

## Tanana Dangerous Ice Report 5-25-2010



Knut Kielland and Bill Schneider are funded under a grant from the National Science Foundation to investigate dangerous ice conditions on the Tanana River. The grant is for three years and the results are to be posted on the Dangerous Ice Jukebox site (Jukebox@uaf.edu). The research area extends from Fairbanks to the village of Tanana. Initial research from Tanana began on March 15, 2010 when Knut Kielland and Karl Olson traveled from Fairbanks to Tanana on the river. On March 16<sup>th</sup> Bill Schneider and Chas Jones flew to Tanana to begin field investigations with Charlie Campbell and Ronnie Evans. The six member crew traveled on the Tanana and on Hay Slough on the 16 and the 17.

### March 16, Day 1

#### Site 1

The first site we visited is listed as GPS 15 (Table 1) on the map (Map 1). This is a place where Lester Erhart went through the ice and is a spot where frequent holes are reported, opens and closes all winter, opens when the temperature warms. *The presence of wind blown sand on the ice facilitates melting. A general caution was expressed about traveling on ice that has sand on it Charlie elaborated by noting that when the sun warms the ice in the latter part of March and April, the dust really hastens heating and melting the ice and rendering it unreliable.*

Table 1. GPS points and the associated coordinates\*

GPS pt.	Easting	Northing
15	545450	7226036
16	546706	7226862
17	549146	7226813
18	551793	7227014
20	554319	7223870
21	560241	7221094

22	547469	7228235
24	562134	7224384
27	563334	7223158
29	562146	7223519
30	558679	7225275
31	561615	7224463

\*Projection: UTM WGS 84 Zone 05 N



#### Site 2

The second site is listed as GPS 16 on the map and is located straight out from Mission Hill. This is a place that in some winters has open holes and is the reason that the *Yukon River crossing is well above this spot and is marked with willows by community members.*



Site 3

The third site is listed as GPS 17 (Table 1) and is located at the mouth of Hay Slough. There is a large overflow outporing that has recently frozen. The slough contains a bulge

in the middle that would seem to indicate pressure. The frozen overflow is dark brown and is both at the mouth and along the sides of the slough. *It was noted that the snow insulates the ice and on the edges of the slough where there is overflow that this could be a bad spot for getting stuck with a snowmachine since the water seeping up could be insulated in normal snow year from freezing.*



#### Site 4

The fourth site is listed as GPS 18 (Table 1) and is located a short distance up Hay Slough near the portage trail from Hay Slough to the Yukon River. *It was reinforced at this site how overflow occurs after you get snow on the ice and that it is best to stay off the ice till after a good cold stretch. The reason for the portage is to avoid the poor ice at the lower end of Hay Slough.*



Site 5

The fifth site is located on the Tanana River below Squaw Crossing on the upper end of 8 Mile Island. This is at GPS location [20](#). At this site there was a discussion of river bars

and the cut banks edges. *It was pointed out that when there is lots of snow it is good to avoid these spots because the swift current will be eating away on the ice and the deep snow that accumulates under the cut bank will insulate thereby creating a condition for weak and dangerous ice. Sometimes one can see a snow indent at these spots. It is better to travel on the rough ice where you are assured of safe ice. Ronnie noted that if you have to travel on and off the bars you want to be going at a fast speed so you don't sink. This led to a clarification that one might want to enter and leave the bar slowly so you aren't driving yourself down, but then speed up to pull yourself up onto the flat ice. The idea is to hit the throttle when you are down in the trough, not as you are approaching.*



#### Site 6

The sixth site is located on the Tanana River at GPS location 21. *This site has an active cutbank with overhang. The channel has carved its way over this way. This features a Southeast exposure with drifts that insulate. There is also dirt mixed with snow, classic features to avoid. It was pointed out you would want to have a probe if you had to be in this situation. This led to a discussion of the stakes that the iron dog people put in and how one could easily be fooled into thinking the trail was safe and forgetting that trail conditions change frequently and also that those guys are traveling fast without sleds and loads.*





March 17, Day 2

#### Site 7

The seventh site is located up Hay Slough where Jr. Moses and others have fallen through the ice. This is marked as GPS 31. A portage trail has been cut around this bad spot (Fish Creek Portage). The site has been a problem, according to Lester Erhart from as long as he can recall. In a conversation with Charlie Campbell he attributed the problem to thermal action on the north bank. He said that the site opens up quickly when the weather warms up. Ronnie noted that he heard that people used to get winter supply of fish at this spot. The site is particularly dangerous in spring when the temperature warms up. Since this site is on the main overland trail from Manley Hot Springs and is used frequently it would warrant further investigation, scientific monitoring and marking for safety.





#### Site 8

The eighth site is located further up Hay Slough at a beaver house. This site was open last winter. It was noted that the otters when they hear the water trickling they come and open it up.

