



Guide to South Nahanni and Flat Rivers

Nahanni National Park



INTRODUCTION

The South Nahanni River and its tributary, the Flat River, flow eastward from their sources in the glaciers and snowfields of The Ragged Range. About 33 km downstream of the east boundary of Nahanni National Park, the South Nahanni River flows into the Liard, which joins the mighty Mackenzie River at Fort Simpson.

This booklet deals with a 300 km section of the south Nahanni River, from Rabbitkettle Lake to the east park boundary, and with 128 km of the Flat River, from Seaplane Lake to its confluence with the South Nahanni River. The first 21 km of the Flat River, downstream of Seaplane Lake, are not within the park.

Nahanni National Park, covering 4,766 sq km of the Northwest Territories is just to the east of the Yukon border (approximately latitude 62°). The park is only accessible by boat or aircraft. Float planes can be chartered at Fort Simpson, Watson Lake and Fort Nelson. Road access is available to Fort Simpson, Northwest Territories via the Mackenzie Highway and to Watson Lake, Yukon Territory on the Alaska Highway. Fort Simpson is 308 km east of Rabbitkettle Lake and Watson Lake is 224 km to the southwest. Common float plane landing areas outside the park are the Moose Ponds and Broken Skull on the upper south Nahanni River and Seaplane Lake, which permits easy access to the Flat River. In the park, fixed winged aircraft may land at Rabbitkettle Lake (between 1000 and 1800 hours), Virginia Falls, and Deadmen Valley. In addition, there are two possible overland and river routes which provide access to the South Nahanni watershed without the use of chartered aircraft. From Tungsten, Northwest Territories, the little Nahanni permits direct access to the South Nahanni. A second route begins at the Canol

Road crossing on the Macmillan River. Both routes are arduous and require expertise in wild river travel. Information on outfitters operating in the park can be obtained by writing the Superintendent, Nahanni National Park, Postal Bag 300, Fort Simpson, Northwest Territories, X0E 0N0.

Both the South Nahanni and Flat rivers provide superb opportunities for wild river touring. The South Nahanni River, from Rabbitkettle Lake to Virginia Falls, meanders slowly across a broad valley. There are no rapids in this scenic 118 km section (mean gradient .7 m/km). At Virginia Falls, the river plunges into the first of four great canyons, which are up to 1,200 m deep. The 116 km section from the falls to Kraus Hot springs contains some of the most spectacular canyons in Canada. The section is rated as Grade 3 (mean gradient 1.7 m/km). Although the river's dangers are often exaggerated, it is a big river with powerful currents and boils. Splash covers are recommended for canoes (Open Canadian). Downstream of the Kraus Hot springs, in a section known as The Splits, the river flows into numerous branching channels (mean gradient 1.1 m/km).

The exciting 43 km section on the Flat River between Seaplane Lake and Irvine Creek is Grade 3 in difficulty (mean gradient 3.2 m/km). Splash covers are recommended. Downstream, the river has an overall rate of Grade 2 (mean gradient 1.8 m/km).

The South Nahanni River flows into the Liard River at Nahanni Butte and joins the Mackenzie River at Fort Simpson. This section downstream of the park is navigable, but information should be obtained on a long set of rapids including those known as the Beaver Dam.

Note to Using This Pamphlet

Parks Canada assumes no responsibility for the misuse of this information, nor the failure of individuals to adequately assess their paddling capabilities. The decision to run a particular river, river segment or rapid rests solely with the individual.

Rating River Difficulty

River difficulty is rated using the six-part International River Classification System. Individual rapid ratings are called classes, while sections are called graderates. The rating system for river sections follows. The rapid rating scale is based on the same difficulty levels, but are always indicated in Roman numerals. (Class I rapids are not indicated).

Grade 1 — VERY EASY

- Suitable for novices in all boats.
- Waves small and regular. Passages clear with occasional channel bars and artificial difficulties such as bridge piers.

Grade 2 — EASY

- Suitable for Intermediate Open Canoe, Novice Closed Canoe or White Water Boat with intermediate accompaniment.
- Rapids of medium difficulty, with clear and wide passages. Low ledges, sweepers, snags, log jams and large protruding boulders may be present. Open canoes may ship some water.

Grade 3 — MEDIUM DIFFICULTY

- Suitable for Advanced Paddlers in Open Canoes and Intermediate Paddlers in White Water and Closed Boats.
- Waves numerous, high and irregular rocks, eddies and rapids with clear and narrow passages requiring precise manoeuvring. Inspection usually needed. Upper limit for open canoes, although extended reaches at this level are not recommended.

Grade 4 — DIFFICULT

- Suitable for Advanced Paddlers in Closed Canoes and White Water Boats. Not suitable for Open Canoes.
- Long rapids with powerful and irregular waves. Narrow passages through rocks and boiling eddies, requiring precise manoeuvring. Course difficult to reconnoiter from the water. Inspection mandatory.

