



**Integrated Land
Management
Bureau**

Kispiox LRMP Higher Level Plan Objectives for Biodiversity, Visual Quality and Wildlife

January, 2006

ORDER TO ESTABLISH THE KISPIOX LANDSCAPE UNITS AND OBJECTIVES

ESTABLISH KISPIOX LANDSCAPE UNITS

Pursuant to section 4 (1) of the *Forest Practices Code of British Columbia Act* (the Act), the Cranberry, Kispiox North, Kispiox South, Lower Skeena, Middle Skeena North, Middle Skeena South, Upper Skeena, Gitseguecla, Suskwa and Babine Landscape units, outside of the West Babine Landscape Unit, as indicated on Map 1, are established as landscape units.

OBJECTIVES FOR THE KISPIOX LANDSCAPE UNITS

Pursuant to section 4 (2) of the *Forest Practices Code of British Columbia Act*, objectives, indicators and thresholds/measures identified in this document for biodiversity and wildlife for Kispiox North, Kispiox South, Gitseguecla Lower Skeena, Middle Skeena North, Middle Skeena South, Upper Skeena, Suskwa and Babine Landscape units, outside of the West Babine Landscape Unit, are established as landscape unit objectives. These objectives are consistent with the Kispiox LRMP Higher Level Plan Order (date April 25, 1996 and amended December 12, 2002) objectives for biodiversity and wildlife.

PROVINCIAL NON-SPATIAL OLD GROWTH OBJECTIVES

Landscape units established under the “order establishing provincial non-spatial old growth objectives”¹ will, on the effective date of this order, cease to have effect for the area in this new order.

TRANSITION

Pursuant to Section 10(1)(d)(ii) of the *Forest Practices Code of British Columbia Act*, for forest development plans and section 16(2) of the *Forest and Range Practices Act* for *Forest Stewardship Plans*, any of these type of operational plans submitted for approval on or following the effective date of the order are to be consistent with the objectives of this order.

¹ “Order establishing provincial non-spatial old growth objectives” came into effect on June 30, 2004.

SPATIAL APPLICATION OF OBJECTIVES

Maps 4 through 5 and 7 through 10 attached to this order provide a general indication of the area to which specific objectives apply. The actual location of operational activities in the immediate vicinity of these boundaries may vary from the boundaries shown on a map in order to adjust for inaccuracies in the boundaries or to reflect better information on the presence or absence of resource values provided the overall intent of the objective is achieved.

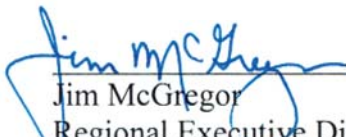
FUTURE AMENDMENTS

Objectives for biodiversity and wildlife may be amended to incorporate the results of new information arising from:

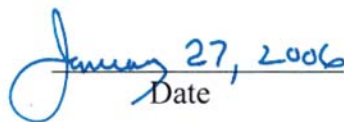
- cooperative planning undertaken with first nations around cultural heritage resources,
- monitoring results, and
- Timber Supply III, where the cumulative impact of these objectives are projected to substantially exceed the expected impact.

EFFECTIVE DATE OF ORDER

This Order takes effect on June 1, 2006



Jim McGregor
Regional Executive Director
Northern Region
Integrated Land Management Bureau
Ministry of Agriculture and Lands



Date

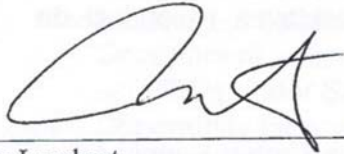
ORDER TO ESTABLISH SCENIC AREAS IN THE KISPIOX TIMBER SUPPLY AREA

ESTABLISH SCENIC AREAS

Pursuant to Section 7(1) of the Government Actions Regulation of the *Forest and Range Practices Act* (the Act), the scenic areas identified in Map 6, outside of the Gitanyow Planning Area and the West Babine SRMP Planning Area, are established as Scenic Areas.

EFFECTIVE DATE OF ORDER

This Order takes effect on February 1, 2006



Mike Lambert
Associate Deputy Minister
Ministry of Agriculture and Lands

January 27, 2006

Date

Preamble

Since the completion of the Kispiox Land and Resource Management Plan (LRMP) in 1996, there have been changes to forest legislation – notably the replacement of the *Forest Practices Code* by the *Forest and Ranges Practices Act* (FRPA). The FRPA requires Higher Level Plan (HLP) objectives be achieved through measurable and verifiable strategies and/or results. As a consequence, the Kispiox LRMP objectives need to be interpreted within the context of this new legislation. This document represents the functional interpretation of the Kispiox LRMP objectives for biodiversity, wildlife and visual quality, under the current legislation. These objectives under FRPA will form the minimum legal standard that forest licensees must meet when they develop their forest stewardship plans. These objectives will be consistent with the social choices made in the LRMP.

Each biodiversity, visual quality and wildlife objective is based on the Kispiox LRMP objectives and strategies. Where necessary, strategies are interpreted using current government policy. For example, the biodiversity objectives are implemented through the biodiversity guidebook, as guided by the Landscape Unit Planning Guide policy. Additionally, these objectives implement the results of inventories required by the LRMP such as those required for wildlife and visual quality.

Pre-FRPA HLP objectives for each value are described at the beginning of each section and originate directly from the Kispiox LRMP. Following this list are tables that form the refined HLP objectives. The HLP objectives will be as described by the Objective(s), Indicator(s) and Threshold/Measure(s). These columns meet the intent of the pre-FRPA HLP objectives, and are written in a way that allows the “measurable and verifiable” requirement of FRPA to be achieved. The “Management Considerations” provide additional descriptive information, and are not considered to be part of the HLP objective.

Spatial identification of resource features is considered an integral component of the objectives. However, the specific location of these features usually needs to be identified at an operational level. Therefore, the lines used to describe polygons associated with a particular resource feature or management direction as identified in these objectives should be considered to have an accuracy of plus or minus 100 metres at an operational scale. This flexibility is not intended to reduce the effective size of a particular resource feature. Also, this flexibility is not intended for use adjacent to features with a legal designation such as a park, private land or woodlot licence but may be acceptable when applied to wildlife habitat polygons, visual inventories and other similar designations.

Old Growth Management Areas (OGMAs) function to provide reserves for old growth dependant species across the landscape. Target percentages are identified by the provincially established old growth order. OGMAs are identified spatially but allow for limited operations within them to provide operational flexibility and minor improvement of locations over time.

In the event that there are future planning processes, the existing legal objectives will be re-examined to ensure the overall socio-economic balance anticipated by the LRMP, or a subsequent process, is maintained.

Table of Contents

Preamble	i
Table of Contents	ii
List of Tables	iii
List of Maps	iii
1.0 Biodiversity Objectives.....	4
2.0 Visual Quality Objectives	10
3.0 Wildlife Objectives	11
3.1 Ungulates	12
3.1.1 Mountain Goat	12
3.1.2 Moose.....	14
3.1.3 Mule Deer	15
3.2 Grizzly Bear	15
Appendix	29
A Acronyms and Glossary	29
Acronyms	29
Glossary	29
B Data Sources for Objectives.....	32
Biodiversity Objectives.....	32
Visual Objectives	34
Wildlife Objectives	35

List of Tables

Table 1. Landscape Unit Objectives, Indicators and Threshold/Measures for Biodiversity	4
Table 2. Recommended distribution of patch sizes	9
Table 3. Wildlife Tree Patch Retention Targets	9
Table 4. Landscape Unit Objectives, Indicators and Threshold/Measures for Mountain Goat Winter Range	12
Table 5. Landscape Unit Objectives, Indicators and Threshold/Measures for Moose Winter Range	14
Table 6. Landscape Unit Objectives, Indicators and Threshold/Measures for Mule Deer Winter Range	15
Table 7. Landscape Unit Objectives, Indicators and Threshold/Measures for Grizzly Bear Habitat	15

List of Maps

Map 1. Project Area and Landscape Unit Boundaries	18
Map 2. Biogeoclimatic Subzones and Landscape Unit Boundaries	19
Map 3. Biogeoclimatic Subzones and Watershed Boundaries	20
Map 4. Old Growth Management Areas	21
Map 5. Floodplain Areas	22
Map 6. Scenic Areas	23
Map 7. Recommended Visual Quality Objectives	24
Map 8. Goat Winter Range	25
Map 9. Moose Winter Range	26
Map 10. Mule Deer Winter Range	27
Map 11. High-value Grizzly Bear Habitat and Grizzly Bear Access Management Zones	28

1.0 Biodiversity Objectives

Kispiox LRMP Higher Level Plan Biodiversity Objectives

- ✧ To maintain or enhance biodiversity over the planning area
- ✧ To maintain the present variety of plant and animal species for each of the major ecosystems at the landscape level
- ✧ To maintain rare or threatened plant and animal species and communities
- ✧ To maintain rare ecosystems and environmentally sensitive areas such as wetlands (e.g. upper Shelagyote valley), floodplains and riparian areas.
- ✧ To maintain deciduous ecosystems
- ✧ To retain the structural diversity of managed forests

Table 1. Landscape Unit Objectives, Indicators and Threshold/Measures for Biodiversity

Objective(s)	Indicator(s)	Threshold/ Measure	Management Considerations
1. To maintain a distribution of old, mature, and early seral forest reflective of the natural disturbance regime, while maintaining the structural and functional features of old forest ecosystems.	a. Amount of mature and old seral forest retained in each landscape unit by BEC subzone (Map 2).	% retention of mature and old seral forest by BEC subzone for each landscape unit: <u>NDT 1</u> ESSF_{wv} >36% MH_{mm2} >36% <u>NDT 2</u> CWH_{ws2} >34% ICH_{mc1} >31% ICH_{mc2} >31% <u>NDT 3</u> SBS_{mc2} >23%	Mature forest is defined as > 80 years for CWH, >100 years for ICH and >120 years for ESSF and MH.

Objective(s)	Indicator(s)	Threshold/ Measure	Management Considerations
	b. Amount of early seral forest at any one time in each landscape unit by BEC subzone (Map 2).	Maximum amount of early seral forest (< 40 years) by BEC subzone for each landscape unit: <u>NDT 1</u> ESSFwv <22% MHmm2 <22% <u>NDT 2</u> CWHws2 <36% ICHmc1 <36% ICHmc2 <36% <u>NDT 3</u> SBSmc2 <54%	
	c. Amount of old seral forest at any one time in the Suskwa and Hazelton watersheds (Map 3).	<u>NDT 2</u> ICHmc2 >9%	Target can not be met as of 2005. Therefore, there can be no logging of old in the short term.

