
Les relevés de la série Les rivières sauvages sont également publiés en français.
Wild Rivers:
The Northwest
Mountains

Wild Rivers Survey
Parks Canada
ARC Branch Planning Division
Ottawa, 1980
“It is difficult to find in life any event which so effectually condenses intense nervous sensation into the shortest possible space of time as does the work of shooting, or running an immense rapid. There is no toil, no heart breaking labour about it, but as much coolness, dexterity, and skill as man can throw into the work of hand, eye and head; knowledge of when to strike and how to do it, knowledge of water and rock, and of the one hundred combinations which rock and water can assume — for these two things, rock and water, taken in the abstract, fail as completely to convey any idea of their fierce embraces in the throes of a rapid as the fire burning quietly in a drawing-room fireplace fails to convey the idea of a house wrapped and sheeted in flames.”

Sir William Francis Butler (1872)
Reports available in the Wild River series:

- Alberta
- Barrenlands
- Central British Columbia
- James Bay/Hudson Bay
- Newfoundland and Labrador
- Northwest Mountains
- Quebec North Shore
- Saskatchewan
- Southwestern Quebec and Eastern Ontario
- Yukon Territory

**Metric symbols used in this book**

- mm - millimetre(s)
- m - metre(s)
- km - kilometre(s)
- km/h - kilometres per hour
- cm/s - centimetres per second
- d - day(s)
- h - hour(s)
- °C - degree Celsius
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Wild rivers are a priceless part of our natural heritage. Untouched by the march of man's technological progress, these waterways are the arteries of our land, and one of the main elements in its growth to nationhood.

Long before Europeans laid eyes on them, these rivers served the native peoples as sources of food and means of transportation. Later, the rivers were to carry the Europeans on voyages of exploration and exploitation throughout the vast interior of the continent. The settlers who followed travelled the same routes.

The waterways were the mainstay of the fur trade; they were the highways to the gold rushes. They did much to provide the economic nourishment through which Canada grew to its present stature.

With the advent of modern technology, some of our rivers were harnessed to serve our newfound needs. But thousands of kilometres of waterways, and the land they pass through, remain essentially untouched.

Today, Canadians are gradually rediscovering these fascinating wild rivers. They are recreating the adventures of the explorers; struggling over the same portages as the heavily-burdened "coureurs de bois"; running rapids which once
hurtled “voyageurs” and their precious cargoes toward the markets of Montreal; gently floating down majestic rivers which once carried thousands of anxious prospectors towards the promise of gold.

Parks Canada is promoting these challenging voyages of discovery, which embrace both the past and the present. However, a good deal of down-to-earth information about the rivers and their characteristics is needed before anyone attempts to navigate them. It is for this reason that Parks Canada decided to carry out surveys of wild rivers all across the country. The result is this series of booklets, designed to provide a practical guide for the modern “voyageur”.

Although “wild” is used to describe rivers not yet harnessed to industry, it is an apt adjective, for many of the rivers should be challenged only by experienced and well-equipped canoeists.

There are few rivers left in Canada where one can canoe from headwaters to mouth without seeing signs of man’s presence. The rivers of the Northwest Mountains, accessible in most cases only by aircraft, offer canoeists this rare and fast-vanishing wilderness experience.

White water skills are essential for travelling these rivers, for most are characterized by frequent rapids. Often there is hardly time to bail the canoe before the next rapid is encountered. Under such circumstances a loaded canoe, if capsized, might be impossible to right. This ever-present possibility and the total isolation of the region dictate the utmost in safety precautions and procedures.
Frequent changes in water levels greatly affect the navigability of these rivers. There are few lakes to act as catch-basins, and rocky slopes with thin soil quickly funnel rainfall into the rivers. The resulting increase in water volume and speed can render sections unnavigable in a very short period. Prolonged rains can occur at any time during the summer, so extra provisions should be carried and extra time scheduled.

Often long and difficult portages must be undertaken to reach the river from the access lake. In some cases portage trails are non-existent and the most direct route to the river is followed by compass bearing and utilizing available game trails. Canoeists planning to travel these rivers are advised to use sturdy canoes capable of running white-water and withstanding frequent and unavoidable collisions with rocks. A spray cover fitted on to the canoe will allow larger volume rapids to be run, thus eliminating the need to follow a course nearer the bank where most rocks are encountered.

The Northwest Mountain regions enjoy an excellent recreational climate throughout the summer months. The rivers are usually free of ice by mid-April and the lakes somewhat later in mid-May. The precipitation seldom exceeds 375 mm. Day-to-day weather conditions are extremely variable during the summer and strong headwinds in mid-afternoon are common. These winds are particularly strong in the lower sections where the rivers are quite wide. In the area of the Mackenzie Lowlands, thunderstorms and windstorms occur frequently but are of short duration. Summer temperatures are warm during the daylight hours, dropping quickly once the sun disappears.

Towards the latter part of August, snowstorms and night frosts occur. Canoeists
Planning the trip

are therefore advised to bring quality rain gear, long underwear and light down-jackets. A cold layer of air lies above these mountain rivers and a heavy shirt or sweater may be needed while canoeing. Water levels are quite low in the fall but would probably maintain enough depth for canoe travel. October marks the end of the canoeing season.

In planning a canoe trip, allow 25 to 35 km/d paddling. Always allow extra time and food for such unforeseen events as being windbound or delayed by rain.

If egress is to be by plane, make sure arrangements are taken care of before the trip begins. Be sure to check out with some responsible agency (the RCMP or the Department of Natural Resources) stating your route and expected time of arrival. Do not forget to check in with them at the end of the trip.

Permits for fires and fishing may be required. Extreme caution should be exercised in the use of fire. Campfires should be built on rock or sand only and extinguished completely. All garbage should be packed out with you.

A sturdy canoe capable of handling well in rapids and equipment for its repair are essential. Aluminum canoes were used throughout the surveys and proved very practical.

Since lining and hauling are often necessary, several pairs of running shoes or other sturdy footwear that can take the abuse of rocks and constant wetness are needed.
In the more isolated regions an emergency survival kit is recommended. The kit should contain high energy food rations, spare blanket, waterproofed matches, fish hooks and line and perhaps emergency signal flares for signalling aircraft. This kit should be readily available, or even worn, while running rapids.

Firearms are never necessary.

The National Topographical Series of maps are available from:
Canada Map Office,
Room 147,
615 Booth Street,
Ottawa, Ontario K1A 0E9
1 Mountain River
**Mountain River**

Palmer’s Lake to the Mackenzie River

14 to 16 d (232 km)
Two portages

**Access and egress**

The headwaters of the Mountain River are accessible by float-plane only. Norman Wells is the nearest base and is located on the Mackenzie River 102 km upstream from the confluence with the Mountain River. The most suitable access lake is locally known as Palmer’s Lake and is located at 64°27’N latitude, 129°40’ longitude. The lake is eight kilometres north of the Mountain River and a portage is necessary to reach the river.

Another lake, situated 230 km by river from the mouth of the Mountain River is also a potential landing site, at 64°24’N latitude, 129°30’W longitude. This lake is located no more than 1.5 km south of the river but its landing suitability should be determined on sight. A third possible landing site is on a lake 272 km by river from the Mackenzie at 64°7’N latitude 129°50’ longitude. This lake, three kilometres long and one kilometre wide, is accessible to twin-engined aircraft. The 5 to 7 km stream draining the lake was extremely shallow, and dry in many places, during early August. For 13 km below the mouth of this stream, on the...
<table>
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<th>Map required</th>
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<tr>
<td>Mountain River, the channel is confined by steep sided walls. The water is fast, shallow and the narrow channel provided no room for manoeuvring. The rapids cover the entire river width and the navigability of this section is questionable. A few kilometres south of the MacKenzie and Mountain confluence is a research station. Arrangements can be made prior to the trip to be picked up here or at Fort Good Hope, 90 km down the Mackenzie River.</td>
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<td>N.T.S. 1:250 000 scale</td>
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<td>106 A Mount Eduni</td>
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<td>106 H Sans Sault Rapids</td>
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<tr>
<th>About the river</th>
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<tr>
<td>Geography</td>
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<tr>
<td>Confined narrow valleys, one to two kilometres in width, are characteristic of the mountainous region, from which bordering mountains rise in places to over 2 500 m. Snow capped and precipitous peaks tend to lose their rugged character and height, becoming rounded and no more than 1 800 m high. However, valley characteristics remain much the same where the river passes through a series of ranges at right angles. Running parallel to these ranges are the valley flats of rivers entering the Mountain River. At the confluence of these rivers the valley widens considerably, at times producing a plain-like effect for many kilometres before another mountain range is encountered.</td>
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The wide open valley of the Mackenzie Lowland is a direct contrast to the Mackenzie Mountains. Here the river is bordered by cutbanks rising to barely 100 m. The valley width varies between two and three kilometres and is characterized by numerous gravel bars stretching across the entire valley. Low rounded hills infrequently rise above the gently undulating landscape.

Flora
In the mountainous region, black and white spruce cover the lower slopes of the mountains, with alpine tundra generally occurring above 1200 m. Immediately bordering the river are traces of willow, poplar and alder increasing in size and density toward the Mackenzie Lowland. In the Mackenzie Lowlands, large stands of poplar cover islands in the channel. Willow, poplar and alder line the shorelines and are backed by white- and black-spruce. Vegetative covering is relatively dense in this lower section.

Fauna
Wildlife indigenous to the mountainous region are moose, Dall’s sheep, grizzly bears, wolves, rodents, eagles, hawks and a variety of song birds. Canada geese, a large variety of ducks and black bears frequent the Mackenzie Lowlands. Lake trout abound in the mountain lakes with grayling found in the major tributaries and the Mountain River. Towards the mouth of the Mountain, pickerel, Dolly Varden and whitefish may be caught.
The canoe trip

The Mountain River survey took place in early August. At this time, water levels could be considered to be relatively low although they will become lower towards the end of the month. High and medium water levels occur in early June and mid-July respectively. To be able to navigate this river with relative ease it is suggested that the trip be taken in August. The many large volume rapids and Canyon areas would likely have to be portaged during high and medium water levels.
All rapids should be scouted before being run. Their characteristic pattern is a short steep drop over large cobbles and boulders, followed by a short distance of calm water before the next drop is reached. Rock gardens are frequent and considerable manoeuvring in these rapids is necessary. The river is best navigated in a covered canoe or kayak, however most of the rapids can be navigated in an open canoe. The danger of capsizing and swamping is ever present. This is especially true for the canyon at the mouth of Cache Creek. The velocity of the river in the mountainous region varies from 2 m/s to 3 m/s at medium to low water levels. Weather conditions have considerable effect and with prolonged or heavy rains, water levels rise drastically in a matter of hours. Portage routes, if necessary, are best acquired from the topographic sheets. No man-made trails are available and in some places portage routes may be at least five kilometres long. This river trip should be attempted only by experienced canoeists and at least two weeks allotted to complete the trip.

Palmer’s Lake to the Mackenzie Lowland
To reach the river, an eight-kilometre portage from Palmer’s Lake is necessary, the first three kilometres involves relatively easy walking to an intermediate pair of small lakes. A game and horse trail may be followed for the first kilometre beginning to the west side of a creek flowing southeast from the lake. The second leg of the portage follows the most direct route to the river from the two small lakes. The hiking for this portion of the portage is up and over small hills and past another small lake, one kilometre from the river. The terrain is covered with white spruce on the high areas with black spruce dominating the frequent, but small wet areas. No trails exist from the intermediate lakes to the river. The upper section is typical of most rivers flowing through the Mackenzie Mountains, in that both large and small volume rapids are present in varying degrees of difficulty.
The predominant channel pattern is braided and the river's bed bank materials are generally composed of large gravel and cobbles. At times, single channels occur and in four instances small spectacular canyons or canyon-like features have formed as a result of the river passing through a range of mountains.

One hundred and seventy-nine kilometres above the Mackenzie, at the mouth of Cache Creek is a 1015 m long canyon. The Mountain River narrows considerably as it enters the canyon, its width varying from 30 to 50 m as it flows between 50 m vertical rock walls, with scree slopes at their base.

The right limit above the canyon wall is steeply sloping mountain side rising over 1000 m above the river. The left limit above the canyon wall is vegetated and gently undulating. With one exception, rapids that occur within the canyon do not cover the entire river width. Half-way through, the canyon makes a sharp right turn causing the water to run hard up against the vertical left limit. Surging and boiling water is present to the outside of the turn and rough water occurs on the inside. A vertical rock wall forms the right limit. This turn is potentially dangerous. However, during low water conditions the canyon is completely navigable.

