

Vermont Loon Conservation Project ***Rafts and Nest Warning Signs—guidelines, building, and maintenance***

Guidelines for Use of Artificial Nesting Rafts for Common Loons

Loons will select the best nest sites they can find, sheltered from the prevailing winds and wave action and usually located on an island or in a marsh, where shoreline predators are less likely access the nest. Now that the Common Loon is doing well in Vermont, the Vermont Loon Conservation Project is trying to minimize nesting raft use and promote natural sites as much as possible. We can then work with landowners for the long-term conservation of loons, and not have them as reliant on our management. In addition, it takes time and money to maintain and place rafts every year. The following guidelines should answer many questions about loon nesting raft use.

When might a nesting raft be useful?

1) A territorial loon pair must be present. Rafts do not attract pairs to form. When can we tell if there is a territorial pair?

* 2 loons observed together for at least a 6-8 week period from mid-May through August, which might include 2 loons defending a lake or area from other loons, nest searching activity, and copulation observed.

In the late 1990s and early 2000s, 15 rafts were located on ponds and lakes with loon activity but no consistent “territorial pair” activity. These “experimental” rafts have not caused pairs to form despite their presence for over a decade in some cases.



This successful marsh nest is what we’re trying to replicate - visual barrier of shrubs, on and off ramps, well-drained nest bowl.

When a pair forms, they defend their lake or pond from other birds and spend most of their time on that waterbody. However, on smaller ponds under 50-80 acres, loons leave the pond more frequently than on larger ponds, and on large lakes, the loons may swim all over the place. We’re trying to document loon activity on as many lakes as possible, and in time, we may know more about the process of territory formation. Monitoring and knowing the level of loon activity is the first step to making any of these decisions. This is where volunteers can help most by documenting loon activity as often as possible on the lake in question.

2) If a loon pair is present and any natural habitat is available (islands, marshes, undeveloped bays, peninsulas), the VLCP wants to give the loons time to try to nest naturally. Why wait?

- stress the importance of undeveloped shorelines and the long-term conservation of them,
- reduce the time and money necessary to maintain rafts,
- promote “wild” population of loons not dependent on our help,
- if natural habitat is minimal, the lake might NOT NATURALLY support nesting loons, but could be a good lake for non-breeders and visitors coming into feed and rest, and
- It is o.k. for nests to flood occasionally; it’s part of nature.

3) A nesting raft might be placed if a loon pair is present and there is:

- little or no natural nesting habitat available due to development (island has cottage, shorelines by marsh highly developed),
- water levels fluctuate due to man-made dams, and
- an existing pair has had repeated nest failures for several years in a row caused by flooding, predators, or other causes related to better habitat not being available.

These are the VLCP’s current guidelines, and are just that, guidelines. There are exceptions to every rule. Contact the VLCP biologist for more information. If you know of a territorial loon pair forming on a lake, please contact the VLCP Biologist to further assess the lake and set-up more detailed monitoring.

