Stakeholder and Community Engagement Wildlife Action Plan Revision 2015

Prepared for: New Hampshire Fish and Game



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Appendix K – Stakeholder Input Report

New Hampshire Fish and Game
Wildlife Action Plan Revision

Stakeholder and Community Engagement

EXECUTIVE SUMMARY:

The University of New Hampshire Cooperative Extension (UNHCE) led a stakeholder and community engagement effort to gather information relative to the 2015 revision of the New Hampshire Fish and Game (NHFG) Wildlife Action Plan. The staff at UNHCE worked closely with NHFG staff, CrossCurrent Communications and a newly formed Wildlife Action Plan Outreach and Engagement Steering Committee.

Information was gathered at five input sessions carried out in spring 2015 across the state. The sessions were well attended by those working with the Wildlife Action Plan and those who work with or are interested in wildlife and natural land protection and related issues. This report was prepared using the information gathered from these sessions. The following is a summary of findings.

- Education was by far the most suggested action item. Education for a variety of audiences and types of education were identified with specifics under each topic.
- Education was a primary focus for action with the invasives and human activities threats.
- Development and transportation corridors are seen as the biggest threat and the action ideas included the role of municipalities, coordination of groups and agencies, funding and regulation.
- Funding was a major topic of discussion within all topics. This included funding for NHFG and its
 activities to address threats and take action.
- The need for research was highlighted throughout the action discussions and was a focus in the climate change discussion.
- Incentives were part of action for some topics but not all they were discussed for human activities, development and transportation and pollution.
- There was much discussion about agency and organization coordination with regard to development and transportation but little around climate change, invasives, natural systems modification and human activities.
- Discussion on threats and actions often cited the need for volunteers to participate in the action.
- Some regional differences were seen at the input sessions. The Northern Pass project was a main
 point of discussion at the Plymouth session and there appeared to be more support for state
 funding at the Keene and Concord sessions. The similarities were more important than the
 differences as in each session participants talked about education, funding, research and
 coordination of groups and organizations along with specific actions on topics.



SUMMARY	THREAT	THREAT	THREAT	THREAT	THREAT	THREAT
THEMES IDENTIFIED at sessions	Development & Transportation	Invasives	Climate Change	Natural Systems Modifications	Recreation and other Human Activities	Pollution
Agriculture					Х	Х
Coordination	Х			Х	Х	
Education	Х	Х	Х	Х	Х	Х
Energy			Х			
Enforcement & Monitoring		Х	Х	Х	Х	Х
Forestry					Х	
Funding	Х	Х	Х	Х	Х	Х
Incentives	Х				Х	Х
Infrastructure	Х		Х			Х
Land Conservation & Management	Х	Х	Х	Х		
Municipalities			X			Χ
Planning, Zoning, Regulations	X	X			X	Χ
Research	Х	Х	Х	Х	Χ	Х
Specifics for Invasives		Х				
Specifics for Natural Systems Modifications				Х		
Specifics for Pollution						X
Ticks			Х			
Transportation			Х			
Water Protection & Resources			Х	Х		Х

Input Sessions Methodology

The goal of the input sessions was to gather ideas on actions that should be included in the 2015 Wildlife Action Plan from a broad range of organizations and interests. The information from the sessions was collected, transcribed and presented below.

Wildlife Action Plan Outreach and Engagement Steering Committee: A Steering Committee was put in place to help identify key stakeholders, guide the stakeholder engagement and to provide a link to the stakeholder groups for promoting participation in the engagement process. The Steering Committee met to review the engagement strategy and assist in the execution to encourage strong participation in the Wildlife Action Plan Revision. The Committee worked to promote the update of the Wildlife Action Plan and the various opportunities to participate through appropriate websites, social media and newsletters through their stakeholder and public networks to promote participation in the Wildlife Action Plan Revision.

Committee Charge: The Outreach/Engagement Steering Committee will help guide the public participation process, identify and help engage key stakeholders, help to develop the timeline; provide input and approve messaging; and assist with strategy prioritization and plan development for the update of the NH Wildlife Action Plan 2015 Revision.

Steering Committee members:

Paula Bellemore Land and Community Heritage Investment Program (LCHIP)

Jim O'Brien The Nature Conservancy

Jack Savage Society for Protection of NH Forests
Roger Stephenson Strategic Communications

Jane Vachon NHFG

Kris Neilsen DRED, Tourism/travel
Susan Arnold Appalachian Mountain Club

Jim Martin NH Department of Environmental Services

Sabrina Stanwood DRED Natural Heritage Bureau

Kate Luczko Stay Work Play

Resource Group to the Wildlife Action Plan Steering Committee:

Emily Preston, John Kanter, Loren Valliere NHFG

Amanda Stone, Molly Donovan

Melissa Paly, Barbara MacLeod

UNH Cooperative Extension

Crosscurrent Communications

Promotion of the Wildlife Action Plan Input Sessions:

The Steering Committee worked to promote the public input sessions to their networks, members and supporters. UNH Cooperative Extension sent email announcements to its extensive email database of 5000 on two occasions. Crosscurrent Communications provided communications expertise and messaging.





Wildlife Action Plan Input Session 2015 Attendees Data

The Input sessions were held in five locations across New Hampshire. There was a total of 166 participants. Just over 400 hours were spent by professionals and volunteers to discuss the threats to wildlife and ideas for addressing these threats. The input sessions were attended by non-profit organization staff and volunteers and a large number of volunteer conservation commission members. State and federal agencies were also represented. The participants were from 79 different communities across the state.

Wildlife Action Plan Stakeholder Input Sessions: Locations

Thursday 4/23 4:00-6:30pm Plymouth High School Cafeteria Tuesday 4/28 6:00-8:30pm Exeter High School Cafeteria

Tuesday 5/5 1:00-3:30pm City of Keene Parks and Recreation Center

Wednesday 5/6 2:00-4:30pm NHFG Office

Tuesday 5/12 2:00-4:30pm AMC Highland Center Lodge

Plymouth

Total attending: 29

Organizations represented:

State Agency: 0

Conservation Commission: 4

Non-profit: 6 Resident: 10

Exeter

Total attending: 33

Organizations represented:

State Agency: 3

Conservation Commission: 4

Non-profit: 10 Resident: 4

Keene

Total attending: 36

Organizations represented:

State Agency: 5

Conservation Commission: 10

Non-profit: 6 Resident: 1 Concord

Total attending: 46

Organizations represented:

State Agency: 12

Conservation Commission: 10

Non-profit: 15 Resident: 3

Bretton Woods
Total attending: 22

Organizations represented:

State Agency: 3

Conservation Commission: 3

Non-profit: 6 Resident: 7

Input Sessions: Who Participated?

166 participants representing 79 different communities and multiple organizations. 85% were very or somewhat familiar with the Wildlife Action Plan with only 15% not familiar at all. The participants represented an engaged group of stakeholders and potentially new stakeholders.



Attendee Affiliations

Appalachian Mountain Club Antioch NE Graduate School

Ausbon Sargent Land Preservation Trust Barrington Conservation Commission

Bear Camp Trackers Bedford Land Trust

Bellamy River Collaborative
Brox Environmental Citizens
Carroll Conservation Commission

Center for Wildlife and Nottingham
Chester Conservation Commission
Chesterfield Conservation Commission

Danbury Grows

Exeter Conservation Commission Fitzwilliam Conservation Commission Five Rivers Conservation Trust Fremont Conservation Commission

Lamprey River Advisory Committee

Friends of Moeckel Pond

Gilford Conservation Commission

Granite State Priorities

Great Bay Resource Protection Partnership

Groton Conservation Commission Hanover Biodiversity Committee

Harris Center for Conservation Education Holderness Conservation Commission Holderness County Commissioner

Homeowners

Hubbard Brook Research Foundation

Ibis Wildlife Consulting

Indian Woods Landowner

LCHIP Land and Community Heritage

Investment Program

Lempster Conservation Commission Loon Preservation Committee Mason Conservation Commission Merrimack Conservation Commission

Monadnock Conservancy

Moose Mountains Regional Greenways

Moosewood Ecological LLC Nelson Conservation Commission New England Forestry Foundation

NH Army National Guard

NH Association of Conservation Commissions

NH Audubon

NH Community Rights Network
NH Coverts/Mahoosuc Land Trust

NH Fish and Game

NH Natural Heritage Bureau NH Project Learning Tree

NH State Parks

NH Natural Resources Steward

NH Department of Environmental Services

NH Division of Historic Resources Bath Conservation Commission Northern Pass Opposition Coalition National Wild Turkey Federation

O'Brien Forestry Pillsbury Lake

Piscataqua Region Estuaries Partnership

Private Citizen

Quincy Bog Natural Area Pemi Baker Land Trust

Randolph Conservation Commission Rindge Conservation Commission Rochester Conservation Commission Rockingham County Conservation District

Russell Farm and Forest Conservation Foundation

Salmon Press

Southeast Land Trust

Society for the Protection of NH Forests State licensed wildlife rehabilitator State Rep Conservation Commission Stoddard Conservation Commission Strafford Conservation Commission

