

# Loons and People: Guidelines for “Nesting” Together on Adirondack Lakes



**Wild Gift, [www.wildgift.org](http://www.wildgift.org)  
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**COLLABORATING ORGANIZATIONS:**

The Wildlife Conservation Society's Adirondack Program, [www.wcs.org/Adirondacks](http://www.wcs.org/Adirondacks), has also greatly assisted with this project. Their mission is to promote both healthy communities and wildlife conservation in the Adirondack Park through an information-based and cooperative approach to research, community involvement, and outreach. This project complements WCS' broader efforts to minimize the impacts of backcountry residential development on a number of wildlife species and their habitats. For additional information, refer to WCS' Adirondack Program's publication, "*Make Room for Wildlife*", a set of guidelines for local planners to minimize the effects of development on wildlife.

The Adirondack Park Agency (APA), [www.apa.state.ny.us](http://www.apa.state.ny.us), has also contributed to this project. The APA is a New York State governmental agency that develops long-range land use plans for both public and private lands and regulates private land use and development within the boundary of the Park.

**ACKNOWLEDGEMENTS:**

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I am very grateful to all the individuals who reviewed these guidelines. Their comments and suggestions greatly aided in the completion of this document.

Photographs were provided by Dr. Nina Schoch and Gary Lee.

**NOTE:**

*This information has been written for distribution in New York State's Adirondack Park. However, these guidelines are also applicable to the rest of New York, and all Common Loon breeding habitat.*

## **INTRODUCTION**

The Common Loon (*Gavia immer*), with its unique summer plumage, eerie red eyes, and haunting calls, is an icon of wilderness throughout the Adirondack Park. As development of land and human activity in the Park increases (Bauer 2001), the survival of the Common Loon and other wildlife may become threatened. People and loons need to coexist on Adirondack lakes in order to ensure this emblematic species is present for future generations.



These guidelines provide information about issues that arise due to the overlap of loon nesting habitat with lakeshore development and recreational boating activities. By increasing awareness and knowledge of Common Loon behavior and breeding habitat, these guidelines will enable people who share lakes with loons to better protect this symbol of the wilderness.

## **WHY PROTECT THE COMMON LOON?**

Many people are attracted to loons because of their striking appearance and fascinating calls. However, there are many other reasons to protect these unique birds.

The Common Loon is protected by both federal Migratory Bird Act and New York State law. The Migratory Bird Act protects all migratory birds, including their eggs, nests, and feathers. In New York, the loon is also designated as a Species of Special Concern.



As fish-eating birds, loons are at the top of the food chain in aquatic ecosystems. Thus, if pollutants accumulate up the food chain, their effects may be observed in top predators, such as loons.

The Common Loon is a long-lived species, living 20-30 years. They are also very territorial, returning to the same territory on the same lake each year.

These unique characteristics make loons excellent biological indicators of freshwater ecosystems, enabling scientists to use the Common Loon to learn about issues affecting aquatic ecosystems in the Adirondack Park and throughout their breeding range.

## **THREATS TO BREEDING LOONS**

Since the breeding habitat of loons in New York State almost completely overlaps with human use of lakes, many threats affecting loons are related to people, including pollutants, lead poisoning from ingestion of lead fishing tackle, and fishing line entanglement. Two other significant threats to loons are nesting habitat loss from lakeshore development and disturbance from boating, recreational, and other human activities.

As more people build second homes in the Adirondacks and visitation to the Park increases (Bauer 2001), the threat of development around lakeshores also increases. This has high potential to result in the loss of prime loon nesting habitat. This may force loons to nest in poorer sites, or not at all, thus decreasing the reproductive success of breeding birds. Also, pollution due to surface run-off from lawns and emissions from motorized watercrafts can decrease the water quality and visibility of lakes, making it harder for loons to hunt for fish.



