

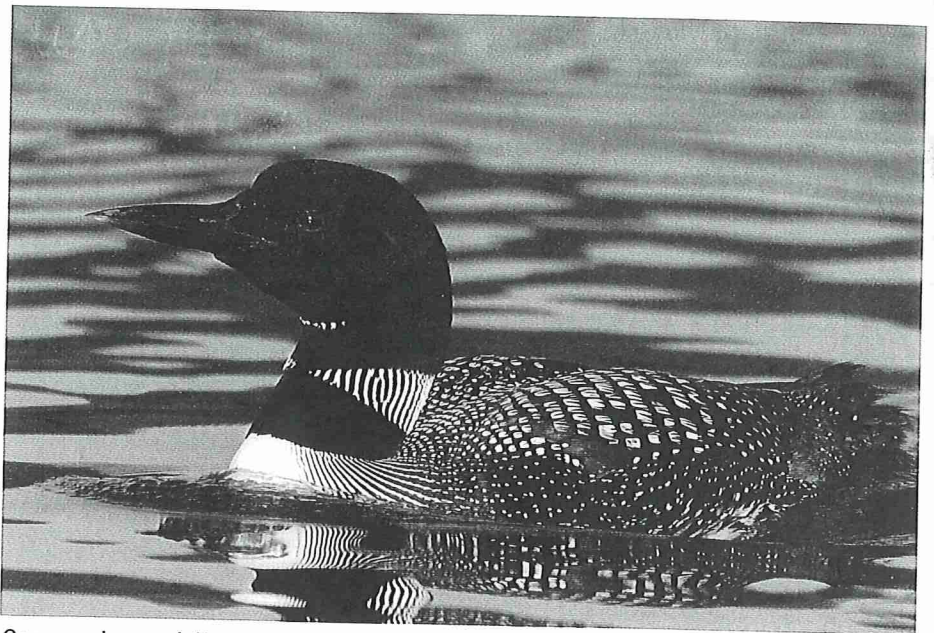
Common Loon

Figure 23

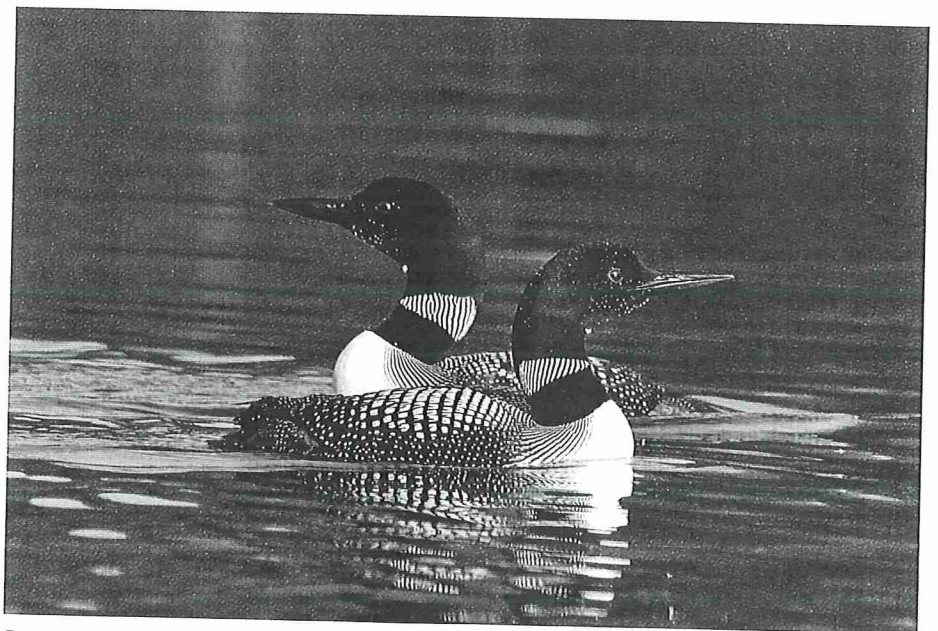
The Common Loon, Minnesota's state bird, usually nests on islands or on shorelines of our northern lakes. Loons return from marine wintering areas in the Atlantic offshore from the Carolinas, Georgia, and Florida, and from the Gulf of Mexico adjacent to Florida, from late March through late April.

They begin nesting in early to mid-May. The nest will usually contain one to two, and rarely, three eggs. The eggs average 57 by 90 mm and are a handsome olive-brown with small dots and blotches of dark brown. Incubation lasts 29 to 30 days. The loon chicks leave the nest 1 to 2 days after hatching and accompany both parents through late summer.

While many people enjoy loons, they may not realize they can help loons by placing floating nest platforms in bays and sheltered areas of lakes where safe natural nesting islands are not available. On some lakes or reservoirs, loons experience frequent nest failures because of water level fluctuations or because their mainland nesting sites at the water's edge are vulnerable to



Common Loon adult.



Pair of loons.



Loon nest platform in a bay at Big Mantrap Lake.



Nest with loon eggs.



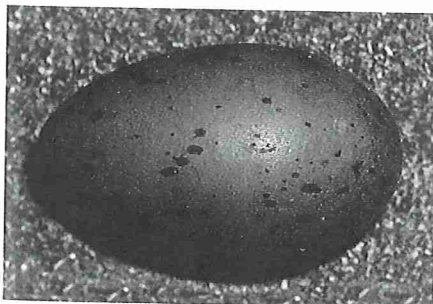
Common Loon on nest along a shoreline. This location is vulnerable to predation by Raccoons and River Otters.

predation by Raccoons, otters, or other predators.

