



Atlas

of Resource Values in the Gitxsan Watersheds

Lower Skeena Watershed

September 2007

Sharing of resource information is one of the first steps in developing a common understanding of the land and its resources. Only then can the discussion of the best use of these resources take place. This pamphlet describes the known resources lying within the Lower Skeena Watershed and forms part of the *Atlas of Resource Values in the Gitxsan Watersheds*. The goal of the atlas is to describe resource values in the six Gitxsan watersheds that overlap the boundary of the Skeena-Stikine Forest District.

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Skeena-Stikine Forest District



Gitsegucia • Suskwa • Kispiox (North and South) • Middle Skeena (North and South) • **Lower Skeena** • Babine



1.0 Geographic Description

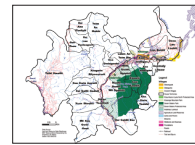
The Lower Skeena Watershed is bisected by the Skeena River and Highway 16 corridor and is over 275,000 hectares in size. The vast Seven Sisters Provincial Park and Protected Area is located in the southeast and represents 14% of the watershed's area. There are two communities within the boundaries of the watershed: Kitwanga, located at the junction of Highway 16 and Highway 37, and Cedarvale, which is located to the west on Highway 16.



2.0 Social Characteristics

2.1 Communities

The Lower Skeena Watershed includes 21 Gitxsan house territories: Anxmaiy Litsx, Gasa Lax Loobit, Gwax Tseelixit, Haahl Daakt Wii Sganist, Lax Behlit, Luum An Tsim Din, Mii Sxu Gwin Gaat, Sigagit, Tsihl Gwellii, Tsim An Maakhl, Xsa Andiligan, Xsa Gwingoohl, Xsan Skeeks, Xsansisnak, Xsi Galdii Ess, Xsi Gallii Gadsit, Xsi Lax Teslasgwit, Xsu Gwin Aaxwit, Xsu Gwin Yookhl, Xsugwin Biiyoosxwit, and Xsuwii Lax loobit.



Map 1—Page 12

2.2 Parks and Special Management Zones

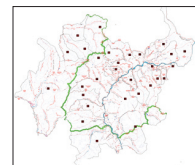
The Seven Sisters Provincial Park and Protected Area is located in the southeast portion of the watershed and is 39,155 hectares in size. The park protects representative ecosystems, including ancient forests, across the complete elevation sequence from valley bottom to mountain top. The park also has a provincially significant goat population and outstanding recreational opportunities.

Kitwanga Mountain Provincial Park is located in the Nass Range near Kitwanga and is 720 ha in size, representing 0.2% of the watershed's area. The park protects a variety of hardwood stands along a south facing slope, as well as habitat for potential rare vascular plant species in the alpine and on the dry rocky slopes. Important wildlife habitat, including particularly high quality habitat for grizzly, is located in the park. Backcountry hiking trails offer challenging treks to panoramic views over the Seven Sisters area and the Skeena River Valley.

The Andimaul Lookout Special Management Zone (211 ha) is located about six kilometres east of Kitwanga on the north side of the Skeena River. This SMZ was designated by the Kispiox Land and Resource Management Plan and protects a rocky mountain juniper community, associated deciduous forests and a recreation trail. The management zone allows development that maintains these features.

2.3 Cultural Heritage Values

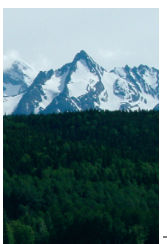
A cultural heritage and archaeological resources inventory for the unit was compiled by the Gitxsan Watershed Authorities. The inventory—intended to communicate Gitxsan environmental, cultural knowledge and resource values—includes a territory map and a reference table with descriptions of Gitxsan place names, non-aboriginal place names, information sources and any related comments.



Map 2—Page 13

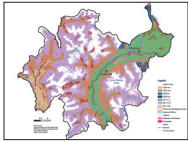


Lower Skeena Watershed



3.0 Environmental Characteristics

3.1 Biodiversity Characteristics



Map 3-Page 14

Biodiversity is the sum of the diversity of plants, animals, and other living organisms in all their forms and levels of organization, including genes, species, ecosystems, and the processes that link them. Due to difficulties in describing, measuring or monitoring diversity, habitat types are often used as a substitute for managing biodiversity. In BC, the Biogeoclimatic Ecosystem Classification system (BEC) is used. This is a system of ecological classification based primarily on climate, soils, and vegetation that divides the province into large geographic areas with similar climate and dominant tree species.

In the Lower Skeena Watershed there are three zones: Alpine Tundra (AT); Engelmann Spruce Sub alpine Fir (ESSF) and Interior Cedar-Hemlock (ICH).

Throughout the province it is recognized that different forest zones have developed under the influence of different types of disturbance, (e.g. fire, insects, wind storms or land slides) which vary in size, concentration and frequency. Managing forests to resemble these natural disturbances will increase the probability that all native species and ecological processes will be maintained. The historic patterns of these disturbances have been studied and each BEC zone has been given a Natural Disturbance Type (NDT) classification.

There are three NDT types in this watershed:

- NDT1: ecosystems with rare natural disturbances. Disturbances are generally small resulting in uneven-aged or multi-storied even-aged forest, with regeneration occurring in gaps created by the death of individual trees or small patches of trees.
- NDT2: ecosystems that experience infrequent natural disturbances. Wildfires are often of moderate size (20 to 1000 ha) producing a landscape dominated by extensive areas of mature forest surrounding patches of younger forest.
- NDT5: ecosystems are Alpine Tundra and Sub alpine Parkland ecosystems. They occur above or immediately below the alpine tree line, and are characterized by short, harsh growing seasons.

Table 1. Biogeoclimatic (BEC) Variants and Natural Disturbance Types (NDT) in the Lower Skeena Watershed.

BEC Variant	Hectares	% of planning unit	NDT	NDT (ha)	NDT (%)
AT	49401	18	5	70120	25
CWH ws1	15222	6	2		
CWH ws2	49674	18	2		
ESSF wv (wet, very cold)	3310	1	1	3310	1
ESSF wvp (parkland)	800	0	5		
ICH mc2 (Hazelton moist cold)	50608	18	2	202199	73
MH mm2	86695	31	2		
MH mmp	19919	7	5		
Total Area for Planning Unit	275629	100		275629	100

Some methods of managing for biodiversity include the creation of Old Growth Management Areas (OGMAs). These zones are identified for the express purpose of maintaining structural and functional features of old growth forest ecosystems. The table below summarizes OGMAs in the Lower Skeena Watershed

Table 2. Old Growth Management Areas in the Lower Skeena.

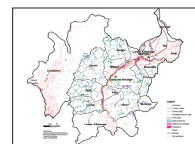
BEC Variant	OGMA ¹	
	ha	% of variant
CWHws1	1298	9
CWHws2	260	0.5
ESSFwv	954	29
ICHmc2	1434	3
MHmm2	3792	4

¹It was assumed that OGMA's consisted entirely of old seral forest.

Two percent (3792 ha) of the forested landbase in the Lower Skeena is designated as OGMA.

3.2 Water

Water is the lifeline of a watershed and is critical for the overall health of an ecosystem and organisms that live in that ecosystem, including multiple fish and wildlife species. The Gitksan has historically relied on fresh water and healthy fisheries to sustain their culture. Although there are no community watersheds, fourth order watersheds include the headwaters and tributaries that feed into the main watercourses flowing into the Kitwanga and Skeena Rivers. Fourth order watersheds have been identified to provide the basis for measuring and assessing watershed integrity (peak flow, surface erosion, mass wasting and riparian buffer integrity).



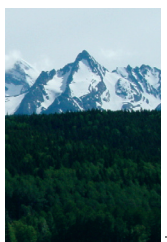
Map 4—Page 15

Table 3. Fourth Order Watersheds in the Lower Skeena.

Watershed	Hectares
Sedan	12143
Mill	4182
Lower Kitwanga	34103
Tea	7954
Burdick	3325
Andi	9484
Shandilla	7803
Price	7922
Wilson	8949
Boulder	15708
Mulwain	5201
Oliver	2042
Flint	4450
Lorne	12072
Insect	20390
Quill	14573
Cranberry	87543
Surrounding Watersheds	17785



Photo: Marilyn Freel





Map 4—Page 15

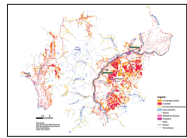
3.3 Fisheries Values

Fish values are very high in the Lower Skeena Watershed. Fish species present include:

Sockeye salmon	Bull trout
Chum salmon	Pacific Lamprey
Pink salmon	Dolly varden
Steelhead	Mountain whitefish
Chinook salmon	Bull trout
Coho salmon	Coastal cutthroat trout
Rainbow trout	Cutthroat trout



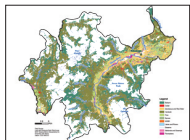
Photo: Marilyn Freel



Map 5—Page 16

3.4 Soils

Terrain Stability Mapping (TSM) identifies Class IV (potentially unstable) and Class V (unstable) areas in the watershed. These areas, representing 12% of the watershed (31,910 ha), have been removed from the operable landbase. In addition to TSM, Environmentally Sensitive Areas (ESA) mapping (done in the early to mid-1970s as a component of the forest cover inventory) classified the land base according to its environmental sensitivity for soils. Some 7% of the watershed (18,465 ha) is classified as having environmentally sensitive soils.



