



Cassandra PEI

Charting a better future for Prince Edward Island

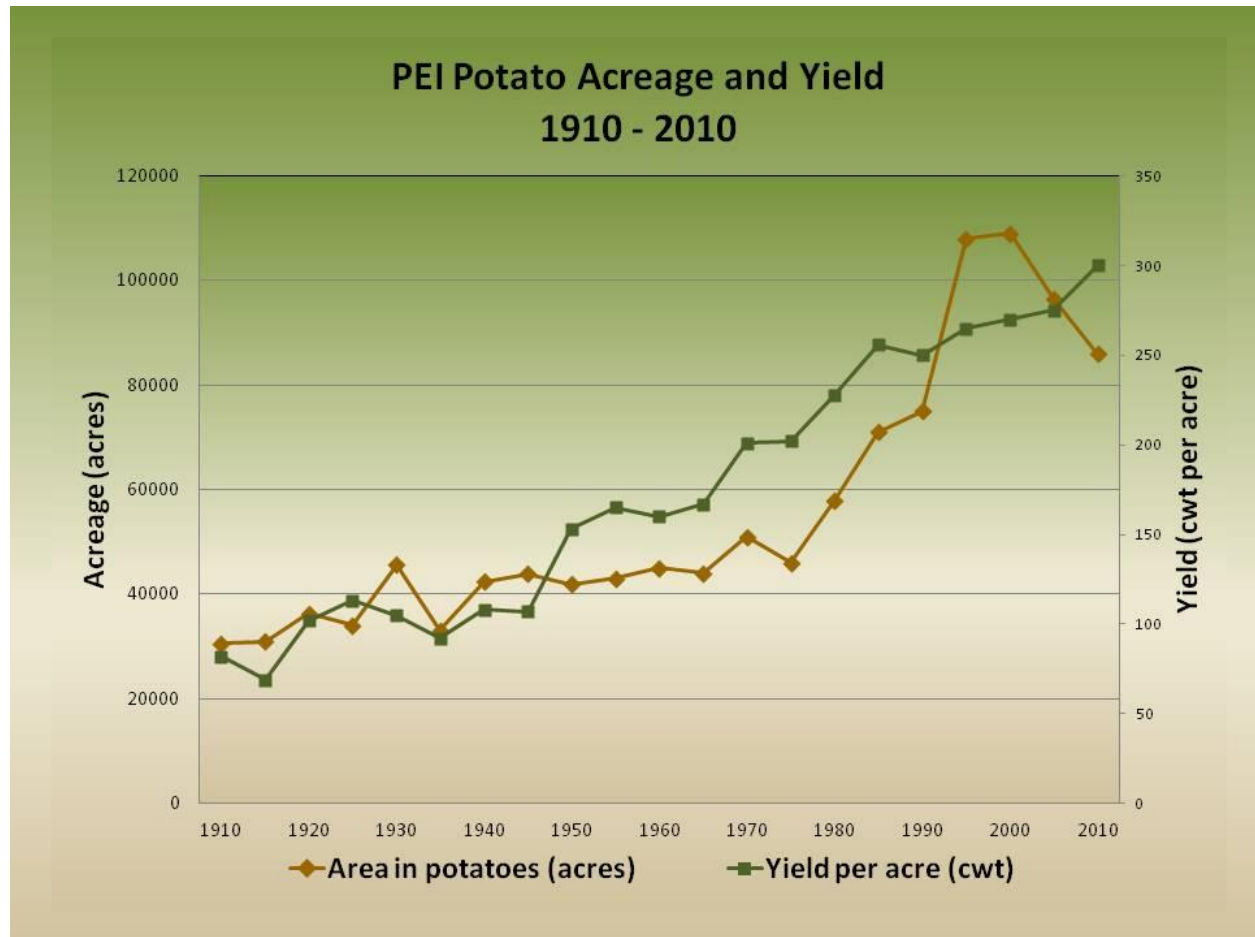
In mythology, Cassandra could see the future but was not believed. For decades, we have been predicting the environmental, social and economic outcomes of industrial agriculture on Prince Edward Island. In the following pages, we show that these predictions have come true, where this road takes us, and that there is a better way.

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What's happening on PEI: Part 1 – Increasing area and intensity of potatoes

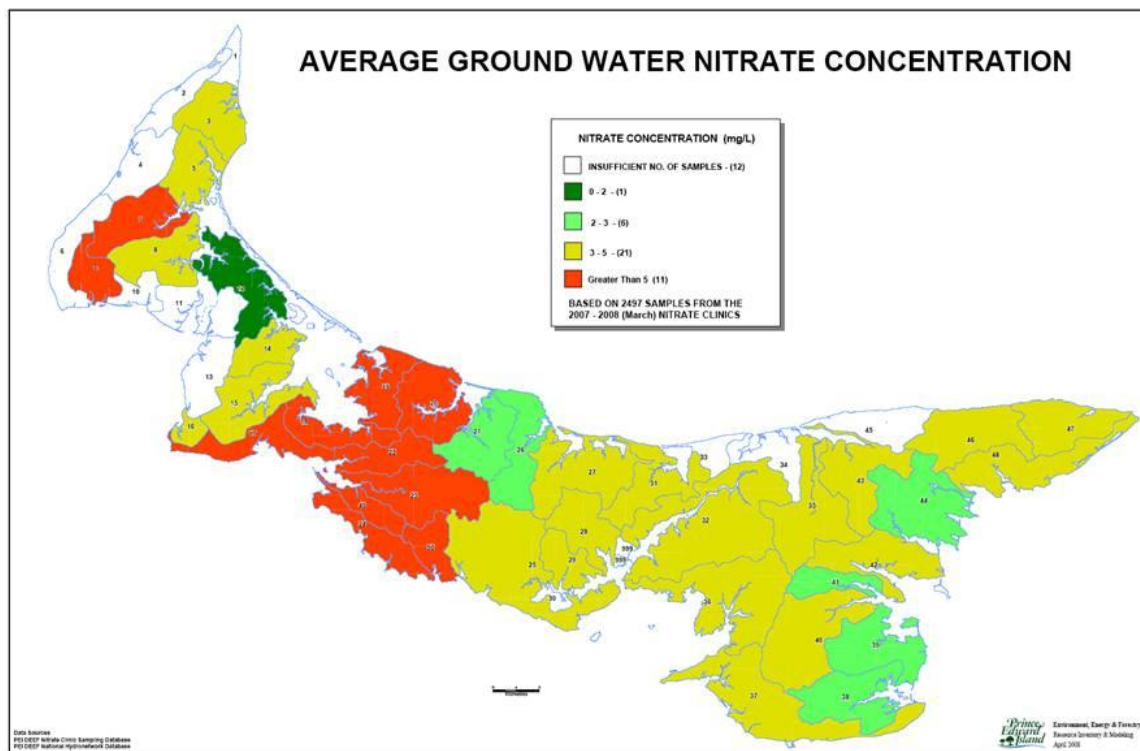
Not only has the area of potatoes on PEI increased dramatically, the intensity – the yield squeezed out of each acre – has also grown. This increases the pressure on our land, water and people. Cassandra will show some of the consequences of this, and that there is a better way.



What's happening on PEI: Part 2 – We are drinking chemical fertilizer

Island-wide testing clinics held in 2008 found nitrate in two-thirds of home well water samples. In the most intensively-farmed areas –Albany, Borden-Carleton, Lower Freetown, Middleton and Mount Royal, for example –more than 20% of samples exceeded the maximum of 10 mg/L recommended by the Canadian Drinking Water Guidelines. In some areas, samples from private wells are more than 20 mg/L. “Pristine” PEI ground water nitrate is in the range of 0.05 mg/L. Increased levels mean there is chemical fertilizer in the water.

