



VISION 2016 – 2020

Conservation Ontario will be the leader in engaging Conservation Authorities in matters of common interest and in shaping effective policy related to Conservation Authorities

Conservation Ontario Council Report

From: Jo-Anne Rzadki, Conservation Ontario
Date: November 22, 2016
Subject: Conservation Ontario's Submission on "Discussion Document for Developing and Agricultural Soil Health and Conservation Strategy for Ontario" (EBR# 012-8468)

Summary

The Ontario Ministry of Agriculture, Food and Rural Affairs has posted a Discussion Document titled "Sustaining Ontario's Agricultural Soils: Towards a Shared Vision" on the Environmental Bill of Rights for discussion on the development of an Agricultural Soil Health and Conservation Strategy for Ontario. Background on the submission and endorsement of Tracey Ryan, Manager of Environmental Education and Restoration (Grand River Conservation Authority) is Conservation Ontario's representative on the Province's Soil Health Working Group.

Recommendation

THAT the attached comments on the "Discussion Document for Developing an Agricultural Soil Health and Conservation Strategy for Ontario" (EBR#: 012-8468) submitted to the Ministry of Agriculture, Food and Rural Affairs on November 23, 2016 be endorsed

Background

Please refer to the September 26, 2016 CO Council Agenda for background on the Ontario Soil Health Strategy and endorsement of Tracey Ryan, Manager of Environmental Education and Restoration (Grand River Conservation Authority) to continue participating on the Provincial Soil Health Working Group as CO Representative. Sharon Bailey, Director, Food Safety and Environmental Policy Branch, Ontario Ministry of Agriculture, Food and Rural Affairs made a presentation on the discussion paper, draft vision and objectives and participated in a discussion with CO Council members (presentation attached to the September 2016 Council Minutes).

Current Status

The Environmental Commissioner released a report on Soil Health at the Latornell Conservation Symposium (weblink to the document provided below). CO and CA staff have participated in stakeholder sessions, including a CA focused teleconference organized by OMAFRA staff to receive input on November 22, 2016. CO staff have received comments from Ausable-Bayfield, Credit Valley, Essex Region, Grand River and Lake Simcoe Conservation Authorities for the development of the attached letter on this Posting, which was submitted to the Province on November 23, 2016.

Conclusion

The Soil Health Discussion paper is an initiation of discussions towards the development and implementation of a Provincial Soil Health Strategy. Conservation Ontario staff and Tracey Ryan will identify opportunities, and work with OMAFRA and other stakeholders to continue to engage CAs in this process.

Additional Resources (for information only, not required for printing)

[Putting Soil Health First: A Climate-Smart Idea for Ontario](#)



Paul Smith
Senior Policy Advisor
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Policy Division
Food Safety and Environmental Policy Branch
1 Stone Road West
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November 23, 2016

Dear Mr. Smith:

Re: Conservation Ontario's Comments on "*Discussion Document for Developing an Agricultural Soil Health and Conservation Strategy for Ontario*" (EBR#: 012-8468)

Thank you for the opportunity to provide comments on the Discussion Document for developing an Agricultural Soil Health and Conservation Strategy for Ontario, titled "*Sustaining Ontario's Agricultural Soils: Towards a Shared Vision*". Conservation Ontario is the network of Ontario's 36 Conservation Authorities (CAs). These comments are being provided to you as a result of consultation with CA staff who have extensive experience working with agricultural communities to improve soil health and soil conservation. These comments are not intended to limit consideration of comments shared individually by Conservation Authorities. The comments below are organized based on the questions provided in the Discussion Document.

Conservation Ontario also appreciates the opportunity for Conservation Ontario Council to learn more about this Soil Health and Conservation Strategy through a presentation by OMAFRA staff at the September Conservation Ontario Council meeting and the opportunity for CA staff to provide comments through a specially organized teleconference on November 22, 2016.

1. Do you think the draft vision, goals and objectives will lead us in the right direction regarding soils? If not, how might they be improved?

Conservation Ontario commends the Province in encompassing the importance of soil health as it relates to the sustainability of the economy, environment and society in the draft vision. Conservation Ontario is also supportive of the long-term goals listed in the Discussion Document and recommends that the Province ensures the implementation plan includes an evaluation plan for measuring effective progress of the Strategy and is adaptive over time. It is also important for the Province to acknowledge

that the listed goals and objectives will only be achieved if funding and programs are developed to support their achievement, such as incentives to encourage farmers to conduct the proposed soil health tests. Alternatively, if the Province cannot develop new programs, Conservation Ontario encourages the Province to integrate the goals and objectives of the Agricultural Soil Health and Conservation Strategy into existing programs, such as those for nutrient management and Great Lakes objectives. Conservation Ontario also encourages the Province to recognize the role Conservation Authorities can play to help meet the draft objectives, such as those listed under the theme of Soil Management, and Soil Monitoring and Modelling.