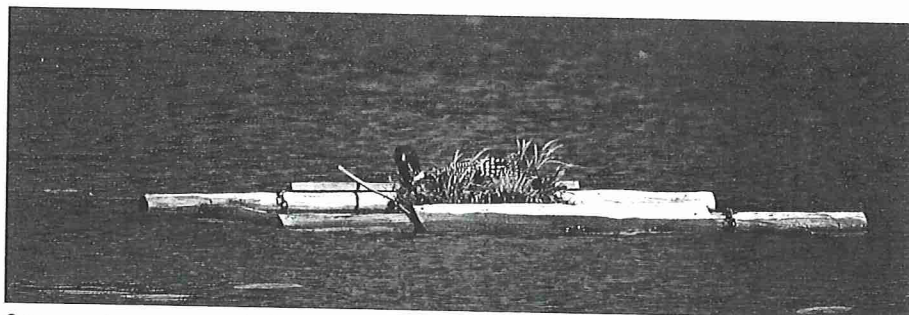
In such cases, a floating nesting platform can provide a secure site for loons to nest. There are three types of nest platforms recommended here. In the previous edition of *Woodworking for*

Wildlife, the loon nest platform was made from used cedar utility poles. They were quite heavy and by late summer they became waterlogged and sat quite low in the water. The new designs provided here include one made from three tiers of 4 x 4 cedar timbers. They can be obtained at most

lumberyards. The second option is a commercially-manufactured loon nesting platform. These are an excellent alternative that will last many years. They are expensive, but perhaps a lake association or group of shoreland owners could share the cost. The third option described here is made of PVC pipe.



Common Loon egg.

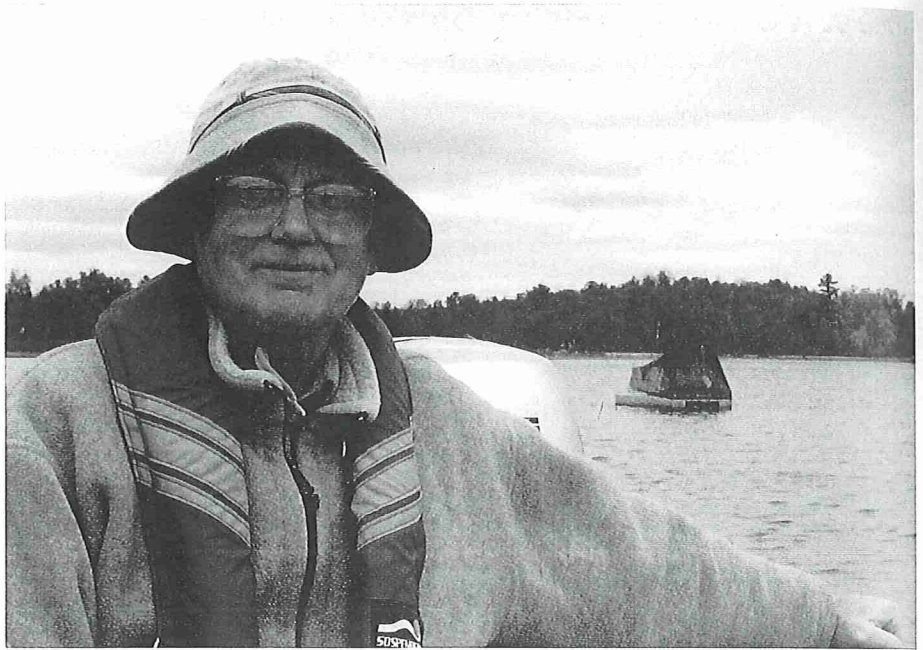


Common Loon on a nest platform.

BIG MANTRAP LAKE LOON NESTING SYSTEM

Lakeshore homeowner Lyle Laske and other lakeshore owners on Big Mantrap Lake have been among the most progressive loon enthusiasts in Minnesota with their loon management program. Big Mantrap Lake is 1556 acres in size, with more than 21 miles of irregular shoreline, including five islands and many bays and coves.

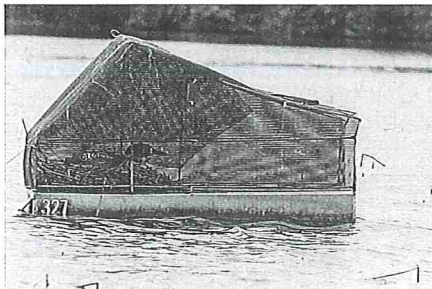
Lightweight, commercially-made aluminum nesting rafts have worked out best on Big Mantrap Lake because of the number of rafts needed and the 7-mile length of



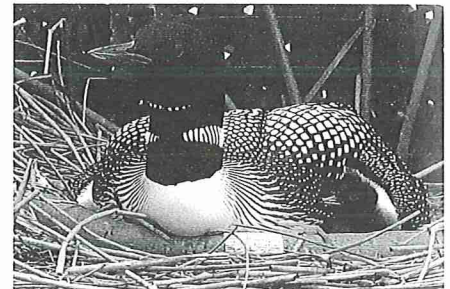
Lakeshore homeowner Lyle Laske at Big Mantrap Lake.



