

Groundwater Pesticide Results – Summary

2004/05 – 2015/16

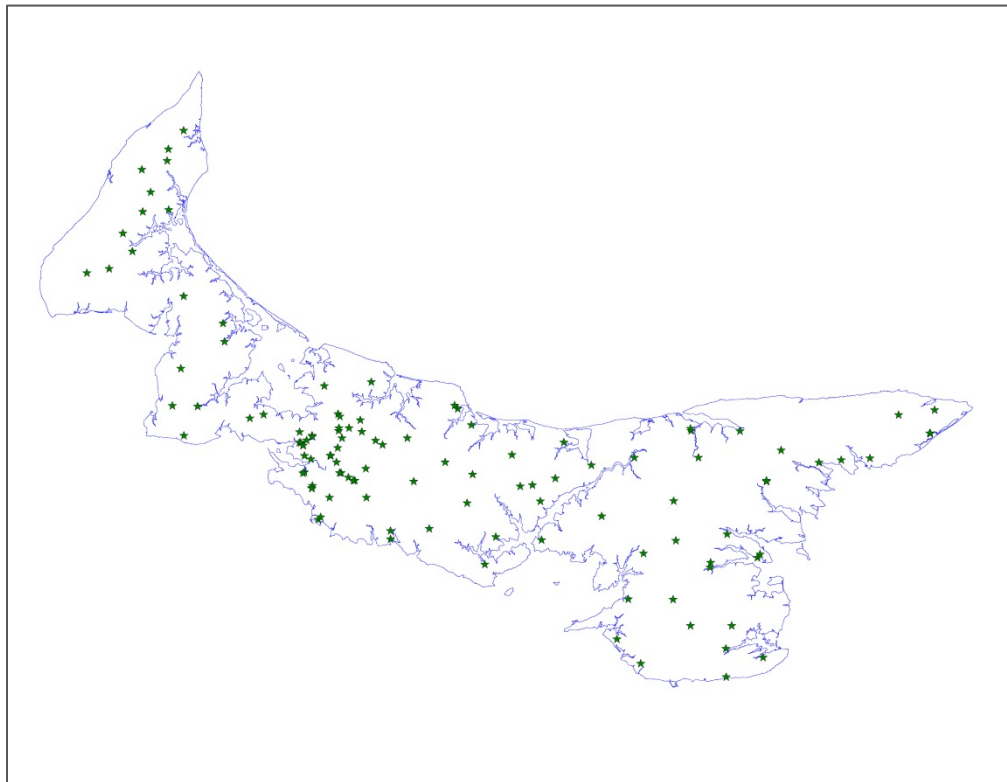
*Water and Air Monitoring Section
PEI Department of Environment, Water and Climate Change*

October, 2019

Groundwater Pesticide Monitoring Program Results October, 2019

The Program

- Wells across the Island have been sampled for pesticides once a year since the fall of 2004. This summary covers twelve years of results, up to the fall of 2015.
- There are 115 sites in the program (map). Most sites are sampled each year and include:
 - private homes
 - schools and seniors homes
 - municipal water systems



Location of sites in groundwater pesticide monitoring program

- All raw data (minus private information) is available [online](#).
- A more in-depth summary of the results is available [online](#).
- Each site is sampled once per year in the late fall/early winter by staff of the Department of Environment, Water and Climate Change.

