

DENALI NATIONAL PARK AND PRESERVE

CENTRAL ALASKA NETWORK

Vegetation Monitoring Program

Summary Trip Report: Sandless Lakes Mini-grid

31 July – 9 August, 2006



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August, 2006

PURPOSE:

The purpose of this work was to install permanent plot monuments and to collect data at the Sandless Lakes area for the CAKN Long Term Ecological Monitoring Program. There was half a day of travel and 9.5 days of field work from the dates of July 31, 2006 to August 9, 2006.

PERSONNEL:

James Walton - crew leader, nonvascular species composition, soil data, transect cover, plot tree and sapling data.

Abbie Gongloff - grid point data, meta-plot data, quadrat and vascular species composition, quadrat variable estimates, plot variable estimates, transect cover, plot tree and sapling data.

Larissa Lasselle - plot photos, trip report record, plot tree and sapling data, transect cover, quadrat variable estimates, weather record.

ACCESS TO MINI-GRID AND CAMPING POSSIBILITIES:

We were flown from the Headquarters airstrip in a fixed wing plane to the Kantishna air strip. We then transferred our gear over to a helicopter and flew about 70 km to the Sandlaess Lake mini-grid.

The campsite is about 200 meters north of point 18 in a tussocky, *Sphagnum* sp. and gramminoid abundant fen with live and burnt *Picea mariana*. There is also an abundance of *Alnus viridis*, *Vaccinium uliginosum*, *Vaccinium vitis-idaea*, *Betula nana*, *Ledum palustre* ssp. *groenlandicum*, *Ledum palustre* ssp. *decumbens*. The cook tent was about 100 meters north of our tents. There is a beaver pond about 5 meters north of where we set up our cook tent.

We flew in 2, 5 gallon jugs of water and planned on pumping water to supply us with all of our water needs. It is pretty much impossible to not find a body of water to pump from. The place that we camped is next to a beaver pond. We never saw a beaver or new signs of beaver presence. However, we did not pump from this pond because generally we were able to find running water hiking to plots.

- En route to point 21 we stopped and pumped water from a running creek that we passed.
- We passed two running creeks en route to point 5 and we stopped to pump water at one.
- Point 19 is north of a beaver pond and we really needed to pump water so we walked down to the pond and pumped. There was a beaver swimming out in the pond and slapping his tail in the water. The water tasted bad.
- The day that we visited points 14, 10 and 15 we did not find any pumpable bodies of water.
- We pumped water at a creek en route to point 16. The creek was running but it was dark with tannons.
- Hiking to the auxiliary point we pumped water at a shallow slow running creek.

WEATHER AND ENVIRONMENTAL CONDITIONS:

Our weather seemed to alternate with one rainy day and then a sunny day. The bugs were atrocious. There were no-seeums, mosquitos, gnats, horseflies, and small blackflies.

GENERAL NOTES ON PLOT-WORK AND PLOT OBSERVATIONS:

Table 1. Collection series for the Sandless Lake mini-grid.

Collector	Identifier	Series
Walton	Nonvascular collection	Non-sequential
Gongloff	Vascular collection	AG06-228 to AG06-268
Walton	Soils	SL1 to SL6, SL8 to SL16, SL18 to SL19, SL21 to SL26
Lasselle	Digital Photographs	100-0001 to 104-0476

Table 2. Points sampled and wildlife observations.

Points	Animal Observations
12	At night, back at our tents we heard Sandhill Cranes and Trumpeter Swans.
6, 8, 7, 13	About 15 minutes after arriving to point 6 Abbie spotted a black bear in the stalking position approaching her. She alerted James and me. The bear was less than 6 meters from her! We all grabbed our bear spray and prepared for action. The bear moved up the hill around us and stayed about 6 meters away the whole time. We yelled and squelched the radio but the bear was not scared of us. The bear laid down, ate some grass and then yawned. We decided that the bear was not in a hurry to leave the area so we had to get out of there. Two of us stayed on guard with bear spray as we took turns getting our bags packed up again. Then we cautiously left plot still yelling at the bear, carrying bear spray and watching behind us. On the way to point 13 we passed a pond and heard a beaver whacking his tail on the water. On the hike home we saw a wood frog.
23, 22, 21	On the way to point 23 we saw a Hawk Owl sitting in a tree and watching us. At point 22 we heard ducks.
4, 5, 9	Hiking between points 4 and 5 we stopped and pumped water at a creek. The Salix sp. surrounding the creek that had heavy moose browse and there was moose scat on the ground.
24, 29, 20, 19	At 19 we saw a Rough-Legged Hawk. South of this point we pumped water at a beaver pond with a beaver swimming around and slapping his tail.
1, 2, 3	At point 2 there was a Hawk Owl sitting in a tree near the plot and there were aquatic birds on the pond.
14, 10, 15	At point 14 there were two Trumpeter Swans flew over our site. We saw a Rough-Legged Hawk. I found half of a bird egg shell that was thin, white and a little smaller than a chicken egg.
6, 11, 16	En route to point 6 we came across early season bear scat, which was the only bear scat we saw all week. On plot we saw two hairy woodpeckers.
18, Aux 26	There were red squirrels in the trees. I spotted a Sage Grouse on the ground.

