Aleza Lake Research Forest

MANAGEMENT PLAN #3

2019 to 2029

Prepared and submitted by:
The Aleza Lake Research Forest Society
Prince George, BC
January, 2019

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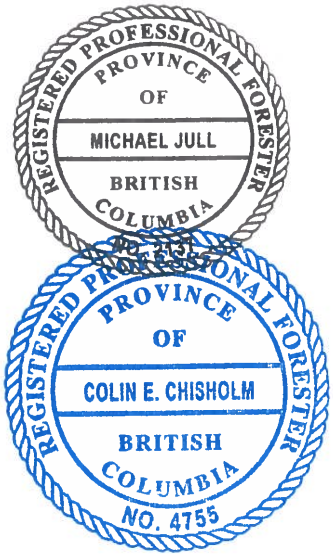
Special Use Permit (SUP) 23615
Term of Plan: 2019 to 2029

Aleza Lake Research Forest Society

Final Submission, January 2019

To: Prince George Resource District, MFLNRORD

By: The Aleza Lake Research Forest Society



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District Manager, MFLNRORD Approval:

FOR AND ON BEHALF OF: — FEB. 6, 2019

Mr. John Huybers, RPF, District Manager — Date
BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development, Prince George Resource District

Dedication

"If I see a little further, it is because I stand on the shoulders of giants" (Isaac Newton)

This management plan is dedicated to three individuals whose forward thinking, advocacy, persistence, and leadership in forest stewardship, teaching, and research, have been instrumental in realizing the vision of the Aleza Lake Research Forest as a dedicated landbase for all these purposes, and as a university research forest:

Dr. Percy Barr (1897–1960),
BC Dept. of Forests and Lands,
Univ. of California (Berkeley)

Mr. John Revel RPF (1935-2015),
Silviculturist, BC Forest Service
1960-1993

Mr. Harry Coates,
Forest Research section,
BC Forest Service 1957-93

Acknowledgments

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The Board of Directors of the Aleza Lake Research Forest Society, including Mr. Peter Forsythe RPF (president), Dr. Paul Sanborn, Dr. Pam Wright, and Dr. Scott Green (UNBC), Dr. John Rex (MoFLNRORD), and past ALRF MoFLNRORD directors Mr. Norm Bilodeau RPF and Dr. Wayne Martin.

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Forest industry advisor

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Drs. Roy Rea, Hugues Massicotte, and Art Fredeen of UNBC, for their perspectives on forest habitat management, below-ground forest ecology, and forest carbon management respectively, and ALRF forest conservation generally.

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Photo Credits: Mike Nash, Curtis Fenton, Hugues Massicotte, Mark Thompson, Paul Sanborn, Roy Rea, Colin Chisholm, Mike Jull, Melanie Karjala, Judy Carlson, UNBC Communications

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PREAMBLE:

The key purpose of the Aleza Lake Research Forest (ALRF) is to provide field-based experiential education and research opportunities related to the understanding, management, and stewardship of northern and sub-boreal forest, riparian, and wetland ecosystems. As a university research forest, we strive towards these goals by applying scientific enquiry, local experience, and ecological knowledge to the practice of forest land stewardship. We recognize the ecological, social and cultural, legal, and economic bases of sustainable forest management, and the traditional territories and cultural perspectives of indigenous peoples within this and surrounding landscapes.

Many have strived to define the concept of "sustainable forest management" (SFM) in recent decades. Global and Canadian SFM definitions are recognized in this management plan. The United Nations Forum on Forests, and the international Food and Agriculture Organization (FAO), define SFM as:

"The stewardship and use of forests and forest lands in a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity, vitality and their potential to fulfill, now and in the future, relevant ecological, economic and social functions, at local, national, and global levels, and that does not cause damage to other ecosystems."

