

State Wildlife Action Plan Characterization: NEW HAMPSHIRE



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Introduction

Historically known for its extensive forest cover and granite mountains, New Hampshire is now distinguished as the fastest growing state in the Northeast. The state's population grew at twice the rate of the rest of New England between 1990 and 2004, and is expected to grow more than 28% between 2000 and 2025.¹ As forests, agricultural lands and wetlands are developed with roads, homes and businesses, wildlife species face shrinking and fragmented habitat. Loss of open space escalates the indirect impact of other wildlife threats, such as nonpoint source pollution and climate change. Despite increasing human pressures, New Hampshire remains home to a wealth of natural diversity, including the White Mountains, more than a million hectares of pine forest communities, 40,000 miles of rivers, hundreds of lakes and ponds, and an 18-mile coastline of salt marshes and sand dunes.² Wildlife associated recreation is a significant component of New Hampshire's economy. Wildlife watching activities alone account for more than \$300 million in state revenue each year, exceeding total revenues from hunting and fishing.³

In 1988, the New Hampshire Fish and Game (NHFG) expanded its mandate to protect all state wildlife, not only game and endangered species.⁴ The agency has partnered extensively with related agencies and non-profit organizations; however, NHFG acknowledges that it has “never had the resources necessary to comprehensively address the challenges facing all the state's wildlife and habitats.”⁵ In October 2005, in order to continue to qualify for federal State Wildlife Grant funds, New Hampshire completed a State Wildlife Action Plan (SWAP).⁶

According to the plan itself, the SWAP is “the most comprehensive wildlife assessment ever completed in New Hampshire.”⁷ The plan includes condition analyses for all species and habitats of conservation need in NH, an assessment of statewide wildlife risks and strategies to address these threats. Representatives from NHFG and external organizations agree that the SWAP is a strategic step forward in protecting New Hampshire's wildlife.

¹ Society for the Protection of New Hampshire Forests. “New Hampshire's Changing Landscape 2005.” (Concord, NH: Society for the Protection of New Hampshire Forests, 2005),2.

² “New Hampshire.” *The World Almanac Book of Facts*. 2006. New York, NY.

³ New Hampshire Fish and Game Department. 2005. New Hampshire Wildlife Action Plan. (NH WA). XVI

⁴ NH WAP. XI

⁵ NH WAP. XII

⁶ Within statewide communications, New Hampshire's State Wildlife Action Plan is referred to as the WAP. Here SWAP is used to show a consistency with plans from other states.

⁷ NH WAP. IX.

The following pages provide a summary of the plan's development, contents and implementation through Fall 2007. The paper begins with a review of the plan contents corresponding to the eight congressionally mandated elements. Except where otherwise stated, information on plan contents and development comes exclusively from the published plan itself. The paper continues with a discussion of post-publication plan implementation, detailing activities that have been carried out as a result of the plan, and addressing the plan's effect on NHFG and external partners. This section draws on information from interviews with NHFG professionals and non-agency stakeholders. Finally, the paper concludes with a brief discussion of the transformative effect of the plan on the state's approach to wildlife conservation.

Overview of Plan Development

New Hampshire Fish and Game (NHFG) led development of the New Hampshire Wildlife Action Plan (SWAP), called a Comprehensive Wildlife Conservation Strategy (CWCS) in early documents. The SWAP Core Team included two co-coordinators, the NHFG Nongame & Endangered Species Program Coordinator and the Wildlife Extension Specialist from the University of New Hampshire Cooperative Extension.⁸ The Core Team also included three NHFG biologists, the NHFG conservation science director, and science communications consultants that designed the plan layout and edited work from the plan's many authors.⁹ Thirty-four wildlife experts from 10 government agencies, conservation organizations, and academic institutions contributed to the plan, writing pieces directly.¹⁰ Many others served in an advisory capacity.¹¹ In addition to the Core Team, a Public Participation Team was created to facilitate broader stakeholder and public participation in the plan's development.¹²

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

To identify and prioritize the species of greatest conservation need (SGCN), wildlife experts reviewed the following pre-existing sources:¹³

⁸ NH WAP. VIII.

⁹ Ibid.

¹⁰ NH WAP. XI.

¹¹ NHFG Representative. Telephone interview with author, October 1, 2007. Ann Arbor, MI.

¹² NH WAP. VIII.

¹³ NH WAP. 2-1.

- All New Hampshire Species lists, including non-game, game, fish
- Endangered and Threatened Species lists, including state and federal lists
- Species tracked by the New Hampshire Natural Heritage Bureau (NHNHB) or listed in the Animal Tracking List
- Species of Regional Concern, as identified by the Northeast Wildlife Diversity Technical Committee
- Living Legacy Project and New Hampshire Ecological Reserve System Project expert panel results
- Taxonomic priority lists, including birds, invertebrates

Experts determined species state status based on distribution and abundance in the state and region, status and risk to state habitat, vulnerability due to life-history traits and state, regional and global population trends.¹⁴ More than 15,000 species were considered.¹⁵

One hundred twenty-three species of greatest conservation need (SGCN) were identified.¹⁶ Although final species prioritization was not included in the plan itself, a peer-reviewed risk assessment of each species ultimately led to the identification of 28 species of critical concern, 40 species of serious concern, 43 species of moderate concern and 11 species of low concern.¹⁷ According to an agency representative, some SGCN were included in the plan to provide historical perspective but may not have feasible conservation or restoration opportunities.¹⁸

A detailed species profile was completed for each of the SGCN. The profiles vary in length from 2 to 11 pages, expanding on the following information:

- | | |
|--|---|
| • Name of species | • Species and habitat threat assessment |
| • Federal/State listed status | • Conservation actions |
| • Distribution and habitat information | • References |
| • Species/Habitat condition | (Appendix A) |

¹⁴ NH WAP. 2-3.

