

Section IV: References and Appendices

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14. Appendices

14.1 Sensitive Features and Best Management Practices

Sensitive Feature	Operational Constraint	Additional Sources of Information
Vernal Pool	<ol style="list-style-type: none"> 1. Identify and mark perimeter of pools in spring prior to harvest 2. Avoid running machinery through vernal pool basins 3. Avoid felling trees or piling slash in pools 4. Avoid running roads or skid trails through areas that drain into vernal pools 5. Conduct nearby forestry operations on snow or frozen ground 6. Avoid clear-cutting and landings between vernal pools less than 1/4 mile apart 7. Within 75ft of the vernal pool, no harvesting of trees or use of heavy equipment 6. Within 450ft of the vernal pool, maintain natural vegetation cover with >50% canopy closure, maintain an adequate supply of dead and dying wood, and avoid disturbing downed logs 	Calhoun and deMaynadier, 2004; Cullen, 1996; Mitchell et al., 2006.
Seeps and Springs	<ol style="list-style-type: none"> 1. Identify and mark perimeter of seeps in spring prior to harvest 2. Layout road and skid trails prior to harvest in seasons when seeps are obvious 3. Avoid felling trees or piling slash in seeps or wildlife trails that access these areas 4. Within 25 feet of the seep, no harvesting of trees or use of heavy equipment 5. Avoid intercepting flow of water down slope of seeps when constructing roads, skid trails, or other developments 	Cullen, 1996; Flatebo et al., 1999; Forest Sustainability Standards Work Team, 1997; Mitchell et al., 2006.
Important Mast Area	<ol style="list-style-type: none"> 1. Maintain diversity of mast producing species 2. Manage oak on long rotations (100-125 years) 3. Retain beech with recent claw marks and bear feeding sign 4. Retain mature (older than 40 years old) beech trees that show signs of beech bark disease resistance 	Flatebo et al., 1999; Forest Sustainability Standards Work Team, 1997.

Highly Erodible Soils

1. Throughout harvest operations and skid trail development, use best management practices for erosion control as described by Cullen, 1996 and Forest Sustainability Standards Work Team, 1997
2. Layout and construct road grades not to exceed 10%. Steeper grades are permissible for short distances
3. Layout and construct skid trails not to exceed 15%. Steeper grades are permissible for short distances.
4. Avoid harvesting on slopes greater than 60%
5. Harvest during dry, snow-covered, or frozen ground conditions
6. Use equipment that is suited to the site and size of material being harvested
7. Use low-impact equipment such as forwarders mechanical harvesters with long booms, or low ground pressure skidders
8. Spread limbs and tops on skid trails to cushion impact of harvesting equipment
9. Promote rapid regeneration of harvest area and skid trails

Cullen, 1996; Forest Sustainability Standards Work Team, 1997; Vermont Family Forest Management Checklist, 2005; Vermont Dept. of Forest, Parks, and Recreation. 1987.

Wetlands

1. Identify and mark perimeter of wetland in spring prior to harvest
2. Layout road and skid trails prior to harvest in seasons when wetlands are obvious
3. Avoid harvesting within wetlands and within 25 feet of wetlands
4. Avoid crossing wetlands or within 25 feet of wetlands with skid trails or roads unless there are no reasonable alternatives. If a wetland is crossed, skid trails or roads are to be constructed in accordance with Cullen, 1996 and Welsch, 1992. Wetland crossings must be conducted in accordance with New Hampshire Laws RSA 227-J and 482-J
5. Within 150 feet of wetlands less than 10 acres in size or within 300ft of wetlands greater than 10 acres in size, maintain natural vegetation cover with >70% canopy closure, maintain an adequate supply of dead and dying wood, avoid disturbing downed logs, manage for and maintain tall supra-canopy trees, and avoid skid trails or roads unless there are no reasonable alternatives. If a wetland buffer is crossed, skid trails or roads are to be constructed in accordance with Cullen, 1996 and Welsch, 1992
6. Maintain natural hydrology of wetlands by avoiding damming, draining, filling, or exaction of wetland and associated streams

Cullen, 1996; Forest Sustainability Standards Work Team, 1997; Mitchell et al., 2006; Vermont Dept. of Forest, Parks, and Recreation. 1987. Welsch, 1992.

Streams	<ol style="list-style-type: none"> 7. Avoid accidental chemical discharge into wetlands by conducting filling and maintenance of equipment well away from wetlands and wetland buffers 8. Avoid sediment discharge into wetlands by constructing road and skid trail erosion control devices in accordance with Cullen, 1996 and Forest Sustainability Standards Work Team, 1997 <ol style="list-style-type: none"> 1. Layout road and skid trails prior to harvest in spring when ephemeral streams are obvious 2. Avoid harvesting within streams and within 25 feet of all 3rd order and higher streams 3. Avoid crossing streams or within 25 feet of streams with skid trails or roads unless there are no reasonable alternatives. If a stream is crossed, skid trails or roads are to be constructed in accordance with Cullen, 1996 and Welsch, 1992. Streams crossings must be conducted in accordance with New Hampshire Laws RSA 227-J and 482-J 4. Within 100 feet of all ephemeral, 1st, and 2nd order streams and within 300ft of all 3rd order streams, maintain natural vegetation cover with >70% canopy closure, manage for and maintain tall supra-canopy trees, maintain an adequate supply of dead and dying wood, and avoid skid trails or roads unless there are no reasonable alternatives. If a stream buffer is crossed, skid trails or roads are to be constructed in accordance with Cullen, 1996 and Welsch, 1992 5. Avoid avoiding damming, draining, filling, or exaction of streams 6. Avoid accidental chemical discharge into streams by conducting filling and maintenance of equipment well away from streams and stream buffers. 7. Avoid sediment discharge into streams by constructing road and skid trail erosion control devices in accordance with Cullen, 1996 and Forest Sustainability Standards Work Team, 1997 	<p>Cullen, 1996; Forest Sustainability Standards Work Team, 1997; Mitchell et al., 2006; Vermont Dept. of Forest, Parks, and Recreation. 1987.</p>
Rare and Uncommon Natural Communities	<ol style="list-style-type: none"> 1. In summer prior to harvest, conduct a survey for rare plants and verify extent of natural community 2. Manage for species composition and structure associated with the natural community type 3. Design harvesting to mimic the intensity, frequency and, scale of natural disturbances associated with the community 	<p>Flatebo et al., 1999; Forest Sustainability Standards Work Team, 1997.</p>

Exemplary Natural Communities

4. Avoid introducing or encouraging the spread of non-native exotics

1. Avoid harvesting in exemplary natural communities or within 150 feet of exemplary natural communities (special exemptions for disturbance-dependent communities may be appropriate)
2. Avoid skid trails and roads in exemplary natural communities or within 150 feet of exemplary natural communities
3. Manage to prevent the spread of non-native exotics.

