

## Instructions for Conducting Nightjar Surveys

Thank you for agreeing to participate in the Wisconsin Nightjar Survey, a project of the Wisconsin Bird Conservation Initiative (WBCI) in cooperation with the Northeast Coordinated Bird Monitoring Partnership and other state partners. All three species of nightjars in the Midwest and Northeast – Whip-poor-wills (*Caprimulgus vociferus*), Chuck-will's-widows (*C. carolinensis*), and Common Nighthawks (*Chordeiles minor*) – are believed to have declined severely in the past 50 years, so the purpose of the survey is to collect information on the abundance and distribution of these species in these regions (and potentially the whole range in the future). 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 efforts, habitat management, and future research.

The Survey relies on a network of volunteers to conduct standardized surveys along roadside census routes during specific lunar conditions. The only experience necessary is a familiarity with both species' characteristic songs. You can listen to the songs at <http://www.mbr-pwrc.usgs.gov/id/songwav.html> and <http://www.allaboutbirds.org/guide/search>. It will also be helpful to be familiar with the calls and booming display of the Common Nighthawk (<http://www.on.ec.gc.ca/wildlife/wildspace/life.cfm?ID=CONI&Page=Call&Lang=e>), which sometimes occurs in the same habitats as the other nightjars. Volunteers are asked to conduct two nighttime surveys along pre-established routes between early May and mid-July (depending on location). Please read carefully and follow closely the instructions that follow. Compliance with these instructions will ensure standardized data collection and a more successful survey.

In addition to nightjars, Wisconsin is also collecting information on owls during the nightjar survey in order to test our protocol and survey design for the Western Great Lakes Owl Survey (<http://wiatri.net/projects/birdroutes/owls.htm>). *In 2009, surveyors are required to record any owls heard in the same manner as the nightjars below.* If you're not familiar with owl calls please see the Hawk Ridge website <http://www.hawkridge.org/research/springowl.html> for sample clips of many of the species found in Wisconsin.

### Conducting Surveys

#### **Seasonal and Daily Timing:**

Surveying nightjars is particularly challenging because they are known to be 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 (the "quarter moon"), AND WHEN THE MOON IS ABOVE THE HORIZON.** Thus, assuming lack of cloud cover, **the primary survey period in Wisconsin in 2009 is May 30 – June 15.** In addition, to learn more about nightjar phenology and calling activity, we are asking volunteers to conduct **a second replicate survey of their routes during the secondary window of June 29 – July 10.** However, if volunteers can conduct only one survey of their route, they **MUST** do the survey during the primary window in early June.

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 hours 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.*

Begin each survey at least 15 minutes after sunset and end no later than 15 minutes before sunrise. Check your local newspaper or the U.S. Naval Observatory website at <http://aa.usno.navy.mil/data/> for sunset and moonrise times. Surveys should NOT be conducted in overcast conditions (e.g., the moon is mostly obscured), when precipitation stronger than an intermittent light drizzle, or if wind speed averages above 8 miles an hour see below for estimating wind speed).

**In summary, the survey windows for the 2009 Wisconsin Nightjar Survey are:**

- *Survey #1 (required): May 30 to June 15*
- *Survey #2 (very strongly encouraged): June 29 to July 10*

**\*\*SURVEYS CANNOT BE CONDUCTED OUTSIDE THESE DATES\*\***

**Route Logistics:**

The Wisconsin Breeding Bird Survey (BBS) routes will be used to conduct the owl and nightjar surveys. There are currently about 92 active BBS routes scattered throughout Wisconsin. You can see where the existing BBS routes are in Wisconsin by going to the <http://www.pwrc.usgs.gov/bbs/results/routemaps/wisconsin.htm> website. Survey maps can also be viewed and printed at <http://wiatri.net/projects/birdroutes/nightjars.htm> on the Wisconsin Bird Monitoring website.

Each survey route will consist of 10 survey points spaced 1 mile (~1.6 km) apart. If the one-mile mark places you in a location that is not conducive to the survey (no place to pull off, excessive highway noise, barking dogs, directly in front of home, otherwise unsafe location), you may continue on for UP TO 1.2 miles. Be sure to continue with one mile spacing to the following point. It is advisable to scout your route during daylight to familiarize yourself with point locations and any unforeseen problems with access. Locations of points, including GPS coordinates (if possible), can be written on the "Route Description Form" at this time. If you have questions about the route please contact your state coordinator, Ryan Brady, at [ryan.brady@wisconsin.gov](mailto:ryan.brady@wisconsin.gov) or 715.685.2933. Please run the stops along a route in the same order during each survey.

