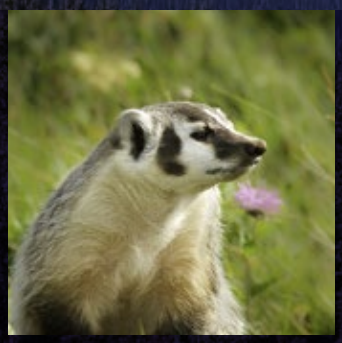
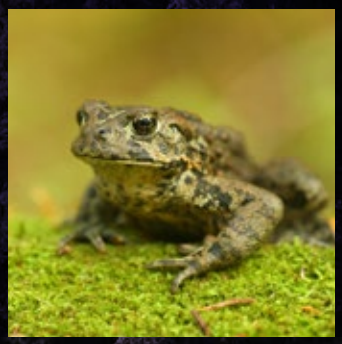





B.C. Biodiversity Report Card

WILDERNESS COMMITTEE
ecojustice

B.C. Biodiversity Report Card

May 2021

Written by
Sean Nixon, Ecojustice
Charlotte Dawe, Wilderness Committee
and
Liat Podolsky, Ecojustice

Edited by
Alex Hsuan Tsui and Kimberly Shearon

Published by
Wilderness Committee
and Ecojustice

B.C. Biodiversity Report Card

Written by: Sean Nixon, Staff Lawyer, Ecojustice
Charlotte Dawe, Conservation and Policy Campaigner, Wilderness Committee
Liat Podolsky, Senior Scientist, Ecojustice

Edited by: Alex Hsuan Tsui and Kimberly Shearon

Design and Layout: Kelvin Yip and Sue Fox

Cover Photos: Moose: John E. Marriott, American badger: Jared Hobbs, Garry oak ecosystem: Graham Osborne, Bumble bees on purple corn flower: Chris Bidleman, Grizzly bear: John E. Marriott, Great blue heron: Jared Hobbs, Western toad: Jacob Dulisse, White fawn lily: Michael Wheatley, Spotted owl: Francois Xavier DeRuydts

Back Cover: Koksilah: Emily Hoffpauir

Acknowledgement
The authors would like to thank Sarah P. Otto (University of British Columbia) for her reviews of the report outline and final draft, and Justina Ray (Wildlife Conservation Society Canada) for reviewing a draft of the final report. Both provided insightful comments and valuable suggestions which greatly improved the report. Many thanks as well to Richard Schuster (Carleton University) for his data analysis. Any errors in the report are our own.

Land Acknowledgement
This report was co-written at Wilderness Committee and Ecojustice's Vancouver offices, situated on the traditional, ancestral and stolen lands of the Coast Salish Peoples, specifically the xʷməθkʷəy̓əm (Musqueam), Skwxwú7mesh (Squamish) and səl'ilwətaʔɬ (Tsleil-Waututh) territories. We also acknowledge the lands of neighbouring Peoples and nations in this region where many of us reside and where we carry out our environmental defence work, including S'ólh Téméxw (Stó:lō), Stz'uminus, Qayqayt, kʷikʷəƛ̓əm (Kwikwetlem), Kwantlen, sḵəc̓iy̓aʔɬ təməxʷ (Katzie), Semiahmoo, sc̓əwaθenaʔɬ təməxʷ (Tsawwassen), Nɬeʔkepmx Tmíxʷ (Nlaka'pamux), Secwepemcúl'ecw (Secwépemc), and W̱SÁNEĆ.

Published by the Wilderness Committee and Ecojustice

WILDERNESS COMMITTEE

46 East 6th Avenue, Vancouver, BC V5T 1J4
1-800-661-9453 (toll-free in Canada and US)
(604) 683-8220 (in Metro Vancouver)
WildernessCommittee.org

ecojustice

Suite 390, 425 Carrall Street, Vancouver, BC V6B 6E3
1-800-926-7744 (toll-free in Canada and US)
(604) 685-5618 (in Metro Vancouver)
Ecojustice.ca

Executive Summary

Last year marked the end of the "Aichi decade." In 2010, the international community met in Aichi, Japan and set targets requiring all governments to make measurable progress in conserving the planet's wildlife and natural systems (biodiversity) by the end of 2020. We are in the midst of a biodiversity crisis on par with the climate crisis, and all governments need to step up to meet this challenge. At the end of the Aichi decade, it's time to evaluate how B.C. did.

B.C. is in many ways a "poster child" for the biodiversity crisis — it has the richest biodiversity in Canada, but also the highest number of species at risk. In general, we found the B.C. government has failed to meet international standards and other important legal commitments to protect and restore its biodiversity. But it's not all bad. For example, B.C. has made a good start with its network of protected areas.

We are faced with the enormous but achievable task of saving the biodiversity we all rely on. It will take drastic change but we have no choice but to rise to the challenge. We need the B.C. government on board.

Subject: Protection and recovery of species at risk – Grade: F

B.C. is one of the few remaining provinces without a stand-alone law to protect at-risk species and the habitat they need to survive and recover. Habitat protection is the ultimate test of whether a species or other biodiversity law is likely to be effective — loss of habitat is the main cause of biodiversity decline.

B.C. has not met the requirements it agreed to twenty five years ago in the 1996 Accord for the Protection of Species at Risk in Canada. It could meet these requirements by enacting a stand-alone endangered species law or an overarching biodiversity law.

Subject: Protection and recovery of ecosystems – Grade: F

B.C. claims it protects and recovers species at risk through "complex" ecosystem approaches. It doesn't.

When paired with effective endangered species laws, protecting ecosystems can be a good way to protect and recover biodiversity. But the province would need to protect a significant amount of the landscape (generally 50 per cent or more of each ecosystem or region) for this approach to save most of B.C.'s wildlife. B.C. protects far less than this, with many endangered habitats receiving well under 10 per cent protection.

Subject: Parks and protected areas – Grade: C–

One of the key Aichi targets required that B.C. protect at least 17 per cent of its land-base by 2020. B.C. did not reach this target, but it came close by protecting 15.5 per cent.

However, B.C. gets poor marks for the transparency and reliability of its claims about the area covered by "other conserved" areas. B.C. also scores low marks for the poor connectivity and representativeness of its protected areas.

B.C. must develop and implement a strategy for meeting future Canadian and international targets for its legitimate protected areas, including 25 per cent by 2025 and 30 per cent by 2030.

Subject: Protection of natural habitats of all species and ecosystems – Grade: F

Another important Aichi commitment requires the province to reduce the loss of all natural habitats by 50 per cent from 2010 levels. B.C. failed to achieve this.

B.C. does not have the laws necessary to achieve this target. For example, the province's forestry laws prohibit the government from reducing industrial timber harvest by more than one per cent — even when much greater reductions are needed to protect biodiversity. Not surprisingly, in the last decade B.C. has failed to reduce by half the annual amount of timber that can be harvested.

B.C. has an opportunity to make up lost time by protecting significant proportions of native ecosystems and ensuring habitat loss is reduced by more than 50 per cent from 2010 levels.

Subject: Other laws to protect biodiversity – Grade: F

B.C. also claims to protect biodiversity through several different laws that regulate specific industry sectors, like forestry or oil and gas. It doesn't.

In the B.C. government's own words, its sector-specific approach "has created a patchwork of rules that do not effectively or consistently protect all species at risk or their habitats from all types of human-related impacts across all types of land use."

The old-growth strategic review panel proposed a solution to many of the problems set out above: namely, that the province enact a new, overarching biodiversity law to prioritize ecosystem health and biodiversity conservation across all sectors. B.C. has not made any progress towards enacting such a law. B.C. could become a world leader in the protection of the natural world if it developed a strong, innovative biodiversity law in cooperation with Indigenous groups.

All British Columbians deserve a secure future, where nature is cherished, protected and capable of providing life-giving resources for all creatures. This is our chance to ensure this future is obtainable. Species and ecosystems are incredibly resilient and can bounce back. We just need to give them a fighting chance.

Nimpkish Valley Logging (Emily Hoffpauir)

May 22 is the International Day for Biological Diversity, celebrating the variety of life on Earth and encouraging efforts to protect and restore it. This year will mark an important milestone, as jurisdictions around the world consider whether they have achieved the Aichi targets. These targets were set by the international community in 2010 and required all governments to make measurable progress in conserving the planet's wildlife and natural systems by the end of 2020. Under Canada's laws, British Columbia has primary responsibility for protecting biodiversity within the province, including most species, natural habitats, and landscapes. The importance of that responsibility cannot be overstated. Multiple independent reports have confirmed that biodiversity is declining faster than at any time in human history and that this decline threatens all of us.[1] In a recent report by Paul Ehrlich and sixteen other leading scientists, the authors concluded: "The scale of the threats to the biosphere and all its lifeforms — including humanity — is in fact so great that it is difficult to grasp for even well-informed experts."[2]

What is biodiversity?
Biodiversity, or biological diversity, is the variety of living creatures on Earth. It includes variety within species, among different species, and of ecosystems (ecosystems are natural communities of organisms and their habitats). It also includes the processes and interactions that connect life at each of these scales. If biodiversity remains in good condition, living systems are more resilient and resistant to disturbance, and are much more likely to support non-human and human life in the long-term.