SWC

Tamworth Conservation Commission

The Nature Conservancy

Town of Groton Trailwrights

University of New Hampshire

USDA Natural Resources Conservation Service

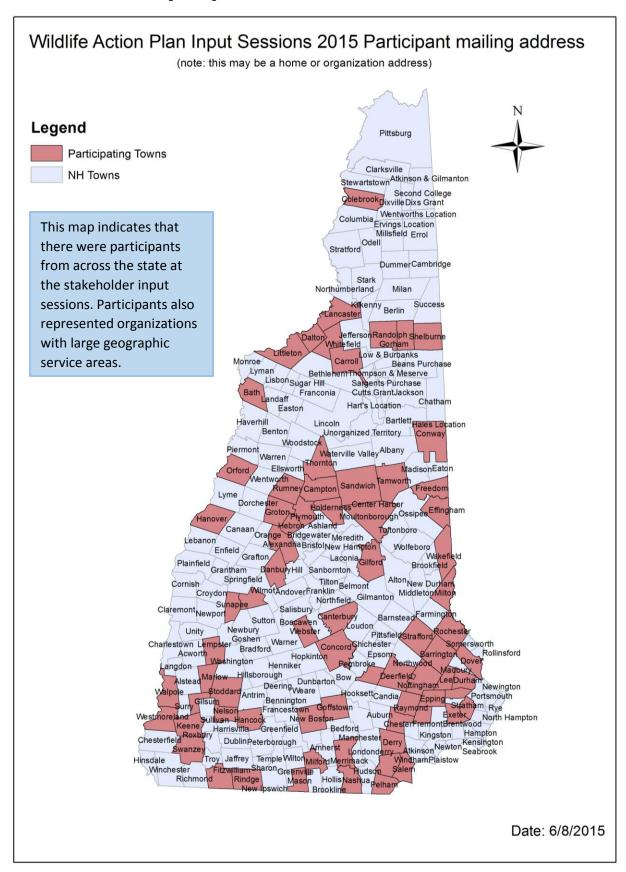
USFS White Mountain National Forest

Upper Valley Land Trust

Volunteer

Wagner Forest Management, LTD Webster Conservation Commission





THREATS TO WILDLIFE ENGAGEMENT EXERCISE WITH DOTS

An engagement exercise was available to each participant upon registration at the input sessions. A chart with the 10 threats to wildlife was on display and each participant was asked to mark what they thought were the two highest threats to wildlife in their area. Overall, development was ranked the highest in all locations except Plymouth. Climate change ranked as second overall, and although it ranked fourth in Plymouth, it ranked second in all other locations. Agriculture and Aquaculture along with Recreation and Other Human Disturbances were seen as the least threatening.

Overall Results – Ranked by Total:

Number of "dots" or votes received.

Threats to Wildlife	Plymouth	Exeter	Keene	Concord	Bretton Woods	Total
Development	10	21	20	23	18	92
Climate Change	8	11	6	17	9	51
Pollution	2	5	11	15	3	36
Invasives	6	6	8	5	5	30
Transportation and Utility Corridors	10	5	3	5	1	24
Natural Systems Modifications	3	3	5	8	3	22
Energy Production and Mining	14	1	1	1	0	17
Biological Resource Use	1	7	2	2	3	15
Recreation and Other Human Interaction	2	1	1	5	1	10
Agriculture and Aquaculture	0	0	1	1	1	3

Ranked Results by Region:

Threats to Wildlife	Plymouth
Energy Production and Mining	14
Development	10
Transportation and Utility Corridors	10
Climate Change	8
Invasives	6
Natural Systems Modifications	3
Pollution	2
Recreation and Other Human Interaction	2
Biological Resource Use	1
Agriculture and Aquaculture	0

Threats to Wildlife	Exeter
Development	21
Climate Change	11
Biological Resource Use	7
Invasives	6
Pollution	5
Transportation and Utility Corridors	5
Natural Systems Modifications	3
Energy Production and Mining	1
Recreation and Other Human Interaction	1
Agriculture and Aquaculture	0

Threats to Wildlife	Keene
Development	20
Pollution	11
Invasives	8
Climate Change	6
Natural Systems Modifications	5
Transportation and Utility Corridors	3
Biological Resource Use	2
Energy Production and Mining	1
Recreation and Other Human Interaction	1
Agriculture and Aquaculture	1

Threats to Wildlife	Concord
Development	23
Climate Change	17
Pollution	15
Natural Systems Modifications	8
Invasives	5
Transportation and Utility Corridors	5
Recreation and Other Human Interaction	5
Biological Resource Use	2
Energy Production and Mining	1
Agriculture and Aquaculture	1

Threats to Wildlife	Bretton Woods
Development	18
Climate Change	9
Invasives	5
Pollution	3
Natural Systems Modifications	3
Biological Resource Use	3
Transportation and Utility Corridors	1
Recreation and Other Human Interaction	1
Agriculture and Aquaculture	1
Energy Production and Mining	0



Threats: Participants at each session were asked to place a dot indicating the two top threats to wildlife

INPUT SESSIONS FORMAT

UNH Cooperative Extension designed the input session to gather ideas and information and used small group dialogue format to connect participants – stakeholders and the public –on natural resource topics in their region. Participants were assigned to groups to ensure a diverse mix of people in each group. Small group discussions were held with trained facilitators and scribes from UNH Cooperative Extension.

Discussion focused on the threats to wildlife and natural lands and the actions to address those threats. Over the past year, NHFG has brought together ecologists and biologists from many agencies, universities and conservation groups to discuss and rank threats to species and their habitats. Every threat was ranked based on how large of an area or percent of a population it impacts, the severity of that impact, and the timing and certainty of this happening in New Hampshire. With 177 species and 25 habitats in the Wildlife Action Plan, there were over 1800 threat/target combinations assessed! Ranking individual threats in this way gives us a picture of the greatest threats to species or habitats, meaning those having the largest and most immediate impact and those threats that are most commonly acting on a large range of species and habitats. For the purpose of group discussion, the threats were grouped into six general categories, described below:

THREATS TO WILDLIFE AND NATURAL LANDS

- ▶ Natural Systems Modifications: Dams, managing water levels of lakes and ponds, culverts, and lack of habitat management.
- ► **Climate Change:** Changes in temperature, precipitation, extreme weather and other climate factors such as sea level rise along the coast.
- ▶ **Pollution:** Chemicals, nutrients and sediments in stormwater runoff, industrial and agricultural wastes, air pollutants including chemicals, sediment, thermal
- ▶ Invasives: Plants, animals, fungi, genes and diseases and native species overpopulation
- ▶ **Development and Transportation:** Changes to land use from housing, retail, industrial and commercial; transportation and utility corridors.
- ► Human Activities: Recreation and other human disturbances; forestry; hunting, fishing and collecting; commercial fisheries; energy production and mining; agriculture and aquaculture.

Participants were asked to review the list of threats and consider whether they have seen the threat in their community. Each participant was asked to share their story of the threat and to share one thing about wildlife and/or habitat that was important to them. In small group discussion, participants focused on the following questions for each of the six threats presented:

- What actions do you think are needed to address this threat?
- Who can address the actions for this threat?

All responses, ideas and discussion items were recorded by the scribe and all notes were transcribed for the following report.

THREAT: DEVELOPMENT AND TRANSPORTATION AND SERVICE CORRIDORS

This threat was defined as changes to land use from housing, retail, industrial and commercial development. Transportation and service corridors are defined as roads, railroads, flight paths, shipping lanes and transmission lines.

The action items suggested and discussed in this threat category focused on education and research; planning, zoning, regulation and the role of municipalities; and incentives and funding.

Development and Transportation and Service Corridors

Education

Public

- Education about pros and cons of backyard wildlife feeding.
- Be an advocate for wildlife-friendly zoning in towns that have none
- Educate people about importance of un-fragmented land on wildlife and habitat
- Cultural shift to value wetlands as part of a system
- Education about impacts of human population growth for public
- Encourage use of NH Fish & Game wildlife sightings database
- Information through technology (Facebook/Apple etc)
- Education through social media
- Includes getting help/feedback from public
- Make it quick, simple, easy for people to stay informed and provide input
- Make support/resources available when making decisions

Developers

- Educate developers, engineers, etc on sustainable development
- Educating architects, developers, realtors, chambers on issues of environment in community
- Education on cluster development
- Training developers to better develop for wildlife
- Outreach to developers about better construction practices. Better info to road agents and developers
- Use T2 @ UNH as a mechanism to educate road agents

Farmers/Landowners/Property Owners

- Educate about impacts of pesticide use and incentives for farmers and landowners to not use pesticides
- Educate property owners and assist owners to maintain property on conservation easements
- Educate owners on value of land
- Educating new land owners especially new farmers

Local

- Educate board of selectman/general public about cost of development
- Better information for small communities on impacts of large developments, especially towns without professional staff/expertise
- Conservation Commissioners don't necessarily have the expertise to review development proposals
- Better education for local land use decision makers

- Need scientists/experts at state level not town level such as a State board of scientists, UNH Cooperative Extension and NHFG
- Town understanding/education of conservation easements and funding
- Provide limits for town documents on how to protect/optimize habitat in a community or town
- Local government/Planning Board should understand agricultural lands, conservation critical habitat
- Prioritizing land for protection and passage

State

- State definitions and guidelines standards
- State to be proactive
- Regulate/educate on water resource use within specific watersheds
- Educate about ecological benefit of dam removal vs historic/aesthetic value
- More education about how disturbances are beneficial
- Value conservation land for all it brings eco systems
- Communications can help inform different views and show impacts of development
- Building support for land conservation so it is permanently protected. More proactive approach
- Best Practices repository as a resource for wetlands and topics at hand
- Better understanding of critical habitat and wild life behaviors
- There has been good education on things like water quality, but there could be more especially related to green-development
- Promote trail (bike/ski) to protect wildlife corridors