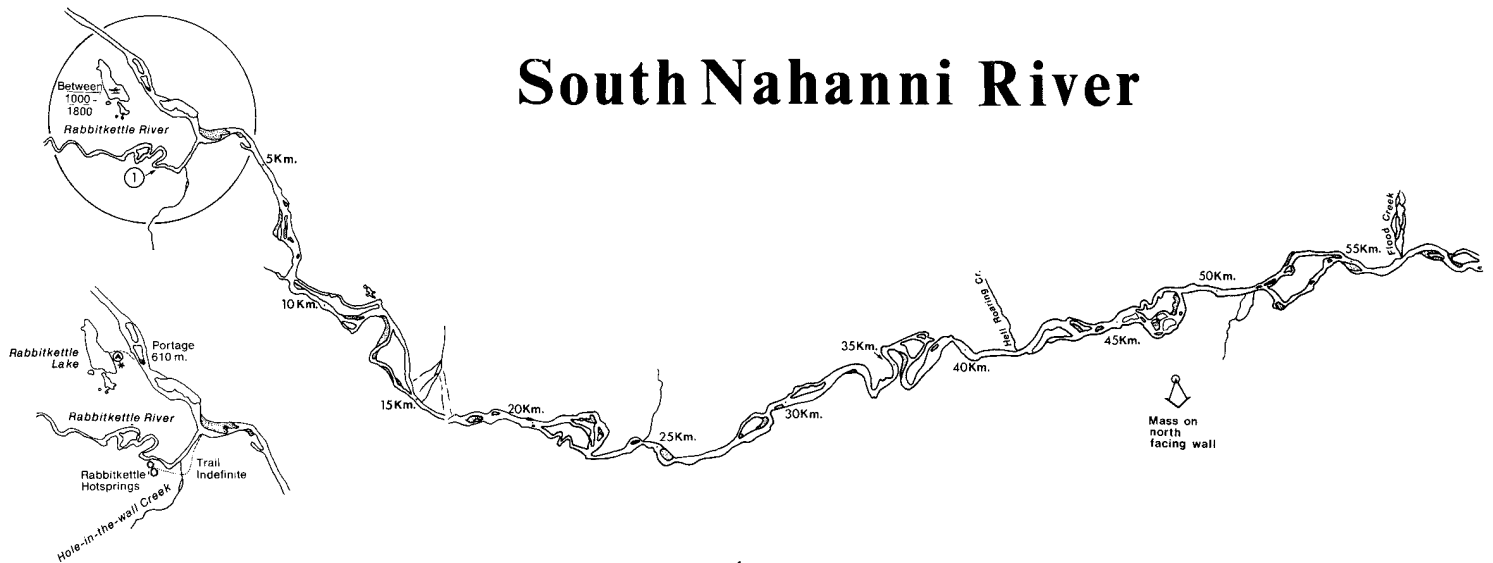
Grade 5 — VERY DIFFICULT

- Suitable for Expert White Water Paddlers only.
- Extremely difficult, long and very violent rapids following each other almost without interruption. Channel bed is extremely obstructed. Big drops, steep gradient and violent current. Inspection essential but may be difficult due to nature of the terrain.

Grade 6 — EXTRAORDINARILY DIFFICULT

- Suitable for teams of Expert White Water Paddlers, at favourable water levels and with adequate provision for rescue.
- Difficulties of Grade 5 carried to extremes of navigability. Nearly impossible and very dangerous.

South Nahanni River



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1. Rabbitkettle Hot Springs

The hot springs are a major feature on the upper section of the river. To reach them, walk 1.6 km up the southeast side of Rabbitkettle River. The trail is not well-defined and a map should be taken. Fording Hole-in-the-Wall Creek is also necessary. Like many mountain streams, Hole-in-the-Wall Creek is subject to rapid changes in water level and caution should be used in crossing.

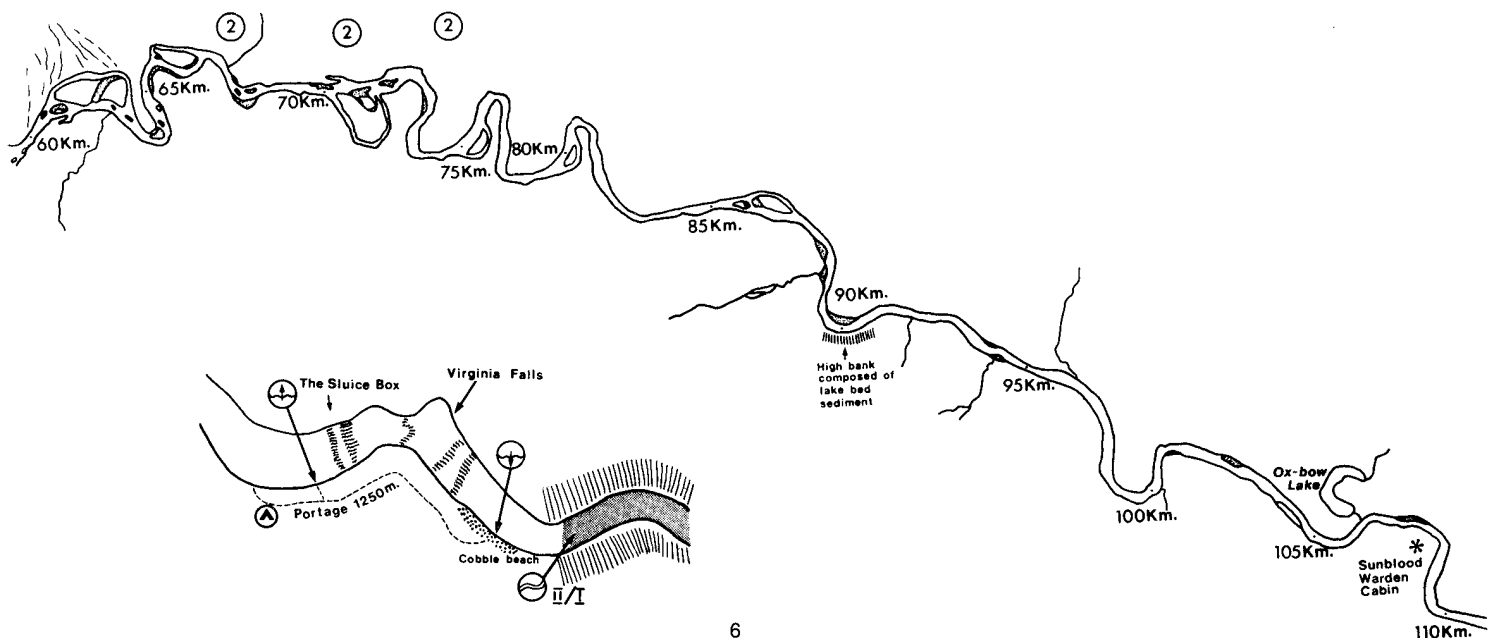
The site contains two spectacular flat-topped tufa mounds. Tufa is a rock-like substance created by the precipitation of dissolved minerals (mostly calcium carbonate) from the thermal spring water. The North Mound (nearest the river) is 27 m high and 70 m in diameter. Water emanates from a deep orifice and radiates outwards forming a series of intricate terraces called rimstone dams. Two amalgamated mounds comprise the South Mound.