Soil Management

Conservation Ontario is supportive of the goals and objectives listed under the theme of Soil Management. Conservation Ontario supports the Province in acknowledging that soil health can improve water quality but the Province should also acknowledge that soil management decisions can have an impact on water quantity as well. It is also important for the Province to consider local source protection plans developed under the *Clean Water Act*, which contain legally binding policies to protect municipal sources of drinking water. Furthermore, many of the proposed actions for Soil Management are directed at the farmer's role at improving soil health. Conservation Ontario advises the Province to recognize the role that landowners can have for improving soil health because oftentimes the farmer is not the landowner. Thus, engaging both farmers and rural non-farm landowners in the Strategy would maximize the efforts towards improved soil health.

Soil Information and Mapping

Conservation Ontario is supportive of updating soil resource mapping data and encourages the Province to undertake this task on a scale that would allow growers to practice within field zone management of their cropping systems. Conservation Ontario is also supportive of making soil sampling data available through an open source data system but recommends the Province to make this data available to all interested parties in addition to producers. Conservation Ontario recommends discussion with producers regarding the advantages and benefits of making this information available for decision-making, efforts on the evaluation of BMPs for soil health, and to address issues like phosphorus reduction in the Great Lakes (i.e., benefits to the maintenance and development of a prosperous Agri-food sector in Ontario). Different ways of making the information available should be discussed with producers and the industry. This could include aggregating information where individual or property-specific information would not be identified, or different scales or types of information could be made available to specifically identified users. Conservation Ontario also recommends that clarification be added on who will be responsible for analyzing the soil sampling data.

Soil Monitoring and Modelling

Conservation Ontario commends the Province on their goal to track the health and status of Ontario's agricultural soils over time. Conservation Ontario recommends that the Province undertakes this task at the subwatershed level so that it can be nested with water quality data gathered by Conservation Authorities. Conservation Ontario also recommends that the Province prioritizes the proposed action of making a farm-scale soil health test for Ontario farms because this test can contribute to the other objectives set out in the Discussion Document, such as using the soil test to ensure farmers and

landowners are assessing soil health on their farms, and the results from the test can be used to update soil inventories and remote sensing data.

Soil Knowledge and Innovation

Conservation Ontario is supportive of the enhancement of soil knowledge and skills of professionals in Ontario. The Province is encouraged to work collaboratively with Conservation Authorities to assess the role that they can play in the delivery of soil related information and services at the local level.

2. What top three actions could government, farm organizations, and the research and education community take to protect and conserve soil health over the long term?

To protect and conserve soil health over the long term, Conservation Ontario recommends that the Province provides sufficient funding for more research on soil health and conservation, and to support the staff who will be providing education and engagement activities to farmers and landowners. Conservation Ontario also encourages the Province to implement an incentive program to encourage farmers to assess soil health on their farms and adopt best management practices for healthy soil and soil conservation.

Secondly, Conservation Ontario recommends the Province to develop education programs, workshops and other opportunities to provide information and solutions for improving soil health. Events, such as a soil health road show, demonstration sites and/or peer to peer mentoring opportunities, are encouraged at the local level. It is also important to educate both farmers and rural non-agricultural landowners on the benefits of healthy soils, such as through an economic analysis of returns on soils of varying health.

A third action to protect and conserve soil health over the long term is to include more detail in the Agricultural Soil Health and Conservation Strategy for quantitative monitoring of soil health parameters. Conservation Ontario advises the Province to include additional guidance to determine how to quantify soils with poor health in comparison to healthy soils. By quantifying soil health parameters, measurements and tracking of soil health within field management zones over time would be more effective. In addition, knowing the desired value for soil health parameters can assist farmers and landowners in choosing the appropriate best management practice to implement on their land.

3. What trends have you noticed in agricultural soil management practices over the past 10 years (tillage, cover crops, etc.)?

Many trends in agricultural soil management practices have been observed by Conservation Authority staff over the past 10 years. There has been a decrease in conservation tillage practices, such as strip tilling, no till, and reduced till practices, with some farmers returning to more intensive tillage practices, such as moldboard plowing.

Conservation Authority staff have observed a reduced number of farms raising livestock and total livestock numbers, which results in reduced pasture and hay lands due to its conversion to row crop production of corn and soybean. With reduced livestock farms and numbers, there has been less manure fertilizer available resulting in a greater dependency on synthetic fertilizers. However, it has been observed that an increasing number of farms are utilizing municipal compost. Additionally, some

parts of Ontario have observed better nitrogen management (i.e., ESN, split applications, and PSNT/green seeker technology).

