Nomination for Addition to
Bureau of Parks and Lands Ecological Reserves

Project: Allagash Mountain subunit of Chamberlain Public Reserved Land
Location: T7 R14 WELS
Biophysical Section: Boundary Plateau and St. John Uplands
Approximate Size: ~690 acres (plus Allagash Wilderness Waterway adjacency)
Applicant: Maine Bureau of Parks and Lands
Date: August 25, 2022

I. Project Area Description

Allagash Mountain is a 1,760' peak with a trail from the Warden's cabin to the fire tower, which is open for recreationists and offers spectacular views of the lake and surrounding areas. Allagash Mountain lies on the Bell Formation, a geologic feature consisting of basalt and metamorphic rock. The east slope of the mountain supports a small area of moderately calcareous cliffs (several near vertical ledges 30-50' tall) which are an extension of the Boreal Circumneutral Outcrop on the same ridge about ¾ mile to the south. The cliffs here are partially open and sparsely vegetated, with scattered stunted northern white cedar clinging to crevices. In a few shadier locations there are many clumps of rusty cliff fern (*Woodsia ilvensis*) and also clumps of the rare fragrant wood fern (*Dryopteris fragrans*), a species of special concern.

The upper forested slopes support mature spruce - fir forest, while mid slopes support late successional northern hardwood forest. Legacy sugar maples and yellow birch in this stand are up to 35" DBH. Other old forest indicators include large volumes of coarse woody debris, large diameter snags, and an abundance of old forest lichen indicator species. Spruce may have been selectively removed from these hardwood stands long ago, but there is currently little to no evidence of harvesting. The lower slopes and adjacent flat areas were harvested ~30 years ago, just prior to BPL ownership.

II. By which ecological criteria does this area qualify as an Ecological Reserve? (see Evaluation Criteria for Potential Ecological Reserves)

<u>Matrix forest communities:</u>

Northern hardwoods forest

A 185-acre area of late successional northern hardwoods forest occurs within the parcel. Tree cores of older trees within this stand are of trees 150-200 years. Other old forest indicators within the stand include abundant coarse woody debris, large cavity trees, and limited evidence of historic timber harvesting in many areas.

III. What is the current condition of the land?

Portions of the parcel were harvested in high-grade operations approximately 50 years ago, while some areas show no evidence of historic harvest.

IV. Are these natural features and Ecological Land Units already represented on Ecological Reserves elsewhere in this biophysical section or in the state?

Exemplary beech-birch-maple forest occurs within portions of the Chamberlain Lake/Bear Mountain Reserve, along Eagle Lake.

V. For which Ecological Reserve purposes is this area well suited? (benchmark, unique habitat, educational and scientific purposes). How natural are the features of this area?

1. "to maintain one or more natural community types or native ecosystem types in a natural condition and range of variation and contribute to the protection of Maine's biological diversity,"
    - The Ecological Reserve designation would capture an exemplary matrix forest natural community example in its entirety.
2. "as a benchmark against which biological and environmental change may be measured, as a site for ongoing scientific research, long-term environmental monitoring and education,"
    - Allagash Mountain is distant from paved roads, and is very challenging for access. It is unlikely that independent research proposals will be proposed for the Allagash Mountain lot.
3. "to protect sufficient habitat for those species whose habitat needs are unlikely to be met on lands managed for other purposes".
    - Old forests are rare in Maine and provide habitat for numerous dispersal limited plant and lichen species.

VI. Do any of the features of the reserve require active management for their perpetuation?

No needs for active management are foreseen.

VII. What recreational uses currently exist within the area?

A hiking trail accesses the summit of Allagash Mountain, the location of a recently restored fire tower.

VIII. Are there any designated and maintained snowmobile or ATV trails on the property? If so are these part of a large organized trail network?

