date: Indicate the date of the survey.

Start time: Indicate the time at which you begin listening at stop 1.

End time: Indicate the time at which you stop listening at stop 10.

For each point we are asking that you rank the following environmental conditions which are known to affect bird calling or our ability to detect them. **ONLY USE THE 0-3 CODE SYSTEM**

OUTLINED BELOW. Note that the moon rises later each evening during these survey periods, and that by the end of the period a pre-dawn survey would be required. In such cases be sure to leave roughly 1.5 hr to complete the survey so that it ends before sunrise. *It is **CRITICAL** that surveys are conducted during appropriate lunar conditions, irrespective of the date within the survey period.*

Wind: Record the wind speed at each stop using the codes below. Do not begin a survey if wind is considered MODERATE or STRONG. If wind intensifies during the survey, and winds of MODERATE or STRONG persist for more than three stops, we recommend that you end the survey and attempt the entire route again under better conditions.

Code Wind Speed Description

0 Calm (<1 mph) smoke rises vertically (< 2 km/h)

1 Light (1-7 mph) smoke drifts, weather vane inactive, leaves rustle, can feel wind on face (2-12 km/h)

2 Moderate (8-18 mph) leaves, twigs, and thin branches move around, small flags extend, raises loose papers. (13-29 km/h) **If persists do not conduct survey.**

3 Strong (19 mph or greater) small trees begin to sway. (30+ km/h) **Do not conduct survey.**

Sky Condition: Record the sky condition at each stop using the codes below. Do not begin a survey if the sky is completely overcast, or there is heavy fog or persistent rain or drizzle. If cloud cover intensifies during the survey, and CLOUDY or MOSTLY CLOUDY conditions persist for more than three stops, we recommend that you end the survey and attempt the entire route again under better conditions.

Code Sky Condition Description

0 Clear Almost no clouds, <20% cloud cover

1 Mostly Clear More open sky than clouds, perhaps 25-40% cloud cover

2 Mostly Cloudy At least half cloudy, with some open sky visible (20-40%)

3 Cloudy At least 80% cloud cover. **Do not conduct survey.**

Moon Visibility (Y or N): Enter Y for Yes or N for No to indicate if the moon can be seen above the horizon while counting nightjars at the stop. This is particularly important to register when in deep valleys because the moon may be obstructed.

Noise: Assign a noise code to each stop. Noise codes are a measure of the effect of background noise on your ability to hear nightjars. Although we have provided examples of noises for each

code, these are meant only as general guidelines. It is ultimately up to you to judge to what degree the noises you encounter are affecting your ability to hear birds.

Code Description

0 There is no appreciable effect on your ability to hear nightjars

1 Noise slightly affects your ability to hear nightjars (e.g. distant traffic, dog barking, 1-2 car passing during survey period).

2 Noise moderately affects your ability to hear nightjars (e.g. nearby traffic, 3-6 cars passing during survey period, airplane flying overhead).

3 Noise seriously affects your ability to hear nightjars (e.g. continuous traffic nearby, construction noise, loud spring peeper chorus, more than 6 cars passing during the time spent at one point).

Cars: Record the number of cars that pass by during the entire count period as an index of traffic noise.

Counting Nightjars:

At each point, the observer will spend 6 min listening for nightjars, with each bird and one-minute period treated independently. What this means in practice is that you will have a single line on the survey form for each bird detected (see example below) and you will mark whether you detect it in each of the six one-minute periods. Birds will sometimes move during the count, and you will need to use your best judgment when deciding if a “new” detection is actually an additional bird or simply an already counted bird that has moved. Listening and recording data should be done from a stationary point outside the car. **DO NOT** use *whistling, playbacks, or any other method of coaxing birds*. Record only birds detected during the 6-minute sample period, although you may record birds detected outside of this period in the Comments section. Record birds as you hear them, rather than waiting for the sample period to be over, to avoid errors of omission.

Use the following abbreviations for each species on the data form:

WPWI = Whip-poor-will

CWWI = Chuck-will’s-widow

CONI = Common Nighthawk

In the “Dir.” (=direction) column, please write down the general direction the bird was calling from. This can be as simple as a rough cardinal direction (N, S, W, E), more specific (e.g., SW, NW), or even a compass bearing. This will help you keep track of individual birds and reduce the chance of double counting. It may also help us in the future with determining habitat relationships on a larger scale. If NO BIRDS are detected on a point, enter the point number as usual, followed by “NONE” instead of a species code, and leave the columns for each time block

blank (or draw a line through them). Doing so will reduce the possibility of becoming confused during a survey and losing track of the current point.

Each volunteer should submit the following forms after surveys have been completed:

1. Completed data sheet – EVEN IF YOU DETECTED NO NIGHTJARS!!!
2. We recommend you make a copy of your data sheets for your own records in case they are lost in the mail, etc. Send us the originals please. Be sure all data cells are completed!
3. Route description form – please fill out appropriate portions
4. Volunteer effort form – critical for us to track survey effort; record all prep work, travel, survey time, etc.

Send all forms to: David Cuthrell, MI Natural Features Inventory, P.O. Box 30444, Lansing, MI 48909, cuthrell@msu.edu

MANAGEMENT ACTION THRESHOLDS

None.

DATA STORAGE PROCEDURES

A database (Excel file) and hardcopies do **NOT** need to be kept at the refuge. These data are forwarded to MNFI.

SPECIAL CONSIDERATION

This may be another survey that could involve volunteers.

LITERATURE CITED

None.

EFFORT AND COSTS

Surveys are conducted by refuge staff and surveys, reporting, and preparation time for the entire survey (assuming one person does all work) is approximately 15 hr per year. Fuel costs are <\$100.