

Nova Scotia Department of Energy and Mines
Geoscience and Mines Branch - Geological Survey Division

Open File Map ME 2021-002

Fluoride in Groundwater
from Bedrock Aquifers in Nova Scotia

Second Edition

G. W. Kennedy

Scale 1:500 000

Halifax, Nova Scotia
2021

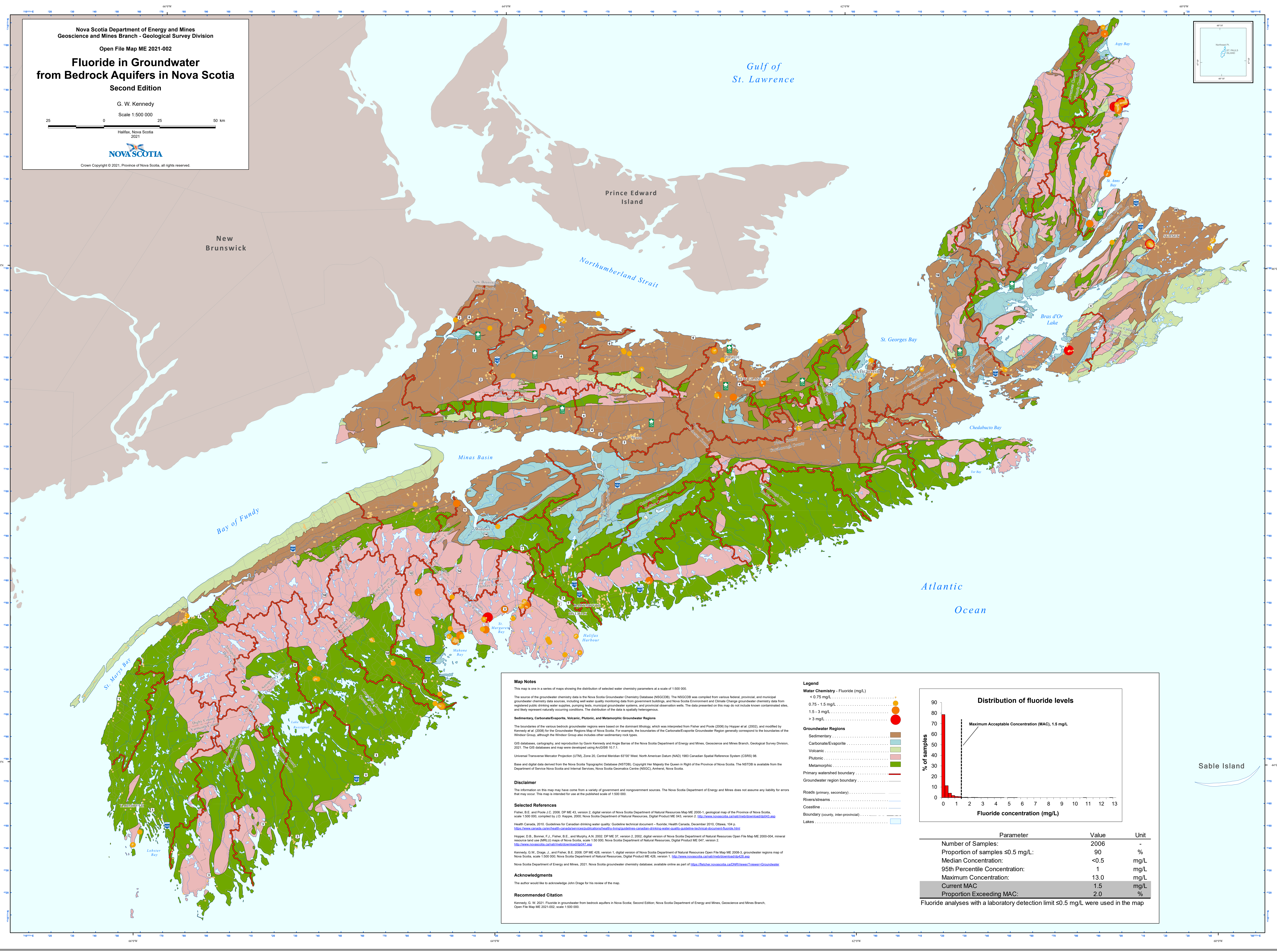
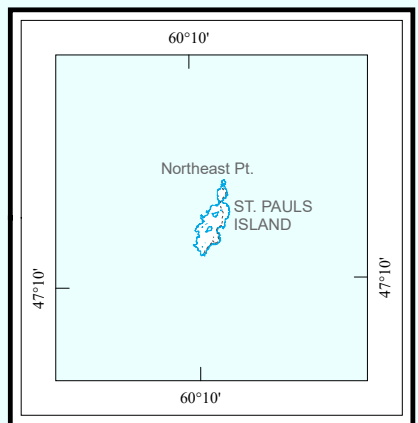


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25000000

02550

50 km



Map Notes

This map is one in a series of maps showing the distribution of selected water chemistry parameters at a scale of 1:500 000.