One hundred and fifty-seven kilometres above the Mackenzie, just 22 km below the first canyon, a shorter navigable canyon has formed. Again the river channel narrows considerably as it has cut its way through a rock wall. High vertical walls form the right limit but are interrupted by vegetated slopes and bars along the left.

Six point one five kilometres above the mouth of Brunson Creek, about 19 km from the Mackenzie Lowlands, the Mountain River again becomes incised between vertical rock walls. It is in this canyon that a small waterfall occurs.
Rapids are present upon entering the canyon, the most navigable route being along the right limit. The water then becomes placid within the narrow confines of the rock-walled channel. The canyon walls along the right limit recede to be replaced by a large boulder bar. Point seven five of the way around this large bar, the river becomes a rapid and makes a sweeping right turn to a three-metre waterfall. A portage is required along the right limit for a few hundred metres. Below the fall the canyon narrows as the river turns left. Rapids are present in the lower section of the canyon but may be avoided.

The fourth canyon occurs where the Mackenzie Mountains meet the Mackenzie Lowlands. Small volume rapids are present but should pose no difficulty to navigation. The canyon is short and characterized by relatively slow water, confined by 15 to 30 m rock walls.

The river is braided throughout most of its course. Large volume rapids are ever present, increasing in frequency towards the Mackenzie Lowland. The gradient of the river in this upper section is 6 m/km for the first 80 km of the trip. Thereafter, the river descends at a rate of 8 m/km gradually decreasing in gradient upon entering the Mackenzie Lowland. It is within this 56 km section, just before the Mackenzie Lowland, that large volume rapids occur with the frequency of every five hundred metres.

The Mackenzie Lowlands
Throughout this portion of the Mackenzie Lowlands, the channel is braided and the relief subdued as the river flows through a wide valley flat. The gradient of the river is 5 m/km from river Kilometre 101 to river Kilometre 56, and 3 m/km from river Kilometre 56 to the mouth. At river Kilometre 56 the Mountain River passes through the western end of the Imperial Hills, forming a wide canyon. The entrance to this canyon is characterized by a rapid with surging and swirling waters and should be approached with care. The river poses no other problem to navigation, except the possibility of grounding on a shallow bar. The velocity becomes negligible towards the confluence with the Mackenzie River.
2 Natla and Keele rivers
<table>
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<tr>
<th>Natla and Keele rivers</th>
<th>Access and egress</th>
<th>Maps required</th>
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| O’Grady Lake to Fort Norman | The river trip begins at O’Grady Lake, one of the few alpine lakes in the Mackenzie Mountains. There are no roads or trails into this isolated region and access is limited to float planes. Bases are located at Fort Norman or Norman Wells along the Mackenzie River as well as the community of Ross River in the Yukon. Egress may take place at Fort Norman or Norman Wells on the Mackenzie River, 97 km and 176 km respectively below the mouth of the Keele River. Scheduled jet service is available at Norman Wells. | N.T.S. 1:250 000 scale  
105 P Sekwi Mountains  
95 M Wrigley Lake  
96 D Carcajou Canyon  
96 C Fort Norman |
About the river

Geography
The headwaters of the Natla River are located on the eastern slopes of the Selwyn Mountains near the Yukon-N.W.T. border. From these slopes, this shallow, meandering stream enters a poorly-drained plateau area centred around O’Grady Lake, at an elevation of 278 m above sea level. Below O’Grady Lake at Natla is a swift-flowing mountain stream bounded by peaks rising 500 m above the river. During its 120 km course the river drops from an elevation of 278 m to under 900 m at a rate of 5 m/km, with most of the drop occurring in the first 24 km and the last eight kilometres.

Flora
An alpine vegetation consisting of stunted willows, moss, lichens and wild flowers is found around O’Grady Lake and for the first 24 km of the Natla River. Below the tree line, spruce comprise 90% of the forest cover with the occasional stand of poplar found along the river banks. Alpine tundra dominates the mountain slopes above the 1350 m contour.

Fauna
Large animals indigenous to the region are caribou, moose, dall’s sheep, grizzly bear and wolf. Many species of birds are also present.

The canoe trip
The Natla River is best navigated by covered canoe or kayak. The major rapids are found in the upper 40 km and the last eight kilometres separated by 72 km of placid water. Optimum water levels occur from early July to mid-August with the river still in spring flood prior to this. From the latter part of August into the fall, water levels are too low for navigation.
The first 40 km
O’Grady Lake is eight kilometres long and three kilometres wide, divided into two sections by a short and shallow stream 30 m wide. The shore line is for the most part composed of cobbles and rocks backed by thick scrub willow. Good campsites and firewood are difficult to find; however, a suitable campsite is located on the eastern portion of the lake, on a sandy peninsula. The lake becomes free of ice towards the end of June and offers excellent grayling and lake trout fishing. The water, is potable, clear and cold. As it leaves O’Grady Lake, the Natla River is shallow and rapid-filled, and is for the most part incised within cut banks 10 m to 12 m high. River width varies between 25 m and 30 m, current velocity is 5 km/h and the average depth is 50 cm.

Sections of the riverbed are strewn with rocks and boulders that often span its entire width. The resulting rapids, although not large in volume, range from easy to difficult and require precise and quick maneouvrering. Portages are few, but lining is necessary around major drops. Because of the incised nature of the Natla River valley during the first 40 km, views are confined by the valley walls. However, the occasional vista of snow-capped peaks is a reminder of the mountainous region through which the river flows. Campsites and firewood become more available below the tree line some 24 km below the outlet of O’Grady Lake.

The mid-section
The swift rock-strewn course of the first 40 km is followed by a 72 km stretch of placid waters. The river, has lost most of its energy as a result of the widening of the river bed to 60 m and the decrease in river slope. Gravel bars and islands are numerous throughout this section but all chutes and rapids are easily navigated. These conditions provide the canoeist with a welcome relief from the strenuous canoeing of the previous section. An unrestricted view of the mountains in all directions is made possible by a low and relatively wide valley.
The final section
The last 8 km of the Natla River is characterized by the fast water of large volume rapids with hidden boulders and ledges. Lining is difficult owing to the smooth and gently sloping banks which are slippery near water level. A portage along this section would be long and difficult. The valley narrows to less than one kilometre and in places there is virtually no valley flat where the river cuts through the inclined rock strata. The most difficult rapids are encountered here, where rock ledge protrude into the river creating sudden drops backed by large standing- and rolling-waves 1 to 2 m high. Most of the larger standing waves...
can be avoided by carefully skirting their edges, but care must be taken to avoid the ledges and large boulders near the banks of the river. The last kilometre of the Natla River before it enters the Keele River is braided and shallow and should pose no problems. Campsites are numerous at the mouth of the river and further downstream on the Keele.
**Keele River**

11 d (176 km)
No portages

The headwaters of the Keele River are located 32 km north of O’Grady Lake on the slopes of the Selwyn Mountains. The river flows in a northwest direction before it is joined by the Natla River. Above the confluence the Keele is a shallow and swift stream inaccessible by float plane, road or trail, although the abandoned Canol Road passes 19 km to the northwest.

The predominant river pattern is braided and throughout its length gravel and cobble bars occur. River width varies from 200 to 400 m in the Mackenzie Mountain region with a velocity of 8 km/h at medium water levels. Upon entering the Mackenzie Lowlands the river width increases to one kilometre and the velocity diminishes to 5 km/h. Water depth is over three metres in the deepest channels. However, where the river widens, gravel bars and shallow stretches occur more frequently.

The mountain ranges and peaks parallel the river’s course to within 80 km of the Mackenzie River. In the upper reaches of the Keele, block-like mountains with pinnacled tops and pronounced scree slopes rise to over 2250 km above sea level. The mountains fronting the Mackenzie Lowlands are more rounded and subdued in nature. Portaging or lining is not necessary, but sections of the river may pose difficulty. These sections are Shezal Canyon, 1.5 km upstream of the Ekwi River; five kilometres above the Twitya River; 40 km below the Twitya River; and 88 km from the mouth of the Keele. At medium flow levels these sections are characterized by rapids, back eddies, boils and small whirlpools. Gravel bars are frequently encountered anywhere along the Keele and
often braid the main river channel. It is advisable to choose the channel carrying the most water to avoid grounding the canoe. From the Natla-Keele confluence the 288 km of the Keele River can be covered in four days. However, a minimum of 10 days should be allowed to reach the Mackenzie River and two more days on the Mackenzie to reach Fort Norman 95 km downstream.
3 South Redstone River
<table>
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<tr>
<th>South Redstone River</th>
<th>Access and egress</th>
<th>Maps required</th>
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| Little Dal Lake to Fort Norman | The two major lakes in the headwaters region that provide float plane access are Dal and Little Dal lakes, 200 km and 280 km respectively from the mouth of the river. These lakes become free of ice during the latter half of June and from them portages of 8 to 10 km are necessary to reach the river. Float plane bases are located at Fort Norman and Norman Wells. Upon reaching the Mackenzie River a two-day paddle will bring the traveller to Fort Norman where bi-weekly air service is available to Norman Wells. Here daily scheduled airline service to the south or Inuvik is available. | N.T.S. 1:250 000 scale  
95 M Wrigley Lake  
95 M Dahadinni River  
96 C Fort Norman |
About the river

**Geography**
Located in the southwestern portion of the Northwest Territories, the South Redstone River is a major westbank tributary of the Mackenzie River. Beginning in the Backbone Range of the Mackenzie Mountains, the river flows in a north-easterly direction for 224 km before the Mackenzie Lowlands are entered. Here, the river is multi-channelled as it flows through broad alluvial flood plains. In the upper and middle sections of the river, width varies from 30 to 600 m as it flows through narrow and deep canyons to wide-open valleys with multi-channelled characteristics. In the upper reaches, mountain peaks rise over 2 250 m above sea level or 1 200 m above the river and form a spectacular backdrop to the river valley. Shoreline and bed materials vary from boulder and cobble in the upper reaches, to gravel and silt at the river mouth. Sand and gravel bars are found throughout the length of the river. The silt content is high during the early summer, but clears towards the end of August. Water temperatures in late June range 7°C to 10°C.

**Flora**
The tree line in the Little Dal Lake Region is 1 260 m above the sea level and the vegetative cover of the region consists mainly of alpine tundra and black spruce. Towards the mouth of the river birch, poplar and willow associate in increasing density with black- and white-spruce.
The canoe trip

Fauna
The south Redstone River valley harbours grizzly bear, wolf, Dall’s sheep, woodland caribou, moose and various rodents. Rock ptarmigan, bald eagles and hawks are the predominant birds of the area.

Travel on this river can be dangerous, especially during high water levels. Only canoeists experienced in white water should attempt to run this river. The recommended mode of travel is covered canoe or kayak. Travel in open canoes is possible but dangerous.

The first 224 km
Two days were spent portaging canoes and gear from Little Dal via a trail found east of the stream draining the Lake. The trail passes an outfitter’s camp and then forks. The right trail is shorter, but it meets the river above a canyon that can be difficult to canoe at high water. The left trail leads to the river below this canyon. The portage, about 10 km long, is over an easily negotiated trail.

