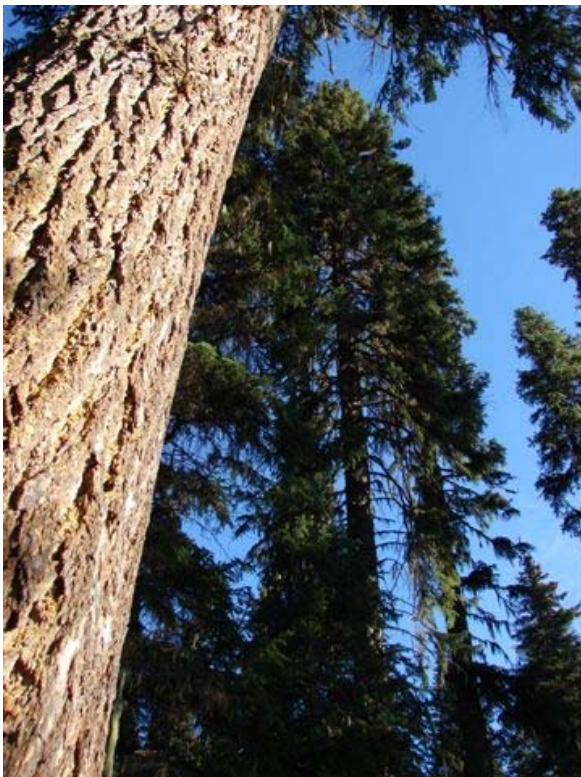


Aleza Lake
Research Forest Society
2007 ANNUAL REPORT

For the Period of Jan. 1st to Dec. 31st, 2007
May 7th, 2007



Old-growth Douglas-fir and spruce, South Knolls Trail
Photo Credit: Mike Nash

Contents

Manager's Message1

Education and Demonstration Program2

Forest Research Activities and Programs5

New Forest and Ecosystems Projects5

Historical and Community Projects6

Long-term Research Installation Activities.....6

2008 Research and Education Goals7

2007 Forest Operations.....7

 Forest Harvesting8

 Operational Planning.....9

 Reforestation and Basic Silviculture10

 Silviculture Database11

 Backlog Plantation Maintenance11

 2007 Road Work11

 Hansard Creek Crossing Issues.....11

 Riparian and Fish Habitat Assessments12

 Forest Health.....12

Strategic Planning.....13

Finance and Administration14

2008 Major Operational Goals and Initiatives ..15

Board of Directors.....16

Research Forest Staff17

Acknowledgements17

MANAGER'S MESSAGE

2007 was a very good year for the Aleza Lake Research Forest.

ALRF staff continued to prove that they are our greatest strength, providing excellent field and office support to a surprisingly wide range of different ALRF endeavors.

Solid ALRF timber revenues, and strong support from a range of provincial and federal funding sources for special projects allowed the ALRF to provide many work-based training and mentoring opportunities. Our temporary staff, David, Judy, Renata, and Andrea, proved instrumental in helping the ALRF achieve both operational as well as research and educational goals. Externally-funded projects include Douglas-fir research, wildlife monitoring, forest history and archival work, innovative remote sensing technologies, and more.

Several years of hard work and effort paid off in the achievement of the transfer of Aleza Lake historical materials from the BC Ministry of Forests and Range, to the UNBC Archives. This process also built excellent working relationships with the staff of UNBC Archives, including Chief Archivist Ramona Rose, and Archives Intern Tara Rogers, who was supported financially by the ALRF and the Canadian Council of Archives.

Likewise, the University of Northern BC and the Aleza Lake Research Forest Society successfully concluded a protocol agreement in 2007 that solidified this successful working partnership and its related administrative arrangements.

In August 2007, ALRF staff completed our office move to the UNBC campus, and I think all are benefiting from the increased interaction that results.

In 2007, we saw the start of our first UBC-UNBC PhD research work on the ALRF, and (at least) our

seventh Masters student complete their degree based on ALRF research.

Late 2007 saw the many financial issues facing the Canadian forest industry hit the BC Interior. The Aleza Lake Research Forest, along with our colleagues at the 3 other BC research forests will be working hard to maintain our 2007 momentum in some obviously challenging economic circumstances.

However, along with the challenges, I see many opportunities for growth.

As always, it is a great privilege to continue to work at, and manage at the Aleza Lake Research Forest, and I look forward to what 2008 and 2009 have in store.

EDUCATION AND DEMONSTRATION PROGRAMS

Overview and Highlights

The Aleza Lake Research Forest saw another active year for forest-based teaching and demonstration activities. Numbers of classes and events remained relatively stable, although total numbers of students waned slightly for some events due to general decreases in natural resource program enrolments.

The ALRF Society delivered 333 student-days of post-secondary forest education, including forestry field schools, and graduate and undergraduate courses. The ALRF also hosted 6 day-long field tours for research and technical audiences.

Fall University Field Camps

ALRF staff members, Melanie Karjala, Matt LeRoy, and Mike Jull delivered four modules of the 2007 UNBC Fall Natural Resources Field Camp (F333) in cooperation with UNBC faculty and instructors. ALRF teaching modules included:

- stand dynamics and silvicultural systems in wetbelt and drybelt forest types;
- stream and riparian ecology;
- guide outfitting (including a riverboat trip and visit to a guide-outfitter camp with Bowron River Guiding); and
- integration of First Nations values in forest management.