The source of the groundwater chemistry data is the Nova Scotia Groundwater Chemistry Database (NSGCD). The NSGCD was compiled from various federal, provincial, and municipal groundwater chemistry data sources, including well water quality monitoring data from government buildings, and Nova Scotia Environment and Climate Change groundwater chemistry data from registered public drinking water supplies, pumping wells, municipal groundwater systems, and provincial observation wells. The data presented on this map do not include known contaminated sites, and likely represent naturally occurring conditions. The distribution of the data is spatially heterogeneous.

Sedimentary, Carbonate/Evaporite, Volcanic, Plutonic, and Metamorphic Groundwater Regions

The boundaries of the various bedrock groundwater regions were based on the dominant lithology, which was interpreted from Fisher and Poole (2006) by Hopper et al. (2002), and modified by Kennedy et al. (2006) for the Groundwater Regions Map of Nova Scotia. For example, the boundaries of the Carbonate/Evaporite Groundwater Region generally correspond to the boundaries of the Windsor Group, although the Windsor Group also includes other sedimentary rock types.

GIS databases, cartography, and reproduction by Gavin Kennedy and Angie Barras of the Nova Scotia Department of Energy and Mines, Geoscience and Mines Branch, Geological Survey Division, 2021. The GIS databases and map were developed using ArcGIS 10.7.1.

Universal Transverse Mercator Projection (UTM), Zone 20, Central Meridian 63°00' West, North American Datum (NAD) 1983 Canadian Spatial Reference System (CSRS) 98.

Base and digital data derived from the Nova Scotia Topographic Database (NSTDB). Copyright Her Majesty the Queen in Right of the Province of Nova Scotia. The NSTDB is available from the Department of Service Nova Scotia and Internal Services, Nova Scotia Geomatics Centre (NSGC), Amherst, Nova Scotia.

Disclaimer

The information on this map may have come from a variety of government and non-government sources. The Nova Scotia Department of Energy and Mines does not assume any liability for errors that may occur. This map is intended for use at the published scale of 1:500 000.

Selected References

Fisher, B.E. and Poole, J.C. 2006. DP ME 43, version 2, digital version of Nova Scotia Department of Natural Resources Map ME 2000-1, geological map of the Province of Nova Scotia, scale 1:500 000, compiled by J.D. Kieppie, 2006. Nova Scotia Department of Natural Resources, Digital Product ME 043, version 2. <http://www.novascotia.ca/nat/mdb/download/dp43.asp>

Health Canada, 2010. Guidelines for Canadian drinking water quality: Guideline technical document – fluoride; Health Canada, December 2010, Ottawa, 104 p. <https://www.canada.ca/en/health-canada/services/publications/healthy-living/guidelines-canadian-drinking-water-quality-guideline-technical-document-fluoride.html>

Hopper, D.B., Bonner, F.J., Fisher, B.E., and Murphy, A.N. 2002. DP ME 37, version 2, 2002, digital version of Nova Scotia Department of Natural Resources Open File Map ME 2000-004, mineral resource land use (MRLU) maps of Nova Scotia, scale 1:500 000; Nova Scotia Department of Natural Resources, Digital Product ME 047, version 2. <http://www.novascotia.ca/nat/mdb/download/dp47.asp>

Kennedy, G.W., Drage, J., and Fisher, B.E. 2008. DP ME 428, version 1, digital version of Nova Scotia Department of Natural Resources Open File Map ME 2008-3, groundwater regions map of Nova Scotia, scale 1:500 000; Nova Scotia Department of Natural Resources, Digital Product ME 428, version 1. <http://www.novascotia.ca/nat/mdb/download/dp428.asp>

Nova Scotia Department of Energy and Mines, 2021. Nova Scotia groundwater chemistry database; available online as part of <https://fisher.novascotia.ca/DNRViewer/?viewer=Groundwater>