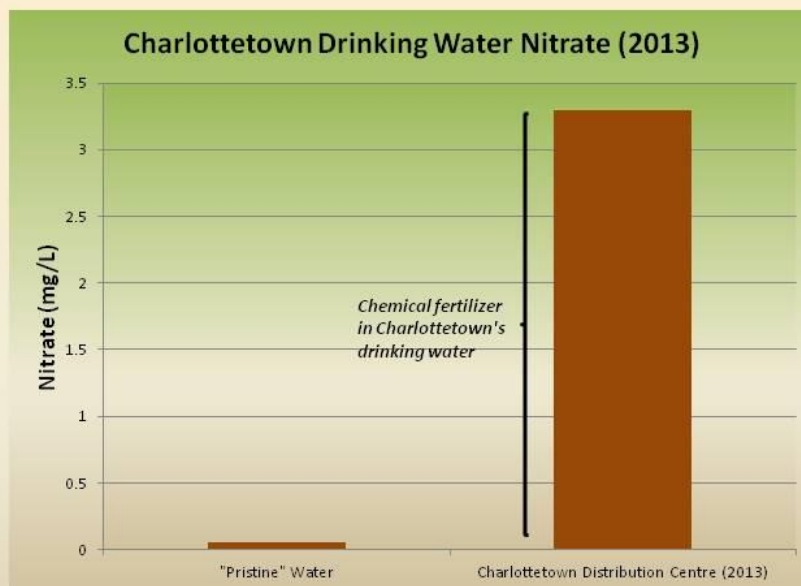
How much chemical fertilizer is in your drinking water? If you think this is only an issue for rural Islanders, check the next page to find out what's happening in Charlottetown.



What's happening on PEI: Part 3 – Nitrate is not just a rural issue

Although the most contaminated water is found in PEI's potato growing areas, Charlottetown is not immune. 2013 water quality data show that Charlottetown's drinking water has nitrate levels nearly 70 times higher than pristine water. This means that every resident of Charlottetown is drinking chemical fertilizer.

There are very real economic costs to nitrate contamination. The next page highlights some examples of this.

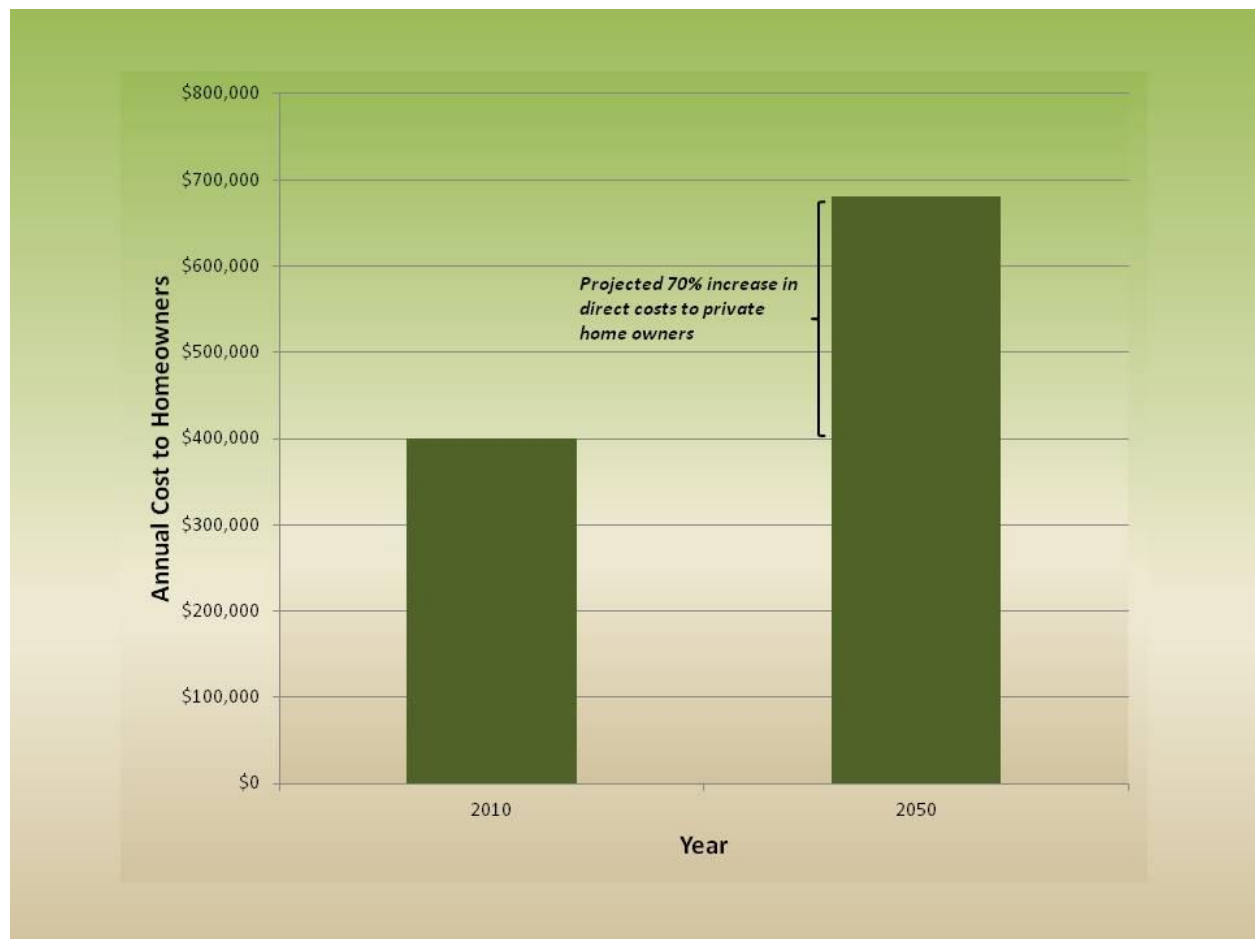


What's happening on PEI: Part 4 – We are paying for these results

Owners of nitrate-contaminated wells generally have two choices: dig a deeper well or install a treatment device. Using the average number of private wells per year testing over the 10 mg/L guideline, this represents a cost to homeowners of as much as \$400,000 per year. Some estimate that this will increase by up to 70% by 2050.

There are costs to municipalities as well. It has been estimated that the costs of treating municipal water for nitrate would double the costs of securing water for a city the size of Charlottetown.

These costs are a direct effect of the industrial agricultural model, yet are not borne by that sector. This is a type of subsidy.



What's happening on PEI: Part 5 – Our surface water stinks

Nitrate applied to farmland eventually makes its way to our bays where it encourages sea lettuce growth. When the sea lettuce dies, it uses up oxygen in the water –oxygen that is essential for other life. As a result, fish, shellfish and other animals in the water die. The stink of rotting sea lettuce affects nearby residents and tourism operators, and the sea lettuce itself interferes with our shell-fishery.

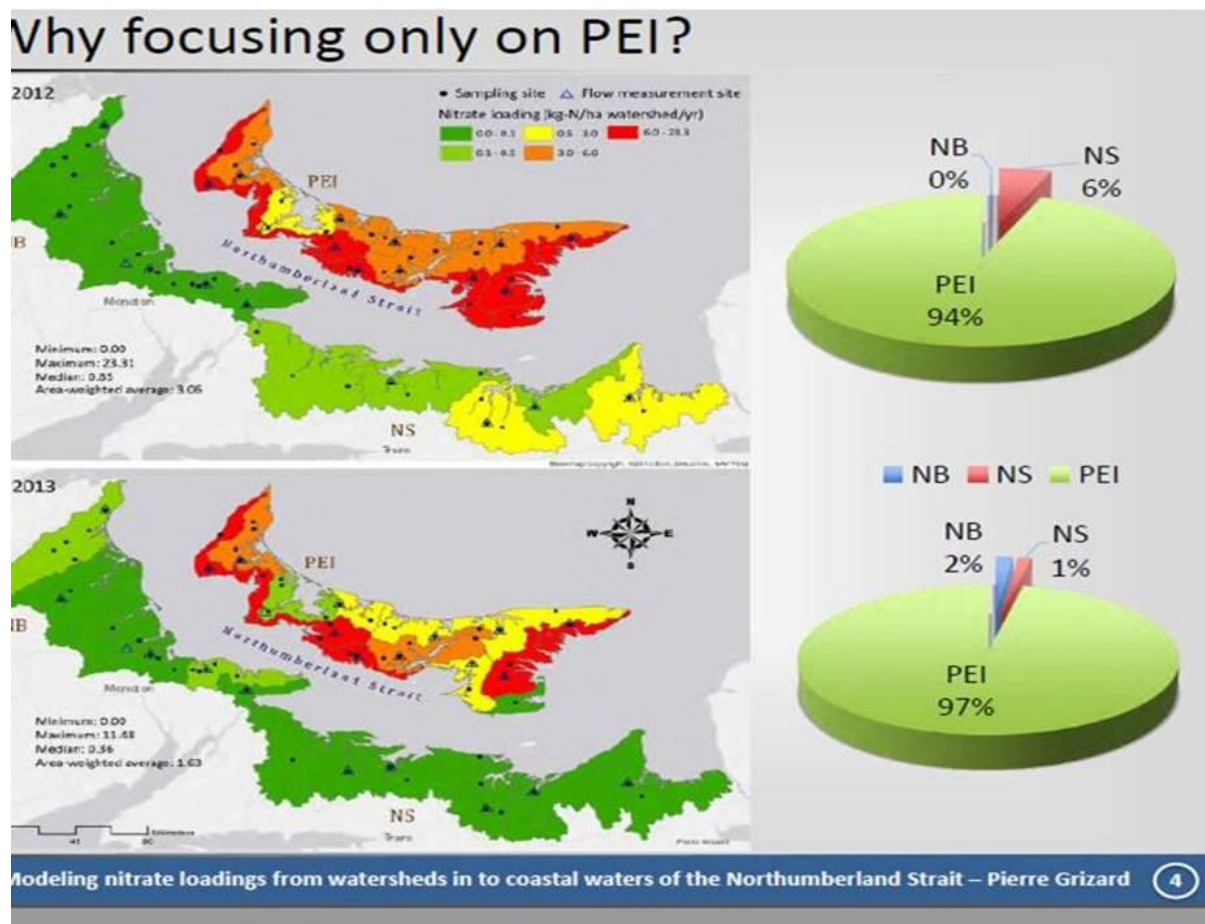
The next page shows that effects of PEI's industrial agricultural model do not stop at our borders.



