

**Ruthven Park National Historic Site Banding Station**  
(a Sub-station of Haldimand Bird Observatory)

**Protocol**

Revised December, 2008

**Rick Ludkin**  
36 Merritt St.  
York, Ont.  
N0A 1R0  
905-765-4963  
rludkins@hotmail.com

## Table of Contents

Ruthven Park National Historic Site Bird Banding Station Protocol .....	1
Caveat: Protocol and Operations Manual .....	3
2. Introduction .....	3
Priority list for migration monitoring .....	4
3. Staffing .....	6
4. Migration Monitoring Dates .....	7
5. Count Area.....	7
6. Daily Count Period .....	8
Key Event of the Day .....	8
8. Net Lane Locations.....	8
Net Protocol.....	9
Extracting .....	10
PROCESSING BIRDS .....	11
Canadian Migration Monitoring Network Responsibilities	15
Weather Information	15
Data Processing	16
Retrapped Birds	17
Data Processing CMMN	17
Procedure for Determining Resident and Stopover Individuals	17
What is a Resident?	17
What is a Stopover?	17
Status Codes and Training at Rock Point	18

gg13

## List of Figures

<i>Figure 1: Table of Priority List of Monitoring Species</i>	<b>3</b>
<i>2: Daily Key Events</i>	<b>7</b>

## **Caveat: Protocol and Operations Manual**

The purpose of this document is to summarize the protocol for the Spring and Fall Migration Monitoring Program at Ruthven Park Bird Banding Station. It does contain general operations criteria but is not a technical manual on bird banding. It builds upon the original document prepared by John Miles for Selkirk and on the draft protocol document prepared for Rock Point Bird Banding Station in Fall 2001 and revised in 2007 & 2008. We also acknowledge borrowing heavily in relation to format and content from the Innis Point Bird Observatory “Field Protocol For The Spring Migration Monitoring Program”.

### **2. Introduction**

The purpose of the Spring and Fall Migration Monitoring Program at Ruthven Park is to obtain data on neotropical migrants and landbird species, in a scientifically rigorous manner, in order to contribute to continent wide efforts to monitor changes in population levels of these species.

Specifically we want to narrow our focus to look at the neotropical and landbird species which use Haldimand County as part of their migration route.

Since the protocol document is intended to be a practical field manual, it emphasizes what procedures should be followed and how, and places little stress on why particular approaches have been chosen. The purposes of migration monitoring generally, and recommended methods of running a migration monitoring program, are explained in detail in Blancher et al (1994) and Hussel and Ralph (1996).

The written field protocol for Ruthven Park is designed to indicate how generally-accepted principles of migration monitoring are applied to the study site, and to spell out procedures which are specific to the monitoring program at Ruthven Park. A written field protocol is necessary to ensure that staff follow the same procedures from day to day and year to year, despite changes in the people involved.

Both the Spring and Fall Migration Monitoring Programs consist of standardized banding, a standardized census, general observations of birds and calculation of a standardized Estimated Total for each species for each day covered by the program.

High priority species for the monitoring program at Rock Point are listed in Figure 1.

## Figure 1

### Priority list for migration monitoring

Priority list for migration monitoring of regularly migratory Canadian landbird species. Note that raptors are not listed, as they are best monitored using different protocols from other landbirds.

A. Species with <50% of North American (Canada & U.S. only) breeding range covered by BBS, and <60% of their winter range in U.S. and Canada.

Alder Flycatcher  
Bay-breasted Warbler  
Blackpoll Warbler  
Cape May Warbler  
Connecticut Warbler  
Gray-cheeked Thrush  
Lincoln's Sparrow  
Magnolia Warbler

Northern Waterthrush  
Orange-crowned Warbler  
Swainson's Thrush  
Tennessee Warbler  
Wilson's Warbler  
Yellow-bellied Flycatcher

B. Species with <50% of North American breeding range covered by BBS, but 60% of winter range in U.S. and Canada..

American Tree Sparrow      Dark-eyed Junco  
Fox Sparrow  
Myrtle Warbler  
Ruby-crowned Kinglet  
Swamp Sparrow  
White-crowned Sparrow  
White-throated Sparrow  
Palm Warbler

C. Species with <60% of their Canadian and Alaskan breeding range (but 50% of North American range) covered by BBS, and <60% of their winter range in U.S. and Canada.

