

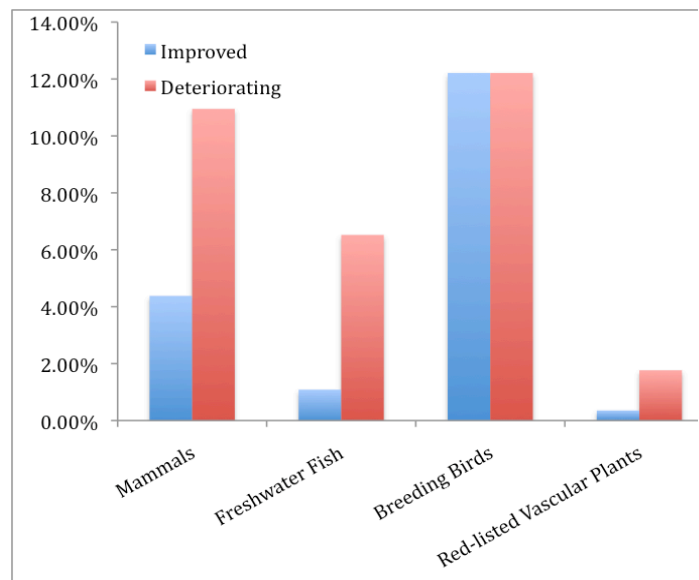
Building a Safety Net for BC's Biodiversity

Defining Vision, Principles and Outcomes

The quality of our lives in British Columbia relies on the diversity of species that surround us; they feed us, cloth us, house us, and inspire us. We share this province with over 50000 species of plants and animals¹, which live in a variety of ecosystems, from the arid grasslands of the Okanagan to the temperate rain forests of coastal Vancouver Island. These ecosystems provide us with our core needs for clean air, water, and climate regulation. A preliminary assessment of these ecosystem services suggests they represent \$5.4 billion in annual benefits for the Lower Mainland area alone². Biodiversity also serves as a treasure trove of new pharmaceuticals, agricultural varieties, and evolutionary potential in the face of a changing climate. With every species that becomes extinct or extirpated, with every unique natural habitat that becomes developed or destroyed, we lose a bit of BC's biodiversity capital for all future generations.

Sadly, the safety net for species at risk has holes too big to protect the species that are imperiled in British Columbia. Endangered species lack adequate legal protection in BC. The BC *Wildlife Act* does prevent the direct killing of endangered wildlife, but this Act has rarely been applied. Of the 1597 red- and blue-listed species compiled by the BC Conservation Data Centre³, only four are legally protected under the *Wildlife Act*⁴. Species listed under the federal *Species at Risk Act* (SARA) and living on Federal Crown lands are covered by this federal legislation, but federal lands amount to only 1% of the land base in BC⁵. Furthermore, the legal protection provided by SARA is weak, at best, because there are no enforced timelines to insure that recovery strategy and action plans are developed and applied. Indeed, not a single species in British Columbia has both a recovery strategy and action plan in place, as directed by SARA (only one species in Canada does, the Banff Springs snail). For the numerous species not occurring solely on federal lands in BC, a provincially-based solution is required.

In British Columbia, we have watched as the status of species continues to deteriorate. A comparison of the status of species in BC from the 1990s to the mid 2000s found that more species had declined in status than improved¹ (Figure). Although several breeding birds improved in status, most of these cases involved expanding northern ranges in response to climate change. The status of many other bird species has declined; for example, one of the species most at risk of extirpation from BC is the Northern spotted owl, which has declined from one hundred individuals in the early 1990s down to two breeding pairs in the latest census. Even relatively common species such as the horned grebe have undergone continued population declines⁶. These declines mirror the loss and declining status of biodiversity worldwide⁷. Globally, over one in five species of vertebrates⁸ and plants⁹ are now estimated to be at risk of extinction (critically endangered, endangered, or threatened).



In 1996, British Columbia, along with the other provinces and territories, signed the national Accord for the Protection of Species at Risk, a multi-lateral agreement coming out of Canada's 1992 ratification of the UN Convention on Biological Diversity (CBD). In 2002 Canada and its provinces and territories committed to a United Nations initiative to "achieve by 2010 a significant reduction of the current rate of biodiversity loss at the global, regional, and national level as a contribution to poverty alleviation and

to the benefit of all life on Earth”¹⁰. In the recent words of the Executive Secretary of the CBD, “we have failed”¹¹. Nonetheless, biodiversity targets have been reinvigorated at October’s CBD meeting in Nagoya, Japan, and British Columbia is in the position to be a Canadian and global leader in meeting biodiversity conservation commitments.