In August 2007, ALRF Manager Mike Jull RPF also taught 3 days of the Sub-boreal Spruce and Interior Cedar-Hemlock Modules of the Gavin Lake 2nd-year Forestry Field School at the UBC Alex Fraser Research Forest near Williams Lake and assisted in conducting field examinations of the students.



Photo: Licensed Guide-Outfitter Scott Pichette of Bowron River Guiding takes a group of UNBC Natural Resource Mgmt students on a riverboat tour of the Bowron River and floodplain at the Aleza Lake Research Forest.

Photo credit: Melanie Karjala

Demonstration Trails

During Spring and Fall 2007, the East Loop Trail and South Knolls Trail received frequent use for a field tours and field training courses. A UBC-UNBC PhD research project also is using the South Knolls trail as an access point for field research sites. ALRF

staff undertook regular annual maintenance activities on the East Loop and South Knolls Trails including trail inspections and debris clearing where necessary.

ALRF staff also considered treatment options for forest harvesting and related demonstration opportunities along sections of the South Knolls and Link trails. Significant areas of mature forest were excluded from harvesting along the trail to protect current research projects, heavily used teaching sites (in mature forest), and areas with high wildlife values. Other areas along the trail with declining or overmature stand conditions were prioritized for 2007/2008 winter harvesting. The logged areas along these trails including green-tree retention practices. Reforestation and forest management operations in these areas will be integrated into ongoing teaching and demonstration opportunities along the route.

In Summer 2008, ALRF Project Coordinator Melanie Karjala, assisted by summer student Krysten St. Jean (from the UNBC Outdoor Recreation and Tourism Program), will be supervising a major overhaul and upgrade of the South Knolls and North Ridge interpretive trail system. This major project will include:

- A new parking area and trailhead at the junction of the Aleza and Upper Fraser Roads, including an informational kiosk;
- Relocation and improvements to the North Ridge trail.
- Several kilometres of additional trail length.
- upgrading of existing trails. And;
- new interpretive signs.

Trail works will be assisted by Upper Fraser Road community members. Financial assistance for this trail project is being provided by the Regional District of Fraser-Fort George, the BC Ministry of Forests and Range, and the Aleza Lake Research Forest Society. Other proposals for funding assistance are currently in progress.

Other Field Course and Forest Education Highlights

Part of the mandate of the ALRF is forest-based research and education. In keeping with this mandate, ALRF staff also contribute time and expertise to other forest education, research and management activities related to ALRF programs. In 2007, these activities included:

- ALRF staff contributions to curriculum and field course work at the John Prince Research Forest (UNBC) and the UBC Gavin Lake (Alex Fraser Research Forest) field camps;
- Preparing and conducting guest lectures at UNBC;
- Presenting at workshops (Northern Silviculture Committee 2007 Winter Workshop);
- Conducting and collaborating in a variety of original research and related publications;
- Participating in the Prince George Biodiversity Workshop Committee (including planning and coordinating delivery of a local Biodiversity Conference). And
- Participating in UNBC forestry curriculum review working groups (approved in March, 2008 for Fall 2008 implementation).

In May 2007, Aleza Lake staff coordinated the third annual Field Skills and Hazard Awareness course for approximately 12 UNBC graduate students, faculty and staff.

Also in May 2007, Mike Jull assisted instructors Ken Zeilke and UBC Silviculture professor Dr. Steve Mitchell in presenting a Windthrow Management field trip at the research forest, for operational forestry practitioners.

In September 2007, ALRF Manager Mike Jull hosted Dr. Scott Green and his UNBC Forestry 306 (Silviculture II) students for two field laboratory

modules examining regeneration dynamics, and silvicultural systems. As part of their hands-on learning for this course, the students were challenged with preparing silviculture prescriptions for a mixed conifer stand and multiple resource objectives.

In addition to all the above teaching activities in 2007, ALRF staff contributed several guest lecture and field-based lab modules for undergraduate course and related labs and tutorials. These included:

UNBC Biology 201 (Jull);
Forestry 306 (Jull),
NREM 400 (Karjala), and
NRES 333 (Jull, Karjala, and LeRoy).



Photo: UBC Forestry professor Dr. Steve Mitchell instructs a class of Central Interior forest industry staff in a Windthrow Management course held at the ALRF in May 2007.

Photo credit: Ken Zeilke

Community Outreach

In 2007, ALRF staff continued a newsletter directed to faculty and the general public. Published twice annually in the Spring and Fall of each year, the newsletter current activities in ALRF forest operations, research, and education & demonstration activities.

The Aleza Lake Research Forest Society is now working with the Upper Fraser community on community projects at or related to the ALRF. Two projects are scheduled for 2008.

FOREST RESEARCH PROGRAM

Highlights

In 2007, there were 13 new research projects for a total of 38 active and ongoing projects. Of these, there were 2 new Master's thesis research projects, 1 PhD project, and four undergraduate student thesis and graduating essay projects

Since the ALRF's inception in 2001, forest researchers have established a total of 44 new research projects.

