

Carlson Inlet – fast or slow?

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I conducted a ground-based radar survey of Carlson Inlet and Rutford Ice Stream, West Antarctica to determine the internal ice stratigraphy and flow history. Rutford Ice Stream has a fast-flow signature and most of Carlson Inlet has a slow-flow signature. I used radar layer tracing and 1D modelling to estimate the age of the ice. I conclude that most of the ice in Carlson Inlet has been stagnant throughout much of the Holocene and that there has not been any flow switching between Carlson Inlet and Rutford Ice Stream during that time period. A narrow region near the margin of Carlson Inlet changed from fast to slow flow, possibly related to changes in subglacial water distribution.