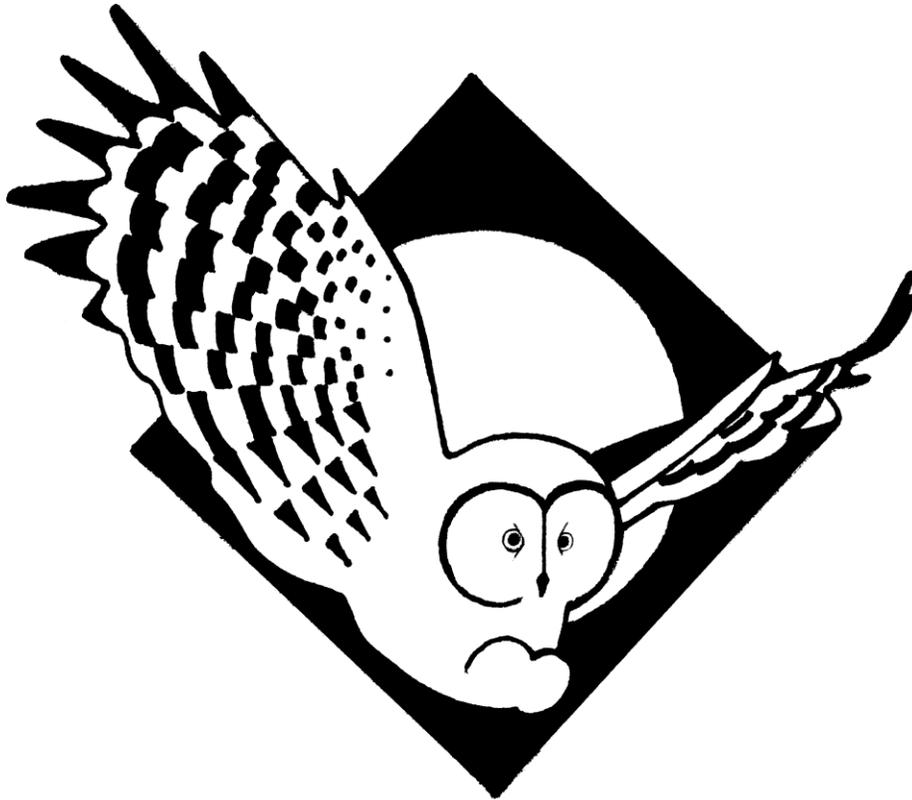


ONTARIO NOCTURNAL OWL SURVEY

NOCTURNAL OWL SURVEYS IN NORTHERN ONTARIO: A CITIZEN SCIENTIST'S GUIDE



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CITIZEN SCIENTIST'S GUIDE FOR CONDUCTING OWL SURVEYS IN NORTHERN ONTARIO

INTRODUCTION

This citizen scientist's guide contains detailed instructions for the Ontario Nocturnal Owl Survey. The current protocol used for this survey is based on data collected by volunteers from 1995-1999 during the Nocturnal Owl Pilot Study. We used these data to develop the best protocol based on science and optimal volunteer recruitment and retention. Many thanks to all the citizen scientists who have helped with this study in the past and who are continuing to participate this year.

On-line Resources

For survey protocols, data sheets, Field Notes and our latest Newsletter visit: www.birdscanada.org/volunteer/onowls. For on-line data entry and downloadable MP3 audio files visit: <http://www.bsc-eoc.org/birdmon/onowls>. Please note that you will need to create a login name which takes one business day for approval. If you choose to enter your data on-line please remember to also send in your original data forms by mail.

For additional images and audio recordings of owls, volunteers are encouraged to check out the new Nature Instruct website: www.natureinstruct.org

At least one week prior to conducting your survey, please ensure that you have all the necessary equipment (see checklist on page 6). Feel free to contact Bird Studies Canada if you have any questions.

To volunteer contact:

Kathy Jones, Volunteer Coordinator,
volunteer@birdscanada.org, 1-888-448-2473 ext. 124



For more information on the project contact:

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WHAT IS A CITIZEN SCIENTIST?

A Bird Studies Canada citizen scientist is a volunteer who dedicates their time and observations to scientific research projects supporting bird conservation. Citizen scientists' voluntary efforts are essential and contribute to the conservation and preservation of Canada's wild birds and their habitats. Thanks for being a citizen scientist!

BACKGROUND

Relatively little is known about the abundance and distribution of owls in Ontario. The Ontario Ministry of Natural Resources (OMNR) requires information on owl populations, because they may be sensitive to habitat change and forest fragmentation. In partnership with OMNR, Bird Studies Canada is coordinating a provincial survey to monitor owl populations.

