

Ms. Elaine Hardy
Senior Policy Advisor
Ministry of Natural Resources and Forestry, Regional Operations Division
Far North Branch
99 Wellesley Street West, Suite 5540
Toronto, ON
M7A1W3

17 December 2015

RE: Far North Land Use Strategy (EBR Registry Number: 012-0598)

Dear Ms. Hardy,

Thank you for the opportunity to provide comments on the draft Far North Land Use Strategy (FNLUS) mandated by Ontario's Ministry of Natural Resources and Forestry (MNRF) under Ontario's Far North Act, 2010 (hereafter, Act). We also appreciated the time you and Grant Ritchie spent discussing the FNLUS with us in our office on November 12, 2015.

Despite some improvements in the content of the document since the last version we reviewed, we remain unconvinced that the FNLUS as embodied in this document can address critical and mandated land use planning objectives in Ontario's Far North. Moreover, this draft document falls considerably short of meeting the Ministry's own intended purposes, as described in multiple places throughout it. Our primary focus here is to elaborate on these two points. In the second section at the end of document, we briefly mention a number of our additional major concerns.

THE FNLUS WILL NOT ENABLE MNRF TO DELIVER ON THE FOUR OBJECTIVES OF THE ACT

1) Addressing the Act's Objectives: Although the Act does not specifically mandate regional-scale planning, three of its four objectives are only measurable at the scale of the Far North region. Yet, the almost exclusive focus of MNRF throughout the development of the FNLUS is on community-based planning. However well the community-based land use planning process is being implemented, reliance on zoned plans that emerge at different times and scales to deliver ambitious broad-scale ecological and socio-economic objectives is insufficient. The FNLUS purports to provide guidance for the development of the community-based land use plans (CBLUP) (see below), but there is neither: a) a vision for the Far North that provides a framework for the overall planning process and links explicitly to delivering measurable outcomes for each of the four objectives in the Act, nor b) a process for how the provincial interest (i.e., delivery of the four objectives in the Act for which MNRF is ultimately responsible) will be accommodated as CBLUP are developed and implemented. Neither of these key aspects is evident in the draft FNLUS. It seems that MNRF will necessarily depend on policy and legislation, where it exists, to actually address regional-scale issues, while the FNLUS will remain perfunctory, and hence of limited use.

- 2) Fulfilling the purposes of the FNLUS: The draft FNLUS variously explains its purpose as:
 - "assist in the preparation of land use plans and to guide the integration of matters that are beyond the geographic scope of the individual plans" (p. 8);
 - "guide planning and inform decision making to work towards environmental, social and economic objectives as set out in the Far North Act" (p. 9);
 - "provide guidance on how to apply existing provincial policy and legislation to land use planning in the Far North" (p. 9); and,
 - "expresses the province's interests and direction with regard to land use planning and natural resource management" (p. 9).

The specific guidance offered in the strategy is intended to:

- "help planning teams consider landscape-level matters, such as water and infrastructure, and adjacent planning areas" (p. 9);
- "provide additional direction to guide how community based land use plans can contribute to landscape objectives" (p. 22);
- "help planning and decision making to work towards environmental, social and economic objectives and support orderly development in the Far North of Ontario" (p. 36); and,
- "provide guidance on how to apply existing provincial policy and legislation to land use planning in the Far North throughout the land use planning process" (p. 36).

By definition, "guidance" provides direction or advice about *how* to do something. By contrast, as illustrated by many of our detailed comments below, the FNLUS largely limits its guidance for various issues or topics to a series of objectives, with little indication of any pathway for planners to achieve them. With respect to the task of accomplishing Objectives 2 and 3 in the Act, we are left to conclude that MNRF is not in any position to address vital "broad-scale matters" (e.g., cumulative effects, climate change, species at risk, protected area planning, and freshwater conservation) in its own programs and decision making. Accordingly, if MNRF is unable to provide appropriate guidance to planners, it is in no position to be able to uphold its own responsibility to track the socio-economic and ecological success or failure of the planning efforts it leads under the Act.

