

Wetland, Woodland, Wildland

*A Guide to the
Natural Communities
of Vermont*



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**The publication of *Wetland, Woodland, Wildland*
was funded by:**

The Nature Conservancy
U.S. Environmental Protection Agency
Vermont Department of Environmental Conservation
Vermont Department of Fish and Wildlife
Vermont Department of Forests, Parks, and Recreation
Vermont Community Foundation
Barbara Dregallo
Warren and Barry King
National Wildlife Federation
Conservation and Research Foundation
The Friendship Fund
Bill and Claire Thompson
Nancy Wolfson
Central Vermont Audubon

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A Guide to the Natural Communities of Vermont

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Illustrated by

Libby Davidson, Betsy Brigham, and Darien McElwain

Published by

Vermont Department of Fish and Wildlife
and

The Nature Conservancy



Distributed by

University Press of New England
Hanover and London

Published by The Nature Conservancy and the Vermont Department
of Fish and Wildlife

Distributed by University Press of New England, One Court Street, Lebanon,
NH 03766

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of Fish and Wildlife

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Printed in the United States of America 5 4 3 2 1

ISBN: 1-58465-077-X

Library of Congress Card Number: 00-103493

Book design by Mirabile Design
Book formatting by Rachel Goldenberg
Icons and profile maps by Laura Maker
Printed by Queen City Printers Inc.



To our parents

*Bill and Claire Thompson
Allan and Edith Sorenson*

*who first showed us the beauty
and intricacy
of the natural world*



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Foreword

W*etland, Woodland, Wildland: A Guide to the Natural Communities of Vermont* is part of the Middlebury College Bicentennial Series in Environmental Studies, co-sponsored by Middlebury College and the University Press of New England. Each of the books in this series adopts a bioregional approach to environmental topics. Such an approach emphasizes the continuity between natural history and human history, and often seeks to illuminate such connections by focusing closely on the history and characteristics of particular landscapes. The inclusiveness of bioregionalism is a natural outgrowth of the complex environmental history of New England and the Adirondack Mountains. Wild nature and human cultures are intricately interwoven in this region, which although long-settled by humans has recently experienced a dramatic resurgence of forests and wildlife. The editors of the Middlebury Series believe that a healthy irony can enter into environmental discourse through study of this region's turbulent history and surprising present, and can perhaps illuminate a possible pathway for environmental recovery in other regions of the world. *Wetland, Woodland, Wildland* emphasizes an important component of our understanding of New England: a detailed accounting of the diversity of its natural communities. Traditional natural histories tend to emphasize only the species level of biological diversity, particularly the common species likely to be seen, such as birds, butterflies, or flowers. By this approach, however, important interactions and commonalities among species and the ways in which individuals are woven together into a diverse tapestry of life are missed. Part of this tapestry is the aggregation of species into natural communities, yet except for broad characterizations about communities, such as "evergreen forests" or "wetlands," they have rarely been described in much detail or in a way to allow a non-specialist to understand where they can be found or identified. Without this, meaningful connections between people and the places they live are difficult to achieve.

With *Wetland, Woodland, Wildland*, Thompson and Sorenson correct this deficiency and provide a rich understanding not only of what natural communities are, but their geographical diversity in this region both in space and time. This is important for more than just a detailed understanding of the natural history of Vermont or of what is at stake in efforts to conserve the region's biodiversity; the natural communities of this region have provided the foundation upon which its human cultures, from the time of first human settlement more than 10,000 years ago to the present, have been based. The forests, fields, and wetlands of Vermont have always been the bases for the resources used by the people here, and a true appreciation of this region's cultural history can only come from an appreciation of its natural communities.

From detailed descriptions of the eight biophysical regions of Vermont to descriptions of each upland and wetland community's characteristics and how they can be identified, this book seeks to make practical familiarity of the Vermont landscape available to everyone. It is such a familiarity with the landscape that allows a meaningful understanding of not only the region's past, but its possible futures.

Steve Trombulak
Middlebury College

Acknowledgements

This book is truly the result of a collaborative effort, involving many more people and agencies than just the two authors, The Nature Conservancy, and the Vermont Department of Fish and Wildlife.

We start by acknowledging the individuals at The Nature Conservancy and the Vermont Department of Fish and Wildlife who supported us in this effort. Chris Fichtel, at different times working for both the Department of Fish and Wildlife and The Nature Conservancy, stood staunchly behind the idea when it seemed impossible. At The Nature Conservancy, John Roe adopted the project and promoted its importance, both within The Nature Conservancy and outside it. Other Conservancy staff, including Maryke Gillis, Bob Klein, Susan Baker, Nancy Light, and Shannon Brady, contributed ideas and enthusiasm. At the Vermont Department of Fish and Wildlife, Bob Popp tirelessly supported the completion of the project. He and Everett Marshall shared their extensive personal knowledge of Vermont natural communities. Other Department staff have helped in many ways, including Linda Henzel, Steve Parren, Mark Ferguson, and John Hall. Commissioner Ron Regan's support of the project was critical to its final completion. Stephan Syz, Carl Pagel, and Alan Quackebush, all with the Water Quality Division of the Department of Environmental Conservation have provided substantial support to the wetlands portion of the project. Brian Stone of the Department of Forest, Parks, and Recreation has also been a consistent supporter of the project.

