



### **What are we trying to find out?**

We would like to know more about how well Maine's loons produce and raise chicks each year. Our annual loon count has shown an increase in the adult population over the last 25 years but no change in the number of chicks. Are Maine's loons less productive than they were two decades ago? The limited loon productivity data we have for Maine so far shows our loons are less productive than those in other states and regions. This study seeks to answer the following questions for a sample of individual lakes in Maine:

1. Were loons present and if so, were they a mated pair attempting to nest?
2. If they nested, did they hatch chicks, and if so, how many?
3. Did the chick(s) survive to at least six weeks of age?

The answers to these three questions, as well as other data collected during the survey, will help us learn more about how well Maine's loons are doing.

### **Should I participate in this project?**

Participants in the 2008 field season (June through August) should be familiar with a lake or known loon territory. This is the third year of the survey, so the number of participants is limited to no more than 50 volunteers. We are searching for grant funding so that we can expand the survey to include additional volunteers on more lakes across the state.

### **Where do I survey?**

We are interested in collecting productivity data from a variety of lake sizes, but all lakes in the survey should be large enough to support at least one loon pair (minimum of 20 acres). For smaller lakes, surveys should cover the entire lake each time to assure all loon territories are assessed and delineated. For larger lakes with multiple loon territories, we would ideally like comprehensive coverage of the entire lake by several surveyors working together. However, if this is not possible, mapping and then surveying a loon territory or territories, or an area where you expect loons to nest (a bay or portion of a larger lake) is ideal.

### **When and how often do I survey?**

You should plan to do a thorough survey of your area at least once every two weeks, but not more than twice in any given week. Loons in Maine typically lay eggs from mid-May to mid-June, so surveys at this time will target nesting pairs as well as birds who are patrolling a territory but don't have a mate or have not yet nested. Loon eggs hatch from mid-June to as late as the end of July, sometimes into August. Surveys at this time will target downy chicks as well as track loon pairs who have not produced any chicks (very important information for us to have!). Later surveys in August will primarily target large young at an age when we expect them to survive (six weeks). More surveys are encouraged at the beginning of the breeding season if you are trying to figure out whether there are territorial pairs established on the lake.

### **How long do I watch?**

Your observations can be incidental to your other activities while you're in your survey area. If you visit a lake only to conduct a loon survey, we recommend spending at least a couple of hours watching for loons. Adults will fly to other lakes to visit or feed, and can be absent for several hours at a time. Also, while loons are usually conspicuous on open water, one member of the pair can be hidden while incubating eggs. When you report "no loons" (an extremely useful report), please try to spend enough time to be certain of your conclusion. Once chicks are hatched, loons

become more visible, because at least one adult will usually be with the chicks.

### **How do I know when two loons are part of a pair?**

We are interested in two different types of pairs. Territorial pairs will regularly stick together and stay in a particular area of a lake (or if it's a small lake (<100 acres) then perhaps the whole lake). The courtship of a loon pair is fairly quiet, but may be observed in the early spring. Pairs will swim side by side, often close to shore, sometimes turning their heads away from each other or dipping their bills in the water. Pairs may be observed swimming in circles, and may imitate each others movements (preening, wing flapping, etc.). Territorial pairs will rarely let another adult loon visit their territory, especially early in the season (April and May). Territorial displays include "yodel" calls and physical aggression with interlopers. Note that male and female loons look alike, although males tend to be larger than females. You may want to keep track on a map the locations where adults are regularly seen together. **If you see two loons in the same area on a regular basis, they can be considered a territorial pair.**

Nesting pairs will have either a nest or chicks. If they are nesting, you will regularly observe one loon alone while his or her mate incubates the eggs. It is not necessary to find the nest. **If you see one loon regularly in the same area, you can assume that individual is a member of a nesting pair.** Later observations of chicks with parents will confirm their status as a nesting pair.

### **Filling out the Survey Form**

The directions below refer to the 2008 Loon Productivity Survey Report Form. Note that information from multiple loon pairs may be recorded on one form, though if you survey multiple lakes, each lake will need its own survey form. Feel free to photocopy the forms for additional lakes or contact Maine Audubon for additional copies.

