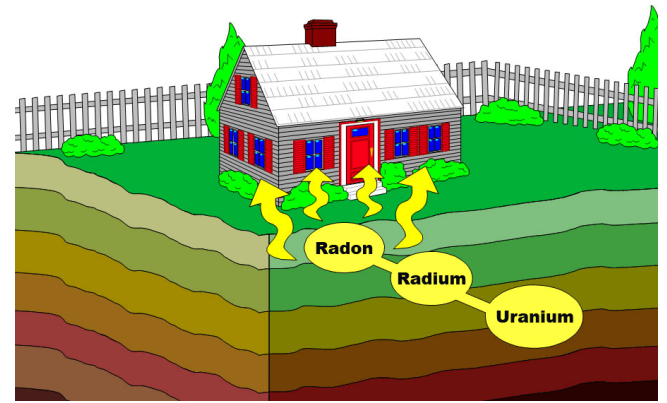


Mapping Radon in NS

John Drage, NSDNR

26 May 2016

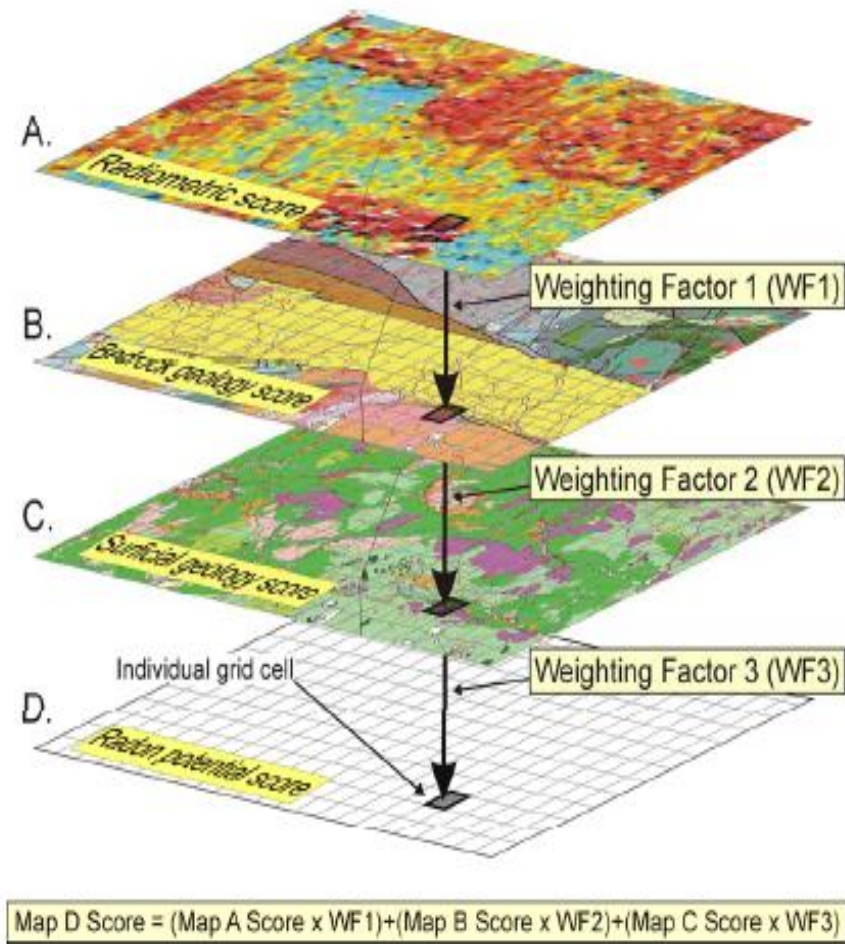
NS Radon History



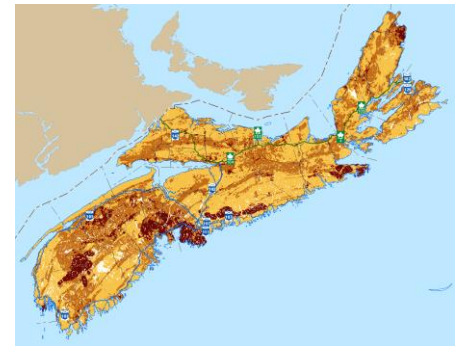
- 1978 - uranium found in well water in NS.
- 1990 - NS radon indoor air survey (700 homes, 8% exceed).
- 2007 - NS radon indoor air testing of public buildings (19,400 tests, 6% exceed).
- 2012 - Health Canada cross-Canada survey (600 homes, 11% exceed in NS, Canadian average was 7%).
- 2013 – NS radon indoor air risk map released.

