

# Water Survey of Canada

## International Polar Year Hydrometric Activities

Dale Ross



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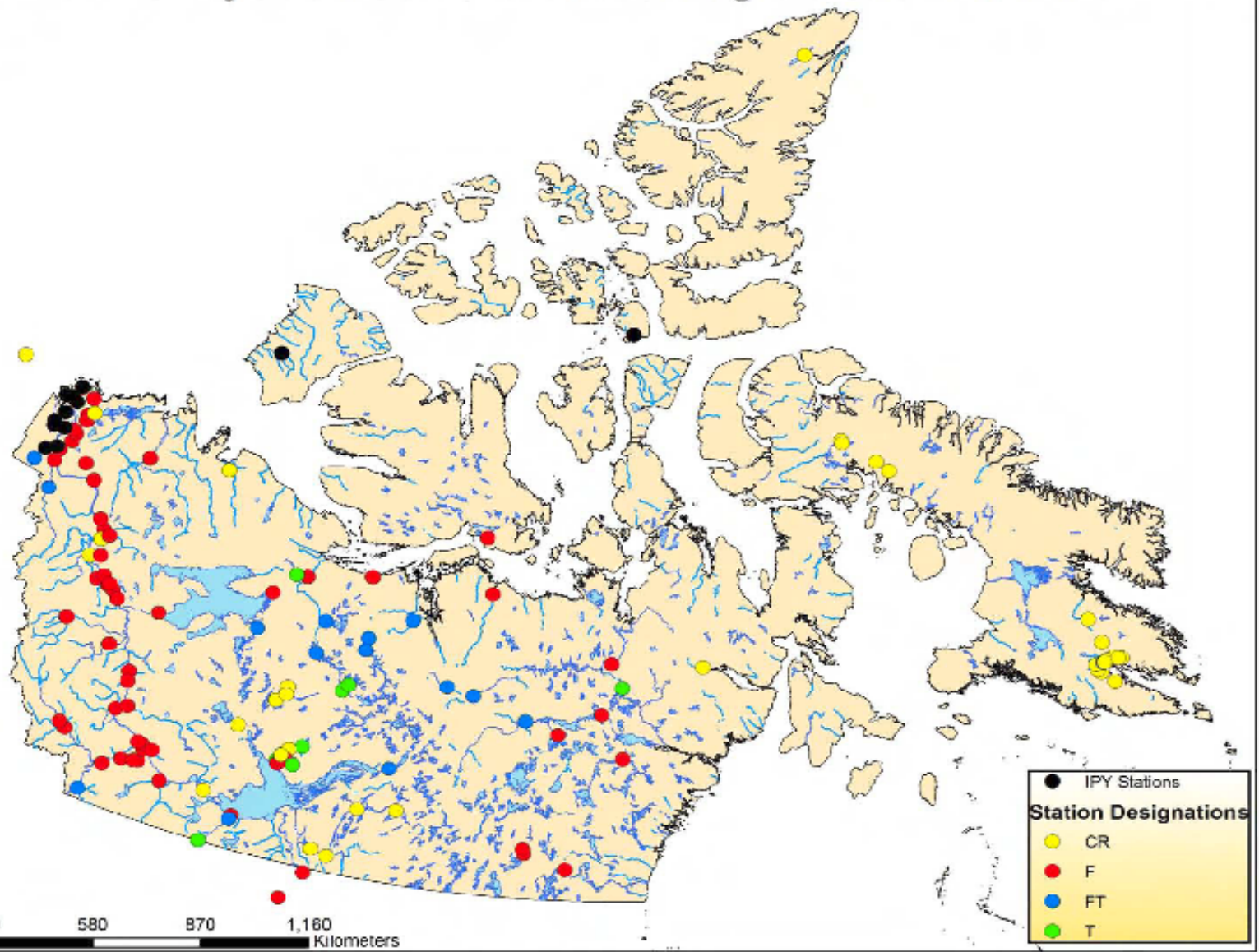
# IPY Projects

- Freshwater flux to the Arctic Ocean
- Enhanced monitoring in the Mackenzie Delta