On the north side of this mound, frost action has broken up the fragile tufa. Subsequent freezing and thawing action has sorted the fragments and formed a series of frost polygons, with coarse fragments on the perimeters and fine material in the centres.

The mean water temperature of these springs is 21°C, although seasonal variations do occur. The heated water is a last vestige of the great crustal energy, which formed the mountains in this area millions of years ago.

These tufa mounds are the largest of their kind in Canada. Indiscriminate human trampling can create severe damage to the intricate surface sculpture. Please stay on the North Mounds obvious trail and off the polygons of the South Mound.

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2. Alluvial Fans

Alluvial fans are created at or near the mouths of most tributary streams. These fans are composed of boulders, gravel and sand which have been transported by streams during periods of peak flow. Many of the favoured campsites occur on the smaller fans.

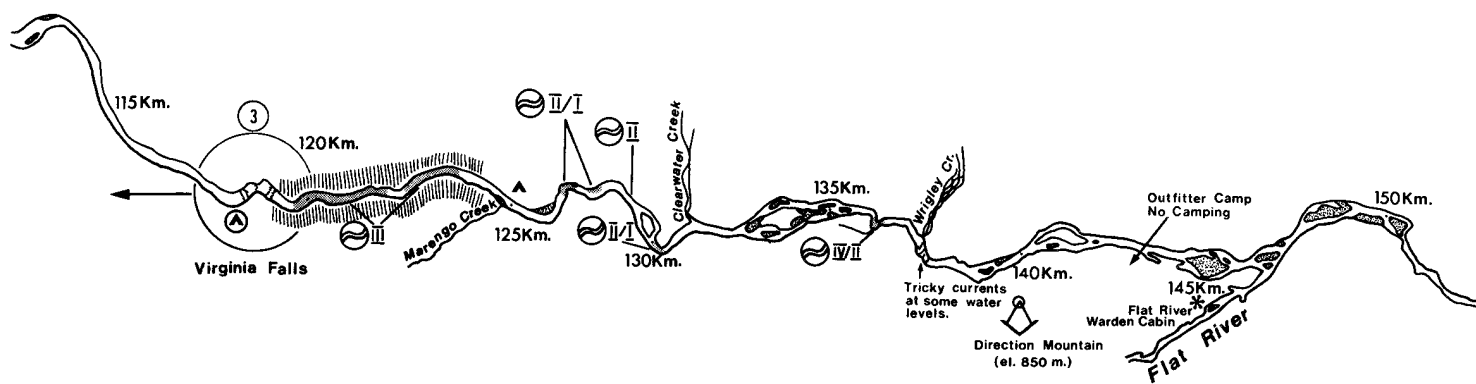
The three large fans indicated here are particularly impressive. Unlike most other mountain valleys, glaciers have been absent here for at least 100,000 years. The fans have a life span, therefore, that is at least ten times greater than similar features elsewhere. Further, the steep valley walls in this area result in confined, high gradient streams capable of moving enormous quantities of material.

The River Valleys

Over millions of years, the ancestral South Nahanni and Flat Rivers eroded deep and narrow, V-shaped valleys. About two million years ago, gradual cooling occurred, resulting in four separate periods of multiple glacial advances. The major effect of these advances was the scouring of these V-shaped valleys and the formation of U-shaped valleys.

In contrast to most of Canada, this area was not covered by ice during the last of the four advances (the most recent advance was 80,000 to 8,000 years ago). Although the area was cold enough, there was not sufficient precipitation to permit the formation of glaciers.

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3. Virginia Falls and Five Mile Canyon

Virginia Falls is among the better known waterfalls in Canada. There are two falls, 91.5 and 55 m in height, separated by a central stack.

The portage trail around the falls follows a previous course of the river, now blocked by glacial debris. In fact, the steep lower portion of the trail is located on the site of a former waterfall.

As you start the descent down to the river, a spectacular view of Five Mile Canyon is provided. This canyon was formed by the upstream migration of Virginia Falls — a process which is still continuing today. The canyon walls are particularly attractive because of the brilliant yellows and oranges in the rock.

Canyon Rapids

An almost continuous set of rapids occur along Five Mile Canyon. The rapids consist of a straight forward series of high standing waves. The difficulty of individual sections varies between Class I and III. The height of the waves increases as

