Published on: 2023-02-21

Wastewater Sequencing Trend Report: Detection of SARS-CoV-2 Variants of Concern by Metagenomic Sequencing

Public Health Agency of Canada | Agence de la santé publique du Canada | Statistics Canada | Statistique Canada

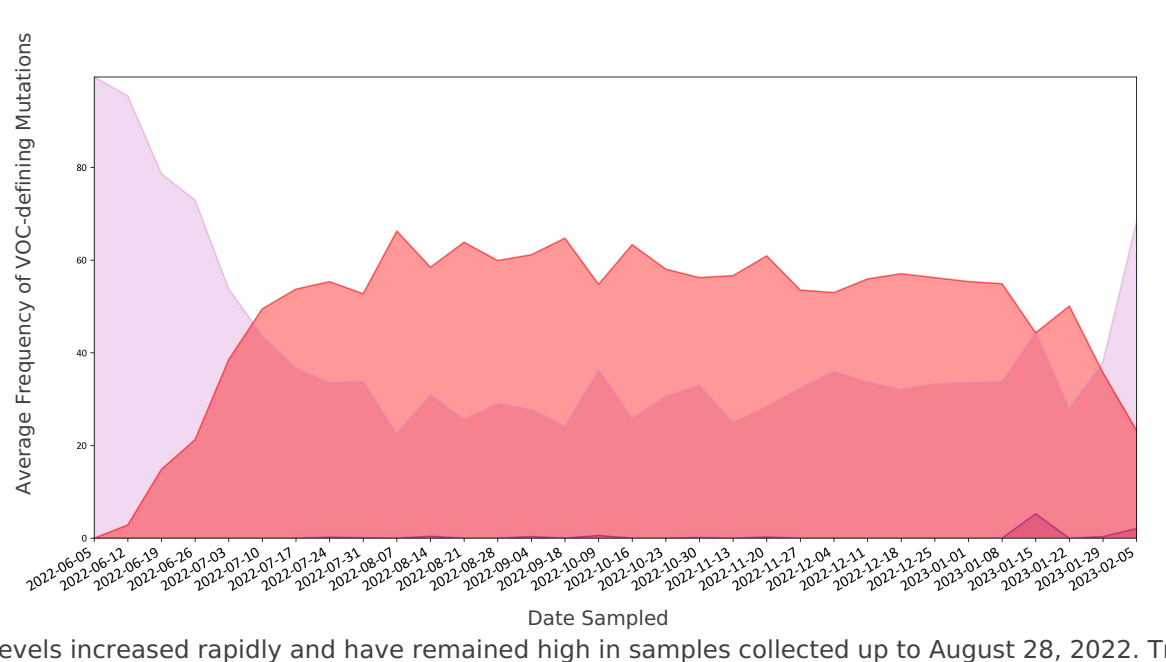
Longitudinal wastewater sequencing data ending 2023-02-21

The plots show the percentage of Omicron and its sublineages (BA.1, BA.2 and BA.4/BA.5) SARS-CoV-2 variants of concern (Omicron sublineages) detected in wastewater samples collected from different sites using metagenomic sequencing. SARS-CoV-2 viral fragments present in the wastewater are isolated and sequenced to obtain a genomic "blueprint" of the virus. Each sublineage carries small differences in their genomic blueprint called mutations that can be queried using specialized software to identify their presence and abundance (BA.1, BA.2 and BA.4 or BA.5) present in the wastewater sample. The shaded areas in the plot show BA.1 in dark purple, BA.2 in light purple, BA.4 or BA.5 in red and where applicable, Alpha in blue. To correct for the shared ancestry of BA.2 and BA.4/BA.5 SARS-CoV-2 lineages, the average frequency of VOC-defining mutations for BA.4/BA.5 has been subtracted from BA.2.