To illustrate the nature of these two major concerns, we focus on five key topics in the FNLUS: cumulative effects, caribou, climate change, protected areas, and freshwater, a number of which are interrelated. You will see from our comments our strong view that for the FNLUS to be useful as a guidance document for CBLUP, it needs to be far more prescriptive than in its current form. The value of the FNLUS depends, in part, on how it is actually taken up and applied by planning teams. It also serves as an expression of MNRF's own leadership and role in implementing the objectives of the Act. We address both the nature of the guidance and the process for applying the guidance and offer recommendations within each of the key topics we've chosen to focus on.

1. Cumulative effects

While it is important that cumulative effects be considered a topic in the FNLUS, the current guidance illustrates Ontario's failure to plan for and address cumulative effects in both environmental assessment and land use planning processes, particularly at broad scales. The lack of cumulative effects assessment in any planning process in the Far North is highly significant given proposals to develop the Ring of Fire. A practical recommendation for cumulative effects assessment is to develop a regional approach to environmental assessment that can consider cumulative effects at the appropriate scale and inform

environmental planning for development (CCME 2009, Chetkiewicz & Lintner 2014). In Ontario's Far North, environmental assessment is not integrated with land use planning under the Act. As such, the current guidance will not be able to ensure that the extent, intensity and duration of development will be addressed in CBLUP. Because land use planning is about planning for the future, we recommend MNRF consider more immediately how it will address cumulative impacts of development and climate change in the Far North through CBLUP to meet Objectives 2 and 3 in the Act.

The three points offered in the FNLUS as "guidance" (p. 45-46) are vague, lack definition, and provide no direction that planners could practically follow. To help address these shortcomings, we recommend the following revisions:

- The preamble to the section provides an adequate conceptual definition of cumulative effects, but needs to also include clear language about both the real challenges of evaluating cumulative effects and the limitations of Ontario's policy. For example, there is no legal requirement in Ontario to address cumulative effects, and the document provides no description of how MNRF as a ministry considers cumulative effects in its decision making about fish, wildlife and land management. Who is actually responsible and accountable for addressing and managing the cumulative effects of land use and climate change in the Far North?
- Cumulative effects can only be evaluated, either conceptually or analytically, if the planning team carefully considers multiple scenarios for development and protection. For example, it should be possible, given available information and through established practices of participatory approaches with communities and stakeholders, to envision alternative futures for the planning area in question. These would range from multiple mines and associated road networks to one mine, various sizes of protected areas, various buffer widths, climate change scenarios, etc. Planners could consider, for example, a set of four plausible scenarios that range in severity and scope of the cumulative development footprint (see also climate change below which should be integrated with this approach).
- "Decision support tools" are mentioned, but not defined. Examples should be provided as well as models for how to use them within CBLUP.
- To accompany the FNLUS, MNRF should develop technical guidance, similar to efforts underway
 within the Ministry of the Environment and Climate Change (MOECC), on how to conduct a
 cumulative effects assessment within the scope of CBLUP based on these tools and scenarios.
 The outcomes of these processes could be considered hypotheses for how the future may
 unfold and can be monitored and revisited during planning cycles in an adaptive framework
 approach.
- In the Far North, land use planning for caribou conservation must consider cumulative effects. Although there is a paragraph in MNRF's *State of the Woodland Caribou Resource Report* in which cumulative effects planning is referenced, there is no transparent approach to cumulative effects assessment or planning within the Far North. The FNLUS can be more explicit about cumulative effects assessment in CBLUP in terms of caribou range management.

2. Caribou

As a species at risk with demonstrated vulnerability to land use change, caribou can be useful "tools" for regional-scale planning. MNRF has made a 5-year sizeable investment in caribou knowledge in Ontario, and technical reports evaluating the health of the various ranges are readily available to all planners. Although the FNLUS references these range assessments, it offers no guidance to planners for how to

use them. We are also aware that the technical range assessment reports themselves deliberately do not include recommendations for how to proceed with decision making regarding development. Moreover, all caribou ranges in the Far North are in "uncertain" condition, due to low recruitment rates in the last surveys (2011-2012).

