

# Update on Monitoring PFAS in Surface Waters and Fish Tissue

Prepared for the House Committee on  
Natural Resources, Fish, and Wildlife

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VERMONT AGENCY OF NATURAL RESOURCES

## State of Vermont Plan

Deriving Ambient Water Quality Standards  
for the Emerging Chemicals of Concern:  
Per- and Polyfluoroalkyl Substances (PFAS)



Prepared for the Vermont General Assembly in Accordance with No. 21 of the  
Acts and Resolves of 2019 (Session 2019).



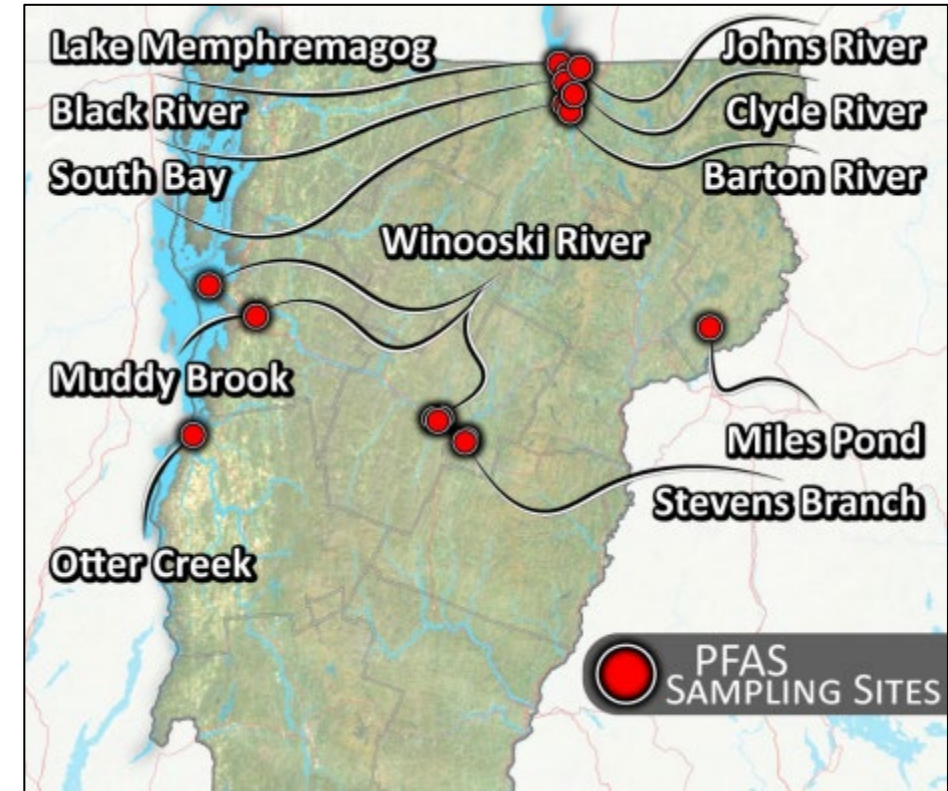
## Surface Water and Fish Tissue Monitoring Actions

1. Conduct surface water and fish tissue monitoring for PFAS.
2. Establish Human Health Criteria using Fish Tissue Concentrations.
3. Establish programs to control PFAS sources to wastewater treatment plants.
4. Work with federal and state partners to develop aquatic biota criteria for PFAS.

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**2021 Vermont Per- and Polyfluoroalkyl Substances (PFAS)  
Surface Water, Fish Tissue, and  
Wastewater Treatment Facility Effluent  
Monitoring Report**

April 4, 2022



- Surface water at 19 sites, including 10 sites in Lake Memphremagog and its watershed in collaboration with Quebec partners
- Fish tissue at eight of the 19 sites
- Effluent at three wastewater treatment facilities (WWTFs)

