

Appendix 1

Land-use Plan Summary:

Summarised Goals, Objectives, Strategies, Indicators and Targets

prepared for

Babine Monitoring Trust Governance Design Group

by

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December 16, 2004

Table of Contents

Introduction	4
Maintain biodiversity	5
Maintain core ecosystems in an ecosystem network.....	5
Maintain a natural seral stage distribution.....	5
Maintain connectivity in landscape corridors.....	5
Maintain sensitive riparian areas.....	6
Attain natural landscape pattern.....	6
Maintain stand structure	6
Maintain rare ecosystems	7
Maintain tree species diversity.....	7
Maintain wildlife.....	7
Maintain wildlife habitat and populations	7
Conserve grizzly bear habitats and populations	8
Reduce human-bear interactions.....	8
Minimize disruption of bear activity.....	9
Maintain high value habitat	10
Maintain mountain goats	12
Maintain goat habitat.....	12
Maintain goat populations	12
Maintain fish habitat and populations	13
Maintain fish habitat.....	13
Maintain bull trout.....	14
Maintain steelhead	14
Maintain water quality	14
Maintain hydrological integrity	14
Conserve and respect cultural heritage.....	16
Protect cultural heritage values.....	16
Maintain opportunities for forestry.....	16
Maintain access to timber supply.....	16

Promote rapid timber growth.....	16
Minimize unsalvaged timber mortality	16
Manage Enhanced Timber Development areas intensively	17
Conserve soil	17
Conserve soil.....	17
Maintain opportunities for tourism	18
Maintain wilderness value of Babine River Corridor	18
Maintain wilderness setting for Gunanoot Lake.....	19
Maintain fish and wildlife.....	19
Maintain cultural heritage.....	19
Ensure park is safe	19
Maintain opportunities for recreation.....	20
Maintain access to recreational opportunities.....	20
Maintain backcountry opportunities.....	20
Maintain wilderness value of Babine River Corridor	20
Trail management.....	21
Ensure park is safe	21
Maintain visual quality.....	21
Maintain scenic areas	21
Maintain access to mineral and energy resources.....	22
Maintain exploration and development opportunities.....	22
Maintain habitats for botanical forest products	22
Maintain high-value pine mushroom sites.....	22
Maintain berry habitat within berry management areas.....	22

Introduction

Table 1.1 summarises the goals, objectives, strategies, indicators and targets from the six land-use plans applicable to the Babine watershed: Kispiox LRMP, Bulkley LRMP, West Babine SRMP, Babine LUP, Nilkitkwa LUP and the Babine River Corridor Park MDS. Consolidating wording from different plans simplifies this summary, but necessitates some interpretation. The table was designed to facilitate consideration of monitoring.

Table 1.1 uses the following terms and structure.

- **Goals** are over-arching objectives. In land-use plans, goals are often stated in text rather than being specifically listed (for example, the Bulkley LRMP states that “*the maintenance of biodiversity is an underlying objective of land and resource management at all levels of management*”—Table 1.1 interprets this statement to mean that “maintaining biodiversity” is a goal of the LRMP). Some goals are derived from the land use objectives in the Forest and Range Practices Regulation (FRPR). Table 1.1 is divided into sections by goals. Accompanying text describes general differences among plans in relation to the particular goal.
- **Objective class** is a short description of a group of objectives used for cross-referencing monitoring tables (Appendices 2 and 3).
- **Objectives** describe the aim or intention of forest management. Some objectives come from legislation (FRPR). Most objectives are taken from the Babine or Nilkitkwa LUPs or the West Babine SRMP, although some come from LRMPs if they are not clearly included in the more detailed plans. To facilitate the consideration of monitoring projects, Table 1.1 sometimes separates clauses in compound objectives. Because objectives listed in the SRMP and Landscape Unit Plans form the core of legally-defined higher-level plans, the wording for objectives follows the plans relatively closely, and refers to the location within the documents. The distinction between goals and objectives is somewhat arbitrary.
- **Strategies** describe the methods to be used to meet an objective. They are somewhat equivalent to **indicators plus targets**, depending upon the particular plan. The Kispiox LRMP, Babine and Nilkitkwa Landscape Unit Plans list strategies as ways of achieving objectives; the West Babine SRMP provides explicit indicators and targets to be used to achieve objectives and lists other strategies under “management considerations”; the Bulkley LRMP provides strategies as “specific direction” under objectives for each planning unit; and the Babine River Corridor Park MDS lists strategies as management actions. Table 1.1 lists strategies, indicators and targets under a single column, and sometimes combines wording from more than one land-use plan for conciseness. Strategies do not always match objectives one-to-one: sometimes several strategies apply to one objective and sometimes a single strategy is designed to achieve several objectives. *Italic* text highlight strategies that apply to more than one objective. In Table 1.1, strategies line up with the relevant objective whenever possible.

Table 1.1 Summary of goals, objectives and strategies

Maintain biodiversity: FRPR includes the goal of conserving biodiversity and specific objectives related to seral stage distribution, riparian areas and stand structure. All land-use plans include objectives to maintain biodiversity. LRMPs sometimes include objectives that are not further detailed. For example, the Kispiox LRMP includes objectives for riparian habitat and deciduous ecosystems, whereas the SRMP does not include a specific riparian objective (although it does include Landscape Riparian Corridors), and relies on the Forest and Range Practices Act to cover the deciduous objective. No Bulkley plans include objectives for riparian habitat, although landscape corridors generally follow riparian ecosystems.