American Redstart  
Black-and-white Warbler  
Black-throated Gray Warbler  
Black-throated Green Warbler  
Canada Warbler  
Chipping Sparrow  
Common Yellowthroat  
Least Flycatcher  
Mourning Warbler  
Ovenbird

Philadelphia Vireo  
Red-eyed Vireo  
Solitary Vireo  
Tree Swallow  
Warbling Vireo  
Yellow Warbler

**Figure 1 continued**

D. Species with <60% of their Canadian and Alaskan breeding range (but >50% of North American range) covered by BBS, but >60% of their winter range in U.S. and Canada (includes some irruptive species and irregular migrants)

American Crow	Hermit Thrush
American Robin	Marsh Wren
Black-capped Chickadee	Northern Flicker
Brown Creeper	Northern Saw-whet Owl
Cedar Waxwing	Pine Siskin
Common Grackle	Purple Finch
Downy Woodpecker	Red-breasted Nuthatch
Eastern Phoebe	Red-winged Blackbird
European Starling	Song Sparrow
Golden-crowned Kinglet	Winter Wren
Hairy Woodpecker	

E. Species with >60% of both their Canadian and North American breeding range covered by BBS, and <60% of their winter range in U.S. and Canada.

Acadian Flycatcher	Louisiana Waterthrush
Baltimore Oriole	Nashville Warbler
Bicknell's Thrush	Northern Parula
Black-billed Cuckoo	Northern Rough-winged Swallow
Black-throated Blue Warbler	Orchard Oriole
Blackburnian Warbler	Prairie Warbler
Blue-gray Gnatcatcher	Prothonotary Warbler
Blue-winged Warbler	Purple Martin
Bobolink	Rose-breasted Grosbeak
Cerulean Warbler	Ruby-throated Hummingbird
Chestnut-sided Warbler	Scarlet Tanager
Eastern Wood-Pewee	Veery
Golden-winged Warbler	Whip-Poor-Will
Grasshopper Sparrow	White-eyed Vireo
Gray Catbird	Willow Flycatcher
Great-Crested Flycatcher	Wood Thrush
Hooded Warbler	Yellow-billed Cuckoo
House Wren	Yellow-breasted Chat
Indigo Bunting	Yellow-throated Vireo

**Figure 1 continued**

F. Species with >60% of both their Canadian and North American breeding range covered by BBS, and >60% of their winter range in U.S. and Canada.

American Goldfinch  
Blue Jay  
Brown Thrasher  
Brown-headed Cowbird  
Eastern Bluebird  
Eastern Meadowlark  
Evening Grosbeak  
Field Sparrow  
House Finch  
Mourning Dove  
Pine Warbler  
Red-headed Woodpecker  
Eastern Towhee

---

### **3. Staffing**

Ruthven Park can be run by one person providing the restrictions in relation to open nets and catch totals are adhered to. (See Pg. ) It is a matter of law that when only one person is running the station that person be a licensed bander, and capable of acting as Bander in Charge (BIC).

When two or more people are available then all nets can be opened confidently but adherence to provisions in relation to catch totals must still be followed. (See Pg. ) Besides a licensed Bander in Charge it is extremely helpful if at least one other person is competent in extraction.

A few additional staff will make it easier to run the program, and can help to obtain better coverage of the study site. Staff not essential to the banding program at any particular moment (banding, extraction, etc.) are encouraged to make more or less continuous observations in the count area.

During heavy migration days, if insufficient staff are available on a particular day to run the full protocol (i.e. to run all net lanes), the top priority is the banding. The census will be dropped but staff are encouraged to make more intensive casual observations during net runs. When rain or high winds make banding impossible, staff should spend more time making general observations or, if the inclement weather is forecast to last throughout the morning, they are encouraged to stay home in bed and rest up).

Personnel should be assigned responsibilities commensurate with their skill, knowledge and experience. Training to bring individuals up to required skill levels should not interfere with the protocol but become an integral part of all activities.

## **4. Migration Monitoring Dates**

The monitoring program ideally will run seven days per week during the following periods:

Spring: April 1 to May 31 (approx. 61 days depending on weather)

Fall: Sept. 1 to Nov. 7 (approx. 68 days – depending on weather)

Total coverage for the migration period is approximately 129 days.

[Note: There is banding at Ruthven Park during the Summer following a MAPS protocol (and episodically to band young birds) and during the Winter (episodically to sample wintering species).]

Coverage is based on the availability of volunteer banders as well as funding that provides for a part-time paid bander. This should continue for the foreseeable future.

