

Friends of Ecological Reserves Submission to B.C. Government in Response to the B.C. Biodiversity and Ecosystem Health Framework



Oeder's lousewort –
Ospica Cones ER #152



Sitka spruce forest –
Klanawa ER#138



Carnivorous sundews found
in the fen at Mara Meadows
ER#42



Sea Otter – Checleset Bay
ER#109



Tufted puffins – Triangle Island
(Anne Vallee) ER#13

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Friends of Ecological Reserves
P.O. Box 8477 Stn Central
Victoria, BC V8W 3S1

Email: ecoreserves22@gmail.com
Website: www.ecoreservesbc.ca

Please also send copies of any correspondence to the president harry_crosby@telus.net



Grassland – Trout Creek ER#7

EXECUTIVE SUMMARY

Our Submission follows the headings that were presented in the Draft Framework (in black text) **with our comments and recommendations in green text.**

The government of British Columbia has distributed a framework on Biodiversity and Ecosystem Health for discussion. (the "Framework"). The Framework expresses a well thought out approach to the protection of biodiversity and ecosystem health. The Biogeoclimatic Ecosystem Classification Zones (BEC zones) of British Columbia are not currently adequately protected with protection of zones ranging from 4% to 29%. Representation of underrepresented zones needs to be boosted.

Friends of Ecological Reserves (FER) makes the following contribution, suggesting additions to the Framework.

Ecological Reserves

Ecological Reserves, their establishment and monitoring need to be included in the final B.C. Biodiversity and Ecosystem Health Framework. Ecological Reserves safeguard natural ecosystem benchmarks which are needed for scientific study and monitoring of biodiversity change through natural succession and to understand species shifts occurring from climate change. Ecological Reserves will inform on how we can adapt practices to sustain B.C.'s biodiversity. The current 154 Ecological Reserves created in the 1970's and 80's have species lists and new data is being collected by volunteer Eco guardians. A completed system of Ecological Reserves and on-going monitoring will provide a credible path forward for understanding the effect of climate change and adaptations needed to sustain ecological integrity. FER seeks a clear and coherent and scientifically informed approach to protect 1% per cent of the province as a network of Ecological Reserves to adequately represent the ecological diversity of B.C. either as part of 30% by 2030 or in addition to this.

ERs are set aside for scientific research and educational purposes to safeguard ecosystems for studies in productivity species assemblages, monitoring and gain knowledge of aspects of the natural environment. Ecological Reserves are areas with the highest degree of protection and least subject to human influence. The legislation exists; the final Framework needs to fully use it.

Outside of an expanded protected area system, FER supports the rapid shift to ecosystem based management (EBM) beyond the Great Bear Rainforest. Statutory decision makers need legislative changes in the *Forest and Range Practices Act* to require EBM forest development plans as a condition of approval.

Protection of 30% of the Province

The framework needs to state protection of 30% of the Biodiversity of the province is a priority and that development of measures to protect the ecosystem health of protected areas is a priority in collaboration with First Nations and the "Whole of Society". Government processes for managing the project need to be integrated in a "Whole of Government approach".

A substantial portion of the 30% protected areas, (at least 1% of the province) needs to be rigorously protected with Ecological Reserves. There needs to be community input into the process for identifying and managing protected areas. Areas to be protected need to have a proportional representation of the BEC zones in British Columbia.

First Nations

First nations need to be engaged with the process. The principles of UNDRIP have evolved and the details for engagement of First Nations as set out in the Convention of the Parties (COP15 targets) need to be incorporated into the framework. Science and Indigenous knowledge need to be considered together in accordance with principles identified by the Indigenous Circle of Experts (as set out in section 4 of the submission)

Legal Protection

There needs to be a shift in legal concepts for management of biodiversity and ecological health from the concept of environmental law (management of economic development) to ecological law (management of biodiversity and ecological health). Following the legal shift, legislation needs to be rewritten particularly the *Forest Act* and other resource legislation to establish a sustainable approach to harvesting of the forests and other resources. The 6% timber impact policy restrictions placed on Landscape Level biodiversity in the 1990's needs to be immediately rescinded.

Actions for Protection of the remaining 70%

The remaining 70% of the province needs to be managed sustainably, with First Nations playing a key role preferably using Ecosystem Based Management. The proposed office of Biodiversity and Ecosystem health needs to have overarching power to manage resources, and governmental decisions need to follow prescriptions of that office.

Accountability

A system for "Whole of Society" participation would best be modelled using the Cascades Process (as described in section 5, pillar 2). Accounting principles need to be followed in managing the remaining 70% of the province. The idea of transparency needs to be upgraded to a system of accountability. It is not adequate to be transparent about failure to sustainably manage the provinces ecological systems.

Management

- 1) Forest and Range management needs improved systems of Environmental Risk Assessment, Timber Supply reviews and Landscape Unit Planning, with improved restoration efforts.
- 2) The Timber Supply Review process used by the Chief Forester needs to be amended to include forecasts of indicators of biodiversity and the environmental risk and AACs set that sustain biodiversity.
- 3) The Framework needs to incorporate management of the transitions necessitated as a result of the climate emergency.
- 4) Care must be taken to ensure that the Framework is implemented in a way that provides employment of the "Whole of Society".
- 5) Whole of government training is needed to shift the culture towards conservation and away from the current resource management paradigm.
- 6) Significant funding is needed for Landscape Unit plans, planning tables and restoration of degraded ecosystems.

STATEMENT OF INTENT

Friends of Ecological Reserves strongly supports the British Columbia government's commitment to the conservation and management of ecosystem health and biodiversity as the overarching priority. See our suggestions for improvements and more detailed specific measures in Section 6: Conclusions and Next Steps.

1. ECOSYSTEM HEALTH AND BIODIVERSITY IN B.C.

FER RESPONSE

The Threat

The diversity of organisms is rapidly being reduced by human activity. According to the 2019 Global Assessment Report on Biodiversity and Ecosystem Services by Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), the biomass of wild mammals has fallen by 82%, natural ecosystems have lost about half their area and a million species are at risk of extinction, all largely as a result of human actions.

The Strategy

The United Nations convention on Biodiversity, Convention of the Parties has recommended that we protect 30% of terrestrial and inland water areas, and of marine and coastal areas. FER is pleased to see a government commitment to increased natural areas protection by the year 2030. This commitment and program need to be included in the final Biodiversity and Ecosystem Health Framework and included in the terms of reference for the Draft Framework.

Current State of Protection of Biodiversity and Ecological Health

The variety of ways the Province protects areas is set out in Appendix B. There have been a number of good initiatives begun by government such as Landscape Unit planning, the Old Growth Task Force deferrals, and strategic land use plan maintenance, all of which have had inconsistent application. FER is concerned that the Draft Framework will become a long drawn out process without interim measures to protect the very biodiversity it is aiming to sustain.

Gaps in the Current Protection of Biodiversity

Protection of Biodiversity requires protection of representative ecosystems within all of the ecological zones identified in the Biogeoclimatic Ecosystem Classification (BEC) system. In British Columbia protection ranges from 4% of some zones to 29% of other zones. Thirty percent of each BEC zone should be protected as a minimum. Protecting higher percentages of zones with low diversity and not under development pressure such as high elevation rock and ice and not protecting enough of highly productive valley bottom ecosystems for example, will not protect and sustain B.C.'s biodiversity. Appendix

B shows the percentages of the BEC zones currently in the Protected Areas System. To help species and ecosystems shift in light of rapid irreversible climate change also requires that the protected areas be distributed so natural habitats are connected across the broader landscapes of B.C.

Government Goal

Friends of Ecological Reserves sees this framework as a great leap forward to improving the systems for protection of biodiversity and ecosystem health. However, the commitment made by the premier to protect 30% by 2030 in his mandate letter to Minister Cullen is not mentioned in the framework.

A government wide training program on Biodiversity conservation will be needed as the Framework represents a cultural shift away from Business as Usual (BAU). Such a government wide ecological training was done in France

Adjusting the Framework

It is of concern that there is no link to the recommendations and criteria specified at COP 15 (Conference of the Parties to the UN Convention on Biological Diversity).

It is important that First Nations have a central, fully collaborative role in protecting biodiversity.

United Nations Declaration on the Rights of Indigenous People (UNDRIP) has been supplemented by the Targets set at COP 15. The framework needs to be adjusted to incorporate the new targets and the recommendations for involvement of First Nations in implementing targets.

The framework also needs to incorporate the “Ethical Space” concept of respecting the distinctly different knowledge systems of western science and First Nations.

The framework needs to recognize that different standards need to be applied to the governance of the 30% to be protected and the remaining 70% which, while not protected, must be managed sustainably. FER supports the Ecosystem Based Management (EBM) to manage lands outside of a system of natural protected areas. (See Executive Summary)

The difference between concepts of ecological law and concepts of environmental law need to be described in the framework to set out the “transformative” changes which the framework acknowledges are needed.

2. PURPOSE

FER RESPONSE:

NEEDED – For the importance of the framework to be understood, it must contain: a clear and coherent statement about the consequences of loss of biodiversity weakens the . Lack of such a statement about the threat from loss of biodiversity weakens the framework.

The framework also requires a clear statement about how biodiversity is to be measured and success reported.

