Habitat Assessment for the Vermont Gas Pipeline through Geprags Park Hinesburg, Vermont.

Golden-winged Warbler

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March 2016

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Introduction

The following pages provide a habitat assessment and management strategies for portions of Geprags Park that are associated with the Vermont Gas (VTG) pipeline and its associated right of way (ROW) in Hinesburg, Vermont. This assessment is part of the Golden-winged Warbler Protection Plan in the Stipulated Agreement between Town of Hinesburg and VTG. The assessment is also part of Audubon Vermont's Champlain Valley Bird Initiative (CVBI) which works with landowners to promote effective avian habitat management in the Champlain Valley. These recommendations are based on habitat requirements of priority bird species, primarily Golden-winged Warbler (*Vermivora chrysoptera*) and Blue-winged Warbler (*Vermivora cyanoptera*), that have been identified by the Vermont State Wildlife Action Plan (VTWAP) and the North American Bird Conservation Initiative (NABCI) as conservation priorities, and are the focus of regional conservation efforts (Appendix 1). Although this report is concerned primarily with habitat management for birds, numerous non-avian species will also benefit from its recommendations.

Geprags Park is located in Lower Great Lakes/St. Lawrence Plain Bird Conservation Region (BCR 13) as delineated by NABCI. The Lower Great Lakes/St. Lawrence Plain encompasses a narrow, low-lying plain stretching from the Champlain Valley west to Northeastern Ohio and surrounds the St. Lawrence River, and lakes Erie, Ontario and Champlain (Figure 1).

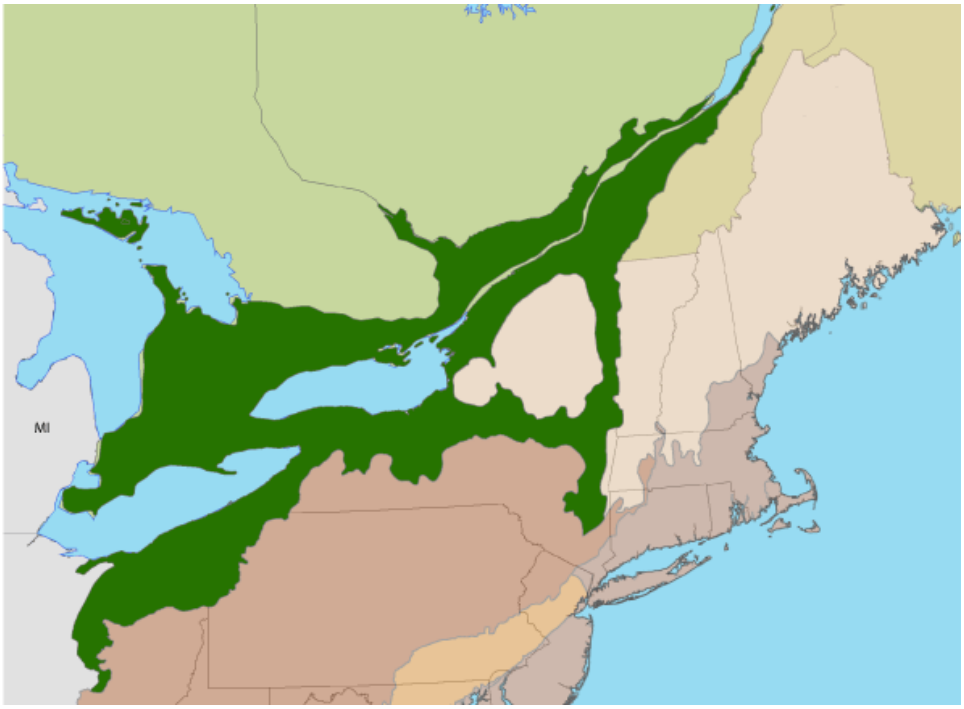

Figure 1. The Lower Great Lakes/St. Lawrence Plain (BCR 13) shown in green.

