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Maine Owl Monitoring Program

Data Collection Protocol

Revised February 2008

Thank you for volunteering for the Maine Owl Monitoring Program (MOMP). We hope to learn more about the abundance and distribution of owls in our state, the types of habitats where they occur, and how their populations fluctuate from year to year. Ultimately, we hope that by gathering this information we will ensure that each species remains an integral part of our ecosystem. This would not be possible without the help of volunteers like you.

Getting Ready

There are a limited number of MOMP survey routes around the state. Open routes are posted to Maine Audubon's website by March 1st (www.maineaudubon.org). New volunteers should speak with the program coordinator at Maine Audubon to be assigned a route. You'll then need to assemble some equipment before conducting your owl survey. If you have questions about the equipment or need help locating or borrowing items, please call. Items listed as available on-line are at the Maine Audubon website. Click the tab for Birds & Science, and then Science & Conservation to get to the owl project web page.

Provided by Maine Audubon and Inland Fisheries and Wildlife:

- Map of survey route
- Route information sheet
- MOMP Survey CD
- Available on-line:*
- Data sheet
- Data sheet key
- Data Collection Protocol
- CD Narrative
- Waiver of Liability
- Survey Notification
- "Owl Survey" signs for vehicles

Provided by Volunteers:

- Portable CD player (*suggest starting with a fresh set of batteries*)
- Extra batteries or adapter for cigarette lighter
- Flashlight
- Watch or clock (*a digital watch with an illuminated face works well*)
- Thermometer (*preferably in C°*)
- Extra pens/pencils (*pencils don't freeze!*)
- Clipboard or other writing surface
- Extra warm clothes (*Very important!*)

1. Testing Your CD Player: The use of a CD to play calls and elicit responses from owls is an important piece of this survey. However, one potential problem is that CD players vary in both their sound quality and how loud they can play without distortion. To account for this variability, and to test the effectiveness of different CD players on owl detections, you will need to test your CD player. The test is fairly simple, requires two people, your player, the MOMP Survey CD, and an open area. The test shouldn't take more than one half hour to complete and can be done during daylight hours. Record your findings from the test on the Owl Survey Data Sheet in the appropriate box at the bottom of the front page. You only need to conduct this test and record this information once, assuming you use the same player for all surveys. If you've already tested your CD player and submitted the test results in past seasons, check the "repeat equipment" box on the datasheet. **Note that you cannot use a car stereo for CD playbacks.**

Steps for CD Testing:

1. You'll need a calm, clear day (or night if you prefer) with conditions similar to those needed for owl surveys. In general, this means little or no wind or precipitation (see "Weather" on page 5 for more information). You'll also need an assistant with you to run the CD player, and a quiet open area where you can walk or drive 3/10 of a mile away from the CD player. You can use a straight stretch of a road that doesn't have much traffic, athletic fields, or other open area.
2. Leaving your assistant with the CD player, measure a distance of 1/10 mile (or 528 feet) using either a car odometer (if on a road), a measuring tape or by pacing the distance. An average person takes about 230 paces (or regular strides) to go 1/10 mile.
3. Have your assistant play the 20-second Barred Owl call from Track 5 of your CD. See the CD Narrative for more information about the CD. He or she should have the player at the maximum volume it can play without distortion, and make a note of the volume on the datasheet (see bottom of first page). If there are bass and treble settings, they should be set to "normal." Record whether or not you can hear and recognize the call.
4. Pace or measure another 1/10 mile from your assistant and have him or her repeat the playback. Again, record whether or not you can hear and recognize the CD. Repeat the process another 1/10 mile away. Record your findings on the front page of one of your data sheets.

2. Route Maps and Stop Descriptions: New volunteers should receive a route assignment as well as a map of the stops and a page that describes where each stop is. If a new route is being established, follow the guidelines for setting up stops (available on-line).

3. Waiver and Release of Liability: Volunteer safety is always the top priority, but this is especially so with unpredictable weather conditions and late-night surveys. We will support any decisions you make to discontinue surveys or change your survey route if and when you feel your safety is at risk.

New volunteers should print out the Waiver and Release of Liability that is available on-line and send it to Maine Audubon. Returning volunteers who have already sent in waivers do not need to send another one.