Map 6—Page 17

3.5 Forest

There are 167,031 ha of forested landbase in the watershed. This represents 61% of the total landbase. The breakdown of habitat types by leading species of the total forest is summarized in Table 4.

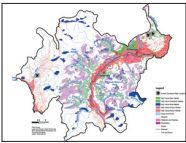
Table 4. Timber Types in the Lower Skeena Watershed.

Leading species	Hectares	% of forested area
Balsam	42509	25
Cedar	1248	1
Deciduous	21097	13
Hemlock	86304	52
Pine	12558	8
Spruce	3768	2
Total	167030	100

3.6 Wildlife Values

Moose winter range is found along the Skeena River valley bottom, with a concentration at the Kitwanga River junction. Class 1 goat habitat is common, with high value habitat in the Seven Sisters, as well as the mountainous areas on the north side of the Skeena, especially from Sedan to Insect Creek.

There is no provincially significant grizzly bear habitat in the watershed. However, high value habitat is abundant, coinciding with the moose winter range and extending throughout many of the high altitude areas, especially on the north side of the Skeena. The vast majority of this high value habitat is outside of the watershed’s operable landbase.



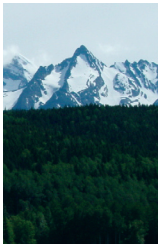
Map 7—Page 18

Table 5. Wildlife Habitat in the Lower Skeena Watershed.

Species	Hign Value Habitat (ha)	% of Watershed
Moose	26966	10
Mountain goat	10600	4
Goshawk	14989	5
Deer	11000	4
Grizzly bear	57908	21



Photo: Marilyn Freel



4.0 Economic Characteristics

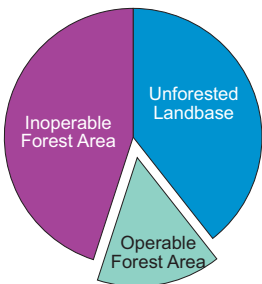
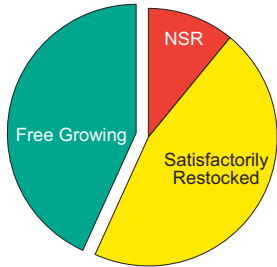
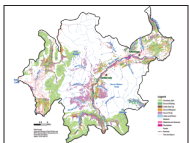
4.1 Timber and Silviculture

Lower Skeena Landbase Summary

Total Watershed Area:
275,629 ha

Total Operable Forest Area:
41,998 ha

Total Harvested Area (2002):
20,128 ha



Map 8-Page 19

Timber

The Lower Skeena Watershed lies within three Timber Supply Areas: the Kispiox, the Bulkley and the Kalum. Most of the total area of the Babine is located within the Kispiox TSA but most of the operable landbase (70%) is found within the Bulkley (much of the Kispiox TSA is steep and mountainous, making it unavailable for harvest). A small portion of the watershed is located within the Fort St. James TSA. The table below shows the proportion of total landbase and operable landbase associated with each TSA within the Babine.

Table 6. Total Landbase and Operable Landbase from each TSA in the Lower Skeena.

TSA	Total Landbase (%)	Total Landbase (ha)	Operable Landbase (%)	Operable Landbase (ha)
Bulkley	2	5036	1	1466
Kalum	43	118109	5	13853
Kispiox	55	152485	10	26679
Total	100%	275630	100%	41998

The total forest area that can be used for timber production (operable landbase) in the Lower Skeena is 41,998 ha. This represents 15% of the total landbase in the watershed. This operable forest can be classified into wood quality types as follows:

- 1) sawlog, meaning greater than 60% of the volume should be sawlog material;
- 2) marginal sawlog, meaning 40-60% of the volume should be sawlog material; and
- 3) pulp which means greater than 60% of the material is pulp grade.

The following tables show a breakdown of operable timber resources within each TSA by wood quality in the watershed.





Table 7. Operable Timber Resources in the Lower Skeena Watershed - Kispiox TSA.

Sawlog 1 ≤ 40% Slope		Sawlog 2 40 to 90% Slope		Marginal Sawlog ≤40% Slope		Pulp ≤40% Slope		Immature <100 Yrs Old	
Ha.	% Operable	Ha.	% Oper.	Ha.	% Oper.	Ha.	% Oper.	Ha.	% Oper.
3978	15	538	2	2460	9	10365	39	9338	35

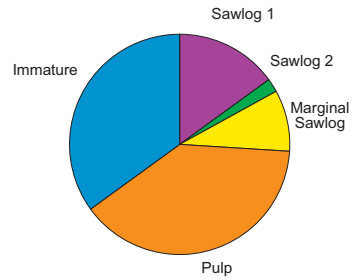


Table 8. Operable Timber Resources in the Lower Skeena Watershed - Bulkley TSA.

Sawlog 1 ≤ 40% Slope		Sawlog 2 40 to 90% Slope		Marginal Sawlog ≤40% Slope		Pulp ≤40% Slope		Immature <100 Yrs Old	
Ha.	% Operable	Ha.	% Oper.	Ha.	% Oper.	Ha.	% Oper.	Ha.	% Oper.
941	64	90	6	25	2	410	28	0	0

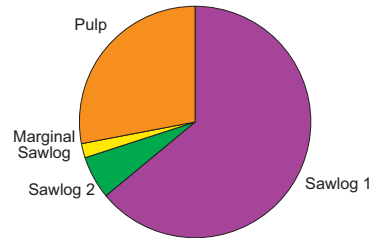


Table 9. Operable Timber Resources in the Lower Skeena Watershed - Kalum TSA.

Sawlog 1 ≤ 40% Slope		Sawlog 2 40 to 90% Slope		Marginal Sawlog ≤40% Slope		Pulp ≤40% Slope		Immature <100 Yrs Old	
Ha.	% Operable	Ha.	% Oper.	Ha.	% Oper.	Ha.	% Oper.	Ha.	% Oper.
1868	13	951	7	2072	15	4898	35	4064	29

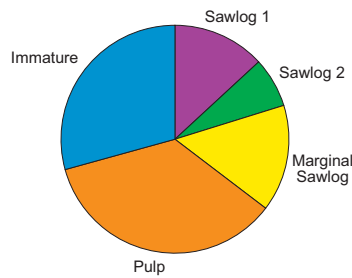
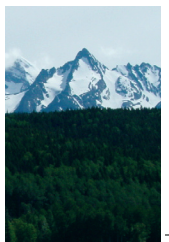
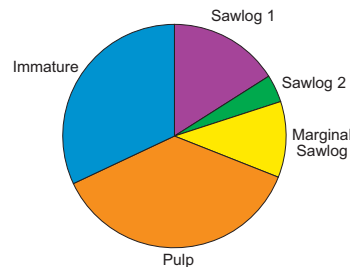
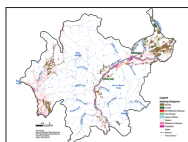


Table 10. Operable Timber Resources from all TSAs in the Lower Skeena Watershed.

Sawlog 1 <= 40% Slope		Sawlog 2 40 to 90% Slope		Marginal Sawlog <=40% Slope		Pulp <=40% Slope		Immature <100 Yrs Old	
Ha.	% Operable	Ha.	% Oper.	Ha.	% Oper.	Ha.	% Oper.	Ha.	% Oper.
6787	16	1579	4	4557	11	15673	37	13402	32



Map 9—Page 20

Silviculture

As of 2002, 20128 ha have been harvested in the Lower Skeena Watershed. This represents 7% of the total landbase of the watershed. All areas harvested must be planted or restocked naturally, and then monitored until the trees have established themselves and have a good chance of becoming a mature forest (attaining “free growing” status). The Ministry of Forests and Range is responsible for planting areas that were harvested prior to 1987. Areas harvested after 1987 are planted and managed to free growing status by individual licensees.

Of the total amount harvested, 9230 ha (46%) has been restocked and 8697 ha (43%) is free growing. Some 2201 ha (11%) of the watershed is classified as “not satisfactorily restocked.”

Table 11. Area by Opening Type in the Lower Skeena Watershed.

Timing of harvest or fire	Not Satisfactorily Restocked		Satisfactorily Restocked		Free Growing		Total
	Ha.	%	Ha.	%	Ha.	%	%
1987 or earlier	134	1	3832	19	7077	35	55
Post 1987	2067	10	5398	27	1620	8	45
Total	2201	11	9230	46	8697	43	100

4.2 Tourism and Recreation Characteristics

Wilderness Values

A good portion of the area is relatively untouched and primitive, potentially providing opportunities for wilderness recreation experiences.