Objective Class ¹	Objectives	Strategies or Indicators plus Targets
<i>Maintain core ecosystems in an ecosystem network</i>	<ul style="list-style-type: none"> • Maintain structural/functional features of old forest ecosystems within core ecosystems (SRMP Table 2²); retain representative examples of old seral stage in core ecosystems (Bulkley LUPs Ob 1.1) • Maintain representative cross-section of ecosystems in core ecosystems (Bulkley LUPs Ob 1.1) • Provide forest interior conditions (Bulkley LUPs Ob 1.1) 	Target of 0% alteration in core ecosystems except as noted: <ul style="list-style-type: none"> • allow natural disturbance processes to occur unless risk is high to adjacent ecosystems (B, K³) • do not allow harvesting except to address forest health (B) or to permit mining and exploration (B, K) • if harvesting is required, use low impact treatments and modified harvesting (B) • do not build roads to access otherwise inaccessible timber beyond the core (B, K) • do not allow new grazing (B)
<i>Maintain a natural seral stage distribution</i>	<ul style="list-style-type: none"> • Use the spatial and temporal pattern of natural disturbance to guide harvest unit design (FRPR S9 (1)); maintain a distribution of seral stages that reflects natural disturbance (SRMP Table 2; similar wording in Bulkley LUPs Ob 1.3, 1.4) 	<ul style="list-style-type: none"> • Maintain target % of old seral stage by BEC subzone (targets vary with subzone and landscape unit; Table 2 in SRMP, Tables 2, 3, and 4 in LUPs) (B, K) • Maintain target % mature + old by BEC subzone (B, K) • Maintain target % young by BEC subzone (B, K) • limit cutblock size to less than 60 ha (FRPR S64, default); do not harvest an area until adjacent cutblocks are stocked to specifications (FRPR S65, default)
<i>Maintain connectivity in</i>	<ul style="list-style-type: none"> • Maintain connectivity of old and mature forest cover within landscape riparian corridors (SRMP Table 2); maintain landscape 	<ul style="list-style-type: none"> • Retain 70% of old and mature forest structure within corridor (K)

¹ This column lists classes of objectives used for cross-referencing with other tables.

² Parentheses refer to the objectives in the Babine SRMP by Table # and to the Bulkley LUPs by Objective #. Objectives are not numbered in either the MDS or LRMPs.

³ Letters in parentheses show whether strategy applies to the Bulkley (B) or Kispiox District (K) or to the Babine River Corridor Park (P). Within the Bulkley, BB refers to the Babine LUP and BN to the Nilkitkwa LUP.

landscape corridors	corridors ... containing most of the structure and function associated with old forest (Bulkley LUPs Ob 1.2)	<ul style="list-style-type: none"> • Plan for small cutblocks within corridor (see patch size objective in SRMP Table 2) • Increase flexibility within corridor if harvesting outside is modified (see Table 1 in LUP, or Table 4 in SRMP) (B, K) • 0 roads within corridor; access should be temporary unless no other alternative is reasonable (B, K) • 100% winter harvest (B, K)
Maintain sensitive riparian areas	<ul style="list-style-type: none"> • Conserve biodiversity associated with riparian areas (FRPR S8). maintain environmentally sensitive areas such as wetlands, floodplains and riparian areas (Kispiox LRMP); use Landscape Riparian Corridors (SRMP Table 2); no riparian objective in Bulkley plans, although corridors follow riparian ecosystems • <i>Maintain ecological values (including extensive wetlands) in Atna/Shelagyote SMZ (SRMP Table 13)</i> 	<ul style="list-style-type: none"> • <i>Create riparian reserves and riparian management zones of specified size and content (FRPR S47-S49, default). no harvesting in reserves except for specified purposes (FRPR S51, default); retain specified basal area and physical structure in management zones (FRPA S52, default); do not conduct listed silvicultural activities in riparian reserve zones (FRPR S51, default)</i> • 0% alteration of fluvial ecosystems (K); no strategies address conservation of riparian ecosystems • <i>No harvesting in Atna/Shelagyote SMZ except for mineral exploration and development (K)</i>
Attain natural landscape pattern	<ul style="list-style-type: none"> • Attain a landscape patch size distribution that reflects natural disturbance pattern (similar wording in Bulkley LUPs Ob 5 and SRMP Table 2) • Minimize fragmentation (SRMP Table 2) 	<ul style="list-style-type: none"> • Aim for target distribution and range of patch sizes per watershed (target varies with area; Table 3 SRMP; Table 5 LUPs) • Locate small, mid-sized and large harvested patches as suggested in SRMP (e.g. small patches in corridors and grizzly bear habitat) (K) • Concentrate development (K)
Maintain stand structure	<ul style="list-style-type: none"> • Retain wildlife trees within stands (FRPR 9(2)); maintain the range of structural attributes of old forest within forest stands throughout rotation (SRMP Table 2); provide structural diversity within managed stands by retaining attributes of old forests (Bulkley LUPs Ob 1.7); 	<ul style="list-style-type: none"> • Retain target % of wildlife tree patches with old forest attributes (see Table 6 LUPs, and Table 5 and Appendix 3, SRMP) (B, K); retain at least 7% of cutblock area in wildlife trees, on average; retain at least 3.5% of each cutblock (FRPA S66, default) • Increase retention in larger openings (see Table 5 SRMP) • Target of < 500 m between patches (B, K) • Throughout block, retain target amount of coarse woody debris (Appendix 3 SRMP); locate slash piles close to wildlife tree patches (K); retain at least four logs per hectare, each greater

		<p>than 2 m long and 7.5 cm in diameter (FRPR S68)</p> <ul style="list-style-type: none"> • Maintain advanced regeneration where appropriate (K) • Retain target amount of structural features outside wildlife tree patches targets (K)
Maintain rare ecosystems	<ul style="list-style-type: none"> • Maintain structural and functional integrity of red- and blue-listed plant communities (SRMP Ob 6); retain representative examples of rare plant communities within core areas (Bulkley LUPs Ob 1.1) 	<ul style="list-style-type: none"> • 0% reduction of functional area of red- and blue-listed ecosystems (K) • Locate rare plant communities within wildlife tree patches and core ecosystems (B)
Maintain tree species diversity	<ul style="list-style-type: none"> • Maintain deciduous ecosystems (Kispiox LRMP); SRMP relies on the Forest and Range Act to cover LRMP objective; Maintain a diversity of coniferous and deciduous species that represents the natural species composition (Bulkley LUPs Ob 1.6) 	<ul style="list-style-type: none"> • Do not convert natural deciduous stands to coniferous (B) • Retain deciduous species , particularly when pre-harvest stand has > 20% deciduous (B) • Retain advanced regeneration (B) • Ensure that non-planted natural species are a component of wildlife tree patches (B) • Ensure that all existing ecologically acceptable species are represented (B)

