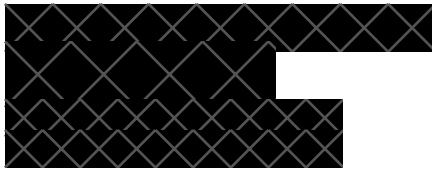
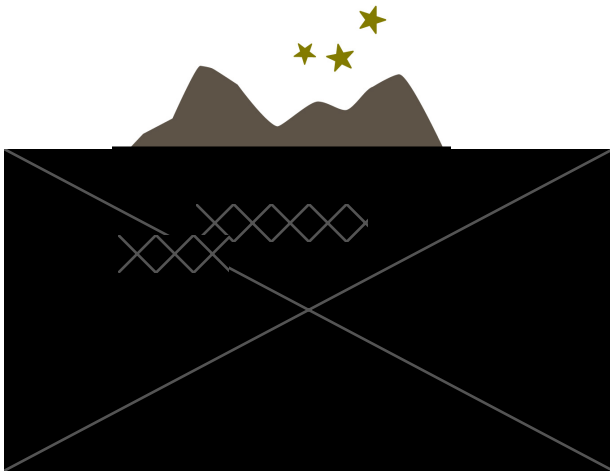


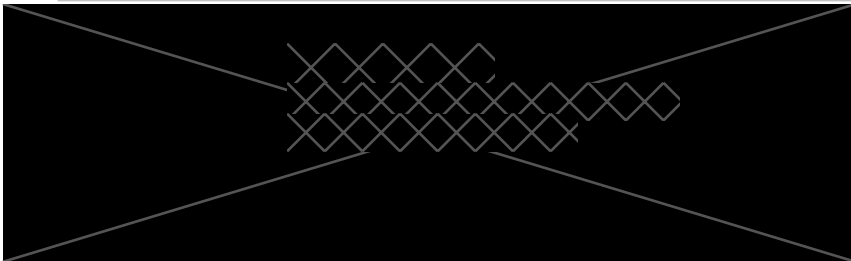
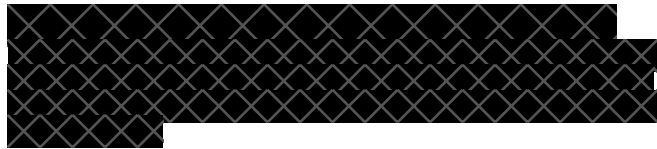
Registration Summary

RKMF Expedition Grant (GROUP APPLICATION)
2014/2015



Registration

Oct 30, 2014-
Aug 31



Expedition Name

In The Steps of Alexander Mackenzie

Objectives

We will be traveling to the Great Bear Rainforest in British Columbia to hike the historic Alexander Mackenzie Heritage trail. We have carefully planned a 13 day hike across the Alexander Mackenzie Trail, an ancient trail used by aboriginal tribes to travel from the interior of British Columbia to the coast.

Our Primary goals for this trip are to:

- Safely explore this pristine, expansive wilderness area before it is forever changed by fossil extraction and transportation.
- To implement and increase our Leave No Trace skills
- To enhance our trip planning skills
- To foster a supportive and positive group dynamic to ensure a safe and memorable expedition.
- To use the wilderness setting to reflect on our college experiences and appreciate the importance of

friendship as we navigate life post-graduation.

-To increase our knowledge of the temperate rainforest flora and fauna.

-Most importantly, to minimize risk as we build on our existing outdoor safety skills.

Why the Great Bear Rainforest?

With over 6,200 square miles protected as 'conservancy' land, the Great Bear Rainforest is one of the largest remaining tracts of unspoiled temperate rainforests left in the world. However, due to the approval of the Northern Gateway Pipeline Project, the next five years will bring crude oil tankers regularly passing this currently pristine boreal wilderness area. This is likely the last opportunity we will have to visit a temperate rainforest of this size and integrity.

Location

Our proposed destination is the Alexander Mackenzie Heritage Trail (AMHT) in British Columbia. The trail is located in the Caribou Chilcotin Coast Region, beginning near Quesnel and stretching west until it reaches the Sir Alexander Mackenzie Provincial Park in the Dean Channel. We will hike an 85 mile section of the trail, beginning at Tsetzi Lake near Pan Philips Fishcamp, heading west to the Dean River and through Mackenzie Pass in Tweedsmuir Provincial Park, and ending in the Bella Coola Valley.

Departure Date

Aug 8, 2015 12:00am

Return Date

Aug 23, 2015 12:00am

Days in the Field

13

Wilderness Character

We will be in British Columbia's Chilcotin country, the plateau and mountain region inland of the Coast Mountains. Our route will lead us through the Great Bear Rainforest (also known as the Central and North Coast forest), one of the world's largest remaining undisturbed temperate rainforests. The first section of our route will be shielded from heavy rainfall by the Coast Range to the east. Beginning at Tsetzi Lake at km# 192, we will quickly begin paralleling the Blackwater River as we hike through grassy meadows interspersed with Lodgepole pine forest.

The section of our expedition inside Tweedsmuir Provincial Park is more mountainous and includes alpine tundra where there is a potential for some lingering snowpack. Our route drops significantly in elevation in our final day of hiking as we descend into the Bella Coola Valley. Some of the botanical life that we can expect include the soopolallie berry, fireweed, indian paintbrush, bunch berry, strawberry, common rose, graceful cinquefoil and western columbine. Animals of note in the area include loons, grizzly and black bear, cougar, moose, wolf, and mule deer. Most notable of the many lakes we will encounter include Tsacha Lake, the Kluskus Lakes, Eucheniko Lake, and Eliguk Lake. The summer months see many of the area's rivers filled with salmon, such as Sockeye, Chum and Pink, on their annual upstream migration to spawn. In recent decades the area has experienced significant tree blow down due to the Mountain Pine Beetle.

II. Participant Qualifications

Participants' Graduation Date

Benjamin Feldman, May 2015
Sarah Hamilton, May 2015
Luke Paulson, December 2015

Medical Certifications

Benjamin Feldman, May 2015 (WFR)
Sarah Hamilton, May 2015 (WFR re-certification to be completed in January, 2015 through NOLS Wilderness Medicine Institute)
Luke Paulson, December 2015 (WFR certification expires January 19, 2016)

Does your group have adequate experience?

Yes

Training Plan

As our trip will consist of extensive hiking, it will be necessary to be in prime hiking condition prior to our departure. This will involve diligent hiking and cross-training in the Colorado region throughout the months leading up to our August trip. With the multiple stream crossings, we will review proper river/stream crossing procedures. We will refresh our orienteering and map reading skills by going on a "orientation trip". Together we will go into Pike National Forest with USGS topographical maps and compass and practice skills such as taking and following a bearing, accounting for declination (true North versus magnetic North), and pinpointing one's location via triangulation. This practice day will also provide us with practice reading maps. For medical skills, we will each attend at least one Wilderness First Responder "review day" typically offered by the Colorado College Outdoor Recreation Committee in the spring to ensure that these skills are as fresh as possible. We will touch base with our contacts in the area (rangers, etc) throughout the summer months for updates on snowpack and water levels. While rangers and online sources maintain that mid-August should be snow-free, we will be prepared in the event of prolonged snowpack. If snowpack is indeed greater than usual we will review and practice proper snow travel in the Colorado area (in Rocky Mountain National Park for instance). If water levels are higher than usual we will practice stream and river crossings in the field as well.

III. Expedition Logistics, Gear and Food

Travel Plan

To Trailhead: All three expedition members will meet on August 7th in Colorado Springs to gather and organize gear and prepare packs. On the morning of August 8th we will have a friend drive Luke's Jeep (17 mpg) to Denver International Airport in Denver, Colorado and drop us off. We will then fly to British Columbia. Our commercial airlines flights will leave us at the Anahim Lake Airport, British Columbia, Canada. From Anahim Lake Airport we will fly a private charter plane to the landing strip at Pan Phillips Fishcamp. The AMHT cuts directly through Pan Phillips Fishing Resort at km# 141 (while the AMHT cuts through Pan Phillips Fishcamp at km# 141, it does not cut through any other camps until after its intersection with Highway 20 in Bella Coola).

From Trailhead: The backcountry portion of our expedition will conclude at the junction of the AMHT and Highway 20, approximately 14 miles from Bella Coola. We will parallel Highway 20 to reach Bella Coola where we will spend the night of August 22nd at the Bella Coola Valley Motel. We will take a complimentary motel shuttle from our hotel to the Bella Coola Airport on the morning of August 23rd to fly to Denver, Colorado. We will have a friend pick us up at DIA in Luke's Jeep to take us back to Colorado College.

