

Atlas

of Resource Values in the Gitxsan Watersheds

PHASE 2: Nass Watershed

March 2008

The Gitxsan Nation and the Ministry of Forests and Range have agreed that sharing of resource information is the first step in planning—and agreeing upon—the use of resource values known to the Ministry within Gitxsan traditional territories. This pamphlet describes the resources lying within the Nass Watershed and forms part of the *Atlas of Resource Values in the Gitxsan Watershed*. The goal of the atlas is to describe resource values in the nine Gitxsan watersheds that lie within provincial government forest districts. The Nass Watershed lies within the boundaries of the Nass, Kispiox and Fort St. James Timber Supply Areas.

Inside:

Geographic Description	2
Social Characteristics	3
Environmental Characteristics	4
Economic Characteristics	8
Resource Maps	12



Skeena Stikine Forest District



1.0 Geographic Description

The Nass Watershed is a large (833,516 hectares) watershed of the Nass River and is bounded by the Bell-Irving River to the west, Konogus Creek in the north, Groundhog Mountain in the east, and Mount Kologet in the south. The Nass is the largest of nine watersheds in the traditional territory of the Gitxsan First Nation.



Front Cover Photo: Kirby Muldoe (provided by George Muldoe)

2.0 Social Characteristics

2.1 Communities

There are no villages or communities in this watershed; however, the Bell II All Service Lodge is located on Hwy 37 North (on the north western boundary of the watershed), approximately 360 kilometres north of Smithers. The lodge caters primarily to fishers and is open year round.

The Nass Watershed consist of 11 Gitxsan watersheds. Eight of these are completely within the Nass Timber Supply Area (TSA): Gwin Hagiisdixw, Min Lax Muhl, Xsana Loop, Xsi Lax Uu Andoo o, Xsi Luu Biiyoosxwit, Xsi Luu Wit Wiidit, Xsigalliixawit, and Xsihi Guuga. A further two Gitxsan house territories are within the Nass, Ft St James and Kispiox TSAs (Angodjus and Taax Tsinihl Denden) and one Gitxsan house territory is located within the Nass/Ft St James TSAs (Dam Tuutsxwhl Ax).

The Nass Watershed also contains another house territory (the house of Awijii), which is located within the Nass TSA. All of the graphs and tables contained in this report include data from the House of Awijii.

2.2 Parks and Special Management Zones

Although there are no Special Management Zones within the Nass, the south-eastern boundary of the watershed borders 550 ha within the Swan Lake/Kispiox River Provincial Park. In addition, a small area of the Damdochax Protected Area (771 ha) is within the eastern boundary and was designated by the provincial government following recommendations from the Fort St. James Land and Resource Management Plan. Key values within the Damdochax Protected Area, which is 8,097 ha in size, include very important wildlife habitat, a wetland riparian complex that provides significant habitat for grizzly bear and moose, and the terminus for a small but significant run of sockeye salmon.

The Nass Wildlife Area was established as part of the Nisga'a Final Agreement to define the area where the Nisga'a can exercise their treaty right to hunt. The area extends 124,328 ha into the Nass Watershed.

The Grave Point for the late (Geel) Simon Gunanoot is located on the northeast shore of Bowser Lake and is a historical site that is a non-LRMP protected area (see cultural heritage map on page 14).

2.3 Cultural Heritage Values

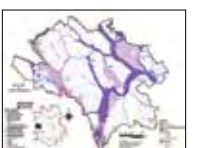
A cultural heritage and archaeological resources inventory for the unit was compiled by the Gitxsan Watershed Authorities for only a small portion of the watershed. The inventory—intended to communicate Gitxsan environmental and resource values, as well as cultural knowledge—includes a territory map and a reference table with descriptions of Gitxsan place names, non-aboriginal place names, information sources and any related comments. The resource map also displays anecdotal and potential archaeological information (see map on page 14).



Photo: George Muldoon / Inner-Nonn Watershed Facilitator



Map 1—Page 12



Map 2—Page 14

3.0 Environmental Characteristics



Map 3—Page 16

3.1 Biodiversity Values

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 Nass Watershed there are four zones: Alpine (BAFA); Engelmann Spruce Sub alpine Fir (ESSF); Interior Cedar-Hemlock (ICH); and Sub Boreal Spruce (SBS).

Natural Disturbance Types

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 four 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.
- NDT3: ecosystems with frequent natural disturbances. Natural burns usually contain unburned patches of mature forests producing a landscape of even aged regeneration stands containing mature forest remnants.
- 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.

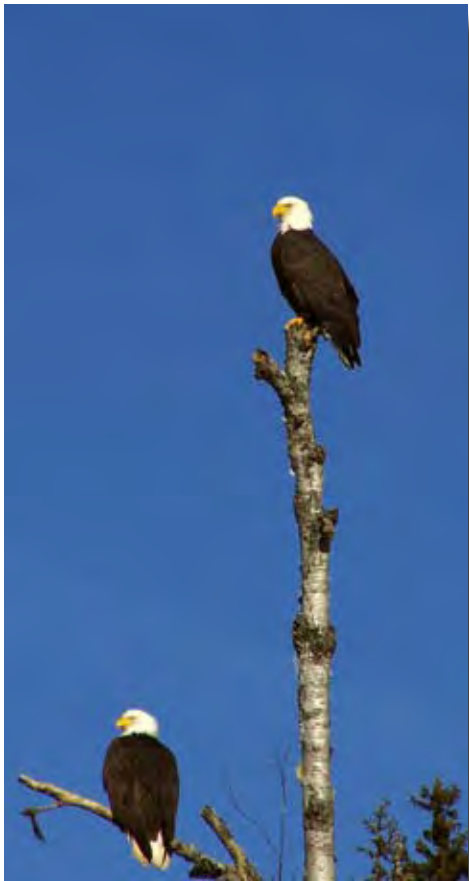


Photo: by Victor Mowatt (provided by George Muldoe)

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

BEC Variant	Hectares	% of planning unit	NDT	NDT (ha)	NDT (%)
AT	279597	34	5	279597	34
ESSFmc (moist cold)	5151	1	2	--	--
ESSFmcp	2155	0	2	--	--
ESSFwv (wet, very cold)	333902	40	2	--	--
ESSFwfp (parkland)	5416	1	2	--	--
ICHmc1 (Nass moist cold)	106265	13	2	452889	54
ICH vc	67041	8	1	67041	8
SBSmc2 (Babine moist cold)	33989	4	3	33989	4
Total Area for Planning Unit	833516	100		833516	100

3.2 Water Values

Water is the lifeline of a watershed and is critical for the overall health of an ecosystem, including fish and wildlife species. The Gitxsan has historically relied on fresh water and healthy fisheries to sustain its culture.

Third order watersheds provide the basis for measuring and assessing watershed integrity (peak flow, surface erosion, mass wasting and riparian buffer integrity). In the Nass, third order watersheds include the headwaters and all tributaries that feed into the main river systems, and the main watercourses flowing out of the main river systems.

Table 2. Third Order Watersheds in the Nass Watershed.

Watershed	Hectares
Kispiox	582
Lower Bell Irving	202,386
Middle Skeena	46,889
Nass River	100,446
Taylor River	137,375
Upper Bell Irving River	42,316
Upper Nass River	298,797
Upper Skeena River	4725



Photo: George Muldoe



Map 4—Page 18



Map 4—Page 18

3.3 Fisheries Values

Fisheries values are rated high to very high in the watershed. Twelve species of fish can be found in the Nass Watershed, including all salmon species. The Bell-Irving, Upper Nass and Damdochax are remote world-class rivers that receive very little angling pressure and provide a high quality fishing experience.