Owls are notoriously difficult to count. They are secretive, primarily nocturnal, and roost in concealed locations during the day. Consequently, Ontario's owl populations are not adequately monitored through existing monitoring programs (e.g. Breeding Bird Survey, Forest Bird Monitoring Program, Migration Monitoring Program). Playback of tape-recorded songs has been used to census a variety of bird species, and is a particularly useful technique for secretive, nocturnal birds that cannot otherwise be reliably surveyed. Due to the territorial behaviour of owls, songs broadcast within an owl's territory may elicit a vocal or visual response by the resident owl in an attempt to defend its territory against an intruder. This method can be used to survey a number of owl species.



The Ontario Nocturnal Owl Survey, initiated in 1995, uses volunteers to conduct standardized roadside surveys in forested areas in central and northern Ontario. The goal of the survey is to monitor owl populations in Ontario through a network of citizen scientists. The primary target species for this survey are *Great Gray*, *Barred*, *Boreal*, and *Northern Saw-whet* owls. However, all owl species encountered during the survey are recorded.

Owl Surveyors are also asked to record any Ruffed Grouse, Common Snipe, and American Woodcock that are seen or heard along their route. Although Ruffed Grouse, Snipe, and Woodcock are not nocturnal, they are *crepuscular*, which means they are most active in the evening and at dawn. Consequently, these species are also poorly monitored by other bird surveys. You are most likely to hear these species at the first few stops along your owl route. A training CD is available to new surveyors to help them become familiar with the various calls.

SURVEY METHODOLOGY

The protocol for this survey is similar to other roadside surveys using tape playback. A team of two volunteers drives a pre-determined route, stopping at fixed intervals along the roadside. At each stop, the assistant plays a cassette tape or compact disk consisting of pre-recorded calls of two owl species alternating with timed listening periods. The surveyor is responsible for identifying all owls, Ruffed Grouse, Snipe, and American Woodcock heard or seen during each listening period and recording this information on the data forms provided.



Surveys begin one half hour after sunset and take approximately 3 hours to complete (not including travel time to and from the survey route). Surveyors are asked to run each route once, on any evening in the month of April.



We do, however, encourage you to run your route early in April (i.e. in the first two weeks) in order to avoid problems with frogs (e.g. loud choruses drowning out owl calls) and/or spring runoff or meltwater problems.



Map of Ontario showing the study area boundaries for the Ontario Nocturnal Owl Survey. All routes north of the 47th parallel use the northern Ontario protocol and all routes south of the 47th parallel use the central Ontario protocol.

Two different survey protocols are used, one for **northern Ontario**, where the main target species are Great Gray Owl and Boreal Owl, and another for **central Ontario**, where the main target species are Barred Owl and Northern Saw-whet Owl. The 47th line of latitude is used as the boundary between these study areas (see map on page 3). In general, the southern edge of the Canadian Shield defines the southern limit of the central Ontario study area, but a few routes are located south of this boundary.

Although the broadcast tapes are identical each year, please use the new Northern Ontario Broadcast tape, issued with your survey kit, to conduct the survey. Both sides of the broadcast tape are just under five minutes long and contain one set of Boreal Owl calls and one set of Great Gray Owl calls. The owl calls are preceded by two minutes of silent listening (divided by quiet beeps into one-minute intervals). **Compact disks (CDs) are also available for use during the survey.** If you are using a CD, please keep in mind that there is only one track that contains the same material as the tape. Please replay the track at each stop.



This guide contains detailed instructions for the **northern Ontario survey protocol only**. Check the map above to make sure that you have the correct guide, data sheets, and broadcast tape/CD for your region. Both the surveyor and assistant should be familiar with the protocol before attempting the first survey. **Once again, please use the new broadcast tape or CD provided with this guide. We will continue to replace tapes annually to prevent tape degradation for the next couple of years, but CDs will NOT be replaced. Please take care of your CD and hold on to it for future surveys.**

GETTING READY

In preparation for your owl survey, you need to:

-  Make sure you have the current participant's kit for your area. Each kit includes this instruction booklet, data forms, a tax relief application, a broadcast tape/CD, and a return envelope for returning your data forms. A training CD is provided for new surveyors only, but is available upon request. The survey methods and participant's kit have changed slightly over the years, so be sure to use this year's booklet.
-  Carefully read over the information in this participant's guide and become familiar with the survey methods and data forms.
-  If you are a new participant, listen to the training CD to be sure you can identify any owl, Ruffed Grouse, Snipe, and American Woodcock calls you might hear. Pay close attention to the various vocalizations of the four target owl species (Great Gray, Boreal, Northern Saw-whet, and Barred owls).
-  Check your broadcast equipment **BEFORE** your survey by carrying out the simple test outlined in the box on page 7.