ALRF 2007 Funding Programs

In 2007, for the fourth consecutive year, the Society continued an ALRF funding program to encourage new and innovative research on the forest. Two projects were funded at \$1,600 each. The ALRF project selection committee consisted of Bruce Larson, UBC representative, Staffan Lindgren, UNBC representative, and Melanie Karjala, ALRF Project Coordinator. The two grants were awarded to:

- Paul Sanborn, UNBC Professor: "Basal Radiocarbon dates for Aleza Lake Research Forest peatlands"
- Cecilia Alstrom-Rapaport, UNBC: "The impact of beaver foraging on the ecology and genetic structure of riparian willows"

To enhance UBC participation in ALRF research opportunities, in 2007 we initiated a travel grant program specifically for UBC faculty, students and affiliates. Three grants were awarded for travel to the research forest, resulting in the establishment of new research work at the ALRF in two areas. 2007 UBC travel grants include grants to:

- ❖ Jeremy deWaard (UBC Phd candidate): to carry out a pilot study to test moth trapping methods under different forest conditions (clearcut, partial cut, old growth)
- ❖ Marley Chewter (UBC BSc Forestry candidate): to carry out measurements on larch, cedar and Douglas fir trials at ALRF for her BSF undergraduate thesis.
- ❖ Dr. Jean-Claude Ruel (UBC Visiting Scholar on sabbatical from Laval University): visited partial-cutting and windthrow research and demonstration sites at the ALRF.

HIGHLIGHTED NEW FOREST AND ECOSYSTEM PROJECTS IN 2007

(Selected List)

- Darwyn Coxson (UNBC), "*Lichen Biodiversity in Deciduous Wetland Swales*" (BC Forest Science Program, 2 year funding)
- Melanie Karjala (ALRF), Dr. Nicholas Coops (UBC), Dr. Art Fredeen (UNBC), Dr. Roger Wheate (UNBC), and Darren Janzen (UNBC Research Associate). "*An Evaluation and Comparison of LiDAR Remote Sensing Technology and Large Scale Digital Photography for Landscape Level Forest Management Applications in complex multi-aged coniferous forests.*" (BC Forest Science Program, 2 year funding)
- Mike Jull, Bruce Rogers, Susan Grainger, and Dr. Chris Hawkins. "*A long-term study of the*

post-harvest population dynamics, development, and emergent characteristics of mature Douglas-fir leave trees on sub-boreal sites in Central Interior BC (BC Forest Science Program, 2 year funding).

- Marley Chewter, UBC BScF Thesis, “*Extending the ranges of native conifers: A study of western larch, Douglas-fir, ponderosa pine, and western redcedar in central British Columbia*” (ALRFS travel grant recipient)

HISTORY & COMMUNITY PROJECTS

History Initiatives

In October, 2007, the Ministry of Forests and Range (Northern Interior Region), the Aleza Lake Research Forest Society, and the UNBC Northern BC Archives signed a written agreement that allowed many historical documents, maps and photographic materials related to the former Aleza Lake Experiment Station to be transferred from the BCMoFR to the permanent care of the UNBC Archives facility. This Archives facility is located at the UNBC Geoffrey Weller Library building

The new Aleza Lake Archives at UNBC will allow these historical materials to be preserved and catalogued for posterity. UNBC Archives management will make these materials more accessible for future academic and historical research.

With funding assistance from the Young Canada Works, Careers in Heritage Program, and the ALRFS, the Northern BC Archives hired Tara Rogers as an intern to clean, file and inventory the materials, under the supervision of Ramona Rose, UNBC’s head archivist. In October, 2007, Tara and Ramona also coordinated a public event at UNBC that celebrated the history of the Aleza Lake Experiment Station.

Aleza Lake Forest Experiment Station Memoirs 1945-64

In 2007, the ALRF continued our support work of local retired forester John Revel RPF’s history of the Aleza Lake Forest Experiment Station for the period of the 1940s to 1960s. This publication project assembles the lively histories of several people (including John’s colleagues Harry Coates and Hugh Turner) who worked and lived in the Aleza Lake areas during this period. The final manuscript and editing was completed in 2007. The ALRF is publishing this manuscript as the first of a dedicated ALRFS publication series. Publication is anticipated for Spring 2008.

LONG-TERM RESEARCH INSTALLATION (LTRI) PROGRAM ACTIVITIES

In 2007/08, support funding for maintenance of key research support infrastructure for the ALRF was accomplished through two main sources:

- a) The British Columbia Forest Science Program (FSP) Long-term Research Installation (LTRI) fund. And,
- b) In-kind contributions of staff time and resources from the ALRFS.

Research Project Online Database

With LTRI funding, the programming, design, testing, and initial loading of the BC Research Forest Database was completed in 2007. A collaborative endeavor of all 4 UBC and UNBC university research forests, the Database allows publicly-available internet-based access to research project information from all these BC research forests, including the ALRF.

Ongoing database maintenance work is carried out on behalf of the 4 research forests, by the UBC Malcolm Knapp Research Forest.

Long-term Field Installations

Climate Stations

In 2007, the data and equipment for the two ALRF climate stations continued to be monitored and maintained by meteorologist Dr. Bob Sagar PhD, under contract to the ALRFS. Bob provides consolidated climate datasets annually.

