

APPENDIX E: Common Loon Surveys

Montana Loon Survey Procedures

Scheduling your survey:

Work with your area coordinator ([Appendix A](#)), to find out which lakes to survey and when to survey them. Most loon lakes are to be surveyed once in May and once in July. The target date for the May survey is the Saturday closest to May 15. For the July survey, it is the third Saturday of the month. For example, for 2009, the survey dates are May 16 and July 18. If it is not possible to survey on a Saturday, it may be acceptable to survey any time from the Friday before to the following Monday.

Before you head out to a lake:

If the lake or its access is on private land, make sure to have permission to be there. Familiarize yourself with regulations specific to the land management agency. Notify a friend or relative of your itinerary and return time for safety purposes. Find out what you can about access routes, observation points, and areas of the lake frequented by loons.

Bring with you:

- [Loon Observation Form](#) with lake map on reverse side (Get these from your Area Coordinator, [Appendix A](#))
- Bug repellent and/or bear pepper spray (optional)
- Boat, paddles, and life jackets (although most lakes are surveyed from shore)
- Loon identification materials
- First-aid kit, knife, signaling device, matches
- Water and food
- Map and compass
- Binoculars
- Spotting scope, if possible
- Camera
- Water and food
- Rain gear and extra clothes

While at the lake:

If possible, monitor lakes **when winds are light**, typically early in the morning. Adult loons are extremely difficult to see in choppy water. If observation points are limited to one side of the lake, consider observing the lake when the sun will be at your back.

Approach the lake **slowly and quietly** so that you do not disturb loons, while being observant for other wildlife such as bears and moose.

Keep your distance, especially if you identify a nest site or chicks. This is important whether you are on shore or in a boat.

Plan to spend **an hour or more** at the lake. You may see loons right away, or it may take up to an hour to confirm presence or absence of loons. Take your time and be sure. Try to view the lake from several observation points to ensure you are not missing anything.

Follow instructions on the “[Loon Observation Form](#).” Complete one form for each lake and one form per visit, even if you do not see loons. Data collected when not seeing loons are just as valuable.

The **essential parts of the form** to fill out are the lake, observer, and date information at the top and everything in the “Summary” box.

On the **map** on the back of the form, indicate loon locations, nest site, floating buoys, boats/watercraft, eagles and other predators, and your observation points. If your form is lacking a printed map, sketch one as best you can by copying the lake shape and other important features from the map you used to navigate to your lake.

The **table at the bottom of the form** is designed for recording things like loon interactions, nesting, chick rearing, loon/human interactions, predators, and waterfowl at timed intervals. Use the codes provided just above the table for individual loons and their behaviors (see photos in this appendix). The last line of the table is already printed with an example.

If you see what looks like **bands on the legs** of a loon, do your best to identify the color and arrangement of bands. Also watch for stripes and dots. (See photos in this appendix for more information on observing and recording bands.) For each banded loon, record its code used for this observation form (i.e. loon A1 or C2), then the color of the band closest to the body on the left leg, the band closest to the left foot, the band closest to the body on the right leg, and then the band closest to the right foot. An example could be “Loon A3 (LL) Orange Stripe / Silver (RL) White / Yellow”. Contact your area’s coordinator as soon as you can. Someone with more experience identifying bands or with a high-power spotting scope may need to return to the lake soon. Also, the coordinator should be able to provide you information about the bird’s age, where and when it was banded, and other places it has been observed.

Loon chicks typically hatch in Montana between late May and late June. Loon pairs that have re-nested due to a nest failure may hatch their chicks as late as mid-July.

- **Keep your distance to prevent disturbance when observing loons with chicks.**
- If you see chicks make sure to get an accurate count of the number. They can be difficult to detect especially when less than 6 weeks old or if away from adults. The raised tail of an adult loon (as seen during preening or distress) can be mistaken for a back-riding chick.
- Document nursery areas. Note and photograph the location of loon chicks on the lake.
- Photograph the chicks from a distance, even if they will be difficult to see in the photo, and do so through a spotting scope if possible.
- Help us determine hatch dates by classifying chicks into one of the categories below.

If you are not sure whether a bird is a loon, photograph it if possible. Also photograph nest and chick locations. Photograph from a distance so you do not disturb the loons.