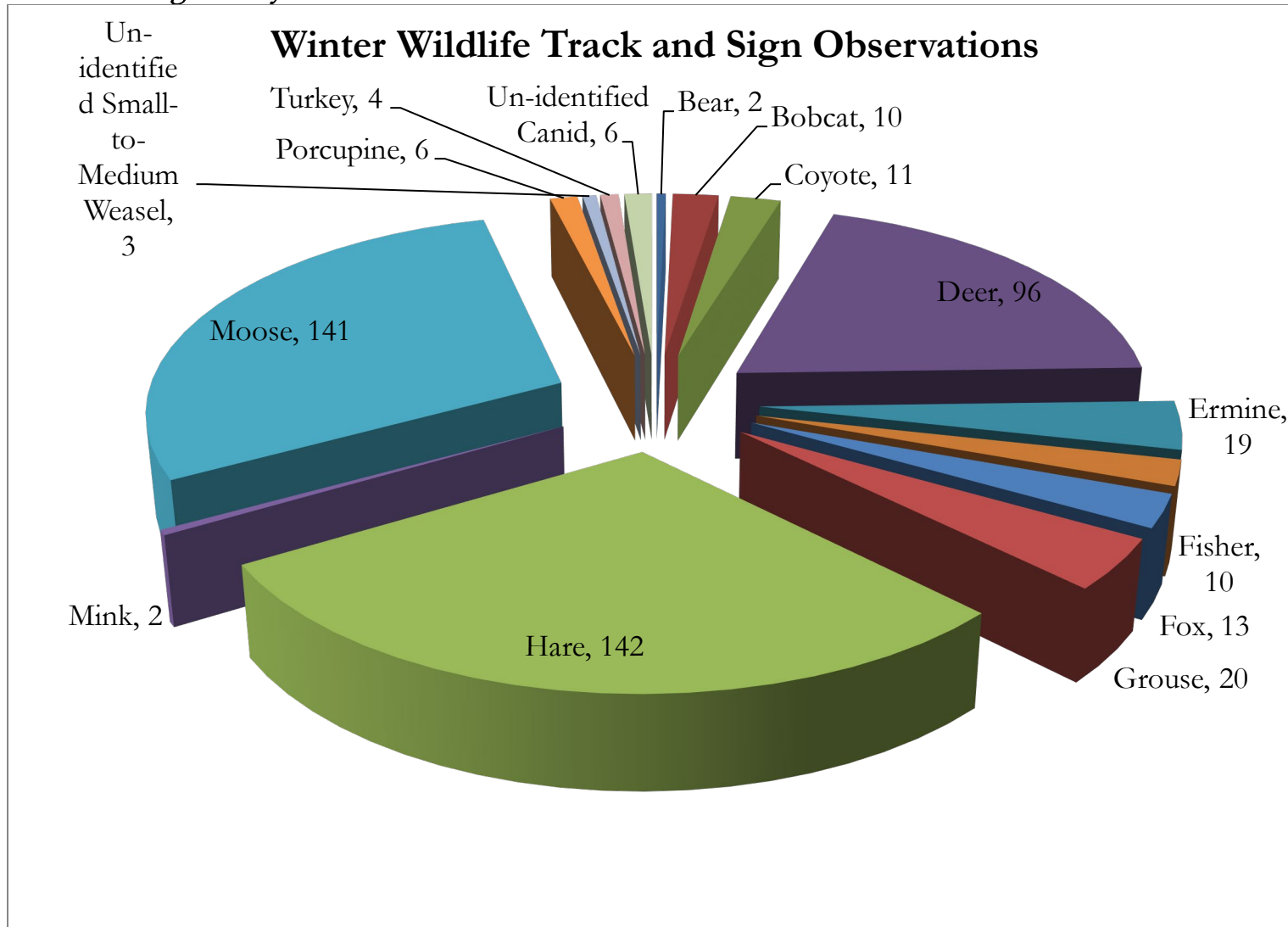
Flatebo et al., 1999; Forest Sustainability Standards Work Team, 1997.

Deer Wintering Area

1. In non-winter months prior to harvest, survey potential deer wintering areas for signs of winter usage including accumulations of pellets, browse line on conifers, and successive years of browsing on hardwood saplings
2. Maintain at least 50% of deer wintering area in shelter areas that contain trees 35+ feet tall and with a canopy closure of 65-70%
3. Avoid building roads within deer wintering areas
4. Manage timber stands within deer wintering areas for a balanced age class distribution
5. Maintain closed-forest cover strips at least 200ft wide as travel corridors across deer wintering area
6. Using 1-5 acre cuts, manage for a hardwood browse near perimeter of deer wintering area
7. Use Forest Sustainability Standards Work Team, 1997 and Reay, 1990 for forest-type specific management guidelines

Flatebo et al., 1999; Forest Sustainability Standards Work Team, 1997; Reay, 1990.

14.2 Tracking Survey Results



14.3 Species of Greatest Conservation Need

Taken from the New Hampshire Wildlife Action Plan

TAXA		
Invertebrates	Fish (continued)	Birds (continued)
Freshwater molluscs	Swamp darter	Nelson's sharp-tailed sparrow, SC
Brook floater, E, RC	Tessellated darter	Northern goshawk
Dwarf wedgemussel, E, FE	Amphibians	Northern harrier, E, RC
Eastern pondmussel, RC	Blue-spotted salamander, RC	Osprey, T
Insects	Fowler's toad, SC	Palm warbler
Barrens itame	Jefferson salamander, SC, RC	Peregrine falcon, E
Barrens xylotype	Marbled salamander, E	Pied-billed grebe, E, RC
Broad-lined catopyrha	Mink frog	Piping plover, E, FT
Cobblestone tiger beetle, T	Northern leopard frog, SC, RC	Purple finch
Cora moth	Reptiles	Purple martin, E
Frosted elfin butterfly, E	Black racer	Purple sandpiper
Karner blue butterfly, E, FE	Blanding's turtle, SC, RC	Red shouldered hawk, SC
Persius duskywing, E	Eastern box turtle, RC	Roseate tern, E, FE
Phyllira tiger moth	Eastern hognose snake, T, RC	Ruffed grouse
Pine barrens zanclognatha moth, T	Ribbon snake, RC	Rusty blackbird, SC
Pine pinion moth, T	Spotted turtle, SC, RC	Salt marsh sharp-tailed sparrow, SC, RC
Puritan tiger beetle, FT	Smooth green snake, SC	Seaside sparrow, SC
Ringed boghaunter, E	Timber rattlesnake, E, RC	Sedge wren, E, RC
Sleepy duskywing	Wood turtle, SC, RC	Semipalmated sandpiper
White Mountain arctic	Birds	Spruce grouse
White Mountain fritillary	American bittern, RC	Three-toed woodpecker, T
Vertebrates	American black duck	Turkey, BGP
Fish	American pipit, SC	Upland sandpiper, E, RC
Alewife	American woodcock	Veery ²
American brook lamprey, RC	Arctic tern, T	Vesper Sparrow
American eel	Bald eagle, E, FT	Whip-poor-will, SC, RC
American shad	Bay-breasted warbler	Willet, SC
Atlantic salmon	Bicknell's thrush, SC, RC	Wood thrush ²
Atlantic sturgeon, RC	Black guillemot, SC	Mammals
Banded sunfish, RC	Canada warbler ² , RC	American marten, T
Blueback herring	Cerulean warbler, RC	Black bear, BGP
Bridle shiner, RC	Common loon, T	Bobcat, SC
Burbot	Common nighthawk, T	Canada lynx, E, RC, FT
Eastern brook trout	Common tern, E, RC	Eastern pipistrelle, SC
Finescale dace	Cooper's hawk, T	Eastern red bat, SC, RC
Lake trout	Common moorhen	Eastern small-footed bat, E, RC
Lake whitefish	Eastern meadowlark	Hoary bat, SC, RC
Northern redbelly dace	Eastern towhee	Indiana bat, FE
Rainbow smelt	Golden eagle, E, RC	Moose, BGP
Redfin pickerel	Golden-winged warbler, SC, RC	New England cottontail, SC, RC
Round whitefish, RC	Grasshopper sparrow, T	Northern bog lemming, SC, RC
Sea lamprey	Great blue heron	Northern myotis
Shortnose sturgeon, E, FE	Horned lark	Silver-haired bat, SC, RC
Slimy sculpin	Least bittern, SC	White-tailed deer, BGP
Sunapee trout, E	Least tern, E, RC	Wolf, FT

