

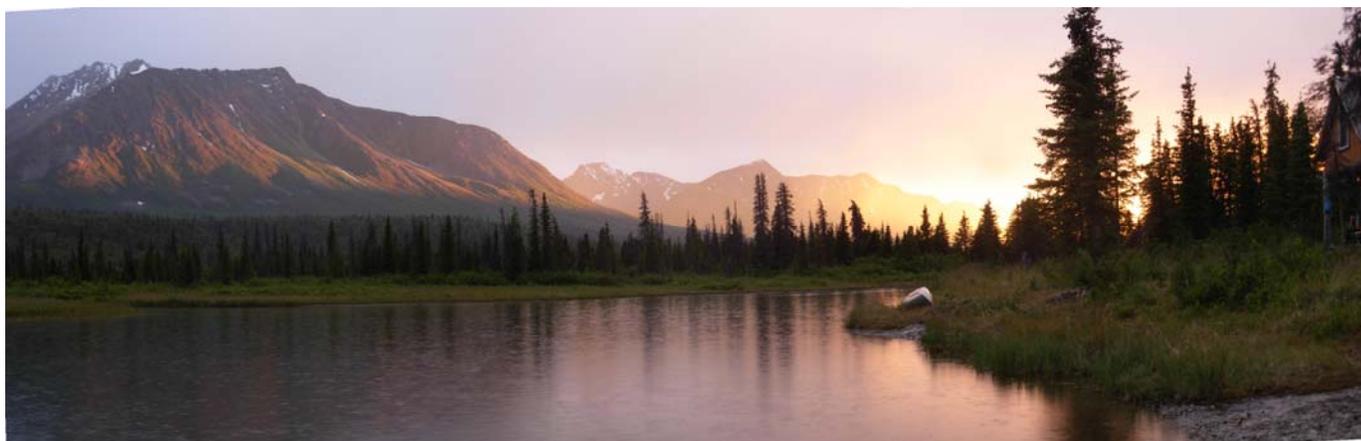
WRANGELL- ST. ELIAS NATIONAL PARK AND PRESERVE

CENTRAL ALASKA NETWORK

Vegetation Monitoring Program

Summary Trip Report: Hanagita Lake Mini-grid

1 August – 10 August, 2008



Lead Author: E. Fleur Nicklen
Contributors: Kara Thies, Christina Thompson

September, 2008

PURPOSE:

The purpose of this trip was to establish permanent plots for vegetation sampling at the Hanagita Lake mini-grid according to the Central Alaska Network (CAKN) vegetation monitoring protocols. We completely sampled all points except 1, 15, 16, and 14. For 16 and 14 we completed a grid point and listed the species present.

PERSONNEL:

Fleur Nicklen - crew leader, vascular collections/id, plot/quadrat variable estimates, transect data

Kara Thies - non-vascular plant composition/collection, soils

Christina Thompson – plot photos, tree and sapling measurements, tree coring, transect data

ACCESS TO MINI-GRID AND CAMPING POSSIBILITIES:

The Hanagita Lake mini-grid is accessible by float plane. It is about an hour from Tolsona Lake where Dave Parmenter, the Copper Valley Air pilot, keeps his float plane. Hanagita Lake is one valley south of the Chitina River and about 15km east northeast of Tebay Lakes.

There are only two camp locations that are accessible to float planes. The most ideal spot is not camping at all. There is a cabin owned by Alaska Wilderness Outfitting Company (awoc@ctcak.net, 907-424-5552) located on the northeast corner of Hanagita Lake (photo 1) next to the lake's outlet. This company offers expensive guided trips and usually does not just rent the cabin out. However, they were willing to rent to the Park Service for \$150 per night (for 3 people). AWOC is looking to sell this cabin, so there may be new owners in the future.

The cabin has a propane lighting system, stove, and refrigerator. It has a “sunflower” propane heater (that was nearly empty). There are two bedrooms upstairs and a table and chairs downstairs. The table and light makes pressing plants at night so much more comfortable! There is another one-room log cabin that is run down, but has a wood stove that is handy for drying wet cloths. The cabin also offers a leaky canoe and two motor boats. Although most of these luxuries are not necessary, the location and use of the canoe makes completing the mini-grid possible. The AWOC did not want us to just camp next to their cabin (part-way through our trip, they were coming out with some clients). Camping next to their cabin would not have been pleasant anyway; multiple streams surrounded the cabin and saturated all the surrounding ground. For example, walking to the outhouse we had to wear rubber boots because the trail was a stream with foot deep water. The area north of point 16 is just sedges in standing water and beyond that is the impenetrable willow thicket in running water. There is no other acceptable place to camp with the same great access to the mini-grid.