We also recommend that you:

-  Find a partner to accompany you.
-  Scout your route during daylight hours.
-  Call us if you have any questions (1-888-448-BIRD)

FINDING A SURVEY ROUTE

Survey routes in northern Ontario consist of a minimum of 10 stops and a maximum of 20 stops spaced 1.6 km apart as the crow (or owl) flies. The total route length therefore ranges from **16 km to 32 km (or longer if the road is quite curved)**. We currently have close to 150 routes in Northern Ontario, and all of our ‘target areas’ have been filled. In fact, we are running out of roads in some places for people to do owl surveys on! For these reasons, we will not be establishing any more new routes. Instead, we will focus on ensuring that all established routes are assigned to a surveyor in every year, and on making improvements to the survey.

MODIFYING PREVIOUS ROUTES

If you participated in the owl survey in previous years, we hope you will survey the same route(s) again this year. If some of the stops on your previous route were not suitable (i.e. too much traffic, too much industrial noise, not near suitable habitat), you may want to modify your previous route. If your previous route passed through apparently suitable habitat but you found few or no owls, we strongly recommend that you survey it again this year. Owl populations and response rates can vary considerably from year-to-year and we need information from areas with few owls to detect these trends. Please contact the survey coordinator prior to making any changes to your route.

TAKING ON A NEW ROUTE

If you are taking over a new route, please study the route map carefully before surveying your route. If you are unsure of where your route is located, please call the coordinator. We recommend that you scout your new route during daylight hours (drive it once or twice) and that you mark the first stop with flagging tape or a reflector to make it easy to re-locate at night. As much as possible, please try to keep your stop locations in the same spot as the previous surveyor. However, stops should be moved if they are too dangerous or noisy. To help you remember where your stops are located in future years, we have provided you with a stop description form.





SURVEY MATERIALS

The following materials are included in the participant's kit for northern Ontario:

- ☞ Northern Ontario scannable data forms
- ☞ Survey and stop description form
- ☞ Return envelope
- ☞ Application for tax relief
- 🎵 Northern Ontario broadcast tape/CD

In addition, new participants will receive:

- 🎵 Ontario Nocturnal Owl Survey Training CD
- ☞ Citizen Scientist's Guide
- ☞ Route map and stop descriptions
- ☞ Field Notes Booklet

You will have to supply the following:

- 🚗 reliable vehicle
- 🎧 portable stereo (see below) ☞ clipboard
- ✚ compass
- 🔦 flashlight
- ✎ pencil/pen
- 🕒 watch
- 🔋 fresh batteries (for flashlight or stereo)
- ☞ road map and/or topographic map showing survey route

The following items are optional but are recommended, if available:

- towel (to place underneath broadcast unit to avoid scratching your vehicle)
- hands-free, headlamp-type flashlight
- Geographic Positioning System (GPS) unit (see page 8)
- thermos with hot beverage (hot chocolate is our favourite!)



Unfortunately, we are not able to reimburse volunteers for travel or other expenses. However, as a charitable organization, BSC can offer support for expenses volunteers incur while conducting fieldwork. We are happy to extend this benefit to participants in the Nocturnal Owl Survey. An application for voluntary support is included in each participant's kit.

BROADCAST EQUIPMENT



As we are unable to provide standardized broadcast equipment to all surveyors, we expect that a wide variety of equipment will be used to broadcast the owl calls. Differences in the volume and sound quality of these different tape and CD players will no doubt affect the number of owls that respond. However, as long as the average volume and quality of the broadcast unit does not change over time, this will not

interfere with the usefulness of this survey for monitoring long-term trends in owl populations.



We would also like you to conduct a simple test of your equipment to see how far away you can clearly hear the calls on the broadcast tape/CD. **Some stereos have difficulty playing the broadcast CD, please contact us if you have any problems.** This will provide us with some indication of how much variability there is in the broadcast equipment being presently used. We have established **250 metres** as the minimum distance at which you should be able to recognize the Boreal Owl calls when the broadcast tape is played at maximum volume without causing distortion. This guideline is well within the capability of many inexpensive tape or CD players. If your equipment does not meet this guideline, please locate another unit that does.



If your unit is equipped with an adapter cord so that it can be plugged into your car's cigarette lighter, please use it if possible. If you must use batteries to power the unit, then include the purchase receipt when applying for voluntary support. Before heading out to do your survey, make sure the audio equipment is working, that the batteries are fresh, and that you are familiar with the broadcast tape or CD operation.

INSTRUCTIONS FOR TESTING YOUR BROADCAST EQUIPMENT

This test takes about 20 minutes to complete and can be done anytime before the survey (day or night). It should be carried out under weather and noise conditions similar to what will be encountered during the survey (i.e. little wind, no precipitation, minor background noise). Use two people for this test: a "surveyor" to listen and an assistant to run the tape player.

