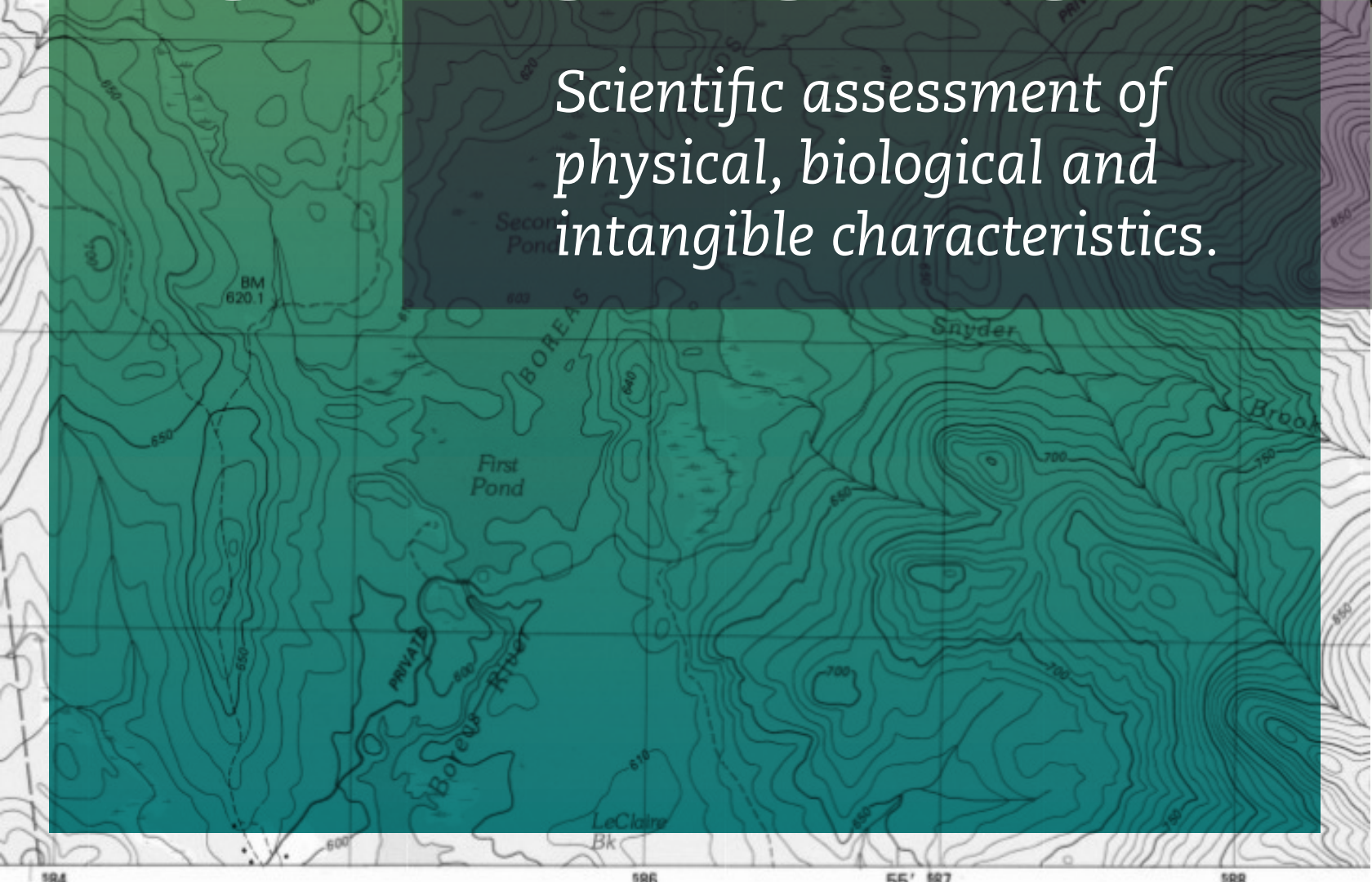




# BOREAS PONDS



*Scientific assessment of  
physical, biological and  
intangible characteristics.*



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Front cover:

**Boreas Tract**

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**Boreas Tract:** Photo ©Carl Heilman II/Wild Visions, Inc.

# Welcome

**The Adirondack Park is** a six-million-acre expanse of public and private lands and waters located in Upstate New York. Founded in 1892, it is the largest intact, temperate deciduous forest remaining in the world.

About half of the Adirondack Park (roughly 2.6 million acres) is public land, known as the Adirondack Forest Preserve. Since 1894, Adirondack Forest Preserve lands have been protected from logging, sale, lease and development by the “forever wild” clause of the NYS Constitution.

All Forest Preserve is open to the public for various types and intensities of outdoor recreation. Consequently, when state officials purchase new public lands for the Forest Preserve, they must determine what levels of recreational use are appropriate.

State law requires that new lands be classified according to their characteristics. After classification, they must be managed using methods that are compatible with their ability to withstand use. Since Forest Preserve cannot be developed, in this case “use” means public recreation. Classification

and management actions are intended to protect the Park's open spaces, clean water, wildlife, and preserve the land's ecological vitality for future generations.

Lands with similar characteristics are sorted into classification categories, ranging on a broad spectrum from Intensive Use Areas (the least fragile and least protected) to Wilderness Areas (the most fragile and best protected).

In this report, we assess the characteristics of the 20,494-acre **Boreas Ponds tract**, adjacent to the existing High Peaks Wilderness Area and Dix Mountain Wilderness Area in the towns of Newcomb and North Hudson, in Essex County.

We provide a scientific assessment of the key land characteristics within three major categories: physical, biological and intangible. These characteristics convey the "capacity to withstand use," as required in the Adirondack Park State Land Master Plan.

We assess all available information, using transparent methodology. Our goal is to determine the best classification and management for the Boreas Ponds tract.



# INTRODUCTION

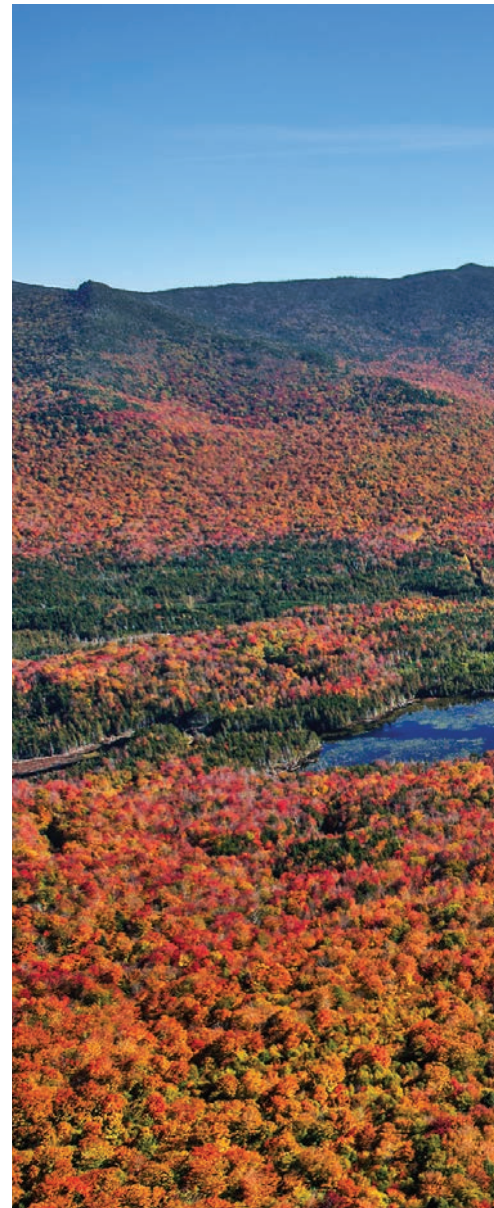
## State Land Classification

The Adirondack Park contains approximately 2.6 million acres of public land, of which 1.1 million acres are Wilderness Areas, which account for nearly all protected Wilderness Areas remaining in the northeastern United States. Outside of the Florida Everglades and a small patch around the Allagash River in Maine, the Adirondack Park contains the last places remaining east of the Great Lakes where motor vehicles and mechanized travel are not allowed to dominate the landscape.

This is no accident. It is the result of state policy and a conscious effort by state officials. The policy goals are to preserve the wildest places that still exist, while also giving nature the chance to recover from human impacts. Policy dictates that previously harvested forests are protected and left alone so they can return to Old Growth status. Former roads revert to footpaths over time, as the forest reclaims them.

Protected doesn't mean locked up. The Adirondack Park contains 130 historic, rural communities that live in harmony with the Wilderness next to them. Some 130,000 people live here year-round, while another 10 million visit, mostly in the summer. Some isolated Wilderness Areas, such as the Pepperbox Wilderness in the western Adirondack Park, attract only a few hundred visits per year. In contrast, the popular High Peaks Wilderness has an interstate highway within a few miles of its gateways in Keene Valley and Lake Placid. Those trailheads alone receive closer to 200,000 annual visits, according

**Boreas Tract:** Photo © Carl Heilman II/Wild Visions, Inc.



**Boreas River:** Photo © Ezra Schwartzberg







to the most recent surveys. However, large numbers of visitors in one place can damage Wilderness Areas. One way to diminish the damage and support more communities is to spread out the visitors. Acquiring new lands and establishing new gateways is one such method.