Objective(s)	Indicator(s)	Threshold/ Measure	Management Considerations
	d. Amount of harvesting in OGMA as identified in Map 4.	Up to 10% within a BEC subzone, within a watershed (Map 3), for the purposes of road development, improved harvest boundary alignment and for otherwise improving the location of the OGMA provided that an alternate area or areas in the same ecological unit² are identified and reserved from harvesting, and the area is - of equal or greater extent than the area to be disturbed, and - of equal or greater value for biodiversity conservation than the area to be disturbed.	Allow natural processes (e.g., fire, insects) to occur within OGMA except where those processes threaten resources outside the OGMA. The extent and location of the disturbance in OGMA and of the alternative area or areas reserved from harvesting should be reported in a digital format to the Integrated Land Management Bureau.
2. To attain a landscape pattern of patchiness that, over the long term, reflects the natural disturbance pattern.	a. Distribution and range of patch sizes by natural disturbance type, within each landscape unit.	Development over a five year period will maintain or move towards the patch size distribution targets in Table 2.	Analyses will be calculated separately for each LU, by licensee chart/Forest Development Unit. The method used for preparing the initial patch size and seral stage analyses will be summarized and retained. The same method will be utilized again at the end of the 5-year period.

² BEC Subzone, within a watershed

Objective(s)	Indicator(s)	Threshold/ Measure	Management Considerations
3. To maintain the range of structural attributes of old forest ecosystems within forest stands throughout the rotation.	a. Area of wildlife tree retention having the structural characteristics of older forests.	% of cutblock area retained in wildlife tree patches (WTPs) over the rotation as per Table 3.	Wildlife tree retention should, as a first priority, protect trees with valuable wildlife tree attributes. ³ Mature stand structural attributes may be achieved through a variety of means, including wildlife tree patches, alternate silvicultural systems, and OGMA's across the landscape.
	b. Distance between wildlife tree patches.	< 500m from mature timber.	
4. Maintain the integrity of floodplain ecosystems.	a. Amount of harvesting in low bench floodplain ecosystems.	No alteration within low bench ecosystems except to manage natural processes that threaten resources outside of the floodplain, or to build a road to access timber or other resources outside of the low bench ecosystem.	Current extent of floodplain mapping is shown on Map 5.

³ High value wildlife tree characteristics include: internal decay; crevices present (loose bark or cracks); large brooms present; active or recent wildlife use; current insect infestation; tree structure suitable for wildlife use (e.g., large nest, hunting perch, bear den, etc); largest trees on site (height and/or diameter) and/or veterans; and locally important wildlife tree species. Where there are few trees suitable for wildlife trees, priority should be given to retaining large, stable trees that will likely develop two or more of the above characteristics.

Objective(s)	Indicator(s)	Threshold/ Measure	Management Considerations
	b. Amount of harvesting in midbench floodplain ecosystems.	No alteration within midbench ecosystems except: - to manage natural processes that threaten resources outside of the midbench ecosystem, - to access timber or other resources outside of the low bench ecosystem, or - to provide for moose and grizzly bear habitat.	Current extent of floodplain mapping is shown on Map 5.

Table 2. Recommended distribution of patch sizes

NDT	%Contributing Forested Area Within Landscape Unit		
	Small Patches (<40 ha)	Medium Patches (>40 and <80 ha)	Large Patches (>80 and <250)
NDT 1	30-40%	30-40%	20-40%
NDT 2	30-40%	30-40%	20-40%
	Small Patches (<40 ha)	Medium Patches (>40 and <250 ha)	Large Patches (>250 and <1000)
NDT 3	20-30%	10-20%	60-80%

Table 3. Wildlife Tree Patch Retention Targets

Landscape Unit	BEC subzone	% of Cutblock Area Required as Wildlife Tree Patches
1. Kispiox North	ESSFwv	0
	ICHmc	1
2. Kispiox South	ESSFwv	2
	ICHmc	6
3. Upper Skeena	ESSFwv	0.5
	ICHmc	1
	SBSmc	2
4. Middle Skeena North	ESSFwv	0.5
	ICHmc	3
5. Middle Skeena South	CWHws	8
	ESSFwv	2
	ICHmc	3
6. Lower Skeena	MHmm	0
	ICHmc	4
	CWHws	0.5
	ESSFwv	0.5
7. Suskwa	ESSFwv	0.5
	ICHmc	4

2.0 Visual Quality Objectives

Kispiox LRMP Higher Level Plan Visual Quality Objectives

- ✧ To maintain visual quality in scenic areas including:
 - a) Highways 16 and 37 corridors
 - b) Babine River
 - c) Seven Sisters area
 - d) Kispiox River valley
 - e) Skeena River valley
 - f) Swan Lake area
 - g) Hazelton area
 - h) adjacent to Ross Lake and Seeley Lake Provincial Parks
 - i) B.C. Forest Service recreation sites and trails and
 - j) important recreational fishing areas.
- ✧ To maintain visual quality as seen from Highway 16 and 37, Sedan Creek recreation site and Cedarvale back road.

Scenic areas were made known in 1999 by the district manager for the Kispiox Forest District for the following areas:

<u>Recreation Areas</u>	<u>Recreation Trails</u>	<u>Important Recreational Fishing Areas</u>
• Bonus Lake • Derrick Lake • Elizabeth Lake • Keynton Lake • Little Fish • Mitten Lake • Octopus Lake • Pentz Lake • Sedan Creek • Suskwa River • Sweetin River Upper Kispiox	• Blue Lakes • Coyote Creek • Kispiox Mtn • Rossvale x/c Ski Trail • Sidina Mtn • Station Creek • Telegraph • Thoen Basin	• Footsore Lake • Gunanoot Lake • Hodder Lake • Kitwancool Lake • Sicintine Lake • Babine River • Bulkley River • Kispiox river • Skeena River
<u>View Sheds</u>	<u>Travel Corridors</u>	<u>Provincial Parks</u>
• Hazelton • Seven Sisters	• Highway 16 • Highway 37 • Highway 49 (Kispiox Trail)	• Ross Lake • Seely Lake • Swan Lake/Kispiox River

These scenic areas (Map 6) will be established under Section 7(1) of the *Government Actions Regulation of the Forest and Range Practices Act*. Consultation with the forest industry, public and first nations occurred as part of the Kispiox FRPA project. The District Manager for the Skeena Stikine Forest District has the authority to amend these areas and to establish the corresponding visual quality objectives. Recommended VQOs, are identified in Map 7.

3.0 Wildlife Objectives

Kispiox LRMP Higher Level Plan Wildlife Objectives

- ✧ To maintain natural ecosystems and habitat to sustain viable populations of all native wildlife within their natural ranges.
- ✧ To protect or enhance populations and habitat of rare or endangered and regionally significant species.
- ✧ To maintain provincially significant scenic resources, backcountry recreation opportunities and habitat for grizzly bears and mountain goats.
- ✧ To maintain provincially significant scenic resources, backcountry recreation opportunities, grizzly bear denning habitat, mountain goat habitat and extensive wetlands in the upper Sicintine and Shelagyote valleys.
- ✧ To maintain provincially significant scenic resources, backcountry recreation opportunities and wildlife habitat.
- ✧ (Guiding principles) Access Management – road construction must minimize negative impacts on grizzly bear habitat and grizzly bear populations.
- ✧ Manage so that important grizzly bear habitat receives special emphasis.
- ✧ Manage so that important wildlife habitat and important connective corridors receive special emphasis.
- ✧ Manage access to minimize human-bear interactions;
- ✧ To minimize disturbance to the migration patterns of mountain goats that use the higher elevation areas to move between northern and southern ranges.

3.1 Ungulates

3.1.1 Mountain Goat

Table 4. Landscape Unit Objectives, Indicators and Threshold/Measures for Mountain Goat Winter Range

Objective(s)	Indicator(s)	Threshold/ Measure	Management Considerations
1. Provide for thermal and snow interception cover and forage for wintering goat populations on goat winter range identified on Map 8.	a. Amount of timber harvesting, silviculture treatments and road construction in goat winter range.	No activities, except when addressing worker safety for: - felling danger trees, - felling for guy line anchors, and - felling of tail holds or to access timber or other resources outside of the winter range, where no practicable alternative exists.	Trees felled to address worker safety will remain on site unless worker safety is compromised. Retention of forest cover in mountain goat winter range is required to maintain habitat attributes critical to the survival of this species. This includes patches of mature/old forest that provide winter forage production, snow interception, and thermal/security cover in areas adjacent to escape terrain.
2. Limit disturbance to mountain goats on winter range identified on Map 8.	a. Timing of primary forest activities within 500 meters of goat winter range.	Timing for activities is June 15 to October 31 unless otherwise varied .	Timing can be varied by a qualified professional
	b. Timing of helicopter logging activities within 2000 metres of goat winter range.	Timing for helicopter logging is June 15 to October 31 unless no other practicable alternative exists.	Timing can be varied by a qualified professional

Objective(s)	Indicator(s)	Threshold/ Measure	Management Considerations
3. Prevent unregulated harvest of mountain goats in mountain goat winter range identified on Map 8.	a. Road standards within 500 metres of goat winter range.	Non-permanent access structures only unless otherwise required to access timber or other resources outside of the winter range, where no practicable alternative exists.	Avoid road or trail construction within 500 meters horizontal distance of a mountain goat winter range. Where no other practicable access options exist, roads and trails should utilize measures to protect goats and their habitat from disturbance including: - placing adequate timber buffers around mountain goat winter range boundaries, - increasing the operational distance between activities and mountain goat winter range, or other suitable techniques.
	b. Motorized vehicle access within 500 meters of goat winter range following completion of primary forest activities.	Restrict motorized vehicle access to within 1 year following completion of primary forest activities, unless no other practicable alternative exists.	Timing can be varied by a qualified professional

3.1.2 Moose

Table 5. Landscape Unit Objectives, Indicators and Threshold/Measures for Moose Winter Range

Objective(s)	Indicator(s)	Threshold/ Measure	Management Considerations
1. Ensure moose forage is retained and available within moose winter range identified on Map 9.	--	--	Adjust stocking standards to increase forage in conifer leading stands that are conducive to high-value moose forage. Retain woody forage species (e.g. willow, dogwood, saskatoon, mountain ash, highbush cranberry, etc.), provided crop tree growth and attainment of free growing will not be impacted. Maintain existing deciduous patches throughout larger blocks, particularly in locations where conifer establishment is poor or deciduous patches are dominated by high value forage species (e.g. willow, dogwood, saskatoon, mountain ash, highbush cranberry, etc.). Distribute harvest throughout the winter range to provide a balance of cover and forage through a rotation.
2. Maintain cover for security, visual screening, thermal cover and snow interception needs within moose winter range, identified on Map 9.	--	--	Plan clearcut areas to attain a high perimeter to area ratio and irregular boundaries. Retain reserves and unmerchantable trees to provide security cover. Maintain visual screening along accessible road right-of-ways when spacing, pruning and/or brushing. Once the interior of the block offers visual cover, the buffers may be harvested or treated silviculturally. Locate roads away from riparian areas and natural openings to reduce vulnerability of moose in the winter and to avoid alienation of habitat. Provide visual screening where operational constraints require roads to be located close to these areas. . Development planning will emphasize the use of temporary roads and or deactivation following use.

