

YUKON-CHARLEY RIVERS NATIONAL PRESERVE

CENTRAL ALASKA NETWORK

Vegetation Monitoring Program

Summary Trip Report: Kathul Mini-grid

19 June to 27 June 27, 2007

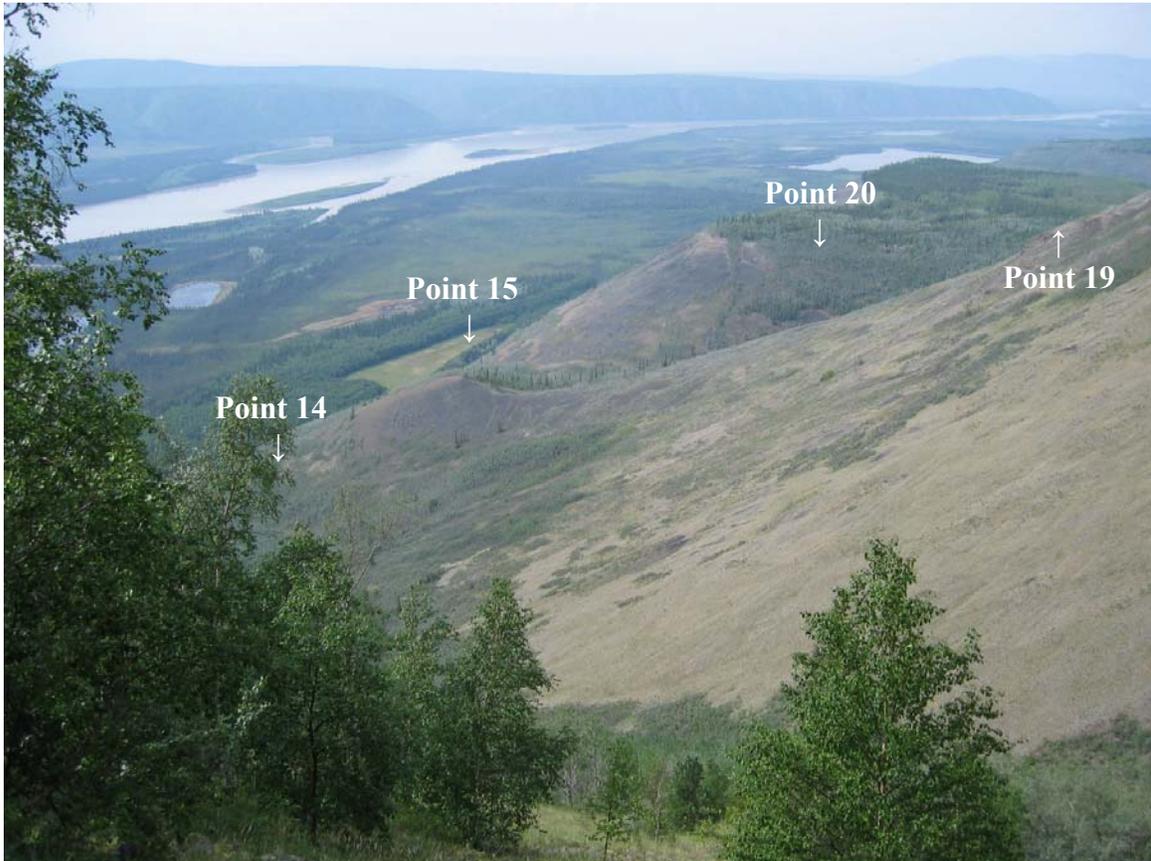


Figure 1. Looking west from ridge NE of point 13 to points 14, 15 and 20. Point 19 is not quite visible due to ridge between photo location and the point.

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PURPOSE:

The purpose of this trip was to install permanent vegetation plots and collect vegetation data at the Kathul Mountain mini-grid study area according to the protocols established for the Central Alaska Network (CAKN) vegetation monitoring program. The crew completed sampling protocols at 12 of the 25 sample points in this mini-grid during a 9-day field work period including two travel days. Two additional grid point data sheets were completed at sites that were either inaccessible or time constrained.

