



Guidelines for Managing Rusty Blackbird Habitat in New York and Northern New England



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Introduction

Species profile

The rusty blackbird is an inconspicuous songbird, slightly larger than the more familiar red-winged blackbird, but noticeably smaller than the common grackle. Breeding males are glossy black, sometimes with a greenish sheen, and females are dull charcoal black. Both have bright yellow eyes. In late summer they molt into the rusty non-breeding plumage for which the species is named.

Rusty blackbirds spend their entire lives in North America (Fig. 1). The breeding range includes the boreal region from Alaska to Labrador and extends south through the Acadian forest into northern New England and New York. The wintering distribution lies primarily within the United States east of the Rocky Mountains.¹

In northeastern North America, rusty blackbirds breed in softwood-dominated stands in forested landscapes with an abundance of wetlands and low-gradient streams. Occupied landforms range from extensive lowland flats to mountainous terrain, at elevations from 980 to 2,600 ft. Typical nesting habitat consists of dense, young or stunted softwoods in or near a wetland.

Status and conservation concerns

Historical accounts suggest that Rusty Blackbird populations have been declining since at least the 1920s, and Breeding Bird Survey and Christmas Bird Count data indicate declines of more than 80% since the 1960s.^{2,3} Clearing of wintering habitat for agricultural uses may have been a primary cause of the long-term decline. Blackbird control efforts in southern states aimed at common grackles and red-winged blackbirds may also have affected wintering rusty blackbirds. Mercury contamination and acidification of breeding habitat may be contributing factors; however, their effects on rusty blackbirds are not well known. Available data suggest retractions to the north and higher elevations in the eastern part of the breeding range.⁴⁻⁸ Climatic influences are likely to be involved, but the mechanism underlying the shift has not yet been demonstrated.⁹

The rusty blackbird is listed as Endangered in Vermont, a Species of Special Concern in Maine and New Hampshire, and a high-priority Species of Greatest Conservation Need in Maine, New Hampshire, Vermont, and New York. The Committee on the Status of Endangered Wildlife in Canada designated the rusty blackbird a Special Concern species in 2006.

Purpose of the guidelines

These guidelines are designed to provide forest landowners and managers with an understanding of the habitat conditions and management actions that sustain rusty blackbird breeding populations in the Acadian Forest. They also describe how habitat conditions that benefit rusty blackbirds can benefit other native wildlife as well. Public and private land managers, forestry professionals, and conservation planners should find the information useful in accomplishing their stewardship objectives.



Figure 1. Rusty blackbird breeding and wintering ranges (based on Peterson 2008, Powell 2008, Fisher and Powell 2013, Audubon Society of NH unpubl. data, and BirdLife International and NatureServe 2015)

Where to Create and Sustain Habitat

Landscape characteristics

Rusty blackbirds inhabit large home ranges (10 to 430 acres) in extensive spruce-fir and mixed spruce-fir/northern hardwood forests with abundant wetlands and low gradient streams.¹⁰ Beaver-influenced wetland complexes are particularly favorable.^{11,12} Inhabited landforms range from extensive lowland flats to mountains interspersed with valleys.

In low-relief landscapes, rusty blackbirds often nest in forested wetlands that contain stunted conifers and surround shallow, open-water wetlands (Fig. 2). These areas typically appear as wetlands on stand maps or the National Wetlands Inventory. In high-relief landscapes with well-defined wetland/upland edges, rusty blackbirds may nest in regenerating softwood stands up to 800 ft from a mapped wetland where they travel to forage (Fig. 3). While these nest sites are not in mapped wetlands, they typically occur in seepage areas on partially hydric soils.



Figure 2. Rusty blackbird nest sites in a forested wetland surrounding shallow, open-water wetlands



Figure 3. Rusty blackbird nest sites in regenerating softwoods on uplands surrounding a beaver impoundment

Within the rusty blackbird's northeastern US range, management opportunities exist primarily in areas of Boreal Upland Forest and Northern Swamp, as classified by the Northeastern Terrestrial Habitat Classification System (Figure 4).¹³ Areas appropriate for considering this species' habitat needs in planning forest management include the following characteristics:

- softwood and mixed stands
- within 800 ft of a shallow wetland or low gradient stream
- hydric or partially hydric soils
- at elevations of 980 to 2,600 ft
- with slopes less than 40% (or 22°)

Rusty blackbird planning units should maximize inclusion of spruce-fir and mixed forest and minimize inclusion of hardwood stands. Blocks of suitable nesting habitat may occur within a mosaic of softwood, hardwood, and mixed-wood stands and age classes.