The 20,494-acre Boreas Ponds tract has been a priority for state acquisition for decades. It is located on the southern border of the High Peaks Wilderness and would provide new access gateways for the public. It contains no communities, homes or public roads, so it holds few obstacles to discourage the state from classifying it as Wilderness. So the next test to be applied by the state would be an assessment of whether it contains the physical, biological and intangible

qualities required of Wilderness Areas. There are seven Forest Preserve classification categories described in the State Land Master Plan that the state can choose from to guide management of new Forest Preserve. They include:

**Wilderness Area**—A wilderness area, in contrast with those areas where man and his own works dominate the landscape, is an area where the earth and its community of life are untrammelled by man--where man himself is a visitor who does not remain. A wilderness area is further defined to mean an area of state land or water having a primeval character, without significant improvement or permanent human habitation, which is protected and managed so as to



preserve, enhance and restore, where necessary, its natural conditions, and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least ten thousand acres of contiguous land and water or is of sufficient size and character as to make practicable its preservation and use in an unimpaired condition; and 4) may also contain ecological, geological or other features of scientific, educational, scenic or historical value;

**Primitive Area**—Essentially the same as Wilderness, but contains private in-holdings, roads or structures that cannot be removed by a specific deadline; often called Wilderness-in-waiting;

**Canoe Area**—A collection of interconnected waters and waterways in a Wilderness setting;

**Wild Forest**—accommodates somewhat more intensive use than Wilderness, Primitive or Canoe areas and allows motorized and mechanized access on designated roads;

**Intensive Use**—drive-in campgrounds and day-use areas;

**Historic**—state-owned historic sites and buildings; and,

**State Administrative**—hosts state offices or other management facilities not intended for visitors.

The New York State Department of Environmental Conservation (DEC) and the state's Adirondack Park Agency (APA) share responsibility for the Forest Preserve. While the DEC acquires new lands, the APA is tasked with developing classification recommendations based on SLMP criteria. After full public review, a final recommendation is approved by the APA and sent to the Governor, who makes the final decision. The DEC then proposes a unit management plan for the newly classified lands and the APA determines whether that plan meets the requirements of the master plan. Again, the physical, biological and intangible values of the property must be assessed.



Boreas Ponds: Photo ©Larry Master

## Target Audience

This report is intended to inform the APA, DEC, local government officials, Adirondack conservation organizations and members of the public, all of whom have a stake in the expansion and management of the Adirondack Forest Preserve.

## Methodology

We performed a standard assessment of land characteristics to define the physical, biological and intangible parameters. We then scored these parameters in relation to how they affect the land's capacity to withstand use as it relates to ecological integrity, wild character and recreational constraints. The additive scores for each of these three categories provide a basis for comparison between lands. Specifically, the higher the score, the more protective the land classification would need to be to allow the parcel to withstand recreational use.





## What this tells us

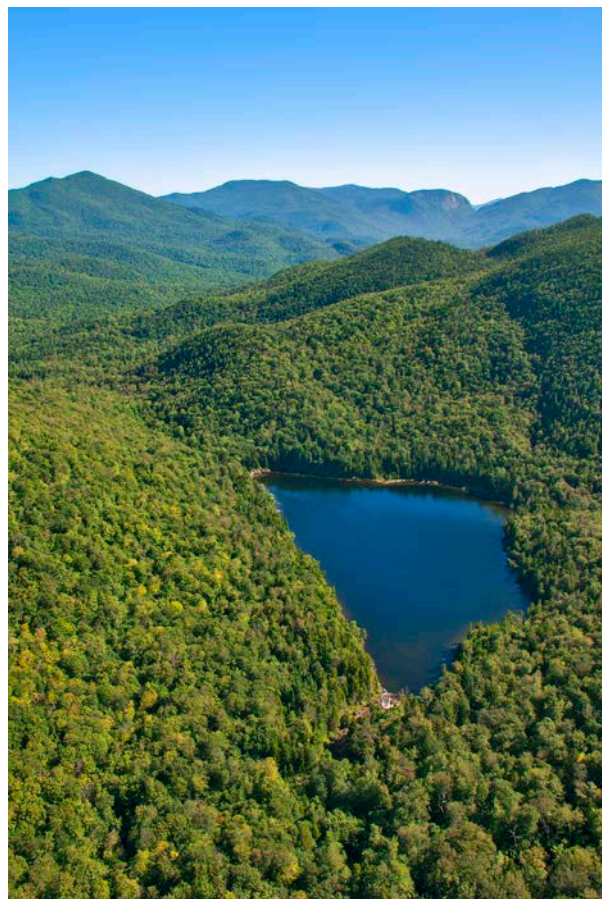
This analysis conveys the parameters that guide state land classification inside the Adirondack Park and relates them to on-the-ground conditions on the Boreas Ponds tract.

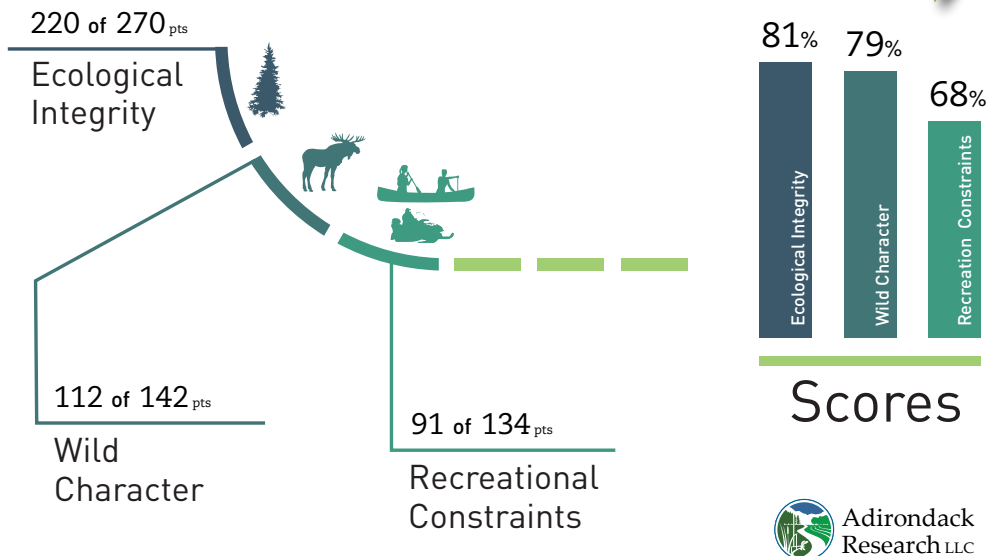
Each parameter is evaluated and given a weighted score (usually between 0 and 15) to denote how that parameter affects capacity to withstand use, related to:

1. EI – Ecological Integrity
2. WC – Wild Character
3. RC – Recreational Constraints

The sums of scores for each parameter are represented as points out of a possible maximum. These are expressed as percentages, so 100 percent is the maximum score possible. The higher the score for each parameter, the greater the need is to address the effects of recreational use on that parameter. Total scores represent the cumulative threat that recreational use might exceed the land's capacity. So, the higher the score, the greater the justification is for a Wilderness classification.

Boreas Tract: Photo ©Carl Heilman II/Wild Visions, Inc.





## EXECUTIVE SUMMARY

### Our methods

We assessed and scored the physical, biological and intangible attributes of the Boreas Ponds tract to determine the value of the characteristics that influence policymaker decisions on classification of Forest Preserve lands in the Adirondack Park. Then, each value was assessed for its impact on the tract's ecological integrity, wild character and recreational constraints, as guided by the Adirondack Park State Land Master Plan (APSLMP, 2013).

In each case, several characteristics were assessed to ensure a thorough examination of physical, biological and intangible attributes. For example, some of the physical characteristics assessed included geology, topography and the presence of water/wetlands. Biological characteristics included an assessment of wildlife habitat for birds, fish and sensitive plants, plus habitat connectivity and presence of rare species. Intangible characteristics include – among other things – aesthetic beauty, solitude and relative noise levels created by human activities.

The scores are, in general, conservative. Where there was evidence of a characteristic worth protecting, but too little information to fully assess its impact, we assigned a low score rather than leave it unassessed. With more information on large mammals and rare species, for example, we could have assigned a higher overall biological integrity score.

### What this tells us

This analysis allows policymakers and citizens to review the land characteristics that influence the ability of the Boreas Ponds tract to withstand public recreational use. This includes the ability to maintain its ecological integrity, retain its wild character and support recreational activities. Each parameter of the analysis and its referenced result contributes to an overall score. Higher scores reflect a higher level of sensitivity and the need for a more protective classification. Some parameters are more influential than others and were weighted to have a larger effect on the overall score.



## Results

The Boreas Ponds tract scores high in all three categories. For ecological integrity, it scored 220 points out of a possible 270, or **81 percent**. For wild character, it scored 112 point out of a possible 142, or **79 percent**. For recreational constraints, it scored **91 points** out of 134, or 68 percent.

### PHYSICAL CHARACTERISTICS:

**1:** Geology was the most significant physical characteristic when considering human influence on the capacity of Boreas Ponds to withstand use, especially with regard to ecological integrity and recreational constraints, each of which scored 100 percent. The tract is composed of wetland soils, erodible soils and high elevations.

**2:** Topography is varied. Some areas within the Boreas Ponds tract lie above 2,500 feet. Further, the tract's impressive topography and mountain views influence the tract's wild character.