And the Canadian Council of Forest Ministers (2008) defines SFM as:

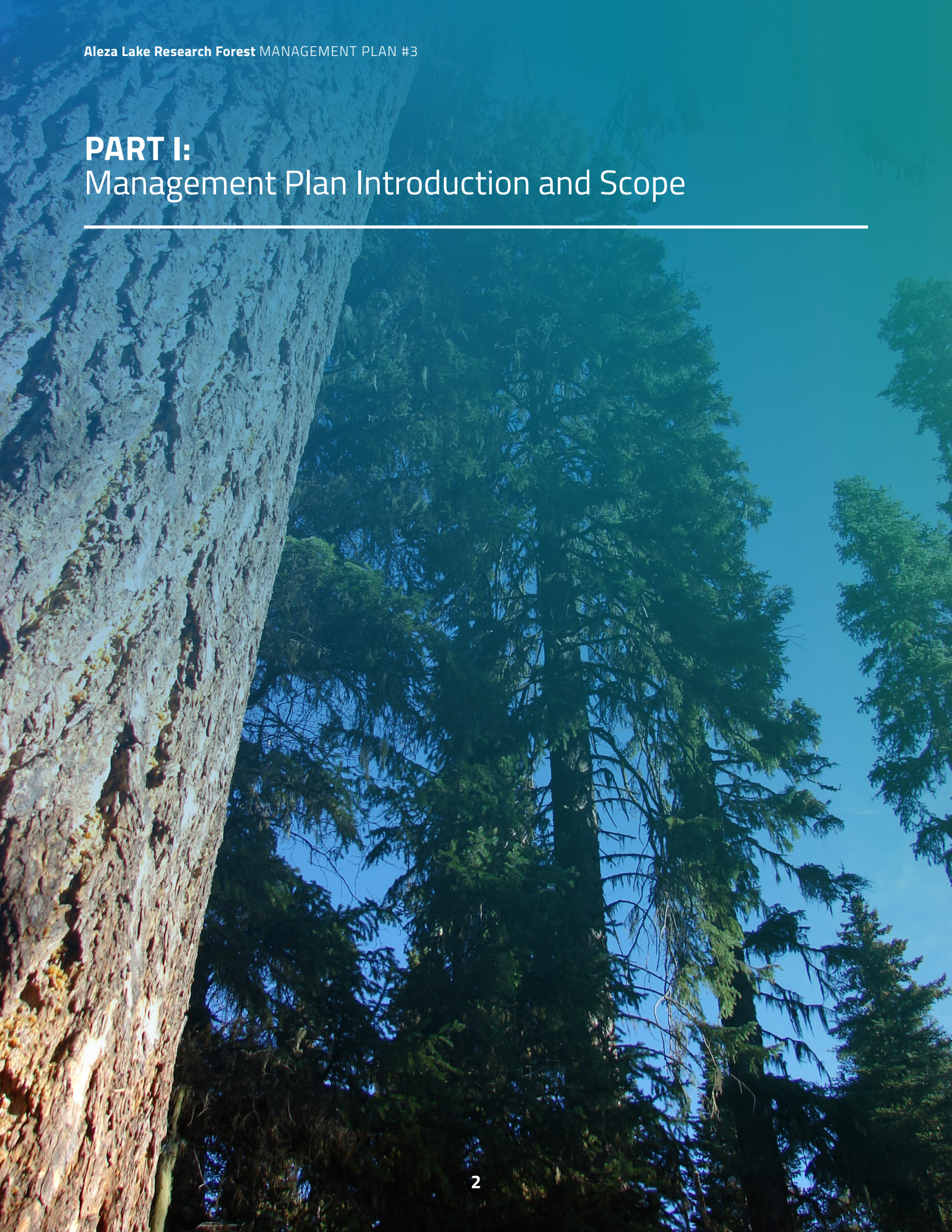
"Management that maintains and enhances the long-term health of forest ecosystems for the benefit of all living things while providing environmental, economic, social, and cultural opportunities for present and future generations."

Opportunities for teaching, learning, innovation, and scientific enquiry relating to forest ecosystems and landscapes, including the testing and challenging of existing ideas, are core to the ALRF's mission. Principles of academic and scientific freedom of enquiry, creativity, and openness to new ideas are vital means for pursuing this ALRF mission and vision.

The following ALRF management plan seeks, to the greatest degree possible, to achieve and balance the goals of sustainable forest land management with the ALRF's core mandate of facilitating high-quality opportunities for forest-based teaching, education, and research, for the benefit of communities, the region, and the Province. The idea of such balance is of course, aspirational and evolving, with ongoing scientific research, increasing knowledge of the landbase and its ecosystems, and better understanding of the needs of people and our society.

At the ALRF, we regard a continual learning process as fundamental to the thoughtful and careful long-term stewardship of forests and ecosystems, and a driving philosophy in this management plan.

