

BC HYDRO OPERATIONS - ICE OBSERVATION REPORT #20

Flight: Monday February 17, 2014

Report: February 18, 2014

Report by Kerry Paslawski and Martin Jasek

The responsibility for ice observations on the Peace River passes to BC Hydro from Alberta Environment and Sustainable Resource Development when the ice front is upstream of Dunvegan. That responsibility was transferred on January 15, 2014. The numbering of reports is a continuation of the Alberta Environment reports.

Flight Observations by Kerry Paslawski

A flight observation was conducted out of the Dawson Creek Airport on Monday Feb 17, 2014. Air temperature at the Clayhurst Bridge near the BC-AB Border was -3 °C and at Dunvegan it was -7 °C. It did reach -11 °C and -17 °C earlier the same morning at the two stations respectively. The skies were mostly clear and sunny over the river sections that were flown.

Ice Observations

Location of the Ice Front: The ice front had advanced 30.8 km since the last observation by web camera on February 10 and was located at **km 210.0 on Feb 17, 2014 13:47 MST**. This was approximately 86 km upstream of Dunvegan and about 46 km downstream of the Clayhurst Bridge near the BC/AB border. The average rate of advance since the observation on February 10 was 4.3 km/day. **For comparison the average most upstream extent of the ice cover is km 214 occurring on Feb 26.**

Detailed Observations:

km 199	- frazil ice pan concentration of about 2 to 5%
km 202	- frazil ice pan concentration of about 5 to 10%
km 207.5	- frazil ice pan concentration of about 20%
km 210.0	- ice front at 13:47 MST
km 210.0 to 212.2	- juxtaposed ice cover
km 212.2 to 214.0	- medium consolidated ice cover
km 214.0 to 216.3	- heavily consolidated ice cover with toes in both channels
km 216.3 to 216.8	- juxtaposed ice cover
km 216.8 to 217.1	- open lead
km 217.1 to 218.8	- heavily consolidated ice cover with toe at downstream end
km 218.8 to 221.3	- medium consolidated ice cover
km 221.3 to 224.0	- heavily consolidated ice cover with toe at downstream end
km 229	- toe of a consolidation
km 231.5	- slightly consolidated ice cover
km 233.5	- medium consolidated ice cover
km 236 to 236.9	- heavily consolidated ice cover with toe at downstream end
km 236.9 to 240.0	- juxtaposed to slightly consolidated ice cover
km 240.0	- open leads through islands
km 242	- medium consolidated ice cover
km 242.5 and 243.0	- toes of consolidations in both channels
km 246.0	- slightly consolidated ice cover
km 251.5	- medium consolidated ice cover
km 252.2	- toe of a consolidation