This covered loon platform is very successful.



Loon nesting platform side view.



Loon and newly hatched chick.

the lake. Two rafts with anchors and buoys can be hauled in and out with a 14-foot boat. The aluminum raft design has the following features: it is strong, lightweight, seaworthy in rough weather, resistant to corrosion, contains a canopy and protective screen, contains a secure nesting ring, and provides easy access for adults and young to climb back onto the raft.

Eighteen loon nesting territories have been identified on the lake. About half of the nesting pairs on Big Mantrap Lake nest on natural sites and the other half use the nesting platforms. The aluminum nesting rafts provide the benefit of

not flooding in high water, extra concealment from predators, and they last for many years.

Loon nesting rafts are set out each spring and removed 3 weeks after the chicks hatch. (Don't leave them in the lake during the winter or they will be damaged by ice.) The rafts are removed for boating safety reasons and to maintain the natural beauty of the lake. Refurbishing the rafts, setting them out, and removing them require the efforts of a number of people. If people are interested in learning more about the loon management on Big Mantrap Lake, they should check out their Web site at: [http://www.](http://www.freewebs.com/mantraplake/loonnestingrafts.htm)

[freewebs.com/mantraplake/loonnestingrafts.htm](http://www.freewebs.com/mantraplake/loonnestingrafts.htm)

There are two fabricators of commercially-made loon nesting rafts that have proven to be very successful:

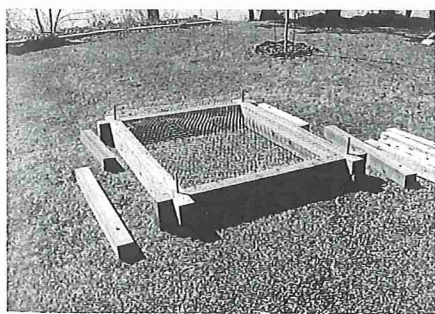
Duane Petterson, fabricates loon nesting rafts in his home workshop
5894 409th Street
Rice, Minnesota 56367
E-mail: dspetterson@junco.com
Phone: 320-656-5279

Izzy's Machine & Welding Shop
607 N. Central Avenue,
Park Rapids, Minnesota 56470
Phone: 218-732-9390

HOW TO MAKE THE NOVAK CEDAR TIMBER NEST PLATFORM

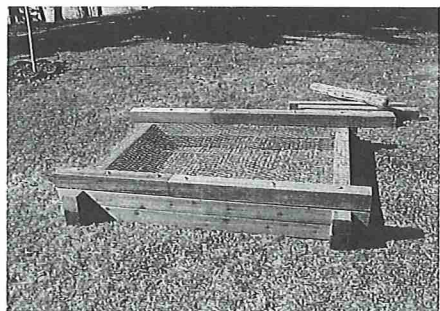
The loon nesting platform illustrated here is a new design provided by Ed and Judy Novak. They live on 8th Crow Wing Lake between Nevis and Akeley, Minnesota. This nesting raft is constructed of eight untreated 8-foot long, 4 x 4 cedar timbers. The timbers are cut to create a 42- by 53-inch internal dimension. A 4 x 8 sheet of 2-inch-thick construction foam can be cut to snugly fill the internal dimensions of the platform. This allows about 4 inches of wood to extend at each end of a timber beyond the 3¾-inch-wide notch. Each notch is cut to half the thickness of the timber—a depth of 1⅞ inch. Four timbers are cut to a length of 50 inches and four timbers are cut to a length of 61 inches.

Construction begins by fitting two timbers into the notches of the other two timbers to create the middle layer of the nest platform. A double layer of galvanized chicken wire, or a layer of 2- by 4-inch welded wire fencing, is stapled to the bottom of the timbers with heavy galvanized staples.



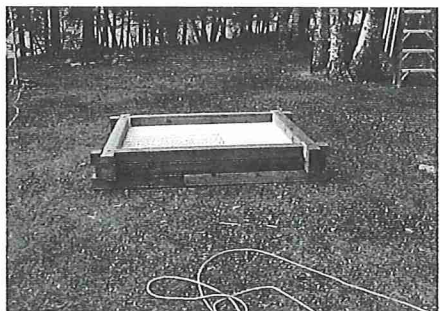
Novak cedar timber platform.

The “scraps” of 4 x 4 timber are then pieced together to form the bottom “buoyancy” layer, using ⅝-inch by 6-inch lag screws. This sandwiches the layer of chicken wire or welded wire between the bottom and middle rows of timbers. Two 2-inch-thick pieces of yellow construction foam are then placed over the layer of wire.



A top single layer of welded wire (or two layers of chicken wire) are attached to the top of the middle layer of timbers so that the foam is enclosed.

A top row of timber frame is added, sandwiching the top layer of welded wire between the top and middle row of timbers to produce a 3-tiered nest platform. The mated notched timbers are then fastened with ½-inch by 12-inch bolts going through the notched joints of all three timbers at the location of the joints.



DUGAS PVC LOON NESTING PLATFORM

Craig Dugas of Rabbit Lake near Crosby, Minnesota, has developed an innovative loon nesting platform design that is easy to construct and relatively economical. It is made from two 10-foot sections of PVC pipe and 2- by 4-inch-mesh welded wire fencing. The PVC pipe creates a very buoyant platform that does not become waterlogged through the summer as do cedar logs or poles. It takes less than an hour to assemble this nest.

