physiography

[The Eagle Lowlands physiographic region can be seen in the distance as the Wind River flows out of the Wernecke Ranges. [JP]]

[Long linear valleys between the mountain ranges, like the Snake River valley above, are typical in the upper Peel River watershed. [CA]]

The Yukon is part of the chain of mountain ranges that runs from Mexico north to the Beaufort Sea. This mountain system is known as the Canadian Cordillera. There are 5 distinct physiographic or morphogeological belts in the Canadian Cordillera that run side by side in a northwesterly direction. Each belt is distinct due to a different geological history as well as the effects of climate and glaciation (Hart, nd).

Most of the Peel River watershed is considered to fall within the outermost belt, the Foreland Belt. The Foreland Belt consists of long and linear mountain ranges made up of sedimentary rocks. These rocks have been stacked and thickened along northwest trending folds and faults. The larger faults have resulted in long linear valleys of rivers between mountain ranges (Hart, nd). The Bonnet Plume, Wind and Snake river valleys are good examples of such valleys.

The landscape can be further divided into physiographic regions. These are regions where the topography is the same throughout and distinct from adjacent areas. A boundary will occur where there is an abrupt change in slope, elevation, local relief, or structural trend in topography (e.g. mountains change from running north-south to east-west). When mountains change suddenly from having glaciers to not having glaciers, they can be considered to be part of two separate physiographic regions too (Mathews, 1986).

As Map 2 indicates, the Peel River watershed contains portions of 8 different physiographic regions and includes mountains, ranges, plateaus, plains and lowlands. Ranges consist of many individual mountains and ridges and generally have ragged peaks with glaciers. Plateaus are elevated areas where summits have gentler slopes than the slopes of nearby valleys where rivers and streams have cut through. A lowland, as the name suggests, is a low-lying area covered in fill from the Quaternary period. Usually little or no exposed bedrock will be found in lowlands. Plains are extensive regions where the land is smooth and level or gently undulating. Plains do not have prominent surface features that stand out (Mathews, 1986).

[**middle:** The rolling Richardson Mountains trend in a north-south direction. [JP]]

[**bottom:** The lower Snake River carves its way through the Peel Plateau physiographic region. [RR]]

DRAFT

Peel River Watershed

Map 2: Physiographic Regions

EAGLE LOWLAND

Eagle Plains

Dempster Highway

Canyon Cr.

RICHARDSON MTNS

Trail River

PEEL RIVER

Caribou River

INTERIOR PLAIN

Arctic Red River

Ogilvie River

PEEL RIVER

Noisy Creek

PEEL PLATEAU

N.W.T.

Yukon

Hungry Cr.

Bonnet Plume River

CANYON RANGES

Snake River

Crawford River

Blackstone River

SOUTHERN OGILVIE MOUNTAINS

Little Wind River

Wind River

Bear River

Hart River

N.W.T.

BACKBONE RANGES

Mail River

Orthogoto River

West Hart River

WERNECKE RANGES

Rae Creek

Nash Creek

Corn Creek

Goz Creek

Beaver River

Rackla River

Nadaleen River

Klondike River

STEWART PLATEAU

HESS RANGES

138°W

136°W

134°W

132°W

130°W

69°N

65°N

64°N

Physiographic regions

Peel River Watershed boundary

Physiographic Regions of the Yukon

Data sources:

Physiographic regions from Gordon, S.P. and Makepeace, A.J. 1999. Yukon physiographic regions from Matthews, W.H. (1986) Physiography of the Canadian Cordillera, Geological Survey of Canada, Map 1701A, scale 1:5,000,000 as provided on the Yukon Digital Geology CD.

Base data: National Topographic Data Base (NTDB) at 1:250,000 (NAD 83).

Projection: Albers Equal-Area Conic

December 2003

DRAFT

Canadian Parks and Wilderness Society

0 5 10 20 30 40 50 Kilometers