With the number of people living on and visiting Adirondack lakes rising, the potential for human disturbance of loons grows. If a loon is regularly disturbed on a nest, it may abandon the nest, or the nest may fail because the eggs will not be incubated sufficiently. It can take over an hour for a bird to return to a nest if it is disturbed, even if the cause of the

interruption leaves immediately. Also, when a loon is off the nest, the eggs are more susceptible to being eaten by predators. Opportunistic predators, such as gulls and raccoons, are more common in areas where humans and their garbage are found.

The overall impact of lakeshore development and human disturbance on loons is to affect their reproductive success. If loons are unable to breed successfully, the loon population in New York will eventually decrease.

### **PROTECT SHORELINE HABITAT FOR NESTING LOONS**

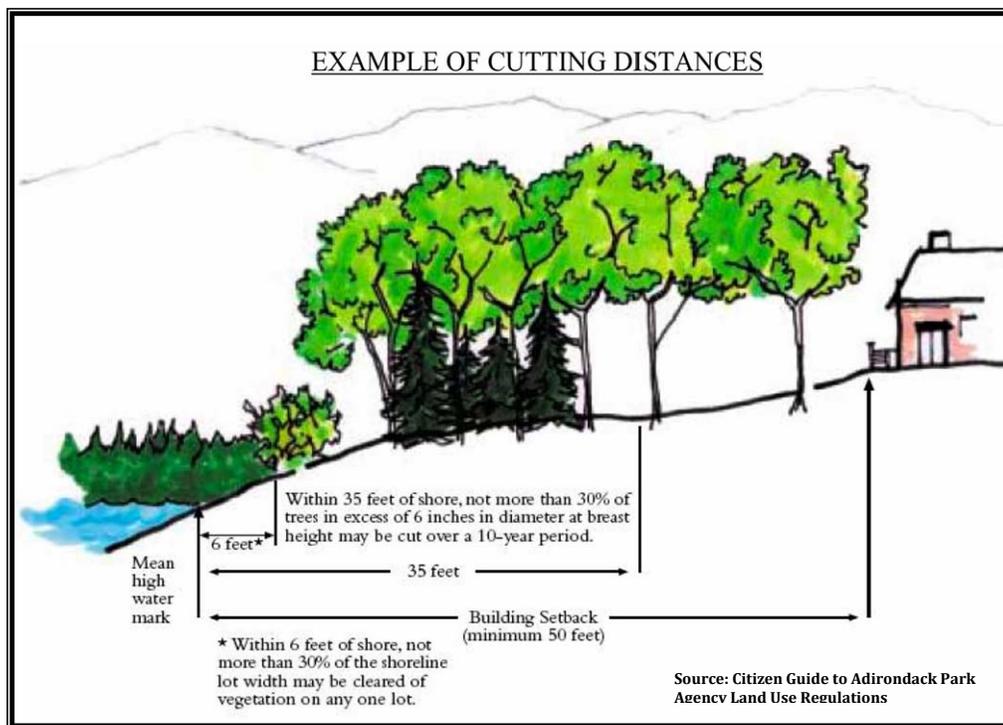
People can utilize a variety of techniques to help protect shoreline habitat for nesting loons and other wildlife species.

- ❖ **Obey shoreline regulations.** In the Park, the Adirondack Park Agency (APA) has developed shoreline restrictions that apply to all lakes and ponds. These restrictions include minimum lot widths, structural setbacks, dock and boathouse requirements, sewage system setbacks, and shoreline cutting restrictions. Before building or making any structural changes on your property, contact the APA to make sure it follows regulations and to determine whether a permit is needed.



- ❖ Minimize water level fluctuation during the nesting season. Water level fluctuations can be caused by both natural occurrences and dams. When dams are present on a lake, water level fluctuations can be minimized by working with dam operators throughout the nesting season (late May through June) to keep water levels constant to prevent flooding of a loon nest.
- ❖ Leave natural vegetation around shorelines beyond the minimum required by law. This will leave material for loons to use in building a nest and for hiding the nest from people and predators. Leaving a large buffer of native vegetation and cutting down fewer trees will also help prevent shoreline erosion and decrease runoff.