What's happening on PEI: Part 6 – What happens here does not stay here

Nitrate from PEI farmland does not stop at our bays. It also contaminates the Northumberland Strait and surrounding waters. New research under the Northumberland Strait Environmental Monitoring Partnership shows that 97% of the nitrate in these waters comes from PEI, and 91% of this comes from farmland. What we do with our land has far-reaching effects, including to other industries such as the \$90 million per year lobster fishery.

Check the next page for some examples of the economic impacts of nitrate.



What's happening on PEI: Part 7 – We are paying for these results

Nitrate contamination of our bays has direct economic implications to land owners, shell fishers and tourism operators. Consider that:

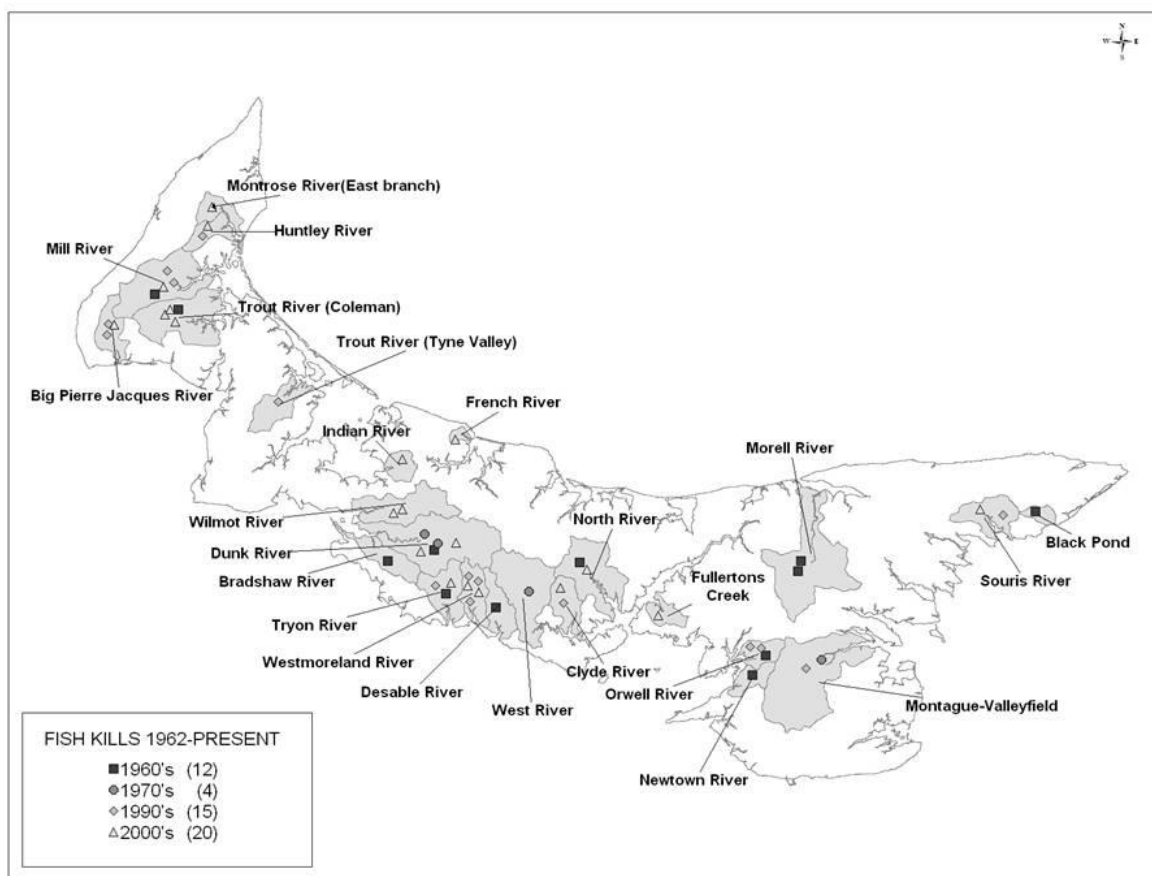
- the landed value of PEI's lobster industry in 2013 was \$91.4 million. What is nitrate contamination in the Strait doing to this industry, and how do NB and NS feel about this?
- the landed value of mussels and oysters in 2013 was \$54.8 million. Anoxic bays directly threaten this industry.
- the assessed value of properties for the Southwest River - just ONE of 45 Island estuaries that regularly goes anoxic - is more than \$41 million.
- the potential impact to PEI's \$368 million per year tourism industry –an industry that relies heavily on coastal experiences and a clean, green image – is incalculable.

True calculation of the economic impact of industrial agriculture to the Island must include the value of what it is costing these other important industries.

Sector	Value	Comments
Potato	\$244.5 million	Farm cash receipts in 2013
Shellfish– mussels & oysters	\$54.8 million	Landed value in 2013. Risk from effects of silt and nitrate in estuaries.
Shellfish– Lobster	\$91.4 million	Landed value in 2013. Risk from effects of silt and nitrate from PEI in Northumberland Strait.
Recreational Fishery	\$4 million	Direct value in 2010. Risk from nitrate, pesticides and silt.
Municipalities	\$1.5 million capital + operating costs per municipality	Increased costs associated with treating water for nitrate. This would double the cost of water securement, based on a Charlottetown-sized utility.
Private home owners	\$400,000 annually	Cost to replace nitrate-contaminated wells today, projected to increase 70% by 2050.
Coastal land owners	Hundreds of millions	Value of properties bordering estuaries (example: \$41 million in assessed property values for just ONE of 45 estuaries that regularly go anoxic)
Tourism	\$368 million	Estimated value of tourism in 2012. Risk to the PEI brand from fish kills, water quality, stinking estuaries, etc.

What's happening on PEI: Part 8 – Fish kills: the tip of the iceberg

More than 50 pesticide-related fish kills have been reported on PEI, but this does not reflect the size of the problem. More than just fish are killed: other in-stream animals are affected, and it is likely that scavengers are too. And there is no question that we have had more fish kills than this –not all kills are found. Despite tremendous publicity, public outrage, and promises by industry and Government, the frequency of fish kills has been unchanging for decades. 2014 was no exception, with a fish kill found in the North River in August.



