



## North American Breeding Bird Survey Instructions and Safety Guidelines

**Strict adherence to the rules is essential for proper analysis of results. Please read all instructions and safety guidelines prior to conducting your survey.**

### BBS Requirements

It is very important **that the observer should know the songs, calls, and visual identification of all species** likely to be encountered. It is advisable, even for experienced observers, to learn the less common species. You can register with [NatureInstruct's Dendroica](#), an interactive website designed to help improve bird identification skills by sight and sound. Also, since identification by songs and calls is required, acute hearing is extremely important. An observer with hearing loss should not be running Breeding Bird Surveys. All new observers must complete the [BBS online methodology training module](#) before conducting their survey.

### Scouting Your Route

Much time can be lost due to closed roads, washed out bridges, and wrong turns. The importance of familiarization with the 50 stops and the proper turns before the day of the run cannot be over-emphasized. A scouting trip can save time and frustration, especially for first-time observers or observers starting new routes. Scouting trips are an excellent time to mark stops on the map, record stop descriptions, and/or record stop coordinates. First-time observers should also conduct a test run to get familiar with the BBS protocol and data forms. If the route is far away, try 10 or 20 practice stops somewhere close to home.

### When to Run Routes

In Canada, the acceptable dates for running routes are between 28 May and 7 July. In more southern areas, it is preferable to run routes in early or mid-June. In general, it is best to keep the date of your survey as similar as possible between years.

### Starting Your Route

Begin at the marked start point on the map (stop number 1). **Do not reverse the route** even if the end is closer to home. At the official starting time, which is pre-printed on the data cover sheet, begin counting birds at the marked starting point. The official start time is always 30 minutes before sunrise. Keep in mind that daylight savings time is often in effect, and local papers and TV stations often give incorrect sunrise data. If you want to confirm your official start time, please contact the national office ([BBS@ec.gc.ca](mailto:BBS@ec.gc.ca)). Be at the start point early so that you can get set up (e.g., record weather data and actual start time).

### Stop Locations

Stops are generally located at 0.8 km (800 m or ½ mile) intervals. Unfortunately, car odometers vary. The most important issue concerning stops is that **all 50 stops should be made in exactly the same location from year to year.**

If you are running an unmarked route for the first time (i.e., no stops marked on the map and/or stop descriptions available), the best approach is to drive 0.8 km (800 m or ½ mile) between every stop. Important: please make a list of stop descriptions and mark their locations using a GPS unit, so that your stops can be duplicated in the future.

If you have a route map with stops marked on it or a list of stop descriptions available, use those stops regardless of what your odometer says unless the marked stops are entirely unreasonable. If this is the case, please contact the national office ([BBS@ec.gc.ca](mailto:BBS@ec.gc.ca)). If a route problem arises, see [Route Problems](#).

It is important that a clear written stop description and accurate GPS coordinates exist for each stop. Please enter or edit your stop descriptions [online](#), ensuring that you update your stop descriptions is ever they change (see [Stop Descriptions](#)). Please collect GPS coordinates and enter them [online](#) (see [Stop Coordinates](#)).

### **Stop Descriptions**

If your route has outdated stop descriptions or does not have any at all, please document them and/or ensure they are up-to-date. Not all subsequent BBS observers on your route will have a GPS unit, so even if exact GPS coordinates are available, stop descriptions should have enough detail that a new observer is able to find the same stop using the written descriptions. Stop descriptions should be updated as necessary whenever major landmarks change along the route. You can enter stop descriptions [online](#) or return hard copies in the mail.

### **Stop Coordinates**

If you are able, please obtain GPS coordinates in **decimal degrees using NAD83** (e.g., 49.1234, -79.12345) for all 50 of your stops. If you are already familiar with your GPS unit, it only takes a few seconds to capture each GPS point so this can usually be done at the same time you run your BBS route (especially if you have an assistant along). However, if you are not familiar with your GPS unit, please do **not** let it interfere with your bird counts. Record the GPS points during your scouting trip instead. **Remember: these GPS points can be collected outside the breeding season as well.** You can enter stop coordinates [online](#) or return hard copies in the mail.

For those of you who would like to collect GPS information but do not own a GPS unit, Environment Canada has several units to lend. Please contact the national BBS office ([BBS@ec.gc.ca](mailto:BBS@ec.gc.ca)) or your [regional coordinator](#) for help.