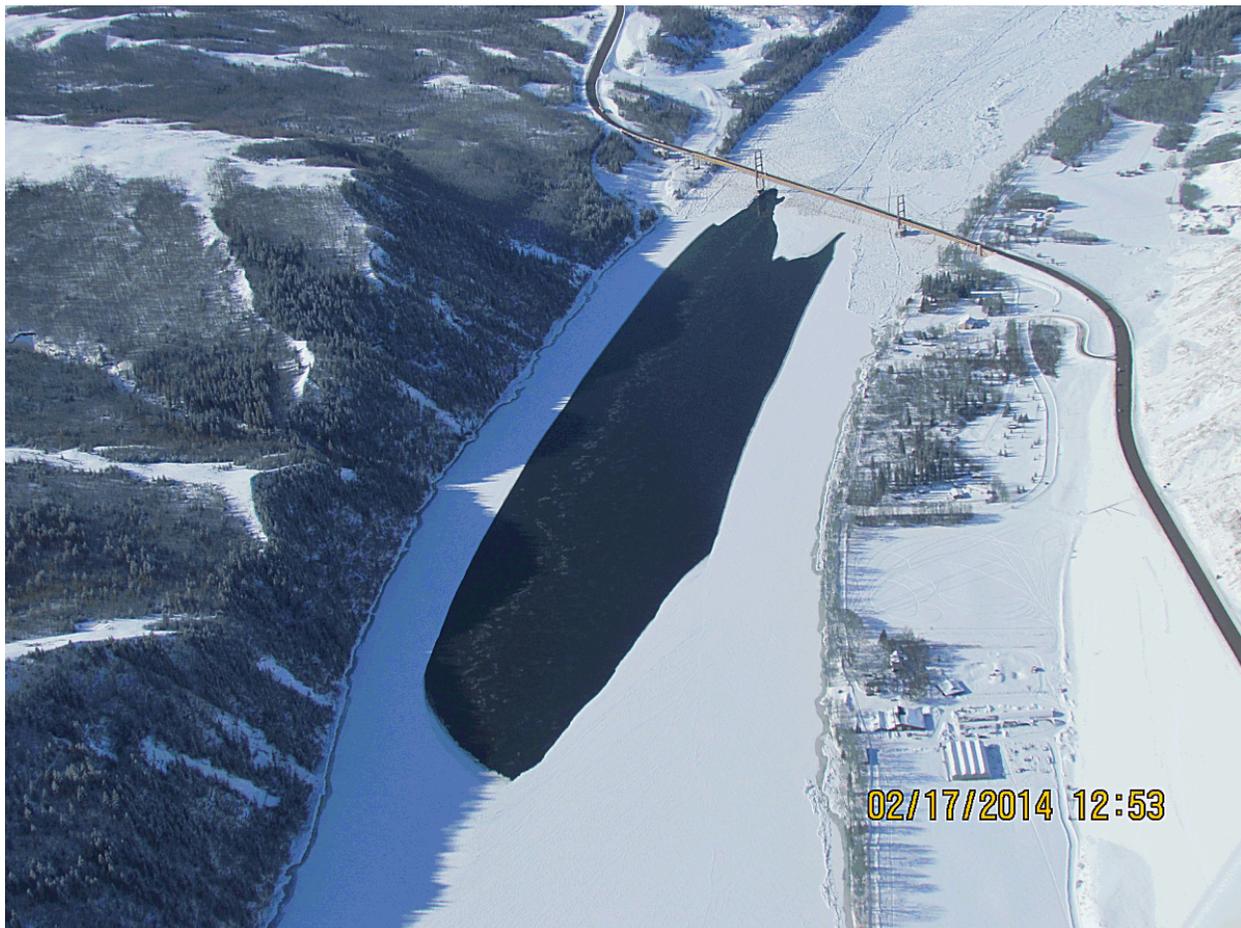
- km 254.2 - toe of a consolidation
- km 254.2 to 260 - large juxtaposed frazil pan rafts
- km 262 - medium consolidated ice cover
- km 262.5 to 273.0 - heavily consolidated ice cover with toe at downstream end
- km 272.2 to 273.4 - narrow open lead through the toe of the consolidation
- km 273.4 to 278.3 - consolidated ice cover with toe at downstream end
- km 278.3 to d/s - large juxtaposed frazil pan rafts (ice cover unchanged from Feb 5 flight)

Consolidation observed on Feb 8 by web camera (See Report #19)

The consolidation observed by a web camera on Feb 8 at km 250.5 showed that the ice ran for many hours until darkness set in and also beyond the downstream extent of the camera. However, the flight observations on Feb 17 allowed for the determination of the likely location of the termination of this ice run; a toe was located at km 273.0. Using the consolidation downstream advance rate recorded by the camera and the subsequent re-advancement of the ice cover between two other web cameras the following ice front positions were estimated; **km 273.0 on Feb 8, 2014 20:00 MST** and **km 252 on Feb 9, 2014 00:00 MST**.

Ice Gap at Dunvegan:

The ice gap at Dunvegan continues to close in due to border ice freezing and is now 1.2 km long (km 295.7 to 296.9). It has shortened only by 100 m but has significantly narrowed due to border ice growth since the Feb 5 flight observation (Report #18). **Note:** The fourth paragraph in Report #18 incorrectly stated the downstream end of the gap as km 299.0, it should had been stated as km 297.0.



Looking upstream at the ice gap at Dunvegan on February 17, 2014.



Looking upstream at the ice front at km 210.0 on Feb 10, 2014.



Looking downstream at the ice front at km 210.0 on Feb 10, 2014.



Looking u/s of a toe of a consolidation at km 252.2 and also on inset web cam photo on Feb 9.



Looking upstream at the toes of consolidations at km 252.2 and km 254.2.



Looking upstream from 260 at an ice cover composed of large juxtaped frazil pan rafts.