Find a quiet area where you can measure off distances of approximately 100, 250, and 500 metres either by pacing (100 metres is roughly 120 steps for most people) or driving (use car odometer). Using the broadcast tape/CD and tape/CD player you will be using during the survey, have the surveyor stand 100 metres away from the broadcast unit while the assistant plays the broadcast tape/CD. The broadcast unit should be played at the same volume as for the survey (i.e. at the maximum volume without causing distortion). If your tape player has bass and treble settings, make sure they are set to the "normal" setting. The surveyor should listen to see if the Boreal Owl and Great Gray calls are audible and recognizable. Repeat this test for the 250 metre distance and, if possible, the 500 metre distance. The results of this test should be entered on the first page of the survey form.

The purpose of this simple test is two-fold:

- 🔊 To ensure that the tape player you will be using during the survey meets our guideline (i.e. the Boreal Owl call is audible and recognizable at 250 metres distance).
- 🔊 To give us a rough measure of the variability of the broadcast volume produced by different tape players.

STOP LOCATIONS

It is very important that we know the location of the stops along your survey route. Most of you have been sent a copy of a topographic map showing your survey route. **If you haven't already done so, please mark your stop locations on the map and return it with your complete data sheets to Bird Studies Canada.** Having accurate stop locations is very important because it allows us to relate owl locations to habitat characteristics. With this information, we can answer questions such as: Do Barred Owls like old growth forests or young forests? Are Saw-whet Owls found mostly in small forests or in large?

Geographic Positioning System (GPS) Unit

If you own or can borrow a Geographic Positioning System (GPS) unit, we recommend that you take it with you on your survey. Many Ontario Ministry of Natural Resources offices have GPS units that you may be able to borrow. At a minimum, we would like to know the position of the first and last stops on your route. As you can run the GPS unit while you do your survey at each stop, it should be possible to record the position of every stop without adding to the survey time. We would prefer that all positions are reported to the nearest 100 metres using the NAD83 reference system. Please indicate if the GPS you are using uses a different reference system (e.g. NAD27) or other units (e.g. longitude/latitude). Please record all 6 digits of the easting and all seven digits of northing. These units can be accurate to about 2 meters, and the added precision is useful for relating owl locations to habitat data.



DETAILED INSTRUCTIONS

Read the following information carefully and contact the owl survey coordinator if you have any questions. Please be sure you are using the proper broadcast CD or tape. Tapes are replaced annually so please check that your tape is marked with the proper year.

WHEN TO SURVEY YOUR ROUTE

Survey Window

Please run each route on a single evening in April. You can run your route on any evening in April; however, we strongly encourage you to run it in the first two weeks of the month. Otherwise, you may run into problems with competing frog choruses or messy roads due to snowmelt. Noise from running streams is also a problem later in the season.

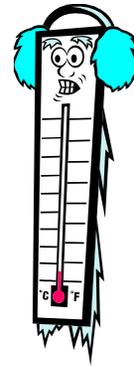
Survey Timing



The survey should begin one half hour after sunset and should finish as close to midnight as possible. Check your local paper for sunset time. The time required to complete a survey (not including travel time to and from the route) ranges from 2.5 hours to 4.5 hours. The average time to complete a survey in northern Ontario is about 3 hours. Surveyor fatigue is a factor, so it is essential to start the survey on time and move promptly from stop to stop.

Weather Conditions

Weather has a great influence on our ability to hear owls. Calm conditions are without a doubt the best. Wind and precipitation significantly reduce calling rates and detectability, while cloud cover is less important. Some owl calls do not carry very far, so wind is a critical limiting factor. Try to conduct surveys with little or no wind (3 or less on the Beaufort Scale). For a description of the Beaufort Wind Scale, please refer to your datasheet. Extremely cold temperatures have an adverse effect. For optimum response, try to select nights that are clear, calm, and not too cold (use warmer than -15EC as a guideline). There is little point in attempting or continuing a survey if the wind exceeds force 3 or if there is persistent snow or rain.



HOW TO SURVEY YOUR ROUTE

To survey your route, drive to the starting location. Plan to arrive just after sunset. Reset your trip odometer if your vehicle has one. This is **Stop 1**. Fill out date, time, and weather information at the top of the data form.

Clearly mark the starting point of your route on your route map. You will need to be able to find this starting point again next year, so try making note of any obvious landmarks. Clearly describe your stop locations (especially the start point) on your **Stop Description Form**. It is also a good idea to mark the starting point with flagging tape or a reflector. If you have a GPS unit with you, have it start calculating the stop location position before you begin the tape or CD so that you aren't delayed later.

