

## **APPENDIX B: Best Management Practices for Common Loon Habitat**

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### **INTRODUCTION**

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Public interest in common loon habitat and ecology has increased dramatically during the latter part of the 20<sup>th</sup> century. The persistence of common loons relies heavily on the public's continued interest as well as their active participation in conservation and management. Wildlife resource agencies and conservation groups have increased their research and management efforts on common loons over the last 20 years. Recognizing the need for collaboration in managing common loons in Montana, a team of biologists from both government and non-government agencies created the Common Loon Working Group (CLWG). They have cooperated with each other locally and nationwide to coordinate common loon inventories, research programs, and other management and educational activities that help maintain common loon habitat in much of its historic range.

The CLWG recognized the potential impacts of ever-increasing human development, recreational activities, and forest management activities may be having on common loon populations. In response to this concern the CLWG has developed a set of voluntary **Best Management Practices** (BMPs) to guide activities that could affect Montana's common loons or their habitat. The CLWG used information gathered from 20 years of loon monitoring throughout western Montana; the results and management implications from several Master's theses, research results on breeding common loons in Montana and other states from the 1980s through 2008, the recommendations and conclusions of the Conservation Plan for Common Loons in Montana, and 10 years of cooperative work together as diverse members of the CLWG.

Objectives of the BMPs are to 1) avoid disturbing loons during territory establishment, breeding, nesting, brood rearing, and at key foraging sites, and 2) avoid altering the habitat at or adjacent to known, suspected, and potential nest sites and important brood rearing sites.

These BMPs are general guidelines that will help a landowner or land manager evaluate both direct and cumulative effects of potential new activities on common loons and their habitat. Evaluating which guidelines provide the best conservation for a proposed activity are best reviewed during the planning process and incorporated as part of the final proposed action.

#### **Why Do Common Loons Need Our Help?**

As described in the Conservation Plan for Common Loons in Montana, human activities can cause short-term and long-term effects to individuals as well as the entire population. Many human activities can take place near or in common loon habitat that will not have any discernable impact on common loons or their habitat, depending on the activity, the timing of that activity, and how it might affect loon habitat. However, activities that generally occur close to common loon nesting, brood rearing, or key foraging sites can affect subsequent loon nesting success, not only for the current year, but possibly for many future years. Some of these activities include, but are not limited to water recreation, boats, canoes, and kayaks spending too

much time close to a nest, building and development in, on, or near nesting habitat, and the operation of loud equipment in close proximity to nesting loons. Any single activity or a combination of activities could have a significant or irreversible effect to common loon productivity and common loon habitats.

### **What Lakes Should Follow BMPs?**

More than 300 Montana lakes with known or potential value for nesting, foraging, and migration were classified and coded by the CLWG ([Appendix A](#)). The following BMPs are organized in the context of these loon lake classifications or codes as described in [Appendix A](#). The recommended BMPs depend on both the importance of that lake to loons and the nature, duration, and timing of that activity. If an activity is near a lake and not on this list, these common loon BMPs would probably not apply. However, if an activity is near a private or unnamed lake for which we have no data, we suggest you check with the local loon coordinator ([Figure 1](#) and [Appendix A](#)) to be sure the lake is not an unsurveyed lake or pond. Many relatively small private ponds or lakes are not surveyed due to lack of access. Loon lakes are typically greater than 13 acres (5.4 hectares), but loons have nested on very small (<10 acres) potholes or wetlands in Montana in the past.

### **What Types of Activities Are Covered by BMPs?**

We describe BMPs for forest management activities, subdivisions, construction, and the development of recreational sites or services. Forest management activities include, but are not limited to roads (construction, drainage, use, maintenance, etc.), timber harvest (erosion control, helicopter logging, and other alternate methods), trails, fire prevention and suppression (thinning, helicopter use, etc.), and future land use considerations. Other activities include, but are not limited to subdividing land, splitting existing lots, roads, docks (public and private), boat ramps, campsites, campgrounds, fishing access sites, and all the associated or subsequent activities related to or resulting from the above.