Photo 1. Alaska Wilderness Outfitting Company cabin. We stayed in the cabin on the left and used the woodstove in the cabin on the right to dry our cloths. When we had to move to the second camp, we used the motorboats to transport our gear.

That said, I will now describe the one other potential camping spot. It is located on the SW point of the lake east of points 6 and 11 (map 1). This second camping spot gives you access to points 1, 2, 3, 6, 7, 8, and potentially 11 and 12. The camp spot is an old horse corral. It has a wet cook tent area by the lake and an old cook house (photo 2), and a good camp spot up the hill (photo 3). To access the points on the other side of the creek cutting through the center of the mini-grid (Lake Creek from here on) from this camp spot, you would essentially have to follow the lake all the way around the stream's outlet (very wet walking) and then back SW to the points. You would not have time to sample nearly as many points from this camp spot compared to the cabin.

There are some places you could camp if you flew in with a helicopter, but you would not have access to water (near point 2). Downstream from Hanagita Lake (between points 22 and 23) are camp spots with access to water, but there is no way to get to this area unless you spend a day hiking all you gear in and then another day hiking it out (not realistic).



Photo 2. Old Corral cooking area by the lake. It was a bit wet for our cook tent, but there was good access to water and a nice view of the lake.



Photo 3. Camp spot #2; Vegetation is more open here—probably from past grazing.

HIKING:

The key to hiking around the Hanagita Lake mini-grid is finding a moose trail. Given the vegetation, it is not surprising that there are extremely well developed animal trails. Some sections of the willow thickets are so amazingly thick it will take you 5 minutes to move 15 meters (photo 4). Often there would be a mix of standing water and running water through these thickets. It is possible that on a drier year it will not be so bad.



Photo 4. Example of impenetrable willow thicket. Often there would be running water through these willow thickets.

The willow thickets are mostly located where Lake Creek becomes braided. The vegetation where Lake Creek meets Hanagita Lake is tall sedge in standing water.

The rest of the mini-grid is a mixture of pure 7 ft tall dwarf birch stands (photo 5), dwarf birch-bebb willow-lichen areas, and dwarf birch-bebb willow-white spruce. Most of the dominant spruce trees have been killed by the bark beetle. The entire mini-grid except for point 2 is brushy and the walking is slow and very wet if there has been rain any time recently.

The canoe at the cabin allows you to get to points 16, 11, and 6 very easily. It is also a necessity if you are staying at the cabin to get across the outlet of the lake. The canoe should not be taken down the outlet of Hanagita Lake.



Photo 5. Thick tall dwarf birch. Note that you can barely see the person in left side of photo.

WEATHER AND ENVIRONMENTAL CONDITIONS:

The rainy weather at Hanagita Lake was made tolerable by the dry cabin that welcomed us back each night. The first three days were mostly sunny, dry, warm and beautiful. However, the next four days were overcast and rainy, making travel through the dwarf birch and willow particularly wet and difficult. It was wonderful to be able to dry out our clothes at night in the cabin, even though they just got wet again the next day. The remaining days consisted of scattered showers which made several lovely rainbows across the Chugach. There was even one night of hail and freezing rain. On the night of day nine the temperatures dropped below freezing and we awoke to frost on the tents and vegetation. Luckily we were on our way outta there!

SAFETY CONSIDERATIONS:

There was a reasonably large stream crossing just north of point 12. It is doable, but care should be taken here. Lake Creek is in a gorge that has very steep, high eroding walls that makes it un-crossable through most of the mini-grid. Canoeing down the outlet of Hanagita Lake is very dangerous; it is a swift, narrow, slightly-winding stream with many overhanging trees and beaver dams perfect for flipping boats.

This mini-grid is brushy and we saw a fair amount of bear scat. With the poor visibility and using the same trails as all the other animals, extra vigilance in calling for bears is a good idea.

I could reach Gulkana dispatch weakly via radio on channel 5 or with the satellite phone.

PHENOLOGY OBSERVATIONS:

Still flowering at Hanagita Lake were *Antennaria sp.*, *Pyrola spp*, *Orthilia secunda*, *Aconitum delphinifolium*, *Rubus pedatus*, *Artemisia arctica*, and *Moneses uniflora*. Plants that were both flowering and fruiting were *Cornus canadensis*, *Lupinus nootkatensis*, *L. arctica*, *Linnaea borealis*, and *Trientalis europa*, and *Castilleja spp*. *Empetrum nigrum*, *Vaccinium vitis-idaea*, *V. uliginosum*, and *Veronica wormskjoldii* were fruiting. *Betula nana*, *Trientalis europa*, and *Epilobium angustifolium* were starting to show fall color.

