

BC HYDRO OPERATIONS - ICE OBSERVATION REPORT 34

Flight: Tuesday March 13, 2007

Report: March 14, 2007

Report by Dale Bairstow, Deb Bisson and Martin Jasek

The responsibility for ice observations on the Peace River passes to BC Hydro from Alberta Environment (AENV) when the ice front is upstream of Dunvegan. That responsibility was transferred on February 2, 2007. The numbering of reports is a continuation of the AENV reports.

Flight Observations by Deb Bisson

A flight observation was conducted out of the Fort St. John Airport on Tuesday March 13, 2007. Air temperature at the airport was - 4° C. The weather during the flight was clear and sunny.

Ice Observations

Location of the Ice Front: The ice front had advanced 2.7 km upstream since the last observation on March 10 and was located at **km 183.7 on Mar 13, 2007, 10:00 MDT**. This was approximately 112 km upstream of Dunvegan or about 20 km downstream of the Clayhurst Bridge near the BC/AB border. The advance rate of the ice front between the last two observations was about 0.9 km/day. Since the last flight, daily low temperatures at the Fort. St. John Airport have been about -17 °C with daily highs anywhere from -12 to 0 °C

Detailed Observations:

- km 173 to 183.7 - dislodged anchor ice floes 15% concentration just upstream of the ice front. Smaller amounts of shore ice floes as well.
- km 183.7 - ice front on Mar 13, 10:00 MST, the first 50 m of the ice cover consisted of anchor ice floes and shore ice floes
- km 183.75 to 184.6 - ice cover was juxtaposed and made up of frazil pans
- km 184.6 to 186.3 - ice cover was consolidated and made up of frazil pans
- km 186.3 to 188 - ice cover that was a brash ice cover on the last flight had consolidated some
- km 188 to 233 - ice cover is mostly the same as the last flight. The 3 km open lead (km 193 to 196) had started to freeze in from the edges.



Looking downstream at ice front at km 183.7. Dark floes in foreground are released anchor ice. Brownish colour is due to gravel being carried by the anchor ice. The white floes are broken off shore ice.



Released anchor ice floes (dark floes) and shore ice floes (white) at km 182 about 3 km upstream of the ice front (flow direction is lower right to upper left)



Ice front at km 183.7. (flow is from left to right). Dark anchor ice floes were arriving at the ice front causing the ice cover to advance. This was due to the anchor ice being released from the river bed due to warm temperatures and bright sunshine. This mechanism of ice cover advancement had been occurring for a short while since this ice cover type was only about 50 m long. Once the anchor ice arrives at the ice front it loses its dark colouring since it gets buoyed up by additional floes from underneath which drains the ice giving it a higher albedo. The anchor ice floes upstream of the ice front look dark because the gravel weighing them down causes most of the ice to be submerged making only the gravel visible. Downstream of the anchor ice cover the ice cover was a juxtaposed consisting of frazil pans that formed during the cooler weather on previous days and nights.

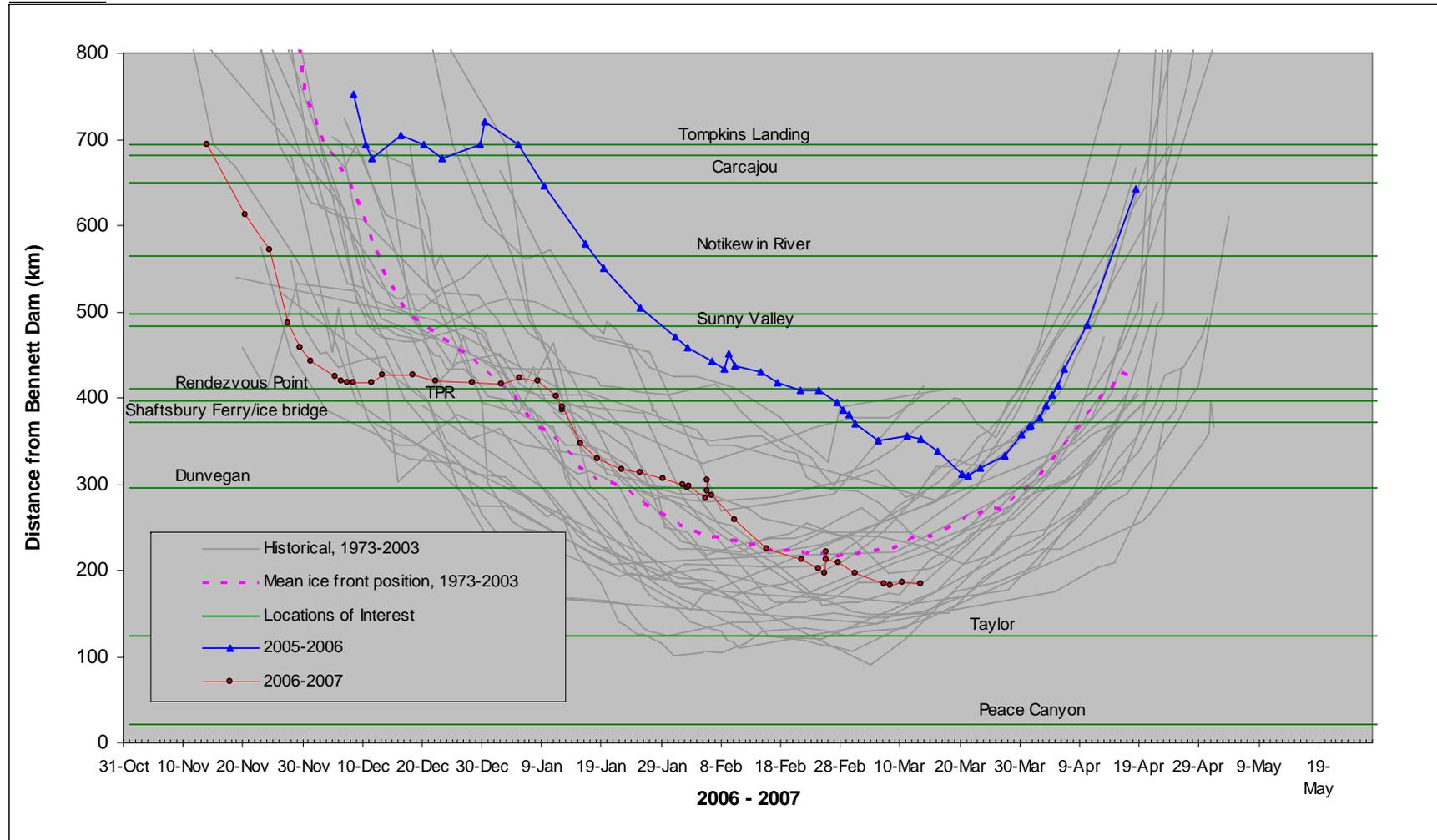


Open water lead from km 193 to 196 (looking upstream) has started to freeze in from the sides.

Environment Canada Forecast temperatures (°C)		Fort St. John Max/Min	Town of Peace River Max/Min
Wed	14-Mar-07	-9 / -17	-5 / -12
Thr	15-Mar-07	0 / -9	-1 / -14
Fri	16-Mar-07	0 / -10	-4 / -12
Sat	17-Mar-07	-9 / -15	1 / -5
Sun	18-Mar-07	-6 / -15	-6 / -12
Normal Max/Min		0 / -9	0 / -10

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Ice Front



Given the weather forecast, the ice front is not expected to move much over the next several days. Therefore, the next ice observation flight is scheduled for Monday March 19, 2007 instead of later this week.