

Atlas

of Resource Values in the Gitxsan Watersheds

PHASE 2: Sustut 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 Sustut 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 nine Gitxsan watersheds that lie within provincial government forest districts. The Sustut Watershed lies within the boundaries of the Fort St. James and Mackenzie Forest Districts.

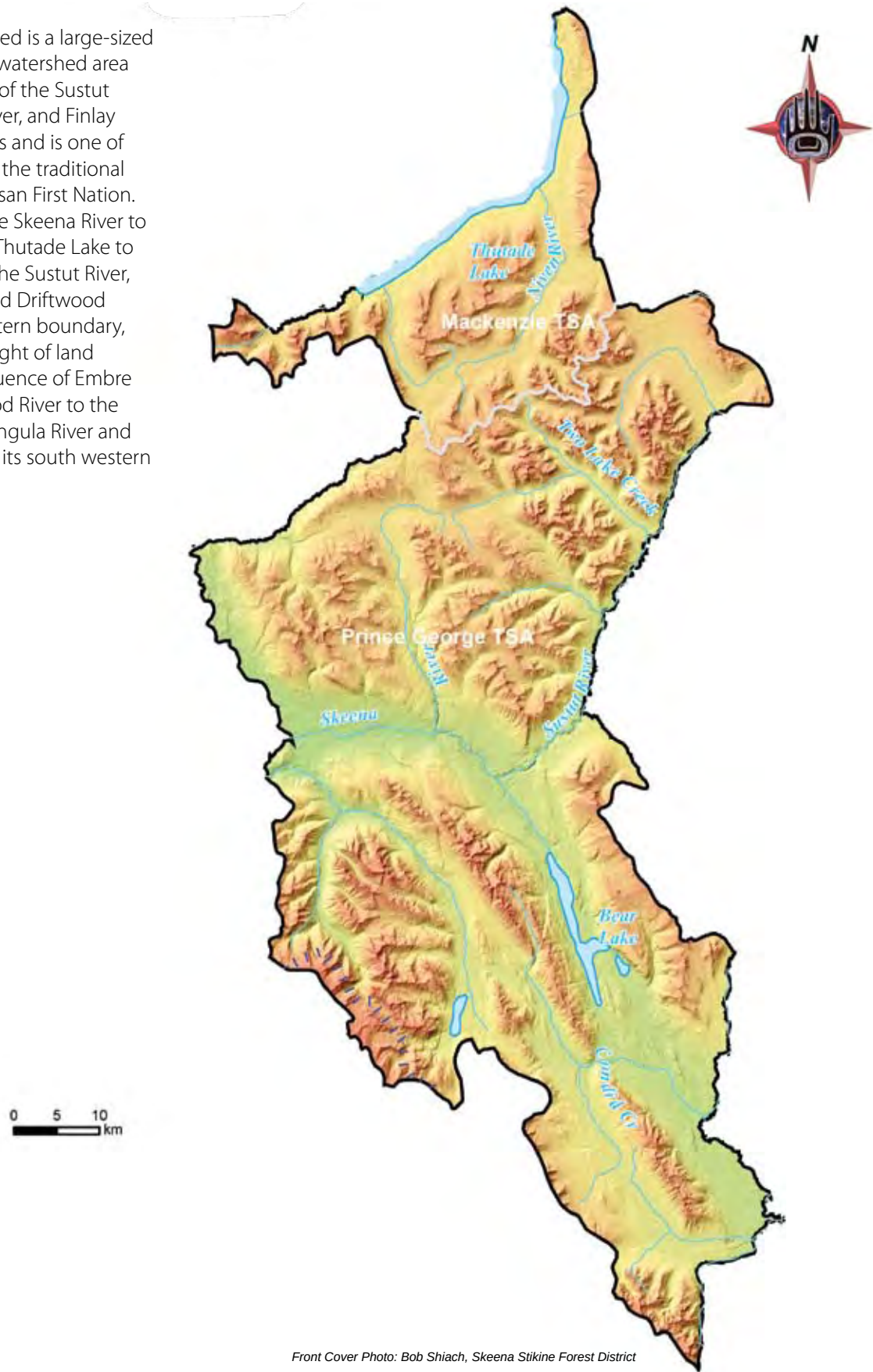
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1.0 Geographic Description

The Sustut Watershed is a large-sized (488,559 hectares) watershed area including portions of the Sustut River, Driftwood River, and Finlay River drainage areas and is one of nine watersheds in the traditional territory of the Gitksan First Nation. It is bounded by the Skeena River to the west, includes Thutade Lake to the north, follows the Sustut River, Connelly Range, and Driftwood Rivers along its eastern boundary, and follows the height of land between the confluence of Embre Creek and Driftwood River to the confluence of Squingula River and Skeena River along its south western boundary.



Front Cover Photo: Bob Shiach, Skeena Stikine Forest District

2.0 Social Characteristics

2.1 Communities

The Sustut is a remote area with no highway and little industrial road access. The primary access to the Sustut Watershed is via a deactivated rail line running along the east side of Bear Lake, the Sustut River and the Skeena River. The land is rich in salmon and wildlife making it a vital part of Gitksan life for countless generations. The Sustut Watershed includes four Gitksan house territories represented by the following hereditary Gitksan Chiefs: Nii Kyap within the Mackenzie and Prince George Timber Supply Areas (TSA) and Wii Gaak, Tsa Buk, Miluulak, and Haiwas within the Prince George TSA.

2.2 Parks and Special Management Zones

The Sustut Park and Protected Area is over 77,929 hectares in size. Of this, 18,543 hectares is located within the Sustut. The park was established as a result of implementing the Fort St. James Land and Resource Management Plan. The current objectives of the park are primarily directed at protection of geographic and ecological features, cultural values, recreation values, and fish and wildlife from access development.

Tatlatui Park, which was established to conserve mountain headwaters of the Arctic drainage, borders the northern portion the Sustut Watershed.

2.3 Cultural Heritage Values

Due to the richness of the salmon and wildlife habitat, the watershed has an extensive history of aboriginal use. Along with the many traditional trails and camps running throughout the area, there is a wide variety of cultural features echoing the history of the Gitksan Nation. The cultural heritage map included in this document (see page 12) highlights some of the general locations of the historic travel corridors and cultural features that cover the landscape.

As well, a Cultural Heritage and Archaeological Resource inventory has been developed using known information gathered from surveys related to industrial activities which forms the basis of current archaeology potential mapping.



Photo: Jason Wiley



Map 1–Page 10



Map 2–Page 12

3.0 Environmental Characteristics

3.1 Biodiversity Values



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 Sustut Watershed there are four zones: Boreal Altai Fescue Alpine (BAFA); Engelmann Spruce Sub alpine Fir (ESSF); Sub Boreal Spruce (SBS) and Spruce Willow Birch (SWB).

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 unit:

- 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: Tetrad Communications

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

BEC Variant	Hectares	% of planning unit	NDT	NDT (ha)	NDT (%)
BAFAun (Boreal Altai Fescue Alpine – Undifferentiated)	60550	14	5	113231	26
ESSFmc (Engelmann Spruce - Subalpine Fir - moist cold)	134576	31	2	193909	44
ESSFmcp (Engelmann Spruce - Subalpine Fir - Moist Cold Parkland)	43564	10	5		
ESSFmv 3 (Engelmann Spruce - Subalpine Fir - Omineca Moist Very Cold)	26211	6	2		
ESSFmvp (Engelmann Spruce - Subalpine Fir - Moist Warm Parkland)	8936	2	5		
ESSFwv (Engelmann Spruce - Subalpine Fir - wet, very cold)	2495	1	1	2495	1
ESSFwvp (Engelmann Spruce - Subalpine Fir - Wet Very Cold Parkland)	581	<1	5		
SBSmc2 (Sub-Boreal Spruce - Babine moist cold)	65721	15	3	129720	29
SBSwk 3 (Sub-Boreal Spruce - Takla Wet Cool)	63999	15	3		
SWBmk (Spruce Willow Birch - Moist Cool)	5423	1	2		
SWBmks (Spruce Willow Birch - Moist Cool Scrub)	27699	6	2		
Total Area for Planning Unit	439755	100		439755	100

3.2 Water Values

The Ministry of Environment Watershed Atlas has broken the province down into small order watersheds based on creek and rivers. Within the Sustut Watershed there are 34 named watersheds and 92 un-named watersheds. The named watersheds are listed below.

Table 2. Fourth Order Watersheds in the Sustut Watershed.