The minimum cutting restrictions for Adirondack shorelines is described in the diagram below:



Leaving a shoreline buffer zone (i.e. 20-100 meters minimum) can be done simply by not mowing grass or cutting down trees and shrubs along the shoreline. This allows natural vegetation to grow and become re-established. A shoreline buffer can also be created by planting native, deep-rooting plants, shrubs, and trees. Larger trees and shrubs can be pruned to decrease an obstructed view.

- ❖ Do not build in areas where loons have nested in the past. Loons often re-use nest sites from past years, and they like to choose nest sites that are farther away from development. Observing where the adult loons and adults with chicks spend most of their time on your lake can help you determine areas which should be protected (Spilman 2006).

- ❖ Leave large rocks, logs, and other woody debris in the water along the shore. Many



fish spawn in such areas, and loons need abundant fish to hunt. Loons may also nest on rocks and logs if they are accessible. This can also help prevent shoreline erosion because these objects act as a shock absorber from waves. Remove only what might be a safety hazard.

- ❖ Reduce pollution.

- Change your motorized watercraft to four stroke engines to produce fewer emissions than two stroke motors, or, alternatively, use a boat without a motor.
- In many older homes, the leaching component of septic systems may not be placed far enough away from the water. Make sure your septic system is functioning properly, and thus providing adequate effluent treatment.
- In order to prevent run-off into the lakes, do not use fertilizer. Fertilizer contains nitrogen and phosphorus that can change the clarity of the water and cause fish kills.
- Use soaps and detergents that are phosphorus/phosphate free.

- ❖ Remove plant material from watercraft before and after use. This will prevent the spread of invasive species, such as Eurasian water-milfoil, which can grow in dense beds, affecting the clarity of the water, and making it harder for loons to find fish.



### **MINIMIZE HUMAN DISTURBANCE OF LOONS**

Minimizing disturbance of breeding loons, in addition to protecting their nesting habitat, is essential to ensuring their ability to successfully hatch and raise chicks. The following methods will help prevent disruption of normal behavior of nesting loons and loons with chicks.

- ❖ Understand Common Loon behavior and vocalizations. If you are unsure that you are disturbing a loon, but the behavior or vocalization of the bird changes, you should back away. Note that if you are hearing soft, hoot-like calls, and the birds are feeding or preening, then you know the birds are behaving normally, and you are not causing them any distress, so you can continue observing them.



❖ Observe loons at a distance of at least 500 feet. Binoculars can be used to get a better view of the birds. Loons are curious, and may approach you, swimming quite close to your boat. However, please don't approach loons directly – let them come to you.

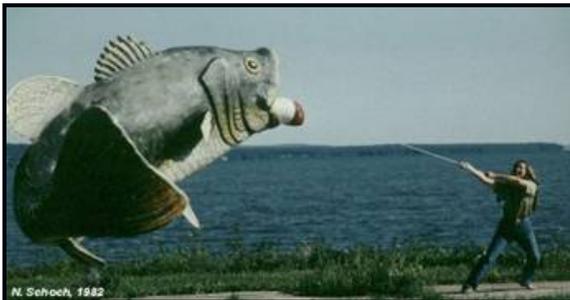
❖ Observe no wake zones and speed limits. Waves caused by motorized watercraft can swamp a nest and potentially lead to its failure. If you see a loon while in a motorized watercraft, please slow down so that you can hear the birds better. Loon chicks are hard to see or hear from a distance. They cannot dive well, so they may not be able to move away from the watercraft quickly enough to avoid being swamped or hit by the boat.

❖ When paddling a canoe or kayak, keep away from the shoreline, especially of islands, during the breeding season (late May through June), so that you do not inadvertently flush a bird off a nest. Do not approach loons with chicks, as the parents may stop caring for the chicks to distract you away from their young. If the birds approach you, and they are continuing to pay attention to their chicks, then it is fine to observe them as long as you like.



❖ Report harassment of loons to your local environmental conservation officer. Loons and many other wildlife species are protected by both state and federal laws. Thus, it is illegal to disturb or harass protected wildlife, such as loons, and people can be prosecuted and fined for doing so. Information on how to contact your local ECO in New York can be found at [www.dec.ny.gov/regulations/393.html](http://www.dec.ny.gov/regulations/393.html).

