3.2 Wildlife Indicator 1.   Adherence to Forest Management Objectives for Five Key Wildlife Species

3.2.1 Measure:

Proportion of total harvested area within high-value habitat areas that meet forest management objectives for caribou, mountain goat, grizzly bear, moose and mule deer.

3.2.2 Results and Discussion:

LUP objectives for forest management within high-value wildlife habitats are as follows:

Caribou
- Provide for security cover, forage and large areas of inactivity over a rotation within the Telkwa Caribou Herd Recovery Program (TCHRP) area.
- Within a managed forest setting, provide for critical caribou habitat and forage by retaining Key Forested Caribou Habitat with mature and old forest characteristics.
- Within the ESSF Biogeoclimatic zone in the TCHRP area, emulate natural disturbance patterns by creating small openings with irregular edge configurations.
- Within the SBS Biogeoclimatic zone in the TCHRP area, emulate natural disturbance patterns by creating large aggregate blocks while providing for caribou forage and screening.
- Avoid caribou displacement, reduce human, caribou and predator interaction, and encourage caribou use of the TCHRP area.
- Limit access to protect caribou habitat (alpine and subalpine) surrounding Mooseskin Johnny Lake and its wetlands.
- The modelling parameters used to represent desired caribou habitat structure for timber supply review (TSR2) require a minimum 90% of the forested landbase within the habitat area, by landscape unit, to be greater than 50 years of age.

Mountain Goat
- Provide for thermal and snow interception cover and forage for wintering goat populations in areas near identified habitat (G).
- Provide for security for mountain goat from an unregulated harvest in important mountain goat habitat.
- TSR2 habitat structure modelling assumptions require that only a maximum 33% of the forested landbase within the habitat area, by landscape unit, can be less than 3 metres in height.

Grizzly bear - Babine
- Avoid human-bear conflicts and maintain high value grizzly bear habitat (GB)
- Maintain the diverse understory within high value, mixed-forest habitat (GBA)
- Limit road development and the number and duration of entries within moderate value grizzly bear habitat

- TSR2 habitat structure modelling assumptions (applied to forested landbase within the habitat area, by landscape unit)
    - high value (and grizzly habitat: minimum 80% > 50 years
    - high value mixed habitat: maximum 25% < 3 metres
    - moderate value habitat: no special constraint

Grizzly bear – Management Unit 1: Boucher Creek Wetlands
- Allow for the movement of grizzly bears between the Van Fire, Bait Range and Babine River in the Boucher Creek Wetlands management unit

Grizzly bear – Management Unit 2: Nichyeskwa South; Management Unit 3: Nichyeskwa North
- Allow for the movement of grizzly bears between feeding areas and reduce the potential of human-bear contact in the Nichyeskwa North and South management units.

Moose
- Ensure forage is retained and available in identified moose winter range
- Provide for security, visual, thermal and snow interception cover within identified moose winter range
- TSR2 habitat structure modelling assumptions require that only a maximum 33% of the forested landbase within the habitat area, by landscape unit, can be less than.3 metres in height.

Mule deer
Habitat is primarily concentrated in the Bulkley Valley, which as yet has no established LUP objectives.
- TSR2 habitat modelling parameters require that only a maximum 20% of the forested landbase within the habitat area, by landscape unit, can be less than 20 years of age.

Table 7 reports on areas that have been harvested to date within high-value wildlife habitat areas, and Figure 15 shows their location. Table 7 and Figure 15 are separated into ranges of years to allow focus on what has been harvested before and since LUP objective (1998) establishment. Figure 16 provides some pictures of post-1998 harvest in high-value habitat types, for a visual perspective.

A column has been added to report what proportion of high-value habitat areas harvested since 1998 meets LUP objectives. The value is 100% in all cases because from 1998 to 2002, all submitted licensee silviculture prescriptions were reviewed against LUP objectives and strategies, and were rejected for revision if found in non-compliance[1]. With the exception of moose habitat, the table reveals that harvest as a proportion of total habitat type is still at fairly low levels.

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[1] The proportion of area harvested prior to 1998 that meets LUP objectives has not been provided because the information is unavailable.