PART I:
Management Plan Introduction and Scope



1. INTRODUCTION

1.1 Purpose and Scope

The purpose of this Management Plan is to provide direction and guidance for the stewardship and management of the Aleza Lake Research Forest (ALRF), for the term of this plan.

The Aleza Lake Research Forest Society respectfully acknowledges that this area resides within the traditional territory of the Lheidli T'enneh First Nation.

The Plan has been prepared with consideration to the historical and ecological character of the Aleza Lake Research Forest landscape, legal requirements, the long-term goals and intent of the Aleza Lake Research Forest Society as tenure-holder, and the allied interests of the University of Northern British Columbia (UNBC), local communities, and the Province, in its present and future management.

Upon approval by the Province of British Columbia, this Management Plan #3 for the Aleza Lake Research Forest succeeds and replaces prior ALRF management plans.

1.2 General description and location

The Aleza Lake Research Forest is a diverse 9,000-hectare landscape of rolling hills and plateaus, moist sub-boreal upland forests, wetlands, streams and ravines, ponds and lakes, and river floodplains, located 60 kilometres east of the city of Prince George, in east-central British Columbia (Figure 1). The Research Forest is located at the approximate latitude of 54° 07' North, and longitude of 122° 04', and lies between 600 and 850 metres above sea level (a.s.l.).

Geographically, the ALRF is located in the Upper Fraser River basin, near the eastern edge of the Central Interior (McGregor) Plateau, adjacent to the western foothills of the Rocky Mountains, and the northern limit of the Columbia (Cariboo) Mountains. The nearest public highway access to the ALRF is the Upper Fraser Road to the north, and the nearest local communities are Shelley (Khast'an Lhughel), Ferndale, Willow River, Giscome, Aleza Lake, Upper Fraser, Sinclair Mills, and Longworth.

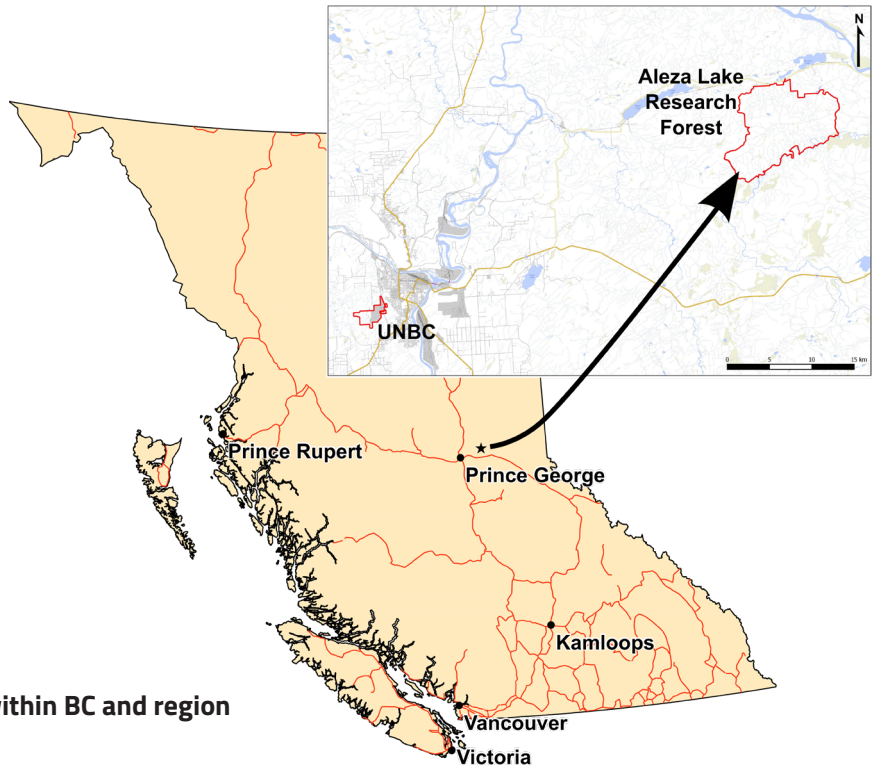


Figure 1:
General location of the ALRF within BC and region

Dr. Percy Barr travelling the railway line near Aleza Lake, BC, circa 1925
(Photo courtesy of BC Archives)

1.3 Tenure area history

The Aleza Lake Research Forest is BC's oldest research and teaching forest, dating back nearly a century to its establishment in 1924 as the Aleza Lake Forest Experiment Station by the BC Department of Forests and Lands (also later known as the BC Forest Service or "BCFS"). This area was selected by Dr. Percy Barr, director of the provincial Forest Research Division, because the area was considered typical of the productive commercially-important spruce forest types of BC's central and northern Interior (Barr, 1928, Schmidt, 1992).