**1. PARTICIPANT INFORMATION:** Fill out as instructed.

**2. LAKE INFORMATION:** In addition to providing the information requested, please include a map of the lake. Hand sketches of lakes are fine, or make a photocopy of a map. For those with internet access, lake maps (and also MIDAS numbers) may be downloaded from the PEARL website, [www.pearlmaine.org](http://www.pearlmaine.org). Click on "Data Search", then "Text Search", and then enter the name of the lake. Look for a link to the lake depth map. If you survey a section of the lake, please provide a detailed description of the area and also draw the specific area on a larger lake map. Be sure to include the town(s) and county where the lake is located, as there are may be many different lakes with the same name in the state.

**3. SURVEY INFORMATION:** Please record your estimate of the percent of the lake you surveyed as well as the dates you started and finished the surveys and general comments about factors affecting the success of loons. Please print clearly.

**4. LOON INFORMATION:** Sections 4 and 5 of the Survey Report Form are designed for lakes or sections of lakes with up to four pairs of loons. If you surveyed part or all of a lake with more than four pairs, information about other pairs can be recorded in the same format on extra sheets -just change the pair number as appropriate (e.g., Pair 5, Pair 6, etc.). The following are explanations of the column headings in the table.

**(1) Date:** Date of survey. Survey at least once every two weeks, but not more than twice a week. Surveys can start any time after the loons arrive and continue through mid-August (see (5) below).

**(2) Number of Adult Loons Observed:** The total number of loons observed during a survey,

including any unmated individuals seen in large groups. If none, enter zero rather than leave blank.

**(3) Number of Pairs:** Differentiate between territorial pairs (those seen regularly in an area together who haven't yet nested) and nesting/parental pairs (those that likely have a nest (because you regularly observe only one individual) or have chicks. This number will exclude any unmated individuals or large groups of non-breeding loons you may have counted in (2). If none, enter zero rather than leave blank.

**(4) Number of Young:** For each nesting/parental pair listed in (3), circle the number corresponding to the maximum number of loon chicks observed with each pair. Circle "0" if none, "?" if unknown.

**(5) Number of Large Young in August:** For the entire month of August, circle the maximum number of large young (>6 weeks of age, see illustration below) for each territorial pair. Circle "0" for none, "?" for unknown

To help you readily identify large young, the three chick age classes are:

**Downy Young.** Chicks are **less than 1/3 adult length** (including bill), have **dark grey down**, and may ride on the parents' backs. (They may be difficult to see without binoculars.) These chicks are *less than three weeks old*.



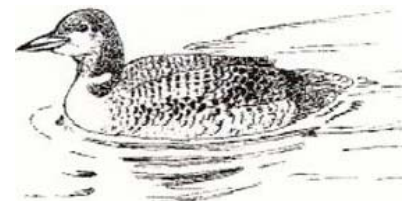
Adult with downy young

**Small Young.** Chicks are **1/3 to 2/3 adult length**, have **lighter, brown/grey down, or mottled light and dark grey feathers**, and do not ride on the parents' backs. These chicks are *between three and six weeks old*.



Adult with small young

**Large Young.** Chicks are **2/3 adult length or longer** and have a **full coat of light and dark grey feathers** forming a "scalloped" pattern along the back. These chicks will still be attended and fed by the parents, and will not fly. Large Young are *at least six weeks old*.



Large young

**5. NESTING SUMMARY:** PLEASE DO NOT SEARCH FOR NESTS, but if you know where pairs nested, record the information in the nesting summary. Please ensure that pair numbers correspond to the information provided in Section 4 (e.g., Pair 1 in Section 4 is also Pair 1 in Section 5). Answer all four questions if you can. If you know any causes of nest loss (e.g., flooding, wakes, predators, etc.) or death of adults or young, please write a detailed description. Use additional pages if necessary. You may also include a summary of any historical nesting data you have recorded.

**6. HUMAN DISTURBANCE:** Assessing the impacts of human disturbance on loons is very difficult because different loons react differently to more or less disturbance. Loons on busy lakes with regular boating activity, for example, may not be bothered much by boats compared to loons who rarely see boating activity. In this section, we would like an objective measurement of different types of human activity and your best guess as to whether or not they affected nesting loons. For each month, circle the corresponding level of activity for each type of activity observed in your survey area.

If you have questions, please don't hesitate to contact Susan Gallo at Maine Audubon at (207)781-6180 ext. 216 or by e-mail at [sgallo@maineaudubon.org](mailto:sgallo@maineaudubon.org). We hope that you enjoy participating in the survey!

Please copy and return the survey forms by **September 15<sup>th</sup>** to: **Attn: Loon Survey, Maine Audubon, 20 Gilsland Farm Rd., Falmouth, ME 04105.**

***Thank you for your support and participation.***