14.4 Stand Development Stages

Taken from Bryan (2007)

Stand Development Stage		Identification	
		Typical characteristics ¹	Description
Early Successional	Regeneration and Seedlings	Less than 30 sq.ft. basal area/ac. (BA) in trees >1 in. dbh. Typically 0-10 years	Regeneration phase; may include partial residual overstory
	Saplings and Small Poles	BA in trees 1-5 in. dbh greater than that of trees <1 in. or >5 in. Typically 10-30 years old	Young, closed-canopy stands or two-storied stands dominated by small trees with a partial residual overstory
Intermediate		Majority of stocking in: <ul style="list-style-type: none"> Softwood stands: >5 in. Hardwood stands >5 in. Majority of stocking typically in trees 30-70 years old	Includes even-aged stem-exclusion stands (little or no understorey) and two-story stands with partial overstorey of mature trees
Mature		Majority of stocking in <ul style="list-style-type: none"> Spruce-fir >9 in. Hardwoods >12 in. Pine-hemlock >12 in. Overstorey typically 70-100+ years depending on forest type	Includes stands dominated by small- to large-sized sawtimber, including stands in the late stem exclusion stage and early phases of understorey reinitiation. May be single story, two story, or multi story depending on past harvest history. Depending on species and condition, may be maintained by individual tree or group-selection harvests.
Late-Successional		Majority of stocking (better site quality, will vary with species, site, and stand history): <ul style="list-style-type: none"> Spruce-fir ≥12 in. Hardwoods ≥16 in. Pine-hemlock ≥20 in. Large deadwood accumulating Indicator species (e.g., certain lichens) present Transition from mature to late successional is generally in the 100-125-year age range	Net growth stable or declining in unharvested stands; principle mortality in canopy due to disease, wind, and insects. Large-diameter dead wood accumulating in standing trees and on the ground. Typically one or more age classes represented in the understorey or in gaps but may be virtually even-aged in the case of pine and hemlock. When long-lived species with medium to high shade tolerance are present, this stage can be maintained over time by light individual-tree or group-selection management. Stands meeting diameter guidelines but lacking other characteristics should be classified at mature.
Old-Growth		Generally >150 years old	Old growth is the culmination of the late-successional stage. These stands are typically unharvested or have a very light harvest history.

¹ Diameters and ages are general guidelines only and will vary based on site characteristics, stand history, and forest type. Note that diameter guidelines are overlapping; place stand in the oldest development stage possible given the diameter constraints and other characteristics. Final determination should be based on professional judgment based on stand conditions and knowledge of local forests. See Appendix 10 for example of stand classification.

14.5 Forest Inventory Methods

Basic, qualitative data on wildlife habitat, recreation, and regeneration was gathered on the whole property, in addition to mapping of natural communities, wetlands, streams, seeps, sensitive features, primary skid trails, and erosion/drainage problems. However, there were two different data collection protocols used for the overstory. In areas where there was a measurable overstory that will be used for timber management (in addition to other values), a standard cruise with the typical metrics (BA, trees per acre, stocking, etc) will be implemented. In areas where there was overstory or areas that will not be managed for timber, data collection was based on a qualitative and categorical system. The below table shows what data collection protocol was used in each Ecosystem Management Unit; the second table details the two different protocols.

Ecosystem Management Compartment (Primary Uses)	Ecosystem Management Unit-Subunit (Condition)	Acres	Data Collection and Analysis Protocol
Eastern Steeps (Low Impact and Diffuse Recreation, Priority Wildlife Habitat Protection, Water Quality Protection, Scenic Protection)	Forest (Intact Spruce-Fir Forest on inaccessible steep rocky slopes)	62	Type I
Eastern Steeps (Low Impact and Diffuse Recreation, Priority Wildlife Habitat Protection, Water Quality Protection, Scenic Protection)	Partial Cut (Partially cut Spruce-Fir Forest on upper edge of steep rocky slopes)	9	Type I
Eastern Bowl (Low Impact and Diffuse Recreation, Priority Wildlife Habitat Protection, Water Quality Protection, Scenic Protection)	Forest (Intact Northern Hardwood Forest on now inaccessible bowl)	41	Type I
Eastern Bowl (Low Impact and Diffuse Recreation, Priority Wildlife Habitat Protection, Water Quality Protection, Scenic Protection)	Clearcut (Heavily cut Northern Hardwood Forest on now inaccessible bowl)	20	Type I
Southern Steeps (Low Impact and Diffuse Recreation, Priority Wildlife Habitat Protection, Water Quality Protection, Scenic Protection)	Forest (Intact Spruce-Fir Forest on inaccessible steep rocky slopes)	47	Type I
Eastern Steeps (Low Impact and Diffuse Recreation, Priority Wildlife Habitat Protection, Water Quality Protection, Scenic Protection)	Partial Cut (Partially cut Spruce-Fir Forest on lower edge of steep rocky slopes)	8	Type I
Eastern Steeps (Low Impact and Diffuse Recreation, Priority Wildlife Habitat Protection, Water Quality Protection, Scenic Protection)	Clearcut (Heavily cut Spruce-Fir Forest on lower edge of steep rocky slopes)	1	Type I
Summit Plain (Mixed-use Recreation, Timber Management; Priority Wildlife Habitat Management, Water Quality Protection, Scenic Protection)	Forest (Intact Spruce-Fir Forest and Spruce-Northern Hardwood Forest)	5	Type II
Summit Plain (Mixed-use Recreation, Timber Management; Priority Wildlife Habitat Management, Water Quality Protection, Scenic Protection)	Partial Cut (Partially Cut Spruce-Fir Forest and Spruce-Northern Hardwood Forest)	1	Type II
Summit Plain (Mixed-use Recreation, Timber Management; Priority Wildlife Habitat Management, Water Quality Protection, Scenic Protection)	Clearcut (Heavily Cut Spruce-Fir Forest and Spruce-Northern Hardwood Forest)	40	Type I