B.C. has not escaped this global crisis. It has the richest biodiversity of any of Canada's provinces or territories, but it also has the highest number of species at risk.[3] A 2008 scientific report found that 43 per cent of the province's assessed species are at risk.[4] Hundreds of ecosystems are also under threat in the province, and some are on the verge of disappearing (see coastal Douglas-fir case study, below).

In light of that challenge, this report card grades the B.C. government's progress in achieving key Aichi targets and other essential legal commitments to conserve biodiversity. We look at B.C.'s progress in the following subject matters:

BC Government Biodiversity Report Card

Date: May 22, 2021
Premier: John Horgan

SUBJECT	PROGRESS	GRADE
Protection and recovery of species at risk		F
Protection and recovery of ecosystems		F
Parks and other protected areas		C-
Protection of natural habitats of all species and ecosystems		F
Other laws to protect biodiversity		F

BC lacks commitment and focus. Needs improvement.

Protection and Recovery of Species at Risk

Grade: F

Standards we used to measure the province's performance:

- Has B.C. met the requirements it agreed to twenty-five years ago in the **1996 Accord for the Protection of Species at Risk in Canada?** These include: establishing an independent process for assessing the status of species at risk; legal listing; providing immediate protection from harm and long-term habitat protection to threatened and endangered species; timely development and implementation of recovery plans; and preventive measures to keep species (including species of special concern) from becoming at risk.[5]
- Has B.C. met its international obligations under the Convention on Biological Diversity, and particularly **Aichi Target 12:** By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained?[6]

B.C. is one of the few remaining provinces without a stand-alone law to protect at-risk species and the habitat they need to survive and recover. The province claims that it protects endangered species through a "complex" system of laws and policies.[7] In our view, that complexity masks a multitude of flaws: B.C.'s laws are antiquated, vary according to the resource industry or activity they regulate, and provide only partial protection to a small handful of the thousands of species at risk in the province.

The B.C. *Wildlife Act* is the province's primary approach to managing species at risk outside of sector-specific laws (e.g. forestry laws). This law fails in several respects. While a government body in B.C. maintains lists of species grouped according to risk, this action triggers no legal protection under the *Wildlife Act* or any other law. Only four out of the large number of threatened wildlife species in the province[8] are legally listed under the *Wildlife Act* and entitled to the limited protections set out in that act. Legally listed species are protected from direct harm (e.g. from hunting) but there is no requirement in the *Wildlife Act* or any other B.C. law for government to protect the habitat at-risk species need to survive and recover, or to develop and implement recovery plans for those species.[9]

B.C.'s long-standing failure to enact an endangered species law has consequences. The BC Conservation Data Centre has identified more than 1,300 species at risk in the province, not including hundreds more that meet the criteria for endangered, threatened and "special concern" species.[10] At the national level, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) has assessed 278 species at risk of extinction in B.C.[11]

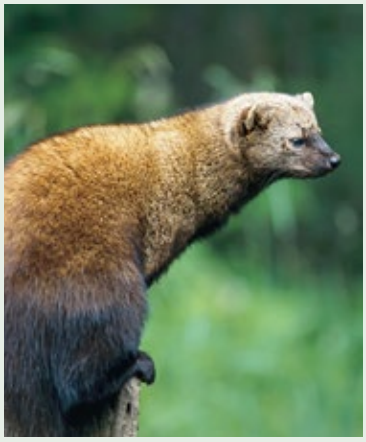
Case Study: Fisher (*Martes pennanti*)

Fishers are small, carnivorous mammals of the mustelid (weasel) family. They are a low-density, forest-dwelling species, requiring mature trees for denning and shelter – only five tree species in B.C. have cavities suitable for female fisher to birth and raise their kits while avoiding predators.[12] They are also sensitive to human activities, have long been trapped for their fur, and need special management attention in B.C.[13]

In 2020, the BC Conservation Data Centre elevated the status of the Central Interior fisher population to red-listed (endangered) because of low and steeply declining population numbers (estimated between only 299-517 individuals), coupled with threats from accelerated forest harvesting which has eliminated fisher denning trees, as well as trapping.[14] The Boreal Forest population remains blue-listed.

Despite this status change, less than a year later the B.C. government approved winter trapping of the fisher even though removing just a few individuals from heavily impacted and harvested areas could result in local extirpations.[15] Around 170 fishers are trapped each year in B.C., but it is not typical for red-listed species to be harvested.[16] B.C.'s 2020-2022 hunting and trapping regulations specifically noted an increased concern for fisher populations in certain areas that have experienced large habitat changes due to forest harvest, highlighting the compounding threat that trapping poses to population persistence in compromised habitats.[17] The regulations indicated fisher trapping seasons were under review[18], including a proposed change to close the trapping season for Central Interior fisher, with a consultation period that ended May 7, 2021.[19]

To further illustrate these concerns, the Forest Practices Board recently investigated a complaint that three of Canfor's proposed cutblocks comprised the last remaining fisher habitat in a trapline near Prince George. The board concluded that the B.C. government relied on Canfor's voluntary yet inadequate efforts to conserve fisher habitat, which did not include landscape level planning, and that B.C. needs to strengthen fisher habitat management to ensure their survival in the area.[20] In response, B.C. is developing a fisher management plan, with a targeted completion date of 2022.[21]


Fisher (The Degners)

In 2021, the B.C. government and Environment and Climate Change Canada announced a Fisher Conservation Program on Crown Land pilot project to explore how provincial tools can protect species at risk and the mature forest habitat on which they depend. However, a key objective of the project is to explore how proactive provincial actions can be better reflected in federal decisions to list species under the *Species at Risk Act,* and to develop better socio-economic information for these decisions.[22] This may not bode well for the fisher or any other old-growth dependent species, and their fate is in the hands of the B.C. government.

The condition of B.C.'s at-risk species continues to deteriorate. For example, since 2004, B.C. has lost six herds of southern mountain caribou from populations COSEWIC has assessed as endangered.[23] Further, B.C.'s spotted owl population is on the brink of extirpation (extinction in the province)[24] – see our case study below.

Habitat loss is by far the greatest threat to B.C.'s species and ecosystems. It is a key cause of endangerment for more than 95 per cent of species on land.[25] Because of this, any effective endangered species law must require governments to follow scientific advice and Indigenous knowledge about protecting the habitat that species need to survive and recover. B.C.'s laws fail entirely in this respect; the amount of habitat protected and the strength of those protections will not likely ensure even the mere survival of most of B.C.'s at-risk species. Further, even when B.C. is made aware of the habitat that species need to survive and recover, it does little to control industrial development in that habitat; recent mapping by the Wilderness Committee shows that the federally-mapped critical habitat of 20 endangered and threatened species in B.C. is threatened by new, proposed industrial development.[26]

While we have a federal *Species at Risk Act* (SARA), many people do not realize that it only applies automatically to species on federal lands, aquatic species and, in part, to migratory birds. Primary responsibility for all other species is left to the province. While provisions in SARA allow the federal government to intervene when a province is not effectively protecting species or their critical habitat, or when species face imminent threats, these provisions are discretionary and have only been used twice since SARA came into force in 2004.

B.C. is not living up to its responsibility to protect and recover the majority of at-risk species on provincial lands. In its 2017 mandate letter to the environment minister, the B.C. government committed to passing endangered species legislation.[27] After the 2020 election, the B.C. government abandoned this pledge.[28]

B.C. thus gets a failing grade for protecting endangered species. If B.C. wants to do better in future report cards, it must:

- Enact a stand-alone endangered species law or a similar law (e.g. a biodiversity law to protect and restore biodiversity at all scales — see below) that assesses the province's at-risk species based on scientific advice and Indigenous knowledge, automatically adds those species to a legal list, protects them immediately from harm, protects and restores the habitat that they need to survive and recover, and requires government to develop and implement science-based and Indigenous-knowledge-based recovery plans on timelines designed to ensure species' survival and recovery.

Protection and Recovery of Ecosystems

Grade: F

Standards we used to measure the province's performance:

- Given B.C.'s claim that it addresses species at risk through ecosystem approaches, has it met **Aichi Target 12** through ecosystem-level protections? (By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.)
- Does B.C.'s approach to biodiversity protection and management encompass both **larger-scale regional or ecosystem approaches** (to maximize protection of the highest percentage of species and their habitat) and **finer-scale approaches** for individual species whose needs would be missed through an ecosystem approach?
- **How much of each region or ecosystem in the province has B.C. protected** through strong legal measures that prohibit or appropriately manage industrial development and other activities that could harm biodiversity? Does it follow Indigenous knowledge and science advice about what level of protection ecosystems need to maintain their integrity and resilience?

In response to criticisms about its ongoing failure to enact a stand-alone endangered species law, B.C. often claims that it uses "ecosystem-based" approaches to biodiversity protection.