The Effect of Loss of Biodiversity

The loss of biodiversity threatens food supplies, opportunities for recreation and tourism, sources of wood, medicines, and energy, and interferes with essential ecological functions.¹

The loss of biodiversity often reduces the productivity of ecosystems. It destabilizes ecosystems and weakens their ability to deal with natural disasters such as floods, droughts, and hurricanes, and their capacity to deal with human-caused stresses, such as pollution and climate change. Loss of biodiversity leads to loss of economic opportunities and limits future options. Loss of key species and the associated impact of the loss can be protected against by maintaining species. Biosystem redundancy helps ensure that changes in the environment are unlikely to eliminate all species of a given functional type.

Protection of Biodiversity

Protection of biodiversity benefits immensely from setting aside and monitoring changes occurring in natural ecosystems using a network of Ecological Reserves and consistent monitoring and reporting. Ecological Reserves are a legal designation to conserve and educate future generations on how to sustain B.C.'s biodiversity and adapt our use of ecosystems.

We advocate for a comprehensive approach to sustain British Columbia's biological diversity through a system of Ecological Reserves either as a component of the 30% protection of natural areas in B.C. by 2030 initiative now underway or separately and in addition to the 30%.

NEEDED – a Core System of Ecological Reserves of 1% of B.C. – Central to this proposal is the need to establish a robust and core system of Ecological Reserves covering at least 1% of British Columbia's landmass to act as a seed bank, a source of genetic material as well as establish reserves for scientific study, to be protected from destructive development and recreational use and be retained as representative samples and to include examples of high productivity ecosystems. This is a modest yet crucial insurance policy and is critical to safeguard B.C.'s diverse ecosystems.

Education, periodic monitoring and reporting, stand as cornerstones to improve our collective wisdom on how to maintain species that are shifting in response to climate change. We propose there be specific programs aimed at enlightening both First Nations youth and the broader public about the intrinsic values and significance of ERs as natural

¹ "How the Convention on Biological Diversity Promotes Nature and Human Well-Being", *Convention on Biological Diversity*, <https://www.cbd.int/convention/guide/?id=changing>

area monitoring sites. This includes data collection, outreach initiatives, integrated curricula, and community engagement programs to foster a deep understanding of the vital role these areas play in preserving our ecological heritage.

These sites will also serve as monitoring sites to evaluate the effectiveness of the Biodiversity and Ecological Health program.

A robust Ecological Reserves System will drive evidence-based decision-making for land use policies and conservation efforts.

Emphasizing the cultural and medicinal significance of these reserves as seed banks and as preserves for plants of immense cultural value to First Nations is imperative. Ecological Reserves are protected sites for understanding, mitigating, and adapting to climate change impacts, and offer critical insights for sustainable management. They are needed to protect genetic diversity and safeguard native species against threats posed by introduced species or urbanization.

Expansion of Ecological Reserves not only shields ecosystems but can also generate employment opportunities for First Nations communities. Comprehensive monitoring, data collection and reporting, conducted by dedicated Eco Guardians (Wardens), will inform future ecosystem restoration and species migration actions and provides employment.

Specific programs for the broader public, when informed by data collected and assessed by First Nations youth, can be a foundation for outreach initiatives, integrated curricula, and community engagement programs on how to sustain our ecological heritage.

3. PRINCIPLES TO GUIDE OUR SHARED PATH FORWARD

FER RESPONSE:

Shift in Legislation to Ecological Law

While the table in the Purpose section of the Framework (section 2) describes a number of shifts, the list of shifts provided does not include the legal shift needed to shift the focus from environmental law (environmental assessment of development projects) to ecological law.

Environmental Law

Environmental law has been applied to try to mitigate the environmental impact of human activity, not to prevent negative impacts. Environmental laws tend not to recognize that the earth is finite, that there are limits to industrialization and development. Environmental Assessment Hearings allow for incremental development. References to cumulative effects usually require that the impact of cumulative effects be mitigated (softened). The concept of cumulative effects does not require an examination of the cumulative effects of development on an ecosystem in order to assess whether the cumulative effects of development that have not been mitigated has reached a limit which has such detrimental effect that further development should not be permitted. (For example the cumulative effects of development on the Fraser river salmon run and on the estuary.) The environmental review process tends to splinter problems into pieces without an understanding of the cumulative effects of development.

The Principles of Ecological Law

The function of ecological law is to provide clarity about principles which need to be followed to ensure human development is pursued without irreversibly impairing ecological integrity. Ecological law emphasizes the importance of considering the impact of development on the entire ecosystem for terrestrial, atmospheric, and marine environments. A shift to ecological law will contribute to the holistic health and sustainability of ecosystems, encompassing both land and sea. It has a number of main principles:

- Ecological law suggests that we live in a way that does not cause serious harm to people or the integrity of the planet.
- The health of ecological systems is central.
- Ecological concerns must be balanced with economic and social concerns. Ecological law:
 - considers the role resources play in maintaining health and ecosystems and
 - considers the complete picture, the cumulative impact of activities on earth.

NEEDED – a transformational shift from environmental law to ecological law which would be best to be embedded in the provincial constitution act. The transformation must be used as the foundation for more detailed legislation.

- The state must assume the role of trustee of the land, air and water with a duty to limit the impact of development and industrialization on nature's needed ecosystem functions and services.
 - The transformation requires legislation to provide protection for the ecological services provided by nature, (provisioning, support and regulatory services). The protection of ecology must have priority over other interests and follow the precautionary approach with the onus on the developer to prove the environmental impact of a project,
 - Legislation must require an accountability report on the State of Biodiversity and Ecosystem Health. B.C. has some private land (6%) designated but most land is held in common by the society as a whole (94%). The public and first nations "society as a whole" need reports on condition of the ecosystems. In the past there has been State of Forestry and State of Environment reporting, but these were last produced over a decade ago.
 - Transformation requires a legislated natural resource development framework, for forestry, mining, water allocation.
 - to require the chief forester or Office of Biodiversity and Ecosystem Health to forecast state of non-timber values.
 - to revise the Forest Range Practices Act to enable discretion at the local level by District Managers to implement First Nations and local advice on how to sustain non-timber values as part of the Timber Supply Review
 - to commit in legislation to a technical planning process like the Timber Supply Review process to inform First Nations and others when setting priorities for all forest resources.
 - To tie wood from forests harvested near local communities to manufacturing of wood products in the local community
 - Support a mandate for the Chief Biologist of B.C. within an Office of Biological and Ecosystem Health patterned after the mandate of the Chief Forester. The Chief Biologists would periodically assess inventory and monitoring data, provide assumptions used to forecast suitable supply of habitat in order to set population targets for conservation and allow harvest of fish, wildlife and maintenance of ecosystems at risk.
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Shift in the Forest Act

NEEDED – changes to the *Forest Act* in keeping with principles of ecological law – although the government may set objectives under the current *Forest and Range Practices Act* for the protection of biodiversity, fish, wildlife and for other values.² the *Forest Act*³ directs the Chief Forester to consider the rate of timber production and economic and social objectives of the government as priorities in setting the annual allowable cut among other things. Section 8(8) of the *Forest Act* does not directly reference the objectives under the *Forest and Range Practices Act* and may be ambiguous in the way it is followed. The *Forest Act* needs to be amended to:

- a) Clearly *require* accountability and responsibility for biodiversity.
 - b) Provide for development and management of an effective process for forecasting the condition of all forest values including biodiversity and be limited to timber forecasts.
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Sustainability

Sustainable development is the use of Earth's environment and resources to meet the needs of the present without compromising the ability of future generations to meet their needs for sustenance and habitation.

- Sustainability does not require that ecosystems remain unchanged.
- Sustainability requires that people be able to meet their needs.
- Sustainability implies the persistence of the productivity of earth's natural resources and requires that the productive base required to support well-being, be maintained and increased over time. The needs of future generations are compromised when utilization of resources depletes resources or causes damage to nature.

The use of ecosystems is sustainable when human activities do not diminish quantity and quality of goods and services delivered over time. Human uses need to be scaled to within the limits of the ecosystem so that the ecosystem can self-perpetuate. Current practices together with the cumulative impacts of human induced changes indicate the level of environmental risk from activities that degrade the environment and reduce whole society's access to and use of environmental goods and service.

Sustainability requires that the productive base be available to future generations. We can't know what future generations may want. If the productive base of Earth's systems is sustained, future generations can make their own choices about how best to meet their needs. Well-maintained forests, fields or rivers may provide an indefinitely sustainable flow of new trees and food, whereas over-use of these resources may lead to a permanent decline in timber or food availability.

Sustainability is about:

- maximizing harmony with nature using policies that facilitate development of processes, products and patterns that are good for the planet.
- Earth, nature and humanity have intrinsic value because of their qualities.
- Ecological limits must have primacy over social and economic goals, because of long-term security (human safety) concerns.
- Economic growth must be rebalanced to ensure the preservation of resources and natural processes that sustain humanity.
- Resources are to be spared unless there is good reason to use them.
- The legacy of future generations is to be protected ("generational inheritance").
- The polluter pays.

² *Forest and Range Practices Act* s149

³ *Forest Act* s 8(8)

NEEDED – The Ecological Law approach includes the adoption of principles of sustainability in a legal framework that requires the principles to be applied when environmental permits are granted. The principles of the Rio Declaration on Environment and Development must be incorporated into the British Columbia's legislative framework.

(See Appendix "H" Sustainability)

4. FOUNDATION

FER RESPONSE:

The connection between land, water and people are inseparable when it comes to stewardship and conservation, whether First Nations or others.

