

# BEST MANAGEMENT PRACTICES FOR Golden-winged Warbler Habitat in Deciduous Forests of the Great Lakes

A publication of the Golden-winged Warbler Working Group, [www.gwwa.org](http://www.gwwa.org)



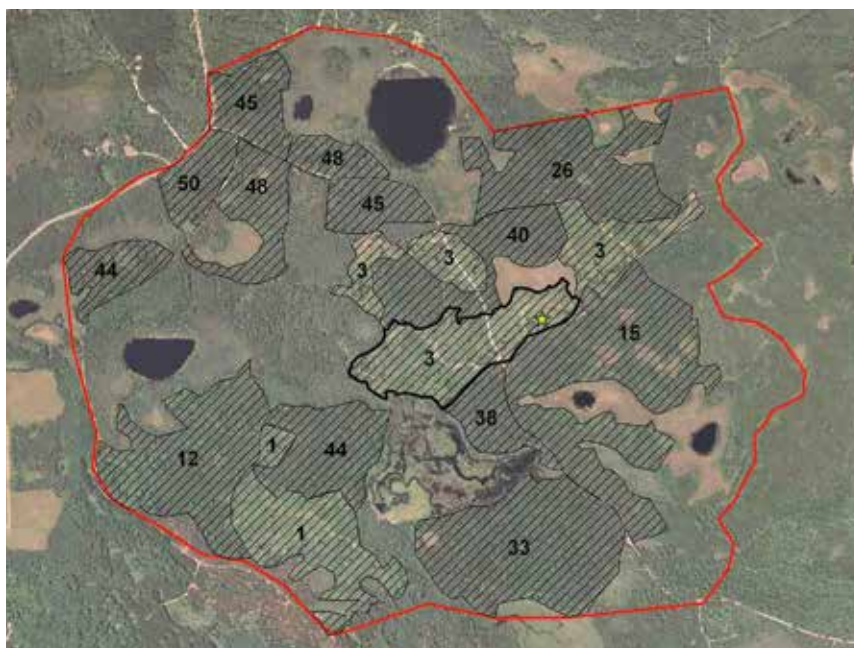
This supplement for Deciduous Forests accompanies *Best Management Practices for Golden-winged Warbler Habitats in the Great Lakes Region*, which includes general information that applies to all habitat types in this area. Users should refer to both documents to develop a comprehensive management strategy for Golden-winged Warbler. The following are guidelines and not absolute rules for the creation of breeding habitat, thus prescriptions that fall outside the numerical ranges presented can provide habitat, too. Consult a Golden-winged Warbler or young forest habitat expert for assistance in tailoring a management plan to your property, and, if available, follow forest management guidelines for your state or province.

Historically, young forest in this region was generated by natural disturbances such as wind, ice, insect outbreaks, flooding, beaver activity, and fire. Today, much habitat is created through commercial management of deciduous forests, which is the focus of this habitat guide. Deciduous forest management opportunities exist throughout the Great Lakes on public, private, and tribal lands.

## Scaling-down Forest Management for Golden-winged Warbler

Promote Golden-winged Warbler use and limit Blue-winged Warbler co-occurrence by working in landscapes:

- within defined focal areas or < 5 miles (preferably < 1 mile) from known breeding populations and < 1 mile from other early successional patches (e.g., young deciduous forest or shrub wetlands)
- with > 50% forest cover composed of at least 70% deciduous trees within 1.5 miles of the site (Figure 1), preferably < 1 mile from other early successional patches
- with multiple, manageable forest stands each  $\geq 5$  acres where you can rotate management among stands such that at least 15–20% of the area is available as breeding habitat in any one year (Figure 1)
- that are  $\geq 5$  acres when < 1,000 ft from other early successional habitat and  $\geq 25$  acres when > 1,000 ft from other early successional habitat



**Figure 1.** A 1,000-acre site of primarily aspen forest (hatched areas with stand ages in bold font) managed to maintain at least 15% in breeding habitat.

## Stand-scale Characteristics for Breeding Habitat

Even-aged forest management generally creates suitable vegetation structure for breeding Golden-winged Warblers. Habitats produced through even-aged techniques are ephemeral and typically occupied for 10–12 years post-harvest unless they have low regenerating tree seedling densities (i.e., poorly stocked), have large maintained openings (e.g., utility rights-of-way), have conditions that slow stand development (e.g., poor soils), or have noncommercial treatments to extend suitability. Logging roads, skidder trails, log landings, areas of soil compaction, and natural openings create patchiness that can be incorporated into stand-scale management to improve habitat for Golden-winged Warbler. The birds will use regenerating stands that range from 1,300–26,000 seedling stems/acre, thus objectives for regeneration density can accommodate considerations of commercial viability (high stem densities) or habitat needs of associated wildlife species (e.g., low stem densities for Field Sparrow, *Spizella pusilla*). If Golden-winged Warblers do not occupy regenerating stands by four years post-harvest, then the prescription should be evaluated to adjust distribution and density of important habitat components: retained canopy trees, saplings, patches of shrubs, and patches of herbaceous cover.