Expedition Itinerary

Note about our maps Included with our itinerary are maps from *In the Steps of Alexander Mackenzie: Trail Guide*. Each map is labeled with a circled number, which we have referenced in our itinerary. The route shown on these maps (marked by the dashed red line) has been corroborated by recent published accounts from hikers and Google Earth maps provided by rangers at Tweedsmuir Provincial Park. The blue stars on each map represent our camping locations for each night. Each bold contour line represents 500 ft' elevation gain/loss from the adjacent bold line (5,000 ft' → 5,500 ft' for instance). Each non-bold line in between represents 100 ft' (5,100 ft' → 5,200 ft' for instance).

We recognize that we will need more detailed topographic maps for the trail, which we will have shipped to us from Cliff Kopas Store in Bella Coola, BC (with whom we have already been in contact). Maps we will need include the 1:250,000 series topos of Anahim Lake and Bella Coola.

Additional Note: Refer to the maps included with daily itinerary for marked exact campsite locations, etc as the attached map document does not include these designations.

Day 0 (August 8): Arrive at Pan Philips Fish Camp via private charter plane, camp just west of the airway, at a campsite on the east end of Cluchuta Lake (map 13N).

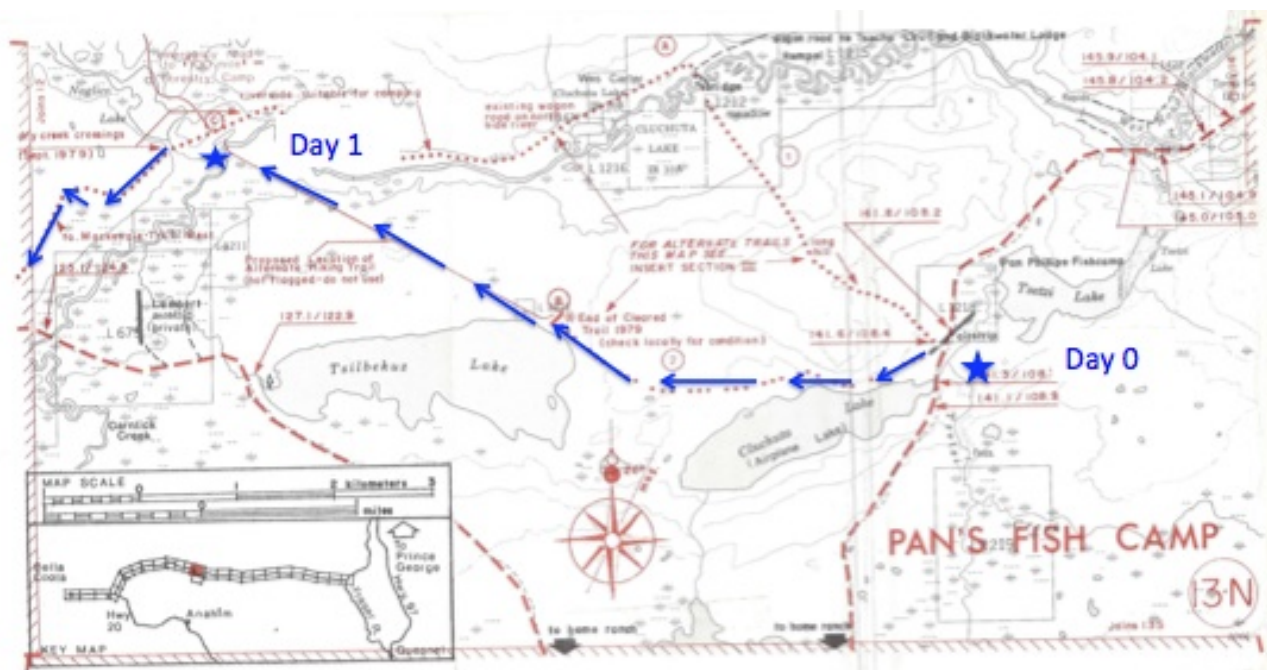
Day 1 (August 9):

total mileage: 5 mi

beginning elevation: 3,500'

ending elevation: 3,400'

We will follow the trail west along the north side of Cluchuta Lake and then to the NE corner of Tsilbekuz Lake. From there, we will head NW towards the Blackwater River, through stands of aspen, lodgepole pine, and fir. We will cross the Blackwater River (the water here is normally shallow and slow moving) and camp on the west bank. (This route is seen on map 13 N as the proposed hiking route. It has since been cleared and become the main route of the Alexander Mackenzie Trail, marked with blue arrows).



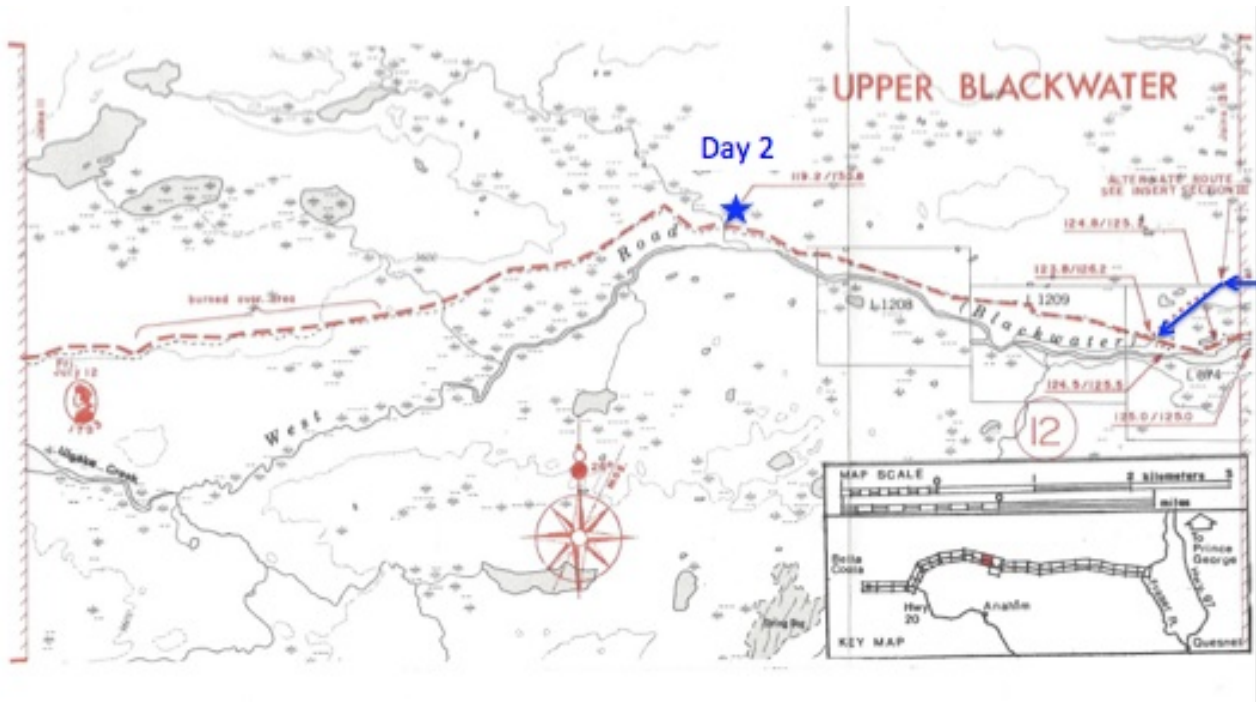
Day 2 (August 10):

mileage: 5 miles

beginning elevation: 3,400'

ending elevation: 3,500'

We will follow the trail as it turns into an abandoned dirt wagon trail, passing through meadows alongside the Blackwater River. We will follow the Blackwater until we reach the Cottonwood Creek tributary, where there is good drinking water and a primitive campsite where we will spend the night (map 12).