**Completing the Survey Form:**

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 so as 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 give a rough indication of 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.**

Wind: Record the rough 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 it again under better conditions.

Code	Wind Speed	Description
0	Calm (<1 mph)	smoke rises vertically
1	Light (1-7 mph)	smoke drifts, weather vane inactive, leaves rustle, can feel wind on face
2	Moderate (8-18 mph)	leaves, twigs, and thin branches move around, small flags extend, raises loose papers. <b>Do not conduct survey.</b>
3	Strong (19 mph or greater)	small trees begin to sway. <b>Do not conduct survey.</b>

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 it again under better conditions.

Code	Wind Speed	Description
0	Clear	Almost no clouds, <20% cloud cover
1	Mostly Clear	More open sky than clouds, perhaps 25-40% cloud cover
2	Moderate (8-18 mph)	At least half cloudy, with some open sky visible (20-40%)
3	Cloudy	At least 80% cloud cover. <b>Do not conduct survey.</b>

Noise: Assign a noise code to each stop. Noise codes are a measure of the effect of noise on your ability to hear Whip-poor-wills and other 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 a rough index of traffic noise.

### Counting Nightjars and Owls:

At each point, each observer will spend SIX MINUTES listening for nightjars and owls, 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 its location. 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 six-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, so as 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
- GHOW = Great Horned Owl
- BDOW = Barred Owl
- NSOW = Northern Saw-whet Owl
- EASO = Eastern Screech Owl
- LEOW = Long-eared Owl

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 period blank (or draw a line through them). Doing so will reduce the possibility of becoming confused during a survey and forgetting which point you are on.

### Sample Data Form:

Pt.	Species	1	2	3	4	5	6	Rep?	Dir.
1	WPWI	1	1	1	1	1	1		NE
1	WPWI	0	0	1	1	1	0		S
2	NONE								
3	WPWI	1	1	1	0	0	0		W
3	WPWI	0	0	0	1	1	1		W
3	CONI	0	0	0	0	1	0		SE
3	WPWI	0	0	0	0	1	1		N
4	CWWI	1	1	1	0	0	0		E
4	BDOW	0	1	1	1	1	1		SE
5	BDOW	1	1	1	1	1	1	Yes	NW

In this form a “0” indicates that a given individual was NOT detected, while a “1” indicates it was. For example, at Point 1 a Whip-poor-will was heard in the first one-minute period and every period thereafter. A second Whip-poor-will was first detected in the third period and heard in the following two periods before becoming silent. No nightjars were heard at Point 2. At Point 3 a Whip-poor-will was heard during the first three periods but not the second three. A different Whip-poor-will was first detected in Period 4 and heard again in Periods 5 and 6. Because it did not overlap with the first bird, there is a possibility that they are the same bird and that it moved between Periods 3 and 4. Some cues that might suggest this are if calling ended early in Period 3 and started late in Period 4, but there is no hard and fast rule. Use your best judgment. Also at Point 3, both a Common Nighthawk and Whip-poor-will were detected in Period 5, with the latter continuing into Period 6. The fact that this bird overlapped with the second Whip-poor-will is clear evidence that there are at least two of Whip-poor-wills at this point. At Point 4, a Chuck-will’s-widow was heard in Periods 1-3 and a Barred Owl in Periods 2-6. At point 5, a Barred Owl was heard throughout the each minute of the survey but this was believed to be the same owl heard at Point 4. Hence it was recorded as usual but then the Repeat (“Rep?”) column was marked. This process would continue through Points 6-10.

#### NEW IN 2009:

While the basic protocol remains unchanged in 2009, we have added two columns to the data sheet to both aid observers in data collection and collect additional data of interest to the Nightjar Survey. These are as follows:

- 1) Please indicate in the “Rep?” (= repeat) column if you think a given bird is the same individual you heard at a previous point. Do not ignore this bird, but be sure to indicate that it was previously detected.
- 2) 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.