¹⁵ NH WAP 2

¹⁶ Kanter, John. 31 July 2006. "Prioritization: What's next for New Hampshire: Seventy-two strategies, 123 species and \$600,000." State Wildlife Action Plans One Year Later Meeting. PowerPoint Presentation.

¹⁷ Ibid.

¹⁸ NHFG Representative. October 1, 2007.

The plan did not directly address the use of indicator species (keystone, flagship, or umbrella) or biological diversity indicators.

As a result of this species assessment process, NHFG is updating the state list of threatened and endangered species.¹⁹ For more on the status of this project, see the implementation section of this paper.

More information on selection of species is available in Chapter 2 and Appendix A.

2. Identification of Key Habitat and Community Types

To identify and analyze key habitats, the agency developed new classification systems and spatial tools. Drawing from NHHB classification, NHFG biologists and external experts created a spatial hierarchy ranging from large-scale habitats to small-scale natural communities.²⁰ Additionally, NHFG contracted with The Nature Conservancy to develop a state aquatic classification system, using major watershed groupings to represent large-scale aquatic habitats, and lakes to provide additional local context.²¹ A statewide aquatic classification did not exist prior to the plan.²²

Prior to assessing NH habitat conditions, location maps for each forest matrix, terrestrial and wetland habitat and watershed were created in GIS.²³ Data on the quantity and distribution of habitats was sometimes incomplete, so predictive models were generated through multiple methods.²⁴ These basic habitat location maps were not available for public distribution prior to plan publication.²⁵ A representative of an NH nongovernmental organization (NGO) remarked that simply having publicly accessible maps of different NH habitats has been a huge step forward, both in prioritizing land protection efforts within his organization and in communicating with the public.²⁶

Next, a threat assessment was conducted for habitat polygons. Each habitat was assigned a relative condition based on information on landscape context, wildlife diversity, recreational

¹⁹ Ibid.

²⁰ NH WAP. 3-2.

²¹ Ibid.

²² Ibid.

²³ NH WAP 3-1.

²⁴ Ibid.

²⁵ NH Conservation NGO Representative B. Telephone interview with author, October 10, 2007. Ann Arbor, MI.

²⁶ Ibid.

factors, development and land use factors, and air and water quality factors.²⁷ Patterns of biodiversity were compared across scales: unfragmented forest blocks, large and medium-scale habitats, and natural communities, lakes and wildlife populations.²⁸ The relative condition index was used to compare habitat polygons and habitat types that could be targeted for protection.²⁹

A detailed profile was completed for each key habitat.³⁰ The profiles vary in length, expanding on the same information categories used in the species profiles, plus an explanation of associated species for each habitat. (Appendix B)

More extensive habitat condition maps and maps of conservation focus areas were made available after the plan's publication.³¹ See the implementation section of this paper for an update on post-publication map developments.

More information on habitats of concern is available in Chapters 2, 3 and Appendix B.

3. Identification of Threats to Species and Habitats

NFGH compiled a list of 18 challenges to state habitat and wildlife conservation.³² Expert panels identified the events that lead each factor to become a problem for wildlife.³³ By focusing on the underlying series of events that creates threats, rather than the symptoms or results of threats themselves, experts aimed to undermine the “exposure pathways” that bring the threats to fruition.³⁴ They justified that disrupting threat development can be more effective and less expensive than managing the symptoms of individual threats.³⁵

After a full list of risk factors was complete, factors were scored and ranked on magnitude (through assessment of two variables: scope and severity) and urgency (through three variables: timing, likelihood and information reliability).³⁶ Overall ranks were computed for

²⁷ NH WAP. 3-2.

²⁸ NH WAP. 3-5.

²⁹ NH WAP. 3-6.

³⁰ NH WAP. Appendix B.

³¹ New Hampshire Fish and Game. Wildlife Action Plan Habitat Maps CD. February 2007.

³² NH WAP. 4-3.

³³ Ibid.

³⁴ NH WAP. 4-2.

³⁵ Ibid.

