

## **Use of a remote-controlled jet boat to survey bathymetry at the terminus of a lake-calving glacier: Tasman Glacier, New Zealand**

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Global glacier recession is increasing the number of glaciers that terminate in proglacial lakes, yet knowledge about the processes that drive ice-berg calving are still poorly understood. This knowledge-gap is in part due to the challenges in obtaining good data sets in a highly dynamic and dangerous environment. We are using emerging remote technologies in the form of a remote controlled jet boat to conduct bathymetric surveys on Taman Lake in the immediate vicinity of the actively calving terminal face. Our UC Jettec boat is equipped with a dual frequency sonar (50hz/200-hz) and a Trimble R8 RTK-GNSS. The boat is also equipped with real time telemetry which streams NMEA data to a remote laptop running Trimble Hydropro. A long range first person viewer camera enables out of line of sight operation. Results show that part of the glacier terminus now terminates in water that is 200 m deep, and the sub-aqueous 'ice-ramp', associated with large unpredictable calving events is currently small and localised.