Edmonton

BA.1 BA.2 BA.4/BA.5

Edmonton Goldbar

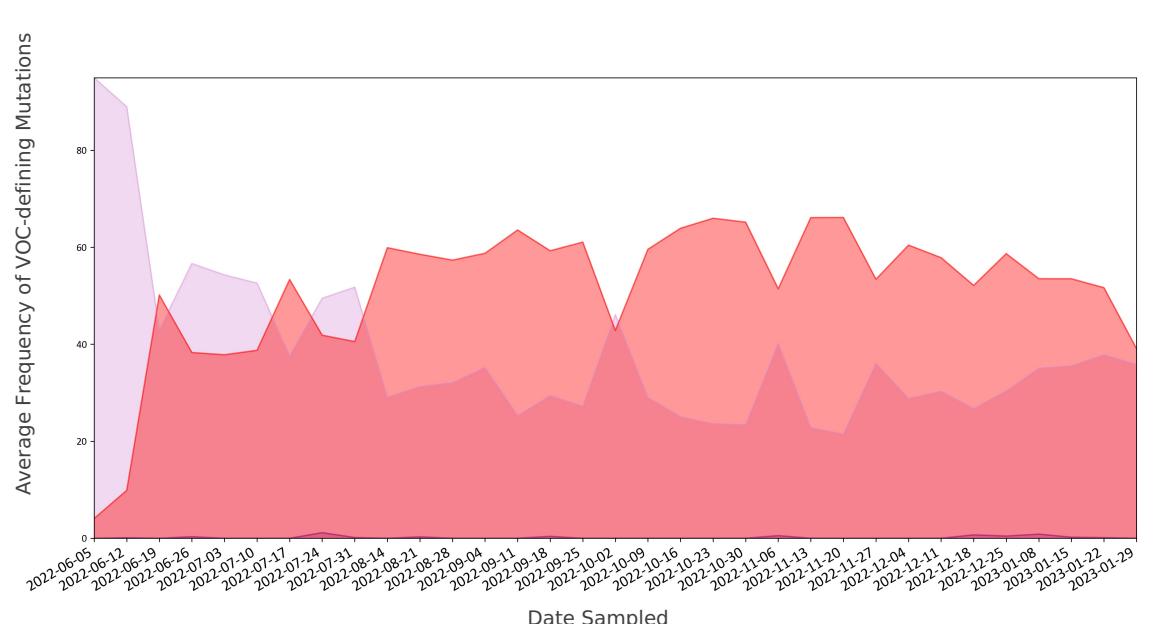


BA.2 levels increased rapidly and have remained high in samples collected up to August 28, 2022. Trace to low levels of BA.4/BA.5 were first detected at the beginning of May 2022 and high signals are detected in samples collected up to February 5, 2023.

Halifax

BA.1 BA.2 BA.4/BA.5

Halifax Dartmouth



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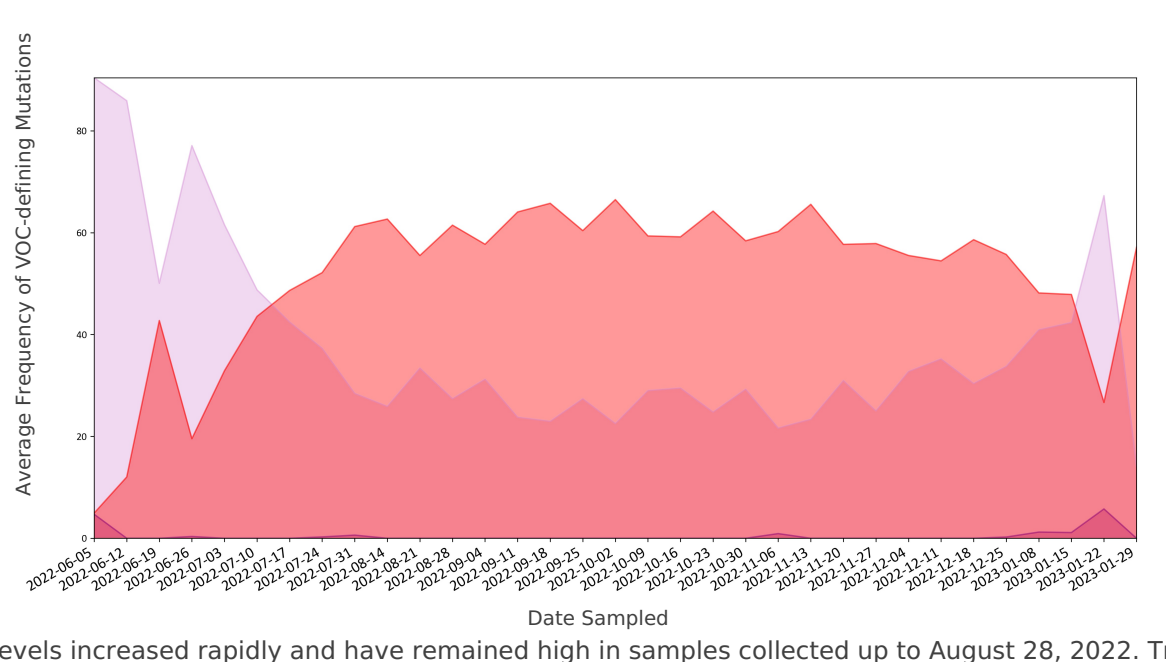
Halifax Halifax