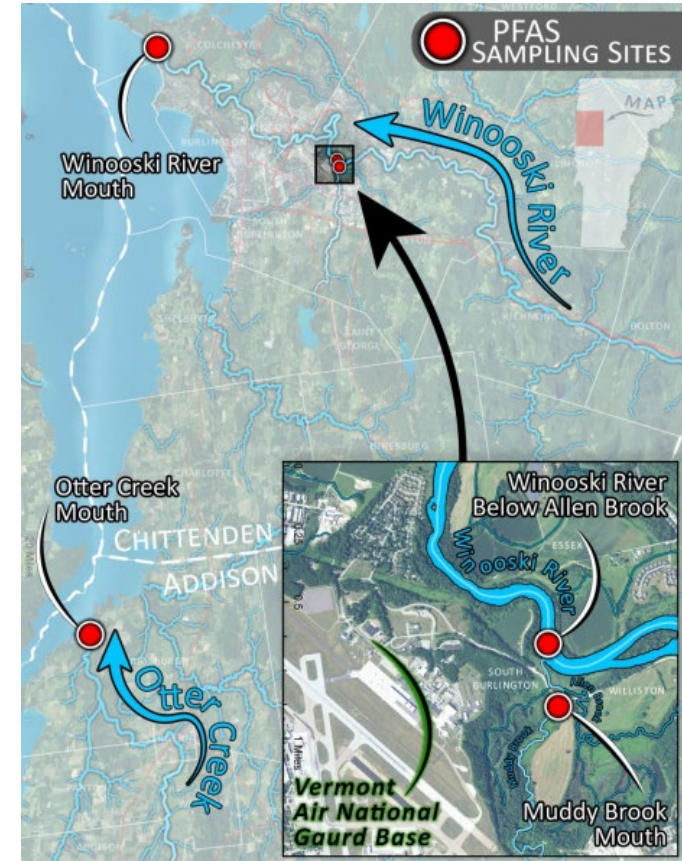
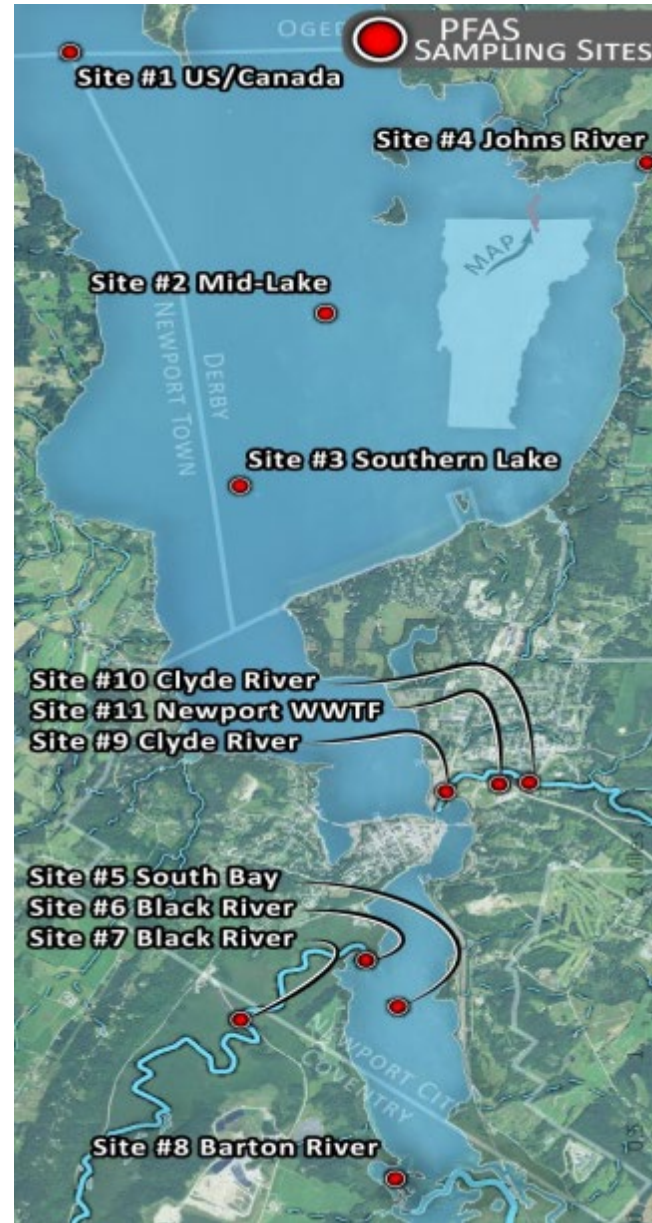
# 2021 PFAS Monitoring Overview

- Purpose of monitoring is to better understand the concentration of PFAS in surface waters and fish tissue.
- Collected surface water, fish tissue, and WWTF effluent samples between July and October 2021.
- Drinking water advisory of 20 ppt for the sum of five PFAS (PFHpA, PFHxS, PFOA, PFNA, PFOS) serves as a benchmark for assessing PFAS concentrations in surface waters in the absence of Vermont Water Quality Standards for PFAS.
- Reporting Limit: Lowest value that can be used to assess PFAS concentrations.
- PFAS concentrations in surface waters measured in parts per trillion (ppt).
- PFAS concentrations in fish measured in parts per billion (ppb).