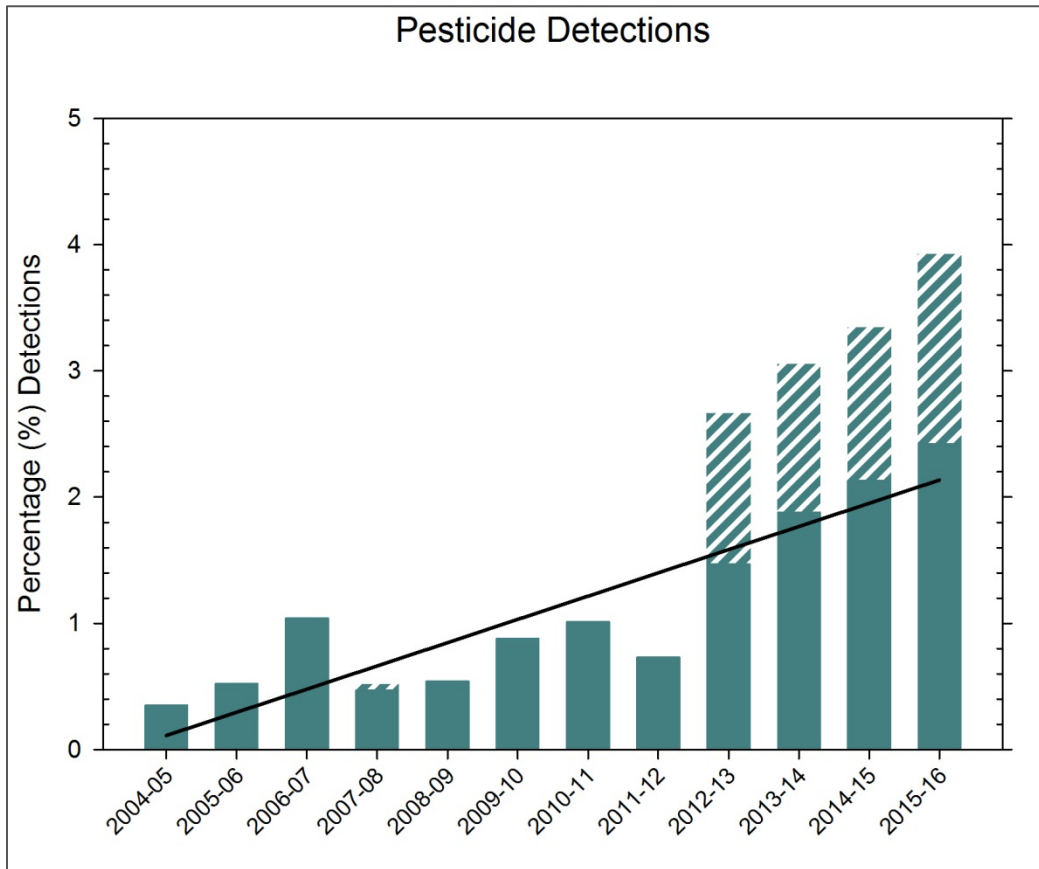
- The samples are analysed at an accredited NB laboratory. Each sample is analysed for 30 to 36 pesticides. Some pesticides that have never had detections are tested only every 3 years.
- Some “additional” pesticides were added to the program in 2007-08, 2008-09, 2009-10 and in 2014-5.
- Statistical analyses were performed and the summary results are presented here.

The Results

Pesticide	Number of Analyses	Total Detections	Percentage Detections	Maximum Recorded Concentration (ppb)	Guideline/Guidance Value (ppb)
Chlorantraniliprole	750	130	17.3%	0.43	15000
Imidacloprid	982	94	9.6%	0.31	426
Clothianidin	671	94	14.0%	0.35	not available
Metalaxyl	1181	42	3.6%	0.15	501
Metribuzin	1181	37	3.0%	1.21	80
Atrazine	1181	37	3.1%	0.65	5
Thiamethoxam	671	31	4.6%	0.38	6
Hexazinone	1181	19	1.6%	0.77	400
Thiabendazole	876	14	1.6%	0.08	210
Chlorothalonil	1181	5	0.4%	0.78	70
Azinphos-methyl	1181	2	0.2%	0.07	20
Carbofuran	1181	2	0.2%	0.14	90
Fludioxonil	575	2	0.3%	0.05	200
Glyphosate	658	2	0.3%	0.05	280
Phorate	671	1	0.1%	0.1	2
Dimethoate	1181	1	0.1%	0.02	20