### **Counting Birds**

**One and only one observer should count birds.** Counting should be done from outside the car but from a stationary point. Every bird seen within 400 m by the one observer, or heard from any location, should be counted during the three minutes at each stop. Do not exceed three minutes even if you are sure a certain “good bird” is there and not calling -- it will probably be recorded some other year, and valid negative data are as important as positive in this survey. Do not stay less or more than three min. **Absolutely no method of coaxing birds should be used** under any circumstances during the three-minute counting periods. This means no “pishing,” tape playbacks or any other method. It is crucial that all surveys be done consistently, because the goal of the survey is to establish a comparison index not an actual count or census. Birds seen between stops or before and after the three minutes or on scouting runs should not be counted, but may be noted in the margin. Such birds are of some interest, but do not spend extra time pursuing them, **as it is important to finish within the time limit**, which should be 4 to 5 hours; bird activity changes drastically after this time. Do

not wait to record birds after the three minutes have been completed; always record as you hear or see the birds. Waiting leads to errors of omission and significantly delays the completion of the survey.

### **Which Birds to Count**

Count every individual (except dependent young including downy chicks of waterbirds and shorebirds) of all species seen or heard during each three-minute period. Estimate flocks too large to count in the brief time they are seen. Do not use check marks even for abundant species; always provide a count. No one will detect all birds within hearing or seeing distance. Hundreds of birds could be present, but not all will be active during each three-minute count. You must not try to guess how many you are missing. **Report only those birds actually seen or heard during the prescribed three-minute stops.** Be careful not to count any individuals known or strongly suspected to have been counted at a previous stop. Any bird known to be a non-breeder (late migrant, injured bird, or summer vagrant) should be included, **but marked on the data sheet as a non-breeder (Mig).** Easily identifiable subspecies of birds, such as Northern Flicker (yellow- vs. red-shafted), Dark-Eyed Junco (Slate-coloured, Oregon, etc.), and Yellow-rumped Warbler (Myrtle vs. Audubon's) should be identified whenever possible. Species recorded that are not already listed on the forms should be added at the bottom. **There is no need to fill in AOU numbers;** we will do that for you. **Any species unusual to the area, whether it appears on the form or not, should be supported by including some details of the observation.**

### **Counting Vehicles**

At the bottom of the field sheets, record the number of vehicles that pass by during each three-minute stop. Treat all motorized vehicles equally; motorcycles, cars, buses, trucks, semi-tractor trailers, etc., each count as one vehicle if they pass by the point while the count is in progress. Count only those vehicles that are on the road where the count is taking place. Do not count vehicles passing by on nearby thoroughfares even if their noise is interfering with your ability to detect birds. If a stop is located at an intersection, count the vehicles traversing both roads during the count. **It is useful if the assistant can count and record the number of vehicles, thereby freeing up the observer to concentrate on the birds. We suggest using a mechanical hand-counter or tallying device to count vehicles.** If a stop is on a heavily traveled road, it is acceptable to estimate the number of vehicles that passed by during the three-minute stop, since counting birds is the primary objective of the survey. In addition, if you feel counting vehicles distracts too much of your attention from the bird survey, forego this step and indicate on the cover sheet that you did not count vehicles.

### **Excessive Noise**

At the bottom of each field sheet there are five bubbles, one bubble for each stop. Fill in a circle completely if you feel constant excessive noise, other than that produced by counted vehicles, is significantly interfering with your ability to hear birds at that stop. Possible sources of excessive noise include, but are not limited to: lawn mowers, oil well pumps, trains, planes, tractors, vehicles on nearby roads, numerous barking dogs, and rushing river water. Do not fill in the circle if the disturbance is temporary (lasts < 45 seconds) or if you are able to temporarily suspend the count until the offending noise has ceased or moved on.

### **Acceptable Weather**

To be comparable, routes must be run under satisfactory weather conditions: good visibility, little or no precipitation, light winds. Occasional light drizzle or a very brief shower may not affect bird activity but fog, steady drizzle, or prolonged rain should be avoided. Except in those prairie provinces where winds normally exceed Beaufort 3 (13-19 km/h; 8-12 mph), counts should preferably be made on mornings when the wind is less than 13 km/h (8 mph) and not done if the wind exceeds 19 km/h (12 mph). If you can walk faster than the

wind is blowing, wind conditions are very satisfactory. See [Wind Speed Codes](#) and [Sky Condition Codes](#) for more information.

### Wind Speed Codes

Enter Beaufort Numbers on the cover sheet, as well as every 10 stops or if there is a marked change in conditions. Do not use mph or km/h.

Beaufort code	Indicators of Wind Speed	Wind speed km/h	Wind speed mph
0	Smoke rises vertically	< 2	< 1
1	Wind direction shown by smoke drift	2 - 5	1 - 3
2	Wind felt on face; leaves rustle	6 - 12	4 - 7
3	Leaves, small twigs in constant motion; light flag extended	13 - 19	8 - 12
4	Raises dust and loose paper; small branches are moved	20 - 29	13 - 18
5	Small trees in leaf sway; crested wavelets on inland waters	30 - 38	30 - 38

### Sky Condition Codes

Enter these Weather Bureau code numbers on cover sheet, as well as every 10 stops or if there is a marked change in conditions.

