ONTARIO BREEDING BIRD ATLAS

GUIDE FOR PARTICIPANTS

March 2001

Ontario Breeding Bird Atlas
A project sponsored by:

Federation of Ontario Naturalists

Bird Studies Canada / Études d'Oiseaux Canada

OFO

Environment Canada / Environnement Canada
Canadian Wildlife Service / Service canadien de la faune

Ontario Ministry of Natural Resources

Funding for the project to date has been provided by:

Environment Canada: Canadian Wildlife Service

Environment Canada: Science Horizons Program

Ontario Ministry of Natural Resources: Science Development & Transfer Branch

Ontario Ministry of Natural Resources: Species at Risk Project, Ontario Parks

Government of Ontario through the Ministry of Citizenship, Culture and Recreation, Volunteer @ction.online Program

Human Resources Development Canada

Volunteer Action / Bénévole

ESRI Canada

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PROJECT OVERVIEW

Welcome to Ontario's second Breeding Bird Atlas, scheduled to run from 2001- 2005. It follows on the highly successful first atlas that was carried out from 1981-1985. The Atlas's goal is to provide an up-to-date assessment of the distribution, relative

abundance and status of the birds that breed in the province.

The basic field work for this atlas is similar to that in the first atlas. The province is divided up into 10-km squares and 100-km blocks based on the Universal Transverse Mercator (UTM) grid. Atlassers are asked to do field work in selected squares or blocks to find as many breeding species as possible in each, and to record the evidence of breeding for each species. In addition, those atlassers who are willing and able are asked to carry out a series of Point Counts in each square, to estimate the relative abundance of species. If any rare or colonial species are found, details are requested so they can be entered into the rare breeding bird data base. Ontario Nest Records Scheme cards are also requested for any nests found, especially for nests that can be visited multiple times (to estimate nesting success) or for poorly known species.

For administration, the province is divided into 47 regions, each with a Regional Coordinator (RC) who organizes volunteers and provides information and data packages, and to whom results should be sent. Details on region boundaries and RCs are available on the atlas web page. Data can be submitted either on paper or through on-line entry via the web page. The web page can also be used to download maps of each square, and will present details of data from the atlas as they become available, including comparisons of maps with those from the previous atlas.

This manual contains the details on how to collect data for the atlas. Don't be deterred by what may at first seem like a rather involved procedure. Reading through the manual carefully should clarify things for you. It really isn't complicated once you begin. Thousands of people around the world are taking part in similar ventures and having a good time in the process. Your RC or the atlas office can help with any problems you may encounter.

Data should be submitted by August 31 each year.

Anyone can participate

Although most atlas data will be provided by experienced birders, less-experienced observers can make a valuable contribution so long as they submit only records of which they are certain. During the first atlas, many new birders got involved and developed their skills over the project's 5 years. It is not necessary to take on an entire square; you can help out in a square, and/or participate as a "casual observer", submitting records from anywhere in the province. Again, during the first atlas, some avid atlassers submitted records from dozens and even hundreds of squares over the 5-year period. Atlas workshops will be given in many regions across the province, and will include training on data collection, song identification, use of GPS, how to read atlas maps and use UTMs. See our web site (**www.birdsontario.org**) for details on workshops and for links to training web pages.

Thanks very much for your participation in the atlas project! Good luck in your square(s)! Have fun, and tell your birder friends to get involved!

PURPOSE AND APPROACH

The first atlas contributed significantly to our understanding of bird status and distribution in Ontario, and has been used for numerous conservation and protection purposes province-wide. The objectives of the second atlas are to:

1. Repeat the coverage of the first atlas and provide detailed maps of each species' current distribution for comparison to the first atlas.
2. Collect abundance data to allow contour mapping of the relative abundance of each species, and provide a baseline for comparison to future atlases.
3. Record specific information on the location of breeding sites of rare species.
4. Produce a published book and database available for research and conservation purposes.
5. Get people out into the field where they can enjoy themselves birding and contribute to an important conservation project.

In terms of its scientific merit, the atlas project will:

1. Provide data on current distribution, and new baseline data on relative densities, which will allow changes in bird populations to be tracked over time.
2. Provide information useful in assessing the conservation needs of particular species.
3. Serve as reference information for environmental impact assessments.
4. Help select species which may serve as indicators of changing environmental quality.
5. Help determine the relative value of individual parks and other protected areas for maintaining biotic diversity.
6. Compile extensive data on the breeding locations and status of rare species.
7. Facilitate an evaluation of the effects of forest management on birds in Crown Forests of Ontario.

SCOPE

For the purpose of the project, Ontario has been divided into 10-km "squares"and 100-km "blocks" (Figure 1). Our goal is to provide adequate coverage of every 10-km square in southern Ontario, and of every 100-km block in northern Ontario. Data will be recorded on a 10-km basis wherever possible in the north.

The province has also been divided into 47 regions (see Figure 2). Each region has a Regional Coordinator (RC), often assisted by a Regional Coordinating Committee, and most of your contact with the project will be through your RC. Regional boundaries correspond very roughly to municipal boundaries. A list of RCs is provided in Appendix B and on the web page, or is available from the atlas office.

Briefly, volunteer participants are asked to spend time in at least one 10-km square, listing bird species present and recording evidence for breeding on a preprinted data form. They are also given the option of collecting information on the relative abundance of species in their square by doing Point Count surveys. The atlas will be the summation of the information collected in thousands of such squares over a five-year period.

Atlassers can take responsibility for covering one or more particular squares, but are also encouraged to provide data from any squares anywhere in the province, even if visited only briefly.

Atlassers often comment on the pleasure of gaining intimate knowledge of the birds and habitats in their assigned squares, and may gain insight into bird behaviour and the composition of bird communities. The thorough coverage of squares required by atlassing may reveal rare species or extensions and retractions of range that would otherwise go undetected.

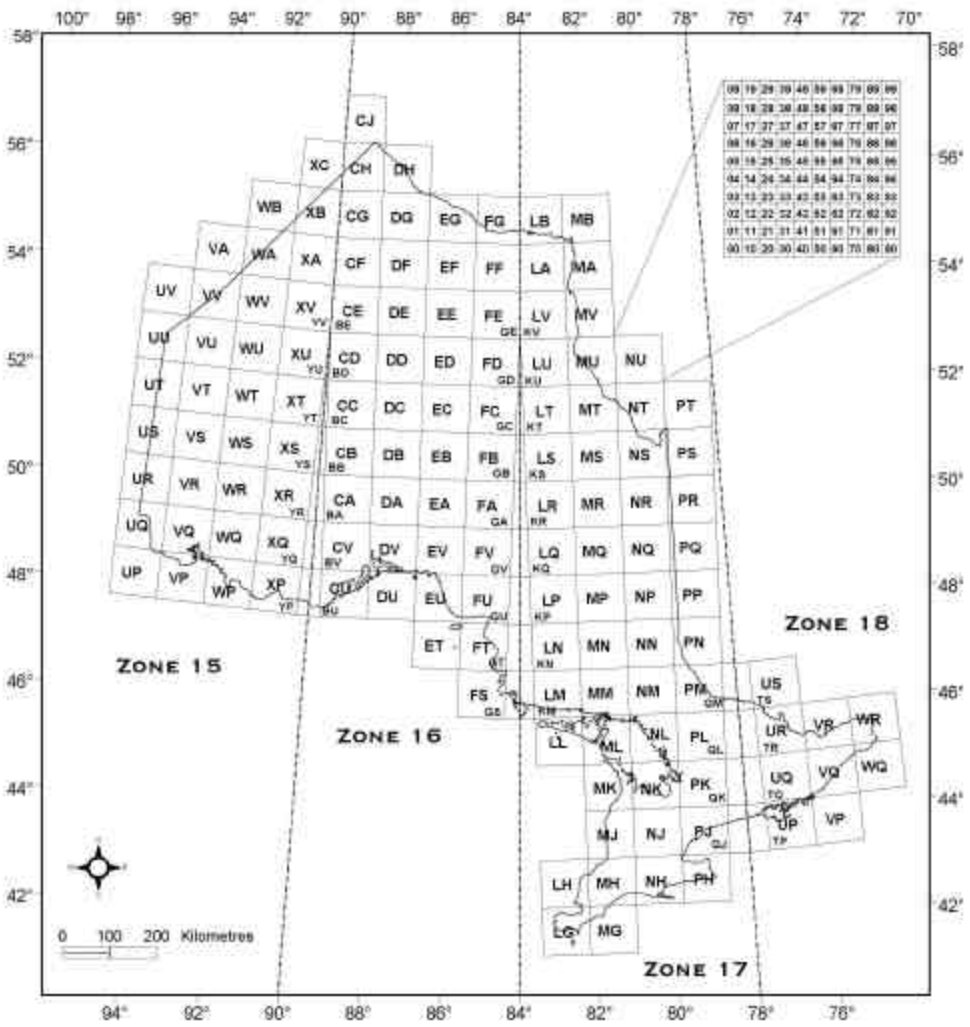

Figure 1. Atlas zones, blocks and squares.

GETTING STARTED

Registration forms

To submit data to the project, you will need an Atlasser ID number. If you have already registered on the atlas web page, you will receive a completed Registration form containing your Atlasser ID number. If you aren't yet registered, you will get a blank Registration form from your RC. You should either register on the web page or complete the form and mail it to the atlas office, and we'll provide you with an Atlasser ID number.

Obtaining materials

Atlassing will be greatly simplified by contacting your RC. Your RC can:

1. Explain more about the project to you, and suggest ways in which you can contribute, given your skills and the time you have available.

2. Direct you to squares which have not been assigned, or in which additional help is needed.

3. Provide you with an Atlasser's Kit containing:

- Map of the square(s)
- Regional map
- Participant's guide
- Breeding Evidence Data Forms
- Point Count Data Forms (optional completion)
- Rare/Colonial Species Data Forms (for use if needed)
- A Regional/Square Summary Sheet
- Atlasser registration form
- Atlasser ID card
- Atlasser notice for car dashboard
- Ontario Nest Records Scheme (ONRS) Cards (optional completion)
- ONRS Coding Card (for habitats and 4-letter species codes)

Atlassers will need to have their Atlasser's kit, plus a pencil and eraser, binoculars and compass with them in the field. A Global Positioning System (GPS) Unit will also be very useful, but is not required. See the web page for more on GPS units.

All participants will receive a **Regional/Square Summary Sheet** that includes:

- The list of species reported in the square and region during the first atlas.
- Breeding dates for each species: a guideline as to when the species most frequently breeds in the region.
- The number of roadside and off-road Point Counts that should be done for the square (in case Point Counts are going to be done).
- For squares with few or no roads, a habitat breakdown of the square to help you select representative Point Count locations.

MAPS

You will receive a map of your adopted 10-km square and a map of your atlas region. It is also feasible to print a colour map of every square in the province from the Atlas web page. If you wish to use other topographic maps, please use the more recent North American Datum (NAD) 83 and not the old NAD 27 maps because the square boundaries have shifted since the last atlas, and the block names have changed. The NAD is always provided on topographic maps, usually in small print at the bottom of the map.

Your square code is determined by ZONE, BLOCK and SQUARE (see Figure 1). For example, the square 17MH42 is in ZONE 17, BLOCK MH and SQUARE 42.

Zone Line Areas

The Universal Transverse Mercator (UTM) grid system for Ontario is shown in Figure 1. On the UTM grid, three zone lines divide the province of Ontario. Zone lines are the boundaries of the zones that occur every 6 degrees across Canada. The area immediately to either side of a zone line is called the zone line area and makes the designation of some squares slightly more complicated. Atlassers in zone line areas will have odd-shaped "squares". Coverage targets in these odd-shaped squares are the same as other squares. If you have any questions, ask your RC.

Boundary squares

If your square crosses a border into an adjacent state or province, you should cover only the Ontario portion of the square.

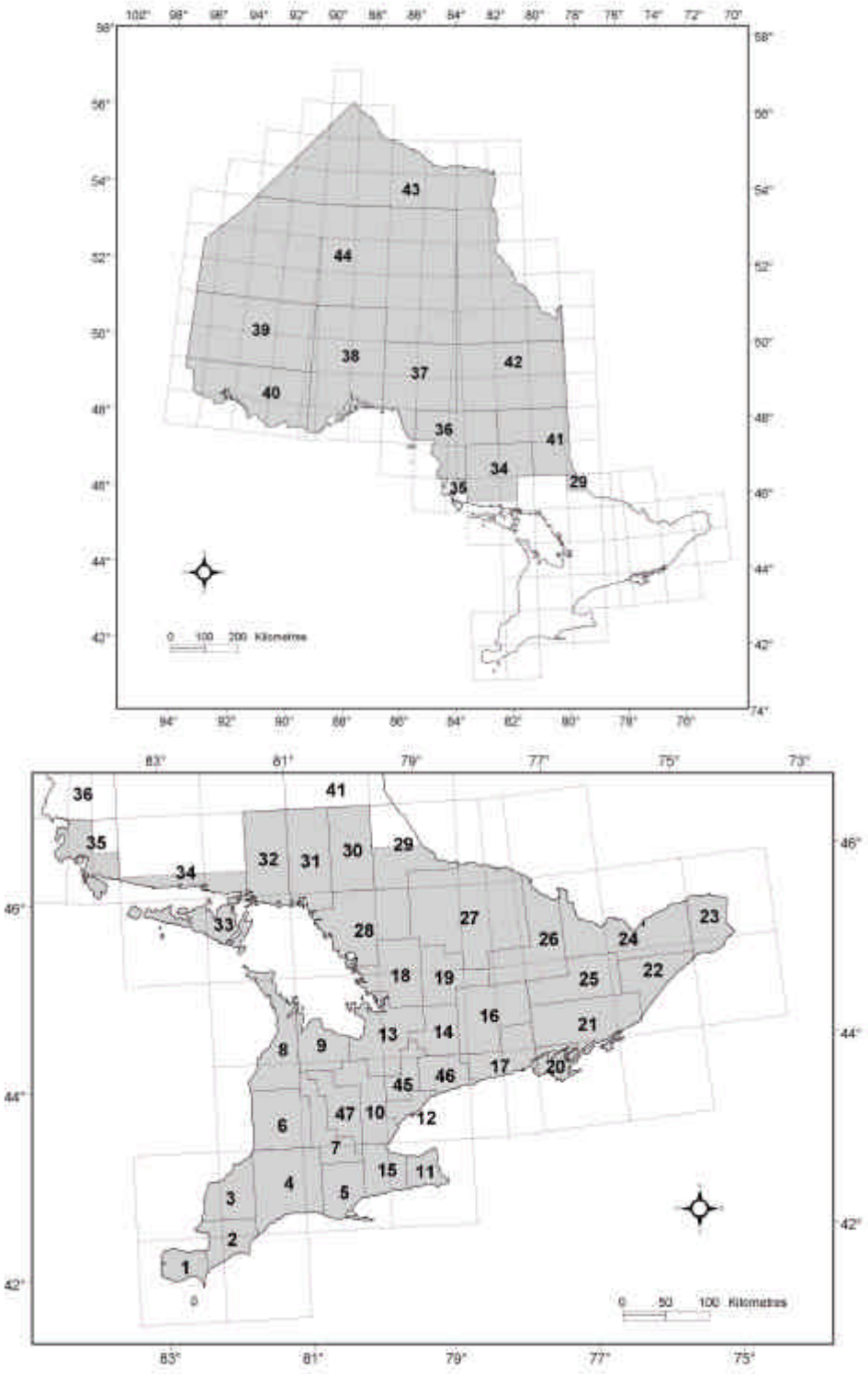

Figure 2. Atlas regions in southern and northern Ontario.
See Appendix B for a list of Regional Coordinators.