3.1.3 Mule Deer

Table 6. Landscape Unit Objectives, Indicators and Threshold/Measures for Mule Deer Winter Range

Objective(s)	Indicator(s)	Threshold/Measure	Management Considerations
1. Provide for thermal and snow interception cover and forage for wintering mule deer populations on deer winter range identified on Map 10.	a. Amount of area managed for a rotation age >150 years.	>15% will be managed at a rotation age of 150 years. >40% of this area will be older than 150 years at any one time.	Select areas exhibiting important deer winter range attributes that include: - southerly aspects (unless cedar is present or pine is leading); - low-moderate elevations (< 1000m); - stands providing thermal and snow interception values associated primarily with riparian communities and sites of drier moisture regimes. Key forage species include red-osier dogwood, saskatoon, arboreal lichens (on tree and litterfall), douglas maple, birch, aspen, wild rose, highbush cranberry, Vaccinium spp., Kinnikinnick, fir and cedar. Harvest adjacent to stands with key attributes should proceed based on the advice of a qualified professional and should give consideration to proximity to forage and cover.

3.2 Grizzly Bear

Table 7. Landscape Unit Objectives, Indicators and Threshold/Measures for Grizzly Bear Habitat

Objective(s)	Indicator(s)	Threshold/Measure	Management Considerations
1. Maintain the integrity of critical grizzly bear habitat ⁴ within high-value grizzly bear habitat identified in Map 11.	a. Alteration of critical grizzly bear habitat.	No alteration of critical habitat unless no practicable alternative exists.	Critical habitats will be identified during operational planning. Note that critical habitat patches may be encountered outside of the high-value grizzly bear habitat zone and may require strategies to maintain the habitat over the long-term. Retain devil's club in riparian areas and wildlife tree patches. Avoid bedding, denning, trails and rub trees.

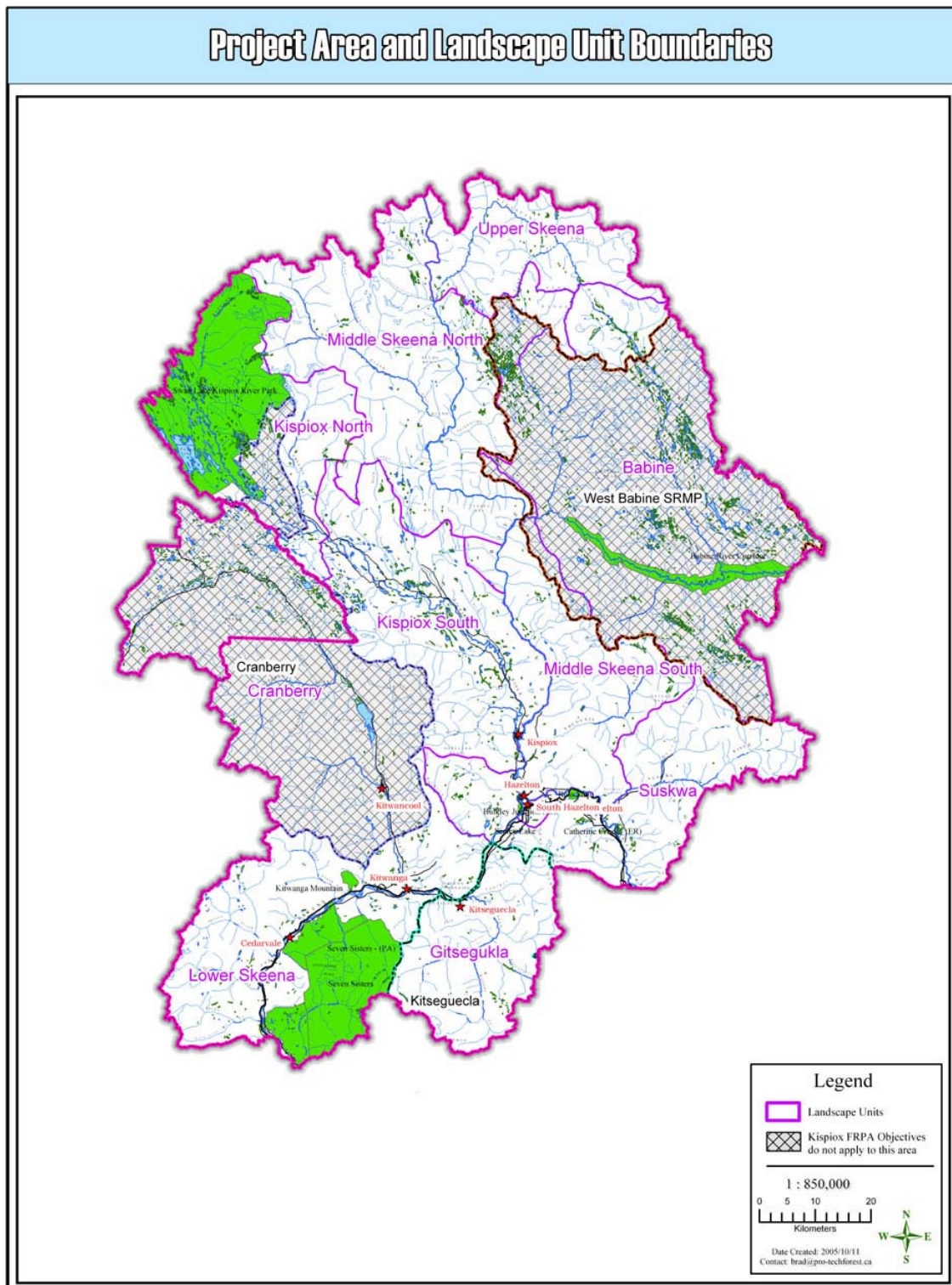
⁴ Critical patch habitats are >2ha (contiguous) and include Sitka alder-spiny wood fern seepage sites; south aspect Trembling aspen-Douglas maple sites (minimum 5% cover of Douglas maple); Sitka alder-cow parsnip avalanche chutes; Spruce-black twinberry floodplain (ICHmc2/05); trembling aspen-beaked hazelnut sites (ICHmc2/51); paper birch-red osier dogwood fans (ICHmc2/03); south aspect Paper birch-

Objective(s)	Indicator(s)	Threshold/ Measure	Management Considerations
	b. Functional forest cover adjacent to non-forested critical habitats.	Approximately 100m of functional forest cover adjacent to non-forested critical habitats, unless no practicable alternative exists.	Configure areas of forested cover within critical habitat to provide interior forest conditions that limit wind exposure, provide shading and prevent the introduction of prolific understory growth.
2. Limit the disruption to bear use of the high value habitat in the Upper Kispiox access management zone identified on Map 11.	a. Percent of forest > 50 years in age.	50% > 50 years.	Harvest the operable volume in two passes, with a minimum of 35 years between each pass. Manage each area, separated by the Kispiox River, as separate units.
	b. Duration and season of activity during operations.	--	Road building, harvesting and silviculture is to occur within a 20 year window. Variation from this timeframe is available after consultation with agencies and other licensees in the area. 5 years for road building and harvest operations, 20 years for silviculture activities. Harvesting is to occur in the winter unless no other practicable option available.
	c. Motorized use of the road network between operations.	Restricted motorized access to the road network between operational periods.	Use access control points, temporary access structures, or a deactivation strategy.
3. Limit the impact of road building and forest harvesting activities on critical habitat within the Upper Kispiox access management zone identified on Map 11.	a. Distance of roads from critical grizzly bear habitats.	No permanent roads located within approximately 150m of critical grizzly bear habitat, unless no practicable alternative exists.	

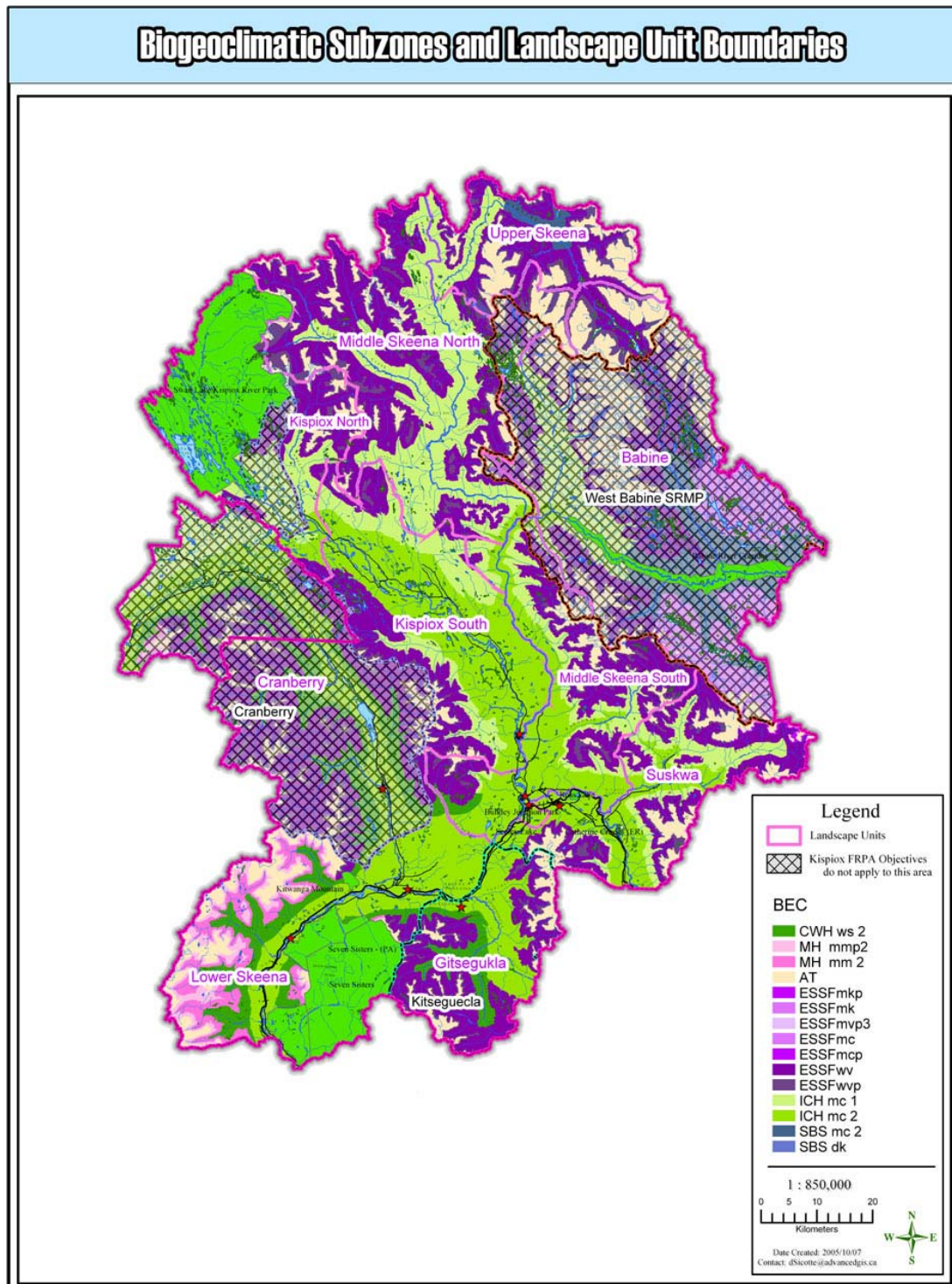
falsebox sites; black cottonwood-red osier dogwood floodplains (CWHws2/08); Spruce-Salmonberry floodplains (CWHws2/07); Cottonwood-Willow Floodplains (CWHws2/09); thimbleberry-cow parsnip moist meadows; willow swamps and willow-sedge wetlands (where willow is the dominant woody vegetation and exceeds 20% cover); Skunk cabbage sites (CWHws2/11; ICHmc2/07; ICHmc1/06).