A section of snowmobile trail crossed the southeast corner of the tract, following an old road for ~0.4 mile to reach Allagash Lake. It is one of a number of short snowmobile trails between lakes and ponds in the region, providing winter access to those water bodies and opportunities for longer trips between and on the lakes. The trail would continue with ecological reserve designation.

IX. How many acres of operable timber are there within the area? What would be the impact on the region's timber supply of inclusion of these acres within Ecological Reserve status?

Most (~80%) of the approximately 690-acre area is likely operable timberland. These lands are not a significant portion of the region's timber supply.

X. What are the surrounding land uses? Are they compatible as landscape context for a Reserve in this area?

Surrounding lands include commercial industrial forest (within a working forest conservation easement) and the Allagash Wilderness Waterway.

XI. Other considerations: Carbon sequestration and climate resilience

Mature and late successional forest provides important carbon storage and sequestration benefits.

Names of Individuals Knowledgeable about the Area
Justin Schlawin, Maine Natural Areas Program
Jacob Guimond, David Pierce, Maine Bureau of Parks and Lands.

Draft findings:
The potential Allagash Mountain Ecological Reserve qualifies for designation based on the following criteria:

- Matrix-forming ecosystems: The proposed area contains a ‘B’ ranked matrix forming ecosystem. The Allagash Mtn. Public lot is less than 1000 acres but is adjacent to the Allagash Wilderness Waterway.

EVALUATION CRITERIA FOR POTENTIAL ECOLOGICAL RESERVES

	CONSERVATION TARGET			
	MATRIX-FORMING ECOSYSTEMS	***LARGE PATCH COMMUNITIES/ECOSYSTEM COMPLEX***	***SMALL PATCH COMMUNITIES***	***ENDURING FEATURES (ECOLOGICAL LAND UNITS)***
QUALIFIES	A-B ranked matrix-forming ecosystems *and* ~5,000 acre minimum size *and* -for mountainous areas, all aspects and elevations included **OR** A-B ranked matrix-forming ecosystems present ***and*** 1,000 to ~5,000 acres, but surrounding landscape is in a ***compatible land use*** **OR** includes entire watershed of third order or higher stream system	A-B ranked large patch ecosystem/ecosystem complex present ***and*** 100% of conservation target is within unit *(for lakes and wetlands, entire watershed is included*) **OR** A-B ranked large patch ecosystem/ecosystem complex present ***and*** >50% of conservation target is within unit *and* surrounding landscape is in a ***compatible land use*** **OR** A-B ranked matrix-forming ecosystems on geographically isolated land masses (such as islands and peninsulas)	A-B ranked small patch ecosystem(s) present *and* 100% of conservation target is within unit (for lakes/wetlands, entire watershed is included) **OR** A-B ranked small patch ecosystems present *and* >50% of conservation target is within unit; surrounding landscape is in a ***compatible land use***	Includes an Ecological Land Unit or ELU group type (or surrogate) that is not adequately protected within the section ***and*** intact vegetation (e.g., mature forest) ***and*** sufficient acreage to conserve the conservation targets. **OR** Includes intact aquatic systems* ***and*** their entire watersheds
CONDITIONAL	A-B ranked matrix-forming ecosystems present *and* 1,000 to ~5,000 acres in size but surrounding landscape is in an ***incompatible land use*** *Qualifies if:* this type is not already adequately protected (2 A/B examples) in this biophysical section	A-B ranked large patch ecosystem(s)/ecosystem complex present *and* <50% within unit, but remainder is apparently intact *and* surrounding landscape is in a ***compatible land use*** *Qualifies if:* this type is not already adequately protected (2 A/B examples) in this biophysical section (including old growth remnants with >50% forest interior)	A-B ranked small patch ecosystem(s) present *and* <50% of conservation target is within unit, but remainder is intact *and* surrounding landscape is in ***a compatible land use*** *Qualifies if:* this type is not already adequately protected (2 A/B examples) in this biophysical section	Includes an ELU or ELU group type (or surrogate) that is not adequately protected within the section ***and*** sufficient acreage to protect the conservation targets. **OR** Includes intact aquatic systems (needs refinement) ***and*** sufficient portions of their watersheds *Qualifies if:* Restoration of condition is possible
DOES NOT QUALIFY	*No A-B ranked matrix-forming ecosystems present* ***OR*** *<1,000 acres in size* ***OR*** *1,000 to ~5,000 acres in size, but surrounding landscape is in an incompatible land use*	*<50% A-B ranked large patch ecosystem is within unit and surrounding landscape is in an incompatible land use* ***OR*** *No A-B ranked large patch ecosystem(s) present* ***OR*** *No rare or restricted C-D ranked large patch ecosystem(s) present*	*<50% A-B ranked small patch ecosystem is within unit and surrounding landscape is in an incompatible land use* ***OR*** *No A-B ranked small patch ecosystem(s) present* ***OR*** *No rare or restricted C-D ranked small patch ecosystem(s) present*	*Contains ELUs or ELU groups that are redundant or sufficiently protected in the section.*