Southern Bowl (Mixed-use Recreation, Timber Management; Priority Wildlife Habitat Management, Water Quality Protection, Scenic Protection)	Forest (Intact Northern Hardwood and Spruce-Northern Hardwood Forest)	39	Type II
Southern Bowl (Mixed-use Recreation, Timber Management; Priority Wildlife Habitat Management, Water Quality Protection, Scenic Protection)	Partial Cut (Northern Hardwood and Spruce-Northern Hardwood Forest)	78	Type II
Southern Bowl (Mixed-use Recreation, Timber Management; Priority Wildlife Habitat Management, Water Quality Protection, Scenic Protection)	Strip Cut (Partially cut Northern Hardwood and Spruce-Northern Hardwood Forest)	76	Type II
Southern Bowl (Mixed-use Recreation, Timber Management; Priority Wildlife Habitat Management, Water Quality Protection, Scenic Protection)	Clearcut (Heavily cut Northern Hardwood and Spruce-Northern Hardwood Forest)	14	Type II
Cooley Hill (Mixed-use Recreation, Timber Management; Priority Wildlife Habitat Management, Water Quality Protection, Scenic Protection)	Forest (Intact Spruce-Fir and Spruce-Northern Hardwood Forest)	24	Type II
Cooley Hill (Mixed-use Recreation, Timber Management; Priority Wildlife Habitat Management, Water Quality Protection, Scenic Protection)	Strip Cut (Partially cut Northern Hardwood and Spruce-Northern Hardwood Forest)	35	Type II
Western Shoulder (Mixed-use Recreation, Timber Management; Priority Wildlife Habitat Management, Water Quality Protection, Scenic Protection)	Partial Cut (Partially cut Northern Hardwood and Spruce-Northern Hardwood Forest)	24	Type II
Western Shoulder (Mixed-use Recreation, Timber Management; Priority Wildlife Habitat Management, Water Quality Protection, Scenic Protection)	Clearcut (Heavily cut Northern Hardwood Forest and Spruce-Northern Hardwood Forest)	78	Type I
Northern Slope (Mixed-use Recreation, Timber Management; Priority Wildlife Habitat Management, Water Quality Protection, Scenic Protection)	Partial Cut (Partially cut Northern Hardwood and Spruce-Northern Hardwood Forest)	115	Type II
Northern Slope (Mixed-use Recreation, Timber Management; Priority Wildlife Habitat Management, Water Quality Protection, Scenic Protection)	Clearcut (Heavily cut Northern Hardwood Forest and Spruce-Northern Hardwood Forest)	23	Type I
Northern Bench (Mixed-use Recreation, Timber Management; Priority Wildlife Habitat Management, Water Quality Protection, Scenic Protection)	Partial Cut (Partially cut Northern Hardwood and Spruce-Northern Hardwood Forest)	102	Type I

Type I (431 acres total)	Plot-level Data Collection and Analysis (Spacing ~10 acres)	Ecosystem Management Unit- wide Observations	Ecosystem Management Unit-wide Delineations
	Qualitative Categorical Assessment of: % Overstory Cover (0-25%. 25-50%, 50-75%, 75-100%); Overstory Distribution (Patchy, Uniform); Overstory Composition (Deciduous, Mixed-wood, Coniferous); % Midstory Cover (0-25%. 25-50%, 50-75%, 75-100%); Midstory Composition (Deciduous, Mixed-wood, Coniferous); Midstory Distribution (Uniform, Patchy); Midstory Habitat Quality (Low, Medium, High); Midstory Commercial Regen Quality (Low, Mixed, High); Midstory Commercial Regen Abundance (Limited, Moderate, Abundant); % Understory Cover (0-25%. 25-50%, 50-75%, 75-100%); Understory Composition (Deciduous, Mixed-wood, Coniferous); Understory Distribution (Uniform, Patchy); Understory Habitat Quality (Low, Medium, High) Understory Commercial Regen Quality (Low, Mixed, High); Understory Commercial Regen Abundance (Limited, Moderate, Abundant); Snag Abundance (Limited, Moderate, Abundant) Cavity Tree Abundance (Limited, Moderate, Abundant); Hard Mast (Absent, Present); Soft Mast (Absent, Present); Deciduous Leaf Litter (Absent, Present)	Overstory Species; Midstory Species; Understory Species; Pest and Pathogens; Invasive Species; Access and Operability; High, Low, and Supra Canopy Perch Availability; Breeding Birds; Wildlife Species; Existing and Potential Recreation Uses	Natural Communities; Priority Wildlife Habitats; Seeps; Streams; Wetlands; Primary Skid Trails; Erosion and Drainage Problems; Sensitive Features; Existing and Potential Recreation Uses
Type II (411)	Plot-level Data Collection and Analysis (Spacing 3-5 acres)	Cover unit-wide Observations	Cover unit-wide Delineations
	Quantitative Assessment of: Stocking; AGS/UGS; Live Tree Basal Area; Snag Basal Area; Cavity Tree Basal Area; Live Tree Trees Per Acre; Snag Trees Per Acre; Cavity Tree Basal Area; Cavity Tree Trees Per Acre; Overstory Composition; Q-factor; Pulpwood and Sawlog Volume Qualitative Categorical Assessment of: % Overstory Cover (0-25%. 25-50%, 50-75%, 75-100%); Overstory Distribution (Patchy, Uniform); % Midstory Cover (0-25%. 25-50%, 50-75%, 75-100%); Midstory Composition (Deciduous, Mixed-wood, Coniferous); Midstory Distribution (Uniform, Patchy); Midstory Habitat Quality (Low, Medium, High); Midstory Commercial Regen Quality (Low, Mixed, High); Midstory Commercial Regen Abundance (Limited, Moderate, Abundant); % Understory Cover (0-25%. 25-50%, 50-75%, 75-100%); Understory Composition (Deciduous, Mixed-wood, Coniferous); Understory Distribution (Uniform, Patchy); Understory Habitat Quality (Low, Medium, High) Understory Commercial Regen Quality (Low, Mixed, High); Understory Commercial Regen Abundance (Limited, Moderate, Abundant); Hard Mast (Absent, Present); Soft Mast (Absent, Present); Deciduous Leaf Litter (Absent, Present)	Overstory Species; Midstory Species; Understory Species; Pest and Pathogens; Invasive Species; Access and Operability; High, Low, and Supra Canopy Perch Availability; Breeding Birds; Wildlife Species; Existing and Potential Recreation Uses	Natural Communities; Priority Wildlife Habitats; Seeps; Streams; Wetlands; Primary Skid Trails; Erosion and Drainage Problems; Sensitive Features; Existing and Potential Recreation Uses

14.6 Plot Sampling

Sampling was stratified by Ecosystem Management Units parcels. A 300ft by 300ft grid was overlaid on the unit boundary map using GIS and plots were randomly located at grid intersections. The number of plots in each unit was assigned based on acreage. Additional plots were sampled in areas of ecological and management significance or not identified during the original coarse unit boundary mapping.