**3:** Water has a large influence on the tract's capacity to withstand use, although we lacked some of the information needed to assign a score above 50 percent.

### BIOLOGICAL CHARACTERISTICS:

**1:** Birds, wetlands and fisheries were the three most influential factors in enumerating the tract's ecological capacity to withstand use. The wetland habitat provides habitat for many sensitive plants and birds. The birds, including boreal species such as the common loon, have both ecological and intangible values in that they represent biological diversity and also attract visitors who are eager to see them.

**2:** Fisheries and forest connectivity are important factors that affect an area's, or a waterbody's, ability to withstand use. High scores for these parameters highlight the impact of human activity on wildlife. Fisheries scored 83 percent in terms of ecological integrity and recreational constraints. Birds scored 100 percent for ecological integrity and wild character, but did not influence the site's intangible qualities. Wetlands scored 100 percent for ecological integrity. Further analysis on large mammals, such as moose, would likely increase the biological scores.

**3:** Rare species were apparent in our analysis. Additional information would likely increase the biological scores.

### INTANGIBLE CHARACTERISTICS:

**1:** Geological features had the largest influence on this score, as might be expected. The tract's outstanding mountain views over water were the main variable contributing to a high score. Their influence on wild character is 100 percent. The influence of motorized public recreation on this tract's ability to retain its wild character remains a concern. Information on historic motorized use is limited. There has been no motorized public access. The lands have been off limits to the public for more than a century, well before automobiles, snowmobiles or all-terrain vehicles were widely used. Only a limited number of leaseholders and guests have had access since then.

## Conclusions

Overall, the Boreas Ponds tract is an excellent candidate for classification as a Wilderness tract. It scores high for ecological integrity, wild character and recreational constraints. It is situated adjacent to two existing Wilderness areas (High Peaks and Dix Mountain) and is quite remote.

## Scoring

Characteristic	Ecological Integrity		
Physical characteristics	score	max	Percent
Geology	30	30	100%
Topography	5	10	50%
Water	5	10	50%
Biological characteristics	score	max	Percent
Amphibians	5	10	50%
Birds	45	45	100%
Fisheries	25	30	83%
Forest connectivity	35	45	78%
Plants	10	15	67%
Rare species	25	35	71%
Wetlands	40	40	100%
Intangible characteristics	score	max	Percent
Geological features	---	---	---
Wilderness character	5	10	50%

Wild Character		
score	max	Percent
---	---	---
5	10	50%
5	15	33%
score	max	Percent
---	---	---
37	37	100%
---	---	---
---	---	---
---	---	---
---	---	---
score	max	Percent
35	35	100%
30	45	67%

Recreational Constraints		
score	max	Percent
20	20	100%
10	20	50%
20	40	50%
score	max	Percent
---	---	---
---	---	---
25	30	83%
10	10	100%
---	---	---
---	---	---
---	---	---
score	max	Percent
---	---	---
1	4	25%

## Geology/soils

Soils and geological attributes are important factors to consider for land classification because they influence the capacity of the land to withstand use, and they influence the biological characteristics that support flora and fauna. Non-native species invasion, rare species habitat suitability, roads and trails are among those affected by geology and soils.

### PARAMETER:

**1. Are there soils or habitats that are particularly prone to invasion by non-native plant or animal species? Describe soils or habitat.**

### OPTIONS:

**A:** Yes

**B:** More data are needed.

**C:** No

**A:** EI+10 **B:** EI+5 **C:** EI+0

### RESULT: A: EI+10

Wetland habitats are particularly prone to invasion by non-native species (Zedler and Kercher 2004). The large wetland complex on the Boreas Ponds tract is at risk of invasive species because wetlands create natural canopy gaps that accelerate the growth of opportunistic plant species. Approximately 28% of all invasive



**LaBiere Flow:** Photo ©Ezra Schwartzberg

plants are wetland species (Zedler and Kercher 2004).

### PARAMETER:

**2. Are there rare soil types present that do or may contain rare or endangered species?**

### OPTIONS:

**A:** Yes

**B:** More data are needed.

**C:** No

**A:** EI+10 **B:** EI+5 **C:** EI+0

### RESULT: (A: EI+10)

Soil types supporting rare or endangered species were not reported specifically for this tract by (NYNHP, 2015). A soil map can be obtained from (CUGIR 2016, NRCS 2016). Further research on soil and habitat types of the wetlands has been conducted by APA (Langdon, personal correspondence) indicating wetland soils that do contain rare species. Additional soils information for Essex County can be found within (Smith 2010) or (NRCS 2016).

### PARAMETER:

**3. Does the tract contain fragile areas, as defined by APSLMP as being “2,500 feet in altitude, particularly the boreal (spruce-fir), sub-alpine and alpine zones, as well as low lying areas such as swamps, marshes and other wetlands.”**





Boreas Ponds: Photo ©Ezra Schwartzberg

**OPTIONS:**

- A:** Yes  
**B:** More data are needed.  
**C:** No

**A:** EI+10 **B:** EI+5 **C:** EI+0

**RESULT:** (A: EI+10)

The tract contains several of the fragile areas defined by APSLMP, including boreal (spruce-fir) forests, sub-alpine zones, and other wetlands including a large peat land (NYNHP, 2015).

**PARAMETER:**

**4. Does the tract contain soil types that have a high erosion hazard for roads and trails?**

**OPTIONS:**

- A:** Most of the soils (over 50%) have a moderate or slight erosion hazard rating.  
**B:** More data are needed or current information warrants additional analysis.  
**C:** Yes, there is a high proportion of “severe” erosion

hazard soils (over 50% of total acreage).

**A:** RC+0 **B:** RC+5 **C:** RC+10

**RESULT:** (C: RC+10)

Approximately 80.7% of the soils are rated as Severe erosion hazard (NRSC 2016). The three soils within the tract contributing approximately 1/3 of this 80.7% include 3,755 acres Mundalite-Rawsonville complex, 2,187 acres Rawsonville-Hogback complex, and 2,164 acres Monadnock-Tahawus complex.

**PARAMETER:**

**5. Are the tract’s soil types well suited or poorly suited for roads and trails?**

**OPTIONS:**

- A:** There is a high proportion of “Well Suited” soils (over 50% of total acreage) for road creation and maintenance.  
**B:** More data are needed or current information warrants

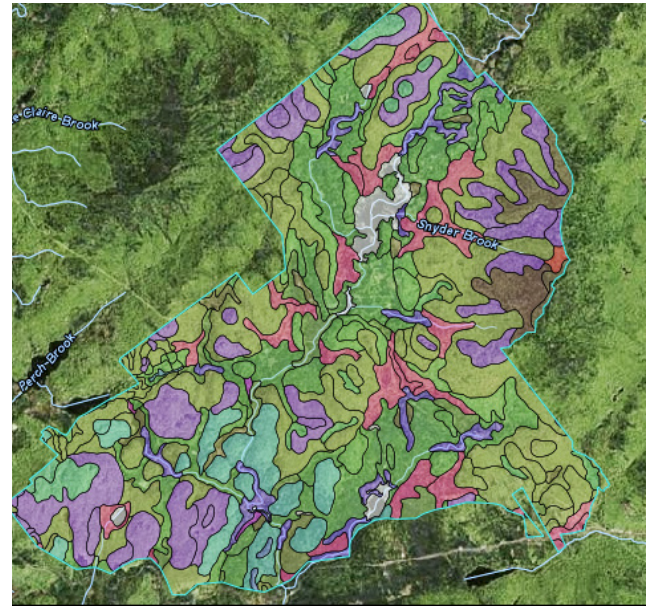
additional analysis.

**C:** There is a high proportion of “Poorly Suited” soils (over 50% of total acreage) for road creation and maintenance.

**A:** RC+0 **B:** RC+5 **C:** RC+10

**RESULT: (C: RC+10)**

The area is poorly suited for roads, with 68.1% of the area rated “Poorly suited” indicating that the soil has one or more properties that are unfavorable for roads. Overcoming the unfavorable properties requires special design, extra maintenance, and costly alteration (NRCS 2016).



Boreas Ponds Soil Map: NRCS 2016.

**Topography** Topography is an important characteristic for land classification because it affects soils, habitat and intangible characteristics of wild character in the Adirondacks. Terrain also adds a sense of ruggedness that would be required for Wilderness classification. The topography of this area consists of relatively low rolling hills and small mountains, some of which rise into the High Peaks and Dix Mountain Wilderness areas and include Rist, Cheney Cobble, Allen, McDonnell, Pinacle, and Boreas mountains. The area also contains large areas of wetlands and ponds.

**PARAMETER:**

**1. Does the topography of the tract pose hazards for recreation? What types of recreation may be limited to or from this tract and why?**

**OPTIONS:**

**A:** Not dangerous, amenable to basic recreation and / or critical topography for specialized recreational opportunities.

**B:** The tract does not pose a safety threat for outdoor recreationists, nor is the tract particularly suitable to specialized recreational pursuits.

**C:** The land topography poses threats to human safety or is otherwise less suitable for human recreation.

**A:** RC+0 **B:** RC+5 **C:** RC+10

**RESULT: (A: RC+0)**

Terrain is not particularly steep or dangerous. Lakes provide ample opportunity for watercraft recreation. Other aspects of topography are typical to other areas of the Adirondack Park. An analysis on the suitability of high peaks hiking access from the tract needs to be a part of future analyses. Gulf Brook Road, however, has the potential to become a new access point for the High Peaks Wilderness (CNYhiking.com).