At each stop, push the play button on the portable broadcast unit and move at least 20 metres away from your vehicle. This will reduce noise interference from the engine as it cools and will enable you to hear the owls. Although all participants should listen and watch for owls, one person should act as the surveyor and be responsible for identifying and counting owls and completing the survey forms. **Please use the forms provided for recording data in the field.**

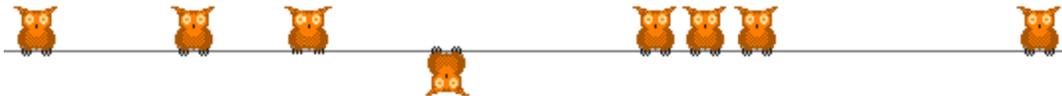
IMPORTANT

A copy of the scannable data form is provided in your survey kit, and can be found stapled to the back of your survey form. This data sheet will be scanned at BSC and therefore needs to be legible and in good condition. If you need a rough copy to use on your survey without worrying about wrinkling or staining it, they can be downloaded from the BSC website (www.bsc-eoc.org/volunteer/onowls). If you use a rough copy, please transcribe your data on to the scannable data sheet before sending it to BSC. If you decide to use the good copy on your route, please be careful with it!

Both sides of the northern Ontario broadcast tape are just under 5 minutes long and include four listening periods; the broadcast CD has one track which is also just under 5 minutes long and includes four listening periods. The broadcast starts with a double-beep to indicate the start of the first silent listening period lasting one minute. Record all owls heard or seen using the instructions on pages 12-13. Another double-beep marks the end of the first silent listening minute. This is followed by a second silent listening minute. Record any **new** owls heard or seen during this second minute. Owls heard during these silent periods are calling “voluntarily,” rather than in response to the playback.

Then, the **Boreal Owl** broadcast will begin (20 seconds long), followed by another one minute silent listening period. Record all owls heard and seen during this period separately. Keep track of whether the owls heard in the first 2 minutes continue to call and indicate if any new owls start to call.

Next, the **Great Gray Owl** broadcast will play for 20 seconds. Again, listen and record any owls heard or seen during the subsequent one minute listening period. Record any changes in owl vocalizations since the last listening period. A **double-beep** marks the end of the broadcast tape or CD.



Direction and distance of owls

Please remember to record both the direction and distance from which each owl calls, at the point when they first begin to call. We will use this information to relate owl presence/absence to the surrounding habitat. Distance is estimated using categories, and direction is estimated with a compass.

If you think you are hearing the same bird as at a previous station, then record it by printing a “Y” in the “Repeat?” column beside the species code (Y= yes) and make a note in the “Comments” section that you think this bird is a repeat.

We are primarily interested in knowing how many owls of each species you hear, when you first heard each owl (i.e. during which silent minute, or after which playback call), and whether it continued to call in subsequent listening periods. If possible, the surveyor should also try to collect additional information. For example, if you hear two Barred Owls calling at distinctly different pitches (e.g. "duet" on the training tape) you should note in the "Comments" section that you think they are a pair. Also, please note if you observe an owl but it never calls.

Grouse, snipe, and woodcock

We would also like you to record any Ruffed Grouse, Snipe and American Woodcock that you hear at each stop. Please indicate the number of each of these three species that you hear under "Other Species" section of your datasheet. The calls are described in the Field Notes booklet and are included on both the training tape and CD. Any extra notes you feel are useful can be written under "Comments".

Traffic Count and Noise Level

Two additional pieces of information being collected in a standardized manner are the **traffic count** and **noise level codes**. We have provided a column so that everyone will keep track of the number of vehicles that pass during the broadcast period at each stop. Surveyors in past years also remarked on various background noises that interfered with the tape/CD broadcast and/or the listening periods. Background noises reported during previous years include environmental noises (e.g. wind, running water, waves, etc.), animal noises (e.g. dogs barking, frogs calling, wolves howling, etc.), and human-induced noises (e.g. industrial noise, jets, trains, traffic, etc.). In most cases these noises had a minor effect, but in some instances they were sufficient to drown out any owls that might have been calling. In addition to providing an indication of the noise level at each stop, we will be using the traffic counts and noise level codes to track year-to-year changes. If the average noise level along a route increases with time, then the number of owls detected might decrease, even though the actual number of owls calling was not decreasing. **Please do not give a range of possibilities for noise level; give only one code per stop (e.g. Noise Level = 1).**

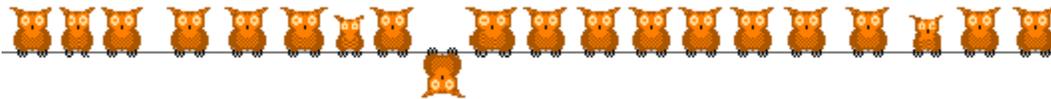


Before you leave each stop, make sure you have filled in all the necessary information including the odometer reading, time of day, traffic count, and the background noise levels. Proceed immediately to the next station. As the broadcast tape is double-sided, do **not** rewind it. If your tape player has an auto-reverse feature, simply change the play direction. Otherwise, flip the tape over and it will be ready for the next stop. If using the CD, all you have to do is press play at each stop. Don't forget to retrieve your broadcast unit from your car roof before driving off!