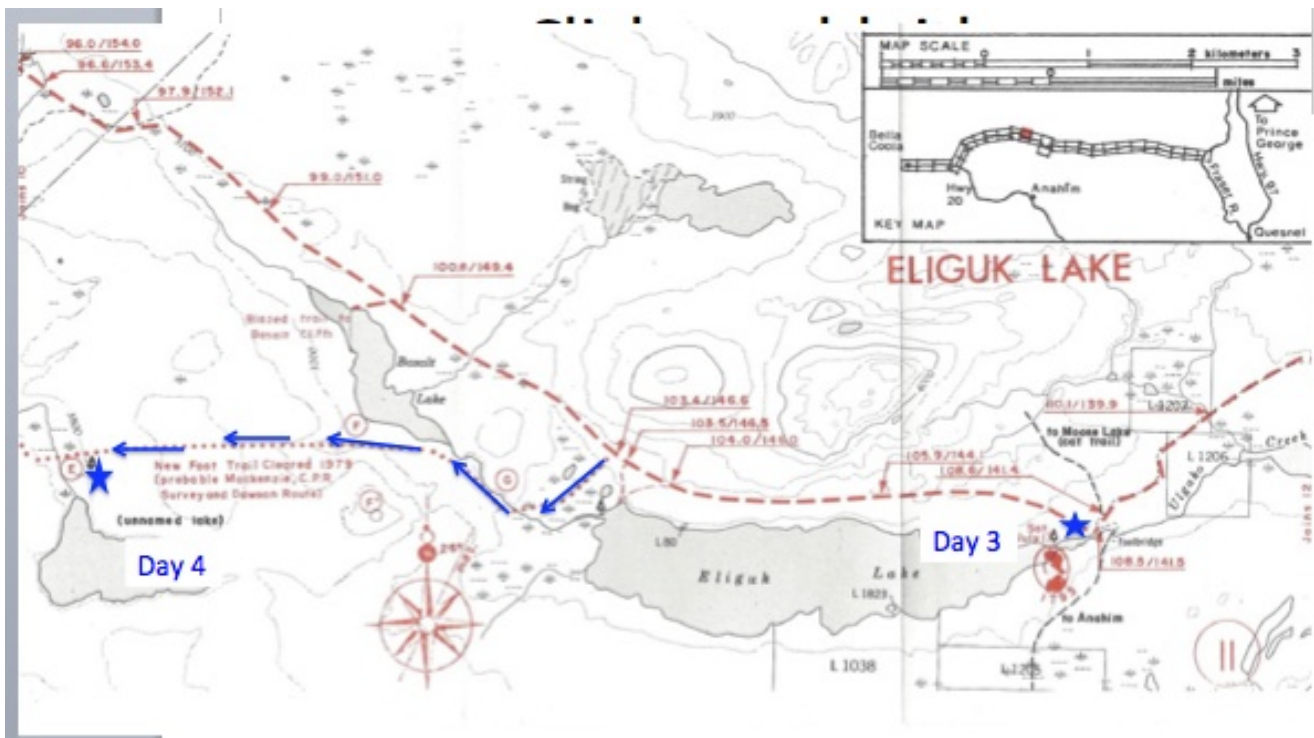
Day 3 (August 11):

mileage: 7

beginning elevation: 3,500'

ending elevation: 3,600'

Leaving Cottonwood Creek, we will cross through more meadows and then reach a footbridge at Ulgako Creek, where there will be a three path junction, with the southern path leading to Anahim Lake. There is a primitive campsite on the eastern shore of Eliguk Lake, just past the footbridge, where we will spend the night (map 11).



Day 4 (August 12):

mileage: 7

starting elevation: 3,600'

ending elevation: 3,800'

We will follow the trail along the shore of Eliguk Lake. Just after Eliguk lake, the trail forks- we will take the left fork, as this is now the main foot path (shown by blue arrows on map 11). We will follow the trail west, crossing a marshy area and following the southern shore of Basalt Lake. The trail ascends slowly until reaching the northern shore of an unnamed lake. There is a primitive campground here where we will spend the night (map 11).

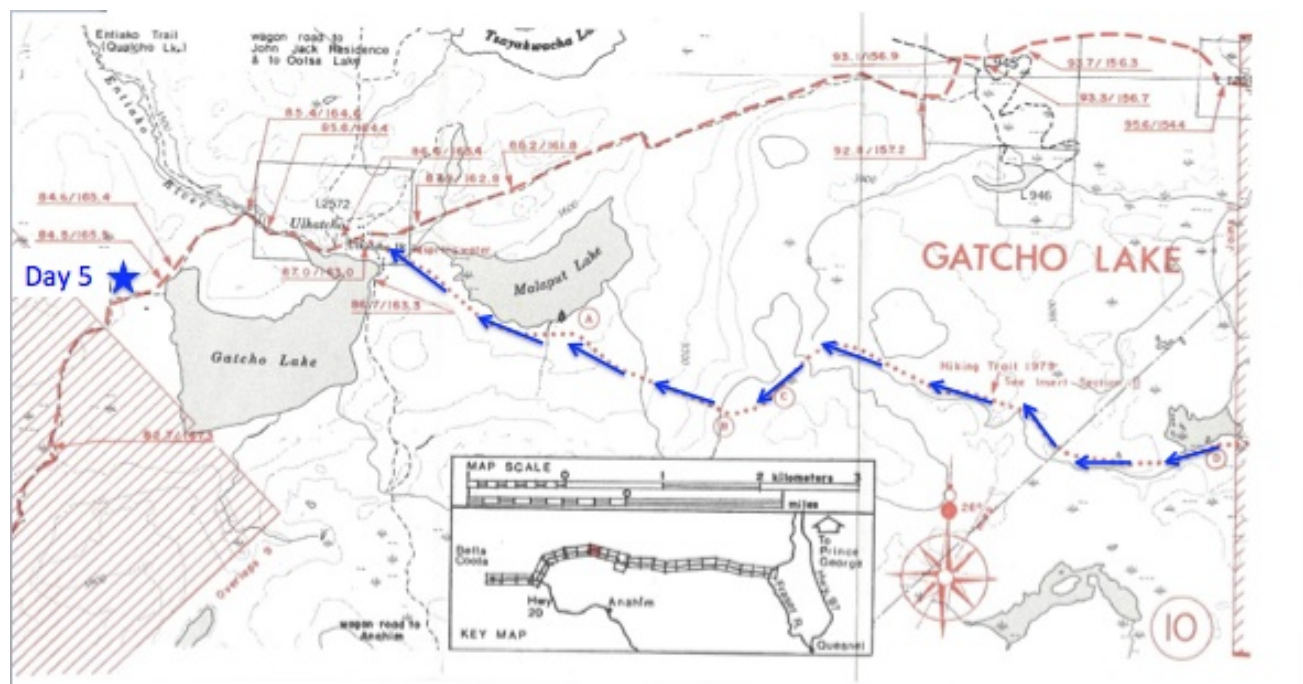
Day 5 (August 13):

mileage: 8.5

starting elevation: 3,800'

ending elevation: 3,600'

Leaving our campsite by the unnamed lake, the trail descends towards Malaput Lake. Once reaching Malaput Lake, we will follow the shoreline until the footpath joins up with a wagon road at the NE corner of Gatcho Lake. Here, we will go through the abandoned Ulkatcho Village, where there is a meadow, cemetery, and building remains. We will follow the Entiako River before turning SW and meeting back up with Gatcho Lake. Just past the NW shore of the lake is primitive campsite on a dry wooded hill where we will spend the night (map 10).

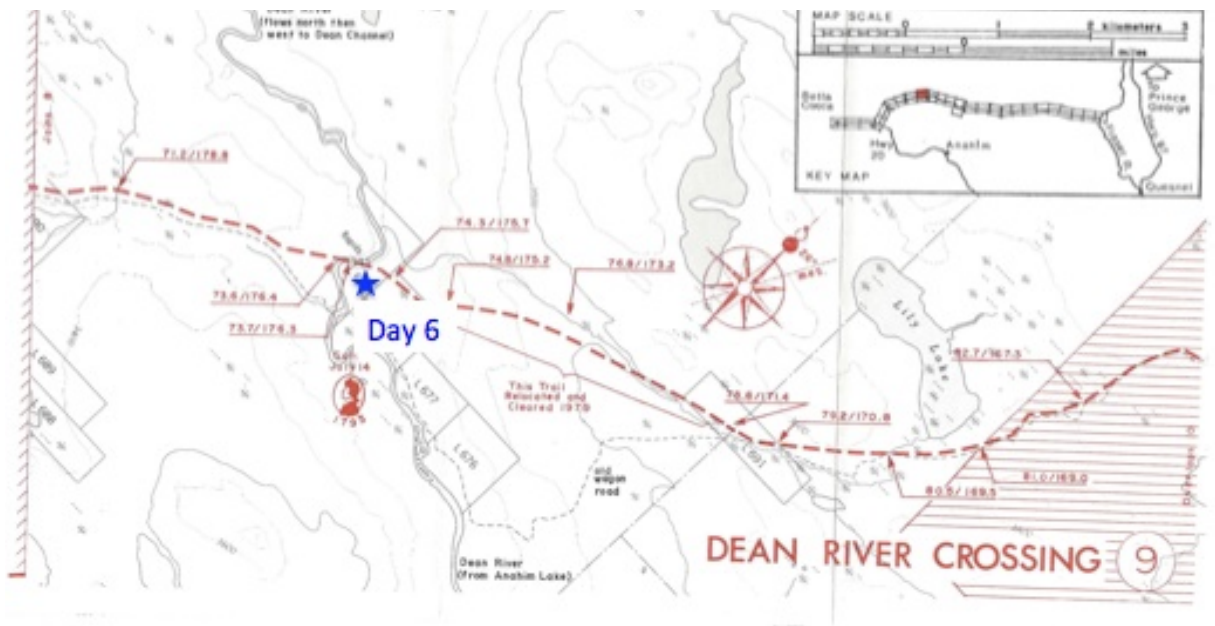
**Day 6 (August 14):**

mileage: 7

beginning elevation: 3,600'

ending elevation: 3,300'

We will follow the trail southwest away from Gatcho Lake, then head west past Lily Lake and a small marshy area to the south of the lake. The trail passes on the north side of an old hay meadow and old homestead cabin. After passing Lily Lake, the trail veers away from an old wagon road towards the Dean River. We will spend the night at a primitive campsite on the east bank of the Dean River (map 9).



