

# **State Wildlife Action Plan Characterization: VERMONT**



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March 2008

## Introduction

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Vermont's landscape extends 9,250 square miles, from the cedar swamps of the calcium-rich Vermont Piedmont to the high peaks of the Southern Green Mountains. This small state's eight biophysical regions reflect the diversity of its wildlife and natural communities. These ecoregions are in large part defined by variations in the historic interplay between its geology, climate, and topography dating back more than 500 million years.

More recent demographic and land use patterns have had an equally significant influence on Vermont's landscape. In the early 1800's, most of Vermont's forests were cleared for agriculture, particularly for sheep farming. Since 1964, the state has lost roughly half of its farming acreage to development.<sup>1</sup> The fertile Champlain Valley is Vermont's most densely populated and fastest growing region, and also comprises the edge of the habitat range of many of the state's wildlife species.

From 2000 to 2006, Vermont's population increased by 2.5%, compared to an average rate of growth of 6.4% across the U.S.<sup>2</sup> Despite the state's slower than average growth rate, the Vermont Forum on Sprawl reports that the rate of development is 2.5 times the rate of population growth.<sup>3</sup> Increasingly, forest and habitat fragmentation resulting from the parcelization of land and the impact of roads and trails threaten the preservation of Vermont's rural and natural heritage, including its wildlife. Additional threats to wildlife include pollution and sedimentation, invasive species, climate change, and data gaps and information needs.<sup>4</sup>

Despite development pressures and these other threats to wildlife, there is room for optimism. Today, 78% of the state of Vermont is forested. The dominance of resource-related industries, including agriculture and forestry, provides opportunity to improve the management of lands in their undeveloped state and to strengthen efforts to enhance wildlife habitat. Recently,

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<sup>1</sup> Vermont Fish and Wildlife Department (VFWD). *Vermont's Wildlife Action Plan: Main Document*. (Waterbury, VT: November 22<sup>nd</sup>, 2005.) 2:7.

<sup>2</sup> US Census Bureau. State and County QuickFacts. <http://quickfacts.census.gov/gfd/states/50000.html> (February 8th, 2008).

<sup>3</sup> VFWD 2:7.

<sup>4</sup> VFWD 2:8.

the Vermont Fish and Wildlife Department (VFWD) has increased efforts to manage actively for early successional habitat on public lands. VFWD has also established a program to work with municipalities on how to better plan for wildlife conservation. At the same time, an increasing number of non-industrial landowners are beginning to manage their lands to enhance environmental benefits.

### *Overview of Plan Development*

Vermont's Wildlife Action Plan was designed to serve as a strategic guide for wildlife protection that can be used by actors throughout the state. Development of Vermont's Wildlife Action Plan began in January 2004 as a collaborative effort between VFWD and representatives of over 60 partner organizations and agencies. By May 2005 technical teams had completed the identification of species and key habitats and threats to species and habitats, and had developed and selected conservation actions to benefit SGCN. In January and February of 2005, the Conservation Strategy Review Team conducted their review of the plan. Natural Resources commissioners, conservation partners and the general public reviewed the Wildlife Action Plan from April through July of 2005. The plan was adopted in October 2005.

## **1. Identification of Species of Greatest Conservation Need (SGCN)**

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Vermont's process of identifying Species of Greatest Conservation Need (SGCN) began with a systematic review of all its known wildlife.<sup>5</sup> Through an iterative process of reaching out to key agencies and experts, VFWD and the Agency of Natural Resources Endangered Species Committee (ESC) organized six taxa-specific technical teams to conduct the species review for Vermont's Wildlife Action Plan.<sup>6</sup> The Species Teams focused on Birds, Fish, Reptiles & Amphibians, Invertebrates, Mammals and Plants.<sup>7</sup> In the end, the technical teams selected 144

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<sup>5</sup> VFWD 3:10.

<sup>6</sup> Jon Kart. Telephone interview with Nicole Lewis, April 11<sup>th</sup>, 2007. Ann Arbor, MI.

<sup>7</sup> Species Teams were provided with lists of species and supporting information developed by the Vermont Nongame and Natural Heritage Program (NNHP). Natureserve and Partners in Flight (PIF) also served as important resources in developing initial species lists (VFWD 3:10).

vertebrates, 192 invertebrates, and 577 plants as Vermont's SGCN.<sup>8</sup> Vermont was the only state identified in our study of the northeast that included plants in its list of significant, at-risk species.

Vermont's plan includes comprehensive species assessments for individual SGCN, found in plan Appendix A. The level of detail included in each assessment speaks to Vermont's success in incorporating sound natural resource-related science in the design of the state's wildlife conservation strategy. Each assessment includes an overarching conservation assessment, including species priority level for conservation; general distribution data based on observed occurrences throughout the state; a description of habitat and habitat preferences; and a discussion of current threats to the species, in which both direct threats to species and habitat-related threats are discussed separately. In addition, each assessment includes detailed discussion of research and monitoring needs and a prioritized list of recommended strategies to address conservation needs.