Repeat the above procedure at all 20 stops. At the end of the last stop, record the time and weather conditions. Be sure to fill out the comments section. We love to read all about your owling experiences! We are also concerned about your safety. Dress warmly. Please be careful when standing on roadsides at night and while driving on winter roads.

CAUTIONARY NOTE

Call broadcasts are effective in locating and studying owls but should not be used indiscriminately. Responding birds may continue to vocalize for some time after the playback ends and therefore may be more easily located by predators. In addition, frequent and persistent playbacks may affect the normal activities of the owl. Enjoy the birding experience but please keep disturbance to a minimum. Remember that the health and welfare of each bird is our utmost priority.



HOW TO COMPLETE THE SURVEY FORM AND DATA FORM

The first page of the survey form can be completed before starting the survey. The reverse side of the survey form has a summary of the key survey instructions and definitions for the various codes to be used in completing the data forms. Detailed instructions for filling out the forms, as well as examples of completed forms are included below. **Please study the sample forms carefully to ensure that data are collected accurately.**

Remember that there is only one copy of the data form provided (a scannable copy). Please return the completed copy to BSC in the return envelope provided with your survey kit. Remember to print very clearly so that our high-tech scanner can ‘read’ your printing!

Route name: If this route was previously surveyed, then use the same route name. If it is a new route, then give it a descriptive name (unless the route follows a numbered highway or regional road, use the nearest town or lake rather than the local road name). To help us locate your route, provide the name of the nearest town. **(NOTE: The name and number of your route should be given on the label at the top of your data forms).**

Route status: Please indicate whether this is a new route, existing route (i.e. surveyed previously), or a modified version of an existing route.



Stop locations: Please fill out the stop description form to help you locate your stops in future years. If you have a GPS unit, please record all stop coordinates on this form. If you haven't already done so, please mark your stop locations on the map provided and return it with your data sheets.

Surveyor/assistant information: Provide the name, mailing address (where you want further correspondence directed), and phone number of both the surveyor and assistant.

Broadcast equipment: Indicate the general and specific type of equipment you are using to play the broadcast tape or CD. Also indicate the results of the equipment test described on page 7.

Date: The scannable forms provide the month for you (04, April), so all you need to do is fill in the day and the last digit of the year.

Weather: Record the weather conditions at both the start and end of the survey in the space provided at the top of your dataform.

Snow Cover: estimate the percent snow cover on survey route (e.g. 33%, if lower two-thirds of route is snow-free).

Snow depth: estimate to the nearest cm, for both maximum and minimum depths.

Temperature: estimate air temperature to the nearest whole degree (no decimals).

Wind/Cloud Cover/Precipitation: Circle the appropriate weather code to indicate the wind, cloud cover and precipitation. Please select only **one code** for 'Wind' and 'Cloud Cover'. Up to **two selections** can be made for 'Precipitation' (i.e. if there was both rain and snow).

<u>WIND (Beaufort Scale)</u>	<u>CLOUD COVER</u>	<u>PRECIPITATION</u>
0. Calm, smoke rises vertically.	1. 0-25%	<i>Choices:</i> <ul style="list-style-type: none"> • None • Trace • Rain • Snow
1. Light air movement, smoke drifts.	2. 25-50%	
2. Slight breeze, wind felt on face.	3. 50-75%	
3. Gentle breeze, small twigs move.	4. 75-100%	
4. Moderate breeze, small branches move.	5. Fog	
5. Fresh breeze, small trees sway.		

Odometer reading: This information is particularly important if a stop is shifted from the standard station spacing. Please be sure to record distances in kilometers.

Time at each stop: Record the time of day using the 24-hour clock at the start of each new stop.



Owl Information: To determine the effectiveness of the broadcast tape or CD, we need to know when each owl first started calling (i.e. during which silent listening period, or after which playback call), and whether it continued to call in the following listening periods. We would also like you to note any owls that were seen but not heard, individuals you think are "repeats" (i.e. same bird as heard at previous station), and possible pairs.

At each stop, record each owl detected in the column immediately to the right of the stop number. Please use the four-letter abbreviation for each species, as provided on the reverse side of the survey form. For each stop, up to 2 different owls can be recorded on the lines provided. Record *each* individual owl on a separate line even if they are the same species. Follow the sample form carefully! The four columns to the right of the species codes are used to indicate which of the four listening periods a particular owl was heard calling in. Leave the relevant column blank if a particular owl was not heard during that listening period.