Development and Transportation and Service Corridors

Research

- Statewide analysis of habitat connectivity
- Habitat block analysis as tool layering all data
- Better understanding of what is on landscape
- Identification of lands that have high values (wildlife) especially southeast NH learn who owns and educate landowners
- Monitor impact of wind turbines on wildlife
- Concern about wetland mitigation and whether it really works (works regarding dollars but not according to species)
- Studies of water withdrawals and their sustainability
- Studying migratory patterns of wildlife (especially with flight paths and transmission lines) and education
- More information/detail on WAP/maps, more than general description and give to conservation commission

Development and Transportation and Service Corridors

Planning

Plans

• Rank communities on environmental planning Master plan/ordinances and how they interact with wildlife and have resources for communities to improve

- Encourage towns to develop a Master Plan
- Water management plans for low water or drought conditions
- Statewide plan to develop our power infrastructure and energy
- Targeting natural flow regions in plans
- Better management considerations of subsurface systems

Where/How to Develop

- Integrate wildlife in transportation plans or development
- Coordinate intentional development with wildlife habitats
- Be intentional about development (not reactive)
- More informed land use planning regarding where to develop and where not to develop
- Encourage development in areas determined less sensitive
- Landscape scale mobility patterns for habitat corridors

Community Planning

- Create identity/recognize community for environmental planning (historical signs)
- Scenic by-way designations
- Consider community development to corridor livable/walkable
- Avoid urban sprawl
- Planned communities
- Towns should do natural resources inventory

Regional

- Conservation planning should be regional
- Model by laws @ regional planning commission for sustainable development
- Identify/prioritize a map crossings/areas of importance
- Prioritized sites for roads for mitigation
- Forest management with landscape planning multiple landowners
- Planning board doesn't encourage alternative energy/planting trees
- Encourage planning boards to minimize impervious surfaces, reduce blacktop and increase use of pervious materials
- Site plan review regulation allows some control over development on the town level

Development and Transportation and Service Corridors

Zoning

- Must be local zoning and planning
- Adopt zoning to address building on steep slopes. Needs to be in master plan
- Use zoning to address wetlands, soils, etc.
- Eliminate development in wetlands
- Encourage conservation subdivisions/clusters rather than frontage-based developments
- Encourage limits for maximum driveway lengths to reduce fragmentation
- 2 acre minimum lot size cut up/fragments landscape
- Developers less likely to do cluster development
- Change zoning for cluster development; mandate/allow
- Rezoning with wildlife in mind
- Restrict land use based on wildlife habitat info

Development and Transportation and Service Corridors Regulations

- Need a better process for mitigation/developing roadways and commercial developments that have less impact on wildlife/natural resources
- Stricter regulatory controls for commercial and industrial development
- Enforce regulations on wetland development
- "Teeth" in regulation should be consequences to actions
- Make developers responsible for impacts through permitting, regulations
- Understand impact and put in permitting
- Regulation and permitting
- Better oversight of permitting process
- Actions should be done through permitting authority
- Consistent laws and regulation state-wide
- Consider the impact of state mandates on local community
- Towns should know what the state regulations are
- Each town has to do own wetland protection, river protection

Development and Transportation and Service Corridors

Land Conservation

- Protect land local to state level
- Conservation
- Can use conservation easement
- Encourage conservation of land to create wildlife corridors
- Permanent protection of state forests
- Land protection funding is needed
- Higher level protection of deer yards
- Landscape level review: management needed (in areas with small parcels, especially)

Development and Transportation and Service Corridors

Infrastructure

- Address impacts of improper forestry on roads, to reduce washouts and impacts on wildlife
- Better roadkill mitigation strategies, increased awareness.
- Proper sizing of culverts and bridges on roads public and private to allow wildlife passage
- Manual of best practices to protect wildlife for road agents
- Coordinate/combine best practices manual for consistency
- Curbs or infrastructure have impact
- Road construction that contributes to minimized use of salt/sand
- Lack of maintenance for infrastructure (detection ponds, culverts, etc)
- Highway-level planning needs to incorporate corridor information

Development and Transportation and Service Corridors

Funding and Incentives

Development

- Incentives for developers to leave more open space
- Certifications for designs for sustainability similar to LEED (created by non-developers)
- Incentivize re-development over new development
- Incentives for companies to use old sites and not use wild lands
- Recognize voluntary proactive measures taken by private sector

Conservation

- Financial support for conservation
- Funding for purchase and easements
- Protect LCHIP for funds for land conservation
- Money for land protection
- Increased support for land conservation programs (wild lands and woodlands report has good goals)
- Support for current use

Towns

- Identify sources of funding for land protection efforts and for town's NRIs to identify critical properties
- Funding for towns for NRI \$ implementation conservation plans
- Towns receive 100% of land use change tax to mitigate development
- Use a partial alteration of terrain permit fees should support wildlife also Land Use Change tax
- Thinking to future (providing incentives and resources for towns to create long term plans)

State Level

- Funding at national and (especially) state level, concern we invest almost nothing; lack of commitment by legislature and governor
- Funding at state level i.e. wetland monitoring
- Funding state agencies
- State funding mechanisms for stream crossings for fish and aquatics
- Funding for NH F&G
- State funding for monitoring wetland protection

Mitigation

- Mitigation areas and funds should go to larger areas not small areas
- Mitigation for lost habitat of equal value
- Increase cost to mitigation for better results funds could go to conservation commissions
- Stronger mitigation requirements when impacts can't be avoided
- Better way to measure value quality of habitat is for mitigation. Resource Managers should be involved in this, especially NHFG

Other

- Hold DOT and local transportation agencies accountable to Best Management Practices in good forestry
- Incentives for local resources

- Money for all of this!
- Fund wildlife corridors
- More funding for enforcement

Development and Transportation and Service Corridors

Coordination

- Encourage conservation commissions to work with planning boards
- Encourage planning boards to work with a wildlife professional
- Zoning and planning boards need to integrate with other agencies/groups
- DOT, DES, Fish & Game work collaboratively
- Partnerships with other nonprofits and planning commissions on transportation and development to better protect wildlife and habitat
- Working relationships between conservation and transportation
- Better relationships between DOT and DES and nonprofits to achieve common goal and build roads and culverts that have less impact on wildlife
- Coordinating FEMA \$ for culvert replacement that is better for wildlife
- Collaboration with DOT for wildlife crossings
- Establish a state and wildlife official/advisor to be looking at wildlife protection and mitigating impacts
- Collaboration between biologist and commissioners in Fish & Game
- Gap between state legislature and DES often at cross purposes between different agencies and levels of government (state vs local)
- Networking w/state organization and local
- Working across town lines
- Water access and preserve = coordination

WHO CAN ADDRESS THE ACTIONS FOR THIS THREAT?

Development and Transportation and Service Corridors

Army Corps E	Engineers
Amoskeag	
Association c	of Conservation Commissions
Attorney Ger	neral
3ring in mult	iple generations to the process
Chamber of (Commerce
Churches/yo	uth groups – educating
Civic organiza	ations
Counties sup	port conservation districts
DES dam bur	eau
DOT	
Environment	al groups
isheries	
Grange and o	hurches
Homeowners	5
_ake associat	ions
ocal advisor	y committees
ocal highwa	y department
Need more,	younger people involved through local activities
NGO's	
NH Legislatui	re – subsurface
Non-profits	
North Counti	ry Council
Planning Con	nmissions
Private land	owners
rivate secto	r for funding (EMS, Cabelas, LL Bean, REI)
Recruit youn	ger people
Retired engir	neers biologists, scientists
Selectboard	
state/federa	l road organizations
Γrail Commit	tees
Village distric	cts
√oters	
Watershed A	ssociations

THREAT: INVASIVES

Invasives were presented as a threat being defined as plants, animals, fungi, genes and disease. Native species overpopulation is also included since this can pose a threat to wildlife. Examples of this threat include introduced insects and plants; invasive non-native diseases such as white-nose syndrome in bats; foxes raccoons, skunks or introduced predators such as cats and disease outbreaks.

The action items suggested and discussed include much discussion on the need for research and education and the need for funding. The role of volunteers was noted and many action items directly relating to invasive work were shared.

