

ONTARIO FEDERATION OF ANGLERS & HUNTERS

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Ontario Conservation Centre

OFAH FILE: 794
December 19, 2022

MNRF - PD - Resources Planning and Development Policy Branch
300 Water Street, 2nd Floor, South tower
Peterborough, Ontario
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To Whom it May Concern:

Subject: ERO# 019-6161 Conserving Ontario's Natural Heritage

The Ontario Federation of Anglers and Hunters (OFAH) is Ontario's largest, non-profit, fish and wildlife conservation-based organization, representing 100,000 members, subscribers and supporters, and 725 member clubs. We have reviewed ERO posting 019-6161 *Conserving Ontario's Natural Heritage* and offer the following comments for consideration.

Biodiversity offsetting (BO), where negative impacts on an ecosystem are offset or compensated for by restoring another ecosystem, is an increasingly popular tool in the world of conservation. In theory, BO demands accountability from permit holders who negatively impact habitat through development or other such activities, by requiring them to either directly or indirectly restore another degraded ecosystem. However, the efficacy of this process has been questioned, with many experts suggesting that it is ineffective or, at least, has been utilized ineffectively (Curran et al. 2014; Ermgassen et al. 2019; Harper & Quigley, 2005; Poulton & Bell, 2017).

Despite past failings, growing research interests in this topic have yielded helpful insights into how the offsetting process might be improved and, hopefully, play a role in protecting and restoring Ontario's natural heritage. To ensure a successful entrance into the world of offsetting, the OFAH strongly encourages the ministry to establishment a biodiversity offsetting committee before proceeding. Such an assemblage of stakeholders and subject-matter experts would be a valuable resource, in addition to ensuring accountability, transparency, and efficiency.

Our response will address each component of the MNRF's offsetting outline for Ontario individually.

“Net Gain. The goal of the offsetting policy should be net gain with respect to the extent and quality of natural heritage features or their functions, within a reasonable period of time.”

The OFAH is encouraged by the MNRF's interest in net-positive offsetting, as research suggests this may be the most effective way to increase offsetting success (Ermgassen et al. 2019; Poulton & Bell, 2017). Although popular, the “no-net-loss” (NNL) approach has proven an inconsistent and generally ineffective option across a wide range of habitat types and circumstances (Ermgassen et al. 2019; Harper & Quigley, 2005; Poulton & Bell, 2017).

With respect to offsetting ratios, it is important to note that higher ratios are conducive to more successful offsetting projects. For example, while using a loss/gain calculator to help simulate restoration outcomes, Gibbons et al. (2015) found that ratios of $\leq 10:1$ had the greatest potential to result in no net loss and that, without a ratio of this degree, NNL success was extremely limited. Considering the government's intent to go beyond NNL, Ontario's offsetting requirements will likely have to be much more ambitious.

As the ministry suggests, offset ratios should be determined based on a multitude of factors, including habitat type, offsetting method, uncertainties around counterfactual scenarios, gain permanence (whether ecological gains will last), time lag, indirect leakage (when ecological loss is displaced rather than prevented) and more (Gibbons et al. 2015; Laitila et al. 2014; Poulton & Bell, 2017). These factors can be represented as multipliers in the offsetting process and, although complex, are a critical consideration for achieving NNL, or in this case, net biodiversity gain.

Timing, as the ministry suggests, is an especially important factor. A **time lag** can be defined as a delay in anticipated restoration impacts, which may be caused by a variety of factors, including restoration style, dominant species, ecosystem type, geography, and more (Maron et al. 2012). A potential delay in impact manifestation can make or break a BO project, rendering even the highest confidence offset sites essentially useless. We encourage the MNRF to require consideration and planning for potential sources of time-lag in their BO process (Maron et al. 2012; Poulton & Bell, 2017).

“Avoidance first. Offsetting should be the last step after other options to avoid and mitigate any impacts on natural heritage are considered.”

The ministry’s position on “avoidance first” is encouraging. Due to their complex and often unpredictable nature, many habitats cannot be artificially replicated, and offset success has often suffered for this reason (Gibbons et al. 2015).

In their 2017 posting “A Wetland Conservation Strategy for Ontario,” the MNRF defines **the mitigation hierarchy** as a “...hierarchical progression of alternatives, including avoidance of impacts, minimization or mitigation of unavoidable impacts and offsetting of impacts that cannot be avoided.” Although offsetting can be effective, the first two steps of this hierarchy (avoidance and minimization) have significantly less uncertainty and, thus, should be prioritized (Grimm et al. 2019). We encourage the ministry to commit to this process, ensuring due diligence and the careful consideration of all possible alternatives prior to offsetting. Failure to follow the mitigation hierarchy in its entirety has led to significant losses in biodiversity in the past (Poulton & Bell, 2017).

