



**Comments on: Yukon Government Draft for public review:  
A policy for the stewardship of Yukon's wetlands.**

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**Submitted by**

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*Wildlife Conservation Society (WCS) Canada is a national non-government organization of scientists conducting research on species and ecosystems to inform conservation decisions. Our role is to provide long-term, site-based, research and syntheses of science that inform policy and practice and that support the implementation of effective conservation measures. We do this by providing technical advice and by engaging relevant decision-makers at all levels, from local to federal. WCS Canada scientists have been working in Yukon since 2004 on wildlife research, land use and protected areas planning, resource management, and policy applications for conservation science.*

## **Preamble**

Wetlands are of highest value for protection and careful management in the Yukon. They support unique, diverse, and abundant plant and animal communities; they protect ecosystems from climate change through carbon storage (mitigation) and as climate-change refugia (adaptation); they provide essential ecosystem services, such as flood control and water filtration; and, they provide opportunities for sustenance, recreation, and spiritual experiences, contributing to the well-being of First Nations and non-Indigenous Yukoners.

Wetland areas also have the potential to generate economic wealth for individual users, but this use of wetlands results in their disturbance, destruction, and loss. Post-disturbance reclamation activities can create some wetland benefits, such as water storage and aquatic habitat, but the impacts of human development of wetlands cannot be fully mitigated or restored, and some impacts are permanent.

To date, Yukon has not had a territory-wide Policy that provides strategic direction and guides decision-making regarding wetlands. The result has been uncertainty for all. In the absence of strategic guidance on limits, the outcome has been incremental loss and a net negative impact on wetlands and their benefits as individual development projects are authorized.

We welcome the commitment of Yukon Government (YG) to complete the Wetland Policy by May 2022 (<https://yukon.ca/sites/yukon.ca/files/eco/eco-mandate-letter-nils-clarke-2021.pdf>). And, we gratefully acknowledge the opportunities provided to Wildlife Conservation Society (WCS) Canada and other interested parties to contribute to the development of the Wetland Policy through the Wetland Policy roundtable (since 2018), comments on earlier versions of the Policy, and at the recent virtual Roundtable (November 16 & 17, 2021).

Our comments and recommendations focus on the extent to which the draft Policy puts forward a clear and sound strategy for caring for Yukon's wetlands to protect ecological, social, and cultural benefits for current and future Yukoners.

## **Wetland Definition and Foundational Information**

Successful implementation of a Wetland Policy depends on defining and delineating wetlands, and describing and quantifying their benefits.

### Defining & delineating wetlands

The Policy defines a wetland as ‘an area that is saturated with water long enough to promote wetland or aquatic processes, as indicated by poorly drained soils, water-loving (hydrophytic) vegetation and various kinds of biological activity which are adapted to a wet environment’. While technically accurate (the source is the National Wetlands Working Group, 1997), this definition does not capture the full complexity of hydrologic, geomorphic, and biotic interactions occurring within a wetland, and between a wetland and the larger aquatic-terrestrial system within which it is embedded. Wetland functions and benefits cannot be understood or maintained in isolation from adjacent, upstream, or downstream areas; the wetland definition and delineation should reflect this.

Recommendation #1 – Wetland definition and delineation should, at a minimum, include the concept of adequate buffers surrounding wetlands to protect wetland functions and benefits. Ideally, the Policy defines wetlands, and provides guidance on delineation, that recognizes wetlands as part of an interconnected aquatic-terrestrial system, to be protected and managed accordingly.

Yukon has adopted the Canadian standard for wetland classification into five major types: bogs, fens, marshes, swamps, and shallow open water. Each type has clearly defined characteristics. This is foundational information that is relevant to all aspects of the Policy, including Building Knowledge (e.g. inventory by wetland class); Protecting Wetlands of Special Importance (e.g. rarity of type as a criteria); and Managing Human Impacts (e.g. inability to reclaim peatlands). Instead, the Policy presents vague descriptions in the Introduction of how wetlands may differ in hydrology and vegetation and the potential implications for ecosystems and benefits. It is not clear why this basic information is not included as it has previously been presented by YG as part of the wetland policy engagement (archived at: <https://online.engageyukon.ca/project/yukon-wetlands/documents/>) and was included in previous drafts.

Recommendation #2 – Foundational information should include standard definitions of the five wetland classes recognized by Yukon Government given the relevance of wetland class to all aspects of the Policy.

