

**Divergent bacterial landscapes:**

**Unraveling geographically driven dual microbiomes in Atlantic cod**

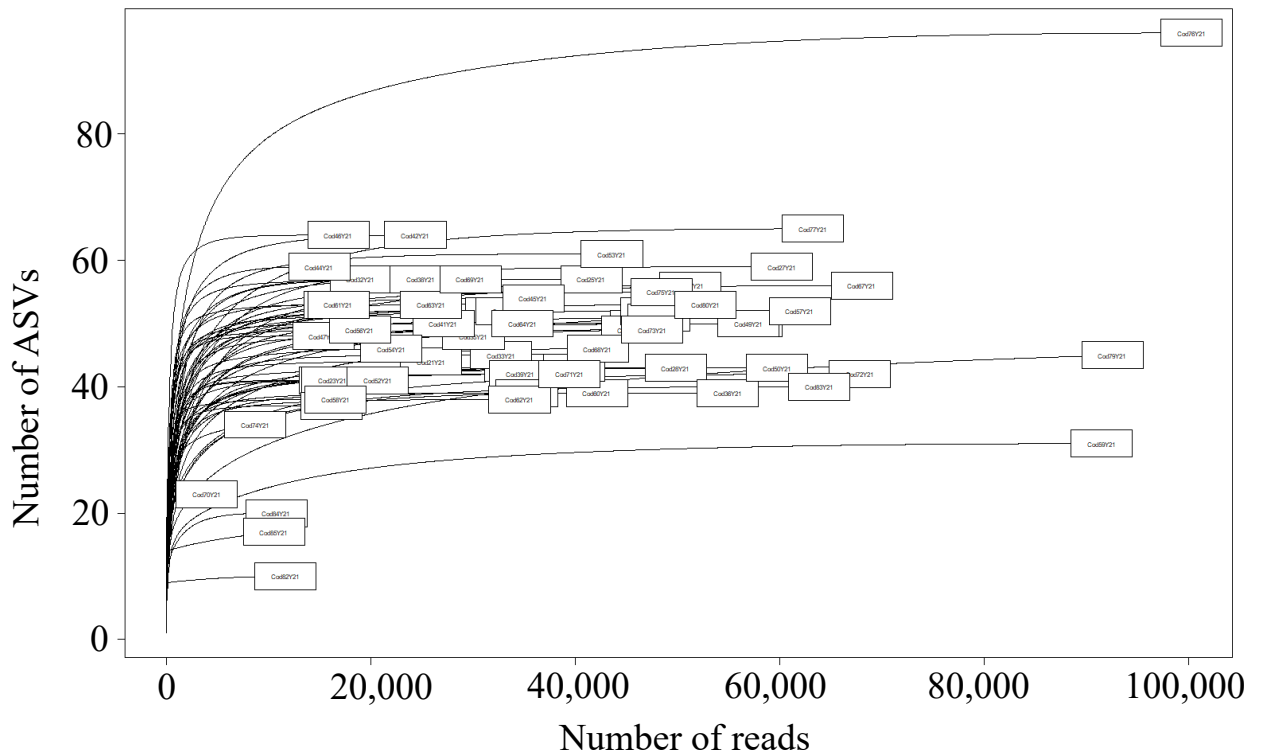
**(*Gadus morhua*) from the southern Gulf of St. Lawrence**

