



APB Member Survey: BC Government Public Engagement on Wildlife and Habitat

This provincial engagement process is the first step in a four-phase process that is intended to lead toward implementation of a new wildlife and habitat management strategy.

To frame the discussion, 8 challenges in wildlife management and habitat conservation in British Columbia were identified by the Province. Each Challenge includes a summary of opportunities and a specific question for comment that are reproduced here in this APB member survey.

Respondents (28 APB members) to the APB survey were welcome to provide a complete response, but encouraged to comment only on the 1 or 2 challenges that they felt are the highest priorities to address.

Challenge 1: Advancing reconciliation with Indigenous peoples in wildlife management and habitat conservation.

Opportunities:

- Build on and enhance existing collaboration on wildlife management and habitat conservation.
- Develop and implement new approaches for government-to-government collaboration and decision-making.
- Update programs and policies to advance the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), the Truth and Reconciliation Commission's calls to action, and the results of the Tsilhqot'in Nation decision.
- Other solutions developed in collaboration with Indigenous peoples.

Q1. What programs and policies are most important to advance meaningful and lasting reconciliation with Indigenous peoples and help implement the United Nations Declaration on the Rights of Indigenous Peoples?

13 responses

Comments:

1. Engagement between western science and Traditional indigenous knowledge to share knowledge and communicate ideas. For example the Tseil Waututh Nation just



coordinated a climate summit in Vancouver (no fee!) that was an excellent forum to share how we see the environment, what we collaboratively know about climate change challenges faced by wildlife (and us) and how to approach them together. I think, we need to put on forums like that to communicate, engage and collaborate with First Nations.

2. Build on existing.....but be ready to develop new approaches and collaborate with First Nations. One of course assumes they will be based on objective, empirical criteria and not political motivation(s).
3. We need to recognize that we took land that First Nations lived on and used for thousands of years so when there are plans for development there needs to be effective consultation.
4. Would like to see efforts focus on sustainable use of wildlife. At present, without meaningful regulation of protected right to hunt by aboriginal peoples, I am worried that what all of us value will be lost. I know that some First Nations are looking at self-regulation. I hope this is something that will be supported within Nations, by biologists, governments and others.
5. This should be determine with the Indigenous people. But I certainly don't support monetary handouts to any group.
6. Shared decision making with First Nations.
7. Meaningful consultation with indigenous people is needed. Hard truth discussions that may allow for percentage of allocation to indigenous people being a priority that may not be favoured by other resource users or government if it impacts revenue.
8. Wildlife and habitat recognize no boundaries. We cannot have "dual" management. Reconciliation must recognize this. I am dismayed at the number of First Nations referrals that go unanswered, or that arrive at the last minute. We need a program to ensure that everyone works to the same standard and agrees on regional management strategies.
9. Education around stewardship and land management practices for all band members. Re jiggling of indigenous peoples' value systems around grazing practices and range carrying capacity.
10. Listen to First Nations and informed by science; consult on regulatory changes.
11. In my experience of working with most of the First Nations in coastal BC, I would have to say that promoting First Nation stewardship (vs. ownership) and involvement in management of traditional territories is critical. I would also point out that all current and future citizens of BC have the right to the opportunity to hunt, fish and gather, and we expect the provincial government to protect that opportunity for all.
12. The first nations of BC are not a single entity, but a broad collection of different communities that have different priorities and speech with many different voices. To engage meaningfully with first nations communities we must recognize that the aspirations and the need of each of these communities. To do this a the BC government



sponsoring scientific conferences within each of these communities such as the Tsleil Waututh, Climate Change Summit where traditional knowledge and science are presented.

13. First Nations deserve equal access to clean water, air, and technology. While I am sympathetic to First Nations and support truth and reconciliation, BC and Canada does not need a distinct class system, rather one of equality as we move to the future. Let's provide some incentive for inclusion. Hunting, trapping and too much reliance on tradition will act as a mode to keep them repressed. Think graduate degrees.

Challenge 2: Increasing involvement and shared stewardship.

Opportunities:

- Support and enhance the long-standing role and contributions of non-government conservation organizations in habitat protection and shared stewardship.
- Engage a wider range of stakeholder groups to provide advice to government through proven and new approaches (for example, provincial/regional wildlife boards).
- Improve understanding and communication of the social, economic and environmental values of wildlife and their habitats within functioning ecosystems.
- Develop new governance models for making wildlife management and habitat conservation decisions.

Q2. How should a broad range of stakeholders be involved in wildlife management and habitat conservation decisions?

11 responses

Comments:

1. Why is a broad range of stakeholders important in all circumstances? How do you define stakeholders? Better to have a policy direction and identify relevant stakeholders based on site specific considerations. One size fits all rarely works
2. All of the above but also push for integrated land use planning via the LRMP process or something similar that involves All natural resource sectors in addition to the diverse public interests.
3. We need to gain the insights of all stakeholders in management of wildlife, including looking at how our management actions will impact ecosystems.
4. For some time, we have had a talent for letting broad consultation stop us from moving forward. Sometimes we consult and listen only to the voices that we agree with. Sometimes we consult and we only ask the questions that we want answered and we ask questions in ways



that limit opportunities to provide nuanced responses. Sometimes we consult without any leadership toward achievable goals. Honestly, I've seen consultation fail in every possible way. In the end, the problem is not the range of stakeholders or the decisions where opinions are solicited, the problem is that we don't build on decisions from the past. We build on the polarization between stakeholders and we let politics convince us to knit and unravel decisions, preventing us from learning and making progress toward greater success. Genuinely I don't think the problem is lack of consultation, it is more that we are unwilling to negotiate or compromise over differences. We work in the realm of winners and losers, and even when we don't, some stakeholders frame the result that way.

