Good Choices, Bad Choices.

Environmental Rights and Environmental Protection in Ontario

2017 Environmental Protection Report

Environmental Commissioner of Ontario

The people of Ontario recognize the inherent value of the natural environment.

The people of Ontario have a right to a healthful environment.

The people of Ontario have as a common goal the protection, conservation and restoration of the natural environment for the benefit of present and future generations.

While the government has the primary responsibility for achieving this goal, the people should have means to ensure that it is achieved in an effective, timely, open and fair manner.

Preamble to Ontario's *Environmental Bill of Rights, 1993*

Select citations have been included to help readers understand where the information the ECO cites comes from and to assist them in investigating an issue further should they be interested. Citations may be provided for: quotes; statistics; data points; and obscure or controversial information. Endnotes for these facts are generally only included if the source is not otherwise made clear in the body of the text and if the information cannot be easily verified. Exhaustive references are not provided.

Ministries were provided the opportunity to provide comments on this report. Ministry comments are available on our website.

October 2017

The Honourable Dave Levac
Speaker of the Legislative Assembly of Ontario

Room 180, Legislative Building
Legislative Assembly of Ontario
Queen's Park
Province of Ontario

Dear Speaker:

In accordance with Section 58 (1) of the *Environmental Bill of Rights, 1993* (*EBR*), I am pleased to present the 2017 Environmental Protection Report of the Environmental Commissioner of Ontario for your submission to the Legislative Assembly of Ontario.

I am proud to report further progress on environmental rights in Ontario. Government compliance with the *EBR* continues to improve. Almost all the 1,800 outdated proposals that languished on the Environmental Registry at the time of my appointment have been updated. The quality of notices posted by some ministries has improved, and the public now gets more information about the progress of Applications for Review. The government has promised to update the Environmental Registry software, and review the Statements of Environmental Values for prescribed ministries. Meanwhile, public awareness and use of the *EBR* also continues to improve, with more than 1,700 Ontarians using our alert service to keep up with environmentally significant government decisions. These changes strengthen the *EBR* as a tool for open government, public engagement, and social license for government decisions.

The last year has been more mixed in terms of environmental protection. Although much remains to be done, the Ministry of the Environment and Climate Change (MOECC) has taken steps to improve environmental health, especially for First Nations. The MOECC is also using the modernization approvals framework respectfully and to good effect. In contrast, the Ministry of Natural Resources and Forestry is using the same framework to sacrifice the protection of species at risk for the convenience of industry.

Sincerely,

Dianne Saxe
Environmental Commissioner of Ontario

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CONTENTS

Executive Summary 6

Chapter 1
The *Environmental Bill of Rights* 14

Chapter 2
Getting Approvals Right: the MOECC's Risk-Based Approach 70

Chapter 3
Environmental Injustice: Pollution and Indigenous Communities 98

Chapter 4
Algae Everywhere 148

Chapter 5
Lightening the Environmental Footprint of Aggregates in Ontario 166

Chapter 6
The Missing 68,000 km^2: Ontario's Protected Areas Shortfall 186

Chapter 7
Getting Approvals Wrong: The MNRF's Risk-Based Approach to Protecting Species at Risk 216

Chapter 8
Failing to Protect a Threatened Species: Ontario Allows Hunting and Trapping of the Algonquin Wolf 252

Appendix: *EBR* Report Cards for 2016/2017 270

Executive Summary

The Environmental Commissioner of Ontario (ECO) is the guardian of the *Environmental Bill of Rights*. We report to the Ontario legislature and to the public on environmental protection, energy conservation, and climate change. The ECO's 2017 Environmental Protection Report, *Good Choices, Bad Choices: Environmental Rights and Environmental Protection in Ontario*, examines eight environmental issues this year. The report highlights examples of positive government action as well as cases of government inaction, or worse, misguided action.

Chapter 1: The *Environmental Bill of Rights*

Each year, the Environmental Commissioner of Ontario reports on whether ministries have fulfilled their responsibilities under the *Environmental Bill of Rights*, and whether their environmentally significant decisions were consistent with the purposes of the law. Last year we called on all ministries to show more respect for the public by improving their best practices and compliance with the law. In response to last year's report cards, as well as training and outreach by the ECO to ministries, we saw progress this year in three of the four areas that needed significant improvement:

1. **Content of notices posted on the Environmental Registry:** Ministries made modest progress by making the content of their notices for instruments (e.g., approvals, permits, and licences) more relevant to the public and easier to understand.

2. **Outdated proposals on the Environmental Registry:** Ministries reduced the total number of outdated proposal notices on the Environmental Registry by over 80%. Only four ministries still had outdated proposals on the Environmental Registry at the end of the reporting year.

3. **Overdue applications for review under the *Environmental Bill of Rights*:** Ministries concluded four of the seven overdue applications for review that we identified in 2015/2016. The Ministry of the Environment and Climate Change (MOECC) also began posting status updates of its applications for review on the Environmental Registry. However, the MOECC's review of the *Environmental Bill of Rights* itself remains incomplete, almost seven years after this application was submitted.

Ministries often still take a long time to post decision notices on the Environmental Registry. This delay deprives the public of the right to know both the government's ultimate decision on a proposal within a reasonable time, as well as how public comments affected it. Late posting can also affect the public's ability to appeal certain instrument decisions.

This year the MOECC – which makes the most environmentally significant decisions – generally discharged its duties well under the *Environmental Bill of Rights*. The Ministry of Natural Resources and Forestry (MNRF), which also makes many environmentally significant decisions, performed less well; for example, the MNRF did not document its consideration of its Statement of Environmental Values for all decisions. The Environmental Commissioner of Ontario expects all ministries to continuously improve how well they meet their obligations under the *Environmental Bill of Rights*.

Prescribed Ministry	Quality of notices for policies, acts and regulations posted on the Environmental Registry	Quality of notices for instruments posted on the Environmental Registry	Timeliness of posting decision notices on the Environmental Registry	Keeping notices on the Environmental Registry up to date	Handling of applications for review and investigation	Avoiding overdue applications for review	Considering Statements of Environmental Values (SEVs)	Co-operation with ECO requests
The Ministry of the Environment and Climate Change	→	→	→	↗	↗	↗	→	→
The Ministry of Natural Resources and Forestry	→	→	→	→	↗	↗	↘	↘

Summary of the Ministry of the Environment and Climate Change and the Ministry of Natural Resource and Forestry's performance in 2016/2017. Green means that a ministry met or exceeded the ECO's expectations and its legal obligations; yellow means that a ministry's performance needs improvement; red means that the ministry's performance is unacceptable. Arrows indicate annual trends.

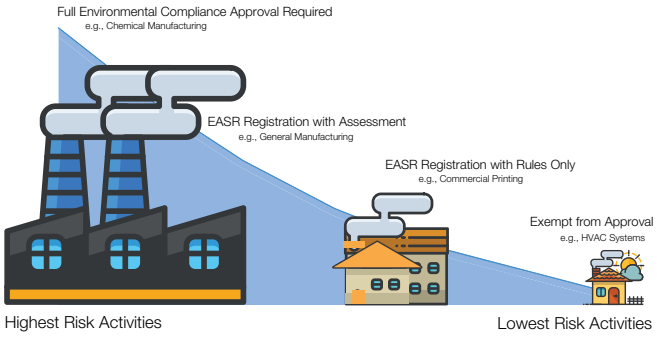
The ECO recommends that:

- **All ministries post documentation of how they considered their Statement of Environmental Values as part of posting decision notices on the Environmental Registry for all policies, acts, regulations, and instruments.**
- **The MOECC immediately complete its review of the *Environmental Bill of Rights*; all ministries improve their practices to address operational deficiencies in administering the act; and the MOECC amend the *Environmental Bill of Rights* itself to remedy legislative deficiencies.**
- **All ministries that have ongoing applications for review post information notices on the Environmental Registry to update the public on the status of the review.**

Chapter 2: Getting Approvals Right: the MOECC's Risk-Based Approach

In 2010, the Ministry of the Environment and Climate Change launched an online permit-by-rule system to regulate some low-risk environmental activities instead of requiring individual approvals for every single activity. Now, proponents undertaking certain low-risk activities must follow a standard set of operating requirements by registering the activity in an online database known as the Environmental Activity and Sector Registry (EASR).

This new approach has reduced the number of applications for individual environmental approvals, lightening the ministry's workload, and saving time and money for businesses. More importantly, the shift to the EASR has also brought many facilities that were previously operating outside environmental laws under regulatory oversight, and made EASR registrants subject to up-to-date environmental standards. It has also levelled the playing field for competitors, making all EASR registrants in a sector subject to the same rules. The Ministry of the Environment and Climate Change has developed a sound compliance and enforcement



Ontario's risk-based approach to environmental approvals.

Source: created by the ECO.

strategy for EASR registrants, which is already improving compliance. For example, the MOECC saw significant improvement in the automotive refinishing sector after taking compliance action.

A key purpose for introducing the EASR was to enable the ministry to focus more of its resources on higher-risk activities; now it needs to do just that. The Ministry of the Environment and Climate Change must strengthen its environmental approvals framework by: updating older environmental compliance approvals for higher-risk activities outside the EASR framework; accounting for the cumulative environmental effects of all regulated facilities (e.g., all air pollution within an airshed); and improving the Access Environment website where the public can find EASR registrations and other environmental approval documents.

The ECO recommends that:

- **The MOECC take a risk-based approach to prioritize updating older environmental compliance approvals (ECAs) for activities that will not be subject to EASR registration.**
- **The MOECC ensure that all forms of environmental approvals (including ECAs and EASR registrations) take into account the potential cumulative effects of multiple regulated entities on local air quality.**
- **The MOECC resolve ongoing technical issues with Access Environment, so that information about environmental approvals is more accessible to the public.**
- **The MOECC post all ECAs that are still in force on Access Environment.**

Chapter 3:
Environmental Injustice: Pollution and Indigenous Communities

Photo credit: CBC/Jody Porter.

Governments and industry have long failed to remedy environmental issues that adversely affect the health, ecology and economies of Indigenous communities across Ontario.

In the Grassy Narrows and Wabaseemoong First Nation communities, northwest of Dryden, community members have suffered the devastating effects of pervasive mercury contamination in the Wabigoon-English River system for over 60 years. In one study, over 58% of the participating Grassy Narrows and Wabaseemoong community members were diagnosed with or suspected of having Minamata disease, a serious neurological syndrome caused by mercury poisoning. Minamata disease causes degraded neurological abilities including: tunnel vision; deafness; numbness in arms and legs; uncontrollable shaking; difficulty walking; and even death.

Across Ontario, numerous First Nation reserve communities are under boil water advisories that have lasted years. As of July 2017, 34 Ontario First Nation communities were affected by an advisory that had been in place for more than a year, and 17 communities were under an advisory more than a decade old. The federal government has the primary responsibility for water infrastructure and regulation on First Nation reserves, but the Government of Ontario also has a role to play in ensuring that every person living in Ontario has access to safe drinking water.

Surrounded by heavy industry, the Aamjiwnaang First Nation, located in Sarnia, suffers some of the worst air pollution in the country. Altogether, the industrial facilities of "Chemical Valley" release millions of kilograms of pollution into the Aamjiwnaang airshed each year, including some particularly toxic chemicals such as benzene and sulphur dioxide (SO_2). There is strong evidence that the pollution is causing adverse health effects, which neither the federal nor provincial government have properly investigated. Aamjiwnaang is known, sadly, for a 2005 study that confirmed a skewed sex ratio of babies in the community – two girls are born for every boy. A series of studies has found that Sarnia (including Aamjiwnaang) experiences high frequencies of many illnesses, higher-than-average hospital admissions for respiratory and cardiovascular illnesses, and higher-than-average incidences of certain cancers. In Aamjiwnaang, a "shelter-in-place" siren may go off at any time because of dangerous emissions, requiring residents to immediately go or stay inside, seal air exchanges and await further instructions.

After decades of inaction, the Ontario government is finally taking some steps to acknowledge and address these wrongs, but more is needed. In Grassy Narrows and Wabaseemoong, the provincial government must fulfil its commitment to ensure remediation takes place in a manner that includes the community and is respectful of their concerns and needs as partners. For the dozens of First Nation communities without safe drinking water, the province should provide more support, including technical expertise and training to operators of First Nation water treatment facilities. In Aamjiwnaang, the Ministry of the Environment and Climate Change must update its air standards and clarify the rules to ensure that all health-relevant industrial pollution is being properly regulated. The government and the ministry must invest in stronger monitoring and enforcement, as well as better communication with the Aamjiwnaang community.

The ECO recommends that:

- **The MOECC amend O. Reg. 419/05 to set up-to-date SO_2 air standards that protect human health.**
- **The MOECC clarify, by regulation, that acid gas flaring must be included in Emission Summary and Dispersion Modelling reports, even when associated with transitional operating conditions.**
- **The MOECC ensure the people of Aamjiwnaang have access to real time air monitoring information.**
- **The Government of Ontario and the MOECC increase technical capabilities and response capacity at the Sarnia district office by making more resources available.**
- **The MOECC work with Aamjiwnaang to improve transparency and trust between the ministry and the community.**
- **The Government of Ontario incorporate environmental justice as part of its commitment to reconciliation with Indigenous people and communities.**

Chapter 4: Algae Everywhere

A large algal bloom in western Lake Erie in September 2013.

Photo credit: NASA.

Algae blooms – thick, soupy scums of algae – are becoming much more frequent and wide-spread, and are imposing serious costs on Ontario communities. Harmful algal blooms can disrupt lake ecosystems, affect drinking water supplies, and make water unusable for recreation. Although the problem is most common in Lake Erie, algae also affect Lake Simcoe, parts of Lakes Huron and Ontario, and inland lakes, especially on the Canadian Shield.

Phosphorus is a key cause of algae growth. Regulations on phosphorus releases helped clean up algal blooms that plagued Lake Erie in the 1970s. Now more phosphorus controls are needed.

Today, run-off from rural, agricultural and urban lands is the dominant source of phosphorus. The Ontario government's preference so far for addressing these sources has been through voluntary and unevaluated programs, with questionable effectiveness. The Ministry of Agriculture, Food and Rural Affairs (OMAFRA) and the MOECC must apply effective financial, regulatory and land use planning tools to curb these "non-point" sources of phosphorus run-off, such as:

- Expanding phosphorus trading to more watersheds (i.e., enabling phosphorus emitters, like sewage treatment plants, that can only reduce their emissions at great expense to pay other emitters, like farmers, to reduce their emissions more cheaply);
- Incenting agricultural practices that clearly reduce phosphorus run-off;
- Banning the spreading of phosphorus-containing materials on frozen or saturated ground;
- Reforming land use policy to reverse the continuing loss of wetlands in southern Ontario; and
- Addressing previously overlooked phosphorus sources, such as agricultural tile drains, construction sites and golf courses.

The ECO recommends that:

- **The MOECC and the OMAFRA link financial incentives to verified reductions in farm-based phosphorus run-off to water courses.**
- **The MOECC and the OMAFRA ban all spreading of phosphorus sources, such as manure, fertilizer and sewage sludge, on frozen or saturated ground.**
- **The MNRF reverse the continuing loss of wetlands in southern Ontario.**
- **The MOECC, the OMAFRA and the MNRF ensure that metrics-based and outcome-driven evaluations are built into all programs and strategies that the ministries lead, fund or partner on. Phosphorus control programs should, for example, require quantitative loadings targets, monitoring, quantitative evaluations and regular reporting as core elements.**

Chapter 5: Lightening the Environmental Footprint of Aggregates in Ontario

Photo credit: Hansueli Krapf / Wikimedia used under CC BY-SA 3.0.

Aggregates – sand, stone and gravel – are used to construct everything from highways to buildings. However, aggregates come with a significant environmental and social cost. They are often a source of conflict when aggregate extraction occurs close to communities.

The Ontario government began a review of the *Aggregate Resources Act* in 2012, finally amending the law in 2017. The amendments have addressed some of the concerns raised by the ECO and others over the years.

The amendments include enhanced protections for drinking water sources, improved compliance and enforcement capacity, and increased fees and royalties. However, the environmental footprint of aggregates should be lightened by: decreasing the need for new extraction sites; updating the operating conditions of existing sites where necessary to ensure environmental protection; and decreasing the environmental impact at end-of-use sites.

The ECO recommends that:

- **The government use the additional funds from the increased fees and royalties to grow the market for recycled aggregate.**
- **The government adopt procurement policies across all ministries, agencies and Crown corporations that prioritize the use of recycled aggregate.**
- **The government make recycled aggregate procurement policies a prerequisite for municipalities to receive infrastructure funding.**
- **The MNRF identify currently licenced aggregate sites that require studies and, if appropriate, update their operating conditions to ensure environmental protection.**
- **The MNRF include clear timelines for progressive and final rehabilitation in the *Aggregate Resources Act* policy framework.**

Chapter 6: The Missing 68,000 km^2: Ontario's Protected Areas Shortfall

Protected areas, like provincial parks, are one of the most important tools for safeguarding nature. They conserve biodiversity, help us mitigate and adapt to climate change, provide ecosystem services that humans rely on, and offer social, economic and cultural benefits. Because of their critical role in combatting global biodiversity loss, almost all countries in the world, including Canada, have committed to protect 17% of lands and inland waters by 2020. Ontario still has a long way to go to reach this goal; protected areas currently cover only 10.7% of the province.

The Ministry of Natural Resources and Forestry does not have a plan for expanding the protected areas system to meet the 2020 international goal. The ministry must undertake a frank assessment of the current status of the protected areas system, identify key opportunities for expansion, and make a clear public commitment to achieving, and eventually exceeding, the 17% conservation target.

The ECO recommends that:

- **The MNRF fund the work required to inventory and assess Ontario's natural heritage areas as protected areas and other conservation lands.**
- **The MNRF develop a strategic plan for how it will achieve 17% conservation in the province, including:**
  - **Identifying priority lands for protection (e.g., biodiversity hotspots, improving ecoregional representation, enhancing connectivity, protecting important carbon stores, and protecting climate refugia);**
  - **Identifying priorities for ecological restoration in the protected areas system;**
  - **Identifying opportunities for co-management with Indigenous communities;**
  - **Providing financial and capacity-building support to increase protection of partially protected natural heritage areas; and**
  - **Restoring land acquisition funding programs.**

Algonquin Provincial Park.

Photo credit: Danny Zabbal.

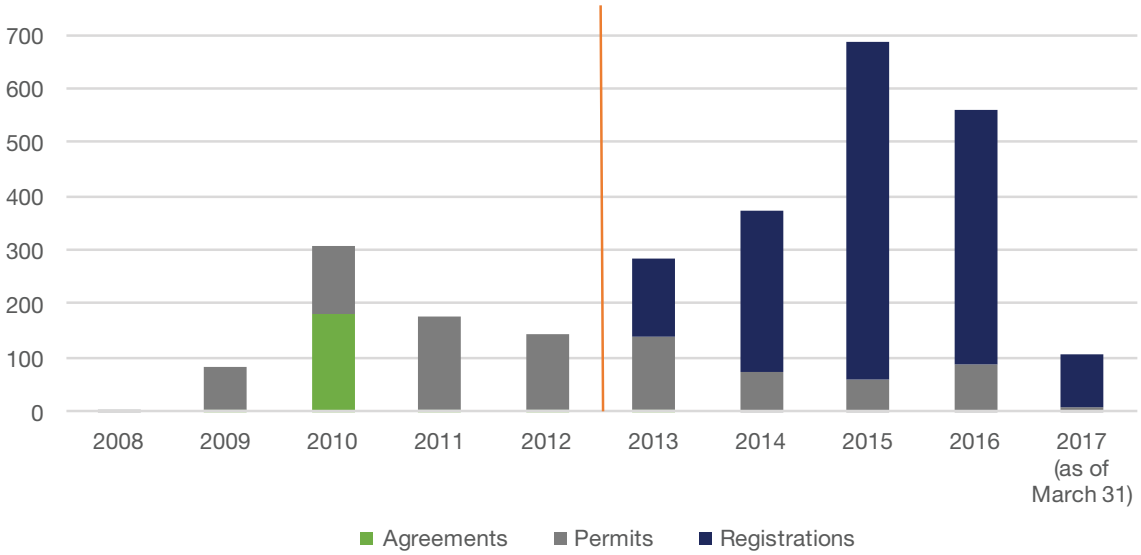
Chapter 7: Getting Approvals Wrong: The MNRF's Risk-Based Approach to Protecting Species at Risk

In 2013, the Ministry of Natural Resources and Forestry "modernized" its system for issuing approvals under the *Endangered Species Act*. The law prohibits activities that harm species at risk or their habitat (there are 237 currently listed as at risk in Ontario), but it also gives the ministry the flexibility to authorize exceptions to these protections (e.g., through permits). Much like the MOECC's Environmental Activity and Sector Registry program (discussed in Chapter 2), instead of issuing individual permits that require the proponent to provide an "overall benefit" to a harmed species at risk, the Ministry of Natural Resources and Forestry now regulates most activities under a permit-by-rule system that is supposed to require proponents to follow a standard set of operating rules.

This approach is undermining the survival of Ontario's species at risk. The MNRF has never denied a permit to harm a threatened or endangered species. And, the permit-by-rule system only requires proponents to minimize (not eliminate or compensate for) harm to affected species at risk; the MNRF also turns a blind eye to whether proponents comply with these weakened rules. Making it worse, the ministry keeps the public in the dark about what activities it allows. The ministry must overhaul its approach to managing the *Endangered Species Act* approvals program, including enhancing monitoring and enforcement.

The ECO recommends that:

- **The MNRF determine the effects of its authorizations on species at risk and publicly report on the results.**
- **The MNRF amend the *Endangered Species Act* to give enforcement officers the power to conduct inspections of registered activities to ensure compliance with permit-by-rule conditions.**
- **The MNRF post instrument proposals for all permits on the Environmental Registry for full public notice and comment.**
- **The MNRF make all species at risk authorizations, including registrations, publicly accessible on Access Environment.**
- **The MNRF amend the *Endangered Species Act* to create a right of appeal for permits.**



Number of authorizations under the *Endangered Species Act*.

Source: data provided by the MNRF in April 2017.

Chapter 8: Failing to Protect a Threatened Species: Ontario Allows Hunting and Trapping of the Algonquin Wolf

The Algonquin wolf is a distinct species native to Ontario, listed as "threatened" under the *Endangered Species Act*. There may be as few as 250 mature Algonquin wolves (also known as eastern wolves) remaining, with about two-thirds living within our province. Although the law prohibits killing or harming the Algonquin wolf, the Ministry of Natural Resources and Forestry allows hunting and trapping of this threatened species to continue throughout much of its range; the ministry decided to only protect Algonquin wolves from hunting and trapping in and around a few isolated provincial parks. The Algonquin wolf stands little chance of recovery unless it is better protected.

The ECO recommends that the Ministry of Natural Resources and Forestry prohibit hunting and trapping of wolves and coyotes throughout the Algonquin wolves' entire "extent of occurrence" (i.e., where they live).

The threatened Algonquin wolf.

Photo credit: MNRF.

Chapter 1

The *Environmental Bill of Rights*

Contents

1.0	**THE *ENVIRONMENTAL BILL OF RIGHTS***	**16**
1.1	**THE ENVIRONMENTAL COMMISSIONER OF ONTARIO**	**17**
1.1.1	EDUCATION AND OUTREACH BY THE ECO	17
1.2	**STATEMENTS OF ENVIRONMENTAL VALUES**	**19**
1.2.1	KEEPING THE *EBR* IN SYNC: THE TBS AND THE MOECC WILL CONSIDER CLIMATE CHANGE IN DECISION-MAKING	**19**
1.3	**PUBLIC NOTICE AND CONSULTATION THROUGH THE ENVIRONMENTAL REGISTRY**	**20**
1.3.1	POLICIES, ACTS AND REGULATIONS	22
1.3.2	PERMITS, LICENCES AND OTHER APPROVALS	22
1.3.3	INFORMATION NOTICES	23
1.3.4	EXCEPTION NOTICES	23
1.3.5	COMPLIANCE WITH *EBR* PUBLIC CONSULTATION REQUIREMENTS	23
1.3.6	OVERHAULING THE ENVIRONMENTAL REGISTRY	24
1.4	**APPEALS, LAWSUITS AND WHISTLEBLOWER PROTECTION**	**25**
1.4.1	APPEALS OF CLASSIFIED INSTRUMENTS	25
1.4.2	LAWSUITS AND WHISTLEBLOWER PROTECTION	27

1.5	**APPLICATIONS FOR INVESTIGATION**	**27**
1.5.1	INVESTIGATION OF WASTE AT A FORMER SAWMILL	29
1.5.2	INVESTIGATION OF BATTERY STORAGE AT A RAILYARD	29
1.5.3	INVESTIGATION OF CONTAMINATION FROM A SEPTIC TANK	29
1.6	**APPLICATIONS FOR REVIEW**	**30**
1.6.1	REVIEW OF A STORMWATER APPROVAL	32
1.6.2	REVIEW OF THE WELLS REGULATION	32
1.6.3	REVIEW OF FRACKING REGULATIONS	33
1.6.4	REFORMING ONTARIO'S *ENVIRONMENTAL BILL OF RIGHTS*: PROMISES MADE, ACTION NEEDED	36
1.7	**REVIEWING MINISTRY PERFORMANCE: *EBR* REPORT CARDS**	**38**
1.7.1	SUMMARY OF *EBR* REPORT CARD RESULTS FOR 2016/2017	41
1.7.2	QUALITY OF NOTICES FOR POLICIES, ACTS AND REGULATIONS ON THE ENVIRONMENTAL REGISTRY	44
1.7.3	QUALITY OF NOTICES FOR INSTRUMENTS ON THE ENVIRONMENTAL REGISTRY	45
1.7.4	PROMPTNESS OF POSTING DECISION NOTICES ON THE ENVIRONMENTAL REGISTRY	49
1.7.5	KEEPING NOTICES ON THE ENVIRONMENTAL REGISTRY UP TO DATE	51
1.7.6	HANDLING OF APPLICATIONS FOR REVIEW AND INVESTIGATION	53
1.7.7	AVOIDING OVERDUE APPLICATIONS FOR REVIEW	55
1.7.8	CONSIDERING STATEMENTS OF ENVIRONMENTAL VALUES	57
1.7.9	CO-OPERATION WITH ECO REQUESTS	59
1.8	***EBR* SUCCESS: THE MNRF SHUTS DOWN THE SNAPPING TURTLE HUNT**	**60**
1.9	***EBR* SUCCESS: IMPROVEMENTS TO THE MOECC'S FINANCIAL ASSURANCE PROGRAM**	**64**
1.10	**THE ECO RECOGNITION AWARD: *POLLINATOR HEALTH STRATEGY* AND *ACTION PLAN***	**66**

1.0 The *Environmental Bill of Rights*

Ontario's *Environmental Bill of Rights, 1993* (*EBR*) is an environmental law unlike any other in the world. The purposes of the *EBR* are to:

- protect, conserve and, where reasonable, restore the integrity of the environment;
- provide sustainability of the environment; and
- protect the right of Ontarians to a healthful environment.

To achieve these goals, the *EBR* requires the Ontario government to consider the environment in its decision making. Certain ministries, known as "prescribed ministries," are given varying responsibilities under the *EBR*. During the ECO's 2016/2017 reporting year (April 1, 2016 – March 31, 2017), there were 17 prescribed ministries:

THE PEOPLE OF ONTARIO HAVE THE RIGHT TO PARTICIPATE IN ENVIRONMENTALLY SIGNIFICANT DECISION MAKING.

Agriculture, Food, and Rural Affairs (OMAFRA)

Infrastructure (MOI)

Economic Development and Growth (MEDG)

Labour (MOL)

Education (EDU)

Municipal Affairs (MMA)

Energy (ENG)

Natural Resources and Forestry (MNRF)

Environment and Climate Change (MOECC)

Northern Development and Mines (MNDM)

Government and Consumer Services (MGCS)

Tourism, Culture and Sport (MTCS)

Health and Long-Term Care (MOHLTC)

Transportation (MTO)

Housing (MHO)

Treasury Board Secretariat (TBS)

Indigenous Relations and Reconciliation (MIRR)

While the government has the primary responsibility for protecting the natural environment, the *EBR* recognizes that the people of Ontario have the right to participate in environmentally significant decision making, as well as the right to hold the government accountable for those decisions. The *EBR* empowers Ontarians to participate in environmental decision making in a number of different ways.

The *EBR*'s "tool kit" is a collection of government obligations and public participatory rights that work together to help ensure that the purposes of the *EBR* are met. The *EBR* tool kit includes:

- The oversight role of the Environmental Commissioner of Ontario (see section 1.1);
- Ministry Statements of Environmental Values (see section 1.2);
- Notice and consultation through the Environmental Registry (see section 1.3);
- Leave to appeal and the right to sue (see section 1.4);
- Applications for investigation (see section 1.5); and
- Applications for review (see section 1.6).

See the ECO's website (eco.on.ca) for an up-to-date list of ministries, laws and instruments prescribed under the *EBR*.

1.1 The Environmental Commissioner of Ontario

The Environmental Commissioner of Ontario (ECO) is an independent Officer of the Legislative Assembly. Often referred to as Ontario's "environmental watchdog," the ECO is responsible for reviewing and reporting on the government's compliance with the *EBR*. To ensure that the *EBR* is upheld, the ECO monitors how prescribed ministries exercise their discretion and carry out their responsibilities under the *EBR*.

THE ENVIRONMENTAL COMMISSIONER IS ONTARIO'S ENVIRONMENTAL WATCHDOG.

Each year, the ECO reports on whether ministries have complied with the procedural requirements of the *EBR*, and whether ministry decisions were consistent with the purposes of the *EBR*. The ECO also reports on the progress of the Ontario government in keeping the *EBR* up to date by prescribing new ministries, laws and instruments that are environmentally significant. The ECO reports to the Legislative Assembly of Ontario – not to the governing political party or to a ministry.

The ECO also reviews and reports on a wide variety of environmental topics, often relating to recent provincial government decisions or issues raised by members of the public. Additionally, since 2009, the ECO has been mandated with reporting annually on the progress of activities in Ontario to reduce emissions of greenhouse gases, and to reduce the use or make more efficient use of electricity, natural gas, propane, oil and transportation fuels.

1.1.1 Education and Outreach by the ECO

People across Ontario face a wide range of environmental issues every day, from local questions about neighbourhood waterways or air quality to broader concerns about a changing climate. Part of our job is helping the public understand and navigate their environmental rights under the *Environmental Bill of Rights*, so they can engage directly with Ontario ministries on environmental decisions that matter to them. We also report regularly to the Ontario Legislature and the broader public on how well ministries are delivering their environmental responsibilities.

PEOPLE ACROSS ONTARIO FACE A WIDE RANGE OF ENVIRONMENTAL ISSUES EVERY DAY.

Our revamped website (eco.on.ca) has made it easier for the public to access our many relevant reports. Our website user numbers grew by an impressive 28% in 2016, and our page-views by 50%, compared to the previous year. Ontarians can also follow the ECO through our blog, Twitter, Facebook and LinkedIn accounts, as well as our YouTube channel. Stay tuned for more updates to the ECO's website in the coming year.

Also, nearly 1,500 users are now signed up for our Environmental Registry Alert service on our website to receive e-mail alerts when topics that interest them show up on the Environmental Registry. Until the Ministry of the Environment and Climate Change (MOECC) completes its promised overhaul of the Environmental Registry, our Environmental Registry Alert service remains the most convenient way to track public comment opportunities offered by Ontario ministries on environmental matters. Almost 2,000 people also follow our @EBR_EnvRegistry account to get notified of what's on the Environmental Registry via Twitter.

Media coverage of our reports to the Ontario Legislature has shown a steady upward trend over the past four years. The ECO's October 2016 Environmental Protection Report, *Small Steps Forward*, received over 350 media hits, while the November 2016 report, *Facing Climate Change*, received over 570 media hits. Topics from past ECO reports can also receive significant attention, including over 300 media hits in the fall of 2016 on the issue of water pricing.

In 2016, we introduced stand-alone executive summaries for each of our reports, supported by graphics. The very low printing costs compared to our bound reports have allowed for large print runs and outreach to many different audiences.

In this reporting year, Commissioner Saxe has reached thousands of Ontarians directly through speaking engagements and webinars, from a gathering of Regional Public Works Commissioners in Kitchener to the annual meeting of Ontario Beekeepers in Ottawa; and from a conference of Great Lakes scientists on Lake Huron to a discussion with woodlot owners in Trenton.

Bringing the latest climate science to the attention of Ontario's key public policy influencers was a top priority for the Environmental Commissioner this year. In early 2017, Commissioner Saxe presented thought-provoking slide decks on the accelerating changes to climate patterns to dozens of appreciative executive audiences in Ontario's government, industry and finance sectors.

Commissioner Saxe also met with each of the three party caucuses at the Ontario Legislature in the spring of 2017, to hear about environmental issues from the perspective of MPPs and their constituents. The Commissioner also travelled to both Quebec and Manitoba in this reporting period, for information exchanges on environmental advances and challenges in these neighbouring jurisdictions.

The Sustainability Network also hosted a webinar for us in October 2016, allowing the ECO to share highlights of our *Small Steps Forward* report with a Canada-wide audience.

Outreach on the citizen engagement toolkit of the *Environmental Bill of Rights* is an ongoing priority for our office. The Environmental Commissioner and her staff make a point of featuring and illustrating the *EBR* toolkit in their presentations to audiences across the province. In this reporting period, well over 30 ECO presentations focussed on the workings and success case studies

of the *EBR* toolkit. Audiences included students at the University of Waterloo, York University, Osgoode Law School, Fleming College and Wilfred Laurier University; industry and government engineers at events hosted by the Air and Waste Management Associations and the MOECC; and non-profit groups like the Ontario Land Trust Alliance, Ontario Nature, Gravel Watch, and Kawartha Conservation.

Every year, our Public Information and Outreach Officer receives a wide range of public inquiries on a variety of environmental concerns – about 1,400 inquiries per year – by phone and e-mail. Common concerns include: difficulties accessing information about environmental assessment processes, questions about the use of the Environmental Registry, and enquiries about the ECO's position on a variety of topics based on our past reports. We also help redirect some callers to information and services they seek within the provincial government or other agencies. The ECO's Resource Centre, with an extensive collection of environmental documents, is also open to the public.

Altogether, the ECO is proud of our growing success in reaching and serving Ontarians. The ECO is always on the lookout for new audiences, to share information about the citizen rights toolkit available under the *EBR*, and to update Ontarians on current environmental issues. The ECO is happy to offer overview presentations about the *EBR* to audiences across Ontario, including lecture and classroom settings, service clubs, private sector groups, ratepayer groups and non-profits. For more information, contact us at commissioner@eco.on.ca.

THE ECO IS PROUD OF OUR GROWING SUCCESS IN REACHING AND SERVING ONTARIANS.

1.2 Statements of Environmental Values

The *EBR* requires each prescribed ministry to develop and publish a Statement of Environmental Values (SEV). An SEV describes how the ministry will integrate environmental values with social, economic and scientific considerations when it makes environmentally significant decisions; ministries must consider their SEVs when making decisions that might significantly affect the environment. Essentially, an SEV reveals how a given ministry views its environmental responsibilities. The ministry does not always have to conform to its stated values, but it must explain how it considered them when making a decision.

Statements of Environmental Values have only been minimally effective in changing environmental outcomes to date. One limitation to their effectiveness is that ministries do not share with the public how they considered their SEVs in making decisions. This lack of transparency can be easily and quickly fixed. If ministries were to publicly share their SEV consideration documents, members of the public would then be able to hold ministries to account for how they consider their SEVs. Therefore, **the ECO recommends that all ministries post documentation of how they considered their SEV as part of posting decision notices on the Environmental Registry for all policies, acts, regulations, and instruments.**

1.2.1 Keeping the *EBR* in Sync: The TBS and the MOECC Will Consider Climate Change in Decision Making

The Treasury Board Secretariat (TBS) became prescribed under the *EBR* in July 2016 and, shortly thereafter, started work on developing its Statement of Environmental Values (SEV). The ministry deserves praise for explicitly incorporating climate change into

its finalized SEV. The TBS states that it will "consider climate change mitigation and adaptation as part of the government decision-making process. This will include both greenhouse gas impact analyses for government policies, legislation and regulations, as well as adaptation considerations for public infrastructure investments and government procurement decisions."

In May 2017, the MOECC followed suit and proposed changes to its SEV, including:

- updating the Ministry's vision to include a resilient, low-carbon economy;
- adding a section that recognizes that the public interest requires a broad effort to reduce greenhouse gases and build a cleaner and more resilient province with continued involvement and engagement of individuals, businesses, communities, municipalities, non-government organizations and First Nation and Métis communities;
- adding a commitment to review the SEV every five years; and
- articulating that the SEV is to be considered for instruments (e.g., approvals and permits) as well as policies, acts and regulations.

While these ministries' efforts to incorporate climate change are commendable, the wording is too vague. Ministries should include clear and specific action statements in their SEVs so that ministry staff and the public understand how climate change considerations should be applied in practice, and how they might affect the final decision.

Other prescribed ministries have committed to update their SEVs. For example, the MTO, the OMAFRA and the MEDG have indicated that they are in the process of adding climate change considerations into their SEVs.

1.3 Public Notice and Consultation through the Environmental Registry

The Environmental Registry is a website that provides the public with access to information about environmentally significant proposals being put forward by the Ontario government, and also allows the public to provide comments. The Environmental Registry is the key *EBR* tool facilitating public engagement in government environmental decision making. It can be accessed at ebr.gov.on.ca.

The Environmental Registry provides other information that may help the public exercise their *EBR* rights, including:

- notice of appeals and leave to appeal applications related to classified instruments;
- background information about the *EBR*;
- links to the full text of the *EBR* and its regulations;
- links to prescribed ministries' SEVs;
- in some cases, links to the full text of proposed and final policies, acts, regulations and instruments; and
- in some cases, links to other information relevant to a proposal.

The MOECC hosts and maintains the Environmental Registry. The ECO monitors ministries' use of the Registry to ensure that prescribed ministries are fulfilling their responsibilities under the *EBR* and respecting the public's participation rights.

Table 1. Top 10 most commented-on government decisions on the Environmental Registry in 2016/2017.

	Proposal	# of Comments Received
#1	Moratorium on Permits to Take Water for water bottling	21,276 comments
#2	Hunting rules for snapping turtles and other wildlife	13,461 comments
#3	Exempting Algonquin wolves from protection	13,251 comments
#4	Hunting rules for wolves and coyotes in northern Ontario	12,113 comments (+200,000 signatures on petitions)
#5	Allowing cottages in Algonquin Provincial Park until 2038	10,860 comments
#6	Pollinator Health Action Plan	5,220 comments
#7	Hunting rules for Algonquin wolves	4,051 comments
#8	Crown land planning in Wawa District	1,452 comments
#9	Reviews of the Growth Plan for the Greater Golden Horseshoe, Greenbelt Plan, Oak Ridges Moraine Conservation Plan and Niagara Escarpment Plans	866 comments (+21,000 additional comments and petitions, 9,902 of which referenced the *EBR*)
#10	Climate change discussion paper	563 comments

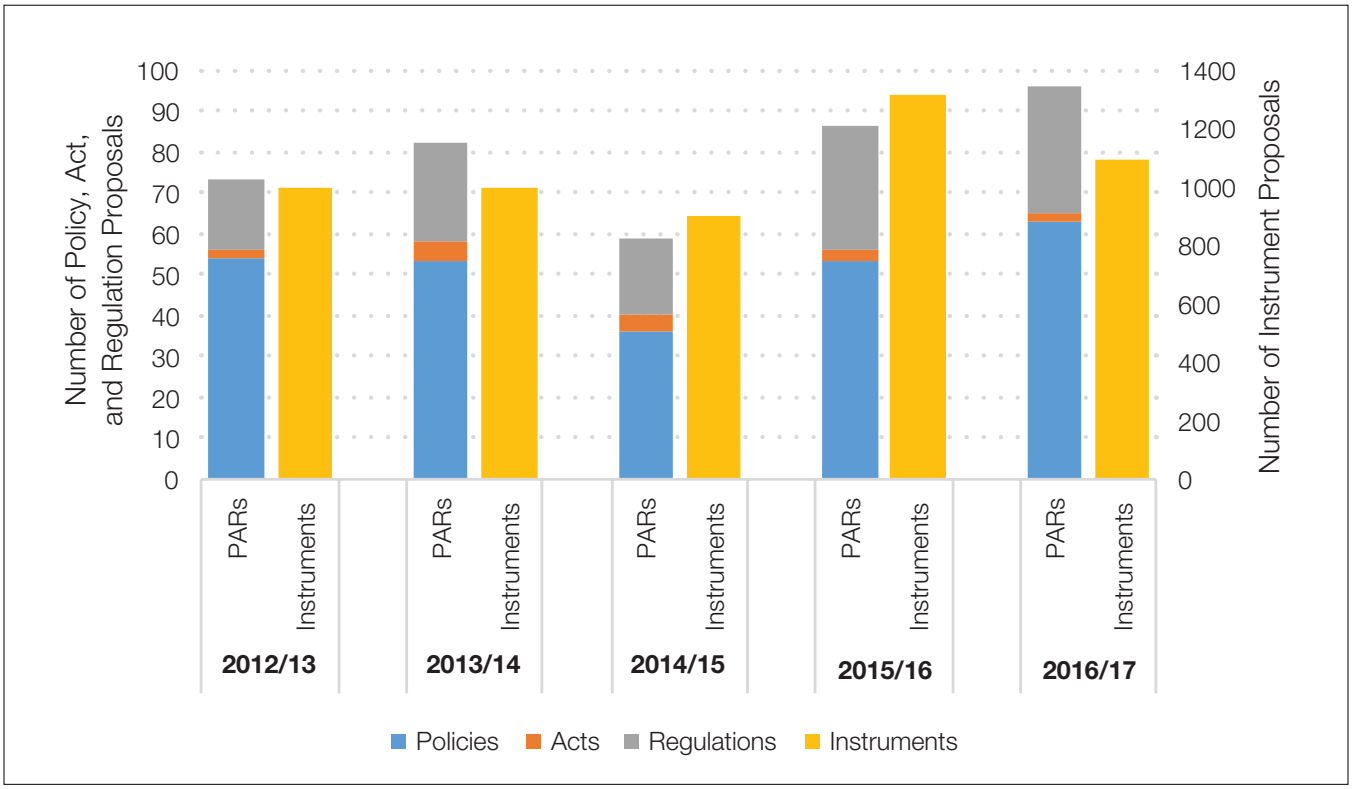


Figure 1. Number of policy, act and regulation (PAR) and instrument proposals posted on the Environmental Registry by prescribed ministries over the previous five years (note: instrument proposal numbers are approximate).

1.3.1 Policies, Acts and Regulations

Prescribed ministries are required to give notice of and consult on certain environmentally significant proposals on the Environmental Registry. Ministries must provide at least 30 days for the public to comment on any proposed environmentally significant act or policy, as well as regulations made under prescribed acts; there are 40 acts prescribed (in whole or in part) under the *EBR*. The public can submit comments online, by mail or by e-mail. Ministries must consider the public's comments when making a decision on a proposal, and must explain how the comments affected the final decision.

1.3.2 Permits, Licences and Other Approvals

Five ministries (the MGCS, the MOECC, the MMA, the MNRF, and the MNDM) are also prescribed for the purposes of giving notice and consulting on certain proposed "instruments" (e.g., permits, licences and other approvals) issued by those ministries. Currently, select instruments issued under 19 different acts are subject to the *EBR*. These ministries must give notice on the Environmental Registry of any proposals and decisions related to those instruments, such as the decision to issue or revoke a prescribed permit.

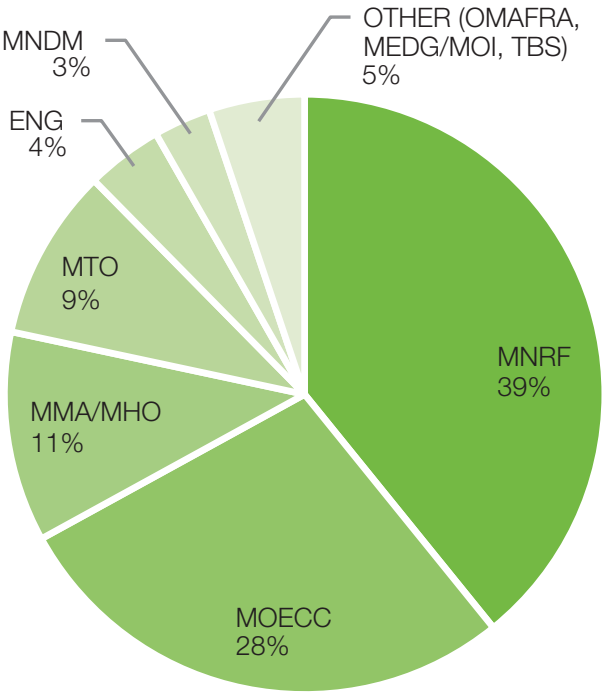


Figure 2. Percentage of all policy, act, and regulation proposals posted on the Environmental Registry by prescribed ministry in the 2016/2017 reporting year (note: EDU, MGCS, MOHLTC, MIRR, MOL, and MTCS did not post any proposals).

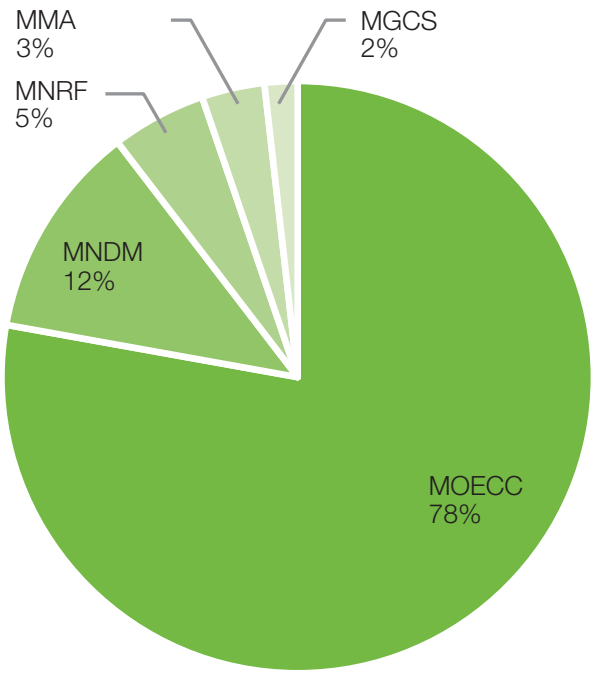


Figure 3. Percentage of all instrument proposals (i.e., permits, licences and other approvals) posted on the Environmental Registry by prescribed ministry in the 2016/2017 reporting year.

1.3.3 Information Notices

When the government proposes or makes a decision that could affect the environment, but the *EBR* does not require the responsible ministry to post a proposal notice on the Environmental Registry, the ministry may choose to inform the public by voluntarily posting an "information notice" on the Registry.

Information notices are also used by ministries to fulfill requirements of other statutes to provide information to the public. These are some of the most common types of information notices posted on the Registry. Examples include amendments to Renewable Energy Approvals (required under the *Environmental Protection Act*) and Source Protection Plans (required under the *Clean Water Act, 2006*).

In the 2016/2017 reporting year, 5 ministries posted 140 information notices. The ECO assessed all information notices in the reporting year, judging them to be all appropriate uses of the Environmental Registry. For example, the MNDM made good use of information notices to let the public know about some mining-related activities that are otherwise exempt from the *EBR*'s public notice and consultation requirements.

1.3.4 Exception Notices

In certain situations, the *EBR* relieves prescribed ministries of their obligation to post proposal notices on the Environmental Registry before making an environmentally significant decision. In such situations, ministries must instead post an "exception notice" to inform the public of the decision and explain why it did not first post a proposal notice.

There are two main circumstances in which ministries can post an exception notice instead of a proposal notice. First, ministries may post an exception notice when a decision has to be made quickly in order to deal with an emergency, and the delay in waiting for public comment would result in danger to public health or safety, harm or serious risk to the environment, or injury or damage to property. Second, ministries can notify the public about an environmentally significant proposal using an exception notice when the proposal will be or has already been considered in another public participation process that is substantially equivalent to the process required under the *EBR*.

In the 2016/2017 reporting year, ministries posted 3 exception notices and the ECO judged them to be appropriate uses of the Environmental Registry.

MINISTRIES ARE FULFILLING THEIR OBLIGATIONS UNDER THE *EBR* TO NOTIFY AND CONSULT THE PUBLIC ON ENVIRONMENTALLY SIGNIFICANT PROPOSALS.

1.3.5 Compliance with *EBR* Public Consultation Requirements

The ECO has a statutory duty to report to the Ontario Legislature on how well ministries are fulfilling their obligations under the *EBR* to notify and consult the public on environmentally significant proposals through the Environmental Registry. This year, the ECO is very pleased to report that we found no instances of failures by ministries to post a proposal notice on the Environmental Registry when they were required to.

1.3.6 Overhauling the Environmental Registry

The MOECC started work on updating the Environmental Registry in the spring of 2016. The ministry hosted an "ideation session" that brought together ministry staff, ECO staff and members of the public to brainstorm ways the Environmental Registry could be improved and, more generally, ways the MOECC could better communicate with and engage the public in environmental decision making. Since this first meeting, the ministry has also: conducted a public survey seeking feedback from Environmental Registry users on their needs and experiences with the Environmental Registry; formed a working group of ministry and ECO staff that have identified and prioritized functional requirements and other potential features for the new Environmental Registry; and explored different options for designing and building a new Environmental Registry platform (i.e., working with an external contractor or building a new platform in-house).

In April 2017, the MOECC began a discovery phase with the Ontario Digital Service, which seeks to improve the overall usability of the Environmental Registry so that it is easier for citizens to both use and navigate. Based on the outcomes of this research, the Ontario Digital Service and the MOECC are collaborating on building a refreshed Environmental Registry.

The first phase of this work involves building and testing potential designs and establishing a suitable solution for an initial test launch. This initial phase is expected to be completed Fall 2017. At the conclusion, the Ontario Digital Service will present the basic platform to the MOECC, the ECO and other stakeholders to determine next steps.

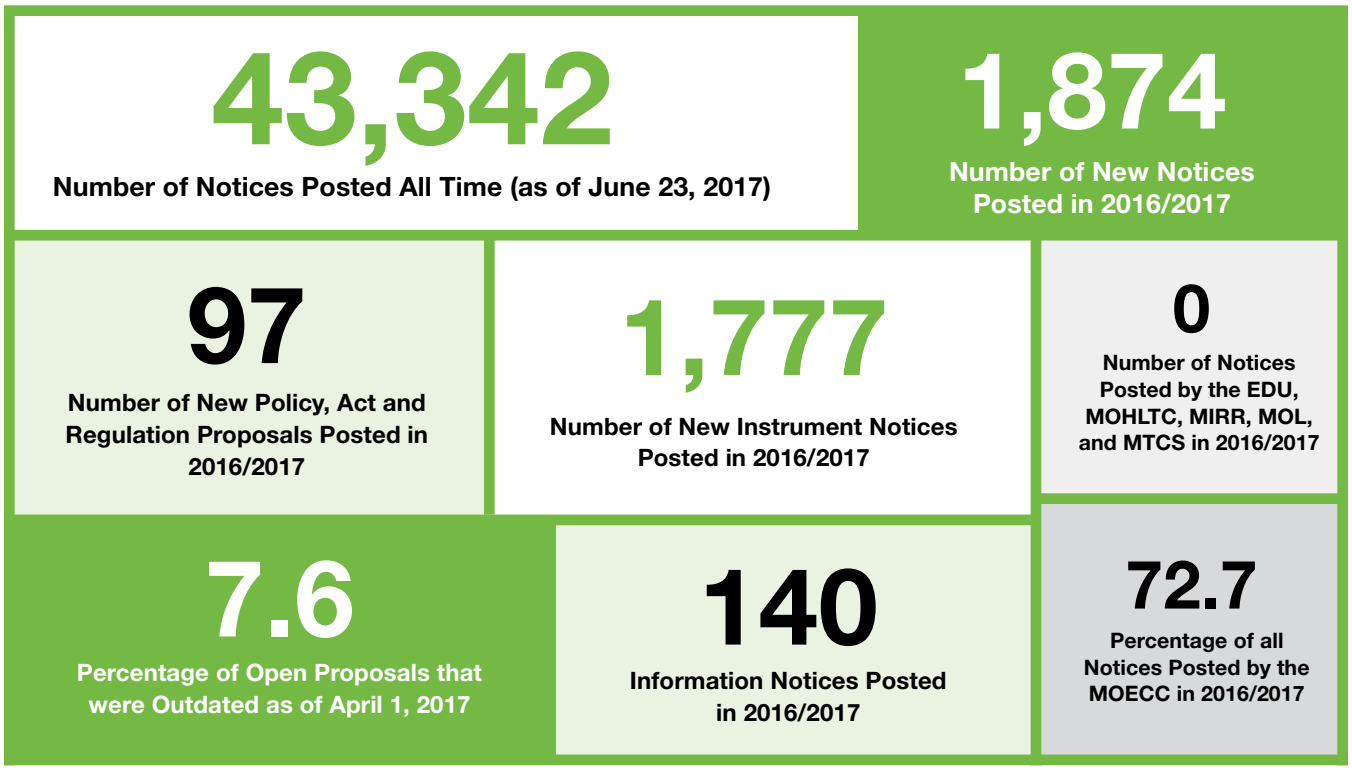


Figure 4. The Environmental Registry by the numbers.

1.4 Appeals, Lawsuits and Whistleblower Protection

The *EBR* provides Ontarians with increased access to courts and tribunals for the purposes of environmental protection. It provides a special right for members of the public to appeal (i.e., challenge) certain ministry decisions regarding instruments. Ontario residents may also take court action to prevent harm to a public resource and to seek damages for environmental harm caused by a public nuisance. Finally, the *EBR* provides enhanced protection for employees who suffer reprisals from their employers for exercising their *EBR* rights or for complying with or seeking the enforcement of environmental rules.

1.4.1 Appeals of Classified Instruments

When an instrument that is classified under the *EBR* is appealed, the ECO notifies the public by posting a notice on the Environmental Registry. Appeals of such instruments can be filed in several different ways. Many laws provide individuals and companies with a right to appeal government decisions that directly affect them, such as a decision to deny, amend or revoke an instrument that they applied for or that was issued to them. In some cases, laws also give third parties (e.g., members of the public) a right to appeal ministry decisions about instruments – third parties can appeal decisions on *Planning Act* instruments (e.g., the approval of an Official Plan) and can appeal decisions on Renewable Energy Approvals under the *Environmental Protection Act*. The *EBR* also allows third parties to seek leave (i.e., permission) to appeal decisions on many instruments classified under the act, including Environmental Compliance Approvals (ECAs) for air, sewage and waste, and Permits to Take Water.

During the 2016/2017 reporting year, the ECO posted notices on the Environmental Registry for 16 new appeals and applications for leave to appeal. Most of these were filed by members of the public exercising their leave to appeal right under the *EBR* (Figure 5). Overall, there were relatively fewer appeals of *EBR*-classified instruments this year, in large part because the MOECC did not approve many large-scale wind energy projects, which have been subject to many third party appeals (see Part 3.1.2 of the ECO's 2015/2016 Environmental Protection Report).

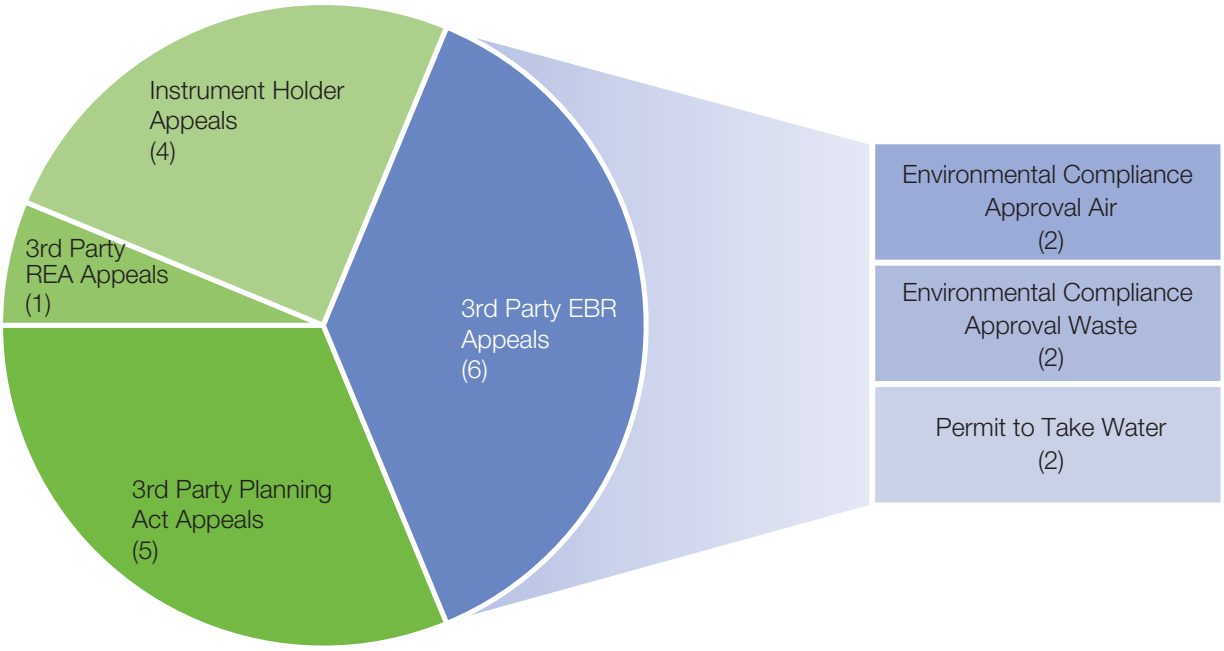


Figure 5. Appeals and applications for leave to appeal filed in the 2016/2017 reporting year.

In addition, 17 appeals and leave to appeal applications were decided during the 2016/2017 reporting year – including decisions on 9 appeals that were filed in previous years. Most of these appeals and leave to appeal applications were denied or resolved by a settlement agreement (Figure 6).

Figure 6. Appeals and applications for leave to appeal decided in the 2016/2017 reporting year.

1.4.2 Lawsuits and Whistleblower Protection

The ECO is not aware of any new lawsuits brought under the *EBR*'s public nuisance or harm to a public resource provisions during the 2016/2017 reporting year. Similarly, the ECO is not aware of any employer reprisal ("whistleblower") cases in this reporting year.

1.5 Applications for Investigation

Applications for investigation are a powerful tool that the public can use to ensure environmental laws are upheld. The *EBR* also provides Ontarians with the right to ask a prescribed ministry to investigate alleged contraventions of prescribed acts, regulations or instruments. Applications for investigation may be filed for alleged contraventions of specific acts, regulations and instruments administered by the following six ministries:

- The Ministry of Government and Consumer Services;
- The Ministry of Energy;
- The Ministry of the Environment and Climate Change;
- The Ministry of Municipal Affairs;
- The Ministry of Natural Resources and Forestry; and
- The Ministry of Northern Development and Mines.

In the 2016/2017 reporting year, members of the public submitted 15 applications for investigation.

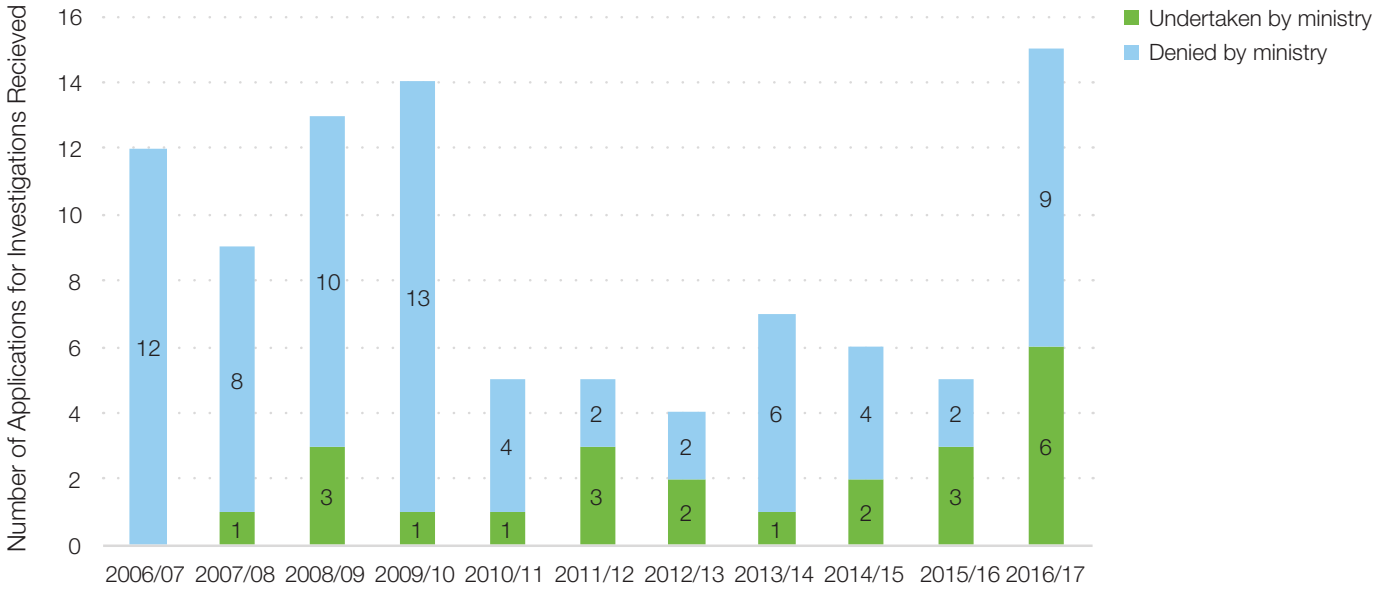


Figure 7. Status of applications for investigation between the 2006/2007 and the 2016/2017 reporting years.

The MOECC deals with the lion's share of applications for investigation; it received 12 of 15 applications for investigation in the 2016/2017 reporting year and agreed to undertake half of them. It is clear that the MOECC takes these requests for investigation by the public seriously and handles them exceptionally well on the whole. Even if it denied an application, the MOECC often responded by taking actions such as site visits or explaining how the ministry was already addressing the issue in other ways. In each case this year in which the MOECC denied an application, the ECO judged that the ministry's decision was reasonable.

The ECO commends the MOECC for its handling of these *EBR* responsibilities, and the ministry should serve as a model for all other ministries in how to handle such requests from the public.

THE MOECC TAKES THESE REQUESTS FOR INVESTIGATION BY THE PUBLIC SERIOUSLY AND HANDLES THEM EXCEPTIONALLY WELL.

Table 2. Topic and status of applications for investigation in hand in 2016/2017.

Topic	Reporting Year Submitted	Ministry	Decision	Status
Noise from a quarry	2015/2016	MOECC	Undertaken	Ongoing
Noise from an asphalt plant	2015/2016	MOECC	Undertaken	Concluded
Wood waste at a planning mill	2016/2017	MOECC	Undertaken	Concluded
Waste at a former sawmill	2016/2017	MOECC	Undertaken	Concluded
Battery storage at a railyard	2016/2017	MOECC	Undertaken	Concluded
Lack of a mine closure plan	2016/2017	MNDM	Denied	Concluded
Hydro-site impacts	2016/2017	MNRF	Denied	Concluded
Hydro-site impacts	2016/2017	MOECC	Denied	Concluded
Abandoned wells	2016/2017	MOECC	Denied	Concluded
Abandoned wells	2016/2017	MOECC	Denied	Concluded
Impacts on wetlands	2016/2017	MOECC	Denied	Concluded
Impacts on wetlands	2016/2017	MNRF	Denied	Concluded
Noise from manufacturing	2016/2017	MOECC	Undertaken	Concluded
Contamination from a septic tank	2016/2017	MOECC	Denied	Concluded
Contamination from ski hill runoff	2016/2017	MOECC	Denied	Concluded
Adverse effects from recycling company	2016/2017	MOECC	Undertaken	Ongoing
Dust and noise from cement company	2016/2017	MOECC	Undertaken	Ongoing

Below is a selection of applications for investigation that were completed in the reporting year.

1.5.1 Investigation of Waste at a Former Sawmill

Members of the public were concerned about possible contamination at a former lumber mill near Harcourt. They believed that on the site there were: large amounts of wood waste that could be a fire hazard and could leach into the groundwater; old electrical transformers possibly containing PCBs; and other materials that could contaminate local waters. The MOECC undertook the investigation, dispatching staff from the local district office as well as a hydrogeologist and a surface water specialist.

Ministry staff conducted a site inspection accompanied by the site owner, site manager and the local fire chief. The ministry determined that there were only minor amounts of woodwaste on site, which was to be reused, and the local fire chief advised that the woodwaste did not violate the Ontario Fire Code. As a result of this *EBR* investigation, the MOECC required the site owner to produce documentation confirming that the old electrical transformers at the mill do not contain PCBs, or the ministry would refer this particular matter to the applicable federal agencies. Ministry staff also ensured that the owner properly disposed of three drums of liquid chemical wastes that were found on site. The MOECC concluded that despite these limited issues of non-compliance, there was no actual or significant potential environmental impacts at the site. The ECO believes that this *EBR* investigation was warranted, and concludes that the ministry handled it well.

1.5.2 Investigation of Battery Storage at a Railyard

Members of the public requested an investigation into the storage of large volumes of nickel-cadmium batteries at a locomotive repair facility in North Bay. The applicants believed that thousands of pounds of batteries had been stored illegally outside for several years, without the necessary approval from the MOECC. The MOECC undertook the investigation, sending staff out to conduct a site inspection.

Ministry staff determined that as the batteries were intact and destined for a waste battery recovery facility, they were not a "subject waste" (as defined in Regulation 347 under the *Environmental Protection Act*) and did not require an Environmental Compliance Approval to be stored onsite. Nonetheless, as a result of this *EBR* investigation, the facility altered its operations, so that the batteries would be stored inside during winter months to avoid the risk of freeze/thaw cycles rupturing them. The MOECC concluded that this proactive change should reduce the potential for spills from the storage of the batteries and ensure the proper reuse or recycling of all used batteries generated on site. The ECO believes this *EBR* investigation was warranted, and concludes that the ministry handled it well.

1.5.3 Investigation of Contamination from a Septic Tank

Members of the public requested an investigation into possible contamination of their drinking water well at their property in Lake Scugog; they believed it to be contaminated from their neighbour's septic tank. Small septic systems are regulated under the *Ontario Building Code* and, in this case, administered by the local health unit, but the MOECC also plays a role regulating discharges that may cause adverse impacts. The MOECC chose not to undertake this investigation, having previously attempted to address the applicants' concerns.

Ministry staff had visited the property on three separate occasions in 2016 and determined that there were no off-site impacts attributable to the neighbour's septic system. The ministry also reported its findings to the Region of Durham's Health Department, who themselves have conducted five inspections since 2014 and were also unable to substantiate the allegations. Ministry staff also reviewed the analytical results from the neighbouring property's well, along with information relating to the groundwater quality in the geographic

area, and determined that it is unlikely that the water quality issues can be attributed to the neighbour's septic system. Despite denying this *EBR* application, the ministry states that it remains willing to assist the property owner to ensure that they are properly maintaining their well. The ECO believes that the MOECC's decision to deny this *EBR* investigation was appropriate, and the ministry still took commendable steps to try to resolve the applicants' concerns.

1.6 Applications for Review

Applications for review are a way for the public to influence government decision making. The *EBR* gives Ontario residents the right to ask a prescribed ministry to review an existing environmentally significant policy, act, regulation or instrument, or to review the need to develop one. These requests are called "applications for review."

In 2016/2017, there were 10 ministries prescribed for purposes of receiving applications for review under the *EBR*:

- the Ministry of Agriculture, Food and Rural Affairs;
- the Ministry of Energy;
- the Ministry of the Environment and Climate Change;
- the Ministry of Government and Consumer Services;
- the Ministry of Health and Long-Term Care;
- the Ministry of Housing;
- the Ministry of Municipal Affairs;
- the Ministry of Natural Resources and Forestry;
- the Ministry of Northern Development and Mines; and
- the Ministry of Transportation.

Specific laws ("acts") must be prescribed under Ontario Regulation 73/94 in order for those acts and the regulations made under them to be subject to applications for review. Similarly, instruments (such as permits and licences) must be prescribed under Ontario Regulation 681/94 to be subject to applications for review. In the 2016/2017 reporting year, members of the public submitted 11 applications for review.

A positive development this year is that, at the ECO's request, the Ministry of Education became prescribed under the *EBR* for the purposes of applications for review. As of September 2017, the public now has the right to ask the ministry to review its environmentally significant policies.

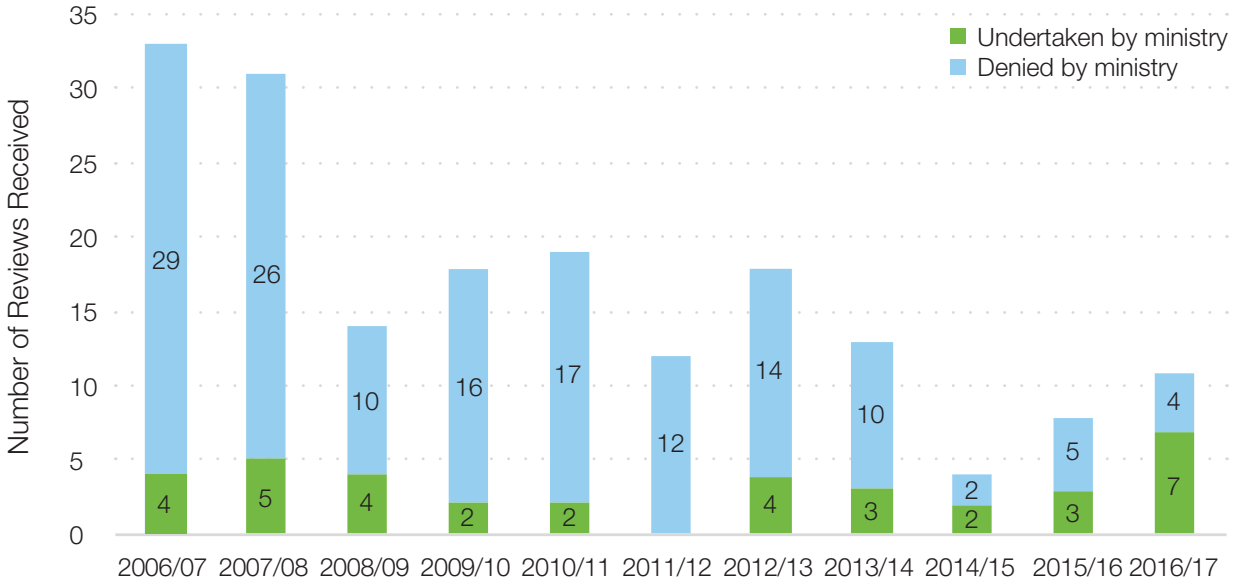


Figure 8. Status of applications for review between 2006/2007 and 2016/2017 reporting years.

As with applications for investigation, the MOECC deals with the majority of applications for review. It received 8 of 11 reviews in the 2016/2017 reporting year and agreed to undertake 7 of them. Again, it is clear that the MOECC takes these requests very seriously, and responds to the public in a thoughtful manner.

APPLICATIONS FOR REVIEW ARE A WAY FOR THE PUBLIC TO INFLUENCE GOVERNMENT DECISION MAKING.

Table 3. Topic and status of applications for review in hand in 2016/2017.

Topic	Reporting Year Submitted	Ministry	Decision	Status
Air pollution hotspots	2008/2009	MOECC	Undertaken	Ongoing
Review of the *EBR*	2009/2010	MOECC	Undertaken	Ongoing
Fracking	2012/2013	MOECC	Undertaken	Concluded
Fracking	2012/2013	MNRF	Undertaken	Concluded
Industrial, commercial and institutional waste diversion	2012/2013	MOECC	Undertaken	Concluded
Waste disposal site	2013/2014	MOECC	Undertaken	Ongoing
Regulation of wells	2013/2014	MOECC	Undertaken	Concluded
Soil management in agricultural operations	2014/2015	OMAFRA	Undertaken	Ongoing
Spills from pipelines	2015/2016	MOECC	Undertaken	Ongoing
Asphalt plant environmental compliance approval	2015/2016	MOECC	Undertaken	Concluded
Asphalt plant environmental compliance approval	2016/2017	MOECC	Undertaken	Concluded
Storm water management environmental compliance approval	2016/2017	MOECC	Undertaken	Concluded
Policies on light pollution	2016/2017	MOECC	Denied	Concluded
Lake Simcoe Protection Plan	2016/2017	MOECC	Undertaken	Ongoing
Water management to improve climate resiliency	2016/2017	MOECC	Undertaken	Ongoing
Land use planning near nuclear power plants	2016/2017	MMA	Denied	Concluded
Nuclear reactor life-extension approvals	2016/2017	MENG	Denied	Concluded
Municipal class environmental assessment process	2016/2017	MOECC	Undertaken	Ongoing
Soil processing facility environmental compliance approval	2016/2017	MOECC	Undertaken	Ongoing
Waste disposal site environmental compliance approval	2016/2017	MOECC	Undertaken	Ongoing
Provincial park management plans	2016/2017	MNRF	Denied	Concluded

Below is a selection of applications for review that were completed in the reporting year. A strong application can result in improved environmental protection.

1.6.1 Review of a Stormwater Approval

Members of the public submitted an application asking the MOECC to review the environmental compliance approval for a stormwater management pond in Oshawa. The applicants correctly stated that the MOECC had failed to post this permit for public consultation on the Environmental Registry, depriving them of the ability to comment on the permit's conditions. They were concerned about the potential impact of contaminants from the pond on the nearby Second March Wildlife Area.

The MOECC undertook this application and, ultimately, amended the environmental compliance approval to include a monitoring and inspection program, as well as a Spill Contingency and Pollution Prevention Plan. The ministry admitted its error in failing to consult the public via the Environmental Registry, as required by the *EBR*, when the approval was first proposed. The MOECC stated that by conducting a review of the approval and considering the concerns raised by the applicants in their *EBR* application, the ministry has taken steps to rectify its error that prevented the applicants from having the opportunity to participate in the decision-making process.

The ECO believes this review was warranted, and concludes that the ministry handled it well by rectifying its error in not initially consulting the public on the stormwater approval.

1.6.2 Review of the Wells Regulation

Over the past 15 years, the MOECC has significantly changed and enhanced protections for municipal drinking water, making the province's municipal drinking water among the best protected in the world. Private wells, however, have not benefitted from the same safety improvements as municipal systems, and concerns persist that gaps in regulating wells leave some Ontarians exposed to health and environmental risks. This is no small concern – about four million Ontarians rely on private wells for their drinking water.

The *Ontario Water Resources Act* and its Wells Regulation (Regulation 903) regulate most aspects of constructing, using and abandoning wells, and licensing requirements for those who work on wells. The Wells Regulation has been amended twice in the past 15 years to address concerns about the effectiveness of the rules; both times the ECO found that the changes did not fully address the identified issues, particularly relating to enforceability.

In 2014, two representatives of the Canadian Environmental Law Association – an organization with a long history of involvement on issues relating to well safety – submitted an excellent *EBR* application asking that the MOECC review the regulatory framework governing Ontario's wells. They argue that it is incomplete, outdated and inadequate to protect the environment and public health and safety, and that it is "plagued by serious interpretive problems, unacceptable loopholes, substantive shortcomings, and enforcement difficulties" related to regulatory deficiencies, inconsistencies between legal requirements and best management practices, and wells on brownfield sites. The applicants had filed a previous application for review on this subject in 2003, which the ministry had denied.

The MOECC undertook this *EBR* review. The ministry sought input during its review from 7 other ministries, 22 stakeholder organizations, Source Protection

ABOUT FOUR MILLION ONTARIANS RELY ON PRIVATE WELLS FOR THEIR DRINKING WATER.

Committee Chairpersons, the Ontario Drinking Water Advisory Council, First Nations organizations, the well industry, and interested organizations. The ministry concluded that appropriate regulatory changes could:

- clarify responsibilities regarding persons doing abandonment work;
- update casing standards;
- require reinstallation and maintenance of flowing well control devices; and
- address inconsistency between the Wells Regulation and Ontario Regulation 153/04 in relation to shallow well screens.

Additionally, the MOECC identified non-regulatory proposed actions including: developing new best management practices for casing removal and disinfection; program changes such as updating the well record form, well licensing technician training curriculum and Well Owner Information Package; and improving the availability and use of the manuals for water supply wells and for test holes and dewatering wells. The ministry stated that it would work with the well industry, interested organizations, and others to determine next steps.

The MOECC also stated that more discussions with stakeholders will be required to further consider potential improvements to natural gas and mineralized water testing, sealant requirements, sources of contaminants, repairs, and possible specific requirements for monitoring wells. The ministry also stated that it intends to establish a regular five-year review cycle of the Wells Regulation and framework.

The ECO is pleased that the ministry considered the issues raised by the applicants with such thorough attention, and that it consulted so broadly with stakeholders and other parties with insight into well regulation. The MOECC has identified several possible initiatives that could make wells much safer for both human health and the environment. The identification of possible solutions is only part of the work, however, and now the ministry should determine which initiatives it will undertake and then ensure that they are implemented promptly. The ECO will be watching with keen interest to see what action the MOECC ultimately takes to improve well safety.

1.6.3 Review of Fracking Regulations

Ontario has a long history of oil and gas production. The province's first commercial crude oil well was established in Lambton County in 1858 and the first commercial natural gas well was drilled in Essex County in 1889. Since then, it is estimated that upwards of 50,000 oil and gas wells have been drilled in Ontario. In 2010, Ontario had a total of 92 commercial oil and gas producers operating 1,223 active oil wells, 1,214 active natural gas wells, and 29 wells producing both oil and natural gas.

A new wave of energy exploration and development – high volume hydraulic fracturing (fracking) – has spread across many parts of North America in recent years. Fracking has fundamentally changed energy markets by drastically increasing potential hydrocarbon supplies. Fracking is different from conventional drilling as it targets entire layers of rocks, instead of going straight down into pockets (reservoirs) of the oil or gas (Figure 9). There are no fracking operations currently in Ontario; shale resources do exist in the province, albeit not at a scale that currently makes them economically viable for production (Figure 10).

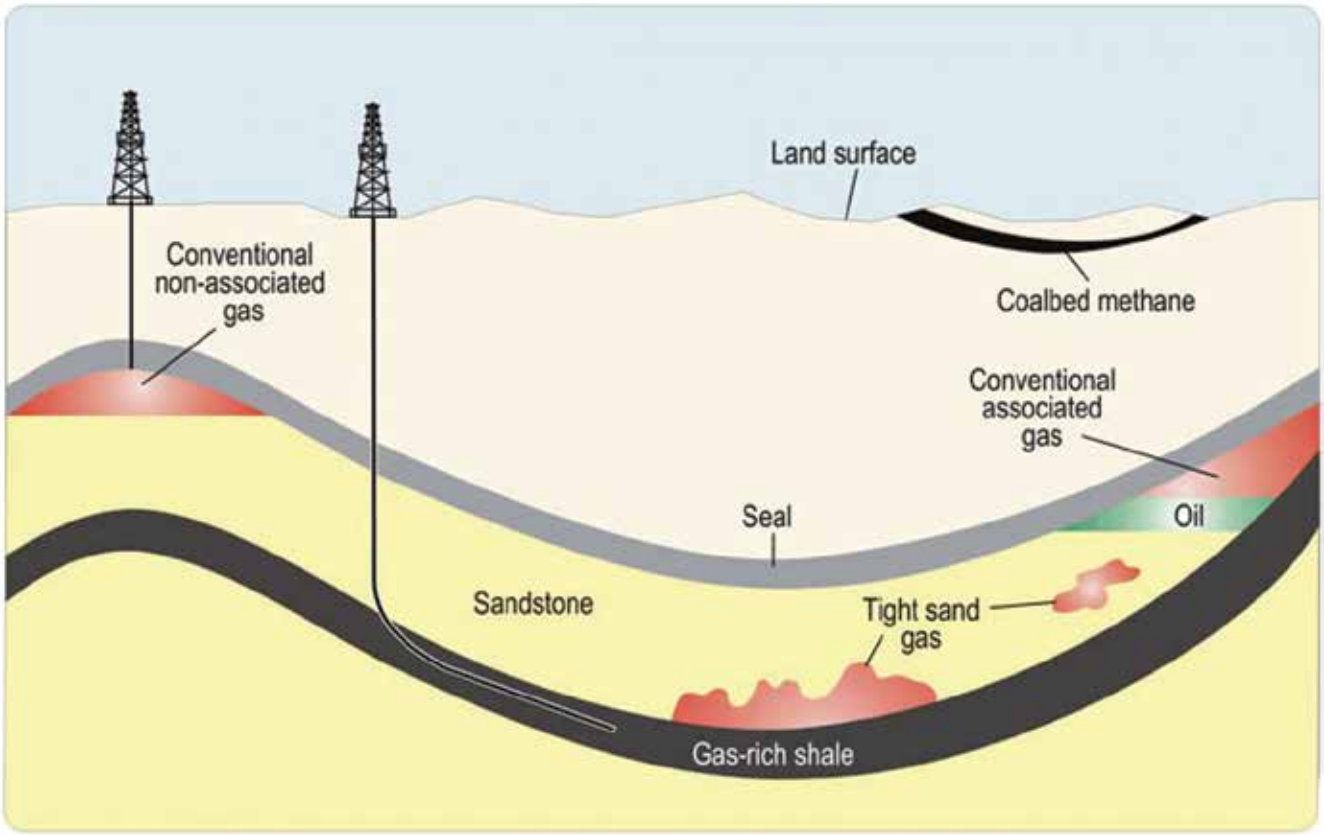


Figure 9. Differences between conventional drilling and fracking.

Source: U.S. Energy Information Administration.

Fracking extracts natural gas by shattering rock layers with large amounts of water (typically fresh water), propping agents, and a chemical slurry injected down a drilled well at incredible pressures. A single well can require millions of litres of water for proper hydraulic fracturing, and wells may require repeated fracturing. This process entails serious risks of water contamination, surface and groundwater degradation due to excessive withdrawals, natural gas leaks and earthquakes. Some jurisdictions, such as New Brunswick and New York state, have banned fracking because of such risks and significant public opposition.

The MNRF regulates natural gas extraction under the *Oil, Gas and Salt Resources Act*. However, the regulatory framework – Ontario Regulation 245/97 (Exploration, Drilling and Production) and the Provincial Standards for the Oil, Gas and Salt Resources of Ontario – pre-dates unconventional natural gas extraction processes and, therefore, was not developed with fracking in mind. As a result, the ECO recommended in our 2010/2011 Annual Report that the MNRF and the MOECC review and publicly report on the sufficiency of the regulatory framework to protect water resources and the natural environment from shale gas extraction.

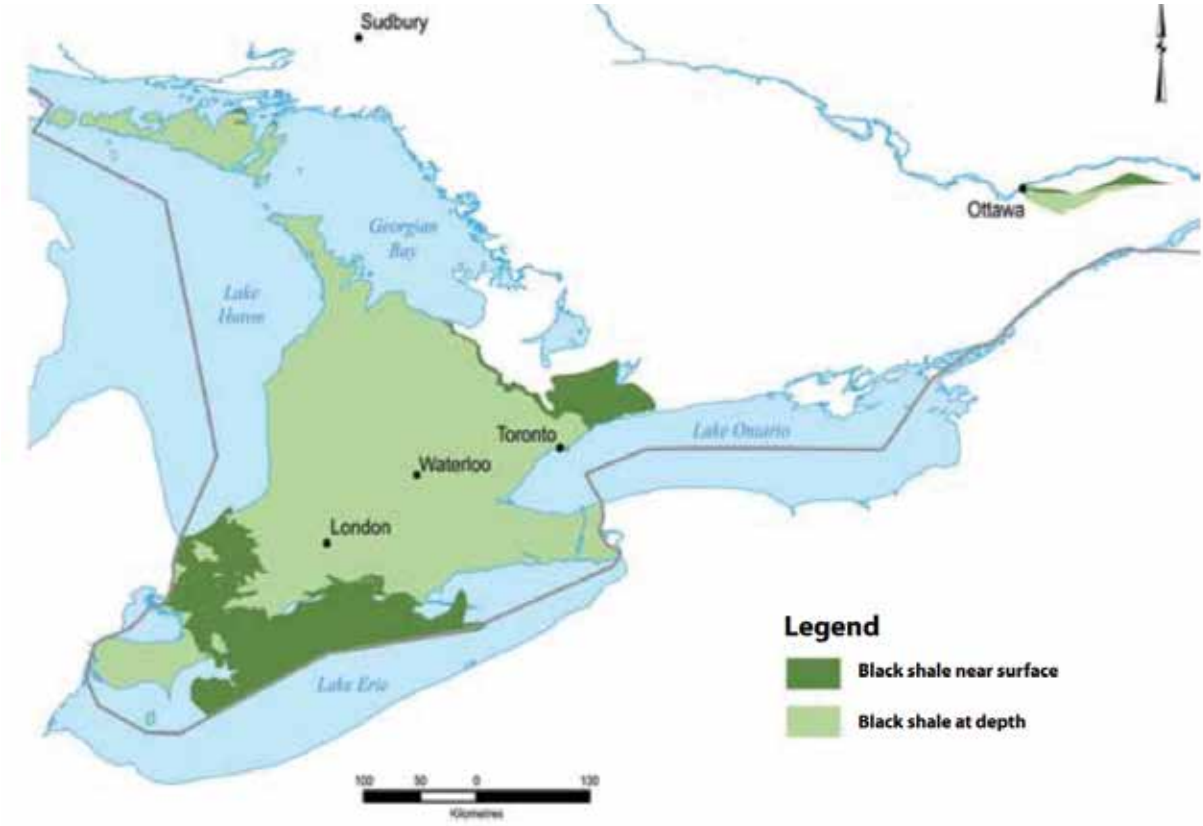


Figure 10. Distribution of black shale with shale gas potential in Ontario. Black shale is the term used to identify dark-coloured shale rock that is a potential source for natural gas. Black shale rocks typically contain 1% or more of organic carbon.

Source: MNRF.

In 2012, Ecojustice, an environmental law charity, submitted an *EBR* request for review of the government's rules that would apply to fracking operations. The applicants submitted that fracking fluids and the produced water are exempt from the *Environmental Protection Act*, while not properly regulated under any other law. Further, Ecojustice argued that the existing regulations may also exempt the water and chemicals used to frack a well (i.e., flowback) even though they are not used for drilling, but instead completing the well, and that fracking represents a new type of hydrocarbon extraction. The applicants recommended that flowback not be exempt from environmental regulation, and that it should be regulated either as a liquid industrial waste or a hazardous waste.

THE CURRENT REGULATORY FRAMEWORK IS INADEQUATE TO ADDRESS ASPECTS OF HIGH-VOLUME HYDRAULIC FRACTURING.

