



Ritt Kellogg Memorial Fund Registration

Registration No. S9D9-4PS2T

Submitted Jan 10, 2018 8:59am by Kilian Morales Coskran

Registration

2018

Ritt Kellogg Memorial Fund

RKMF Expedition Grant 2017-18 Group Application

This is the group application for a RKMF Expedition Grant. If you have received approval, you may fill out this application as a group. In this application you will be asked to provide important details concerning your expedition.

**Waiting
for
Approval**

Participant



I. Expedition Summary

Expedition Name

Voyageur Reflection Quest: Bound for Glory in the Boundary Waters

Objectives

The objective of our proposed expedition is, first and foremost, to safely navigate the interlocking lakes and streams of the Boundary Waters Canoe Area. In the pursuit of this objective, we will practice our backcountry navigation and travel skills. As graduating seniors, we want to reflect on our time at CC and contemplate our transition forward, into the greater world. To do this we will supplement our paddling time with journaling, yoga, watercoloring, and fishing while simultaneously making sure we live in the moment, savoring each other's company and the remote wilderness around us.

Location

The Boundary Waters Canoe Area is an area of wilderness that lies below the border between Ontario and Northern Minnesota. The boundary waters is adjacent to Canada's Quetico Provincial Park and flanked on the south west by Voyageurs National Park. The area is over one million acres in size and contains over one thousand lakes. For the majority of our trip we will follow the border between the United States and Canada as we look to delve deeply into the areas of the park with the most solitude.

Departure Date

May 31, 2018

Return Date

Jun 13, 2018

Days in the Field

14

Wilderness Character

One million acres of wilderness straddle the Canadian-US border to our north, where isolated lakes, large and small, are woven together by streams and rivers, making up the Boundary Waters Canoe Area (BWCA). Over 1,200 miles of canoe routes exist, taking visitors through ancient boreal forests, rugged cliffs and canyons, and sandy islands. Starting as early as 11,000 years ago, Native American people have traversed the BWCA, leaving their mark in the form of pictographs on rocks throughout the region. Whether we think back to the birch bark canoes of the Ojibwe or the 36-foot canoes of the French Voyageurs, the BWCA has a rich history of canoe travel, one that we hope to be part of.

While the immense size of the BWCA is staggering, we acknowledge that it is one of the most traveled wildernesses in the US. In order to combat this popularity, we have intentionally chosen a portage heavy route that avoids large, more popular lakes in favor of smaller harder to access lakes. We also chose to depart after the Memorial Day crowds and before school years end to avoid school groups and summer camp traffic.

II. Participant Qualifications

a. Participants' Graduation Date

Kilian Morales Coskran- Graduating: May 21, 2018

Austin Hammer- Graduating May 21, 2018

Delaney Tight- Graduating May 21, 2018

Emily Cain- Graduating May 21, 2018

Brian Rubin- Graduating May 21, 2018

Alana Aamodt- Graduating May 21, 2018

b. Medical Certifications

Kilian Morales Coskran- Took WFR Half Block in January of 2017 and expires January 18, 2019

Austin Hammer- Took WFR Half-Block at CC through CCOE/NOLS in 2016. Taking the WFR-Recertification Course offered by CCOE/NOLS during Half Block Break from January 19-21.

Alana Aamodt - Took WFR during Half Block at CC in 2016 - is registered to take WFR-Recertification planned February 2-4 in Golden, CO through REI/NOLS

Emily Cain -Took WFR during Half Block at CC in 2016 and is registered to take the WFR-Recertification course planned February 2-4 in Golden, CO through REI/NOLS

Delaney Tight - Took WFR during Half Block at CC in 2015 and took the recertification in June of 2017, which expires June 2nd, 2019

Does your group have adequate experience?

Yes

d. Training Plan

In preparation for this trip, our group intends to attend roll sessions to practice canoe strokes and become more comfortable righting a flipped canoe from the water without using the ground. Since our entire trip will be on flatwater lakes, the pool will provide a realistic environment similar to that which we will encounter in the Boundary Waters. In addition to this our outfitter has offered to give us a free safety lesson so we can working together to get back into a flipped canoe. That being said not having a canoe to practice righting it in the pool will be an obstacle but we see practicing with kayaks as better than doing nothing.

Our group also plans to go on at least one weekend camping trip in Colorado together to become even more comfortable with our respective personalities in the wilderness than we already are. Knowing one another's camping dispositions will allow us to better focus on the reflection and meditation aspects of our trip which we are all so excited about.

We also plan to regularly visit the gym to strengthen our arms, shoulders, and core muscles to be prepared for days filled with paddling heavy boats and plenty of squats to prepare our legs for the portages.

III. Expedition Logistics, Gear and Food

e. Travel Plan

We will be driving from Colorado Springs to Ely, Minnesota in two vehicles. We will use Austin's Jeep Renegade and Kilian's Subaru Outback. The total drive from school to the Boundary Waters will take just under 17 hours. We plan to complete the drive in two days. We will drive 14 hours to sleep in Minneapolis at Kilian's family's home. The next day we will do our final round of shopping before driving the additional 3 hours to Ely, Minnesota where we will finalize our gear rentals with our outfitter and go through our final round of packing. We will then get a good nights sleep at Whispering Pines Campground in Ely before catching an early ride with our outfitters to access point 14 and beginning our journey!

We realize that a 14-hour driving day is ambitious. However, there are six group members (three potential drivers per vehicle), so each person will only be required to drive for a total of 4.5 hours on the first day. Leaving at 6AM will allow us to arrive in Minneapolis at around 10 PM. To keep our minds sharp and ready for the wilderness, we will be listening to a variety of mentally invigorating podcasts! This will not only help us to remain focused while driving, but also provide us with ample conversation starters for long days of paddling. Additionally, we will break for bathroom, food, and curbside boogies whenever necessary. Being all friends and having completed long road trips together in the past we know that we will not have any trouble communicating how we are feeling or whether we are unfit to drive.

e. Expedition Itinerary

[Expedition Itinerary.pdf](#) (1.7MB)

Uploaded 1/10/2018 2:39am by Kilian Morales Coskran

Appendix A

Empty

No we all of our food will fit in the three canoes

Food Storage

Bears and small rodents are a potential issue in the boundary waters, so we will be bringing food barrels, which are bear and rodent proof, provided by our outfitter and will be prepared to store these tied to a tree 100 feet away from our tent and kitchen. These food barrels are specifically designed for boating and portaging. We will also be sure to seal all foods in airtight bags and clean the campsites thoroughly before heading to bed.

g. Food List

[Food List10.xlsx](#) (41KB)

Uploaded 1/10/2018 2:54am by Kilian Morales Coskran

Appendix C

f. Equipment List

[Equipment List.pdf](#) (147KB)

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Appendix B

b. LNT Principles

Yes

Empty

Our close proximity to water throughout the trip means that we must be conscious of how each of our actions could impact the watershed, so we will be sure to take steps to minimize our impact. The BWCA can be heavily trafficked in the summer, so upholding LNT principles is critical in ensuring continued ecosystem health and future recreational opportunities. As required by the US Forest Service, we will be camping in designated sites. During our portages we will stay on designated trails. Since most of our travel time will be spent on water, our impact to the land will be minimal compared to most other backcountry trips. We will only canoe when conditions are safe in order to ensure stability of our boats and safety of trip members. We will try to always use pit toilets, which are located at all our campsites, and if we cannot use a pit toilet we will bury human waste in a hole 6 to 8" deep at least 200 feet from water. We will only have campfires in the designated grates at each of our campsites.

Empty

Plan ahead and prepare

In order to stay self-sufficient and maximize safety, we have carefully planned our itinerary and all food.

Travel and camp on durable surfaces

As required by the US Forest Service, we will be camping in designated sites. During our portages we will stay on designated trails. Since most of our travel time will be spent on water, our impact to the land will be minimal compared to most other backcountry trips. We will only canoe when conditions are safe in order to ensure stability of our boats and safety of trip members.

Dispose of waste properly

There is a wilderness latrine at all campsites. We will use this latrine while at a campsite. If we are not near a campsite, we will bury human waste in a 6 to 8" hole. We will pack out all other waste.

Leave what you find

Aside from any obvious waste left behind by other people, which we will pack out if we determine safe, we will leave what we find. While traveling in the BWCA, we will be conscious of the historical areas that we are traveling in.

Minimize campfire impacts

We will have all campfires in designated campfire pits at our campsites. We will only have a campfire if deemed useful for the group and we will check any fire restrictions before departing.

Respect Wildlife

We will cook and store all of our food away from our campsite in order to minimize our likelihood of contact with bears. Additionally, we will store all of our food in bear cans supplied by our outfitter that are designed specifically for boat travel and portaging.

Be considerate of other visitors

We have planned our route on smaller lakes, where we will likely encounter fewer people. When we do encounter people we hope to share experiences and advice, and we will respect the objectives of our other travelers. Due to the reflective nature of our expedition, most of our activities will be relatively quiet.

IV. Risk Management

b. Objective Hazards

Drinking water: In order to avoid Giardia and other illnesses from unfiltered water, we will use chlorine droplets for all drinking water and ensure that any water used for cooking is first boiled.

Rapids: Although much of the Boundary Waters is flatwater lakes, there are rapids on the connecting rivers and streams between lakes. Each set of rapids, however, is well marked and includes a portage that we will take to avoid them. We will make sure that the front canoe keeps an eye out for rapids and signals to the following canoes that rapids are ahead so that we can pull off to the proper side of the waterway.