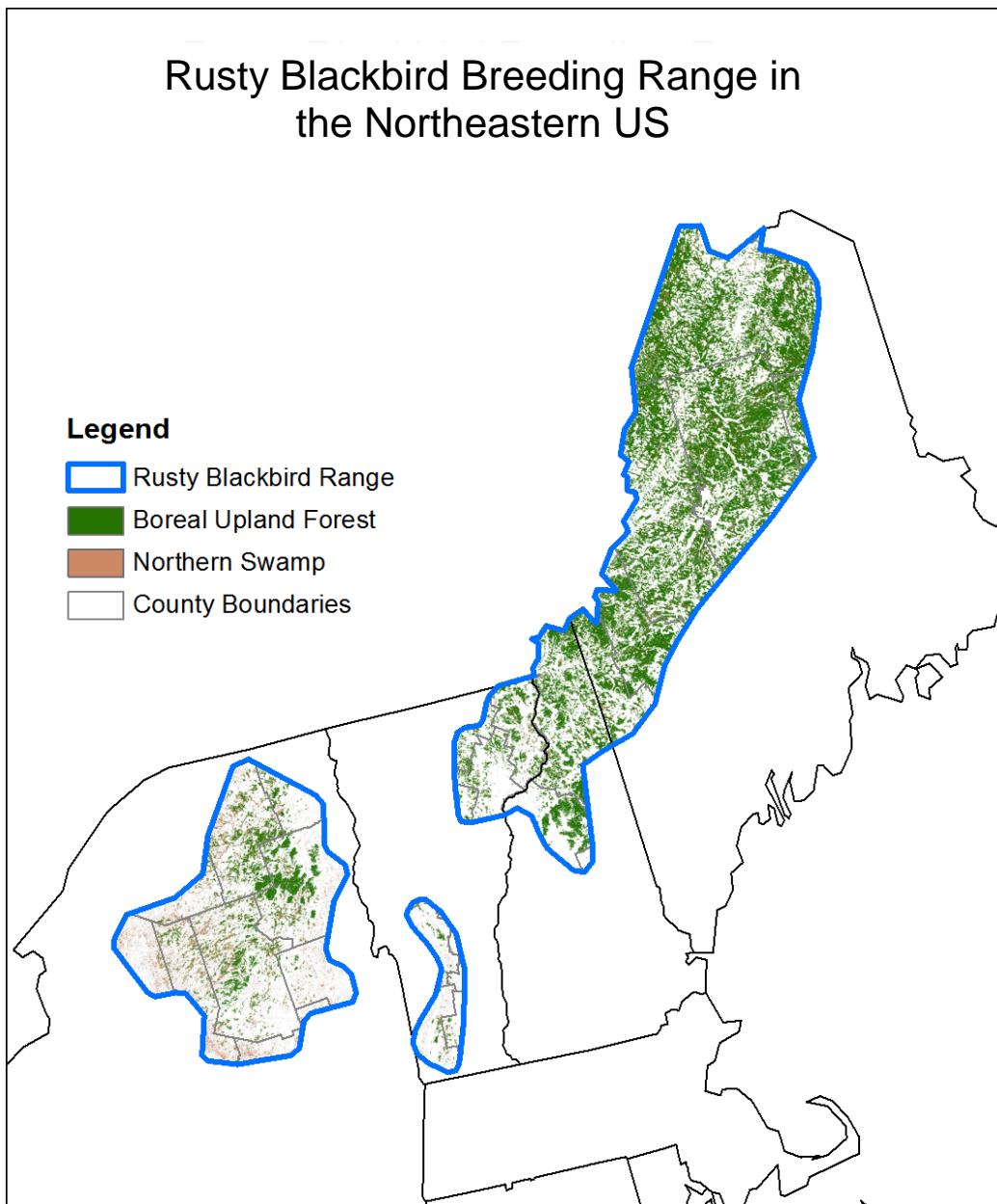


Figure 4. Rusty blackbird breeding range in the northeastern US with favored habitat classes

Desired Nesting Habitat Conditions ^{14,15}

Typical nesting habitat consists of dense, young or stunted softwoods (Fig. 5). In managed forests, rusty blackbirds usually nest in stands between approximately 5 and 15 years post-harvest. Tree growth rates vary depending on site conditions, and some patches may grow more or less rapidly than the majority of a stand. Such patches may extend the availability of suitable rusty blackbird nest sites at either end of the typical age range of suitability. The size of stands surrounding rusty blackbird nests varies widely from less than an acre to more than 100 acres. In commercial forests of Maine and New Hampshire, the stand size averages around 20 acres.