### Wetland benefits

The table of functions and benefits (page 2) is provided as ‘foundational knowledge’ for the Policy (line 13-14). Globally, we are facing dual crises of biodiversity loss and climate change. The critical role of wetlands in both is not adequately reflected in the list of benefits and functions.

The benefits table neglects the value of wetlands and wetland complexes to the full suite of biodiversity, including mosses, lichens, fungi, plants, and invertebrates, in addition to fish, amphibians, birds, and mammals. In addition, wetlands provide critical habitat for many species at risk and

endemic species. Many of the benefits to fish and wildlife populations, particularly those with multiple habitat needs, large territories or home ranges, or that make seasonal movements, result from wetlands being embedded in intact landscapes of aquatic and terrestrial habitats, which collectively provide the resources needed to support individuals and populations.

Recommendation #3 – The Policy should provide a more comprehensive description of the ecological values of wetlands, including supporting the full suite of biodiversity elements, providing critical habitat for species at risk and endemic species, and as necessary components of larger landscapes that support fish and wildlife populations.

The Policy fails to recognize, describe, and provide adequate protection for the carbon storehouses of Yukon’s wetlands. Carbon, in the form of undecomposed or only partially decomposed plant material, has been accumulating in wetlands, especially in bogs and fens, throughout the Holocene. While some carbon release does occur naturally, the net benefit is of wetlands as carbon storehouses. The atmospheric carbon cycle is unbalanced, which is driving our climate crisis. Increasingly, the global community is looking to nature-based climate solutions that, among others, involve conserving existing carbon stores in place. The target ecosystems for these activities are generally forests and wetlands, because these are the most carbon-rich ecosystems. New research has described the global importance of boreal forests and peatlands as rich storehouses of carbon (Harris et al. 2021, Rockstrom et al. 2021; see also WCS Canada peatland [story map](#)). This is carbon that we cannot afford to release to the atmosphere. It took hundreds and often thousands of years to accumulate. If released as a result of development, it could not be re-absorbed from the atmosphere within the few decades left until we need to get to net-zero carbon budgeting. By moderating temperature and moisture, wetlands also function as climate-change refugia - areas resistant to regional changes in climate and thus acting as a refuge for plant and animal species (Stralberg et al. 2020).

Recommendation #4 – The Policy should recognize and describe the role of wetlands in climate mitigation, particularly carbon storage, and adaptation, as climate-change refugia.

## Policy Goal and Guiding Principles

The Goal of the Policy is to ‘*ensure the benefits of Yukon’s wetlands are sustained for all*’ (lines 29-30) but the term ‘sustained’ is not defined, leaving uncertainty as to how the Policy will be used to guide decision-making. The framing concept of the Policy is ‘stewardship’ (title, line 52, 72-3), which suggests a strategic direction for decision-making that recognizes the interdependence of humans and wetlands, and our responsibility to care for wetlands (Chapin et al. 2010). The definition in the Policy recognizes that our decision-making must be responsive to change and ensure no loss of future options. These

concepts are consistent with the guiding principles of respect, reciprocity, and a holistic approach. However, the implicit strategic direction of the Policy is that all wetlands are open to development and that economic gain is a valued trade off for loss of wetlands and wetland benefits.

A Policy that recognizes and respects that humans and nature, including wetlands, exist in an interconnected system that produces numerous benefits for all would put protection first. A protection-first approach was put forward by representatives of Indigenous governments, and boards and councils established under the Umbrella Final Agreement, at Roundtables 3 and 4 (section 4: <https://yukon.ca/sites/yukon.ca/files/env/env-wetlands-roundtable-report-3.pdf>; section 3: <https://yukon.ca/sites/yukon.ca/files/env/env-wetlands-roundtable-report-4.pdf>). Under a protection-first Policy, human activities in wetlands would have to be justified to ensure benefits are maintained for all and future options are not lost.

Recommendation #5 –The Wetland Policy should put protection of wetlands first.

The Policy does not include three important principles that are commonly used to guide land-use decisions: precautionary approach; ecosystem-based approach; and adaptive management. These are particularly important given gaps in knowledge, lack of regional land use planning, and uncertainty about outcomes from implementation of the mitigation hierarchy.

There was widespread support for including the precautionary approach as a guiding principle among members of the Roundtable (e.g. page 7 in Wetlands Roundtable report 4; link above). The Convention of Biological Diversity applies the precautionary approach as follows “... where there is a threat of significant reduction or loss of biological diversity, lack of full scientific certainty should not be used as a reason for postponing measures to avoid or minimize such a threat” (<https://www.cbd.int/convention/articles/?a=cbd-00>). There are considerable gaps in knowledge about Yukon’s wetlands. In the absence of a wetland inventory and gaps in knowledge of the hydrology, geomorphology, and ecology of each of Yukon’s 5 wetland classes, allowing new development puts their benefits and value to Yukoners at risk. A precautionary approach is consistent with putting protection of Yukon’s wetland first.