Maintain wildlife: FRPR (S7(1)) has the broad objective to conserve habitat for key wildlife species. Both the Kispiox and Bulkley LRMPs have broad objectives to conserve wildlife. The SRMP and LUPs do not address these broad objectives, but rather focus on objectives relating to the species of particular interest in the Babine watershed: grizzly bears (Babine LUP, SRMP) and mountain goats (Bulkley LUPs). The SRMP explicitly assumes that objectives designed to achieve other goals (biodiversity, water quality, visual quality, berries) will “provide for the habitat needs of most other species”, specifically including ungulates and furbearers. See goals for grizzly bears and mountain goats below.

Objective Class	Objectives	Strategies or Indicators plus Targets
Maintain wildlife habitat and populations	<ul style="list-style-type: none"> • Maintain natural habitat to sustain viable population of all native wildlife (Kispiox LRMP); Conserve the wide abundance of all wildlife habitats and populations (Bulkley LRMP); conserve sufficient habitat for the survival of species at risk and regionally important wildlife and for the winter survival of specified ungulate species (FRPR S7(1)); conserve wildlife habitat associated with riparian areas (FRPR S8) • <i>Protect conservation values (...grizzly bear, moose, mountain goat...) affected by increased access north of the Babine River through the Nichyeskwa Connector (SRMP Table 7)</i> 	<ul style="list-style-type: none"> • Detailed plans mostly rely on strategies for other goals • Identify high wildlife use areas at the stand level in Enhanced Timber Development areas and maintain them by management or deletion from area (under Timber; Babine LUP Ob 5.3) • The Minister of Water, Land and Air Protection may establish wildlife habitat areas, ungulate winter ranges, general wildlife measures and wildlife habitat features as appropriate (Government Actions Regulation S7-S10) • <i>Winter only public access on Nichyeskwa Connector(K)</i>

Conserve grizzly bear habitats and populations: The Bulkley LRMP contains specific direction to emphasize grizzly bear management in the Babine River SM2 zone and the Babine IRM zone and to maintain grizzly bear habitat in Barbeau Creek. The Babine LUP provides more detail, listing objectives for mapped habitat and access control zones as well as for the Babine River SM2 zone. The Nilkitkwa LUP includes an objective to maintain habitat in Barbeau Creek. The Kispiox LRMP contains several strategies for grizzly bear habitat. Like the Babine LUP, the SRMP provides more detailed objectives within mapped access control zones and high value habitat.

Objective Class	Objectives	Strategies or Indicators plus Targets
<i>Reduce human-bear interactions</i>	<ul style="list-style-type: none"> • Throughout plan areas: Reduce the number of human-bear interactions (SRMP Table 7); avoid human-bear conflicts (Babine LUP Ob 2.3); protect the Babine River Corridor Park’s grizzly bears (MDS) • Within defined zones: Minimise human/bear interaction in Shenismike West zone (SRMP Table 7); reduce potential for human/bear contact in Nichyeskwa South and North units (Babine LUP Ob 2.7, 2.8) 	<ul style="list-style-type: none"> • Minimise open, active road networks; target road density open to harvesting activity per mid-sized watershed (< 0.6 km/km² in 80% of Shedini and Hanawald watersheds); deactivate or block unnecessary temporary and secondary roads (K) • Avoid mainline roads through high-value habitat and use temporary roads where possible (BB) • Harvest in winter (K) • Restrict harvesting adjacent to listed critical habitat types to periods of low or no use by bears; construct roads > 150 m from listed habitat types; provide ~100 m of forested cover adjacent to listed habitat types for security cover (BB) • Develop Human/Bear Management Plan; meanwhile, follow interim management actions: develop and deliver guidelines on appropriate human behaviour around bears, an information package about the areas of the park with high bear use, and signage; do not allow garbage to accumulate; provide adequate enforcement and extension services (P) • Initiate programs to educate visitors on methods to minimise interactions in shared fishing areas; unspecified target level of public awareness about reducing human-bear interactions (K); • Unspecified target level of tourism use within periods of active bear use; BC parks will develop strategies to address risk associated with any proposed bear-viewing (K) • Note that many strategies listed under the objective to minimise disruption are also designed to reduce human/bear interactions (K, BB); some specifics include: retain visual screening along main haul road and blocks in Nichyeskwa South unit, along