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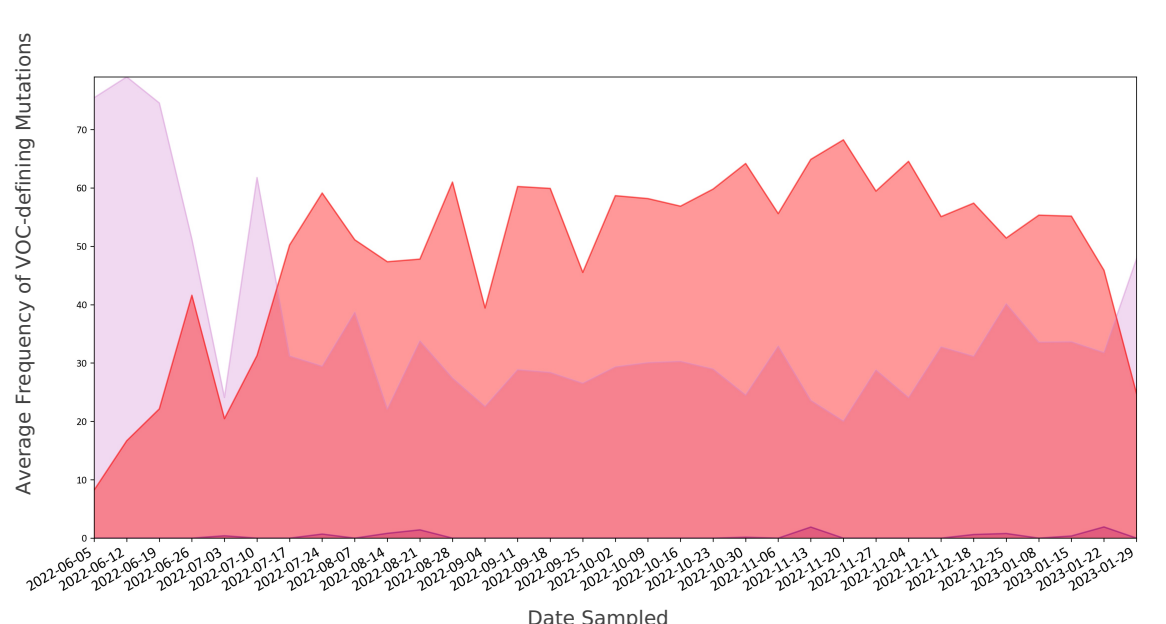
Halifax Millcove

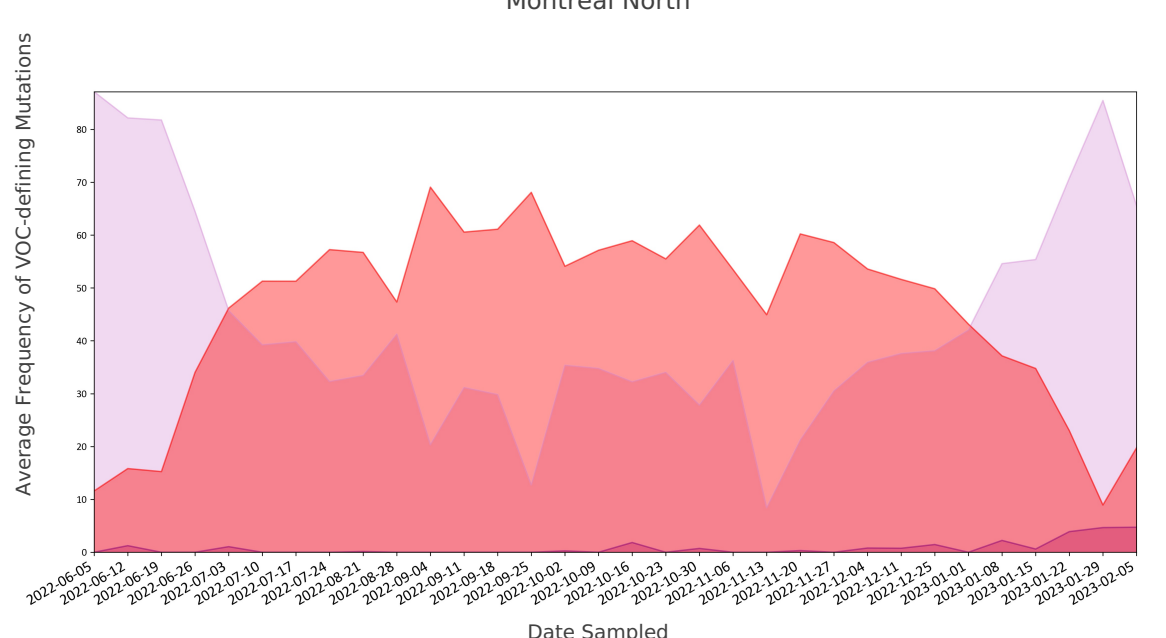


BA.2 emerged at the start of March and rapidly increased to sustained high levels observed until August 28 2022. Trace to low levels of BA.4/BA.5 were first detected at the beginning of May 2022 and high signals are detected in samples collected up to January 29, 2023.