We recommend MNRF revise the FNLUS to:

- State more explicitly how planning teams must address caribou range management and consider range condition in CBLUP. This guidance must consider the range information from MNRF, anticipated development, and climate change, particularly in the Ring of Fire (e.g., Missisa and Ozhiski ranges). "Uncertain" ranges deserve a higher degree of precaution than ranges in good condition. For example, planning teams should intersect their planning area of interest with the relevant caribou ranges and run the current caribou range models (e.g., Resource Selection Function models) with future scenarios of land use, natural disturbance, and climate change (see above) to consider the implications of different zoning decisions. In this way, planning teams will have a better understanding of the implications of the intensity, pace, and configuration of disturbance (natural and anthropogenic) on caribou range management within their planning area.
- Consider more explicitly how to address limits to development in CBLUP in general. We recommend this approach be mandatory for plans emerging on the Boreal Shield, where fire regimes are anticipated to be more aggressive under climate change scenarios and for the Missisa and Ozhiski ranges where the Ring of Fire developments are anticipated to open up the region with a potential growth-inducing effect. Developing a decision-support approach to resource development that explicitly considers thresholds for disturbance will be necessary as climate change interacts with fire to alter habitat quality, quantity and configurations in the Far North in ways that are not transferable from current forestry management practices to the south (e.g., mosaic model). Examples could be provided to allow planning teams a means to envision how to integrate caribou needs into the planning process.
- Develop a set of range management maps and explicit guidance that integrates current and
 future climate change into range management plans for Far North ranges enabling planning
 teams to consider how ranges may change in the future, particularly on the Boreal Shield.
- Explicitly state that management of boreal caribou populations requires consideration of large (> 30,000 km²) planning scales for designing protected areas, maintaining connectivity, and safeguarding areas important for life history components (e.g., calving, wintering, etc.).
- Revise the caribou range map in Appendix 1 to include current range information and status based on MNRF technical reports for Far North ranges.

3. Protected Areas Planning

While sound in a generic way, the FNLUS guidance illustrates Ontario's narrow and dated approach to protected area planning, at any scale, and is too limited given the unique ecological and social systems in Ontario's Far North. Relative terms like "large" (protected area), "little" (disturbance), "important" (habitat), "compact" (shape of protected area), etc. are used without any reference points for planners to understand how large (e.g., 1,000 km² or 10,000 km² or 100,0000 km²) for example. Moreover, the onus for "applying these design principles" and "consider[ing] how each area proposed for protection contributes to the creation of a Far North protected areas network and to broader provincial and global protection objectives" (p. 38) is implicitly at the scale of each CBLUP. Yet these scales are generally

unknown because each emerges in negotiation about the area of interest for planning and appears to not consider ecological boundaries (e.g., ecoregions, ecozones) in any explicit or consistent way. Again, we are left wondering where the provincial interest in protection in the Far North actually lies, and whether MNRF has developed any measurable protection objectives at the scale of the Far North. In general, protected area planning in Ontario is neither systematic nor based on relevant social and ecological principles. In the Far North, these principles would include intactness and complementarity. In an effort to meet a 50% protection target (Objective 2 of the Act), MNRF must also consider what the actual contribution of protected areas emerging in each CBLUP is to conserving biodiversity features and whether this contribution will actually be realized or even persist over the life of the plan given the landscape context within which the protected areas are embedded.