Sky condition code	Indicators of sky condition
0	Clear or a few clouds
1	Partly cloudy (scattered) or variable sky
2	Cloudy (broken) or overcast
4	Fog or smoke
5	Drizzle
7	Snow
8	Showers

### Route Problems

Scouting your route beforehand should eliminate most last-minute adjustments. If any problems arise, **notify the national office** ([BBS@ec.gc.ca](mailto:BBS@ec.gc.ca)) as soon as possible. If it is not possible to scout a route and a problem arises while running it, remember that it is most important to use the **same stops in the same order as in previous years**. If a detour is necessary, go around and resume on the other side of the obstruction, attempting to preserve as many stops as possible. **Do not make new stops** along the detour unless necessitated by inaccessible sections of road or if detouring around will take in excess of an hour.

There are numerous local traffic regulations dealing with the proper and safe parking of vehicles along roadsides. Please observe these regulations while conducting your Breeding Bird Survey. Remember to use caution in selecting an appropriate stopping place, and when getting in and out of your vehicle. If a stop is in a dangerous location, it is acceptable to move it as much as 160 m (or 0.1 miles) forward or backward, or to put it on a side road. If this does not resolve the safety problem, skip the stop and contact the national office ([BBS@ec.gc.ca](mailto:BBS@ec.gc.ca)). **Never stop at a location you consider to be dangerous in any way.** Counting may be extended

by 1 minute at stops with excessive traffic noise. This should be restricted to only a few stops; if many stops have excessive traffic, notify the national office. In some cases, a replacement route will have to be developed.

### **BBS Cover Sheet**

**Always complete and mail in the cover sheet** of the field sheet form regardless of whether you are planning to enter your data online or planning to mail it in. Be sure to **furnish all the summary information requested on cover sheet**; including date, time and weather data. Please enter only one number or letter per block (start the date and starting time entries with a "0"). Please print plainly with a dark pencil or pen, but not a felt-tip marker, because all information must be scanned. The observer refers to the name indicated at the bottom of the sheet, not the driver or the recorder. Two people should not observe together and take turns putting each other's name in the observer block from year to year. Before submitting the cover sheet, always verify the address indicated on the front and answer the questions listed by filling in the bubble corresponding to the correct response (Y= Yes and N = No). When updating the address, always use CAPITAL letters and place one character per box. If surveying multiple routes, it is only necessary to update the address on one cover sheet.

### **Submit Data Online**

Please submit your data [online](#). Note that you will still need to mail in your cover sheet (See [BBS Cover Sheet](#)) and your original data sheets (i.e. those used in the field) to Environment Canada's Canadian Wildlife Service BBS office using the postage-paid return envelope after you have entered your data.

### **Submit Data by Mail**

Observers without internet access can mail completed data forms to the Canadian BBS office using the postage-paid return envelopes. If you choose to mail your completed data forms to the BBS office for entry, remember that all data must either be recorded directly to the scan forms in the field or transcribed to the scan forms from your own field sheets. You must submit your data using **Arabic numerals** (i.e., 1, 2, 3, ..., 15, 16, etc.). Print **firmly** with **dark** pencil or ink pen, write legibly, avoiding contact with edges of entry boxes. Do not obscure or mar the black cornerstones or identification boxes at the top left corner of the pages. **Do not use a felt-tip pen**; the ink is not waterproof so it smudges, washes out easily and makes corrections difficult. There is no need to fill in missing AOU numbers or staple the data sheets together. **Missing species may be written in lower case letters and abbreviated.**

**If using any other method to record individuals (hash marks, dots, etc.), please use your own data sheets (or make a photocopy of the scan form for use in the field) then transfer the species data to the scan form using Arabic numerals before sending it in.** Please double-check the transfer of data; we have found that many observers inadvertently omit information when transferring. For this and other reasons, always send **both sets of data sheets** to our office. Also, keep a photocopy of the original data sheets for your records; you will need the photocopy to check against the results we will send you at the end of the year and as insurance against lost mail.

### **Dictating Observations to a Tape Recorder**

It is risky to record data by dictating observations to a tape recorder because the data can easily be lost by one sort of malfunction or another. Transferring the taped data is tedious and also subject to error. Another problem is that the tape is technically the original field sheet and it would be unreasonable for people to send us tapes. If you must use a tape recorder, indicate this on the assistant line and please be careful. With practice, an observer can easily count and record birds on the field sheet alone.