Montreal

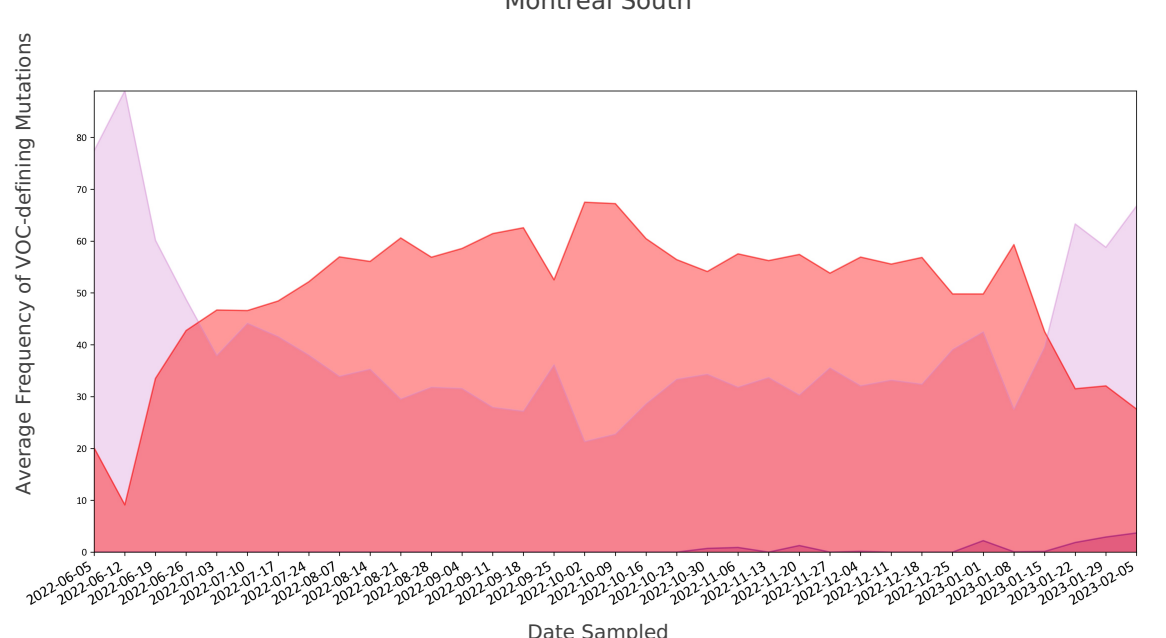
BA.1 BA.2 BA.4/BA.5

Montreal North



High levels of BA.2 were detected in samples collected until June 2022. Trace to low levels of BA.4/BA.5 were first detected in April 2022 and high signals are detected in samples collected up to February 5, 2023.

Montreal South

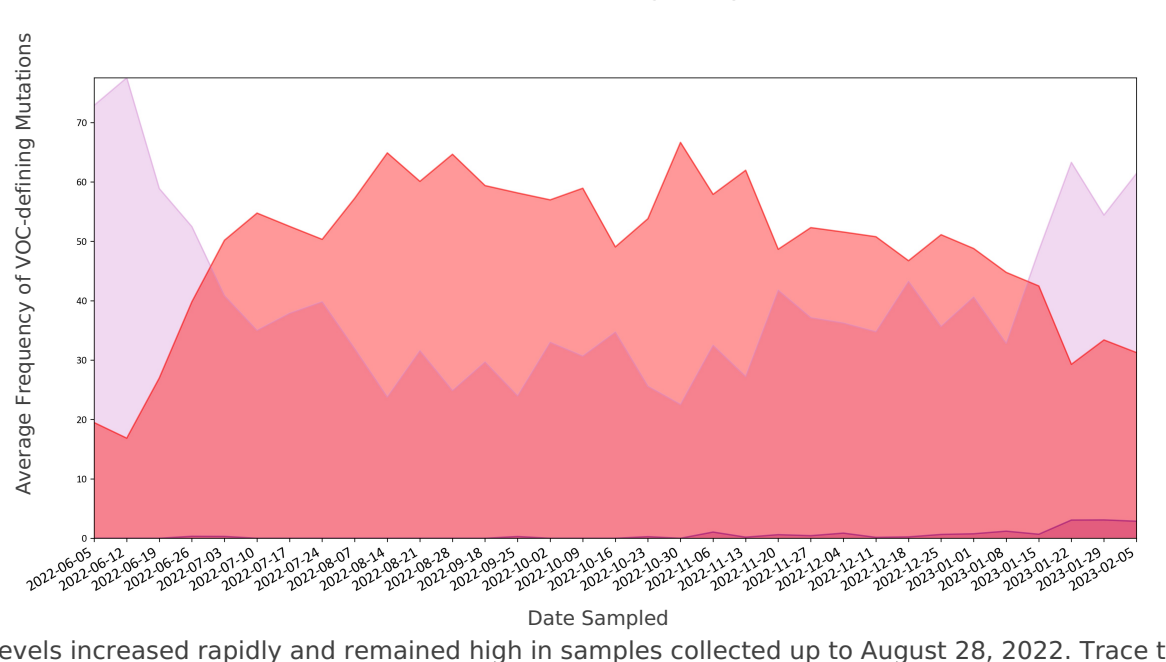


High levels of BA.2 were detected in samples collected up to June 2022. Trace to low levels of BA.4/BA.5 were first detected in April 2022 and high signals are detected in samples collected up to February 5, 2023.