The MOECC and the MNRF completed this *EBR* review in 2016, jointly concluding:

> … the current regulatory framework is inadequate to address aspects of the high-volume hydraulic fracturing process. Prior to this technique being considered for use in Ontario, additional work needs to be done to safeguard human health and the environment, and to respond to societal concerns.

The ministries further stated that oil and gas development cannot be undertaken without authorization, and that the MNRF "…is not considering applications for high-volume hydraulic fracturing at this time." The MOECC and the MNRF affirmed that there currently is no oil or gas development utilizing high-volume hydraulic fracture treatments in Ontario.

The ministries acknowledged that given that the term "flowback" is relatively new and not specifically referenced in either ministry's regulatory framework, the requirements for managing flowback may be unclear to some stakeholders and the public. The key findings by the MNRF and the MOECC were:

- The review determined that both the definition of "oil field fluid" under the *Oil, Gas and Salt Resources Act* and the definition of "oil field brine" in Regulation 341 include drilling fluid and produced water. However, neither of these definitions includes the flowback associated with hydraulic fracturing.
- The exemption for "oil field brine" in Regulation 341 means that drilling fluid and produced water are exempt from the regulation and the *Environmental Protection Act*. The handling and disposal of drilling fluid and produced water are therefore not regulated by MOECC. The disposal of these materials is regulated by the MNRF when disposed of in a MNRF-licensed disposal well; the majority of these materials are disposed of in this fashion.
- The review determined that flowback from hydraulic fracturing operations is not covered by any of the exemptions in Regulation 341 or Regulation 347 and is therefore subject to the requirements set out in Regulation 347. Flowback must therefore be characterized, and if it meets the regulatory criteria for hazardous waste or liquid industrial waste, it must be registered, manifested when transported, and disposed of in accordance with the requirements of the *Environmental Protection Act* and its Regulations. The Oil, Gas and Salt Resources of Ontario Provincial Operating Standards require stimulation fluids recovered from a well (i.e., flowback) to be kept separate from oil field fluid and disposed in accordance with the *Environmental Protection Act*.

In June 2017, the Ontario government subsequently amended the *Oil, Gas and Salt Resources Act* to clarify some definitions and expand the types of activities requiring a permit. In May 2017, the ECO responded to an inquiry from a Member of Provincial Parliament asking for clarification whether this amendment could be used to authorize fracking; the ECO confirmed to all three political parties that was the case.

The ECO is pleased that the MOECC and the MNRF undertook and completed this *EBR* review, despite the unreasonable four-year delay. Public scrutiny of the government's rules for fracking is an excellent use of the *EBR*'s application for review provisions. The applicants, Ecojustice, were rightly concerned about the clarity and scope of the rules for fracking. Both the MOECC and the MNRF undertook this review, and concluded that the rules were inadequate and that no fracking operations would be considered for permitting at this time. The review by the ministries also squarely addressed a recommendation by the ECO to publicly report on the sufficiency of the rules for fracking. On the other hand, it is unfortunate that the government refused to amend the *Oil, Gas and Salt Resources Act* to clarify this position, and to ensure that fracking will not be permitted under the current regulatory regime.

1.6.4 Reforming Ontario's *Environmental Bill of Rights*: Promises Made, Action Needed

The *EBR* is a unique and powerful law for public engagement in government environmental decision making. The *EBR* provides Ontarians with a host of tools that allow us to be informed of, comment on, question and challenge the ways that the provincial government manages our natural environment. But the *EBR* is overdue for a tune-up.

In the 23 years since the *EBR* came into force, the environment and the way that society values it have

changed, the internet has taken hold, and flaws in the functionality of the *EBR* have been repeatedly demonstrated. Yet despite numerous calls from stakeholders for improvements to the law (including 16 recommendations from the ECO in a 2005 Special Report), the *EBR* has remained largely unchanged.

THE *EBR* IS OVERDUE FOR A TUNE-UP.

Request from the Public Triggers Review

In December 2010, the ECO received an application for review under the *EBR* from the Canadian Environmental Law Association asking that the *EBR* itself be reviewed. The applicants correctly argued that while "the *EBR* can be used effectively to inform and empower the public to protect the environment and conserve resources, particularly at the local level," there have also been numerous cases that "demonstrate serious systemic problems within the existing *EBR* regime."

The applicants asked the MOECC to undertake a formal public review of the *EBR* to obtain input on statutory and regulatory changes needed to better achieve the purposes of the legislation. The applicants enumerated ten key issues that they believed the MOECC should review, describing their concerns and suggesting potential reforms.

Encouragingly, the MOECC agreed to a scoped review on March 1, 2011. The ministry stated:

> As suggested in your application, the *EBR* is generally sound and it would not be appropriate to conduct a wholesale reconsideration of the Act in its entirety. Therefore, the Ministry's review will examine certain components of the *EBR*, as determined necessary by the Ministry after further deliberation and reference to some of the matters raised in your application.

At the time, the ECO hailed the ministry's decision, hoping the review might lead to renewed engagement in the *EBR*, both through improvements to the legislation and in the way that prescribed ministries meet their obligations under the act.

Around the same time, the ministry had also received several other requests from Ontario residents to strengthen the *EBR*. The MOECC subsequently combined the review of the *EBR* with two related reviews. The first involved a request for a new regulation under the *EBR* that would give a tribunal power to grant a stay (i.e., a temporary hold) of a ministry decision to issue an instrument pending a request to the tribunal by a member of the public for leave to appeal that instrument. The MOECC had agreed to undertake this review in August 2010, but only in relation to Permits to Take Water under the *Ontario Water Resources Act*.

The second related to a request to amend the *EBR* to require ministries to post documents on the Environmental Registry describing how they considered their Statement of Environmental Values for all environmentally significant decisions. The MOECC agreed to undertake this review in August 2012, as the issues it raised "fall within the scope of the existing review [of the *EBR*]."

The initial optimism that followed the MOECC's decision to conduct a review of the *EBR* soon gave way to frustration and disappointment. As the months – and then years – trickled by, the ministry did very little to move forward with the review.

Despite requests from the applicants for updates, meetings held between the applicants and the MOECC staff, calls from numerous environmental non-governmental organizations for the review to proceed, and repeated chastising by the ECO, there was no meaningful progress in the first five years after the MOECC agreed to review the *EBR*.

The ministry had estimated in August 2011 that the combined review would take 12-16 months to complete. But in February 2013 – 18 months after making that

estimate – the ministry had still not even finalized its scope or approach to the review. When the ECO asked for a progress update over a year later, in May 2014, the MOECC still had nothing to report. In September 2014, the applicants wrote to the minister about the lack of progress on the long-promised review, asserting that the review had "quickly and inexplicably stalled."

With encouragement from the ECO, the MOECC finally confirmed the scope of the *EBR* review in June 2016. At that time, the ECO wrote a letter to the Minister of the Environment and Climate Change outlining potential amendments to consider in reforming the *EBR*. Shortly after, in July 2016, the MOECC published a discussion guide on the Environmental Registry (#012-8002) seeking the public's feedback on the following components of its scoped *EBR* review:

- The purposes of the *EBR*;
- Statements of Environmental Values;
- The Environmental Registry;
- The leave to appeal process;
- Prescribing new ministries, statutes and instruments;
- Applications for review and investigation; and
- Section 32, the environmental assessment exception to public posting.

The ministry also sought public input on the issue of substantive environmental rights – namely, the right to a healthy environment – despite explicitly excluding this issue from the ministry's review of the *EBR*.

In March 2017, the MOECC posted a status update on the Environmental Registry, indicating that it anticipated completing the review of the *EBR* by April 2017. It later pushed the completion date back to June 2017. By the end of August 2017, the ministry still had not completed the review.

More than six years after agreeing to undertake this review, the MOECC still has not completed it. The law requires that applications for review under the *EBR* be completed by ministries "within a reasonable time." The ECO believes that it is indefensible that the ministry has taken this long to complete the review. Making it all the more egregious is the fact that this application for review under the *EBR* is about the *EBR* itself, which drives home some of the very concerns that were highlighted by the applicants themselves. Members of the public who make the effort to engage in provincial environmental decision making by submitting applications for review – as is their *EBR* right – are owed at a minimum transparency, accountability and respect from the ministry responsible for handling the application. The ministry has consistently failed in this regard in how it has handled this important application for review.

The ECO recommends that: (1) the MOECC immediately complete its review of the *EBR*; (2) all ministries improve their practices to address operational deficiencies in administering the *EBR*; and (3) the MOECC amend the *EBR* itself to remedy legislative deficiencies. The ministries are fully capable of fixing many problems highlighted by the applicants, with or without the MOECC completing this review or amending the act. For example, all ministries can immediately improve the quality of their Statements of Environmental Values and their notices on the Environmental Registry. The ECO will continue to offer training to help ministries improve their *EBR* performance.

1.7 Reviewing Ministry Performance: *EBR* Report Cards

One of the ECO's core functions is to review and report annually to the Legislative Assembly on how prescribed government ministries are complying with the requirements of the *EBR*. This is a significant responsibility; if ministries do not properly carry out their *EBR* obligations, Ontarians lose out on their rights.

In December 2015, the ECO wrote to the all ministries that were prescribed under the *EBR* and asked

them to affirm their commitment to the *EBR*. Each Deputy Minister made this commitment, sending an important signal to their staff and the public that the ministries intend to make the *EBR* – and the important rights that it gives to all Ontarians – matter more than ever before.

Last year (2015/2016), the ECO started issuing report cards that evaluated how well each of the prescribed ministries executed their *EBR* responsibilities in a number of categories. The *EBR* Report Cards identified areas of *EBR* performance in which ministries were succeeding, and areas requiring improvement. The report cards were designed to encourage ministries to improve how they execute their *EBR* duties and, consequently, make it easier for the public to exercise their rights.

Based on the results of the 2015/2016 *EBR* Report Cards, the ECO identified four key areas of *EBR* responsibilities in which ministries needed to significantly improve:

1. Content of instrument notices posted on the Environmental Registry;
2. Posting decision notices promptly;
3. Avoiding outdated proposals; and
4. Avoiding overdue applications for review.

The 2015/2016 *EBR* Report Cards had their intended effect. Since their release, the ECO has witnessed an increased level of engagement by several ministries in ensuring they are satisfying their *EBR* responsibilities. More significantly, ministry performance has improved measurably in some key categories, improving the public's ability to understand and participate in government decision-making on important environmental matters, and exercise their other *EBR* rights.

Based on the positive effects of the *EBR* Report Cards in 2015/2016, and with the intent of driving further positive change, the ECO is issuing *EBR* Report Cards for all prescribed ministries again this year.

MINISTRY PERFORMANCE HAS IMPROVED MEASURABLY.

EBR Report Cards in 2016/2017

This year, we evaluated ministries' performance in eight categories:

1. Quality of notices for policies, acts and regulations posted on the Environmental Registry;
2. Quality of notices for instruments posted on the Environmental Registry;
3. Promptness of posting decision notices on the Environmental Registry;
4. Keeping notices on the Environmental Registry up to date;
5. Handling of applications for review and investigation;
6. Avoiding overdue applications for review;
7. Considering Statements of Environmental Values; and
8. Co-operation with ECO requests.

We used a set of detailed criteria to evaluate ministry performance in each applicable category (not all ministries are prescribed for all responsibilities under the *EBR*). Our evaluation criteria are based not only on the *EBR*'s strict legal requirements, but also on what the ECO believes are best practices required for a ministry to fulfil its obligations in light of the *EBR*'s purposes.

The results of our evaluations are presented graphically, using coloured circles to represent a ministry's performance in a particular category:

- **GREEN** means that a ministry met or exceeded the ECO's expectations and its legal obligations;

- **YELLOW** means that a ministry's performance needs improvement; and
- **RED** means that the ministry's performance is unacceptable – the ministry has failed to comply with its legal obligations and/or is frustrating the environmental rights granted to the public by the *EBR*.

The results are accompanied by trend lines (→↗↘), wherever applicable, to indicate whether a ministry's performance in a given category has improved, declined or remained unchanged since 2015/2016.

The ECO provides written comments in each *EBR* Report Card, pointing out ministries' strengths and weaknesses and any special considerations or context. Each prescribed ministry had an opportunity to review their *EBR* Report Card and respond with a written comment.

Prescribed ministries' individual *EBR* Report Cards for 2016/2017 are found in Appendix 1 to this report. Individual ministry comments on their *EBR* Report Cards can be viewed online at eco.on.ca. A summary of the results is found below.

What's New in 2016/2017?

The ECO made some minor adjustments to our evaluation methodology and presentation of the 2016/2017 *EBR* Report Cards. We made these changes primarily to depict ministries' *EBR* performance as fairly and clearly as possible.

Key changes this year include:

- **The number of categories evaluated increased from 5 to 8:** This change is the result of splitting three of the existing 2015/2016 categories into separate categories, to better represent results. Nothing new was evaluated in 2016/2017.
- **Dot size no longer used to represent *EBR* workload:** Prescribed ministries have widely varying "*EBR* workloads"; some ministries, such as the MOECC and the MNRF, are prescribed for all aspects of the *EBR* and exercise their *EBR* functions daily. Other ministries, such as the EDU and the MOL, have fewer *EBR* responsibilities and rarely need to take action to fulfil those duties. In 2015/2016, the ECO varied the size of the coloured dots in *EBR* Report Cards to represent a ministry's "*EBR* workload" in a particular category. This year, we adjusted the evaluation methodology to better account for *EBR* workload in the result itself, and no longer vary dot size.
- **Use of trend lines:** The arrows used to indicate trends in a ministry's performance in a given category are new this year; in 2015/2016 we did not have comparable data from previous years to use to identify trends.

Helping Ministries Understand and Comply with their EBR *Responsibilities*

One of the ECO's functions is to provide guidance to prescribed ministries on how to comply with the *EBR*. In September 2016, following the June 2016 release of the first-ever *EBR* Report Cards, the ECO invited each prescribed ministry's *EBR* co-ordinator(s) – staff responsible for facilitating the implementation of the *EBR* within their ministry – to meet with us to discuss their ministry's *EBR* responsibilities and what the ECO believes is required to fulfil those responsibilities.

Every ministry took us up on our offer, and we had constructive discussions with *EBR* co-ordinators about the requirements and challenges of complying with the *EBR*. The ECO shared our *EBR* Report Card evaluation methodology for 2016/2017 with the *EBR* co-ordinators, and provided them with an updated guidance document for ministry staff on implementing the *EBR*.

As a result, the ECO strengthened our working relationships with many of the prescribed ministries. ECO staff received calls from various ministries' *EBR* co-ordinators throughout the year, looking for advice regarding specific notices, or for information about best practices for *EBR* compliance. Ministry *EBR* co-ordinators were also receptive to calls from ECO staff with requests or advice regarding Environmental Registry matters.

The ECO believes that these open lines of communication with ministry staff are responsible for some improvements in the ministries' performance of their *EBR* obligations in 2016/2017. If ministries keep up their level of engagement and effort, the ECO is optimistic that their *EBR* performance will continue to improve and, consequently, the public will be better served.

1.7.1 Summary of *EBR* Report Card Results for 2016/2017

In general, prescribed ministries continued to discharge their *EBR* responsibilities reasonably well in 2016/2017. The MOECC – the ministry with the highest *EBR* workload – stood out this year for its exemplary performance in most categories.

The other ministry with a high *EBR* workload – the MNRF – did not fare as well this year. While the MNRF improved in some categories, it made a particularly poor showing in others. Specifically, the ECO is disappointed with the MNRF's stance on documenting its consideration of its SEV for certain decisions, as well as the ministry's lack of co-operation with some of the ECO's requests for information.

Ministries with a low *EBR* workload – the MEDG/MOI, the EDU, the MOHLTC, the MIRR, the MOL, the MTCS and the TBS – had few *EBR* obligations to fulfil this year, but in most cases did those well. The ECO cautions ministries with a low *EBR* workload that, because their *EBR* responsibilities are not onerous, we expect them to discharge their very few obligations very well. For example, the MTCS failed to post either of its two decision notices promptly this year.

Of the remaining ministries – all with a medium *EBR* workload – two (the OMAFRA and the MMA) declined in their overall *EBR* performance this year. The ENG, the MTO and the MGCS-TSSA had generally good results, with some exceptions related to late decision notices. The MNDM stands out this year as the only high or medium workload ministry without any "unacceptable" results in its report card.

WE SAW SOME PROGRESS THIS YEAR IN THREE OF THE FOUR AREAS THAT NEEDED SIGNIFICANT IMPROVEMENTS.

More generally, the ECO is pleased to report that we saw some progress this year in three of the four areas that needed significant improvements in 2015/2016:

1. **Content of instrument notices posted on the Environmental Registry:** Progress in this category was modest, generally limited to improvements made by the MNDM and the MGCS-TSSA.
2. **Posting decision notices promptly:** This was the one category in which we did not see any real improvement.
3. **Avoiding outdated proposals:** Ministries made great strides to address this issue, reducing the total number of outdated notices on the Environmental Registry by over 80%. At the end of the reporting year only four ministries still had outdated proposals on the Environmental Registry.
4. **Avoiding overdue applications for review:** Ministries have now concluded four of the seven overdue applications for review identified in 2015/2016, with two more nearly concluded. The MOECC has also established a new practice of posting quarterly status updates of its applications for review on the Environmental Registry to keep the applicants, the ECO and the public informed of its progress.

Despite the positive steps, significant improvements are still needed in each of these categories. Key areas for improvement in 2017/2018 include:

1. **Content of instrument notices posted on the Environmental Registry:** Instrument notices are generally still falling below the ECO's expectations. Improvements are needed to enable members of the public to exercise their rights to comment on and seek leave to appeal decisions on instruments (for more details, see *Quality of Notices for Instruments on the Environmental Registry*, below).

2. **Posting decision notices promptly:** Most ministries are still not posting decision notices promptly after they make decisions. This deprives the public of the right to timely notice of decisions that affect the environment, as well as their right to know what effect public participation had on the decision. In the case of some instruments, delayed posting of decision notices could have potential effects on third party leave to appeal rights under the *EBR* (for more details, see *Promptness of Posting Decision Notices on the Environmental Registry*, below). This included 64 aggregate licences issued by the MNRF, but which had never been posted on the Registry as decision notices, thus denying appeal rights to members of the public while the facilities operated. The MNRF finally posted the decisions for these licences on August 25, 2017 (for details, see Part 1.7.5).

SIGNIFICANT IMPROVEMENTS ARE STILL NEEDED.

3. **Avoiding outdated proposals:** Although ministries made great headway in 2016/2017, it is essential that all notices on the Environmental Registry are up to date. The Environmental Registry should serve as a reliable and up to date source of information about environmental proposals and decisions for the public (for more details, see *Keeping Notices on the Environmental Registry Up to Date*, below).

4. **Avoiding overdue applications for review:** Although the overall number of overdue applications for review decreased significantly this year – a positive development – one application for review, in OMAFRA's care, was added to the "overdue" list, and three others remain. No number of overdue applications is acceptable. Ministries must ensure that all applications for review are completed within a reasonable time, as required by the *EBR*.

For a summary of the results by ministry, see Table 4. You can read a category-by-category summary of the *EBR* Report Card results for 2016/2017 below.

Quality of Performance

Meets or exceeds expectations and legal obligations

Needs improvement

Unacceptable: failure to comply with legal obligations and/or frustrating the environmental rights granted to the public by the *EBR*

Trend

Overall quality of performance unchanged since 2015/2016

Overall quality of performance has improved since 2015/2016

Overall quality of performance has declined since 2015/2016

Table 4. Summary of Ministry *EBR* Report Card Results by Ministry, 2016/2017.

Prescribed Ministry	Quality of notices for policies, acts and regulations posted on the Environmental Registry	Quality of notices for instruments posted on the Environmental Registry	Promptness of posting decision notices on the Environmental Registry	Keeping notices on the Environmental Registry up to date	Handling of applications for review and investigation	Avoiding overdue applications for review	Considering Statements of Environmental Values (SEVs)	Co-operation with ECO requests
Ministries with a High *EBR* Workload								
MOECC	→	→	→	↗	↗	↗	→	→
MNRF	→	→	→	→	↗	↗	↘	↘
Ministries with a Medium *EBR* Workload								
OMAFRA	→	N/A	→	↘	N/A	↘	↗	→
ENG	→	N/A	→	↗	↗	N/A	●	→
MGCS-TSSA	→	↗	↘	→	N/A	N/A	→	→
MMA/MHO	→	→	→	→	↘	N/A	→	→
MNDM	↘	→	↗	↗	●	N/A	→	→
MTO	→	N/A	→	↗	N/A	N/A	→	→
Ministries with a Low *EBR* Workload								
MEDG/MOI	→	N/A	N/A	→	N/A	N/A	●	→
EDU	N/A	N/A	N/A	N/A	N/A	N/A	N/A	→
MOHLTC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	→
MIRR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	→
MOL	N/A	N/A	N/A	N/A	N/A	N/A	N/A	→
MTCS	→	N/A	→	N/A	N/A	N/A	↗	→
TBS	●	N/A	N/A	N/A	N/A	N/A	N/A	●

N/A (not applicable): The ministry is not prescribed for purposes of this category of *EBR* performance, or the ministry did not execute any responsibilities under this category in the reporting year.

1.7.2 Quality of Notices for Policies, Acts and Regulations on the Environmental Registry

Notices posted on the Environmental Registry should enable members of the public to understand and meaningfully comment on a proposal, or understand a decision. The ECO evaluated all proposal and decision notices posted in 2016/2017 for policies, acts and regulations to determine whether they: are clearly written; describe, in sufficient detail, what is being proposed and why (including providing links to key and supporting documents); and explain the potential environmental impacts. We also considered whether enough time was given to the public to comment on proposals, and whether decision notices describe the effects, if any, of public comments on the ministry's decision.

This category applies to all prescribed ministries; for a breakdown of their respective shares of policy, act and regulation notices posted on the Environmental Registry in 2016/2017, see Figure 11, below.

Again this year, the ECO found that the quality of policy, act and regulation notices was generally good for most ministries. The MOECC, in particular, usually posts high quality policy, act and regulation notices; the MOECC's notices could serve as an example for other prescribed ministries.

However, there is still room for improvement; for example, this year the ECO noticed that, with the exception of regulation notices posted by the MNRF, the majority of regulation proposal notices did not include Regulatory Impact Statements; while the inclusion of a Regulatory Impact Statement is at the discretion of the minister, the ECO believes that in most cases such a statement is necessary in order to permit more informed public consultation. A Regulatory Impact Statement ensures that the public is informed about the objectives of the proposal, the environmental, social and economic consequences of implementing the proposal, and why any environmental objectives would be appropriately achieved through the proposed regulation.

Prescribed ministries could also improve their policy, act and regulation notices by ensuring anticipated environmental impacts are described in all proposal notices, and by providing more than the minimum 30 days to comment on complex or significant proposals.

For a graphical representation of the results in this category, see Figure 12.

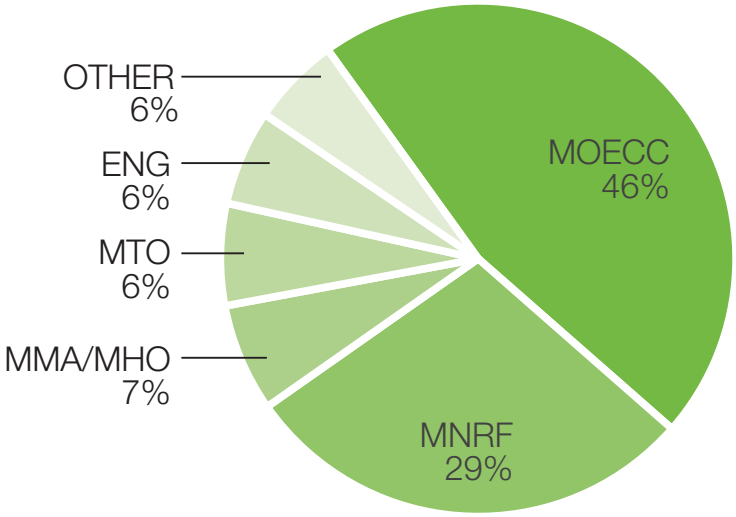


Figure 11. Percentage of all policy, act, and regulation notices (proposals and decisions) posted on the Environmental Registry by prescribed ministries in 2016/2017 (the "Other" category includes the OMAFRA, MEDG/MOI, MNDM, MTCS, TBS, and MGCS-TSSA. The EDU, MOHLTC, MIRR and MOL did not post any notices on the Registry in the reporting period).

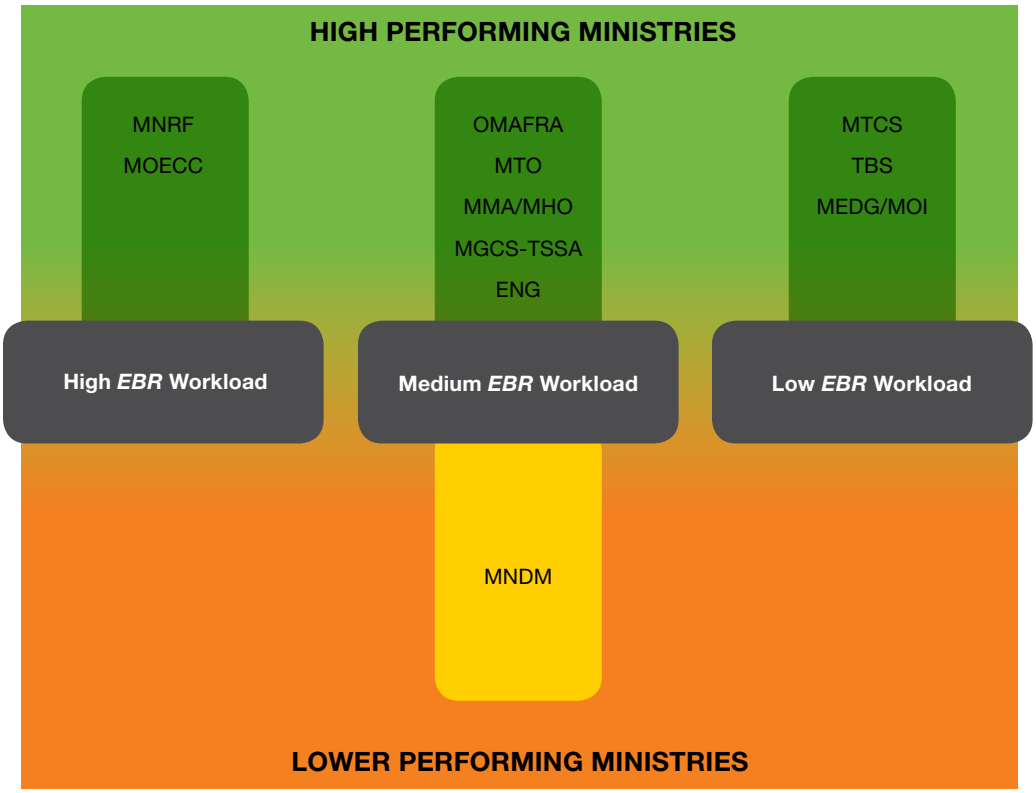


Figure 12. Ministry performance in the category of "Quality of notices for policies, acts, and regulations posted on the Environmental Registry" in 2016/2017.

1.7.3 Quality of Notices for Instruments on the Environmental Registry

Like policy, act and regulation notices, proposal and decision notices for instruments should enable members of the public to understand and meaningfully comment on a proposal, or understand a decision. Further, many instruments have accompanying third party appeal rights under the *EBR*, and a poor quality decision notice could affect the public's ability to exercise those rights.

Only five ministries – the MOECC, the MGCS-TSSA, the MMA, the MNRF, and the MNDM – are prescribed for this category; for a breakdown of their respective shares of instrument notices posted on the Environmental Registry in 2016/2017, see Figure 13, below. The ECO evaluated a random selection of 50 instrument notices posted by each of these ministries in 2016/2017 (25 proposals and 25 decisions), using criteria similar to that used to evaluate notices for policies, acts and regulations.

This year, the quality of instrument notices continues to be a significant concern for the ECO. Of the five ministries that post instrument notices, only the MOECC's instrument notices generally met the ECO's expectations – and even some of the MOECC's instrument notices fell short.

Ministries could significantly improve their instrument notices by:

1. Providing more context for, or background information about, proposed instruments and their potential environmental impacts;
2. Avoiding jargon, technical language and undefined acronyms;
3. Including links to all draft and final instruments, and any other key supporting information; and
4. Providing better descriptors of the geographic location related to an instrument, including:
    a. Municipal addresses, where applicable;
    b. Landmarks;
    c. Longitude and latitude; and/or
    d. Links to any available mapping.

Despite the generally poor results in this category, the ECO did see some modest improvements in instrument notices posted by two ministries. First, the MGCS-TSSA, which posted chronically deficient instrument decision notices in the past, has finally started to explain what decision was actually made in its decision notices. Unfortunately, the MGCS-TSSA is still not posting links to draft or final instrument documents themselves, although the MGCS-TSSA's *EBR* co-ordinator has assured us that the TSSA is working on a solution to that issue.

Second, at the end of the reporting year the MNDM made some much-needed improvements to the description of geographic location related to proposed instruments. Geographic location is important because permits and approvals apply to a specific site, and members of the public should be able to search for and identify instruments that apply in locations that are important to them. It is often difficult to tell, from an instrument notice, the precise location where the proposed or approved activity will take place.

THE QUALITY OF INSTRUMENT NOTICES CONTINUES TO BE A SIGNIFICANT CONCERN FOR THE ECO.

The ECO is therefore pleased that the MNDM is now starting to include landmark descriptors in some cases, as well as the URL for the CLAIMaps website to help the public find the precise location of applicable mining claims on a map. The ECO urges the MNDM to apply these improvements to all of the ministry's instrument notices. The MNDM should also include a direct hyperlink to the CLAIMaps site (not just the URL), along with more detailed instructions on how to find a particular claim number's location.

For a graphical representation of the results in this category, see Figure 14.

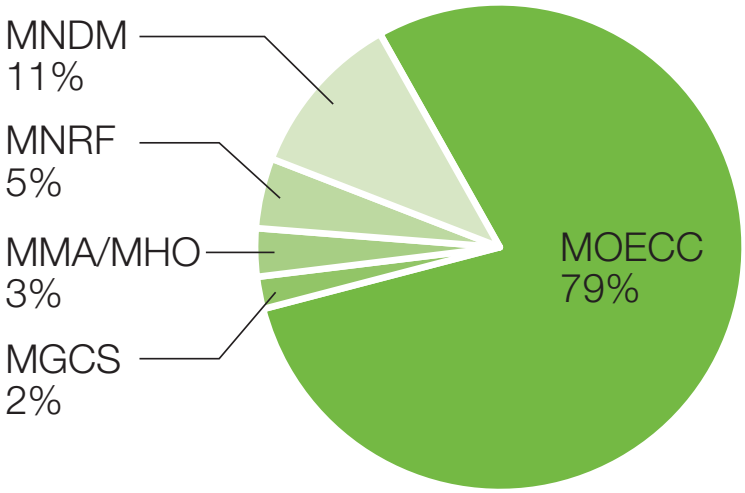


Figure 13. Percentage of all instrument notices (proposals and decisions) posted on the Environmental Registry by prescribed ministries in 2016/2017.

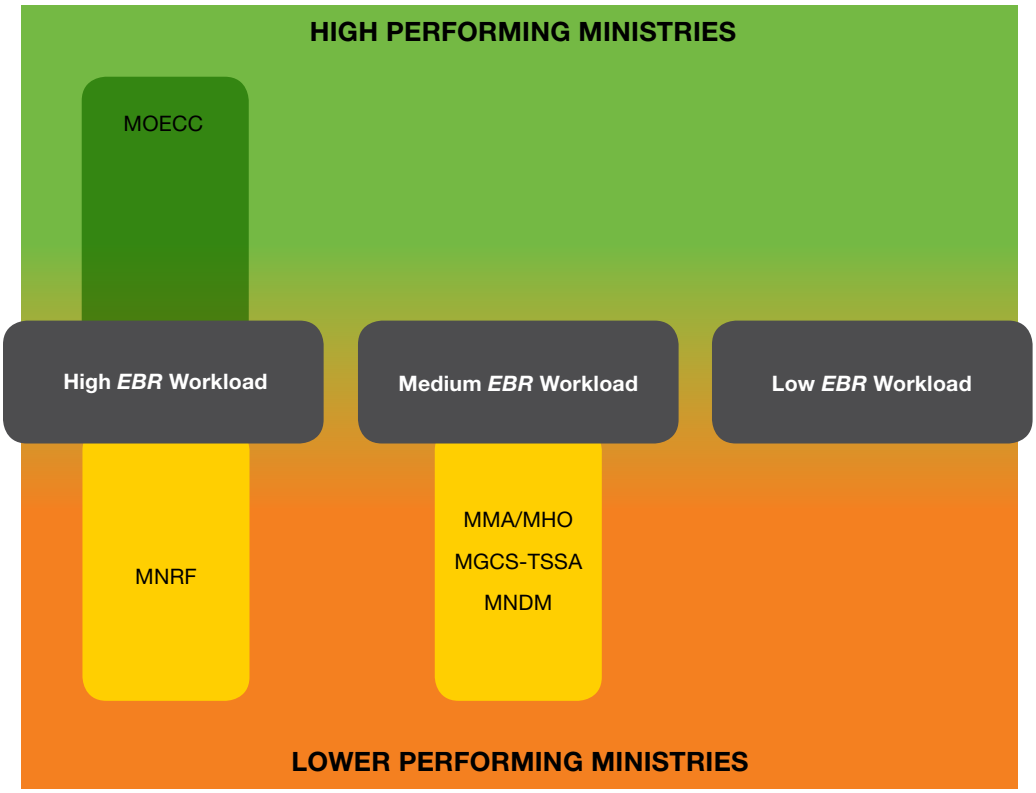


Figure 14. Ministry performance in the category of "Quality of notices for instruments posted on the Environmental Registry" in 2016/2017.

Improving the Quality of Aggregate Resources Act Instrument Notices

The MNRF is responsible for managing Ontario's aggregate resources (e.g., sand, gravel, clay, bedrock). Under the *EBR*, the MNRF must consult the public when it proposes to issue instruments under the *Aggregate Resources Act* (*ARA*), such as licences to remove aggregate from pits or quarries, by posting a notice on the Environmental Registry.

In our 2015/2016 Environmental Protection Report, we drew attention to the chronically inadequate nature of the MNRF's *ARA* instrument notices on the Environmental Registry. In particular, we noted the following deficiencies common in many of the ministry's notices:

- Failure to describe the location of aggregate operations in a way that would be readily useful to the average person;
- Failure to explain the potential environmental effects of issuing proposed instruments;
- Failure to provide links to key and/or supporting documents (e.g., copies of the instruments themselves; site plans; technical reports); and
- Failure to describe the effect of public participation on the ministry's decisions about proposed instruments.

The ECO recommended that the MNRF fix the long-standing deficiencies in *ARA* instrument notices to ensure the public's right to be notified and comment. In March 2017, the Commissioner met with the MNRF's Deputy Minister, who gave assurances that this problem would be resolved.

ECO staff followed up with the MNRF to find out what the ministry was doing to improve the quality of its *ARA* instrument notices. In response, the MNRF assured us that it strives to post high quality notices and "is careful to include sufficient information and resources… for the public to be kept up-to-date and informed on proposals and decisions." The ministry noted that it provides regular staff training to promote compliance and use of best practices.

The MNRF also advised that it is working on updating its templates for each of the eight types of *ARA* instrument notices that the ministry posts on the Environmental Registry. The updates to the template will require ministry staff preparing notices to include:

- A description of the site location by including a street address, or, if a street address is not available, a description of the site location in relation to the nearest major intersection or nearby landmark;
- Standard text developed for each type of instrument that explains what it is and how it could affect the environment; and
- A list of technical reports that are available for viewing (e.g., Natural Environment, Cultural Heritage, Hydrogeological, Noise Assessment, Blast Design, Summary Statement).

The ministry also noted that there may be opportunities for further improvement based on the outcome of the review of the *ARA* and Environmental Registry modernization. The MNRF committed to reviewing this issue further once those processes are complete to identify how notices could be further improved.

The ECO is pleased that the MNRF has promised to take action to improve the quality of its *ARA* instrument notices. More informative notices will enable members of the public to more easily identify notices that are of interest to them, and participate more knowledgeably in the ministry's decision-making process for these instruments.

However, there are two critical components of a good instrument notice that are still missing from the MNRF's new templates:

1. Site-specific information about the potential environmental impacts of the proposed instrument (as opposed to generic information about the potential environmental impacts of the instrument type). Site-specific information could include, for example, information about the species at risk known to be present on-site, or the proximity of a site to a Provincially Significant Wetland or other sensitive habitat. This information would provide the environmental context for the public, so that they could determine whether they should seek further information from a site plan, the ministry or the proponent.
2. The ministry has not committed to providing links to any key or supporting documents, including copies of the instruments themselves. Providing such links would ensure that the public is fully informed of the terms, conditions and context of a given approval. Ready access to key and supporting documents is particularly important for *ARA* instrument notices, because any member of the public who seeks leave to appeal a ministry decision regarding an *ARA* instrument must provide the Ontario Municipal Board with copies of the licence application, the licence itself, site plans, technical reports and other documents – all within 20 days (the *EBR* provides a 15-day period to make an application for leave to appeal, and the Ontario Municipal Board allows 5 more days after that to file those additional materials.)

By August 2017, the MNRF had not yet made significant improvements to its *ARA* instrument notices.

THIS YEAR, MOST MINISTRIES CONTINUED TO DO AN UNACCEPTABLY POOR JOB OF GIVING PROMPT NOTICE TO THE PUBLIC OF THEIR DECISIONS.

1.7.4 Promptness of Posting Decision Notices on the Environmental Registry

When ministries do not post a decision notice on the Environmental Registry "as soon as reasonably possible" after making a decision, as required by the *EBR*, the public is deprived of its right to prompt notice of the decision. For instruments that are subject to leave to appeal, failure to post decision notices promptly can thwart the public's right to challenge the ministry's decision about the instrument.

The ECO believes that ministries should usually be able to post decision notices on the Environmental Registry within two weeks of a decision being made. We gave partial credit to ministries that posted decisions between two and four weeks after making a decision.

This year, most ministries continued to do an unacceptably poor job of giving prompt notice to the public of their decisions. Where the ECO was able to ascertain the decision date, only 4 ministries (the MGCS-TSSA, the MMA, the MNDM, and the MNRF) posted decisions within 2 weeks more than 50% of the time; 3 other ministries posted decisions within 2 weeks less than 20% of the time (the OMAFRA, the ENG and the MTCS).

However, the ECO was only able to ascertain the date of decisions in 66% of the decision notices evaluated this year. Ministries should ensure that all decision notices clearly indicate the date that the ministry made the decision. Doing so would give the public more complete information about the decision, and

MINISTRIES SHOULD ENSURE THAT ALL DECISION NOTICES CLEARLY INDICATE THE DATE THAT THE MINISTRY MADE THE DECISION.

enable the ECO to determine more completely whether ministries are giving notice to the public as soon as reasonably possible, as required under the *EBR*.

Finally, the ECO is aware that some ministries' results for promptness of decision notices were low because they posted decision notices for long-outdated proposals, in an effort to bring their older notices up to date (see *Keeping Notices on the Environmental Registry Up to Date*, below). For example, both the MOECC and the MGCS-TSSA were usually prompt in posting instrument decision notices for current proposals, but they also each posted numerous "clean-up" decision notices for outdated instrument proposals, which skewed their results in this category. Likewise, the MTO's low score in this category is based on cleaning up outdated decision notices. Going forward, ministries should keep all of their proposal notices up to date, which will reflect positively in future *EBR* report cards and, more importantly, serve the public well.

For a graphical representation of the results in this category, see Figure 15.

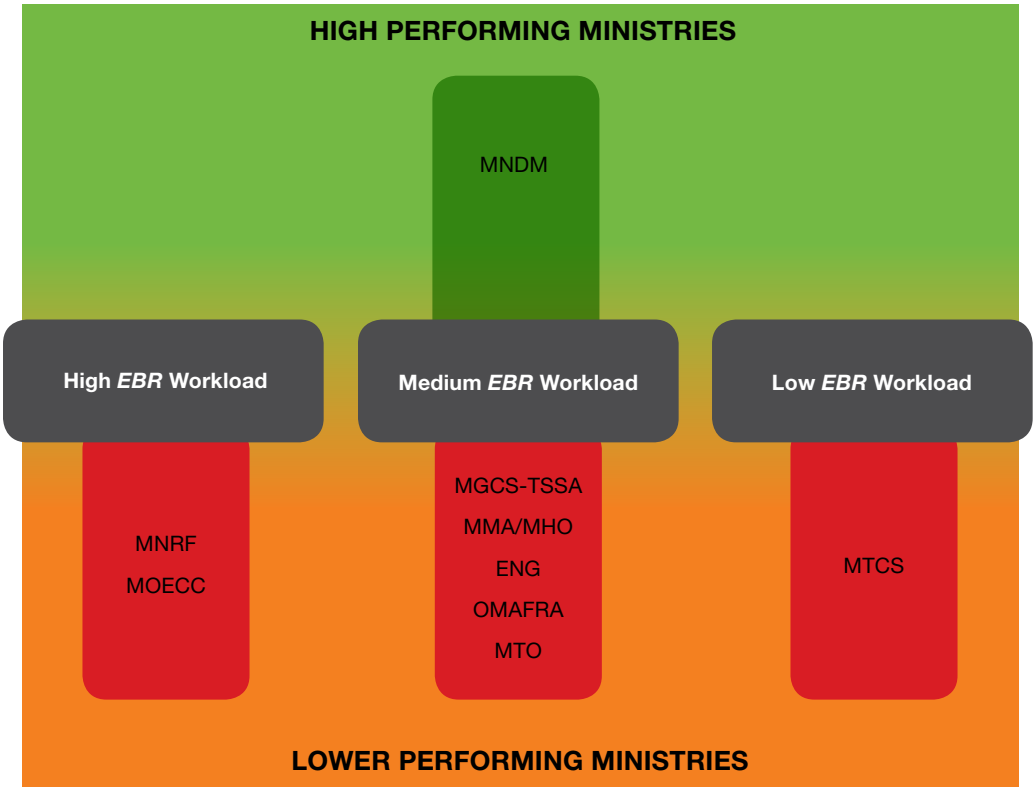


Figure 15. Ministry performance in the category of "Promptness of posting decision notices on the Environmental Registry" in 2016/2017.

1.7.5 Keeping Notices on the Environmental Registry Up to Date

In our 2014/2015 Annual Report and again in 2015/2016, the ECO raised serious concerns about the number of proposal notices on the Environmental Registry that were "outdated" (i.e., proposals that were posted more than 2 years previously, without any updates or a decision). For the Environmental Registry to be a reliable source of up-to-date information for the public, prescribed ministries must give notices of decisions promptly, and keep notices for prolonged proposals updated so that the public can easily determine the status of those proposals.

Since the ECO raised the issue in 2014/2015, most ministries have been making significant efforts to bring their proposal notices up to date, either by including a status update in the proposals themselves, or by posting decision notices for forgotten or abandoned proposals, as the case may be.

In 2016/2017, the ECO saw further progress; the total number of outdated proposals on the Environmental Registry dropped from 839 on April 1, 2016 to 136 on April 1, 2017. In particular, the ENG, the MNDM and the MTO should be commended for remedying all of their outdated proposals, and for keeping all of their remaining proposal notices up to date in 2016/2017. The MOECC has also worked extremely hard to post decision notices or updates for most of its outdated notices, going from 686 outdated proposals at the end of 2015/2016 to 39 at the end of 2016/2017. In addition, in August 2017, the MMA and the OMAFRA remedied all outdated proposals that were identified for those ministries in 2016/2017. The MNRF also remedied some outdated proposals in 2016/2017, as well as remedied all of its overdue notices for aggregate licences in August 2017 (see below); however, the ministry allowed a number of additional proposals to become outdated during the reporting year.

IN 2016/2017, THE ECO SAW FURTHER PROGRESS; THE TOTAL NUMBER OF OUTDATED PROPOSALS ON THE ENVIRONMENTAL REGISTRY DROPPED FROM 839 ON APRIL 1, 2016 TO 136 ON APRIL 1, 2017.

This year, the ECO's evaluation of ministries' individual performance in this category is based on the number of outdated proposals they had at the end of the reporting year in relation to the total number of open proposal notices on the Registry. This approach helps to take into account the differing *EBR* workloads across prescribed ministries; while the MOECC has more outdated proposals than most ministries, it also posts by far the most notices in total.

However, this approach also meant that ministries with just a few outdated notices received a low score if they had relatively few open proposals in total. The ECO believes this is fair, as a ministry that is generally responsible for a low number of notices on the Environmental Registry should be capable of ensuring that every single proposal is kept up to date.

The ECO encourages the MOECC, the MGCS-TSSA and the MNRF to remedy all of their remaining outdated proposals in 2017/2018, and encourages all ministries to keep their proposal notices current going forward, so that the Environmental Registry is a reliable source of up-to-date information for the public.

For a graphical representation of the results in this category, see Figure 16.

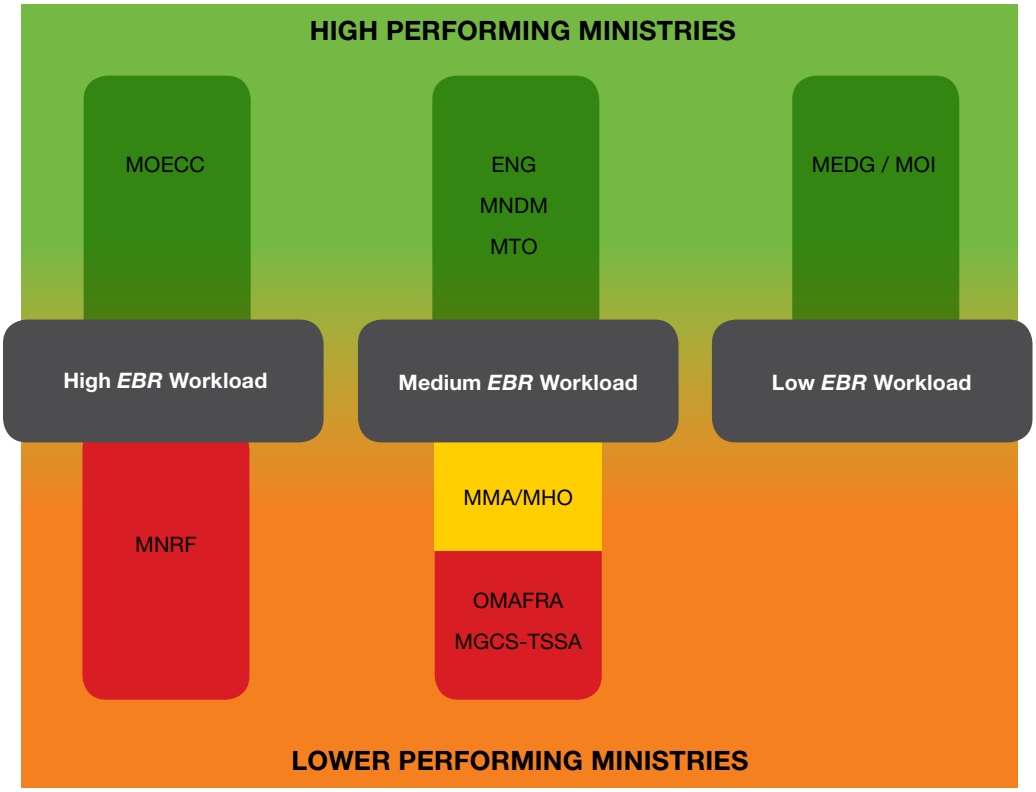


Figure 16. Ministry performance in the category of "Keeping notices on the Environmental Registry up to date" in 2016/2017.

The MNRF Finally Posts Overdue Decision Notices for Issued Aggregate Resources Act *Licences*

Last year, the Commissioner challenged all prescribed ministries to clean up their backlog of outdated proposal notices on the Environmental Registry: proposals more than two years old for which no decision had ever been posted. In 2015, prescribed ministries had failed to post 1,800 such decisions, showing outrageous contempt for public *EBR* rights.

By March 31, 2017, the number was down to 136. Over half of these – 72 notices – were the MNRF proposals for new or amended *ARA* licences dating as far back as 2003.

THE MNRF WAS AWARE OF ITS LEGAL OBLIGATION TO POST DECISION NOTICES FOR THOSE PIT AND QUARRY LICENCES ON THE ENVIRONMENTAL REGISTRY.

Some of the "missing" decisions had not, in fact, been yet made. However, in May 2017, the ECO learned that 64 of the missing decision notices were for licences that the MNRF had issued between 2007 and 2015, without notifying the public through the *EBR*.

The MNRF was aware of its legal obligation to post decision notices for those pit and quarry licences on the Environmental Registry, but initially had not done so as a result of administrative errors. The ministry was now reluctant to post these decision notices because doing so would trigger the public's right to seek leave to appeal under the *EBR*. In other words, once a decision notice was posted, those aggregate licences – under which the licence holders have, in some cases, been operating for years – could be subject to legal challenges from the public.

The ECO wrote to the MNRF in April 2017 requesting the ministry to provide details to the ECO regarding every outstanding notice. Following further conversations with the ECO, on August 25, 2017, the ministry finally posted all of the outstanding decision notices for aggregate licences.

After ten years of the MNRF methodically denying *EBR* rights to Ontarians affected by pits and quarries, the ECO is relieved that the MNRF eventually posted these decisions.

1.7.6 Handling of Applications for Review and Investigation

The ECO evaluates how well prescribed ministries have handled applications for review and investigation submitted by members of the public. We conduct this evaluation once the application is "concluded" (i.e., once the ministry has either denied the application at the preliminary stage or completed the undertaken review or investigation, and given notice to the applicants of the final outcome).

In our evaluations, the ECO considers criteria such as: whether the ministry met all statutory timelines; whether a ministry responded to the key concerns raised by the applicants; and whether the ministry's decision is written clearly and with sufficient detail.

OVERALL, MINISTRIES HANDLED APPLICATIONS FOR REVIEW AND INVESTIGATION BETTER THIS YEAR THAN IN 2015/2016.

Not all ministries are prescribed for either or both types of applications. For a breakdown of prescribed ministries' share of applications (open and concluded) in 2016/2017, see Figure 17 (reviews) and Figure 18 (investigations), below.

Five prescribed ministries concluded applications in 2016/2017: the ENG, the MOECC, the MMA, the MNRF and the MNDM. Overall, ministries handled applications for review and investigation better this year than in 2015/2016. However, all but one ministry (the MNDM) missed one or more statutory timelines related to at least one application. The application timelines set out in the *EBR* are not discretionary; the ECO reminds ministries of their obligation to comply with the legal requirements of the act.

For a graphical representation of the results in this category, see Figure 19.

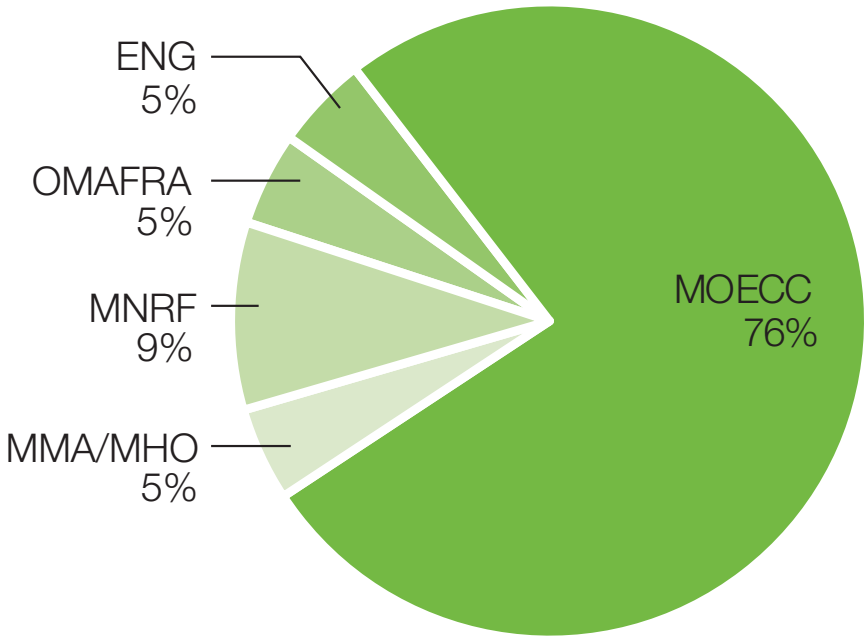


Figure 17. Percentage of applications for review (open and concluded) by prescribed ministries in 2016/2017 (the MGCS-TSSA, the MOHLTC, the MNDM, and the MTO did not handle any applications for review in the reporting year).

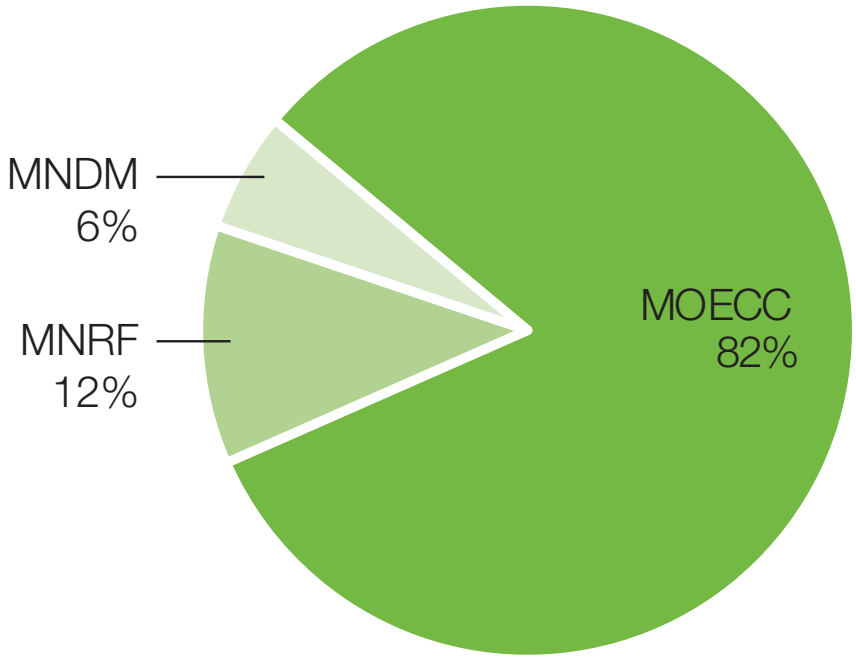


Figure 18. Percentage of applications for investigation (open and concluded) by prescribed ministry in 2016/2017 (the ENG, the MGCS-TSSA, and the MMA did not handle any applications for investigation in the reporting year).

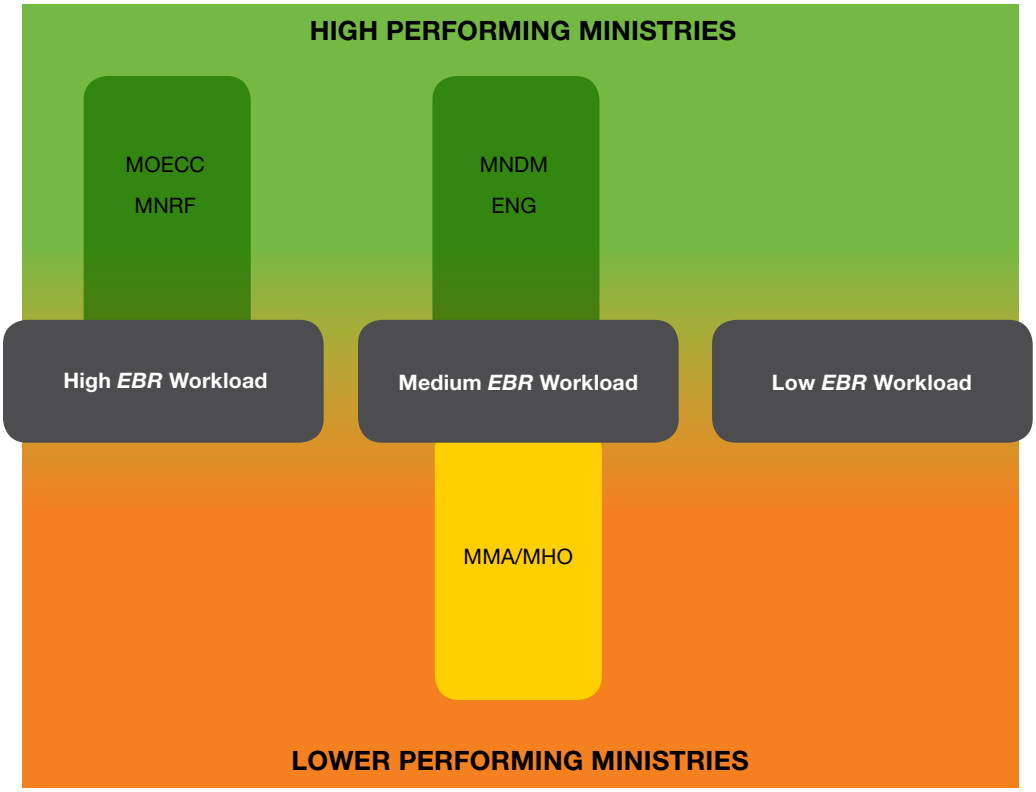


Figure 19. Ministry performance for the category of "Handling of applications for review and investigation" in 2016/2017.

1.7.7 Avoiding Overdue Applications for Review

In 2015/2016, the ECO reported on a systemic problem with ministries – particularly the MOECC – taking an unreasonably long time to complete reviews that the ministries have agreed to undertake in response to *EBR* applications submitted by members of the public.

The ECO is pleased to report improvements in this category in 2016/2017; the MOECC concluded 3 of its 6 overdue reviews, and was close to concluding two others at the end of the reporting year. The MNRF also concluded its one overdue review. To read about the ministries' final decisions on these reviews, see Part 1.6 above.

Another positive development in 2016/2017 is the MOECC's new practice of posting quarterly status updates on applications for review on the Environmental Registry. This practice should help to keep the applicants, the ECO and the public apprised of the ministry's progress on all applications for review submitted to the MOECC – particularly important when an undertaken review is expected to take a relatively long time to complete. This practice should

be emulated by all ministries to better inform the public of the status of ongoing applications for review, such as the OMAFRA's current review of the need for soil conservation legislation and policy. **The ECO recommends that all ministries that have ongoing applications for review post information notices on the Environmental Registry to update the public on the status of the review.**

For a graphical representation of the results in this category, see Figure 20.

THERE IS A SYSTEMIC PROBLEM WITH MINISTRIES – PARTICULARLY THE MOECC – TAKING AN UNREASONABLY LONG TIME TO COMPLETE REVIEWS.

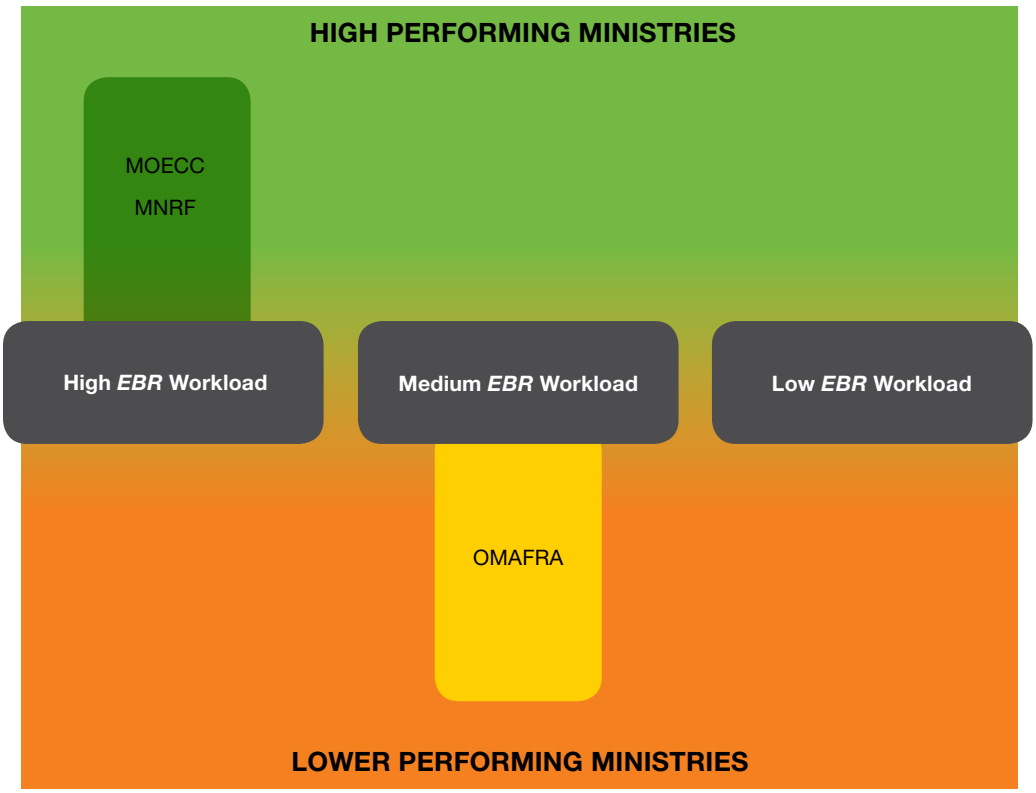


Figure 20. Ministry performance in the category of "Avoiding overdue applications for review" in 2016/2017.

1.7.8 Considering Statements of Environmental Values

The ECO must report annually on whether prescribed ministries have complied with the *EBR* requirement to consider their Statements of Environmental Values (SEVs) when making decisions that affect the environment. To fulfil this duty, the ECO asks ministries for proof of their SEV consideration for all decisions posted on the Environmental Registry for policies, acts and regulations, and for select decisions on instruments. This proof should generally be submitted in the form of an "SEV consideration document," which the ECO asks ministries to provide within four weeks of our request. For a breakdown of the numbers of requests that the ECO made, per ministry, in 2016/2017, see Figure 21, below.

This year, the ECO is pleased to report that most ministries provided proof of SEV consideration for their decisions promptly on request from the ECO. Both the MTCS and the OMAFRA, which had trouble supplying the appropriate documentation in 2015/2016, made significant improvements, responding promptly and appropriately to all of the ECO's requests for SEV consideration in 2016/2017.

The ECO was, however, extremely disappointed that the MNRF resisted over 25% of the ECO's requests for SEV consideration documents this year, providing excuses and rationales that were unacceptable to the ECO. The ECO is particularly troubled by the MNRF's position that it need not document its SEV consideration regarding overall benefit permits issued under the *Endangered Species Act, 2007*. The ECO also disagrees with the MNRF's position that documentation of SEV consideration is not required for decisions for projects that are not large-scale, complex or met with a high degree of public interest.

The MNRF's SEV states that the ministry "will document how the SEV was considered each time a decision is posted on the Environmental Registry"; a commitment which the ministry is clearly failing to honour.

The ECO reminds all ministries, and particularly the MNRF, that they must consider their Statements of Environmental Values – and that they should document that consideration – for every decision that they post on the Environmental Registry.

For a graphical representation of the results in this category, see Figure 22.

THE MNRF'S SEV STATES THAT THE MINISTRY "WILL DOCUMENT HOW THE SEV WAS CONSIDERED EACH TIME A DECISION IS POSTED ON THE ENVIRONMENTAL REGISTRY"; A COMMITMENT WHICH THE MINISTRY IS CLEARLY FAILING TO HONOUR.

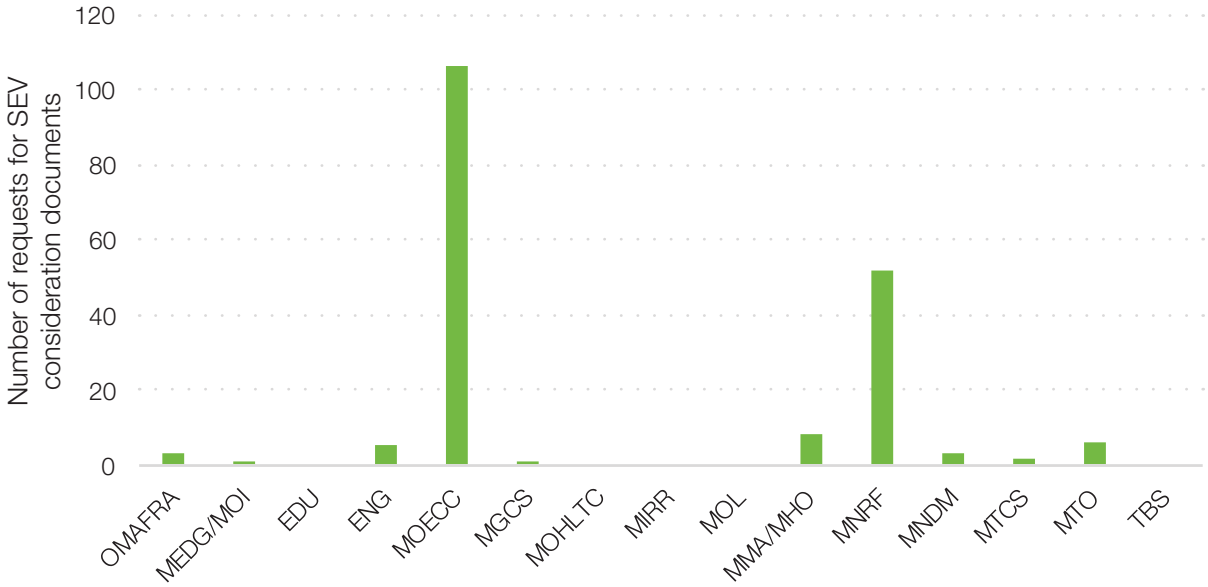


Figure 21. Number of requests made by the ECO for proof of consideration of Statement of Environmental Values, by prescribed ministry, in 2016/2017.

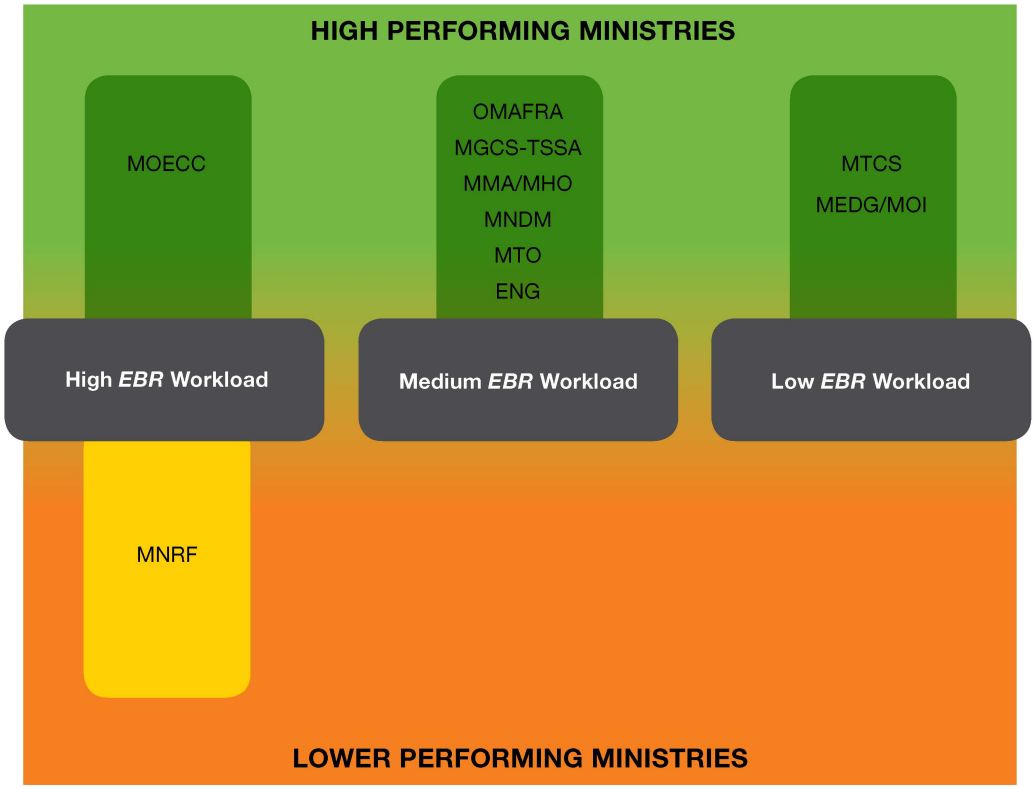


Figure 22. Ministry performance in the category of "Considering Statements of Environmental Values" in 2016/2017.

1.7.9 Co-operation with ECO Requests

The ECO must report annually on whether prescribed ministries have co-operated with our information requests. Again in 2016/2017, prescribed ministries – with one notable exception – were generally very co-operative. Ministry staff briefed the ECO on a wide range of topics, from asset management of water/wastewater infrastructure to environmental approvals to protected areas. When requested – and in some cases proactively – ministries provided ECO staff with documents and other information. Ministries also provided answers to questions on several specific topics from ECO staff.

The MOECC stood out as particularly co-operative, providing a number of helpful briefings on a number of topics, including source water protection, environmental approvals and the renewable fuel standard for gasoline. The ministry was responsive and forthcoming with information and facilitated discussions between ministry experts and ECO staff.

Unfortunately, the MNRF stood out as being significantly less co-operative than other ministries this year. Although the ministry was quick to respond to the ECO's requests in some cases – for example, in providing a helpful status update on the ministry's aggregates policy framework – overall the ECO found the MNRF lagging in this category. The MNRF often responded slowly or not at all to information requests, and had to be pursued repeatedly by ECO staff.

The ECO relies on information from ministries to fulfil our statutory reporting obligations. We urge the MNRF to co-operate more fully with our requests for information in 2017/2018.

For a graphical representation of the results, see Figure 23.

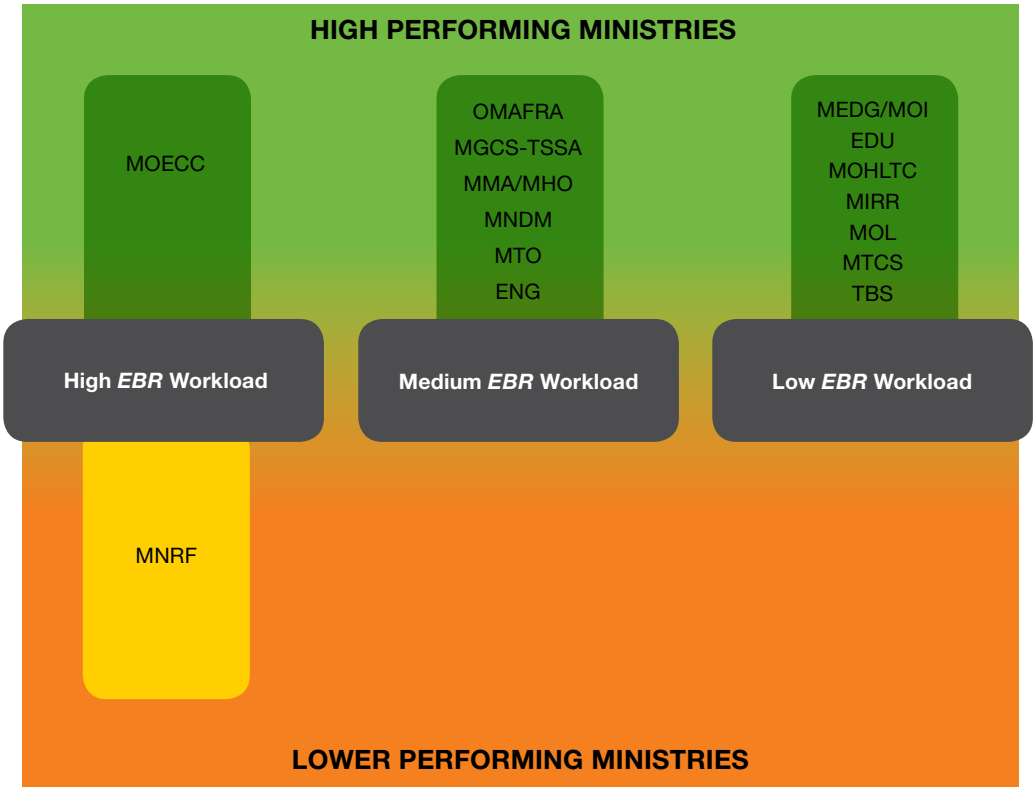


Figure 23. Ministry performance in the category of "Co-operation with ECO requests" in 2016/2017.

MNRF STOOD OUT AS BEING SIGNIFICANTLY LESS CO-OPERATIVE THAN OTHER MINISTRIES.

Going Forward

The ECO will continue to monitor ministry compliance with the *EBR*, and to track trends in ministry *EBR* performance year over year. We will also continue to work with prescribed ministries' *EBR* representatives whenever possible to help those ministries better fulfil their *EBR* responsibilities and, in turn, the public's *EBR* needs.

The next *EBR* Report Cards will cover the ECO's 2017/2018 reporting year (ending on March 31, 2018), and will be released in late 2018.

1.8 *EBR* Success: The MNRF Shuts Down the Snapping Turtle Hunt

Big government decisions usually involve many players. New laws, policies or programs designed to protect the environment are based on a wide variety of inputs and often take a long time from first consideration to final action. In fact, it can take months or years of work by groups or individuals, often working separately, to prompt the government to take action.

When the ECO has played a role in moving the government forward on an important environmental issue – by making recommendations in our reports, drawing attention to the issue through blogs, speaking out about the issue at conferences and in the media, or holding a ministry's feet to the fire through direct correspondence and meetings – we consider the outcome a success for our office, even though many others will have also contributed to the effort.

One such shared success is the ban on hunting Ontario's snapping turtle, which is listed as special concern under Ontario's *Endangered Species Act, 2007* (*ESA*). It is possible in Ontario to encounter a snapping turtle, perhaps while on a family camping trip, fishing with friends, or just driving down a rural road. Depending on the individual, such an encounter with this large, prehistoric-looking reptile may be an experience filled either with awe or with fear. Snapping turtles suffer from an unfair reputation of being aggressive due to their large size and scary appearance, but these turtles – Canada's largest freshwater turtle – are a critical part of Ontario's natural heritage and wetland ecosystems. Turtles play an important role in the wetland's food web, feeding on plants, insects, spiders, worms, fish, frogs and other organisms.

WHEN THE ECO HAS PLAYED A ROLE IN MOVING THE GOVERNMENT FORWARD ON AN IMPORTANT ENVIRONMENTAL ISSUE WE CONSIDER THE OUTCOME A SUCCESS.

Photo credit: Karim Rezk

Worldwide, reptile populations are in trouble: nearly one in five reptile species are threatened with extinction. Seven of Ontario's nine turtle species and subspecies are at risk, including the snapping turtle. Snapping turtles are designated as a "special concern" species, which means that they may become threatened or endangered due to a combination of biological characteristics and identified threats.

For turtles, it is primarily their biological characteristics that puts them at risk. People killing turtles, deliberately or accidentally, adds a further threat to local turtle populations. Yet, until recently, it was legal to hunt snapping turtles in Ontario. Although it is illegal to kill a "threatened" or "endangered" species under the *ESA*, this protection does not extend to special concern species. However, in April 2017, after many years of calls by both the ECO and the public to better protect snapping turtles, and well into the preparation of this report, the MNRF finally ended the hunt of this species at risk.

Status of Ontario's Turtles under the ESA

Endangered

Spotted Turtle
Wood Turtle

Threatened

Blanding's Turtle
Spiny Softshell

Special Concern

Eastern Musk Turtle
Northern Map Turtle
Snapping Turtle

Not identified as at risk, but listed as a priority for assessment

Western Painted Turtle
Midland Painted Turtle

Why Snapping Turtles are at Risk

The snapping turtle's biology makes it particularly vulnerable to population declines. They have a long life span, capable of living for more than 70 years. But they also have a delayed sexual maturity, usually not mating until 17 to 19 years of age for females in Ontario. Very few snapping turtles survive to adulthood. Because of these life history traits, adult survival is critical to maintain populations. The death of even a few adult snapping turtles can cause severe declines in a local population. It may take decades for a population to recover once declines occur, if at all.

Given these biological characteristics, snapping turtles have low tolerance to the additional threats they face, such as hunting and other deliberate killing by humans, road collisions and habitat loss. Other lesser threats include water pollution, major changes to water levels, dredging, and collisions with boats. Each of these impacts has a cumulative effect to local snapping turtle populations. Out of all these threats to snapping turtles, some of which would be very challenging to stop, the regulation of hunting is squarely within the control of the MNRF.

Ending the Hunt of Snapping Turtles

Prior to 2017, it was legal for anyone with a fishing licence to harvest snapping turtles during the hunting season, with hunters being allowed to kill two turtles per day. In December 2010, members of the public asked the MNRF, through an application for review under the *EBR*, to end the hunting of snapping turtles because they were a species at risk. The ministry denied the request, asserting that its "conservative harvest regulations" have already reduced pressure on the species. The ECO disagreed and encouraged the ministry to impose a ban on the hunting of snapping turtles in Ontario. (For more information, refer to Part 3.2.1 of our 2010/2011 Annual Report.)

In February 2012, the MNRF posted a proposal on the Environmental Registry for mandatory reporting of snapping turtle hunting. The proposal evoked an overwhelming public outcry to end snapping turtle hunting instead. Most of the 400 public comments that the ministry received, plus a petition with 11,000 signatures presented to the Legislative Assembly of Ontario, asked the provincial government to end the hunting of snapping turtles. The MNRF chose to proceed with its proposal and, in June 2012, snapping turtle hunters were required to report all harvest activities annually.

The next year, only four hunters reported harvesting snapping turtles. The ECO concluded that the MNRF was either "maintaining a recreational hunt of snapping turtles for only four people or compliance with the requirement to report harvest is incredibly low." We also expressed concern that the MNRF does not have accurate population and harvest data to determine what amount of hunting is "sustainable" for snapping turtles, if any. The ECO again urged the MNRF to

"immediately close the recreational hunting season for snapping turtles." (For more information, refer to Part 3.4 of our 2012/2013 Annual Report.) More recent results from the mandatory reporting of snapping turtle hunting continue to show that few people hunted snapping turtles (or reported their harvest to the ministry) (see Table 5), but the number of turtles reported killed was increasing.

Table 5. Number of snapping turtles harvested and number of individuals who harvest snapping turtles per year, based on mandatory harvest reporting.

Year	Total Harvest	Number of Harvesters
2012	13	4
2013	21	9
2014	12	6
2015	9	8
2016	30	12

Source: MNRF, 2017.

In December 2016, the MNRF posted another proposal on the Environmental Registry, this time to shorten the snapping turtle hunting season and reduce the hunting limit to only one turtle per day. The ministry received over 13,000 public comments through the Registry and stated that "based on public feedback, there was significant opposition to maintaining any open season for snapping turtles."

In March 2017, the ministry finally cancelled the legal hunting of snapping turtles "to help maintain populations of this species into the future."

THE END OF THE SNAPPING TURTLE HUNT IS TRULY A SUCCESS STORY.

A Win for Turtles, Win for the Public

The end of the snapping turtle hunt is truly a success story that demonstrates how the public can use the tools of the *EBR* to better protect the environment by contributing to the government's decision-making process. The public successfully used the *EBR* application for review process and the Environmental Registry to bring attention to this issue and ultimately change the ministry's approach to managing this at-risk turtle.

Given the snapping turtles' biology and sensitivity to external pressures, any hunting of mature snapping turtles is unwise. Since 2012, hunters have legally killed 85 snapping turtles. While this does not seem like a large amount, the loss of each one of these turtles can quickly and significantly reduce the local population from which they were removed. Therefore, protecting snapping turtles from hunting not only reduces the number of adults that are killed, it should also help to maintain turtle populations and increase the chances for local populations to recover from losses related to other threats, including habitat loss and road mortality.

Prohibiting the hunting of snapping turtles in Ontario is a positive first step towards protecting and recovering this species at risk. Recreational hunting is a valued and legitimate activity that many Ontarians cherish; however, the government has a prior responsibility to protect species at risk, including those that are threatened by hunting.

1.9 *EBR* Success: Improvements to the MOECC's Financial Assurance Program

The MOECC is responsible for safeguarding Ontario's air, water and soil. To a great extent, this means limiting pollution in an effort to avoid environmental harm from occurring in the first place. However, another facet of the ministry's work is making sure that when environmental problems arise, the parties responsible cover the costs of clean-up in accordance with the polluter pays principle of environmental management.

The MOECC has several tools to make polluters pay for the costs associated with cleaning up their messes, although hundreds of contaminated sites have been left behind by bankrupt or vanished polluters. One of the key tools is the provision of the *Environmental Protection Act* that allows the ministry to require financial assurance from proponents, usually as a condition for issuing an environmental approval or other instrument. In other words, before the ministry will give permission for certain environmentally risky activities to take place, it requires proponents of those activities to set aside money to cover the costs for any potential clean up that may be required down the road.

The MOECC must always obtain financial assurance for three types of projects: certain private-sector landfills; mobile facilities that destroy PCBs; and certain anaerobic digestion and thermal treatment facilities. It may also choose to obtain financial assurance in several other situations, including for renewable energy projects and sewage works.

In the ECO's 2014/2015 Annual Report, *Small Things Matter*, we reported on the MOECC's financial assurance program and identified three key issues that undermined the effectiveness of the program. Specifically, we encouraged the ministry to address the following concerns:

- the ministry did not routinely require financial assurance for many high-risk activities;
- when requested, proponents did not always provide financial assurance and the ministry did not promptly follow up and enforce the requirement (and when the ministry *proposed* to request it, it did not follow through on the request); and
- even when financial assurance was provided, it was sometimes insufficient to cover the actual costs of clean up.

In addition to the ECO, the Auditor General and the Ministry of Finance have also recommended improvements to the MOECC's financial assurance program. In response, the MOECC reviewed its files and followed up on all reported outstanding financial assurance cases and recovered funds where possible. As a result, financial assurance now remains outstanding in less than 1% of all cases where it is required. In addition, the ministry has introduced some key enhancements to its financial assurance program aimed at ensuring that sufficient financial assurance is secured in all appropriate cases. Specifically, the ministry reports that it has:

- developed additional cost estimate guidance to better ensure that financial assurance is sufficient to cover the likely costs of clean up;
- developed a system to track and monitor outstanding requests for financial assurance or related compliance issues;

- updated the methodology and directives for calculating financial assurance amounts;
- updated the financial assurance guideline to remove "non-standard" forms of assurance and to include Guaranteed Investment Certificates as a standard form;
- standardized the requirement for periodic review of amount to ensure it remains sufficient;
- standardized letter of credit and bond terms to ensure priority in cases of bankruptcy;
- reviewed existing approvals for hazardous and liquid waste to ensure that they included appropriate financial assurance conditions; and
- developed new operating procedures regarding roles and responsibilities for all ministry staff.

Overall, it appears that the ministry has taken steps to address each of the ECO's concerns, particularly regarding ensuring the sufficiency of financial assurance and following up on outstanding requests for financial assurance. We were pleased to note that, according to the ministry, in April 2017 the MOECC had in hand more than 99% of the financial assurance it currently requires of proponents.

IN APRIL 2017 THE MOECC HAD IN HAND MORE THAN 99% OF THE FINANCIAL ASSURANCE IT CURRENTLY REQUIRES OF PROPONENTS.

The MOECC's Co-ordinated Approach for Addressing Provincial Contaminated Properties

Financial assurance is an important tool for ensuring that private property owners cover the costs of cleaning up contamination. However, there are many properties in Ontario that are the responsibility of the provincial government, rather than a private party. Until recently, these properties were managed on a piecemeal basis that varied from ministry to ministry.

Recently, the MOECC has been working with other ministries on a new "co-ordinated approach" to manage and prioritize clean-up of all contaminated sites for which the government of Ontario has responsibility. As part of this initiative, the province has built a single inventory of all provincial contaminated sites regardless of which ministry is responsible for the property, and has developed a framework to prioritize clean-up work based on risks to health, safety and the environment. In this way – in theory – the government can spend public money where it is most needed, when it is needed, in a manner that takes all properties into consideration, instead of looking at each ministry's holdings individually. This initiative is still in the early stages. The ECO looks forward to reporting on it in more detail in a future report.

1.10 The ECO Recognition Award: *Pollinator Health Strategy* and *Action Plan*

Each year, we ask prescribed ministries to submit outstanding programs and projects to be considered for the ECO's Recognition Award. This award is meant to recognize and praise specific public servants from a ministry prescribed under the *EBR* for their hard work in an initiative that is innovative, goes above and beyond legal mandates of the ministry, betters Ontario's environment, and that meets the requirements and purposes of the *EBR*.

This year, the ECO received nominations for 10 projects and programs from 6 ministries and agencies. The ECO congratulates all the ministry staff who implemented these exceptional environmental projects.

After careful consideration, the ECO has decided to give the 2017 ECO Recognition Award to staff from the OMAFRA, the MOECC, and the MNRF for the *Pollinator Health Strategy* and *Action Plan*. This is the second time the ECO has awarded this accolade to three ministries for a joint initiative.

A multi-ministry Pollinator Health Strategy Team with staff and senior leadership from the OMAFRA, the MOECC, and the MNRF worked together to strengthen pollinator health by developing the *Pollinator Health Strategy* and the *Pollinator Health Action Plan*.

Pollinators – insects, birds and other creatures which play a role in the pollination of plants – are vital to natural ecosystems and agricultural productivity all over the world and contribute over $990 million annually to Ontario's economy. Ontario also has a managed honey bee sector, with an estimated population of 97,342 colonies and 2,896 registered beekeepers in 2016.

By 2014, there was abundant evidence that pollinators' health and populations are in decline in many parts of the world. In Ontario, our beekeepers were experiencing significant bee mortality incidents, as well as elevated overwintering mortality rates. For example, Ontario's average honey bee overwintering mortality rate was 58% in 2014, which was far greater than any other province that year.

Photo credit: Benny Lin

Photo credit: Chris Sorge

The Premier directed the OMAFRA to strengthen pollinator health by developing a strategy and action plan in 2014. Between 2014 and 2016, the three ministries worked together to lead the development of the strategy and the action plan, with the contribution of many other ministries, industry, stakeholders, First Nations and Métis communities, and the public.

The *Pollinator Health Strategy* includes:

- a financial program to assist beekeepers experiencing high levels of bee hive losses;
- a regulation limiting the use of neonicotinoid-treated seed; and
- a *Pollinator Health Action Plan* to address multiple stressors on pollinators.

It sets three ambitious targets:

- an 80% reduction in the number of acres planted with neonicotinoid-treated corn and soybean seed by 2017;
- an over-winter managed honeybee mortality rate of 15% or lower by 2020; and
- restore, enhance and protect 1 million acres of pollinator habitat in Ontario.

The *Pollinator Health Action Plan* outlines the government's actions to improve the health of Ontario's wild pollinators and managed bees, such as:

- release and consult on a discussion paper on modernizing the legislative framework for beekeeping;
- provide $1 million to fund new research to address key knowledge gaps related to pollinator health;
- launch a digital awareness campaign to encourage Ontarians to plant pollinator-friendly gardens;
- collect data from government monitoring and surveillance programs to establish baselines on the status of managed honey bees, wild pollinators and pesticide residues in the environment; and
- conduct climate change vulnerability assessments for select wild pollinator species.

