



Puvirnituk River

**Safety Protocol
Prepared by : Eric Leclair**

**Prepared for : Nunavik Parks and Nunaturlik Landholding
Corporation of Kangiqsujaq**

February 2012

Table of Contents

1.1	Foreword	3
1.2	Lakes of Pingualuit National Park (km 412 – km 382)	4
1.2.1	Information	5
1.2.2	Hazards and Safety	5
1.3	Upper Puvirnituk (km 382 – km 260)	7
1.3.1	Information	8
1.3.2	Hazards and Safety	8
1.4	Allemand Lake (km 260 – km 204)	11
1.4.1	Information	12
1.4.2	Hazards and Safety	12
1.5	Lower Puvirnituk (km 204 – km 0)	14
1.5.1	Information	15
1.5.2	Hazards and Safety	15
1.6	Safety and Emergency	18
1.6.1	Group Safety	19
1.6.2	Logistics and Equipment	19
1.6.3	Emergency Phone Numbers	20

1.1 Foreword

The recommendations in this safety protocol, although based on common sense, cannot replace the sound judgement of an experienced guide when faced with a multitude of possible situations.

The survey, on which the River Map and the recommendations of this Safety Protocol are based, was completed between July 3rd and July 21st 2011. **The second section of the Puvirnituk River « The Upper Puvirnituk » was paddled at a medium water level and the fourth section « The Lower Puvirnituk » at medium to high water level.** Therefore, the River Map and the recommendations in this Safety Protocol, have been made at those particular water levels and are very accurate at those particular water levels. But on the Puvirnituk, especially between km 382 and km 296, the water level can come down quite fast, therefore changing drastically the conditions. Good scouting is always advisable!

The Puvirnituk River flows in an exceptionally wild and remote area. The climatic conditions are severe and external assistance, even if urgent, might take days to arrive, due to bad weather conditions. It is therefore very important to have a preventive attitude and sufficient experience to anticipate potential problems that, if not well handled, could lead to dangerous situations.

The most common incident is not usually a fatal swim in the rapids or the loss of a canoe, wrapped around a rock, but rather, a sprained knee or ankle while walking on shore. This minor condition usually means that the injured person cannot continue and must be evacuated. Good leadership skills include the prevention of such incidents. Every detail is important out there!

The participants must be confident running Class 3 rapids and have a lot of canoe tripping experience. Some people in the group must have river rescue and wilderness first aid skills. Some more experienced people can balance the lack of experience of others, but keep in mind that an expedition group moves only as fast as its slowest member. If some participants are too slow, because they portage or line every rapid, this can compromise the entire trip!

Note : You must register your trip with Nunavik Parks and hold an authorization issued by the park authorities. <http://www.parcsnunavik.ca/en/parks/regulations-conservation/index.htm>

1.2 Lakes of Pingualuit National Park (km 412 - km 382)



Flowing in a territory of ice, rocks and lichens, the headwaters of the Puvirnituk River offer a direct contact with the raw power of elements. At the launch point, the time frame which is free of ice is only of 20 days. Add icy winds, an average temperature of 7 C, precipitation in snow or in rain almost daily: you are in hypothermia country. It is a playground which allows no error.

1.2.1 Information (km 412 - km 382)

Length : 30 km. From km 412 to km 382.

Best time of travel : July. There is 15 shallow areas of approximately 300 m each, for a total of 4,4 km of lining/portaging over the 30 km of that section. The earlier you are, the more water there is over those shallow areas, but keep in mind that the lakes start to melt beginning of July.

Estimated time of travel : 3 days, + 0-3 days depending on ice cover and weather (high winds).

Interests : Pingualuit Crater and good fishing.

Landscape : Moonland. Rising 500' above the flat ground, the crater rim is visible for 30 km. Lot's of flat grassland and beaches offer good camping sites. Some eskers offer good views.

How to get there : Twin-Otter airstrip at lake Laflamme or canoe up the Vachon (330 km).

Other information : You must register your trip at the Pingualuit National Park office.

Dangers : Rock gardens, high winds, ice cover and cold temperatures.

Difficulty : Zone 2 : Navigation on big lakes. Some lining and hauling is needed between lakes.

Topographical maps : 35H/5E, 35H/6W.