This BCR is comprised of extensive wetland ecosystems, accompanied by a mosaic of forests, agricultural fields and early-successional habitat (abandoned fields reverting to shrubland or young forests). The Champlain Valley of Vermont and New York has been identified as a Focus Area within BCR 13 because its mixed habitat types and open water are home to a number of BCR13's priority bird species.

Geprags Park is located in the northwest portion of the town of Hinesburg, Vermont. The larger landscape surrounding the property includes a mix of agricultural lands, small to medium-sized forest patches, and residential development. The property comprises approximately 86 acres of fields, early successional shrublands, and forest. The fields are not currently in agricultural use and contain a mix of grasses and forbs. The early successional shrublands, are comprised of a number of shrubland plant species including dogwoods and viburnums as well as invasive plant species. The property also supports a young forest of primarily northern hardwoods. Several small drainages run throughout the property, the largest of which is on the western portion of the property. There are roughly two miles of maintained trails in the park and Vermont Electric Power Company (VELCO) maintains a ROW under its powerlines that run through the park. Numerous invasive plant species including wild parsnip, European buckthorn, and honeysuckle are also present due to the past disturbance regime and the strong presence of these species in the Champlain Valley.

Current management activities include mowing most of the open fields, the trails and several larger openings annually. Beginning in 2012, Audubon Vermont worked with the Town of Hinesburg, the Hinesburg Conservation Commission and the U. S. Fish and Wildlife Partners Program to manage portions of the shrublands for priority bird species. This work was done over a period of about a year and a half and consisted of heavy brush hogging and removal of trees and invasive plant species with a chainsaw. The work resulted in the creation and maintenance of habitat that benefited Golden-winged Warblers and other shrubland species.

The habitat types at Geprags Park are common in the Champlain Valley and support bird species associated with early successional habitat types (shrublands and young forest), and mixed forests. Priority Bird Species (as identified by VTWAP, NABCI and Audubon Vermont) that are particularly well suited to these habitats include the focal species of this report, Golden-winged and Blue-winged warbler. The Golden-winged Warbler's high priority status is due to declines in its populations across its range, and the species is the focus of numerous conservation efforts directed in large part by the Golden-winged Warbler Working Group and the Golden-winged Warbler Conservation Plan. More information about the life history of this species, the working group and the conservation plan can be found at www.gwwa.org.

Vermont Gas Pipeline and Associated Right of Way (ROW)

The focus of this report is the western section of Geprags Park where the VTG pipeline will run and where the ROW will be maintained (Figure 2). This area comprises approximately 28 acres of the park. The siting of the pipeline was determined in part by the location of wetlands within and adjacent to the park. The pipeline and its associated 50 foot ROW as approved by the Vermont Public Service Board will run through an old field, a treed hedgerow and shrubland. In 2015, both a Golden-winged Warbler and a Blue-winged Warbler were trapped and banded in the shrubland section as well as other locations within the park (Figure 2). Golden- winged Warblers, Blue-winged Warblers and their hybrids have been observed since 2010 in the

