

## Priorities for Future Research

Studies are urgently needed to determine the cause or causes of Canada Warbler declines. While some of this work must be conducted on the wintering grounds, factors on the breeding grounds could be just as important. Forest maturation, wetland habitat loss, and environmental contaminants (e.g. mercury) warrant special attention as potential contributors to population declines.

To help guide decisions that affect this vulnerable species, we suggest that future investigations collect standardized density and demographic data to:

- 1) compare the quality of natural and created habitats; and
- 2) specifically evaluate effects of small-scale, single-tree or small group selection harvests on Canada Warbler populations.



For more information, or to receive a copy of the technical report, *Canada Warbler: Population Status, Habitat Requirements, and Stewardship Guidelines for Northeastern Forests*, contact VINS or visit [www.vinsweb.org/cbd](http://www.vinsweb.org/cbd).

  
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THE VERMONT INSTITUTE  
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# Conserving Canada Warbler Habitat



PRACTICAL GUIDELINES  
FOR STEWARDS OF THE  
NORTHERN FOREST

  
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# Canada Warblers at Risk

## Background

The Canada Warbler is a neotropical migratory songbird that nests in moist woodlands of boreal Canada, the northeastern United States, and south along the Appalachian



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Canada Warbler female at her mossy ground nest.

Mountains to Tennessee. The vast majority of its global population however, occurs in Canada and the Atlantic Northern Forest of New England and New York.

## Population Declines

Over the last 40 years Canada Warblers have steadily declined throughout the northeastern U.S., raising concerns about habitat loss and degradation. This has prompted bird conservation organizations and wildlife managers to list the species as a high priority in need of conservation action and research. However, the Canada Warbler has received little attention from avian ecologists — until now.

## New Research

Biologists from the Vermont Institute of Natural Science, along with collaborators from Salve Regina and Plymouth State Universities, have been studying the Canada Warbler's breeding ecology since 2001. This work has led to a better understanding of the species' population status and habitat requirements in the Northern Forest, as well as to the development of practical stewardship guidelines for natural resource professionals.

## Habitat Needs

Although Canada Warblers occupy a variety of woodlands, they reach their highest densities in swamps and riparian forests where wet conditions limit canopy closure and favor shrub growth. In the uplands, Canada Warblers are disturbance specialists, occupying regenerating forest patches following wind-throw, ice damage, or timber harvests. While they appear to prefer mixed forests, they can be found in pure conifer or hardwood stands with high shrub densities and structurally complex forest floors.

## Stewardship Guidelines

Natural resource professionals can use a variety of land protection and forest management strategies to help stabilize declining Canada Warbler populations.

### Land Protection

1. Focus preservation efforts on large areas of moist, mixed forest that feature a semi-open canopy and dense undergrowth.
2. Target areas characterized by the following attributes:
  - ◆ high shrub density (woody stems measuring 2–6 m in height, < 8cm dbh);
  - ◆ high volume of understory foliage (including ferns);
  - ◆ low level or threat of deer/moose browse;
  - ◆ low or semi-open canopy;
  - ◆ structurally complex forest floor (hummocks, root masses, logs, etc.);
  - ◆ emergent trees or tree clumps used for territorial display.
3. Protect large tracts of working forest with intent to pursue one or more of the following management strategies.



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## Forest Management Strategies

1. Provide patches of young forest habitat. Canada Warblers utilize regenerating stands, 6-20 years old, with low canopy closure. Retain individual trees or tree clumps for territorial display. Stands 20-50 years old appear to be of low value.
2. Maintain large, contiguous areas of old, unmanaged forest. Such areas are more likely than age-class mosaics to experience large natural disturbances that could benefit Canada Warblers.
3. Maintain or restore mixed forest cover at the stand and landscape levels.
4. Maintain a well developed herbaceous and woody understory:
  - ◆ avoid damage to understory during harvest and skidding operations;
  - ◆ control browsing by deer and moose;
  - ◆ restrict use of all-terrain vehicles.
5. Maintain or enhance forest floor structure for Canada Warbler nests:
  - ◆ harvest in winter to avoid compaction of hummocks, root masses, stumps, etc.;
  - ◆ avoid moist areas where ferns and moss offer suitable nesting cover;
  - ◆ leave woody debris on site.
6. Conserve riparian buffers and avoid logging wooded ravines.



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