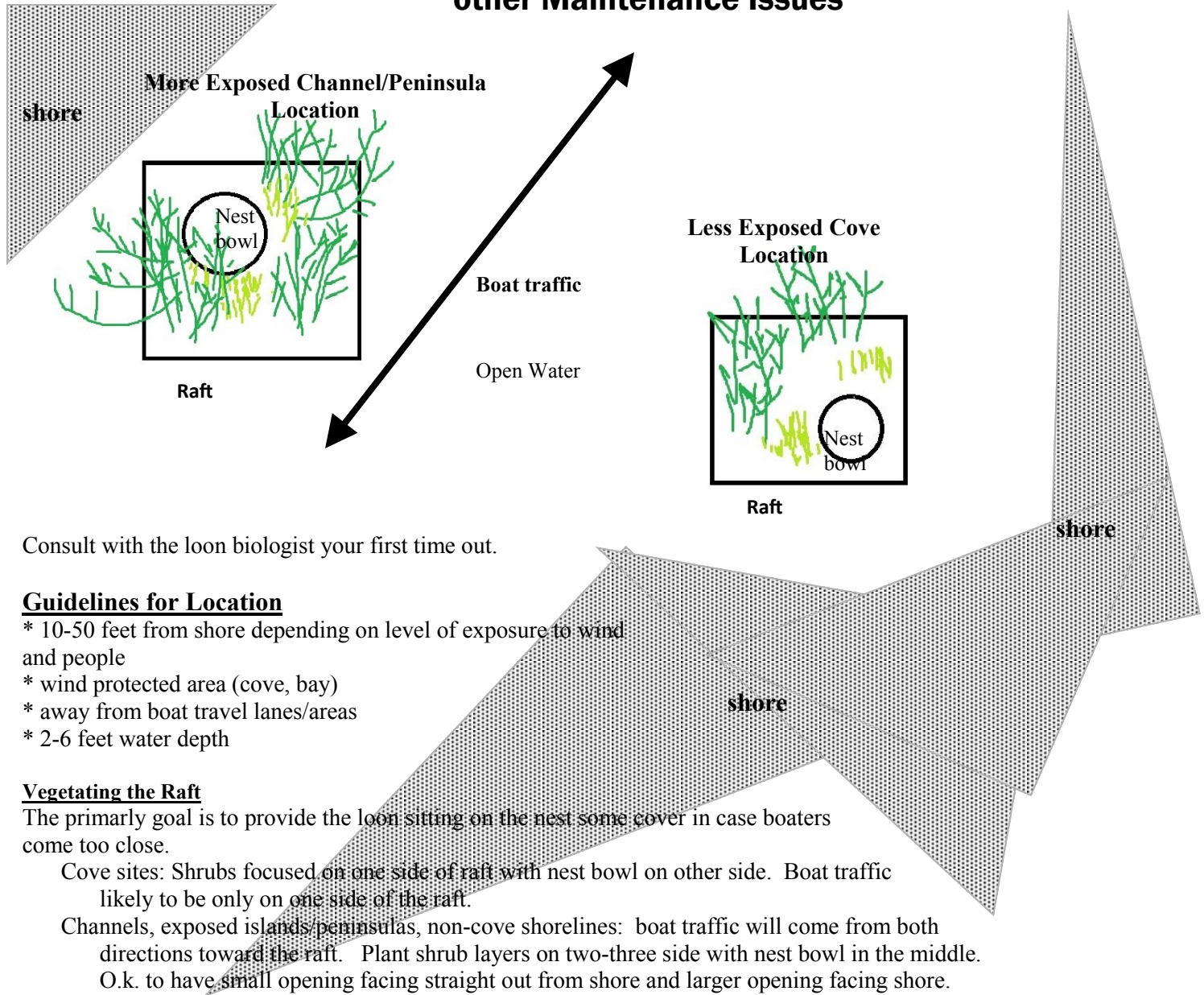


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Nesting Raft Placement, Adding Vegetation, and other Maintenance Issues



Consult with the loon biologist your first time out.

Guidelines for Location

- * 10-50 feet from shore depending on level of exposure to wind and people
- * wind protected area (cove, bay)
- * away from boat travel lanes/areas
- * 2-6 feet water depth

Vegetating the Raft

The primary goal is to provide the loon sitting on the nest some cover in case boaters come too close.

Cove sites: Shrubs focused on one side of raft with nest bowl on other side. Boat traffic likely to be only on one side of the raft.

Channels, exposed islands/peninsulas, non-cove shorelines: boat traffic will come from both directions toward the raft. Plant shrub layers on two-three side with nest bowl in the middle. O.k. to have small opening facing straight out from shore and larger opening facing shore.