³⁶ NH WAP. 4-3.

each risk factor, and then organized into broad categories in a database.³⁷ This final list of challenging issues was reviewed by wildlife biologists and edited internally.³⁸

In addition to ranking risk factors, cumulative effects of exposure pathways on species and habitats were analyzed.³⁹ This led to the creation of species and habitat risk groups and allowed for prioritization of species and habitats of greatest conservation concern.⁴⁰

Top 10 risk factors were calculated for four categories: (1) cumulative risk to habitats, (2) cumulative risk to wildlife, (3) high-intensity risks to habitats, and (4) high intensity risks to wildlife.⁴¹ Development was seen as the biggest risk factor overall, topping the list of the first three risk categories and placing second on the last.⁴² Population scarcity (of wildlife), recreation, transportation infrastructure, and predation and herbivory also scored high across the risk lists.⁴³ Risk assessment scores for fish were not complete at the time of plan publication.⁴⁴

Unlike other states, there was no apparent scaling of threats by a national, regional, state or local hierarchy. One stakeholder noted that the agency's focus on in-state species threats did not place enough emphasis on negative impacts to species that spend part of their life history beyond state boundaries, acknowledging that this was beyond the scope of the agency's mission.⁴⁵

Detailed profiles of each threat were included in the plan. Each threat profile includes a definition of the threat, an expert assessment, discussion of known exposure pathways, research needs and literature cited. (CHAPTER 4)

Climate change implications for species and habitats were addressed in this chapter. Climate change discussion included a 4-page threat profile, and references in individual species and habitat profiles.⁴⁶ Although national SWAP characterization studies have paid particular interest to coverage of climate change discussion in the plans, a NH plan contributor cautioned against placing too much emphasis on climate change mitigation and adaptation strategies. "The biggest threat we are facing is the increasing paving of New Hampshire, and that's going to

³⁷ Ibid.

³⁸ Ibid.

³⁹ Ibid.

⁴⁰ Ibid.

⁴¹ NH WAP. 4-5.

⁴² Ibid.

⁴³ Ibid.

⁴⁴ Ibid.

⁴⁵ NH Conservation NGO Representative A. Telephone interview with author, October 10, 2007. Ann Arbor, MI.

⁴⁶ NH WAP. 4-19.

happen far faster than climate change,” she said. “To the extent that climate change will have an effect on things, the more we pave, the less room there is for things to adapt to climate change.”⁴⁷

More information on conservation threats, including threat profiles, is available in Chapter 4.

4. Description of Conservation Actions for Species and Habitats

Conservation Strategies were developed at multiple levels of detail. Strategies were developed to address four broad focus areas: regional air and water quality, local land and water conservation, statewide biodiversity stewardship, and conservation science and information management.⁴⁸

In addition to the four broad areas, the NH SWAP outlined specific actions in several categories,⁴⁹ including:

- Intra-agency coordination and policy
- Conservation planning
- Education and technical assistance
- Environmental review
- Habitat management
- Interagency regulation and policy
- Land protection
- Landowner incentives
- Monitoring
- Population management
- Regional coordination
- Research
- Local regulation and policy

The plan describes specific strategies for each of these categories. All strategies identify an organization, program or partnership that might implement the strategy.⁵⁰ Strategies directly related to each threat, species or habitat are cross-referenced in the corresponding threat, species or habitat profile.⁵¹ There is no clear prioritization of strategies.⁵²

⁴⁷ NH Conservation NGO Representative A.

⁴⁸ NH WAP. 5-1.

⁴⁹ NH WAP. 5-2.

⁵⁰ NH WAP. Chapter 5.

⁵¹ Ibid.

⁵² Ibid.

NHFG created the NH Big Game Plan contemporaneously to the SWAP, standardizing conservation strategies across both plans.⁵³ Additionally, SWAP strategies were made consistent with several existing fisheries operational plans.⁵⁴

Complete strategy templates were conducted to detail information relevant to feasibility and priorities⁵⁵ While these are used internally to guide implementation, they were not printed as part of the plan.⁵⁶

An exemplary aspect of the published plan is the clear connection between wildlife, habitat, threats, and conservation action profiles. Actions, threats and management strategies were each numbered and these numbers were cross-listed in species and habitat profiles. This thorough cross-listing makes the plan more accessible to users who are interested in managing for specific habitats or taking action to address specific threats.

More information on conservation strategies is available in Chapter 5.

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

Monitoring the effectiveness of the SWAP includes three approaches: monitoring SGCN and their habitats, monitoring the effectiveness of proposed strategies, and adapting conservation actions to changing conditions.⁵⁷ All SWAP monitoring will build on existing state and national programs, adapting or expanding programs when existing programs are not sufficient.⁵⁸ After state conditions for species and habitats can be determined, monitoring local conditions of species and habitats will be prioritized.⁵⁹ Monitoring will be adapted to the condition of targeted populations, but larger scales may be monitored to address challenging state or regional issues, such as climate change.⁶⁰ The SWAP identifies the need for increased communication and coordination of approaches between states and regions, so that species trends can be nationally assessed.⁶¹

⁵³ NH WAP 5-3.

⁵⁴ Ibid.

⁵⁵ NH WAP 5-1.

⁵⁶ Ibid.

⁵⁷ NH WAP. 6-1.

⁵⁸ NH WAP. 6-2.

⁵⁹ NH WAP. 6-3

⁶⁰ Ibid.

⁶¹ Ibid.