Public consultation, a key component of the *EBR*, was an integral part of the development of the strategy and action plan. The ministries posted the three proposals on the Environmental Registry, which received a staggering total of 80,594 public comments. The ministries stated that most of the comments received through the Environmental Registry were supportive of the government's action on pollinator health.

Photo credit: Rob Campbell

Honourable Mention: The Ministry of Transportation's University Student Wildlife Monitoring Program

In 2014, the MTO established a program for university students to monitor wildlife movement along various highways in the ministry's central region, spanning from Niagara to Penetanguishene. Roads can increase mortality, fragment habitat and impede movement of many wildlife species, including at-risk turtles. Through this program, students have monitored reptiles, amphibians, and mammals for movement patterns, use of mitigation measures and mortality along a number of highways. Students also make recommendations to the ministry for future monitoring, additional mitigation measures and modification to existing mitigation measures to increase success.

This innovative program provides valuable education and experience for students in wildlife management, but also helps the ministry collect data on wildlife movement and mitigation efforts along highways. The information collected through this program, as well as input from the public, is used to improve the ministry's wildlife mitigation strategies and activities, and has resulted in the installation of amphibian fencing along a stretch of Highway 48 and deer escape ramps along Highway 26.

Table 6. Past Recipients of the ECO's Recognition Award: the MOECC; the MMAH; the MNRF; the MTCS; and, the MTO.

Year	Program or Project
2016	Mid-Canada Radar Site Clean-Up in Polar Bear Provincial Park (MNRF)
2015	No submission found to be acceptable
2014	Water Chestnut Management in Voyageur Provincial Park (MNRF)
2013	Wasaga Beach Provincial Park Piping Plover Program (MNRF)
2012	Algonquin Provincial Park's Waste Management System (MNRF)
2011	Bioretention Cells and Rubber Modified Asphalt at the QEW Ontario Street Carpool Lot, Beamsville (MTO)
2010	Green Power for the Summer Beaver Airport (MTO)
2009	Project Green (MOECC)
2008	Zero Waste Events at the Metro Toronto Convention Centre (MTCS)
2007	No submission found to be acceptable
2006	Southern Ontario Land Resource Information System (MNRF)
2005	Conservation of Alfred Bog (MNRF, MOECC, MMAH)
2004	Environmental Monitoring (MOECC)
2003	Ontario's Living Legacy (MNRF)
2002	Oak Ridges Moraine Strategy (MMAH)
2001	Eastern Massasauga Rattlesnake Project for Highway 69 Reconstruction (MTO)
2000	Septic System Program (MMAH)

Chapter 2

Getting Approvals Right: the MOECC's Risk-Based Approach

Contents

2.0	**INTRODUCTION**	**72**
2.1	**SHIFTING TO A RISK-BASED FRAMEWORK: AN OVERVIEW**	**73**
2.1.1	HOW ACTIVITIES ARE SELECTED FOR THE EASR	75
2.1.2	ONCE AN EASR ACTIVITY IS SELECTED...	77
2.1.3	AN EVOLVING FRAMEWORK: THE EASR REGULATION FOR ACTIVITIES WITH AIR EMISSIONS	79
2.2	**COMPLIANCE AND ENFORCEMENT**	**80**
2.2.1	THE MOECC'S COMPLIANCE AND ENFORCEMENT STRATEGY FOR THE EASR	80
2.2.2	COMPLIANCE MONITORING AND ENFORCEMENT ACTION FOR EASR-REGULATED FACILITIES TO DATE	81
2.2.3	COMPLIANCE AND ENFORCEMENT OF ENVIRONMENTAL COMPLIANCE APPROVALS	84
2.3	**THE RESULTS OF THE SHIFT TO A RISK-BASED APPROACH**	**84**
2.3.1	EFFICIENCIES FOR BUSINESS AND GOVERNMENT	84
2.3.2	FOCUS ON PROTECTING THE ENVIRONMENT	86
2.3.3	SOME LOSSES, SOME GAINS FOR *EBR* RIGHTS, TRANSPARENCY AND ACCESS TO INFORMATION	89
2.4	**CONCLUSION: THE MOECC'S RISK-BASED APPROACH DELIVERS PROMISED RESULTS**	93

The MOECC's approvals program is a good risk-based approach.

Abstract

The Ministry of the Environment and Climate Change's (MOECC) 2011 launch of an online permit-by-rule system (the "EASR") to regulate low-risk environmental activities has, so far, proven to be a good move. The number of applications for individual approvals is going down, reducing the ministry's approval workload and saving time and money for businesses – a key driver of approvals modernization. More significantly, the shift to the EASR has brought many facilities that were previously operating outside environmental laws under regulatory oversight, and made EASR registrants subject to up-to-date environmental standards. It has also levelled the playing field for competitors, making all EASR registrants in a sector subject to the same rules.

Further, the MOECC has developed a sound compliance and enforcement strategy for EASRs that, if maintained, should motivate registrants to follow the rules. Some opportunities for public participation have been lost such as the right to comment on individual approvals for EASR-regulated facilities. However, the public has gained the right to help shape operating requirements for each EASR-regulated sector, potentially raising the bar for all facilities. Transparency around environmental approvals has also improved overall.

A key benefit of introducing the EASR was to enable the MOECC to focus more of its resources on higher risk activities; now it needs to do just that.

To further strengthen its environmental approvals framework, the ministry must: update older environmental compliance approvals for the higher-risk activities that will not transition to the EASR framework; account for the cumulative effects of all regulated facilities; and improve the Access Environment website upon which all EASR registrations and other environmental approvals are posted.

2.0 Introduction

Ontario has recently transformed the way that it regulates many activities that may be harmful to the environment.

In the past, each person or organization engaging in a regulated activity – emitting contaminants to air, handling and storing waste, operating a sewage works, taking water – had to first obtain an individual approval from the Ministry of the Environment and Climate Change (MOECC). The application and approval process was time-consuming for both businesses and ministry staff, costly for businesses, and led to a significant backlog of approval applications. The rules were often uneven, hard to understand and enforce, and became outdated. In short, the old environmental approvals process was not working well.

In 2010, the MOECC started to develop a framework for "modernizing" its environmental approvals. One part of that modernized framework was to transition activities that the ministry deemed to be "low-risk, less-complex or that have standard requirements," to a new permit-by-rule system. Under the new system, instead of applying for an individual approval, a party wishing to undertake an eligible activity must follow a standard set of operating requirements for that activity by registering the activity in an online database known as the Environmental Activity and Sector Registry (EASR).

The MOECC claims that shifting low-risk activities to the EASR framework reduces cost and delays for organizations wishing to legally engage in regulated activities, and allows the ministry to focus on activities that are unique, complex or pose a greater risk to the environment. The MOECC also says that the EASR levels the playing field for EASR-regulated entities by making everyone subject to the same up-to-date rules. Most importantly, the government maintains that the EASR approach to environmental approvals can be used without reducing environmental protections, and that it provides increased transparency by publishing information about registered operations on a publicly accessible and searchable website.

THE OLD ENVIRONMENTAL APPROVALS PROCESS WAS NOT WORKING WELL.

But is this true?

When the MOECC first introduced its risk-based approvals framework, the ECO was cautiously optimistic that it had – conceptually, at least – developed a reasonable modernized framework for environmental approvals. However, we had concerns about how the shift would affect the environment; at the time, the scope of activities that the MOECC would choose to regulate using the EASR was unknown, as were the ministry's plans for enforcing the rules underlying EASR registrations. We also had concerns about the effects on public participation, since an individual registration for an EASR activity would not be subject to public comments and third-party appeal rights the way many individual approvals are under the *Environmental Bill of Rights, 1993*.

With the EASR now fully established, we can evaluate how it has been working in practice. In this report, the ECO provides an update on the risk-based approvals framework and the MOECC's strategy for enforcing it, and explores three key questions:

1. Has the shift to the EASR yielded the intended efficiencies to business and government?
2. Has the shift come without costs to the environment?
3. How has the shift affected transparency and accountability in environmental decision-making?

In short, was the shift to a more risk-based approach a good move?

2.1 Shifting to a Risk-Based Framework: An Overview

One of the MOECC's core functions is to regulate activities with the potential to harm the environment – in effect, ensuring that their impact on the air, land and water is kept within limits deemed reasonable by the ministry.

Until recently, the MOECC regulated most activities with environmental impacts using the same approach, regardless of the nature of the activity. People or businesses (referred to as "proponents") had to submit a detailed, individual application package, often including technical studies and reports, to seek approval from the MOECC to engage in a regulated activity. Ministry staff would then undertake a technical review of the application and, if deemed satisfactory, prepare an individualized approval document that, in many cases, included conditions specific to the applicant's business to minimize environmental impacts.

Today, the way an activity is regulated depends on its complexity and level of environmental risk (see *Ontario's Risk-Based Approach to Environmental Approvals* and Figure 1, below). Under this new risk-based approach, the MOECC continues to regulate activities deemed high risk using the more intensive approval process that requires an individual approval – usually an environmental compliance approval (ECA).

Conversely, many low-risk activities are now regulated using a permit-by-rule framework: self-registration on the Environmental Activity and Sector Registry (EASR), subject to standard operating requirements in a regulation. Other low-risk activities are exempt altogether from requiring an approval or registration.

The MOECC also recently created a new category of EASR registration for activities with air emissions.

UNTIL RECENTLY, THE MOECC REGULATED MOST ACTIVITIES WITH ENVIRONMENTAL IMPACTS USING THE SAME APPROACH.

Before registering, proponents of eligible activities must assess their air, noise and odour emissions to verify that their facilities meet specified emissions standards – with sign-off from a licenced engineering practitioner – and then they must file the emissions summaries with their EASR registration. The emissions summaries will be posted online with the EASR confirmation document on Access Environment, accessible to the public.

Despite a long list of ineligible activities,[1] the MOECC anticipates that 50 – 70% of air emitters will be captured. Over 9,000 facilities are believed to be eligible to register. For a more detailed discussion of the EASR regulation for activities with air emissions, see *An Evolving Framework: The EASR Regulation for Activities With Air Emissions*, below.

TODAY, THE WAY AN ACTIVITY IS REGULATED DEPENDS ON ITS COMPLEXITY AND LEVEL OF ENVIRONMENTAL RISK.

Ontario's Risk-Based Approach to Environmental Approvals

Regulating activities that may harm the environment is one of the MOECC's core responsibilities. Based on the ministry's analysis of the risk associated with an activity, an activity may now be regulated in one of four ways:

1. Exempt from Approval (lowest risk activities)

- Activities in this category do not require registration or approval, provided proponents comply with specified eligibility criteria
- The MOECC says that it will audit facilities that haven't registered or applied for an ECA to ensure that they are complying with the exemption rules
- Examples include: comfort heating (HVAC) systems; standby power systems[2]

2. EASR Registration with Rules Only

Proponents of activities in this category must register and follow operating conditions set out in a regulation

- Examples include: automotive refinishing; commercial printing

3. EASR Registration with Assessment

Before registering, proponents of activities in this category must complete modelling of air emissions, and evaluate potential odour and/or noise impacts

- Proponents must submit summaries of their air assessments, and, if applicable, noise assessments, with their EASR registration, and must operate within the parameters set out in those summaries
- Examples include: general manufacturing activities such as food processing and cabinet making

4. Full Environmental Compliance Approval (highest risk activities)

Activities/sectors in this category are not eligible for EASR registration

- Proponents must apply for an individual ECA and associated assessments
- Examples include: chemical manufacturing; petroleum refineries; waste disposal

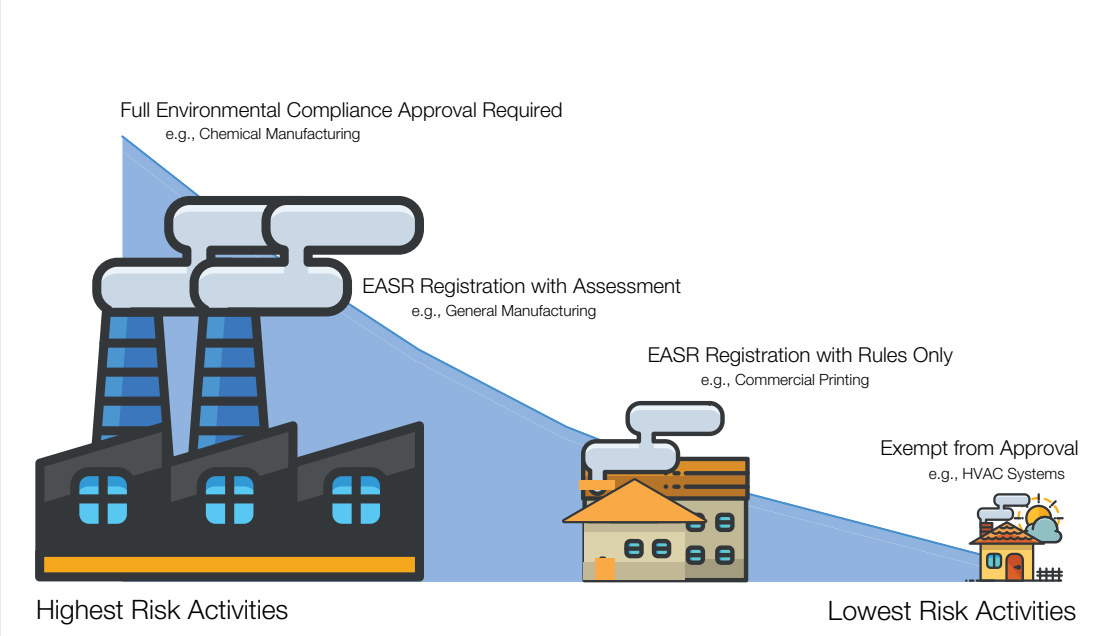


Figure 1. Ontario's risk-based approach to environmental approvals.

2.1.1 How Activities are Selected for the EASR

There are no statutory criteria regarding what types of activities can or should be regulated using the EASR. However, the MOECC has developed a detailed multi-step process for identifying and vetting potential EASR candidate activities and sectors:

1. **Internal screening by ministry staff** to determine whether a candidate activity is appropriate for transitioning to the EASR; for an activity to be brought forward, the ministry must conclude three things:
   a. The potential emissions to the environment can be categorized and have minimal impacts;
   b. Businesses engaged in the activity all use routine or standard processes; and
   c. There is a "sufficient number" of businesses engaging in the activity that would be captured by an EASR regulation;[3]
2. **Preparing a technical discussion paper** that summarizes the environmental impacts of the activity and proposes draft eligibility criteria and operating requirements to lessen those impacts;
3. **Consulting the public** on the MOECC's proposal to add the activity to the EASR (with the technical discussion paper posted on the Environmental Registry);[4] and
4. If, based on the public's comments and the ministry's technical analysis, the ministry chooses to proceed with adding the activity to the EASR framework, **consulting the public** on a draft regulation that sets out both eligibility requirements and operating requirements for EASR registrants for that activity.[5]

If, after considering the public's comments on the draft regulation, the ministry decides to go ahead with its proposal, the regulation is finalized and filed, and the activity is officially subject to EASR registration.

TO DATE, THE MOECC HAS FOLLOWED ITS MULTI-STEP PROCESS FOR EACH SECTOR OR ACTIVITY PROPOSED FOR TRANSITION TO THE EASR.

Proponents that already have an ECA for an activity that subsequently became regulated through the EASR have a prescribed amount of time (in many cases, 10 years) to switch over to EASR registration before their ECA ceases to apply.

To date, the MOECC has followed its multi-step process for each sector or activity proposed for transition to the EASR. When the EASR was introduced in 2011, the ministry initially proposed four activities to be regulated under the EASR system (automotive refinishing; comfort heating in buildings; commercial printing; and stand-by power generation), but ultimately decided to proceed with just three of those activities (commercial printing was not prescribed at that time). Since then, the ministry has periodically added additional activities or groups of activities to the EASR framework.

Activities have also been removed from the EASR; two of the three activities that were originally prescribed for EASR registration – stand-by power systems and comfort heating in buildings – have since been exempt from the requirement to obtain approval altogether. Neither an ECA nor EASR registration is now required for those activities, provided proponents comply with the conditions of the exemption.

For a list of the activities currently prescribed under the EASR framework, see Table 1.

Table 1. Activities Subject to EASR Registration as of June 2017.

Activity	Date Added to the EASR	Details
Automotive refinishing	June 2011	Applies to auto body shop paint spray booths. ECAs cease to apply on October 31, 2021.
Waste management systems	November 2012	Applies to non-hazardous waste transportation systems. ECAs cease to apply on November 18, 2022.
Commercial printing	November 2012	Includes lithographic, screen and digital printing. ECAs cease to apply on November 18, 2022.
Small ground-mounted solar facilities	November 2012	Only applies to solar facilities between 10 and 500 kilowatts that were not already approved under an ECA or REA when O. Reg. 350/12 came into effect.
End-of-life vehicle processing	March 2016	This is a sector that was not explicitly regulated previously. Operating requirements apply as of September 30, 2017. Any applicable ECAs cease to apply on March 30, 2018.
Construction-related water taking	March 2016	Applies to water taking for road construction purposes and for construction site de-watering. Permits to take water issued before March 29, 2016 continue until they expire.[6]
Air emissions	January 2017	This is the only "EASR with assessment." ECAs cease to apply on January 31, 2027.

When an Activity is Not a Good Fit

The fact that the MOECC has identified an activity as an EASR candidate does not mean that a transition to the EASR system is a *fait accompli*. The ministry has opted to withdraw several proposed EASR candidates, following public consultation on the Environmental Registry. For example, concrete product manufacturing, landfill gas power generation facilities, on-farm anaerobic digestion and hazardous waste transportation systems have all been proposed as EASR candidates and then withdrawn, for various reasons. Those activities continue to require an individual ECA.

Similarly, even after an activity has been selected for EASR registration, the MOECC has made changes to proposed eligibility and operating requirements in response to stakeholder concerns. For example, the ministry removed cadmium and chrome stripping from eligibility for air emissions EASR registration after commenters indicated that those activities present too high a risk to the environment. Likewise, the MOECC made amendments to the operating requirements for the controversial EASR for construction-related water taking in response to public concerns about discharging water to land in wellhead protection areas.

2.1.2 Once an EASR Activity is Selected...

If an activity is selected to be regulated by EASR registration, proponents that meet the eligibility requirements must register their activity through the EASR website (which can be completed through the ServiceOntario webpage) by the prescribed deadline,[7] and pay a one-time fee to the MOECC.[8]

Once the MOECC provides electronic confirmation of an EASR registration, the proponent may commence operations, provided they comply with all requirements set out in the relevant regulation.[9] The regulatory requirements, which are customized to the activity or sector in question and include such things as design requirements, pollution control measures and best management practices, are intended to protect the environment and human health from the effects of the registered activity. The MOECC says that EASR operating requirements are generally equivalent to the environmental standards implemented in current ECAs. For an example of EASR operating requirements, see Figure 2.

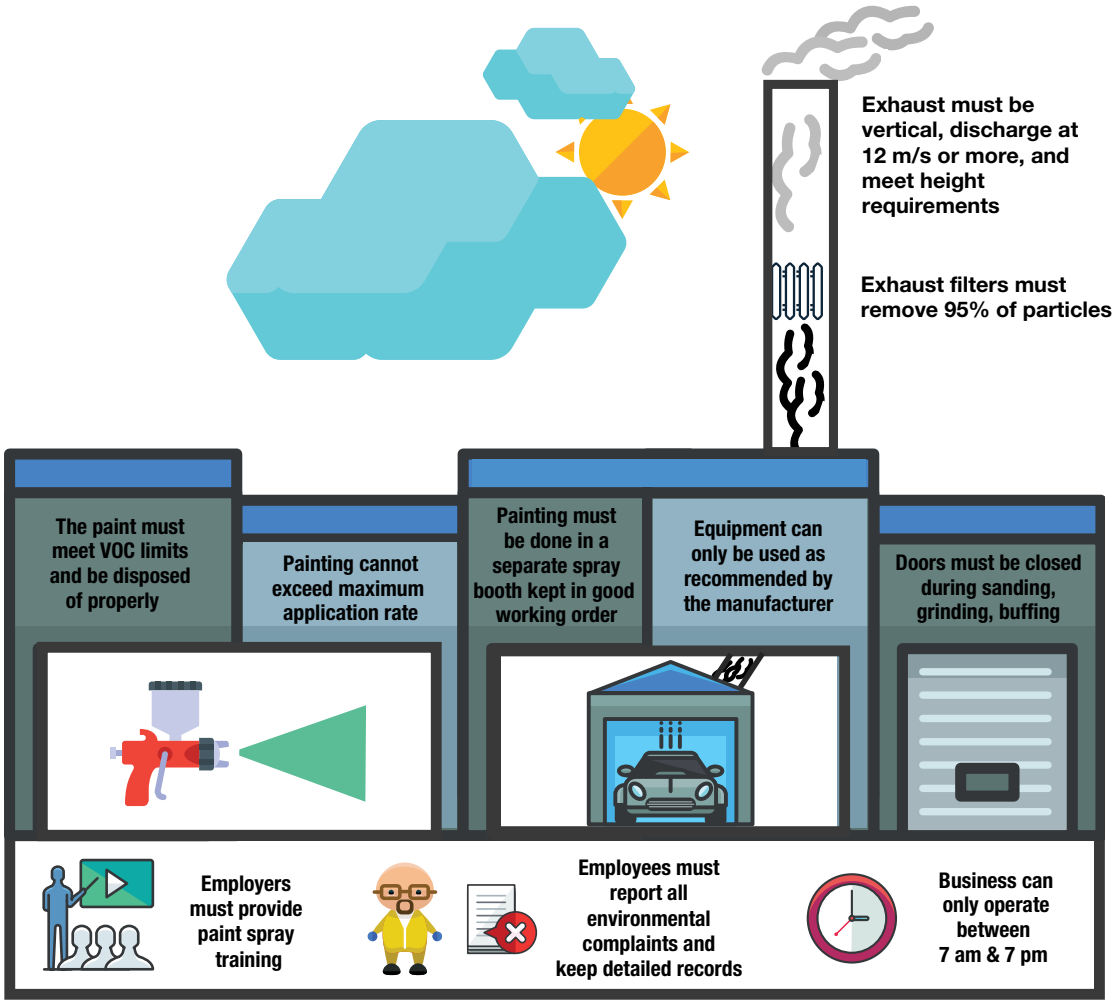


Figure 2. EASR Operating Requirements for Auto-Body Shop Paint Spray Booths.

THE MOECC SAYS THAT EASR OPERATING REQUIREMENTS ARE GENERALLY EQUIVALENT TO THE ENVIRONMENTAL STANDARDS IMPLEMENTED IN CURRENT ENVIRONMENTAL COMPLIANCE APPROVALS.

If the EASR regulation is amended to change operating requirements, proponents must comply with the updated regulation. This ensures that all EASR registrants are subject to the most up-to-date requirements regardless of when they registered. As of the end of June 2017, there were over 2,400 registrations for the seven current EASR-regulated activities (see Figure 3). Over 3,300 additional registrations for standby power systems and comfort heating systems no longer have legal effect, as those activities have now been exempt from requiring approval. Based on numbers supplied by the MOECC, the ECO estimates that EASR registrations (including those for the now-exempt activities) have replaced approximately 2,800 ECAs previously held by those registrants.

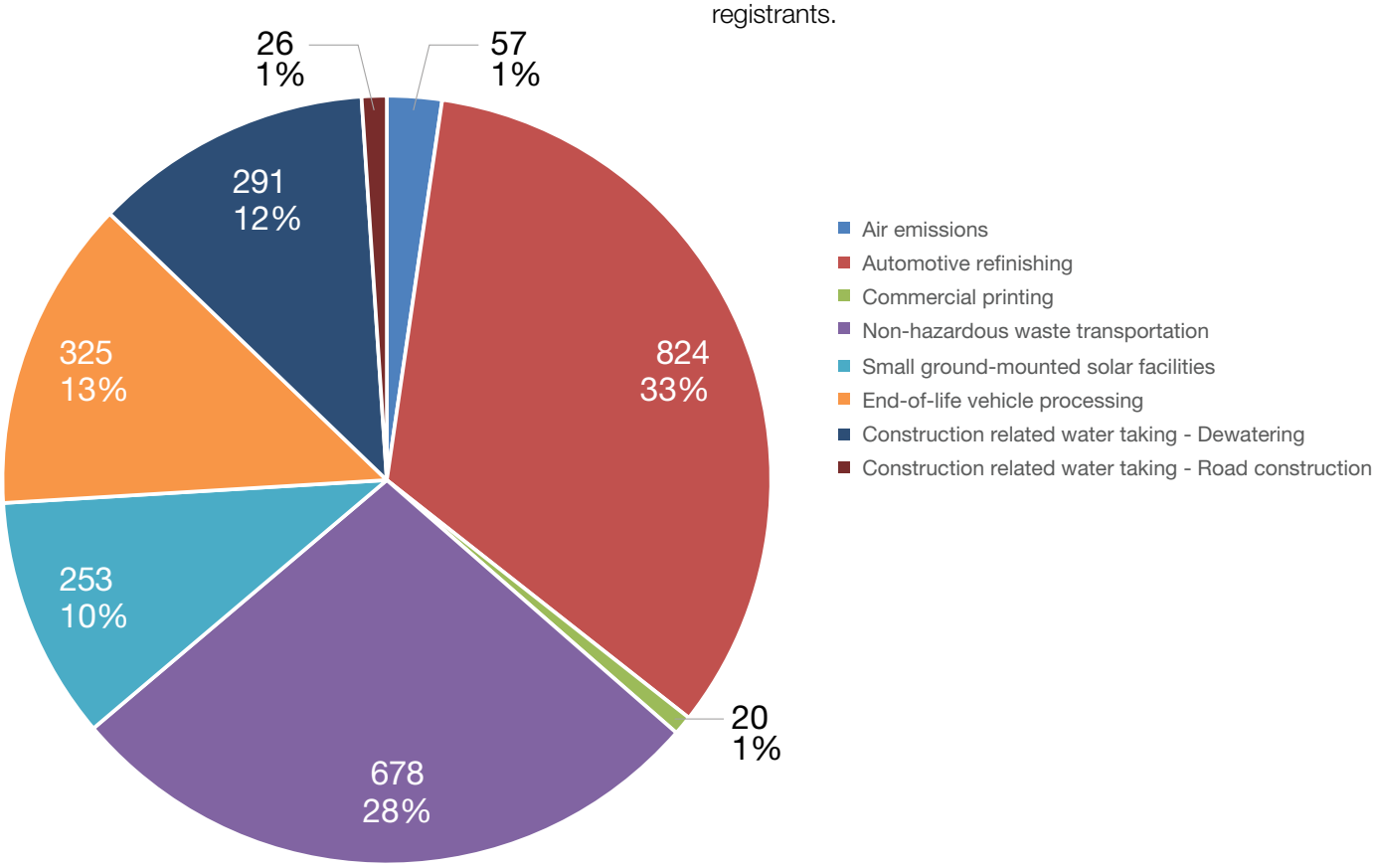


Figure 3. Numbers and percentages of registrations for current EASR-regulated activities as of the end of June 2017.

The public can search for and view details of all EASR registrations on the MOECC's Access Environment website (accessenvironment.ene.gov.on.ca/AEWeb/ae/GoSearch.action).

2.1.3 An Evolving Framework: The EASR Regulation for Activities With Air Emissions

The MOECC's proposal to regulate many activities with air emissions using the EASR – introducing an emissions assessment component as a condition of registration – was a game-changer. It represented a significant departure from the MOECC's original characterization of the EASR framework as a way to regulate activities that have predictable impacts and that can be regulated with standard requirements. Not all stakeholders were happy with the evolution of the EASR from a strict permit-by-rule framework to an "EASR with assessment" approach.

Some Argue it is Too Onerous

Some proponents of eligible activities have complained that, contrary to the intent of permit-by-rule, the requirements for registering are *more* onerous and costly than operating under an ECA. This is because it requires up-front assessment of air, noise and odour emissions, including Emission Summary and Dispersion Modelling (ESDM) reports and supplements,[10] noise reports, and odour screening reports, which must also be updated every 10 years.[11] These stakeholders anticipate that the requirement to retain a licenced engineering practitioner to sign off on the required assessments will add significant costs to the approvals process. Some challenged the need for a licenced engineer to do this work, asserting that other types of environmental professionals are equally qualified.

Others Worry It Is Not Protective Enough

Conversely, some environmental non-governmental organizations opposed it altogether, arguing that the EASR was intended to apply to low-risk activities with predictable impacts that could be regulated by pre-set rules. They argued that the need to evaluate an individual facility's emissions to determine whether they would cause an adverse effect should disqualify that activity from the EASR process. Commenters also maintained that the determination about whether the discharge of contaminants has the potential to cause adverse effects should be made by the MOECC, and not outsourced to an engineering practitioner.

THE "EASR WITH ASSESSMENT" APPROACH TO AIR EMISSIONS IS A REASONABLE WAY TO REGULATE LOW-RISK FACILITIES WITH AIR EMISSIONS.

A Reasonable Approach… Provided There's Good Enforcement

The "EASR with assessment" approach to air emissions is a reasonable way to regulate low-risk facilities with air emissions; the requirement to assess air, noise and odour emissions prior to registering provides additional safeguards to ensure that facilities will be able to meet the applicable standards once they have registered in the EASR. Registrants will then be obligated to operate within the parameters set out in the required assessments.

The requirement for a qualified professional to sign off on the reports provides an additional safeguard. Since ministry engineers will no longer undertake a detailed technical review to ensure EASR registrants' operations meet ministry requirements and protect the environment, it is appropriate to require qualified professionals to provide this oversight – and take on the liability for it – instead. To ensure the integrity of this process, the MOECC is working with Professional Engineers Ontario to develop practice standards

for completing air and noise assessments for the EASR. The MOECC also acknowledged the need to make the public aware of complaint and disciplinary processes for professional engineers, to address any poor quality registrations. However, not all engineers may have the necessary training to conduct air emissions monitoring. To protect the public, the MOECC should also require qualified professionals to have appropriate training, competence assurance and sufficient liability insurance.

Finally, while developing the operating requirements for the air emissions EASR registrants, the MOECC created its first-ever standardized odour policy framework to clarify how registrants must address and minimize potential odour emissions. The creation of this policy framework is a welcome benefit. The MOECC told the ECO that it intends to adapt this approach to regulating odour emissions from facilities that require an ECA.

Provided the MOECC applies strong compliance and enforcement measures to this sector, it should ensure that the environment is as protected from these low-risk facilities (representing a significant proportion of the sector) as it would be under an ECA regime. It should also enable the ministry to focus more resources on the smaller pool of heavy emitters and more complex operations that present a greater risk to the environment and human health.

The ECO is disappointed that the ministry provided 10 years for existing approval holders to transition from an ECA to EASR registration – double the time it initially proposed. Five years was an achievable – and not overly burdensome – timeframe within which to bring proponents of many already long-outdated approvals under current standards; a timeframe that would have yielded real environmental benefits that much sooner.

APPROXIMATELY 50% OF ALL EASR REGISTRATIONS ARE FOR FACILITIES THAT WERE PREVIOUSLY OPERATING WITHOUT ANY APPROVALS.

2.2 Compliance and Enforcement

A permit-by-rule system only works if the participants actually follow the rules. When the MOECC first introduced the EASR in 2011, the ECO noted that a strong, visible inspection program is needed for a self-regulation system such as the EASR. The MOECC's inspection rate at the time – just 5% of regulated facilities per year – as well as the ministry's apparent lack of plans or procedures for inspecting EASR registrations, did not inspire confidence.

In 2014, the ECO raised concerns about the effectiveness of the MOECC's approach for compliance and enforcement of Ontario's environmental laws and regulations. In particular, we concluded that the ministry's "soft" enforcement approach was too often failing to bring violators into compliance within a reasonable timeframe, and that a credible threat of stronger and more punitive enforcement measures was needed to motivate compliance. The province's Auditor General voiced similar concerns in her 2016 Annual Report.

2.2.1 The MOECC's Compliance and Enforcement Strategy for the EASR

Since the ECO voiced our concerns, the MOECC has developed a compliance and enforcement strategy that is tailored to address the unique characteristics of each EASR-regulated activity or sector.

The MOECC's new compliance and enforcement strategy for the EASR takes a sector-based approach, rather than focusing just on entities that have already registered. This approach enables the ministry to identify facilities that are eligible for EASR registration but have not yet registered. It also identifies facilities operating without any approvals that are ineligible for EASR registration but should have an ECA. The MOECC reports that this approach has resulted in

many existing facilities being brought under ministry oversight for the first time; in fact, approximately 50% of all EASR registrations are for facilities that were previously operating without any approvals.

The ministry's strategy includes both proactive and responsive approaches to compliance and enforcement. Proactive approaches include:

- **Education and outreach/communicate for compliance:** As a first step, the MOECC may send letters to all known facilities in a newly regulated sector, to help facilities determine what compliance actions are required of them. For example, the MOECC sent outreach letters to over 1,000 known end-of-life vehicle waste disposal sites, with a link to an online survey for self-assessment, before the deadline for EASR registration for that sector. The ministry followed up with a second outreach letter to over 500 facilities that had neither registered for the EASR nor completed the survey.
- **Desktop audits:** Desktop audits are compliance reviews that MOECC staff conduct without a site visit or inspection. Desktop audits evaluate compliance with some (but not all) EASR requirements. The MOECC has told the ECO that it prioritizes review of facilities that are closer to sensitive receptors.[12]
- **Inspections:** Depending on the results of an audit, a facility may be referred for an inspection.[13] The ministry may also conduct planned proactive inspections that are not the result of an audit. An inspection involves a visit to the facility by MOECC staff to determine whether the facility is complying with *all* eligibility and operating requirements of the EASR (i.e., not just those reviewed during the audit).

The MOECC's responsive approach focuses on responding to reported incidents, concerns or complaints from the public, whether received through the MOECC's Spills Action Centre, local district offices or reported by registered businesses themselves. EASR-regulated facilities must report any environmentally related public complaints to the MOECC, in most cases within two business days. All regulated facilities also have a separate, pre-existing legislative duty to immediately report to the MOECC any spills of pollutants, and any discharges of contaminants that exceed permitted levels or that cause or may cause an adverse effect.

The MOECC has developed guidance materials for ministry staff that set out distinct steps for various compliance activities specific to EASR-regulated sectors. The ministry may address non-compliance a number of different ways:

- Voluntary abatement;
- Provincial officer's orders;
- Director's orders;
- Referral for investigation (which could lead to a prosecution and conviction); or
- Removal or suspension of EASR registration (requiring a Director's order[14]).

Environmental Officers must follow the MOECC's general compliance policy[15] when determining how to address non-compliance issues.

2.2.2 Compliance Monitoring and Enforcement Action for EASR-Regulated Facilities to Date

As of April 2017, the MOECC had conducted over 2,900 audits and/or inspections of facilities in EASR sectors (registered and non-registered).[16] Total audit/inspection rates of EASR-registered facilities by sector range from 13% (for end-of-life vehicle processing) to 37% (for automotive refinishing), with an average audit/inspection rate of almost 25% of registered facilities (see Figure 4).

THE MOECC HAS CONDUCTED OVER 2,900 AUDITS AND/OR INSPECTIONS OF FACILITIES IN EASR SECTORS.

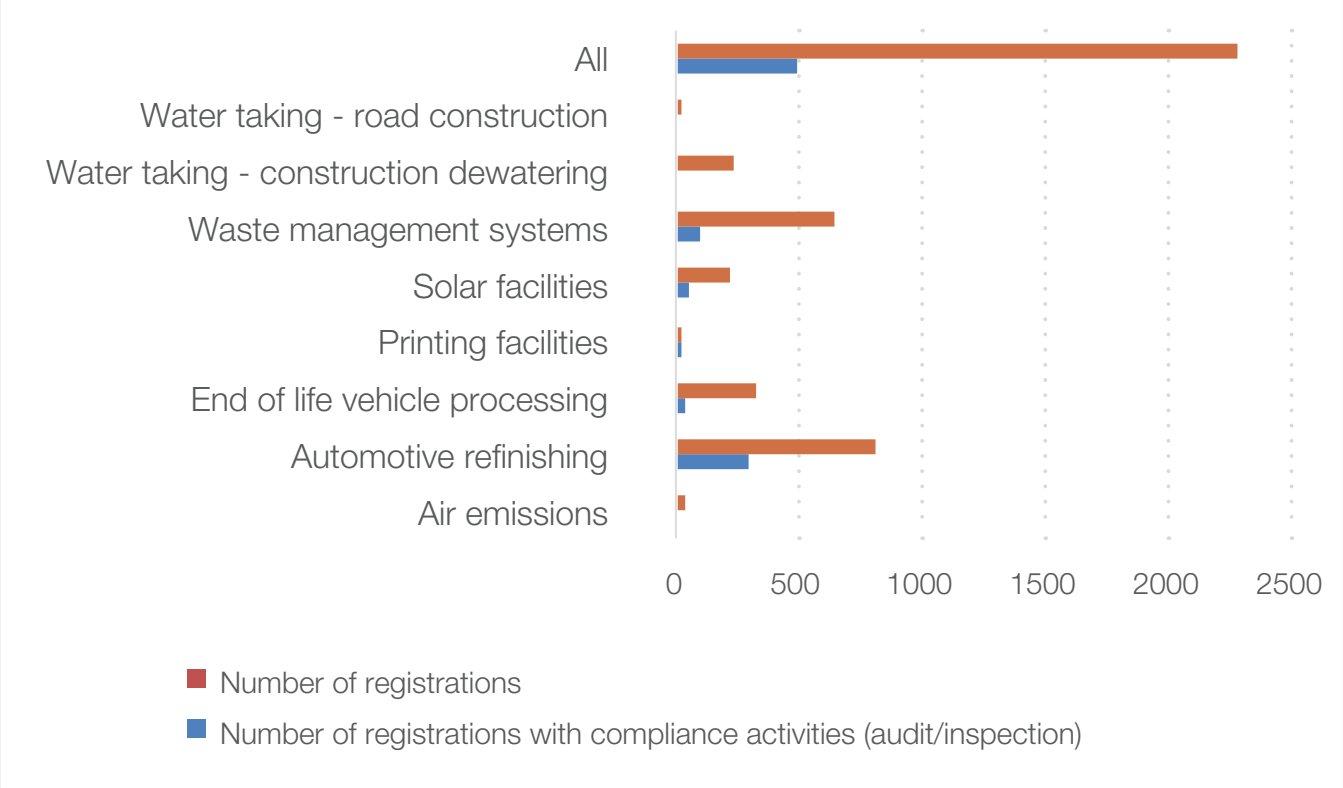


Figure 4. Number of registrations by EASR sector, and number of registrations by sector that have been subject to compliance activities (i.e., desktop audit and/or site inspection) as of May 2017 (if a facility was subject to an audit and an inspection, this was counted as a single compliance activity). Note that numbers for standby power systems and comfort heating systems are not included as they are no longer eligible for EASR registration. No data is available yet on compliance activities for air emissions or water taking.

Source: Data provided to the ECO by the Ministry of the Environment and Climate Change on May 3, 2017.

THE MINISTRY REPORTS THAT IT HAS ISSUED OVER 1,500 COMPLIANCE INSTRUMENTS.

As a result of the MOECC's audits and inspections of both EASR-registered facilities and non-registered facilities in EASR sectors (i.e., facilities that likely should be registered in the EASR), as of May 2017 the ministry reports that it had issued over 1,500 compliance instruments.[17] These include: 696 warnings; 475 letters/notices of violation; 199 provincial officer orders; a Director's order; 6 referrals to the ministry's Investigations and Enforcement Branch (which has the power to lay charges); and 316 tickets. About 65% of the instruments to date have been warnings or letters/notices of violations, and almost 90% of all instruments related to non-hazardous waste vehicle inspections (a subset of the waste management EASR) (see Figure 5).

As of May 2017 there have been six EASR-related convictions. The MOECC has also issued 10 orders removing registrations from the EASR (i.e., requiring the proponent to stop operating or obtain an ECA).

THERE HAVE BEEN SIX EASR-RELATED CONVICTIONS.

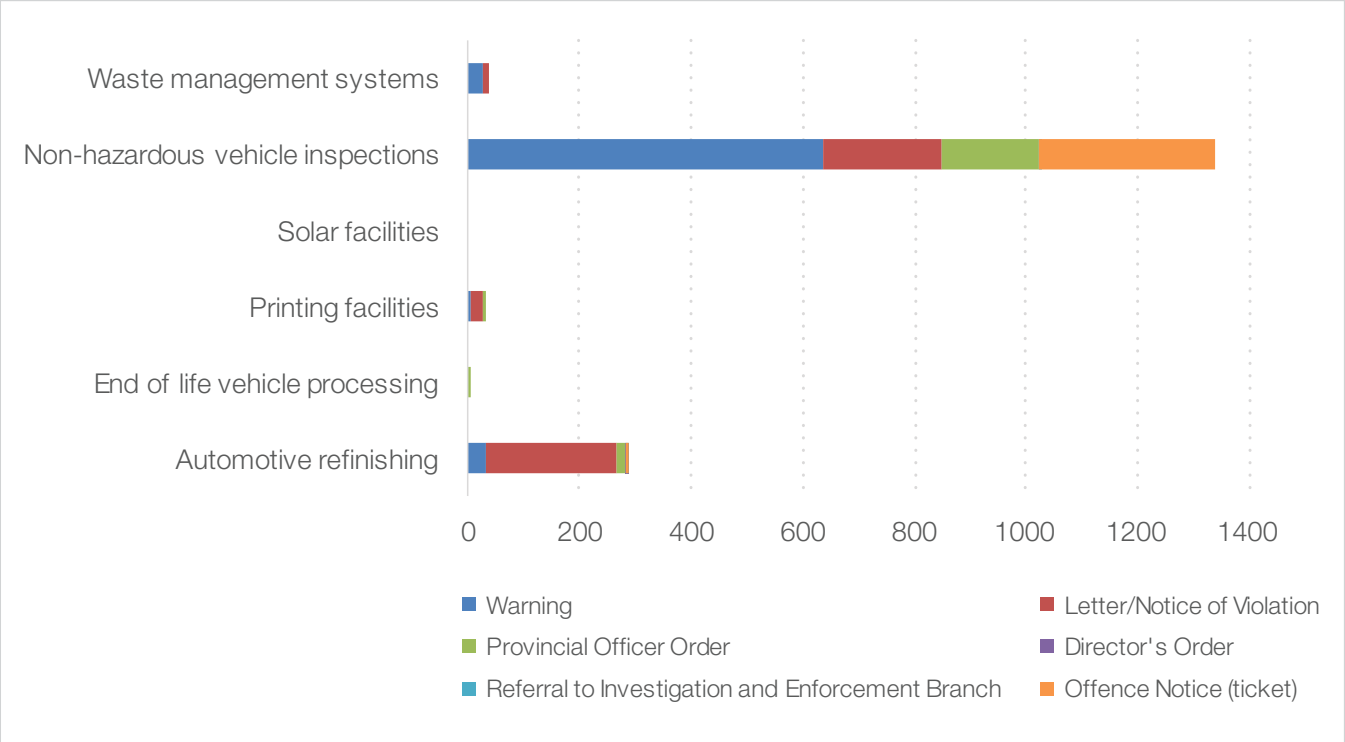


Figure 5. Compliance instruments issued as of May 2017 to proponents of facilities in EASR sectors (registered and non-registered), by compliance instrument type and sector (not including water taking or air emissions, for which there is no data available yet).

Source: Data provided to the ECO by the Ministry of the Environment and Climate Change on May 3, 2017.

The MOECC has noted that compliance issues are more frequent with "new captures"(i.e., facilities that did not have an ECA and were not under government oversight before registering in the EASR). Some compliance issues are administrative, such as record keeping requirements, and may not present a direct risk to the environment. Because approximately half of all EASR registrants are new captures who may not be familiar with regulatory requirements, the ministry acknowledges the need for strong education and outreach initiatives even after facilities have completed EASR registration.

The MOECC has stated that, going forward, it will evaluate options for improving the transparency of the compliance process, such as making its sector-specific compliance strategies and audit/investigation findings available to the public. It will also ensure public availability of information about how to make a complaint about an EASR-registered facility, and the ministry's procedures for responding to such complaints.

THE MINISTRY ACKNOWLEDGES THE NEED FOR STRONG EDUCATION AND OUTREACH INITIATIVES.

A Case Study: EASR Compliance and the Automotive Refinishing Sector

In 2015/2016, the MOECC assessed EASR compliance of 106 facilities in the automotive refinishing sector within a selected region.

Of the 106 facilities assessed, 83 were identified as potentially non-compliant. After follow-up by the MOECC, including inspections of 68 of those 83 facilities:

- 2 were found to be in compliance at the time of inspection;
- 72 had complied as of October 2016;
- 8 were working towards compliance as of October 2016; and
- 1 facility was no longer in operation.

The high rate of non-compliance initially identified by the MOECC – and the encouraging results of the MOECC's compliance actions – reinforce the importance of maintaining a strong compliance and enforcement strategy to ensure that EASR-sector facilities follow the rules, and, consequently, that the environment is being protected.

2.2.3 Compliance and Enforcement of Environmental Compliance Approvals

As additional government resources become available through the transition of low-risk activities to the EASR, the theory behind a risk-based approach is that the resulting freed-up resources should be redirected towards the higher-risk activities. These additional resources should be focused not only on reviewing ECA applications, but also on ensuring and enforcing compliance of the high-risk activities with their ECAs.

The MOECC informed the ECO that the frequency of inspections and level of enforcement of existing ECAs has not changed since the introduction of the EASR.

THE FREQUENCY OF INSPECTIONS AND LEVEL OF ENFORCEMENT OF EXISTING ENVIRONMENTAL COMPLIANCE APPROVALS HAS NOT CHANGED.

However, the ministry reported that it is enhancing its compliance and enforcement approach to ECA facilities by integrating risk assessment into its decision-making/planning regimen. The ministry stated that it has undertaken a comprehensive compliance risk assessment exercise that has been integrated into its decision-making/planning regimen, which includes identifying and assessing risks related to emitters operating with and without appropriate environmental approvals.

2.3 The Results of the Shift to a Risk-Based Approach

In this section, the ECO tests the MOECC's assertions about the benefits of the EASR. Is it achieving efficiencies for government and business without sacrificing environmental protection? Has it really increased transparency and access to information?

2.3.1 Efficiencies for Business and Government

The ECO has found that, as intended, the EASR approach is creating efficiencies for both business and government, by:

- playing a role in reducing wait times to obtain environmental approvals, and allowing the MOECC to focus on the most complex and high-risk activities;
- reducing approval costs associated with EASR activities; and
- levelling the playing field and creating certainty by requiring all proponents of an EASR activity to follow the same up-to-date rules.

Reducing Approval Wait Times

In its 2015 Fall Economic Statement, the Ontario government committed to: reduce, by the fall of 2017, the amount of time taken to review air and noise ECAs by at least 50%; and implement a one-year service standard for reaching a decision on higher-risk ECA applications received after 2017. The MOECC's multi-pronged approach to fulfilling these commitments includes:

- creating the system for air emissions EASR registrants, which will shift more than 50% of proponents with air and noise emissions from the ECA process to the EASR, allowing the ministry to "more quickly assess activities with a more complex, higher risk profile";
- engaging nine additional engineers to help review the existing backlog of approval applications; and
- developing a more efficient process for screening approval applications before forwarding them for technical review (i.e., ensuring applications are complete).

The MOECC reports that wait times for air and noise ECAs have already decreased from an average of 720 days in fall 2015 to an average of 400 days as of May 2017; and 76% of applications for air and noise ECAs received in December 2015 were completed in fewer than 360 days (i.e., before December 31, 2016). While it is encouraging to at last see some improvement, these wait times are still much too long. Figure 6, below, shows that the number of air and noise approval applications more than one year old, as well as the overall number of air and noise applications under ministry review at one time, declined between April 2016 and April 2017.

THE NUMBER OF APPLICATIONS – AS WELL AS WAIT TIMES FOR APPROVAL – WILL DECREASE FURTHER AS MORE PROPONENTS REGISTER FOR AIR EMISSIONS.

The average wait time for all types of ECAs combined actually went up for the first few years after the EASR was introduced, climbing from 200 days in 2011 to 350 days in 2015 and 2016 – perhaps due to the initial ministry resources required to get the EASR program

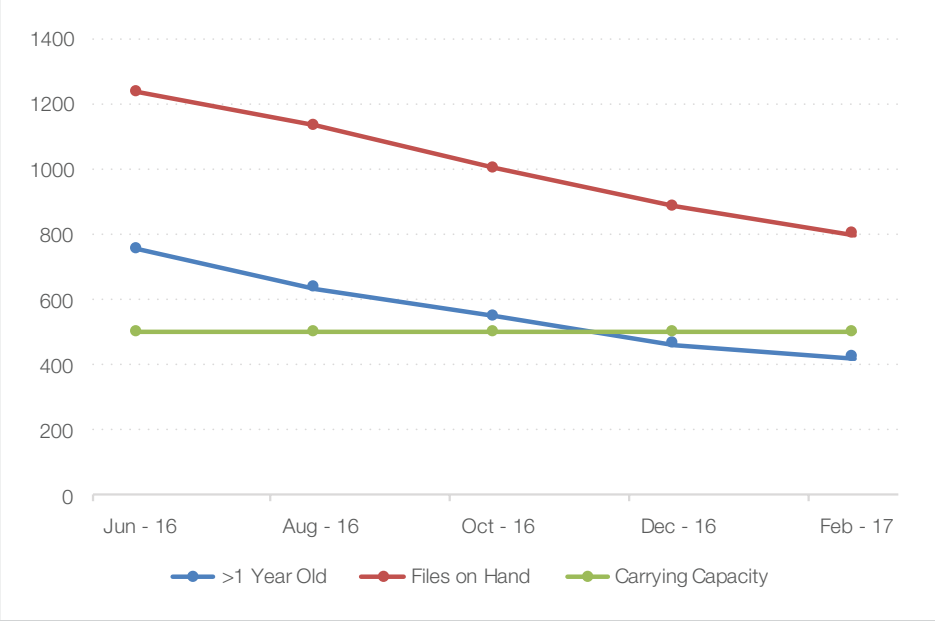


Figure 6. Numbers of applications for air and noise approvals under review by the MOECC, April 2016 – April 2017. "Carrying capacity" refers to the number of applications that the ministry is equipped to review at any given time.

Source: Ministry of the Environment and Climate Change.

established and running. However, this number has started to decline in 2017, down to 275 days at the end of March. The average number of applications for ECAs of all types received by the MOECC per month is also on the decline, down to 275 at the end of March 2017 from 383 in 2011.

The ministry anticipates that the number of applications – as well as wait times for approval – will decrease further as more proponents register for air emissions. With fewer applications to review, the MOECC should be able to spend more time and resources on the most complex and high-risk activities that still require ECAs.

NEWLY-CAPTURED FACILITIES ARE NOW MORE LIKELY TO OPERATE WITHIN THE ENVIRONMENTAL STANDARDS SET BY THE MINISTRY, POTENTIALLY DIMINISHING THEIR IMPACT ON THE ENVIRONMENT.

Reducing Costs

From businesses' perspective, the time and cost savings of registering in the EASR instead of applying for an ECA have been described as "very significant."

The MOECC reports that the cost savings to proponents of EASR-registered activities range from an estimated $1,000 for waste management systems to an estimated $100,000 for solar facilities. In total, the MOECC estimates that, as of April 2017, total cost savings to business attributable to using EASR registrations instead of ECAs amounted to almost $45 million.[18]

Meanwhile, as of April 2017, revenue from EASR registration fees collected by the government totalled over $4 million, helping the ministry recover its costs for running the program.[19]

Levelling the Playing Field

The MOECC takes the position that shifting to a risk-based framework, including the EASR, is not only about reducing costs and delays for businesses; it is also a way to increase predictability in environmental approvals and create a more level playing field, which in some cases also increases environmental protections. The ECO agrees.

Under the ECA process, proponents within the same sector may be required to adhere to terms and conditions that are customized to their facilities' particular operations. While this approach can be more protective of the environment, that is not necessarily always the case. Differences between ECAs within a sector may also depend on where, when and by whom the approval is issued, contributing to an uneven playing field.

The EASR framework eliminates opportunities to customize approvals with facility-specific conditions designed to protect the environment. However, by limiting EASR eligibility to activities and sectors that are already known to be routine, low risk, or generally subject to standard conditions, the ministry has levelled the playing field for those sectors, creating certainty for proponents and the public, while retaining the authority to impose facility-specific – and environmentally protective – conditions on more complex or high-risk activities and sectors through the ECA process.

2.3.2 Focus on Protecting the Environment

The MOECC is adamant that shifting an activity to EASR registration can be done without decreasing environmental protections.

The ECO believes that, as intended, environmental protections are being maintained or enhanced under the risk-based approach to environmental approvals in several ways:

- the MOECC is now overseeing more facilities overall;
- all EASR registrants are subject to up-to-date environmental standards;

- faster (but still not fast enough) approval times for ECA amendments that benefit the environment; and
- increased data collection can inform better policy-making.

Oversight of More Facilities

The ECO found that one of the most conclusive results of introducing the EASR is that many new proponents have been brought under ministry oversight for the first time. As noted above, the MOECC reports that approximately 50% of EASR registrations are for "new capture" facilities that previously operated without the required approvals, and which may or may not have been operating within acceptable standards prior to registration. Because of the EASR – and the ministry's associated compliance and enforcement strategy for the EASR – those newly-captured facilities are now more likely to operate within the environmental standards set by the ministry, potentially diminishing their impact on the environment.

Not only is the EASR bringing new proponents under the MOECC's oversight, but it has brought in a whole new sector that was previously unregulated: end-of-life vehicle processing. End-of-life vehicle processing includes dismantling and depolluting retired vehicles before crushing and shredding them, and can involve the removal of a number of contaminants such as fuels, lubricating oils, coolant fluids, refrigerants, batteries and mercury-containing parts.

Before the end-of-life vehicle sector was prescribed for EASR registration in 2016, there were no explicit regulatory requirements for the safe removal and management of contaminants from end-of-life vehicles, even though the MOECC had concerns about improper waste management associated with end-of-life vehicle processing. Now that proponents must register end-of-life vehicle waste disposal sites in the EASR, the MOECC can require that these previously unregulated actors operate within standards that minimize environmental impacts.

The implications of the MOECC's new oversight of this sector are not insignificant; according to the MOECC, approximately 600,000 vehicles are retired each year in Ontario, creating over 150,000 tonnes of waste that can and should be safely diverted from landfill.

FACILITIES WITH OLDER ECAS TRANSITIONING TO EASR REGISTRATION WILL LIKELY RESULT IN SOME FACILITIES OPERATING UNDER STRICTER CONDITIONS.

All EASR Registrants are Subject to Current Environmental Standards

One problem with individual ECAs is that the terms and conditions of approval – which can vary from one ECA to another – can become outdated. Because ECAs do not have to include expiry dates or review requirements, facilities with older ECAs can legally operate indefinitely under conditions that may not meet today's environmental standards. In 2016, the Auditor General of Ontario reported that there were over 200,000 environmental compliance approvals issued more than 15 years ago that have not been updated to meet current standards or reflect current operations.

Under the EASR, all registered facilities are subject to the same operating conditions, set out in a regulation. The MOECC has the power to amend the regulations to update operating conditions to ensure that EASR-registered facilities are required to operate under the most current standards for environmental protection.

As noted above, the MOECC says that EASR requirements are generally equivalent to the environmental standards implemented in current ECAs. Facilities with older ECAs transitioning to EASR

THE SHIFT FROM AN ECA TO AN EASR REGISTRATION RESULTS IN THE LOSS OF *EBR* RIGHTS WITH RESPECT TO AN INDIVIDUAL PROPONENT'S ACTIVITY.

registration will likely result in some facilities operating under stricter conditions. However, because of the long deadlines for proponents to transition existing ECAs to EASR registration (in most cases, 10 years from the date the activity is first prescribed for EASR registration), it could take a long time before the full benefits to the environment of shifting to the EASR are felt.

Faster Approval Times Create Opportunities for Improvements

As noted above, the MOECC is reporting shorter turn-around times for issuing ECAs to higher-risk activities, due in part to the staff time that was freed up by the transition of low-risk activities to the EASR framework.

Often, proponents apply for proposed amendments to existing ECAs to enable them to install new technology or update their processes in ways that will benefit the environment – for example, by improving spill containment infrastructure, or by improving the energy efficiency of equipment. By freeing up ministry time to undertake the necessary technical review of applications faster, proponents should be able to make improvements to their facilities faster as well.

The MOECC has also noted that "a faster review process allows more certainty for businesses, for example, as they plan for investments to upgrade their facilities to reduce greenhouse gas emissions under the cap and trade program."

Increased Data Collection Can Inform Future Policy-Making

According to the MOECC, the data that it collects from air emissions EASR registrants (i.e., emissions summary tables) can be used across the ministry in developing or refining program initiatives that could improve protections for the environment. In particular, the ministry has noted that the increased data could help it address cumulative effects, air standard setting and contaminants without specified limits (see *Cumulative Effects Not Reflected in Approvals or EASR Regulations*, below).

The MOECC told the ECO that this year it intends to develop a road map for how it will use the data collected from air emissions EASR registrants.

THE POOLED COMMENTS FROM THE PUBLIC, INCLUDING INFORMED EXPERTS, ON THE EASR REGULATION CAN HELP RAISE THE BAR FOR EVERY SINGLE FACILITY.

Cumulative Effects Not Reflected in Approvals or EASR Regulations

The MOECC continues to disregard the potential cumulative effects of regulated activities, whether approved under the individual approval process or permitted by EASR registration. This is a significant gap that, although not specific to the EASR framework, must be noted as an ongoing failure of environmental regulation in Ontario more generally.

THE MOECC CONTINUES TO DISREGARD THE POTENTIAL CUMULATIVE EFFECTS OF REGULATED ACTIVITIES.

The operating conditions for an approved individual facility are intended to prevent that facility's emissions from presenting an unreasonable risk to the environment or human health. But groups of facilities in close proximity to one another may each be permitted to operate without considering the collective effects of their emissions, resulting in heavy emissions – and negative environmental impacts – in that geographic area. Chapter 3 of this report describes the dire case of Aamjiwnaang First Nation's residential community, which is known as an air pollution "hot spot" due to the cumulative effects of air emissions from multiple heavy emitters operating in close proximity to the community.

For years, the ECO has called on the MOECC to account for potential cumulative effects of air emissions (and other environmental impacts) from regulated activities to avoid creating pollution hot spots. Although the ministry reports that they are working on a cumulative effects policy, to date the ministry has set no timeline for finalizing or implementing the policy and continues to regulate facilities in a vacuum – ignoring the presence of any other emitters in the same area.

The ECO is encouraged that the MOECC intends to use the data collected through EASR registrations for development of initiatives to address cumulative effects. The MOECC must prioritize the development of a process for identifying potential cumulative effects of multiple regulated entities on the local environment, and take those effects into account when issuing approvals or enabling EASR registration.

2.3.3 Some Losses, Some Gains for *EBR* Rights, Transparency and Access to Information.

When the MOECC first created the EASR, environmental non-governmental organizations were strongly opposed to the exclusion of the individual registrations of EASR activities from the public participation and leave to appeal provisions of the *Environmental Bill of Rights, 1993* (*EBR*). They argued that it would undermine the purposes of the act and significantly erode the public's ability to participate in environmental decision making in Ontario.

The ECO shared these concerns, and does not take the loss of any *EBR* rights lightly. However, as discussed above, the MOECC has thus far taken a reasonable approach to selecting activities that can be appropriately regulated using standard eligibility and operating rules instead of individual approvals. Facilities undertaking activities that are high risk or complex – which often garner heightened public concern – remain in the individual approvals stream and continue to be subject to the public's *EBR* rights.

In the context of this risk-based approach to approvals, the ECO believes that the loss of the right to comment on or appeal approvals for individual EASR-regulated facilities is mitigated by:

- the public's new *EBR* right to participate in the development of the underlying policy and sector-wide rules for EASR-regulated facilities; and
- safeguards in the EASR framework that should ensure facility-specific concerns by the public are heard and empower the MOECC to take action.

The EASR process has also improved overall transparency and access to information about environmental approvals.

Public Input Shapes the Rules for Entire Sector Rather than a Site-Specific Approval

The shift from an ECA to an EASR registration results in the loss of *EBR* rights with respect to an individual proponent's activity. Once an activity is transitioned to the EASR, a registered facility undertaking the activity is no longer subject to *EBR* rights.[20] This means that the MOECC does not have to give notice on the Environmental Registry or consult the public about a specific EASR registration, as it would have had to about an ECA. Further, there is no right for members of the public to seek leave (i.e., permission) from the Environmental Review Tribunal to appeal a specific EASR registration, the way they would be able to seek leave to appeal a ministry decision about an ECA (for example, of a neighbouring industrial facility's air emissions) posted on the Environmental Registry.

These losses are significant. Input from the local community on facility-specific proposals can alert the MOECC to issues unique to a particular facility or location. And although *EBR* leave to appeal rights are used relatively infrequently – all told, members of the public have exercised this right about 165 times since 1995 in relation to tens of thousands of approvals issued – the right to appeal the ministry's decision on a specific approval for a facility is nevertheless a powerful one.

However, the public has gained new opportunities under the *EBR* to participate on sector-wide rules. The MOECC is required to – and does – use the Environmental Registry to consult the public on both the policy underlying a decision to transition an activity or sector to the EASR, as well as the eligibility and operating requirements for a new EASR regulation. Before the EASR, public comments were confined to a particular ECA; while this may have yielded improvements for the operating requirements for a specific proponent, it had no effect on the broader standards for every other proponent in that sector. The pooled comments from the public, including informed experts, on the EASR regulation can help shape the operating requirements for an entire sector, addressing the types of public concerns that are often raised on an individual facility basis, and potentially raising the bar for every single facility.

And the public does take these opportunities to comment; all EASR proposals have yielded input from the public, with some of the higher-interest proposals (e.g., short-term water takings; air and noise emissions) prompting dozens of public submissions. Moreover, the MOECC appears to be seriously listening to this public input and making changes as a result (see box above: *When an Activity is Not a Good Fit*).

Unfortunately, some members of the public may not take an interest in these broader proposals unless or until a problem with a facility arises in their own community, when they may not have a right to comment. However, the public may still have some options to raise their concerns, see box below: *What Can the Public Do if Concerned About an EASR-Registered Facility?*

What Can the Public Do if Concerned About an EASR-Registered Facility?

So what can members of the public do when they are concerned about an EASR-registered facility? It depends on the issue.

If the issue is non-compliance with EASR rules, the first step is to collect evidence of the non-compliance and submit it to the facility and/or the MOECC (keeping in mind that the facility is required to report public complaints related to the environment to the ministry). If the facility is persistently failing to comply with EASR requirements and the MOECC has failed or refused to enforce compliance, members of the public can submit an *EBR* application for investigation to the ECO. The application for investigation can ask the MOECC to investigate the alleged non-compliance with the *Environmental Protection Act* and the regulation applicable to that facility.

If, on the other hand, the public is concerned more generally that the requirements for the entire sector are inadequate, they can submit an *EBR* application for review to the ECO. An application for review could ask the MOECC to review the provisions of the regulation applicable to the sector to address the inadequacies that are causing the public's concerns.

In either case, the use of citizen science – the collection or analysis of data about the natural environment by members of the public, usually in collaboration with professional scientists – may help the public gather the evidence needed to persuade the MOECC that a specific facility is not complying with EASR requirements, or that the requirements for a sector are inadequate to protect the environment.

EASR Framework Affords Some Safeguards

The regulatory framework for EASR activities or sectors provides some safeguards to ensure the public's concerns about specific EASR-regulated facilities are heard, and to empower the MOECC to act when it has concerns about a specific facility.

All EASR regulations require registrants to notify the MOECC of any public complaints they receive that are related to the environment; this triggers the MOECC's responsive approach to EASR compliance and enforcement (see Part 2.2 above). For most activities, the MOECC must be notified within two business days after the complaint is made; air emissions EASR registrants must notify the MOECC immediately of any complaints related to the discharge of a contaminant to air.

Further, the MOECC Director has retained the power to require any proponent of an EASR-regulated activity to obtain a full ECA for the facility instead of registering in the EASR (and therefore remain subject to *EBR* public participation rights).[21] This broad power could be invoked to prevent a highly contentious facility, or a facility with a history of non-compliance, from transitioning to EASR registration in the first place, or to require an EASR registrant that has been subject to numerous complaints and/or compliance issues to return to a full ECA. However, the MOECC has not shared with the ECO how many times, if any at all, MOECC Directors have exercised this power on their own initiative.[22]

Greater Transparency and Access to Information

One of the MOECC's goals for approvals modernization was to "improve public transparency through improved reporting and a public information website to access approvals and registration related information."

BEFORE THE EASR WAS INTRODUCED, THERE WAS NO CENTRAL LOCATION – OR EASY WAY – FOR THE PUBLIC TO ACCESS INFORMATION ABOUT, OR COPIES OF, ENVIRONMENTAL APPROVALS.

Before the EASR was introduced, there was no central location – or easy way – for the public to access information about, or copies of, environmental approvals. Notices of many types of approvals (called "instruments") are posted on the Environmental Registry, but they often include only minimal information, and ministries frequently do not attach copies of the approval documents themselves to the notices (for more information about quality of instrument notices posted on the Environmental Registry, see Chapter 1 of this report). In those cases, members of the public instead had to request copies of approval documents directly from the responsible ministry or, in some cases, resort to making a request under Ontario's *Freedom of Information and Protection of Privacy Act*.

Further, there is no reliable way to search the Environmental Registry for approval notices on a geographic basis, making it difficult for a member of the public to use the Environmental Registry to find out about environmental approvals issued in a particular community or area of the province.

Today, all EASR registrations and most ECAs are recorded on the MOECC's Access Environment website (www.accessenvironment.ene.gov.on.ca/AEWeb/ae/GoSearch.action). This map-based website enables the public to search for all EASR registrations, and all ECAs dating back to 1999 (as well as renewable energy approvals), by location. An advanced search function also

MOECC's Access Environment website

enables searching by: approval number or approval date; business name; address, municipality, MOECC district or source protection area; and approval type or status.

Each EASR registration on Access Environment includes a link to the MOECC's confirmation of registration document, which includes information about the activity undertaken by the registered facility. For the air emissions EASR registrants, emissions summary tables and, in some cases, acoustic assessment summary tables, are also made publicly available. This type of information may not have been accessible to the public at all under the ECA process.

The MOECC has also committed to making serious occurrences of non-compliance with the EASR public, by making convictions and revocations of EASR registrations publicly available through court bulletins and Access Environment.

Unfortunately, the Access Environment website still needs a lot of work. The ECO has experienced frequent error messages and long delays when conducting advanced searches and using the map function, as well as outages of the system altogether. The "help" function does not work.

Access Environment also lacks tools to enable the public to monitor the website for, or receive alerts about, new registrations for a specific activity or geographic location. Unlike the Environmental Registry, Access Environment is not even set up to display new registrations as they are added. Further, the assessment documents that accompany air emissions EASR registrations are unclearly and inconsistently labelled, which could make it difficult for a member of the public to find what they are looking for.

UNDER THE EASR FRAMEWORK, ALL PROPONENTS OF AN ACTIVITY OR SECTOR ARE SUBJECT TO THE SAME RULES.

Nevertheless, the public's ability to access all EASR registrations and copies of ECAs and Renewable Energy Approvals on the Access Environment website, as well as conduct geographic searches for approvals, represent a clear improvement in transparency and access to information.

Common, Publicly Available Rules Add Transparency

The EASR framework also increases transparency by establishing predictability about the rules registrants have to follow. Under the ECA process, individual proponents within a sector could be subject to differing, facility-specific terms and conditions. And unless the MOECC posts copies of issued ECAs on the Environmental Registry (which, as noted above, does not always happen), the public may not be able to readily determine what conditions are imposed on a particular facility. Further, it can be difficult to understand the terms of approval for a specific facility if its ECA has undergone a series of amendments, due to a lack of co-ordination of historical notices posted on the Environmental Registry.

Under the EASR framework, all proponents of an activity or sector are subject to the same rules, which are set out in a publicly available regulation (all EASR regulations can be found on the Ontario government's e-Laws website at ontario.ca/laws). By applying the same rules to all proponents of an activity, the public is better informed about what rules apply to a given facility, and better able to determine whether a facility is operating in compliance with the law.

2.4 Conclusion: The MOECC's Risk-Based Approach Delivers Promised Results

With the MOECC's risk-based approval framework, the ministry has set up a system for regulating activities based on their complexity and level of risk to the environment, reserving the most resource-intensive process – the issuance of individual approvals – for activities that present the highest risk to the environment or are too complex for one-size-fits-all rules.

A risk-based framework should never be used as a justification for underfunding the ministry's approvals program. However, in a world of finite capacity and financial resources, it makes a lot of sense for the MOECC to focus the bulk of its resources on keeping the environment safe from activities that present the greatest risk of harm, while still keeping close watch over other less risky – yet still potentially harmful – activities.

The MOECC has developed a cautious approach to selecting the activities to transition to the EASR framework, with reasonable selection criteria and a public consultation process that works. Moreover, safeguards built into the EASR framework will enable the ministry to keep a specific facility out of the EASR system when a permit-by-rule approach would not be appropriate. The ECO believes that the ministry's approach is working and that, so far, the sectors and activities that have been selected for the EASR seem appropriate. In particular, the new "EASR with assessment" approach applied to the EASR regulation for activities with air emissions, with its additional safeguards to ensure eligible facilities can meet applicable standards, is a reasonable middle ground between a full ECA and a more basic EASR registration.

The ministry must remain vigilant, however, to ensure that eligibility requirements continue to bring appropriate activities into the EASR framework (and leave appropriate activities out). It should also periodically review and evaluate operating requirements to ensure that they remain up to date and protective of the environment; and any updates should be accompanied by strong outreach efforts to ensure EASR registrants are informed of changes to the rules applicable to their operations.

A strong cue that an activity is not appropriate for regulation under the EASR framework would be the presence of a high degree of public concern or ongoing public complaints about registered facilities undertaking that activity. The MOECC should collect data on public complaints about EASR-regulated activities and facilities to continually evaluate whether an activity (or a specific facility or group of facilities undertaking that activity) would be better regulated using an individual approvals approach.

So far, the MOECC's shift to a risk-based framework is delivering on its promised results:

- Numbers of applications and wait times for ECAs have begun to go back down, which should enable the MOECC to focus more resources on activities that pose the greatest risk to the environment and save time and money for businesses;
- The environment is being protected by: bringing more entities and sectors into the regulated community, imposing consistent, up-to-date standards on all EASR registrants, and undertaking strong compliance and enforcement measures to motivate EASR registrants to follow the rules;
- The public has access to more information about environmental approvals in Ontario, including EASR registrations and ECAs, through the publicly accessible map-based Access Environment website. The EASR provides transparent, predictable rules for all registered activities.

Ontarians have lost some *EBR* rights with respect to the individual facilities that are now regulated via EASR registration, but have gained the *EBR* right to participate in the policy discussion about which activities are selected for EASR regulation, and in the development of sector-wide rules for those activities. This process should ensure the rules address the common concerns that the public would have had about individual facilities, potentially raising the bar for the entire sector and improving environmental outcomes overall. Further, safeguards in the EASR framework should ensure that facility-specific complaints by the public are heard, and empower the MOECC to take action when a specific facility is problematic.

IT IS CRITICAL THAT THE MINISTRY MAINTAIN A HIGH LEVEL OF COMPLIANCE MONITORING AND ENFORCEMENT GOING FORWARD.

The MOECC has developed a compliance and enforcement strategy that should motivate EASR registered facilities to follow the rules, and ineligible facilities to either obtain an ECA or comply with the requirements for exemptions. It is critical that the ministry maintain a high level of compliance monitoring and enforcement going forward, to ensure that existing and new EASR registrants are held accountable.

However, the reason the MOECC introduced the EASR in the first place was to enable the ministry to focus more resources on the higher-risk activities that pose the greatest threat to the environment; now it needs to do just that. The creation of the EASR will be in vain if the rest of the environmental approvals framework is not also strengthened. Wait times for approvals are still much too slow, and must be reduced further. The MOECC must also intensify its compliance and enforcement efforts for ECAs.

The ECO is pleased that the MOECC is strengthening its review process for new ECA applications, but thousands of older ECAs remain that contain few conditions and may be based on outdated environmental standards. Even proponents of activities that are now subject to EASR registration could continue operating under their outdated ECAs for many years before the registration deadline; ideally, those proponents would be brought under current standards of environmental performance more swiftly. The ECO urges the MOECC to consider providing shorter timeframes for ECAs to cease to apply for any future activities or sectors that are transitioned to the EASR regulatory framework.

At a minimum, **the ECO recommends that the MOECC take a risk-based approach to prioritize updating older ECAs for activities that will not be subject to EASR registration.** Proponents of higher-risk activities should certainly be expected to operate under up-to-date environmental standards and conditions.

The MOECC's ongoing failure to address the potential cumulative effects of air emissions or other environmental impacts from multiple regulated entities is a major flaw in Ontario's environmental regulatory framework as a whole. **The ECO recommends that the MOECC ensure that all forms of environmental approvals (including ECAs and registrations) take into account the potential cumulative effects of multiple regulated entities on local air quality.**

Finally, having a comprehensive online record of all EASR registrations as well as most ECAs adds significant transparency to Ontario's environmental approvals program. However, the current functional and technical shortcomings of the Access Environment site detract significantly from its usefulness. The MOECC is currently working on updating its Environmental Registry website, and it is important that these two websites together provide a comprehensive, well-integrated portal for all environmental approval information. **The ECO recommends that the MOECC resolve ongoing technical issues with Access Environment, so that information about environmental approvals is more accessible to the public.** In addition, **the ECO recommends that the MOECC post all ECAs that are still in force on Access Environment.**

Current technological shortcomings aside, the Access Environment website could be an excellent resource to find information about all types of environmental approvals and permits. The ECO envisions a site that would not only provide information about EASR registrations, ECAs, and renewable energy approvals issued by the MOECC, but would incorporate permits to take water and environmentally significant approvals issued by other ministries, such as *Endangered Species Act, 2007* permits and *Aggregate Resources Act* licences issued by the Ministry of Natural Resources and Forestry, and *Mining Act* permits issued by the Ministry of Northern Development and Mines. The ECO encourages the MOECC to work with other ministries to make Access Environment a one-stop source for up-to-date, map-based information about all environmentally significant activities taking place in Ontario.

Endnotes

1. A large number of activities and facility types are ineligible to register due to the toxicity of the contaminants they emit, as well as other considerations such as issues with noise and odour levels, or the need for site specific requirements to reduce emissions. For example, ineligible activities for air emissions EASR registrants include: facilities identified by a specified North American Industry Classification System (NAICS) codes (e.g., metal ore mining; sewage treatment facilities; petroleum refineries); renewable energy projects; facilities that use a site-specific air standard or a technical standard; and facilities at which any of a number of other specified activities take place (e.g., land disposal of waste; closed landfill site; processing of waste via thermal treatment; use of a wood-fired combustor over 3 MW; certain plating processes; electrolytic stripping processes; the processing of metals outdoors).
2. Although many registrations for HVAC and standby power systems remain on Access Environment, those registrations no longer have any legal status. Registrants must specifically request for their registrations to be removed from the EASR.
3. Ministry staff begin by assessing a candidate activity (in consultation with in-house experts and external stakeholders) for: its environmental impacts; the complexity of the processes and equipment used; how widespread the activity is in Ontario; and the compliance history of proponents of the activity.
4. The ministry usually gives the public at least 45 days to comment, although in some cases it has given as little as 30 days or as many as 60 days.
5. Usually for 45 days.
6. A permit to take water (PTTW) is required for water taking under the *Ontario Water Resources Act.*
7. If a proponent wishes to make any modifications to their approved processes or equipment that would require an amendment to the ECA before the prescribed deadline, they must register rather than apply for an ECA amendment. If a proponent registers earlier, their ECA ceases to apply immediately.
8. Fees range from $1,190 for short-term project-based registrations to $2,353 for air emissions. The one-time fee for most activities is set at $1,309.
9. Proponents must update their registrations if they become aware of any inaccurate information, or if they receive a notice from the MOECC Director requiring additional information. If a proponent stops operating, they must request that their registration be removed from the EASR.
10. An ESDM report is used by a regulated facility to document the facility's air emissions information. This information is used to assess the concentrations of contaminants that the facility is emitting to the local air, to ensure that the facility's emissions do not exceed the regulated standards at a specified location.
11. During the initial policy consultation (Environmental Registry #012-7954), the MOECC proposed a 5-year updating requirement. The ministry changed it to 10 years at the regulation development stage (Environmental Registry #012-8646) in response to public comments.
12. Facilities may be selected randomly for an audit, or, in some cases, the MOECC uses geo-spatial analysis to identify facilities that are at higher risk of non-compliance (e.g., due to setback distances).
13. For example, a facility may be referred for an inspection if the proponent fails to provide information for an audit or to address non-compliance identified through an audit, or if the audit identifies larger compliance issues.
14. *Environmental Protection Act,* section 20.23.
15. Ministry of the Environment and Climate Change, Compliance Policy – Applying Abatement and Enforcement Tools (May 2007)
16. These numbers do not include over 300 inspections and audits of standby power systems or comfort heating systems, which are now exempt from EASR requirements. These numbers also exclude the air emissions EASR registrants and the EASRs for construction-related water taking, as these sectors were only transitioned to the EASR in 2016/2017, and no data on compliance/enforcement actions were provided by the MOECC.
17. Not including 120 compliance instruments issued in relation to EASR registrations for now-exempt standby power and comfort heating systems.
18. This figure includes almost $17 million in cost savings for registering heating and stand-by power systems before they were exempt.
19. In October 2016, the MOECC reported that the ministry is on track to achieve full cost recovery for the EASR, but that it needs to increase registration fees for most EASRs by 10% per year "to remain on track and continue the momentum towards full cost recovery."
20. Most approvals for sectors or activities that have now been transitioned to the EASR were prescribed under the *EBR*. However, short-term water takings (under one year in duration) were not prescribed under the *EBR*; similarly, end-of-life vehicle processing was not explicitly regulated previously by the MOECC, and was therefore not subject to *EBR* requirements.
21. Under section 20.18 of the *Environmental Protection Act.*
22. Since 2011, at least 1,458 section 20.18 orders have been issued (39 of those in 2017); however, a proponent can also request that a section 20.18 order be issued to them so that they may stay in the ECA program. Many of the section 20.18 orders were at the request of proponents who wished to bundle their HVAC and standby power activities within an ECA.

Chapter 3

Environmental Injustice: Pollution and Indigenous Communities

Contents

3.0	**INTRODUCTION: ENVIRONMENTAL JUSTICE**	100
3.1	**MERCURY CONTAMINATION IN GRASSY NARROWS AND WABASEEMOONG**	**102**
3.1.1	MERCURY CONTAMINATION OF THE WABIGOON-ENGLISH RIVER SYSTEM	102
3.1.2	ONTARIO'S RESPONSE: A HISTORY OF GOVERNMENT INACTION	105
3.1.3	THE WABIGOON-ENGLISH RIVER SYSTEM TODAY	108
3.1.4	CONCLUSION: RIGHTING AN HISTORIC WRONG	111
3.2	**DRINKING WATER IN FIRST NATION COMMUNITIES**	**112**
3.2.1	LACK OF SAFE DRINKING WATER: A SYMBOL OF GOVERNMENT'S CONTINUED FAILURE	112
3.2.2	WHAT IS ONTARIO'S ROLE IN FIRST NATIONS' DRINKING WATER?	114
3.2.3	WHY PROBLEMS CONTINUE	118
3.2.4	CONCLUSION: ONTARIO'S CHALLENGE	119
3.3	**AIR POLLUTION IN AAMJIWNAANG**	**121**
3.3.1	AAMJIWNAANG: A COMMUNITY IN HARM'S WAY	121
3.3.2	POLLUTANTS IN THE AAMJIWNAANG AIRSHED	123
3.3.3	IMPACT OF AIR POLLUTION IN AAMJIWNAANG	124
3.3.4	AAMJIWNAANG FIGHTS BACK	125
3.3.5	WHY IS AAMJIWNAANG SO POLLUTED?	127
3.3.6	CONCLUSION: WHAT'S POSSIBLE?	140
3.4	**CONCLUSION: ENVIRONMENTAL JUSTICE MUST BE PART OF RECONCILIATION**	**142**

Ontario's Indigenous people and communities are disproportionately affected by pollution.

Abstract

Indigenous people and communities are disproportionately affected by pollution. Governments and industries have long turned a blind eye to contamination that adversely affects the health, ecology and economies of Indigenous communities like Aamjiwnaang, Grassy Narrows and Wabaseemoong. Serious health and environmental problems, including lack of access to safe drinking water, that would not be tolerated in other communities, have long been deemed unworthy of priority, effort or expense. After decades of inaction, the Ontario government is finally taking some steps to acknowledge and address these historical wrongs, but more is needed. Environmental justice must be part of the Ontario government's pursuit of reconciliation with Indigenous people.

3.0
Introduction: Environmental Justice

Indigenous people and communities are disproportionately affected by environmental problems, due to a long and shameful history of mistreatment by all levels of government. Indigenous people have often been subjected to environmental decisions made without consideration of their interests, let alone their participation. Many of these decisions have caused profound harm that carries on to today. Even the locations of some First Nation reserves were chosen because the lands were viewed as worthless to white settlers.[1] Today, many First Nations are engaged in legal battles for more control over how and what activities will be permitted on their traditional lands.

In this chapter, we report on three environmental issues that illustrate the heavy impact of pollution on Ontario's Indigenous communities.

In Part 3.1, we look at how polluted waterways have affected Grassy Narrows and Wabaseemoong First Nations. In Part 3.3, we examine the causes and effects of toxic industrial air pollution on Aamjiwnaang First Nation. In both cases, the provincial government historically turned a blind eye to the associated health and environmental problems. In Part 3.2, we report on an all-too-common crisis facing many Indigenous communities across Canada – the lack of safe drinking water. While on-reserve drinking water systems are largely the responsibility of the federal government, the Ontario government can and should do its part to address this problem. Many Indigenous communities face similar challenges to those profiled in these cases, including governments' failure to acknowledge the severity and impact of pollution, to appropriately fund remedial measures, to communicate effectively with the communities, and to work respectfully and collaboratively with those communities in the pursuit of practical solutions.

IT IS TIME FOR ENVIRONMENTAL JUSTICE TO BE PART OF THE ONTARIO GOVERNMENT'S PURSUIT OF RECONCILIATION WITH INDIGENOUS PEOPLE.

The situations profiled in this chapter acknowledge that each of these cases is part of a much larger history of government mistreatment. Subjecting vulnerable communities (e.g., poor and/or racialized communities) to significant pollution and excluding them from environmental decision making is often referred to as "environmental injustice." With this understanding, it becomes clear that environmental justice must be part of Ontario's pursuit of reconciliation – the process of "working with Indigenous partners to address the

dark legacy of residential schools and the social and economic challenges that face Indigenous communities after centuries of colonization and discrimination."[2] It is time for environmental justice to be part of the Ontario government's pursuit of reconciliation with Indigenous people.

Understanding Government Responsibilities for Indigenous Communities

Many issues affecting Indigenous communities in Canada are made more complicated by the fact that the Canadian constitution gives the federal government responsibility for Indigenous people and reserve communities. This means that the federal government is responsible for many matters that the province would normally handle, and the province plays a more limited role than they do in communities elsewhere in the province. For example, initiating a community health study would be within the province's jurisdiction in most of Ontario, but is the domain of the federal government for reserve communities. Traditional lands located off-reserve, however, are still primarily governed the provincial laws.

In addition, First Nation governments have long fought to regain the power to make, or at least influence, many decisions that affect their communities and traditional lands. Increasingly, both the federal and provincial governments are publicly acknowledging that First Nation governments must be respected as an equal partner in a trilateral relationship regarding matters of interest to all three governments. This means decisions are more and more the result of sometimes lengthy negotiations between all three governments, or, at minimum, First Nation and federal governments.

3.1
Mercury Contamination in Grassy Narrows and Wabaseemoong

3.1.1 Mercury Contamination of the Wabigoon-English River System

The Asubpeeschoseewagong Netum Anishinabek (Grassy Narrows) First Nation and the Wabaseemoong Independent Nations (historically also referred to as the Whitedog First Nation) are two Ojibwa nations based in northwestern Ontario, near the Manitoba border. Almost half of the members of the Grassy Narrows First Nation live within the Grassy Narrows reserve community, and a majority of the members of the Wabaseemoong Independent Nations live within the Wabaseemoong reserve community.

The Wabigoon-English River system runs through the traditional lands of both First Nations, including the reserve communities. While the federal government carries primary responsibility for environmental and health matters within the reserve communities, most of the river system runs through Crown land managed by the province. The river system defines the region's geography, and has historically defined much of life for the Grassy Narrows and Wabaseemoong communities. The people have relied on the river for food, as well as for employment as commercial fishers, hunting and fishing guides, and within the tourism sector more broadly. Over the past 50 years, however, another feature has permeated the river system and life in Grassy Narrows and Wabaseemoong: mercury contamination. Mercury is highly toxic and can cause extremely serious, life-long health effects.

Where Did the Mercury Contamination Come From?[3]

The mercury pollution is largely the result of a pulp and paper mill (at the time, Dryden Chemical, owned by the Reed Paper Co.) in Dryden, Ontario, that discharged mercury directly into the Wabigoon River from 1963 until 1970. From Dryden, the mercury travelled throughout the waters of the Wabigoon-English River system, including the areas used by the people of Grassy Narrows and Wabaseemoong. Mercury was, at that time, well-known to be a powerful poison, but was also commonly used by pulp and paper mills in the paper bleaching process. In 1970, in response to an order from the province, the mill reduced the level of mercury in its wastewater, before ultimately ending the use of mercury completely in 1975. Altogether, an estimated 9 to 11 tonnes of mercury were released into the water.

The paper mill is the largest mercury source affecting the Wabigoon-English River system, but not the only one. Another source is atmospheric mercury, which is released into the air by industrial facilities around the world (particularly coal-fired power plants), and travels long distances before being deposited into forests, lakes and rivers across Ontario, including the Wabigoon-English River system. Logging, which was once prevalent in the region, can exacerbate the problem by releasing atmospherically deposited mercury from the soil via rain and snowmelt into waterways. Forestry activities, however, have been suspended in the vicinity of the Wabigoon-English

Figure 1. Map of the Wabigoon-English River System showing the approximate locations of the Grassy Narrows and Wabaseemoong communities, as well as Dryden (home of the pulp and paper mill responsible for most mercury contamination) and Kenora, Ontario.