Objective(s)	Indicator(s)	Threshold/ Measure	Management Considerations
4. Limit the impact of road building and forest harvesting activities on high-value habitat within the East Kispiox/Kuldo access management zone identified on Map 11.	a. Access within high-value habitat.	Restricted motorized access to the road network.	Use access control points, temporary access structures, or a deactivation strategy.
5. Limit the impact of road building and forest harvesting activities on high-value habitat within the Upper Cranberry access management zone identified on Map 11.	a. Access within high-value habitat.	Restricted motorized access to the road network.	Use access control points, temporary access structures, or a deactivation strategy.

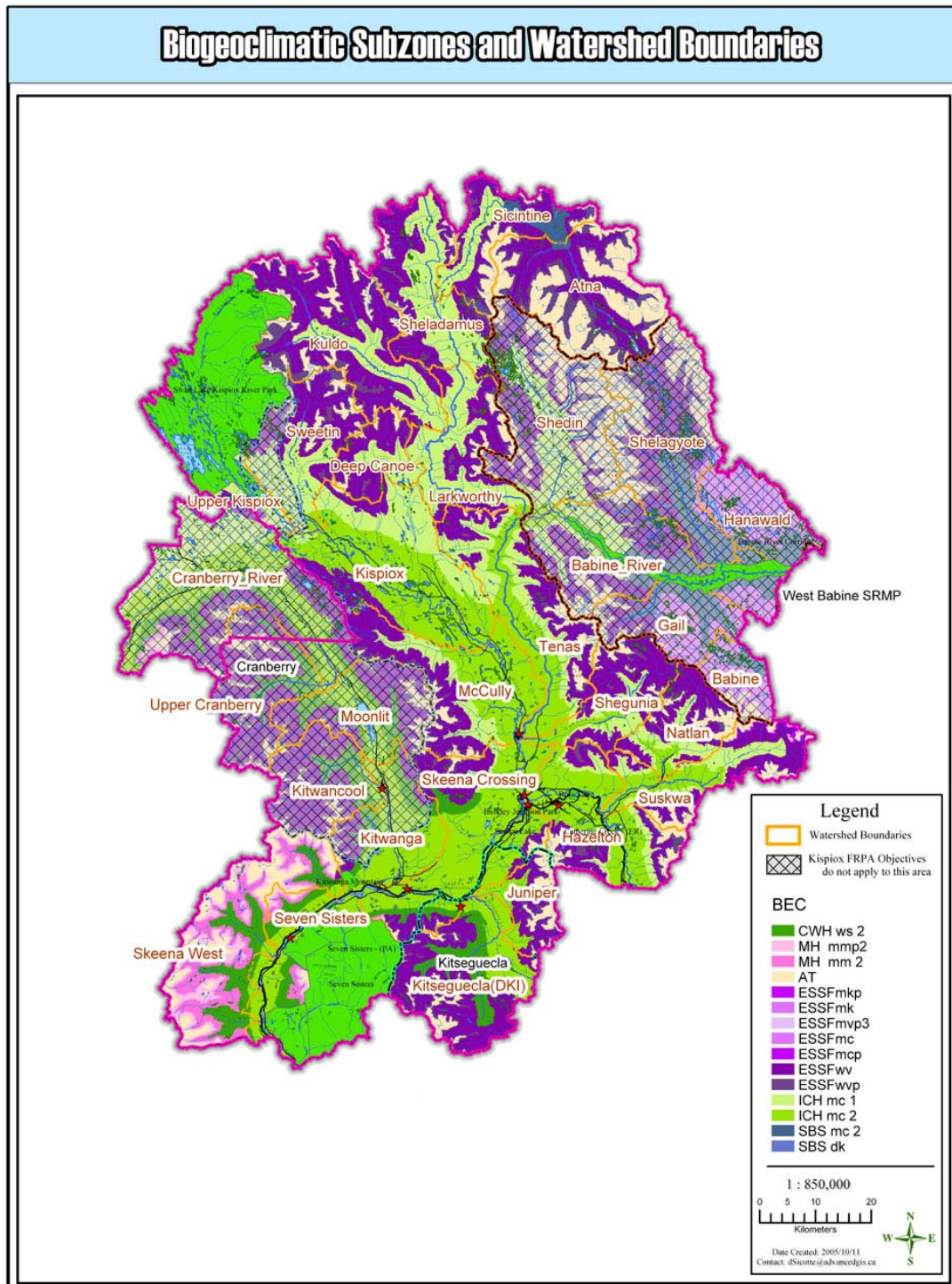
Map 1. Project Area and Landscape Unit Boundaries



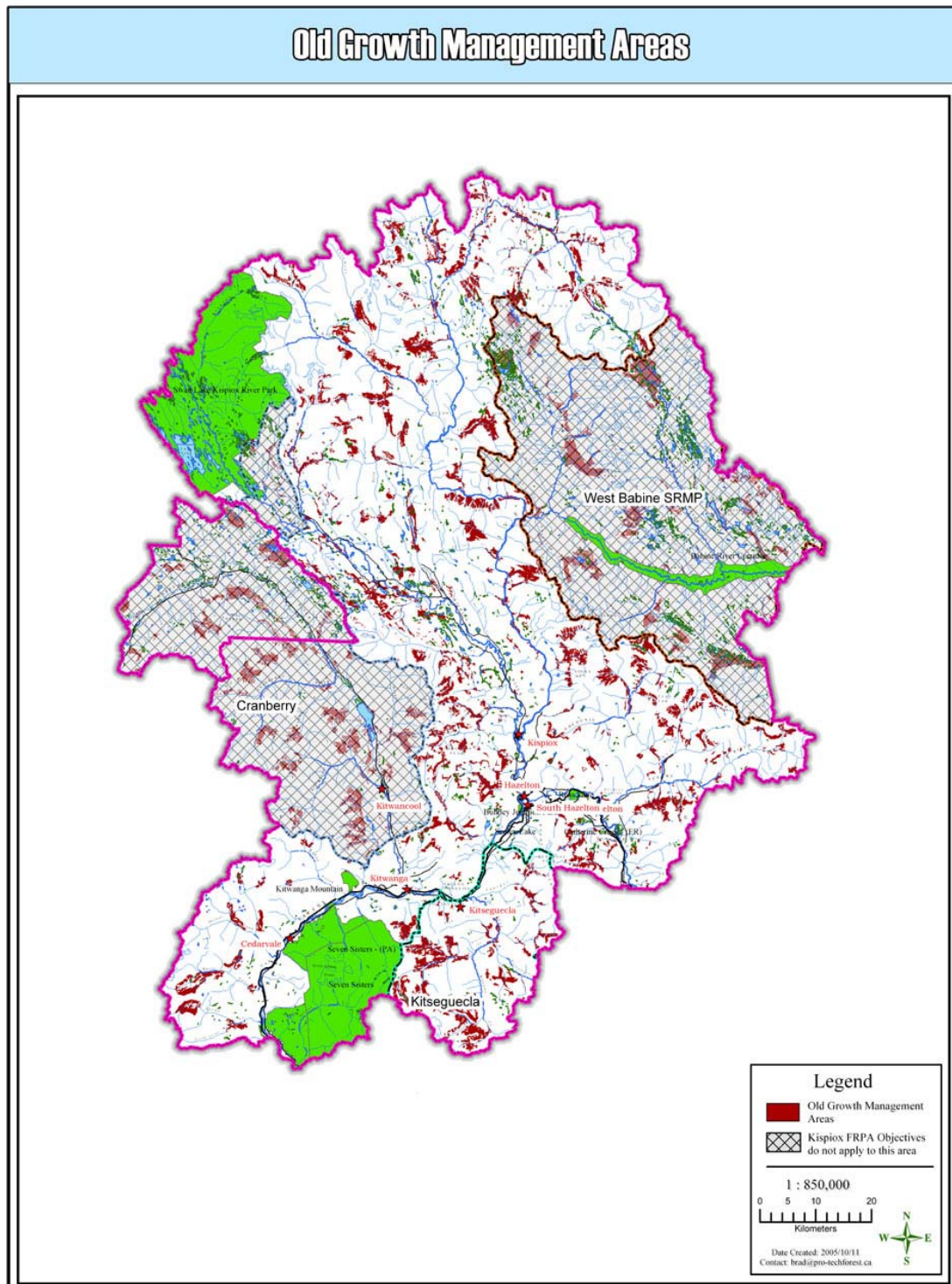
Map 2. Biogeoclimatic Subzones and Landscape Unit Boundaries



