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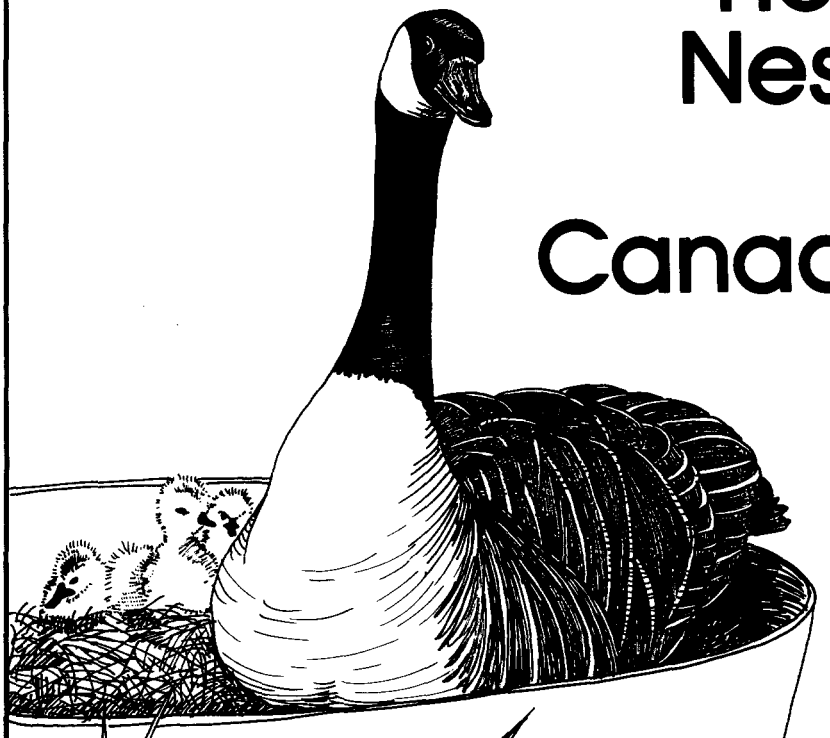
Homemade Nest Sites for Giant Canada Geese



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Since their near extinction in the 1920s, the restoration of the giant Canada goose (*Branta canadensis maxima*) in North America is a success story that has few equals in the history of wildlife management. For the most part, this happened in the last 40 years with modest beginnings in the 1930s and 1940s and considerable momentum developing in the 1960s and 1970s.

The return of the giant Canadas to North Dakota is an integral part of this success story. The restoration began in 1969, when a flock of giant Canada geese was established at Slade National Wildlife Refuge. Large-scale releases of hand-reared Canada geese began in 1972. Since then, remarkable increases have been noted in North Dakota, and these magnificent birds now nest over much of the state. Present restoration efforts involve the transplanting of wild-reared giant Canada geese. These efforts have been state-federal cooperative ventures with substantial support from private groups and individuals.

The giant Canada goose has become so well established in North Dakota that breeding pairs may find and use homemade nesting structures placed in suitable habitats most anywhere in the state. It is possible for landowners and sportsmen to entice this magnificent bird to nest in their localities by providing safe nesting places for them. Nesting structures are beneficial for the geese because they provide a nest site that is safe from predators that would destroy the nest. Giant Canada geese seem to recognize secure nesting situations and readily use nesting structures provided for them.

Life History

The giant Canada goose nests in most parts of North Dakota wherever suitable wetland habitats exist. Canadas are the first waterfowl to arrive in the state in the spring. In fall, many stay late into November and even December before moving south to wintering areas in South Dakota, Nebraska, or Kansas. Small numbers sometimes overwinter in North Dakota along the Missouri River where there is open water and ample food.

While the giant Canada is the only race of Canada geese that nests in North Dakota, several other North American subspecies migrate through the State. These races include the tiny Richardson's goose which weighs about three pounds, the lesser Canada at five to six pounds, the interior Canada at seven to nine pounds and the giant Canada which may weigh over 15 pounds.

Despite size differences, all Canada geese are similar in appearance. Body color of the subspecies varies from light to dark brown. In all races, the head, neck, bill, tail and feet are black and there are prominant white patches on the cheeks and a crescent-shaped white area on the rump. This white crescent is easily observed when the birds are in molt or in flight. Some races have a more or less complete white ring at the base of the black neck.

Canada geese are long-lived and generally mate for life. If one member of the pair is killed, the survivor will usually select a new mate. Giant Canadas can live from 20 to 30 years and have been known to successfully reproduce at 20 years of age. Females do not breed until they are least two years old and many may not nest until the age of three or four.

Family ties are very strong. Parents attend to the young for nearly a year. Families remain intact throughout the winter until they return to the breeding grounds. Once weather moderates on the breeding grounds and nesting sites become available, the birds rapidly disperse to establish their nesting territories.

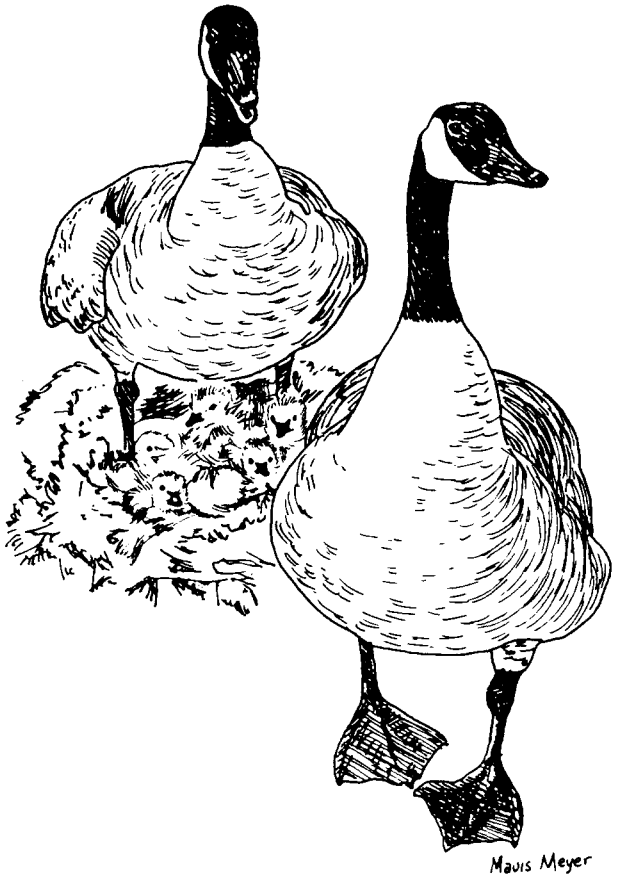
Because Canada geese may initiate nesting activity as early as the first of April, it is important to have nesting structures ready by that time. Properly maintained nesting structures, being free of snow cover, are especially attractive to early nesters.