Watershed	Hectares	Watershed	Hectares	Watershed	Hectares
Attichika Creek	460	Kastberg Creek	7094	Saiya Creek	3372
Attycelley Creek	943	Kotsine River	7651	Salix Creek	4216
Azuklotz Creek	10162	Menard Creek	117	Skeena River	8898
Barbeau Creek	101	Minaret Creek	4084	Squingula River	25794
Bear River	19236	Moosevale Creek	9747	Sustut River	41883
Birdflat Creek	15564	Mosque River	6168	Thorne Creek	1463
Condit Creek	7488	Nilkitkwa River	87	Thutade Creek	7758
Driftwood River	17345	Niven River	18079	Two Lake Creek	14166
Elmore Creek	2627	Omineca River	65		
Endless Creek	92	Patcha Creek	3390		
February Creek	7150	Picea Creek	1825		
Finlay River	30314	Pilot Creek	4849		
Fort Creek	68	Red Creek	7736		



Map 4 –Page 16



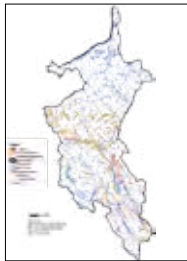
Map 4—Page 16

3.3 Fisheries Values

Fisheries values are rated high to very high in the Sustut. The watershed drains to both the Arctic Ocean and the Pacific Ocean.

The Artic drainage includes: arctic grayling, bull trout, dolly varden, kokanee, largescale sucker, longnose sucker, mountain whitefish, and rainbow trout

The Pacific drainage includes: bull trout, burbot, chinook salmon, chub, coho salmon, dolly varden, lamprey, leopard dace, longnose dace, minnow, mountain whitefish, pink salmon, prickly sculpin, rainbow trout, sculpin, sockeye salmon, steelhead, unidentifiable trout, and whitefish.



Map 5—Page 18

3.4 Soil Values

The Sustut Watershed is mountainous with steep slopes throughout the watershed. Terrain Stability Mapping (TSM) completed for this unit has identified potentially unstable terrain (Class IV) over an area of 15,929 ha (3% of the unit). TSM identified unstable terrain (Class V) over an area of 5860 ha (1% of the unit). In addition, mapping of environmentally sensitive areas completed in the early to mid-1970s classified another 26,048 ha (5% of the unit) as having environmental sensitivity for soils.

3.5 Forest Values

Some 377,408 hectares of land within the unit is forested. This represents 77% of the total landbase. The breakdown of forest habitat types by leading tree species is summarized in the table below.

Table 3. Timber Types in the Sustut Watershed.

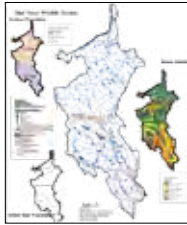
Leading Species	Hectares	% of forested area
Mixed deciduous	6652	2%
Pine species	47969	13%
Alpine/Amabilis fir	275751	73%
Spruce species	47036	13%
Total	377408	100%



Map 6—Page 20

3.6 Wildlife Values

The Sustut River and Bear River valleys and neighbouring slopes and alpine habitats support numerous wildlife species including mountain goat, which is identified as a species requiring winter habitat conservation, and northern mountain caribou, which is recognized as a species at risk. Other important species supported by habitat within the Sustut watershed include grizzly bear, black bear, moose and several species of fur bearing mammals.

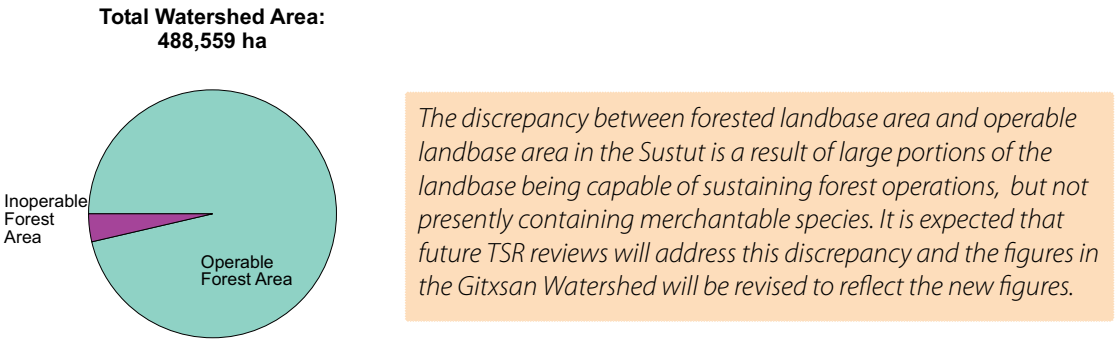


Map 7—Page 22

4.0 Economic Characteristics

4.1 Timber and Silviculture

Sustut Landbase Summary



Timber

The Sustut Watershed lies within two Timber Supply Areas: the Prince George and the Mackenzie. Most of the total area of the Sustut is located within the Prince George TSA (84%), as is most of the operable landbase (84%). The table below shows the proportion of total landbase and operable landbase associated with each TSA in the watershed.

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

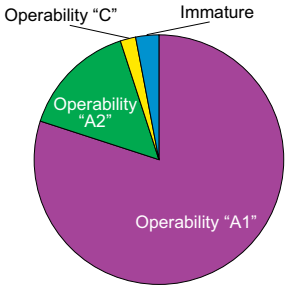
TSA	Total Landbase (%)	Total Landbase (ha)	Operable Landbase (%)	Operable Landbase (ha)
Prince George	84	410390	84	395501
Mackenzie	16	78169	16	75334
Total	100%	488559	100%	470835

The total forested area that can be used for timber production (operable landbase) in the Sustut Watershed is 470,835 hectares. This represents 98% of the total landbase in the watershed. The timber from the operable landbase of each TSA is classified in Table 6 and 7.

Table 6. Operable Timber Resources for the Mackenzie TSA.

Sawlog Operability Code A1		Sawlog Operability Code A2		Sawlog Operability Code C		Sawlog Operability Code H		Immature <=80 Yrs Old	
Ha.	% Operable	Ha.	% Oper.	Ha.	% Oper.	Ha.	% Oper.	Ha.	% Oper.
27818	37	5394	7	864	1	0	0	1148	2

The timber from the operable landbase of the Mackenzie TSA is classified as follows:
A1 Conventional ground base skidding (slope <=30%; all soil types)
A2 Conventional / cable-based skidding / yarding (slope >30% and <=55%; stable soils, non-lacustrine)
C Cable-based yarding system (slope >30% and <=100%) (stable soils, non-lacustrine, cable based yarding system (slope >30% and <=100%) (lacustrine soils)
H Helicopter-based logging (slope >100%)
I Inoperable

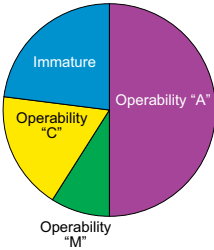


Map 8—Page 24

Table 7. Operable Timber Resources for the Prince George TSA.

Sawlog Operability Code A		Sawlog Operability Code M		Sawlog Operability Code C		Sawlog Operability Code H		Immature <=80 Yrs Old	
Ha.	% Operable	Ha.	% Oper.	Ha.	% Oper.	Ha.	% Oper.	Ha.	% Oper.
201570	50	38181	9	76006	18	0	0	90140	23

A Conventional ground base skidding (slope <=30%)(all soil types)
M Conventional / cable base skidding / yarding (slope >30% and <=55%) (stable soils, Non-lacustrine)
C Cable based yarding system (slope >30% and <=100%)(stable soils, Non-lacustrine, Cable based yarding system (slope >30% and <=100%) (Lacustrine soils)
H Helicopter base logging (slope >100%)
I Inoperable



Map 9–Page 26

Silviculture Status

As of 2007, 11618 ha (3% of the operable forested landscape) had been harvested in the Sustut 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 11618 ha that have been harvested, 10,172 ha (88%) have been restocked and 1100 ha (9%) is free growing. Some 346 ha (or about 3% of the watershed) are classified as “not satisfactorily restocked.”

Table 10. Area by Opening Type in the Sustut Watershed.

Timing of harvest or fire	Not Satisfactorily Restocked		Satisfactorily Restocked		Free Growing		Total
	Ha.	%	Ha.	%	Ha.	%	
Total	346	3	10172	88	1100	9	11618



Photo: George Muldoe

4.2 Tourism and Recreation

Wilderness Values

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

- 60% 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).
- 30% 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 no provincial recreation trails or recreation sites established within the Sustut Watershed. There are currently two privately owned fishing lodges operating along the Sustut River.

Visual Quality

Due to the high quality recreation opportunities available within the Sustut Watershed area, visually sensitive areas and associated visual quality objectives have been established. The primary areas identified for visual quality conservation and management include the landscape adjacent to Bear Lake, the landscapes visible from the Bear River, Sustut River and the Skeena River (below the confluence with the Sustut River). The map on page 30 shows the location of these visual designations.

