Prince Edward Island Potatoes

Water Act Consultations
December 2015
Agenda

• The PEI Potato Industry
• Sustainability Efforts by Potato Farmers
• Improving Water Use & Quality
• Equitable Access to Water
• Our Shared Water Resource
• Managing Allocation of Water Use
• Managing on a Watershed Basis
• Recommendations
The PEI Potato Industry:

• Potatoes are an economic engine on PEI*
  – Directly or Indirectly employs 8,283 Islanders, 12% of the total provincial workforce
  – Total economic output of $1.065 billion in direct and indirect (spin off) channels
  – 10.8% of PEI’s GDP ($512 million)

*Economic Impact Study of PEI Potato Industry, 2012
Family Farms are the most prevalent “Corporations” in our industry, comprising over 93% of PEI potato acreage.
200+ farm operations

89,000 acres harvested in rotation with grain, oilseed and forage crops.

85% of Island fields grow crops other than potatoes in a given year.

Total harvested yield of 24.9 million cwt in 2015

This represents approx. 25% of Canadian potato production.
Industry Overview

• 60% Processing (fries, chips, granules)
• 30% Fresh Market
• 10% Seed

• PEI continues to be a major potato producer due to favourable growing conditions, a history of quality potato production, and proximity to major markets.
Sustainability Efforts by Farmers

• Potato farmers continue to make significant efforts to improve environmental sustainability, in partnership with provincial government departments.

• These efforts follow a path of continual improvement. Nothing happens overnight, and all human activity can impact the environment, so finding balance is required.
Sustainability Efforts by Farmers

• 4R Nutrient Stewardship Initiative
  ➢ Reducing amount of nutrients remaining in soil after the crop is harvested
  ➢ Improving placement and selection of nutrient source
  ➢ Multiple years of grower trials, moving toward certification process and wider adoption

RIGHT SOURCE

Matches fertilizer type to crop needs.

RIGHT RATE

Matches amount of fertilizer to crop needs.

RIGHT TIME

Makes nutrients available when crops need them.

RIGHT PLACE

Keeps nutrients where crops can use them.
Sustainability Efforts by Farmers

• Soil Conservation Structures

  o > 1,200,000 ft of terraces
  o > 2,300,000 ft of grassed waterways
  o > 285,000 ft of farmable berms

  o In partnership with PEI Department of Agriculture & Fisheries
Sustainability Efforts by Farmers

• Buffer Zones and ALUS
  ➢ Mandatory Buffer Zones near watercourses significantly reduce soil and nutrients from being deposited in rivers and streams. Started in 2000.
  ➢ The Alternative Land Use Strategy (ALUS) program provides farmers with additional incentive to divert sensitive land from crop production. Started in 2008.
Sustainability Efforts by Farmers

• **Alternative Tillage Options**
  - Residue/Conservation Tillage before potato year to increase water holding capacity and reduce soil erosion
  - No-till options for corn/soybeans/grains

• **Cover Cropping**
  - Prevents erosion, planted following potato harvest
  - Increasing prevalence
  - Research with AAFC to find later establishing species
Sustainability Efforts by Farmers

• Building Soil Organic Matter

➢ Reduction in livestock numbers in PEI in the last 20 years has reduced the amount of manure returned to soils and has decreased value of forage crops, both of which contribute to soil organic matter levels.

➢ Strengthening of livestock sectors would benefit potato farmers as well!

➢ In the meantime, ongoing research with multiple partners into Best Management Practices and rotations to build organic matter and soil health properties over time (cover crops, green manures, etc)
Sustainability Efforts by Farmers

• Integrated Pest Management
  ➢ Decreases pesticide use by assessing crop status and only using pesticides when necessary for crop protection.

• Environmental Farm Planning
  ➢ PEI has the highest EFP participation rate in Canada

• Crop Rotation
  ➢ Investigation of new crops to grow in rotation with potatoes that have benefit to soil and water.
Improving Water Use & Quality

• No one, including farmers, want to see fish kills.
• However, progress is being made, and the number of fish kills are decreasing.
• Collaborative work being done by farmers, agricultural organizations and industry partners, watershed groups, and the provincial government is making a difference in reducing the incidence of these events.
Improving Water Use & Quality

• Photo of Barclay Brook
Improving Water Use & Quality

- There has been substantial progress made in the Barclay Brook watershed, where the majority of recent fish kills have occurred.
- Work includes land taken out of production, soil conservation structures, band spraying technology, etc.
- There have been no fish kills in this watershed in the past two years.
- There have been no potato-related fish kills in two years.
Improving Water Use & Quality

- Nitrate levels in surface water are decreasing in almost all regularly-tested watersheds across the province.
- Due to the holding capacity of our sedimentary rock, reductions in nitrate levels in ground water may be slower to see, but work is continuing to reduce nitrogen losses to the environment.
Since 2010: steady decreases in nitrate levels!