We, the undersigned scientists, have worked on conservation and biodiversity issues in British Columbia and beyond. We call upon British Columbia to develop binding legislation to protect species at risk and their critical habitats within the province. We call upon British Columbia to fulfill our global obligations and to avoid the risk of an irreversible loss in the quality of our lives through species extinction.

Principles:

- ***Unimpeded listing process*** – British Columbians are entitled to unbiased assessments of the status of species living in the province. These assessments should be scientifically based and should not be subject to approval based on the potential economic consequences of listing (***economics should be considered in the management process, not the assessment and listing process***). We do not consider that this principle has been satisfied with SARA, because the Minister of the Environment can choose whether or not to accept the assessments of COSEWIC and to list species under the Act (SARA Schedule 1). Species such as Chinook salmon (Okanagan population) and the winter skate have been denied Schedule 1 listing because of potential impacts to the fishing industry¹². As a result, fewer than 10% of marine fish assessed by COSEWIC as “at risk” have been officially listed as such¹³. Without listing, management and policy decisions that could improve status are unlikely to be identified or enacted. As an example, it has been projected that the lack of listing for the eastern Hudson Bay beluga whale (*Delphinapterus leucas*) will lead to its extinction within the near future (10-15 years)¹¹.
- ***Oversight of the listing process*** – Currently, the status of species at risk in the province is assessed by the BC Conservation Data Centre under the provincial Ministry of Environment. Our group was generally satisfied with the process and progress made by the BC Conservation Data Centre and with the open access of available data. We are concerned, however, that if species at risk were legally protected, political pressure might impede the assessment activities or countermand the assessment outcomes. We recommend that an ***independent oversight board be tasked with reviewing progress and decisions of the BC Conservation Data Centre***. The board, composed of individuals with relevant scientific expertise, would be obliged to ensure that British Columbians have accurate and valid assessments of species in our province, and it must be given sufficient powers to ensure that this occurs. In particular, the oversight board would have the authority to revise a status assessment if it is deemed to have been unduly influenced and to contract out assessment reports if they are not made in a timely manner.
- ***Scientific analysis of critical habitat*** – Identification of critical habitat, i.e., the habitat that is necessary to ensure the survival of a species, should be ***coupled with the assessment process***. It is during the initial scientific assessment that the ecological literature and monitoring reports are evaluated in depth for trends in species numbers and historical effects of habitat deterioration. It is at this time that the critical habitat should be identified in light of available information, ***with the possibility of future amendments***. A major potential problem with SARA is that critical habitat is identified after listing (and, for most listed species, has not been identified), leading to substantial delays in determining what protections are needed to prevent further declines. We are concerned that recovery teams have been advised to exclude detailed descriptions of critical

habitat in BC (in violation of federal policies¹⁴) and that current guidelines for provincial recovery planning do not require identification of critical habitat¹⁵. Critical habitat is the cornerstone of endangered species legislation in developed countries worldwide. Again, British Columbians are entitled to unbiased assessments of what lands and waters would be needed to preserve a species at risk.