Invasives Education

General

- Educate community about what invasives are and why it's a concern and how to eradicate and prevent
- Educate why we have invasives need to address larger issues look at whole system not just invasives
- General education campaign, for public (terrestrial and aquatic)
- Educate about economic impacts of invasives
- Boost general awareness about invasive pests/plants start in schools
- Better education on living with wildlife
- Educate people about cats/ dogs going outside as predators
- Awareness of connection between hunt and trapping to keep populations in balance
- People need to know native species need awareness education so don't buy invasives
- Encourage native plants
- Lack of caring/knowing/understanding about impact of invasives if people don't spend time in the woods, don't notice loss of vegetation
- Much of "knowledge" about wildlife through folklore not facts
- Education for deeper understanding moving firewood

Who to Educate

- Educate licensed foresters want to cut invasives or not/control invasives cutting can help habitat
- Educate people who are selling/interacting with farmers Agway store, landscapers, etc.
- Education visitors, landscapers
- Educating those who are eyes to ears in the woods (hunters, professionals, hikers)

Method

- Use media, public access TV, and social media
- Expand existing education programs
- Education and recruitment of citizen scientists
- Educational signs when enter state firewood, cleaning boats
- Education of public on invasive issues and non-gov and protection of wildlife sporting groups to help monitor boats, ATV's, etc.
- Step up don't move firewood campaign

- Workshops by conservation commission educate city government/land owners conservation districts/UNHCE how you do it is important –news and radio and multi-media
- Different levels of education road agents; public; recreation users, flowers consumers, multiple approaches.
- Equipment maintenance
- Make a video showing how many insects are in firewood
- Take advantage of how people learn today
- Include educational materials to new homeowners through realtors
- Encourage people to participate in various wildlife programs
- More publicity for state projects (milfoil)
- Learn from experiences in other parts of the country where they already are

Towns

- Educate towns as to how to mow to avoid spreading: need to figure out how to manage each species; UNH or Fish & game provide education
- Land use planning depending on available resources currently limited knowledge
- Share information in towns

Homeowners

- Homeowners target education to group (ex. Tool rental program)
- Suburban areas educate homeowners on using native species use garden clubs, etc.
- Lake Host program outreach and education helpful
- Local community/landowners programs for invasive species management
- More outreach to cat owners to protect habitat where certain species come

How to Control

- Clear answer to how to get rid of... (invasives) (consistent between depts./agencies)
- Easy access to info (website)...best practices for removal and prevention
- More education about how to control various invasive plants
- Produce identification guide to give out and have days when volunteers go out

Defining Invasives

- Reframe discussion about invasives could some be OK?
- Public perceptions of "nuisance" species outreach about addressing these species is done in a thoughtful way
- Differentiate between invasives that are a clear threat and those not a threat more strategic
- Invasive species buckthorn, approach businesses to remove

Invasives

Research

- Strong long range research programs on invasives
- Have to do a study before you can do anything; need to do baseline studies upfront
- How to define invasive species in a changing climate
- Determine largest contributors to climate change climate driving many invasive plants and insects
- More discussion about the methods to control invasives herbicide, pesticide, bio control

- Some plant invasive species good for wildlife need analysis of impact balance needs of species to manage (over population need to control)
- Dealing with invasives is expensive. Need research to figure out where to use resources focus on those causing most problem.
- Rating invasives based on impact to environment
- Identify invasives effects on wildlife and habitat environment some more difficult prioritize threats integrate with climate change
- Find ways to anticipate what could become invasives (ornamental plants)
- Identify areas that could be vulnerable
- Research on what state will look like in future guide consequences of current action
- Mapping of invasives for use at local level hard visual evidence to motivate action
- Understand perspectives of invasives
- How does state invasive program dovetail with federal program? (i.e. green crab)

Invasives

Funding

- Money
- Support funding for boat inspections at access points (including canoes and kayaks)
- More funding for state agencies NHFG, NH DES, NH DOT
- Need for long-term habitat protection/like Land Conservation Investment Program
- Watershed or sub-watershed level so not just hotspots state funding to non-profits/townscommunities planning
- Money for invasive removal projects; funding source; organizing volunteers for this use other clean-up volunteer models
- Need resources for disease monitoring and maintaining/Volunteer
- Costly to be pesticide applicator; funding sources needed; spraying for invasives

Invasives

Enforcement -

- Lots of good regulations to prevent invasive spread and needs more enforcement
- Increase enforcement of selling invasive plants
- Higher penalties and enforcing for spreading invasives
- Consequences for release of non- native species

Invasives

Regulations

- Policies to reduce movement of invasive (along coast international)
- Loosen laws that restrict who can manage invasive species (along roadways specifically)
- Outlaw sales of exotic pets that can be release (turtles) and snakes
- Outlaw possession of invasive plants
- Improved regulation for disease vectors and invasives
- Make current regulations even more restrictive to any non-native species
- Eliminate and regulate availability of nursery stock

Invasives

Planning

- Decide our values around invasives as a state why are we trying to control invasives
- Address invasive species before it's a problem
- Town plans for addressing invasives
- Whatever actions we take be cautious in introducing new species may backfire
- Human movement of invasive plants should be addressed on town-by-town basis
- Towns need place to dump invasives plant hazards

Invasives

Land Management and Monitoring -

- Lack of diversity in habitat/Use forest management to created diversity
- ID invasive species in backyard
- Community forests habitat management
- Land disturbances pull invasives, clean up and plant new species (transition phase)
- Implement management plans that allow for balance of whole animal ecosystem at town level (diversity and balance of wildlife populations)
- Interconnectedness of ecosystems supports variety must maintain
- Monitor what plants are sold in state and regulate and enforce
- Voluntary self-monitoring program for different species
- Develop public forum to report invasives
- App to report invasives
- Proactive monitoring of disease
- Inspection of boats
- Monitor movement of firewood effective?
- Significant monitoring by the state to detect new invasives

Invasives

Specifics for Invasives –

- Develop and implement rivers, lakes, aquatic invasives (not just terrestrial) programs
- Focus on prevention
- Community workdays: ex removing loosestrife
- Keep domesticated animals controlled
- Hire goats
- Working with towns to work proactively on wildlife
- Work with towns and local groups
- Actions to address chemical imbalances in soil created by invasive plants
- Keep native species out of the invasive category (see table fox, raccoons, skunks, etc.)
- Available native stock-hard to find not many nurseries have stock comparable to invasives
 plant sales through county
- More concentrated effort by agency to keep accessible data base more user friendly keep track of invasives

- Bring in predators unless you can nip them in the bud early response
- Honey bees permitting, legislation; to protect
- Invasives triage effort come into disturbed land give native species time to take hold
- Don't treat invasives as homogenous group deal with best at local level not state level
- Alternatives to pesticides; more natural options, understand impacts to native species
- Limit use of pesticides/herbicides to control invasive plants
- Clarify nomenclature of invasive vs nuisance species
- Homeowners/citizens aren't authorized to move animals by current law
- Removal of dams that limit migration
- Pulling garlic mustard hard to control
- Pick out unusual threats for largest impact (triage)
- Incorporate more green space to support predators
- Consider predators as important to ecosystem
- Strengthen Lake Host program
- Look for synergies and how species interact. Create maps that predict problems.
- Proactive eradication
- Re-establish native with equal food and habitat value BEFORE removal of invasives
- Expanding or adding more plants to the banned list of invasive plants
- Find ways to eradicate hogweed
- NHDOT clean their equipment
- Limit movement of dirt
- Prevent/control overpopulation of certain wildlife populations

WHO CAN ADDRESS THE ACTIONS FOR THIS THREAT?

Invasives

Citizen S	Scientists
Commu	nity groups – volunteers
Conserv	vation Districts
Conserv	ration group work with conservation commissions
Conserv	ration non-profits
Corpora	ite volunteer groups
Crowds	ourcing
Eversou	rce/Utilities
Foreste	rs
Garden	clubs
Kids	
Landow	ners
Legislate	ors
Master	Gardeners & Natural Resource Stewards
Meet-u	p groups
NH Fish	& Game, NH DES – together with Dept. of Education
NHDOT	 removal along highways (and other agencies)
NHFG	
Nurserie	es
People v	who are in the woods – keep eyes and ears open
Planning	g Boards
Public w	vorks departments
Retired	folks – volunteers
River wa	atch programs
School k	kids – lobby adults in their community
School p	programs (gets parents involved too)
Schools	
Schools	– clubs @ high school, college - @ all levels
The Stev	wardship Network
Town bo	oards & commissions
UNH Co	operative Extension
Univers	ities – students
Wellbor	n Conservation Fund

THREAT: CLIMATE CHANGE

Climate change was presented as changes in temperature, precipitation, extreme weather and other climate factors such as sea level rise along the coast of New Hampshire. Threat examples include shifting habitats and alteration of habitats and increased intensity or changing in timing of storms and flooding.

The action items suggested and discussed focused on the need for research and education on the topic.

Climate Change

Education

General

- More general education and press
- Promote communities acceptance of climate change
- Need to educate people: their individual actions have an effect
- W.A.P. can help with the education about larger societal situations
- Widespread education; but someone has to develop materials
- EDUCATION outreach about what people can do about climate change
- Collaborate on education
- Science is discounted until if affects people individually

Public

- Be aware of invasive species coming from other states and more specific actions, i.e. education
- Better education about not releasing non-native species general public and schools
- How to define invasive species make science relevant and understandable so communities can use it in master planning. Make the path clearer.
- Better understanding of threats
- Education of larger/broader picture of cycles of climate change (over long term vs. what is happening today)
- Educate citizenry on how to decrease carbon footprint
- Need to convince people that climate change is real media, politics
- Education on value land (conservation)
- Better communications about impacts and what is already known so they can connect the dots to personal action
- The biological function/clocks of wildlife are out of sync with climate change. Provide stories to help people understand impacts on real species and values
- Educate people to mitigate and communicate
- Awareness of sensitive areas of high elevations
- Stay on trail so not impacting sensitive areas
- Part of "citizen science"/AMC program to find what's blooming
- Spread word on aerial spraying
- Public shaming/peer/pressure to move to action

Businesses and Schools

- There's an abundance of waste/packaging; educate big business
- Present facts, more education by reputable sources through schools

Climate Change

Research

General

- Spending on research and development is necessary
- Need to show correlation with climate change
- More information/research about how to adapt to climate change. Identify most sensitive species and priorities
- Prioritize and recognize when to "let go"
- Apply/Adopt broad research more locally
- The general public isn't as aware of research that is going on as it could be. People want/need to know what they can do, what their communities can do.
- Understand predictions of global climate change
- Study and monitor
- More science and info/transparency on the topic, plan for air traffic/ condensation trails

Method

- Collect stories and observations to better understand changes that are happening
- Use NHFG as a resource to gather information/observations, state foresters, all state agencies, consulting foresters

