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Best Management Practices For

Golden-winged Warbler Habitat on Abandoned Farmlands in the Appalachians

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This supplement for Abandoned Farmlands accompanies *Best Management Practices for Golden-winged Warbler Habitats in the Appalachian 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.

CURTIS SMALLING

Figure 1. *Typical early successional abandoned field in Appalachian region.*

Since the early 20th century, abandoned farmland has become an important component of the Appalachian landscape. When crop and pasture lands become inactive, they immediately begin succeeding into their pre-agriculture state, which is often deciduous forest. The span of time from field to forest takes decades, during which there is a period of years where the ratio of herbaceous vegetation, shrubs, and young trees on a given site can potentially create habitat for breeding Golden-winged Warblers (Figure 1). Without active management, this is a temporary condition that typically persists for less than a decade.

Throughout the region there is an excellent opportunity, especially on private lands, to create habitat for Golden-winged Warbler on abandoned farmlands. Perhaps the best opportunities exist on high elevation "balds" and poorly drained soils that are too wet for pasture or crops.

Key Landscape Scale Requirements

Abandoned farmland is found throughout the region, but much of it is not suitable for Golden-winged Warbler because it lacks a primarily forested habitat matrix and adequate elevation. Sites located in a non-forest, agricultural matrix will often attract Blue-winged Warbler, potentially exacerbating displacement and hybridization rates.

Select sites:

- within defined focal areas or < 5 miles (preferably < 1 mile) from known breeding populations and < 1 mile from other early successional patches
- with > 60% (preferably > 70%) deciduous forest cover within 1.5 miles of the site (Figure 2), preferably < 1 mile from other early successional patches
- with elevations > 1,300 ft in north and > 2,000 ft in south, lower in swamp forests and heavily forested valleys
- with multiple, manageable patches each ≥ 5 acres in size
- that lack adjacent active agriculture, such as row cropping

Figure 2. Management sites should be surrounded by mostly deciduous forest and other idle farmland.

Key Site Scale Requirements

Much Golden-winged Warbler habitat is intentionally created from existing forest by setting back ecological succession through specific timber harvesting practices. In the case of abandoned farmland, agriculture has already "reset succession" to an earlier state so the first goal in managing abandoned farmland is to evaluate that state relative to the habitat needs of breeding Golden-winged Warblers.

Characteristics of patches within management sites (Figure 3):

- 30–70% tall shrubs and saplings (3–13 ft) unevenly distributed as clumps
- herbaceous openings of mostly forbs with lesser proportions of grasses
- overstory deciduous trees (5–15/acre) resulting in 10–30% canopy cover
- high habitat dispersion, making average distance among microedges < 20 ft (see regional BMP guides for microedge definition)

Advancing or retarding succession to achieve an appropriate successional stage can be difficult, and, in some cases, impractical. If a given patch is still in a primarily herbaceous state or has become a closed canopy forest, then the location might be better managed as grassland or forest (see Deciduous Forests Appalachian supplement).

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Figure 3. *Good quality breeding habitat with clumped shrubs, herbaceous openings, and primary forest edge.*

How to Manage for Golden-winged Warbler Breeding Habitat

The three most common problems in abandoned farmlands are **1)** lack of a prominent forest edge, **2)** habitat elements (often shrubs) too evenly distributed, and **3)** too few overstory trees within the site (Table 1). When possible, on large sites, select abandoned fields adjacent to mature forest as opposed to those surrounded only by other fields. If this is not possible, develop an "interior feathered forest edge" by planting fast-growing, native trees and shrubs on each side of existing fencerows. Another way to increase edge habitat is to harvest trees in an irregular, feathered buffer along the existing forest edge. Mowing and brush-hogging in serpentine-like rows or small patches can be used to create a pattern of clumped shrub cover interspersed with herbaceous openings. A selective herbicide application might be necessary to reduce re-sprouting of woody plants and eliminate undesired invasive plant species. Habitat can be improved on sites with too few overstory trees by planting fast growing native trees in clumps or scattered throughout the plot.

Table 1. *Suggested management techniques to manipulate habitat conditions for Golden-winged Warbler.*

Symptom	Management Technique	Description of Technique
Lack of prominent forest edge	Timber Management	Harvest selected canopy trees along existing edge to promote shrub growth and extend habitat into forest.
	Plant Desired Species	Plant fast growing native trees and shrubs in large clumps or adjacent to existing fencerows.
Shrubs too evenly distributed or too many exotic shrubs	Mechanical Treatment	Mow within larger patches to create clumps with herbaceous openings; target exotic shrubs.
	Prescribed Burning or Grazing	Use micro-burns to selectively remove shrubs; graze cattle to reduce shrub density.
	Herbicide Spot Treatments	Treat individual or groups of shrubs to create smaller clumps, target exotic species when present.
	Restore Natural Disturbances	Restore hydrology on wetland sites to kill shrubs and retard re-growth.
Too few canopy trees	Timber Management	Create feathered edge through thinning; retain select saplings and poles as future trees.
	Plant Desired Species	Plant fast growing native trees in clumps or throughout the patch.
Too much herbaceous cover, too little shrub cover	Mechanical Treatment	Ripping, disking; reduce frequency and/or intensity of mowing.
	Prescribed Burning or Grazing	Reduce frequency and/or intensity of burning/grazing.
	Plant Desired Species	Plant fast growing native shrubs in clumps; best to use multiple species that vary in height when mature.

Resources/References

- Golden-winged Warbler Status Review and Conservation Plan, **www.gwwa.org**
- NRCS Working Lands for Wildlife provides technical and financial assistance to private landowners in the Appalachian region, **www.nrcs.usda.gov/wps/portal/nrcs/site/national/home/**
- Golden-winged Warbler Habitat Best Management Practices for Forestlands in Maryland and Pennsylvania. American Bird Conservancy. The Plains, VA, 26 pp.

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