<ul style="list-style-type: none"> • Delineate Grizzly Drop as Special Features zone (MDS) • Minimise potential for human/bear interaction in Babine River Valley SMZ (SRMP Table 12) 	<p>aspen-Douglas maple habitat in Nichyeskwa North unit, and along aspen-Douglas maple habitat in identified mixed forest habitat (BB)</p> <ul style="list-style-type: none"> • Manage recreational use at Grizzly Drop (P) • Target of < 300m sight distance along roads in Babine River Valley SMZ (K) and Babine River SM2 (BB)
<p><i>Minimize disruption of bear activity</i></p> <ul style="list-style-type: none"> • Minimize disruption to bear movement and/or use of high value habitat in mapped zones (Big Slide near Babine River Corridor and Grizzly Drop, Sperry/Rosenthal, Shenismike Corridor and Shenismike West) (SRMP Table 7); minimise the impact of road building and harvesting on critical habitat within high-value habitat (SRMP Table 7). Allow movement of bears in mapped units (Boucher Creek Wetlands, Nichyeskwa South and Nichyeskwa North) (Babine LUP Ob 2.6, 2.7, 2.8); limit road development and number and duration of entries within identified moderate value bear habitat (Babine LUP Ob 2.5) 	<ul style="list-style-type: none"> • Seral stage strategies: Target of 70% of forest > 70 yr in Big Slide zone; target 50% of forest > 50 yr in Sperry/Rosenthal and Shenismike West zones (K) • Road access strategies: Only industrial motorised use within Big Slide zone; no motorised use between operations within Big Slide, Sperry/Rosenthal and Shenismike West zones; deactivate secondary and tertiary roads south of primary road in Shenismike West zone; no roads within Shenismike Corridor; no permanent roads within 150 m of listed critical habitats (unless no alternative) (K). Only industrial motorised use beyond access control point in Boucher Creek Wetlands and Nichyeskwa North unit between May 1 and November 1; no roads within 150 m of listed high-value habitat types; no mainline roads through identified high-value habitat; close roads through high value habitat in Nichyeskwa South; no roads parallel to aspen-Douglas maple habitat in Nichyeskwa North; if roads cross aspen-Douglas maple habitat, maximum right-of-way of 20 m; maximum right-of-way of 20 m in high value habitat within Nichyeskwa South (BB) • Period of activity strategies: Complete road-building, harvesting and silviculture within five years in Sperry/Rosenthal and Shenismike West zones (K); concentrate harvesting and complete silviculture and road deactivation within five years in moderate value habitat; limit duration of operation in Nichyeskwa South unit (BB); use two pass system, with > 35 years between passes in Shenismike West zone (K); use two pass system in Boucher Creek Wetlands; prefer single entry followed by sustained inactivity of about half a rotation in moderate value habitat (BB) • Season of activity strategies: Winter harvesting in Nichyeskwa North, within high value grizzly bear habitat in Nichyeskwa

<ul style="list-style-type: none"> • <i>Protect grizzly-bear conservation values affected by increased access to the area north of the Babine River through Nichyeskwa Connector (SRMP Table 7)</i> 	<p>South, preferred in Boucher Creek Wetlands; harvesting adjacent to listed high-value habitat types during periods of low or not use by bears (BB); winter harvesting in Shenismike West and Sperry/Rosenthal zones (K)</p> <ul style="list-style-type: none"> • No industrial camps in high value habitat in Nichyeskwa South (BB) • <i>Winter only access on Nichyeskwa Connector (K)</i>
<p>Maintain high value habitat</p> <ul style="list-style-type: none"> • Maintain identified high value grizzly bear habitat by addressing critical habitats (Babine LUP Ob 2.3); within high-value habitat, maintain integrity of and linkage amongst listed critical habitats (SRMP Table 7) • Provide forest cover adjacent to non-forested critical habitats within high value habitat (SRMP Table 7) • Maintain a diverse understory in identified high-value, mixed forest habitat (Babine LUP Ob 2.4) • <i>Protect and buffer river-based resource values (specifically grizzly bears, ...) within the Babine River Corridor Park (Kispiox LRMP)</i> 	<ul style="list-style-type: none"> • Identify critical habitats during operational planning (K); critical habitats are greater than 2 ha or show signs of high use (BB) • No harvesting in critical habitats (BB); no alteration of critical habitats (unless no alternative) (K) • Provide ~100 m of forested habitat adjacent to critical habitats for cover and bedding habitat (required degree of cover will vary) (BB); provide 100m of windfirm functional forest adjacent to non-forested critical habitats (unless no alternative); configure forested cover within critical habitat to provide interior forest conditions; logging is allowed within buffer (K) • Use group selection in identified mixed forest habitat (BB) • Use four or five pass removal system in identified mixed forest habitat (BB) • Prescribe site preparation methods that provide berry-producing shrubs in identified moderate value habitat (BB) • Use silviculture treatments that maintain production of foraging areas and provide cover within harvested blocks in high value habitat in Nichyeskwa South; restore habitat value of previously-logged high-value habitat: e.g. reforest with a mix of tree species, create openings to encourage shrub growth (BB) • Retain current level of aspen-Douglas maple habitat (BB) • Management in Babine River SMZ designed to achieve LRMP objective (see strategies below)

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- *Maintain habitat quality for grizzly bears in Babine River SMZ (SRMP Table 12); Manage Babine River SM2 to protect ... high value grizzly bear habitat ... in the Babine River Corridor (Babine LUP Ob 4.1)*
 - *Maintain provincially significant ecological values (including grizzly bear denning habitat) in the Atna-Shelagyote SMZ (SRMP Table 13)*
 - *Maintain Barbeau Creek Watershed in a primitive state to protect ... grizzly bear habitat ... (Babine LUP Ob 4.1)*
 - *In Babine River SM2 zone, use partial cutting or small clearcuts (<15 ha) with wildlife tree patches, large leave strips, 150-year rotation, winter harvest, restricted access (BB); In Babine River SMZ, use openings < 15 ha, > 30% of forested stands > 140 years old (200-year rotation), winter harvest (K)*
 - *No harvesting except for mineral exploration and development purposes in Atna-Shelagyote SMZ (K)*
 - *No harvesting except for mineral exploration and development purposes in Barbeau Creek SM2 (BN)*
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Maintain mountain goats: Bulkley LUPs include specific objectives for goats. Although the Kispiox LRMP lists several strategies for goats, the SRMP has no specific objectives, assuming that the Atna-Shelagyote SMZ and access control address strategies listed in the LRMP. The SRMP notes that LRMP direction could result in future guidelines.