2007 maintenance on the open-field site completed by ALRF staff includes annual brushing and clearing around the tower to clear away vegetation growth that might adversely influence open-air weather measurements. The second permanent station is located in a mature “old-growth” stand in the Aleza Lake Ecological Reserve, and as an unmanaged forest ecosystem, has no maintenance activities other than downloading of climate station data.

In Fall 2007, an additional *temporary* climate station was installed at the old Ranger Station property owned by UNBC, located just northeast of the ALRF on the Upper Fraser Road. The goal of this temporary station is to collect air temperature data that will calibrate modern-day measurements with data collected at the Ranger Station site between 1952 and 1980. The current open-field climate station site is located about 2 to 3 kilometers directly to the south.

Growth and Yield Permanent Plots

In 2007, plot maintenance and tree remeasurements were completed on 9 stand development and growth plots in a 12-year-old spruce shelterwood harvesting treatment. Conifer regeneration and vegetation data were collected at each plot, as well.

In Fall 2007, ALRF staff conducted a final remeasurement and removal of five stand development and growth plots dating from 1954 (from old timber sale TSX 42765; ALRF project # 1954-05). These plots were located within Block 15 which was scheduled for harvest in 2007/2008. Plot

locations plots were recorded by GPS (Global Positioning Systems) to allow plot locations to be re-established in the future, following logging.

2008 RESEARCH AND EDUCATION GOALS AND OPPORTUNITIES

For 2008, the ALRF’s major research and education priorities will include:

- Relocation the North Ridge Interpretive Trail to connect the public parking areas at the ALRF forest entrance with the ALRF trail system
- Local community and public outreach activities to improve awareness and use of ALRF trails
- In-kind support to selected research projects
- Re-establishment of historical stand development and growth plots in recently partial-cut harvest areas.
- Hosting of a workshop on the use of LiDAR remote sensing technology and data in forested terrain. And;
- Assistance to Giscome Elementary School in the implementation of a tree- and shrub-planting program on school grounds at Giscome, BC.

FOREST OPERATIONS

The Aleza Lake Research Forest’s mandate is to foster research, education, and applied knowledge in the management of northern Interior forest ecosystems, while at the same time, manage a working forest landbase on a cost-effective basis. The ALRFS is organized as a non-profit registered society, and must be financially self-sustaining based on forest operations and additional revenue sources.

The ALRF Society manages 9200 hectares of forest land, with a working forest of approximately 5500 hectares. Approximately 85 to 90% of the ALRF’s average annual net income is derived from sustainable timber management and sale of timber from its managed forest lands. The remaining 10 to

15% is “non-timber” revenue derived from other sources, including research provincial grants, youth employment programs (for temporary staff), cost recovery for ALRF services, and other minor sources.



Photo: A grapple-skidder (foreground) skids Aleza timber on Block 15 in December 2007.

Photo credit: Judy Carlson

Forest Harvesting

Goals for ALRF 2007 forest harvesting programs were several-fold, incorporating strategic, silvicultural, and financial goals. These interlocking goals were:

1. To harvest timber in a manner consistent with ALRF Management Plan # 2, and the Stand Harvesting Priorities identified in that plan.
2. To provide opportunities for the cost-effective silvicultural rehabilitation and improvement of productive forest sites occupied by stands of declining quality and vigour.
3. To provide opportunities for innovative (partial cutting) harvest practices, where appropriate, and research and demonstration on areas to be reforested.

4. To provide adequate operating revenue for 2007 ALRF research coordination, education programs, and forest land management operations;
5. To generate sufficient surplus revenues to (a) generate a positive cash flow and annual operating surplus for 2007 operations. And
6. To generate adequate financial reserves to offset accrued silvicultural (reforestation) liability, and provide a modest cash reserve for financial contingencies (including capital expenditures and roads).

Financial objectives were assisted by reasonably favorable log markets in late 2006 and early 2007.

Winter 2006/07 blocks (December 2006 to March 2007) were accessed by reactivating several kilometers of old winter roads in the northwest corner of the forest, plus building of about 1 km of temporary new winter road. Through an access agreement with an adjacent private landowner, a temporary winter bridge was installed across Camp (Hansard) Creek, to provide direct access to the Upper Fraser Road to the north, for Winter 2007 operations. This winter road system was connected to the ALRF permanent all-weather road system via by the West Branch Road to the south.

2007 logging was carried out by ground-based harvesting. This year, the ALRF was successful in increasing both the variety and scope of harvest and silvicultural systems in used its forest operations, and the range of forest products able to be marketed.

Approximately 107 hectares and a total of 29,678 cubic metres were logged from December 2006 to March 2007. Just under one-third was partially-cut, by area, and just over two-thirds clearcut with reserves (see Table 1). Species composition of harvested timber was approximately 60-65% spruce and 30-35% subalpine fir (or “balsam”). Minor other species (Douglas-fir, paper birch, and some western hemlock) generally were not commercially

utilized, and wherever feasible, were reserved as standing green trees in harvested blocks.

83 % of the timber volume (24,642 m³) was sold as small to large sawlogs to markets near Prince George. Prices of pulp logs rose in 2006/07, allowing this product to become economically viable for the ALRFS. An additional 16.6 % by volume (4,932. m³) was marketed as pulp logs. Minor volumes (0.33 %, or 104 m³) of premium house logs were sold to a house-log builder in the Cariboo region.