5. There is already a broad range of stakeholders involved. The problem is allowing decisions to be made politically instead of scientifically (e.g. Grizzly bear hunt).
6. Engaging citizens to understand concerns/perspectives and be sure they know how their input will be used.
7. Bring the most polarized stakeholders together and give them a contract to make decisions.
8. Accept input but realize that many NGO's have fuzzy, non-scientific goals that would run counter to the reasoned, scientific management of wildlife resources.
9. They already are.
10. Very little aside from raising awareness of a potential issue. I can't stress this enough, these decisions need to be made by an independent, science professional with an appropriate amount of education and experience. I don't mean to be condescending, but many constituents of these stakeholder groups are under educated and have little more than a high school education and limited literacy. This is not sufficient. Anecdote is not plural for data and is too risky to manage with alone.
11. Science Based Decision Making is very important to develop long term policy decision. In many cases, stakeholder groups have an advance agenda that serves self-interest. It is critical that government sets appropriate goals and objective based on science when considering input from stakeholder groups.

Q3. What are your suggestions for a new governance model for wildlife management and habitat conservation?

14 responses

Comments:

1. Identify priorities and work on those.



2. No special interest groups should be involved, make it SCIENCE-BASED!
3. Something that definitely involves much more public consultation and involvement in decisions
4. Set up management boards that have the expertise and knowledge to effectively develop management plans and options.
5. I don't think we need a new governance model. I think we need to make room for a broad range of stakeholders and their broad range of values that relate to this topic. I think we need more resources to manage, so that we know that what we do is sustainable, especially when we are making consumptive use. And, I think we need to remember that consumptive user have been an important component of conservation in the past, with more of a tradition for giving back to wildlife management and conservation in general, than those who oppose this use. I'm not a hunter and I'm never going to be one, but I want us to be inclusive in our approaches and break down some of the barriers that make it hard for some conservation advocates and some consumptive users to work together.
6. More science. I would like to see government empowered again and retain strong scientific staff positions instead of contracting out. US Fish and Wildlife may serve as a good comparison. We have very few quantitative wildlife managers left, it's embarrassing when compared to other US states such as Alaska.
7. Not sure.
8. Shared decision making with the local First Nations, stakeholders (general public, guide outfitters, trappers, etc..) could form advisory groups
9. Can only comment on a few aspects which I am familiar with: [A]. mining reclamation permits & regs., especially relating to older mines that have ceased operations but have considerable legacy impacts need more site - specific oversight. This lack of interest makes it difficult to get budget approvals for these non-revenue producing operations, especially during metals/coal price downturns when companies tend to manage towards "regulator - led" requirements, which there are practically none (aside from broad generalizations with no time deadlines) on the non-water side of things. Making recommendations for work to correspond to general industry standards is hindered by the complete lack of standards and tremendous range in work undertaken by various companies at different times. If the company foresees needing a new permit or changed permit it is usually "best foot forward" but otherwise, well ... "what's the rush?". Adjacent jurisdictions at the minimum specify some time frames so that work would keep moving forward, rather than just delay and see what happens. This is also relevant to the undertaking of risk assessments as they relate to wildlife health at legacy sites. Further, there seems to be poor communication between FLNRO & mine researchers/env. staff with regard to programs in some regions. Should reporting to FLNRO be looped in to the system instead of



being silo'd to mines where it seems to receive cursory review with little or no feedback? Both ministries seem to be too understaffed to deal with non-producing sites even though the problems may be significant. [B]. Lack of ministry staff and/or budgets for wildlife population inventory & management. This seems to be an overriding issue, as staff appear to be putting out fires and making best guesses, trying to piece together information gleaned from various industry/interest group - based research. Methodology exists for better data/synthesis than seems to be possible under the current budgetary constraints - government needs to be more than a repository of studies - it must have the resources to also synthesize the information and respond with updated requirements for monitoring and management of populations & their habitat. Professional reliance doesn't provide a platform for this function as far as I know, because we are each performing more site - specific roles. Currently, there seems to be more emphasis on communicating regulatory items than synthesizing the big picture and managing. How does professional reliance work without that overview body for input? How do professionals avoid the "Salami" impact effect (F. Bunnell et al. - small impacts that keep eroding the system) when we are not part of an updated cumulative impact study? What are the science-based long-term implications? Professional reliance recommendations based on short-term limited area studies seems unlikely to be reliable without benefit of the bigger picture (long term, species/provincial wide perspective).

10. Remove hunting lobby groups from decision making.
11. I think the current governance is working well as it is, though non-scientific political meddling (stop the grizzly hunt for example) are not constructive.
12. Have the professionals that are employed to manage our wildlife make the decisions, without interference.
13. Move away from the North American Wildlife Management Model. While it had relevance 100 years ago, it is a failing model. The times have changed and resource extraction in the form of mining and oil and gas generate more revenue and public interest in remote, rural areas than hunting. Hunting organizations and lobbies have too much influence in wildlife management and will not work with those groups they perceive as anti-hunting. From simple minds come simple, ineffective, solutions to a highly complex system. As a result we are now in a place where culls of other species and fire are the primary actions to increase a desired species (e.g. game). Move towards an independent (not government) science-based model.
14. A governance model should provide clear and concise objectives that articulate the amount, distribution of specified habitats. These should be tied to population objectives. Long term monitoring of populations should be included.



Challenge 3: Declining wildlife populations.

Opportunities:

- Set measurable objectives for wildlife populations and ecosystems in collaboration with Indigenous peoples, wildlife and habitat organizations, natural resource development industry stakeholders and the public.
- Address habitat loss, alteration and fragmentation where required to meet wildlife population and ecosystem objectives.
- Improve understanding of wildlife population dynamics through improved and more frequent information collection, as well as incorporation of Traditional Ecological Knowledge and citizen science to complement existing inventory and monitoring programs.
- Improve understanding of the links between habitat conservation and healthy wildlife populations.
- Address other mortality factors, such as hunting, predation and road/rail collisions, that are contributing to population declines.

Q4. What measures need to be taken to proactively manage wildlife and habitat and prevent wildlife from becoming species at risk?