GENERAL NOTES ON PLOT-WORK AND PLOT OBSERVATIONS:

I collected 74 vascular plant specimens from the Hanagita Lake mini-grid; I began on collection number EFN-00-187 and ended on EFN-08-260 (Table 1). On average each point had 25 vascular species. Kara collected 149 nonvascular plants (Table 1). The number of the first photo taken at Hanagita Lake was 100-0821 and the last number was 100-1133 (Table 1). Kara collected soil samples from every plot that we fully sampled. Of the plots that we fully sampled, 2, 5, 7, 9, 11, 12, 17, 19 and 24 had no trees to measure. Saplings were present in all fully sampled plots except 4, 5, 7, 9, 12, 17, and 24. Christina cored trees in all sampled plots except for 5, 7, 11 and 17.

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

Collector	Identifier	Series
Nicklen	Vascular plants	EFN-08-187 to EFN-08-260
Thompson	Photos	100-0003 to 100-0237
Thies	Nonvascular collections	KT-08-369 to KT-08-418, KT-08-420 to KT-08-505, KT-08-507 to KT-08-518, 542

ACTIVITES:

Thursday, July 31

Since Copper Valley Air was booked for flights on July 30th, we scheduled our flight for Thursday the 31st and had a prep day on Wednesday. As it turned out, Thursday was very foggy and we heard that there were very high winds towards Hanagita Lake. We postponed our flight until Friday. This worked out well for us. Copper Valley Air was booked on the day we wanted to come out August 9th, so we would have been scheduled for an 11-day trip that we were not entirely looking forward to (given the horrific weather we had this summer). The extra day in the office gave me time to look into renting the cabin at the lake, which seemed like a terrific idea with the cold rain we that had been surrounding us for the past 4 days (and most of the summer).

Weather: Very foggy in the morning with rain. High winds around the pass to Hanagita Lake.

Friday, August 1

We started work at 10:30am and arrived at Copper Valley Air at 11:30am to weigh our gear. We put some gear in the pilot's truck and he drove Christina and me to Tolsona Lake. We took off at 1:30pm and arrived at Hanagita at 2:30pm. From here the pilot flew to Pippin Lake where Kara was waiting with the rest of our gear. She arrived at Hanagita Lake a little before 4pm. I canoed to point 16, which is mostly in the lake, and filled out the grid point data sheet. It is possible that 16 will be doable in a drier year. Once our stuff was settled into the cabin, we headed north to point 21. Halfway there we realized we had forgotten the stake and monument and I went back to retrieve it. It was a short but extremely brushy walk to 21 from the cabin. We were back to the cabin at 9:15pm.

At night we saw a cow and two huge bull moose checking each other out across the lake. We saw moose nearly every night we were in the cabin (photo 6).

Weather: It was a mostly sunny warm day.