Wildlife

- More research on effects of climate change on wildlife
- Studying ticks and find ways to reduce other diseases as well
- Get a better sense of what wildlife are being impacted needed to drive actions need to know what's wrong before we can fix
- Identify opportunities to mitigate migration problems i.e. advance of phragmites with sea level rise
- Map how climate change affects different species, include all species not just game
- Common species need to be monitored especially as related to climate change
- Have study areas on conservation lands that allow understanding of predator ecosystem
- Climate change at high emission scenarios = shift in plants
- Role of beavers in climate adaptation
- Consider including beaver in WAP, will help water storage during drought and severe storms

Habitat

- Academic research around value of wetlands in mitigating impacts of climate change— can help drive wetland protection
- Better understanding of what will happen to our forests what changes conserve transition zones/corridors
- Research Identify margins of what to save or enhance
- Protection of critical habitats understanding where they are and monitoring how they change over time
- Drought situations could impact vernal pools
- Updating managements with current information on precipitation and rainfall (new data)

Climate Change

Energy

Renewable

- More renewable energy, better infrastructure for renewables
- More community solar, net metering to reduce carbon emissions
- Balancing renewable energy and habitat is in the interest of energy
- Conflicts exist between energy and wildlife e.g. wind turbines & birds
- Renewable energy we need a better understanding of the real impacts on wildlife
- More alternative energy; less coal
- Decentralize the power sources in NH, tap into water power. Distributed energy sources
- Strong state initiatives for solar commercial and residential

Conservation/Efficiency

- Energy efficiency
- Encourage energy conservation so we don't need more corridors for energy
- Assess carbon footprint at schools and at community level, homeowners
- Insulating homes
- Need greater investment in energy efficiency
- Reduce carbon/energy use
- Turn lights off larger buildings automatic switches
- Get businesses and auto makers to reduce carbon footprint
- Enforce and Best Management Practices buy-in regulations

Carbon Emissions

- Support the regional greenhouse initiative
- Change in energy policy to decrease carbon
- Carbon storage

Climate Change

Transportation

- Mandate mass transit, i.e. school buses for kids
- Need a park & ride in Plymouth for bus to Boston
- Carpooling
- More electric car charging stations
- NHFG could partner with transportation/public works to create habitat on roadsides could grab public's attention
- DOT aquatic connectivity issues; integrate wildlife friendly passages into climate change planning

Climate Change

Water

Wetlands

- Protect wetlands to mitigate droughts & flooding
- Address natural storage capacity of wetlands in development proposals.

Floodplains

- Use floodplains for agriculture
- Identify landowners in floodplain areas and target them for protection same for landowners with shorefront that could be protected
- Purchase sensitive floodplain areas for water storage/use conservation easements (i.e. in Concord and Canterbury)
- Look at building policies around the seacoast and Great Bay, looking at rivers and coastal flooding
- Flood storage areas need to be larger to protect habitat. Look at regulations at a more regional or watershed wide approach

Mapping

- Better community flood maps so people understand where impacts might occur
- Better maps so people can see how climate change will impact rivers more dynamic maps
- More information/better understanding of climate change impacts on communities; i.e. do floodplain maps reflect new climate regime?

Withdrawal

- What is being done to protect aquifers/gas supply? Better regulation around withdrawal, especially if leaving the watershed
- Protect water resources w/legislation to prevent commercial water extraction

Climate Change

Ticks

- Problems with ticks and moose and Lyme disease addressing it in ways beyond hunting levels
- Human health from ticks and diseases
- Ticks affecting snowshoe hares and other wildlife

Climate Change

Municipalities

- Municipalities are educated, but don't take action
- Need stricter standards, or opportunities to work with municipalities in planning process
- Municipalities could adopt higher standards for energy use
- Make mitigating impacts of climate change mandatory as part of the planning process at the town level (RSA)
- Town level land conservation
- Master planning process should address CO2 reduction
- Increase flood plain zone protection regulations i.e. revisit definition of protection zone and incorporate new climate/precipitation data in rule making

Climate Change

Land Conservation and Management

More land conservation

- Need for land conservation in relation to development so things can adjust
- Increase amount of large tracts of undeveloped land to handle increased rainfall
- Increase protection of targeted lands that would mitigate effects of climate change. e.g., vernal pools, wetlands
- Identify what lands would be particularly valuable to conserve for resilience
- Outreach: teach people how to manage on private lands
- Replacement of ash trees and others
- Targeted beetle management and forest management
- Timber harvesting to anticipate more dominate species in 50 years and manage for it

Climate Change

Landscape Thinking —

- More trees and rain gardens to mitigate climate change
- Larger riparian buffers
- General storm water management manage water on landscape better
- Erosion control
- Use southern plant species plan for it
- Thinking about projects at landscape scale and urban or other wildlife corridors

Climate Change

Infrastructure

- Identify how we can change infrastructure to make up for damage by storm events while being aware of impacts of new infrastructure to wildlife
- Climate change could drive changes in infrastructure that could benefit wildlife with good planning, i.e. larger culverts
- Management of infrastructure & planning needs to take entire ecosystem into account
- Better process for replacing culverts that are correctly signed. Permitting process is too complicated to replace culverts that are better for wildlife.
- Continually look at culverts and stream crossing practices. Slip-lining on culverts on I-93; it's becoming a more prevalent practice but is damaging to wildlife
- Identify places for road crossings larger culverts & plan for larger storms
- Development in the flood plain and culvert size
- Flood plan ordinances development out of floodplains
- Dam bureau should be involved ability to influence flood storage
- Maintain and update current drainage systems to accommodate changes and flows
- Road design standards by future flood expectations

Climate Change

Enforcement

- Enforcement of regulations already in place, and legal actions
- More consistent policies and enforcement of shorefront zoning
- If education doesn't work other approaches could help enforce (e.g. fines)
- Include beaver dam removal w/ human dam removal notification requirements
- Enforce beaver dam regulations

Climate Change

Funding

- Better management though better funding
- No funding for monitoring and is required for new funding and results
- Lack of funding need political support
- More fundraising for wildlife through legislation
- Sources of funding other than fishing and hunting license fees, and wildlife plates
- Use room and meals tax to support wildlife and tolls
- NRCS as a source of funding
- Zero sum game what will you give up for this funding
- Money often goes into general fund
- More money for land conservation; LCHIP, Land and water conservation fund

WHO CAN ADDRESS THE ACTIONS FOR THIS THREAT?

Climate Change

Conservation commissions and groups, town, regional
Conservation Commissions as eyes and ears of Fish & Game
County involvement
Federal and state
Fish & Game and non-game – established agencies
Governor – make a priority, executive order
Governor's Office
Homeland Security
Kids
Make it a priority with your vote
Need positive choices – not guilt
Ordinary, concerned people
Politicians and need education ex. WMNF need congressional support
Public schools
Road agents
Scientific community for research and monitoring
Voters so politicians not follow money
Work with congressional delegation for strong federal

THREAT: NATURAL SYSTEMS MODIFICATIONS

Natural systems modifications were defined as dams, managing water levels of lakes and ponds, and lack of habitat management. Some examples include impacts from dams and water management, including timing of lake and pond draw-downs and tidal restrictions as well as habitat degradation from natural succession or lack of management.

Water resource management was the big topic of discussion with natural systems modifications. Education and research were also of importance in discussion. There was some discussion on planning and regulations and funding. There were specific recommendations relating to land management.

Natural Systems Modifications

Water Resource Management

Dams

- Evaluation of dams to see which should stay or be modified
- Identify priority dams
- Consider impacts of dam drawdown timing-- not during critical periods for wildlife
- Dams for fisheries/waterfowl management should be operating under a plan for drawdowns
- Fall drawdowns for hydro-electric could impact fisheries
- Regulating water level who is responsible?
- Financial and technical assistance to remove old dams
- Increase funding for staff for dams
- More dam removal— restore fish habitat
- Get rid of some dams
- Streamline system for dam removal less regulation, less cost
- Privately owned dams are difficult to manage
- Exeter Dam removal sometimes good studies can catalyze local action
- Dam removal as example of natural flows/ sediment removal as example of connectivity
- Dam regulation/mod should consider climate change
- Protect beaver dams

Management

- Fish-ways passage ways and ladders to get over dams
- Interconnectivity ID and replace culverts
- Beaver pipes should be installed saves funding, non-lethal
- Education on beavers use beaver pipes not trapping
- Education on beavers and how they are good
- Guidelines for communities and land trusts for stewarding/managing wetlands
- Wetland reclamation and restoration
- Measuring water quality regularly in lakes/rivers and coordinating among agencies
- Limiting water withdrawals
- Town-level ordinances that limit large-scale water extractions
- Regulating water/lake flows to impact streams & rivers
- Plan to clean-up after chemicals in stream and enforcement
- Diligence/oversight on products used on water/salt marshes, etc.