After you complete your survey:

Turn in your [Loon Observation Forms](#) to your coordinator ([Appendix A](#)) as soon as possible.

Contact your coordinator as soon as possible if you are unable to get to lakes you have agreed to survey.

Classification of Loon Chicks by Stage

(Photos by Dan Poleschook, Jr. and Ginger Gumm)

STAGE 1 - The chicks are small and have black to brown downy feathers with a white belly. They keep these downy feathers only from hatch for approximately 7 to 10 days. Chicks in this stage are often observed on the backs of adults.



STAGE 2 - From 10 to 14 days old, the black downy feathers appear more brownish or reddish-gray. The chicks keep these feathers until they are approximately 4 weeks old when they may start to appear unkempt.



STAGE 3 - At about 4 weeks of age, the brownish (reddish) gray downy feathers start being replaced by smoother gray contour feathers. By the end of this stage, at about 9 weeks old, the chicks have completely replaced their down feathers with smooth gray contour feathers.



STAGE 4 - At 10 to 11 weeks, juvenile plumage is complete and flight feathers have erupted enough to allow flight practice. They can fly when they are 11 to 13 weeks old. At 14 weeks old most chicks are surviving on their own as their parents have already left the lake. The chicks will retain this last set of feathers until the next summer when they will experience their first complete molt.

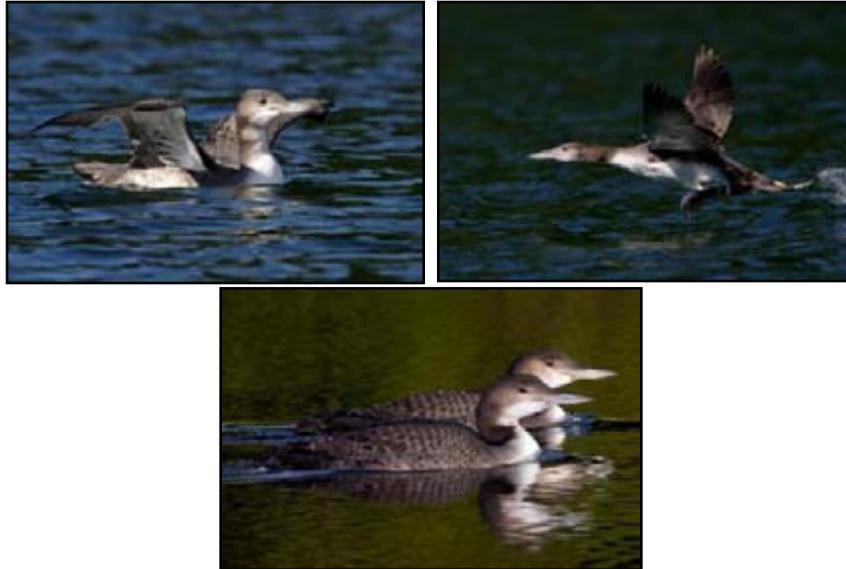


Photo Guide to Common Loons and Similar Species

(Photos by Dan Poleschook, Jr. and Ginger Gumm)



Common Loon on Nest (Summer Plumage)



Common Loon Nest with Two Eggs



Common Loon Family with Two Stage One Chicks



Common Loon in Winter Plumage



Upright Wing Flap (Territorial Behavior)



Penguin Dance (Territorial Behavior)



Surface Rush (Territorial Behavior)



Aggression towards Waterfowl



Common Merganser (male)

Similarity: all black head and overall coloration

Distinguishing: thin, bright orange bill



Common Merganser (female)



Barrow's Goldeneye (male)

Similarity: black head and overall coloration in males

Distinguishing: white patch on face, duck-like shape, short bill, small size



Common Goldeneye (male)



Double-crested Cormorant

Similarity: size, long bill, neck shape

Distinguishing: orange face and throat



Yellow-billed Loon (Basic Plumage)

Rarely observed in Montana

Distinguishing: heavy pale to yellow bill that angles up



Western Grebe

Similarity: general shape, red eye

Distinguishing: white neck/cheek



Red-necked Grebe

Similarity: tremolo, general shape, chicks ride on back

Distinguishing: red neck, white cheek, small size

Observing Banded Loons

When making band observations, always state which leg (i.e. LL or RL) the bands were on and the color combination on that leg as “some color” over (or /) “some color”. This can be complicated because in many situations the leg is upside down. A very easy way to remember which color is reported first is to always record the combination as **the band closest to the body over the band closest to the foot**. (Note: some birds may have only one band per leg.) All loons will have a silver color USFWS band with a unique band number (number not visible). Color bands may have stripes, dots, or letters present. Report all bands to area coordinators.