The materials necessary to make this nesting platform include two 10-foot lengths of 4-inch-diameter PVC pipe, four 90-degree PVC plumbing elbow joints, and about 16 feet of 2- by 4-inch-mesh welded wire rabbit fencing that is 4 feet high. Other materials include PVC cleaner, PVC cement, and two lengths of welded link chain for attaching two anchors. Purchase chain twice the depth of the lake where the platform is to be anchored. You also need two concrete foundation blocks or other suitable anchors. Assembly instructions are as follows:

1. Cut the PVC pipe into two 4-foot sections and two 5-foot sections so the finished platform will be 4 by 5 feet.
2. Join the pipe sections with the elbow joints after first cleaning the areas where the elbows will meet with PVC cleaner. Place PVC cement on the joint areas and install the elbow joints quickly before the cement dries.
3. Stretch the fencing across the platform between narrower 4-foot sections. Fold the wire

See Figure 23 instructions on page 154.

over the PVC and back onto the wire so you can fasten the cut wire edges onto the wire mesh inside the platform.

4. Attach a length of welded chain link to two diagonal corners of the platform. The length of the chain should be about twice the depth of the lake where the platform is to be placed.
5. After obtaining a free DNR aquatic plant collection permit, collect some "marsh muck" and associated cattails, bulrushes, and other aquatic plants in some buckets so it can be placed inside the nest platform and allow some concealment for the loons.

Tow the platform out to the desired nesting site and then attach each anchor chain to an anchor.

Remove the platform 3 weeks after the loons have hatched and left the nest. If the nest sits high above water level, a "ramp" should be attached to the one side to allow chicks and adults easier access if they wish to use it the first couple weeks after hatching.

GENERAL CONSIDERATIONS FOR LOON PLATFORMS

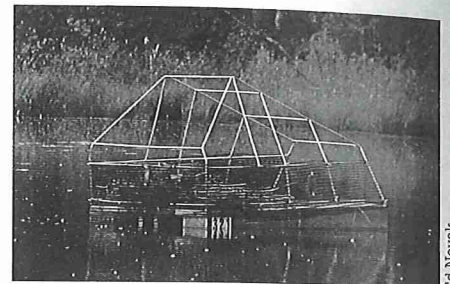
A-frame shelter over the raft. The loon nesting raft needs an A-frame over the top or a cover to help conceal the loon and its nest from predators like eagles and from egg predators like gulls, crows, and ravens. Loons prefer to enter and exit the nest undetected. The raft canopy needs a screen to reduce detection and to give a sense of security if boaters pass nearby.



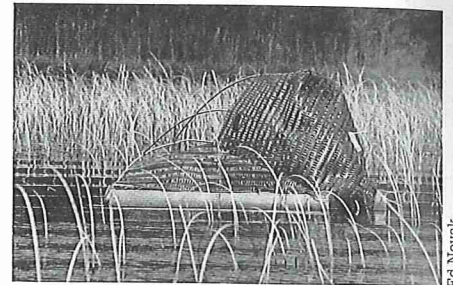
Chicken wire can be placed on the A-frame and covered with screening.

One way to create an A-frame for the Novak loon platform is to use four pieces of $\frac{5}{8}$ - or 1-inch electrical conduit and pinch the ends flat so that you can use lag screws to fasten each piece on each corner of the platform. Bend the conduit pieces toward the center over one end of the platform so the two pieces of conduit meet. Use the same process for the other end of the platform. A fifth piece of conduit, with the ends also flattened, can be placed across the top of the A-frame. Drill a hole through the three flattened pieces of conduit where they meet and place a bolt through the hole so that they form a rounded A-frame structure. Chicken wire and light screening material can be fastened onto the A-frame to help conceal the loon from above.

For aluminum nest platforms, the exposed rods of the custom canopy frame with screening provide protection from large avian predators. The screen provides 360-degree visibility for the loon sitting close to the screen. In addition, the screen is a windbreak, partial shade for the incubating loon, and possibly a solar reservoir to keep the eggs warm when the loon briefly leaves the nest. Plastic screen is attached to the canopy frame with plastic cable ties.



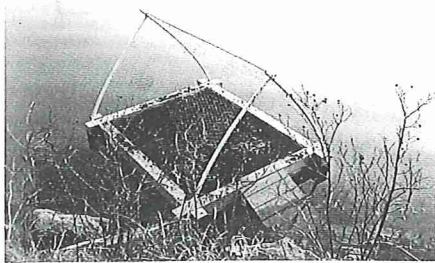
Commercial loon nest platform.



Covered loon nest platform.

Loons encountering an aluminum nesting raft with a fully enclosed plastic canopy screen for the first time will probably consider the raft to be a trap and thus avoid the raft. To condition loons to the plastic canopy covering, the screen is added in phases over 3 years. In the first year, it has a 10- to 12-inch-high screen on three sides of the canopy base. This is sufficient for the loon to remain undetected in their "head-down" posture. A bow screen is added the second year to gradually condition the loons to the screen, as well as providing a wind barrier. Loons returning to nest in the third year readily accept a completely covered canopy.

Screen material for the loon platform can be obtained from United Rentals, Brainerd, Minnesota. Phone: 218-829-2708. The item is referred to as *Windbreak No. X05300-002*. It comes in a roll 4 feet wide by 50 feet long.