- Need better understanding of how water resources are impacted
- More comprehensive water quality monitoring
- Let floodplains grow back to original
- Regional water management governed at state level. Federal system doesn't work.
- Winnipesaukee watershed management planning as a model
- Logging slash leave for habitat where appropriate (brush piles)
- Coordinating with lakes associations
- Oversight of groundwater removal

Natural Systems Modifications

Education

- Education about prevention, maintenance, restoration
- Becoming educated to make decisions
- Community outreach and education
- Educational programs from experts
- Being aware of what's going on in community / self- educate
- Education on forest management especially young foresters
- Education on clear cutting small areas
- Get word out on county extension foresters to provide education
- Better job of reaching owners/industry of recreational vehicles
- Education on use of ATVs
- Education on best management
- Education on timing of drawdowns and impacts on wildlife and educate town officials and community on impact
- Education, outreach, networking on dam maintenance
- More information on dam removal process (how does it happen?)
- Educate public on implications of dams on natural systems and landowners
- Educate people on importance/impact of deer browsing
- No science on deer browse need strong science harsh impact on vegetation
- Educating landowners
- Whoever is responsible for lakes should have information on impacts to species and habitat
- Educate private landowners about the resources
- Better informed people on planning boards
- More communication about existing regulations
- More awareness of impacts of pesticide use on law care in sensitive areas
- Getting media attention
- Should be in the big game plan

Natural Systems Modifications

Research

General

- Research and focused to public- related to research
- Looking long range on impacts of change
- Identifying important properties under conservation easement
- Need research on old growth forest as relates to carbon sequestration
- Information on dam draw down of lakes and ponds
- Study impact or threat of dams and education community on topic
- Who makes these decisions? (control dams) Need more information about impacts to wildlife
- Better information about impacts of water withdrawal for snowmaking, bottled water, swimming pools and impacts of runoff. Use of chemical in snowmaking.
- Identify regions lacking habitats (e.g. early successional rare in south, abundant in north)
- Habitat alteration, impacts

Natural Systems Modifications

Planning and Regulation

- Statewide master plan for wildlife
- Wildlife Action Plan in useable format
- Balance habitat management system
- Look at habitat system not just \$\$\$\$
- Regulate land use practices that better impact sensitive habitats use of buffers
- Regulations/control of parcel size (larger parcels make more sense to manage)
- Regulations around mechanical harvesting using herbicides and aquatic herbicides
- Forestry regulated at state level
- Laws pertaining to highway vehicles on Class VI roads
- Programs to divert around use technology
- Legal action
- Dams not regulated on CT River & impacted fish
- Standards for regulating dams
- Regulation of smaller privately owned dams
- Operational rules for dams should include habitat impacts
- Regulations for maintenance/removal of private dams
- Better regulation of water level management

Natural Systems Modifications

Land Management

- Plan for management of conservation land
- Funding & expertise to develop local management plans
- Focused management plans for varied habitats and a template
- Use knowledgeable volunteers and UNH professors for management plans
- Working with knowledgeable forester to develop a plan

- Considering and prioritizing use on natural lands
- How to manage tidal lands and dams must understand impact
- Look at what is out there and matrix to consider species = landscapers and how to manage landscape to manage species
- Managing for natural communities/ecosystems
- Better BMPs in sensitive areas
- Better clarity about roles at different levels to produce better management; towns v. state
- Determine matrix on habitat and at landscape scale
- Think about landscape scale of habitat and mobility and relation to streams
- Regional/landscape scale management
- Landscape scale thinking and actions
- Places where there should be no management
- State some lands managed as wild lands (10%) or based on wildlife
- Increase harvest of mature forest before they're too old

Natural Systems Modifications

Enforcement

- Enforcement needed
- More enforcement on recreational vehicles
- Enforcement and chronic shortage of funding give Conservation Commissions regulatory authority

Natural Systems Modifications

Funding

- Support budgets for natural resource agencies (enforcement)
- Money
- Funding from NRCS on delayed mowing
- · No resources to maintain dams need funding
- Fund for beaver pipes and culverts
- Tax dollars should go to what is valued
- Funding support for implementation of management plans

Natural Systems Modifications

Coordination

- Better guidance through state regulatory system
- State/federal/private collaboration with dam management
- Increase communication between biologists and dam management to time draw-downs to support wildlife
- Involve DOT, local and state participation
- DES and dam bureau should coordinate with NH F&G on Wildlife Action Plan
- Planning Board and town master plan and inform Conservation Commission

Natural Systems Modifications

Specifics

- Include municipalities
- Management of conserved land especially at town level could be income producer
- Technical assistance focused where will make biggest impact
- Restore/maintain: shorelines and shoreline vegetation
- Look at watershed solutions
- Address habitat needs through forestry
- Keeping open land
- GPS on ATVs to be monitored
- Build more habitats
- Support forest management activities
- Logging is large impact forest is depleting not leaving chips for habitat
- Decrease aerial spraying (stop)
- Expand the parameters (e.g. jet dust)

WHO CAN ADDRESS THE ACTIONS FOR THIS THREAT?

Natural Systems Modifications

Conservation Commissions
Conservation organizations
Corporate owners/customers (e.g. ski areas)
County Extension
Coverts program
Dam Bureau
Dam owners
Dept. of Environmental Services
DRED/Parks and Recreation – limiting access
Educators
FERC
High school children
Internships for youth
Involve civic group and land trust to educate and volunteer
Land managers
Local town/conservation groups
Loggers, natural resource consultants
NH Audubon Society
NH Lakes Association
NH Legislature
NH Timberland owners
Recruit local associations and local volunteers

Society for the Protection of NH Forests
State/Federal agencies
Trout Unlimited
UNH Cooperative Extension
Volunteer organizations

THREAT: HUMAN ACTIVITIES

Human activities is a broad category which includes biological resource use such as hunting, fishing, collecting animals or plants and timber harvesting. Also included are: human intrusions and disturbance such as recreation and airport operations that disturb wildlife; energy production and mining including wind power facilities, biomass harvest and mining; agriculture and aquaculture (farming and ranching, freshwater and marine aquaculture).

Education and research were a major topic of discussion. Participants focused on energy and forestry in this discussion and less on recreation.

Human Activities

Education

General

- More knowledge/education
- Educate recreational use
- Educate towns/public
- Education for landowners
- Educate planning boards and developers
- Don't assume human activities are bad
- Comprehensive total state program for education
- Education of public to reduce recreation activity impacts to wildlife
- Lack of education; need to define problems clearly and develop mitigations
- Utilize existing resources (UNHCE) to get advice/help to be good stewards
- Promote programs that further educate professionals (loggers) to be good stewards
- Supporting education and oversight

Specific Topics

- Threats or areas of concern to specific species and opportunities to educate people about species Be aware of where food sources of aquaculture/farmed fish come from
- Education about impacts of domestic animals (cats)
- Need more education about climate change & wetlands
- Should highlight ban on lead sinkers to all fishermen, every year!
- Education, including for decision-makers such as Fish and Game Commission and the state legislature

- Broaden appreciation of natural world; reach uninformed/unengaged; increase long-term thinking as communities; ownership of natural world and what's affecting it
- Increase awareness of animals along roads
- Community outreach about impact of what users are doing to land
- Educating public about nesting ground birds especially in spring
- Campaign to leave open land how you found it "leave no trace" Community outreach
- Educational efforts in urban suburban areas part of natural systems connect built environment with natural systems
- Make better use/awareness of DES land use guide Innovative Land Use Handbook
- Working w/landowners to understand value of working w/professionals (forester, etc.)
- Conservation commissions educate about use native plants in landscaping
- Updated action plan integrated into hunting safety program/licensing program.
- Building awareness for value of various species
- Re-connect to N. American model of conservation
- Better education about impacts (of ATV, snowmobile, mountain bikes) through clubs

Schools/ Youth

- Provide more resources to schools, hands on education related to curriculum in local community
- More teacher/school training too much focus on indoors/testing
- More education to parents
- Use obesity money to get kids outdoors
- Educate children from very young in school to care for wildlife
- Require that science be taught K-12; require Department of Education hire science consultant
- Create new attitude about how to approach nature/ young people more and more disconnected from land. Work through school?
- Coverts program for kids more advertising
- Curriculum development infuse in elementary
- Incorporate ecology/environmental issues in education in schools start young!

Other

- Wetlands are important for water storage; patterns will change with climate change; there
 needs to be education
- Highest diversity along transmission line not negative, understand impact
- More organized excursions with educators for folks into the woods Land Association AMC (NH Children & Nature)
- Membership often age 55+ increase trail maps, geocaching, etc. to get families/younger demographics out
- Pictures of wildlife posted on trails for recreational users/cordon off areas when there is habitat
- Management of coyotes tends to seem irrelevant and promotes taking of the animal; coyote
 and wolf education into hunter education programs; new corridors present opportunities for
 wolves to colonize NH needs to recognize this

Human Activities

Research

- Properly quantify impacts, develop mitigation option; and then educate
- ID species that are most sensitive to human disturbance and find places to limit distribution

- Look at all species (bobcat, etc.)
- Map of migratory paths from the state flyways/runways air and terrestrial
- Improve data collection for NHB Improve data more available. Use Publicly –collect data for NHB.
- Effect of windfarms on bats noise pollution
- More research on bird mortality with wind convert to info for pubic also mitigation plans with existing planned development
- Study fish farms marine aquaculture: how much can our resource sustain, impacts to ecosystem
- Identify sensitive habitats in wind power project area (not just ridgelines)
- Data collection of road kill animals DOT deal w/dead animals to collect data
- Study/understand more about impacts to wildlife of ATV, mountain bikes, etc. and share this
 information

Human Activities

Regulations —

- Technology makes hunting & fishing unfair some regs to limit or lower take limits
- Strengthening the NH Site Evaluation Committee (SEC) regulatory process to address wildlife issues
- Increase wildlife regulations to protect native species and exotic species not harmed/killed
- More regulation against lead ammo/tackle
- Regulation of ATV's especially in early spring because of salamander population impacts and erosion
- More state regulation for ATV use speed limits, license or not, age of use, etc.
- Developers that break regulations and pay fine; need greater consequences; fines hold –
 damage done; uphold existing laws with new consequences
- Trapping doesn't differentiate between species sometimes species trapped not intentionally better regulation of trapping or discouraging/eliminating
- Pipeline oversight if goes through where is oversight require 3rd party oversight as built.
- Increase penalty of breaking wildlife regulations

Human Activities

Plannning

- Public and town input, needs to be planned not reactive
- Get info to towns, develop plans
- Site evaluation committee instead of reacting, come up with proactive plan
- Think long-term in plans instead of immediate payback (about impacts)
- Look at whole state to identify parts of state (sensitive areas) where human activities not allowed. Come up with policies around sensitive areas.
- Human activities intruding into forests area a concern (snowmobiles, hikes, etc.). Improve planning and coordination to limit/address.