All plots were then downloaded onto a Trimble Nomad GPS unit. This unit was then used to navigate within 40 feet (6.096 m) of the predetermined plot location.

14.6.1 Data Collection

At each plot, all of the forest and wildlife attributes in the above table were measures. Percent canopy measurements were based on an ocular estimates. Estimate ranges are included in the above table.

14.6.1.1 Overstory

Trees were sampled in a variable radius plot, using a 10-factor prism. All trees growing at least 4.5” diameter breast height (DBH) were tallied. For each sample tree, species, diameter at breast height (DBH), tree condition, quality, log grade, log defect, crown class, crown condition, and presence of cavities were all recorded. Variables were collected and recorded in accordance with NED-2 and entered into NED-Lite in the field.

14.6.1.2 Regeneration

Advanced regeneration was qualitatively assessed at each plot center. The presence and relative abundance of regenerating tree species was noted for mid and understory layers. The distribution of the advanced regeneration was also noted. The adequacy (or lack thereof) of the advanced regeneration was based on composition, quality and abundance of the regeneration and the consultant’s experience.

14.6.1.3 Wildlife habitat, Snags, and Downed Woody Debris.

Information on potential habitat features was recorded at each plot, including the absence or presence of high exposed perches, low exposed perches, soft mast, hard mast, inclusions, slash, road, seeps, vernal pools, rock piles, rock crevices, raptor nests, dead cavity trees, live cavity trees, primary cavity nester activity, loose soil, and exposed root wads.

At each plot, a habitat assessment based on the Forest Bird Habitat Assessment: A Guide to Integrating Bird Habitat Data into a Vermont Forest Inventory protocol was carried out. Using the protocol, the functional condition of the understory, midstory, downed woody

debris, and deciduous leaf litter was estimated. Estimated ranges are included in the above table. Additionally, an evaluation of the surrounding landscape was carried out based on landscape level considerations included in the protocol.

Snags and cavity trees were both qualitatively and quantitatively assessed. Estimate ranges (qualitative assessment) are included in the above table. Snags, cavity trees, canopy height, and canopy condition were quantitatively assessed as part of the full inventory.

14.6.1.4 Site Class

Site Class, which is on a scale of 1-5, was determined based on a combination of soil, landscape position, and observations of forest composition and tree vigor.

14.6.1.5 Site Index

Site Index, which is given in feet for 50-year tree, is based on the dominant underlying soil, which was determined using ARC GIS 9.3 coupled with field observations. Approximate Site Index heights were taken from the Grafton County Soil Survey.

14.6.2 Forest Data Analysis

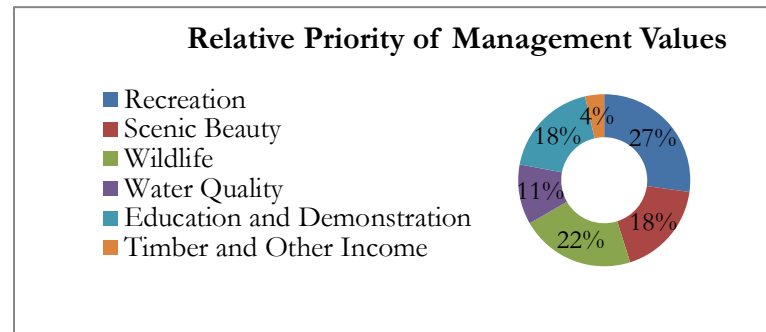
All data were entered into and analyzed using NED-2, Northeast Decision Model (NED), the US Forest Service software package. Data were analyzed in order to obtain metrics on the composition, structure, density and volume of each unit, including number of stems per acre, basal area, percent basal area by species and mean unit diameter, as defined by the diameter of the tree of average basal area average.

Categorical habitat and regeneration data were compiled and review within ArcGIS.

14.7 Goal Assessment Survey Results

1. **Prioritization of Uses:** Rank the following uses on 1-6, with “1” being the highest priority and “6” being the lowest priority

Uses	Overall Relative Priority	Overall Total Score
Recreation	1	25
Scenic Beauty	4	43
Wildlife	2	36
Water Quality	5	56
Education and Demonstration	3	42
Timber and Other Income	6	71