Figure 5. Dense softwood regeneration with seepage area in the foreground and emergent snags in the background

Scattered, live and dead residual overstory trees exceeding 13 ft in height are very important in rusty blackbird nest stands (Fig. 6). Species may include red and white spruce, balsam fir, tamarack, white pine, yellow and white birch, and red maple. Males watch for approaching predators from high perches near the nest site while the female is building the nest and laying and incubating eggs. When a male delivers food to an incubating female, she leaves the nest inconspicuously and joins him on a high perch to collect the food, returning by a circuitous route to avoid drawing attention to the nest location. Both adults check the vicinity from a series of high perches before delivering food to nestlings.



Figure 6. Multiple-aged regenerating softwoods with live and dead canopy trees available for high perches

Forest Composition and Structure

Forest type

- Spruce-fir

Age class structure

- Young, even-aged stands with scattered older trees

Overstory characteristics

- Canopy: open with trees dispersed individually and in clumps
- Composition: live or dead red spruce, white spruce, balsam fir, tamarack, white pine, white birch, yellow birch, and/or red maple
- Height: ≥ 13 ft

Regenerating stand characteristics

- $\geq 34\%$ softwood composition (primarily red spruce, white spruce and/or balsam fir; may also include white pine, tamarack) (Fig. 7)
- Height: 8-12 ft
- Diameter at breast height (dbh): 1.5-2 in
- Total horizontal cover (softwood and hardwood, all classes): $> 95\%$
- Total softwood cover: 35-100%
- Softwood seedling/sapling cover: 20-55%
- Total hardwood cover: up to 65%
- Patches of softwood saplings (dbh ≤ 4 in) with basal area ≥ 85 ft²/acre to provide cover for nesting (Fig. 8).

Recommended Practices

Methods to produce suitable forest composition and structure will vary by physiographic setting and each stand's starting condition. However, any practice that regenerates spruce and fir in the appropriate context has potential to benefit rusty blackbirds.

- The size and shape of a harvest area that creates nesting habitat will be dictated by topography and site conditions. Sizes may range from 2.5 to 100 acres; narrow, linear blocks should be avoided to the extent possible, especially adjacent to roads or mature softwood stands.
- Overstory removal with residual tree retention, in the presence of ample advance softwood regeneration, will consistently produce the desired conditions.
- Shelterwood harvests and clearcuts with retention can also be effective, but will take longer to reach the desired conditions.
- Retain mature dead and live trees, dispersed individually and in clumps, to maintain a scattering of overstory perch sites.
- Schedule harvests to provide a sapling softwood stand within 800 ft of a shallow wetland or low gradient stream throughout a rotation of the area.



Figure 7. Mixed-species softwood regeneration



Figure 8. Most rusty blackbird nests (70-80%) are supported by branches of 2-4 saplings.

Managing for Multiple Benefits

Most even-aged silvicultural strategies used to manage spruce-fir forests in the Northeast benefit rusty blackbirds directly by creating the young forest conditions they prefer for nesting. Special management considerations for this species include: applying silvicultural practices that maintain or increase the softwood component of the stand; implementing a harvest schedule that maintains at least one softwood stand in a sapling stage within 800 ft of a wetland; and retaining scattered snags for perching. Many wildlife species benefit from access to a diversity of age classes within their home ranges. Standing dead trees provide nesting and denning/roosting cavities for birds and mammals and foraging perches for raptors and aerial insectivores.

Associated species

While a diversity of bird and mammal species use regenerating softwood and mixed-wood stands during some part of their annual cycle, a few benefit particularly from these habitat conditions. Evidence of heavy use by moose and snowshoe hare is abundant in rusty blackbird nest stands. Other bird species that frequently nest in these stands include alder and olive-sided flycatchers, magnolia and chestnut-sided warblers, dark-eyed junco, and Swainson's thrush. Management to benefit rusty blackbirds in mixed forests also complements best management practices for American woodcock promoted by the Young Forest Project, a partnership of state and federal wildlife agencies, the Wildlife Management Institute, and a number of forest landowners.

Table 1. A partial list of Species of Greatest Conservation Need that could benefit from implementation of these guidelines. Species of high or very high regional concern are indicated in bold.

Species	Overlapping habitat(s)
Alder flycatcher	Moist riparian thickets, shrublands and young forests with high density of trees
Blackpoll warbler	Young spruce-fir forest at high elevations and latitudes
Canada warbler	Young mixed spruce-fir/northern hardwood forest, swampy areas
Chestnut-sided warbler	Young mixed spruce-fir/northern hardwood forest
Dark-eyed junco	Young coniferous and mixed forests
Magnolia warbler	Dense young spruce-fir forest
Nashville warbler	Second-growth mixed forests, moist openings with dense undergrowth
Olive-sided flycatcher	Wetlands and young forest with tall snags
Purple finch	Coniferous forest edges
Spruce grouse	Dense lowland conifers (especially spruce, fir, and tamarack) with small
Swainson's thrush	Damp, young spruce-fir forests
Tennessee warbler	Moist areas of young mixed spruce-fir/hardwood forest
Pygmy shrew	Moist forest floors with accumulated debris in coniferous and mixed forests
Bobcat	Young spruce-fir forest
Lynx	Young spruce-fir forest
Moose	Lowland softwoods, young forest, and beaver ponds
Snowshoe hare	Moist, dense, young spruce-fir forest



Figure 9. Species that often utilize rusty blackbird habitat include (l-r) magnolia warbler, olive-sided flycatcher, and moose.