Over the past 10 years, Conservation Authority staff have observed agricultural fields increasing in size, with farmers renting more land. Generally, larger farms have resulted in larger equipment. Farmers have also been using more technology in agricultural soil management practices, such as GPS guidance, drones and yield monitoring.

Other trends that Conservation Authority staff have observed are: an increase in cover crops, a reduction in crop rotation with continuous plantings of soy and occasionally wheat crop, an increase in tile drainage, removals of windbreaks and buffers, and large scale fill operations on agricultural lands. Large scale fill projects can remove agricultural lands from production for many years because poor or contaminated fill is placed on healthy soils, which modifies drainage and infiltration, affects soil quality, and impacts floodplains, wetlands and pollution.

Recent conservation trends have been focused on soil erosion, but Conservation Ontario advises the Province to also recognize other important factors leading to soil degradation. For example, Conservation Ontario recommends the Province to recognize the loss of organic matter, the loss of porosity (compaction), and the deficiencies or surplus of nutrients and pollutants as important factors to consider when preparing the Agricultural Soil Health and Conservation Strategy.

4. What do you think are the best practices for conserving soil health? How can government and soil experts best assist farmers in adopting best management practices?

Conservation Ontario encourages the Province to develop messaging in the Agricultural Soil Health and Conservation Strategy that best management practices (BMPs) should be used as a system instead of independent solutions. Firstly, Conservation Ontario recommends that the Province requires farmers and landowners to assess and monitor their farm's soil health to be able to make educated decisions on the appropriate BMPs to implement for healthy soils and soil conservation. Conservation Ontario strongly encourages the Province to make the proposed farm-scale soil health test very strongly recommended for Ontario farms to ensure farmers and landowners are assessing soil health on their farms and adopting the appropriate BMPs based on this assessment.

An important BMP for conserving soil health is the use of cover crops and crop rotation. Conservation Ontario advises the Province to focus education efforts on integrating cover crops within corn and soy production. Practices promoting longer crop rotations with more permanent cover and root structure are also advised. Farmers and landowners are encouraged to have a minimum of three crops rotation instead of a simple two crops rotation of corn and soybean, meanwhile also using cover crops.

Another BMP for healthy soils is to know the proper timing and method of nutrient application to increase soil health and reduce water quality problems. Conservation Ontario also encourages the Province to provide guidance to farmers and landowners on how to apply soil organic matter amendments to fields with low organic matter. Additionally, conservation tillage or reducing tillage should be highlighted for their benefits of improving soil health. Another BMP to consider is the implementation of erosion control measures, such as windbreaks and buffers.

The best method to assist farmers and landowners in adopting BMPs is through increased education and local demonstrations of implemented BMPs. Conservation Ontario encourages the Province to recognize that Conservation Authorities are in an ideal position to deliver these types of education programs and establish positive relationships with local farmers. However, the Province is reminded that proper funding is needed to support the staff providing these education and engagement activities to farmers and landowners.

Conservation Ontario also recommends that the Province undertakes or funds additional studies assessing the costs and benefits of implementing different BMPs at the local level. This can be achieved by using target groups who are considering change, such as young farmers or innovators, to identify the barriers to implementation, such as the associated costs or risks, and the solutions to remove those barriers. Conservation Ontario encourages the Province to have educated staff conduct site visits with farmers and landowners and provide them with the needed resources and information to implement the appropriate BMPs on their property.

5. What specific types of information and tools are needed to help farmers, agri-business, municipalities, conservation authorities and governments to make decisions about soils?

Conservation Ontario recommends the Province to develop tools to identify priority sites for BMP implementation, such as those identified through erosion risk mapping. Additional research is also needed to identify which BMPs to implement on soils with different health status, while considering their associated risks and benefits. The Agricultural Soil Health and Conservation Strategy should also provide consistent messaging about BMPs and what systems are required to provide best value solutions.

As previously stated, Conservation Ontario encourages the Province to strongly recommend the completion of the proposed farm-scale soil health test for Ontario farms because the data collected will benefit both the Province, and the farmers and landowners. The collected data will provide the Province with an assessment of the current state of Ontario's soils and the necessary information to develop or update maps of soil health properties to allow within field zone management. The completion of the soil health tests will also help farmers and landowners by determining the most appropriate and effective BMP to implement on their property to improve soil health. The Province is reminded that funding or an incentive program is needed to ensure farmers and landowners are able to perform and complete these tests.