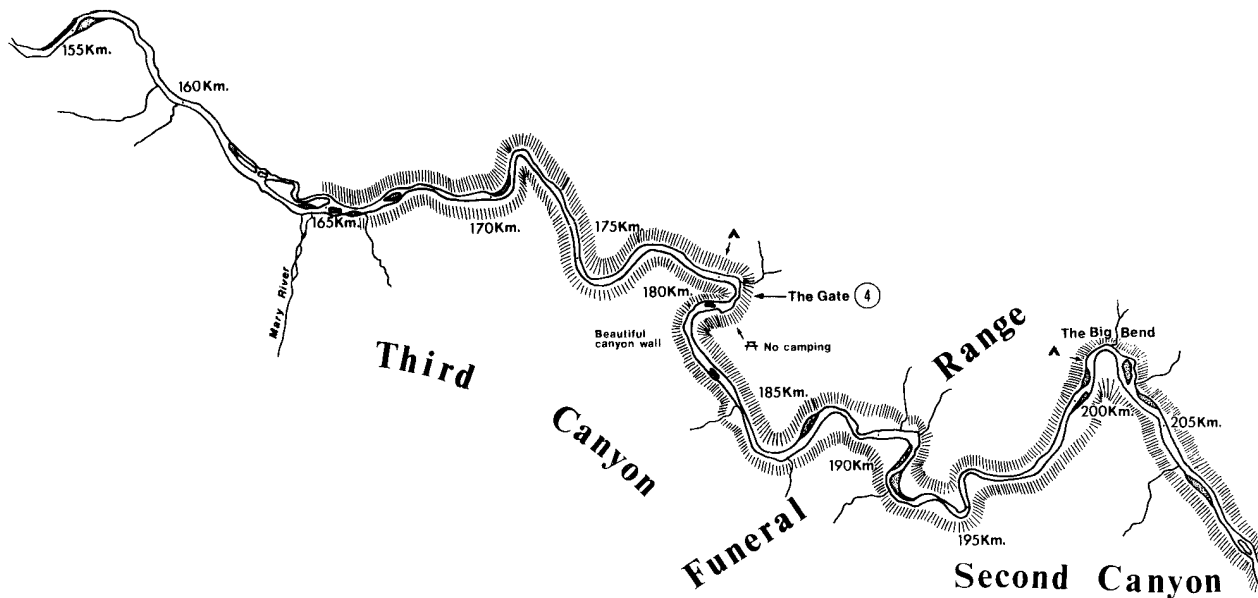
water levels rise. In most cases, the very high waves can be easily avoided. It is particularly enjoyable to run these rapids in a closed boat, or canoe with a splash cover. There are frequent spots for landing along this section.

Figure 8 Rapids

These are the best known rapids in the park. As the rapids are approached, the river makes a gentle turn to the right and flows up against a cliff face. Irregular standing waves up to 1.5 m high are created by this deflection. The channel then makes a sharp, right angled turn and enters a short gorge. However, the current does not make the turn and instead continues across the channel to pile up against a rock wall. Eddies are present on either side of the main current.

At high water, even experienced paddlers portage these rapids. As water levels drop, the standing waves diminish in height and the currents become less powerful. Reconnoitering is recommended at all water levels. The portage is easy, but a swamped boat will result in a long and cold swim!

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Third Canyon

Third Canyon is a great gash through the mountains of the Funeral Range. In contrast to the lower canyons, long colluvial slopes are present. This is because the rock is not the resistant limestone found in First Canyon, but mixed strata of shales, sandstones and limestones. Where limestone is present, such as in the vicinity of The Gate, the canyon walls are vertical.

4. The Gate

The river makes a sharp hairpin turn at this site and flows through a narrow gap flanked by a vertical wall 460 m high. It is impossible to believe that huge waves and boils are not present in this narrow constriction — but there are none. There is a distinctive pinnacle on the east side of the gap known as Pulpit Rock.

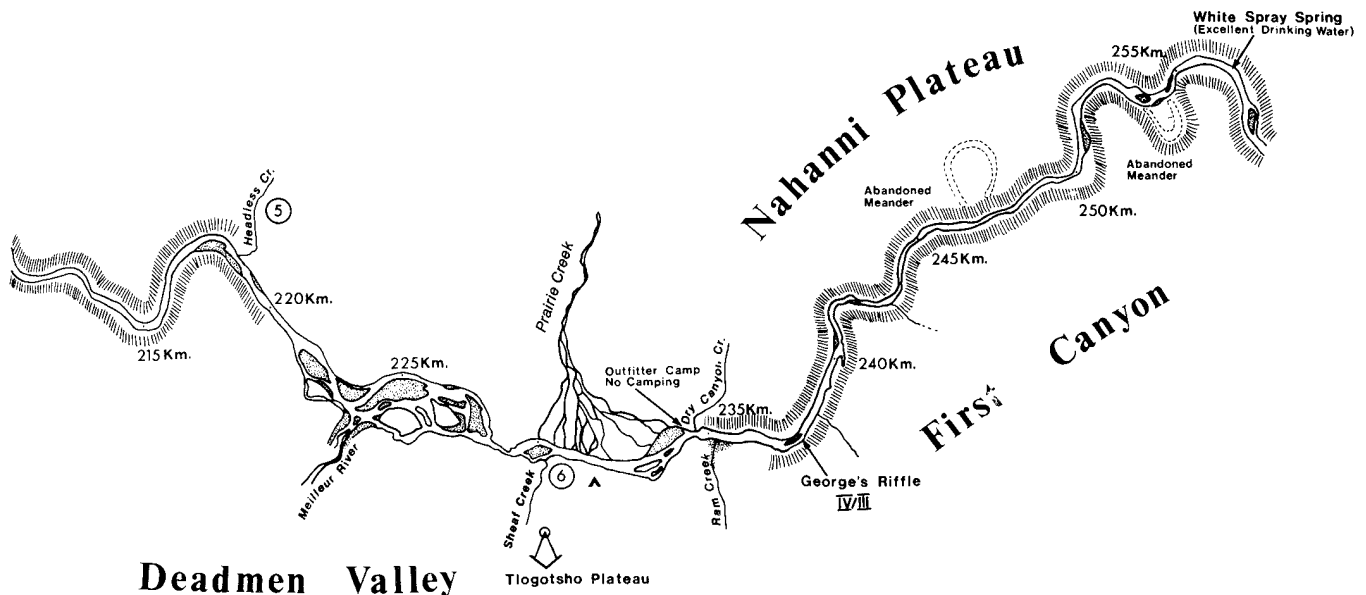
A superb view of the area is available from the top of the ridge

on the east side. Looking eastward, an old course of the river can be seen swinging around the ridge. Thousands of years ago, the river abandoned its old course for its present route through The Gate. It is believed that water began to trickle through the new route and slowly enlarged a passage along a vertical fracture in the ridge. A natural bridge, likely present during the early part of this diversion, collapsed as the passage was enlarged.