Monitoring needs for each species, habitat, threat and strategy were identified in each detailed profile. In the cases where direct monitoring of species and habitats will not be possible, proxy indicators are identified instead.⁶²

Adaptive management will be guided by results on performance evaluations, which were built into each strategy objective.⁶³ “Periodic summary reports” will assess the direct threats of management and the ecological responses by comparing baseline data, inputs and changes.⁶⁴

More information on monitoring is available in Chapter 6.

6. Procedures for Strategy Review

According to the published plan, major goals for the first two years include the following:

- Internal and external outreach: A major public release of the plan was targeted for early 2006 in coordination with national promotion efforts. Wildlife Summit II was planned to bring together stakeholders (conservation community partners, landowners, businesses and agencies) to provide implementation input.⁶⁵
- Prioritize SWAP strategies and goals into NHFG work plans so staff, administrators and partners who helped develop the plans will be engaged, so that all understand their roles, available resources and can “commit to the successful implementation of plan strategies.”⁶⁶
- Prioritize SWAP strategies and objectives through feasibility ranking forms (developed for the SWAP, see section 4 of this paper). These strategies will be reviewed by partners and revised as needed.⁶⁷
- Identification of partner organizations to take lead roles in actions.⁶⁸

In the first three years following the introduction of the plan, NHFG will develop “specific, measurable targets to monitor achievement” including performance indicators.⁶⁹ “Work plans

⁶² NH WAP. 6-5, and Appendices A, and B, and chapter 4.

⁶³ NH WAP. 6-4.

⁶⁴ Ibid.

⁶⁵ NH WAP 7-1.

⁶⁶ Ibid.

⁶⁷ Ibid.

⁶⁸ NH WAP. 7-2.

⁶⁹ Ibid.

for top priorities will be developed in Year 1, while lower priority work plans may not be developed until Years 2-3.”⁷⁰

In years 2 through 10, progress will be measured and adaptive management will occur when needed.⁷¹

A major plan review is scheduled for 2015.⁷² The review will include the public for another Wildlife Summit and other participatory forums. At this review, information on progress toward SWAP goals will be discussed. SWAP priorities and strategies will be reassessed.⁷³

More specificity of NHFG goals is likely expanded in the internal strategy templates, although these were not examined by the author.

More information on plan review is available in Chapter 7.

7. Coordination with Federal, State and Tribal Agencies

As described in the “Overview of Plan Development” section of this paper, NHFG worked extensively with government and non-governmental organization partners in the creation of the SWAP. Experts from The Nature Conservancy, NH Audubon, the University of New Hampshire and several other organizations and universities were contracted to write the species and habitat profiles, to develop analysis tools and to provide external review.⁷⁴ All total, more than 34 experts from 10 government agencies and non-governmental organizations directly contributed to the plan.⁷⁵ One NGO representative who worked contractually on the plan said “[NHFG] certainly made an effort to farm out to where they thought the expertise was.”⁷⁶ That representative believed that bringing in external expertise did more than provide solid scientific data to the plan, it encouraged continued interest from state partners.⁷⁷

In the coordination chapter of the plan, NHFG looked forward to implementation, aiming to continue to involve department staff, other agencies and the partners that assisted in the plan’s

⁷⁰ Ibid.

⁷¹ Ibid.

⁷² Ibid.

⁷³ Ibid.

⁷⁴ NHFG Representative. October 1, 2007.

⁷⁵ NH WAP. VIII.

⁷⁶ NH Conservation NGO Representative A.

⁷⁷ Ibid.

development.⁷⁸ NHFG plans to contribute to statewide plans in the NH Division of Forests and Lands, the NH Office of Energy and Planning, and the NH Department of Transportation, and U.S. Fish and Wildlife Service and U.S. Forest Service planning efforts that contain species or lands in New Hampshire.⁷⁹

In several chapters, the plan articulates the need for major federal funding support. “While we rely on partners to support the SWAP’s goals, long-term dedicated funding will be needed so that NHFG can successfully lead implementation and provide partners with greater support for their implementation efforts,” an agency representative said after the plan’s publication.⁸⁰ Funding requirements for recommended strategies or implementation activities were not included in the plan.

Additional implementation partners have been identified for implementation goals since the plan’s development.⁸¹ See the implementation section of this paper for more.

More information on coordination can be found in Chapter 7 and Appendix E.

8. Public Participation

A communications and outreach team coordinated the public participation components of the plan, meeting regularly from 2003 to 2005. Gathering public input included the following activities:

- A telephone survey of NH residents (part of a larger NE region survey)
The survey was developed by the Northeast Conservation Information and Education Association, funded from USFWS. The survey identified major issues to address and effective communication methods for reaching residents.⁸²
- A Wildlife Summit workshop (Appendix H)
Agencies, organizations, business and other conservation groups attended the summit – 112 people in all (1-2). The results of the summit were used to prioritize and develop strategies and actions.

⁷⁸ NH WAP. VIII.

⁷⁹ NH WAP 7-2.

⁸⁰ NHFG Representative. Telephone interview with author, April 16, 2007. Ann Arbor, MI.

⁸¹ NHFG Representative. October 1, 2007.

⁸² NH WAP. 1-1.

