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Resource Development in Canada: A Case Study on the Ring of Fire

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(Background Paper)

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RESOURCE DEVELOPMENT IN CANADA: A CASE STUDY ON THE RING OF FIRE

1 INTRODUCTION

With a known mineral potential of approximately \$60 billion and the first commercial quantities of chromite discovered in North America, the Ring of Fire¹ area in Northern Ontario has garnered much attention in recent years.² Federal and provincial ministers have described the Ring of Fire as a multi-generational economic opportunity, with the potential for creating long-term job growth in the region.³ A recent report suggests that developing the area could contribute at least \$5.1 billion to Ontario's Gross Domestic Product (GDP) over the next 10 years.⁴

The Ring of Fire has also received attention because of its challenges, which mirror the difficulties experienced in other remote communities across Canada that are looking to develop natural resources. For instance, the Ring of Fire is located in an ecologically sensitive area on the traditional lands of many First Nations communities.

This publication provides background information on the Ring of Fire, covering the following topics:

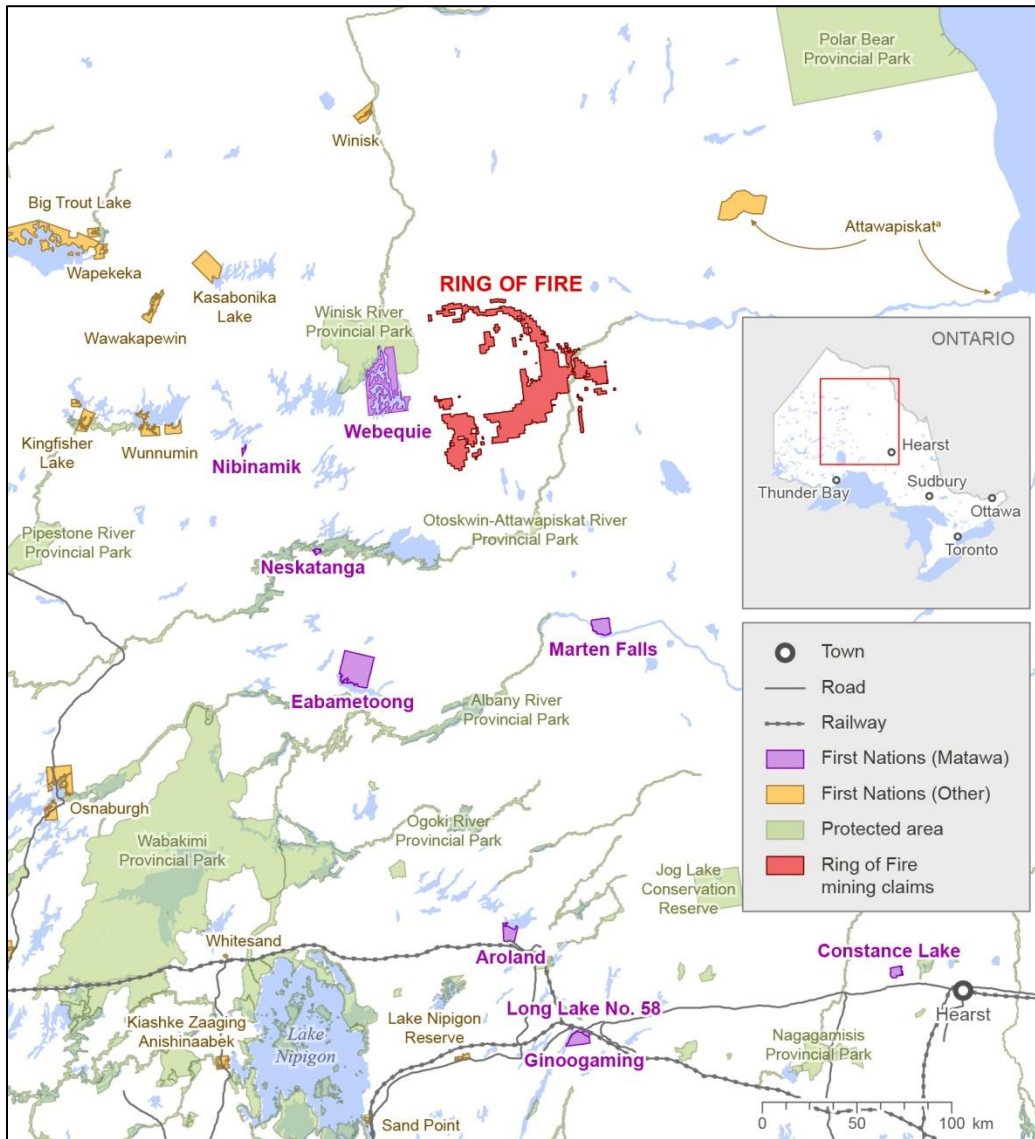
- the location, size and geology of the area;
- an overview of federal jurisdiction in the region;
- the potential economic benefits of mining development in the Ring of Fire;
- the challenges to mining development in the region;
- First Nations and the development of the Ring of Fire; and
- examples of federal and provincial government initiatives in the Ring of Fire.