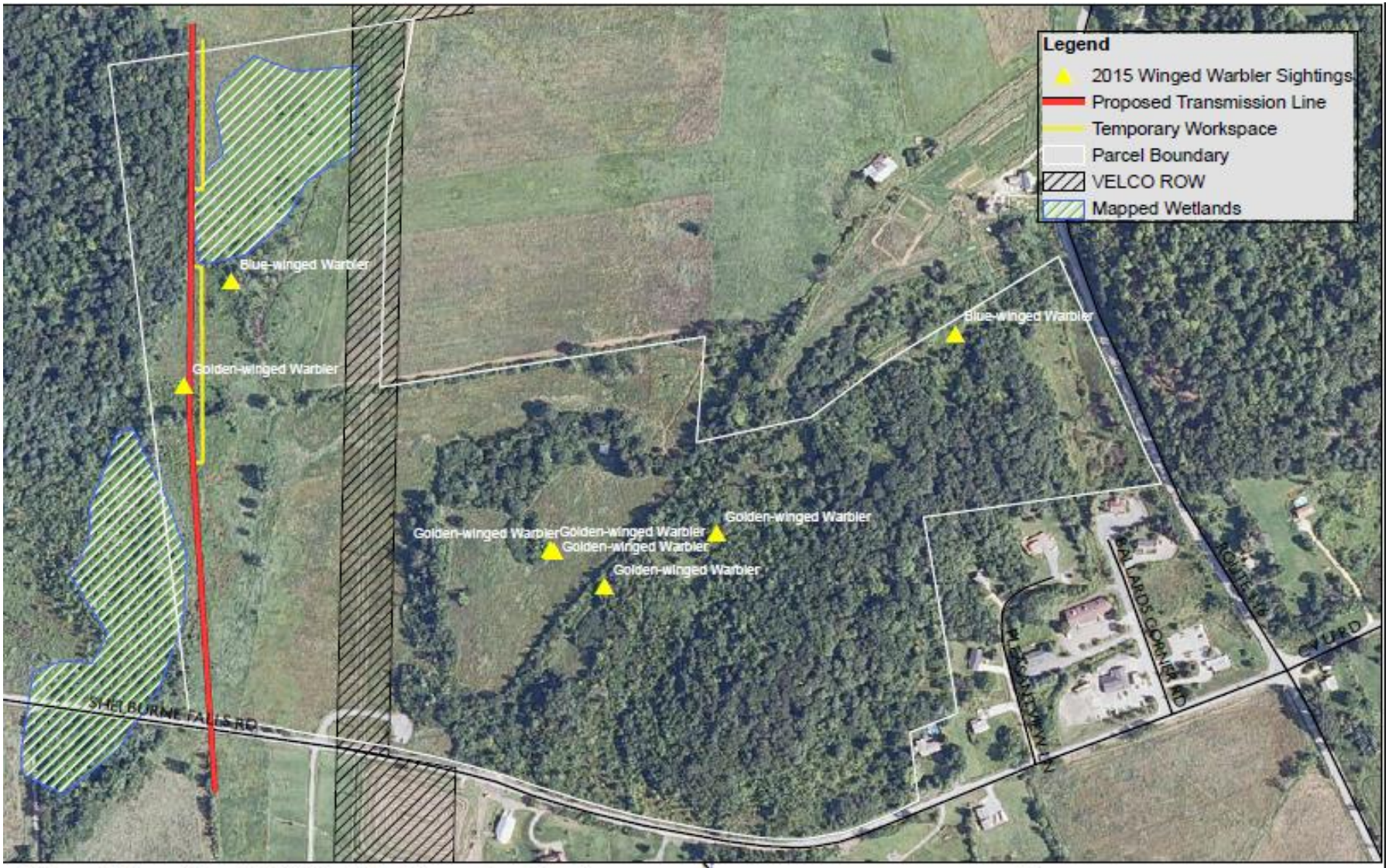

Figure 2. Locations in 2015 of Golden-winged and Blue-winged Warblers in relation to the proposed Vermont Gas Pipeline in Geprags Park, Hinesburg, VT.

N
W E
S

0 225 450 900 Feet

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Map created by Margaret Fowle, March 2016
Data provided by Audubon VT, VCGI, ESRI, and VT Gas Systems

Not a survey. All boundaries and acreage figures approximate.

western section where the pipeline will be located. The habitat, a mix of shrubs, goldenrod filled openings, saplings and mature forest is ideal for these two species and a "Warbler Protection Plan" within the Stipulated Agreement has been created to protect these species during the breeding season. The plan includes efforts to enhance the habitat through plantings and monitoring the species post construction. Utility ROWs can be managed in a way that maintains habitat for Golden-winged Warblers, as addressed by the Golden-winged Winged Warbler Working Group's document "Best Management Practices for Golden-winged Warbler Habitat On Utility Rights-of-way in the Great Lakes" (http://www.gwwa.org/resources/GWWA-Habitat-GreatLakes-utility-130808_lo-res.pdf).