Difficult rapids occur quite often in the upper and middle reaches of the river, gradually decreasing in intensity and volume upon entering the Mackenzie Lowlands. Considerable time will be consumed scouting these rapids which occur almost every 500 m. Short yet spectacular canyons 60 m to 100 m deep occur near the middle reaches.
The water flowing through them is strong and fast and conditions should be examined before the canyons are entered. Portages around these points can be seen on the topographical sheets. Through the 224 km of this reach the river’s gradient is 6 m/km, flowing at a velocity of 11 to 16 km/h at medium to high water conditions.
Suitable campsites and firewood are plentiful. The water, although heavily silted, is potable.
The final 48 km
No major obstacles to navigation exist in this section of the river which slows considerably and braids frequently around gravel and sand bars. During late August, when water levels are low, wading and hauling the canoes over these bars may be necessary. Twelve days in late June were spent travelling the 272 km of the Redstone. However, it is recommended that three weeks be set aside for this canoe trip. The extra time would provide a margin of safety should prolonged rains create fast and turbulent water.
4 Frances and Liard rivers
### Frances and Liard rivers

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<tr>
<th>Access and egress</th>
<th>Maps required</th>
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<tbody>
<tr>
<td>Frances Lake to Fort Liard</td>
<td>N.T.S. 1:250 000 scale</td>
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<tr>
<td>20 to 28 d (1080 km)</td>
<td>105 H Frances Lake, Y.T.</td>
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<tr>
<td>6 to 12 portages</td>
<td>105 A Watson Lake, Y.T.</td>
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<tr>
<td>Date of survey</td>
<td>104 P McDame, B.C.</td>
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<tr>
<td>mid-August, 1973, low water level</td>
<td>94 M Rabbit River, B.C.</td>
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<td>94 N Toad River, B.C.</td>
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<td>94 O Maxhamish Lake, B.C.</td>
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<td>95 B Fort Liard, N.W.T.</td>
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<td>95 G Sibbeston Lake, N.W.T.</td>
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<td>95 H Fort Simpson, N.W.T.</td>
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With Watson Lake, Y.T. as a base, access to the starting point at Frances Lake is by road or float plane. Access may be gained to Frances Lake by taking the Robert Campbell Highway (Yukon 9) north from Watson Lake 175 km to Frances Lake. Many communities are located on the Alaska Highway which hugs the river closely between Upper-and Lower-Liard. Any one of these communities could serve as alternate access or egress points if so desired. Below Lower Liard the river is no longer beside the Alaska Highway, and flows through 296 km of wilderness before Fort Liard is reached just inside the N.W.T. boundary.
About the river

A Note of Caution
From extreme high water conditions in mid-June to extreme low water conditions in mid-September, the water level of the Liard River can vary as much as five metres. The present survey was conducted in mid-August during medium-low level and the following report reflects the situation at that water level. With higher water conditions, many of the river characteristics change drastically, especially in rapid and canyon sections. It is advised that anyone wishing to travel down the Liard river wait for low water conditions.

Geography
The Liard River is a major tributary of the Mackenzie River. Frances River begins in a glacial lake bordered by 2 100 m mountains. There are many canyons as much as five kilometres long and 90 m deep. These run through irregular bedrock composed of limestone and quartz with shales and many other types of rock. The river passes through subdued topography in the Liard Plain and becomes quite tortuous. Further down, the Grand Canyon of the Stikine cuts its way through over 48 km of river through the Rocky Mountains. There are no major tributaries entering along the way and the canyon in places is only 30 m wide. At the Beaver River, the relief is low, the valley broad, and islands stud the river. The physiography is diverse and interesting throughout much of the trip.

Flora
The vegetation along the Frances and Liard Rivers is predominantly boreal forest. Willows and alders dominate the shoreline, especially along the Liard below Nelson Forks. The trees which grow along the Liard River are white and black spruce, poplar, larch, cottonwood and lodgepole pine. The dense forests of the Liard River are said to be the best timber in the Northwest Territories. Lack of good transportation has saved them from destruction. The forest floor is usually covered by a variety of mosses and lichens, with several types of wild flowers, the most common being lupines and wild roses.
Fauna
Moose is by far the most common animal seen along the shores. Other animals which can be seen include black- and brown-bears, wolves, lynx, and a multitude of smaller animals such as beaver, marten, fox and marmot. Canada geese can be seen along the shore with their young. Ducks, such as mallards, mergansers and harlequins can be seen along the river. Bird species common to the area are whisky jacks, Bohemian waxwings, gulls, belted kingfishers, bald eagles, hawks and, in the most isolated areas, ospreys.

History
The Liard has long been used as a major waterway into northern British Columbia and the Yukon. In 1836 Robert Campbell, working for the Hudson’s Bay Company, first ascended the river and built an outpost at the confluence of the Liard and Dease rivers. This post, now Lower Post, B.C., was a focal point for fur trading on the Liard River. The tremendous expense in supplying this type of outpost, however, undermined the profits gained in the trading of furs.

With the discovery of placer gold in the Cassiar Mountains in 1872-73, hundreds of gold seekers struggled up the Liard to McDame- and Thibert-creeks on the Dease River. The deposits were found to be quite small and soon most of the people left and went south. Except for the section of the Liard between the Nelson and the Mackenzie Rivers, where barges now run, the Liard is primarily a canoe- and small boat-river.
The canoe trip

Frances Lake to Upper Liard
3 to 4 d (216 km)
1 or 2 portages
Headwinds can impede progress down the 27 km of the long and narrow Frances Lake. From Frances Lake canoeing is easy for the first 34 km. The current in this section is slight. The channel width fluctuates between 45 m and 100 m. The river bends gently in both directions and is often divided by small islands. A cabin in good repair is located high on the right bank in this vicinity and has a road leading to the highway. A short distance downstream of the cabin two rapid sets are encountered before the entrance to the Upper Canyon. Both rapid sets can be run in an open canoe by staying close to the left shore.

Throughout the channel the rapids are characterized by exposures of bedrock and sharp rocks which cause large standing waves. A portage trail runs parallel to the river on the left limit and could be used to by-pass the rapids. The total length of the portage would be one kilometre. Upper Canyon is 6.5 km downstream. The canyon is four kilometres in length and is broken in both limits by talus slopes which may be landed on in order to scout the river. The exposed rock walls are about 20 m high. The channel width is 50 m and the current is strong. In the canyon five rapid sets are encountered, all of which can be run after scouting. The right limit offers the best vantage point as well as a route through the first three sets. The remaining white water can be run to the left of centre, avoiding the large standing waves which occupy centre stream. All the rapids are characterized by fast water, sharp rocks throughout the river channel, and large standing waves. Three kilometres downstream from the canyon, the Upper Frances Bridge spans the river. The bridge may be used for access to or egress from the river; camping sites are available here. The bridge crossing is that of the Nahanni Range Road (Yukon 10) also referred to as the Cantung Highway. No obstacles are encountered for 26 km. False Canyon is entered next. It has low rock walls 10 m high continuing for a distance of 500 m. No rapid water is encountered at medium to low water levels, but at high water one rapid set appears.
From the exit of False Canyon to the Lower Frances Bridge lies 32 km of easy canoeing. The bridge carries the Robert Campbell Highway. Two point five kilometres downstream a shelf running across the channel is encountered. Passage can be made by staying to the extreme right. One kilometre farther is the entrance to Middle Canyon where spectacular rock walls rise to 60 m above the water. The canyon is broken by talus slopes from which the rapid water may be scouted. The first rapid consists of a wide river channel with boulders and large standing waves. This lengthy rapid is best run to the left of centre. The second set may be run or lined on the extreme left shore. A narrowing of the river channel creates a violent section of chutes and rapids that require a portage.

The portage of about 500 m can be made on the left shore. The remainder of the rapid set below and the third rapid set can both be run by keeping left. Middle Canyon is nine kilometres long, with riffling and rapid water throughout.

In the next 32 km to the confluence of the Frances and Liard rivers the current increases to about 8 km/h. The river width increases to over 120 m. At medium- and low-water levels large gravel and sand bars are exposed with log and driftwood debris scattered about. The 45 km from the confluence of the two rivers to Upper Liard and the bridge crossing of the Alaska Highway is clear of obstacles. The wide river channel is often broken by large wooded islands that create side channels which may also be canoeable. Good camping sites are available in this section as well; three cabins in good repair are visible on the river banks. Upper Liard is a small native community 13 km from Watson Lake where supplies and services may be available.
Upper Liard to Lower Liard
4 to 6 d (246 km)
3 to 5 portages
The Upper Liard Bridge spans the 200 m width of the Liard River at Mile 642 of the Alaska Highway, 11 km past the town of Watson Lake. The river at Upper Liard is smooth-flowing, but the current is fast, averaging about 6.5 km/h. The channel runs quite straight for 23 km until Liard Canyon is encountered. This is five-kilometre stretch of canyon with nearly vertical walls reaching up 60 m in places. There are some rapids at the beginning of the canyon which should be scouted before running. More rapids further along in the canyon can be avoided on the clear side as the canyon is about 100 m wide. Ten metres below Liard Canyon, the community of Lower Post, B.C. is located at the confluence of the Dease River. This community is located on the Alaska Highway at Mile 620. For the next 48 km below Lower Post, the river becomes quite braided, splitting in places into several channels, many of which are dry at lower water levels. Large gravel bars and high cut banks are common. The Hyland River, a major northern tributary of the Liard, enters on the left limit 24 km below Lower Post. At the end of this stretch the river narrows into a single channel again. A short stretch of rapids can be run by staying to the right. Three kilometres further lies the entrance to a canyon commonly referred to as Little Canyon. This canyon is actually two short canyons separated by 1 500 m of smooth water. The rapids entering the canyon are heavy and should be scouted carefully before any attempt is made to run them. The left limit offers the safest passage. The second canyon is very similar to the first, with walls 15 m high. Large boils and whirlpools make canoeing hazardous. Fifteen hundred metres below Little Canyon another set of minor rapids presents itself but can be easily run.
The next 65 km is smooth water flowing in a straight channel. Because of the long straight stretches, headwinds may be a hindrance to paddling. However, the river occasionally makes sharp turns between solid rock banks creating small rapids and boiling water. This occurs five kilometres below Tsinitla Creek, at Leguil Creek where a small rapid is divided by an island, and three kilometres below Leguil Creek where the river makes a sharp turn to the left.

Cranberry Rapids is an intense set of rapids, 1 500 m in length, located about 6.5 km above the entrance of the Kechika River. These rapids are unnavigable in an open canoe as the water cascades over ledges and around jutting rocks creating extremely large breaking waves across the entire width of the river. A kilometre portage on the left limit is the best route around this obstacle. At the end of the portage, where the water slows up, the community of Fireside, B.C., where some services are available, is visible high up on the steep left bank. Immediately below Fireside, the rapids continue, but can be safely canoed. The Kechika River enters the Liard 6.5 km below Cranberry Rapids, bringing with it a heavy sediment load which increases the turbidity of the Liard considerably.

Three kilometres below the Kechika, Mountain Portage Rapids are encountered. These are similar in nature and intensity to Cranberry Rapids. The first part of the rapids is navigable on the extreme left limit, except for one impassable ledge protruding into the main current. This obstacle must be portaged, but the length of the portage is very short, perhaps 15 m. Past this, the left side is again clear until two islands are encountered, splitting the rapids into three channels. The left channel appears navigable, but careful scouting reveals a high ledge
at the downstream end of the island. The centre channel between the two islands is the best choice. However, the entrance to this channel is not easily visible from upstream because of the narrow entrance between some rocks. There are two small ledges in this channel which may be run or lined around. The left channel cuts sharply across the slower channel in the centre at the downstream end of the islands. Care must be taken to avoid being swept into some rocks. Rabbit River, entering on the right limit, signals the end of Mountain Portage Rapids. The best portage route would be the right limit, the distance being about 1200 m.

At the lower end of these rapids some boils and whirlpools occur, but these are avoided by staying to the right. At medium to low water levels the narrow channel to the right of the island is dry. Portage Brulé Rapids begins 2.5 km below the Coal River. This is one of the longest and most intense rapids on the Liard River. Three kilometres in length, these rapids begin with a series of large standing waves which flatten out, then slide over a ledge into enormous breaking waves. The left side of the channel is blocked by huge boils and back eddies. The right side is the most convenient place to stop and scout. The water is smooth down the right side for some distance, the river being very strong, and care must be taken to avoid being swept into the main current. With careful canoeing it is possible to canoe the right side of the rapids for some distance. The water slows for a few hundred metres,
then the longest and most intense section of the Portage Brûlé Rapids is encountered. This section, is 1,500 m in length, has mountainous waves across the entire 300 m of the channel, bordered by almost vertical cliffs reaching to 30 m high in places. This section is unnavigable in an open canoe and a five kilometre-portage should be made on the left side.

A 1,500 m portage would bypass this last section. After Portage Brûlé the remaining 50 km to the Lower Liard Bridge is a wide straight channel affording easy paddling.

Fifteen hundred metres from the bridge, at Alaska Highway Mile 497, the Liard River Hot Springs Provincial Park makes a worthwhile sidetrip.

*The Hole, Portage Brûlé on the Liard River*
Lower Liard Bridge to Nelson Forks
5 to 9 d (206 km)
at least 2 portages

From the Lower Liard Bridge it is 18 kilometres by river to the first rapids, 1500 m above Devil’s Portage. The Alaska Highway continues to follow the river for eight kilometres downstream of the bridge at which point the road strikes off in a southerly direction. The channel narrows noticeably as the first rapids is approached. The current is 2.5 m/s. This first rapid consists of a series of one-metre high standing waves that continue for about 500 m.