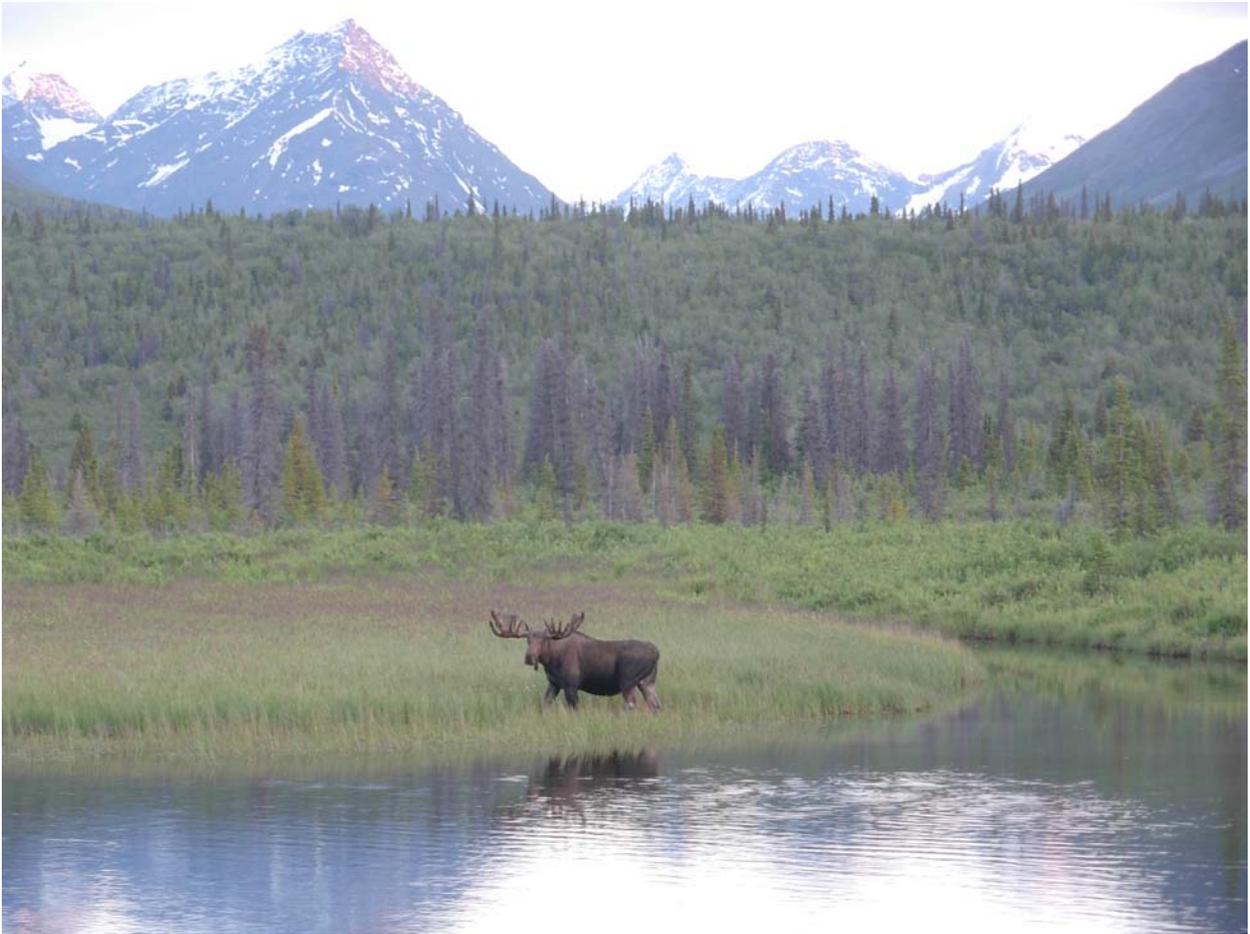


Photo 6. Bull moose just west of point 16.

Saturday, August 2

On Saturday we sampled points 25, 24, and 23. After looking at the maps and the points near the outlet of Hanagita Lake, I made an unwise decision this morning. I thought we could just take the canoe (yes, it would be a little heavy with three people and three large packs) 150m downstream to point 22 and then have a shorter walk to 25. The stream gets very swift very quickly. I managed to steer us to the right of a beaver dam that the stream was rushing into on the left bank. I forgot to ask before setting off if the other crew members knew how to pull left or right in the front of the boat. At nearly each bend in the creek was a large, low overhanging spruce. We pulled to shore as quickly as possible. The snags would have flipped us for sure.

With that adventure over, we headed to point 25. At some point on this brushy walk, the gun fell apart and springs and caps went flying. Luckily we were able to find all the pieces and reassemble it. The intense dwarf birch made hiking pretty brutal. After point 25 we headed to 24 and ate lunch in 6-7ft dwarf birch that we came to know very well over the next nine days. Point 23 is an interesting plot located on a small steep hill just above an old creek bed. Lake Creek appears to have changed direction often over the years. If you compare the topo map with the ortho image, you can see that where the topo shows many of the creeks flowing

there are now open lichen-grass-forb meadows or tall spruce areas. Lake Creek now bends sharply east to meet the lake rather than flowing north as it used to. We lined the canoe back up the stream, which required getting my pants soaked and performing some intriguing maneuvers over a submerged beaver dam. We were back to the cabin by 8:30pm.

Weather: Sunny and warm.

Sunday, August 3

We sampled points 22 and 18 on Sunday. Christina felt ill this morning, but decided she would try to work. We crossed the outlet in the canoe and then bushwhacked towards point 22. At about 80m from the point we hit a stream, we went up stream a little ways and were suddenly mired in a beaver dam and willows so thick you could not see your hands and endless patches of standing and running water. For a few moments cardinal directions ceased to exist and we were perpetually 80m from the point no matter where I turned. Not that we could really even turn since we were so entirely wedged between willows. The breaking point came when Christina threw up. I was then able to sense direction again and we arrived at the point. Point 22 was an overwhelming point. Near the center there is a pile of downed spruce trees and a pool of stagnant water. On the west and south ends there is running water from two different streams (photo 7). I found 61 species at this point; it took me quite a long time to make all the collections. Christina was sick a second time, but still felt she could keep working. We headed to point 18, which is a mix of willow and herbaceous meadow. Christina was again sick at this plot. Finally we convinced her to lie down while we finished the point. With Christina ill and after the long time we spent at point 22, we decided to go back to the cabin instead of attempting point 17. We were back to the cabin by 6pm.



Photo 7. Looking east from west end of point 22.

Weather: Rain and cool temps in the morning. Cloudy with some drizzle in the afternoon.