Species assessments constitute a large portion of the plan document and collectively serve as a significant resource for conservation practitioners and local landowners interested in learning more about particular species. The Natural Resource Conservation Service (NRCS) in Vermont has incorporated breeding bird survey information, in addition to other information from the plan, into its plan for the state's Wildlife Habitat Incentives Program (WHIP). NRCS also included information on grassland birds into technical documents and program information for its first at-risk species incentives under the Environmental Quality Incentives Program (EQIP).<sup>9</sup> In some instances, such as in the case of Audubon Vermont, the mere identification of SGCN and actions appropriate to protect them has helped conservation organizations to focus and further refine their own conservation strategies.<sup>10</sup>

For more information on SGCN, see Plan Chapters 3 and 4 and Appendix A.

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<sup>8</sup> VFWD 4:1. Reviewed species were assigned conservation priorities of high, medium or low. Species ranked medium and high constitute Vermont's Species of Greatest Conservation Need. High priority species include species that are rare, locally extirpated, exhibiting negative population trends, or whose survivability is immediately limited. Medium priority species were chosen using a consensus-based approach—these are species challenged by increased mortality and habitat loss but that may be locally abundant (VFWD 3:11).

<sup>9</sup> Alexander, Toby. Telephone interview with Nicole Lewis. October 12<sup>th</sup>, 2007. Ann Arbor, MI.

<sup>10</sup> Shallow, Jim. Telephone interview with Nicole Lewis. 14 November 2007. Ann Arbor, MI.

## 2. Identification of Key Habitat and Community Types

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The identification of Vermont's critical habitat began with a process of assigning SGCN to at least one of more than 100 communities, cultural habitats and/or landscapes. Technical teams then grouped the 100 categories into 24 major categories, adopting features from five vegetation and habitat classification systems to characterize community types.<sup>11</sup>

Categories used to describe Vermont's range of habitat types include landscape level communities such as northern hardwood forests, and terrestrial and wetland communities such as sedge meadows and marshes. The plan's habitat classification also designates habitat categories such as Lake Champlain and the Lower Connecticut River, to reflect the importance of particular natural systems to the state's wildlife.<sup>12</sup> Research conducted in Vermont and publications specific to Vermont were used to help characterize terrestrial vegetation and aquatic communities.<sup>13</sup> Information generated by the USDA Forest Service informed characterization of early successional forest communities.<sup>14</sup>

The plan includes conservation summaries for each of the 24 broad habitat categories, found in Appendix B. These include general descriptions of location, current and desired conditions, lists of associated SGCN, and priority problems impacting this category. Habitat summaries also include prioritized conservation strategies to address threats to habitat and a list of other plans and planning entities with significant interest in this area.

While Vermont's habitat assessments adequately characterize broad habitat categories, they provide limited detail on specific natural communities found throughout the state. This lack of specificity is considered by one conservation stakeholder to be one of its weaknesses. Its failure to address early successional woodlands as a separate habitat type under major threat in

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<sup>11</sup> VFWD 3:15.

<sup>12</sup> Vermont Fish and Wildlife Department (VFWD). *Vermont's Wildlife Action Plan: Appendices*. (Waterbury, VT: November 22<sup>nd</sup>, 2005.) Appendix B.

<sup>13</sup> For terrestrial vegetation, Thompson and Sorenson (2000). For aquatic communities, Langdon et al (1998).

<sup>14</sup> USDA Forest Service (2003). "Forest inventory and analysis national core field guide, volume 1." Eyre 1998, "Forest Cover Types of the United States" also informed this characterization.

the northeastern, and its cursory characterization of shrub habitat and associated species, have been cited as specific opportunities to improve future plan drafts.<sup>15</sup>

Similarly, Vermont's action plan falls short in providing geographic or spatial specificity with respect to habitat types. Vermont's plan does not include a map that illustrates the distribution of the landscape, community, habitat, or cover types described in the plan. According to stakeholders, this limits the plan's effectiveness as a tool for habitat conservation.<sup>16</sup> While data related to community distribution is available from the state to those who request it, a history of stakeholder infighting and strong opposition from private property interests and conservative state agencies have limited VFWD's ability to publish an ordained, conservation opportunity map as part of the Wildlife Action Plan.<sup>17</sup>

Vermont's Wildlife Action Plan applies a state-level framework for ecological regionalization to help demonstrate the statewide distribution of SGCN species. In this way, Vermont's regionalization provides a spatial context to help prioritize species conservation at a regional level, and thus assists in targeting the protection or restoration of specific natural areas. As stated in the plan, "...what may be a common species in one biophysical region may be rare in another, thus increasing the importance of conserving habitat for that species in the region in which it is rare."<sup>18</sup>

For more information about habitats, see Plan Chapter 4 and Appendix B.

### **3. Identification of Threats to Species and Habitats**

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For the purposes of the plan, Vermont defines a problem as "a force causing a negative impact at the species, population, habitat, and landscape levels".<sup>19</sup> The Wildlife Action Plan identifies the following problems as the most frequently occurring threats to Vermont's SGCN:

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<sup>15</sup> Alexander, Toby.

<sup>16</sup> Gay, George. Telephone interview with Nicole Lewis. October 29<sup>th</sup>, 2007. Ann Arbor, MI. Alexander, Toby.

<sup>17</sup> Gay, George.

<sup>18</sup> VFWD 2:4.

<sup>19</sup> VFWD C:1.