Dedication

This circular is dedicated to the memory of
Frank J. Gjersing

Frank, a former wildlife biologist with the state of Montana and the designer of the Gjersing structure, died in a June 11, 1983 plane crash while censusing waterfowl.

"He was a monument to what he believed in."



There is a tendency for the geese to return to the area of their first flight experience to breed. This tendency is known as homing. Wild geese usually home to the area where they were reared. Captive-reared geese or wild transplants used in restoration programs home to the area where they are released prior to first flight (fledging).

Canada geese are highly adaptable and will nest in a variety of locations. In many areas, islands, muskrat houses and homemade nesting structures provide safe nest sites. Where these are not available, they will often nest in marsh vegetation, shoreline points or on upland sites where predators may find and destroy the eggs.

No matter where the nest is located, **geese do not carry materials to the nest site.** The nest is made only of materials at hand such as dead vegetation and grasses. The female will build the nest using only those materials that can be reached from the nest bowl as well as down and feathers plucked from her belly. For this reason, nesting structures must contain nesting materials such as flax straw or hay.

Canada geese usually lay five or six eggs (occasionally seven). The gander does not incubate the eggs but remains close at hand guarding the female. Incubation period is 28 days, and after the young are hatched both the gander and the goose take care of them. Canada geese will aggressively defend their nest and young, often attacking intruders by striking hard blows with their wings.

Canada geese are mainly grazers. During the fall and spring migration, they eat green shoots of grasses as well as waste grains. On the wintering areas they feed on both greens and grains. Corn is also a favorite food. The goslings eat tender grasses and other green herbage.

HOMEMADE NEST STRUCTURES

Over the years a number of homemade nest structures for Canada geese have been developed and used throughout the U.S. and Canada. The most successful of these have a number of things in common. A structure must be attractive to nesting geese, economical to build, and easy to install and maintain. In addition, it must provide a nesting site secure from predation, flooding and other factors which may destroy the eggs.

The homemade nest structures described in this circular generally meet these requirements.

THE NORTH DAKOTA STRUCTURE

The North Dakota Game and Fish Department currently provides Canada goose nesting structures to landowners under a cooperative agreement. Under this agreement, the North Dakota Game and Fish Department furnishes the nesting structure and the landowner agrees to install it, fill it with nesting material and provide annual maintenance.

The North Dakota nesting structure (Figure 1) is very sturdy and should last 15 or more years when

Figure 1. The smooth support pipe and fiberglass tub of the North Dakota nesting structures make it virtually inaccessible to mammalian predators. (G. Enyeart)

properly installed. This structure requires little servicing except for annual visits to replace nesting material.

The structure's smooth support pipe makes the nest inaccessible to raccoons and other mammalian predators. This structure is relatively easy to install if the support pipe is driven through the ice during the winter. When properly installed, moderate fluctuations in water level can be tolerated. Although the North Dakota structures are generally considered to be sturdy, they cannot withstand the type of ice action normally encountered on large, open bodies of water.

Materials needed

Fiberglass tub	One 32- to 36-inch diameter, with 8-inch side wall and 2-inch drop bottom from side wall with 8° sidewall for stacking purposes and 5 x 7-inch escape opening. In earth tone tint and made of 1/8-inch fiberglass laminated of 70% polyester resin with U.V. stabilizer and 30% glass content.
Steel disc	One 20- to 24-inch steel farm implement disc or suitable substitute
Wood	One 20- to 24-inch circle of ¾-inch exterior grade plywood.
Pipe	One 1-foot length of 3½-inch I.D. pipe (4-inch O.D.)
Pipe	One 9-foot length of 3-inch I.D. (3½-inch O.D.) pipe
Bolts	One 4½-inch or 5-inch long 3/16-inch bolt with nuts and flat washers and four 3/16-inch eyebolts of appropriate length with flat washers and nuts.
Bale	One-half bale of flax straw

Construction

Structure support pipe can be purchased either new or used from local scrap dealers. Nesting tubs can be purchased from either Pleasure Products Manufacturing Co., 2461 16th Ave. South, Moorhead, MN 56560, Raven Industries, Inc. Plastics Division, Box 1107, Sioux Falls, SD 57101, or Hanson Manufacturing, Inc., Turtle Lake, ND 58575. Similar tubs may also be available from other manufacturers.

Four holes are burned through the steel disc with an acetylene torch and four matching holes are drilled through the bottom of the fiberglass tub and the plywood circle. The 1-foot length of 3½-inch inside diameter pipe is welded to the disc. These components are then assembled and bolted together with four 3/16-inch eyebolts, using washers as necessary (Figure 2).

Matching holes are drilled in the 1-foot length of pipe and at the top of the 9-foot support pipe. A ½-inch diameter drain hole must be burned in the support pipe. This hole should be about 18 inches down from the matching hole. This drain hole will prevent water from remaining in the support pipe over winter. Past experience has shown that water confined within undrained support pipes may expand enough, upon freezing, to break the weld between the disc and the 1-foot length of pipe.

The 9-foot length of 3-inch inside diameter support pipe is driven into the marsh bottom at a selected location. The tub assembly with nesting material installed can then be set in place on the support pipe. A 3/16-inch bolt is inserted in the previously drilled holes in the two pipes and the nut is tightend.

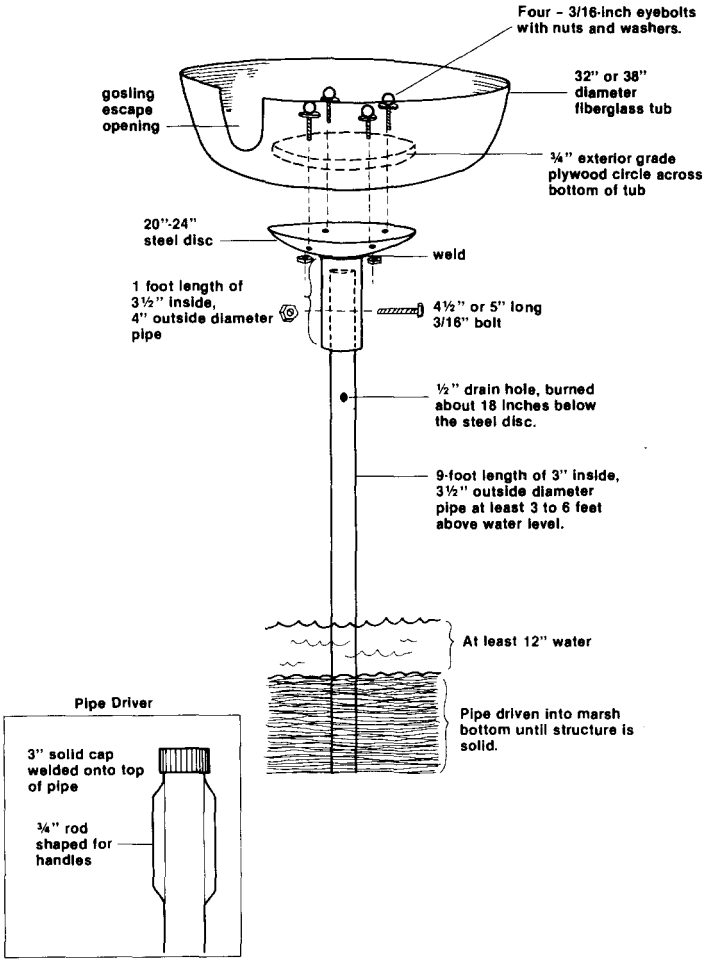


Figure 2. Construction of the North Dakota structure and pipe driver is relatively simple although welding equipment is required.