### **Is a Site Specific Management Plan Available or is More Information Needed?**

If a proposed action is within ¼ mile of one of one of these classified loon lakes, particularly a nesting lakes coded “A” or “B”, determine if a [Specific Lake Management Plan](#) already exists for that lake or territory ([Appendix A](#)). If one exists, that Plan should provide the best information about that lake or territory and provide the context and appropriate BMPs or management actions needed to protect common loon habitat. Work with the area coordinator ([Figure 1](#) and [Appendix A](#)) and others to apply the BMPs in the plan to address the specific situation.

If a [Site Specific Management Plan](#) does *not* exist, we propose that the landowner, land manager, or community work together with the appropriate members of the CLWG to develop a detailed and effective [Site Specific Management Plan](#) using the history of loon activity on that lake, the nesting, brood-rearing, and foraging habits of the potentially affected loon pair(s), history of disturbance, these BMPs, and other information and tools relevant to maintaining habitat quality and reproductive success. This [Site Specific Management Plan](#) would be reviewed and approved

by the CLWG when completed. Instructions and examples for [Site Specific Management Plans](#) are provided in [Appendix C](#). It might take members of the CLWG and others 60 days to develop a workable Site Specific Management Plan.

### **Obtain Relevant Site Specific Information MNHP/Coordinate with CLWG Coordinator**

To obtain, or understand the specific nesting, foraging, or migration information for a specific site/lake/territory, you can do the following:

1. Obtain additional information on common loon nesting sites, historical use, brood-rearing, and production information for that lake or territory by first making a specific request to the [Montana Natural Heritage Program](#) or their Helena office at 406-444-5354. This request will need to be by lake name or territory name but must also include section, township, range, drainage, county, or other coordinate system.
2. Work with the local CLWG coordinator. The request for more detailed information through the [Montana Natural Heritage Program](#) will also be forwarded to the appropriate CLWG coordinator for that lake or territory. This individual will then help interpret the available historic and biological information, the application of the recommendations in the Lake Site Specific Management Plan (if one exists), the actual development of a Lake Site Specific Management Plan, and/or the application of the recommended BMPs.

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### **RECOMMENDED BEST MANAGEMENT PRACTICES**

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These BMPs offer guidance to landowners, land managers, planners, or others who are considering activities listed in the introduction on or near an important loon lake or territory. In addition, these BMPs offer guidance to management agencies regulating and/or planning for these activities on loon lakes and to agencies or their entities planning or considering projects on public lakeshores and/or projects that would provide or change public access to loon lakes. These considerations apply to activities including but not limited to existing and planned features such as shoreline trails, campgrounds, picnic sites, boat ramps, fishing or boat docks, road access to recreational developments/features, and new or increased access to remote and/or previously inaccessible lakes.

If a land activity has already occurred within ¼ mile from one of these loon lakes, we recommend a review of any known past habitat or lakeshore changes to see if this activity has already had effects on that lake or territory habitat. This will help identify what actions, if any, to consider as part of the proposed project to avoid, reduce, or offset some of these already existing effects.

The following BMPs focus on minimizing changes to natural vegetation and shorelines that are part of important loon habitats and avoiding disturbances during the loon's critical or sensitive life stages (nesting and brood-rearing).



Figure 1. Common Loon Survey/Coordinator Areas (also see [Appendix A](#)).

**Step 1: Evaluate proximity of proposed activities to important loon territories or lakes.**

If proposed activity is within ¼ mile of a classified loon lake or territory listed in [Appendix A](#) or based on information from landowner, Montana Natural Heritage Program, or other source..... **Go to Step 2.**

If the action is proposed to occur on a lake in a remote area or on a lake not accessible by road, or outside of the generally surveyed area of northwest Montana (Figure 1), then obtain a site evaluation by a qualified biologist or by the appropriate member of the CLWG to determine if the lake may provide habitat for common loons.

If the action is proposed to occur on a lake with no road access, or outside of survey area in northwest Montana (Figure 1), then obtain a on site evaluation by a qualified ornithologist and /or the appropriate member of the CLWG to determine if the lake is being used or has the potential to be used by loons.

If the activity will not affect a loon lake.....**Go to Step 6.**

**Step 2: Review Loon Lake Classification Codes ([Appendix A](#)) for those lakes/territories that fall within ¼ mile of proposed activity.**

The CLWG members have classified approximately 150 lakes in northwest Montana according to their importance for common loons. There are different classification codes for nesting, foraging, and migration; the various codes reflect the relative importance of that lake or territory to loons in Montana.

