REGIONAL DISTRICT
of Fraser-Fort George

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DEVELOPMENT PERMIT No. 1508

ISSUED TO: Canadian Sunday School Ministries

WITH RESPECT TO THE FOLLOWING LANDS:

Block A District Lot 8812 Cariboo District
PID: 013654152

The East 15 Chains Of The Fractional South 1/2 Of District Lot 8812 Cariboo District
PID: 015526321

The Most Westerly 5 Chains Of The Fractional South West 1/4 Of District Lot 8813 Cariboo District
PID: 013407104

Block A District Lot 8813 Cariboo District
PID: 008511497

1. This Development Permit is issued pursuant to the *Local Government Act.*

2. The general purpose of this Permit is to allow works as described in the Environmental Management Plan (2025-2030) for Future Maintenance, Development and Restoration Activities at Ness Lake Bible Camp Version 1 June 2025.

3. This Permit recognizes the location of the existing vegetation, residences, recreation camp, roads and accessory buildings.

4. This Development Permit specifically permits the following development and alteration of land within the Ness Lake Development Permit Area, as designated in the Salmon River-Lakes Official Community Plan Bylaw No. 1587 pursuant to the *Local Government Act:*

   a) All works as described within the Environmental Management Plan (2025-2030) for Future Maintenance, Development and Restoration Activities at Ness Lake Bible Camp.

5. All work is to be substantially as shown on Appendix ‘A’ and Appendix ‘B’ attached to and forming part of the Permit and is **subject to the following:**

   a) All earthworks and vegetation removal shall be strictly limited to that which is required to accommodate development authorized in Section 4 of this Permit

   b) The portion of the lands located within 100.0 m, measured horizontally, from the natural boundary of Ness Lake shall remain free of development, land alteration and vegetation removal activities except for what is allowed by this Permit.

   c) Any works on the property, as identified in this Permit, will be performed in such a way that no fuel, hydrocarbons, soil, sediment, or other harmful materials may enter Ness Lake. Before any works or activities are done close to Ness Lake, erosion control methods must be in place.

   d) Land alteration activities are not to coincide with wet weather conditions. The removal of material must not lead to bank instability or increase the risk of erosion. Exposed soils

should be seeded with restoration grass mix and/or actively planted with deep rooting vegetation, in a timely manner.

e) All development, including use, size and siting of buildings and structures, including sewage disposal systems, shall be in accordance with Zoning Bylaw No. 2892, as amended or replaced.

f) Accessory buildings must not be occupied as a dwelling unit or recreation cabin, in accordance with Zoning Bylaw No. 2892, as amended or replaced. Furthermore, the combined maximum total floor area of all accessory buildings and structures is limited to 50.0 m^2 until a permitted use (e.g., Residential-Single Family dwelling) is established.

g) No indoor plumbing is to be installed in any building, and no water borne sewage is to be generated, until such a time as the building is served by an approved water borne sewage disposal system on the property.

h) The owner or occupier is responsible for verifying the location of all lot lines and watercourse natural boundaries prior to development.

i) For any earthworks necessary for the construction of any building allowed by this Permit, a geotechnical report may be required to confirm the safety of such developments for the intended use without undue risk. The report shall be prepared by a Qualified Professional registered in British Columbia with qualifications and experience in the fields of geoscience and training in geotechnical engineering and geohazard assessment.

6. This Permit shall lapse if the holder of this Permit does not substantially commence any work with respect to which this Permit is issued within two years after the date it is issued.

7. This Permit does not relieve the owner or occupier from obtaining any other approvals required by the Regional District or any other jurisdiction, or from meeting any applicable regulations. Furthermore, this Permit is not a building or sewage disposal permit.

8. The land shall be developed strictly in accordance with this Permit.

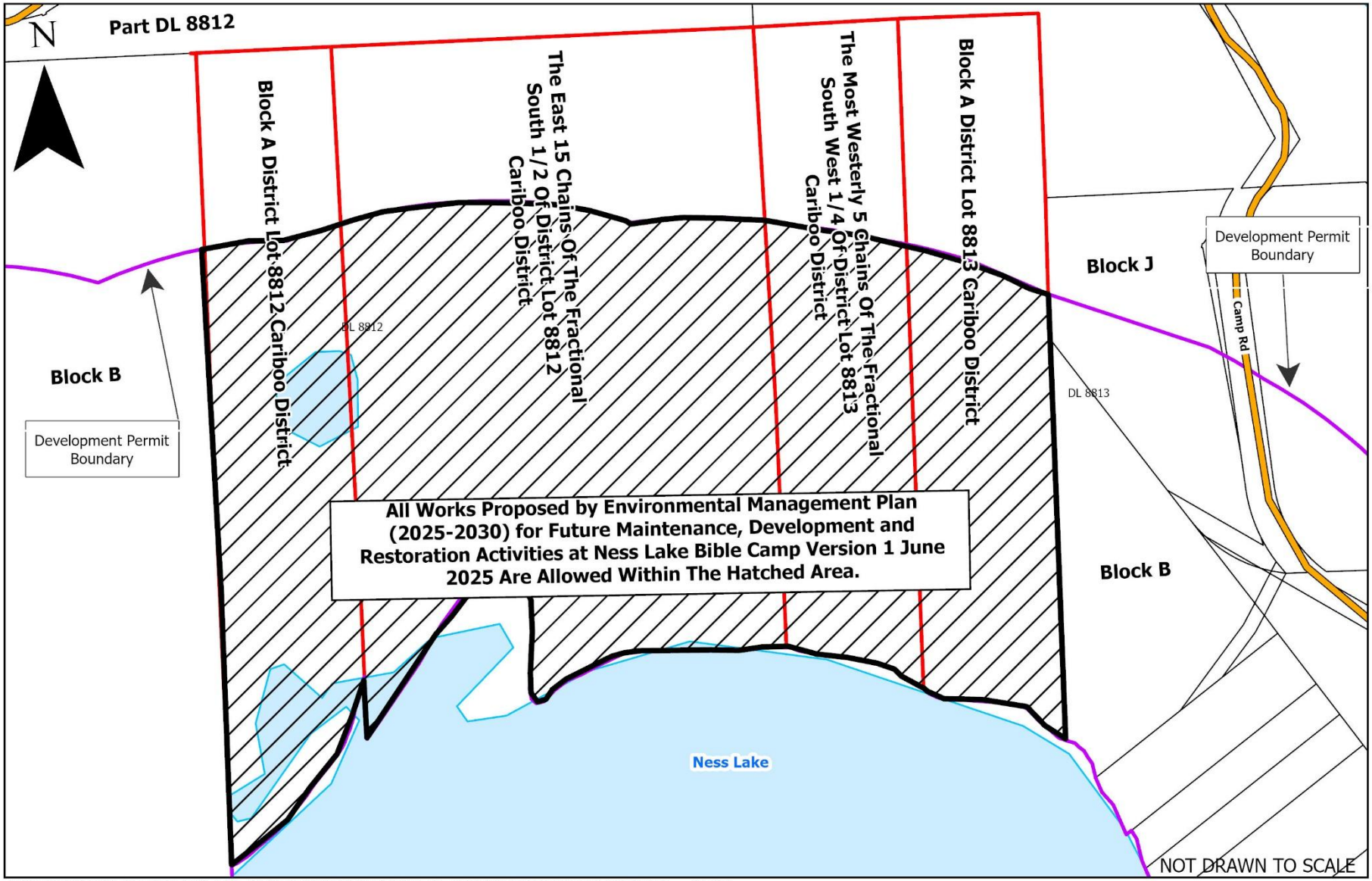
[The zoning on the properties at the date of issuance of this Permit is Public Institutional 1 (P1), Public Institutional 2 (P2) and Rural 1 (Ru1) pursuant to Zoning Bylaw No. 2892]

DEVELOPMENT PERMIT No. 1508 ISSUED BY RESOLUTION OF THE REGIONAL DISTRICT BOARD ON THE DAY OF 2025.

_____

M. Connelly, General Manager of Legislative and Corporate Services

APPENDIX 'A' OF DEVELOPMENT PERMIT No.1508



APPENDIX 'A' ATTACHED TO AND FORMING PART OF DEVELOPMENT PERMIT No. 1508

M. CONNELLY, GENERAL MANAGER OF LEGISLATIVE
AND CORPORATE SERVICES

APPENDIX 'B' OF DEVELOPMENT PERMIT NO. 1508

Environmental Management Plan (2025–2030) for Future Maintenance, Development and Restoration Activities at Ness Lake Bible Camp - Supplement to the Development Permit Amendment – Non-Delegated

APPENDIX 'B' ATTACHED TO AND FORMING PART OF DEVELOPMENT PERMIT NO. 1508

M. Connelly, General Manager, Legislative and Corporate Services

Prepared For
Ness Lake Bible Camp – Dave Horton, Executive Director
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Senior Biologist

Version: 1
June 2025

ENVIRONMENTAL DYNAMICS INC.
Down to Earth Biology

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EXECUTIVE SUMMARY

Ness Lake Bible Camp (NLBC) has developed this Environmental Management Plan to support its application to the Regional District of Fraser-Fort George for a five-year Development Permit Amendment. This document outlines the procedures NLBC will follow to conduct necessary maintenance, restoration, and minor construction/development activities in a safe and environmentally responsible manner. The natural environment found at the NLBC property is a key component of the experience provided to the campers and as a result NLBC administration work hard to balance safety requirements while focusing on conserving the native flora and fauna that are present.

This permit is required for proposed works to be conducted within the Lakeshore Development Permit Area over the next five years, including the removal and maintenance of vegetation for safety and Firesmart purposes, general site maintenance, the installation of portable structures, and the construction of one new 145 m trail and the upgrade of a 40 m section of existing trail to a small low use road that will provide vehicle access to the northern portion of the camp property. A primary goal of the permit is to allow NLBC to proactively manage the property under a clear set of environmental guidelines.

