Water Act Consultations: Presentation to the Environmental Advisory Committee

Prince Edward Island Potato Board

December 2nd, 2015

Good evening ladies and gentlemen,

(SLIDE 1) My name is Greg Donald, and I am the General Manager of the Prince Edward Island Potato Board. (Introduce anyone else accompanying you).

It is my pleasure to present to you tonight on behalf of the potato farmers of Prince Edward Island.

(SLIDE 2) Our presentation will provide a brief overview of the PEI Potato Industry, highlight the sustainability efforts being made by potato farmers, and address a number of the key considerations outlined in the white paper on water that was circulated in advance of these consultations, followed by our recommendations.

(SLIDE 3) The potato industry in Prince Edward Island is a major economic engine for the province. It provides a great deal of employment and prosperity for Islanders, and has been estimated by a study done by Dalhousie University in 2012 to be worth approximately $1 billion dollars to the provincial economy in direct and indirect contributions.

(SLIDE 4) Prince Edward Island potato farming is dependent on family farms, many of which have been farming for multiple generations. While some farms may be corporations for tax reasons, our farmers are owned and operated by families that live in the communities where they farm.

(SLIDE 5) We have more than 200 potato farms in Prince Edward Island, with 89,000 acres of potatoes harvested this year. It should be noted that this makes up only 15% of the 600,000 acres of arable land in the province, with potatoes being grown in rotation with grains, oilseeds, forages and other crops. Our farmers harvested approximately 25 million hundredweight of potatoes this year, which is very consistent with production in the last few years. This also

represents about one-quarter of the potatoes produced in Canada, with PEI being the largest potato producing province.

(SLIDE 6) Our industry has three sectors. Processing accounts for 60% of our production, which includes potatoes destined for French fries, potato chips, and dehydrated potato products. Another 30% of our crop is sold as fresh or table stock potatoes to destinations near and far. Approximately 10% of our crop is seed potatoes grown to produce next year's crop.

Prince Edward Island continues to be a major potato producing province for many reasons. We have a history of growing high quality potatoes that goes back decades. The Island has favourable growing conditions for growing potatoes compared to many parts of Canada and North America. We also are relatively close to major markets in Central Canada and the US North East, where the majority of our potatoes are sold.

(SLIDE 7) Environmental sustainability is a priority for PEI potato farmers. They continue to make significant efforts to improve environmental sustainability each year, in partnership with the provincial departments of Agriculture and Environment. These efforts follow a path of continual improvement. Nothing happens overnight, and all human activity can impact the environment, so finding balance is required.

(SLIDE 8) One effort which is proving very successful is the 4R Nutrient Stewardship Initiative. It is a partnership between the Potato Board, the Federation of Agriculture, Watershed groups, the provincial government, and Fertilizer Canada to reduce the amount of nutrients which remain in the soil after a crop is harvested so that they are not leached to the environment in the fall. This reduces nitrate levels in Island water as well as reduces fertilizer costs to the grower. Through using the right source of fertilizer at the right rate, at the right time, in the right place, three years of trials on PEI have shown reductions in soil nitrate and phosphorous levels post-harvest.

(SLIDE 9) Island farmers have also been active in preventing soil erosion through the construction of soil conservation structures. In partnership with staff from

the Department of Agriculture and Fisheries and funding programs offered by the Department, Island farmers have constructed more than 1.2 million feet of terraces, 2.3 million feet of grassed waterways, and 285 thousand feet of farmable berms so far. There is a significant expense to constructing these structures, but it is worth it if it keeps soil from leaving our fields and being deposited in Island waterways.

(SLIDE 10) Farmers are adhering to the buffer zone requirements set out in legislation, and in many cases they are setting aside additional sensitive land under the Alternative Land Use Strategy.