Fish species found within the Nass Watershed include:

Bull trout	Prickly sculpin
Chinook salmon	Rainbow trout
Coho salmon	Redside shiner
Dolly varden	Sockeye salmon
Longnose sucker	Steelhead
Mountain white fish	Sucker



Photo: Tetrad Communications

3.4 Soil Values



Map 5—Page 20

The topography of the western part of the Nass Watershed is mountainous with coastal plains and rugged ice-capped mountains. A significant portion of the forest in this area is unavailable for harvesting because it is either non-merchantable or located in environmentally sensitive locations. The eastern portion is characterized by wide- and flat-plateaus bordered by the Skeena and Coast Mountain ranges. Overall in this watershed, summers are warm, while cold Arctic fronts frequently descend into the area in the winter. Terrain Stability Mapping (TSM) completed for a very small portion of the watershed has identified potentially unstable (Class IV) and unstable (Class V) areas in 4518 ha, less than 1% of the watershed. In addition, mapping of environmentally sensitive areas completed in the early to mid-1970s classified another 43,783 ha (0.5%) of the watershed as having environmental sensitivity for soils.

3.5 Forest Values

Some 375,506 hectares of land within the unit is forested. This represents 45% of the total landbase in the watershed. The breakdown of forest habitat types within the forested area by leading tree species is summarized in the table below.

Table 3. Timber Types in the Nass Watershed.

Leading Species	Hectares	% of forested area
Balsam	244,241	65%
Deciduous	4581	1%
Hemlock	120,819	32%
Pine	1317	<1%
Spruce	4547	1%
Total	375,506	100%

3.6 Wildlife Values

The forests of the Nass Watershed are home to a wide variety of wildlife species including moose, mountain goat, grizzly bear and black bear. Wetlands and lakes provide habitat for a variety of birds and other species. The flooded willow swamps between Damdochax and Wiminask Lakes are used by calving moose and the entire valley is used by moose as a winter range. Grizzly bears live and den in the area, and use the Damdochax/Slamgeesh Valleys as a travelling corridor. High value fish habitat is found throughout the Damdochax River, with steelhead, coho, sockeye and chum all found spawning in the Damdochax Protected Area. The Damdochax is also important to migrating waterfowl in the fall when many other bodies of water are frozen. Other animals found in high numbers in the protected area include wolf, otter, wolverine, marten, black bear and eagle.

Table 4. Wildlife Habitat in the Nass Watershed.

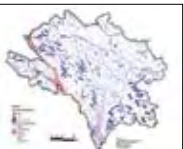
Species	Hign Value Habitat (ha)	% of forested area
Moose	23700	3%
Grizzly bear	8312	1%
Mountain Goat	28478	3%
Total		7%



Photo: by Tiger Michelle (provided by George Muldoe)



Map 6—Page 22

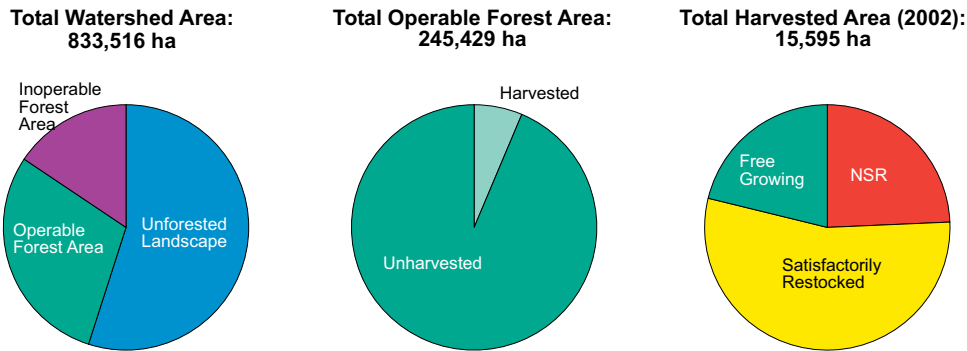


Map 7—Page 24

4.0 Economic Characteristics

4.1 Timber and Silviculture

Nass Landbase Summary



Map 8—Page 26

Timber

The Nass Watershed lies within three Timber Supply Areas: the Fort St. James, the Kispiox and the Nass; however, the vast majority of the landbase of the Gitksan Nass Watershed lies within the Nass TSA. The table below shows the proportion of total landbase and operable landbase associated with each TSA in the Nass Watershed.

Table 5. Total Landbase and Operable Landbase from each TSA in the Nass.

TSA	Total Landbase (%)	Total Landbase (ha)	Operable Landbase (%)	Operable Landbase (ha)
Fort St. James	5	39105	3	7473
Kispiox	2	13317	1	2279
Nass	94	781094	96	235675
Total	100%	833516	100%	245427

The total forested area that can be used for timber production (operable landbase) in the Nass watershed is 245,427 hectares (29.4% of the total landbase). The timber from the operable landbase can be classified as follows:

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

A breakdown of operable timber resources by wood quality types is found in the tables on page 9, and presented on map 8, page 26.

Table 6. Operable Timber Resources for the 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.
135	6	19	1	434	19	1691	74	2	<1

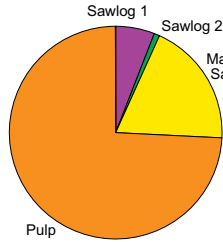


Table 7. Operable Timber Resources for the Nass TSA.

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.
43352	18	8964	4	2578	1	158134	67	22647	10

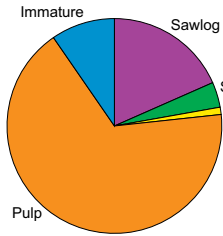


Table 8. Operable Timber Resources from all TSAs in the Nass Watershed.

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.
43487	19	8983	5	3012	2	159825	65	22649	9

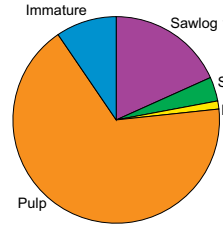


Photo: Tetrad Communications



Map 9—Page 28

Silviculture Status

As of 2002, 15,595 ha (6% of the operable forested landscape) had been harvested in the Nass 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 15,595 ha that have been harvested in the Nass, 8501 ha (55%) have been restocked and 3303 ha (21%) is free growing. Some 3791 ha (or about 24% of the harvested area) are classified as “not satisfactorily restocked.”

Table 9. Area by Opening Type in the Nass Watershed.

Timing of harvest or fire	Not Satisfactorily Restocked		Satisfactorily Restocked		Free Growing		Total
	Ha.	%	Ha.	%	Ha.	%	ha
1987 or earlier	386	2	1394	9	2000	13	3780
Post 1987	3405	22	7107	46	1303	8	11815
Total	3791	24	8501	55	3303	21	15595

4.2 Tourism and Recreation

Wilderness Values

A significant portion of the Nass is relatively untouched and primitive, providing potential opportunities for wilderness recreation experiences.

- 47% 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).
- 40% is classified as “semi primitive” (greater than or equal to 1 km from a road, and greater than or equal to 1000 ha in size).

Camp Sites

While several provincial highways department rest stops are located within the Nass Watershed, only one recreation site (Bonny Lake) falls within its boundary. The recreation site is on the southern tip of the watershed and is a managed two-unit site with a canoe route.

Visual Quality

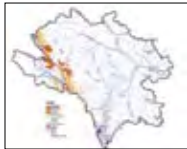
Highway 37 defines the northwest boundary of the watershed and, because it offers mountain views, is a visually sensitive corridor. Visual Quality Objectives (VQOs) of retention, partial retention and modification of forests in harvesting operations have been determined along the highway. The map on page 32 shows the location of and defines visual quality designations.



Photo: George Muldoe



Map 10—Page 30



Map 11—Page 32

4.3 Other Values

Range and Agriculture

There is no Agricultural Land Reserve designation within the watershed, although it does contain one range tenure (a Grazing Licence) within its boundaries.

Roads

The Highway 37 corridor runs along the western boundary of the watershed for 62 kilometres. There are also 570 kilometres of gravel logging roads including spur roads or logging trails.

Minerals, Oil and Natural Gas

Metallic mineral potential is low for over 90% of the watershed, with a small portion to the west classified as high. Industrial mineral potential is low to moderate. There are two mineral showings (copper and zinc) in the northwest.