5. Headless Creek

One of the best known Nahanni legends developed as a result of the deaths of two brothers at this site. Willie and Frank McLeod started prospecting the tributaries of the Flat River in 1905. Three years later, their headless bodies were found at the mouth of this creek. Soon the stories were rampant about murder and decapitation and the entire South Nahanni River valley became known as the Headless Valley.

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Deadmen Valley

Deadmen Valley is a beautiful area between Second and First Canyons. The massive alluvial fan created by Prairie Creek is a dominant feature in the valley. Bears are attracted to this area in the early summer by the large amounts of bearberry growing on the fan. In addition, two mineral licks are present on the Prairie Creek side of the river. It is important that the Dall's sheep using these licks are not disturbed.

6. Sheaf Creek

There are several cabin sites in the valley. Raymond Patterson and his partner, Mathews, built a cabin at the mouth of Sheaf Creek, but used it only for the winter of 1928-29 (site 6). During the winter of 1939-40, a party of prospectors stayed in two new cabins they built at the site. All of these cabins have collapsed and only a few rotting base logs remain.

Behind the old Northwest Lands and Forests cabin (a designated campsite) are the remains of a cabin built in 1945 by a party of Indians on their way to trap in the Yukon.

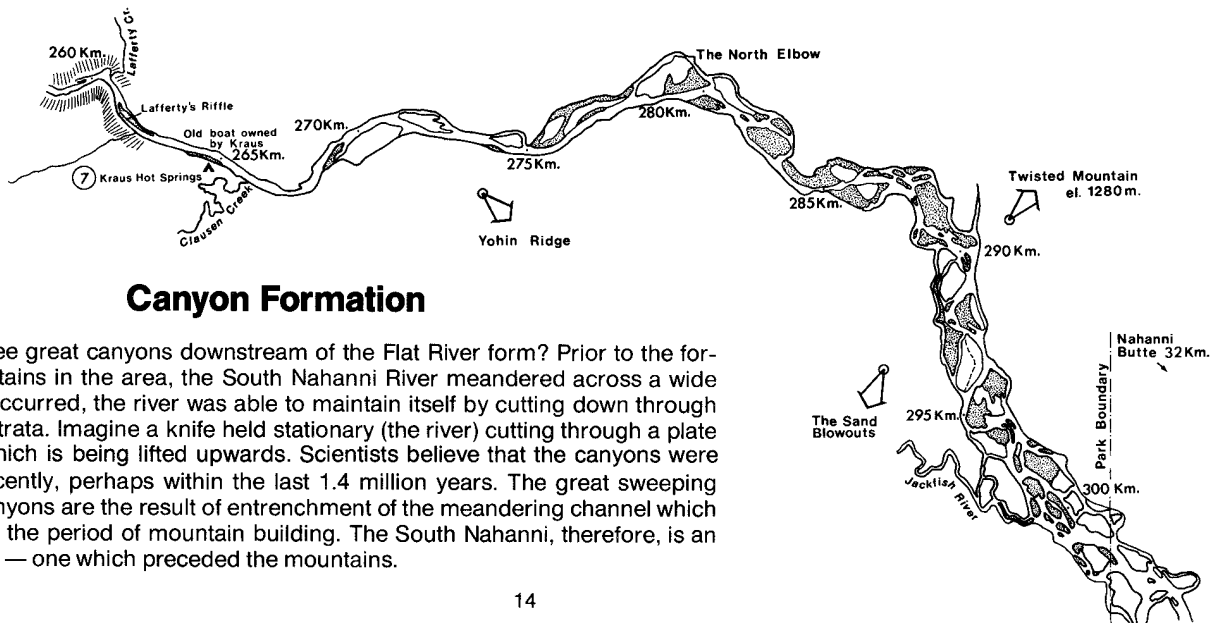
The valley provides a superb base for hiking. The Tlogotsho Plateau can be reached by an eight hour hike up Sheaf Creek.

Be prepared, however, for bad weather and an absence of drinking water. An equally spectacular 6 km hike along Dry Canyon Creek provides access to an open tundra-like plateau.

George's Riffle

These rapids are at the western entrance to First Canyon. Most of the flow is diverted to the south (right) side of the channel by a large cobble island. High and irregular standing waves are created by a low band of rock which extends into the channel. At high water, the best route is along the north channel. When the water is lower, the flow is inadequate and the south channel must be taken. The rapids should be reconnoitered from the island. There is no established portage around the rapids.

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How did the three great canyons downstream of the Flat River form? Prior to the formation of mountains in the area, the South Nahanni River meandered across a wide plain. As uplift occurred, the river was able to maintain itself by cutting down through the rising rock strata. Imagine a knife held stationary (the river) cutting through a plate of soft butter which is being lifted upwards. Scientists believe that the canyons were created very recently, perhaps within the last 1.4 million years. The great sweeping curves in the canyons are the result of entrenchment of the meandering channel which occurred before the period of mountain building. The South Nahanni, therefore, is an antecedent river — one which preceded the mountains.

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Lafferty's Riffle

Outwash material from Lafferty Creek constricts the river and results in high standing waves on the south (right) side of the channel. Irregular waves deflect off a low rock wall. At all water levels the waves can be skirted by running along the north (left) shore.