First Nations

Section 4 of the draft Framework dealing with foundation, is focused on the United Nations Declaration on the Rights of Indigenous People (UNDRIP).

What UNDRIP Does:

There is no specific mention of biological diversity and ecosystem health in UNDRIP. UNDRIP has four main themes:

- 1) Self-determination and inherent right of self-government
- 2) Title and rights of Indigenous Peoples
- 3) Ending Indigenous-specific racism and discrimination.
- 4) Social, cultural and economic well-being.

What UNDRIP Does Not Cover:

The Draft Framework does not consider how the UN Convention on Biodiversity and the Cop15 (2022) targets relate to First Nations.

On December 18 of 2022, at COP 15 the United Nations set a number of targets.⁴ These targets suggest a framework for First Nations involvement in the protection of biodiversity. The portions of the targets relating to First Nations are listed in Appendix A with the portions relating to First Nations italicized. The key targets are Targets 21 and 22.

Each First Nation will determine their commitment and degree to which they support Ecosystem Health and Biodiversity when there are resource decisions made in their territories. Some may wish to participate in protecting 30% and in traditional use. Some may wish to participate in commercial harvesting of the remaining 70% in sustainable ways. The two levels of activity need to be managed in different ways.

⁴ <https://www.cbd.int/doc/decisions/cop-15/cop-15-dec-04-en.pdf>

Science and Indigenous Knowledge

Ecosystem management must be based on science and First Nations knowledge. Using the following terminology, the Indigenous Circle of Experts suggests that science and indigenous knowledge should work together.⁵

...“Ethical space”... respects the integrity of all knowledge systems. This ethical space provides a venue for collaboration and advice, sharing and cross-validation (where one side validates the other's decisions). Its methodology applies Indigenous knowledge ... in conservation and protection measures going forward.

- The focus of ethical space is on creating a place for knowledge systems to interact with mutual respect, kindness, generosity and other basic values and principles. All knowledge systems are equal; no single system has more weight or legitimacy than another.
- One system does not need the other to “corroborate” it to achieve internal validity. For example, the written system does not always need archaeological evidence to provide sound “proof” of an Indigenous practice or story.
- While agreeing to formally enter ethical space may be straightforward for most parties, actually being within that space together requires flexibility. Parties may frequently need to adjust to change, surprise, and other factors that cannot be envisioned at the initial stage.
- While engaged in ethical space, no party can claim to have achieved (or even entered into) processes of consultation or accommodation as defined under existing or previous provincial or federal legislation or policies. That is not the purpose of ethical space.”

Indigenous knowledge has resulted in effective stewardship of indigenous territories for millennia and can be adapted. Support for sharing knowledge (Indigenous, scientific, expert, local) and learning together will strengthen the adaptive approach necessary to address the complex challenges we are collectively facing.

Funding for Indigenous communities, governments and organizations will be needed to support readiness in the implementation of the Framework.

NEEDED – The Framework needs to clarify to the public and First Nations the process for development of a coordinated provincial approach to decision making at the local level between First Nations leaders and provincial government decision makers. The final Framework needs to reference the provisions of COP15 relating to First Nations (See Appendix A) Local planning meetings will need support from the provincial government similar to planning meetings that develop the current high-level plans across most of B.C. Planning meetings for the protected 30% and the sustainably managed 70% will need to be supported by technical staff to put together data packages, develop and provide forecasts for in general providing planning support. Terms of Reference for regional and subregional planning tables need to be coordinated so there are some efficiencies in data assembly, analysis to allow for regional and provincial summaries and reporting on the state of biodiversity.

⁵ “We Rise Together” produced by the Indigenous Circle of Experts pg. 7
https://static1.squarespace.com/static/57e007452e69cf9a7af0a033/t/5ab94aca6d2a7338ecb1d05e/1522092766605/PA234-ICE_Report_2018_Mar_22_web.pdf

Biodiversity Convention

The UN Convention on Biodiversity was completed in 1992.⁶ Canada ratified the Convention the same year. The convention and its recently updated framework represent the combined wisdom of an international community of ecologists about the steps that need to be taken to manage the extinction epidemic and maintain the essential ecological services needed by humans. Key provisions of the convention are extracted as follows:

The objectives of this Convention, are ... the conservation of biological diversity and the sustainable use of its components.

Each Party shall:

6.(a) develop national strategies, plans or programs for the conservation and sustainable use of biological diversity (and)

8(a) establish a system of protected areas or areas where special measures need to be taken to conserve biological diversity:

On December 18 of 2022, at COP 15 the United Nations set a number of targets.⁷ Target 3 is the key target, a goal of protecting 30% of terrestrial and inland water and of coastal and marine areas.

Target 3 – Protection

Ensure and enable that by 2030 at least 30 per cent of terrestrial and inland water areas, and of marine and coastal areas, especially areas of particular importance for biodiversity and ecosystem functions and services, are effectively conserved and managed through ecologically representative, well-connected and equitably governed systems of protected areas and other effective area-based conservation measures, recognizing indigenous and traditional territories, where applicable, and integrated into wider landscapes, seascapes and the ocean, while ensuring that any sustainable use, where appropriate in such areas, is fully consistent with conservation outcomes, recognizing and respecting the rights of indigenous peoples and local communities, including over their traditional territories.

December 7, 2020, the Premier directed the Minister of Water, Land and Resource Stewardship to prioritize making progress on partnering with the federal government, industry, and communities, and working with Indigenous Peoples The lead to achieving the Nature Agreement's goals of 30% protection of B.C.'s land base by 2030, including Indigenous Protected and Conserved Areas.

NEEDED – The Final Framework needs to adopt Target 3. This target is central to biodiversity conservation but has been omitted from the Draft Framework

NEEDED – Principle: In order to protect biodiversity, a diversity of ecological zones and marine ecosystems must be protected. Representative samples, 30% of each of British Columbia's 16 BEC zones need to be set aside. Currently the representation of the ecological zones varies from 4% to 29% (See Appendix "B") Biodiversity is only adequately protected if 30% or more of all the diverse BEC zones are in a natural condition and protected.

⁶ <https://www.cbd.int/convention/text/>

⁷ <https://www.cbd.int/doc/decisions/cop-15/cop-15-dec-04-en.pdf>

5. ACTIONS

Pillar 1 – Whole Government Approach

FER RESPONSE:

NEEDED – The Whole of Government, Whole of Society and Transparency processes need to be integrated and work together

Office of Biodiversity and Ecosystem Health

NEEDED – The meaning of Whole of Government approach needs to be clarified. The whole of government approach should mean that:

- a) all government departments and crown corporations (such as BC Hydro, BC Ferries) and their operations having an impact on biodiversity and ecological health need to be structured to function in an integrated way.
 - b) all planning processes need to receive data from all departmental operations and crown corporations to assist with the planning of economic and harvesting activities.
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NEEDED – The status of the Office of Biodiversity and Ecosystem Health needs clarity. The role of the office of Biodiversity and health needs to be identified and stated. In addition to the description in item 1 of Pillar 1, the Office of Biodiversity needs to:

- be driven by science and indigenous knowledge.
 - to include powers to manage sustainability, and determining annual allowable harvest, in a way that allows industry to have a stable and sustainable supply
 - follow principles of sustainable accounting rules (set out in section 3 above “Principles”)
 - function independently with a duty to follow identified principles.
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Accounting Principles

NEEDED – That British Columbia adopt the principles of integrated environmental and economic accounting to manage its sustainability policy. In order to estimate the total value of ecosystem services, we need sound ecological information and estimates of the total global extent of the ecosystems. The value of ecosystems can be derived using a combination of appraisal methods when the assets (natural capital) have been identified.

Management of sustainability combines ecological and economic models. Models can be complex but nevertheless oversimplify reality. Different models and modelling approaches exist. One study examined the benefits of over 60 models selected from 5 ecological and economic journals.⁸

Identification of the value of nature's ecological functions and services is essential to assist the processes of decision making and identify what is gained by conserving

⁸ Environmental Risk Assessment: An Approach for Assessing and Reporting Environmental Conditions
<https://www.env.gov.bc.ca/wld/documents/era.pdf>

ecological systems. Knowledge about the value of what has been lost identifies the extent to which humanity is dependent on ecological services and helps us identify what should be conserved. Developing and applying methodology for measuring and representing the value of earth's assets furthers our ability to understand the value of these assets.

In March 2021, the United Nations Statistical Commission adopted the System of Integrated Environmental and Economic Accounting (SEEA) setting out internationally agreed concepts, definitions, classifications, accounting rules and tables for calculating the value of ecological services.

For an overview of the processes of environmental and economic accounting, and other resources follow these links:

<https://ourenvironmentbc.ca/biodiversity/implementing-the-30-target/>

<https://www.sciencedirect.com/science/article/abs/pii/S0921800906002643>

https://en.wikipedia.org/wiki/System_of_Integrated_Environmental_and_Economic_Accounting

Pillar 2 – Fostering and supporting a broader whole-of-society approach

FER RESPONSE:

Whole of Society Approach

The connection between land, water and people are inseparable when it comes to stewardship and conservation. First Nations and other citizens of B.C share common ecosystems and a common future.

Community Dialogue

The whole of society approach is envisioned in the Framework as facilitating individuals, organizations, private sector, governments, and communities to conserve and manage ecosystem health and biodiversity and to advance sustainable communities and economies.

NEEDED – Ensure that government consults equitably with representatives for all forest values and stop preferential treatment for the forest industry and is based on Community/Place-Based decisions and actions.