To address the potential impacts of these activities, NLBC commits to the following actions:

- Seek professional guidance: Engaging Qualified Professionals as required to conduct danger tree assessments, pre-clearing bird nest surveys, and other environmental, forestry or engineering assessments as needed.
- Tree Removal Mitigation: For any trees removed for safety reasons, NLBC will leave the stump and root mass in place, as much as possible considering safety and aesthetics, to limit soil erosion and will implement a robust replanting program using native species.
- Habitat Restoration: Two sites impacted by erosion—a lake bank and a roadside slope—will be actively restored to enhance natural vegetation and stability.
- Best Practices: All work will adhere to established Best Management Practices, including standard erosion and sediment controls and respecting reduced risk timing windows to protect nesting birds and spawning fish.

Approval of this Development Permit will help NLBC fulfill its long-term vision of providing a safe environment for all campers and staff while ensuring the continued protection and conservation of the natural environmental values of Ness Lake and the NLBC property. This EMP formalizes NLBC's commitment to environmental stewardship for future work on the property.

ACKNOWLEDGEMENTS

EDI would like to thank Dave Horton – Executive Director of Ness Lake Bible Camp for his assistance in developing this Environmental Management Plan. He assisted with field-based sites assessments, the collection of drone imagery data (that were used to develop a GIS image/map of the current site conditions) and provided many pertinent details regarding NLBC's operational, safety and insurance requirements, environmental management goals, existing infrastructure inventory, proposed maintenance details and restoration goals for two sites. In addition, Dave provided important communications and permitting details he had obtained from Regional District of Fraser-Fort George staff. Dave's guidance and assistance was instrumental in the development of this document.

AUTHORSHIP

Team members from EDI Environmental Dynamics Inc. (EDI) who contributed to preparing this report include:

Bob Redden, RPBio, AScT, CPESC, CESSWI.....Primary Author

Olivia Leblanc, GIS Analyst, B.A. GIS Cert.....GIS map development

Jonathan Dopson, System Administrator.....Drone digital data compilation

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ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Definition
BMP	Best Management Practices
DPA	Development Permit Area
ECCC	Environment and Climate Change Canada
EMP	Environmental Management Plan
ESC	Erosion and Sediment Control
MBR	Migratory Birds Regulations
NLBC	Ness Lake Bible Camp
QP	Qualified Professional (e.g., member of the College of Applied Biologists or Forest Professionals of BC)
RDFFG	Regional District of Fraser-Fort George

1 INTRODUCTION

Ness Lake Bible Camp (NLBC) has retained EDI Environmental Dynamics Inc. (EDI) to assist with the development of this Environmental Management Plan (EMP) that will be included as a supplement to the Development Permit Amendment (Non-Delegated) application that NLBC will be submitting to the Regional District of Fraser-Fort George (RDFFG) in early summer 2025. EDI is pleased to donate our professional time to assist NLBC with this project.

This EMP is a living document that will cover a 5-year period (summer 2025 to summer 2030). Minor revisions and updates (e.g., maintenance tasks with low environmental risk) may be added to the environmental management procedures identified in the EMP during this period as appropriate. A detailed review and update of the EMP will be completed by early 2030 and can be added to a Development Permit application package when NLBC does another submission to the RDFFG in five years.

1.1 BACKGROUND: DEVELOPMENT PERMIT AREA REQUIREMENTS AND SUMMARY OF NLBC PROPOSED WORKS REQUIRING RDFFG APPROVAL

RDFFG has designated Lakeshore Development Permit Areas (DPAs) to protect the natural environment, preserve water quality, and maintain the aesthetic character of lakefront areas. These DPAs typically extend 300 m from a lake's shoreline.

Within a Lakeshore DPA, a permit is mandatory for any land subdivision, construction or alteration of buildings, and any land alteration, which includes tree clearing and landscaping. All development proposals are evaluated based on their visual impact and their commitment to retaining or enhancing natural vegetation. Another requirement is that all new buildings and structures must be set back at least 15 m from the lakeshore. Furthermore, property owners are encouraged to preserve or replant native vegetation within this 15 m shoreline riparian zone. All development must also comply with the standards set out in the current Zoning Bylaw (source: https://www.rdffg.ca/node/351).

The last permit obtained for the camp property was issued in 2012 (No. 898) so NLBC will be applying for a Development Permit Amendment – Non-Delegated for the works that are proposed over the next 5 years. NLBC will be conducting tree and vegetation clearing (to meet safety, insurance and maintenance needs), road surface maintenance, construction of one new trail (145 m) and a short (40 m) section of road, along with the installation of non-permanent/portable structures, and landscaping work in the form of habitat restoration projects, which is the primary reason for this permit amendment application. A summary of the proposed works include:

1. danger and hazard tree maintenance and removal;
2. Firesmart (vegetation maintenance and removal);
3. existing road, trail and campsite maintenance (surface grading; runoff, erosion and sediment control works, and vegetation brushing/pruning);

4. installation of non-permanent/portable cabins and shelters on existing cleared sites;
5. installation of metal storage containers for storage on existing cleared sites;
6. construction of a 145 m long by 2 m wide trail;
7. construction of a 40 m long section of road; and,
8. restoration of two sites within or near the 15 m riparian zone of Ness Lake.

1.1.1 SUMMARY OF ADDITIONAL PERTINENT REGULATORY REQUIREMENTS

In addition to the RDFFG Official Community Plan (Development Permit Area) requirements and Lakeshore Development Guidelines (provided in the RDFFG Development Permit Area documents), all works and operations conducted by NLBC will adhere to other regulatory requirements, found in pertinent regulatory acts, regulations and guidelines such as the:

- Federal *Fisheries Act*;
- Federal *Species-At-Risk Act*;
- Federal *Migratory Birds Convention Act* (including regulation and management requirements specific to piliated woodpecker nests);
- BC *Wildlife Act* (Section 34 which refers to impacts to occupied bird nests with eggs present); and,
- Region 7A Omineca – Reduced Risk Timing Windows for Fish and Wildlife.

1.2 LOCATION

Ness Lake Bible Camp is situated at 23705 Camp Road, Prince George, British Columbia, approximately 35 km northwest of the city centre. The camp is located within the boundaries of the Regional District of Fraser-Fort George, specifically in Electoral Area A (Salmon River-Lakes). Furthermore, it falls under the BC Government's administrative area of Region 7A Omineca (Fish and Wildlife Management Unit 7-15).

To reach Ness Lake Bible Camp from Prince George, travellers should head north on Highway 97. Turn left onto Chief Lake Road and continue straight; this road will eventually become Ness Lake Road. Follow Ness Lake Road and watch for signage directing you to turn onto Austgarden Road, and subsequently to Camp Road, where the camp is located. See Appendix A and Appendix Map B-1 for representative photos and an overview image of the property and infrastructure, respectively. **Note:** Map B-1 titled Ness Lake Bible Camp Property Overview provides the locations of the vast majority of major infrastructure found at the camp.

1.3 ENVIRONMENTAL MANAGEMENT PLAN SCOPE

NLBC's overarching goal is to conduct their operations in a safe and environmentally responsible manner on their property. Maintaining, conserving and restoring (where necessary) the natural environment and minimizing impacts to the diverse assemblage of species (e.g., vegetation, birds, fish) found on their property is of the utmost important to NLBC.

Environmental management processes/procedures associated with the removal and maintenance of trees and vegetation; and runoff, erosion and sediment control (ESC) best management practices (BMPs) associated with the operation and maintenance of the camp infrastructure (e.g., roads, parking lots, trails and campsites) will be address throughout this EMP.

NLBC identified four core areas of focus that have been considered and addressed during the development of the EMP.

1. **Public/staff safety and infrastructure protection** (e.g., Danger tree management/removal and vegetation maintenance while mitigating environmental impacts);

2. **Operations and maintenance** following sound environmental management and mitigation procedures for vegetation brushing/pruning and ESC BMPs (at roads, parking lots, trails, campsites, playgrounds and around buildings);

3. **New construction** (e.g., installation of portable non-permanent 10x10 foot cabins/100 square foot equivalent covered shelters and metal storage containers on existing cleared sites, and potentially developing a new 145 m trail and widening a 40 m length of existing trail into an access road near the northern boundary of the 300 m Lakeshore DPA; and,

4. **Habitat restoration** at two sites located in or near the Ness Lake riparian zone (e.g., lake bank and eroding slope on access road).

Important Note on EMP Scope: This EMP specifically addresses Danger Tree and Firesmart assessments and their related on-the-ground management activities (e.g., removal of trees and scrubs) from an environmental perspective only. Its purpose is to identify potential environmental impacts arising from these activities and to provide recommended environmental management measures to mitigate such impacts. This EMP does not replace the requirement for qualified professionals (QPs) (e.g., a member of the Forest Professionals of BC) to conduct Wildlife Danger Tree assessments or Firesmart assessments and to provide their independent prescriptions intended to manage the safety related risks. NLBC will retain QPs as required.

2 SITE CONDITIONS

Bob Redden, RPBio, AScT, CPESC, CESSWI, Senior Biologist/Certified Professional in Erosion and Sediment Control, conducted two site assessments at the NLBC property (February 16 and May 16, 2024) to collect data in two different seasons.

2.1 OVERVIEW OF CURRENT SITE USE AND INFRASTRUCTURE

NLBC has been in operation since 1953 and is located on four connected property lots at the northern shore of Ness Lake (see Appendix Map B-2 that shows the properties boundaries and uniquely identifies the lots as 13654152, 15526321, 13407104, and 008511497). The combined size of the four lots is approximately 28 hectares with approximately three-quarters of this area located within the 300 m Lakeshore DPA. The site is used year-round for conferences, retreats, and summer camps. The infrastructure which has been developed over the past seven decades includes roads, trails, parking lots, houses, cabins, administration centre, cafeteria, gym, chapel, playgrounds, .22 rimfire and archery ranges, campsites, zip-line, gardens, boat shed, canoe racks, docks, sand beach and maintenance shop/storage facilities (see Appendix A and Appendix B). Eight septic fields are on site with one large septic field located near the centre of the camp property, approximately 200 m inland from Ness Lake. The other septic fields are much smaller in size and are connected to structures such as houses or other buildings at various locations throughout the camp. Most of this infrastructure is located on the southern half of the lots and falls within the RDFFG's 300 m wide Lakeshore DPA that starts at the highwater mark of Ness Lake. The only infrastructure of note that is in the northern portions of the lots (outside of the Lakeshore Development Permit Area zone) are trails and one small cabin.

