

Supplemental Information for: Changes in gross oxygen production, net oxygen production, and air-water gas exchange during seasonal ice melt in the Bras d'Or Lake, a Canadian estuary

Cara C. Manning^{1,2,3,a}, Rachel H. R. Stanley⁴, David P. Nicholson², Brice Loose⁵, Ann Lovely⁵, Peter Schlosser^{6,7,8}, and Bruce G. Hatcher⁹

¹MIT/WHOI Joint Program in Oceanography/Applied Ocean Science and Engineering, Woods Hole, MA, USA.

²Department of Marine Chemistry and Geochemistry, Woods Hole Oceanographic Institution, Woods Hole, MA, USA.

³Department of Earth, Atmospheric and Planetary Sciences, Massachusetts Institute of Technology, Cambridge, MA, USA.

⁴Department of Chemistry, Wellesley College, Wellesley, MA, USA.

⁵Graduate School of Oceanography, University of Rhode Island, Narragansett, RI, USA.

⁶Lamont-Doherty Earth Observatory of Columbia University, Palisades, NY, USA

⁷Department of Earth and Environmental Sciences, Columbia University, Palisades, NY, USA

⁸Department of Earth and Environmental Engineering, Columbia University, New York, NY, USA

⁹Department of Biology and Bras d'Or Institute, Cape Breton University, Sydney, NS, Canada

^aNow at: Department of Earth, Ocean and Atmospheric Sciences, University of British Columbia, Vancouver, BC, Canada.

Correspondence to: Cara C. Manning (cmanning@eoas.ubc.ca)

1 ADCP data

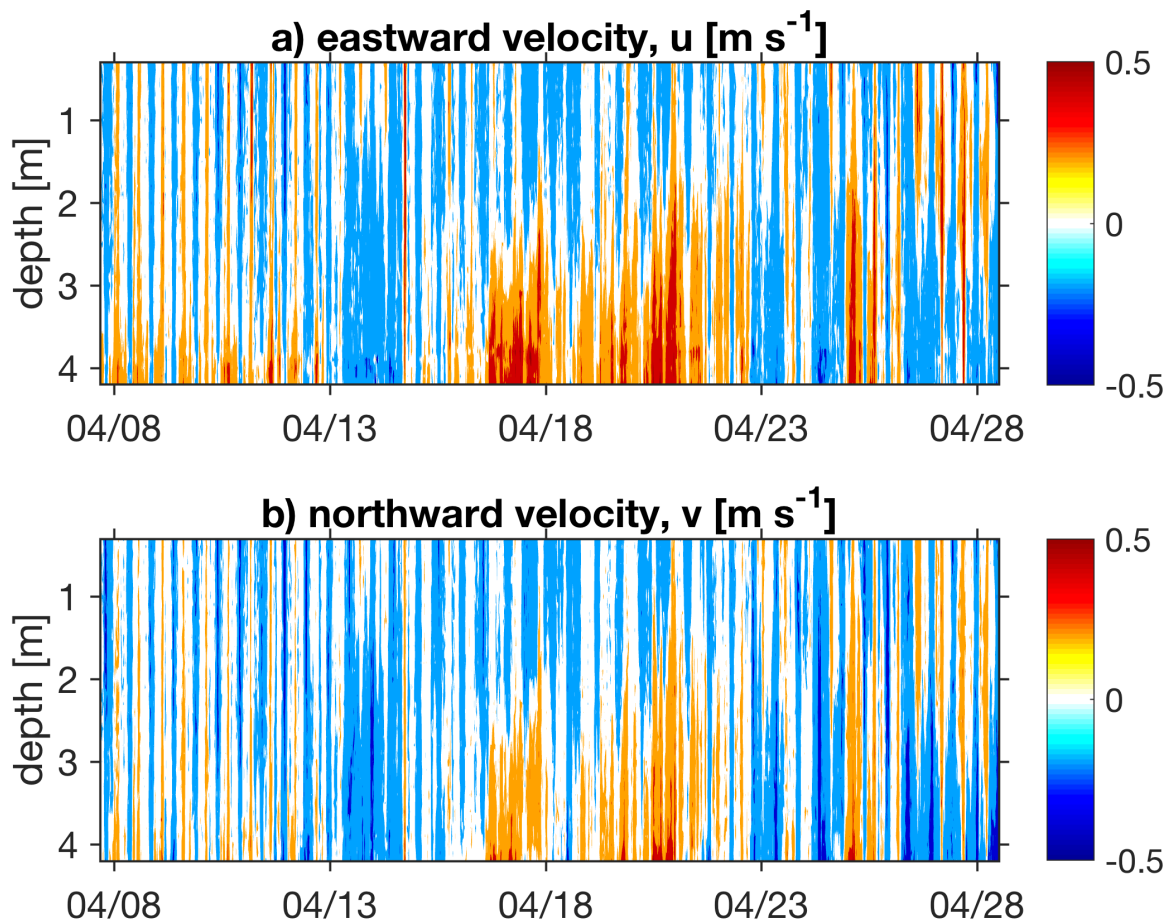


Figure 1. ADCP measurements showing water velocity at the center of Little Narrows channel. The velocity data are 20-min averages, measured every 0.1 m from 0.3–4.2 m depth.