## **5. Count Area**

The banding area is situated on the grounds of the historic site – a large Georgian-style mansion, surrounded by lawns and fields. Directly to the west, the mansion overlooks the Grand River; the floodplain below the mansion is in early stages of succession. The site plan is to keep the area right in front of the mansion cleared (“the Vista”) but allow the rest to grow into a riparian forest. To the south and east is forest with a buffer of dogwood scrub between it and the lawns/fields. As well there is a large field that is being maintained as a “Butterfly Meadow”. The net lanes are cut into the scrub. All efforts are being made to reduce successional tree growth in the area of the net lanes.

The census trail runs next to the forested area to the east, crosses the lawns to go along the forest corridor bordering the floodplain; it then follows the River Trail from the front of the mansion, along the river to the forest at the south end of the Butterfly Meadow; it then winds through the forest along the Carolinian Forest Trail back to the banding lab.

(See accompanying maps).

For the purpose of General Observations and Estimated Totals, any and all birds visible or audible from within this area are countable. In other words, any bird seen or heard by an observer within the zone is countable, regardless of whether the bird is inside or outside the zone and no matter how far outside the zone the bird is.

## 6. Daily Count Period

The daily count period begins when the nests are being opened (approximately half an hour before sunrise, and concludes when the last nets are closed (approximately 7 hours later). This can be modified according to weather. Banders may not open nets early if it is raining or overly windy and they may close early for the same reasons. On windy days, only sheltered nets may be opened. Practically speaking, nets start to be opened when the count period begins, and start to be closed 6 hours later. Nets should generally be closed in the same order in which they were opened

### Key Events of the Day

Figure 2. Summarizes the schedule of **key events** during the count period when there is no adverse weather.

**Figure 3. Summary of Key Events during Count Period in relation to Sunrise**

<b>Event</b>	<b>When</b>	<b>Example 1: April 26</b>	<b>Example 2: May 31</b>
Count period begins	½ hour before sunrise (rounded to nearest 5 minutes)	5:30	4:50
Nets start to be opened	same as above	5:30	4:50
Sunrise		5:59	5:18
Census	Approx. 2 hours after sunrise	7:59	7:18
Nets start to be closed	5.5 hours after sunrise	11:30	10:50
Count period ends	Approx. 6.5 hours after sunrise	12:30	11:50

The log book tally cannot begin until all birds captured in the closing net round have been processed. Extra time from the end of processing to the end of the count period should be used for general observations.

An extended banding period applies when weather or other factors prevent banding throughout the first 6 hours, but weather is suitable for banding during the last hour of the count period when nets would ordinarily be closed. Also, on occasion the nets will be open longer because volume of captured birds slows the closing of the nets.

## 8. Net Lane Locations

There are 16 nets in 10 standard net lanes (see Maps). All nets in a lane are opened and closed at the same time. In times of inclement weather (especially high winds), nets lanes that are more exposed will not be opened.

All nets are 4 or 5 shelf, tethered, black, nylon with 30 mm mesh of 70 or 110 denier and 2 ply, deployed to a height of about 2.5 meters. All nets are 12 meters in length with generous pockets.

Opening and closing net lanes takes place in the context of the net lane. Times are recorded on the log sheet on the basis of net lane. Mist net captures are also recorded in the data sheet by the specific net lane not by individual net.

*Banders are primarily responsible for the safety and welfare of the birds they study so that stress and risks of injury and death are minimized.*

## Net Protocol

1. Open only as many nets as you have help in order to complete processing and net runs within maximum 35 minutes but preferable no more than 30 minutes. The number of nets open is dependent upon the experience of the people in extracting birds.
2. When at least 36 birds are caught on a net round the birds will be put into the banding lab and immediately the nets will be cleared and pulled together until all birds are processed.
3. Be aware of approaching weather conditions. Close nets if thunderstorm is threatening.
4. Close nets if nets become wet enough to bead and/or the temperature drops or birds become wet.
5. Close nets if consistent wind has the nets billowing so no bag is present in the net.

## Nets

1. During the day, nets that are not in use will remain furled so that no birds can be caught.
2. At the end of the banding day nets are pulled up and down towards the middle of the pole, the top panel is then raised about 15 to 20 cm. and the bottom bunched net is then twirled so that it goes into the top panel. The top trammel is then collapsed to engulf the furled net and the whole configuration is tied at both ends and in the middle to prevent unfurling/opening. **BEFORE CLOSING NETS MAKE SURE NO BIRDS, LEAVES, TWIGS ETC. ARE IN THE NET.** The birds needs no explanation but leaves and twigs makes it very difficult to open the nets the next day.
3. Make sure that all nets are closed and properly tied. A mental count and confirmation from anyone who did nets on their own is needed and/or personally check.
4. Nobody should close nets by themselves at the end of the day unless they have been shown the proper procedure for both furling and tying the nets.
5. Opening nets in the morning should not be difficult if they have been closed properly.