Management Options

Management options are provided for the portion of Geprags Park west of the main drainage and along the pipeline corridor. They are designed to provide guidance for activities that would benefit priority bird species and prevent and alleviate any disturbance resulting from the pipeline construction and ROW maintenance**.**

Assessment of Current Habitat Conditions along the Pipeline Corridor:
The shrubland habitat types where the pipeline will run are currently a mix of old field, early successional shrublands composed of dogwoods, viburnums and honeysuckle, and early successional forest composed of saplings and various species of small trees. Within this shrubland structure are a number of small to medium sized openings and a trail system. The shrubland habitat is situated between a mature hardwood forest to the west and hayfields to the east. As mentioned above, this mix of vegetation types and openings provides ideal habitat for a suite of bird species dependent on early successional habitat. Efforts to maintain this habitat structure by managing the amount of reforestation that occurs would benefit numerous priority species, including Golden-winged and Blue-winged warblers. Saplings, primarily ash, are currently beginning to dominate the area where the winged-warblers are found. Over time this succession of shrubland to forest will limit the use of this area by Golden-winged and Blue-winged warblers. As such, management actions will be required in the next couple of years to maintain the habitat. If done responsibly, the construction of the pipeline and the resulting ROW may enhance this habitat by removing saplings and creating a maintained 50-foot wide open area of grasses and forbs including goldenrod. If the pipeline and ROW do not go through Geprags Park, then other management actions some of which are described below will need to be undertaken in this area.

General Management Options for Shrublands:

- Brush hog portions of the shrublands every 3-5 years after August 1st to maintain shrubland habitat. Target native and non-native shrubs that are greater than 10 feet high for cutting (these will quickly regenerate) while maintaining 5-10 foot native shrubs, some trees, saplings, and snags throughout. The optimal shrub height is 5-10 feet tall for shrubland priority species. Brush hogging will enhance the habitat structure while preventing the encroachment of trees and will benefit several priority shrubland species
- Selectively remove tall trees after August 1st while retaining desirable shrub species. Trees can be cut or girdled outside of the nesting season, which is generally from April 15 – August 1. Girdled trees will become snags which can provide singing perches and nesting sites for cavity nesters.

- Aim to maintain at least 40% of the area in grasses and forbs to create a mixture of open field and shrubland. Leaving some areas undisturbed every year (ie brush hogging in thirds) will provide cover and food for species while the disturbed areas regenerate. Shrubland priority species benefit from a mixture of native shrubs, grasses, and forbs, all of which provide nesting habitat and food resources. Light pasturing after August 1st can also help achieve this habitat structure.
- If possible, target non-native shrubs such as buckthorn and honeysuckle for removal. Retain orchard fruit trees such as apples and pears where applicable. Native shrubs such as dogwoods and orchard fruit trees provide better quality resources than non-native species. For more information, see Invasive Plant Species section below.
- In areas where shrubs are limited, plant native shrubs to further the succession from field to shrubland. Plantings should be "clumped" to create the mosaic of shrubs and grasses and forbs.

Specific Management Actions Recommended for the Pipeline Corridor

Many of the recommended management actions follow those mentioned above with more specific guidance coming from the "Best Management Practices for Golden-winged Warbler Habitat On Utility Rights-of-way in the Great Lakes" (http://www.gwwa.org/resources/GWWA-Habitat-GreatLakes-utility-130808_lo-res.pdf). Below are actions specific to the agreement between VTG and the town of Hinesburg as explained in the Warbler Protection Plan.