- A web survey based on priority issues from the Wildlife Summit (Appendix I)
The survey was accessed through a link from the NHFG homepage. Announcements about the survey were sent in public utility bills, public radio announcements, emails, meetings and other partner websites. In all, 1,256 surveys were completed. Survey questions related to threats affecting wildlife conservation, actions to conserve wildlife, and conservation priorities.
- Stakeholder meetings (Appendix J)
NHFG and UNH Cooperative Extension led or attended meetings of various sizes to inform about the plans and get input on conservation strategies.
- Wildlife Conservation Strategy Forum (Appendix K)
This participatory breakout session involved 24 participants from organizations who had participated in the Wildlife Summit. The groups brainstormed strategies, actions and tools to address habitat fragmentation, air and water quality, growth and development and transportation. Top issues were recorded and ranked by participants and priority actions identified.

Although outreach with stakeholder organizations was extensive, NHFG did not establish any particularly new partnerships as a result of their approach. According to one stakeholder, “NH is a small state. All the conservation NGOs, state agencies and federal agencies – we all know one another. We all collaborate in almost every project that we do.”⁸³ A representative from the agency agreed, “We got a lot of good feedback from a variety of stakeholders and increased public awareness through the summits, but there wasn’t something brand new like a partnership with representatives from land development interests that could lead to far-reaching changes in development practices that impact wildlife.”⁸⁴

While broad public participation is the eighth Congressional required element of the plan, New Hampshire elected to position public participation as the first chapter. Plan development advice from the Teaming With Wildlife Coalition (TWW) recommended including the eighth element first in alternative plan formats, citing that this re-arrangement streamlines plan design

⁸³ NH NGO Conservation Representative B.

⁸⁴ NHFG Representative. October 1, 2007.

in states with strong partner relationships.⁸⁵ New Hampshire was the only state in New England to use this alternative format.

More information on Public Participation can be found in Chapter 1, and appendices H, I, J, and K.

Implementation

Now two years after the SWAP's initial publication, NHFG has made clear progress toward published implementation goals. All major goals for the first two years detailed in Chapter 7 of the plan have been accomplished. As planned, in April 2006, NHFG and UNH Cooperative Extension hosted Wildlife Summit II, inviting back the stakeholders from the previous summit to help prioritize implementation strategies through facilitated breakout groups.⁸⁶ NHFG then ranked these strategies by the feasibility ranking forms developed as part of the SWAP.⁸⁷ Feasibility rankings considered efficacy, resources, organization, expertise, motivation, and information, and weighted these factors for relative importance.⁸⁸ Ultimately, the agency identified the top

Top Successes and Challenges of Implementation

Successes

- Post-plan publication of conservation area focus maps and devoting a full-time biologist to help share these maps with other agencies, governments and organizations interested in land use planning
- Conservation focus areas produced as a result of the SWAP are used as criteria to help rank applications for the state's \$12 million Land and Community Heritage Investment Program (LCHIP) fund and Aquatic Resources Mitigation Fund

Challenges

- Funding crisis within the state agency that is causing a loss of up to 25% of the department's function; challenges in meeting the SWG state-federal match ratio
- Difficulty of collaborating with 232 individually governed municipalities to achieve conservation goals

⁸⁵ U.S. Fish and Wildlife Service. "Resources for Comprehensive Wildlife Conservation Strategies." <<http://www.fws.gov/r5fedaid/swg/Planning%20Resources/default.htm>> (Accessed 18 December 2007).

⁸⁶ French, Charlie and Covell, Darrell. 2006. Wildlife Summit II Report. New Hampshire Fish and Game and University of New Hampshire Cooperative Extension.

⁸⁷ Kanter, John. 31 July 2006.

⁸⁸ Ibid.

implementation strategies for three different implementation actors: NHFG, partner organizations and contracted professionals, and other implementers.⁸⁹ Strategies were delineated by their expected year of initiation and overall duration.⁹⁰

Who is Involved and What are They Doing?

Just as in plan development, NHFG used State Wildlife Grant (SWG) funds to contract professionals from academic institutions and non-governmental organizations as partners in implementing the plan. The University of New Hampshire, the Nature Conservancy, the Audubon Society of New Hampshire and other state partners play key implementation roles, leading projects and serving as specialists.⁹¹

In May 2007, a SWAP Core Implementation Group began meeting monthly to share progress toward implementation goals, and to identify how SWAP priorities can be incorporated with parallel, ongoing efforts.⁹² The group includes the NHFG SWAP program supervisor, NHFG habitat and wildlife diversity program administrators, NHFG nongame biologists, and professionals external to the agency whose primary source of funding comes from SWG funds.⁹³

In October 2007, the Core Implementation Group re-examined their top implementation strategies and noted that progress had been made on a number of articulated goals.⁹⁴ Major NHFG and contracted partner successes to date include:

- release of conservation area focus maps that identify habitats ranked by ecological condition,
- integration of SWAP priorities into state conservation funding programs,
- development of additional protections for amphibian and reptiles, and
- action toward revision of the state threatened and endangered species list.⁹⁵

⁸⁹ Ibid.

⁹⁰ Ibid.

⁹¹ NHFG Representative. October 1, 2007.

⁹² NH Conservation NGO Representative A.