THE GJERSING STRUCTURE

This haybale platform type of goose nesting structure has been widely used in Montana on stock ponds and in other wetland habitats. Geese have accepted this structure readily. In some areas, more than 50 percent held successful nests the first year they were put out.

The Gjersing structure consists of a 3×4 foot wood frame platform supported by an angle iron frame attached to three 10-foot long pieces of pipe. Two hay bales are placed on the platform for nesting (Figure 3).

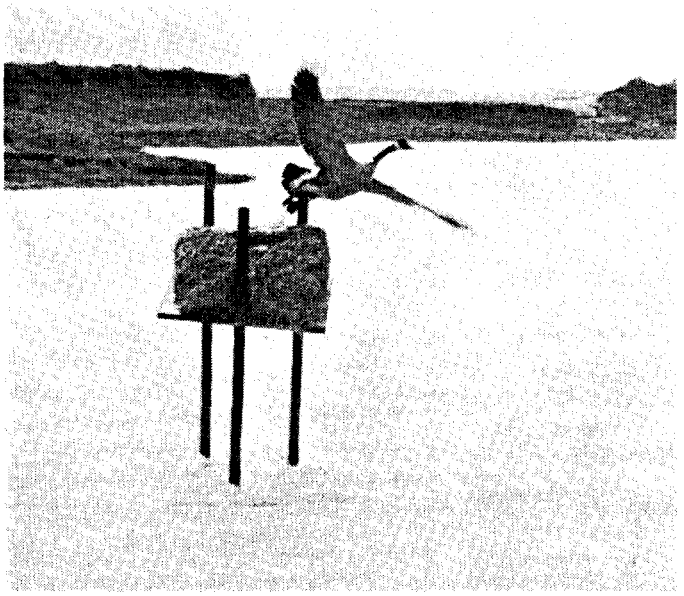


Figure 3. Canada geese quickly accept the bales used in the Gjersing structure. (T. Hinz)

It is a sturdy structure, but the wood platform may need to be replaced periodically. Annual inspections are also necessary to determine if haybales should be replaced.

This structure is more difficult to install than the elevated North Dakota structure, but its high first year use more than offsets this difficulty.

A major advantage of this structure is that it can be constructed from scrap pieces of wood, pipe and angle iron.

Materials Needed

Pipe	30 feet 2 to 3-inch diameter pipe
Angle iron	14 feet 1-inch wide × 1/8-inch thick
Wood	12 board feet of rough lumber in either 3 or 4 foot lengths
Bolts	Three 3½ × 3/8-inch galvanized hex bolts, nuts, flat and lock washers.
Wire	20 feet of 10 gauge smooth galvanized wire
Bales	2 bales of flax straw or hay

Construction

The materials are prepared in a shop before going into the field. Oil well tubing (2 3/8-inch outside diameter) which comes in 28- to 30-foot lengths has been used in Montana to make the structure support pipes. These longer lengths can be cut to give three equal length pieces. Each piece must have a 25/64-inch diameter hole drilled about 8 inches from the end.

The 14 foot piece of angle iron must be cut with 45° mitered ends into two 4-foot pieces and two 3-foot pieces. These are then welded in a 3- by 4-foot frame. Each frame should then have a 25/64-inch diameter hole drilled into it. One hole is drilled in the center of one 3-foot side. One hole, six inches in from each corner, is then drilled on the other 3-foot side (Figure 4).

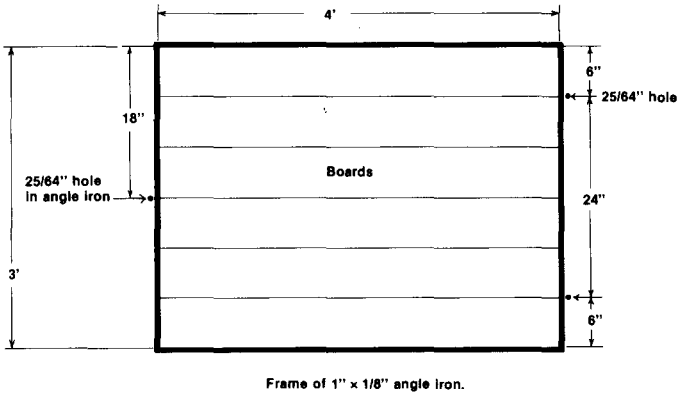


Figure 4. Top view of frame with boards in place showing locations of holes in angle iron for bolting to support pipes.

Boards should be cut to fit after the frame is welded. The boards can fit loosely together in the frame. These can be either 3-foot length boards laid cross ways or 4-foot length boards laid lengthwise in the frame.

Once the frame is assembled and the holes are drilled in the support pipe, the structure can be erected in the field (Figure 5).

Once you have selected a site, make a hole in the ice and drive the first leg of the structure into the bottom until solid. Lay the frame on the ice so that the single hole drilled in one of the 3-foot sides is butted up against the middle of the pipe. Mark the placement of the other two legs with an ice chisel, chipping the ice on the outside of the frame near the two holes drilled in the opposite 3 foot side of the frame. Chip out the second and third holes and slide those legs in until they touch bottom. Tip the legs until they appear vertical from two directions from a distance of at least 15 feet. Drive the remaining two legs in until: 1) they are solidly set in the bottom, 2) the drilled holes are about a foot above flood level, and 3) the drilled holes are about the same distance above the ice. Once the legs are set the frame can be attached.

Bolt the frame to the legs inserting the bolt from the frame side through the leg. Add the flat washer, lock washer, and nut in that order on the outside edge of the pipe, then tighten until snug. Make sure the frame is level. If it is not, drive in the high pipe(s) using the closed end of the driver.

Insert the boards in the frame, set the two bales on top (cut ends of the bale up and down) and wrap wire around the bales and platform near the ends of the bales. The wires should be tight. Tighten by pulling with one hand and using a lineman's pliers to pull on the other end. Tightening should be done using the frame edge for good mechanical advantage. Once the bales are wired in place, the structure is ready for geese.