2.2 ENVIRONMENTAL CONDITIONS AND OBSERVATIONS

As previously stated, most of the NLBC infrastructure is located on the southern half of the lots within the Lakeshore DPA zone. The area is built-up on a shallow gradient slope with some undulating terrain that provides numerous flat sites and benches where many buildings are situated. A well-developed network of roads and trails connect the infrastructure (e.g., buildings, playground, outdoor group gathering sites) (see Appendix Map B-1 for a detailed view of the infrastructure). The slope is on a south facing aspect, and the soils present are well draining due to a high sand content. The northern portion of the lots have a more diverse topography with numerous post-glacial features like eskers noted.

The highly erodible soil and the location of most of the developed infrastructure within catchment areas that drain toward Ness Lake, adds to the potential environmental risk (**Note:** Environmental management procedures such as runoff and ESC measures needed to address this risk are provided in this EMP). Specific areas of concern noted during site assessments include erosion from a road draining to the west end of the beach, and two separate slopes (a lake bank and a road slope) where foot traffic has degraded vegetation and exposed highly erodible sandy soil. NLBC has roped-off these two slopes and plans on restoring these sites (see Appendix Map B-1 that shows the location of these sites – Restoration Site 1 and 2).

The camp property, including within the primary infrastructure area around the facilities and cabins, is well vegetated with extensive amounts of mature trees and scrubs. The habitat was well suited for use by wildlife common to the area such as birds and small mammals within the developed areas, while large mammals such as deer, bears, and moose to name a few species, have access to suitable habitat in the less developed areas of the camp. The diverse structure and age classes of the vegetation provide habitats that will be used by many different bird species. **Note:** Many of the mature paper birch trees (*Betula papyrifera*) and a few mature trembling aspen (*Populus tremuloides*) and spruce trees (*Picea* spp.) observed on site had dead branches and signs of rot (e.g., conks observed in some and snapped stems/trunks).

The entire NLBC property is situated within the Sub-boreal Spruce (SBSdw3) biogeoclimatic zone which is very diverse. The vegetation observed during field assessments were consistent with what would be expected in a drier well draining south facing site within this biogeoclimatic zone, with some wetter micro-sites and riparian areas. Common vegetation noted during the field site visits included:

Trees:

- Douglas-fir (*Pseudotsuga menziesii*) and paper birch (*Betula papyrifera*) (dominant)
- White spruce (*Picea glauca*), trembling aspen (*Populus tremuloides*), black cottonwood (*Populus trichocarpa*) and lodgepole pine (*Pinus contorta*) (sub-dominant)

Shrubs:

- Red-osier dogwood (*Cornus sericea*), willows (*Salix* spp.), Sitka alder (*Alnus alnobetula* subsp. *sinuata*), Saskatoon berry (*Amelanchier alnifolia*), rose (*Rosa* spp.) and Rocky Mountain juniper (*Juniperus scopulorum*)

Herbs and dwarf shrubs:

- Common juniper (*Juniperus communis*), Kinnikinnick (*Arctostaphylos uva-ursi*), and buffaloberry (*Shepherdia canadensis*)

Ness Lake is home to three gamefish species including rainbow trout (*Oncorhynchus mykiss*), eastern brook trout (*Salvelinus fontinalis*), and kokanee (*Oncorhynchus nerka*); and other fish including prickly sculpin (*Cottus asper*), and course fish such as largescale sucker (*Catostomus macrocheilus*), longnose sucker(*Catostomus catostomus*), and red-side shiners (*Richardsonius balteatus*) (source: BC Lake Stewardship Society and BC Ministry of Environment). Based on lake stocking records, it appears that the gamefish are stocked by the Freshwater Fisheries Society of BC on a regular basis. The nearshore aquatic habitat along the NLBC property primarily consisted of sand substrates with pockets of accumulated gravel and some dispersed gravel. Lake shore habitats are typically not considered high quality spawning habitats for salmonids (especially if there aren't any upwelling water sites), but these types of habitats will sometimes be used by course fish that spawn in the spring; and in fact during the May 16, 2024, site visit, adult suckers were observed in large numbers spawning near the western portion of the swimming beach (see Appendix Photo A-18 and Appendix Photo A-19). Dave Horton has confirmed that course fish use this area for spawning annually. No streams are located on the NLBC site.

3 OVERVIEW OF MANAGEMENT CONSIDERATIONS AND INTRODUCTION TO ENVIRONMENTAL MANAGEMENT SECTIONS

NLBC identified numerous inter-related requirements and occasional constraints that were considered during the development of this Environmental Management Plan (EMP). Meeting public and staff safety, infrastructure protection, insurance, and environmental regulatory requirements were of primary importance. Consequently, efforts to ensure safety, protect infrastructure, and satisfy insurance mandates have primarily focused on eliminating or mitigating risks through danger tree management and Firesmarting activities, which involve vegetation removal and maintenance (e.g., brushing/pruning).

To fulfill these requirements, NLBC has implemented danger tree management and Firesmart measures throughout its years of operation and will continue to do so, incorporating environmental management and mitigation measures into this work. NLBC is committed to the overarching goals of providing a safe site and an excellent experience for campers, while operating in an environmentally responsible manner that minimizes impacts and conserves a high degree of biodiversity.

The NLBC property is well vegetated with upland and riparian areas and is located on the shore of a fish-bearing lake. These site characteristics mean that NLBC's various operations, maintenance activities, and proposed construction projects carry a risk of impacting wildlife (particularly nesting birds) and fish. The following sections of this plan detail the environmental procedures that will be implemented to mitigate these risks.

Section 4 – Reduced Risk Timing Windows – Birds and Fish - This section outlines mitigation measures to protect breeding birds and spawning fish. These timing windows are critical because many maintenance and project activities, such as vegetation cutting and work near lake and beach areas, can directly impact nesting and spawning habitats.

Sections 5, 6, 7, 8 and 9 – Environmental Management for Specific Activities - Each section outlines standard environmental management practices and specific protocols required for certain activities and tasks.

A summary of the topics covered includes:

- Section 5 – Vegetation Management and Maintenance Activities
    - Danger Tree Management (5.1)
    - Firesmart Management (5.2)
    - Road, parking lot, trail, and campsite maintenance (5.3)
- Section 6 – Runoff, Erosion and Sediment Control Measures for General Site Maintenance Activities
    - Covers roads, parking lots, and trails

- Section 7 – Proposed Construction Project Activities
    - Non-permanent, portable prefabricated 10x10 foot cabins and covered shelters (or 100 square meter equivalent)(7.1)
    - Storage facilities made from metal shipping containers (7.2)
    - New 145m long trail (7.3)
    - New 40 m section of road within the Lakeshore DPA that will connect to a proposed access road which will be located outside of the Lakeshore DPA (7.4)
- Section 8 – Restoration Activities
    - Restoration Site 1 – Ness Lake bank (8.1)
    - Restoration Site 2 – Roadside slope (8.2)
- Section 9 – Environmental Management Procedures Related to Petroleum Products
    - Refueling boats
    - Refueling equipment
    - Use of equipment within and near riparian zone

4 REDUCED RISK TIMING WINDOWS – BIRDS AND FISH

Reduced Risk Timing Windows are considered the period that the natural environment and specific animal species are less susceptible or less at risk to adverse impacts caused from maintenance and construction activities. For birds, the timing window is related to nesting and the fledging of immature birds. For fish, the timing window is often associated with a period when there are less risks to spawning fish and egg incubation. Since the primary activities proposed by NLBC are focused on standard activities such as vegetation management, and road/trail and parking lot maintenance, the following sections will focus on typical environmental management and mitigation measures that will be implemented to avoid or mitigate impacts and meet environmental regulatory requirements. Sections 4.1 and 4.2 will, therefore, emphasize requirements and strategies for operating within the critical timing windows for breeding birds and spawning fish.

4.1 BREEDING BIRD REDUCED RISK TIMING WINDOW AND STANDARD MITIGATION

To protect nesting birds in the Omineca Region (7A), vegetation clearing and maintenance (such as danger tree removal and brushing/pruning of shrubs) is generally restricted to the period between August 1 and April 30. However, raptors may begin nesting as early as February. Trees containing nests of eagles, peregrine falcons, gyrfalcons, ospreys, or herons must not be felled at any time, even outside the breeding season, and require surrounding forest buffers as per the Guidelines for Raptor Conservation during Urban and Rural Land Development in British Columbia. Adhering to the timing window is the best way to minimize disturbance to bird nests, young, or eggs, reducing the risk of "incidental take" under the *Migratory Birds Convention Act* and Section 34 of the BC *Wildlife Act*.

While adhering to this timing window (August 1 to April 30) is important for minimizing disturbance to bird nests, young, or eggs and thereby reducing the risk of "incidental take", situations may arise where vegetation removal outside this period is unavoidable. This is particularly true for trees that pose an imminent danger to people or infrastructure. In these circumstances, NLBC will implement specific management options, primarily by engaging a QP registered with the College of Applied Biologists to review the situation and if appropriate conduct a thorough pre-clearing bird nest assessment to search for nesting birds along with surveying for any raptor, heron and piliated woodpecker nests (active or abandoned). Based on this assessment and background research, the QP will recommend appropriate mitigation measures that can be implemented by NLBC and will assist with any regulatory processes as required.

To manage risks to nesting birds before clearing, the following survey and mitigation steps will be taken as appropriate:

- **Timing Assessment:** Determine if clearing activities fall within the regional bird nesting window (typically spring/early summer). If outside this window, a survey may not be needed but it is important to consider the presence of any year-round protected nests.

- **Engage a Qualified Professional (QP):** If clearing is during or near the nesting window, a QP (e.g., a Registered Professional Biologist) must be hired to plan and conduct the survey.
- **Survey Planning:** The QP develops a survey plan, considering the area, habitat types, target species, and appropriate survey intensity and methodology (e.g., point counts, transects, area searches).
- **Conduct Field Survey:** The QP performs systematic searches for active nests (containing eggs, young, or an incubating adult) within and immediately adjacent to the proposed clearing area, typically no more than 7 days before clearing.
- **Reporting and Mitigation:** If no active nests are found, the QP provides a clearance report, and work can proceed (within the specified validity period of the survey). If active nests are found, the QP identifies them, recommends appropriate protective buffers (e.g., no-disturbance zones) and mitigation measures, and advises on any necessary permits or notifications (e.g., to Environment and Climate Change Canada or provincial authorities). Clearing in areas with active nests must be delayed until nesting is complete, or other appropriate and approved mitigation is in place.