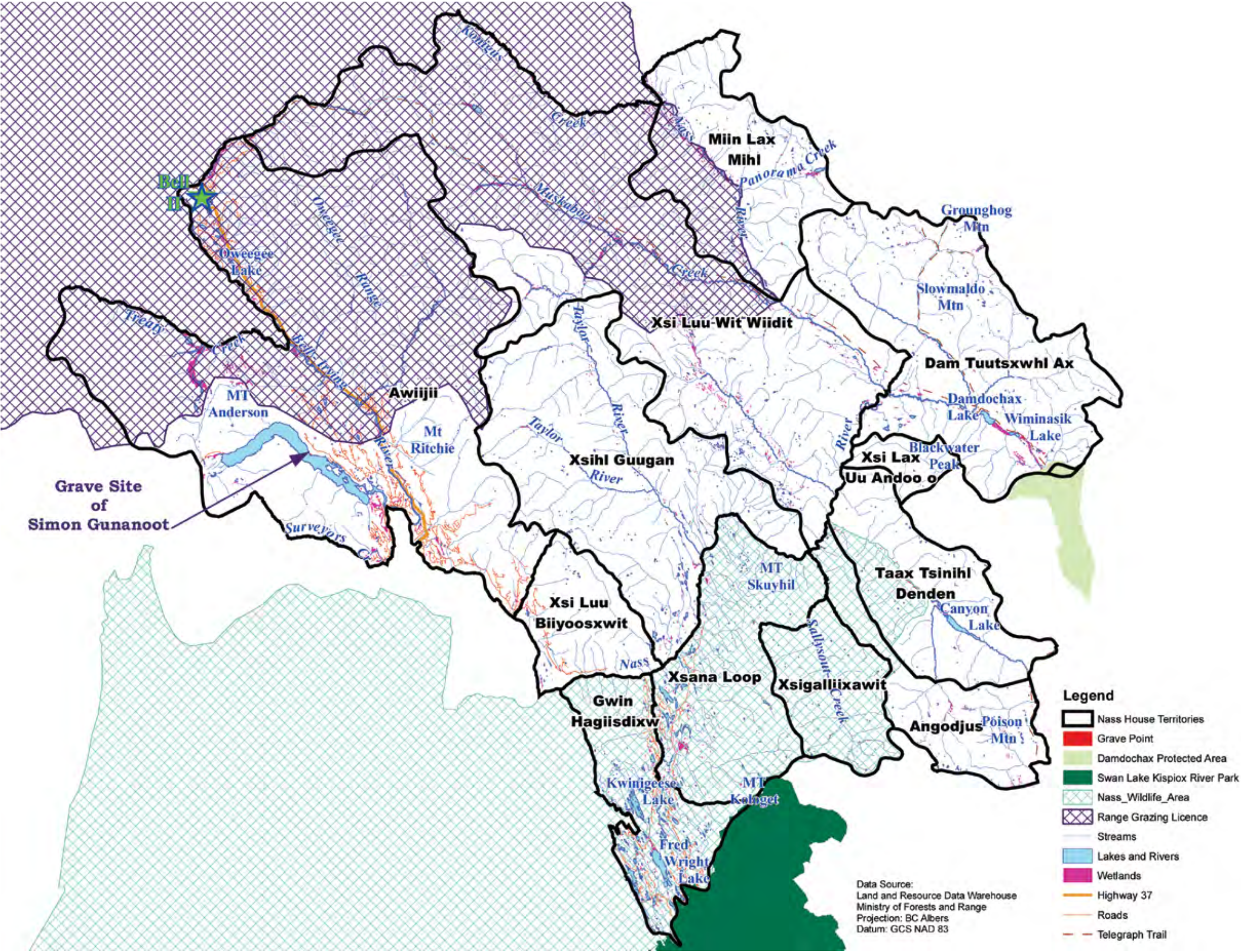


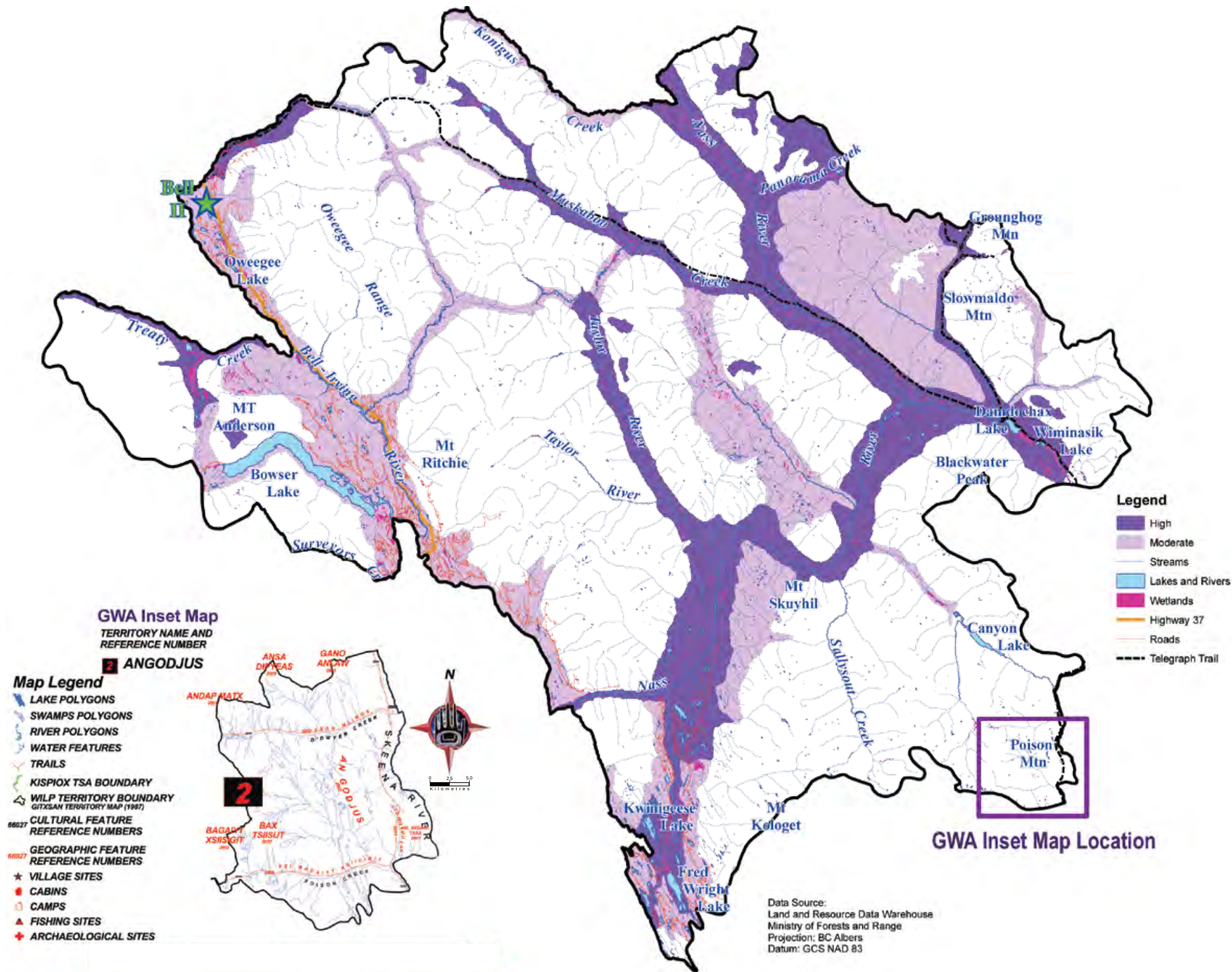
Photo: George Muldoe

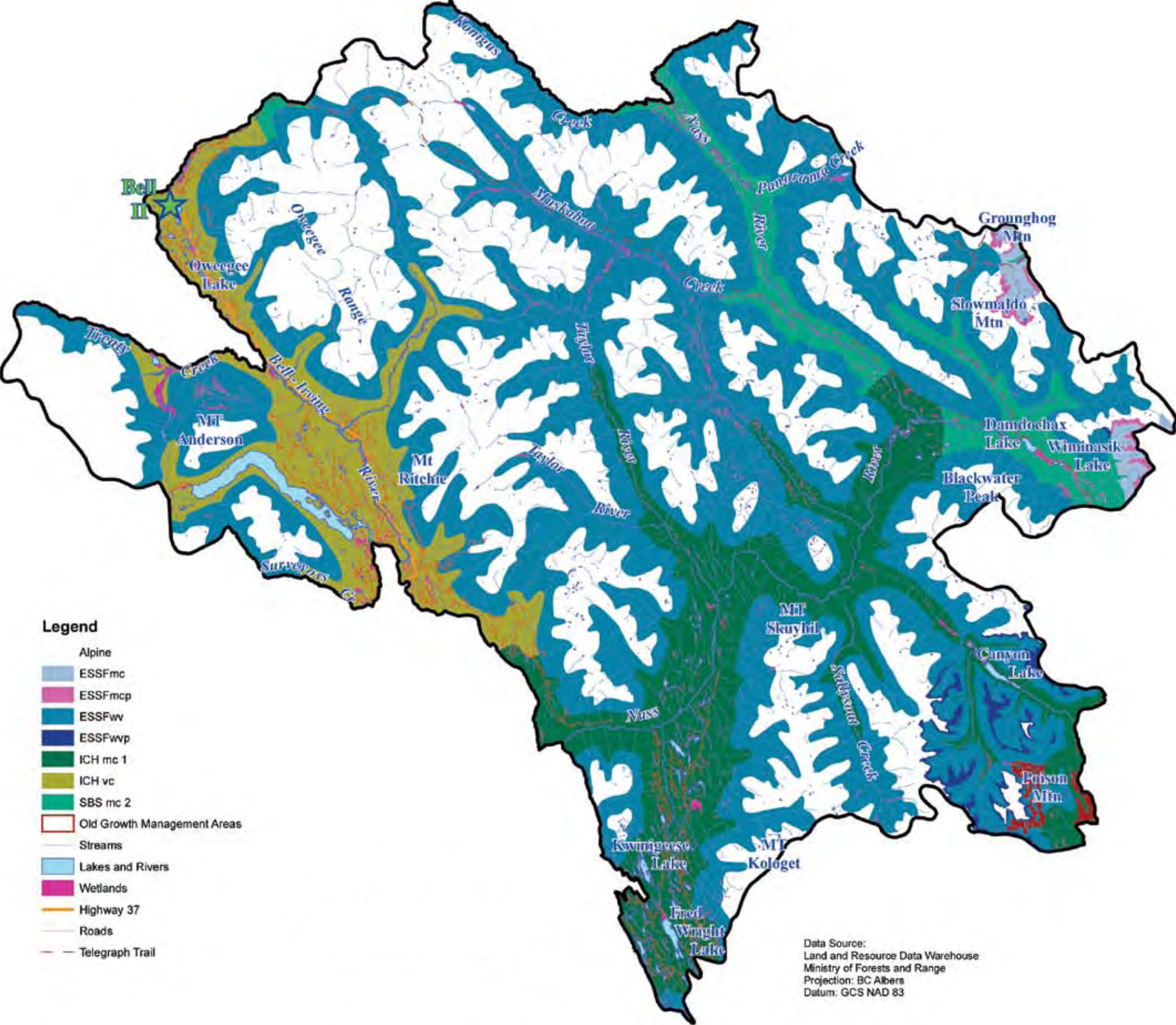