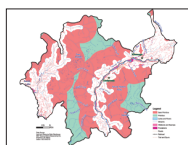
- Less than 16% is classified as “primitive” (greater than or equal to 8 km from a four-wheel-drive road and greater than or equal to 5000 ha in size).
- 49% is classified as “semi primitive” (greater than or equal to 1km from a road, and greater than or equal to 1000 ha in size).

Camp Sites

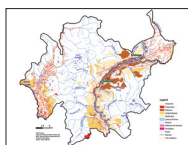
There are a total of ten managed and user maintained recreation camp sites in the Kispiox TSA and ten in the Bulkley TSA. These sites are all available for use by the general public. None of these recreation sites falls within the watershed.

Visual Quality

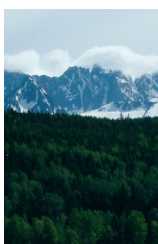
Visual Quality Objectives (VQOs) of retention, partial retention and modification of forests in harvesting operations have been determined for the unit. The map on page 22 shows the location of VQOs and describes these designations.



Map 10—Page 21



Map 11—Page 22



4.3 Other Values

Range and Agriculture

There is one range unit located in the watershed: Wilson Creek (3760ha). A significant amount of Agricultural Land Reserve is located along the Bulkley, Suskwa and Skeena Rivers, and 8373 ha of this falls within the Lower Skeena Watershed.

Roads

Over 155 kilometres of paved road is located in the Lower Skeena Watershed (Highways 16 and 37). There is also over 420 kilometres of gravel roads and over 180 kilometres of logging trails or spur roads. In addition, about 115 kilometres of railway traverses the watershed.

Minerals, Oil and Natural Gas

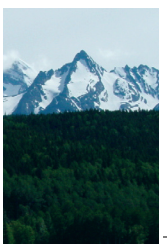
Industrial mineral potential is low and metallic mineral potential is low to moderate. There are five past producers in this watershed, along with numerous showings throughout.