Ed Novak

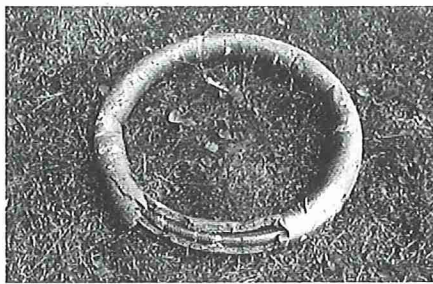
Loon platforms need a chick ramp.

Make a “chick ramp” for the side of the Novak raft.

On the Novak nest platform, a 16-by 16-inch board is used to form a ramp extending from the top of the nest platform into the water to provide access for the loons. The wood should be grooved horizontally to give loons traction when they climb the ramp. If the platform is sheltered and has a good ramp, it may be used by the loons and their chicks for up to 3 weeks after hatching.

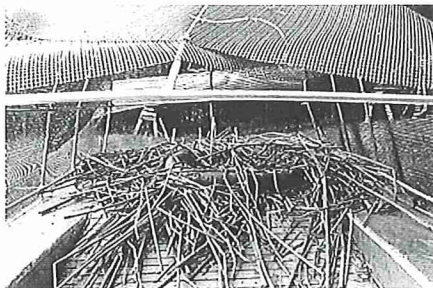
Nest ring for aluminum rafts.

The function of the nest ring on aluminum rafts is twofold; first, the ring prevents the eggs from rolling off the raft, and second, the ring keeps the natural vegetation from blowing off the platform. The nesting ring is made of a ¾-inch inside diameter by 4-foot-long piece of rubber garden hose that is inserted into foam pipe insulation (1-inch inside diameter by 1¾-inch outside diameter). The interior diameter of the nest ring is 12 to 13 inches. The hose ends are joined with a 5/8-inch wood dowel about 2 inches long forced into the hose ends. Small screws can be used to fasten the hose to the dowel if the joint is too loose. The joint seams are covered with duct tape. The nest ring is placed on top of the natural vegetation and secured with government grade plastic cable



Lyle Laskie

This is a nesting ring for a nest platform.



Lyle Laskie

The nest ring is covered with dried bulrushes.

ties through four eye screws in the plywood platform. Lesser grade cable ties will break in freezing temperatures. Government grade ties can be obtained from electricians. Try using 6-, 12-, and 18-inch-long cable ties for the nesting ring and canopy screen. Place the nesting ring deep inside the raft.

On aluminum rafts, the “chick ramp” is contained within the raft to make the raft compact for easy handling. Marine plywood (¾-inch thickness) is preferred for the platform and ramp; however, if unavailable, exterior plywood can be substituted. Green treated plywood can be toxic. Don't use it. The plywood is fastened to the raft frame with stainless steel ¼-20 by 1-inch, hex head cap screws with washers and nylon locknuts. Texturing the ramp plywood will help the chicks return to the nest. The ramp can be textured with coarse abrasives or by shallow parallel saw cuts about 1 inch apart.



Lyle Laskie

Bulrushes should be collected in fall as bedding for loon nests.

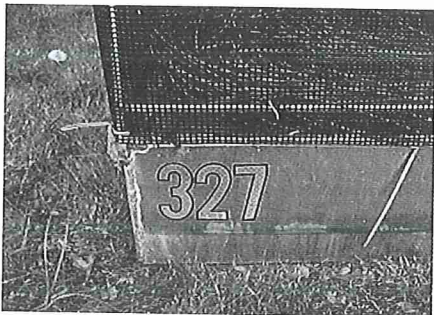
“Marsh muck,” concealing vegetation, and nesting material.

On the Novak loon platform, place some “marsh muck” with associated rushes and small shrubs like willow onto the platform edges so that the nesting loon can be partially concealed. If marsh muck is not available, about four bags of gardener's topsoil can be used and seeded with perennial rye.

For aluminum loon nesting platforms, plants must be collected in the fall for use the following spring. Natural vegetation is gathered after the lake is frozen and before the snow is too deep. A DNR permit is required before harvesting vegetation or “marsh muck.” Bulrush stems are preferred instead of cattails because they are easier to shape on the platform. The harvested bulrushes must not dry out or they become brittle and break easily. Store over winter on the ground and cover with a tarp so they will not be dry and brittle in the spring. Wet them down in the spring if necessary. Two to 3 inches of a combination of cattails (*Typha latifolia*) and/or hardstem bulrush (*Scirpus acutus*) are spread over the nesting area of the platform. Sedge grass (*Carex spp.*) is used to line the interior of the nest ring.

ANCHORS

Large (200 ounce, 1½ gallon) detergent bottles filled with concrete can serve as anchors for loon nesting platforms. Before the concrete sets, one end of a length of large chain is suspended in the concrete. These anchors are compact, have a smooth exterior, and a handle. Anchor lines are ¼-inch nylon rope with the large brass rope snaps (251B-3) tied to each end. The bow anchor is placed toward the on-shore wind and the stern anchor holds the rear of the raft toward the shore. Rafts exposed to large waves may require a 15-pound naval anchor placed an additional 10 feet in front of the concrete bow anchor.



Lyle Laake

Nest platforms must be registered.