19 responses

Comments:

1. There's a need for habitat connectivity protection to avoid cumulative impacts resulting from residential development. Currently, at best, sites are only evaluated individually.
2. Address road-kill, other than habitat loss it's probably the biggest cause of declining populations in the Okanagan (affecting badgers, snakes, amphibians...).
3. Any project that modifies habitat in any way (e.g., industrial development, natural resource development, private development) needs to be held accountable for damages through adequate project siting options (i.e., avoidance), mitigation, restoration and monitoring of that restoration. There needs to be more research into what restoration techniques can be applied successfully to return wildlife habitat into functioning habitat for target wildlife species without encroachment of invasive species. This also requires measurable monitoring targets that show success criteria are met (metrics of success need to be discussed with regulators and First Nations). Monitoring has to occur for a length of time (at least 3 to >10 years) that reflects the development type, habitat damage and restoration effort. This needs to be mandatory (company to pay bond for restoration/monitoring).



4. Focus on pts 3 and 4 but very surprised that climatic change and its impacts are not mentioned. While the decline in some species is clearly directly human related, the declines in others is not but likely is related in some way to the changing climate.
5. Recognize the root causes of the declines and address these (e.g. predator control or timber harvesting or other developments).
6. The first two examples speak to me the most. I think we will continue to research and support TEK approaches, educate and where necessary manage mortality, but where our weaknesses have been in the past have been in setting objectives and following through on them, as well as in meaningful efforts to address habitat loss. Sure we do habitat acquisition and set targets for protected areas, but we don't put the resources into those places to manage them against people impacts, both direct and indirect. Protected habitats and not protected, just because governments or conservation partners manage/own them.
7. More interdisciplinary work. Declining populations and wildlife health is not just about habitat. There are many emerging and re-emerging disease issues that we have very few options to help minimize. We need to be proactive. We need better survey data for many species. We seem to be really good at simply documenting declines after they have happened.
8. Ensure critical habitat and connectivity corridors are maintained and/or established. And create more parks where development is restricted and wildlife cannot be hunted.
9. Protect habitat (but first understand where the critical habitat is).
10. All of the above - see my previous discussion.
11. We know so little about populations, that using that as a measurable objective would be impossible. Perhaps having landscape-level habitat targets would be useful. Industry is very powerful and it still ultimately impacts what management decisions are made. For instance, mule deer winter range is under pressure in the Cariboo as it's some of the last remaining green timber and industry is very, very resistant to investing in increased planning and implementation costs to conduct partial cutting. Rather, government is being pressured to relieve the Government Actions Regulations regarding mule deer winter range management. I do not see industry embracing conservation measures voluntarily (unless measures occur on non-productive or inaccessible forest). Roads are a very large part of the problem of declining wildlife (hunter/predator access; attracting herbivores/omnivores to increased risk of intentional or accidental mortality).
12. More science on the ground! More conservation and habitat officers in the field. The number of violations that go unnoticed is unacceptable. We need more science and more enforcement of closures, bag limits, prosecution of habitat damage and destruction. It is widely understood that



the chances of a violator actually getting caught and then actually being charged, let alone found guilty, is so low that it might as well not exist, especially with regard to fisheries habitat violations. Biologists can prescribe good protective measures but there is no one to enforce them.

13. Connectivity between populations and important habitat areas.
14. Strong rules, including large fines and jail time around development on private lands. That's where most of the values collide.
15. Currently, industry (especially forestry) has a veto on the introduction of measures to protect wildlife and habitat. Many of the potential tools under the Forest & Range Practices Act have not been used (e.g. wildlife habitat features) to protect important features such as mineral licks, bear dens and stick nests. Such features as have been protected under FRPA have then not been respected by other industries, such as Oil & Gas. Make habitat protection the same across industries, please! Currently, habitats are not protected on Private Managed Forestland, nor on fee simple lands. Development also hides behind legislation, such as the Freedom to Farm act, allowing wholesale logging of forests and riparian areas for "farming" only to have the land immediately flipped for home construction.
16. Regular population inventories conducted using standardized methodologies, and use the results of those inventories to set appropriate regulations. Stop managing hunters and start managing wildlife. Identify ungulate migration routes from radio telemetry and use those results to set hunting regulations (e.g. vehicle closed areas) and limit resource extraction. Currently, the aftermath of pine beetle harvest, and an explosion in the wolf population across the province has had significant impact on ungulate populations, and yet in many areas hunting regulations have not been changed to reflect these declines. There are many examples I can draw from where wildlife inventories have shown significant declines in a population of big game animals, and yet the limited entry hunting draws remain the same year after year. There are good examples of mountain goat (Carpenter Lake) and sheep (Ashnola) inventories where the results have indicated that there area actually less animals than there are limited entry draws.
17. BC needs to take into account that the preservation of wildlife habitat requirements, need to become the priority. We can not keep species if the habitat is not there to support them. Every valley in the province has been impacted by anthropogenic activity. You can breed all the Vancouver Island Marmots you want, but the species will not recover until we recognize that we need to replace the habitat lost due to logging. The Cariboo in BC will not recover until the impacts of snowmobiles and the preservation of substantial tracts of habitat are dealt with in a meaning full way. Restrictions need to be placed on the use of recreational vehicles in the BC back country the complete deactivation of roads to prevent snowmobiles, ATV and motorcycles use, would be a start. Vast areas of the south coast are now accessible to recreational vehicles



as a result of lobbying by recreational vehicles clubs with corporate donations, that were not accessible ten years ago. We need to stop spending vast sums of money to save species that exist on the northern extent of their range, but have large population pools south of the border such as burrowing owls. These types of species tend to go extinct and then repopulate from the main population with variations in environmental suitability and start looking at species that are endemic to the province and whose numbers are declining (e.g.: barrows golden eye).

