

**STATUS: ENDANGERED**

Endangered in Iowa

Red-shouldered Hawk

Buteo lineatus

Introduction

The Red-shouldered Hawk is listed as Endangered in Iowa. Field data that documents confirmed or probable breeding of Northern Harriers in a particular habitat – for at least 2 of the previous 6 years – will qualify that habitat as one of Iowa’s Important Bird Areas (IBAs).

This species is described as a rare permanent resident in Iowa. It is most commonly seen in heavily wooded bottomland areas near rivers and streams in the eastern half of the state; especially near the Mississippi River in northeastern Iowa. During the first half of the twentieth century researchers called this a fairly common summer resident in the southern portion of the state, and uncommon to rare in the north. But populations declined rapidly, apparently in the 1950’s and 1960’s, and red-shoulders are much less common now than they were 50 years ago.

Red-shouldered Hawks are identified by “red” shoulder patches, black-and-white checkered flight feathers (seen from above), translucent, crescent-shaped wing panels in the outer primaries (seen from below when the wing is backlit), and reddish barring across the breast. The piercing, whistled calls of the Red-shouldered Hawk announce its presence, and it is often heard before it is seen.

The elimination, and the fragmentation (cutting large blocks of natural habitat into smaller and smaller parcels), of large wooded areas which are crucial for breeding; and competition from Red-tailed Hawks and Great Horned Owls (which benefit from fragmentation), are probable reasons for the decline of Red-shouldered Hawks.



Recent research has shown that Red-shouldered Hawks return to use previous nests again and again (e.g. demonstrate high nest site fidelity) and populations appear to be slowly recovering. However, some of the small increases that were noted may have resulted from expanded nest-searching efforts.

Habitat Preferences

In Iowa, the Red-shouldered Hawk favors extensive, mature, mixed deciduous woodlands, especially bottomland woods, riparian areas, and flooded deciduous swamps. Upland mixed deciduous forests may also be utilized. Extensive timber stands consisting of mature to old-growth canopy trees with a small amount of under-story are favored. At times woodlands with relatively open under-stories are utilized.

This species is generally secretive, especially during nesting season, and may not be observed during some survey and monitoring efforts. All of the confirmed breeding that was documented as part of the Iowa Breeding Bird Atlas project in the late 1980s and early 1990s occurred near large publicly owned forests or woodlands.

In our state, this raptor inhabits larger wood lots, closer to water and farther from roads and buildings than Red-tailed Hawks.

Feeding Habits

Red-shouldered Hawks hunt during the day and generally from a perch in the forest canopy, waiting for its prey to reveal itself and then swooping down to snatch it from the ground or water surface. The diet is quite broad, and varies by season. Small mammals (especially chipmunks, mice, and voles), frogs, and snakes comprise the bulk of the food in most areas. Birds, crayfish, and insects are also key food items at certain times of the year.

Breeding Biology

Migrants arrive in February and March and depart in September or October, and only a

few individuals of this species over-winter within the state. The conspicuous vocalizations are more frequent early in the breeding season when courting and establishing its territory.

Courtship lasts about 3 weeks and building a nest or restoring a previously used nest starts before courtship ends. Nests are built below the canopy but more than halfway up a tree in a crotch of the main trunk (usually 35-65 feet above ground). Nests are located in the preferred habitat of bottomland woods, wooded stream-sides and swamps.

Three to five eggs are laid and incubation begins in late March to early April. Incubation lasts about 28-33 days and both parents participate. Females generally provide all of the brooding for the young, while males supply the female and young with nearly all their food, until the young near fledging.

Certain individual Red-shouldered Hawks have exhibited aggressive behavior toward humans who get too near the nest. These parents make close passes at intruders and do considerable calling while the intruder is present.

The young leave the nest at about 6 weeks of age, but may continue to be fed by their parents for another 8–10 weeks. The young are thought to stay in contact with the parents during summer or longer, although little is known about immature Red-shouldered Hawks after they leave the nest.