# IPY & Hydrometric Monitoring in the NWT/NU



# Big River above Egg River



2007/07/17



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# Big River above Egg River

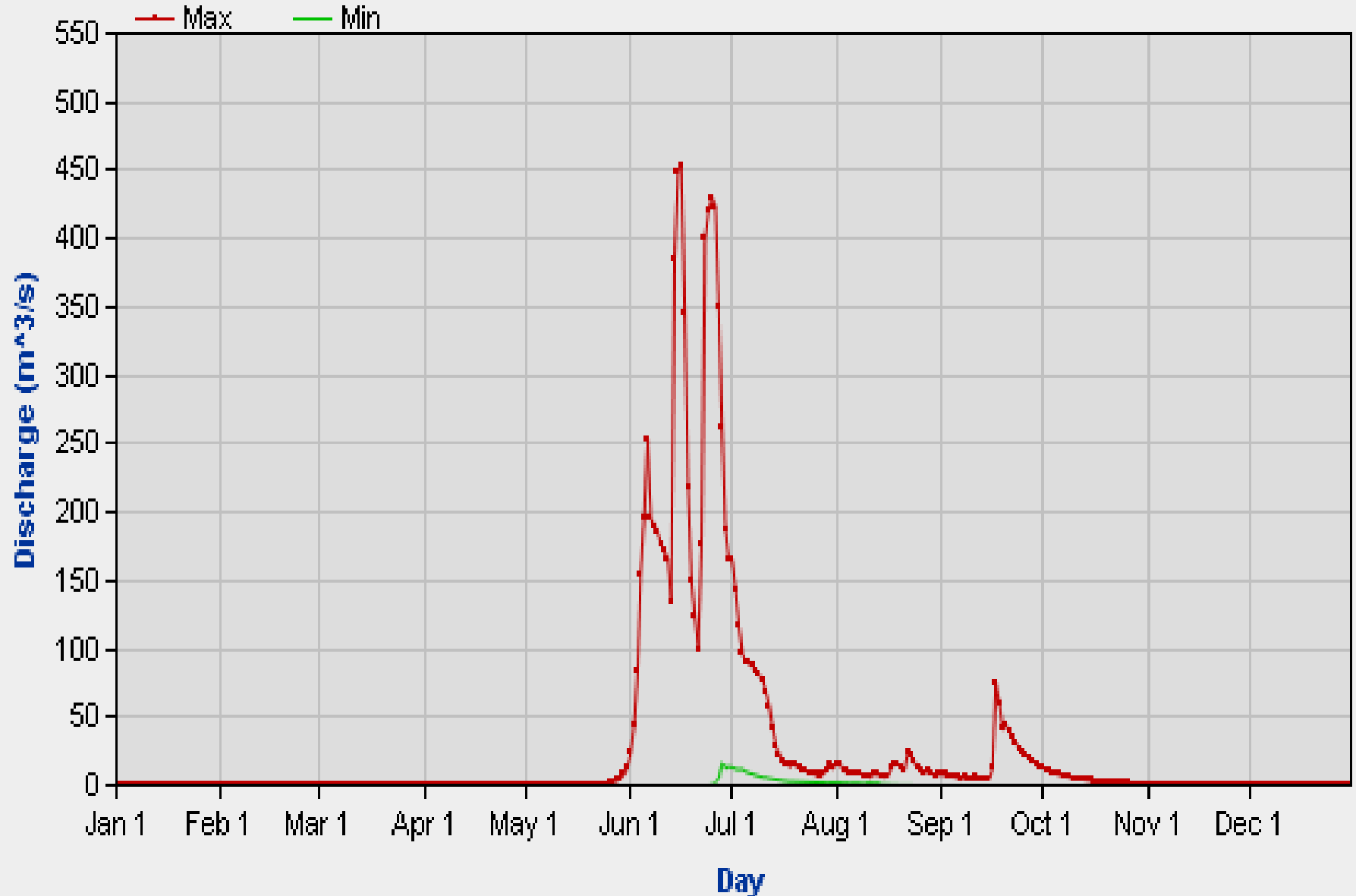
## Drainage Basin 3640 KM<sup>2</sup>

### 2007 Activities

- Originally established 1975 - 1988
- June: Original plan was to re-establish station before spring freshet. Weeks of continuous fog and aircraft unavailability we were unable to install site in as planned.
- July 17: Station installed. A discharge of 5.94 m<sup>3</sup>/s was obtained on this date. Near real time telemetry data has been available since this date. Unfortunately, there was a pressure system problem that could not be repaired so data was not useable.
- September 13: Station repaired and a discharge of 0.977 m<sup>3</sup>/s was obtained. River found under backwater due to ice.