18. Far too many recovery and action plans have been prepared, some never attaining more than draft status. With the increasing demands to health care and education, increasing funding and capacity for species at risk is often too late for meaningful impact (e.g. Caribou). These other socio-economic demands may preclude any improvements in the way a unionized government worker may desire. I have seen a strategy emerge that only a species in "crisis" gets funding for preferred work (e.g. wildlife capture), so there is an incentive to allow these crisis situations to manifest. I often hear government employees complain that they have no time to meet their statutory requirements due to lack of funding or capacity. I believe this still occurred in the past, due to the union environment, when ministry budgets and capacity were increased. The problem seems systemic and rife with apathy, those guilty should face discipline. To fix this, radically change the government biologist's job description to that of a data synthesizer only, no field based work except for compliance activities. This allows for a pro-active approach rather than reactive by identifying knowledge gaps or important information needs for comprehensive, science based management. A government worker often has advanced knowledge of future, or proposed, industrial projects or cumulative effects that may adversely reduce or alter wildlife species or habitat. They also should have ready access to historical population or habitat data, competing interests, and regulatory levers.
19. There should be investment into have a clear understanding of habitat requirements of target species. In many case, there is a poor understanding of habitat requirements. With new available technology, there is a very good opportunity to have a strong understanding of habitat requirements for a reasonable investment.

Challenge 4: Habitat loss, alteration and fragmentation are increasing due to human activity.

Opportunities:

- Integrate wildlife and habitat values into decision-making about land and natural resource use on Crown and private land.
- Expand the use of cumulative effects assessment and habitat modelling to better understand the effects of human activity on wildlife habitats throughout B.C.
- Use land use planning, access management and other landscape-level tools to reduce the impacts of human activity on wildlife and their habitats.



- Consider consolidating habitat conservation provisions in provincial natural resource legislation so that they apply to all industries and human activities across B.C.
- Review the effectiveness of current land conservation designations on both Crown and private land and consider changes to increase their effectiveness.
- Increase public awareness about the importance of conserving biodiversity and habitats to maintain environmental sustainability, human health, and the provincial economy.
- Foster individual, industry and community actions that contribute to conservation and habitat stewardship on Crown and private land.

Q5. What is the most effective way of ensuring that wildlife and habitats are healthy while fostering a healthy economy to ensure life is affordable for British Columbians?

20 responses

Comments:

1. Define healthy habitat and maybe I could tell you.
2. Keep all motorized vehicles (including ATVs and skidoos) out of parks, conservation areas and sensitive wildlife habitats. All industries (including private, industry, forestry, mining etc.) need to follow wildlife regulation (e.g., migratory bird active nest surveys; protection of federally and provincially listed species at risk and their habitats) to the same standard.
3. The first 4 pts all need to be addressed.
4. Identify the needs of wildlife and then provide these in the habitats that are protected from development.
5. I would focus on effectiveness review and increasing public awareness. After approx. 3 decades, almost all my working life, of not seeing environmental education as a priority, too many people think that environmental protection is something that comes at the cost of social and economic benefits. Few people understand that we can love wildlife and protected areas to death or that human use can be the biggest threat some of our most spectacular species and landscapes face. We still don't understand that we are part of the ecosystems we live in, and what we do to these, we do to ourselves and our future.
6. Increase public awareness about the importance of conserving biodiversity and habitats to maintain environmental sustainability, human health, and the provincial economy.
7. All of the above.
8. Conduct land use planning and ensure meaningful mitigations are in place if disturbance to habitat is needed



9. We need all of the above. We need a much greater emphasis on the fact that ENVIRONMENTAL WORK CREATES JOBS! All we ever hear is that environmental regulations cost resource jobs. What is wrong with providing jobs for biologists, etc.? The resource may not be extracted with such a high profit for the corporation, but the subsidies e.g. for mining hydroelectricity (see Red Chris operation) are presumably to assist with job creation as well as taxes/royalties. Naively assuming that corporations will extract our resources without leaving legacy environmental impacts is obviously proving wrong - can we devise some sort of "brownie point" reimbursement program to tie environmental due diligence into subsidies, tax rates or whatever? Make good environmental management profitable some way. Emphasize the cost of environmental degradation that is (frankly) mostly left to the tax payers to clean up or suffer from.
10. Mining and oil and gas need to be expected to perform at least to the standards already in place for other resources sectors. Landscape level planning needs to be implemented. The incentive for industry to participate needs to have enough clout to cause them to act. Minimum standards in Forest Stewardship Plans, for example, continue to drive forest management decisions. Companies will not commit to doing more than the minimum unless they have to. Road access management needs improvement; roads provide an unfair advantage to human and non-human predators, plus attract wildlife, such that vulnerability to mortality is increased.
11. Through a planning process that is inclusive, areas or tracts of land that are "useful" habitat need to be set aside for no human access and allow the wildlife to have a wild place without intrusions. There are enough places for humans to recreate that areas set aside for wildlife should be just that.
12. Strong municipal bylaws with clear requirements for assessment, mitigation and habitat restoration/offsetting. The provincial wildlife act could be improved to support municipal levels of government.
13. The provincial government should provide more support and input into local government land use planning activities. During Neighbourhood/Area Plan development local governments can establish greenways/wildlife corridors and habitat cores/patches. The province should also have a program that would help to purchase some of these areas with high wildlife values that are not otherwise protected via stream setback protection requirements. The Riparian Area Regulation should expand its scope to include wildlife habitat in addition to fish habitat. A simple way to do this would be to require all greenfield development to establish setbacks that based off of the Simple Assessment rather than the Detailed Assessment.
14. The number one issue in my mind is too many loaded areas. We fragment habitat by logging and then leave the roads for predators (e.g. wolves to prey on caribou and elk calves) and do not consider this is a "cost" to forestry. FULL cost accounting is needed. We need to reclaim (not



"deactivate") roads, make areas truly off-limits to both motorized vehicles and mountain bikes, and crack down on wildlife trafficking and illegal wildlife possession.