An ecosystem approach to decision-making considers all levels of biological organization, from genes to species to ecosystems; considers the structure, processes, functions, and interactions among organisms and their environment; and the multiple spatial and temporal scales at which these occur. A precautionary and ecosystem approach also incorporates an adaptive management framework that allows for responsive management in a ‘learning-by-doing’ framework and which is critical given the complex and dynamic nature of wetland ecosystems and the incomplete knowledge of wetlands in the Yukon.

Recommendation #6: Adopt the precautionary approach, ecosystem approach, and adaptive management as guiding principles of the Policy.

## **Building Knowledge**

The policy would add momentum to the systematic mapping of Yukon's wetlands over the next five years. This is necessary to assess the abundance and locations of each of the five types of wetlands so that regional planning and impact assessments have the evidence to make better decisions. Under the precautionary approach, the lack of a wetland inventory should not be rationale for postponing measures to avoid or minimize threats, such as full protection for all peatlands (fens and bogs) to avoid carbon emissions from these important carbon storehouses.

All aspects of the Policy are dependent on defining and quantifying wetland benefits, such as assessing WSIs, setting a benchmark for no loss of benefits from WSI, and managing human impacts to wetlands through the mitigation hierarchy. Overall, we support using area-based indicators as proxies for wetland benefits in the short term. However, this first depends on completing the broad-scale inventory for the 5 wetland classes across the Yukon.

Recommendation #7: YG should implement a moratorium on new and renewed authorizations of activities impacting wetlands until a Yukon-wide 5-class inventory is complete.

## **Wetlands of Special Importance**

The Policy proposes designation of Wetlands of Special Importance (WSI) as a means to protect individual wetlands from human activities. As part of a protection-first Policy, we support a process for identifying and permanently protecting WSI based on ecological, social, and cultural values.

Several of the WSI criteria use undefined qualifying terms, such as key, important, significant, and critical. Under the narrowest interpretation of these terms, few individual wetlands will meet any single criterion. Under the broadest definition, all wetlands may be considered WSI. Adding to the confusion and uncertainty, different qualifying terms are used for different wetland benefits and criteria. For example, wetlands may be WSI if they provide 'important' flood control, 'critical' water filtration, or 'key' habitat. It is not clear how or why these terms were selected for these particular values and how they differ (or not). This lack of clarity results in uncertainty of whether the Policy is

putting forth a robust process for identifying and protecting wetlands that have special importance in the Yukon.

Recommendation #8. The Policy should clearly define the criteria and standards for Wetlands of Special Importance.

The previous version of the Policy (as shared with members of the roundtable in fall 2020) included the criteria, ‘contributes to protection of ecologically representative set of wetlands in each ecozone’. This was also identified as an important criterion for WSI by members of the roundtable (e.g. Wetland Roundtable Report 4; see link above). This is an important part of a comprehensive strategy to protect the full variety and benefits of Yukon’s wetlands. Given the role of wetlands in climate mitigation and adaptation, these should also be included as WSI criterion.

Recommendation #9: The Policy should include the following criteria for designating Wetlands of Special Importance: contributes to protection of ecologically representative set of wetlands in each ecozone; contributes to carbon storage and climate adaptation.

The Policy does not identify any formal recognition for WSI under legislation such as the Environment Act or the Parks and Land Certainty Act. Further, WSI are not truly protected given the discretion of YG to delist a WSI at any time. Legal protection of WSI from all development activities is particularly important given that all other wetlands (outside protected areas) are open for development in the Policy. Even if a protection-first Wetland Policy is adopted, WSI should be legally designated to ensure their benefits are protected from future human activity.

Recommendation #10: All Wetlands of Special Importance should have full legal protection and the Policy should identify the legislation that will be used.