Human Activities

Specific

- Need alternatives to lead
- Make lead ammo & tackle illegal with incentives
- Need to ban bear baiting with chocolate and smart rifles and restrict noise suppression and hounding
- Protect wild cats (bobcats)
- Not allow anyone to take turtles for pets or hunting
- Don't allow killing crows for sport
- Restrict shooting coyotes/sale of wild leeks
- Restoration and maintenance of hedgerows (instead of huge fields)
- Renewable energy (wood) is compatible with wildlife habitat
- Human population control
- No raking
- Eliminate off-road vehicles/restricting use
- Fines for trash
- Create benchmark for sustainable use for trails
- Airports can provide very valuable wildlife habitat to certain species not a detriment
- Managing mowing of airports for wildlife

Human Activities

Energy

- Encourage energy conservation (reward it)
- Encourage distributed generation of power small-scale community energy production
- Need statewide energy policy that is science based and needs based
- Should be advocating for modern technologies for energy projects (burial of power lines)
- Need community based input to energy projects e.g. northern pass and wind projects
- Land trusts and towns need guidance on carbon credits for our conservation lands (individuals too)
- Need state-level authority on energy- enforcement and placement (maybe not best local)
- Have a statewide plan for developing energy (ex. Windfarm/wind on ridges)
- State should be able to eliminate renewable energy fund; governor should be lobbied by agencies and people not companies! Solar is important
- Encouragement of municipalities to use solar power –tax incentives for the meter installations
- Develop statewide plan for siting renewable energy & funding it
- We should focus on balance with energy, in our general not just renewable sources
- There is potential for managing energy related lands for wildlife; e.g. powerlines, timber removal
- Energy: add large solar arrays; Bedford proposal on conserved land currently
- Residential scale energy production incentivize
- Ensure that NH's biomass rules ensure sustainable harvest contains sustainable harvesting standards

Human Activities

Forestry

- Wildlife management incorporated into logging/forestry
- Enforcement of Best Management Practices (BMPs)
- Promote sustainable forestry and industrial practices
- Sustainable forestry practices, manage with wildlife and recreational values in mind
- Encourage landowners to practice forestry this way
- Tree farms and wind break management bring back/promote
- List and use of foresters that are sustainable
- Recovery forestry
- Large scale forestry issues need to be addressed
- Partner with licensed foresters
- Leave buffers along streams, strengthen and follow forestry Best Management Practices
- Forestry hire a professional forester to help with maintaining/improving wildlife habitat, be good stewards
- Incentivize/require a professional forester sign off on plans (wildlife forestry) for lands in current use
- Timber harvesting/management one of biomass harvesting
- Cannot afford to lose timber management tools
- Choose loggers who follow BMPs/the "rules"

Human Activities

Agriculture

- Incentives for sustainable farming that promotes wildlife habitat fields/grasslands
- Create better incentive for best management practices agriculture regulatory use (financial or consequences)
- Agriculture best practices turtles impacted by practices more education to farmers. (i.e. not mow right up to the river to protect habitat)
- Economic value to farmers versus needs of wildlife (i.e. 1st crop of hay vs. bird nesting)
- Agriculture provides grassland habitats coordination to encourage, promote proper management

Human Activities

Coordination

- Active partnerships w/ the variety of non-profits to conserve wildlife
- Integrate multiple agencies in the community
- Foresters share information so loggers can't go county to county more information coordination

Human Activities

Enforcement

- Enforcement increase
- Enforce/manage ATV use need to fund keep ATV trails, prevent resource impacts

• Strengthen and enforce wildlife regulations – don't feed bears, deer, etc.

WHO CAN ADDRESS THE ACTIONS FOR THIS THREAT?

Human Activities

Companies
Dept. of Agriculture
Dept. of Resources & Economic Development
Division of Forests & lands – DRED
Environmental Education in schools
Families need to be focus
Federal, state agencies, towns
Girl scouts, boy scouts, 4H
Local groups
Local/towns boards & commissions
Municipalities/towns
NH Dept. of Ed. Curriculum
NHFG
Non-profit conservation organizations (R3 model)
Off road vehicle (ATV) organizations
Police
Regional Planning Commissions
Retailers
Sportsman & recreational organizations

THREAT: POLLUTION

Pollution was defined as chemicals, nutrients and sediments in stormwater runoff, industrial and agricultural wastes, air pollutants including chemicals, sediment, and thermal changes. Examples of pollution include excess nutrients, chemicals and sediments from lawns and backyards, agricultural practices, mining and energy production; insecticide use and run-off from impervious surfaces such as municipal, commercial and industrial.

Education was a major topic when pollution was discussed by the groups.

Pollution	
Education	

General

- Public education
- Education? Start with young kids
- Educate new community members and update the community regularly
- General public needs access, require info to be posted to this info
- Explain "step down" (answer: localize that federal laws) state and local government have to allow this

Homeowners/Farmers

- Education related to phosphorus, herbicides, fertilizers, insecticides, pesticides for landowners, homeowners, landscapers, and property management
- Limit homeowner's availability to herbicides and insecticides plus education and training for the homeowners audience that is independent (not from the company)
- There should be more education for landowners- can't have a 'cop' everywhere
- Show impacts of fertilizers, abutters, etc.
- Education on food chain (ex.-use poison and it goes in food chain)
- Educate on pesticides harmful to pollinators and other wildlife
- Education to landowners and places like Agway about what is sold
- Modify / reduce pollution around waterbodies : educate, including younger generation
- Educate about impacts to fish
- Raise awareness of storage of hazardous materials
- Educate farmers on additions of fertilizers/nutrients and facilitating invasive species. Food source for algae blooms
- Bring back old farm practices (crop rotation, etc.) that may have been beneficial
- Insect host plants are important: educate gardeners, etc.
- Educate about gardening w/ native species. HQ= Wisconsin program w/ national chapters wildones.org
- Education on pollinator decline and plant organic or native species
- Big box stores can have a big impact if educated
- Education on existing laws
- Proper disposal of hazardous materials
- Need to educate public on on-site sewage disposal maintenance (septic systems)
- Better education for how to care for septic systems, also septic haulers & collectors

Best Management Practices

- Too expensive to maintain natural surfaces on conservation land; guidelines on options and Best Management Practices for impervious surface
- Provide everyone with BMPs and alternatives, and access to this info
- Best Management Practices for forest activities on private lands and owners need to be aware

Towns

- Utilizing state experts for education to towns
- Education for municipal officials (like one for forestry laws for municipal officials) with articulated economic benefits
- UNH program for road agents (T2) and storm water center to better educate

Environment

- More education to public about general environment
- Reduce litter/trash more education, reintroduce the bottle bill
- Educate about/increase recycling
- Encourage recycling
- Encourage plant-based diet to reduce land space taken up to raise animals for consumption and associated pollution leads to less polluting run-off and get info on this topic to the public
- Encourage cycling, walking = less auto use

Schools

- Get WAP into schools to education and encourage the next generation
- Partner with schools to educate about rain gardens and implement rain gardens w/ landowners
 give tools and projects to do
- Education in schools about pollutants and pesticides we only have one earth
- Bring mandatory education on series that focus on nature, use existing documentaries, handson activities in schools, like nature clubs discussions and projects

Pollution Research

• Testing and monitoring is important, this isn't regulatory for rivers; need to call in, but it's after the problem occurs (need proactive monitoring)

- Is there testing regarding places that flood regularly?
- Determine non-point sources and education on those
- Identify who/what the biggest polluters are to help prioritize actions
- What wildlife is most impacted by pollution?
- Effects of drugs that enter the hydrologic system = needs research, public education and regulation
- Impact on fish of Styrofoam dumped in rivers
- Understand effects of fertilizers
- Monitoring particulates in the air. Where do they come from, monitoring system.
- Address dumping of trash in the woods, especially near sensitive areas. Investigate why this
 occurs.
- Test commonly used chemicals (grandfathered) and issues w/ combining these chemicals

 Where does genetic modification come on this (genetically modified corn) what is outcome for wildlife?