2 Photographs of study area



Figure 2. Photograph of Whycomomagh Bay taken on 28 March 2013.

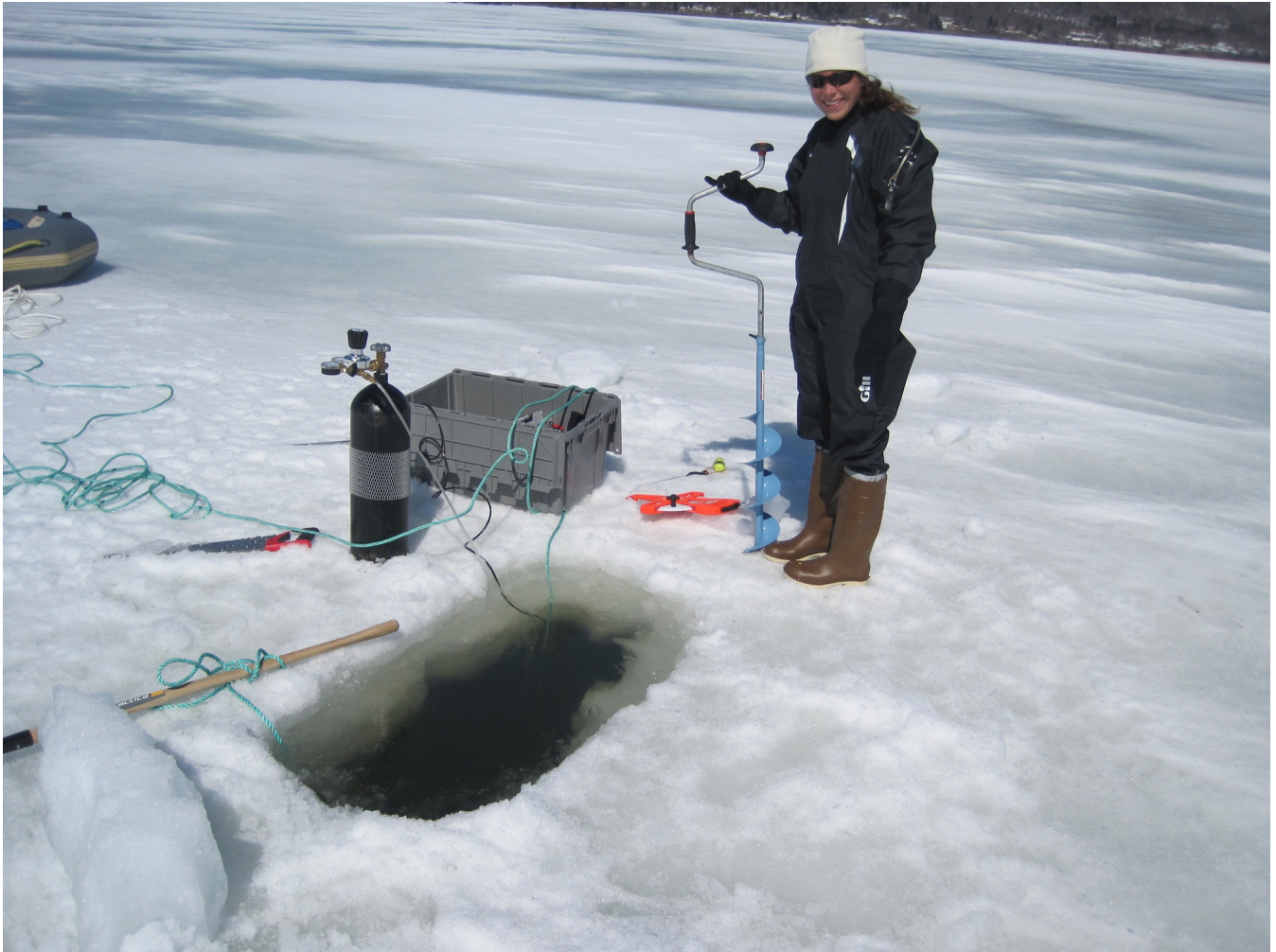


Figure 3. Photograph of the tracer injection that occurred through ice on 30 March 2013. The ice behind the injection site shows some bare areas and/or melt ponds, which facilitate the transmittance of light through the ice to the water below.



Figure 4. Photograph of the ice edge in Whycomomagh Bay (close to Little Narrows) taken on 7 April 2013.



Figure 5. Photograph of Whycomomagh Bay taken on 12 April 2013. The photo shows that the ice is thin, with melt ponds in some areas, and allows some light to pass through to the water below.