Example 1: February 2006 images of the Upper Stillwater Lake female common loon at her usual winter home in Morro Bay, California. The bands for this bird are recorded as **LL Red/Blue, RL Not Observed**. The red band is listed first, as it is closest to the body. The right leg is not visible; therefore it is recorded as not observed. (Photo by Darwin Long)

The following banded common loon photos were taken in Washington and were provided by Daniel Poleschook, Jr. and Ginger Gumm.



Example 2: Very rarely will you have the opportunity to observe bands when a loon is taking off from a lake, although it is possible to observe bands while in flight. The band combination for this bird is **LL Orange/Green, RL Red/Silver**.



Example 3: Sometime observations can be made with legs still in the water. The band combination for this bird is **LL Red??/White or Silver, RL Fluorescent Pink/Fluorescent Green**. In this case it is difficult to make out the bands on the LL. Report only what you can positively identify or make a note of you uncertainty (i.e. “??”, or possible colors).



Example 4: This is typical of the type of observation you will make. One leg will be raise into the air exposing the leg. This bird has only a single band on leg indicating it was either too small to receive two bands at initial capture or it lost a band. The band combination for this bird is **LL Not observed, RL Yellow/Nothing**. On your observation form clearly indicate that the leg had only a single band.



Example 5: Again, this is the typical observation. It would be easy to record this as LL Orange Stripe??/Unknown, RL White/Green, but that would be incorrect. **Remember always record the band closest to the body first**. The correct observation is **LL Orange Stripe??/Unknown, RL Green/White**. The band on the left leg is questionable so I made sure to note my uncertainty.

LOON OBSERVATION FORM (January 2009)

Lake/Territory Name _____ Observer _____
 Date _____ Weather (temp., wind, precip.) _____ Address _____
 Time Observed (Start/Stop) _____ Phone _____

Instructions: 1. Record significant observations of loon interactions, nesting, chick rearing, loon/human interactions, predators and waterfowl. Loon behaviors using timed intervals may be indicated in the lower table. 2. On the map on back, indicate loon locations, nest site, floating buoys, boats/watercraft, eagles and other predators, and observation points.

Summary:

Pairs _____ # Singles _____ Total Adults _____ # Sub Adults _____ # Chicks/Juveniles _____ Chick Size (Stage or Age) _____
(brown & white adult-sized bird) (young of the year)

banded adults _____ # banded chicks _____ # People (on shore) _____ # & type of Boats _____ Loon signs on shore (location) _____
 Sign buoys at nest site _____ Artificial nest platform present? _____ Nesting (Y/N) Nest Status: (Incubating)(Abandoned)(Hatched)
 # Eagles _____ Eagle Location and Activity _____ Ravens (# and Activity) _____

Significant Observations

Color of Bands:

	Left Leg (closest to body)	(closest to foot)	Right Leg (closest to body)	(closest to foot)
Indicate loon: Adult 1 (A1) of pair, Adult 2 (A2) of pair,	Loon _____ (LL) _____ / _____		(RL) _____ / _____	
Chick 1 (C1), Chick 2 (C2) and other adults (A3, A4...)	Loon _____ (LL) _____ / _____		(RL) _____ / _____	
	Loon _____ (LL) _____ / _____		(RL) _____ / _____	

Loon Behavior Key:

- | | | | |
|-------------------------|--------------------------------|---|---|
| B1 Diving/feeding self | B8 Call – wail | T3 Territorial – approach | T9 Territorial – harassment diving |
| B2 Diving/feeding chick | B9 Call – hoot | T4 Territorial – raised neck | M1 Courtship – mutual bill dipping/diving |
| B3 Swimming | B10 Call – flight tremelo | T5 Territorial – upright wingflap | M2 Courtship – ashore nest testing |
| B4 Preening | B11 Chick riding on adult | T6 Territorial – circling, bill dipping, diving | M3 Courtship – copulation |
| B5 Sleeping/loafing | B12 Chick fed by adult | T7 Territorial – penguin dance | N1 Nesting – nest building |
| B6 Flying | T1 Territorial call – yodel | T8 Territorial – surface rush | N2 Nesting – incubation |
| B7 Call – tremelo | T2 Territorial – tremelo/yodel | T8 Territorial – chasing/attack | N3 Nesting – left nest |