These rapids should be scouted prior to running. Another shorter set of standing waves on the right may be run after scouting to a talus slope on the right marking the start of Devil’s Portage. At this point the rapids may be seen less than a one kilometre downstream. Then from here a one-kilometre portage may be made across a point of land ending on a rock beach below a one-metre ledge that marks the last really difficult section of water. The next 1500 m of river may be run mostly on the left limit. Perhaps only medium to low water levels will permit this section to be run. To arrive at the starting point of the second portage it may be possible after scouting from the right bank to turn down a left channel with a cobble bar. Below this, the portage may be made on the right limit. A talus slope on the right limit is the best starting point for this second portage.

The first portage, although the easiest, involves a steep climb of 60 m and a similar descent. The second portage is very difficult. Initially a very abrupt climb of over 30 metres is required to reach the top of the canyon wall. From this point the portage becomes arduous and painful for the next 1500 m until it ends at a widening of the channel. The difficulty lies in the fact that a recent burn has killed most of the trees and has resulted in a tangle of deadfalls which make walking difficult. The time required for these two portages is at least one long day and
care should be taken to move all equipment well up the talus slope if two or more trips are required across the portages. Water levels can change considerably over a short period within the narrow canyon, but after Devil's Portage has been traversed the rest of the 50 km of canyon may be entirely navigable. The difficulty encountered proves to be the confused water running through an irregular channel rather than standing waves. The first marked series after Devil's Portage, located 6.5 km downstream, should present little difficulty. Quite a long stretch of turbulent water is encountered soon after this and brings us to a point just above Moule Creek. This series should be run cautiously and scouted. A channel to the right of the island in this stretch appears the easiest to navigate.

Following this series a 16 km stretch of relatively easy canoeing follows down to the Rapids of the Drowned. A series of rapids that are marked just one kilometre above Sulphur Creek on the topographic map is merely detectable at lower water levels. Sulphur Creek is an obvious landmark notable for its strong sulphur smell. The Rapids of the Drowned, the first series to be encountered after this long stretch of quiet water, is not as formidable as the name suggests at this lower water level and may be run on the right.

Below the Rapids of the Drowned the river again is narrowed to quite an impressive high-walled canyon. Marked as rapids on the map, these stretches of canyon are merely turbulent at low water level and the only difficulty is maintaining proper balance in the cross currents and boils. The more difficult areas are those where the channel narrows between rock walls. Running to the left channel and then keeping in a back eddy close to the left bank seems the easiest course to follow from here on.

The channel becomes wider and relatively quiet to a point just above Hell's Gate. Here a ledge off the left bank may be avoided by keeping right. The difficult water on the channel below may be
avoided by crossing to the left as one runs into Hell's Gate. At low water level there is only one channel on the right; the highwater channel around a high rock island on the left is blocked by a bedrock ledge. The left of the existing channel of Hell's Gate may be run. Scouting is again recommended. This canyon is possibly the most spectacular along the river. Vertical rock walls 50 m high enclose a channel 30 m wide. Hell's Gate marks the end of the difficult canoeing. The channel broadens considerably from this point, but areas of high rock walls line the river banks. These rock faces become less frequent as one continues downstream and disappear 16 km upstream from the Beaver River, where the river leaves the Rocky Mountains through which the Grand Canyon of the Liard cuts.

Below the canyon the current remains strong and one sees the mouths of some of the Liard's major tributaries, the Grayling, Toad and Scuttes. Below the Scuttes River the channel becomes more and more marked with islands which disappear at lower water levels when many of the side channels are dry. From the northeast, 16 km below the Scuttes River, the channel makes an abrupt turn to the southeast which it maintains almost to the confluence of the Liard and Fort Nelson rivers. The Beaver River enters from the left about 11 km below, but its mouth may not be detected as it is behind a series of islands. One more tributary, the Dunedin, enters about eight kilometres from the mouth of the Fort Nelson River. From the mouth of the Dunedin the Liard swings northeast to its confluence with the Fort Nelson River, which enters from the south. This confluence is commonly known as Nelson Forks. A bypass of the Grand Canyon of the Liard, taking out at the Lower Liard Bridge and putting in again at Fort Nelson, is an alternative to the route entirely down the Liard. It is 208 km from Fort Nelson to Nelson Forks, an easily navigable run with a slow current.

**Nelson Forks, B.C. to Fort Simpson, N.W.T.**

6 to 8 d (302 km)
no portages
For its last 302 km the Liard River is slow moving with an average width of 315 m.
The canoeing is often monotonous and slow. From Nelson forks to Fort Liard the river follows a relatively straight northerly channel braided by several large islands and gravel bars. Large amounts of drift load and deadfall often clutter the gravel bars and islands, evidence that in early spring the current of the Liard is very strong. The relief in this section is very flat with 489 m LaJolie Butte being the predominant physical feature near Nelson Forks and Mount Coty, 842 m at Fort Liard.

From Fort Liard to the confluence of the Nahanni River, a distance of 145 km one again encounters a straight wide channel with a slow current. There is, however, one set of rapids marked on the map. Flett Rapids, 56 km from Fort Liard is on the east side of a large island. At low water level this rapid almost disappears. The Liard Range can be seen along the western limit. Thirty-two kilometres from the confluence with the Nahanni River, Nahanni Butte, 1 374 m dominates the community of Nahanni Butte where services are available. There is a large island at the mouth of the Nahanni with an inside channel which could be used. However, at low water this channel is blocked by a large sand bar and one must paddle five kilometres upstream to Nahanni Butte.

From Nahanni Butte to Fort Simpson, a distance of 170 km the river has fewer sand bars and a straight section, 13 km long. The river resembles a lake in these sections, but there are two sets of unmarked rapids, the first being three kilometres downstream from the Birch River on either side of a large island. At low water level they consist of standing waves and a few riffles. The next set starts three kilometres past the Poplar River. It runs 10 km through a low broken canyon and is commonly called the Liard Rapids. The standing waves are much larger than in the first set and there are also small ledges. By staying to the right most of the larger waves can be avoided. There are small chutes along the shore which can be followed. At the end of this set of rapids is Beaver Dam, a one-metre ledge which extends across the river. One can get around this ledge by staying to the right along a small chute. The last 50 km of the river is straight channel with no further obstacles. On the right limit of the confluence of the Liard and Mackenzie Rivers is Fort Simpson.
Stikine River

Tuaton Lake to the Alaska Boundary
10 to 14 d (456 km)
3 to 5 portages

Date of survey
Late June, 1973, high water level

Access and egress
Tuaton Lake is accessible only by float plane. The air base nearest Tuaton Lake is Watson Lake. Egress may be by float plane or power boat from Wrangell, Alaska. Arrangements can be made by radio or telephone from Telegraph Creek.

Maps required
N.T.S. 1:250 000 scale
104 H Spatsizi
94 E Toodoggone River
104 I Cry Lake
104 J Dease Lake
104 G Telegraph Creek
104 B Iskut River
About the river

Geography
The entire Stikine River system is within the Cassiar Mountain and the Coast Mountains located in northern British Columbia and Alaska. This survey was made along 448 km of river that was canoeable and another 80 km along the Grand Canyon of the Stikine which was surveyed by aircraft. Tuaton Lake is at an elevation of 1200 m and from here the river cuts its way through the Spatsizi Plateau until its confluence with the Chukachida River. Rising to 1800 m this plateau is barren land with many outcroppings. Below the Chukachida, the Stikine is bounded by the Stikine Range on the north and the Spatsizi Plateau on the south. Generally, the Stikine valley is quite wide and changes from barren land topography to forests a short distance from Tuaton Lake. The valley is quite wide and becomes increasingly broader below the Chukachida River except for a few areas where the channel narrows through canyon-like cut banks. Below the Pitman River there are some very high cut banks on some of the bends. This river flows between the Eaglenest Range on the west and the Spatsizi Plateau on the east as the Spatsizi River enters. The river flows in a more confined valley as it goes between the Eaglenest Range on the south and the Three Sisters Range on the North. Another very high walled canyon is encountered at Beggarley Creek a few kilometres above the Klappan River.

From this point to the Stewart-Cassiar Bridge the river flows between the Katailu Range and the Klastine Plateau. Below the bridge the spectacular Grand Canyon of the Stikine stretches for most of the 80 km of river down to Telegraph Creek. The Grand Canyon, which reaches a vertical depth of almost 300 m and narrows to 15 m is a fluvial landform as is indicated by the unglaciated canyon walls. Tahltan Butte, which is crossed by the road to Telegraph Creek, is a fascinating structure eroded from the volcanic rock by the Stikine and Tahltan Rivers.

On the second leg of this river trip the Coast Mountain Ranges are somewhat higher than in the upper section. Glacial features abound along this lower portion.
From Telegraph Creek to the border the river flows in a southerly direction cutting through the Sawback and Boundary Ranges. Rugged peaks, many over 1500 m high, remain snowcapped throughout the year. Channel widths near the boundary are up to 300 m.

**Flora**

At Tuaton Lake, 1200 m above sea level, the landscape is barren and the surrounding plateau and mountains may maintain some snow cover year round. The land is otherwise covered with bunch grass, wild flowers, moss and lichens. The stands of trees include lodgepole pine, poplar, balsam fir, and spruce; their sporadic distribution is such that the area seems almost a groomed parkland. Willows and bushes thrive along the shores of Laslui and Tuaton lakes as well as the banks of the river for a considerable distance downstream.

Tree heights follow a progression throughout the length of the trip in a response to the drop in elevation, as well as the marked change in climatic conditions. Towards the middle of this upper section the vegetation becomes predominantly spruce and this species dominates the river valley down to the egress point at the Stewart-Cassiar Bridge. Tree species along the lower Stikine section vary considerably between Telegraph Creek and the boundary. Pines, poplars, spruce, hemlock, fir and balsam are all found in the area around Telegraph Creek; as the heavy coastal rain belt is encountered many very large cottonwoods and very dense undergrowth of willow are encountered. Spruce, hemlock and fir are common in this lower section of high rainfall with a correspondingly large size. Western hemlock constitutes 70% of the forest.

**Fauna**

Moose are the most common large game animal but mountain goats, stone sheep and caribou may be encountered on hikes to the surrounding plateaux. Wolves, bears, foxes, minks, martens and fishers dwell here. Canada geese frequent the channels of the Stikine as do mergansers, mallards and harlequin ducks. Loons were also sighted. Different species of hawks as well as bald eagles and ravens, cliff swallows, lesser yellow legs, terns, spotted sandpipers, seagulls and even rufous hummingbirds are seen. The river above the Grand Canyon of the Stikine contains Dolly Varden, lake-and rainbow-trout, grayling and char. Below the canyon the river is a spawning ground for king-and coho-salmon. Seals may also be noticed.
History
In the early eighteenth century, the Russian American Company established an outpost on an island 16 km from the mouth of the Stikine. The tremendous demand for otter and seal pelts made Fort Dionysius, the present site of Wrangell, Alaska, a flourishing town. While the Russians concerned themselves with the coastal regions, the Hudson’s Bay Company was penetrating this area in the interior. In 1834, they sent John McLeod into the Dease Lake-Stikine area to establish an outpost. He built a post at Dease Lake, but competition with the Russians made the enterprise unprofitable. In 1860 placer gold was discovered near Telegraph Creek on the Stikine. The discovery was quite small, but people started moving to the river and built small towns like Jackson and Glenora. In 1865 the Collins Overland Telegraph Company planned to build an inter-continental communications link between the United States and Europe via Russia. They moved machinery and hundreds of men to Telegraph Creek to begin laying the cable. This scheme collapsed when the trans-Atlantic cable was completed in 1866. The next major gold rush into northern British Columbia took place in 1873. Large deposits of placer gold were found along Thibert, McDame and Dease Creeks. Soon thousands of gold-seekers poured into Wrangell and, by steam boat, Glenora and Telegraph Creek. Telegraph Creek soon became the centre of unloading for men and supplies. From Telegraph Creek they soon followed an overland trail to Dease Lake. The well-known Klondike gold rush of 1897-98 brought a flood of miners and adventurers up the Stikine to Telegraph Creek. The upper reaches of the Stikine has had less historical significance than the lower portion, one reason being the 65 km canyon of unnavigable water above Telegraph Creek.
The canoe trip

Tuaton Lake to Chukachida River Junction
(75 km) 3.5 m/km drop in elevation.
Tuaton Lake is located high in the Spatsizi Plateau at an elevation of 1275 m. It is scenically situated amongst snow-peaked mountains and the adjacent land supports patchy coniferous growth with open areas giving it a park-like appearance. Campsites are numerous and excellent in this area. The connection channel between Tuaton and Lasliu Lakes is 10 km long and has some minor riffled sections that do not hinder passage. Lasliu Lake is 14 km long. At its outlet from Lasliu Lake, the channel
width ranges between 20 and 30 m and can be canoed for 1 500 m. At this point a portage is required to by-pass a rapid section of one kilometre cut through the bedrock, creating roaring torrents of white water and an incredible boil in mid-channel, 2.5 m high. A 1 200 m portage can be made on the downstream right bank, with easy walking along a ridge above the river. The next eight kilometres to the junction of Chapea Creek, is strenuous canoeing. The channel is 50 m wide and a strong current creates standing waves that occasionally spill into the canoe. Fortunately the channel is clear of rocks, sweepers and log jams. This rapid water continues three kilometres beyond Chapea Creek until a major set of rapids, carved through bedrock on the right limit and high gravel banks on the left necessitate a 500 m portage. The portage can be made easily on the left bank in open country and the river can be rejoined just before some islands in the channel. In the next seven kilometres the river contains some intermediate rapids that are characterized by large standing waves, fast current and large rounded rocks.

