

BEST MANAGEMENT PRACTICES FOR Golden-winged Warbler Habitat in the Aspen Parkland Transition Zone of Canada

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This supplement for the Aspen Parkland Transition Zone 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 Aspen Parkland Transition Zone comprises the contact zone between the prairie parkland and the greater boreal ecosystems (Figure 1). Whereas the prairie biome is dominated by grasses and the boreal biome by coniferous tree species and mixed woods, the Aspen Parkland Transition Zone is dominated by deciduous trees, especially Trembling Aspen (*Populus tremuloides*) and Bur Oak (*Quercus macrocarpa*), in complex mosaics with grassland and wetlands.

The Aspen Parkland Transition Zone is the only remaining large area within the Golden-winged Warbler range where Blue-winged Warbler does not occur. Thus, maintaining healthy populations of Golden-winged Warbler in this area is critical.

Threats to the Aspen Parkland Transition Zone

Golden-winged Warbler habitat in this region is threatened mostly by human uses, especially land clearing for exurban development. Grazing within forested landscapes can also be a threat, when it reduces shrub density below 15% cover and hence renders habitat ecotones less suitable for Golden-winged Warbler nesting.

Aspen Parkland Transition Zone landscapes comprise a mosaic of deciduous woodlands, prairie openings, forested wetlands, and marshes maintained by ecosystem processes like fire and natural succession. Fire suppression close to human settlements can result in more contiguous forest stands with fewer openings and less variation in tree age classes — habitat less suitable for Golden-winged Warbler. Fire suppression is also detrimental to the maintenance of remnant native prairie. Management techniques including burning, cutting, and planting have the potential to benefit Golden-winged Warbler.

Key Features or Issues for Golden-winged Warbler

The key to productive Golden-winged Warbler habitat in this region is maintaining a forested mosaic that includes gaps with shrubs and forbs (Figure 2), whether or not these are fixed in position or shift over time. Forest edges should be “feathered”, i.e., not with sharp transitions but irregular and with shrubs and forbs mixed with trees (Figure 3). Linear features such as trails with soft edges can produce Golden-winged Warbler habitat if human use is not excessive. Evidence suggests that Golden-winged Warblers will not occupy patches of apparent breeding habitat when agriculture constitutes > 30% of the surrounding landscape.



Figure 1. The Aspen Parkland Transition Zone in Canada. For Bird Conservation Region (BCR) descriptions, see www.nabci-us.org/bcrs.htm.



Figure 2. Burn regeneration in aspen woods. Note forest edge, dense shrubs, and some open areas with forbs. Tall trees within openings provide excellent song perches.

How to Manage for Golden-winged Warbler Breeding Habitat

In Aspen Parkland Transition Zone forested landscapes, the Golden-winged Warbler occupies a mix of relatively “permanent” upland scrub (where growing conditions prevent formation of closed canopy forests) and forested sites where small-scale disturbance creates openings and permits the growth of shrubs and forbs. These small-scale disturbances typically result in habitat for approximately 5–20 years after the disturbance (once the shrub layer is re-established and through various stages of regrowth). Common disturbance types include fire, logging, wind throw, tree mortality, linear disturbances (e.g., trails or rights-of-way when not frequently mowed or grazed), and sometimes resource extraction activities. Some wetland types in wooded areas also create a suitable ecotone.

Key requirements:

- within defined focal areas or < 8 km or 5 miles (preferably < 1.6 km or 1 mile) from known breeding populations
- ideally 70% forested (< 30% agriculture) within a 2 km (1.2-mile) radius of the site and within 5 km (3 miles) of known populations
- most territories found in forest landscapes containing Trembling Aspen and Bur Oak; sometimes Balsam Poplar (*Populus balsamifera*) and mixed woods
- most common understory: Beaked Hazel (*Corylus cornuta*) and Saskatoon (*Amelanchier alnifolia*); also Red-osier Dogwood (*Cornus sericea*), Hawthorn (*Crataegus* sp.), Prickly Wild Rose (*Rosa acicularis*), Beaked Willow (*Salix bebbiana*), High-bush Cranberry (*Viburnum trilobum*)
- most common forbs: Field Horsetail (*Equisetum arvense*), Canada Violet (*Viola canadensis*), Canadian Bunchberry (*Cornus canadensis*), Strawberry (*Fragaria* sp.), and Wintergreen (*Gaultheria procumbens*)
- ideal conditions consist of a mosaic of forest and early successional patches

To Promote Reforestation:

- first consider nearby tall-grass prairie and opportunities for prairie restoration over and above reforestation
- plant a combination of easily established and fast-growing native trees and shrubs
- incorporate patches of herbaceous ground cover and shrubs along with reforestation
- herbaceous layer needs to be planted with the goal of restoring a native plant community rather than monotypic grass cover; individual species selected need to match site and soil characteristics

Management techniques including planting, ripping the substrate, prescribed burning, and brush-hogging may speed up succession and the process of generating Golden-winged Warbler habitat.

Table 1. Management options to restore Golden-winged Warbler habitat.

Symptom	Management Technique	Description of Technique
Maturing trees, excessive canopy cover	Timber Management	Create irregular patch margin
	Mechanical Treatment	Use brush-hog to create irregular patch margins
	Prescribed Burning	Create small, irregular openings and stimulate shrub regeneration
Deforestation: Too much herbaceous cover, too little woody cover, soil compaction, gravel piles	Mechanical Treatment	Use ripping and diking
	Prescribed Burning	Create small, irregular openings and stimulate shrub regeneration
	Plant Desired Species	Plant trees/shrubs to foster regeneration around larger disturbances such as gravel piles
Forest edge damaged by grazing or limited edge	Timber Harvest	Create irregular patch margin
	Mechanical Treatment	Install fencing to prevent grazing edge; use brush-hog to create irregular patch margins
	Prescribed Burning	Create irregularly shaped or feathered edges or small openings
	Plant Desired Species	Plant native shrubs and forbs



Figure 3. Leaving legacy trees and feathered edges in cutovers, greatly increases the likelihood Golden-winged Warblers will use a site after sufficient shrub regeneration, as long as the distance to the nearest forest edge is not too great (< 75 m or 245 ft).

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Resources/References

- Golden-winged Warbler Status Review and Conservation Plan, www.gwwa.org
- Bird Species At Risk in Manitoba’s Aspen Parkland (Pamphlet by Bird Studies Canada – Manitoba) www.gwwa.org/outreach.html