- Work will be scheduled to avoid disruption of nesting. As such, no work will occur between April 15 and July 31, 2016 unless site surveys by Audubon Vermont in July indicate no evidence of nesting activity. Audubon Vermont recommends that actual construction occur after July 31 so as not to disturb the habitat prior to the arrival of the birds and give the area time to recover for the 2017 breeding season. In addition, future management of the ROW should take place outside these dates. ROW maintenance should occur on a 2-3 year cycle to allow the establishment of grasses and forbes, primarily goldenrod.
- Work within the area should stay within the pipeline ROW and designated temporary construction sites.
- Plantings of woody shrubs at the boundaries of the ROW should occur to enhance habitat for Golden-winged Warblers. As mentioned above, these plantings should be "clumped" and could include areas along the ROW south of the treed hedgerow in the old field habitat. This would bring this area into shrubland habitat at a faster rate and make it available for priority bird species sooner. A planting schematic should be put together post construction to assist with appropriate plant placement. VTG has committed $1000.00 to the purchase of native shrubs for this purpose.
- Monitor the ROW post construction to determine the impacts to the Golden-winged and Blue-winged warblers. As mentioned above the two birds captured in 2015 now have metal bands on their legs with unique number combinations. Return rates of these birds can be compared to other banded birds in the park. Surveys should be conducted over the next several years of both the birds and the vegetation (photo documentation) so management action can be altered if it is determined that other strategies would work better.

Summary

Geprags Park is home to many bird species including a number of priority birds such as the Golden-winged Warbler. This management plan looks to provide guidance during construction and post construction activities in an effort to protect nesting birds and maintain and potentially enhance habitat along the pipeline corridor. The park's juxtaposition next to other properties with similar early successional shrubland habitat types supports management actions that maintain the current habitat structure. Past management practices have maintained this shrubland habitat in other areas of the park. These management practices, however, will need to occur at regular intervals to insure the grasslands and shrublands are maintained long-term. Based on the results of past management efforts in the park we believe the pipeline and its associated ROW, if managed correctly, can provide opportunities for habitat maintenance and enhancement for priority bird species, including the Golden-winged Warbler.

Appendix 1.

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Champlain Valley Priority Bird List

September 2014

Wetlands

Pied-billed Grebe [1,2]
American Bittern [1,2]
Least Bittern [1,2]
Wood Duck[2]
Common Goldeneye [2]
American Black Duck [1,2]
Sora [1]
Blue-winged Teal [1]
Bald Eagle [1]
Osprey[1]
Black Tern [1]

Agricultural Grasslands

American Kestrel [1]
Northern Harrier [1,2]
Short-eared Owl [1,2]
Upland Sandpiper [1,2]
Sedge Wren [1]
Vesper Sparrow [1]
Grasshopper Sparrow [1,2]
Bobolink [1,2]
Eastern Meadowlark [1,2]

Islands

Great Blue Heron [1]
Black-crowned Night Heron [1,2]
Common Tern [1,2]

Shrub/Early Successional

American Woodcock [1,2]
Brown Thrasher [1,2]
Eastern Towhee [1]
Willow Flycatcher [2]
Golden-winged Warbler [1,2]
Blue-winged Warbler [1,2]
Field sparrow [1,2]
Baltimore Oriole [2]

Deciduous/Mixed Forest

Scarlet Tanager [1]
Black-billed Cuckoo [1,2]
Whip-poor-will [1]
Veery [1]
Wood Thrush [1,2]
Canada Warbler [1,2]
Ruffed Grouse [1]
Chestnut-sided Warbler [1]
Black-throated Blue Warbler[1,2]
Cerulean Warbler [1,2]
Northern Flicker [2]
Rose-breasted Grosbeak [2]
Peregrine Falcon

[1] Vermont's Species of Greatest Conservation Need from the Vermont Wildlife Action Plan
[2] Bird Conservation Region 13 (Lower Great Lakes/St. Lawrence Plain) Priority Bird Species from the North American Bird Conservation Initiative