(SLIDE 11) Farmers are also increasingly adopting conservation tillage practices, which have been shown to reduce erosion and improve water holding capacity of soil. More growers are also planting fall cover crops to prevent erosion and bind soil nutrients in the fall and winter. In fact, the Board is sponsoring research into more effective cover cropping options with Agriculture and Agri-Food Canada over the next three years.

(SLIDE 12) There is no doubt that a reduction in the livestock industry in PEI in the last 20 years has reduced the amount of manure that used to be returned to soils. Along with decreased value in forage crops, this has contributed to a decline in organic matter in many fields. A stronger livestock sector would be welcomed by our farmers for many reasons, including additional access to livestock manures. In the meantime, ongoing research with multiple partners is being conducted into best management practices and crop rotations to build organic matter and soil health, as this improves the water holding capacity of soils as well as the resistance to some soil borne diseases.

(SLIDE 13) In addition, tools such as integrated pest management, environmental farm planning, and crop rotation are all used by Island potato farmers to enhance environmental sustainability.

(SLIDE 14) No one, including potato farmers, wants to see fish kills. Thankfully, the frequency of fish kills in the past few years has decreased, in part due to

collaboration between farmers, agricultural organizations, industry partners, watershed groups, and the provincial government.

(SLIDE 15) The Barclay Brook has been the site of most of the fish kill events in the past number of years, due in part to the unique geography of that watershed.

(SLIDE 16) Thanks to the work done by farmers with land adjacent to Barclay Brook and the efforts of all other partners, there has been substantial progress made. Land has been taken out of production, soil conservation structures have been built, band spraying technology has been employed, and stream monitoring for water quality has taken place for the last two summers. There have been no fish kills in this watershed for the past two years, and after the work that has been done, it seems unlikely that Barclay Brook will be the site of more fish kills. In fact, there have been no potato-related fish kills for the past two years and we hope that this is repeated going forward. Our industry has been at table in coming up with recommendations to prevent future fish kills, and we support work being done in three other watersheds starting this year to address sensitive areas and prevent future fish mortalities.

(SLIDE 17) On the subject of nitrates, it is clear that agricultural production has led to an increase in nitrate levels in Prince Edward Island ground water in the past. Farmers have learned lessons from the past and are continuing to improve practices, as I touched on earlier. What is key to share is that nitrate levels in surface water have been shown to be decreasing in almost all regularly monitored 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.

(SLIDE 18) You can see in this slide that nitrate levels have been decreasing steadily since 2010. Some of the highest rates of reduction are seen in rivers like the Wilmot River and Dunk River, where there has not been a substantial reduction in potato acreage, so it is likely that improved practices have a hand in these downward trends.

(SLIDE 19) At previous water act consultation sessions and in conventional and social media, there have been worries expressed about pesticide residue detections in groundwater. We feel that it is important to test for this, but it is also important to put detections into context. In statistics released last year, the pesticide detection closest to the legal limit was 25 times lower than the Drinking Water Guidelines established by Health Canada, and most of the other detections were hundreds or thousands of times lowers than accepted standards. With improvements in testing technology, it is easier to detect minute quantities of many chemical compounds, down to parts per billion or parts per trillion. This does not mean that our health is in jeopardy. We rely on the science done by Health Canada, which is the expert in the field, and already builds multiplicative factors into their safety standards.

(SLIDE 20) There has been significant work done in recent years to better understand groundwater and surface water in Prince Edward Island. In addition to monitoring, testing and modelling done by hydro-geologists with the PEI Department of Communities, Land and Environment and Agriculture and Agri-Food Canada, there was also a series of projects undertaken by university and federal researchers under the Canadian Water Network collaboration in the last few years at multiple sites on PEI.

(SLIDE 21) These studies have generally agreed that PEI has amongst the highest annual recharge rates for groundwater in Canada, as well as a large amount of available groundwater due to our fractured and porous sedimentary rock. There have also been differences noted in water holding capacity and flow rates among different watersheds in the province. This indicates that we are blessed with considerable access to water. While it is essential that this water be used sustainably, Prince Edward Island has more access to groundwater that many other parts of Canada.