When paired with effective endangered species laws, protecting ecosystems and larger landscapes can be a good way to protect and recover biodiversity at multiple scales (populations, species, ecosystems and regions).[29] But the key questions are *how much* and *which parts* of each ecosystem or region are protected. As noted by eminent biologist E.O. Wilson, protecting at least half the surface of the planet would likely stabilize more than 80 per cent of species and help ensure the long-term survival of humanity.[30] The fraction of species stabilized through this approach can be increased by including biodiversity "hot spots" where the greatest numbers of threatened species remain.[31]

The province would need to protect much more than it currently does for this approach to contribute meaningfully to biodiversity protection. Below 50 per cent coverage of each ecosystem or region, the effectiveness of large-scale protections drops off quickly. Protecting 10-20 per cent — the current level of protection in many of B.C.'s ecoregions — risks losing 50 per cent or more of the species in those areas.[32] As noted by the authors of the recent *B.C. Old Growth Strategic Review* panel report, protecting anything below 30 per cent also poses a high risk to ecosystem services (the ongoing provision of services that forests and other natural areas provide to humans, including carbon storage, clean air, clean water, and the prevention of floods and droughts); the authors note that often significantly more must be protected — up to 70 per cent, depending on the ecosystem — to create a low risk of species loss, loss of ecosystem resilience, and compromised ecosystem services.[33]

Manning Park, B.C. (Jeremy Sean Williams)

The province does have one law dedicated to protecting ecosystems, namely the *Ecological Reserve Act*. This law allows the government to set aside Crown lands to preserve endangered plants and animals in their natural habitats. The act and its regulations generally prohibit any activities and resource development that could harm biodiversity in a reserve. However, there is no requirement in this or any other provincial law to protect all ecosystems in the province, to protect at-risk ecological communities identified by science and Indigenous knowledge, or to follow scientific and Indigenous advice about how much to protect of each ecosystem to ensure its ongoing health and integrity.

The B.C. government has identified hundreds of ecological communities at risk,[34] but only a small handful of these are protected in whole or in part through the *Ecological Reserve Act* or other provincial protected areas legislation. (As noted in more detail below, areas the government claims to protect through forestry and other resource-specific legislation do not in fact provide meaningful protection to biodiversity.)

Old-growth forest ecosystems provide a telling example of the province's failure to protect endangered ecosystem types. A recent scientific study found that less than one per cent of B.C.'s remaining forests are highly-productive ecosystems with large, old trees.[35] The authors of this study note that highly-productive old-growth forest ecosystems in B.C. are "effectively the white rhino of old-growth forests. They are almost extinguished and will not recover from logging."[36] The study concludes that B.C.'s poor management of old-growth forest ecosystems puts biodiversity, ecosystem resilience and ecosystem integrity at high risk.[37]

Some portions of the province, especially the Great Bear Rainforest on B.C.'s central and north coast, have made progress in implementing a robust version of ecosystem-based management (an approach to managing human activities that seeks to ensure the coexistence of healthy, fully functioning ecosystems and human communities).[38] However, to date this approach has not been applied to other parts of B.C. — it remains the exception and not the rule.

Case Study: Coastal Douglas-fir Ecosystem

B.C.'s coastal Douglas-fir (CDF) zone, located on low elevation areas on parts of the mainland coast, the Gulf Islands, and along the southeastern coast of Vancouver Island, is one of the smallest and rarest biogeoclimatic zones in B.C., covering only 0.3 per cent of the province.[39] Historically growing throughout the south coast, the trees were readily accessible for logging, so only a fraction are now left.[40] Less than one per cent of the region's original old-growth forest remains, and the older forests occur in small, highly fragmented patches, as half the land in the CDF has been permanently converted by logging, agriculture, grazing, mining, and residential development.[41,42]

The CDF ecosystem is also one of the most endangered ecosystems in Canada. It is home to the highest number of species at risk in B.C., including Garry oak trees, northern goshawk, marbled murrelet, and Vancouver Island screech owl.[43,44] The CDF is also home to many species and ecosystems found nowhere else, and most of them are at risk, many of them globally.[45]

Despite its ecological rarity and importance, the CDF is the least protected zone in B.C. and has the lowest number of large (>250 ha) protected areas, with most of them small, isolated land parcels surrounded by development.[46] Of the 256,800 hectares remaining throughout B.C., only nine per cent is provincially owned (much of the rest is privately owned) and only about four per cent is protected.[47]

As with its protection of endangered species, we give B.C. a failing grade for its protection of the province's native ecosystems. To do better on future report cards, B.C. needs to:

- Take proactive measures to protect ecosystems in order to protect and restore both ecosystems and species, and to prevent them from becoming at-risk. B.C. must protect all native ecosystems and determine the size and location of the areas it protects based on the latest conservation science and Indigenous knowledge (likely requiring protection of a minimum of 50 per cent of each ecosystem or region of the province).[48] Ecosystem protections must be done in a way that respects Indigenous territories and governance.
- Recognize that ecosystem protections do not work for all species at risk and that some species will still need individual protections and recovery actions (such as rare species with few remaining locations, those particularly sensitive to human activities, those with limited geographic distributions or those with wide-ranging habitat requirements).[49]
- With respect to old-growth forests, immediately stop harvesting the rarest forest ecosystem types and develop ecologically-defensible mandatory thresholds for the minimum amount to be retained of all forest ecosystems (likely 50 per cent or more of forest ecosystems in general, and 100 per cent of remaining rare old-growth).[50]

Parks and Other Protected Areas

Grade: C-

Standards we used to measure the province's performance:

- **Aichi Target 11:** "By 2020, at least 17 per cent of terrestrial and inland water [areas]… especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes."[51]

One of the most important measures of the province's efforts to protect biodiversity is the amount of its land-base set aside in interconnected protected areas that are representative of all the ecosystems of the province. Under Aichi Target 11, B.C. was required to protect at least 17 per cent of its lands and inland waters by 2020. B.C. did not meet this target.

B.C. claims to be well over 17 per cent, but that is based on dubious provincial accounting. About 15.5 per cent of the province is in true protected areas, but B.C. — uniquely among Canadian provinces — claims a significant additional amount (four per cent) as "other conserved" areas.[52] B.C. has ignored clear Canadian and international standards defining what it can include as "other conserved" areas.[53] Most of this additional four per cent is in areas that still allow considerable industrial development and that are not set aside for long-term protection.[54] According to standards B.C. has adopted, areas should only be considered protected or conserved if all industrial development incompatible with biodiversity conservation is prohibited, and if protections are intended to be permanent.

We would give relatively high marks to B.C. for getting to 15.5 per cent.[55] That ranks B.C. high relative to other Canadian provinces and territories, and second only to the North West Territories, which has protected 15.8 per cent of its landscape. However, the B.C. government's questionable accounting forces us to lower their grade. Without reliable accounting that follows Canadian and international standards, British Columbians can never be sure whether their government has met future targets for protected and other conserved areas.

Further, the Aichi target for protected areas is not just about quantity — the **quality** of the lands B.C. chooses to protect is also critical. As part of its Aichi commitments, B.C. was required to:

- Ensure protected areas are **ecologically representative**, meaning that those areas conserve viable habitats covering the full range of biodiversity within each region of the province;
- Focus on areas of **particular importance for biodiversity** (e.g. areas containing significant habitat for large numbers of species, including species at risk);
- Ensure protected areas are **inter-connected** with one another, e.g. via corridors that allow wildlife to move freely — this will be particularly important as climate change forces wildlife to move further north or to higher elevations.

B.C. does not get high marks for the quality of its protected areas.

The province's protected areas are not ecologically representative and are generally biased towards higher-altitude "rock & ice" parks that are more important for scenery than for biodiversity. As the B.C. environment ministry notes, B.C.'s protected area system protects as much as 30 per cent of some alpine habitats, but much lower amounts (5-10 per cent) of many forest habitats, including coastal Douglas-fir, interior Douglas-fir, and ponderosa pine ecosystems.[56] International guidance on Aichi Target 11 notes that protected area systems should cover a minimum of 10 per cent of each ecoregion or ecosystem type.[57]

Further, B.C.'s protected areas are not generally in areas of particular importance for biodiversity. For example, the province's protected areas do not effectively protect species at risk because they do not adequately overlap with species' habitat needs. According to a recent study that looked at the overlap between protected areas and the ranges of SARA-listed terrestrial species, protected areas in Canada protect only 15 per cent of species' ranges, and 35 per cent of species are protected within less than five per cent of their range Canada-wide.[58] In B.C., protected areas overlap with only 17 per cent of at-risk species' ranges, and seven species have no overlap at all with protected areas.[59]

Finally, B.C.'s protected areas are generally not well-connected to other protected areas.

B.C.'s overall grade of C- on this subject reflects relatively high marks for the quantity of its parks and protected areas (15.5 per cent of B.C.'s landscape), but lower marks for the transparency and reliability of its protected area accounting (claiming an additional 4 per cent of the land-base as "other conserved" areas despite ongoing industrial development and no long-term protection). B.C. also scores low marks for the poor connectivity and representativeness of its protected areas.