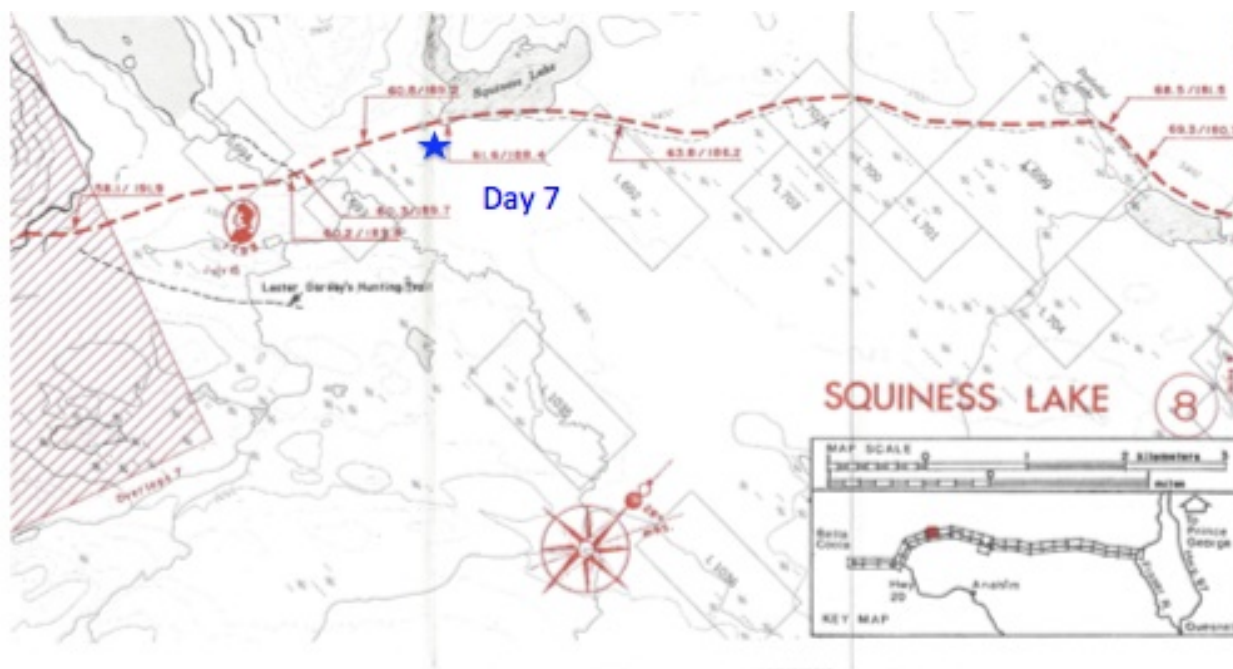
Day 7 (August 15):

mileage: 7.5

beginning elevation: 3,300'

ending elevation: 3,400'

Depending on how fast and deep the Dean River is running, we will cross at a ford crossing where the main trail meets the river, or if that is not safe, we will follow a hunting trail ½ km north along the river to where there is a suspension bridge over the Dean River. After crossing, we will follow the hunting trail south until it meets up with the main trail again. We will then do another small creek crossing (4 m wide, 10 cm deep under normal weather conditions). We will pass through meadows and an old cabin to the south of Datletlal Lake. We will pass through more meadowlands until we reach Squiness Lake, where we will camp (map 8).



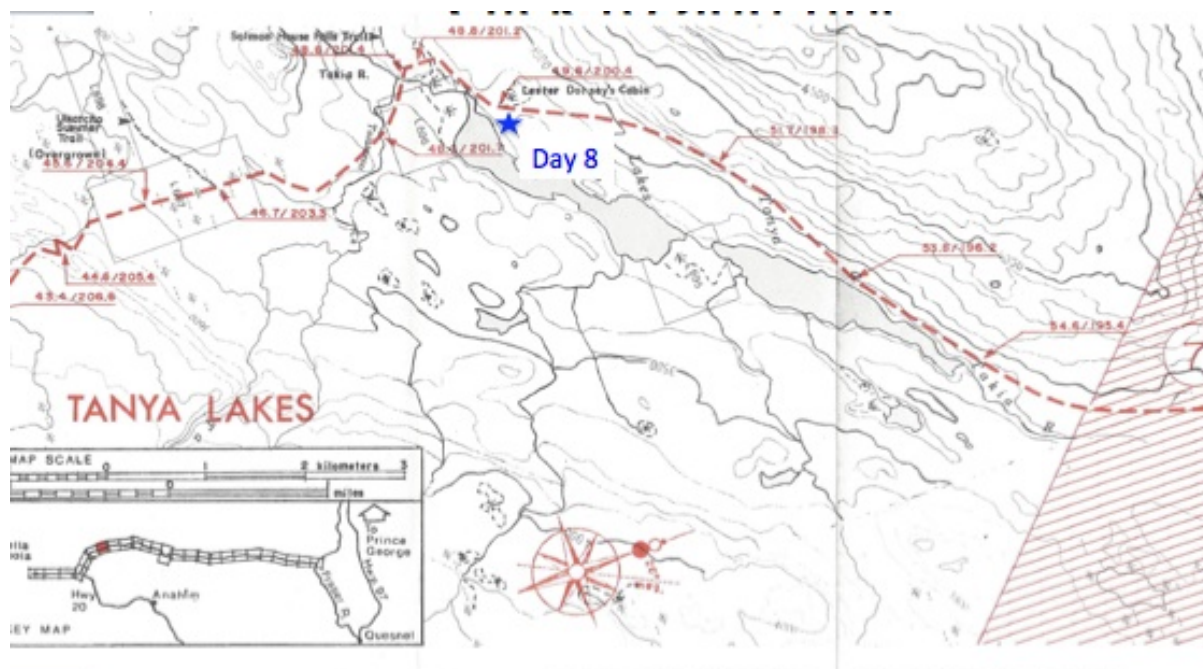
Day 8 (August 16):

mileage: 7.5

beginning elevation: 3,400'

ending elevation: 3,400'

After leaving Squiness lake, we will come to a creek crossing and swamp, and cross using the bridge and boardwalk. We will then come to a trail junction, and follow the Alexander Mackenzie trail to the southwest. The trail will go through a stand of tall trees, and we will climb in elevation slightly until reaching the top of a bluff, called Eagle Cliffs, above the north side of East Tanya Lake. The trail then descends towards the west end of west Tanya Lake. We will camp at the western end of Tanya Lake, where there is a large meadow and bear proof cache (map 7).