Many ecologists and naturalists have contributed to this work over the years by generously sharing their knowledge of the natural history, ecology, and botany of Vermont. Many of these people also contributed field data to the files of the Nongame and Natural Heritage Program, which formed the basis for our work. Among these ecologists are Brett Engstrom, Marc Lapin, Charlie Cogbill, Bob Popp, Everett Marshall, Chris Fichtel, Jerry Jenkins, Peter Zika, Kerry Woods, Diane Burbank, Ian Worley, Charles Johnson, Marc DesMeules, Hub Vogelmann, David Barrington, Cathy Paris, Jeff Parsons, and Bob Zarembo.

The classification presented here is part of a larger region-wide and national classification system developed by The Nature Conservancy. As part of this effort, we trade ideas regularly with our colleagues in the northeast, and we shamelessly present here the results of that trade, recognizing that specific ideas may have originated with someone else. Particularly influential to us have been ecologists working at the regional level, including Mark Anderson, Lesley Sneddon, Ken Metzler, and Tom Rawinski. Ecologists in closely adjacent states have also been influential, including Dan Sperduto, Carol Reshke, David Hunt, Greg Edinger, Sue Gawler, Andy Cutko, and Pat Swain.

The information presented in the Upland Forests section of the book represents, in part, the combined knowledge of the Vermont Natural Communities Working Group, an extraordinary group of foresters and ecologists who spent ten days together in the field in 1998, visiting forests in various stages of succession discussing what these forests might look like over time and how this might influence management. Staff from the Vermont Department of Forests, Parks, and Recreation and USDA Forest Service contributed large amounts of time in this effort. Bill Moulton of the Vermont Department of Forests, Parks,

and Recreation was especially instrumental in getting this effort off the ground, and Bill Leak of the USDA Forest Service provided many wise insights throughout the process. The group, and this book, are part of a bigger effort, the Vermont Land Classification Project, which aims over time to gather the data needed to understand habitat-vegetation relationships more fully. The collaborators on this project include The Nature Conservancy, Vermont Department of Fish and Wildlife, Vermont Department of Forests, Parks, and Recreation, USDA Forest Service, USDA Natural Resources Conservation Service, and the National Wildlife Federation.

A number of people provided specific pieces of information that we incorporated into the book. Thom Villars provided the basis for our section on soils. Information on animals that characterize natural community types was based largely on work by Chris Fichtel, Rich Chipman, Steve Parren, Chris Rimmer, Jim Andrews, Ned Swanberg, Mark Ferguson, Kim Royar, Bill Crenshaw, and Nat Shambaugh. Some of the information presented here was developed for the Vermont Biodiversity Project. We especially acknowledge the contributions of information and ideas from Dave Capen, Charles Ferree, Steve Trombulak, Ernie Buford, Larry Becker, and Marjorie Gale. Phil Girton's work for the Vermont Biodiversity Project provided the basis for Part Two, Biophysical Regions of Vermont. Lesley-Ann Dupigny-Giroux helped us with climatic data.

Aside from all the people who contributed knowledge, many others contributed their communication skills. A group of about 20 ecologists and land managers met early on to brainstorm a list of places to visit for each community in each biophysical region. This formed the basis for Appendix A. Ricky Battistoni and Debra Steinfeld took black-and-white photographs before we decided to go with full color. Ian Worley and Steve Robbins piloted us over Vermont to get a landscape perspective and take aerial photos. Barbara George and Orion Barber provided valuable publication and marketing ideas.

For editing and proofreading, we thank Gale Lawrence, who edited the entire manuscript and Cathy Kashanski, who proofread it. Rebecca Davison and Trude Lauf copy edited the book. Leif Richardson, with the help of Ann Turner, proofread the scientific names for accuracy.

Brett Engstrom, Marc Lapin, Bill Leak, Charles Cogbill, Chris Fichtel, John Roe, Bob Popp, Linda Henzel, Everett Marshall, Alan Quackenbush, and Cathy Kashanski reviewed substantial portions of the manuscript, and we thank them wholeheartedly. Thanks to Larry Becker, Marjorie Gale, Cathy Paris, George Springston, Megan O'Reilly, and Sonja Schmitz, who each reviewed sections of the draft.

We thank David Barrington and the University of Vermont's Pringle Herbarium for providing a peaceful and inspiring work space for Liz Thompson. And thanks to all the students at UVM who asked hard questions.

Linda Mirabile designed the book. We thank her for her artistry and her great patience.

Thanks to Charles Johnson for encouraging us in the project and providing an inspiring voice. We wish him a happy and productive retirement from his many years of service to the state.

Finally, we thank our families, Bill Drislane, Cathy Kashanski, Graham Sorenson, and Drew Sorenson, for their patience and support.

Liz Thompson and Eric Sorenson,
Spring 2000