About

COVID-19 wastewater monitoring dashboard

This dashboard provides data about the levels of COVID-19 and variants found in the wastewater (sewage) of different communities across Canada. This information can help assess the levels of COVID-19 in those communities.

Last updated: 2024-02-09 PDF

We're working with our partners across Canada as part of a pan-Canadian wastewater monitoring network to track the spread of the virus that causes COVID-19 (SARS-CoV-2). Our partners include municipal, provincial and territorial governments, as well as other federal departments and academia.

The wastewater dashboard allows you to track and compare COVID-19 levels over time in some communities in Canada. It provides a weekly breakdown of COVID-19 variants circulating across Canada. Over time as the virus grows and spreads, it gains small changes in its genetic material. These changes are mutations that produce new variants of the virus.

The data comes from sewage samples submitted for testing to the National Microbiology Laboratory or participating partner laboratories. Trend data are presented as 7-day rolling averages, and are based on polymerase chain reaction (PCR) testing. Genomic data summarize the lineages detected over a recent 10-week period.

Some communities monitor their own wastewater and publish their own data. For more information, please refer to the list of Canadian wastewater COVID-19 monitoring dashboards and websites.

Why we monitor wastewater

The virus that causes COVID-19 is shed in the stool (feces) of people while they're infected. Even if a person doesn't have symptoms, they still shed the virus in their feces, urine or while brushing their teeth. The virus can then be detected by testing the community's wastewater. Wastewater monitoring only detects the virus in a community or institution. It can't identify single cases or households.

By monitoring wastewater we can:

- monitor COVID-19 in communities
- detect the presence of COVID-19 in institutional settings such as long-term care facilities
- track which variants are circulating
- monitor other public health threats, including other infectious diseases and emerging trends in antimicrobial resistance

Wastewater monitoring can provide an early warning of COVID-19 in a community or setting. This facilitates an early public health response, which may also include reminding the public about personal protective measures.

Wastewater monitoring partners

We thank participating municipalities for submitting wastewater samples and associated data. We also thank federal, provincial and territorial public health professionals for valued input on the development of this program, as well as the many scientists supporting wastewater monitoring networks nationally.

COVID-19 wastewater monitoring dashboard: Viral signal trend

This dashboard provides data about the levels of COVID-19 and variants found in the wastewater (sewage) of different communities across Canada. This information can help assess the levels of COVID-19 in those communities.

Last updated: 2024-03-12 PDF

We update this information on Tuesdays and Fridays at 12:00 noon Eastern Time. In the event of a holiday, we update on the next business day. Data at some sites may lag slightly, due to the time it takes to transport and analyze samples. This report was **last updated on March 12, 2024** with data up to and including March 5, 2024.

On this page

Key updates

These tiles show how many of the wastewater monitoring sites are showing increases, decreases or no change in their recent COVID-19 viral signals. They also show whether there is a high, moderate, or low signal level.

Number of sites showing an **increase**

9

(14.52%)

Number of sites showing **no change**

32

(51.61%)

Number of sites showing a **decrease**

21

(33.87%)

Current COVID-19 signal level compared to historical data collected since December 1, 2021

High	Moderate	Low	New sites (Testing for these sites started after December 1, 2021, which doesn't cover the entire post-Omicron period, normally used to establish cutoff values.)
1	**15**	**7**	**39**
(1.61%)	(24.19%)	(11.29%)	(62.90%)

- An **increase** is a statistically significant increase in the wastewater signal.
- **No change** is either a steady signal or an insignificant decrease in the wastewater signal.
- A **decrease** is a statistically significant decrease in the wastewater signal.

National overview

Figure 1. Current wastewater signal trends and levels in Canada

ℹ Zoom or tap regions to see current signal trends and levels in Canada. Map data is available in .csv format.

In **Canada**, **62** sites currently submit sewage samples for processing, representing **49.58%** of the Canadian population. Of those sites, **9** showed an increase, **21** showed a decrease and **32** showed no change as of March 5, 2024.

Search:

Site	Level	Trend
Alberton	New site	
Assiniboia	New site	
Bathurst	New site	
Battery Point	New site	
Battleford	New site	
Birch Hills	New site	
Brandon	New site	

Showing 1 to 7 of 62 entries

1 2 3 4 5 … 9

Search:

Site	Level	Trend
Alberton	New site	
Assiniboia	New site	
Bathurst	New site	
Battery Point	New site	
Battleford	New site	
Birch Hills	New site	

Site	Level	Trend
Brandon	New site	⊖
Bridgewater	New site	⊖
Campbellton	New site	↓
Canora	New site	⊖
Central Colchester	New site	↑
City of Charlottetown & Town of Stratford	New site	⊖
Dominion-Bridgeport	New site	⊖

Showing 1 to 13 of 62 entries

1 2 3 4 5

- This information is based on sewage samples submitted for testing to the National Microbiology Laboratory or a participating partner laboratory.
- The National Microbiology Laboratory conducts testing for over 70 sites across Canada, with partner laboratories conducting testing for other sites. Data from 62 sites are included on this dashboard. Site selection and the decision to publish results on the dashboard is always at the discretion of provinces, territories and municipalities.
- For the signal level metric, sites are marked as 'new' if they started testing after December 1, 2021. The data for these sites doesn’t cover the entire post-Omicron period, which is the data we normally use to establish cutoff values. Consequently, new sites may underestimate the viral peak of the pandemic.

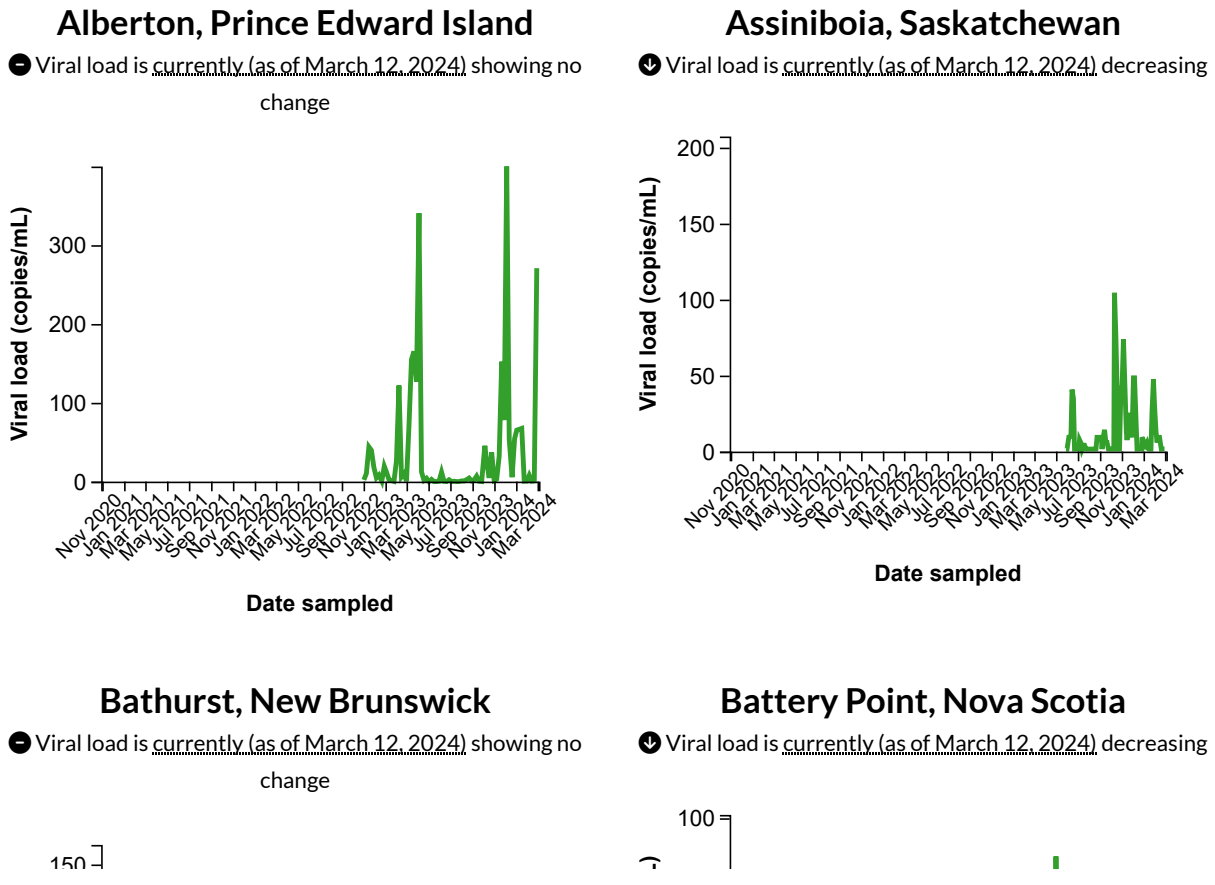
Interpreting wastewater data

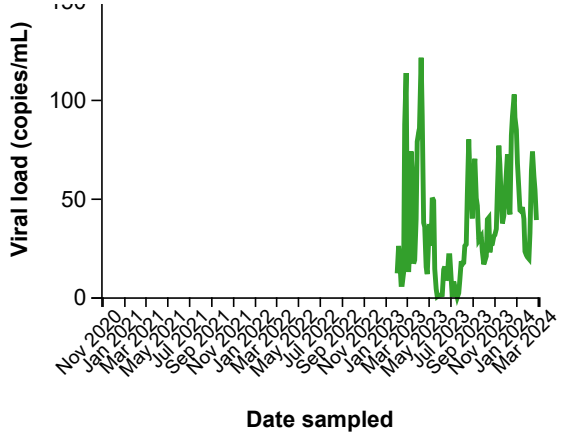
The wastewater dashboard shows the concentration of COVID-19 in wastewater samples from different sites. The solid green line shows the 7-day rolling average of the viral load for each site. We calculate the 7-day rolling average by averaging the viral loads from each