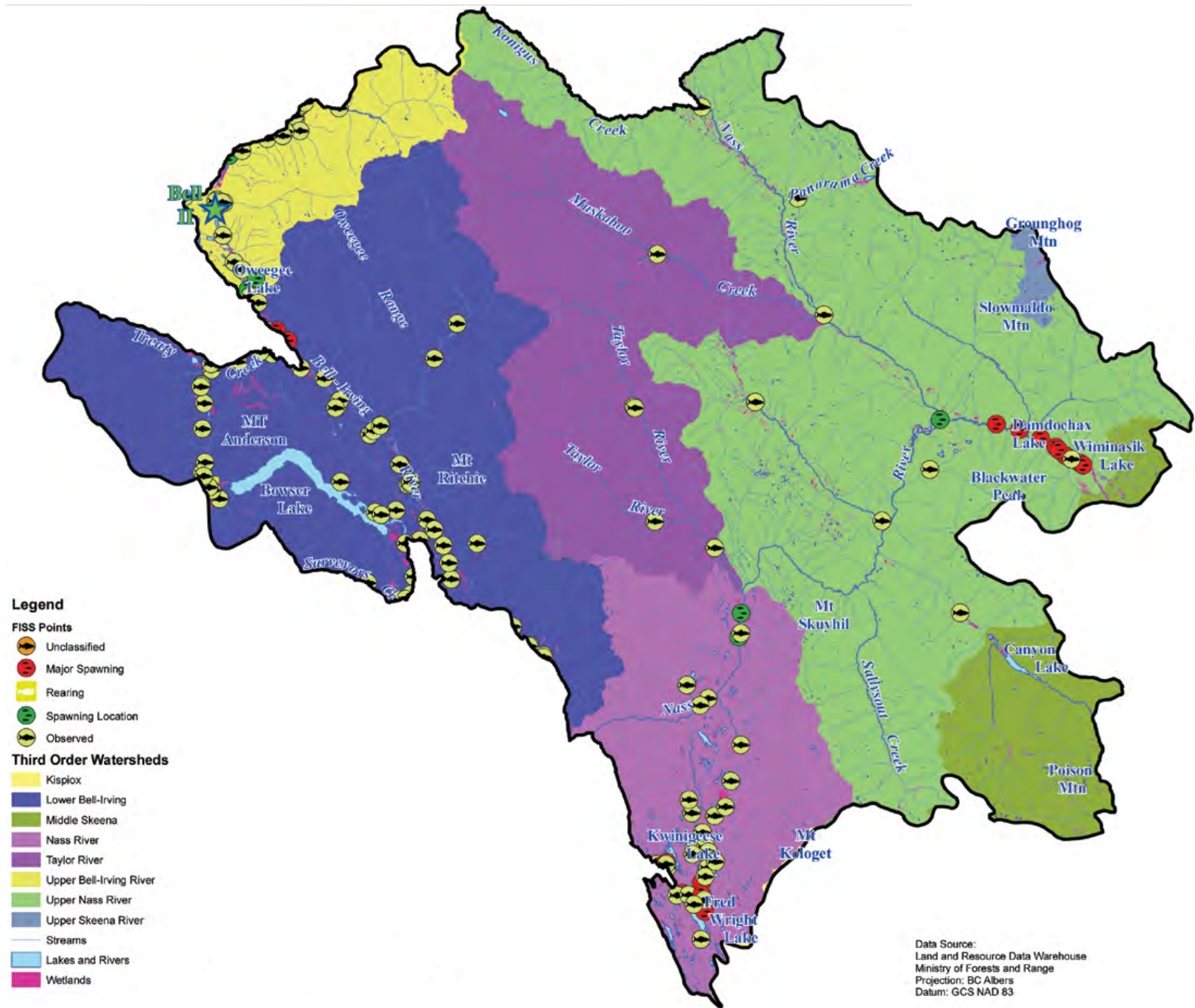
Map 12—Page 34

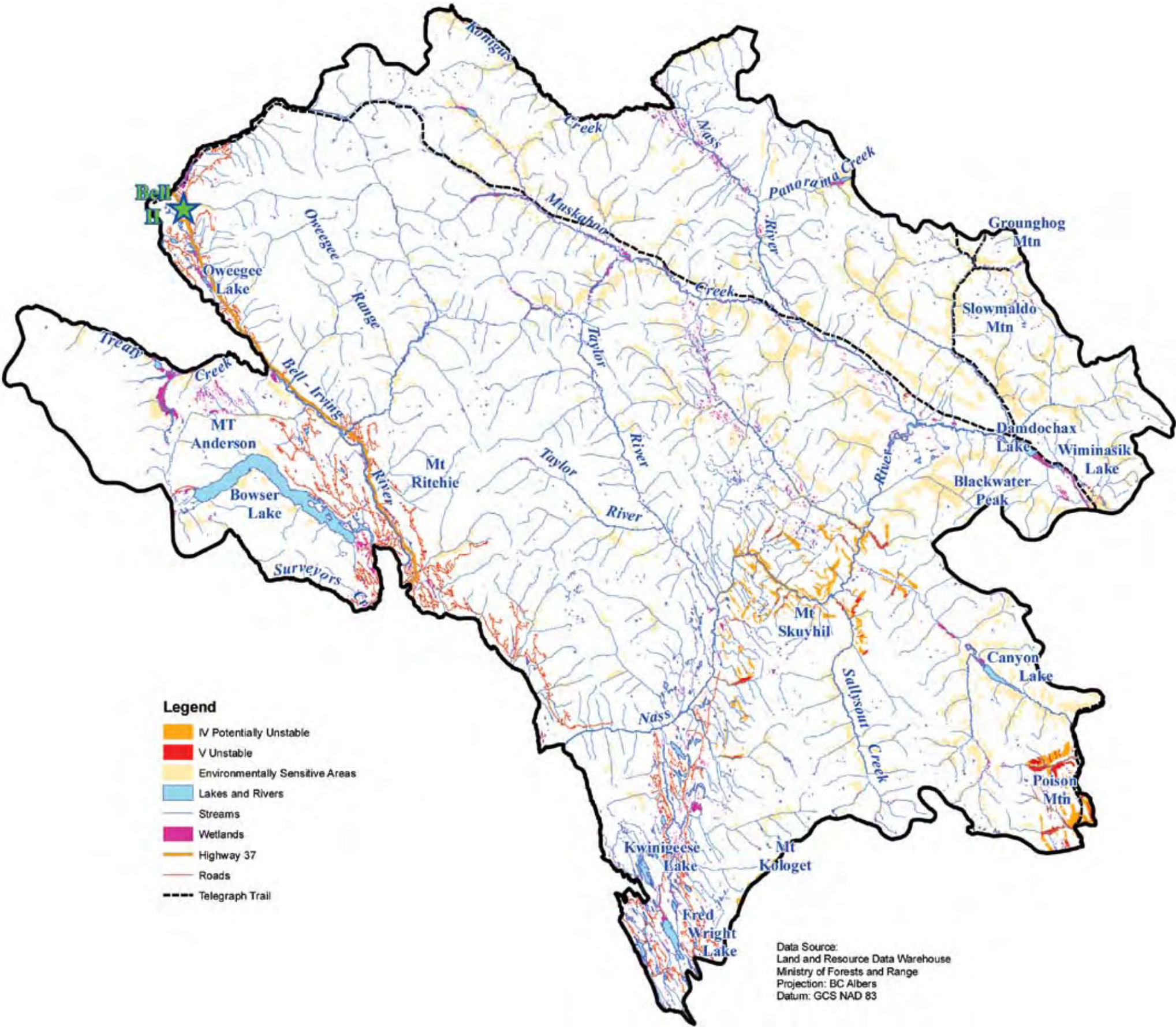
Map 1 Social Boundaries / Territories, Parks, Agricultural Land Reserve