4.3 Other Values

Range and Agriculture

There is no land designated within the Agriculture Land Reserve within the watershed. There is, however, one large, active range tenure occupying the entire northern portion of the watershed (north of the Sustut River) and the area surrounding Bear Lake. The tenure was established for grazing horses, which are used for guided hunting.

Roads

The only roaded areas are located east and west of the Driftwood River and located north and south of the lower Sustut River. The road system in the Driftwood River area is connected to the Forest Service Road network, which provides access to the community of Fort St. James and Highway 27. The road system in the Sustut River area is currently isolated from all other road systems as there is only a deactivated rail line connecting the Sustut area to the Driftwood River road system.

Minerals, Oil and Natural Gas

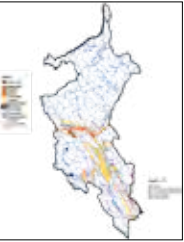
Metallic mineral potential is low to moderate except for the portion southwest of Bear Lake and the area southwest of the Bear, Sustut and Skeena Rivers. There is also an area of high metallic mineral potential in the northeast corner of the watershed area.

Industrial mineral potential is moderate to high throughout the majority of the watershed area.

There is a significant amount of showing prospects southwest of Bear Lake, Bear River and the Sustut River. Showing prospects are also common in the Two Lake Creek area and along the north end of Thutade Lake. The watershed contains two developed prospect areas: one at the north end of Thutade Lake, and one near the headwaters of Red Creek.