Toronto

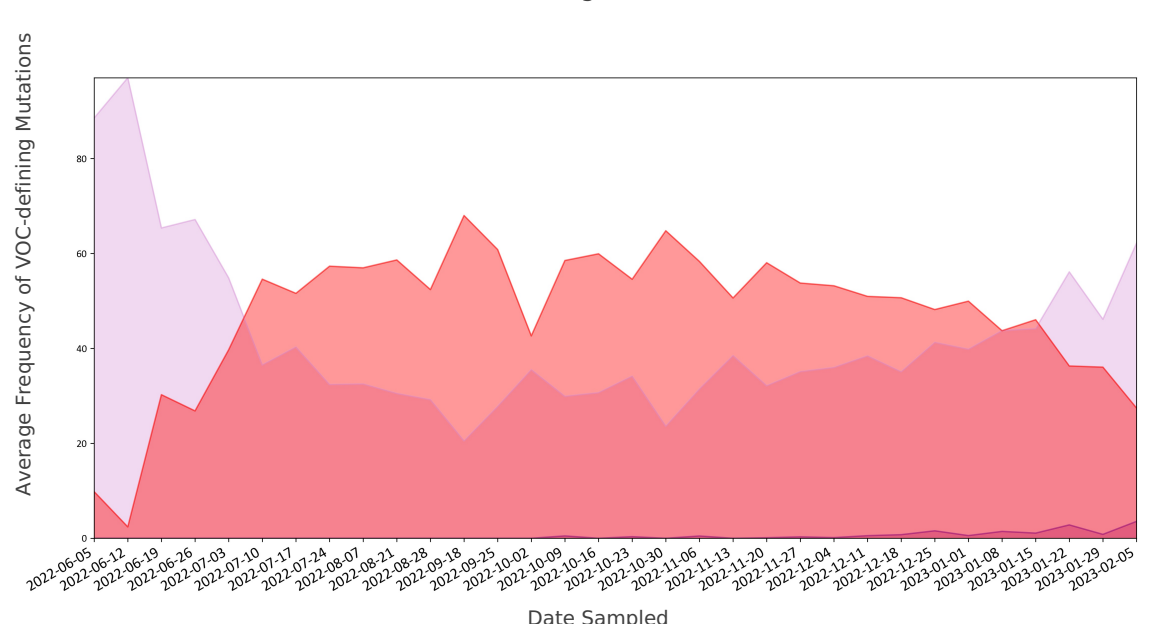
BA.1 BA.2 BA.4/BA.5

Toronto Ashbridges Bay



BA.2 levels increased rapidly and remained high in samples collected up to August 28, 2022. Trace to low levels of BA.4/BA.5 were first detected at the beginning of May 2022 and high signals are detected in samples collected up to February 5, 2023.

Toronto Highland Creek



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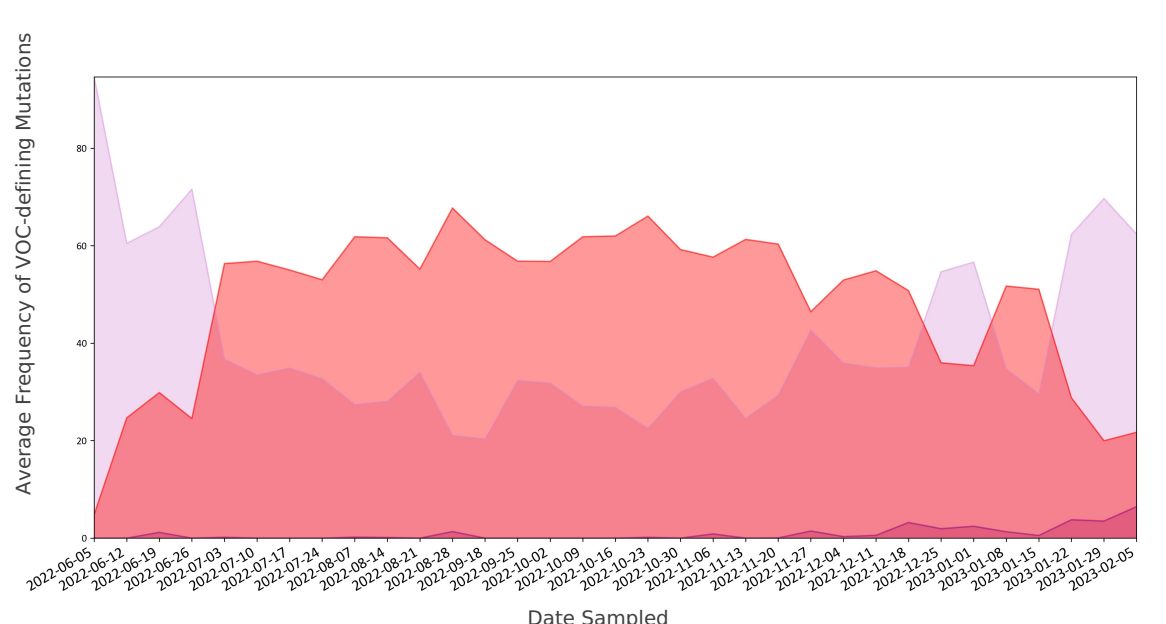
Toronto Humber