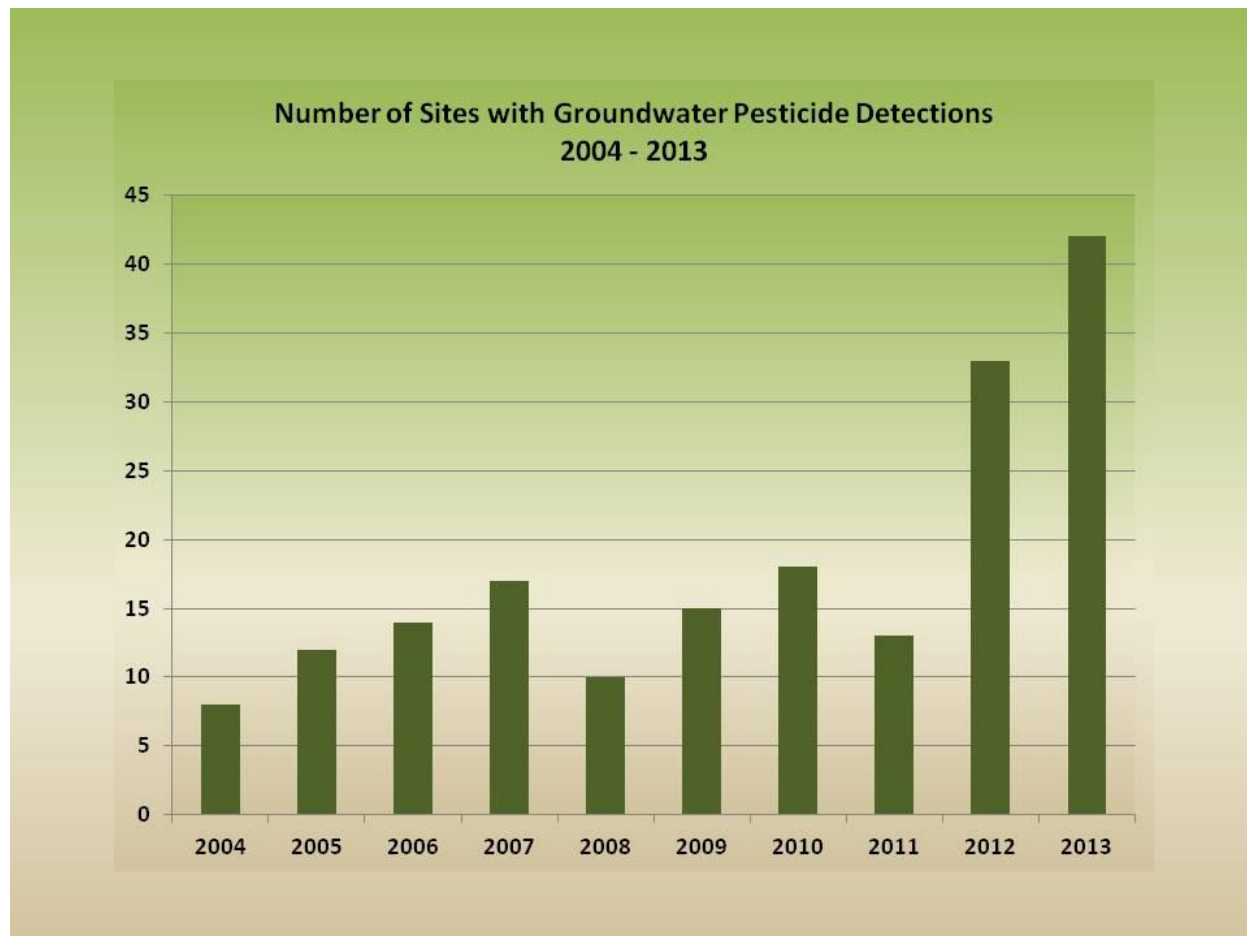
What's happening on PEI: Part 9 – What's in your drinking water?

In addition to being washed into streams and rivers, pesticides also end up in our groundwater. Since 2004, 15 pesticides (listed below) have been found in Island drinking water. In the most heavily farmed areas of PEI, pesticides are found in more than 90% of wells tested. Data released in September show a cocktail of pesticides found in the drinking water of nine Island schools and three seniors homes.

The interaction of these chemicals is also a concern. For example, Atrazine has been shown to increase the toxicity of some chemicals it is combined with. Is this what Islanders want for our future?

Pesticides that have been found in PEI groundwater are:

Atrazine	Azinphos-methyl	Carbofuran	Chlorantraniliprole
Chlorothalonil	Clothianidine	Dimethoate	Glysophate
Hexazinone	Imadacloprid	Metalaxl	Metribuzin
Phorate	Thiabendazole	Thiamethoxam	



(Note: Lower detection limits for two pesticides resulted in increased positive samples in 2012 and 2013)

What's happening on PEI: Part 10 – Money down the drain

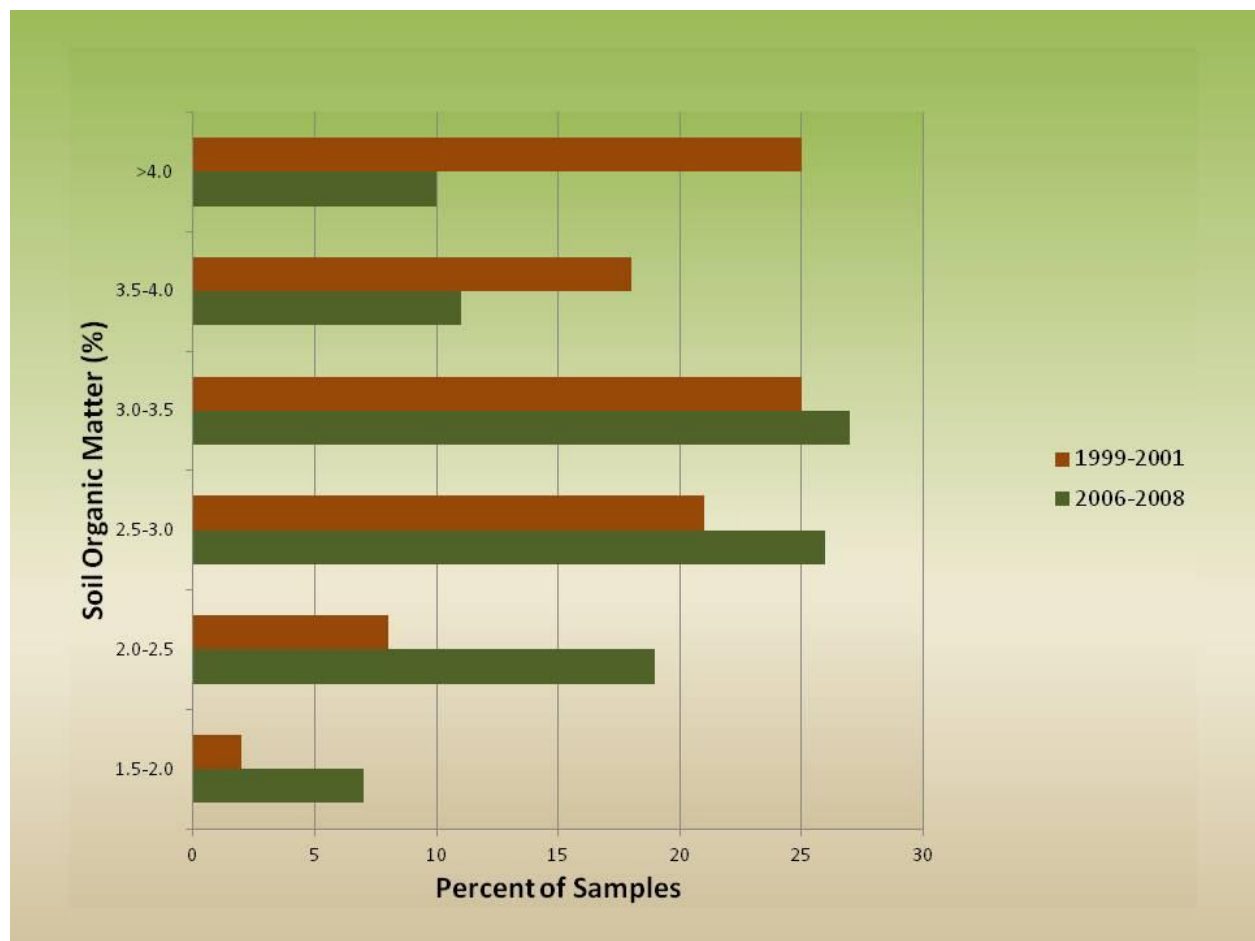
The PEI Government says soil loss of 7 tonnes per hectare per year (t/ha/yr) is acceptable, yet estimates annual soil losses between 20 and 70 t/ha/yr. At the lower end of this estimate, the 90,500 acres (36,650 ha) of potatoes planted in 2014 can be expected to lose nearly three quarters of a million tons of soil this year alone. Using PEI Government numbers, that represents more than \$2.5 million worth of lost nutrients. Dredging that out of our waterways and trucking it away would cost more than \$6 million more. And that's just for ONE YEAR's loss.



What's happening on PEI: Part 11 –Mining the soil











Organic matter is an important indicator of soil health. Healthier soils hold water better, are less prone to erosion, and need less fertilizer. PEI soil organic matter continues to decrease as a direct result of current farming practices. The proportion of samples BELOW 3% organic matter (generally considered the minimum for healthy soil) grew from 32% to 52% in a decade. It is a downward spiral: poorer soil leads to harsher practices –more fertilizer and pesticides, for example – which leads to even poorer soil.