Next, a canyon section, identified by pink granite and sandstone cliff walls up to 12 m high and extending for 1 200 m is encountered. The channel width is 30 m and the strong current creates swells, boils and standing waves that can easily be navigated. From this point is is a short distance to the junction of Metsantan Creek and the abandoned, burnt site of Caribou Hide. Chili Creek and Adoo-gacho Creek are passed during the next 32 km of paddling. This section can be easily canoed and travel is aided by a swift current. Some minor riffles are encountered. The channel is generally straight with some twisting sections as the junction of the Chukachida River is approached. Numerous good campsites are located in this section.
Chukachida River Junction to the Stewart-Cassiar Highway Bridge
(189 km) 4 m/km drop in elevation.
The river elevation is 1,065 m above sea level at the junction and offers a beautiful view of Mount McNamara and Mount Albert Dease, both of the Stikine Range. For the first 10 km the river is sluggish, but soon picks up to 10 km/h. The next 23 km of river has large standing waves. Good campsites are plentiful. The river valley widens at the junction of the Spatsizi and Stikine Rivers and once more offers an impressive view of the highlands of the Spatsizi Plateau. Three kilometres downstream from the Spatsizi River is an outfitting camp which has a radio; the river here can accommodate the landing of a float plane. During the next 18 km the river channel widens and is occasionally divided by islands. Strong upstream winds frequently begin in late morning and continue until mid-afternoon and can hinder canoeing. Jewel Canyon is about two kilometres long and 100 m wide. It is not a canyon in the true sense but is bordered by gravel banks up to four metres high. The channel is broken by large boulders creating standing waves and strong back-eddies. It can be canoed by favouring the left shore, then cutting directly over to the right to avoid the most severe section, but should be scouted beforehand. Game trails on both shores running parallel to the river provide good portaging. Up to the junction of the Pitman River the strong current remains constant and a few minor riffled sections are encountered. Four kilometres farther is Schreiber Canyon consisting of a bedrock bluff on the right limit. High standing waves occur here, but can be easily passed by staying to the left. Other than occasional standing waves, the 90 km from here to Beggerlay Creek present no obstacles to navigation.

The river widens and is divided by islands in spots. The channel is bordered by high, cut gravel banks in sections. Twenty-five hundred metres before the entrance of McBride Creek is a cabin in good repair owned by the British Columbia Forest Service. Sheer rock walls up to 40 m high parallel a 20 m wide channel at Goat Canyon, which begins at Beggerlay Creek. The fierce rapids and powerful surges and boils make canoeing difficult and dangerous. Portaging on the right limit is complicated by the difficulty of crossing Beggerlay Creek. Therefore it is necessary to portage on the left side. The portage route should first be scouted and would result in the difficult one-
kilometre-carry up steep slopes. Fifteen hundred metres after the canyon the Klappan River joins the Stikine. Two large concrete pilings signal the coming of the British Columbia Railroad from Prince George to Dease Lake. Three kilometres farther is a short canyon section that merits caution. The canyon can be canoed by staying close to the left limit and skirting the large standing waves. The river channel widens as does the valley for the next 19 km ending with egress at the Stewart-Cassiar Highway Bridge crossing. There are no services offered here.

**The Grand Canyon of the Stikine**

(93 km) 10 m/km drop in elevation.

Transportation from the bridge crossing to Telegraph Creek should be pre-arranged. To Dease Lake it is 51 km. The road to Telegraph Creek is a poorly-maintained one lane gravel road. It takes about 3.5 h to make the 120 km trip but incredible scenery and the pioneering quality of the road is an unforgettable experience. At Telegraph Creek, which has a population of 200, supplies may be purchased and arrangements of egress by plane or power boat may be made. The town also has mail, communication and medical services. Telegraph Creek is the most convenient point of access for the lower portion of the Stikine River. Between the bridge crossing of the Stikine and Telegraph Creek is 93 km of unnavigable water. This section is known as the Grand Canyon of the Stikine. The canyon is cut through volcanic rock exposing many unique and interesting geological features. The walls range between 250 and 400 m high and the channel narrows to 15 m in places with an average width of about 55 m. A tremendous volume of water shoots through the canyon creating powerful swells, boils and cross-currents, as well as fierce chutes, rapids and falls. To date, no man has passed through the canyon in any type of river craft. Parts of the canyon frequently remain ice-free even during the winter months. The lower 16 km section of the canyon from Talhtan to Telegraph Creek can be viewed from the road and is convincing testimony to the impossibility of passage through the canyon.
**Telegraph Creek to Boundary House**

The 184 km of the Stikine from Telegraph Creek to Boundary House lacks the spectacular rapids and white water of the upper river, but maintains superlative scenic quality. From Telegraph Creek to the Chutine River, the Stikine flows in a relatively straight channel. The width of the river is up to 100 m with a current of 10 km/h. This 42 km section has many riffles and rapids marked on the topographical map. These include Buck Riffle, Ball Rapids, and Dutch Charlie Riffle. At high water levels these riffles and rapids may be only standing waves. The route through them is quite obvious and they should offer no serious problems. However, the most serious canoeing difficulty is presented by boils and powerful whirlpools which can abruptly tip or turn a canoe. It is more difficult to avoid these boils and whirlpools than the standing waves. Just below Yehiniko Creek is an area of difficult water, unmarked on the map. The standing waves are small but the boils and whirlpools are much stronger than those previously encountered.

From the Chutine River to Little Canyon, the river widens to an average of 250 m. The river channel is braided with many islands and gravel bars. The current slows and the water is very turbid. This is the start of the many deadfalls and log jams which clutter the river all the way to the boundary. In this section, there are four sets of rapids: Grand Rapids, Devil’s Elbow, Kloochman Canyon and Little Canyon. These are nothing more than standing waves, and whirlpools and boils offer the most difficulty.

At the Little Canyon, the river narrows to 50 m. The canyon is one kilometre long with 30 m cliffs along the shore. The current is 10 km/h and from Little Canyon to Boundary House, five kilometres above the boundary, the river meanders extensively. The numerous gravel bars and log jams make it difficult to choose the channel with the most current.

Boundary House is now abandoned. If previous flying arrangements have not been made, Wrangell, Alaska, 65 km downstream on the ocean, is the only place where transportation can be arranged.
6 Dease River
<table>
<thead>
<tr>
<th>Dease River</th>
<th>Access and egress</th>
<th>Maps required</th>
</tr>
</thead>
</table>
| Dease Lake to Lower Post | Dease Lake is the headwater of the Dease River. It is accessible via the Stewart-Cassiar-Highway, either from Stewart, B.C., 320 km to the south, or Watson Lake, Y.T., which is 272 km north. The road has few services. Lower Post, the point of egress, is located on the Alaska Highway. | N.T.S. 1:250 000 scale  
104 J Dease Lake  
104 I Cry Lake  
104 P McDame |
About the river

Geography
From Dease Lake to the mouth of the Blue River the Dease River flows gently through the Cassiar Mountains. Below the confluence of the Blue and the Dease, the river flows northeast across the Liard Plain until it meets the Liard across from Lower Post. Most of the Dease River is cut through a bed of glacial till, but there are several stretches where cut banks and tree cover give way to bedrock. The upper section of the Dease, down to the Blue River, is flanked by mountain peaks up to 2 100 m feet. The river below Dease Lake has a short chain of lakes of glacial origin. The valley broadens out below these and the river tends to be more sinuous until it straightens out through the Liard Plain. A rounded range of mountains in the Horseranch Range below Stone Island Rapids marks a further widening of the river valley. Due to the width of the valley there are several areas of poor drainage, and swamps line much of the river down into the Liard Plain. The Liard Plain is the only section of low relief. This terrain is broken by the final two sets of rapids which cut through the bedrock.

Flora
Ferns, willow and alder shrubs dominate the shoreline backed immediately by white- and black-spruce occasionally interspersed with stands of poplar. In some sections the willow shrubs are absent where the shoreline is rocky and spruce crowd the shore. Spruce and poplar predominate on the lower slopes of the mountains giving way to stunted alpine cover on the upper slopes. Other common trees along the river and adjoining valleys include lodgepole pine, white birch, tamarack and aspen. The forest floor is covered by a variety of mosses and lichens, ferns and several species of wild flowers, the most common being lupines and wild roses. The alpine vegetation consists of stunted spruce and juniper.

Fauna
A variety of big game animals inhabit the Dease River Valley. By far the most common is the moose, often seen feeding along the banks of the river or in the shallow water of some lakes. Stone
sheep range high on the mountain slopes along with mountain goats. Other species native to the area include the black bear, grizzly bear, wolf, lynx, beaver, fox, marten, marmot and chipmunk. Several species of waterfowl are common to the river. The most often sighted are ducks such as mergansers and mallards. Canada geese nest along the river and in adjoining marshes. Loons and gulls are present on the lakes. Other species commonly seen in the area include the bald eagle, nighthawk, great horned owl, ptarmigan, cliff swallow, whisky jack, raven, Bohemian waxwing, sparrow, sandpiper, belted kingfisher and spotted sandpiper. The lakes through which the river flows contain lake trout, rainbow trout and others, while the river is home to grayling and Dolly Varden.

**History**
The Dease River is historically an important waterway linking Wrangell, Alaska via the Stikine River to Telegraph Creek, overland to Dease Lake and the Yukon. In 1873 gold was discovered at the present site of McDame, an Indian Reservation which at one time was a Hudson's Bay Post. During the later gold rushes of the Yukon and Klondike, the Dease River was important as a link with the Liard River and for its placer deposits. Before the completion of the Alaska Highway, the Dease was an important freight route to the northern interior of British Columbia and the Yukon. The hulls of the large river freight boats can still be seen on the shores of Dease Lake.

**Dease Lake to Lower Post**
The Dease River flows northeast from Dease Lake. It has a gradient of 1 m/km and an average current of 3 to 5 km/h. From the start of the river to Joe Irwin Lake, the river meanders through very dense brush. Its width varies from 15 to 30 m and the depth averages 1.25 m. Sandbars and log jams occur, but they disappear five kilometres before Anvil Lake, the first lake encountered.
From Anvil Lake to the Cottonwood River entrance the river flows through three more lakes: Joe Irwin, Pine Tree and Cotton Lakes. These Lakes vary from 1500 m to 6.5 km long and are quite shallow. The shorelines are very brushy, but there is a beautiful view of the Cassiar Mountains which dominates the vista. One set of rapids is encountered in this section, just below Pine Tree Lake. These, Pine Rapids, are marked on the map but should cause no problems to canoeists as they are made up of a few riffles and small standing waves in mid-current.

From the Cottonwood River to the Blue River, about 103 km there are two sets of rapids, both of which are small and should cause no problem. The first, Cottonwood Rapids, occur just below the Cottonwood River. Small standing waves cross the entire river and an occasional rock must be avoided, but the rapids may be easily navigated.
Stone Island Rapids consist of some standing waves created by a small ledge jutting out from the right side of the channel. There are scenic high rock banks in this area. The river meanders extensively until 6.5 km above McDame Creek. In this meandering section the current is 3 km/h and the river 60 m wide and two metres deep. At McDame Creek there are a few abandoned cabins, the remnants of a Hudson’s Bay Company trading post. This is the site of the first of four Indian reservations located along the river. None of the reservations are occupied, but occasionally during the summer Indians camp here to fish. With the entrance of the Blue River, the current increases to 6.5 km/h and small cut banks become more frequent. In this last section of the river, two sets of rapids occur. These are much more difficult than earlier rapids on the river and should be scouted before running. Four Mile Rapids, so named for their distance from Lower Post on the Liard, consist of large standing waves along the left limit and shallows on the right, divided by a small island. Safest passage may be made on the right, but care must be taken to avoid rocks in the shallow water.