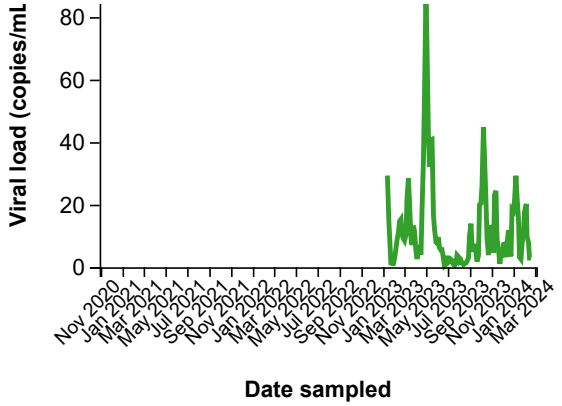
sampling event with the previous 6 sampling events. Use the ‘show daily values’ button to display the daily viral load as a dotted green line. This shows the current trend of the COVID-19 signals and the current signal level compared to previous levels for each site. Use caution when interpreting daily and short-term changes in viral load, as the wastewater signal can change from day to day. An ongoing increase or decrease in the viral load is more reliable for indicating trends.

If the wastewater signals are high or increasing, this may indicate a high level of COVID-19 in your community. It's important to **pay attention to public health alerts** and to **follow public health advice**. Personal protective measures are effective actions you can take every day to help reduce the spread of COVID-19.

Figure 2. Trend graph of 7-day rolling average of COVID-19 viral load in wastewater, as of March 5, 2024

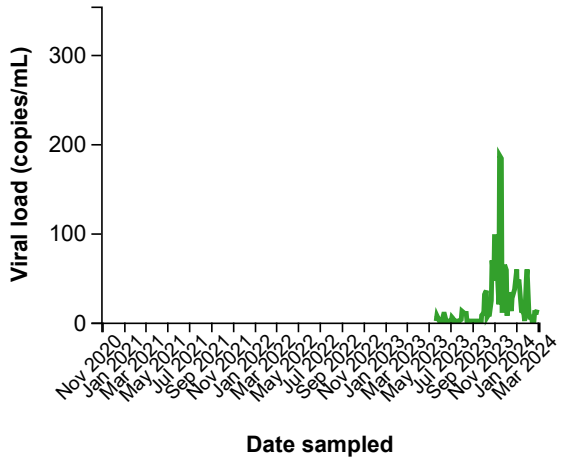






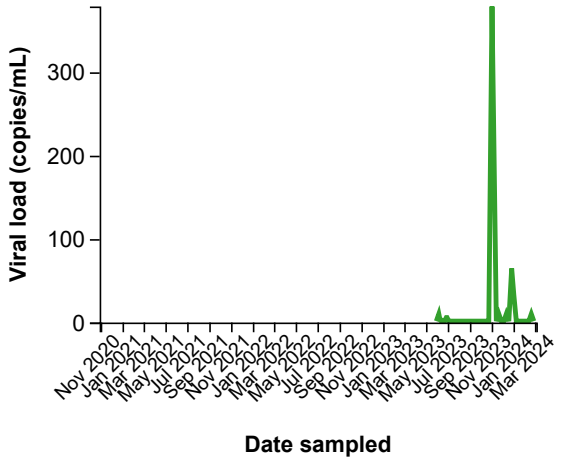
Battleford, Saskatchewan

Viral load is currently (as of March 12, 2024) showing no change



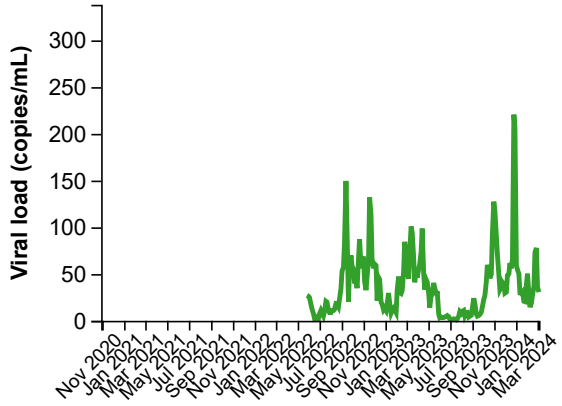
Birch Hills, Saskatchewan

Viral load is currently (as of March 12, 2024) showing no change



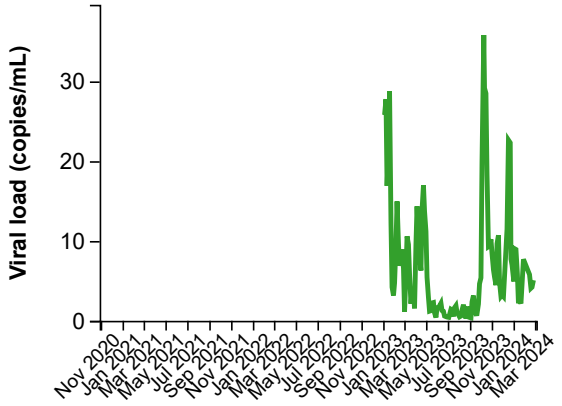
Brandon, Manitoba

Viral load is currently (as of March 12, 2024) showing no change



Bridgewater, Nova Scotia

Viral load is currently (as of March 12, 2024) showing no change

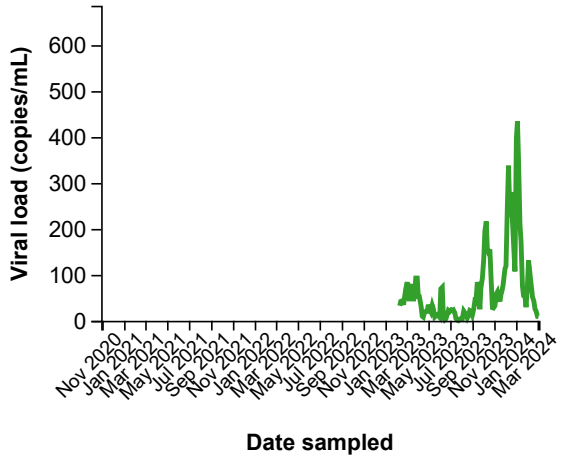


Date sampled

Date sampled

Campbellton, New Brunswick

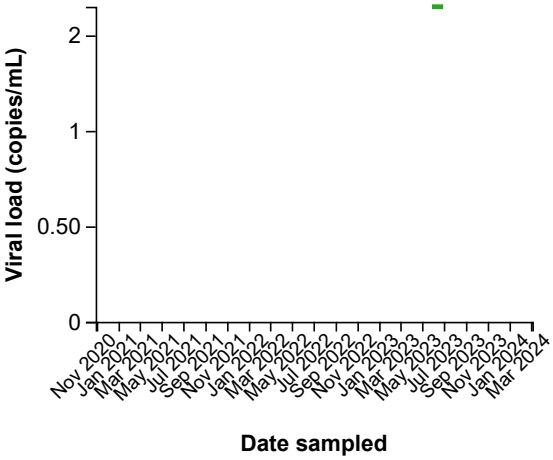
Viral load is currently (as of March 12, 2024) decreasing



Date sampled

Canora, Saskatchewan

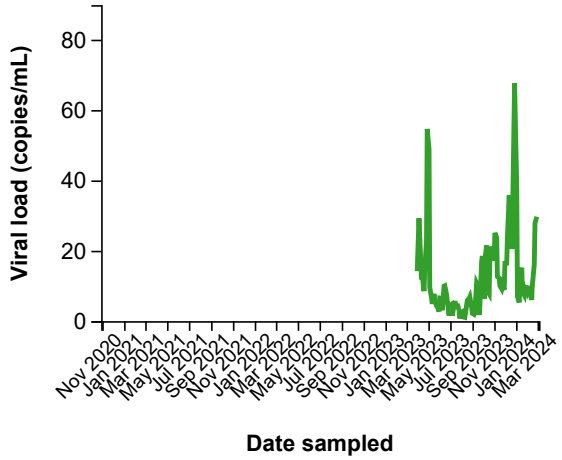
Viral load updates for this site are on pause