To improve its grade on its next report card, B.C. must:

- Stop its dubious accounting of the province's protected and other conserved areas – B.C. should not claim areas where industrial development is still allowed, or that are not set aside for long-term protection, as part of the province's totals.
- Develop and implement a strategy for meeting Canadian and international targets for B.C.'s legitimate protected and conserved areas, by protecting 25 per cent of the province by 2025[60] and 30 per cent by 2030. These targets would bring B.C. in line with Canada's "Target One" and with the targets set by the High Ambition Coalition, which includes Canada.[61] B.C.'s efforts should promote Indigenous-led conservation and focus on areas most important for biodiversity.
- Ensure that B.C.'s network of protected and conserved areas recognizes and advances Indigenous rights and title, knowledge systems and governance — including by supporting the development of Indigenous Protected and Conserved Areas (IPCAs) and Indigenous-led governance and management.[62]
- Ensure that areas added to B.C.'s current network of protected and conserved areas make it more ecologically-representative, more inter-connected, and more focussed on areas of particular importance to biodiversity (by adding Key Biodiversity Areas[63] as these are developed, and by concentrating on the habitat needs of at-risk species and ecosystems).

Protection of Natural Habitats of All Species and Ecosystems

Grade: F

Standards we used to measure the province's performance:

- Has B.C. fulfilled its commitments under **Aichi Target 5** to reduce the rate of loss of all natural habitats, including forests, by 50 per cent and where feasible bring the rate of loss close to zero by 2020?[64]

Under Aichi Target 5, B.C. was required to reduce the rate of loss of all natural habitats, including forests, by 50 per cent and where feasible bring habitat loss close to zero by 2020. B.C. failed to meet this target.

B.C. does not have any legislation that ensures sufficient permanent protection of the varying native ecosystems (or natural habitats) within the province. Additionally, the laws governing extractive resource activities in wildlife habitat favour industry over species protection.[65]

Under current provincial laws, achieving the goal of halving forest loss in timber supply areas would be impossible. B.C.'s forestry laws protect timber supply over all other values in the forest. Under the *Forest and Range Practices Act* and its regulations, the government cannot protect any biodiversity or wildlife values in a way that would "unduly reduce the supply of timber from British Columbia's forests."[66] B.C. government policy has generally interpreted this to mean that the province cannot reduce the rate of logging to protect biodiversity if this would result in anything more than a one per cent effect on short and long-term harvest levels.[67]

The annual allowable cut (AAC) rates in B.C.'s Timber Supply Areas (TSAs) from the early 2010s to 2020 show that B.C. has not halved habitat loss throughout the forested land base. The AAC is the amount of timber the province allows to be harvested each year within a TSA. Only two of 38 TSAs have AAC rates that were reduced by half in the last 8-12 years. This is especially concerning because from 2005-2015 AAC rates spiked due the pine beetle and associated salvage logging.[68] Despite inflated AAC rates in the mid 2000s, B.C. still did not bring harvest rates down by half in most TSAs. There are even examples where AACs increased by more than half. The AAC in the Fort Nelson TSA increased by 63 per cent from 2006-2019, and the AAC in the Mackenzie TSA increased by 67 per cent from 2001-2014.[69] AACs have simply not been reduced in a way that would allow B.C. to halve habitat loss in the province's forested lands.

It is difficult to measure B.C.'s performance on halving habitat loss because the province does not track this data. They currently have no process that tracks remaining wildlife habitat and the rate of loss throughout the years. In the absence of this data, we have used two examples of important habitats in B.C. and determined the rate of loss in each throughout the last decade.

The first example is old-growth forests. B.C.'s old-growth forests contain some of the most important habitat for wildlife, which is key to maintaining biodiversity in B.C. Many species in B.C. rely on old-growth forests and cannot exist anywhere else.[70] Nevertheless, B.C. has failed to reduce habitat loss in old-growth forests by 50 per cent.

Despite the tiny fraction of the most productive old-growth with the biggest trees (415,000 hectares, less than one per cent of B.C.'s total forest area) remaining in the province, government data show that old-growth logging rates have remained at high, relatively stable levels for the last 30 years.[71] More recently, old-growth logging approvals increased by 43 per cent in the year 2020-2021 compared to 2019-2020.[72] In the absence of coherent protection or deferrals for at-risk old-growth forests, particularly those with big trees, logging companies continue to target stands with the largest trees accessible.

Despite calls from the public to end old-growth logging in B.C. and the government's commitment to a "paradigm shift" in old-growth management, there has been no new funding for that transition in the budget announced this year.[73] To implement the recommendations from the old-growth strategic review, First Nations communities require critical funding for logging deferrals and other conservation actions within their territories. B.C. failed to deliver on this funding as well. Without funding to reduce old-growth habitat loss and support First Nations communities where these forests exist, it is unlikely that the B.C. government will be able to implement this paradigm shift.

Our second example is southern mountain caribou. This is considered an umbrella species, which means conserving its habitat would result in many other species being conserved at the ecosystem or landscape level.[74] Despite this, the B.C. government has failed to reduce habitat loss in southern mountain caribou habitat by the minimum Aichi target of 50 per cent. The overall loss of caribou habitat in B.C. has actually increased during the Aichi decade.[75]

Southern mountain caribou rely on old-growth high and low elevation forests as they migrate seasonally between the two. Caribou critical habitat in these forests was partially mapped by the federal government in 2014. In spite of this, a recent scientific analysis shows that the rates of logging in southern mountain caribou habitat in B.C. actually increased after 2014, when the federal government released the critical habitat maps for the species. Between 2014 and 2018, logging in the species' critical habitat increased by an average of 53 per cent compared to the five years before.[76]

For additional context, the total area of cutblocks in southern mountain caribou critical habitat from 2008-2010 was 27,427 hectares, compared to 29,816 hectares from 2018-2020. This shows that the overall rate of caribou habitat loss increased by eight per cent in the last decade.[77] B.C. has not halved the rate of habitat loss for caribou and all the other species dependent on that habitat. In fact, B.C. is going in the wrong direction.

We thus give B.C. a failing grade for achieving Aichi Target 5. To do better on its next report card, B.C. must:

- Create legislation (e.g. an overarching biodiversity law – see below) that protects all native ecosystems based on Indigenous knowledge and the best-available conservation science. This will ensure all native ecosystems are able to persist into the future, and will also prevent many species from becoming at-risk. Saving species at risk can be difficult, expensive and time consuming. Proactive measures to prevent species from becoming at risk will likely save B.C. effort, time and money in the long term.
- B.C. must ensure that the overall rate of habitat loss in the province is reduced by well over 50 per cent. Since B.C. failed to meet the minimum threshold of a 50 per cent reduction by 2020, they have additional ground to cover and must immediately take steps to meet a higher target.
- Amend the *Forest and Range Practices Act* and its regulations to remove the current limitation stating that biodiversity protections cannot "unduly impact" forest timber supply. This outdated clause must be removed if B.C. is ever to achieve Aichi Target 5.

Other Laws to Protect Biodiversity

Grade: F

Standards we used to measure the province's performance:

- Has B.C. met the **Aichi targets and other legal obligations discussed in this report card** through other biodiversity protection laws (especially sector-specific laws)? In particular, do B.C.'s sector-specific laws provide meaningful protection to the province's biodiversity, by protecting species, ecosystems and the habitat they need from harmful resource development and other activities?
- Has B.C. made substantive progress towards **enacting an overarching biodiversity law**, as recommended by the old-growth strategic review panel?[78]

As part of the B.C. government's "complex" response to addressing the ongoing decline of the province's species and ecosystems, they claim to protect biodiversity through several different laws that regulate specific industry sectors (e.g. forestry, or oil and gas).