Spring Checklist for Rafts and Nest

- Do signs and/or raft need replacing? Rotten wood, sinking.
- Do raft cables need replacing or new ones added? broken, obvious worn spots,
- Are there at least 4 cables on each raft?
- Do signs need rope replaced? I now use yellow poly 3/8" that seems to hold up better to water and UV. I use gorilla duct tape to both tie off the ends and to prevent the ends from unraveling.
- Does the raft need extra floatation by adding foam blocks – this can add years to the life of a raft and help balance a raft where heavy mud and soil cause the raft to tilt.
- Is garden hose needed to reduce wear and tear around cement blocks? Is there rubber fabric around cables in cable clamps?



Checking for cable wear and tear

Providing a Visual Barrier for an Incubating Loon

- Use grass, moss, mud on ½ of raft for nest bowl – actually create a bowl with mud, cut grasses and sedges, and mosses.
- Plant shrubs, ferns, grass, and sedges along one edge or on opposite sides to provide cover. Try to include as much 1-2 foot high shrubs to make a visual barrier. Taller shrubs are o.k., if they leaf out down low or there are many of them.
- I often use bare root shrubs with as much root stock as possible. Then I'll place the mud/from the nest bowl and sod at edge of nest bowl to cover the roots for moisture retention.
- Nest bowl - create a 12-16 wide shallow bowl 3-4 inches vertically from the raft surface. Allow for a place for loons to climb on and off in two directions if possible. Cutting tall grasses, old cattails, and mixing it with a little mud makes for a good loose nesting material that will drain and stay fairly light. It is better to not make the nest bowl a lawn; use soil and decomposed leaves and muck with dead grasses mixed in on top and place the grassy/sedge sod clumps around the edge of the nest bowl so it will grow and provide cover.



Adding shrubs would help these loons sit tight if boaters get too close.



Channel nest: Vegetation on 2 sides

CAUTION: don't collect too much heavy mud and sod as it will weight down the raft considerably. Skim the surface of the ground for roots and just enough soil to hold moisture.

MINIMAL IMPACT COLLECTING: obtain your soil, grasses and shrubs from the lake shores you are on. Do not import plant material from far away to avoid introducing unwanted vegetation (exotics). Also, take a shovel load from scattered locations, not just one spot so that it can grow back over the summer.



Cove nest:
Vegetation on one side

Building an Artificial Nesting Raft for Common Loons

Materials:

- 2 4' to 5' cedar posts 8-10" in diameter
- 2 4' to 5' cedar posts 6-8" in diameter
- 1 4 to 5' cedar post 4-6" in diameter

5'x5' mesh (rubber coated lobster mesh, snow fence).

8 10" galvanized spikes (1-2 for each corner)

4-12 6-8" pole barn spikes (4 for center log and extra in case corners need reinforcing)

2 8x8x16 cement blocks

heavy duty 1 1/2" U-shaped nails (fence staples)

4 segments of 8 to 12 foot 3/16"-1/4" plastic coated cable (about 40' total)

8 cable clamps

1" x 2" rubber/heavy duty fabric – to wrap around cable under cable clamp

4 two foot sections of hose for putting cable through cement blocks (reduce abrasion)

Tools Needed

Chainsaw, bucksaw, and/or ax for notching logs

Large hammer or maul

Hammer

Adjustable wrench

Cable cutter (or get 4 15' pieces of cable)



Notch cedar logs Lincoln-log style with 2 large diameter logs on bottom, then three logs across with the smallest log in the center.

Use spikes to pound together. Might be able to get by with on spike in corner if secure.