Three kilometres downstream, Two Mile Rapids occur as the river narrows around a sharp right corner. Some jagged rocks block the centre of the channel and the best route is to the right inside the turn, through a small chute. The Dease-Liard confluence comes into sight shortly after this set of rapids. To reach Lower Post, on the opposite side of the Liard River from the entrance of the Dease, it is necessary to paddle or line the canoes a short distance upstream beside an island located at the mouth of the Dease. Lower Post is directly across the Liard from the upstream end of this island. Supplies, telephone and accommodation are available at this town which is located on the Alaska Highway.
7 Gataga-Kechika River
### Gataga-Kechika River

<table>
<thead>
<tr>
<th>Access and egress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to the South Gataga can only be achieved by float plane, usually from Watson Lake. Fly to a small unnamed lake, 125°25’W 58°3’N on sheet 94 K Tuchodi Lake, and canoe a 13 km stream to the South Gataga. The trip ends at Shook’s Landing on the Alaska Highway.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Maps required</th>
</tr>
</thead>
<tbody>
<tr>
<td>N.T.S. 1:250 000 scale</td>
</tr>
<tr>
<td>94 K Tuchodi Lakes</td>
</tr>
<tr>
<td>94 L Kechika</td>
</tr>
<tr>
<td>94 M Rabbit River</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Access and egress</th>
</tr>
</thead>
<tbody>
<tr>
<td>125°2’ W 58°3’N to Skook’s Landing</td>
</tr>
<tr>
<td>10 to 14 d (320 km)</td>
</tr>
<tr>
<td>4 to 8 portages</td>
</tr>
</tbody>
</table>

### Date of survey
early June, 1973, at high water

Note: Throughout the year there is a very significant variation in flow but the river may be just as easily negotiated in lower water conditions.
About the river

Geography
The headwater starting point of the trip is located in the Rocky Mountains. From this point the drainage to the South Gataga and Gataga runs between the Rocky Mountains and the Kechika Ranges. The Kechika runs through the North Rocky Mountain Trench and into the Liard Plain. The trip starts at an elevation of 1 200 m in a very narrow valley that is surrounded by 2 250 m peaks. At its mouth the Kechika flows into the Liard at an elevation of 530 m and has a very broad river valley.

Flora
The alpine vegetation consists of stunted shrubs and bushes along with a variety of grasses, mosses and wild flowers. The river valley forest consists primarily of white spruce with some large poplar stands. Other common trees include black spruce, lodgepole pine, white birch, aspen, willow, cottonwood, tamarack and balsam. Ground cover is composed of mosses, lichens, shrubs and some berry plants.

Fauna
A variety of big game animals inhabit these river valleys. Most common are moose; cow moose and calves can frequently be seen along the river banks whereas the bull moose stages in the higher areas. Of great importance is the stone sheep which live in the higher Kechika Mountains. This area is reputed to contain 70% of the stone sheep of British Columbia. Other animal species native to this area include caribou, mule deer, elk, mountain goat, grizzly bear, black bear, wolf, lynx, beaver, fisher, marten and weasel. The waterfowl include Canada geese, mallard and harlequin ducks, loons and gulls. Bird species include hawk, grouse, ptarmigan, cliff swallow, bank swallow, whisky jack, Canada jay, raven, tern, sandpiper and woodpecker. The rivers are inhabited by pike and grayling. The numerous lakes that drain into the rivers have rainbow trout and lake trout.
The canoe trip

History
The names 'Kechika' and 'Gataga' come from the Indian people who are of the Sikanni tribe, part of the Athapascan nation which once inhabited the northwestern part of Canada. 'Kechika' means 'big windy' referring to the strong winds up to the valley and 'Gataga' means white paper. The locals refer to the Kechika as the Muddy River which denotes its large sediment load stemming from erosion in the mountains. The Kechika valley was once part of the Davie Trail which supplied goods from Lower Post, B.C. by pack horse to Fort Ware, B.C.

Lake (125°25'W 58°3'N) to confluence of Kechika and Gataga Rivers
Starting at this small isolated lake makes the first 10 km the journey very arduous. A stream which drains from the western shore, is only five to eight metres in width and has a current of 10 km/h. The major obstacle in the first 6.5 km is dead fall covering the entire width of the stream. Sweepers make it impossible to canoe for more than a few hundred metres before a portage is necessary. The stream has many 90° turns and the chance of overturning because of sweepers and these sharp bends is very high. In the lower reaches of the stream there are small falls and vigorous rapids which have to be portaged. About 2.5 km from the confluence with the South Gataga there is a gorge 100 to 120 m high where the stream thunders through. The stream drops 300 m in the 10 km. Of the entire 12 km of stream only 2.5 km can be canoed. Because of the gorge and brushy wet shoreline it is advisable to portage on the high ground. There is less brush and the walking is a little easier. A portage along the higher land south of this stream reaches another stream which can be followed three kilometres to the south Gataga.

The South Gataga is about 15 m wide and has a 10 km/h current. The first 10 km of this river offer no obstruction. There are no large sweepers crossing the river; only small rapids and riffles. Ten kilometres down from the confluence of the South Gataga and the small stream is a set of rapids which should be scouted. On the west shore there is a well-used game trail around the rapids. The portage is 90 m long. The best way to run the rapids is to the left. In the next three kilometres the shoreline becomes higher.
and the standing waves becomes much larger. This is the start of a long gorge. A few hundred metres down the long gorge large boulders occur where the river narrows. On the west shore a well-used game trail can be found. This portage trail disappears just past a small stream. Portage and line the canoes for about one kilometre down the stream to the South Gataga. This last section of the canyon may be run. To portage the entire length of the gorge would be difficult since one would have to climb up and over the steep rock face. The confluence of the Gataga is only 11 km away. From the confluence to 1.5 km past Through Creek, the river widens to 120 m. The current is 10 km/h. Fifteen hundred metres past Through Creek there is a set of rapids which must be portaged. A large rock in the middle has chutes on either side. The best portage route begins on the right shore on a sandy beach just before the rapids at a South Gataga River
game trail and is only 90 m long. About three kilometres downstream is a small rapid which offers no problems. The last 50 km to the confluence with the Kechika is easy paddling. There are no rapids and few standing waves. The river channel is braided with large log jams.

Kechika River from Gataga Forks to the Liard River

The Kechika River at Gataga forks, its confluence with the Gataga River, is about 100 m wide at high flow. The only hazards to canoeing for the next 192 km are log jams and the strong back-eddies and boils which occur near many of these jams and on sharp bends. About 16 km downstream from Gataga Forks, near Matulka Creek, there is a trail on the right limit leading to Moore’s outfitting camp. A single-side-band radio is available here in case of emergency. Twenty-four kilometres farther downstream there is a small trading post marked with red flags. The Turnagain River enters the Kechika on the left about 56 km below. Five hundred metres up the Turnagain on the north side is a small cabin with a couple of bunks and a stove. For the remaining 88 km the Kechika stays in a single channel. The current begins to increase noticeably about 16 km from the Liard River. Within these last 16 km, eight sets of rapids occur, all of which can be navigated in high water. The first has large standing waves. A second set of rapids, about 1 500 m downstream, is characterized by a huge rock splitting the current in two. Safe passage may be made on the right limit close to shore.

The other rapids occur at regular intervals of 1 200 m to 1 500 m apart and are quite easily negotiated. Having reached the Liard River, it is necessary to paddle across it, to land at Skook’s Landing about one kilometre downstream from the entrance of the Kechika on the left. This crossing must be made quickly because the landing lies at the head of the famous Mountain Portage Rapids of the Liard. Skook’s Landing lies just behind a small island close to the left bank of the Liard. To avoid the rough Mountain Portage Rapids it is necessary to go behind the island. The entrance to the channel is split by a large rock, and one of the two chutes around the rock must be run to reach Skook’s Landing. The landing is about 350 m from the Alaska Highway. Five kilometres up the Highway, at Kilometre 869, some services are available.
<table>
<thead>
<tr>
<th><strong>Ogilvie and Peel rivers</strong></th>
<th><strong>Access and egress</strong></th>
<th><strong>Maps required</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ogilvie River Bridge to Inuvik, Northwest Territories</td>
<td>Access to the Ogilvie River may be made at Mile 123 on the Dempster Highway, where a bridge spans the river. The Dempster Highway parallels the river for 56 km before turning north. Inuvik, the point of egress, is serviced by scheduled airline flights.</td>
<td>(N.T.S. 1:250 000 scale) 116 F Ogilvie River 116 G Ogilvie River 116 H Hart River 106 E Wind River 106 F Snake River 106 K Martin House 106 L Trail River 106 M Fort McPherson</td>
</tr>
<tr>
<td><strong>Length</strong></td>
<td>21 d (688 km)</td>
<td>4 portages</td>
</tr>
</tbody>
</table>
About the river

Geography
The Ogilvie and Blackstone rivers rise in the Ogilvie Mountains north of Dawson City to converge on the Porcupine Plateau where they form the Peel River. The Peel River drains the eastern slopes of the Richardson Mountains and the northern slopes of the Ogilvie and Wernecke Mountains north of the Stewart River drainage basin. It cuts a deeper valley through the Porcupine and Peel plateaux until the banks attain a maximum height of 300 m. The Peel enters the Mackenzie River Delta below Fort McPherson at an elevation of 15 m above sea level, 160 km south of the Arctic Ocean.

Flora
Major tree species of the region are black spruce, white spruce, balsam poplar, aspen poplar, larch, alder, willow and many small shrubs. Hummocks and muskeg are common to open areas, especially toward the mouth of the Peel.

Fauna
Wildlife indigenous to the Ogilvie and Peel Rivers includes moose, black bear, grizzly bear, wolf, beaver, muskrat and a wide assortment of small animals and birds. Caribou and sheep may be seen in the Ogilvie Mountains.

The canoe trip

Ogilvie River Bridge to Blackstone River
All locations are described in terms of their kilometre distance downstream. The Ogilvie River, below the Ogilvie River Bridge, flows in a single channel 39 m wide, confined by the 30° to 40° talus slopes of the Ogilvie Mountains. The Ogilvie Mountains are left behind at Kilometre 32 and the exit from the mountains on to the Porcupine Plateau is marked by ledge rapids between Kilometres 24 and 32. The rapids at Kilometre 24 may be navigated at high water levels. If they cannot be run, a small chute along the left enables lining. Immediately after this ledge the canoeist should move to the right limit and land to scout the small chute 90 m ahead. This chute is navigable as it forms between a bar and the shoreline. The left and largest channel flows over a ledge with a drop of one metre.
A few navigable rapids are encountered below Kilometre 24, and at Kilometre 32 the rapid should be approached along the right limit. Scouting is required and the canoeist should be prepared to line most of the rapid. The water flows at an average velocity of 6.5 km/h over a cobble bed. Islands are numerous and in many places the river becomes multi-channeled. Sweepers and gravel bars are common, but can be easily avoided by staying in mid-stream. The Ogilvie again forms a single channel before it joins the Blackstone River, 106 km downstream from the Ogilvie River Bridge.

Blackstone River to Hart River
The Peel River is formed at the junction of the Ogilvie and Blackstone rivers. The volume of the Peel River is twice that of the Ogilvie and its velocity is 6.5 km/h to 8 km/h. It is incised up to six metres into the Porcupine Plateau with a gravel and cobble shoreline. The river is characterized by boils and surges flowing through an island-strewn channel resulting in a braided stream. The main channel is not difficult to follow. Less than 16 km upstream from the Hart River, the valley begins to narrow and the river becomes a single channel. At several locations the river begins to cut into the left limit forming cutbanks 60 to 100 m high. At these locations, ledge rapids occur.

The first ledge of any significance is at Kilometre 146. Rapids situated at Kilometre 148, immediately upstream from a cutbank along the left limit, are ledge rapids and may be-run through a small chute located to the right of mid-channel. The ledge rapids at Kilometre 155 occur immediately upstream of a 60 m rock wall. A small but runnable chute is located directly along the left bank.

One point five kilometres before the mouth of the Hart River, the Blackstone bends west. At this bend the water is forced up on the rock face of the left limit and small haystacks or “dancing horses” occur in mid-stream as the current of the river is met by the water moving back off the wall. This is the last set of rapids before the mouth of the Hart River.
Hart River to Bonnet Plume River
A series of rapids occurs 5 to 6.5 km below the mouth of the Hart. At this point the river is 200 m wide, with the rapids extending across the entire channel and stretching downstream for nearly 150 m. There are three or four ledges that extend across the river, with major turbulence in the right half of the river. The water is shallow as it flows over the ledges, and strong back eddies and turbulence occur beyond each ledge. The rapids may be run and lined along the left limit which consists of bedrock dipping into the water. To survey the rapid, one would land upstream along the right and climb the vertical bank that borders the white water.