*Photo: ALRF Directors tour Block 3, a partially-cut spruce-subalpine fir stand harvested with 35% basal area removal in Winter 2007 (ALRF, West Branch Road area).
Photo credit: Mike Nash*

Clearcut-with-reserves silvicultural systems were used in cutblocks with extensive declining or overmature stand conditions (significant tree

mortality, rots, and declining stand volumes). Clearcut with reserves systems include post-harvest retention of Douglas-fir and birch leaf trees.

Partial cut methods (small patch and selection cuttings) 2007 were directed to improving stand quality in thrifty mature stand conditions with only localized areas of overmature or undesirable stand conditions.

Partial-cut harvesting was successfully implemented for Block 3 in January and February 2007. About 30 hectares were harvested with a combination of single-tree and small-patch harvesting, with a goal of increasing the percentage of spruce, and decreasing the subalpine fir component, to a target 35% average basal area removal. This is the second known stand entry for this area, as this area (also known historically as the “Pogue Sale”), was previously partially cut in 1947/48.

Table 1: Summary of 2007 ALRF timber harvesting. (sawlog volumes only, Jan. to March 2007)

Method	Cutblocks completed in 2007	2007 Area (ha)	2007 Sawlog Volumes (m ³)
Clearcut with Reserves	Blk # 11 Blk # 12 Blk # 14	77 ha. (72 % by area)	18,842 m ³
Partial Cuts and Intermed. Cuttings	Blk # 3	30 ha (28% by area).	5,800 m ³

Operational Planning for Future Harvesting

In 2007, ALRF operations staff completed cutblock planning and consultations for three cutblocks (Blocks 15, 16, and 17, totaling 43 hectares) in preparation for Winter 2007/08 harvesting operations. Road-building and pre-development in

these blocks was completed in December 2007; however timber was not processed or shipped from these blocks until January 2008.

In additional, staff carried out 2007 reconnaissance and preliminary mapping of about 100 hectares of potential future harvest areas in the southeastern and south-central portions of the ALRF. These areas are accessed from the Beaver-Bear Road area.

2008 operational planning activities will be focused on medium-term total resource planning for harvesting (next 5 to 10 years) and updating and amendment of the Forest Stewardship Plan for the ALRF.

A major priority for operations staff in 2008 will be to re-evaluate the overall forest road network at the ALRF in light of safety, engineering / geotechnical, and economic considerations. A key consideration will be the future viability of the existing Camp (Hansard) Creek road crossing and its related approaches.

Reforestation and Basic Silviculture

The ALRF reforests all of its harvested areas, and manages these basic reforestation obligations to standards set by Management Plan # 2 approved the BC Ministry of Forests and Range.

In 2007, the ALRF planted 117 thousand seedlings over 78 ha of basic reforestation in Spring 2007, and 7 thousand seedlings in smaller-scale summer fill planting operations. Tree species planted in 2007 were 90.5 % hybrid white spruce, and 9.5% Douglas-fir. Fir was planted in mixture with spruce, typically on warmer, drier sites.

We completed regeneration surveys on 87 hectares (2004 and 2005 plantations), and vegetation management activities were implemented on 18.3 ha of ALRF plantations, 2007 site preparation and fuel management (roadside slash piling and burning) were completed on 91 ha.

Table 2 below summarizes the basic reforestation treatments and monitoring activities conducted on ALRF cutblocks in 2006.

Table 2: Summary of 2007 ALRF Basic Silviculture Activities (as of November 1st, 2007)

Block #	Year of Harvest	Yr Planted	2007 Silvicultural Treatment	Area Treated (ha)
1,2	W 2003	2004	Surveyed, Brush control	39.5
2	W 2003	2004	Surveyed, Brush control	12.0
6	W 2005	2005	Surveyed, Brush control	39.8
4B, 9, and 10	W 2006	2007	Planted	59.6
14	W 2007	2007	Site prep and planted	12.0
3, 11, 12, 14	W 2007	Pending	Site prep, slashburn	79.0
Total			All Activities	242.

Silviculture Database

In 2007, the ALRF continued the development and modification of a dedicated silviculture database to track and manage these silviculture obligations. The original database programming was provided by Winton Global Ltd. of Prince George, and additional customization was undertaken by Spatial Mapping Ltd. of Prince George, BC.



Photo: A 10-year-old spruce plantation on the East Loop Trail at the ALRF.

Backlog Plantation Management Activities

Supported by funding by the Northern Interior Region of the BC Ministry of Forests and Range, the ALRF completed vegetation competition and stocking surveys, and preparation of stand management prescriptions, on 135 hectares of plantations established in the early 1980's.

2008 funding for vegetation management and manual brushing treatments for 50 to 55 hectares has been tentatively approved by the BC Ministry of Forests' Forests For Tomorrow (FFT) program. 2008 funding will also include surveys of an additional 100 hectares at the ALRF, to: (a) to identify areas that may be Not Satisfactorily Restocked (NSR) or plantations that may be otherwise impeded by brush, and (b) develop treatment prescriptions for identified problem sites.

