

Supplementary Material

Speciation of Dissolved Inorganic Iodine in a Coastal Fjord: A Time-Series Study from Bedford Basin, Nova Scotia, Canada

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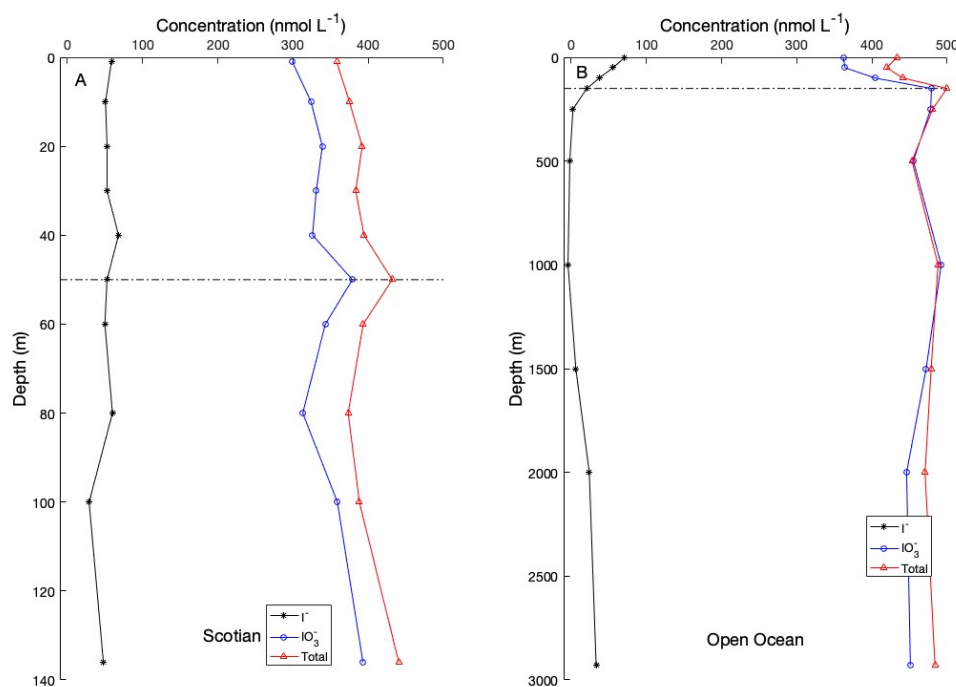
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1 Supplementary Data and Figures

1.1 Depth profiles from continental shelf and slope locations

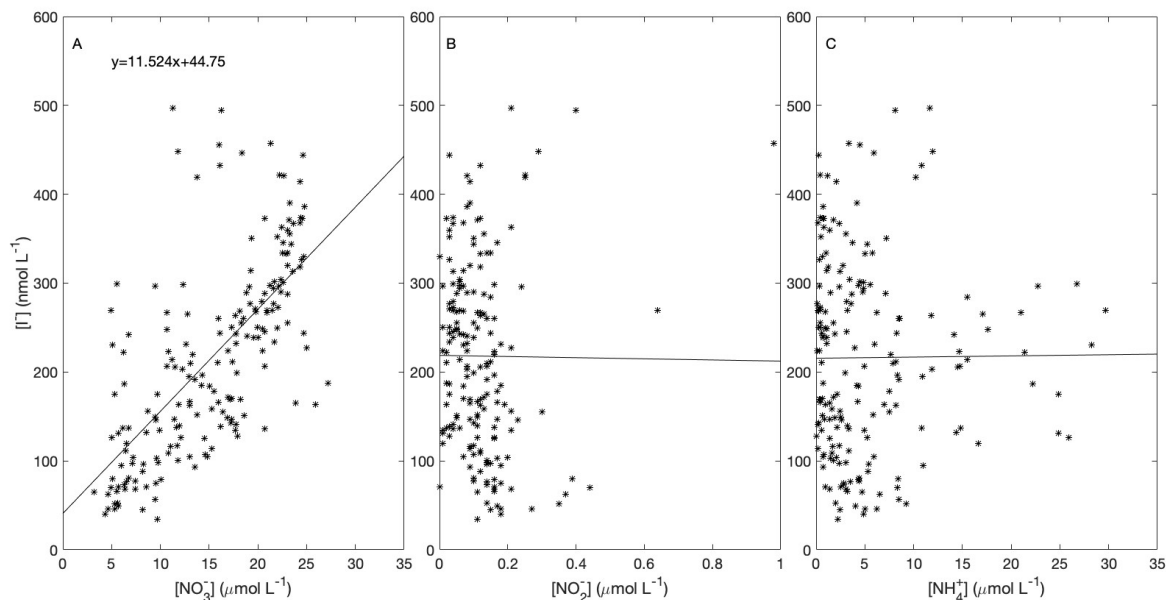
The water samples were collected during the HUD2020063 Fall AZMP Mission (Atlantic Zone Monitoring Program). Two locations were chosen for shelf water and deeper slope water and the depth profiles are plotted in the Fig. S1.



Supplementary Figure 1.: depth profile iodine speciation (iodide: black stars; iodate: blue circles; TI: red triangles) in Scotian shelf water (A) and deeper open ocean water (B).

1.2 Relationships between iodide and DIN

We examined correlations of iodide with different components of DIN from the time-series separately. Figure S3a shows that a significant correlation was only observed between iodide and nitrate in subsurface water (60 m). There was no correlation between iodide and ammonium (Fig. S3c). Hence iodide correlates positively with the process of nitrification rather than ammonification.



Supplementary Figure 2.: correlations between iodide concentration with nitrate (A), nitrite (B) and ammonium (C) in the bottom water (60 m).

1.3 Detail of core incubation experiment

Core incubation experiments have been conducted in November 2020 and May 2021. The samples were taken in the middle of Bedford Basin (location see Fig. 1). The cores were stirred with a magnetic rotor at ~60 rpm to make sure there is water circulation inside the core, to prevent build-up of concentration gradient in water. However, the current was low enough that it did not disturb the sediment-water interface. The incubation was performed in a cold room set to in-situ temperature, and in darkness.