15. Limit development in sensitive habitat and strongly control that development with strict rules on private land
16. This is an impossible compromise. We can't have everything, and wildlife. compromises need to be made, and communicated to the public. No fuzzy warm motherhood statements. If we pave habitat, there will be fewer animals. Set urban containment boundaries and make them firm, like in Europe or Japan.
17. Regulation. If it isn't regulated it won't happen. The Wildlife Act needs to be overhauled to include rare species legislation and a clear provincial mandate for the conservation of wildlife and habitat for the citizens of BC. The economy should not be a part of ensuring that current and future citizens have fish, wildlife and wild places.
18. BC needs to prioritize the preservation of wildlife habitat as it is critical to the preservation of the species. Species and habitat at risk need to be given more than lip services in the province. Areas with red list habitat types are to this day logged ongoing-lee without concern for the habitat that is lost.
19. Reduce government bureaucracy. Be open and transparent. Facilitate don't dictate.
20. To develop science based objectives that clearly articulate the amount, distribution and attributes of required habitats.

Challenge 5: Wildfires and extreme weather.

Climate change is resulting in more wildfires and extreme weather, contributing to wildlife diseases, forest health issues, and the spread of invasive species, affecting wildlife populations and altering habitats.

Opportunities:

- Assess the potential implications of climate change for wildlife and their habitats.
- Proactively manage hazards (e.g. wildfire) associated with climate change by using prevention, preparedness, mitigation and recovery measures.
- Increase wildlife and ecosystem resiliency and adaptation to changing climate by applying forward-looking strategies.
- Enhance research, monitoring and management of climate change effects on wildlife health, ecosystem and forest health, and invasive species.



- Increase awareness and research about wildlife health issues such as Chronic Wasting Disease in deer.

Q6. What are the most effective ways to proactively adapt to the impacts of climate change to wildlife and habitats?

14 responses

Comments:

1. Figure out what the impacts will be, bearing in mind that predictions to date have not been terribly accurate. Protect the habitat, life will find a way.
2. Pt 1 but with emphasis on shifting ecosystems and those impacts on wildlife and fish/aquatic systems.
3. We need to build resilient ecosystems and the wildlife they support.
4. I'm sure these are all worthwhile. My comment is that most of the materials I have read are likely hard to understand for the average BC resident. We need to wade into this with some serious effort to help people understand why this matters to them and how the impacts they are feeling already are not just random events....how many of the ongoing responses are not making things better, but in fact making them worse. I would like us to try to harness property owner energy and get them to act to contribute to positive efforts to promote resiliency rather than having them turn always to government to make their problems go away. The problem is too big and too much influenced by decisions of property owners for government to be the entire solution.
5. Proactively manage hazards (e.g. wildfire) associated with climate change by using prevention, preparedness, mitigation and recovery measures.
6. Invest in research in alternate energy sources as I'm not sure we can help habitat to adapt.
7. Ensure healthy water quality and quantity in specific watersheds that will be hit hardest from climate change
8. The wildlife will adapt themselves. We need to protect their habitats. Fire is a natural event and we must limit fire suppression wherever possible. Consider the impacts of development, including forestry, on water availability and require water reuse in new urban infrastructure. This will reduce demand on surface and groundwater supplies, help ensure water availability for fish and wildlife, require fewer large-scale projects such as dams and reservoirs, and lead to less habitat destruction.



9. Proactively manage wildfire potential by restoring habitat and decreasing in-growth and fuels.
10. Limit development on private lands in fire prone ecosystems
11. Reintroduce controlled fire to the landscape, and plan housing & development in such a way as to minimize interface fire risk.
12. Ensure that riparian areas are appropriately protected province wide.
13. BC needs to prioritize the preservation of wildlife habitat as it is critical to the preservation of the species.
14. Development of sophisticated models that will show environmental change over time as it relates to climate change.

Challenge 6: Better information.

There is a growing need for better information on wildlife and habitats to inform management and conservation outcomes as well as achieving robust compliance and enforcement.

Opportunities:

- Review the need for natural resource management legislation to ensure natural resource management decisions consider information about wildlife and their habitats.
- Improve decision making by gathering and considering a wide range of information sources about wildlife and their habitats, including scientific information and Traditional Ecological Knowledge.
- Revitalize the wildlife and habitat research program by obtaining additional financial and human resources and establishing greater ties with academia and Indigenous peoples.
- Improve the sharing of scientific information and wildlife data with Indigenous peoples, stakeholders, academia and the public and consider ways to formalize the use of Traditional Ecological Knowledge and citizen science in wildlife and habitat conservation decision-making.

Q7. How can Traditional Ecological Knowledge, citizen science and other forms of knowledge complement science to support decision-making?

13 responses

Comments:

1. For example wildlife habitat suitability mapping could have a TEK component that is produced in collaboration with First Nations.



2. Need to address point 1 first but the other 3 points also need consideration, especially #3.
3. First Nations have been managing the land for thousands of years so they have insights that can complement our scientific understanding.
4. Revitalize the wildlife and habitat research program by obtaining additional financial and human resources and establishing greater ties with academia and Indigenous peoples.
5. Acknowledge that it is valid information and engage our indigenous knowledge-keepers to determine how to set up a protocol to gain access to this information. As with any person or organization who holds knowledge or has specific expertise, expect to pay for it.
6. Input and gathering of knowledge must be meaningfully done; TEK is a specific knowledge base and First Nations want to ensure their knowledge is being included and used in a trusted and respected manner.
7. There is a great deal of information to be gained from citizen science and traditional knowledge if there are guidelines for collecting & using this data. The APB could also challenge our CAB to allow for the use of data from retired R.P.Bio.'s (as long as they clearly identify themselves as such) rather than being told their data cannot be used but they can plant shrubs! Biologists often retire after being fed - up and burned out with all the contentious politics that comes with the job. They still have a lot of valuable knowledge and skill that could contribute as "retirees".
8. Test traditional knowledge for ecological values based land use on native land. Remove lobby groups such as hunting logging and mining from land use decision making process.
9. These can inform science, and provide a sense of ownership by first nations in resource and land use decisions.
10. Why ask this question - the answer is obvious. All information, even anecdotal, is good information and worth investigating. A case in point, when I was involved with Fraser River white sturgeon studies, I found as a life-long sturgeon angler I had probably forgotten more about sturgeon biology and life history than the researchers would ever learn, and yet they would not accept my anecdotal information or the information from others, including First Nations that had literally 100's of years of experience and knowledge.
11. Very little aside from raising awareness of a potential issue. I can't stress this enough, these decisions need to be made by an independent, science professional with an appropriate amount of education and experience. I don't mean to be condescending, but many constituents of these stakeholder groups are under educated and have little more than a high school education and limited literacy. This is not sufficient. Anecdote is not plural for data and is too risky to manage with alone.