Objective Class	Objectives	Strategies or Indicators plus Targets
<i>Maintain goat habitat</i>	<ul style="list-style-type: none"> • Provide cover and forage for wintering goat populations near identified habitat (Bulkley LUPs Ob 2.1); • <i>Maintain Barbeau Creek watershed in primitive condition to protect ... goat habitat ... (Nilkitkwa LUP Ob 4.1)</i> • <i>Protect conservation values (...mountain goat...) affected by increased access north of the Babine River through Nichyeskwa Connector (SRMP Table 7)</i> • <i>Maintain ecological values (including mountain goat) in the Atna/Shelagyote SMZ (Babine SRMP Table 13)</i> 	<ul style="list-style-type: none"> • Maintain forested connectors between mountain ranges in Kotsine Pass (BN) • Use small openings (< 5ha) or non-clearcut harvesting within 200 m of identified habitat (B) • <i>No harvest with Barbeau Creek SMI except for mineral exploration and development (BN)</i> • <i>Winter only public access on Nichyeskwa Connector (K)</i> • <i>No harvest within Atna-Shelagyote SMZ except for mineral exploration and development (K)</i>
<i>Maintain goat populations</i>	<ul style="list-style-type: none"> • Provide security from unregulated harvest in important identified habitat (Bulkley LUPs Ob 2.2) 	<ul style="list-style-type: none"> • Limit road access within 1 km of identified habitat (B) • Avoid harvesting within 200 m of habitat during natal time period (B) (Note that this strategy relates to disruption for which there is no objective)

Maintain fish habitat and populations: FRPR (S8) includes the goal of conserving fish habitat. Both LRMPs list general objectives to protect fish habitat and populations. The Babine SRMP includes no specific objectives (except for bull trout), assuming that objectives for the Babine River Corridor Park, Babine River SMZ, Atna-Shelagyote SMZ, biodiversity and water quality will achieve the LRMP objectives. The Bulkley LUPs list an objective to retain structure within riparian management zones. Objectives under biodiversity (particularly Landscape Riparian Corridors) and water quality are also relevant to goals for fish. The Babine River Corridor Park MDS includes an objective to protect fish, specifically targeting bull trout and steelhead.

Objective Class	Objectives	Strategies or Indicators plus Targets
Maintain fish habitat	<ul style="list-style-type: none"> Conserve fish habitat associated with riparian areas (S8); retain structure within riparian management zones to provide shade, maintain natural channel and bank stability, and reduce the risk of windthrow in the reserve zone (Bulkley LUPs Ob 3.1) Manage Babine River SMZ to protect and buffer ... fish habitat ... within Babine River Corridor Park (Kispiox LRMP) Protect conservation values (...steelhead, bull trout..) affected by increased access north of the Babine River through the 	<ul style="list-style-type: none"> Create riparian reserves and riparian management zones of specified size and content (FRPR S47-S49, default). no harvesting in reserves except for specified purposes (FRPR S51, default); retain specified basal area and physical structure in management zones (FRPA S52, default); do not conduct listed silvicultural activities in riparian reserve zones (FRPR S51, default) Do not take gravel or fill from riparian management areas, except for allowed purposes (FRPR S50, default) retain enough trees to maintain bank stability in riparian management zones that feed S1, S2 or S3 streams (FRPR S52, default) maintain sufficient vegetation and trees to prevent ecologically significant temperature increases in temperature sensitive streams (FRPR S53, default) protect stream channel and banks at stream crossings; remove temporary stream crossings when they are no longer required (FRPR S55) do not hinder fish passage (FRPR S56) do not injure fish or damage their habitat (FRPR S57) restrict livestock use in riparian areas (FRPR S58) No specific targets provided (B) No specific strategies for fish habitat in SRMP Winter only public access on Nichyeskwa Connector (K)

	<i>Nichyeskwa Connector (SRMP Table 7)</i>	<ul style="list-style-type: none"> • Protect the Babine River Corridor Park's fish (MDS) 	<ul style="list-style-type: none"> • Work with appropriate agencies to deal with sedimentation concerns (P) • Develop plan in the event of a slide (P)
Maintain bull trout	<ul style="list-style-type: none"> • Conserve critical bull trout habitat in the Shelagyote River and its tributaries (SRMP Table 8); protect the Babine River Corridor Park's fish (MDS) 	<ul style="list-style-type: none"> • No permanent bridge within 750 m of known bull trout staging areas on Shelagyote River. (K) • <i>No permanent motorised access within Babine River SMZ (K)</i> • Babine SRMP notes that many habitats are buffered by core ecosystems or landscape riparian corridors or in the Atna-Shelagyote SMZ (K) • Work with appropriate agencies to define problems; seek funding to monitor by-catch if required (P) 	
Maintain steelhead	<ul style="list-style-type: none"> • Protect the Babine River Corridor Park's fish (MDS) 	<ul style="list-style-type: none"> • Work with appropriate agencies to define problems; investigate risks or repeated capture; seek funding for monitoring as required (P) 	

Maintain water quality: FRPR (S8) includes the goal of conserving water quality associated with riparian areas. The Bulkley LRMP includes objectives to maintain water quality in both zones of the Nilkitkwa Landscape Unit and in the Babine River Corridor and Babine River SM2 zones of the Babine Landscape Unit. The Nilkitkwa LUP includes objectives for Barbeau Creek SM1 zone, but not for the remainder of the Landscape Unit. The Babine LUP does not include objectives for the Babine River SM2 zone. The Kispiox LRMP has objectives to protect water quality in the Babine River; the SRMP includes low risk targets for sedimentation in three watersheds, including the Babine mainstem. The Babine River Corridor MDS includes a strategy for sedimentation under an objective for fish.