❖ Fish responsibly. Use non-lead fishing tackle and do not fish near loons. Loons can die from lead poisoning if they accidentally eat tackle that is still attached to a fish that got away or mistake a lost lead fishing sinker or jig as a pebble needed for digestion. If your line breaks, please pick up your lost line. Loons can become entangled in fishing line, resulting in wounds or even death.



- ❖ Avoid loud noises during the breeding season, such as fireworks and construction (blasting). Loud noises can disturb the birds, and prevent them from nesting or cause nest failures during late May through June.

By minimizing disturbance of nesting loons and loons raising chicks, you will help improve the reproductive success of these special birds.

### **LOON BREEDING HABITAT REQUIREMENTS**

Understanding loon breeding habitat and nesting requirements is essential to protecting prime nest sites and minimizing disturbance. Successful Common Loon breeding habitat has four main components: (1) the general characteristics of the lake, (2) nest site, (3) foraging habitat, and (4) rearing habitat (Evers 2007).

- ❖ Lake Characteristics: Loons typically breed on lakes that are at least 25 acres in size. Because loons cannot take off from land, they need lakes large enough for them to run on the water until they can get airborne. Loons also prefer lakes that have islands and irregular shorelines. Islands provide loons with nest sites that are protected from terrestrial predators. Irregularities in the shoreline, such as bays, provide loons with protection from disturbance and a better ability to defend their territory.



- ❖ Nest Site: Loons can nest on the shoreline of a lake or on islands, bog mats, rocks, and logs. Because loons have great difficulty walking on land, the nest site must be readily accessible to the water so that a loon can approach and swim away from the nest easily. The water adjacent to the nest must also be deep enough for the birds to slide off the nest into it. Sites that are protected from water level fluctuations are critical to ensure that the nest does not get flooded if the water rises, or is left “high and dry” if the water level recedes and the birds cannot get to the nest.



Natural vegetation around the nest site is important to hide the nest from potential predators and humans. Loons also use vegetation to build up the nest.

If given the opportunity, loons select a nest site far away from buildings and human residences. Thus, loons may choose a less suitable location for their nest because it is farther away from development and human disturbance (Spilman 2006).

- ❖ **Feeding Habitat:** Loons need foraging habitat in their territories to obtain the food necessary for survival. They need clear water for fishing because they are opportunistic visual hunters, and have difficulty seeing fish if the water is cloudy or has dense vegetation. They usually fish in shallow water close to the shoreline because fish and crayfish are easier to catch in the shallows, especially the smaller sizes (e.g.: minnows, sunfish...), which are needed to feed young chicks.



- ❖ **Nursery:** Once the chicks have hatched, the loon parents move the chicks to the rearing habitat or nursery. This is usually a bay protected from wind and waves, since loon chicks swim slowly and cannot dive well. Shallow waters are important to enable the adults to catch food of the appropriate size for the chicks and for teaching the chicks to fish. Nursery areas should have natural vegetation so that the chicks can hide when adults respond to threats, such as other loons, predators, and human intruders. Loon chicks may also be left unattended in vegetation while the loon parents fish or socialize with other birds.



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### **BREEDING LOON BEHAVIOR**

A better awareness of Common Loon breeding behavior will help minimize the threat of human disturbance. Loons have both behavioral and vocal warnings that indicate distress. It is important for people to understand the true meaning of these signals to decrease disturbing these birds by accident. By correctly interpreting the behavioral signs of disturbance, people will know when loons are indicating that humans are too close to a nest or chicks and should move away. This is critical to ensuring the reproductive success of the affected birds. If signs of disturbance are observed, you are too close and should back away!

#### **Behavioral Signs of Disturbance**

- ❖ **Furrowed Brow:** When loons first become agitated, they often square or “furrow” their brow. In this position, a loon swims with its head held high and alert, while its brow is squared, rather than smooth and round.