- Loss of habitat
- Impacts of roads and trails
- Pollution and sedimentation
- Invasive species
- Climate change
- Data gaps and information needs<sup>20</sup>

In order to characterize key threats to Vermont wildlife, species teams assigned each identified problem to one of 22 habitat related and non-habitat related problem categories. The ranking of habitat-related problems was done using four criteria: severity, scope, timing and reversibility.<sup>21</sup> Only those problems ranked as medium and high are included in the Wildlife Action Plan.

The plan's classification of conservation threats is based on categories developed by the U.S. Forest Service during its most recent revision of the Forest Plan for Green Mountain National Forest.<sup>22</sup> The 22 problem categories are not intended to be mutually exclusive or all-encompassing. At the same time, the plan does not clearly or systematically communicate the full range of threats to wildlife in Vermont. For example, in the body of the plan and in the appendices, many of the direct threats to wildlife and habitat in Vermont are buried in text or included only parenthetically to provide examples of the causes of indirect threats, or drivers of change, such as habitat fragmentation. For example, utility lines are mentioned in the plan as a direct threat to wildlife. However, a clear description of their impact on wildlife is not available.

In discussing its categorization of threats to wildlife, Vermont's plan states, "Clearly life is too complex to be stuffed into any one box."<sup>23</sup> Clearly, this is true. At the same time, beginning with a set of well-defined, commonly understood terms and clearly delineated threat categories could enable more collaborative wildlife planning both within Vermont and in partnership with other states. In addition, systematically highlighting direct threats themselves, rather than the impacts that these threats have on wildlife, can create a more accessible resource for

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<sup>20</sup> VFWD 2:8.

<sup>21</sup> VFWD Table 3-5.

<sup>22</sup> VFWD 4:9.

<sup>23</sup> Ibid.

conservation practitioners, local planners, and landowners that seek to identify threats occurring at a specific site. This approach could strengthen habitat and species assessments and lead to a more strategic prioritization of threats to address.

Establishing a common conservation dialect will become particularly important as the need for collaboration to achieve conservation goals increases and as the scales at which we plan expand. The classification of direct threats developed by the World Conservation Union (IUCN) and the Conservation Measures Partnership provides a strong example of a widely used categorization that could be useful to apply in Vermont's conservation planning.<sup>24</sup>

For more information about threats to wildlife in Vermont, see Chapter 4 and Appendix C. For a discussion of threats to particular species and habitat, see Appendices A and B.

## **4. Description of Conservation Actions for Species and Habitats**

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Each of the conservation actions identified in Vermont's Wildlife Action Plan was assigned to one of 27 categories falling within six major classes. Vermont used categories developed by the Conservation Measures Partnership as a means to standardize terminology among conservation practitioners.

On one level, Vermont's plan presents broad strategies, "so as not to constrain the selection of actions for implementing them."<sup>25</sup> At the same time, each species assessment and habitat summary found in Appendices A and B includes descriptions of actions falling under these broader strategies that are appropriate to reach specific conservation objectives. The vast majority of actions presented in habitat summaries are viewed as necessarily collaborative efforts in that nearly all strategies list more than one potential partner to implement the strategy.

The plan does not make the explicit connection between threats and actions. Because this document is intended to serve not only as Vermont Fish & Wildlife's Comprehensive Plan, but

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<sup>24</sup> The Conservation Measures Partnership. Unified Classification of Direct Threats. Version 1.0- June 2006. [http://www.conservationmeasures.org/CMP/Site\\_Page.cfm?PageID=32](http://www.conservationmeasures.org/CMP/Site_Page.cfm?PageID=32) (17 April 2007)

<sup>25</sup> VFWD 4:11.

also as a resource for private stewards and local planning agencies who may have limited conservation expertise, it is important that future drafts draw an explicit connection between threats and actions where appropriate.

The most common strategies proposed to alleviate problems impacting SGCN include conducting habitat restoration, providing education and technical assistance to landowner and land managers, providing financial and economic incentives and encouraging wildlife-compatible resource use.<sup>26</sup>

According to stakeholders who were involved in plan development and who are also involved in plan implementation, the strategies or actions in the plan provide a level of detail that has been useful in helping conservation groups to prioritize and further refine their own actions. In addition, actions in the plan have helped to elevate the profile of critical implementation strategies, such as providing technical assistance to local communities and private landowners and installing fish passage in impounded waterways.<sup>27</sup> Of course, the work of those agencies involved in implementing such strategies, such as Audubon Vermont and the Vermont Transportation Agency, has been critical to heightening awareness around these and other conservation needs. Plan implementation will be discussed to greater detail in following sections.

For general information on conservation strategies, see Appendix C. For strategies recommended to address concerns identified for particular species and habitats, see Appendices A and B.

## **5. Proposed Plans for Monitoring Species, Habitats and Conservation Actions**

Ongoing data collection, modeling, and analysis are necessary for species monitoring and for monitoring effectiveness of plan strategies. Baseline species distribution and abundance

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<sup>26</sup> VFWD xxvi-xxvii

<sup>27</sup> Alexander, Toby.

estimates in general have never been determined for the state of Vermont. Research and monitoring needs for each species are presented in the plan's species assessments.