**PARAMETER:**

**2. Are there man-made structures on the tract that require maintenance for recreation purposes? List structures and types of recreation for which these structures are required.**



**OPTIONS:**

**A:** The tract does not contain man made structures that would need repair or regular maintenance.

**B:** The tract contains infrastructure that supports or is required for recreation and recreational access to areas of interest. This infrastructure, however, is not in immediate need of repair, or does not pose a substantial cost liability related to infrastructure maintenance.

**C:** The tract includes infrastructure required for recreation and does pose a cost liability. This could include access infrastructure (roads) or man made structures that enable certain types of recreation (dams that impound navigable water).

**A:** RC+0 **B:** RC+5 **C:** RC+10

**RESULT:** (C: RC+10)

There is no strong evidence that the road infrastructure on the tract is more or less difficult to maintain for recreational purposes as compared to other similar tracts of state land. The seven-mile access route along Gulf Brook Road poses a considerable maintenance liability, however the tract seems to have decent reserves of gravel. Further data on the costs of road maintenance

needs to be conducted prior to classification. As mentioned above, the soils are not well suited for roads (NRCS 2016).

There are two dams impounding LaBiere Flow and Boreas Ponds. The dams will need to be maintained if access and recreation are promoted. Further, these dams will require maintenance to support watercraft recreation in Boreas Ponds. The dams will need to be maintained if access and recreation are promoted.

**PARAMETER:**

**3. Does the topography of the tract create potential vulnerability to disruption of wilderness character? In what way?**

**OPTIONS:**

**A:** Yes, the tract possesses view sheds that are visible from main access points.

**B:** More data are needed or current information warrants additional analysis.

**C:** There are no topographic views from any key points on the tract.

**A:** WC+10 **B:** WC+5 **C:** WC+0

**RESULT:** (B: WC+5)

Important mountain and lake views are accessible from several vantage points on the tract, especially from the shores of Boreas and White Lily Ponds.



**PARAMETER:**

**4. Are portions of the tract capable of supporting recreational activities above 2,500 feet in elevation?**

**OPTIONS:**

**A:** All land within this tract lie above 2,500 feet.

**B:** Some elevations are at or above 2,500 feet.

**C:** All elevations are below 2,500 feet.

**A:** EI+10 **B:** EI+5 **C:** EI+0

**RESULT:** (B: EI+5)

There are regions of the tract that lie above 2,500 feet. These areas are to the northwest and east as the tract approaches Cheney Cobble, Boreas and Allen Mountains. Land above this elevation are sensitive to environmental degradation and often provide habitat to rare species.

## Water Resources

Water resources, as stated in the Adirondack Park State Land Master Plan, “are critical to the integrity of the Park. Waters, particularly lakes and ponds, have their carrying capacity from a physical, biological and social standpoint just as do tracts of public or private land.” The following parameters are important when considering each water body’s capacity to withstand various uses, particularly motorized uses and to maintain and enhance its biological, natural and aesthetic qualities. Biological attributes are omitted from this section as they are included in following sections, including invasive species; wetlands; and rare, threatened and endangered species or communities.

**PARAMETER:**

**1. Are the water resources natural or impounded by a dam?**

**OPTIONS:**

**A:** Most of the resources associated with water bodies are a result of being impounded by a dam.

**B:** The water resources comprise a mixture of water bodies and rivers impounded by dams and natural.

**C:** None of the water resources exist as a result of man made structures such as dams.

**A:** EI+0 **B:** EI+5 **C:** EI+10

**A:** WC+0 **B:** WC+0 **C:** WC+5

**RESULT:** (B: WC+0) (B: RC+5)

The area’s water resources are a mixture of water bodies created by impounding as well as water bodies (ponds and wetlands) that exist naturally.

**PARAMETER:**

**2. Do constraints exist for certain recreation activities (for example does the water or landscape pose constraints on specific types of recreational activities)?**

**OPTIONS:**

**A:** There are no perceived recreation constraints.

**B:** There are constraints to a couple of common recreation activities (between 2 and 4).

**C:** There are many constraints that would affect recreation activities on this tract.

**A:** RC+0 **B:** RC+5 **C:** RC+10

**RESULT:** (A: RC+0)

There are no perceived constraints, though more research needs to be conducted on the effects of motorized recreation on non-motorized use and wilderness character.





Boreas Ponds: Photo ©Larry Master

**PARAMETER:****3. Are water resources affected by the type of camping permitted?****OPTIONS:**

**A:** The water resources are well positioned to support camping at or below the water bodies' carrying capacity. **B:** Further analysis of campsite type, density and location needs to be conducted. **C:** There is major potential for camping to overload the carrying capacity of the water resources.

**A:** RC+0 **B:** RC+5 **C:** RC+10

**RESULT:** (B: RC+5)

Further analysis is needed prior to classification regarding the suitability and capacity of the shoreline to withstand camping use.

**PARAMETER:****4. Does the proximity of lakes and ponds to one another make possible a remote and unconfined type of water recreation in essentially a Wilderness setting? List lake areas and distances of current or potential portages.****OPTIONS:**

**A:** There is a network of lakes, ponds and rivers that create opportunities for interconnected travel (with the use of portages) that would be beneficial for non-motorized recreation. **B:** More data are needed or current information warrants additional analysis.

**C:** The area is not considered to be useful for non-motorized recreation.

**A:** RC+10 **B:** RC+5 **C:** RC+0

**A:** WC+10 **B:** WC+5 **C:** WC+0

**RESULT:** (B: WC+5) (RC+5)

Further analysis is needed.

**PARAMETER:****5. Are the tract's water resources important as a water supply source, or are the water resources important for flood mitigation?****OPTIONS:**

**A:** Water resources are not important as a water supply or for flood mitigation. **B:** More data are needed or current information warrants additional analysis. **C:** Water resources are important as a water supply or for flood mitigation.

**A:** RC+0 **B:** RC+5 **C:** RC+10

**RESULT:** (B: RC+5)

Further analysis is needed.

## Forest Connectivity

Forest connectivity is an important factor affecting survivability and breeding success of animals. Birds, small and large mammals have space requirements for optimal breeding ranges. Matrix Blocks are large contiguous areas whose size and natural condition allow for the maintenance of ecological processes. While forest connectivity is not mentioned in the APSLMP, it is important when evaluating ecological integrity.

### PARAMETER:

**1. Is this tract considered to be important as a “Matrix Block” on its own or as it adjoins another tract?**

### OPTIONS:

- A:** This area is considered a Matrix Block or adjoins land, that when considered whole, is greater than 40,000 acres.  
**B:** This area is between 20,000 and 40,000 acres or adjoins land, that when considered whole, is between 20,000 and 40,000 acres.  
**C:** This area is less than 20,000 acres and does not adjoin larger areas of land (breeding area needed for many bird species).

**A:** EI+15 **B:** EI+10 **C:** EI+0

### RESULT: (A: EI+15)

The Boreas tract is greater than 20,000 acres and adjoins the High Peaks Wilderness, which is 192,000 acres.

### PARAMETER:

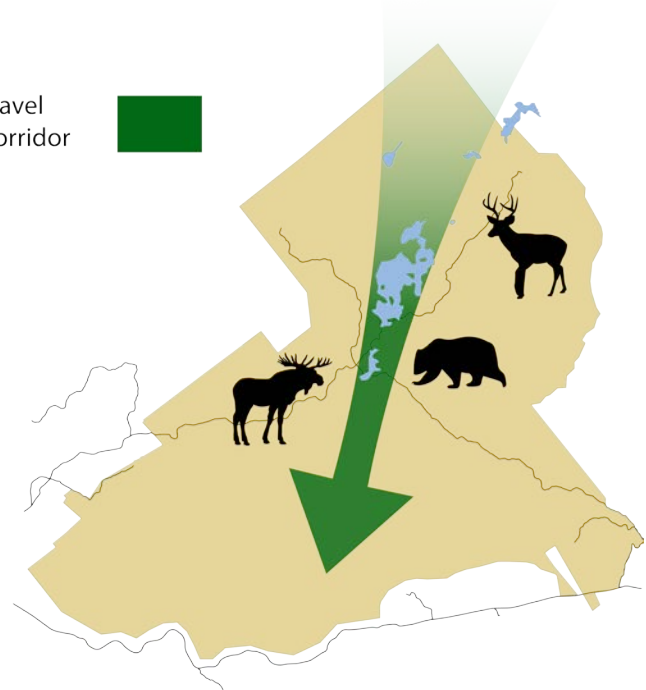
**2. Would increased road use fragment large animal travel corridors?**

### OPTIONS:

- A:** Roads are proposed in areas that have a high likelihood to disrupt travel corridors of large animals within their breeding areas.  
**B:** Roads are not planned, or information regarding routes is not available.  
**C:** Roads, where proposed, do not generally bisect travel corridor routes of large mammals.