Table 7 – Area of Harvest in High-Value Wildlife Habitats

High-Value Wildlife Habitats	Area Harvested before 1998 (ha)	Area Harvested 1998-2002 (ha)	Total Harvest (ha)	Total Area in Habitat Type (ha)	Total Harvest as % of Type	1998-2002 Harvest Meeting LUP Obj's (%)
Caribou	44	34	78	6,468	1	100
Mountain Goat	130	83	213	140,683	0.2	100
Grizzly Bear High Value	495	191	687	14,468	5	100
Grizzly Bear High-Value Mixed	146	5	151	2,532	6	100
Moose	11,515	224	11,739	88,345	13	100
Mule deer	57	1	58	1,416	4	100
Moose/ Mule Deer	1,142	62	1,204	20,837	6	100
Totals:	**13,208**	**600**	**14,130**	**274,749**	-	-

Establishment of formal habitat structural targets for high-value habitat types is being contemplated, but a formal process has yet to be conducted. In the absence of formal targets, Table 8 provides an informal comparison of current height and/or age structure within high-value habitat areas at the landscape level against parameters modelled for the most recent timber supply review, to focus on areas where problems may be developing.

Table 8 – Current Stand Structure versus TSR Modelling Parameters

LU	**Caribou** (parameters: min 90% > 50 yrs)	**Mountain Goat** (parameters: max 33% <3 m)	**Grizzly Bear High** (parameters: min 80% >50 yrs)	**Grizzly Bear High Mixed** (parameters: max 25% <3 m)	**Moose** (parameters: max 33% <3 m)	**Mule deer** (parameters: max 20% <20 yrs)
Babine		Y	Y	Y		
Blunt		Y			N (>20%)	
Bulkley	Y	Y			Y	Y
Chapman		Y			Y	
Copper		Y			Y	
Corya		Y	Y		Y	Y
Deep Creek					Y	Y
Harold Price		Y	N (<5%)		Y	
Kitseguecla		Y			Y	
Nilkitkwa		Y	Y			
Reiseter		Y			Y	Y
Telkwa	Y	Y			Y	Y
Torkelson		Y	Y		Y	
Trout Creek		Y			Y	Y

Y = habitat structure currently achieves parameters; N = does not achieve parameters;
(<>n%) = how close current structure is to target structure

The table shows that TSR height and/or age structure parameters are achieved in wildlife habitat areas, with the exception of moose habitat in the Blunt and High Value grizzly bear habitat in the Harold Price. In the absence of formal habitat structure targets, a definitive recommendation for areas where parameters are not achieved cannot be provided. However, it is logical that any new harvest proposals submitted for these areas are rationalized with these results in mind.

3.2.3 Data Sources:
- Bulkley LRMP
- Bulkley LUP's
- 1999 update FC1 forest cover (Northwest Data Centre, Bulkley District dataset)
- Licensee Forest Development Plan digital map submissions (to acquire boundaries of blocks harvested from mid-1999 to the end of 2002)
- LRMP/LUP wildlife habitat maps

Figure 15

Harvest in High-Value Wildlife Habitat

Legend

- District boundary
- Telkwa Caribou Herd Recovery Program Area (TCHRPA)
- Landscape Unit
- Watershed
- Roads
- Streams

High-Value Wildlife Habitat
- Caribou
- Goat
- High-Value Grizzly
- High Value Mixed-Forest Grizzly
- Moose
- Mule Deer
- Moose and Mule Deer

Logging Within High-Value Wildlife Habitat
- Before 1995
- 1995 - 1997
- 1998 - 2002