2 CONTEXT

2.1 LOCATION AND SIZE OF THE RING OF FIRE

The Ring of Fire is located in a remote area of Ontario's Far North,⁵ in the James Bay Lowlands, about 1,000 kilometres from Toronto and 500 kilometres from Thunder Bay.⁶ The area is approximately 5,000 square kilometres (km²) in size, with most mineral discoveries to date located within a 20-kilometre-long strip. For perspective, the Ring of Fire covers an area slightly smaller than the Calgary Metropolitan Area (5,108 km²).⁷ Figure 1 shows the location of the Ring of Fire belt (the red crescent-shaped area) in relation to major cities, First Nations communities and protected areas.

Figure 1 – Location of the Ring of Fire and Nearby First Nations Communities



Note: a. Attawapiskat has two reserves, sometimes referred to as “Attawapiskat No. 91 A” (near the mouth of the Attawapiskat River by James Bay) and “Attawapiskat No. 91” (located upriver). Residents live in Attawapiskat No. 91 A. The other reserve is uninhabitable, but it is used for traditional purposes. For more information, see Five Nations Energy Inc., [Attawapiskat](#).

Sources: Map prepared by the Library of Parliament based on data from Geobase, [Administrative Boundaries](#); Ontario Ministry of Northern Development and Mines, [Applications](#); and Canadian Council on Ecological Areas, [Conservation Areas Reporting and Tracking System \(CARTS\)](#).

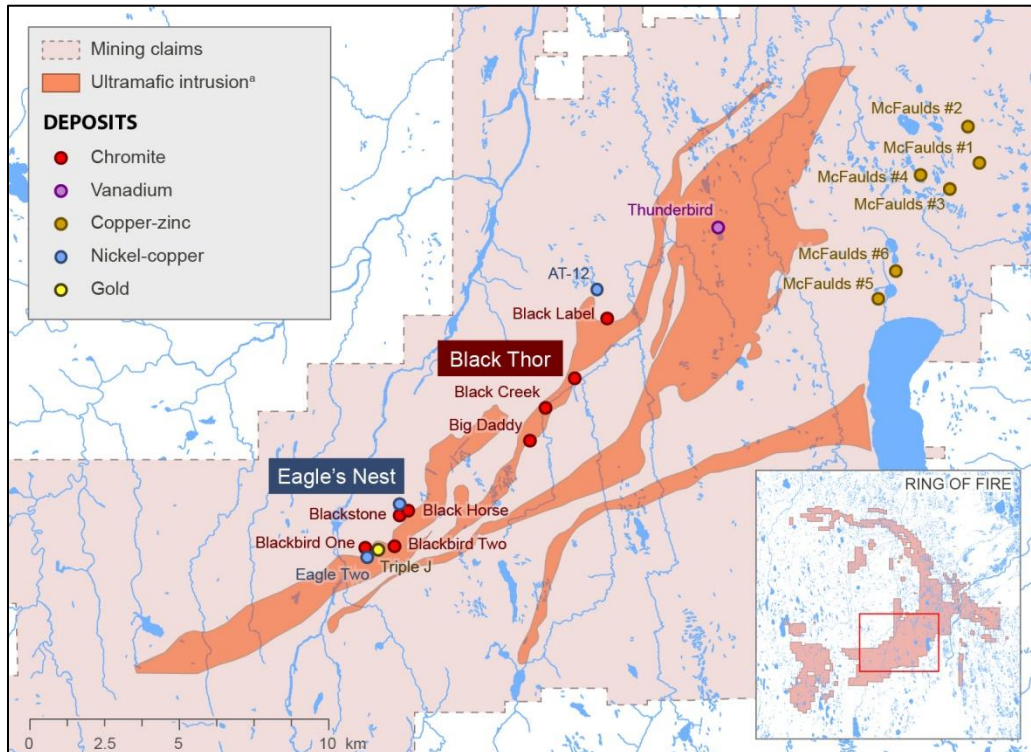
2.2 GEOLOGY AND MAIN DISCOVERIES TO DATE IN THE RING OF FIRE

In 2008, the first commercial quantities of chromite in North America were discovered in the Ring of Fire.⁸ Chromite is used to make ferrochrome, an alloy that is a component of stainless steel.⁹ The mineral is also valued for its ability to improve the hardness, toughness and resistance to corrosion of other products; for example, chromite can be used to protect auto parts, appliances and a variety of other products.¹⁰

Four countries currently account for 80% of the world's chromite production: South Africa, Kazakhstan, Turkey and India. China purchases approximately half of the world's supply, and the United States buys about 15%. The chromite in the Ring of Fire could meet North American needs for two centuries.¹¹

Exploration in the region has also revealed other minerals, such as copper, nickel, gold, zinc, titanium, vanadium, platinum, and palladium. Figure 2 shows some of the main mineral discoveries in the Ring of Fire. Of these discoveries, only the Black Thor chromite deposit and the Eagle's Nest nickel-copper deposit have led to proposals for further development.