Loon Behavior Table: List the key codes with the corresponding loon using 5-15 minute time intervals. See example at bottom of table- Adult 1 is feeding self (B1) and yodeled – territorial call (T1). Adult 2 is nesting (N1). Do not record behaviors if loons are reacting to your presence.

Time Interval (Start) (Stop)	Adult 1 (A1) of pair	Adult 2 (A2) of pair	Other Adults (A3, A4...)	Chick 1 (C1)	Chick 2 (C2)	# People on Shore	# Boats in Water	Comments
10:15-10:25	B1, T1	N2				12	3	EXAMPLE: A1 yodeled when boat approached. A2 is nesting.

Please hand draw a map if none is provided and include a north arrow and a time interval. Label loons, nesting areas, nursery areas, observation points, and watercraft on map.

BEHAVIOR DEFINITION

- T1) Yodel** – Territorial call given by the male loon, usually given when another male flies over the territory or in a territorial encounter.
- T3) Approach** – A pair approaching an intruder loon, other waterfowl or boat
- T4) Raised Neck** – A heightened alertness and is an easy clue that something is disturbing the birds.
- T5) Upright Wing-flap** – The loons to rise up out of the water and flap their wings with white breasts towards the intruder. This is a long distance signal to an intruder (loon or boat) that the territory is occupied.
- T6) Circling** – The resident pair and the intruder loon move around each other in a circle.
Bill Dipping – A repeated sequence of raising the neck/head and a dipping of the face into the water. A nervous gesture, which occurs as the loons come within a close distance of the intruder.
Mutual Dive – Jerky head movements followed by shallow dives by 1 or more loons.
- T7) Penguin Dance** –The birds raise up vertically out of the water, treading water with their feet. Sometimes they slap the water with their wings. This is the most aggressive territorial behavior.
- T8) Surface Rush** – Usually follows Penguin Dance. The “dancing” bird falls forward into the water and continues the momentum as an underwater torpedo.
- T9) Chasing** – Occurs on the surface as the loon uses their wings in an “oaring” motion to chase off an intruder.
Attack – Loons will attack other birds, such as grebes.
- T10) Harassment Diving**– Loons will harass waterfowl by diving and resurfacing under the offending bird.

Sample Volunteer Letter

Area Coordinator
Mailing Address
Loonville, MT 59937

Date

Dear _____,

I have enclosed you Loon Observation Forms for _____ (Lake). I have also included a copy of [Appendix E](#) (Common Loon Surveys) from the [Conservation Plan for Common Loons in Montana](#). This packet provides considerable amounts of information that will assist you with you observations. Thank you so much for your willingness to help and for you enthusiasm!

In an attempt to get more information on the loon population and more information on nesting attempts, we will again be conducting surveys twice; once during the spring season and once during the summer season. The first survey should be conducted in mid-May, which this year falls on _____. The second survey date is the traditional Loon Day survey which is _____. As a minimum it is very important to get these surveys done. Of course you are always welcome to visit the lake(s) more often and take more observations.

Please use your Loon Observation Form for your surveys. Note the message near the top of the form under “Instructions”. As a minimum, please fill out the top of the form and the information in the box. This observation form should be used for both the May and July surveys, and can also be used for any additional surveys you do. There is a spot on for a map on the back of the form. Please draw a map if loons are spotted, especially if they appear to be nesting. The map will be very helpful to us.

Please return your survey forms to me as soon as you complete them. As in the past, mail the form even if you didn’t see any loons. There absence from a lake is important too. We have a database set up for storing all of the information we gather. This same effort is being coordinated in other parts of Montana, so we are optimistic that we will learn a lot about our population of loons and that as a result our loon management will improve so that we can enjoy these wonderful birds for many years to come. If you have any questions about these forms please call me.

Again, many thanks! I hope your lakeside visits are filled with pleasant surprises.

Sincerely,

Area Coordinator