TENNESSEE CASE STUDY: Intensive management for early successional habitat, guided by the needs of Golden-winged Warbler in the N. Cherokee Conservation Opportunity Area

The birdwatchers and fishermen who visit Hampton Creek Cove State Natural Area in the Southern Appalachians may not realize the degree of collaboration and management that goes into maintaining this ecological gem. Hampton Creek Cove (HCC) is a popular birding destination owned by the Tennessee Department of Environment and Conservation (TDEC) and managed by the Southern Appalachian Highlands Conservancy (SAHC) land trust.

The creek itself supports one of the most productive native trout streams in East Tennessee, while the old field/early forest succession at lower mountain elevation provides excellent nesting habitat for Golden-winged Warblers, a declining neotropical migrant species. The National Audubon Society designated HCC an "Important Bird Area" in 2005, even though it falls at the edge of the species' breeding range. The HCC site supports the highest density of Golden-winged Warblers on the Roan Mountain Massif.

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Like many warblers, the Golden-winged is suffering a range-wide decline due at least in part to loss of breeding habitat (Schubert 2013). In fall 2007, the Tennessee Wildlife Resources Agency (TWRA) decided to work with TDEC at this 693-acre Natural Area to enhance habitat for Golden-winged Warblers. The scientific literature supports the idea that these warblers can be considered a type of "indicator" species. Because of their marked dependence on early successional habitat, if an area can be maintained as preferred habitat for Golden-winged Warblers, it will likely remain suitable for many more species that rely on that habitat type.

Hampton Creek Cove ranges from 3,000 to 4,800 feet at the higher elevations and is a mix of pasture, shrub-scrub, and mature timber. Golden-winged Warblers prefer scattered

Top to bottom: Forest habitat closing in without disturbance at HCC; Habitat opened up after bulldozing - both photos by Scott Dykes, TWRA; Golden-winged Warbler in the hand - Nora Schubert/next page left: Early successional habitat restoration begins; right: Green-up first spring after restoration - both photos by Scott Dykes, TWRA

shrub habitat with an understory of forbs (wildflowers and other broad-leaved herbaceous plants) and grasses, where they hide their nests. As scrub habitat matures, in the absence of disturbance from fire or storms, the canopy closes in, eventually making the habitat unsuitable for these birds.

In natural cycles, rebirth follows death; the process is no different for habitat restoration. Early successional habitat restoration involved work from 2007 through 2009 to open up 45 acres of forest canopy using heavy equipment, herbicide, and native grass seeding to ensure quick ground cover for the next breeding season. The seed mix included Fowl Bluegrass (found in four Tennessee counties), Little Bluestem and Indian Grass.

To document management at HCC and to assess the effectiveness of their project, TWRA also funded biological surveys of HCC Golden-winged habitat. Field work is documenting the warblers' population and breeding activities post-restoration, including characteristics of the vegetation in preferred nest sites. Ideally, nest monitoring will assess nesting success in restored and natural habitat.

The results of the habitat work speak for themselves. In years prior to restoration, between 16 and 17 Golden-winged Warbler breeding territories were documented. In the first year after restoration work began, territories dropped to 11, but this result was expected due to the large-scale disturbance of the site. By the spring of 2010, the first year without on-the-ground work, surveys showed 21 occupied territories! The 2013 survey showed that early successional habitat restored by TWRA was occupied by relatively high densities of Golden-winged Warblers, with 17 territories overall (Schubert 2013). Future habitat restoration at the site is recommended, including a monitoring design that will measure GWWA population response to habitat modifications.

The immediate result of conservation work to restore early successional habitat can look like the results of a very bad storm, and that is precisely the point. In Tennessee, vegetation regrowth is quick and profuse.

Schubert, N. 2013. 2013 Golden-winged Warbler monitoring at Hampton Creek Cove State Natural Area, Tennessee. Report submitted to Tennessee Wildlife Resources Agency.