Notes:

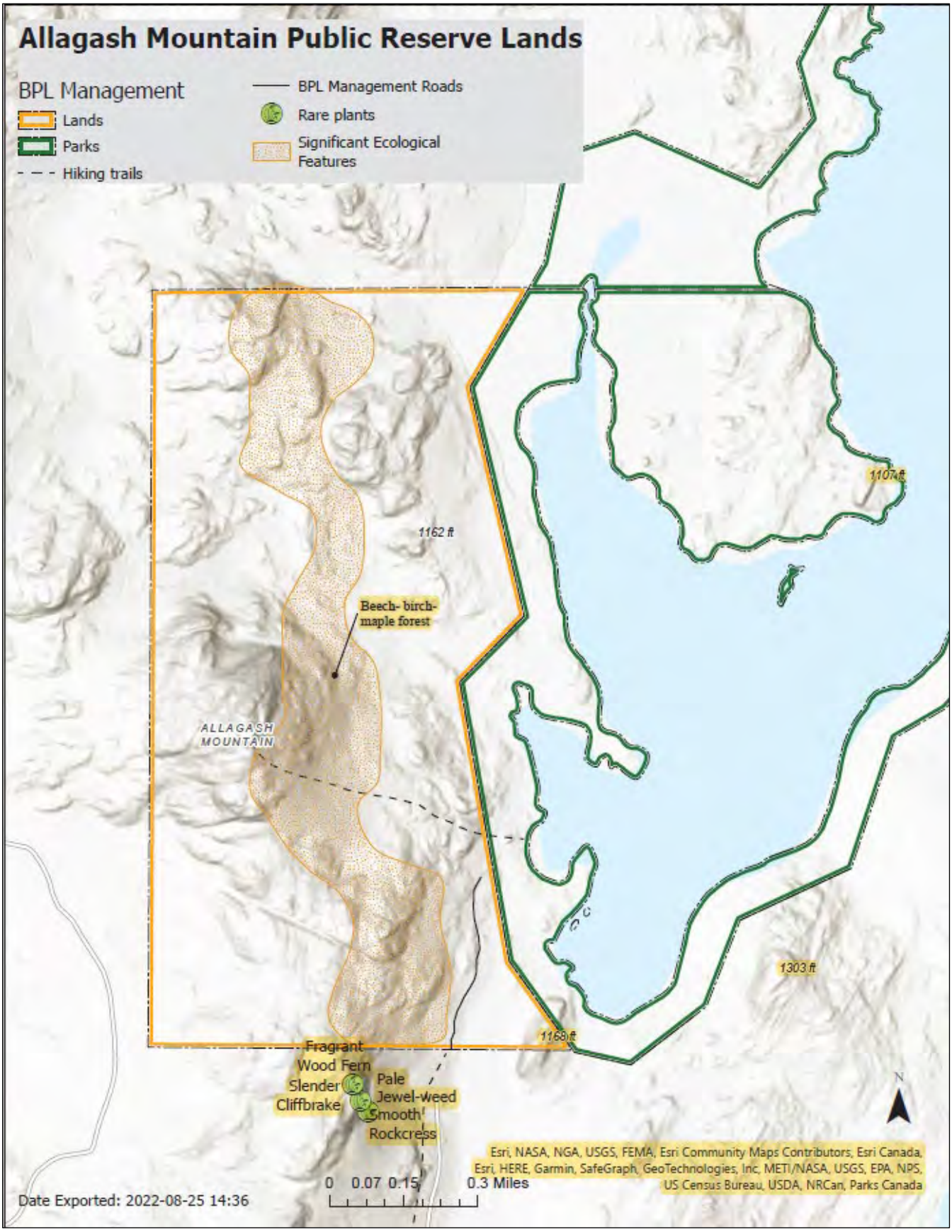
(1) **Reserve Purpose**: Reserve review should recognize which of the three primary purposes (benchmark, science/education, unique habitat) are most relevant to designation of a particular Reserve. One or more of the purposes may be relevant for any given Reserve.