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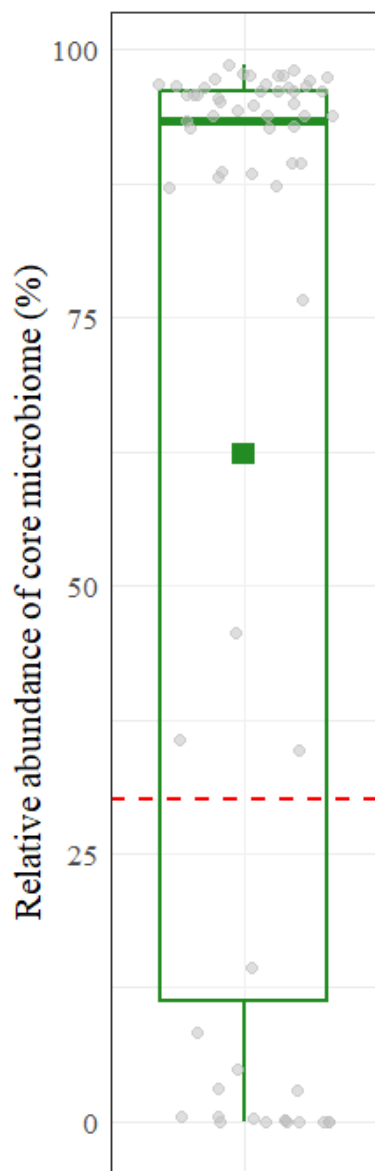
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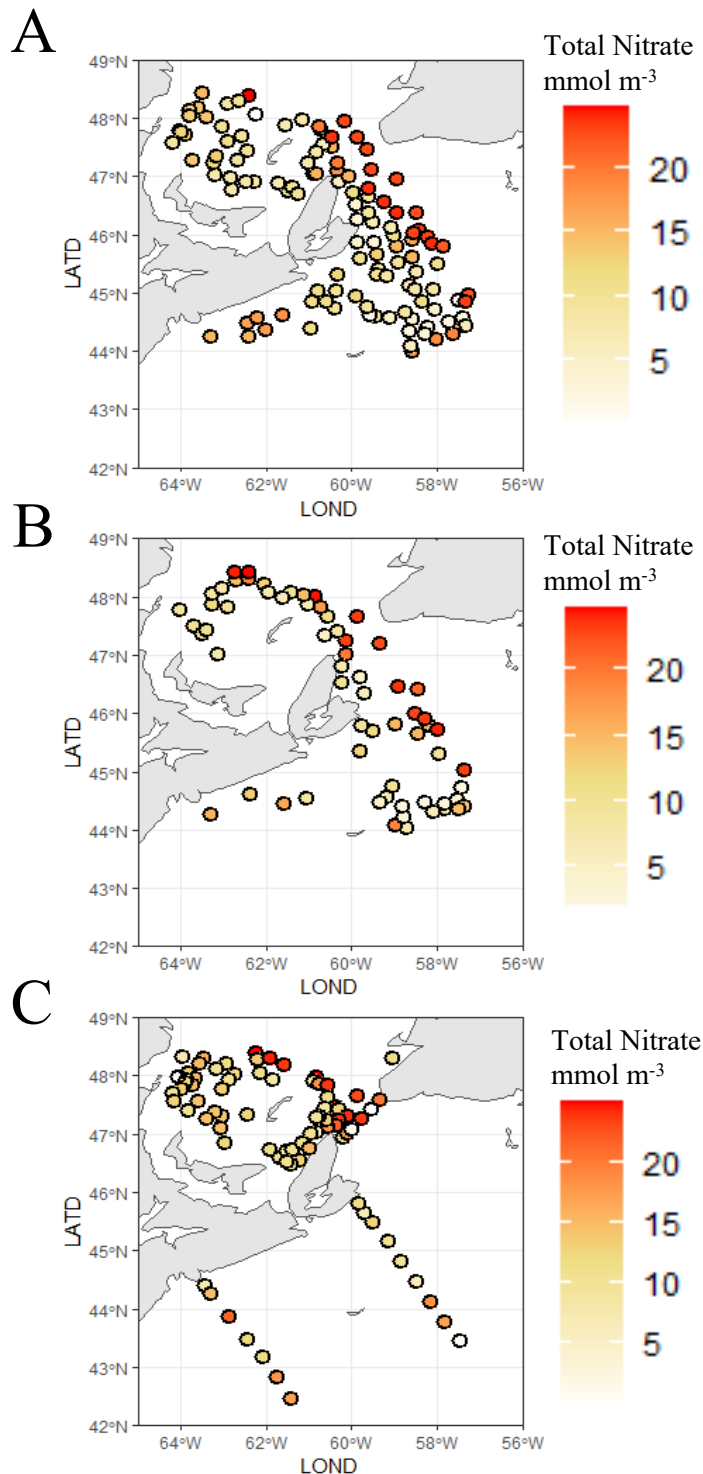
## Supplementary Material



**Figure S1:** Sequencing depth curves based on the number of reads (sample size) and the number of ASVs for each sample. Each line represents one sample. n=63



**Figure S2: Relative abundance of Atlantic cod's core circulating microbiome.** Relative abundance of the core bacteria present the blood microbiome of the Atlantic cods.  $n = 63$ . Core microbiome decision: Prevalence = 50%, detection threshold = 0.2%. Red dashed line = 30%. Group A >30%, Group B <30%.



**Figure S3: Map of total nitrate (nitrate + nitrite) at the bottom (> 150m depth).** (A) Late summer (August to September) (B) Late summer 2020 (C) Late summer 2021. These maps were generated using the MPO data available in Casault *et al.* (DFO Can Sci Advis Sec. Res. Doc. 2023/016, 2023) and Blais *et al.* (Can Tech Rep. Hydrogr. Ocean Sci. 357, 2023) using ggplot2 *sf* (1.0-13), *rnaturalearthdata* (0.1.0), *sf* (1.0-13), and *rnaturalearthdata* (0.1.0), *ggOceanMaps* and *ggOceanMapsData* (1.3.4), in R (version 3.4.0).