1.2.2 Hazards and Safety (km 412 - km 382)

Guiding ratio :

One Guide 2 for four canoes. FQCK certifications for Guide 2 are : EV III + SEV II + CC III.

Participants :

Provided beginners line or portage the few rapids, no experience is needed.

Equipment :

Average temperature in July is 5,6 C. Needless to say warm clothing and good rain + wind gear is mandatory. Sleeping bag with a least 4 inches of loft in a good waterproof bag.

Good 3 or 4 season tent, that can withstand winds around 100 km/h. Don't drop anything!

Since there is nothing to build a fire from, good clothing is mandatory. Polyester fiber that can dry quickly and stay warm, even if wet, is preferable. Candlelight or stove provide extra warmth.

River travel :

* Rock gardens : The numerous shallow areas must be crossed carefully, especially if you choose to run the few rapids which contain many rocks!

* High winds : Extra care must be taken while crossing those lakes to stay together. The guide should be nearby to help bring a team to shore, if a boat capsizes in this cold water. Avoid travelling if it is windy, especially if you must travel upwind of an ice pack. Throw bag handy.

* Ice cover : Travel together on them, to help people get on and out of the many ice packs.

Safety:

The numerous shallow areas must be crossed carefully, especially if there is enough water to run them. Some of them have a good slope, making it hard to manoeuvre your boat properly while still offering plenty of opportunities (rocks) to wrap your boat.



It is a good idea to stay together on the lakes, to help people get on and off the many ice packs. Some are very thin and unstable, making it safer to be near each other and the canoe.

**Transportation/Evacuation :**

In case of minor injuries, the best way to get out of this section, would be to paddle up to the Twin-Otter airstrip at lake Laflamme and be evacuated from there by plane. Otherwise, if more urgent, there is plenty of helicopters in this area, operating for the different mining companies near the Pingualuit National Park area. See their phone numbers at the end (section 4.6.3).

1.3 Upper Puvirnituk (km 382 - km 260)



The first 60 km flows through a small Canyon and presents an average slope of 0.3% which translate into an almost continuous class I + II rapid all the way down. However, great care must be taken between km 364 to km 356. The river gradient in this particular 8 km section is 0.6% and translate in a series of long and turbulent rapids.

The next 60 km presents an average slope of 0.1%, but the rapids are grouped in a few big sets. With all the tributaries that flows in the Puvirnituk, the river is 3 times bigger and a class III here is much more impressive than in the first part.

Keep in mind that the Puvirnituk River is the northernmost river in Nunavik and because of the numerous rocks that dot every rapid, a capsized here can have bad consequences.

1.3.1 Information (km 382 - km 260)

Length : 122 km. From km 382 to km 260.

River Gradient : 0.2% From 1550 to 700 feet.

Best time of travel : Two first weeks of July. The river can be in flood anywhere between mid-June to the end of June. After this, the water level quickly goes down, and the first 42 km of this section will most likely involve lining, hauling and portaging as soon as beginning of August.

Estimated time of travel : 5 days, + 1-2 days depending on weather (high winds).

Interests : White water, archaeological sites, canyon and wildlife (falcons, caribous, wolves etc).

Landscape : The river slowly cut its way down through the plateau and offers great views for 35 km, while it flows down in a small canyon with 400 feet walls on each side. The next 50 km are a nice valley with gentle slopes between 200 and 300 feet. Apart from the canyon section, there are many good camping opportunities and nice views to observe the many caribous in this area.

How to get there : Via Lake Saint-Germain or down an old Inuit portage (8 km) from Lake Laflamme to km 358 on the Puvirnituk, right at the beginning of the canyon. This alternative also allows to skip the most technical part of this section, which is between km 364 to km 356.

Other information : Using this old Inuit portage leaves you with only 18 km of possible dry river bed (instead of 42 km) and allows you to travel the Puvirnituk in August or even September

Dangers : Continuous rapids. Beginning of July, high water and ice undercuts can be very tricky.

Difficulty : Zone 4 : RII + RIII + RIV which are almost continuous between km 364 and km 356.

Topographical maps : 35H/5E, 35H/5W, 35G/8, 35G/7, 35G/6, 35G/3, 35G/4.