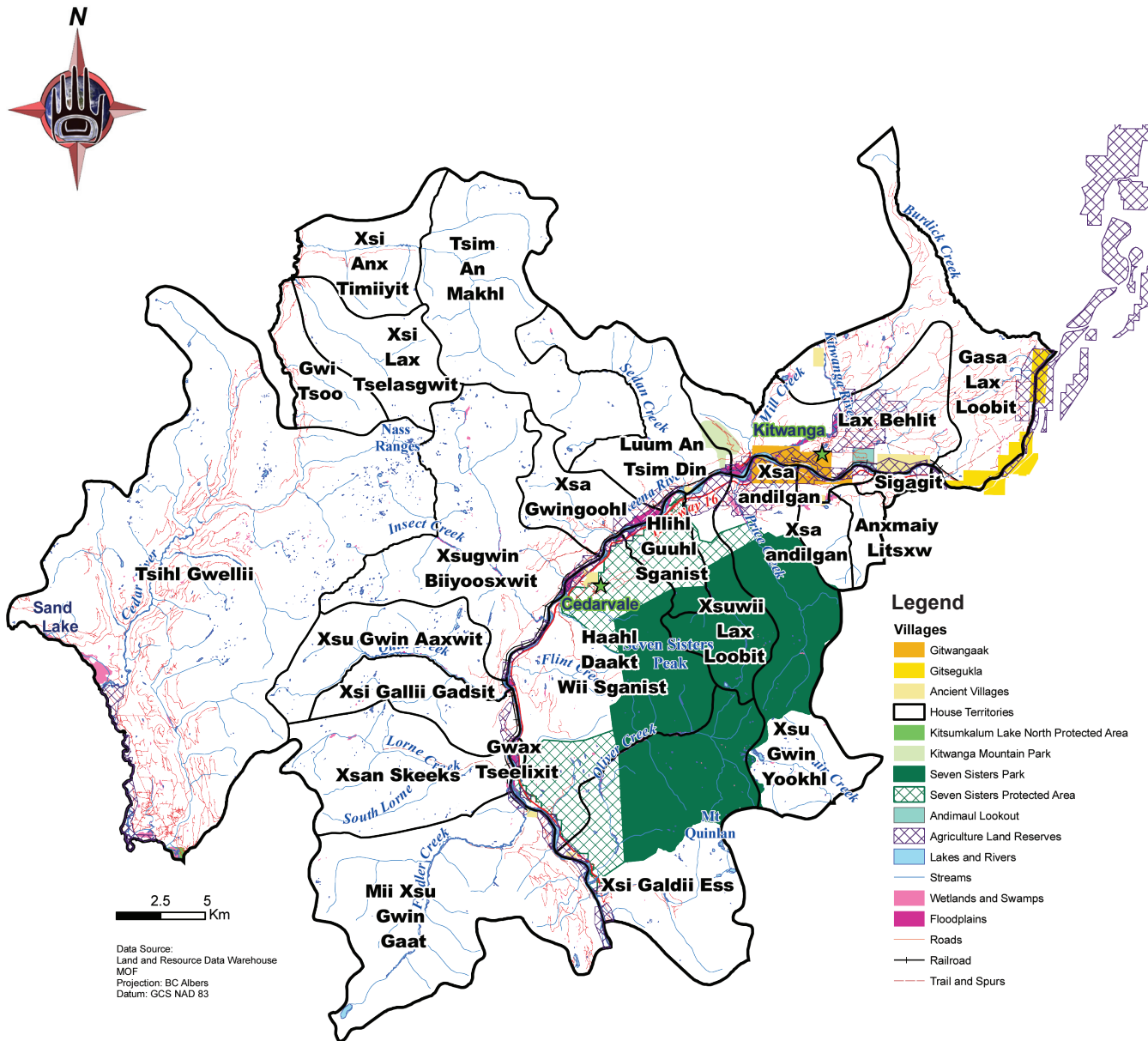
Map 12—Page 23



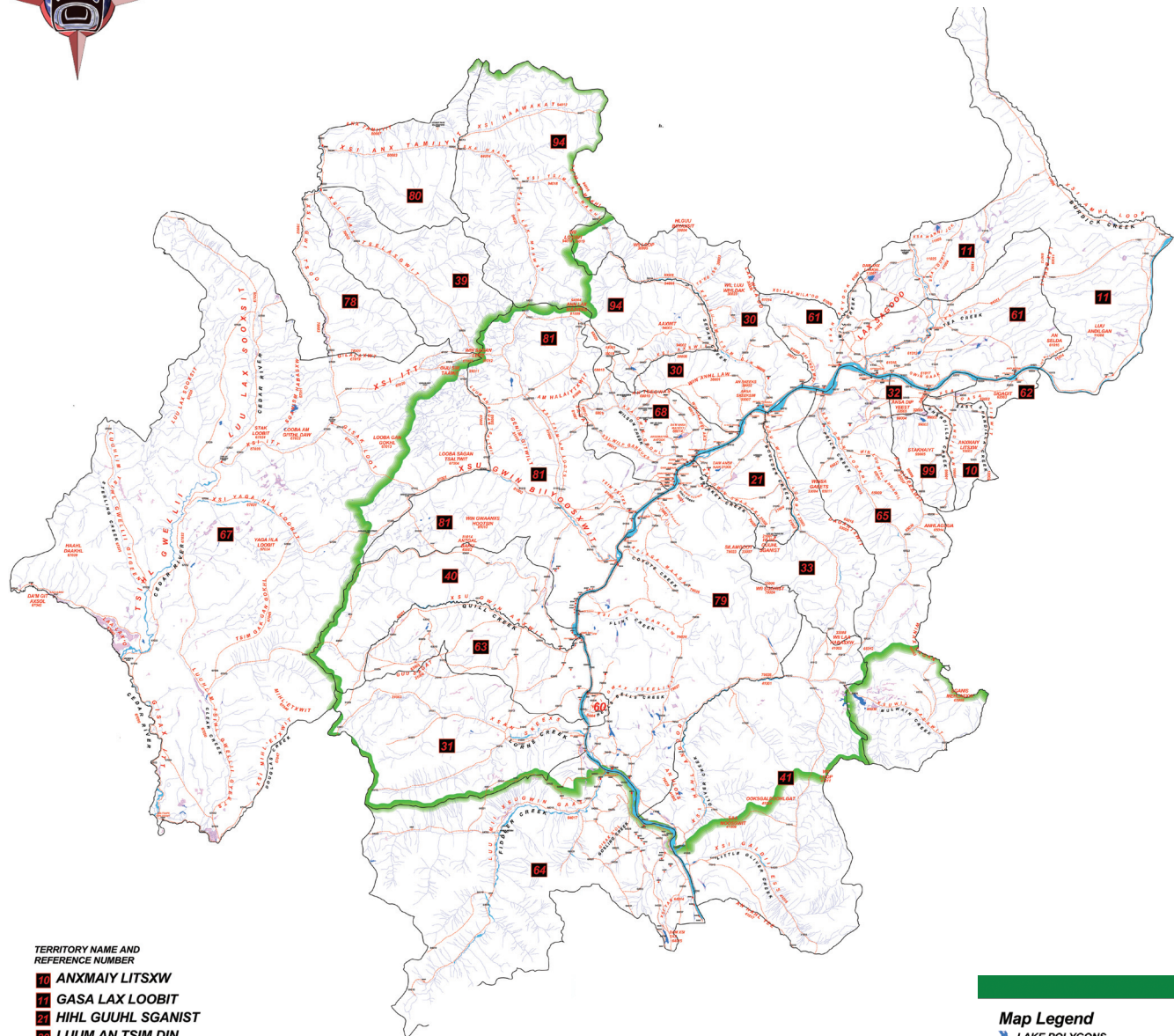
Photo: Marilyn Freel



Map 1 Social Boundaries / Territories, Parks, Agricultural Land Reserve



Map 2 Social Boundaries / Gitxsan Cultural Heritage Map



TERRITORY NAME AND
REFERENCE NUMBER

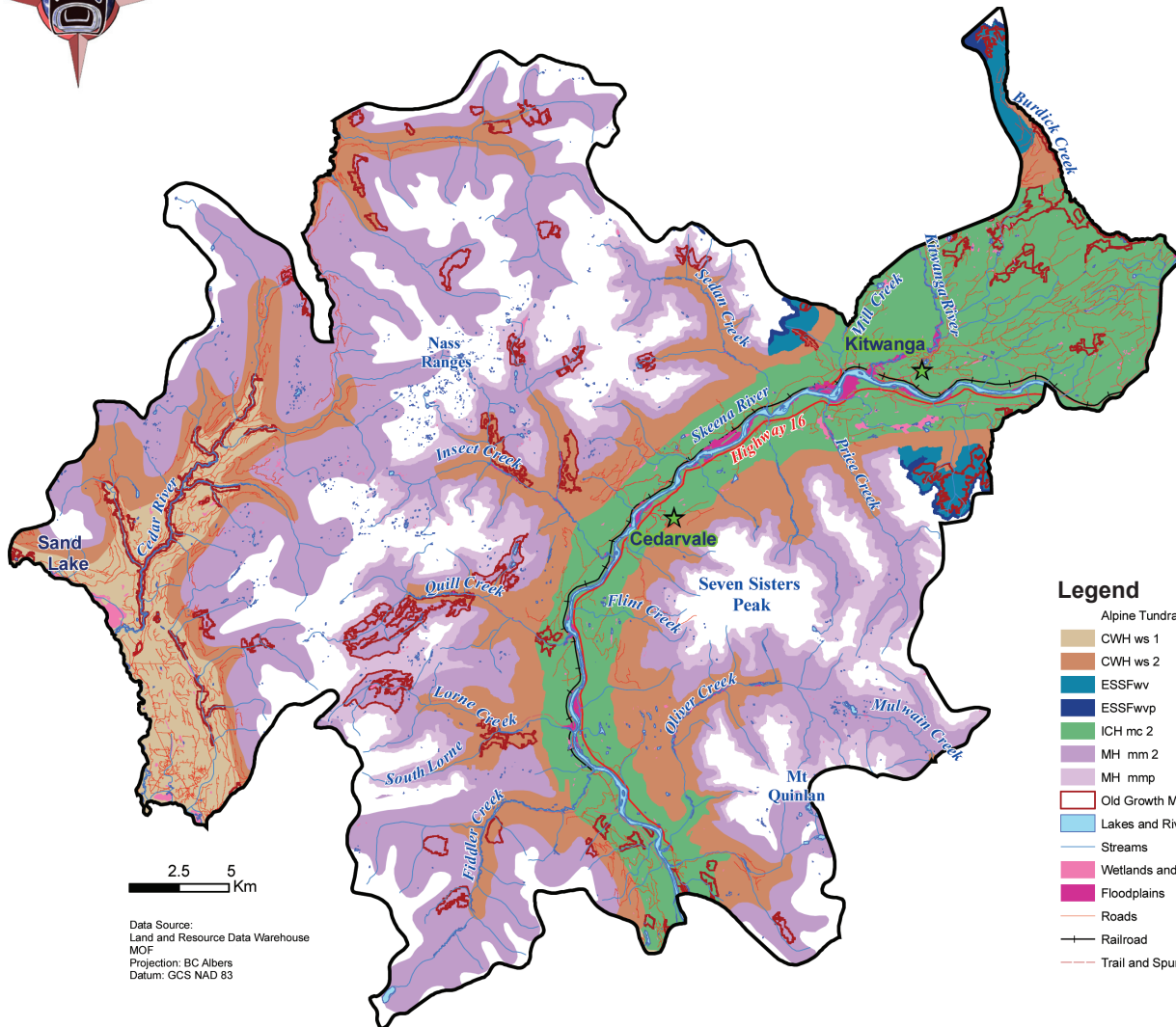
- 10 ANXMAIY LITSXW
- 11 GASA LAX LOOBIT
- 21 HIHL GUUHL SGANIST
- 30 LUUM AN TSIM DIN
- 31 XSAN SKEEKS
- 32 XSA ANDILGAN
- 33 XSUWII LAX LOOBIT
- 34 XSI LAX TSELASGWIT
- 40 XSU GWIN AAXWIT
- 41 XSA GALTII ESS
- 50 GWAX TSEELIXIT
- 61 LAX BEHLIT
- 62 SIGAGIT
- 63 XSI GALII GADSIT
- 64 MII XSU GWIN GAAT
- 65 XSU GWIN YOOKHL
- 67 TSIHL GWELLII
- 68 XSA GWINGOOHL
- 76 GWI TSOO
- 79 HAAHL DAAKT SGANIST
- 80 XSI ANX TIMIYIT
- 81 XSUGWIN BIIYOOSXWIT
- 84 TSIM AN MAKHL
- 89 XSA ANDILGAN

Map Legend

- LAKE POLYGONS
- SWAMPS POLYGONS
- RIVER POLYGONS
- WATER FEATURES
- TRAILS
- KISPIOX TSA BOUNDARY
- WILP TERRITORY BOUNDARY
GITXSAN TERRITORY MAP (1987)
- CULTURAL FEATURE
REFERENCE NUMBERS
- 66027 GEOGRAPHIC FEATURE
REFERENCE NUMBERS
- ★ VILLAGE SITES
- CABINS
- CAMPS
- ▲ FISHING SITES
- ✚ ARCHAEOLOGICAL SITES

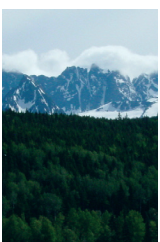
Lower Skeena Watershed

Map 3 Environmental Characteristics / Biogeoclimatic Classification

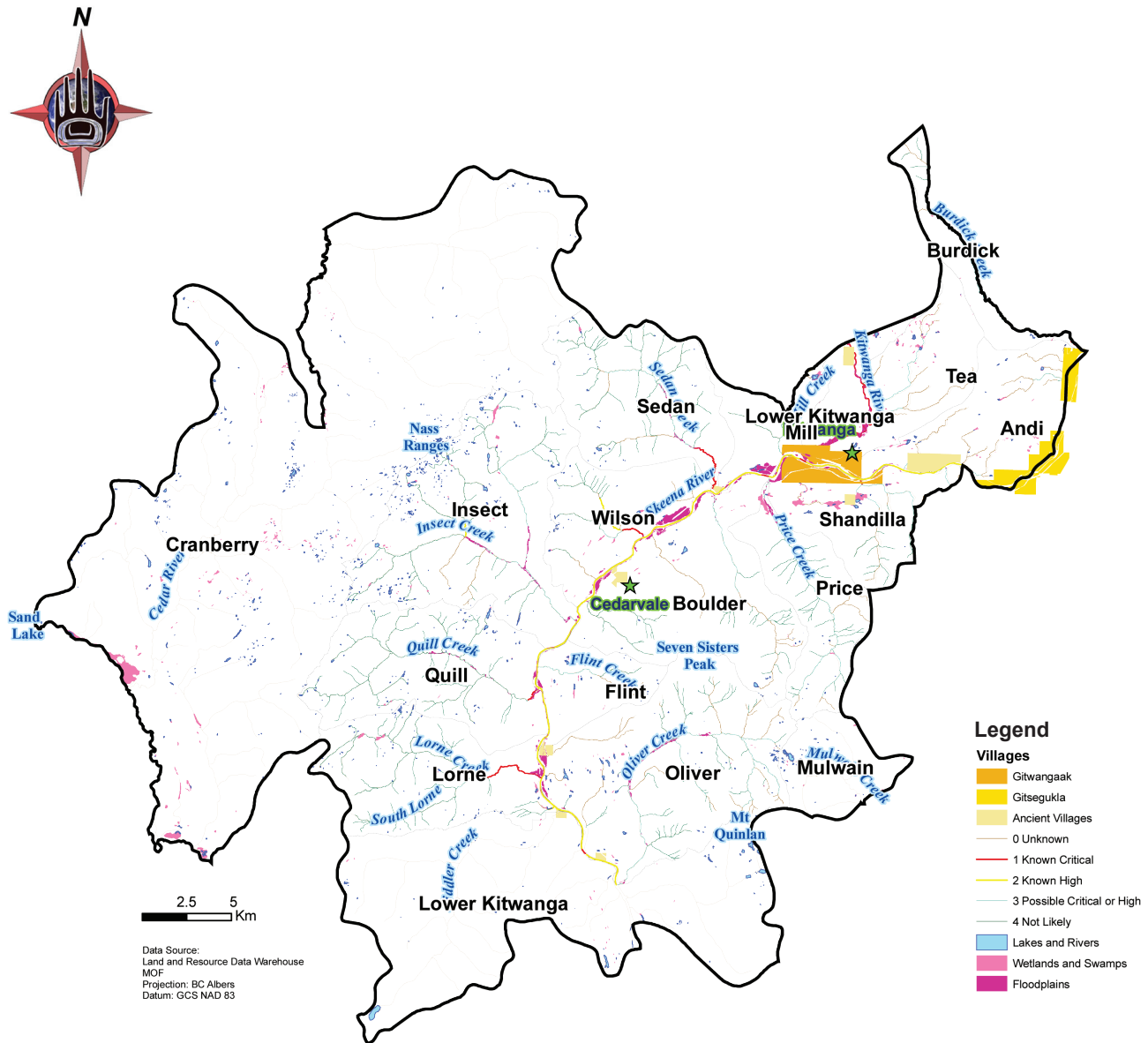
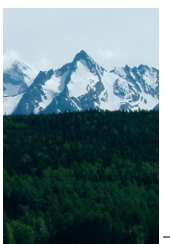