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Champlain Valley Bird Initiative Resource List

NATIVE & INVASIVE PLANTS

Trees, Shrubs, & Vines for Attracting Birds by Richard M. DeGraaf, 2002. A wonderful guide to woody plants that are useful for attracting birds. Helpful tables for each plant species indicating birds that use the plant in terms of food, cover & nesting. $20

Landscape Plants for Vermont by Norman Pellett and Mark C. Starrett, 2002. An incredible reference book for plants that will grow in Vermont; highlights native species. Organized by plant type (i.e., vines, shrubs, trees) and mature height. Lists plants resistant to deer browse and poisonous plants. Order online through UVM Master Gardener Program. $15 *See website list.*

Native Shrubs and Vines for Northern New England Landscapes by Norman Pellett, 2001. Strictly native Vermont plants. Includes plant descriptions and uses in the landscape; appendices list plants suited for wet, dry and woodland sites. Published by Friends of the Horticulture Farm, P. O. Box 64788, Burlington, VT 05406. $7

Native Trees, Shrubs, and Vines: a Guide to Using, Growing, and Propagating North American Woody Plants by William Cullina, 2002. A tremendous reference book with wonderfully written, engaging prose. Species accounts include wildlife uses, cultural and propagation information, native habitats and more. Color photos. $40

Native Plants of the Northeast; A Guide for Gardening and Conservation by Donald J. Leopold, 2005. A book that is specific to our region with a great balance of perennials, annuals, shrubs, trees & vines. $40

Sources of Native Plant Materials in Vermont, Agency of Natural Resources, 2003. An updated publication, listing Vermont nurseries that carry native species and the plant species available at each nursery. Contact information included. A great resource.
http://www.anr.state.vt.us/dec/waterq/wetlands/docs/wl_nativeplants.pdf
Available in print or online. Free.

Vermont Invasive Exotic Plant Fact Sheet Series, revised 2003. A collection of black and white fact sheets for 25 invasive species. Identification, habitat and control information. Available online from Vermont Master Gardeners, *see website list*.

Native Alternatives for Invasive Ornamental Plant Species, edited by Timothy M. Abbey for the Connecticut Invasive Plant Working Group. Small booklet; recommends multiple native alternatives for five commonly planted invasive ornamentals – color photos. Available in print or online. http://www.caes.state.ct.us/SpecialFeatures/NativeAlternatives.pdf

FORESTRY & CONSERVATION

Working with Your Woodland: A Landowner's Guide, *revised edition* by Mollie Beattie, Charles Thompson, and Lynn Levine, 1993. Covers a wide spectrum of compatible woodland management

objectives – wildlife, recreation, timber and firewood - as well as the technological, environmental, tax and legal concerns. $25.

BIRDS

The Audubon Society Guide to Attracting Birds: Creating Natural Habitats for Properties Large & Small by Stephen W. Kress, 2006. The "everything-you-need-guide!" From specific native plant recommendations to create cover and nesting sites on your property, this book thoroughly covers all the aspects of attracting birds to your yard and beyond. Great designs for nesting platforms, advice for the larger landowner, and a wonderful resource appendix. $24.95

Birdwatching in Vermont by Ted Murin & Bryan Pfeiffer, 2002. Great for finding spots to visit for specific birds in order learn about their habitat requirements. $20

Sibley's Birding Basics by David Allen Sibley, 2002. Learn how to look at and listen to birds. $15.95

Bird Watcher's Digest *magazine,* edited by William Thompson, III. Bird identification tips, landscape and gardening articles, and in-depth exploration of different bird species. *http://birdwatchersdigest.com/* Six issues per year, $20 subscription.