When an owl is heard, record the species name in the column labeled "Species Code," then place an "X" in the column(s) corresponding to when that owl was heard (e.g. if an owl is heard calling during the second silent listening period, place an "X" in the column titled, "2nd minute." If the owl is heard during every listening period, place an "X" in every column). If you are lucky enough to see an owl, put an "S" in the appropriate column. If the owl was both seen and heard, use "XS". **Please do not use "XX" to denote two owls heard calling during the same listening period! Use a separate line for each individual owl.** Also, we are not interested in how many times an owl calls during a particular listening period. Use only one "X" to denote that an owl called, regardless of whether it called once, or 20 times. Only owls heard or seen between the start and end of the broadcast tape should be tallied.

If you hear an owl only before or after this period, then make a note in the "Comments" section, but do not include this individual when you add up the total number of owls on the route. If more than four owls are detected at a stop, they should be recorded in the spaces provided at the end of the form. Be sure to write in the stop number beside any additional owls.

Repeat? If you think that you are hearing the same individual owl at two different stops (example, same Great Gray Owl heard at Stops 1 and 2), then mark a 'Y' in the "Repeat?" column on the datasheet.

Direction to owl: For each owl heard calling, estimate the direction it is calling from *the point when it first began to call* using a compass (e.g. north, north-east, east, south-east, south). Enter the direction (e.g. NE) in the given column, making sure to use the appropriate 2 letter code.



Distance to owl: For each owl heard calling, estimate its distance from you *at the point when it first began to call* by marking an “X” in the appropriate distance category (<200m, 200-500m, 500-1000m, and >1000m).

Number of other species heard: At each stop record the number of Ruffed Grouse, Snipe, and American Woodcock heard in the “Other Species” section of your datasheet. Extra comments may go under “comments”.

Traffic count: Indicate the number of vehicles that pass by during the broadcast period at each stop in the column provided. Your assistant can either mark a tally as each vehicle goes by or keep a mental count and enter the total at the end of the survey. If no vehicles pass by, then enter a 0. Please be sure to enter only the **total** number of vehicles on your datasheet. *Please do not tally vehicles on your form.*

Noise level: Rate the background noise level at each stop using the four-point scale described on the reverse side of the survey form. Describe the source of any elevated noise levels (above level 1) in the “Comments” section (e.g. frogs calling, airplane overhead, running water, etc.).

Comments: Please complete this section immediately following the survey while the experience is still fresh in your mind. Your comments are very important. We want to be sure this volunteer survey is designed in such a way that it is feasible, enjoyable and productive. We may wish to use your comments in our newsletters or post them on our web page! Also, please supply us with pictures and accounts of your evening adventures. We love to hear your stories!

SCANNABLE FORMS – HELPFUL HINTS

USE PEN instead of a pencil or felt-tipped marker when filling in forms as they are easier for the computer to “read.”

PLEASE PRINT legibly using block letters as the scanning program cannot discern cursive writing (i.e. **B | A | R | R** not **B | A | R | R**). Please follow the example forms carefully when filling in your forms.

STAY BETWEEN THE LINES when filling out your datasheet. The scanning program cannot decipher lines that cross into multiple fields. If you need more room than what is provided, please use the “Comments” section or attach a separate page.

FILL IN THE BUBBLES completely when you are asked to make a choice using them (i.e. $\circ \rightarrow \bullet$).

MISTAKES HAPPEN! Try to limit errors, but if they occur, correct them as best you can. To reduce the number of mistakes, a rough datasheet may be downloaded from our website for use on your survey (<http://www.bsc-eoc.org/volunteer/onowls>). Please be sure that you download the forms appropriate to your region. As the scanning program responds the best to the original datasheet, please try your best to send us the original back in legible form.



RETURNING THE COMPLETED FORMS

After you've completed the surveys, check over your forms to make sure all information is complete (and legible). **Please make a copy of your data forms for your records** (and in case the originals get lost in the mail). Return the forms, along with a copy of your route map, by **20 May** to the Owl Survey Coordinator at Bird Studies Canada, Box 160, Port Rowan, Ontario, N0E 1M0. If you fax your data forms, please try to send a copy of the original forms by mail, as faxes are often not as legible. If you are applying for voluntary support, include the completed application form and your cheque with your data forms. A pre-addressed envelope is included with this participant's kit.



At any time, don't hesitate to call if you have any questions regarding the survey.

Good luck on your owl surveys!