Objective Class	Objectives	Strategies or Indicators plus Targets
Maintain hydrological integrity	<ul style="list-style-type: none"> • Conserve water quality associated with riparian areas (FRPR S8); maintain water quality and quantity within its natural range (SRMP Table 9) 	<ul style="list-style-type: none"> • <i>Create riparian reserves and riparian management zones of specified size and content (FRPR S47-S49, default). no harvesting in reserves except for specified purposes (FRPR S51, default); retain specified basal area and physical structure in management zones (FRPA S52, default); do not conduct listed silvicultural activities in riparian reserve zones (FRPR S51, default)</i> • Do not take gravel or fill from riparian management areas, except for allowed purposes (FRPR S50, default) • retain enough trees to maintain bank stability in riparian management zones that feed S1, S2 or S3 streams (FRPR S52,

-
- default)
 - protect stream channel and banks at stream crossings; remove temporary stream crossings when they are no longer required (FRPR S55)
 - restrict livestock use in riparian areas (FRPR S58)
 - No specific targets provided (B)
 - Any licensed waterworks or community watersheds
 - Follow target Equivalent Clearcut Area limits (Table 10), or complete watershed assessment before exceeding target (K)
 - Target of no landslides related to forestry development: develop terrain stability mapping for Class IV and V slopes; develop special management for fans; develop erosion control plans (K)
 - Target of low risk of introducing sediment at stream crossings within Nichyeskwa, Babine Mainstem and Shelagyote watersheds; Consider stream quality crossing index (K)
 - *Maintain Barbeau Creek watershed in a primitive state to protect water quality ... (Nilkitkwa LUP)*
 - Minimise impact to downstream water quality in Nilkitkwa IRM zone (Bulkley LRMP); no specific objectives listed in Nilkitkwa LUP
 - Maintain existing levels of water quality, clarity and hydrologic stability in the Babine River and its tributaries (Bulkley LRMP); Manage Babine River Valley SMZ to protect and buffer ... water quality ... within Babine River Corridor Provincial Park (Kispiox LRMP)
 - *No harvesting except for mineral exploration and development purposes in Barbeau Creek SM1 (BN)*
 - No associated strategies
 - Protect Babine River Corridor Park
 - No specific strategies for water quality associated with Babine River SM zones in either SRMP or LUPs
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Conserve and respect cultural heritage: FRPR and the Kispiox LRMP include objectives relating to cultural heritage. The SRMP does not currently include specific objectives, but may in the future depending upon Gitksan House decisions. The Bulkley LRMP does not include objectives for cultural heritage. The Babine River Corridor Park MDS includes an objective to protect cultural heritage values.

Objective Class	Objectives	Strategies or Indicators plus Targets
<i>Protect cultural heritage values</i>	<ul style="list-style-type: none"> Protect cultural heritage values in Babine River Corridor Park (MDS); conserve or protect cultural heritage resource that are the focus of a traditional use of continuing importance (FRPR S10) 	<ul style="list-style-type: none"> Investigate and collate existing information on values (P) Continue to develop consultation process with Gitksan; discuss important resources and management opportunities (P) Discuss options for managing camping use near park entrance with Wud'at residents and Ned'u'ten Nation (P) Investigate opportunities for partnership/employment (P)

Maintain opportunities for forestry : FRPR and both LRMPs include objectives related to forestry. The SRMP includes a single broad objective; the LUPs list several more detailed objectives and associated strategies.

Objective Class	Objectives	Strategies or Indicators plus Targets
<i>Maintain access to timber supply</i>	<ul style="list-style-type: none"> Enable efficient timber harvesting (FRPR S6); do not unduly reduce timber supply (FRPR multiple objectives); provide sustainable and economically viable access to timber supply (SRMP Table 15; similar wording in Bulkley LUPs Ob 5.1) 	<ul style="list-style-type: none"> Harvesting activities permitted throughout the operable forest consistent with objectives and targets for other values (K) Many strategies addressing other goals have exceptions allowing access or harvesting if timber will be alienated, if forest health is an issue or if no practical alternative exists (K, B)
<i>Promote rapid timber growth</i>	<ul style="list-style-type: none"> Maintain or enhance an economically valuable supply of timber (FRPR S6); ensure that productive ground in the timber harvesting landbase is growing timber (Bulkley LUPs Ob 5.1) 	<ul style="list-style-type: none"> establish a free growing stand following harvest (FRPR S44) use approved seed (FRPR S43) Replace poor quality balsam and hemlock stands on productive sites with managed stands (B) Reforest backlog NSR areas (B) Encourage reduction in time to regenerate harvested areas (B)
<i>Minimize unsalvaged timber mortality</i>	<ul style="list-style-type: none"> Maintain the health and productivity of the timber resource (Bulkley LUPs Ob 5.2); similar wording in Kispiox LRMP, but 	<ul style="list-style-type: none"> Salvage damaged or diseased timber as soon as possible (B) Use practices that limit the spread of disease and pests (B) Use beetle activity to identify high priority stands for harvest (B); target stands at high risk of beetle attack in Babine River

	no specific objective in Babine SRMP	SM2 (BB) <ul style="list-style-type: none"> destroy insect broods that have been concentrated by trap trees or pheromones (FRPR S41)
<i>Manage Enhanced Timber Development areas intensively</i>	<ul style="list-style-type: none"> Intensively manage timber in identified Enhanced Timber Development areas to reduce the rotation and/or increase yield (Babine LUP Ob 5.3) 	<ul style="list-style-type: none"> Practice intensive silviculture on ETD areas: improved seed or stock, thinning, pruning, fertilising, brushing and weeding (B)

Conserve soil: FRPR includes an objective to conserve soil. Land use plans do not specifically address soil.

Objective Class	Objectives	Strategies or Indicators plus Targets
<i>Conserve soil</i>	<ul style="list-style-type: none"> conserve soil productivity and hydrological function (FRPR S5) 	<ul style="list-style-type: none"> limit soil disturbance to 10% of cutblock, or 5% of cutblock if soils are sensitive; limit soil disturbance to 25% of roadside work areas (FRPR S35, default⁴) limit area occupied by permanent access to 7% of cutblock (FRPR S36, default) do not cause landslides (FRPR S37) maintain natural surface drainage patterns along access routes (FRPR S40)

⁴ default strategies need not be followed if Forest Stewardship Plans propose acceptable alternatives.