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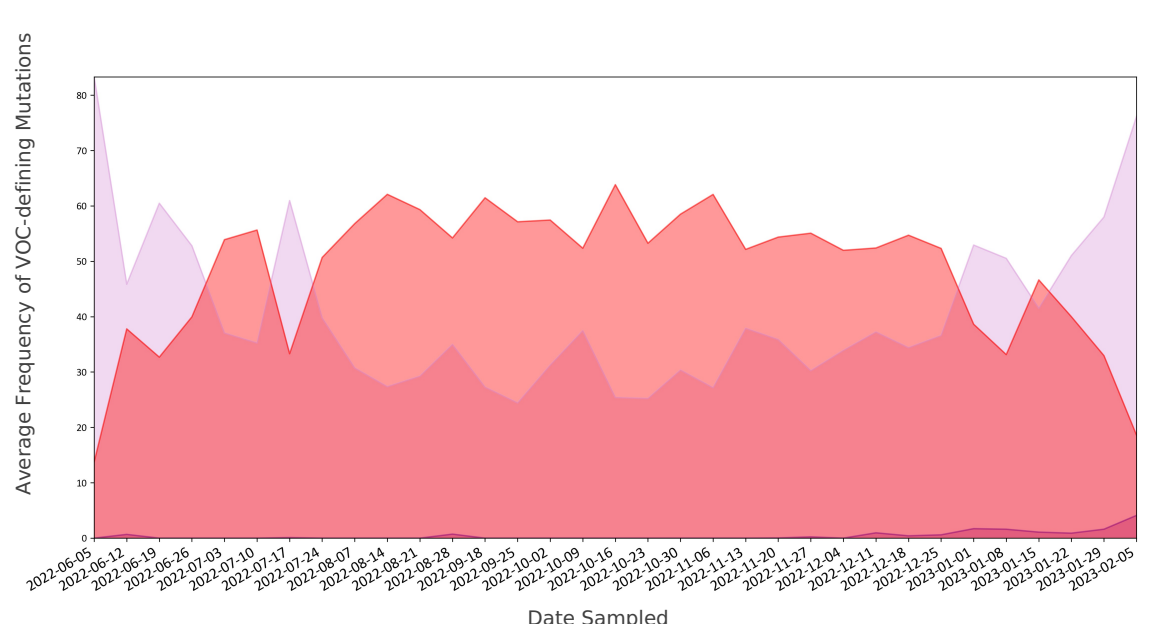
Toronto North Toronto



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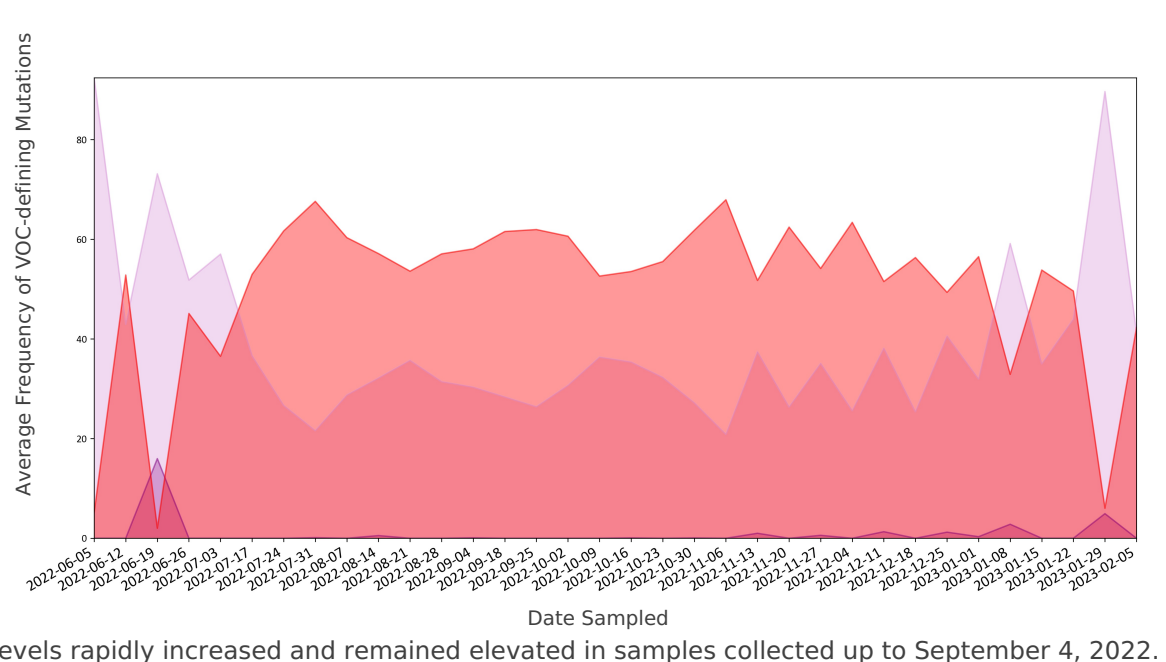
Vancouver