We recommend that MNRF revise the FNLUS to:

- Be explicit about what the broader provincial and global protection objectives are, given MNRF's
 mandate, and how Dedicated Protected Areas, emerging from CBLUP in the Far North, will
 contribute to Ontario's Biodiversity Strategy goals and Objectives 2 and 3 in the Act.
- Make clear that the effectiveness of protected areas within any CBLUP depends on the condition of the surrounding landscape. In other words, if relatively intensive land uses, (e.g., multiple developments and associated road networks) are developed in general use zones that surround a Dedicated Protected Area, the smaller and more isolated the protected area, the less effective it will be. Similarly, significantly wider waterway protection zones will be more effective than traditional buffers (~100m) for protecting sensitive aquatic values if intended land uses in neighbouring general use areas are expected to result in increased sedimentation and runoff (e.g., logging, road building). This is why scenario planning (discussed above) is a critical dimension for planning. Even if details of the nature of development are not generally known at the time of planning, protected area design must account for various plausible situations to determine the size of individual areas, the location, and the overall proportional coverage of this zone in the CBLUP.
- Be more precise when using relative terms (see above) for guidance, and provide examples of their application for protection of various values, including intactness values which currently makes the Far North a potential key biodiversity area¹.
- Indicate how persistence and dynamics of natural disturbance regimes can be addressed in protected area planning, particularly under scenarios of climate change. This could include using spatially explicit conservation planning tools such as Marxan² and BEACONs³ based on traditional ecological knowledge held by First Nations and scientific data where it exists.
- Invest in more explicit guidance based on culturally-relevant approaches to protection and planning by Indigenous Peoples including tools such as participatory mapping, traditional land use studies, and occupancy research with communities.
- Consider more culturally-appropriate approaches to protected area planning and governance.
 We recognize that working with First Nations to consider where values for protection may occur
 is a step in the right direction given First Nation antipathy for Ontario's approach to protected
 area designation in the past (e.g., Ontario's Living Legacy Legacy Land Use Strategy). Yet, we are

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https://www.iucn.org/about/union/secretariat/offices/iucnmed/iucn_med_programme/species/key_biodiversity_areas/

² See http://www.uq.edu.au/marxan/latest-r-d

³ See http://www.beaconsproject.ca/

aware that a number of First Nations are interested in protecting watersheds (e.g., Moose Cree First Nation and the French River watershed, the Water Declaration of Kitchenumaykoosib Inninuwug First Nation). The FNLUS explicitly consider how MNRF can consider this scale and governance of protection in CBLUP. We have suggested in previous comments, that this could include MNRF taking up the International Union for the Conservation of Nature (IUCN) recognition of Indigenous Peoples and Community Conserved Territories and Areas (ICCAs), the IUCN UNESCO guidelines for Sacred Natural Sites, and IUCN UNESCO World Heritage Sites. In Canada, good examples of ICCAs are emerging as "tribal parks"⁴, particularly in Alberta and British Columbia.

- Review the meaning of the conservation matrix model, as articulated in the Far North Science Advisory Panel (2010). The FNLUS seeks to offer a framework for planning in the Far North that must consider both "local" and "broad-scale" matters. It refers to this as a "stewardship approach" (p. 28) as a means to introduce the sections that follow. We have no concerns about this approach in principle, but have serious objections to linking this with the "conservation matrix model", an approach that is introduced and explained with significant detail in the Far North Science Report (2010). We stress that there is no element of the FNLUS in its current version that bears any resemblance to the "conservation matrix" approach, or any substantive advice offered by the Far North Science Advisory Panel, which was convened by the Minister for this purpose.
- Also include the four principal components of the conservation matrix model and indicate how
 these components are relevant to protected area planning in the Far North, given natural
 disturbance regimes and intactness. We suggest that the matrix model is a relevant framework
 for determining the goals for protection in the Far North and together with First Nations could
 be used to test the current hypothesis that at least 50% protection (Objective 2) is needed to
 conserve biological functions and processes under Objective 3.

4. Climate Change

The boreal forest and peatland systems of the Far North have a vital role to play in provincial efforts to mitigate the impacts of a changing climate. At the same time, as stated by the FNLUS, climate change may negatively affect biological diversity in the Far North more than other parts of Ontario. While the document offers considerations for climate change adaptation within various topics, it is still not linked explicitly to Ontario's provincial goals for addressing climate change. Most of the language is tentative and not very practical in terms of describing how planning teams could address climate change in order to consider the implications of zoning decisions (*sensu* community well-being) in the face of climate change. We suggest the FNLUS be revised to require that each CBLUP include current and future climate change scenarios when considering zoning for protection and development and provide an example of how climate change could be explicitly included to support caribou management in the section above.