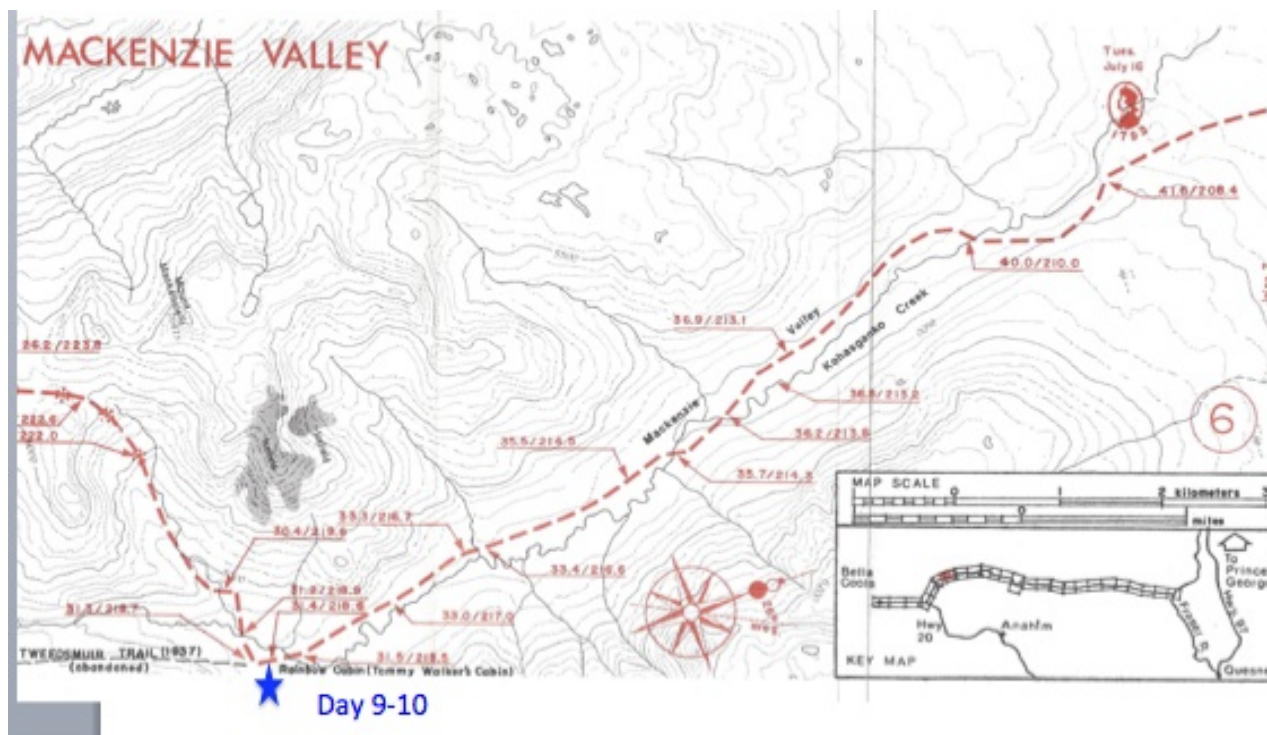
Day 9 (August 17):

mileage: 11

beginning elevation: 3,400'

ending elevation: 4,600'

With lighter packs and a rest day ahead of us, we will embark on our longest day of hiking. Leaving Tanya Lakes behind, we will pass through a meadow and cross bridges over the Takia River followed by the Tatatasezi River. We will come to a trail junction, where an old Ulkatcho summer trail branches off to the NW. We will go approximately 1 km up a steep hill with switchbacks, and then the trail levels out in an open forest. We will then do a small creek crossing (3 m wide, 15 cm deep). After following the trail along the east bank of Kohasganko Creek, we will cross at a suspension bridge and follow the trail along the west bank of the creek through the Mackenzie Valley. Heading up-valley, we will cross over Kohasganko Creek several times. All crossings should be less than knee deep. Continuing along the west side of the creek, we will shortly cross a small tributary. Continuing south, we will cross Kohasganko Creek again (4.6 m wide, 15 cm deep) to the Rainbow Cabin. This is supposed to be the best campsite in the Mackenzie Valley, so we will camp in a meadow by the cabin (map 6).



Day 10 (August 18): Rest day, Mackenzie Valley

We will spend Day 10 resting and exploring the Mackenzie Valley

Day 11 (August 19):

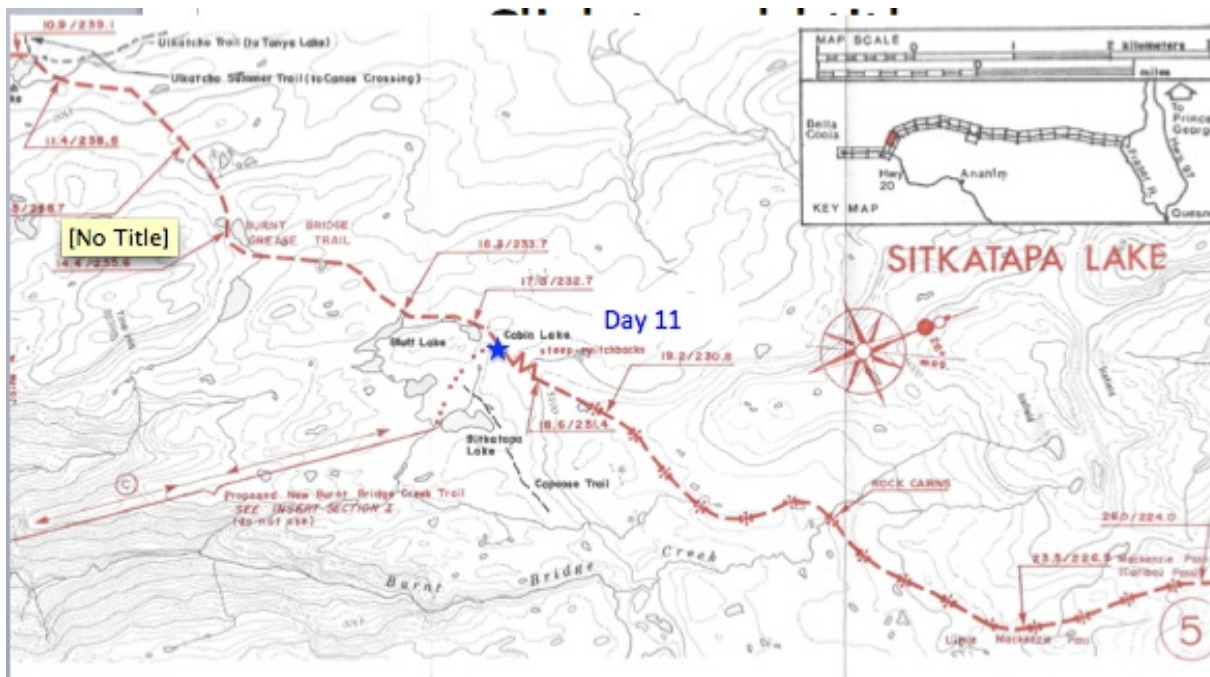
mileage: 8.5

starting elevation: 4,600'

ascend to 6,000

ending elevation: 4,600'

We will cross back over Kohasganko Creek for the last time (4.6 m wide, 15 cm deep) and begin ascending towards timberline. Cairns serve as trail markers along this section. Once reaching timberline, we will hike through a short segment of alpine tundra, being careful to disturb the landscape as little as possible. We will follow the cairns through Little Mackenzie pass, over a long gentle alpine slope, reaching the end of the alpine tundra just before descending down steep switchbacks toward Bluff Lake. We will camp at the bottom of the switchbacks near Cabin Lake (map 5).



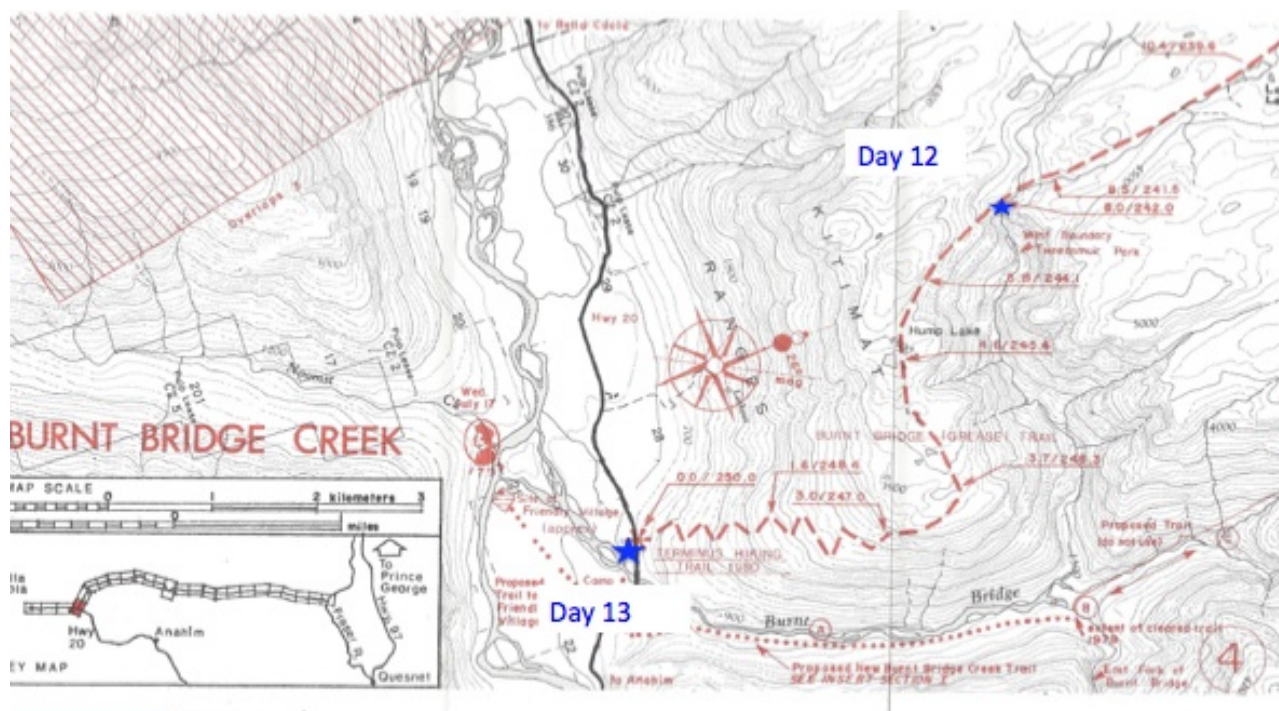
Day 12 (August 20):

mileage: 6 mi

beginning elevation: 4,600'

ending elevation: 3,700'

