

Common Loon Nesting Rafts



Photo: Michelle Duffy, Maine Audubon

**Maine Partners Working with Local
Volunteers to Improve Loon Nesting Success
Using Artificial Nesting Platforms**



Maine Loon Restoration Project

[flickr.com/photos/massdep/sets/72157622921360474](https://www.flickr.com/photos/massdep/sets/72157622921360474)

What Happened?

In 2003, 98,000 gallons of oil spilled in Buzzards Bay, off the coast of Massachusetts and Rhode Island, from a tank barge called Bouchard B-120 (pictured below). Over 500 Common Loons died, including some that breed on Maine lakes.



Top: Oil covers the shoreline after the 2003 Bouchard oil spill; Inset: Bouchard B-120 tank barge.

Loon Restoration

A settlement from this spill, announced by the U.S. Fish and Wildlife Service in 2021, led to funding for loon recovery on their breeding grounds. Maine Audubon received a portion of the funds to work with partners on efforts to increase loon breeding success and reduce loon mortality in Maine.

The Maine Loon Restoration Project is a 5-year collaboration between Maine Audubon, Maine Lakes, Lakes Environmental Association, and the Penobscot Indian Nation, in partnership with Maine Department of Inland Fisheries and Wildlife (MDIFW). In addition, Somes-Meynell Wildlife Sanctuary provides assistance with staff training and loon raft design. The project partners are working with volunteers across the state to place artificial nests where appropriate, monitor nesting success, expand the Fish Lead Free Program, and create a Look Out for Loons program aimed at increasing nest protection and outreach to lake users.

Loon Rafts

This guide focuses on one part of the restoration project — artificial loon nesting platforms or “rafts” which are placed to help increase nesting success at some sites. We will be working with lake associations and local volunteers to place rafts on lakes and ponds with low nesting success in 11 counties: York, Cumberland, Oxford, Androscoggin, Sagadahoc, Kennebec, Lincoln, Knox, Waldo, Hancock, and Penobscot. The Biodiversity Research Institute also received funding to work with tribes in Northern and Downeast Maine to place rafts on tribal lakes. For more information about constructing and placing loon nesting rafts, watch our video at: maineaudubon.org/loonraftvideo or scan this QR:



Do Nesting Rafts Work?

Loon nesting rafts have been used for over 50 years to help increase the nesting success of loon pairs that fail to produce chicks year after year. Rafts can move the nest offshore if predators are a problem or if the nest is near a public beach or boat launch where there's a lot of human disturbance. Rafts can provide a new nest site if nesting habitat is lost to development. Rafts also float so they are less likely than onshore nests to flood from boat wakes or water level management. In this project we have already doubled the number of chicks hatched from a few dozen struggling loon pairs, showing that loon rafts can be a great tool to increase nesting success in the right situations.

But rafts also come with risks. In the wrong circumstances, without proper placement or maintenance, rafts can actually hurt the loons' chances of producing chicks. Here are some of the things that can go wrong:

- Rafts placed too close to another loon breeding territory can attract the attention of a neighboring loon pair, resulting in disputes that keep the pair from tending and guarding their nest.
- Rafts can make loon nests more visible to avian predators, like gulls and eagles.
- Improper placement can put nesting rafts in harms way, such as in the path of boat wakes or waves, which can flood the nest.
- Rafts can break loose and go ashore, or float into other loon territories. Or the nest can sink without proper flotation or if the raft is damaged.
- Other animals may rest on or damage the raft.

And remember, it's ok if loons don't produce chicks every year. Some nesting failure is normal and if a pair fails on their first try, they can try again this season or next year. Rafts should only be used for pairs that really need the help.

A good rule of thumb: If a pair successfully raises a chick at least once every three years, they probably don't need our help!



Photo: Somes-Meynell Wildlife Sanctuary

Should I Put Out a Nesting Raft?

When is a raft appropriate?

A raft may be a good idea on your lake if these three situations apply:

1 Continual Nest Failure

The loon pair has failed to hatch chicks every year for at least three years, or for three of the last five years.