### TRAVEL CORRIDOR - LARGE MAMMALS

Travel  
Corridor



**A:** EI+10 **B:** EI+5 **C:** EI+0  
**A:** RC+10 **B:** RC+5 **C:** RC+0

### RESULT: (A: EI+10)(RC+10)

The proposed roads within this area have the potential to disrupt habitat connectivity. While connectivity and habitat suitability include factors other than roads (water, land cover, topography), distance to roads accounts for 10-20 percent for model predictions of connectivity potential (Graves and Wang, 2012). Each species of concern (bear, bobcat, fisher) are affected differently by road proximity. Bears avoid areas within 200m of a road (Hammond, 2002) and there is evidence of avoidance up to 1,000m (Graves and Wang, 2012). Bobcats avoid roads and rely on edge habitat, wetlands and streams for use as travel corridors (Abouelezz, 2009). Fishers avoid roads and use riparian habitat as travel corridors (Heinemeyer, 1993).



**PARAMETER:**

**3. Are there less common forest types that provide important habitat for rare, endangered, or threatened species? List less common forest types.**

**OPTIONS:**

**A:** Two or more less common forest types.

**B:** One less common forest type.

**C:** No recorded less common forest types.

**A:** EI+10 **B:** EI+5 **C:** EI+0

**RESULT:** (B: EI+5)

New York Natural Heritage Program (NYNHP 2016) identified mountain spruce-fir forest (S2S3) on the Boreas Tract. Mountain spruce-fir forests are highlighted in the APSLMP as a fragile habitats of particular concern when determining the capacity of the land to accept human use.

**PARAMETER:**

**4. Is this tract important as a wildlife corridor by providing a high degree of connectivity?**

**OPTIONS:**

**A:** The tract in question is within a wildlife corridor and there is evidence of use by large mammals **B:** The tract is within a wildlife corridor, but limited evidence exists for large mammal presence, or evidence is lacking regarding wildlife connectivity through this region. **C:** The tract is not part of a wildlife corridor and/or there is no evidence of use as a travel corridor by large mammals.

**A:** EI+10 **B:** EI+5 **C:** EI+0

**RESULT:** (B: EI+5)

There is evidence of large mammals (e.g., moose). One of the great attributes of this tract is that it may provide a North to South and upslope connectivity corridor as the climate continues to warm. An analysis on connectedness relating to wildlife on this tract needs to be performed prior to classification.

## Wetlands

APSLMP guidelines pay special consideration to fragile habitats, including high elevation habitats and wetlands. Wetlands play a critical role with flood mitigation, water filtration, and provide habitat for many important flora and fauna. The following parameters highlight the importance of wetlands to rare and invasive species, biological diversity and climate change mitigation.

**PARAMETER:**

**1. Are there sizable wetlands within, partially within, or bordering the tract? What is the size of each wetland?**

**OPTIONS:**

**A:** The tract contains wetlands of considerable size compared to other parts of the Adirondacks.

**B:** The tract contains wetlands, but not of particularly large sizes.

**C:** There are no wetlands present on the tract.

**A:** EI+10 **B:** EI+5 **C:** EI+0

**RESULT:** (A: EI+10)

The wetland complex, some of which is within the Boreas Ponds tract, is very large. Of particular interest is the 1411 acre peatland. Peatlands are wetlands with a thick water-logged organic soil layer (peat) made up of dead and decaying plant material. Most of the peatland is at 2,015 feet above sea level, making this complex one of the largest high peatlands in the Adirondacks.

Peatlands are critically important for mitigating the effects of climate change because they buffer flooding, capture carbon and they provide habitat for rare and endangered species at threat in a changing climate. The wetlands within the Boreas Ponds tract need to be fully assessed and considered prior to classification.



**PARAMETER:**

**2. Are there less common wetland types that provide important habitat for rare, endangered or threatened species? List less common wetlands types.**

**OPTIONS:**

**A:** There are three or more less common wetland types or one wetland type of particular concern.

**B:** There are at least two less common wetland types.

**C:** There are no recorded less common wetland types.

**A:** EI+10 **B:** EI+5 **C:** EI+0

**RESULT: (A: EI+10)**

NYNHP identified two wetland communities of interest. They include a black spruce-tamarack bog (S3) and a medium fen (S2S3). The black spruce-tamarack bog is about 800 meters from a parking area. This black spruce-tamarack bog totals approximately nine acres, which is small compared to other significant black spruce-tamarack bogs in the state. This bog overall is

in excellent ecological condition with no visible exotic plants, species defoliation, or significant disturbances such as trampling. The abiotic processes are also in excellent condition, with no visible disturbances to hydrology or soils documented during the field survey. This bog also has inherent community maturity. EO Rank of AB.

The medium fen is located at the north-west corner of Casey Brook tract and extends into Boreas Tract. It is approximately 14 acres in size, which is small compared to most other significant medium fens throughout the state. This medium fen is mature and is partially disclimax, in which permanent inundation and acidity create conditions that are unfavorable for other plant species to become established. The abiotic processes and hydrological regime of this medium fen are fully intact and in excellent condition, and all inherent plant species are present for this community. EO Rank of AB. There are several other wetland types not listed here. A complete analysis of these wetlands needs to be conducted as a component of classification.



**PARAMETER:****3. Are wetlands particularly diverse?****OPTIONS:**

**A:** Wetland communities on this tract are more diverse than other wetland communities in the Adirondacks.

**B:** Wetland communities are neither more or less diverse as compared to other wetland communities in the Adirondacks.

**C:** Wetland communities on this tract are less diverse than most other wetland communities in the Adirondacks.

**A:** EI+10 **B:** EI+5 **C:** EI+0

**RESULT: (A: EI+10)**

The wetland communities that comprise the Boreas Ponds tract are particularly diverse. The northern white cedar swamp (Marcy Swamp) is north of the Boreas tract. It is very diverse and is part of one of the largest high-elevation wetlands in the Adirondacks. More information will become available pending approval by the Adirondack Park Agency and it is important that these wetland communities are fully assessed.

**PARAMETER:****4. Are there wetland attributes of particular concern for ecosystem processes, climate change adaptation, or recreation?****OPTIONS:**

**A:** Yes.

**B:** More data are needed or current information warrants additional analysis.

**C:** No.

**A:** EI+10 **B:** EI+5 **C:** EI+0

**RESULT: (A: EI+10)**

The entire peatland complex, of which Boreas Ponds tract is a part, is one of the largest high elevation peatlands in the Park. The characteristics of this peatland may have implications for climate change adaptation, especially as a climate refuge. A complete analysis of these wetlands needs to be conducted as a component of classification.

## Rare, threatened or endangered species or communities

Unit management plans are designed to accommodate “the preservation and management of special interest areas such as the habitats of rare, threatened or endangered species and areas with the potential for the reintroduction of extirpated species, unique geological areas and historic areas or structures” (APSLMP). The following are parameters related to rare and threatened species and communities.

**PARAMETER:****1. How many listed natural community types have been identified on the tract?****OPTIONS:**

**A:** There are two or more listed natural community types or one of particular concern.

**B:** There is at least one listed natural community types.

**C:** There are no recorded listed natural community types.

**A:** EI+10 **B:** EI+5 **C:** EI+0

**RESULT: (A: EI+10)**

There are three listed natural community types

(see sections above for details). These include black spruce-tamarack bog (S3), medium fen (S2S3), and mountain spruce-fir forest (S2S3) (NYNHP 2016).

**PARAMETER:****2. How many rare, threatened, or endangered species have been recorded from the tract?****OPTIONS:**

**A:** More than five rare, threatened, or endangered species have been reported, or at least one species of particular

concern. **B:** Between one and four species listed as rare, threatened, or endangered have been reported. **C:** No listed species have been reported from this tract. **D:** Extensive surveys have yielded no reports of rare, threatened, or endangered species.

**A:** EI+15 **B:** EI+10 **C:** EI+5 **D:** EI+0

**RESULT:** (B: EI+10)

Bay-breasted warbler (S2 - imperiled) and northern bog aster (S2 - imperiled) have been reported in 2009. The site of occurrence is a medium fen with open, graminoid-dominated areas interspersed with stunted northern white-cedar. A mix of boreal bog and calciphilic fen species occupy the various microhabitats in this peatland (NYNHP 2016).

**PARAMETER:**

### 3. Are there climate change refugia present on the tract?

**OPTIONS:**

**A:** There are areas of extended cold periods, or areas otherwise known to sustain colder micro-climates compared to nearby geographic locations? These include cold pockets or areas of higher elevation that are generally colder.

**B:** More research needs to be conducted.

**C:** Temperature probes have been deployed over multiple years and there are no cold pockets.

**A:** EI+10 **B:** EI+5 **C:** EI+0

**RESULT:** (B: EI+5)

Further analysis is needed. The peatland is large and high in elevation. The potential for cold pockets and other climate refugia is extremely high for this bog and it is important that micro-climate habitats are assessed.

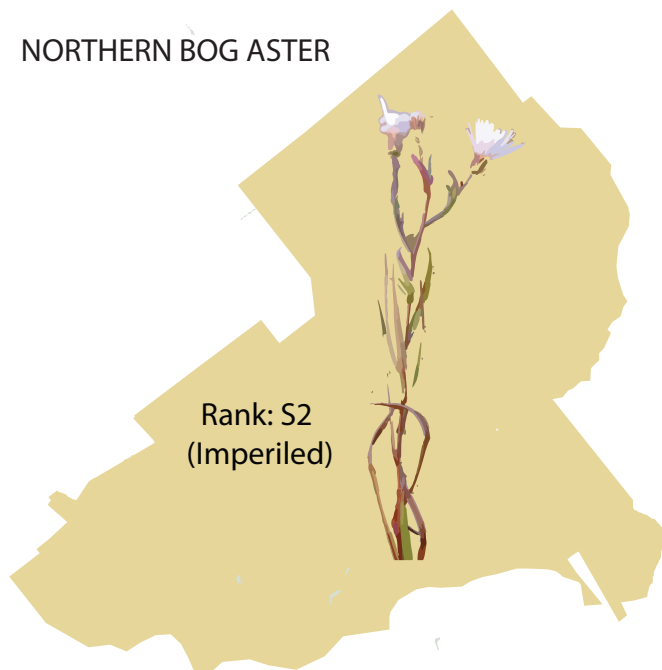
BAY BREASTED WARBLER



LINCOLN'S SPARROW



NORTHERN BOG ASTER





# Fisheries

Fisheries are an important factor when determining a water body's capacity to withstand use. This capacity is influenced by the species present as well as the attributes of the water bodies.