B.C. does indeed provide limited, partial protections to some species and ecosystems through these laws. However, none of the laws provide enough protection to ensure the survival and recovery of most of B.C.'s biodiversity. Provincial laws are fragmented and "siloed," varying according to the industry sector they regulate.[79] In the B.C. government's own words, the sector-specific approach "has created a patchwork of rules that do not effectively or consistently protect all species at risk or their habitats from all types of human-related impacts across all types of land use."[80]

Case Study: Northern Spotted Owl (*Strix occidentalis caurina*)

The northern spotted owl lives in low elevation old-growth forests in southwestern B.C.[81] It is an important indicator species, meaning its health reflects the health of the old-growth ecosystem in which it lives.[82] Listed as endangered under SARA in 2003, it is one of Canada's most imperiled species. Despite this, and in what can be considered one of Canada's and B.C.'s worst failures to prevent a species from being lost, the spotted owl is functionally extinct in B.C.'s wild and on the brink of extirpation in Canada.[83] From a historic population of more than 500 pairs, there are now as few as three known spotted owls remaining in the wild.[84]

The primary threat to the survival and recovery of the spotted owl is unsustainable logging practices, specifically clearcut logging.[85] Yet despite its legal designation under SARA, a lack of protection under B.C. law has allowed destruction of much of the owls' critical habitat, resulting in the steep decline of the species. Instead of habitat protection, B.C.'s primary focus has been on a captive breeding program. Introduced in 2006 with the goal of releasing 10-20 owls per year, the program has yet to successfully release a single captive-bred owl into the wild.[86]

In a good step forward, ongoing logging of the habitat around the last known breeding pair in the wild has been halted temporarily, as a result of efforts by Ecojustice, Wilderness Committee and Spô'zêm (Spuzzum) First Nation.[87]

Spotted Owl (Jared Hobbs)

A one-year logging deferral has been issued in Spô'zêm (Spuzzum) Valley and Utzilus watershed, providing a reprieve for the owls. Meanwhile, B.C. and Canada are working on an updated, and long overdue (by 14 years), Recovery Strategy that will identify and meaningfully protect the critical habitat needed to prevent the extirpation of the spotted owl in B.C.[88]

Some laws like B.C.'s *Forest and Range Practices Act* expressly limit the effect biodiversity protection can have on resource development (biodiversity orders must not "unduly reduce the supply of timber from British Columbia's forests").[89] Under this act and its regulations, the courts have confirmed that neither the government nor logging companies are required to prevent logging in threatened ecosystems, including in severely endangered old-growth coastal Douglas-fir forests. Coastal Douglas-fir forests are nominally listed as "protected" under B.C. forestry laws and policies, but the protections do not apply unless the government gives specific notice to forest companies, which government often chooses not to do.[90] Under B.C.'s forestry laws, the maintenance of short-term timber supply explicitly trumps the public interest in biodiversity conservation — even when it involves the potential disappearance of an entire old-growth forest ecosystem.

B.C.'s resource laws — including those governing forestry, oil and gas, and mining — also suffer from the government's systemic adoption of a "professional reliance" model for industry.[91] This has meant that industry-hired consultants, rather than government decision-makers, make most decisions about how to conduct industrial development on Crown lands in a manner that protects public interests, including the public interest in biodiversity conservation. As noted in a recent B.C. government report on this issue, this does not work to protect either the general public or Indigenous groups:

"Not only do many public interests fall outside of the expertise of a given profession, there is a strong public expectation that their interests be decided by those who are democratically accountable. The general public does not elect the councils of professional organizations. Indigenous governments and communities expect to address their interests through government to government relationships. The professional organizations involved in this review made it clear that they too consider that government has an essential role in these matters."[92]

Critically, B.C. does not have any tools that set limits on development to protect biodiversity outside of protected areas. While the province has developed a cumulative effects framework, it is primarily a tool for generating information.[93] The framework does not create any new legal requirements; in particular, the government is not required to refrain from issuing further approvals in areas that already have too much development to support species' habitat needs or the integrity of ecosystems. This compounds a general problem that B.C.'s resource laws rely primarily on mitigating (i.e. reducing) impacts, rather than on avoiding impacts.[94] Even when industrial projects are likely to harm endangered species and the habitat they need to survive — a situation which in the United States would halt further approvals — the vast majority of projects in B.C. are approved subject to unproven "mitigation measures".[95]

Finally, the legal land "conservation" designations established under B.C.'s natural resource laws are convoluted, conradictory and riddled with loopholes. These designations do not protect against all resource sectors or activities that harm wildlife and destroy habitat; they include broad exemption or permitting processes that disregard jeopardy to survival and recovery of species, ecosystem integrity, and cumulative effects.

For example, old-growth management areas (OGMAs) are nominally meant to protect portions of B.C.'s remaining old-growth forests, but are often too small to maintain ecosystem function, sometimes do not contain any old trees, and allow continued logging, road-building and other industrial development.[96] In a recent report, the government-appointed old-growth strategic review panel expressed strong concern about the results of scientific research on "edge effects" in OGMAs next to roads and recent cut-blocks. The research showed that species dependent on old forests had disappeared up to 100 metres from the edge of the relevant opening.[97]

As a further example, wildlife habitat areas — the primary tool the government uses to protect the habitat of endangered wildlife in the industrial forestry context — allow continued industrial and other harmful activities, frequently exclude the most important and productive habitat for species, and do not provide permanent protection.[98]

As this biodiversity report card was going to press, the B.C. auditor general released a report about the province's management of its conservation lands program, which covers wildlife management areas in some of the most biologically-productive estuaries, wetlands and grasslands in the province.[99] The auditor general concluded that the province has not effectively managed these conservation lands to conserve important habitat. Between 2016-2020 there were hundreds of unauthorized activities on these lands, including harvesting, dumping and motor-vehicle use. The report noted that the province has limited strategies to deal with unauthorized uses, and that the entire conservation lands program lacks overall strategic direction.

In short, outside of parks and protected areas, conservation designations in B.C. do not provide adequate protection against destructive resource development.

The old-growth strategic review panel noted these various problems with B.C.'s forestry and other resource-specific laws and proposed a solution: namely, that the province enact a new, overarching biodiversity law to prioritize ecosystem health and biodiversity conservation across all sectors.[100] The old-growth panel recommended that the government establish a process as soon as possible to align all land-related provincial legislation, management systems and processes with these overarching priorities.

The B.C. NDP government has promised to implement all the old-growth panel's recommendations. To date, it has made little progress in doing so, and no apparent progress at all in developing an overarching biodiversity law.[101]

Accordingly, B.C. also gets a failing grade for its other approaches to protecting biodiversity. To improve its grade in future reports, B.C. must:

- Enact an overarching biodiversity law that establishes ecosystem health and biodiversity as top priorities across all resource sectors, and that requires government to develop and implement plans to protect and recover biodiversity at all scales (e.g. populations, species, ecosystems, regions). Recognition of Indigenous jurisdiction, laws, knowledge and worldviews must shape all aspects of the development and application of this new law.
- Strengthen and standardize the level of protection in the current patchwork of sector-specific conservation designations, including OGMAs and wildlife habitat areas, and apply those standardized protections across all sectors. This could be done either by converting them to a new, stronger designation (e.g. a "Biodiversity Conservation Area"), or by establishing minimum levels of protection, and common exemption or permitting mechanisms,[102] that apply across all of them.
- Above all, ensure that B.C.'s species and ecosystems have enough fully-protected habitat to ensure their survival and recovery, based on the best available science and Indigenous knowledge.

Conclusion

B.C. is already in the grips of the biodiversity crisis. This report has shown, it is doing little to find a way out.

The province can still make up for lost time. By following the recommendations in this report, B.C. can live up to its legal and international commitments to conserve the natural systems here.

The province can chart a new way forward — one where ecosystems, wildlife and human communities co-exist and flourish. After all, we are also part of the planet's biodiversity. We need healthy, functioning ecosystems to provide our basic needs the same way caribou, bees and frogs do.

It's time for the province, and all of us, to get to work. In the next decade and the years to follow, we must set and hold the course toward a healthy, thriving British Columbia, or risk losing the spectacular nature here forever.

References

1. IPBES. 2019. Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. S. Díaz, J. Settele, E. S. Brondízio E.S., H. T. Ngo, M. Guèze, J. Agard, A. Arneth, P. Balvanera, K. A. Brauman, S. H. M. Butchart, K. M. A. Chan, L. A. Garibaldi, K. Ichii, J. Liu, S. M. Subramanian, G. F. Midgley, P. Miloslavich, Z. Molnár, D. Obura, A. Pfaff, S. Polasky, A. Purvis, J. Razzaque, B. Reyers, R. Roy Chowdhury, Y. J. Shin, I. J. Visseren-Hamakers, K. J. Willis, and C. N. Zayas (eds.). IPBES secretariat, Bonn, Germany. 56 pages. https://doi.org/10.5281/zenodo.3553579; WWF. Living Planet Report 2020 - Bending the curve of biodiversity loss. Almond, R.E.A., Grooten M. and Petersen, T. (Eds). WWF, Gland, Switzerland.; Science Academies of the Group of Seven (G7) Nations. March 2021 Statement: Reversing biodiversity loss – the case for urgent action. https://www.academie-sciences.fr/pdf/rapport/Biodiversity_G72021.pdf.

2. Bradshaw C.J.A., Ehrlich P.R., Beattie A., Ceballos G., Crist E., Diamond J., Dirzo R., Ehrlich A.H., Harte J., Harte M.E., Pyke G., Raven P.H., Ripple W.J., Saltré F., Turnbull C., Wackernagel M., and Blumstein D.T. 2021. Underestimating the Challenges of Avoiding a Ghastly Future. Frontiers in Conservation Science. 1:615419. doi: 10.3389/fcosc.2020.615419.

3. Westwood A.R., Otto S.P., Mooers A., Darimont C., Hodges K.E., Johnson C, Starzomski B.M., Burton C., Chan K.M.A., Festa-Bianchet M., Fluker S., Gulati S., Jacob A.L., Kraus D., Martin T.G., Palen W.J., Reynolds J.D., and Whitton J. 2019. Protecting biodiversity in British Columbia: Recommendations for developing species at risk legislation. FACETS 4: 136–160. doi:10.1139/facets-2018-0042.