Note: The BC Ministry of Transportation and Transit has recently published (January 2025) a document titled Breading Bird Nest Survey Protocol, which provides a thorough process that will be considered and can be implemented, as appropriate, by NLBC. Other pertinent information will also be considered and implemented as appropriate, based on guidance from the QP.

4.1.1 PILEATED WOODPECKER NEST ASSESSMENT, REGULATORY PROTOCOLS AND STANDARD MITIGATION

The Pileated Woodpecker (*Dryocopus pileatus*) is a species of particular concern in this region, so Environment and Climate Change Canada (ECCC) have special requirements associated with this species. Specifically, Piliated Woodpecker nests must be monitored for up to three nesting seasons to confirm that this species is not using the nest, before the tree can be removed.

Under ECCC's Migratory Birds Regulations (MBR) 2022, Pileated Woodpecker nests receive year-round protection due to their significant value as habitat, even when temporarily unoccupied. To determine if such a nest is formally considered abandoned and therefore eligible for removal or disturbance, a strict protocol must be followed:

1. **Initial Observation and Verification:** The proponent must first confirm the cavity is indeed a Pileated Woodpecker nesting cavity (not just a feeding or roosting cavity) and that it appears unoccupied. Due diligence, such as surveys during periods when birds would reasonably be expected to occupy nests (e.g., the previous breeding season), should be conducted to make sure it was not recently used.

2. **Notification to ECCC:** The proponent must formally notify ECCC by registering the nest in the online "Abandoned Nest Registry." This submission requires specific details about the nest, its

location, and confirmation that the nest was observed during a period when it could reasonably be expected to be occupied by breeding birds and was found to be inactive. This notification officially starts the waiting period.

3. **Mandatory Waiting Period:** A waiting period of 36 consecutive months must pass from the date the nest is registered with ECCC.

4. **Monitoring Responsibilities:** Throughout this 36-month period, the onus is on the proponent to monitor the nest to verify that it remains continuously unoccupied by any migratory bird. Monitoring should occur during periods when birds could reasonably be expected to use nests.

5. **Confirmation of Abandonment:** If, after the 36-month waiting period, the nest has remained continuously unused by any migratory bird since the notification was submitted, it is then considered abandoned under the MBR. Only then can it be damaged, destroyed, removed, or disturbed without a specific permit, provided all other conditions have been met.

If the nest is re-occupied by any migratory bird at any point during the 36-month waiting period, the notification becomes void, and the clock resets. A new notification and full waiting period would be required if the nest subsequently appears abandoned again.

Permits to impact a Pileated Woodpecker nest before the 36-month abandonment period is complete are only considered by ECCC as a last resort in specific situations, such as demonstrable human health and safety risks or significant damage to the use of land and will typically require substantial justification and mitigation measures.

Note: The April 17, 2023, memo from the Ministry of Environment, Ministry of Forests and Worksafe BC to Wildlife Dangerous Tree Assessors titled Migratory Bird and Nest Tree Protection provides excellent guidance for the assessment of nests and associated regulatory processes. This document also provides very good photos of piliated woodpeckers and their nests, which can be used as an education tool for NLBC staff.

As per a standard operating approach, NLBC will monitor for the presence of piliated woodpeckers, and identify, map and document the use of any nest sites. If nests are found in any areas of the camp that may required future tree removal works (e.g., Danger Tree or Firesmart), NLBC will make sure the sites are documented, monitored and addressed as per ECCC requirements. NLBC will retain the assistance of a QP as required.

4.2 FISH SPAWNING REDUCED RISK TIMING WINDOWS AND STANDARD MITIGATION

The gamefish species (i.e., rainbow trout, brook trout and kokanee) present in Ness Lake typically require suitable stream habitat and gravel substrates to successfully spawn. In rare cases kokanee may spawn in suitable lake shore habitats that have gravel and well oxygenated moving water, but there are no records or observations of spawning kokanee at the NLBC property. There are no streams present on the NLBC property, and the lake shore beach is dominated by sand with some sparse gravel and small pockets of gravel. As a result, it is unlikely that these gamefish will spawn at this location. Suckers have been observed spawning at the beach area each spring (pers.comm. Dave Horton).

Since gamefish species likely do not spawn at the NLBC property and only course fish have been observed spawning, it is likely that the standard "Omineca Reduced Risk Timing Windows for Fish and Wildlife" do not effectively apply to this situation. Since NLBC's goal is to conduct their operations in an environmentally responsible manner, staff will monitor for fish spawning activity on the beach and apply mitigation measures if spawning activity is observed. The primary concern would be related physically disturbing the lake bottom substrate where the fertilized sucker eggs are deposited and must incubate and develop for a given period to time before being able to swim freely and avoid disturbance. The most appropriate mitigation practice would be the installation of signage identifying the spawning site(s) and roping off access to the shoreline near the spawning sites, so the sites are not disturbed from campers wading on the spawning sites. A table provided at the end of this section provides specific guidance related to the timelines that should be followed for cordoning off the sites where the longnose and largescale suckers spawned. Other water-based activities such as the installation of the wharfs and the docking of boats (which is done at slow speed) can still occur as required during the sucker spawning season, with limited risk of significant impact to the fish (in fact the suckers will likely opportunistically used the wharfs for cover for protection from predators).

NLBC will contact a QP registered with the College of Applied Biologists for guidance if gamefish species are observed spawning or if they need assistance identifying the species of suckers spawning. (**Note:** rainbow trout spawn in the spring and kokanee and brook trout spawn in the late summer and/or fall). In the case of the course fish present in Ness Lake, all of them spawn in the spring to early summer at the latest and all sucker eggs generally take from 1 to 3 weeks to hatch depending on the water temperature and another 1 to 2 weeks to develop within the lake-bottom substrate before emerging as free-swimming juvenile fish. As a result, it is suggested that NLBC document the fish species, spawning locations and times and make sure no significant beach use, include wading, swimming or energetic boating activities (e.g., water-ski launching or fast-moving boats) occur near the spawning sites for at least 2 to 7 weeks after spawning occurred. Again, NLBC will request the assistance of a QP registered with the College of Applied Biologists for specific mitigation guidance if necessary.

Freshwater Fishes of British Columbia (McPhail, 2007) has been used as a reference source of information to develop Table 1, which NLBC can use to mitigate potential impacts to fertilized sucker eggs at their beach site. The development rate for the sucker eggs is water temperature dependent and it was noted that longnose

sucker spawning typically starts at 5 degrees after ice out, but in the Cariboo Region of BC some suckers wait until mid June when the water temperature is about 15 to 16 degrees. It is recommended that NLBC monitor and document the spawning activities, including taking water temperatures so they can effectively time when normal use of the lake and beach near the spawning sites can re-commence.

Table 1. Timelines from spawning to the emergence of free-swimming juvenile suckers that can be used by NLBC to implement management procedures to mitigate potential impacts.

Fish Species	Spawning Period	Water Temperature (degrees Celsius)	Duration in gravel before fertilized eggs hatch	In gravel development before juvenile fish emerge and are free swimming	Total duration range after spawning before site area can be disturbed (i.e., kids wading or standing on the lake bottom)
Longnose sucker	May and June	10	11 days	7–14 days	18–25 days
		16	7 days	7–14 days	14–21 days
Largescale sucker	May and June	10	20 days	11–13 days	32–34 days
		16	7 days	11–13 days	18–20 days

For general guidance, the BC Ministry of Water, Land and Resource Stewardship's "Standards and Best Practices for Instream Works" (which includes the Omineca Reduced Risk Timing Windows for Fish and Wildlife) is a useful document to consult. The relevant section can be found at the following link: https://www.env.gov.bc.ca/wld/documents/bmp/omineca_tw_bmp.pdf.

5 VEGETATION MANAGEMENT AND MAINTENANCE ACTIVITIES

Section 5 has been divided into three subsections: 5.1 Danger Tree Management, 5.2 Firesmart Management, and 5.3 Vegetation Maintenance – Roads, Trails, Parking Lots and Campsites. The focus of this section is the management of vegetation ranging from the full remove of danger trees to the brushing/pruning of vegetation that encroaches along the edges of infrastructure such as roads and trails.

5.1 DANGER TREE MANAGEMENT

NLBC's site management approach has consistently prioritized safety first closely followed by environmental stewardship. This includes the long-standing implementation of standard danger tree management and Firesmart measures. NLBC will continue these essential practices, ensuring that appropriate environmental management and mitigation measures are integrated into all related work. This commitment supports NLBC's overarching goal: to provide a safe site while maintaining a high level of biodiversity within the camp property.

NLBC is planning on implementing a five-year danger tree management plan that focuses on the safety of its campers and staff. The camp experiences extreme winds and thunderstorms especially during the summer camping season, presenting significant overhead hazards from large, mature trees (e.g., paper birch and Douglas-fir) that are growing amongst the buildings. Notably, several large paper birch trees within the developed camp areas exhibit dead branches, rot, or are leaning precariously over buildings and many Douglas-fir are located directly within falling distance of buildings (for examples, refer to Appendix Photo A-1, Appendix Photo A-5, Appendix Photo A-10, Appendix Photo A-11, Appendix Photo A-13 and Appendix Photo A-14). Recognizing the immense "stored energy" these trees hold and the direct potential danger they pose to occupied cabins and buildings, NLBC's core objective is to strategically removal danger trees throughout the camp and other trees they consider high-risk located within 30 m of camp infrastructure. This proactive measure aims to eliminate the immediate threat to people, especially around the cabins where campers are sleeping (D. Horton, pers. comm.).

Beyond immediate hazard reduction, this plan addresses NLBC's long-term vision for a diverse ecosystem. A key goal is to transition the forest structure towards smaller, more wind-firm native tree species. NLBC's goal will be to manage new tree growth within 30 m of camp buildings to achieve a desirable size (from a safety perspective); specifically targeting an upper size limit that trees will be allowed to grow to before removal, which is a diameter at breast height (DBH) of 25-30 cm and a height of no more than 12 m (D. Horton, pers. comm.). This plan will prioritize replanting initiatives that promote a diversity of species on-site.