Barr (1928) articulated the original management goals for the Aleza Lake Forest Experiment Station, and these were refined by subsequent management and working plans for this forest (including DeGrace, 1950, and Decie, 1957). These goals provided the framework for Aleza Forest management and innovations for many decades, and provided the foundation for more recent management (Jull, 1992, Jull and Karjala, 2005, and this current plan).

The Aleza Lake Forest Experiment Station operated as a provincial forestry field research and training centre for nearly 40 years, pioneering field forestry and technical training, ecological and soils classification, early Interior spruce reforestation techniques, silvicultural systems, and forest growth monitoring. The Province eventually closed the station in 1963-64 as the BC Interior pulp and sawmilling industry and forest research needs expanded to other regions of Interior BC. However, the forest management and forest research expertise and capacity fostered at the Aleza Forest spread throughout British Columbia and beyond.

After the closure of the Aleza Lake station in 1964, the BC Chief Forester of the time, F.S. McKinnon, directed that the Aleza Forest Reserve landbase remain set aside for a future "forest experiment station" and that the Province undertake a review of the reserve status within 10 years (BC Ministry of Forest Correspondence, 1964). Within the BC Forest Service, a standing committee on the Aleza Reserve remained active until 1975 (Revel, 2007).

In the mid-1970's and early 1980's however, external events redirected the provincial government's attention to other major forestry issues, including the 1976-1984 Bowron Valley spruce beetle outbreak and timber salvage program, a major

BC Forest Service re-organization between 1980-82, and the economic impacts of the 1981-84 North American recession.

The Aleza Forest's original purposes and significance seemed forgotten during these two decades, replaced by forest-policy priorities of the day. In the early 1980's, provincial Small Business Forest Enterprise Program (now BC Timber Sales) timber sale licenses were issued within the Aleza Forest landbase. In 1984, the Aleza Forest Reserve itself was officially dissolved, and incorporated into the larger Purden Forest Public Sustained Yield Unit (PSYU) or planning unit within the Prince George Timber Supply Area (TSA). In the mid- 1980's, about two-thirds of the old Aleza Forest Reserve was absorbed into a volume-based Forest License managed by Northwood Pulp and Timber Ltd, and the timber rights on the remaining one-third of the area were allocated to the Small Business Program.

However, some never forgot the original vision for the Aleza Forest and its forest research legacy, and its potential value for future generations. Long-time forest researchers John Revel RPF and Harry Coates tirelessly advocated for the the Aleza Forest, and the protection and stewardship of this area for forest education and research. John and Harry ultimately succeeded in building broad base of support across government, industry, and the new University of Northern British Columbia (UNBC). And in 1990, a provincially-led multi-agency "Aleza Lake Steering Committee" was formed, to help manage the ALRF area for its unique values. In 1992, a new management plan for the Aleza Lake Research Forest (Management and Working Plan #1, Jull, 1992) was approved by the BC Ministry of Forests. About 6 years later, in 1997-98, the volume-based forest tenure holders within the ALRF landbase agreed to government re-allocation of their timber harvest rights to other areas of the Prince George TSA, thereby freeing up the landbase for future research-forest tenure considerations.

In 1999, the Chief Forester of British Columbia accepted a joint proposal by UNBC and the University of BC (UBC) Faculty of Forestry, for the management of the ALRF as a university research forest. The original 8,957-hectare ALRF tenure area was awarded by the Province in May, 2001 to the not-for-profit Aleza Lake Research Forest Society, which included the two universities, the Province, and partners. In 2012, after 11 years with the ALRF Society, UBC elected to step down from its formal partnership role in the Society, but UNBC and the Province of BC remain as Society members. The ALRF Society continues to manage this research forest tenure to the present day.

In January 2015, the BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development approved minor modifications to the tenure boundaries of the ALRF, adjusting them to more closely follow natural geographic and landscape features. These new boundaries replaced original ALRF boundaries which followed Land District lot survey boundaries aligned along cardinal directions. Equally importantly, these ALRF boundary changes finalized the Research Forest landbase into a single cohesive and geographically-defined landscape unit with the Bowron River on its southern boundary. The ALRF area following these changes is now 9,002 hectares.