Date sampled

Central Colchester, Nova Scotia

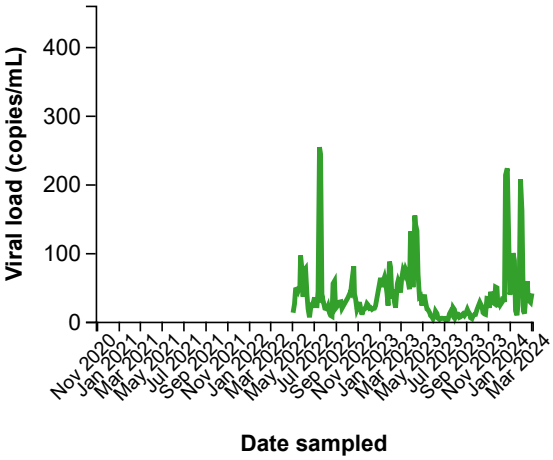
Viral load is currently (as of March 12, 2024) increasing



Date sampled

City of Charlottetown & Town of Stratford, Prince Edward Island

Viral load is currently (as of March 12, 2024) showing no change



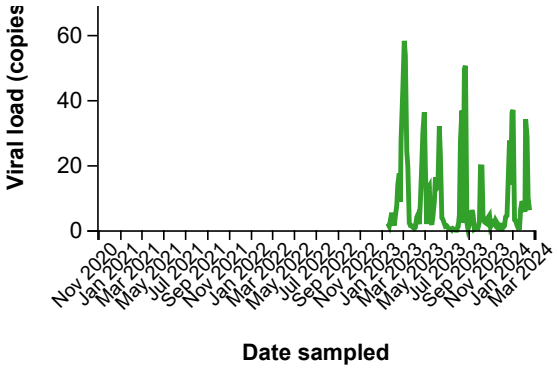
Date sampled

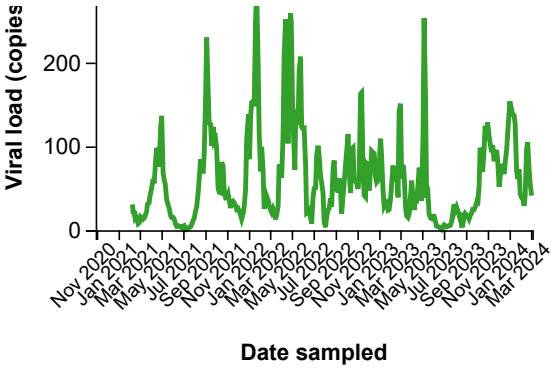
Dominion-Bridgeport, Nova Scotia

Viral load is currently (as of March 12, 2024) showing no change

Edmonton Goldbar, Alberta

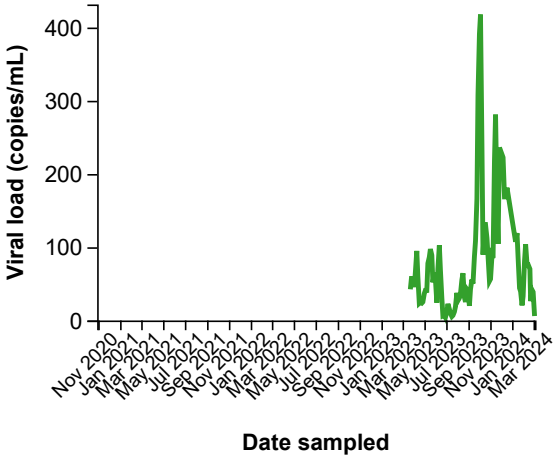
Viral load is currently (as of March 12, 2024) moderate and decreasing