2007 Road Work and Issues

In a teaching and research forest such as the ALRF, a network of reliable forest roads are essential for allowing researchers, students, and visitors to travel to and from teaching and demonstration sites as safely, comfortably, and conveniently as possible.

Temporary road activities for Winter 2006/07 harvesting activities unrelated to the permanent

road system were reported previously in the Forest Harvesting section.

In Spring 2007, ALRF operations staff undertook a regular annual inspection of all road sections and drainage structures under road use permit to the ALRFS, and other cutblock access roads used by the ALRF. Additional inspections took place after other major rainfall or run-off events.

Summer maintenance on all-season roads at the ALRF in 2007 were modest in scope compared to 2006 when a number of culverts and stream crossings were replaced and upgraded.

Key ALRF road improvements completed in Summer 2007 included:

1. Spot gravelling of 10 kilometres of road, including the Aleza Main road from 0 to 6 Km, and West Branch Road from 0 to 4 Km;
2. Supplemental grass / clover seeding in Spring 2007 for sediment and erosion control on 2006 road works.
3. Replacement of a 400 mm culvert at 51 km on the Beaver-Bear FSR (damaged by Winter 2007 snow plowing);

Hansard Creek Crossing Options

Due to staff turnover in ALRF Forest Operations, further study or measures for the Hansard (Camp) Creek stream crossing on the Aleza Main road were generally deferred to 2008. This decision did not impact Winter 2007-08 harvest operations as these blocks are located north of the crossing, close to the Upper Fraser highway.

In 2008, the ALRF will place a very high priority on resolving the Hansard Creek crossing issue, to ensure reliable long-term access to the two-thirds of the ALRF area that lies south of the Hansard Creek. Hansard Creek is fair-sized stream (S2 to S3 classification) stream, and provides documented habitat for both rainbow trout and Chinook salmon juveniles.

ALRF staff will examine technical requirements and cost estimates for two options:

i. Option # 1 *Replacement Option*

Replacement of the existing Hansard Creek crossing on the ALRF in approximately the same location, with a new structure (most likely a bridge), and redesigning existing road approaches through the Camp Creek gully. And;

ii. Option # 2: *East Branch Bypass Option*

Bypass the existing Hansard Creek crossing on the Aleza road by reactivating currently-inactive stream crossings on the East Branch Road. The East Branch road crosses Hansard Creek further up the watershed on the east side of the ALRF, eventually connecting to the Beaver-Bear and Aleza roads further south in the forest. This option could eventually allow the removal of the existing outdated culvert on the Aleza road.

2007 Riparian and Fish Habitat Assessments

The ALRF contracted DWB Forestry Ltd of Prince George to undertake several riparian and fish habitat assessments on ALRF streams and waterbodies in Summer 2007.

These included riparian assessments, stream classifications and assessments of fish presence or absence at several locations associated with planned ALRF road works or harvest blocks in Forest Development Unit A (in the north-central ALRF) and Forest Development Unit "E" in the southeast corner of the ALRF.

We also thank Brian Aitken RPBio, of DWB Forestry, for his volunteer teaching contributions on stream management and riparian assessments at

the UNBC Fall Field Camp at the Aleza Lake Research Forest.



Photo: UNBC Forestry student (and 2007 ALRF summer student) Renata Woodward examines rainbow trout collected in Hansard Creek during the Forestry Field Camp stream and riparian module.

Forest Health

Due to the predominance of non-pine tree species in mature stands at the ALRF (including spruce, subalpine fir, Douglas-fir, three broadleaved species, and western hemlock), the ALRF has generally escaped the worst effects of the mountain pine beetle (MPB) infestation that has ravaged the pine forests of the BC Interior. At the ALRF, MPB mainly affected mature pine stands that occur in peat bogs in this region (<0.3% of the total landbase), and also killed minor pockets of pine in 30-35 year-old mixed spruce stands at the ALRF.

Initial assessments of younger (<20 year old) plantations in 2005 and 2006 indicated occasional attack of larger pine (> 15 cm dbh) by MPB in these stands but much less than 1%. Follow-up assessments and detailed ground surveys in selected stands by ALRF staff found no new attack this year.

Pine plantations are also showing some effects of defoliation caused by red-band needle blight

(*Dothistroma* spp.), especially on moist humid microsites, Detailed forest health surveys of ALRF pine plantations were undertaken in May 2007; currently the long-term impact of *Dothistroma* in these stands is unclear, but will continue to be monitored in coming years.

Spruce beetle (*Dendroctonus rufipennis*) continued to be at a low ebb in 2007. Wind storms in late Fall 2006 caused windthrow in some areas. In May, 2007, ALRF staff carried out helicopter surveys in May 2007 to map wind damage to these spruce stands in order to prioritize windthrow pockets that may create conditions for build-up of bark beetle populations.

In general, aerial surveys indicated that ALRF stands stood up to the Fall 2006 winds quite well, though localized windthrow pockets were found adjacent to new cutblock boundaries and road right of way in the Block 9 and 10 area south of the East Branch Road. These areas were not salvaged in Winter 2007/08 due to economic conditions, but will be monitored for spruce beetle activity in May and June 2008, with possible salvage in Summer 2008.