COLLECTING ATLAS DATA

It is best to familiarize yourself with the square by studying the square map and noting the different habitat types before making detailed observations. You can obtain adequate coverage most quickly by sampling all of the different habitats rather than by trying to cover the entire area of your square. Atlassing visits should be carried out primarily during the main breeding season of late-May to early July, but also outside of this period for certain species (e.g. February-March for Great Horned Owls) and by making dusk and night visits for twilight and nocturnal species. More details on when and how to look for the more elusive species will be provided in the newsletter and on the web site.

Submitting data

There are two options for submitting data to the atlas:

1. Submit your completed scannable data forms. See instructions below.
2. Enter your data on-line via the web page. Even if you plan to enter your data via the web page, we recommend that you use the computer "scannable" forms provided to record your field data. The forms closely resemble the data entry page, so it will be easier to input data from the form than directly from your notebook. To enter data online, see the instructions on the web page. If you are entering data on-line, you do not need to submit the paper data forms, but you should keep them for reference, at least until the atlas project is completed.

Completed data forms should be sent to RCs by August 31 each year, and entry of data to the web page should be complete by the same date.

About Scannable Forms

All of the atlas data forms are designed to be "scanned" and "read" by computer. Although computer technology has come a long way since the first atlas, computers are still not as good at reading handwriting as people are, so it is especially important that you fill out the forms neatly and follow the instructions – otherwise your data may be incorrectly read. It is best to use one copy of each form as a "field" form on which you can spill your coffee, squash mosquitoes, etc, and on which you don't have to be as neat. It is best to use pencil for field forms to facilitate erasing. At home, transcribe your field form onto a clean version to be submitted for scanning. On the version to be submitted, use a dark pencil, or pen, and write neatly and clearly with all numbers completely inside the boxes (without touching the edges). Use block capitals, with one character per space. Atlas staff will review input to ensure that the computer has correctly read all data, but your care in recording will greatly reduce errors, their workload, and atlas costs.

BREEDING EVIDENCE

One of your main objectives as an atlasser is to obtain the strongest evidence of breeding for as many species as possible within your square(s). There are four levels of evidence:

1. Species observed in breeding season (no indication of breeding).
2. Possible breeding.
3. Probable breeding.
4. Confirmed breeding.

See the box for details on the kind of evidence required for each of these levels.

CODE	BREEDING EVIDENCE
	OBSERVED
X	Species observed in its breeding season (no evidence of breeding). Presumed migrants should not be recorded.
	POSSIBLE BREEDING
H	Species observed in its breeding season in suitable nesting habitat.
S	Singing male present, or breeding calls heard, in its breeding season in suitable nesting habitat.
	PROBABLE BREEDING
P	Pair observed in their breeding season in suitable nesting habitat.
T	Permanent territory presumed through registration of territorial song on at least 2 days, a week or more apart, at the same place.
D	Courtship or display between a male and a female or 2 males, including courtship feeding or copulation.
V	Visiting probable nest site.
A	Agitated behaviour or anxiety calls of an adult.
B	Brood patch on adult female or cloacal protuberance on adult male.
N	Nest-building or excavation of nest hole.
	CONFIRMED BREEDING
DD	Distraction display or injury feigning.
NU	Used nest or egg shell found (occupied or laid within the period of the study).
FY	Recently fledged young or downy young, including young incapable of sustained flight.
AE	Adults leaving or entering nest site in circumstances indicating occupied nest.
FS	Adult carrying faecal sac.
CF	Adult carrying food for young.
NE	Nest containing eggs.
NY	Nest with young seen or heard.

Breeding Evidence Data Forms

There are separate Breeding Evidence Data Forms for southern Ontario, northern Ontario and the Hudson Bay Lowlands. Your RC will provide you with the form appropriate for your region.

Each atlasser will receive scannable Breeding Evidence Data Forms for each square he/she is allocated, and additional forms for observations in squares other than those allocated. Additional forms can be obtained from your RC as needed.

An example of a completed data form is shown in Figure 3. Breeding evidence should be recorded in **pencil** on the field form, because when upgrading breeding evidence you may need to erase the previously recorded code. All other information can be entered in pen.

Ontario Breeding Bird Atlas

Breeding Evidence Form - North

Zone	Block	Square	Region	Year
17	V	P58		2001

Atlasser Name: PAT JONES — Atlasser Number: 7682

Additional Observers: BOB BLACK — Atlasser Number (if available): 6631 5

Visit	Mon	Day	Start Time	End Time	Party Hours*
1	5	29	08:00	10:00	2:00
2	6	02	05:30	10:30	5:00
3	6	07	06:00	09:30	3:30
4	6	10	19:00	21:30	2:30
5	6	15	08:00	11:00	3:00
6	7	02	07:00	10:00	5:00
7	7	03	07:15	10:00	2:45
8	7	05	06:40	09:40	3:00
9			:	:	:
10			:	:	:

* Use 24-hr clock. See manual for calculation of party-hours. Record extra visits in notes or on separate sheet. For each species, record visit number when **first** found (use 0 if **only** recorded on casual visits).

Notes/Other Observers:

Rare species forms were completed for the Bufflehead and Bohemian Waxwing.

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Species	1st Visit	Ob.	Po.	Pr.	Conf.
Common Loon	02				FY
Pied-billed Grebe					
Red-necked Grebe †					
American White Pelican †					
Double-crested Cormorant §					
American Bittern	02			T	
Least Bittern †					
Great Blue Heron §	03	X			
Green Heron §					
Turkey Vulture					
Canada Goose	02				NE
Mute Swan					
Trumpeter Swan †					
Wood Duck	03		H		
Gadwall					
American Wigeon					
American Black Duck					
Mallard	01				NE
Blue-winged Teal					
Northern Shoveler					
Northern Pintail					
Amer Green-winged Teal					
Redhead †					
Ring-necked Duck					
Greater Scaup †					
Lesser Scaup					
White-winged Scoter †					
Bufflehead †	02				FY
Common Goldeneye					
Hooded Merganser					
Common Merganser					
Red-breasted Merganser					
Ruddy Duck †					
Osprey					

Species	1st Visit	Ob.	Po.	Pr.	Conf.
White-winged Crossbill					
Common Redpoll					
Pine Siskin					
American Goldfinch	02				FS
Evening Grosbeak	01		S		
House Sparrow					

Additional Species Name	Code	1st Visit	Ob.	Po.	Pr.	Conf.
BOH. WAXWING	BOWA	03			T	

Status Codes

† - Rare species § - Colonial Species

(Please complete relevant sections of rare/colonial species form)

Breeding Codes

OBSERVED:
X - Species observed in its breeding season (no evidence of breeding)

POSSIBLE:
H - Species observed in breeding season in suitable nesting habitat
S - Singing male present or breeding calls heard in breeding season in suitable nesting habitat

PROBABLE:
P - Pair observed in their breeding season in suitable nesting habitat
T - Permanent territory presumed through registration of territorial song on at least 2 days, one week or more apart at the same place.
D - Courtship or display between a male and a female or 2 males including courtship feeding or copulation
V - Visiting probable nest site
A - Agitated behaviour or anxiety calls of an adult
B - Brood Patch on adult female or cloacal protuberance on adult male
N - Nest building or excavation of nest hole

CONFIRMED:
DD - Distraction display or injury feigning
NU - Used nest or egg shell found (occupied/laid during atlas period)
FY - Recently fledged young or downy young
AE - Adults leaving or entereing nest site in circumstances indicating occupied nest
FS - Adult carrying faecal sac
CF - Adult carrying food for young
NE - Nest containing eggs
NY - Nest with young seen or heard

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Figure 3. Three panels of a completed Breeding Evidence Data Form. There was a total of 8 visits to the square in 2001. The 5 Party Hours on Visit 6 resulted from the two observers working together for the first hour and separately for the next two hours. Great Blue Heron was observed in the square, but not at a breeding colony, so was recorded as "X". Breeding evidence for Mallard was first observed on Visit 1 (May 29), and for Canada Goose on Visit 2 (June 2). Note that these were the dates that breeding evidence was first observed – not necessarily the Visits on which breeding was confirmed. Bohemian Waxwing was added to the data form, and Rare/Colonial Species Report Forms were completed for it and the Bufflehead.

Atlassers should have at least 2 copies of the breeding evidence form for each square being atlassed. One should be used as a "field" form and carried with you while atlassing the square. After your last visit to the square each year, all information from the field form should be transcribed onto a clean form (the "record" form). The "record" form is the form that will be submitted to your RC, or from which you enter data via the web page.

Optionally, you may also want to complete a third copy of this form to keep from one year to the next (a "master" form), so you can see what species still need to be found and can track your progress (these data can also be obtained from the web page, once your data have been submitted and entered). Note that the record form that you send in at the end of each breeding season should have the information for ONE BREEDING SEASON only. However, your personally-retained copy of the "master" form may contain data from several years.

At the top of each data form, fill in the square identification (zone, block, square), the region number and the year. Fill in your name and Atlasser Number as well as those of any additional atlassers who worked with you in the square (use the 'Notes' section if more than two people worked with you). Please ask any other atlassers working with you to register, so that we can include their names in the acknowledgements and include them on our mailing list if they'd like to receive newsletters.

Make sure that you record the date of each visit in the appropriate columns, including the start time. Please record these at the **beginning** of each visit to the field, so you don't forget. Time should be recorded using a 24-hour clock (e.g., 14:45 instead of 2:45 PM), and can be rounded to the nearest 10 or 15 minutes. "Party Hours" is calculated for each visit by adding the number of hours that each party spends actively birding in the square (a party is either an individual or a group of individuals birding separately). For example, if two people are atlassing together for four hours, and they then split up for the next two hours, the total entered in the column headed "Party Hours" is 8, because (1 party x 4 hrs)+(2 parties x 2 hrs)=8. If more than 10 visits are made to the square, please list the visit number, start time, end time, and party hours in the Notes section of the data form, or on a separate sheet of paper to be sent in with your data form.

Do not report time spent in the square which is spent on activities other than atlassing, even though you may happen to record a few bird species at the same time. For example, if you were driving to work through your square and saw a Tree Swallow enter a nesting hole, you would enter the observation on the data form but would not fill out date, start time, end time or Party Hours.

Notes/Other Observers

A space has been left on the data form in which you can enter additional information relevant to the atlassing of the square, such as extra visits, reference to supplemental data forms submitted, factors affecting the quality of data collected, or records from other observers. Here are some examples of relevant comments:

- Rare/Colonial Species Report forms (see below) were sent to RC re Orchard Oriole and Cerulean Warbler in this square.
- 13 visits were made to this square. Details of the final three visits are recorded on the enclosed sheet of paper.
- Heavy fog encountered on 3 of the 4 visits to this square, severely reducing observation.
- Data on this form do not represent all habitat types – lakes were not visited though there were several of them in the square.
- John Smith provided the record of confirmed Baltimore Oriole (NU).

1st Visit

Record, in the "1st Visit" column, the number of the visit on which you first record breeding evidence for every species in the square. The visit number is taken from the "Visit" column on the front of the data form.

If you first record the species as a casual observation (e.g. while driving through the square), record the visit number as '0', using pencil. If you later see the species during a regular atlassing visit, then change this to the appropriate visit number. Do NOT change the visit number if you later upgrade the breeding evidence.

With this information, we can estimate how fast the species list grows with increasing effort. We do not expect everybody to find all of the species in each square, and these data will allow us to compare squares with different amounts of effort. This is especially important for comparison with the previous (or next) atlas, as it is unlikely that all squares will receive exactly the same amount of effort every time.

Please record the visit numbers for all observations on the same day that you first record the species, preferably while you are still in the field. If you wait even one or two days, it becomes much harder to remember which species was recorded on which day.

When visiting the square in subsequent years, you need only record visit number for species you have not previously recorded in the square. Simply enter the number of the visit (starting again at 1 each year) on which each of these species is reported.

Recording Breeding Evidence

There are several categories of breeding evidence within each breeding level (see box). You should familiarize yourself with the codes, categories and levels because you will be using the codes on the data form. The codes are listed in order of breeding evidence, from lowest to highest. The breeding evidence codes are entered on the data form. Some examples of codes are provided in Appendix F. If you have doubts about the appropriate code for a particular observation, ask your RC.

There are separate breeding evidence forms for each of three areas of Ontario: southern Ontario, northern Ontario, and the Hudson Bay Lowlands. Each form lists all of the breeding species that are normally expected in that area. Your RC will supply you with the appropriate form for your region. If you find any species that are not listed on the form, there is space at the end of the list to write those in. The four-letter species codes are provided in Appendix C. (You should complete a Rare/Colonial Species Form for each of the species you write in.)

The four columns following the "1st Visit" column are those in which you record the codes. Each of the four columns is used to record a code from a different level of evidence. The first column, headed **"Ob."** (for species **Observed**) is used to record the code "X" for the level "Species Observed". For example, you would put an "X" in the column headed "Obs" next to the names of species observed in your square which are using your square in the summer, but are probably not nesting there because of a lack of suitable habitat (e.g. foraging gulls or herons). Probable migrants should not be recorded. Only record species detected in their migration period if you observe a higher level of breeding evidence.

The next column, headed **"Po."**, is where you record codes from the "**Possible Breeding**" level of breeding evidence. If you observe a bluebird in an orchard, you would record the code "H" next to the Eastern Bluebird, in the column headed "Po".

The next column, headed "**Pr."**, is one column wide to allow you to enter a one-letter code from the "**Probable Breeding**" level of breeding evidence. If you were to find a Robin building a nest in your square,

you would record the one-letter code “N” in the column headed “Pr.”, next to Robin.