We will pass the the west of Bluff Lake, and follow the trail between two unnamed ponds.. We will cross through two wet grassy meadows. We will reach a trail junction with the Ulkatcho summer trail branching to the NE. We will follow the Alexander Mackenzie around Fish Lake, and then hike past the western shore of Long Lake. The trail will then follow switchbacks down a steep slope, and then cross a shallow, Burnt Bridge creek tributary (less than knee deep). We will camp at an existing site near this crossing, which is the west Boundary of Tweedsmuir park (map 4).



Day 13 (August 21):

mileage: 5

beginning elevation: 3,700'

ending elevation: 600'

We will climb out of the valley where we camped by the Burnt Bridge Creek tributary, emerging on a south facing slope, from which we will be able to look down on views of the Bella Coola Valley. We will follow the trail past Hump Lake and begins descending via steep switchbacks towards Hwy 20, reaching the end of the trail where it intersects the highway at the Alexander Mackenzie Memorial (map 4).

August 22: Rest day/ buffer day

August 23: Depart for Denver, CO.

Maps/Topos/Charts

[maps.pdf](#) (1.8MB)

Uploaded Jan 4 by Luke Paulson

Re-Ration Plans

We will not re-ration, and will carry our food for the entire trip with us.

Food Storage

Bears are of primary concern to human food along the AMHT. We will employ the use of bear-proof canisters at all times while in the backcountry. These will prevent both bears and other critters (squirrels, chipmunks, marmots, birds, etc.) from accessing our food. We will provide our own bear-proof canisters as Tweedsmuir Provincial Park does not provide them. All food, including sentable materials such as toothpaste, chapstick and trash, will be stored in the canisters. At night we plan to cache our bear canisters at least a hundred yards from camp in a proper bear hang. Some nights we plan to cache our canisters in designated bear-proof caches along the trail.

Food List

After consulting the NOLS Food/Nutrition Guidelines and considering our age, size, eating habits, and physical rigor of expedition, we figure 1.8 lbs per person per day (PPPPD) will provide us with sufficient food plus extra in case we are forced to spend extra days in the backcountry. Total poundage will be 64.8 lbs, or 21.6 lbs per person.

$(3 \text{ people}) \times (12 \text{ complete days}) \times (1.8 \text{ lbs/day}) = 64.8 \text{ lbs TOTAL}$

Breakfast= 0.4 lbs per person per day

Lunch and snacks= 0.6 lbs per person per day

Dinner= 0.8 lbs per person per day

Breakfast:

Items	Pounds (lb)	Price (\$)
Breakfast (14.4lb ideal)		
Dried Fruit (raisins, raisins, apricots)	2	\$16
Bagels (1.25lb/pack of 6)	3.75	\$15

Granola	3	\$15
Cream Cheese (.5lb per pack)	1	\$7
Peanut Butter (1lb per jar)	1	\$5
Powdered Milk	1	\$4
Honey (1lb per jar)	1	\$9
	12.75lb	\$71
Lunch and Snacks (21.6lb ideal)		
Pita (.75lb/pack of six)	4.5 (6 packs)	\$15
Peanut Butter (1lb per jar)	1	\$5
Cheddar Cheese	1	\$10
Pepper-Jack Cheese	0.5	\$5
Cliff Bars (.15lb per)	2.7 (18 bars)	\$18
Snickers (.11lb per)	1.98 (18 bars)	\$14
Fruit Jelly	1	\$8
Trailmix (almonds, raisens, peanuts, apricots)	3	\$25
Canned Tuna in Oil (.31lb per)	1.86 (6 cans)	\$16
Dried Apples	1	\$14
Dried Mango	1	\$18
Dried Humus	1	\$7
Apples (4 per pound)	3	\$13
	23.54lb	\$168

Items	Pounds (lb)	Price (\$)
Dinner (28.8lb ideal)		
Brown Rice	3	\$9

Dried Beans	2	\$8
Penne Pasta	4	\$18
Dried Pea Soup	1.5	\$8
Parmesan Cheese	.5	\$8
Cheddar Cheese	1	\$10
Tortillas (10/lb)	2	\$7
Olive Oil	.5	\$8
Hot Sauce	.25	\$4
Carrots	3	\$8
Onions 2/lb	4	\$8
Dried Mushrooms	1	\$9
Canned Tuna in Oil (.31lb per)	1.86 (6 cans)	\$16
Tomato Sauce	1	\$5
Spice Kit	.25	\$6
Tea	1	\$12
	26lb	\$144
	TOTAL	\$383

Equipment List**Upper Body:**

- 1 base layers
- 1 thin fleece
- 1 Thick long underwear top
- 1 fleece
- 1 insulated jacket (such as down)
- 2 synthetic t-shirts
- 1 hooded Goretex rain jacket
- 2 synthetic sports bra (if applicable)

Lower Body:

- 1 pairs long underwear bottoms

- 1 pair hiking pants (fleece or insulated)
- 2-3 pairs synthetic underwear
- 1 Goretex rain pants
- 1 pair synthetic hiking pants
- 1 pair synthetic shorts

Additional Clothing:

- 1 sun-protective hat
- 1 pair polarized sunglasses
- 1 pair lightweight fleece or wool winter gloves
- 2 bandanas (for additional sun protection)
- 1 fleece or wool hat

Footwear:

- 1 pair heavy-duty hiking boots (waterproof)
- 6 pairs wool hiking socks
- 1 pair camp shoes (no exposed toes)
- 1 pair knee-high Gaiters

Sleeping Gear:

- 1 down or synthetic sleeping bag (rated for 20 degrees or lower)
- 1 sleeping bag compression sack
- 1 insulated sleeping pad

Bags:

- Backpacking backpack (5,000 cubic inches or larger)
- 3 ziploc bags
- 2 large thick trash bags (for waterproof backpack liners)
- Backpack rain cover

Additional:

- Bearspray
- Bear Bells
- 1 digital waterproof watch with alarm
- 1 headlamp with extra batteries
- 1 compass
- 1 whistle
- 2 lighters
- Personal medications
- tooth brush
- 1 pocket knife (multitool, such as Swiss Army)
- 1 fork
- 1 spoon

- 1 camping bowl and/or plate
- 1 mug (if desired)
- 2 1-liter waterbottles
- UV/UB protective chap-stick
- 1 small bottle sunscreen (high SPF)
- 1 small bottle insect repellent

Group Gear:

- 1 3-person, 3-season tent with rainfly and metal stakes
- 1 ground tarp for tent
- 6 bear-proof canisters
- 6 yards Parachute Cord
- 6 yards rope
- 4 large MSR fuel bottles (filled with white gas)
- 2 Whisperlight camp stoves with repair kits
- 2 sets topographic maps
- 3 sets laminated list of emergency resources
- 1 large cooking pot (with lid)
- 1 frying pan
- 1 wooden stirring spoon
- 1 spatula
- Books (reference guides, including to flora and fauna of the region, and personal reading)
- First-Aid Kit (see below)
- Patch kit for tent/backpack
- extra heavy-duty trash bags
- Satellite phone
- Trowel
- Hand sanitizer
- 6 bottles iodine tablets (for water purification)
- 1 water purification device (Steripen or filter)
- 1 pair of binoculars

First Aid Kit Contents:

- 2 pairs Nitrile Gloves
- 1 12 cc irrigation syringe
- 1 pair trauma shears
- 1 pair tweezers:
- 2 Pencils
- 5 SOAP notes