Cascades are developed to facilitate the dialogue and help participants relate ecosystem assets to the services desired and valued by a community and to assist with management of ecological systems. Dialogue can happen through a process of public discussion among stakeholders and publication of that discussion. Planning is best done in a conversation among ecosystem managers, scientists and stakeholders. They are different for different ecological systems and should be developed to assist with the management of each ecological system.

An example of a cascade in use can be found in the Landscape Use Planning Guide, 2020, Forestry British Columbia page 2.⁹

⁹ https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/cumulative-effects/protocols/cef_forest_biodiversity_protocol_sept2020_final.pdf

Biophysical structure	Supporting Services	Regulating Services	Provisioning Services	Cultural Services
Not Stated	Primary production Provision of habitat Nutrient cycling Soil formation/retention Production of atmospheric oxygen Water cycling	Invasion resistance Pollination Seed dispersal Climate regulation Pest & disease regulation Natural hazard protection Erosion regulation Water purification	Food, fiber, fuel Genetics resources Biochemicals Fresh water Habitat	Spiritual Values Knowledge systems Education & Inspiration Recreation & Aesthetic

This example of a cascade illustrates the ecosystem services which may be discussed in a community agenda when community members (individuals, organizations, private sector, government) come together to give input on biodiversity and ecological health.

Discussion of ecosystem services are important because they:

- are a device for structuring and prioritizing work and reporting,
- assist communications between disciplines and help decision-makers better integrate the concept of ecosystem services into decision-making.
- provide a framework for documenting the functioning and measuring the value of ecosystem services,
- advance scientific understanding, helping us to better understand the dependence of human well-being on nature,
- provide tested, practical, and tailored solutions for integrating ecosystem services into land, water and urban management and decision making and
- addresses the challenge of ecosystem management and governance.

The choice of categories used in cascades can bias the work of a task force developing the cascade. Headings may include:

- Biophysical structure, climate – state of ecosystem
- Services
 - a) processes supported by the ecosystem
 - b) goods and services provided by the ecosystem
- Impact of economic activities on ecosystems
- Benefits to people such as cultural services
- Economic value (measured)
- Management, governance and policy requirements to maintain ecosystem

The following link provides more information on the role of ecosystem cascades
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6472296/>

Pillar 3 – Adopting an open and transparent process

FER RESPONSE:

Accountability

NEEDED – Accountability processes need to be clarified.

- Performance of government decision makers need to be subject to self-reporting, auditing of performance on a regular basis.
 - When professional reliance processes are used and when professionals are hired, whether in house or on a consulting basis, professionals need to be subject to rigorous codes of professional conduct, performance audits and professional disciplinary hearings.
 - Opportunities for public complaint and investigation of compliance with laws, regulations to public boards and professional associations must be available
 - The British Columbia Forest Practices Board is an independent watchdog for forestry practices in British Columbia. The Board audits forest and range practices on public lands. The role of the Forest Practices Board needs to be expanded to review
 - both the practices of people holding licenses and permits
 - provide a wider review for mining and oil and gas development and other resource development
 - and evaluate government departments success in working together.
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6. CONCLUSIONS AND NEXT STEPS

FER RESPONSE:

In the statement of intent set out in the Draft Framework, the British Columbia government commits to the conservation and management of ecosystem health and biodiversity as an overarching priority. The mandate letter to the Minister of Water, Land and Resource Stewardship from the premier dated December 7, 2022, bottom of page 3 states.

I expect you to prioritize making progress on the following:

Partnering with the federal government, industry, and communities, and working with Indigenous Peoples, lead the work to achieve the Nature Agreement's goals of 30% protection of B.C.'s land base by 2030, including Indigenous Protected and Conserved Areas.

The process for implementation is set out in the Appendix to the Framework. The process should be part of the framework and open for discussion.

NEEDED – Whole of Society Consultation needs to be timed so that consultations on steps precede the implementation of measures.

Consultation on Selection

The Framework must but does not reference the intention to protect any percentage of the province. In order to protect biodiversity, a diversity of ecological zones must be protected. In order to protect biodiversity, representative samples, 30% of each of British Columbia's 16 BEC zones need to be set aside. Currently the representation of these zones varies from 4% to 29% (see Appendix B).

The amount of protected land and water varies across British Columbia. For example, protected areas cover over 40% of the Gwaii Haanas, Chilcotin Ranges and Eastern Hazelton Mountains regions but less than 10% of the Fraser Basin, Fraser Plateau and Thompson-Okanagan Plateau regions.

NEEDED – Whole of Society Consultation needs to be timed so that consultations on steps precede the implementation of measures to protect biodiversity and ecological health. A process for selection and implementation is set out in Appendix "C" Selection, Management of Protected Areas. The process should be part of the framework and open for discussion.

Point 3 in the Implementation section of the Draft Framework (page 13) indicates that implementation is now underway while consultation is just starting. Of particular concern is that the selection of areas to protect is being done before priorities for protection of ecological zones is established.

Areas selected for protection must include a 30% proportional representation from all BEC zones of robust, untouched examples. Selection of marginal examples because they have little economic value can't be the approach used in the selection of areas for protection.

In order to protect biodiversity and maintain ecological integrity in the Marine Zones of the province, British Columbia must take the lead in promoting a similar approach to that achieved by the Marine Protected Area Network Action Plan for the Northern Shelf Bioregion.

Protected areas cover 3.2% of B.C.'s coastal and marine areas. B.C. has 200 designated marine protected areas located in all six of the provincial marine ecoregions.

NEEDED: The framework should establish basic principles for identifying ecological systems to be protected. In establishing protected areas government should, in addition to establishing Indigenous Conservation and Protected areas ensure that areas selected:

- provide connectivity and, corridors (avoidance fragmentation) and
- ensure selected areas are of adequate size to sustain genetic and functional diversity, anticipate encroachment.
- Provide limits on use such as motorized recreational access, fishing and hunting limitations and road access restrictions etc.

See Appendix "C" Selection and Management of Protected Areas for more detail.

Consultations on Levels of Protection

NEEDED: The framework should set a proposed agenda which must include discussion of the levels of protection needed in the areas to protect Biodiversity and Ecological Health in an integrated protection regime. The framework should describe the process to be followed for establishing the following:

- Sustainable management of 70% of the province – the framework should ensure that 70% of the province is managed sustainably.
 - First Nations should have access to resources located in the 70% and have the opportunity to manage development of the resources. Agreements should be negotiated with First Nations on an individual basis.
 - Areas of intense development should be managed following principles of sustainable development.
-

Protected Areas will continue to have different levels of protection. For example

- In some areas recreational use will be permitted, in other areas it will be restricted.
- Recreational use will be restricted to an extent in Ecologically protected areas.

(See Appendix “C” Selection and Management of Protected Areas for more detail)

(See Appendix “D” Levels of Protection regarding existing levels or protection)

Management of Protected Areas (30%) and Sustainably Managed Areas (70%)

NEED – There is a need to rethink the management of protected areas and the remaining sustainably managed areas

- 1) Management of the 70% sustainably managed areas
 - All areas should be managed with an emphasis is on ecosystem health, protection.
 - Indigenous Use Areas should be available in the 70% sustainably managed areas, where there can be sustainable development by first nations.
 - Protection of the remaining 30%. The remaining 30% should be protected in a regime setting out levels of utilization to be permitted in protected areas:
 - *used* by whom and to what extent,
 - *managed* by whom, and for what purposes.
 - The 30% protected should be reorganized to protect existing protected areas while considering the possibility of swapping the level of protection and use of existing protected areas in order to obtain better representative protection of the most valuable existing and protected ecological zones and the level of protection of additional protected areas.
-

(See Appendix “C” Selection and Management of Protected Areas for a partial listing of levels of protection for various areas of the province.)

Management of Forests and Range Land

FER provides insights for transformation of management processes needed to implement the Framework Processes. Management processes need to be updated rather than discarded.

Some of the planning processes already in use and documented are listed in the Reference Section (page 38 of this Submission). The development and documentation of these processes need to be completed and implemented.

See Appendix "E" Forest and Range Management

Climate

The framework needs to be integrated with climate adaptation and mitigation planning and implementation actions

See Appendix "F" Climate Adaptation

Employment

Resource management is about employment. The framework needs to consider and integrate with employment initiatives

See Appendix "G" Employment Management

APPENDIX "A" COP 15 TARGETS

How the Cop 15 Targets for the Protection of Biodiversity and Ecological Health engage the interests of First Nations. Note the key targets 21 and 22.¹⁰

TARGET 1 – Planning

Ensure that all areas are under participatory, integrated and biodiversity inclusive spatial planning and/or effective management processes addressing land and sea use change, to bring the loss of areas of high biodiversity importance, including ecosystems of high ecological integrity, close to zero by 2030, *while respecting the rights of indigenous peoples and local communities.*

TARGET 5 – Harvesting – Exploitation

Ensure that the use, harvesting and trade of wild species is sustainable, safe and legal, preventing overexploitation, minimizing impacts on non-target species and ecosystems, and reducing the risk of pathogen spill-over, applying the ecosystem approach, *while respecting and protecting customary sustainable use by indigenous peoples and local communities.*

TARGET 21 – Use Best Available Data

Ensure that the best available data, information and knowledge, are accessible to decision makers, practitioners and the public to guide effective and equitable governance, integrated and participatory management of biodiversity, and to strengthen communication, awareness-raising, education, monitoring, research and knowledge management and, also *in this context, traditional knowledge, innovations, practices and technologies of indigenous peoples and local communities should only be accessed with their free, prior and informed consent, in accordance with national legislation.*

TARGET 22 – Equality

Ensure the full, equitable, inclusive, effective and gender-responsive representation and participation in decision-making, and access to justice and information related to biodiversity by indigenous peoples and local communities, respecting their cultures and their rights over lands, territories, resources, and traditional knowledge, as well as by women and girls, children and youth, and persons with disabilities and ensure the full protection of environmental human rights defenders.