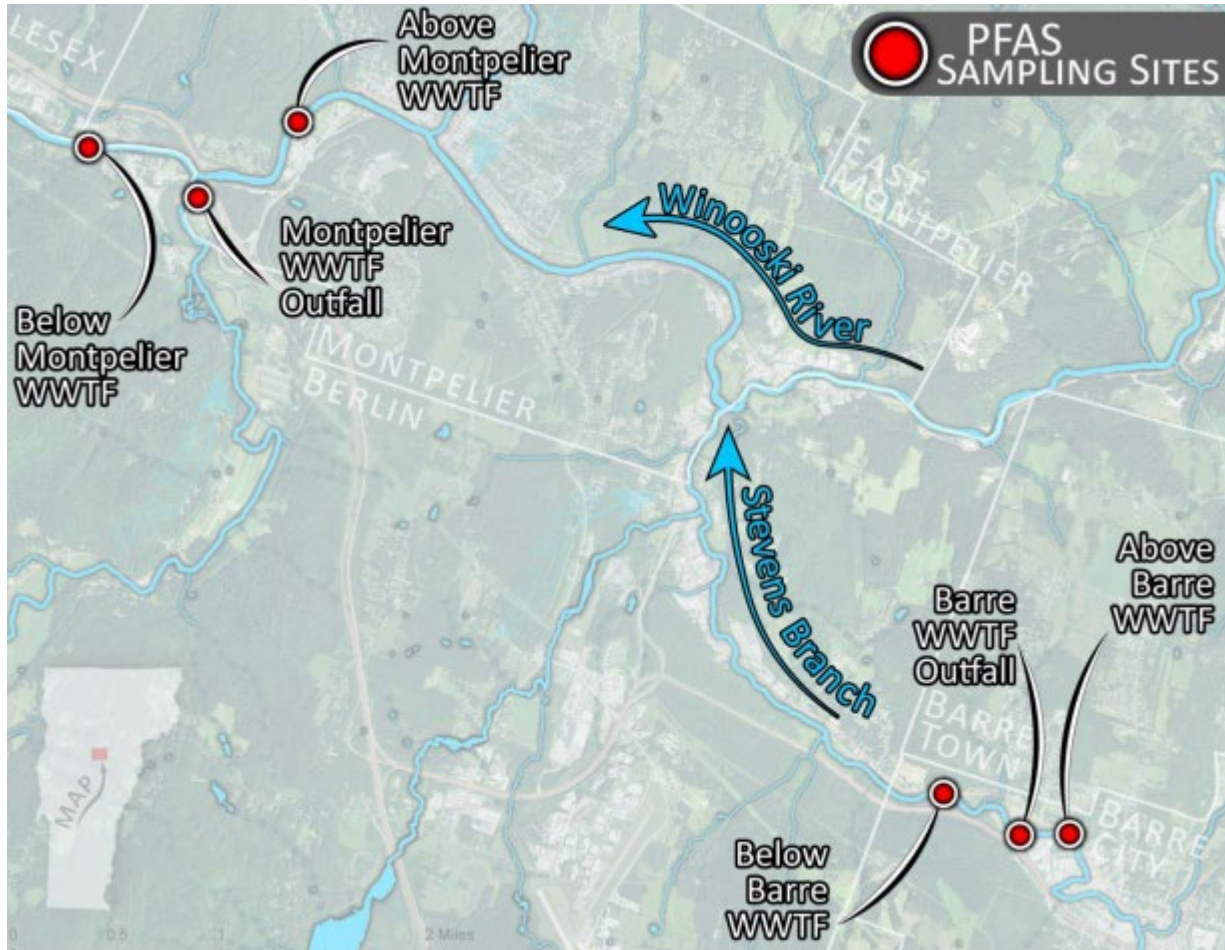


# PFAS in Surface Water

- All surface water results were below the Vermont Drinking Water Advisory of 20 ppt for the sum of the five Vermont-Regulated PFAS.
- There were only two PFAS detected above the Reporting Limits within the Lake Memphremagog watershed and these detections were very low – in the single part per trillion.
- The highest surface water PFAS concentrations observed, though still low – in the single part per trillion – were from Muddy Brook and the Winooski River site downstream of Muddy Brook, 14.8 ppt and 10.7 ppt, respectively.