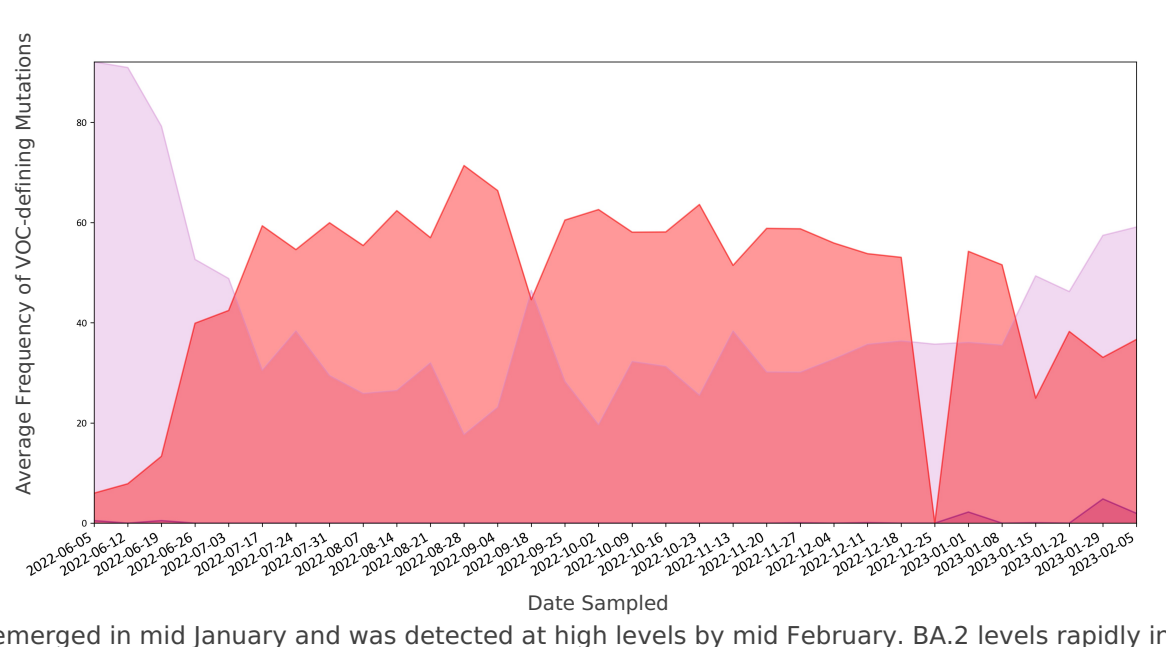
BA.1 BA.2 BA.4/BA.5

Vancouver Annacis Island



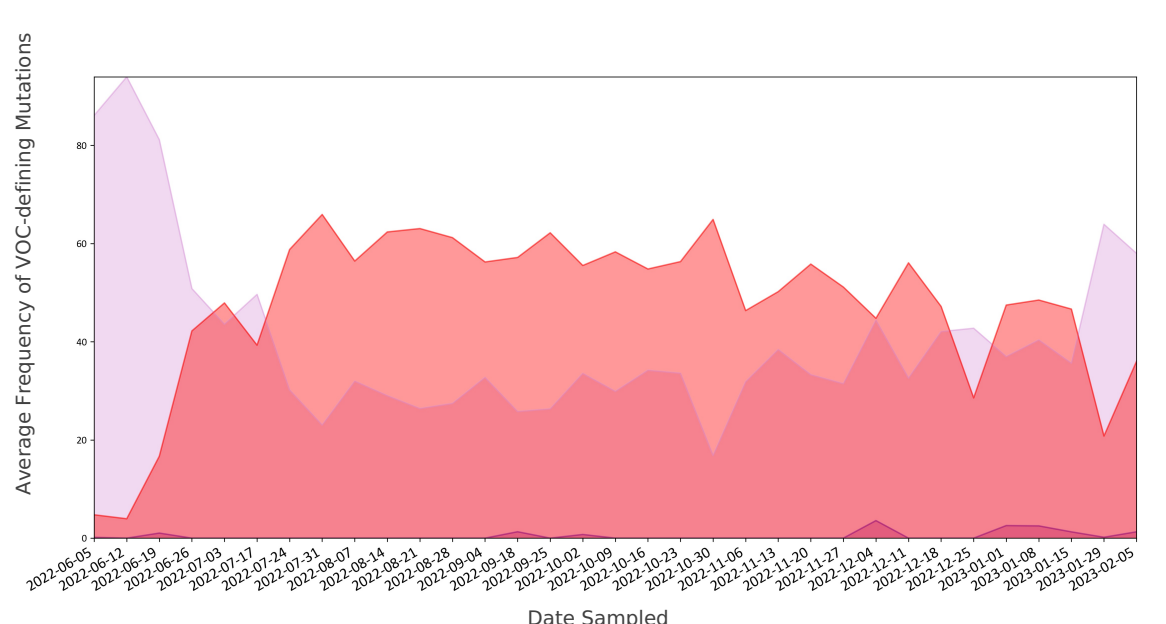
BA.2 levels rapidly increased and remained elevated in samples collected up to September 4, 2022. Trace to low levels of BA.4/BA.5 were first detected at the beginning of May 2022 and high signals are detected in samples collected up to February 5, 2023.

Vancouver Iona Island



BA.2 emerged in mid January and was detected at high levels by mid February. BA.2 levels rapidly increased and remained elevated in samples collected up to September 4, 2022. Trace to low levels of BA.4/BA.5 were first detected at the beginning of May 2022 and high signals are detected in samples collected up to February 5, 2023