- '*Benchmark*' is intended to indicate that the Reserve is of sufficient size, configuration, condition, and composition (including enduring features) to serve as a standard or 'research control' area for the purposes of long-term monitoring. The reserve need not be 'pristine' or 'old growth' to meet this criterion, but the effects of human activities should be minimal enough such that natural patterns of growth and disturbances predominate (e.g., harvesting 100 years ago at Chamberlain Lake).
- Reserves particularly suited for '*science and education'* include those that have terrestrial or aquatic systems that have been used, or could be used, by researchers to study specific ecological processes or conditions. These Reserves may be proximal to universities (e.g., Spring River Lake and water quality sampling by the University of Maine, Bigelow alpine pond sampling by the University of Maine at Farmington) or have a track record or suitability for long-term studies on a particular topic.
- Reserves may be designated because of '*unique habitat*', including uncommon natural communities, rarer representative enduring features, or other characteristics that are under-represented on the landscape. Examples of this criterion include the floodplain forest system at Wassataquoik Stream and the concentration of rare plants and extensive cedar stands at Salmon Brook Lake Bog,

(2) **MNAP Ranking System**: Maine Natural Areas Program A, B, C, or D ranks for natural communities ecosystems are a summary of the following criteria and are drawn from regional and national criteria developed by NatureServe. More specific ranking criteria are available from MNAP. In general, A= Excellent; B=Good; C=Marginal; D=Poor. A and B examples are considered 'viable', C examples are considered marginally viable, and D examples are considered viable.

Size/Quality: Does this occurrence have sufficient size to be a viable example of this type?.
Condition: Is the ecosystem occurrence degraded by human activities, does it represent the natural variation of disturbance, composition, and structure?
Landscape Context: Can this occurrence be protected from extrinsic human factors emanating from outside the Reserve?

(3) **Compatible Land Use**: While there is no hard and fast rule for determining thresholds for compatible land use, the Committee recognizes a gradient between incompatible (e.g., industrial development) and compatible (e.g., national park). As a guide, any land use scoring higher than a 0.5 in the Land Use Coefficient Table (Hauer et al 2002) would be considered compatible. In general, managed forestlands in central and northern Maine are considered compatible land use.


Allagash Mountain Public Reserve Lands
BPL Management
Lands
Parks
Hiking trails
BPL Management Roads
Rare plants
Significant Ecological Features
1074 ft
1162 ft
Beech- birch-maple forest
ALLAGASH MOUNTAIN
1303 ft
1169 ft
Fragrant Wood Fern
Slender Cliffbrake
Pale Jewel-weed
Smooth Rockcress
N
Esri, NASA, NGA, USGS, FEMA, Esri Community Maps Contributors, Esri Canada, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, NRCan, Parks Canada
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