Ten kilometres below the Hart River, sections of white water occur for 2.5 km in a narrow channel of the river. These are a result of ledges and the funnel effect of the narrower channel. The medium-high water during the period of this survey caused waves 2 to 2.5 m high in the middle of this set of rapids. The rapids may be approached along the left and the canoeist should be prepared to paddle, line and portage through this area. Below this section the water is turbulent and boiling prior to a left turn.

The river widens to 200 m as more rapids, one kilometre in length, and full river width are encountered. These are easily navigable. Below these last rapids the river flows in a wide valley, incised 3 to 10 m. Three kilometres downstream a stream enters from the north. Eight kilometres below the stream a final set of rapids will be encountered before the upper Peel Canyon and Aberdeen Falls. This rapid consists of a series of ledges and should be scouted to determine a proper course through several chutes. Downstream from this rapid the river becomes incised to a depth of 60 m between shale walls. By following the right limit very closely the white water above Aberdeen Falls may be avoided. It will be necessary to drop over a ledge to reach a low beach beyond the vertical
walls. Below this ledge, if the water is low, portaging may be required to reach the excellent campsite on the low beach ahead. Beyond this beach the rapids continue to the head of Aberdeen Falls and may be lined and run along the right. The river channel constricts considerably to form Aberdeen Falls a torrent of white water 15 to 50 m wide. The gradient is fairly constant, creating more of a rapid than a fall, with the torrent continuing for about five kilometres. The river has formed a gorge 50 m deep into rock strata, and a portage of 6.5 to 10 km is required. The best portage route, involving a climb through poplar growth to the flat land above, is along the right. Hummocks muskeg and scrubby black spruce dominate the landscape above the water. Walking over this area is difficult since there is no well-defined trail and 1.5 km before the end of the portage the terrain becomes hilly. The end of the portage is marked by a hill downstream along the right limit of the river. It may be seen from the beginning of the portage above the water and is the only hill in sight. The river winds through a valley making a 90° turn at the base of this hill and then turns to the right a few hundred metres farther on.

The portage ends on the inside bend of the right turn at the base of a hill. The base of this hill is the first area along the portage that is accessible to the water from above. A portage along the left limit may cause some difficulty. At low water level, gradually sloping bedrock is evident and seems to follow the length of the gorge. However, towards the end of the gorge the bedrock is interrupted by vertical walls necessitating an “up and over” route. The walls have to be climbed over to reach the water. At a low water level, the portage above the falls may be lengthened, due to more exposed ledges.
The Peel continues for 6.5 km flowing at 8 km/h through 60 m vertical shale walls as close as 60 m apart. Six point five kilometres below the end of the gorge, the canyon widens to 450 m, giving a view of low, rounded and dissected hills covered by spruce and poplar. The Peel flows for 1.5 km in this setting and around two islands before it enters another canyon.

In the vicinity of Kilometre 210 some easy rapids will be encountered as the valley of the Wind River enters the Peel Canyon from the south. One and a half kilometres below the Wind the canyon gives way abruptly to a flat low basin. To the south is a level, wooded plain that eventually reaches the Wernecke Mountains, while to the north the basin continues up to the Richardson Mountains. The water flows by many islands and bars at 10 to 13 km/h.

Thirteen kilometres below the upper canyon, Mountain Creek enters from the north. It was used as an overland route by Indians to avoid the swift waters and the lower canyon. This overland route joins the Peel again at the mouth of the Trail River, where the current begins to slow considerably.

Bonnet Plume River to the Snake River
From this point to 56 km above Fort MacPherson the river flows through the Peel Plateau, cutting a deeper valley northward. The banks attain a maximum height of 300 m below the mouth of the Snake River. Approaching the lower canyon, there are large swells in midstream and a large, powerful back eddy is formed on the right by a ledge. The river moves into the canyon through a narrow portion, 50 m wide. Although it cannot be seen from the entrance, rapid water is encountered for 90 m in the three-kilometre canyon. A ledge protruding
from the left causes standing waves 1.25 m high, with back eddies located on either side of the white water. Within the surging and boiling back eddies, small whirlpools with 1 to 1.5 m diameters are present. These rapids should be approached with care. The walls of the canyon are composed of vertical black slates rising 60 to 150 m. Beyond the constriction, the canyon widens to 150 m and gravel beaches are more common.

Three kilometres below the entrance of the canyon the valley widens to form a large basin, 6.5 km long and two kilometres wide. The river is multi-channelled, but the main channel is 300 m wide with a velocity of 11 km/h. Mixed and pure stands of birch and black-and white-spruce, rising 12 to 20 km on the well-drained soils, are unique to the area. The river contracts below the basin and flows in a valley one kilometre wide from Kilometre 258 to Kilometre 299, where the Snake River enters from the right. It is confined by 150 m vertical cut-banks of soft shales or limestone. The river is generally a single channel, but where islands or bars have formed, turbulence can be expected. Where the river bends, strong back eddies are frequent and should be avoided by staying in the rough water that by-passes them.

Below the second canyon the river is navigable without hazard to its mouth.
Snake River to Fort MacPherson
Immediately below the Snake River, islands and bars appear and the river winds between them at 10 km/h. From Caribou Creek to the mouth of the Trail River, the current of the Peel becomes noticeably slower and the number of islands begins to decrease. Abandoned oil camps, fishing camps and trappers’ cabins become numerous toward Fort MacPherson. The river widens, the current slows to 3 km/h, and islands occur less frequently below the mouth of the Trail River. High winds may be expected in the Satah River area.
The buildings of Fort MacPherson will be seen along the right limit about a kilometre before the settlement is reached. The settlement is located 25 m above the river on a cutbank, the only significant height of land in the area. It is supplied by a barge that plies the Mackenzie River receiving supplies from the south and from Inuvik. Float planes land on the Peel River which has a current of 1.5 km/h at this point.

**Fort MacPherson to Inuvik**

The Mackenzie River is 42 km below Fort MacPherson. The only hazards to navigation are the high winds that can result in two metre waves. Along the Mackenzie, the land is flat and the river has a width of up to five kilometres. The water, besides being sluggish, has a very high silt content. Drinking water may be brought from the Peel.

The east channel of the Mackenzie Delta leads to Inuvik. To reach this channel, the Delta must be crossed. A small channel is present 1.5 km up the Mackenzie from the mouth of the Peel. This channel cuts through the maze of islands that are directly across from the mouth of the Peel. It will lead to the main channel, eight kilometres south of the east channel. From here it is a matter of crossing the Mackenzie River to reach the entrance of the East Channel.

Another alternative is to paddle 24 km upstream on the Mackenzie, cross the river at Point Separation, follow the right limit to the East Channel and then to Inuvik. Five days should be allowed for travelling the 192 km between Fort MacPherson and Inuvik. Two or three extra days may be added, should wind hamper progress.
9 Bonnet Plume River
<table>
<thead>
<tr>
<th>Bonnet Plume River</th>
<th>Access and egress</th>
<th>Maps required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bonnet Plume Lake to the Peel River</td>
<td>There are no roads or trails in this area. The head waters are accessible only by float plane. The best landing area is Bonnet Plume Lake, 6.5 km long and up to 600 m wide. The creek draining this lake into the Bonnet Plume River is navigable. Float planes are available from Mayo, Yukon Territory, and Norman Wells, Northwest Territories. Both have a scheduled air service and Mayo is accessible by road. Arrangements can usually be made to be picked up at a suitable location on the Peel River. However, should time and food supplies permit, the trip could be extended 256 km down the Peel to Fort MacPherson on the Mackenzie River.</td>
<td>N.T.S. 1:250 000 scale 106 B Bonnet Plume Lake 106 C Nadaleen River 106 D Nash Creek 106 E Wind River 106 F Snake River (optional)</td>
</tr>
</tbody>
</table>
About the river

Geography
The Bonnet Plume River, from Bonnet Plume Lake to the point at which the river joins the Peel River, can be divided into three sections. In the upper 120 km of the Bonnet Plume, the river is shallow and flows swiftly within a narrow V-shaped valley.

There are many rapids, numerous canyons and areas of braided gravel floodplains. The middle section, 80 km from Corn Creek to Margaret Lake, is braided and flows in an incised valley in the Bonnet Plume Basin.

Flora
From Bonnet Plume Lake to Goz Creek, vegetation is sub-alpine to alpine-tundra, with occasional small stands of spruce and poplar. From Goz Creek to just beyond Fairchild Lake, the forest cover is thicker (predominantly spruce) on the valley floor, extending to sub-alpine and alpine-tundra on the slopes. The elevation of the treeline drops as one travels northward. Beyond Fairchild Lake, the valley widens. The forests on the valley floor are predominantly spruce, with some aspen, poplar and birch.

Fauna
In the sub-alpine and alpine-tundra areas near the headwaters, animal life is sparse. Only after Goz Creek does one see much evidence of the larger animals. Moose, bears and sheep may be seen, as well as smaller mammals. An area of special interest is the salt-licks near Fairchild Lakes. Barrenground caribou of the Porcupine herd through Margaret Lake. The territory north of Rapitan Creek is a winter denning area for grizzly bears. The fast-flowing river provides little good habitat for waterfowl, which are generally restricted to the lakes along the valley. The Bonnet Plume supports populations of arctic grayling, round whitefish and slimy sculpin. Near the headwaters, there are Dolly Varden. The lakes along the route offer good fishing.
Bonnet Plume Lake to Corn Creek
The upper 50 km of the river, from Bonnet Plume Lake to Goz Creek, are the most hazardous. The river is shallow and flows swiftly over a gradient of 56 m/km through numerous short canyons, with rapids in most. It is wise to check each canyon to determine its navigability and the course to follow. Portage trails are non-existent, but carries over the spruce-alpine terrain are easy.

Lining in most instances is difficult because of rock bluffs rising straight out of the water. Portages may extend beyond the rapids because of the difficulty of getting back down to the river once one gets on to the shore. Campsites are available on many bars along the river. However, fast-rising water levels are an ever-present danger.

Bonnet Plume Lake is a clear, deep mountain lake, with good fishing. There is an outfitter’s camp on the northwest shore, although at the time of the survey it had not recently been in use. The stream from the lake to the Bonnet Plume River is slow, with numerous bars. At low water, these may be too shallow for a canoe. Vegetation is mostly shrubs with scattered black spruce. The Bonnet Plume is a fast-flowing river, shallow and slightly braided. Six point five kilometres down river, a straight stretch begins.

There is a good view from the river of a rockslide ahead. At the end of this 1.25 km reach, where the river takes a bend to the left, there is, on the left, a small spot suitable for landing. From here the rapids which follow can be reconnoitered.

The river has cut a meandering course through the rockslides for the next four kilometres. The river is turbulent and rocks occur sporadically. The banks are frequently loose scree, and footing along the river edge is treacherous. Lining would be difficult.
There is a path along the top of the bluff, which, though not well marked, is not difficult to follow. For the next 19 km the river flows through a truncated V-shaped valley and is frequently braided with occasional riffles. The mountain slope often forms one limit. There are numerous secondary channels, but the main channel is easy to locate. The river then enters a small canyon with moderately difficult rapids; there are standing waves of about 33 cm, white water and scattered rocks. Just before a sharp bend to the left, there is a set of very difficult rapids. In the stretch beyond, a gravel tank on the left, at the lower end, marks the start of the portage. The river flows in a canyon for the next four kilometres. Extremely difficult rapids must be portaged for the first kilometre. The length of the portage beyond this will depend on the skill of the canoeists. The best launch site is 1.5 km downstream. There is a gravel bar, with a small spring at the base of the 12 m bank.

Following this, the river flows through the canyon for another two kilometres in which standing waves and scattered rocks are encountered. A sandbar on the right limit, about 1.5 km downstream, is a good place to land to scout the next 500 m of rapids. Here the river broadens and for three kilometres runs in a braided channel through a gravel flood plain. There are a number of possible camp-sites along the shores. The river returns to a canyon, containing short stretches of white water. One kilometre farther, just before the river makes a swing to the left, there is a gravel bar on the left limit. This is the start of the portage around rapids that are impossible to run. The portage of one kilometre is along the left shore. Before launching, however, it is wise to scout the rapids through the remainder of the canyon. In the next 1.5 km after the portage, are several sets of rapids. The first and third are easy, but the second and fourth must be run with caution. They both involve ledges and drops of one to two metres. The course is generally to the left, but there are scattered rocks.
The river continues to run in an incised valley, but follows a slightly meandering course. There are steep bluffs with turbulent water on corners but these are only moderately difficult. Sandbanks on the meanders are usually suitable for camping. The river flows through a canyon for the next 1.25 km. There is some turbulent and 50 cm standing waves, but they are easily run after scouting from the right limit.