(TOP) Aerial view of the Aleza Lake Forest Experiment Station, circa 1958
(ABOVE) Harry Coates (left) and John Revel (right) accept awards of recognition from BC Forest Service Research Branch Director Ted Baker (centre) on July 9, 1992 at the re-opening of the ALRF

A UNBC forestry class traverses a recently-cleared area now rich with thimbleberry

1.4 ALRF Permit / License Holder

The Aleza Lake Research Forest Society (or ALRFS) is a provincially-registered not-for-profit Society established in 2000 (Society # S-42412) whose membership (effective 2012) includes the University of Northern British Columbia (3 directors), the Province of British Columbia (1 director), and a member of the forest community (1 director).

The stated purposes of the Society under its Constitution are:

- **a)** "to undertake stewardship of the Aleza Lake Research Forest (the "Forest"),
- **b)** to manage and operate the Forest to promote and support education and research with respect to sustainable forest management, ecosystem management, silviculture, and forest ecology by:
  - **i.** creating educational and research opportunities for forest and natural resource professionals, resource managers, technologists, and the public,
  - **ii.** sharing and disseminating information and knowledge gained through the research conducted at the Forest, and
  - **iii.** assisting in the fulfilment of the educational and research needs of the University of Northern British Columbia

Local grade 8 students enjoy an educational class outing at the Aleza Lake Research Forest

c) to hold property in the form of: Crown tenures of the research forest lands, capital improvements on those lands, and capital assets, as are necessary to manage and operate the Forest and the educational and research activities which will take place therein,

d) to allow access and input into the management and operation of the Forest by the University of Northern British Columbia,

e) to provide a long-term, financially self-sufficient research facility, funded primarily by harvesting timber in a manner consistent with the stewardship, research and educational goals of the Society,

f) to maintain the natural levels of biodiversity throughout the Forest by way of retaining all natural ecosystem components, processes, structural attributes and micro-processes,

g) to foster innovation in ecologically-sound management strategies and practices, and in research, extension and demonstration strategies and projects,

h) to provide opportunities for demonstration, testing, and refinement of a range of silvicultural systems and partial-cutting techniques, (and)

i) to do all such things as are incidental or conducive to the attainment of the purposes herein expressed."

2. MANAGEMENT PLAN REQUIREMENTS

2.1 Term of the Plan

The initial term of Aleza Lake Research Forest Management Plan #3 is 10 years, from 2019 to 2029.

The effective date of commencement of this plan and its end date (including any amendments or extensions to the plan term) are determined by the District Manager, Prince George District, BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development (MoFLNRORD) or a successor organization.

2.2 Content Requirements

Special Use Permit (SUP) 23615 was issued to the Aleza Lake Research Forest Society by the Province of BC (BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development) for the specified term of the SUP. Section 3.01 of the SUP specifies the content of the ALRF management plan, as follows:

"The Permittee must submit for the approval of the district manager, once every five years, or more often if the district manager considers that special circumstances require, a management plan that contains the following:

(a) Management objectives regarding

general research and education strategies and approaches within the Permit area,

management and utilization of the timber resources in the Permit area, including harvesting methods and utilization specifications suitable to the types of timber and terrain in the Permit area,

management and conservation of non-timber values in the Permit area, including visual quality, biological diversity, soils, water, recreation resources, cultural heritage resources, range land, and wildlife and fish habitats,

integration of harvesting activities in the Permit area with licensed use, traditional aboriginal use,, or other uses of the area for purposes other than timber production,

forest fire prevention and suppression, forest health, silviculture, and road and access management strategies,

(b) Map(s) of the Permit area which include known or available information regarding: harvesting and natural disturbances, resource inventories, reserves, research activities or project sites, man-made facilities or utilities, and any other requirement identified by the district manager,

(c) Measures to be taken by the Permittee to identify, consult with and incorporate the input received from persons using the Permit area for purposes other than timber production including licensed resource users and aboriginal people claiming an aboriginal interest in or to the area,

(d) A timber supply analysis that analyzes the short and long term availability of timber for harvesting in the Permit area, including the impact of management practices on the availability of timber,