NS Radon Risk Map

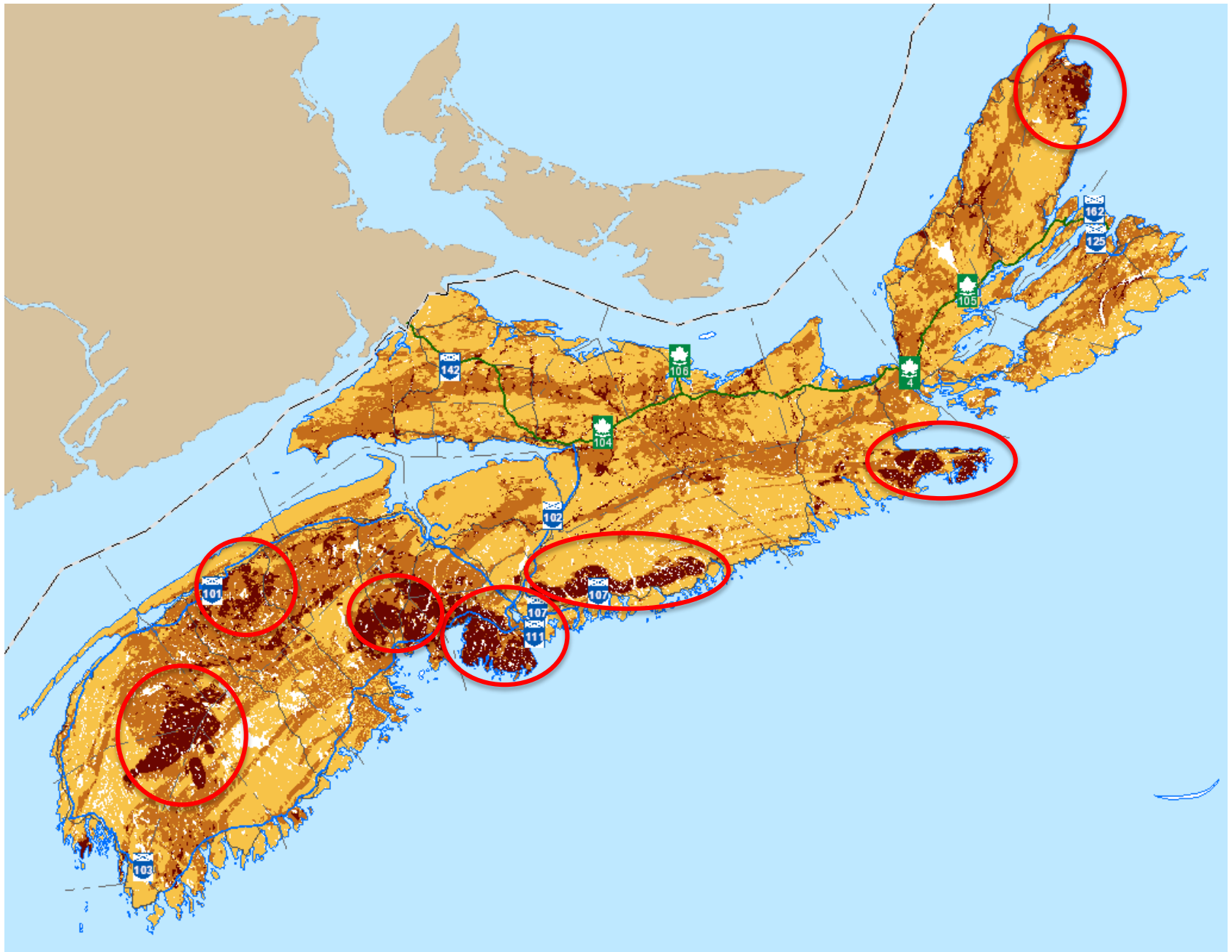
- The radon risk model was made with a GIS model.
- The model used 3 information layers:
 - airborne radiation
 - bedrock
 - soil



Radon Risk Map



- Measured radon data from 524 locations was used to determine the risk zones:
 - high (40% exceed)
 - medium (14% exceed)
 - low (5% exceed)
- This means even homes in low risk areas need testing.



