



Thames-Sydenham and Region
Threat Policy Discussion Paper

The use of land as livestock grazing or pasturing
land, an outdoor confinement area or a farm-
animal yard

1. *What is the Threat to Drinking Water?*

This paper provides background information for prescribed drinking water threat 21 - Livestock grazing/pasturing and outdoor confinement area/farm animal yard. Any farm where fencing is in place that could be used to keep livestock outdoors is associated with this drinking water threat.

An **outdoor confinement** area (OCA) is a yard, facility, or enclosure (for livestock, deer, elk or game animals) with a very high animal concentration, typically 15 + animals per acre, often for extended periods of time. Ontario Regulation 267/03 made pursuant to the Nutrient Management Act defines outdoor confinement areas as follows:

- 1) It has no roof, except as described below (#3);
- 2) It is composed of fences, pens, corrals or similar structures;
- 3) It may contain a shelter to protect the animals from the wind or another shelter with a roof of an area of less than 20 square metres;
- 4) It has permanent or portable feeding or watering equipment;
- 5) The animals are fed or watered at the enclosure;
- 6) The animals may or may not have access to other buildings or structures for shelter, feeding or watering; and
- 7) Grazing and foraging provides less than 50 per cent of dry matter intake.

Farm-animal yards are outdoor livestock areas lined with concrete other than those meeting the definition of an outdoor confinement area. Food and water are not provided in farm-animal yards. They are generally used as outdoor exercise areas or holding areas for when barns are being cleaned out, usually in association with a barn/covered structure.

Grazing or pasturing land is land where animals eat growing herbaceous plants.

Although grazing/pasturing, farm animal yards and outdoor confinement areas are different (i.e. the latter is a more concentrated animal area requiring more active management), many sections of this background report

NOTE TO THE READER

*This document is one of a series of threat policy discussion papers for the Thames- Sydenham and Region in support of Source Protection Plan development. Each discussion paper looks at the nature of one or more types of drinking water threat, describes the local occurrence of those threats, assesses existing policies/programs, and introduces related 'policy concepts' for source protection planning. **While every effort has been made to ensure the accuracy of the information in this document, it should not be construed as legal advice or relied on as a substitute for the legislation.***

*This version is considered to be a **working draft** because it will be revised as the policy development process progresses. This discussion paper represents the best information available to the SPC upon which they will base their policy decisions.*

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apply to all. In this report when all types of outdoor livestock areas are referred to collectively, the term “outdoor livestock areas” is used for brevity.

2. What causes this activity to be a drinking water threat?

The Ontario Ministry of the Environment (MOE) Tables of Drinking Water Threats (Ontario Ministry of the Environment, 2009) identify nitrogen, total phosphorus and pathogens (such as e-coli) as contaminants that could make their way into surface and groundwater from outdoor livestock areas (circumstances 200 to 211, 1945 and 1946). Nitrogen is a concern for both surface and groundwater. When water with high nitrate concentrations is given to babies less than six months of age, high levels of methemoglobin are formed in the blood. Oxygen is not distributed to the body's cells and methemoglobinemia or Blue Baby Syndrome results. Total phosphorous is only considered for surface water because excessive inputs result in eutrophication and can cause toxic algae blooms.

These nutrients and pathogens found in animal manure could threaten the safety of drinking water sources in certain situations. Generally speaking, keeping greater numbers of livestock in a space intensifies the accumulation of nutrients and pathogens, thereby increasing the risk of contamination and the requirement for more active management. As such, the ranking of drinking water threat in the MOE Tables increases proportional to the concentration of manure in a given area.

3. What is the local scale of the drinking water threat?

Significant Threats

- WHPA-A or B with a vulnerability score of 10
 - For the management or handling of agricultural source material – ASM generation from grazing and pasturing, a significant chemical threat exists if the number of nutrient units generated in the farm unit divided by the number of acres of land that is used for livestock grazing or pasturing is sufficient to generate nutrients at an annual rate that is more than 1 nutrient unit per acre. The chemical of concern is nitrogen. There is a significant pathogen threat if there is one or more animal.
 - For the management or handling of agricultural source material – ASM generation from yards or confinement, a significant threat exists when the number of animals confined in the area at any time is sufficient to generate agricultural source material at an annual rate of greater than 300 nutrient units per hectare. The chemical of concern is nitrogen. There is significant pathogen threat if there is one or more animal.