If the activity falls within ¼ mile of a lake coded A, B or F1, go to **Step 3**.

If the lake is not listed or associated with codes A, B or F1, go to **Step 5**.

**Step 3: Proposed Activities on Lakes coded A, B, or F1.**

Obtain additional information on loon use of lakes adjacent to the activity from an area coordinator ([Appendix A](#)) or the [Montana Natural Heritage Program](#). The area coordinator can provide you with a copy of a Site Specific Management Plan, if one is available. Review the plan and relevant biological information with the appropriate CLWG coordinator or other CLWG members. The Site Specific Management Plan has already adapted the BMPs to the specific loon lake or territory based on local knowledge and breeding history and land uses. If a Site Specific Management Plan is not completed, consider supporting the development of one for that territory or lake. If a lake or territory Site Specific Management Plan is deemed unnecessary for the proposed activity, review and adapt/apply the following BMPs. This application of the BMPs would be termed a single forest activity implementation plan and it would be applied to that single activity.

**a. Avoid activity within ¼ mile of A, B, and F1 lakes or territories during critical breeding season times** Compare timing and distance of proposed activities to potential loon reproductive or foraging timeframes listed below and determine if the proposed forest management activity can be undertaken outside loon nesting, brood rearing, and foraging seasons.

- **Nest Sites Selection and Nesting:** Avoid activities from ice-out ~**April 1 to June 15<sup>th</sup>**: Nesting sites are typically sheltered shorelines of islands, bays, peninsulas, and wetlands.
- **Brood-rearing areas:** Avoid activities near brood-rearing areas from **May 28-July 15<sup>th</sup>** unless reproduction has completely failed. If the nest has failed or chicks hatched and have been lost and the pair has not re-nested, the time restrictions would no longer apply for that season. Brood-rearing areas usually consist of shallow bays and shorelines commonly used by a loon family during the 4 weeks after chick hatch ~ these dates cover the time frames for first and second nesting attempts.
- **Key Foraging Sites:** Avoid activities near key adult foraging sites from ~**May 1-July 15<sup>th</sup>** during nest site selection and nesting, and brood-rearing

seasons. Key foraging sites are defined as those portions of a territory or lake often used by nesting adults during incubation and young rearing. These sites may be on nearby lakes or in a different part of the lake/territory from brood rearing or nesting.

**b. Avoid intense human activities within appropriate buffers from nest, brood-rearing or key foraging sites.** If the activity must occur within ¼ mile of the A, B, or F1 lakes or territories during the nesting season, develop appropriate buffer areas around key loon sites using best available information. This would include information on: whether the activity is in the line of sight of the key area, the potential effects of other ongoing activities, the type of activity, the amount of time the proposed activity would take, anticipated noise levels, human presence on water or shoreline, etc. No activity should occur within these recommended buffers, unless there is mitigating information that allows you to reduce these distances.

- **Nest Sites:** Avoid direct human activity or presence on land or water within 500 ft of an active nest sites.
- **Brood rearing areas:** Avoid direct presence on land or water within 300 ft of brood rearing areas during the brood rearing season.
- **Key Foraging Sites:** Avoid direct presence on land or water within 100 ft from designated foraging sites on F1 lakes.

If proposed activity will ultimately affect current stand and riparian/wetland or shoreline vegetation within recommended buffers of key nest sites, brood rearing areas, and foraging sites on A, B, or F1 lakes..... **Go to Step 4**

If proposed activity involves either private or public and includes, but is not limited to building a home, commercial enterprise, dock or road access, trail access, boat house on A, B, or F1 lakes..... **Go to Step 5**

If the planning concludes and the CLWG coordinator’s evaluation of the available loon information indicates that the proposed activity would affect the lakeshore of a C, D, or E lake or lake with F2 or F3 codes or any other lake including M1, M2, and M3..... **Go to Step 6**

**Step 4: Forest (Vegetative) Management near Lakes or Territories on A, B, or F1 Lakes (if not A, B or F1, go to Step 5)**

These assume activity takes place outside nesting season window as listed above (ice out or ~April 1 to July 15<sup>th</sup> if nesting occurs and chicks hatch).