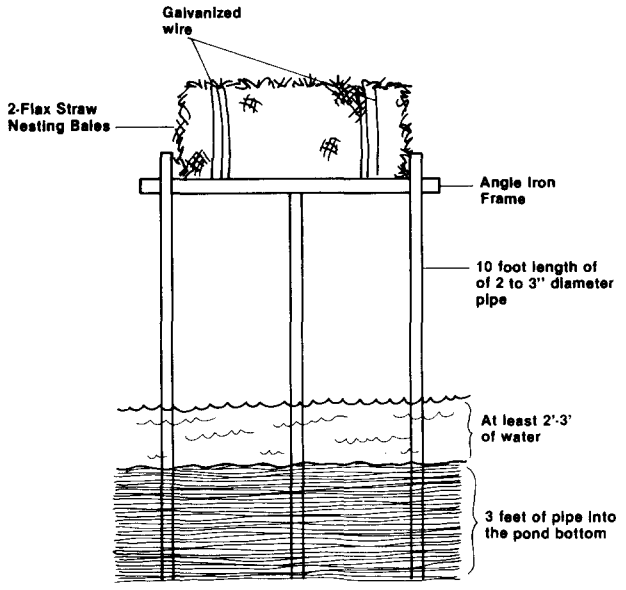


Figure 5. The Gjersing structure is a sturdy platform which can be used in a variety of wetland habitats.

FLOATING NESTING PLATFORM

The main advantage of a floating platform is it can be used on reservoir bays or in situations of extreme water level fluctuations where an elevated structure is not appropriate. A floating platform is able to rise and fall with the changing water levels. The platform is held in place by a length of nylon rope attached to the platform and to an anchor at the other end. If properly anchored, the floating platform will shift position to face into the wind.

Another advantage is that practically all the components are of wood. Scrap pieces of telephone poles, boards, and other lumber can be used to build a floating nest platform at low cost (Figure 6).

A floating structure is less predator proof than the elevated types because raccoons or other predators can swim to reach it. Installation is relatively simple since the unit can be hauled or dragged with a vehicle over the ice to the selected location. Maintenance can be difficult if the structure has to be moved by boat. These platforms are very heavy and cumbersome, and are not recommended except for situations where other nesting structures are not appropriate. Also, these structures may become waterlogged over a period of time.

Materials needed

Wood	Approximately 30 lineal ft. 1 × 12-inch board
	15 lineal ft. 1 × 6-inch board
	5 lineal ft. 2 × 6-inch board
Cement blocks	Two 8-inch cement blocks
Lag bolts	Four ½ × 6-inch lag bolts
Bolts	Three ½ × 6-inch bolts w/nuts and washers
Rope	One 20-foot length of ½-inch nylon rope
Posts	Two 5-inch diameter posts 8 feet long
	Two 4-inch diameter posts 2½ and 3⅓ feet long.
Bale	One half bale of flax straw

Construction

The support frame is triangular in shape. It consists of two 5-inch diameter posts bolted together at one end and spaced apart at the other end with the 5-foot lengths of 2 × 6-inch lumber which are bolted in place. The bottom side of the triangular frame contains six pieces of 1 × 12-inch lumber nailed in place from one 5-inch diameter post across to the other post. Since the shape of the frame is pointed, the length of these boards will vary depending on what part of the frame they are nailed to. The two 4-inch diameter posts are mounted on top of the support

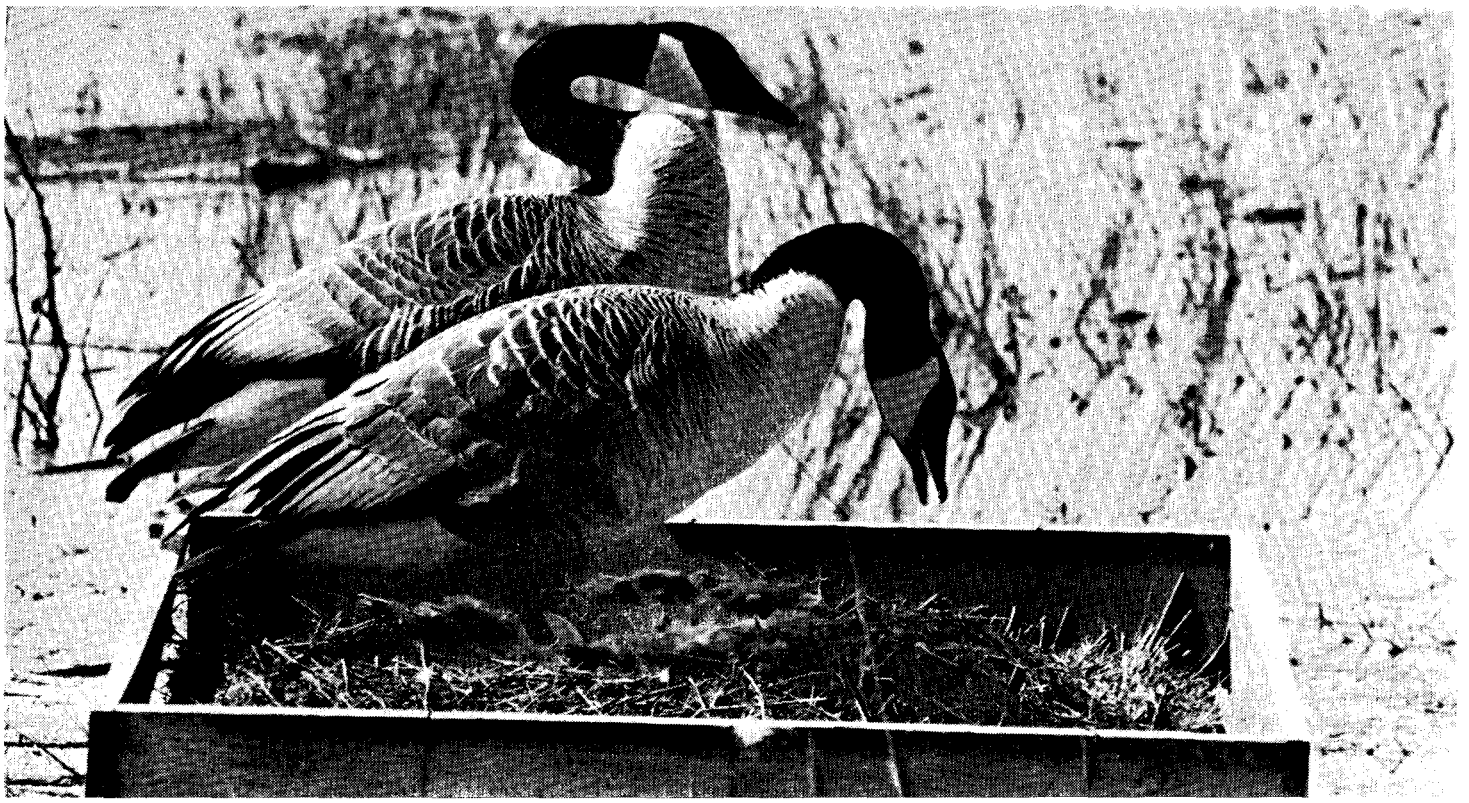


Figure 6. Although floating nest platforms are accessible to predators, a determined pair may successfully defend their nest. (B. Martin)

frame as shown in Figure 7. A 30 x 30-inch nest box with three sides 12 inches high and one side 6 inches high and with a bottom of 1 x 6-inch boards is mounted on top of the two 4-inch diameter posts. The 6-inch high side faces the wide end of the support frame. This serves as a place for the goose to step up on before she enters the nest box. A piece of 1-12-inch lumber is nailed to the upper side of the support frame between the nest box and the wide end.