Map 10–Page 28



Map 11–Page 30



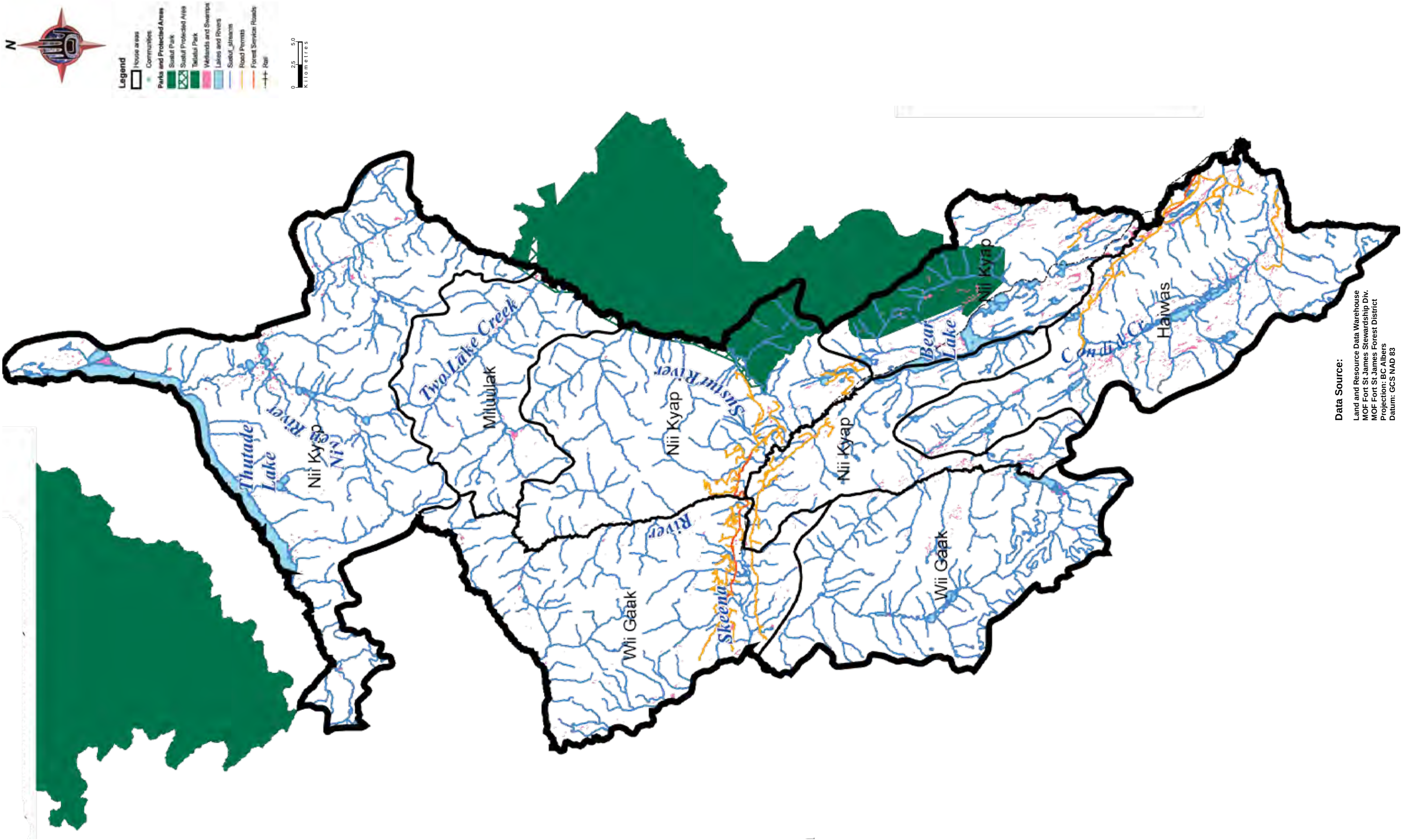
Map 12–Page 32



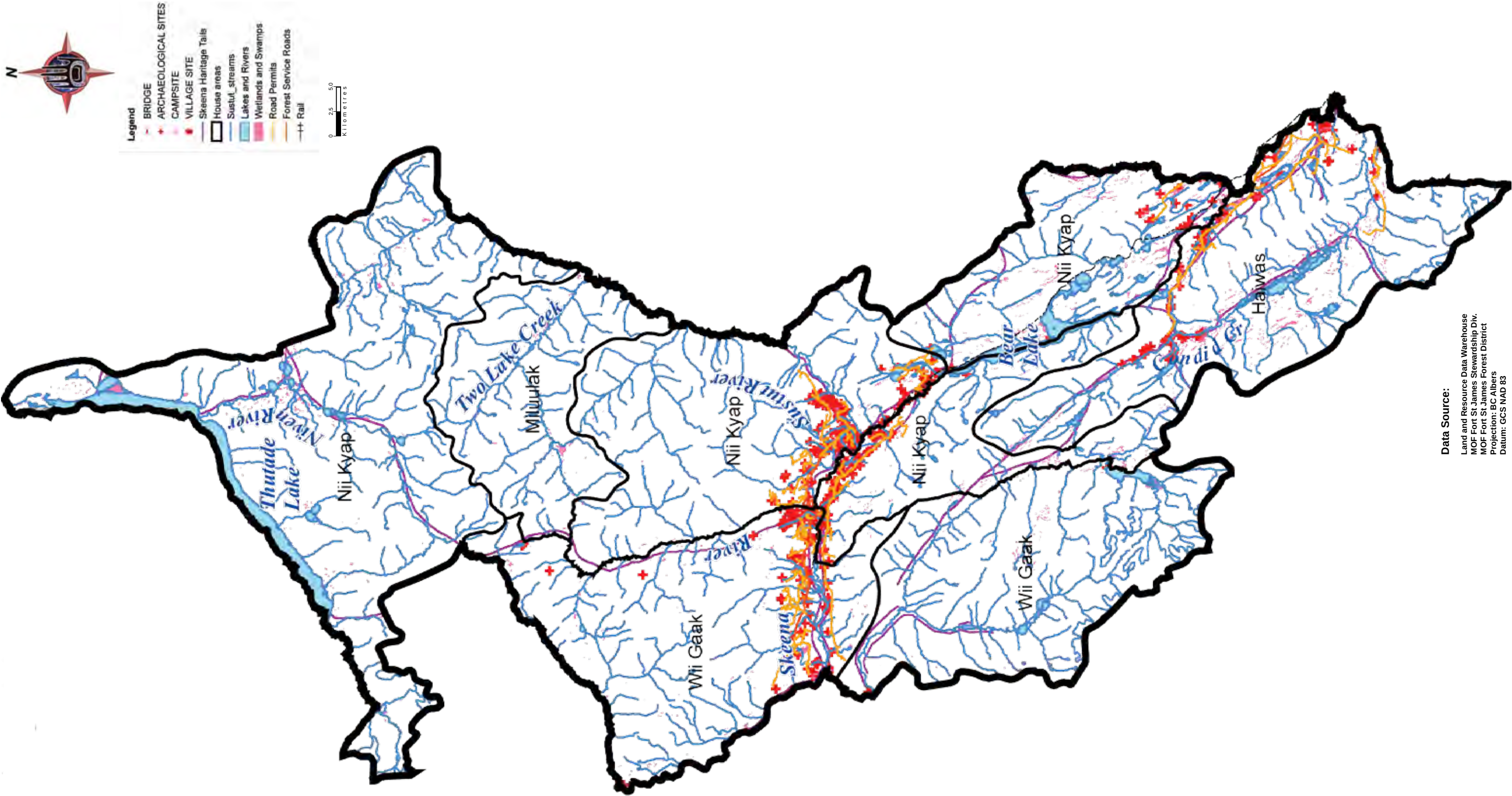
Map 13–Page 34

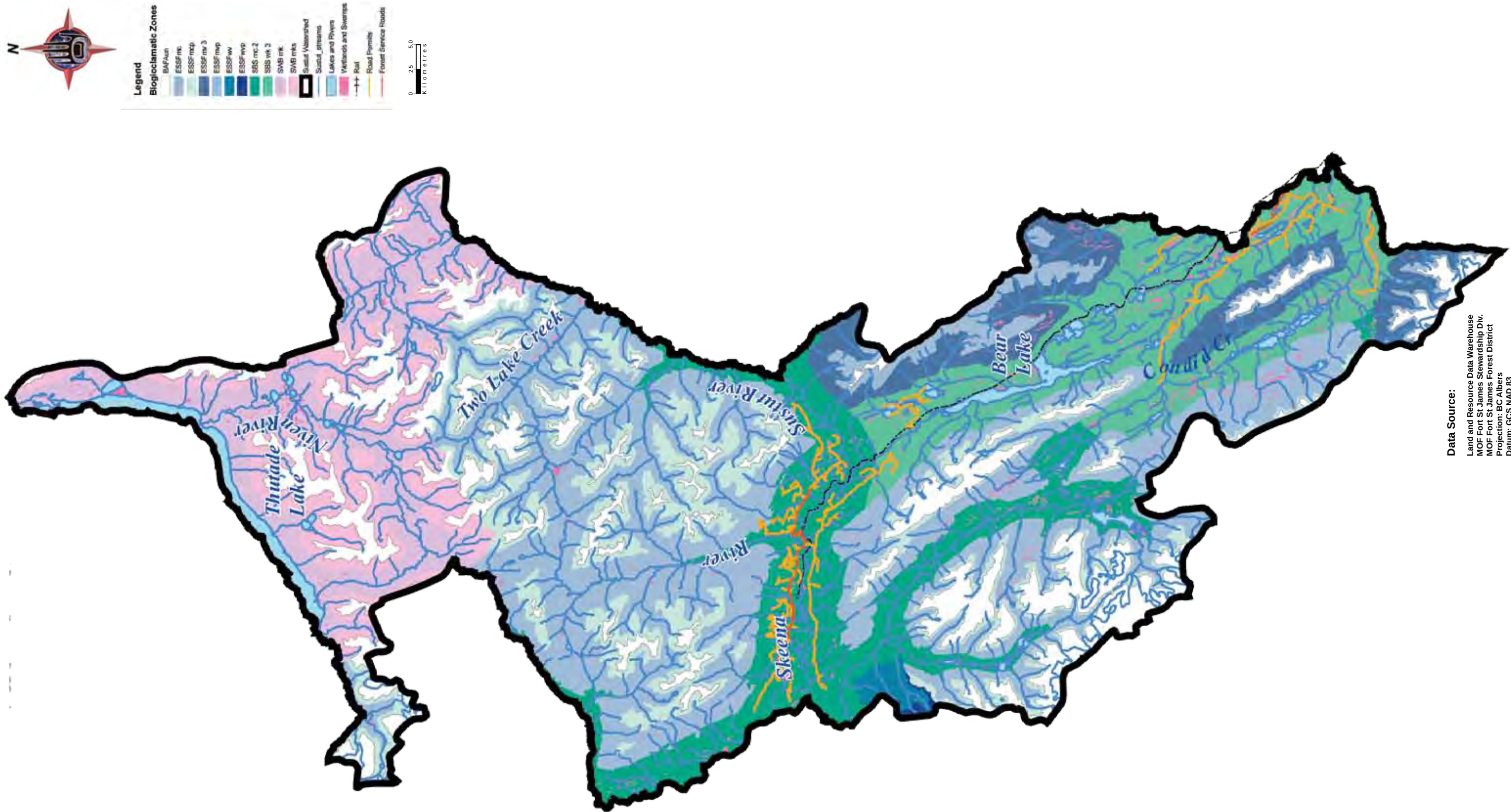


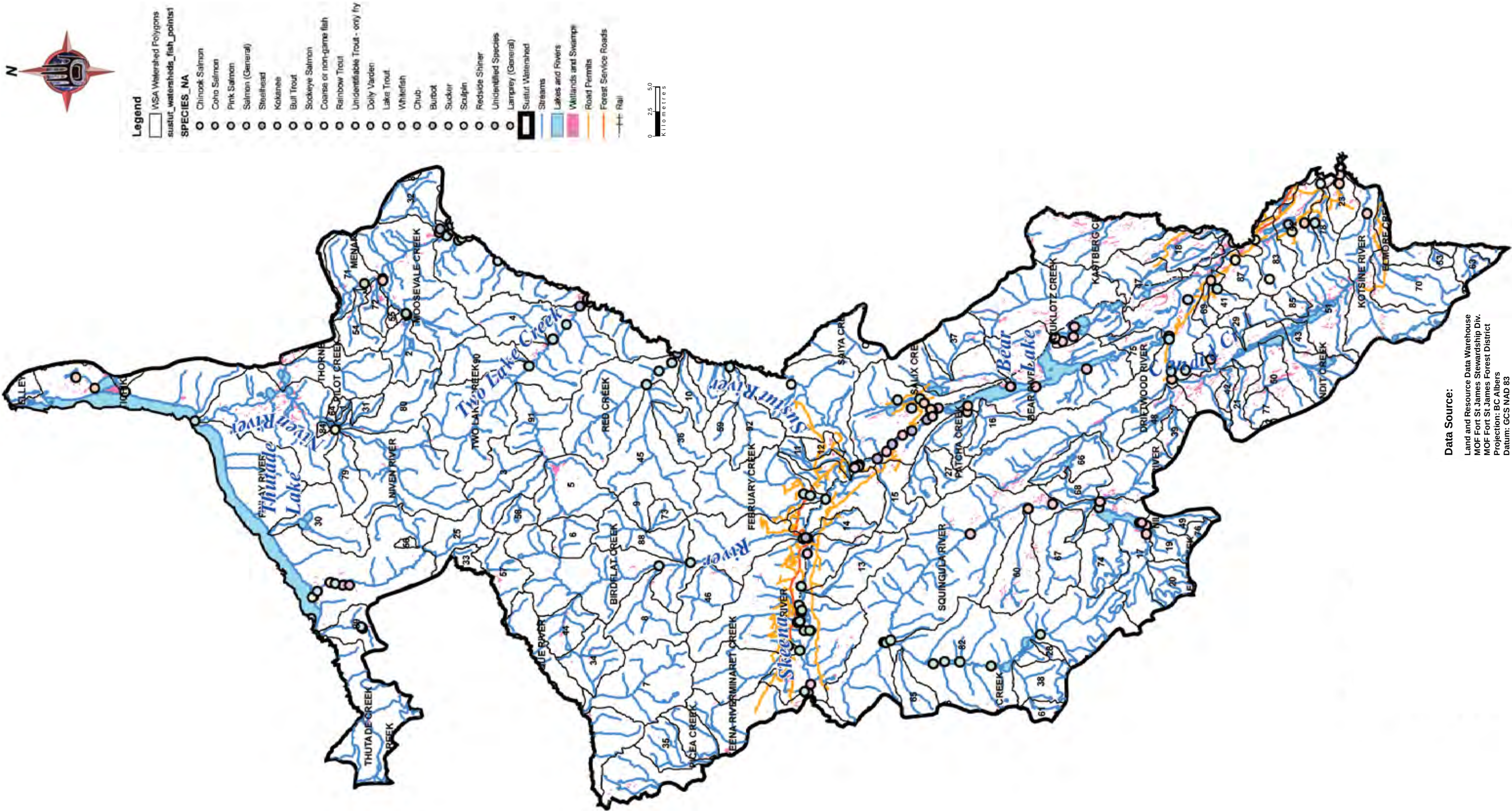
Map 1 Social Boundaries / Territories, Parks, Agricultural Land Reserve