Legend

- Alpine Tundra
- CWH ws 1
- CWH ws 2
- ESSFwv
- ESSFwvp
- ICH mc 2
- MH mm 2
- MH mmp
- Old Growth Management Areas
- Lakes and Rivers
- Streams
- Wetlands and Swamps
- Floodplains
- Roads
- Railroad
- Trail and Spurs

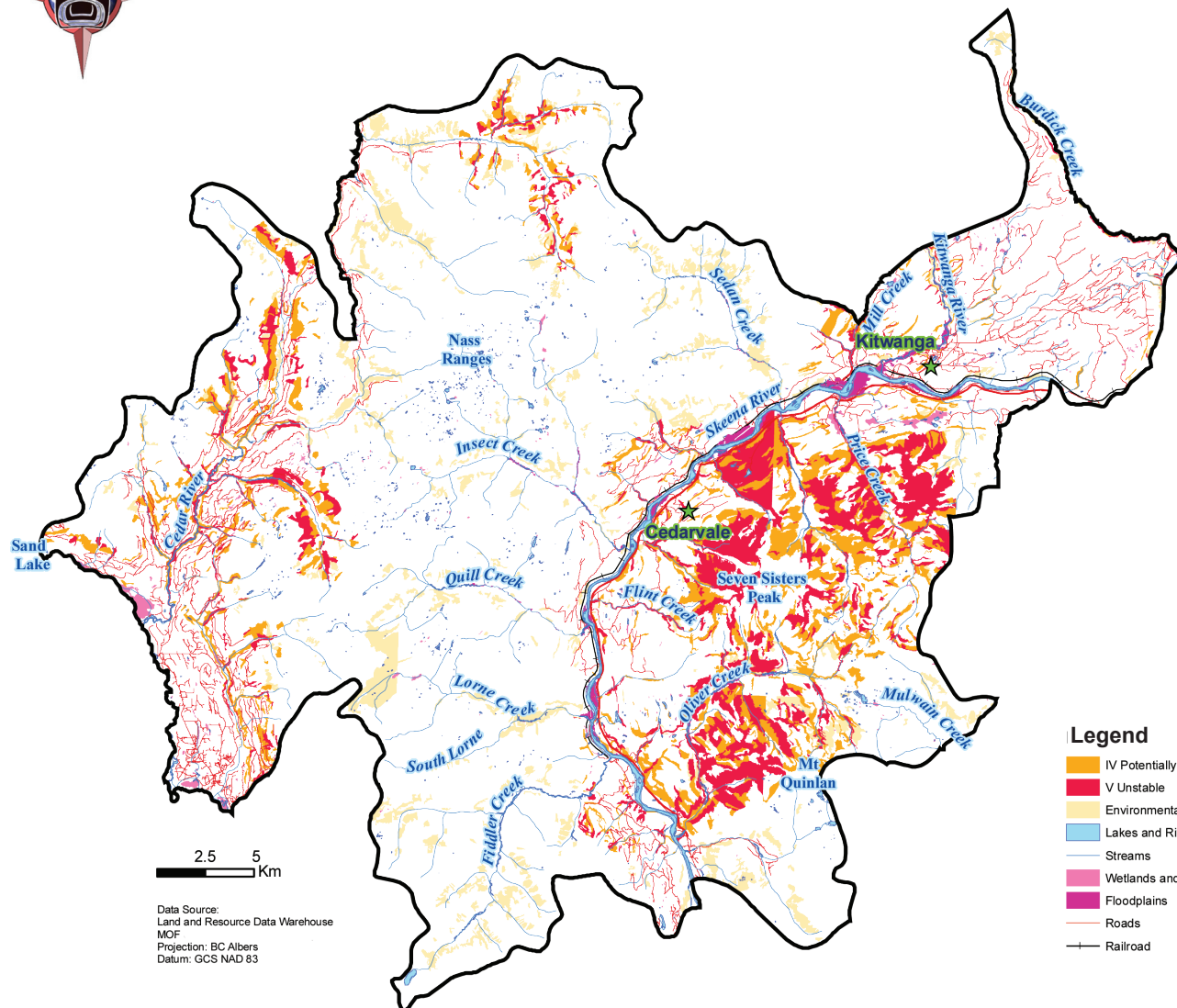
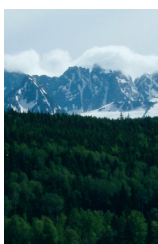


Map 4 Environmental Characteristics / Watersheds and Critical Fish Streams



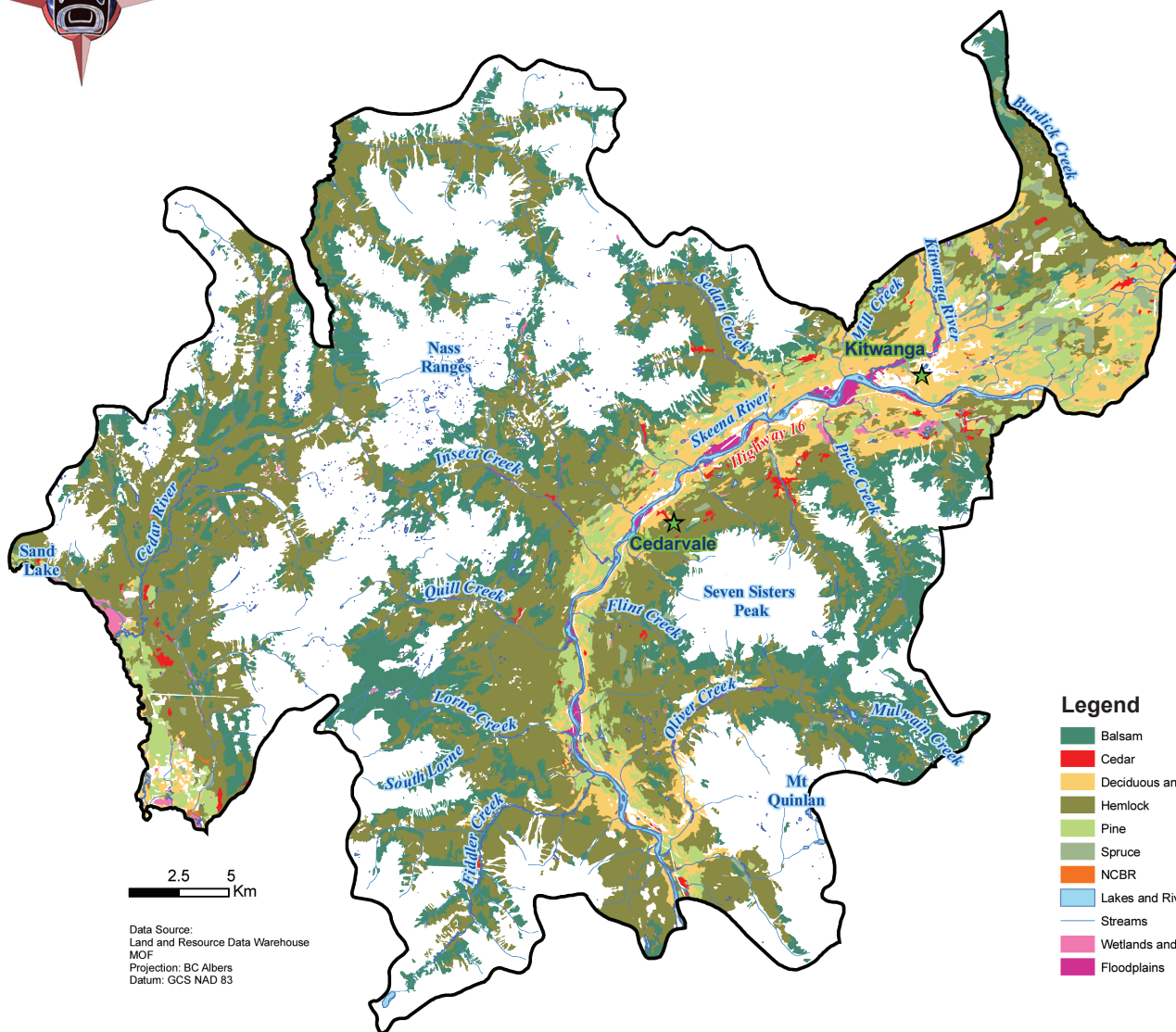
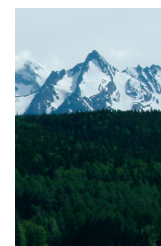