NS Radon Risk Map

To use the map, google “ns radon map”

<http://novascotia.ca/dhw/environmental/radon.asp>



The screenshot shows the Nova Scotia Government website. At the top, the Nova Scotia Canada logo is visible. Below it is a navigation menu with links for RESIDENTS, VISITORS, BUSINESSES, GOVERNMENT, and NEWS. A search bar is located to the right of the menu. The breadcrumb trail reads: DHW > Public Health > Environmental Health > Chemicals and Hazardous Sub... > Radon. The main content area is titled "Environmental Health" and features a photograph of a blue house. To the left of the photo is a sidebar menu for "Environmental Health" with sub-items: Chemicals and Hazardous Substances (Asbestos, Fluoride, Lead, Mercury, Radon), Emergencies and Extreme Weather Events, Recreational Camps, Recreational Water, Air Quality, Food Safety, Housing, Tobacco Control, Tanning Beds, Community Sanitation, and Bed Bugs. To the right of the photo is a text box that says: "Looking for information on an environmental public health topic, call 1-800-565-3611 or fill out our [online form](#)". At the bottom of the page, the text "Chemicals and Hazardous Substances - Radon" is displayed. The footer of the page includes the Department of Health and Wellness logo and the Nova Scotia logo.

Potential for Radon in Indoor Air

Address Search...

Home

I want to...

Welcome to Department of Natural Resources

Potential for Radon in Indoor Air

This application was developed to show areas of Nova Scotia where people are more likely to be exposed to radon in indoor air.

Potential for Radon in Indoor Air

- High Risk
- Medium Risk
- Low Risk

Testing is the only way to find out how much radon is in your home, so it is important to test no matter where you live. Some areas of Nova Scotia have a higher risk of radon because of the local geology. The radon risk map for Nova Scotia from the Department of Natural Resources shows areas with high, medium and low risk. Test results have shown that 40% of buildings in the high risk areas exceed the radon guideline. In the medium risk areas, 14% of buildings exceed the guideline and in the low risk areas 5% exceed the guideline. These results tell us that even homes in low risk areas should be tested. Do-it-yourself radon testing kits can be ordered on-line from the [Lung Association of Nova Scotia](#)



For further information on radon testing please click [here](#).

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Lat/Long ▲ Lat: 45.6610° N Lon: 64.3962° W 0 30 60km

NOVASCOTIA Potential for Radon in Indoor Air

6296 Summit Street Halifax  

6296 Summit St, Halifax, Nova ...  

I want to...

Details
address
6296 Summit St, Halifax, Nova Scotia, B3L
score
100





Radon in water

- Radon in drinking water does not pose a risk.
- 95% of radon exposure is from air, 1% from water.
- However, if radon levels in water are high they will add to indoor air radon levels.