We recommend MNRF:

 Make more explicit how the FNLUS will meet commitments for addressing adaptation and mitigation in Ontario's Climate Change Strategy⁵. While the provincial climate change action plan is yet to be released, it would behoove MNRF to ensure the final FNLUS is more specific about how it will deliver on meeting Ontario's goals, particularly with respect to renewable

⁴ See http://www.tribalparks.ca/

⁵ https://www.ontario.ca/page/climate-change-strategy

energy (e.g., hydroelectric development) and protection of peatlands and wetlands for climate regulation. Given that CBLUP are assigning general use zones (where development and infrastructure may be built) in world-class peatlands and wetlands, attention to carbon sequestration, greenhouse gas accounting, and wetland and peatland protection are expected and vital contributions from planning processes in the Far North.

- Recognize the value of peatlands and wetlands as ecosystem services. Ontario's recent report on the State of Ontario's Biodiversity⁶ indicate little progress has been made by Ontario's ministries on meeting Target 14⁷ to have programs and policies in place to maintain and enhance ecosystem services. The FNLUS seems like an important opportunity for MNRF to do so given the global significance of these ecosystems. In addition, we have provided public comments to MNRF on wetland conservation in Ontario, recommending proactive wetland valuation, protection, and land-use planning under climate change scenarios in the Far North (EBR 012-4464).
- Determine how CBLUP will contribute to meeting Ontario's goals for mitigation of climate change, including emissions targets by sectors such as infrastructure and mining which are consistent components of CBLUP.
- Determine how CBLUP will contribute to protecting carbon functions and climate regulation
 values in peatlands and wetlands (e.g., meeting Objective 3 of the Act). From a planning
 perspective, this demands more explicit consideration in land use plans emerging on the Hudson
 Bay Lowlands in particular where attention to intactness values and protection of peatlands and
 wetlands must be prioritized and true guidance offered in the FNLUS for how planners can
 accomplish this most effectively.
- Revise climate change projections map in Appendix 1 to generate a set of down-scaled regional
 maps of climate change that can be used by planning teams. These maps could be based on the
 ecological boundaries described in Appendix 2 and should also be down-scaled to the area of
 interest for planning in CBLUP.
- Provide a technical guidance document, similar to efforts underway by MOECC, on how to consider climate change scenarios in Far North planning and clarify which type of emissions scenarios and models are relevant, why, and how to consider them in CBLUP.
- Work with communities to develop a list of key values (sensu valued ecosystem components or similar) that must be consistently considered within each CBLUP. This would ensure that each plan considers a key set of regional-scale values under different climate change scenarios. This would also support the identification of indicators for regional monitoring programs.
- Identify what values MNRF considers are important (e.g., the provincial interest) for planning across the Far North, particularly in relation to Ontario's commitments under the Biodiversity Strategy.
- Require planning teams to systematically consider the impacts of climate change on these
 ecological and social values within the area of interest for planning for each CBLUP (e.g., caribou
 ranges, freshwater fish, wetlands, etc.).

5. Freshwater

While the FNLUS now includes sections on wetlands and peatlands, and describes the importance and value of freshwater throughout the document, the guidance for water remains generic. We are aware

⁶ https://www.ontario.ca/page/climate-change-strategy

⁷ Target 14 states that by 2020, programs and policies are in place to maintain and enhance ecosystem services.

that some First Nations are concerned about protecting watersheds (e.g., Moose Cree First Nation and the French River watershed, the Water Declaration of Kitchenumaykoosib Inninuwug First Nation and the Water Declaration of the Anishinaabek, Mushkegowuk and Onkwehonwe in Ontario). This scale of protection is significant for freshwater planning because freshwater systems are highly connected. A disturbance to one area of a freshwater system doesn't remain there, but can affect the rest of the area downstream. Importantly, most of the traditional emphasis on protected area planning is focused on terrestrial systems. Yet, the extent to which this scale of protection is being considered in CBLUP is unknown.