Acknowledgments

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Recommended Citation

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Legend

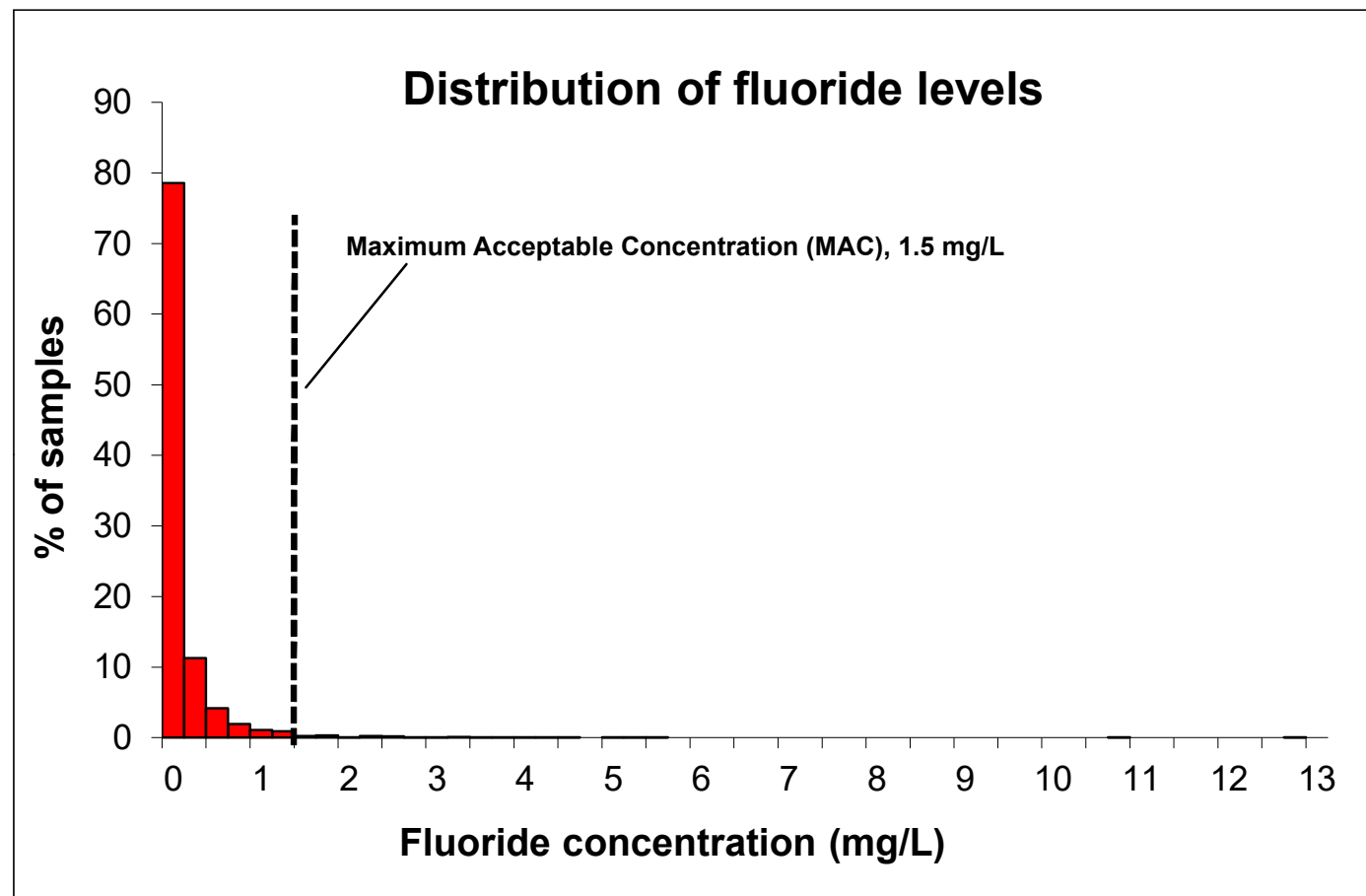
Water Chemistry - Fluoride (mg/L)

- < 0.75 mg/L
- 0.75 - 1.5 mg/L
- 1.5 - 3 mg/L
- > 3 mg/L

Groundwater Regions

- Sedimentary
- Carbonate/Evaporite
- Volcanic
- Plutonic
- Metamorphic
- Primary watershed boundary
- Groundwater region boundary

- Roads (primary, secondary)
- Rivers/streams
- Coastline
- Boundary (county, inter-provincial)
- Lakes



Parameter	Value	Unit
Number of Samples:	2006	-
Proportion of samples ≤0.5 mg/L:	90	%
Median Concentration:	<0.5	mg/L
95th Percentile Concentration:	1	mg/L
Maximum Concentration:	13.0	mg/L
Current MAC	1.5	mg/L
Proportion Exceeding MAC:	2.0	%

Fluoride analyses with a laboratory detection limit ≤0.5 mg/L were used in the map

Sable Island