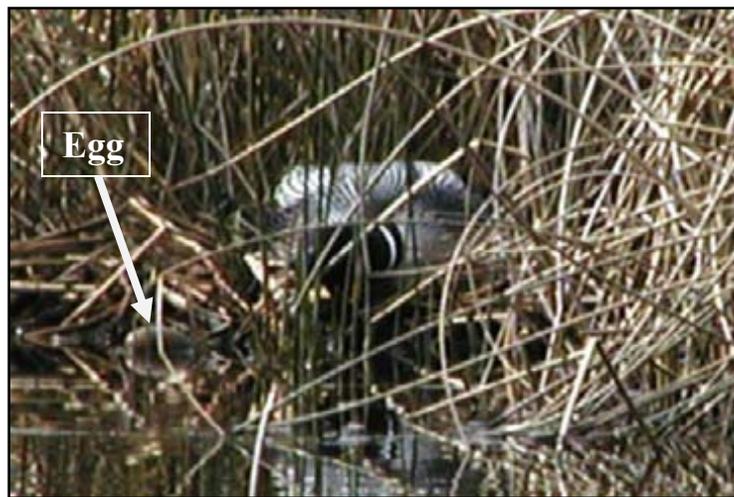
- Avoid riparian/wetland or upland vegetative disturbances within first 300 feet of nest sites, first 100 feet of brood rearing areas and 50 feet from foraging shorelines. Silvicultural prescriptions beyond these distances of the lakeshores need to consider visual screening and other factors listed below.
- Alternatively, undertake an on-site evaluation with knowledgeable member(s) of CLWG and create an appropriate buffer area with prescriptions around the nest sites, brood rearing areas or foraging sites based on site characteristics, visibility from shoreline or roads, security from predators or dogs, stand characteristics, roads, homes, docks, and other activities in area, etc.
- Consider the current stand condition and the harvest prescription and its potential effect on public access, visibility from roads or a public access site, visibility or vulnerability from proposed or existing developments, etc.
- Determine whether the harvest prescription will affect visual screening of the nest site from various points of view including water and shoreline or if it would provide new access of the site or lake since this could increase recreational use?). Some prescriptions at distances greater than 300 feet could have a disproportionate disturbing affect if the lake is small and isolated.

**Step 5: Proposed activities affecting shorelines of lakes with Lake Codes A, B, and F1.**

If construction is expected to occur in or near important common loon habitats, consider cluster development on other property rather than placing lots on or adjacent to nest sites, consider land donated (through an easement or other options) to a private conservation or public agency for permanent protection or designation of a permanent park or preserve for the sensitive area. In the case of a community park or preserve, develop a management plan with the appropriate public agency. The following guidelines will help ensure existing and alternative nest sites, brood rearing areas, and important foraging sites will not be abandoned.

- **Nest Sites**
  - Avoid construction of a building, road, trail, public access, dock or any development within 500-feet of existing, historic, and potential nest sites on lakes with a code of A or B.
  - Maintain vegetative integrity along shoreline within that 500 feet buffer by retaining at least 75% of natural vegetation or replanting about 75% of natural vegetation within the first 50 feet of the shoreline. The size of the required buffer may be modified depending on existing shoreline configuration, line of sight from proposed action, nest site cover, history of nest use, nearby land uses, availability of alternative nesting areas, future land uses, etc. The design of the buffer should be undertaken with assistance from the CLWG.

- Limit or minimize the use of private docks, homes, boathouses or construction sites that are in the direct line of sight and within 500 ft (160 m) of active loon nests. Dogs and other pets should not be allowed within 500 feet of nest site occupied by a pair of loons.
- Monitor effects of any human/pet use near or within this buffer area, using loon behavior as a guide to determining whether or not the buffer is adequate. If a human activity, such as walking near the shore or on a dock or docking a boat causes a loon to lower its head (Figure 2) or flush from a nest site, the buffer should be increased. Some degree of a nesting pair's tolerance to human activity may increase during the nesting season if the site becomes more hidden by vegetative growth and by lack of general disturbance within the buffer. If a human activity, such as walking near the shore or on a dock or docking a boat causes an incubating loon to lower its head or for the non-incubating adult to approach the disturbance or if an adult flushes from a nest site, the buffer area should be increased.