Comment [P1]: No GPS point recorded

Comment [P2]: Beavers?



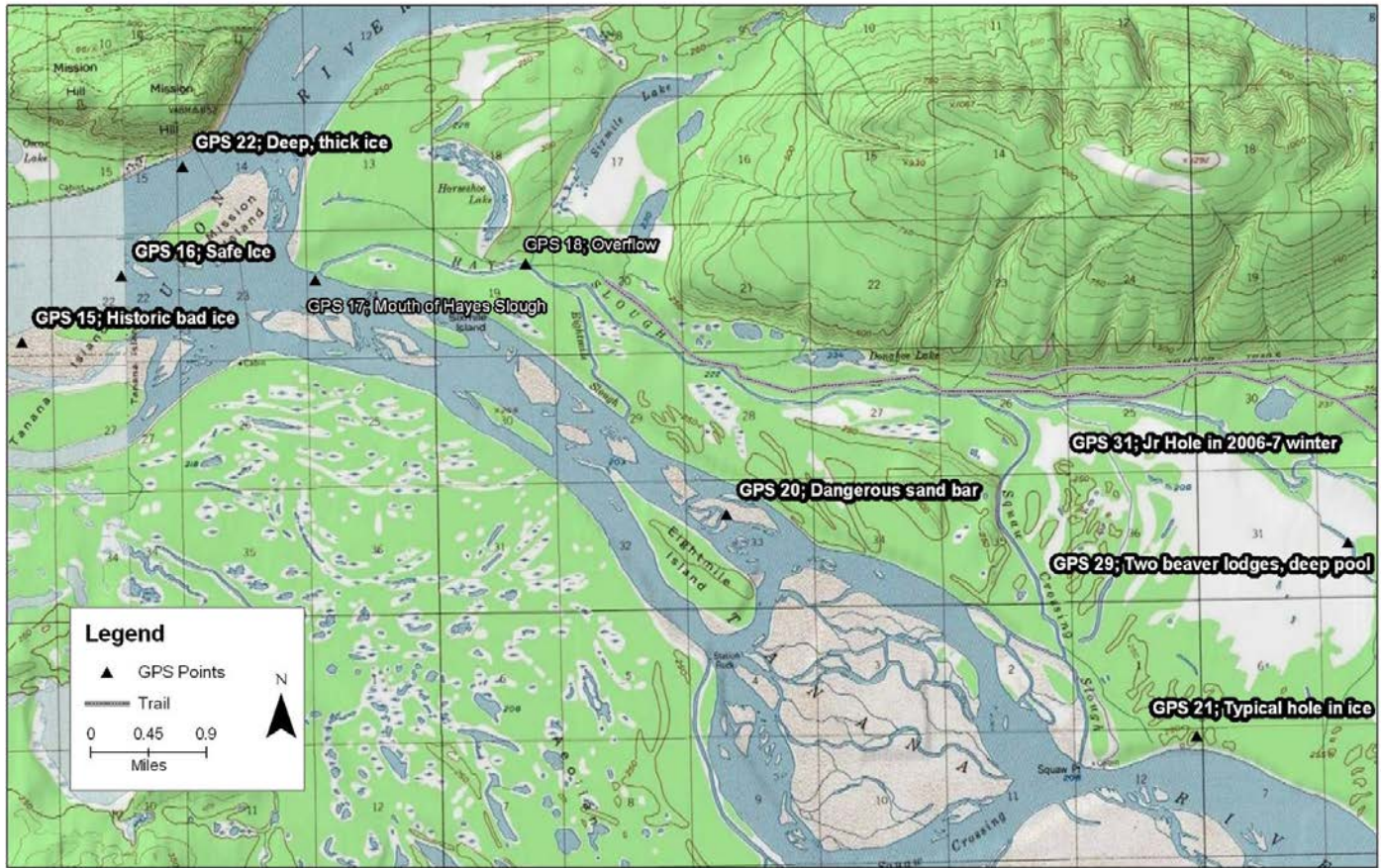
#### Site 9

This is the location of the portage trail around the bad ice spot, site 7. *It was noted that people mark the slough with two branches in an X when the ice is bad and people should take the portage.*



### Recommendations

Site 7 holds potential for a project engaging scientific testing with local community support. Although there is a portage trail around this specific place, this site is on a section of trail that is often traveled in winter by Tanana residents back and forth from Manley Hot Springs. This is a part of the slough that has a history of open water problems in winter as evidenced in both the cases of people going through the ice here and in the portage trail built around this section of the river. The scientific testing at this site could serve several purposes: determine the cause of the open water, provide information useful to understanding other sites in the slough, involvement of community members in scientific research methods, and such work could build a legacy of shared information in the community and the academy drawing from both the science and local knowledge. This could have positive implications for continuing work on Dangerous Ice in Tanana.



Map 1. GPS Coordinates of Field Locations Associated with Specific Sites of Interest