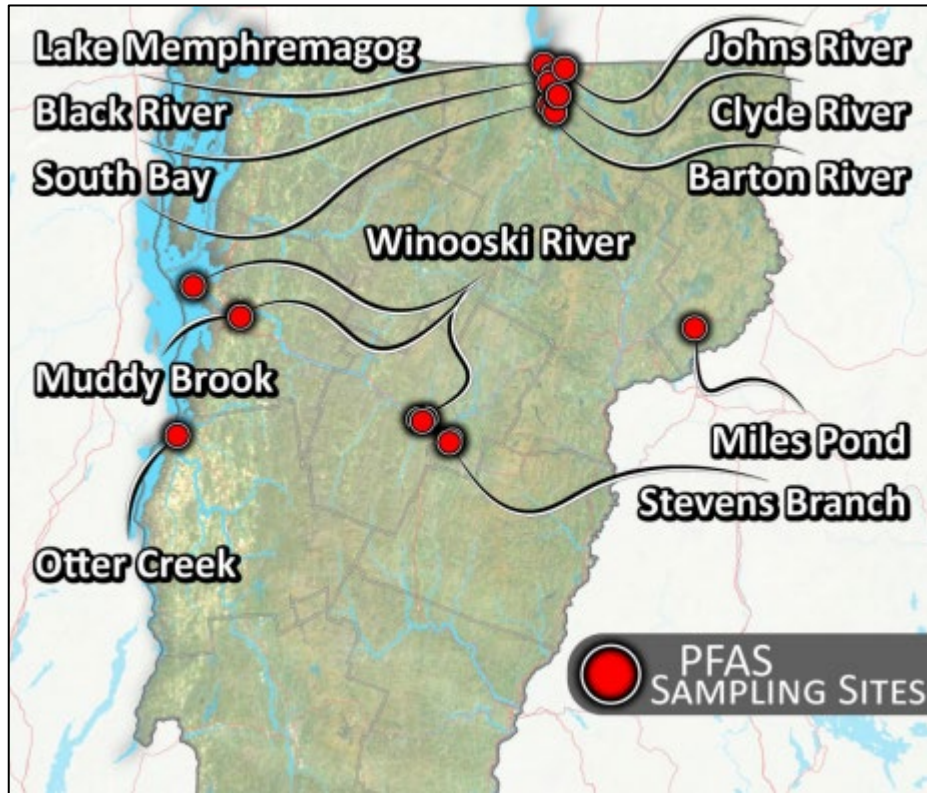
# PFAS in WWTF Effluent



- The Newport City WWTF effluent had ten PFAS detected above the RL, with the sum of the five Vermont-regulated PFAS ranging from 17.0 ppt to 27.6 ppt.
- The Barre City WWTF effluent was very low in PFAS, with only four PFAS detected above the RL. The sum of the five Vermont-regulated PFAS was 2.53 ppt.
- The Montpelier City WWTF, which currently receives landfill leachate for treatment, had 12 PFAS detected above the RL, the sum of the five Vermont-regulated PFAS was 79.7 ppt.



# PFAS in Fish Tissue



- Fish tissue PFAS results from the eight sites sampled showed only one of the five Vermont-regulated PFAS, PFOS, which is the most widely distributed and persistent PFAS, detected above the Reporting Limits.

- Fish tissue collected at eight of the 19 sites

# Next Steps

- Additional surface water and fish tissue sampling in 2022 will focus on sites near known or suspected PFAS sources, including:
  - Winooski River
  - Otter Creek
- Continue coordination with Department of Health and Fish Contaminant Monitoring Committee on fish tissue results and monitoring needs.
- Continue coordination with EPA on draft national recommended aquatic life criteria for PFOA and PFOS.