Source: Created by the ECO using Google Maps data, 2017.

River system due to on-going litigation between Grassy Narrows First Nation and the Ministry of Natural Resources and Forestry.

Mercury also reached the river system when, starting in the 1950s, the Ontario and federal governments built multiple hydroelectric dams on the Wabigoon-English River system. The dam reservoirs released mercury from soil into the watercourse. They also had other negative impacts on the local indigenous communities, including reducing wild rice, game and fur-bearing animal abundance.

Although the exact contribution of each mercury source to the contamination of the Wabigoon-English River system is unknown, it is clear that the pulp and paper mill deserves most of the blame. The Wabigoon-English River system is significantly more contaminated than other river systems in the region, almost all of which are also affected by hydroelectric dams, atmospheric mercury deposition and forestry. A 2016 study commissioned by Grassy Narrows First Nation found that mercury levels are 130 times higher in river sediment immediately downstream of the mill site compared to immediately upstream, a strong indication that the mill site contributes significantly to the high mercury levels (see Figure 2).[4]

AN ESTIMATED 9 TO 11 TONNES OF MERCURY WERE RELEASED INTO THE WATER.

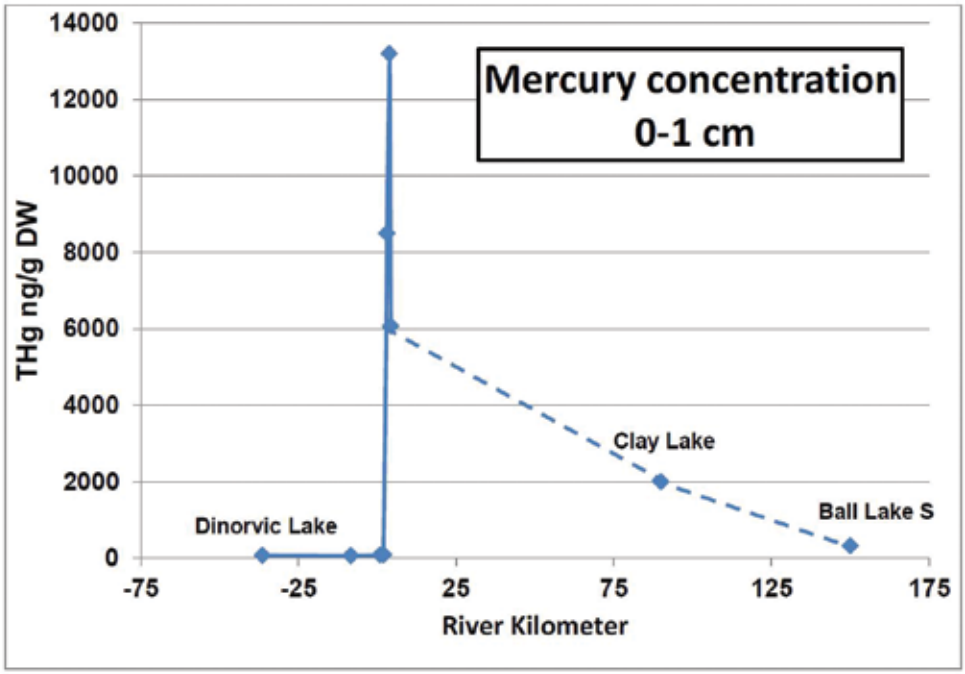


Figure 2: Average concentrations of mercury in surface sediments upstream and downstream of the former pulp and paper plant in Dryden, Ontario, in July/August 2016 (data points connected by solid lines). Clay Lake and Ball Lake surface sediment concentrations (data points connected by dotted lines) are from samples taken in 2004 and 2007 respectively.

Source: Asubpeeschoseewagong Netum Anishinabek (Grassy Narrows First Nation), *Evidence that the Former Chlor-Alkali Site in Dryden, Ontario is Still Leaking Mercury into the Wabigoon River* by Patricia Sellers et al. (February 2017).

The Impacts of Contamination on the River System

When mixed with water, inorganic mercury can be metabolised by bacteria into the more toxic methylmercury. Methylmercury is then taken up by the organisms at the bottom of the food web as they absorb nutrients from the water and sediment or when they consume the mercury-metabolising bacteria. The mercury then biomagnifies as it moves from one organism to the next through the food web, meaning that mercury concentrations are greater, higher in the food chain. As a result, the mercury most affects the top eaters in the ecosystem, be they people or other fish-consuming animals.

Methylmercury can negatively affect reproduction rates, behaviour and physical development in fish and fish-eating birds and mammals. In the waters around Grassy Narrows and Wabaseemoong, for example, scientists have noted that mercury contamination may be to blame for declines in otter and mink.[5] Correlations have also been observed in the area between high mercury levels and abnormalities in domestic cats and turkey vultures.[6]

The Impacts of Contamination on the Grassy Narrows and Wabaseemoong Communities

Fish are a traditional staple food in the diets of many members of the Wabaseemoong and Grassy Narrows communities. As a result, many community

MINAMATA DISEASE, A SERIOUS NEUROLOGICAL SYNDROME CAUSES BY MERCURY POISONING, DEGRADES NEUROLOGICAL ABILITIES.

members are affected by mercury poisoning. In 2016, a *Toronto Star*-commissioned study concluded that an average meal of walleye from Clay Lake (located just east of the Grassy Narrows community) contains 15 times the tolerable mercury intake limit for adults, and over 40 times the limit for children and women who are of child-bearing age.[7] (The term "tolerable mercury intake" is not one used by the Ministry of the Environment and Climate Change (MOECC), and it is thus not entirely clear how the study calculated this reported exceedance; regardless, it is clear from the fish advisories issued by the province that mercury poisoning is a concern associated with fish consumption in the area.)

Over 58% of the Grassy Narrows and Wabaseemoong community members examined by Japanese doctors specialising in mercury poisoning have been diagnosed with or are suspected of having Minamata disease, a serious neurological syndrome caused by mercury poisoning.[8] Minamata disease causes degraded neurological abilities including: tunnel vision; deafness; numbness in arms and legs; uncontrollable shaking; difficulty walking; and even death.

Although community members know the risk of mercury poisoning, avoiding fish consumption is not a reasonable option for many in Grassy Narrows and Wabaseemoong because of the cultural significance of fishing and fish consumption.[9] [10] Furthermore, the high food prices and limited economic opportunities in remote communities make many people at least partially dependent on food they can catch or harvest themselves. Unfortunately, the most desirable fish (large pike and walleye) are also the most toxic.[11] Although the government of Ontario has provided uncontaminated whitefish to the affected communities, it has not prevented people from continuing to catch and eat some amount of fish native to their territorial lands.

The mercury damage also affects community members' livelihoods. As a result of the toxic levels of mercury in the fish, the commercial and sport fisheries have suffered considerably.[12] Because many people worked in fisheries, tourism or related businesses, the closure of the fishery resulted in a significant loss of employment for the Wabaseemoong and Grassy Narrows communities.

THE MERCURY DAMAGE ALSO AFFECTS COMMUNITY MEMBERS' LIVELIHOODS.

3.1.2 Ontario's Response: A History of Government Inaction[13]

Since 1969, the Ontario government has known about the mercury contamination of the Wabigoon-English River system. However, despite dozens of government-backed and independent studies confirming environmental impacts and threats to human health, no remediation has ever been done on the river system.

Working Group Recommended Remediation Over 30 Years Ago

In 1970, the mercury contamination was sufficiently well known that the Ontario government closed the commercial fishery. Throughout the 1970s, studies of the Wabigoon-English River system, along with the government's own monitoring data, confirmed elevated mercury levels in various animals, as well as in people living in the Grassy Narrows and Wabaseemoong communities.[14]

Photo credit: CBC/Jody Porter

A 1976 report documented a suspected outbreak of the Minamata disease among residents of Grassy Narrows and Wabaseemoong.[15] But it was not until 1979 that the provincial government convened a provincial-federal working group to formally investigate the mercury pollution affecting the Wabigoon-English River system.[16] Five years later, the working group's report confirmed that while mercury levels had decreased substantially since the early 1970s, levels of mercury in fish remained elevated. Ultimately, the working group concluded that the river system should be remediated by dredging the Wabigoon River from Dryden to Clay Lake as well as testing the efficacy of adding clean sediment to Clay Lake to trap mercury underneath the new sediment. The working group determined that, without remediation, mercury levels in fish would remain "unacceptably high for many years."[17] It also recommended that the mercury monitoring and fish consumption guideline program be continued.

IT WAS NOT UNTIL 1979 THAT THE PROVINCIAL GOVERNMENT CONVENED A PROVINCIAL-FEDERAL WORKING GROUP TO FORMALLY INVESTIGATE THE MERCURY POLLUTION AFFECTING THE WABIGOON-ENGLISH RIVER SYSTEM.

Why Hasn't the Mill Paid for Remediation?

Under modern environmental laws, the MOECC is committed to making businesses and people who pollute the environment pay to clean it up. Indeed, the "polluter pays" principle is a cornerstone of environmental policy. The MOECC has established several precedents for requiring property owners and their parent companies and officers and directors to pay for both current and historic contamination. So why isn't the MOECC making Dryden Chemical, the company that dumped most of the mercury, or its parent company Reed Paper Co., pay to remediate the river system, or to compensate the people of Grassy Narrows and Wabaseemoong for the hardships they have suffered?

In fact, in 1977, Grassy Narrows and Wabaseemoong First Nations sued the owners of the mill, seeking compensation for the health and economic effects of the mercury contamination. However, when the lawsuit threatened to kill an agreement to sell the mill in 1979 – a move that would have closed the mill and put people out of work – the provincial government agreed to take responsibility for (i.e., to indemnify both buyer and seller against) future liabilities in exchange for one-time payments from the past and current owners of the mill. This agreement was formalized in a settlement agreement between the Ontario and Canadian governments, the past and current owners of the mill, and Grassy Narrows and Wabaseemoong First Nations, signed by all in 1985. This agreement included an exhaustive indemnity, protecting any future owners of the mill from liabilities relating to the mercury. In exchange, the company contributed money towards a $17 million compensation fund.[18] This money, however, cannot be used to fund environmental remediation, and the communities have argued for years that the criteria for accessing compensation is overly restrictive and that payments are insufficient.

Government Opted for Natural Attenuation – the 'Do Nothing' Approach

In 1986, the Ontario government released a socio-economic assessment of the possible remediation measures that the working group had identified in 1984. This assessment concluded that, since it was uncertain that dredging would be effective, the cost of doing so was not worthwhile.[19] Additionally, the MOECC reports that the communities did not support dredging out of concern that it could make the situation worse by causing settled mercury to be re-suspended in the water. Accordingly, the governments of Ontario and Canada chose to wait for natural processes – essentially the river flushing itself clean over the course of decades – to reduce the mercury pollution over time (a process referred to as "natural attenuation").

Since the 1986 decision *not* to remediate the Wabigoon-English River system, the Ontario government has done little to manage the mercury contamination. Although monitoring has taken place (with increasing focus on waters identified by the Grassy Narrows community in recent years),[20] until 2017, the Ontario government never undertook, or required others to undertake, thorough sediment sampling along the river system or a detailed investigation of the mill site. Until recently, the only

THE GOVERNMENTS OF ONTARIO AND CANADA CHOSE TO WAIT FOR NATURAL PROCESSES – ESSENTIALLY THE RIVER FLUSHING ITSELF CLEAN OVER THE COURSE OF DECADES – TO REDUCE THE MERCURY POLLUTION OVER TIME.

action the MOECC required from the current owner of the mill site was some on-site monitoring as a condition of its regulatory approvals (the results of which are not routinely made public).[21]

3.1.3 The Wabigoon-English River System Today

Mercury Problems Persist

Mercury contamination continues to seriously impact the Grassy Narrows and Wabaseemoong communities and their surrounding ecosystems, despite some moderate improvement.

The authors of the original 1976 Minamata study revisited the community in the early 2000s and concluded that incidence of the disease is increasing.[22] In 1975, 7.9% of Grassy Narrows and Wabaseemoong community members examined by the researchers were suspected of having Minamata disease; in 2011, 58.7% of examined community members met the diagnostic criteria for, or were otherwise suspected of having, the disease.[23]

Another study showed that while mercury levels in fish and sediment dropped dramatically through the 1970s and early 1980s, they have largely plateaued in more recent years, remaining elevated enough to cause concern.[24]

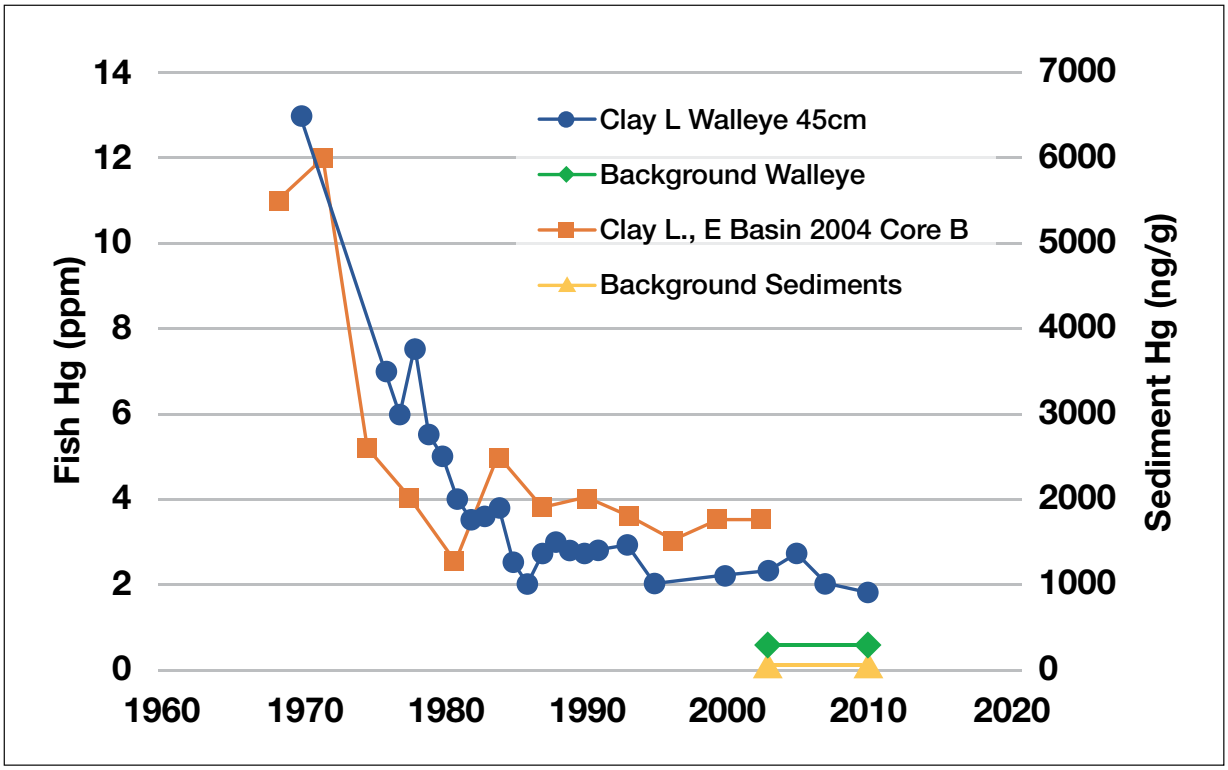


Figure 3: Mercury concentrations from 1960s to 2010, in surface sediments of the east basin of Clay Lake and in 45 cm walleye. The data show that both surface sediment mercury concentrations and fish mercury concentrations appear to have stabilized about 30 years ago.

Source: Asubpeeschoseewagong Netum Anishinabek (Grassy Narrows First Nation) – Ontario – Canada Working Group on Concerns Related to Mercury, *Advice on Mercury Remediation Options for the Wabigoon-English River System Final Report* by John Rudd, Reed Harris, & Patricia Sellers (March 21 2016).

As a result of elevated mercury levels, several species of fish still remain unsafe for regular consumption.[25] One study calculated that it could be another 50 years until it is safe to eat walleye from the Wabigoon-English River system.[26]

Decades of chronic mercury exposure increases the severity of mercury's effects.[27] As a result, although some of the fish in the area (such as whitefish) are relatively safe to eat in moderation, it is still considered unsafe for residents of the reserve communities who consume fish frequently.[28] [29]

New Studies Prompt Government to Finally Take Some First Steps

In 2013, the provincial government helped to form an inter-ministerial Mercury Working Group (the ANA-Ontario Mercury Working Group) with the goal of addressing Grassy Narrows' concerns about environmental issues, human health and other matters relating to mercury contamination.[30] The group sought updated advice from experts on remediation options for the Wabigoon-English River system.[31] This advice, released in a May 2016 report, recommended doing additional field work to better understand the mercury contamination before deciding on remediation options.[32]

In response to this report the Government of Ontario committed $300,000 to the working group itself, and $410,000 to Grassy Narrows and Wabaseemoong Independent Nations to fund the recommended field work.[33] This work included: fish sampling by Grassy Narrows; preparation of a plan of study for an environmental baseline within Wabaseemoong Independent Nations' traditional land use area; and measures to determine if there is an ongoing source of mercury releasing into the Wabigoon River. In addition, significant sediment sampling by the MOECC and Grassy Narrows occurred along the Wabigoon River in 2017.[34]

IT COULD BE ANOTHER 50 YEARS UNTIL IT IS SAFE TO EAT WALLEYE FROM THE WABIGOON-ENGLISH RIVER SYSTEM.

Ongoing Contamination Seems Likely

In February 2017, a research team commissioned by Grassy Narrows First Nation found that mercury levels are 130 times higher in river sediment samples taken immediately downstream of the old mill as compared to immediately upstream.[35] Through isotope analysis, the scientific team determined that the sediments they sampled had been deposited within the previous few months. The researchers concluded that an unidentified source of mercury on the mill site was likely actively leaking into the Wabigoon River.

In addition, a former mill worker has stated that he helped bury several barrels of unknown waste on the property about 40 years ago.[36] If barrels are indeed buried onsite, they could be a potential source of ongoing mercury leaking into the soil and water. However, groundwater sampling and geophysical surveys conducted at the site to date have not found evidence of buried drums in the area studied.[37]

MERCURY LEVELS ARE 130 TIMES HIGHER IN RIVER SEDIMENT SAMPLES TAKEN IMMEDIATELY DOWNSTREAM OF THE OLD MILL AS COMPARED TO IMMEDIATELY UPSTREAM.

The pulp and paper mill in Dryden, Ontario, previously owned by Reed Paper Co.

Photo credit: Dhscommtech at English Wikipedia, CC BY-SA 3.0, https://commons.wikimedia.org/w/index.php?curid=10536091

Government Finally Commits to Action in 2017

In response to the February 2017 report, the Premier of Ontario and the Minister of the Environment and Climate Change announced that the provincial government is committed to "working with all partners to identify all potentially contaminated sites, and to creating and implementing a comprehensive remediation action plan for the English Wabigoon River."[38] In April 2017, the CBC and *Toronto Star* reported that the Ontario government committed $2.1 million to fund pre-clean up studies.[39]

In May 2017, the MOECC posted a draft *Environmental Protection Act* Director's Order on the Environmental Registry for public review and comment, indicating the ministry's intention to order Domtar Inc., the current owner of the mill site, to develop and implement a comprehensive work plan/assessment to determine whether the mill site is an ongoing source of mercury to the Wabigoon River, and to provide opportunities for First Nations and members of the public to engage in this process. Under the *Environmental Protection Act*, the MOECC asserts the power to order a property owner to investigate and cleanup contamination on and migrating from their property, even if that property owner did not create the contamination. The Environmental Registry proposal notice for the order notes that "if there is evidence that the Dryden mill site is an ongoing source of mercury, then measures to prevent further mercury from entering the river, and how those measures are to be implemented, will be assessed. This may include future orders."[40] The MOECC received 2,603 comments on the proposed order. As of September 2017, the ministry was reviewing and considering the comments and had not yet issued an order to Domtar Inc.

In June 2017, the Minister of the Environment and Climate Change announced $85 million in dedicated funding for the remediation of the Wabigoon-English River system, plus an additional $2.7 million to accelerate the current assessment work. The Minister stated that the new dedicated funding will pay for the remediation, including the engineering design and

implementation of remediation measures and long-term monitoring. The remediation options chosen will be based on the fieldwork that is currently underway and will be undertaken in partnership with First Nations. The Minister stated: "we are determined to right these historic wrongs, and we realize that actions speak louder than words. For these reasons, we are committed to working with the First Nations and respecting their leadership."[41]

3.1.4 Conclusion: Righting an Historic Wrong

For almost 60 years, mercury contamination has severely damaged the Wabigoon-English River ecosystem. This contamination has stripped the people of Wabaseemoong and Grassy Narrows of important facets of their cultural practices, livelihoods and health. The company that profited from the pollution sold the property, settled legal claims, and moved on 30 years ago. The government long ago abandoned the communities to bear the consequences, and has only very recently begun to take the first steps towards remediating the river system, as well as the government's relationship with the affected communities.

IN JUNE 2017, THE MINISTER OF THE ENVIRONMENT AND CLIMATE CHANGE ANNOUNCED $85 MILLION IN DEDICATED FUNDING FOR THE REMEDIATION OF THE WABIGOON-ENGLISH RIVER SYSTEM.

This tragic story is partly borne of a time before modern pollution laws, when industrial pollution was permitted in many parts of Ontario in the interests of short-term prosperity. But it was made much worse by the government's ill-considered broad indemnity in 1985. Although the polluter (the owners of the original mill) did pay some money pursuant to the settlement agreement, the amount was grossly inadequate to either remediate the river system or appropriately compensate for the damage done.

After accepting financial responsibility for the mercury contamination, the Ontario government declined to take action for decades, largely ignoring the suffering of the Grassy Narrows First Nation and Wabaseemoong peoples. Over and over, the Ontario government chose to do nothing. It chose *not* to remove the sediment, *not* to investigate in more detail, *not* to monitor whether mercury levels were indeed declining. In other words, it chose to allow the ongoing poisoning of the communities.

It is no coincidence that this environmental devastation primarily affects Indigenous communities. The Japanese researchers who have studied Grassy Narrows for decades noted in 2014 that:

> … physicians' associations and the police who interviewed the victims spoke words of blatant discrimination: "They are alcoholics," and "There is no such thing as organic mercury poisoning." Such words render it undoubtable that *pollution occurs where discrimination exists*, instead of discrimination occurring as a result of pollution.[42]

Grassy Narrows has fought a long, hard battle to have this pollution, and discrimination, recognized and addressed. Only now is the government finally starting to take appropriate action to meaningfully investigate the possibility of an ongoing contamination source, and to work with the affected communities to determine what remediation may be effective. Fundamental to the success of this undertaking will be the on-going, meaningful involvement of Grassy Narrows and Wabaseemoong; failing to listen to the experiences, needs and knowledge of these communities will only further delay successful remediation.

3.2
Drinking Water in First Nation Communities

3.2.1 Lack of Safe Drinking Water: A Symbol of Government's Continued Failure

Most people living in Ontario have rarely gone a day without easy access to safe drinking water while in the province. Most of us assume that having safe drinking water is a reality of life in a wealthy country with solid public infrastructure. However, for some people, this could not be further from the truth. In fact, thousands of Indigenous people live without household access to safe drinking water in Ontario.[43]

A 2011 report commissioned by the Canadian government found that, nationally, 73% of water systems in First Nation communities were categorized as medium or high overall risk.[44] It is not uncommon for homes in some of Ontario's First Nation communities – even those located close to cities – to lack running water altogether. Even where there is running water, about a third of all First Nation communities in our province are affected by drinking water advisories to either boil tap water before using it (i.e., a "boil water advisory"), or to avoid consuming tap water completely (even if boiled first) and instead rely on bottled water (i.e., a "do not consume advisory").

THOUSANDS OF INDIGENOUS PEOPLE LIVE WITHOUT HOUSEHOLD ACCESS TO SAFE DRINKING WATER IN ONTARIO.

As of July 2017, 34 Ontario First Nation communities were affected by an advisory that had been in place for more than a year, and 17 communities were under an advisory more than a decade old (see Figure 4). The longest standing advisory in Canada is in the Neskantaga First Nation in northwestern Ontario: it was issued in February 1995 – more than 22 years ago.[45]

THIS LACK OF ACCESS TO SAFE DRINKING WATER IS A SYMBOL OF CANADA'S CONTINUED FAILURE TO ITS INDIGENOUS PEOPLE.

Figure 4: Ongoing and unresolved water advisories. The pins mark the location of First Nations affected by drinking water advisories, including the number of months spent on the advisories, as of July 2017.

Source: Health Canada First Nation Drinking Water Advisories database

When added to the material and service shortages that exist in many remote communities, and to the devastating legacy of racism, abuse and colonialism, this lack of access to safe drinking water is a symbol of Canada's continued failure to its Indigenous people. The 2015 report of the Truth and Reconciliation Commission, which documented the experiences of those affected by the Indian residential school system and recommended actions to address the legacy effects, reported on the poor state of access to safe drinking water among many Indigenous communities, explaining:

> While issues such as poor quality housing and water are not direct legacies of residential schools, substandard community infrastructure increases the health burden, and consequently increases the challenges of addressing the legacy of the residential schools. Communities, families, and individuals that are in crisis cannot heal. For this reason, we make specific note of the shameful state of community infrastructure in many Aboriginal communities.[46]

Viewed in this light, the urgent need to provide access to safe drinking water in Indigenous communities – and to then build trust in that safety – cannot be understated.

3.2.2 What is Ontario's Role in First Nations' Drinking Water?

Regulating drinking water is usually the domain of the provincial government, while water utilities are often owned and run by municipal governments. However, Canada's constitution tasks the federal government with primary responsibility for First Nation reserve communities, including water infrastructure and regulation.[47] Provincial water standards and regulatory programs do not apply to communities on reserve land.

Instead, federal ministries: provide 80% of the funding associated with water treatment facilities; oversee design, construction and maintenance of water facilities; manage drinking water monitoring programs;[48] and carry out some source water protection activities.[49] First Nations are generally responsible for planning, operating and carrying out maintenance of their water systems, and for paying 20% of the associated costs.

Nonetheless, the province does have a role to play and has been active in the last few years. The Walkerton Inquiry, which made recommendations to the Ontario government about drinking water safety, dedicated an entire chapter of its final report to the state of drinking water for First Nation communities in Ontario, stating:

> Aboriginal Ontarians, including First Nations people living on "lands reserved for Indians," are residents of the province and should be entitled to safe drinking water on the same terms as those prevailing in other similarly placed communities.[50]

The report laid out four recommendations specific to the Ontario government's role in improving drinking water quality for First Nation communities.[51] Three of the recommendations spoke of the potential role of the Ontario government to provide technical support and training to First Nation communities, while the fourth recommended that First Nations should be invited to join in the provincial watershed planning process.[52] The Ontario government has responded to each of these recommendations, as well as taken additional action, as discussed below.

Province Plays a Role Providing Technical Support and Training

The province has responded to the Walkerton Inquiry recommendations regarding enhancing training and technical support in several ways. For example, the province will, upon request and free of charge, conduct reviews to confirm that drinking water projects in First Nation communities meet provincial requirements and issue "Letters of Conformance" to this effect. The MOECC reported that, as of August, 2017, it had issued 68 Letters of Conformance to First Nation

communities in respect of their water systems. Also, the MOECC reported in May 2016 that it had certified 165 operators now working for 77 First Nations. In addition, the Ontario Clean Water Agency provides operations and maintenance services on a fee-for-service basis to water systems across Ontario, including those in First Nation communities.

More recently, Ontario has provided supplemental funding to the Walkerton Clean Water Centre to work with First Nations partners and communities to help train on-reserve drinking water operators so that they may become certified. Ontario is also supporting First Nations-led conferences on drinking water to help exchange information and increase understanding of needs and potential solutions.

First Nations communities may also participate in the MOECC's Drinking Water Surveillance Program, a voluntary monitoring program that gathers water quality information for scientific and research purposes.[53] Currently, four First Nations are participating in this program.

In June 2016, the MOECC established the Indigenous Drinking Water Projects Office to provide a single window for First Nations communities and Tribal Councils to access the provincial technical resources

THE WALKERTON INQUIRY, WHICH MADE RECOMMENDATIONS TO THE ONTARIO GOVERNMENT ABOUT DRINKING WATER SAFETY, DEDICATED AN ENTIRE CHAPTER OF ITS FINAL REPORT TO THE STATE OF DRINKING WATER FOR FIRST NATION COMMUNITIES IN ONTARIO.

and expertise that are available. When requested by First Nations communities, the Indigenous Drinking Water Projects Office can provide technical and engineering support for on-reserve drinking water systems, working collaboratively with communities and the federal government.

First Nations Can Opt In to the Provincial Source Water Protection Process

Another Walkerton Inquiry recommendation stated that First Nations should be invited to join in the provincial watershed planning process. Ontario has fulfilled this recommendation by enabling First Nations communities to choose to participate in Ontario's source protection planning program under the *Clean Water Act, 2006*.

Several communities have elected to participate in the *Clean Water Act* process. The MOECC reports that 12 of the 19 source protection committees have seats reserved for First Nation representatives, and First Nations elected to participate in 6 of those committees during the development of source protection plans. Since the plans were approved, the MOECC reports that nine First Nations communities have continued to participate on five committees. Further, three First Nation communities have passed Band Council Resolutions to be fully included in local source protection plans (i.e., beyond having a representative sit on the committee, the community itself is included in the source protection plan). In addition to those communities participating in the official source protection program, other Indigenous communities likely have developed their own source protection plans outside the *Clean Water Act, 2006* process.

Province Manages Nearby Water Sources and Land Uses

Most water resources in Ontario – including those located near reserve communities – are managed by the province. The province regulates activities such as water takings, industrial discharges of contaminants into waterways, mining, and hydroelectric power development. A number of provincially regulated off-reserve activities, such as taking water or releasing pollutants, can affect water quality on reserve. Protecting water, including drinking water sources for First Nation communities, must be explicitly considered in the land use planning process under the provincial *Far North Act, 2010*. Furthermore, the MOECC reports that there are 11 First Nations with water systems directly connected to neighbouring municipal water systems, which are provincially regulated.

Province Collaborates with Federal Government and First Nations

In September 2014, Ontario's Premier issued mandate letters to the Minister of the Environment and Climate Change and the Minister of Indigenous Relations and Reconciliation (at the time called the Minister of Aboriginal Affairs) that directed these ministries to work towards improving drinking water on reserves and to develop measurable, achievable targets to monitor progress.

In response, First Nations were made eligible for the Small Communities Fund, a federal program to which Ontario contributes funding. In 2015, seven Ontario First Nations received funding for drinking water improvement projects. In 2016, the government

reached out to First Nation communities with long-term drinking water advisories to make sure they were aware of the program and 11 on-reserve water projects received funding.

Also in 2016, First Nations in Ontario were eligible to apply for the newly established Clean Water and Wastewater Fund (CWWF), a program to support water and wastewater projects. Through this initiative, the Province of Ontario cost-matches up to 25% of the eligible project costs. As of August 2017, over $15 million (approximately $10 million from the federal government and $5 million from the provincial government) had been dedicated for water projects in reserve communities in Ontario.[54]

The province has also collaborated with the federal government and four First Nations by providing technical and other support on innovative drinking water improvement projects pursuant to the *Canada-Ontario First Nations Drinking Water Improvement Initiative*. Similarly, Ontario has provided support to two First Nations through the *Showcasing Water Innovation* program (which serves both First Nation and non-First Nation communities).

In March 2016, Ontario's Premier called on all provinces and territories to commit to a national agreement to ensure safe, clean drinking water for all First Nations communities. The MOECC advised the ECO in August 2017 that the province has been working actively with the federal government and First Nation representatives

Photo Credit: Joe Shiabotnlk, flickr. Used under CC BY 2.0

on a trilateral strategy to eliminate drinking water advisories and improve the sustainability of water systems on reserves. As part of this work, a trilateral steering committee has developed an action plan to resolve long-term drinking water advisories (restricted to advisories that are longer than one year and affect federally-funded public drinking water systems, but not including systems that suffer chronic, recurring, short-term advisories) in Ontario First Nation communities by the end of March 2021. The MOECC reports that this action plan includes targets that are now being actively implemented by federal, provincial and First Nations partners, but the plan is not currently publicly available.

In June 2017, the MOECC reported that, since the trilateral work began, seven long-term advisories in six communities have been lifted, although two new long-term advisories have been declared in two communities. Although there are plans to make the steering committee's progress reports public by posting them on the Ontario First Nations Technical Services Corporation website, as of September 2017, the reports were not yet available online.

THE PROVINCE HAS BEEN WORKING ACTIVELY WITH THE FEDERAL GOVERNMENT AND FIRST NATION REPRESENTATIVES ON A TRILATERAL STRATEGY TO ELIMINATE DRINKING WATER ADVISORIES.

FOR YEARS, FIRST NATIONS HAVE BEEN RAISING THE ALARM OVER THE STATE OF DRINKING WATER ACCESS IN RESERVE COMMUNITIES.

3.2.3 Why Problems Continue

For years, Indigenous people and communities have been raising the alarm over the state of drinking water access in reserve communities. Numerous public reports and community pleas have identified this as an unacceptable crisis. The federal and provincial governments have both acknowledged the severity and urgency of the issue. Yet, despite the substantial progress described above, much of the problem persists. The reasons for this are multi-faceted, and the subject of some debate. Frequently cited factors include:[55]

- the high cost of constructing and maintaining facilities in remote locations, and insufficient funding to properly operate and maintain these systems;
- lack of clarity regarding roles and responsibilities, especially because of the involvement of multiple federal government agencies;
- limited local capacity and ability to retain qualified operators;
- insufficient testing and inspections of water and water facilities;
- an inadequate federal regulatory framework, particularly respecting source protection; and
- a long-standing lack of political will.

3.2.4 Conclusion: Ontario's Challenge

Most of the problems that limit access to safe drinking water in reserve communities are primarily the responsibility of the federal government, not the province. In particular, it is not Ontario's legal responsibility to address funding shortages, nor can Ontario do much to clarify the roles and responsibilities among federal agencies. However, Ontario can, and should, do what is within its power to ensure everyone in the province has access to safe drinking water.

ONTARIO SHOULD BUILD ON THE IMPORTANT WORK IT ALREADY DOES TO PROVIDE TECHNICAL EXPERTISE AND TRAINING TO FIRST NATION COMMUNITIES.

Technical Support and Training

Ontario should build on the important work it already does to provide technical expertise and training to Indigenous communities. This work helps to address issues related to insufficient information and capacity within Indigenous communities. These technical services could be expanded more broadly, and training programs could be enhanced to build up more local capacity. Training programs could also be taken a step further by considering whether general programs could be tailored to make them more applicable to Indigenous communities.

Source Water Protection Planning

One important example where the government could do more to make provincial programs work better for First Nation communities is Ontario's source water protection program. While First Nation communities can opt in to Ontario's source protection planning process under the *Clean Water Act, 2006*, only three communities have chosen to fully participate in the program. A modified version of this program more tailored to the unique circumstances of many First Nation communities could encourage greater uptake. For example, the ministry could work with the three First Nation communities already participating in the program to develop guidance materials and sample policy language that address risks common in First Nation communities. Additionally, the MOECC should consider how they might acknowledge and support the implementation of source protection plans created by First Nation communities outside of the *Clean Water Act, 2006* process.

Regulating Nearby Water and Land Use

Many Indigenous communities are especially vulnerable to the effects of poor water quality and other forms of pollution. A number of factors contribute to this vulnerability, such as a lack of full-service medical facilities and environmental emergency response resources, as well as higher rates of disease and illness relative to other Canadians, all of which magnify the negative effects of poor water quality. Although only the federal government can regulate drinking water on reserve lands, Ontario regulates off-reserve activities that may affect reserve drinking water supplies. The

THE PROVINCE MUST EXERCISE A HEIGHTENED LEVEL OF CAUTION WHEN REGULATING ACTIVITIES NEAR RESERVE COMMUNITIES.

province must exercise a heightened level of caution when regulating nearby activities. For example, issuing an approval that allows a facility to release effluent into a waterway might have a greater negative impact for a reserve community with no or limited water treatment infrastructure than it would elsewhere in the province.

Provincial ministry staff must have the training and direction to consider how land use planning decisions and approvals issued to projects near reserve communities might negatively affect those communities. This duty is, of course, in addition to fulfilling any consultation duties that also exist in such circumstances. As part of this effort, it is important to ensure that notices posted on the Environmental Registry are accessible to those in remote northern communities (e.g., in some communities with limited internet access it may be preferable to mail copies of the notice), and that sufficient time is provided for communities to develop their comments on such proposals.

Measuring Progress on Drinking Water Access

Setting measurable, achievable targets to monitor progress on drinking water access is a key step in measuring water quality and ending long-term advisories. The ECO commends the province for taking action to incorporate targets into the trilateral action plan. It is important, however, that targets applicable to all water advisories (not just the long-term advisories that are the focus of the trilateral action plan) be established as well. Establishing appropriate metrics and making progress reports available to the public will help ensure transparency and accountability as the federal, provincial and First Nations governments work to meet these goals.

Collaborating with the Federal Government and First Nations

Perhaps most important is that efforts to improve the quality of First Nations' drinking water must be undertaken in partnership with the affected communities, as part of a larger, long-term strategy. The work of the province towards developing a trilateral strategy with the federal and First Nations governments is a strong starting point for such work. It is important that the trilateral collaboration is not restricted to work on long term advisories alone, as the ultimate goal must be to end all drinking water advisories. Although this is just one of a number of issues faced by many Indigenous communities, each in dire need of attention, drinking water is an important component of the reconciliation project. These issues are too big and too complicated for any one government to tackle alone – only with the province, federal government and First Nation governments and communities working together can sustainable solutions be crafted.

SETTING MEASURABLE, ACHIEVABLE TARGETS TO MONITOR PROGRESS ON DRINKING WATER ACCESS IS A KEY STEP IN MEASURING WATER QUALITY AND ENDING LONG-TERM ADVISORIES.

3.3 Air Pollution in Aamjiwnaang

3.3.1 Aamjiwnaang: A Community in Harm's Way

The Ojibwe (Chippewa) reserve community of Aamjiwnaang lies on the shores of the St. Clair River, within the city limits of Sarnia. It is home to the Aamjiwnaang First Nation. The ancestors of Aamjiwnaang's 2,300 members have lived in what are now Ontario and Michigan for millennia, and the current community site has been settled since at least 1827.

Aamjiwnaang looks a lot like many other small communities across Ontario, except that it is hemmed in by a uniquely intense concentration of heavy industries. About 40% of Canada's chemical industry is located around Aamjiwnaang, earning the area the name "Chemical Valley."[56] Aamjiwnaang is not just surrounded by heavy industries, it is polluted by them.

Other Ontario communities, such as Hamilton and Sudbury, also have a high concentration of industry. However, Aamjiwnaang is among the most polluted places in Ontario because of the large number of heavy industries located so close to the residential community.

This situation is a legacy of land use planning decisions that would never be allowed today. The six large petrochemical and petroleum refineries located exceptionally close to the community are of particular concern (see Figure 5).[57] On some of the community boundary roads, homes line the Aamjiwnaang side of the street, while refineries sit on the other; one facility is less than a kilometre from the daycare centre. Although the federal government, along with the Aamjiwnaang Band Council, carries responsibility for the reserve itself, the province is the primary regulator of the heavy industry that surrounds the community.

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ABOUT 40% OF CANADA'S CHEMICAL INDUSTRY IS LOCATED AROUND AAMJIWNAANG, EARNING THE AREA THE NAME "CHEMICAL VALLEY."

In 2014, the ECO called the level of pollution in Aamjiwnaang "truly shameful" and called on the MOECC to "enhance its efforts to eliminate the adverse effects of the industrial facilities within Chemical Valley on the Aamjiwnaang community and the environment."[58] There has been considerable progress since then. The MOECC has clarified some regulatory standards, enhanced its monitoring, laid charges for some spills, and developed a stronger relationship with the community. But today, and for years to come, Aamjiwnaang residents continue to be exposed to pollution that may adversely affect their health.

Figure 5. Map showing major petroleum and petrochemical facilities surrounding the Aamjiwnaang First Nation community, shown in red.

Source: Created by the ECO, using GoogleEarth.

AAMJIWNAANG RESIDENTS CONTINUE TO BE EXPOSED TO POLLUTION THAT MAY ADVERSELY AFFECT THEIR HEALTH.

3.3.2 Pollutants in the Aamjiwnaang Airshed

The facilities of Chemical Valley release hundreds of toxic chemicals into the Aamjiwnaang (and, more broadly, Sarnia) airshed from hundreds of discharge points. Some of the compounds of particular concern include:

- **Heavy metals, including mercury, lead and cadmium:** These toxic metals can accumulate in soil and water, and are associated with developmental, physical and neurological problems in humans and wildlife. Exposure can be especially dangerous to fetuses and young children.
- **BTEX compounds (benzene, toluene, ethylbenzene, and xylene):** These compounds are a particularly toxic subgroup of volatile organic compounds (VOCs) often found in petroleum products. High concentrations can be toxic to aquatic life, and can lead to crop damage. Long-term exposure to high concentrations can damage organs, cause respiratory problems, damage the immune system, and cause cancer.
- **Benzene:** the first of the BTEX compounds, is a non-threshold carcinogen, meaning that exposure to *any* amount of benzene increases cancer risks. Acute exposure to benzene can cause serious impacts, including dizziness, irregular heartbeat and, in extreme cases, death. Better regulation of fuels and industries, as well as restrictions on smoking and the reformulation of certain consumer products, have dramatically reduced benzene levels in the air. However, benzene levels remain high and frequently above health standards in Sarnia, and particularly in Aamjiwnaang.
- **Particulate matter:** Dust, dirt, soot and smoke particles that are smaller than 10 micrometres in width are considered inhalable particulate matter (for reference, the average human hair is about 70 micrometres thick). When inhaled, particulate matter can be deposited in lungs, and the smallest particles can enter the bloodstream. As a result, excessive inhalation of particulate matter has been linked with a variety of heart and lung problems.
- **Sulphur dioxide (SO_2):** Sulphur dioxide damages trees and other plants and is one of the components of acid rain. Even brief exposure (5 to 10 minutes) can cause a range of respiratory and cardiac problems in humans, including asthma, bronchoconstriction, changes in lung function, airway inflammation, and airway hyper-responsiveness. The odour threshold of SO_2 is higher than its health impact level, meaning that it can have health impacts even if it cannot be smelled.

The MOECC has identified benzene and sulphur dioxide as particular threats to the Aamjiwnaang community.

Altogether, Chemical Valley releases millions of kilograms of pollution into the Aamjiwnaang airshed each year.[59] Much of this pollution comes from routine emissions from dozens of facilities, which are permitted by the MOECC. Frequent unscheduled, non-routine releases of pollution, called “spills” by the MOECC, also contribute to the problem. Companies are required to self-report spills to the MOECC.

Because of the way these facilities have been designed and built, with hundreds of different discharge points from multiple facilities and no buffer zone between industry and community, there are no easy options for eliminating these releases altogether. Many parts of these facilities are designed to release contaminants into outdoor air in order to protect the health and safety of workers in the facilities, and to avoid indoor buildup of explosive gases. The provincial government has a strong and legitimate interest in the economic health of Sarnia’s petroleum and chemical industries.

These industries frequently raise competitiveness concerns about Ontario environmental regulations, including the recent launch of a cap and trade program. The extraordinary proximity between the vulnerable community of Aamjiwnaang and this essential pillar of Ontario's economy creates an exceptionally difficult public policy challenge.

ALTOGETHER, CHEMICAL VALLEY RELEASES MILLIONS OF KILOGRAMS OF POLLUTION INTO THE AAMJIWNAANG AIRSHED EACH YEAR.

3.3.3 Impact of Air Pollution in Aamjiwnaang

Environmental Impacts

The multitude of pollutants released into the airshed every day result in frequent, serious air quality issues. In addition, community waterways and soil are heavily polluted with many of the same pollutants. Significant benzene and other hydrocarbon spills have contaminated the soil and water, and remediation work has often been slow. As noted above, many of these pollutants can damage trees and other plants, and harm fish and wildlife.

Health Impacts

There is strong evidence that pollution is causing people in Aamjiwnaang adverse health effects which neither the federal nor provincial government have properly investigated. Aamjiwnaang is known, sadly, for a 2005 study that confirmed a skewed sex ratio of babies in the community – two girls are born for every boy.[60] Although there has been no follow-up study, anecdotal reports confirm that the sex ratio remains skewed at two-to-one. A 2013 study of Aamjiwnaang mothers and children confirmed that their bodies contain pollutants associated with nearby industries.[61] In particular, the study found above-average levels of cadmium, mercury, perfluorinated compounds, and polychlorinated biphenyl (better known as PCB), among others.

In the early to mid 2000s, a series of studies found that Sarnia (including Aamjiwnaang) experienced high frequencies of many illnesses,[62] higher-than-average hospital admissions for respiratory and cardiovascular illnesses,[63] and higher-than-average incidences of certain cancers.[64] In 2005, the Ontario Medical Association determined that Sarnia-Lambton was among the most heavily impacted communities with respect to health effects from air pollution.[65] There was no government follow-up on these findings, and no updated studies have been completed.

Stress is an under-acknowledged consequence of living surrounded by so much pollution. Stress is caused by both the uncertain long-term health consequences of exposure to pollution, as well as the unpredictable nature of spills. In Aamjiwnaang, a "shelter-in-place" siren may go off at any time because of dangerous spills, requiring residents to immediately go or stay inside, seal air exchanges and await further instructions. Many residents report living on edge, bracing for the next siren to go off, regardless of their plans and schedules. This stress is further exacerbated by the noise and vibration caused by unpredictable flaring (discussed later in this chapter), which can be significant enough to rattle the windows of buildings. Nighttime flaring – a regular occurrence – is loud and bright enough to disrupt some residents' sleep.

Members of the community have long sought a formal, government-led study to identify the health effects of their polluted environment and other factors. As in all First Nation reserves, Health Canada is the government body responsible for such an undertaking. It has chosen not to investigate. In the absence of provincial or federal government action, the community undertook its own health survey in 2004/2005. Respondents to this survey self-reported noteworthy rates of: asthma; high blood pressure; severe and chronic headaches;

Photo credit: Toban B., flickr. Used under CC BY-NC 2.0

THERE IS STRONG EVIDENCE THAT POLLUTION IS CAUSING PEOPLE IN AAMJIWNAANG ADVERSE HEALTH EFFECTS WHICH NEITHER THE FEDERAL NOR PROVINCIAL GOVERNMENT HAVE PROPERLY INVESTIGATED.

learning and behavioural problems in children; skin rashes; and miscarriages and stillbirths.[66] Anecdotal reports are that these results remain generally representative of the ongoing health problems for many in the community. Still, there has been no government follow-up.

Disruption to Life and Culture

Pollution's environmental and health impacts, as well as the frequency of shelter-in-place advisories, combine to disrupt the lives and cultural practices of people in Aamjiwnaang. Residents report that the pollution hinders their ability to participate in hunting, fishing, medicine gathering and ceremonial activities.

3.3.4 Aamjiwnaang Fights Back

Despite these difficult circumstances, members of the Aamjiwnaang community have fought persistently over the past 15 years to limit new pollution in their airshed

Photo credit: TheKurgan, CC BY-SA 3.0, https://commons.wikimedia.org/w/index.php?curid=42904921

and to demand better environmental protections. This work has included a range of strategies – everything from legal challenges[67] to awareness-raising "toxic tours" of the community.[68] A cornerstone for much of this work has been the Aamjiwnaang Health & Environment Committee, which led a successful fight against a proposed ethanol plant in 2002 and 2003, and has been involved in a number of ongoing projects, including air quality monitoring.[69]

Aamjiwnaang members have also been active users of the *Environmental Bill of Rights* (*EBR*). For example, the Health & Environment Committee actively monitors the Environmental Registry and flags issues of interest to the community, assisting members in submitting comments on proposals.[70] As well, community members submitted an *EBR* application for review in 2008 calling for the creation of legislation to address the impacts of cumulative effects on communities that are pollution hotspots like Sarnia. The MOECC agreed to undertake this review and – after years of delay – the ministry anticipates completing this review very soon. In 2013, Aamjiwnaang community members filed an *EBR* application for investigation into a series of incidents at the Shell refinery that released toxic fumes into the air, making community members sick. As a result of the MOECC's investigation into these incidents, Shell was fined (see *Enforcement Action in Sarnia* below).

3.3.5 Why is Aamjiwnaang So Polluted?

The root cause of Aamjiwnaang's pollution problem is the existence of so much heavy industry in such close proximity to their residential community (sometimes literally across the street). The community is not moving; nor, likely, are the industrial facilities. Despite this, significant improvements are possible. Currently, several factors make the situation worse than it needs to be, and each presents opportunities for improvement. Broadly speaking, there are three main problems with the MOECC's approach to industrial pollution affecting Aamjiwnaang:

1. Regulations that do not protect public health;
2. Inadequate monitoring, which hinders enforcement; and
3. Poor communication between the MOECC and Aamjiwnaang community.

Regulations That Do Not Protect Public Health

Ontario has an elaborate system of air quality regulation, which has gradually become more stringent since air standards were introduced in 1971. However, three key flaws allow excessive air pollution in the Aamjiwnaang airshed:

- air standards that are outdated or not based on protecting health;
- emissions that the MOECC doesn't count; and
- ignoring the cumulative impacts of multiple facilities.

Together, they mean that Aamjiwnaang is exposed to significant human health impacts even if each company complies with its pollution permit.

Standards That Do Not Protect Health

Ontario's air standards are set out in the air quality regulation, O. Reg. 419/05. To legally operate in Ontario, each facility must demonstrate that its emissions meet the air standards[71] (unless the company obtains MOECC approval to rely on a technology-based standard instead, as discussed below). Ontario's air standards for some pollutants do not sufficiently protect human health, and lag behind those of leading jurisdictions.

Outdated Standard for Sulphur Dioxide

Ontario's permissible emission limit for sulphur dioxide (SO_2) was set in 1974, and has never been revised. The MOECC identified SO_2 as a "high priority" for an updated air standard based on its release pattern in Ontario,[72] identification as a priority by federal and national committees, and toxicological information published since 1974. Still, no updated air standard has been adopted.

Ontario's 1-hour air standard for SO_2 is over six times higher than the level identified by Health Canada as being sufficiently protective of human health (see Table 1).[73] Ontario's 30-minute standard is even less stringent, even though short exposures (e.g., 5 to 10 minutes) can cause harm, especially if they are repeated.[74]

COMMUNITY MEMBERS SUBMITTED AN *EBR* APPLICATION FOR REVIEW CALLING FOR LEGISLATION TO ADDRESS POLLUTION HOTSPOTS LIKE SARNIA.

Table 1. Ontario's SO_2 Standards Compared to Standards Set or Recommended by Other Organizations (measurements provided in micrograms per cubic metre (µg/m^3) and parts per billion (ppb)).[75]

Averaging Time	Ontario's Current Air Standards for SO_2 (Last Updated in 1974)	Health Canada	World Health Organization	US Environmental Protection Agency – National Ambient Air Quality Standards
10 minutes		175 µg/m^3 (67 ppb)	500 µg/m^3 (190 ppb)	
30 minutes	830 µg/m^3 (312 ppb)			
1 hour	690 µg/m^3 (259 ppb)	105 µg/m^3 (40 ppb)		200 µg/m^3 (70 ppb)
24 hours	275 µg/m^3 (103 ppb)		20 µg/m^3 (7.5 ppb)	

ONTARIO IS CONTINUING TO REGULATE SULPHUR DIOXIDE WITH A 43-YEAR-OLD STANDARD THAT IT KNOWS DOES NOT PROTECT HUMAN HEALTH.

In 2016, the MOECC began consultations on a new sulphur dioxide air standard, hosting a "pre-consultation science meeting" with representatives from Aamjiwnaang and Walpole Island First Nations, among other participants. To its credit, the ministry provided funding to Aamjiwnaang to hire an independent technical expert to advise the Band Council throughout this process, allowing them to more meaningfully participate. In March 2017, the MOECC advised that an updated sulphur dioxide proposal was to be posted "soon" on the Environmental Registry. But as of September 2017, no such proposal had been posted, although the ministry advised the ECO that discussions with stakeholders were ongoing. This means that Ontario is continuing to regulate sulphur dioxide with a 43-year-old standard that it knows does not protect human health.

Benzene Standards Based On Technology, Not Health

A second example of standards that do not fully protect human health is the use of technical standards for Benzene and related compounds. As described above, benzene and benzo(a)pyrene are non-threshold carcinogens, which means that exposure to *any* amount increases the risk of cancer. They are released into the air by leaks and venting from equipment such as: petrochemical storage vessels, valves and pumps; industrial sewage treatment; truck and railcar product loading; and marine vessel loading.

In 2011, Ontario set a new, lower, health-based air standard for benzene (0.45 µg/m^3 per year) to come into effect July 1, 2016. However, some industries, including all six petrochemical and petroleum facilities located in particularly close proximity to Aamjiwnaang, did not expect to be able to meet the 2016 benzene air standard. The Canadian Fuels Association and Chemical Industry Association of Canada therefore asked the MOECC to develop a technical standard that these industries could comply with instead, that would allow them to release emissions that exceed the general air standard. This is a legal process, permitted by the air quality regulation. Technical standards are used when facilities within particular industries or that use particular

equipment are unable to meet general air standards due to technical or economic limitations.[76] They allow industry, in effect, to install the best available technology that is "economically achievable" rather than meet the health-based standard, regardless of the impact on Aamjiwnaang.

In 2016, the ministry concluded a multi-year process to develop technical standards for benzene and benzo(a)pyrene emissions from petroleum refineries and benzene and 1,3 butadiene from petrochemical manufacturing facilities.[77] The new standards require industry to take a long list of specific measures to reduce and to detect benzene emissions, but not to meet any particular benzene emission limit. Some of the measures will not be phased in until 2025. The ministry has committed to reviewing the technical standard in 2023 in order to determine if it is still appropriate to move to a more-stringent but still technology-based standard in 2025 (as planned); the precise scope of this review has not been established.

To develop these technical standards, the MOECC formed a working group that included representatives of the relevant industry associations, as well as representatives of both Aamjiwnaang and Walpole Island First Nations, among others. The MOECC also provided the Aamjiwnaang First Nation with funding to allow them to hire their own technical consultant. This was the first time such an arrangement was used for this type of process, and it later served as a precedent for the on-going SO_2 standards development process. This allowed the community to meaningfully participate in the later part of the standards development process alongside industry and government experts. The community's consultant expressed frustration, however, that they had not been meaningfully included from the beginning of the process.[78]

TECHNICAL STANDARDS ALLOW INDUSTRY TO INSTALL THE BEST AVAILABLE TECHNOLOGY THAT IS "ECONOMICALLY ACHIEVABLE" RATHER THAN MEET THE HEALTH-BASED STANDARD, REGARDLESS OF THE IMPACT ON AAMJIWNAANG.

As the MOECC moves into the implementation phase of these new technical standards, it has established a collaborative project where participants from Aamjiwnaang and Walpole Island First Nation, as well as a community environmental group, will work with volunteer facilities on a range of monitoring activities.

THE MOECC DOES NOT APPLY ITS AIR STANDARDS TO A FACILITY'S ENTIRE EMISSIONS.

The MOECC Ignores Some Emissions

The MOECC does not apply its air standards to a facility's entire emissions. Under the local air quality regulation, the MOECC requires each industrial facility to measure or estimate its emissions and use an approved dispersion model to estimate the maximum concentration of those emissions at the "point of impingement" – typically, the point where the pollution reaches neighbouring properties. The estimates are set out in an Emissions Summary and Dispersion Modelling (ESDM) report.[79] The MOECC relies on these ESDM reports to decide whether a facility's emissions are within the allowable limits.

ESDM reports are only reliable, however, if the emissions calculations are accurate and complete. It has been common practice in Canada and the U.S. for facilities to only include emissions from steady-state operations in their ESDM reports, leaving out emissions

from start-up, shut-down and malfunction conditions – called "transitional operating conditions."[80] The MOECC guidance document states:

> focusing the analysis on steady-state operating conditions may be reasonable if there are no acute effects associated with the contaminant during transitional operating conditions and transitional operating conditions last only for a few hours a few times per year.[81]

Unfortunately, this guideline is not reliably followed. Some Sarnia industrial facilities frequently use flaring at multiple locations as a fast, cheap method to burn off excess chemical gases that would pose a danger within their plant.[82] Acid gas flaring can be a major source of sulphur dioxide, particulate matter, noise, vibrations and light. As stated above, even short, undetected exposures to sulphur dioxide can adversely affect human health; such impacts should qualify as "acute effects." Moreover, these incidents happen multiple times a month and can last several hours or even days. Yet, although flaring is common, and has acute effects on the community, the emissions from flaring are not reliably included in ESDM reports. When flaring emissions are left out of ESDM reports, the MOECC does not consider such emissions when it evaluates facility compliance with air emissions limits. For this reason, flaring is a particular concern for Aamjiwnaang.

WHEN FLARING EMISSIONS ARE LEFT OUT OF ESDM REPORTS, THE MOECC DOES NOT CONSIDER SUCH EMISSIONS WHEN IT EVALUATES FACILITY COMPLIANCE WITH AIR EMISSIONS LIMITS.

The MOECC is well aware of the issue, but has not decided what to do about it. There is a strong division of opinion among environmental organizations, First Nations, environmental consultants and industry.[83]

In the meantime, the MOECC is collecting more information about flaring, as part of its Sulphur Action Plan under the broader Sarnia Air Action Plan. The focus of this action plan is to better understand all sources of sulphur emissions from industry (including flaring), and eventually reduce such emissions. The MOECC has collected additional information from industry about flaring events, which allowed the ministry to identify gaps in the ESDM reports of several facilities,[84] and has updated its guidance on how to model flares in ESDM reports. The MOECC has said that it will continue to work on this issue, but no timelines have been provided or next steps identified.

ONTARIO REGULATES EACH FACILITY'S AIR EMISSIONS AS IF IT WERE THE ONLY EMITTER.

MOECC Ignores Cumulative Effects

Ontario regulates each facility's air emissions as if it were the only emitter in the area. When issuing an approval for one facility, the MOECC does not consider the cumulative or synergistic impacts on human health or the environment when several emitters are located close together, as they are in Chemical Valley.

This issue is the focus of the still outstanding 2008 *EBR* application for review asking the province to consider new regulations that address air pollution "hot spots." The *EBR* requires the MOECC to decide such applications in a reasonable time. Eight years is not reasonable especially when human health is at stake.

Photo credit: P199, CC BY-SA 3.0, https://commons.wikimedia.org/w/index.php?curid=20567736

The ECO has repeatedly raised this application with the MOECC, and has been assured that significant effort is going into the review. The MOECC has committed to using data from the Environmental Activity and Sector Registry for air emissions to inform ministry policy regarding cumulative effects. The MOECC also facilitated a Cumulative Air Emissions Assessment group (a sub-group of the O. Reg. 419/05 External Working Group), which includes representatives from environmental organizations, Aamjiwnaang and Walpole Island First Nations, local public health, industry and the MOECC. This group worked from 2015 to 2017 to inform the future ministry policy on cumulative air emissions. But as of September 2017, no results had been released and no policy proposal had been posted on the Environmental Registry.

THERE IS NOTHING NEW ABOUT THE ISSUE OF CUMULATIVE EFFECTS.

After waiting eight years for the ministry to complete this review, Ecojustice applied to the Divisional Court in July 2017 for a judicial review of the ministry's failure to complete this *EBR* review within a reasonable time.

This eight-year delay is particularly egregious because there is nothing new about the issue of cumulative effects. More than a decade ago, the MOECC put considerable effort into developing a cumulative air impact policy for

the Clarkson airshed, just west of Toronto. The Clarkson Airshed Study collected considerable air monitoring data between 2003 and 2006. A Task Force was convened to develop an Action Plan to improve air quality in the airshed and to recommend air quality improvement targets, timelines for achieving those targets, strategies, reporting requirements for the Action Plan, information reporting, and oversight, coordination and leadership for the plan. Ultimately, the 2010 Action Plan recommended that the ministry develop and implement a new form of governance and an Airshed Management System in the Clarkson area to manage cumulative impacts. This included evaluating applications for environmental approvals that would increase emissions within the airshed in light of the capacity of the airshed to absorb those emissions. This recommendation was never implemented.

Moreover, the computer models that the MOECC uses to assess emissions are capable of handling cumulative effects. Indeed, the two MOECC-approved emissions computer models used for generating ESDM reports are programed to remind users that background concentrations should be considered in Ontario; but this instruction is routinely ignored. Ontario Regulation 419/05 could, but does not, require models to factor in background air quality. The U.S. also has an elaborate system for gradually requiring air quality improvements in stressed airsheds while still permitting new facilities to open. Again, Ontario has chosen not to implement a comparable approach.

What Else Is Needed?

Update the SO_2 standard. By continuing to rely on a 40-year-old sulphur dioxide standard that, as the ministry acknowledges, does not protect human health, the MOECC puts Aamjiwnaang residents and many other Ontarians at unnecessary risk. Although much work towards an updated standard has been done, progress has stalled. The MOECC should prioritize finalizing an updated standard, starting with posting the Environmental Registry proposal before the end of 2017.

THE MOECC MUST TRANSPARENTLY MONITOR COMMUNITY AIR TO ENSURE THAT THE TECHNICAL STANDARDS ACTUALLY REDUCE BENZENE LEVELS IN AAMJIWNAANG.

Ensure Provincial Officers are trained on the new benzene technical standards. Because of the detailed technical nature of the benzene technical standards, it is critical that the MOECC not only undertake compliance inspections at registered facilities, but that inspectors have specialized training to understand relevant equipment and to be alert to possible technical issues relating to such equipment. Although MOECC officers are well trained, they are responsible for many different types of facilities with a wide range of complex equipment. It cannot be assumed that provincial officers always have the depth of understanding necessary to properly evaluate compliance with a new technical standard.

Ensure new benzene standards get results. The MOECC must transparently monitor community air to ensure that the technical standards actually reduce benzene levels in Aamjiwnaang. The Petroleum Refining Industry Standard and the Petrochemical Industry Standard require each facility to install and operate at least six property line monitors for benzene, and to publish an annual monitoring report "including a summary of actions taken to address any statistically significant higher monitoring results." However, property line monitors will not necessarily detect cumulative impacts, and the community should not have to wait more than a year to know what it is breathing. The MOECC should therefore have real-time community monitoring results available to the public, just as it does for major urban communities' Air Quality Health Index.

Address transitional operating conditions. The MOECC must clarify its rules on transitional operating conditions by explicitly requiring in regulation that emissions from acid gas flaring be included in ESDM

reports. In the interim, the MOECC should enforce its current guidance. Flaring in Sarnia occurs frequently and has acute health and lifestyle effects on the neighbouring community. Accordingly, ESDM reports that omit emissions from flaring are incomplete and cannot support a valid environmental compliance approval. The MOECC should require all Sarnia industrial facilities that flare to submit ESDM reports that include these emissions. If correctly completed ESDM reports predict noncompliance with the existing, very lax sulphur dioxide standards, the MOECC should take appropriate compliance and enforcement action, including issuing orders, where appropriate.

Finalize a cumulative effects policy. The ministry agreed to undertake the "hotspots" application for review in 2009 but has yet to propose what it will do to address the issue. The MOECC should develop a clear policy setting out how it will take cumulative impacts into consideration during its various regulatory functions, including: when deciding whether to issue an environmental compliance approval; determining what conditions to impose upon an approval; setting air standards; and when updating the permit-by-rule regulation for activities with air emissions. Every year that has passed since 2009 without such a policy represents a potential compounding of health and environmental impacts on communities like Aamjiwnaang.

THERE IS ONLY ONE PERMANENT AIR MONITORING STATION IN AAMJIWNAANG.

Inadequate Monitoring, Enforcement Challenges

Limited air quality monitoring has hindered the MOECC's ability to effectively enforce the *Environmental Protection Act* rules that are supposed to protect the Aamjiwnaang community, and has kept the community in the dark about what they are breathing. Three key issues hinder the MOECC's ability to effectively monitor air quality and enforce air pollution regulations:

- inadequate and insufficient monitoring equipment;
- over-reliance on industry self-reporting; and
- enforcement challenges due to delayed responses and lack of evidence.

Inadequate and Insufficient Monitoring Equipment

There is only one permanent air monitoring station in Aamjiwnaang and it is designed to measure pollutant levels averaged over long periods of time. This is useful for monitoring the general air quality in the Aamjiwnaang airshed, but the equipment is not designed to pinpoint the geographic source of any rogue emissions (which could help identify which facility is responsible for specific incidents). Additionally, there is no monitoring equipment designed to measure the noise and vibrations associated with flaring events.

Recently, the MOECC has invested in additional monitoring equipment. The MOECC recently stationed a new air monitor in Aamjiwnaang that measures volatile organic compounds including benzene. A temporary air monitoring station has also been installed to determine if more monitors are required. As described above, some industrial facilities will also be installing additional property line monitors for benzene, as part of the new technical standards.

Industrial facilities also do some of their own monitoring. For example, the Sarnia Lambton Environmental Association, a co-operative comprised of several Sarnia-area industrial manufacturers, operates a mobile monitor to monitor ambient air quality. Members acknowledge that they can reduce emissions when the need is identified by the monitoring equipment through a "switch to fuels that contain less sulphur dioxide. Rates of manufacturing products may also be cut back in order to reduce SO_2 emissions."[85]

IT CAN BE CHALLENGING FOR THE MOECC TO DETECT SPILLS THAT ARE NOT REPORTED.

Reliance on Self-Reporting

Like all Ontario emitters, Sarnia facilities are required to self-report to the MOECC anytime they have a "spill" — an emission of potentially harmful pollutants that is "out of the normal course of events."[86] This includes flaring (in many cases, they must also notify the ministry in advance if they anticipate needing to flare). It may be that the facilities involved are in fact reporting every incident they are themselves aware of, as required.

However, members of the Aamjiwnaang community have expressed doubt that Sarnia facilities are as diligent as they should be about noting and reporting every spill, because community members have repeatedly experienced odours and adverse effects when no facility reported a spill. It can be challenging for the MOECC to detect spills that are not reported because of limited air monitoring equipment.

In addition to routine annual compliance inspections, the MOECC has begun to conduct enhanced inspections as part of the Sarnia Air Action Plan. In these enhanced inspections, MOECC staff go beyond checking for compliance with environmental approvals, and focus more broadly on all possible sources of benzene and sulphur emissions. The goal of this work is to identify sources of "fugitive emissions,"

THE MOECC HAS BEGUN TO CONDUCT ENHANCED INSPECTIONS AS PART OF THE SARNIA AIR ACTION PLAN.

i.e., emissions that leak from buildings, vehicles and equipment and are not intentional discharges. The MOECC reports that these inspections have allowed the ministry to gather information about common sources of fugitive emissions, which can, in turn, inform future technical standards and guidelines on equipment and best practices.

Enforcement Challenges Due to Delayed Response and Lack of Evidence

In addition to the regulatory air standards that limit emissions of particular substances, section 14 of Ontario's *Environmental Protection Act* (*EPA*) prohibits the release of any substance that causes an adverse effect. In other words, even if a facility is operating in accordance with its permits, if it releases substances that make people sick, cause material discomfort, damage vegetation and/or interfere with the normal use of their property (as a "shelter-in-place" order surely does), the facility violates the *EPA*.[87]

However, the limited monitoring capabilities and reliance on self-reporting discussed above hinder the MOECC's ability to enforce section 14 of the *EPA* by making it more challenging to determine if a violation has occurred. Many health-relevant releases are brief and it is understandably difficult for the ministry to collect the necessary evidence to determine who is responsible for intermittent, unpredictable, short-lived releases. Although MOECC officers make every effort to respond quickly, it can take several hours for them to arrive. As a result, community members report that it is not uncommon for someone to smell and feel the negative physical effects of a pollutant when they call to report an issue, but, by the time ministry staff arrive, the pollutants have dissipated sufficiently that they are no longer detectable. In such a situation, if a facility declines to identify themselves as the source, there is no way for the ministry or the community to determine the type, extent and source of an emission.

It should be noted, however, that the MOECC's Sarnia district office is more responsive to complaints than most other MOECC offices. Elsewhere in the province, the MOECC uses discretion when deciding whether or not to dispatch an officer to investigate a single complaint. However, the Sarnia office has made it a policy to always dispatch a person to respond to even a single after-hours complaint about an industrial facility within a designated part of Sarnia and St. Clair (including Aamjiwnaang). This protocol was developed in recognition of the unique vulnerability of many residences in such close proximity to heavy industry.

THE SARNIA OFFICE HAS MADE IT A POLICY TO ALWAYS DISPATCH A PERSON TO RESPOND TO EVEN A SINGLE AFTER-HOURS COMPLAINT ABOUT AN INDUSTRIAL FACILITY CLOSE TO AAMJIWNAANG.

Enforcement Action in Sarnia

Charges have been laid for some notable spills. For example, the ministry laid charges against Shell Canada Limited for one of the January 2013 incidents that was the subject of the *EBR* application for investigation noted in Part 3.3.4. As a result, in 2015, the company pled guilty to causing or allowing the discharge of odour into the natural environment. It was fined $500,000 and required to contribute $200,000 to the Aamjiwnaang First Nation (which the community used to install their own "fenceline" air monitoring network along the community boundaries). In 2016, Imperial Oil Limited pled guilty to a charge of discharging coker stabilizer thermocracked gas into the environment in relation to a 2014 incident. During a leak that lasted three and half hours, residents experienced burning eyes, sore throats, headaches, light-headedness, nausea and dizziness. Some residents were forced to remain in their homes, and a hospital had to take defensive measures. The company was required to pay over $800,000 in fines and victim surcharges.

What Else Is Needed?

More air monitoring equipment. Additional air monitoring equipment and related technology is needed in Aamjiwnaang, whether funded publicly or by industry. The current monitoring network cannot track the source of fast-dissipating spikes in common contaminants. Of particular use would be more on-site monitoring, as well as mobile equipment that can be used to better track contaminants through the airshed. Noise and vibration monitoring would also help quantify and document such disruptions to the community, which may violate the *EPA*.[88] It is equally important that the community have prompt access to the results, which should not be obscured by averaging of the data over long periods of time.

Require industry to disclose and respond to ambient air quality monitoring data. In Sudbury, two companies operating the majority of large polluting facilities jointly maintain, and publicly disclose the results of, 18 fixed SO_2 monitoring stations. They are also required to predict where the highest pollutant concentrations will occur and to send a mobile monitor to those locations. For this purpose, they maintain a sophisticated weather office, and jointly sponsor a third party to monitor and report the pollution. Real time SO_2 data is accessible on two public websites.[89] Facilities curtail production when necessary to avoid exceeding ambient air pollutant limits in the community. The MOECC should require Sarnia's industrial facilities to undertake similar measures.

Do more to confirm self-reports. The ministry should do more to confirm that facilities are accurately tracking and reporting exceedances of air standards. Having facility monitoring data independently verified, and expanding ministry powers to compel facilities to carry out modeling of specific conditions would both further this end. Additionally, increasing the number of proactive inspections undertaken by the MOECC could also help verify that facilities are operating in compliance with both their approvals and the law more generally.

Additional resources to support enforcement efforts. The MOECC's Sarnia district office is responsible for ensuring compliance with environmental rules for 40% of Canada's entire chemical industry. To manage this sizable task, the district office has 6

full-time provincial officers who carry out inspections in 40 industrial facilities. It is clear the district office works hard to both responsibly enforce the rules and to be responsive to Aamjiwnaang's concerns and needs. However, challenges persist, as discussed above.

In light of the unique concentration of industry and its impacts on the people of Aamjiwnaang, as well as the urgency of reconciliation with Indigenous people, more resources should be dedicated to ensure rapid and effective responses to community complaints whenever they occur. In the past, the ministry has required businesses that create significant regulatory loads to fund dedicated environmental officers, as well as proactive odour detection patrols. Something similar may be appropriate for Aamjiwnaang.

Moreover, in order to enhance the air monitoring network, acquire other useful technology, undertake additional proactive inspections, as well as ensure personnel are available to respond as quickly as possible to complaints, the Ontario government needs to provide the Sarnia district office with additional resources.

Communication Challenges

Beyond the discrete regulatory and enforcement problems identified above, ineffective and insufficient communication between the MOECC, industry and the Aamjiwnaang community is a clear source of frustration. Poor communication undermines what limited trust the community has in the government and industry, and makes every challenge more difficult to address. These challenges largely fall into three categories:

- an unreliable emergency warning system;
- inadequate information sharing between the MOECC, industry, and the Aamjiwnaang community; and
- frustration and mistrust among community members toward the MOECC.

INEFFECTIVE AND INSUFFICIENT COMMUNICATION BETWEEN THE MOECC, INDUSTRY AND THE AAMJIWNAANG COMMUNITY IS A CLEAR SOURCE OF FRUSTRATION.

Unreliable Warning System

Aamjiwnaang and the larger Sarnia community is equipped with an emergency response system intended to warn residents about dangerous discharges of contaminants. In the most severe situations air sirens sound to warn the community to shelter-in-place. Residents cannot fully trust this system, however, because there are times that community members can smell, taste and feel the significant effects of air pollutants, but no sirens go off. This reportedly happened in 2013, during an incident at the Shell facility that resulted in charges against the company. This unreliability both increases the risk exposure of Aamjiwnaang's residents, and also increases their stress and fear.

There are also reports of mixed messages being delivered from the community emergency management team, the MOECC and the facilities themselves. For example, community members recall situations in which one entity told them there was a problem and they should stay inside, while another told them that everything was operating as normal.

Inadequate Information

Community members report that it is often difficult for them to get information either from the MOECC or from the facilities directly about discharges of pollutants or other incidents as they occur (i.e., at the time an odour is smelled in the air, people are feeling ill, or a siren is going off). This hinders the ability of community members to respond appropriately, and also increases stress and fear. For example, in 2013 it was reported that a release of hydrogen sulfide made children at the

daycare centre ill. However, the emitter reportedly did not notify the community or nearby hospitals of the spill. As a result, when the children were taken to hospital, the doctors lacked key information about the cause of their symptoms.[90]

The Sarnia Lambton Environment Association, the industry group, collects substantial monitoring data but only for its own use. Short-term pollutant spikes are recorded by its monitoring equipment, but only one-hour averages are reported to the ministry. Even less information is provided to the public, and not all of it is accurate. Reports on the Sarnia Lambton Environment website are quite old, the most recent being from 2015.[91] What is advertised as "the most recent Progress Review Technical Summary for details on SO_2" is from 2013.

Even when information is provided to the community, it is often inadequate (such as being advised to expect flaring on a particular day, but not being told whether there are dangerous substances in the emissions, such as sulphur dioxide). Similarly, there is often very little follow-up information available to the community after an incident, such as whether the MOECC conducted an investigation, what ministry staff determined regarding the emissions, or what action they took as a result.[92]

Although problems persist, the MOECC and the community have been working to improve information dissemination. One of the most significant examples comes from Clean Air Sarnia and Area (CASA), a community advisory panel composed of representatives from industry, First Nations, community members and government. CASA's mandate is to improve air monitoring and communication of air quality information to community members.[93] Its most significant initiative is the development of a new website, expected to launch in late 2017, that will provide real-time air quality information from stations along the St. Clair River from Sarnia to Walpole Island.[94] Aamjiwnaang Band Council plans to erect public screens displaying this information around the community in order to ensure that it is easily accessible to residents.[95]

A NEW WEBSITE WILL PROVIDE REAL-TIME AIR QUALITY INFORMATION FROM STATIONS ALONG THE ST. CLAIR RIVER FROM SARNIA TO WALPOLE ISLAND.

Frustration with the MOECC

It is clear the MOECC's Sarnia district office works hard to address Aamjiwnaang's concerns. However, community grievances and mistrust persist regarding some ministry responses to complaints, particularly when the district office is closed and complaints must go to the MOECC's Spills Action Centre, an emergency line that receives calls about all types of environmental emergencies across the entire province. Members of the community have reported that the MOECC staff answering these calls sometimes decline to send someone to investigate even where appropriate. For example, one community member reports being told by a Spills Action Centre employee that he was unable to assist if the community member did not know what facility was responsible for the fumes they called to report, rather than arranging for an MOECC officer to visit the site and attempt to determine the source of the contaminant.

Underlying these issues is the fact that the Governments of Ontario and Canada have given Aamjiwnaang, like all Indigenous communities, many reasons to mistrust government. In Aamjiwnaang, decades of pollution have left the First Nation with limited trust in the MOECC's ability and desire to protect their health against big business' interests. Although this has begun to change in recent years, as the ministry has made a clear effort to improve its responsiveness to community concerns, mistrust of both the ministry and industry permeates every conversation.

The MOECC has worked hard in recent years to improve its relationship with Aamjiwnaang. In 2016, the MOECC undertook a multi-step communication needs

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assessment with Aamjiwnaang. The ministry completed: in-depth interviews with community leaders; conducted focus groups with mothers, youth, educators and others; and surveyed community members, including reaching out to a number of community groups.[96] The results of this assessment will be used to inform ministry communications decisions in the future.[97]

As a provisional measure, the MOECC has implemented an interim communications protocol aimed at providing clearer and fuller communications relating to emergency events.[98] Representatives from the community confirmed that they felt this initiative has improved communications between the community and the ministry, although further clarifications are still needed.

What Else Is Needed?

Ensure a reliable warning system. The community must be able to trust that the warning system is reliable and will sound each and every time it is necessary to shelter-in-place. One way to help build this confidence is to ensure that, when incidents occur and the system does not sound, the MOECC provides an explanation of why the system did not sound (be it because the situation was not serious enough to merit a shelter-in-place advisory, because there was a mechanical or process breakdown, or for another reason). If the lack of sound is the result of an error, the ministry must communicate to the community what has been done to ensure the same problem does not happen again. Moreover, improving communication between Aamjiwnaang, the MOECC, and neighbouring facilities – with an emphasis on the open sharing of information about all incidents and air quality – will help build trust in all aspects of the emergency management system.

Require advance community notice of flaring. Another strategy that could improve community confidence in the warning system, as well as improve communication generally, would be to require facilities that immediately surround Aamjiwnaang to notify the community of expected flaring as a condition of their environmental compliance approval. It is already common practice to include approval conditions

THE COMMUNITY MUST BE ABLE TO TRUST THAT THE WARNING SYSTEM IS RELIABLE.

requiring facilities to notify the MOECC if such incidents are anticipated, so it should be a small burden to require that they notify Aamjiwnaang's Band Council at the same time. This small measure would go a long way to alleviating a lot of the apprehension community members feel when they see flaring and do not have information about whether it is associated with an emergency or what substances are in the emissions.[99]

Strengthen communication channels. The MOECC should continue to build on its work to date to improve communication with the community. In particular, community members highlighted a desire to receive more follow-up information after an incident. For example, as it currently stands, the MOECC may advise the community that it is going to investigate a complaint, but then never provide information about the outcome of the investigation, leaving the community wondering as to the results.[100]

Improve Spills Action Centre responses to incidents. For the benefit of not only Aamjiwnaang, but all of Ontario, Spills Action Centre staff need to be trained on how to respond to complaints of unknown contaminants from unknown sources. The Centre should undertake routine customer service quality assurance assessments in order to ensure that staff provide callers with accurate information and appropriate responses.

Improve transparency and build trust between the MOECC and Aamjiwnaang. Fundamental to achieving all other goals is an unwavering commitment from the MOECC to build trust and improve transparency in the ministry's dealings with the Aamjiwnaang community. The Aamjiwnaang Band Council has expressed a desire for the MOECC to fund and sanction one or more roles for someone that works alongside other MOECC staff in carrying out inspections and investigations, but who is from Aamjiwnaang and reports back to the community on their work.

3.3.6 Conclusion: What's Possible?

The people of Aamjiwnaang have suffered immensely from the shadow of Chemical Valley, and they continue to do so. Asthma and other respiratory problems are commonplace, cancer rates are higher than average, and a skewed sex ratio at birth, along with high rates of miscarriage and stillbirth, leave parents wondering about the long-term impacts on their children.[101] This should not be the price anyone has to pay to live in the place they call home. That those affected belong to an Indigenous community on its ancestral land makes the situation all the more intolerable.

In a perfect world, the industries of Chemical Valley would continue to support Ontario's economy, but would immediately stop emitting all toxic pollutants into the air that their neighbours breathe. In the real world, industry and the MOECC should do everything practicable to achieve transformative, tangible improvements, until Aamjiwnaang's air quality meets health-relevant standards. The longer this takes, the longer the people of Aamjiwnaang will be exposed to pollutants known to adversely affect human health.

In this complex context, what do we expect the provincial government to do?

As shown in this chapter, there are many ways for the MOECC to improve the situation in relatively short order. In particular, **the ECO recommends that:**

1. No later than June 30, 2018, **the MOECC amend O. Reg. 419/05 to set up-to-date SO_2 air standards that protect human health.** Specifically, the MOECC should establish a SO_2 standard that meets or exceeds the level identified by Health Canada as being sufficiently protective of human health, i.e., a 1-hour limit of, at most, 105 µg/m^3 (40 ppb).

2. **The MOECC clarify, by regulation, that acid gas flaring must be included in ESDM reports, even when associated with transitional operating conditions.** This will eliminate any confusion, and will ensure that Ontario's air quality standards and approvals apply to all relevant industrial emissions. More broadly, the ministry must ensure that all health-relevant emissions resulting from foreseeable, repeated transitional operating conditions are properly reported, evaluated and regulated.

3. **The MOECC ensure the people of Aamjiwnaang have access to real time air monitoring information.** The people of Aamjiwnaang and their health professionals should know what they are breathing. For toxic contaminants with acute effects from brief exposures, like SO_2, Aamjiwnaang should know about short-term spikes when they happen, not just long-term averages. All outdoor air quality monitoring data should be public, whether collected by industry or the MOECC.

4. **The Government of Ontario and the MOECC increase technical capabilities and response capacity at the Sarnia district office by making more resources available.** Improved monitoring, more pro-active inspections, and faster response times will make it easier for the MOECC to identify violations of the *EPA* and ensure remedial action is taken.

5. **The MOECC work with Aamjiwnaang to improve transparency and trust between the ministry and the community.** In particular, the MOECC should make every effort to fulfil the community's desire to have an Aamjiwnaang community member work alongside MOECC staff during compliance and enforcement activities.

The ECO's recommendation regarding cumulative effects, set out in Chapter 2 of this report, is also worth restating here, as it has direct impact on the issues faced by the Aamjiwnaang community: **"the ECO recommends that the MOECC ensure that all forms of environmental approvals (including ECAs and registrations) take into account the potential cumulative effects of multiple regulated entities on local air quality."** Taking cumulative effects into account when issuing approvals to industry has great potential to improve air quality and protect human health in the long term by imposing absolute limits on the amount of pollution a single airshed is required to accept.

3.4
Conclusion: Environmental Justice Must Be Part of Reconciliation

It is not a coincidence that Indigenous people and communities in Ontario bear a disproportionate burden of pollution and poor environmental management; rather, it is part of a much larger history of mistreatment by all levels of government.

This chapter describes environmental problems that threaten the health of several Indigenous communities, limit their cultural practices, and damage the natural environment. Although Grassy Narrows, Wabaseemoong, Aamjiwnaang, and the dozens of communities affected by drinking water advisories are each unique, the challenges they face have common threads applicable to many Indigenous communities: long-standing government failures to value Indigenous relationships to land and water, to acknowledge the severity of pollution when it occurs, to adequately investigate and remediate contamination, to communicate effectively with affected communities, and to work respectfully and collaboratively with them to seek solutions.

In recent years, the government of Ontario has begun to acknowledge this harmful legacy, and to seek reconciliation with Indigenous communities. The MOECC has worked to redress past wrongs and to improve current conditions. But undoubtedly there is still much to do. As stated in the introduction of this chapter, environmental justice must be part of Ontario's pursuit of reconciliation. **The ECO recommends that the Government of Ontario incorporate environmental justice as part of its commitment to reconciliation with Indigenous people and communities.**

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51. Other recommendations related to actions the federal government could take in collaboration with First Nations governments to ensure drinking water safety in reserve communities.

52. Specifically, the report recommended that:

    - Recommendation 88: Ontario First Nations should be invited to join in the watershed planning process outlined in Chapter 4 of this report.
    - Recommendation 91: The provincial government should require the Ontario Clean Water Agency (OCWA) to offer its services to First Nations band councils for operating on-reserve water systems on a normal commercial basis.
    - Recommendation 92: The provincial government should actively offer, on a cost-recovery basis, its training facilities and curriculum to First Nations water system operators.
    - Recommendation 93: As a matter of principle, the provincial government should make technical assistance, drinking water testing, inspection, and enforcement available to First Nations communities on a cost-recovery basis, if requested.

    See: The Honourable Dennis R. O'Connor, *Part Two, Report of the Walkerton Inquiry: A Strategy for Safe Drinking Water*, Chapter 15 (Toronto: Ontario Ministry of the Attorney General, 2002).

53. "Ministry of the Environment and Climate Change: Minister's Annual Report on Drinking Water 2015", Online: Ministry of the Environment and Climate Change <www.ontario.ca/page/ministry-environment-and-climate-change-ministers-annual-report-drinking-water-2015#section-6> at Section 6.

54. "Clean Water and Wastewater Fund (CWWF)", Online: Government of Ontario <www.grants.gov.on.ca/GrantsPortal/en/OntarioGrants/GrantOpportunities/PRDR015994>; MOECC communication to ECO (August 25, 2017).

55. For more on these issues, see: Cathy Gulli, "Why Can't We Get Clean Water to First Nation Reserves?" *MacLean's* (October 7, 2015), online: <www.macleans.ca/news/canada/why-cant-we-get-clean-water-to-first-nation-reserves/>; Tonina Simeone, *Safe Drinking Water in First Nations Communities*, (Ottawa: Library of Parliament, 2010) online: <www.lop.parl.gc.ca/content/lop/researchpublications/prb0843-e.htm#a2>, citing Senate Standing Committee on Aboriginal Peoples, *Minutes of Proceedings*, 1st Session, 39th Parliament (May 2, 2007, 15:43–15:59), Christine Cram, Associate Deputy Minister, Socio-economic Policy and Regional Operations Sector, Department of Indian Affairs and Northern Development; The Honourable Dennis R. O'Connor, *Part Two, Report of the Walkerton Inquiry: A Strategy for Safe Drinking Water*, Chapter 15 (Toronto: Ontario Ministry of the Attorney General, 2002); "First Nations Reserve Drinking Water Issues in Canada: A Governance Primer", Online: Program on Water Governance <watergovernance.sites.olt.ubc.ca\\files\\2010\\04\\Primer_reserve-drinking-water-issues.pdf> at 2; Heather Murphy et al. "Insights and Opportunities: Challenges of Canadian First Nations Drinking Water Operators" (2015) 6:3 The International Indigenous Policy Journal; Rachel Plotkin, "Cleaning Up Water in First Nations Communities: Advice to Prime Minister-Designate Justin Trudeau", *David Suzuki Foundation* (October 28, 2015), online: <www.davidsuzuki.org/blogs/panther-lounge/2015/10/cleaning-up-water-in-first-nations-communities-advice-to-prime-minister-designat/>.