12. TEK can help address change over time while CS can track present occurrences.
13. Scientific information should always be the primary foundation for decision-making, but traditional ecological knowledge (TEK) and citizen science can also play an important role - particularly when scientific information is lacking. A process for incorporating non-scientific forms of knowledge should be formalized so that decision-makers can easily interpret the contributions from the various sources of information. The current process often seems to simply present TEK with little follow up to how (or if) this information contributed to the management decisions. Even a requirement for a conclusion statement to indicate how science, TEK, citizen science, etc. each contributed to a management decision, would go a long way in integrating these forms of information into wildlife management. With regards to scientific information, whenever possible, more effort needs to be made to encourage decision-making to incorporate the latest scientific information (preferably peer-reviewed) rather than referencing best management practices or similar guidelines, which are often outdated and/or too generic to be of much value in certain situations. As mentioned above, TEK and citizen science should become proportionately more prominent in the decision-making process when scientific information is lacking.

Q8. What are the best ways to share information broadly so that there is transparency and trust is gained among all parties?

15 responses

Comments:

1. Perhaps public occurrence records should be easier to create. Improve iMap BC.
2. Increase funding to the Conservation Data Centre so the mapping of at-risk species is more up to date and exists for all species at risk!
3. Open meetings/workshops/summits where knowledge and ideas can be shared between scientific community and First Nations
4. Frequent communication with ALL parties, i.e. with resource interests, the public, First Nations, academia, etc. and that needs to start with the planning, through the steps taken, and finally with the products/results.
5. Via the APB.
6. Existing provincial government wildlife inventory data repositories are a good example of a system that works, they have been maintained for decades and used to make information more publicly available. More effort is needed to increase awareness of these data systems and tools to access them. There is also similarly strong First Nations tools (LEO network) that should be



expanded. Important to avoid multiple short-term databases. Strength in fewer more robust sources.

7. Ask our youth, it will be some kind of social media...
8. Some information (certain TEK) cannot be shared broadly so the general public and stakeholders need to better respect that.
9. The province should be releasing the best available science in guidance documents. They should also be putting on workshops to teach consultants, NGOs and local government staff about the best management practices.
10. World Wide Web and remove all Lobby groups from the process.
11. Make documents public to the fullest extent possible, while acknowledging first nations need for privacy for some cultural values.
12. Transparency and trust have nothing to do with good wildlife management. Management should be based on science, not socio-economic considerations.
13. The BC government should be sponsoring scientific conferences in conjunction with first nation communities. Such as the Climate Change Summit put on by the Tsleil Waututh, where traditional knowledge and science are presented.
14. I believe there is little transparency currently within government ministries. Many wildlife and habitat projects funded by public taxation disappear in the mist without any realized benefit. For example, the Habitat Conservation Trust Foundation (HCTF) does not publish the products of funded projects. There is little recourse to the public or QEPs to obtain project data, results or other information except FOI act which is onerous, time consuming and may be redacted. HCTF is not subject to FOI requirements. Increase trust, transparency and accountability by requiring all government biologists and those who work in an environmental capacity to obtain a permit for ALL work like everyone else. The permit number will then be used to track financials, data and reference the project application to promote awareness the work has been done, as well as determine if promises were met. A final report that describes project objectives and accomplishments should be a mandatory requirement. This applies to desktop syntheses as well as it is often the most valuable. Punish those government employees that do not comply or provide tangible value to the public. Provide the public with access to these products. The SPI database is not adequate as is. Allow for the public and other professionals to challenge the results.
15. Trust is best gained by making all of the information that contributed to a decision available to the public. A professional must always be prepared to defend the decision, while acknowledging



the uncertainties and risks associated with that decision. Much more needs to be done to educate the public on the fundamental difference between a value- and information-based decisions as the two are often not reconcilable and often results in conflicts. Such conflicts create the appearance that one side must be wrong, which leads to a distrust of the entire process. Most unfortunate is that an honest professional must acknowledge uncertainties with the information, whereas there is often no uncertainty associated with value-based opinions, which can lead an uninformed person to conclude that the problem, and therefore lack of trust, lies with the professional.

Challenge 7: Human-wildlife conflicts.

Concerns about human-wildlife conflicts are increasing, including those related to agricultural impacts, urban wildlife, wildlife-vehicle collisions and dangerous wildlife.

Opportunities:

- Improve understanding of human-wildlife conflicts, and address the underlying causes such as the presence of attractants in communities.
- Encourage individual and community prevention and mitigation of human-wildlife conflicts by providing incentives and disincentives.
- Expand programs to reduce conflicts with agricultural communities.
- Provide safe passage for wildlife to move across barriers such as roads.

Q9. What are the most effective ways to reduce wildlife-human conflicts in British Columbia?

16 responses

Comments:

1. Enforcement needs to be greatly increased to enforce existing laws against feeding wildlife and more needs to be done to decrease roadkill!
2. Education the public and industry about human garbage, behaviour in the backcountry, for example widely show the bear aware movie.
3. The 4 points is a good start but a major problem today is that the vast majority of people are born and raised in an urban environment and are heavily influenced by what they see on TV and social media so fundamentally they are clueless regarding the needs of wildlife, about ecosystems, and their impacts of people on them.
4. Avoid situations that lead to conflicts (like unsecure garbage containers on the streets).