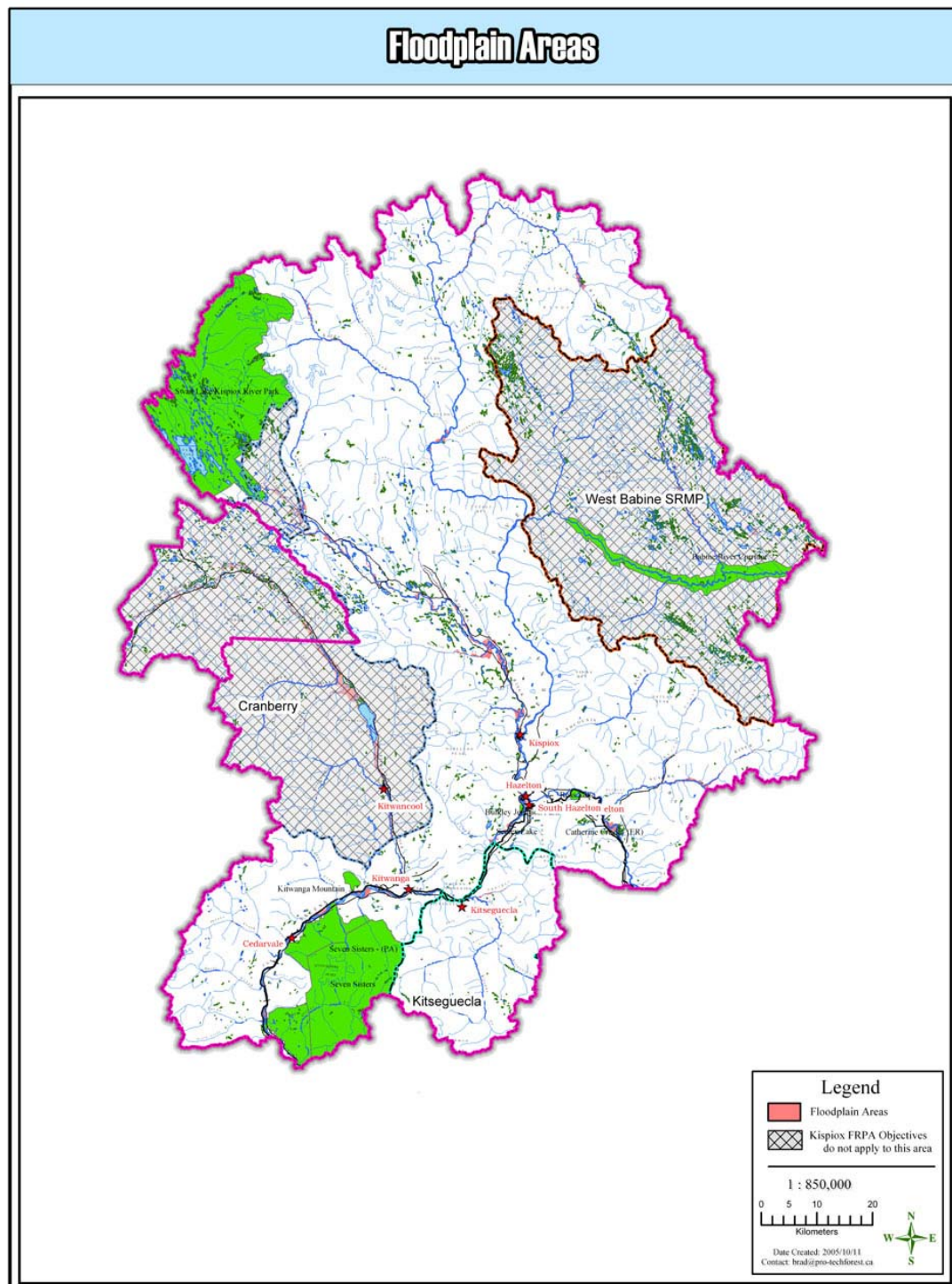
Map 3. Biogeoclimatic Subzones and Watershed Boundaries