(SLIDE 22) Presently, we are only using approximately 7% of our available annual ground water recharge as a society. Of that 7%, 60% is used for residential uses, 30% for commercial industry, 8% by livestock and other farms, and only 1% is

used for agricultural irrigation, the same as is used for other forms of irrigation, such as golf courses.

(SLIDE 23) Municipalities, golf courses, car washes, fish hatcheries, factories, and geothermal heating systems are all currently permitted to dig high capacity wells for groundwater extraction. Only agricultural irrigation is affected by the current moratorium.

(SLIDE 24) This is an example of a pivot irrigation system which applies water just above the canopy of the potato crop at times of water deficit. There are some years when irrigation is barely needed, but there are many years where there are multiple weeks in the growing season where there is little to no rainfall, and the crops suffer if they do not have access to water.

(SLIDE 25) This lack of moisture reduces the marketable yield potential of the potato crop. Supplemental irrigation allows for application of adequate moisture during times of drought. In the driest years, this would amount to the application of approximately 5 to 6 inches of water per acre over a period of several weeks. High capacity wells for irrigation are used for considerably less time per year than those used for residential or other commercial uses.

(SLIDE 26) We have estimated that approximately 7% of potato acreage on PEI is currently irrigated. Even if there was additional access to water, we do not envision this percentage to grow that much. The majority of PEI potatoes will not be irrigated. Part of this is due to the cost to drill and install a well, as well as modern irrigation equipment. This has been estimated to cost between $150,000 and $200,000 for a 75 to 100 acre field which will only be in potatoes 1 out of every 3 years.

(SLIDE 27) Not every potato farmers in Prince Edward Island wants or needs irrigation, and there is no plan to enforce the use of irrigation. Whether irrigation is needed depends on the variety they are growing, the end use of the crop, the size and location of their field, and other factors. We know that some watersheds have lower capacity for high capacity wells than others based on geographical and

hydrological factors, so there are parts of the province where agricultural irrigation won't be feasible.

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. Farmers are producing food that nourishes our citizens as well as providing economic prosperity to our province. If water can be used sustainably to foster that, we feel that it is a worthy use of water.

(SLIDE 28) Obviously, managing the allocation of water use is very important. The approval of all 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 Islanders, does not reduce stream flow in nearby streams and rivers to unsustainable levels, and does not risk salt water intrusion. These are all factors which are addressed in the current water extraction policy and which should be included in future regulations. As well, ongoing monitoring of ground water and surface water at locations across the province should continue to be done.

(SLIDE 29) Our industry is open to exploring a gradual, phased in approach to approval of high capacity wells for agricultural uses. Perhaps 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 in locations where they are feasible.

(SLIDE 30) Our experience with the Action Committee making changes in the Barclay Brook watershed reinforces to us that not all watershed are created equal. There can be a large degree of difference in the geography and hydrological reality of each watershed. A blanket approach to water management and blanket water access is not feasible given the diversity in our watersheds.

We are proud that many watershed groups work hand-in-hand with farmers in their communities, and we encourage all of our farmers to work with their local

watershed associations. Watershed groups require a more stable source of funding so that they can continue to perform many of the core functions that they do, including stream restoration, research, and monitoring.

(SLIDE 31) We would like to close our presentation with our recommendations to the Council:

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.

(SLIDE 32)

6. Additional human resource investments in Land Resource Stewardship section of the PEI Department of Agriculture & Fisheries to assist land owners 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.
9. Provide context when sharing water quality information. Data should be related to National Drinking Water Quality Guidelines from Health Canada

(SLIDE 33)

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
    - Harvesting of sea lettuce in vulnerable estuaries
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.

(SLIDE 34)

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.

(SLIDE 35) We thank you for this opportunity to present to you today, and we would welcome any questions that you have at this time.