Undo the ties; then raise the top panel on one pole and lower the bottom panel; move along the net raising the top trammel and unfurling as you go. Once the net(s) is open take time to make sure that the panels are open to their maximum width and height. Short “net sticks” are available in the banding lab and aid the raising of the nets to their proper height immeasurably.

## Extracting

### IT IS NOT ACCEPTABLE TO HAVE INJURIES OR DEATHS!

This is the most difficult thing done at the banding station. It is also the area where the most casualties occur. Casualties include both injuries and deaths.

Only people who have observed for at least a day and who have been supervised for at least a week should attempt to extract birds by themselves and then only with the approval of the Bander in Charge. **Your comfort level and ability is important – if you feel at all uncomfortable with the extraction of a particular bird, leave it and get the Bander in Charge.**

1. Although injuries and deaths do occur in rare cases without any person being around; as when the bird hits a tether line or predation from another source occurs it is NOT acceptable to have injuries or deaths in extracting birds from the net.

2. Deaths are most likely to occur because of the inexperience of the person removing the bird. It is no achievement to spend so much time on one bird that it goes into shock and died just as you get it out of the net. **ASK FOR HELP!**

**3. IF YOU FEEL THAT THE BIRD IS TOO DIFFICULT AND THAT YOU HAVE SPENT MORE THAN TWO MINUTES REMOVING IT FROM THE NET THEN ASK FOR HELP FROM THE BANDER IN CHARGE!**

4. If a particular species such as Black-Capped Chickadee or some of the biting birds such as Cardinal or Grosbeak are something you do not want to take out of the net the leave them for someone with more experience..

5. Unless you have experience with hawks do not remove them from the net. Pull the panel up where the hawk is positioned and tie it so the hawk can not get away.

6. Injuries occur most often to the wings and legs. Be aware of the tension on the tether lines of the net. If you are working on one bird you may be pulling on the net which contains another bird and possibly putting undo pressure on it.

7. As you remove mesh from the bird be aware of tension on the legs so that you are not pulling sideways to a leg. It will break. If a leg is broken make sure it is brought back to the

banding shed for medical attention.

8. Tongues can sometimes be wrapped with thread. If possible loosen the thread and move the loop back and over the arrow points of the tongue. If the threads can not be loosened then use a small twig to loosen them (or carry a pointed tool that you can use).. **AT NO TIME IS IT ACCEPTABLE TO PULL ON THE TONGUE SO THAT THE BIRD LOSES ANY PART OF THE TONGUE. ASK FOR HELP!**

9. All birds should be placed in one of the banding bags and a note made of the net number where the bird was caught. All birds should be brought back to the banding lab. Only the Bander in Charge can decide if a bird should be released without any processing.

**10. ALL INJURIES OR DEATHS SHOULD BE REPORTED TO THE BANDER IN ANY CHARGE.**

## **PROCESSING BIRDS**

1. All birds are to be brought back to the banding lab in one of the small mesh bags. An exception are hawks which should not be put into the bags and should be brought back using the ice cream grip and processed immediately.

2. Birds are placed on hooks numbered according to the net where they were caught. Do not crowd the bags together since smaller birds can suffocate in the bag if too many are on one hook. Use lower or higher hooks for that net number. On some occasions, the number of birds from a particular net lane can be high. In this case, spread the bags out along a pole/broom handle secured at one end from the table.

3. No bird can be banded without the presence of a Licensed Bird Bander.

I. Bird is removed from the bag and species is identified for proper band size.

II. Net where bird was caught is recorded along with species on proper page for that band size in the Field Data Book.

III. Band is placed on banding pliers and number checked to make sure it is next in the sequence and the band is opened. **NOTE: the scribe and/or bander should check that it is the 'right' band EACH time.**

IV. Band is then put onto the right leg of the bird making sure that no other band is present on either leg and closed so the ends of the band meet.

V. Sex of the bird is recorded. This may be determined by plumage, wing length (in some species) or by the presence of a cloical protuberance (male) or brood patch (female). Note

that these determinants may be useful for some species but not for others. It is important to learn the pertinent criteria for making this determination in a particular species.