⁹³ NHFG Representative. October 1, 2007.

⁹⁴ Ibid.

A non-governmental organization representative to the Implementation Core Team remarked that the progress monitoring meeting was motivating, “We felt really good after it. We’ve actually done a lot of this stuff at some level or another. That does provide some incentive to keep plugging along...That’s where the implementation is going to be – in these step by step pieces.”⁹⁶

In addition, the team member noted that being closely involved with the Implementation Core Team helped her entire organization better understand state agency priorities. “I have now a foot in both worlds. I was at this [regional conference] last week and was able to bring forward the agency’s perspective with NGO partners who don’t always interact as well or as much with their state agencies. These plans are actually going to be driving stuff for quite a while, and having that perspective is really, really useful.”⁹⁷ She noted that by bringing together multiple organizations in the implementation team, collaboration between major conservation players in the state has been strengthened.⁹⁸

Implementation Action: Mapping conservation focus areas

In October 2006, the agency released a full set of statewide conservation maps that were reviewed by external advisors. ⁹⁹ In addition to the statewide habitat map and habitat type maps published in the SWAP, the revised map set includes a map of habitats ranked by ecological condition, and a map of conservation focus areas developed through analyses of co-occurrence and statistically significant clusters of highest ranked wildlife habitat by ecological condition.¹⁰⁰ The highest ranked wildlife habitat maps analyzed each habitat type to show where the biological and landscape impacts are highest and human impacts are lowest, identifying habitats most likely to maintain biological integrity over time. ¹⁰¹ The conservation focus area maps considered the importance of each habitat on a statewide and regional scale and the highest concentration of highest ranked habitats.¹⁰²

⁹⁵ Ibid.

⁹⁶ NH Conservation NGO Representative A.

⁹⁷ Ibid.

⁹⁸ Ibid.

⁹⁹ NHFG Representative. October 1, 2007.

¹⁰⁰ NHFG. Wildlife Action Plan Habitat Maps CD.

¹⁰¹ Ibid.

¹⁰² Ibid.

Distributing these conservation maps to planners and GIS users is one of the state's highest priorities.¹⁰³ One of NHFG's three wildlife biologists spends 80% of her time collaborating with other state agencies, nonprofit organizations, regional planning commissions and local towns, explaining the purpose of the SWAP and sharing conservation area focus maps.¹⁰⁴ While outreach was a portion of her position prior to the plan, the SWAP and maps have significantly altered the information being shared and the priority of distributing this information.¹⁰⁵ As of September 2007, NHFG and UNH Cooperative Extension had released wildlife maps to the public through more than 22 mapping workshops and 5 workshops targeting GIS professionals, including participants from 133 towns.¹⁰⁶ Long-term plans call for biologists at NHFG's four state regional offices to become more involved in community conservation, serving as state liaisons to local planning boards and conservation commissions where possible.¹⁰⁷

The plan, its maps and data have been used to guide NGO, town and regional conservation planning efforts.¹⁰⁸ A few examples of organizations using the plan include: the Rockingham (Regional) Planning Commission used SWAP maps and data to inventory and prioritize natural features their 2006 Land Conservation Plan for New Hampshire's Coastal Watersheds;¹⁰⁹ the Town of Effingham is completing a natural resources assessment in their town where the first step involved incorporating SWAP data on high quality upland wildlife habitat;¹¹⁰ a state NGO, the Jordan Institute, is using SWAP data in their natural resource mapping to help gauge the impact of a proposed highway expansion on wildlife habitat.¹¹¹

Sharing SWAP priority habitats and goals with New Hampshire's municipalities and translating that information into local conservation strategies is an ambitious undertaking. One non-governmental stakeholder remarked, "You have to realize that New Hampshire is a New England state, a home rule state. There are 232 municipalities and it's just like having 232 little

¹⁰³ NHFG Representative. October 1, 2007.

¹⁰⁴ Ibid.

¹⁰⁵ Ibid.

¹⁰⁶ NHFG Representative B. New Hampshire Fish and Game representative, Telephone interview with Michelle Aldridge, September 7, 2007. Ann Arbor, MI.

¹⁰⁷ Ibid.

¹⁰⁸ NHFG Representative B.

¹⁰⁹ New Hampshire regional planner, Telephone interview with Michelle Aldridge, October 23, 2007. Ann Arbor, MI.

¹¹⁰ New Hampshire town conservation commissioner, Email correspondence with Michelle Aldridge, October 30, 2008. Ann Arbor, MI.

¹¹¹ NHFG Representative B.

countries...Just think of a New England state with 232 different planning boards and conservation commissions and master plans and community visions and all the rest, all volunteer boards, principally, and you can see what an outreach challenge that would be... Were there 2 or 3 [outreach biologists], I'm sure NHFG would be much more effective in getting this out to communities or groups of communities, and it would be even better, from a systems point of view."¹¹²

There has been some concern about the publication of maps from landowner rights groups.¹¹³ As transparency increases about the location of wildlife and habitats of conservation needs, their presence or absence is less open for debate.