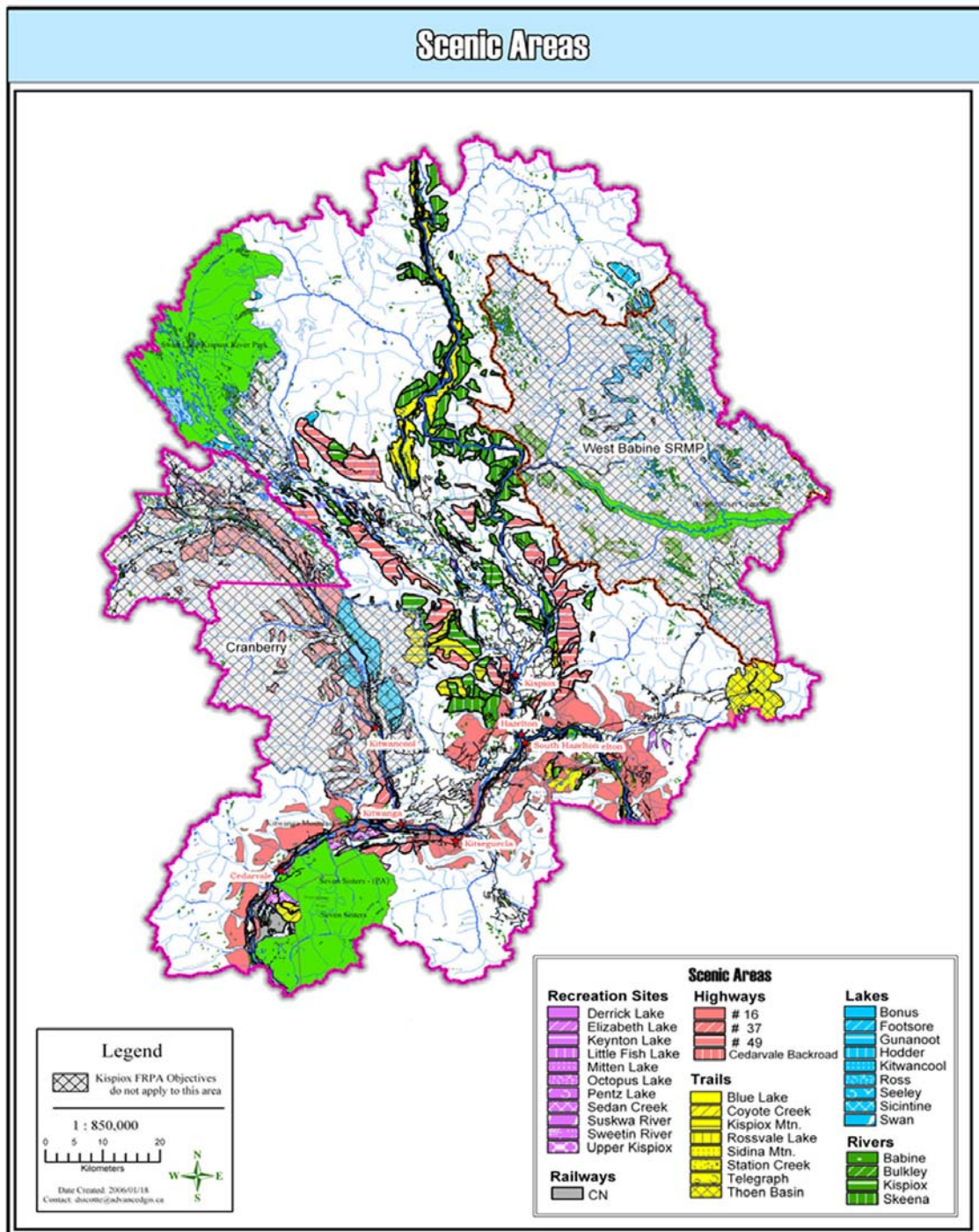
Map 4. Old Growth Management Areas



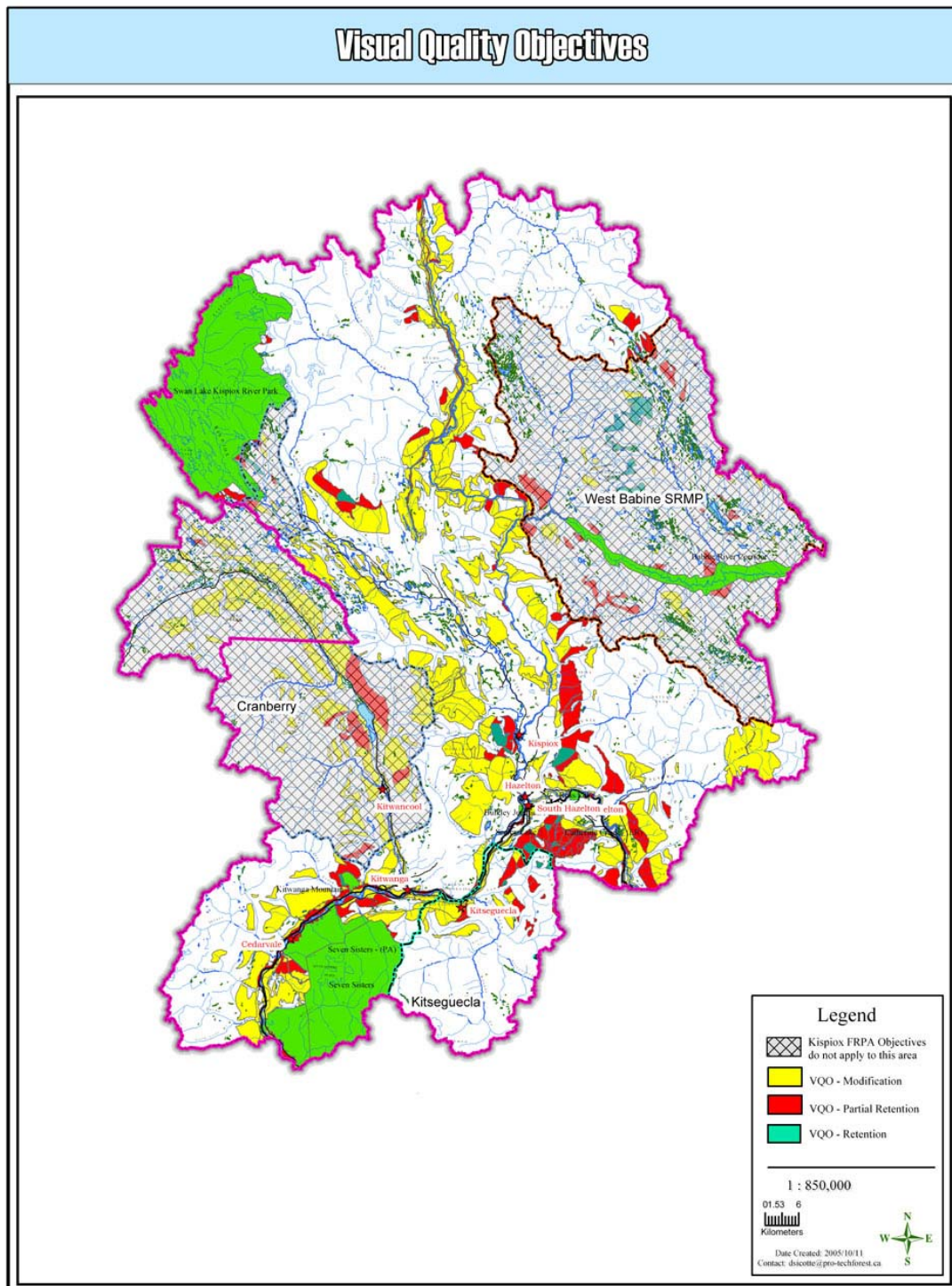
Map 5. Floodplain Areas



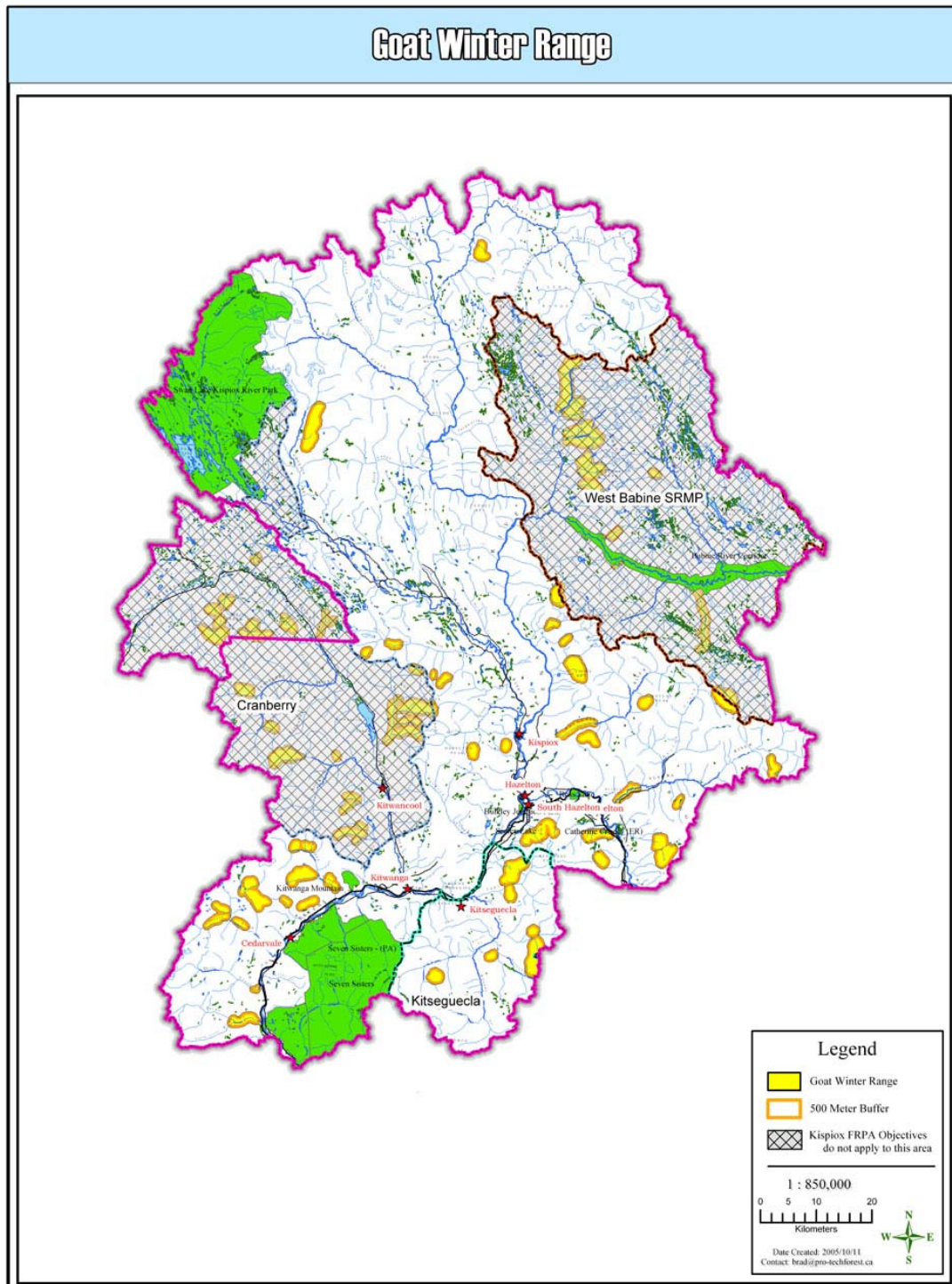
Map 6. Scenic Areas



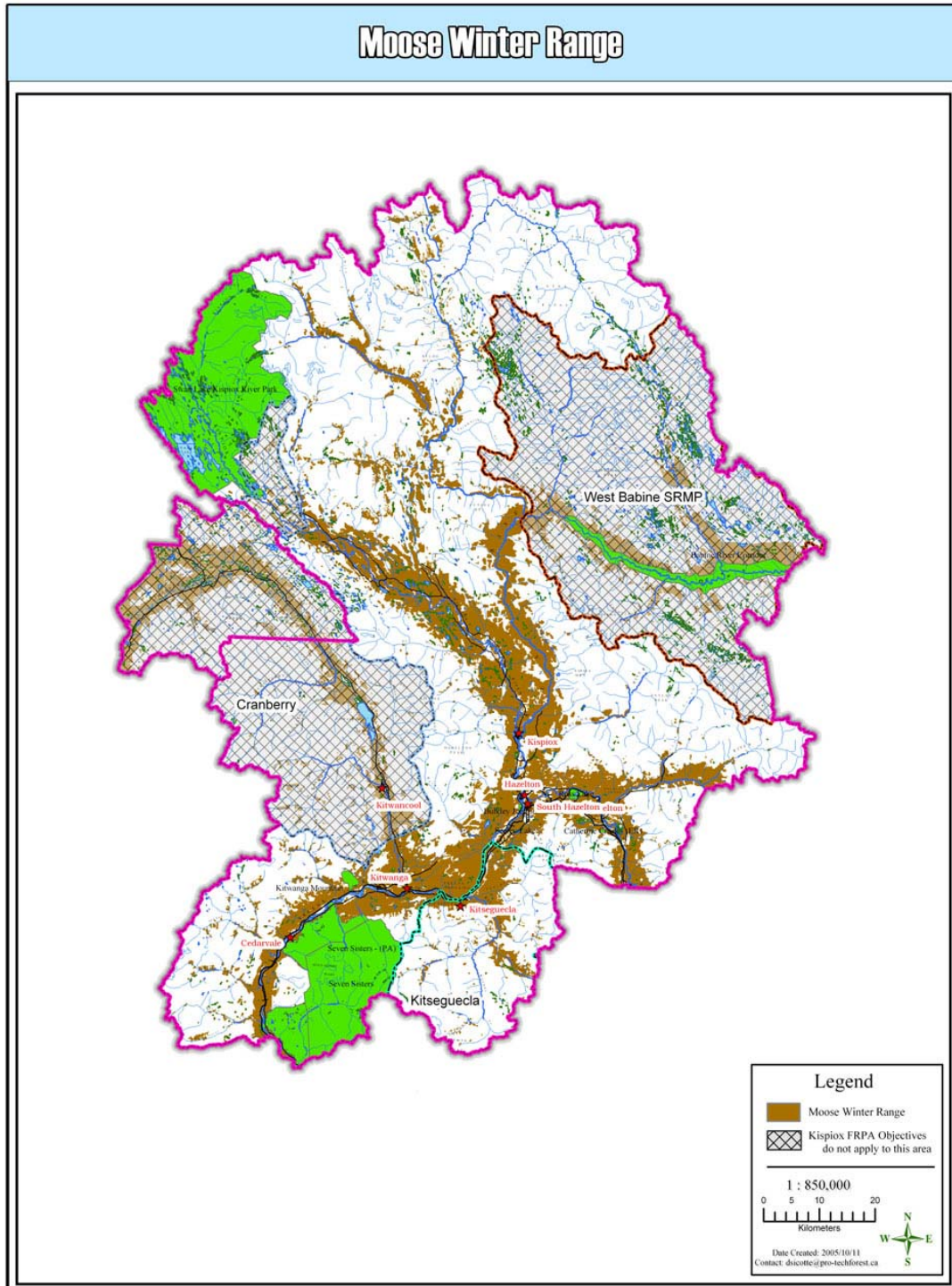
Map 7. Recommended Visual Quality Objectives