The next column is headed “**Conf.**”, and is two spaces wide so that you can record a two-letter code from the “**Confirmed Breeding**” level of breeding evidence. If, for example, you see a Spotted Sandpiper feigning injury in your square, you would record the code “DD”, next to Spotted Sandpiper.

Strengthening the evidence for breeding

During the course of the 5-year survey, while looking for previously unrecorded species, you should also look for stronger evidence of breeding for previously recorded species.

For example, on your first visit to a square, you may observe a singing Song Sparrow, which you record as 'S' under Possible. If you observe this bird singing in the same location on several subsequent occasions during the breeding season, you would now have 'Probable' evidence, and enter “T” in the Pr column. (You do not have to erase the ‘S’ already recorded in the Possible column.) If later you were to find a Song Sparrow nest with eggs in it, you would fill in “NE” in the column headed “Conf.”. You would then have upgraded the Song Sparrow from "Possible" to “Probable” to the “Confirmed” level of breeding evidence. You should attempt to obtain probable or confirmed breeding evidence for as many species as possible, especially those that are unusual in your region, or were not recorded there on the previous atlas. A species needs to be confirmed as breeding only once in the five years of the atlas for any 10-km square.

You should also upgrade within a level. The categories within each level of breeding evidence are listed in order of their importance. For example, if you had evidence for a “T” for Chipping Sparrow and then found a Chipping Sparrow displaying to another, you would upgrade the evidence by erasing “T” and filling in “D” next to Chipping Sparrow. Make sure that your data form shows the highest breeding evidence observed for each species.

Observers from the first atlas found that it was easier to obtain confirmed breeding records late in the season by observing adults carrying food or seeing fledged young. However, it is still important to do most atlassing early in the season, especially in early June, because many more species are singing and easier to find at that time.

Casual observations

If you happen to casually or incidentally observe breeding evidence for a species in someone else’s square, you can either complete a form (then enter it via the web page or send it to the RC for that region) or you can provide the information directly to the principal atlasser for the square (if you know them) so they can add the record to their own data form. However, if you spend time atlassing in someone else’s square, you should complete a form yourself, detailing dates, times of visits, party hours of atlassing, visit number and breeding evidence. This will ensure we have a complete record of atlassing effort in that square for comparison to future and previous atlases.

HOW MUCH EFFORT?

A visit to any 10-km square by an experienced observer in early June will likely yield 30 to 40 species during the first two hours of observation. From then on the number of additional species discovered during more hours of observation drops quickly.

During the first atlas, experienced observers found about 75% of the species in a square in about 16-20 hours - but 100% of the species were not found in even 200 hours. We have therefore set the minimum effort

for “adequate” coverage at 20 hours per square over the 5 years. This, however, is the **minimum** number of hours that should be spent surveying a square. If you do not know bird songs well, or travel within your square is difficult, you will need additional time to cover the square adequately. During the first atlas, squares in southern Ontario averaged over 50 hours of coverage. It is important that you spend at least 20 hours actively atlassing your square, and ensure that all habitats within the square are properly covered. If you do Point Counts (see below), you can include the time doing them in your total hours of coverage.

Some squares have relatively little land in them to be atlassed, because much of the square is water, or land that is outside the province. However, unless the available land area is less than 10% of a square, you should spend the full minimum of 20 hours atlassing the square. If the available land area is less than 10% of the square, you can reduce the number of hours, as long as all habitat types in the area are covered. Be sure to note that the square is a partial square, and the size of the area available for atlassing on the “Notes” section of the data form.

Since a minimum of only 20 hours is normally required to reasonably cover a 10-km square, a number of squares could be surveyed by one atlasser over the 5 years of the project, or even in one season. As our aim is to atlas all squares and blocks in the province, please consider covering a different square each year rather than duplicating effort within any one square. Your RC, the web page, and the quarterly newsletter will provide you with information on which squares are yet to be covered. Experience from the first atlas indicates that regions on the Canadian Shield will need considerable outside help.

HOW MANY SPECIES?

The number of species breeding in a square will vary considerably, depending upon the variety and extent of habitats in the square. On average, most squares in southern Ontario tend to support about 100 breeding species, so you should expect to find 75-100 species. Fewer species may be expected in areas where little natural habitat remains (e.g., Essex and Kent) and in the far north (Hudson Bay Lowlands). However, these numbers should be taken only as rough guidelines -- one of the objectives of the atlas is to find out how many species are supported in each square.

POINT COUNTS

One of the objectives of the atlas is to generate maps showing the relative abundance of each species across its range. These data will add greatly to the value of the atlas. Along with numerous conservation and research applications, the data will provide a basis for comparison to future atlases. Examples of the types of maps we are aiming for, in this case from Britain, can be seen on the atlas web page (www.birdsontario.org).

After considering methods tried by other atlases around the world, and testing methods during a pilot season in 2000, we decided that Point Counts would be the best method of collecting abundance information for Ontario.

Appendix D provides a summary of the point count methodology. A more thorough explanation of the methodology is provided below.

The Point Count is very simple. You stand at an appointed location (known as a “station”) for a specified time period (5 minutes for the atlas) and record all the birds seen and heard during that interval. In normal atlassing, you will often stand

quietly in the woods listening for several minutes, and the Point Count is really just a standardized way of doing that.

The majority of birds are usually heard rather than seen, especially in forested sites, so people who do Point Counts need to know the songs of most birds in their square. Because many people are not experienced doing Point Counts, and therefore may at first be intimidated by them, **doing Point Counts is not required in all squares and is completely optional for all volunteer atlassers**. However, we encourage all atlassers who know birds by song reasonably well to try doing at least a few (see information for less-experienced birders, below). Even if you couldn't do them in the first year of the atlas, you may find that with study of bird songs and more time in the field, you will be able to do Point Counts before the end of the atlas period.

In southern Ontario, we are aiming to get at least 25 Point Counts in a minimum of 25% of the squares in each region, and in some regions we are aiming for 50% or 100% of the squares (see Figure 4). In squares where 25 Point Counts will not be feasible, even a few Point Counts will add to the value of the data in the region. Your RC will contact you to see if you are willing and able to undertake Point Counts to help meet regional targets. If you agree to do Point Counts and later find that you cannot, be sure to let your RC know right away so the Point Counts in the square can be reassigned.

Getting the required number of Point Counts done in so many squares will be a big job. Once you have completed 25 Point Counts in your square(s) and your square is adequately covered, please consider helping out elsewhere in your region or in other regions with fewer atlassers. Some RCs will be forming special teams of people to ensure that sufficient Point Counts are done in their region. If you're interested in this, let your RC know.

Information for less experienced birders

We hope that less-experienced birders who know birds by song reasonably well will try some Point Counts to test their skill level. If you hear a bird you don't know during your Point Count, you can track it down and identify it at the end of the 5 minute count period. If you often find there is more than one bird song per station that you don't know and must chase, you should not submit your data, and should consider learning more bird songs before doing further Point Counts.

RCs and the atlas web page have lists of training materials to help you learn bird songs. We recommend attending any of the atlas workshops where training on Point Count methods will be provided – check the workshop schedule in the newsletter and the web page. The best method of all is to go out in the field with someone who knows their bird songs and ask a lot of questions. Otherwise, it's a matter of studying recordings, practice, building on the birds you know, and chasing down the ones you don't. It's rewarding to learn bird songs, and will help you become a better birder and a more efficient atlasser.

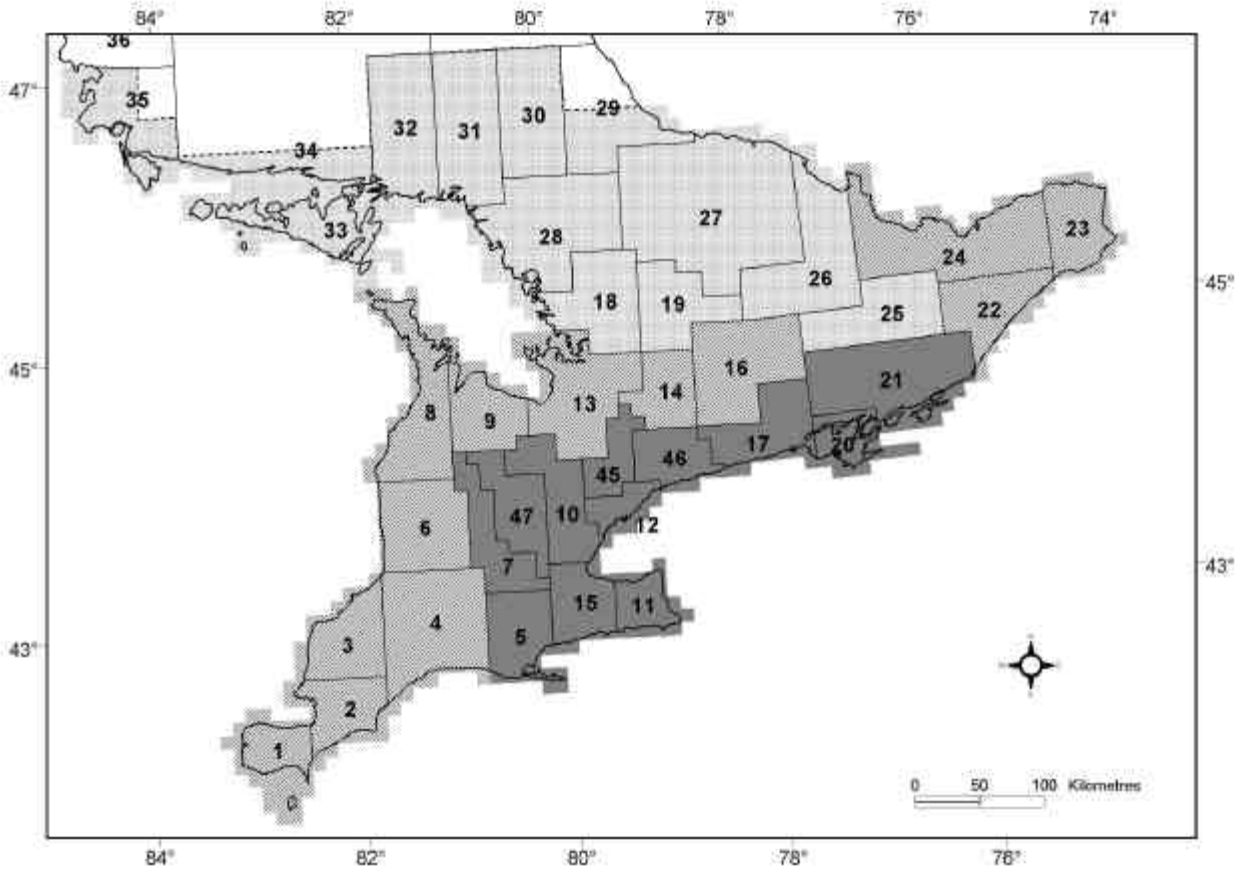


Figure 4. The atlas' goal is to get at least 25 point counts done in all squares in the shaded regions of the "Golden Horseshoe", in at least 50% of squares in the darkly shaded area and in at least 25% of squares in the lightly shaded area. See text for northern targets.

How many Point Counts, and where?

Although any number of Point Counts in a square will be useful, 25 Point Counts is the target minimum number to be done in each square. (In the north, the target minimum is 25 Point Counts in one 10-km square plus a further 25 Point Counts elsewhere in the 100-km block.) In the south, most of the 25 count stations will be along roads, but some will be off-road (see below).

To find out how many road-side and off-road Point Counts should be done in your square, look at the Regional/Square Summary Sheet.

Your atlas map shows 50 randomly located points on roadsides in your square, from which you choose the lowest numbered stations up to the required number. (E.g. if you are to do 20 on-road counts, choose numbers 1-20). In some cases, points may be on busy roads or in other locations unsuited to Point Counts. You should eliminate these from consideration, preferably before you start doing any Point Counts, and add locations with higher numbers to make up your total. For example, if your initial set of points is 1-20, but stations 15 and 18 are unsuitable, add numbers 21 and 22 to make up your total to 20. Remember that some locations which are unsuitable for much of the day may be fine in the early morning, especially on weekends, before traffic noise builds up.

Although there are 50 Point Count locations marked on your map, it is important to follow the procedure given here to ensure that count stations are randomly distributed, and not biased towards especially productive habitats or a particular portion of the square. The extra stations on the maps are provided to ensure there are enough to replace unsuitable stations, and because some atlassers may wish to do more than the minimum number. If you decide to do extra stations, use the same procedure as above to choose them (e.g. if you decide to do 30 instead of 20, select stations 1-30.)

Once you have selected your on-road stations, you can cover them in any sequence that seems efficient. For example, you may wish to cover all those in one corner of the square on a day when you are doing general atlassing in that area. Doing the Point Counts early in your atlassing is a good way to get an overview of the birds and habitats in your square.

Because each Point Count lasts 5 minutes, it may be possible to do all 25 in one morning in a square with good road access. However, it isn't necessary to do them all at once. In fact, we would prefer to have them spread out a little over the season, and even over several years if you are going to keep returning to a square.

Off-road Point Counts: squares with road access

To find the minimum number of off-road counts needed in your square, see the Regional/Square Summary Sheet. Most off-road counts are to be done in forest interior habitat, i.e., at least 100m from the edge of the woodland. In a few squares with large amounts of other habitat (e.g. marsh or swamp), you may be asked to do a small number of off-road Point Counts in those other habitats.

Within each specified habitat, you choose the location of the off-road Point Counts. Please select these locations ahead of time so you are not tempted to put in a station simply because there is an interesting bird in a particular spot. You could preselect the approximate location for your Point Count on your map, or could decide to walk a preselected distance from a landmark that you can easily recognize (e.g. 150m down the path from the edge of the woodland). Try to spread off-road stations around the square. There can be more than one station in a single woodlot, but make sure all points are at least 300 m apart. If you can't access interior forest in the square, pick the largest woodland available and put the station(s) as far from the forest edge as possible.

Off-road Point Counts: squares with little or no road access

In squares with little or no road access, you will be provided with information on the proportion of the square (and, in the north, the 100-km block) made up by each major habitat (e.g. 75% forest, 15% bog, 10% coastal marsh). You should attempt to spread Point Counts throughout the square as access allows, and should try to sample the habitats proportionately to their availability (e.g. 75% of Point Counts in forest if 75% of the square is forested). You can ignore habitats making up less than 10% of the square. We recognize, of course, that limitations of access may make it impossible to follow these guidelines. It is more important to complete the target number of Point Counts than it is to sample all habitats and portions of the square, but do try to meet the sampling goals to the extent feasible.