Figure 2 – Key Mining Discoveries in the Ring of Fire



Note: a. An *intrusion* is the process of emplacement of magma in pre-existing rock; the term is also used to describe the rock mass formed by this process. The term *ultramafic* is used to indicate that the rocks are dark in colour and high in mineral content. See: Oregon State University, "[Definitions](#)," *Volcano World*; and North Carolina Department of Cultural Resources, "[Glossary](#)."

Sources: Map prepared by the Library of Parliament based on data from: Geobase, "[Administrative Boundaries](#)"; and Ontario Ministry of Northern Development and Mines, "[Applications](#)."

Cliffs Natural Resources (Cliffs) proposed development of Black Thor, the largest chromite deposit in North America. An environmental assessment of that project started in October 2011.¹²

However, Cliffs announced in November 2013 that it was suspending the Black Thor project indefinitely, citing uncertain timelines and risks related to infrastructure.¹³ The company will close its Thunder Bay and Toronto offices, but will continue its work with the provincial government and First Nations on the infrastructure issue.

In 2007, Noront Resources Ltd. (Noront) discovered the Eagle's Nest, a deposit with mineable quantities of nickel, copper, platinum, and palladium.¹⁴ The deposit has an estimated 11.1 million tonnes of proven and probable mineral reserves.¹⁵

The company started a coordinated federal/provincial environmental assessment for the project in November 2011¹⁶ and released a feasibility study in September 2012.¹⁷ In December 2013, Noront released a draft of its Environmental Impact Statement and Environmental Assessment Report (EIS/EA) for public comment.¹⁸

3 JURISDICTION: ROLE OF THE FEDERAL GOVERNMENT¹⁹

Provincial governments have most of the responsibility for mining issues through section 92A of the *Constitution Act, 1867*.²⁰ However, some aspects of mining projects fall under federal jurisdiction. These include issues relating to Aboriginal reserve lands, fish habitat, navigable waters, migratory birds, species at risk and national parks.²¹

For example, the *Migratory Birds Convention Act, 1994* bans the deposit of harmful substances in waters or areas frequented by migratory birds. This ban could affect where and how a mining company disposes of its waste.

The *Species at Risk Act* prohibits destruction of any part of the protected critical habitat of certain species at risk.²² For mining projects that might affect the critical habitat of such a species, the ban could determine the manner in which the project occurs, if at all.

A federal environmental assessment might also be triggered for certain designated projects in the mining sector.²³ The environmental assessment for Noront's Eagle's Nest project is an example.

Some challenges, such as the absence of infrastructure in the Ring of Fire region, might likewise require federal involvement.²⁴ The federal government has used its role in providing jobs and training to invest in skills development for First Nations in the area.²⁵

4 ECONOMIC OPPORTUNITY²⁶

A report from the Ontario Chamber of Commerce (OCC) suggests that the Ring of Fire could contribute \$5.1 to \$10 billion²⁷ to the province's GDP in the first 10 years and \$14.4 to \$27 billion in the first 32 years.

Ring of Fire projects would also have an impact outside Ontario. In the first 10 years, the GDP impact outside Ontario would range from \$2.1 to \$6.3 billion; in the first 32 years, the GDP impact outside Ontario would range from \$5.8 to \$16.8 billion.²⁸ How much of the GDP impact outside Ontario would accrue to specific Canadian provinces and how much would accrue to other countries is not possible to determine.

The OCC report also estimates the tax revenue that Ring of Fire projects would generate. In the short term, \$870 to \$940 million would accrue to federal reserves. In the long term, the federal government would receive \$2.89 to \$3.25 billion in taxes.

5 CHALLENGES

The main challenges for the mining industry in the Ring of Fire include:

- ecosystem sensitivity;
- remoteness and lack of infrastructure; and
- education and training.²⁹

The following subsections focus on these three issues. Challenges faced by First Nations regarding development of this region are addressed later, in section 6 of this paper.

5.1 ECOSYSTEM SENSITIVITY

The Ring of Fire's location in the James Bay Lowlands places it within the Hudson Bay Lowlands. Together, these areas form the largest peatland (a type of wetland)³⁰ in the world and act as an important carbon store.³¹ Wetlands are a naturally saturated environment, meaning that managing tailings and waste rock would be particularly challenging.³² The area also includes rivers that flow into James Bay.