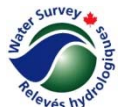
# Daily Discharge for BIG RIVER ABOVE EGG RIVER (10TA001)



# July 17, 2007



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# September 13, 2007



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# Mecham River near Resolute



# Mecham River near Resolute

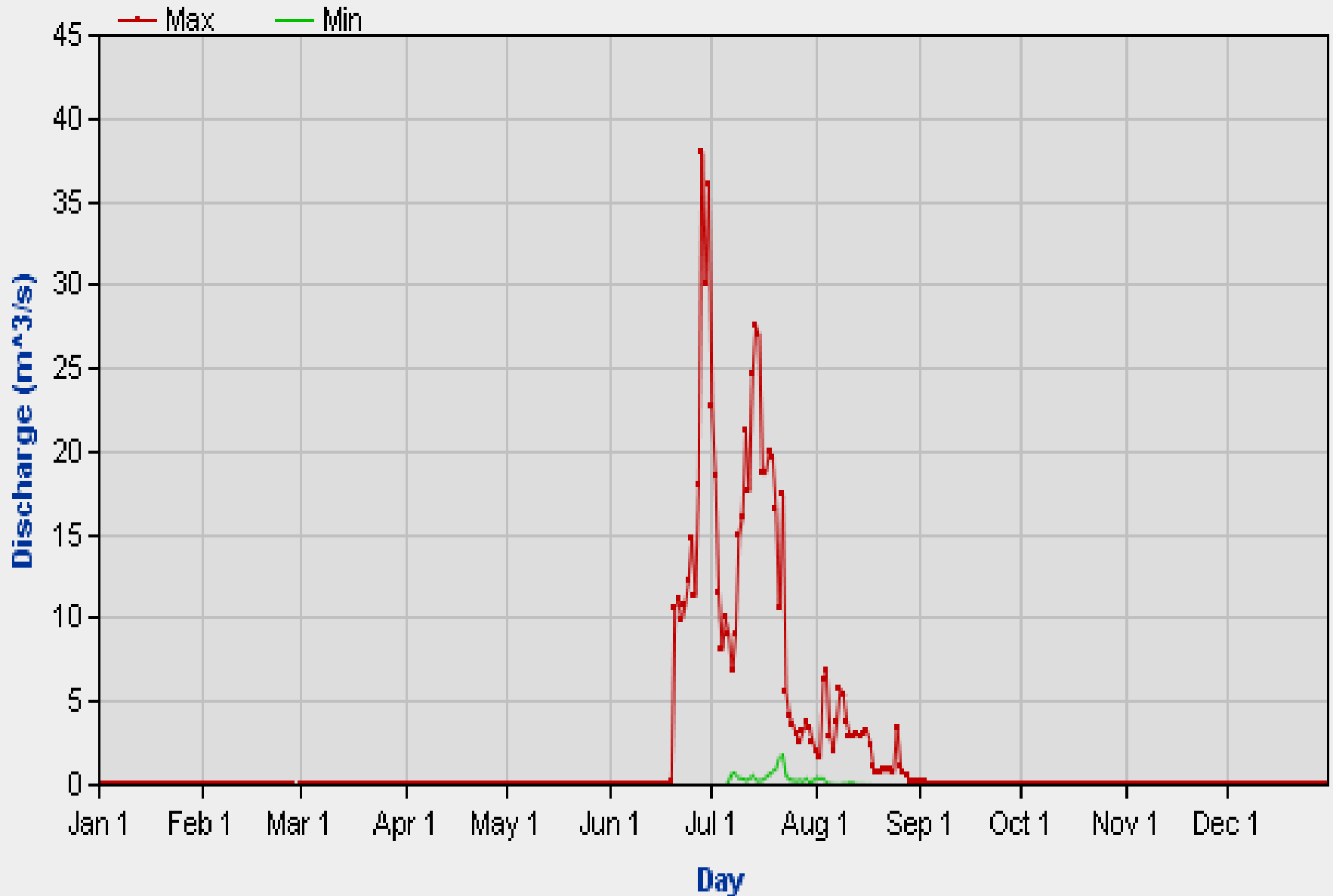
Drainage Basin 87 Km<sup>2</sup>

2007 Activities

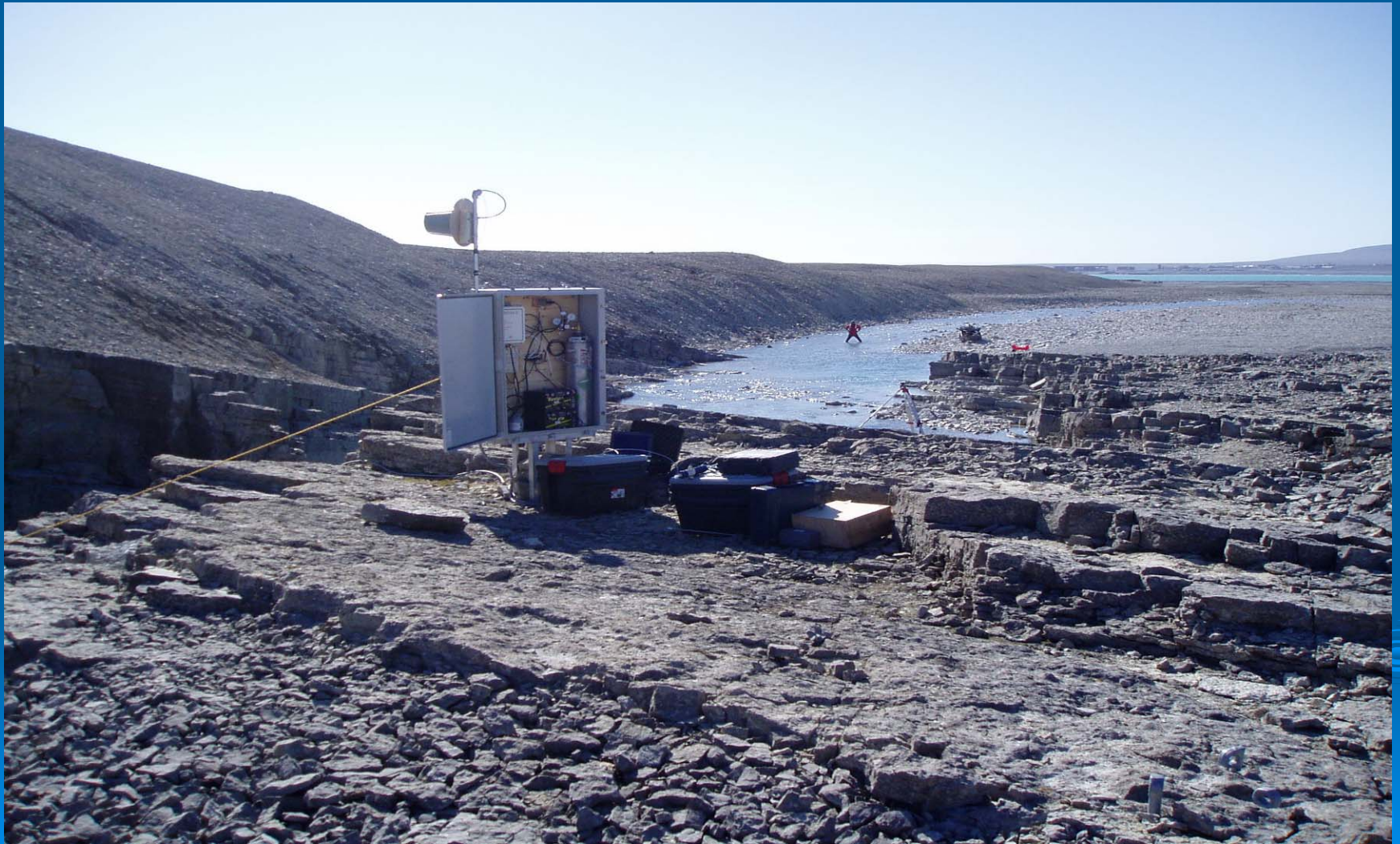
- Originally established in 1971 - 1979
- Re-established on July 23, 2007
- Completed 6 discharge measurements in 2007