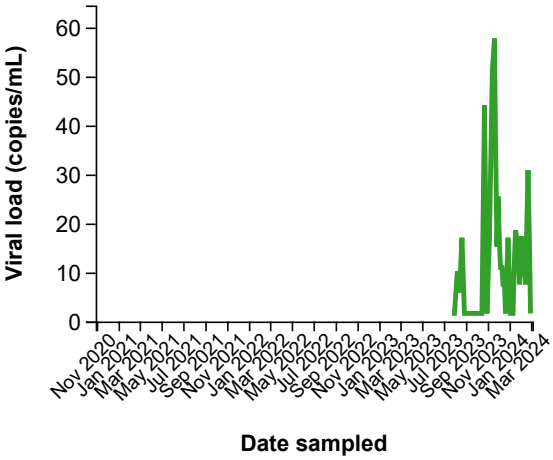
Edmundston, New Brunswick

Viral load is currently (as of March 12, 2024) decreasing



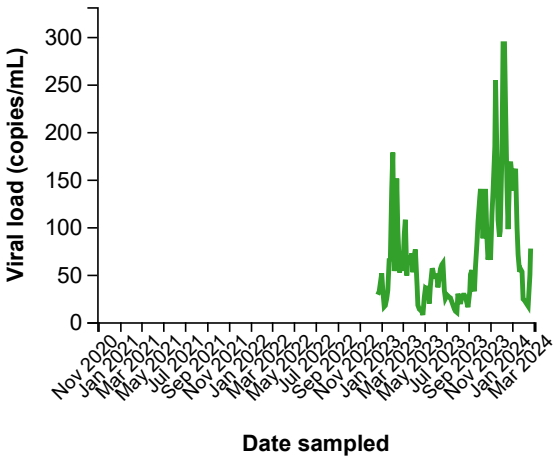
Estevan, Saskatchewan

Viral load is currently (as of March 12, 2024) showing no change



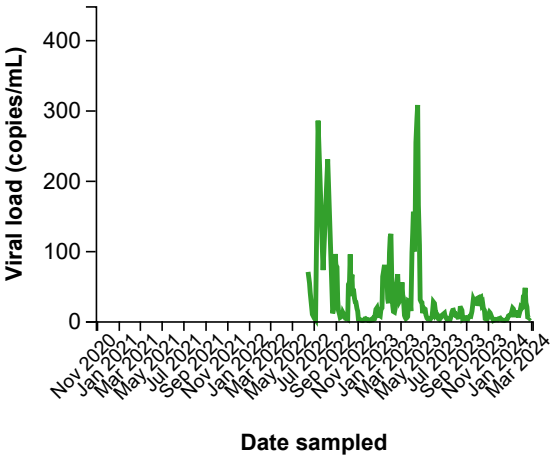
Fredericton, New Brunswick

Viral load is currently (as of March 12, 2024) showing no change



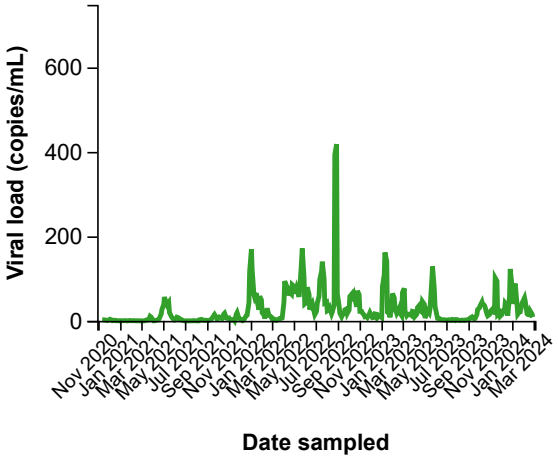
Haines Junction, Yukon

Viral load is currently (as of March 12, 2024) decreasing



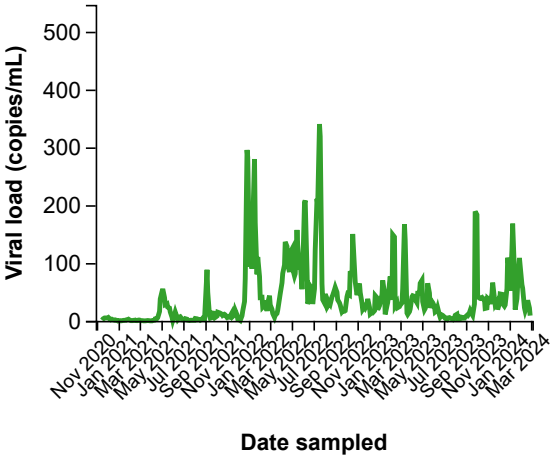
Halifax Dartmouth, Nova Scotia

Viral load is currently (as of March 12, 2024) moderate and decreasing



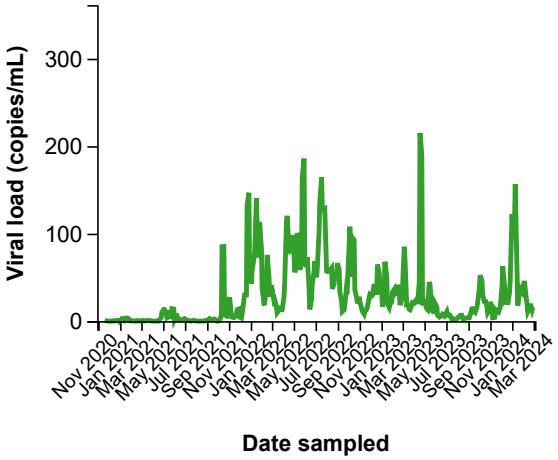
Halifax Halifax, Nova Scotia

Viral load is currently (as of March 12, 2024) low and decreasing



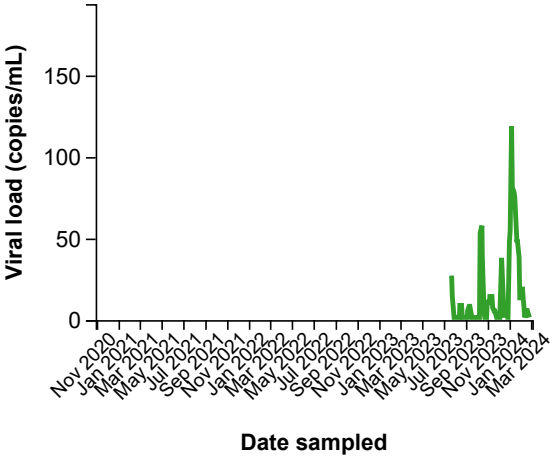
Halifax Millcove, Nova Scotia

Viral load is currently (as of March 12, 2024) moderate and decreasing



Île-à-la-Crosse, Saskatchewan

Viral load is currently (as of March 12, 2024) decreasing

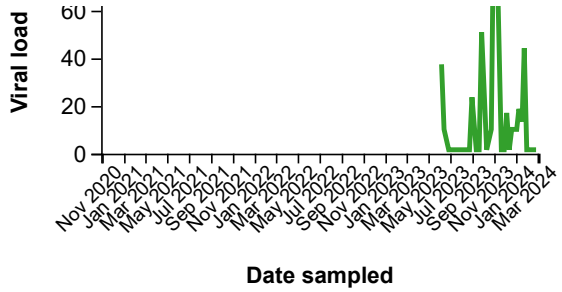


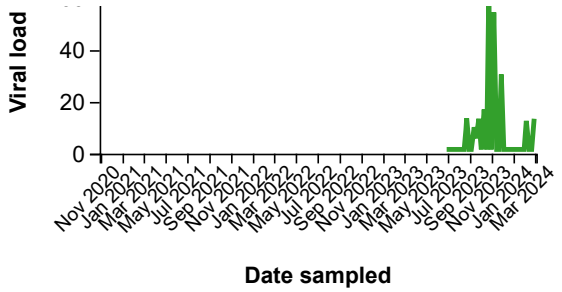
La Ronge, Saskatchewan

Viral load is currently (as of March 12, 2024) showing no change

Lumsden, Saskatchewan

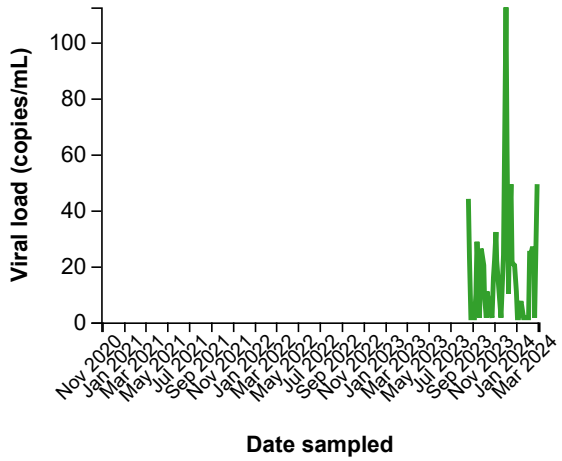
Viral load is currently (as of March 12, 2024) showing no change





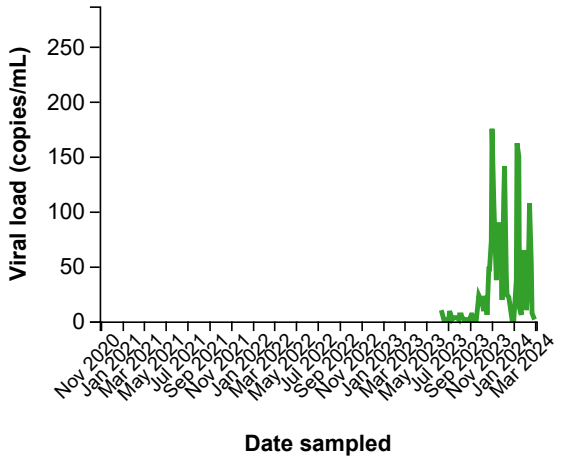
Maple Creek, Saskatchewan

Viral load is currently (as of March 12, 2024) increasing



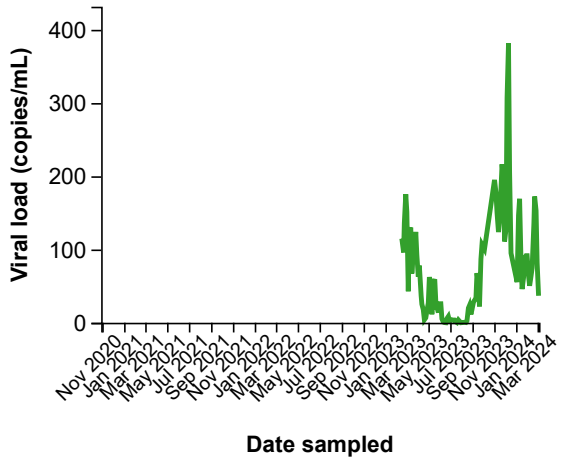
Meadow Lake, Saskatchewan

Viral load is currently (as of March 12, 2024) showing no change



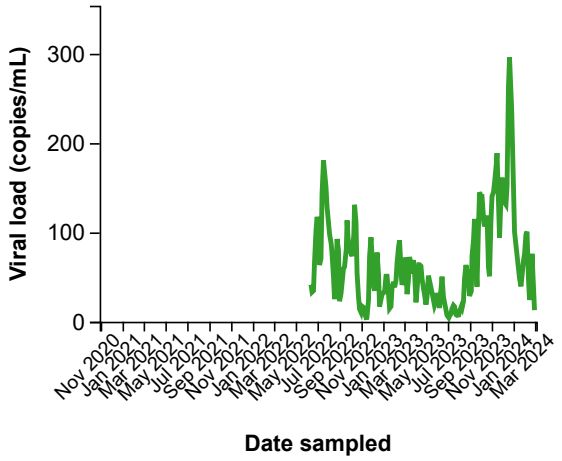
Miramichi, New Brunswick

Viral load is currently (as of March 12, 2024) showing no change



Moncton, New Brunswick

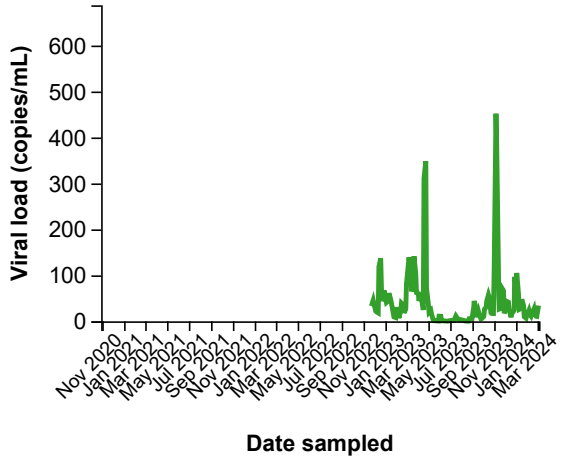
Viral load is currently (as of March 12, 2024) decreasing