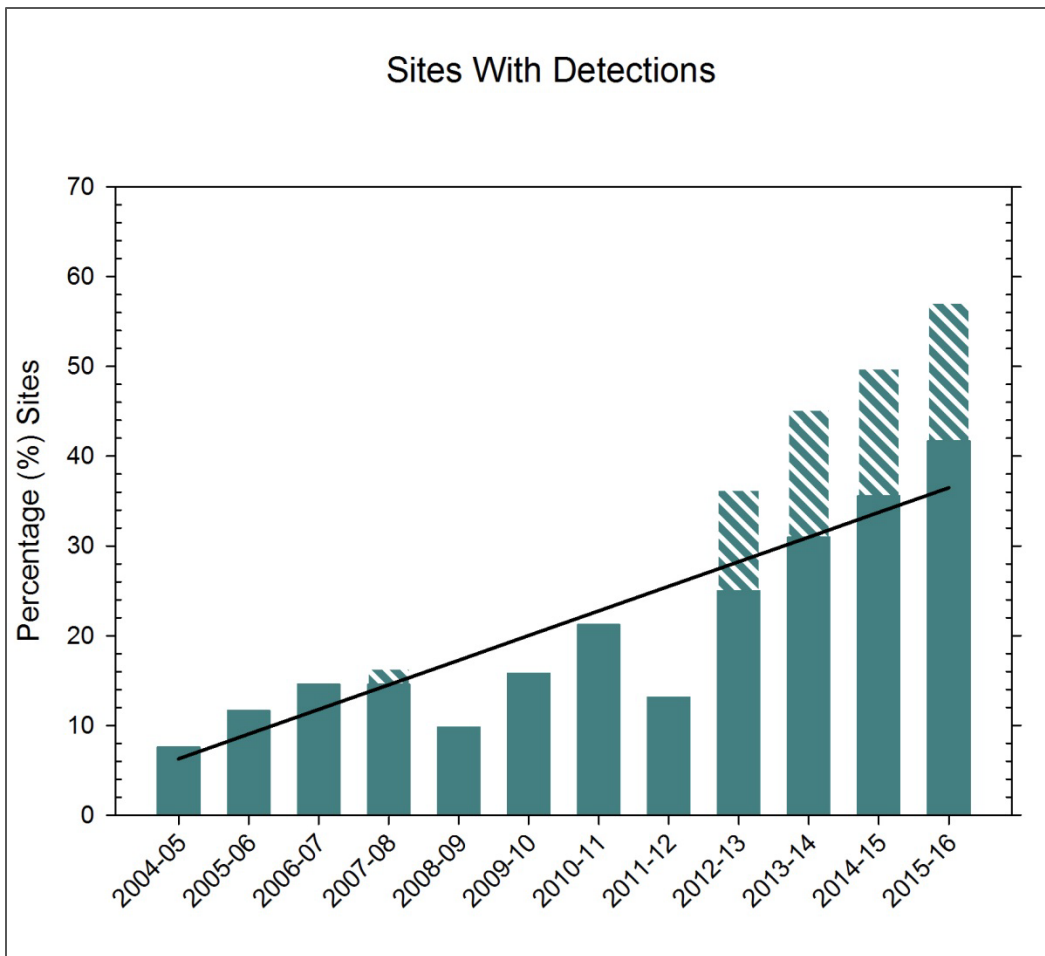
- 16 of the 44 pesticides measured have had detections.
 - Pesticides have been detected 513 times in 31,268 tests.
 - Detections are now found in about 4% of tests carried out each year
- No detected pesticide has ever exceeded its guideline/guidance value.
- The highest concentration of any pesticide found in 11 years was 1.2 ppb (for metribuzin – measured at one site in December 2006). That would be about the same concentration you would get if you added a single grain of sugar to 520 litres of water.
- The majority of detections are a small fraction of the guideline value.
 - 61.6% of all detections (316 of 513) are less than 1/1000th of their guideline.
 - 13.6% of all detections (70 of 513) are between 1/100th and 1/1000th of their guideline.

- 6.0% of all detections (31 of 513) are between 1/10th and 1/100th of their guideline.
- 0.4% all detections (2 of 513) are between 1/5th and 1/10th of their guideline.
- 18.3% of all detections (94 of 513) have no guideline.



The hashed part of each bar shows detections made with the improved lab methods.

- There is an increasing trend in annual detections.
- There has been an increase in detections each year since 2012-13. This is due to:
 1. Pesticides that have been added to the testing since 2008 because of their increasing use. A few of these pesticides are being seen more often.
 2. The testing has gotten better. Pesticides are being found at levels that could not be measured just a few years ago



The hashed part of each bar shows detections made with the improved lab methods.

- There is an increasing trend in the sites that have detections each year.
 - In 2016 57.3% of the sites measured had at least one detection
 - 65.2% of all sites have had at least one detection in the last 12 years of reporting.

Contact Information

For information and questions about the pesticide sampling and results of the Groundwater Pesticide Monitoring Program contained in this report, please contact Glen Robertson, Water and Air Monitoring Specialist, PEI Department of Environment, Water and Climate Change at g Robertson@gov.pe.ca or by calling 902-314-0046.

For information and questions about the data summaries and statistical analyses contained in this report, please contact Cindy Crane, Surface Water Biologist, PEI Department of Environment, Water and Climate Change at cscrane@gov.pe.ca or by calling 902-368-5179.