How to do a Point Count

Before heading into the field, be sure you have Point Count forms. The Point Count forms will be read by computer, so have to be filled in neatly. So it is best to transcribe data from your field form to a clean form that will be submitted for scanning, or you can enter the data directly from the field form via the web page. While these forms may at first seem awkward to use in the field, they help remind you of the data that

must be recorded, and you will save a lot of time in not having to write species names into a field notebook. If you do want to use a notebook, be certain to record date, time, point location and habitat (for off-road points) as we cannot process your data without them.

Once you arrive at your Point Count station, make sure the weather is suitable for doing a Point Count before proceeding (see guidelines in next section). Double check that you are as close as possible to the location marked on the map. The UTM Easting and Northing of the roadside stations is provided in a table on the 10-km square map, so people with GPS units can ensure they are very close to the specified location. If you are doing an off-road station, you will have to record UTM (see below), so either use a GPS to do this while you are on the spot, or mark the location on your map as closely as possible for later look-up of the UTM. You might give each off-road station a number for your own use in keeping track of which station is which. (If you use a number, use one greater than 50, to avoid confusion with on-road stations.)

The Point Count consists of standing at a specific point and counting all birds seen and heard during a 5 minute period. You should turn occasionally to look in all directions, but should stand at the same spot throughout the count. The 5 minute period should be adhered to exactly (to the second). We recommend using an egg-timer or other device that can be set to beep after 5 minutes. A watch with a second hand is less satisfactory because it requires frequent checking, which distracts from your birding, and you are more likely to go over 5 minutes. While it may be tempting to add a new species to your Point Count list that was detected moments after the end of the count, please do not succumb. Point Counts are certain to miss a lot of species, and their absence is a true indicator that those species are relatively uncommon in your area.

When you detect a bird, record it on your field sheet as being less than 100m ("<100m" on form) or more than 100m (>100m) from the Point Count station. Every bird you see or hear, including birds flying over the station, should be allocated to one or other of these two categories. If a bird moves from over 100m away to less than 100m away (or vice versa), record the bird only in the "<100m" category. Recording the distance provides information important to data analysis, but often worries counters because of concern that they have misclassified their observations. The rule of thumb is to simply do the best you can--and that will be fine. We recommend that, prior to doing Point Counts, you measure 100m distances in various locations/habitats to get a good feel for what 100m actually looks like. For roadside situations, you might measure the distance between telephone poles and use this distance in your determinations. Most birds are clearly less than or more than 100m away, so it is easy to categorize them. If you are unsure which category particular birds are in, feel free to note the location and check out the distance after the 5 minute count is over. If you are unsure of the distance to a particular bird, it is OK to simply guess. It is more important that every bird observed during a Point Count is recorded than it is that every one is perfectly categorized by distance.

You should record every bird you see or hear, even if at a great distance. This is so that we get a sufficient sample of birds such as raptors, which are not frequently detected by Point Counts. The only exception is for a bird seen or heard from more than one station - do not record it on both. Usually you should record it only for the station at which it was first observed. However, if it was first observed more than 100m away, and at the next station it came within 100m, record it at the second station only.

Count all birds observed during the Point Count, including fledged young and birds flying over, regardless of distance. This includes birds that you don't think are

breeding in the square. If you encounter a flock too large for counting all individuals, simply estimate the number of birds and, if you have the chance, count them more precisely after the 5 minute period is over. To quickly estimate the size of a flock, we suggest counting off groups of 5 birds for a flock of less than about 40, by 10s for a flock of less than 100, and by 25s for less than 250.

Before you leave the Point Count station, be sure you have recorded all the relevant information (location, date, start time) and, if you are doing an off-road station, that you have recorded the habitat (see details below).

When to do Point Counts

Season: Point Counts should be done in the peak breeding season for the bulk of species. This is largely June in southern Ontario, but counts are acceptable between May 24 and July 10 in southern Ontario, and between June 1 and July 10 in northern Ontario as far north as the Hudson Bay Lowlands. For 2001, the dates for the Hudson Bay Lowlands will be June 1 through July 17. Those dates will be reviewed after the first year.

Because different species breed on different schedules, you are encouraged to spread out Point Counts throughout the peak season in each square. However, if you don't have the luxury of doing so, because you are doing a blitz or can only do Point Counts on a few occasions, it is quite acceptable to do all the Point Counts in a square on one day or on two consecutive days.

Time of Day: Point Counts can be done anytime between dawn and 5 hours after dawn. Dawn is at about 5am in southern Ontario. It is not necessary that counts be done only in the very early morning – in fact some birds aren't active until an hour or two after dawn. In the peak season of early June, most species are quite active until about 5 hours after dawn.

Weather: Counts should **not** be done if it is raining, there is thick fog, or if winds are greater than 19 km/hr (i.e. >3 of the Beaufort scale, which is enough to constantly move leaves or small twigs and to extend a light flag).

How to record habitat

You are asked to record habitat at all off-road stations, using the simple coding system shown in the box on page 18. You are not required to do this for on-road counts, but if you are willing to do so, the data will be useful. Although we can often evaluate the habitat based on satellite maps, your information is important so that we can check their accuracy (as they are often imperfect, especially where habitat has changed).

Please record the dominant 1 or 2 habitats within the 100m circle around the sample point. The main habitats can be recorded on your form using a 2-character code, of which the most important for Point Counts are listed in the box on page 18. The first character is the "Class", and consists of a single capital letter (A-H), corresponding to the major habitat classes. The second character is the subclass ("Sub." on the data form), consisting of a single number (1-7). As most off-road Point Counts will be in woodland, you may need to use only the woodland categories, A1, A2 or A3. For on-road counts you may want to record 2 categories (e.g. if habitat is different on each side of the road). However, do not record a second category unless the second habitat covers at least 25% of the area within the 100m circle (excluding the road itself). If the habitat does not fit within one of the category codes shown below, or if you would like to record additional detail (such as whether the forest has been recently burned or logged) you may do so in the "Structure" and "Modification" boxes on the data form. These boxes will allow you to fill in up to four additional codes. Please see the ONRS Coding Card for additional habitat codes and instructions.

HABITAT CODES: Habitat class is shown by letters A-H, and subclass is shown by numbers 1-7.

A Woodland
- 1 Deciduous
- 2 Coniferous
- 3 Mixed (>10% of each A1 and A2)

B Grassland, Agriculture and Shrubland
- 1 Grassland
- 2 Shrubland
- 3 Planted grass
- 4 Tilled crop
- 5 Overgrown/old field
- 6 Orchard
- 7 Vineyard

C Tundra
- 1 Dry vegetated tundra/meadow
- 2 Wet vegetated tundra/meadow
- 3 Mix of wet and dry tundra
- 4 Rock/gravel
- 5 Polygonal tundra

D Human Sites
- 1 Urban
- 2 Rural

E Wetlands
- 1 Sedge/grass
- 2 Reeds/cattail
- 3 Shrubs/bog/fen

F Wetlands with mainly open water
- 1 Sheet water (shallow/impermanent)
- 2 Pond/dugout (<0.25 ha)
- 3 Small lake (0.25-5 ha)
- 4 Lake (>5 ha)
- 5 Stream (< 3 m wide)
- 6 River (> 3 m wide)
- 7 Ditch/canal with water

G Saltwater coastal sites
- 1 Marine shore
- 2 Estuarine shore
- 3 Brackish lagoon shore

H Rock
- 1 Cliff
- 2 Scree/boulder slope
- 3 Rock outcrop
- 4 Quarry
- 5 Mine spoil/slag heap

Completing the Point Count Data Form

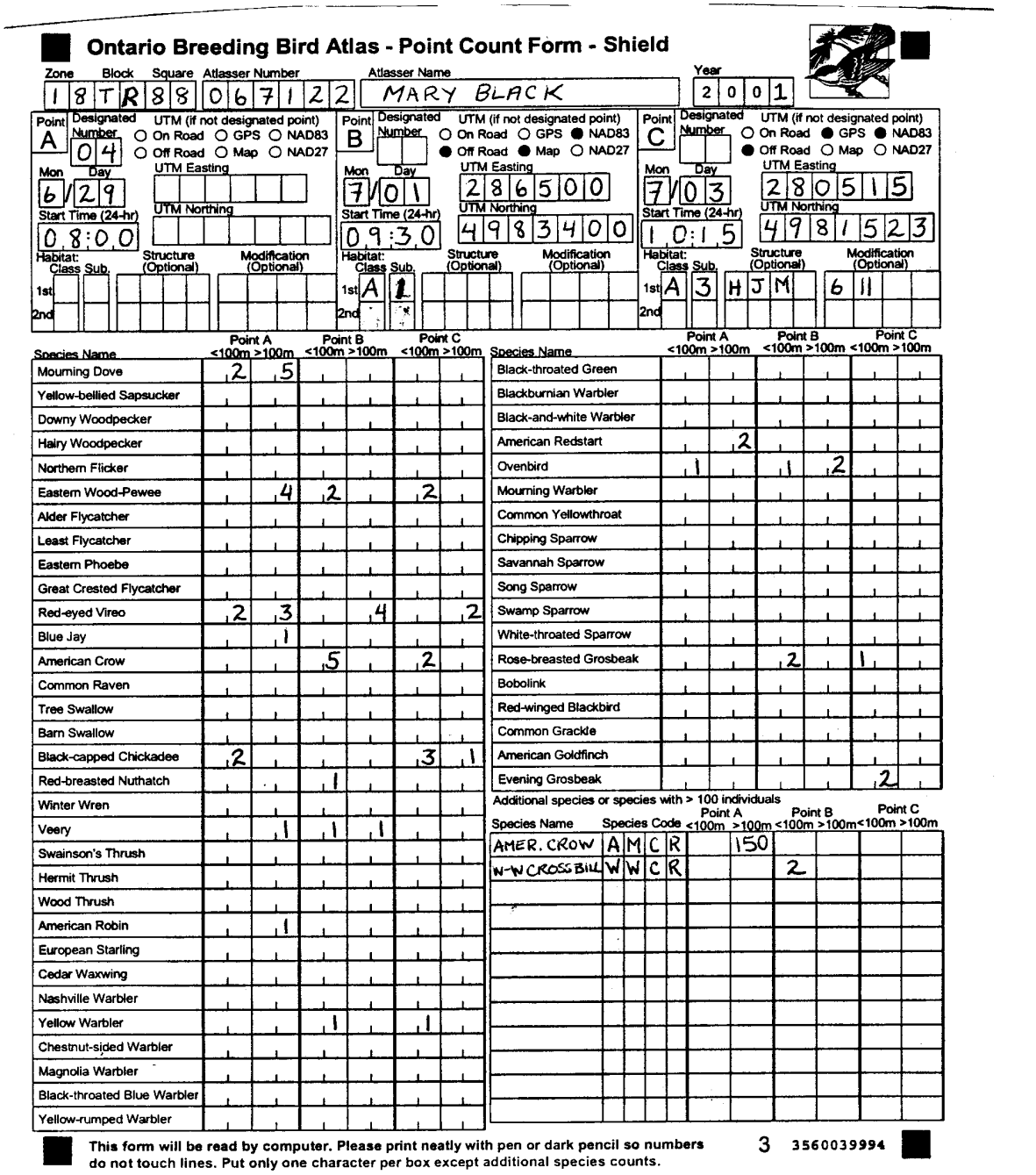
Separate Point Count forms have been prepared for different areas of Ontario, listing the species most likely to be detected on Point Counts in that area. Make sure that you have the most appropriate form for the region, or you may find that you need to write in most of the species at the end.

Area	**Atlas Region Number**
Carolinian	1-5, 11, 15
South-central	6-10, 12-14, 16,17, 20-24, 45-47
Shield	18, 19, 25-35
Boreal	36-42, 44
Hudson Bay	43

Although the Point Count Data Forms may look intimidating (Fig. 5), they are actually fairly simple to fill out. Each side of the form has space for 3 Point Counts (labelled A,B,C on the front, and D,E,F on the back), with the boxes at the top matching the columns below.

If you are surveying one of the numbered road-side points marked on your map, all you need to fill out at the top of the form is the “Designated number” (1 to 50), the date, and the start time (use a 24-hour clock). You are not required to record habitat for on-road stations (although we welcome the data if you do so).

If you are doing an off-road Point Count, or had to make up your own point locations because your square did not have a map of designated points, you should not record a Point Count number here (even if you used a number to keep track of it for yourself). Instead, you must fill in the off-road/on-road bubble, as appropriate, and the complete



Ontario Breeding Bird Atlas - Point Count Form - Shield

Zone 18 Block TR Square 88 Atlasser Number 067122 Atlasser Name MARY BLACK Year 2001

	Point A	Point B	Point C
Designated Number	04		
UTM (if not designated point)	On Road ○ GPS ○ NAD83 ○ Off Road ○ Map ○ NAD27	On Road ○ GPS ● NAD83 ● Off Road ● Map ○ NAD27	On Road ○ GPS ○ NAD83 ● Off Road ○ Map ○ NAD27
Mon / Day	6 / 29	7 / 01	7 / 03
UTM Easting		286500	280515
UTM Northing		4983400	4981523
Start Time (24-hr)	08:00	09:30	10:15
Habitat: Class Sub. 1st		A 1	A 3
Habitat: Class Sub. 2nd			
Structure (Optional)			H J M
Modification (Optional)			6 11

Species Name	Point A <100m	Point A >100m	Point B <100m	Point B >100m	Point C <100m	Point C >100m
Mourning Dove	2	5				
Yellow-bellied Sapsucker						
Downy Woodpecker						
Hairy Woodpecker						
Northern Flicker						
Eastern Wood-Pewee		4	2		2	
Alder Flycatcher						
Least Flycatcher						
Eastern Phoebe						
Great Crested Flycatcher						
Red-eyed Vireo	2	3		4		2
Blue Jay		1				
American Crow			5		2	
Common Raven						
Tree Swallow						
Barn Swallow						
Black-capped Chickadee	2				3	1
Red-breasted Nuthatch			1			
Winter Wren						
Veery		1	1	1		
Swainson's Thrush						
Hermit Thrush						
Wood Thrush						
American Robin		1				
European Starling						
Cedar Waxwing						
Nashville Warbler						
Yellow Warbler			1		1	
Chestnut-sided Warbler						
Magnolia Warbler						
Black-throated Blue Warbler						
Yellow-rumped Warbler						

Species Name	Point A <100m	Point A >100m	Point B <100m	Point B >100m	Point C <100m	Point C >100m
Black-throated Green						
Blackburnian Warbler						
Black-and-white Warbler						
American Redstart		2				
Ovenbird	1		1	2		
Mourning Warbler						
Common Yellowthroat						
Chipping Sparrow						
Savannah Sparrow						
Song Sparrow						
Swamp Sparrow						
White-throated Sparrow						
Rose-breasted Grosbeak			2		1	
Bobolink						
Red-winged Blackbird						
Common Grackle						
American Goldfinch						
Evening Grosbeak					2	

Additional species or species with > 100 individuals

Species Name	Species Code	Point A <100m	Point A >100m	Point B <100m	Point B >100m	Point C <100m	Point C >100m
AMER. CROW	AMCR		150				
W-W CROSSBILL	WWCR			2			

This form will be read by computer. Please print neatly with pen or dark pencil so numbers do not touch lines. Put only one character per box except additional species counts.