“Informed. Offsetting should consider the best available science, and knowledge, including Traditional Ecological Knowledge.”

The OFAH supports an informed offsetting process, and strongly encourages the MNRF to establish a biodiversity offsetting committee. With an assemblage of subject matter experts and relevant stakeholders, such a committee would help keep the MNRF up to date on important science, policy, and valuable public and stakeholder perspectives.

“Transparency and accountability. The offsetting policy should incorporate provisions for oversight, tracking and public reporting on the effectiveness of implementation.”

The OFAH suggests the MNRF put special emphasis on monitoring and oversight provisions.

Poor or lacking long-term monitoring, record keeping, maintenance, and accountability are considered a root cause of historic BO underperformance (Poulton & Bell, 2017). For this reason, the MNRF would be wise to put significant resources into the development of comprehensive performance standards for biodiversity offsetting. In the past, weak, typically area-based metrics have often been used to evaluate offsetting and restoration success, making it challenging to draw conclusions around biodiversity impacts. As noted by Suding (2011), “Even when the area restored is larger than the area lost, compensation seldom succeeds in restoring structure, composition, or function...” We recommend the ministry aim for a more robust evaluation framework which gauges success in terms of biodiversity, ecological function, and both short- and long-term ecosystem health. Specific considerations should include population size and distribution, habitat quality and carrying capacity, and other biodiversity values (Ermgassen et al. 2019; Grimm et al. 2019; Maron et al. 2012). These same metrics can also be used to structure and evaluate effective offsetting goals prior to project start (Price et al. 2018).

In addition to the monitoring of results, it is extremely important to underline compliance monitoring and enforcement. Poor regulatory compliance is a pervasive issue across the offsetting world, and likely one of the major sources of project failure (Ermgassen et al. 2019; Harper & Quigley, 2005; Poulton & Bell, 2017). As a result of poor monitoring and enforcement, both Canada and the US have low levels of regulatory compliance (with respect to BO), with Ermgassen et al. (2019) estimating a compliance rate of just over 50% for Canadian projects. Changing this trend will not only require consistent regulatory oversight and monitoring, but strict enforcement as well (Poulton & Bell, 2017). To help guide an effective tracking and monitoring process, we recommend the MNRF look to other jurisdictions with experience in establishing mitigation tracking databases, like New Brunswick. The OFAH also suggests requirements for frequent reporting on the part of permit holders/offsetting agents, as well as annual or biannual reporting by the MNRF to the legislature.

“Limits to Offsets. Some wetlands, like coastal wetlands, bogs and fens in southern Ontario, and other areas that historically have been important for recreation and tourism should be ineligible for offsetting.”

Despite recent changes to the wetland evaluation system, the OFAH feels it is incredibly important to include consideration for threatened and endangered species in the MNRF offset limitations, in addition to sensitive and ecologically important habitats such as breeding, hibernation, staging and moulting, winter cover, and stopover habitats. These vulnerable habitats are a critical component of Ontario’s biodiversity and natural heritage and should, therefore, be protected. Prohibiting the use of biodiversity offsetting across these locations would be in the true spirit of the mitigation hierarchy.

“The baseline assessment would consider the area, location, scale, function, and values of the feature.”

Lack of effective baseline has been a notable source of offsetting failure in Canada (Poulton & Bell, 2017). As such, significant resources should be given to baseline surveying prior to project start.

“In some cases, the baseline assessment and offset ratios would also be used to determine a compensation amount that would be paid to a fund that could be used to implement an offset, including construction, monitoring and adaptive management. Ideally, offsets should be located in the same watershed; however, offsets outside the watershed could be considered where there is opportunity for greater conservation outcomes.

This approach could also enable opportunities to pool funds to support large, strategic projects rather than re-creating small, isolated offsets. A fund could also invest in areas of the province where natural heritage loss has been the greatest.”

Conservation banking and in-lieu fees (ILF) both offer unique opportunities to improve the success of biodiversity offsetting. The primary distinction between these two approaches is that offset banks generally distribute credits for restoration projects which have already been conducted, while ILFs pool resources, often from multiple sources, and begin restoration once enough funds have been accumulated (USDT, N/A; USEPA, 2015).

Although there is a need for significantly more research on this topic, banking and ILFs have been criticized for rarely meeting NNL objectives and for poor oversight. With the goal of net gain and an emphasis on effective monitoring and evaluation, however, the MNRF could potentially improve upon these conservation tools (Droste et al. 2022; Grimm et al. 2019). Between the two approaches, conservation banking may be preferable, due to its potential to address time-lags and uncertainties around offsetting effectiveness (Maron et al. 2012).