Concerns and Limiting Factors

The Red-shouldered Hawk is an area-sensitive, interior-forest species that requires large stands of mature bottomland forest habitat. A large portion of the population decline in this species in Iowa appears to clearly be due to the destruction, or at least the shrinking, of suitable nesting habitat.

A second significant factor is disturbance from human activities, which typically cause this secretive species to retreat into the most remote wooded areas, or to abandon nesting and feeding areas entirely.

Historically, shooting was a serious problem, but with enactment of laws such as the Endangered Species Act (1973) and education programs stressing the ecological value of raptors, this concern has diminished.

Pesticides and industrial chemicals are a continuing concern because of the way these compounds become concentrated from numerous prey species into the organs and tissues of individual predators. Adult Red-shouldered Hawks have died from a number of different pesticides; and several insecticides and industrial chemicals have been found in eggs and in the body tissues of nestlings.

Red-shouldered Hawks avoid nesting in areas that are bordered by agricultural fields, livestock pastures, and wetlands contained within levee systems. Breaking-up contiguous forested areas into smaller wooded blocks surrounded more closely by such human-manipulated properties has created habitat more suitable to larger and more aggressive Great Horned Owls and Red-tailed Hawks, the closest and most serious competitors with red-shoulders.

Research in nearby Wisconsin has shown that selective thinning of timber (which opens up the forest canopy layer) has favored Great Horned Owls, and thus had a negative impact on the number of Red-shouldered Hawks using those habitats.

Habitat Management Recommendations

Clearly, the best type of management for increasing and sustaining populations of Red-shouldered Hawks in Iowa is to preserve and maintain the largest possible areas of mature, contiguous floodplain

forests. Research suggests that these blocks of timber need to be 600 acres or more in size, with open wetland inclusions, and low density under-story shrub and ground cover, in order to provide optimal habitat for this species.

In some areas red-shoulders may use smaller forest patches if it is part of a larger forested ecosystem. Replacement by Red-tailed Hawks is a concern in small or fragmented woodlands, but some researchers found that even in wood lots of less than 12 acres red-shoulders were not replaced by red-tailed hawks when mature canopy structure was retained. And the average size of wood lots occupied by red-shoulders in a study in one part of its range was just 43 acres.

The requirement of large tracts of forest limits the potential for privately owned lands to be managed for this species. The large blocks of bottomland forest in state and federal ownership are therefore the most likely sites for this hawk. The necessary size of a wooded area needed by red-shoulders is one issue that needs to be resolved with further research.

Certain types of logging are detrimental to Red-shouldered Hawk populations. Studies in Iowa and adjacent states indicate that large-scale, long-term timber harvesting, regardless of method, negatively impacts Red-shouldered Hawk reproductive success. In contrast, small-scale, short-term harvests may have a limited impact on Red-shouldered Hawk productivity if done properly. Importantly, if logging is done, it should only be allowed between July and January, and it needs to be kept to a small-scale.

Researchers also recommend maintaining and encouraging mature (50- to 100-year old trees, 100–120 trees/acre, diameter at breast height 8–25 inches) mixed hardwood bottomland forests. Other research suggests that high tree densities (between

150-400 trees/acre) of mature maple-elm communities should be maintained in bottomland forest for red-shoulders. Managing for a crown closure of greater than 70% should prevent Red-tailed Hawks from displacing Red-shouldered Hawks. Availability of nearby small marshes and wet meadows as feeding areas is crucial to Red-shouldered Hawks nesting success.

During the nesting season, human use and disturbance should be minimized in identified nesting areas, particularly from late February through May. A distance of at least 300 feet from the nest should be kept free from human disturbance during this period of time.

Woodland management for Red-shouldered Hawks may be considered difficult by some forestry-oriented individuals, but it should be recognized that several other Iowa IBA Criteria Species also benefit from the same management. These may include: Bald Eagles, Broad-winged Hawks, Pileated Woodpeckers, Veery, Wood Thrush, Cerulean Warbler and Prothonotary Warbler. Many other non-priority species of birds and other wildlife also benefit from management aimed at Red-shouldered Hawks.