

27 August 2023

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Port Hawkesbury Paper LP  
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Re: Review of FSC Conservation Areas Network Gap Analysis (Indicator 6.5.2)

Andrea,

Thank you for the opportunity to review PHP's Conservation Area Network Gap Analysis for LP FULA lands for Eastern Mainland and Cape Breton, Nova Scotia. I have attached an electronic copy of this review and included my CV as a separate document.

This review is based on the FSC® National Forest Stewardship Standard of Canada (FSC-STD-Can-01-2018 V 1-0 EN). You have asked for my opinion as a "peer reviewer" on the approach taken and the evidence provided based on my experience. My comments can be found in the accompanying document.

You have specifically asked me for my opinions for indicator 6.5.3 which requires that, "A peer review of the gap analysis is completed by one or more independent experts." The requirement for a gap analysis is found in section 6.5.2 of the FSC document, which is central to indicator 6.5.

"6.5.2 Using best available information, and analysis is used to identify potential gaps in the completeness of the Conservation Areas Network in the Management Unit. Elements considered for inclusion in the gap analysis address enduring features, representation of native ecosystems, landscape connectivity, High Conservation Values and High Conservation Value areas."

"6.5. The organization shall identify and protect representative sample areas of native ecosystems and/or restore them to more natural conditions. Where representative sample areas do not exist or are insufficient, the Organization shall restore a proportion of the Management Unit to more natural conditions. The size of the areas and the measures taken for their protection or restoration, including within plantations shall be proportionate to the conservation status and value of the ecosystems at the landscape level, and the scale, intensity and risk of management activities."

To perform a gap analysis, PHP must also assess the regional Conservation Areas Network to assess indicator 6.5.7, which requires that 10% of the Management Unit is represented in protected area. The Conservation Areas Network for public lands represents the totality of protected areas and designated conservation lands.

After reviewing the gap analysis document I would make the following general comments. Detailed comments follow below.

- Overall, I believe that PHP has met the standard as described within the FSC guidance document for 6.5, including 6.5.2 and 6.5.7.

- I have no major comments that would require a significant re-examination of the data and analysis.
- Although the document was generally easy to follow, I have identified several areas within the document that would benefit from additional details for clarification and supporting information.
- The document sets clear objectives for PHP's management area and area of influence.
- While PHP has demonstrated a reasonable ecologically-based approach to their gap analysis, I have minor concerns with both the ecological and influence thresholds used that may be addressed with additional supporting information.
- The results of the gap analysis have identified two Natural Landscapes that will benefit from additional protection.
- During my review I specifically noted three areas that although not significant, should be addressed.
  1. The role of the gap analysis in potentially identifying mechanisms to strengthen ecological connectivity. This is identified in section 6.5.2 of the FSC standards document.
  2. The inclusion of potential inoperable forest areas as part of the gap analysis to strengthen protected lands and lead to increased landscape connectivity and conservation measures.
  3. The long-term value of small forest fragments identified as "other conservation measures" that are susceptible to windthrow, or other anthropogenic disturbances that compromise their intended conservation value.

For reference purposes for your auditors, my level of effort in preparing this review was 15 hours. This included background reading, a review of the report, and preparation of these documents.

I have forwarded to you a separate document with small editorial comments for your review. If you have any questions about my review of the gap analysis please contact me for clarification.

Sincerely,



Mark Pulsifer  
Edgewood Environmental Services  
Antigonish, NS  
902-714-9595

Attachments:  
Electronic copy of review  
Electronic copy of document with minor editorial comments  
CV

## Port Hawkesbury Paper Conservation Area Network Gap Analysis Review

Comments pertaining to this review will follow the structure of the document provided by Port Hawkesbury Paper entitled, *Conservation Area Network Gap Analysis for Port Hawkesbury Paper LP FULA Lands for Eastern Mainland and Cape Breton, Nova Scotia*, henceforth referred to as the document. Additional minor editorial comments are addressed in a separate document and were made available to the author.

This peer review is intended to meet requirements to fulfill the FSC Certification Standard under The FSC® National Forest Stewardship Standard of Canada (FSC-STD-CAN-01-2018 V 1-0 EN) 6.5.3, “A peer review of the gap analysis is completed by one or more independent experts.”