56. Ecojustice, *Exposing Canada's Chemical Valley* (Toronto: Ecojustice, 2007) at 8; Patrick McGuire, "I Left My Lungs In Aamjiwnaang: Breathing the Most Polluted Air in Canada", Vice.com (August 7, 2013), online: <www.vice.com/en_ca/article/i-left-my-lungs-in-aamjiwnaang-000300-v20n8>.

57. These are refineries and manufacturing facilities belonging to Imperial Oil, Shell Canada, NOVA Chemicals, Suncor, INEOS Stryrolution Canada Limited. and ARLANXEO Canada Inc. You can view information about the environmental approvals each of these facilities hold on the Access Environment website: <www.gisapplication.lrc.gov.on.ca/AccessEnvironment/IndexAccEnv.html?site=AccessEnvironment&viewer=AE&locale=en-US>; All six of these companies applied to register in the technical standards registry for the benzene and benzo(a)pyrene Technical Standards for petroleum or petrochemical facilities.

58. Environmental Commissioner of Ontario, *Managing New Challenges*, Annual Report 2013/2014 (Toronto: ECO, October 2014) at 118.

59. Over 110 million kilograms of pollution were released into the Sarnia airshed in 2009 and about 60% of this volume was released within 5 kilometres of Aamjiwnaang. See: Nil Basu et al., *Biomarkers of Chemical Exposure at Aamjiwnaang*, Multiple Chemical Exposure Assessment at Aamjiwnaang (McGill Environmental Health Sciences Lab Occasional Report, 2013) at 3.

60. Constanze A. Mackenzie, Ada Lockridge, & Margaret Keith, "Declining Sex Ration in a First Nation Community", (2003) 113:10 Environ Health Perspect 1295.

61. Nil Basu et al., *Biomarkers of Chemical Exposure at Aamjiwnaang*, Multiple Chemical Exposure Assessment at Aamjiwnaang (McGill Environmental Health Sciences Lab Occasional Report, 2013) at 12.

62. Ecojustice, *Exposing Canada's Chemical Valley*, (Toronto: Ecojustice, 2007) online: <www.med.uottawa.ca/sim/data/Images/Env_Health_Sarnia_air_pollution_report.pdf> at 9-10.

63. Karen Y Fung, Isaac N. Luginaah & Kevin M. Gorey, "Impact of Air Pollution on Hospital Admissions in Southwestern Ontario, Canada: Generating Hypotheses in Sentinel High-Exposure Places", (2007) 6:18 Environ Health at 3-5.

64. Health Canada, *St. Clair Area of Concern: Health Data and Statistics for the Population of Sarnia and Region (1986-1992)*, Great Lakes Health Effects Program, A Technical Report for the RAP Community (Ottawa: Health Canada, 2000) at37, A-21-25.

65. Ecojustice, *Exposing Canada's Chemical Valley*, (Toronto: Ecojustice, 2007) online: <www.med.uottawa.ca/sim/data/Images/Env_Health_Sarnia_air_pollution_report.pdf> at 9.

66. Ecojustice, *Exposing Canada's Chemical Valley*, (Toronto: Ecojustice, 2007) online: <www.med.uottawa.ca/sim/data/Images/Env_Health_Sarnia_air_pollution_report.pdf> at 9; also discussed in Patrick McGuire, "I Left My Lungs In Aamjiwnaang: Breathing the Most Polluted Air in Canada", *Vice.com* (August 7, 2013), online: <www.vice.com/en_ca/article/i-left-my-lungs-in-aamjiwnaang-000300-v20n8>.

67. "Defending the rights of Chemical Valley residents – Charter Challenge", online: Ecojustice <www.ecojustice.ca/case/defending-the-rights-of-chemical-valley-residents-charter-challenge/>.

68. "Aamjiwnaang Water Gathering & Toxic Tour 2017", online: Aamjiwnaang Solidarity Against Chemical Valley. <aamjiwnaangsolidarity.com/>.

69. "Aamjiwnaang First Nation Health & Environment Committee", online: Aamjiwnaang First Nation Health & Environment Committee <www.aamjiwnaangenvironment.ca>.

70. "Current Projects", online: Aamjiwnaang First Nation Health & Environment Committee <www.aamjiwnaangenvironment.ca/current_projects.html>; "News and Events", online: Aamjiwnaang First Nation Health & Environment Committee <www.aamjiwnaangenvironment.ca/news.html>.

71. Compliance with the regulated air standard is assessed by the facility modelling its emissions, and demonstrating that the estimated maximum point of impingement (POI) concentration resulting from the facility's emissions does not exceed the air standard. See: "Rules on Air Quality and Pollution", online: Ministry of the Environment and Climate Change <www.ontario.ca/page/rules-air-quality-and-pollution>.

72. Sulphur dioxide emissions in Sarnia have reportedly gone up since some Sarnia facilities began using high sulphur Alberta feedstocks, typical of the oil sands.

73. Based on recent Health Canada research, an SO_2 standard based primarily on protecting human health would set a 1-hour limit at 105 micrograms (µg) per cubic metre of air (µg/m^3) or 40 parts per billion (ppb). Health Canada developed a SO_2 reference concentration (RfC) from the statistically significant lowest observed adverse effect concentration of 400 ppb, resulting in lung function decrements from controlled human exposure studies of asthmatics exposed for 5-10 minutes at increased ventilation. To account for the uncertainties in the controlled human exposure dataset, and to consider the supporting evidence from the epidemiology, a combined uncertainty factor of 6 was applied. This resulted in an inhalation RfC of 67 ppb (≈175 µg/m^3), which was converted to a 1-hour limit of 40 ppb (≈105 µg/m^3). See: Health Canada, *Human Health Risk Assessment for Sulphur Dioxide*, (Ottawa: Health Canada, 2016) online: <publications.gc.ca\\collections\\collection_2016\\sc-hc\\H144-29-2016-eng.pdf>.

74. Ministry of the Environment and Climate Change, *Science Discussion Document on the Develop of Air Standards for Sulphur Dioxide (SO_2)*, (Toronto: MOECC, Standards Development Branch, 2016) at 44.

75. Ministry of the Environment and Climate Change, *Science Discussion Document on the Develop of Air Standards for Sulphur Dioxide (SO_2)*, (Toronto: MOECC, Standards Development Branch, 2016) at 27-37.

76. "Rules on Air Quality and Pollution", online: Ministry of the Environment and Climate Change <www.ontario.ca/page/rules-air-quality-and-pollution#section3>.

77. Environmental Registry Policy Decision #012-6857, *Petroleum Refining – Industry Standard under the Local Air Quality Regulation (O. Reg. 419/05)* (July 28, 2016); Environmental Registry Policy Decision #012-6859, *Petrochemical – Industry Standard under the Local Air Quality Regulation (O. Reg. 419/05)* (July 28, 2016).

78. Ontario Ministry of the Environment and Climate Change, *Background and Rationale Document, Petrochemical Industry Standard (for selected contaminants) Under Ontario's Local Air Quality Regulation*, (Toronto: MOECC, 2016) at 63-64; Ontario Ministry of the Environment and Climate Change, *Background and Rationale Document, Petroleum Refining Industry Standard (for selected contaminants) Under Ontario's Local Air Quality Regulation*, (Toronto: MOECC, 2016) at 123-124.

79. "Rules on Air Quality and Pollution", online: Ministry of the Environment and Climate Change <www.ontario.ca/page/rules-air-quality-and-pollution#section6>.

80. Transitional operating conditions have traditionally been excluded, partly on the grounds that they are unpredictable and unavoidable, and partly on the grounds that, by definition, these are periods of time during which pollution control systems are not operating as designed.

81. Government of Ontario, *Procedure for Preparing an Emission Summary and Dispersion Modelling Report [Guideline A-10]*, Section 8.3 (Toronto: MOECC, 2017) online: <www.ontario.ca/document/guideline-10-procedure-preparing-emission-summary-and-dispersion-modelling-esdm-report/operating-conditions>.

82. When such chemicals must be released into the atmosphere, it is better to flare them than to vent them unburned; burning the gases reduces – but does not eliminate – their negative environmental and health effects.

83. A similar debate is underway in the U.S. In response to a petition by the U.S. Sierra Club, the U.S. Environmental Protection Agency issued a rule in 2015 to increase states' regulation of air pollutants from transitional operating conditions. In 2015, it ordered 39 states to revise their air pollution rules to better control such air pollution. The rule was challenged in court, and is now being reconsidered by the U.S. government.

84. Specifically, the ministry determined that information was lacking in the Emissions Summary Dispersion Models, including information to verify that emission estimates were a maximum for the relevant averaging periods. (Ministry of the Environment and Climate Change, information provided to the ECO (March 24, 2017)).

85. "Air Quality: Sulphur Dioxide (SO_2)", online: Sarnia Lambton Environmental Association <www.sarniaenvironment.com/air-quality-sulphur-dioxide-so2/>. Some Sarnia facilities now use natural gas feedstocks which typically contain much less sulphur, and at least one biomass-based facility is under construction.

86. *Environmental Protection Act*, RSO 1990 c E19, s. 15(1).

87. "Air Self Assessment", online: Ministry of the Environment and Climate Change <www.ontario.ca/page/air-self-assessment>. Questions 10 and 13 in particular set out the rules around reporting emissions exceedances and any discharge that could cause an adverse effect.

88. Under s.6(1) of the *EPA*, no person shall discharge or permit a discharge of a contaminant into the natural environment. Under s.1(1) a contaminant is defined as any "solid, liquid, gas, odour, heat, sound, vibration, radiation or combination of any of them resulting directly or indirectly from human activities that causes or may cause an adverse effect" and adverse effect is defined as "one or more of, (a) impairment of the quality of the natural environment for any use that can be made of it, (b) injury or damage to property or to plant or animal life, (c) harm or material discomfort to any person, (d) an adverse effect on the health of any person, (e) impairment of the safety of any person, (f) rendering any property or plant or animal life unfit for human use, (g) loss of enjoyment of normal use of property, and (h) interference with the normal conduct of business."

89. "SO_2 Monitoring", Online: Vale Canada Ltd., Greater Sudbury Air Quality <www.airquality-sudbury-vale.com/environmental-activity/monitoring/index.asp>.

90. Fram Dinshaw, "First Nations Lead Protest Against Pollution in Ontario's Chemical Valley", *National Observer* (September 7, 2015), online : <www.nationalobserver.com/2015/09/07/news/first-nations-lead-protest-against-pollution-ontarios-chemical-valley>; "The Chemical Valley", *Vice* (August 8, 2013), online: <www.vice.com/en_us/article/the-chemical-valley-part-1>.

91. "Sustainability", Online: Sarnia Lambton Environmental Association <www.sarniaenvironment.com/sustainability/>.

92. Interviews with community members and other stakeholders (various dates, 2017).

93. Ministry of the Environment and Climate Change, information provided to the ECO (March 24, 2017).

94. Ministry of the Environment and Climate Change, information provided to the ECO (March 24, 2017).

95. Aamjiwnaang First Nation, information provided to the ECO (May 25, 2017).

96. Ministry of the Environment and Climate Change, information provided to the ECO (March 24, 2017).

97. Ministry of the Environment and Climate Change, information provided to the ECO (March 24, 2017).

98. Ministry of the Environment and Climate Change, information provided to the ECO (March 24, 2017).

99. Interviews with community members and other stakeholders (various dates, 2017).

100. Interviews with community members and other stakeholders (various dates, 2017).

101. Interviews with community members and other stakeholders (various dates, 2017); Karen Y Fung, Isaac N. Luginaah & Kevin M. Gorey, "Impact of Air Pollution on Hospital Admissions in Southwestern Ontario, Canada: Generating Hypotheses in Sentinel High-Exposure Places", (2007) 6:18 Environ Health at 3-5; Health Canada, *St. Clair Area of Concern: Health Data and Statistics for the Population of Sarnia and Region (1986-1992)*, Great Lakes Health Effects Program, A Technical Report for the RAP Community (Ottawa: Health Canada, 2000) at37, A-21-25; Constanze A. Mackenzie, Ada Lockridge, & Margaret Keith, "Declining Sex Ration in a First Nation Community", (2003) 113:10 Environ Health Perspect 1295; Ecojustice, Exposing Canada's Chemical Valley, (Toronto: Ecojustice, 2007) online: <www.med.uottawa.ca/sim/data/Images/Env_Health_Sarnia_air_pollution_report.pdf> at 9.

Chapter 4
Algae Everywhere

Contents

4.0	**INTRODUCTION**	**150**
4.0.1	THE GROWTH OF ALGAL BLOOMS	150
4.0.2	CONTROLLING PHOSPHORUS TO CONTROL ALGAL BLOOMS	152
4.1	**PHOSPHORUS AND ALGAE PROBLEMS HAVE CHANGED**	**153**
4.1.1	NUTRIENT IMBALANCE HAS DEVELOPED BETWEEN OFF-SHORE AND NEAR-SHORE	153
4.1.2	RUN-OFF HAS TAKEN OVER AS LARGEST SOURCE OF PHOSPHORUS	153
4.1.3	MORE SOIL EROSION FROM FARMLANDS	154
4.1.4	CLIMATE CHANGE	155
4.2	**THE SEARCH FOR EFFECTIVE APPROACHES**	**155**
4.2.1	STORMWATER MANAGEMENT	156
4.2.2	FARMING BEST MANAGEMENT PRACTICES	157
4.2.3	NUTRIENT MANAGEMENT RULES FOR FARMING	157
4.3	**PROVINCIAL LEADERSHIP IS IMPORTANT**	**158**
4.3.1	FINANCIAL TOOLS	159
4.3.2	REGULATORY TOOLS	160
4.3.3	LAND USE POLICY TOOLS	161
4.3.4	RESEARCH IS ALSO NEEDED	162
4.4	**CONCLUSIONS: PHOSPHORUS CONTROLS NEED MUSCLE AND METRICS**	**162**

Lake algae: bad and getting worse.

Abstract

Algal blooms are becoming more frequent and wide-spread, and are imposing serious costs on communities. The problem affects not only Lake Erie, but also parts of Lake Huron and Lake Ontario and smaller inland lakes, especially on the Canadian Shield.

Controlling phosphorus – a critical ingredient in the development of algal blooms – was the key to cleaning up Lake Erie in the 1970s, and there is agreement that we now need more phosphorus controls. But there remains debate on exactly how and where to apply further controls. Run-off from rural, agricultural, and urban lands has become the dominant contributor to phosphorus loadings.

The Government of Ontario's preference so far for addressing phosphorus in run-off has been through voluntary and unevaluated programs, with questionable effectiveness. The government must apply new financial, regulatory and land use planning tools. For example, phosphorus trading approaches should be used more broadly, and incentives should support agricultural practices that can show quantified, validated reductions in phosphorus loadings. Bans should be applied where they can be effective, such as to the spreading of phosphorus-containing materials on frozen or saturated ground. The government must also adopt land use policy reforms to reverse the continuing loss of wetlands in southern Ontario. Previously overlooked phosphorus sources such as agricultural tile drains, construction sites and golf courses also need closer scrutiny.

4.0 Introduction

4.0.1 The Growth of Algal Blooms

Thick, soupy scums of algae – "algal blooms" – are becoming much more frequent in Ontario's lakes (see Figure 1). In mid-July 2011, a toxic green blob began to spread across Lake Erie's western basin. By mid-October that year, it had become the largest harmful algal bloom in Lake Erie's recorded history, covering an estimated 5000 km^2. In 2014, the City of Toledo, Ohio declared a state of emergency when its water supply became contaminated with toxins from an algal bloom in Lake Erie, leaving almost half a million people without access to safe drinking water for days. The very next year, yet another algal bloom developed in Lake Erie and it was described as the most severe in this century.[1] If these trends continue, algal booms could cost tourism, real estate (through decreasing property values) and other sectors of the economy in the Canadian Lake Erie basin more than $270 million, according to a study prepared for the federal government.[2]

Not all algal blooms are alike. Water quality managers distinguish between "harmful" algae and "nuisance" algae. Species of blue-green algae or "cyanobacteria" are called harmful because they can produce potent toxins that can threaten drinking water sources, fish, and the overall health of a lake – sometimes in headline-grabbing fashion (as in the case of Lake Erie). Nuisance algae are species that do not produce toxins, but still foul shorelines and recreational areas, clog water intakes and ruin fish habitat.[3] Some other types of algal blooms (such as some types of diatoms) may not have any detrimental effects.

WHILE LAKE ERIE HAS A PROBLEM WITH HARMFUL BLUE-GREEN ALGAE, MANY OTHER WATERBODIES IN ONTARIO ALSO HAVE ALGAL BLOOMS OF VARIOUS KINDS.

While Lake Erie has a problem with harmful blue-green algae, many other waterbodies in Ontario also have algal blooms of various kinds. Near-shore stretches of Lake Huron and Lake Ontario are plagued by algae, mostly the nuisance variety.[4] Some parts of Lake Ontario, such as the Bay of Quinte, are showing a trend for more harmful algal blooms, according to a 2017 binational government overview.[5] There has also been a significant increase in the number of reports of algal blooms on smaller inland lakes, especially on the Canadian Shield, since the mid-1990s, according to data from the Ministry of Environment and Climate Change (MOECC).[6] Even Algonquin Provincial Park has problems with algae (see box, *An Algae Puzzle in Algonquin*). The season for algal blooms also seems to be extending. Blooms are now being seen later into the fall – even as late as November.

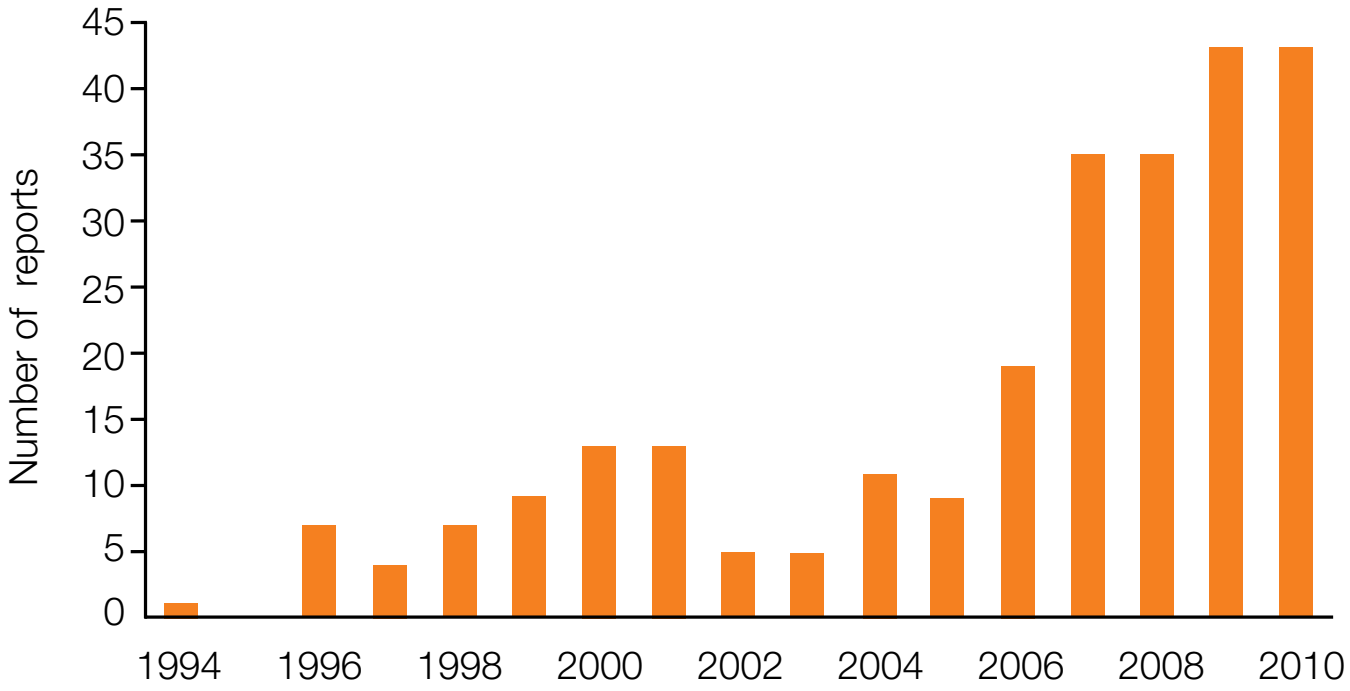

Figure 1. Number of confirmed algal bloom reports in Ontario, by year (1994-2010).[7]

Source: Adapted from the MOECC, Algae Blooms in Ontario's Lakes: Analyzing the Trends (2011).

An Algae Puzzle in Algonquin

Although scientists have come a long way towards understanding algal blooms since the 1970s, there is still much to be learned. For example, the discovery of algal blooms in three small lakes in Algonquin Park since 2015 presents a research puzzle for Ontario Parks. Dickson Lake, Lake Lavieille, and Ryan Lake are considered fairly pristine and have no cottages, though logging, quarrying and roads do occur in the area, yet all have had algal blooms. What's more, the lakes are not connected to each other, and the algae species observed in each are quite different – different types of blue-green algae species in Dickson and Ryan Lakes, and a golden algae in Lake Lavieille. There were no previous reports of algal blooms in the park before these, and lake sediment cores suggest no previous occurrences stretching back to 1756. Ontario Parks has closed overnight camping for canoers on these lakes, and advises visitors not to drink lake water even if treated or boiled. So far, monitoring suggests that local fish species and bald eagles are holding their own, but marked declines in dissolved oxygen have been observed as the algae decompose and deplete oxygen in the lake water. As of August 2017, the algal blooms persist.

4.0.2 Controlling Phosphorus to Control Algal Blooms

Phosphorus is a critical nutrient for plants, including phytoplankton – the base of the aquatic food chain. Phosphorus is also, however, a key ingredient in the development of algal blooms. As such, efforts to address algae need to focus on phosphorus.

Phosphorus controls proved very effective in the 1970s when Lake Erie last needed binational emergency help for severe nutrient pollution and algae problems. It made sense and was relatively easy to regulate what were then the biggest sources of phosphorus: wastewater treatment plants. Governments on both sides of the border passed laws requiring wastewater treatment plants to improve their phosphorus controls. Ontario and some American states also mandated low-phosphate detergents around the same time. These actions succeeded in dramatically reducing total phosphorus loadings to the Great Lakes between 1972 and the late 1980s.

THERE IS NO DEBATE: EVEN MORE PHOSPHORUS CONTROLS ARE NEEDED NOW.

Forty years later, there is no debate: even more phosphorus controls are needed now. In Lake Erie and elsewhere, the science is clear that our algal problems call for controls on phosphorus, since it is a key limiting plant nutrient in our lake systems.[8] But there is still debate on exactly how and where to apply these controls.[9]

Lake Erie's worsening troubles with algae have spurred new high-level binational commitments. In 2015, Ontario's Premier signed an agreement with the governors of Michigan and Ohio, collectively committing to an ambitious goal of reducing the total load of phosphorus entering Lake Erie's western basin by 40% by 2025.

Algal bloom at the western end of Lake Erie.

Source: NASA.

The agreement also sets an interim goal of a 20% phosphorus reduction by 2020 (from a 2008 base year). Sources on the American side contribute over 80% of the total phosphorus load to Lake Erie. Nevertheless, the signatories affirm that collaboration and proportional contributions from all areas of the Lake Erie basin will be vital. Intense discussions among government agencies and stakeholders are now underway.

THE TYPES OF ACTIVITIES RESPONSIBLE FOR THE LARGEST PHOSPHORUS LOADS IN THE GREAT LAKES REGION HAVE CHANGED.

4.1 Phosphorus and Algae Problems Have Changed

The nutrient challenges facing our lakes have evolved in important ways since the 1970s. The lakes affected in the 1970s are again having problems with algae, but the aquatic ecosystems themselves have been altered by new pressures, and now respond differently to phosphorus in its various forms. In addition, the types of activities responsible for the largest phosphorus loads in the Great Lakes region have changed. All these changes will need to be reflected in new solutions, and how we prioritize and fund them.

4.1.1 Nutrient Imbalance Has Developed Between Off-Shore and Near-Shore

A nutrient imbalance has developed between near-shore and off-shore regions for most of the Great Lakes.[10] In most of the Great Lakes except Lake Erie, phosphorus concentrations have been declining in off-shore regions, and may actually be getting too low to support productive food webs.[11] At the same time, near-shore regions often have an excess of nutrients, especially phosphorus.

Zebra and quagga mussels, which have invaded the Great Lakes since the late 1980s, are suspected to be part of the cause of this nutrient imbalance. Their dense colonies filter and trap phosphorus near shorelines, limiting its movement into open, off-shore waters and converting it to forms more easily used by plants such as algae.[12] Important near-shore aquatic habitats and recreational shorelines thus become clogged with dense growths of algae. This phenomenon, the so-called "near-shore shunt" of nutrients, was described in the ECO's 2010/2011 Annual Report, *Engaging Solutions* (Part 2.1).

Unlike the other Great Lakes, in Lake Erie phosphorus concentrations in off-shore waters exceed Ontario's interim water quality objective, and this trend has been worsening in the western basin. Loads of bio-available phosphorus, or "dissolved reactive phosphorus," have increased in Lake Erie because of increases in storm events and run-off, and changes in land use practices.[13]

4.1.2 Run-Off Has Taken Over as Largest Source of Phosphorus

The biggest sources of phosphorus have changed since the 1970s. Run-off from rural, agricultural and urban land has become the largest contribution to phosphorus loads. These are often called "non-point sources." In contrast, in the 1970s, the main sources of phosphorus were municipal wastewater treatment plants, called "point sources."[14]

The precise breakdown of the various non-point sources of phosphrous differs from watershed to

RUN-OFF FROM RURAL, AGRICULTURAL AND URBAN LAND HAS BECOME THE LARGEST CONTRIBUTION TO PHOSPHORUS LOADS.

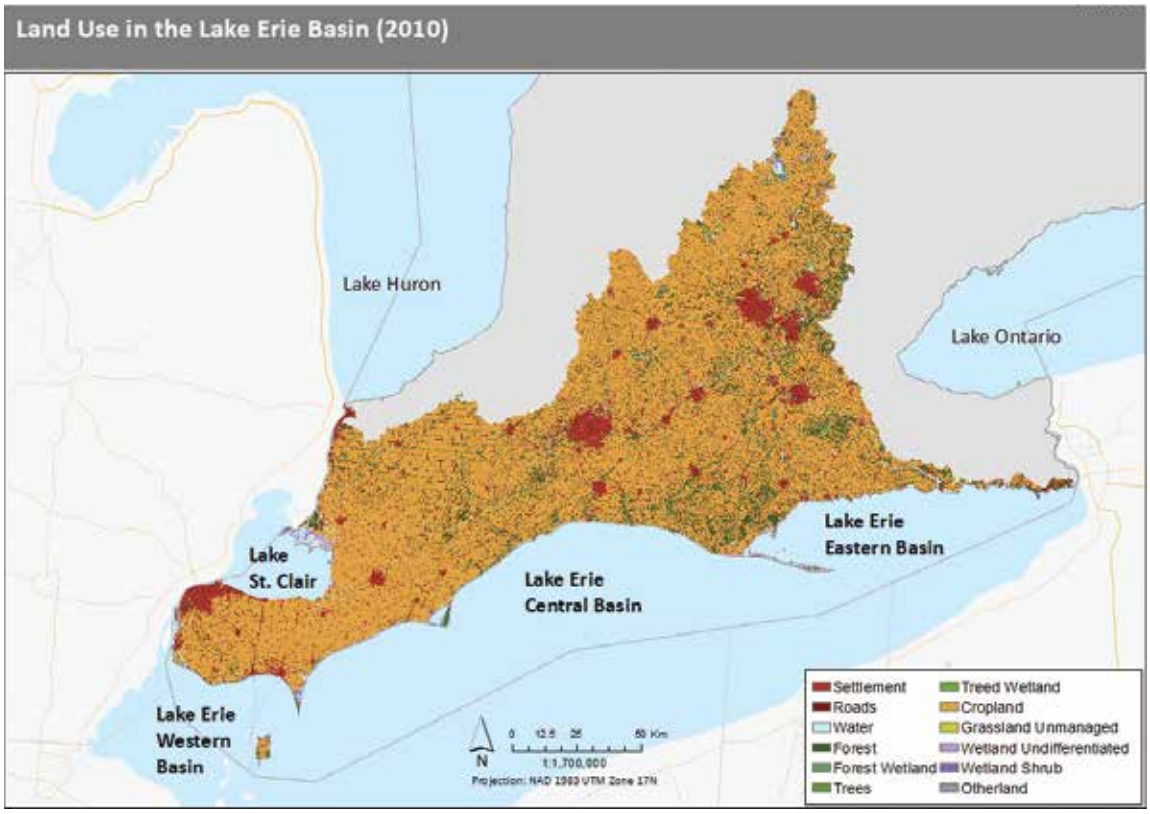

Figure 2. Land use in the Lake Erie basin (2010).

Source: Government of Canada, *Let's Talk Phosphorus Reduction in Lake Erie*.

watershed. For example, in Ontario's portion of the Lake Erie watershed, non-point sources contributed over 90% of the total phosphorus load during the 2003-2013 timespan. And since about three-quarters of Ontario's Lake Erie basin is agricultural (see Figure 2), the phosphorus contribution from farming has become an important part of the big picture.[15] Lake Erie now receives only minor phosphorus loads (estimated at 10-15% of total loads) from all urban sources (point and non-point).[16] In fact, while the lake's health has been deteriorating in recent years, phosphorus loads from point sources have continued to decrease.[17]

Lake Simcoe – which fortunately does not currently have a problem with toxic algal blooms, but which does have serious problems with phosphorus – receives the bulk of its phosphorus loads from non-point sources.[18] The main sources include surface run-off from agricultural lands (an estimated 29% of total loads, attributed to hay, pasture, croplands and polders) and urban run-off (an estimated 31% of total loads).[19] Agriculture contributes additional phosphorus through atmospheric deposition of airborne dust from fields.

4.1.3 More Soil Erosion From Farmlands

Farm practices have also changed since the 1970s. Soil erosion is a major mechanism for transporting

STRONG ECONOMIC PRESSURES HAVE SHIFTED ONTARIO'S FARMLANDS TOWARDS MORE INTENSIVE AGRICULTURE, WHICH INCREASES THE RISK OF SOIL EROSION.

phosphorus from land into waterways.[20] Strong economic pressures have shifted Ontario's farmlands towards more intensive agriculture, which increases the risk of soil erosion. Larger average field sizes, the loss of fencerows and windbreaks, and a dramatic shift from hay and pasture lands to more corn and soybean production have all been part of this broad trend.[21] Hay and pasture (or "forage") lands typically have year-round soil cover and lower erosion rates, but Ontario lost almost 290,000 hectares of forage lands in the five-year period from 2006 to 2011.[22] In contrast, soybean fields, once harvested, have less soil cover and less organic matter than other crops, leading to an increased risk of soil erosion. Within the Lake Erie basin, soybean production grew from 16% to 34% of total croplands in the 1981 to 2011 period.[23] Farm soil erosion rates in Ontario have gone up an average of 10-20% per decade in spring and summer seasons over recent decades.[24] The risk of erosion also increases on rented lands, where soil health tends to receive less attention.[25] Rented lands now make up about 35% of Ontario farmlands – a bigger chunk than in the 1970s.[26]

THE CONSEQUENCES: MORE RAIN FALLING ON BARE FARM FIELDS, MORE EROSION OF SOILS, WORSENING PHOSPHORUS RUN-OFF.

4.1.4 Climate Change

Finally, the climate is changing; since the 1970s, the Great Lakes have already experienced clear trends of rising temperatures, warmer waters and decreasing ice cover. We can also expect more rainfall, more frequent severe weather and less snow in winter months. The consequences: more rain falling on bare farm fields, more erosion of soils, worsening phosphorus run-off, and more algae in our lakes.[27]

UP TO 90% OF THE TOTAL PHOSPHORUS LOAD TO A RIVER CAN BE DELIVERED DURING STORM EVENTS.

4.2 The Search for Effective Approaches

When the sources of a pollutant change, management approaches must adapt. Research has convinced regulatory agencies to refocus on non-point sources of phosphorus, but tackling them is a challenge. Regulators must consider a multitude of land use practices and stakeholders, some far inland from the problems in the lakes. As well, nutrient loads often vary enormously with seasons, weather events and locations. For example, approximately 80% of phosphorus run-off from farmlands can occur in the non-growing season (November to April),[28] and up to 90% of the total phosphorus load to a river can be delivered during storm events.[29]

The Government of Ontario's preference so far for addressing phosphorus in run-off has been through voluntary and unevaluated programs, with questionable effectiveness. The ECO highlights several examples below that demonstrate the failure to evaluate the effectiveness of voluntary provincial programs for

controlling non-point sources of phosphorous. Going forward, the government will need to evaluate the pros and cons of various management approaches. Traditional regulatory mechanisms, economic instruments and land use planning policy approaches are all on the table for discussion.

MOST MUNICIPALITIES HAVE NOT BEEN MONITORING OR MAINTAINING THEIR PONDS.

4.2.1 Stormwater Management

Run-off from rain or melted snow in urban areas, known as stormwater, can add a big burden of phosphorus to water bodies. Lawn fertilizers, soil, dust, litter and pet waste all add phosphorus to stormwater as it races across urban pavements and roofs.

Stormwater management ponds, which offer end-of-pipe treatment, allow suspended pollutants to settle, and send cleaner waters on to rivers and lakes. They are popular with municipalities, and thousands have been installed across Ontario since the late 1980s. When they work well, stormwater ponds can reduce total phosphorus loads by 50 – 80%.[30] But they don't always work well; ponds need to be dredged periodically in order to function and dredging is expensive. Municipalities typically underfund their stormwater management, as reported in the ECO's 2016 report, *Urban Stormwater Fees: How to Pay for What We Need*. Also, most municipalities have not been monitoring or maintaining their ponds, and the MOECC has so far declined to set any rules for their maintenance, an issue the ECO previously raised (see our 2010/2011 Annual Report, *Engaging Solutions*, Part 4.5). Without any monitoring, municipalities themselves are not sure if their ponds are effective for controlling water quality.[31]

Fortunately, some creative new stormwater approaches are being tried, with phosphorus control either a main driver or a co-benefit. These projects are being tried by provincial ministries, municipalities, conservation authorities and the private sector.

A key principle guiding much of the innovation in stormwater management is the need to plan at multiple geographic scales (e.g., from entire watershed to single residential lots). For example, the *Lake Simcoe Phosphorus Reduction Strategy* (2010) aims to manage phosphorus at a very large watershed scale. Lake Simcoe's program features an ambitious overall phosphorus load reduction target and, nested within that, reduction targets portioned out to all the contributing phosphorus sources.

A second guiding principle in stormwater management is the need to adopt and adapt nature's approaches to community design and development. Lot-scale features such as grassy swales, rain gardens, permeable pavements and green roofs can mimic ecosystem processes, including absorbing and filtering stormwater. Stormwater practitioners are increasingly adopting these Low Impact Development (LID) features, recognizing they can function as cost-effective "green infrastructure." LID features will also be championed by the MOECC's *Low Impact Development Stormwater Management Guidance Manual*, expected to be finalized by late 2017.

However, the ministry's forthcoming LID manual focuses mainly on controlling stormwater *volumes*, rather than stormwater *quality*. Indeed, volume controls seem to dominate most technical discussions about LID features so far. But successful volume control does not necessarily equal good phosphorus control. Some LID features are far better than others at improving water quality. Bioretention areas, for example, which use specialized soil media covered by vegetation, can be relatively effective in removing pollutants.[32] While some very helpful guides are now available, such as the "Grey to Green" series of LID guides issued by the Credit Valley Conservation Authority, it is clear that more

evaluation and research is still needed on water quality controls for stormwater.

This suggests we should adopt a third principle to guide stormwater management, if we hope to reverse current trends of algal blooms: the need to monitor, quantify and report on how projects at every scale are affecting water quality, and specifically phosphorus levels. Of course good ideas need trial and error phases, and overnight results are not to be expected. But as phosphorus control programs roll out, they will need the rigour of clear targets, and strong, ongoing evaluation.

AS PHOSPHORUS CONTROL PROGRAMS ROLL OUT, THEY WILL NEED THE RIGOUR OF CLEAR TARGETS, AND STRONG, ONGOING EVALUATION.

4.2.2 Farming Best Management Practices

Ontario farmers have been encouraged to adopt environmental Best Management Practices (BMPs) through the voluntary Environmental Farm Plan Program (which operates across all Canadian provinces) since the 1990s. Through this program, farmers voluntarily prepare assessments to increase their knowledge of a wide range of on-farm environmental issues. The program also offers federal-provincial cost-sharing incentives to tackle issues like soil and water protection. However, there has been no measurement of how effective the Environmental Farm Plan Program has been at reducing, or even targeting, phosphorus run-off or other water quality concerns – a gap noted by the ECO in our 2010/2011 Annual Report, *Engaging Solutions*, Part 2.1.

The program's design includes no outcome-based monitoring or follow-up by provincial ministries, despite

THERE HAS BEEN NO MEASUREMENT OF HOW EFFECTIVE THE ENVIRONMENTAL FARM PLAN PROGRAM HAS BEEN AT REDUCING, OR EVEN TARGETING, PHOSPHORUS RUN-OFF OR OTHER WATER QUALITY CONCERNS.

public funding of over $100 million in the 2005-2010 period alone.[33] Available metrics suggest program uptake in Ontario remains low. Only 38% of Ontario farmers had an Environmental Farm Plan, according to a 2012 survey by Statistics Canada;[34] and among participating Ontario farmers, less than 40% had fully implemented their plans. A separate 2010 survey found that, on average, participating farmers were implementing 65% of their plans and had invested $70,000 in agri-environmental activities.[35] By contrast, 72% of Quebec farmers had an Environmental Farm Plan, and almost 80% of those farmers reported having fully implemented their plans.

Ontario's modest participation rates and investment levels have not been enough to curb nutrient run-off at a landscape level. A 2012 MOECC study of 15 streams in agricultural watersheds in southwestern Ontario found nutrient loadings were either the same or appreciably higher than 30 years ago.[36] In 2017, the International Joint Commission (IJC) emphasized that voluntary agricultural programs are not sufficient to achieve target nutrient loadings for Lake Erie, in light of frequent harmful algal blooms in the last decade.[37]

4.2.3 Nutrient Management Rules for Farming

Manure produced by certain livestock farms is regulated by Ontario's *Nutrient Management Act, 2002*. The main

THERE IS NO AVAILABLE DATA TO SHOW WHETHER NUTRIENT LOADINGS FROM MANURE HAVE IN FACT CHANGED AS A RESULT OF THIS LAW.

environmental aim of this law is to reduce the risk of nutrients entering ground or surface water from both nutrient storage and land application of nutrients. To comply with this law, an estimated 4,600 farms must meet manure storage requirements. Of those farms, an estimated 1,150 large operations must also prepare and follow nutrient management plans.

Unfortunately, there is no available data to show whether nutrient loadings from manure have in fact changed as a result of this law. Both the ECO and Ontario's Auditor General have noted the lack of evalutation of the law's effectiveness and its limited coverage.[38] The Auditor General observed in 2014 that less than half of Ontario's livestock manures by volume were actually being managed under this regulatory structure, since many small and mid-sized farms are not captured. Moreover, for regulated farms, the Auditor General found a very low (3%) inspection rate for 2013/2014, and only minor ongoing follow-up for non-compliance. In response, the MOECC did strengthen some aspects of its inspection work. The IJC in 2014 similarly called for stronger regulatory mechanisms to reduce nutrient loadings from agriculture, since dissolved reactive phosphorus levels have been steadily increasing in many agricultural watersheds, despite decades of incentives and education programs.[39]

4.3 Provincial Leadership is Important

Reversing current trends for algal blooms – both their growing severity and widening geographic reach – will not be simple. The province will have to lead with creative collaboration and a more effective policy toolkit, because no single municipality or conservation authority has the clout or the resources to tackle the full range of phosphorus inputs to a regional watershed, let alone the entire Great Lakes basin. Only the province has the necessary breadth of mandate and legislative authority, through laws such as the *Ontario Water Resources Act*, the *Nutrient Management Act 2002*, the *Lake Simcoe Protection Act, 2008* and the *Great Lakes Protection Act, 2015*.

The province has stepped up by working with the federal government to release the draft *Canada-Ontario Action Plan for Lake Erie* in March 2017 (still in draft as of September 2017). The draft plan acknowledges that past actions are not enough, that new approaches are needed, and that both point and non-point sources (urban and agricultural) deserve scrutiny for new control options. The draft plan also places a welcome emphasis on research, monitoring and collaboration. Above all, the draft plan can be read as a tacit acknowledgement that our reliance so far on voluntary and unevaluated phosphorus control programs has not served Ontarians well. Financial, regulatory and land use policy tools must also be examined, tested and added to the phosphorus control tool kit.

OUR RELIANCE SO FAR ON VOLUNTARY AND UNEVALUATED PHOSPHORUS CONTROL PROGRAMS HAS NOT SERVED ONTARIANS WELL.

4.3.1 Financial Tools

Financial tools that put a price on phosphorus offer some potential means of controlling nutrient loads. Two examples – phosphorus trading and financial incentives – are discussed below.

POLLUTANT TRADING CAN BE A COST-EFFECTIVE WAY TO REDUCE POLLUTION LOADS.

Phosphorus Trading

Pollutant trading can be a cost-effective way to reduce pollution loads wherever pollution sources have widely differing control costs. For example, it can be very costly to achieve small improvements in phosphorus controls at a municipal sewage treatment plant, while run-off from farms or urban areas nearby could be far cheaper to control, per kilogram of phosphorus.[40] So to achieve the same overall phosphorus load target, it could be cheaper for the sewage treatment plant to pay local farmers to reduce their phosphorus run-off.

Phosphorus trading (or "water quality trading") has already been working since 1998, under the South Nation Total Phosphorus Management Program in eastern Ontario. The South Nation program is considered one of the most successful in North America. Its trades, which require a 4 to 1 trading ratio (i.e., the trade must redcue four times more phosphorus than would have been discharged without the trade), have so far financed projects for feedlot run-off controls, manure storage facilities, milk house wastewater treatment, as well as cattle fencing and cover cropping. Trading approaches such as these should be used more broadly. Encouragingly, the province proclaimed legal amendments in July 2017 that confirm its power to establish and govern water quality trading in Ontario.[41] Under a different framework, a phosphorus offsetting pilot project is being finalized for implementation in the Lake Simcoe watershed in late 2017. The program will require developers to purchase offset credits for any phosphorus discharges from new or redevelopment projects in the watershed.

Targeted Funding for On-Farm Phosphorus Controls

Strong economic pressures have shifted farm operations towards practices with greater risks of soil erosion. But rewarding agricultural practices that demonstrably reduce phosphorus loads through smart economic incentives could push them in the opposite direction. The main challenges with this approach are verifying improvements, and putting the right price on those improvements.

So far, Ontario has taken only baby steps towards such an incentive model. Several small-scale programs jointly funded by the provincial and federal governments have been encouraging farm stewardship projects, often short-term. A modest $4 million per year, over four years, has been allocated for farm soil health projects

REWARDING AGRICULTURAL PRACTICES THAT DEMONSTRABLY REDUCE PHOSPHORUS LOADS COULD PUSH THEM IN THE OPPOSITE DIRECTION.

and environmental stewardship in the Lake Erie and Lake Huron basins.[42] Similarly, a cost-share program offered in the Lake Simcoe watershed from 2008-2012 funded 440 on-farm projects.[43] Demand for such programs often exceeds available funding.

For a more strategic approach, the province needs to tie financial incentives to explicit phosphorus loading reduction targets, with an emphasis on quantifying and validating reductions. Targets and metrics are critical for learning which practices are most effective under different field conditions. Rented farmlands would likely need specially tailored incentives, since tenant farmers do not recoup investments on long-term soil improvements and thus tend to place a lower priority on soil conservation. A markedly expanded program is also needed to reflect the scale of the phosphorus problem.

One attractive funding option for phosphorus management programming would be to redeploy the more than half a billion dollars in fossil fuel tax breaks the province issues every year, as recommended by the ECO's 2015/2016 Annual Energy Conservation Progress Report; the agricultural sector received $28 million to subsidize fossil fuel consumption in 2015 as part of this program.[44] Supporting soil health and other farm-based ecosystem services would be far more sustainable than subsidizing fossil fuels. The ECO recommended the province provide financial support for farmers adopting soil health best management practices in our 2016 report, *Putting Soil Health First*. There is some promise in the fact that Ontario committed in 2016 to "look at removing existing [subsidy] initiatives that support fossil fuel use."[45]

4.3.2 Regulatory Tools

When voluntary measures are not achieving the desired results, government should consider regulation. For example, regulations can be used to ban certain activities, as appropriate, to control phosphorus run-off, as described below.

SPREADING FARM MANURE ON FROZEN OR SATURATED GROUND GREATLY INCREASES THE RISKS OF THE MANURE RUNNING-OFF.

Ban the Spreading of Farm Manure and Fertilizer on Frozen or Saturated Ground

Spreading farm manure on frozen or saturated ground greatly increases the risks of the manure running-off and the phosphorus entering waterways. Ontario's *Nutrient Management Act, 2002* sets standards for winter spreading, at least for the estimated 1,150 farms requiring nutrient management plans under the law. But so far, the law applies to less than half of the total volume of farm manure produced in the province and only a quarter of Ontario's livestock operations.[46]

Ontario's golf courses and urban areas have no restrictions on phosphorus applications. In contrast, jurisdictions like Manitoba and Indiana have set much broader and stronger prohibitions on winter spreading. For almost a decade, Manitoba has restricted winter spreading of all types of fertilizers, including manures and sewage sludges, on farmlands and golf courses.

The International Joint Commission (IJC) recommended in 2014 that Ontario and other Great Lakes jurisdictions ban the winter spreading of manures, sewage sludges and phosphate fertilizers on farmlands in the Lake Erie basin.[47] Given that over 80% of agricultural phosphorus run-off can occur in winter,[48] the IJC's recommendation seems a minimum requirement. Rules prohibiting the winter spreading of any materials contributing to phosphorus run-off should apply across the province. As of February 2017, Ontario was "considering further restrictions" on the winter spreading of nutrients,[49] but has taken no action so far.

The Fertilizer Industry's Voluntary Phase-out of Phosphorus in Lawn Fertilizers for Canada

Phosphorus in lawn fertilizer has been restricted or banned in many U.S. Great Lakes states, including Illinois, Indiana, Michigan, Minnesota, New York and Wisconsin, which has proven effective at reducing phosphorus loads in waterbodies. One year after Ann Arbor, Michigan had introduced a lawn fertilizer by-law, total phosphorus had declined by an average of 28% in local rivers.[50] After a dozen years regulating phosphorus use on lawns, Minnesota was able to report good public support and significant drops in phosphorus application to lawns, even without enforcement.[51] In Canada, Manitoba and Sudbury have similarly restricted phosphorus in lawn fertilizers in recent years. "Phosphorus-free lawn" jurisdictions typically offer public education on successful phosphorus-free lawn care, and usually allow exemptions for some special situations such as newly established lawns.

In 2010, perhaps in response to this regulatory trend, members of Fertilizer Canada, an industry association, voluntarily eliminated phosphorus from most of their lawn products. An important next step is for the Ontario government to evaluate and monitor whether this voluntary measure is achieving results.

PHOSPHORUS IN LAWN FERTILIZER HAS BEEN RESTRICTED OR BANNED IN MANY U.S. GREAT LAKES STATES.

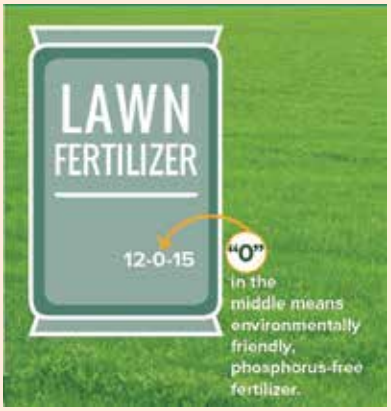

Figure 3. Educational tool to support phosphorus-free lawn fertilizer.

Source: New York State.

4.3.3 Land Use Policy Tools

Land use policy can be another effective tool for controlling phosphorus. For example, there is a need for policies that better support the role of wetlands in mitigating phosphorus loads.

Reverse the Net Loss of Wetlands

Wetlands store and filter run-off, and are also recognized for their important ecological roles in storing and processing phosphorus. Exactly how effective wetlands are at trapping phosphorus varies by site; one review of studies world-wide suggests wetlands can achieve phosphorus reductions of 50-90%.[52] When wetlands are disturbed, however, they can become net releasers of phosphorus.

ONE REVIEW SUGGESTS WETLANDS CAN ACHIEVE PHOSPHORUS REDUCTIONS OF 50-90%.

Southern Ontario has seen a drastic loss in wetlands, estimated at 70%, since European settlement. The net loss of wetlands continues today, driven by development pressures, though losses may have slowed over the last decade.[53] Reversing the net loss of wetlands should be a key provincial goal, not just because they protect water quality, but also because they provide critical habitat, and buffer watersheds in times of flood and drought.

Unfortunately, the province's new *Wetland Conservation Strategy for Ontario 2017-2030*, finalized in July 2017, accepts the continued shrinking of wetlands in southern Ontario for nearly another decade. The strategy also accepts that southern Ontario will see no net gains of wetland area until 2030. Here again, weak metrics hamper decision making; the strategy provides no data or even comparative estimates of how much wetland area is lost annually to pressures such as residential and commercial development, agricultural drainage or transportation infrastructure. The strategy does, however, recognize the need for an improved wetland inventory as a starting point.

PHOSPHORUS IMPACTS FROM ONTARIO'S GOLF COURSES ALSO DESERVE SCRUTINY.

4.3.4 Research is Also Needed

Research and innovation must remain high priorities in tackling Ontario's phosphorus and related algal bloom challenges. In contrast to the success stories of the 1970s and 1980s, a single "silver bullet" is unlikely to be found. The geographic spread of the issues and their ecological and societal complexities are simply too great. For example, since agricultural tile drains have been shown to play a role in increasing levels of bioavailable phosphorus in certain soils, farmers need verified best management approaches to minimize phosphorus run-off via tile drains.[54] The province's ongoing work on farm soil health and the promised provincial soil strategy will also need to address phosphorus issues.

In urban settings, some overlooked phosphorus sources also need much more research attention. Construction sites, for example, often add very large loads of sediment and phosphorus to waterways.[55] Erosion rates at construction sites can be 3 to 100 times greater than crop lands, according to a 2001 U.S. stormwater management handbook.[56] Phosphorus loads from construction sites may be similarly significant in rapidly urbanizing regions of southern Ontario.[57]

Phosphorus impacts from Ontario's golf courses also deserve scrutiny, since the province has well over 800 golf courses,[58] mostly clustered in southern Ontario. Studies by the U.S. Department of Agriculture and others show that run-off from golf courses contains high phosphorus loads – comparable to rates from agricultural lands.[59] The State of Virginia now requires all golf courses to complete nutrient management plans, including soil tests. No such requirements exist in Ontario. Under a voluntary program offered by the Audubon Society, golf courses can be certified if they commit to minimizing nutrient run-off and monitoring for nutrients like phosphorus. Only 5% of Ontario's golf courses have opted to be certified under this program.[60]

4.4 Conclusions: Phosphorus Controls Need Muscle and Metrics

Phosphorus run-off and algal blooms are serious problems in Ontario. Lake Erie and Lake Simcoe are particularly hard-hit by phosphorus problems, but the trend is also evident for stretches of Lake Ontario and Lake Huron, as well as many smaller northern inland lakes.

The province has shown leadership in tackling phosphorus loads in Lake Erie and Lake Simcoe, committing to targets and actions for phosphorus control. The three key ministries – the MOECC, the Ministry of Agriculture, Food and Rural Affairs (OMAFRA) and the Ministry of Natural Resources and Forestry (MNRF) – are all actively engaged. The focus on non-point sources in these two regions and the strong collaboration with partner agencies are commendable. But the growing geographic extent and scale of algal blooms demand that the Ontario government apply a stronger and more widespread approach to protecting the health of our lakes.

WELL-DESIGNED PRICE SIGNALS CAN ALSO BECOME PART OF THE SOLUTION.

Financial tools will be vital to stem phosphorus loadings to Ontario's waterways, from both agricultural and urban non-point sources. Strong economic pressures towards intensive agriculture have been helping drive current phosphorus loadings, but well-designed price signals can also become part of the solution.

The ECO recommends that the MOECC and the OMAFRA link financial incentives to verified reductions in farm-based phosphorus run-off to water courses.

The ECO also repeats our 2016 recommendation that the province require municipalities to recover the full costs of stormwater management, including not only capital costs, but also costs of operations, maintenance and research and development. Properly managing stormwater can help reduce phosphorus loads that contribute to algal blooms.

Some types of phosphorus loadings need regulatory action.

The ECO recommends that the MOECC and the OMAFRA ban all spreading of phosphorus sources, such as manure, fertilizer and sewage sludge, on frozen or saturated ground.

Land use planning tools cannot be ignored, given the clear connections between land uses and phosphorus run-off. Southern Ontario's remaining wetlands can help trap and immobilize phosphorus, but only if they are protected from agricultural drainage and encroaching development.

The ECO recommends that the MNRF reverse the continuing loss of wetlands in southern Ontario.

Lastly, metrics and evaluations need to become a priority for the province. With a daunting variety of land uses implicated in phosphorus loadings, managers need trustworthy, loadings-based metrics to identify the top challenges and the most cost-effective solutions in any given setting.

The ECO recommends that the MOECC, the OMAFRA and the MNRF ensure that metrics-based and outcome-driven evaluations are built into all programs and strategies that the ministries lead, fund or partner on. Phosphorus control programs should, for example, require quantitative loadings targets, monitoring, quantitative evaluations and regular reporting as core elements.

METRICS AND EVALUATIONS NEED TO BECOME A PRIORITY.

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48. Ministry of Agriculture, Food and Rural Affairs Environmental Management Branch, "Great Lakes Update; Science and Analysis Foundation for Agricultural Actions" (presentation, undated) slide 3.

49. Canada-Ontario Agreement Partners, *Partnering in Phosphorus Control: Achieving Phosphorus Reductions in Lake Erie from Canadian Sources; The Canada-Ontario Draft Action Plan*, (2017) at 35.

50. John T. Lehman, Douglas W. Bell, and Kahli E. McDonald, "Reduced river phosphorus following implementation of a lawn fertilizer ordinance" (2009) 25:3 Lake Reserv. Manage 307.

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52. International Joint Commission's Lake Erie Ecosystem Priority, *Reducing Phosphorus Loads to Lake Erie: Best Management Practices Literature Review* (DRAFT) by Shawn P. McElmurry, Remegio Confesor Jr., and R. Peter Richards at 32 <www.ijc.org/files/tinymce/uploaded/BMP%20Review-FINAL.pdf>. [Accessed August 25, 2017].

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54. Canada-Ontario Agreement Partners, *Partnering in Phosphorus Control: Achieving Phosphorus Reductions in Lake Erie from Canadian Sources; The Canada-Ontario Draft Action Plan*, (2017) at 16; Ministry of Agriculture, Food and Rural Affairs Environmental Management Branch, "Great Lakes Update; Science and Analysis Foundation for Agricultural Actions" (presentation, undated) slide 2.

55. International Joint Commission's Lake Erie Ecosystem Priority, *Reducing Phosphorus Loads to Lake Erie: Best Management Practices Literature Review* (DRAFT) by Shawn P. McElmurry, Remegio Confesor Jr., and R. Peter Richards at 3 <www.ijc.org/files/tinymce/uploaded/BMP%20Review-FINAL.pdf>. [Accessed August 25, 2017].

56. G. Allen Burton and Robert Pitt, *Stormwater Effects Handbook: A Tool Box for Watershed Managers, Scientists, and Engineers* (Boca Raton: CRC Press, 2001).

57. See for example: Ontario Ministry of the Environment, *Phosphorus Budget Tool in Support of Sustainable Development for the Lake Simcoe Watershed* by Hutchinson Environmental Sciences Ltd., Greenland International Consulting Ltd., and Stoneleigh Associates Inc. (Bracebridge: Hutchinson Environmental Sciences Ltd., 2012) at 23.

58. Golf Canada, PGA of Canada and National Golf Foundation, *Golf Facilities In Canada 2015* (2015) at 14.

59. K.W. King *et al.*, "Nutrient Load Generated by Storm Event Runoff from a Golf Course Watershed" (2007) 36:4 J Environ Qual 1021.

60. There are 42 certified Audubon Cooperative Sanctuaries on golf courses in Ontario (Audubon International, "Certified Audubon Cooperative Sanctuaries – Golf" online: Audubon International <www.audubooninternational.org/acsp-golf-certified>) and over 800 golf courses (Golf Canada, PGA of Canada and National Golf Foundation, *Golf Facilities In Canada 2015* (2015) at 14).

Chapter 5
Lightening the Environmental Footprint of Aggregates in Ontario

Contents

5.1 INTRODUCTION: THE INHERENT CONFLICT OF AGGREGATE EXTRACTION 168

5.2 HOW ARE AGGREGATES REGULATED IN ONTARIO? 170

5.2.1 LAND USE PLANNING RULES DICTATE WHERE A PIT OR QUARRY CAN OPERATE 170

5.2.2 THE *ARA* REGULATES HOW A PIT OR QUARRY CAN OPERATE 171

5.3 GOVERNMENT REVIEW OF THE *AGGREGATE RESOURCES ACT* FRAMEWORK 173

5.4 HOW CAN WE LIGHTEN THE ENVIRONMENTAL FOOTPRINT OF AGGREGATES IN ONTARIO? 175

5.4.1 DECREASE THE DEMAND FOR AGGREGATE 175

5.4.2 ENSURE EXISTING SITES KEEP UP WITH THE TIMES 180

5.4.3 IMPROVE SITE REHABILITATION RATES 181

5.5 CONCLUSION: ONTARIO NEEDS AGGREGATES BUT COULD DO BETTER FOR THE ENVIRONMENT 183

The MNRF has addressed a few problems with aggregate extraction, but many long-standing issues remain.

Abstract

Sand, stone, and gravel, known as aggregates, are essential to build everything from highways to bridges. They help sustain and build Ontario's economy. However, aggregates come with a significant environmental and social cost. Aggregate extraction can often cause conflict, due to the location of the aggregate and/or how the operation is carried out.

The ECO, along with many others, has long called for an overhaul of the policy framework for aggregate approvals and operations. The government began a review of the governing law, the *Aggregate Resources Act*, in 2012 and, in 2017, amended the law and regulation in certain areas. The amendments have addressed some, but certainly not all, of the concerns raised by the ECO and other stakeholders. Significant opportunities remain on the table for lightening the environmental footprint of aggregates including: decreasing the need for new sites; ensuring the environmental protection at operating sites; and decreasing the environmental impact at end-of-use sites.

5.1 Introduction: The Inherent Conflict of Aggregate Extraction

Aggregates – sand, stone and gravel – are essential raw material for everything from the construction of highways and buildings to bridges, sewer pipes and water lines. Some types of aggregates are used to make toothpaste, make-up, and even the drywall used in virtually every home and office. Altogether, 14 tonnes per person per year is the often-cited estimate of Ontario's consumption of aggregates.[1]

However, our pervasive need for aggregates comes at a cost. The process of both siting and approving the operation of pits (sand and gravel) and quarries (solid bedrock material such as limestone and granite) is often highly controversial and divisive for many local communities. Few people want to live beside an aggregate operation or its haul roads as they typically generate dust and noise and increase truck traffic.

OUR PERVASIVE NEED FOR AGGREGATES COMES AT A COST.

Aggregate operations can also impact local water systems, wildlife, natural habitats, and farmland. In addition, as pits and quarries often cluster together in groups – where nature deposited the most desirable types of rock – cumulative environmental effects can arise. For example, some of the best sources for high-quality stone lie along the narrow ribbon of the Niagara Escarpment.

Photo Credit: noranissaanditha / pixabay used under CC0 1.0

Quick Aggregate Facts:

- The average brick house is built with approximately 12 truckloads (250 tonnes) of aggregate.
- One kilometre of 4-lane highway is typically built with approximately 1,430 truckloads (30,000 tonnes) of aggregate.
- One kilometre of subway tunnel is typically built with approximately 5,430 truckloads (114,000 tonnes) of aggregate.[2]

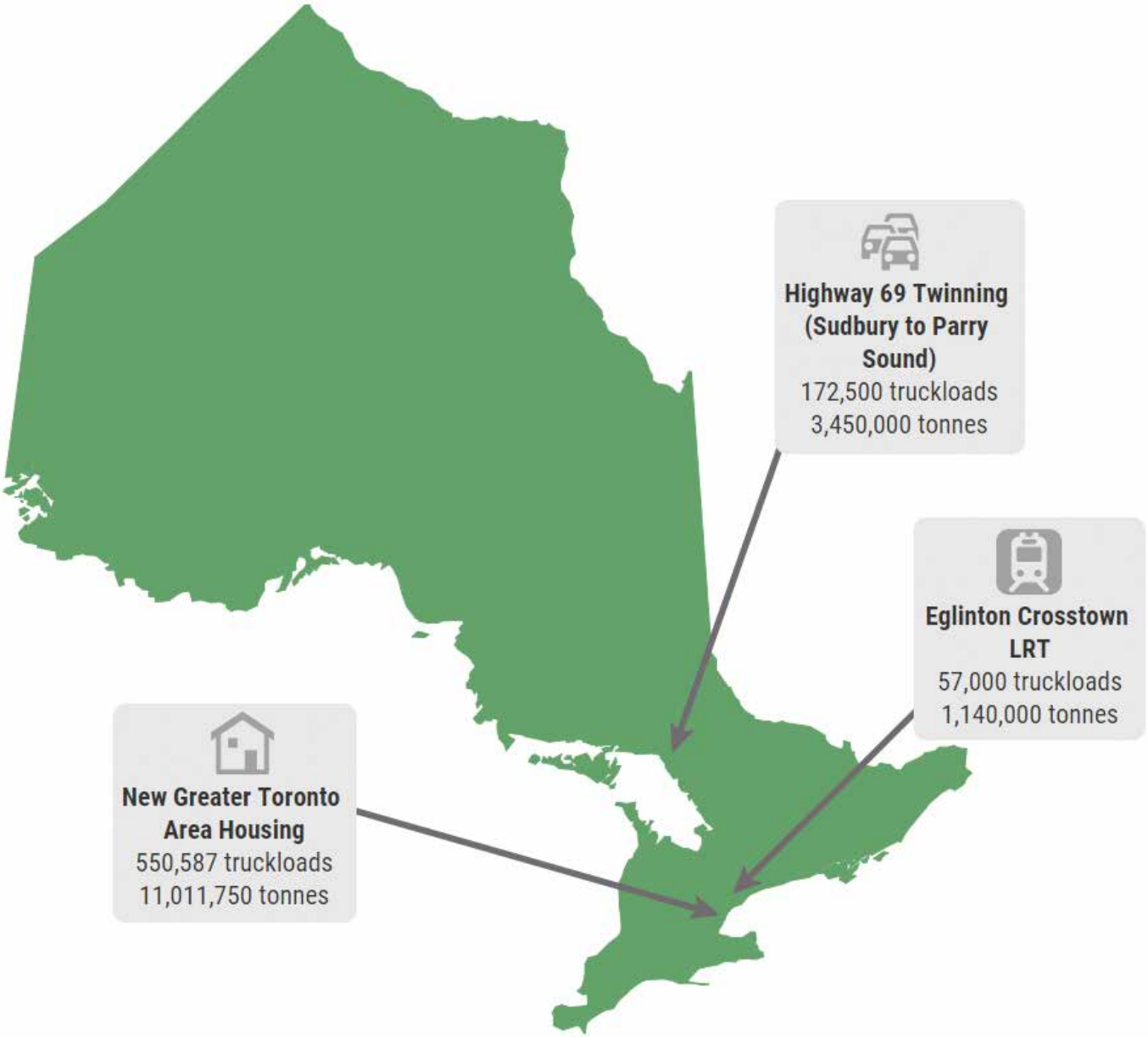

Figure 1. Example of recent Ontario housing and infrastructure projects and their relative aggregate requirements.

Source: Created by the ECO using data from: The State of the Aggregate Resource of Ontario Study Paper 1 - Aggregate Consumption and Demand; and Ryerson University, GTA 905/416 Charts: New Housing Starts (2006-2015).

5.2 How are Aggregates Regulated in Ontario?

The province's governance of aggregate operations involves both land use planning (governed by the Ministry of Municipal Affairs and municipalities in southern Ontario) and site-specific regulation (governed by the Ministry of Natural Resources and Forestry under the *Aggregate Resources Act*). Together, they make for a complex mix of rules and policy. Navigating this regulatory framework can be challenging and frustrating for members of the public.

5.2.1 Land Use Planning Rules Dictate Where a Pit or Quarry Can Operate

The decision on *where* a pit or quarry is located is determined first by where appropriate aggregate exists, because aggregates can only be dug up where geology has put them. Second, the location of a pit or quarry is determined by Ontario's land use planning policies, which put a very high priority on aggregate extraction.

ONTARIO'S LAND USE PLANNING POLICIES PUT A VERY HIGH PRIORITY ON AGGREGATE EXTRACTION.

Strictly speaking, *where* a pit or quarry may be located is determined, in southern Ontario and parts of the north, at the local level by a municipality's official plan. Municipalities develop their official plans by considering such factors as geology and the quality of local aggregate deposits, nearby development, and the long-term growth goals of the municipality.

Photo credit: distel2610 / pixabay used under CC0 1.0.

But municipalities do not have a free hand. Aggregate extraction gets powerful support from the *Provincial Policy Statement, 2014* (*PPS*), which all official plans must be consistent with. The *PPS* is the Ontario government's overarching planning policy, which sets out the provincial interests. The *PPS* sets high-level direction to protect aggregate extraction, dictating that municipal official plans shall: protect aggregate resources for long-term use; seek to locate pits and quarries as close to markets as possible; and protect aggregate supplies from conflicting development and activities that would hinder continued use. Finally, the *PPS* dictates that municipalities cannot require aggregate proponents to demonstrate a need for their product.[3]

Within this context of the high priority given to aggregates, local official plans are adopted and updated on a regular basis, with public input. During this process, interested parties have the opportunity to provide comment on the designation of any new lands for aggregate extraction (which is implemented through a zoning by-law, which must be consistent with the official plan). Unfortunately, at this early planning stage, the public is rarely motivated to be involved; few residents understand how an official plan might affect their lives, their family, or their property. Often, it is very far into the planning process when people become aware or engaged on specific aggregate applications, and by then the official plan may already be in place.

5.2.2 The *ARA*: How A Pit or Quarry Can Operate

The operation of aggregate sites is regulated by the Ministry of Natural Resources and Forestry (MNRF) under the *Aggregate Resources Act* (*ARA*). This law, its regulation and a complex suite of standards, policies and procedures outline how the sector is required to operate. Pits and quarries on private land need an aggregate licence, while operations on Crown land are issued aggregate permits. Different rules apply to licences and permits, including different application requirements, fees and royalties, and inspection targets.[4] In essence, the *ARA* approval authorizes the operation of a pit or quarry and determines how it must operate.

OFTEN, IT IS VERY FAR INTO THE PLANNING PROCESS WHEN PEOPLE BECOME AWARE OR ENGAGED ON SPECIFIC AGGREGATE APPLICATIONS.

Quick Aggregate Facts:

- There are more than 6,000 approved pits and quarries in Ontario.
- Approved sites cover just over 175,000 hectares of land across the province – this is about half the size of the state of Rhode Island.
- The majority of aggregate produced in Ontario comes from private land in southern Ontario, where most aggregate is also consumed and where development pressures are greatest (Figure 2).[5]

Many considerations go into the approval of an aggregate operation under the *ARA*. Starting at the application stage, the proponent must provide a number of plans and studies, addressing the natural environment, hydrogeological (in some cases) and cultural heritage considerations. Once completed and submitted, the proponent must conduct public consultation and ensure that all concerns are satisfied before the MNRF will grant the approval. If the proponent is unable to satisfy all concerns, the MNRF staff have the option to recommend to the Minister: to issue the approval nonetheless; refuse it; or, refer the application to the Ontario Municipal Board (OMB) to make a decision.[6] If the application is referred to the OMB, the process can take years and be prohibitively expensive, especially for members of the public. Once at this stage, the outcome of the application rarely satisfies anyone; but for the proponents at least, approvals are rarely denied completely.

THERE ARE MORE THAN 6,000 APPROVED PITS AND QUARRIES IN ONTARIO.

Quick Aggregate Facts:

- Ontario uses 164 million tonnes of aggregate each year.
- Each Ontarian uses approximately 14 tonnes of aggregate each year.
- The Greater Toronto Area consumes over 50 million tonnes of aggregate annually.[7]

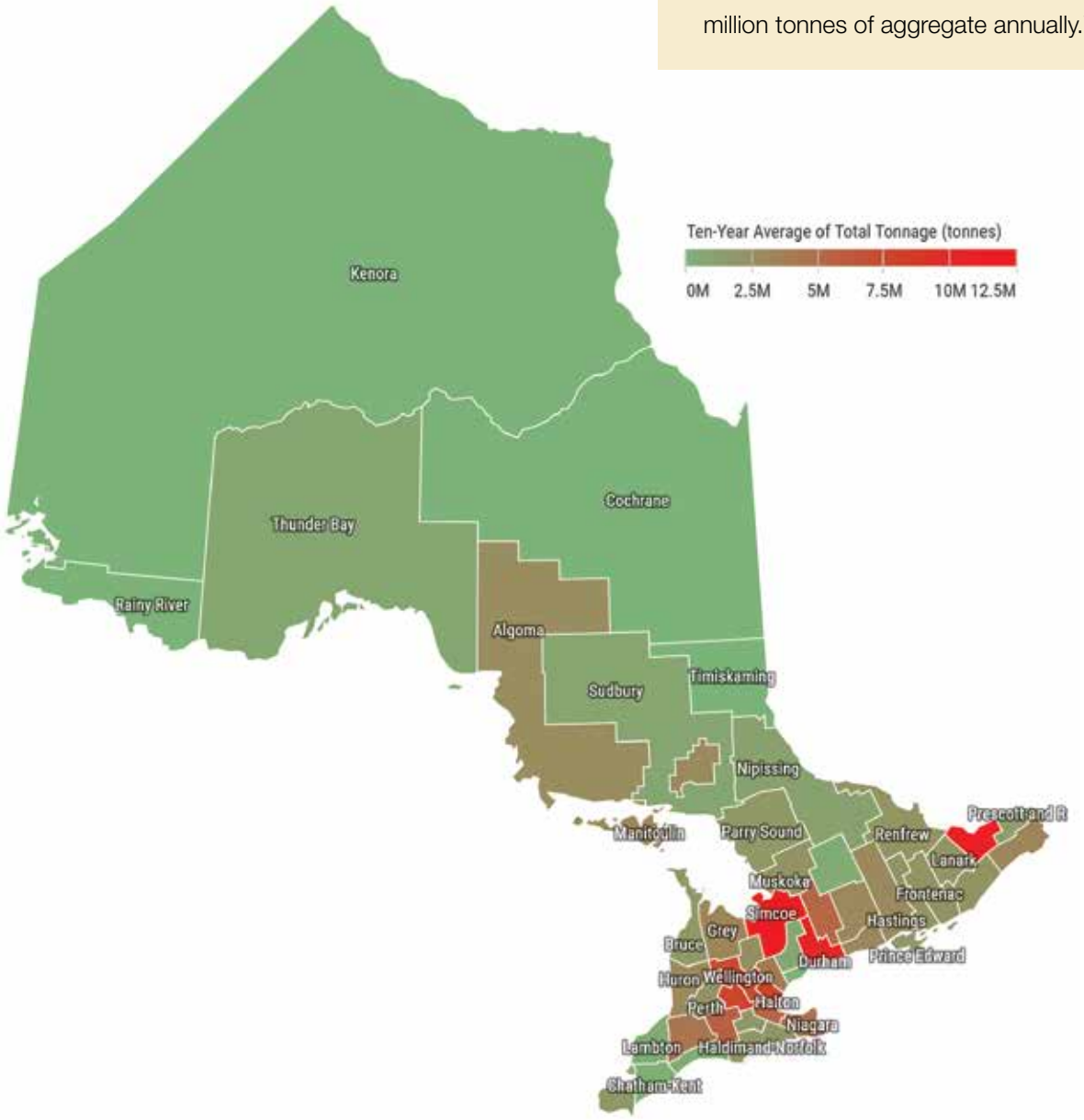

Figure 2. The ten-year average annual tonnage extracted (in millions of tonnes) within upper tier municipalities

Source: Created by the ECO using the Ontario Aggregate Resources Corporation's 2015 Production Statistics.

5.3 Government Review of the *Aggregate Resources Act* Framework

The ECO and many others have long called for an overhaul of the *ARA* to better address the challenges related to aggregate extraction. Finally, in 2012, the government began a review of the *Aggregate Resources Act*. Five years later, the law was updated to "modernize the province's resource extraction rules to increase environmental protections, boost competitiveness and create jobs and economic growth," according to the MNRF.[8]

The MNRF confined its changes to those that fall squarely within the ministry's own direct responsibilities under the *ARA*. Its new strategy, *A Blueprint for Change,* "sets out a blueprint of proposed changes to modernize and strengthen the [*ARA*] policy framework…".[9] No changes were made to the land use planning rules that give aggregate extraction priority over most other land uses.

The following is a summary of many key concerns that the ECO and others have raised over the last several decades,[10] and the extent to which government has addressed these concerns:

Photo Credit: Hansueli Krapf / Wikimedia used under CC BY-SA 3.0

NO CHANGES WERE MADE TO THE LAND USE PLANNING RULES THAT GIVE AGGREGATE EXTRACTION PRIORITY OVER MOST OTHER LAND USES.

Concerns with Aggregates Relating to Land Use Planning

Because the review of the *ARA* does not address land use planning, it will not resolve any land-use conflicts:

- **"Close to market" siting** – provincial land use planning policy directs that as much of the mineral aggregate resources as realistically possible be made available as close to markets as possible, which reduces transportation costs and greenhouse gas emissions, but creates conflicts with surrounding land uses.[11]
- **"Interim use"** – provincial land use policy refers to aggregate extraction as interim, meaning operations are intended to be temporary activities on the landscape, yet extractions often go on for decades, and the land is rarely returned to its original form.[12]
- **Demonstration of need** – provincial land use policy directs that proponents of aggregate sites cannot be required to demonstrate that their aggregate is needed, potentially creating a situation where sites are approved even when aggregate is not needed.[13]
- **Impacts on natural heritage** – provincial land use planning policy prioritizes aggregates over other land uses meaning aggregate sites can, in many cases, be located in provincially significant areas and landforms (e.g., wetlands, woodlands, species, etc.).
- **Cumulative effects** – clustered aggregate extraction sites in a relatively small area can cause a 'death by a thousand cuts' for the local environment.

Concerns with Aggregates Relating to the ARA (i.e., Approvals and Operations)

The *ARA* review has addressed some, but not all, of the major concerns with aggregate operations:

✗ **Rehabilitation of sites** – rehabilitation rates for end-of-use pits and quarries remain low, leaving long-term damage by not returning sites to useful land uses (see section 5.4.3).

✓ **Protection of source water values** – aggregate operations often conflict with source water protection, due to fuel handling and storage associated with aggregate operations in vulnerable municipal drinking water protection areas. The 2017 amendments to the *ARA* address this by authorizing the Minister to establish conditions on existing aggregate sites related to source water protection plans.

✗ **Impacts on natural heritage (e.g., groundwater, wetlands, woodlands, species, etc.)** – aggregate operations can have continuing impacts on the environment throughout their operating lifetime. Conditions in the aggregate approval to protect the environment are rarely updated to ensure ongoing environmental protection throughout the duration of extraction (see section 5.4.2).

✓ **Compliance and enforcement** – the MNRF had historically failed to meet its own inspection targets.[14] However, the MNRF appears to have improved their compliance and enforcement capacity. For example, the MNRF inspected, on average, 18% of all aggregate approvals per year since 2007.[15]

✓ **Fees and royalties** – the amount charged in fees and royalties has historically failed to provide a fair rate of return to the province for the use of the resource and administration of the program.[16] All aggregate operators must pay a specified amount to the government per tonne of aggregate removed per year. On Crown land, operators are required to pay a minimum of 50 cents per tonne per year in royalties and an annual fee of $200, all of which are retained by the provincial government.[17] On private land, operators are required to pay 11.5 cents per tonne per year in fees, which are disbursed as follows: 52% to the local municipality; 13% to the County or Regional municipality; 4% to the Aggregate Resources Trust; and the remainder is retained by the provincial government.[18] As part of the *ARA* review, the MNRF amended the regulation in July 2017 to update the fees and royalties and index them over time based on Ontario's Consumer Price Index.[19]

✗ **Public participation** – the approval process is proponent-driven, which often causes concerns about fairness and transparency; for example, misalignment between the consultation periods of the *ARA* and the *Environmental Bill of Rights* can cause the public to miss critical comment deadlines.[20] The ECO is disappointed and continues to be very concerned generally about this public participation issue with respect to the *ARA* (see Part 1 of this report). The ECO continues to monitor the MNRF's progress in improving the quality of their *ARA* notices on the Registry and the promptness of posting notices.

5.4 How Can We Lighten the Environmental Footprint of Aggregates in Ontario?

Although land use planning policy remains a significant challenge, there are many opportunities within the *ARA* policy framework to lighten the environmental footprint of new and existing aggregate operations. This section highlights three areas in which the MNRF could make real progress:

1. Decrease the demand for new or 'virgin' aggregate.
2. Strengthen ministry powers to update site-specific environmental requirements.
3. Improve rehabilitation rates (not just at the end of production life, but also during the decades of extraction).

5.4.1 Decrease the Demand for Aggregate

The most important way to decrease the environmental impact of aggregate extraction is to reduce our demand for new (or "virgin") aggregate. Shifting to increased use of recycled aggregate can alleviate the need to either open new or expand existing operations. In cases where the highest quality aggregate is not required, recycled aggregates could be utilized.

THE MOST IMPORTANT WAY TO DECREASE THE ENVIRONMENTAL IMPACT OF AGGREGATE EXTRACTION IS TO REDUCE OUR DEMAND FOR NEW (OR "VIRGIN") AGGREGATE.

Currently, only about 7% of aggregate used in Ontario is recycled material.[21] By contrast, some European countries use up to 20% recycled aggregate.[22] [23] If Ontario could achieve such a recycling rate, we could theoretically avoid extracting up to 33 million tonnes of new aggregate per year.

What is Recycled Aggregate?

Recycled aggregate is recovered aggregate materials from building demolition, road reconstruction, and other infrastructure projects that is re-engineered and re-used in new projects as a substitute for new aggregate.[24] Using recycled aggregate can not only reduce the demand for new aggregate but can avoid the need to dispose of reclaimed material in landfills. Properly engineered, recycled material that meets provincial construction standards can be used in a variety of applications including backfill and base material for roads and many other uses that do not require the highest quality aggregate.

Many Users Don't Consider Recycled Aggregate as an Option

Some Ontario organizations successfully use recycled aggregate at a high volume. For example, the Ministry of Transportation (MTO) has incorporated recycled aggregate into their operations for years; the Town of Erin, and the Toronto and Region Conservation Authority (TRCA) recently adopted procurement policies prioritizing recycled aggregate.

The MTO has been doing an excellent job using recycled aggregate in the construction and maintenance of Ontario's highways. From 2005 to 2008 (the most recent period for which data is available), up to 20% of the aggregate used in highway construction and maintenance by the MTO was recycled. Similarly, the Town of Erin's new procurement policy prefers sustainably sourced aggregate, which includes the use of recycled aggregate.[26] The TRCA has adopted a similar procurement policy for its operations.

Unfortunately, most other large volume users of aggregate in the province ignore recycled material. For example, Ontario municipalities use a high volume of aggregate for roads, bridges, and drainage. A survey of municipalities in the 2009 *State of the Aggregate Resource in Ontario Study* (SAROS) showed that most municipal official plans do not consider recycled aggregate in their procurement policies.[27] This perpetuates a preference for new aggregate in municipal procurement. The survey concluded that this is largely due to a lack of experience, unfavourable past experience, and the desire for high-performance materials.[28]

Another example is Metrolinx, the provincial agency that oversees transit operations including the GO Transit network. Metrolinx is a large consumer of aggregate for projects ranging from installing and maintaining the rail network to constructing and maintaining stations and related infrastructure such as parking lots. In fact, Metrolinx has built and operates over 65,000 parking spaces at GO rail stations, making it one of the largest parking operators in North America.[29] Many of Metrolinx projects (e.g., parking lots) do not require high-quality aggregate, making them an ideal organization to utilize recycled aggregate. However, Metrolinx does not appear to incorporate recycled aggregate in their construction or maintenance. Indeed, Metrolinx's Sustainability Strategy does not mention using recycled aggregate in their operations.[30] Metrolinx, as a Crown agency, should be a leader and not a laggard in green procurement, especially for a high-impact material such as aggregate.

METROLINX, AS A CROWN AGENCY, SHOULD BE A LEADER AND NOT A LAGGARD IN GREEN PROCUREMENT.

Photo Credit: NCDOTcommunications used under CC BY 2.0.

What Can Government Do to Increase the Use of Recycled Aggregate?

The MNRF's recent review of the *ARA* framework included one very small measure to help promote the use of recycled aggregate. The *Blueprint for Change* proposed mandatory reporting and record-keeping for removal of recycled aggregate from sites.[31] This will allow for annual tracking of aggregate recycling occurring at sites regulated under the *ARA* and can provide trends in the use of recycled aggregate over time. Moreover, this should help increase transparency on the part of both government and industry, which is critical for keeping the public aware of how aggregate operations impact the environment.

Although the ability to track the movement and use of recycled aggregate over time is a good first step, it does not go nearly far enough to promote its use. To boost the amount of recycled aggregate used in Ontario, the province should do much more.

First, government intervention is needed to more fairly price recycled aggregate.[32] Currently, it costs a buyer about the same to acquire recycled aggregate as it does to buy virgin material. In some cases, recycled material can be even more expensive. A key reason for this cost disparity is that environmental costs (externalities such as impacts on water resources, species habitat and the landscape) and community impacts are not reflected in the price of virgin aggregate. The market failure to internalize these environmental costs skews

the economics of aggregates towards new extraction. Further, extraction fees charged for virgin aggregate are very low. Rapid growth in the recycled market could be expected if the MNRF gives recycled material a distinct cost advantage. This it could easily do by increasing the fees it charges for extraction of virgin material (as recommended by the Standing Committee report[33] and as proposed in the MNRF strategy document, *A Blueprint for Change*[34]). The ECO commends the MNRF for increasing the fees for operators to extract virgin aggregate; now, **the ECO recommends that the government use the additional funds from the increased fees and royalties to grow the market for recycled aggregate.**

Second, **the ECO recommends that the government adopt procurement policies across all ministries, agencies and Crown corporations that prioritize the use of recycled aggregate,** where appropriate. The government and broader public sector wield a significant amount of purchasing power for a vast amount of projects. As the MTO is already recognized as a leader in the use of recycled aggregate, their model could be expanded and applied to all ministries and the broader public sector. For example, the MTO could share their knowledge and experience on best practices for incorporating recycled aggregate into operations. A periodic public progress report on the recycling rates achieved by public sector agencies would help showcase leaders, success stories, and best practices.

Third, **the ECO recommends that the province make recycled aggregate procurement policies a prerequisite for municipalities to receive infrastructure funding.**

THE ECO COMMENDS THE MNRF FOR INCREASING THE FEES FOR OPERATORS TO EXTRACT VIRGIN AGGREGATE.

Finally, the government should invest in research and educational outreach to validate and share the engineering capabilities of recycled aggregate. Currently, the Aggregate Resources Trust applies a portion of aggregate fees towards rehabilitation research. Since the MTO is an acknowledged leader in recycling, the ministry could use a very similar approach in using fees to support aggregate recycling research. MTO-led seminars and workshops to share know-how among public sector aggregate users would also seem a productive approach.

Reducing the Demand for Aggregate in Buildings and Infrastructure

Use of Wood Building Materials

Another important way to decrease demand for aggregate is to increase the use of wood building materials. Using wood in the construction of buildings reduces the demand for aggregate by requiring less concrete in construction and decreasing the footprint of the foundation.

In Ontario, 2015 amendments to the provincial *Building Code* increased the maximum allowable height of wood buildings from four to six stories.[35] The first occupied, six-storey wood building in Ontario, known as Templar Flats, was completed in Hamilton in 2016.[36] Other jurisdictions allow larger wood buildings. For example, Quebec allows 12 storey wood buildings; a students' residence at the University of British Columbia in Vancouver, completed in September 2016, is an 18-storey wood building.[37]

Use of Green Infrastructure

Another opportunity to decrease demand for aggregate is through the use of green infrastructure. Green infrastructure is an approach to water management that protects, restores, or mimics the natural water cycle. Not only does it boost ecosystem resilience and enable adaptation to climate change, but it can also offset some demand for the aggregate found in traditional man-made engineering works such as ditches, culverts, storm sewers, catch basins, inlets, outfalls, and other water quality treatment devices.

Ontario has made some progress in promoting green infrastructure. This includes changes to the *Development Charges Act* that promote green space in developments, and the forthcoming update to Ontario's climate change adaptation strategy which includes a climate modelling collaborative that, in part, will assist in infrastructure risk assessments to help build resiliency.[38] These actions would likely drive a shift away from "gray infrastructure" as municipalities benefit from the reduced environmental and economic costs of implementing more green infrastructure.

Both of these initiatives fall under the Ministry of Municipal Affairs, not MNRF, which underscores the importance of cross-ministry cooperation to reduce aggregate demand.

Example of a bioswale to increase water absorption in a highway median.

Photo Credit: Aaron Volkening used under CC BY 2.0.

5.4.2 Ensure Existing Sites Keep Up With the Times

Beyond the initial environmental harm of establishing a pit or quarry, the operation of an aggregate site has ongoing impacts: dewatering (which affects water quantity in the area); water discharges (which can pollute water sources); and truck traffic, noise, vibrations and dust (which can negatively impact the surrounding community). As some pits and quarries operate for many years, or even decades, the MNRF badly needs to review long-operating pits and quarries to ensure that they continue to meet modern standards, and to reflect any changes in the environment and nearby communities.

Operating Conditions Are Rarely Updated

Once approved, aggregate operations can go on for many decades. The initial environmental protection measures, which are put into place at the time of approval of the operation's site plan, often remain unchanged for the duration, essentially frozen in time. This is unlikely to provide adequate protection over time, as the nearby landscape and communities change and as climate change impacts accelerate. For example, a drought could change water levels in the area, or a municipality could incorporate the site into a protection zone for its municipal drinking water, or another pit could open nearby. Any of these examples could warrant an altered approach to environmental management at an existing aggregate site. Improvements in environmental science and standards alone may justify new or different environmental protection measures.