Deep water/drowning: Every member of the team will wear a life jacket anytime they're in a boat. In addition, we will always paddle as close to shore as possible to avoid increasing the risk of drowning.

Getting lost: Navigating the BWCA, with its many interconnecting lakes, is more difficult to navigate than a typical river. To combat the threat of getting lost or off route, we will ensure that each boat has a set of maps at all times and that the maps are checked periodically and often so that we always know where we are. In addition, the three canoes will always stay in sight of each other to prevent any separations from the group. When hiking and exploring on land,

group members will always have at least one person accompanying them and inform other group members of their intended return time.

Weather: Weather is the most likely hazard of the expedition. Strong winds, rain, hail, and lightning all could occur during our expedition. We will monitor the weather at all times while paddling to avoid being caught in a storm while on the water. We will paddle near the shoreline to more easily land ourselves in case of immobilization or capsizing from strong winds. We will also scout our tent spots ensuring that we don't camp beneath trees at risk of being blown over. In case of lightning, we will quickly move to land and seek the cover of dense trees making ourselves as low as possible and avoiding isolated trees and rock outcroppings. We will also use our sleeping pads or something similar to insulate ourselves from the ground.

Extreme cold or heat: An extension of hazardous weather, extreme cold and heat are a hazard that we will hopefully avoid. In the case of extreme heat, we will alter our canoeing schedules to paddle at cooler parts of the day, like early morning, and increase our water intake. In the case of extreme cold, we will make sure we have enough layers and most importantly, avoid getting wet by having rain gear easy accessible at all times.

Injury: Injury is a risk during a trip most notably during portages. Portages are integral to safely traversing the Boundary Waters, but they can be dangerous due to carrying heavy loads like canoes over rocky terrain. To prevent injury, we will make sure that each canoe is transported with the support of two people-- either one carrying with the yolk on their shoulders while one helps maintains balance, guides, and assists with breaks, or with one on each end of the canoe carrying it upright. We will all be wearing shoes with proper support so as to avoid ankle twists and stubbed toes, and the portage route will be assessed for large drops or hazards before the beginning canoe transport.

Wildlife: The only bears that we may encounter in the BWCA are black bears, and, even then, they are very rare. To ensure that our food stays safe from bears or other animals, we will make sure that we store all foods and smelly items (ie toothpaste) in the food barrels, away from our tent areas. On the rare chance we encounter a black bear, we will make ourselves look big and make a lot of noise. There are also moose in the BWCA. If we see a moose, we will stay in our canoes in deep water and give them a wide berth. If encountered in camp, we will slowly and quietly back away being sure that we do not spook the moose.

Bugs: The BWCA is notorious for bugs. During early June, when our expedition is planned, black flies are at their worst. They bite, swarm, and are attracted to dark colors, so to combat the nuisance of them we will bring bug nets, bug spray, and wear light colored clothing.

Blisters, burns, and cuts: Given that we will be paddling for multiple hours a day, there is a high risk for blisters. While the consequence is not very high, we will be sure to wear gloves when it is cold and bring bandaids and moleskin to mend these wounds. Sunburns will be avoided by using sun block, hats, and long layers. To prevent other burns from cooking or fires, we will use proper cooking etiquette around the stove and fire by wearing close-toed shoes and not walking over the hot locations. We will air out these type of wounds and apply lotion and aloe when necessary. Small cuts and abrasions are possible, but we will be sure to be prepared to patch these up and take care when dealing with sharp objects, such as knives and fish hooks.

Evacuation Plan

In addition to being WFR certified, each member of our group has extensive experience in the backcountry and understands the steps one must take to assess whether or not an evacuation is necessary. We will make sure to manage injuries, such as blisters, shoulder pain, and sunburns before they require evacuations.

The following evacuation plan was approved by Piragis Northwoods Company (our outfitters), and they are confident with our abilities to follow through with this evacuation protocol.

If we are in need of an immediate life-threatening evacuation, we will use our satellite phone to call 911 or any of our emergency contacts. Given our close proximity to large bodies of water, a float plane will be able to land near each of our campsites and provide aid in situations that pose immediate threat to life or limb. If we experience a non-life threatening situation that requires evacuation, we will contact our outfitter via satellite phone or, if possible, cell phone and paddle to the nearest access point where there is access to a road where our outfitter will meet us and shuttle us to our desired location. For each day of travel we have determined the closest access point. The list below shows the access points closest to us for each travel day and the map that follow shows a general guideline on how we would navigate to each access point.

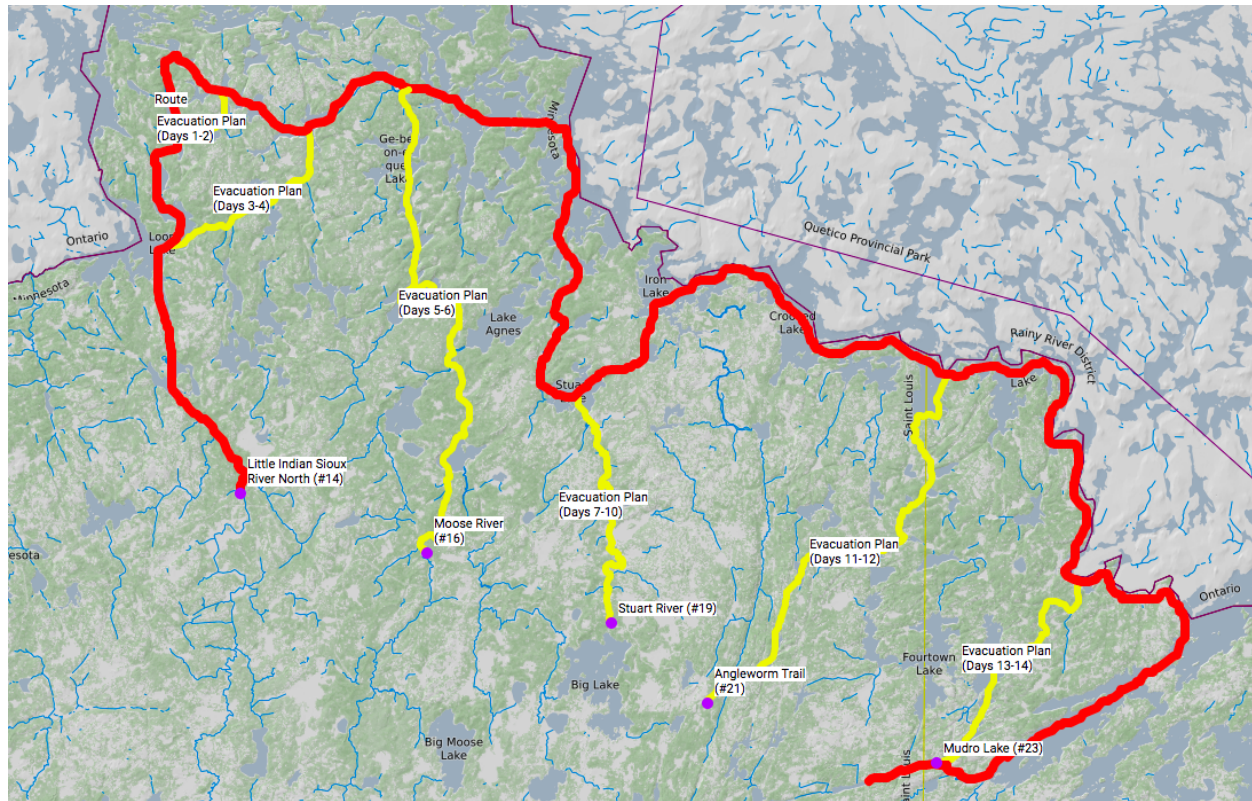
Day 1-4: Little Indian Sioux River North (Access Point #14)

Day 5-6: Moose River (Access Point #16)

Day 7-10: Stuart River (Access Point #19)

Day 11-12: Angleworm Trail (Access Point #21)

Day 13-14: Mudro Lake (Access Point #23)



Special Preparedness

e. Emergency Resources

We will be able to contact the following resources using our satellite phone. In the beginning of our trip, we have the potential to use cell phones, but due to poor coverage in the BWCA we cannot rely on this capability.

Ely Bloomenson Community Hospital

328 West Conan Street

Ely, Minnesota 55731

(218) 365-3271

Piragis Northwoods Company (Outfitter)

105 N. Central Ave

Ely, MN 55731

(800) 233-6565

(218) 365-6745

Forest Supervisor's Office
8901 Grand Avenue Place
Duluth, MN 55808
(218) 626-4300
www.fs.usda.gov/superior

Gunflint Ranger Station
2020 W. Highway 61
Grand Marais, MN 55604
(218) 387-1750

Kawishiwi Ranger Station
1393 Hwy 169
Ely, MN 55731
(218) 365-7600
(218) 365-7561

La Croix Ranger Station
320 N. Hwy 53
Cook, MN 55723
(218) 666-0020

Laurentian Ranger Station
318 Forestry Road
Aurora, MN 55705

Tofte Ranger Station
Box 2159
Tofte, MN 55615
(218) 663-8060

Emergency Communication

We will be carrying a satellite phone for emergencies while out of cell service. There is very little to no cell service while out on the boundary waters, so we will be sure to carry the satellite phone at all times and have our cell phones available when we are in service. We will also be sure to let our emergency resources know our timing and itinerary as a precautionary measure.

