Forest Raptors & THEIR NESTS IN CENTRAL ONTARIO

A Guide to Stick Nests & Their Users

SCSS Field Guide
FG–03
1998

Ontario

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Introduction

This guide strives to provide information on stick nests and related structures for people involved in forest management activities. It covers how to find and identify stick nests and the birds that build or use them, as well as some of the most important attributes of their behaviour, habitat requirements, and the guidelines and modeling tools that should be considered when trying to protect them.

Portions have been devoted to more recreational aspects of the subject too. For example, Hawk Watching Made Easy identifies some migratory hot spots where interested people can go to further their identification skills, and to see more hawks than they ever thought possible in one day! Much of the natural history described here barely scratches the surface of the lives of these fascinating, reclusive birds.

Hawks and owls are sensitive to disturbance at their nests or roosts, and their low populations are often testament to the fact that they were persecuted for decades as the wolves of the skies. They have also suffered from pesticide contamination of their food and habitat loss through a variety of land use activities on public and private land. In 1998, the Ontario Ministry of Natural Resources (OMNR) and the Committee on the Status of Species at Risk in Ontario (COSSARO) listed the bald eagle, golden eagle, and the peregrine falcon as endangered, and the red-shouldered hawk as vulnerable. The Cooper's hawk was formerly classified as vulnerable also.

Field staff from both the OMNR and private companies are encouraged to include all active stick nests in the provincial data bases outlined in the section "Bird Studies Canada and the Royal Ontario Museum." These agencies make valuable habitat and other data available to researchers. Nest locations should be documented as part of the values mapping process in forest management planning.

The contents of this guide reflect available literature on the subject, the personal experience of the authors, and most importantly, observations contributed by many devoted OMNR biologists, foresters, and technicians who threw themselves wholeheartedly into early projects designed to protect habitat for the red-shouldered hawk in Ontario. This guide is dedicated to all those past and present OMNR staff whose tireless efforts have helped to produce it.

The errors and omissions are ours.

The Ecological Role and Value of Raptors

Environmental Barometers

As top carnivores, raptors can be environmental barometers. For example, populations of peregrine falcons, bald eagles, ospreys, merlins and Cooper's hawks were greatly affected by the persistent pesticide DDT. Peregrines were nearly extirpated in parts of North America. The metabolites of DDT caused the eggshells of these birds to become so thin that they were crushed during incubation, and chicks were not produced. The process of biomagnification ensured that the concentration of persistent chemicals was much higher in the raptors than in their food or in the surrounding environment. Persistent chemicals are stored in body fat, so their concentration increases greatly with each stage upward in a food chain. A healthy raptor population probably means the rest of the food web is also healthy.

Bald eagles have suffered from lead poisoning on their wintering grounds where they feed on waterfowl that are killed or crippled by lead shot. This has contributed to the banning of lead shot in many areas. Nesting success of eagles near the Great Lakes is low despite reintroduction efforts, in part because of chemical pollution of the lakes — when long-term eagle reproduction is restored, we will know that water quality has also been restored.

The red-shouldered hawk, broad-winged hawk, and goshawk are all susceptible to forest fragmentation. Widespread changes in forest structure and land use have caused a great reduction in red-shouldered hawks and an increase in red-tails. This has been the impetus for the OMNR's efforts to modify forest harvesting practices near their nests.

Population Control of Potential Pests

Voles can damage conifer plantations by girdling seedlings and saplings, and mice eat large quantities of conifer and hardwood seeds. Mice and voles are favourite foods of all raptors which use forests, forest openings, forest edge, or clear cuts and burns. Using data from Preston and Beane (1993) and erring on the conservative side, our calculations suggest that in one year a pair of red-tailed hawks which raises two chicks that survive to the end of December would require the equivalent of about 3,270 rodents (assumes about three each per day).

Stick Nests are Valuable Real Estate

Hawks build nests that, once abandoned, are used by barred owls, great horned owls, long-eared owls, merlins, and squirrels, all enriching the diversity of an area. Also, they may use each other's nests. For example, red-shoulders have used old goshawk and red-tail nests. Old red-shoulder nests have been used by those species as well as by Cooper's hawks and broad-wings.

Topography of a Hawk