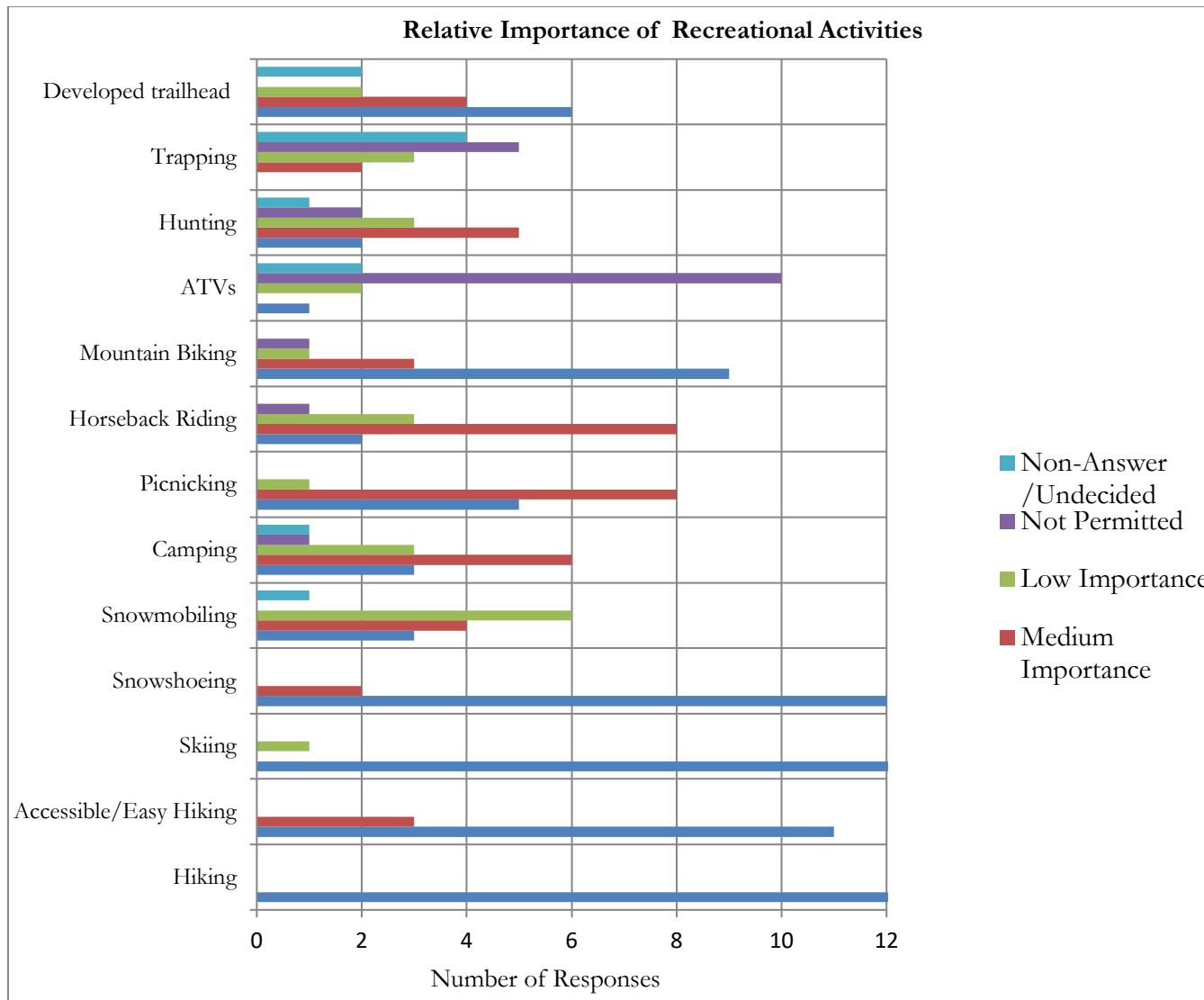


Comments:

- I think of protecting the habitat as “1” (includes wildlife, watershed, etc.). The scenic beauty is preserved in large part by virtue of putting the land in conservation, although it does have to be managed. Thus, conservation and recreation are 1 and 2 for me, followed by education. Income is important for the towns; so timber management is important in the long run.

2. **Recreation Details:** Identify the importance of the following recreation activities. Please check “none” if the activity should not be permitted.

Activity	Total Importance Score (Each “x” worth 1 point)				Non-Answer /Undecided
	High	Medium	Low	None	
Hiking	14				
Accessible/Easy Hiking	11	3			
Skiing	13	0	1		
Snowshoeing	12	2			
Snowmobiling	3	4	6		1
Camping	3	6	3	1	1
Picnicking	5	8	1		
Horseback Riding	2	8	3	1	
Mountain Biking	9	3	1	1	
ATVs	1	0	2	10	2
Hunting	2	5	3	2	1
Trapping	0	2	3	5	4
Developed trailhead (signage and bathroom)	6	4	2		2



Concerns:

- Response reflects general preference for quieter activities—can't speak for snowmobile and ATV enthusiasts. Think camping permits might be good eventually, but don't know about applicable camping regulations in area. Have spoken with horseback riding

enthusiasts, who are not entirely sure about practicalities of riding in the C-J Forest (transporting horses, insurance, etc. for individuals and locals inns)—also, mountain bike groups wary of sharing trails with horseback riders. There is a large mountain biking community in the area, including inns that cater to mountain bikers—strong interest. Have also spoken with hunters, many of whom are very enthusiastic, but one local fellow who hunted there in the past mentioned the impracticalities of packing a moose carcass out to a vehicle. Signage seems appropriate early on; picnic waste receptacles and limited facilities (bathroom) might eventually be necessary as the broader community begins to use the forest, possibly starting with a clearing near the Trumpet Road entrance (classes on the ledge) and a small, rough shelter.

- Do not want ATVs or trucks
- Activities should have least amount of impacts on forest as possible.
- Not all activities are compatible. Prioritize low impact over motorized
- ATV-erosion, noise, disrupts wildlife
- Hunting-my concern would be poaching-irresponsible hunting practices
- Would like noise level kept to minimum
- Erosion
- Not thrilled with any motorized vehicles on trail
- ATVers seem to have a cavalier attitude toward nature—it is to be used for their benefit, rather than respected and preserve
- Equestrian-high value is horse people participate
- I am not anti-hunting, but I am concerned about safety regarding hunting and trapping. However, we do have an obligation through our grant to accommodate hunters. If that includes trappers, so be it.
- I am convinced that ATVs and similar activities would be detrimental to the property and should not be allowed. A big factor about ATVs is that the participants are reportedly not respectful of the property and do not care about preserving its integrity.
- X-C skiing can come in two varieties, back country with no particular track preparation or well prepared tracks (Classic and Skating). It would be good to accommodate both forms although the costs of prepared tracks would have to be addressed

Recommendations:

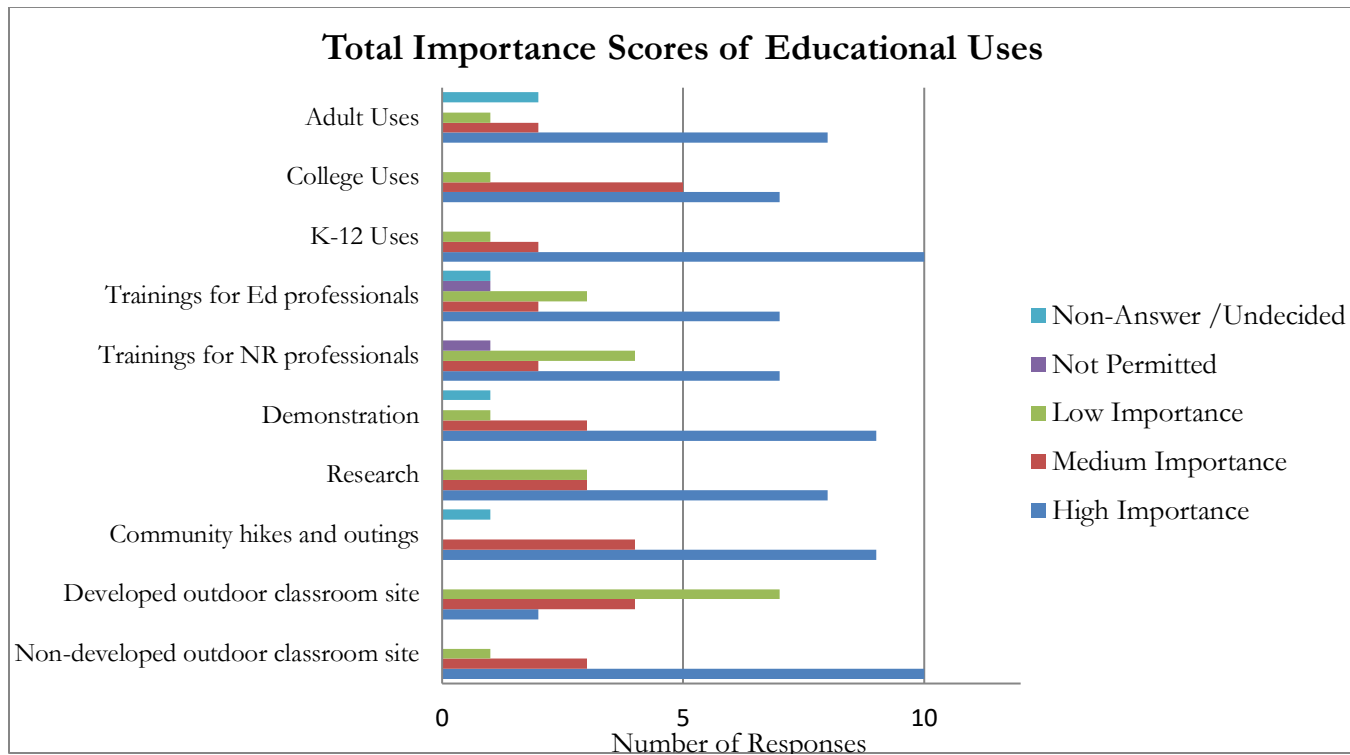
- Develop signage but not bathroom
- Develop signage but not bathroom
- Nordic skiing-tracked
- Make sure parking sites are clearly marked