Identify Yourself: The 50 Most Common Birding Identification Challenge by Bill Thompson III, 2005. This is an excellent book for sorting out and identifying those tricky birds that are difficult to distinguish from one another. Aimed at beginners and intermediates. $19.95

WILDLIFE HABITAT

A Landowner's Guide: Wildlife Habitat Management for Vermont Woodlands Ronald J. Regan and Ginger Anderson, publication coordinators. Each creature receives an entire chapter that focuses on its natural history, habitat requirements and management practices or projects. Booklet available through VT Fish & Wildlife Department, Waterbury, (802) 241-3700, free.

Landowner's Guide to Wildlife Habitat; Forest Management for the New England Region by Richard M. DeGraaf, Mariko Yamasaki, William B. Leak, and Anna M. Lester, 2005. An easy-to-use guide for enhancing wildlife habitat quality, timber values and the appearance of forest lands. Explains how to work with professional foresters to meet your goals. Great color photographs. $16.95

Enhancement of Wildlife Habitat on Private Land by Daniel Decker and John Kelley, 1998. A popular 42-page publication with illustrations and instructions for 10 projects designed to provide desirable habitat for wildlife. http://store.cce.cornell.edu/ Order online through Cornell Cooperative Extension Resource Center. Publication #16271

Landscaping for Wildlife by Carrol Henderson, 1987. A landowner's guide to developing backyard, farm, and woodlot habitats for wildlife.
http://www.comm.media.state.mn.us/bookstore/bookstore.asp Available online through Minnesota's Bookstore, Department of Natural Resources. $10.95

Backyard Wildlife Habitat in Vermont by Steve Parren, 1993. Provides information on creating habitat for birds and other wildlife, specific to Vermont. Booklet available through VT Fish and Wildlife Department, Waterbury, (802) 241-3700, $3

Noah's Garden: Restoring the Ecology of Our Own Back Yards by Sara Stein, 1995. This author completely breaks through the mysteries of gardening and shows us how we need to simply plant

with nature (i.e. plant native plants and plant them where they will thrive) instead of fighting against nature. $13.00

Planting Noah's Garden: Further Adventures in Backyard Ecology by Sara Stein, 1997. Furthers Stein's campaign to make lawns animated, full of disorder, life, and wildness. Packed with practical instructions for planning and maintaining a garden of one's own. Wonderful entertainment for anyone with a green thumb. $35

VERMONT NATURAL HISTORY

Wetland, Woodland, Wildland; A Guide to the Natural Communities of Vermont by Elizabeth H. Thompson & Eric R. Sorenson, 2000. A ground-breaking, comprehensive book on Vermont's natural communities, including descriptions of over 80 community types, their native species and places to visit. $20

The Nature of Vermont; Introduction and Guide to a New England Environment by Charles W. Johnson, 1980. An engaging narrative history. $17

Reading the Forested Landscape by Tom Wessels with Brian Cohen illustrator, 1997. Bill McKibben wrote, "Equal parts Sherlock Holmes and Aldo Leopold, it will help thousands of New Englanders answer the questions that come to mind when they walk this landscape of stone walls, stunted apple trees and towering hemlocks."$19

FIELD GUIDES

The Sibley Field Guide to Birds of Eastern North America by David Allen Sibley, 2003. A portable version of the Sibley guide, limited to Eastern birds; beautiful full-colored drawings and color-coded range maps. $20

A Field Guide to the Birds of Eastern and Central North America*, 5th edition (Peterson Field Guides)* by Roger Tory Peterson, 2002. A birding classic. Page numbers in *Birding by Ear's* booklet refer to the species descriptions in this book. $20

Birding by Ear: Eastern/Central North America (Peterson Field Guides) by Richard Walton and Robert Lawson, 1990. Teaches a unique system for distinguishing and remembering bird songs, using mnemonics and descriptive words. The authors have created learning groups of similar bird songs and clearly point out distinguishing characteristics. 3 CDs and guide booklet, $30

The Shrub Identification Book by George W. Symonds, 1963. Organized like the Tree Identification Books; a great tool for learning shrubs. $15