The plan does not include a monitoring program or specify next steps to fill monitoring gaps. It does, however, provide descriptions of existing monitoring programs for each of the five animal taxa and introduces monitoring programs carried out by state agencies. According to the plan, VFWD intends to use the Vermont Monitoring Cooperative as a model for coordination of statewide SGCN monitoring. In addition to focusing on collaboration and coordination, Vermont's guiding philosophy to create a monitoring plan as outlined in the plan focuses largely on the need to establish meaningful baseline data, design biological indicators for SGCN, and embrace existing "citizen science."<sup>28</sup>

Vermont's plan explicitly recognizes the need to monitor program implementation and effectiveness, and appropriately addresses the challenges of monitoring. While the plan does not provide a strategy for developing a monitoring program, it does speak to the state's hope to integrate existing monitoring projects across organizations and to improve collaboration in monitoring overall. Performance measures to assess progress in implementing specific conservation strategies are included in the habitat summaries and, to a limited extent, are part of SGCN assessments. These measures collectively represent the beginning of what could be a strong monitoring program.

Recently, Vermont has created a Vermont Wildlife Action Plan Monitoring and Performance Reporting Team. In Fall 2007, the team completed its first draft of key indicators and targets or measures for all the state's species of greatest conservation need. The monitoring program in Vermont is still in its development phase.

According to the plan, "The Action Plan monitoring program will help identify areas of land and water within each biophysical region that provide the best prospects for conservation actions to benefit SGCN and their habitats. VFWD and partners can prioritize (though not limit) efforts on these 'Conservation Opportunity Areas' in order to achieve a greater likelihood of

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<sup>28</sup> VFWD 5:8.

success and to use limited conservation funds most efficiently.”<sup>29</sup> Unfortunately, initial efforts to develop an opportunity map for the plan were thwarted by the highly politicized nature of identifying critical conservation areas within a state with a high rate of private land ownership. At the same time, there is a growing recognition within VFWD that developing a conservation opportunity map is necessary to further conservation on-the ground.<sup>30</sup>

## 6. Procedures for Strategy Review

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Vermont’s Wildlife Action Plan will be reviewed on a 10-year cycle. This length of time between periods of review was selected to allow time for planning, implementation of actions, and monitoring that effectively detects results of the state’s conservation efforts.<sup>31</sup>

The plan does not identify conditions that will automatically trigger a review. However, financial tracking and reporting and project progress reports will serve to provide continual information that agencies and partners can use to gauge progress and adapt conservation and management practices in the interim periods. In addition, according to the plan, VFWD will develop a biannual report for agencies and stakeholders to review previous years’ efforts and develop goals for the coming year.<sup>32</sup>

VFWD has been lauded for his efforts to involve stakeholders not only in the initial review of the first plan draft, but also throughout the plan’s development. According to on stakeholder, VFWD was very good about taking people’s comments to heart and in providing detailed response to their concerns. This has helped to maintain effective dialogue between the Department and conservation partners.<sup>33</sup> Involving stakeholders substantively in revisions of future plan drafts will both improve the plan itself and help to strengthen the existing relationships between VFWD and stakeholders that are key to successful implementation.

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<sup>29</sup> VFWD 5:16.

<sup>30</sup> Kart, Jon. November 8<sup>th</sup>, 2007.

<sup>31</sup> VFWD 5:18.

<sup>32</sup> Ibid.

<sup>33</sup> Shallow, Jim. Telephone interview with Nicole Lewis. DATE. Ann Arbor, MI.

## 7. Coordination with Federal, State and Tribal Agencies

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Representatives of eight state and federal agencies served on action plan technical and coordinating teams. US Fish and Wildlife Service, US Forest Service, and Natural Resources Conservation Service staff all served on various plan development teams. In addition, individuals from these three agencies are active members of the team that helps select grant applications seeking State Wildlife Grant funding for implementation programs. In addition, the Plan lists the offices of two U.S. senators and two Vermont congressmen as conservation partners, though it does not specify the extent of their involvement.

State agency groups that served on plan development teams include the Department of Environmental Conservation, Department of Forests, Parks and Recreation, and Vermont's Agency of Transportation. Because wildlife conservation is farther from the center of its mission than the other state agencies involved, the Fish and Wildlife Agency considers the Agency of Transportation a particularly important collaborator in plan development, and views its involvement in plan implementation critical to achieving progress.<sup>34</sup>

The Endangered Species Committee (ESC), a standing committee of the Agency of Natural Resources, also acted as a partner to the process. Several members of the Endangered Species Committee served as species team members. ESC is supported by Scientific Advisory Groups (SAG) comprised of taxa-specific experts and includes representatives or staff from state and local agencies. SAG members served on species teams, as well.