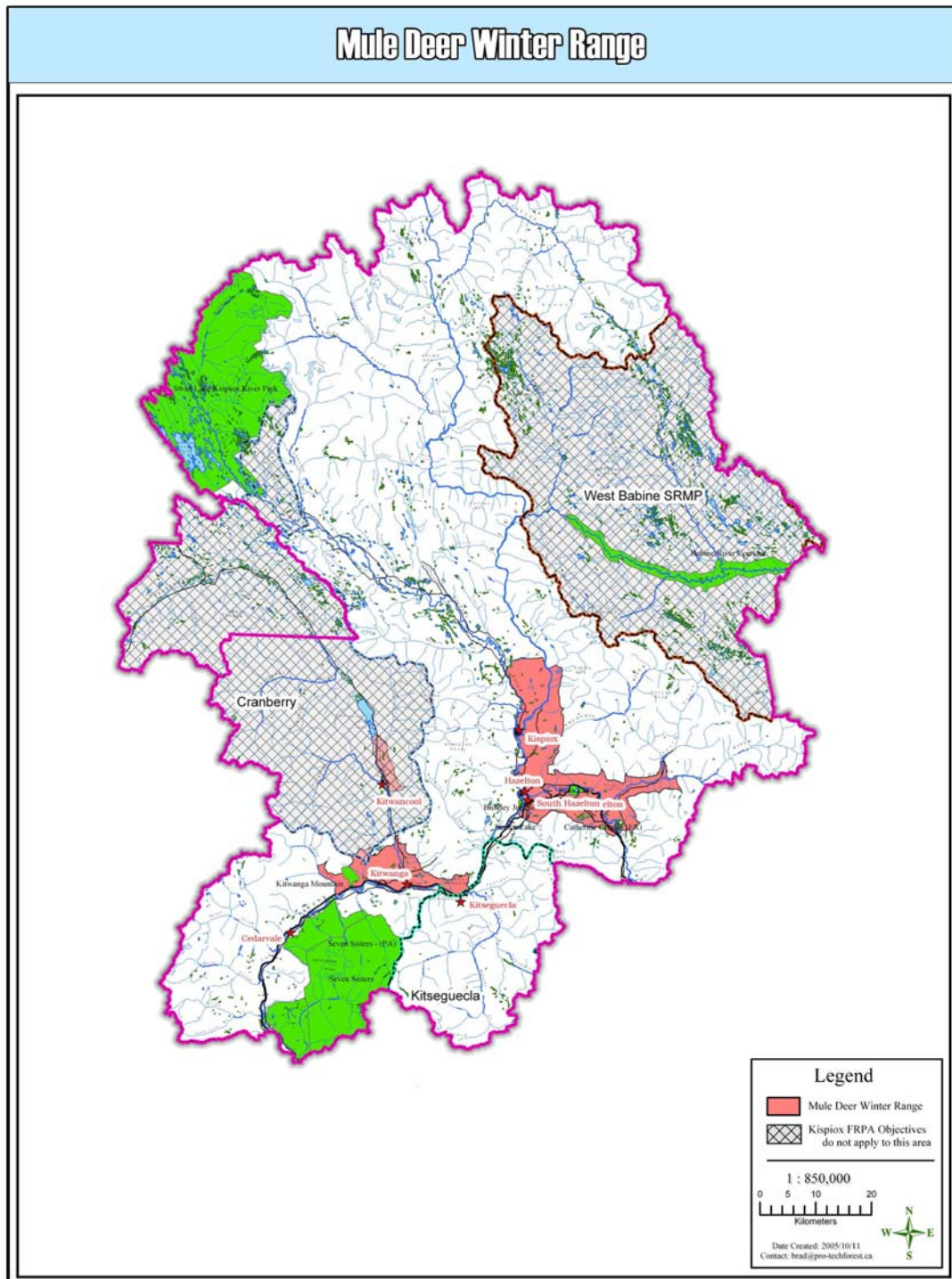
Map 8. Goat Winter Range



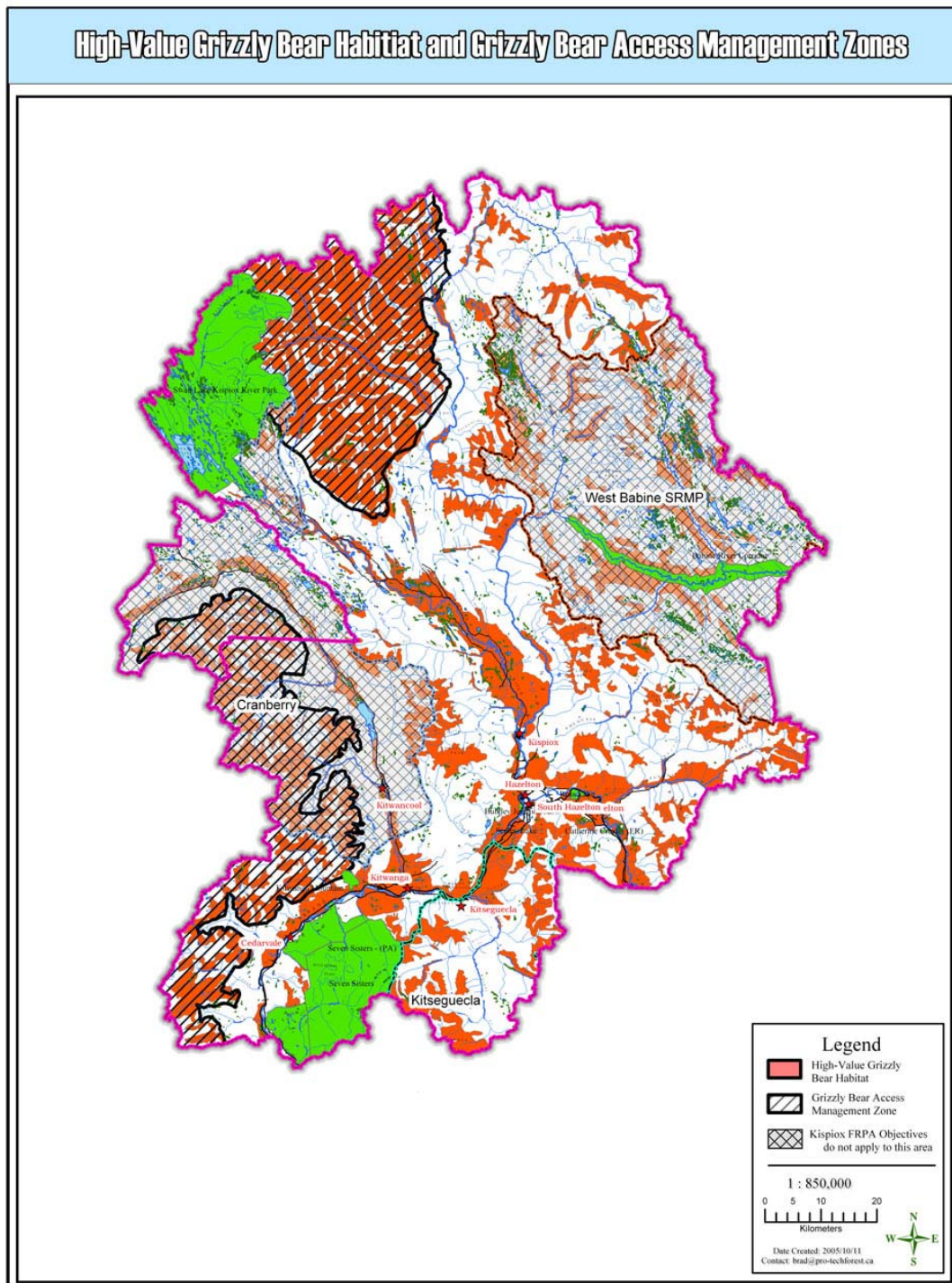
Map 9. Moose Winter Range



Map 10. Mule Deer Winter Range



Map 11. High-value Grizzly Bear Habitat and Grizzly Bear Access Management Zones



Appendix

A Acronyms and Glossary

Acronyms

BEC	Biogeoclimatic ecosystem classification
CWH	Coastal Western Hemlock zone
ESSF	Engelmann Spruce Sub-alpine Fir zone
FRPA	<i>Forest and Range Practices Act</i>
FSP	Forest Stewardship Plan
HLP	Higher Level Plan
ICH	Interior Cedar Hemlock zone
LU	Landscape unit
LRMP	Land and resource management plan
MH	Mountain Hemlock
MELP	Ministry of Environment, Lands and Parks; now called MWLAP
MoF	Ministry of Forests
MSRM	Ministry of Sustainable Resource Management
MWLAP	Ministry of Water, Land, and Air Protection
NDT	Natural Disturbance Type
OGMA(s)	Old Growth Management Area(s)
SBFEP	Small Business Forest Enterprise Program; now called BC Timber Sales
SBS	Sub Boreal Spruce zone
SRMP	Sustainable Resource Management Plan
TSA	Timber supply area
TSR	Timber supply review
UWR	Ungulate Winter Range
VLI	Visual Landscape Inventory
VQO	Visual Quality Objective
WTP	Wildlife tree patch

Glossary

Biodiversity	The diversity of plants, animals and other living organisms in all their forms and levels of organization, including the diversity of genes, species and ecosystems, as well as the functional processes that link them.
---------------------	--

Biogeoclimatic zones	A system of ecological classification based primarily on climate, soils, and vegetation that divide the province into large geographic areas with broadly homogeneous climate and similar dominant tree species. Zones are further broken down into subzones (based on characteristic plant communities occurring on zonal sites) and variants (based on climatic variation within a subzone).
Critical Grizzly Bear Habitat	>2ha and include Sitka alder-spiny wood fern seepage sites; south aspect Trembling aspen-Douglas maple sites; Sitka alder-cow parsnip avalanche chutes; Spruce-black twinberry floodplain (ICHmc2/05); trembling aspen-beaked hazelnut sites (ICHmc2/51); paper birch-red osier dogwood fans (ICHmc2/03); south aspect Paper birch-falsebox sites; black cottonwood-red osier dogwood floodplains (CWHws2/08); Spruce-Salmonberry floodplains (CWHws2/07); Cottonwood-Willow Floodplains (CWHws2/09); thimbleberry-cow parsnip moist meadows; willow swamps and willow-sedge wetlands; Skunk cabbage sites (CWHws2/11, ICHmc1/06, ICMmc2/07).
Forest Stewardship Plan (FSP)	An operational plan that detail the logistics for development. Methods, schedules, and responsibilities for accessing, harvesting, renewing and protecting the resource are set out to enable site-specific operations to proceed.
Landscape Unit	Large watersheds, based on an amalgamation of Gitxsan house territories.
Monitoring	Ongoing assessment of how well the management objectives of the SRMP are being implemented. Effectiveness monitoring will assess how well the management objectives are meeting the goals or intent of the SRMP.
Motorized Vehicle	A vehicle that is designed to be self propelled.
Practicable	Is possible and can be accomplished with known means or resources.
Results-based	A management strategy that focuses on on-the-ground results, providing flexibility in meeting the clear environmental standards set by the <i>Forest and Range Practices Act</i> .

Riparian area	Areas of land adjacent to wetlands or bodies of water such as swamps, streams, rivers or lakes including both the area dominated by continuous high moisture content and the adjacent upland vegetation that exerts an influence on it.
Scenic area	Any visually sensitive area of a scenic landscape identified through a visual landscape inventory or planning process carried out or approved by a district manager.
Seral (forest or stage)	Sequential stages in the development of plant communities (e.g. from young (or early seral) stage to old stage (or old seral)) that successively occupy a site and replace each other over time.
Sustainable	A state or process that can be maintained indefinitely. The principles of sustainability integrate three closely interlinked elements – the environment, the economy and the social system – into a system that can be maintained in a healthy state indefinitely.
Timber supply area (TSA)	An integrated resource management unit established in accordance with Section 6 of the <i>Forest Act</i> . TSAs were originally defined by an established pattern of wood flow from management units to the primary timber-using industries. They are the primary unit for allowable annual cut determinations.
Visual Landscape Inventory (VLI)	An inventory that identifies visible areas that have known or potential scenic value as seen from selected viewpoints, such as towns, parks, recreation sites and highway and river corridors. This province-wide inventory undertaken by the Ministry of Forests is designed to provide information on visual quality for planning including strategic planning (e.g. LRMPs) and operational planning (forest stewardship plans). One component of a VLI are Recommended Visual Quality Objectives (VQOs).
Visual Quality Objectives (VQO)	A resource management objective established by the district manager or contained in a higher level plan that reflects the desired level of visual quality based on the physical characteristics and social concern for the area. Five categories of VQO are commonly used: preservation; retention; partial retention; modification and, maximum modification.
Watershed	Midsized watersheds, previously identified as landscape units in the blanket provincial old growth order.