The Policy provides multiple opportunities for economic gain to be valued over ecological, social, and cultural benefits of WSI. Prior to listing, wetlands that do qualify as a WSI will be subject to consideration of the economic and legal impacts of listing, at the discretion of YG. After listing, existing authorizations and tenure will be honoured by YG, indicating some developments (e.g., on mineral claims) could continue in WSIs, subject to environmental assessment under the Yukon Environmental and Socio-economic Assessment Board. The Policy merely says that YG will achieve no loss of wetland benefits in WSIs by “applying appropriate mitigation measures during regulatory review processes...”. It is difficult to conceive of a situation where a new or renewed authorized activity in a WSI will not result in loss of benefits (lines 207-9), but this is impossible to determine without clear guidance on how benefits will be identified and assessed. A further concern is that honouring existing tenures may promote a staking rush in some regions to ensure private tenure is established under our free-entry system before a wetland can be nominated and listed.

Recommendation #11: All nominated Wetlands of Special Importance should be assessed and listed based solely on ecological, social, and cultural values, and without consideration of economic and legal risks.

The policy does not identify any wetlands as WSIs. This is a step backwards because, up to a few years ago, the Yukon Government's Wetlands Technical Committee had a map of about 54 Important Wetlands on the Environment Yukon website. Some are now in protected areas, but many are not.

Recommendation #12: The Important Wetlands previously identified by the Yukon Government Wetlands Technical Committee should be immediately considered and advocated by YG as candidates for designation as Wetlands of Special Importance.

The proposed standards for assessing what activities can occur in and around a WSI is confusing and contradictory. The Policy states that YG is committed to no loss of benefits in WSI (lines 202-3). Yet, section 7.6 outlines a mitigation hierarchy for activities in wetlands, and states that an activity may be permitted at YG discretion based on whether it is 'necessary to Yukon society'. Further, the Policy states that activities adjacent to WSI will not be restricted (lines 222-4) yet provides no guidance on how to safeguard wetland benefits given that wetlands are part of an interconnected system.

Recommendation #13: Wetlands of Special Importance should be mapped with an appropriate buffer that protects functions and benefits from human activities and the Policy should clearly lay out what, if any, activities will be considered acceptable and compatible with 'no loss of benefits'.

## **Managing Human Impacts**

The Policy takes the position that managing human activities in wetlands is necessary to ensure 'sustainable and responsible economic development' (lines 305-6). To date, economic development has been ensured in the absence of a Wetland Policy. A Policy is necessary to ensure wetlands and their benefits are protected, and provide guidance on minimizing impacts when human activities are justified.

Recommendation #14: The Policy should set forth criteria to determine whether loss of wetland benefits as a result of human activity is justified.

Recommendation #15: This section should be reframed as providing guidance for managing impacts to minimize loss of wetlands and their benefits when human activities are justified.

To manage impacts of human activity on wetlands, the Policy proposes that users and regulators apply a sequential process: first try to avoid all impacts, then minimize unavoidable impacts, then reclaim impacted wetlands, then offset residual impacts. This “mitigation hierarchy” is a common tool for managing environmental impacts.

In Yukon, this approach is essentially business-as-usual, as it is the approach followed by the environmental assessment process. The outcome of the business-as-usual approach to date has been incremental loss and a net negative impact on wetlands as individual development projects are authorized. The Policy states that cumulative wetland loss must ‘remain below the accepted ecological or management threshold for the watershed’. But it fails to set limits on human activity and thresholds for acceptable level of loss. The outcome will be the gradual, but inevitable, loss of wetlands, as has already occurred in various parts of the Territory.

Recommendation #16: The Policy must set limits or thresholds on wetland loss due to human activity beyond which further impacts are not allowed.

As part of the mitigation hierarchy, the Policy allows for unavoidable impacts resulting from human activities and proposes that reclamation can ‘re-create’ wetlands, ideally to the point of providing similar wetland benefits (lines 388-93). Wetlands that have formed over hundreds and thousands of years cannot be restored, and reclamation can only create select functions and benefits (e.g. water storage and filtration) and mitigate some of the worst impacts. The Policy states that loss of some wetland benefits is acceptable if other benefits result from reclamation. Peatlands (fens and bogs) cannot be reclaimed and there should be no trade off of their carbon storage value for benefits of wetlands created through reclamation. Upland habitat should not be a permissible trade off for wetland area and benefits.

Recommendation #17: The Policy should acknowledge that development in wetlands can rarely be fully mitigated, and that some wetland values will be permanently lost.

## References

Chapin III, et al. 2010. Ecosystem stewardship: sustainability strategies for a rapidly changing planet. *Trends in Ecology & Evolution* 25(4):241-249. <https://doi.org/10.1016/j.tree.2009.10.008>

Harris et al. 2021. The essential carbon service provided by northern peatlands. *Frontiers in Ecology and the Environment*. <https://doi.org/10.1002/fee.2437>

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