An alternative to the wood nest box is a plastic nest tub of the same type used in the North Dakota structure. This tub is fastened to the top of the raft similar to a wood nest box (Figure 8).

Styrofoam pieces can be attached to the bottom of the platform for added floatation. Other innovations used to increase floatation include substituting fiberglass tubes or PVC pipe for the wood support frame. Such modifications not only increase the life of the structure but also reduce its weight, making for easier handling.

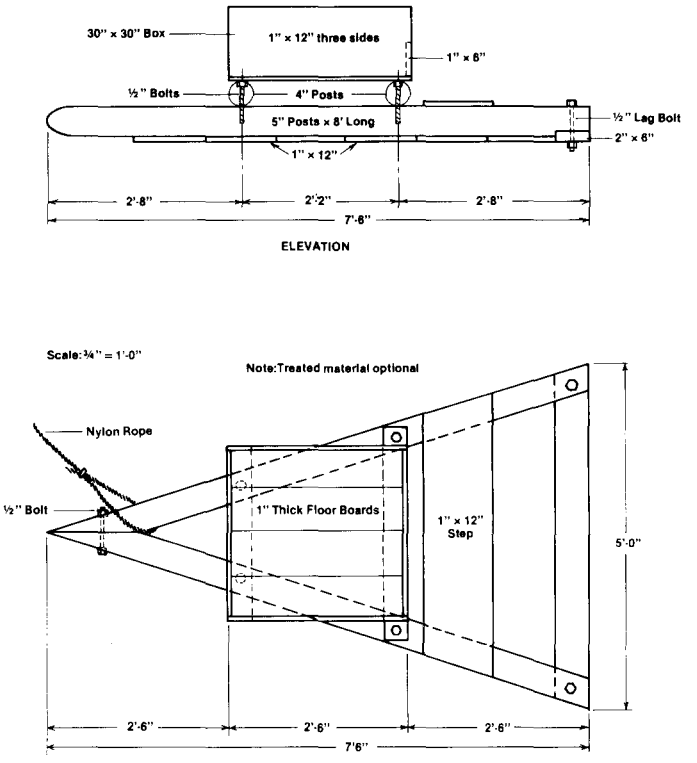


Figure 7. Floating nest platforms are most suited for areas with extreme water fluctuations.

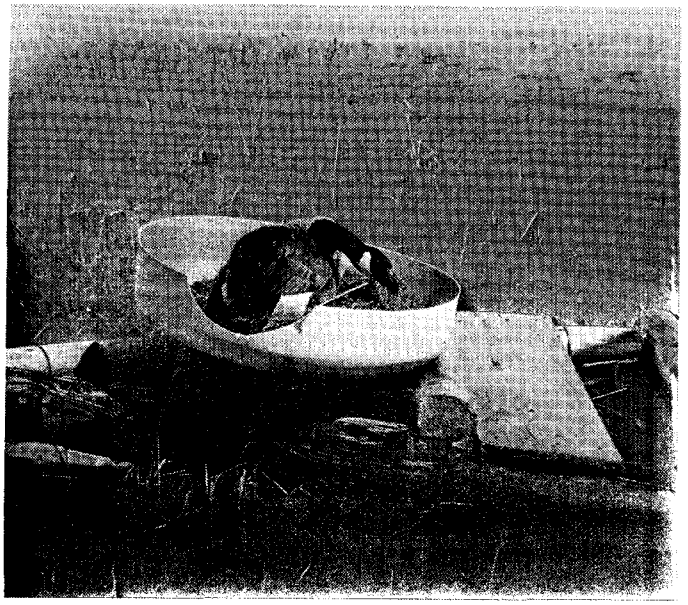
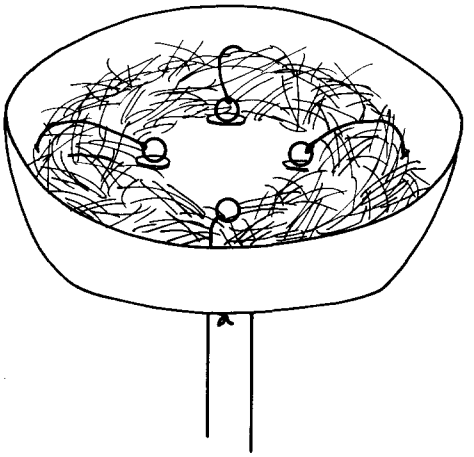


Figure 8. Floating platforms are heavy and require much maintenance. Innovations such as fiberglass nesting tubs and replacing other wood components with fiberglass, styrofoam or plastic may improve the structure. (T. Kuck)



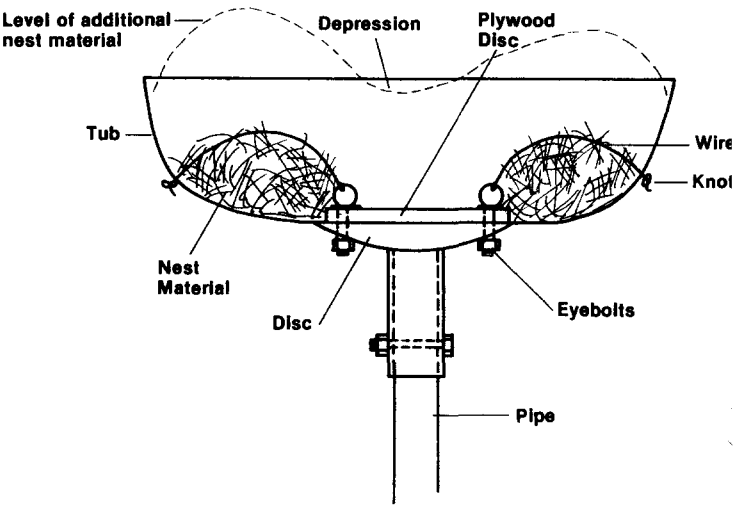


Figure 9. Secure a substantial bundle of nest material in the bottom of the tub, then fill to the top leaving a depression in the middle.