3 3560039994

Figure 5. An example of a completed Point Count Data Form. Station A is at designated Point Count number 4, so UTM and habitat information are not required. Station B is off-road, and the atlas map was used to designate UTM (so UTM is precise to 100m, and NAD83 is indicated). Station B is in deciduous woodland (Habitat Class A, subclass 1). Station C is off-road, and a GPS was used to designate UTM (so it is precise to 1m). The habitat at C is mixed woodland, and the atlasser has opted to provide additional detail on the mixed woodland in the Structure and Modification sections. The Additional species section is used for records of 150 American Crows (observed at >100m) on Point A, and 2 White-winged Crossbills (observed at <100m) on Point B. Four-letter species codes are from Appendix C or the ONRS Coding Card .

UTM Easting and Northing coordinates. These are most easily determined using a GPS unit while you are on site (please try to use NAD83 if possible), but you can also work out the coordinates from your map (see details below). If you use a GPS unit to determine the UTM coordinates, fill in the "GPS" bubble. If you get the UTM coordinates from the map, fill in the "Map" bubble. Fill in the "NAD 27" or "NAD 83" bubble as appropriate. Your atlas map is in NAD 83. If you are using a 1:50,000 topographic map to determine UTM, check whether the map is NAD 27 or NAD 83 in the text in the margin of the map.

Remember to complete the habitat section for off-road stations (see pages 17-18, or the ONRS Coding Card for codes and instructions).

Next, record your count for each bird species in the appropriate rows and columns. Please enter only one digit in each space--which allows recording of a maximum of 99 birds at each point. If you saw more than 99 of any species (e.g., a large flock flew by, or you were near a colony), or if you record any species that are not on the form, record these in the 'Additional Species' section. Here, you can write as many digits as you need in the larger boxes provided (but make sure the digits are separated from one another and don't overlap edges of the box). Fill in the 4-letter code for these additional species (check your ONRS Coding Card or the web page. Otherwise, write in the full name, and we will supply the code later. If you require space to add more species, please provide the details on a separate piece of paper to be sent in with the form.

For any Point Count station that was not marked with a number on your map (including all off-road stations), you will have to provide UTM Eastings and Northings, precise to at least 100 m (see below).

DETERMINING UTM EASTINGS AND NORTHINGS

You will need to record UTM Eastings and Northings for off-road Point Counts and for the locations of Rare or Colonial species (see below).

If you have a GPS unit, record the location while you are on site. Set the device to NAD83, and record all 6 digits of the Easting and all 7 digits of Northing. (If your GPS unit gives you 7 digits for Easting, do not record the initial "0".) If you do not have a GPS unit, mark your location on the map as accurately as possible and figure out the UTM designation later, following the instructions below.

Look at Figure 6 for an example of how to designate UTM Eastings and Northings. The 1-km and 500m "Northings" are shown along the left border of the map, and 1-km and 500m "Eastings" are shown along the bottom. The 1-km designations always end in "000", and 500m designations end in "500". There are 100m "tick" marks between the 500m and 1-km grid lines, but these are not numbered. If they were, they would end in "100", "200", "300", "400", and "600" to "900". To get the closest 100m Easting for a location, place a ruler from top to bottom on the map to determine which 100m tick mark on the bottom of the map is closest to the location. Record the 6 digit Easting of that 100m tick mark. To get the closest 100m Northing, place the ruler horizontally across the map in the same manner. On Figure 6, the "X" is at Easting 560700, and Northing 4811800.

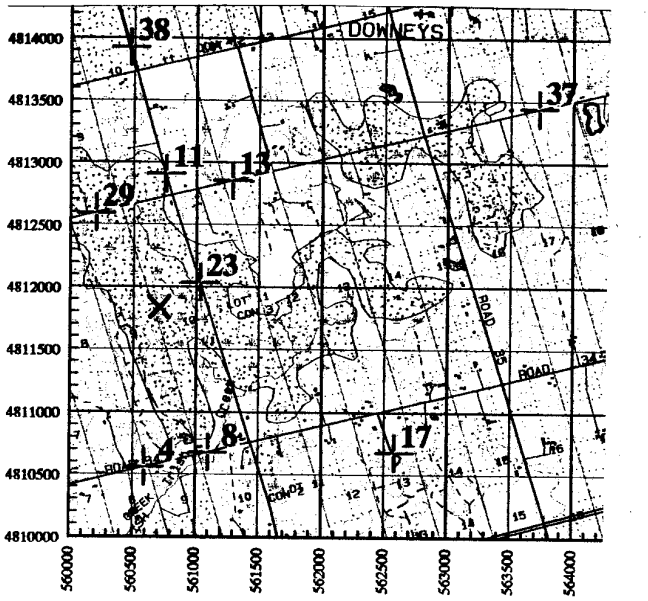


Figure 6. Part of an atlas 10-km square map. The "X" is at Easting 560700 and Northing 4811800.

ATLASSING IN NORTHERN ONTARIO

Northern Ontario will be covered on the basis of 100-km blocks (see Figs 1 and 2). Within each block, data should be recorded on a 10-km square basis whenever possible. Therefore, you should still fill in a single data form for every 10-km square in which you have observations. However, if you cannot pinpoint some of your sightings to a 10-km square, a data form for the 100-km block can be completed. To do this, enter only the zone and block codes in the square designation on the data form.

100-km blocks provide a vast area to cover, necessitating detailed planning prior to a visit. Habitats of interest may be much farther apart, bird life more thinly distributed, and travel conditions more primitive, all necessitating a far longer period of atlassing in order to obtain adequate coverage.

Adequate coverage of a 100-km block in the north is defined as:

- 50 hours of data collection, **and**
- 50 Point Counts within the block, **and**
- adequate coverage of at least one 10-km square (i.e., 20 hours of coverage and 25 Point Counts). The 25 Point Counts and 20 hours of atlassing in the 10-km square are included in the 50 of each required for the block.

These are the minimal criteria for adequate coverage. However, we hope to collect considerably more data than this in most blocks – particularly those with road access. The more data the better, because so little is known of northern bird distribution and abundance. Where feasible, RCs will be trying to have more than one 10-km square per block covered adequately.

To best represent the birds in a block, survey locations must be carefully selected to include the greatest variety of habitats present. This increases the likelihood of finding those species with specific habitat

requirements. RCs in northern regions will have habitat maps and habitat breakdowns for each block and square to help them organize coverage in each block.

A booklet entitled "Atlassing in remote northern Ontario" is available from northern RCs or from the atlas office. Anyone interested in data collection in remote northern Ontario should obtain a copy of this booklet, which will provide more information on northern habitats, and on working in remote areas.

COVERAGE PRIORITY

Because we are asking atlassers to carry out several tasks, we provide the following guidance on the priority you should place on each activity.

1. Find breeding evidence for as many species as possible in the square.
2. Do 25 Point Counts (if you are doing them)
3. Upgrade breeding evidence for as many species as possible to Probable Breeding
4. Upgrade breeding evidence for as many species as possible to Confirmed Breeding
5. Conduct extra Point Counts if desired.

For northern Ontario, the priority should be:

1. Adequately cover one 10-km square within the 100-km block (20 hours and 25 Point Counts).
2. Find breeding evidence for as many species as possible in the 100-km block.
3. Do 25 Point Counts in other portions of the block.
4. Upgrade breeding evidence for as many species as possible to Probable Breeding.
5. Upgrade breeding evidence for as many species as possible to Confirmed Breeding.

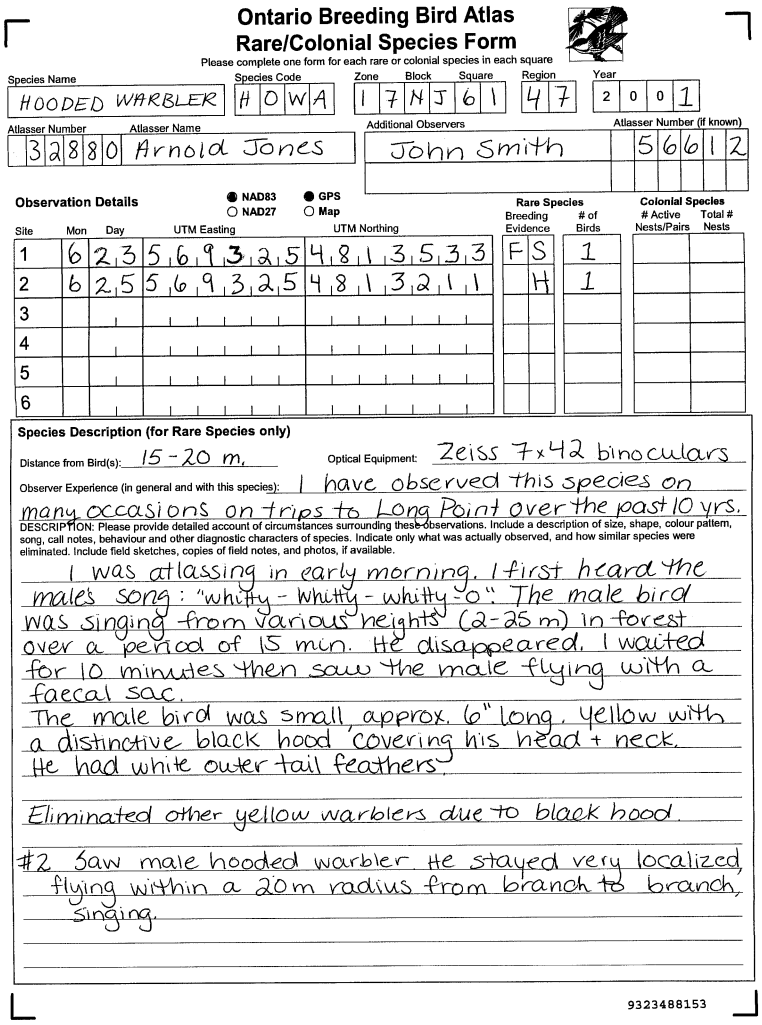
RARE OR COLONIAL SPECIES

Provincially rare breeding species are marked with a "†", and Colonial species are marked with a "§", on your Regional/Square Summary Sheet, on your Breeding Evidence data form, and in Appendix C. Regionally rare species are marked with a "‡" only on your Regional/Square Summary Sheet. **You are asked to complete a Rare/Colonial Species Report Form for all records of "†" and "‡" birds and for nesting colonies of colonial species.**

The Rare/Colonial Species Report Form (Figure 7) used to report data for these species will be scanned into the computer, so please print neatly with a dark pen or pencil and put one character in each box so that the characters do not touch the lines. The rest of the form will be read by RCs and the atlas' Rare Species committee, so please write neatly for them too!

Please report the location of rare and colonial species as precisely as possible. See instructions above for completing the UTM Eastings and Northings. Be sure to fill in the bubbles to indicate whether you used a GPS unit or a map to determine UTM, and whether you used NAD27 or NAD83. If possible, please use NAD83. Provide a complete written description and map of the location, stating as precisely as possible the exact location of the observation and how to reach it.

If you find more than one site for a particular rare or colonial species in a 10-km square, you can document all of them on the same form. There is space in the table to report 6 sites. If you find more than 6 sites in the square, simply list the relevant information for each additional site in the "Additional Comments" section on the back of the form (or attach additional sheets).



Ontario Breeding Bird Atlas
Rare/Colonial Species Form

Please complete one form for each rare or colonial species in each square

Species Name: HOODED WARBLER | Species Code: H O W A | Zone: 17 | Block: NJ | Square: 61 | Region: 47 | Year: 2001

Atlasser Number: 32880 | Atlasser Name: Arnold Jones | Additional Observers: John Smith | Atlasser Number (if known): 56612

Observation Details ● NAD83 ○ NAD27 ● GPS ○ Map

Site	Mon	Day	UTM Easting	UTM Northing	Rare Species: Breeding Evidence	Rare Species: # of Birds	Colonial Species: # Active Nests/Pairs	Colonial Species: Total # Nests
1	6	23	569325	4813533	FS	1		
2	6	25	569325	4813211	H	1		
3								
4								
5								
6								

Species Description (for Rare Species only)

Distance from Bird(s): 15-20 m. | Optical Equipment: Zeiss 7x42 binoculars

Observer Experience (in general and with this species): I have observed this species on many occasions on trips to Long Point over the past 10 yrs.

DESCRIPTION: Please provide detailed account of circumstances surrounding these observations. Include a description of size, shape, colour pattern, song, call notes, behaviour and other diagnostic characters of species. Indicate only what was actually observed, and how similar species were eliminated. Include field sketches, copies of field notes, and photos, if available.

I was atlassing in early morning. I first heard the males song: "whitty - whitty - whitty-o". The male bird was singing from various heights (2-25 m) in forest over a period of 15 min. He disappeared. I waited for 10 minutes then saw the male flying with a faecal sac.
The male bird was small, approx. 6" long. Yellow with a distinctive black hood covering his head + neck. He had white outer tail feathers.

Eliminated other yellow warblers due to black hood.

#2 Saw male hooded warbler. He stayed very localized, flying within a 20m radius from branch to branch, singing.

9323488153

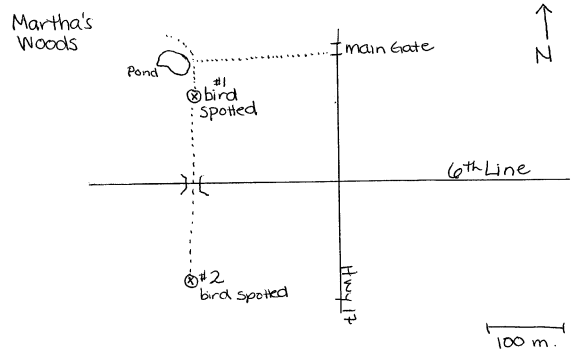
Ontario Breeding Bird Atlas -- Rare/Colonial Species Form -- page 2

Site Description

Description of Habitat: mature oak-maple forest

Description of how to access the site(s): Enter Martha's Woods through the main gate - located on Hwy. 17, 200m north of 6th Line. Follow the main trail west 150 m. to the pond. The trail splits. Turn left (south). The bird was located 45 m. down the trail. #2, 300m S, across 6th Line.