Monday, July 31

At 8am we headed down to the Headquarters air strip and weighed our gear. We did some more running around and then at 9 am James and Carl took off in the helicopter to the mini-grids. Next Abbie and I took off in the fixed wing plane with Colin and landed at the Kantishna air strip. We unloaded our gear from the plane and reloaded it into the helicopter. Then George flew us out to our mini-grid at Sandless Lakes.

Point 12: Hiking to point 12 was a physical challenge to keep from breaking my ankles on the uneven tussocks and wet *Sphagnum* sp.. In addition it was a challenge to maneuver around live and dead *Picea mariana*, *Betula nana* and *Vaccinium uliginosum*. Measuring all of the saplings significantly increased the time spent working on the plot.

Weather: The weather was cloudy and rainy in the morning and then clear and sunny by the afternoon and then rainy again and then the sun was out again in the evening.

Tuesday, August 1

Point 6 (on the first try): We trudged out 800 meters southeast to point 6 one of our furthest away plots. We were preparing to set up plot when Abbie spotted a black bear stalking her. We abandoned the plot for the day, and we abandoned the whole area for 5 days. We lost a significant amount of time due to the bear encounter because we had to hike back to a plot that was at least 1 km from where we saw the bear.

Point 8: Next we headed further west to point 8. The plot took us about 4 hours to complete. The number of saplings to measure increased our time spent on plot.



Photo 1. Point 13 looking west from perimeter.

Point 7: From point 6 we headed west to point 7 which is in the water so we were not able to set up the plot.

Point 13: The eastern edge of the plot is in standing water and dominated by grasses (photo 1). Further east of the plot lies a pond. The rest of the plot lies in a *Picea mariana* stand. The plot took 4 hours to complete. Trees and sapling measurements as well as tree coring increased the amount of time spent working at the plot.

Weather: The day was sunny with patches of clouds in the morning. By the time we reached point 13 the sky darkened and it rained on us.

Wednesday, August 2

Point 23: Walking to this point is extremely difficult. I sunk in *Sphagnum* sp., tripped over tussocks, and the quadrat frame buckled to the side of my pack got caught in the trees and shrubs that I walked around. However, the ground on site was not as tussocky and there were less trees and saplings which made work faster than usual.



Photo 2. Point 21 looking east from the west perimeter.

Point 22 :This point is located about 100 meters northwest of a pond.

Point 21: From point 22 we had to hike north and then east and back to the south around the pond to get to point 21. There were no problems on plot. The rain and bugs were extremely annoying.

Weather: The sky was clear in the morning until halfway through work at our second plot and then it started raining.

Thursday, August 3

Point 4: Site is in a burn. Many burnt *Picea mariana* snags. Understory consists of *Alnus rubra*, *Betula papyrifera*, *Ledum palustre* ssp. *groenlandicum*, *Ledum palustre* ssp. *decumbens*, *Betula nana*, *Sphagnum* sp., carex and tussocks.

Point 5: We had to cross a couple of creeks to get to point 5. Point 5 is very wet with standing water in all directions and lots of wetland grasses. Quadrat D is inaccessible due to deep, wet, floating ground. Transect 6a is wet but we were able to read the transect and we were able to put in quadrat A.



Photo 3. Point 9 looking west at quadrat 4c.

Point 9: Plot is in a burn with burnt *Picea mariana* snags. Vegetation is very similar to other plots in the mini-grid that are burned.

Weather: The weather was perfect all day.

Friday, August 4

Point 24: There were no problems hiking to the plot other than the bugs and hiking on tussocks and *Sphagnum* sp. The ground on plot that difficult to walk on. To the east perimeter of the plot there is a wet area. The dominant tree is *Picea mariana* with some *Larix laricina*, the dominant shrub is *Alnus viridis* and the dominant shrub layer includes *Ledum palustre* ssp. *groenlandicum*, *Ledum palustre* ssp. *decumbens*. The dwarf shrubs include *Vaccinium vitis-idaea*, *Rubus chamaemorus*. There is low visibility. The work at this plot took 2.5 hours to complete.

Point 25: This plot was burned and there are many burnt *Picea mariana* snags. There are some *Picea mariana* saplings growing. The visibility is far. The dominant shrubs include *Betula nana*, *Ledum groenlandica*, *Ledum decumbens*. The ground is dominated by moss and graminoids.