Maintain opportunities for tourism: The Kispiox LRMP includes objectives to maintain opportunities based on wilderness. The SRMP details several objectives concerned with maintaining wilderness experience. The Bulkley LRMP combines tourism and recreation, and is concerned primarily with maintaining angling within the Babine River. The Babine LUP includes objectives to protect the wilderness qualities of the park. The Babine River Corridor Park MDS includes maintaining wilderness recreation opportunities as a high priority objective. FRPR contains no objectives for resource features and recreation resources, however the Minister of Forests may establish such objectives (GAR 3).

Objective Class	Objectives	Strategies or Indicators plus Targets
Maintain wilderness value of Babine River Corridor	<ul style="list-style-type: none"> • <i>Protect Babine River corridor for river-based recreation (Kispiox LRMP); Maintain provincially significant angling opportunities associated with the Babine River (Bulkley LRMP)</i> • <i>Maintain a wilderness experience in Babine River Corridor (MDS)</i> • <i>Provide a wilderness experience by maintaining a single access point to Babine River Corridor Park (SRMP Table 14)</i> • <i>Manage Babine River SM2 (Babine LUP) to protect wilderness setting for river-based opportunities in the Babine River Corridor (Babine LUP Ob 4.1); Manage the Babine River SMZ to protect and buffer river-based resource values (including tourism) within Babine River Corridor park (Kispiox LRMP); Maintain the aesthetic quality (visual and auditory) of the Babine River Corridor (Babine SRMP Table 12, 14)</i> 	<ul style="list-style-type: none"> • <i>MDS lists allowed and controlled activities (P)</i> • <i>Develop Recreation Management Plan encouraging a sustainable level of recreation; involve stakeholders; meanwhile, follow interim strategies (P)</i> • <i>No permanent motorised access within SMZ (deactivate roads, implement access control, use temporary roads); temporary access >300 m from park (K)</i> • <i>In Babine River SM2, use partial cutting or small clearcuts (<15 ha) with wildlife tree patches, large leave strips, 150-year rotation, winter harvest, restricted access (BB); In Babine River SMZ, use openings < 15 ha, > 30% of forested stands > 140 years old (200-year rotation), winter harvest; locate cutblocks and roads to minimise impacts to the park (K)</i> • <i>No harvesting within Shelagyote/Babine Tourism Node with noted exception; exception to follow retention VQO; road location as planned (K)</i> • <i>No visible change within Tourism Node as a result of other development activities (K)</i> • <i>No perceptible industrial activity within Babine River SMZ during peak season (K)</i> • <i>Work with appropriate industries to reduce the impact of activities outside the park (P)</i> • <i>Review development proposals in Babine River SMZ and SM2 to minimise impacts on wilderness experience (P)</i>

	<ul style="list-style-type: none"> • Maintain the remote access associated with the park and existing tourism facility (SRMP Table 14) 	<ul style="list-style-type: none"> • No non-industrial motorised use of the Shelagyote Bridge; install gate; remove bridge during prolonged periods of inactivity (K) • No operational activity (except road-building) between July 31 and November 15 across Shelagyote Bridge (road construction must end September 1) (K)
<i>Maintain wilderness setting for Gunanoot Lake</i>	<ul style="list-style-type: none"> • Maintain wilderness setting for Gunanoot Lake (SRMP Table 14) 	<ul style="list-style-type: none"> • No permanent roads within 1 km of lake (K) • < 20m right-of-way on temporary roads within 1 km (K)
<i>Maintain fish and wildlife</i>	<ul style="list-style-type: none"> • Maintain or enhance the abundance of fish and wildlife within natural range (SRMP Table 14) 	<ul style="list-style-type: none"> • Follow objectives and strategies listed under biodiversity, wildlife, fish and water quality (K)
<i>Maintain cultural heritage</i>	<ul style="list-style-type: none"> • Maintain cultural heritage features (SRMP Table 14) 	<ul style="list-style-type: none"> • No specific strategies at present (K)
<i>Ensure park is safe</i>	<ul style="list-style-type: none"> • <i>Ensure park is safe for recreational use (MDS)</i> 	<ul style="list-style-type: none"> • <i>Address human/bear safety in Human/Bear Management Plan (P)</i> • <i>Develop and deliver bear information package (P)</i> • <i>Evaluate safety of existing foot trails; post warning and educational signs; improve or deactivate as necessary (P)</i> • <i>Develop and deliver water safety package (P)</i> • <i>Consider options if viewing from logging road bridge becomes dangerous (P)</i>

Maintain opportunities for recreation: The Kispiox LRMP includes objectives for maintaining recreational values and opportunities as well as public access to these opportunities. The SRMP includes objectives for recreation under special management zones, but does not include recreation as a separate value, and has no objective ensuring public access to recreational features. The Bulkley LRMP includes objectives for maintaining angling values in the Babine River Corridor and Babine River SM2. The Babine LUP addresses these objectives through the Babine River SM2 zone and includes objectives for maintaining access to existing features. The Babine River Corridor Park MDS includes maintaining wilderness experience for park users as a high priority objective. FRPR contains no objectives for resource features and recreation resources, however the Minister of Forests may establish such objectives (GAR 3).