### 1. Introduction

- Overall, the author introduces the reader to the intent of the gap analysis well. With few exceptions (see below) the content is appropriate, identifies principle concepts and goals, and positions the reader appropriately for the sections that follow.
- Definitions of terms contained within the document are central to understanding the intent of the gap analysis process and ability of PHP to meet the intent of FSC requirements. It is important that there is no ambiguity within the document about the meaning and context of terms. For example, what is the difference between a legal and administrative set aside, and what management activities can take place within them? What level of protection is afforded to administrative set asides, and for how long?
- Footnote 1 at the bottom of page 3 directs the reader to a website that explains various types of gap analysis (i.e., representation, ecological, and managerial); however, it is unclear whether the gap analysis performed by PHP is for a single type or combination of more than one. The author specifically references ecological gap analysis, but there is no mention of whether this is the type of gap analysis completed, or why other related types were not chosen. Related to this in 1.1 Project Objectives, objectives specifically refer to representation.
- For context, clarity, and further review, this section of the document would benefit from an explanation of how this current gap analysis will build upon past similar analyses, and contribute to specific long-term goals? This is addressed under Indicator 6.5.7 #4 *Previous contributions of the Organization to Conservation Areas Network on lands that were formerly within the Management Unit*, and the overview statement under 6.5 which states that, “This criterion addresses effort to add to the Conservation Area Network in the Management Unit by filling gaps in the existing network with new designated conservation lands and secondary conservation lands. The role of the

*Organization, as expressed through this Criterion's indicators is to lay the groundwork for working towards and achieving a vision for the Conservation Areas Network."*

- Page 5. *"Although PHP uses NSDNRR's Ecological Land Classification System (Neily et al, 2017) for its forest management planning and operations activities, the use of NSDECC's Natural Landscapes framework was chosen for this analysis to better align with protected areas planning and objectives."* Nova Scotia's forest management system is highly aligned with the provincial FEC. A brief explanation of why the Natural Landscapes approach is a better fit for this process should be included.

### **1.1 Project Objectives**

- It is unclear to what extent PHP considered all types of potential gaps in the PAN as stated in FSC Indicator 6.5.2, and how these may be reflected in the Project Objectives. Further detail would be informative. For example, did the gap analysis address landscape connectivity issues within the context of the protected areas network?

*6.5.2 Using best available information\*, an analysis is used to identify potential gaps in the completeness of the Conservation Areas Network\* in the Management Unit\*. Elements considered for inclusion in the gap analysis address enduring features\*, representation of native ecosystems\*, landscape\* connectivity\*, High Conservation Values\* and High Conservation Value areas\*.*

- Project objectives listed under 1.1 within the document focus on representation and do not appear to reflect other potential gaps in the Conservation Areas Network listed under 6.5.2 above. If this is an oversight the document should clarify the objectives of the gap analysis, or provide a rationale for excluding specific elements.

### **1.2 Study Area**

- The study area description and mapping are clear and contains sufficient detail to be understandable and provide the reader with a good overall perspective on the size and distribution of the natural landscapes, and PHP's Crown license area.

## **2. Methods and Analysis Approach**

### **2.1 Conservation Area Network Inputs**

- On page 8 the document states that Conservation Area Network Inputs contribute to "restoring ecological integrity across the landscape". The use of the term "restoration" implies that something is lost or diminished. Since this type of restoration is pertinent to a gap analysis it would be helpful if the document contained an explanation of what is meant by "ecological integrity" and how the addition of these protected and conservation areas restores ecological integrity at a landscape level.

- Information presented under section 2.1 Conservation Area Network Inputs may be better presented as a table. Additionally, a supporting appendix with the specific HCVF values and area sizes would be helpful for readers or reviewers to understand why these areas are currently set aside.

## **2.2 Natural Landscapes and Eco-Units**

- The Natural Landscapes approach with an eco-units subclassification system is an appropriate scientifically valid foundation for a gap analysis. This landscape and sub-classification system is based on definable and measurable natural features that represent some of the best information available.

## **2.3 Ecological Representation Thresholds**

- Clearly defined terminology is essential to understand meaning and intent, particularly in the methodology section. The opening paragraph in section 2.3 refers to “ecological components”, but it is unclear what is meant in this instance. Additional information by way of examples would help clarify the intent of this statement. This sentence is followed by a reference to “species and elements”. It is unclear what “elements” is referring to; however, in the next paragraph elements would appear to refer to genes, species and ecosystems. These two paragraphs require additional attention to organization, consistency of terminology, and clarification.
- On page 13 the author makes the statement, “In a protected habitat, representation was deemed good when there were 75% to 89% of the expected species present, and complete when there were 90% of the expected species (Cameron 2022). The cited paper appears to be a cornerstone document for understanding the methodology behind assessing ecological representation, yet there are no supporting details in this document. The reader may look the reference up; however, a brief description of the basis for these species-area relationships would be helpful to reviewers.
- Values in Table 3 need to be interpreted cautiously. Simply saying that by protecting 66% of the province, 90% of bird species will be protected can be misleading. If for instance, protection is defined as the amount of land area required to conserve viable population levels of bird species, the size, type, and distribution of land area set aside for bird conservation is more important than the total area. All species can be categorized as by their habitat and functional needs, i.e., generalists, specialists, open habitat, late seral, interior, etc. Late-seral closed canopy bird species are the most vulnerable of the bird species in Nova Scotia. A protected areas plan should recognize and protect all habitat types. This should be clarified within the PHP document.