Photo 4. Point 25 looking to the southwest from the northwest perimeter.

Point 20: We walked to point 20 but it is in water so we could not set up the plot.

Point 19: We were able to cross over the creek connecting the lake that point 20 is in and the lake that lays between points 25, 24, 19 and 20. Point 20 is about 200 meters north of a large beaver pond. The plot had similar vascular plants to point 25 and there was also *Betula papyrifera*, *Vaccinium vitis-idaea*, *Rosa* sp. and *Equisetum* sp.

Weather: In the morning the weather was perfect, it was sunny and the vegetation was dry. It started to rain on us at the end of our work on the last plot.

Saturday, August 5

This day we were heading back to the southern part of the mini-grid near point 6 where we ran in to the bear. In the morning when we checked in with dispatch we gave the dispatcher the coordinates to the plots we planned to visit that day and told them we would check back in when we got back to camp that night. James carried the shotgun with him this day.

Point 1: We headed east out of camp and walked about 1.5 km to point 1, our furthest away plot. The hiking took an hour. The walking was not bad. There was heavy forest cover which meant the ground was not very wet with spongy moss and graminoid tussocks. We picked up a mushing trail and followed it for about 500 meters. We crossed a couple creeks and pumped water out of one.



Photo 5. Point 1 looking to the south from plot center.

Point 2: We arrived at point 2 in about 30 minutes. The plot is northeast of a sizable pond. Because the plot was not that tussocky, walking was done with ease and we were able to finish work on the plot in a timely manner.

Point 3: We had to walk around a pond to get to point 3. The plot is in a buggy and tussocky area. There were few saplings to measure which means I got done with my work quickly and helped James and Abbie with their work. We completed work on this plot in almost 2 hours.

Weather: The day started overcast and the vegetation was wet, but it cleared up early and the sun shone the rest of the day.

Sunday, August 6

Point 14: We walked 750 meters southwest to point 14. We trekked over tussocks, *Sphagnum* sp., water and bushwhacked through shrubs, live and dead *Picea mariana*, *Betula papyrifera* and *Larix laricina*. The plot is in a burn south of a dried pond.

Point 10: The upper southern half of this plot is very wet and thick with *Sphagnum* sp. The plot is in a burn, it is very open and there are many mole tunnels and holes.



Photo 6. Point 10 looking to the south at quadrat 4b.

Point 15: The map indicated that we may need to head southwest down around a lake to get to our next plot. This would add a significant amount of distance to travel. The map shows a creek connecting the two lakes, but from experience we thought the creek may be impossible to cross. We were able to cross the creek on a beaver dam. The plot has thick tree cover. The vascular and non-vascular plant diversity is low. The ground is covered with moss.

Weather: The morning was sunny with storm threatening clouds in the distance. By the second plot the threatening clouds broke up. The sky darkened again as we were leaving the second plot and it rained on us the time we were hiking to our third plot.

Monday, August 7

Point 6: We left camp and headed southeast back to point 6 where we had seen the bear. The hike took us about 45 minutes. The walk over the tussocks and spongy moss takes some time to make way through. We made it to the plot with out any problems and no bear. The eastern edge of the plot borders a pond. The rest of the plot lies in a thick *Picea mariana* stand. Visibility is low and we were on extreme bear alert.

Point 11: We headed north to our next tussock and *Picea mariana* plot. Other dominant vegetation on plot includes *Alnus viridis* and *Ledum palustre* ssp *groenlandicum* and *Ledum palustre* ssp. *decumbens*.

Point 16: The dominant vegetation is a *Picea mariana* stand with a *Ledum palustre* ssp *groenlandicum* and *Ledum palustre* ssp. *decumbens* shrub layer. We could have done a fourth plot today but we decided it was unnecessary because we still had two days in the field.



Photo 7. Point 16 looking north from south perimeter.

Weather: The sky was clear in the morning and we had a clear view of Denali in the morning.

Tuesday, August 8

Point 18: This point is the closest one to our camp, less than 200 meters. It was burned and what remained is burnt *Picea mariana* snags, moss and tussocks. *Betula nana* and *Ledum palustre* ssp *groenlandicum* and *Ledum palustre* ssp. *Decumbens* are dense in the shrub layer. There is standing water at the southwest edge of the plot.

Auxiliary plot, Point 26: The auxiliary plot is about 700 meters southeast of point 18. The plot is located on a dry, solid mound (30 to 50 meters across). The dominant trees are *Picea glauca* with dbh's at 45 meters. To the far west about 300 meters is a lake. The non-vascular community is low diversity. The ground is covered with *Picea glauca* needles. The western transect takes a dive down a steep slope at the 4 meter point. The soil on the bank is dry, fine and very loose. It has the consistency of powder. The moss and lichens easily break away here so be careful not to destroy the vegetation.