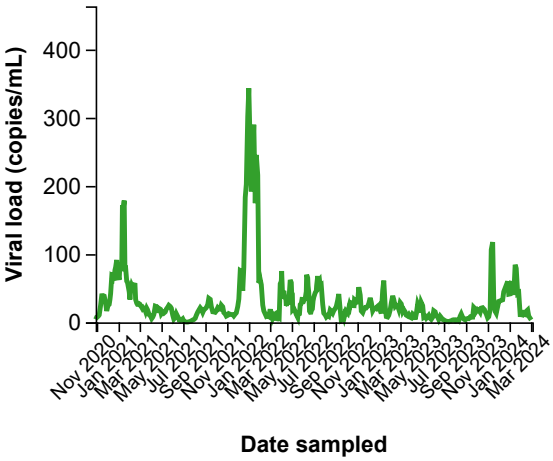
Montague, Prince Edward Island

Montreal North, Quebec

Viral load is currently (as of March 12, 2024) decreasing

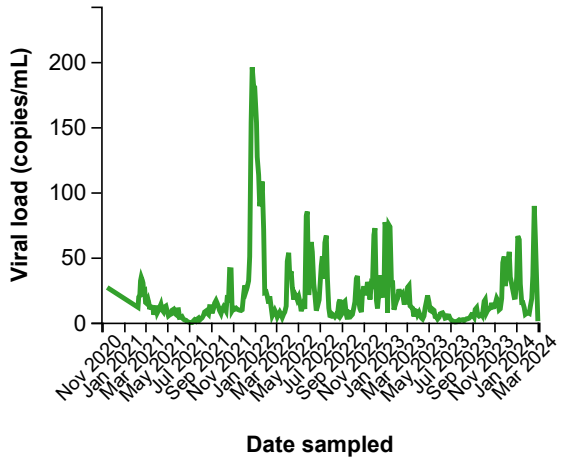


Viral load is currently (as of March 12, 2024) low and decreasing



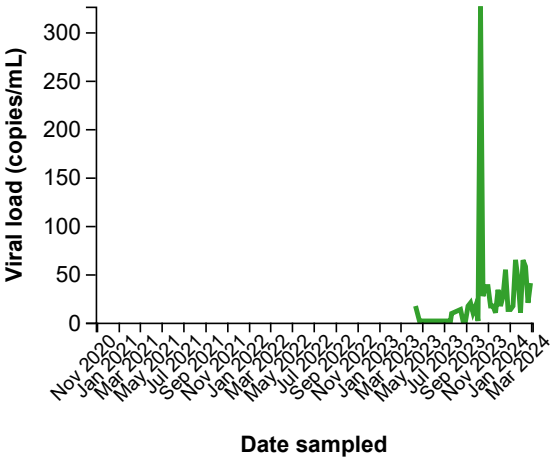
Montreal South, Quebec

Viral load is currently (as of March 12, 2024) low and decreasing



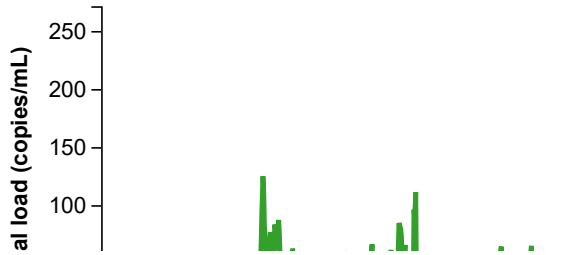
Moose Jaw, Saskatchewan

Viral load is currently (as of March 12, 2024) showing no change



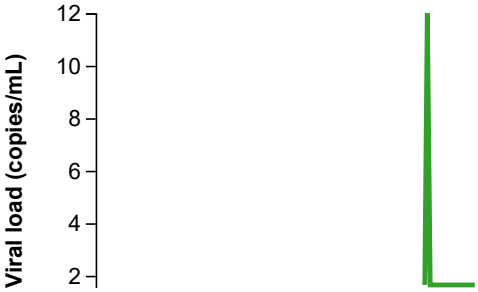
North Battleford, Saskatchewan

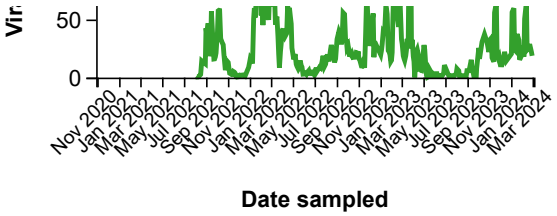
Viral load is currently (as of March 12, 2024) moderate and showing no change

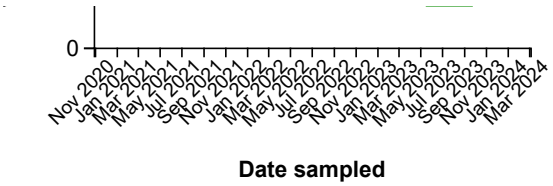


Pasqua, Saskatchewan

Viral load updates for this site are on pause

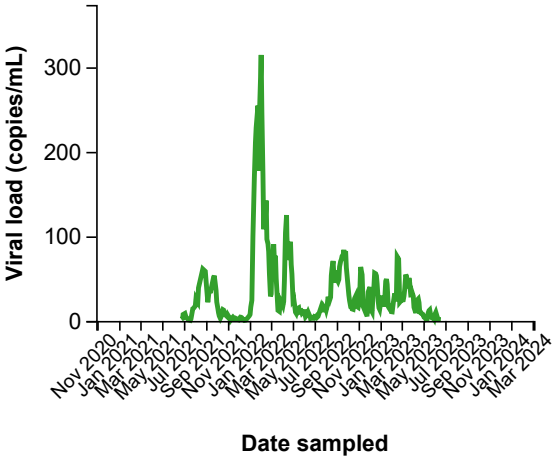






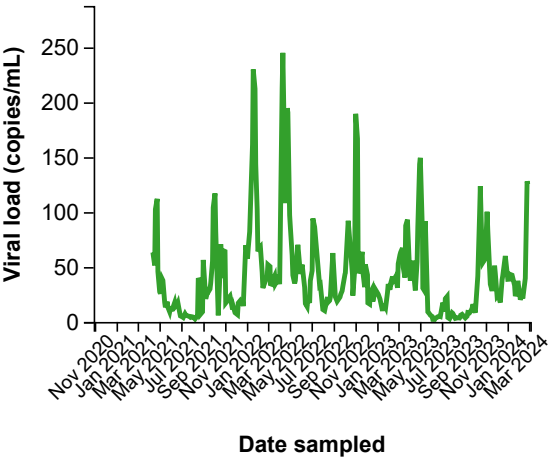
Prince Albert, Saskatchewan

Viral load updates for this site are on pause



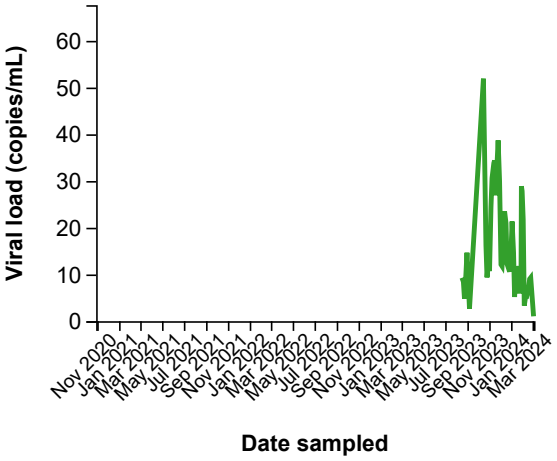
Regina, Saskatchewan

Viral load is currently (as of March 12, 2024) moderate and showing no change



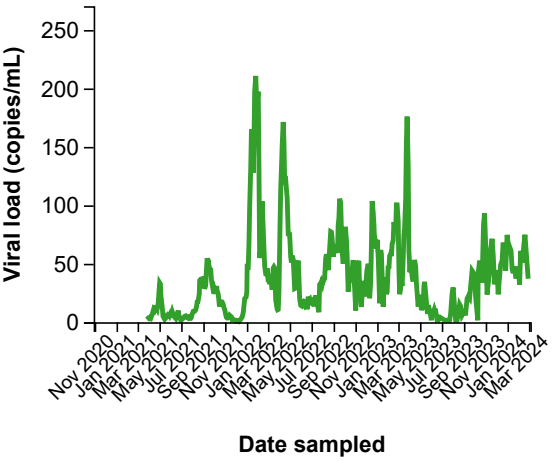
Saint John, New Brunswick

Viral load is currently (as of March 12, 2024) decreasing



Saskatoon, Saskatchewan

Viral load is currently (as of March 12, 2024) moderate and showing no change

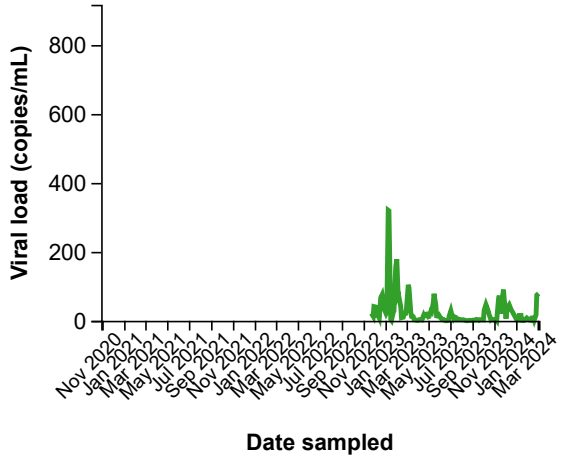


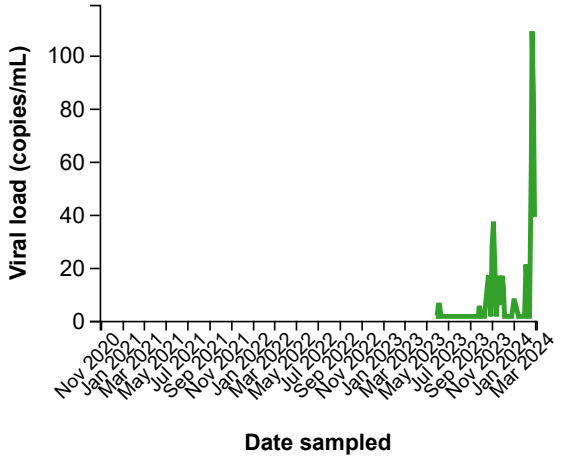
Souris, Prince Edward Island

Viral load is currently (as of March 12, 2024) increasing

Southey, Saskatchewan

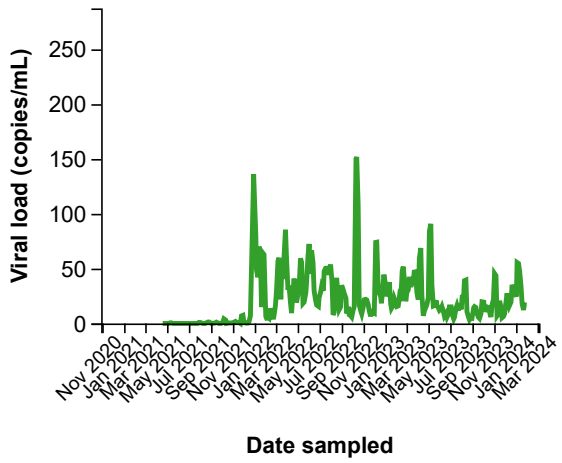
Viral load is currently (as of March 12, 2024) increasing