- **Recovery planning** – Because recovery is largely a management issue (although scientifically grounded), the province should lead recovery efforts for “non-federal” species, in close collaboration with stewardship groups, stakeholders, and scientists. To ensure that action is not too little and too late, legislation should mandate reasonable recovery planning and timely action on these plans. Current provincial policies are too vague with respect to what species are covered and what actions must be taken with respect to restorative measures and habitat protection for species at risk. Further hindering effective action for protecting species at risk in BC has been a lack of resources, both in terms of funding and manpower. At present the province has no field program, staff, or budget for monitoring the efficacy of recovery actions, which risks wasting the limited funds that are in place on activities that are not cost-effective in achieving our conservation goals for preserving species and ecosystem at risk.
- **Balanced socioeconomic analyses** – Armed with the knowledge of which species are at risk and what is needed to reverse the declining status of a species, we recognize that a decision process for action will be taken that accounts for socioeconomic impacts. The assessment of any impacts of species recovery must, however, be **rigorous, balanced, and transparent**. It is insufficient and out of step with current best practices for socioeconomic analyses to account only for the short-term financial interests of immediate stakeholders. Management practices in fisheries and forestry are aimed at avoiding irreversible losses of major natural resources for future stakeholders. These management practices do not, however, adequately protect non-commercial species that are harmed as a result of by-catch or habitat destruction. Such species will continue to be imperiled as long as socioeconomic analyses focus on short- and long-term losses to stakeholders involved in natural resource extraction. Yet **British Columbians value biodiversity, and this valuation must also be assessed**, broadening the definition of ‘stakeholders’ to include those who value biodiversity for non-commercial purposes. Surveying the interests of Canadians, Rudd (2010) evaluated support for 20 quality-of-life initiatives and found that the top ranked initiative was “Protect our environment, ecosystems, and biodiversity” alongside “Reduce poverty and inequalities in wealth within Canada.” Furthermore, in an earlier study, Rudd¹⁶ found that Canadians were individually willing to increase taxation to conserve species at risk. Summed over the population, Canadians were willing to pay tens of millions of dollars for protection measures for relatively unknown species such as the porbeagle shark and up to hundreds of millions for Atlantic salmon¹⁷. Balanced socioeconomic assessments must consider the value that citizens place on conserving species at risk within British Columbia and **should be overseen by a board with economic, social, and scientific expertise**.
- **Appropriate action within mandated timelines** – One of the main lessons learned from equivalent federal legislation (SARA) is that if timelines are not in place, plans for action stall. Following listing, **strict timelines must be in place** for protective actions. At the federal level, protection for many species has stalled at the recovery strategy stage, before a finalized action plan has been approved. In part because of this lack of action, the status of many species listed under SARA has continued to decline or at least not to improve. Of 269 species at risk that have been reassessed by COSEWIC, the majority of changes in status have been declines (46 species) with only 27 species improving in status¹⁸.

- ***Protect against our ignorance*** – We do not have a complete list of species within British Columbia. Our knowledge of microbes (of particular value in terms of the ecosystem services they provide) and invertebrates is particularly poor, but we are continually discovering new species within our province, even among vertebrates (e.g., the newly distinguished Pacific wren, *Troglodytes pacificus*¹⁹). Because we cannot assess the status of unknown species and because rare and endemic species are particularly likely to remain undiscovered, ***protecting species at risk must be coupled with an ecosystem-based reserve design***. While we applaud the fact that the province has set aside 14% of habitat for preservation, future preserves must be better concentrated in areas containing high densities of species and ecosystems at risk. We note the lack of extensive protected areas in the most endangered ecosystems in BC (the Coastal Douglas Fir, Bunch Grass and Ponderosa Pine BEC Zones, as well as coastal marine areas)¹. With BC’s extensive coastline and imperiled marine fisheries, we are particularly concerned by the fact that only 0.64% of Canadian marine areas are protected²⁰.
- ***Protect against future climate change*** – In the face of global climate change, protecting biodiversity in BC also requires that we plan for plausible range shifts. This is particularly important for peripheral species whose ranges primarily occur to the south of BC. Given limited resources, protecting peripheral species with healthy populations south of the border should not generally be given as high a priority as protecting species endemic to or largely residing within BC. That said, we should prioritize peripheral species if it is likely that ranges would shift north in the face of climate change. Indeed, a recent study showed that most species with a reduced range persisted at the periphery of their historic ranges²¹. To the extent that peripheral species in BC are locally adapted to the physical and biotic community at the northern end of their current range, we risk reducing the genetic variation – the evolutionary capacity – for species to respond rapidly enough to selection to persist and move further north. Not only does habitat destruction and fragmentation cause the loss of these peripheral individuals, but it can also create a migration barrier preventing northern range expansion. In such cases, British Columbians could well be responsible for declines in a species even if the majority of its range is south of the border because we have obstructed range shifts to the north in response to climate. Protecting species at risk in a changing environment thus requires that we ***preserve genetic diversity at range edges and provide corridors to areas that are likely to become critical habitats in the future***.
- ***Judicial use of funds*** – Funds for preserving species and ecosystems at risk are limited, and we run the risk of funneling the majority of these funds into monitoring and repeated reassessments, rather than actions that ameliorate the risks faced by imperiled species and ecosystems. We recommend that a decision tree approach be used to guide how funds are spent (such as that outlined in reference 22); for example, if the threats to a species are known and the best management option is clear, this decision tree framework guides us to implement the best management option immediately, rather than a monitoring program. ***Limited resources should be allocated in a manner that most directly protects species at risk from further declines***.
- ***Stable funding*** – Identifying, monitoring, and protecting species at risk should not be subject to the vagaries of annual budgets and must remain a core function, with stable staffing, of provincial government agencies. Actions that protect a species at risk only in some years are meaningless if extinction occurs in the intervening time periods. An effective model for stabilizing funding might be an independent endowment similar to the Habitat Conservation Trust Fund (HCTF) model. HCTF provides funds for projects that enhance populations of wildlife species, using income generated from a permanent endowment as well as sales of hunting and fishing licences. A similar ***“Biodiversity Trust Fund” should be developed*** with an initial endowment, supplemented by opportunistic annual budget supplements from various