NLBC aims to establish a system that carefully balances safety requirements with minimizing environmental and habitat impacts. This holistic approach ensures that while trees are removed for safety, the replacement process minimizes disruption and contributes to conserving the high degree of biodiversity that is a key component of the camper experience. NLBC recognizes that QP's will be required as appropriate throughout the duration of their 5-year danger tree management work to assist with environmental assessment and

planning works to mitigate environmental impacts (e.g., pre-cutting environmental assessments, site specific environmental management plans/advice and restoration planning advice).

5.1.1 DANGER TREE MANAGEMENT PROTOCOLS

To address danger tree risks and implement environmental mitigation, NLBC will adhere to the following management protocols:

1. **Professional Assessment:** Retain a certified Danger Tree Assessor to conduct assessments of potentially hazardous trees on a set schedule or as specific situations require. NLBC will also retain the assistance of QPs registered with the College of Applied Biologists and/or the Forest Professionals of BC as required for environmental and forestry related advice and guidance.

2. **Prioritize Maintenance over Removal:** Whenever possible, and if there isn't a significant safety or risk concern related to the tree, prioritize maintenance by trimming damaged or rotten branches and limbs rather than complete tree removal.

3. **Tree Removal Criteria:** Trees will be removed if a wildlife danger tree assessment identifies a significant safety concern or risk for people or building infrastructure.

    - **Birch Clump Management:** It is common for birch trees to grow in "clumps" with many stems sprouting from a single root mass. NLBC often utilizes this trait by only removing the stems that are considered a danger, leaving the remaining stems to continue growing and allowing new stems to sprout from around the root mass area (see Appendix Photo A-15 and Appendix Photo A-16).

4. **Stump and Root Mass Retention:** For any species of tree that is cut down, NLBC will try to leave as many stumps and root masses intact, as possible. This practice has been implemented at NLBC for many years with excellent results (see Appendix Photo A-15 and Appendix Photo A-16 for examples). Retaining the stump and root mass helps to:

    - Limit soil erosion potential.
    - Provide nursery micro-habitats for the establishment of new vegetation.
    - Allow new shoots to sprout from the stumps and/or roots of deciduous trees such as black cottonwood, trembling aspen, paper birch, or willow.

5. **Large Log Retention:** Instead of removing all large Douglas-fir logs, some will be strategically left in stable areas. These logs offer important microclimates for new trees to establish and grow, retain moisture, contribute to nutrient cycling, and provide habitat for a variety of species including amphibians, small mammals, insects, and fungi.

6. **Comprehensive Replanting and Forest Structure Development:** NLBC will implement a comprehensive replanting program to compensate for removed danger trees and to achieve the

desired long-term forest structure. This system is built around a cyclical tree management and replacement strategy, precisely tailored to maximize the time trees remain on site before reaching height limits.

- **Replacement Ratios:**
  - **Development Permit Area Zone** (300 m wide zone from Ness Lake shoreline inland, excluding the 15 m Riparian Zone): Seedlings will be replanted at a 5:1 replacement ratio within 12 months of tree removal.
  - **Riparian Zone** (15m wide zone along shore of Ness Lake): Seedlings will be replanted at a 10:1 replacement ratio within the riparian zone, within 12 months of tree removal.
  - **Note:** NLBC will determine what tree species is most appropriate for the site and as a result may not plant the same tree species as was removed.
- **Species Selection & Professional Advice:** The exact location, species to be planted, and timing will be determined based on advice from a Qualified Professional (QP), either a member of the College of Applied Biologists or Forest Professionals of BC.
  - **Conifer Selection:** NLBC will plant Douglas-fir, lodgepole pine, and white spruce, sourced from local, adapted stock. Douglas-fir is particularly valued for its wind resistance, deeper root systems, and fire resistance when mature. White spruce seedlings will be selected for wetter growing sites.
  - **Deciduous Complement:** Existing trembling aspen will be allowed to sucker from their root systems, as these deciduous stands naturally enhance fire resistance and provide excellent wildlife habitat. Paper birch will also be planted from rooted stock, though careful consideration will be given to their placement, ensuring they are away from buildings and high-traffic areas due to their tendency to shed lots of branches during windstorms.
  - **Riparian Species:** Typical riparian tree species such as black cottonwood, Sitka alder, paper birch, or white spruce will be prioritized for planting within the 15 m riparian zone. Douglas-fir may also be planted in appropriate, well-drained sites within this zone.
- **Planting Season:** Most replanting is expected to occur in the spring.
- **Wider Initial Spacing:** Conifers will be planted a minimum of 4 to 5 m apart. This generous spacing is important as it encourages stronger, more extensive root systems, leads to thicker, more tapered stems that resist wind, and promotes bushier crowns by allowing ample light and space. The property's natural wind exposure from Ness Lake, combined with this wider spacing, should inherently encourage the desired wind-firm development.
- **Proper Planting Technique:** Ensure the root collar is at or slightly above ground level, roots are straightened, soil is firmly tamped, and thorough watering is provided

immediately after planting and as required (e.g., during dry periods or drought) during the first few growing seasons.

- **Diverse Age Class:** This ongoing planting, coupled with cyclical harvesting, will create a mosaic of trees of varying ages, from young seedlings to those nearing their maximum size. This diverse age class and stand structure will significantly enhance the stand's overall stability against wind and add to the camp's ecological diversity.

7. **Desired Size Management:** New trees will be managed to grow to a maximum of 30 cm DBH and 12 m in height. Once they reach this target, they may be harvested, initiating the next replacement cycle.

8. **Ongoing Tree Management and Shaping for Wind-Firmness and Controlled Growth:** NLBC is committed to active tending for the ongoing maintenance and shaping of these trees and will seek guidance from QPs as required to appropriately implement these procedures. Some examples of potential maintenance and shaping approaches include:

    - **Leader Cutting (Topping):** Once a conifer is well-established but still significantly below the 12 m height limit, the main leader (the terminal shoot at the very top) can be deliberately cut. This redirects energy into lateral branches and, crucially, into the trunk's diameter (DBH).
        - For Douglas-fir and spruce, cutting the leader above a strong lateral branch can encourage a new, less dominant leader or a more rounded crown.
        - For lodgepole pine, cutting new shoots in spring can stunt height.
        - Optimal time for leader cutting is generally late winter or early spring during dormancy for Douglas-fir and spruce, and during active growth in late spring for lodgepole pine.
    - **Aggressive Formative Pruning:** Actively shaping the tree's crown from a young age also significantly contributes to girth and wind firmness. This involves lightly pruning the tips of the main leader or upper branches to encourage more lateral branching, creating a wider, denser crown on a more stable base.
    - **Crown Thinning:** As trees mature, dense branches within their crowns can also be thinned to improve wind flow and reduce the overall fuel load.
    - **Watering:** New trees should be watered, especially during their first year after planting or during drought, to support robust root establishment.
    - **Weed and Brush Control:** Weeds and brush will be controlled around young trees to reduce competition for resources (sun, water, and nutrients).
    - **Continuous Monitoring:** Ongoing monitoring of tree growth will allow NLBC to adapt management practices as needed, always focusing on optimizing height and DBH development to maximize the time trees remain safely on site.

9. **Protecting Nesting Birds:**

   - **Timing Window:** Plan to conduct all vegetation maintenance and removal within the Omineca Region's (7A) standard Timing Window for the Protection of Nesting Birds (August 1 through to April 30). The primary goal is always to avoid disturbing active nests.
   - **Work During Nesting Period (May 1 to July 31):** If vegetation maintenance or removal is unavoidable during this period, NLBC will retain a QP, as required, to conduct nesting bird sweeps and determine mitigation strategies if occupied nests are discovered. Common mitigation measures may include:
     - Pausing activities until nests are no longer occupied;
     - Establishing an appropriate no-work buffer zone around the nest;
     - Modifying work plans to avoid nests and buffer zones entirely, potentially by adjusting the project task or sequence of work; and,
     - Additional permitting may be required.

     See Sections 4, 4.1 and 4.1.1 for additional details regarding timing windows and standard mitigation practices.

10. **Protecting Spawning Fish (Riparian Zone):**

    - **Timing Window:** Conduct all vegetation maintenance and removal work located within the 15 m wide riparian zone between August 1 and April 30 to limit the risk of impacting spring-spawning fish species observed near the shoreline. Suckers, a spring-spawning fish species have been observed spawning in front of the NLBC most years. Depending on water temperature, it typically takes a few weeks for sucker eggs to hatch and mature into free swimming juvenile fish (See Table 1 for management options). No work should be undertaken that could significantly disturb the spawning fish or their developing eggs (spawning and egg development typically occurs during May and June).
    - **Work During Sensitive Period:** If vegetation maintenance or removal within the riparian zone is required during this sensitive period for safety related reasons, NLBC will retain the services of a QP registered with the College of Applied Biologists for guidance.

This cyclical and comprehensive system will allow NLBC to create a property that is significantly safer for people, highly wind-firm, and boasts rich ecological diversity and habitat value.

5.1.2 RECORD KEEPING LOG – REMOVAL AND REPLANTING OF TREES

While the exact number of trees requiring removal over the next five years is undetermined, NLBC will maintain a comprehensive record of all trees removed. This record will include documentation of the reasons for tree removal, environmental mitigation measures employed for each tree removed and the date these

measures were completed. Table 2 provides an example of the information that will be recorded within the log.

Table 2. Information recorded within the record keeping log for tree removal.