## Forest Management Guidelines

### Silvicultural Systems:

Even-aged and two-aged silviculture treatments (clear-cutting, seed tree harvests, green-tree retention, and shelter-wood harvests) can provide the necessary structural conditions for breeding habitat. Noncommercial treatments such as prescribed burning and brush-hogging can extend the suitability of stands.

### Canopy-tree Retention Guidelines:

Retention of live canopy trees is important for attracting breeding pairs of Golden-winged Warbler (Figure 2). Males use these dispersed canopy trees as song perches and for foraging. Absence of residual trees is correlated with low male densities and poor mating success.

### Retain:

- a minimum of 5 trees/acre with at least 4 trees being deciduous hardwood species (Figure 3)
- preferably 10–15 trees/acre (10–30% residual canopy cover) but higher densities are acceptable (Figure 3)
- trees > 9 inches in diameter

### If there are no canopy trees to retain:

- increase the amount of young-mature forest edge by creating an irregular margin to the harvest area's perimeter
- thin or cut 150 ft into an adjacent stand to promote a gradual transition, or feathered edge, from mature to young forest
- foster small trees for future retention

## Other Management Considerations

### Invasive Plants:

Prior to forest management, identify invasive plant species on-site or nearby. Pre-harvest treatment of invasive plants may be necessary to prevent their spread and competition with desired regenerating tree species. Minimize the spread of invasive plants by harvesting in winter and routinely cleaning machinery between sites.

### Riparian Zone Management:

Young forests in riparian zones, especially where adjacent to or intermixed with wetland shrubs and in the absence of Blue-winged Warbler, can be managed for Golden-winged Warbler. Harvest timber on sites where soil erosion will not occur and in winter to protect wet soils.

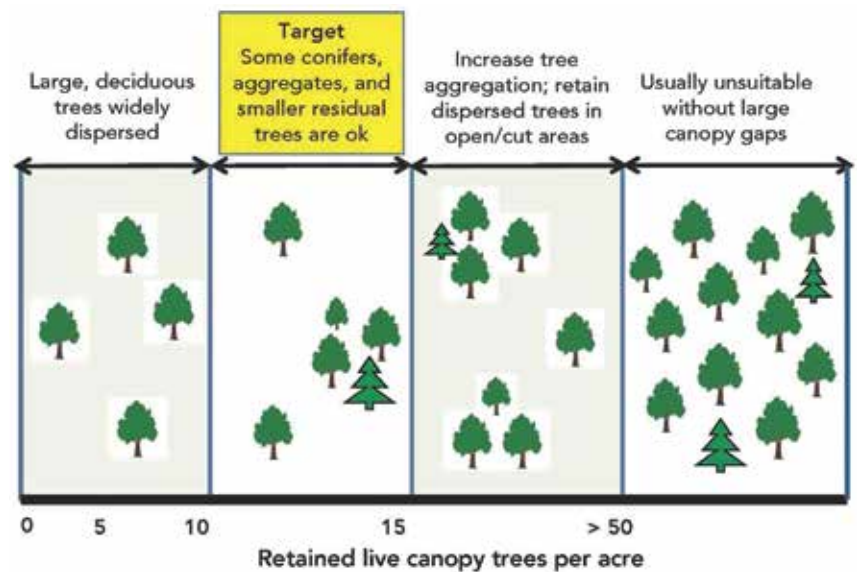
## Resources

- Golden-winged Warbler Status Review and Conservation Plan, [www.gwwa.org](http://www.gwwa.org).
- Your state/provincial silvicultural guidelines for even-aged forest management and green-tree retention. In most cases, Golden-winged Warbler breeding habitat can be managed within these guidelines.
- Site-level forest management guidelines developed by the Minnesota Forest Resources Council, [www.frc.state.mn.us/initiatives\\_sitelevel\\_management.html](http://www.frc.state.mn.us/initiatives_sitelevel_management.html)



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**Figure 2.** A young aspen forest with the optimal density of residual canopy trees, saplings, shrubs, and herbaceous vegetation dispersed throughout the stand. Both conifer and hardwood canopy trees were retained and met the required minimum density of hardwoods.



**Figure 3.** Guidelines for canopy-tree retention patterns with varying tree density.