If the MNRF does use ILFs, it is especially important to create strict guidelines, including restrictions against education and research expenditures in-place of active restoration (Poulton & Bell, 2017).

If done ineffectively, these indirect forms of offsetting could create a “pay to pollute” opportunity for permit holders, which would undermine the very purpose of an offsetting policy.

The OFAH supports the MNRF’s assertion that, where possible, offsets should be located in the same watershed or area as the original impact site. Often, the social impacts of offsetting projects are not considered, and changes to recreational opportunity and public access can be socially and economically detrimental (Kalliolevo et al. 2021; Varumo et al. 2020). However, we also acknowledge that, in special cases, the ecological potential of investing resources into a project that is further away from the impact site may outweigh other considerations.

Additional recommendations

Site selection

Choosing the right restoration site is a challenging and important step in the offsetting process. Despite the great number of degraded habitats that exist across the country, limited restoration opportunities make it is extremely important to maximize efficiency and ecological impact wherever possible.

Our recommendations:

- Require careful site selection considerations from an ecological perspective, with concern for habitat connectivity, ecological diversity, ecological function, and potential for long-term success (Grimm et al. 2019; Poulton & Bell, 2017; Spence, 2021).
 - Bear in mind:
 - Some habitats have more ecological value than others
 - Some habitats have greater potential for success than others (i.e. wetlands vs old growth forest) (Ermgassen et al. 2019; Maron et al. 2012)
- Emphasize community engagement and stakeholder consultation
- Consider requiring multiple restoration projects for each development permit.
 - This may help to combat the inherent uncertainty associated with certain offsetting approaches (Maron et al. 2012)
- Encourage or require the use of restoration simulation modeling
 - Modeling can be used to predict project outcomes and, ultimately, help to inform decisions around site selection and strategy (Laitila et al. 2014)

Active restoration

The success of an offsetting project is largely defined by the degree to which permit holders and offsetting agents are invested in the restoration process itself. Although outcomes can be difficult to predict, regulatory agencies like the MNRF can require or encourage an array of practices which dramatically increase the likelihood of project success.

Our recommendations:

- Require clear, concise, and transparent mitigation plans and proceedings
 - This will help avoid the high degree of subjective interpretation, inconsistency and uncertainty which has historically plagued the permitting and offsetting process (Poulton & Bell, 2017)
- Incentivise the production of taxonomically diverse ecosystems to avoid biotic homogenization (BH)
 - Biotic homogenization (BH) occurs when ecological communities become compositionally similar, reducing Beta (β) diversity
 - BH can, in turn, hinder some ecosystem functions (Price et al. 2018)
 - Poor restoration practices can lead to BH, due to factors like poor topographical variability, simplified site geometry, preferential species selection, consistent recurring soil conditions, narrow functional goals, invasive species establishment and more (Holl et al. 2022; Price et al. 2018)
- Restrict or prohibit the use of averted loss
 - **Avoidance or averted loss** is a BO strategy that involves offsetting ecological loss by protecting habitat that is expected to be lost in the future
 - This approach does not result in a net gain of habitat or function and is considered extremely ineffective (Ermgassen et al. 2019; Droste et al. 2022; Poulton & Bell, 2017)

Administration and oversight

Without effective record keeping, monitoring, evaluation, and enforcement, offsetting projects are often doomed from the beginning. Investing the appropriate time and resources into this end of a provincial offsetting process will be vital to its success.

Our recommendations:

- Separate administrative and oversight roles (e.g. between agencies, organizations, etc.) to prevent attempts to streamline the process
 - Both regulators and developers may aim to avoid delays, uncertainties, and additional costs, which could result in deliberate streamlining and corner-cutting throughout the offsetting process. Separating administration and oversight roles may help to detect and eliminate this issue (Grim et al. 2019; Poulton & Bell, 2017)
- Establish independent program evaluations to avoid potential bias (Poulton & Bell, 2017)

Additional research

The world of biodiversity offsetting is relatively young and remains under-researched. To better harness the potential of this tool, we recommend the MNRF invest research efforts into several relevant topics.

These include:

- Investigation of variable offsetting approaches and tools, such as “out-of-kind” and “indirect offsetting”
- Developing more efficient metrics to quantify success (see above)
- Further research on BO effectiveness for terrestrial habitats, such as forest and grasslands
- Investigation of new and innovative offsetting strategies and models, such as Spence’s 2021 Strategic Wetland Offset Site Selection (SWOSS)
- Investigating the potential value of offset-failure insurance

While there is no silver bullet for habitat loss, we have an abundance of tools at our disposal which, if used effectively, may help to manage the issue. Biodiversity offsetting is one such tool. By investing sufficient time and resources into its understanding, this approach to conservation could be used to the great benefit of Ontario’s natural heritage.

Yours in Conservation,



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