The focus on zoning in CBLUP is problematic for freshwater conservation planning. Although the FNLUS mentions connectivity in a variety of places, the guidance ultimately returns to advice that is not useful for planning at a watershed scale. For example, the physical footprint for the Victor Diamond mine is 13 km², yet dewatering operations impact 2,600 km² of aquatic and terrestrial systems within the watershed⁸. Similarly, interests in developing hydroelectric generation by both Ontario and some First Nations requires an understanding of what the impacts of run-of-river dams may be versus other types of renewable development within and across watersheds before considering zoning based on hydrological function and freshwater values in CBLUP. In summary, although the FNLUS acknowledges the importance of water, there is a lack of any useful direction or advice regarding planning for freshwater systems.

OTHER MAJOR CONCERNS WITH THE FNLUS

We take this opportunity to discuss, in brief, a number of additional concerns we have with the draft FNLUS as a guidance document for planning teams in the Far North.

1. The importance of monitoring to the FNLUS

The FNLUS notes that results from monitoring programs need to be included, but should be more explicit about how it can contribute to meeting Target 15⁹ of the Biodiversity Strategy. At present, the guidance is perfunctory given that most of the topics in the FNLUS require baseline data and ongoing monitoring. While there have been some efforts by Ontario to establish a monitoring program for inland lakes, biodiversity, and caribou, it is unclear if these programs will continue in the future. Information on caribou (e.g., population health) is already out of date. Also, these programs, with the exception of caribou, were not designed to answer ecological questions that support planning and decision making at various scales. We reiterate the need for a commitment to regional monitoring in the Far North that is framed to deliver on the conservation outcomes in Objectives 2 and 3 of the Act. We encourage MNRF to work with First Nations to include traditional knowledge and support First Nations understanding of change on the land in developing monitoring programs in the Far North.

⁸ http://www.miningwatch.ca/there-are-no-clean-diamonds-what-you-need-know-about-canadian-diamonds http://www.miningwatch.ca/there-are-no-clean-diamonds-what-you-need-know-about-canadian-diamonds

⁹ Target 15 states that by 2015, a long-term monitoring and reporting system for assessing the state of Ontario's biodiversity is established and operating.

2. Appendix 2

This section of the report has the most potential to offer real guidance to planners (as well as environmental assessment), but is hidden in the back and hardly referred to in the FNLUS. We suggest Appendix 2 provides a framework for considering the regional-scale topics such as cumulative effects, climate change, protected area design, and freshwater within the FNLUS because it considers the ecological values of each region as well as the current and potential changes due to land use (development), natural disturbance (fire regimes) and climate change. This information should be referenced more explicitly in the FNLUS. The FNLUS could also consider using Appendix 2 as a regional framework that can inform CBLUP in respective areas of the Far North.

3. The need for regional planning

As the Provincial Caribou Technical Committee stated in comments to you at an earlier stage of the FNLUS development process, "OMNR[F] faces a daunting challenge in representing broad provincial interests relating to the planning of conservation and development, evaluating and responding to cumulative environmental impacts, and considering broader implications for northern communities, economies, resource management industries, and ecosystems. We are concerned that the current planning environment and context for the Far North is insufficient to evaluate and address the longterm implications of developments on ecosystem integrity..." We at WCS Canada have expressed our concerns about the ability of MNRF to deliver on the Act's objectives in their current planning approach through our previous comments to you and in many other instances. In addition, MNRF has solicited and received plenty of advice and recommendations on this issue, including from both resource industries and environmental groups (Far North Advisory Council) and scientists (Far North Science Advisory Panel). The Far North Science Advisory Panel Report emphasized that "careful planning and management of development intensity and extent across the region as a whole was necessary to protect ecological integrity and resilience while delivering social and economic benefits" (2010: 99). In addition, the Environmental Commissioner of Ontario (ECO) has also provided recommendations and direction for regional planning in the Far North in various annual reports. We conclude that MNRF has not taken up any of the substantive recommendations or addressed them in the draft FNLUS.