States in the Northeast Association of Fish and Wildlife Agencies, including New Hampshire and 12 other states, are pooling 4% of their SWG allocations for regional projects.¹¹⁴ One of these projects will involve regionwide GIS habitat classification and prioritization. New Hampshire is not directly involved in this project; however the regional project is expected to be a scaled-up approach of what New Hampshire has completed on a state scale.¹¹⁵

Additional implementation goals

In addition to releasing maps to the public, NHFG's other top priority for FY2008 is to complete the revision of the state threatened and endangered species list.¹¹⁶ NHFG and contracted experts from associated non-governmental organizations have completed the technical review, and administrative approval is now underway.¹¹⁷ A non-governmental organization representative to the Implementation Core Team remarked that the list revisions "came directly out of the SWAP and wouldn't have probably been possible had we not at least compiled what we know for in-state distribution."¹¹⁸

Other top agency-identified top achievements include creating a list of comprehensive rules for managing reptiles and amphibians that are not listed as rare, threatened or endangered,

¹¹² NH Conservation NGO Representative B.

¹¹³ NHFG Representative. October 1, 2007.

¹¹⁴ Ibid.

¹¹⁵ Ibid.

¹¹⁶ Ibid.

¹¹⁷ Ibid.

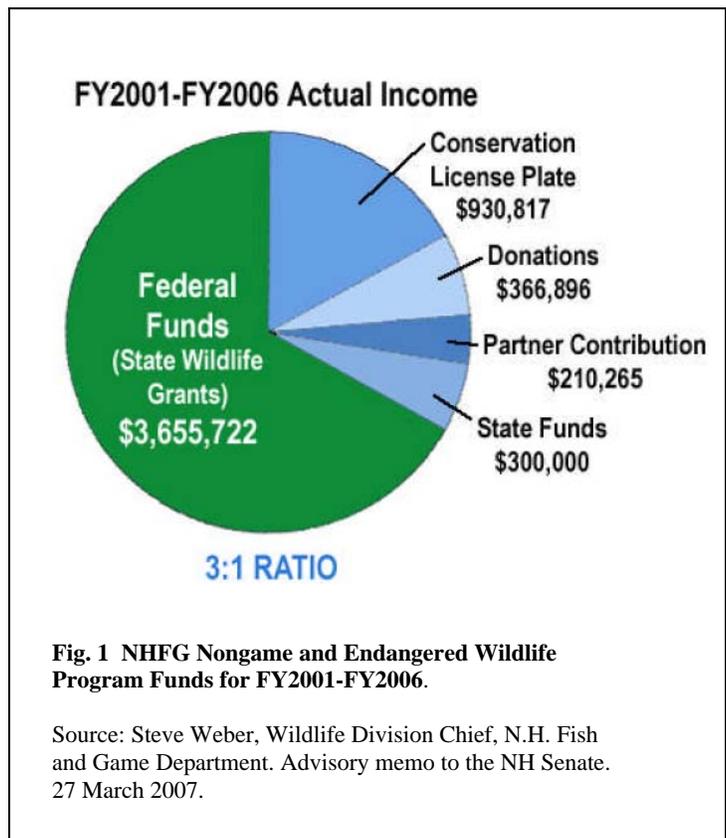
¹¹⁸ NH Conservation NGO Representative A.

and additional rule making to limit activity in sensitive habitats such as vernal pools and shorelines.¹¹⁹

Implementation developments have not been incorporated into the plan itself. The plan has not had any amendments and there is no indication that text revision will occur prior to the plan's next scheduled revision in 2015.¹²⁰ Supplemental publications are being published by NHFG as needed to achieve plan goals.

How Has Funding for Non-Game Wildlife Changed?

Funding constraints remain the most significant barrier to implementation. The Department's Nongame and Endangered Wildlife Program is primarily funded by Conservation License Plate dollars, private donations that are matched up to \$50,000 annually by the state, partner contributions, and the federal State Wildlife Grants Program.¹²¹ In recent years, major program partners providing match funding have included New Hampshire Audubon, Loon Preservation Committee, The Nature Conservancy, University of New Hampshire and St. Anselm's College.¹²² The plan's completion and the January 2007 change in the definition of SWG matching funds resulted in a transition from a federal: state match ratio from 3:1 to 1:1. Continuing to find the state match to federal monies is expected to be one of



¹¹⁹ NHFG Representative. October 1, 2007.

¹²⁰ Ibid.

¹²¹ Ibid.

¹²² Ibid.

NH's biggest challenges.¹²³

This summer, after an appeal to the state legislature to help close the fill the unmet match needed for FY2008, the NHFG was appropriated \$87,000 of state general fund monies as a match for SWG funds.¹²⁴

Help from the state legislature provided a boost this year, but future match funds are still a concern. "I feel like we're on the cusp of being successful in getting a larger pot of federal monies with a dedicated source. Without some new mechanisms to come up with the non-federal matching dollars, it's going to be tough," said one agency representative.¹²⁵

The number of state conservation programs tied to the SWAP is another success for state wildlife funding. The New Hampshire Land and Community Heritage Investment Program (LCHIP), a program funded for \$12 million for FY08-09,¹²⁶ now gives higher ranking to applications for projects that fall within a conservation focus area.¹²⁷ The same is true for project applications for the Aquatic Resources Mitigation Fund program in the NH Department of Environmental Services.¹²⁸ The state Natural Resources Conservation Service (NRCS) has also prioritized SWAP species and habitats in grant guidance for the Wildlife Habitat Incentive Program (WHIP) and the Environmental Quality Incentives Program (EQIP).¹²⁹

How Has the Agency Changed?