NEST MATERIAL

Once your nesting structure or floating platform is assembled, it is time to place the nesting material. **Flax straw is the best nesting material** since it holds together well and resists being blown from the structure by wind. Native hay or marsh vegetation can also be used for nesting material but are less desirable than flax straw. Alfalfa hay and small grain straw crumble too easily and are quickly blown away so they should never be used as nesting material.

Structures or platforms already in the field should be visited in late winter or early spring before March 1 to add additional nesting material.

North Dakota and Floating Platform Structures

Do not skimp on nesting material. Wind, weather and goose use will reduce the amount of material in the nesting tubs or boxes. Place enough nesting material in the nest box or nest tub so that it extends above the top leaving a depression in the middle (Figure 9).

Where nest tubs are exposed, it is necessary to secure some straw in the tubs with wire. Place 2 to 3 inches of nesting material in the bottom of the tub. Next, drill three or four sets of two small holes opposite one another, one on the upper and one on the lower edge of the tub. Thread light wire in one hole, through and around some of the nesting material, and then out through the other hole on the same side. Pull the wire tight and secure on the outer edge. Do not make wire loops on the outside of the tub, since this might provide a raccon with a "toehold" to gain access to the nesting structure. If 3/16-inch eyebolts were used to attach the nesting tub to the metal disc in the North Dakota structure, nesting material can be secured by threading wire through the eyelet, then over and around a bundle of nesting material. The wire can then be refastened to the starting eyelet. After the 6 to 8 inches of nesting material has been secured with wire, the tub should be completely filled with additional nesting material (Figure 10).

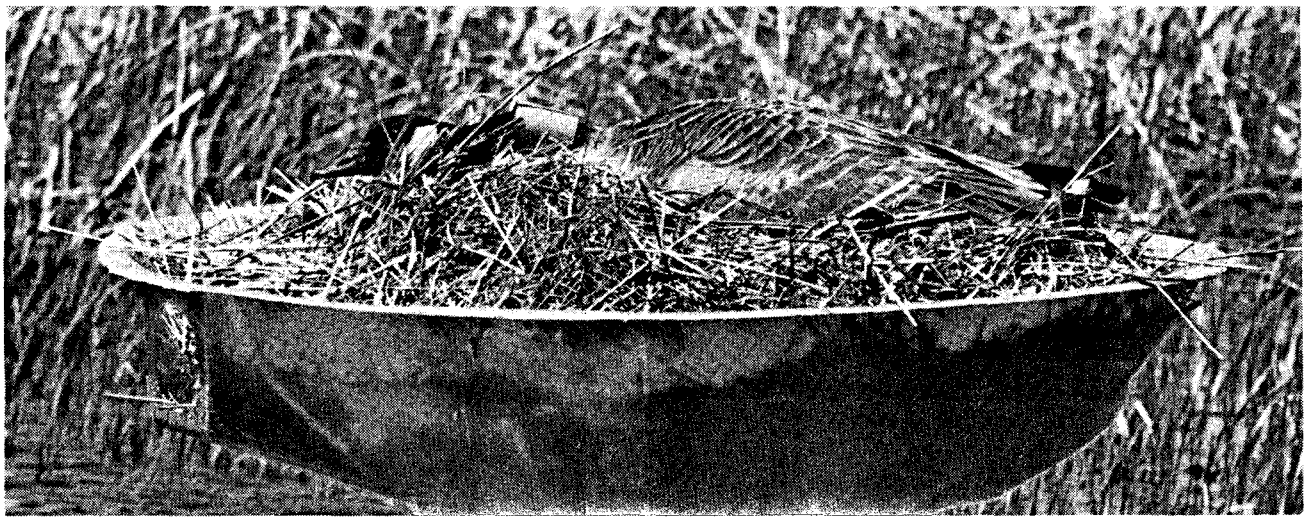


Figure 10. Flax straw is the best nesting material because it holds togethers well and resists being blown from the structure. (E. Bry)

Gjersing Structure

Even though flaxstraw bales can be expected to last three years or more if in good condition when put up and wired securely, structures still should be visited in late winter or spring before March 1 to determine if they are in usable condition for the coming season. It is generally easier to replace bales, wire, etc. when the pond is covered with ice and one can walk to the structure.

PLACEMENT

Placement sites for the nesting structures and floating platforms should be selected well in advance of the fall or winter season. It is important to obtain landowner permission and become familiar with the roads and the pond or wetland before winter.

The location of the nesting structure(s) and floating platform can vary depending on the type of water area, size of the water area, and the configuration of the shoreline. The structures can be placed in either natural or man-made water areas that are permanent or semi-permanent in nature. These would include natural wetlands, stock ponds, or reservoirs that hold water throughout the summer.

North Dakota and Gjersing structures have similar placement guidelines. The best time to erect these nesting structures is during the winter months when one can work on the ice. Nesting structures can be erected during the summer, but working from a boat is much more difficult. Generally the time to begin is in December, once ice is thick enough to support people and equipment. A hole must be cut in the ice so the nesting structure support pipes can be driven into the bottom of the wetland. The following table will assist you in determining how much weight ice can support. The ice must be clear and blue.

Ice Thickness	Permissible Load
Less than 2"	STAY OFF!
2"	One person on foot
3"	Group in single file
7½"	2 ton truck gross (car or snowmobile)
8"	2½ ton truck gross
10"	3½ ton truck gross
12"	8 ton truck gross

If the ice is soft and slushy you will need twice the ice thickness to insure safety. Beware of crossing rivers, beaver lodges and lakes at their inlets and outlets since the flow of water under ice impedes freezing.

Nesting structures should be placed where they will be least affected by ice action. This would usually be a sheltered bay or arm of the water area or along the shoreline from which the prevailing winds blow. Nesting structures placed in or adjacent to available emergent vegetation such as cattail or bulrush are less likely to be affected by ice action. A small open-water area within a stand of emergent vegetation is a good location for a nesting structure.

There are several other important factors to remember when selecting locations for nesting structures. Select a location where the water is at least a foot deep. It is also important that the support

pipes be high enough to keep the nest dry during high water periods. In most cases, support pipes extending 3 to 6 feet above the normal water level would be sufficient.

Do not place the structures where cattle may rub on them causing them to tip. It is also advisable to avoid water areas with appreciable fishing or boating activity and areas near homes and other places where human activity might disturb nesting geese. If there are other choices, ponds surrounded by trees or those which frequently dry up should be avoided.

Canada geese are very territorial during the breeding season, and placement of nesting structures in close proximity to one another may cause fighting and disrupt nesting by either or both pairs. Therefore, multiple nest structures placed on large water areas should be as far apart as possible and no closer than 100 yards. Locate the structures so that a goose on one structure cannot see another goose nesting site.