PERSONNEL:

Jay D. Scelza – crew leader, soils, tree/sapling, and non-vascular plant data collection.
E. Fleur Nicklen – grid- and meta- plot data, transects, and vascular plant data collection.
Myles E. Robinson – plot photography, transects, and tree and sapling data collection.

ACCESS TO MINI-GRID AND CAMPING POSSIBILITIES:

The Kathul Mountain mini-grid is accessed via the Yukon River, approx. 20 miles upriver (East) of the NPS facilities at Coal Creek Camp/Slaven's Roadhouse area. Two crew members flew (via charter with Wrights Air Service) to the airstrip at Coal Creek Camp and met up with the boat which had come up from Circle to the rendezvous point at Slaven's Roadhouse.

The boat crew with one veg. crew member left Fairbanks at 0800 and went by truck to Circle where it was loaded with all the sampling gear (except the tablet PC, which was flown in) and then piloted up the Yukon to Slaven's Roadhouse (about 7 hours total). Upon arriving at Slaven's approx 50 miles up river from Circle there was enough weight reduction (due to burned fuel) to accommodate the other two crew members for the rest of the trip. This was a precautionary measure and may have been unnecessary. Water in 7, 5-gallon containers was boated the entire trip. To accommodate the other two crew members, the containers could have been loaded empty and filled at a clear running creek somewhere nearer to the mini-grid and filtered later. Clear water was potentially present in ponds near or in the southwest portion of the mini-grid, but this was not verified by the crew during the visit and should not be relied on, as several ponds on the map were dry.

Crew members that flew in brought with them only daypacks with the tablet, food and water, raingear and bear spray (be sure to tell pilot you have bear spray, and he/she will secure in ammo box or tape to outside wing support of aircraft before flight). Due to a new nationwide NPS rule in 2007, ATV's could not be utilized by NPS personnel while on duty within the preserve. Since this was the main mode of transport in YUCH from the airstrip to Slaven's Roadhouse, these two crew members either had to walk or find another mode of transport for the three miles down to Slaven's and the Yukon to meet the boat. An old army truck exists at Coal Creek Camp, but its location was unknown to us upon arriving. We found two bicycles (with only back-pedal brakes and one speed! At least they had nifty front baskets) at the airstrip and peddled them down to the river, making plans with a maintenance employee to have them brought back to the airstrip. We met the boat at approx. 1530.

The boat dropped us off at approx. 1800 at our chosen campsite which was on the banks of the Yukon, more or less between the gridpoints 02 and 03 (both inaccessible due to location of the river). With the absence of a helicopter assisted drop-off, it is easiest to camp near the Yukon due to the benefits of bathing and cleaning dishes in the river, as well as scenic view, less mosquitoes near the water, easy drop-off and pick-up, and easy travel between kitchen and camp. However, it was a considerable hike each day up and down Kathul Mtn. Recommend helicopter assistance. See also “2007 Supplemental Crew Leader Report: Recommendations for Sampling at YUCH” for further recommendations.



Figure 2. Looking NE towards the main drainage from the middle of the Yukon River. The ridge just to the right (east) of the drainage was the primary route used to access points in the eastern part of the mini-grid, specifically; 11, 12, 13, 16 and 17, see arrow.

HIKING:

Hiking from camp to grid points in the Kathul Mtn. grid was very dynamic due to the varied terrain that was encountered. The river bar provided the easiest travel, but was not in a direct line to any points sampled on this trip. However, we did use it for short distances to begin or end the day on several occasions.

The lowland forest in the river terrace contained two main types of vegetation, white spruce mixed hardwood forest with drier soils and the wetter black spruce forests (occurring ~25% of the time in the river terrace area that we saw). Hiking in the white spruce/hardwood areas had high frequency of alder scrub and 3-4' tall thickets of rose shrubs, but the elevation gradient was low. The black spruce openings within the mixed white spruce/hardwood forest were often wet beneath tall tussocks, which made walking in these areas less desirable than walking in the white spruce/hardwood.