1.3.2 Hazards and Safety (km 382 - km 260)

Guiding ratio :

Two Guides 3 for four canoes. FQCK certifications for Guide 3 are : EV IV + SEV II + CC IV.

Participants :

Participants require 500 km of river tripping experience and the equivalent of EVII.

Equipment :

Average temperature in day time is around 7-8 C. Needless to say warm clothing and good rain + wind gear is mandatory. Sleeping bag with a least 4 inches of loft in a good waterproof bag.

Drysuit or wetsuit is mandatory here and canoes must be equipped with airbags, painter ropes etc

Safety:

Most of the rapids follow the same general pattern : They start off nice and gentle and slowly increase in volume and difficulty as the water concentrate into a small and powerfull chanel as it goes over the last drop, full of boulders. If you can't see a safe landing spot to avoid the last drop, be sure to scout it well in advance.



Since the water level of this section drops dramatically from the beginning to the end of July, chances are that the water level will be low. The numerous rocks that are present at low water level, requires precise manoeuvring to avoid wrapping your boat around one of them.

**Transportation/Evacuation :**

Between km 360 and km 340, you are within a 20 to 30 km hike to Manarsulik Camp at Lake Laflamme. There is also a cabin on top of the hill at km 360 and a camping platform with some emergency gear at km 340. There is also a possible landing area for a Twin-Otter at km 312 on Natirnaalik Island. Otherwise, if more urgent, there are plenty of helicopters in this area, operating for the different mining companies near the Pingualuit National Park area (4.6.3).

River travel :

- * Km 365 to km 362 : This rapid start with 1.5 km of RI + RII which grows to a RII-III for an other 1.5 km and ends with a good RIII-IV at the end. Try to stop to have a look at this last drop.
- * Km 360.5 : This RIV is not to be underestimated. Portage is an easy alternative on river left.
- * Km 359.5 : Chicken line on river right + some lining/hauling at the end to avoid the RIV drop.
- * Km 308 : With the added water from the tributary at km 340 and km 322 this rapid is quite big.
- * Km 297 : This rapid start as a nice RII-III but quickly grows to a RIII-IV and then a RIV-V with a nice RIII right after it, to make sure your canoe is properly wrapped or wrecked... It's better to line the first RII-III on river left to cut through the land, via a small portage to avoid the big stuff.
- * Km 295.5 to km 293.5 : With the addition of the water from Lake Nantais and Flaherty at km 296 those 3 RIII in this section are quite impressive, please adjust your lens...
- * Km 263.5 : With the addition of the water from Lake Bélanger and Dumas, the river is now three times bigger than it used to be in the first 60 km of this section. Great care must be taken to get out somewhere in the RI, before the RIII-IV, which turns into a SV followed by 1 RIV + 2 RIII ... Providing you are confident with your lining skills, it's possible to line this rapid on river left. The last RIII ends with a good RIII-IV full of boulders! Good scouting is advisable.
- * Km 260 : Short but powerful, the Upper Puvirnituk says a wet goodbye with a nice RIII-IV.

Ledge V at km 263



1.4 Allemand Lake (km 260 - km 204)



Lake Allemand is 40 km long, of which the first 20 km is about 5 km wide. No need to say that the wind can quickly raise big waves and make it particularly dangerous to travel away from the shore on this ice cold water.

Most of this section is flat land, with small hills, therefore making it difficult for orientation as there is very few landmarks. Don't rely on the islands either, since most of them only rise a few feet above the water level and are barely visible. Stay together.

1.4.1 Information (km 260 - km 204)

Lenght : 56 km. From km 260 to km 204.

River Gradient : 0% From 210 to 200 meters.

Best time of travel : July – August – September.

Estimated time of travel : 2 days, + 0-2 days depending on weather (high winds).

Interests : Shrub tundra, wildlife (birds, caribous, wolves etc) and good fishing.

Landscape : Most of this section is flat land with small hills (100 to 200 feet) making very few landmarks while crossing this 40 km long lake, which the first half is 5 km wide. Many islands are barely visible since they only rise a few feet above the water level. Lot's good camping sites.

How to get there : Twin-Otter airstrip at lake Laflamme + canoe down the Puvirnituk (150 km).

Other information : Recent fox trap lines suggest people from Puvirnituk do come here in winter time. There is one cabin in poor shape at km 222.