It is critical that both the North Dakota and Gjersing structure support pipes be firmly driven into the marsh bottom (Figure 11). Canada geese will avoid wobbly structures. Support pipes should be driven into the bottom so they move an inch or less each time they are struck full force. If the support pipes move more than an inch or can be twisted or pulled by hand, move them closer to shore where there will be a thinner layer of soft bottom material.

Avoid creating trails during placement. Such trails will serve as travel lanes, drawing predators to the nest site.

Floating Nesting Platforms are generally used on reservoirs or larger water areas where it is not practical to use elevated structures because of ice action or extreme fluctuations in water levels. Experience has shown that the floating platforms should be placed in sheltered bays or other protected situations. If this is not done, ice action during the spring break-up may push them up on shore. When this happens it is difficult to dislodge them from the shoreline and move them back over water. A substantial anchor must be used to hold the platform in place. One wildlife agency made satisfactory anchors by pouring concrete into 5-gallon pails. Before the concrete hardened, a metal loop was inserted on the top side to provide a place to attach the nylon rope to the anchor. Two 8-inch concrete blocks attached to the end of the nylon rope have been used to provide a satisfactory anchor. When two blocks are used it is advisable to secure them together with a short piece of chain and then tie the nylon rope to the chain. This prevents the sharp corners of the cement blocks from rubbing against and cutting the nylon rope. Wire cable is not recommended as an anchor tie because it rusts and does not last as long as the nylon rope.

Figure 11. The best time to begin installing nesting structures is in December once the ice is thick enough to support people and equipment. (G. Enyeart)

MAINTENANCE

Nest structures and the floating platforms should be visited in late winter or early spring before March 1 to determine if they are in usable condition. When visiting the structures and platforms, take care to avoid creating a trail through emergent vegetation that will draw predators to the nest site.

The North Dakota structure should be examined annually, all unsuitable materials removed, and the nesting tub filled with new nest materials.

The Gjersing structure's bales, boards and wire should also be checked annually and replaced as necessary (Figure 12).

Floating nesting platforms as well require annual maintenance to replace nest material and to inspect and repair the structure if necessary. Generally the platform is left in place over-winter because it is too heavy to drag ashore. However, platform longevity

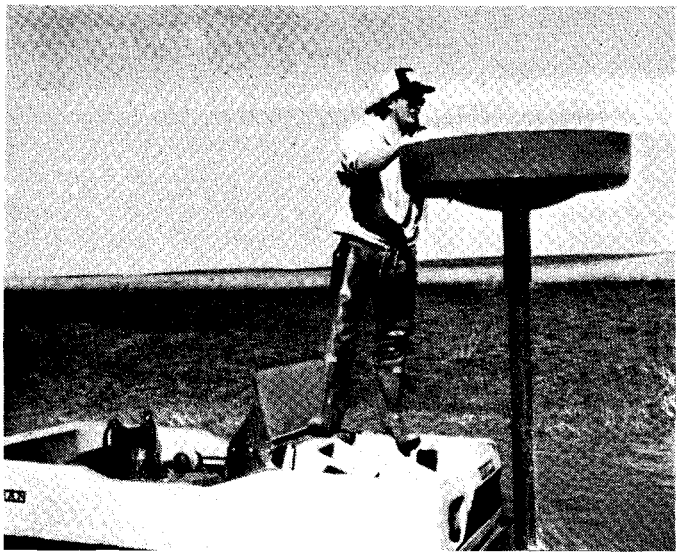


Figure 12. Annual maintenance and replacement of nesting material is crucial to the success of homemade structures. (above, C. Schroeder; below, T. Hinz)

can be increased if it is brought to shore as soon as the nesting season is over. A water-logged wood support frame can be extremely heavy to move and may require the use of a tractor. If pulled to shore through emergent vegetation, the platform will create a permanent trail. If the platform cannot be pulled to shore without going through shoreline vegetation, it should be pulled to and removed from the shore opposite the nest site. This will allow the platform to be reset in the same nest site next season without fear of creating a hazard for the geese.

Servicing on the ice is usually done in late winter or early spring prior to the return of the geese and before the ice goes out. Servicing after the ice has gone out usually requires the use of a boat for carrying nesting materials to the platform. The use of a boat also enables one to change the location of the raft if ice-action has resulted in the platform being dragged too close to shore. If this has happened, the anchor can be lifted off the bottom and the platform moved to the desired location. Under some circumstances the platform can be put in place by setting it on the ice in winter and dropping the anchor through a hole in the ice.

If a platform is occupied when ice is still present, predators will have direct access to the nest. For this reason, the platform should only be used in places where the other types of nesting structures are not practical. Remember, nesting structures are built to attract geese and should not create a hazard for them.

LARGE ROUND BALES FOR GOOSE NESTING

One of the more recent and practical types of homemade nest sites for Canada geese is the large round bale. During the past few years, many bales have been placed for goose nesting throughout North Dakota (Figure 13).

One shortcoming in using large bales for goose nests is that they may be usable only a few years.

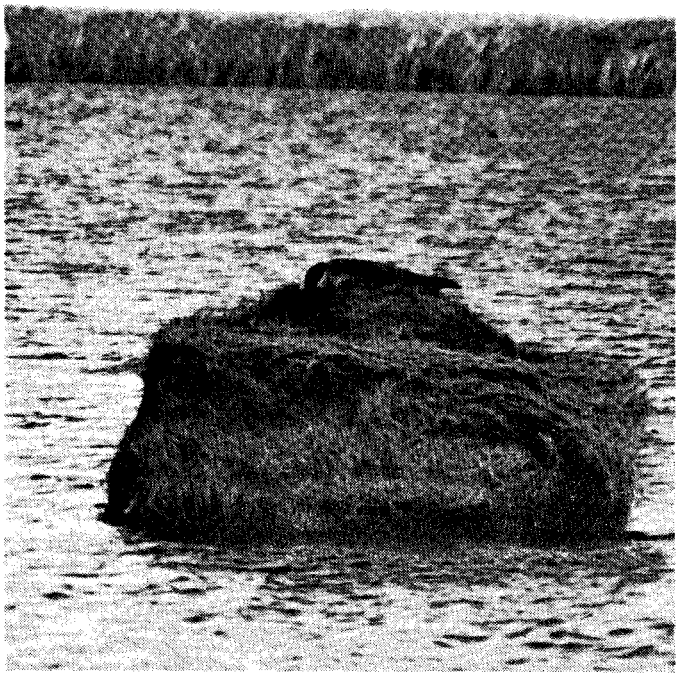


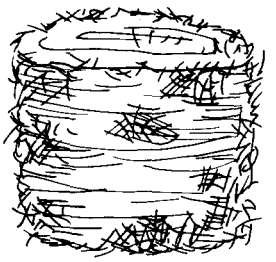
Figure 13. The natural appearance of large bales make them attractive Canada goose nesting sites. (I. Rostad)

Some, however, last as long as five years under favorable circumstances, especially if they are reinforced with woven wire. In general, high quality, tightly wrapped bales will last the longest.