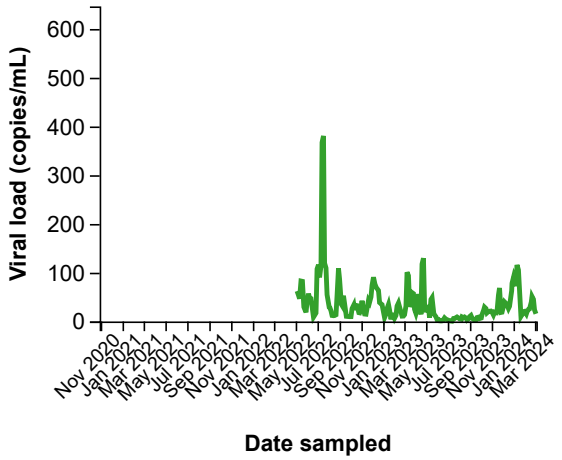
St. John's, Newfoundland

Viral load is currently (as of March 12, 2024) moderate and decreasing



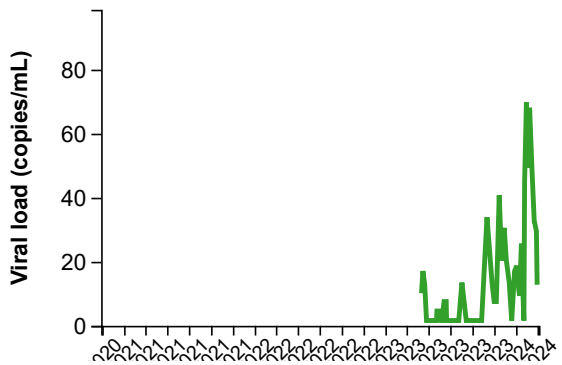
Summerside, Prince Edward Island

Viral load is currently (as of March 12, 2024) decreasing



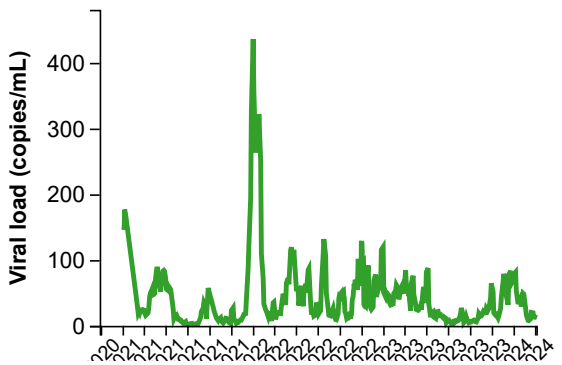
Swift Current, Saskatchewan

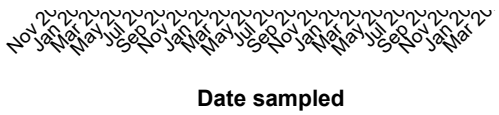
Viral load is currently (as of March 12, 2024) showing no change

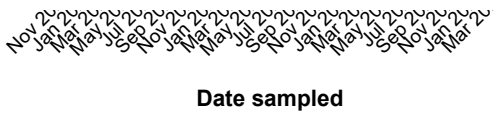


Toronto Ashbridges Bay, Ontario

Viral load is currently (as of March 12, 2024) moderate and decreasing

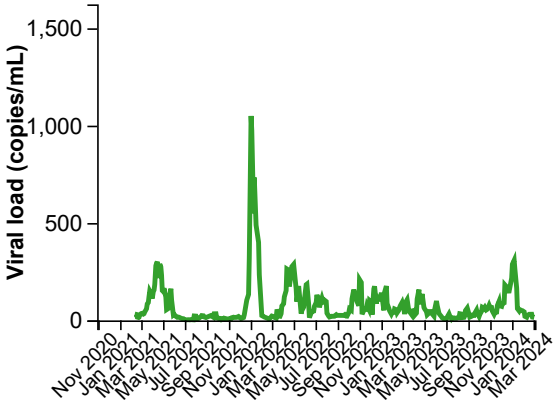






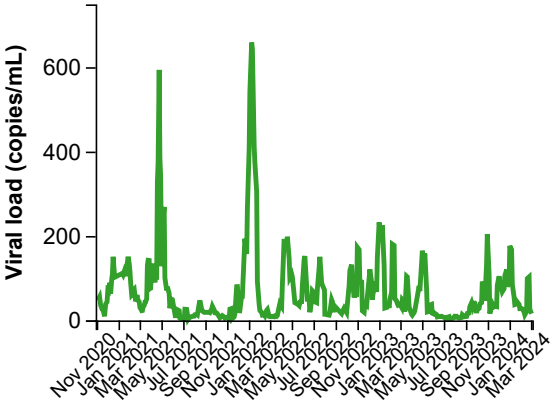
Toronto Highland Creek, Ontario

Viral load is currently (as of March 12, 2024) low and showing no change



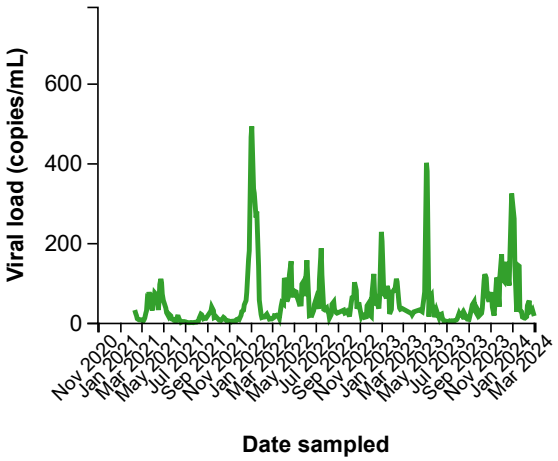
Toronto Humber, Ontario

Viral load is currently (as of March 12, 2024) low and showing no change



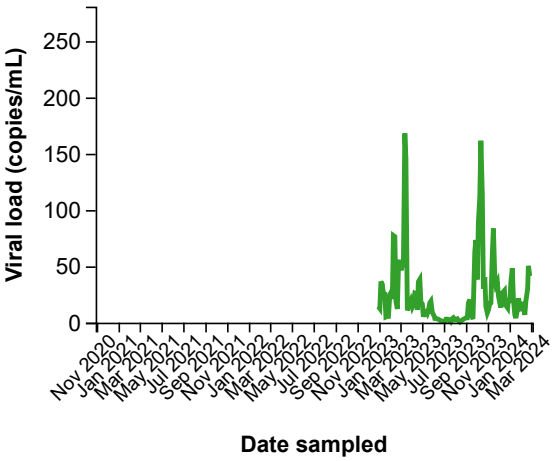
Toronto North Toronto, Ontario

Viral load is currently (as of March 12, 2024) low and showing no change



Trenton, Nova Scotia

Viral load is currently (as of March 12, 2024) increasing

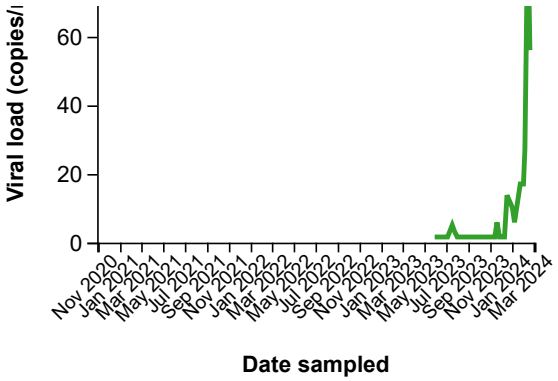


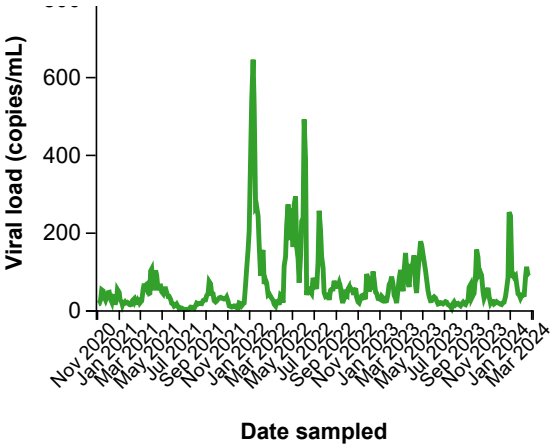
Unity, Saskatchewan

Viral load is currently (as of March 12, 2024) increasing

Vancouver Annacis Island, British Columbia

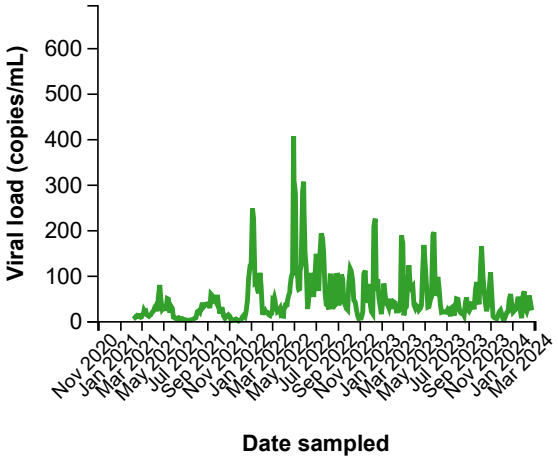
Viral load is currently (as of March 12, 2024) moderate and increasing