Although it sounds less than friendly, the waiver is a necessity for us to meet our insurance needs. Please call if you have any questions. If you are conducting owl surveys as a professional in a work situation, the waiver is not necessary.

4. Survey Notification (optional): Volunteers from previous field seasons reported friendly visits by police officers who had received calls about their nighttime activities. We've created a Survey Notification form to help you inform your local police of your survey dates, times and routes. Many volunteers felt this would help alleviate some public concern, and those folks may also want to distribute

this form to concerned neighbors. Feel free to copy this form and hand it out to anyone you think might be anxious about your owl survey activities.

5. **“Owl Survey” notice (optional):** Volunteers from previous field seasons asked for signs they could post in their car windows to alert friendly passers-by who would otherwise stop to ask if they needed help. Print copies from the website if you would like this added measure of insurance against well-intentioned disturbance.

Conducting Owl Surveys

1. **Schedule:** Our monitoring program involves just a single night of owling. Based on data from an earlier study, we found that the greatest chance for hearing all three species occurs between early March and early April. **We ask that you run your route once in the five week period that starts Sunday, March 9, 2008 and ends on Monday, April 14, 2008.**

Furthermore, we’ve learned from our study that the most detections of owls occurred in the “wee hours”. We are requesting that volunteers run their routes starting at midnight and finishing by 4:00 a.m. eastern standard time. **In 2008, with daylight savings moved to the start of the survey period, this means starting the survey by 1 a.m. and finishing by 5 a.m. for all of the survey.** Four hours should be sufficient for completing all the stops so starting exactly at the start time is not that critical. However, try to be at your first stop as close to the start time as possible.

2. **CD Playback:** When conducting the survey, you’ll play a series of three common owl calls, either Track 1 (Long-eared/Barred/Great Horned) or Track 2 (Northern Saw-whet/Barred/Great Horned), depending on the survey year. **In 2008, use the playback series that is recorded on Track 1 of the CD.** The track is 13 minutes long, and has all three species interspersed at the correct times for the survey (see page 6 for more detailed information).

3. **Weather:** The best time to hear owls is on clear nights without wind or precipitation. Wind and rain can affect how often owls call, how well they can hear recordings, and how well you can hear them. Extremely cold temperatures also may be a problem, both for volunteer safety and comfort as well as for owls, which are more likely to remain quiet on extremely cold nights. Conduct surveys when nighttime minimum temps are above 10°F.

Wind should be minimal on nights you survey. There are codes for wind levels on the datasheet, (see page 6 for more information). If wind registers four or greater (wind raises dust and loose paper, small branches move), surveys should not be run.

Precipitation should also be minimal on nights that you survey. Codes that describe precipitation are on the datasheet (see page 6 for more information). Ideally, surveys are conducted on nights with no precipitation, though drizzle, rain, or light snow flurries are acceptable conditions for surveys.

With a five and a half week window to conduct a single survey, you should be able to pick a night with ideal weather conditions. If you are part way through your survey and winds get stronger or drizzle changes to heavy rain, use your best judgment. If owls can’t hear your CD and you can’t hear the owls calling, it doesn’t make much sense to continue! Consider resuming the route at the same stop and same time on another night of the week if absolutely necessary.

4. Owl Surveys and the Datasheet:

BEFORE YOU START THE SURVEY: You should have tested your tape player and filled in the appropriate information on the bottom of the second page of the datasheet. If you choose, send out the survey notification on the day of your survey and post the owl survey signs onto your vehicle windows.

AT THE BEGINNING OF THE SURVEY: Fill in the observer name, names of assistants, the date, the route name and number (this will be written on your route map). Although everyone on the survey should listen and watch for owls, only one volunteer (noted as the observer) is responsible for identifying and counting owls. The assistants should help with the other measures required at each stop.

AT EACH STOP: In addition to recording the information below, you'll need to get your CD player set up and ready for the playback track. You should do this in the car to minimize disturbance to owls. The following information is collected at every stop on the first page of the datasheet:

Start Time: Record the time you start the survey, in military time. Add 12 to any hour after noon (e.g., 8 p.m. is 2000 hours). Please note that you should decide ahead a start time for the survey, rather than starting the survey when you hear the first owl.