Kathy Jones, Volunteer Coordinator, volunteer@birdscanada.org, 1-888-448-2473 ext. 124

Jody Allair Biologist and Science Educator, jallair@birdscanada.org, 1-888-448-2473 ext. 117



SAMPLE SURVEY FORM – NORTHERN ONTARIO

ONTARIO NOCTURNAL OWL SURVEY - NORTHERN ONTARIO DATA FORM

Jen Owler, I.D. #12345 Hooterville Road (#123) 14 Long Rd. Owlton, ON P7B 5X9	Please return completed forms, along with a map showing stop locations, in the envelope provided by 15 May, 2002.
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ROUTE NAME: <u>Hooterville Road</u> Closest Town: <u>Owlton</u> Route Status (check one): Established <input checked="" type="checkbox"/> Modified <input type="checkbox"/> New <input type="checkbox"/> Route Map attached (circle one): <input checked="" type="radio"/> Yes <input type="radio"/> No	COMMENTS: Beautiful evening - lots of owls tonight! Also saw lone timberwolf - I think we spooked him with our headlights. Can't wait until next year's survey!
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SURVEYOR: <u>Jen Owler</u> Address: <u>14 Long Rd.</u> <u>Owlton, ON</u> Postal Code: <u>P7B 5X9</u> ☎ <u>807-622-9922</u> home ☎ <u>807-684-9956</u> work E-mail: <u>jowler@yahoo.com</u>	ASSISTANT: <u>Don Whoot</u> Address: <u>1953 Mountain Rd.</u> <u>Owlton, ON</u> Postal Code: <u>P7A 3X6</u> ☎ <u>807-344-1613</u> home ☎ <u>807-684-9956</u> work E-mail: <u>owlguy@hotmail.com</u>
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BROADCAST EQUIPMENT

GENERAL TYPE: <input type="checkbox"/> Portable, single speaker <input checked="" type="checkbox"/> Luggable, dual speakers <input type="checkbox"/> Other _____	MAKE/MODEL (speaker wattage if known): <u>General Electric</u> <u>(15 watts)</u>
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RESULTS OF PRE-SURVEY EQUIPMENT TEST

When you tested your tape player, could you hear the BOOW broadcast call (when playing the broadcast tape at maximum volume without distortion) at: a) 100 metres distance? Yes No b) 250 metres distance? Yes No b) 500 metres distance? <input checked="" type="radio"/> Yes No	When you tested your tape player, could you hear the GGOW broadcast call (when playing the broadcast tape at maximum volume without distortion) at: a) 100 metres distance? Yes No b) 250 metres distance? Yes No c) 500 metres distance? <input checked="" type="radio"/> Yes No
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ONTARIO NOCTURNAL OWL SURVEY - Northern Ontario

Route # 1, 2, 3

Stop	Time (24hr) Odometer(km)	Species Code	Mark "X" if heard; "S" if owl seen; "XS" if both			Distance to each owl (m)			Traffic Count (# cars)	Noise Level (1-4)	Remarks and Other Species
			1st Min	2nd Min	After BOOW GGOW	Same Owl? Y=Yes	<200	200-500			
13	2:3:15	LEOW	X	X	X				0	1	LEOW calling upon arrival
14	2:3:25								2	2	
15	2:3:35								0	1	
16	2:3:45								0	1	
17	2:3:55	GHOW	X		X, S				0	1	GHOW flew in and landed in a tree near us!
18	2:5:05								0	1	
19	2:8:15								0	1	
20	3:0:25								0	1	Quieted down alot as the night went on.
Stop											
Use these lines for additional owls. Please note the stop numbers.											

How certain are you in your estimates of: **Distance (fill in one circle per category)**

<200m: ● very confident ○ confident ○ uncertain **Direction (fill in one circle)**

200-500m: ○ very confident ● confident ○ uncertain ● very confident ○ confident ○ uncertain

500-1000m: ○ very confident ● confident ○ uncertain ○ very confident ● confident ○ uncertain

>1000m: ○ very confident ○ confident ● uncertain ○ very confident ○ confident ● uncertain

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SAMPLE STOP DESCRIPTION FORM – NORTHERN ONTARIO

2002 Northern Ontario Nocturnal Owl Survey STOP DESCRIPTION FORM

PREPARED BY: <u>Jen Owler</u>		DATE: MM / DD / YY <u>04 / 12 / 2002</u>		ROUTE NAME: <u>Hooterville Road</u>	ROUTE #: <u>123</u>
STOP #	Longitude (Easting)	Latitude (Northing)	NAD (83 or 27)	DESCRIPTION (location, habitat, etc.)	
<u>1</u>	<u>343964</u>	<u>5414183</u>	<u>83</u>	<u>Corner of Hooterville Rd. and Conc. IX. Marked With reflector tape. Mainly forested (conifer)</u>	
<u>2</u>	<u>344418</u>	<u>5412617</u>	<u>83</u>	<u>Bridge over Rapid Creek on Hooterville Rd. Small clearcut adjacent to bridge.</u>	
<u>3</u>	<u>344790</u>	<u>5411190</u>	<u>83</u>	<u>Driveway of Boreal Forestry Services. Habitat consists of small pine plantation.</u>	

COMMENTS: All stops are marked with flagging tape. We recorded each stop location with our new GPS unit (NAD83) Steps were recorded using latitude and longitude. Most stops are located near large mixed forest, with the exception of stop #5 and #6, which have agricultural fields to the south. Please see the attached map for exact stop locations.