



**STATUS: HIGH
CONSERVATION
PRIORITY IN IOWA**

Kentucky Warbler *Oporornis formosus*

Introduction

The fast, rolling spring and summer song of the Kentucky Warbler is a familiar sound of rich, moist, deciduous forests in the southeastern U.S. and in the northern and western portion of its range in the southern and eastern portions of Iowa.

This Neotropical migrant is a skulking bird, which spends most of its time on the ground. Despite bright colors – this species is heard more often than seen. In early spring, the male sings incessantly, sometimes partly concealed and almost motionless except for his vibrating throat, in bouts from the same perch for 5 to 15 minutes, and typically at heights of 15 to 50 feet.

Numbers of this species appear to be declining, and more in some regions than in others.



Habitat Preferences

Kentucky Warblers depend upon deep shaded woods with dense, humid thickets, bottomlands near creeks and rivers, ravines in upland deciduous woods, and the edges of wooded swamps.

Dense understory appears to be a key component of this warbler's habitat, and it is rarely observed in agricultural areas. Well-developed ground cover and a thick understory seem to be essential for ground nesting.

Studies of forest fragmentation in Missouri indicate that blocks of suitable habitat of at least 200 acres in size are necessary for successful breeding. Little is known about habitat requirements during spring and fall migration or for its winter range.

Feeding Habits

Kentucky Warblers forage mainly by walking on the ground, seeking prey among the leaf litter, flipping over dead leaves, and sometimes leaping up into the air to capture insects from the undersides of leaves.

The primary diet is made up of insects, caterpillars, and small spiders, and rarely seeds, during breeding season. Major food items include: moths, bugs, ants, grasshoppers, beetles, caterpillars, aphids, and grubs; but also spiders and a few berries.

Breeding Biology

Male Kentucky Warblers arrive in Iowa in early May, and usually precede the female by several days. The breeding territory is 1 to 2 acres in size, but almost 750 acres of quality woodland is required to maintain a stable population.

Males defend the breeding territory with persistent singing, vocalizing as often as every 12 seconds.

Female Kentucky Warblers choose the nest site within minutes of arriving, and after pair formation and copulation. Male usually

remains in visual contact with the female during this time – i.e., to begin the mate-guarding behavior that will continue through egg-laying and sometimes incubation.

The nest is constructed by both sexes, and is located on, or within a few inches of the ground, at the foot of a shrub, or sometimes in the lowest fork of a small tree.

Usually 4 to 5 eggs are laid, but the number is sometimes as few as 3 or as many as 6. Only the female incubates, and this lasts 12 to 13 days. Nests of this warbler are often parasitized by Brown-headed Cowbirds, in which case reproduction capacity can be severely impacted.

Nestlings are fed by the female, and rarely by the male. The young leave the nest at the age of 8 to 10 days. Then both parents feed the young for up to 17 days.

Concerns and Limiting Factors

Dead Kentucky Warblers, presumably on migration, have been recovered from under communications towers, and large glass doors and windows. Also, excessive disturbance by humans at nest sites cause parent birds to desert eggs and, infrequently, nestlings. Human attention to nests is also likely to increase the probability of predation.

But these are not the key factors in the decline of Kentucky Warblers and other Neotropical migrant songbirds.

As with other species of high conservation priority in Iowa, such as Broad-winged Hawk, Black-billed Cuckoo, Chuck-will's-widow, Pileated Woodpecker, Veery, Wood Thrush, Cerulean Warbler, Prothonotary Warbler, Worm-eating Warbler, and Hooded Warbler, the Kentucky Warbler is seriously impacted by the loss, fragmentation and degradation of its essential woodland habitat where breeding occurs.

Protecting, restoring and otherwise managing these essential habitats should always be the first and primary concern and

limiting factor that is considered by owners and managers of IBAs as well as non-IBA woodlands that these important species depend upon.

Research priorities for management of the breeding grounds should include assessments of minimum area requirements, and quantification of specific habitat requirements, especially of nest sites, as related to breeding success. In addition, research is needed to determine minimum viable population sizes and the impacts of woodland fragmentation (including its effect on predation and cowbird parasitism).

Habitat Management Recommendations

Forest management practices that encourage a dense understory and well-developed ground cover should enhance woodland stands for this species. Because Kentucky Warblers are tolerant of openings in canopy, harvesting techniques such as group selection, small or narrow clear-cuts, thinning of “over mature” trees, and selection-cutting may be acceptable practices. Light timber stand improvement should also be acceptable to Kentucky Warblers. Although this species was thought to benefit from selective logging, numbers actually declined after such practices in a neighboring Midwestern state. Clear-cutting temporarily eliminates habitat for Kentucky Warbler, but regenerating woodlands might possibly be reoccupied after a 6 to 7 year wait.

Sustaining viable populations of Kentucky Warblers in Iowa will require maintaining large woodlands where this species is found, which may serve as source populations for new breeders. Large contiguous woodland areas will produce the highest densities of breeding individuals, and will increase reproductive success by decreasing cowbird parasitism and nest predation by other species. If new breeders

disperse from source populations to less suitable smaller sites, they may help maintain regional populations.

The same recommendations holds true for Broad-winged Hawk, Black-billed Cuckoo, Chuck-will’s-widow, Pileated Woodpecker, Veery, Wood Thrush, Cerulean Warbler, Worm-eating Warbler, and Hooded Warbler. Each of these is a species of high conservation priority for the IBA Program in Iowa, and the biggest need of each is habitat for nesting and feeding.

For general information about habitat management for Kentucky Warbler, as well as for the other declining species listed above, see the sections on Woodland Management for Birds and Recommended Woodland Management Practices - both found in Part 3.