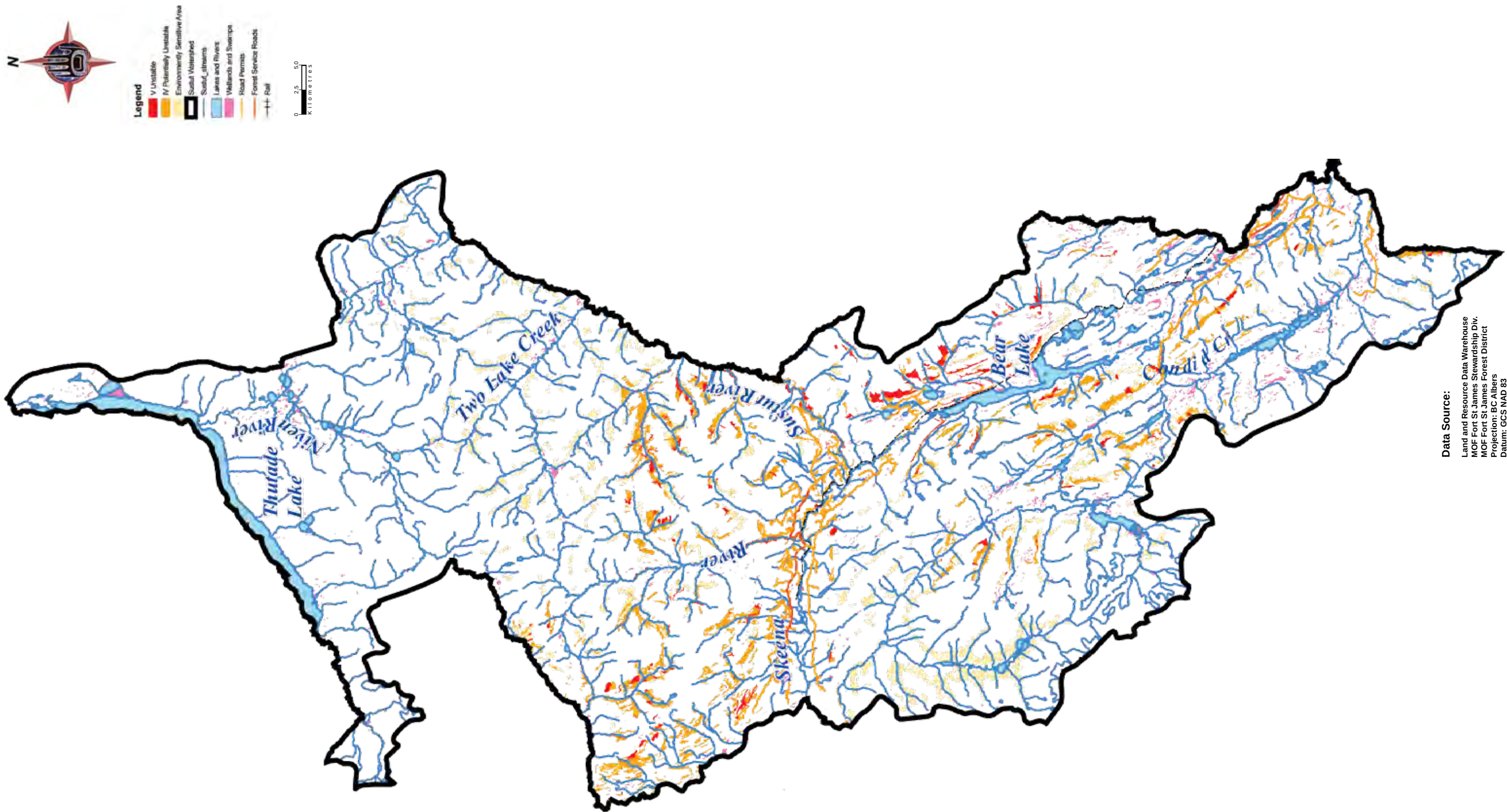


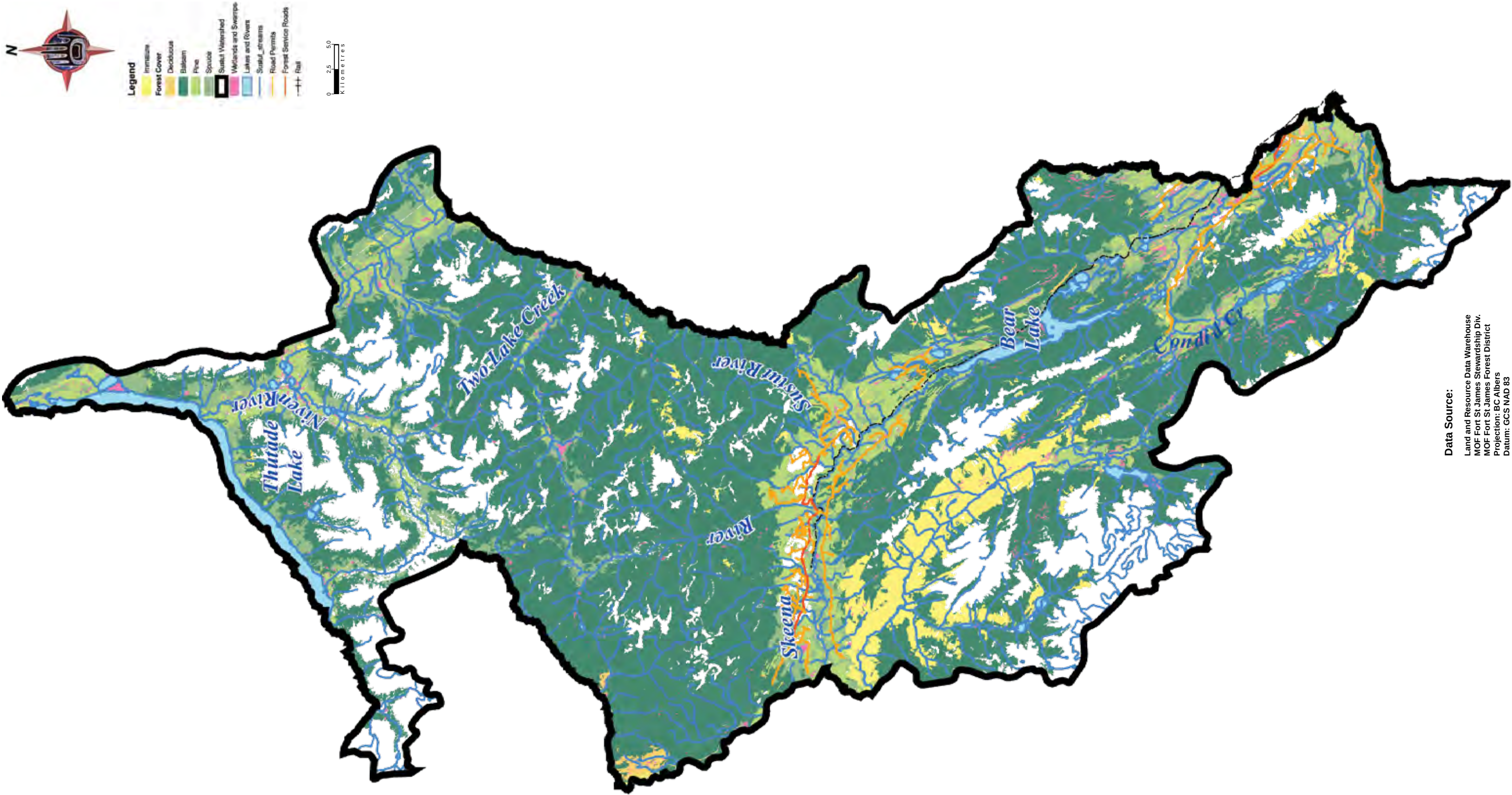
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MOF Fort St James Forest District
Projection: BC Albers
Datum: GCS NAD 83