Monday, August 4

On Monday we completed points 4, 5, and 10. Point 4 is on a slope above the Lake Creek gorge. This was a drier point with some *Arctostaphylos uva-ursi* and a mix of thick dwarf birch, bebb willow, and scattered white spruce. Point 5 is in a dwarf birch-bebb willow stand. Point 10 is similar but with a few more spruce trees. Point 10 has high liverwort cover on litter and soil. We had trouble getting satellites at this point and had to wait until the end to record the center point. We headed home at 7:50pm. We reached the side of the gorge and found a place we could descend. The walking wasn't too bad right next to the creek, but when the creek began to fan out we had a pretty terrible bushwhack through willow and running water (we have video footage of this). We finally reached the canoe. Unfortunately, the canoe was pointing down stream as we pushed off. I didn't have enough time or speed to get it turned towards the cabin before we were swept down the lake's outlet. We managed not to hit the beaver dam and to get to the bank before we went too far. We were back to the cabin at 9:30pm.

Weather: It was cloudy most of the day, but the rain held off until 9pm. It rained all night.

Tuesday, August 5

We sampled points 12, 11, and 17 on Tuesday. In the morning we canoed south along the lakeshore to get close to point 11. We then walked to point 12, which again involved terrible

walking through thick willow and running water. We had a good size stream crossing just north of point 12. After point 12 we crossed back over Lake Creek and back through the willow and standing/running water to point 11. Somehow point 11 landed in the only spot that was mostly clear of water. Point 11 has open herbaceous areas on silt and closed willow areas with some standing water. From 11 we went back to the canoe through extra-tuff height running water and 7ft tall willow and paddled as close to 17 as we could. We found a terrific moose trail that leads almost directly to point 17. Point 17 had some interesting species; I found *Thalictrum* there. We were back to the cabin at 8pm and very thankful for a dry place!

Weather: It rained all night and into the morning. Walking through the brush was like being in a car wash. It continued to rain all day.

Wednesday, August 6

On Wednesday we sampled points 20 and 19. We left an hour late in the morning because it was pouring. It was all a giant dwarf birch bushwhack to point 20. 20 was one of our more open points, located on a little ridge. This point had a lot of *Danthonia intermedia*, which I did not see in many other places on this mini-grid. Next we went to point 19, which was moderately open with lots of *Cladonia* spp. in the openings. We took the animal trail near point 17 to the canoe and were back to the cabin at 6:30pm.

Weather: It rained all night and rained very heavily in the morning. Light rain continued throughout the day. Temperatures were cool.

Thursday, August 7

Thursday we completely sampled 13 and 9 and did a grid point and species list for point 14. The previous evening we realized we were short on stakes, so this morning when I called in I inquired about the feasibility of getting some stakes air-dropped to us. I also had to call AWOC to see if we could leave their canoe across the lake at our new camp. Point 13 is in a tall spruce stand with a forest floor of silt; a creek had run through this area recently enough that the silt was mostly still exposed (photo 8). Next we went to point 9 and ate lunch. We heard the park plane fly into the area. We communicated with them as they dropped the stakes. They described where they had dropped the stakes (75 ft downstream of our canoe, just before the beaver dam about 2ft into the lake's outlet). After 9, we went to point 14. We installed the center monument and almost started to sample, but we decided it was too late, cold, and wet to sample this point. Plus, we still had to find the stakes that had been dropped. We got back to the canoe at 7:30pm and searched for the stakes until 8pm. We found the flagging that had been attached to the stakes, but did not find the stakes themselves. It seemed likely that they had rolled to the bottom of the lake's outlet, where the water is deep and swift.

Weather: It rained all night and into the morning. The rain briefly stopped at point 13. It rained again on our walk to point 9, stopped for our lunch and then began again. By the time we got to point 14 it was really pouring. It rained into the night.



Photo 8. Point 13—silt and gravel pile visible in right of photo.

Friday, August 8

Today was our day to move out of the cabin and to our second camp. The owners of the cabin were coming with clients on the 9th. We loaded half of our gear into one of the motor boats. Luckily, Kara had used outboard motors before and was able to get us to the old corral. We returned to the cabin and picked up the rest of our stuff and brought it to our new camp. We then returned to the cabin for one last unsuccessful search for the stakes. We lined the canoe up and down the creek/lake where the stakes should have been. Finally we paddled to our new camp and ate lunch.

After lunch we sampled points 3 and 2. Point 3 is a typical dwarf birch-bebb willow-spruce plot. Point 2 was our first and only truly open point in this mini-grid—beautiful spot. We left monument heads at the centers of these two points, but had no stakes. We put up some flagging and tried to secure the monuments with sticks in the ground around it. Unfortunately, there really was no way to really secure the monuments. We were back to camp at 7:30pm.

Weather: The morning was sunny. We were very thankful not to have rain while moving our camp. In the evening at point 2 it hailed on us and rained through dinner. During the night it cleared up and temperatures dropped below freezing (but I didn't see the aurora even though it was supposed to be out this night). We were so cold in our tents!!