Ontario's Far North contains the world's largest area of boreal forest that is free from large-scale human disturbance.³³ The Environmental Commissioner of Ontario (ECO) describes the Far North as "a stronghold for biodiversity" that includes at-risk animals such as caribou, wolverines and polar bears.³⁴

Developing mining projects and building infrastructure in this sensitive ecosystem will require careful planning to mitigate environmental impacts. For example, transportation infrastructure would bisect largely intact wilderness, which might affect wildlife migration and impede drainage in this wetland environment.³⁵ See the

appendix for a table summarizing information from ECO about the potential environmental effects of developing the Ring of Fire.

This challenge is also of concern to First Nations, who expect these ecological issues to be fully addressed through the environmental assessment process, as will be discussed in more detail in section 6 of this paper.

5.2 REMOTENESS AND LACK OF INFRASTRUCTURE

As a result of the location's remoteness, exploration costs in the Ring of Fire are at least 10 times higher than in Sudbury, and some professionals do not consider the area a desirable workplace.³⁶ The area also lacks transportation and energy infrastructure, which is an impediment to resource development. As noted earlier, Cliffs cited infrastructure issues when it suspended the Black Thor project.

Companies have not agreed on the form that transportation infrastructure should take in the region. Cliffs proposes a north–south road, while KWG Resources supports a north–south railway.³⁷ Noront Resources has proposed an east–west all-weather road.

Energy infrastructure is also required. For example, Cliffs would have needed 15 to 30 megawatts to operate its mine and concentrator at the Black Thor deposit, in addition to another 300 to 350 megawatts for the proposed ferrochrome processing plant north of Sudbury.³⁸ Noront's Eagle's Nest project would require 25 megawatts for the concentrator and mine, energy that could potentially be provided by a diesel generating station built near the community of Webequie.³⁹

Who would bear the costs of new infrastructure presents another challenge. Industry has suggested a public–private partnership, under the assumption that local communities would also benefit from the infrastructure.⁴⁰ Transportation and power line infrastructure in the Ring of Fire would cost an estimated \$1.74 billion.⁴¹

As will be discussed in more detail in section 7.2, the Government of Ontario has announced that it will create a development corporation to bring together stakeholders in an effort to develop infrastructure in the region.

5.3 EDUCATION AND TRAINING

Development in the Ring of Fire may hold economic potential for the surrounding communities. However, many of the jobs created by mining development are highly technical, meaning that members of these communities might require additional training. The OCC suggests that 45.1% of employers in Northern Ontario have had difficulty hiring someone with the right qualifications.⁴² Industry representatives who appeared before the RNNR Committee recognized the need for engaging these communities early in the process to identify the necessary training plans and programs for the area.⁴³

6 FIRST NATIONS ISSUES AND THE DEVELOPMENT OF THE RING OF FIRE

The Ring of Fire is located within the traditional territories of several First Nations. Closest to the proposed Ring of Fire development are the nine Matawa First Nations communities,⁴⁴ many of which are accessible only by air or by winter road.

Given the large number of First Nations in the area, it is beyond the scope of this paper to discuss their individual concerns and positions. Instead, the sections that follow provide an overview of shared concerns, including:

- adequate consultations with First Nations and their role in the development of their traditional territories;
- sharing of benefits; and
- the readiness and capacity of First Nations to participate in decision-making.

These key issues, as well as a recent agreement between the Matawa First Nations and the Ontario government that is intended to address some of these concerns, are discussed below.

6.1 CONSULTATION AND ROLE IN DEVELOPMENT

Some First Nations in the region have expressed concern about a lack of consultation with governments and industry. While these communities recognize the potential economic benefits of the Ring of Fire development, they also want to ensure that decisions on development in their traditional territories occur with their meaningful participation and in a way that ensures their communities will be ready to take full advantage of the opportunities presented by this development.⁴⁵

In particular, First Nations want to have a significant role in the environmental assessment and in infrastructure development.⁴⁶ Many of the Matawa First Nations still make a living from the land and have expressed concerns about the environmental changes that Ring of Fire development would bring to the fish, wildlife and plants upon which their communities rely.⁴⁷ Regarding infrastructure, the remoteness of these First Nations has had a discernible impact on their levels of social and economic development; these communities might therefore benefit from access to any new infrastructure that is built.⁴⁸

6.2 SHARING OF BENEFITS

As mentioned previously, the Ring of Fire could have a substantial economic impact in Ontario. First Nations expect a “fair share” of those benefits because the Ring of Fire projects would occur in their traditional territories. These benefits could include:

- shared resource revenues;⁴⁹

- access to new infrastructure;
- use of traditional ecological knowledge;
- education and skills development; and
- business and employment opportunities.⁵⁰