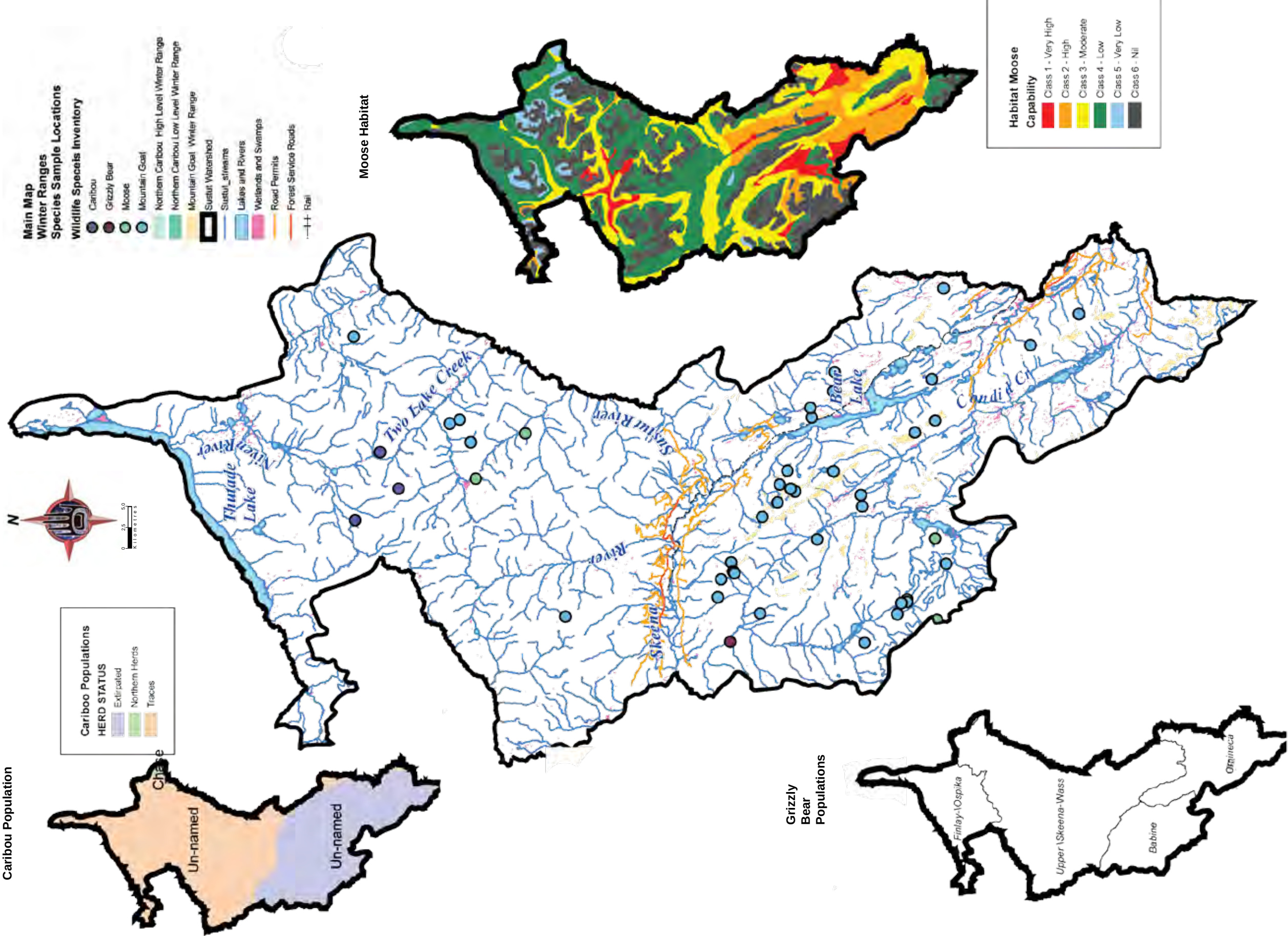




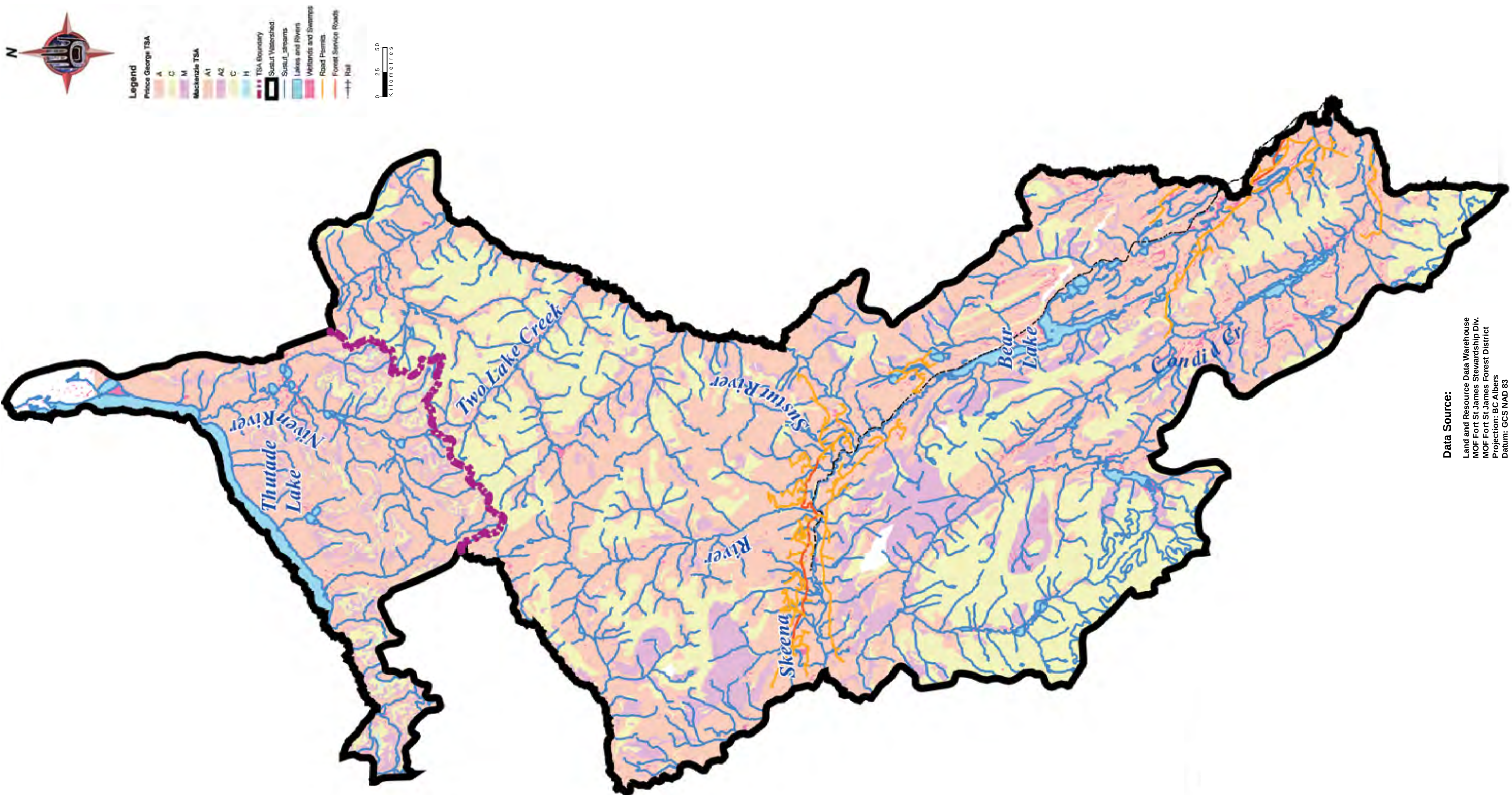




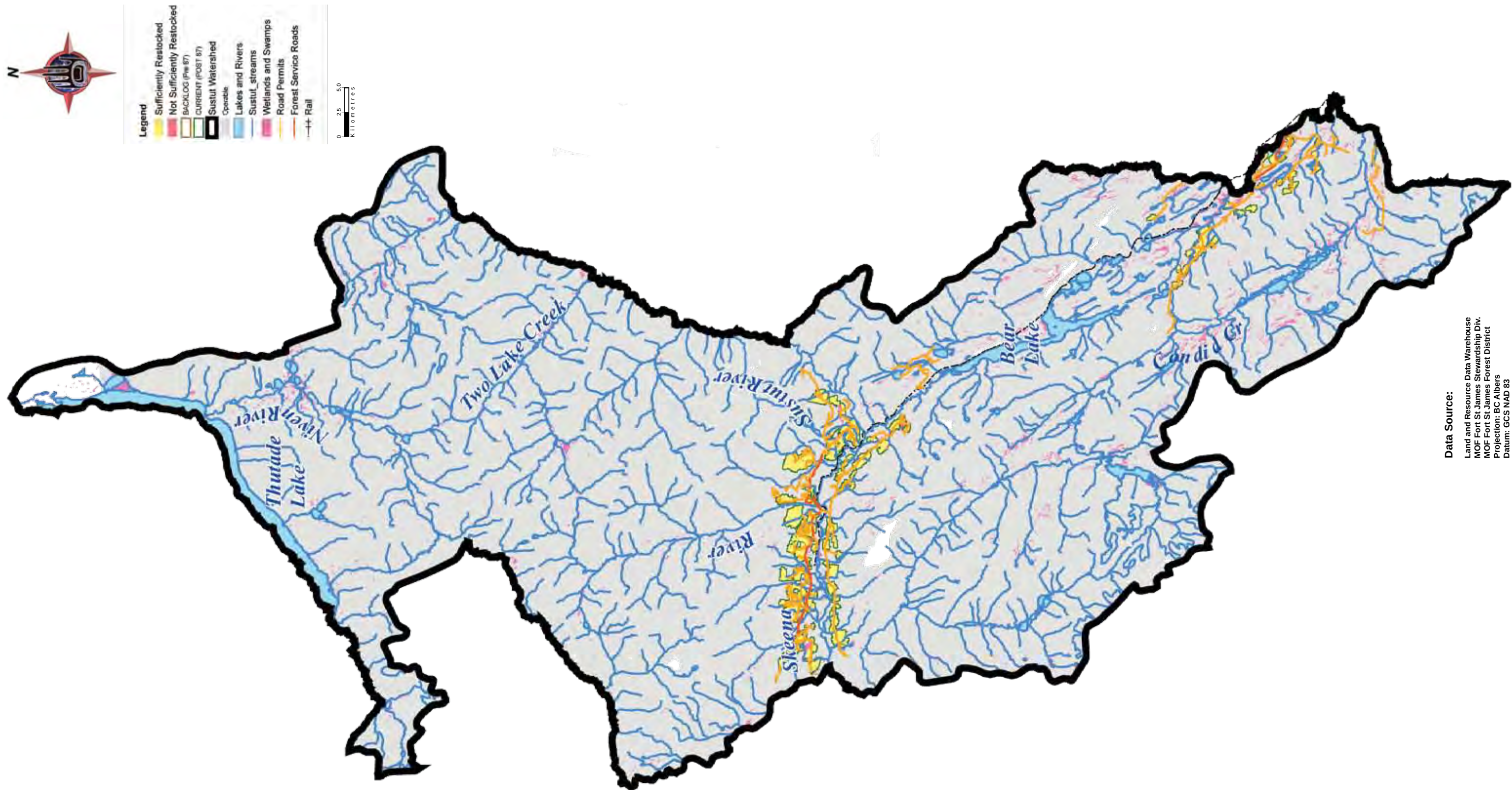
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