Saturday, August 9

On our final day of sampling in 2008 we did points 8, 7, and 6. I had started carrying the soil probe in my backpack along with the quadrat frame because it was just too difficult to hold the probe, compass, and Garmin at the same time while attempting to bushwhack (not to mention the compass doesn't work when near the probe). On our way to point 8 the probe must have snagged on some bush and been yanked out of my pack. Since my pack was continually getting stuck in the brush, I never noticed the probe coming out. Neither Kara nor Christina, who were walking behind me, saw the probe.

Point 8 is on the very steep and eroding bank far above Lake Creek. The soil depths would have likely all been 100cm+ at this point. Point 7 is in the typical thick, tall dwarf birch. Point 6 had a fairly high diversity of vascular plants and an interesting mix of a moist meadow-y willow thicket and drier lichen-rich areas.

This evening we could relax a little since we were done sampling for the year. I took a nice canoe ride around the lake with the sun setting on the Chugach Mountains (photo 9). We had seen a loon on the lake, and tonight it started calling.

Weather: In the morning we had a little rain—just enough to drench all the vegetation so that we were soaked by the time we reached point 8. We had off and on sun and rain for the whole morning. By late afternoon it was sunny and dry—beautiful.



Photo 9. Last evening at Hanagita Lake

Sunday, August 10

We slept in this morning until 9:30am. We ate breakfast and packed our gear. We got word that the park had finally gotten its plane back on floats—so two planes came to pick us up

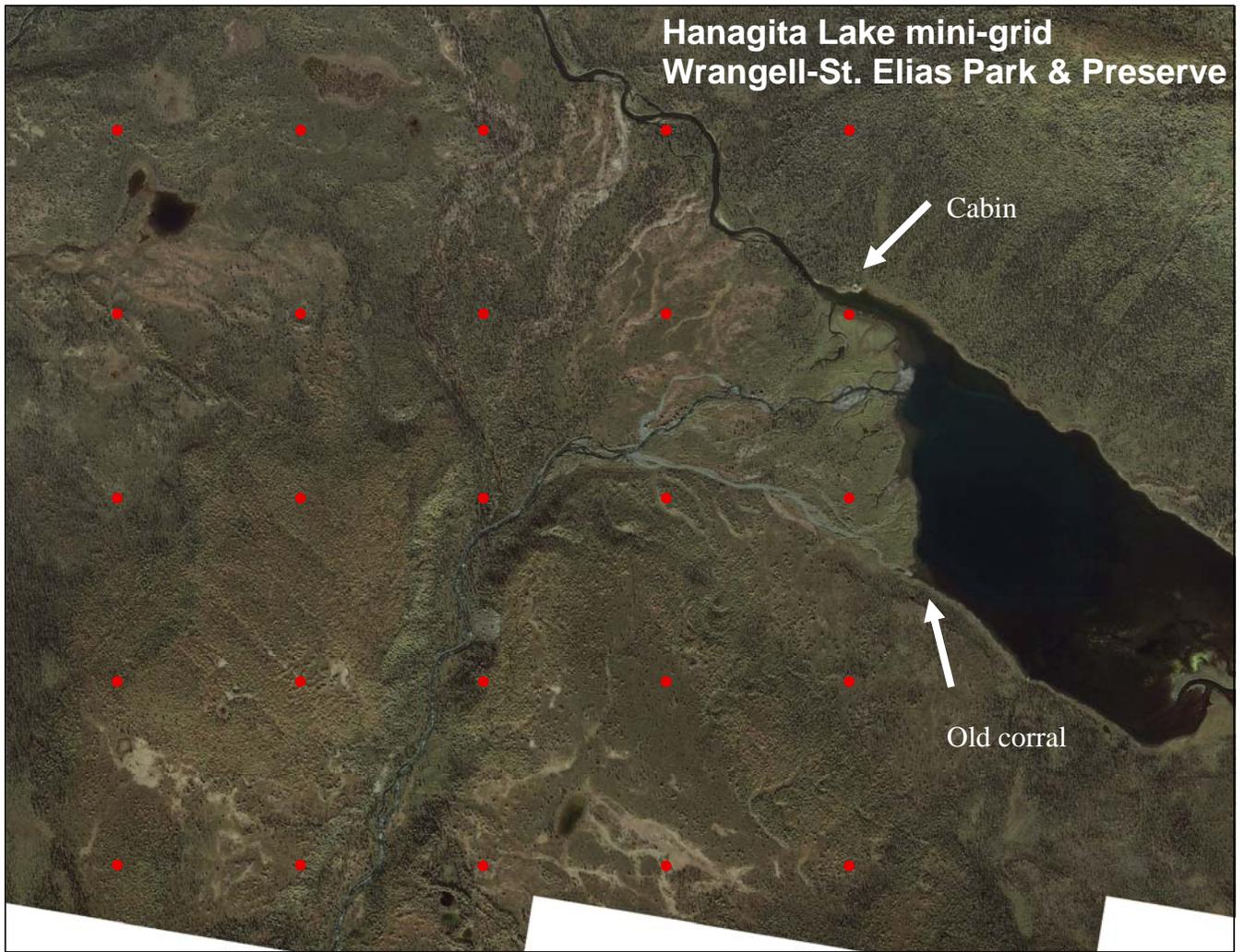
instead of doing a shuttle with Copper Valley Air. Tom Betts arrived first and picked up Kara and then Dave with Copper Valley Air picked up Christina and me. We all were dropped off at Tolsona Lake, where Tom had said a vehicle would be waiting for us. Clearly, there was some miscommunication because there was no vehicle. Luckily Dave gave us a ride back to Gulkana where we picked up a park vehicle and went home.