And now we hear that industrial agriculture wants to bring fumigation to PEI. Is this what we want for our Island?



What's happening on PEI - Summary

The environmental results of our current path speak for themselves. On the next page, we outline how Islanders are paying for these results with our own money.

Indicator	Long Term Trend	Comments
Row crop area and intensity		Increasing. More rapidly since ~1980.
Ground Water Nitrate		Increasing since at least 1984/85.
Surface Water Nitrate		Increasing since at least 1980. Dead estuaries happening earlier and in more sites
Fish Kills		Unchanging frequency since at least 1994. Likely more kills happening but not found.
Pesticide Detections		Increasing number of sites and chemicals since at least 2004.
Soil Loss		Increasing with row crop area and intensity.
Soil Organic Matter		Known to be decreasing since 1999; likely a much longer term trend.
 Getting Worse  No Change  Improving		

Summary – We are paying for these results

The effects of industrial agriculture go far beyond environment. Compare the value of the potato industry with the amount of taxpayer money being used to prop up this unsustainable industry. Cassandra suggests that this public subsidy meets or exceeds the direct contributions of agriculture to PEI.

Do Islanders really want to continue to subsidize industrial agriculture with our air, land, water and tax dollars?

Taxpayer Subsidy	Value (2013)	Department or Agency
Property tax assessment loss for farmland	\$776,654,500	Finance, Energy & Municipal Affairs
Loans to the agricultural sector	\$27,268,693 ¹	Finance PEI
Agricultural insurance	\$26,052,864	Agriculture & Forestry
Tax revenue lost due to property tax assessment loss	\$11,600,000 (estimated)	Finance, Energy & Municipal Affairs
Direct agricultural grants	\$7,061,255	Agriculture & Forestry
Marked Gas and Diesel (waived fuel taxes)	\$2,935,000	Finance, Energy & Municipal Affairs
Tax exemptions – e.g. pesticides, fertilizer, farm machinery	Unknown ²	Finance, Energy & Municipal Affairs
Tax credits – claimed on a wide range of products and services on which HST is paid	Unknown ²	Finance, Energy & Municipal Affairs

¹ Finance PEI reported a further \$98,303,418 in loans and notes to the manufacturing and processing sector. It is not clear how much, if any, of this was for agriculture.

² Government does not track point-of-sale tax exemptions, and information on tax credits was unavailable. Cassandra estimates the value of this to be in the hundreds of millions annually.

An Exit Strategy – Where to from here?

Today PEI has choices, but the clock is ticking. McCain Foods has closed and it may only be a matter of time before Cavendish Farms does the same. We are one social media campaign away from losing our reputation as “clean and green”. Our markets for beef, dairy, produce, fin fish, shellfish and specialty products are at risk. Our ability to attract tourists, businesses and new residents is threatened. And we continue to pump huge amounts of public money into this unsustainable situation. We need to imagine a new – better – future.



The Path Forward – It's not rocket science

For more than four decades, Islanders and their Governments have been aware of the environmental, social and economic consequences of industrial agriculture. Over this time, there has been a pile of extensive reports – such as the small sample shown below – with hundreds of recommendations. Yet the problems continue, and worsen.

Our suggestions are not new, and the solutions are not rocket science. What we think IS new: the climate of public awareness and impending changes for PEI's potato industry.

Next: the first step on a new road.

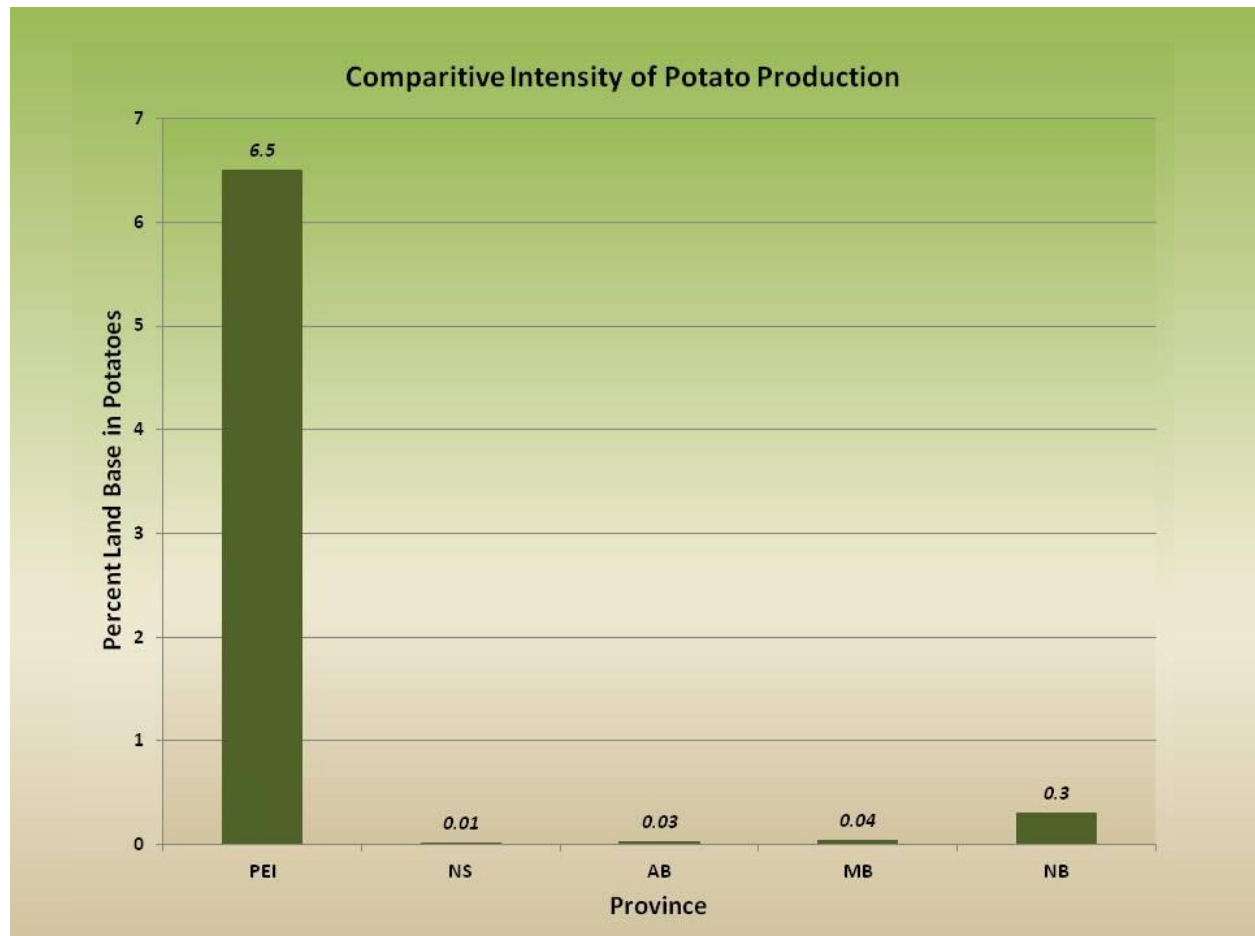


Charting a New Course – Step 1: Admit there is a problem

We know where the current road leads, and we have the power to chart a new course. The first step on this new path is to acknowledge that the industrial agricultural model is not working for PEI. It is not sustainable. It will end either by our choice and with our planning or without.

Environmentally, PEI simply cannot grow 90,000 acres of potatoes on our tiny land base without negative effects. This level of production is far too intense. Economically, PEI's potato sector is the least profitable in Canada.

We need to let go of our deep cultural identification with potato production. We need to start a new conversation, one that imagines PEI with a profitable agricultural sector not reliant on one product sold to one company.