V. Budget

Budget

[Budget.pdf](#) (156KB)

Appendix D

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Transportation

703

Food and Fuel

949.32

Maps and Books

81

Communication Device Rental

0

Permits/Fees

250

Gear Rentals

2962

Total Funding Request

824.22

Cost Minimization Measures

We chose to drive from Colorado to Minnesota, which is considerably less expensive than flying

In route to our expedition, we will spend a night at Kilian's home as opposed to paying for a campsite or hotel

We plan to purchase the majority of our food from less-expensive wholesale stores, such as Costco, and prices for food in our uploaded spreadsheet are reflected in that choice

We chose to stay within the limits of BWCA purely because of price. The permit for six of us for our entire trip costs only \$114. While we wanted to explore Quetico Provincial Park in Canada, permits cost \$21/night per person. The total cost in Quetico for 14 days would have been \$1,764, therefore saving \$1,650 by staying in Minnesota.

Austin has a friend who owns a satellite phone which we will be able to borrow for the entirety of the trip. Thus we will not have to rent one of the most expensive pieces of gear for the trip.

Minnesota residents are getting two of the fishing licenses which will save \$56 because they are \$28 cheaper than the out of state licenses.

VI. Expedition Agreement

Expedition Agreement

[Expedition Agreement.pdf](#) (339KB)

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Appendix E

Appendix A- Itinerary

Pre-Trip Itinerary

Pre-Trip Day 1:

Drive from Colorado College to Minneapolis (14 hours); sleep at Kilian's home.

Pre-Trip Day 2:

Organize all food and complete the drive (3 hours); meet the outfitters organize the gear and get a good night's sleep.

Pre-Trip Day 3: Embark on the journey of a lifetime

Expedition Itinerary

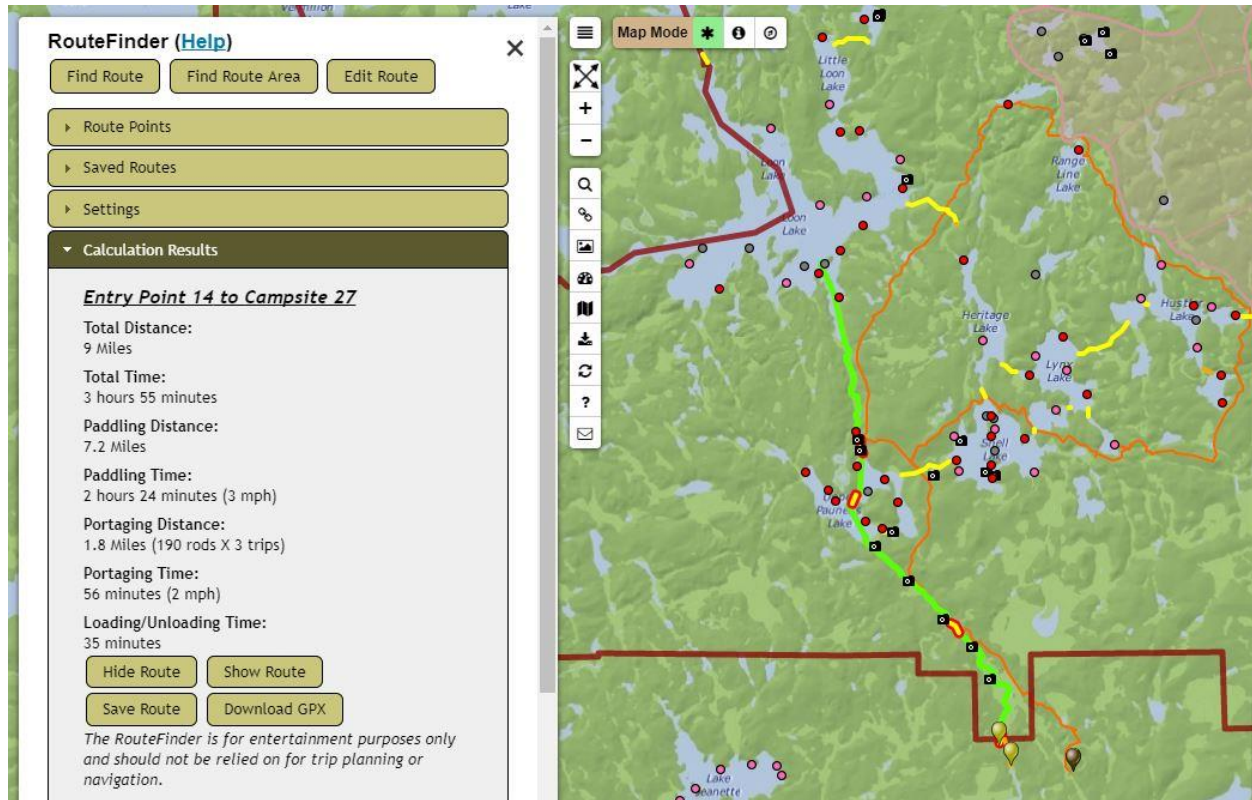
The maps we used to trace our route through the BWCA come from a website suggested to us by our outfitter: Paddleplanner.com. While these maps will be useful in highlighting campsites and total paddling and portaging distances and times, they will not be the actual maps we will use on our expedition. Rather, we will be using the official maps provided by the outfitter.

In calculating the time it takes for paddling and portaging, please note that the Paddle Planner made some assumptions. The default settings are that our paddle speed is 3 mph (slightly less than what our outfitter's predicted, which was 3.5-4 mph with no wind). The default portaging speed is 2 mph and adds 10 minutes to load and unload the canoes. For portaging miles, it is important to understand that the listed distance is the distance of the portage multiplied by three. Paddle Planner does this under the assumption that we will need three trips to get all the gear across the portage. In talking to our outfitters, these assumptions could be overestimations on the shorter portages but we decided to leave this assumption the same for every portage so as to not underestimate portaging times or distances.

Our route is highlighted in green and every portage is highlighted in yellow. The pink and red dots on all of the maps mark the campsites that can be used in the BWCA. These campsites are the only places we will be camping and are all equipped with a high quality grated fire pit and wilderness latrines. The campsites are not to be confused with the access points that are only at the beginning and end of our expedition and are a much larger icon that resembles a drop. The camera icons do not pertain to our grant proposal, but offer photos uploaded by previous paddlers. The orange lines, which are generally not on our route, mark the hiking trails through the BWCA and the Superior National Forest. These are important to note for our rest days, where we plan on hiking a short portion of these trails (weather permitting). Once again, we will be bringing more detailed maps that include descriptions of the trail and will be easier to read for our excursions off the water.

It is important to note that the route mapped out by Paddle Planner sometimes takes the most direct approaches across some of the larger lakes. In general, our paddling strategy will be to remain near the safety of shoreline as we paddle through the boundary waters, even though this may add extra distance. Although there are not large, dangerous crossings on our route, we do not want to leave the safety of shoreline when crossing larger lakes and put ourselves at risk of dangerous weather. Therefore, we will stop and check the weather conditions prior to crossing large lakes, in order to make a group judgement call and determine whether making a crossing at that time would be safe.