Dangers : High winds and cold water.

Difficulty : Zone 3 : Navigation on big lakes.

Topographical maps : 35G/4, 35B/13.

1.4.2 Hazards and Safety (km 260 - km 204)

Guiding ratio :

One Guide 3 for four canoes. FQCK certifications for Guide 3 are : EV IV + SEV II + CC IV.

Participants :

Provided beginners line or portage the few rapids, no experience is needed.

Equipment :

Average temperature in day time is around 8-12 C. Needless to say warm clothing and good rain and wind gear is mandatory. Sleeping bag with a least 4'' of loft in a good waterproof bag.

Drysuit or wetsuit is mandatory here and canoes must be equipped with all the outfit.

River travel :

* Km 210 : Chicken line on river left.

Safety:

Lake Allemand is 40 km long, of which the first 20 km is about 5 km wide. If you choose to cut through it right in the middle, be aware that the wind can catch up and quickly raise big waves... In case it's windy, be sure to travel on the downwind side of the lake, to be pushed towards the shore in case of a capsized. Even on a sunny day, keep in mind that the water is ice cold.



Most of this section is flat land with small hills, therefore making very few landmarks as you go across this 40 km long lake. Don't rely on the islands for orientation purposes, since most of them only rise a few feet above the water level and are barely visible. Stay together.

**Transportation/Evacuation :**

There is plenty of space to land a float plane here. If not available, an helicopter might be in close range from the mining companies. See their phone numbers at the end (section 4.6.3). There is one cabin, at km 222, that can offer some shelter, but it's not clean.

1.5 Lower Puvirnituk (km 204 – km 0)



With the addition of the « Little » Puvirnituk River into Lake Allemand, the Puvirnituk is now a huge river... Rapids here are so big, so wide, that most of them would deserve two different ratings for each side. While scouting the rapids, make sure you have a correct assessment of the current strength and the real size of what's in front of you.

There are also lots of lakes and wide river segments in this section. Considering dominant winds come from the North West, you will have to paddle with an average headwind of 40 to 50 km/h. The winds will dictate progression and so, a few days of waiting are to be expected.

The Puvirnituk watershed is 30 000 km². Despite it is smaller than the 40 000 km² of the George River, since you will be paddling it earlier in July, the water level here will likely be much higher than what you could find on the George in August or even in July. The Lower Puvirnituk is truly a monster of energy ...

1.5.1 Information (km 204 – km 0)

Length : 204 km. From km 204 to km 0.

River Gradient : 0.1% From 200 to 0 meters.

Best time of travel : July – August – September.

Estimated time of travel : 9 days, + 0-3 days depending on weather (high winds).

Interests Whitewater, waterfalls, fishing and archaeological sites.

Landscape : Mostly flat land with a few hills no more than 150 feet high. From km 74 to km 68, and from km 42 to km 40, there are very pretty small valleys, with 100 feet slopes on each side. Everywhere in this section, there is plenty of flat ground available for camping.

How to get there : Twin-Otter airstrip at lake Laflamme + canoe down the Puvirnituq (210 km).

Other information: There are two cabins at km 92 and we found the first tree at km 86.

Dangers : Falls, ledges + huge and powerful rapids. Wide river and cold water.

Difficulty : Zone 4 : Navigation on big and wide river, that is exposed to high winds.

Topographical maps : 35B/13, 35B/12, 35C/9, 35C/8, 35C/10, 35C/7, 35C/2, 35C/3.

1.5.2 Hazards and Safety (km 204 – km 0)

Guiding ratio :

Two Guides 3 for four canoes. FQCK certifications for Guide 3 are : EV IV + SEV II + CC IV.

Participant :

Participants require 500 km of river tripping experience and the equivalent of EVII.

Equipment :

Maximum temperature in day time is around 12-16 C. Needless to say warm clothing and good rain and wind gear is mandatory. Drysuit or wetsuit is mandatory to travel on this mighty river.

River travel :

* Km 204 : Portage river left. If water level allow it, lining is also possible, but good skills are required as there are many « déflecteurs » to be crossed which will require two ropes.

* Km 193 : Portage (300 m) + line (300 m) and portage (100 m) on river left.

* Km 191.5 : River right.