1 Photo Taken (see next page)

- Logging Outside High-Value Habitat

SBS and ESSF BEC Zones Within TCRPA
- ESSF
- SBS

Babine Landscape Unit

Babine River

Nichyeskwa Watershed

Boucher Watershed

4

3

Moricetown

2

Smithers

Telkwa

1

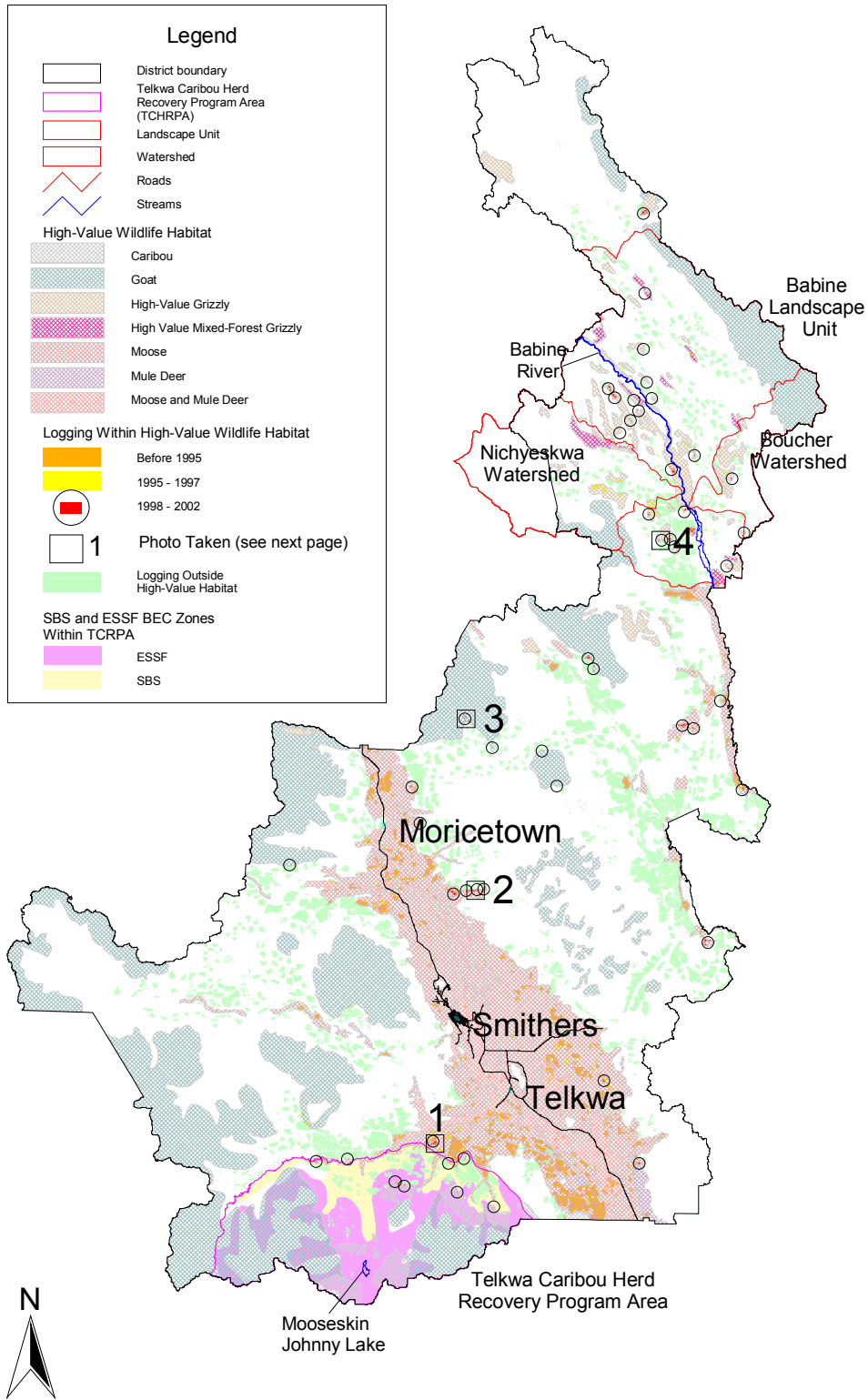Mooseskin Johnny Lake

Telkwa Caribou Herd Recovery Program Area

N

Figure 16

Examples of Harvest in High-Value Habitat

Area 1 - Moose Habitat

Direction of View

Note screening along roadside versus no screening

Note increased mature leave stems for security/snow intercept cover versus no mature stem retention

Area 2 - Moose/Mule Deer Habitat

Note mature leave stems for security/snow intercept cover

Direction of View

Area 3 - Goat Habitat

Direction of View

Note small block sizes and irregular edges, providing quick access to security and thermal cover

Area 4 - High-Value Grizzly Habitat

Direction of View

Note diversity of understorey, and significant stem retention both within block and along roadways

Access control, to limit human-wildlife interaction during critical periods, is provided by strategically-placed gates

High-Value Wildlife Habitat

- Caribou
- Goat
- High-Value Grizzly
- Moderate Value Grizzly
- Moose
- Mule Deer
- Moose and Mule Deer

Logging Within High-Value Wildlife Habitat

- Before 1990
- 1990 - 1997
- 1998 - 2002
- Logging Outside High-Value Habitat

SBS and ESSF BEC Zones Within TCRPA

- ESSF
- SBS

Roads

Streams