Air Temperature: You can take air temperature in either the Celsius (preferred) or Fahrenheit scale, using whatever means you have available. Regular "mercury" type thermometers work fine, and there are many affordable digital alternatives available at discount and hardware stores. Be sure to circle whichever scale you use. You'll need to measure the air temperature again at the end of the survey. Rig up a means of keeping the bulb of mercury thermometers and the sensor of a digital thermometer off of the cold metal of your vehicle.

Cloud Cover: Estimate the percentage of the sky covered with clouds to the nearest 10%.

Wind: Circle the Beaufort wind code number. Note that codes are also summarized on the datasheet key.

- 0=<1 mph (calm, smoke rises vertically),
- 1=1-3 mph (light breeze, wind direction shown by smoke drift)
- 2=4-7 mph (slight breeze, wind felt on face, leaves rustle)
- 3=8-12 mph (gentle breeze, leaves and small twigs in motion)
- 4=13-18 mph (moderate breeze, raises dust/loose paper, small branches move)
- 5=19-24 mph (small trees sway, crested waves on inland water)

Noise: Circle the noise code number. Note that codes are also summarized on the datasheet key.

- 1=relatively quiet
- 2=moderate noise but not affecting ability to hear owls (dogs or coyotes barking)
- 3=loud noise that may affect detection of owls (running water, distant machinery)
- 4=excessive loud noise that probably affects detection of owls (heavy traffic, nearby machinery, roaring streams, peepers gone wild)

Precipitation: Circle the appropriate code for precipitation. Note that surveys should not be conducted if precipitation is a 3 or above

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|--------------|----------------|
| 0=none | 1=drizzle |
| 2=light rain | 3= steady rain |
| 4= sleet | 5=flurries |
| 6= snow | |

Snow Cover: Circle the appropriate descriptor for snow cover along the route

N=None

P=Patchy

C=Continuous

Frogs?: It's entirely possible in late March or early April to hear frog courtship calls. If you can hear wood frogs calling (they sound like a sharp quack) or spring peepers "peeping", indicate so on the data sheet.

Car Count: Count the number of cars that pass during your survey. Ideally, your assistant will be able to do this while you listen for owls. **If no cars pass during the survey, mark a zero here rather than leaving it blank. If cars pass on nearby roads that impair your ability to detect and count owls these cars should be considered noise and coded appropriately.**

LISTENING FOR OWLS: Once you've recorded the initial survey information and the initial stop information at Stop 1, you're ready to begin listening for owls. If your car is noisy while it's cooling down, you may want to walk a short distance away. Alternatively, you can wait until your car quiets down, though this may take more patience than you have in the cold and dark! Either way, be sure you have minimized possible disturbances before you start listening.

When you are ready to start listening, start the appropriate survey track and begin timing your survey with a watch or clock. **Note that it is not possible to conduct a valid owl survey without an accurate watch or clock.** The first three minutes of the survey will be silent ("passive listening"). Do not start your survey a minute or two early because you hear an owl, instead start at a predetermined start time (one suggestion is to pick the time while still in your car) even if you miss the first hoot you heard while exiting the vehicle or getting set up.

Record any owls on the second page of your data sheet using one line per individual owl heard. Be sure to indicate the stop in the first column. Use the codes below to identify the owl species in the second column.

Barn Owl=BNOW

Eastern Screech-owl=EASO

Long-eared Owl=LEOW

Snowy Owl=SNOW

Barred Owl=BARR

Great Gray Owl=GGOW

Northern Hawk Owl=NHOW

Northern Saw-whet Owl=NSWO

Boreal Owl=BOOW

Great Horned Owl=GHOW

Short-eared Owl=SEOW

The columns to the right of the species represent each minute of the survey. **Make an "X" in each column that you hear the same owl during the entire 13-minute survey. If you see an owl, use an "S" in the appropriate column.** If you hear or see additional owls, they should be entered on subsequent lines of the datasheet so that **each line represents only ONE individual owl**. Use your best judgment, as to whether the owls you hear are repeats of earlier owls or are actually different individuals. Try to be conservative and assume that an individual owl may move around a given area and not call repeatedly from exactly the same location. If you suspect that an owl you hear is one you've already heard at a different stop on the survey, mark it with an "*" and make a note in the comment section for that stop.