Ontario's existing regulatory regime does allow for amendments to the operator's site plan, which can be initiated by either the operator or the Minister of Natural Resources and Forestry.[39] Amending a site plan is often a painfully slow process, and operators can appeal the minister's site plan amendments to the Ontario Municipal Board. Typically, such amendments are initiated only because the operator is planning to expand extraction, not to update environmental measures. The province needs more effective and nimble tools to update and strengthen environmental measures at existing approved aggregate sites.

What Can the MNRF Do to Minimize Environmental Impacts of Existing Operations?

The province has recognized the need for enhanced powers to update environmental protections at existing operations. The *Blueprint for Change* has proposed adding new powers for the MNRF, related to existing operations through future regulation.[40] The proposed powers would include the authority to require proponents to do additional studies or provide new information (which could inform and facilitate making site plan amendments), and add new conditions related to source water protection. For example, a new traffic study could lead to different routes for trucks going into and out of the extraction site.

The MNRF's proposed new powers are a modest step towards ensuring an increased level of environmental protection at existing aggregate extraction sites. However, to support and reinforce these new powers, the MNRF now needs a strategic, risk-based approach to identify which permits and licenses need to be updated.

The ECO recommends that the MNRF identify currently licenced aggregate sites that require studies and, if appropriate, update their operating conditions to ensure environmental protection. Note the public can also request this; the public does have the right to request a review of an existing aggregate approval (including seeking site-specific updates of environmental protection measures within the approval) under the *Environmental Bill of Rights* (*EBR*). The *EBR* affords Ontarians the ability to apply to have a ministry (in this case the MNRF) review certain instruments, such as an aggregate licence, under a formal process monitored by the ECO.

The ECO and the public expect a more responsive and nimble approach to increasing environmental protection standards for aggregate extraction. The perpetual grandfathering of approvals is no longer appropriate in the 21st century.

5.4.3 Improve Site Rehabilitation Rates

After use, aggregate sites should be rehabilitated. With a multitude of pressures on the dwindling natural areas of southern Ontario, it is not wise or sustainable to leave thousands of worked-out aggregate sites pock-marking the landscape. Left alone, such aggregate sites provide little natural habitat, regenerate only very slowly, and have risks of serious erosion and contamination of underlying aquifers, as noted in the ECO's 2006/2007 report, *Reconciling Our Priorities* (see "Our Cratered Landscape: Can Pits and Quarries be Rehabilitated?"). Rehabilitation of aggregate sites provides an opportunity to re-establish unique landforms and ecosystems previously lost, thereby potentially providing habitat for rare species of flora and fauna.

Low Rates and Poor Quality Rehabilitation

Rehabilitation has been a legal requirement for aggregate operations as far back as 1971. Under the current *ARA* regulatory framework, rehabilitation, both progressive and final, is mandated in each operator's site plan. Operators must also annually submit information on the amount of area disturbed and rehabilitated, as part of the Compliance Assessment Report.[41]

Despite these long-standing requirements, low rates of rehabilitation remain a chronic problem due to a lack of inspection and enforcement capacity in the MNRF.[42] For example, less than 60% of aggregate sites had done progressive (i.e., stepwise) rehabilitation of sites still under production, based on a 2009 survey for the State of the Aggregate Resource Survey (SAROS); the other 40% of sites had done no progressive rehabilitation.[43]

LOW RATES OF REHABILITATION REMAIN A CHRONIC PROBLEM.

Similarly, the MNRF's Operational Standards in the *ARA* policy framework set out minimum rehabilitation standards (allowing for variance or enhancement of these standards on a site-specific basis for the purpose of attaining higher-quality rehabilitation).[44] To support better rehabilitation, The Ontario Aggregate Resources Corporation (TOARC) has published a best practices manual offering a number of restoration and management practices to achieve the goal of maximizing biodiversity while minimizing maintenance costs.[45] Yet despite both the standards and best practices manual, SAROS found that operators were using a high number of non-native and in many cases invasive plant species at sites in rehabilitation, with a reliance on commercial seed mixtures.[46] Although more cost-effective for the operator, the use of non-native or invasive species, combined with commercial seed mixtures for rehabilitation will not achieve the goal of creating a native landform or useful habitat at an end-of-use aggregate extraction site.

The need to improve rehabilitation rates for the aggregate industry has been highlighted by many observers, including the ECO, by the SAROS report, and by the Standing Committee on General Government's Report.[47]

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What Can Government Do to Increase and Improve Rehabilitation?

The MNRF's strategy, *A Blueprint for Change*, proposes some strengthening of rules for progressive and final rehabilitation. One proposal will require an enhanced "summary statement" on applications to include rehabilitation, that is, a plain-language summary of what steps will be taken to carry out progressive and final rehabilitation. Currently, no such detailed statement is required. This would include information pertaining to the rehabilitation's compatibility with surrounding land uses, consideration of municipal land use plans, and performance indicators for monitoring and reporting.[48] The proposal also would establish a maximum disturbance area for all new applications to encourage progressive rehabilitation.[49] For operating sites, the MNRF proposes to enhance reporting requirements to better describe the extent and type of progressive rehabilitation that is occurring on the site.[50] These would be helpful steps, if they become reality.

Two key measures are missing, however, from the ministry's strategy. Together, they would go some distance towards improving progressive and final rehabilitation at aggregate sites.

The first is adequate compliance and enforcement. The MNRF must ensure that progressive rehabilitation is occurring as outlined in an operator's site plan. The MNRF has advised our office that since 2007 they have been inspecting about 18% of licences and permits annually, meeting the ministry's own inspection targets.[51] But, it is not clear whether the ministry's inspections place enough, or any, emphasis on a site's progressive rehabilitation efforts. At a minimum, the ministry should be annually compiling and publicly reporting progressive rehabilitation rates, based on its

site inspections. Compliance and enforcement statistics related to rehabilitation should also be published annually.

A second support for site rehabilitation would be introducing clarity around the required timing of rehabilitation efforts. Apart from the annual reporting requirement for progressive rehabilitation, the *ARA* policy framework does not provide any direction on timing for either progressive or final rehabilitation activities.[52] **The ECO recommends that the MNRF include clear timelines for progressive and final rehabilitation in the *ARA* policy framework.** The inclusion of clear timelines would provide assurance to both ministry staff, operators and other interested parties on timing expectations for both progressive and final rehabilitation.

5.5 Conclusion: Ontario Needs Aggregates but Could Do Better for the Environment

Ontario's aggregates are a vital, non-renewable resource. They provide the raw material for our buildings and infrastructure and are thus critical to our everyday lives. As population and economic growth drive increased demand for aggregate, our environment and communities will feel the increased pressures of extraction.

The *ARA* review did not look at any of the long-standing land use policy problems with aggregate extraction. These issues are a core part of the conflict between aggregate operations and the public. Nonetheless, the ongoing review of the *ARA's* regulatory and policy framework has made some progress to mitigate many of the chronic environmental issues. But the ECO believes that there are three areas that need urgent attention in this round of reforms:

First, by incenting and promoting aggregate recycling, reserves of high-quality aggregate can be put to the best possible use while mitigating the impact that new aggregate extraction sites have on the environment. The ECO commends the MNRF for increasing the fees for operators to extract virgin aggregate; **the ECO recommends that the government use the additional funds from the increased fees and royalties to grow the market for recycled aggregate.** Further, **the ECO recommends that the government adopt procurement policies across all ministries, agencies and Crown corporations that prioritize the use of recycled aggregate,** where appropriate. Finally, **the ECO recommends that the province make recycled aggregate procurement policies a prerequisite for municipalities to receive infrastructure funding.** For public transparency, the government should also periodically publish a list showing how much recycled aggregate is used by key public bodies.

Second, by updating (and, of course, enforcing) the environmental requirements of operating sites, the ongoing impact of aggregate extraction on the environment can be decreased. The ministry needs stronger powers to proactively review and update the site-specific environmental protection elements of currently operating sites, as needed. Building on the proposed new ability for the Minister to require existing operations to provide additional studies and information, **The ECO recommends that the MNRF identify currently licenced aggregate sites that require studies and, if appropriate, update their operating conditions to ensure environmental protection.**

And finally, adequate enforcement of progressive and final rehabilitation requirements will help ensure that restored sites can contribute much-needed ecological services, including habitat, the buffering of water quantities in times of flood and drought, and the protection of groundwater. **The ECO recommends that the MNRF include clear timelines for progressive and final rehabilitation in the *ARA* policy framework.** The ECO also urges the MNRF to report annually on rehabilitation rates, and related compliance and enforcement actions.

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Chapter 6

The Missing 68,000 km²: Ontario's Protected Areas Shortfall

Contents

6.0	**INTRODUCTION**	**188**
6.1	**WHAT IS A PROTECTED AREA?**	**189**
6.2	**WHY ARE PROTECTED AREAS IMPORTANT?**	**190**
6.2.1	BIODIVERSITY CONSERVATION	190
6.2.2	CLIMATE CHANGE ADAPTATION AND MITIGATION	193
6.2.3	ECOSYSTEM SERVICES THAT HUMANS RELY ON	195
6.2.4	SOCIAL, ECONOMIC AND CULTURAL BENEFITS	196
6.3	**CANADA'S COMMITMENT TO PROTECT 17% BY 2020**	**198**
6.3.1	IS CONSERVING 17% ENOUGH?	200
6.3.2	WHAT COUNTS AS A PROTECTED AREA?	201
6.3.3	WHERE AND WHAT SHOULD BE PROTECTED?	202
6.3.4	HOW MUCH PROGRESS HAS ONTARIO MADE?	204
6.4	**BARRIERS AND OPPORTUNITIES: HITTING 17% IN ONTARIO**	**205**
6.4.1	ONTARIO NEEDS TO MAKE A PUBLIC COMMITMENT	205
6.4.2	ASSESS WHAT WE HAVE ALREADY	207
6.4.3	LEVERAGE THE WORK OF PARTNERS	209
6.4.4	MAKING TOUGH CHOICES	210
6.4.5	INDIGENOUS PROTECTED AND CONSERVED AREAS AND CO-MANAGEMENT WITH INDIGENOUS PEOPLES	211
6.5	**CONCLUSION: PLANNING FOR PROTECTION**	**213**

Ontario needs more protected areas.

Abstract

Ontario does not have enough protected areas. Almost all countries in the world, including Canada, have committed to protect 17% of lands and inland waters by 2020 to combat the global loss of biodiversity. In Ontario, protected areas currently cover only 10.7% of the province. Despite having the lead responsibility for protected areas in the province, Ontario's Ministry of Natural Resources and Forestry does not have a plan for expanding the protected areas system to meet the 2020 international goal. The Ministry of Natural Resources and Forestry must undertake a frank assessment of the current status of the protected areas system, identify key opportunities for expansion, and make a clear public commitment to achieving, and eventually exceeding, the 17% conservation target.

6.0 Introduction

Protected areas, such as provincial parks, are one of the most important tools for safeguarding nature. Wildlife needs wilderness: places where plants, animals, fish, and all the other parts of our province's biological diversity can function largely unimpaired by human impacts. People benefit too from these natural areas: we value the time our families spend in these places canoeing, camping, hiking, watching wildlife, and sitting by a campfire.

PROTECTED AREAS ARE ONE OF THE MOST IMPORTANT TOOLS FOR SAFEGUARDING NATURE.

Protected areas provide habitat for wildlife and species at risk. They are instrumental in maintaining ecosystem services like clean air and water, and play an important role in climate change adaptation and mitigation. They also can hold places of immense cultural and spiritual value, especially places of great importance to Indigenous communities, as well as archaeological and historic sites. Protected areas are also an economic engine – they encourage tourism in Ontario and support thousands of full-time jobs.

But perhaps most importantly, protected areas are a key solution to one of the greatest environmental issues facing our planet: the global loss of biological diversity.[1] Canada and the rest of the world are united in how to do it: increase the number and size of protected areas.

In 2010, nearly every country in the world met in Nagoya, Japan to craft a plan to halt the global loss of biodiversity. These countries, parties to the *Convention on Biological Diversity*, agreed to a new *Strategic Plan for Biodiversity* that established 20 targets, known as the Aichi Targets, to be achieved by 2020. The key role of protected areas in biodiversity conservation is recognized in these targets: under Aichi Target 11 the parties committed to protect at least 17% of terrestrial and inland water, and 10% of coastal and marine areas by 2020.[2] The Government of Canada reaffirmed this commitment in 2016, and promised to take measures to achieve and substantially surpass the target in the coming years.

With a total area of over 1 million km^2, Ontario is larger than most countries. In fact, if Ontario were a country, it would be the 29th largest in the world. Given its size and low population density, Ontario could make an important contribution to the global protected areas system. But protected areas currently comprise only 10.7% of the province (roughly the same percentage as Canada as a whole). From a practical perspective, Canada is unlikely to meet its obligation under Aichi Target 11 unless Ontario meets or exceeds a 17% conservation target, given that the province constitutes 10.8% of Canada's land mass.

In 2012, the ECO presented a Special Report to the legislature, *Biodiversity: A Nation's Commitment, An Obligation for Ontario*. It called on the Ministry of Natural Resources and Forestry (MNRF) to ensure that at least 17% of terrestrial areas and inland waters are conserved through ecologically representative and well-connected systems of protected areas. In our 2014/15 Annual Report, the ECO followed up on the Ontario government's progress: little action had been taken.

Now with only three years left to achieve the 2020 target, Ontario does not even have a plan. It is time for the MNRF to undertake a frank assessment of the current status of Ontario's protected areas system, identify key opportunities for expansion, and make a clear public commitment to achieving, and eventually exceeding, the 17% target.

ONTARIO DOES NOT EVEN HAVE A PLAN TO MEET THE 17% CONSERVATION TARGET.

6.1 What Is a Protected Area?

Protected areas include what we commonly refer to as parks. They are defined areas that are permanently set aside and managed to conserve nature – places where plants, animals and natural processes can exist without being negatively affected by human activities.

The International Union for Conservation of Nature (IUCN) is the international authority on protected areas. The IUCN helps countries implement the international conventions on biodiversity and conservation, and helps set global standards to ensure that all countries take a consistent and effective approach to conservation.

The IUCN defines a protected area as "a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long term conservation of nature with associated ecosystem services and cultural values."

Within this broad definition, protected areas can take many different forms.[3] For example, government regulated protected areas in Ontario include provincial parks, conservation reserves, wilderness areas, dedicated protected areas and national parks, with each designation having its own particular set of rules and management practices (Figure 1).

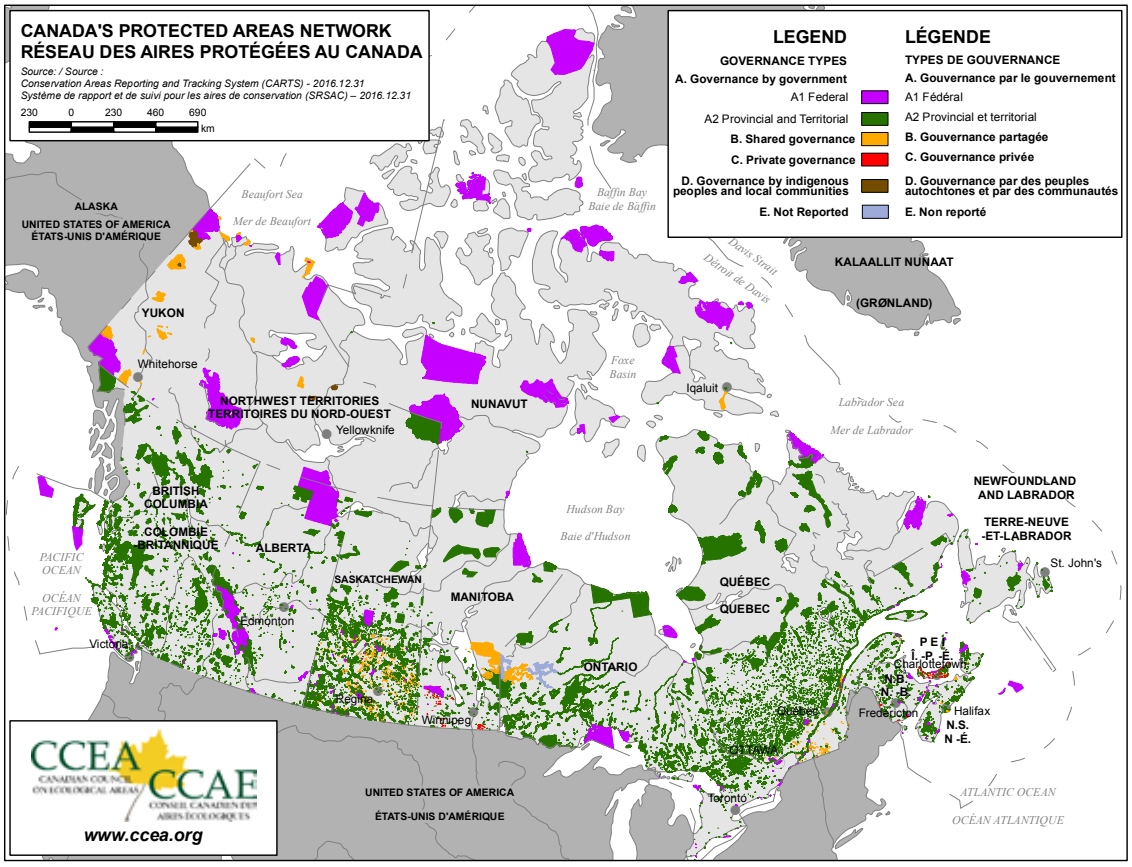


Figure 1. Protected areas coverage in Canada, by governance type.

Source: Canadian Council on Ecological Areas, Conservation Areas Reporting and Tracking System.

In Ontario, the *Provincial Parks and Conservation Reserves Act, 2006*, and the *Far North Act, 2010*, are the main laws that govern Ontario's 649 provincial protected areas.[4] These laws provide the rules for the establishment and management of protected areas, and set out what activities are permitted within their boundaries.

The *Provincial Parks and Conservation Reserves Act* provides the most protective regime, and regulates the province's provincial parks and conservation reserves.[5] This law requires that both provincial parks and conservation reserves be managed for their "ecological integrity." In essence, managing for ecological integrity means maintaining the naturalness of an area, and is synonymous with conserving biodiversity. The law also generally prohibits industrial activities such as logging, mining, and aggregate and peat extraction.[6]

The *Far North Act* commits the government, in partnership with First Nations, to conserve areas of cultural value and ecological systems by including at least 225,000 km^2 of the Far North in an interconnected network of protected areas.[7] There is no timeline for meeting this target, but if achieved, it would result in an additional 20.9% of the province being protected. To date, nine dedicated protected areas, constituting 1.1% of the province have been established under the *Far North Act*. These areas are established under the community-based land use planning process, a collaborative effort between First Nations and the MNRF. In 2011, the ECO expressed concern that although this law bans commercial activities like mining, logging and oil and gas exploration and production in dedicated protected areas, these prohibitions can be overridden by a Cabinet order.

6.2 Why Are Protected Areas Important?

6.2.1 Biodiversity Conservation

Habitat loss and degradation is the single greatest threat to biodiversity – it is the primary cause of most species extinctions and extirpations.[8] Habitat loss and degradation is a result of many different pressures: land use change (e.g., converting land from wilderness to residential or farm land); resource extraction (e.g., logging or mining); fragmentation (e.g., roads, hydro corridors); pollution, invasive species, and changing climatic conditions.

One of the core purposes of protected areas is to safeguard important natural areas against as many of these pressures as possible, thereby preserving habitats for the wildlife that depend on them. Numerous studies have demonstrated that protected areas can successfully conserve habitat, provided that they are appropriately located, adequately sized and effectively managed (Figure 2).[9]

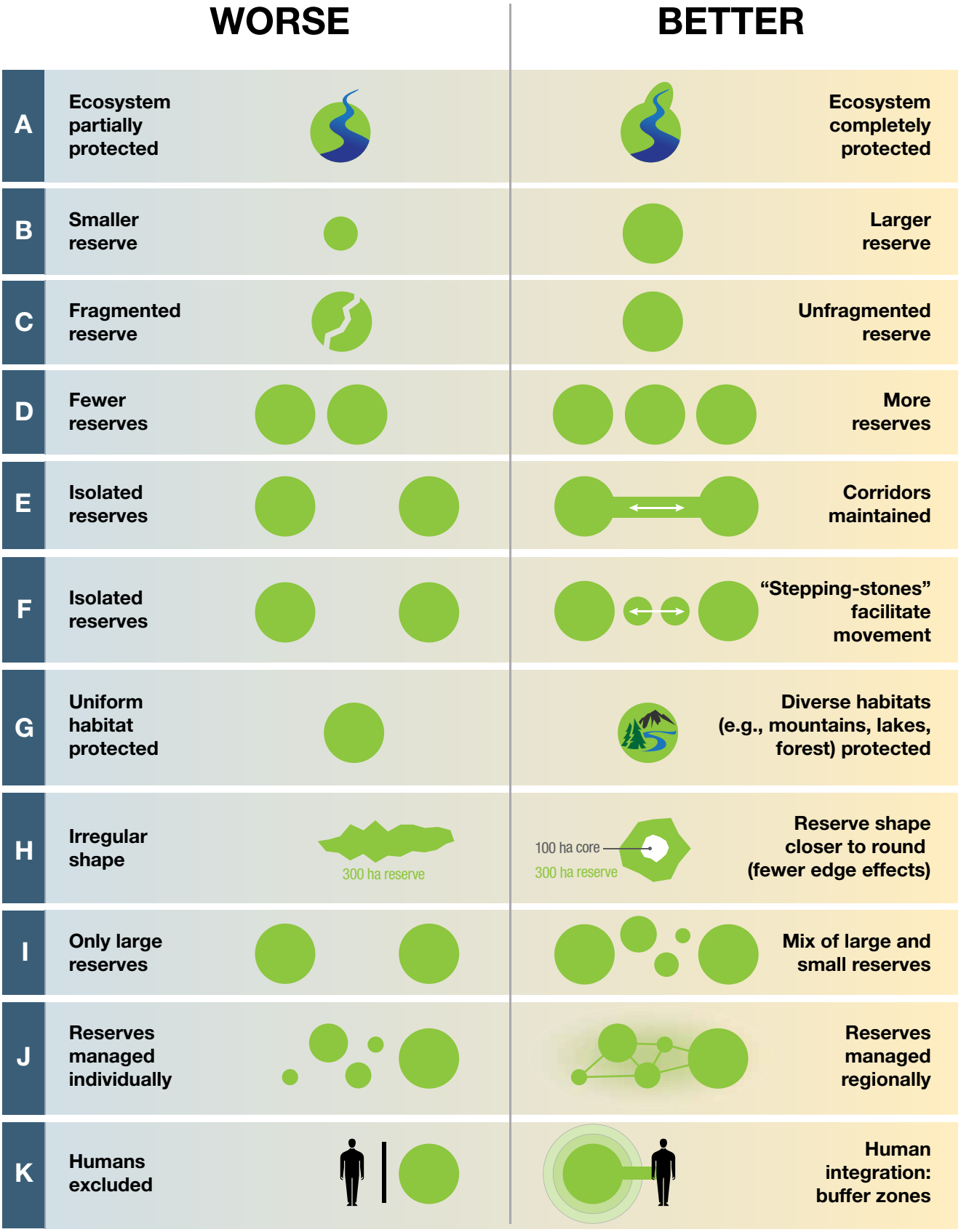
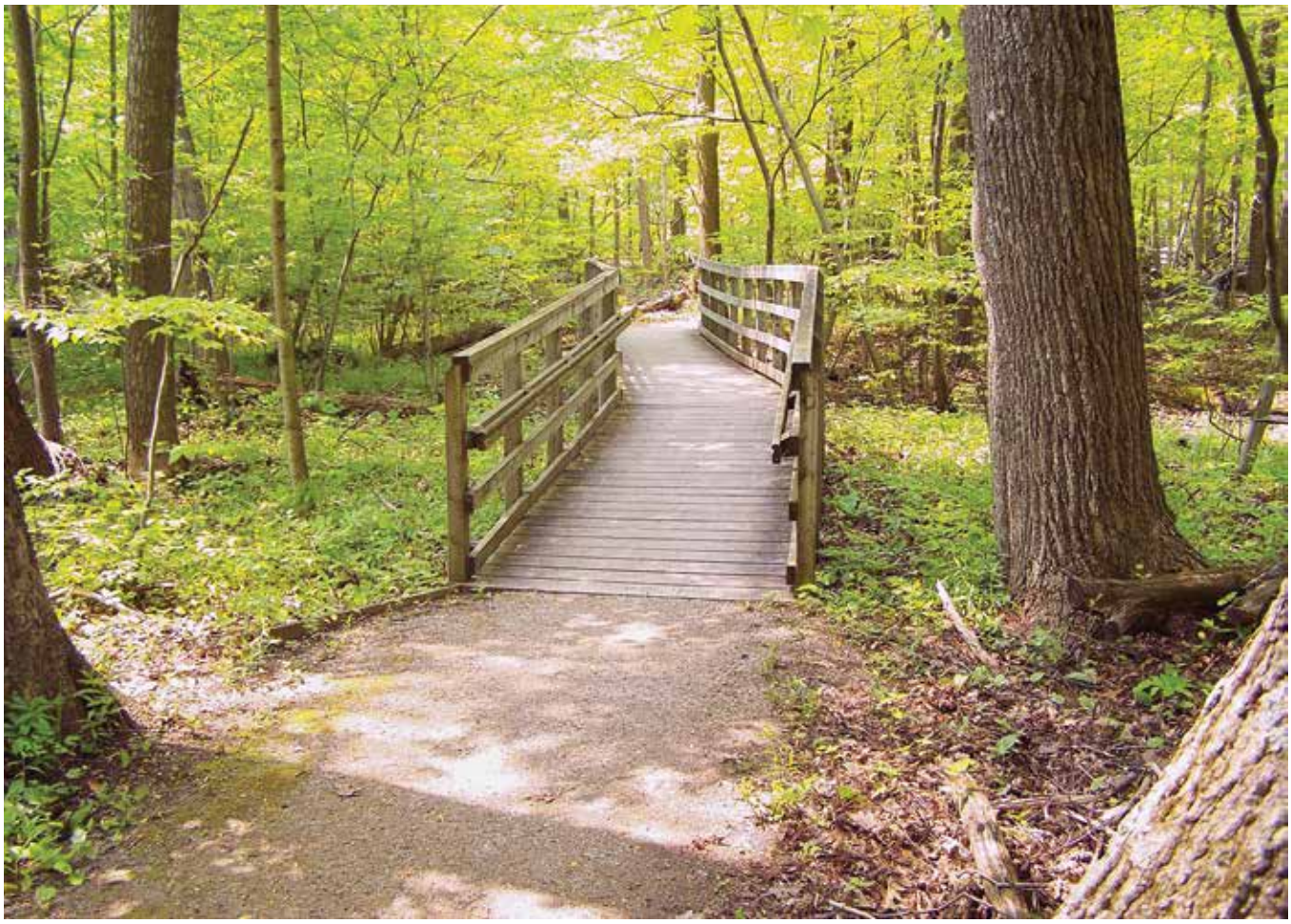


Figure 2. Elements of effective protected areas.

Source: Adapted from Primack, 2010[10].

Conserving habitat and providing protection from outside pressures often results in a higher diversity and abundance of species within protected areas than outside of their boundaries.[11] For example, Long Point Provincial Park (on Lake Erie near Port Rowan) is part of the world's longest freshwater sandspit, and is designated as a World Biosphere Reserve and an Important Bird Area. Because it protects an important stopover for migrating birds, more than 400 species of birds have been recorded at the Long Point Bird Observatory. Protected areas can also act as a safe haven for species at risk, like Rondeau Provincial Park, which at only 32.5 km^2, is home to over 75 species at risk.

In addition, protected areas can bolster biodiversity outside of their boundaries by acting as areas that support source populations for the surrounding landscape. For example, historically, Algonquin wolves were found across eastern North America, but today the few remaining populations of this threatened species reside in four protected areas in Ontario (Killarney Provincial Park, Queen Elizabeth II Wildlands Provincial Park, Kawartha Highlands Signature Site Park and Algonquin Provincial Park). Algonquin Provincial Park acts as a critical source habitat for the largest of these populations, from which these wolves disperse onto the broader landscape (see Chapter 8 of this report).



Rondeau Provincial Park is home to over 75 species at risk.

The Diversity of Ontario's Species

3,045 vascular plants	230 worms
511 mosses	479 birds
154 liverworts	84 mammals
112 ferns	27 reptiles
1,000 fungi and algae	27 amphibians
700 lichens	160 fish
260 molluscs	Thousands of insects

6.2.2 Climate Change Adaptation and Mitigation

Climate change has been identified as another main driver of global biodiversity loss[12] and poses an array of serious threats to human well-being (see *Facing Climate Change*, the ECO's 2016 Greenhouse Gas Report). Although protected areas will be significantly affected by climate change, they offer the potential to contribute to both climate change adaptation and mitigation.

As the climate changes, many species will be forced to move into new areas in order to survive. But most species will not be able to make this geographic shift unless there are adequate connections between natural landscapes. Protected areas can play a key role by acting as migration corridors. Ensuring that adequate, protected migration corridors exist will be critical in preventing major extinctions.[13]

Beyond supporting connectivity at a landscape level, protected areas can sometimes be used to conserve areas that species will be able to retreat to and persist in under future climate conditions (Figure 3).[14]

PROTECTED AREAS CONTRIBUTE TO BOTH CLIMATE CHANGE ADAPTATION AND MITIGATION.

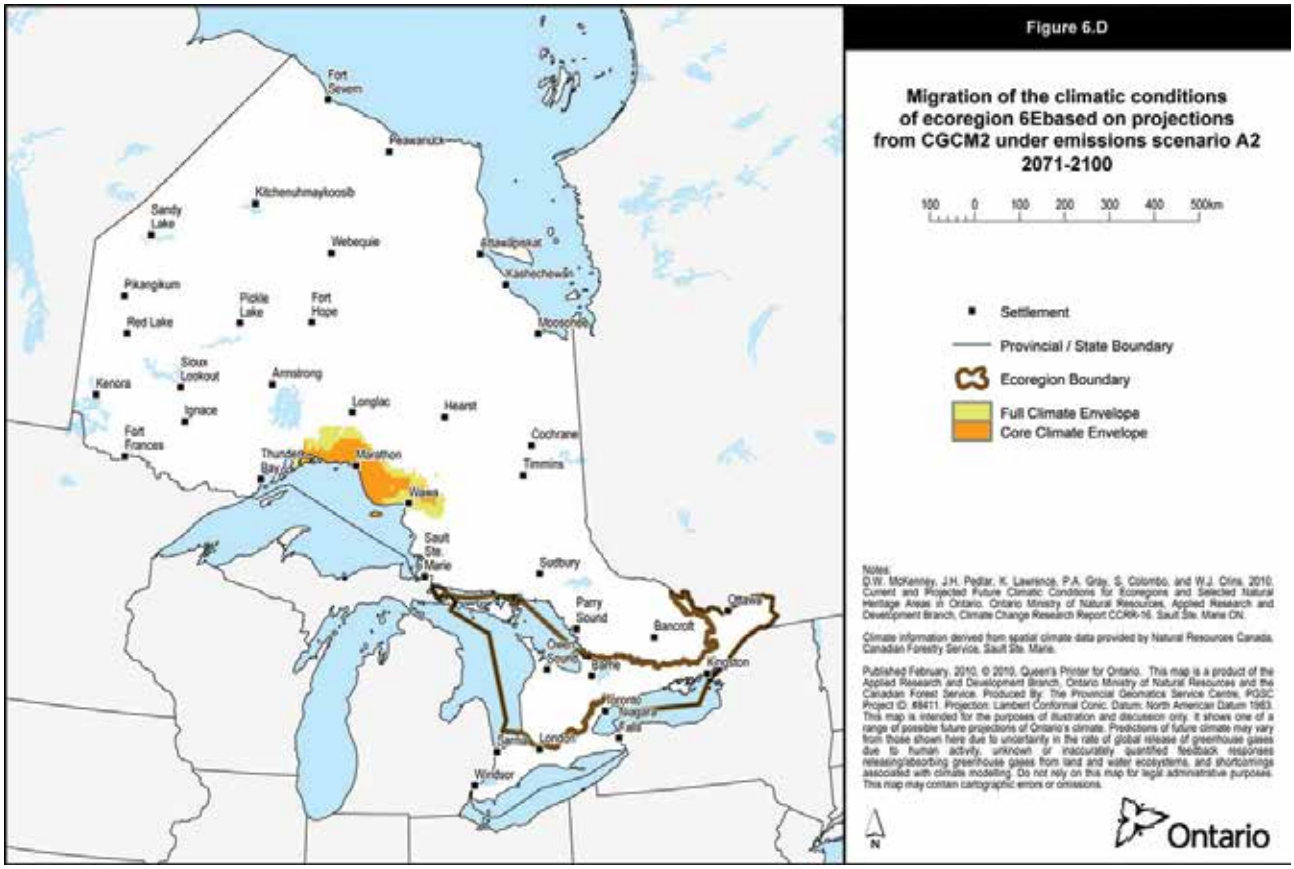


Figure 3. Protected areas planning needs to account for shifting climatic envelopes.

Source: Ministry of Natural Resources, 2010[15].

Protected areas may also provide ecosystem-based adaptation measures to lessen the negative effects of climate change.[16] For example, conserving wetlands is a widely recognized and effective mechanism for helping to control the effects of extreme weather like floods.

On the climate change mitigation side, many protected areas also serve as effective carbon stores by protecting natural features that sequester carbon (e.g., forests, peatlands, etc.). Recent studies have attempted to quantify the carbon stored in some of Ontario's protected areas – for example, Pukaskwa National Park – a 1,878 km^2 protected area on the north coast of Lake Superior – is estimated to store nearly 23 megatonnes of carbon.[17]

Pukaskwa National Park is estimated to store almost 23 megatonnes of carbon.

Photo Credit: Hans-Jürgen Hübner.

6.2.3 Ecosystem Services That Humans Rely On

In addition to conserving habitat to sustain a diverse abundance of species, protecting natural spaces supports the ongoing delivery of ecosystem services, i.e., the benefits that ecosystems provide to humans, like clean air and water, nutrient cycling, and flood control. For example, the 600 km² Algoma Headwaters Signature Site (which encompasses three provincial parks and one conservation reserve located between Sault Ste. Marie and Chapleau) protects the headwaters of eight different rivers. This protection is critical to maintain healthy aquatic ecosystems and clean drinking water for the region.

EVEN SMALL PROTECTED AREAS CAN PROVIDE IMMENSE BENEFITS FOR PEOPLE.

The huge value of these ecosystem services often goes unrecognized, but even small protected areas can provide immense benefits for people. For example, a 2013 report by Statistics Canada assessed the value of the ecosystem goods and services provided by the Thousand Islands National Park (one of the smallest in Canada at 22.3 km²), and estimated that the value falls

between $12.5 and $14.7 million per year.[18] Another recent study looked at the value of the ecosystem services provided by Canadian forests – it estimated the value of the ecosystem services provided by just one square kilometre of the forests found in southern and central Ontario (i.e., the Carolinian forest and the Great-Lakes St-Lawrence forest) ranges from $1.9-$2 million every year.[19]

6.2.4 Social, Economic and Cultural Benefits

Ontario's protected areas represent a major component of our natural capital, providing a range of other socio-economic benefits. Tourism is key among these benefits. Globally, terrestrial protected areas bring in over 8 billion visits each year.[20] In Ontario, operating provincial parks receive an average of 9.4 million visitors every year – and there are many more visitors to non-operating parks, conservation reserves, wilderness areas and dedicated protected areas, though such visits are not tracked by the MNRF.

Parks in southern Ontario are heavily visited – Wasaga Beach Provincial Park receives almost 1.5 million visitors each year, while other parks like Pinery Provincial Park (near Grand Bend) and Sandbanks Provincial Park (near Picton) get more than 600,000 visitors. Central and near north parks also receive a substantial number of visitors, for example, Algonquin Provincial Park gets more than 800,000 visitors. Many parks in northern Ontario also make a substantial contribution to the local economy – with several parks, including Killbear Provincial Park and Killarney Provincial Park, contributing more than 1.3 million visitors to the region each year.

A recent study found that parks in Ontario supported more than 6,400 full-time jobs, generated $305 million in labour income, $48 million in tax revenue for governments, and contributed more than $466 million to Ontario's gross domestic product.[21] Similarly, a 2013 study in Quebec estimated that each park visitor spends about $60 per day at local businesses.[22]

Killbear Provincial Park brings almost 350,000 visitors to northern Ontario each year.

Photo Credit: John Vetterli.

Nature-based tourism also offers a range of benefits to people, which not only stem from participating in nature-based recreational activities, but from simply experiencing nature (Table 1).[23] These benefits include: improved concentration; stress reduction; improved immunity; improved cardiovascular function; blood pressure reduction; alleviation of anxiety and depression symptoms; and improved cognitive functioning in children.[24] Moreover, a recent survey of campers from Ontario Parks revealed that 53% of respondents felt that introspection or spirituality was part of their park experience.[25] In recognition of these many benefits, Ontario Parks participates in the worldwide "Healthy Parks Healthy People" movement, offering the public a day of free use of provincial parks every summer.

Because protected areas conserve an array of representative geological, ecological and cultural features, they also act as an important resource for conducting scientific research.

Last, but certainly not least, protected areas conserve many areas with Aboriginal significance. For example, a number of provincial parks protect areas with Aboriginal rock art, including Bon Echo Provincial Park, Matinenda Provincial Park, and Petroglyphs Provincial Park (about 56 km northeast of Peterborough), which has the largest concentration of Aboriginal rock carvings in Canada. Known as the "Teaching Rocks," the carvings at this sacred site are thought to be between 500 and 1,000 years old. Similarly, Sleeping Giant Provincial Park protects a number of cultural and historical features with Aboriginal significance, including Nanabosho, the "Sleeping Giant," who according to legend was turned into stone as punishment for disobeying the Great Spirit.[27]

Table 1. A Summary of the Contribution of Parks to Human Health and Wellbeing

Source: Maller et al., 2002[26].

Component of Health	Contribution of Parks
Physical	Provide a variety of settings and infrastructure for various levels of formal and informal sport and recreation, for all skill levels and abilities, e.g., picnicking, walking, dog training, running, cycling, ball games, sailing, surfing, photography, birdwatching, bushwalking, rock climbing, camping
Mental	Make nature available for restoration from mental fatigue; solitude and quiet; artistic inspiration and expression; educational development (e.g. natural and cultural history)
Spiritual	Preserve the natural environment for contemplation, reflection and inspiration; invoke a sense of place; facilitate feeling a connection to something beyond human concerns
Social	Provide settings for people to enhance their social networks and personal relationships from couples and families, to social clubs and organisations of all sizes, from casual picnicking to events day and festivals
Environmental	Preserve ecosystems and biodiversity, provide clean air and water, maintain ecosystem function, and foster human involvement in the natural environment (Friends of Parks groups, etc.)

According to legend, Nanabosho, the “Sleeping Giant,” lies in what is Sleeping Giant Provincial Park today.

Photo Credit: p199.

6.3 Canada’s Commitment to Protect 17% by 2020

In 2015, Canada formulated its own series of national targets in response to the Aichi commitments. Target 1 of the national *2020 Biodiversity Goals and Targets for Canada* reiterates Canada’s commitment to conserve at least 17% of terrestrial areas and inland water, and 10% of marine and coastal areas.[28] Although this is a federal commitment, because Canada’s provinces and territories manage the lands and waters within their borders, they are the ones largely responsible for meeting the commitment. To date, Canada’s provinces and territories have each achieved between 3.1% and 15.3% protection of lands and inland waters (Figure 4).

Figure 4. Proportion of terrestrial and inland water areas protected by province/territory.

Source: Based on data from CCEA CARTS Report, 2016.

In April 2016, federal, provincial, and territorial Deputy Ministers responsible for parks agreed to establish a National Steering Committee to develop advice on how jurisdictions could contribute to achieving Target 1, along with guidance for best practices and measuring progress towards implementing the qualitative elements of the target. Ontario is a member of this Steering Committee.

The Ontario government's own plan to conserve biodiversity (*Biodiversity It's In Our Nature*) commits to expand Ontario's system of protected areas and conservation lands, but does not explicitly discuss the 17% target (see Part 4.1 of the ECO's 2014/2015 Annual Report). Instead, the government states that it will work with existing legislation and policy to "explore opportunities for expanding the system of protected areas and conservation lands."[29] The target is also endorsed in the Ontario Biodiversity Council's conservation strategy[30] (see the ECO's 2012 special report *Biodiversity: A Nation's Commitment, An Obligation for Ontario*).

6.3.1 Is Conserving 17% Enough?

There is no magic to the specific number 17% that was set as the conservation target; rather, it follows the conclusions of scientific research that generally shows that the more area that is protected, the more biodiversity is protected (see e.g., Figure 5).

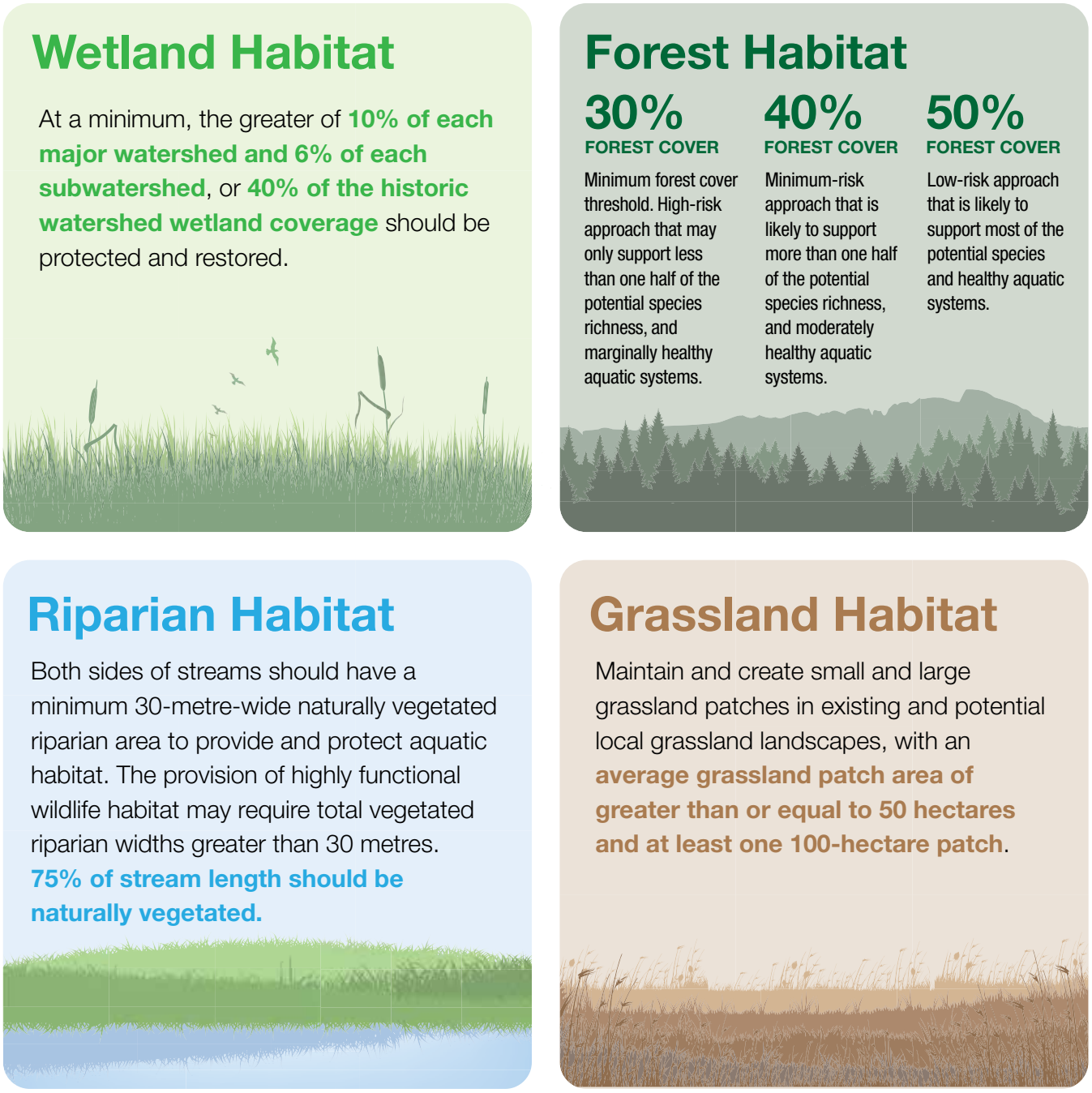


Figure 5. Environment Canada habitat guidelines. Greater protection protects a higher diversity of species[31].

Source: Adapted from Environment Canada, 2013.

The 17% target was negotiated between the parties to the *Convention on Biological Diversity*; many countries in the world sought a higher target when it was negotiated and may independently exceed it on their own. Most biodiversity experts believe that more needs to be done.[32] [33] For example, the "Nature Needs Half" movement advocates for the protection and connection of at least half of the ecosystems on earth. Regardless, aiming for 17% protection as an interim target is an achievable goal that would constitute a solid basis for higher levels of protection in the future.

6.3.2 What Counts as a Protected Area?

Protected areas can come in many different forms. In Ontario, our protected areas system is a mix of provincial parks, conservation reserves, wilderness areas, dedicated protected areas, national parks, and marine conservation areas. Other types of areas, like some conservation authority lands and privately held conservation lands (which are distinct from "conservation reserves"), could also potentially qualify as protected areas – provided that they meet a defined set of minimum standards. For example, Minesing Wetlands Conservation Area, managed by the Nottawasaga Valley Conservation Authority, is a biologically rich site that is protected from site alteration and development, and could, if formally assessed to meet the criteria for a protected area, represent an important contribution to Ontario's protected areas inventory.

Minesing Wetlands Conservation Area protects an internationally significant wetland complex.

Photo Credit: Nottawasaga Valley Conservation Authority.

Aichi Target 11 not only includes government regulated and administered protected areas (like provincial parks), but also considers the potential contribution of "other effective area-based conservation measures" (OECMs), for example, privately held conservation lands.

Counting government-regulated protected areas is a relatively straightforward task, perhaps with the exception of some provincial parks that are focused on recreation rather than conservation. However, assessing both private and publicly owned areas that fall into the OECM category is a challenging and somewhat controversial topic. The Canadian Council on Ecological Areas (CCEA) is currently developing guidance on assessing whether areas can be counted towards Aichi Target 11.[34] At a broad level, the key criteria include:

- A defined geographical space;
- Biodiversity conservation objectives;
- Prioritization of nature conservation objectives over conflicting objectives;
- Governance (i.e., governing authorities acknowledge and abide by conservation objectives);
- Effective means of protection, including the power to exclude, control and manage activities likely to impact biodiversity and the prohibition of activities that are incompatible with the conservation of biodiversity;
- Long-term protection;
- Dedicated protection that can only be reversed with great difficulty; and
- A year-round protection mechanism.

6.3.3 Where and What Should Be Protected?

Ideally, decisions about which areas to protect should be based on several factors including: ecoregional representation; species coverage (including species at risk and biodiversity hotspots); and connectivity. Protected areas should also be large enough to achieve biodiversity conservation outcomes, such as supporting viable species populations and allowing natural ecological processes to occur.

The reality, however, is that a significant factor in planning for protected areas is cost. And unfortunately, the regions where protected areas would provide the greatest conservation value rarely align with where they might be the easiest or least expensive to establish. Many biodiversity "hotspots" like Important Bird Areas, Provincially Significant Wetlands and species at risk habitat are located in regions where land acquisition is expensive and it is difficult to secure adequately sized areas. Specifically, many of these hotspots are found in southern Ontario, where 100 acres might cost the government a million dollars or more to acquire; conversely, there is no cost to acquire land for protected areas on Crown land.

As a result, protected areas are spread disproportionately throughout Ontario. From an ecoregional perspective, the Ontario Shield region has substantial protected areas coverage (over 10%), while southern Ontario and most of the Far North have very low coverage (Figure 6). The mixedwood plains zone, in southern Ontario, is particularly underrepresented – only about 0.5% of the area is protected.[35] This disparity is also problematic from a species coverage perspective, given the concentration of species at risk in southern Ontario, and the threats posed by climate change to species in the Far North.

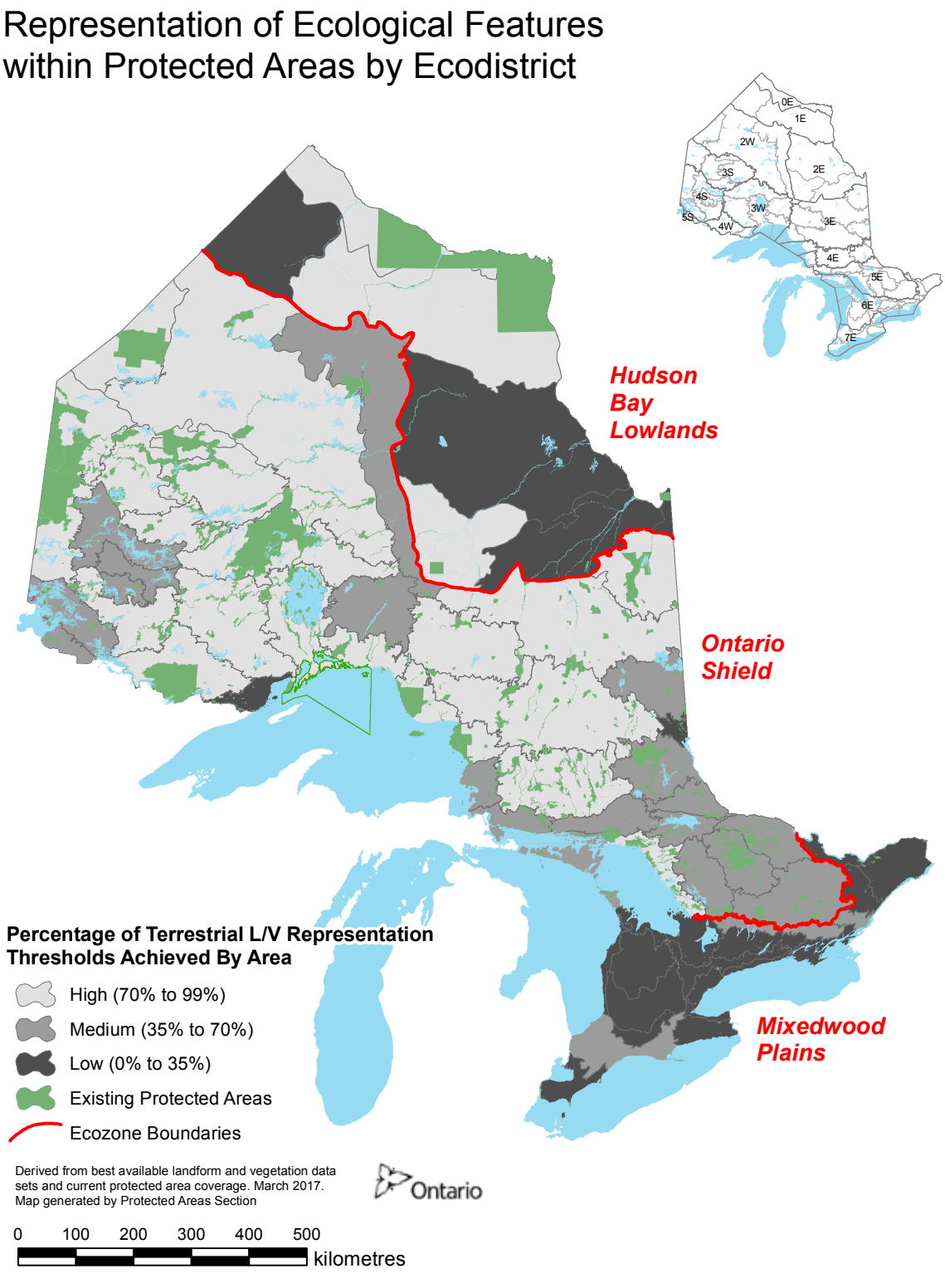


Figure 6. Representation of ecological features within protected areas by ecodistrict.

Source: The MNRF.

THERE IS A NEED TO IDENTIFY AND PROTECT IMPORTANT CLIMATES THAT MAY BECOME RARE OR THREATENED IN THE FUTURE.

There is also a need to ensure connectivity between protected areas, which is currently lacking for much of Ontario's protected areas system.[36] As discussed above, connectivity, or conservation corridors, will be especially important to facilitate species' migration as Ontario's climate shifts. For over two decades, the Algonquin to Adirondacks Collaborative (or "A2A") has been advocating for the protection of ecological linkages along the Frontenac Axis between Algonquin Provincial Park and Adirondack Park in New York State. Linkage initiatives like this are critical in expanding the protected areas system.

An emerging body of research is also revealing the need to identify and protect important climates that may become rare or threatened in the future. Protecting these "climate refugia" is an important proactive conservation tool to support the persistence of species whose preferred climates may shift or become more rare in the coming years.[37] Researchers are also advocating for the protection of diverse connected landscapes as a key element of conserving biodiversity under changing climatic conditions.[38]

Areas that are effective carbon sinks should also be part of an expanded protected areas system. Wetlands in northern Ontario currently receive very little protection, yet, roughly 36 gigatonnes of carbon are stored in the 210,000 km^2 of peatlands (i.e., non-forested bogs and fens) in Ontario's Far North.[39] Including important carbon stores like these in the province's biodiversity conservation plans could play a key role in Ontario's climate change mitigation efforts.

6.3.4 How Much Progress Has Ontario Made?

According to the 2016 *Protected Planet Report*, 14.7% terrestrial protection has been achieved worldwide.[40] But Canada is behind the pack, having only protected about 10.6% of terrestrial and 1% of marine areas. Ontario is on par with the Canadian average; currently, government regulated protected areas cover 10.7% of the province (Table 2). The majority of these areas are protected as regulated provincial parks, which currently comprise 6.9% of the province.

Ontario is less than two-thirds of the way to meeting the Aichi target. To fill the remaining shortfall, Ontario will need to protect at least another 68,000 km^2 – an area about nine times the size of Algonquin Park – by 2020.

Table 2. Government regulated protected areas in Ontario (Note: area has been rounded to the nearest km²).

Protected Areas in Ontario			
Provincial Protected Areas	**Number**	**km²**	**% of Province**
Regulated Provincial Park	334	74,193	6.9%
Regulated Conservation Reserve	295	15,142	1.4%
Dedicated Protected Area – Regulated under PPCRA	5	3,495	0.3%
Dedicated Protected Area – Non-regulated	4	8,800	0.8%
Wilderness Area	11	8	<0.1%
Total Provincial Protected Areas	649	101,637	9.4%
National Protected Areas	**Number**	**km²**	**% of Province**
National Park	5	2,056	0.2%
National Urban Park	1	19	<0.1%
National Marine Park	1	114	<0.1%
National Marine Conservation Area	1	10,880	1.0%
National Wildlife Areas	10	54	<0.1%
Migratory Bird Sanctuary	8	319	<0.1%
Other National Protected Area	**Number**	**km²**	**% of Province**
National Capital Commission Area	16	82	<0.1%
Total National Protected Areas	**42**	**13,523**	**1.3**
Total National and Provincial Protected Areas	691	115,160	10.7%

6.4 Barriers and Opportunities: Hitting 17% in Ontario

6.4.1 Ontario Needs to Make a Public Commitment

The Ontario government has never explicitly committed to conserving at least 17% of the province in protected areas. Although the Ontario government is participating in the federally-led *Pathway to Target 1* initiative, it will only state that it "supports the national target," but stops short of actually committing to the expansion of Ontario's protected areas system.

THE ONTARIO GOVERNMENT HAS NEVER EXPLICITLY COMMITTED TO CONSERVING AT LEAST 17% OF THE PROVINCE.

Consistent with this lack of commitment, the government has failed to seize on recent opportunities to expand Ontario's network of protected areas. For example, over 3,250 km² of land has been identified by Forestry

Stewardship Council-certified commercial forestry companies as candidate protected areas. However, the MNRF has declined to engage in any process that would see these areas receive permanent protection.[41]

This lack of commitment to conserving Ontario's biodiversity has also resulted in the absence of any updated strategic conservation planning for the protected areas system. Other than the limited conservation planning currently being carried out under the *Far North Act, 2010*, the MNRF has not updated its protected area expansion strategy in the last two decades; however, even this outdated policy recognizes that Ontario's protected areas system is incomplete and aims to expand protection to represent "the full spectrum of the province's natural features and ecosystems."[42]

In contrast, in 1997 the Ontario government initiated a planning process that covered almost half of the province, which resulted in an unprecedented expansion of the protected areas system (Figure 7). This initiative spurred immense public support: members of the public submitted over 37,000 comments over the course of the planning and consultation process on the final policies. The *Ontario's Living Legacy Land Use Strategy*, released in 1999, set out a plan to conserve 12% of the planning area (totaling 24,000 km^2) in provincial parks and conservation reserves. Unfortunately, in recent decades the Ontario government has shown little interest in undertaking a similar planning process to achieve the 17% national and global commitment.

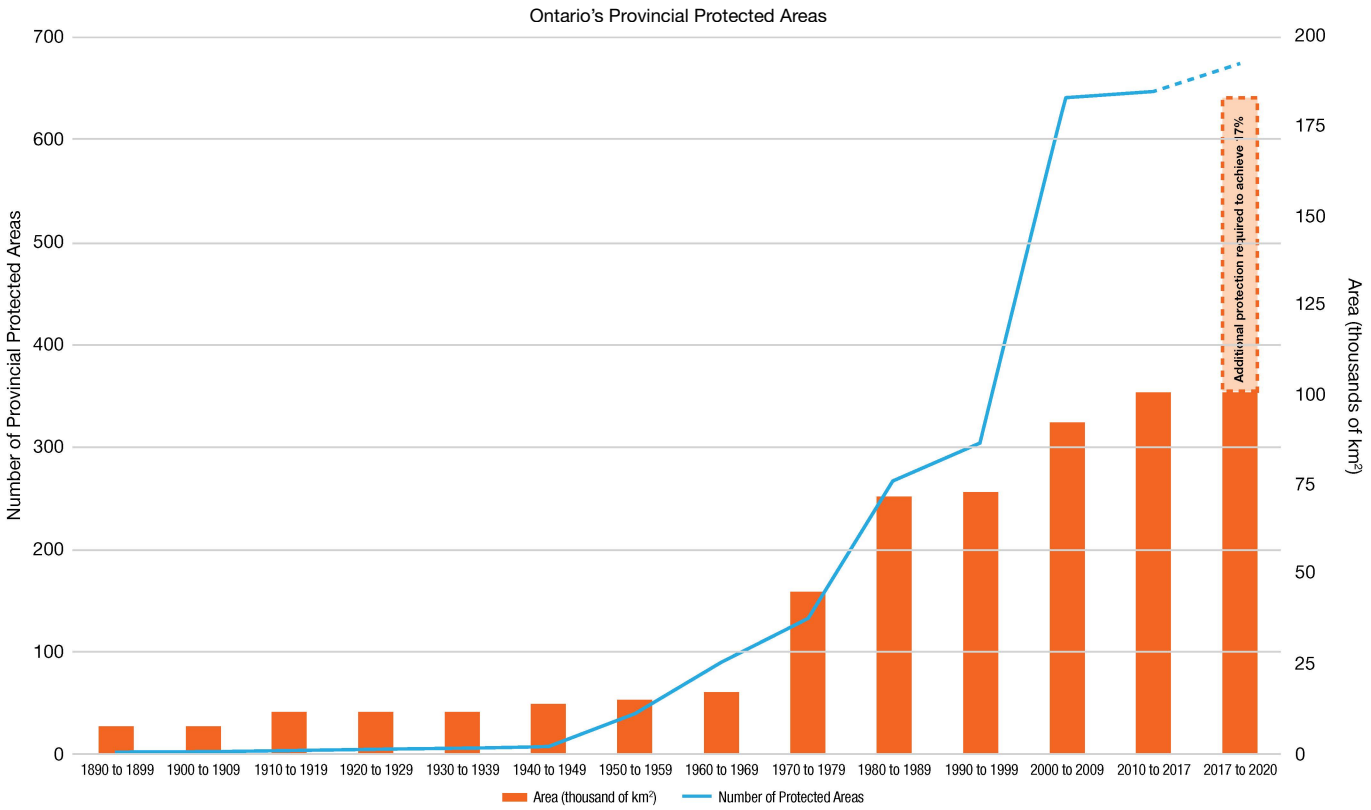


Figure 7. Growth of Ontario's protected areas system.

Source: Adapted from the MNRF, State of Ontario's Protected Areas Report, 2011.

6.4.2 Assess What We Have Already

The over 115,000 km² that the MNRF counts in its protected areas inventory currently only includes areas that are owned and managed by the federal and provincial governments. However, Ontario has over 40 different kinds of natural heritage areas that are subject to some form of protection (Table 3). Areas such as forest reserves, private conservation lands, provincially significant wetlands, areas of natural and scientific interest, conservation authority lands and parts of the Greenbelt and Oak Ridges Moraine would be prime candidates for inclusion in Ontario's protected areas inventory provided that they meet the minimum standards set out by the CCEA.

For example, conservation authorities in Ontario manage over 6,400 parcels of land totaling 1,500 km², much of which is of high conservation value, but are not included in the province's protected areas numbers. Similarly, Ducks Unlimited Canada has conserved almost 4,000 km² of wetlands in Ontario to date. Nature Conservancy Canada has conserved almost 800 km² of the province. Ontario Nature has also made major contributions to conservation in Ontario, since 1961 it has protected over 20 km² of significant natural areas through its Nature Reserves Programs.

Areas like these are in need of inventorying and assessment against the CCEA criteria in order to determine whether they can be counted as either protected areas or other conservation lands (i.e., OECMs). Such a process will require a great deal of co-ordination between multiple levels of government, conservation organizations and private land owners. But this process will be a necessary pre-condition to any strategic conservation planning efforts going forward.

More importantly, an inventorying and assessment process could also identify areas that do not currently meet minimum protected area or OECM standards, but that could qualify with some improvements. Identifying these areas and providing resources for land owners and/or managers to improve protection standards could make a substantial contribution to meeting the 17% conservation target. In some cases, this may mean clarifying the biodiversity conservation objectives for the area or strengthening the permanence of the protection mechanism. For other areas it may mean the withdrawal of subsurface rights, or increasing funding for enforcement to exclude prohibited activities.

Similarly, two-thirds of Ontario's flagship protected area, Algonquin Provincial Park, does not currently qualify as a protected area because of ongoing commercial logging activity (see Part 3.4 of the ECO's 2013/2014 Annual Report). If logging were prohibited throughout Algonquin Park, Ontario could add almost 5,000 km² to its protected areas inventory almost overnight.

Table 3. Types of 'fully' and 'partially' protected natural heritage areas. Areas that are currently included in Ontario's protected areas inventory are indicated in green.[43]

Source: Adapted from Ministry of Natural Resources, 2009

INTERNATIONAL
International Biological Programme Sites
Ramsar Convention Sites
Biosphere Reserves
World Heritage Sites
Important Bird Areas

NATIONAL
National Parks
National Marine Conservation Areas
National Marine Parks
Migratory Bird Sanctuaries
National Wildlife Areas
National Capital Commission Lands
National Urban Parks
Marine Wildlife Areas
Marine Protected Areas
National Historic Sites
Canadian Heritage Rivers

MUNICIPAL
Municipal Parks and Open Spaces
Natural Heritage Features in Urban and Rural Areas

PROVINCIAL
Provincial Parks
Conservation Reserves
Wilderness Areas
Dedicated Protected Areas (regulated)
Dedicated Protected Areas (non-regulated)
Forest Reserves
Enhanced Management Areas
Provincially Significant Wetlands
Areas of Natural and Scientific Interest
Wildlife Management Areas
Fish Sanctuaries
Crown Game Preserves
Niagara Parks System
Parks of the St. Lawrence
Conservation Authority Properties
Forest Management Reserves
Restricted Access Areas
The Niagara Escarpment
Oak Ridges Moraine
The Greenbelt
The Lake Simcoe Watershed

PRIVATE
Eastern Habitat Joint Venture Program
Nature Conservancy of Canada – Nature Preserves
Ontario Nature – Nature Reserves
Bruce Trail Conservancy Properties
Carolinian Canada Sites
Provincial Tax Incentive Programs (MFTIP and CLTIP)
Ontario Heritage Trust Properties
Conservation Easements
Land Trust Properties

Two-thirds of Algonquin Provincial Park does not qualify as a protected area because of ongoing commercial logging operations.

6.4.3 Leverage the Work of Partners

For decades, the Ministry of Natural Resources and Forestry had various programs that provided an average of $4.7 million in funding annually for both public and private conservation land acquisition (the purchase of land for permanent protection). In addition to funding the purchase of land for new provincial parks, many conservation organizations were able to leverage this government funding to secure matching funds to purchase private conservation lands. In both cases, this funding was particularly important for securing conservation land in southern Ontario, where most land is privately owned, there are many biodiversity hotspots, and where protected areas coverage is low.

Many of Ontario's provincial parks, like Stoco Fen (near Tweed), Carden Alvar (near Orillia), Hardy Lake (near Gravenhurst), and Cedar Creek (near Essex), would not exist as they are today were it not for the province's land acquisition programs. Lands that are now part of these parks were acquired by the Nature Conservancy of Canada and then transferred or leased to the MNRF for regulation as protected areas.

Carden Alvar Provincial Park protects a globally rare habitat type.

But in recent years, provincial funding for land acquisition has disappeared. The MNRF discontinued its previous land securement programs and cut its budget for the Ontario Parks Capital Land Acquisition Program to just $1,000 per year – an amount only sufficient to retain the budget line item. In contrast, the ministry spends more than $60 million a year subsidizing the fragmentation of ecosystems by funding the construction and maintenance of logging roads.

Conservation organizations are still working diligently to acquire ecologically significant land – for example, the Nature Conservancy of Canada recently announced that it had secured over 10 km^2 of significant undeveloped boreal forest, including 21 km of shoreline along Lake Superior. But because the MNRF is no longer supporting land acquisition partnerships, it is unlikely that important conservation lands like these will be formally regulated as part of Ontario's protected areas system.

In 2015, the ECO recommended that the MNRF resurrect a dedicated annual fund and establish strategic priorities for land acquisition for protected areas; however, the MNRF has not made any improvements to its land securement budget or programs since we last reported on the issue. (For more information, see Part 4.4 of the ECO's 2014/2015 Annual Report.)

The province also has various tax incentive programs aimed at supporting the protection and responsible management of natural heritage areas. The Conservation Land Tax Incentive Program offers property tax exemptions to landowners who commit to protecting provincially important natural heritage features like provincially significant wetlands or endangered species habitat. Similarly, the Managed Forest Tax Incentive Program offers landowners property tax reductions if they maintain their land as "managed forest." Programs like these are important to encourage conservation on privately held lands, which can complement formal protected areas.

6.4.4 Making Tough Choices

Approximately 85% of Ontario is Crown land owned by the government; in these areas, land does not have to be purchased before it can be protected. Instead, the government can create protected areas on Crown land by regulating the area under Ontario's protected areas legislation. But even in circumstances like these where purchasing land is not a barrier, there are often competing interests from a variety of stakeholders

MANY JURISDICTIONS IN CANADA AND AROUND THE WORLD HAVE STARTED TO RECOGNIZE THE VALUE OF CO-MANAGING PROTECTED AREAS WITH INDIGENOUS COMMUNITIES.

that can hinder the creation of protected areas. First and foremost, natural resource industries, such as mining or logging, can view the withdrawal of lands from commercial activities as potential threats to future business opportunities.

Establishing new protected areas can have other potential downsides to stakeholders like municipalities – for example, regulating land within a municipality's borders as a provincial park may represent lost tax income for a municipality. In the rare instances when this does occur, the MNRF typically compensates municipalities for this lost tax revenue, which represents a significant and ongoing financial commitment for the ministry.

Negotiating these conflicting interests is challenging, but a clear plan for expanding government-regulated protected areas would provide a degree of certainty for all stakeholders that cannot be achieved under an *ad hoc* park expansion approach. With a clear picture of where the government intends to establish new protected areas, other stakeholders are better able to plan into the future and run their business accordingly.

6.4.5 Indigenous Protected and Conserved Areas and Co-management with Indigenous Peoples

Historically, Canada's Indigenous peoples were not invited to meaningfully engage in the establishment, planning and management of protected areas. In fact, the establishment of some protected areas resulted in the forcible removal of communities from reserves and/or exclusion from traditional territories, and tended to involve little consideration of the compatibility with traditional Indigenous uses and activities on the land.

But this is beginning to change; many jurisdictions in Canada and around the world have started to recognize the value of co-managing protected areas with Indigenous communities and of supporting Indigenous protected and conserved areas.

Currently, Ontario Parks has 10 partnership agreements with First Nations that cover a variety of activities ranging from conducting educational programming in protected areas to taking partial or full responsibility for park operations and management. The *Provincial Parks and Conservation Reserves Act* enables co-management by allowing the Minister of Natural Resources and Forestry to delegate almost every aspect of protected areas management to another party.

However, Ontario does not yet have any mechanism in place to facilitate the legal recognition and protection of Indigenous protected and conserved areas – areas that are identified for protection and managed by Indigenous communities themselves. For example, since 2001, the Moose Cree First Nation has been seeking to protect a 6,600 km² area that covers the North French River Watershed, but has encountered difficulty in securing formal protection for the area and has ongoing concerns about potential mineral development in the area.

The Moose Cree First Nation has been seeking to protect the North French River Watershed.

Photo Credit: Ted Cheskey.

The incorporation of Indigenous protected and conserved areas into Canada's protected areas system has been identified as a priority area for the Pan-Canadian *Pathway to Target 1* initiative. The federal government has also committed to an initial investment of $25 million over five years to support the creation of a National Indigenous Guardians Network – the 30 existing Indigenous Guardian programs in Canada help communities establish Indigenous protected areas, among other initiatives.

Collaboration with First Nations and Métis people will be a critical element of any plan to achieve the 17% target in Ontario. The recognition of Indigenous protected and conserved areas, and creating opportunities for co-managing protected and conserved areas is an important way to ensure that Indigenous perspectives and interests are incorporated into the establishment and management of protected areas. Such initiatives can also contribute to reconciliation efforts, by helping to redefine the government to government relationship between the Ontario government and Indigenous peoples. Co-management could also provide important economic opportunities for Indigenous communities, especially in more remote areas.

COLLABORATION WITH FIRST NATIONS AND MÉTIS PEOPLE WILL BE A CRITICAL ELEMENT OF ANY PLAN TO ACHIEVE THE 17% TARGET IN ONTARIO.

6.5 Conclusion: Planning for Protection

Between urban expansion, resource extraction, the spread of invasive species and a changing climate, Ontario's biodiversity is under more pressure than ever before. Protecting the very ecosystems that we – and all of Ontario's species – depend on has never been more important. Expanding the protected areas system is not a panacea for biodiversity loss, but it is one of the most effective tools available. Protected areas also offer a suite of additional benefits ranging from direct economic benefits to human health. Given the urgency of addressing biodiversity loss and the looming deadline for achieving Aichi Target 11, the Ontario government needs to make a public commitment to meeting, and eventually exceeding, the 17% conservation target.

There is a great deal of work to be done to put Ontario on a path to achieving the 17% target, ranging from restoring funding for land acquisition to developing programs to improve conservation standards for areas that are only partially protected. However, the first step will be to develop an accurate assessment of how much land and water is already protected – including conservation lands and natural heritage areas that are not owned or administered by the government. This is no easy task and will require collaboration and capacity building across all levels of government, conservation authorities, conservation organizations and private land owners. It will also require resources to ensure that all of these parties can meaningfully participate in an assessment and inventorying exercise. **The ECO recommends that the MNRF fund the work required to inventory and assess Ontario's natural heritage areas as protected areas and other conservation lands.**

ONTARIO'S BIODIVERSITY IS UNDER MORE PRESSURE THAN EVER BEFORE.

THE ONTARIO GOVERNMENT WAS ONCE A CHAMPION FOR PROTECTED AREAS.

Even with a clearer picture of how much more land Ontario needs to protect, with only three years left, Ontario – and Canada – will not achieve the goal of protecting 17% by 2020. But there is still time to set out a clear and actionable plan to hit this target in the coming years. **The ECO recommends that the MNRF develop a strategic plan for how it will achieve 17% conservation in the province, including:**

- **Identifying priority lands for protection (e.g., biodiversity hotspots, improving ecoregional representation, enhancing connectivity, protecting important carbon stores, and protecting climate refugia);**
- **Identifying priorities for ecological restoration in the protected areas system;**
- **Identifying opportunities for co-management with Indigenous communities;**
- **Providing financial and capacity-building support to increase protection of partially protected natural heritage areas; and**
- **Restoring land acquisition funding programs.**

The Ontario government was once a champion for protected areas. The Ministry of Natural Resources and Forestry's refusal to commit to and plan for protected areas expansion threatens to undermine Canada's ability to meet our international obligations to conserve biodiversity. Worse, this failure to prioritize protected areas means that future generations may not be able to enjoy the full benefits of Ontario's spectacular natural heritage.

Endnotes

1. Bernard WT Coetzee, Kevin J Gaston & Steven L Chown, "Local Scale Comparisons of Biodiversity as a Test for Global Protected Area Ecological Performance: A Meta-Analysis", online: (2014) 9:8 PLoS ONE e105824 <http://journals.plos.org/plosone>.

2. Aichi Target 11 states: By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.

3. The IUCN itself recognizes seven different categories of protected areas: strict nature reserves; wilderness areas; national parks; national monuments or features; habitat/species management areas; protected landscapes/seascapes; and protected areas with sustainable use of natural resources.

4. In addition to the *Provincial Parks and Conservation Reserves Act* and the *Far North Act*, the *Wilderness Areas Act* governs the 11 wilderness areas in Ontario, which are intended to preserve areas "as nearly as may be in its natural state in which research and educational activities may be carried on, for the protection of the flora and fauna, for the improvement of the area, having regard to its historical, aesthetic, scientific or recreational value..." Ontario has not created a new wilderness area since 1972.

5. For further information see pages 99-106 of the ECO's 2006-2007 Annual Report.

6. The *Provincial Parks and Conservation Reserves Act* includes some exceptions to these prohibited activities. Notably, the law permits commercial timber harvesting in Algonquin Provincial Park, as well as aggregate pits to support forest operations.

7. For further information see Part 2.2 of the ECO's 2010-2011 Annual Report.

8. Oscar Venter et al, "Threats to Endangered Species in Canada" (2006) 56:11 BioScience 903.

9. See Jonas Geldmann et al, "Effectiveness of terrestrial protected areas in reducing habitat loss and population declines" (2013) 161 Biol Conserv 230.

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11. Claudia Gray et al, "Local biodiversity is higher inside than outside protected areas worldwide", online: (2016) 7 Nat Commun 12306 <www.nature.com/ncomms>; supra note 1.

12. See e.g., Celine Bellard et al, "Impacts of climate change on the future of biodiversity" (2012) 15:4 Ecol Lett 365.

13. Jenny L McGuire et al, "Achieving climate connectivity in a fragmented landscape" (2016) 113:26 PNAS 7195; Joshua J Lawler et al, "Projected climate-driven faunal movement routes" (2013) 16:8 Ecol Lett 1014.

14. Gunnar Keppel et al, "Refugia: identifying and understanding safe havens for biodiversity under climate change" (2012) 21:4 Global Ecol Biogeogr 393; Craig R Groves et al, "Incorporating climate change into systematic conservation planning" (2012) 21:7 Biodivers Conserv 1651.

15. Ministry of Natural Resources, *Current and Projected Future Climatic Conditions for Ecoregions and Selected Natural Heritage Areas in Ontario,* by Daniel W McKenney et al (Ontario: Queen's Printer for Ontario, 2010).

16. Brendan Mackey, "Protected areas and ecosystem-based approach to climate change mitigation and adaptation" in Penelope Figgis et al, eds, *Valuing Nature: Protected Areas and Ecosystem Services* (Sydney: Australian Committee for IUCN, 2015).

17. Canadian Parks Council, *Carbon Sequestration in Protected Areas of Canada: An Economic Valuation*, by Suren N Kulshreshtha et al (Warsaw, Ontario: CPC, 2000) at 104.

18. Statistics Canada, Environment Accounts and Statistics Division, "Human Activity and the Environment: Measuring ecosystem goods and services in Canada" (Ottawa: Statistics Canada, 2013) at 75.

    Assessed ecosystem services included: atmospheric regulation; water quality, nutrient and waste regulation; water supply regulation; soil retention and erosion control; habitat and biodiversity; pollination and dispersal services; disturbance avoidance; recreation; aesthetic and amenity; and other cultural services.

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Chapter 7

Getting Approvals Wrong: The MNRF's Risk-Based Approach to Protecting Species at Risk

Contents

7.0	**INTRODUCTION: 237 ONTARIO SPECIES ALREADY AT RISK, AND COUNTING**	**218**
7.0.1	THE *ENDANGERED SPECIES ACT* IS SUPPOSED TO PROTECT AND RECOVER AT-RISK SPECIES	219
7.1	**THE FLEXIBILITY TOOLS UNDER THE *ESA***	**220**
7.1.1	THE MNRF AUTHORIZES INDIVIDUAL ACTIVITIES THROUGH PERMITS AND AGREEMENTS	220
7.1.2	THE MNRF AUTHORIZES MORE ACTIVITIES THROUGH THE PERMIT-BY-RULE SYSTEM	222
7.2	**HOW HAVE THE *ESA*'S FLEXIBILITY TOOLS BEEN USED?**	**227**
7.2.1	TOTAL *ESA* AUTHORIZATIONS HAVE DRASTICALLY INCREASED SINCE THE INTRODUCTION OF PERMIT-BY-RULE	227
7.2.2	INFRASTRUCTURE HAS THE LARGEST IMPACT ON SPECIES AT RISK	230
7.2.3	PRESSURE ON SPECIES AT RISK IS HIGHEST IN SOUTHERN ONTARIO	231
7.2.4	SOME SPECIES AT RISK ARE AFFECTED MORE FREQUENTLY	232
7.3	**SPECIES ARE GETTING LESS PROTECTION UNDER PERMIT-BY-RULE**	**234**
7.4	**BLIND FAITH: THE MNRF DOESN'T CHECK**	**238**
7.4.1	NO ROUTINE COMPLIANCE AUDITING	238
7.4.2	ENFORCEMENT DATA ARE NOT ADEQUATELY TRACKED BY THE MINISTRY	239

The MNRF's risk-based approvals allow harm to endangered and threatened species.

7.4.3	NO LEGAL AUTHORITY TO CONDUCT SITE INSPECTIONS FOR PERMIT-BY-RULE ACTIVITIES	239
7.4.4	THE MNRF IS NOT UNDERTAKING EFFECTIVENESS MONITORING	240
7.5	**THE PUBLIC CAN'T ACCESS INFORMATION ABOUT ACTIVITIES THAT AFFECT SPECIES AT RISK**	**241**
7.5.1	THE PUBLIC IS CUT OUT OF *ESA* DECISION MAKING	241
7.5.2	THE MNRF DOES NOT SHARE INFORMATION ABOUT PERMIT-BY-RULE ACTIVITIES	242
7.5.3	THERE IS NO WAY TO APPEAL *ESA* PERMIT DECISIONS	244
7.5.4	A BACK-DOOR APPEAL ROUTE FOR RENEWABLE ENERGY PROJECTS	244
7.6	**CONCLUSION: BIG CHANGES NEEDED TO PROTECT SPECIES AT RISK**	**248**

Abstract

The purpose of the *Endangered Species Act* is to protect and recover species at risk. To this end, the Act provides a general prohibition against activities that harm species at risk. But the law also gives the Ministry of Natural Resources and Forestry (the MNRF) flexibility to authorize activities that could harm species at risk, under appropriate conditions. For example, proponents may obtain a permit from the MNRF that allows harmful activity, if the total activity provides an "overall benefit" to the species at risk.

The wellbeing and survival of Ontario's species at risk has been dramatically undermined by the MNRF's "modernization" of its *ESA* approvals. Instead of individualized permits that require an "overall benefit" to species, the MNRF now allows many harmful activities under a permit-by-rule system that requires proponents only to minimize (not eliminate or compensate for) harm. To make matters worse, the MNRF turns a blind eye to whether proponents comply with these weakened rules and to the impact of the new system on species at risk. Meanwhile, the MNRF keeps the public in the dark about what activities it allows to harm species at risk, making it difficult to hold the ministry to account for this critically important program.

7.0 Introduction: 237 Ontario Species Already at Risk, and Counting

The loss of biodiversity is one of the most urgent problems facing our planet: Earth's species are disappearing at an alarming pace. Scientists estimate that the world is losing species at about 1,000 times the natural rate.[1] Ontario's native species are part of this extinction catastrophe: 237 of Ontario's plants and animals are listed as at-risk under the *Endangered Species Act* (*ESA*),[2] and there are many more species whose status has not been assessed yet but may also be at risk (Figure 1). The rapid onset of climate change adds to the stress on many species. Without effective action to protect and recover species at risk, they could disappear altogether from Ontario, representing an incredible loss of our biodiversity.

THE LOSS OF BIODIVERSITY IS ONE OF THE MOST URGENT PROBLEMS FACING OUR PLANET.

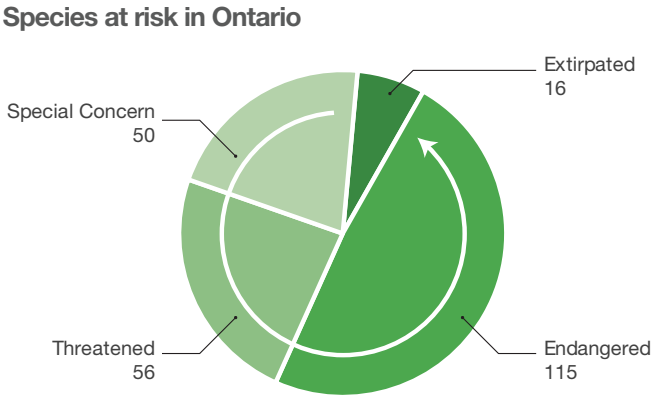

Figure 1. Species at risk listed under the *ESA* as of June 2, 2017. Arrow reflects level of impairment from low to high.

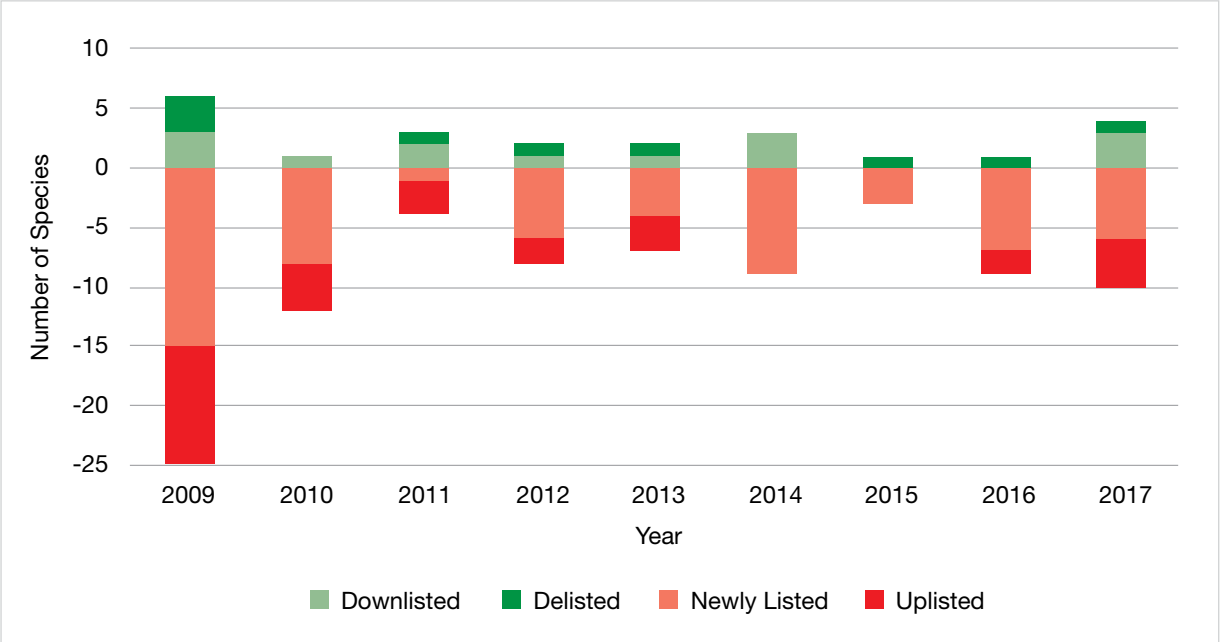

Figure 2. Change over time of species at risk classification under O Reg 230/08 of the *ESA*. Since the law came into force, there has been a total of 247 species (including sub-species and populations) listed as at-risk at some point, while there have been 59 newly listed and 28 uplisted species compared to 14 species downlisted and 9 delisted (i.e., removed from the Species at Risk in Ontario list).

7.0.1 The *Endangered Species Act* is Supposed to Protect and Recover At-risk Species

The *Endangered Species Act* is the centrepiece of the Ontario government's efforts to protect and recover species at risk. The law is intended to protect species by making it illegal to kill, harm or harass them, or to damage or destroy their habitat. It aims to recover species through a three-step process: development of a recovery strategy by a person or agency with expertise on the species; a response statement by government that outlines the actions it will take; and finally, on-the-ground conservation action (Figure 3).

THE *ENDANGERED SPECIES ACT* IS THE CENTREPIECE OF THE ONTARIO GOVERNMENT'S EFFORTS TO PROTECT AND RECOVER SPECIES AT RISK.