5. As long as environmental standards are not a priority on agriculture lands it is hard to make progress in this area. We seem to have shifted toward the perception that any activity on agriculture lands is justified, regardless of the impact and when there are impacts on wildlife habitat and behaviour, leading to conflicts, we put more resources into things like kill permits, conservation officers capturing and moving wildlife etc. Where I live, a moderate to large mammal has almost no way to move across the landscape because of wildlife fencing. I've heard landowners talk about how they need those fences to protect their crops, and that's true since mostly we are now growing crops to create alcohol. I honestly think we've lost the thread of why the ALR exists. By all means protect AG land and address impacts to food crops, but when the majority of ALR is deployed to grow crops that are not food and that are so attractive to wildlife that we have to fence everything in tall wire fences or electrified fences, none of these strategies are likely to succeed (where I live) because of the economic pressure. If you want to work on one of these, try to work on the barriers issue.
6. Educate people. Create more connectivity on the landscape. Requirement to include these costs in MOTI highway infrastructure improvement projects.
7. All of the above opportunities.
8. Education and enforcement.
9. The Water Sustainability Act should be re-written to require consideration of wildlife passage when culverts are being installed.
10. Use good science to start with. For example, there is a widely held belief that grizzly bears are endangered. That may be true in certain parts of the province, but certainly not in others, such as the Kootenays where grizzly encounters are frequent. The new policy of protecting all grizzlies regardless of location is not scientifically defensible, but it sounds great in the news. Politics has no place in wildlife management, but without good science, that is all that we are left with. Only by truly understanding population dynamics and educating citizens can we reduce conflict. Urban deer are a hugely divisive issue, but too often I think it is because we do TOO MUCH public consultation. If need be, cull deer, quietly. If population studies are needed, do them in a responsible way without input from every neighbour who has an opinion. It is just that, an opinion- not science. Be willing to do the science, determine a course of action, and do it. If the Province took responsibility for wildlife, and highways, not local government a lot of the political conflict could be solved. The Province used to talk to the local trappers, ranchers, hunters, anglers, rural property owners, etc. to understand wildlife dynamics and reduce conflict. We need that back and that requires staff and money.
11. Remove humans and limit development.



12. Public education, especially to non-English speaking citizens and new immigrants, manage wildlife movement corridors so as not to conflict with people and infrastructure (roads & railways). Introduce a fund to reimburse farmers for damage to crops by wildlife, such as used in Alberta.
13. Regulation, science, learning from others and not repeating past mistakes. One of the opportunities listed above is providing safe passage for wildlife to move across roads. In order for this to be effective you have to identify where and when wildlife moves across roads. Example: the wildlife studies conducted in the early 90's for the Vancouver Island Highway Project identified areas of high conflict, one of which was the approaches to the French Creek Bridge near Qualicum. To this day I can travel that section of highway and expect to see a dead deer on the highway almost every time. The findings of the wildlife consultant were ignored and the highway was not fenced. I have several photos showing that the page wire fencing used on the Coquihalla Highway is apparently the perfect mesh size for strangling moose calves. The lesson should have been learned, so why are we still applying the same fencing elsewhere?
14. Limit access to the back country by motorized recreational vehicles.
15. WildsafeBC is ineffective in its current state. Limit the Conservation Officer Service to compliance and enforcement duties. They are not qualified, nor competent, to make management decisions with respect to human-wildlife conflict. Municipal by-laws and enforcement are better options to combat public apathy.
16. In order for FLNRORD to manage wildlife and conserve wildlife habitats effectively, appropriate financial resources and staff time must be allocated to understand the complex issues associated with wildlife vehicle collisions (WVCs), reduction and habitat fragmentation and to provide appropriate recommendations and support to other agencies to develop, implement, and monitor suitable mitigation. The first step in addressing and reducing WVCs is to form a multi-agency provincial working group with a mandate to identify and implement appropriate actions. Appropriate resources of staff time and funding need to be allocated to all government agencies involved. Non-government partners and other stakeholders need to be identified and included in this working group to broaden expertise and knowledge, and to achieve agreement with, and participation in, any proposed actions. A multi-agency committee would provide opportunities for: [1] Supporting non-government organizations participation in wildlife management. [2] Engaging and collaborating with a wider range of stakeholder groups. [3] Providing input into governance models for improved decision making models.



Challenge 8: Funding.

Wildlife management and habitat conservation are funded through annual Ministry budgets, contributions to the Habitat Conservation Trust Foundation from surcharges on hunting, trapping and guide outfitting licenses, and through partnerships (e.g., academia, non-government organizations, industry, etc.). Current funding levels may not meet expectations for improved wildlife and habitat conservation.

Opportunities:

- Provide stable and increasing funding dedicated to wildlife management, habitat conservation and compliance and enforcement.

Q10. What are the best funding models, funding sources, and creative financing ideas that could increase resources for wildlife management and habitat conservation and provide additional flexibility for how funding is prioritized and allocated?

16 responses

Comments:

1. Everyone else asks for money from the developers. Perhaps the province should do the same.
2. More actively manage bear viewing and impose a fee from it that goes into the Habitat Conservation Trust Foundation.
3. Funding for research, restoration and monitoring should come to a great extent as bond from organizations that destabilize/modify/destroy wildlife habitat
4. Good question. Has to come primarily from government but government has to be convinced the average member of the public has a concern or they are unlikely to increase funding much.
5. Developers and resource users need to provide funding for effective management.
6. I think we have to build on the user pay model by helping everyone understand their impacts to wildlife. I am a supporter of making conservation a service and having users and developers of land, pay toward that service through taxes and user fees.
7. BC Hydro and the Fish and Wildlife Compensation Programs have created opportunities for long term funding in many areas of BC. Possible to expand these areas? Also US Pitman-Robertson funding model seems effective.