SKETCH MAP OF LOCATION (to assist in relocating breeding territory/colony). For multiple breeding sites or colonies, sketch each location separately in space provided or on a separate sheet.



Additional Comments (e.g. land ownership, nest contents)

Site #1 The land is owned by Wellington Conservation Authority.

Site #2 The land is owned by Eva Rhubur, who gave me permission to atlas. Tel. number 519-555-1026.

OFFICIAL USE ONLY: Accept as is ____; Reject record ____; Change breeding code to ____; Accept as released/escaped ____

Remarks

0327488158

Figure 7. An example of a completed Rare/Colonial Species Report Form. Note that the same form was used for Hooded Warblers found at two sites within the square. The "Description" section is required only for rare species, and only for the first site of each rare species in the square.

Rare Species

If you find breeding evidence for a rare species, please contact your RC right away. The RC might help in verifying the sighting or in completing the data form. You should use the Rare/Colonial Species Report Form if you find breeding evidence for any species not listed on your Regional/Square Summary Sheet or Breeding Evidence Data Form, or for any species marked with a "†" or a "‡"**.**

In order to safeguard species at risk, any sensitive information (e.g., precise locations of rare species) will be kept strictly confidential, according to the policies of MNR's Natural Heritage Information Centre, which houses Ontario's data on species at risk.

If the atlas is to reach its full potential as a conservation tool, it is extremely important that you report all occurrences of rare species. If you are particularly concerned about protecting information for a species you have found, contact the Atlas Coordinator at the Atlas office, who can discuss the situation with you to determine how to proceed.

Colonial Species

Colonial species are marked with a "§" on the Regional/Square Summary Sheet, on your Breeding Evidence Data Form and in Appendix C. Breeding colonies of colonial species (but not reports of colonial breeders seen away from colonies) should also be documented on Rare/Colonial Species Report Forms. Fill in one form per species, including multiple sites for a species on the same form. Colonial species are sensitive to disturbance at the colony, so you should estimate the number of nests from a distance without entering the colony.

You do not need to record Cliff Swallow colonies of fewer than 8 nests, or Bank Swallow colonies of fewer than 100 nests.

For colonial species, you do not need to complete the "Description" portion of the form.

These numbers will be used in producing maps of relative abundance of these colonial species.

SURVEYING PUBLIC AND PRIVATE PROPERTY

In your Atlasser Kit, is an atlasser I.D. card, which will identify you as a volunteer collecting data for the atlas. The card has contact information for the atlas office. Please fill in the name and phone number of your RC.

The card will give you free access to Provincial Parks for day trips to collect atlas data, and, if you make arrangements with the park ahead of time, will also allow you to camp free of charge. See the web site for more information. Similar arrangements are being sought for Conservation Areas and national parks -- see the web site for updates if you plan to visit such areas.

Before entering private property, you must ask permission from the landowner. The Atlasser Kit also has a flyer explaining the atlas. If you show the flyer and explain to the landowner the nature of the project and who is sponsoring it, in most cases permission to enter onto the property will be granted. During the first atlas, we experienced few problems in this regard. In fact, many landowners were quite interested and were very cooperative. Remember that access during the early morning should be arranged ahead of time.

Your Atlasser Kit also contains a sign you can put on the dash of your car. It states that you are collecting data for the atlas and gives contact information for the atlas office in case people have questions.

The Ontario Provincial Police have been advised that atlassers will be active for the

years 2001-2005, and have been provided with an example of the Atlas ID card. If the OPP should question you on your activities, please show them the atlasser ID card. They can contact the atlas office for further details.

SAFETY

It is always wise to inform people of where you will be working each day, and that is especially true if you will be working off-road. If you will be working in remote areas, or expect to be off-road for much of the time, we recommend that you work with a friend. Taking along a less experienced birder is a good safety measure, and it can be a valuable learning experience for that person. Take along a compass and your map, and a GPS unit if you have one.

If atlassing in "Bear Country", contact the local MNR office for advice, or see the pamphlet "Living with Black Bears in Ontario: a guide to co-existing" available at: http://www.mnr.gov.on.ca/MNR/pubs/pubmenu.html

Remember that atlassing season is also bug season, so always go prepared. For information on Lyme disease see http://www.cma.ca/cmaj/vol-162/issue-11/1567.htm.

For more on West Nile Virus, see web site: http://www.hcsc.gc.ca/hpb/lcdc/publicat/info/wnv_e.html.

ONTARIO NEST RECORDS SCHEME (ONRS)

Information about the nests of birds is useful for studies of breeding success, nesting biology and breeding distribution. Such studies are complementary to the objectives of the Atlas program. Information about all nests discovered should be recorded on ONRS cards.

By using care and judgement a brief nest examination is not likely to cause any harm or lead to nest desertion. However, the value of any nest record is greatly enhanced by the knowledge of nest contents.

Nest record cards are provided in your Atlasser's Kit, and additional copies are available from your RC or from George Peck or Mark Peck, Ontario Nest Records Scheme, Ornithology/CBCB, Royal Ontario Museum, 100 Queen's Park, Toronto, Ontario, M5S 2C6. Telephone 416-586-5523, Email address: markp@rom.on.ca . In southern Ontario, for Tree Swallow (in boxes), Barn Swallow, American Robin, Eastern Bluebird (in boxes), European Starling, Red-winged Blackbird and Common Grackle there are now more than 2,000 cards per species on file. For these species, cards need not be filled out unless multiple visits to nests are possible. Multiple visit cards for all species are extremely valuable as they allow researchers to track breeding success. Cards filled out on poorly known or rare species are also requested. Observations of breeding (e.g. a brood of ducklings with a female) may also be recorded on nest cards.

A simple system of designating habitat has been developed for Nest Record Schemes and the Atlas project. The ONRS Coding Card, which explains the method, will be provided in your Atlasser's Kit. That system is to be used to designate habitat for Point Counts, as explained above (pages 17-18).

THANKS VERY MUCH FOR YOUR PARTICIPATION. YOUR CONTRIBUTION IS ESSENTIAL TO THE SUCCESS OF THE PROJECT. GOOD LUCK IN YOUR SQUARE(S) AND HAVE FUN!

APPENDIX A: GLOSSARY

DATUM - Mathematical model used to describe the size and shape of the earth and to reference points on the earth's surface. In North America, two commonly used datums are NAD83 and NAD27. Atlas squares from the first atlas were referenced to NAD27, while the squares and maps for the new atlas are referenced to the new and improved NAD83. As a result, UTM coordinates for points on the ground have generally shifted by about 200m to the north and by about 10m to the east. In addition, the change from NAD27 to NAD83 has brought about a change in the two-letter block names. For these reasons, if you are not using one of the supplied atlas maps, it is imperative that you take note of which datum (NAD83 or NAD27) your map employs.

GPS – Global Positioning System. Hand held navigational device that can pin point locations precise to about 2 m.

MNR – Ontario Ministry of Natural Resources.

NAD83/NAD27 - see entry for datum.

ONRS – Ontario Nest Records Scheme. Run by the Royal Ontario Museum.

RC – Regional Coordinator

UTM – Universal Transverse Mercator System. A coordinate system used to reference points on the earth's surface. The UTM system divides the earth into 60 zones, each 6 degrees longitude in width. There are 4 UTM zones in Ontario (zones 15-18). An extension of the UTM system is the Military Grid Reference System - this is the system of alphanumeric codes used to define 100km blocks and 10km squares for the atlas. Within any given UTM zone, Easting and Northing coordinates are used to designate the precise location of a point.

APPENDIX B: ATLAS REGIONAL COORDINATORS

This list may change over time. Check the atlas web page or contact the Atlas office for a current list.

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APPENDIX C: SPECIES 4-LETTER CODES

RTLO	Red-throated Loon †
PALO	Pacific Loon
COLO	Common Loon
PBGR	Pied-billed Grebe
HOGR	Horned Grebe †
RNGR	Red-necked Grebe †
EAGR	Eared Grebe †
AWPE	Amer. White Pelican †
DCCO	Double-crested Cormorant §
AMBI	American Bittern
LEBI	Least Bittern †
GBHE	Great Blue Heron §
GREG	Great Egret †
SNEG	Snowy Egret †
CAEG	Cattle Egret †
GRHE	Green Heron §
BCNH	Black-crowned Night-Heron †
YCNH	Yellow-crowned Night-Heron †
TUVU	Turkey Vulture
SNGO	Snow Goose §
ROGO	Ross's Goose †
CAGO	Canada Goose
MUSW	Mute Swan
TRUS	Trumpeter Swan †
TUSW	Tundra Swan †
WODU	Wood Duck
GADW	Gadwall
AMWI	American Wigeon
ABDU	American Black Duck
MALL	Mallard
BWTE	Blue-winged Teal
CITE	Cinnamon Teal †
NSHO	Northern Shoveler
NOPI	Northern Pintail
AGWT	Amer. Green-winged Teal
CANV	Canvasback †
REDH	Redhead †
RNDU	Ring-necked Duck
GRSC	Greater Scaup †
LESC	Lesser Scaup
KIEI	King Eider †
COEI	Common Eider †
SUSC	Surf Scoter †
WWSC	White-winged Scoter †
LTDU	Long-tailed Duck †
BUFF	Bufflehead †
COGO	Common Goldeneye
HOME	Hooded Merganser
COME	Common Merganser
RBME	Red-breasted Merganser
RUDU	Ruddy Duck †
OSPR	Osprey
BAEA	Bald Eagle †
NOHA	Northern Harrier
SSHA	Sharp-shinned Hawk
COHA	Cooper's Hawk
NOGO	Northern Goshawk
RSHA	Red-shouldered Hawk †
BWHA	Broad-winged Hawk
RTHA	Red-tailed Hawk
RLHA	Rough-legged Hawk †
GOEA	Golden Eagle †
AMKE	American Kestrel
MERL	Merlin
PEFA	Peregrine Falcon †
GRPA	Gray Partridge
RIPH	Ring-necked Pheasant
RUGR	Ruffed Grouse
SPGR	Spruce Grouse
WIPT	Willow Ptarmigan
STGR	Sharp-tailed Grouse †
WITU	Wild Turkey
NOBO	Northern Bobwhite †
YERA	Yellow Rail †
KIRA	King Rail †
VIRA	Virginia Rail
SORA	Sora
COMO	Common Moorhen
AMCO	American Coot
SACR	Sandhill Crane
AMGP	Amer. Golden-Plover †
SEPL	Semipalmated Plover
PIPL	Piping Plover †
KILL	Killdeer
AMAV	American Avocet †
GRYE	Greater Yellowlegs
LEYE	Lesser Yellowlegs
SOSA	Solitary Sandpiper
SPSA	Spotted Sandpiper
UPSA	Upland Sandpiper
WHIM	Whimbrel †
HUGO	Hudsonian Godwit †
MAGO	Marbled Godwit †
SESA	Semipalmated Sandpiper
LESA	Least Sandpiper
PESA	Pectoral Sandpiper †
DUNL	Dunlin †
STSA	Stilt Sandpiper †
SBDO	Short-billed Dowitcher †
COSN	Common Snipe
AMWO	American Woodcock
WIPH	Wilson's Phalarope †
RNPH	Red-necked Phalarope †
PAJA	Parasitic Jaeger †
LIGU	Little Gull †
BOGU	Bonaparte's Gull
RBGU	Ring-billed Gull §
CAGU	California Gull †
HERG	Herring Gull §
GBBG	Great Black-backed Gull †
CATE	Caspian Tern †
COTE	Common Tern §
ARTE	Arctic Tern †
FOTE	Forster's Tern †§
BLTE	Black Tern †§
BLGU	Black Guillemot †
RODO	Rock Dove
MODO	Mourning Dove
BBCU	Black-billed Cuckoo
YBCU	Yellow-billed Cuckoo
BNOW	Barn Owl †
EASO	Eastern Screech-Owl
GHOW	Great Horned Owl
NHOW	Northern Hawk Owl
BDOW	Barred Owl
GGOW	Great Gray Owl †
LEOW	Long-eared Owl
SEOW	Short-eared Owl †
BOOW	Boreal Owl
NSWO	Northern Saw-whet Owl
CONI	Common Nighthawk
CWWI	Chuck-will's-widow †
WPWI	Whip-poor-will
CHSW	Chimney Swift
RTHU	Ruby-throated Hummingbird
BEKI	Belted Kingfisher
RHWO	Red-headed Woodpecker †
RBWO	Red-bellied Woodpecker
YBSA	Yellow-bellied Sapsucker
DOWO	Downy Woodpecker
HAWO	Hairy Woodpecker
TTWO	Three-toed Woodpecker
BBWO	Black-backed Woodpecker
NOFL	Northern Flicker
PIWO	Pileated Woodpecker
OSFL	Olive-sided Flycatcher
EAWP	Eastern Wood-Pewee
YBFL	Yellow-bellied Flycatcher
ACFL	Acadian Flycatcher †
ALFL	Alder Flycatcher
WIFL	Willow Flycatcher
LEFL	Least Flycatcher
EAPH	Eastern Phoebe
GCFL	Great Crested Flycatcher
WEKI	Western Kingbird †