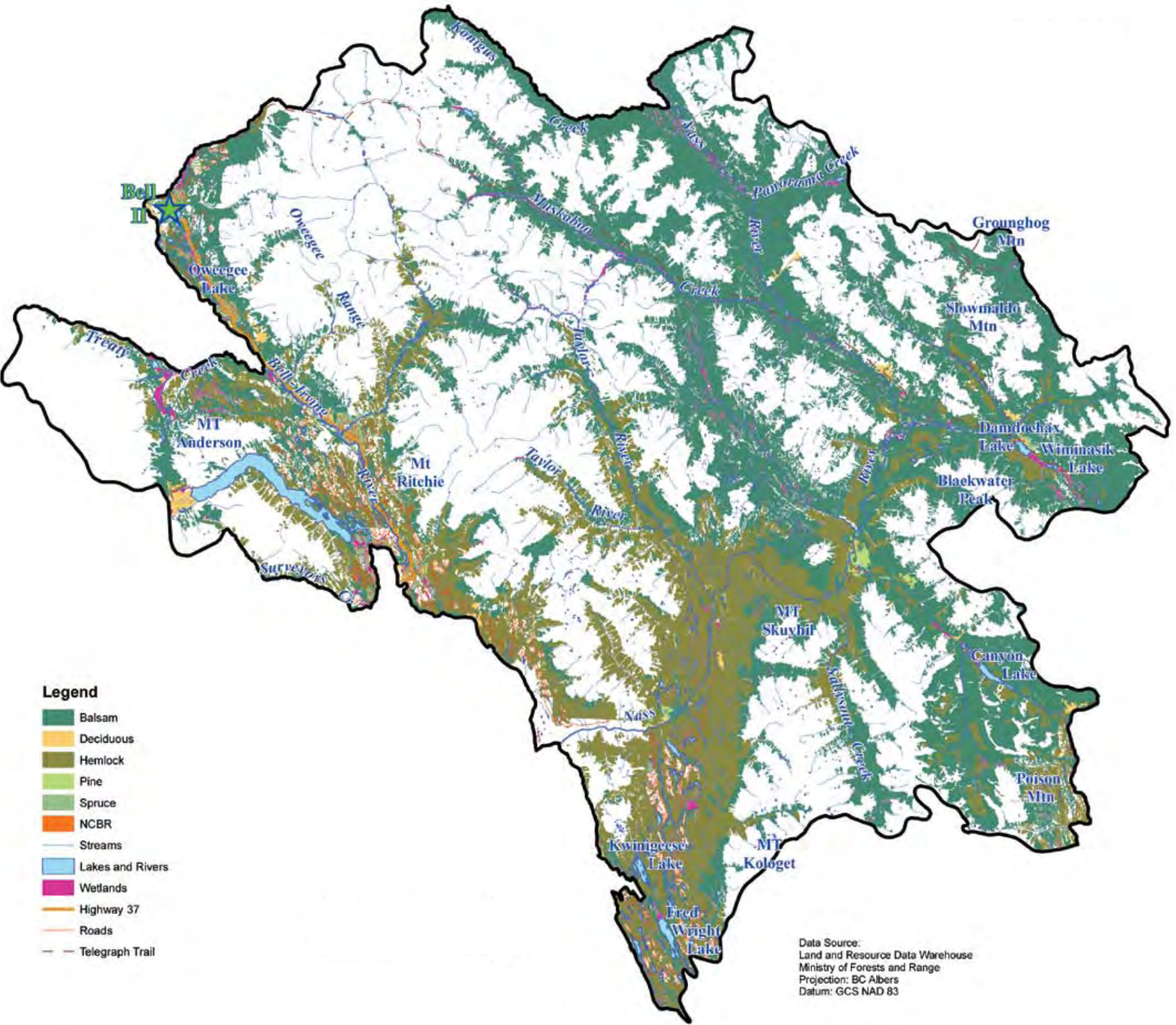


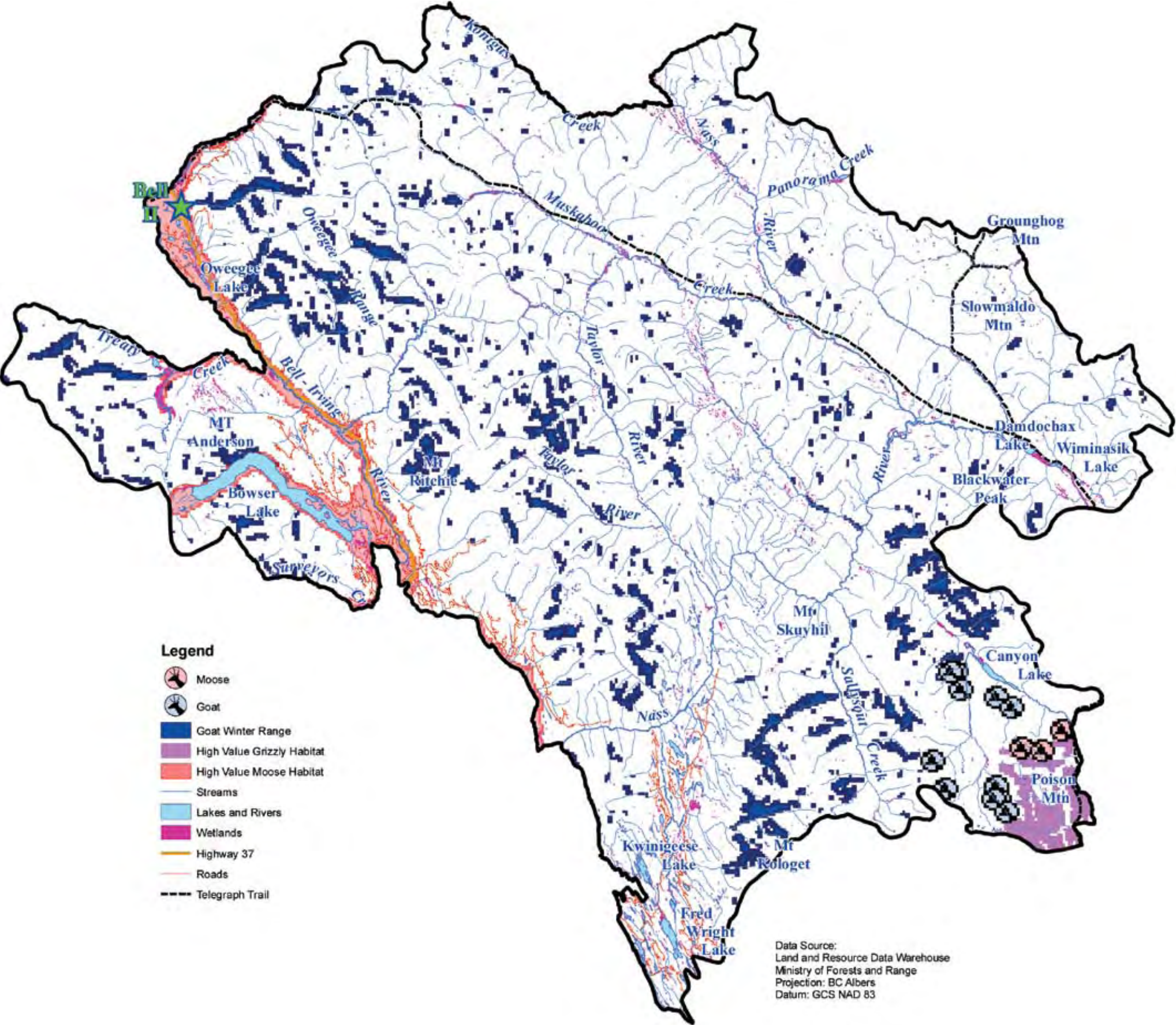


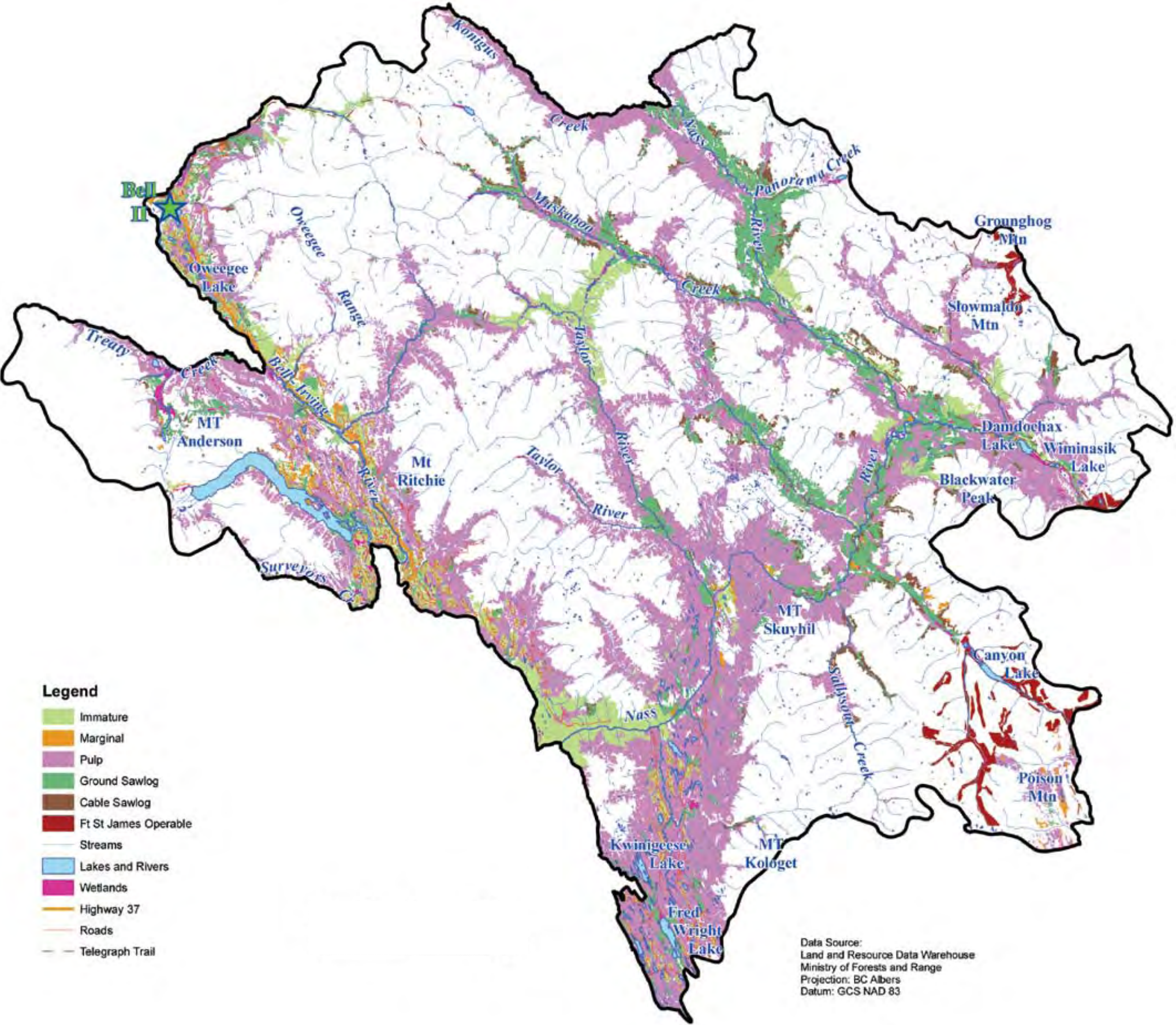


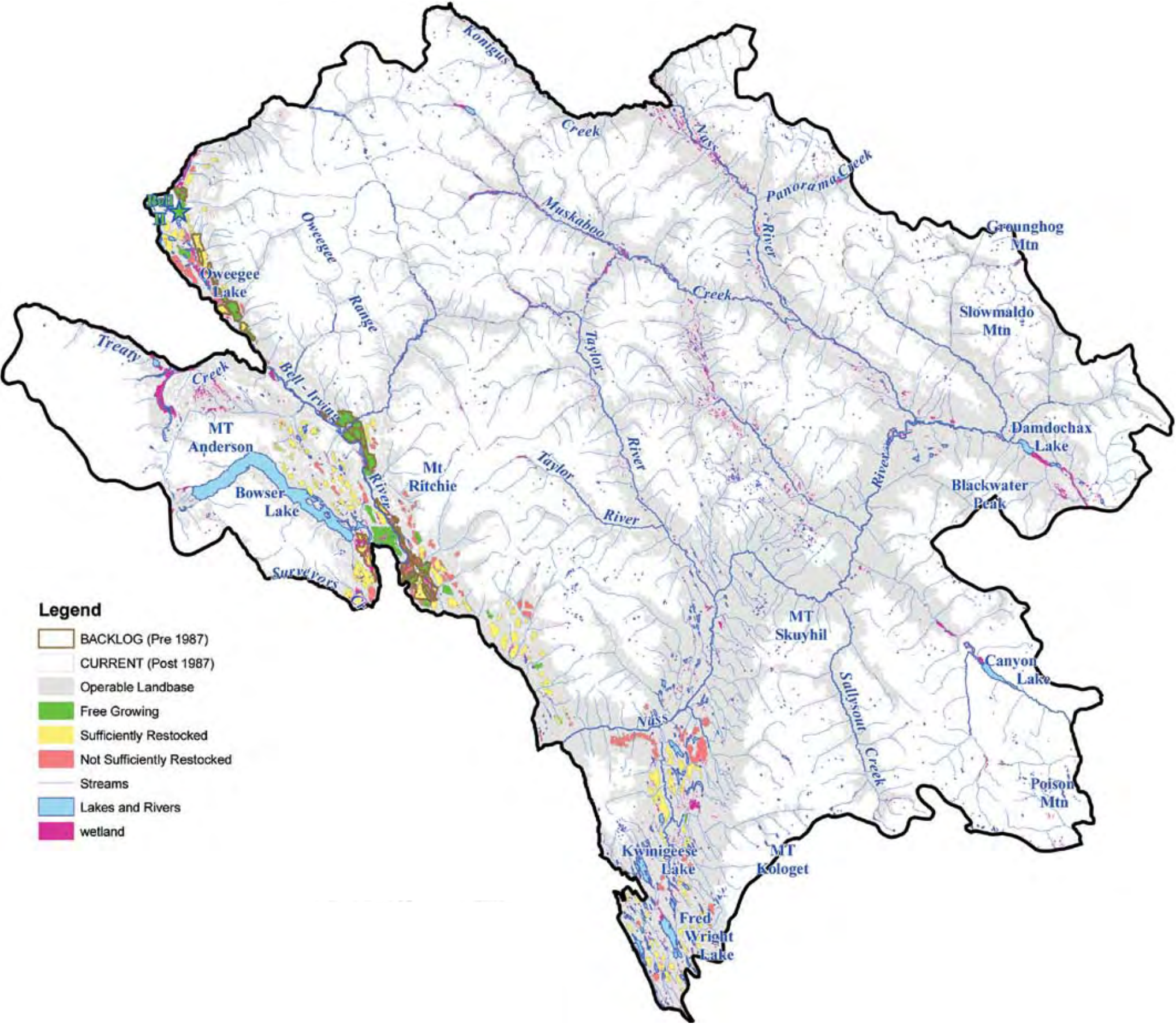


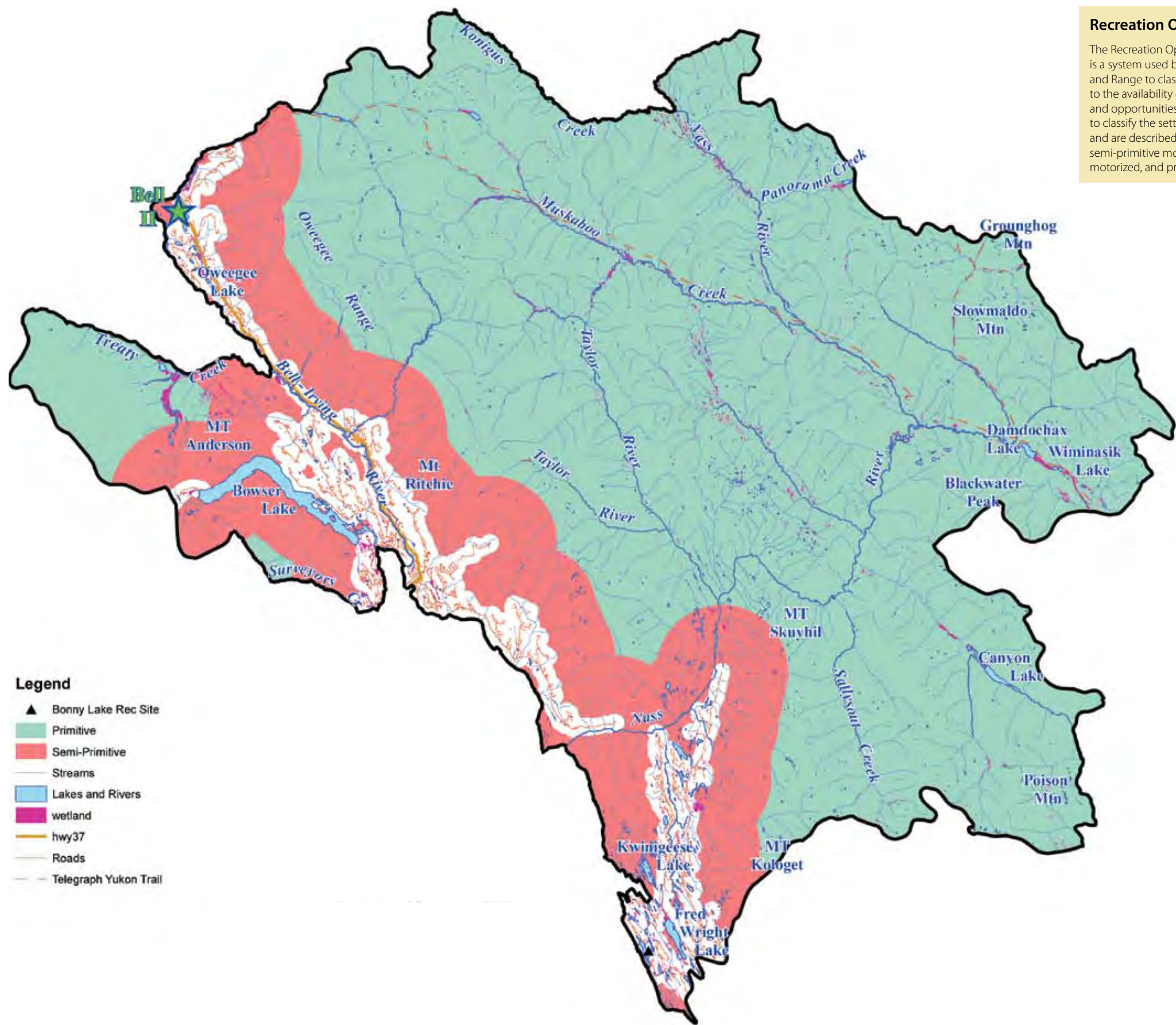








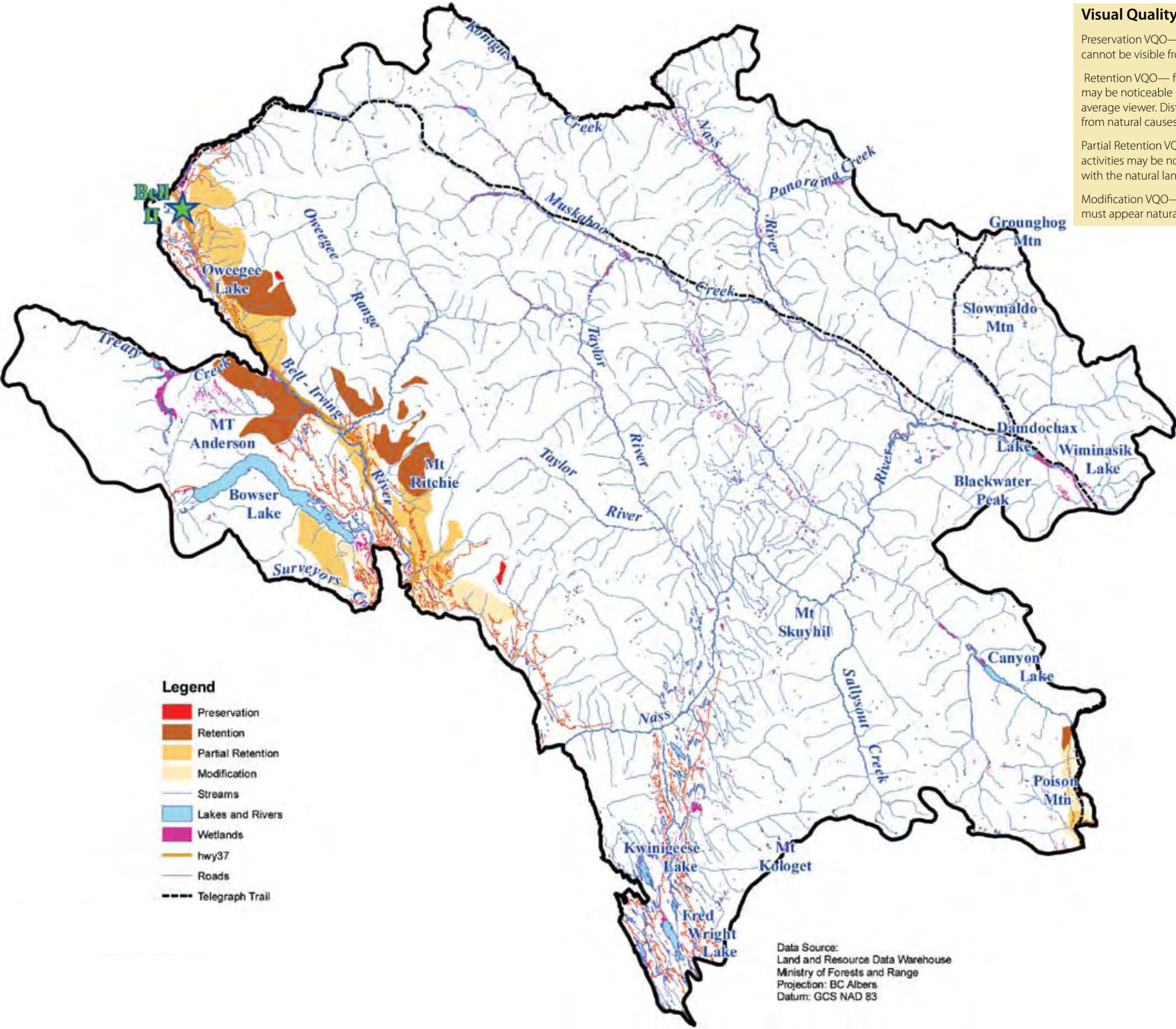




- Legend**
- ▲ Bonny Lake Rec Site