**Figure 2.** A nesting common loon's response to disturbance. Notice the egg in the water to the left of the loon. It is common for eggs to be knocked out of the nest when a disturbed loon is flushed from its nest. For additional photos of loons responses see [Appendix E](#).

- **Brood rearing Habitat and Key Foraging Sites**

- Avoid construction of a permanent building, road, trail, public access, dock or any development within 50-feet of shoreline that encompasses existing, historic, and potential key adult brood rearing or adult foraging sites on lakes with a code of A or B.
- Maintain vegetative integrity along shoreline within that 50 feet shoreline buffer by retaining at least 75% of natural vegetation or replanting about 75% of natural vegetation within first 25 feet of the shoreline.

- Retain and protect marsh, emergent, and all wetland vegetation within known brood-rearing areas or along key foraging areas as this provides important buffer from upland activities, helps maintain high water quality, and provides fish and security for young birds and adults. The size of the required buffer may be modified depending on existing shoreline configuration, line of site from proposed action, size of foraging area, history of loon use, effects of nearby land uses, availability of alternative foraging areas, future land uses, etc. The design of the buffer should be undertaken with assistance from the appropriate CLWG members.

**Step 6: Activities on all other Loon Lakes (C, D, E, F2-F3, and M1-M3).**

The current state or federal forestry rules governing harvests next to water bodies should be adequate to protect water quality and potential future uses of that lake by common loons.

- **Apply Montana Stream Side Management Zone (SMZ) Act (MCA 77-5-301).** The SMZ regulations require a 50 to 100 ft partial harvest retention zone around all streams, lakes and other water bodies depending on slope. Trees retained must be representative of the species and size present in the pre-harvest stand. In practice less than 1/3 of the riparian volume can often be removed. Specific restrictions within SMZ deal with timber harvesting, broadcast burning, road construction, side casting of road materials, equipment operation, slash deposition, and the handling of hazardous and toxic waste.
- For more information please review [Montana's Forest Practices](#).

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**BMA EVALUATION TOOLS AND CONSIDERATIONS**

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To evaluate loon sensitivity and/or effectiveness of applied buffers during loon breeding season, look for the following:

- **Active Nest Sites and Brood Rearing Areas:** Loon behavior can help determine if an activity such as a conducting a survey or a machine noise will cause a disturbance to loons during the breeding season that could impact nesting success. During incubation, observe the nesting adults during an everyday activity or during an approach by land or water near an active nest area. At the distance where that activity causes an adult loon to lower its head (Figure 2) is the recommended minimum buffer around that nesting area. The loon lowering its head in this manner is a clear indication that this activity or disturbance is beginning to stress the nesting loon. This behavior may also occur after the chicks hatch. Also, monitor the adult that is not on the nest. Usually the other adult, if on site, is nearby at a lookout area which could possibly be several hundred yards away. At this point the second adult is no longer fishing or resting, but focusing on either the nesting adult, the adult with chicks, humans, or the disturbance. The change in bird behavior at this

distance is also an indication of a buffer area around a nest site or brood rearing area. In both nesting situations and in situations where the chicks have already hatched adults may actually move closer to the boat or person. While approaching loons may show their white belly to display their presence, vocalize with a tremolo to announce they are disturbed or vocalize with a yodel to warn that you are in their territory. This behavior indicates that they want you to leave the area or to cease the activity. In extreme cases of disturbance common loons will surface rush towards the disturbance or rise completely out of the water and charge at the disturbance in what is known as a penguin dance. See [Appendix E](#) for photos of loon behaviors.

- **Other Human Activities on Lake:** On lakes that have shoreline development, public boat ramps, and other types of frequent human activity, forestry operations may be able proceed within the ¼ mile buffer especially if out of direct line of sight of nesting, brood rearing, or foraging shorelines. Conversely, on lakes with limited human activity, loons may be more sensitive to activities at greater distances because of a previous lack of human exposure. Monitor loon behavior when humans approach on land along shoreline or from behind the nest. If loons appear sensitive to human presence as stated above at distances greater than 500 ft, avoid any activity in that territory during the nesting or brood-rearing period.