7. Kraus Hot Springs

The legends of tropical forests in the area are likely associated with these hot springs. However, you will not find ripe bananas dangling from spruce trees! The main springs are about 300 m south of the river. There are two source pools where the 35° to 36° C water bubbles up through fine mud. Warm water also emits from several locations along the banks of the river. The water enters the ground somewhere high in the Nahanni Plateau and gains heat as it traverses a deep flow system.

As the spring water surfaces, it contains all the principal com-

ponents of tufa. But there are no tufa mounds. The reason for this is the high concentration of hydrogen sulphide, which can be detected by its smell — similar to the smell of rotten eggs. As the water surfaces, sulphuric acid is formed. The acid erodes any tufa that is precipitated.

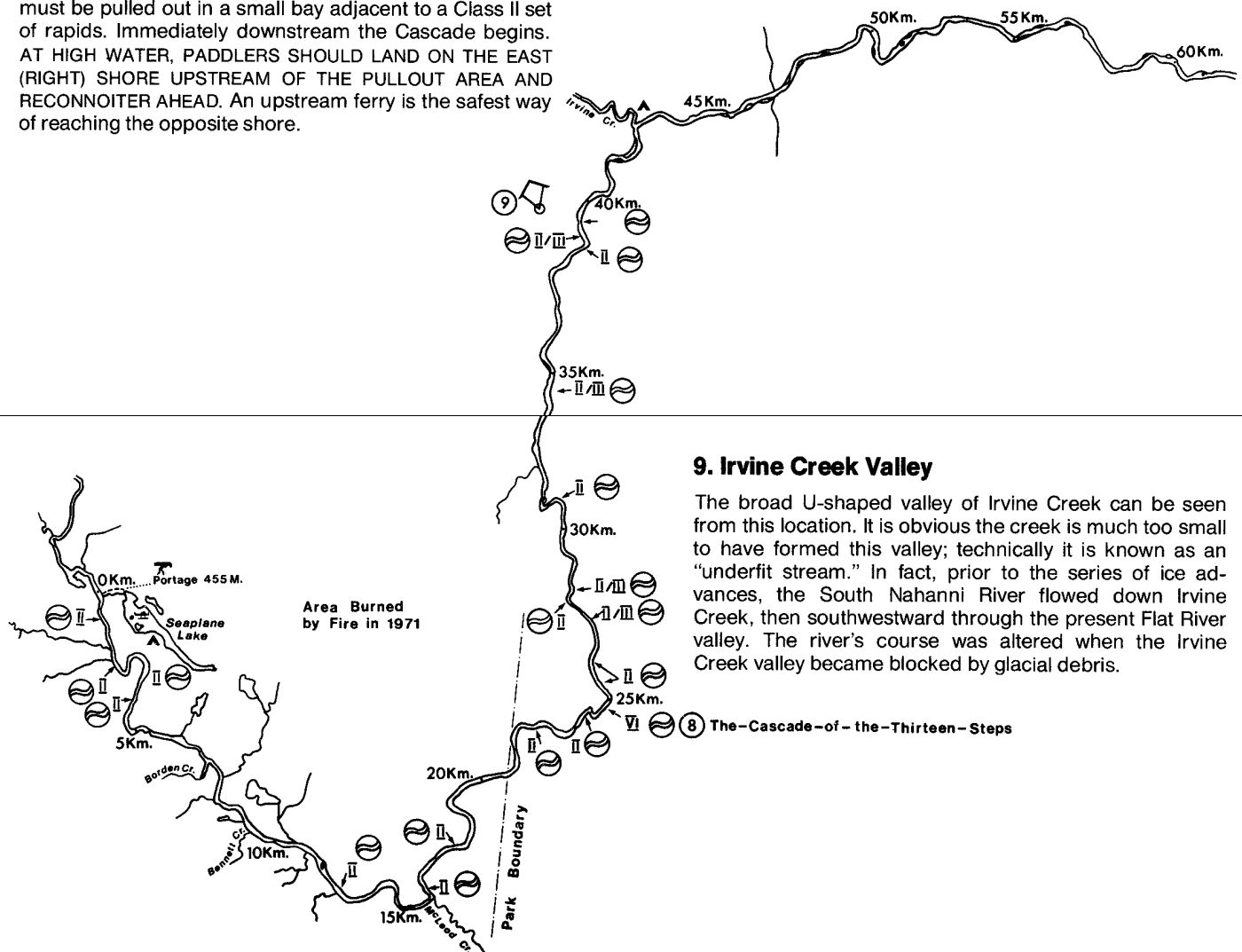
Many of the exotic plants found here (such as the prevalent garden parsnip) were introduced to the area in the gardens of Gus and Mary Kraus, who resided here intermittently between 1940 and 1971. The various outbuildings present were constructed by Kraus. Their main cabin, however, was dismantled several years ago due to its poor condition.

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8. The Cascade-of-the-Thirteen-Steps

These rapids, containing ledges and chutes, are Class VI in difficulty and must be portaged. The approach to the portage trailhead is tricky, especially at high water. Boats must be pulled out in a small bay adjacent to a Class II set of rapids. Immediately downstream the Cascade begins. AT HIGH WATER, PADDLERS SHOULD LAND ON THE EAST (RIGHT) SHORE UPSTREAM OF THE PULLOUT AREA AND RECONNOITER AHEAD. An upstream ferry is the safest way of reaching the opposite shore.

The Flat River



9. Irvine Creek Valley

The broad U-shaped valley of Irvine Creek can be seen from this location. It is obvious the creek is much too small to have formed this valley; technically it is known as an "underfit stream." In fact, prior to the series of ice advances, the South Nahanni River flowed down Irvine Creek, then southwestward through the present Flat River valley. The river's course was altered when the Irvine Creek valley became blocked by glacial debris.