Day 1

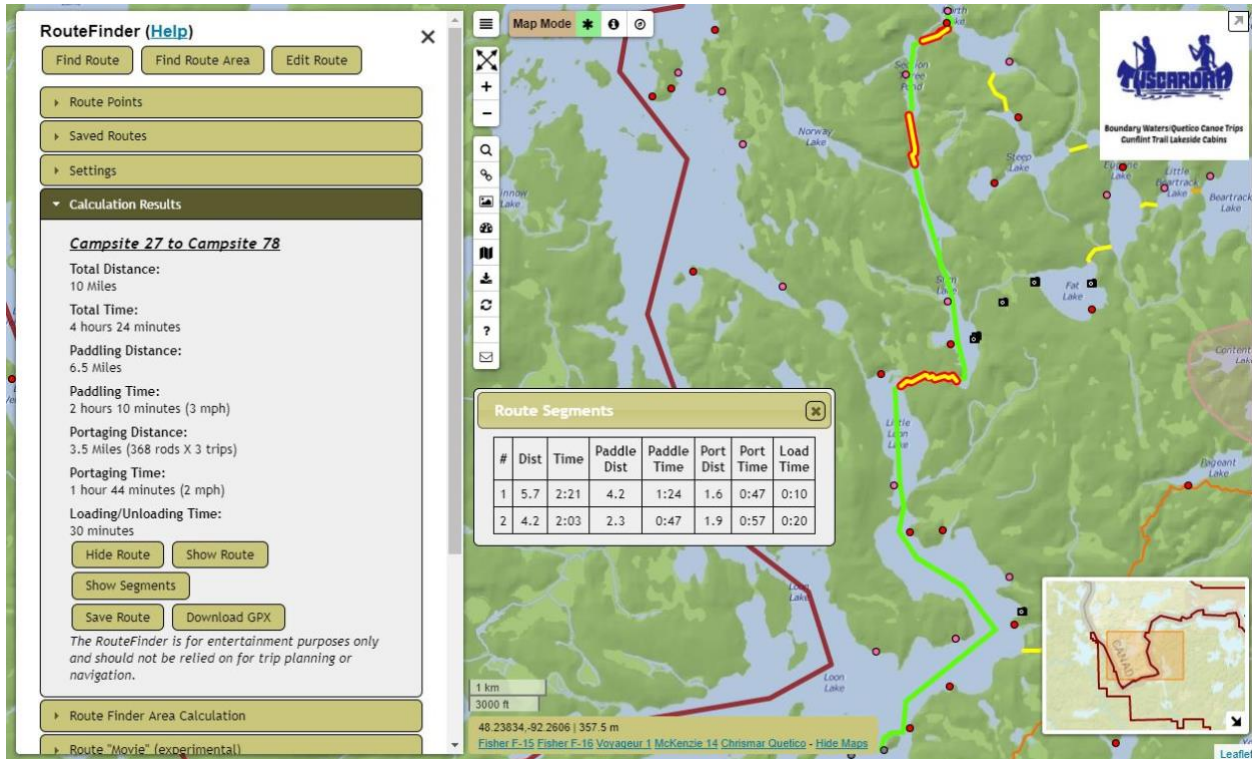


On day one of our trip our outfitter, Piragis Northwoods Company, will drop us off at access point 14 (Little Indian Sioux River North). After a very short 600 foot portage, we will begin paddling north following the Little Indian Sioux River through the upper and lower Pauness lakes until we reach our primary campsite on the southernmost Island of Loon Lake. Our secondary campsite will be the campsite on the smaller island, directly west of our primary campsite. This first day will include 7.2 miles of paddling and four relatively short portages (less than 1000 feet each) for a total of 1.8 miles of portaging.

Because access point 14 allows 6 group permits each day and we will still be relatively close to road access, we plan on an early departure so we can arrive at our campsite before any other possible overnight group. Our route selection also reduces the chances of running into other groups. Our outfitters pointed out most groups departing from access point 14 travel to Shell and Lynx Lake, both of which are east of our route.

The second reason we plan on an early departure is we want to allow additional time for our first day of portaging. Although we will be traveling with lighter Kevlar Canoes and Duluth Portaging Packs to facilitate our portages, we assume it will take additional time on this first day to organize and get into the groove of portaging.

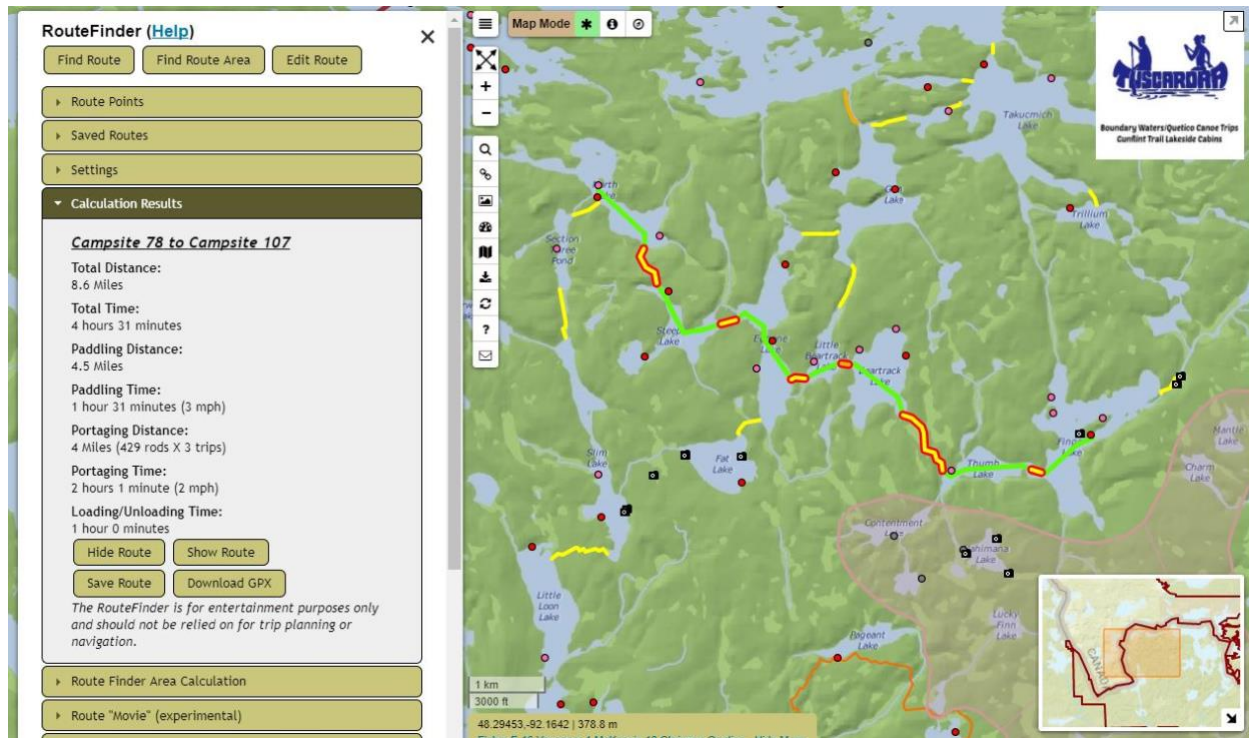
Day 2



On day two, we will leave our campsite on the southeast island of Loon Lake and continue north east towards and through Little Loon Lake until we reach the portage to Slim Lake. After making the longer portage to Slim Lake, we will follow the lake north until we reach the second shorter portage to Section's Pond. Here, we will continue northeast and make our final portage to North Lake. Because this travel day will contain more portaging miles than our first day, we will only paddle 6.5 miles and camp on the island directly north of the end of the portage to North Lake, with the secondary campsite being the site at the end of the portage.

Given it will be relatively early on in our expedition, we will plan on leaving earlier in the morning to allow for extra portaging and paddling time. In addition to this, our outfitters mentioned that an earlier departure time would reduce the chances of paddling through the occasional summer showers.

Day 3 and 4

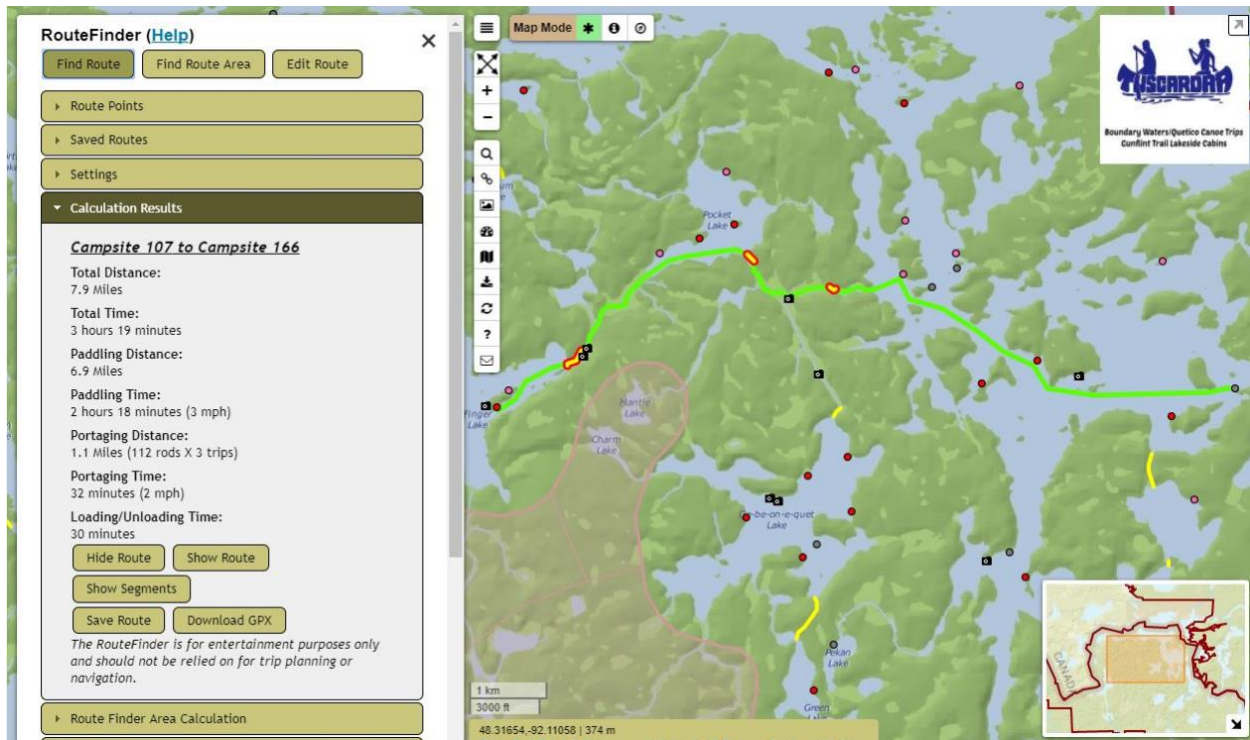


On day 3, we will make our way southeast through South lake, Steep Lake, Eugene Lake, Little Beartrack Lake, Beartrack Lake, and Thumb Lake, with six relatively short portages between them until reaching our campsite on the south side of the island in the middle of Finger Lake. Our secondary campsite will be the campsite at the southwest side of the island. While the six portages will add up to 4 miles and will make for our second longest portaging day of the expedition, this will be balanced by our expedition's second shortest paddling day. In addition, we are confident that by our third day of portaging we will have worked out the kinks and perfected our approach to portaging.