(e) An operational timber supply projection for the Permit area that, in support of the timber supply analysis, indicates the availability of timber by identifying:

the net operable landbase, harvested areas, existing and proposed road access within the net operable land base, and areas subject to special management constraints, and

categorizing areas within the net operable landbase by the type and quality of timber, and the harvesting method suitable to the terrain,

(f) Evidence of preparation by a professional forester,

(g) Approval by the Board of Directors of the Aleza Lake Research Forest Society,

(h) Inventories of the forest, recreation, fisheries, wildlife, range, and cultural heritage resources in the Permit area,

(i) Consistency with the conditions of the Permit,

(j) Any other information on the development, management, and use of the Permit area that the district manager requires, and

(k) Commitment by the Permittee to implement the approved management plan."

2.3 Relationship to Previous Management Plans

Prior management plans for the Aleza Lake Research Forest under SUP 23615 include:

- Management and Working Plan #1, 1992-2005, and,
- Management Plan #2, 2005 until replaced.

The intent of this Management Plan #3 (MP#3) is to maintain general consistency with the management direction and principles of earlier management plans, and also incorporate new information, experience, and understandings gained since the last plan was prepared. This new plan and its strategies also consider and reflect updated direction from government, community perspectives, and new scientific knowledge regarding forest land and resource stewardship and practices.

2.4 Relationship to Operational Planning and Site Plans

Special Use Permit (SUP) 23615 for the Aleza Lake Research Forest is subject to the legislative framework described in the permit. This framework includes but is not limited to the *Forest Act, Forest Practices Code of British Columbia Act* (including the *Strategic Planning Regulation*), the *Forest and Range Practices Act* (FRPA), and the regulations and standards under those Acts, as amended from time to time.

This Management Plan describes the terms and conditions of ALRF management, as approved by the District Manager. Forest Stewardship Plans (FSP's) are not required on the ALRF, due to this form of higher-level planning, and due to the specific legal provisions of Research Forest tenure (SUP and Occupant License to Cut).

On the ALRF, operational forest plans and site plans (for example, for site- and stand-level implementation of new roads, harvest areas, and stand treatments) must still be developed. As per the SUP, such plans must be *"consistent with the intent and direction established in the Management Plan, contain information similar to that required in operational plans developed under the Forest and Range Practices Act, and be developed under the guidance and signature of a professional forester."*

3. ALRF FOREST MANAGEMENT VISION AND GOALS

Vision

The management vision for the Aleza Lake Research Forest is that of an innovative, dynamic, and financially self-sustaining university research forest that fosters (in equal order of priority):

- Forest education and research related to the conservation and management of northern sub-boreal forest ecosystems, including both scientific enquiry and experience-based knowledge.
- Sustainable forest management. And,
- Learning, skills acquisition, and enhanced awareness of responsible land and ecosystem stewardship for current and future generations.

UNBC forestry students stop for a photo at the big firs on the South Knolls Trail at the ALRF

Management Goals

The 8 management goals of the ALRF, in keeping with this vision, encompass forest education and research, and forest stewardship and management. These goals are:

Aerial view of the Aleza Field Education Centre, established 2015

I. Forest education and research

1. To promote and support forest and environmental research, education, and demonstration on the ALRF, at UNBC, within the region, provincially, and where applicable, nationally and globally.
2. To assist in fulfilling the educational and research needs of UNBC and its allied educational and research institutions.
3. To provide diverse outdoor experiential learning opportunities for young and mature students across many different disciplines and perspectives, ranging from basic and applied sciences to the ecological, social, cultural, and economic dimensions of forest management.
4. To foster professional and practitioner innovation in forest and environmental management strategies and practices, through extension, demonstration, and practical field training.

II. Forest stewardship and management

5. To maintain forest landscape biodiversity at a range of spatial scales, a full range of early to late seral (young to old) forest conditions, and habitat connectivity within the ALRF area.
6. To protect and conserve unmanaged natural forest areas and habitats within identified areas, across a wide range of ecosystem types and conditions in the ALRF, for many values, including future research and education.
7. To grow and manage forests, and harvest timber products on a sustainable basis within the identified timber-management land base, using combinations of silvicultural systems, harvest methods, reforestation objectives, stand-structure retention patterns, and access strategies, that are compatible with, and conducive to, other management goals. And,
8. To maintain adequate flow of revenues from ALRF activities and operations that will provide resources for supporting all of the above goals on an ongoing basis.