REGISTER YOUR LOON NESTING PLATFORM

Important! Loon nesting platforms can be a hazard to boaters and a legal liability to someone who places a platform without registering it with the county sheriff's office. To avoid safety hazards and legal liability in Minnesota, place reflectors on all four sides of the nest platform and register the nest platform with the county sheriff in the same manner that you would register a swimming raft. Obtain sheriff department registration numbers to place on the loon rafts.

PLACEMENT OF THE LOON NESTING PLATFORM

It is important to place the nest platform in a location that is sheltered from wind action and within 20 to 50 feet of the shore. In most cases this means anchoring it on the west or northwest side of a lake since prevailing winds in Minnesota are from the northwest. Wind-sheltered bays that are connected to larger lakes are ideal.

LOON NESTING AREA MARKER BUOYS

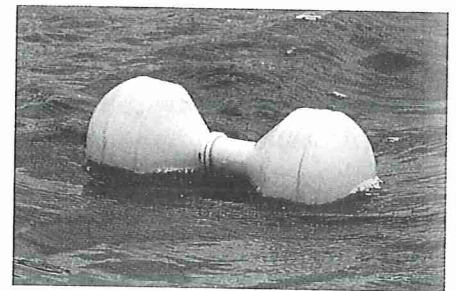
It is usually best not to provide conspicuous markers by loon nests because it can draw undue attention. However, if boaters or anglers pose a disturbance problem for a loon nesting raft, a "loon nesting area" marker buoy may be necessary. Smith & Nephew Rolyan, Inc., P. O. Box 555, Menomonee Falls,

See Figure 23 instructions on page 154.

WI 53051, phone 414-251-7840, sells an excellent regulatory buoy, which measures 9-inch diameter by 61 inches high. See the DNR Minnesota Boating Guide for Water Marker information.



Marker buoys help protect loon nests.



This yellow float helps identify the boundary of a loon nesting territory.

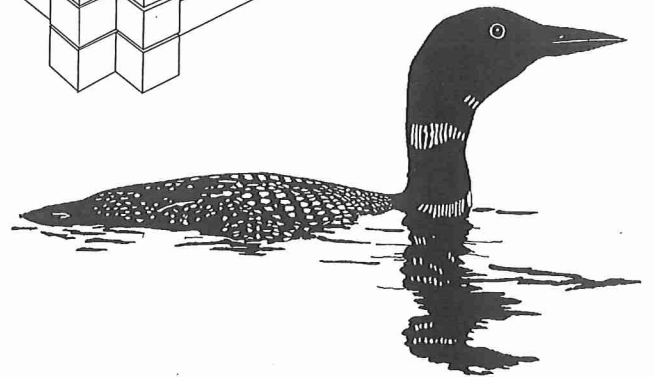
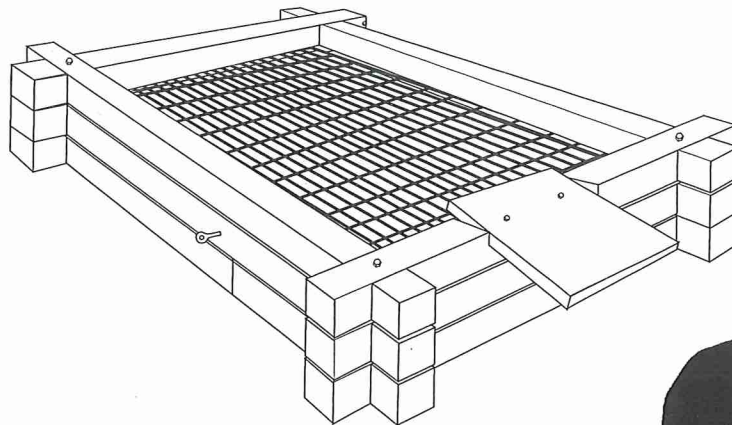
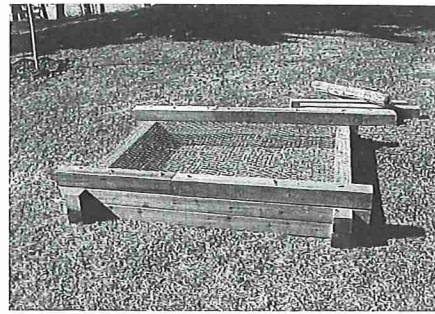