Day 4

Following our second longest day of portaging, we will take our first rest day of the expedition on day 4. Besides taking the day to recover and swim, we will also take advantage of the remote location of Finger Lake to relax, watercolor, fish, and, weather permitting, go on the quarter mile hike to the top of Finger Lake overlook at the southern end of the lake.

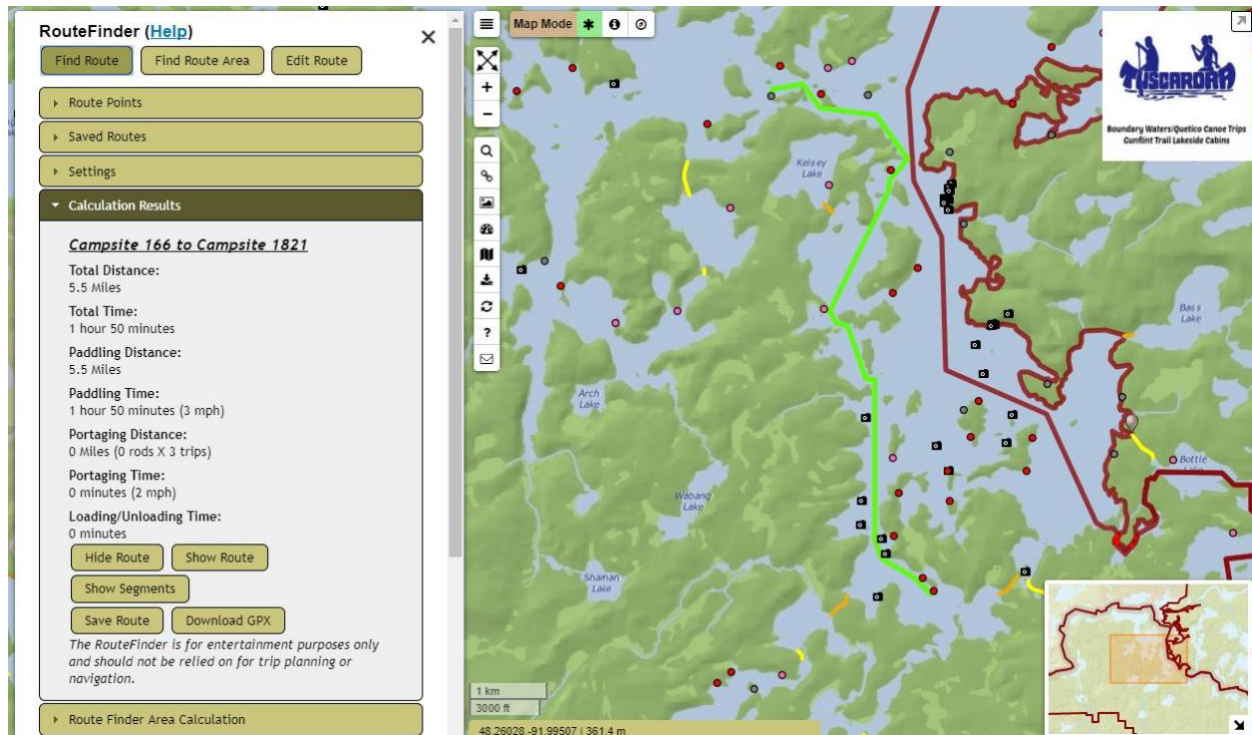
Day 5



Following our rest day at Finger Lake we will paddle to the northeast corner of Finger Lake and continue east through Pocket Lake until we make it out to Lac La Croix. From there, we will continue east across Lac La Croix to our campsite on the south side of the Fish Stake Narrows. Our secondary campsite will be on the east side of the same island (not shown on day 5 map, but can be seen on the day 6 map)

We will be paddling a total of 6.9 miles today and portaging only 1.1 miles. These lower mileages are intentional as this will be our first day on Lac La Croix which we have been warned can take longer to paddle if we are unfortunate enough to encounter a headwind as we cross the lake. To account for this possible delay, we will stop and assess the wind and other weather conditions before going out in open water.

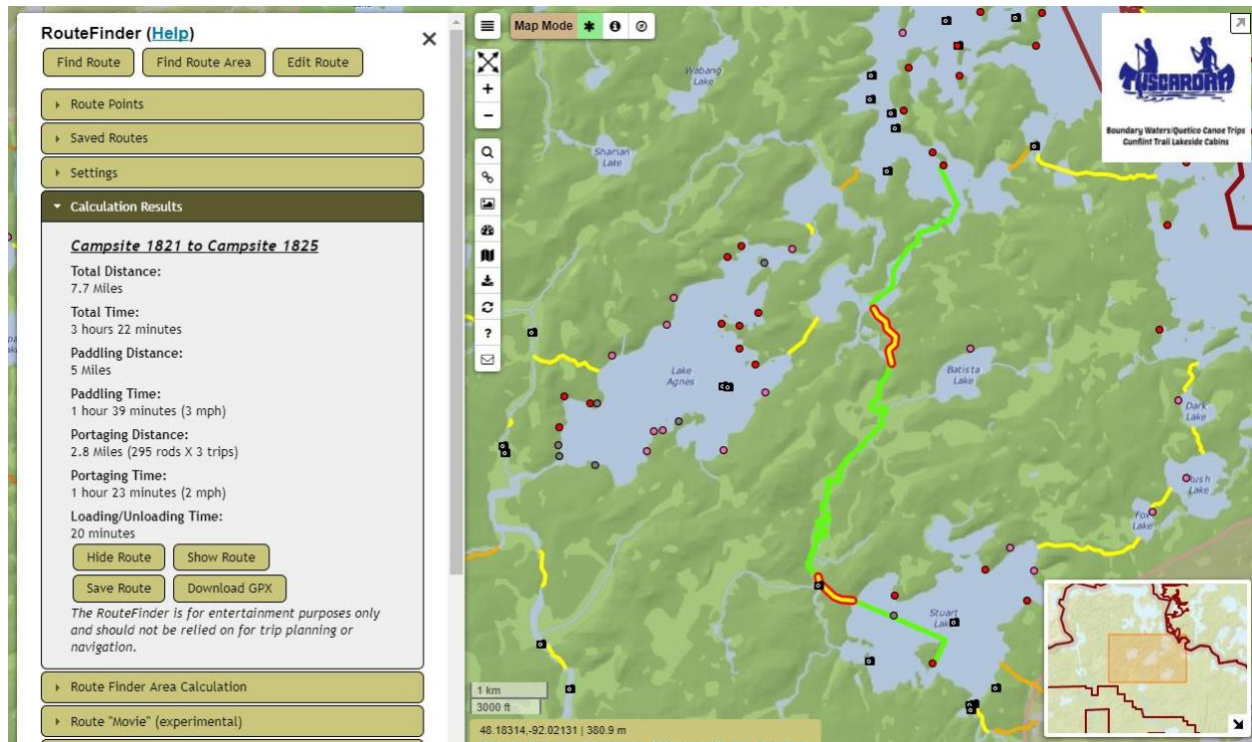
Day 6



On day six, we will finally reach the US border with Canada. We will depart our day five campsite and paddle southeast on Lac La Croix to the Canadian border. Once we reach the border, we will continue south on the US side of Lac La Croix until we reach our campsite on the northern side of Boulder Bay. Our secondary campsite for this night is the campsite just north of our primary campsite.

Day six will, thankfully, have zero portaging miles and only 5.5 miles of paddling for an estimated travel time of 1 hour and 50 minutes. The short travel day is due to the fact that we will be canoeing on Lac La Croix, which, as we've mentioned before, our outfitters warned us can sometimes be plagued by strong headwinds. Because of this, we have chosen to air on the side of caution and allow for extra travel time on our way to the campsite.

Day 7 and 8



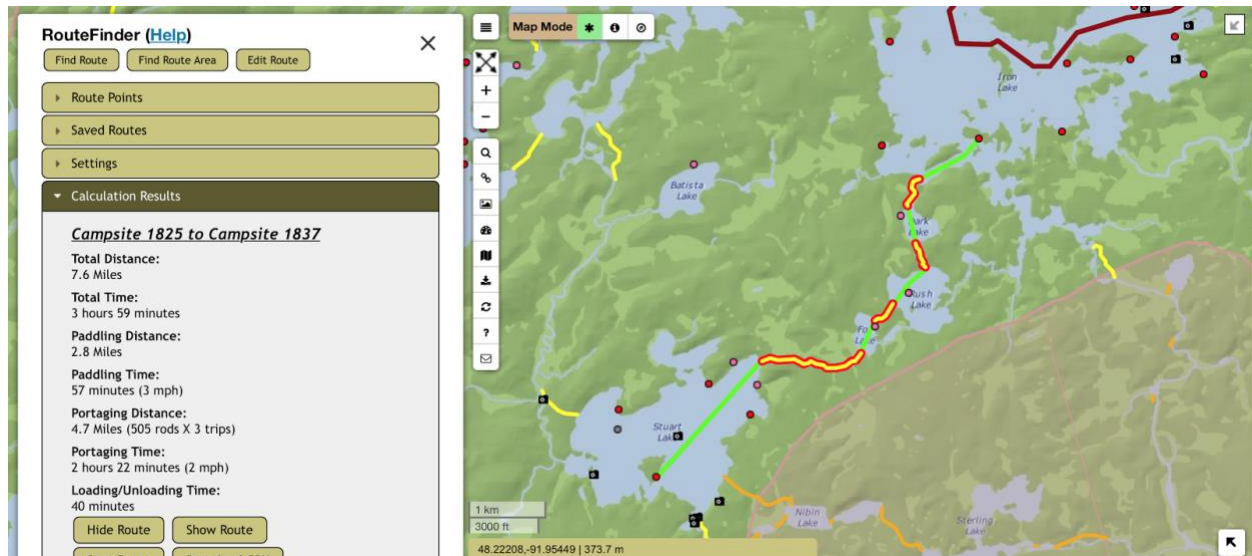
On day seven, we will continue south from our campsite through Boulder Cay to the mouth of the Dahlgren River. From there, we will follow the Dahlgren River south until it enters Stuart Lake, where we will stay at the campsite on the southern tip of the southern most island. Our secondary campsite on this day will be the campsite on the smaller island just northwest of our primary campsite.