Clues that the pair may be nesting, but not producing chicks:

- There's nest building, courtship, or an adult on the nest, but no chicks ever seen
- Nest predation
- Broken or floating eggs
- The pair abandons the nest



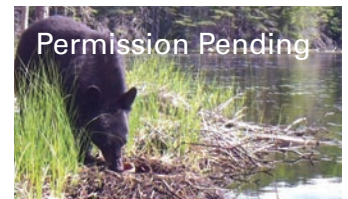
Photo: Sue Downes-Borko

2 Failure is Due to Problems that a Raft CAN Help Address:

- **Lack of nesting habitat:** Lakeshore development can reduce prime nesting habitat, forcing loons to nest in poorer sites or not at all. A raft may be useful if natural nesting sites are lost within a loon pair's territory.
- **Fluctuating water levels:** As lake levels rise and fall, nests can be flooded or stranded. Rafts float, so they help with fluctuating water levels or if waves and wakes flood the nest.
- **Predation from land animals:** A raft can move the nest offshore, providing more protection from mainland predators like raccoons or even dogs.
- **Disturbance:** If a loon is regularly disturbed, it may abandon its nest. If the nest is near a boat landing or other high use area, a raft can be placed offshore where activities may be less intrusive.



Photos: adkloon.org



3 There is Local Commitment to Monitoring and Maintenance

Rafts require a serious investment of time and take active management. The community should be ready to:

- Learn how to build the raft
- Place it out on the water in spring
- Take it out at the end of the season
- Monitor for raft problems and chick hatching
- Submit data



Is a Raft Right for Your Lake?

Questions to ask yourself:

1. Is there a territorial pair present?
2. Has the pair nested but failed to produce chicks for the last three years, or for at least three of the last five years?
3. Is the nest failure due to a problem that rafts can fix (i.e., fluctuating water levels, loss of nesting habitat, land animal predation, or onshore disturbance)?
4. Does the territory contain a protected site to place a raft out of wind and waves, away from boat traffic, and in water 2-6' deep?
5. Is there a dedicated group that is willing to provide continuous monitoring and annual maintenance?
6. Is a raft a better option than another action or no action?

If you
answered
YES to **ALL**
of these
questions

If you answered
NO
— or —

I DON'T KNOW
to **ANY** of these
questions

*See Appendix for more
detailed information.*

GO

A raft may be
right for a loon pair
on your lake.
Get in touch with a
loon biologist and
start planning
your raft!

STOP

a nesting raft may
NOT be the right tool
for your lake at
this time.

HINT: If you don't have enough information to answer one of the questions above, watch the loons for a few years or participate in our monitoring program to find out more about what the loons on your lake are doing before considering a raft.

So, You're Ready for a Raft

TIMELINE

Fall to Early Spring

- Join one of our webinars to learn more about the project and what's involved.
- Contact one of the project partners to help you determine if there's a loon pair on your lake or pond that would benefit from a raft, and to find a good site for raft placement. Our staff may even come on-site to do a lake assessment.
- Build Your Raft. Join one of our raft building workshops in early spring or we can help you build one on-site when we come to help you deploy the raft. Build your raft in fall or early spring (or even the summer before), so you're ready to put it in the water before the pair starts nesting.

March-April

Loons start defending their territories and looking for nest sites in early spring. The sooner the raft is out, the more loons will see it and get used to it as they are selecting their nesting site. If geese nest on your lake, wait to put out the raft until they have chosen nest sites.

April-July

We host online and on-site monitoring trainings in April and May. After receiving training, data forms, and instructions, monitor the loon pair and the raft once a week or at least every two weeks to track the loons' use of the raft and their nesting success. Keep monitoring even if the nesting attempt has failed. They might nest a second time! Also check to make sure the raft is securely attached, the loons have cover, and there are no other problems.

August-Fall

Continue to monitor until the chicks leave the lake in late fall/early winter, or at least until the chicks are six weeks old. Turn in monitoring forms. Retrieve the raft from the lake to store for the winter. Sometimes log rafts can be left in place, but more often they are hauled ashore and leaned against a tree or placed on top of anchor blocks above the highest water line.

Next Year

Don't give up if the loons don't immediately take to the raft. Keep putting the raft out in the spring (and removing in the fall). If after three years it is not used, something might not be right with the location or the raft, or they are simply not interested. Sometimes small changes like removing or putting on an avian guard, or moving to another location, make it more suitable.