- VI Determine the age of the bird by using skull ossification or differential plumage condition/moult
- VII Fat level of the bird is recorded (this is based on a scale running from 0 – 7).
- VIII Wing chord of the bird is measured to the nearest millimeter and recorded.
- IX Bird put into tube and weighed on the electronic scale to the nearest tenth of a gram.
- XI Bird is released and time of release is recorded.
- XII Any bird with wing strain upon release should be, if possible, recaptured and placed in the injury cage for later release.

4. Make sure time for next net round is observed. Time from beginning of previous plus 30 minutes means another net round. If too many birds are left from previous net round and only basic information was recorded (Ring and Fling) then close nets if many birds are present as you proceed on the next round.

## **Canadian Migratory Monitoring Network Responsibilities**

1. A daily census should be taken along a prescribed route which takes at a leisurely walk around 60 minutes to complete. Ideally this is done approximately 2 hours after opening the nets. The number of each species seen is recorded in the appropriate column (Cens.) in the daily log book data sheet.
2. A record of all birds seen casually through the banding day is also kept and note should be made of this after each net round. These records are entered into the Species Total of the Daily Log under the heading Obs.
3. Special note should be made of birds known to be breeding in the area and they should not be included in the daily total.
4. Once all the day's data is entered – i.e., banding numbers, recapture numbers, census tally and observation numbers – an “Estimated Total” for each species should be made and recorded. Ideally, this is done using input from all that day's participants (although the final decision of which total to use, if there's differing opinion, will be up to the Bander in Charge).

## **Weather Information**

Weather information is recorded in the log book at 3 points in the day: dawn, start of census, noon. The following data is recorded in that day's data page in the Log Book for each time period:

Temperature: See the thermometer on the outside of the lab window (do not use the reading on the electronic weather station as it is skewed by heat off the washroom building roof).

Measure in Celsius.

Rainfall: Take reading from the weather station. Where appropriate calculate the amount of rainfall since the last banding period.

Wind: the weather station provides an accurate reading of wind direction and strength (record Beaufort Scale reading).

Cloud Cover: Estimate cloud cover by dividing the sky into 10ths and estimating the number of tenths covered by cloud.

Barometric Pressure: take reading from the weather station.

## **Data Processing**

Field data report is checked over when a sheet is finished. The data is entered on the computer in the Bandit file when time permits. Generally the bander in charge does this data entry. Ideally, these entries are made as sheets are filled.

## **Retrapped Birds**

Retrapped birds are recorded on 'Retrap Cards'. Birds are not recorded if banded on that day but otherwise every retrapped bird will be processed (i.e, measurements repeated, etc.) as many days as it is recaptured. When a recaptured bird is brought in and the number determined, the first thing to do is see if it was banded that day. If so, it is released. If not, you then check through the retrap cards to see if it has been banded before. If so, record the new data on that card. If there is not a card for the bird then start one. The day's data is recorded on the second line. At the end of the day go through the banding records to find and then record the original banding data in the first line on the card.

## **Data Processing CMMN**

Information on the daily log sheets is recorded on the CMMN program with all columns being entered under the appropriate date. Normally the bander in charge is responsible for these entries. They are made as time allows.

## **Training at Ruthven Park**

It is understood that training is an ongoing endeavor where individuals with more experience

encourage and give information to volunteers and visitors to the Banding Station.

Ruthven Park also has an educational aspect. This may include:

- Having the banding lab open to the public when banding is going on so that visitors to the park can see what is going on on an informal basis
- Formal banding demonstrations to small groups at the banding lab (e.g., school groups)
- public presentations of slides and information outside the banding site such as clubs and classrooms.
- newspaper and magazine articles about seasonal migration within the mark
- training for students from Colleges and Universities
- 

In addition to the above is the ongoing training of those individuals who wish to volunteer at the site. This very much takes the form of the willingness of the individual to learn new skills but also and more importantly the individual is given skill advancement providing they demonstrate care and attention for the well being of the birds they may handle. Training may include:

- Bird identification
- Scribing
- Banding
- Aging and sexing
- Taking measurements
- Net extraction
- Use of traps
- Opening and closing nets

Ultimately the training hinges on safety of the birds and proper skill development in relation to all aspects of the banding operation. This can vary among individuals. Some people are content just to extract birds, others wish only to scribe, some are excellent at identifying

birds in the field but not good with birds in the hand, some prove to be a danger to the birds in relation to extracting. All aspects are evaluated. Volunteers are encouraged to get as much experience as possible but with the proviso that safety of the birds is paramount.