- Help abutters mark their property
- Informative stops along hiking trails
- Develop signage but not bathroom
- I think we should develop a partnership with the snowmobilers as soon as possible because they will help us control access by the ATVs and similar activities. (I am not a snowmobiler and do not intend to be, but I have developed a respect for their ethic and keeping trails fit for their activity means keeping ATVs off the trails.)
- X-C skiing can come in two varieties, back country with no particular track preparation or well prepared tracks (Classic and Skating). It would be good to accommodate both forms although the costs of prepared tracks would have to be addressed

3. Education Details: Identify the importance of the following education activities. Please check “none” if the activity is not permitted.

Total Importance Score (Each “x” worth 1 point)

Activity	High Importance	Medium Importance	Low Importance	Not Permitted	Non-Answer /Undecided
Non-developed outdoor classroom site	10	3	1		
Developed outdoor classroom site	2	4	7		
Community hikes and outings	9	4			1
Research	8	3	3		
Demonstration	9	3	1		1
Trainings for natural resource professionals	7	2	4	1	
Trainings for education professionals	7	2	3	1	1
K-12 Uses	10	2	1		
College Uses	7	5	1		
Adult Uses	8	2	1		2



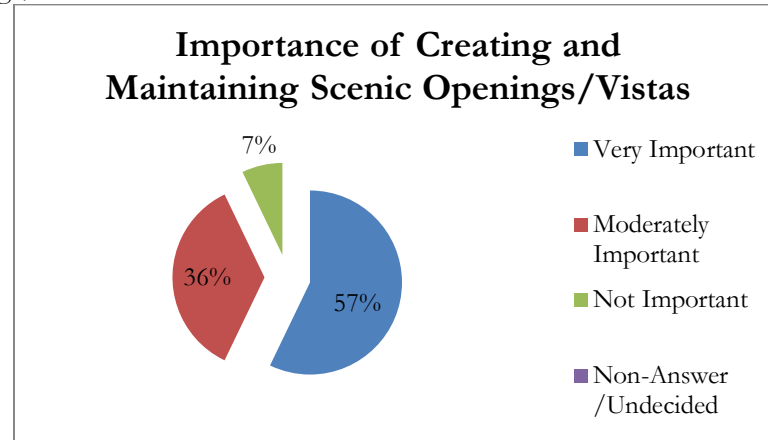
Concerns:

- Liability for professional development groups
- Getting the word out to people to participate

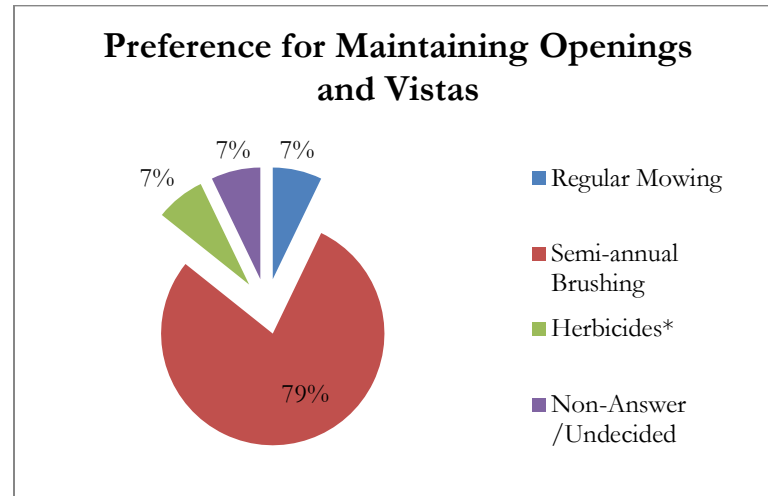
Recommendations:

- It would be great to keep the C-J Forest as a low impact outdoor classroom, although, ultimately there may need to be modest facilities for groups—not sure. Because there are so many other developed sites for outdoor educational field trips in the area, the C-J Forest may be able to remain more pristine to offer that type of experience.
- Have some observation relay of some sort with specific information on tracks, wildlife, or forest
- Develop a test plot for American chestnut. 1. It would be educational 2. Test viability in N county as climate change occurs

4. Scenic Beauty: Identify the importance of the following education activities. Please check “none” if the activity is not permitted.
Importance of creating scenic openings/vistas



Preference for maintaining openings and vista



Slash/Logging Residue Treatments: Rank the following slash/logging residue treatment using 1-5, with “1” being the most preferred and “6” being the least preferred

Activity	Financial Cost	Ecological Impact	Overall Relative Preference
Complete Removal	High	Negative (high)	4
Chipping	High	Negative (moderate)	3
Pile	Moderate	Positive (high)	2
Lop and Scatter	Moderate	Negligible or Positive	1
Leave as is	Low	Negligible or Positive	1

Concerns/Comments:

- No herbicides
- The leave as is option might want to be utilized away from trails and piling utilized near trails