What Does a Properly Constructed and Placed Raft Look Like?

Raft Characteristics

- Mimics a natural island or marsh hummock
- Rises and falls with changing water levels
- Vegetation to act as shade cover and a visual barrier, easy access on and off, and well-draining nest bowl
- Nest that floats 1-3 inches above water and is in water at least 2-6 feet deep so loons can swim underneath it



This successful natural nest is what we're trying to replicate—visual barrier of shrubs, easy on and off, well-drained nest bowl.

Raft Locations

- Located 10-50' offshore where land predators have a harder time accessing it, but not so far offshore that it's in the way of boat traffic or fishing areas.
- Away from land-based recreation and development and located where it doesn't attract attention from lake users.
- Outside boat traffic lanes and away from boat launch sites.
- Well within the pair's territory, so it's unlikely to attract other loons; placing a raft near an old nest site is one way to ensure the raft is well within the territory
- Protected site out of prevailing winds and protected from waves and boat wakes

For more information about how to build and place a raft, watch our video at maineaudubon.org/loonraftvideo or visit maineaudubon.org/loonrestoration

We use two types of rafts in this program:

CEDAR LOG RAFT



MODULAR RAFT



Summary

With the right team of people and the right circumstances, a loon nesting raft can be a great tool to increase loon nesting success, especially when changes in water level, mainland predators, onshore disturbances, or habitat losses result in repeated nest failures (the loss of eggs or nest abandonment for more than three breeding seasons). Loon rafts do come with risks, so consulting a professional loon biologist is a good idea—for you and for the loons.



We have materials and resources to help you make your loon raft successful. For help with your raft, email one of the project partners or visit our websites:



Email: loonrestoration@maineaudubon.org
maineaudubon.org/loonrestoration



Email: maggie@leamaine.org
mainelakes.org/news_article/lea-is-part-of-a-larger-loon-project



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Appendix

Is there a territorial pair present?



- A territorial pair consists of two adult loons that are observed together and interacting over a multi-week period and defending an area from other loons.
- The two loons demonstrate courtship behavior including synchronized movement (swimming, diving, and foraging together), exchanging wails or hoots, or mutual bill dipping. You may observe them testing out shoreline nest sites.
- Territorial pairs can also engage in territorial confrontations, including sudden simultaneous dives, chases, the “penguin dance”, or other aggressive behavior.
- To be considered a territorial pair, a loon pair must establish and defend a territory for at least 4 weeks.

Has the pair nested but failed to produce chicks for the last 3 years or at least, three of the last 5 years?

Most successful rafts are placed where a resident pair has repeatedly nested and failed. What evidence do you have that the pair is nesting but failing? (e.g., nest building or an adult seen on nest, but no chicks ever seen; known nest predation; or broken or floating eggs found.)

Is the nest failure due to a problem that a raft can fix?

Rafts can only address certain problems that cause nests to fail, namely: fluctuating or altered water levels, predation from land animals, loss of nesting habitat, or human disturbance onshore. A raft won't help if a nest fails for other reasons, like avian predation, lead poisoning, disease, or disturbance from boats.

Does this pair's territory contain a protected site for a raft (*out of the wind, away from boat traffic, and in water 2-6' deep*)?

A raft has to be placed in a sheltered spot well within the pair's territory to attract a pair, without attracting other loons and inviting territorial disputes. You'll need a rough understanding of the boundaries of the pair's territory and their breeding history before placing a raft. Often placing a raft near an old nesting site is a good way to ensure it's well within the territory. Your raft should also be out of prevailing winds and not in the path of boat wakes, and in deep enough water that loons can swim underneath it.

Is there a dedicated group of people willing to provide continuous monitoring and annual maintenance?

- Rafts require monitoring and maintenance.
- They need to be taken out every fall and returned in the early spring before loons begin nesting.
- Rafts have to be anchored so they don't float away or moved if water levels drop.
- They need to be monitored to make sure they are in good condition and are supporting nesting.
- Without ongoing commitment, your raft could be worse than no raft.

Is a raft a better option than another action?

Are there other actions that could accomplish the same ends without the same risks, such as signage or outreach to reduce disturbance, measures to reduce wake and boat speeds, or better trash management to discourage scavengers?

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