Unique Id. #	Date Tree Removed	Tree Species	Number of Stems Removed	Location of Tree (s) (UTM obtained from Google Earth or GPS)	Reason for Tree Removal	Environmental Mitigation Measures	Date Environmental Mitigation Measures Completed and appropriate notes
1	March 15, 2024	Birch	2		Rotten trunk	Left root mass and short stump in place as a nursery site that will allow for existing seeds and shoots to sprout. Planted 10 Douglas-fir seedings in the general vicinity.	March 15, 2024
2	March 15, 2024	White Spruce	1		Wind damage	Left root mass and short stump in place – will plant 2 white spruce and 3 Douglas-fir seedlings near site.	To be completed in spring 2025
3	March 30, 2024	Black Cottonwood	1		Leaning over building	Left root mass and short stump in place – allow new suckers to shoot from the stump/roots and planted 5 trees (1 cottonwood, 3 spruce, and 1 Douglas-fir)	March 30, 2024
4	May 5, 2025	Douglas-fir	1		Rotten trunk	Located in 15 m riparian area. Left root mass and short stump in place – will plant 5 Douglas-fir and 5 willow seedings at appropriate locations within the riparian area.	To be completed in spring 2025

5.2 FIRESMART MANAGEMENT

The increasing frequency and intensity of wildfires in British Columbia pose a significant threat to both communities and infrastructure. Consequently, implementing Firesmart practices around buildings and cabins has become a critical preventative measure. The primary objective of Firesmarting is to create a defensible space, thereby reducing the likelihood of ignition from embers and slowing the spread of wildfire. Common Firesmart prescriptions involve removing flammable vegetation such as conifers, dense brush, and debris within a 10 to 30-m radius of structures. Additionally, pruning lower tree branches and regularly clearing roofs and gutters of combustible debris are standard practices. While these essential tasks are undertaken, it is crucial to address important environmental management considerations. This includes being mindful of wildlife habitat features and adhering to windows of least risk for nesting birds. For NLBC, balancing wildfire risk reduction with environmental stewardship is a key priority. When implementing Firesmart measures, NLBC will adhere to the management procedures and measures concerning bird nesting outlined in Sections 4.1 and 4.1.1, in addition to the following protocol:

1. **Firesmart Assessment:** To be completed by a qualified assessor, with knowledge of bird nest protection and management protocols.
2. **Protecting Nesting Birds:**
    - **Timing Window:** Plan to conduct all Firesmart vegetation removal within the Omineca Region's (7A) standard Timing Window for the Protection of Nesting Birds (August 1 through to April 30). The primary goal is always to avoid disturbing active nests.
    - **Work During Nesting Period (May 1 to July 31):** If vegetation removal is unavoidable during this period, NLBC will retain a QP, as required, to conduct nesting bird sweeps and determine mitigation strategies if occupied nests are discovered. Common mitigation measures may include:
        - pausing activities until nests are no longer occupied;
        - establishing an appropriate no-work buffer zone around the nest;
        - modifying work plans to avoid nests and buffer zones entirely, potentially by adjusting the project task or sequence of work; and,
        - Additional permitting may be required.

        See Sections 4, 4.1 and 4.1.1 for additional details regarding timing windows and standard mitigation practices.

5.3 VEGETATION MAINTENANCE – ROADS, TRAILS, PARKING LOTS AND CAMPSITES

To provide ongoing safety and accessibility, NLBC conducts regular vegetation maintenance along its roads, trails, parking lots, and campsites. The work involves both manual and mechanical brushing and is performed on an annual or as-needed basis.

Brushing and pruning will adhere to the following standard widths:

- **Roads:** Up to 1.5 m from each road edge.
- **Trails:** Up to 1 m from each trail edge.
- **Parking lots:** Up to 2 m from the parking lot edge.
- **Campsites:** Up to 1.5 m from the campsite perimeter.
- **Note:** To minimize environmental impacts, NLBC will endeavor to brush and prune vegetation only to the minimum width necessary to meet its safety and accessibility requirements, ensuring the cleared area does not exceed the maximum widths listed above.

The maintenance plan incorporates key environmental safeguards, particularly for sensitive areas. Within the 15m riparian zone, no significant vegetation clearing is anticipated, as the existing infrastructure is well-established and meets the camp's needs. Any pruning required within this zone will be limited to the absolute minimum necessary for maintaining infrastructure such as trail edges.

When conducting brushing, NLBC will adhere to the management procedures and measures concerning bird nesting outlined in Sections 4, 4.1 and 4.1.1, in addition to the following protocol:

1. **Timing:** Considering the importance of protecting nesting birds, the late summer/fall (August onwards after the main nesting period ends) and winter months are generally the most suitable and environmentally beneficial times for brushing. This timing avoids the critical bird nesting period and can offer operational advantages such as better visibility while cutting stems. In addition, managing vegetation, by cutting it in the late summer or early fall targets a vulnerable stage in the plant's annual life cycle. This action takes place after the plant has used considerable energy during its main growth period, but before it can fully rebuild and store enough energy reserves needed for winter survival and for new growth the next spring. As a result, this specific timing puts maximum stress on the plant, reducing its ability to regrow vigorously in the following growing season, thus potentially limiting the need to conduct vegetation management on an annual basis. This approach is especially useful in managing road and trail side vegetation and should be prioritized for any brushing/pruning work that occurs outside of the 15 m riparian zone. It is recommended that the limited pruning work that needs to be done in the riparian zone is conducted in the winter to make sure the vegetation and regrowth is not significantly impacted in this environmentally sensitive area.
2. **Protecting Nesting Birds:**
    - **Timing Window:** Plan to conduct all vegetation maintenance or removal within the Omineca Region's (7A) standard Timing Window for the Protection of Nesting Birds (August 1 through to April 30). The primary goal is always to avoid disturbing active nests.
    - **Work During Nesting Period (May 1 to July 31):** If vegetation maintenance or removal is unavoidable during this period, NLBC will retain a QP as required, to conduct nesting bird sweeps and determine mitigation strategies if occupied nests are discovered. Common mitigation measures may include:

- pausing activities until nests are no longer occupied;
- establishing an appropriate no-work buffer zone around the nest;
- modifying work plans to avoid nests and buffer zones entirely, potentially by adjusting the project task or sequence of work; and,
- Additional permitting may be required.
  See Sections 4, 4.1 and 4.1.1 for additional details regarding timing windows and standard mitigation practices.

6 RUNOFF, EROSION AND SEDIMENT CONTROL FOR GENERAL SITE MAINTENANCE ACTIVITIES (ROADS, TRAILS, AND PARKING LOTS)

The maintenance of the roads, trails and parking lots will primarily focus on maintaining the running surfaces via grading and the filling of potholes, along with drainage (runoff control) management.

Specific Environmental Mitigation Practices:

- Most roads are located within the 300 m Development Permit Area zone, but most do not have any significant risks related to the transport of sediment laden runoff water to environmentally sensitive receiving environments such as Ness Lake. One exception is a short section (approximately 60 m) of sloped road that enters the swimming beach area from the west. Minor surface erosion was noted on the road surface during the May 2024 field assessment, it appeared that none of this sediment reached Ness Lake, but it is important to minimize this risk since the main spawning area for suckers is located very close to this location. It is recommended that three shallow water bars or berms be placed across the road running surface (spaced approximately 20 m apart), starting near the beach. These water bars or berms will direct any runoff into the vegetation, reducing the volume of water that can reach the bottom portion of the road, thus limiting the future risk of sediment laden water reaching Ness Lake. It must be noted that there is a very limited risk of sediment laden water reaching Ness Lake at this time because the primary sediment is sand (which is difficult to transport and settles easily due to the large grain size) and the beach area has a shallow gradient that will help with the settlement of suspended sediment. As an extra measure of safety, NLBC should consider building a simple sediment trap near the toe of the road slope to capture and retain any sediment laden water before it can reach Ness Lake. There are two design options for the sediment trap, (1) excavate a shallow 0.4 m deep by 1.5 m wide by 5 m long sump with some rock armouring protection on the outlet end; or, (2) construct a sediment trap with three baffles (0.3 m straw wattles or rock can be used) installed perpendicular to the water discharge path. If installed, NLBC should monitor and maintain the sediment trap and remove accumulated sediment when the trap is half full. NLBC should also monitor this section of road during spring melt and following significant rain events and perform any required maintenance to make sure the drainage structures and the road surface directs water and especially sediment laden water to stable well vegetated areas that will not result in impacts to fish and fish habitat. **Note:** See Appendix Map B-1 for the proposed locations of the water bars and sediment trap.
- Grade all roads in a manner that will shed runoff water toward natural drainage areas and depressions as much as possible. Were possible, road surfaces should be crowned, and windrows (grader berms) should be avoided especially on roads that have reasonably sized catchment areas or roads that lead directly towards Ness Lake. The goal is to limit the concentration of flowing water, so it does not have the power to cause significant erosion and result in the deposition of

sediment in environmentally sensitive areas. Effective water runoff management is important to limit the risk of sediment laden water reaching environmentally sensitive receiving environments such as Ness Lake.

- The following list provides some recommended tasks that should be completed by NLBC:
    - Regular inspection of graded surfaces and water bars is crucial, especially after heavy rainfall and during spring melt. Things to look for and address include significant rutting from vehicle tires that channel water and increase the volume of concentrated flow and erosion.
    - Remove sediment buildup from water bar channels and ditches as required.
    - Repair or reconstruct damaged water bars promptly.
    - Regrade the road surface as needed to maintain the proper crown or slope.
    - Repair any road surface that shows evidence of erosion by concentrated flowing water (**Note:** Usually these kinds of issues can be addressed using a shovel to re-establish a path for the water to flow that does not result in significant erosion.)
    - Make sure outflow discharge points or the outlet of tail-ditches remain stable and vegetated or protected by a rock energy dissipation structures.

By implementing these BMPs, NLBC will significantly reduce erosion from their roads, parking lots and minimize future maintenance work and limit the risk of environmental impact. Finally, NLBC may want to considered upgrading some of the steeper roads on the property by installing non-woven geotextile covered by gravel. This will provide excellent erosion protection and will minimize future maintenance work on these sections of road.

7 PROPOSED CONSTRUCTION PROJECTS

NLBC plans on constructing four types of projects over the next five-year period. Specifically, the construction of cabins/covered shelters, storage facilities, a new trail and a new road (to access the northern portion of their properties). (Note: A majority of the new road will be built outside of the Lakeshore DPA). Most of these works will occur within the 300 m Lakeshore DPA, with the portable non-permanent covered shelters placed on the beach within the 15 m Riparian Zone. It should be noted that all the structures will be portable and installed in a manner that limits environmental impacts. See Sections 7.1, 7.2, 7.3 and 7.4 for specific details and environmental mitigation measures that will be followed.