4. Austin M.A., Buffett D.A., Nicolson D.J., Scudder G.G.E. and Stevens V.E. (eds). 2008. Taking Nature's Pulse: The Status of Biodiversity in British Columbia. Victoria: Biodiversity BC.

5. See 1996 Accord for the Protection of Species at Risk in Canada, available at: https://www.sararegistry.gc.ca/virtual_sara/files/agreements/aa_Canada-British_Columbia_agreement_on_species_at_risk_0805_e.pdf

6. Target 2 of the Canadian Biodiversity Strategy reflects a similar commitment, though it focuses on species at risk listed under federal law (B.C. is responsible for protecting and recovering many more species at risk): "By 2020, species that are secure remain secure, and populations of species at risk listed under federal law exhibit trends that are consistent with recovery strategies and management plans." Convention on Biological Diversity. Canada - National Targets (Canadian Biodiversity Strategy). Available at: https://www.cbd.int/countries/targets/?country=ca.

7. B.C. ministers and government staff regularly claim that B.C.'s response to biodiversity protection is "complex". For example, in a May 2016 response letter to groups concerned about the effects of logging on migratory birds, the then-Minister of forests stated that provincial management of migratory birds "is a component of the province's complex ecosystem management strategies."

8. The BC Conservation Data Centre has currently identified over 600 "red-listed" endangered and threatened species in B.C.: BC Conservation Data Centre. 2021. BC Species and Ecosystems Explorer. BC Min. of Env. Victoria, B.C.. Available at: https://a100.gov.bc.ca/pub/eswp/. Accessed Apr 30, 2021.

9. Central elements of species at risk legislation include: assessment of species at risk based on the best available science and Indigenous knowledge; legal listing of, at minimum, endangered and threatened species; immediate protections against harm to individuals; protection of habitat; and the timely development and implementation of recovery plans. BC agreed to implement all of these by establishing complementary legislation and programs to provide for the effective protection of at-risk species – see 1996 Accord for the Protection of Species at Risk in Canada, available at: https://www.sararegistry.gc.ca/virtual_sara/files/agreements/aa_Canada-British_Columbia_agreement_on_species_at_risk_0805_e.pdf.

10. As of June 15, 2020, there were 1336 Red and Blue listed species but 2373 species that would qualify under the criteria used for Red and Blue listing: Pers. communication: Sarah Otto. May 6, 2021. A Red-listed species is extirpated (extinct in the province), endangered or threatened. Blue-listed species are "special concern" (i.e. not yet threatened, but vulnerable to further decline).

11. Westwood A.R., Otto S.P., Mooers A., Darimont C., Hodges K.E., Johnson C, Starzomski B.M., Burton C., Chan K.M.A., Festa-Bianchet M., Fluker S., Gulati S., Jacob A.L., Kraus D., Martin T.G., Palen W.J., Reynolds J.D., and Whitton J. 2019. Protecting biodiversity in British Columbia: Recommendations for developing species at risk legislation. FACETS 4: 136–160. doi:10.1139/facets-2018-0042. Pg. 138.

12. Cox, S. Nov 20, 2020. B.C. government gives okay to trap endangered fishers for fur as scientists warn of impending extinctions. The Narwhal. Available at: https://thenarwhal.ca/b-c-government-trap-endangered-fishers-fur-extinction/.

13. British Columbia Fisher Habitat and Forestry Web Module. Available at: https://www.bcfisherhabitat.ca/.

14. BC Conservation Data Centre. 2020. Conservation Status Report: *Pekania pennanti* pop. 5. B.C. Ministry of Environment. Available at: https://a100.gov.bc.ca/pub/eswp/.

15. Cox, S. Nov 20, 2020. B.C. government gives okay to trap endangered fishers for fur as scientists warn of impending extinctions. The Narwhal.

16. Ibid.

17. BC Trapping Regulations. Available at: https://www2.gov.bc.ca/assets/gov/sports-recreation-arts-and-culture/outdoor-recreation/fishing-and-hunting/hunting/regulations/2020-2022/trapping-synopsis-2020-2022.pdf.

18. Updates are posted on the "Trapping in B.C." website at: www.gov.bc.ca/trapping, but there do not appear to be any updates (accessed on May 4, 2021).

19. The Furbearers. May 3, 2021. Action Alert: Support fisher trapping restrictions in BC. Available at: https://thefurbearers.com/blog/action-alert-support-fisher-trapping-restrictions-in-bc/.

20. Forest Practices Board. May 7, 2021. Fisher habitat impacted by logging. Available at: https://www.bcfpb.ca/news-resources/news-releases/fisher-habitat-impacted-by-logging/.

21. Cox, S. Aug 8, 2020. British Columbia's looming extinction crisis. The Narwhal. Available at: https://thenarwhal.ca/bc-extinction-crisis/.

22. Environment and Climate Change Canada. Feb 25, 2021. Multi-species pilot projects and Spotted Owl recovery actions in British Columbia – Backgrounder. Available at: https://www.canada.ca/en/environment-climate-change/news/2021/02/multi-species-pilot-projects-and-spotted-owl-recovery-actions-in-british-columbia.html.

23. The Purcells Central, South Purcells and South Selkirk herds are now extirpated (locally extinct) or functionally extirpated: Shore, R. 2018. BC's Selkirk Mountains' Gray Ghost caribou herd 'functionally extinct.' Vancouver Sun. Retrieved from https://vancouversun.com/news/local-news/b-c-s-selkirkmountains-gray-ghost-caribou-herd-functionally-extinct; as are the Monashee, George Mountain and Burnt Pine herds: Government of British Columbia, & Government of Canada. 2017. Canada and British Columbia southern mountain caribou protection study 2017. Available at: https://www.canada.ca/en/environment-climate-change/services/ species-risk-public-registry/publications/canada-britishcolumbia-caribou-study-2017/chapter-2.html.

24. Hobbs, J. 2019. Spotted Owl Survival and Recovery in British Columbia: Expert Report, at pp 7-10.

25. Habitat loss is a key driver of decline for more than 80% of Canada's assessed species at risk – this figure rises to greater than 95% for terrestrial species: Venter, O., Brodeur, N.N., Nemiroff, L., Belland, B., Dolinsek, I.J., Grant, J.W.A. 2006. Threats to Endangered Species in Canada. BioScience, Volume 56, Issue 11, Pages 903–910. See also Woo-Durand, C., Matte, J-M., Cuddihy, G., McGourdji, C.L., Venter, O., and Grant, J.W.A. 2020. Increasing importance of climate change and other threats to at-risk species in Canada. Environmental Reviews. https://doi.org/10.1139/er-2020-0032.

26. See a new (April, 2021) mapping tool developed by the Wilderness Committee, "Species Extinction: Industry Out of Control", at: https://storymaps.arcgis.com/stories/706a64b95cbb4d9b9b6d2af60cc03b4e. The mapping tool shows industrial development that is new, proposed, permitted or in the planning phase inside federally-mapped critical habitat.

27. B.C. Mandate Letter to Minister Heyman. July 18, 2017.
https://www2.gov.bc.ca/assets/gov/government/ministries-organizations/premier-cabinet-mlas/minister-letter/heyman-mandate.pdf

28. B.C. Mandate Letter to Minister Heyman. Nov 26, 2020.
https://www2.gov.bc.ca/assets/gov/government/ministries-organizations/premier-cabinet-mlas/minister-letter/heyman_mandate_2020.pdf

29. Westwood et al. 2019. Protecting biodiversity in British Columbia: Recommendations for developing species at risk legislation. FACETS 4: 136–160. doi:10.1139/facets-2018-0042.

30. Edward O. Wilson. 2016. Half-Earth. Our Planet's Fight for Life. Liveright Publishing Corporation. At pp 4 and 186.

31. E.O. Wilson. 2016, note 30 above, at p 186. Conservation frameworks can also be tailored to local conditions – e.g. for urban and agricultural areas, focus on securing endangered species and protecting remaining primary ecosystem fragments; for shared lands, focus on developing an appropriate protected areas network and on restoring and maintaining ecological integrity and viable populations of native species (protecting 25-75% of each ecoregion); for wild or intact lands, retain overall ecological integrity by establishing large protected areas and IPCAs, and secure Indigenous livelihoods – see Locke, H., Ellis, E.C., Venter, O., Schuster, R., Ma, K., Shen, X., Woodley, S., Kingston, N., Bhola, N., Strassburg, B.B.N., Paulsch, A., Williams, B., Watson, J.E.M. 2019. Three global conditions for biodiversity conservation and sustainable use: an implementation framework. National Science Review. Volume 6, Issue 6, Pgs 1080–1082. doi.org/10.1093/nsr/nwz136.