# Daily Discharge for MECHAM RIVER NEAR RESOLUTE (10VC002)



# Mecham River Gauging Station



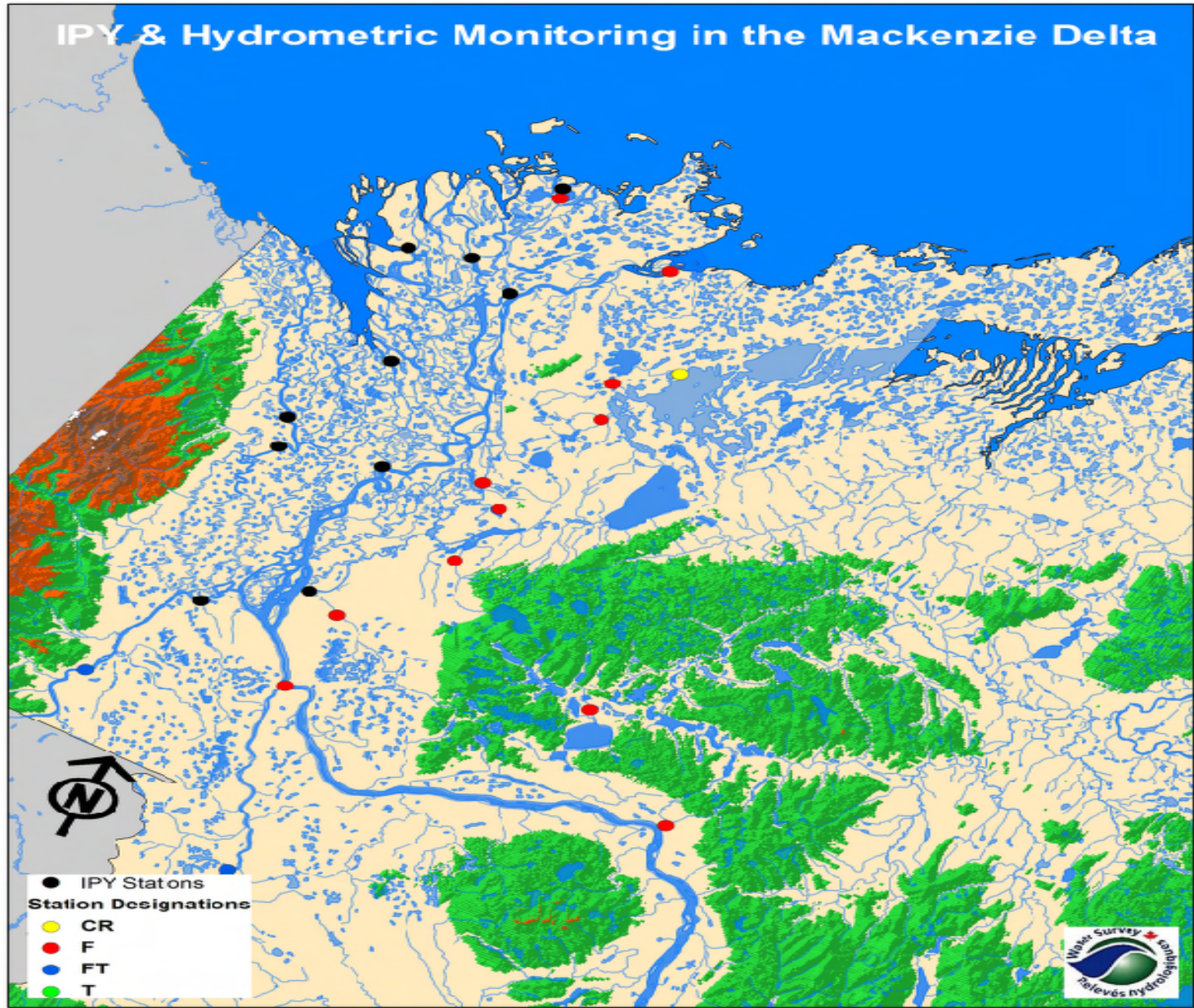
# Mecham River Discharge Measurement



# Resolute - Cornwallis Island



# IPY & Hydrometric Monitoring in the Mackenzie Delta



# Mackenzie Delta 2007

## IPY – Hydrologic Modeling

- Enhanced monitoring within the Delta
- Between June 14 and June 20, 2007 Acoustic Doppler Current Profiler (ADCP) measurements were completed at 10 sites throughout the Mackenzie River delta. Differential GPS was also used in conjunction with the ADCP to compensate for any moving bed at the sites.
- Planned measurements later in the summer had to be abandoned because severe mechanical problems with boat.





# Mackenzie Delta 2007 Discharge Measurements

Sta Number	Sta Name	Date	Discharge
10MC022	Peel River at Frog Creek	15-Jun	725
10MC010	Mackenzie River Middle Channel Below Langley Island	19-Jun	6277
10MC010	Mackenzie River Outflow Middle Channel Below Langley Island	19-Jun	2518
10MC023	Mackenzie River at Napoiak Channel	20-Jun	947
10LC019	Mackenzie River at Kumak Channel	19-Jun	2836
10LC015	Mackenzie River at Confluence East Channel	15-Jun	1106
10MC011	Mackenzie River (Reindeer Channel) at Ellice Island	20-Jun	4521
10MC003	Mackenzie River (Peel Channel) above Aklavik	14-Jun	1190
10MC008	Mackenzie River (Middle Channel) below Raymond Channel	14-Jun	667
10LC012	Mackenzie River (Middle Channel) at Tununuk Point	18-Jun	89.4
10LC021	Mackenzie River Kuluarpak Channel at Taglu Island	19-Jun	268



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# Mackenzie Delta Winter 2007

- 2 winter measurements at three locations are planned along the Inuvik to Aklavik corridor (Peel channel, Middle channel above Raymond, and East Channel at Inuvik).
- An attempt will be made to operate all delta stations throughout the winter. There will be at least 2 stations (Middle Channel at Tunnuk Pt and Confluence with East Channel) that will likely not operate throughout winter as the channels are too shallow.





**Questions?**



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