EAKI	Eastern Kingbird
LOSH	Loggerhead Shrike †
NSHR	Northern Shrike †
WEVI	White-eyed Vireo †
YTVI	Yellow-throated Vireo
BHVI	Blue-headed Vireo
WAVI	Warbling Vireo
PHVI	Philadelphia Vireo
REVI	Red-eyed Vireo
GRAJ	Gray Jay
BLJA	Blue Jay
BBMA	Black-billed Magpie †
AMCR	American Crow
CORA	Common Raven
HOLA	Horned Lark
PUMA	Purple Martin
TRES	Tree Swallow
NRWS	North Rough-wing Swallow
BANS	Bank Swallow §
CLSW	Cliff Swallow §
BARS	Barn Swallow
BCCH	Black-capped Chickadee
BOCH	Boreal Chickadee
TUTI	Tufted Titmouse †
RBNU	Red-breasted Nuthatch
WBNU	White-breasted Nuthatch
BRCR	Brown Creeper
CARW	Carolina Wren
BEWR	Bewick's Wren †
HOWR	House Wren
WIWR	Winter Wren
SEWR	Sedge Wren
MAWR	Marsh Wren
GCKI	Golden-crowned Kinglet
RCKI	Ruby-crowned Kinglet
BGGN	Blue-gray Gnatcatcher
EABL	Eastern Bluebird
MOBL	Mountain Bluebird †
VEER	Veery
GCTH	Gray-cheeked Thrush †
SWTH	Swainson's Thrush
HETH	Hermit Thrush
WOTH	Wood Thrush
AMRO	American Robin
GRCA	Gray Catbird
NOMO	Northern Mockingbird
BRTH	Brown Thrasher
EUST	European Starling
AMPI	American Pipit
BOWA	Bohemian Waxwing †
CEDW	Cedar Waxwing
BWWA	Blue-winged Warbler
GWWA	Golden-winged Warbler
LAWA	Lawrence's Warbler †
BRWA	Brewster's Warbler †
TEWA	Tennessee Warbler
OCWA	Orange-crowned Warbler
NAWA	Nashville Warbler
NOPA	Northern Parula
YWAR	Yellow Warbler
CSWA	Chestnut-sided Warbler
MAWA	Magnolia Warbler
CMWA	Cape May Warbler
BTBW	Black-throated Blue Warbler
YRWA	Yellow-rumped Warbler
BTNW	Black-throated Green Warbler
BLBW	Blackburnian Warbler
PIWA	Pine Warbler
KIWA	Kirtland's Warbler †
PRAW	Prairie Warbler †
PAWA	Palm Warbler
BBWA	Bay-breasted Warbler
BLPW	Blackpoll Warbler
CERW	Cerulean Warbler †
BAWW	Black-and-white Warbler
AMRE	American Redstart
PROW	Prothonotary Warbler †
OVEN	Ovenbird
NOWA	Northern Waterthrush
LOWA	Louisiana Waterthrush †
KEWA	Kentucky Warbler †
CONW	Connecticut Warbler
MOWA	Mourning Warbler
COYE	Common Yellowthroat
HOWA	Hooded Warbler †
WIWA	Wilson's Warbler
CAWA	Canada Warbler
YBCH	Yellow-breasted Chat †
SUTA	Summer Tanager
SCTA	Scarlet Tanager
EATO	Eastern Towhee
ATSP	American Tree Sparrow
CHSP	Chipping Sparrow
CCSP	Clay-colored Sparrow
FISP	Field Sparrow
VESP	Vesper Sparrow
LASP	Lark Sparrow †
SAVS	Savannah Sparrow
GRSP	Grasshopper Sparrow
HESP	Henslow's Sparrow †
LCSP	Le Conte's Sparrow
NSTS	Nelson's Sh.-tailed Sparrow
FOSP	Fox Sparrow
SOSP	Song Sparrow
LISP	Lincoln's Sparrow
SWSP	Swamp Sparrow
WTSP	White-throated Sparrow
HASP	Harris's Sparrow †
WCSP	White-crowned Sparrow
DEJU	Dark-eyed Junco
LALO	Lapland Longspur
SMLO	Smith's Longspur
SNBU	Snow Bunting †
NOCA	Northern Cardinal
RBGR	Rose-breasted Grosbeak
INBU	Indigo Bunting
DICK	Dickcissel †
BOBO	Bobolink
RWBL	Red-winged Blackbird
EAME	Eastern Meadowlark
WEME	Western Meadowlark
YHBL	Yellow-headed Blackbird †
RUBL	Rusty Blackbird
BRBL	Brewer's Blackbird
COGR	Common Grackle
BHCO	Brown-headed Cowbird
OROR	Orchard Oriole
BAOR	Baltimore Oriole
PIGR	Pine Grosbeak
PUFI	Purple Finch
HOFI	House Finch
RECR	Red Crossbill
WWCR	White-winged Crossbill
CORE	Common Redpoll
HORE	Hoary Redpoll
PISI	Pine Siskin
AMGO	American Goldfinch
EVGR	Evening Grosbeak
HOSP	House Sparrow

§ - Colonial species
† - Provincially rare species

APPENDIX D: POINT COUNT METHODOLOGY SUMMARY

Doing a Point Count is as simple as standing in one place for 5 minutes and recording all of the birds that you see or hear. If you are able to identify most of the birds in your square by song, we hope that you will try doing some Point Counts, because these will provide valuable data on the relative abundance of birds. However, Point Counts are completely optional for all volunteer atlassers.

How?
The Point Count consists of standing at a "station" and counting all birds seen and heard during a 5 minute period. Record birds as less than or more than 100m from the station.

When?
Counts should be done between dawn and 5 hours after dawn between May 24 and July 10 in good weather.

How Many?
Any number of point counts in a square is useful. In southern Ontario, our target is at least 25 Point Counts in a minimum of 25% of the squares in each region, and in some regions we are aiming for 50% or 100%. In the north, the minimum target is 25 Point Counts in one 10-km square in each 100-km block, plus a further 25 Point Counts elsewhere in the block.

Roadside Point Counts:
Most Point Counts will be along roads. The Regional/Square Summary sheet shows how many road-side and off-road counts should be done in the square. Up to 50 random "designated" roadside point locations are shown on your atlas square map. If you are to do 20 on-road counts, choose numbers 1-20, unless some of these are in unsuitable locations (e.g. too busy), in which case add number 21, 22, etc, as required. Cover them in any sequence.

Off-road Point Counts:
Some habitats, especially forest interior (>100m from an edge), are not well covered on roadsides. The Regional/Square Summary sheet shows the target minimum number of off-road Point Counts in each habitat for your square. Within each habitat, you decide where to put off-road Point Counts, but please select these locations ahead of time, so you are not biased by choosing points based on the birds you find there. Count stations should be at least 300m apart.

Squares with limited road access:
In squares with few or no roads, or squares where roads are not shown on standard maps, you will be provided with information on the proportion of the square (and, in the north, the 100-km block) made up by each major habitat (e.g. 75% forest, 15% bog, 10% coastal marsh). You should try to select Point Counts throughout the square as access allows, and to sample the habitats proportionately to their availability in the square.

Data Recording:
You may record field data on the point count form or in your notebook, but be sure you record all the information. You need to record the date, time, location, and numbers of each species less than or more than 100m from the station. For designated roadside Point Counts, record the Point Count number from the map. For all other points, record the UTM and indicate the habitat type using the simple coding system on the ONRS Coding card. Recording habitat is optional for on-road counts.

Data Submission:
Data should be copied to a clean scannable form for submission, or entered via the atlas web page: <www.birdsontario.org>.

APPENDIX E: ATLAS COMMITTEE STRUCTURE AND MEMBERSHIP

Management Board:
Ric Symmes (Chair), Federation of Ontario Naturalists (FON)
Gregor Beck, FON
Michael Bradstreet, Bird Studies Canada (BSC)
Chris Davies, Ontario Ministry of Natural Resources (OMNR)
Rick Pratt, Canadian Wildlife Service (CWS)
Jean Iron, Ontario Field Ornithologists (OFO)

Technical Committee:
Mike Cadman (Chair), CWS
Ken Abraham, OMNR
Ted Cheskey, FON
Andrew Couturier, BSC
Bill Crins, Regional Coordinator (RC), Peterborough
Erica Dunn, CWS
Charles Francis, BSC
Steve Holmes, Canadian Forest Service
Jon McCracken, RC, Long Point
Mark Peck, Royal Ontario Museum (ROM)
Chris Risley, OMNR
Al Sandilands, ESG International

Significant Species Subcommittee
Ted Cheskey (Chair), FON
Madeline Austen, Environment Canada
Ross James
Al Sandilands, ESG International
Bill Crins, OFO
Bob Curry
Jon McCracken, BSC
Mark Peck, ROM
Don Sutherland, OMNR

Point Count/Sampling Subcommittee
Mike Cadman (Chair), CWS
Andrew Couturier, BSC
Charles Francis, BSC
Erica Dunn, CWS
Steve Holmes, Canadian Forest Service
Jock McKay, University of Waterloo
Bruce Pond, OMNR
Chris Risley, OMNR
Lisa Venier, Canadian Forest Service

Volunteer Committee
Bill Crins (Chair), RC, Peterborough
Debbie Badzinski, BSC
Bob Bowles, RC, Simcoe
Christine Hanrahan, RC, Ottawa
Andrea Kettle, FON
Dave Martin, RC, London
Chris Risley, RC, Peterborough
Ron Tozer, RC, Algonquin

Northern Committee
Ken Abraham (Co-chair), OMNR
Scott Jones (Co-chair), OMNR
Ted Armstrong, OMNR
Nick Escott, RC, Thunder Bay
Don Fillman, CWS
George Holborn, OMNR
Bruce Murphy, RC, Kirkland Lake
Dean Phoenix, OMNR
Nancy Wilson, OMNR

Data Management Committee
Charles Francis (Chair), BSC
Andrew Couturier, BSC
Don Fillman, CWS
Denis Lepage, BSC
Rob Parry, OMNR

Thanks also to the many other people who provided input to these committees and subcommittees.

APPENDIX F: SOME EXAMPLES OF BREEDING CODES.

Below are some examples to serve as guidelines for using breeding evidence codes. The fact that a species has not been know to breed in your region before is not a valid reason for omitting a Possible or Probable. Summering, non-breeding birds should be included, provided there is suitable breeding habitat.

1. Common Loon in basic (winter/subadult) plumage spending the whole summer on a lake or other waters: Observed- X.

2. Common Loon or ducks in alternate (breeding/adult) plumage spending the whole summer on a lake or other waters, but no song, display or broods: Possible-H

3. Double-crested Comorant spending whole summer on a lake with wooded islands or other suitable breeding habitat: Possible-H.

4. Great Blue Heron or similar species seen in a wooded square but where no heronry is known, even if there is a known heronry in a nearby square: Observed- X.

5. Grouse heard drumming: Possible-S. (Probable-T if heard on more than one date in the same place. Probable-D only if actual courtship and display are seen).

6. Rails heard in a marsh on a visit in early breeding season, but not on subsequent visits: Possible-S.

7. American Woodcock “peenting”/ nuptial flights, or Common Snipe “winnowing”/ flights, for three weeks, but then no further signs: Probable-T. (Possible-S if seen or heard only once; Probable-D if actual courtship and display to females seen).

8. Gulls frequenting dumps, ploughed fields, drive-ins, park lakes etc. throughout summer in unsuitable breeding habitat: Observed- X.

9. Woodpeckers drumming: Possible- S if heard in breeding season; Probable-T if heard a week or more apart in same place. (Note: Pileated and Sapsucker can be safely identified by sound alone; other species should be seen).

10. Single Clay-colored Sparrow seen, heard singing or building or occupying a nest (but no second bird ever seen): Probable-N.

Examples were adapted from the New York State Breeding Bird Atlas Handbook for Workers, February 2000.

SOME KEY POINTS

1. Familiarize yourself with your square by travelling through it and noting all the different habitat types.

2. The first priority is to find breeding evidence for as many species as possible in the square.

3. Squares should be surveyed for at least 20 hours over the 5-year period, and longer if possible.

4. Make early- and late-season visits and evening and morning visits in your square.

5. Try to visit all habitats in the square, but be sure to get permission before going on private property.

6. Record all times, dates and number of hours you survey.

7. The second priority, if you are able and willing, is to carry out at least 25 Point Counts in your square. If you know most of your local birds by song, try some Point Counts – any number would be useful.

8. If you don't know your birds well by song, work on that aspect of your skills so you may be able to do Point Counts later in the project. Use the list of materials on the web page or go out with experts whenever you can.

9. The third priority is to upgrade sightings to the highest level of breeding evidence for as many species as possible, especially rare species or species near the edge of their range.

10. Familiarize yourself with all the atlas breeding codes and species codes, and use the appropriate codes when completing forms.

11. Please complete all scannable data forms as neatly as possible, following instructions to be sure your hard-earned data are correctly interpreted.

12. Check to make sure your data are complete and accurate before submitting them to your Regional Coordinator or entering them onto the web page.

13. Rare or unusual sightings should be fully documented on a Rare/Colonial Species Report Form, and the Regional Coordinator should be notified right away.

14. Fill out Ontario Nest Records Cards for all nests, especially those you can visit multiple times, and submit them to the Nest Records Scheme at the Royal Ontario Museum.

15. Please attempt to cover more than one square within the 5-year period.

16. Have fun and get your birder friends involved.

THANKS VERY MUCH FOR YOUR INVOLVEMENT IN THE PROJECT.

Ontario Breeding Bird Atlas

ONTARIO BREEDING BIRD ATLAS GUIDE FOR PARTICIPANTS ADDENDUM

February 2003

Page 7, Definition of "T"

Replace the current definition of "T" with:

> "Permanent territory presumed through registration of territorial song, or the occurrence of an adult bird, at the same place, in breeding habitat, on at least two days a week or more apart, during its breeding season."

Use discretion when using this code. "T" is not to be used for colonial birds, or species that might forage or loaf a long distance from their nesting site e.g. Kingfisher, Turkey Vulture, and male waterfowl.

Page 7, Breeding Evidence Data Forms

A few changes have been made to the Breeding Evidence data forms.

1. *Square name:* We have included a space for you to record a square name on your breeding evidence card. Fill in the name that you use to refer to that square. You are not required to fill in this space, but if you are atlassing a number of different squares you may find it helpful to record a name that will help you quickly identify which square that breeding evidence form is for.

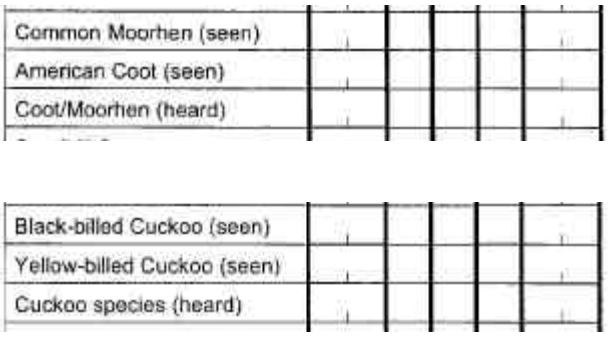
2. *Golden-winged and Blue-winged warbler, Yellow-billed and Black-billed Cuckoo, Common Moorhen and American Coot.* It has become increasingly evident that each of these pairs of species will sing the others' song. This means that song is not a reliable indicator of the presence of these species. This presents a problem for the Atlas. For example, if you were to record any one of these six species based on song this may or may not indicate the presence of this bird. The resulting species distribution maps could then depict nothing more that the distribution of the song-types, rather than the actual species distribution.

As this problem was first identified with Golden-winged and Blue-winged Warblers we modified the 2002 breeding evidence form so that Golden-winged Warbler and Blue-winged Warbler had "(seen)" beside them. Brewster's Warbler was removed and replaced with Blue/Golden-winged Warbler. Note that if you find a Brewster's Warbler you should record it in the Additional Species section at the end of your breeding evidence form and fill out a Rare/Colonial Species report form.