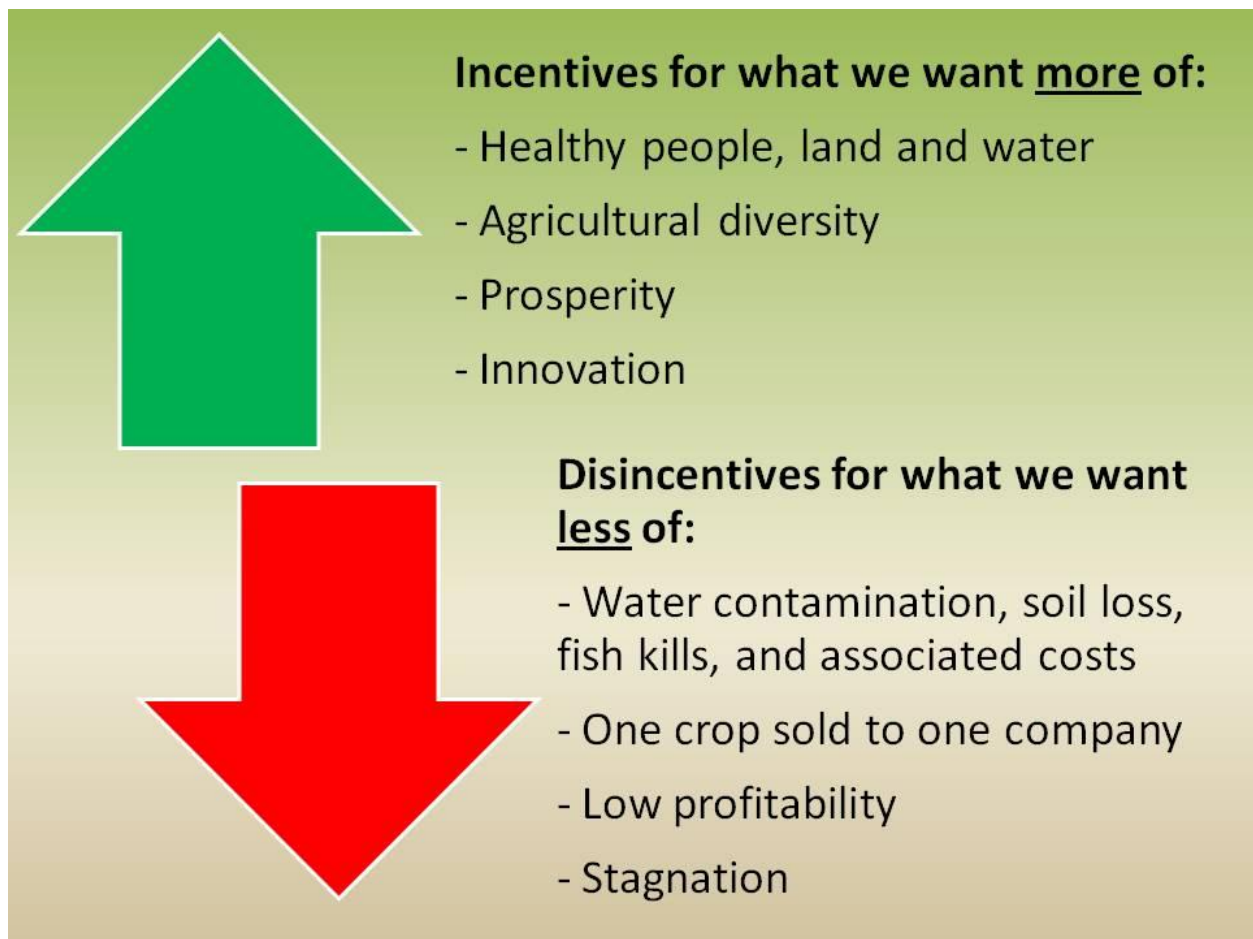
Charting a New Course – Step 2: Transform the carrots and sticks

The first step is admitting there is a problem. The next step is to stop supporting that problem.

PEI is subsidizing what we don't want and taxing what we do want - exactly the opposite of what we should be doing. We **MUST** transform the carrots and sticks that guide industry. The hundreds of millions of dollars propping up industrial agriculture can be used to help industry – and PEI – evolve into something sustainable.

A few examples:

- identify what we want: set targets for reducing soil loss, increasing soil organic matter, decreasing row crop acreage, decreasing nitrate and pesticide inputs, and increasing forest cover, among others;
- link access to all Government supports –including agricultural programs, crop insurance, and preferential tax rates –to identified outcomes and progress towards those targets;
- start taxing what we want less of, such as fertilizer and pesticides;
- start linking the economic costs of industrial agriculture back to this sector –the polluter pays principle.



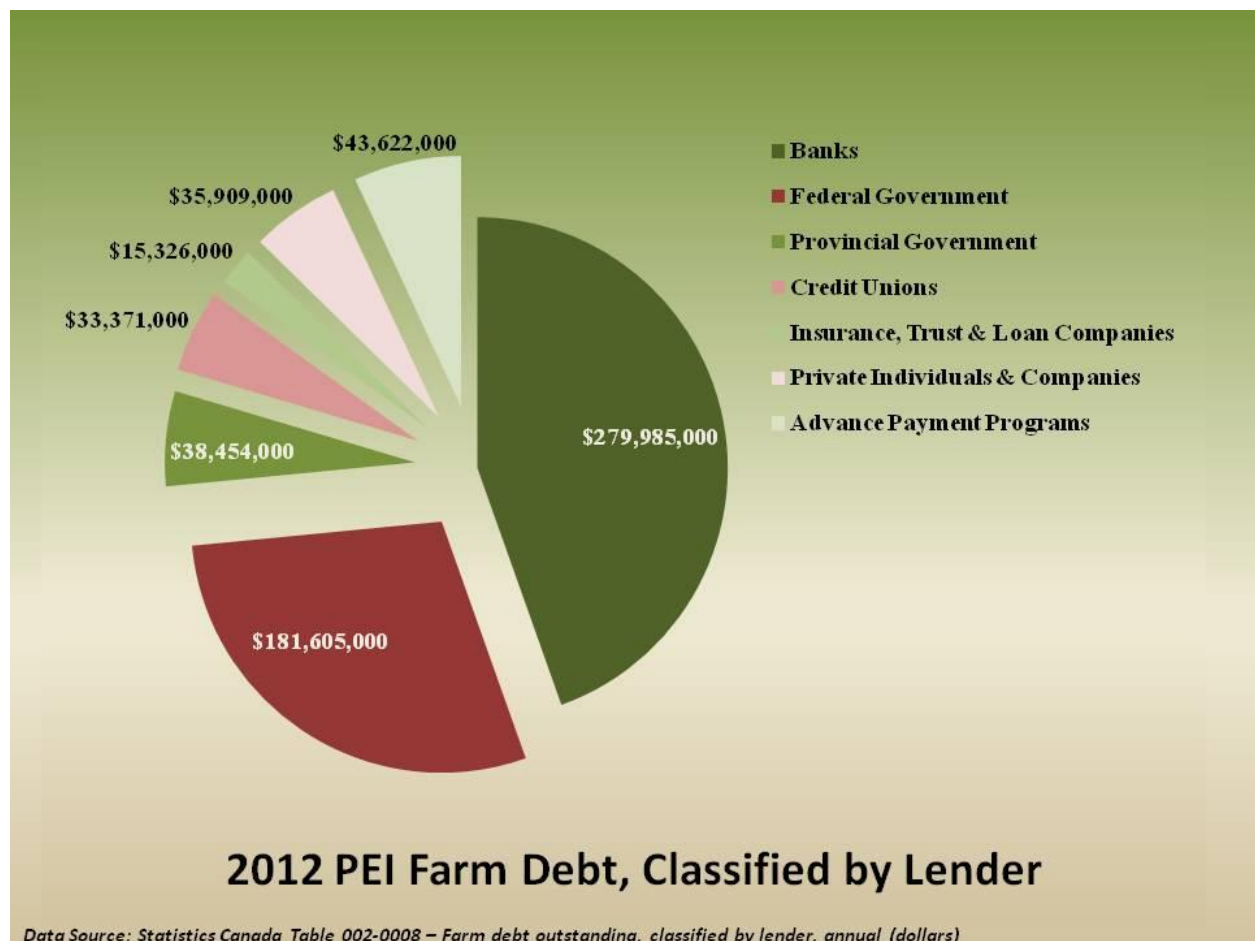
Charting a New Course – Step 3: Identify the Challenges

We must change - the Island's future depends on it.

The transition to a new agricultural future for PEI may not be easy, but it is essential. Reforming our system of taxes, rebates, subsidies and supports is needed, but challenges remain. One of these is that we cannot move forward from a clean slate: PEI's outstanding farm debt was \$628 million in 2012, up nearly 25% (from \$504 million) a decade earlier.

We do not believe this is a barrier to change, but merely an issue that must be addressed. More importantly, it is an issue that remains whether we choose our future and plan for a post-Cavendish Farms agricultural economy or simply react to what happens.

Today, we still have choices. But time is running out.