Framework for protection and recovery under the *Endangered Species Act*

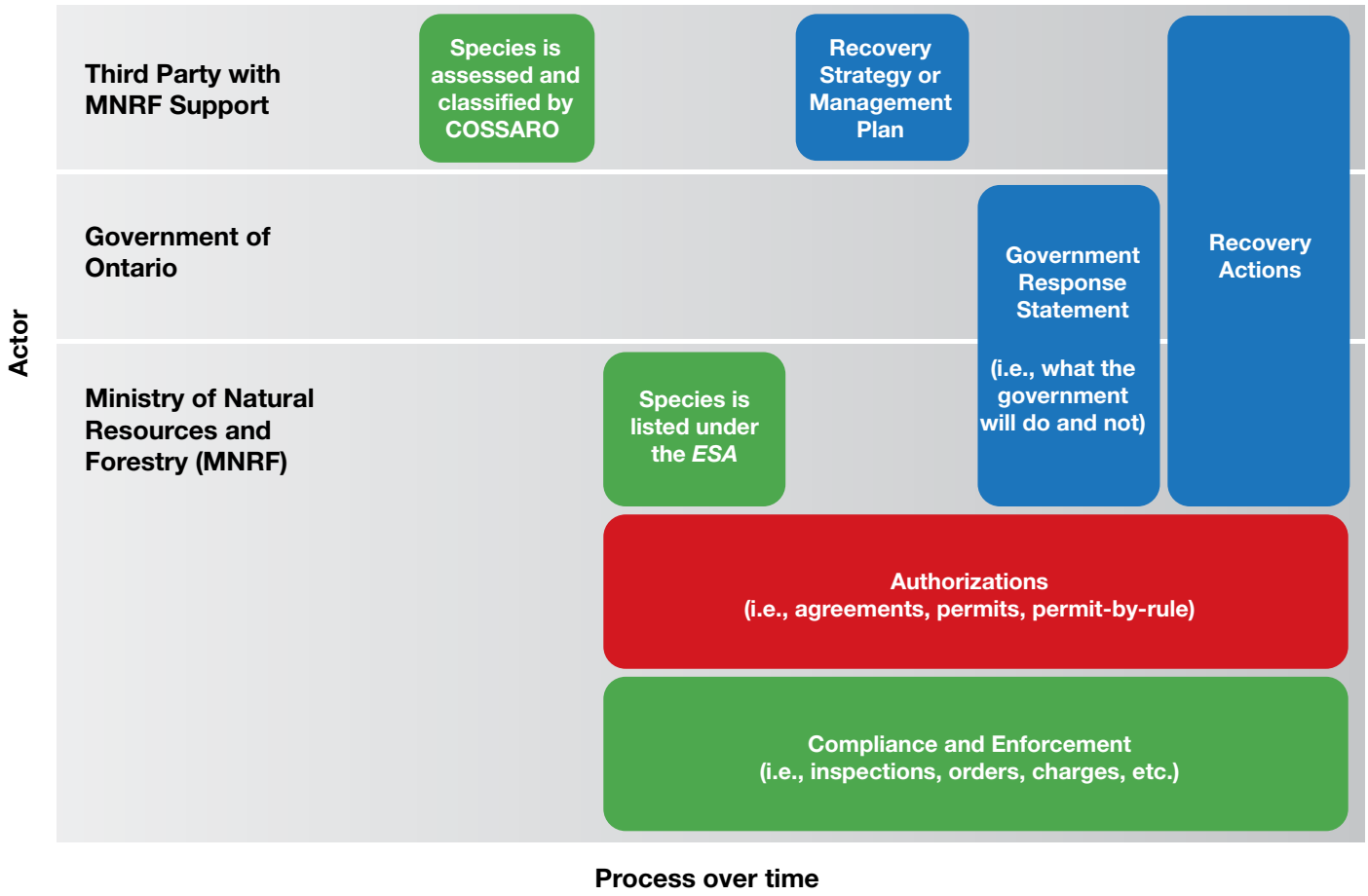

Figure 3. A general overview of the *ESA*'s framework for protecting and recovering species at risk.

IF BADLY DESIGNED AND/OR BADLY ENFORCED, PERMIT-BY-RULE SYSTEMS CAN EVISCERATE ENVIRONMENTAL PROTECTIONS.

Since its passage in 2007, the ECO has repeatedly concluded that the *Endangered Species Act* provides a solid legal basis for protecting species at risk, but its effectiveness lies entirely with how the Ministry of Natural Resources and Forestry (the MNRF) exercises its powers and responsibilities under the law.

There is some flexibility built into the *Endangered Species Act*, something that was missing in the old law that it replaced a decade ago. People can now carry out activities that could harm species at risk or their habitat if they get authorization from the MNRF. Until 2013, in most cases this meant that proponents of harmful activities had to obtain a specific permit from the MNRF. In 2013, the MNRF cut its workload and delays to proponents by shifting away from authorizing activities through individual permits, and moved to a "permit-by-rule" system. This means that proponents can carry out many harmful activities as long as they follow a series of rules that are set out in a regulation under the *ESA*.

As the Ministry of the Environment and Climate Change has demonstrated, permit-by-rule systems can work well for low-risk, repetitive activities (see Chapter 2 of this report). However, if badly designed and/or badly enforced, permit-by-rule systems can eviscerate environmental protections.

The ECO's 2013 special report *Laying Siege to the Last Line of Defence: A Review of Ontario's Weakened Protections for Species at Risk* examined this permit-by-rule approach at its onset and expressed serious concerns about reduced protection for species at risk, a lack of oversight and enforcement, and less transparency and public consultation. Now that these rules have been in place for four years, the ECO is disappointed to report how many of our initial concerns have proven to be well-founded. The MNRF has implemented the *ESA* framework in a manner that inadequately protects Ontario's most imperilled species.

7.1 The Flexibility Tools Under the *ESA*

The *ESA* protects at-risk species by making it illegal to harm them; more specifically, it is illegal to kill, harm, harass, capture, possess, transport, collect, buy, sell, or take a living member of an endangered, threatened or extirpated species.[3] It is also illegal to damage or destroy the habitat of an endangered or threatened species.[4] But these prohibitions are not absolute – the MNRF can authorize activities that contravene the *ESA*'s prohibitions. The *ESA* provides the MNRF with several mechanisms to authorize a potentially harmful activity: individual permits; agreements between the proponent and ministry; and permit-by-rule (through regulatory exemptions).

7.1.1 The MNRF Authorizes Individual Activities Through Permits and Agreements

The MNRF can issue an individualized permit that authorizes a person to engage in an activity that contravenes the law's protections. The ministry issues five types of permits covering a range of activities:[5]

'A' permits: the activity is necessary for the protection of human health or safety, but where the risk is not imminent (e.g., cutting down a tree that is likely to fall on a house, or repairing a bridge);

'B' permits: the purpose of the activity is to assist in the protection or recovery of a species;

'C' (overall benefit) permits: the purpose of the activity is not to assist in the protection or recovery

of a species, but, through requirements imposed in the permit, the proponent of the activity will achieve an overall benefit to the species within a reasonable time, and will take reasonable steps to minimize adverse effects on the species;

'D' permits: the activity will result in a significant social or economic benefit to Ontario, but will not jeopardize the survival or recovery of the species in Ontario; and

Aboriginal permits: may be issued to a band (as defined in the federal *Indian Act*), a tribal council, or an organization that represents a territorially based Aboriginal community.

THE MNRF HAS NEVER DENIED AN *ESA* PERMIT TO ANY APPLICANT.

The MNRF has never denied an *ESA* permit to any applicant. The MNRF staff say the ministry takes an "iterative approach," working with proponents to arrive at an acceptable proposal that it believes will meet the Act's legal tests. According to the ministry, there as been at least one instance of a proponent abandoning its proposal for the time being because of the inability to achieve an overall benefit.

In certain circumstances, the MNRF can also authorize an otherwise prohibited activity by entering into an agreement with a proponent. The Act allows the ministry to enter into agreements for activities aimed at assisting in the protection and recovery of species, and to enter into agreements with Aboriginal persons.[6] When the Act came into force, the ministry also created time-limited, transition exemptions for pre-existing or pre-approved activities in specific sectors to proceed under an agreement, including: aggregate operations, drainage activities; development and infrastructure projects; and waterpower operations.[7]

For the first five years that the *ESA* was in force, the majority of activities that could harm or harass and endangered or threatened species, or damage or destroy their habitat, were authorized through permits or by entering into an agreement with the MNRF. Most approvals issued during this period (for development or commercial activities) were overall benefit permits.

More Exemptions on the Horizon: A Permanent Exemption for Commercial Logging?

The *ESA* allows approvals issued under other legislation to act as a substitute for an *ESA* permit, if certain conditions are satisfied.[8] These conditions include demonstrating that each of the legal requirements of the permits will be met. If the approved activity is not specifically aimed at the protection or recovery of a species, an overall benefit to the species must be achieved within a reasonable time. To date, no approvals issued under other legislation have been deemed equivalent to an *ESA* permit.

Commercial forestry on Crown land is carried out in a region covering 438,000 km^2 of the province, known as the Area of the Undertaking. This area is home to at least 54 at-risk species (or species populations) that are listed under the *ESA*. But commercial forest operations in Crown forests have been exempt from the *ESA*'s approval requirements under permit-by-rule since 2013.

One of the reasons for this exemption is that the MNRF already requires forestry operations to minimize risk to species at risk; forestry operations are required to follow area-specific plans that provide detailed direction for addressing potential harm to species and their habitats.

The exemption for forestry is currently set to expire on June 30, 2018. There are several options open to the MNRF and the forest industry when this occurs: the exemption could be extended; the forest industry could be required to obtain permits; or the ministry could establish a process by which Forest Management Plans under the *Crown Forest Sustainability Act* (*CFSA*) can have the same effect an *ESA* permit.

The MNRF has indicated that it is exploring options to "harmonize" the *CFSA* and *ESA*. One aspect of this project is to enable Forest Management Plans issued under the *CFSA* to function as a substitute for an *ESA* permit. However, this harmonization of the *CFSA* and the *ESA* would require that forest management plans meet the overall benefit standard. It is not clear that this will be achievable for all species that are found in the area where commercial forestry takes place.

According to the ministry, of the 54 listed at-risk species found in the Area of the Undertaking:

- 16 species are not on Crown land or are not affected by forest management;
- existing forest management guidance is sufficient to avoid impacts on 10 species; and
- the 28 remaining species will require either new or revised direction to meet *ESA* standards.

7.1.2 The MNRF Authorizes More Activities Through the Permit-by-Rule System

In 2013, the MNRF created numerous exemptions to the *ESA*'s permit requirement. The exemptions allow various types of activities to proceed without having to obtain individual government approval. Instead, proponents must follow a series of rules that are set out in a regulation under the law.

Types of Activities Covered by Permit-by-Rule

The permit-by-rule system covers many of the most common activities that adversely affect species at risk and their habitats, including:

- forestry operations;
- hydro-electric generating stations;
- aggregate pits and quarries;
- ditch and drainage activities;
- early exploration mining; and
- wind facilities.

The permit-by-rule system also includes a broad transition exemption for certain development and infrastructure projects. This exemption delays the protection of most

newly listed species and their habitats from these projects by up to seven years from the date the species are listed.[9]

Permit-by-rule also includes provisions that apply to specific species, including butternut trees, chimney swift, bobolink and eastern meadowlark, barn swallow, and specified aquatic species.

Other activities that qualify for permit-by-rule include: activities geared towards species protection and recovery; ecosystem conservation measures; activities required to avoid or reduce non-imminent threats to human health or safety (e.g., work to prevent environmental contamination, or work to protect against drought, flooding, forest fires, unstable slopes and erosion, etc.); and activities that damage or destroy "safe harbour" habitat (i.e., newly-created habitat for a particular at-risk species).

THE PERMIT-BY-RULE SYSTEM COVERS MANY OF THE MOST COMMON ACTIVITIES THAT ADVERSELY AFFECT SPECIES AT RISK.

A summary of the permit-by-rule regulatory exemptions, and the permits they can replace, is provided in Table 1.

Table 1. Types of permits under the *ESA* and the corresponding permit-by-rule regulatory exemption(s) under O Reg 242/08.

PERMITS	EQUIVALENT REGULATORY EXEMPTIONS
Human Health and Safety ('A')	Non-Imminent Health and Safety Imminent Health and Safety Protection of Property
Protection or Recovery ('B')	Ecosystem Recovery Possession for Educational Purposes Safe Harbour Habitat Protection or Recovery Actions Zoos Veterinarians Wildlife Custodians
Overall Benefit ('C')	Aquatic Species Barn Swallow Bobolink / Eastern Meadowlark Butternut Chimney Swift Drainage Works Early Exploration Mining Hydro-Electric Generating Stations Pits and Quarries Wind Facilities

Eastern Hog-nosed Snake

Photo Credit: Jon Fife.

Status: Threatened

Ontario Distribution: The eastern hog-nosed snake is found in two areas of the province: southwestern Ontario in the Carolinian region and along the Great Lakes-St. Lawrence region.

Ontario Population and Trend: There is incomplete information on the population of this species in Ontario, but repeated sampling at known sites shows that the eastern hog-nosed snake is declining. The species is most threatened by habitat loss and fragmentation, road mortality, and persecution by humans.

Authorizations (excluding protection and recovery activities): 105

- Agreements: 39 (18 for aggregates, 19 for drainage, and 2 for infrastructure)
- Permits: 4 (all 'C' permits)
- Permit-by-rule registrations: 62

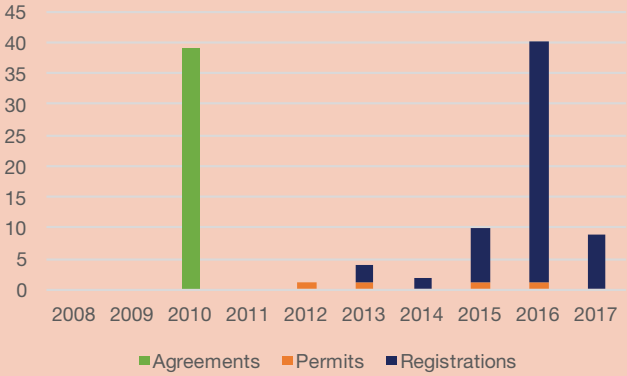

Figure 4. *ESA* authorizations for eastern hog-nosed snake (as of March 31, 2017).

Authorization Trends: The most frequent authorizations for the eastern hog-nosed snake were registrations made under the non-imminent health and safety regulatory exemption (47%), followed by drainage and aggregate agreements (Figure 4).

What's Required by the ESA's Permit-by-Rule System?

The rules that apply to the *ESA*'s permit-by-rule activities vary, but almost all require a proponent to register with the ministry and to take specific steps to minimize adverse effects on the affected species.

In most cases, proponents must also prepare a mitigation plan that describes the steps taken to minimize adverse effects on the affected species, and to keep the plan updated. Proponents of many of the permit-by-rule activities are required to monitor and/or report on the effects of the activity on the species. Proponents generally do not have to submit their mitigation plans, monitoring records, or reports to the ministry, although they must be provided if the ministry requests them.

Unlike the Ministry of the Environment and Climate Change's permit-by-rule system (the Environmental Activity and Sector Registry, see Chapter 2 of this report), proponents are not required to pay a fee to register an activity to recover costs for running the program.

The ministry has no authority under the *ESA* to require a proponent to seek a permit instead of registering an activity when such a course of action may be warranted (e.g., to address unique local circumstances). It also lacks the authority to say no to activities proceeding under permit-by-rule as long as proponents can meet all of the conditions set out in regulation.

For additional details on exemption conditions refer to Section 4 of the ECO's 2013 Special Report *Laying Siege to the Last Line of Defence: A Review of Ontario's Weakened Protections for Species at Risk* and O Reg 242/08.

A PERMIT-BY-RULE APPROACH, IS ONLY SUITABLE FOR LOWER-RISK ACTIVITIES.

What Are the Benefits and Risks of a Permit-by-Rule System?

A permit-by-rule system, when properly applied, can be an effective tool for regulating activities that can cut costs for both business and government. Indeed, the MNRF's central justification for shifting to a permit-by-rule approach for the *ESA* was the purported high administrative and financial costs of permitting. But, as we noted in our 2013 Special Report, the ministry's high costs for operating its *ESA* program were largely a defect of its own making; by failing to develop clear and consistent policies to guide the permitting process, the MNRF created an inefficient approach to permitting that was unnecessarily lengthy, costly and frustrating for proponents and other stakeholders.

A permit-by-rule system can also eliminate delays and create greater certainty for proponents. But because there is reduced government oversight in a permit-by-rule approach, it is only suitable for lower-risk activities. In the case of activities affecting species at risk, it is most appropriate for activities with predictable effects that can be adequately controlled using proven mitigation measures, where conditions to avoid adverse impacts can easily be standardized and enforced.

Butternut

Photo Credit: Valerie Zinger.

Status: Endangered

Ontario Distribution: The butternut tree is found throughout southern Ontario, south of the Canadian Shield.

Ontario Population and Trend: The butternut tree has experienced a significant population decline in the past 40 years, primarily due to a fungus called butternut canker. Research indicates that almost 50% of butternut trees in Ontario are in poor condition due to butternut canker.

Authorizations (excluding protection and recovery activities): 344

- Agreements: 73 (9 for aggregates, 58 for drainage, and 6 for infrastructure).
- Permits: 52 (2 'A' permits, 50 'C' permits).
- Permit-by-rule registrations: 219

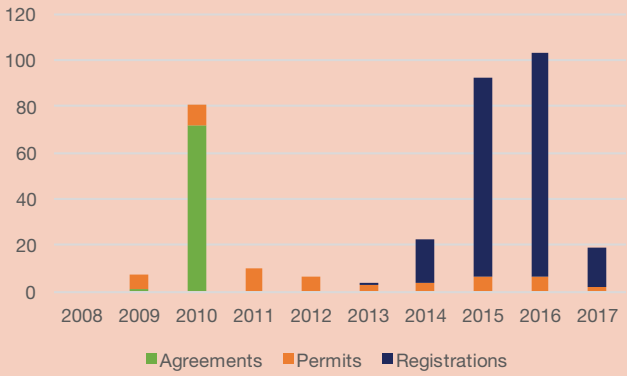

Figure 5. *ESA* authorizations for butternut (as of March 31, 2017).

Authorization Trends: The MNRF has issued a relatively high number of 'C' permits (overall benefit) for the butternut tree (Figure 5). In general, the overall benefit permits have been issued for housing developments and road construction. The butternut tree has its own species-specific regulatory exemption and so, not surprisingly, the majority of registrations were made under this exemption with 145 registrations (42% of all authorizations for the species). Another 53 registrations (15% of butternut authorizations) were made under the non-imminent health and safety regulatory exemption.

7.2 How Have the *ESA*'s Flexibility Tools Been Used?

7.2.1 Total *ESA* Authorizations Have Drastically Increased Since the Introduction of Permit-by-Rule

Since the *ESA* came into force in 2008, the MNRF has issued a total of 2,728 authorizations, including 186 agreements, 900 permits and 1,642 registrations (i.e., activities registered under the permit-by-rule system) (as of March 31, 2017). Permits were initially the main form of authorization (except in 2010, when a large batch of agreements were finalized in time to meet the deadline for proceeding under a transition exemption), but the number of permits has declined since the introduction of the permit-by-rule system in 2013; this was partly the intent of the change.

AUTHORIZATIONS TO HARM SPECIES HAVE INCREASED DRAMATICALLY SINCE THE INTRODUCTION OF PERMIT-BY-RULE.

Overall, authorizations to harm species have increased dramatically since the introduction of permit-by-rule (Figure 6). This increase is partly because, in 2013, the *ESA*'s habitat protections came into effect for an additional 65 "transition" species, increasing the need for more authorizations for activities.[10] However, large increases in authorizations have also occurred for a number of species that received full protection under the *ESA* prior to 2013.

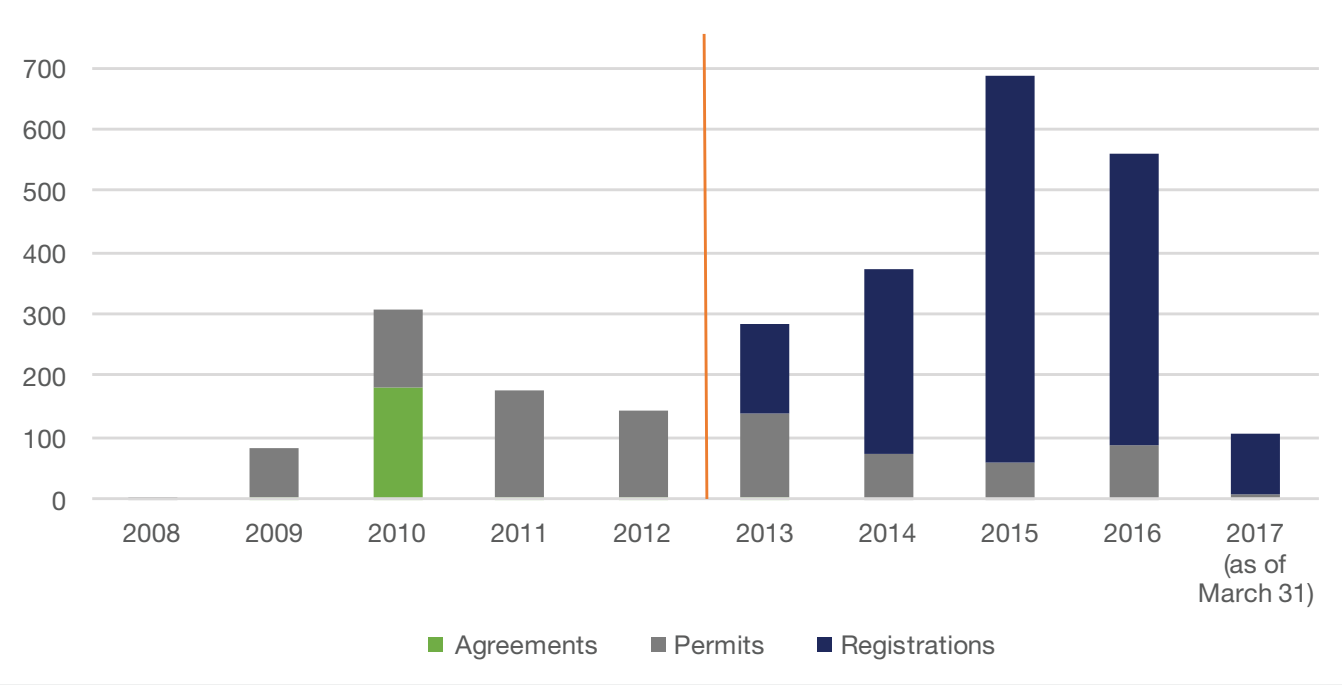

Figure 6. Number of authorizations under the *ESA*.

Source: Based on data provided by the MNRF.

How Registrations Have Impacted Permitting Levels

Shifting to permit-by-rule was meant to decrease the permitting burden on the ministry for some low-impact, high-volume activities with predictable effects. This should allow the MNRF to focus its efforts on activities with a higher potential for negative impacts to species at risk and their habitats.

The clearest case for permit-by-rule lies with 'B' permits, which contribute to the protection or recovery of a species through research, conservation, and habitat rehabilitation. Since the transition to permit-by-rule, the number of 'B' permits issued by the ministry predictably decreased, replaced by a similar number of corresponding registrations (Figure 7).

THE CLEAREST CASE FOR PERMIT-BY-RULE LIES WITH 'B' PERMITS, WHICH CONTRIBUTE TO THE PROTECTION OR RECOVERY OF A SPECIES THROUGH RESEARCH, CONSERVATION, AND HABITAT REHABILITATION.

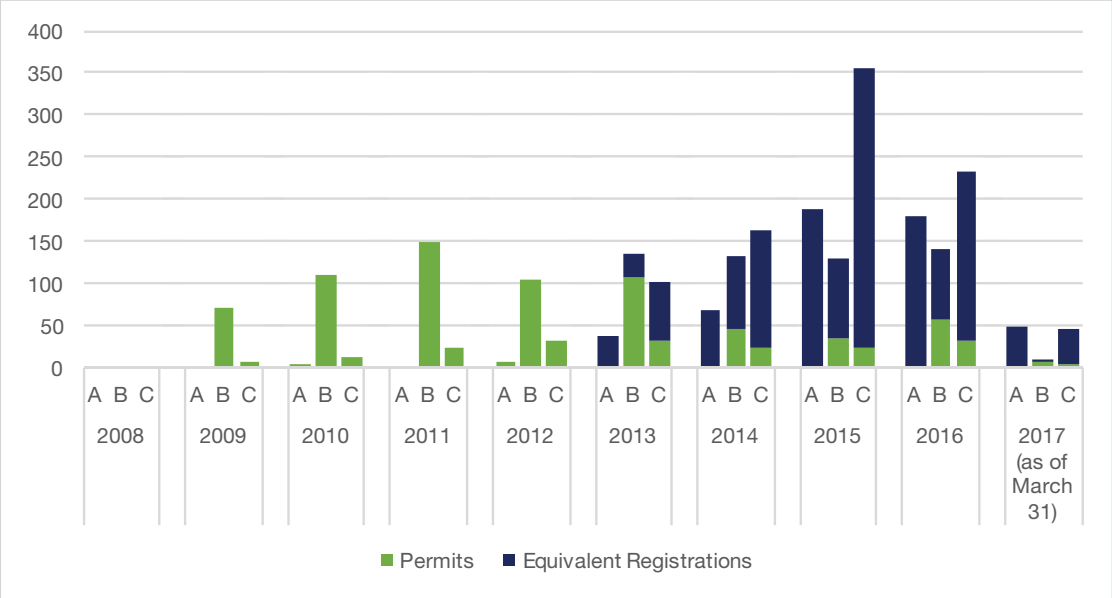

Figure 7. The number of 'A', 'B', and 'C' permits issued per year by the MNRF compared to the number of registrations for equivalent regulatory exemptions (note that only one permit was issued in 2008, and 2017 data only represents up to March 31).

Source: Based on data provided by the MNRF.

IT IS PLAUSIBLE THAT, PRIOR TO 2013, MANY MORE ACTIVITIES HARMFUL TO SPECIES AT RISK TOOK PLACE ILLEGALLY.

Comparing overall benefit ('C') permits with their equivalent regulatory exemptions provides a different picture. In the period 2009 to 2012, the MNRF issued a total of 77 overall benefit permits. Since 2013, there have been 786 registrations for the equivalent regulatory exemptions, plus a modest increase in overall benefit permits (i.e., 117) (Figure 7). It is plausible that, prior to 2013, many more activities harmful to species

at risk took place illegally, with no authorization under the *ESA*. (A similar phenomenon is documented for the Ministry of the Environment and Climate Change in Chapter 2 of this report). Bringing these illegal activities into the permit-by-rule system could enhance species protection if the newly captured proponents upgrade their activities to comply with the rules, even though the permit-by-rule conditions merely require proponents to minimize adverse effects on the affected species, rather than producing an overall benefit to the species.

A similar trend emerges when comparing 'A' permits (protection of human health and safety) with registrations under the "non-imminent health and safety" exemption (Figure 7) – there has been a marked increase in authorizations for activities related to health and safety since the introduction of permit-by-rule. Unfortunately, as shown below, infrastructure maintenance is one of the most common causes of harm to species at risk. This analysis similarly suggests that, prior to 2013, many activities that required an 'A' permit simply took place illegally.

Chimney Swift

Photo Credit: Andrew Cannizzaro.

Status: Threatened

Ontario Distribution: The chimney swift is generally found in southwestern Ontario; however, it has been occasionally observed throughout the province.

Ontario Population and Trend: There are approximately 7,500 individuals in Ontario. The Canadian population has been declining at a rate of about 8% per year, representing a total decline of 95% since 1968. The species' decline is thought to be primarily related to a loss of habitat as traditional chimneys become less common in buildings.

Authorizations (excluding protection and recovery activities): 125

- Agreements: 1 (for infrastructure)
- Permits: 2 (1 'A' permit, 1 'C' permit)
- Permit-by-rule registrations: 122

Figure 8. *ESA* authorizations for chimney swift (as of March 31, 2017).

Authorization Trends: Virtually all of the authorizations (84%) for chimney swift were under the non-imminent health and safety regulatory exemption (Figure 8). Although there is a species-specific exemption for chimney swift, only two registrations have been received by the MNRF under this provision.

7.2.2 Infrastructure Has the Largest Impact on Species at Risk

Of all activities that negatively affect species at risk, the most common are activities related to infrastructure and structure maintenance (Figure 9) – for example, work on roads, electric power systems, communications systems, etc. Most of these activities now proceed under the permit-by-rule exemption for "non-imminent threats to human health and safety." Over 400 activities (about a quarter of all registrations) related to infrastructure or structure maintenance have proceeded under this exemption since 2013. Although proponents of these activities are supposed to "minimize" adverse effects, in most cases they are not required to go to the effort of preparing a formal mitigation plan, unless they are undertaking a complete infrastructure replacement.[11] This is unlike most other permit-by-rule exemptions. Without such a plan, effective harm mitigation is less likely.

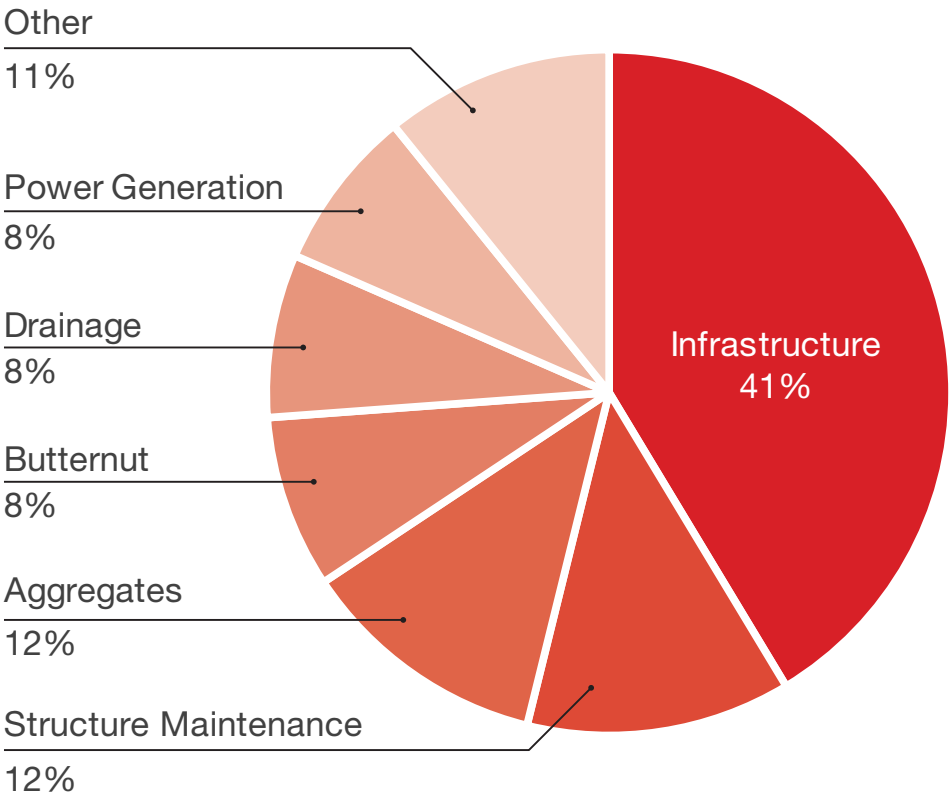

Figure 9. Percentage of authorizations by activity. Authorizations for protection or recovery have been omitted in this figure. "Other" category includes agriculture, residential, educational possession, development, mining, and incidental trapping.

Source: Based on data provided by the MNRF.

OF ALL ACTIVITIES THAT NEGATIVELY AFFECT SPECIES AT RISK, THE MOST COMMON ARE ACTIVITIES RELATED TO INFRASTRUCTURE AND STRUCTURE MAINTENANCE.

7.2.3 Pressure on Species at Risk is Highest in Southern Ontario

The largest numbers of authorizations under the *ESA* are for activities in southern Ontario, particularly in Aylmer, Aurora, and Kemptville districts (Figure 10). This trend is likely a result of the high number of activities (particularly development) conducted in these areas, compounded by the disproportionately high number of species at risk in southern Ontario. On the other hand, the extremely small number of *ESA* approvals in several northern regions raises questions about whether the *ESA* is being appropriately applied in northern Ontario.

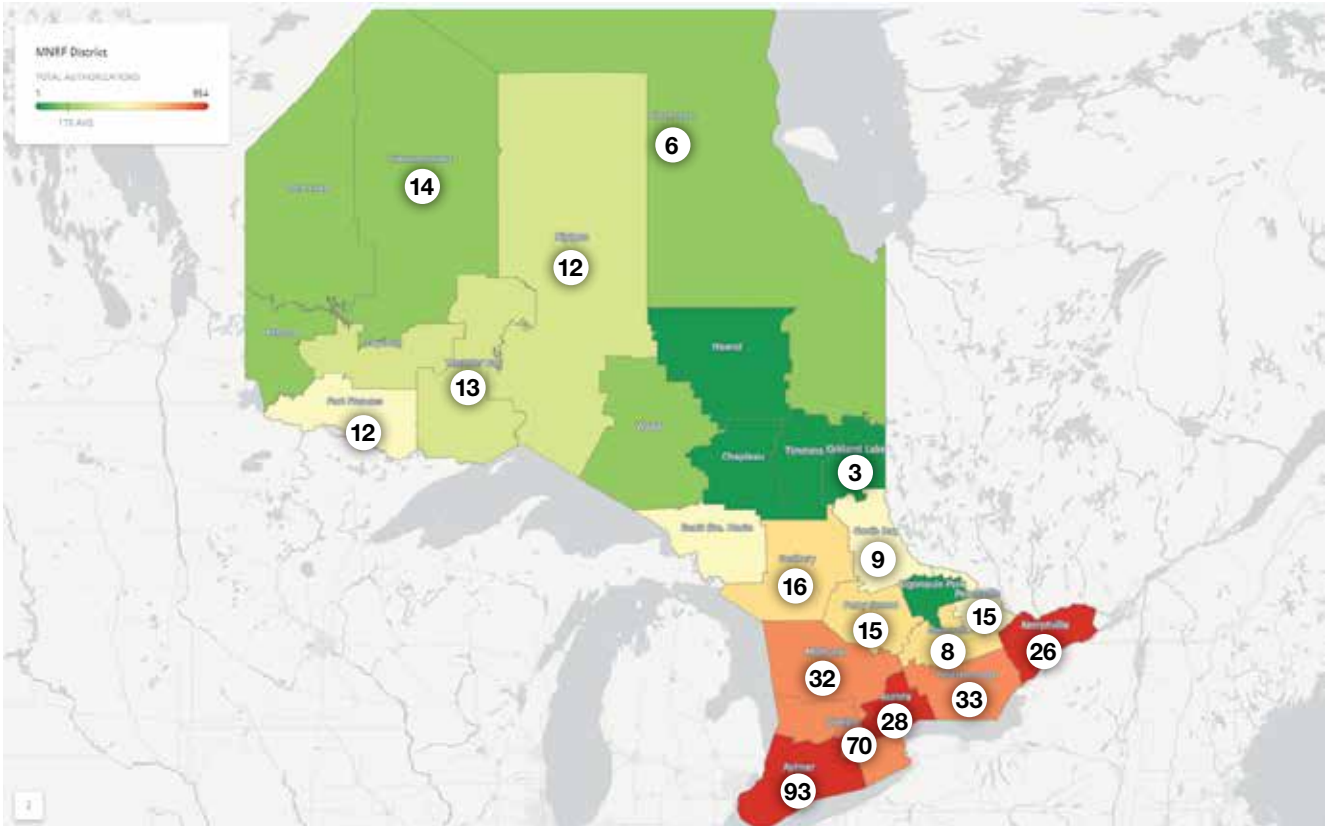

Figure 10. Geographic distribution of authorizations under the *ESA* and approximate number of threatened and endangered species present in the area.

Source: Based on data provided by the MNRF.

7.2.4 Some Species at Risk Are Affected More Frequently

Of the 171 endangered and threatened species listed under the *ESA*, there are several that are affected particularly frequently by potentially harmful activities. Figure 11 shows the ten species most frequently harmed by activities authorized under the *ESA* (excluding activities undertaken for the purposes of protecting and recovering species).

From a species perspective, large number of authorizations for the barn swallow is particularly troubling. The barn swallow was provided with its own permit-by-rule exemption even though, at the time the system was developed, only two permits had been issued for activities impacting the species. Since the amended regulation came into force in 2013, there have been 520 registrations and five permits issued for the barn swallow, accounting for about 32% of all *ESA* registrations and 19% of all *ESA* authorizations (for additional information on barn swallow, see box below).

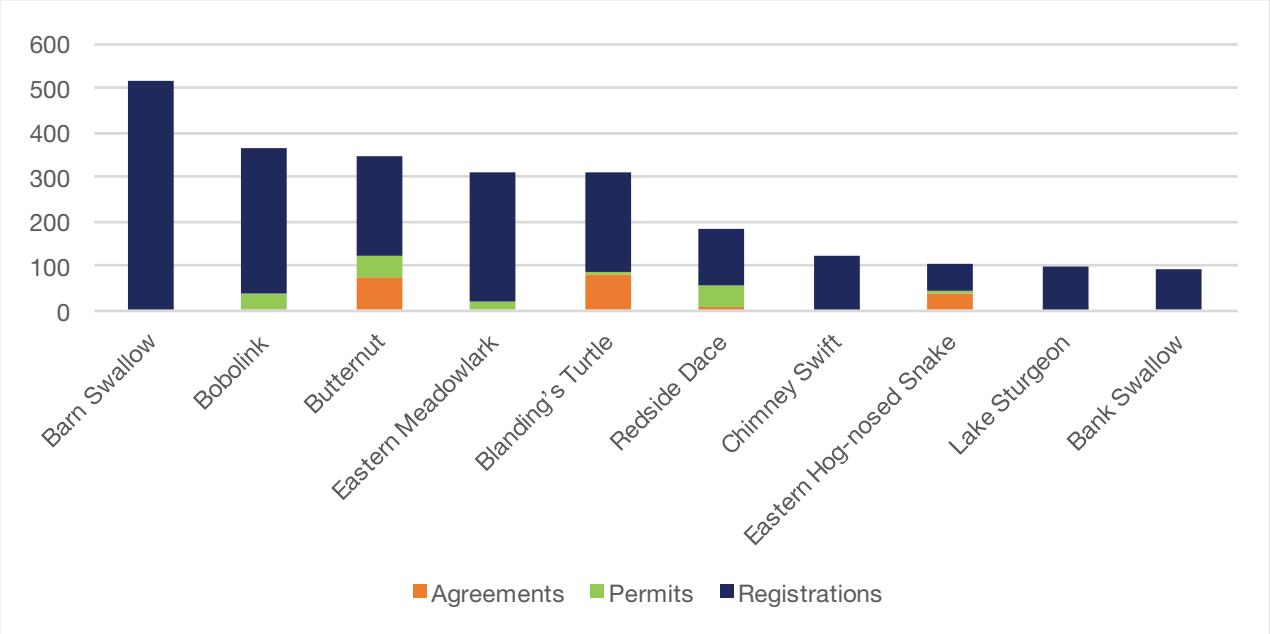

Figure 11. Top ten species most frequently affected by activities authorized under the *ESA*. Authorizations for activities related to species protection and recovery are excluded.

Source: Based on data provided by the MNRF.

Barn Swallow

Photo Credit: Charles James Sharp.

Status: Threatened

Ontario Distribution: Barn swallows are found throughout southern Ontario and have been observed as far north as Hudson Bay.

Ontario Population and Trend: The number of barn swallows in Ontario has decreased by 65% between 1966 and 2009. The top threats to barn swallows include habitat loss and degradation, large-scale changes in insect prey, and climate change.

Authorizations (excluding protection and recovery activities): 517

- Agreements: 0
- Permits: 4 (1 'A' permit, 3 'C' permits and 0 'D' permits).
- Permit-by-rule registrations: 513

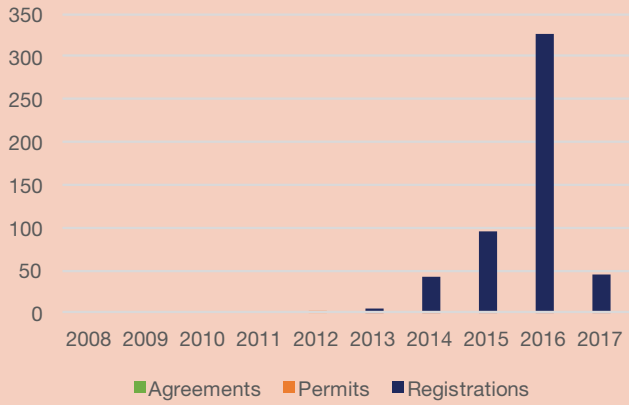

Figure 12. *ESA* authorizations for barn swallow (as of March 31, 2017).

Authorization Trends: Although there is a species-specific exemption for barn swallow, most activities affecting the species were registered under the non-imminent health and safety exemption. The non-imminent health and safety exemption accounted for 274 registrations (53%) compared to 200 registrations (39%) for the barn swallow exemption (Figure 12). This is particularly troubling given that the barn swallow exemption includes specific measures to provide a benefit to the species (i.e., creating and maintaining new habitat and monitoring and reporting on habitat), whereas the non-imminent health and safety exemption is generic in nature. It does not include any species-specific mitigation measures, and in most cases does not even require the development of a mitigation plan.

Barn swallow was listed as a threatened species in January 2012. The MNRF issued two permits for the species before permit-by-rule came into effect in 2013. Since that time, there have been 517 registrations under permit-by-rule. The dramatic increase in authorizations brings into question the motivation to establish this species-specific regulatory exemption in the first place. The high number of registrations for the barn swallow may indicate that more activities are coming into compliance given the relative ease of registration versus getting a permit. However, the lack of permits issued to protect the barn swallow prior to the introduction of permit-by-rule in 2013 points to the ineffectiveness of the *ESA* permitting framework.

As a group, birds are highly affected by harmful activities authorized by the MNRF. Although birds constitute just 13% of species listed as endangered or threatened, authorizations for bird species account for 41% of all approvals (Figure 13). Reptiles are also frequently impacted by activities – they represent just 9% endangered and threatened species listed under the *ESA*, but they are affected by 19% of authorized activities (Figure 13).

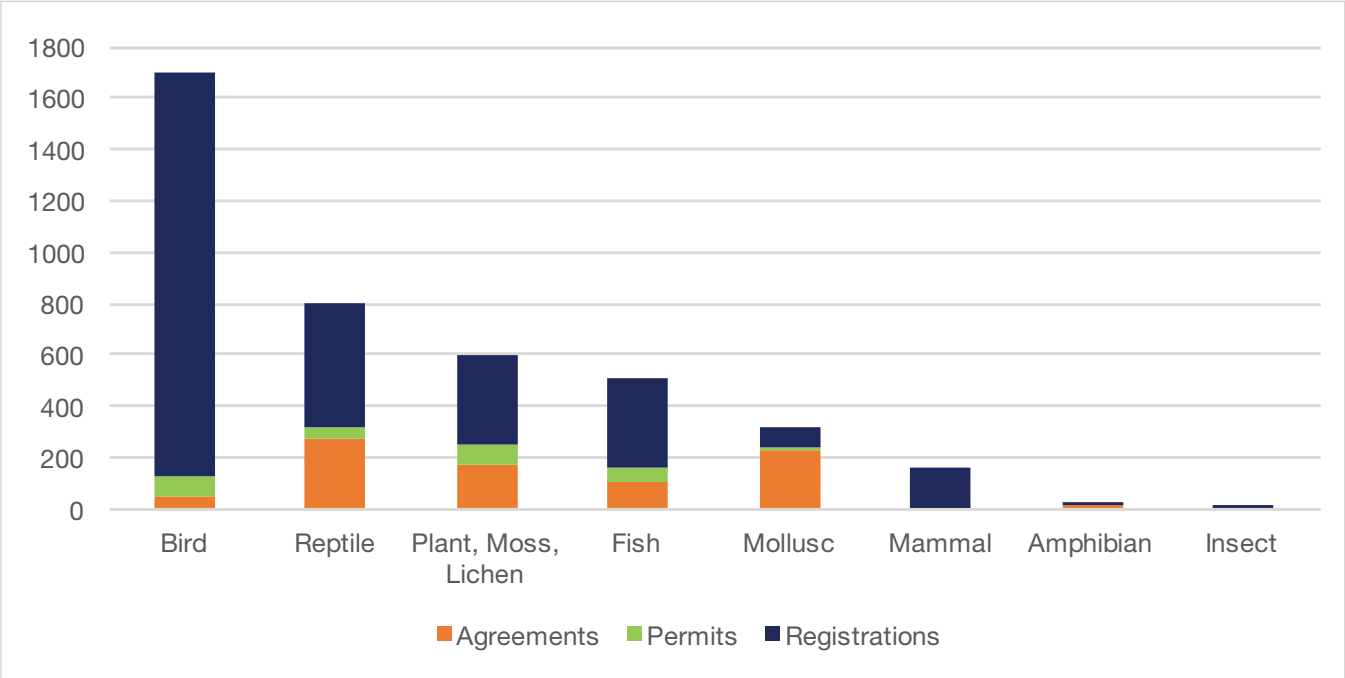

Figure 13. Number of *ESA* authorizations by species group. Authorizations for activities related to species protection and recovery are excluded.

Source: Based on data from the MNRF.

7.3 Species are Getting Less Protection Under Permit-by-Rule

Although the *ESA* was designed to include flexibility to allow activities that could harm species at risk to proceed with an approval, it was also designed with safeguards. One of the most common types of permits issued for industrial and commercial activities requires that an "overall benefit" to the species be achieved through requirements imposed by conditions of the permit.

Achieving an overall benefit not only requires a proponent to minimize the adverse effects of the activity on the affected species, but also to take steps to actually improve the overall state of the species (see Figure 14). According to the MNRF, "[o]verall benefit is more than no net loss or an exchange of like- for-like … Overall benefit is grounded in the protection and recovery of the species at risk and must include **more** than steps to minimize adverse effects on the protected species or habitats" (emphasis in original).

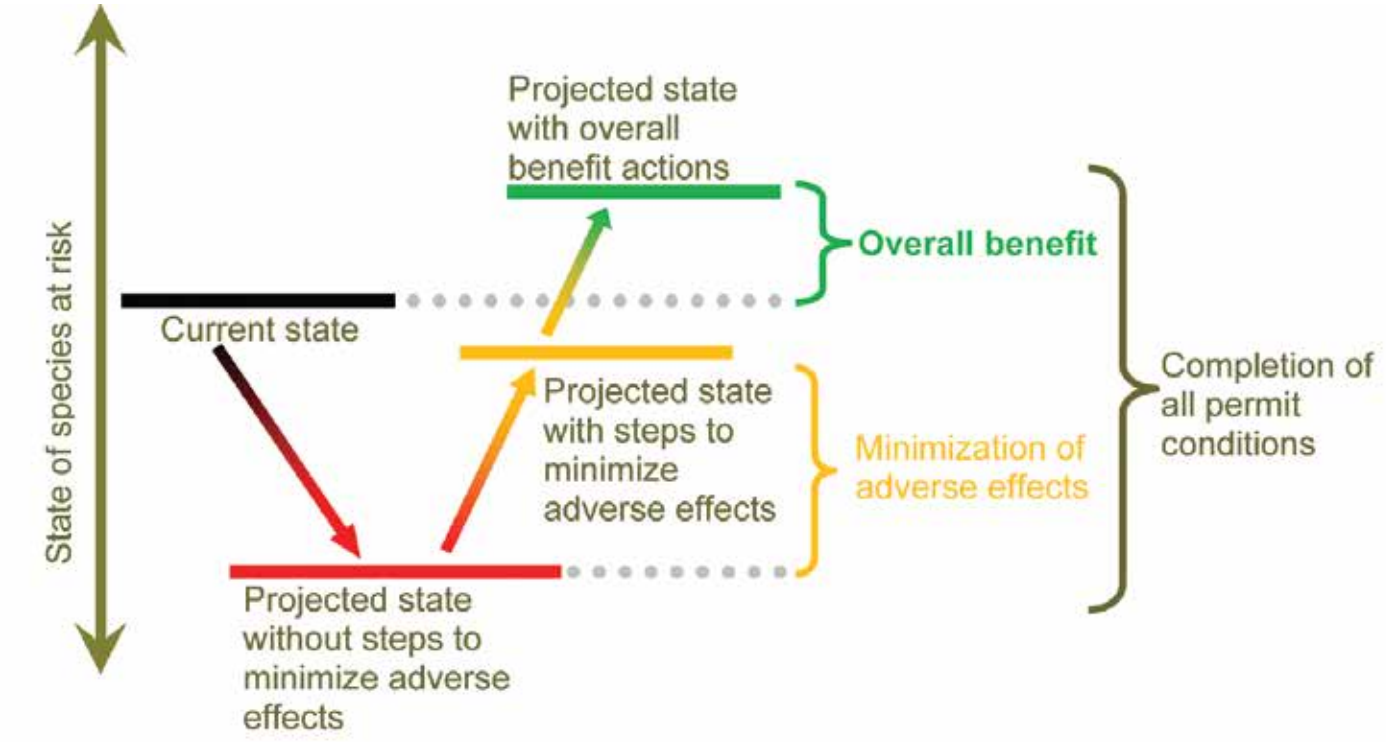

Figure 14. A simplified representation of overall benefit concept as depicted by the MNRF.

Source: The MNRF, 2012.[13]

In the permit-by-rule system, the MNRF abandoned the essential "overall benefit" safeguard for almost all species at risk and many of the major activities that harm them. While a few of the species-specific exemptions include actions that could potentially benefit the species (e.g., replacing damaged or destroyed habitat with a greater area of suitable new habitat), most exemptions only require the proponent to minimize the predictable adverse effects of their activities – likely leaving the species in a worse state than before. The sweeping scope of the exemptions created by the MNRF in 2013 is also cause for concern.

Only a few of the species-specific rules included in the *ESA*'s permit-by-rule system appear to be appropriate. For example, if an activity will adversely affect a butternut tree, the effects on Ontario's butternut population can often be counteracted by planting healthy butternut trees elsewhere. The current permit-by-rule exemption requires that proponents that kill or

THE MNRF IS NOT TRACKING THE CUMULATIVE IMPACT OF HARMFUL ACTIVITIES ON SPECIES.

IN THE PERMIT-BY-RULE SYSTEM, THE MNRF ABANDONED THE ESSENTIAL "OVERALL BENEFIT" SAFEGUARD FOR ALMOST ALL SPECIES AT RISK AND MANY OF THE MAJOR ACTIVITIES THAT HARM THEM.

take a butternut tree plant between 2 and 20 seedlings to replace it (depending on the size of the tree taken).[14]

The data provided by the ministry indicates that few activities now are proceeding under the overall benefit approach – the vast majority of activities are proceeding under exemptions that only ask proponents to minimize harm.

This is particularly troubling because the MNRF is not tracking the cumulative impact of harmful activities on species. In April 2017, the ECO asked ministry staff whether the MNRF considers cumulative effects in its approvals process or under permit-by-rule, and whether it has conducted a cumulative effects analysis for the *ESA*. The ministry stated that it does not consider cumulative effects and has not undertaken any such analysis. This potentially puts many species in a "death by a thousand cuts" situation that could cause irreparable harm, especially since the MNRF does not deny *ESA* authorizations.

This frequent authorization of harm to species at risk and their habitats – almost across the board – is not counterbalanced by effective recovery planning. Although government response statements are intended to set out a clear plan for recovering species at risk, the ECO has previously reviewed dozens of government response statements and found them to be ineffective (see for example, Part 5.1 of the ECO's 2014/2015 Annual Report).

Bobolink

Photo Credit: Andrea Westmoreland.

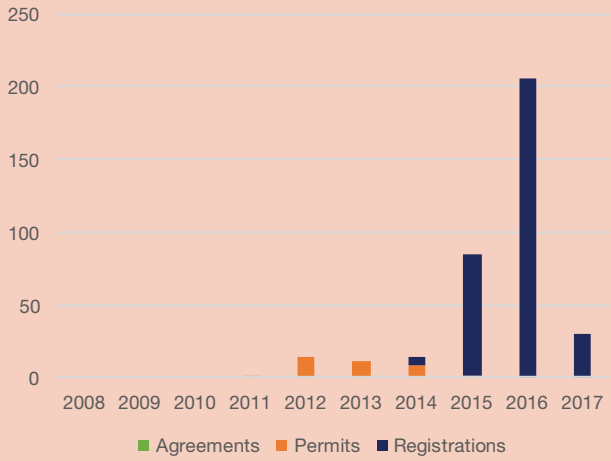

Figure 15. *ESA* authorizations for bobolink (as of March 31, 2017).

Status: Threatened

Ontario Distribution: The bobolink is found throughout southern and central Ontario. It depends on grasslands like hayfields and pastures.

Ontario Population and Trend: In 2007, the bobolink population was estimated at 400,000 breeding pairs. The bobolink has experienced a loss of 52% of its population since 1998. The bobolink's main habitat is agricultural land leading to problems during harvest, crop conversion and pesticide use.

Authorizations (excluding protection and recovery activities): 362

- Agreements: 0
- Permits: 37 (1 'A' permit, 36 'C' permits)
- Permit-by-rule registrations: 325

Authorization Trends: Although the bobolink has its own species-specific exemption, the majority (60%) of the authorizations for the species were for the non-imminent health and safety regulatory exemption (Figure 15). The bulk of the remaining authorizations were made up of the drainage works and wind operations regulatory exemptions, and 'C' permits (primarily for wind and solar farms).

PERMIT-BY-RULE IS A PROPONENT-DRIVEN APPROACH THAT IS LARGELY BASED ON SELF-ASSESSMENT.

7.4 Blind Faith: The MNRF Doesn't Check

Permit-by-rule is a proponent-driven approach that is largely based on self-assessment. This means that there is generally minimal, if any, ministry involvement when a registration occurs. As a result, a robust inspection, compliance and enforcement system is critical to minimize the inherent risk in a permit-by-rule system, by ensuring that proponents are actually following the rules. When the MNRF transitioned to a permit-by-rule system for the *ESA*, the ECO expressed concern that the ministry had done so without developing appropriate compliance and enforcement policies to make sure that people follow the rules.[15] Because of the minimal ministry involvement in permit-by-rule, effectiveness monitoring is essential to ensure that the rules protect species on the ground.

7.4.1 No Routine Compliance Auditing

In January 2017, the ECO asked the MNRF for its enforcement or compliance protocols for its *ESA* program. The ministry eventually provided the ECO with a copy of its *Risk-Based Compliance Handbook for the Endangered Species Act, 2007*, dated May 2017. The handbook essentially informs staff in the ministry's Regional Operations Division that they do not have the authority to engage in any enforcement-related activities. Their compliance-related duties are limited to activities such as education, training and stakeholder outreach; their role is to support, enable and encourage voluntary compliance. Operations staff are informed that they do not have the authority to take any actions intended to determine whether an activity is compliant with the *ESA* or collect any evidence of non-compliance. Instead, they are directed to refer any instances of suspected non-compliance to the MNRF's Enforcement Branch. The applicability of the handbook is limited to the Regional Operations Division and does not cover any compliance protocols or policies for the Enforcement Branch, although this branch is the lead in determining the ministry's compliance approach.

On its face, this is a reasonable approach given that the law only empowers ministry enforcement officers (i.e., conservation officers and park wardens) to undertake inspections and searches, issue orders, or initiate prosecutions. Although the law does allow the Minister to appoint other persons as enforcement officers for the purposes of the act (for example, it could empower operations staff to act as enforcement officer), the Minister has not exercised this power to date.

The MNRF Enforcement Branch staff stated that the branch does not have any inspection targets or protocols with respect to activities regulated under the *ESA*. Instead, its enforcement actions are largely driven by complaints or tips, or referrals from operations staff who may have grounds to suspect non-compliance. This means that neither the Regional Operations Division nor the Enforcement Branch is conducting routine compliance monitoring of activities regulated under the *ESA*.

NEITHER THE REGIONAL OPERATIONS DIVISION NOR THE ENFORCEMENT BRANCH IS CONDUCTING ROUTINE COMPLIANCE MONITORING.

The MNRF stated that it conducted a desk-top audit of all the registrations it received in the first year of the permit-by-rule system (July 2013 - June 2014). The ministry's audit found that over 90% of registrants provided the required information in their online submissions and 85% provided mitigation plans or other required records when requested by the MNRF. The ministry did not provide details on its actions to remedy the non-compliance it identified in this audit, but stated that it made "enhancements to the online system and is developing tools and resources to enable registrants to better use the registry system and understand reporting requirements." The MNRF's review of registered activities was limited to a paper audit of the registration system, and did not include any on-the-ground assessment of registered activities. The ministry did not indicate whether it has audited registered activities since its initial examination of the first year of the program.

NONE OF THE ESSENTIAL COMPLIANCE AND ENFORCEMENT INFORMATION IS TRACKED.

7.4.2 Enforcement Data Are Not Adequately Tracked by the Ministry

The ECO requested extensive information on the MNRF's compliance and enforcement activities under the *ESA*, including data summarizing: warnings, charges, orders, inspections and auditing related to authorizations.

According to the ministry, it has issued a total of 58 warnings and laid 132 charges under the *ESA* since 2007. Despite repeated requests from the ECO over a period of about six months, the MNRF was not able to provide any additional detail on these instances of non-compliance. The ministry was also unable to provide the ECO with any information regarding orders issued under the *ESA*, statutory inspections (i.e., compliance inspections for permits, agreements and orders), or compliance referrals from the Regional Operations Division. The MNRF staff stated that none of this essential compliance and enforcement information is tracked.

THE MNRF CLAIMS IT HAS NO LEGAL AUTHORITY TO CONDUCT ROUTINE ON-THE-GROUND COMPLIANCE MONITORING OF REGISTERED ACTIVITIES.

7.4.3 No Legal Authority to Conduct Site Inspections for Permit-by-Rule Activities

Although the *ESA* grants enforcement officers the authority to conduct site inspections to determine whether a proponent is complying with an agreement, permit or order, this authority does not extend to activities covered by the permit-by-rule system (see endnote for additional detail).[16] As a result, the MNRF claims it has no legal authority to conduct routine on-the-ground compliance monitoring of registered activities. According to the ministry, it considered this limitation while it was developing the permit-by-rule system. In other words, when the MNRF created the permit-by-rule system, which regulates the vast majority of activities affecting at-risk species, it did so with the full awareness that it would not have the jurisdiction to conduct compliance monitoring of those activities.

7.4.4 The MNRF Is Not Undertaking Effectiveness Monitoring

Because there is no on-the-ground auditing of registered activities, the ministry also cannot assess whether the rules themselves are effective for protecting species at risk. In fact, ministry staff stated to the ECO that the MNRF has no plans to evaluate the effectiveness of its permit-by-rule system, which would be necessary to determine whether species are receiving adequate protection under the rules.

Moreover, this also hinders the ministry from re-evaluating the appropriateness of the permit-by-rule system for a particular species or sector.

THE MNRF HAS NO PLANS TO EVALUATE THE EFFECTIVENESS OF ITS PERMIT-BY-RULE SYSTEM.

Eastern Meadowlark

Status: Threatened

Ontario Distribution: The eastern meadowlark is found south of the Canadian Shield but has been observed as far north as the Lake of the Woods area.

Ontario Population and Trend: There are roughly 130,000 adult eastern meadowlarks in Ontario. The species has experienced a 62% population decline in Ontario since 1970. The eastern meadowlark's main threats are habitat loss due to development and agricultural operations.

Authorizations (excluding protection and recovery activities): 310

- Agreements: 0
- Permits: 22 (all 'C' permits)
- Permit-by-rule registrations: 288

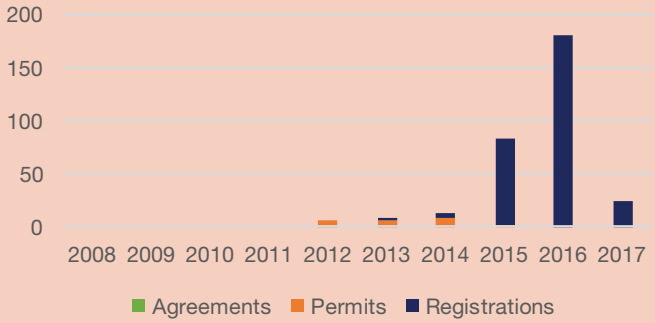

Figure 16. *ESA* authorizations for eastern meadowlark (as of March 31, 2017).

Authorization Trends: Trends in authorizations for eastern meadowlark are virtually identical to the bobolink. The majority of the authorizations (63%) were for the non-imminent health and safety regulatory exemption, with the remaining comprising of the eastern meadowlark, drainage and wind regulatory exemptions, and 'C' permits (primarily for wind and solar farms) (Figure 16).

DESPITE THE STRONG PUBLIC INTEREST IN SPECIES AT RISK, AND THE ENVIRONMENTAL IMPORTANCE OF *ESA* AUTHORIZATIONS, ONLY A SMALL FRACTION OF *ESA* AUTHORIZATIONS ARE SUBJECT TO THE *EBR*'S NOTICE AND CONSULTATION RIGHTS.

7.5 The Public Can't Access Information About Activities That Affect Species at Risk

7.5.1 The Public Is Cut Out of *ESA* Decision Making

The *Environmental Bill of Rights, 1993* (*EBR*) provides Ontarians with the right to receive notice of, and to comment on, decisions that could have a significant effect on the environment. This right applies to instruments, like permits and other types of approvals, that are "classified" (prescribed) under the *EBR*. For such instruments, ministries must post a notice on the Environmental Registry informing the public about its proposal to issue the instrument and invite the public to submit their comments on the proposal.

Despite the strong public interest in species at risk, and the environmental importance of *ESA* authorizations, only a small fraction of *ESA* authorizations are subject to the *EBR*'s notice and consultation rights. The public doesn't have any right to participate in decisions about species at risk authorizations if: the proposal involves an animal; the proponent is the Crown, a municipality or a public body; and/or the activity takes place on Crown land or in a provincial park.[17]

The ministry's rationale for excluding these permits and agreements is that they are covered by the *Class Environmental Assessment for MNR Resource Stewardship and Facility Development Projects.* Ministries do not have to consult the public through the Environmental Registry if an instrument is for a project that is covered (or exempted) by the *Environmental Assessment Act*, including projects that fall under a Class Environmental Assessment (Class EA).[18] This exemption is intended to avoid duplication because, in theory, environmental assessments have public consultation requirements similar to the *EBR* consultation process. However, the public consultation requirements of this Class EA are not equivalent to those of the *EBR*.

Although not required to do so, the MNRF posts information notices on the Environmental Registry to notify the public about *ESA* instruments that are not classified under the *EBR*. However, information notices do not provide the same public rights as proposals for prescribed instruments.[19] Public scrutiny is essential to improve environmental decision making, and is a well used tool when the opportunity is provided, with the public providing input on permits about 40% of the time. However, only 30% of *ESA* overall benefit permits are required to be posted on the Environmental Registry as instrument notices for full public notice and comment (Figure 17).

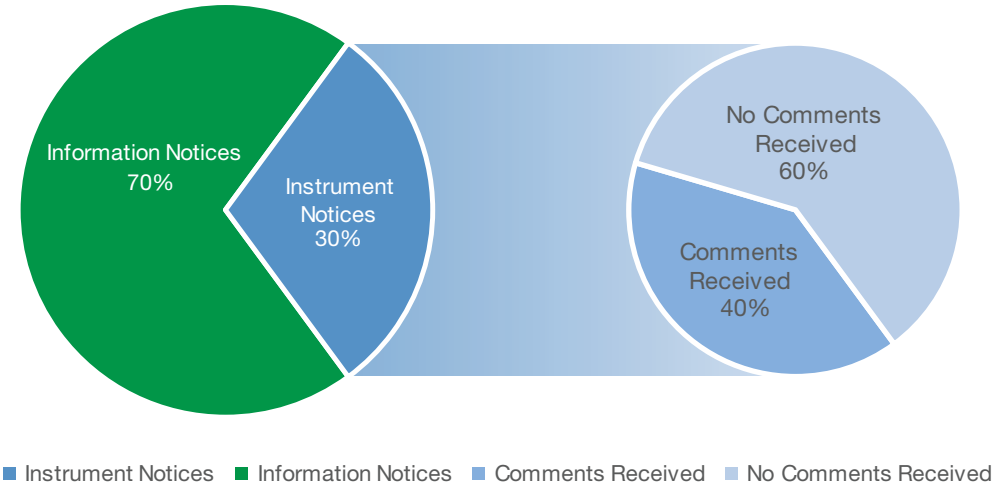

Figure 17. Public consultation on overall benefit permits issued under the *ESA*.

7.5.2 The MNRF Does Not Share Information About Permit-by-Rule Activities

Many activities that previously would have required a permit now proceed under permit-by-rule. As a result, these activities no longer show up on the Environmental Registry, and the public loses the *EBR* rights to receive notice and to comment.

In January 2012, the MNRF launched a species at risk "Permit Tracker"– an interactive map that provided information on *ESA* authorizations. At the time the new exemptions came into effect, the MNRF staff indicated to the ECO that eventually all permits, agreements and registrations (i.e., registered activities covered by a permit-by-rule exemption) would be accessible through this tool. However, this never occurred – the MNRF has not updated the authorization tracker since 2013.

The MNRF now has no intention of publicly sharing information on registered activities under the *ESA*. Instead, the MNRF informed the ECO that members of the public can only obtain such information by submitting a freedom of information request under the *Freedom of Information and Protection of Privacy Act*. In sharp contrast, all registered activities under the Ministry of the Environment and Climate Change's permit-by-rule program (see Chapter 2 of this report) are fully accessible and searchable online on the ministry's Access Environment site.

In effect, there is no readily available information on activities that the MNRF allows under permit-by-rule. The public is being kept in the dark on what activities are harming species at risk, and where. Without this information, stakeholders and members of the public cannot provide the MNRF with information about non-compliance, and cannot hold the MNRF accountable for its failures to protect species at risk.

THE PUBLIC IS BEING KEPT IN THE DARK ON WHAT ACTIVITIES ARE HARMING SPECIES AT RISK, AND WHERE.

Redside Dace

Status: Endangered

Ontario Distribution: The redside dace is found in southern Ontario, primarily in Lake Ontario tributaries around the Greater Golden Horseshoe and has been observed as far north as western tributaries of Lake Huron.

Ontario Population and Trend: There is insufficient data on population numbers in Ontario; however, sampling of historical redside dace habitat indicate significant reductions in the species' range. The redside dace's greatest threat is habitat loss and degradation due to urban development and agricultural activities, which can affect water quantity and quality by removing vegetation, changing water flows and temperatures, introducing contaminants, etc.

Authorizations (excluding protection and recovery activities): 181

- Agreements: 7 (5 drainage and 2 infrastructure)
- Permits: 48 (2 'A' permits and 46 'C' permits)
- Permit-by-rule registrations: 126

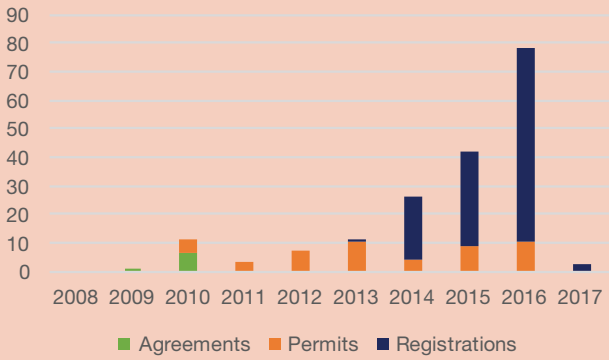

Figure 18. *ESA* authorizations for redside dace (as of March 31, 2017).

Authorization Trends: Registrations under the aquatic works regulatory exemption comprise 52% of the total authorizations for the species, followed by 'C' permits (primarily for bridge and culvert maintenance) and the non-imminent human health and safety regulatory exemption (Figure 18).

7.5.3 There Is No Way to Appeal *ESA* Permit Decisions

The *ESA* does not include any appeal rights for proponents, meaning that anyone seeking an *ESA* permit does not have the ability to challenge a decision by the ministry. This likely has little impact on proponents, since *ESA* permits are never refused. But the *Environmental Bill of Rights, 1993* only creates appeal rights for members of the public when proponents can appeal. As a result, members of the public cannot seek leave (i.e., permission) to appeal the MNRF's decisions to grant an *ESA* permit under the *EBR*.[20] This leaves both instrument holders and concerned members of the public with only one, very expensive and difficult to use option for challenging authorization decisions – applying for a judicial review of the decision.

Challenging decisions through a judicial review is much more difficult than through an appeal under the *EBR*. The process for pursuing an appeal before the Environmental Review Tribunal is simpler, less expensive and faster than going to court. Moreover, courts require judicial review applicants to meet a very high bar to show that a ministry's decision was unreasonable, and the Environmental Review Tribunal has specialized environmental expertise and understanding that the courts lack. No *ESA* approval has been successfully overturned by judicial review. As a result, there is no effective oversight, and no legal remedy for the MNRF's failures to effectively protect species at risk.[21]

THERE IS NO EFFECTIVE OVERSIGHT, AND NO LEGAL REMEDY FOR THE MNRF'S FAILURES TO EFFECTIVELY PROTECT SPECIES AT RISK.

7.5.4 A Back-door Appeal Route for Renewable Energy Projects

The only exception is the special appeal process for Renewable Energy Approvals (REAs) (e.g., for wind farms) under the *Environmental Protection Act*.[22] Several *ESA* permits have been subject to indirect challenges during wind farm appeals. To date, two appeals of wind energy project approvals have succeeded because of the projects' impacts on threatened and/or endangered species. In both cases the Environmental Review Tribunal found that the MNRF's authorizations (or lack thereof) under the *ESA* were insufficient to prevent serious and irreversible harm to the affected species.

THE ENVIRONMENTAL REVIEW TRIBUNAL FOUND THAT THE MNRF'S AUTHORIZATIONS (OR LACK THEREOF) UNDER THE *ESA* WERE INSUFFICIENT TO PREVENT SERIOUS AND IRREVERSIBLE HARM TO THE AFFECTED SPECIES.

In July 2013, the Environmental Review Tribunal granted an appeal of a REA issued to the Ostrander Point Wind Energy Park, a nine turbine wind energy facility in Prince Edward County.[23] The Tribunal found that the roads for the project would cause "serious and irreversible harm" to the Blanding's turtle population at the project site due to mortality. Although the project had obtained an *ESA* permit from the MNRF requiring the proponent to provide an overall benefit to the Blanding's turtle in the province as a whole, the Tribunal found that the conditions were insufficient to protect the

specific population affected by the project, in particular because the project would have been constructed directly in the species' habitat, and because the project was located on publicly accessible Crown land. The appeal ultimately concluded in June 2016, with the Environmental Review Tribunal wholly revoking the REA for the project.[24]

In our 2013 Special Report, we noted that the Tribunal's findings in the Ostrander case created doubt about whether the reduced level of protection afforded to species under the permit-by-rule system would be sufficient to withstand legal scrutiny under similar circumstances. We also noted that the decision underscored the need to account for site-specific factors when determining the adverse effects of projects on species at risk, and that the permit-by-rule system does not do so.

More recently, the Environmental Review Tribunal substantially altered a REA issued for the White Pines Wind Project (also in Prince Edward County), after finding that the project would cause serious and irreversible harm to two species at risk – the little brown bat and Blanding's turtle.[25] The Environmental Review Tribunal ordered amendments to the proponent's mitigation plan to ensure sufficient measures to minimize harm to the little brown bat. It also removed 18 of the 27 project's turbines from the approval to address harm to the Blanding's turtle.

The project was proceeding under both an overall benefit permit (for bobolink, eastern meadowlark and eastern whip-poor-will) and a permit-by-rule *ESA* exemption for wind generation facilities with respect to little brown bat. The proponent did not obtain any *ESA* authorization for Blanding's turtles, on the basis that it would implement measures to avoid harm to this species.

The Tribunal found that the measures included in the proponent's mitigation plan (as required under the wind generation exemption regulation) would be insufficient to prevent harm to the little brown bat. It also noted that the applicable rules in the regulation do not provide any details or minimum standards for operational curtailment (e.g., by specifying turbine speed to minimize risk to bats). The Tribunal found that the Blanding's turtle would suffer serious and irreversible harm as a result of increased collision mortality on upgraded municipal roads.

These cases show why effective oversight of the ministry's *ESA* decisions is essential. They also demonstrate that the MNRF is not using its powers under the *ESA* to effectively prevent harm to species at risk. These cases also illustrate the unusual situation that exists because of the absence of an appeal right for *ESA* approvals – species at risk may be afforded greater protection from the impacts of wind farms and other renewable energy projects than from any other activities in Ontario.

Blanding's Turtle

Photo Credit: Ontley McNauth.

Status: Threatened

Ontario Distribution: Blanding's turtle is found in southern and eastern Ontario in approximately four distinct and isolated populations.

Ontario Population and Trend: Research indicates that there are approximately 10,000 individuals within Ontario. The top threats include road mortality, habitat loss, and poaching.

Authorizations (excluding protection and recovery activities): 308

- Agreements: 80 (35 for aggregates, 43 for drainage, and 2 for infrastructure)
- Permits: 8 (all 'C' permits)
- Permit-by-rule registrations: 220

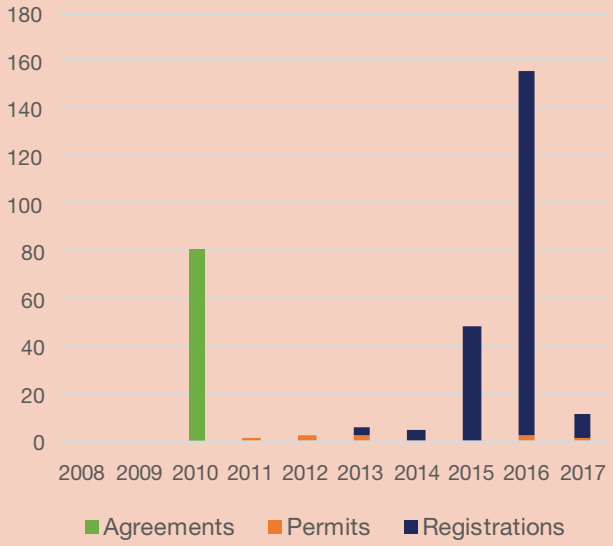

Figure 19. *ESA* authorizations for Blanding's turtle (as of March 31, 2017).

Authorization Trends: Prior to the implementation of the permit-by-rule system, Blanding's turtle was subject to a high number of aggregate and drainage agreements (Figure 19). Since then, the species has been listed on 154 non-imminent health and safety registrations, accounting for 50% of all authorizations for the species.

Blanding's turtle was also included in one species-specific registration for the barn swallow, potentially indicating a misuse of the registration system.

Bats (Eastern Small-footed Myotis, Little Brown Myotis, Northern Myotis, Tri-colored Bat)

Little Brown Bat. Photo Credit: USFWS/Ann Froschauer.

Status: Endangered (all species)

Ontario Distribution: These bats are generally found in southern and central Ontario.

Ontario Population and Trend: Cave-dwelling bat populations in Ontario have been decimated by a fungus called white nose syndrome (see Chapter 3.2 of Volume 2 of the ECO's 2015/2016 Environmental Protection Report). It is uncertain whether they will ever recover.

Authorizations (excluding protection and recovery activities): 127

- Agreements: 0
- Permits: 3 (all 'C' permits)
- Permit-by-rule registrations: 124

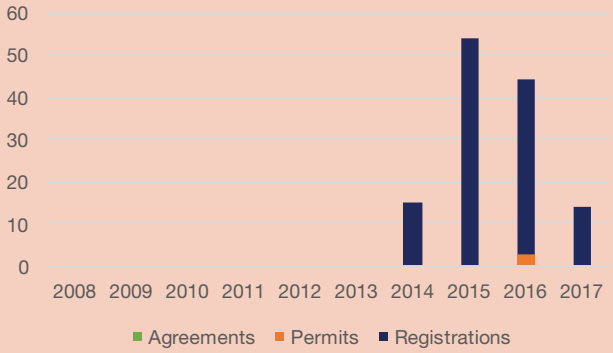

Figure 20. *ESA* authorizations for eastern small-footed myotis, little brown myotis, northern myotis, and tri-colored bat (as of March 31, 2017).

Authorization Trends: Authorizations for Ontario's cave-dwelling bats have primarily been issued under the wind facility operation regulatory exemption (65%), followed by the transition regulatory exemption (Figure 20).

7.6 Conclusion: Big Changes Needed to Protect Species at Risk

The ECO still stands behind the *ESA* in principle – it is a good law that has the potential to protect and recover species at risk. But as we have now reported on many occasions, the MNRF has utterly failed to implement the law effectively. With each passing year, the extent of this failure becomes more clear – the ministry has reduced what should have been a robust system for protecting species at risk to what is largely a paper exercise. The MNRF is failing to not just protect species at risk as intended under the law, but also to lead effective recovery programs. In the best case, the MNRF has created a system that leaves itself with a minimal role to play; in the worse case, it has a created a system designed to fail.

THE MNRF HAS UTTERLY FAILED TO IMPLEMENT THE LAW EFFECTIVELY.

The massive shift from overall benefit to minimizing harm – a much lower standard of protection – now authorizes harm to most species at risk across Ontario. Meanwhile, the MNRF relies on blind faith and on public complaints instead of an effective compliance and enforcement strategy. It makes no attempt to ensure routine compliance, to prevent cumulative impacts, or to monitor the effect of its permit-by-rule system on species at risk.

The MNRF does not have measures in place to monitor or assess if or how the *ESA* regulatory system is working to protect and recover species at risk on the ground. Because the ministry has not examined the effectiveness of its permit-by-rule conditions, it has no way to evaluate whether changes need to be made to the system. **The ECO recommends that the MNRF determine the effects of its authorizations on species at risk and publicly report on the results.**

Worse, the ministry's compliance monitoring and enforcement actions for activities affecting species at risk are deficient. The MNRF should require the submission of mitigation documentation and monitoring records to help ensure that proponents of registered activities understand and are following the correct rules. The MNRF's Enforcement Branch should also develop an effective enforcement strategy for activities affecting species at risk, including site inspection targets.

On a more fundamental level, it is deeply disturbing that the MNRF designed a permit-by-rule system to regulate activities that could harm the province's most vulnerable species without first ensuring that it had the legal authority to audit the on-the-ground compliance with that system. This astonishing lack of oversight creates serious doubt about the ministry's commitment to actually protecting species at risk, and it should be remedied without delay. **The ECO recommends that the MNRF amend the *Endangered Species Act* to give enforcement officers the power to conduct inspections of registered activities to ensure compliance with permit-by-rule conditions.**

The shift to a less protective regime for species at risk, coupled with insufficient oversight and enforcement by the MNRF is even more problematic given the

increasing lack of transparency and accountability. As time has passed, less and less information is publicly available on activities affecting species at risk. In effect, the system is broken and there is little opportunity for the public to hold the government to account for its failures in protecting species at risk.

The ECO strongly believes that the protection of species at risk in Ontario can be improved by enhancing public participation and transparency. The lack of public notice and comment for *ESA* permits means that the public has no opportunity to know what is happening to species at risk and to hold the MNRF accountable for a critically important program. **The ECO recommends that the MNRF post instrument proposals for all permits on the Environmental Registry for full public notice and comment.**

Further, it is unacceptable that the ministry refuses to make information on activities that are proceeding under the permit-by-rule system publicly available. **The ECO recommends that the MNRF make all species at risk authorizations, including registrations, publicly accessible on Access Environment.**

Lastly, a final challenge is that, even when the public is able to access information on authorizations, it is extremely difficult to challenge those decisions. There needs to be an accessible mechanism to appeal permit decisions when appropriate. **The ECO recommends that the MNRF amend the *Endangered Species Act* to create a right of appeal for permits.**

Endnotes

1. Stuart L. Pimm et al. "The biodiversity of species and their rates of extinction, distribution and protection" (2014) 344:6187 Science 1246752.
2. O Reg 230/08.
3. *Endangered Species Act, 2007*, SO 2007, c 6, s 9 [*ESA*].
4. *ESA, supra* note 3, s 10. Note: it is also illegal to damage or destroy the habitat of extirpated species if prescribed by regulation.
5. *ESA, supra* note 3, s 17(2).
6. *ESA, supra* note 3, ss 16, 19.
7. O Reg 242/08.
8. *ESA, supra* note 3, s 18.
9. O Reg 242/08, s 23.13. However, activities that fall under the aquatic species exemption do not qualify for this exemption.
10. Endangered and threatened species that were listed at the time the *ESA* came into force, but that were not listed under the legislation that preceded the ESA did not receive habitat protection for the first five years the law was in force. The *ESA*'s habitat protections came into effect for these species on July 1, 2013.
11. A mitigation plan is only required if work to maintain, repair, remove or replace and existing structure or infrastructure results in the upgrade or removal of a structure or infrastructure, the decommissioning of a mine or the replacement of an entire structure or infrastructure. See O Reg 242/08, s 23.18(5)(1)(ii).
12. Ministry of Natural Resources, *Endangered Species Act Submission Standards for Activity Review and 17(2)(c) Overall Benefit Permits* (Ontario: February 2012).
13. *Ibid.*
14. O Reg 242/08, s 23.7. Note that different ratios apply to butternut trees that are harmed rather than killed/taken. The exemption only applies to a maximum of ten Category 2 trees.
15. Environmental Commissioner of Ontario, *Laying Siege to the Last Line of Defence: A Review of Ontario's Weakened Protections for Species at Risk* (Toronto: ECO, 2013) at 33.
16. Section 23 of the *ESA* establishes the powers of enforcement officers with respect to inspections to determine compliance. Subsection 23(3) sets out the circumstances in which an enforcement officer may conduct an inspection without a warrant – such inspections are limited to determining compliance with a provision of an agreement, permit or order. This power does not extend to activities proceeding under regulatory exemptions.

    In addition, subsection 23(1) states that enforcement officers may obtain a warrant to "enter and inspect any land or other place" provided that there are reasonable grounds to believe that an inspection would assist in determining compliance with the *ESA* more broadly. However, warrants must be obtained under the *Provincial Offences Act*. The *Provincial Offences Act* provides the ability to issue a search warrant, but does not contemplate the issuance of a warrant to inspect. The MNRF asserts that it would be unable to obtain a warrant to inspect given that this is not set out in the *Provincial Offences Act.*

    The *ESA*'s separate search warrant provisions (as set out in section 25) are only applicable in circumstances where there are reasonable grounds to believe that an actual offence is occurring or has occurred.
17. O Reg 681/94, s 10.5.
18. *Environmental Bill of Rights, 1993*, SO 1993, c 28, s 32.
19. Proposal notices and information notices are different from each other. Ministries are required to invite and consider public comments on proposal notices, and they must also post decision notices explaining the effect of those comments on their final decisions. Information notices do not have to include invitations to the public to provide comments, and ministries are not required to consider public comments or subsequently post decision notices.
20. The *Environmental Bill of Rights, 1993* provides Ontarians with the right to seek leave to appeal decisions of instruments that are classified under the Act, provided that a right of appeal exists under another Act. For example, instrument holders have a right to appeal a decision on whether to issue an approval under the *Environmental Protection Act*, and as a result, a third party may seek leave to appeal an *Environmental Protection Act* instrument.
21. When the *ESA* came into force, the ECO expressed concern over the lack of an appeal mechanism, stating that "giving the public the right to seek leave to appeal ministry decisions to issue permits under the Act easily justifies creating a right of appeal for the potential permit holder. In light of the explicit reference to the precautionary principle in the statute's preamble, the onus lies with MNR to justify why a permit should be granted." See Environmental Commissioner of Ontario, *The Last Line of Defence: A Review of Ontario's New Protections for Species at Risk* (Toronto: ECO, 2009) at 51.
22. The *Environmental Protection Act* allows appeals of REAs on the grounds that engaging in a renewable energy project will cause serious harm to human health or serious and irreversible harm to plant life, animal life or the natural environment.
23. *Alliance to Protect Prince Edward County v Director, Ministry of the Environment* (3 July 2013), 13-002/13-003, online: ON ERT <www.ert.gov.on.ca>.
24. *Prince Edward County Field Naturalists v Ontario (Environment and Climate Change)* (6 June 2016), 13-003, online: ON ERT <www.ert.gov.on.ca>.
25. *Hirsch v Ontario (Environment and Climate Change)* (26 April, 2016), 15-068/15-069, online: ON ERT <www.ert.gov.on.ca>.

Chapter 8

Failing to Protect a Threatened Species: Ontario Allows Hunting and Trapping of the Algonquin Wolf

Contents

8.0	**INTRODUCTION**	**254**
8.0.1	THE ALGONQUIN WOLF: A DISTINCT AND IMPORTANT SPECIES	254
8.0.2	ONCE ABUNDANT, NOW THREATENED	254
8.0.3	WHY IT MATTERS THAT ALGONQUIN WOLVES ARE THREATENED	255
8.1	**FROM PERSECUTION TO PROTECTION: THE SHIFTING ATTITUDE TOWARDS WOLVES**	**256**
8.1.1	PROTECTED AREAS: CREATING SAFE SPACES FOR WOLVES	257
8.2	**HUNTING AND TRAPPING: THE BIGGEST THREAT TO ALGONQUIN WOLVES**	**258**
8.2.1	THE IMPACTS OF HUNTING AND TRAPPING ON ALGONQUIN WOLVES	259
8.2.2	THE REGULATION OF HUNTING AND TRAPPING	259
8.2.3	HOW MANY ALGONQUIN WOLVES ARE KILLED IN ONTARIO?	260
8.2.4	THE MNRF EXEMPTED ALGONQUIN WOLVES FROM THE PROTECTIONS OF THE *ENDANGERED SPECIES ACT*	262
8.3	**LITTLE CHANCE OF RECOVERY FOR THE ALGONQUIN WOLF**	**264**
8.4	**CONCLUSION: ALGONQUIN WOLVES NEED FULL PROTECTION**	**266**

Ontario needs to protect threatened Algonquin wolves from hunting and trapping.

Abstract

Hunting and trapping is a central threat to the long-term survival of the Algonquin wolf, which is a threatened species at risk. Ontario's *Endangered Species Act* prohibits threatened species from being killed or harmed, but the Ministry of Natural Resources and Forestry has chosen to exempt the Algonquin wolf from this important protection across much of its range. The ministry has opted to only protect Algonquin wolves from hunting and trapping in and around a few isolated provincial parks. Scientists have concluded that the Algonquin wolf stands little chance of recovery unless the ministry bans hunting and trapping of wolves and coyotes throughout its range.

8.0 Introduction

Since 1963, more than 150,000 people have experienced the wonder of taking part in a wolf howl in Algonquin Provincial Park. This unique opportunity to get to know one of our province's most iconic species is one of the longest running events of its kind in North America. Despite the immense public interest in this animal, most people are unaware that, unlike other threatened species in Ontario, Algonquin wolves may be legally hunted and trapped in parts of their range. The Ministry of Natural Resources and Forestry (the MNRF) has denied Algonquin wolves the full protection normally provided under the *Endangered Species Act* (*ESA*) to threatened species. The MNRF's failure to fully protect the Algonquin wolf has drastically reduced the chance of recovering this species.

UNLIKE OTHER THREATENED SPECIES IN ONTARIO, ALGONQUIN WOLVES MAY BE LEGALLY HUNTED AND TRAPPED IN PARTS OF THEIR RANGE.

8.0.1 The Algonquin Wolf: A Distinct and Important Species

The Algonquin wolf, also sometimes known as the eastern wolf,[1] is a mid-sized canid (i.e., part of the dog family), with variable fur colour that is generally reddish-brown or tawny. The Algonquin wolf is native to Ontario, but its genetic origin and status has been a controversial topic for decades, largely because of hybridization and backcrossing with other canids like coyotes.[2] However, many recent studies have now concluded it is a genetically, morphologically and behaviourally unique species.[3]

Photo Credit: MNRF.