Comprehensive planning

Rusty blackbirds are highly mobile and readily colonize recently disturbed forests. Young stands favored by this species are not suitable for some spruce-fir specialists associated with more mature forests, such as northern parula and Cape May and bay-breasted warblers. However, maintaining a patchwork of age classes within management units enables wildlife species to move among suitable habitat patches as stands age into and out of favorable conditions. Local knowledge of stand conditions, landscape context and long-term landowner goals for size and age-class structure will be the most effective guides to the selection and timing of silvicultural treatments.

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Acknowledgments

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Field Guide to Managing Rusty Blackbird Nesting Habitat

Companion to *Guidelines for Managing Rusty Blackbird Habitat in New York and Northern New England*

Status: Endangered in Vermont, Species of Special Concern in Maine and New Hampshire, and a Species of Greatest Conservation Need in Maine, New Hampshire, Vermont, and New York.

Foraging habitat: shallow wetlands, seeps, exposed mud, puddles, ditches, moist leaf litter

Nesting habitat: sapling softwood or mixed stands, stunted softwoods on hydric soils

Nest site: nest typically concealed in a dense clump of spruce-fir saplings 3-10 ft above the ground, often supported by branches of multiple saplings

Special requirements: scattered, tall, standing live or dead wood in nesting and foraging areas

Territory or home range size: highly variable, depending on proximity of nest site to wetlands, estimated at 10 to 430 acres from radio telemetry

Diet (breeding season): primarily aquatic macroinvertebrates captured by probing or flicking aside dead vegetation; also flying insects and berries

Associated species: magnolia warbler, Nashville warbler, northern waterthrush, olive-sided flycatcher, Swainson’s thrush, moose, snowshoe hare

Recommended Forest Management Practices: When conducted in the appropriate context, some methods of timber harvesting can enhance habitat quality for rusty blackbirds and associated species. However, conservation benefits may be low in areas where suitable habitat occurs naturally. For more discussion of where to create and sustain habitat, consult the complete guidelines. The following table summarizes options for creating the desired, stand-level conditions.



Adult rusty blackbirds in breeding plumage: charcoal gray female on left, glossy black male on right.

Eian Prohl

Starting Condition	Objective	Management Options	Desired Condition
Mature softwood stand High canopy closure	Regenerate stand	Overstory removal with retention of scattered dead and/or live trees Shelterwood harvest Clearcut harvest with retention	Thick regenerating stand of mixed or softwood saplings (1.5- 2 in DBH) measuring 8-12 ft in height Open canopy Residual overstory \geq 13 ft, composed of live and/or dead trees, dispersed individually and in clumps Softwood patches of saplings to small poles with basal area \geq 85 ft ² /acre

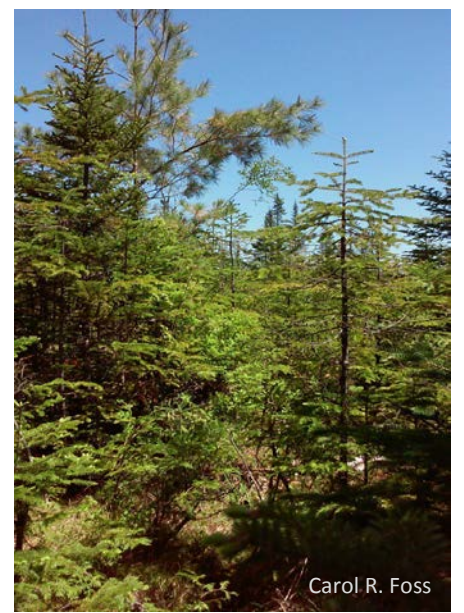
Field Guide to Managing Rusty Blackbird Nesting Habitat



Winter harvest in a mature softwood stand (l) and a mosaic of hardwood and softwood stands in various age classes (r)



Softwood regeneration with snags in background (l) and mixed regeneration with live and dead trees retained (r).



Regeneration adjacent to seep (l), nest supported by branches of multiple saplings (center), and mixed species softwood regeneration (r).