❖ Hiding Position: The loon will lie low on the water, partially submerged. This allows the loon to slide underwater easily and often undetected. When you see a loon in this position, you may only be able to see the head of the loon.

❖ Hangover Position: If you see a nesting loon with its head held low and close to the water, the bird is agitated. In this posture, called the “hangover position”, the bird may even look dead. This position allows the loon to stay hidden and, if needed, readily slide off the nest, quite possibly undetected. If you see a loon doing a hangover, you should immediately back away so you do not accidentally flush it from the nest, which could cause the eggs to roll out. In contrast, when a loon is sitting undisturbed on its nest, it holds its head high – this is a relaxed, comfortable position for the bird, enabling it to look around easily.



❖ Steadily Swimming Away: Sometimes loons show no other sign of agitation than to continually move away from the source of disturbance. If a bird is consistently swimming away as you approach, then in all likelihood, it is uncomfortable with you nearby. In this situation, the bird will probably resume feeding, preening, or resting behaviors if you increase the distance between you and the loon.



❖ Wing Row: If the loon is flushed off the nest, it might “wing row” rapidly away from the nest. In this behavior, the loon will often call with loud tremolos and make a lot of commotion as it attempts to move quickly across the water. The loon’s head will be held straight out and its bill pointed forward. It will seem like the loon is paddling with both of its wings at the same time to rush away. This behavior requires a lot of energy. If you see a loon wing rowing, you should back away to make sure you are not disturbing a nest or chicks.



- ❖ Penguin Dance: The most aggressive and energy consuming behavior of the Common Loon is called the “penguin dance”. In this behavior, there is a huge amount of splashing and noise as the bird paddles hard with its feet to keep upright – the loon appears to be standing high in the water with its wings spread a little away from its body and its beak pointed straight ahead. The loon moves across the water like this towards, or parallel to, the intruder. The bird also tremolos loudly, while its mate wails or tremolos. Many people mistake the penguin dance for a mating ritual, but it is not! If you see a loon doing a penguin dance, please move away immediately to ensure that you are not the cause of the disturbance of a nest or chicks.



#### Vocal Signs of Disturbance

Loons have several unique vocalizations. Some of these calls indicate that the birds are agitated and feel threatened. These distress calls are distinct, and can be easily recognized. Thus, learning and understanding these calls can greatly help reduce disturbance and increase the likelihood that the loons will successfully raise chicks.



- ❖ Wail: The most common and well known call of the loon is the wail. Many people say this call sounds like a wolf howling. Members of a loon pair use this call to communicate with each other. If you hear this call, you should be aware that other loons might be in the area. A wailing loon may be on a nest or have chicks with it. This could be the first warning call to a member of the pair.

- ❖ Tremolo: This call is sometimes referred to as the laughing call. A loon will do the tremolo when it is agitated or feeling threatened (it is also the call a loon makes when it is flying). Both the male and the female use this call to defend their territory, nest, and chicks from potential threats. When you hear a loon making this call, check to make sure you are not the source of the disturbance. If no other potential cause is present, it is important to back away to enable the loons to relax and return to their parenting duties.



- ❖ Yodel: Only male loons make this territorial defense call. They assume special postures, called the “crouch position” and the “vulture position” to do it. In the crouch, the loon lies flat across the water, with its neck extended, and lower jaw just above the water. In the vulture position, the bird paddles hard to get its body upright while its neck and head are pointed down. The call begins with a three-note introduction followed by a repeating motif, and sounds like a screaming gull. If you see and hear a loon doing a yodel, it indicates that the bird is extremely upset. You should move away immediately because the loon feels threatened.