- WHPA E with a vulnerability score of 9
 - For the management or handling of agricultural source material – ASM generation from grazing and pasturing, a significant chemical threat exists if the number of nutrient units generated in the farm unit divided by the number of acres of land that is used for livestock grazing or pasturing is sufficient to generate nutrients at an annual rate that is more than 1 nutrient unit per acre. The chemical of concern is nitrogen or total phosphorus. There is a significant pathogen threat if there is one or more animal.
 - For the management or handling of agricultural source material – ASM generation from yards or confinement, a significant threat exists when the number of animals confined in the area at any time is sufficient to generate agricultural source material at an annual rate of greater than

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300 nutrient units per hectare. The chemical of concern is nitrogen or total phosphorus. There is significant pathogen threat if there is one or more animal.

- WHPA E with a vulnerability score of 8.1
 - For the management or handling of ASM generation from grazing and pasturing, a significant pathogen threat exists if there is one or more animal.
 - For the management or handling of ASM generation from grazing and pasturing, a significant pathogen threat exists if there is one or more animal.

A nutrient unit (NU) compares livestock based on the nutrient content (nitrogen and phosphorus) found in manure. A NU is based on the manure equivalent of nutrients contained in 43 kg of nitrogen or 55 kg of phosphate, varying according to livestock type. (For example - 300 NU = 2,400 dairy goats or 210 large frame Holsteins). As nutrients from one dairy goat does not equal nutrients from one large frame dairy cow, under the Nutrient Management Act animals were all standardized to Nutrient Units so that they could be treated equitably.

4. *How is the Risk Currently Managed?*

The following section illustrates examples of how these threats are dealt with municipally, provincially, federally or in other jurisdictions.

National

Fisheries Act

The Federal Fisheries Act always applies where fish habitat is concerned. In general, the Fisheries Act is enforced by Fisheries and Oceans Canada; however, the section that applies to contamination is under the authority of Environment Canada. The main objective of this Act is to protect fish including their habitat and other life requirements. The deposition of any deleterious substance (contaminant) is in contravention of the legislation, per Section 36(3): "... no person shall deposit or permit the deposit of a deleterious substance of any type in water frequented by fish or in any place under any conditions where the deleterious substance or any other deleterious substance that results from the deposit of the deleterious substance may enter any such water" (Government of Canada, 1985).

Manure and sediment runoff are considered deleterious substances. Manure and sediment could enter surface water as a result of unrestricted livestock access to surface water or runoff from outdoor livestock areas.

Provincial

There are three provincial regulations that apply to outdoor livestock areas; each is outlined below. Where there is overlap between the Nutrient Management Act (NMA) and the Environmental Protection Act (EPA) the NMA applies. For example, should a storm cause manure to flow from an outdoor confinement to a watercourse and the farm has a Nutrient Management Strategy the NMA applies, otherwise the EPA and the Ontario Water Resources Act (discussed below) would apply.

Environmental Protection Act

The Environmental Protection Act (EPA) generally prohibits anyone from polluting the environment and is enforced by the Ontario Ministry of the Environment. Sections 6 and 14 of the EPA prohibit pollutant releases except where the discharge of a contaminant is a result of normal farming practices (Government of Ontario, 1990). The exception for normal farming practices allows activities that are necessary for raising livestock (e.g. manure to be spread on fields) without the approvals that are required for other wastes. Section 14 is set out below.

14.1 Subject to subsection (2) but despite any other provision of this Act or the regulations, a person shall not discharge a contaminant or cause or permit the discharge of a contaminant into the natural environment, if the discharge causes or may cause an adverse effect.