Bale nest sites are more accessible to raccoons and other predators, although studies indicate a low rate of predation. Bales are also more likely to be damaged by abnormal rises in water levels than the other types of homemade nest sites discussed. A nesting bale is relatively easy to install since it can be transported onto the ice during the winter. The nest bale, in some circumstances, may be the most economical of all the homemade nest sites discussed.

Bales are a good choice for wildlife club projects because of their availability and general lack of maintenance. In addition, geese generally will begin nesting on the bales almost immediately. Other structures, such as fiberglass tubs, may require more time to develop consistent use by geese.

Although the technique is relatively new and not yet perfected, the results have been excellent. To date most bales placed are for nesting Canada geese. However, ducks, especially mallards, also nest on the bales. Large round bales also provide excellent loafing sites and are used extensively by ducks and geese throughout the spring and summer.



LARGE BALE WITHOUT WIRE MESH

LARGE BALE BEING REINFORCED WITH WIRE MESH

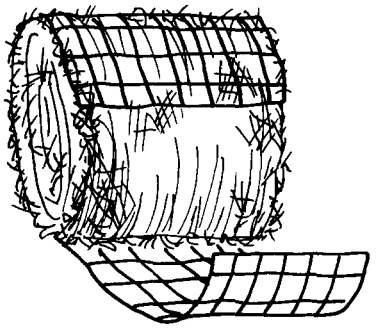


Figure 14. Wrapping of bale with wire will greatly increase its longevity.

Materials needed

Bale	Flax straw, coarse grass, straw or marsh hay
Wire mesh	4 × 16 ½-foot pieces of wire mesh

Construction

The ideal size of the round bales is about 5 feet high by 5 feet in diameter. These bales can weigh up to 1500 pounds.

The bales should be tight and securely tied. They will last longer if additional plastic twine is applied to them during the baling operation. Some individuals have wrapped the bales with plastic strapping similar to that used to bind crates or lumber in order to increase bale life.

Large round nesting bales will also last longer if the bales are wrapped with wire mesh or woven wire. If wire is used, the bales are wrapped so that a minimum of three-quarters of a bale is covered with wire mesh (Figure 14). Bales should be wrapped with wire mesh prior to handling and transporting. A disadvantage of the wire wrapping is that it will remain to clutter up the wetland after the bale has deteriorated unless removed.

Flax straw is the best material for a nest bale because of its coarse nature and resistance to rotting. If flax is not available, other straw or grasses may be used but they will not last long. Coarse grass or marsh hay is probably better than fine grass or straw. Alfalfa is very crumbly and should not be used to make a nesting bale.

Placement

Although bale nest sites are not completely predator proof, they offer a Canada goose protection from predators such as fox, coyote, and skunk, and a determined pair can frequently defend a bale against raccoons. Proper placement in a marsh will also reduce the chances of predation.

The best time to place large round bales on a wetland is in early winter when the ice is strong enough to support a vehicle and before snow has accumulated (Figure 15). When placing bales by driving a vehicle on the ice, be sure to enter the pond from the shore opposite the site. Vehicle tracks through emergent vegetation last for a number of years, creating an excellent predator travel lane. Entering the pond directly by a bale will draw attention to the bales and at the same time make it more accessible to mammalian predators.

The bales can be placed in a variety of wetland sites. It is best to locate them in or near stands of bulrush, cattail or other vegetation. If possible, place on the leeward side of the wetland where they are somewhat protected from winds and ice action. Bales placed on small wetlands will probably last

longer than bales on lakes because of reduced wave action in the summer and less ice action in the spring.

No more than two bales should be placed on sloughs or wetlands of less than five acres in size. Bales should not be located closer than 100 yards apart on any wetland. This spacing will avoid or reduce conflict between nesting pairs. It is also advisable to avoid placing bales close to well-traveled roads where human disturbance may occur.

Bales are less likely to be visited by predators if they are located at least 150 feet from the shoreline. This distance might be less in cases where the bale is partially concealed by emergent vegetation so it cannot be seen from shore by raccoons or other predators. Bales should not be placed in deep water or river systems where they will drift or float away. Water depth of 1 to 2 feet and no deeper than one-half the height of the bale are ideal. Generally, the deeper the water, the shorter the bale's life span.

Bales placed on the ice sometimes tip over when the ice melts unevenly. Tipped bales are of little value as nesting sites. To avoid tipping, set the bale into a hole cut into the ice. A circular hole the size of the end of the bale can be cut in the ice with a chain saw and the chunks of ice removed with an ice tong. The bale is then laid on its side next to the hole, tipped up, and set into the hole so an end goes down through the hole settling on the marsh bottom. Experience has shown that if the distance from the surface of the ice to the marsh bottom is a foot or less, the bales can be set on end on the ice without much risk of it tipping.

Tipped bales that cannot be uprighted can be made usable for nesting geese. To do so, a small depression and loose straw must be provided on the top side of the bale. This can be done simply by cutting or chopping into the bale until enough loose material is available to form a nest bowl.

Bales should not be placed in pasture wetlands which dry up during the summer and fall. There are very few things that could destroy a nesting bale faster than livestock having free access to one.

Figure 15. Large round bales may be placed in wetland during the winter using standard farm trucks equipped with hoists. (I. Rostad)

Finally, extra straw can be placed on top of the bales to make them more attractive to Canada geese.

Maintenance

It is important to check the bales each year in late winter or early spring to determine if any need to be replaced. In some cases it may be desirable to add more bales to a wetland to replace usable but rapidly deteriorating bales or to accommodate an expanding breeding population.

CONCLUSIONS

Although Canada geese readily use homemade nest sites, such sites must be placed in good wetland habitat. Permanent wetland complexes of large and small marshes are essential for Canada goose brood rearing activities. Such complexes permit parents to move broods away from disturbances with a minimum of overland travel. Nest sites must also be close to area where adults and goslings can graze relatively undisturbed.

Homemade Canada goose nest sites have been used extensively by other waterfowl, particularly mallards. Also, mallards and Canada geese have been observed nesting on large round bales at the same time (Figure 16).

Once you have built and placed a homemade nest site, you have made a commitment to maintain it. If the structure is not used the first year, don't become discouraged. Since Canada geese have strong homing tendencies, it may take time for young geese to move (pioneer) into your area.

Once a pair of geese successfully use your homemade nest site, they are likely to return to use it

Figure 16. Large round nesting bales will be used by mallards as well as Canada geese. Note the mallard nest on the right side of the bale below the incubating goose. (R. Martin)

E. Bry

year after year. In two or three years, surviving young females will return with their mates to nest in your area. When this happens, you are well on your way to establishing a growing local population which will continue to nest on homemade nest sites.

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