Figure 23

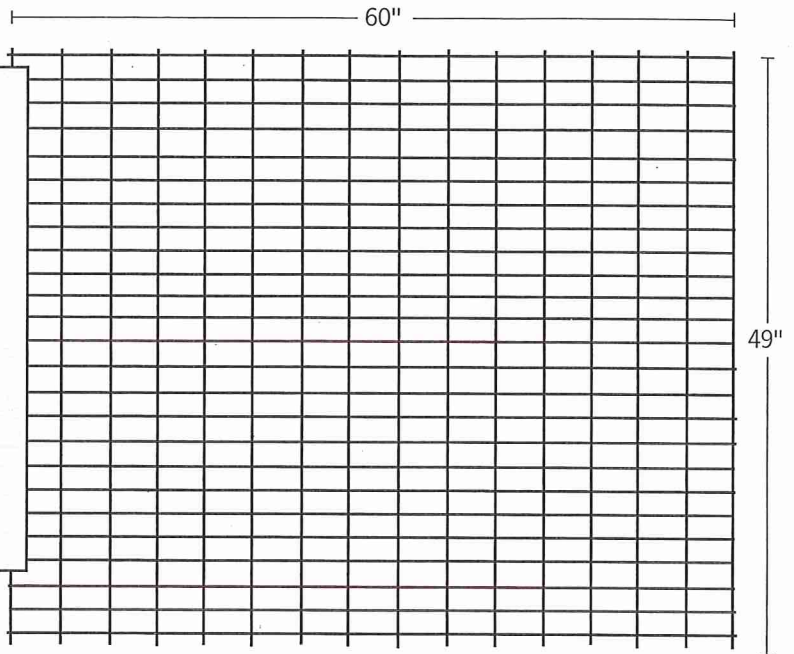
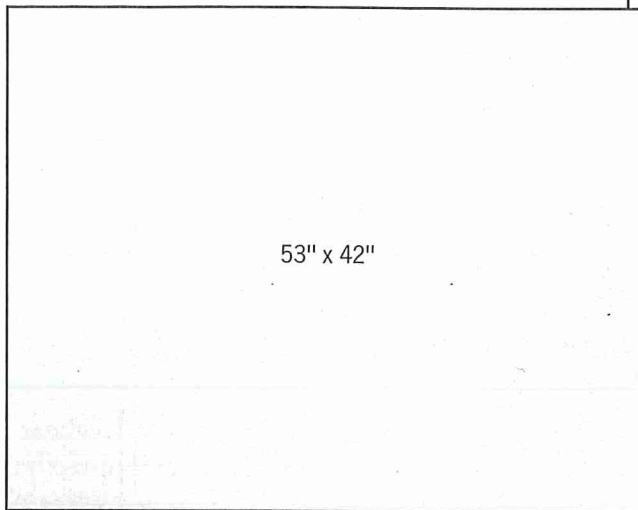
Novak Common Loon Nest Platform



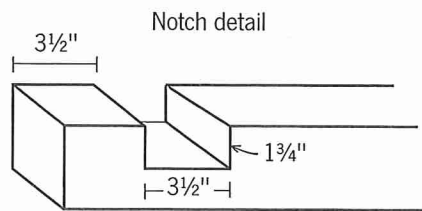
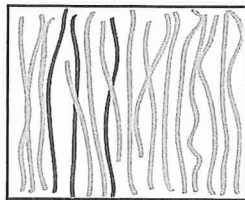
- Hardware:
- Two 1/2" x 8" eyebolts and washers
 - Two 3/8" by 2" lag screws
 - Four 1/2" x 12" lag screws and washers
 - 72 fencing staples

Two pieces of 2" x 4" welded wire mesh fencing (use four pieces chicken wire).

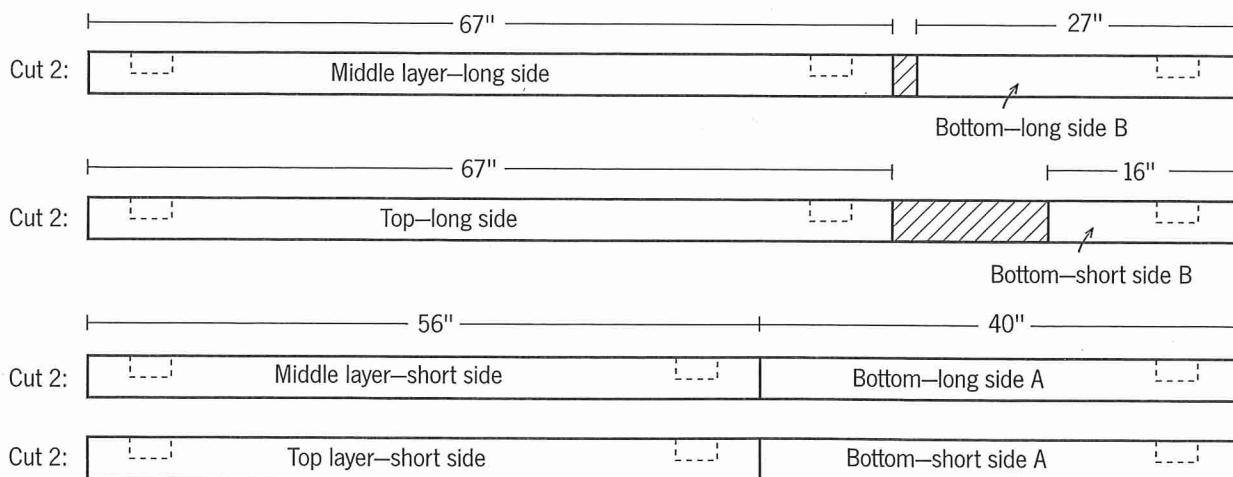
Two sheets of yellow construction foam insulation.



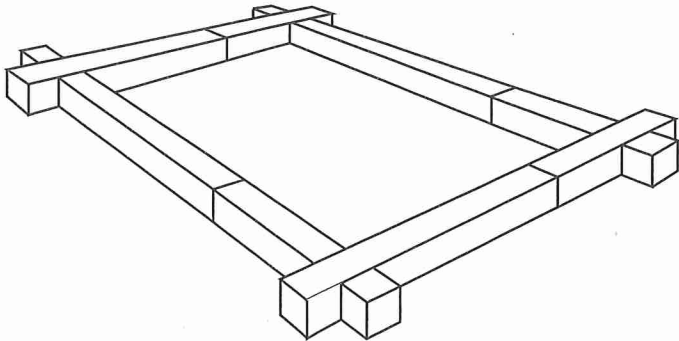
One piece of 16" x 20" 1/2" plywood, roughened on one side with a chisel (chick ramp).