6. What kinds of tools do you think are needed to assess and monitor soil health and conservation in Ontario?

To assess and monitor soil health and conservation in Ontario, there is a need for a biological health index to consistently assess and monitor soil health. The proposed farm-scale soil health test would be a good starting point to assess the current state of Ontario's soils and allow the tracking of soil health conditions over time. The data from the soil health test could be used to base management decisions and measure the effectiveness of different BMPs. However, Conservation Ontario recommends that the Province provides additional guidance on the standardized field collection and analytical methods for the soil health test to ensure that it is conducted consistently and accurately across the province.

Conservation Ontario recommends the Province to provide sufficient funding for farmers and landowners to conduct and complete assessments of soil health. Alternatively, the Province can develop options for cost recovery such that farmers who agree to share their soil data would be able to recover some or all of the cost of conducting the analysis. Another incentive program the Province could implement is to compensate farmers and landowners to retire fragile agricultural lands to prevent further soil degradation.

With Ontario currently working towards a cap and trade program, the Agricultural Soil Health and Conservation Strategy should include consideration for participation or contribution in carbon offsetting programs.

7. Beyond what's currently available, what kind of research, education and training should be put in place to produce the expert people and knowledge needed to help improve soil health?

Conservation Ontario recommends that the Province conducts more research to determine the costs and benefits of various best management practices and their effectiveness for improving soil health. As previously mentioned, the Province can provide funding for technical groups to assess the risk and benefits of implementing different BMPs.

Conservation Ontario recommends that advisors require a minimum standard or certification, such as the Certified Crop Advisor (CCA) certification, the Nutrient Management Planning and Agricultural Erosion Control Structure course, and the 4Rs Nutrient Stewardship program. By requiring advisors to participate in these training programs, the Province can ensure that advisors have expert knowledge of soil health and are able to inform farmers and landowners during site visits on how to achieve healthy soils and soil conservation. These advisors can also apply their expertise when assessing and adapting stewardship programs as needed. The province is encouraged to support and facilitate opportunities for Conservation Authority staff and CCAs to engage for knowledge transfer and collaboration.

Conservation Ontario advises the Province to create college courses, especially for new farmers, to ensure the next generation is equipped with the necessary knowledge and tools to focus on soil health. Additional education is needed on how to return organic materials to farms to promote soil health. Well-funded post-secondary school programs focused on soil health is encouraged for societal stability, environmental protection and agricultural production. Post-secondary school programs need to focus on soil itself to be able to foster deeper knowledge and understanding of soils in the future.

8. What are the best ways to make information available to farmers to help them adopt best management practices for healthy soil and soil conservation?

Conservation Ontario commends the Province in acknowledging the importance of sharing information with farmers and landowners to help them adopt best management practices for healthy soil and soil conservation. Conservation Ontario advises the Province to acknowledge that different farmers and landowners have different preferences for accessing information. Therefore, Conservation Ontario recommends that the Province undertakes various efforts to make information available to all farmers and landowners.

Conservation Ontario recommends that impartial extension staff be tasked with connecting farmers with solutions and information. It is crucial that solutions as well as information are presented to

farmers and landowners to be able to deal with production issues using agri-business solutions. Conservation Ontario recommends that the Province holds education programs, workshops, demonstrations sites, and/or site visits to farms to promote information to farmers and landowners. These face-to-face meetings will provide the opportunity for peer-to-peer interactions between farmers and landowners to learn about the effectiveness of different BMPs and their associated risks and benefits.

Information on BMPs can be shared through the existing Environmental Farm Plan program, and/or the local Soil and Crop Improvement Associations. The information can also be circulated with the instructions of the proposed farm-scale soil health test for Ontario farms, which Conservation Ontario encourages to be strongly recommended to farmers and landowners. Additionally, the Province is encouraged to use social media and local Conservation Authorities to promote information to farmers and landowners.

Thank you for the opportunity to provide comments on the Discussion Document for developing an Agricultural Soil Health and Conservation Strategy for Ontario, titled "*Sustaining Ontario's Agricultural Soils: Towards a Shared Vision*". Conservation Authorities play an important role in addressing today's environmental and resource management challenges, including soil health and soil conservation, which enables Conservation Ontario to be uniquely positioned to provide valuable input into this review process. Conservation Ontario has also endorsed the participation of Tracey Ryan (Grand River Conservation Authority) to represent all CAs at the Provincial Soil Health Stakeholder Advisory Group table. Conservation Ontario is supportive of the draft vision, goals and objectives for an Agricultural Soil Health and Conservation Strategy for Ontario but the Province should recognize the need for additional funding and education to support their achievement. Should you have any questions about this letter, please contact Jo-Anne Rzaadki at extension 224 or by e-mail at jrzadki@conservationontario.ca, or Jessica Chan at extension 227.

Sincerely,



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