6.3 READINESS AND CAPACITY TO PARTICIPATE IN DECISION-MAKING

First Nations are geographically well-positioned to take advantage of the Ring of Fire's benefits. However, the First Nations closest to the Ring of Fire are among the most socially and economically challenged in Ontario, which affects their ability to meaningfully participate in large, complex resource development projects.⁵¹

For example, most of the working age population in the Matawa First Nations have not completed high school.⁵² Six of the nine Matawa First Nations are also under financial intervention (sometimes known as *co-management*).⁵³ According to Aboriginal Affairs and Northern Development Canada, these communities will need to develop capacity in finance, management and regional/community-based infrastructure to participate in decision-making in a meaningful manner.⁵⁴

6.4 REGIONAL FRAMEWORK AGREEMENT WITH THE MATAWA FIRST NATIONS

In March 2014, the Ontario government and Matawa First Nations announced that they had reached a regional framework agreement, a first step in the community-based negotiation process.⁵⁵ The negotiations began in the summer of 2013, with former Member of Parliament and Ontario Premier Bob Rae representing the Matawa communities, and former Supreme Court of Canada Justice Frank Iacobucci representing the provincial government.⁵⁶

The framework agreement allows the Matawa First Nations and Ontario government to continue the negotiation process on a community-based regional approach to the Ring of Fire's development. As explained in the announcement:

The agreement ensures First Nations and Ontario can work together to advance Ring of Fire opportunities, including regional long-term environmental monitoring and enhanced participation in environmental assessment processes, resource revenue sharing, economic supports, [and] regional and community infrastructure.⁵⁷

Negotiations are ongoing between the Matawa communities and the Ontario government.⁵⁸ Stakeholders generally see consultation with First Nations as essential to the success of the Ring of Fire, and early reaction from industry has been positive.⁵⁹

7 GOVERNMENT INITIATIVES IN THE RING OF FIRE

The following sections offer some examples of federal and provincial initiatives relating to the Ring of Fire. The examples are not exhaustive, as complete lists of such initiatives are not publicly available.

7.1 FEDERAL GOVERNMENT

The 2013 federal budget included an investment of \$4.4 million over three years for the Ring of Fire Capacity Building Initiative, through the Federal Economic Development Initiative for Northern Ontario. The initiative supports communities near the Ring of Fire for activities such as business skills development, strategic business planning and engagement of First Nations youth.⁶⁰

In August 2013, the federal government announced an investment in skills training for First Nations in the Ring of Fire. Through the Skills and Partnership Fund, the Canadian government allocated \$5.9 million to Kiikenomaga Kikenjigewen Employment and Training Services (KKETS), which is partnering with Noront and Confederation College to help 260 people from the Matawa First Nations gain skills for occupations in the mining industry, particularly in the Ring of Fire.⁶¹

The Government of Canada has also allocated funding for First Nations communities to participate in the environmental assessment of Noront's Eagle's Nest project. Three communities received funding:

- \$26,682 for the Attawapiskat First Nation;
- \$22,050 for the Aroland First Nation; and
- \$19,233 for the Kasabonika Lake First Nation.⁶²

The three grants are allocated through the Participant Funding Program; eligible costs include expert advice, travel expenses and reporting costs.⁶³

In November 2013, the Ontario Premier wrote to the Prime Minister, asking the federal government to partner with the province in infrastructure investments for the region.⁶⁴ After meeting to discuss the issue in December 2013, the two leaders did not announce any new initiative, though media reports suggest that the talks were constructive.⁶⁵

On the issue of infrastructure, the Minister responsible for the Ring of Fire⁶⁶ has stated in media reports that Ontario can apply for infrastructure funding through the Building Canada Plan⁶⁷ for projects in the Ring of Fire.⁶⁸

7.2 GOVERNMENT OF ONTARIO

In 2010–2011, Ontario set up a Ring of Fire secretariat in the Ministry of Northern Development and Mines. The secretariat is responsible for working and consulting with First Nations, northern Ontarians and the mining industry to encourage responsible and sustainable economic development in the region.⁶⁹

In November 2013, the Government of Ontario announced that it would lead the creation of a development corporation that would “bring together private and public partners, including First Nations, mining companies, as well as the federal and provincial governments.”⁷⁰ According to the news release, this corporation would “develop, construct, finance, operate and maintain infrastructure supporting access to strategic resources in the Ring of Fire.”⁷¹

Details on this corporation’s costs and how it will function are not yet available. However, in February 2014 the provincial government announced that it had hired the consulting firm Deloitte LLP to help establish the development corporation. The firm will also write a research report on existing infrastructure proposals in order to establish a common technical basis for future decisions.⁷²

In addition, the Ontario government has made some investments in the region. For example, it invested \$5 million to support “community readiness and capacity building” in Ring of Fire communities.⁷³ An additional \$3 million was provided to the Matawa First Nations and Tribal Council to help them “build capacity to participate in Ring of Fire–related activities, including training and job opportunities.”⁷⁴