* Km 186 : Line on river right. If you choose to run it, there is RIII-IV sneak passage (2 m) on river right, but be sure to stop before the next RIV, which you will line on river right. Beware!

* Km 182.5 : Easiest channel (RII) is between the two islands. Scout the next RIII, it's big!

- * Km 154.5 : A SIV cut the river from river right almost all the way across. A 50 m portage on river right allow to skip the SIV, but river left is probably a better option.
- * Km 145.5 : There is a small 2 m channel on river left that avoids all the holes in this RIII-IV.
- * Km 135 : Technical lining on river right allows you to avoid the S5 and skip the portage.
- * Km 133 : There is a chicken line on river right, but you must stay there! Some lining on river right is also a good idea, to avoid the many rocks that can either send you right in the middle (you don't want to go there) or provoke a capsize, just above 24 m of waterfalls on river left...
- * Km 130 : 24 meters of falls (over 1 kilometer) oblige to a portage on river right.
- * Km 90.5 : If you land on the island, it's an easy line on the left side of it, to avoid the rapid.
- * Km 75 : From river left, it's an easy line over the S4 and a 100 m portage to skip the RV-VI.
- * Km 67 : Two short portages on river left (to avoid the big stuff) allow to run most of this rapid.
- * Km 65.5 : 200 m portage on river right.
- * Km 64 : Line on river right.
- * Km 46.5 : The portage on river left seems easier. From river right, you have to paddle through the backwash of the fall and run a RIII-IV. Beware of the strong current upstream of this fall.
- * Km 45 and km 44 : Carry your canoe on river right.
- * Km 36 : This rapid is long and technical and ends up in a powerfull RIV-V. At our water level, middle-right was the best line. Then skip the RIV-V via a 100 m portage on river right. Beware!
- * Km 7.5 : River left is the best line.
- * Km 4.5 : Thank God we made it!

Note : Tides are small and only affect the last 4 km of the journey, before reaching Puvirnituq. For all information related to tides, you can go to the Fisheries and Oceans Canada website at : <http://www.lau.chs-shc.gc.ca/english/Canada.shtml> Look for North Kopac Island, station # 4548.

Safety:

With the addition of the « Little » Puvirnituk River into Lake Allemand, the Puvirnituk is now a huge river... While scouting the rapids, make sure you have a correct assessment of the current strength and the real size of what's in front of you.



There is also lot's of lakes and wide river segments in this section. Considering the temperature of the water and the strong winds that can lift up big waves on those segments great care must be taken while crossing them. It might be a good idea to wait for better conditions if it's too windy!

**Transportation/Evacuation :**

In case of minor injuries the best way to get out of this section, would be to paddle to Puvirnituk. A boat pick-up from Puvirnituk can also be arranged to meet you on Puvirnituk Lake until km 35. If more urgent, there is many lakes and opportunities to land a float plane here. If not available, an helicopter might be available from Puvirnituk or the mining companies (see section 4.6.3). There is also two cabins, at km 92, that can offer some shelter while waiting to be evacuated.

1.6 Safety and Emergency



Good technical river skills are mandatory but good judgment is even more important! Harsh weather conditions can prevail here and high winds can impair outside help for many days. Be smart, avoid any potentially risky and hazardous situation.

No one wants to have to deal with an emergency situation, but if it happens you should be prepared to respond accordingly. In this regard, a 40-hour first aid course is truly a minimum.

If you do have to deal with an emergency, don't lose sight of your group safety, which often is left aside, being exposed to hypothermia, since everyone is focusing only on the victim. Also, after you have stabilized the situation, take a few minutes to gather information and establish a good communication plan, before you call for external help. Make sure you know your exact location, situation of the injured person, signs and symptoms, full set of vital signs, what do you need exactly and what will be the next steps and needs to evacuate this person + his equipment.