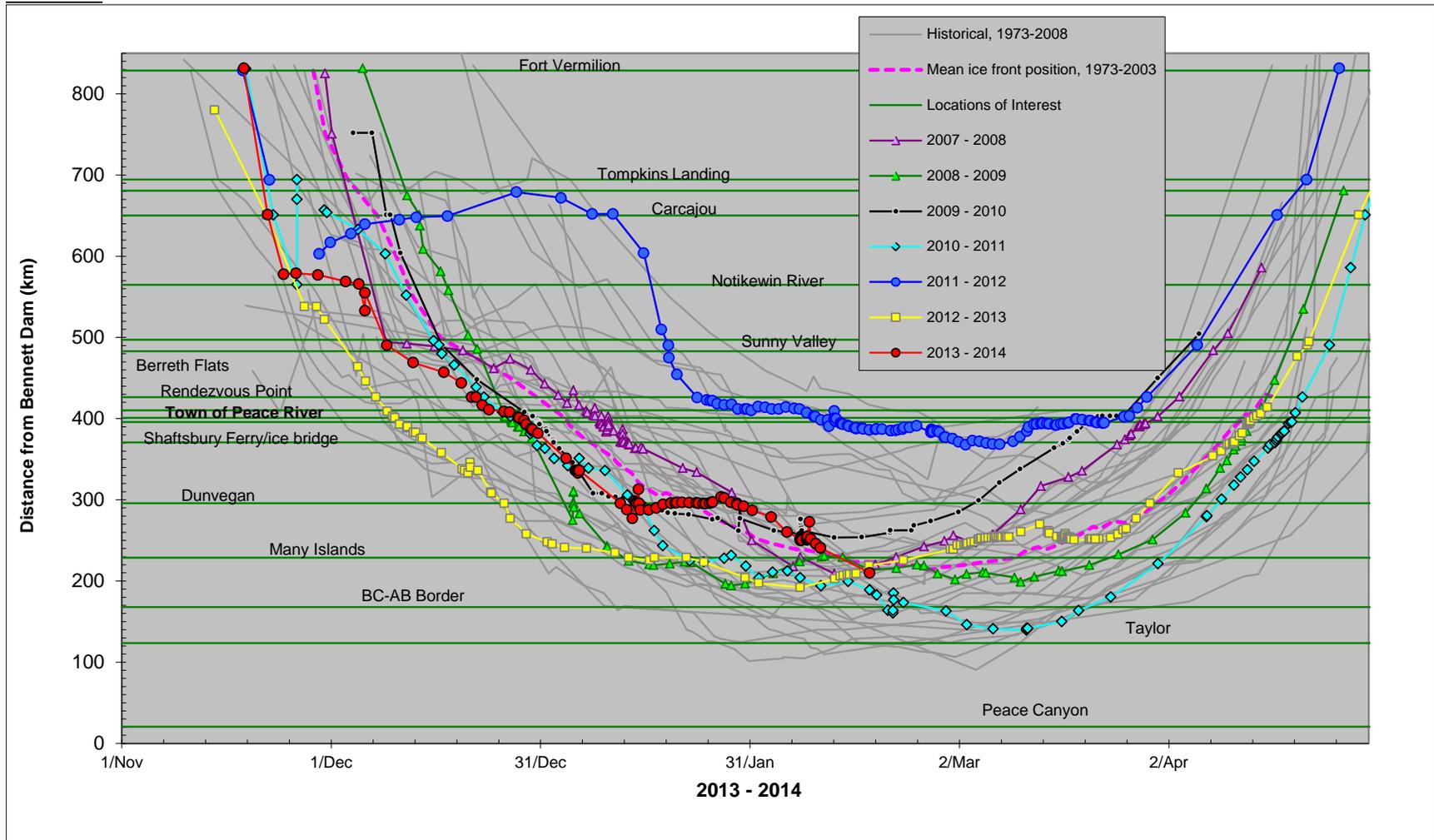
Looking upstream at the toe of a consolidation at km 273 that likely formed on Feb 8.



Looking upstream at a toe of a consolidation km 278.3.

Environment Canada Temperatures (°C)			
Observed:		Fort St. John Max/Min	Town of Peace River Max/Min
Sun	09-Feb-14	-19.4 / -22.9	-20.6 / -29.5
Mon	10-Feb-14	-22 / -26.5	-20.5 / -25.6
Tue	11-Feb-14	-21.3 / -24	-20.6 / -23.9
Wed	12-Feb-14	-17.4 / -24.2	-14.1 / -22.6
Thr	13-Feb-14	-15.7 / -23	-14.2 / -23.9
Fri	14-Feb-14	-12.2 / -19.9	-6.7 / -25
Sat	15-Feb-14	-2.4 / -15.3	-3.3 / -16.3
Sun	16-Feb-14	-1.9 / -10.4	-4.4 / -8.3
Mon	17-Feb-14	1.3 / -7.2	0.6 / -14.8
Environment Canada Temperatures (°C)			
Forecast:			
Tue	18-Feb-14	-2 / -5	-5 / -13
Wed	19-Feb-14	-10 / -14	-9 / -10
Thr	20-Feb-14	-15 / -16	-12 / -16
Fri	21-Feb-14	-14 / -22	-15 / -24
Sat	22-Feb-14	-9 / -20	-12 / -23
Sun	23-Feb-14	-6 / -16	-9 / -18
Mon	24-Feb-14	2 / -10	-4 / -16
Normal Max/Min		-5 / -14	-6 / -17

Ice Front



The next ice observation will likely be issued on Friday Feb 21 but is dependent on web camera coverage.