Day seven will bring a change in scenery from the large size of Lac La Croix back to smaller lakes and rivers. On day seven of the trip, we will paddle for 5 miles and will have two portages totaling 2.8 miles of portaging around the rapids at the north and south ends of the Dahlgren River.

Day 8

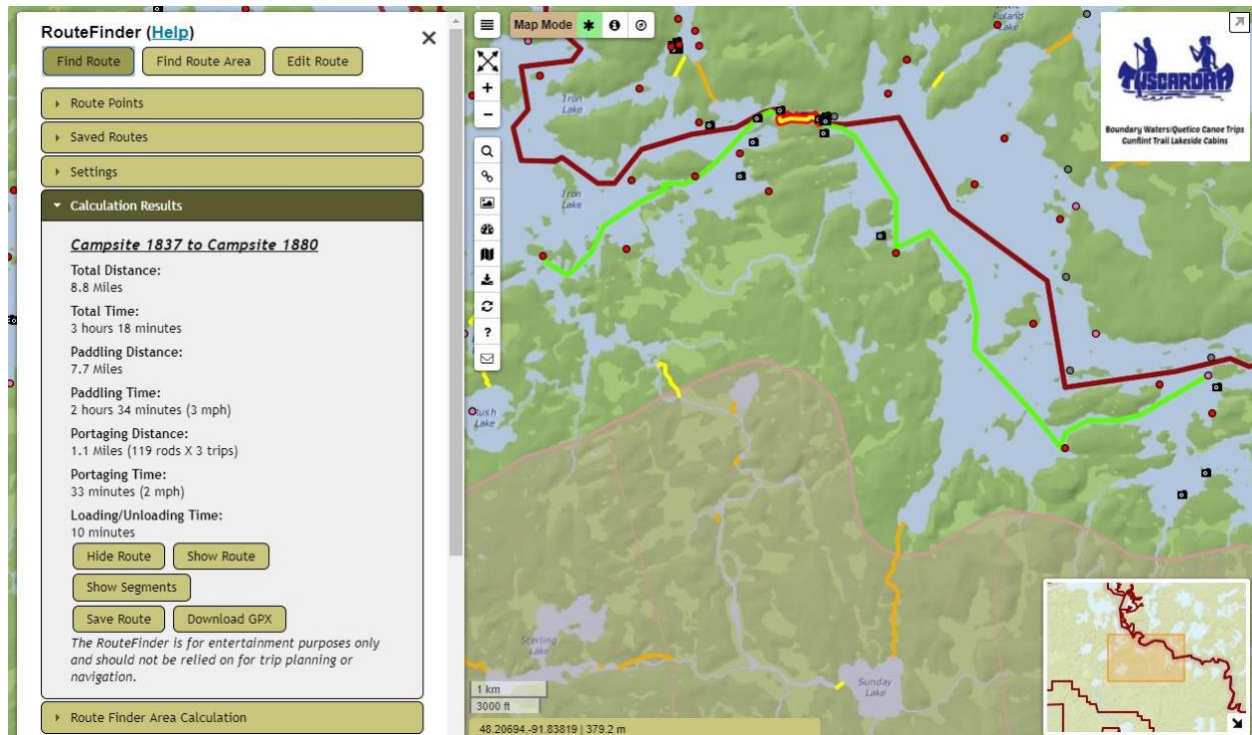
Day eight will mark our second rest day of the expedition, sleeping at the same campsite as day seven. We chose this day as a rest day because of a beautiful description of Stuart lake from our outfitter. We will take this rest day to reflect, read, watercolor, practice yoga and fish. The southern end of the lake not only has great fishing, but also has waterfalls at the southeast corner where Stuart River runs into Stuart Lake, which are supposed to be exceptionally beautiful. Finally, the southeast corner of Stuart Lake has short hiking trails into Superior National Forest so we can go for a hike to stretch our legs after paddling for so long.

Day 9



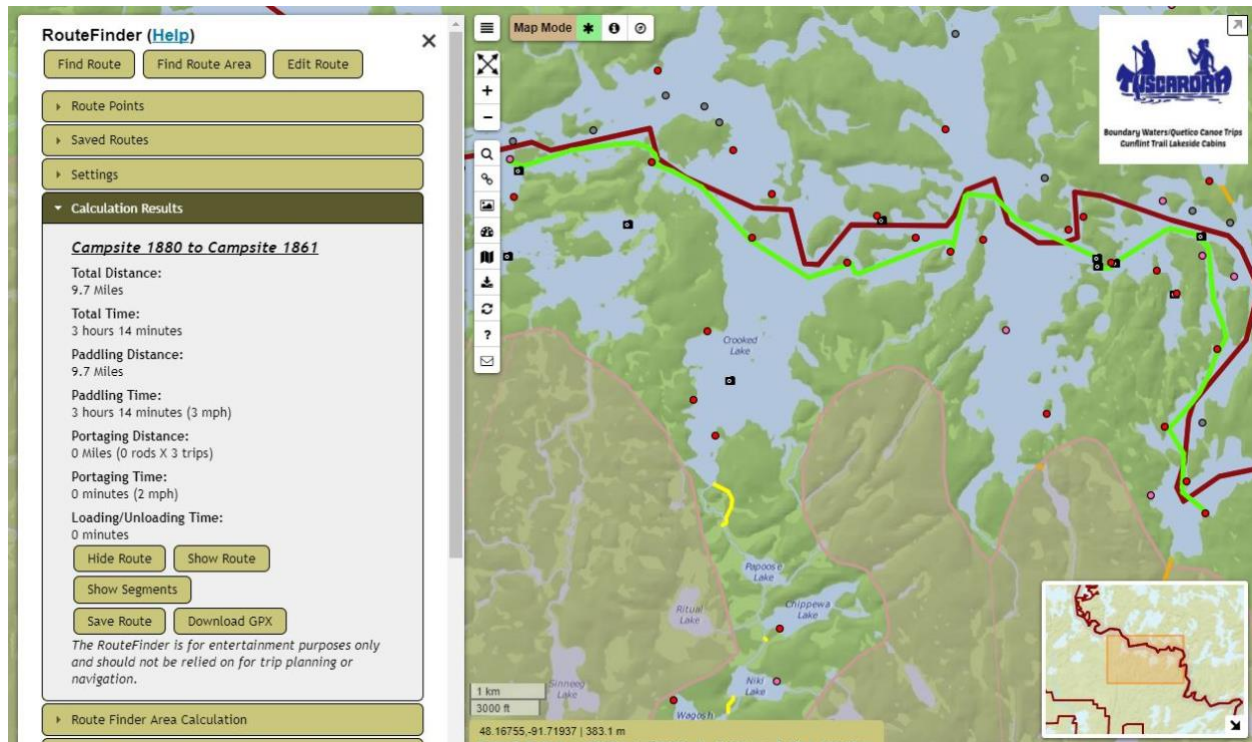
On day nine, we will head northwest on Stuart Lake and paddle a total of 2.8 miles through Fox, Rush, and Dark Lakes before reaching our campsite on the island just north of Peterson Bay. Our secondary campsite will be east of our primary campsite on the south side of Iron Lake. Although this will be a short paddle day, we will have four portages through this chain of small lakes, which make up our longest portaging day of 4.7 miles. Fortunately, our day eight rest day means we will be fresh and well rested to tackle this tough travel day. Additionally, we will already be skilled portagers and have much less weight to deal with as we eat our way through our food supplies at this point in the trip.

Day 10



On day ten, we will head northeast along Iron Lake to our first and only portage of the day. This portage, which is 1.1 miles, will take us right along the Canadian border and into Crooked Lake. From there, we will follow the southern edge of Crooked Lake through Sunday Bay to our primary campsite on the northern side of Saturday Bay. Our secondary campsite is located on the mainland just south of our primary campsite. Day ten will include a total of 7.7 miles of paddling with the possible chance of a headwind due to the larger size of Crooked Lake.