Involvement of neighboring states in the development of Vermont's plan was informal and limited. Vermont's Action Plan Coordinator spoke regularly with Fish and Wildlife staff in New Hampshire and New York and less so with staff from other states, sharing ideas on how to address common issues and obstacles throughout the process. VFWD did not work with neighboring states to formally address the needs of common resources and habitat areas such as

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<sup>34</sup> Kart, Jon. October 5<sup>th</sup>, 2008.

the Connecticut River, shared by New Hampshire and Vermont, or the Champlain Valley, which spans the Vermont- New York divide.<sup>35</sup>

County and local agencies were involved in plan development to a lesser degree, primarily through two entities. One representative from the Association of Vermont Conservation Commissions (AVCC) was very active on one of the planning teams. AVCC is a non-profit whose mission is “to build the effectiveness of conservation commissions and community groups working to sustain their natural and cultural resources.”<sup>36</sup> To a lesser extent, Vermont’s regional planning commissions were involved; while they accepted information related to plan development and often affirmed the efforts of the planning groups, but did not provide frequent, substantive feedback.<sup>37</sup>

## **8. Public Participation**

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Vermont’s efforts to engage outside stakeholders began from the perspective that the Wildlife Action Plan had to be not just a department plan, but a plan for all entities working in the states. Based on the range of groups involved as conservation partners, a diversity of interests were targeted to participate in the planning process. Of the 66 listed conservation partners, the majority are environmental organizations, conservation education organizations, and sportsman groups. Partners identified in the plan also include land trusts, recreation groups, energy, forest products and recreation industry groups, grass-roots associations and farm organizations.

The sense of ownership of the plan among stakeholders is a large reason for the plan’s relative success to date. Vermont involved stakeholders and partners as members of all of its planning teams, both in the research and strategy development phases of the planning process. As members of the Steering Committee, conservation partners provided guidance and recommendations related to process. Partners nominated expert staff members to sit on technical teams. The nature of participation included sharing and analyzing data to determine priority

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<sup>35</sup> Ibid.

<sup>36</sup> Vermont Association of Conservation Committees. <http://www.avccvt.org/> (Accessed November 17<sup>th</sup>, 2007).

<sup>37</sup> Kart, Jon.. October 5<sup>th</sup>, 2007.

species and key threats, recommending and developing conservation strategies, and plan review.<sup>38</sup>

Since VFWD believes in no way that the agency can implement the plan alone, the meaningful involvement of stakeholders is a critically important component of their plan. According to VFWD, only a very few conservation partners simply lent their name to the process.<sup>39</sup>

Organizations that contributed significantly to plan development include Audubon Vermont, Vermont Federation of Sportsman, Friends of Lewis Creek, Vermont Institute of Natural Science, the Nature Conservancy, and the National Wildlife Federation. Vermont's universities also played a critical role in lending the results of scientific and technical research and in providing direction in the design of conservation actions.<sup>40</sup>

Vermont's public outreach followed guidelines developed by the International Association of Public Participation. The general public was kept informed through two department newsletters, one of which was created especially for the purpose of sharing news about the Wildlife Action Plan.<sup>41</sup> VFWD created an action plan website, posted updates to listserves, and utilized their limited media coverage to keep interested members of the public knowledgeable of the process. Vermont residents were also invited to participate in public hearings and to provide comment on the final plan draft during the period of review.

Despite such efforts to involve general members of the public, the plan development process, according to some, did not engender the level of citizen buy-in that is required to implement a strategy as far-reaching as protecting the state's wildlife and its habitat. According to one stakeholder, the plan "didn't have that real classic, crisp connection to the people at the development stage. I think a way to have done that would have been to engage towns and local

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<sup>38</sup> VFWD

<sup>39</sup> Kart, Jon. April 11<sup>th</sup>, 2007.

<sup>40</sup> Kart, Jon. October 5<sup>th</sup>, 2007.

<sup>41</sup> Three issues of Fish and Wildlife Conservation News were distributed over the course of the planning process.

governing and planning entities in the development process because that's how this is going to get implemented at the local level.<sup>42</sup>”

## Implementation

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### *Overview*

Vermont's wildlife action planning process is the state's first comprehensive wildlife planning effort of its kind. The plan and those who support it have successfully elevated the profile of non-game species in a state whose culture is in part defined by a rich outdoor sporting tradition and a parallel dedication to the preservation of their natural heritage and sustainable management of game species. Key conservation priorities, such as forming partnerships to address landscape-level issues or providing technical assistance to private landowners, were beginning to take hold before development of the plan.<sup>43</sup> However, the science and detail provided in the action plan has provided clear direction for conservationists that embrace these strategies.

Since the plan's development, no significant state-level political changes have resulted in great strides in plan implementation, nor have state politics resulted in major setbacks. However, the recent change in the match requirement for State Wildlife Grant funds from 25% to 50% has and will continue to negatively impact VFWD's ability to attract project applications or implement quality programs themselves.

Environmental changes such as recently emerging invasive species and continuing market-driven development pose new and enduring challenges to wildlife conservation in Vermont. The presence of the paradoxical single-cell algae,<sup>44</sup> didymo (*Didymosphenia geminata*), has become a conspicuous problem in Vermont only in the past few months. Didymo has created significant

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<sup>42</sup> Gay, George. Personal communication, October 29<sup>th</sup>, 2007.

<sup>43</sup> Shallow, Jim.

<sup>44</sup> Velasquez-Manoff, Moises. "Mysterious Alga Threatens Rivers." CS Monitor. March 1<sup>st</sup>, 2007. <http://www.csmonitor.com/2007/0301/p13s01-sten.html> (October 20<sup>th</sup>, 2007).

disturbance conditions on a couple of Vermont's rivers.<sup>45</sup> In the meantime, growth in the Champlain Valley continues to threaten now rare clayplain and floodplain forests in the region, as well as federally listed endangered species such as the Indiana bat.