Exceptions

(2) Subsection (1) does not apply to,

(a) a discharge that is authorized under this Act or the Ontario Water Resources Act, if the discharge does not cause and is not likely to cause an adverse effect; or

(b) a discharge of a contaminant that arises when animal wastes are disposed of in accordance with normal farming practices, if the only adverse effect that is caused or that may be caused by the discharge is an adverse effect referred to in clause (a) of the definition of "adverse effect".

Adverse effect means "impairment of the quality of the natural environment for any use that can be made of it"

Ontario Water Resources Act

The Ontario Ministry of the Environment is responsible for enforcement of the Ontario Water Resources Act (OWRA). Two sections apply to outdoor livestock areas.

Section 30(1): "Every person that discharges or causes or permits the discharge of any material of any kind into or in any waters or on any shore or bank thereof or into or in any place that may impair the quality of the water of any waters is guilty of an offence." This includes manure and sediment.

Under section 32 of the Act the Ministry can order a person who holds a certificate of approval to make changes if it is found that material is being discharged into the water that could impair its quality (Government of Ontario, 1990).

Nutrient Management Act – Ontario Regulation 267/03

The Nutrient Management Act provides a comprehensive nutrient management framework for Ontario's agricultural industry, municipalities and other generators of materials containing nutrients, including clear environmental protection guidelines. It builds on the existing system by giving current best management practices the force of law, and creating comprehensive, enforceable, province-wide standards to regulate the management of all land- applied materials containing nutrients.

Sections 10, 14 and 28 of Ontario Regulation 267/03 – General are prescribed instruments under the Clean Water Act. These sections relate to the approval of nutrient management strategies and nutrient management plans, and to compliance with nutrient management strategies and plans that are in force (Government of Ontario, 2003).

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Farms are regulated under the Nutrient Management Act if the farm generates greater than 300 nutrient units annually or generate between 5 and 300 NU annually and have applied for a building permit to construct a building used to hold farm animals or manure.

Permanent outdoor confinement areas (OCAs) on farms that are required to have a nutrient management strategy must comply with the following sections under O. Reg. 267/03. There are no requirements for pasturing and grazing.

- Section 55: Increases in capacity and separation distances from water sources
- Section 57: Access of livestock to surface water
- Section 58: nutrient Management Strategy required to apply to manure and runoff from confinement area
- Section 60: Management of manure
- Section 61: Management of snow that contains manure
- Section 81 (2,3) : Runoff management system mandatory
- Section 81 (5): Permanent vegetated areas requirements as runoff management
- Part IX.2: Vegetated Filter Strip Systems requirements

Municipal

Municipal Act

Municipalities have the ability to pass by-laws about the economic, social and environmental well-being of the municipality, and about the health, safety and well-being of people, under the Municipal Act

Education and Incentive Programs

Canada-Ontario Environmental Farm Plan

The Environmental Farm Plan (EFP) is a program that is delivered locally through the Ontario Soil and Crop Improvement Association with expertise provided by the Ontario Ministry of Agriculture and Food. It is a voluntary educational program for farmers delivered through local workshops. Participants progress through a risk assessment and action plan development for their farm. The risk assessment gives the farmer the opportunity to assess the current level of environmental concern in up to 23 different areas on the farm and access funding to make improvements for areas of identified risk (Ontario Soil and Crop Association, 2005). The information sheets on nutrient management for the EFP program are consistent with the requirements of O. Reg. 267/03.

5. *Policy Considerations*

- Run-off from outdoor confinement areas and farm-animal yards is the greatest risk for livestock manure to enter surface water.
- Only farms regulated under the NMA will have a nutrient management strategy or plan. The NMP/S will only have sections applicable to outdoor confinement areas but not to grazing and pasturing.