After three minutes of passive listening, you will hear the first species on the playback track (LEOW or NSWO). The volume should be set to the maximum it can play without distortion (this should have been noted when you tested your player). Listen for two more minutes and record all owl species you hear ("X") or see ("S"), making note of the same individuals heard during the passive listening or adding new lines for new individuals. If species call during the 20 seconds of playback, make a mark in the column labeled "PB".

After two minutes of listening, you will hear the Barred Owl call from the CD. Note that the waiting period after this species is six rather than two minutes. Evidence shows that Barred Owls take longer to respond to playbacks than other species. Be patient and you may be rewarded with a delayed response

After the six-minute waiting period, you will hear the Great-horned Owl call from the CD and listen for a final two minutes. Remember to add additional marks (“X” or “S”) for owls that are repeating their calls but to add a new line for new individuals that begin calling later in the period. At the end of the 13 minute listening protocol, the track ends with a quiet “beep”.

If you hear other night birds during the survey you can include them in the “notes” section below the box for data collection. You can also add any other comments, notes or observations you have during the survey. Repeat this procedure at all ten stops, always starting with Stop 1 and proceeding to Stop 10.

AT THE END OF THE SURVEY: Look over your data sheet to be sure that you have completed all the information. Drive home safely and catch up on your sleep!

General Notes on Data Collection:

- **Do not use ranges of numbers on the datasheet.** For example, if you think that wind is between a 1 and 2, pick the one you feel is most appropriate. You are the best judge of what you are seeing and hearing! We can’t use data that includes ranges of values.
- **Try to complete all ten stops in the four-hour time period.** This should not be a problem, however, if you stop for multiple, lengthy warm ups you may find the last stops approaching the end of the four-hour window. If you need to run over the time period slightly, we’d rather have you do this and complete all stops than abandon the last few stops on the route.
- **Remember that each owl requires its own line on the datasheet.** Use your best judgment to determine if and when new owls begin calling. Be conservative and avoid “double-counting” (i.e., counting the same owl twice).
- **Your safety and comfort are top priorities during these surveys.** *If at any time you feel uncomfortable or unsafe for any reason at all, discontinue the survey immediately!* Your safety always takes priority over data collection.

What NOT to do:

- **Repeating survey routes too often could make owls acclimate to tapes and cause them to stop responding to the playbacks.** Additionally, too many playbacks can disrupt owl activity, waste their energy resources, and draw them far off their territories. Small owls may also be susceptible to predation by larger owls if they are “discovered” while responding to a playback tape. For this reason, avoid conducting playbacks on your route before you are ready to collect data or going back out on your route multiple times to hear their response. If you want to do more owling, you can either search for the less common owls using limited playbacks (Long-eared, Barn or Eastern Screech, depending on your location in the state) or sign up for a second survey route.
- **Scanning owls that fly near the survey stop with a flashlight could scare off other owls about to call.** If an owl has flown in close enough for a look, wait until the entire survey period is over before shining a flashlight on it for a brief period of time (not more than a few seconds at a time). Remember owls are nocturnal and have large eyes that are not well adapted to bright lights!
- **Do not survey for owls if the weather conditions are questionable and put your safety at risk.** Pending snowstorms, icy roads, snow plows, extremely cold temperatures and other

conditions that put you at risk while surveying for owls should be avoided at all cost. Safety should be your number one priority!

Some final notes: It is always best to run a survey with at least one partner who can help with recording data and navigating to stops as well as counting cars during surveys and keeping you company. If you would like help finding a partner, please call Becca at Maine Audubon. We can try to match you up with an interested volunteer in your area.

Keep emergency supplies in your car (jumper cables, sleeping bag, first aid kit, snacks, shovel, etc.) in case you do get stuck. Always take along extra warm clothing, as you'll be surprised how cold it will feel over the survey period. A cell phone is a great safety back-up if you have one, and always report your travel plans and schedule to a friend before you go.

Return data sheets at the end of the season to Maine Audubon. Make copies of the datasheet to ensure that they are not lost permanently in the mail.

Finally, thank you to all who help us with these surveys. We know it will be dark and cold, but we hope you'll be rewarded with some good owl responses over the course of the season. We appreciate your commitment to collecting this important information and look forward to sharing the results with you over the coming year.

Happy Owling!

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