The Ontario government has also been investing in community-based land use plans, as provided for in the *Far North Act*. Communities in the Far North have received over \$15 million since 2008 for land use planning that helps identify where given land use activities would be permitted, subject to additional planning requirements and environmental assessments. According to the province, 22 communities have been involved in these plans, including all of the Ring of Fire communities.⁷⁵

Furthermore, Ontario has invested in environmental monitoring in the North. For example, the province invested \$15 million to improve the mapping, science and knowledge of the Far North to support land use planning, and some of this information “will contribute to a long-term environmental monitoring framework to ensure sustainable development in the Ring of Fire.”⁷⁶ The provincial government has also invested \$8 million for environmental monitoring programs in the Far North, including a \$5 million investment for baseline studies in the Ring of Fire.⁷⁷

8 CONCLUSION

The remote Northern Ontario Ring of Fire area holds an estimated \$60 billion in mineral potential, including deposits of chromite, nickel, and copper. Development of the region poses a number of challenges, including consideration of ecosystem sensitivity, the region’s remoteness and lack of infrastructure, First Nations concerns, and education and training of workers.

Some of these challenges are not unique to mining development in the Ring of Fire. Indeed, remote communities across Canada face many of these same issues when it comes to natural resource development. For example, a Conference Board of Canada Report on mining in Northern Canada identifies some of the same challenges.⁷⁸

Going forward, attention on the Ring of Fire will likely be focused on three key areas:

- continuing negotiations following the recently announced framework agreement between the Matawa Tribal Council and the Government of Ontario;
- the ongoing environmental assessment of Noront's Eagle's Nest project; and
- the progress of Ontario's forthcoming development corporation.

NOTES

1. Noront Resources founder Richard Nemis named the Ring of Fire region after the famous Johnny Cash song. See Ontario, "[Ring of Fire lights up Northern Ontario's mining industry](#)," *Ontario Business Report* [OBR], n.d.
2. Ibid. See also Ontario, Ministry of Northern Development and Mines [MNDM], "[Minister's Statement on Ring of Fire](#)," 20 November 2013.
3. Government of Canada, FedNor, "[Minister Clement addresses premier mining conference on Ring of Fire](#)," News release, 3 March 2013; and MNDM (20 November 2013).
4. Ontario Chamber of Commerce [OCC], Table 1, "Economic Impact of Ring of Fire Development on Ontario: Conservative Scenario (10 Year Period)," [Beneath the Surface: Uncovering the Economic Potential of Ontario's Ring of Fire](#), February 2014, p. 10.
5. A map showing what the provincial government considers the "Far North" can be found at Ontario, Ministry of Natural Resources, "[About the Far North](#)," *Far North Ontario*.
6. House of Commons, Standing Committee on Natural Resources [RNNR], [Resource Development in Northern Canada](#), Fourth Report, 1st Session, 41st Parliament, November 2012; and OBR, (n.d.)
7. Statistics Canada, "[Calgary \(CMA\) Alberta \(Census metropolitan area\)](#)," *Census Profile*.
8. OBR (n.d.).
9. RNNR (2012).
10. OBR (n.d.)
11. Ibid.
12. Canadian Environmental Assessment Agency [CEAA], [Notice of Commencement of an Environmental Assessment](#), 7 October 2011.
13. Cliffs Natural Resources Inc. [Cliffs], "[Cliffs Natural Resources Inc. Announce Plans to Halt Development of its Chromite Project Indefinitely](#)," News release, 20 November 2013.
14. Noront Resources Ltd. [Noront], [Eagle's Nest Project: Feasibility Study Executive Summary](#), October 2012.
15. Noront, "[Volume 1: Executive Summary](#)," *Eagle's Nest Project: A Federal/Provincial Environmental Impact Statement/Environmental Assessment Report – Draft Copy*, 20 December 2013, p. ES-1.