In 2003 the breeding evidence form has been further modified to address the same problem with the Cuckoo species and the Common Moorhen/American Coot. After each of these species "(seen)" has been added, and an additional line has been added to record the species when you only hear the bird. See Figure 1. For the Black-billed/Yellow-billed Cuckoo if you only hear the bird, you should record it under the line that reads "Cuckoo species (heard)". If you were to only hear either a Common Moorhen or American Coot, you should record it under the line that

reads " Coot/Moorhen (heard)". For a more detailed explanation, please see the example provided below.

Figure 1: Modified breeding evidence form, 2003

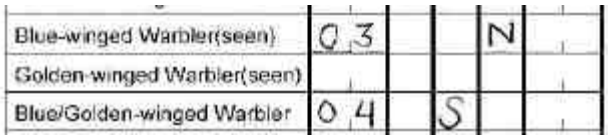


Common Moorhen (seen)					
American Coot (seen)					
Coot/Moorhen (heard)					
Black-billed Cuckoo (seen)					
Yellow-billed Cuckoo (seen)					
Cuckoo species (heard)					

Example

If you only hear either a Blue-winged or a Golden-winged Warbler song, but do not see the bird, mark the breeding evidence code in the line that says "Blue/Golden-winged Warbler". Presumably only the codes "S" and "T" should be used for this line. If you see the bird, record the appropriate breeding evidence code in either the "Golden-winged Warbler (seen)" line or the "Blue-winged Warbler (seen)" line as applicable.

Figure 2:



Blue-winged Warbler(seen)	0 3			N	
Golden-winged Warbler(seen)					
Blue/Golden-winged Warbler	0 4		S		

In this example, the atlasser saw a Blue-winged Warbler nest building on their 3rd visit to the square. On the 4th visit to the square while atlassing a different area, the atlasser heard a Golden-winged song, but did not see the bird.

For each of the six species mentioned, it is preferable to actually see the bird, if you can. Pishing can be an effective way of drawing the bird from cover.

Page 11, Casual Observations

If you happen to casually or incidentally observe breeding evidence for species in a square other than the one you regularly atlas in, you should record your observation(s) on a Casual Observation card (see Figure 3). If you do spend some time actually atlassing in a different square, complete a regular breeding evidence card, recording effort and 1st visit as you would for your own square. For example, if you are on your way to your cottage and see a Redstart carrying food on your lunch stop, note this observation on your casual observation card. If you decide to go for a hike to atlas and spend a few hours or find more than, say, 10 species, record your observations on a breeding evidence card and include the party hours information.

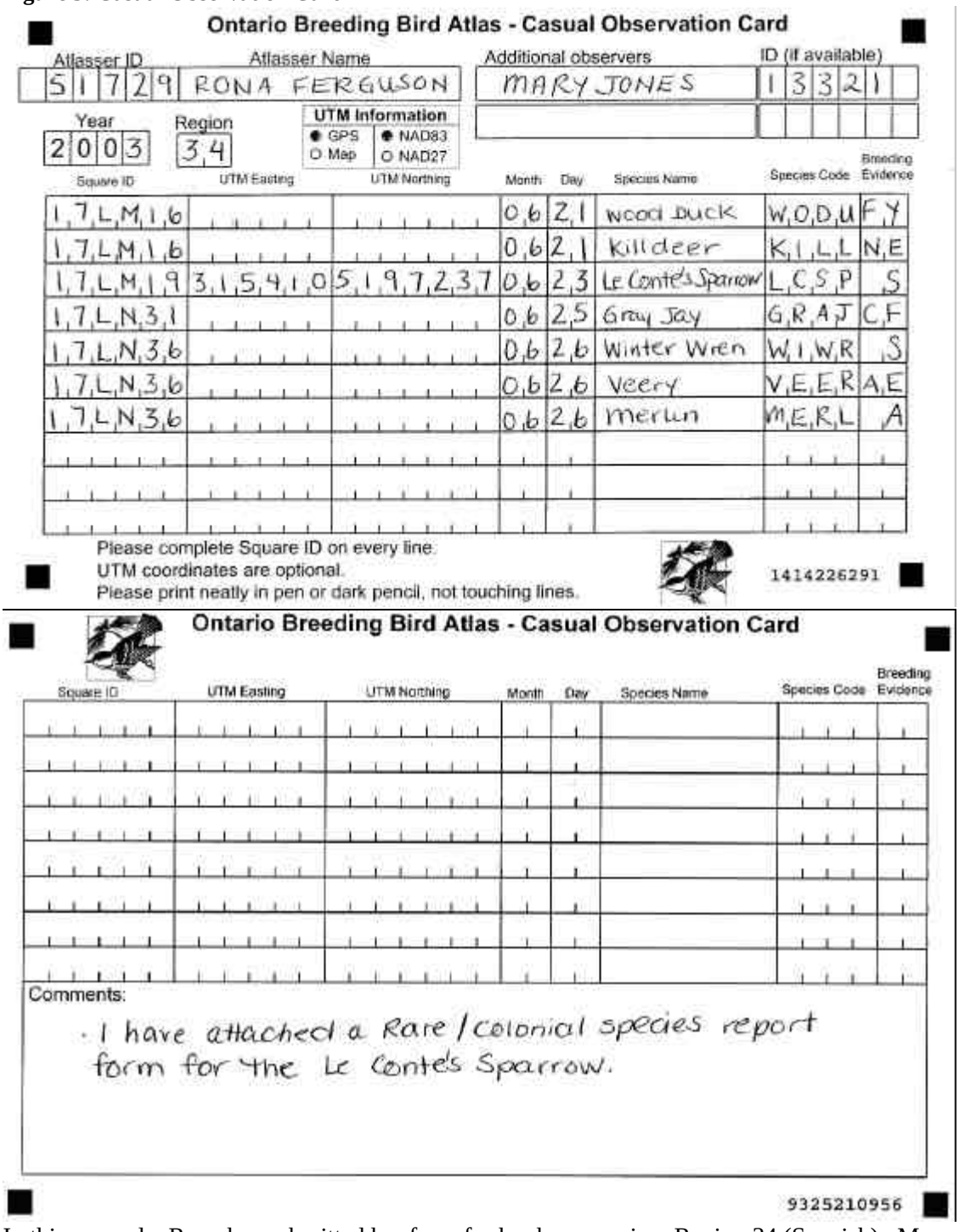
Keep Casual Observation Cards in your car so that they are always ready for you to record observations. If you also keep the Atlas regional map for your region in the car, you will be ready to identify the square, wherever you are in the region. Of course, keep cards handy for when you are on a road trip anywhere in the province.

Once completed, submit this card to the Regional Coordinator for that region (see Appendix for RC changes or see the web page for a current listing). If you prefer, you can enter the observations on-line.

At the top of the card, fill in your name, your atlasser ID number, the year, and the region. If you are atlassing with other people, add their names and atlasser numbers under "Additional Observers". If you provided UTM information, fill in the bubbles to indicate whether you used a GPS unit or a map to determine UTM, and whether you used NAD27 or NAD83. If possible, please use NAD83.

You must fill out the square ID for each record, even if it is the same as the record above. Each complete square ID is made up of a zone, a block and a square number. For example a square that is in zone 17, in block NK and is square 23 will be referred to by the complete square ID 17NK23. If you are submitting casual observations for other squares within your home region, use your region map to determine the square ID. If you are outside of your home region, you can download region maps from the web page (Atlas Data & Maps/Printable PDF Maps). Alternatively, you can determine the zone and block designations by referring to Figure 1 of your Guide for Participants, and determine your square number using a GPS unit. To do this, use the 2nd number of the easting as the first digit of the square number, and the 3rd number of the northing as the second digit. For example, a GPS reading of 2**8**0515 (easting) and 49**7**1503 (northing) will be in the square number 87.

Figure 3: Casual Observation Card



Ontario Breeding Bird Atlas - Casual Observation Card

Atlasser ID: 51729 — Atlasser Name: RONA FERGUSON — Additional observers: MARY JONES — ID (if available): 13321

Year: 2003 — Region: 34 — UTM Information: ● GPS ○ Map — ● NAD83 ○ NAD27

Square ID	UTM Easting	UTM Northing	Month	Day	Species Name	Species Code	Breeding Evidence
17LM16			06	21	Wood Duck	WODU	FY
17LM16			06	21	Killdeer	KILL	NE
17LM19	315410	5197237	06	23	Le Conte's Sparrow	LCSP	S
17LN31			06	25	Gray Jay	GRAJ	CF
17LN36			06	26	Winter Wren	WIWR	S
17LN36			06	26	Veery	VEER	AE
17LN36			06	26	Merlin	MERL	A

Please complete Square ID on every line.
UTM coordinates are optional.
Please print neatly in pen or dark pencil, not touching lines.

1414226291

Ontario Breeding Bird Atlas - Casual Observation Card

Square ID	UTM Easting	UTM Northing	Month	Day	Species Name	Species Code	Breeding Evidence

Comments:

- I have attached a Rare / Colonial species report form for the Le Conte's Sparrow.

9325210956

In this example, Rona has submitted her form for her home region, Region 34 (Spanish). Mary Jones was with her when she made these observations, so Rona has filled in Mary's name and ID number. She has recorded breeding evidence for seven different species in four different squares. She has recorded the square ID and date for each observation. For the observation of the Le Conte's Sparrow she also opted to provide the UTM coordinates. As Le Conte's Sparrow is a regionally rare species, she has also filled out and submitted a Rare/Colonial species report form for this observation.

Page 12, Point Counts

Note: All species that are detected on point counts that are in breeding habitat, in their breeding season, should also be recorded on your breeding evidence form for that square with the appropriate breeding evidence code listed.

Page 22, Rare or Colonial Species

A number of changes have been made to the Rare/Colonial Species report form.

1. *Site*: Fill in a site number, e.g. 1, 2, 3. Use the same Site number for all observations that refer to the same general location, the same colony, or, for birds with large territories, the same pair of birds. For example, if you find 4 singing male Hooded Warblers in the same woods, you can provide a single UTM central to the part of the woods occupied by the birds and write in "4" under "# of adults". Or, you can provide a UTM for each territory, but provide the same site number for each, and write "1" under "# of Adults" on each line. If you see a Red-shouldered Hawk soaring over two different woodlots, provide a UTM for each woodlot, but use the same site number for each record. If you make multiple visits to a site, use the same site number to record the results of each visit.

2. *Rare species, # adults*: Please record the number of adult birds present at the site. Do not include numbers of young/ fledglings. If you do see fledged young on-site, include the number in the description or comments section.

3. *Breeding Evidence Code*: Please ensure that you report the breeding evidence code. A breeding evidence code should be recorded for all records of rare species as well as all reports of breeding colonies.

Page 24, Colonial Species

There is strong evidence that the Chimney Swift is declining in the province. Therefore, it is important to document the locations of swift nesting colonies. For locations where **5 or more** Chimney Swifts are entering a site and exhibiting breeding behaviour, please submit a Rare/Colonial Species Form. The best way to determine if a site is being used for nesting rather than roosting is to monitor when it is being used. If birds are seen flying in and out of the structure throughout the day, nesting is probably occurring. If several birds enter or leave the site only at dusk and dawn, it is likely a roost. The "safe dates" for recording breeding evidence for Chimney Swifts are from May 24- August 5th.

New: Owl Survey Protocol

For the second season of the Atlas we introduced an optional, standardized, approach to owling that we hope will allow us to map the relative abundance of the commoner species across the province. We encourage everyone to give it a try.

We have developed an owl survey manual, owl data cards and a survey and training tape/CD. If you are interested in participating in owl surveys, you can get these materials from your Regional Coordinator.

APPENDIX: CHANGES TO ATLAS REGIONAL COORDINATORS

Please check the atlas web page, or contact the Atlas office for a complete and current list.

Region 6 Huron-Perth
Rob Ridley
c/o Scouts Canada
844 Frederick Street
Kitchener ON N2B 2B8
Tel: 519-742-8325 x.24
ridley@scouts.ca

Region 15 Hamilton
Rob Dobos
21 Sunrise Crescent
Dundas, ON L9H 3S1
(h): 905-628-0297
(w): 905-336-4953
rob.dobos@ec.gc.ca

Region 22 Thousand Islands
Gary Nielsen , Stew Hamill
and Laurie Consaul

Stew Hamill
RR#2
Merrickville, ON K0G 1N0
613-269-3415
shamill@istar.ca

Laurie Consaul
47 Smith Rd.
RR#1
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613-258-5661
lconsaul@cyberus.ca

Gary Nielsen
Leeds County Stewardship
Council
PO Box 605, Oxford Ave.
Brockville, ON K6V 5Y8
613-342-8526
gary.nielsen@mnr.gov.on.ca

The Federation of Ontario Naturalists (FON) protects Ontario's nature through research, education, and conservation action. FON champions woodlands, wetlands and wildlife, and preserves essential habitat through its own system of nature reserves. FON is a charitable organization representing 15,000 members and over 100 member groups across Ontario. For more information, contact: Federation of Ontario Naturalists, 355 Lesmill Rd., Don Mills Ontario, M3B 2W8, Tel: 1-800-440-2366, Web: www.ontarionature.org.

As in the first Ontario Breeding Bird Atlas, Bird Studies Canada (formerly Long Point Bird Observatory) is a proud partner in the delivery of the second Atlas project. BSC is Canada's largest non-government organization dedicated to the study of wild birds and their habitats, drawing upon the skills and enthusiasm of volunteers who are engaged in meaningful "citizen science." For more information, contact: Bird Studies Canada, P.O. Box 160, Port Rowan, ON, N0E 1M0. Toll free: 1-888-448-BIRD, fax: 519-586-3532, email:generalinfo@bsc-eoc.org. Web: www.bsc-eoc.org.

The Ontario Field Ornithologists (OFO) is a provincial organization dedicated to the study of birds in Ontario. It publishes *Ontario Birds* and *OFO News*, operates the listserv *Ontbirds*, hosts field trips, holds an Annual General Meeting, oversees the Ontario Bird Records Committee (OBRC), and maintains the official provincial bird checklist.
Web: www.interlog.com/~ofo.

The Ontario Ministry of Natural Resources (MNR) is supporting the atlas financially, through species at risk and monitoring programs, and through the provision of logistical support, especially in remote areas in Northern Ontario. MNR is also playing a leadership role through involvement on the Management Board and Technical Committee. Web: www.mnr.gov.on.ca

The Canadian Wildlife Service is Canada's national wildlife agency, handling wildlife matters that are the responsibility of the federal government. This includes the protection and management of migratory birds and nationally important wildlife habitat, endangered species, research on nationally important wildlife issues, control of international trade in endangered species, and international treaties. As such, Canadian Wildlife Service Ontario Region is pleased to support the Ontario Breeding Bird Atlas.
Web: www.on.ec.gc.ca/wildlife.