**Comments:** Use this field to provide any additional information not included in the table. Example of such data could include:

- other nocturnal species detected (woodcock, marsh birds, frogs, etc. – please indicate Point Number)
- details on noise factors that might impede your ability to detect nightjars
- nightjars detected between points or before/after the official six-minute period
- any other information you wish to convey about the route or your experience

#### **AFTER THE SURVEY**

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

1. Completed data sheet – EVEN IF YOU DETECTED NO NIGHTJARS OR OWLS!!!
2. Route description form – only if you filled out appropriate portions
3. Release of liability form – busy work but has to be done...
4. Volunteer effort form – critical for us to track survey effort; record all prep work, travel, survey time, etc.

**Send all forms to: Ryan Brady, WDNR, 2501 Golf Course Rd, Ashland, WI 54806, [ryan.brady@wisconsin.gov](mailto:ryan.brady@wisconsin.gov)**

#### **Questions?**

Contact Ryan Brady, Wisconsin Nightjar Survey Coordinator, at 715.685.2933 or [ryan.brady@wisconsin.gov](mailto:ryan.brady@wisconsin.gov)

**THANK YOU FOR MAKING THIS SURVEY POSSIBLE!**



## Nightjar Route Description Form

Route # and Name: \_\_\_\_\_ State: \_\_\_\_\_

Year: \_\_\_\_\_

This form has three purposes:

- 1) Record specific information on the observers assigned to a specific nightjar route
- 2) Provide a space where observers can record details about each point location during a non-survey visit to the route (GPS coordinates are optional – please indicate map datum used).
- 3) Allow for recording of habitat information at each stop along a route (optional)

### Part 1: Observer Information

	Observer #1	Observer #2
Name		
Address		
City, State, Zip		
Phone Number		
Email Address		

### Parts 2 and 3: Route Information (optional)

Point	Location Description (landmarks, GPS coords, etc.)	# Houses Visible	Dominant 3 habitats (see below)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

Habitat Codes:

PF = Pine/Conifer/Mixed Forest

HF = Hardwood Forest

D = Developed (urban, residential area)

O = Open (fields, lawn, gravel pits)

W = Water

M = Marsh/Wetland

RELEASE OF LIABILITY  
Wisconsin Nightjar Survey

ACTIVITY Wisconsin Nightjar Survey

NAME \_\_\_\_\_ DATE \_\_\_\_\_

I, \_\_\_\_\_, wish to participate in the Wisconsin Nightjar Survey (WNS). I am informed that WNS activities are led by WNS selected people who may or may not be WNS employees and that they function as representatives of WNS.

I recognize that the Wisconsin Nightjar Survey activity has a certain degree of risk, and I knowingly and voluntarily assume the risk of any injuries, regardless of severity, and including death, and all risk of damage or loss of property which I may incur due to negligence or accidental occurrences while I am participating in the Wisconsin Nightjar Survey.

In consideration of the opportunity to participate in the Wisconsin Nightjar Survey, I, on behalf of myself, my agents, heirs and next of kin, hereby release WNS organizations and their representatives, employees, officers, and agents from any responsibility or liability for personal injury, including death, and damage to or loss of property, that I may incur due to the acts of WNS, my own negligence, or due to accidental occurrences while I am traveling to or from and during an owl survey, using or operating equipment, or otherwise participating in the Wisconsin Nightjar Survey.

I verify that I have no physical disability, impairments, or chemical dependencies that might inhibit my participation in the Wisconsin Nightjar Survey, and I agree to abide by all WNS regulations regarding my participation in the Wisconsin Nightjar Survey.

I, the undersigned, am at least 18 years of age, am competent to sign this release, and have read carefully and understand all its terms.

Signed \_\_\_\_\_

Date \_\_\_\_\_

Witnessed by \_\_\_\_\_

Date \_\_\_\_\_

## Wisconsin Nightjar Survey Volunteer Effort Sheet

Activity Description:	
Project Title: <i>Wisconsin Nightjar Survey</i>	State: WI
Route # and Name:	

### In-kind Effort

Date	Name	Signature	Mileage	Hours

Certification:

To the best of my knowledge I certify that the above is correct.	
Signature:	Date:
Title:	