## PARAMETER:

**1. Are there known non-native or invasive fishes present in these water bodies?**

## OPTIONS:

**A:** Survey work has been performed and there are no occurrences of invasive fish species.

**B:** More data are needed or current information warrants additional analysis.

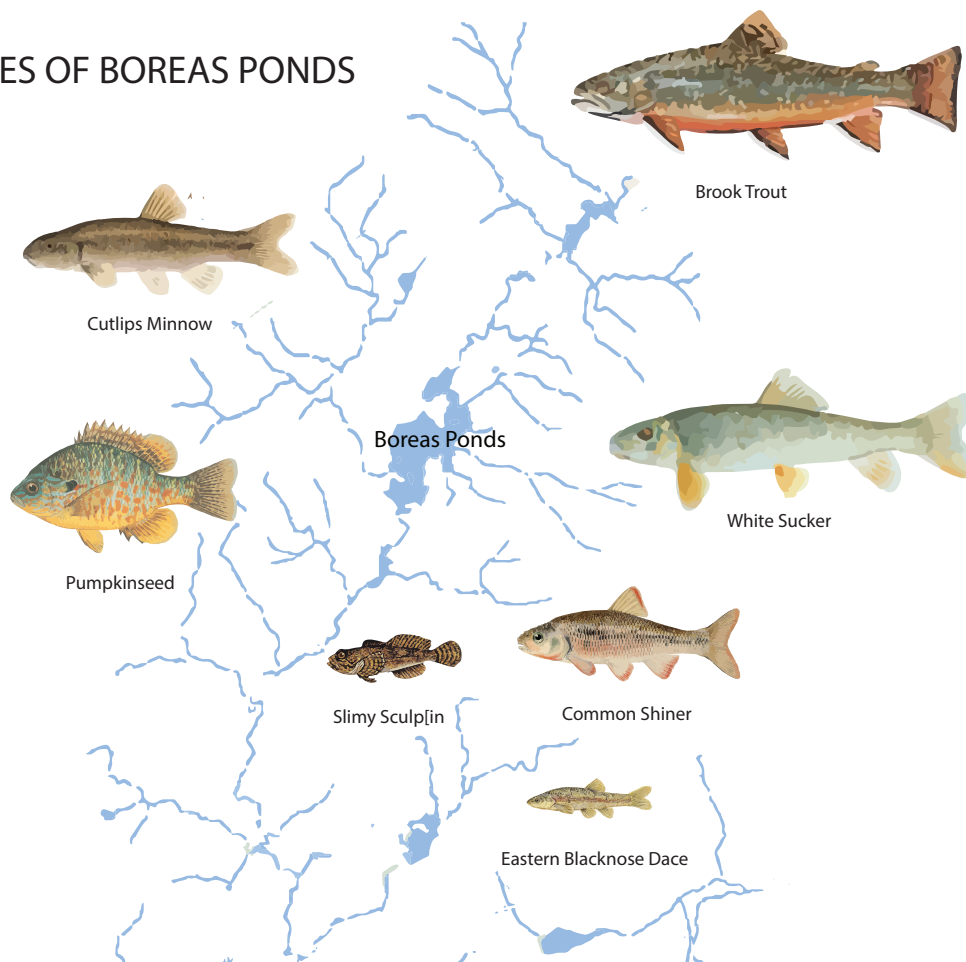
**C:** Invasive fish species are present in water bodies on this tract.

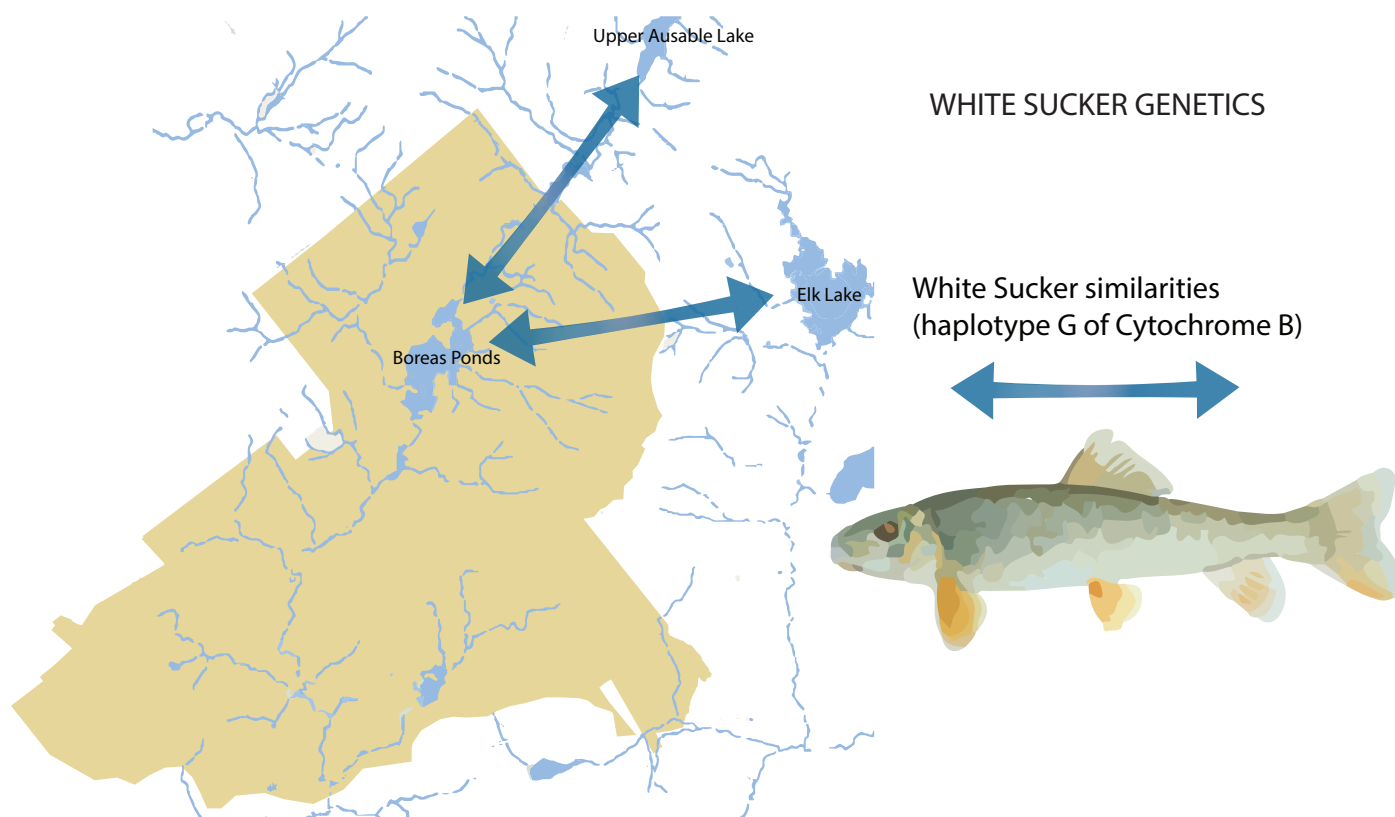
**A:** EI+10 **B:** EI+5 **C:** EI+0  
**A:** RC+10 **B:** RC+5 **C:** RC+0

## RESULT: (A: EI+10) (A: RC+10)

Brook trout, white suckers and pumpkinseed are present in Boreas Ponds. Pumpkinseed, cutlips minnow, eastern blacknose dace, slimy sculpin, and common shiner were surveyed from upstream of Boreas Ponds. There is no evidence of invasive fishes present on the Boreas Tract (DEC 2016, iMapInvasives 2016).

## FISHES OF BOREAS PONDS





**PARAMETER:**

**2. Do these water bodies contain heritage breeds of fishes?**

**OPTIONS:**

**A:** Heritage breeds or fish haplotypes of specific interest or value exist on the tract.

**B:** More data are needed or current information warrants additional analysis.

**C:** Survey work has been performed and there are no occurrences of heritage breeds of fishes.

**A:** EI+10 **B:** EI+5 **C:** EI+0

**A:** RC+10 **B:** RC+5 **C:** RC+0

**RESULT: (A: EI+10) (A: RC+10)**

Sucker tissue samples were analyzed by a geneticist from Fordham University to show that there were similarities (haplotype G of Cytochrome B) to Elk Lake and Lower Ausable Lake suckers that are referred to as late spawning suckers from the eastern Adirondacks. The survey just downstream of Boreas Ponds contained pumpkinseed and confirmed they are in these ponds as well (Carlson 2013).