While Vermont's Wildlife Action Plan does not include a well-developed monitoring strategy, Vermont has recently created a Vermont Wildlife Action Plan Monitoring and Performance Reporting Team. In Fall 2007, the Team completed its first draft of key indicators and targets or measures for all the state's species of greatest conservation need. The monitoring program in Vermont is still in its development phase and they plan to run test reports for indicators before developing a report for administrative and public review. While no changes have been made to the plan to date, future plan drafts will benefit from the performance reporting team's findings.<sup>46</sup>

## **Who is Involved and What are They Doing?**

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Vermont's plan has helped both to affirm and to justify the focus and strategic direction of many conservation organizations. At the same time, the plan is working to create a common dialect for discussing wildlife conservation and has helped conservationists better articulate their projects and priorities to the state and to other potential funders. Conservationists throughout the state have begun to adopt language used in the plan. Terms such as species of greatest conservation need, habitat fragmentation and technical assistance are becoming more widely used among stakeholders and interest groups. Federal agencies and nationally affiliated organizations such as NRCS and the Nature Conservancy, as well as local groups such as those applying for funds under the Forest Legacy program, cite the plan in program material and grant applications.<sup>47</sup> In this sense, the plan has helped strengthen communication and dialogue that surrounds habitat conservation and restoration for non-game species protection.

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<sup>45</sup> Kart, Jon. 5 October 2007.

<sup>46</sup> Ibid.

<sup>47</sup> Shallow, Jim.

## The Wildlife Partnership

In September 2006, almost a year after adoption of the plan, the Northern Forest Alliance and its partners launched the Wildlife Partnership. The Wildlife Partnership's goal is to advocate for adequate funding for fish and wildlife conservation as carried out by the Department of Fish and Wildlife, including implementation of the Wildlife Action Plan. The partnership includes over 50 organizations and constitutes a diverse group that, among many others, includes the National Wildlife Federation, the Vermont Federation of Sportsman, Trout Unlimited, Vermont Natural Resources Council, National Wild Turkey Federation, The Nature Conservancy, and Trust for Public Lands.<sup>48</sup> The Wildlife Partnership's current campaign includes a legislative component, an outreach component, and a media component. Currently, the coalition is lobbying the public and Governor to dedicate 1/8<sup>th</sup> of 1% of state sales tax directly to VFWD's budget- a legislatively mandated appropriation so that VFWD would no longer have to compete with all other state agencies for an appropriation from the general fund.<sup>49</sup>

## Natural Resources Conservation Service

NRCS has used information specific to Vermont's priority species and conservation needs found in the plan to help guide management

### **The Politics of Mapping**

For many conservation groups, a spatially explicit depiction of Vermont's key habitats is a necessary tool for plan implementation, and a central component of the state's wildlife strategy that is missing. Others believe that mapping key habitat areas will bring heightened focus to properties falling within those areas, threatening privacy and autonomy over the management of privately owned lands. While stakeholders and VFWD worked well together through the initial stages of plan development, momentum around plan development broke down when discussion turned to the need to create a conservation opportunity map.

Since the plan's publication, implementation has slowly moved forward with the recognition that the positive impact that Vermont's Action Plan will have on the landscape is contingent upon the collaboration of stakeholder groups to accomplish state conservation goals, regardless of whether an opportunity map is available to guide their efforts. Despite a renewed commitment on the part of stakeholder groups to move forward with Plan implementation, both the lack of an opportunity map and politicization around discussions of mapping habitat in Vermont will continue to pose implementation challenges. Recent discussions within VFWD address this concern and the need to create a map. However, doing so will require the buy-in and participation of plan stakeholders and Vermont's citizens.

<sup>48</sup> In addition to some of the 'usual suspects,' the Wildlife Partnership includes Burlington Electric, a large landholder in the Champlain Valley; traditional hook and bullet groups such as Vermont Trappers Association and Vermont Bear Hounds Association; non-consumptive user groups including Confederated Garden Clubs of Vermont; and small industry such as Isis, a women's outdoor clothing manufacturer.

<sup>49</sup> Gay, George.

efforts under farm bill programs, most notably the Wildlife Habitat Incentives Program (WHIP). In this way, NRCS has been able to better align their priorities with those identified in the action plan. The Action Plan has also been a useful resource in helping to refine land management practices under farm bill. Toby Alexander, NRCS biologist, relied heavily on Vermont's Action Plan to develop WHIP's Management Plan, folding significant portions of the Plan directly into WHIP's Plan.<sup>50</sup> He has also used parts of the Action Plan to develop program information, technical documents and job fact sheets for WHIP and other programs.

With an annual budget of at least one million dollars, WHIP is the primary funder of private lands programs in the state. In helping NRCS to prioritize their actions based on Vermont's priorities, and providing guidance for improving management practices that directly benefit Vermont's SGCN, the plan is having a positive impact with respect to how private land is managed for wildlife.