There exists remnants of the old mail trail, circa 1890's-1930's (called “winter trail” on our Garmin GPS, but off by hundreds of feet) that runs between Circle and Eagle and we often encountered brief glimpses of it through the dense forest on our way to and from camp. If it

can be found again by future crews it should be noted as to the type of forest it mainly traverses because it is often in a band of larger white spruce with solid ground, which goes NW-SE, and while the trail itself is scarcely navigable due to overgrowth, the band of forest it lies in is the easiest one to navigate through.

The main south facing side of Kathul Mountain is very steep and rocky and in places vertical cliffs exist, specifically around point 12, where a peregrine nest was seen. Therefore we used the low flat lands to cover as much ground as possible to the north and west before beginning the ascent to the grid points. Two flanking ridges (the west-most one is a large butte) to the west have a lesser gradient, were used to access points 14, 15, 19, 20, 24, and 25. The lower elevations on the south side of Kathul often consisted of very loose, 1-6cm diameter, talus fields which gave way underfoot, making upwards travel near impossible and downward travel extremely fast, but with increased risks. Due to this we used the solid-footed ridge to the west of the talus as our main route up and often down the mountain, even when accessing point 16 to the northeast of our camp, which meant a 3 hour hike from camp. The mountain contained several types of vegetation, but was mainly open shrub steppe or mixed hardwood forest dominated by aspen.