Map 5 Environmental Characteristics / Soils and Terrain Stability

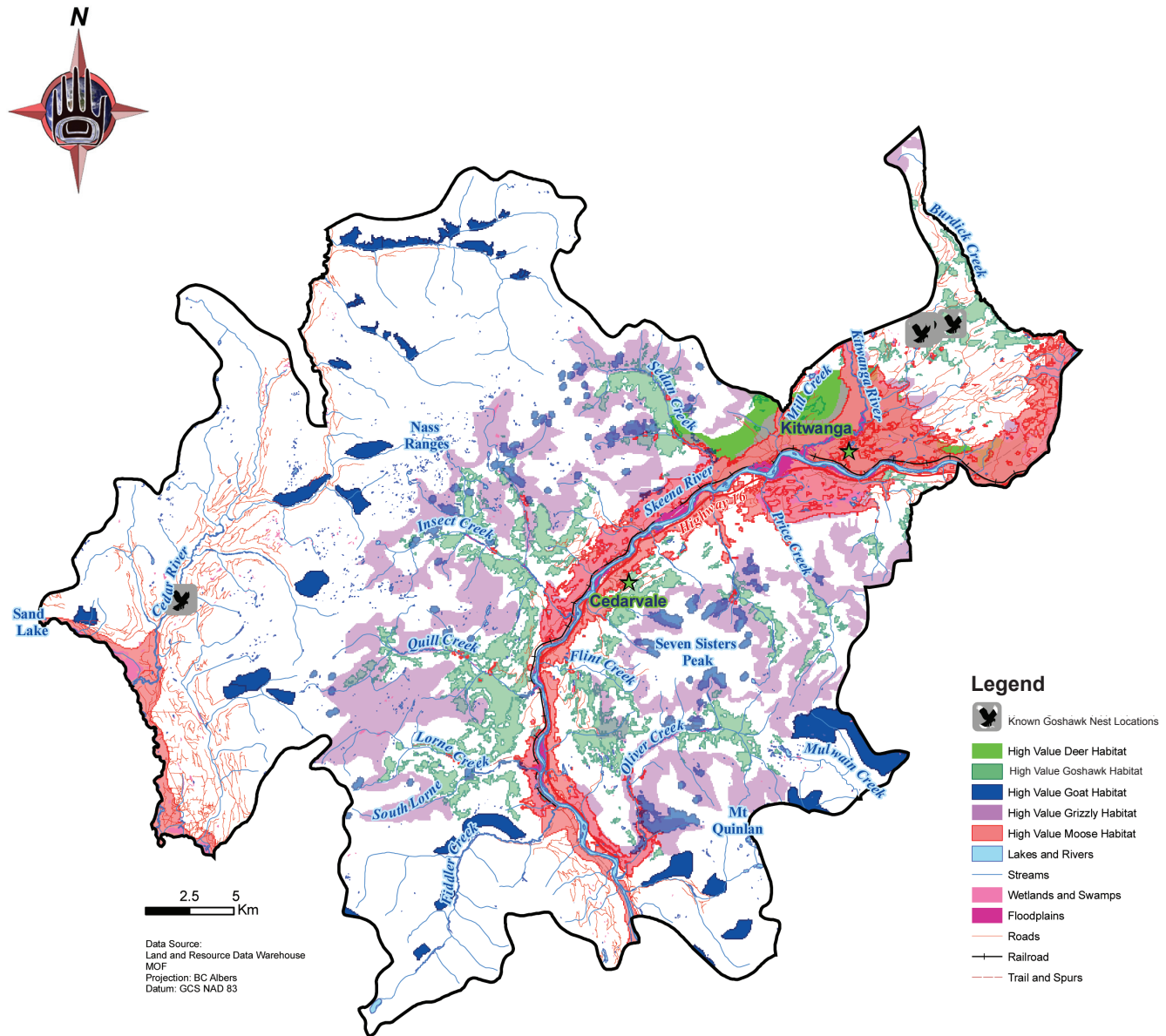




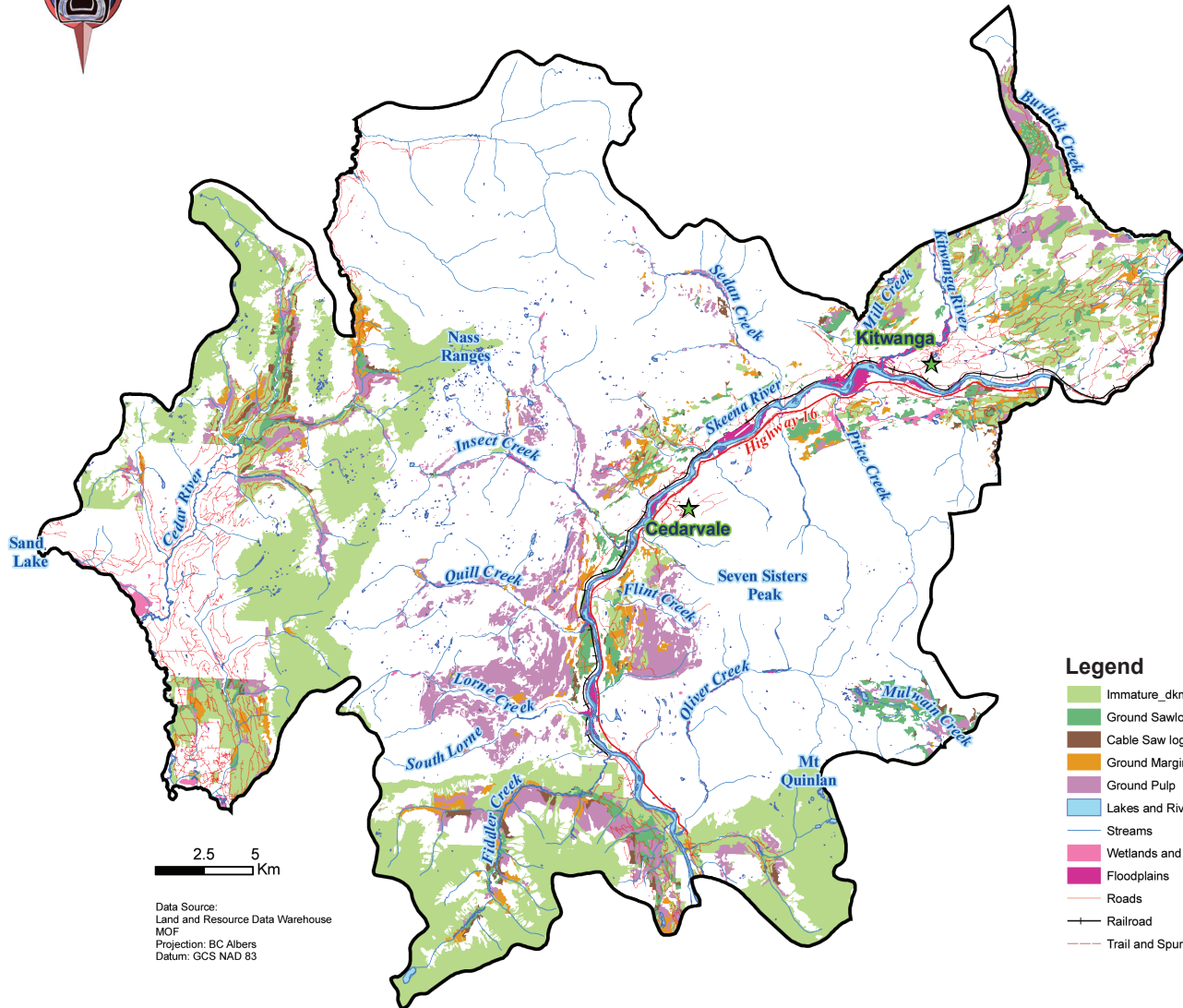
Map 6 Environmental Characteristics / Forested Landbase