Recently, NRCS introduced its first series of incentives for at-risk species protection under Environmental Quality Incentives Program (EQIP) and used plan information related to grassland bird species and habitat to develop program materials and practices. While the plan itself was not the impetus for creating these new incentives, the science and the strategies included in the plan have helped NRCS expand their efforts to assist landowners in managing lands for better habitat protection for species of greatest conservation need.<sup>51</sup>

### Audubon Vermont

Audubon Vermont Audubon uses the Wildlife Action Plan in their annual planning process to help them prioritize conservation actions for the next fiscal year. The plan's discussion of recommended actions at the landscape level has helped them to think about how to partner with other groups whose work is similar and who, in many ways, are working to achieve the same end but who are not necessarily focused on birds.<sup>52</sup>

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<sup>50</sup> Alexander, Toby. Telephone Interview with Nicole Lewis. October 12<sup>th</sup>, 2007. Ann Arbor, MI.

<sup>51</sup> Alexander, Toby.

<sup>52</sup> Shallow, Jim.

With respect to implementation of plan strategies, Audubon is investing heavily in providing information and technical assistance to towns and landowners in specific parts of the state identified as priority sites for forest-breeding birds. Local government assistance efforts include conducting habitat assessments of town forests so town planners have a better understanding of the role that municipal public lands can play for wildlife.<sup>53</sup> Providing technical assistance to landowners and government agencies to maintain and enhance habitat is a priority strategy identified to address floodplain forests and most other habitat community types highlighted in the plan.<sup>54</sup> Influencing local planning and zoning is a closely related plan strategy that provides particular promise for habitat conservation and restoration.

In addition to helping Audubon set priorities for action, the plan is an important reference for Audubon when thinking about the species that want to address. While Audubon does not focus exclusively on species of greatest conservation need, the plan's detailed species assessments provide information for the many SGCN that Audubon does focus on. This information helps Audubon in its education and outreach efforts as well as in its process of prioritizing conservation strategies.<sup>55</sup>

### New Partners in Implementation

Since adoption of the Wildlife Action Plan, new groups have emerged to help implement conservation strategies. The Orange County Headwaters Project and Northern Woodlands Magazine are two examples.<sup>56</sup>

The Orange County Headwaters Project is a collaborative effort involving multiple landowners in the towns of Washington & Corinth. This project will conserve over 3000 acres of critical land in the Upper Valley of Vermont, in part through the donation of private development rights to the Vermont Land Trust or the Upper Valley Land Trust. This Forest Legacy project will preserve land within the Connecticut River watershed whose conservation is critical to the long-term protection of water quality. The Connecticut River and its tributaries is an aquatic system that the Wildlife Action Plan explicitly recognizes key wildlife habitat. A

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<sup>53</sup> Ibid.

<sup>54</sup> See Appendix C of Vermont's Wildlife Action Plan

<sup>55</sup> Shallow, Jim.

<sup>56</sup> Kart, Jon. October 5h, 2007.

primary focus of the Orange County Headwaters project is also to continue sustainable forest management for timber and maple sugar production in areas actively managed for production.<sup>57</sup>

The mission of Northern Woodlands Magazine is “to encourage a culture of forest stewardship in the Northeast by increasing understanding of and appreciation for the natural wonders, economic productivity, and ecological integrity of the region's forests.”<sup>58</sup> As a new partner in Plan implementation, Northern Woodlands is working with VFWD on a project called The Place You Call Home (TPYCH). Under TPYCH, VFWD and Northern Woodlands are developing information and conservation tools accessible to the unskilled landowner in order that they can better manage their lands and positively impact the populations of many SGCN. In addition, TPYCH will help partner landowners with public and private natural resource professionals, so that these professionals will have positive impact on significantly more acreage.<sup>59</sup>

## **How Has Funding for Non-Game Wildlife Changed?**

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Two years have passed since the plan's adoption, and VFWD has been able to move away from using State Wildlife Grant (SWG) funds for planning projects to using most SWG money for implementation projects. According to VFWD, the Department is making more SWG dollars available to partner organizations for projects than it has in the past, and so more people are now working on implementing strategies identified in the action plan than there were previously. At the same time, stakeholders cite institutional resistance within the Department to more widely distribute SWG funds among outside organizations as a barrier to their involvement in implementation.<sup>60</sup> This resistance, and the general lack of available funding, clearly poses a challenge to plan implementation.

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<sup>57</sup> “Northern Forest Legacy Project” <http://www.outdoors.org/conservation/landprotection/northern-forest-2006.cfm> (November 16th, 2007)

<sup>58</sup> Northern Woodlands online. [http://www.northernwoodlands.com/editorial\\_mission.php](http://www.northernwoodlands.com/editorial_mission.php) (November 16<sup>th</sup>, 2007)

<sup>59</sup> Kart, Jon. Personal Correspondence. February 25<sup>th</sup>, 2008.

<sup>60</sup> Shallow, Jim.

Despite these noted challenges to implementation, SWG has helped to leverage additional conservation funding from a variety of non-profit organizations. Collectively, non-profits have put up a match for \$300,000 worth of SWG projects since the plan was completed. Examples of ways that SWG is being used include acquisition of conservation easements.<sup>61</sup> In some instances, the state is dedicating SWG money to pick up where the action plan left off. For example, VFWD granted SWG dollars to the Nongame and Natural Heritage Program to map certain blocks of contiguous forest, which will help to identify areas of potential habitat based on perceived opportunities to protect or restore broader habitat areas and connect forest patches to create potential wildlife corridors.<sup>62</sup>

## How has the Agency Changed?

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Few notable changes within VFWD have occurred as a result of the plan itself. Perhaps the most notable change is simply having a wildlife biologist on staff to coordinate its implementation. Hiring a biologist to coordinate the Community Wildlife Program is another major recent change that has greatly improved the Department's capacity for conducting community-based education and outreach related to the plan.