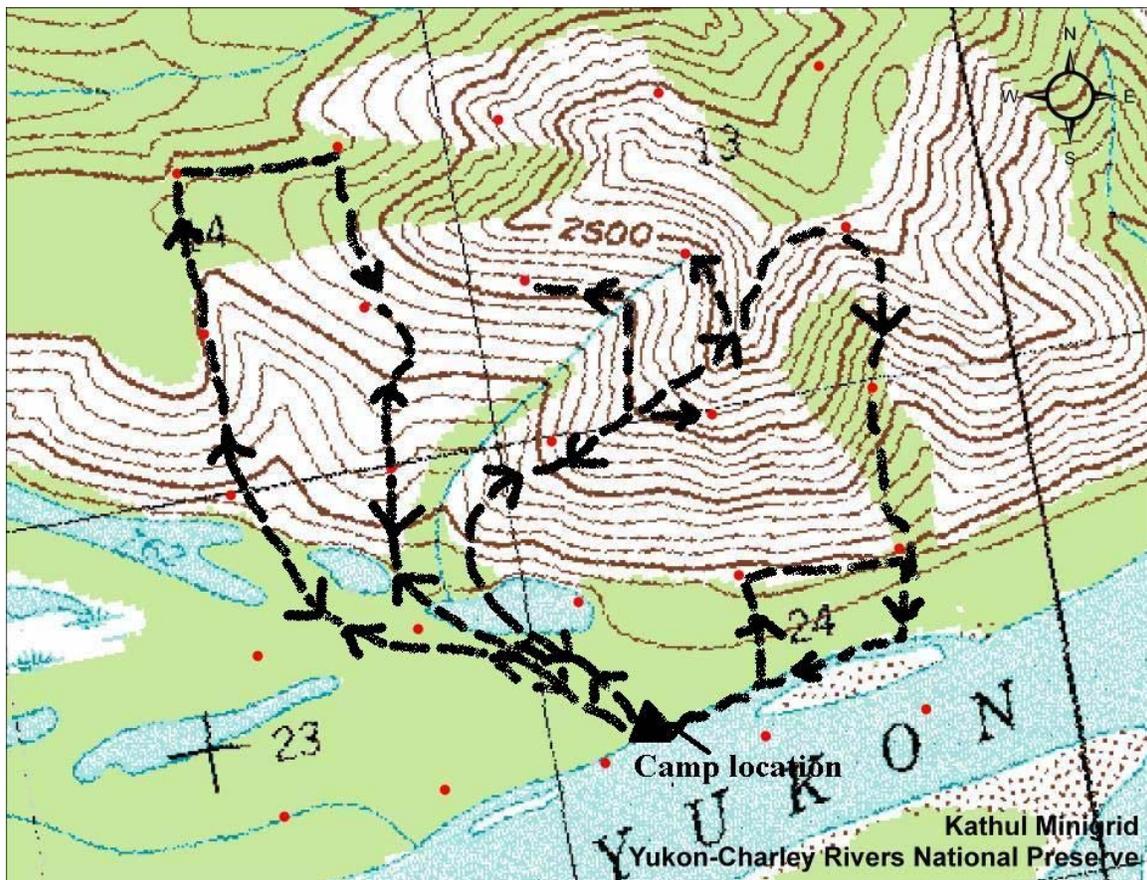


Figure 3. Map of Kathul Mini-grid showing camp location and main routes used to access points. The center-most route was used most frequently for trips up and down the main mountain. Ponds in the center of map without standing water, but were slightly marshy, covered with gramminoids.

WEATHER AND ENVIRONMENTAL CONDITIONS:

We had a mix of very nice to very wet weather while working on the Kathul mini-grid. The average daily high was 76 degrees in the shade, while the overnight low averaged around 45 degrees. The rains were often light and intermittent, sometimes caused by passing thunderheads and typically occurred in the mid-afternoon. Most days had some sun especially in the late mornings when we could dry out clothing. On one occasion, while working at point 16, we had fairly close thunder and lightning and extremely heavy rain. Mosquitoes were particularly bad in the lowland forest especially in the cool early mornings and afternoons after the rains had come and the air was humid. This was intensified by our hiking as we stirred up the resting insects. When working up on the mountain in open habitat we often had a nice breeze which kept the mosquitoes almost entirely absent. We did however encounter a number of large, persistent horseflies and occasionally whitesocks in these locations. At a few of the drier points (often in *Populus tremuloides*-*Juniperus communis* forests or occasionally in the open steppe areas) we encountered biting ants which were abundant and would not allow us to sit and do our work. To remedy this we tucked our pants into our socks and our shirts into our pants. One day we smelled smoke from a forest fire, however, none were reported as being dangerously close to us at that time and there were no respiratory complaints.

SAFETY CONSIDERATIONS:

Hiking in this type of terrain on steep slopes with heavy packs during long hours requires extreme caution. Coming down the talus slopes of the lower south facing mountain required extreme caution as it was a fast paced activity requiring careful attention to footing. Often the loose scree would suddenly be firm underfoot, even though it appeared no different from the surrounding terrain. We found rubber boots such as extra-tuffs to be unnecessary in the lower forests (keeping in mind that it was a low precipitation year and we did not sample the 5 lower plots to the southwest) and downright dangerous on the steep slopes due to lack of ankle support and gripping soles. We each wore sturdy leather ankle-high boots nearly every day. Due to a variety of foot ailments ranging from soreness to blistering to numbness I recommend 'plot shoes' (e.g. crocs, chacos, or lightweight runners) and/or a change of dry socks to wear while working at the points.

PHENOLOGY OBSERVATIONS:

The Kathul Mtn mini-grid had a diversity of vegetation types and consequently high overall diversity of vascular plants for Yukon-Charley. However, at each individual point the diversity was fairly low, averaging around 25 (with more in the steppe plots and fewer in the forested plots).