**PARAMETER:**

**3. Do the water bodies within, partially within, or bordering this tract support or potentially support sports fisheries?**

**OPTIONS:**

**A:** Water bodies support fishes important for recreational anglers. Lake, ponds, or rivers in current form (dammed, etc.) offer sustainable recreation opportunities.

**B:** More research needs to be conducted.

**C:** Water bodies do not support fishes important for recreational anglers. Lake, ponds, or rivers in current form (dammed, etc.) do not offer sustainable recreation opportunities.

**A:** EI+10 **B:** EI+5 **C:** EI+0

**A:** RC+0 **B:** RC+5 **C:** RC+10

**RESULT: (B: EI+5) (B: RC+5)**

More research needs to be conducted.



## Birds

Avian diversity and population size are important factors for land use. While avian diversity is not mentioned in the APSLMP, birds are indicators of ecosystem health and many species like loons or eagles provide a degree of intangible wilderness character. The presence of certain bird species are indicative of boreal habitat, therefore the presence of boreal bird species, among others, are important factors to consider during the land classification process.

### PARAMETER:

**1. Is this area considered or potentially considered an Important Bird Area (IBA), i.e. it meets at least one of the three IBA criteria?**

### OPTIONS:

**A:** Yes. This site meets at least one criterion relating to threatened species, habitat-species assemblages, and congregations of birds.

**B:** More data are needed or current information warrants additional analysis.

**C:** No. This site does not meet any of the criteria to be considered an Important Birding Area.

**A:** EI+10 **B:** EI+5 **C:** EI+0  
**A:** WC+10 **B:** WC+5 **C:** WC+0

**RESULT:** (A: EI+10) (A: WC+10)

The Boreas Tract has five waterfowl species, including common loon (S4) as well as nine characteristically boreal bird species, including Lincoln's sparrow and bay-breasted warbler (S2) (Jenkins 2000, USDAFS 2002, eBird 2016). Furthermore, Boreas Ponds is part of the Adirondack Forest Tract Important Bird Area, which was officially recognized in 2015 by the National Audubon Society and the U.S. Important Bird Areas Technical Committee as a continentally important breeding area for a suite of Northern Forest songbirds.

### PARAMETER:

**2. How many rare or uncommon bird species have been documented from Boreas Ponds or elsewhere on the tract?**

### OPTIONS:

**A:** Rare or threatened bird species have been reported from the tract.

**B:** No rare or threatened species have been reported.

**C:** Extensive surveys have been performed, yielding no evidence for rare or threatened species.

**A:** EI+10 **B:** EI+5 **C:** EI+0  
**A:** WC+10 **B:** WC+5 **C:** WC+0

**RESULT:** (A: EI+10) (A: WC+10)

Bay-breasted warbler (S2), Lincoln's sparrow and common loon (S4) have all been documented on the Boreas Tract. The 1980 and 2000 Breeding Bird Atlas Surveys documented a total of 64 and 52 protected avian species (1980 and 2000 respectively) as well as 4 and 2 protected-special concern species for the two primary blocks comprising the Boreas Tract (5887c and 5887a).

### PARAMETER:

**3. How many characteristically boreal bird species have been documented from the tract?**

### OPTIONS:

**A:** Between 6-10 species have been documented.

**B:** Between 2-5 species have been documented.

**C:** Less than 2 boreal bird species have been reported from the tract.

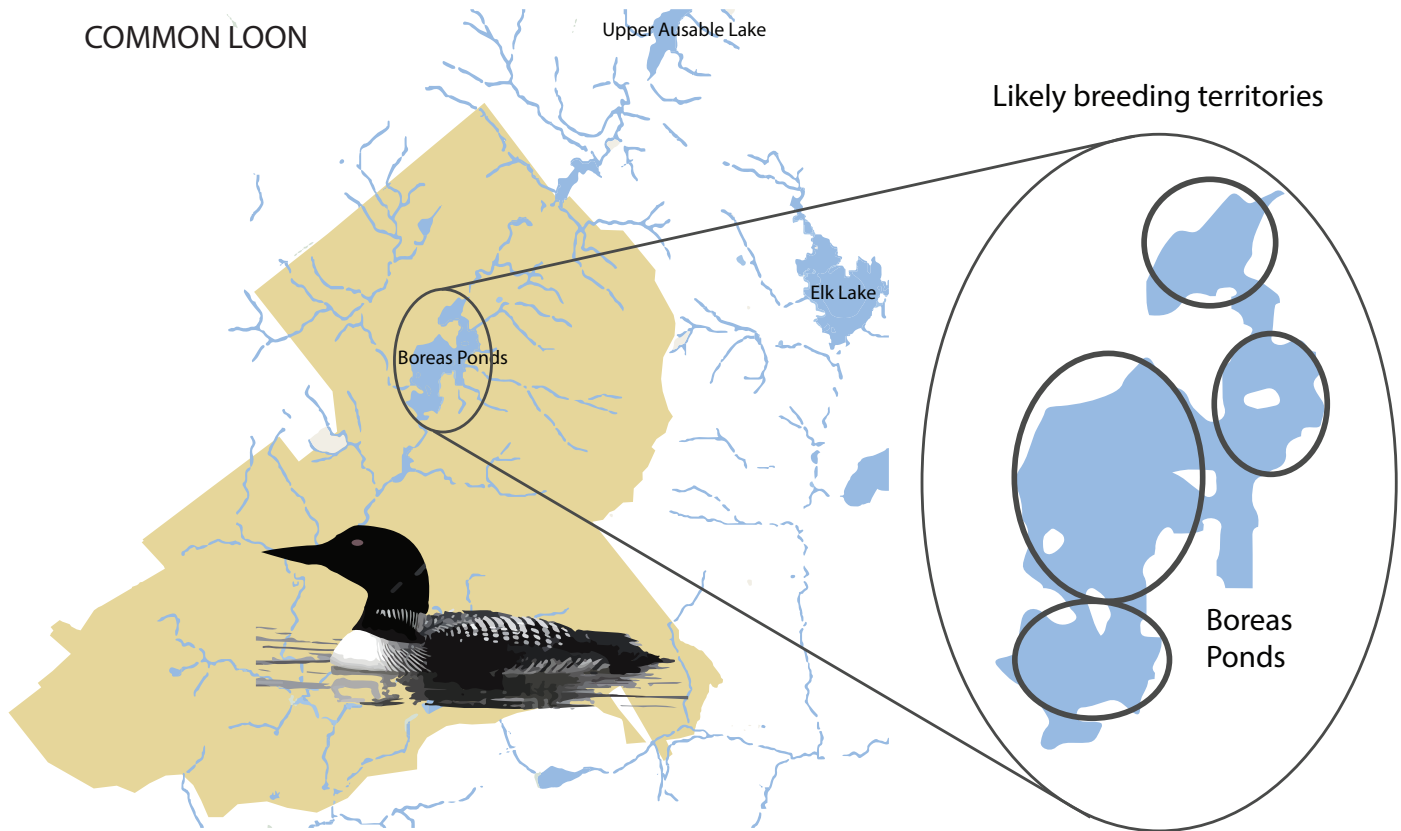
**D:** No rare or threatened species have been reported.

**E:** Extensive surveys have been performed, yielding no evidence for boreal species.

**A:** EI+15 **B:** EI+10 **C:** EI+7 **D:** EI+3 **E:** EI+0  
**A:** WC+7 **B:** WC+5 **C:** WC+3 **D:** WC+1 **E:** WC+0

**RESULT:** (A: EI+15) (A: WC+7)

Nine characteristically boreal avian species have been recorded from Boreas Ponds (Jenkins 2001).



**PARAMETER:**

**4. How many breeding waterfowl or loon species have been documented from the tract?**

**OPTIONS:**

- A:** More than four species have been documented.
- B:** Between 2-4 species have been documented.
- C:** Less than 2 waterfowl species have been reported from the tract.
- D:** No rare or threatened species have been reported.
- E:** Extensive surveys have been performed, yielding no evidence for waterfowl species.

**A:** EI+10 **B:** EI+7 **C:** EI+4 **D:** EI+2 **E:** EI+0  
**A:** WC+10 **B:** WC+7 **C:** WC+4 **D:** WC+2 **E:** WC+0

**RESULT:** (A: EI+10) (A: WC+10)

Five waterfowl species have been recorded from Boreas Ponds (Jenkins 2001, NYBBA 1984, NYBBA 2001) as well as common loon. Further, Boreas Ponds could potentially support four or more loon breeding territories and White Lily pond one additional breeding territory (areas of suitable habitat larger in area than 13 acres) (Schoch, personal correspondence).



## Plants

The presence of rare, threatened or endangered plant species is an important consideration when determining land use. Further, rare plants are often associated with the presence of rare communities or geological attributes. As such, this section is limited to the occurrence of rare, threatened or endangered plant species and not communities.

### PARAMETER:

**1. How many rare, endangered, or threatened plant species have been recorded from the tract?**

### OPTIONS:

- A:** Several rare, endangered or threatened plant species have been recorded from the tract.
- B:** At least one rare, endangered or threatened plant species have been recorded from the tract.
- C:** No rare, endangered or threatened plant species have been recorded from the tract.
- D:** Extensive studies have been conducted and no rare

endangered, or threatened plant species have been recorded from the tract.