Guidelines for Canadian Drinking Water Quality

Guideline Technical Document

Radiological Parameters



Canada 

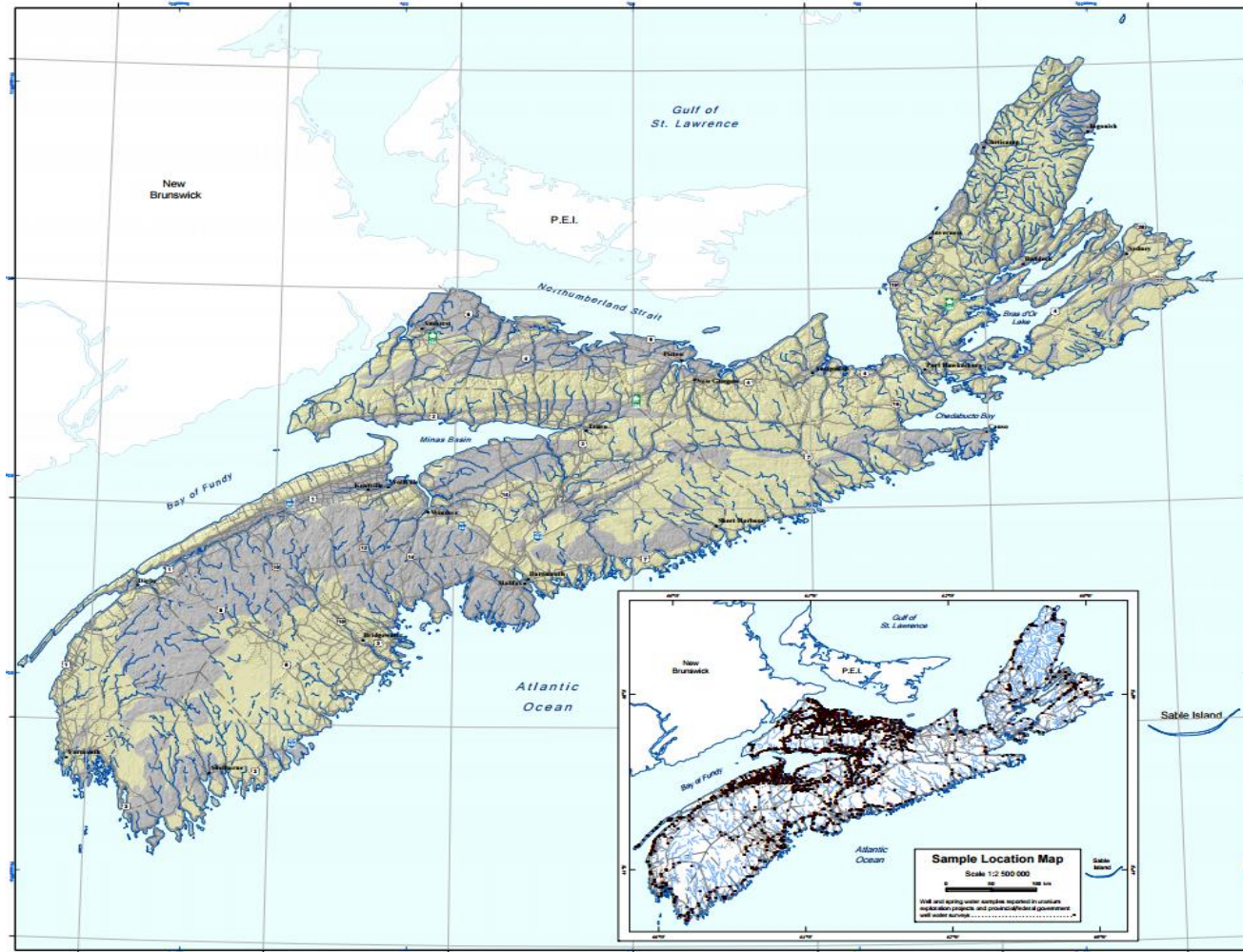
Radon in Water

- 1,000 Bq/L in water can raise radon air levels in a home by 100 Bq/m³.
- If air levels in a home exceed 200 Bq/m³, then water should be tested.
- If radon in water exceeds 2,000 Bq/L, then take action to reduce the release of radon to indoor air.

Radon in water

- Surveys of radon in water in NS include:
 - 1976 exploration survey (700 wells, Northern NS, max = 366 Bq/L)
 - 1978 Uranium Task Force (900 wells, across NS, max = 22,000 Bq/L)
- Wells in granite, especially drilled wells are the highest risk (average = 930 Bq/L).
- 30% of drilled wells in Harrietsfield area were above 1,000 Bq/L.

NS Radionuclide Risk Map for Well Water



Radon Treatment System



- Carbon filter
- Cost \$200
- Radon inflow = 900 Bq/L
- Radon after filter = 450 Bq/L

Summary

- There are no radon free areas in NS, so everyone must test.
- 40% of homes in high risk areas exceed the radon guideline.
- Radon in well water can add significant amounts of radon to indoor air (1,000 Bq/L in water adds 100 Bq/m³ to air).
- Drilled wells in granite in NS are highest risk (22,000 Bq/L).
- For more information, google “ns radon map” or visit: www.novascotia.ca/natr/meb/