Charting a New Course – Step 4: Cultivate Diversity

PEI can have an agricultural future that does not rely one crop sold to one company.

In recent years, PEI has seen the arrival of Buddhist Monks with a chain of grocery stores in Taiwan. Some say they will buy as much natural and organic food as PEI can produce. Earlier this year, Canadian Nectar Products Inc announced its intention to make PEI the “apple capital of the world”, with orchards, a future production and packaging facility, and a bioscience lab. PEI has many innovative, profitable, diversified farms.

We need to think beyond finding another potato processor to take over the McCain’s plant, or expanding irrigation to boost potato yields. We need to prospect for new markets and new business opportunities. We need to cultivate diversity.

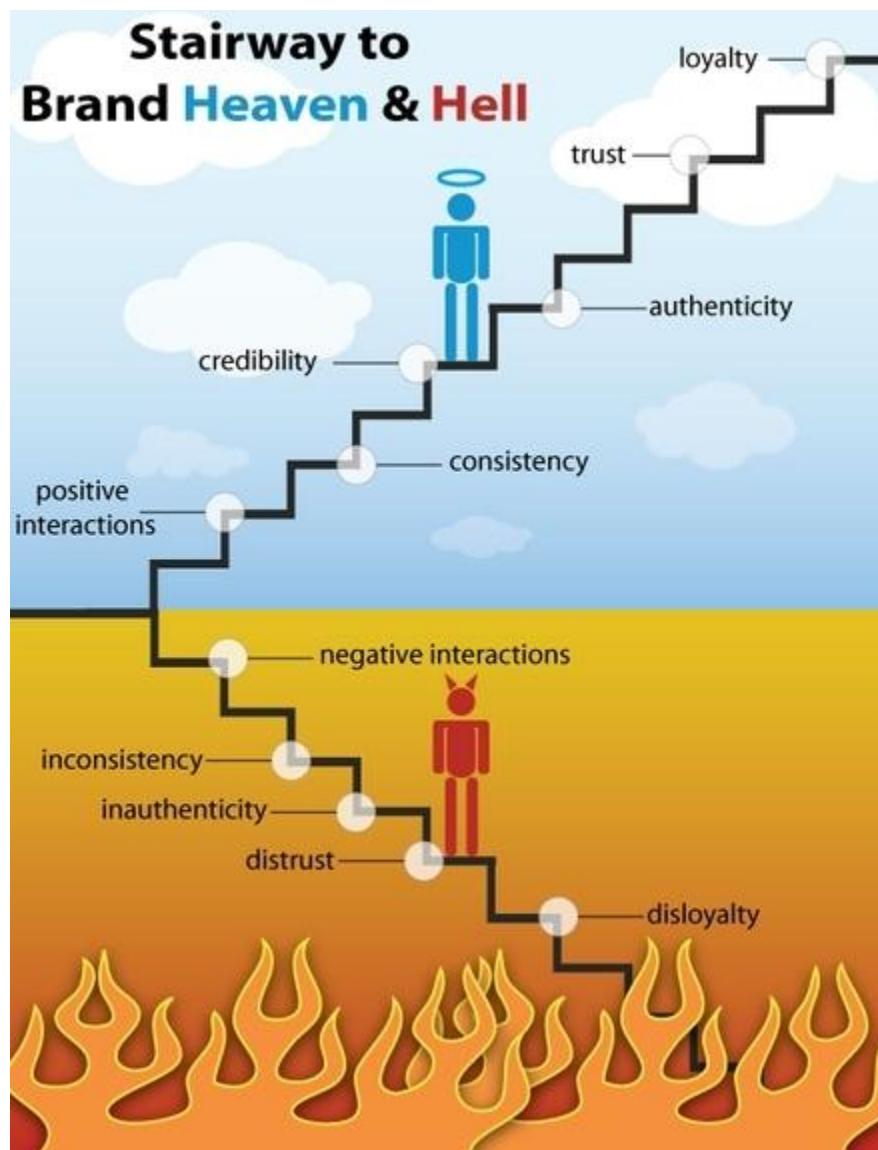


Charting a New Course – Step 5: Develop and Protect the PEI Brand

Finally, PEI needs to build our uniqueness and strengths into a brand. A brand is not a logo. It is a promise to consumers and it provides a competitive advantage. It must be supported by our reputation and rooted in reality.

Developing a PEI brand based on sustainable farms and sustainable food production can build a lasting relationship with consumers. But consumers are more savvy than they once were, and such assertions must be solid. Touting PEI as having the highest adoption rate of environmental farm plans while our soil quality decreases, fish kills continue, and nitrate contaminates our groundwater, bays and the Northumberland Strait is a dangerous game.

We still have time to live up to our reputation as “clean and green” and build this into a profitable cross-sectoral brand. But time is running out.



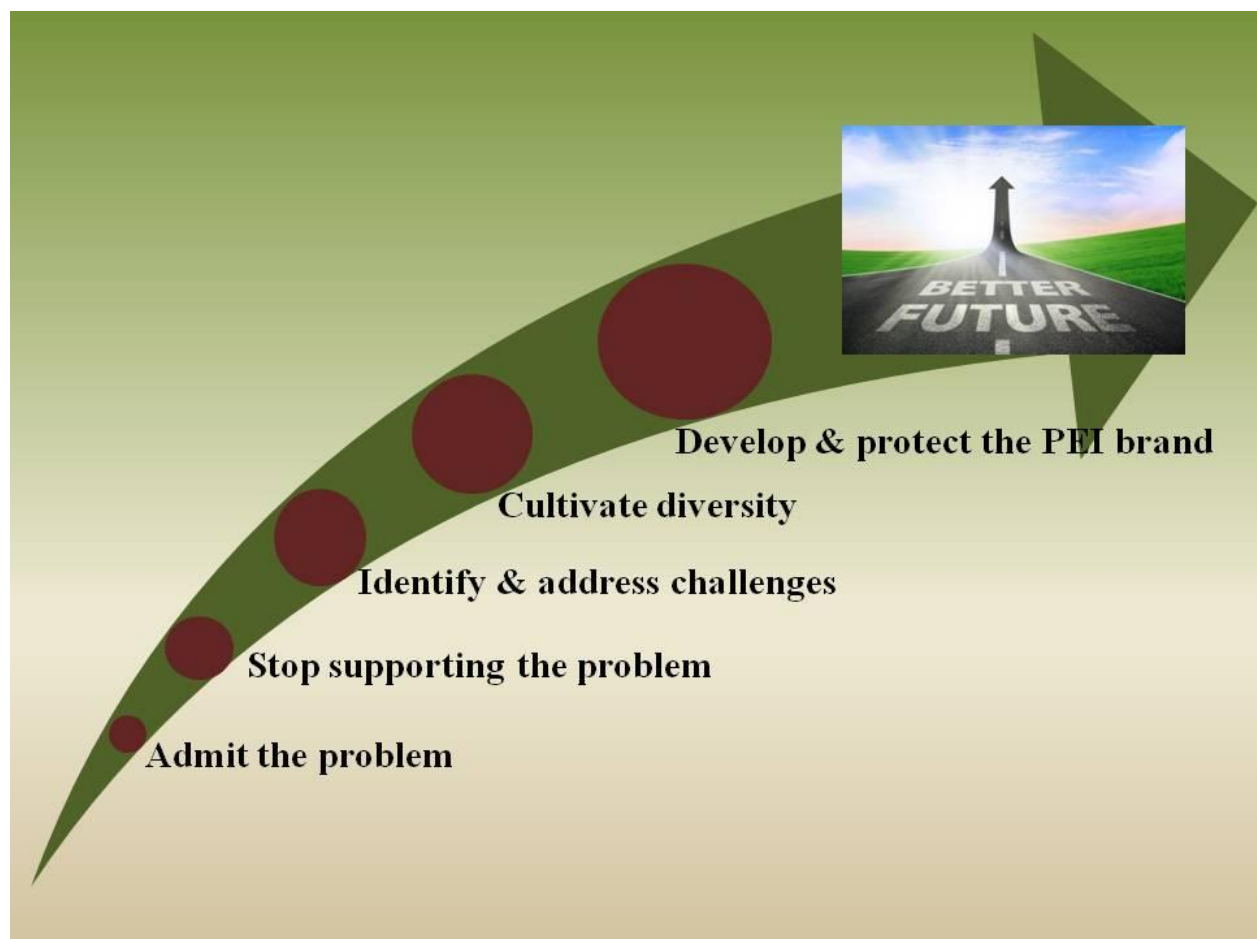
Charting a New Course – An Exit Strategy

By any measure, PEI's industrial agricultural model is not sustainable:

- ***Environmentally***, key indicators of soil and water health are poor and getting worse.
- ***Economically***, our potato sector is the least profitable in Canada and highly vulnerable.
- ***Socially***, there is growing tension between the farm and non-farm communities, and within the agricultural sector itself.