Objective Class	Objectives	Strategies or Indicators plus Targets
Maintain access to recreational opportunities	<ul style="list-style-type: none"> Maintain opportunity for access to identified recreation destinations (Babine LUP Ob 6.2); similar wording in Kispiox LRMP; no specific objectives in Babine SRMP 	<ul style="list-style-type: none"> After operations, allow drive through by pick-ups to identified recreation destinations (i.e. do not permanently deactivate roads accessing destinations) (B) When designing landings, consider the opportunity for parking near identified trailheads (B)
Maintain backcountry opportunities	<ul style="list-style-type: none"> Maintain primitive, semi-primitive and wilderness opportunities (Kispiox LRMP) <i>Maintain ... backcountry recreation opportunities ... in Atna/Shelagyote SMZ (Babine SRMP Table 13)</i> <i>Maintain Barbeau Creek watershed in primitive state to protect ... wilderness recreation opportunities ... (Nilkitkwa LUP Ob 4.1)</i> 	<ul style="list-style-type: none"> <i>No harvesting within Atna/Shelagyote SMZ except for mineral exploration and development</i> <i>No harvesting within Barbeau Creek SM1 except for mineral exploration and development</i>
Maintain wilderness value of Babine River Corridor	<ul style="list-style-type: none"> <i>Protect Babine River corridor for river-based recreation (Kispiox LRMP); Maintain provincially significant angling opportunities associated with the Babine River (Bulkley LRMP)</i> <i>Maintain a wilderness experience in Babine River Corridor (MDS)</i> <i>Protect wilderness values by maintaining a single point for motorised road access to Babine River Corridor Park to protect wilderness values (SRMP Table 12)</i> <i>Manage Babine River SM2 (Babine LUP) to protect wilderness setting for river-based opportunities in the Babine River Corridor</i> 	<ul style="list-style-type: none"> <i>MDS includes a list of allowed and controlled activities (P)</i> <i>Develop Recreation Management Plan encouraging a sustainable level of recreation; involve stakeholders; meanwhile, follow interim strategies (P)</i> <i>No permanent motorised access within SMZ (deactivate roads, implement access control, use temporary roads); locate temporary access > 300 m from park (K)</i> <i>In Babine River SM2, use partial cutting or small clearcuts (<15 ha) with wildlife tree patches, large leave strips, 150-year</i>

	<i>(Babine LUP Ob 4.1); Manage the Babine River SMZ to protect and buffer river-based resource values (including recreation) within Babine River Corridor park (Kispiox LRMP); Maintain the aesthetic quality (visual and auditory) of the Babine River Corridor (SRMP Table 12)</i>	<i>rotation, winter harvest, restricted access (BB); In Babine River SMZ, use openings < 15 ha, > 30% of forested stands > 140 years old (200-year rotation), winter harvest; locate cutblocks and roads to minimise impacts to the park (K)</i>
Trail management	<ul style="list-style-type: none"> • Ensure identified trails are accessible after logging (Babine LUP Ob 6.1) 	<ul style="list-style-type: none"> • Mark trail bed before logging and clear trail as part of operation (BB) • If planning a new trail head after harvesting, ensure trail plan is approved before harvesting (BB) • Place signs to allow trail to be followed (BB)
Ensure park is safe	<ul style="list-style-type: none"> • <i>Ensure park is safe for recreational use (MDS)</i> 	<ul style="list-style-type: none"> • <i>Address human/bear safety in Human/Bear Management Plan (P)</i> • <i>Develop and deliver bear information package (P)</i> • <i>Evaluate safety of existing foot trails; post warning and educational signs; improve or deactivate as necessary (P)</i> • <i>Develop and deliver water safety package (P)</i> • <i>Consider options if viewing from logging road bridge becomes dangerous (P)</i>

Maintain visual quality: Both LRMPs and more detailed plans include objectives for visual quality. The objectives and strategies listed follow current forest management practice. FRPR contains no objectives for visual quality, however the Minister of Forests may establish such objectives (GAR S5).

Objective Class	Objectives	Strategies or Indicators plus Targets
Maintain scenic areas	<ul style="list-style-type: none"> • Manage viewscapes zoned as retention so that alterations are not visually apparent (Babine LUP Ob 7.2, SRMP Table 11) • Manage viewscapes zoned as partial retention so that alterations remain visually subordinate and blend with dominant landscape elements (Babine LUP Ob 7.1, SRMP Table 11) • Manage viewscapes zoned as modification so that alterations are comparable to natural occurrences (SRMP Table 11) • <i>Maintain the aesthetic quality of the Babine River Corridor (SRMP Table 12)</i> 	<ul style="list-style-type: none"> • Modify design to achieve desired appearance; prepare Visual Impact Assessment from identified viewpoints (B,K) • Uphold VQO where noted in Enhanced Timber Development areas (B) • <i>Use openings < 15 ha in Babine River SMZ (B,K)</i>

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- *Maintain scenic resources in Atna/Shelagyote SMZ (SRMP Table 13)*
 - *No harvesting within Atna/Shelagyote SMZ except for mineral exploration and development (K)*
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Maintain access to mineral and energy resources: The Kispiox LRMP contains objectives related to access to crown land. Specific objectives are provided in Babine SRMP. The Bulkley LRMP includes no specific objectives, but provides general direction to follow provincial regulations and allow exploration and development anywhere outside protected areas.

Objective Class	Objectives	Strategies or Indicators plus Targets
<i>Maintain exploration and development opportunities</i>	<ul style="list-style-type: none"> • Provide certainty of access for exploration and development of resources in consideration of other values (SRMP Table 16); No specific objectives in Bulkley LUPs 	<ul style="list-style-type: none"> • 100% of crown land outside protected areas available for exploration and development (K) • Many strategies under other objectives allow exceptions for mineral exploration and development (K, B)

Maintain and use botanical forest products: FRPR does not address botanical forest products. Objectives for botanical forest products are only included in Kispiox land-use plans.

Objective Class	Objectives	Strategies or Indicators plus Targets
<i>Maintain high-value pine mushroom sites</i>	<ul style="list-style-type: none"> • Maintain high-value pine mushroom sites through time (SRMP Table 17) 	<ul style="list-style-type: none"> • >60% of ICHmc1(01b) and ICHmc2(01b) sites > 80 years old (stand-level retention of > 50% is classed as over 80 years old) (K)
<i>Maintain berry habitat within berry management areas</i>	<ul style="list-style-type: none"> • Maintain and enhance the productivity of berry habitat within berry management areas (SRMP Table 18) 	<ul style="list-style-type: none"> • Where harvesting occurs, provide at least 60% exposure to sunlight (K) • Minimise impacts to soils and understory vegetation (K) • Use low ground disturbance systems or harvest on deep snow pack (K) • Apply appropriate practices on traditional berry-picking areas to enhance productivity: prescribed low-intensity burning; avoid cutting berry plants during brushing and spacing; low density restocking (K)
