



**STATUS: HIGH
CONSERVATION
PRIORITY IN IOWA**

Broad-winged Hawk *Buteo platypterus*

Introduction

The Broad-winged Hawk is a crow-sized, stocky buteo with conspicuous, broad white-and-black tail bands. A common breeder in large, deciduous or mixed-deciduous forests throughout northeastern and north central North America, this species is secretive and not often noticed while nesting, but they form conspicuous and even spectacular concentrations when migrating. This is one of the few North American raptors that flock during migration; and tens of thousands of Broad-winged Hawks are commonly seen at the peak of their fall and spring migrations in southern Texas, Mexico, and Central America.

Nesting pairs spend most of their time beneath the forest canopy, perch-hunting for insects, amphibians, reptiles, mammals, and birds. Territorial adults can be located by their plaintive “*peee-uurr*” whistle, which is occasionally heard during soaring flights above the canopy.

It was noted in 1907 that this species was irregularly distributed across the state and that its status ranged from rare to common. Other more recent studies suggest essentially the same thing up until the 1970s, but since that time Broad-winged Hawks were no longer locally common anywhere in Iowa, and have been considered a rare nester and a common migrant here ever since. There is no readily apparent reason why this species is so uncommon in Iowa, when adequate populations exist in adjacent states. But due to its slow decline within our borders, today this species is on the Iowa list as a species of high conservation priority.



Although some aspects of the Broad-winged Hawk's migration behavior and breeding ecology have been well documented, little is known about other facets of its life history. Many observations of its life history come from just one early study, and much remains poorly documented. Few studies have examined color-marked birds or have followed individuals for more than two years.

Habitat Preferences

Broad-winged hawks feed on prey and nests in continuous deciduous or mixed-deciduous forests, which have clearings and often water nearby. Foraging is focus in or near small openings in the canopy. Migrants may be seen over any kind of open country, but tend to stop at night roosts in forests or extensive groves of trees.

This species generally nests away from human dwellings. Although rare, it is detected more frequently in undisturbed woodlands than in areas used for agriculture or logging.

Compared to nesting Red-shouldered Hawks (one the endangered species in Iowa), Broad-winged Hawks use younger forests with more openings. The breeding home range may overlap at times with that of much more common Red-tailed Hawk.

Feeding Habits

Broad-winged Hawks perch-hunt below the canopy of woodlands and often do so near an opening, forest edge, or body of water. It may also occasionally hunt from flight, but rarely stoops.

This raptor is a generalized predator, taking a wide variety of food items. Amphibians, insects, mammals, and juvenile birds are the most common prey taken across its range. Small mammals and amphibians are the most frequent prey and greatest biomass in most studies. Most prey items are quite small. Birds taken during breeding

season are predominantly nestlings or fledglings. Its propensity for amphibians (mainly frogs and toads) may explain habitat association with water and migration schedule. Insects are taken opportunistically on migration.

Broad-winged Hawk is a "sentinel forager," spending large proportions of its time sitting quietly, and scanning for prey. This raptor has been described as "cat-like" in pose when it spots prey and swoops down to snatch it from the forest floor. Studies have shown that it has been successful in 67% of foraging attempts, with highest success shown for reptiles and invertebrates. Adults tend to hunt more after midmorning; but prey deliveries to nestlings in creases through the day.

Mammal prey is fully consumed, and large snakes and frogs skinned. Birds are often plucked. Diet naturally depends on local availability of prey.

Breeding Biology

Early in the breeding season, pairs circle high in the air, calling. When in courtship display, one bird may fly high then dive steeply toward the ground. A mated pair usually takes 3 to 5 weeks to build their flimsy stick nest. The nests are usually new each year, but may be refurbished nests of a crow or another hawk. Nests are usually located in the lower third of the canopy (perhaps 25-40 feet above ground), in the main crotch of a tree. The nest is lined with strips of inner bark, with fresh green sprigs being added throughout incubation.

Eggs are most often 2 to 3 in number, but from 1 to 4 may be laid. Incubation takes from 28 to 31 days, and is almost entirely by the female. Males bring food to females while they incubate, and he may then sit on eggs while she eats.

The female remains with the young almost constantly for the first 1 to 2 weeks after they hatch; while the male continues to

bring food, and the female feeds it to the young. The young may climb out of the nest onto nearby branches at about 4 to 5 weeks of age; and can fly at about 5 to 6 weeks of age. Soon after first flight, they start learning to hunt.

Concerns and Limiting Factors

Early in the twentieth century, shooting this species on migration and during breeding was called “sport” and may have had a significant impact on this species. Reports indicate that 1,500–2,000 Broad-winged Hawks were killed in Minnesota during migration in April 1925; and one man shot 298 in 1 day in New Jersey. More recently, habitat elimination, alteration, or fragmentation, particularly on wintering range but also within the breeding range, may pose a more serious threat.

This species’ reliance on amphibians for food may have allowed it to escape the drastic declines shown by other North American raptors due to DDT impacts in 1950s and 1960s. Recent increased use of DDT south of U.S. may affect some birds where winter diets may include more insects. Full pesticide impacts on this species remain undetermined, but impacts of recent forest insect pest control programs need further study. Regional pollution impacts on this species’ amphibian prey also need study. Fragmentation, degradation and outright elimination of woodlands through human development may accentuate all other negative factors on this species.

Habitat Management Recommendations

Most of the areas where this species has been located in Iowa tend to lie along major waterways, such as sections of the Missouri, Des Moines, and Mississippi River, which contain significant forested corridors. Because it has been demonstrated that woodland fragmentation reduces populations of this beneficial

raptor, woodland management plans ought to be written to avoid any form of woodland degradation, fragmentation or loss.

Broad-winged Hawks select larger trees for nesting, and small clearings and wetlands need to be maintained near nesting areas. Breeding birds appear to prefer mostly large, continuous forest, and management should provide for such habitats as often as possible.

Within the breeding range, research is needed on home-range size, minimum forest size for stable populations, lifetime reproductive output, long-term survivorship, and rates of return to breeding and wintering sites. Long-term studies of marked pairs are especially needed, as are nesting studies at the edge of this species’ range.

Good woodland management practices such as those described in the woodland management section of Part 3 will help return higher numbers of this species back to Iowa where it was once much more numerous than it is today.