 - Primitive
 - Semi-Primitive
 - Streams
 - Lakes and Rivers
 - wetland
 - hwy37
 - Roads
 - Telegraph Yukon Trail

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.



- Legend**
- Preservation
 - Retention
 - Partial Retention
 - Modification
 - Streams
 - Lakes and Rivers
 - Wetlands
 - hwy37
 - Roads
 - Telegraph Trail

Visual Quality Objectives

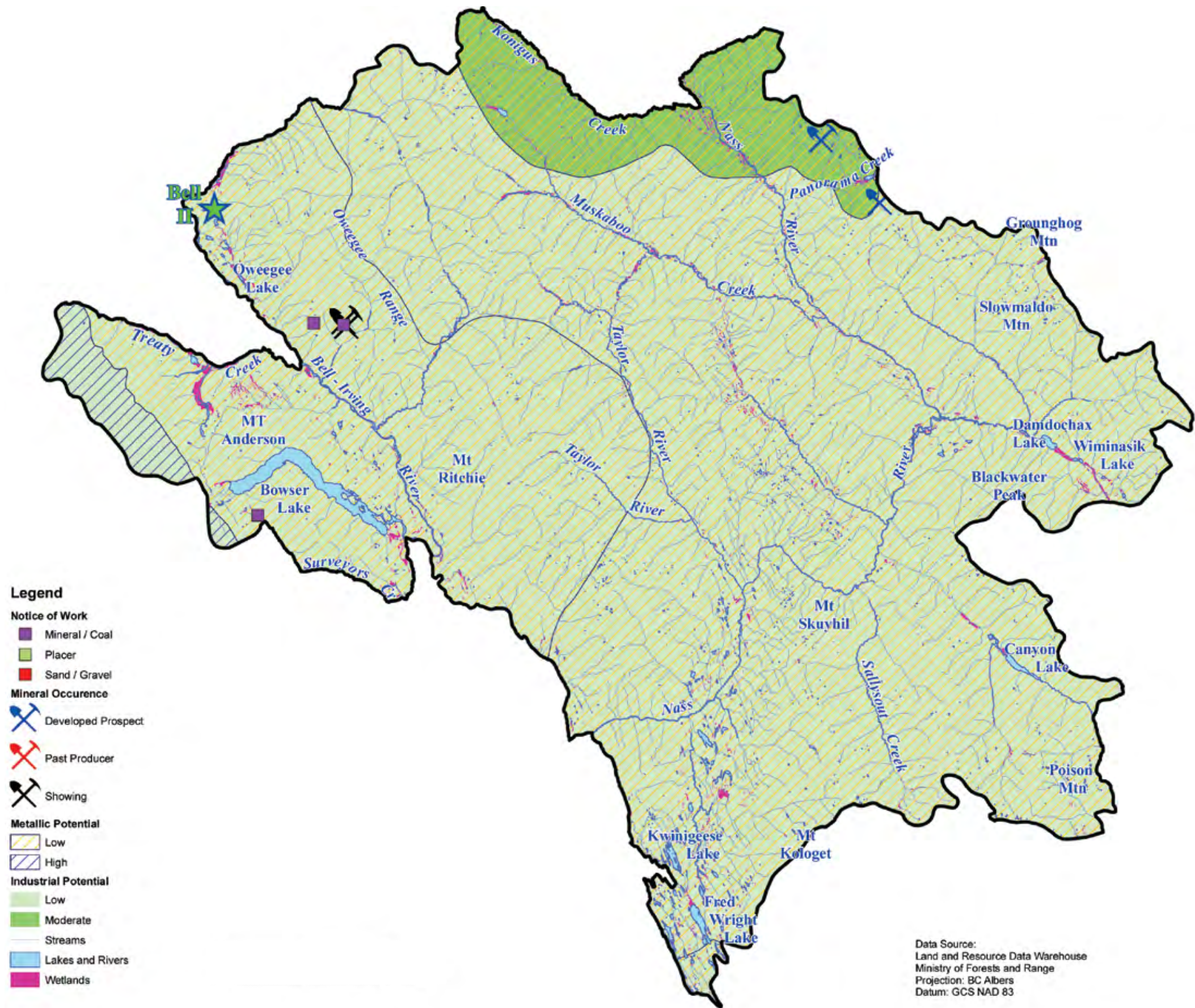
Preservation VQO—forest management activities cannot be visible from designated viewpoints.

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.

Data Source:
Land and Resource Data Warehouse
Ministry of Forests and Range
Projection: BC Albers
Datum: GCS NAD 83





For more information, contact:

Robert Mitchell, Stewardship Officer
Sue McDiarmid, First Nations Officer
Ministry of Forests and Range
Skeena Stikine Forest District
Bag 6000, 3333 Tatlow Road
Smithers, BC, V0J 2N0
Tel: 250-847-6300