



Land Management Support

East Prince Agri-Environment Association
January 26th, 2021

Outline

- East Prince Agri-Environment Association
 - Who we are
- Partnerships and Research
- Sustainability and Improvement Efforts
- Recommendations





Grassroots organization started by a group of Family Farms with a goal of improving and protecting, for our future generations, our Land - the Foundation of our Industry and of our Livelihoods.





Partnerships and Research

For the past 6 years we have partnered with Researchers, Governments, Universities, Agronomists, Watershed Groups, and our Neighbors to learn about our agricultural practices and make improvements.

Farmers understand more than anyone the importance of healthy soil and we continue to strive to make continuous improvements that support environmental sustainability.



Partnerships and Research

- **Yefang Jiang - Physical Scientist, Groundwater Science/Water Quality (AAFC)**
 - examining the quantitative relationship between field management and water quality (3-15 year project)
- **Li Sheng – Researcher, Hydrology/Croplands and Water Management (AAFC)**
 - examining the effects of agricultural practices on land erosion (3 year project)
- **Bonnie Robertson - Water Resources Engineer (AAFC)**
 - examining options for reducing the duration of bare soil conditions in potato rotations (3 years)
- **Josée Owen - Biologist, Vegetable Cropping Systems (AAFC) and Scott Anderson – Industry Liaison (AAFC)**
 - examining types of tillage to use after potato harvest / cover crops to increase organic matter and reduce erosion
- **David Burton and Svetlana Yurgel – Dalhousie University**
 - examining the effects of agricultural practices on structure and function of microbial population in soils and its link to plant health and productivity
- **Tyler Wright – Soil and Water Engineer (PEI Dept. of Agriculture & Fisheries)**
 - examining the effectiveness of Nitrate Woodchip Cells and Willow Trees for removing nitrates and potentially other contaminants from subsurface drainage on agricultural land (3 years)
- **Yefang Jiang (AAFC), Brian Murray (AAFC) and David Burton (Dalhousie University)**
 - demonstrating the effectiveness of willow buffers as an agroforestry practice that can be used by potato producers to promote carbon sequestration, erosion control, nutrient management, and preservation of water quality (**GHG Mitigation Program – 5 years**)



Partnerships and Research

Living Labs Initiative - 16 Partners

- East Prince Agri-Environment Association
- Agriculture Agri-Food Canada
- PEI Potato Board
- Kensington North Watersheds Association
- Souris and Area Branch of the PEI Wildlife Federation
- PEI Department of Agriculture and Land
- PEI Department of Environment, Water, and Climate Change
- PEI Watersheds Alliance
- Genesis Crop Systems
- Ducks Unlimited
- Dalhousie University
- Saint Francis Xavier University
- University of New Brunswick
- University of Prince Edward Island
- Environment and Climate Change Canada
- Fisheries and Oceans Canada



Partnerships and Research

| | # of Farm Participants 2018-19 | # of Farm Participants 2019-20 |
|---|--------------------------------|--------------------------------|
| BMP #1 - Use of Fall Seeded Cover Crops following Primary Tillage | 6 | 8 |
| BMP #2 - Use of Fall-Seeded Cover Crops following Potato Production | 7 | 8 |
| BMP #3 - Use of Full-Season Soil-Building Rotation Crops for Building Soil Organic Matter | 9 | 9 |
| BMP #4 - Nurse Cropping Demonstration Trials within Potato and Corn Production Systems | 3 | 4 |
| BMP #5 - Demonstrating Climate Change Adaption of Potato Productivity and Nitrogen Use Efficiency as Affected by Supplemental Irrigation Scheduling and Nitrogen Rate | 4 | 4 |
| BMP #6 - Demonstrate the performance of three potato varieties under irrigated conditions to measure response for reducing water wastage and nutrient leaching | 2 | 2 |
| BMP #7 - Reducing Nitrogen Losses through use of Slow Release Fertilizer Products | 5 | 6 |
| BMP #8 - Using Constructed Wetland and Vegetated Grass Waterways to Improve Water Quality | 0 | 3 |
| Supporting Activity #1 - Assessment of the impact of land use and management practices on nitrate loading in intensive agricultural watershed | | |
| Supporting Activity #2 - Socio-Economic Analysis | | |
| Supporting Activity #3 - Paired-field Trial Demonstrating BMPs to Reduce Nitrate Leaching (SAB) | 1 | 1 |
| Supporting Activity #4 - Paired Sub-watershed Trials Demonstrating BMPs to Reduce Nitrate Loading to Receiving Waters | | |
| Supporting Activity #5 - Enhancing Soil Quality with Reduced Tillage | 4 | |
| | 41 | 46 |

Sustainability and Improvement Efforts

Between the growers of this group over 850 acres of land is taken out of production for Alternative Land Use.

This total acreage that farmers are voluntarily giving up for the protection of land and waterways is worth approximately \$4.6 million.