32. Coast Information Team, April 2004 Ecosystem Spatial Analysis: found 2021-03-09 at https://www.for.gov.bc.ca/tasb/slrp/citbc/pubpowe.html

33. Old-growth Review Panel (Gorley, A. and Merkel, G.). 2020. A New Future for Old Forests: A Strategic Review of How British Columbia Manages for Old Forests within its Ancient Ecosystems, at p 31: "Knowing how much to maintain as forest with old trees is guided by the notion that mimicking nature is the approach that presents the least risk to biodiversity…. Conservation science provides us with a general risk rating, telling us that if we retain 70% or more of the natural abundance of forest with old trees the risk of species loss, compromised ecosystem services, and losing ecosystem resilience is low. If we retain below 30%, the risk is high. At between 30% and 70%, the risk varies by ecosystem."

34. The BC Conservation Data Centre lists 168 red-listed ecological communities (which are extirpated, endangered, or threatened), and an additional 176 blue-listed ("special concern") ecological communities: BC Conservation Data Centre. 2021. (note 14 above).

35. Price, K., Holt, R.F. and Daust, D. 2020. BC's Old-growth Forest: A Last Stand 2020. Overall, only about 400,000ha of remaining old forest have an SI >20m, representing less than 1% of B.C.'s total forest area of roughly 50 million ha.

36. Price et al. 2020, note 35 above at pp 6-7; and Old-growth Review Panel, 2020, note 33 above at pp 6-7.

37. Price et al. 2020, note 35 above at p 7.

38. Coast Information Team. 2004. CIT Ecosystem-based Management Framework at p 2.

39. University of British Columbia, Centre for Forest Conservation Genetics, Faculty of Forestry. Coastal Douglas Fir Zone. Available at: https://cfcg.forestry.ubc.ca/resources/cataloguing-in-situ-genetic-resources/cdf-zone/.

40. Lavoie, J. 2018. Did B.C. misrepresent public 'support' for Douglas-fir protection plan? The Narwhal.
Available at: https://thenarwhal.ca/did-b-c-misrepresent-public-support-for-douglas-fir-protection-plan/.

41. University of British Columbia, Centre for Forest Conservation Genetics, Faculty of Forestry. Coastal Douglas Fir Zone.

42. McConkey, Darryn. Senior Ecosystem Biologist MoFLNRO. Ecosystem Classification in BC: Coastal Douglas--fir Ecosystems. Available at: http://www.sccp.ca/sites/default/files/species-habitat/documents/coastal%20douglas-fir%20conservation%20McConkey%20SCCP%20SEAR-LG_0.pdf.

43. Ancient Forest Alliance. Action Alert: Support Expanded Protection of the Endangered Coastal Douglas-Fir ecosystem in British Columbia! Available at: https://www.ancientforestalliance.org/action-alert-support-expanded-protection-of-the-endangered-coastal-douglas-fir-ecosystem-in-british-columbia/.

44. South Coast Conservation Program. Available at: http://www.sccp.ca/species-habitat/coastal-douglas-fir.

45. McConkey, Darryn. Ecosystem Classification in BC: Coastal Douglas--fir Ecosystems.

46. University of British Columbia, Centre for Forest Conservation Genetics, Faculty of Forestry. Coastal Douglas Fir Zone.

47. Lavoie, J. 2018. Did B.C. misrepresent public 'support' for Douglas-fir protection plan? The Narwhal.

48. The amount to be protected varies by ecosystem, but should be based on Indigenous knowledge and the best-available conservation science: E.O. Wilson. 2016, note 30 above; Old-growth Review Panel 2020, note 33 above, at p 31.

49. Biodiversity management requires both "coarse-filter" (e.g. representative parks and protected areas, coordinated development at the landscape level) and "fine-filter" (e.g. species-specific) approaches: Westwood et al. 2016, note 3 we above, at p 141. See also: Pathway to Canada Target 1. Discussion Paper: Ecological Representation. Presented by Expert Task Team Members: Jessica Elliott, Evelyn Gah, Karen Hartley and Chantal Vis. And see: Lemelin, L.-V. and Darveau, M. 2006. Coarse and fine filters, gap analysis, and systematic conservation planning. The Forestry Chronicle. 62(6): 802-805.

50. Price et al., 2020, note 35 above, at p 9; E.O. Wilson. 2016, note 30 above; Old-growth Review Panel 2020, note 33 above, at p 31.

51. Target 1 of the Canadian Biodiversity Strategy, note 6 above, uses very similar language.

52. See Canadian Protected and Conserved Areas Database, "Summary table - Protected and other Conserved Areas in Canada, December 2020". Available at: https://www.canada.ca/en/environment-climate-change/services/national-wildlife-areas/protected-conserved-areas-database.html. Accessed April 17, 2021.

53. See Pathway to Canada Target 1, Decision Support Tool; For Assessing Areas Against Pan-Canadian Standards for Protected and Conserved Areas for Terrestrial and Inland Waters (March 2021). Available at: https://static1.squarespace.com/static/57e007452e69cf9a7af0a033/t/608072ffe432dc2f539ecf9e/1619030785401/DST_EN_03-2021%282%29.pdf. The Decision Tool notes at page 6 notes that an area will not meet the standard for a protected or conserved area (OECM) if the legal mechanisms governing the area "do not compel authorities to prohibit activities incompatible with the… conservation of biodiversity and/or incompatible activities are being allowed or are likely to occur." See also page 21: "Due to their typically negative impacts on the… conservation of biodiversity, industrial activities… are not compatible with Protected Areas or OECMs."

54. For example, B.C. claims that "legal, spatial" old-growth management areas (OGMAs) should be considered conserved areas (OECMs) that contribute to B.C.'s totals – however, the independent B.C. Forest Practices Board has found that OGMAs do not provide good, long-term protection for biodiversity, that logging and road-building are still allowed in OGMAs, and that non-forestry tenures and activities are often not required to address old-growth retention: see e.g. Forest Practices Board, Conserving Old-growth Forests in BC, FPB/SIR/36, June 2012. Found at: https://www.bcfpb.ca/wp-content/uploads/2016/05/SIR36-OGMAs.pdf. CPCAD Dec. 2020 Summary Table (note 52 above).

55. CPCAD Dec. 2020 Summary Table (note 52 above).

56. See B.C. Ministry of Environment and Climate Change Strategy. 2016. Environmental Reporting. Available at: http://www.env.gov.bc.ca/soe/indicators/land/protected-lands-and-waters.html.

57. Secretariat to the Convention on Biological Diversity. Quick Guide to the Aichi Biodiversity Targets, Target 11; Protected areas increased and improved. Available at: https://www.cbd.int/nbsap/training/quick-guides/.

58. Bolliger, CS, Raymond, C.V., Schuster R., and Bennett, J.R. 2020. Spatial coverage of protection for terrestrial species under the Canadian Species at Risk Act. Écoscience. Vol. 27, No. 2, 141–147.

59. Pers. communication: Richard Schuster. April 28, 2021.

60. The Canadian federal government has set a target of protecting 25% of Canada by 2025 – see https://www.canada.ca/en/environment-climate-change/services/nature-legacy/canada-target-one-challenge.html.

61. The High Ambition Coalition (including Canada) is working towards a global agreement to increase spatial targets to protect or effectively conserve at least 30 percent of the planet - land and sea - by 2030. Efforts are to promote Indigenous-led conservation and focus on areas most important for biodiversity. The resulting network of conserved areas should be ecologically-representative, well-connected, effectively and equitably-managed, and help to maintain species diversity. See: https://www.campaignfornature.org/high-ambition-coalition.

62. Schuster, R., Germain, R.R., Bennett, J.R., Reo, N.J., Arcese, P. 2019. Vertebrate biodiversity on indigenous-managed lands in Australia, Brazil, and Canada equals that in protected areas. Environmental Science & Policy. https://doi.org/10.1016/j.envsci.2019.07.002.

63. A Key Biodiversity Area (KBA) is a globally-recognized scientific designation established by the IUCN and accepted by many countries, including Canada, as a priority area for species at risk and where biodiversity can be protected most effectively. KBAs are in the process of being identified in Canada, particularly in B.C. – see KBAs in Progress: http://www.kbacanada.org/canada-kbas-in-progress/.

64. Target 6 of the Canadian Biodiversity Strategy, note 6 above, reflects this Aichi commitment: By 2020, continued progress is made on the sustainable management of Canada's forests.

65. For more details, see the section below on B.C.'s other legal approaches to biodiversity protection.

66. Old-growth Review Panel. 2020, note 33 above.

67. See Forest Practices Board report found 2021-02-11 at https://www.bcfpb.ca/wp-content/uploads/2016/04/SIR21-Est-Conservation-Areas-for-Old-Growth.pdf at p 5: the upper limit of any impacts of the province's identified wildlife management strategy has generally been a mere one percent of short and long term harvest levels per forest district (one percent of the mature and total timber harvesting land base area).