¹⁰ <https://www.cbd.int/doc/decisions/cop-15/cop-15-dec-04-en.pdf>

APPENDIX "B" BIOGEOCLIMATIC ZONES

Percent of the total of each Biogeoclimatic Ecosystem Classification (BEC) Zone area within the province that is protected. Note: B.C. does not have 30% protection for any ecological zone.

The Zones		Percent	
1.	Boreal Altai Fescue Alpine	BAFA	1. 29
2.	Bunchgrass	BG	2. 12
3.	Boreal White and Black Spruce	BWBS	3. 8
4.	Coastal Douglas-Fir	CDF	4. 4
5.	Coastal Mountain-heather Alpine	CMA	5. 18
6.	Coastal Western Hemlock	CWH	6. 19
7.	Englemann Spruce-Subalpine Fir	ESSF	7. 17
8.	Interior Cedar Hemlock	ICH	8. 10
9.	Interior Douglas-fir	IDF	9. 5
10.	Interior Mountain-heather Alpine	IMA	10. 29
11.	Mountain Hemlock	MH	11. 20
12.	Montane Spruce	MS	12. 9
13.	Ponderosa Pine	PP	13. 5
14.	Sub-boreal Pine Spruce	SBPS	14. 9
15.	Sub-boreal Spruce	SBS	15. 7
16.	Spruce Willow Birch	SWB	16. 23

<https://bcparks.ca/research/> BC Parks 2016-2017 annual report page 27.

Note that marine areas and wetlands (marshes swamps bogs and fens) are not identified as ecological zones. They require special attention.

APPENDIX "C" SELECTION and MANAGEMENT OF PROTECTED AREAS

SELECTION

Size – Retain Large Contiguous or Connected areas

To sustain genetic and functional diversity, a broad geographic distribution of ecosystems and species must be maintained within forest and range lands.

Representative Samples in Key Areas

Areas selected must protect at least 30% of each ecological zone and species. Current levels of protection for various ecological zones vary from 4% to 29% (See Appendix "C" for a list setting out the skewed representation of ecological zones.) Note that marine areas and wetlands (marshes swamps, bogs and fens) are not identified as ecological zones. They require special attention.

Note that marine areas and wetlands (marshes swamps, bogs and fens) are not identified as ecological zones in British Columbia's zone classification system.

Connectivity – Corridors/fragmentation

As new areas of natural ecosystems are designated for conservation priority and protection selection of areas needs to include an assessment of how well new protected areas link the remnant fragments of previously extensive connected habitat. Without improved natural areas connectivity species will not be able move across landscape over time and in response to climate change.

Connectivity and fragmentation are both important contributors to ecosystem function and processes. The management challenge is how to deal with habitats that existed naturally in large patches but which, as a result of human activity, have been converted into much smaller, sometimes isolated patches.

Preservation vs. Restoration

Select available locations never before harvested or utilized for domestic purposes with the resulting modification of biodiversity. Selection of areas with irreversible damage from land use, such as species loss, should be avoided. It is best to avoid mitigation as a means to compensate for the effects of human activities on biodiversity. Compensation for impact should require setting aside alternate and equivalent sites that have not been harvested.

Anticipate Encroachment

Sites selected should anticipate that abutting development will have an impact on the site and create a buffer zone.

SUSTAINABLE MANAGEMENT

The joint endorsement of the Marine Protected Area Network Action Plan for the Northern Shelf Bioregion and the collaboration with 15 First Nations, the B.C. Government, and the Government of Canada, acknowledging the diversity of ecosystems should be a model for the protection of marine ecosystems in the southern part of the British Columbia Coastline and Vancouver Island.

The proposed framework should align with and enhance existing plans, including the Marine Protected Area Network Action Plan for marine ecosystems and any relevant terrestrial conservation initiatives. Collaboration with first nations and other stakeholders from both terrestrial and marine environments, and the need for integrated conservation efforts is necessary.

APPENDIX "D" LEVELS OF PROTECTION

Current legislation establishes a variety of levels of protection.

THE ECOLOGICAL RESERVES ACT

- Currently .17% of B.C.'s total area has been set aside as Ecological Reserves to act as examples for scientific and educational purposes.

THE PARKS ACT

- Class A Parks – dedicated to the preservation of their natural environments.
- Class B Parks – which permit a broader range of activities and uses.
- Class C Parks – generally smaller parks providing local recreational amenities.
- Conservancies – land set aside for (a) the protection and maintenance of their biological diversity and natural environments; (b) the preservation and maintenance of social, ceremonial, and cultural uses of First Nations; (c) the protection and maintenance of recreational values, and (d) to ensure that the development or use of natural resources occurs in a sustainable manner.
- Recreation Areas – are set aside for public recreational use.
- Designated Wildland Area – a roadless area in a park, conservancy, or recreation area that is (a) retained in a natural condition for the preservation of its ecological environment and scenic features and (b) designated or continued as a designated wildland area under the Act (Park Act, s.1 "designated wildland area").

WILDLIFE ACT

- Wildlife Management Area (WMA): Publicly owned Crown land, or privately owned land leased to the Ministry created for the benefit of some fish and wildlife species, and their habitats.
- Critical Wildlife Area: Land in a wildlife management area that is designated by the Minister as a critical wildlife area. (*Wildlife Act*, s. 5[1])
- Wildlife Sanctuary: Land in a wildlife management area designated by the Minister as a wildlife sanctuary.

FOREST ACT

- Designated Areas – the cabinet can ban all logging in the area by suspending licenses, permits and plans or directing authorized individuals to not issue permit, licenses, or plans for up to 10 years.
- Forest Health Emergency Areas – The cabinet can designate an area of crown land or private land to be a forest health emergency area, and can order the holder of an agreement authorizing timber harvesting or the timber sale manager to carry out measures in that area to prevent, contain or limit the spread of forest health factors.

- Interpretive Forest Sites – established for enjoyment and recreation and are used as outdoor classroom opportunities for integrated resource management.

NORTHERN SHELF BIOREGION ¹¹

- The Northern Shelf bioregion covers approximately two-thirds of the coast of British Columbia, extending from the top of Vancouver Island, including Quadra Island and Bute Inlet, to the Canada–United States border at Alaska; an area that is also known as the Pacific North Coast. The area has diverse ecosystems and features, including globally unique glass sponges, which provide important habitat to several species. The area is also economically important to coastal communities that depend on it for traditional fishing and food gathering, aquaculture, ecotourism and transportation.
- First Nation communities have a distinct cultural and spiritual heritage and practices that are intricately linked to the area's environment. This reflects their long-standing sustainable stewardship of marine resources.
- The Government of Canada, the Province of British Columbia and coastal First Nations are working together to develop a marine protected area network in the Northern Shelf bioregion, a priority of the Pacific North Coast Integrated Management Area Plan signed in 2017. Additional information about the area is currently being compiled. A review of existing protection efforts is also being completed.

<https://www.dfo-mpo.gc.ca/oceans/publications/backgrounder-fiche/pacificnorthernshelf-plateaunord/index-eng.html>

¹¹ <https://www.env.gov.bc.ca/soe/indicators/land/protected-lands-and-waters.html>

APPENDIX "E" FOREST AND RANGE MANAGEMENT

NEEDED – In general terms, British Columbia needs ecosystem-based management and criteria suitable for natural disturbance types of BEC zones such as forests with: 1) infrequent stand-initiating events, 2) Frequent stand-initiating events and 3) Frequent stand-maintaining events. (See Biodiversity Guidebook.)¹²

NEEDED – to Accept and Implement Forest Practices Board 2019 special report. *Tactical Forest Planning: The Missing Link Between Strategic Planning and Operational Planning in B.C.*¹³

NEEDED – Increased ecosystem research funding to clarify and guide public policy and inform planning tables on options needed to sustain biodiversity and ecosystem health.

ENVIRONMENTAL RISK ASSESSMENTS

Ecosystems are at (highest risk) when furthest outside their historic natural range of variability. Lower risks forest ecosystems for example have forest seral stages within the range of natural variability.¹⁴

The closer the current condition to retention for High Biodiversity the lower the Environmental Risk.¹⁵ Relative Risk is related to the extent to which ecosystems function within the range of natural variability.

NEEDED – A process and a method to determine current ecosystem condition and forecast likely future condition in terms (ground cover such as, wetlands, grasslands, alpine, rock and forest seral stages (age classes) and possible tree species). This basic ecological information is needed at a variety of scales such as: Landscape Unit (LU) scale; a number of LUs amalgamated to subregional planning scale; and with an expectation FNs will need a territorial planning summary.

NEEDED – implementation of the Environmental Risk Assessment process developed by B.C. [Environment Habitat Branch 2000](#) so that current risk levels can be shown for BEC zones and ecosystems at the Landscape Unit level, subregional and First Nations territory scale.