7.1 CABINS AND COVERED SHELTERS

NLBC requires more cabins to accommodate campers and intends to provide additional covered shelters (offering protection from inclement weather) for campers participating in outdoor education and group activities. NLBC plans to install up to 28 non-permanent, prefabricated cabins and shelters, which are designed to be portable. The cabins and shelters will have a footprint of 10 x 10 feet (or equivalent area of 100 square feet) or less and it is envisaged that they will be constructed with wood, covered with metal roofing, be placed on temporary footings (e.g., cement deck pier blocks) and anchored if required (e.g., using screw anchors) in a manner that limits site disturbance. NLBC will ensure that the cabins and shelters meet appropriate design criteria. The project will prioritize limiting environmental impacts by placing up to 10 of these units (i.e., cabins and shelters) on existing cleared pads within the 300 m Lakeshore DPA, and 10 covered shelters on existing beach sites within the 15 m Riparian Zone.

Additionally, NLBC may install up to eight structures in the less-developed northern section of the property, outside the DPA. Should this option proceed, localized clearing for new pads will likely be required. In that event, NLBC will minimize vegetation removal and strictly adhere to all mitigation measures outlined in this Environmental Management Plan (EMP), such as observing the Reduced Risk Timing Windows for breeding birds.

7.2 STORAGE FACILITIES

To address the need for additional storage capacity, NLBC plans to install up to four metal shipping containers at the camp within the 300 m Lakeshore DPA. To limit environmental impact the shipping containers will be install on existing cleared areas that provide a suitable pad.

7.3 NEW TRAIL (PROPOSED)

NLBC plans to construct one new trail within the Development Permit Area in the next five years to connect campsites and infrastructure located in the lower and upper portions of the camp. The proposed trail will be

in the western section of the camp and will be approximately 145 m long. A corridor up to 2 m wide will be cleared, resulting in a total clearing area of approximately 290 m², with a final running surface of 1.2 m (Table 3).

While the exact trail location has not been determined, NLBC commits to retaining a QP that is a member of the College of Applied Biologists to conduct a detailed environmental assessment prior to construction. This assessment will inform the final siting of the trail and establish necessary environmental mitigation measures. NLBC acknowledges that this process may reveal environmental concerns that could delay the project for further mitigation or, if impacts cannot be adequately mitigated, lead to its cancellation.

Table 3. Trail specifications.

Trail Structure	Specifications	Glossary of Trail Structure Terms
Surface	1.2 m	Usable trail surface width.
Trailbed	Up to 1.5 m	Total width of placed material. Also know as sub-base.
Trailway	Up to 1.8 m	Total width of disturbed area resulting from trail construction. May include minor ditching and cut/fill slopes.
Clearing Limit	2.0 m	Total width of the trail corridor to be cleared of vegetation and other debris.
Vertical Clearing Limit	3.6 m	Height of trail corridor to be cleared of vegetation and other debris.
Surface Material	Native material	The material used to construct the tread of the trail.

7.4 NEW ROAD (PROPOSED)

NLBC plans to construct a new low-use gravel road to provide access to the northern portion of its four properties which is located outside of the Lakeshore DPA. This area currently lacks vehicle access, relying only on rudimentary trails. This road will help facilitate the maintenance and development of existing and new low impact infrastructure, including campsites and recreational zones like paintball areas and will enhance site safety, as it will significantly improve capabilities for emergency response in the event of injury to a camper and for forest fire fighting.

The proposed road will start at the edge of an existing parking lot near the zipline site and will go for approximately 40 m before leaving the Lakeshore DPA boundary (300 m from Ness Lake) and entering the northern quarter of the NLBC properties (See Appendix Map B 1 titled Ness Lake Bible Camp Property Overview which provides the location of this proposed section of road). This 40 m long section will follow an existing trail, thus limiting the amount of vegetation disturbance within the DPA. NLBC is hoping to build

as much of the road as possible on existing trails to limit the removal of vegetation, but this will be determined during the detailed planning phase of this project. The preliminary specifications/goals for the road are to construct a 4-5 m wide gravel running surface with appropriate pullouts and drainage structures, within a 6-8 m cleared corridor. A multidisciplinary team of Qualified Professionals (QP) (e.g., engineer and biologist) will be engaged as required to plan and design the new road to meet engineering and environmental requirements.

8 RESTORATION

Two sites require restoration: an eroding section of bank that leads down to Ness Lake and an eroding section of roadside slope located near the western end of the beach. Both sites have been impacted by foot traffic.

Note: EDI has volunteered to donate professional time to assist NLBC crews to conduct the restoration works.

8.1 SITE 1 – ERODED BANK

While NLBC has used its campsites for many years with minimal environmental impact, an exception exists at Campsite 9, located on the west side of the camp. At this site, foot traffic from campers has damaged a bank that leads directly to the edge of Ness Lake, causing significant erosion and the loss of vegetation on a slope within the 15 m Riparian Zone. The affected area is approximately 10 m x 10 m, though some shrubs like red-osier dogwood, alder, and Saskatoon berry, as well as a few Douglas-fir and black cottonwood trees, remain in places (see Appendix Photo A-22 to Appendix Photo A-25). To prevent further impact, NLBC has roped off this area to restrict access. NLBC plans on restoring this site in the spring of 2026.

Restoration Prescription:

- 10 m long coir log (Quantity 3: 3 m long by 0.3 m diameter coir logs required) will be staked along the toe of the slope at the edge of Ness Lake (near the waterline) to limit wave erosion. A brush mattress (bioengineering structure) constructed with willow (*Salix* spp.), red-osier dogwood and black cottonwood live cuttings that are in a dormant state (i.e., no leaves or roots growing) will be installed directly above the coir log in a cross-weave fashion, with the stem ends planted as close as possible to the water table. The live cutting stems will be approximately 0.8 to 1 m in length and will be spaced approximately 0.2 m apart; approximate 50 live stakes will be required to build this brush mattress over the 10 m wide toe of the eroding bank. The following web links provide general examples of this style of restoration work:

  (https://newsrelease.adfg.alaska.gov/index.cfm?adfg=streambankprotection.siltation) and (https://cascade.ca/wp-content/uploads/2024/01/WINFAB-Coir-Log-Data-Sheet-2018.pdf).

- Eroding slope will be recontoured to a stable angle of repose and new topsoil and/or compost will be used to cover the entire 10 m x 10 m eroded area. The topsoil will be approximately 0.15 to 0.2 m thick. Topsoil will help promote the regrowth of riparian vegetation and limit the risk of erosion and the transport of sediment downslope to Ness Lake.
- Three 0.23 m diameter straw wattles will be installed on contour across the entire slope on a 2 m wide spacing starting approximately 2 m uphill from the top of the coir/brush mattress structure (located near the toe of the slope) and ending approximately 2.5 m below the slope crest. The straw wattles work very well to limit soil erosion and to capture any sediment that is transported

down slope. The 0.6 m long willow and red-osier dogwood live stakes and a combination of rooted stock shrubs (i.e., alder, willow, red-osier dogwood, Saskatoon, etc.) and a few trees (i.e., white spruce, Douglas-fir, black cottonwood, etc.) will be planted on a 1 m x 1 m spacing over the entire slope. The number of stems planted will be approximately 100.

- It is recommended that NLBC staff monitor the new vegetation and water the site at appropriate intervals during the first growing season to maximize the amount of vegetation that is successfully established.

8.2 SITE 2 – ERODED SLOPE

A section of slope directly uphill from the road section that provides access to the west end of the beach has been damaged by foot traffic. Soil erosion and a loss of vegetation is evident. The site has been cordoned off with rope to restrict access. The site is approximately 20 m long by approximately 5 to 10 m wide. It should be noted that a lot of vegetation is still growing on this slope, but the area where foot traffic was focused has been impacted and erosion of the sandy soil was prevalent. The most common vegetation present at this site was common juniper with lesser amounts of kinnikinnick, soopolallie, Rocky Mountain juniper and Douglas-fir (see Appendix Photo A-12 and Appendix Photo A-20). NLBC plans on restoring this site in the spring 2026 or 2027.

Restoration Prescription:

- Continue to cordon off the impacted area to restrict access to this site to limit further damage and erosion.
- Because the site is an exposed, dry south facing aspect site with sandy soils, it will be a bit of a challenge to restore the site. It is recommended that compost is mixed into the exposed sandy soil to help retain more moisture, add some additional nutrients and help reduce the surface erosion. Since common juniper is currently the dominant plant species at this site, it should be used to restore the site. Rooted stock is available from nurseries in BC. It is estimated that 30 common juniper plants will need to be planted to restore the impacted areas within this site.
- It is recommended that NLBC staff monitor the new vegetation and water the site at appropriate intervals during the first growing season to maximize the amount of vegetation that is established.

9 ENVIRONMENTAL MANAGEMENT PROCEDURES RELATED TO PETROLEUM PRODUCTS

NLBC takes precautions to limit the risk of petroleum products impacting the environment. The majority of NLBC's focus is related to the refueling of equipment which will be discussed in detail in section 9.1 but also related to the hydraulic fluid that they use in their own equipment. Specifically, NLBC intends to use biodegradable hydraulic fluid for any of their own equipment and will try to hire equipment contractors that use the same.

9.1 REFUELING EQUIPMENT

NLBC has a fleet of equipment that is used daily during the operation of the camp. This equipment includes trucks, UTVs, skid-steer loaders, boats (with both inboard and portable fuel tanks), plows, etc. which all require refueling. Except for trucks, all equipment is refueled on site. NLBC adheres to the following procedures when refueling.

- All refueling operations are fully supervised so spills can be prevented, or immediate action can take place if a spill inadvertently occurs.
- Appropriately sized and equipped spill kits are located at each refueling site and are accessible for immediate deployment if required. This includes a larger spill kit with floating booms that can contain a spill into Ness Lake.
- All mobile pieces of equipment except for boats are refuel more than 30 m away from Ness Lake (to meet Fisheries and Oceans Canada's standard best practices guidance).
- All portable outboard motor fuel tanks are refueled on land at a pre-established site in a drip tray that has containment capacity that is greater than the volume of the tank being. This site is located near the dock site, just outside of the 15 m Riparian Zone.
- All boats with inboard fuel tanks are refuel at the dock using a hose and nozzle connected to a portable fuel tank. The portable fuel tank (Tidy Tank) which contains hundreds of litres of fuel is mounted on a trailer that is hauled to the beach, where the hose is then extended down the dock to refuel the boat. The Tidy Tank is hauled away from the beach after refueling is complete and parked at a standard site more than 30 m from Ness Lake. Since there is a risk of fuel reaching the fish bearing waters of Ness Lake, extra contingency measures are ready including having 2 staff members always involved with the refueling so one can shut off the flow of fuel and implement spill containment and clean up measures (e.g., booms and absorbents) immediately should a spill occur.