16. CEAA, [Notice of Commencement of an Environmental Assessment](#), 15 November 2011.
17. The feasibility study can be found at Harry Burgess et al., [Noront Resources Ltd.: NI 43-101 Technical Report Feasibility Study, McFaulds Lake Property, Eagle's Nest Project, James Bay Lowlands, Ontario, Canada](#), Micon International Limited, 4 September 2012.
18. Noront, "[Noront takes another step forward in Ring of Fire development](#)," News release, 20 December 2013. At the time of writing, the Environmental Impact Statement/Environmental Assessment had not been formally submitted to the CEAA. Once submitted, it will likely be posted to the CEAA website: CEAA, [Eagle's Nest Project](#). For a copy of the draft Environmental Impact Statement, see Noront (2013).
19. Some of this section has been adapted from Jed Chong, "[National Mining Week 2013: An Overview of Canada's Mining Industry](#)," *HillNote*, Publication no. 2013-23-E, Parliamentary Information and Research Service, Library of Parliament, Ottawa, 8 May 2013.
20. [Constitution Act, 1867](#), 30 & 31 Victoria, c. 3 (U.K.).
21. These are the federal Acts that govern these areas: [Indian Act](#), R.S.C., 1985, c. I-5; [Fisheries Act](#), R.S.C., 1985, c. F-14; [Navigable Waters Protection Act](#), R.S.C., 1985, c. N-22; [Migratory Birds Convention Act, 1994](#), S.C. 1994, c. 22; [Species at Risk Act](#), S.C. 2002, c. 29; and [Canada National Parks Act](#), S.C. 2000, c. 32.
22. [Species at Risk Act](#), ss. 56–61.
23. For example, see [Regulations Designating Physical Activities](#), SOR/2012-147, ss. 16–17.
24. One of the main activities of Infrastructure Canada, according to its most recent Departmental Performance Report, involves "investments in provincial, territorial and municipal assets." See Infrastructure Canada, [Departmental Performance Report \(DPR\) 2012–2013](#), p.7.
25. Employment and Social Development Canada, "[Supporting Aboriginal skills development and training in Northern Ontario](#)," News release, 8 August 2013.
26. Unless otherwise stated, this section is based on OCC (2014).
27. The wide range reflects different assumptions about which projects go forward, and about leakage rates (i.e., the amount of the GDP impact that occurs outside of Ontario).
28. Author's calculations, based on leakage rates in OCC (2014).
29. RNNR (2012).
30. National Wetlands Working Group, [The Canadian Wetland Classification System](#), 2nd ed., eds. B. G. Warner and C. D. A. Rubec, Wetlands Research Centre, University of Waterloo, Waterloo, 1997.
31. The Pew Environment Group, [A Forest of Blue: Canada's Boreal](#), March 2011; and Environmental Commissioner of Ontario [ECO], [Serving the Public: Annual Report 2012/2013](#), October 2013.
32. OCC (2014); and Joan Kuyek, [Economic analysis of the Ring of Fire chromite mining play](#), prepared for Mining Watch Canada, 25 January 2011.
33. ECO (2013), p. 64.
34. Ibid.
35. Ibid; and Wildlands League, [Wild Notes: Ring of Fire](#), Fall 2013.
36. RNNR (2012).

37. A dispute on this matter has been filed by the companies with the province's Mining and Lands Commissioner. See Mining and Lands Commissioner, [2274659 Ontario Inc. and Canada Chrome Corporation](#), File No. MA 005-12, 10 September 2013. Cliffs Natural Resources Inc. is the parent company of 2274659 Ontario Inc., while KWG Resources is the parent company of the Canada Chrome Corporation.
38. Cliffs, "[3.0 Project Details](#)," *Project Description Report: Cliffs Chromite Project – Cliffs Ferroalloys*, May 2011, pp. 52 and 76.
39. RNNR (2012), p. 34.
40. Ibid.
41. OCC (2014), p. 18.
42. OCC (2014), p. 24.
43. RNNR (2012).
44. The Matawa First Nations include the communities of Aroland, Constance Lake, Eabametoong, Ginoogaming, Long Lake #58, Marten Falls, Neskantaga, Nibinamik and Webequie. See Matawa First Nations, [Member First Nations](#); and MNDM, [Resources](#).
45. RNNR (2012); and Aboriginal Affairs and Northern Development Canada [AANDC], [Ring of Fire \(Information for Minister\)](#), 4 February 2013.
46. AANDC (2013).
47. RNNR, [Evidence](#), 1st Session, 41st Parliament, 14 February 2012, 0905 (Mr. Raymond Ferris, Coordinator, Ring of Fire, Matawa First Nations).
48. AANDC (2013).
49. For more information on resource revenue-sharing arrangements, see Tonina Simeone, "[Resource Revenue-Sharing Arrangements with Aboriginal People](#)," *HillNote*, Publication no. 2014-10-E, Parliamentary Information and Research Service, Library of Parliament, Ottawa, 26 February 2014.
50. RNNR (2012); and AANDC (2013).
51. AANDC (2013).
52. Ibid.
53. AANDC, [Report by Region on List of Recipients with Default Management Under Way as of March 3, 2014](#). The six Matawa communities under Recipient-Appointed Advisors (sometimes known as *co-management*) are the Aroland, Marten Falls, Ginoogaming, Neskantaga, Nibinamik, and Webequie First Nations.
54. AANDC (2013).
55. MNDM, "[Ontario, First Nations to Work Together on Ring of Fire](#)," News release, 26 March 2014.
56. Ontario, Office of the Premier, "[Ontario Appoints Lead Negotiator for Ring of Fire](#)," News release, 2 July 2013.
57. MNDM (March 2014).
58. Ibid; and Carl Clutchey, "'Essential' agreement in place: Ring of Fire prosperity focus of framework accord," *The Chronicle Journal*, 27 March 2014.
59. For example, see OCC (2014); and Noront, "[Noront Statement on Agreement between Ontario and Matawa First Nations](#)," News release, 26 March 2014.
60. Government of Canada, [Jobs, Growth and Long-Term Prosperity: Economic Action Plan 2013](#), 21 March 2013, p. 136.