1.6.1 Group Safety

In order to ensure a safe trip, guides must carry the full topographical maps of the trip and carry a GPS device in order to give their exact position at all time. Topographical maps are available at : <http://www.aqpc.com/> or <http://geogratis.gc.ca/geogratis/fr/collection/detail.do?id=10119>

Every group must also carry an irridium satellite phone <http://www.iridium.com/> with an extra battery as well as a SPOT device with extra lithium batteries. <http://international.findmespot.com/>

It is also a good idea to register every participant at Air Medic, who offer specialized services for evacuations in such remote places. AIR MEDIC : (866) 673-3838 or <http://www.airmedic.net/>

Since you may encounter a lost polar bear, any combination of those items; noise can, bear bangers, bear spray, emergency flares and a shotgun should be part of your outfit. Have a look at the Parks Canada brochure : <http://www.pc.gc.ca/eng/pn-np/nl/torngats/visit/brochures.aspx> Remember that those articles are dangerous goods and must respect specific transportation rules. First Air Cargo (514) 631-8560 or go to : <http://www.firstair.ca/> Air Inuit Cargo (819) 964-2935 or go to : <http://www.airinuit.com/en/index.aspx> For all dangerous goods to be transported in Nunavik, First Air recommend that you contact Dangerous Goods Consultants (DGC) : (514) 684-0424 or <http://pages.total.net/~dgc/index.html>

Since there is virtually no wood in the Puvirnituk area, you must carry one or two gaz stove and several naphta containers for cooking. Those containers and the gaz stoves can go on the regular cargo flights, provided they are brand new, otherwise they are also considered dangerous goods and must comply with specific transportation rules. Of course the naphta gaz itself is considered dangerous good and must meet specific packaging rules in order to go on the cargo flights. Depending on availability, you might find some naphta gaz at the COOP store in Kuujjuaq.

Other usefull information for the preparation of your expedition can be found on Nunavik Parks website : http://www.parcsnunavik.ca/docs/pdf/en/Expedition_Planning_Guide_PNP_2mai11.pdf

1.6.2 Logistics and Equipment Recommendation

Nunavik Parks allow you to buy single seats on their Twin-Otter charter flights, from Kuujjuaq to Pingualuit National Park, therefore making it quite affordable to paddle either the Vachon or the Puvirnituk. Reservations must be made through Inuit Adventures info@inuitadventures.com.

Since the most recent Transport Canada regulations prohibit passengers to travel with their canoes in a Twin-Otter and considering the costs involved, carrying an inflatable canoe or packboat is much cheaper. However, if you still prefer a rigid canoe, a cheaper alternative is to send it by boat, via Desgagnés, to Kangiqsujuaq the previous fall and ask the Pingualuit National Park authorities to tow your canoe on a komatiq by snowmobile to the Crater in winter time.

1.6.3 Emergency Phone Numbers

Before you go, make sure you confirm those numbers and inform the Kuujjuaq Police Department of your trip. Emergency Kuujjuaq Police phone number is : 1-800-964-2644. Kuujjuaq Police Department encourage expeditions to put them on your SPOT contact list in case of emergency. For more information, you can also contact Deputy Chief Tristan Greene, Director of Operations for Kuujjuaq Police Department at (819) 964-2488. You should also add info@nunavikparks.ca to your SPOT list of recipients.

Pingualuit National Park – Kangiqsujuaq office : (819) 338-3282
Pingualuit National Park – Kangiqsujuaq garage : (819) 338-1295
VHF radio : Transmission : 155.37 Mhz and Reception : 151.38 Mhz

Nunaturlik Landholding Corporation of Kangiqsujuaq : (819) 338-3368
Fire Department of Kangiqsujuaq (Rescue team) : (819) 338-9000
Police Department of Kangiqsujuaq : (819) 338-9111

Landholding Corporation of Puvirnituk : (819) 988-2825
Fire Department of Puvirnituk : (819) 988-9000
Police Department of Puvirnituk : (819) 988-9111

You can also call the air transportation companies that operate in Nunavik.

Air Inuit Dispatch in Montreal (Medevac) : (866) 661-8456
Air Inuit Dispatch in Kuujjuaq (Charter Flights) : (819) 964-0548
Nunavik Rotors (Helicopters) : (819) 964-1185
Johnny May's Air Charter : (819) 964-2662

Different mining camps around the Pingualuit National Park, might provide an helicopter.

Company	Resource	Phone number
Canadian Royalties	Dispatch :	(514) 879-1688 # 2518
	Foreman : Gilles Gagné	(514) 879-1688 # 2616
Xstrata Nickel	Dispatch :	(819) 762-7800 # 9 + # 5120
	Safety : Maurice Lefebvre	(819) 762-7800 # 9 + # 5623