Map 7 Environmental Characteristics / High Value Wildlife Habitat



Map 8 Economic Characteristics / Operable Landbase



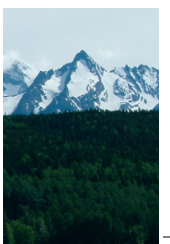
2.5 5
Km

Data Source:
Land and Resource Data Warehouse
MOF
Projection: BC Albers
Datum: GCS NAD 83

Legend

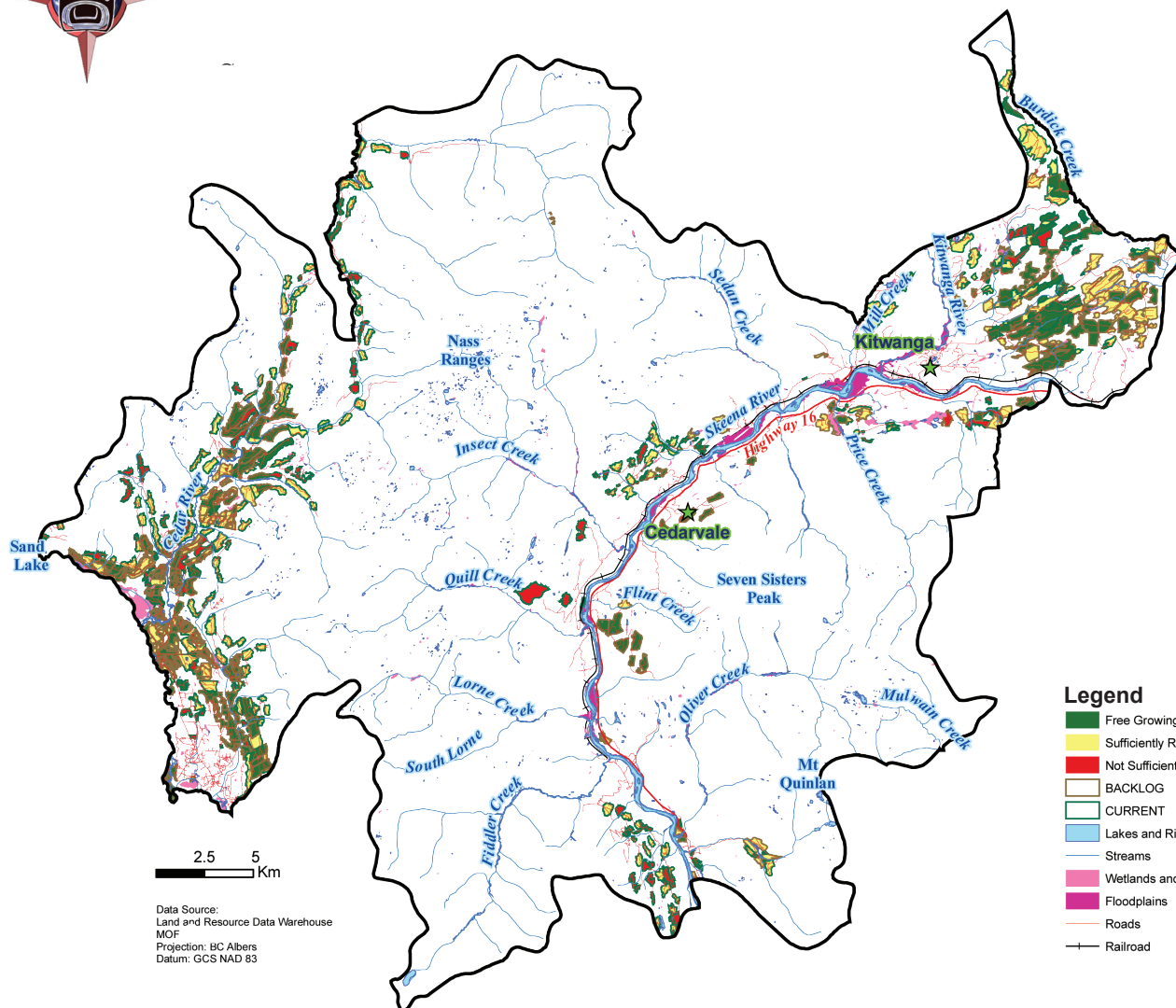
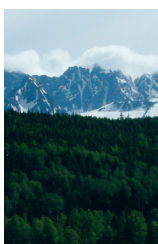
- Immature_dkm
- Ground Sawlog
- Cable Saw log
- Ground Marginal
- Ground Pulp
- Lakes and Rivers
- Streams
- Wetlands and Swamps
- Floodplains
- Roads
- Railroad
- Trail and Spurs

Lower Skeena Watershed

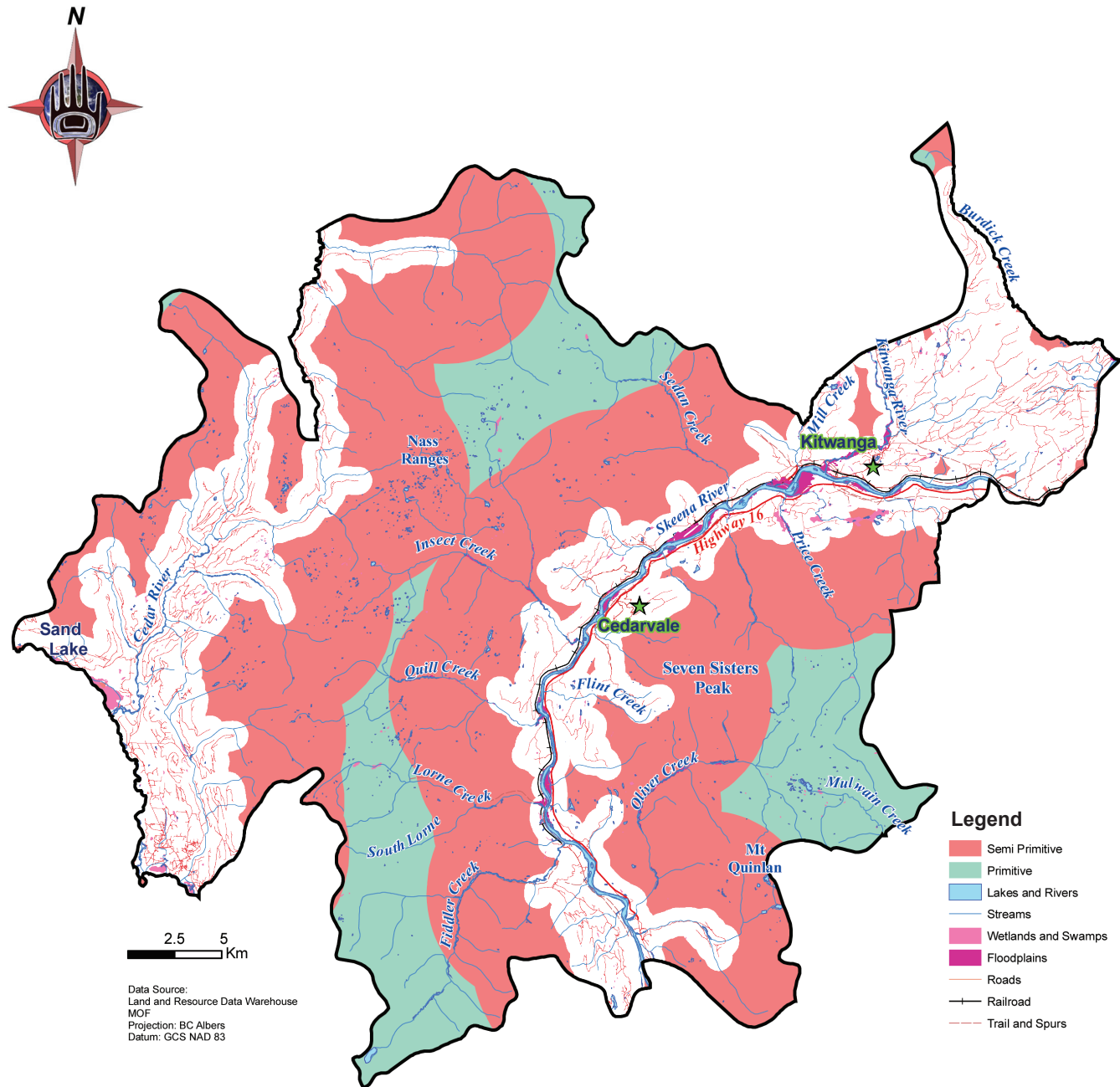




Map 9 Economic Characteristics / Opening Status



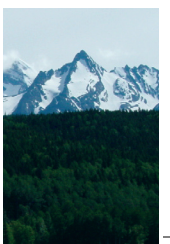
Map 10 Economic Characteristics / Recreation Opportunity Spectrum