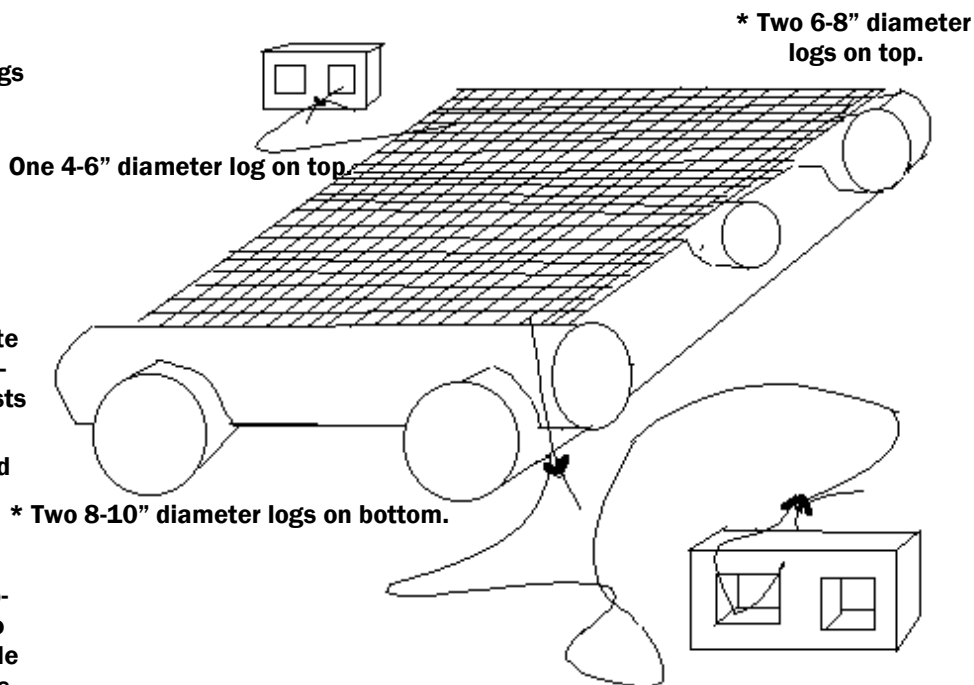
Use fencing nails/staples (U-shaped) to secure mesh. Make sure there are no sharp edges protruding up or toward the sides. Use enough nails to secure the mesh, but don't over-do. The mesh may be re-usable after the logs rot out in 4-8 years.

Attach 4 anchor lines to opposite corners of the raft (2 at each corner) using cable and cable clamps. Use 2 per corner in case one breaks.

Attach cement blocks to the cable-ends. Enclose cable that wraps around cement block in 2 foot section of hose to reduce wear and tear on cable. If transporting a long way, you may want to wait to attach the cement blocks.



- **Mesh attached by U-nails to 3 top logs at same height.**
- **Two 10" spikes for each corner. (Either both through thinner log into thicker log or one from each side.)**
- **Use pole barn spikes for middle log and corners if extra needed.**
- **2 cement blocks attached to opposite corners with 8-12 feet of cable (2 cables per corner in case one cable rusts out).**
- **Place 2' piece of hose over cable-end that wraps around cement block to reduce wear and tear of cable.**
- **U-clip cable ends to raft and cement block (anchor). I cut 1"x2" rubber pieces from my old hip waders to wrap around the cable, then put cable clamp on. The rubber sheet protects the vinyl coating on the cable from cracking, rusting, and breaking.**



2' garden hose not pictured around cement block

Floating Nest Warning Signs

Sign buoys were used in areas where repeated human disturbance was likely to occur. The signs informed boaters that they were close to a loon nest site, and that intrusion could contribute to nest failure.

Buoys were ideally placed 30 to 100 meters away from the nest site. Most incubating loons showed signs of being aware of a boater's presence at this distance, but did not crouch excessively or flush from the nest. Thus, stress on the incubating loons was minimized and restriction of lake use by boaters and anglers was minimized. However, for many lakes, sign placement was determined by lake configuration and location of the nest. For example, if the nest was on an island near the mainland, signs were placed as close as 10 meters away.

Most of these signs were placed prior to nesting in early May for pairs that consistently used a traditional nest site. For loon pairs that often changed nest sites, sign buoys were not placed until nesting had begun. If the loons did not nest, the signs were removed by early July.