¹² [Biodiversity Guidebook \(Forest Practices Code of British Columbia, September 1995\) \(gov.bc.ca\)](#)

¹³ <https://www.bcfpb.ca/reports-publications/reports/tactical-forest-planning-the-missing-link-between-strategic-planning-and-operational-planning-in-bc/>

¹⁴ Ministry of Environment 2000 publication Ecological Risk Assessment Environmental Risk Assessment (ERA)

¹⁵ Biodiversity Guidebook, Biodiversity Guidebook ([Forest Practices Code of British Columbia, September 1995](#))

USE OF TIMBER SUPPLY REVIEWS

Timber supply is determined by the Chief Forester under section 8 of the *Forest Act*.

For decades the Timber Supply Review Process has provided data packages, analysis reports and possible timber forecasts to the Chief Forester who then determines an annual allowable cut for a five to ten-year period. When made, the annual allowable cut determination is supported by an annual allowable cut rationale defending the decision.

The Timber Supply Review Process uses data and applies a number of assumptions and then forecasts a harvest level. All timber supply forecasts and every annual allowable cut in every timber supply area (TSA) and Tree Farm License (TFL) treat other resource values (such as biodiversity and ecological system health as a constraint on timber. There is opportunity for public input (see process defined by 2016 publication. Timber Supply Review Timber Supply Areas November:

<https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/timber-supply-review-and-allowable-annual-cut>

The forecast model examines a number of factors such as forest cover, age of inventory class, species composition, growth, yield, and other factors. This approach provides an overly optimistic forecast with the result that when timber is harvested there is not enough wood available for industry.

We are still logging first growth, with a focus on highest economic value – older forests. The plan is to log old growth timber unless it is in a park, or other legally protected designation. Second growth timber are too low in volume to log (not old enough). Timber has been and will continue to be first in line for access to public forests.

There has been no requirement for the Government nor the Chief Forester to demonstrate to the general public or First Nations the level to which the “non-timber values” coming from the forests are being enhanced or degraded or can be sustained.

Policy constraints were placed on forest conservation which are currently limited to no more than 6% of the provincial allowable annual cut determined in 1995. This 6% limiting policy constraint is inconsistent with the Framework vision. The conservation measures such as those outlined in the numerous guidebooks, (Biodiversity, Wildlife, Riparian Forest Retention, Temperature Sensitive Streams, Community Watershed Practices, and Slope Stability). The 6% timber supply limit affected the width of the riparian strip along streams and the extent to which older forests needed to be retained along fish bearing streams. This 6% (Allowable Annual Cut) AAC cap severely limited distribution of old growth management Area. The 6% AAC cap disallowed Landscape unit design and biodiversity connectivity corridors.

NEEDED – to remove the current timber supply impact of 6% of the 1995 harvest level (AAC) that limited older forest conservation application within the forest practices code.

Figure 1. Timber Supply Forecasting policy for all Timber Supply Areas and Tree Farm licenses. The volume is shown on the Y-axis and decades into the future is shown on the X-axis. Each step is 5 years and reflects when a new AAC determination is made. B.C. has harvested at unsustainable levels for decades.

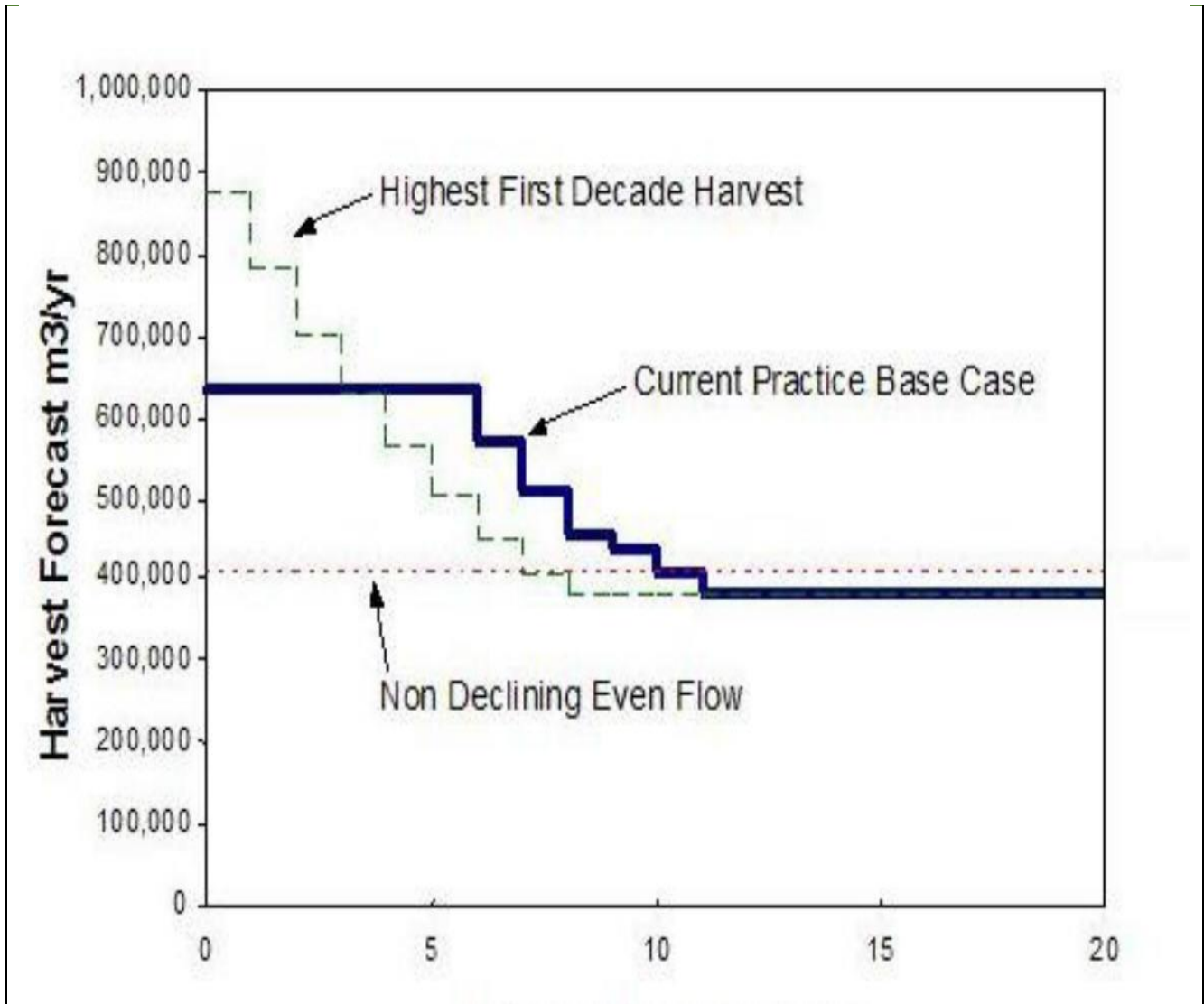


Figure 1 shows that successive governments' path is to, as rapidly as possible, convert all native forests (old growth) to plantation forests and then harvest when forest do no long put on maximum growth.

- This is the overriding goal for the Chief Forester when determining Allowable Annual Cuts (AACs).
- This also assumes that the highest and best value unless otherwise legally stated for so-called non-timber values is to harvest.

The timber supply model is based on European concepts of the normal forest with short rotation even aged forests as the best final outcome.

- Using outdated German model timber supply
- Assume that all forest have their high value as timber,

As to the remaining old growth, anything above age class 4 (approximately) 80 years is to be cut. In the future Class 4 will be the oldest forests in the THLB harvest land base.

NEEDED – decision makers that they need to demonstrate and provide a rational on how their decisions on resource extraction approvals adequately manage and conserve ecosystems and other values.

NEEDED – to implement changes to the timber supply review process and analysis reports prepared for the Chief Forester immediately to ensure harvest is kept to a low enough level so that areas where biodiversity is protected are not depleted and timber supply considers:

- a) reduce the existing timber supply forecasts to the non-declining level. Immediately engage natural disturbance ecologists as advisors to timber supply review to guide the current forecasts of timber analysts.
 - b) provide probabilities bracketing,
 - c) The timber supply review needs to become a quantitative multi resource value forecast.
 - d) The model used for forecasting needs to be updated with the latest approach, probability models dependent on natural disturbances, insects, disease.
 - e) probability of natural disturbances affecting supply,
 - f) Biodiversity risk, wildlife risk (identified wildlife), watershed condition as part timber supply based on variables also used to forecast,
 - g) The model also needs to look at Climate change – forecast of tree species etc. AAC options.
 - h) The model must account for natural disturbance, beetle kill, fires, etc. Currently TSR assumes salvage will capture volume lost to fire and insects. The AAC has no probability that the forests will be available. Investments at the community level need to know the probability that the timber will be available.
 - i) In order to protect biodiversity, harvestable timber will need to be determined in a new paradigm after it can be demonstrated that ecosystems can be protected.
-

The review can't continue to plan timber supply without probability and can't continue to raise undeliverable expectations so in future we repeat the current situation.

The review needs to inform on the long-term sustainability of non-timber values such as the condition of habitats for fish, wildlife, biodiversity, recreational viewsapes integrating all non-timber values in the forecast so they are readily available to decision makers.

The requirement to include other values and timber in forecasts must be set out in forest legislation, regulations and policy. The legislation must direct statutory decision makers. Prior to changes in legislation government can provide letters of direction to Statutory.