During a recent internal planning workshop, VFWD made the decision to take a more hands-on approach to addressing the challenge of inadequate

### ***Linking Wildlife Conservation to Local Land Use Planning: Vermont's Community Wildlife Program***

Vermont's Community Wildlife Program has been hailed as a success by Vermont Fish and Wildlife Department staff and numerous plan stakeholders. This program has the potential to play a significant role in raising citizen consciousness with respect to wildlife. In 2006, VFWD hired a biologist to work with municipalities and town planners throughout the state to provide technical assistance to communities to help them better identify and conserve habitat. His duties include everything from conducting on-the-ground surveys of species occurrence and critical habitat areas to helping town planners develop zoning language for stronger wildlife protection.

Outreach under this program has also served as an important point of entry into local communities for other programs and organizations that provide technical assistance to private landowners, including Vermont Audubon and the state Landowner Incentive Program. Since the majority of land use decisions occur at the local level, programs such as Vermont's Community Wildlife Program are critical to accelerating habitat conservation, particularly in the northeast, where private land ownership rates are so high. Wildlife protection in states that have granted constitutional or legislative home rule authority to their municipalities, stand to benefit from instituting a similar program.

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<sup>61</sup> Kart, Jon. October 5<sup>th</sup>, 2007.

<sup>62</sup> Shallow, Jim.

Department staffing. The Department has identified key areas in which additional work is needed and plans to present the administration with a proposal of their needs. These goals for improvement include strengthening technical assistance through the Community Wildlife Program, heightening regulatory and policy development at the state level, and increasing interagency cooperation and VFWD's capacity to address impacts of climate change and transportation on wildlife and habitat. Without dedicating new staff positions, these are the pressing needs that the Department simply cannot achieve.<sup>63</sup>

It is in this planning context that the state administration has recently sent out a message to employees stating that it plans to cut as many as 400 state jobs beginning in 2008. Given the challenge of further developing internal capacity to implement plan recommendations, the Department recognizes the need to use SWG funds to create jobs at other organizations in order to provide additional technical assistance to communities, agencies and landowners, to work towards translating sound science into sound policy, and to improve or expand current land acquisition efforts. The increase in the state match for SWG funds to 50% poses a challenge to doing so, but VFWD believes it is still possible.<sup>64</sup>

VFWD and key partners such as the Wildlife Partnership are hopeful that they can find a state legislator who will champion a bill to legislate a permanent increase in Department funding in order to fill shortfalls. Last year, H.B. 543 was passed out of Vermont's Fish, Wildlife and Water Resources Committee following the February 2007 release of a Legislative Task Force Report recommending that the state dedicate 1/8<sup>th</sup> of 1% of its sales tax towards VFWD.<sup>65</sup> The bill did not make it to full committee review but it does indicate that there is action at the state level in support of the Department and its goals. Vermont's state legislature reconvenes in January 2008.

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<sup>63</sup> Kart, Jon. November 8<sup>th</sup>, 2007.

<sup>64</sup> Ibid.

<sup>65</sup> Gay, George.

## Conclusion

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Key themes for improving the Wildlife Action Plan and accelerating plan implementation emerged from stakeholder interviews. First and foremost, additional resources are needed to improve the capacity of both the Vermont Fish and Wildlife Department and outside organizations to implement Vermont's Wildlife Action Plan. VFWD can help to accomplish this by continuing to make SWG funds available to conservation groups with a proven track record in public outreach and mediation, in providing technical assistance to communities and landowners, and in translating science into improved habitat conditions for rare, threatened, and endangered species.

The efforts of conservationists throughout the state stand to benefit from the creation of a conservation opportunity areas map. The Wildlife Action Plan itself does not provide known habitat and species occurrence data with the geographic or spatial specificity that is required to prioritize investments in conservation. However, this is not to say that such information is not available. VFWD's Community Wildlife Program provides all towns it assists with such information. In addition, the Department frequently provides habitat and species maps to those who request them. Despite all of this, stakeholders feel that truly effective and efficient wildlife conservation planning requires that a map be part of Vermont's plan. VFWD approval of such an endeavor and dedication of SWG funds to finance the map's creation are the next steps to meeting this expectation.

In the face of limited and dwindling state resources, VFWD and conservation partners must continue to leverage private and non-traditional resources and partner with non-traditional groups for the benefit of wildlife. In terms of motivating private investment, one conservation stakeholder noted, "I know from experience that when government money is put out there as a match that private money will come in to meet that need." The Agency of Transportation's involvement in wildlife conservation and the Landowner Incentive Program's use of state funds dedicated for water quality protection provide strong precedents for the ability to leverage non-

traditional public resources as well. These successes and others serve as proof that talent and resources are available to those who think creatively and pragmatically about changing the traditional conservation paradigm.