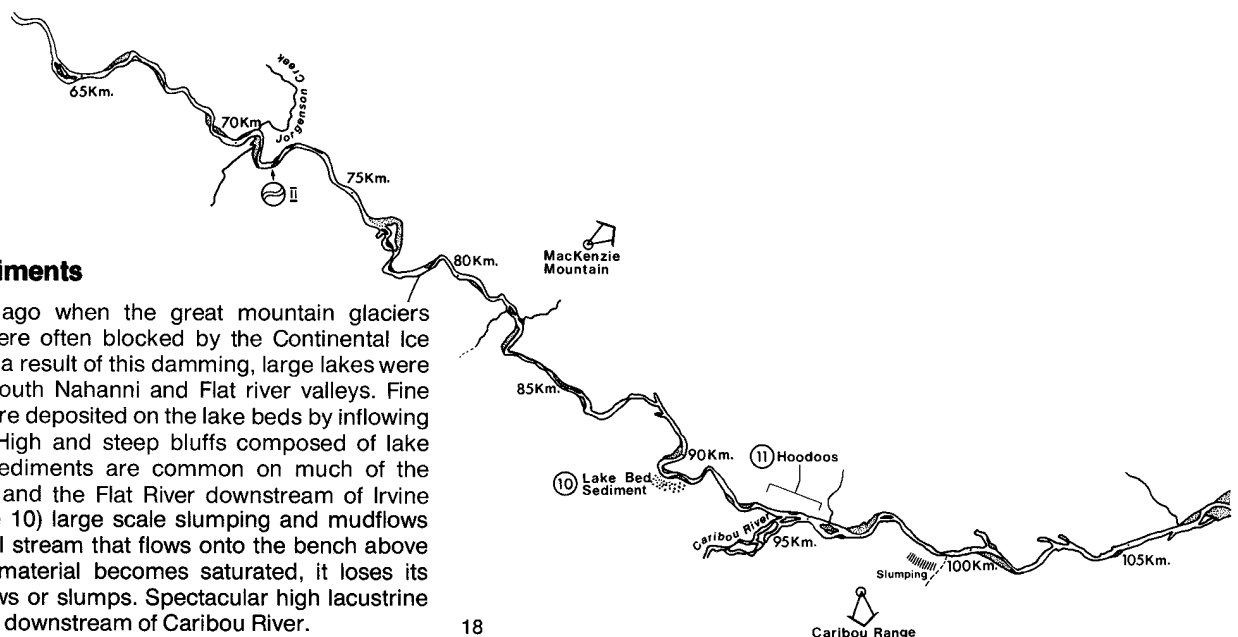
8 The-Cascade-of-the-Thirteen-Steps

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10. Lake Bed Sediments

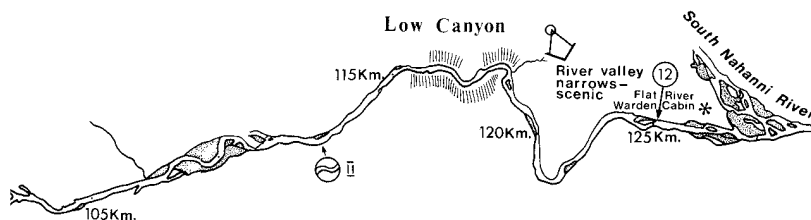
Over 100,000 years ago when the great mountain glaciers melted, the outlets were often blocked by the Continental Ice Sheets to the east. As a result of this damming, large lakes were formed in both the South Nahanni and Flat river valleys. Fine grained sediments were deposited on the lake beds by inflowing meltwater channels. High and steep bluffs composed of lake bed (or lacustrine) sediments are common on much of the South Nahanni River and the Flat River downstream of Irvine Creek. At km 91 (site 10) large scale slumping and mudflows are caused by a small stream that flows onto the bench above the bluff. Once this material becomes saturated, it loses its cohesiveness and flows or slumps. Spectacular high lacustrine bluffs are also present downstream of Caribou River.

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11. Hoodoos

Opposite Caribou River, an entire mountain side for 1.5 km is covered by hoodoos ranging from a few meters to 15 m in height. Hoodoos are pillars left after the surrounding material has been removed. These hoodoos are composed of limestone. They are the result of differential rates of erosion caused by frost shattering. In this process, water penetrates into small cracks where, upon freezing, it expands and shatters the rock. Because of localized variations in the rock composition, some areas have greater resistance to erosion than others.



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12. Faille — Sibbeston Cabin Site

The site is difficult to detect because of a dense shrub layer along the river's edge. Albert Faille built a cabin here in 1924 and used it as a base for hunting and trapping during the following winter. All that remains is a small pile of rotting logs. (Faille also built cabins along the Caribou River and Irvine and Borden creeks.) In the fall of 1944, Fred Sibbeston built a cabin at this site, while waiting with his wife, mother and five children for the river to freeze over. Once the river froze, he continued upstream to the Caribou River. The Sibbeston cabin is still intact and in good condition as a result of maintenance undertaken by staff of the Water Surveys Branch, who have used the cabin as a base. In addition, there are still the remnants of a cache built by Kraus, who wintered at the site in 1937-38.

HISTORY

The Canadian north has a fabric of legend and myth about it which is unique and highly stimulating to the imagination. The spectacular landscape of the South Nahanni area is well suited for the creation and perpetuation of these legends and myths.

In the early 18th century, Athapaskan speaking tribes travelled through and hunted in this area. These Indians were pushed westward by the more dominant Cree. The word 'Nahanni' was used by Athapaskan groups to refer to people in areas not normally visited. Literally translated, it means "People-over-there-far-away."