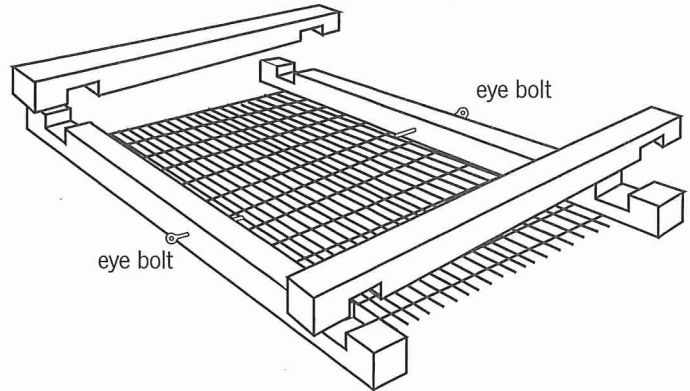
Lumber: Eight 4" x 4" x 8' cedar timbers, cut as shown.



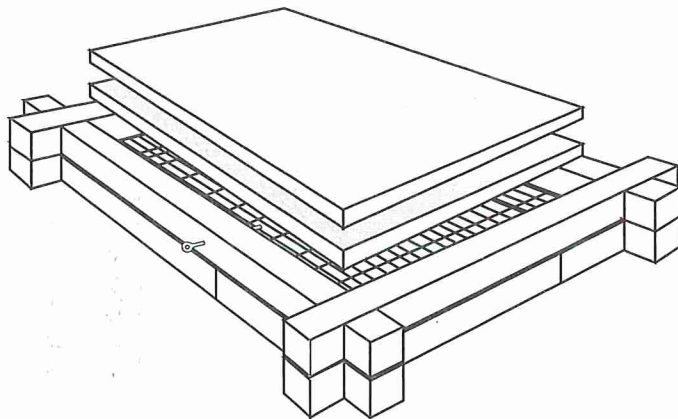
Step one: Assemble the bottom layer of the three-layer loon platform. Set aside until Step five.



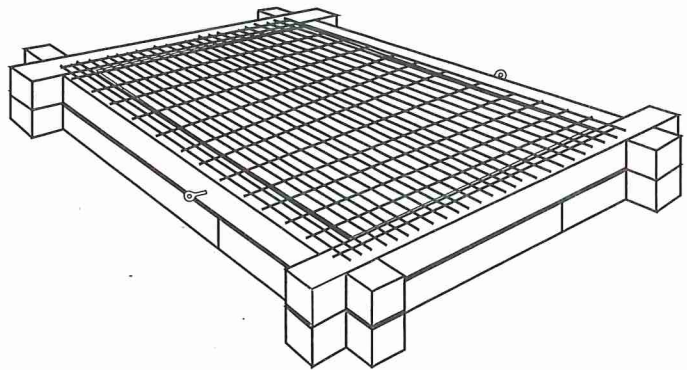
Step two: Assemble the middle layer of timbers. Drill $\frac{1}{2}$ " holes for two $\frac{1}{2}$ " x 8" eye bolts. Attach the welded wire mesh or chicken wire (two layers) onto the BOTTOM of the middle layer.



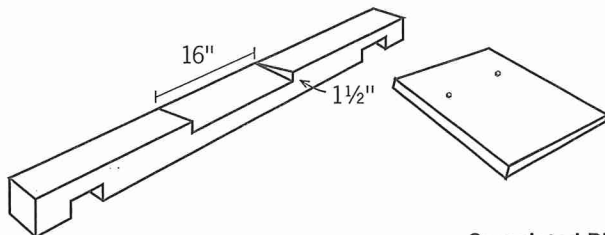
Step three: Place the middle layer on top of the bottom layer of timbers. Then fit two pieces of yellow construction foam insulation onto the wire.



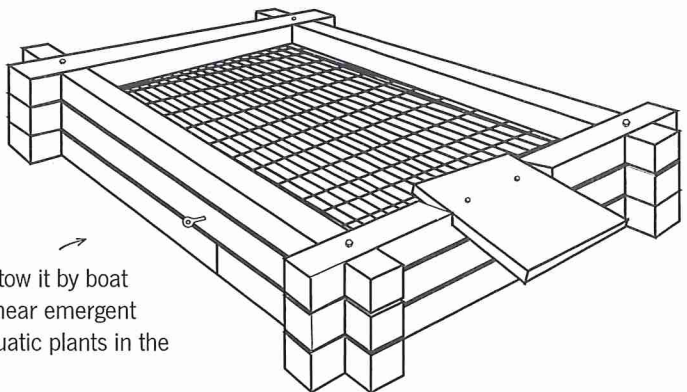
Step four: Attach the other piece of welded wire mesh or chicken wire (two layers) to hold the foam in place.



Step five: On one end of the top layer of the platform cut a sloping notch to attach the chick ramp. Use two $\frac{3}{8}$ " by 2" lag screws to fasten the ramp.



Step six: Add the top layer of timbers to the platform. Drill through the four corners and insert $\frac{1}{2}$ " x 12" lag screws and washers.



Completed Platform

Place the finished platform in the lake and tow it by boat to good location—sheltered from wind and near emergent vegetation. Place clumps of sedges and aquatic plants in the platform.