68. Allowable Annual Cut - Timber Supply Areas - Province of British Columbia. (n.d.). Retrieved May 12, 2021, from https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/timber-supply-review-and-allowable-annual-cut/allowable-annual-cut-timber-supply-areas

69. Nicholls, D. 2014. British Columbia Ministry of Forests, Lands and Natural Resource Operations. Mackenzie Timber Supply Area Rationale for Allowable Annual Cut (AAC) Determination. See also: Mackenzie Timber Supply Area - Province of British Columbia. (n.d.). Retrieved May 7, 2021, from https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/timber-supply-review-and-allowable-annual-cut/allowable-annual-cut-timber-supply-areas/mackenzie-tsa. And see: Berg, S. (2019). British Columbia Ministry of Forests, Lands, Natural Resource Operations and Rural Development. Fort Nelson Timber Supply Area Rationale for Allowable Annual Cut (AAC) Determination.

70. Dawe, C. 2019. Logging to Extinction. Available at: https://www.wildernesscommittee.org/sites/default/files/2019-05/2019_logging-old-growth_paper.pdf.

71. Wieting, J. July 14, 2016. Vancouver Island old-growth logging rate will lead to collapse - Sierra Club BC. Sierra Club. Available at: https://sierraclub.bc.ca/vancouver-island-old-growth-collapse/.

72. CBC News. May 3, 2021. Old-growth logging approvals in B.C. have gone up over the past year, report suggests. CBC. Available at: https://www.cbc.ca/news/canada/british-columbia/old-growth-logging-approvals-up-wildnerness-committee-1.6012700.

73. The Tyee. April 2021. No New Money for Old-growth Protection in BC's Budget - Ancient Forest Alliance. Available at: http://www.ancientforestalliance.org/no-new-money-for-old-growth-protection-in-bcs-budget/.

74. Environment Canada. 2014. Recovery Strategy for the Woodland Caribou, Southern Mountain population (Rangifer tarandus caribou) in Canada. Species at Risk Act Recovery Strategy Series. Environment Canada, Ottawa. viii + 103 pp.

75. It is important to note that in early 2020 the West Moberly First Nations, the Saulteau First Nation and the B.C. and federal governments reached an agreement to provide interim habitat protection to some herds in the Central Group of southern mountain caribou through a "Partnership Agreement". While this was a significant step in the right direction, the gains from the Partnership Agreement were offset by more-intensive habitat destruction elsewhere.

76. Palm, E.C., Fluker, S., Nesbitt, H. K., Jacob, A. L., and Hebblewhite, M. 2020. The long road to protecting critical habitat for species at risk: The case of southern mountain woodland caribou. Conservation Science and Practice, 2(7), e219. https://doi.org/10.1111/csp2.219. Page 6: "Logging increased by 49% in high and low elevation habitat and 57% within 'matrix' ranges compared to the five years before critical habitat identification."

77. Mapping analysis by the Wilderness Committee shows habitat loss in caribou critical habitat increased from 2008-2010 to 2018-2020.

78. Old-growth Review Panel. 2020, note 33 above, Recommendation #2 and related implementation advice.

79. Ray, J., Grimm, J., and Olive, A. 2021. The biodiversity crisis in Canada: Failures and challenges of federal and sub-national legal frameworks FACETS, in press.

80. B.C. Ministry of Environment and Climate Change Strategy. 2018. Protecting Species at Risk: A Primer to Support a Conversation with British Columbians, at p 17. Available at: https://engage.gov.bc.ca/app/uploads/sites/376/2018/05/Protecting-Species-at-Risk_A-Primer-Apr16_rev.pdf

81. Chutter, M.J., Blackburn, I., Bonin, D., Buchanan, J., Costanzo, B., Cunnington, D., Harestad, A., Hayes, T., Heppner, D., Kiss, L., Surgenor, J., Wall, W., Waterhouse, L., and Williams, L. 2004. Recovery Strategy for the Northern Spotted Owl (Strix occidentalis caurina) in British Columbia. Prepared for the BC Ministry of Environment, Victoria, BC. 74 pp.

82. SFU. Northern Spotted Owl. Available at: http://www.sfu.ca/geog/geog351fall06/group03/Leah%27s%20Pages/Pages/Spotted_Owl.htm.

83. Hobbs, J. 2019. Spotted Owl Survival and Recovery in British Columbia: Expert Report. Available at: https://www.wildernesscommittee.org/sites/default/files/2019-05/2019%2002%2014%20WC%20SPOW%20Expert%20Report_0.pdf

84. Ecojustice. October 14, 2020. Ecojustice, Wilderness Committee demand federal emergency protections for dwindling northern spotted owls. https://ecojustice.ca/pressrelease/ecojustice-wilderness-committee-federal-emergency-order-spotted-owls/

85. Chutter et al. 2004. Recovery Strategy for the Northern Spotted Owl (Strix occidentalis caurina) in British Columbia.

86. Northern Spotted Owl Breeding Program. https://www.nsobreedingprogram.com/. Accessed on May 5, 2021.

87. Cox, S. Feb 25, 2021. This is something to celebrate': B.C. defers logging in home of Canada's last three wild spotted owls. The Narwhal. https://thenarwhal.ca/logging-deferred-bc-valleys-spotted-owls/

88. Environment and Climate Change Canada. Feb 25, 2021. Multi-species pilot projects and Spotted Owl recovery actions in British Columbia. https://www.canada.ca/en/environment-climate-change/news/2021/02/multi-species-pilot-projects-and-spotted-owl-recovery-actions-in-british-columbia.html

89. Government Actions Regulation, e.g. section 2(1)(b).

90. Western Canada Wilderness Committee v British Columbia (Ministry of Forests Lands and Natural Resource Operations), 2014 BCSC 808. Endangered coastal Douglas-fir ecosystems are listed under the province's Identified Wildlife Management Strategy but, as the court confirmed, this gives no mandatory protection to those ecosystems.

91. Haddock, M. 2018. Professional Reliance Review: The Final Report of the Review of Professional Reliance in Natural Resource Decision-Making. Government of BC. Available at: https://professionalgovernancebc.ca/app/uploads/sites/498/2019/05/Professional_Reliance_Review_Final_Report.pdf.

92. Ibid at p 43. The report made several recommendations about improving the professional reliance model in B.C..

93. As the B.C. government notes, "The cumulative effects framework does not create new legislative requirements; rather it informs and guides cumulative effects considerations through existing natural resource sector legislation, policies, programs and initiatives." See: https://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/cumulative-effects-framework/overview (accessed May 11, 2021).

94. Ray et al. 2021, note 79 above.

95. See Collard, R-C., Dempsey, J., and Holmberg, M. 2020. Extirpation despite regulation? Environmental assessment and caribou. Journal of Conservation Science and Practice. https://doi.org/10.1111/csp2.166. "We identify 65 EAs for major projects with potentially significant adverse impacts for caribou—all projects but one were approved. The results show that most projects were approved on the basis of proposed mitigation measures that promise to render adverse effects 'insignificant'; yet mitigation effectiveness is largely unknown." See also the US Endangered Species Act, section 7(a)(2), which prohibits the government from giving any approval that, according to the best available science, could jeopardize the survival of an endangered or threatened species, or destroy species' critical habitat.

96. Old-growth Review Panel. 2020, note 33 above, esp at 33-34; see also Forest Practices Board. 2012, note 54 above, at pp 4-5, 17-18 and 28-30.

97. Old-growth Review Panel. 2020, note 33 above, at p 33.

98. See e.g. Forest Planning and Practices Regulation, s 92(1)(b), which gives the government a general power to grant an exemption to the rules in any wildlife habitat area (WHA) if satisfied that compliance with the rules is not "practicable". Further, WHAs generally contain their own specific rules, which often include additional exemptions for industrial activities harmful to biodiversity conservation – see http://www.env.gov.bc.ca/wld/frpa/iwms/wha.html. See also Cox, S. (2021, February 9). B.C.'s old-growth forest nearly eliminated, mapping reveals. The Narwhal. Retrieved from https://thenarwhal.ca/bc-forests-old-growth-impacts-map/.

99. Auditor General of B.C. May 2021. Management of the Conservation Lands Program. https://www.bcauditor.com/sites/default/files/publications/reports/OAGBC_Conservation-Lands-Program_RPT.pdf.

100. Old-growth Review Panel. 2020, note 33 above, Recommendation #2 and related implementation advice at page 50. See also Ray et al. 2021, note 79 above.

101. See Wilderness Committee, Sierra Club BC and Ancient Forest Alliance. March 11, 2021. BC Government Old-Growth Report Card. Available at: https://www.wildernesscommittee.org/news/bc-not-track-meet-milestones-old-growth-first-nations-and-forestry-transition

102. E.g. based in principle on section 73 of SARA. In particular, no exemption or permit should be granted unless: (a) all reasonable alternatives to the activity that would reduce the impact on species and ecosystems have been considered and the best solution has been adopted; (b) all feasible measures will be taken to minimize the impact of the activity on species, their habitat, and ecosystem integrity; and, (c) the activity will not jeopardize the survival or recovery of any species, or the health or integrity of any ecosystem.

WILDERNESS COMMITTEE

ecojustice