Medical History Information of participants

3 Face Shields

Thermometer

10 Safety Pins

WFR guide Book

Ziplock bag

1 tiny bottle hand sanitizer

Triple antibiotic ointment: 1 tube

Antiseptic towelettes: 16 towelettes

Drugs/Meds

Ibuprofen: 30 pills

Diphenhydramine: 20 pills

Pepto Bismol: 20 pills

Acetaminophen: 20 pills

Tincture of Benzoin: 5 ampules

Iodine ointment: 1 tube

Aloe Vera gel: one bottle

Wound Care/Bandaging

Wet Prep Soap Sponges

2 3" conforming gauze rolls

5 3 x 3 sterile gauze pads

3 2 x 3 non-adherent dressings

2 3 x 4 non-adherent dressing

2 Transparent Dressings

6 Closure strips

2 Elastic bandages

1 Triangular bandage

4 2nd Skin pads

2 2 x 3 adhesive patches

12 Band aids, assorted sizes

10 Butterfly bandages

2 Sterile Cotton Tipped Applicator

- 2 Athletic tape rolls
- 3 Moleskin 2 x 3
- 1 Pressure Wrap

Emergency Fire Starting Kit (in Ziploc)

- 1 pack birthday candles
- 10 cotton balls coated in vasoline
- 1 lighter
- 1 pack water-resistant matches

Leave No Trace

Yes, all three expedition members are well versed in the seven LNT principles.

Plan for Minimizing Impacts

All of the expedition members have been trained in the seven LNT principles. In order to follow the seven LNT guidelines on our expedition, we will discuss how LNT applies to our specific location throughout the entire trip. We will talk about LNT as we choose tent sites, kitchen sites, paths, so that we minimize our individual and group impact in this beautiful place.

Plan ahead and Prepare: Based on our extensive research on the area, we are very familiar with the hiking routes and recommended campsites along the trail. We will be carrying all of the necessary gear to follow LNT principles (eg: Whisperlite stoves, bear canisters, etc.)

Travel and Camp on Durable Surfaces: We will be hiking on an established trail throughout the duration of this trip. We will be deliberate in choosing tent and kitchen sites each, making sure to communicate openly about the placement of these at each location. We have designed our itinerary to camp at established sites as much as possible. We intend to further reduce the impact of our tent sites on vegetation by changing locations each night.

Dispose of Waste Properly: All waste except human bodily waste will be packed out with us. Solid human waste will be disposed of in holes at least 6 inches deep, 300 ft. from the nearest body of water, in areas with maximum vegetation and direct sunlight. If we encounter any trash left behind by previous visitors, we will pack it out with our trash in an effort to leave this wilderness area more pristine than we found it.

Leave what you Find: We will pack out trash, and only trash. Interesting rocks, vegetation, bones, etc. should not and will not be taken from this area. We believe these treasure ought to remain where nature has placed them. Throughout this trip, we will also encounter many archaeological sites with human placed artifacts. We will be extra sensitive as to treat these areas with respect so that they remain undisturbed (for more information, see "Cultural Considerations").

Minimize Campfire Impacts: We will not be making any campfires unless it is needed for an emergency situation. All of our cooking will be done using Whisperlite stoves.

Respect Wildlife: All of our food will be stored in bear canisters hung off of the ground. We will be extra sensitive as to wash our dishes far from water sources and to not drop crumbs. All wildlife will be observed from a distance. All wildlife we encounter will be only observed at a distance, with our binoculars, so as not to disturb them.

Be Considerate of Other Visitors: Although we are headed to a very remote corner of the world, it is still possible that we will encounter other hikers on our expedition. We plan to treat anyone we encounter with kindness, warmth, and respect.

Cultural Concerns

The route that Alexander Mackenzie originally traveled in the late 1700s took him through the heart of the Carrier Indian territory. Parts of the trail he traveled were ancient, having been used for trading purposes by Native American tribes before the arrival of European traders and settlers. In order to be sensitive to cultural considerations on the trail, we will educate ourselves beforehand about the history of the trail and locations of significant historical sites. Along the lower Blackwater river, there are over 300 archaeological sites of interest and near Kluskus lakes are the remains of semi-underground house sites. If we encounter these sensitive historical sites, we will treat them with respect, leave artifacts undisturbed, and travel and camp at an appropriate distance.

IV. Risk Management

Hazard Mitigation Plan

Out of respect for the Ritt Kellogg legacy and ourselves, safety protocol and hazard mitigation must be treated with absolute importance on this trip. In order to ensure our own safety, we have identified the following potential hazards and discuss how they will be avoided and managed.

Wildlife Safety: Given the remoteness of the Great Bear Rainforest, there is a very healthy population of wildlife both big and small. While it is great privilege and excitement to be a guest in such a diverse and populous community, the presence of bears, moose or cougars can pose serious threats. There are several ways that we plan to mitigate the risks posed by wildlife, as well as reduce our impact on wildlife.

Campsite and Kitchen Precautions: Throughout this trip, we will be storing our food in bear canisters. We will hang canisters downwind from where we sleep. We will also always set up our tents upwind from where we cook. We will change our clothing before going to sleep, and store the fragrant clothing that we cooked in with our food. We will keep our campsites extremely clean.

On Trail Precautions: To avoid startling hibernating or hibernation-waking bears, or bears emerging from hibernation, we have planned this drip during late summer, several months after bears have emerged from their winter dens. We will hike as a group and wear bells on our backpacks to alert wildlife of our presence. We will be vigilant for tracks, scat, digs, and trees that have been rubbed. If we see any signs of bear activity, we will sing loudly as we hike. We will also avoid hiking at dawn and dusk, when most animals tend to be more active.

If we encounter any megafauna while hiking, we will remain calm and avoid startling the animal. If possible, we will give the animal plenty of room and allow it to continue its activities undisturbed. If we see a bear or moose, but it does not see us, we will back away slowly. If we spot a moose that is aware of our presence, we will back away slowly too. However, if we see a bear that is aware of our presence, we will wave our arms and speak in a normal voice so that the bear knows we are humans.

If charged by a bear, we will hold our ground and be prepared to use our bear spray. Bears often charge as a bluff, stopping short or veering off to the side. Once a bear ends its charge, we will back away slowly. If a bear continues its charge and comes within 40 ft of our group, we will use our pepper spray. Pepper spray is also effective on Moose and Cougars. However, unlike bears and Cougars, running from a Moose does not trigger its predatorial instincts. If attacked by a Moose, and, for some strange reason, we are unable to access our pepper spray stored on each of our waists or outsides of our backpacks, it is advised to run for cover. If attacked by a surprised black bear in the unlikely absence of access to pepper spray, it is advised to find cover. If attacked by a surprised grizzly bear, it is advised to keep your backpack on and play dead. If attacked by an offensive grizzly, black bear, or cougar (such as one that has been stalking you) it is advised to fight back but always provide that animal an avenue for escape.

Wildlife References:

<http://www.env.gov.bc.ca/bcparks/explore/misc/bears/bearsaf.html>

<http://uspark.about.com/od/backcountry/a/Bear-Safety.htm>

<http://www.simplywildcanada.com/wild-species/mammals-of-canada/cougar-safety-tips/>

<http://bestpepperspray.net/how-use-bear-spray/>

<http://hiking.about.com/od/hiking-safety-advice/a/Moose-Safety-For-Hikers.htm>

Water Crossings: During our trip, we have planned several water crossings. While this route has been planned to avoid crossing any high volume or velocity bodies of water, we will be crossing several small streams, forges, and marshes. It is highly unlikely that that any unanticipated rainfall would drastically change the intensity of these water flows. Nonetheless, before departure we will check trail conditions with the local ranger station to ensure that all crossings are safe. If any of our water-crossings seem too dangerous, we will be able to adjust our route with our detailed topographical maps.

<http://www.hikecampfish.com/five-safety-tips-for-water-crossings-during-your-hike/>

Hypothermia: We will be prepared for harsh weather, including torrential rain storms, hail, or even very light snow. All of us will be carrying adequate rain gear and insulating layers. Each of us will be very familiar with our tent, and capable of setting it up quickly during inclement weather. Each of us will also be carrying our sleeping bags in water-proof stuff sacks. Staying warm and dry is paramount on this expedition. Each of us will be vigilant of our own and others potential symptoms of hypothermia.

<http://www.mayoclinic.org/diseases-conditions/hypothermia/basics/prevention/CON-20020453>

Weather: In the Great Bear Rainforest, it is common for sunny days to quickly turn into rainy ones. To avoid stormy weather, each day we will begin hiking early in the morning and hoping to arrive at camp in the early afternoon. We will try our best to avoid high elevations when thunderstorms seem likely, and will assume the lightning position if we are caught in a lightning storm.