Gold, though, was the focus of most of the activity in the area, as

well as the source for many of the legends. Prospecting in this area occurred primarily between 1900 and 1940. Shortly after the deaths of the McLeod brothers, other itinerant prospector-trappers were attracted to the area — Field, Jorgenson, Faille, Sibbeston, Patterson and Kraus. Again, several died under supposedly dubious circumstances and the legends grew.

Most of the interest was centered on the Caribou River, and McLeod, Moose, Bennett and Borden creeks, which are all tributaries of the Flat River. While the lure of placer gold drove men through incredible hardships, no one became rich or probably even paid his operating expenses.

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Park Regulations

Nahanni is a wilderness park. Both for your protection and the protection of Nahanni's natural resources, the following regulations must be observed.

- Ministry of Transport regulations require that one approved life jacket must accompany each paddler. Spare paddles should always be carried.
- You are required to register with the park at the start of your trip. Registrations can be made at Rabbitkettle Lake, Nahanni Butte, Fort Simpson and Seaplane Lake. Check-in stations are at Virginia Falls, Deadmen Valley and Kraus Hot Springs. The registration form must be returned on completion of your trip in the park.
- You may camp at any suitable site along either river except at Rabbitkettle Lake and Virginia Falls where camping is permitted only at designated sites. Additional campsites have been established at Marengo Creek, Big Bend, Deadmen Valley and Kraus Hot Springs. Where possible, select sites on beaches or at the mouths of creeks. This helps reduce damage to soils and vegetation, and evidence of your camp will be removed during the next high water period.
- You may *not* camp at the picnic site downstream of The Gate, the outfitters' camps, warden cabins and old cabin sites (except the Forestry cabin in Deadmen Valley).

- Campfires are permitted, except during periods of high forest fire hazard. At designated sites, the facilities provided must be used. Fires may be built at other sites, provided they are within 20 m of water. Use driftwood if possible. If it is very windy or dry, use your stove.
- While in the park, burn all combustible garbage and pack out all remaining material. Do not bury garbage. To avoid bear problems, maintain a clean camp. For information about bears, read *You Are in Bear Country*, available free at all park information centres.
- If you are going to fish, you must obtain a national park fishing permit. It costs four dollars and is valid in all national parks for one season. A permit can be purchased from a park warden, at the administration office in Fort Simpson, or any other national park information office.
- It is unlawful to have unsealed firearms in the park. Guns can be sealed at Rabbitkettle Lake or Nahanni Butte. There are self-sealing stations at Rabbitkettle Lake and Deadmen Valley.
- Removal of natural or historical objects from the park is prohibited. This includes small fossils and antlers.
- Motor boats are permitted only on the South Nahanni River between the east park boundary and Virginia Falls. No fuel caches are permitted in the park except for licensed outfitters and park operations.

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GENERAL NOTES

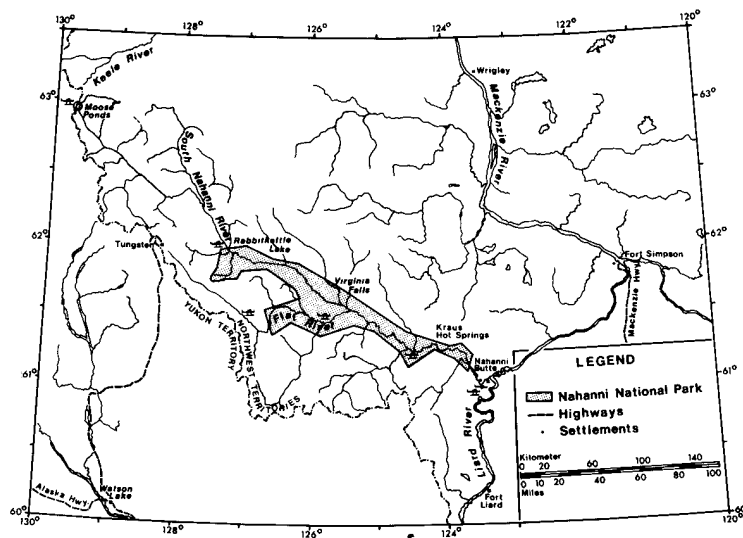
1. **Water Levels:** Water levels normally peak in late June or early July. Levels then drop considerably during August and September. However, northern rivers rise suddenly with periods of intense precipitation and considerable daily changes (of up to 40 percent) may be encountered. These changes will affect travel times and the difficulty of individual rapids. It is best to avoid running these rivers during very high water as powerful currents and high standing waves are present. Park officials can provide you with up-to-date information on water levels.

2. **Climate:** Be prepared for a wide range of weather conditions. Summer weather may be hot and dry or it could snow! Inclement weather is a good possibility on the high plateaus above the rivers. Also, low lying cloud may prevent fixed winged aircraft from entering the river valleys for several days. In such cases, some flexibility in trip scheduling may be required.

3. **Fishing:** Arctic grayling, Dolly Varden, lake trout and northern pike can be caught in these rivers. Grayling are most commonly caught. The mouths of tributary streams and snyes are favoured sites.

4. **Hiking:** A growing number of park visitors are undertaking hiking trips of one day to a week's duration during their visit. Almost any tributary valley can be explored. There are also many higher elevation trips that can be made. In addition to the high, tundra-like Tlogotsho and Nahanni plateaus, there are opportunities for some of the finest ridge walking in Canada. Trips to Sunblood Mountain and the Tlogotsho and Nahanni plateaus via Dry Canyon and Lafferty creeks are particularly popular. **YOU MAY NOT ENTER ANY CAVE IN THE PARK WITHOUT WRITTEN PERMISSION FROM THE PARK SUPERINTENDENT.**

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