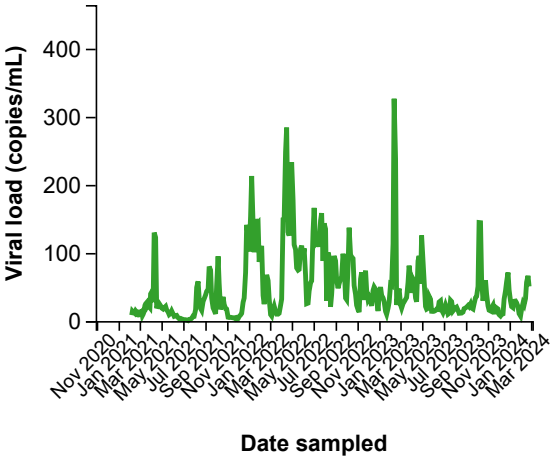
Vancouver Iona Island, British Columbia

Viral load is currently (as of March 12, 2024) moderate and showing no change



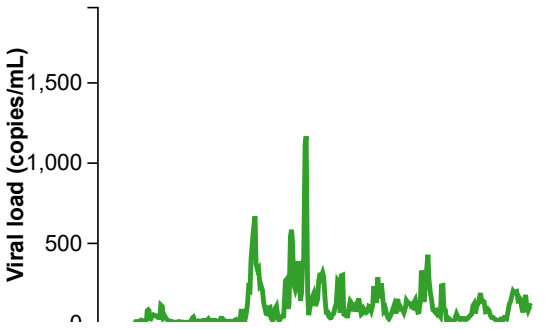
Vancouver Lions Gate, British Columbia

Viral load is currently (as of March 12, 2024) moderate and increasing



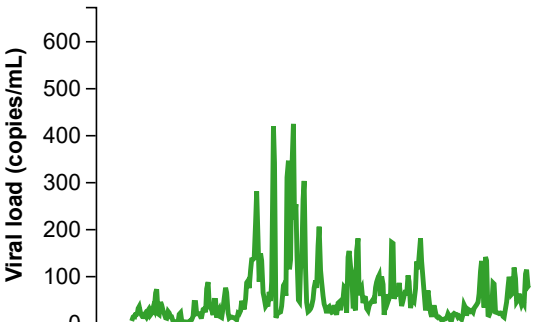
Vancouver Lulu Island, British Columbia

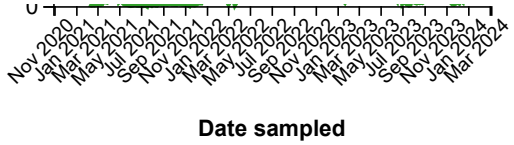
Viral load is currently (as of March 12, 2024) moderate and decreasing

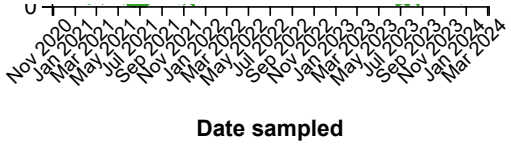


Vancouver Northwest Langley, British Columbia

Viral load is currently (as of March 12, 2024) moderate and showing no change

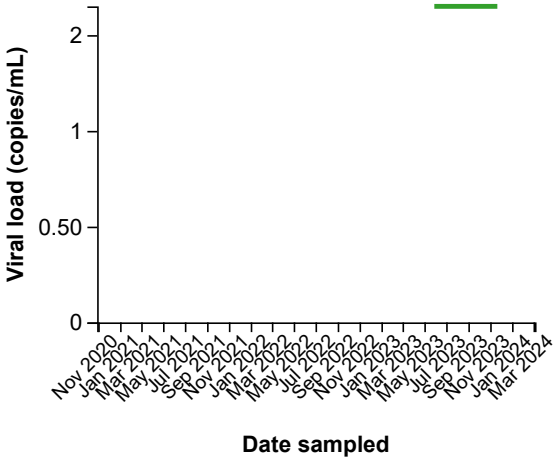






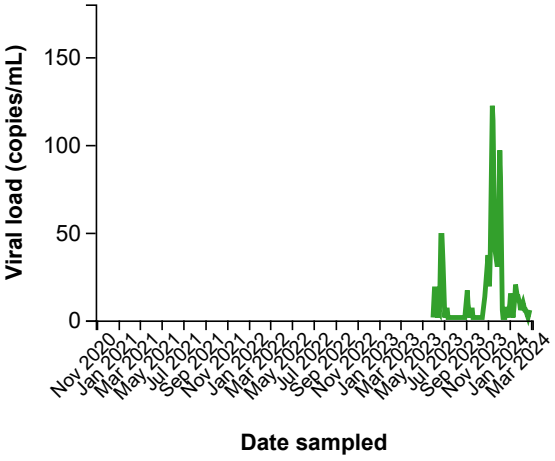
Watrous, Saskatchewan

Viral load updates for this site are on pause



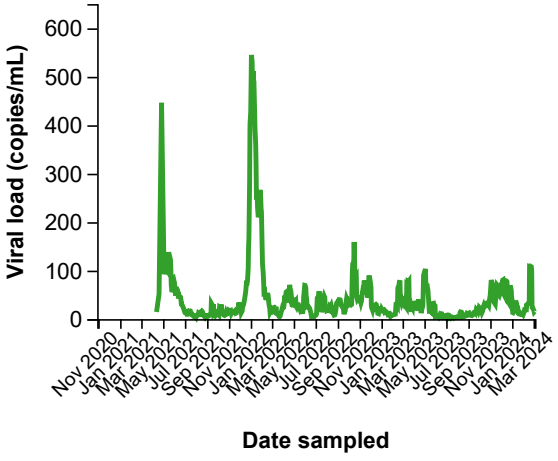
Weyburn, Saskatchewan

Viral load is currently (as of March 12, 2024) showing no change



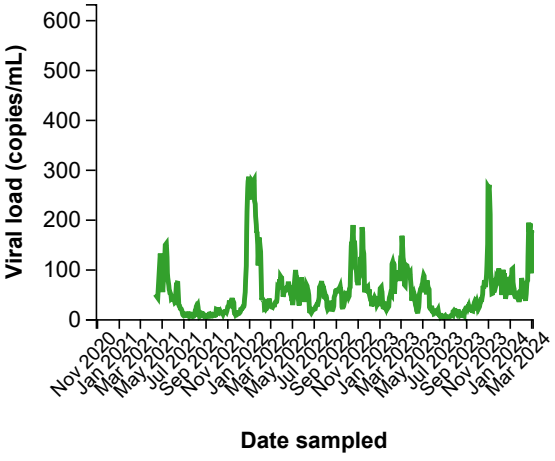
Winnipeg North End, Manitoba

Viral load is currently (as of March 12, 2024) moderate and decreasing



Winnipeg South End, Manitoba

Viral load is currently (as of March 12, 2024) moderate and showing no change

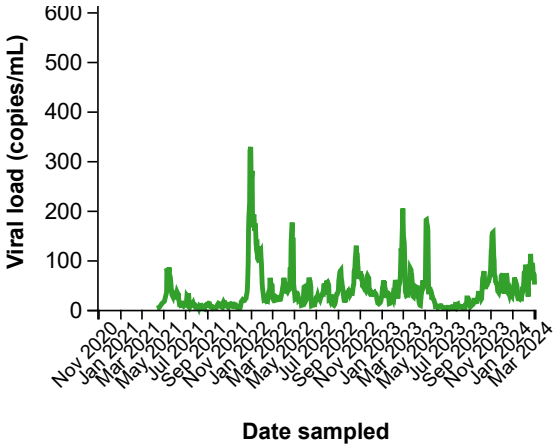


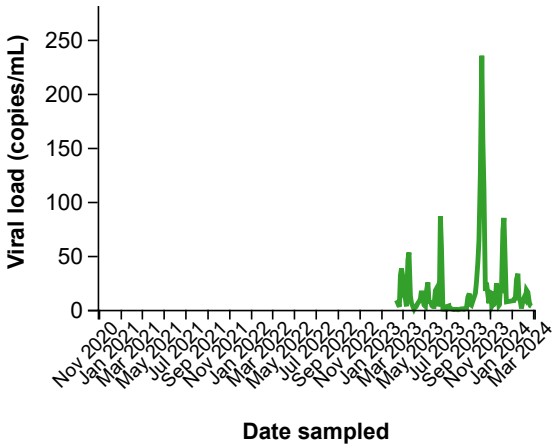
Winnipeg West End, Manitoba

Viral load is currently (as of March 12, 2024) high and increasing

Yarmouth, Nova Scotia

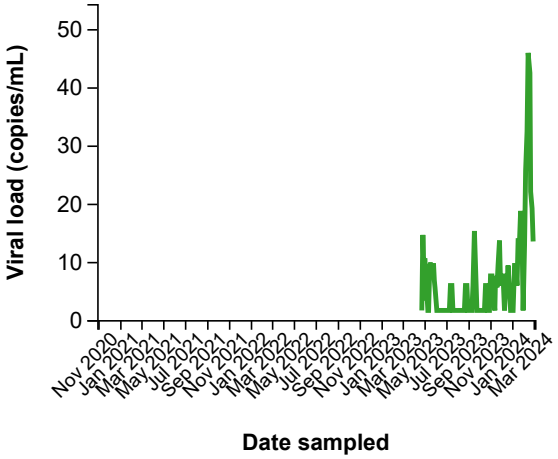
Viral load is currently (as of March 12, 2024) showing no change