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- Grazing of livestock cannot be prohibited under land use planning because it is an activity. Only land future uses can be prohibited, such as agricultural land use. New outdoor confinement areas can only be prohibited through the land use planning tool if they require a planning application for a building. Acquiring land gives a municipality the most control around land use activities.
- The Restricted Land Use tool will not capture future activities if they are not in association with an application process related to land use.
- The use of Risk Management Plans (RMP) would require the property owner to work with the Risk Management Official to create a RMP that would manage the risk posed by livestock grazing or outdoor confinement areas. These RMP would allow for site specific considerations.

6. *Proposed policy ideas*

For discussion purposes, this section of the report provides examples of policy ideas that could be applicable to the subject threat in the Thames-Sydenham and Region. It is not an exhaustive list. Each policy tool is discussed separately in the table below.

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Policy Tool	Policy ideas
Education and Outreach	<ul style="list-style-type: none"> • Support BMPs to manage risk for pasturing/grazing • Promote EFPs for all farms in vulnerable areas • Promote voluntary NMP/S for outdoor confinement areas and farm-animal yards
Incentive Programs	<ul style="list-style-type: none"> • Incentive programs to establish buffers on lands adjacent to surface water within WHPA-E (with vulnerability score of 9 or 8.1) • Continued support for agricultural BMPs which protect source water through existing programs such as EFP, Clean Water Project, • Encourage the Ontario Drinking Water Stewardship Program to consider long-term funding of BMPs in vulnerable areas
Land Use Planning	<ul style="list-style-type: none"> • Cannot regulate activities only land use.
Prescribed Instruments	<ul style="list-style-type: none"> • Require MOE and OMAFRA to consider protection of municipal wellheads in review of NMS/P for farms in WHPA-A • Require landowner to apply for Certificate of Approval under OWRA for runoff management systems
Risk Management Plans	<ul style="list-style-type: none"> • Require RMP for outdoor confinement areas and farm-animal yards within areas where it is considered a significant threat on farms that are not governed under the NMA • Require RMP for livestock grazing and pasturing requiring site specific locally negotiated plan
Prohibition	<ul style="list-style-type: none"> • Prohibit future outdoor confinement areas and farm-animal yards from locating in areas where they would be considered a significant threat.
Restricted Land Use	<ul style="list-style-type: none"> • Require pre-screening of applications where land use may result in a significant threat

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Land Securement	<ul style="list-style-type: none">• Purchase or place easements on land in significant threat areas where it is in an agricultural land use.
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7. *Reference List*

Government of Canada. 1985. Fisheries Act. <http://laws.justice.gc.ca/en/F-14/index.html>

Government of Ontario. 1990. Environmental Protection Act. www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90e19_e.htm

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Ontario Ministry of the Environment. 2009. Complying with Environmental Legislation on Farms. www.ene.gov.on.ca/publications/7212e.pdf

Ontario Ministry of the Environment. 2009. Tables of Drinking Water Threats. 2008, as amended in 2009. www.ene.gov.on.ca/publications/cw/7561e03.pdf

Ontario Soil and Crop Association. 2005. Canada-Ontario Environmental Farm Plan. www.ontariosoilcrop.org/en/programs/programsaboutefp.htm

Threat: The Use of Land as Livestock Grazing or Pasturing Land, an Outdoor Confinement Area or a Farm-animal Yard				
System	Type	# of significant threat locations	WHPA	Vulnerability score
Dorchester	Pathogen	1	A, B	10
Embro	Pathogen	1	A	10
Ingersoll	Pathogen	1	A	10
Mount Elgin	Pathogen	1	A	10
Woodstock-rural	Chemical	2	B	10
Total		6		

Policy Options

Appendix B will be added when the SPC gets to the appropriate stage in the policy discussions. The policy options presented in appendix B are placeholder policies based on the policy ideas noted above. They are presented in this document to facilitate policy discussion at the upcoming SPC meeting. And subsequent review and comment by the Municipal Source Protection Policy Advisory committee.

Policy Example Number	
Sub- Threat(s)	
Circumstance	
Vulnerable Area	
Risk	
Body Responsible for Implementing	
Threat Status	
Land Use	
Legal Effect	
Policy Tool	
Policy Ideas	
Implementation schedule	
Monitoring Policy	