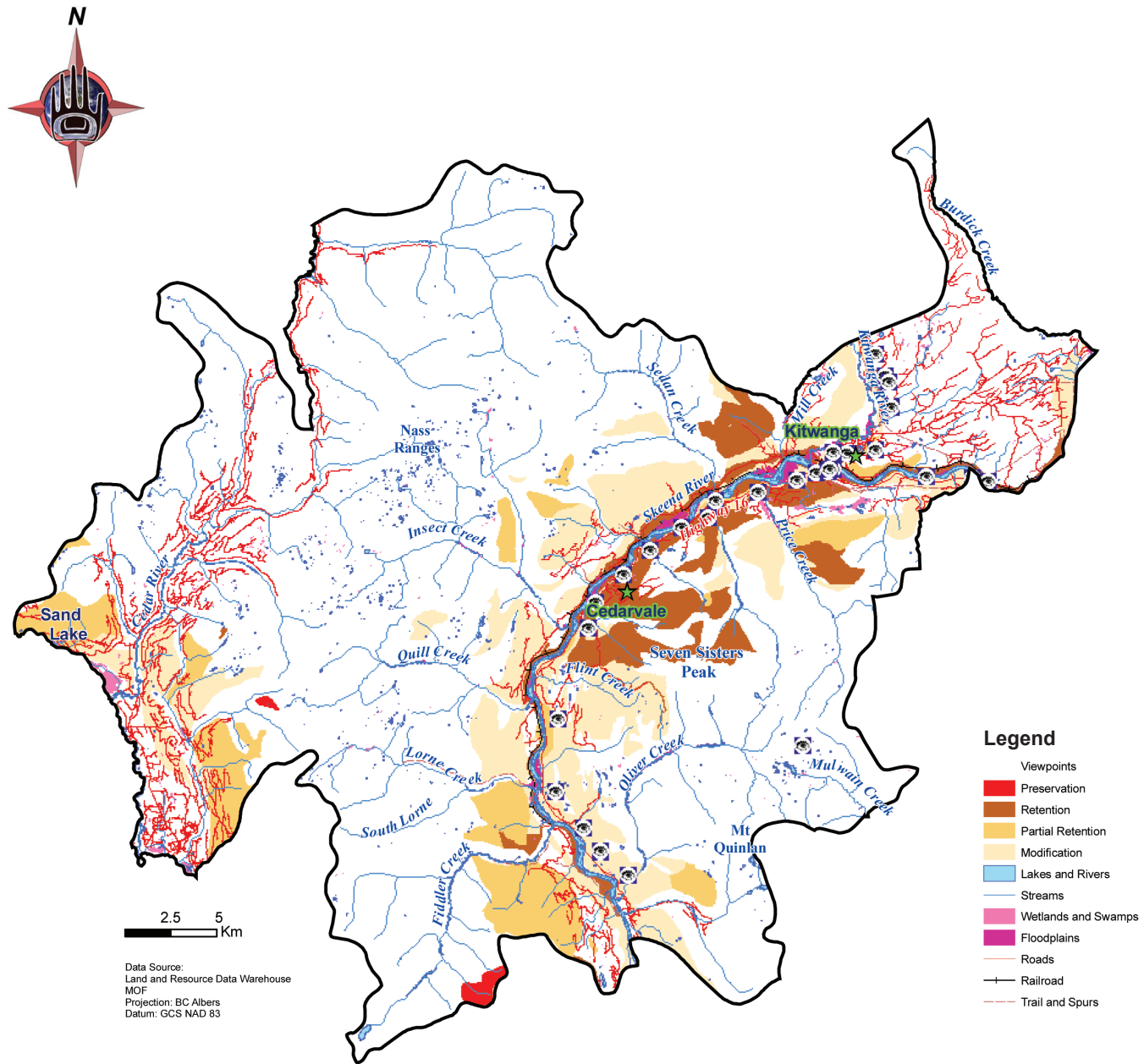
Recreation Opportunity Spectrum

The Recreation Opportunity Spectrum (ROS) is a system used by the Ministry of Forests and Range to classify forest lands in relation to the availability of recreational experiences and opportunities. The descriptions used to classify the settings are on a continuum and are described as: rural, roaded resource, semi-primitive motorized, semi-primitive non-motorized, and primitive.

Lower Skeena Watershed



Map 11 Economic Characteristics / Visual Quality Objectives



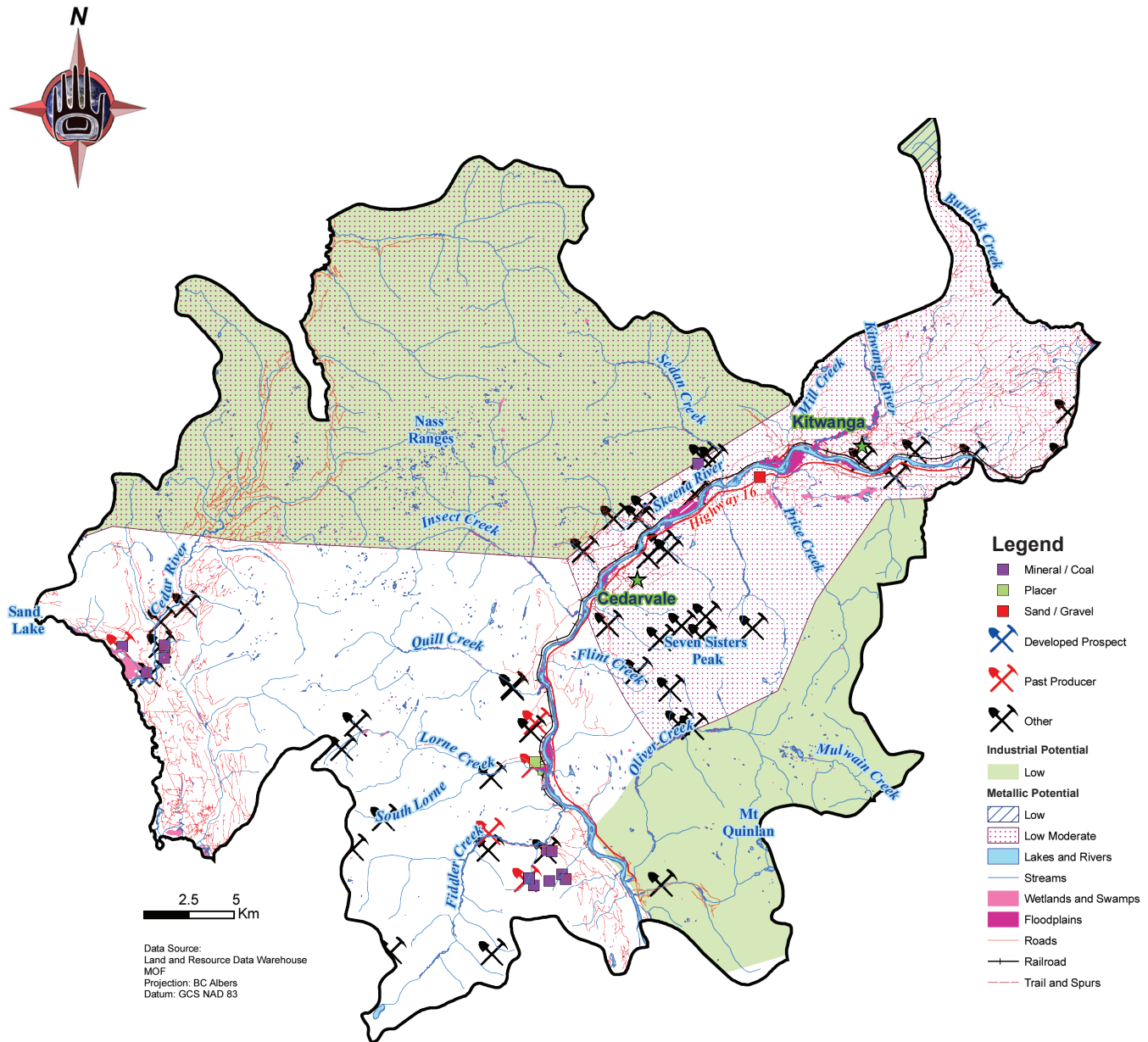
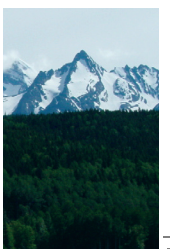
Visual Quality Objectives

Retention VQO—forest management activities may be noticeable but not clearly visible to the average viewer. Disturbances must appear to be from natural causes.

Partial Retention VQO—forest management activities may be noticeable but must blend well with the natural landscape.

Modification VQO—forest management activities must appear natural.

Map 12 Economic Characteristics / Mineral Potential





For more information, contact:

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