Continuing on this road is the very definition of insanity. Taking a new path requires three things: innovative thinking, smart incentives and political will. PEI is rich with innovation. We have a basket of incentives that can be redesigned to support sustainability. Political will requires public support. That's where you come in.

Next: how you can help.



Charting a New Course – YOUR role

Industry is well-organized and has a vested interest in the status quo. It is no surprise that Government regularly hears from groups such as the PEI Potato Board, Cavendish Farms and CropLife Canada, among others. There is nothing wrong with this - that is their job. But we need to do our job and ensure Government also hears from Islanders. We must do more than talk among ourselves and preach to the converted.

If you are tired of subsidizing industrial agriculture with your air, land, water and money – if you believe there is a better way – you must demand better. Contact your MLA and the Premier. Let all political parties know it is time to help the agricultural sector evolve. Write letters to the editor. Spread the word. Help us start a new conversation.

It takes courage to chart a new course. Government and industry need your support to be courageous.

You can find your electoral district here:

<http://www.electionspei.ca/provincial/districts/find/index.php>

District	MLA	E-mail
1. Souris-Elmira	Colin Lavie	clavie@assembly.pe.ca
2. Georgetown-St. Peters	Steven Myers	samyers@assembly.pe.ca
3. Montague-Kilmuir	Allen Roach	afroach@gov.pe.ca
4. Belfast-Murray River	Charles McGeoghegan	cemcgeoghegan@assembly.pe.ca
5. Vernon River-Stratford	Alan McIsaac	jancisaac@gov.pe.ca
6. Stratford-Kinlock	James Aylward	jsaylward@assembly.pe.ca
7. Morell-Mermaid	Olive Crane	omcrane@assembly.pe.ca
8. Tracadie-Hillsborough Park	Buck Watts	fdwatts@assembly.pe.ca
9. York-Oyster Bed	Robert Vessey	rsvessery@gov.pe.ca
10. Charlottetown-Sherwood	Robert Mitchell	rjmitchell@assembly.pe.ca
11. Charlottetown-Parkdale	Doug Currie	dwcurrie@gov.pe.ca
12. Charlottetown-Victoria Park	Richard Brown	rebrown@assembly.pe.ca
13. Charlottetown-Brighton	Robert Ghiz	rwjghiz@gov.pe.ca
14. Charlottetown-Lewis Point	Kathleen Casey	kmcasey@assembly.pe.ca

District	MLA	E-mail
15. West Royalty-Springvale	Bush Dumville	sfdumville@assembly.pe.ca
16. Cornwall-Meadowbank	Ron MacKinley	rwmackinley@gov.pe.ca
17. Kellys Cross-Cumberland	Valerie Docherty	vedocherty@gov.pe.ca
18. Rustico-Emerald	Carolyn Bertram	cibertram@assembly.pe.ca
19. Borden-Kinkora	George Webster	gtwebster@gov.pe.ca
20. Kensington-Malpeque	Wes Sheridan	wjsheridan@gov.pe.ca
21. Summerside-Wilmot	Janice Sherry	jasherry@gov.pe.ca
22. Summerside-St. Eleanors	Gerard Greenan	lggreenan@assembly.pe.ca
23. Tyne Valley-Linkletter	Paula Biggar	pjbiggar@assembly.pe.ca
24. Evangeline-Miscouche	Sonny Gallant	sgallant@assembly.pe.ca
25. O'Leary-Inverness	Robert Henderson	rlhenderson@gov.pe.ca
26. Alberton-Roseville	Pat Murphy	pwmurphy@assembly.pe.ca
27. Tignish-Palmer Road	Hal Perry	jhperry@assembly.pe.ca

Endgame - Why?

Cassandra formed for three reasons:

- (1) To give Islanders clear, concise facts about PEI's environmental health. Too often, this information is buried in websites, or presented in formats hard to understand.
- (2) To dig out information about how much public money is used to support industrial agriculture. Islanders not concerned about the environment may care that hundreds of millions of tax dollars are propping up this sector. Additionally, the sting of HST can be more acute when you learn that industrial agriculture gets a tax-free ride on most inputs – including chemical pesticides and fertilizer.
- (3) To spark a new conversation. This is not about damning individual farmers - these are our family, friends, and neighbours. It IS about admitting that industrial agriculture is a failed experiment on PEI, one that has cost us economically, socially and environmentally. The new conversation stops focusing on the past and looks to the future.



Endgame - Why Now?

In the bigger picture, we believe PEI is at a crossroads: we still have the option to choose sustainability and prosperity over further environmental degradation and economic hardship. But time is running out.

- McCain's has left: we can choose to replace it with another potato business, or look to the future and diversify.
- Our other major player will leave eventually: we can choose to plan our post-Cavendish Farms agricultural economy, or passively accept what comes.
- Industry is asking for increased access to water, a public resource. We can choose to further subsidize industrial agriculture and push individual farmers deeper into debt, or take a new road.
- Requests for soil fumigation are on the horizon. We can choose to continue degradation of our soil and water, or find a better way.

More immediately, the Provincial Legislature is now open. Public consultations on a new Water Act will soon begin. Liberals and Conservatives will be hosting leadership conventions in the coming months. An election could be held as early as next spring. It is tremendously hard for Islanders to get the attention of Government and political parties on issues requiring courage. Each of these provides an opportunity to do so.



End Game - What Next?

Like the original Cassandra, we see what the future holds if PEI continues on its current path. Taking a new road requires more than tinkering with buffer zones or crop rotation rules. More berms and grassed waterways will not solve the problem. We need a fundamental shift in the conversation. We need to start talking about a new agricultural future for PEI and a model other than the current failed experiment.

What's next is up to you. This page has reached more than 4,000 people, and we are grateful for the likes, shares, messages and other support. Thank you.

But we know a Facebook page alone will not affect change, and hitting "like" is not social action. If you share our view, please take the next step. Use the information shared here as you wish - spread it far and wide. Develop your own ideas and add them to ours. Ask your Government what it is doing to prepare for life after Cavendish Farms. Tell your elected officials that the status quo is no longer acceptable and we need to do better. Make this an issue for the upcoming leadership conventions and for all parties in the election.

The Island's future depends on it.



Post	Data Source
Potato Area and Yield	Statistics Canada – Area, production and farm value of potatoes (annual): http://www.statcan.gc.ca/pub/22-008-x/2012003/t005-eng.htm
Ground Water Nitrate	Department of Environment, Labour and Justice 2007-08 Nitrate Clinic Results and Summary
Charlottetown Nitrate	City of Charlottetown Water Reports: http://www.city.charlottetown.pe.ca/pdfs2013/2013%20Water%20Report-Final.pdf
Nitrate Annual Cost to Homeowners	Somers, G and M.M. Savard. <i>Economic implications of increasing nitrate in groundwater due to climate change, Prince Edward Island, Canada</i> http://www.iwra.org/congress/2008/resource/authors/abs696_article.pdf
Surface Water Nitrate	Department of Environment, Labour and Justice: http://www.gov.pe.ca/environment/anoxic-events
Northumberland Strait Nitrate	Northumberland Strait Environmental Monitoring Partnership: http://canadianriversinstitute.com/uploads/NorSt-EMP_Feb_4_2014_PowerPointPresentations.pdf (nitrate starts on p.26)
Value of other industries	Statistics Canada and PEI Government Annual reports
Fish Kills	Department of Agriculture and Forestry Fish Kill Information and Statistics: http://www.gov.pe.ca/forestry/fishkillreports
Pesticides in Drinking Water	Department of Environment, Labour and Justice groundwater sampling data: http://www.gov.pe.ca/photos/original/elj_data_sum.pdf
Soil Loss	Department of Agriculture and Forestry Soil Conservation for Potato Production: http://peiwindatlas.ca/af/agweb/index.php3?number=71740&lang=E
Soil Organic Matter	2010 PEI State of the Environment Report: http://www.gov.pe.ca/fae/state/index.php3
Public Subsidies to Agriculture	Freedom of Information Requests and 2013 Public Accounts of Prince Edward Island: http://www.gov.pe.ca/finance/publicaccounts