NEEDED – The 1990's 6% cap on measures to protect other forest values needs to be lifted.

NEEDED – to immediately end the government policy to dispose of any of the undercut AAC for any TSA or TFL and use this volume to ensure adequate protection of other forest values until such time as the TSR process has been significantly revised and the legislation, changed to reflect the strategic direction the Biodiversity and Ecosystem Health Framework.

NEEDED – FUNDING for monitoring and establishing an accurate forest inventory. Review of Vegetation Resources Inventory (VRI) indicated B.C. underfunds VRI has had the lowest investment of all Canadian provinces.¹⁶ When basic inventory is unreliable so are forecasts for allowable annual cut, carbon stocks, habitat for endangered old-growth dependent species such as marbled murrelet, spotted owl, mountain caribou, and all other assessments made for other forest resources, such as water and fish.¹⁷ This state of forested ecosystems can be an output from a redesigned Timber Supply Review (TSR) and redesigned Silviculture Strategies

NEEDED – The Ministry of the Environment has nothing similar to the TSR process to forecast habitat for species at risk, identified managed wildlife and fish. A similar transparent process is needed within the Wildlife and Fisheries Acts.

LANDSCAPE UNIT PLANNING – required to support the Whole of Society Approach

Data collected to assist in Landscape Unit Planning includes:

- the location of boundaries of protected areas
- established spatial Old Growth Management Areas
- BEC zones,
- roads, streams,
- Ungulate Winter Ranges,
- location of temperate sensitive watersheds and community watersheds.

Information is summarized in data packages of vegetation cover, wetlands, grasslands, alpine, rock and forest seral stages. For more information see:

<https://open.canada.ca/data/en/dataset/11277e35-d8be-47e4-bb1f-c38e393179c6>

¹⁶ Bourgeois et al. 2018. British Columbia Forest Inventory Review Panel Summary Report

¹⁷ Source Price, Holt and Daust. 2021 Conflicting portrayals of remaining old growth: the British Columbia case.

https://www.researchgate.net/publication/350664154_Conflicting_portrayals_of_remaining_old_growth_the_British_Columbia_case

B.C. is divided into landscape units, to provide for biodiversity and forest conservation planning. Landscape unit plans showing what forests are going to be retained in the longer term are incomplete. Landscape units planning could become a building block in managing for Biodiversity Ecosystem Health.

Completion of Landscape Unit Planning across the province will enable people meeting to discuss planning to understand the current environmental risk to forested ecosystems. The relative risk to forest Biodiversity can be identified by comparing the seral forest stages to seral stages recommended in the Biodiversity Guidebook. The further seral stages depart from the natural range of variability the greater the risk of loss of forest biodiversity. Such landscape unit biodiversity risk assessments can be compiled across large planning scales and can be used to inform the state of forest biodiversity for the entire province.

Previous Strategic Planning initiatives and regional planning meetings had monitoring committees to oversee the strategic land use plans and periodic meetings of “stakeholder” with members with knowledge of land use and varying dependencies on ecosystems goods and services. These multi-stake holder committees were not supported financially nor integrated into decision making/advisory bodies for statutory decisions. Those who identified need for changes and amendments to strategic plans had no means to bring those forward for consideration.

NEEDED – The planning framework needed to implement the Biodiversity Environmental Health System Framework using a whole of society approach must provide useful data for discussions at meetings with First Nations and other communities

- a) Planning data can and needs to be available at the local level and compiled to facilitate planning for the entire province.
- b) Planning data can and needs to show the changes in species distribution based on actual monitoring data at the local level and compiled for the province.
- c) Maps need to be made available on-line for B.C. government decision makers First Nations and the public to show current landscape unit boundaries and Biodiversity Emphasis options.

NEEDED – Community and first nations meetings need to be done using structured committees or other groups with clear roles and terms of reference to allow people to inform themselves and come to meetings ready to participate in informed discussions.

NEEDED – a revised Landscape Unit Planning guide which sets out how LU planning for Biodiversity would be restricted also by assigning Biodiversity Emphasis Options.

FUNDING NEED – long term for local planning tables and for a consistent assessment of ecosystem health and biodiversity to inform joint decisions on conservation.

Given the rate of climate change the best possible future outcomes will rely on understanding what species are dropping out of ecosystems and which species are becoming established.

RESTORATION

Ministries, Mine development roads and forestry roads.

The framework does indicate a commitment to “restore degraded ecosystems,” A starting point for Biodiversity conservation is to use Government reports completed in 2006 that prioritized areas for restoration that were impacted by mountain pine beetle and catastrophic fires.

Reports by region prepared for the BC Ministry of Environment, Ecosystems Branch These Strategic Restoration plans provide a starting point for continued restoration when up-dated to include areas burned and areas restored since 2006:

- Cariboo Strategic Regional Restoration Plan
- Southern Interior Strategic Regional Restoration Plan
- Northern Interior Strategic Regional Restoration Plan

RESTORATION OF Loss of habitat due to culvert and other stream crossings that block fish passage:

- A government study in the 1990s identified at least 134,000 stream crossings in the province that present potential barriers to fish passage.
- the Forest Practices Board's Review, 58% of crossings in fish-bearing habitat concluded posed moderate to high risks of blocking fish passage, which implies that at least 77,000 crossings require restoration.
- The current funding levels allow restoration of only 25 crossings per year to be restored. At this rate of current rates of funding, it would take 3,000 years to restore damaged or unmaintained stream crossings and improve fish distribution and productivity.

NEEDED – Past ecosystem degradation caused by resource extraction needs to be restored by those who degraded the ecosystem such as railroad companies, BC Hydro, Highways Ministries, Mine development roads and forestry roads.

PRECAUTIONARY PRINCIPLE

NEEDED – to examine the application of the precautionary principle as a statutory requirement as has been done by the European Union.

STRATEGIC DIRECTION LETTER

NEEDED –. Immediately provide strategic direction in letters to Government administrators responsible for implementing current laws for resource management/extraction that provide:

- a) Strategic Direction to the statutory decision makers who apply current regulations and current government policy
 - b) that are within the scope of the current legislation
 - c) they are consistent with Vision Statements set out in BEH Framework
-

APPENDIX "F" – CLIMATE ADAPTATION

The current Anthropocene era is marked by the devastating impact of people on the planet, especially on the climate and oceans. Internationally countries have recognized a climate emergency. Emergencies require emergency action.

Climate change (higher temperatures, less precipitation, lower snow pack etc.) has increased the size and frequency of natural disturbances and length of the fire season.

NEEDED – to look at where ecosystems and species are going as a result of climate change in the planning process.

NEEDED – to protect important forest and wet land carbon sinks.

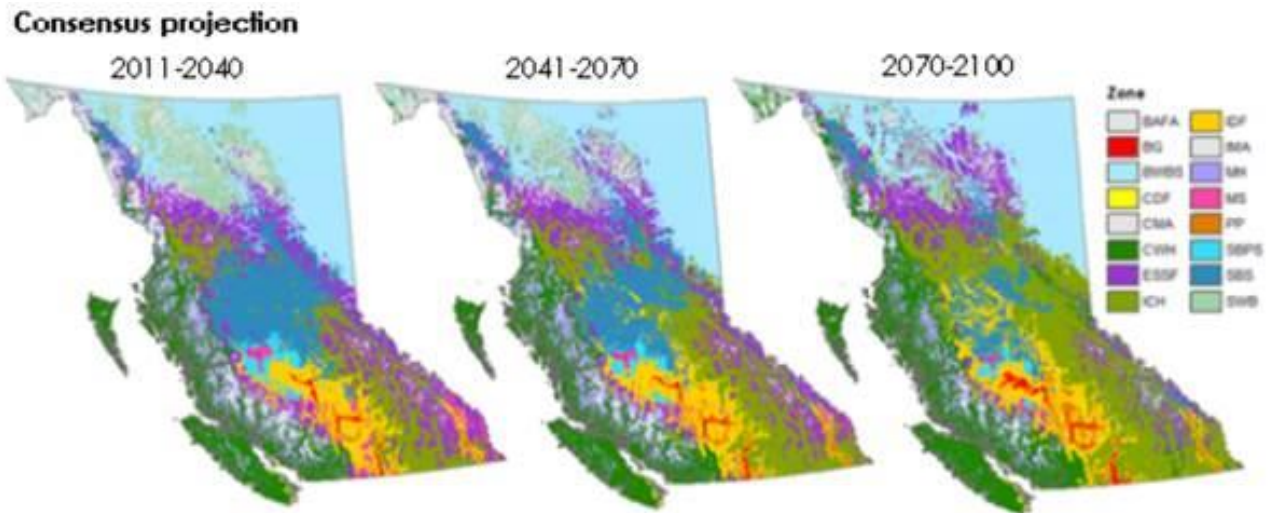
NEEDED – given the current joint climate and biodiversity crisis and other cumulative effects to date, all landscape unit plans and TSRs must reflect “high biodiversity emphasis” and associated age-class structures and in-stand retention guidelines as defined in the 1995 *Forest Practices Biodiversity Guidebook*.

NEEDED – to change our current energy reliance on water power, in light of anticipated significant climate change. The word drought implies there is recovery to some former previous normal but this is no longer true. The new normal is less rainfall/snow pack. The term drought is misleading and unhelpful

NEEDED - Renaming BCHydro (should be BC energy) with a more intense refocus on other renewal energy, such as domestic solar panels, solar farms, geothermal, wind power, and tidal power.