Vancouver Lions Gate



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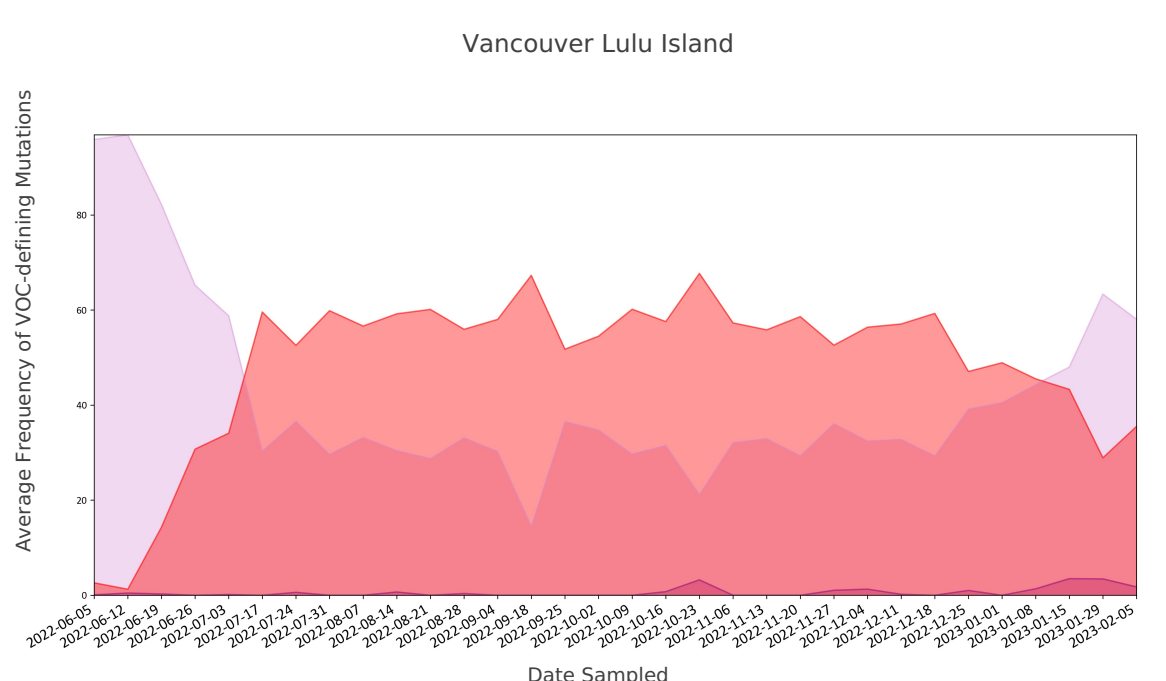
Vancouver Lulu Island



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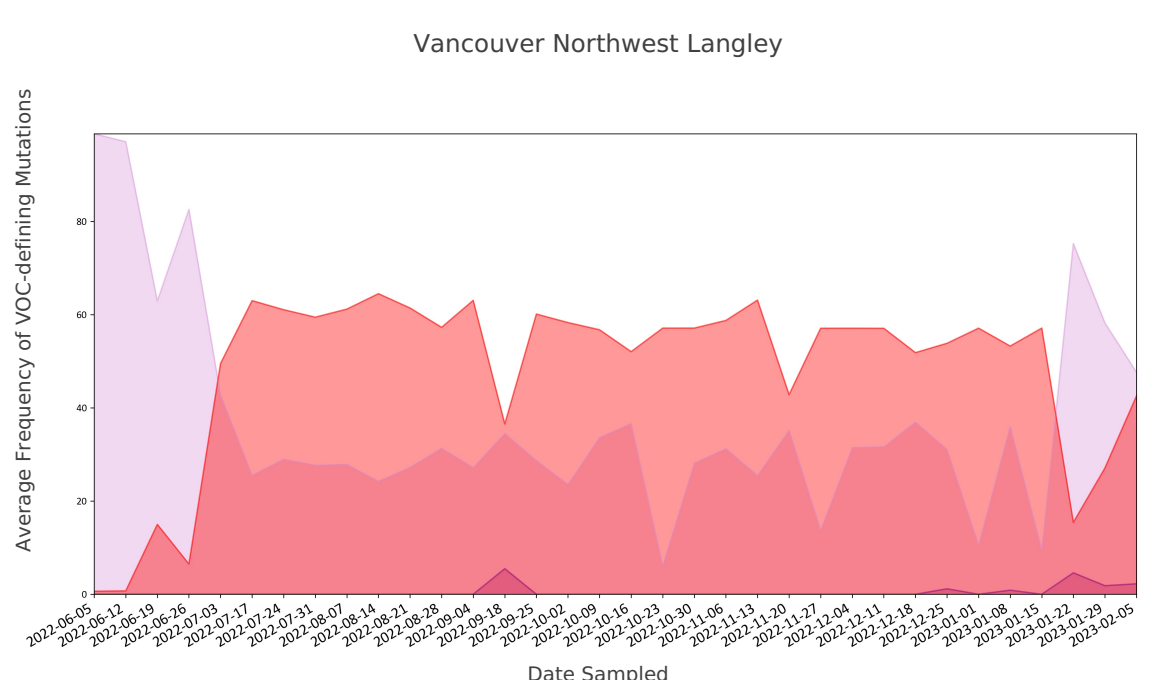
Vancouver Northwest Langley



Omicron was first detected in wastewater samples collected from this site on December 5 and has since remained at a high level. Trace to low levels of BA.4/BA.5 were first detected at the beginning of May 2022 and high signals are detected in samples collected up to February 5, 2023.