- The colour coded system of ranking different categories of representivity is visually effective and easy to understand. That being said, the document would be strengthened by additional details on why (or how) colour bands were classified into their respective values based on percent protected area. For example, the document reports that the 17% threshold was derived from the Aichi Biodiversity Target #11; however, there is no other explanation as to whether there is a biological basis for any of representivity rank categories. In this case it may be that the information presented here is arbitrarily defined based on the best information available, and the novel approach by Cameron (2022), which is acceptable. In this case the document should state as much, provide a rationale for the decision, and PHP should be prepared to defend this position.
- Focusing on eco-units with <17% protected areas prioritizes eco-units with the least amount of conservation area which in most cases is appropriate; however, there may be specific eco-units in higher ranking categories (i.e., > 17% protected), and/or where PHP manages <50% of the unit that deserve attention as well. In the latter circumstance, some eco-units with a high level of private ownership and land use intensity would benefit from protected areas on Crown lands.

#### **2.4/2.5 Management Unit and Regional Representation Assessment**

- With respect to step 5 in the Regional Representation Assessment, PHP should further rationalize the 50% threshold. Explain why 50% was chosen as opposed to 35% or 75%. If the goal is to identify and close ecological gaps, potentially high priority gaps likely exist in landscapes where PHP has < 50% control. The document would benefit by an expanded explanation around prioritization of gaps based on ecological need rather than land tenure. PHP may be able to exert greater ecological influence in some landscapes where the majority landowners are private.
- Notwithstanding the previous comment the overall approach to selecting gaps for inclusion within a protected areas network has merit.

### **3. Results**

#### **3.1 Management Unit**

- The analysis of inputs towards gap-filling of natural landscapes appears to have focused on opportunities derived from species and habitat conservation requirements within the Guysborough Headlands and St. Mary's Plain Natural Landscapes. A complimentary analysis of inoperable areas within these landscapes may have revealed additional lands that could further augment protection within these landscapes and others.

- PHP's explanation and calculation of the amount of land within their management unit contributing to the Conservation Area Network is appropriate and meets the 10% FSC standard.
- Figures 5 and 6 are illustrating the same information in a slightly different manner. Figure 5 provides a more detailed breakdown of the land values comprising the Protected Areas Network. Both may not be necessary. Figure 5 does not provide an area for total old growth. A similar situation occurs for Figures 7 and 8, with Figure 7 providing more detail while Figure 8 provides a simplified visual result.

### **3.1 Regional Representation Assessment**

- The opening paragraph on page 18 of this section partially clarifies some previous confusion in the document related to differences in lands included in the management unit and regional assessments. A similar explanation should appear in the methods section to avoid this confusion by reviewers.

#### **3.1.2 Other Conservation Measures for Filling Ecological Gaps**

- General comment: There has been considerable debate over the value of small forest fragments for species and habitat conservation, and their contribution to a protected areas network. These "other conservation measures" fall within this category. Under section 6.5 of the FSC standards document, a Conservation Areas Network is, "comprised of those portions of Management Unit and adjacent area of ecological influence for which conservation is the primary, and in some circumstances, exclusive objective." Other conservation measures could fall under this definition. These areas may also fall under the FSC "designated conservation lands" distinction which are lands managed "through the exclusion of forest management activities in recognition of their ecological and/or cultural values." IUCN Protected Areas Category IV recognizes that small habitat fragments can play a conservation role. A brief rationalization of the contribution that these other conservation measures contribute to filling ecological gaps (with selected scientific references) would be beneficial (see comment below on long-term value).
- With respect to moose shelter patches, is it understood that shelter patches shall be located within appropriate habitat as per the Mainland Moose SMP on Crown lands? Sizes for moose retention patches should be included in the document for consistency.
- With reference to moose shelter patches and level of management that may take place within them, on page 28 the document states that, "PHP's objective is to have fully set-aside moose shelter patches."; however, in the following paragraph there is reference to

removing the shelter patch and converting it to “viable forage habitat”. The document should explain what is meant by this.

- One of the requirements for areas to be included in a Protected Areas Network is the reasonable expectation that areas set aside will provide long-term conservation value. Small fragments of forest cover (e.g., moose retention patches, and some lichen buffers) are especially vulnerable to windthrow and likely do not meet this condition. With changing climate and increased storm activity resulting in increased windthrow, land managers must consider the long-term viability of set asides, and adjust accordingly. Considerations such as this should be reflected in the document with area adjustments in tables, or an explanation of why these areas should remain included.

### **3.1.5 Monitoring Contributing Habitats for Ecological Gaps**

- “... a monitoring system will be put in place to assess each year whether the areas have been reduced or become available for forest management.” The potential for reductions in total area has been addressed in the previous comment; however, it is unclear what circumstances would result in areas becoming available for forest management if the intent was long-term protection. In the event that either event was to occur what is PHP’s plan to address these area losses?
- Similarly, the amount of current “pending” protected area should be identified within the document.

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