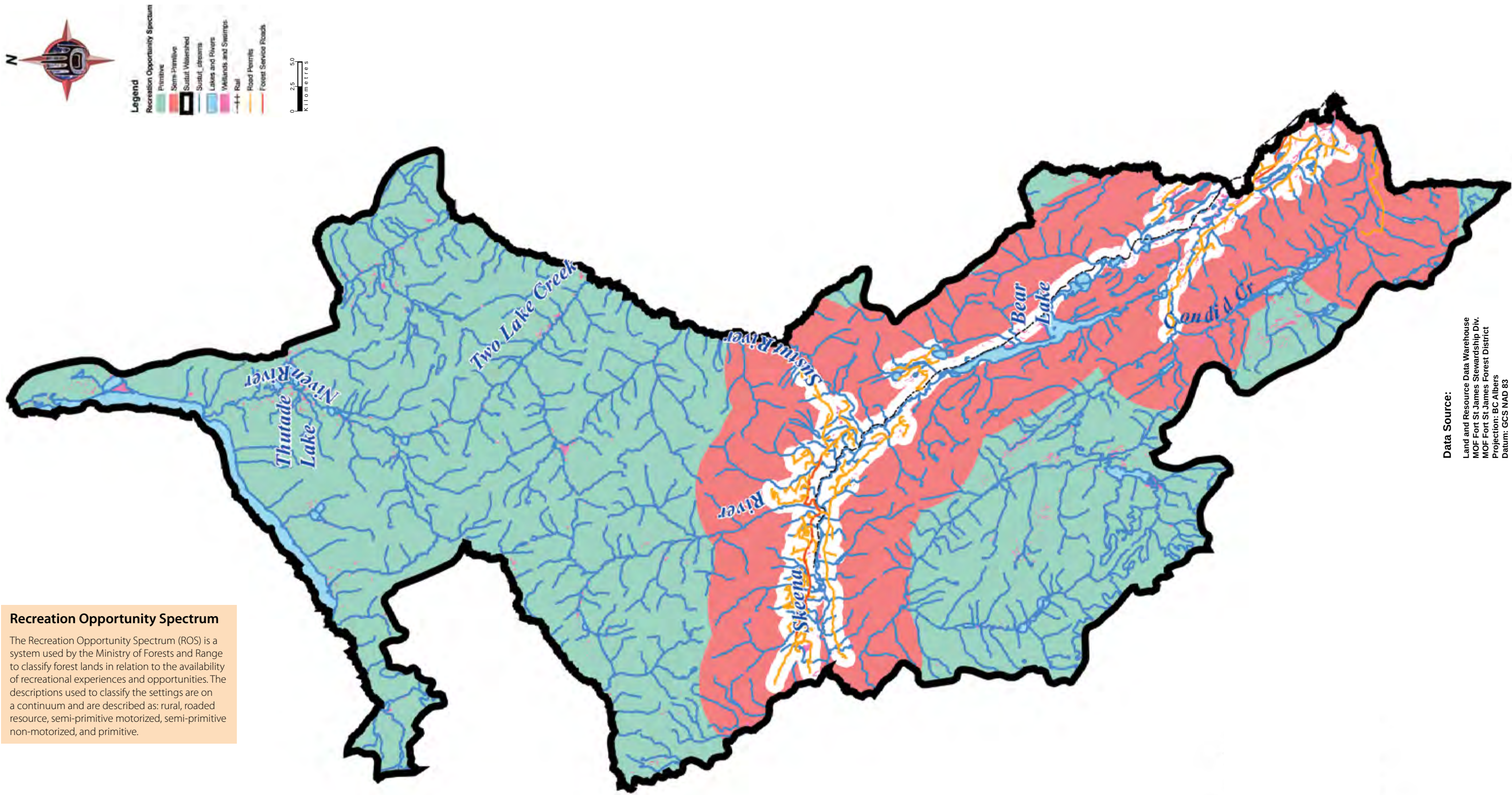


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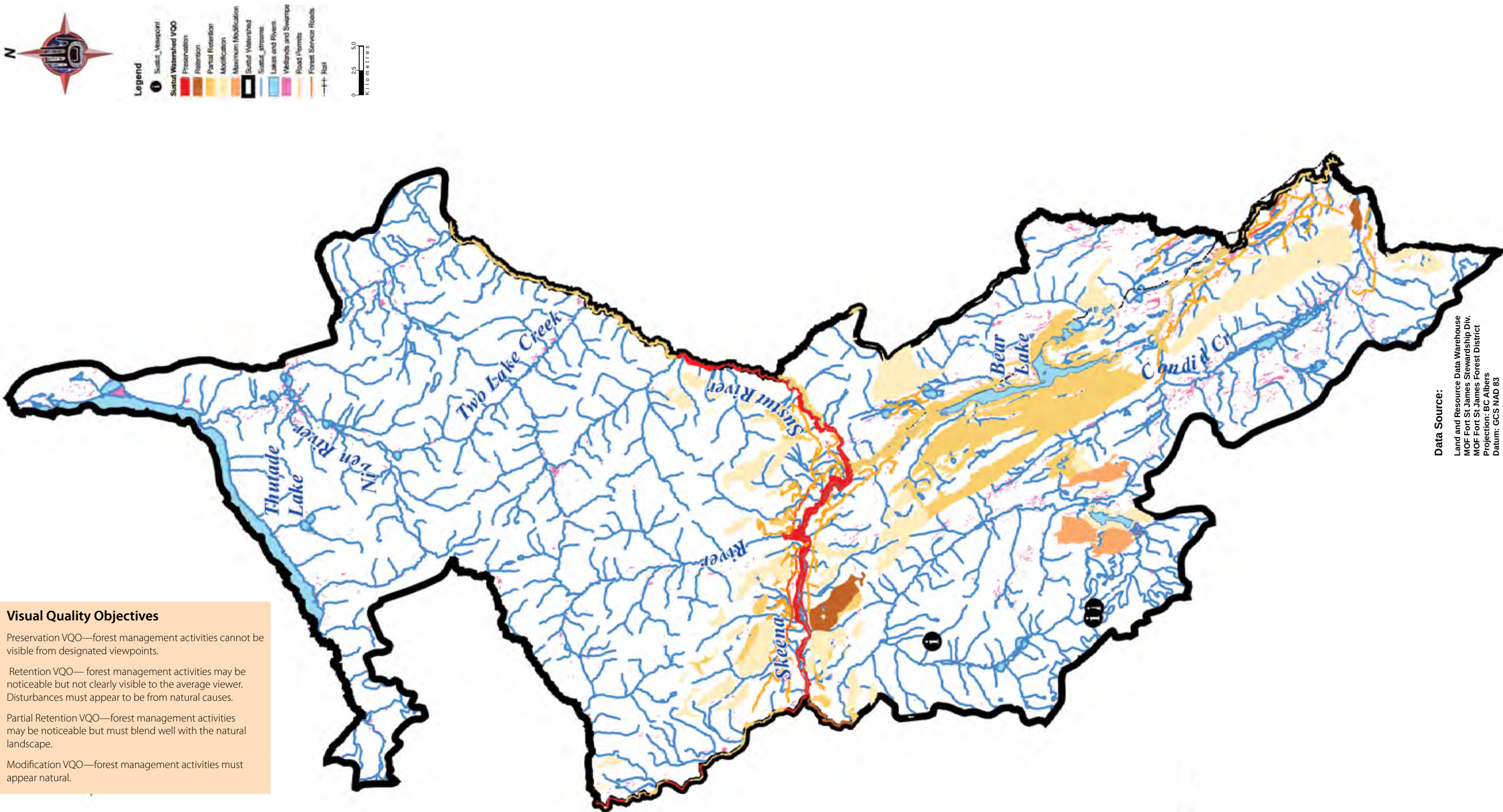


