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# The future of Blue-winged and Golden-winged Warblers in Connecticut

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BY ROBERT ASKINS

# AS SHRUBBY FIELDS DISAPPEAR, TWO BIRD SPECIES STRUGGLE

*The future of blue-winged and  
golden-winged warblers in Connecticut*

*Blue-wing warbler, above, and golden-wing warbler, right.  
Drawings by Paul Fusco/ CT DEP-Wildlife.*

Songbirds are conspicuous and relatively easy to count during the breeding season when males defend their territories by singing loudly. Major environmental changes are therefore often first detected from surveys of songbird populations. When a particular bird species shows a long-term population decline, this may signal a major change in its preferred habitat. For migratory birds, this change may be occurring in either the breeding habitat in Connecticut or in the winter habitat in Mexico, Central America, or some other area in the tropics. Particular species may also decline because of the spread of disease or a decline in their preferred prey, so decreasing numbers of one species are difficult to interpret without intensive study. However, when a large number of species with similar nesting habitats decline in Connecticut, the evidence of widespread environmental changes across the state becomes more compelling.

Many of the songbirds that have declined in Connecticut in the past few decades are associated with open habitats such as farmland, old fields, pastures, and meadows. The decline of bobolinks and other previously common grassland birds is well known, but other open-country species are also in trouble. Species that depend on shrubby fields and thickets are becoming increasingly hard to find in the region as their habitats grow up into forest or are subdivided for housing. Two of these “shrubland species,” the blue-winged warbler and the golden-winged warbler, are listed as high-priority species for conservation in Connecticut.

Brown thrashers, Eastern meadowlarks, and many other open-country species were present in Connecticut at the time of the earliest ornithological records and were probably nesting in the fallow fields of Pequot and Mohegan farmers before the first English settlement. This is not true for the blue-winged and golden-winged warblers, however. Both of these warblers are relative newcomers to the state, arriving in the late 1800s. A list of Connecticut birds published by J. A. Linsley in 1843 describes the golden-winged warbler as a rare migrant and doesn't even mention the blue-winged warbler. Blue-winged warblers were probably originally found only west of the Appalachian Mountains, but they colonized the Delaware Valley in Pennsylvania and the Hudson Valley of New York sometime during the 1800s. By the 1870s, blue-winged warblers were common in Old Saybrook but rare in other parts of the state. Golden-wings colonized isolated sites in Portland and New Britain in the 1880s and 1890s, when blue-wings were concentrated farther south, along the shore of Long Island Sound.

Golden-winged warblers became common in some localities away from the coast, but these populations didn't last long. Golden-wings were consistently replaced

by blue-wings as the latter expanded their range northward along the Connecticut River Valley and then east and west to all parts of the state. Golden-wings may decline because of hybridization or competition with blue-wings, or simply because the open habitat preferred by golden-wings normally changes as trees mature and the vegetation becomes more dense, resulting in a habitat that is more suitable for blue-wings. Whatever factor or combination of factors drives the change, blue-wings consistently replaced golden-wings within 50 years of the appearance of blue-wings at a particular locality. Breeding golden-wings are now restricted to a few sites in the northwest hills of Litchfield County.

The golden-winged warbler is listed as an endangered species in Connecticut, and some researchers have recommended controlling blue-wing populations in the remaining sites occupied by golden-wings to protect golden-wings from hybridization and competition. It is unclear whether this would help save these relict populations, however, particularly if the habitat is not maintained in the open, almost treeless condition needed by golden-wings. Also, blue-wings have shown such steady population declines in the northeastern United States

that conservationists are also concerned about their future as well. The blue-winged warbler is included on the 2002 Audubon Watchlist of species that are in trouble in North America, so eradicating blue-wings to protect golden-wings would be controversial. Probably the best approach to saving golden-winged warblers in Connecticut is to restore and expand breeding habitat in and around the known breeding sites. The basic requirements of this species are well known from the research of John Confer and others. Golden-wing warblers need relatively large openings (larger than 10 acres) with few trees and a mix of herbaceous ground cover (often including grassy areas) and dense, low shrubs. Golden-wing territories typically include some forest edge. Dr. Confer recommends 25- to 100-acre patches of habitat that are kept open by burning every 40 years. Other declining species such as the field sparrow would also benefit from these openings. If the populations at these sites disappear despite efforts at habitat management, then it is probably best to invest in management of this species north of the current range of blue-winged warbler, in southern Ontario and Québec and northern

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## BIRDS STRUGGLE

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Wisconsin and Minnesota, regions where golden-wing populations are stable or increasing.