Day 11 and 12

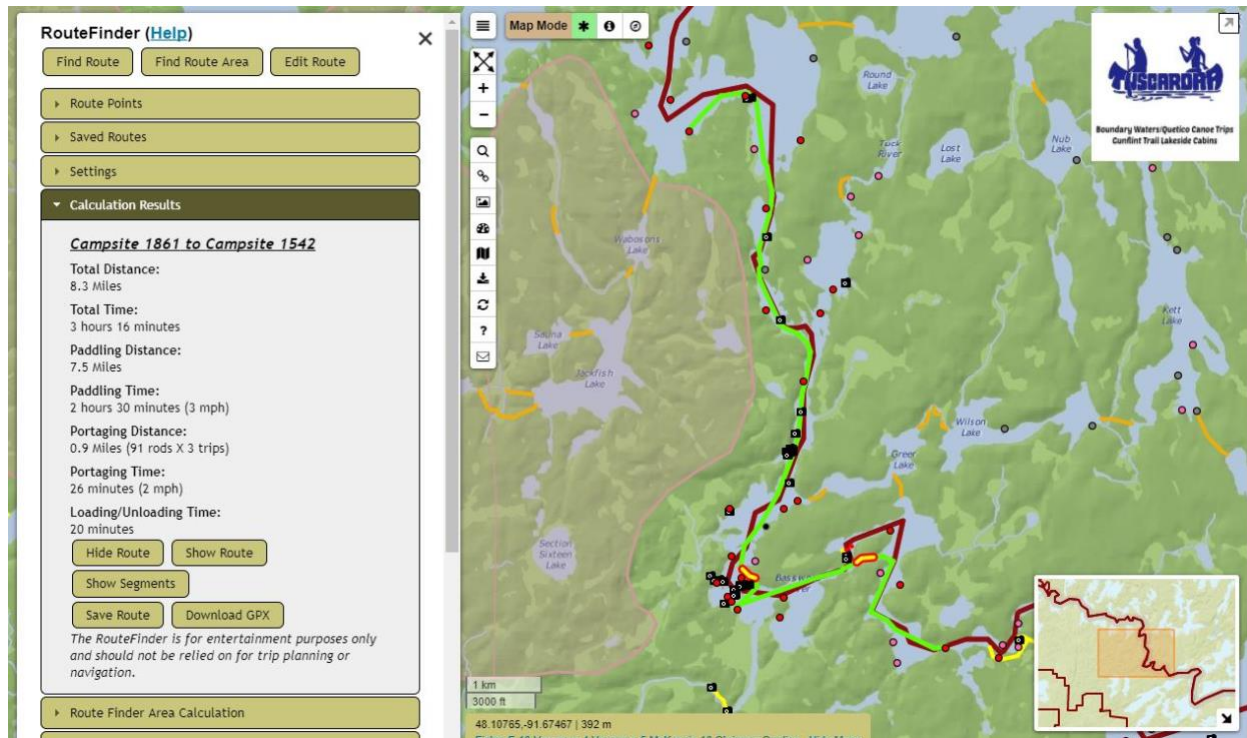


On day eleven, we will continue paddling east on Crooked Lake along the Canadian border through Friday and Thursday Bay before arriving at our primary campsite on the east side of Wednesday Bay. Our secondary campsite will be on the west side of Wednesday Bay. Although this will be one of our longest paddling days, 9.7 miles, on a potentially windy lake, there are no portages and that our bodies will be very well prepared after ten days of paddling, so we will be well conditioned to complete this mileage.

Day 12

Day twelve will be the final rest day of our expedition. For this rest day we will remaining at the same campsite as day eleven and take the time to explore the ancient pictographs near our campsite, reflect, fish, and hike into the Superior National Forest. This will be a welcome rest day after one of our longer paddling days and an excellent chance to prepare for the two longer travel days that will wrap up our trip.

Day 13



On day thirteen, we will begin heading south along the Canadian border through a much narrower section of Crooked Lake. As we pass near Lower Basswood Falls (Where all the camera icons are), we will keep our eyes out for more pictographs on the western cliff walls. As we portage Lower Basswood Falls, we will be sure to stop and admire the cascading water. Our final primary campsite will be just south of the portage near Basswood Falls. Our secondary campsite will be the campsite just north of the Basswood Falls portage.

Although day thirteen will include 7.5 miles of paddling we will be fresh from our rest day and the two portages will only total .9 miles.

Day 14

The screenshot displays the RouteFinder application interface. On the left, a sidebar titled "RouteFinder (Help)" contains several sections: "Find Route", "Find Route Area", and "Edit Route" buttons; "Route Points", "Saved Routes", and "Settings" expandable sections; and "Calculation Results" for the route "Campsite 1539 to Entry Point 23". The results are as follows:

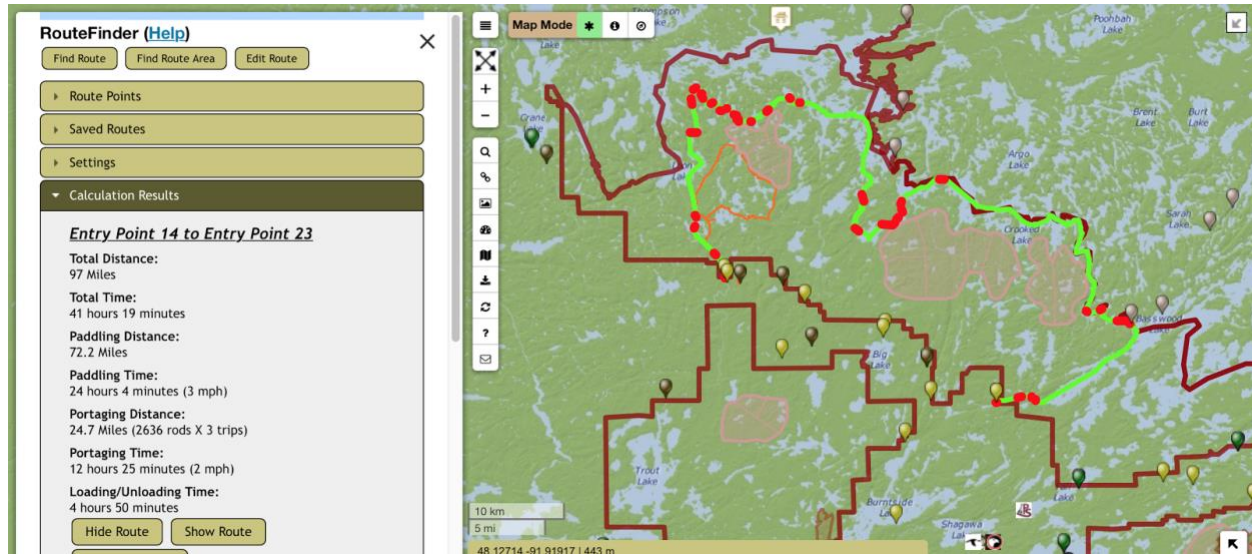
- Total Distance: 13.2 Miles
- Total Time: 5 hours 16 minutes
- Padding Distance: 11.7 Miles
- Padding Time: 3 hours 53 minutes (3 mph)
- Portaging Distance: 1.6 Miles (166 rods X 3 trips)
- Portaging Time: 47 minutes (2 mph)
- Loading/Unloading Time: 35 minutes

Below the results are buttons for "Hide Route", "Show Route", "Save Route", and "Download GPX". A disclaimer states: "The RouteFinder is for entertainment purposes only and should not be relied on for trip planning or navigation." At the bottom of the sidebar are "Route Finder Area Calculation" and "Route 'Movie' (experimental)" options.

The main map area shows a topographic view of a region with numerous lakes and trails. A red route is highlighted, starting from a yellow dot and ending at a red dot. The map includes a scale bar (2 km, 1 mi), a coordinate display (48.03211, -91.83425 | 418 m), and a small inset map in the bottom right corner. A logo for "Boundary Waters/Quetico Canoe Trips" is visible in the top right corner of the map area.

On day fourteen, our final day on the water, we will have a long day with 11.7 miles of paddling and two portages totaling 1.6 miles. Fortunately, we will be able to get the bulk of the portaging done immediately, as we'll have to go around Basswood Falls to get on the water. We will make sure we savor the last miles on the water, as our time in the Boundary Waters, and effectively Colorado College, comes to an end. The final push southwest will bring us through Basswood, Sandpit, and Mudro lakes and to our final destination at access point 23 (Mudro Lake). There, we will contact our outfitters (Piragis), who will send a shuttle to load up everything and drive us back to Ely. Although this is by far our longest day, we will have eaten almost all of our food by day 14 and be paddling and portaging much faster in our lighter canoes. Regardless, we plan on an early morning departure to allow for any unforeseen delays.