Pollution Specific ————

- Decrease/better regulations for light pollution parking lots, businesses, etc.
- Better designed lights to limit light pollution
- Encourage low-impact development
- Shutting down coal plant
- Increase pervious pavement
- Rain/water gardens
- Use of gray water & water conservation practices both in private homes and businesses
- Impervious driveways especially near wetlands, create/promote options and educate homeowners
- Use more permeable pavement options
- Use non impervious surfaces, incentives to put in rain gardens and alternatives for landowners and contractors
- Need better/practical methods for the public to dispose of hazardous chemicals/materials; education on what is hazardous; curb advertisement of harmful substances (lawn fertilizers, etc.)
- Address widespread/aerial spraying; help communities understand impacts
- Stop spraying from jet engines
- Skin cleansers that contain small particles (big issue in Great Lakes) nanoparticles
- Personal care products: research impacts; septics, sewer treatment plants; nano particles; estrogen-like products; medications
- New technology needs to be included
- Switching lightbulbs
- Reduce carbon emissions, help improve air quality
- Wood burning contributes to air pollution understand impacts
- NHFG address motorized boat policy; electric boats are an option
- Snow storage and impacts to ground water. Salt, dirt, asphalt, trash included in snow removal and transport, gets to ground water
- Clean up trash. Tires are dumped because there is a charge for disposal. If this was removed may = less dumping.
- Road side trash of large items and chemicals in those items that leach
- Put asbestos siding in proper place
- Illegal dumping and inappropriate dumping
- Car shops charge \$2 per tire to recycle: where does this go to? It should go into tire recycling
- Need proper car inspections to reduce pollution
- Put in proper barriers for silt control
- More silt control methods
- Remove old/unused barbed wire
- Increase labeling laws
- Educate about Miracle Grow and unknown impacts (salt=kills plants)
- Roundup in the floodplains & wells
- Prevent run off into streams

- Better run-off control
- Retain onsite rain water infiltration
- Implement "soak up rain' program (DES)
- Upgrade & improve stormwater drainage systems
- Use filter strips before run-off enters water
- Riparian buffers should be used
- Simple homeowner's solutions
- Reduce chemical use, eliminate chemicals
- Road salt reduction in sensitive areas, more efficient uses, BMPs
- Encourage alternatives to lawns and less lawns more nature habitats
- Verify yards for wildlife/pollinators
- Promoting biodiversity NEWFS 'state of the plants' doc
- Barry Camp sessions should include forest and wildlife stewardship
- Best Management Practices for spreading manure
- Fish passage raised culverts, dams
- Invasive plants effects on wildlife
- Plants blooming sooner/later, wildlife arriving sooner/after
- Seed manufacturers
- Neonicotinoids in particular problem to pollinators

Pollution

Regulations

- Enforce regulations/laws
- Concern with communities meeting or fighting EPA regulations Re: nitrates
- Septic system testing more requirements needed
- We need proper disposal systems on a local level higher level regulation may be necessary
- Stricter statewide shoreline protection ordinances
- State re-adopt more stringent water front development guidelines
- Shoreline protection act
- Limiting population size/density would limit pollution
- Maintain Clean Water and Air Acts
- Change in industry standards (low impact development, gray water, and light pollution)
- Different rules for agriculture and forestry along streams held similar rules
- State monitor use and effectiveness of Best Management Practices on timber harvests

Pollution

Incentives

- What do we do about airborne pollutants? Need national support; incentives for good practices.
- Provide an incentive
- Work with retailers to offer better alternatives
- Help retailers provide education to the public
- Could provide incentives to not use impervious surfaces
- Provide incentives for best agricultural practices

- Legislature pass bottle bill
- Increase money for incentives NRCS, etc.
- Funding for homeowners on lakes, and other sensitive areas to improve septics
- Grants and incentives/rebates for professionals to work with communities
- Provide incentives (\$\$) for alternative boat/motors
- Incentive program for high quality buffers
- Incentives for solar power, renewable = non-polluting
- Provide incentives or rewards for homeowners that do proactive projects like this
- Financial incentives for septics (three tiers)

Pollution

Funding

- Money is an issue
- Enforcement needs funding
- Funding sources from many sources
- Lack of treatment plant upgrades; funding is key
- Communities are resistant to initiatives that cost money; due to NH's tax system
- Build funding for water quality monitoring into pollution discharge permit fee
- NHDES funding for enforcement
- Pressure on state to re-fund DES, to improve enforcement against pollution issues (currently inadequate)
- Town tax relief
- State funding for infrastructure improvement

Pollution

Coordination

- Regional collaboration is important for consolidating infrastructure, like waste water treatment;
 federal funding might be necessary due to scale of collaborative projects
- Information sharing when things work between communities and professionals
- More long-range NH solutions have NH citizens involved
- Present this gathered info to other state agencies to promote coordination; help implement WAP actions
- State agencies coordinate efforts to reduce pollution
- City/town and federal levels = how do we get them to act on pollution and enforce regs
- VT organizations close to NH, share borders, museum of science, natural science (Vermont Institute of Natural Sciences), Montshire Museum

Pollution

Planning

- Better oil and spill response plan could minimize future impacts
- Devise stormwater management plans for smaller projects
- Incentivize redevelopment instead of new development

Pollution

Municipalities

- Municipal treatment systems may be inadequate
- Town regulations can affect amount of trash
- Town level regulate fertilizer application near waterways, better manage buffer zones
- Municipalities switch to natural/fertilizers on golf courses/parks
- Eliminate herbicide on public properties
- Failure of community to organize the disposition process
- Septic systems town should take actions on leaky systems

Pollution

Monitoring

- Continued monitoring of pollutants, more research on effect on wildlife, non-profits like loon preservation committee, biodiversity research institute, tufts
- Monitoring is weak. DES doesn't have resources to monitor
- Need manpower for monitoring
- Manpower needs to be organized and trained to report need mechanism to do this
- Monitoring on Best Management Practices works

Pollution

Water Protection -

- Rivers, lakes, and marine should all be addressed separately
- Plant vegetative buffer on stream side properties
- Prospective (not retrospective) regulation/guidance re: storm water runoff
- Aquifer protection
- Increase buffers around waterbodies
- Too much time/delay in getting water samples but Green Mountain Conservation Group in NH are doing testing and results quicker

Pollution

Infrastructure -

- State use of road salt what can state/local governments do to minimize effects?
- Eliminate salts from highways need better plowing strategy/technology, other substances besides salt
- Need education on salt use for NH DOT, plows, residential, private contractors
- Requiring plow trucks to drive slower
- Larger roads more surface areas more runoff
- State or regional regulations on impervious surfaces
- Improve public transportation less cars/exhaust
- Better techniques for ditch maintenance (town/dirt roads) to prevent sedimentation
- Best Management Practices for sale use on highways
- Culverts are important for stormwater, wildlife travel, hydro connectivity need to be sized appropriately

Pollution

Agriculture

- Farms are relatively unregulated related to manure management farms could help address pollution – pesticide use by homeowner's especially by lakes and rivers- state policies should be tightened/ banned
- Incentives for farmers to maintain buffers along waterways
- Stricter Best Management Practices for agriculture
- Increase ability to enforce agricultural Best Management Practices
- Reduce agricultural nutrient inputs; higher BRIX levels are better
- Agri-business, and associated pollution from chemicals
- Make pollution control programs more cost effective for small farmers

WHO CAN ADDRESS THE ACTIONS FOR THIS THREAT?

Pollution

Build the networks for NE Wild Flower Society
Citizens – town organizations – volunteers
NHDES
Division Forest Resources
EPA
Industrial and business organizations
Lakes monitoring program
Land Trusts
Local community boards, commission, groups
Local people write letters to editor
Local planning boards
Media
Need adequate staff to monitor (Division of Forest and Lands)
NH Dept. of Agriculture
NHDOT – improve/reduce road runoff
NRCS
Project Learning Tree
UNH lakes lay monitoring
US Senators, Congressmen
US Fish and Wildlife Service

COMMENT CARDS BY PARTICIPANTS

At the close of each session, participants were provided an opportunity to provide anonymous input to the process. A handout with two questions was provided to answer before participants left, if they chose. Responses were received from 78 participants overall. They were presented with two questions:

- 1. What else would you like to tell NHFG and its partners about the Wildlife Action Plan?
- 2. What can you do to take action to protect NH's natural lands and wildlife?

Below is a summary of the input provided on the comment cards. For the details of the specific input provided, refer to the list in Section D of the separate document: WAP Additional Input and Detail Report. Note that the comment card responses were very similar to the input at the sessions.

What else do participants want to tell NHFG and its partners? The most common themes in responses were:

- 1. Focus on education at all levels (about wildlife threats, value of wildlife and habitats, what people can do, etc.)
- 2. People appreciate the Plan, the Plan's partners, and the update process
- 3. Improve the management of non-game species
- 4. Increase use or visibility of science in management and decision-making
- 5. Energy development poses challenges that need to be linked with wildlife management

"Please develop strong educational programs that informs landowners, citizens about the action plan."
- Participant

"Education – Education – Education. More to the everyday Joe." - Participant

What did individuals offer as personal actions to protect NH's natural lands and wildlife? The most common themes in responses were:

- Volunteer on local boards and committees, partake in restoration efforts, and assist land conservation organizations. Volunteering was an overwhelming theme.
- 2. Educate myself, friends, neighbors, local leaders, and state leaders about wildlife issues.
- 3. Preserve land on my property or in my community
- 4. Support conservation groups and agencies
- 5. Lead by example (relating to managing lands for wildlife, obeying regulations)

"Continue to work locally with Planning Board, BOS, Conservation Commission, as well as communicate with legislators." - Participant

"Personally, practice what is recommended in the WAP and educate my neighbors and community at the same time." - Participant

How did responses compare and contrast by region?

The themes of "educate myself or others" and "volunteerism" emerged as the strongest themes in all five sites, and were the only themes referenced in all five sites. These themes were also the two most commonly referenced overall (24 and 14 times, respectively). Comments relating to energy development were received in Plymouth and at the Highlands Center, but not in other regions.