STRATEGIC PLANNING

Amendments to Management Plan # 2

On January 7th, 2008, in response to proposals from the Aleza Lake Research Forest Society, the Prince George Forest District of the BC Ministry of Forests and Range approved amendments to the ALRF Management Plan # 2.

The two amendments affect Section 8.3.2.2 and Section 9.0. These amendments deal with the administration of cut control limits, and timber supply analysis submission dates, respectively.

Under the first amendment, cut control limits were increased from 105 to 120% of the sum of annual allowable cuts for a period, with provision for a carryover threshold of any volumes exceeding

100%. This will allow greater flexibility in harvest scheduling.

Secondly, the date for the next timber supply analysis submission for the ALRF was revised to November 1st, 2009, synchronized with the new management plan submission in 2010.

Timber Supply Analysis

Timber supply analysis activities in 2007 included completion of GIS updates of forest inventories, and spatial net down analysis of the forest. This work was conducted under contract to the ALRF by Timberline Natural Resources Group of Prince George, BC.

Timber supply analysis goals for 2008 include:

- 1) Development of yield assumptions and sensitivity analyses;
- 2) Completion a draft data package and distribute for an external professional review (Spring 2008).
- 3) Modelling of sensitivity analyses.

Business Planning

Due to time and staffing constraints, the ALRFS was not able to undertake long-range business and strategic planning in 2007.



FINANCE AND ADMINISTRATION

Implementation of UNBC-ALRFS Protocol Agreement

In 2007, the University of Northern British Columbia (UNBC) and the ALRFS implemented a protocol agreement which clarifies the administrative relationships between the two allied organizations. The effective date of the agreement was February 5th, 2007.

The most substantial changes for the ALRFS under the agreement were the:

- i. Transfer of all staff payroll and administration to ALRFS. And
- ii. Administrative changes to the management of pension and benefits arrangements for permanent ALRFS staff. Under the agreement, ALRF permanent staff remain with the UNBC pension plan provider, but all employer contributions were paid by the ALRF.

However, the agreement also confirmed and documented several measures that essentially remain unchanged, including in-kind contribution of UNBC office space to ALRF staff, and cost-recovery arrangements for telephone, and computing services to the ALRFS.

Finally, the agreement formalized guiding principles for safety and risk management between the ALRF and UNBC.

Financial Audits

At the request of the ALRF Board of Directors, the accounting firm DeLoitte Touche of Prince George, BC conducted financial audits of 2007 finances, under the supervision of Mr. Ron Fichtner CGA. Copies of the audit reports are available upon request from ALRF offices or the auditor, DeLoitte Touche.

Overview of 2007 Finances

The 2007 audited financial statement of the Aleza Lake Research Forest Society (for the year ending December 31st, 2007) indicates an operating surplus (surplus of revenue over expenditure) of \$155,157. on total *net* revenues of \$779,291, and gross revenues of \$ 1,818,017.

The 2007 surplus closely mirrored the 2006 operating surplus of \$ 159,245. However, more importantly, the 2007 surplus allowed the ALRFS to achieve a positive balance sheet (considering all assets and liabilities at the end of the 2007 fiscal year) with net equity of \$ 60,648. compared to a net liability of \$ 90,299 at the 2006 year end.

2008 Revenue and Expenditure Projections

2008 timber revenues will be constrained due to cut control limitations on ALRF harvest rates, and poor economic conditions in the BC forest sector at time of writing. Therefore, the ALRFS undertook significant expenditure reductions to achieve its 2008 budget.

The 2008 ALRFS financial forecast is for total net revenues of at approx. \$ 415 thousand, and estimated forest management, reforestation, and administrative expenditures of approximately \$ 477 thousand. The ALRFS approved a 2008 budget which projects an operating deficit of approximately \$ 62 thousand.

The 2008 financial goal is to avoid undue erosion of financial reserves beyond the forecast deficit, and maintain contingency funds for this and future years.

Financial Bookkeeping

Accutech Bookkeeping Ltd. (Grace Stevens) of Prince George provides bookkeeping and payroll services to the Aleza Lake Research Forest Society.

2008 MAJOR GOALS AND INITIATIVES

The following is a summary and integration of the various individual goals and objectives for 2008 identified in previous sections.

I. Strategic Planning

- a) Completion of the first approximation of updated timber supply analyses and scenario planning for the ALRF, for review by the ALRFS Board of Directors (Fall 2008);
- b) Completion of the first approximation of a strategic and business plan for the ALRF;
- c) Resolution of Old Forest objectives for the ALRF, in cooperation with the Integrated Land Management Bureau (ILMB).

II. Worker Safety

- a) Implement updated safety measures at the ALRF to promote safe work practices and ensure continued compliance with WorkSafe BC requirements.
- b) Continue to develop and/or upgrade a formal Safety Plan for the ALRF.

III. Education and Extension

- a) Construct a new and improved North Ridge Interpretive Trail at the ALRF, with improved parking area and information kiosk at the ALRF entrance, with external funding support from the Fraser-Fort George Regional District, and the BC Ministry of Forests.
- b) Strengthen education programs through community partnerships.
- c) Cooperate with Giscome Elementary School with their tree planting program on school grounds.
- d) Promote the Aleza Lake endowment fund to augment fund balances.
- e) Continue ALRF participation in UBC and UNBC forestry / natural resources field

schools in Fall 2008, and UNBC undergraduate Silviculture lab instruction.