CONCLUSIONS

In conclusion, while MNRF is responsible for delivering on the objectives of the Far North Act, the draft FNLUS fails, as a strategy, to do so. Although the draft document we have reviewed here acknowledges the need for attention to addressing regional-scale issues, it relies on CBLUP and other existing legislation and policy to deliver regional conservation outcomes inherent in Objectives 2 and 3 of the Act. There are some improvements in the content of the FNLUS from the previous draft, but the document is largely generic in its "advice" on how to deliver on regional-scale outcomes. In spite of its stated purposes, it provides very little true guidance to planners. We submit that MNRF will need to exert considerable effort to improve the guidance in the final FNLUS along the lines we have suggested in this letter.

In issuing this FNLUS, it seems that even if the guidance is improved successfully, it remains unclear how the information it contains will actually be applied in a systematic, transparent and consistent way in CBLUP. The lack of decision support tools and technical guidance within MNRF's own approach and decision making on climate change, cumulative effects, protected area design, and freshwater is

apparent. Therefore, it is impossible for us to see how community plans will "roll up" and collectively deliver on Objectives 2 and 3 of the Act once development projects and road networks come online. We reiterate our recommendation that MNRF consider a regional framework for planning that can consider the current and future ecological, social, and economic state of the Far North if it is to deliver on Objectives 2 and 3 of the Act once development projects and road networks are introduced into the region.

Please contact Cheryl Chetkiewicz (cchetkiewicz@wcs.org or 807-472-1440) if you require further clarification or information regarding our comments.

Sincerely yours,

Cheryl Chetkiewicz, PhD

JANO PETVOTALL

Justina Ray, PhD

Constance O'Connor, PhD

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cc: Environmental Commissioner of Ontario (ECO), Ontario Premier's Office, Minister Mauro, MNRF

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Appendix 1. Information about WCS Canada

About WCS Canada: Founded in 1895, WCS (http://www.wcs.org/) is one of the oldest conservation organizations in the world, with a mission to save wildlife and wild places worldwide through science, conservation action, education, and inspiring people to value nature. WCS has played a key role in Canadian conservation research for more than a century, and WCS Canada (http://www.wcscanada.org/) was officially established as a WCS country program in 2004. WCS Canada's niche among other Canadian environmental organizations is to generate information through field-based and applied science, encourage collaborations among members of the scientific research community to address key knowledge gaps, and resolve key conservation issues by providing biological expertise and technical assistance to decision-makers. Additionally, WCS Canada seeks to educate and inspire the next generation of conservation scientists both through collaborations, and through the W. Garfield Weston Foundation Fellowship Program (http://www.wcscanada.org/Fellowships.aspx).

Dr. Cheryl Chetkiewicz is an Associate Conservation Scientist and the Lead for Ontario's research and conservation efforts in Ontario's Far North. She is focused on regional scale research and planning in the Far North, specifically wildlife research and monitoring, cumulative impacts on wildlife, and strategic environmental assessment for the Ring of Fire.

Dr. Justina Ray is the President and Senior Scientist and has been engaged in field research in Ontario's Far North. She is one of the few biologists to spend significant time in this remote region over the last decade, with a specific focus on wolverine and caribou. Dr. Ray served on MNRF's Provincial Caribou Technical Committee and co-authored the Wolverine Recovery Strategy. She was a member of MNR's Far North Science Advisory Panel.

Dr. Constance O'Connor is a Freshwater Conservation Scientist and leads Ontario's freshwater research and conservation efforts in Ontario's Far North. She is focused on field and applied research on freshwater fish including monitoring, wetland and peatland conservation, and cumulative effects of development and climate change on freshwater systems.