For the next 8.75 km, the river flows in a narrow incised valley, with short stretches of canyon on some corners. There are frequent riffles and small standing waves in the canyon. For the next 32 km the Bonnet Plume provides relatively easy travelling. The river flows in a braided floodplain with one major channel, and frequent small secondary ones. These secondary channels are often rocky and turbulent, and may be completely over-hung by sweepers. Occasional sweepers in the main channel are easily avoided. In this stretch, the vegetation starts to change from predominantly alpine tundra and scattered spruce to a mixed forest, predominantly spruce. The Bonnet Plume narrows, and for 10 km bluffs of cliffs frequently form one limit. The river meanders slightly and sandbanks on the meanders are suitable for camping. Braided floodplains alternate with a narrow valley for the next eight kilometres. Secondary channels are fast, shallow and rocky, with occasional sweepers completely across them. The river flows for the next three kilometres in a canyon with few rocks and deep water. There are two avalanche scars to the right. The second one, running to the river's edge where the river turns left, marks the start of the next rapid section. A terrace and sand beach at the left limit just before the turn is the best starting point for a portage.

There are three sets of rapids, each divided into three distinct sections. The second section of each set is the most
difficult. It is advisable to portage around all three sets, although it is possible to line down the first set of rapids on the left limit. It is not advisable to shoot them, because it would be difficult to get ashore before the second set, which is impossible to be run safely. It may be possible to portage around the second set only, but the shoreline is broken, with 2.5 m rock walls to scale. The third set of rapids is very difficult to run and a portage is recommended.

The river continues in a canyon for the next two kilometres. It is wise to scout the canyon, and to plot a course around a number of rocks and 50 cm standing waves. For the next 18 km the river flows in a truncated, V-shaped valley, with gravel bars and terraces common in braided sections. Rock bluffs at the base of mountains often form the river’s right limit. Some turbulence can be expected in these areas.

**Corn Creek to Margaret Lake**

Corn Creek marks the end of the rapids on the Bonnet Plume. Below Corn Creek, the valley flat increases in width, and the river channel becomes predominately braided. The mountains flanking the valley are colourful and picturesque.

The river then narrows to one channel between gravel banks. The dominant feature is Corn Creek Delta, a broad expanse of unvegetated gravel along the right. Remnants of an older outwash delta can be easily seen along the walls of Corn Creek Valley. Pinguicula Lake, a beautiful lake nestled among mountains, is a 10 km hike from the delta, following the mountain slope above the north bank of Corn Creek. The river braids and at times it is difficult to locate the main channel. The delta from Pinguicula Creek is located five kilometres downstream. A picturesque canyon less than one kilometre up Pinguicula Creek is worth seeing.
The valley flat narrows as the river passes between mountains. The base of the mountain frequently forms one limit on this next 6.5 km stretch. Standing waves occur at these points. The valley broadens where Gillespie Creek enters from the left. The floodplain is broad, braided and unvegetated for the next six kilometres. The main channel is easy to locate. The river then narrows to one channel, flowing between forested banks. The start of this section is a set of twin alluvial fans directly opposite one another. The river splits into a number of channels three kilometres farther, with a broad gravel floodplain. One channel usually predominates.

There is an outfitter’s camp near the mouth of Fairchild Creek. A trail leads to Fairchild Lake from here, a distance of four kilometres. The river meanders along a gravel floodplain, occasionally splitting into several channels. A large alluvial fan forms the left limit for the next 10.5 km. The valley floor which is up to 2.5 km wide, is covered by a dominant spruce forest. Eleven kilometres beyond the mouth of Rapitan Creek, bluffs become prominent, particularly along the right. The valley broadens below this point. For the next 11 km, the left side of the valley is the last range of the Wernecke Mountains. At Margaret Lake there is often a camp at the south end that could offer emergency communication.

**Lower section**

For the last 88 km, the Bonnet Plume flows in an incised valley through the Bonnet Plume Basin. The valley flat varies in width from 1 000 to 2 500 m. The flood plain is braided, and the main channel frequently splits. Bluffs are a prominent feature along this final stretch to the Peel River. The 1:250 000 scale map indicates a gradient of 8 m/km for the last 32 km, but this seems unlikely.
Margaret Lake to the Arctic Coastal Plain

Length
5 d (152 km)
5 portages

Date of survey
Late August 1972

The Firth River is accessible by float plane only. Margaret Lake, 115 kilometres above the river’s mouth, is the only lake in the area on which float planes can land. Less than one kilometre long and 500 m wide, the lake is situated a few hundred metres back of the right limit of the Firth.

Egress would take place on the Arctic Coastal Plain. A lake adjoining Kugaryuk Creek provides ample surface for float plane landing. To reach this lake from the river a five kilometre portage over damp, hummocky tundra is required. Direction bearing for this lake is provided along the right limit by a rock knob protruding from the flat landscape. This outcrop is situated 1.5 km upstream from the mouth of Okpioyuak Creek. The lake lies in a northeasterly direction from the outcropping, or due east of the mouth of Okpioyuak Creek.

Maps required

(N.T.S. 1:250 000 scale)
117 B Davidson Mountains
117 C Demarcation Point
117 D Herschel Island
About the river

Flora
The Firth River valley supports the most northerly extension of the tree line. Isolated patches of spruce growth extend to within 16 km of the Arctic Ocean. Dwarf birch and willow are also common in the vicinity of the river banks. As a rule, spruce growth is found along the Firth River and a few adjoining valleys, among wide expanses of tundra. Farther up the slopes of the surrounding British Mountains the tundra gives way to lichens and bare rock. The Arctic coast is characterized by tundra, varying from very wet to dry. Vegetation is only centimetres high.

Fauna
Animals species indigenous to the area include caribou, grizzly bear, wolf, moose, Dall's sheep, fox and an assortment of small fur-bearing animals. The Porcupine herd of caribou uses the Arctic Coastal Plain and British Mountains region for summer range and calving grounds. Thousands of waterfowl use the Arctic Coastal Plain as favourite nesting and staging areas.

Margaret Lake to Joe Creek (29 km)
The river flows through a wide valley surrounded by gently sloping, tundra-covered slopes. The velocity varies from 11 to 16 km/h, with a few small-volume

The canoe trip
Margaret Lake is the best point to begin a trip down the Firth River. The river may be approached from the lake by a 10 min hike across dry tundra. The 32 km section of the river above Margaret Lake to the international boundary is shallow, braided and characterized by extensive gravel bars. In the vicinity of Margaret Lake the river becomes a single channel with depth enough to float a canoe.
rapids forming where the river encounters resistant rock strata or boulder bars. The water is clear, cold and no more than three metres deep, with an average depth of 1.5 m.

Joe Creek enters from the west as a wide shallow river, partially cutting into the surrounding terrain. Throughout this section of the Firth, the gradient of the river is 6 m/km.

Joe Creek to Wolf Creek
Immediately downstream from Joe Creek, the valley flats narrow considerably as vertical erosion now replaces the lateral erosion of the upper reaches.

Confronted by a range of mountains, the Firth has cut through them in a narrow, sinuous valley. Slopes, alternating between tundra vegetation and barren rock, rise straight from the river banks to heights of 300 m.

A perceptible increase in gradient to approximately 8 m/km occurs. Large-volume rapids formed by rock ledges and huge boulders characterize this reach of river. Occurring roughly every kilometre, these rapids should be approached with caution, and also scouted, although for the most part they were found to be navigable.

Wolf Creek to Sheep Creek (6.5 km)
As Wolf Creek is approached, the hill-sides on the right limit slope to the river from a distance of several kilometres. The left limit is formed by the barren rock hillsides, alternating with gently dipping spruce-covered slopes. Below Wolf Creek the river becomes incised to a depth of six metres.

Immediately below Wolf Creek a rapid has formed that cannot be navigated by open canoe. A short portage along the right limit is necessary. From this point to within three kilometres of Sheep Creek all rapids are of large volume and should be approached and scouted with care.

Three kilometres above Sheep Creek a canyon has formed. The cliff walls rise gradually as the river becomes more deeply incised. The actual entrance of the canyon is marked by the largest of the rapids encountered to this point. This set of rapids cannot be navigated in open canoe and would be very difficult, if not impossible, for a kayak.

At this point the survey crew abandoned the river. Aerial reconnaissance
and ground observations were employed to survey the remaining 60 km of river. For most of the canyon's length, the water is swift and without rapids. However, large-volume rapids have formed that cannot be navigated by open canoe. Where these rapids are located canyon walls are straight and 50 m deep. Points at which to pull out above the rapid are, as a rule, non-existent.

Sheep Creek to Arctic Coastal Plain
This stretch of river is characterized by canyon topography. Flat muskeg-covered terrain borders the top of the canyon walls for many kilometres back, on either side of the river.

Incised to a depth 50 m, narrow and sinuous, the river works its way to the Arctic Coastal Plain.

In running this section of the river many portages may be necessary, and situations will arise where even a portage is out of the question. The only available choices would be to attempt climbing the vertical walls (all but impossible), or take the risk of trying to run the rapid. Nevertheless, many of the rapids in the canyon are navigable. Only five or six cannot be run by open canoe. Kayaks, or large rubber rafts with experienced people aboard, may be able to handle the water.

The Arctic Coastal Plain
As the river enters the Arctic Coastal Plain lateral erosion again becomes evident. The canyon walls decrease in height as the river becomes very wide, and eventually the Firth River Delta is entered.

A wide floodplain is bordered by banks 15 m high. The channel is braided and interspersed by large gravel bars. Below Okpioyuak Creek the channels become more numerous as the delta forms. From this point to the Beaufort Sea, channel depth will vary from a metre to several centimetres.

Adjoining bands
In the upper reaches of the Firth river, above Joe Creek, the mountain slopes are at a distance of 1.5 to 3 km from the river, topped by craggy peaks or pinnacles. The terrain between the river and the mountains is hummocky tundra.
From Joe Creek to Wolf Creek the mountains swallow the river. From Wolf Creek to the Arctic Coastal Plain they border its left limit closely.

Valleys entering the Firth River Valley vary from narrow gorges to U-shaped troughs. Usually a small stream runs through their floors. These swift-flowing creeks are boulder-strewn, cold and very short, their source of water usually coming from run-off during mid-summer.

The Arctic Coastal Plain is in direct contrast to the 1,000 to 1,500 m British Mountains. The landscape is barren of trees, with very gently undulating relief. Vegetative cover, only centimetres high, allows a view for many kilometres in any direction. Creeks and streams crossing the plain are incised. The terrain varies from dry tundra to string bog. Hummocks are almost always present. A gentle breeze, if not a wind, is usually blowing.

Only the fully-experienced canoeist should attempt to run the Firth River. Although the survey crew did not complete the river, long and arduous portages would be involved if an open canoe were used. To abandon the river in the vicinity of Sheep Creek, would mean a hike of 50 km to the Arctic Coastal Plain.

If the river is to be attempted by kayak or raft, a thorough job of scouting the river should take place before the trip.
West of the Firth River is Komakuk Beach. Here at the mouth of Fish Creek is a Dew Line base. On Herschel Island, at the old settlement of Herschel, a trapper and his family live.

Crossing the Beaufort Sea to reach Herschel Island means open-sea paddling for at least one kilometre. The water temperature is approximately 2°C. In the case of a craft overturning in the sea, a human is given three to five minutes of survival in the water.

Black flies and mosquitoes disappear towards the latter half of August. Prior to this, insects are very numerous, especially on the Arctic Coastal Plain.

Inclement weather, frequent on the Arctic Coastal Plain, may prevent an aircraft from landing. Heavy fogs rolling in off the sea may last days at a time. This should be taken into consideration when planning a trip in this area.
Further reading


Dawson, Dr. G.M. *Report on an exploration in the Yukon District, N.W.T., and adjacent northern portion of British Columbia*, 1887, reprint 1898.


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Hume, G.S. *North Nahanni and Root River Area, and Caribou Island, Mackenzie River District*, Summary Report 1921 Part B.

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Areas covered by reports in the Wild Rivers series are outlined on the map. Shaded area is covered by this report.

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