Yorkton, Saskatchewan

Viral load is currently (as of March 12, 2024) showing no change



7-day rolling average of COVID-19 viral load in wastewater, as of March 5, 2024

Search:

Showing 1 to 10 of 12,805 entries

Date	Site	7-day rolling average of COVID-19 viral load (copies/mL)
2020-10-29	Montreal North	4
2020-11-01	Montreal North	8

Date	Site	7-day rolling average of COVID-19 viral load (copies/mL)
2020-11-05	Montreal North	9
2020-11-05	Toronto Humber	49
2020-11-06	Vancouver Annacis Island	16
2020-11-08	Montreal North	11
2020-11-08	Vancouver Annacis Island	16
2020-11-09	Toronto Humber	56
2020-11-12	Halifax Dartmouth	3
2020-11-12	Montreal North	25

1 2 3 4 5 1,281 Next ➔

Canadian wastewater COVID-19 surveillance dashboards and websites

These dashboards and websites are led by provincial, territorial and academic partners across Canada.

For corrections or additions, please contact: nmlwastewater@phac-aspc.gc.ca.

Filter items Showing 1 to 10 of 34 entries

Region	Link
Alberta	Centre for Health Informatics Dashboard

Region	Link
Alberta	Alberta Health Respiratory Virus Dashboard
British Columbia	Metro Vancouver COVID-19 Wastewater Dashboard
British Columbia	Provincial Health Services Authority Wastewater Monitoring
Newfoundland and Labrador	Newfoundland and Labrador Wastewater Monitoring Report
Northwest Territories	Wastewater Monitoring in the Northwest Territories
Ontario	Public Health Ontario Wastewater Monitoring Dashboard
Ontario	Algoma Public Health Unit Dashboard
Ontario	Brant County Health Unit Dashboard
Ontario	City of Greater Sudbury Dashboard

1 2 3 4 Next ➔

Technical notes

COVID-19 wastewater monitoring dashboard

This dashboard provides data about the levels of COVID-19 and variants found in the wastewater (sewage) of different communities across Canada. This information can help assess the levels of COVID-19 in those communities.

Last updated: 2024-02-09 PDF

This page has information about how we conduct wastewater testing and the limitations of the data. It also includes definitions for some of the scientific terms used in this dashboard.

On this page

Methodology

Scientists across the country provide wastewater monitoring data through their provincial and territorial networks. To detect SARS-CoV-2 at the community or institutional level, samples are collected at a central collection point, such as a wastewater treatment plant or pumping station. This method only captures the presence of COVID-19 in the community or institution. It can’t be used to identify single cases or households.

Scientists continue to improve methods for detecting and measuring COVID-19 in wastewater. The scientific community, including the Public Health Agency of Canada, is working together to build a standard that will help everyone understand, compare and

share data about COVID-19 in wastewater. The results shown on this page were obtained by PCR testing and genomic sequencing.

Scientists use genomic sequencing to decipher the different genetic fragments of the virus found in the wastewater samples. Once the sequencing reaction is complete, they analyze the sequenced pieces using special software. These programs provide information on the variants and the relative amount of each variant detected in a wastewater sample.

We've compared wastewater signal trends when the same sites are tested by both the National Microbiology Laboratory and provincial and territorial networks. We found that the trends are broadly consistent across labs. Differences in the strength of the wastewater signals are mostly due to differences in processing methods.

We present COVID-19 wastewater viral load testing as a 7-day rolling average. This is because high levels on a single day don't show the broader trend. Our approach helps us to understand the overall trends while giving you better information to make your own health decisions. Generally, we test sites twice weekly. Exceptions are Alberton and Winnipeg which are tested 1 and 5 times per week, respectively.

We monitor the rise and fall of COVID-19 signals using a technique developed by the Ontario Ministry of the Environment, Conservation and Parks as part of their provincial wastewater monitoring initiative. The wastewater monitoring 7-day average data is broken into segments over time. The daily change in the viral signal is determined for each segment. Rises and falls of the wastewater signal are judged based on their consistency over time.

For more information, please refer to: Quantitative Trend Analysis of SARS-CoV-2 RNA in Municipal Wastewater Exemplified with Sewershed-Specific COVID-19 Clinical Case Counts.

To provide more context to COVID-19 signals, we've developed a signal level metric to compare recent COVID-19 levels to historical levels. For each sampling location, we use viral loads from all samples collected since December 1, 2021, to:

- calculate the 25th and 75th percentiles, and
- establish lower and upper cutoff values

Values below the 25th percentile are classified as low, values above the 75th percentile are classified as high, and the rest are classified as medium.

At least 10 samples are needed to calculate the trend and level metrics. For the signal level metric, sites are marked as new if:

- wastewater testing was established after December 1, 2021 and
- historical data for the complete post-Omicron period doesn't exist to establish cutoff values

Limitations

While wastewater monitoring offers many advantages, it does have some limitations.

The accuracy of the wastewater signal can be affected by various factors, including the composition of wastewater, which varies by community. For example, ground or surface water can make the COVID-19 wastewater signal stronger or weaker. This can be an issue during seasonal snow-melt and large rain events.

The wastewater signal can also be affected by:

- industrial flow into the sewage system
- sand and salt to roads in winter
- the temperature of the collection system
- the method used for collecting the sample
- the diversity of variants in a sample
- the presence of similar mutations found in different variants

We're working with our partners to identify other issues with wastewater monitoring and developing measures to reduce the effects.

Considering the above limitations, we're not sure how much virus is shed with each wave. For this reason we don't recommend comparing wastewater monitoring data from different waves of COVID-19 to estimate the number of cases in a community.

Definitions

- The **7-day average** is generated by averaging the levels from a given day with the 6 previous days. The average is termed "rolling" as it changes each day.
- **Copies per mL** is the number of copies of the target RNA found in a milliliter (mL) of raw sewage by the specific wastewater treatment facility.

- **Viral load** is the concentration of SARS-CoV-2 genetic material present in a sample of wastewater. We present this in the dashboard as copies of SARS-CoV-2 genetic material per milliliter (mL) of wastewater.
- **Wastewater signal** is a measure of the level of virus in wastewater that identifies increasing, stable or decreasing number of virus particles in wastewater.
- **25th percentile** is also called the first quartile. 25% of the data falls below this level.
- **75th percentile** is also called the third quartile. 75% of the data falls below this level.

To learn more about wastewater monitoring, please refer to Harnessing the power of wastewater testing to detect COVID-19 outbreaks.

Data changes

Date	Notes
2023-05-02	We have temporarily removed Saint John from the dashboard, due to possible issues affecting data accuracy. Once these issues have been investigated and resolved, Saint John will once again be included in the dashboard.
2023-05-12	In January 2023, The National Microbiology Laboratory (NML) updated its protocol to include quantification of standard reference samples to improve accuracy. This change affects data points between July 6, 2022 and February 3, 2023. Data points have been retroactively updated to reflect this change. The updated NML wastewater quantification protocol includes a confirmation of standard reference samples' concentration via digital PCR.
2023-09-08	Saint John, New Brunswick, has been reincluded in the dashboard with data originating from Dr. Georges-L.-Dumont University Laboratory.
2023-12-15	Surveillance data for Bathurst, Campbellton, Fredericton, Miramichi and Moncton has been replaced by data originating from Vitalité Health Network in New Brunswick. Historical data analyzed by the National Microbiology Laboratory is still available for download.
2023-12-15	Historical data for Edmundston and Saint John have been updated with a new quantification method to more accurately reflect the laboratory process.

	Notes
2024-02-23	Wastewater activity updates for the following Saskatchewan sites are on hold due to a pause in samples sent to PHAC: • Canora • Pasqua FN • Prince Albert • Watrous

Date modified:
2024-02-09