It is important to know when a loon first becomes agitated, so that you can move farther away from the bird. This will help prevent the loon from progressing to more aggressive behaviors and vocalizations, expending unnecessary energy, and potentially failing to hatch or raise chicks. Note that if you are in a motorboat, it can be very difficult to hear some of these calls over the motor, thus it becomes extremely important to regularly look for loons and other wildlife, and monitor their behavior to ensure that you are not distressing them with your approach. *(To learn more about loon behavior, see McIntyre 1988.)*

### **ADDITIONAL INFORMATION ABOUT THE COMMON LOON**

#### *THE COMMON LOON IN NEW YORK*

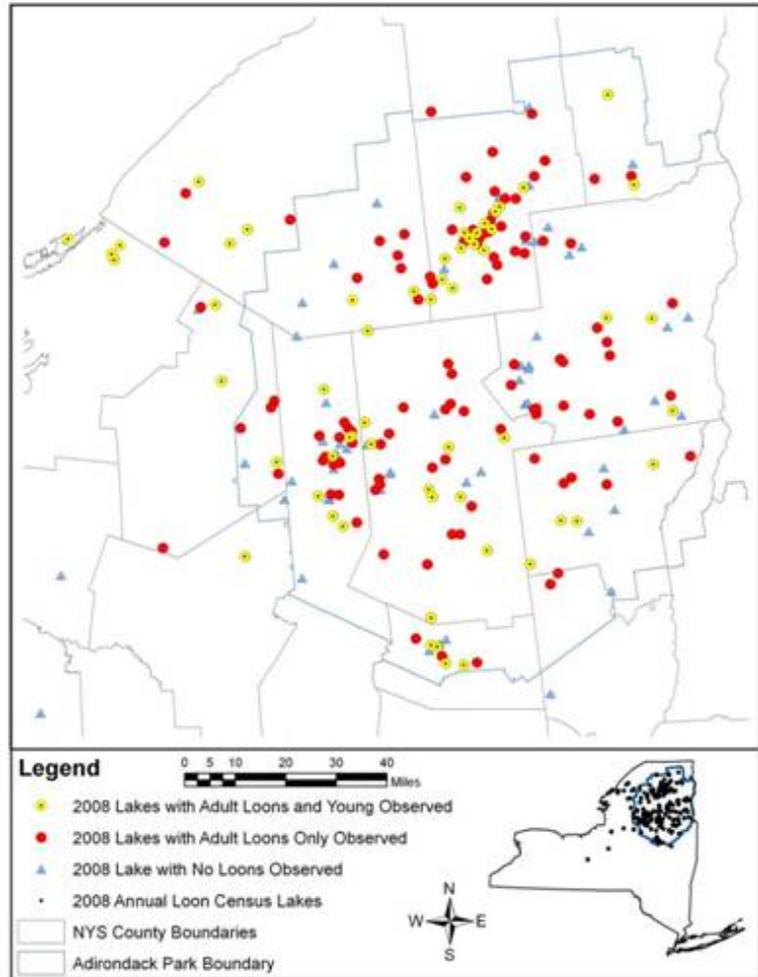
Millions of people live within driving distance of the Adirondack Park, and so it is a popular destination for tourists and second-home owners. The Common Loon is an important attraction for people coming to the Adirondacks, as evidenced by the wide variety of loon merchandise sold in the local stores. People enjoy observing loons on the lakes and listening to the late night choruses echoing off the Adirondack hillsides.

The Adirondack Park, also important to the Common Loon, is at the southern boundary of the loon’s breeding range. Although the border of a species’ range often contains less favorable habitat, the Adirondacks have remained a stronghold for Common Loons. The majority of the breeding population of loons in New York resides within the Adirondack Park.

In the 1980s, the New York State Department of Environmental Conservation conducted a survey of Adirondack loons, and estimated a summer population of about 800 to 1000 (~200 to 250 breeding pairs) birds (Parker et.al. 1986). It now appears that the New York loon population has almost doubled since the 1980s survey, based on the results of an Annual Loon Census conducted by the Wildlife Conservation Society’s Adirondack Program in collaboration with BioDiversity Research Institute’s Adirondack Center for Loon Conservation (Schoch 2002).