We conducted surveys at the Kathul Mtn. mini-grid in late June during the early flowering season for that low elevation, south facing area. Plants such as *Artemisia frigida*, *A. laciniata*, *A. tilesii*, *Cnidium cnidiifolium*, *Epilobium angustifolium*, and *Aster sibericus* were all in bud or early flower. Most of the gramminoids, as well as *Orthilia secunda*, *Pyrola*

asarifolia, *Arnica sp.*, *Senecio sp.*, *Delphinium glaucum*, *Minuartia spp.*, *Bupleureum americanum*, *Podistera yukonensis*, *Polygonum alaskanum*, *Silene spp.*, *Phacelia sp.*, and *Eriogonum sp.* were in full flower. *Linnaea borealis*, *Mertensia paniculata*, *Rosa acicularis*, *Viburnum edule*, *Lupinus arcticus* and *Penstemon sp.* were all in late flower or early fruiting. A few plants such as *Draba murrayi*, *Arabis sp.*, *Dodecatheon pulchellum*, *Pulsatilla patens*, and *Androsace septentrionalis* were fully fruiting. This was excellent phenological timing for vascular plant identification.

GENERAL NOTES ON PLOT-WORK AND PLOT OBSERVATIONS:

We were able to, on average, complete two plots in a day. This should be considered the maximum possible within the current framework. We were expected to complete 3 plots per day, however the steepness of terrain and thickness of vegetation caused lengthy hiking and sampling times, especially with respect to tree and sapling data collection. All three crew members are strong and experienced hikers and pushed themselves to their limits, often not stopping for breaks. It is unlikely that more than two grid points per day could be completed at the Kathul mini-grid unless logistics are changed somehow to include heli-assist for example.

Table 1. Collection series for the upper Sushanna mini-grid.

Collector	Identifier	Series
Nicklen	Vascular plants	EFN-07-001 - EFN-07-084, EFN-07-101
Robinson	Digital Photos	140-4054 - 142-4238
Scelza	Nonvascular collections	JDS-07-1 - JDS-07-179
Scelza	Soils	14 soil samples from 12 sites as follows: 6,7,13,14,15a,15b,16a,16b,17,18,19,20,24,25
Robinson	Tree cores	12 tree cores from 6 sites as follows: 6C, 7A, 7C, 7D,13C, 13D, 15A, 16A, 16B, 16C, 16D, 24B

Table 2. Completion dates for Kathul Mtn mini-grid points

Mini-grid point	Date Completed	Mini-grid point	Date Completed
KAT- 01	In Yukon- not done	KAT -14	21 June
KAT -02	In Yukon- not done	KAT -15	20 June
KAT -03	In Yukon- not done	KAT -16	25 June
KAT -04	In flats – not done	KAT -17	23 June
KAT -05	In flats – not done	KAT -18	24 June
KAT -06	26 June	KAT -19	21 June
KAT -07	26 June	KAT -20	20 June
KAT -08	In flats – not done	KAT -21	Not done-time
KAT -09	In flats – not done	KAT -22	Not done-time
KAT -10	In flats – not done	KAT -23	Not done-time
KAT -11	GPDS only - 25 June	KAT -24	22 June
KAT -12	GPDS only - 25 June	KAT -25	22 June
KAT -13	24 June		

ACTIVITIES:

Tuesday, 19 June

Start day at 0800 in Fairbanks driving to Circle in truck with boat/trailer. Two crew members fly out of FAI at 1100 on Wrights Air Service (see text for details). Arrive at campsite in mini-grid 1800. Set up camp and kitchen. 9.5 hour day.

Weather: Mostly cloudy.

Wednesday, 20 June

Sampled KAT20 and KAT15. Start packing gear at 0800, leave at 0850 arriving at pt. 20 at 1050. Finish time for 1st plot of the mini-grid 1640. Hike down and do pt. 15 from 1740 - 2140. Arrive back at camp at 2300. 13.5 hour day.

Weather: Clear, sunny (59 deg. at 0840).

Thursday, 21 June

Sampled KAT19 and KAT14. Start packing at 0800. Leave camp after packing at 0845, hiking along Yukon to see if it will be easier traveling. Do pt. KAT19 from 1040 to 1515. Do pt. KAT14 from 1600 to 2030. 12.5 hour day.

Weather: Mostly sunny and hot, thundershowers (Max: 96 deg F).