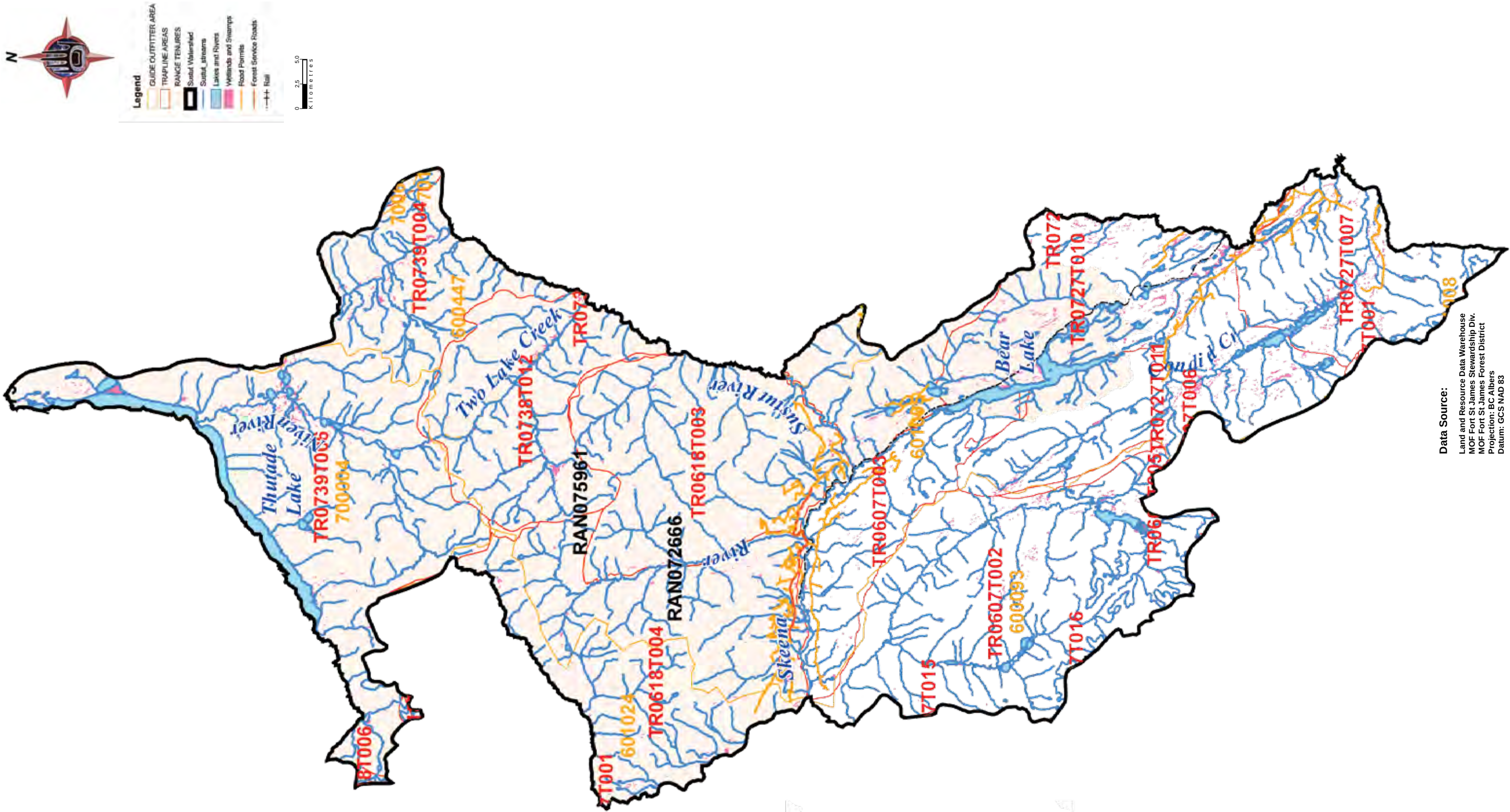
Recreation Opportunity Spectrum

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.

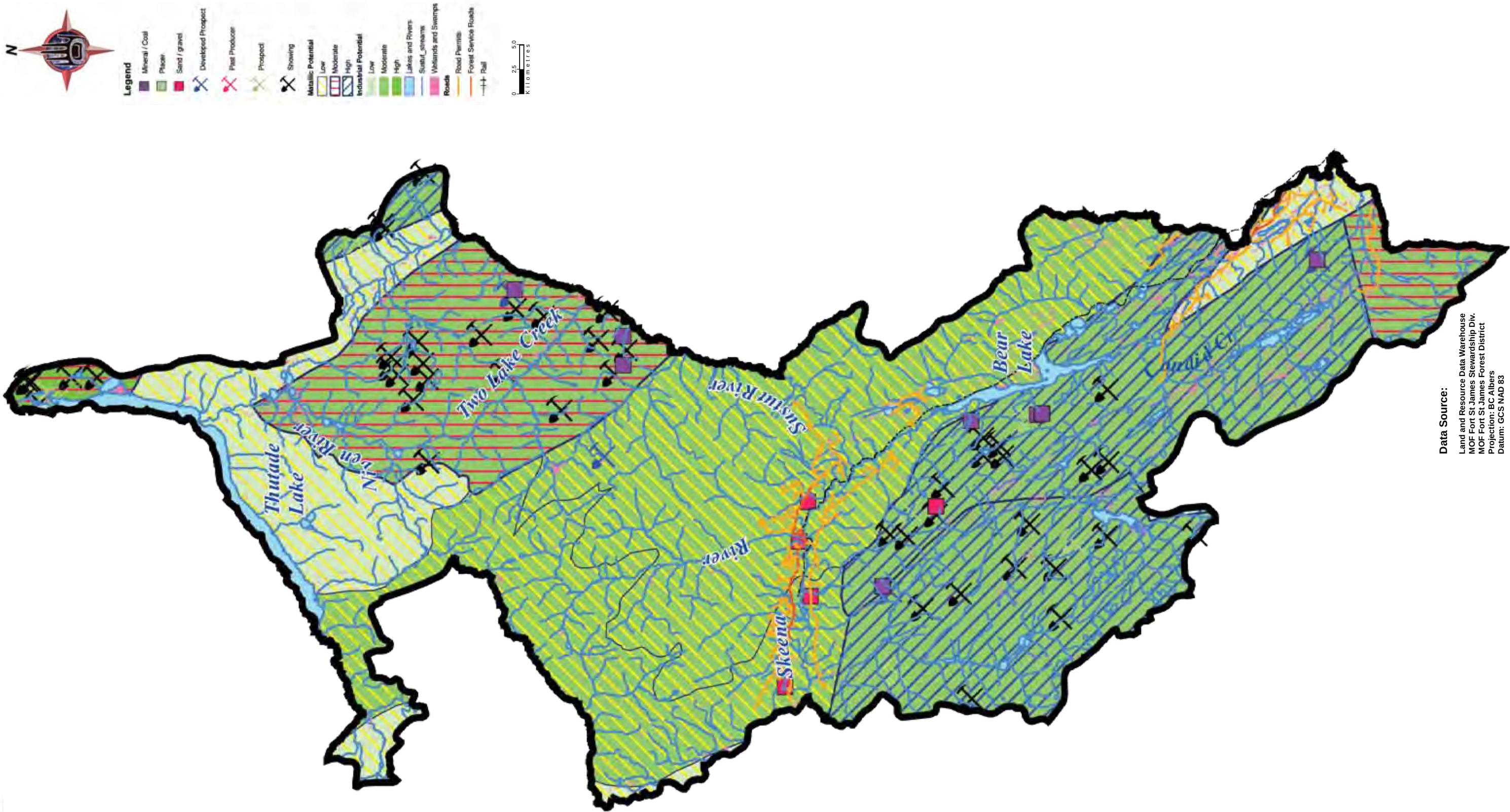
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Data Source:
Land and Resource Data Warehouse
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