Prepared for: East Prince Agri-Environment Association Inc.
Prepared by: PEI Department of Agriculture & Land
September 2020

Table 3: Summary of ALUS features per EPAEA member

| Farm | Diversion terrace | | Grassed waterway | | Farmable berm | | Voluntary grassed headland | | Expanded buffer | High slope retirement |
|----------------------------|-------------------|------|------------------|------|---------------|------|----------------------------|------|-----------------|-----------------------|
| | ft | ha | ft | ha | ft | ha | ft | ha | ha | ha |
| Bedeque Farms Ltd. | 19,109 | 4.2 | 13,131 | 2.1 | 4,354 | 1.0 | 1,931 | 0.4 | | 0.22 |
| Birch Farms Ltd. | 13,554 | 2.5 | 24,280 | 5.8 | 2,426 | 0.6 | 5,690 | 1.6 | 4.5 | 0.38 |
| Carl & Nevin Robinson Farm | | | 1,602 | 0.2 | | | | | 0.23 | |
| Country View Farms Ltd. | 18,584 | 3.7 | 21,010 | 5.3 | 5,823 | 1.3 | 7,517 | 2.1 | 0.95 | 3.8 |
| Dunk River Farms Ltd. | 33,774 | 6.3 | 31,189 | 7.5 | 6,162 | 1.6 | 12,458 | 2.9 | 0.62 | |
| Greenfield Farms Ltd. | 30,460 | 6.1 | 30,053 | 7.6 | 6,586 | 1.5 | 12,487 | 2.9 | 0.32 | 0.67 |
| Havenlee Farms Inc. | 9,111 | 1.9 | 10,765 | 2.8 | | | 7,257 | 2.2 | 0.36 | 3.8 |
| Hilltop Produce Ltd. | 16,388 | 3.0 | 31,702 | 8.2 | 2,884 | 0.7 | 8,347 | 2.5 | 1.37 | 4.5 |
| Klondike Farms Ltd. | | | 9,462 | 2.3 | 4,143 | 0.9 | 3,883 | 1.1 | 0.48 | 0.21 |
| Middleton Farms Ltd. | 10,473 | 2.0 | 24,027 | 4.4 | 11,022 | 2.6 | 8,263 | 2.5 | | 0.42 |
| Monaghan Farms Ltd. | 61,876 | 12.3 | 61,897 | 16.4 | 9,694 | 2.2 | 18,376 | 5.6 | 6.1 | 11.6 |
| Mulligan Bros. Ltd. | 22,317 | 4.5 | 28,290 | 7.1 | 5,506 | 1.3 | | | 2.05 | 0.14 |
| Murray Farms Ltd. | 18,328 | 3.6 | 7,073 | 1.6 | 227 | 0.05 | 1,724 | 0.32 | 0.086 | |
| Smith Farms Ltd. | 8,191 | 1.7 | 7,103 | 1.9 | 1,876 | 0.44 | | | 0.40 | |
| Southside Spuds Inc. | 10,926 | 2.0 | 20,314 | 5.1 | 8,060 | 1.8 | 13,853 | 4.2 | 2.5 | 3.2 |
| Summerfield Farms Ltd. | 25,287 | 4.8 | 32,042 | 9.2 | 5,117 | 1.2 | 10,611 | 3.2 | 7.05 | 1.8 |
| Victoria Potato Farm Inc. | 48,604 | 9.4 | 55,835 | 17.2 | 9,738 | 2.4 | 38,618 | 12.4 | 10.5 | 22.2 |
| Webster Farms Inc. | 12,262 | 2.3 | 26,664 | 5.5 | 3,658 | 0.83 | 10,656 | 3.2 | 2.7 | 3.2 |

Sustainability and Improvement Efforts

With good harvest conditions this past fall, most of our growers were able to establish Cover Crops.

- 66% of our fields are covered with crops this winter.
- Some growers were able to achieve 100% coverage.



Recommendation # 1: Support for our Ongoing Land Enhancement Efforts

- **ALUS Expansion** - Extend the BMP's that ALUS supports to include other practices such as planting Willow Trees in Riparian Zones as an Agroforestry Practice which not only Reduces Nitrate Impacts but also support Wildlife Habitat and Sequesters Carbon
- **Agri-Watershed Partnership** - We applaud this initiative and look forward to continued funding support from the province to make this initiative a success
- **Precision Agriculture** - Each year we are introduced to new technologies that can have significant impact on our land management but affording these technologies and services are sometimes out of reach so helping growers with the costs of adopting precision agriculture tools will help more growers move in this direction

Recommendation # 2: Land Protection against Trespassers

Trespassing

- ATVs
- Dumping Garbage
- Damaging Equipment
- Crop Damage
- Unauthorized investigations

The needles in Potatoes incident speaks volumes to the need for farmers to be able to protect their properties from trespassers. Now with discussions about high-capacity irrigation wells heating up in the public eye we are concerned about a repeat attack on farmers. More enforcement is needed to help enact the Trespass to Property Act.



Recommendation #3: Ensure Farm Families can access Available Land

Land Availability

- More and more we are taking land out of production to support our enhancement efforts, but land availability is limited.

For example, longer crop rotations require more access to land but we are finding it difficult to acquire land for the following reasons:

- Farmers wishing to sell want to sell their business as one parcel rather than divide parcels of land making it hard to acquire
- We are competing with Investors from outside the province who are finding loopholes in the Land Protection Act and are purchasing farmland on the Island

We recommend a closer review of the Lands Protection Act with a goal of closing the loopholes to protect our current land base for our Island Farm Families and the next generations of Island Farmers. We need to develop a mechanism that could help small farms or groups of farms to make land purchases when sold as a whole entity.





A study published Monday, January 18, 2021 by Researchers at the University of California found billions more people could face food insecurity as the Earth's tropical rain belt shifts in response to climate change, causing increased drought stress and intensified flooding in some of the biggest agriculture producing regions. As these shifts happen it is expected that by 2050 Canada will need to play a bigger role in feeding the rest of the world.

Source: Wagstaffe, J. (2021). CBC News. (Television). "Climate change will alter the position of the Earth's tropical rain belt"



Let's continue to work together to protect our land and our agriculture industry so our Children can do their part to help feed the World's growing population right from our tiny Island.

Thank you!