Weather: It was wet in the morning and the sky was threatening rain. The rain held off until the second plot, our Auxiliary plot at which point it poured on us. But the rain did clear up quickly.



Photo 8. Auxiliary point 26 looking southeast from northwest perimeter.



Photo 9. Auxiliary point 26 looking to the east from the west perimeter.

Wednesday, August 9

We got word that we were flying out at 9 am. We packed up and George arrived on time. Abbie and I were taxied to the Kantishna airstrip where we met Collin and transferred our gear to the fixed wing. Collin taxied us to the Headquarters airstrip and then Abbie and I transferred our gear to Peter's van and then we headed back to Headquarters. About an hour and a half later I went back down to the airstrip to pick up Sarah and Peter.

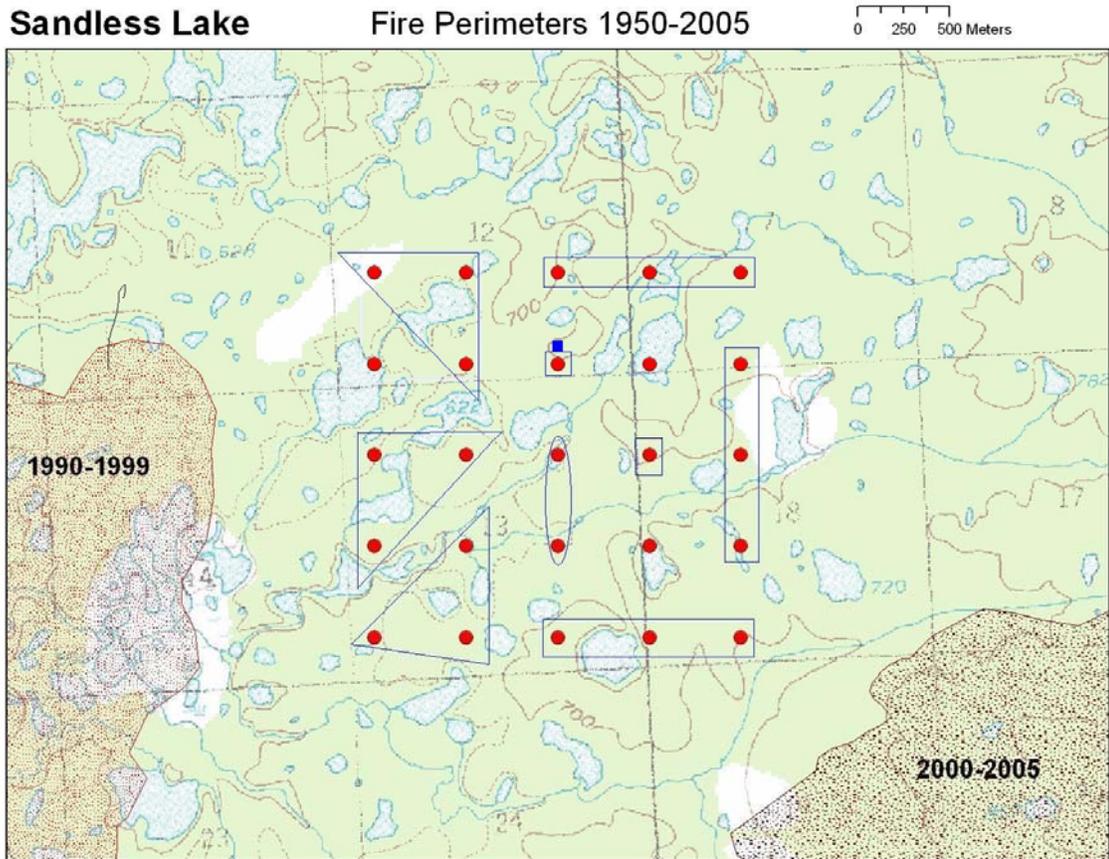
Weather: The weather was sunny, warm and there were clear views of Denali. It was a beautiful day and the bugs were not bad.

CONCLUSION AND FUTURE CONSIDERATIONS:

Work at Sandless Lakes was hard mostly due to bugs and hiking over tussocks, spongy *Sphagnum* sp. and saturated ground. Future crews will need bug jackets and bug spray as well as rubber boots.

Some plots lie in dense forest and the visibility is very low. Since we had a bear encounter it is important for future crews to always have bear spray with them.

Points 7, 17, and 20 are all in water. There is one auxiliary plot, but generally because there are three plots that are under water the work can be done in 9 days. The work could be done quicker if there are no delays due to a bear encounter. Generally, the plant diversity is low and what took the most time on plot was measuring and coring trees



Map 1. Topo map of the Sandless Lake mini-grid. The points are grouped by the ones done in a day. The blue square indicates our camp. The points that are not circled were in water and not accessible.