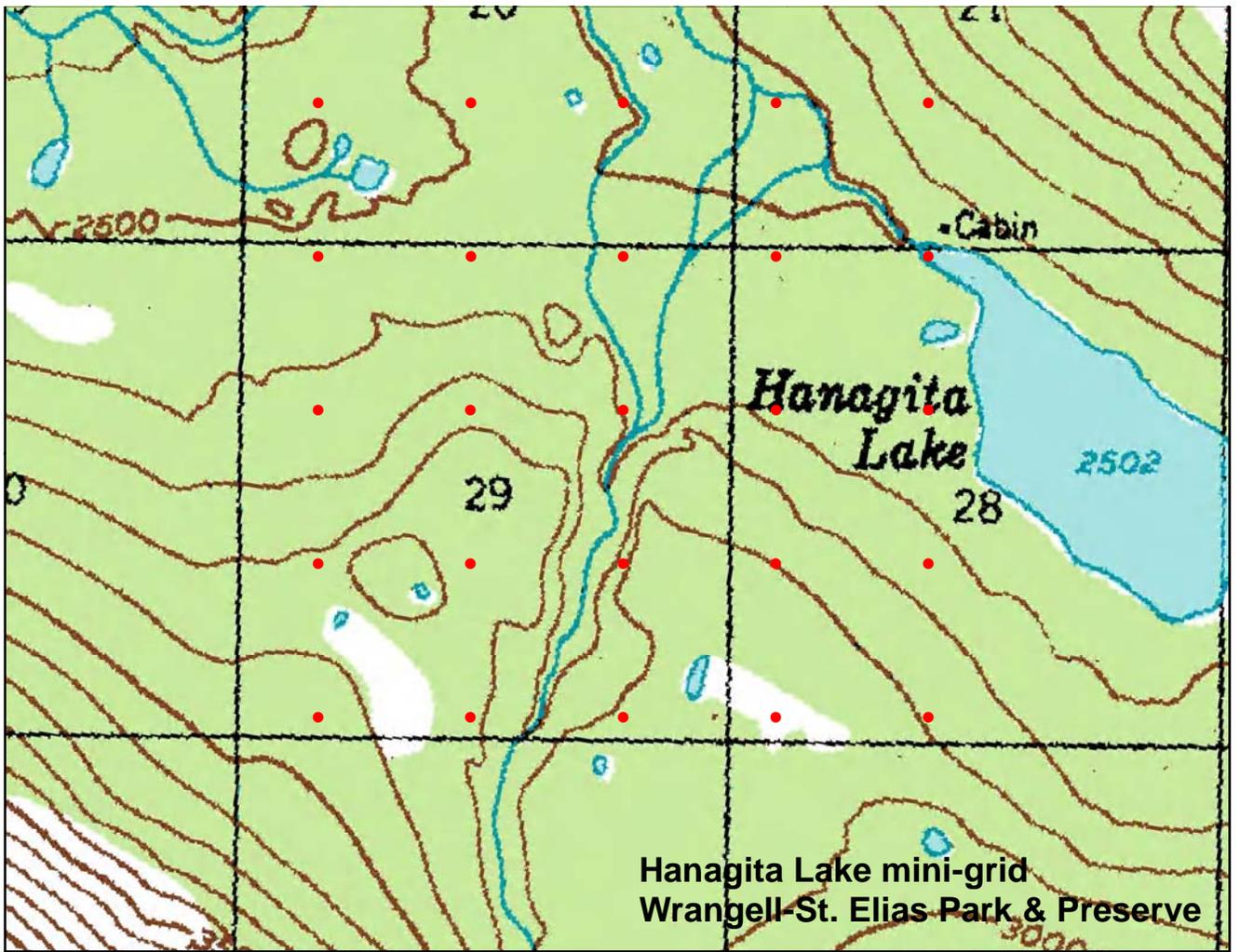
Photo 10. Park plane on floats in front of our cook area at camp #2.

