

Nova Scotia Department of Natural Resources and Renewables
Geoscience and Mines Branch, Geological Survey Division

Open File Map ME 2022-2

Boron in Groundwater from Bedrock Aquifers in Nova Scotia

G. W. Kennedy

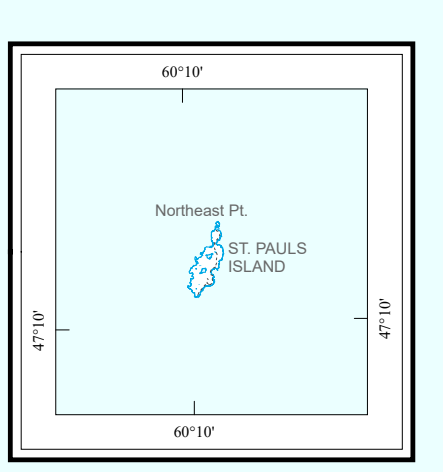
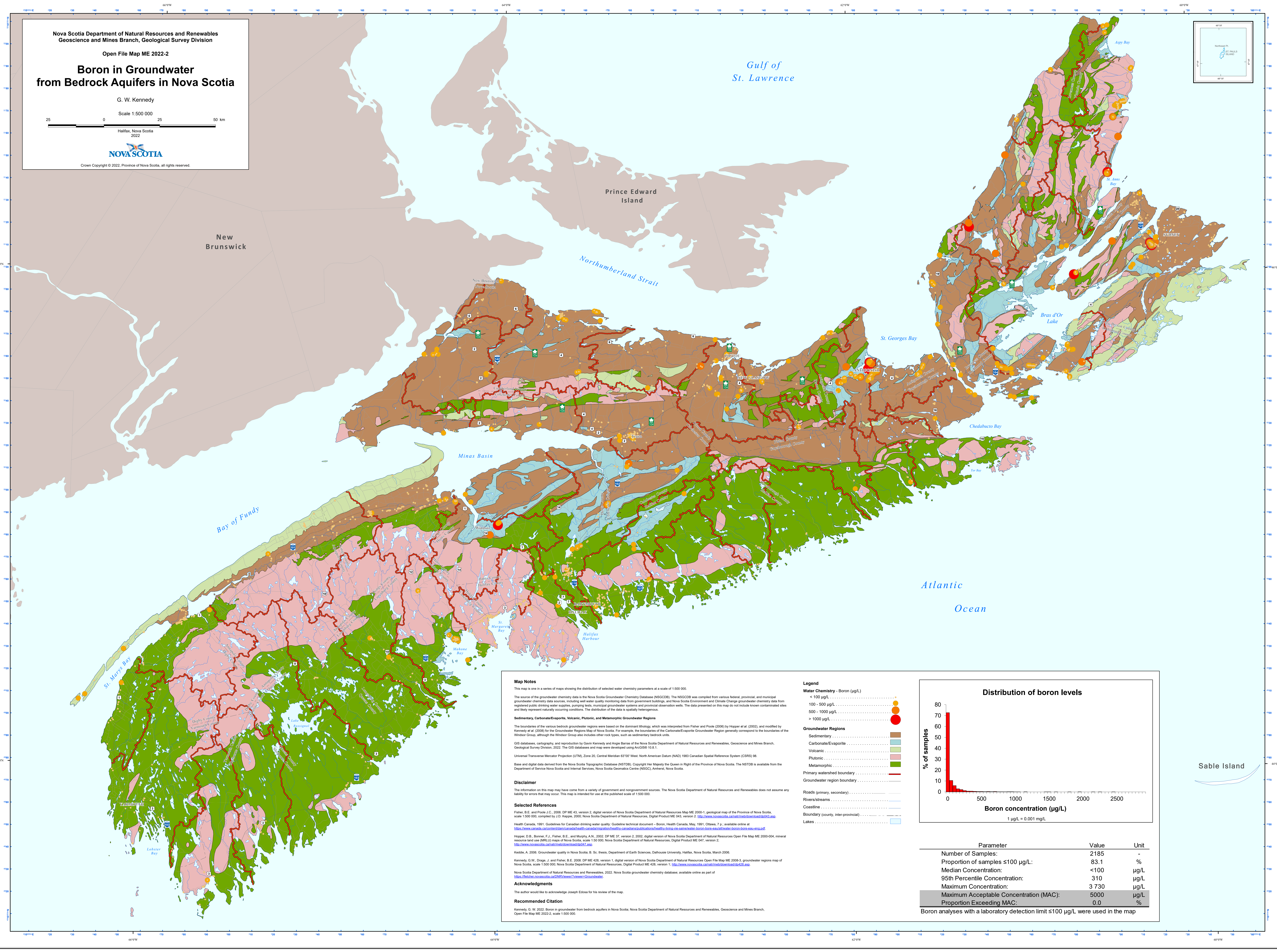
Scale 1:500 000



Halifax, Nova Scotia
2022



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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 (NSGCDB). The NSGCDB 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. (2008) 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 rock types, such as sedimentary bedrock units.

GIS databases, cartography, and reproduction by Gavin Kennedy and Angie Barras of the Nova Scotia Department of Natural Resources and Renewables, Geoscience and Mines Branch, Geological Survey Division, 2022. The GIS databases and map were developed using ArcGIS® 10.8.1.