IV. Research and Research Support

- a) Promote opportunities for Forest History and community research, in collaboration with the UNBC Archives.
- b) Continue programs for promotion and awareness of research opportunities at the ALRF, targeted to faculty, graduate, and undergraduate students at UNBC and UBC.
- c) Increase research activities through collaborative funding proposals
- d) Re-establish growth-and-yield permanent plots in recently harvested selection-cut areas (Pogue Sale / Block 3).

V. Forest Operations

Basic Silviculture

Address post-harvest basic silviculture obligations on the ALRF through the following operations:

- a) Plant approx. 130 thousand spruce and Douglas-fir seedlings on harvested areas at the ALRF (May and June 2008);
- b) Conduct site preparation (7 hectares) and prescribed (slashpile) burning as required on 44 hectares;
- c) Conduct regeneration surveys on approx. 60 hectares, and vegetation management as required.
- d) Complete an integrated pest management plan for the ALRF.

Harvest Planning

- a) Complete operational planning and assessments for harvest of at least 20,000 cubic metres for Winter 2008/09.
- b) Substantially complete operational planning and assessments for an additional 4 years of harvest planning.

- c) Amend or replace the Forest Stewardship Plan for the ALRF.
- d) Initiate Phase I of a Total-Resource Harvest and Roads Plan for the ALRF, to guide future harvest operations.

Backlog Silviculture (Forests for Tomorrow)

- a) Complete stocking and vegetation competition surveys on approx. 100 hectares of pre-1987 cutblocks at the ALRF, and identify productive areas in need of backlog reforestation treatments.
- b) Develop silvicultural prescriptions (treatment plans) for potential future FFT backlog reforestation funding.
- c) Implement and complete contract supervision for approx. 50 hectares of manual brushing treatments for conifer release in approved pre-1987 plantations at the ALRF.

Roads

- a) Conduct regular road inspections (including Spring 2008 freshet) to identify road maintenance requirements and safety measures.
- b) Conduct detailed field inspections and evaluate technical issues and costs for long-term road access across Hansard Creek (Replacement vs East Branch Options), and identify potential funding opportunities.

Forest Health

- a) Complete salvage of windthrown timber in the Block 9 and 10 area, and assess surrounding timber for bark beetle incidence.
- b) Continue ground-based reconnaissance of pine plantations on the ALRF to monitor Dothistroma and residual mountain pine beetle impacts.

V. *Business Administration*

- a) Continue to improve project-tracking processes and procedures for financial management of external research funds, in cooperation with the ALRFS bookkeeper.
- b) Review the ALRFS Financial Policy and Procedures manual to identify needed updates and improvements.

BOARD OF DIRECTORS

The Board of Directors of the Aleza Lake Research Forest Society thanks retiring Board member Anne Hardy of UNBC for her service and dedication to the ALRFS. In 2007, we welcomed new Board member Dr. Oscar Garcia of the UNBC Ecosystem Science and Management Program .

Current ALRFS Directors (as of December 2007) are as follows:

President,	Peter Forsythe RPF
Secretary/Treasurer	Ken Day RPF (UBC)
Director *(BCMofR)	Wayne Martin
Director, UNBC	Bruce Larson
Director, UNBC	Staffan Lindgren,
Director, UNBC	Oscar Garcia
Director, MoE	Bob Brade

RESEARCH FOREST STAFF

Full-time staff through 2007 included permanent staff, Mike Jull (Manager), Melanie Karjala (Programs Co-ordinator), and Kathleen Olson (Office Administrator), and Matt LeRoy (Operations Forester to August 2007).

Judy Carlson RFT provided continuity of operational functions in the Forest Operations Technican role.

ALRF hired two summer students for 2007, including first time ALRF summer student, Renata Woodward, and welcoming back for a second year, Andrea Erwin (UNBC student). We thank them for their hard work through their summer term.

In 2007, we bid goodbye and best wishes to our departing Operations Forester, Matt LeRoy RPF, who, with his family, headed to new career opportunities and adventures on Vancouver Island with the BC Ministry of Forests. With his ideas and energy, Matt made many positive contributions to the ALRF, both in field practices and management of our GIS and photo databases. Best of luck, Matt, you'll be missed.



Matt and his faithful dog Blue.

ACKNOWLEDGEMENTS

The Aleza Lake Research Forest Society thanks the many individuals and companies who contribute to, and work with the ALRF on a regular basis. Thanks to UNBC for providing both office space and local institutional support for the ALRF as it grows and develops, and to UBC for expert advice and experience in the management of university research forests. ALRF staff look forward to the coming year to continue building on strong linkages and establishing more opportunities to work closely with programs from both universities.

Thank you to all the ALRFS Board Members and parent organizations (UNBC, UBC, the BC Ministries of Forest and Range, and Environment) for their dedicated support and continued availability at a moments notice. We particularly acknowledge our Board Chair, Peter Forsythe of Winton Global Ltd., for his guidance and sage advice.

Thank you to our ALRF vendors and contractors in Prince George and beyond, who have worked with and assisted us in operations and research on the forest.

And last, but certainly not least, thank you to all of our ALRF staff throughout 2007.