CONCLUSIONS AND FUTURE CONSIDERATIONS:

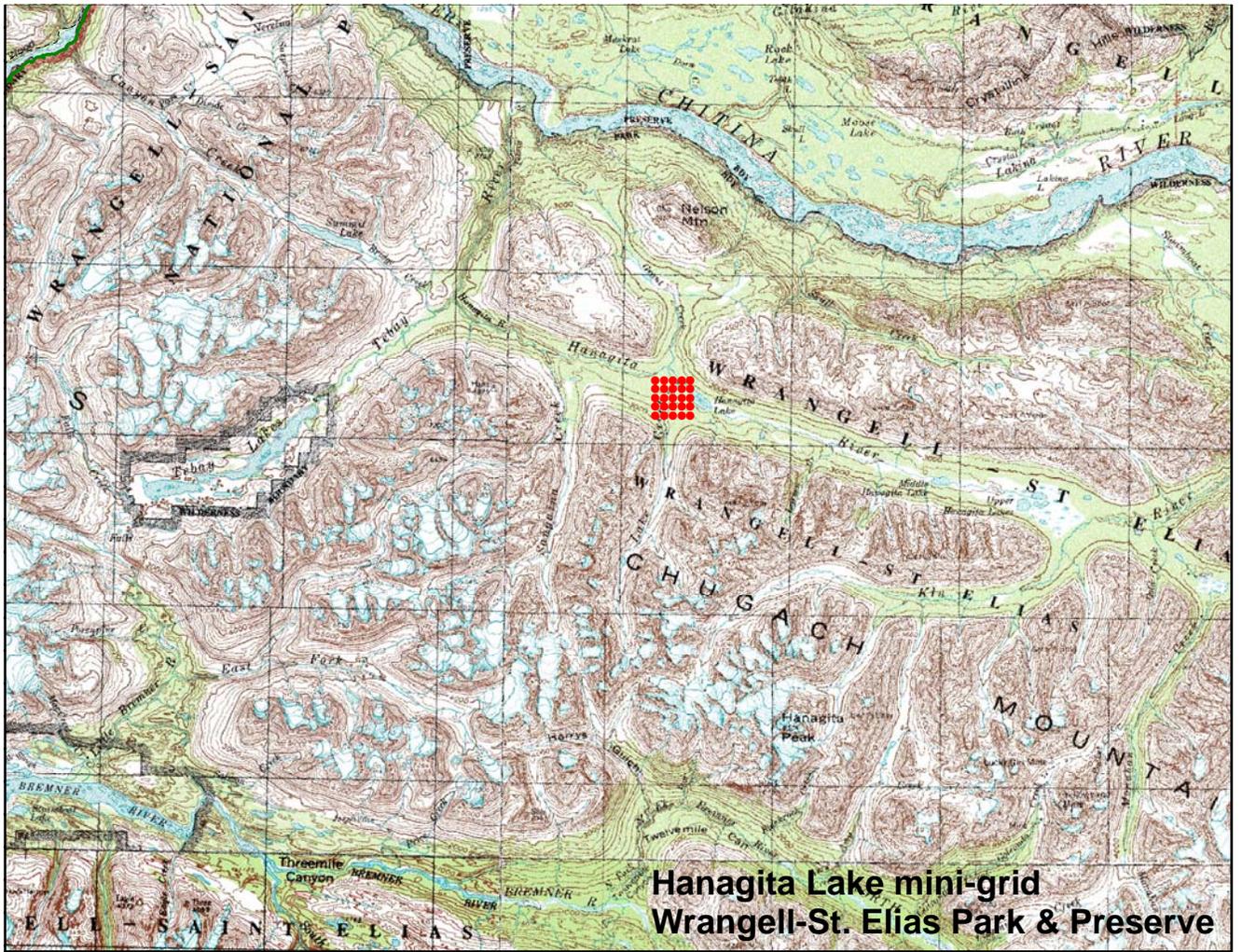
Although the cabin is pricey and maybe a little too nice, it is in the perfect location for getting around the mini-grid, especially with the use of the canoe. I would recommend using the cabin again. The second camp is ok, but its location makes getting to more than half of the mini-grid extremely difficult. This entire mini-grid is brushy with the exception of point 2.



Map 1. IKONOS image of Hangatita Lake mini-grid.



Map 2. Topo map of Hanagita Lake mini-grid (1_15K). Compare flow of Lake Creek on this map with the flow of the creek on the IKONOS image.



Map 3. Topo map of Hanagita Lake mini-grid (1_250K)