**A:** EI+15 **B:** EI+10 **C:** EI+5 **D:** EI+0

### RESULT: (B: EI+10)

Northern Bog Aster *Symphyotrichum boreale* has been reported in 2009. The site of occurrence is a medium fen with open, graminoid-dominated areas interspersed with stunted northern white-cedar. A mix of boreal bog and calciphilic fen species occupy the various microhabitats in this peatland (NYNHP 2016). More research needs to be conducted on site to determine whether more rare plant species are present.

## Amphibians

Amphibians are indicator species and are affected by ecosystem alterations, including those changes resulting from climate change. Further, many species require increasingly rare habitats, and it is important to fully assess the presence of their habitat to conserve vulnerable species.

### PARAMETER:

**1. How many amphibian species have been documented from Boreas Ponds or elsewhere on the tract?**

### OPTIONS:

- A:** At least one amphibian species has been recorded from the tract.
- B:** No amphibian species have been recorded from the tract.
- C:** Extensive studies have been conducted, and no amphibian have been recorded from the tract.

**A:** EI+10 **B:** EI+5 **C:** EI+0

### RESULT: (B: EI+5)

Nine amphibians and reptiles have been documented in the New York State DEC Herp Atlas Project (HAP 2016) for Boreas Ponds area (T. of North Hudson and Mount Marcy, Cheney Pond quadrangles). These observations, however, were in areas outside of the Boreas Ponds tract. Further surveys need to be conducted. It is likely that amphibians are present and more surveys need to be conducted prior to land classification.

## Wilderness Character

Wilderness character includes the intangible characteristics of natural places. Intangible characteristics include ruggedness and the sense of solitude a particular area provides. Wilderness character can be negatively influenced by certain types of recreation and is a key factor when determining land classification.

Boreas Ponds: Photo ©Larry Master



### PARAMETER:

**1. Does this area possess qualities of wilderness character that may be threatened by motorized use?**

### OPTIONS:

**A:** There are major views. Viewing areas would be shared and potentially disturbed by motorized use.

**B:** Views are very dispersed throughout tract, providing ample viewing enjoyment and visitor engagement with minimal potential overlap between motorized and non-motorized users.

**C:** There is no overlap or other effects of motorized or other uses consistent with Wild Forest classification that would reduce or otherwise diminish the wilderness character.

**A:** WC+10 **B:** WC+5 **C:** WC+0

### RESULT: (A: WC+10)

Views are very attractive. Vantage points include areas along the shores of Boreas and White Lilly Ponds. These ponds comprise a substantial amount of un-disturbed shoreline and represents a unique wilderness landscape.

### PARAMETER:

**2. Do the forests and landscape, especially those viewable by road, convey a wilderness character more so than other areas of the Adirondacks?**

### OPTIONS:

**A:** Terrain and key ecological and physical attributes of this tract are unique and impressive and easily visible from current road access.

**B:** Impressive and unique terrain, if present, are not easily visible or enjoyed fully from current or proposed road access. Views and motor-free resources are available only after hiking from existing roads.

**C:** The wilderness character that is accessible from current or potential roads is not impressive, or would not be impeded from motorized use. For example, interior forests with no unique or otherwise impressive geological or ecological attributes.

**A:** WC+10 **B:** WC+5 **C:** WC+0

### RESULT: (A: WC+10)

There are very dramatic and characteristically Adirondack views from the current road access.

### PARAMETER:

**3. Are existing man-made structures obscuring wilderness character?**

### OPTIONS:

**A:** There are minimal or negligible man-made structures that diminish or obscure wilderness character of the tract.

**B:** There are man-made structures such as gravel pits, bridges, or small structures. These structures can be reme-

diated in ways to align their presence with a more natural state.

**C:** Man-made structures are present, obtrusive and costly to remove. This includes remediation of gravel pits, moving or removing buildings, or making changes to access routes.

**D:** Man made structures are obtrusive and removal is unfeasible. This would include large dams, open pit mines or ski areas.

**A:** WC+15 **B:** WC+10 **C:** WC+5 **D:** WC+0  
**A:** RC+3 **B:** RC+2 **C:** RC+1 **D:** RC+0

**RESULT:** (C: WC+5)(C: RC+1)

The tract contains many man-made structures, including roads, gravel pits, bridges, dams, foundation walls, and a modern residential structure on the shore of Boreas Ponds.

**PARAMETER:**

**4. Do existing man-made structures pose a limitation for the tract to revert to a more real or perceived wilderness state?**

**OPTIONS:**

**A:** Man-made structures have a minimal influence on the ecosystem. There are no bridges, barriers to animal migration, or these barriers if they exist can be removed.

**B:** Man-made structures exist, but are consistent with typical park wide presence. This includes small dams used for log drives that result in open water bodies where wetlands were once present as well as logging roads.

**C:** Man made structures will impede reversion of this site to a more natural wilderness state. Structures include large dams, open mines, structures visible from trails, view sheds, and access points.

**A:** WC+10 **B:** WC+5 **C:** WC+0  
**A:** EI+10 **B:** EI+5 **C:** EI+0

**RESULT:** (B: WC+5) (B: EI+5)

There are several man-made structures that impede reversion to a more wilderness state. If removed, the land has a certain capacity to revert to wilderness, however more research and further analyses need to be conducted on feasibility. Several currently standing hunting camps are slated for removal. As buildings are removed, the land has the ability to revert to a more natural state.

## Unique or aesthetically attractive geological features

Attractive geological features are those that convey a sense of ruggedness. These characteristics are very subjective. Nonetheless, attractive geological features are intangible characteristics that affect land classification.

**PARAMETER:**

**1. Are there impressive mountains, scenic corridors, or other special vistas available to visitors?**

**OPTIONS:**

**A:** There are very impressive and unique vistas at multiple locations across the tract.

**B:** There are a minimal number of impressive or unique vistas or special ecological areas on the tract.

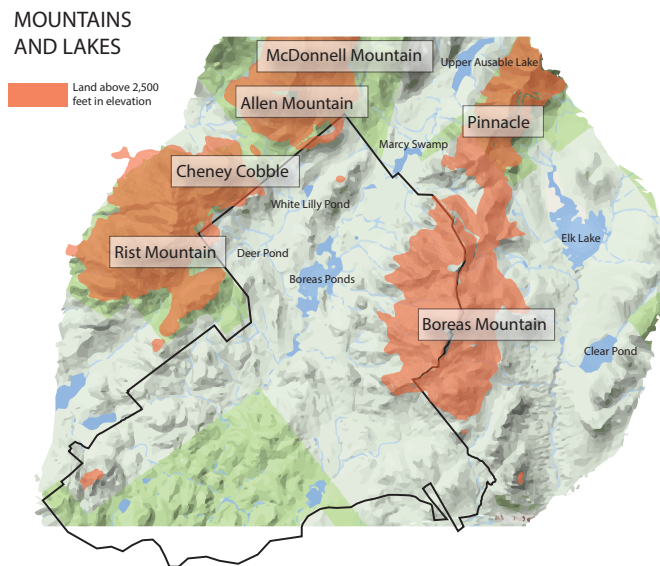
**C:** The tract is mediocre in scenic quality with minimal or no unique views or ecological features.

**A:** WC+10 **B:** WC+5 **C:** WC+0

**RESULT:** (A: WC+10)

Scenic vistas, including views of river corridors and mountains are available to visitors at multiple locations on the property. Some of these locations include the site of the current lodge, the road surrounding Boreas Ponds, the shore of White Lilly Pond, and the water bodies.





## PARAMETER:

**2. Are scenic vistas in danger of being interrupted by recreational uses consistent with Wild Forest classification as opposed to Wilderness classification?**

## OPTIONS:

**A:** Recreational use as well as existing or potential structures have the potential to disrupt or diminish the wilderness character to visitors seeking a wilderness experience.

**B:** There is a moderate capacity for Wild Forest permissible recreation to disrupt or diminish wilderness experience of non-motorized recreationists. For example, the geographic area of interest is large enough for motorized and non-motorized recreation to coexist.

**C:** Motorized potential for the area of interest is large enough where motorized corridors and non-motorized use areas will not overlap and are far enough from each other to limit sound from motors.

**A:** WC+10 **B:** WC+5 **C:** WC+0

## RESULT: (A: WC+10)

Float plane or motorized summer recreation on the water bodies would affect the wilderness character of the tract, especially for visitors pursuing non-motorized recreational activities on the water bodies and seeking a sense of solitude. Motorized winter recreation would likely diminish the wilderness character for non-motorized winter recreationists, especially on the water bod-

ies. This may not be as apparent on inland areas, however, further analyses should be conducted.

## PARAMETER:

**3. Does this tract have qualities of remoteness and solitude that are special or unique compared to other areas within the Adirondack park?**

## OPTIONS:

**A:** This area is very remote and not easily accessible (geographic limitations or boundaries, long access road). View-shed is large and is buffered from sounds or views from other man-made or human influenced areas.

**B:** Area is somewhat remote as compared to other similar tracts of land in the Adirondacks. Access road is under five miles from nearest county or state road.

**C:** Area is accessible from within two-five miles of existing county or state road, lacks remoteness qualities (within sight or earshot of roads or other public and private activities).

**A:** WC+15 **B:** WC+5 **C:** WC+0

## RESULT: (A: WC+15)

Further analyses of sound as well as comparisons to view sheds of similar Adirondack areas need to be assessed to adequately answer this question. The tract is, however, very remote and borders large wilderness areas (Dix Mountain Wilderness and High Peaks Wilderness).

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