B Data Sources for Objectives

Biodiversity Objectives

Category	Item	Date	Description	Application
Spatial Information	BEC Subzones		Ecological classification for the Kispiox. Classification includes the parkland subzone.	Stratification of old growth, seral stage and patch size objectives
	Mid-size Watersheds		Watershed based landscape units defined by the Kispiox district.	Used in the delineation of OGMAs. Originally the landscape units identified in the old growth order
	Landscape Units		Amalgamation of Gitxsan house territories by watershed.	Application of non-spatial objectives for seral stage and patch size
Policy	Landscape Unit Planning Guidebook	1999	Current government policy for identifying OGMAs and calculating WTP retention targets	Identification of proposed OGMAs and WTP targets.
Best Available Information	Steventon	2002	Draft discussion paper: historic disturbance regimes in the Morice and Lakes Timber Supply Areas. Ministry of Forests, Smithers.	Alternative targets for seral stages based on ecosystems in the Morice and Lakes TSAs. Overlapping Ecosystems include SBSmc, ESSFmc and ESSFwv. Steventon targets not used because was not considered in original LRMP and the impacts of a broad application are uncertain.
	Biodiversity Guidebook	1995	Developed to guide the biodiversity objectives in the Forest Practices Code.	Patch size targets, WTP targets

Category	Item	Date	Description	Application
	LRMP Strategies	1996	LRMP strategies developed by a multi-stakeholder group with the intent of supporting the implementation of the LRMP objectives	Provides guidance around managing old growth at a medium size watershed scale, rotation age for old growth managed areas, application of New Forestry systems and cut block size.
	Roberts and Turney	2004	Biodiversity Analysis for the Kispiox and Cranberry TSAs	Current seral and patch size distribution for the landscape units and mid-sized watersheds. OGMA targets, spatial identification of old and near old in the contributing and non-contributing landbase.
	Map 4. Old Growth Management Areas	2005	Map of Proposed OGMA's	Provides a spatially explicit interpretation of the old growth objective.
	Grizzly Bear Habitat Map			Information layer for OGMA location
	Moose Habitat Map			Information layer for OGMA location
	Mountain Goat Habitat Map			Information layer for OGMA location
	Deer Habitat Map			Information layer for OGMA location
	Pine Mushroom Mapping		Amalgamated coverages from the Skeena/Stikine district. Does not include the Cranberry TSA	Information layer for OGMA location
	Floodplain Mapping			Information layer for OGMA location
	Rare and Endangered Species Interpretation			Information layer for OGMA location

Visual Objectives

Category	Item	Date	Description	Application
Spatial Information	VLI Inventory	1997-2000	Ministry of Forests, Kispiox Forest District Visual Landscape Inventory.	Defines the scenic areas and objectives modelled in TSR II
	VLI New	June 2005	VLI updated by Luc Roberge to consider full suite of scenic areas identified by the DM in 1999	Scenic areas and objectives for Visual Objectives
Best Available Information	LRMP Strategies	1996	LRMP strategies developed by a multi-stakeholder group with the intent of supporting the implementation of the LRMP objectives	Strategies provide direction to the objective depending on the sensitivity of the visual landscape.
	Known Scenic Areas List	1999	Known scenic areas as per section 1(3) of the Operational Planning Regulation for recreation sites, recreation trails, travel corridors, viewsheds, provincial parks and important fishing areas	Defines known scenic areas
	DM Policy	1999	Expectations around scenic area management. Describes intent to not establish VQOs	
	MoF Recreation Manual	1991	Describes VQO classes	Definition of retention, partial retention and modification taken from the manual

Wildlife Objectives

Category	Item	Date	Description	Application
Policy	Landscape Unit Planning Guidebook	1999	Current government policy for identifying OGMA's and calculating WTP retention targets	Identification of proposed OGMA's and WTP targets.
	Memo of Understanding on the Establishment of Ungulate Winter Ranges and Related Objectives.	2003	Clarifies ministry roles and responsibilities and outlines procedures and considerations to establish UWRs.	Identification of proposed UWR.
	Identified Wildlife Management Strategy	2004	Describes the procedures for establishing, modifying and rescinding a wildlife habitat area.	
	Amended Kispiox LRMP (Appendix 5)	2001	Describes resource management strategies in support of resource management objectives and zones.	Grizzly bear, moose, mule deer, and mountain goat habitat identification updated at the landscape planning level (see below).
Best Available Information	Mahon, T	2003	Grizzly Bear Habitat Complex Mapping Kispiox Forest District. MoF, MWLAP.	Grizzly bear habitat complex report and mapping with strategic and operational planning guidance.
	Mahon, T., A. MacHutchon, D. Reid, D. Morgan, and A. Edie.	2004	Predictive Habitat Mapping with Grizzly Bear Habitat Suitability Ratings for the Kispiox and Cranberry Timber Supply Areas. MoF, MSRM, MWLAP.	Grizzly bear habitat suitability report and mapping with strategic and operational planning guidance.
	Mahon, T., A. Edie, D. Fillier, L. Malkow, M. Marsland, D. Morgan, D. Reid, G. Schultze, L. Turney, J. Warren.	2005	Winter Habitat Suitability Model for Moose (Alces alces) in the Kispiox and Cranberry TSAs. MWLAP.	Moose habitat suitability report and mapping with strategic and operational planning guidance.
	Roberts, A-M., L. Turney, T. Mahon.	2005	Review of Potential Mountain Goat Ungulate Winter Range in the Kispiox and Cranberry Timber Supply Areas. Skeena Region. MWLAP.	Mountain Goat UWR identification.

Category	Item	Date	Description	Application
	Reid, D., A. Edie, T. Mahon, J. Warren, D. Morgan, G. Schultze, D. Fillier, M. Marsland.	2004	Mountain Goat Winter Habitat Suitability Mapping in the Kispiox Forest District. Forest Renewal BC Wildlife Habitat Inventory Project. MoF, MSRM, MWLAP.	Mountain Goat habitat suitability report and mapping with strategic and operational planning guidance.
	Mule Deer Winter Range Habitat Mapping – Fillier, D. et al. <i>in press</i>	2005	Mule deer winter range identification for the Kispiox and Cranberry Timber Supply Areas.	Mule Deer UWR identification at the landscape planning level.
	Ministry of Forests		Mule Deer winter range information via TSR 2 http://www.for.gov.bc.ca/hts/rni.htm	Mule Deer UWR identification at the landscape planning level.
	Hamelin, E	2002-2003	The 2001-2002 Gitanyow Wildlife Harvest Report, Seasonal Movements and Distribution Patterns of Moose within the Kitwanga Watershed, The Gitanyow Mule Deer Seasonal Movement and Distribution Study, and The 2002 Kitwanga Lake Mountain and Kispiox Range Mountain Goat Population Inventory	Utilized in identification of moose, mule deer, and mountain goat winter range.
	S.B. Yazvenko, G.F. Searing, and M.W. Demarchi	2002	Wildlife Habitat Assessment in the Nass Wildlife Area. Revised Final Report. LGL Limited Environmental Research Associates for Nisga'a Lisims Government. Forest Renewal BC. MSRM.	Utilized in identification of moose and mountain goat winter range and high value grizzly bear habitat.
	Demarchi, M.W.	2000	Moose in the Nass Wildlife Area. Final Report. LGL Limited Environmental Research Associates for Nisga'a Tribal Council. Forest Renewal BC Wildlife Habitat Inventory Project. MELP.	Utilized in identification of moose winter range.
	Demarchi M.W., S.R. Johnson, and G.F. Searing	1997	Mountain Goat Inventory in the Nisga'a Wildlife Management Area Region A. LGL Limited Environmental Research Associates for Nisga'a Tribal Council. Forest Renewal BC Wildlife Habitat Inventory Project. MELP.	Utilized in identification of mountain goat winter range
	Demarchi M. W. and S.R. Johnson	2000	Grizzly bears in the Nass Wildlife Area (NWA). Final report. LGL Limited for Nisga'a Lisims Government. Forest Renewal BC. MELP.	Utilized in identification of high value grizzly bear habitat.

Category	Item	Date	Description	Application
	S.R. Johnson, M.W. Demarchi, and G.F. Searing	1997	Grizzly Bear Inventory in the Nisga'a Wildlife Management Area. Final 1996 Annual Report. LGL Limited, Environmental Research Associates for Nisga'a Tribal Council. Forest Renewal BC Wildlife Habitat Inventory Report. MELP.	Utilized in identification of high value grizzly bear habitat.
	Turney, L.	1998	Habitat Assessment and Suitability Mapping for Grizzly Bear and Mountain Goat in Tommy Jack Pass. SBFEP, Kispiox Forest District, MoF.	Utilized in identification of moose and mountain goat winter range and high value grizzly bear habitat.
	Turney, L.	2002	Summary of Habitat Assessments, Suitability Mapping and Habitat Monitoring for Grizzly Bear in the Nangeese River Watershed, Kispiox Forest District. SBFEP, Kispiox Forest District, MoF.	Utilized in identification of high value grizzly bear habitat.
	Turney, L. and R. Blume.	2002	Habitat Assessment and Suitability Mapping for Grizzly Bear in the Nangeese River Watershed, Kispiox Forest District. SBFEP, Kispiox Forest District, MoF.	Utilized in identification of high value grizzly bear habitat.
	Turney, L. and R. Blume	2002	Grizzly Bear Monitoring Trial in the Upper Nangeese River Watershed. SBFEP, Kispiox Forest District, MoF.	Utilized in identification of high value grizzly bear habitat.
	Doyle F, and T. Mahon	2001	Inventory of the northern goshawk in the Kispiox Forest District. "Annual Report 2000".	Identification of goshawk habitat and operational planning guidance.
	T. Mahon and F. Doyle	2000	An assessment of northern goshawk nest site choice and reproductive success in proximity to forest harvesting: an adaptive management strategy. Unpubl. rep. for MELP	Identification of goshawk habitat and operational planning guidance.
	Manning, Cooper and Associates	2004	Silviculture guidelines and practices for maintaining or recruiting key habitat objectives.	Operational guidance for moose and deer winter range.
	T. Mahon	2003	Kispiox Focal Wildlife Management Guidelines for Northern Goshawk (<i>Accipiter gentilis atricapillus</i>), Grizzly Bear (<i>Ursus arctos horribilis</i>), and Mountain Goat (<i>Oreamnos americanus</i>). Unpubl. Rep. for MoF	Operational guidance for goshawk, grizzly bear and mountain goat.
	Babine Local Resource Use Plan		Appendices 5 and 6: High value grizzly bear habitats	Definition for critical grizzly bear habitat
	Kalum LRMP		Grizzly Bear Objective	Identification of high-value grizzly bear habitat in CWHws2.