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 Natural Resources and Renewables 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 2005-1, geological map of the Province of Nova Scotia, scale 1:500 000, compiled by J.D. Kestpe, 2000. Nova Scotia Department of Natural Resources, Digital Product ME 043, version 2. <http://www.novascotia.ca/nat/resour/novascotia/geo/geology/43/>

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Hopper, D.B., Bonnar, 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/resour/novascotia/geo/geology/37/>

Keddie, A., 2006. Groundwater quality in Nova Scotia. B. Sc. thesis, Department of Earth Sciences, Dalhousie University, Halifax, Nova Scotia, March 2006.

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Nova Scotia Department of Natural Resources and Renewables, 2022. Nova Scotia groundwater chemistry database; available online at <https://data.novascotia.ca/dataset/novascotia-groundwater-chemistry>

Acknowledgments

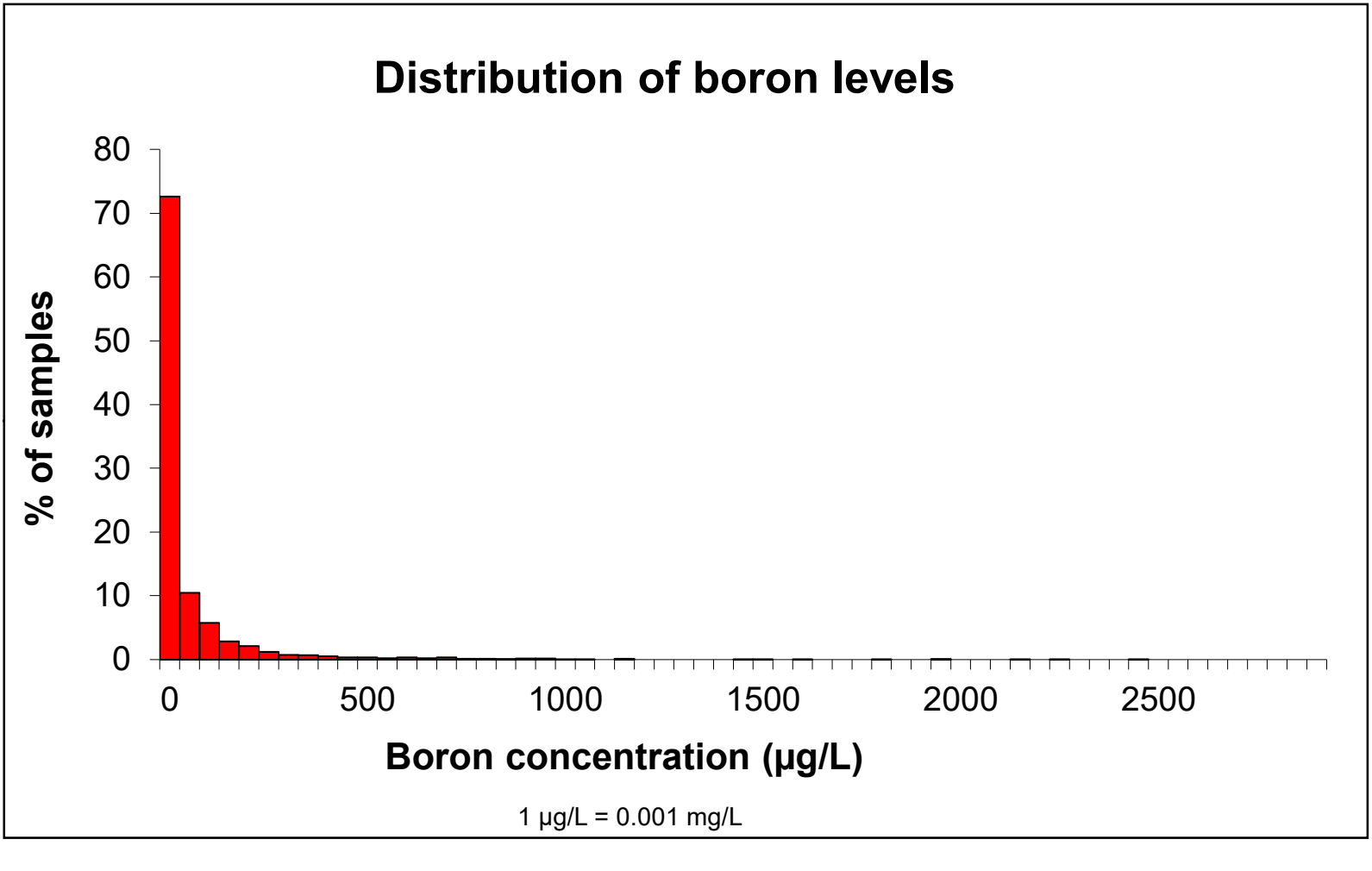
The author would like to acknowledge Joseph Edosa for his review of the map.

Recommended Citation

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Legend

- Water Chemistry - Boron (µg/L)**
- < 100 µg/L
 - 100 - 500 µg/L
 - 500 - 1000 µg/L
 - > 1000 µg/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:	2185	-
Proportion of samples ≤100 µg/L:	83.1	%
Median Concentration:	<100	µg/L
95th Percentile Concentration:	310	µg/L
Maximum Concentration:	3 730	µg/L
Maximum Acceptable Concentration (MAC):	5000	µg/L
Proportion Exceeding MAC:	0.0	%

Boron analyses with a laboratory detection limit ≤100 µg/L were used in the map