Map showing results  
of New York's Annual  
Loon Census

*Courtesy of WCS'  
Adirondack Program*



### COMMON LOON NATURAL HISTORY



The Common Loon is a long-lived species, living 20-30 years. Loons are extremely specialized to live in the aquatic environment. Their bodies are streamlined, and their legs are flattened laterally, which reduces resistance when swimming and diving. Loons have difficulty walking on land because their webbed feet are set far back on their heavy body.

Unlike other birds, loons have very dense bones, which enable them to dive easily, but affects their ability to fly. Loons must flap their wings steadily to remain airborne. Loons can only take off from the water. They need a long stretch of water, usually a quarter of a mile, to run on before they become airborne. Thus, if a loon becomes iced in, or lands on the ground during bad weather, it is incapable of taking off.

Loons return to the Adirondack Park in mid to late April, as the ice melts on the lakes. The males usually return first and establish their territories. Females arrive about two-three weeks after the males. Breeding pairs have high site fidelity, returning to the same territory on the same lake each summer.



Courtship begins after both members of a loon pair come back their territory. Loon courtship, in contrast to their territorial behavior, is subtle, primarily consisting of bill dipping and circling accompanied with gentle hoots. During this period, the loon pair spends most of its time together preening and fishing. They often can be quite aggressive when defending their nest and chicks from other loons, predators, and other intruders.

Shortly after courtship, the loon pair builds their nest and the female lays one to two eggs (very rarely three), usually in mid-May to early June. The eggs are incubated for 28 to 30 days. In many cases, however, the first nesting attempt of the loon pair fails, due to a variety of reasons. If this happens, most loon pairs will attempt to nest again during the same breeding season.



After the loon chicks hatch, they leave the nest and do not return. They grow quickly because they only have about three to four months before they have to migrate. During the first twelve weeks of their lives, the chicks learn to swim, dive, hunt, and fly. Then they remain on their natal lakes until late fall, often until mid-November when the lakes start to ice-in. They migrate to the coast for the winter, and stay on the ocean for two to three years before returning to the Adirondacks, usually to the general area where they hatched. Often a bird is six or seven years old before it finds a mate and establishes a territory for the first time.



In late summer and early fall, adult loons often congregate and socialize in large groups of 15 or more birds as they prepare to migrate to the coast. Loons begin migration as the weather becomes colder and the lakes begin to ice-up. Adult loons from the Adirondacks

spend the winter along the Atlantic coast, and return to the Park the following spring. (For additional information on loon natural history, see McIntyre 1988.)

**HELP SPREAD THE WORD!**

Many of the boat launches throughout the Adirondack Park have signs with information on how to minimize disturbing loons and other wildlife. Please read these signs and inform others to do the same.

Lake associations and residents may also want to become involved with monitoring loon nests and loons with chicks through the Audubon Society of New York's Loon Ranger Program. Volunteers are also welcome to participate with research conducted by BioDiversity Research Institute's Adirondack Center for Loon Conservation. It is an excellent opportunity to learn to observe loons with minimal disturbance, and contribute to the collection of loon reproductive data for a long-term study of the Adirondack loon population.



**ADDITIONAL INFO ABOUT LOONS:**

- ❖ Wildlife Conservation Society - [www.wcs.org/adirondackloons](http://www.wcs.org/adirondackloons)
- ❖ BioDiversity Research Institute - [www.briloon.org](http://www.briloon.org)
  - BRI's Adirondack Center for Loon Conservation - [www.briloon.org/science-and-conservation/centers/adirondackloons.php](http://www.briloon.org/science-and-conservation/centers/adirondackloons.php)
- ❖ Audubon Society of New York - [www.auduboninternational.org/programs/asny](http://www.auduboninternational.org/programs/asny)
- ❖ Loon Preservation Committee - [www.loon.org](http://www.loon.org)
- ❖ Vermont Loon Recovery Project - [www.vtecostudies.org/loons/](http://www.vtecostudies.org/loons/)
- ❖ Journey North - [www.learner.org/jnorth/loon/](http://www.learner.org/jnorth/loon/)
- ❖ Tufts Center for Conservation Medicine - [www.tufts.edu/vet/loons/](http://www.tufts.edu/vet/loons/)

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