The federal Committee on the Status of Endangered Wildlife in Canada (COSEWIC) has determined that the eastern wolf is a species "that is worthy of conservation because of its distinctiveness, persistence and significance as a large carnivore, and likely part of the last remnant population of the large Canis from eastern North America."[4] In Ontario, the Committee on the Status of Species at Risk in Ontario (COSSARO) concluded that although Algonquin wolves are part of a widespread hybrid complex, they are "a genetically distinct" group, and an "evolutionarily significant unit."[5] Both independent bodies of scientists identify it as a threatened species.

8.0.2 Once Abundant, Now Threatened

The species known today as Algonquin wolves used to be found across eastern North America. Now there are only a few small pockets of them remaining, mostly in central Ontario and southern Quebec. Over the last few centuries, the species has lost most of its historical range in northeastern North America, and has been extirpated from the Atlantic provinces and the eastern United States. The current known "extent of occurrence" of Algonquin wolves within Ontario is only about 80,000 km^2 (Figure 1).[6]

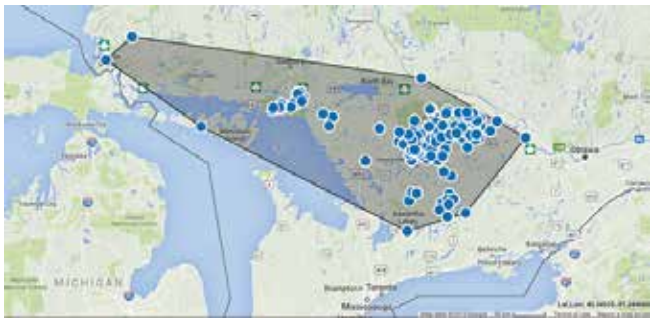

Figure 1. Extent of Occurrence of Algonquin wolf.

Source: COSSARO/NHIC.[7]

The most recent population estimate from COSSARO puts the number of mature wolves between 250 and 1,000, of which about two-thirds live in Ontario.[8] However, scientists warn that the actual population size is likely closer to the lower end of this range.[9] This exceptionally low number of individuals puts the long-term survival of the Algonquin wolf in question.[10] As a general rule, a minimum population of 500 individuals is considered necessary for long-term survival.

For these reasons, the Algonquin wolf has been designated as threatened. Eastern wolves were first classified in 2004 as a species of "special concern" under the *ESA*. This designation means that, although a species is not endangered or threatened, there are identified threats and biological characteristics that could cause it to become threatened or endangered. In January 2016, COSSARO reclassified the species' status to "threatened," meaning that the species is likely to become endangered if steps are not taken to address its threats. When the species was reclassified, COSSARO also changed its name from eastern to Algonquin wolf.

THIS EXCEPTIONALLY LOW NUMBER OF INDIVIDUALS PUTS THE LONG-TERM SURVIVAL OF THE ALGONQUIN WOLF IN QUESTION.

At the federal level, eastern wolves were assessed by COSEWIC as a threatened species in 2015. But, unlike provincial species at risk legislation, a reassessment by COSEWIC does not automatically trigger listing under the federal *Species at Risk Act*, therefore the status of eastern wolves has not yet been changed under that law from special concern to threatened.

ALGONQUIN WOLVES PLAY A SIGNIFICANT ROLE IN SHAPING THEIR ECOSYSTEMS.

8.0.3 Why It Matters That Algonquin Wolves Are Threatened

As a top predator, Algonquin wolves play a significant role in shaping their ecosystems. Not only do Algonquin wolves have an obvious direct influence on their prey (which include beaver, deer and moose), their presence in the ecosystem also has cascading and complex indirect effects on a multitude of plants, animals and ecological processes.[11] For example, wolves can play a key role in forest succession. When Algonquin wolves eat deer, it can reduce the browsing pressure on the forest understory, in turn allowing trees to grow, which create habitat for other animals, like birds, insects and small mammals (Figure 2). Similarly, Algonquin wolf predation on beaver, an "ecosystem engineer," can impact the influence of beavers on the structure of waterbodies like lakes, rivers and streams – and the habitats that these provide for other species.

Figure 2. Wolves help to control deer populations – overabundant deer can prevent successful forest regeneration. The image of the deer exclosure above shows the impact of long-term deer damage.

Photo Credit: Bill Cook, Michigan State University Extension.

The role of Algonquin wolves cannot be filled by smaller canids like coyotes or coyote-hybrids, because these animals are less able to hunt large prey.[12] In other words, if Algonquin wolves are unable to fulfill their ecological role, the ecology of central Ontario is affected in unpredictable ways.

In addition to their ecological role, Algonquin wolves are an important component of the genetic diversity of North America's canid populations. Some scientists believe that Ontario's Algonquin wolves might be the only remaining significant wild population of the red wolf, a species listed as critically endangered in the United States.[13]

8.1 From Persecution to Protection: The Shifting Attitude Towards Wolves

Wolves have long been characterized as "problem" wildlife or as vermin, and have been subjected to wide-scale human persecution since the arrival of European settlers. Early settlers generally viewed predators such as wolves as threats, particularly to livestock, and engaged in targeted eradication campaigns to exterminate wolves and other predators throughout much of North America.[14] Many of these attitudes still persist today.

Older government policies and programs also reflected these attitudes. The Ontario government used to offer a bounty on wolves and coyotes, abolishing it only in 1972. Even within Algonquin Provincial Park, park rangers were once encouraged to kill wolves.[15] The government only began to protect wolves in Algonquin Park in 1959, when a study of the behaviour and ecology of wolves in the park was initiated.

It wasn't until the 1990s that the Ontario government took steps to acknowledge the ecological importance of wolves and the need to conserve them, when it began a review of wolf status and policy. In the early 2000s, the government moved towards a more responsible model of wolf management by restricting the hunting seasons for wolves and introducing harvest limits in parts of the province (see pages 86-88 of the ECO's 2004/2005 Annual Report).

In 2005, the ministry released its *Strategy for Wolf Conservation in Ontario*, which is still in effect today. The primary objective of this policy is to "ensure ecologically sustainable wolf populations," but also includes objectives related to social, cultural and economic benefits related to wolves, and increasing public awareness and understanding. Among other actions, the 2005 Strategy committed the MNRF to undertake monitoring to determine the distribution and abundance of wolves in the province, including considering the mandatory collection of biological samples; however, the ministry has never introduced sample requirements from hunters or trappers (see *The Regulation of Hunting and Trapping* below).

8.1.1 Protected Areas: Creating Safe Spaces for Wolves

Much of the debate about wolf management in Ontario has centred on Algonquin Park. Because wolves tend to inhabit areas away from human disturbances, the few remaining Algonquin wolf populations are concentrated in protected areas, particularly in Algonquin Park (see Figures 1 and 3). Further, because hunting wolves is prohibited in most provincial parks (including Algonquin Park, Killarney Provincial Park, Queen Elizabeth II Wildlands Provincial Park and Kawartha Highlands Provincial Park) and in all Crown Game Preserves, these areas act as crucial safe spaces for wolves.

ISOLATED POCKETS OF PROTECTION ARE NOT ENOUGH.

But because wolves require vast landscapes to roam, hunt and establish new packs, isolated pockets of protection are not enough. Algonquin wolves live in kin-based packs, usually composed of one breeding pair and their offspring, that occupy large territories, often as big as 200 km^2 each. These territories can extend beyond the borders of protected areas. The wolves that live in Algonquin Park also sometimes migrate outside the park in order to hunt deer. In addition, as juveniles mature, beginning at the age of about nine months, they leave their pack's territory (because each pack normally has only one breeding pair) in search of mates and resources – often travelling great distances. Young wolves from Algonquin Park have been known to disperse hundreds of kilometers, including into Quebec and even into Ontario's Far North.[16]

In 1993, the ministry introduced a ban on winter wolf and coyote hunting in three townships southeast of Algonquin Provincial Park to address concerns about high human-caused mortality of park wolves when they followed deer into the wintering areas located in those townships.

Then, in 2001, the ministry introduced a 30-month moratorium on hunting wolves in the townships surrounding Algonquin Park based on recommendations from the Algonquin Wolf Advisory Group (a group of experts and stakeholders established by the Minister of Natural Resources). In our 2001/2002 Annual Report, the ECO concluded that a temporary moratorium was insufficient and the MNRF should: permanently close the hunting and

trapping seasons around the park until the eastern wolf population was demonstrated to be viable; consider closing the seasons across their entire range; and begin managing them as a species at risk.

In 2004, the MNRF permanently closed the hunting and trapping seasons for wolves and coyotes around Algonquin Park. This closure did not ultimately increase the wolf population in Algonquin Park because it was followed by an equivalent increase in natural mortality rates. However, researchers have since concluded that the closure helped to restore natural pack structure of the park's wolves and stabilized population numbers within the park, which represented an important step towards the species' recovery.[17]

HUMAN-CAUSED MORTALITY – PRIMARILY THROUGH HUNTING AND TRAPPING – IS THE MOST SIGNIFICANT THREAT TO ALGONQUIN WOLVES.

8.2 Hunting and Trapping: The Biggest Threat to Algonquin Wolves

Human-caused mortality – primarily through hunting and trapping – is the most significant threat to Algonquin wolves.[18]

The hunting and trapping of wolves and coyotes has economic and social importance for some people in the province, especially in the north. Some Ontarians have a tradition of wolf hunting – each year the MNRF sells thousands of wolf and coyote game seals to hunters. Numerous outfitters in northern Ontario also offer tourists the opportunity to hunt wolves. Unlike many other wildlife species that are hunted and/or trapped in Ontario, wolves are not harvested for food – they are largely hunted for sport and trapped for commercial gain.

Trapping wolves and coyotes is also a source of supplementary income for some people. The pelts of wolves and coyotes that are killed by trappers are sold at auction, mostly for export. In 2015-2016, the average pelt price for coyote was $49.91 and for wolves was $83.50. These low pelt prices, combined with the relatively low harvest numbers (see *How Many Algonquin Wolves Are Killed in Ontario?*, below) means that the overall financial benefit of wolf and coyote trapping within the area where Algonquin wolves are found is minimal, likely in the range of about $70,000 per year, or a few hundred dollars per trapper in the region.

In fact, most trappers do not harvest wolves and coyotes primarily for financial gain. Rather, many trappers believe that trapping canids helps to maintain populations of other game animals, such as beavers. Some farmers also support wolf and coyote harvesting because it can help to reduce livestock depredation.

However, in the event that livestock are killed by wolves or coyotes, farmers may be compensated through the Ontario Wildlife Damage Compensation Program (for more details see Chapter 2.2 of the ECO's 2011/2012 Annual Report, Part 2). There are also relatively low levels of livestock predation in the area where Algonquin wolves are found.[19]

Moreover, the government should not support *de facto* predator control that targets a threatened species as an acceptable wildlife management practice, especially in light of its broader obligations to manage wildlife on behalf of all Ontarians.

The Ontario government also generates a nominal amount of revenue from the hunting and trapping of wolves and coyotes. In addition to a fee of $25.15 for a

small game licence, in the part of the wolf range where a game seal is required the MNRF charges Ontario residents $11.14 for a wolf game seal, while charging non-residents $272.41. The Ontario government also receives royalties for pelts that are sold by trappers – in 2016/2017 the government received $4.60 in royalties for each wolf pelt and $2.75 for each coyote pelt (i.e., a total of about $3,700 per year for the region).

8.2.1 The Impacts of Hunting and Trapping on Algonquin Wolves

Research has shown that outside of protected areas (where hunting in mostly prohibited), Algonquin wolves are particularly vulnerable – they are more likely to die from harvesting than other canids.[20]

The high density of roads in some areas both within and outside the protected areas (such as logging access roads) can also contribute to wolf vulnerability – largely because roads facilitate wolf movement as well as increase hunter access for harvesting, though also because wolves are sometimes killed by vehicles.[21]

Juveniles are at especially high risk of being hunted or trapped, and typically make up a high proportion of wolf harvests.[22] Given the already low number of Algonquin wolves, each wolf killed has a significant effect on the remaining total population.

Moreover, hunting and trapping has effects beyond the deaths of individual wolves. The death of an individual has indirect, negative impacts on the social structure of the entire wolf pack. For example, the loss of pack members may result in more instances of unrelated individuals joining packs, which disrupts the natural composition of packs.[23] It can also increase the incidence of hybridization between Algonquin wolves and coyotes, representing a threat to the genetic distinctiveness of the Algonquin wolf and the ecological role that it fills.[24] All of these factors potentially undermine recovery efforts for the species.

8.2.2 The Regulation of Hunting and Trapping

The rules for licensed hunting and trapping in Ontario (outside of the protected areas where hunting is banned) are found in the *Fish and Wildlife Conservation Act, 1997* and its regulations. Together, these establish licensing requirements, open season timing and length, and harvest limits. There are differing requirements for hunters than for trappers, and also differing requirements for different parts of the province. These rules do not apply to hunting or trapping by Aboriginal people who are exercising Aboriginal or treaty rights.

Hunting restrictions must apply to all wolves and coyotes

One of the central challenges in protecting Algonquin wolves is the difficulty in visually distinguishing this species from coyotes and other types of wolves. It is relatively easy for a hunter to accidentally kill an Algonquin wolf while actually intending to harvest a coyote or grey wolf. Additionally, a trap does not discriminate between Algonquin wolves, coyotes or grey wolves. This means that in order to prevent the accidental harvest of Algonquin wolves in a given area, the hunting of other canid species must be prohibited in that area as well.

In central and northern Ontario, hunters of wolves and coyotes must obtain a small game licence and purchase a game seal (i.e., a seal that is required for each animal harvested, which must be immediately attached to an animal after it is killed).[25] Hunters are limited to two game seals per year.

In southern Ontario, hunting of wolves is minimally regulated; hunters only require a small game licence tag (i.e., a licence tag that allows the holder to hunt a number of small game species like racoon, squirrel and groundhog, as well as wolves), and harvest is unlimited.[26] Five of these southern management units fall within the Algonquin wolf's current range (Figure 3).[27]

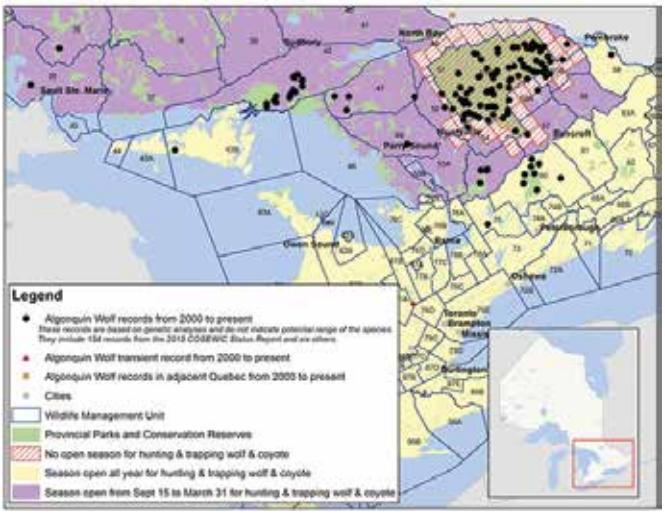

Figure 3. Hunting of wolves and coyotes is largely unregulated in the southern edge of the Algonquin wolf extent of occurrence.

Source: COSSARO.

Trappers are required to have a trapping licence. On Crown land, trappers are assigned a specific trapline with exclusive rights. Trappers may also trap on private land with the owner's permission. Provincially, trappers are not subject to harvest limits on wolves or coyotes, although the ministry may place quotas on individual trappers as needed.

8.2.3 How Many Algonquin Wolves Are Killed in Ontario?

The MNRF provided the ECO with data on wolf and coyote harvesting by both hunters and trappers. This data represents a best estimate, given the various data deficiencies and uncertainties explained below.

Hunting numbers do not distinguish between Algonquin wolves and other canids

It is difficult for people to visually distinguish Algonquin wolves from other canid species – the only reliable method of identifying an Algonquin wolf is by conducting a genetic test. Due to this difficulty, the ministry does not collect information from hunters on whether they harvested a wolf or coyote. Further, the ministry does not require hunters to submit samples of their harvest for the purposes of genetic analysis. For these reasons, the ministry does not have firm data on what proportion of the overall canid harvest consists of Algonquin wolves.

THE ONLY RELIABLE METHOD OF IDENTIFYING AN ALGONQUIN WOLF IS BY CONDUCTING A GENETIC TEST.

Hunting reporting is mandatory for only part of the Algonquin wolf's territory

Hunters in central and northern Ontario (where a wolf/coyote hunting game seal is mandatory) are required to complete a questionnaire regarding their hunting activity. As such, the MNRF collects data from northern wildlife management units, which is the area roughly north of Orillia and Bancroft. According to the ministry's estimates (based on the roughly 57% of mandatory reports that were actually completed by hunters), over the past four hunting seasons for which data are available, hunters harvested an average of about 65 wolves and coyotes per year within the area where Algonquin wolves are found (Figure 4).

Hunters in southern Ontario, however, have no mandatory reporting requirements. As a result, it is unknown how many more wolves and coyotes are killed each year in the southern extent of the Algonquin wolf's range.

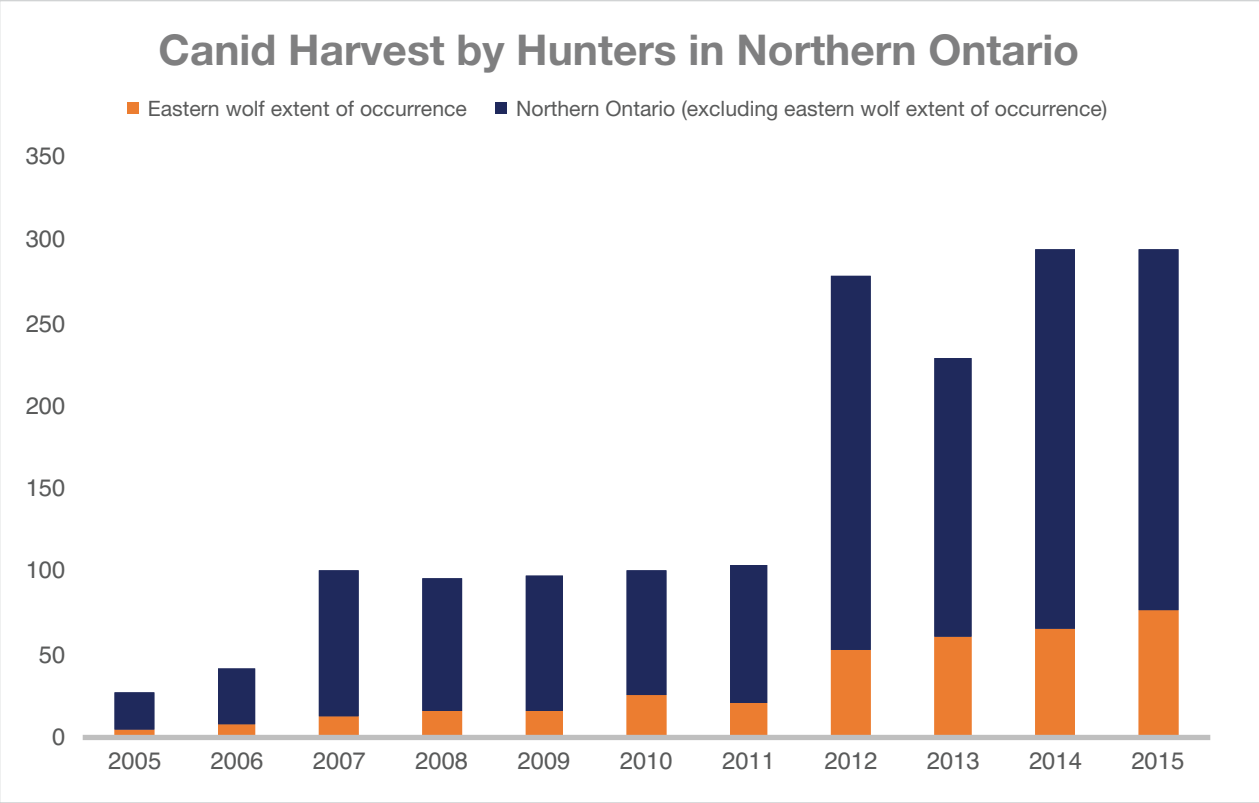

Figure 4. Total hunting harvest of wolves and coyotes in northern Ontario 2005-2015.

Source: MNRF.

Note: Estimates only include hunting in wildlife management units where a wolf/coyote game seal is required. Due to differences in collection methods and information available, the harvest data provided for 2005-2011 is based on a summary of actual harvest reported by hunters (i.e., the harvest data is not extrapolated to generate harvest estimates at the wildlife management unit level). This data does not include WMUs 59-61, 75 and 76A within the southern extent of the Algonquin wolf range as the ministry does not collect this data.

Wolves and coyotes harvested by trappers

All trappers are required to submit a harvest report to the ministry each year. Because most trappers sell the animal pelts, they, unlike hunters, typically do distinguish between wolves and coyotes. According to the data submitted by trappers, over the past four seasons, trappers killed an average of 1,272 wolves and coyotes per year in districts that at least partially overlap with the Algonquin wolf range, an average of 93 of these are identified as wolves (Figure 5). According to the MNRF, as of 2015 there were over 100 trappers reporting wolf or coyote harvests within the extent of occurrence of Algonquin wolf. According to historical data from the MNRF, very few wolves are harvested by Aboriginal trappers in Ontario.

Photo Credit: MNRF.

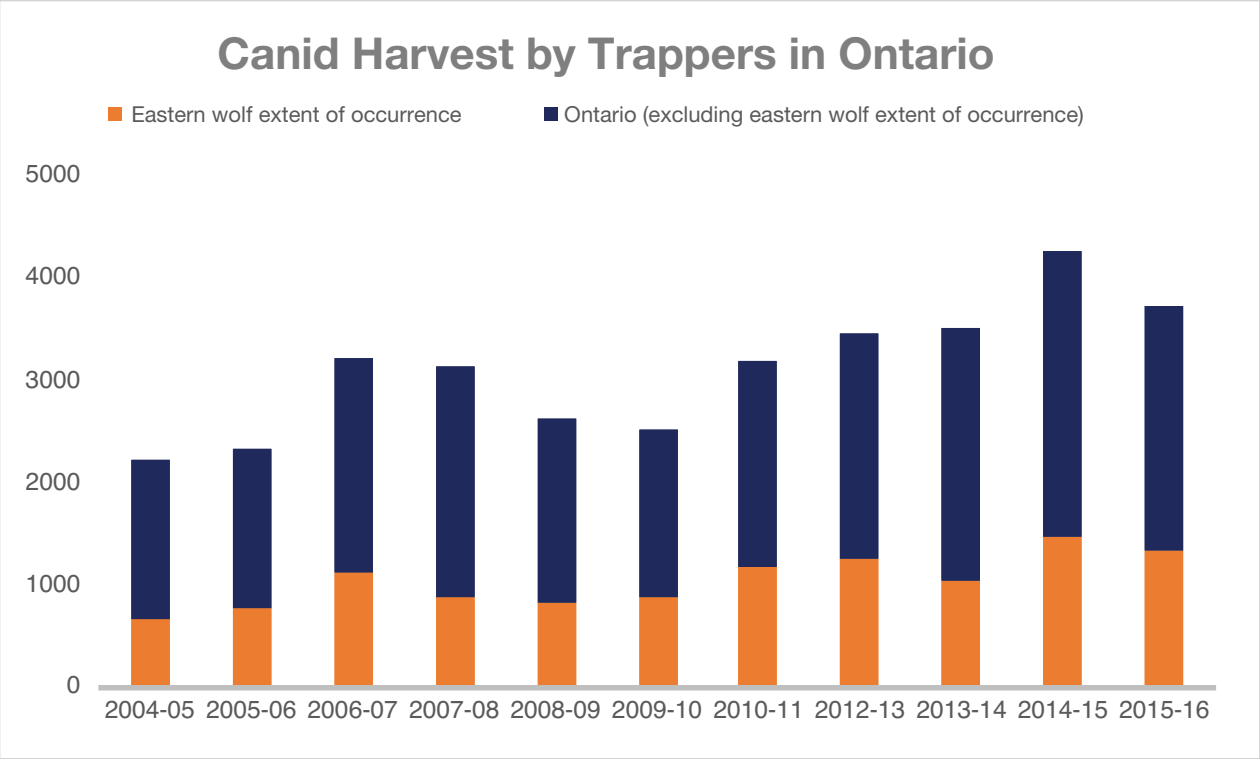

Figure 5. Trapping harvest of wolves and coyotes since 2004.

Source: MNRF.

Note: Estimates provided for trapper harvest in the Algonquin wolf extent of occurrence include the total harvest for all districts that at least partially overlap with the extent of occurrence. The MNRF did not provide data for 2011-2012.

8.2.4 The MNRF Exempted Algonquin Wolves from the Protections of the *Endangered Species Act*

The *ESA* makes it illegal to kill, harm, harass, capture or take a member of a threatened species. These protections should have applied automatically to Algonquin wolves, but the Ministry of Natural Resources and Forestry has exempted the Algonquin wolf from them.

Rather than allow the full protection of the law to apply to Algonquin wolves, in July 2016 (a few months after the species was designated as threatened), the MNRF opted to close the wolf and coyote hunting and trapping seasons in only three new areas: Killarney Provincial Park, Queen Elizabeth II Wildlands Provincial Park, and Kawartha Highlands Provincial Park, including a number of full and part townships surrounding each of these parks (Figure 6). Essentially, the MNRF elected to protect wolves in several parks that already prohibited the hunting of wolves and coyotes, but not trapping, along with a number of townships surrounding these parks.

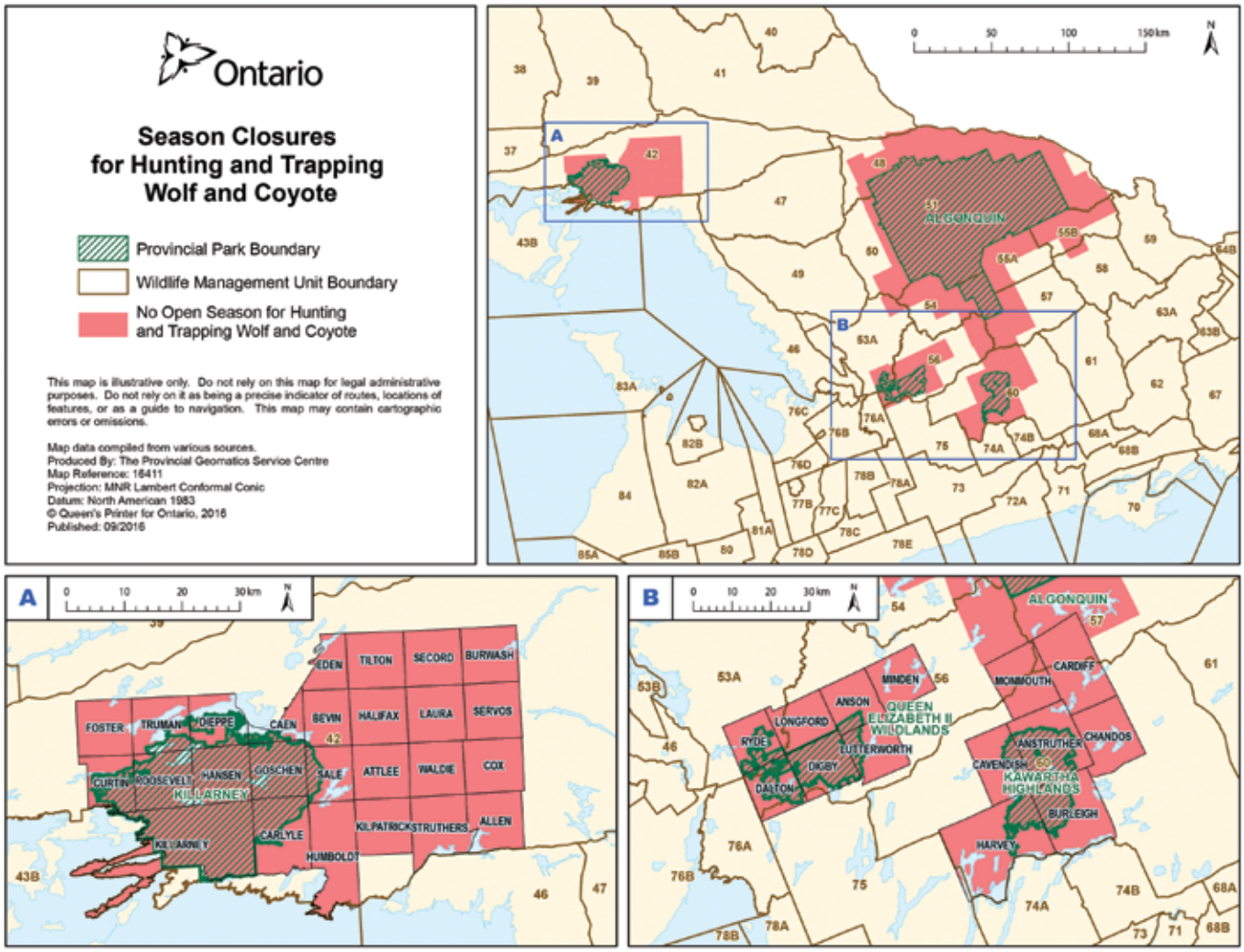

Figure 6. Wolf and coyote season closures.

Source: MNRF.

Outside of these areas, hunters and trappers are exempt from the *ESA*'s prohibition on killing, harming or harassing Algonquin wolves (provided that they are hunting or trapping in accordance with the *Fish and Wildlife Conservation Act, 1997* and its regulations).

MORE THAN 17,300 PUBLIC COMMENTS WERE RECEIVED.

The ministry's proposal to make these changes generated immense public interest. More than 17,300 public comments were received though two proposals posted on the Environmental Registry (#012-8104 and #012-8105) from a wide variety of commenters, including members of the public, environmental advocacy groups, municipalities, farming organizations, and hunting and trapping organizations. The ministry did not receive any comments on the proposals from First Nations. According to the ministry, most comments that it received were "generally opposed to the proposal."

Many commenters, including environmental advocacy organizations, were critical of the proposal for not providing enough protection to Algonquin wolves and stated that it did not reflect the best available science. These commenters asserted that the new harvest restrictions would be insufficient to recover the species, and that instead, Algonquin wolves should receive the full protection of the *ESA*, and hunting and trapping should be banned throughout the area where the species is found. Commenters also criticized the lack of connectivity and insufficient size of the newly protected areas, and noted that Algonquin wolves would face a high risk of being harvested outside of areas with season closures.

Opposition to new harvest restrictions came from a number of commenters, including many hunters, trappers and the organizations that represent them, as well as farmers and municipalities. Many of these commenters disagreed with the classification of Algonquin wolves as threatened and questioned the scientific basis for the proposal. They also argued that a harvest ban is unnecessary and/or ineffective. A number of these commenters raised concerns about the socioeconomic impact of the new harvest restrictions, and asserted that the proposal would negatively affect farmers by increasing depredation of livestock.

In making this controversial decision, the ministry characterized it as "… an interim approach to help support the protection and recovery of Algonquin Wolf while the government seeks broader input from stakeholders and the public through the recovery planning process and prepares a government response statement as required under the *Endangered Species Act*."[28] The recovery strategy for Algonquin wolf is currently under development and is required under the *ESA* by June 2018. The subsequent government response statement will then be required by March 2019.

ALGONQUIN WOLVES REMAIN UNPROTECTED AND VULNERABLE TO HUNTING AND TRAPPING THROUGHOUT MUCH OF THEIR RANGE.

8.3 Little Chance of Recovery for the Algonquin Wolf

Put simply, the new hunting and trapping season closures inadequately address the central threat facing Algonquin wolves and will do little to support their recovery. Algonquin wolves remain unprotected and vulnerable to hunting and trapping throughout much of their range.

In 2016, a number of Ontario's wolf researchers concluded that "[t]he small effective population size of Algonquin wolves combined with the early dispersal of juveniles and high mortality outside protected areas severely limits their potential for persistence and recovery. Providing a protected, connected landscape with sufficiently large areas of suitable habitat to support a population that retains enough genetic variation for long-term persistence will be a key part of successful recovery efforts."[29] COSEWIC has

Photo Credit: MNRF.

made similar conclusions, stating that "expansion of Algonquin wolves will not occur without protection from hunting and trapping throughout its range because juvenile dispersers are more susceptible to harvest."[30] In other words, Algonquin wolves need more, and larger, connected safe spaces.

The three new areas with closed hunting and trapping seasons will not suffice. These areas cover only a small fraction of the region where Algonquin wolves have been found. Moreover, the newly closed areas primarily consist of provincial parks – where the Algonquin wolf already received substantial protection – doing little to change the *status quo*. The closures also do not provide adequate connectivity between these areas.

Hunting rules remain much more liberal in parts of the southern edge of the Algonquin wolf's extent of occurrence (Figure 3). In fact, five wildlife management units within the extent of the occurrence have year-round open seasons, do not require hunters to obtain a game seal, and do not impose any harvest limits.[31] Moreover, because there is no mandatory reporting requirement for these areas, the MNRF does not know how many canids are killed in these areas each year.

Although Algonquin wolves tend to be concentrated in the core areas that are now protected from hunting and trapping, they are not confined to these areas and will frequently leave their boundaries. Algonquin wolves require large, well-connected ranges, and juvenile wolves regularly disperse from their territories. As a result, when individual Algonquin wolves inevitably move beyond the boundaries of the newly protected core areas, they will continue to be at risk of being hunted or trapped. In fact, since the new harvest restrictions came into effect, at least four Algonquin wolves that were being tracked by radio collar have been killed by hunters or trappers.

Given the relatively high vulnerability of Algonquin wolves outside of protected areas and the risks faced by dispersing juvenile wolves, these closures will not support expansion of Algonquin wolves within their range.

Why a few disconnected protected areas aren't enough to protect Algonquin wolves

Imagine your neighbourhood is a protected area. You are quite secure within your home and backyard, and you even feel free to safely stroll down your street. But at some point you will need to go to the grocery store to get some food supplies, and your children will reach the age of maturity and need to go beyond your immediate neighbourhood to meet some potential mates – and at that point all sense of security will be gone. That is what it is like for wolves within a protected area. They may be safe while inside the protected area, but inevitably many wolves will have to venture outside the area to forage for food or find a mate, and they will no longer be protected.

Moreover, because the ministry does not require hunters to submit samples of harvested canids, it will have no way of knowing if Algonquin wolves are being killed by hunters and trappers in the areas that still have open seasons (with the exception of animals collared for research), and therefore no way of knowing whether this limited protection is effective. Numerous Algonquin wolves could be harvested outside of the core areas identified by the ministry, and neither the ministry nor the public would have any indication.

The failure to enact a closed season for both wolves and coyotes in the extent of occurrence of Algonquin wolves could potentially have the unintended effect of bolstering coyote populations in the region, as they are known to breed more in response to hunting,[32] leading to continued human conflicts with these animals. Conversely, if the ministry opted to provide full protection to Algonquin wolves, a more widespread Algonquin wolf population could possibly help to limit the prevalence of coyotes in the region.[33]

Finally, hybridization with coyotes remains a problem for both dispersing juveniles and established packs. Even if dispersing Algonquin wolf juveniles survive, they are unlikely to establish their own breeding pack because they will likely have difficultly finding a wolf mate in low-density areas and may breed with coyotes instead.[34] Similarly, the loss of breeding members from established Algonquin wolf packs will continue to disrupt natural pack dynamics and heighten the likelihood of hybridization with coyotes.[35] Both of these instances threaten to progressively dilute the unique genetic makeup of Algonquin wolves, meaning that they may eventually become unable to fill the same ecological niche.[36]

8.4 Conclusion: Algonquin Wolves Need Full Protection

Controversy has surrounded how the Ontario government has managed eastern (or Algonquin) wolves for decades. Scientists believe that there may be less than 250 adult Algonquin wolves left in the world.[37] The top threat to the long-term survival of the threatened Algonquin wolves is hunting and trapping. Unlike the pressures facing many other species, the Ontario government has the ability to easily eliminate the biggest threat to Algonquin wolves by simply amending a regulation.

Algonquin wolves should have received the full protections provided by Ontario's *Endangered Species Act* when they were listed as threatened in 2016. Instead, the Ministry of Natural Resources and Forestry took an "interim approach" that does not protect them from hunting and trapping throughout most of their range. While Algonquin wolves are subject to some additional protections around a handful of provincial parks, these half measures will not be enough to restore this at-risk population.

There is ample scientific evidence that top predators, like Algonquin wolves, are critical components of ecosystem health and warrant ecologically sound management, not only for their own intrinsic value but for the maintenance of biodiversity more broadly. The Ministry of Natural Resources and Forestry is not only turning a blind eye to the best available science, it is also disregarding the significant public interest in protecting this ecologically and culturally significant animal.

Wolves are among the most easily identifiable symbols of wilderness in the province. How they are treated reflects on our broader stewardship of Ontario's natural environment. The public expects the Ministry of Natural Resources and Forestry to actually protect and recover species at risk. Thousands of Ontarians expressed concerns about the inadequacy of the government's new measures to protect Algonquin wolves. If the MNRF is incapable of protecting a small number of threatened Algonquin wolves in only one part of the province, it creates doubt about the ministry's commitment to sustainably managing any species of wildlife – let alone an imperilled one. Moreover, it begs the question of how the MNRF views its responsibilities under the *Endangered Species Act* given that the ministry has been charged by the Ontario legislature with protecting and recovering species at risk.

The ECO recognizes that properly protecting Algonquin wolves across their range may be unpopular with some hunters and trappers. However, the government should not be catering to the interests of a small group of people when doing so directly jeopardizes a threatened species. This is particularly true given the negligible economic benefit of wolf and coyote harvesting, the inappropriateness of a predator-control approach to wildlife management, and that this species at risk is also hunted for sport.

Algonquin wolves must receive the full protection of the law if this threatened species is to have any chance of recovery. Algonquin wolves need to be protected from Peterborough to North Bay, and from Pembroke to Sault Ste. Marie. **The ECO recommends that the Ministry of Natural Resources and Forestry prohibit hunting and trapping of wolves and coyotes throughout the Algonquin wolves' entire "extent of occurrence" (i.e., where they live).**

Photo Credit: MNRF.

Endnotes

1. In 2016, the Committee on the Status of Species at Risk in Ontario (COSSARO) renamed the species the Algonquin wolf; COSSARO defined the Algonquin wolf as wolves having at least 80% inferred ancestry with the wolf population in Algonquin Provincial Park.

2. See e.g., Linda Y Rutledge et al, "RAD sequencing and genomic simulations resolve hybrid origins within North American *Canis*" (2015) 11:7 *Biol Lett* 20150303; Kristina M. Sefc & Stephan Koblmüller, "Ancient hybrid origin of the eastern wolf not yet off the table: a comment on Rutledge *et al*. (2015)" (2016) 12:2 Biol Lett 20150834; Linda Y Rutledge et al, "Considering all the evidence: a reply to Sefc and Koblmüller (2016)" 12:2 Biol Lett 20151009; Bridgett M vonHoldt et al, "Whole-genome sequence analysis shows that two endemic species of North American wolf are admixtures of the coyote and gray wolf" (2016) 2:7 Sci Adv e1501714; Paul A Hohenlohe et al, "Comment on "Whole-genome sequence analysis shows two endemic species of North American wolf are admixtures of the coyote and gray wolf" (2017) 3:6 Sci Adv e1602250; Bridgett M vonHoldt et al, "Response to Hohenlohe et al." (2017) 3:6 Sci Adv e1701233.

3. Paul J Wilson et al, "DNA profiles of the eastern Canadian wolf and the red wolf provide evidence for a common evolutionary history of the gray wolf" (2000) 78:12 *Can J Zool* 2156; CJ Kyle et al, "Genetic nature of eastern wolves: Past, present and future" (2006) 7:2 *Conserv Genet* 273; Linda Y Rutledge et al, "Genetic differentiation of eastern wolves in Algonquin Park despite bridging gene flow between coyotes and grey wolves" (2010) 105:6 *Heredity* 520; Linda Y Rutledge et al, "Genetic and morphometric analysis of sixteenth century Canis skull fragments: implications for historic eastern and gray wolf distribution in North America" (2010) 11:4 *Conserv Genet* 1273; Steven R Fain, Dyan J Straughan & Bruce F Taylor, "Genetic outcomes of wolf recovery in the western Great Lakes states" (2010) 11:5 *Conserv Genet* 1747; L David Mech, "Non-genetic data supporting genetic evidence for the eastern wolf" (2011) 18:4 *Northeast Nat* 521; Linda Y Rutledge et al, "RAD sequencing and genomic simulations resolve hybrid origins within North American Canis" (2015) 11:7 Biol Lett 20150303; Paul A Hohenlohe et al, "Comment on "Whole-genome sequence analysis shows two endemic species of North American wolf are admixtures of the coyote and gray wolf" (2017) 3:6 Sci Adv e1602250.

4. Committee on the Status of Endangered Wildlife in Canada, *COSEWIC Assessment and Status Report on the Eastern Wolf Canis sp. cf.* lycaon *in Canada* (Ottawa: COSEWIC, 2015) at iv.

5. Committee on the Status of Species at Risk in Ontario, *Ontario Species at Risk Evaluation Report for Algonquin Wolf (Canis sp.), an evolutionarily significant and distinct hybrid with Canis lycaon, C. latrans and C. lupus ancestry* (Ontario: COSSARO, 2016).

6. *Ibid.*

7. *Supra* note 5.

8. *Supra* note 5; *supra* note 4 at 28-31.

9. *Supra* note 4 at v.

10. Linda Y Rutledge et al, "Patchy distribution and low effective population size raise concern for an at-risk top predator" (2017) 23:1 *Divers Distrib* 79.

11. See e.g., Bradley J Bergstrom, "Carnivore conservation: shifting the paradigm from control to coexistence" (2017) 98:1 J Mammal 1; David G Flagel et al, "Fear and loathing in a Great Lakes forest: cascading effects of competition between wolves and coyotes" (2017) 98:1 J Mammal 77; William J Ripple et al, "Status and Ecological Effects of the World's Largest Carnivores" (2014) 343:6167 Science 1241484; Robert L Beschta & William J Ripple, "Large predators and trophic cascades in the terrestrial ecosystems of the western United States" (2009) 142:11 Biol Conserv 2401.

12. John F Benson et al, "Ungulate predation and ecological roles of wolves and coyotes in eastern North America" (2017) 27:3 Ecol Appli 718.

13. *Supra* note 4 at 12.

14. See e.g., Marco Musiani and Paul C Paquet, "The Practices of Wolf Persecution, Protection and Restoration in Canada and the United States" (2004) 54:1 *Bioscience* 50.

15. John B Theberge & Mary T Theberge, *The Wolves of Algonquin Park: A 12 Year Ecological Study* (University of Waterloo: Waterloo, 2004) at 23.

16. *Supra* note 4 at 27.

17. Linda Y Rutledge et al, "Protection from harvesting restores the natural social structure of eastern wolf packs" (2010) 413 Biol Conserv 332.

18. *Supra* note 4; *supra* note 5.

19. See Barry Potter & Anita O'Brien, "Livestock Depredation by Wolves and Coyotes in Ontario" (Midwest Wolf Stewards Conference, 22 April 2010) [unpublished].

20. John F Benson, Brent R Patterson and Peter J Mahoney, "A protected area influences genotype-specific survival and the structure of a *Canis* hybrid zone" (2014) 95:2 *Ecology* 254.

21. *Supra* note 4; supra note 5.

22. NF Webb, JR Allen & EH Merrill, "Demography of a harvested population of wolves (*Canis lupus*) in west-central Alberta, Canada" (2001) 89:8 Can J Zool 744.

23. Sonya K Grewal et al, "A genetic assessment of the eastern wolf (*Canis lycaon*) in Algonquin Provincial Park" (2004) 85:4 J Mammal 625; Linda Y Rutledge et al, "Protection from harvesting restores the natural structure of eastern wolf packs" (2010) 143:2 Biol Conserv 332.

24. Linda Y Rutledge et al, "Intense harvesting of eastern wolves facilitated hybridization with coyotes" (2011) 2:1 Ecol Evol 19.

25. In Wildlife Management Units 1A, 1C, 1D, 2-42, 46-50 and 53-58 hunters are required to purchase a wolf/coyote game seal and report on their hunting activities.

26. These rules apply to Wildlife Management Units 43-45 and 59-95.

27. Wildlife Management Units 59-61, 75 and 76A fall within the Algonquin wolf extent of occurrence are not subject to the harvest restrictions applied in northern Ontario.

28. Ministry of Natural Resources and Forestry, "Regulation Decision Notice #012-8105: Amendment of Ontario Regulation 242/08 (General Regulation - *Endangered Species Act*, 2007) in response to changes to the Species at Risk in Ontario List" (September 15, 2016), *Environmental Registry*, online: <www.ebr.gov.on.ca>.

29. Linda Y Rutledge et al, "Patchy distribution and low effective population size raise concern for an at-risk top predator" (2017) 23:1 Divers Distrib 79.

30. *Supra* note 4 at 23.

31. See Ministry of Natural Resources and Forestry, *2016 Hunting Regulations Summary* (Peterborough: the MNRF, 2016); *supra* note 29.

32. Frederick F Knowlton, Eric M Gese & Michael M Jaeger, "Coyote depredation control: an interface between biology and management" (1999) 52:5 *Journal of Range Management* 398; Brian R Mitchell, Michael M Jaeger & Reginald H Barrett, "Coyote depredation management: Current methods and research needs" (2004) 32:4 *Wildlife Society Bulletin* 1209.

33. See e.g., John F Benson & Brent R Patterson, "Inter-specific territoriality in a *Canis* hybrid zone: spatial segregation between wolves, coyotes and hybrids" 173(4) Oecologia 1539; see also: Kim Murray Berger & Eric M Gese, "Does interference competition with wolves limit the distribution and abundance of coyotes?" (2007) 76:6 J Anim Ecol 1075; JA Merkle, DR Stahler and DW Smith, "Interference competition between gray wolves and coyotes in Yellowstone National Park" (2009) 87:1 Can J Zool 56.

34. John F Benson, *Hybridization Dynamics Between Wolves and Coyotes in Central Ontario* (Ph.D. Thesis, Trent University, 2013) at 150.

35. Linda Y Rutledge, "Intense harvesting of eastern wolves facilitated hybridization with coyotes" (2011) 2:1 Ecol Evol 19. See also Bridget L Borg et al, "Impacts of breeder loss on social structure, reproduction and population growth in a social canid" (2015) 84:1 J Anim Ecol 177; Scott M Brainerd et al, "The Effects of Breeder Loss on Wolves" (2008) 71:1 J Wildl Manage 89.

36. John F Benson et al, "Ungulate predation and ecological roles of wolves and coyotes in eastern North America" (2017) 27:3 Ecol Appli 718; John B Theberge & Mary T Theberge, *The Wolves of Algonquin Park: A 12 Year Ecological Study* (University of Waterloo: Waterloo, 2004); see also Chris Carbone et al, "Energetic constraints on the diet of terrestrial carnivore" (1999) 402 Nature 286.

37. *Supra* note 4 at v.

Ministry: Agriculture, Food and Rural Affairs (OMAFRA)

ECO Comment: The OMAFRA carried out some of its *EBR* responsibilities well this year, continuing to post high quality notices on the Registry and doing a better job of responding to the ECO's requests for proof of consideration of its Statement of Environmental Values. The ECO also continued to have a productive working relationship with the OMAFRA's *EBR* co-ordinator, who was proactive in seeking advice from our office on Environmental Registry matters and was co-operative with requests from the ECO. Unfortunately, the OMAFRA failed to post its one decision notice in 2016/2017 as soon as reasonably possible, taking 2 months to give notice to the public that it had finalized an important policy on pollinator health. Further, at the end of the reporting year, one of the OMAFRA's proposals on the Environmental Registry was outdated; with very few open proposals on the Environmental Registry, the OMAFRA should be able to ensure that all notices are kept up to date by posting updates or decision notices promptly. Finally, the ECO encourages the OMAFRA to conclude its now overdue review of soil management in agricultural operations in 2017/2018.

Category	Result	Trend	ECO Comments
Quality of notices for policies, acts and regulations posted on the Environmental Registry			The OMAFRA continues to post high quality notices on the Environmental Registry. Notices are well written, free of jargon and clearly set out what feedback is being solicited from the public.
Quality of notices for instruments posted on the Environmental Registry	**N/A**	**N/A**	The OMAFRA is not required to post instrument notices on the Environmental Registry.
Promptness of posting decision notices on the Environmental Registry			The OMAFRA only posted one decision notice in 2016/2017, but it was not posted until two months after the ministry finalized the policy in question.
Keeping notices on the Environmental Registry up to date			The OMAFRA only had three open proposals on the Environmental Registry at the end of 2016/2017, but one of them was outdated. The OMAFRA remedied this outdated proposal by posting a decision notice in August 2017.
Handling of applications for review and investigation	**N/A**	**N/A**	The OMAFRA did not conclude any applications for review under the *EBR* in 2016/2017. The OMAFRA is not prescribed for applications for investigation under the *EBR*.
Avoiding overdue applications for review			The OMAFRA has one open application for review, but it has failed to complete that review within a reasonable time.
Considering Statements of Environmental Values (SEVs)			The OMAFRA responded promptly to all 3 of the ECO's requests for proof of SEV consideration in 2016/2017, representing a significant improvement since 2015/2016.
Co-operation with ECO requests			OMAFRA staff were particularly co-operative with the ECO in 2016/17, pro-actively engaging the ECO on issues that they knew were of interest to our office (e.g., inviting the ECO to a workshop on soil health). The ministry's *EBR* co-ordinator was also pro-active in seeking assistance from ECO staff on Environmental Registry matters, and was quick to respond to a request from ECO staff to add a link to the *Pollinator Health Action Plan* in the Environmental Registry decision notice. The OMAFRA's *EBR* co-ordinator also attended an *EBR* compliance information session at the ECO's offices in September 2016.

Ministry: Economic Development and Growth / Infrastructure (MEDG/MOI)

ECO Comment: During 2016/2017, the MEDG and the MOI (formerly joined as MEDEI) were prescribed separately under the *EBR*. The ECO appreciated the MOI's briefings this year on water/wastewater infrastructure asset management and looks forward to co-operating further with both ministries in 2017/2018 as they become established as separate *EBR*-prescribed ministries. In 2016/2017, the MOI posted good quality notices on the Environmental Registry, although the ministry should ensure that it describes the anticipated environmental impacts of its proposals and includes regulatory impact statements for proposed regulations. The ECO encourages the MOI to continue to keep proposals up to date and to post decision notices promptly.

Category	Result	Trend	ECO Comments
Quality of notices for policies, acts and regulations posted on the Environmental Registry			The MOI posted two proposals and one decision on the Environmental Registry in 2016/2017. Generally, the content of the MOI's notices was still very good. However, the ministry could have better explained the anticipated environmental impacts of the proposals, and should consider including regulatory impact statements for proposed regulations. The ECO also believes the ministry should have provided more time for the public to comment on one relatively complex regulation proposal, as it did for its other regulation proposal.
Quality of notices for instruments posted on the Environmental Registry	**N/A**	**N/A**	Neither the MEDG nor the MOI are required to post instrument notices on the Environmental Registry.
Promptness of posting decision notices on the Environmental Registry	**N/A**	**N/A**	The MOI posted one decision notice in 2016/2017. However, as the decision related to ongoing policy development, and not a discrete decision or document, the ECO could not ascertain whether the notice was posted promptly after the ministry made the decision. The ECO urges the ministry to clearly indicate the date of its decisions in decision notices.
Keeping notices on the Environmental Registry up to date			The MOI had two open proposal notices on the Environmental Registry at the end of 2016/2017, but neither of those notices were out of date.
Handling of applications for review and investigation	**N/A**	**N/A**	Neither the MEDG nor the MOI are prescribed for applications for review or investigation under the *EBR*.
Avoiding overdue applications for review	**N/A**	**N/A**	Neither the MEDG nor the MOI are prescribed for applications for review or investigation under the *EBR*.
Considering Statements of Environmental Values (SEVs)		**N/A**	The ECO requested proof of SEV consideration from the MOI one time in 2016/2017. The consideration document was provided by the ministry.
Co-operation with ECO requests			The MOI experienced some challenges in responding to the ECO's communications after its split from MEDEI. However, the ministry's responsiveness improved over the reporting year, and the MOI ultimately provided the ECO with a helpful briefing on water/wastewater infrastructure asset management. At the ECO's request, the MEDG's *EBR* co-ordinator also attended an *EBR* compliance information session at the ECO's offices in September 2016.

Ministry: Education (EDU)

ECO Comment: The EDU has a relatively low *EBR* workload. There was little material with which the ECO could evaluate the EDU's execution of its *EBR* responsibilities in 2016/2017, as the ministry did not post any notices on the Environmental Registry. The ECO is pleased that the EDU has become prescribed for purposes of receiving applications for review under the *EBR*.

Category	Result	Trend	ECO Comments
Quality of notices for policies, acts and regulations posted on the Environmental Registry	**N/A**	**N/A**	The EDU did not post any policy, act or regulation notices in 2016/2017.
Quality of notices for instruments posted on the Environmental Registry	**N/A**	**N/A**	The EDU is not required to post instrument notices on the Environmental Registry.
Promptness of posting decision notices on the Environmental Registry	**N/A**	**N/A**	The EDU did not post any decision notices in 2016/2017.
Keeping notices on the Environmental Registry up to date	**N/A**	**N/A**	The EDU did not have any open proposals on the Environmental Registry at the end of 2016/2017.
Handling of applications for review and investigation	**N/A**	**N/A**	In the 2016/2017 reporting year, the EDU was not prescribed for applications for review or investigation under the *EBR*. However, the ECO is pleased that in September 2017 the EDU became prescribed for applications for review under the *EBR* in response to our recommendation.
Avoiding overdue applications for review	**N/A**	**N/A**	The EDU was not prescribed for applications for review under the *EBR* during the 2016/2017 reporting year.
Considering Statements of Environmental Values (SEVs)	**N/A**	**N/A**	The ECO did not request proof of SEV consideration from the EDU in 2016/2017.
Co-operation with ECO requests			The ECO did not make any specific information requests of the EDU in the 2016/2017 reporting year. However, the ECO is pleased that in September 2017 the EDU became prescribed for applications for review under the *EBR* in response to our recommendation. Also, at the ECO's request, the EDU's *EBR* co-ordinator attended an *EBR* compliance information session at the ECO's offices in September 2016.

Ministry: Energy (ENG)

ECO Comment: Generally, the ENG executed its *EBR* responsibilities well in 2016/2017. The ministry continued to post good quality notices to the Environmental Registry, but should make the improvements outlined below. The ENG ensured that all of its proposals on the Environmental Registry were up to date at the end of the reporting year, and documented its consideration of its Statement of Environmental Values for its environmentally significant decisions. The ENG was also helpful in responding to the ECO's requests for information and assistance, and the ENG's *EBR* co-ordinator was responsive to suggestions from ECO staff on Environmental Registry matters. However, the ENG continued to routinely post decision notices late, depriving the public of the right to prompt notice of the ministry's decisions that affect the environment. Posting decision notices is a routine administrative matter, and the ECO encourages the ENG to commit to do so within 2 weeks of making a decision.

Category	Result	Trend	ECO Comments
Quality of notices for policies, acts and regulations posted on the Environmental Registry			The ENG continues to post generally good quality notices on the Environmental Registry in terms of describing proposals and decisions, and including links. However, the ministry should ensure that it avoids the use of undefined acronyms, and considers including regulatory impact statements for regulation proposals.
Quality of notices for instruments posted on the Environmental Registry	**N/A**	**N/A**	The ENG is not required to post instrument notices on the Environmental Registry.
Promptness of posting decision notices on the Environmental Registry			The ENG rarely gives prompt notice of its decisions on the Environmental Registry. In 2016/2017, the ministry frequently took several months after a new regulation was filed to notify the public about the ministry's decision on the regulation.
Keeping notices on the Environmental Registry up to date			The ENG no longer has any outdated notices on the Environmental Registry.
Handling of applications for review and investigation			The ENG concluded one application for review in 2016/2017. The ministry has shown improvement in responding to the applicants' concerns and explaining its decision on the application in greater detail.
Avoiding overdue applications for review	**N/A**	**N/A**	The ENG did not have any open applications for review at the end of 2016/2017.
Considering Statements of Environmental Values (SEVs)		**N/A**	In almost every case, the ENG responded promptly to the ECO's 5 requests for proof of SEV consideration in 2016/2017.
Co-operation with ECO requests			ENG staff were co-operative with the ECO's requests for information this year, in particular by providing a helpful briefing on energy and water reporting for the broader public sector. The ministry's *EBR* co-ordinator responded promptly to the ECO's request to update an Environmental Registry notice about net metering to notify the public of an additional consultation opportunity. The ENG's *EBR* co-ordinator also attended an *EBR* compliance information session at the ECO's offices in September 2016.

Ministry: Environment and Climate Change (MOECC)

ECO Comment: The MOECC has the highest *EBR* workload of all ministries. This year the MOECC discharged its *EBR* obligations very well, improving performance in several categories. In particular, the ECO commends the MOECC for clearing over 94% of its backlog of outdated proposals from 2015/2016; the ECO urges the MOECC to remedy its remaining outdated notices and to keep all of its proposals up to date. Posting late decision notices contributed to the ministry's poor results in the promptness category; the ECO encourages the ministry to post all decision notices within 2 weeks of making the decision going forward. The MOECC's new practice of posting status updates on applications for review, and providing in-person updates to applicants, is commendable and should be adopted by all ministries; however, actually completing some of those reviews remains shamefully slow, with the important issue of cumulative health effects in Aamjiwnaang still outstanding from 2009. The ministry should conclude all remaining overdue reviews in 2017/2018. The ECO is pleased that the MOECC responded more promptly this year to the ECO's requests for proof of consideration of its Statement of Environmental Values. Finally, the ECO thanks MOECC staff for being consistently helpful and responsive to the ECO's many requests for information and briefings, and for being highly engaged in improving the ministry's *EBR* performance.

Category	Result	Trend	ECO Comments
Quality of notices for policies, acts and regulations posted on the Environmental Registry			The MOECC continues to post high quality notices on the Environmental Registry for policies, acts and regulations.
Quality of notices for instruments posted on the Environmental Registry			The MOECC's instrument notices are generally of high quality, although the ministry could do a better job in some cases of explaining the anticipated environmental impacts of proposals. While the MOECC now regularly includes links to most finalized instruments in decision notices, it still routinely fails to provide links to draft instruments in proposal notices.
Promptness of posting decision notices on the Environmental Registry			As in 2015/2016, the MOECC again posted fewer than half of the decision notices the ECO assessed within 2 weeks of the decision date. The ministry's strong efforts in 2016/2017 to remedy its outdated proposals (necessitating late decision notices) may be responsible, at least in part, for the ministry's low score in this category.
Keeping notices on the Environmental Registry up to date			The MOECC remedied the bulk of its large number of outdated proposals in 2016/2017, bringing the ministry's total number of outdated proposals down from 686 in 2015/2016 (representing 23.5% of the ministry's open proposals at the end of that year) to 39 in 2016/2017 (representing just 3.2% of the MOECC's open proposals at the end of the reporting year).
Handling of applications for review and investigation			The MOECC concluded 6 applications for review and 11 applications for investigation in 2016/2017. The ministry generally handled these applications well.

Category	Result	Trend	ECO Comments
Avoiding overdue applications for review			The MOECC concluded 3 overdue applications for review in 2016/2017, and was close to concluding 2 other overdue applications at the end of the reporting year. The MOECC has one more long overdue application that it should conclude as soon as possible. In 2016/2017, the MOECC started posting regular status updates for its undertaken applications for review on the Environmental Registry.
Considering Statements of Environmental Values (SEVs)			The ECO made 106 requests for SEV consideration documents from the MOECC in 2016/2017. The MOECC responded by providing the requested documentation promptly in most cases, with its response rate increasing by almost 12% since 2015/2016.
Co-operation with ECO requests			The MOECC stood out this year as particularly co-operative with the ECO's requests for information in 2016/2017. The ministry provided helpful briefings on a number of topics, including source water protection, environmental approvals and the renewable fuel standard for gasoline. The ministry was responsive and forthcoming with information and facilitated discussions between ministry experts and ECO staff. The ministry's *EBR* co-ordinator also attended an *EBR* compliance information session at the ECO's offices in September 2016.

Ministry: Government and Consumer Services – Technical Standards and Safety Authority (MGCS-TSSA)

ECO Comment: The TSSA, housed within the MGCS, is responsible for a substantial number of notices on the Environmental Registry. The TSSA took a first step toward improving its historically poor decision notices for instruments in 2016/2017 by ensuring that it explains what decision was made; however, the ECO continues to encourage the TSSA to include links to copies of the draft and final instruments themselves in order to ensure that the public has enough information to provide informed comments and to provide access to the full details of the final decision. The TSSA also did a good job of remedying its outdated proposals, but should update or post decisions for its small number of remaining outdated proposals in 2017/2018; once all outdated notices are remedied, the ECO expects that the TSSA's overall performance in the promptness category will improve significantly given the TSSA's usually prompt posting of decisions. Finally, the ECO is encouraged by the TSSA's commitment to improving its performance of its *EBR* obligations, evidenced by the *EBR* co-ordinator's frequent contact with the ECO.

Category	Result	Trend	ECO Comments
Quality of notices for policies, acts and regulations posted on the Environmental Registry			The TSSA posted just one decision notice for a policy, act or regulation in 2016/2017. The notice was generally clear and understandable. However, the TSSA should avoid heavy use of acronyms and ensure that it explains how the public's comments affected the ministry's final decision.
Quality of notices for instruments posted on the Environmental Registry			The TSSA's instrument decision notices have improved over the course of 2016/2017; most significantly, by the end of the reporting year the TSSA was consistently explaining what it decided for each instrument proposal. However, TSSA notices still do not provide any links to the draft or final instruments themselves, which significantly interferes with the ability of the public to provide effective comments.
Promptness of posting decision notices on the Environmental Registry			In general, the TSSA posts decision notices for instrument proposals extremely promptly. However, in 2016/2017 the TSSA posted decisions for a number of old, outdated proposals; these late decision notices are responsible for the TSSA's lower score in this category.
Keeping notices on the Environmental Registry up to date			The TSSA posted decision notices for the majority of its outdated proposals by the end of 2016/2017. However, 2 outdated notices remained at the end of the year, representing 40% of the TSSA's open notices on the Environmental Registry, which is still unacceptable.
Handling of applications for review and investigation	**N/A**	**N/A**	The MGCS-TSSA did not conclude any applications for review or investigation under the *EBR* in 2016/2017.
Avoiding overdue applications for review	**N/A**	**N/A**	The MGCS-TSSA did not have any open applications for review under the *EBR* at the end of 2016/2017.
Considering Statements of Environmental Values (SEVs)			The MGCS-TSSA responded promptly to the ECO's single request for proof of SEV consideration in 2016/2017, maintaining its record of good performance in this category.
Co-operation with ECO requests			Through its *EBR* co-ordinator, the MGCS-TSSA worked hard to improve its *EBR* performance in 2016/2017, frequently contacting ECO staff to seek advice on Environmental Registry matters, and working to improve its instrument decision notices. The MGCS-TSSA's *EBR* co-ordinator also attended an *EBR* compliance information session at the ECO's offices in September 2016.

Ministry: Health and Long-Term Care (MOHLTC)

ECO Comment: The MOHLTC has a relatively low *EBR* workload. There was little material with which the ECO could evaluate the MOHLTC's execution of its *EBR* responsibilities in 2016/2017, as the ministry did not post any notices on the Environmental Registry and was not responsible for any applications. The ECO is happy to report that the MOHLTC's *EBR* co-ordinator attended an *EBR* compliance information session in September 2016. Going forward, the ECO encourages the MOHLTC to contact our office for any assistance in understanding and complying with its *EBR* responsibilities, including: ensuring that it posts clearly written and sufficiently detailed notices of any environmentally significant proposals on the Environmental Registry for public consultation; giving prompt notice of its decisions on such proposals on the Registry; handling any applications for review in accordance with *EBR* requirements; and considering its Statement of Environmental Values when making those decisions. The MOHLTC is also encouraged to co-operate with any ECO requests for information.

Category	Result	Trend	ECO Comments
Quality of notices for policies, acts and regulations posted on the Environmental Registry	**N/A**	**N/A**	The MOHLTC did not post any policy, act or regulation notices in 2016/2017.
Quality of notices for instruments posted on the Environmental Registry	**N/A**	**N/A**	The MOHLTC is not required to post instrument notices on the Environmental Registry.
Promptness of posting decision notices on the Environmental Registry	**N/A**	**N/A**	The MOHLTC did not post any decision notices in 2016/2017.
Keeping notices on the Environmental Registry up to date	**N/A**	**N/A**	The MOHLTC did not have any open proposals on the Environmental Registry at the end of 2016/2017.
Handling of applications for review and investigation	**N/A**	**N/A**	The MOHLTC did not conclude any applications for review under the *EBR* in 2016/2017. The MOHLTC is not prescribed for applications for investigation under the *EBR*.
Avoiding overdue applications for review	**N/A**	**N/A**	The MOHLTC did not have any open applications for review under the *EBR* at the end of 2016/2017.
Considering Statements of Environmental Values (SEVs)	**N/A**	**N/A**	The ECO did not request proof of SEV consideration from the MOHLTC in 2016/2017.
Co-operation with ECO requests			At the ECO's request, the MOHLTC's *EBR* co-ordinator did attend an *EBR* compliance information session at the ECO's offices in September 2016.

Ministry: Indigenous Relations and Reconciliation (MIRR)

ECO Comment: The MIRR has a relatively low *EBR* workload. There was little material with which the ECO could evaluate the MIRR's execution of its *EBR* responsibilities in 2016/2017, as the ministry did not post any notices on the Environmental Registry. The ECO is happy to report that the MIRR's *EBR* co-ordinator attended an *EBR* compliance information session in September 2016. Going forward, the ECO encourages the MIRR to contact our office for any assistance in understanding and complying with its *EBR* responsibilities, including: co-operating with any ECO requests for information; ensuring that it posts clearly written and sufficiently detailed notices of any environmentally significant proposals on the Environmental Registry for public consultation; giving prompt notice of its decisions on such proposals on the Registry; and considering its Statement of Environmental Values when making those decisions.

Category	Result	Trend	ECO Comments
Quality of notices for policies, acts and regulations posted on the Environmental Registry	**N/A**	**N/A**	The MIRR did not post any policy, act or regulation notices in 2016/2017.
Quality of notices for instruments posted on the Environmental Registry	**N/A**	**N/A**	The MIRR is not required to post instrument notices on the Environmental Registry.
Promptness of posting decision notices on the Environmental Registry	**N/A**	**N/A**	The MIRR did not post any decision notices in 2016/2017.
Keeping notices on the Environmental Registry up to date	**N/A**	**N/A**	The MIRR did not have any open proposals on the Environmental Registry at the end of 2016/2017.
Handling of applications for review and investigation	**N/A**	**N/A**	The MIRR is not prescribed for applications for review or investigation under the *EBR*.
Avoiding overdue applications for review	**N/A**	**N/A**	The MIRR is not prescribed for applications for review or investigation under the *EBR*.
Considering Statements of Environmental Values (SEVs)	**N/A**	**N/A**	The ECO did not request proof of SEV consideration from the MIRR in 2016/2017.
Co-operation with ECO requests			The ECO did not make any specific information requests of the MIRR in the 2016/2017 reporting year. However at the ECO's request, the MIRR's *EBR* co-ordinator attended an *EBR* compliance information session at the ECO's offices in September 2016.

Ministry: Labour (MOL)

ECO Comment: The MOL has a relatively low *EBR* workload. There was little material with which the ECO could evaluate the MOL's execution of its *EBR* responsibilities in 2016/2017, as the ministry did not post any notices on the Environmental Registry. The ECO is happy to report that the MOL's *EBR* co-ordinator attended an *EBR* compliance information session in September 2016. Going forward, the ECO encourages the MOL to contact our office for any assistance in understanding and complying with its *EBR* responsibilities, including: co-operating with any ECO requests for information; ensuring that it posts clearly written and sufficiently detailed notices of any environmentally significant proposals on the Environmental Registry for public consultation; giving prompt notice of its decisions on such proposals on the Registry; and considering its Statement of Environmental Values when making those decisions.

Category	Result	Trend	ECO Comments
Quality of notices for policies, acts and regulations posted on the Environmental Registry	**N/A**	**N/A**	The MOL did not post any policy, act or regulation notices in 2016/2017.
Quality of notices for instruments posted on the Environmental Registry	**N/A**	**N/A**	The MOL is not required to post instrument notices on the Environmental Registry.
Promptness of posting decision notices on the Environmental Registry	**N/A**	**N/A**	The MOL did not post any decision notices in 2016/2017.
Keeping notices on the Environmental Registry up to date	**N/A**	**N/A**	The MOL did not have any open proposals on the Environmental Registry at the end of 2016/2017.
Handling of applications for review and investigation	**N/A**	**N/A**	The MOL is not prescribed for applications for review or investigation under the *EBR*.
Avoiding overdue applications for review	**N/A**	**N/A**	The MOL is not prescribed for applications for review or investigation under the *EBR*.
Considering Statements of Environmental Values (SEVs)	**N/A**	**N/A**	The ECO did not request proof of SEV consideration from the MOL in 2016/2017.
Co-operation with ECO requests			The ECO did not make any specific information requests of the MOL in the 2016/2017 reporting year. However, at the ECO's request, the MOL's *EBR* co-ordinator attended an *EBR* compliance information session at the ECO's offices in September 2016.

Ministry: Municipal Affairs/Housing (MMA/MHO)

ECO Comment: During 2016/2017, the MMA and the MHO (formerly joined as MMAH) were prescribed separately under the *EBR*. The MMA continued to post generally high quality policy, act and regulation notices, but the ministry's instrument notices still fail to include links to applicable Official Plans and other key supporting documents. The ministry should also ensure that the decision date is clear in all decision notices. The MMA's performance declined in the promptness category and in keeping its notices up to date; in fact, the ministry appears to have made little effort to remedy its outdated proposals and allowed additional notices to become outdated. On a more positive note, the MMA responded helpfully to the ECO's information requests this year, and promptly provided proof that it considered its Statement of Environmental Values when making decisions that affect the environment. The ECO looks forward to co-operating further with both MMA and MHO in 2017/2018 as they become established as separate *EBR*-prescribed ministries.

Category	Result	Trend	ECO Comments
Quality of notices for policies, acts and regulations posted on the Environmental Registry			The MMA maintained a high quality of policy, act and regulation notices on the Environmental Registry in 2016/2017. However, the ministry could do a better job explaining the effect of the public's comments on final decisions. The ministry should also more consistently explain the potential environmental impacts of its proposals, and include regulatory impact statements for proposed regulations as required by the *EBR*.
Quality of notices for instruments posted on the Environmental Registry			The MMA's instrument notices routinely lack links to the draft or final instruments themselves. Links to the applicable Official Plans in proposal notices for provisional consent under the *Planning Act*, and for proposed Official Plans or amendments to Official Plans should be included. The MMA also regularly fails to describe the potential environmental impacts of proposed instruments.
Promptness of posting decision notices on the Environmental Registry			The MMA continues to delay giving notice of its policy, act and regulation decisions on the Environmental Registry, in several cases taking over 5 months to post decision notices after regulations were filed. The MMA posted instrument decision notices somewhat more promptly, posting about two-thirds of instrument decision notices within 2 weeks of the decisions being made (based on the instruments for which the ECO could ascertain the decision date).
Keeping notices on the Environmental Registry up to date			The MMA did little to address its outdated proposals on the Environmental Registry in 2016/2017, and in fact allowed some additional proposals to become outdated. At the end of the reporting year, over 10% of the MMA's open proposal notices on the Environmental Registry had been on the Registry for over 2 years without an update or decision. However, the ministry addressed all outdated proposals for the 2016/2017 reporting year in August 2017.

Category	Result	Trend	ECO Comments
Handling of applications for review and investigation			The MMA concluded one application for review in 2016/2017. Although the ministry's decision to deny the request was valid based on *EBR* criteria, the ministry did a poor job of explaining how its decision related to the applicants' key concerns. The ministry also missed the statutory deadline for providing its decision to the applicants.
Avoiding overdue applications for review	**N/A**	**N/A**	The MMA did not have any open applications for review at the end of 2016/2017.
Considering Statements of Environmental Values (SEVs)			The MMA provided proof of SEV consideration to the ECO in response to all 8 of the ECO's requests, and responded promptly in all cases.
Co-operation with ECO requests			The MMA responded to the ECO's requests for information about water efficiency and water reuse in the *Ontario Building Code* and in provincial land use planning policies. The MMA's *EBR* co-ordinator also attended an *EBR* compliance information session at the ECO's offices in September 2016.

Ministry: Natural Resources and Forestry (MNRF)

ECO Comment: The MNRF has one of the highest *EBR* workloads in every category. The MNRF maintained its high quality of policy, act and regulation notices this year, but some instrument notices – in particular *Aggregate Resource Act* instruments – continued to be routinely deficient. The ECO is encouraged that the MNRF posted significantly more of its decisions promptly this year, and remedied a large number of its outdated proposals. The ECO urges the MNRF to remedy its remaining outdated proposals this year and to keep proposals up to date going forward. The ECO is also pleased to see an improvement in the MNRF's handling of applications, and that the ministry no longer has any overdue reviews. However, we were disappointed that the MNRF resisted our requests for proof of consideration of its Statement of Environmental Values (SEV) for a large number of decisions this year; the MNRF's SEV itself states that it "will document how the SEV was considered each time a decision is posted on the Environmental Registry." The ECO expects that the MNRF will consider and document its consideration of its SEV for all of its environmentally significant decisions going forward. Likewise, the ECO looks forward to greater co-operation from the MNRF with ECO information requests in 2017/2018.

Category	Result	Trend	ECO Comments
Quality of notices for policies, acts and regulations posted on the Environmental Registry			The MNRF continues to post high quality notices for policies, acts and regulations, doing a good job of explaining what is proposed and describing environmental impacts. However, the ministry continues to incorrectly complete the "purpose" section of proposal notices. The MNRF's notices would also be more helpful if they included hyperlinks when referring to related Environmental Registry notices.
Quality of notices for instruments posted on the Environmental Registry			The MNRF's notices for *Aggregate Resources Act* and *Endangered Species Act, 2007* instruments still lack links to the draft or final instruments themselves, and only include minimal information about geographic location of the instruments. The notices also often do not adequately describe the public's comments or the effect of public participation on the final decision. (See Chapter 1.5.3 of this Report).
Promptness of posting decision notices on the Environmental Registry			Despite its low score, the MNRF made a significant improvement in posting decisions on the Environmental Registry promptly, with 3 times as many notices being posted within 2 weeks of a decision being made as in 2015/2016. The ministry's continued low score in this category in 2016/2017 is attributable in part to the number of late decision notices that the MNRF posted this year to remedy outdated proposals.
Keeping notices on the Environmental Registry up to date			The MNRF posted updates or decision notices for a significant number of outdated proposals in 2016/2017. However, at the end of the reporting year, 24% of the ministry's open proposals on the Environmental Registry were still more than two years old without any update or decision, which is unacceptable.

Category	Result	Trend	ECO Comments
Handling of applications for review and investigation			In 2016/2017, the MNRF concluded 1 application for review and 2 applications for investigation. The ministry handled those applications well, but continued to miss some statutory deadlines for responding to the applications.
Avoiding overdue applications for review			During 2016/2017, the MNRF concluded its one overdue application identified in last year's *EBR* report card. At the end of this reporting year, none of the MNRF's open applications were overdue.
Considering Statements of Environmental Values (SEVs)			In 2016/2017, the MNRF failed to provide SEV consideration documents in response to over 25% of the ECO's requests, instead providing its rationale for why SEV consideration and/or documentation was not required. The ECO disagrees with the ministry's position and considers those cases to be a failure by the MNRF to consider its SEV.
Co-operation with ECO requests			The MNRF provided quick and helpful responses to some special requests by the ECO (in particular, in providing a status update on the ministry's aggregates policy framework, and in extending a comment period for an *Aggregate Resources Act* instrument). However, more generally, the MNRF did not meet the ECO's expectations for responsiveness to routine information requests, responding slowly or, in some cases, not at all. The MNRF did provide some helpful briefings on various topics (e.g., aggregates, wolves and protected areas), but not without extra effort by ECO staff. At the ECO's request, the MNRF's *EBR* co-ordinator did attend an *EBR* compliance information session at the ECO's offices in September 2016.

Ministry: Northern Development and Mines (MNDM)

ECO Comment: The MNDM executed most its *EBR* responsibilities well again in 2016/2017, and made notable improvements in some categories. The small number of policy, act and regulation notices posted this year meant that the MNDM's score for quality of notices declined as a result of one particularly poor quality notice. Going forward, the ECO urges the MNDM to ensure that every notice it posts is clearly written, describes the environmental significance of the proposal, and includes links to key supporting information. Similarly, while the MNDM made some improvements to the geographic information in *Mining Act* instrument notices at the very end of 2016/2017, the ministry's instrument notices should include more details and links to key supporting information in order to ensure that members of the public can provide informed comments. The ECO commends the MNDM for being the only ministry to meet or exceed our expectations in both the promptness of posting decision notices category and in keeping notices up to date. The ministry made admirable efforts to remedy all of its outdated proposals, and at the end of the reporting year all of the MNDM's open proposals were up to date. The ECO appreciates our good working relationship with the MNDM's *EBR* co-ordinators, who have been highly engaged in improving the ministry's *EBR* performance.

Category	Result	Trend	ECO Comments
Quality of notices for policies, acts and regulations posted on the Environmental Registry			The MNDM posted 3 notices for policies, acts and regulations this year. While two of the MNDM's notices were generally clear and understandable, the third was difficult to follow. The notices also lacked information about potential environmental impacts.
Quality of notices for instruments posted on the Environmental Registry			The MNDM's instrument notices are generally short on details and never include links to proposed or final instruments or other supporting information. In the last months of the 2016/2017 year, the MNDM made some modest but much-needed improvements to the description of geographic location by including the URL for CLAIMaps (mndm.gov.on.ca/en/mines-and-minerals/applications/claimaps) (inexplicably, not hyperlinked) plus, in some cases, landmark descriptors such as the distance to the nearest city. The unlinked URL is better than nothing because it allows the public, with effort, to locate the precise location of specific instruments by using the mining claims map, if they happen to be aware of that specific instrument. However, the URL does not provide the public with location information that would show up on a search of the *EBR*, and therefore cannot be used to provide location-specific alerts, which would be far more useful.
Promptness of posting decision notices on the Environmental Registry			The MNDM posted many instrument decisions promptly. However, the ECO could not evaluate the promptness of many instrument decision notices as the issuance date of many instruments was not clear.

Category	Result	Trend	ECO Comments
Keeping notices on the Environmental Registry up to date			The MNDM posted updates or decision notices for all outdated notices, so that all of the ministry's notices on the Environmental Registry were up to date at the end of the reporting period.
Handling of applications for review and investigation		**N/A**	The MNDM concluded one application for investigation, complying properly and thoroughly with its responsibilities under the *EBR*.
Avoiding overdue applications for review	**N/A**	**N/A**	The MNDM did not have any open applications for review under the *EBR* at the end of 2016/2017.
Considering Statements of Environmental Values (SEVs)			The MNDM provided proof of SEV consideration to the ECO in response to all 3 of the ECO's requests, and was very prompt in its responses.
Co-operation with ECO requests			The MNDM's *EBR* co-ordinators were pro-active in seeking assistance from ECO staff, and were co-operative in response to ECO staff communications about Environmental Registry matters. An MNDM *EBR* co-ordinator also attended an *EBR* compliance information session at the ECO's offices in September 2016.

Ministry: Tourism, Culture and Sport (MTCS)

ECO Comment: The MTCS discharged some of its *EBR* obligations very well this year, maintaining a high quality in both of its notices posted on the Environmental Registry and making significant improvements in responding to the ECO's requests for proof of consideration of its Statement of Environmental Values. Again this year the MTCS did not have any outdated notices on the Environmental Registry. However, the ministry should make a greater effort to give the public prompt notice of its decisions.

Category	Result	Trend	ECO Comments
Quality of notices for policies, acts and regulations posted on the Environmental Registry			The MTCS posted two decisions in 2016/2017, maintaining its high quality of notices in both cases. In particular, the MTCS provided excellent summaries of public comments submitted on the corresponding proposals, and how the ministry's final decisions related/responded to those comments.
Quality of notices for instruments posted on the Environmental Registry	**N/A**	**N/A**	The MTCS is not required to post instrument notices on the Environmental Registry.
Promptness of posting decision notices on the Environmental Registry			The MTCS did not post either of its decision notices within 2 weeks of making the decision; while notice of one decision was posted within 4 weeks, it took the ministry 3 months to give notice of the other.
Keeping notices on the Environmental Registry up to date	**N/A**	**N/A**	The MTCS did not have any open proposals on the Environmental Registry at the end of 2016/2017.
Handling of applications for review and investigation	**N/A**	**N/A**	The MTCS is not currently prescribed for applications for review or investigation under the *EBR*.
Avoiding overdue applications for review	**N/A**	**N/A**	The MTCS is not currently prescribed for applications for review or investigation under the *EBR*.
Considering Statements of Environmental Values (SEVs)			The ECO requested proof of SEV consideration from the MTCS for both of the decisions that the ministry posted in 2016/2017. In both cases the ministry promptly supplied the ECO with SEV consideration documents.
Co-operation with ECO requests			The ECO did not make any specific information requests of the MTCS in the 2016/2017 reporting year. However, the MTCS's *EBR* co-ordinators attended an *EBR* compliance information session at the ECO's offices in September 2016.

Ministry: Transportation (MTO)

ECO Comment: The MTO continued to discharge its *EBR* responsibilities very well in 2016/2017, again posting consistently high quality notices on the Environmental Registry and responding promptly to the ECO's requests for proof of consideration of its Statement of Environmental Values. The ECO is pleased the MTO followed our recommendation and remedied all of its outdated proposals, and that all of the ministry's proposals on the Registry were up to date at the end of 2016/2017. The ECO encourages the MTO to keep proposal notices up to date going forward, and to post all decision notices promptly after making decisions.

Category	Result	Trend	ECO Comments
Quality of notices for policies, acts and regulations posted on the Environmental Registry			The MTO posted generally high quality notices on the Environmental Registry in 2016/2017. The ministry should ensure that it more consistently describes the effects of public consultation on its decisions, and includes links to all relevant documents.
Quality of notices for instruments posted on the Environmental Registry	**N/A**	**N/A**	The MTO is not required to post instrument notices on the Environmental Registry.
Promptness of posting decision notices on the Environmental Registry			The MTO posted several decision notices for outdated proposals in 2016/2017 (in some cases dating back to 2008). These late decision notices are responsible for the ministry's poor result in this category.
Keeping notices on the Environmental Registry up to date			The MTO remedied all of its remaining outdated notices on the Environmental Registry in the 2016/2017 reporting year.
Handling of applications for review and investigation	**N/A**	**N/A**	The MTO did not conclude any applications for review under the *EBR* in 2016/2017. The MTO is not prescribed for applications for investigation under the *EBR*.
Avoiding overdue applications for review	**N/A**	**N/A**	The MTO did not have any open applications for review under the *EBR* at the end of 2016/2017.
Considering Statements of Environmental Values (SEVs)			The MTO provided proof of SEV consideration to the ECO in response to all 6 requests, and was generally very prompt in its responses.
Co-operation with ECO requests			The ECO did not make any specific information requests of the MTO in the 2016/2017 reporting year. However the MTO's *EBR* co-ordinators attended an *EBR* compliance information session at the ECO's offices in September 2016.

Ministry: Treasury Board Secretariat (TBS)

ECO Comment: The TBS is a newly prescribed ministry and, to date, there is little material with which the ECO can evaluate the TBS's *EBR* performance. Nevertheless, we are pleased that the ministry has so far performed its few *EBR* obligations well by posting a high quality notice of its Statement of Environmental Values on the Environmental Registry. The ECO also commends the TBS for amending its draft Statement of Environmental Values in response to comments from the ECO to specify that climate change mitigation and adaptation will be part of the government decision-making process. Going forward, the ECO encourages the TBS to ensure that its decision notices clearly state the date that the decision was made so that the ECO may determine whether the decision notice was posted as soon as reasonably possible, as required by the *EBR*. The ECO is happy to report that the TBS's *EBR* co-ordinator attended an *EBR* compliance information session in September 2016. Going forward, the ECO encourages the TBS to contact our office for any assistance in understanding and complying with its *EBR* responsibilities, including: co-operating with ECO requests for information; posting clearly written and sufficiently detailed notices of any environmentally significant proposals on the Environmental Registry for public consultation; giving prompt notice of its decisions on such proposals on the Registry; and considering its Statement of Environmental Values when making those decisions.

Category	Result	Trend	ECO Comments
Quality of notices for policies, acts and regulations posted on the Environmental Registry		**N/A**	The TBS posted a proposal and decision for its Statement of Environmental Values in 2016/2017. The TBS's first notices as a prescribed ministry were clearly written, straightforward and included links to the proposed and final documents.
Quality of notices for instruments posted on the Environmental Registry	**N/A**	**N/A**	The TBS is not required to post instrument notices on the Environmental Registry.
Promptness of posting decision notices on the Environmental Registry	**N/A**	**N/A**	The ECO could not ascertain when the TBS decided to finalize its Statement of Environmental Values, and so we are unable to evaluate the TBS' performance in this category.
Keeping notices on the Environmental Registry up to date	**N/A**	**N/A**	The TBS did not have any open proposals on the Environmental Registry at the end of 2016/2017.
Handling of applications for review and investigation	**N/A**	**N/A**	The TBS is not prescribed for applications for review or investigation under the *EBR*.
Avoiding overdue applications for review	**N/A**	**N/A**	The TBS is not prescribed for applications for review or investigation under the *EBR*.
Considering Statements of Environmental Values (SEVs)	**N/A**	**N/A**	The ECO did not request proof of SEV consideration from the TBS in 2016/2017.
Co-operation with ECO requests		**N/A**	The ECO did not make any specific information requests of the TBS in the 2016/2017 reporting year. However, the TBS's *EBR* co-ordinator also attended an *EBR* compliance information session at the ECO's offices in September 2016.

Quality of Performance

Meets or exceeds expectations and legal obligations

Needs improvement

Unacceptable: failure to comply with legal obligations and/or frustrating the environmental rights granted to the public by the *EBR*

Trend

Overall quality of performance unchanged since 2015/2016

Overall quality of performance has improved since 2015/2016

Overall quality of performance has declined since 2015/2016

N/A (not applicable): The ministry is not prescribed for purposes of this category of *EBR* performance, or the ministry did not execute any responsibilities under this category in the reporting year.

Individual ministry comments on their *EBR* Report Cards can be viewed online at eco.on.ca.

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