Friday, 22 June

Sampled KAT24 and KAT25. Start packing gear 0805, leaving camp at 0845 hiking WNW towards pt. 15 to ascend butte where pt. 25 is. Do pt. KAT25 from 1050 – 1540. Do pt. KAT24 (which is on the back side of the mountain) from 1630 to 2030. Arrive at camp 2210. 13.5 hour day.

Myles with bloody nose in the am. Very rainy day and crew is exhausted. Decision to cook *and* get 8 hours sleep means late start the next day.

Weather: Sunny until 1000, then light to heavy rain all day (Max: 74, Min: 45 deg F).

Saturday, 23 June

Sampled KAT17. Late start due to several late nights and sleep attrition. Start at 1010 packing up, leave for KAT18 at 1045. Saw a single black bear very near to KAT18 while on our way there, so rerouted to do KAT17 instead. Arrive at camp at 2000. 9.5 hour day.

Weather: Sunny/ slightly hazy (Max: 72, Min: 42 deg F).

Sunday, 24 June

Sampled KAT18 and KAT13. Leave camp at 0815 up ridge to the NW of camp toward KAT18 and KAT13. Do KAT18 from 1040 to 1440. Do KAT13 from 1610 to 2030. Arrive at camp at 2115.

Checked out point 12 on our way up the ridge since this is the highest we'd gotten up the mountain yet, and it appears inaccessible. See photo of Myles standing above point, out of sight is cliff below point where Peregrine Falcon spotted. Saw boat motoring back and forth in front of our camp for an hour or more while we were in plot KAT18. 13 hour day.

Weather: Sunny and hot with warm rain in late afternoon (Max: 76, Min: 44 deg F).

Monday, 25 June

Sampled KAT16 and completed grid point data for KAT12 and KAT11. Leave camp at 0830 heading up ridge on west side of Kathul. Stopped close to KAT12 and did Grid Point Data Sheet from 220 meters above, where we had a good view without compromising safety. Do KAT16 from 1300 to 1750. Hiking down to camp, we stopped at KAT 11 and did Grid Point Data Sheet for that point as well. 13.5 hour day.

Myles feels pain in left leg while putting on pack in the am. He notices his leg is swollen later in the day and is having trouble going downhill. While at KAT16, it rained heavily following close-by thunder and lightning. Crew members worked extra fast on transects due to proximity of lightning (no-one wanted to hold the metal staff) and non-vasc. collecting due to packets getting soaked through.

Weather: Rain in early am, close and heavy thunderstorms in the late afternoon (Max: 70, Min: 48 deg F).

Tuesday, 26 June

Leave camp at 0830 heading NE. Do KAT07 from 0900 to 1415. Do KAT 6 from 1505 to 1905. Arrive at camp at 2000. 11.5 hour day.

Myles leg was swollen all day, but he makes the decision that it would be okay to go slowly to the two close-by points. Checked with him frequently to see if pain worsened. He's taking Ibuprofen and elevating leg while entering data.

Weather: Sunny and mild, light rain in afternoon (Max: 72, Min: 44 deg F).

Wednesday, 27 June

Begin camp breakdown 0730 in preparation for boat pickup est. at 0900. Boat arrives at 0930, leaves with all gear and passengers at 1000. Arrive at Circle around 1430. Lunch at Steese Roadhouse in Central. Arrive back at Fairbanks at 1830. 10 hour day.

Weather: Partly cloudy, passing showers (Max: 72, Min: 41 deg F).

CONCLUSION AND FUTURE CONSIDERATIONS:

In addition to the recommendations mentioned above, it would be preferable to amend the working routine while at YUCH in general and on the Kathul mini-grid specifically to complete the grid to the satisfaction of the project. This could be accomplished in several ways such as adding a crew member to assist in tree and sapling data collection which often takes a long time in the dense boreal forest at YUCH. Alternatively the crew could be given more time to complete a single plot beyond one maxi-flex period. See also “2007 Supplemental Crew Leader Report: Difficulties of Sampling at YUCH” for more suggestions.