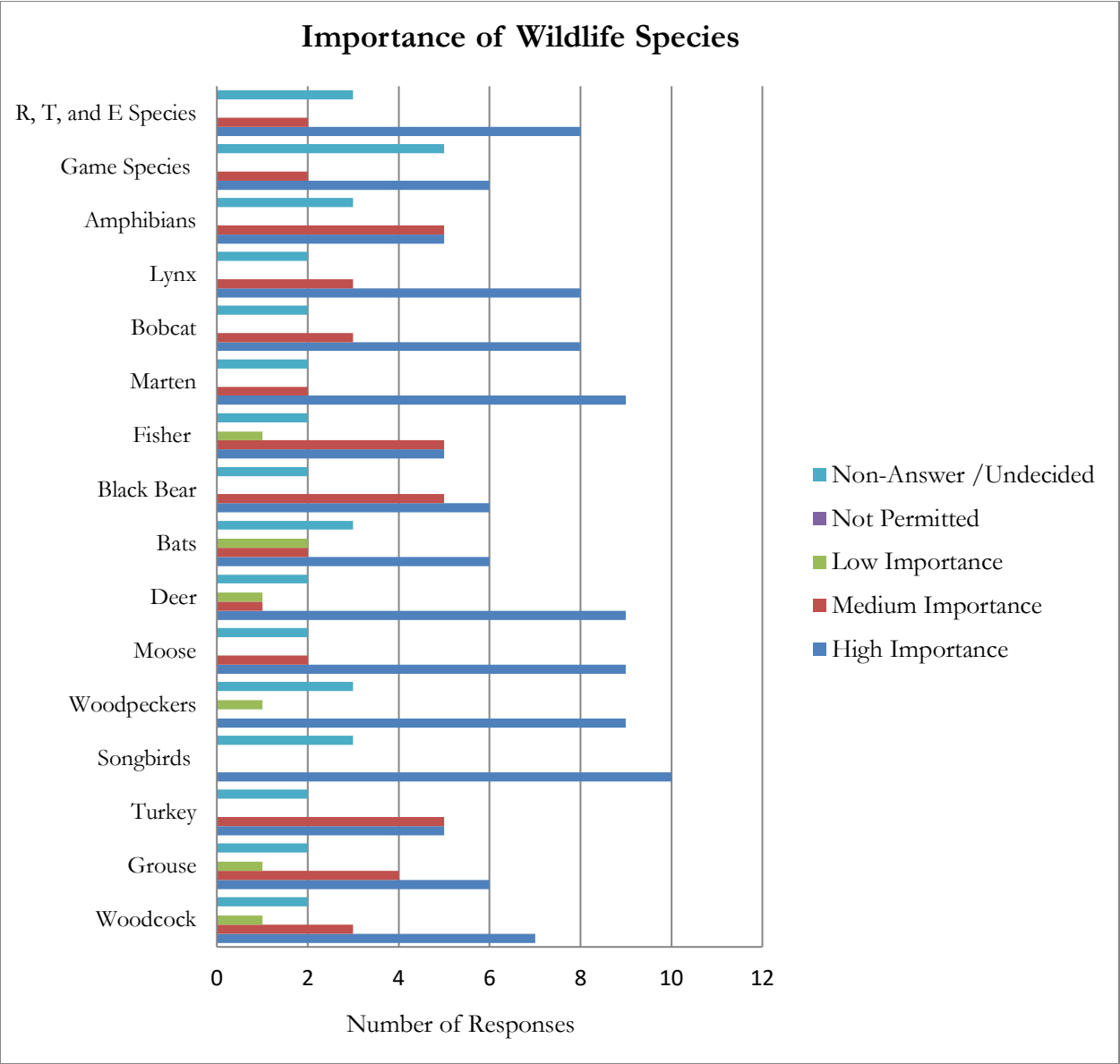
Describe any known existing or potential views:

- Openings important for habitat diversity as much as scenic views
- Doesn’t matter as long as it gives people a goal to hike to. One place could look east, another west...
- Snowmobiler trail has great views towards Pearl Lake and to Lafayette Mtn

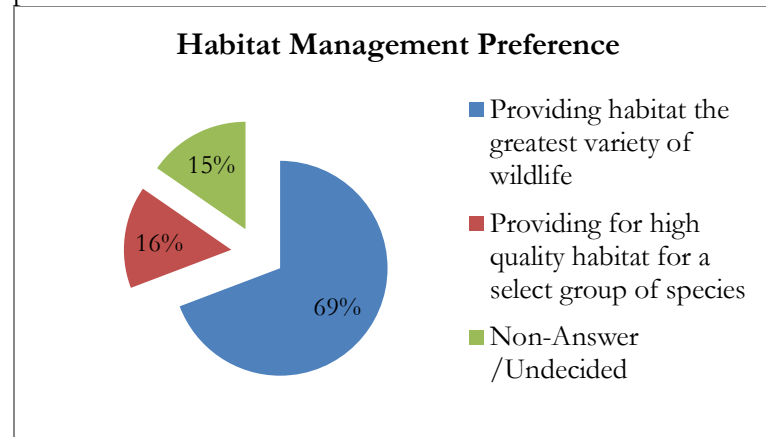
5. **Wildlife Details:** Identify the importance of the following wildlife species

Assessed Total Importance Score (Each “x” worth 1 point)

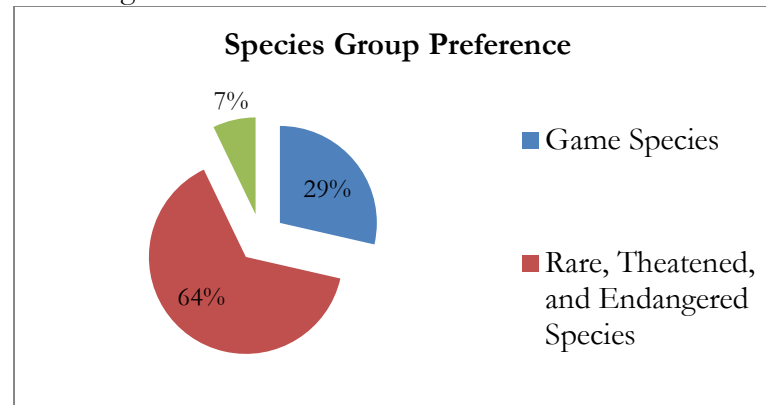
Species/Taxa	High Importance	Medium Importance	Low Importance	Not Permitted	Non-Answer /Undecided
Woodcock	7	3	1		2
Grouse	6	4	1		2
Turkey	5	5			2
Songbirds	10				3
Woodpeckers	9		1		3
Moose	9	2			2
Deer	9	1	1		2
Bats	6	2	2		3
Black Bear	6	5			2
Fisher	5	5	1		2
Marten	9	2			2
Bobcat	8	3			2
Lynx	8	3			2
Amphibians	5	5			3
Game Species	6	2			5
Rare, Threatened or Endangered Species	8	2			3



Which habitat management strategy is preferred?



Which group of species is the priority for management?



Concerns:

- I definitely defer to the experts on the wildlife management topic and will be interested to learn about the plan as it develops. In general, I don't think of the property as a "game preserve" for hunting, although hunting seems appropriate because of local interest. I'm not sure if these are entirely either/or choices: Can you protect rare and endangered species while providing a local game habitat? To what extent does the land, as is, dictate which species will thrive and to what extent does the community want to alter the forest to encourage other species? I guess that's the question.
- If a species is endangered but the forest will not make a difference to its survival (ie moose/ticks) no need to put time and energy there
- How/or will hunting be allowed

Recommendations:

- Anything beneficial to the environment-great
- Preserving wetland communities