Conservation organizations and agencies in Connecticut may actually have a greater responsibility for ensuring the future of blue-winged warblers because it is estimated that 10 percent of the global population of this species nests in the state. Consequently, Partners-in-Flight (an international organization promoting conservation of migratory birds in the Western Hemisphere) lists the blue-winged warbler as a high priority species for conservation in Connecticut. Blue-wings are still widespread and fairly common in the state, but data from 18 breeding bird survey routes in Connecticut indicate that they declined at a rate of 3.5 percent per year between 1966 and 2007. To halt this decline, we will need to maintain the early successional habitat that they need for nesting.

Like golden-wings, blue-wings do well in forest openings with low herbaceous and shrub cover, but they tolerate a wider range of conditions than golden-wings do. Mr. Confer showed that blue-wings nest in areas with denser tree cover than golden-wings do. However, Benjamin Zuckerberg, Leah Novak, and I found that blue-wings are absent from clear-cuts once the tree canopy begins to close. In our sample of 34 clear-cuts in Connecticut state forests, we found that blue-wings were found at nearly all sites except those where the average vegetation height exceeded 21 feet, at which point the tree canopy begins to close and woodland birds such as red-eyed vireo and wood thrush began to set up territories. In southeastern Connecticut, the canopy height typically reaches this height after 8 to 10 years, so clear-cuts are only used by blue-wings for a short period between the 2nd and 10th years following timber harvesting. Clear-cuts support populations of blue-wings, but they provide ephemeral habitat that must constantly be replenished. Also, we found relatively low reproductive success for blue-wings in clear-cuts, primarily because many males were unmated. This conclusion is based on work during only two field seasons, however, so reproductive success should be studied over a longer period in additional clear-cuts.

One of the key questions we wanted to answer by studying a large number of clear-cuts is whether blue-wings require relatively large forest openings. If this were the case, then the recent shift to creating only small clear-cuts (usually 10 acres or less) in Connecticut state forests could be a problem for this species. However, we found that the density and reproduc-



Courtesy of Robert Askins

*Above and below: Robert Askins's students have found healthy populations of shrubland birds like blue-winged warblers in the cleared areas under electric power lines.*

tive success did not differ for small and large openings over the range of sizes we surveyed (1.5 to 53 acres). In contrast, several studies show that extremely small openings created by selective cutting of single trees or small groups of trees do not provide habitat for blue-wings. The opening must be at least large enough to accommodate blue-wing breeding territories, which have a minimum area of 0.75 acres.

Forest openings have been managed primarily for biological diversity in some natural areas in Connecticut. For example, fields have been restored to provide habitat for blue-winged warblers and other early successional species of plants and animals at Audubon Connecticut's Bent of the River Preserve in Southbury. Between 2004 and 2008, Christy Melhart (who was working on her doctorate at the University of Arkansas) found high nest success for blue-winged warblers and other species of early successional birds in these fields. This indicates that good nesting habitat for this species can be restored and maintained.

Continual maintenance of shrubby openings is an expensive proposition, however, because it requires periodic burning, mowing, brush-hogging, or selective removal of trees and tall-growing shrubs. Selective removal of trees by precise application of herbicides to single plants has been perfected by Northeast Utilities and other utility companies in the northeastern United States to maintain low vegetation under power lines along transmission rights-of-way. This method was originally



developed by William Niering and other plant ecologists as an alternative to indiscriminant broadcast spraying of herbicide over an entire power-line corridor. The result is a relatively stable shrubland that only needs to be maintained every few years. Fortunately, this creates habitat for a wide variety of open-country species that have disappeared from much of the rest of the state. My students and I have surveyed birds along power-line corridors throughout southeastern Connecticut, and we've found high densities of several species of shrubland birds, including blue-winged warblers.

Both the blue-winged warbler and the golden-winged warbler probably moved into Connecticut because the land was cleared and then abandoned, resulting in numerous scrubby old fields. A legitimate question is whether we should be concerned about the decline of these species as the land reverts from artificial old fields to more natural forest cover. These species have probably moved within and among regions throughout their history, taking advantages of early successional habitats following glacial retreat, major fires, and hurricanes. There is no original "homeland" for these species that provides an obvious focus for conservation. Instead, we need to protect them where we find them, and right now, the blue-winged warbler is particularly common in Connecticut.

*Reprinted with modifications from an article in Connecticut State of the Birds 2008, which was published by Connecticut Audubon Society. Robert Askins is a biology professor and expert on grassland and shrubland birds at Connecticut College.*

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