provincial revenue streams when resources are available (e.g. environmental levies, federal transfers for species at risk, large project compensation funds, etc.). A Biodiversity Trust Fund would then provide stable funding for status assessments, management, and recovery planning and action for species at risk.

- ***A considered delisting process*** – For species whose status does improve, care must be taken when delisting the species so that we do not place the species back in peril. If protection of critical habitat is what allowed the species to improve in status and the species is subsequently delisted, the critical habitat should not then be allowed to deteriorate. Otherwise, we will end up with a morass of listing and de-listing actions as species recover, only to decline thereafter, creating an inefficient species protection process. Similarly, we must be careful not to delist a species when it first starts to increase in numbers, rather delisting should be considered only when the species is self-sustaining and no longer reliant on current conservation measures.
- ***Evaluation of efficacy*** – Whatever legislation and practices are put in place, their efficacy must be evaluated at regular intervals by an independent body. The litmus test of efficacy should not be a measure of how many more laws, assessments, reports, or plans that we have, but a ***measure of the changes in health of species and ecosystems***.

We do not comment specifically on the other areas of input requested by the task force (“Regulatory Framework”, “Private Land Stewardship”, “Effective First Nation and Stakeholder Communications and Engagement”), as these fall largely outside of our area of expertise. We do, however, note that protecting BC’s biodiversity requires action by all parties. Protection for species at risk should occur where it is most needed and most effective, regardless of whether that land or water falls on private, provincial, or federal territory. We all benefit from BC’s biodiversity and natural resources, and we must all work together to protect them.

We recognize that protecting species at risk comes with costs. Costs through reduced harvesting, costs to identifying and preserving species at risk through by-catch, costs to not developing critical habitat. But there are also costs to not acting. Costs of reducing future natural resources, costs through disruptions in water filtration, biotic processing of pollutants, pollination, and other ecosystem services, as well as the moral costs of failing as stewards of BC’s biodiversity. A balance must be struck that allows for a healthy economy in BC and that protects species within our borders. Fortunately, these need not be opposing forces. Protecting species at risk and ecosystems in peril is in the best of interest of BC’s future economy, including future natural resource extraction, agriculture, bio-prospecting, human health and well-being, tourism, etc. Furthermore, a reputation as an environmental bad guy harms exports and the reputation of BC companies abroad; lax protection regulations also leave BC vulnerable to economic sanctions based on identification of a poor regulatory framework as a trade subsidy. Our economy is not helped when Canada ranks poorly on international assessments such as the Environmental Performance Index, where we were recently ranked 80th among 163 countries for preserving biodiversity and habitat and a sobering 140th for preserving the vitality of ecosystems overall²³.

“In British Columbia, Slaney et al. (1996) found that 142 salmon populations had gone extinct since recording began in the mid-20th century and that 624 more populations were at high risk out of 5487 salmon populations that could be assessed (57% of the total number of populations).”²⁴

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- ⁴ The Vancouver Island Marmot (*Marmota vancouverensis*), American White Pelican (*Pelecanus erythrorhynchus*), the Burrowing Owl (*Athene cunicularia*), and the Sea Otter (*Enhydra lutris*). <http://www.env.gov.bc.ca/wld/faq.htm>
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