Source: Dept. of Communities, Land and Environment
Improving Water Use & Quality

• It is important to put pesticide detection into context.
• The pesticide detection closest to the legal limit on previously released reports are 25 times lower than the Drinking Water Guideline value from Health Canada.
• Most of these detections are hundred or thousands of times lower than accepted standards.
• With improvements in testing technology, it is easier to detect minute quantities of many chemical compounds. This does not mean that our health is in jeopardy.
• Health Canada is the expert in this field, and already builds multiplicative factors into safety standards.
Our Shared Water Resource

• There has been significant work done in recent years to better understand groundwater and surface water in Prince Edward Island.
  
  o Canadian Water Network research team
  o PEI Department of Communities, Land and Environment
Our Shared Water Resource

• Many studies (both old and new) conclude that Prince Edward Island has:
  o High annual recharge rates
  o A large amount of available groundwater due to fractured and porous sedimentary rock
  o Differences in water holding capacities and flow rates by watersheds/regions of the province
Our Shared Water Resource

Source: PEI Dept of Communities, Land and Environment

Provincial Water Use Breakdown

- 60% Residential
- 30% Commercial
- 8% Livestock
- 1% Agricultural Irrigation
- 1% Other Irrigation

PEI Presently Uses 7% of Available Groundwater Recharge (broken down as shown)

Source: PEI Dept of Communities, Land and Environment
Equitable Access to Water

• Currently permitted to dig high capacity wells:
  o Municipalities
  o Golf Courses
  o Car Washes
  o Aquaculture / Fish Hatcheries
  o Factories
  o Geothermal Heating

• Currently not permitted to dig high capacity wells:
  o Agricultural Irrigation
Equitable Access to Water

• While PEI generally experiences significant annual rainfall, increasingly there are long periods of little to no rainfall during July and August in Prince Edward Island.

• A lack of moisture at this time of the year reduces the marketable yield potential of the potato crop and also can have a significant impact on tuber quality.

• Supplemental Irrigation allows for application of adequate moisture to potatoes during times of drought. In the driest of years, this would amount to the application of approx. 5 inches of water per acre over a period of several weeks.
Equitable Access to Water

- Approx. 7% of potato acreage is irrigated on PEI. Even with additional access to water, the grand majority of potatoes in Prince Edward Island will not be irrigated.

- Estimated cost to drill/install a high capacity well plus modern irrigation equipment: $150,000 - $200,000 for a 75 to 100 acre field
Equitable Access to Water

• Not every potato farmer in Prince Edward Island wants or needs irrigation. Dependent on variety, end use, location, etc.

• Some watersheds have less capacity for high capacity wells than others based on level of water table, base flow rates, soil types, etc.

• Where farmers see a worthwhile investment in irrigation and where water extraction is sustainable and responsible, farms should have the same access to high capacity wells as other Islanders.
Managing Allocation of Water Use

• Approval of permits for high capacity wells for all purposes (including agriculture) should continue to require sufficient testing to ensure that water extraction does not:
  • Negatively impact water quantity or quality for other residents
  • Reduce stream flow in nearby streams and rivers to unsustainable levels
  • Risk salt water intrusion

• Ongoing monitoring of groundwater and surface water at locations across the province should be encouraged.
Managing Allocation of Water Use

• There is an openness to exploring a gradual, phased in approach to approval of high capacity wells for agricultural uses.

• A pilot program with automatic monitors at each site could be employed to ensure that water extraction is sustainable.

• Other approaches, such as capturing water in constructed surface ponds, should also be further investigated.
Managing on a Watershed Basis

• Experience with the Action Committee making changes in the Barclay Brook watershed reinforces the notion that not all watersheds are created equal.

• A blanket approach to water management and access not feasible given diversity in watersheds.

• Many watershed groups work hand-in-hand with farmers.

• Watershed groups require a more stable source of funding to perform core functions.
Recommendations

1. Protect the quantity and quality of groundwater for all Islanders for future generations.
2. Legislation and regulations must be based on science and not on perception and emotion.
3. Enable agriculture to have the same regulated access to water as other businesses and municipalities.
4. Pilot program with extensive monitoring for all new high capacity wells approved for all purposes.
5. Existing access to permits for surface water for irrigation purposes should be maintained, subject to permit conditions.
Recommendations

6. Additional human resource investments in Land Resource Stewardship section of the PEI Department of Agriculture & Fisheries to assist landowners with soil conservation projects that improve water quality.

7. Additional investment in fund devoted to help build and maintain soil conservation structures.

8. Continue long term monitoring of surface water and groundwater for deleterious substances.

Recommendations

10. Further support innovative programs aimed at reducing nutrient loading in groundwater and surface water or the effects of excess nutrients.
   - Planting biomass willows in buffer zones

11. Increasing rates for land retirement under ALUS program to keep up with current land rental/purchase costs.

12. Increased, stable funding for watershed groups across the province.
Recommendations

13. Additional investment in research on increasing soil organic matter.

14. Agricultural and watershed groups should be consulted when regulations need to be developed or changed.

15. Regulations should be reviewed on a periodic basis to ensure that they are having the desired effect on water protection and are not adding needless red tape for negligible environmental protection.
Thank You!

Email: potato@peipotato.org
Web: www.peipotato.org
Twitter: @PEIPotatoes  Facebook: /PEIPotatoes