Species and ecosystems are on the move and there is no return to formerly understood ecosystems.

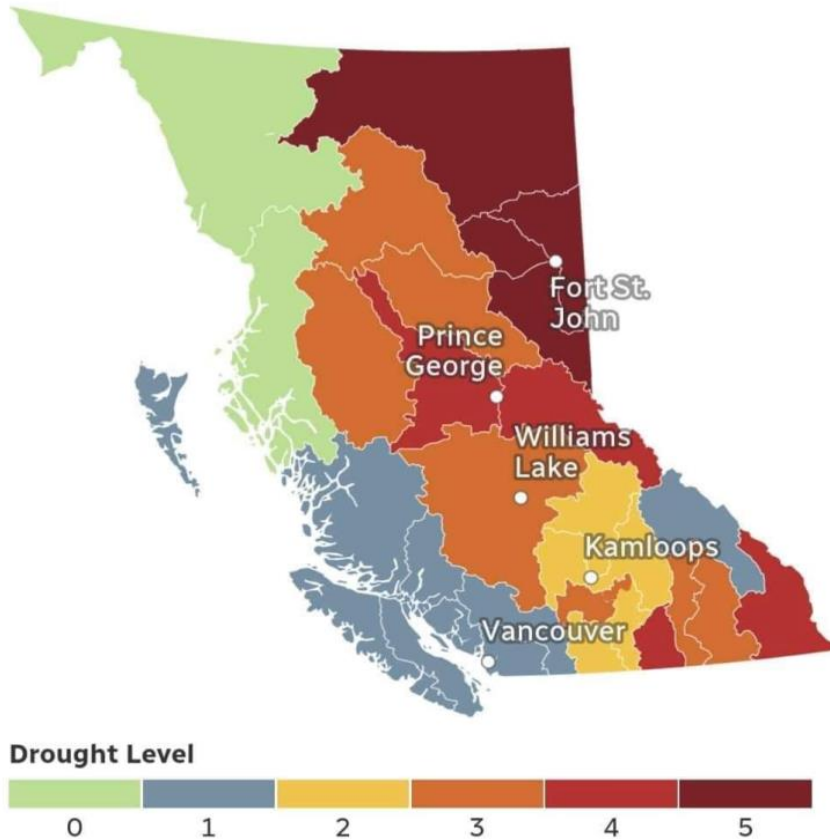
These maps of BEC zones show drier warmer climates in the B.C. Perhaps the most notable changes in BEC zones is the BG zone in B.C.'s interior, the expansion of the ICH and the shrinking of the ESSF most noticeably from the mountains in southern B.C.



Source UBC Faculty of Forestry, Centre for Forest Conservation Genetics 2024
Climate BC and bioclimatic envelope modelling. Link <https://cfcg.forestry.ubc.ca/projects/climate-data/climatebc-and-bioclimatic-envelope-modelling/#:~:text=BCG%20zones%20or%20bioclimatic%20envelope,into%20climate%20change%20adaptation%20strategies>.

Drought levels in B.C. by water basin, as of Dec. 27, 2023

Northeast B.C. water basins are at drought Level 5, the most severe on the province's scale.



Source: Government of B.C. (Akshay Kulkarni/CBC)

FIRES

In 2023 more than 2.84 million hectares of forest and land of trees and bush, were burned. This was B.C.'s worst-ever wildfire season and easily surpassing the previous record of 1.35 million ha burned in 2018. The costs are estimated at \$1 billion for the 2023 year with another 700 million in insurance damages. These cost will be reduced if the Biological and Ecological Health Framework is implemented.

NEEDED – to become proactive with regard to fire suppression. The Strategic direction in the B.C. Wildfire Strategic Plan 2012 2017 needs to be up-dated and include a vision beyond the use of fuel management activities and a focus on Bio-fuels.

See <https://www2.gov.bc.ca/gov/content/safety/wildfire-status/about-bcws/governance/mandate-strategy#:~:text=The%20B.C.%20Wildland%20Fire%20Management,effective%20response%20to%20unwanted%20fires>

NEEDED – to significantly increase small diameter thinning of forests (so-called thinning from below). This is to remove ladder fuels to reduce crown fire opportunity.

This type of selective small stem forest harvest with a commercial wood component is absent in B.C. today and will require active support from government to initiate. It is labour intensive and requires skilled workers and oversight/planning so the largest trees are not harvested while thinning. There can be long term employment opportunities by developing a proactive small stem harvesting and utilization of a small stem fiber source and possibilities for on-site processing for value added products. This selective logging is suitable for natural disturbance type 4 such as the Ponderosa Pine and Interior Douglas Fir ecological zones (see Biodiversity Guidebook). Future savings in fire suppression costs are the incentive to move to pro-active fuel/fiber management.

APPENDIX "G" EMPLOYMENT

The job losses in the forest industry associated with past strategy is shown in Table 2.

Table 2. Forestry Job losses by status quo management (Business as Usual) (BAU)

Forest Industry type	1997 Jobs in thousands	2019 Jobs in thousands	% decline
Forestry and Logging	17.2	11.2	35
Pulp and Paper	16.6	7.1	57
Support Activities	18.4	5.4	71
Wood Product manufacturing	43.1	26.8	38
Total Forest industry jobs	91.7	50.6	50

The job loss in the forestry sector is shown in Table 2 has declined 50% in 20 years using current government legislation and policy. This may in part be a response to a decline in timber supply and planned transition to short rotation harvesting.

Business as usual is no longer sustainable.

The Framework recognizes that long-term stable jobs, and resilient and healthy economies, are only possible with a healthy environment. Given the rapid and irreversible shift of vegetation communities and the expansion and decrease in the range of many species, society as whole needs to adapt to a new economic vision.

NEEDED – a transition to the new economy:

- 1) tie wood from forests harvested near local communities to manufacturing of wood products in the local community.
 - 2) stop whole log exports and together with log markets allow opportunity for local higher value manufacturing.
 - 3) encourage and promote higher value forests so there can be more jobs and revenue for less wood volume harvested.
 - 4) make wood available at the local level for bidders to purchase at market value.
 - 5) make available for reforestation and restoration and to mitigate beetle and wildfire impacts. (Opportunities can be spatially identified at strategic level through landscape unit and watershed level plans)
 - 6) review stumpage-log markets-timber tenure system – no competition for wood. Increase public revenue and seek higher stumpage by changing and amending the current stumpage system and reliance on BC Timber Sales (BCTS) to determine stumpage.
 - 7) Ecosystem restoration will provide community employment opportunities however significant funding is needed to attract and build a skilled work force and retain them over time.
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APPENDIX "H" SUSTAINABILITY

SUSTAINABILITY

The United Nations Commission on Sustainable Development was established in 1992 and replaced in 2013 by the High-level Political Forum on Sustainable Development. The Forum recommended a global agreement to raise international awareness of the need to integrate development with the environment. In 2012 the Commission published Sustainable Development Goals in the Rio Declaration on Environment and Development.¹⁸ The Declaration contains the following key sustainability principles.

Principle 8

To achieve sustainable development and a higher quality of life for all people, States should reduce and eliminate unsustainable patterns of production and consumption and promote appropriate demographic policies.

Principle 10

Environmental issues are best handled with the participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided.

Principle 11

States shall enact effective environmental legislation. Environmental standards, management objectives and priorities should reflect the environmental and developmental context to which they apply. Standards applied by some countries may be inappropriate and of unwarranted economic and social cost to other countries, in particular developing countries.

Principle 13

States shall develop national law regarding liability and compensation for the victims of pollution and other environmental damage. States shall also cooperate in an expeditious and more determined manner to develop further international law regarding liability and compensation for adverse effects of environmental damage caused by activities within their jurisdiction or control to areas beyond their jurisdiction.

(See the document for other principles.)

¹⁸ Rio Declaration on Environment and Development
https://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A_CONF.151_26_VoI.I_Declaration.pdf

REFERENCES – Government Planning Documents

Management processes need to be updated rather than discarded. Planning processes already under way and documented need to be completed and implemented. The following is a partial list of reference materials prepared by the government of BC

- 1) Environmental Risk Assessment: An Approach for Assessing and Reporting Environmental Conditions
<https://www.env.gov.bc.ca/wld/documents/era.pdf>
- 2) The Forest Practices Code Biodiversity Guidebook 1995 was developed under the code. It appears to act as a reference and not prescribe policy. The guide is available on the internet and has not been updated since 1995.
[Biodiversity Guidebook \(Forest Practices Code of British Columbia, September 1995\)](#)
- 3) The Landscape Unit Planning Guide was also developed under the Forest Practices Code and as such appears to be a reference and not prescriptive. The guide available on the internet has not been updated since 1999.
https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/natural-resource-use/land-water-use/crown-land/land-use-plans-and-objectives/policies-guides/lup_guide.pdf
- 4) Protecting Biodiversity – BC Website
<https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/biodiversity?keyword=convention&keyword=on&keyword=biodiversity>
- 5) 2020 Interim Biodiversity Protocol
https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/cumulative-effects/protocols/cef_forest_biodiversity_protocol_sept2020_final.pdf
- 6) Managing Identified Wildlife
<https://www.env.gov.bc.ca/wld/documents/iw.pdf>
- 7) Interim Assessment Protocol for Cumulative Effects
https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/cumulative-effects/cef-interimpolicy-oct_14_-2_2016_signed.pdf