Total Route



Evacuation plan (See evacuation section for description of evacuation plan)

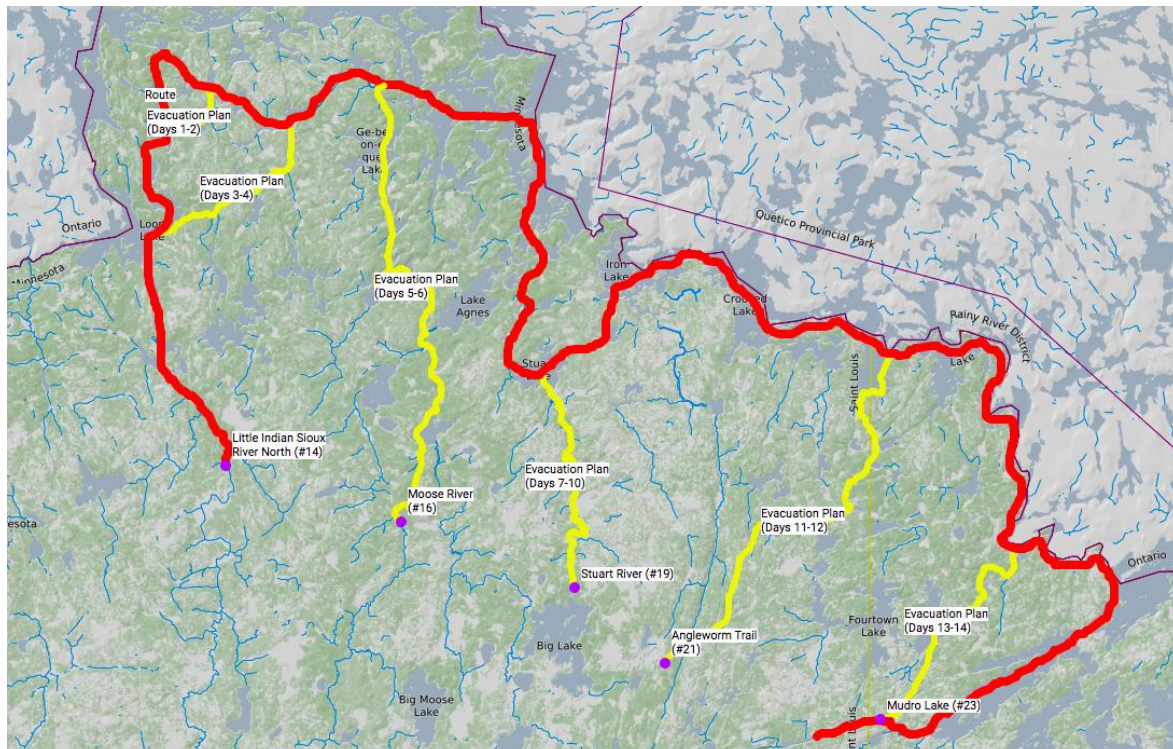
Day 1-4: Little Indian Sioux River North (Access Point #14)

Day 5-6: Moose River (Access Point #16)

Day 7-10: Stuart River (Access Point #19)

Day 11-12: Anglemorm Trail (Access Point #21)

Day 13-14: Mudro Lake (Access Point #23)



Appendix B- Equipment

Personal Gear:

**We will have separate clothes to wear on the water and in the campsites so that we will be comfortable, dry, and warm while camping and boating.

- Underwear
- Short sleeved shirts
- Long sleeve base layers
- Fleece
- Puffy jacket
- Rain coat
- Rain pants
- Long underwear
- Hiking/camp pants
- Fleece pants
- Camp shoes
- Hiking boots/shoes
- Wool socks
- Headlamp and spare batteries
- Chapstick
- Warm hat
- Sun hat
- Warm gloves
- Sleeping bag
- Sleeping pad
- Dry bag
- Sunglasses
- Watch
- Bug head net
- Water bottle
- Emergency money
- Diva cup (for women)

Camping/Group Gear:

- 1 6-person tent
- 1 tarp with parashord
- 2 large bottles of mosquito repellent
- 2 bottles of sunscreen
- trowel
- 9 maps (waterproofed) 3 copies (one per canoe)
- 3 compass (One per canoe)
- 3 ropes
- duct tape
- Roll of heavy duty trash bags
- Zip lock bags

Cooking Gear:

- 3 60L Food Barrels
- 3 MSR stoves (whisperlite, dragonfly)
- 8L of white gas kept in 8 1L bottles
- Stove repair kit
- Lighters and matches
- Pots and pans (large pot, small pot, large frying pan)
- Cooking utensils (spatula, spoon, etc,)

2 knives
Leatherman (can opener + pot grip+ other tools)
Biodegradable soap
Sponge
Dishwater strainer
Personal bowls and utensils mugs
Spice kit
Iodine tabs for 250+L of water Dromedary- 20L

Canoeing Gear:

3 Kevlar Canoes (We are using 41-pound Kevlar canoes to decrease our weight during portages)
7 Canoe paddles (1 extra paddle)
7 PFDs with whistles and river knives (1 extra PFD)
6 Crazy Creeks
3 Bailer
Bow and stern lines

Safety/Communication Gear:

Satellite phone
Signal Mirror
3 cans of bear spray

First-Aid Kit Specifications:

Personal Protective Equipment gloves (nitrile)
CPR mask

Bandage materials

12 non-adherent sterile dressings
30 adhesive bandages - variety of sizes 2 trauma pads (bleeding)
2 combine dressing pads

Blister/burn

1 small bottle Burn-Jel
1 pack of moleskin
Aloe

Fracture/sprain

1 elastic ACE bandage athletic tape-water proof 2 triangle bandages
2 tongue depressors SAM splint
Steri strips
2 rolls vet wrap
2 rolls roller gauze
Instruments tweezers
Water syringe thermometer safety pins trauma shears SOAP notes first aid booklet space blanket pens
Signal mirror
Plastic bag (resealable)

Medication

Personal medications
1 Small bottle ibuprofen
20 Tylenol (cold and flu)
10 Clairton
10 Benadryl
10 Aspirin

12 Tums (antacid)
1 Small bottle imodium
12 Electrolyte stamina power pak 1 tube hydrocortisone cream

Wound prep

1 Tube neosporin
10 Iodine prep pads
20 Alcohol prep pads
Benzoin tincture with swab and capsules 4 cotton tip applicators

Appendix C- Food

Item	Price/pakage	packages needed	Total price
Breakfast			
Oatmeal	19.70	1.00	19.70
Granola	6.99	2.00	13.98
Lunch			
Pita	2.99	2.00	5.98
Hummus	5.00	4.00	20.00
Tillamook Extra Sharp Cheddar Loaf	10.39	2.00	20.78
Tortillas	5.49	6.00	32.94
Almond Butter	12.49	4.00	49.96
Jam	15.00	2.00	30.00
Summer Sausage	6.11	3.00	18.33
Dinner			
Dehydrated black beans	12.97	2.00	25.94
textured vegetable protien	10.00	1.00	10.00
Tortillas	5.49	3.00	16.47
Parmesan Cheese	6.50	2.00	13.00
Chicken of the Sea Chunk Light Tuna 7 oz.	1.99	6.00	11.94
Penne Pasta (whole wheat)	2.07	4.00	8.28
Spaghetti	2.07	4.00	8.28
Dehydrated red Sauce	2.04	5.00	10.20
Summer Sausage	6.11	2.00	12.22
Dehydrated Pesto	3.76	3.00	11.28
Rice Noodles	2.28	4.00	9.12
savory tofu	9.16	4.00	36.64
Rice	1.98	5.00	9.90
Tillamook Extra Sharp White Cheddar Loaf	10.39	3.00	31.17
lentils	9.99	3.00	29.97
quinoa	6.65	1.00	6.65
dehydrated vegetables	14.00	1.00	14.00
Dehydrated mushrooms	17.97	1.00	17.97
Concentrated Chicken Stock	5.99	1.00	5.99
miso powder	3.28	2.00	6.56

Appendix D- Budget

Budget

Transportation Budget:

Total distance from Colorado College to Ely, MN : 1,224 miles

Average U.S. Gas Price (<http://gasprices.aaa.com>): \$2.50

2008 Subaru Outback: 20 mpg

2016 Jeep Renegade: 21 mpg

Gas two-ways for 2008 Subaru Outback (61.2 Gallons x \$2.50 per gallon)	\$306
Gas two-ways for 2016 Jeep Renegade (58.28 Gallons x \$2.50 per gallon)	\$292
Round-trip shuttle and gear transportation service from outfitters	\$105
Total	\$703

Food and Fuel

Food Total (detailed in the Food List): \$837.32

Fuel Total (7 bottles x \$16 for 14 days at the gear house): \$112

Total: \$949.32

Maps and Books

Because we are covering a large distance we will need three maps to give us a complete view of our route. We need an individual set of each map for the three boats so this equates to nine total maps, each costing \$9. Therefore, the total comes to **\$81**.

Communication Device Rental

\$0

Permits/Fees

14-day Backcountry Permits: \$114

4 Fishing Permits (\$20/Minnesota Resident; \$48/Non-MN Resident): \$136

Total: \$250

Gear Rentals

From Piragis Northwoods Company

Equipment	Quantity	Price Per Unit for 14 Days	Cost
Tandem Canoes (Includes yokes, PFDs and paddles)	3	\$616 (\$44 per day)	\$1,848
Bug Tarp (15X15)	1	\$168 (\$12 per day)	\$168

Portage Packs	6	\$84 (\$6 per day)	\$504
Food Barrels	3	\$98 (\$7 per day)	\$294
Total			\$2,814

From Gear House-

For Prices

<https://www.coloradocollege.edu/offices/outdooreducation/ahlberg-gear-house/>

Equipment	Quantity	Price Per Unit for 14 Days	Cost
6-Person Tent	1	\$40	\$40
Whisper Light	3	\$16	\$48
Rope	3	\$6	\$18
Tarps	3	\$6	\$18
Bear Spray	3	Free	\$0
First-Aid kit	3	Free	\$0
Water Purification	3	\$6	\$18
Trowel	1	\$6	\$6
Total			\$148

Total Funding Request

Transportation	\$703
Maps	\$81
Food/Fuel	\$949.32
Permits and Fees	\$250
Gear from Outfitter	\$2,814
Gear from CC Gear House	\$148

Total	\$4,945.32
Per Person	\$824.22