61. Employment and Social Development Canada, "[Supporting Aboriginal skills development and training in Northern Ontario](#)," News release, 8 August 2013.
62. CEAA, "[Eagle's Nest Project Federal Funding Allocated to Support Aboriginal Participation in Environmental Assessment](#)," News release, 26 July 2013; and CEAA, "[Public Notice – Eagle's Nest Project – Federal Funding Allocated to Support Aboriginal Participation in Environmental Assessment \(Revised\)](#)," News release, 8 October 2013.
63. More information on the program can be found at CEAA, [Participant Funding Program](#).
64. MNDM, "[Moving Forward on the Ring of Fire: Ontario Leading the Creation of a Development Corporation for Ring of Fire Infrastructure](#)," News release, 8 November 2013.
65. For example, see Susana Mas, "[Harper, Wynne agree Ring of Fire funding must be of 'public benefit'](#)," *CBC News*, 5 December 2013; and Bill Curry and Adrian Morrow, "[Wynne, Harper hold 'constructive' talks on Ring of Fire development](#)," *The Globe and Mail*, 5 December 2013.
66. In addition to his new role as the Minister of Natural Resources, Greg Rickford maintains his previous responsibilities for the Ring of Fire and FedNor files. See FedNor, [Biography – Greg Rickford](#).
67. For more information on the plan, see Infrastructure Canada, [The New Building Canada Plan: The largest and longest federal infrastructure plan in Canadian history](#).
68. The comments were made during Minister Rickford's previous tenure as the Minister of State for Science and Technology. Dana Flavelle, "[Ontario seeks advice on Ring of Fire](#)," *The Toronto Star*, 14 February 2014; and "[Deloitte to help establish Ring of Fire development corporation](#)," *CBC News*, 14 February 2014.
69. MNDM, [Results Based Plan 2011–2012](#).
70. MNDM (November 2013).
71. Ibid.
72. MNDM, "[Ontario Driving Progress on Ring of Fire](#)," News release, 14 February 2014.
73. MNDM, "[Ring of Fire](#)," Background, 8 November 2013.
74. Ibid.
75. Ibid.
76. Ibid.
77. Ibid.
78. The Conference Board of Canada, [The Future of Mining in Canada's North](#), January 2013.

APPENDIX – POTENTIAL ENVIRONMENTAL EFFECTS OF DEVELOPING THE RING OF FIRE*

Table 1 – Potential Environmental Effects of Mining and Mining-Related Infrastructure in the Ring of Fire

Development	Potential Environmental Effects That Should be Evaluated
Mine construction and operation	<ul style="list-style-type: none"> • Loss and fragmentation of terrestrial and aquatic habitat, including that of species at risk like caribou, wolverine and lake sturgeon • Groundwater flow impacts and subsequent impacts to wetlands, peat and water movement • Pumping of mine water affecting surface water quality • Fuel or chemical spills at the site • Mobilization of naturally occurring metals, such as arsenic, lead, mercury and cadmium • Metal/contaminant seepage to soils and groundwater from aggregate piles and settling ponds during mine construction and operation
Transportation corridors	<ul style="list-style-type: none"> • Fragmentation of both terrestrial and aquatic habitat (e.g., impacts on migration and daily movements) • Ongoing disturbance to wildlife due to noise, traffic and dust • Impacts on stream morphology and flow • Increased sedimentation of water bodies from road runoff • Increased access and traffic to wilderness areas, increasing fishing and hunting pressure • Fragmentation and disturbance of major rivers, wetland areas and protected areas • Increased greenhouse gas emissions from transportation fuels
Smelters or other processing facilities	<ul style="list-style-type: none"> • Soil, sediment, water and air contamination with chromium(VI) (a toxic form of the element chromium); • Emission of air pollutants, such as nitrogen oxides, carbon oxides, sulphur oxides and particulate dusts that contain heavy metals; and • Water pollution from waste rock and tailings management.
Energy use and transmission	<ul style="list-style-type: none"> • Aquatic habitat fragmentation or loss due to hydroelectric dam construction and operation • Fragmentation of both terrestrial and aquatic habitat due to transmission lines

NOTES

* Source: Adapted from Environmental Commissioner of Ontario, [Serving the Public: Annual Report 2012/2013](#), October 2013.