<http://sportsmedicine.about.com/od/enviromentalissues/a/lightning.htm>

<http://advocatesforinjuredathletes.blogspot.com/2013/05/protecting-yourself-in-summer-lightning.html>

Giardia: To avoid contracting any water-born diseases or illnesses, we will be only sourcing our drinking and cooking water from clear, fast-moving bodies of water. We will be using a steripen to sanitize all drinking water. Furthermore, we will be carrying iodine to sanitize our water in the event that our water purification device ceases working. In case of emergency, we are also prepared to bring water to a full boil for 5 minutes in order to disinfect it.

<http://www.rei.com/learn/expert-advice/water-risks.html>

Blisters: Given the amount of ground we are covering each day, it is extremely important that each of us remain comfortable hiking. Each member of the expedition will familiarize him or herself with their boots and camp shoes before our trip. We will always hike in dry socks. Throughout the day, we will also be checking our feet for hot spots. We will treat hot spots immediately with moleskine and medical tape before they become blisters. If anyone of us do obtain painful blisters, we are prepared to drain, disinfect, and bandaged.

http://sectionhiker.com/blisters_and_hiking/

Sun Burn: Sunburns are a risk in nearly any outdoor trip experience. To avoid sunburns, we will be wearing sun block and sun hats while hiking.

Mosquitos: While mosquitos in the Great Bear Rainforest do not carry any diseases, they can nonetheless be great threat to morale. In order to mitigate the prevalence of mosquito bites, we will be sleeping in mosquito nets in our tents. We will also carry with us insect repellent with Deet to further ward off insects.

Evacuation Plan

We will do everything in our ability to ensure that an evacuation does not become necessary, recognizing that small problems can quickly spiral into emergency situations in the backcountry. This will involve remaining constantly alert and keeping open lines of communication in order to anticipate potential problems that may arise from weather conditions, gear malfunctions, participant health, wildlife threats, or other unforeseen circumstances. We will also have a satellite phone that will help us mitigate risk and facilitate an evacuation should one become necessary. We will follow standard Wilderness First Responder protocol in assessing and caring for injuries and developing an evacuation plan.

In the event of a non-emergent self-evacuation (no threat of loss of life or limb):

- Day 1-3: Return to Pan Philips Fish Camp, take charter plane back to Nimpo Lake
- Days 4-8: Hike to small fishing lodge at the west end of Eliguk Lake, arrange for charter plane back to Nimpo Lake
- Days 9-13: Continue along the trail to the endpoint at Hwy 20

If an emergency evacuation is necessary for any reason, we will use our satellite phone to call the appropriate emergency resource. We will clearly state our needs and plans, informing them about our location, condition, and evacuation plan. If a helicopter evacuation is deemed appropriate, we will make a plan to identify and travel to an open space where the helicopter can land. Many portions of the trail pass through open meadows or abandoned hay fields, which could serve as helicopter landing sites. If the injured person is able to walk, we will make plans to walk to the planned pick-up point. If the person is not able to walk, we will assess the situation to see if it is possible to assist the person in moving to the pick-up point. If the injured person cannot be moved, or other conditions make it unsafe to do so, we will remain in a specified location, which we will communicate to the search and rescue team via satellite phone, and wait to be picked up or signal the search and rescue team, if needed.

Throughout the evacuation procedure, we will use our knowledge of wilderness first aid to stabilize the condition of the injured person. We will continue to monitor his/her condition on a regular basis, keeping in mind factors such as water and food intake and external conditions such as weather and altitude. Other WFR skills that we could use in an evacuation situation include making splints or building a makeshift litter. When building/ using these devices, we will also be aware of the status of the uninjured members, making sure they remain healthy and do not put themselves at additional risk.

Special Preparedness

None of us have any medical histories that warrant special preparedness. We will act accordingly if something arises prior to August 8th.

Emergency Resources

Hospitals

G.R. Baker Memorial Hospital

Quesnel, BC

Canada

250-985-5600

Bella Coola General Hospital

Elcho St, Bella Coola, BC V0T 1C0

250-799-5342

Cariboo Memorial Hospital

517 North 6th Avenue

Williams Lake, BC V2G 2G8

Canada

250-392-4411

Ranger Stations

Quesnel Forest Office
322 Johnston Avenue
Quesnel, B.C. V2J 3M5
Phone (250) 992-4400

Tweedsmuir Provincial Park (South)
3790 Alfred Ave.
Smithers, British Columbia V0J2N0
British Columbia
(250) 398-4414

Rae Bussa- Sr. Park Ranger, Bella Coola Area
Box 38 Hagensborg, B.C. V0T 1H0
(250) 982 2701 ext. 2226

Steve Hodgson- BC Parks Area Supervisor
250 982 2701

Search and Rescue

Central Caribou Search and Rescue
1110A North MacKenzie Avenue
Williams Lake, BC
250-398-5445

Anahim Lake Search and Rescue
PO Box 3304
Anahim Lake, BC
V0L 1C0
250-742-3266
250-742-9796

Bella Coola Valley Search and Rescue
PO Box 566
Hagensborg, BC
V0T 1H0
250-982-2298
250-982-0021

Emergency Communication

We are choosing to bring an Iridium 9505A Satellite Phone with us on the expedition as an emergency communication device (see itemized Budget below). This will allow us to contact emergency personnel (search and rescue, ranger station, etc.) anywhere in the backcountry. We also considered a SPOT Satellite Messenger Device, but ultimately concluded that the Satellite Phone will be sufficient given the nature of our expedition.

V. Budget**BUDGET**

Item	Description	Total USD (\$)
Travel		
Gas	Gas to and from DIA (Luke's Jeep gets 17 mpg) (84 mi x 2 = 168 mi/17 = 9.9 gallons x \$2.40/gallon = \$23.70	\$23.70
Airfare	DIA → YVR (Vancouver) and YVR → DIA (~\$462.93 each) (roundtrip)	\$462.93 x 3 = \$1388.79
Airfare	YVR → YAA (Anahim Lake) (~\$170.21 each) Mon, Wed, Fri effective through July 5th, 2015	\$170.21 x 3 = \$510.63
Airfare	Charter from YAA (Anahim Lake) → Tsetzi Lake (~\$600.00 total)	\$600.00
Airfare	QBC (Bella Coola) → YVR (Vancouver) (~\$164.96 each)	\$164.96 x 3 = \$494.88
Airfare	Estimate rise in airline fare by March	\$50 x 3 = \$150
Hotel	Post-expedition hotel in Bella Coola (Bella Coola Valley Motel) Single-night = ~\$130.00	\$120.00
Food	See itemized Food List above for price breakdown.	\$383
Gear		
Satellite Phone	Iridium 9505A	\$152.50

(http://www.globalcomsatphone.com/product/480-iridium-9500-satellite-phone-rental)	2-week rental fee=\$51.90 30-min Pre-paid Airtime=\$50.70 Shipping=\$49.90	
Bear-proof Canisters	Rent from outdoorsgeek.com. \$24.00 x 4	\$96.00
Topographic Maps	Will provide our own maps and supplement with National Topographic Series Maps from local retailer. We will bring one extra just in case. (\$12.00 each). Maps will be donated to Outdoor Ed after the trip.	\$24.00
Bear Spray	Udap Pepper Power Bear Spray Repellant 12vhp with Holster x 2 (\$29.99 x 2)	\$59.98
Water Purification	Iodine tablets: 3 people x 14 days (2 extra) x 4L/day = 168L 50-pills/bottle = 50L, so 4 bottles, plus 2 extras just in case = 6 Total (\$9.20/each)	\$55.20
White Gas (for MSR stove)	Fuel for stove: \$22.53/gallon	\$22.53
	TOTAL:	\$4081.21
	Total per person:	\$1360.41

Transportation

\$3288.00

Food and Fuel

\$405.53

Maps and Books

\$24.00

Communication Device Rental

\$152.50

Permits/Fees

\$0

Gear Rentals

\$96.00

Total Funding Request

\$4081.21

Cost Minimization Measures

- Fly out of DIA rather than COS.

- Do as much food shopping as feasible in bulk from Costco to save money on groceries.
- Borrow gear instead of buy/rent
 - We will be using most of our own gear, but when this is not possible we will do our best to borrow gear
- Carry all food instead of paying for food drop
- Check out trail guide from library instead of buying

***Additional Note: Alexander Suber was included in our Preliminary Proposal, however is no longer part of the expedition (due to scheduling conflicts) and will obviously not be joining us, and is therefore not included in any of our Grant Applications/Forms.

Thanks!!!

