

## PREFACE: A HISTORY OF INSPIRED RESEARCH AND CONSERVATION

As measured by the Breeding Bird Survey (BBS) over the last 45 years, Golden-winged Warbler (*Vermivora chrysoptera*) has experienced one of the steepest declines of any North American songbird. It has also been one of the most intensely studied songbirds. Together with its sister species, Blue-winged Warbler (*V. cyanoptera*), it has been the subject of numerous research projects by a host of talented field ornithologists beginning in the 1960s with Frank Gill, Lester Short, and especially Millicent and Robert Ficken, and continuing to the present day. Several ornithologists have devoted their entire careers to elucidating the knotty problems the species poses. Over the last 150 years, the range of Golden-winged Warbler has geographically shifted more than that of almost any other avian species. It has been labeled as a habitat specialist as well as an early successional pioneer generalist. It has been reported more commonly from low-lying wetlands in some regions and from uplands in other regions. It has been identified as a shrubland edge species associated with abandoned farmland succession and as a species of dynamic forested landscapes. It mates with Blue-winged Warbler where the two species come into secondary contact and forms readily identifiable hybrids in a hybrid mosaic zone, yet one can still find extensive areas where the two species remain at least phenotypically distinct. Despite the characteristic visual features signaling its distinct identity, introgression of Blue-winged Warbler mitochondrial genes is widespread; yet geneticists have been hard-pressed to find nuclear markers that reliably distinguish the two species. Golden-winged Warbler behavior relative to Blue-winged Warbler is puzzling at best: it overlaps territories with the other species yet still engages in aggressive interspecific interactions; individuals that appear to be clearly one species can sometimes sing the song characteristic of the other, or both songs; hybrids may sing the song of either parental type.

Because of the tantalizing science questions it poses, its rapidly declining populations, and its intrinsic aesthetic appeal, Golden-winged Warbler has attracted a large and dedicated group of passionate ornithologists and conservationists over the last decade. Except for the hybridization question, research on Blue-winged Warbler has essentially ground to a halt while work on Golden-winged Warbler has increased exponentially. The formation of the Golden-winged Warbler Working Group in 2003—and its international sister group, Alianza Alas Doradas, in 2005—has catalyzed a highly coordinated conservation initiative. The Working Group has inspired two major workshops or "summits" (in Siren, Wisconsin, and in Bogotá, Colombia), at least three symposia at major ornithological meetings, dozens of regional and local workshops and presentations, a rangewide Golden-winged Warbler Atlas Project, and a rangewide hybridization study. Most significantly, supported by four years of funding from the National Fish and Wildlife Foundation (NFWF) beginning in 2008, the Working Group's Rangewide Golden-winged Warbler Conservation Initiative coordinated a multi-scale study at eight sites in seven states from Minnesota to New York and south to Tennessee. This coordinated research project was to provide the science base for developing regionally specific guidelines for restoring and enhancing productive Golden-winged Warbler breeding habitat. The results of that work form the core of Chapter 3 of this document—the **Golden-winged Warbler Breeding Season Conservation Plan**.

In 2000, David Buehler, John Confer, and Ronald Canterbury were commissioned by the U.S. Fish and Wildlife Service to develop what was originally the *Status Assessment and Conservation Recommendations for the Golden-winged Warbler (Vermivora chrysoptera) in North America*. Over time, that original project received input from others and underwent numerous stalls, revisions, and reviews. The fact that the continuous arrival of new information so rapidly outpaced the writing and review schedule of the *Status Assessment* is fundamentally a tribute to the tremendous dedication and energy of the Golden-winged Warbler Working Group and its partners. However, the deadlines imposed by the

NFWF-funded *Breeding Season Conservation Plan*—coupled with the listing of Golden-winged Warbler as a Threatened species in Canada and a pending petition to list the species under the Endangered Species Act in the U.S.—have finally pushed what has now become the *Status Review* to the finishing line. The core of the original assessment, although with much new information, now forms the basis of Chapter 1 of this document—the **Golden-winged Warbler Status Review**. In this version, survey and trend estimates have been updated to include 2009 BBS data and to incorporate the currently preferred and more robust Bayesian approach for analyzing BBS trend information. Genetic data were updated to include birds sampled during the 2010 breeding season. The conservation and research recommendations of the original *Status Assessment* have been integrated with the results of the two summits, three 2009 regional Working Group meetings, and the business plan developed for NFWF; these now form the comprehensive framework of goals and objectives outlined in Chapter 2—the **Golden-winged Warbler Full Life Cycle Conservation Strategy**.

Finally, recognizing that all parts of the annual cycle of a long-distance migratory bird are inextricably linked to one another—and recognizing that conservation actions on the breeding grounds should be complemented by conservation during the non-breeding season—we have included in this document a placeholder for a fourth chapter. We anticipate that Chapter 4, the **Golden-winged Warbler Non-breeding Season Conservation Plan**, will be completed a few years after analysis of the 2011–2012 non-breeding season survey results and a site-specific review of Neotropical non-breeding season threats.