8. Increase fees for international guiders and hunters who operate guiding businesses in our province and who come here to hunt our wildlife. But make it affordable for the citizens of our province to do the same.
9. Pooled funding models, ensure funding is spread across BC fairly (don't forgot the North), ensure Government is always getting the majority of the funds through funding sources like HCTF and others.
10. Institute and enforce fines for violations and collect on them. The federal Fisheries and Oceans model is a good one, but it not used often enough. A similar model where violators were fined and the money went into a fund to be used in the same watershed/region/ management unit as the violation, with some flexibility as to ow it was used would bring in new revenue, deter violators and improve funding to do the science and habitat restoration needed.
11. Need wider net of contributors to funding for conservation potentially from provincially collected tax base or sales tax for items used in the backcountry/camping/recreation/etc.
12. Take revenue from casinos and marijuana facilities and use for habitat protection with strong focus on curtailing development in sensitive ecosystems.
13. HCTF, hunter Angler surcharges, new surcharges to wildlife viewing industries, and purveyors of sporting goods.
14. I have no idea, but I do know that in the past there was sufficient budgets for the people that we task with managing and protecting our crown resources to do their jobs effectively, so perhaps that is where we need to look.
15. Increase funding to MFLNRORD above present levels.
16. Make the people or organizations that screw things up actually pay for the damages in meaningful amounts. Put this money in a fund that isn't controlled or influenced by special interest groups. Fund independent (non-union) science based on the cumulative effects syntheses of government staff.

Additional questions

Q11. What currently works well in BC for wildlife/habitat management?

11 responses

Comments:



1. Not working so well right now. Need Habitat type biologists who work closely with industrial interests and the public
2. Ecological restoration of impacted habitats.
3. I'm a supporter of Regional Conservation Partnerships and the way these contribute to coordination of effort and information sharing among partners. I think there is a strong core of hunting/guiding/trapping folks in the province and however they may not be strongly supported by current politics, I think they have played an important role in maintaining wildlife funding and habitat in the past. I think we disenfranchise them at our peril, because they are spending a lot of time on the land, and have knowledge that government no longer has, and maybe never did. Further the ethic to support hands on conservation and funding for conservation has never been as strong among those who think they are "non-consumptive" users. I'm not a hunter or a trapper or a guide. I don't work in this area, but I want us to build a coalition that makes room for that community and I value the contributions they have made to date.
4. Land acquisition for conservation land trusts. Motorized vehicle restrictions and access management areas. Using special sheep hunting permits to fund wild sheep and grassland conservation projects.
5. Shared decision making with First Nations.
6. Information and educational components. People in BC are very aware.
7. The tenure system for guiding, trapping, etc. seem to be fine. The provincial biologists are trying to do a good job, but need more support.
8. Growing critters for hunters.
9. Allocation of hunting opportunities.
10. Forest fire.
11. The Spatial Data Repository - BC Data Warehouse does very good work.

Q12. What changes in wildlife/habitat management are most needed for BC?

18 responses

Comments:

1. Protecting species at risk.



2. BC needs to remove the 1% cap on the Timber Harvesting Land Base for Wildlife Habitat Areas. It's an arbitrary biologically meaningless cap with great detrimental effect.
3. It appears currently industry has the say over government and science/TEK. It should be science and TEK that inform government and government should regulate industry.
4. More resources for sure for Fisheries and Wildlife, and changes to the various resource acts so they require more collaboration with wildlife/fish managers.
5. Don't look at wildlife species in isolation, but recognize they are part of an ecosystem that needs to function as a whole.
6. More government staff; more monitoring and scrutiny of wildlife populations, rather than making decisions about wildlife management based on GIS models and expert opinion. More effort to manage and protect areas that are already set aside for protection of habitat/wildlife.
7. Prescribed burning. More access management, more road closures, less motorized access (especially alpine).
8. We need to implement regulations for the protection of species at risk (on all land - not just crown land).
9. Map out the key habitat areas for species and then habitat protection.
10. Somehow it needs to be set back from the 4 year political "make jobs" "grow the economy" cycle. Wildlife & habitat invariably takes a back seat under this priority system.
11. Stop the human use in areas set aside for wildlife.
12. More science, more enforcement of existing rules including more prosecutions.
13. Needs strong rules and enforce them on private lands.
14. Quit pandering to the logging, mining and petroleum industry as if they have a veto on wildlife management.
15. Listen to Ministry staff when they bring forward science based rationales for management.
16. More inventory and enforcement based positions.
17. Improve transparency. Reduced government bureaucracy. Increased synthesis of data by government professionals. More reliance on independent professionals.
18. Review, consolidation and update of three decades of guidance and policy. In many case, there has been good work in the past but there has been very little follow-up on effectiveness.



Q13. Are there any challenges or opportunities listed in this survey that concern you? Why?

7 responses

Comments:

1. Roadkill is an enormous issue.
2. The decline of many wildlife populations from habitat fragmentation/destruction/climate change concerns me. Better communication and collaboration with First Nations is an opportunity to bring science and TEK together and become more forceful in making change happen in industry/development.
3. The focus on wildlife when the issues are really larger than just wildlife that need to be addressed.
4. Challenge would be to have something meaningful implemented without it being political.
5. Be wary of giving NGO's and anti-hunting lobby too much say in wildlife management, as they are often not interested in scientifically sound management principles.
6. All of them, as the focus seems to all be on "warm and fuzzy" aspects, instead of the hard "ruffle some feathers" type of science based management that we need.
7. The North American Wildlife Management Model must be abandoned. The influence of the hunting lobby, disguised as wildlife conservationists, on species of interest, policy, funding and hiring of government staff that are in conflict of interest due to their allegiance to hunting.

Q14. Are there other challenges not addressed in this survey?

6 responses

Comments:

1. Climate change has to be added to all modelling exercises and is the dark cloud that looms over any and all future wildlife management.
2. The focus on wildlife when the issues are really larger than just wildlife that need to be addressed.
3. Cumulative effects and how we deal with these.



4. Access management.
5. Yes - ineptitude. From what I have seen as a life-long hunter, angler, outdoors enthusiast and career biologist I have become very doubtful that the people we have tasked with managing our wildlife are capable of making the right decisions. If anybody can show me an ungulate population in BC that has increased in number in the past 10 years (besides Roosevelt elk transplants) I will eat these words.
6. Government by its nature does not attract the best or most capable. The insinuation that a government worker is an expert or qualified to make management decisions just because they work for government is holding progress back. The apathy of government bureaucrats and the power they wield with the ability to not approve research permit applications and other such shenanigans need to be addressed.