A number of biologists began their positions at NHFG and partner organizations during the development of the SWAP. Direct involvement in the plan's development helped the staff embrace the SWAP as their guide for future action. "Not only were they involved in the development of the plan, that was the origin of their jobs," said one agency representative. "If you're the person writing for the future of conservation action and its really the first thing you've

¹²³ NHFG Representative. October 1, 2007.

¹²⁴ Ibid.

¹²⁵ NHFG Representative. April 16, 2007.

¹²⁶ Ibid.

¹²⁷ NHFG Representative. October 1, 2007.

¹²⁸ Ibid.

¹²⁹ Ibid.

done in your job, you're going to follow it very closely... You're writing your work plan for the next number of years."¹³⁰

NHFG credits the plan with creating a bridge between the fisheries and wildlife programs.¹³¹ Since the plan's development, three staff in the fisheries department spend time on SWAP implementation.¹³² In addition, the staff has been more involved with the state wetland permitting process at the state wetlands bureau, and is working to promote a transportation working group with the state Department of Transportation.¹³³

A number of pre-SWAP species-focused initiatives have been enhanced through SWAP strategies, and there is some indication that the plan may encourage the agency toward a more habitat-based approach. For example, in conservation efforts for roseate terns, NHFG has moved to managing for historical vegetation of the entire coastal island habitat.¹³⁴

The state's interest in updating the list of state threatened and endangered species is intriguing, given the SWAP's ambition to protect all species regardless of listing. However, a representative from NHFG credited the plan with expediting conservation actions for SGCN that were not otherwise listed.¹³⁵ The SWAP has helped leverage support for conservation strategies regarding New England Cottontails and Blanding's turtles, both of which have been under consideration for federal lists but facing administrative and political delays. "Because of the SWAP, we don't have to wait for some federal listing to get moving on them," said a representative from NHFG.¹³⁶

External Changes

One stakeholder noted that her organization was feeling the impact of the state and national transition toward more habitat focused conservation approaches. "There's going to be less money for some of the things we traditionally have done. We have to reprioritize, given both

¹³⁰ Ibid.

¹³¹ Ibid

¹³² Ibid

¹³³ Ibid

¹³⁴ Ibid

¹³⁵ Ibid

¹³⁶ Ibid

the plan’s recommendations and the reality of available funding in terms of what we can accomplish.”¹³⁷

Other than additional funding for state conservation programs, there have not been any significant political changes that have altered the pace and scope of wildlife conservation in the state, nor have there been any significant environmental changes that have altered conservation approaches.¹³⁸

Conclusion

As the first full assessment of all species and habitats in NH, the SWAP marks a transformative step forward for New Hampshire wildlife conservation. The state used the planning process as a catalyst to create a central state wildlife information resource, to develop new metrics and tools, and to strengthen existing partnerships. During the development of the plan, the agency:

- Compiled data that tripled the total number of records in the wildlife occurrence database,
- Created and published habitat location maps, marking the first time this data was publicly available
- Developed new metrics for classifying aquatic habitat,
- Updated wildlife database software, and
- Created strategy templates prioritizing conservation actions
- Integrated expertise from wildlife professionals across organizations, government agencies and academic institutions.

By contracting with state universities and nonprofit government organizations, the planning process ensured engagement from key conservation players throughout the state. This laid the foundation for the plan to become integrated not only within future agency operations, but across partner organizations as well. This will be essential to transforming wildlife conservation throughout the state.

¹³⁷ NH Conservation NGO Representative A.

¹³⁸ NHFG Representative. October 1, 2007.

Agencies represented on the implementation team core feel more connected with the ongoing mission of NHFG and more poised to confront the changing landscape of wildlife conservation. Even stakeholder groups that were less involved in the plan development itself see the project has a huge step forward for conservation efforts in the state. When asked if the State Wildlife Action Plan helped increase regional and local conservation effectiveness, one stakeholder emphatically responded, “Absolutely. A huge difference compared to just a few years ago, when wildlife habitat information was scarce at best and we were all using proxies in GIS for what we would call wildlife habitat data factors. Now we have real science and real data statewide at a variety of scales that we can use in our GIS mapping and analysis. And we use it every day.” In a follow-up email he wrote, “I hope I didn’t sound too much like a broken record, but I really do feel there has been a gigantic break through in conservation planning in this state with the advent of the NH WAP.”

Perhaps most revealing of NHFG’s own investment in this process is the Wildlife Division Chief’s letter appealing for state funding in the FY2008 budget allocation. “Implementation of the Wildlife Action Plan is critical to wildlife and habitat conservation and the survival and success of a number of native wildlife species and special natural places,” he writes. “By conserving wildlife and natural places, the Wildlife Action Plan enhances our quality of life now and for future generations.”

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