

## Summit Lake Development Area Summary – DA 114

### Description of Summit Lake Development Area

The Summit Lake area is one of NACFOR's eight operating areas. It is approximately 1,050 hectares and is bounded by the Jarvis Creek to the west and Helmut Creek to the east. The forests in the Summit Lake area have been disturbed periodically over many years. Old horse logging trails and skid trails from logging in the 1900's through to the 1960's exist throughout. In addition to harvesting disturbances, wildfires have burned much of the mountainside over the last century, evidenced by old snags and stumps, and the mosaic of forest age classes.

Prior to NACFOR obtaining the Community Forest Agreement, BC Timber Sales had logged in this area in 2007 using small patch cuts across the landscape. NACFOR is proposing the same type of harvest system with small dispersed cut blocks designed to protect multiple resource values.

### Development Status

Block	Area (ha)	Harvest System	Harvest Method	Status
2001	Net - 7.3 WTRA – 0.3	Clearcut with WTRA; 15-20 sph single tree retention; dispersed toad habitat micro-reserves	Ground-based	Proposed harvest winter 2017
2002	Net – 9.4 WTRA – 0.5	Clearcut with WTRA; 5-10 sph single tree retention	Ground-based	Proposed harvest summer 2016 / winter 2017
2004	Net – 5.1 WTRA – 1.0	Clearcut with WTRA; 15-20 sph single tree retention; dispersed toad habitat micro-reserves	Ground-based	Proposed harvest winter 2017
2005	Net – 4.1 WTRA – 0.4	Clearcut with WTRA; 15-20 sph single tree retention; dispersed toad habitat micro-reserves	Ground-based	Proposed harvest winter 2017
2011	Net – 6.5 WTRA – 0.2	Clearcut with WTRA; 5-10 sph single tree retention	Ground-based	Proposed harvest summer 2016 / winter 2017
2012	Net - 7.9 WTRA – 0.5	Clearcut with WTRA; 5-10 sph single tree retention	Ground-based	Proposed harvest summer 2016 / winter 2017
2013	Net – 6.8 WTRA – 0.3	Clearcut with WTRA; 5-10 sph single tree retention	Ground-based	Proposed harvest summer 2016 / winter 2017

### Road Construction

There are six temporary roads (2.7 km) proposed for the Summit Lake development area. Roads will be rehabilitated once harvesting and reforestation has been completed. Measures will be taken during construction and maintenance of the temporary roads to ensure fill slopes to reduce sediment delivery into streams and riparian areas. Three roads were constructed in February/March 2016 (Branch 2100, Branch 4200 and Branch 5500) and the pilot trail for Branch 3300 was cut. Completion of Branch 3300 and construction of Branch 3500 are scheduled for June/July 2016. If conditions allow, Branch 1000 will be constructed to 'winter road' standards in 2017.

NACFOR conducted a mapping exercise to identify broad level development opportunities in the Summit Lake chart area. Mapping was followed by a ground level assessment in the summer of 2013 to look at cutting permit and block level opportunities. Seven small cut blocks ranging in size from four to nine hectares were proposed for the area between the Summit Lake Forest Service Road highway access and the Bird Creek drainage. In addition, 2.7 km of proposed temporary road will be built to access the cut blocks. These roads will be rehabilitated and reforested once harvesting is completed.

The proposed silviculture system for all blocks is Clearcut with Wildlife Tree Retention Areas (WTRA) plus 15-35 stems per hectare of single tree retention. WTRAs are designated retention areas within the cut block. Generally, WTRAs are located in areas with high value attributes such as wildlife habitat, riparian areas, streams and gullies. In addition to WTRA's, single trees or groups of trees will be retained across the cut blocks. Single and group tree retention provides in-block wildlife habitat, biological diversity in the next crop of trees and a source of woody debris over time. Retaining trees in the cut block also effectively mitigates the visual impacts of forest harvesting.

In addition to WTRAs, micro-reserves have been identified in the lower cut blocks to protect important terrestrial habitat features for western toads. The habitat features are used by adult western toads during the day as 'day roost' sites and overwintering sites (hibernacula).

### **Assessments**

The primary resource values in the Summit operating area include water quality, archaeological, visual, wildlife, riparian and terrain stability. In order to adequately address these values, NACFOR used specialists with expertise in terrain stability, engineering, hydrology, archaeology and wildlife to conduct assessments of the proposed development. Recommendations from the assessments were then incorporated into operational plans.

### **Terrain Stability and Assessment**

In the fall of 2013 NACFOR conducted a drainage review and terrain stability assessment of the Summit Lake development area. The scope of this assessment was to identify potential terrain stability concerns within the proposed development area and present an analysis of the elements at risk. The risk analysis concluded that there is a Low to Very Low/Nil risk to fish habitat and domestic water quality as a result of the proposed development. Recommendations were proposed to reduce the likelihood of a harmful event occurring as a result of the development. These recommendations have been incorporated into road and site plans.

### **Hydrological and Stream Channel Assessments**

In 2015 NACFOR completed stream channel assessments of all domestic watersheds in the Summit Lake area. The first phase of the project involved updating the equivalent clearcut area calculations for the Summit Creek basin. The second phase involved assessing all stream channels where forestry development is proposed upstream of licenced domestic watersheds in the Summit area.

There are three Points of Diversion (PODs) located down slope of the development area. Bird Creek and Aspen Creek are classified as domestic watersheds for consumptive water use at Summit Lake Provincial Park and Three Islands Resort respectively. Summit Creek is also a licensed domestic watershed. No new crossings of these streams are required for access and cut block boundaries fall well outside of the stream gullies. A mitigation plan will be in place in the event of impacts to water quality resulting from operational activities.

### **Visual Impact Assessments**

Modelling of proposed cutblocks and roads was done to assess the impact of development on the viewscape from several high traffic locations and from Summit Lake. Block design measures such as tree retention, irregular block shapes and limiting the cutblock size were implemented to mitigate the visual impact. As a result of the assessment NACFOR, eliminated a proposed road across the lower slope of Block 2001 dramatically reducing the visual impact from Summit Lake. The proposed openings for the Summit development area are all within the allowable clearcut alteration percentages for partial retention visual quality objectives. See the Visual Quality Objectives Guide and Visual Impact Assessment photos.

### **Archaeological Overview Assessment (AOA)**

Using a predictive modelling approach, the Summit Lake area was assessed for potential archaeological values. The AOA results indicated that the terrain upslope of Summit Lake lacks features normally found associated with archaeological sites and therefore presented no archaeological potential.

### **Riparian Assessments**

Streams, gullies and riparian areas were assessed and mapped to determine appropriate management regimes. Buffers will be established on streams to protect water quality, toad and grizzly habitat as well as riparian values. Best practices for managing riparian areas include machine free zones and retention of mature forest canopy and understory vegetation along streams.

### **Wildlife**

There are two blue-listed / species of special concern in the Summit Lake chart area: the Western toad and the grizzly bear.

Please refer to <http://nakuspcommunityforest.com/projects/western-toad-management-at-summit-lake/> for information on western toad management in the Summit Lake area.

The Summit Lake area is an important cross-valley migration corridor and spring feeding ground for grizzly bears. The Kootenay-Boundary Higher Level Plan Implementation Strategy provides general management and operational guidelines to manage for grizzly bear habitat requirements.