

ARTIFICIAL NEST PLATFORMS FOR RAPTORS

by

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Many species of raptors will utilize artificial platforms as nest sites. Ospreys (*Pandion haliaetus*) have traditionally nested on buoys, channel markers, and other navigational aids. However, the periodic cleaning and repairing of these structures by work crews have resulted in a high number of nest failures in some areas. To reduce these unfortunate occurrences near Chesapeake Bay, in 1965, Reese (1970) erected nest platforms where they would be subject to less human interference. Some of these platforms were subsequently utilized by Ospreys. The Great Horned Owl (*Bubo virginianus*) and Red-tailed Hawk (*Buteo jamaicensis*) nested on artificial platforms in central Minnesota in 1966 (A. H. Grewe pers. comm.); similar results were reported in South Dakota (Dunstan and Harrell 1973). Dunstan and Borth (1970) found that a pair of Bald Eagles (*Haliaeetus leucocephalus*) would accept a reconstructed nest in lieu of their own, which had collapsed during a storm. In 1975, a nesting attempt on an artificial platform by Bald Eagles produced two eggs but was eventually unsuccessful. The platform had been constructed several years earlier in an area where no eagle nests had existed previously (A. H. Grewe pers. comm.). The Great Gray Owl (*Strix nebulosa*) (Nero et al. 1974) and Ferruginous Hawk (*Buteo regalis*) (White 1974) have also utilized manmade platforms. The general concepts of these types of nestings as a habitat enhancement technique have been reviewed by Olendorff and Kochert (1977) and Fyfe and Armbruster (1977).

Artificial nests have several interesting applications in raptor management. Placing them where natural nests are absent or are in poor condition can lead to their being used to expand the existing range of a species. This may be particularly important to owls since they do not construct their own nests. In central Minnesota, Great Horned Owls commonly nest on old Red-tailed Hawk nests, which are often near woodlot edges. In recent years these border areas have become favorite trails for increasing numbers of snowmobilers and cross-country skiers. Attracting owls away from these areas would reduce the number of disturbances to incubating owls, resulting in better productivity. Finally, artificial nests can be placed in trees that are accessible for study and observation. If they are well constructed, they should last several years.

I have erected a number of nests in central Minnesota and have had better success with Great Horned Owls (figure 1) than with Red-tailed Hawks. The nests were made out of 1 m x 1 m pieces of 2.5-cm-mesh chicken wire. A 1 m x 1 m piece was formed into a shallow cone by cutting from its center to one of the corners and then overlapping the edges. The completed cone measured approximately 75 cm (top diameter) by approximately 45 cm (depth); its shape was secured by bending the sharp wire ends around the wire that they overlapped. The cone was then lined with tarpaper and provided with a drainage hole at the base before nest material was added (figure 2). Unlined nests were much more susceptible to weathering. Nest material consisted of twigs, leaves, and branches, with the finer material near the top, where

the eggs would be laid. The larger branches were interwoven with each other and the chicken wire as tightly as possible to provide a solid nest structure (figure 3). When interwoven around the top edge, flexible shrubs such as willow (*Salix ssp.*) and dogwood (*Cornus stolonifera*) were effective at keeping the nest circular. The completed nest was then tied to a rope, pulled up into a tree, and secured in a suitable crotch with wire and/or large staples.

There are a number of factors that may affect the selection of artificial nests by raptors. Nests that I erected as early as the first week in January were not used by Great Horned Owls that same year. This fact seems to support the theory that Great Horned Owls select their nests several months prior to actual nesting (Baumgartner 1938). However, the chances for early selection would be improved if potential nest sites were in short supply. The height of a nest may also be a factor in its acceptance. Red-tailed Hawks generally nest near the top of the tallest available trees. The average height of 29 active natural red-tail nests that I examined in central Minnesota in 1976 was 15 m. Owls, however, will often nest lower.

In the last few years, large numbers of center-pivot irrigation systems have appeared in central Minnesota, and the clearing of fencerows and woodlots has rapidly increased to accommodate them. There also seems to be more selective cutting for firewood. In 1977 I was disappointed to find that several of the 1976 nest trees had been cut during the winter, and in one case the entire woodlot was gone! Other woodlots contained new suburban homes, constructed less than a block from recently active nests. The spread of Dutch elm disease in this area promises to eliminate still more nest trees. Rapid habitat loss such as this increases the significance of artificial nest platforms in future raptor management.

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Figure 1. Great Horned Owl in artificial nest in central Minnesota.

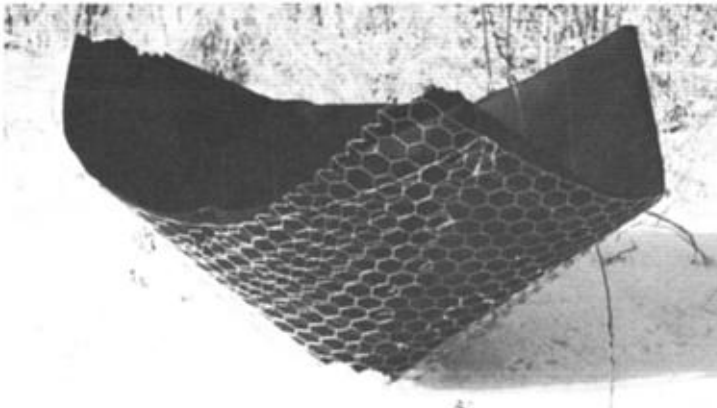


Figure 2. Artificial nest before nesting material is added, showing chicken-wire construction and tarpaper lining.



Figure 3. View of artificial nest from above showing nest material.