### **All Forms Must be Completed and Returned by August 31**

Please use the provided pre-paid, pre-addressed envelope to return your **car sign, field sheets** (representing 50 stops), **cover sheet, route map** and **stop descriptions** each year. Please keep a copy of your bird data so that you can check the computer printout that will be sent at a later date. If you cannot run your route, please return the packet as soon as possible. **If you cannot cover your route during the prescribed period, please inform the [Provincial/Territorial Coordinator](#) or the national office ([BBS@ec.gc.ca](mailto:BBS@ec.gc.ca)) as soon as possible.**

### **Processing Results**

Upon receipt of the forms, the cover and field sheets are checked for completion and addresses are checked. Data from the cover and field sheets are then scanned into the computer and run through a computer edit program. A link to your data will be emailed to you for verification. Data are then posted to the [BBS website](#).

### **Income Tax Deduction**

**It is not possible for Environment Canada's Canadian Wildlife Service to reimburse expenses or to issue tax receipts for participation in the BBS.** However, out-of-pocket expenses for running a BBS route can be treated as a charitable donation through the non-governmental organization **Bird Studies Canada (BSC)** and participants can thereby receive income tax receipts. Please note: this system provides **a tax receipt only** and is not a reimbursement of expenses. Participants submit a record of their expenses along with a cheque, **payable to Bird Studies Canada**, of an amount equaling the expenses. BSC then treats the cheque as a donation and issues the participant a tax receipt. Along with the tax receipt BSC sends the participant a cheque equaling the amount of the donation. Cost of motels, campgrounds, meals, mileage, etc., involved with the scouting and running of official Breeding Bird Survey routes can be included in these costs. For details, see the **BSC Volunteer Support Form** enclosed in your package. Please return your completed Volunteer Support Form **to the Canadian BBS office by October 15** each year. We will process the request and then forward it to Bird Studies Canada.

### **Equipment Checklist**

- Clipboard
- Pencils (dark, soft lead)
- Gasoline
- Hand counter or mechanical tally device
- Binoculars
- Thermometer
- Flashlight
- Watch with second hand (or timer)
- Data forms and/or field sheets
- Route Map & Stop Descriptions
- GPS unit

## Breeding Bird Survey Safety Guidelines

We hope that your Breeding Bird Survey is filled with beautiful sunrises, breathtaking wildlife sightings, and wonderful birdsong. However, you may also have less pleasant experiences on your route. Hazardous route conditions, car breakdowns, bears or other potentially dangerous wildlife (including humans!), mosquito bites, dehydration, sun overexposure, and sleep deprivation are all possible along your BBS route. In order to reduce the risk of these incidents, we ask that you and your assistant familiarize yourselves with the suggested safety precautions outlined below.

### Personal health

- Wear sun and insect protection, including sun block, insect repellent, hat, and protective clothing.
- Be aware of West Nile virus precautions. Get more information on the [use of insect repellents](#).
- Bring drinking water and food. In the event of a delay, you will be much more comfortable after a snack and a drink!
- Be aware of your own personal limits. Postpone the survey if you are feeling unwell or are under the effects of medication or other substances which could impair your judgment.

### Car safety

- Ensure that your car is in safe working condition and your gas tank is full before you leave home for your route.

### Traffic hazards

- Abide by all traffic regulations and laws.
- Be especially aware of and alert to oncoming traffic while you are doing your point count. Keep to the side of the road, and step off the road if a car is approaching.
- Wear a fluorescent safety vest (one is provided to each new participant).
- Assess pullover areas for safety at each stop. Look for traffic hazards, wild animals, and suspicious-looking persons. If you feel that it is not safe to pull over, you can either move 160 m (or 0.1 miles) forward, backward, or on an available side road, or skip the stop altogether.
- It's an early start! Get a good night's sleep, and do not drive if you are feeling drowsy.

### Road conditions

- Do **not** continue your route if road conditions are hazardous (e.g., washed out road, fallen trees blocking the path). Halt the survey and, if possible, try again on a later date.
- If it is unlikely that conditions will change during the season (e.g., bridge washed out, road consistently unmaintained or closed, traffic consistently too heavy), [contact your national or provincial coordinator for advice](#).

### Emergency contact

- Be sure to let someone else know your departure and arrival times, your route, and the location of your overnight accommodation if you are going to your route vicinity the night before your survey.
- Bring a cell phone for emergencies, but remember that more remote routes may not be within range of your cell phone service.
- Consider bringing an assistant. In the event of an emergency, two heads are better than one. As a fringe benefit, with your encouragement, an assistant may become a future BBS participant.

**Respect all private property and laws.**