APPENDICES

APPENDIX A PHOTOGRAPHS (FROM FEBRUARY 16 AND MAY 16, 2024)

Appendix Photo A-1. Typical view of NLBC grounds around the cabin sites.

Appendix Photo A-2. Beach area looking west.

Appendix Photo A-3. **Campsite #6 on western side of NLBC property.**

Appendix Photo A-4. **Campsite #3 east of the beach. Note the mature Douglas-fir and typical deciduous riparian vegetation that is retained to the crest of the lake bank.**

Appendix Photo A-5. Administration office and playground. Note birch tree and stump in center of photo with new vegetation establishing.

Appendix Photo A-6. .22 rifle and archery ranges. The primary septic field for the camp is under the flat grass area on the right side of photo.

Appendix Photo A-7. Shop and maintenance facility.

Appendix Photo A-8. Metal shipping containers used for storage located beside the shop.

Appendix Photo A-9. **Canoe rack. Note mature black cottonwood trees in the riparian area.**

Appendix Photo A-10. **Mature birch trees commonly found throughout the camp. Note the cut branch that once leaned over the cabin. It is likely that this entire tree will need to be cutdown in the future since it is leaning toward the cabin.**

Appendix Photo A-11. **Mature birch trees commonly found throughout the camp. Note the stump directly beside the mature birch tree and the immature conifer establishing at this site. It is likely that this large stem that is leaning toward the cabin will need to be cutdown in the future, but the three smaller stems in the same root mass will be retained.**

Appendix Photo A-12. **East view towards beach. Note common juniper in roped off areas on the left (this is Restoration Site 2) and the shrubs growing on the right within the 15m riparian zone. Three water bars and a sediment trap should be installed on this section of road.**

Appendix Photo A-13. **Broken limbs from birch trees on cabin roof.**

Appendix Photo A-14. **Trembling aspen tree that has visible signs of rot (conks present) near cabin. As a safety measure, this tree will need to be removed.**

Appendix Photo A-15. **Rotten mature birch stem removed with healthy stem left. This has provided a growing site for new stems and other plants.**

Appendix Photo A-16. **All mature stems of this birch were rotten and needed to be removed for safety. The root mass and stumps were left in place and now have created a growing site for new vegetation to establish.**

Appendix Photo A-17. **Road maintenance is required to make sure the road surface is suitable for traffic and that sediment transported from the road network can't enter environmentally sensitive areas.**

Appendix Photo A-18. **Spawning suckers on May 16, 2024.**

Appendix Photo A-19. **Spawning suckers May 16, 2024.**

Appendix Photo A-20. **Slope on road that leads to beach. This site has been roped off to keep campers out and will be restored with vegetation in the future (Restoration Site 2). Note the erosion and loss of vegetation.**

Appendix Photo A-21. **Uphill view of road that leads to the beach. Note the sand surface that needs monitoring and maintenance, so sediment does not get transported to Ness Lake from this section of road. Three shallow water bars or berms will be installed to direct water to the roadside vegetation.**

Appendix Photo A-22. **Crest of an eroding bank on Ness Lake at Campsite 9. Note: This campsite has been closed to campers and will be restored (Restoration Site 1).**

Appendix Photo A-23. **Crest of eroding bank on Ness Lake (Restoration Site 1).**

Appendix Photo A-24. **Eroding bank on Ness Lake (Restoration Site 1).**

Appendix Photo A-25. Toe of eroding bank on Ness Lake (Restoration Site 1).

APPENDIX B MAPS

Appendix Map B-1. Map 1. Ness Lake Bible Camp property overview.

Map 1. Ness Lake Bible Camp Property Overview

N

492800 493000 493200 493400

5987000 5986800 5986600

cabin 19
campsite 14
organic disposal area
archery range
.22 rifle range
zipline
outhouse 1
campsite 13
campsite 16
playing field (septic field)
shop
water reservoir
storage containers
main parking
paintball and programming area
fuel storage shed
campsite 12
covered storage
outdoor bathroom block 2
welcome center
secondary parking
cabin 17/18
small cabin 5
cabin 9/10 (with washrooms)
ropes course and programming area
toboganning hill
campsite 15
cabin (atco)
cabin 13
playground 1
electrical shed 2
cabin 11
cabin 6
campsite 11
guest lodge
cabin 12
cabin 5
small cabin 4
campsite 10
electrical shed 1
gym
cabin 14
cabin 4
wood processing area
cabin 15
cabin 7/8
staff house 1
cabin 16
campsite 5
garage
outhouse 2
cottage 1
storage shed
cabin 3
outdoor bathroom block 1
dining hall
cabin 2
ropes course and programming area 2
campsite 6
cabin 1
staff house 2
cottage 2
small cabin 1
small cabin 2
small cabin 3
staff house 3
tower structure
waterfront lodge
campsite 8
wellhead/pump station
pole shed
garden
wharf winter storage area
campsite 4
campsite 3
playground 2
sediment trap
swing ride
campsite 7
Restoration site 2
summer dock location
campsite 2
campsite 9
sucker spawning area
Restoration site 1
campsite 1

0 50 100 150 200
Meters

Map Scale = 1:2,100 (printed on 11 x 17)
Map Projection: NAD 1983 CSRS UTM Zone 10N

Legend

- Campsite
- Cabins
- Storage Locations
- Main Buildings
- Other Notable Locations
- Trail
- Proposed Trail (2-3m width)
- Proposed Road
- Proposed Water Bar
- Watercourse
- Waterbody
- Restoration Site
- Development Permit Zone
- 15 m Riparian Buffer

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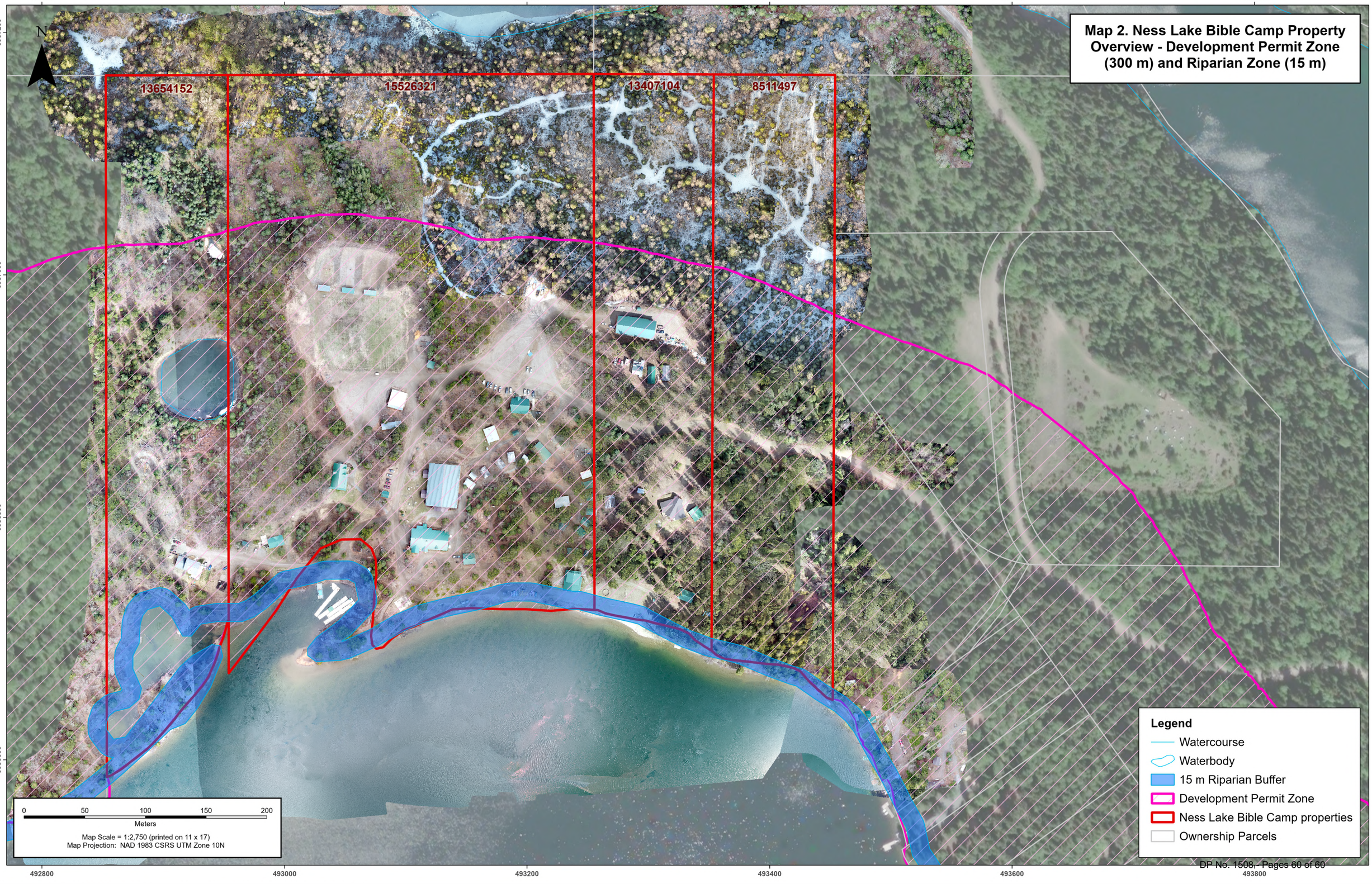
Appendix Map B-2. **Map 2. Ness Lake Bible Camp property overview – development permit zone (300 m) and riparian zone (15 m).**

Map 2. Ness Lake Bible Camp Property Overview - Development Permit Zone (300 m) and Riparian Zone (15 m)



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