

YUKON'S
MINERAL DEVELOPMENT STRATEGY

SUBMISSION TO THE INDEPENDENT PANEL

by

WILDLIFE CONSERVATION SOCIETY CANADA

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SUMMARY

Consideration of a Yukon Mineral Development Strategy (YMDS) coincides with substantial turmoil as humans face various crises of our own making - a mass extinction of biodiversity, and an overheating climate. The scientific evidence is clear that these issues are escalating. In addition, our ability to resolve them is increasingly challenged by a legacy of racism with its imperative for reconciliation, plus the inability of economic markets to deal with ethical dilemmas. Yukon is far from immune to these crises. In many ways Yukon is on the forefront of how they are unfolding, and has a high responsibility in finding resolution to them. Given that they pervade all aspects of our lives, the Mineral Development Strategy needs to address them head on. As scientists working for a non-governmental agency in Yukon for the past 15 years, we have worked on land use planning, wildlife research, and management policies for natural resources, so have experiencing dealing with the mineral development dilemma.

In this context, we lay out two Principles that we think should direct the development of a Mineral Development Strategy because they promote solutions to the various crises. The first Principle is that “minerals are a common property resource”, like other natural resources. Minerals belong to the Yukon public, jointly Indigenous and non-Indigenous. The public needs to be much more in control of whether, when, and how they are explored for and developed. This Principle aims to move towards reconciliation between Indigenous and non-Indigenous sectors of society by giving First Nations governments and communities a stronger voice and direction in mineral exploration and development. Its application can help redress two problems with the current private sector, capitalistic, control of the resource: (i) much of the resource’s value is lost to the people of Yukon as mining industry profit; (ii) the ongoing legacy of the private sector’s abandonment of uneconomical mines to be cleaned up by the public. Specifically, we recommend that the free entry claim system, which gives the resource to the private sector, be abandoned and replaced with government-led and managed mineral exploration based on social licence gained from communities. Ownership of the resource should stay with the public, represented by governments, through the entire mining cycle. The development, extraction, closure and remediation phases of mining should be the economic opportunity and responsibility of Development Corporations, at both the territorial and individual First Nation levels, working in collaboration with the private sector.

The second Principle is that “nature deserves greater respect as an asset”. Natural ecosystems, with full complement of organisms in unpolluted habitats, are essential for human survival and well-being. By promoting this Principle, we think the YMDS can help Yukon respond constructively to both the biodiversity crisis and the climate change crisis. The collective goal should be to do our best to avoid negative consequences of mineral development on our ecosystems. The regional land use planning process, under the Umbrella Final Agreement, is a key tool, and needs to be promoted to: (i) put forward new areas for protection; (ii) address cumulative effects of increasing human footprint on the land and increasing numbers of people in settlements; (iii) address access management and the growth-inducing nature of new roads and their impacts on ecosystem integrity. Land use planning is guided by the concept of sustainable development. The YMDS needs to grapple with this concept because it can easily be misinterpreted. Making development sustainable from an ecological and social perspective means, at least, getting social licence from the Yukon public for exploration and development at key stages, carefully addressing the mitigation hierarchy for natural resource development, and incorporating into regulations the most risk-averse principles and guidelines regarding the risky aspects of mining, notably tailing dams and ponds. Regarding climate change, the mining industry must act as an equal partner with all Yukon economic sectors. This means full reporting of its greenhouse gas

emissions, development of plans to reduce absolute (not intensity-based) emissions to 30% of 2010 values by 2030, and more careful and thorough adherence to risk-averse approaches to the engineering design and maintenance of mine projects and their infrastructure.

We also address the 8 Issues laid out in the YMDS Discussion Paper. We note that our recommendations regarding changes to the mining legislation, mineral tenures, and the mineral development process generally support the underlying concept behind that Paper, which is promotion of place-based development and its focus on local community control, values, and benefits.

Issue 1: Sustainable Industry Development. We recommend that the Mining Principles and associated Performance Expectations of the International Council on Mining and Metals, and the Mitigation Hierarchy, be adopted as necessary practices followed by industry and governments in project design and planning, impact assessment, and other policies and regulations.

Issue 3: Mining legislation and regulations. The Quartz Mining Act and the Placer Mining Act should be repealed. They should be replaced with legislation that removes the process of free entry staking, and asserts the common property ownership of minerals held as public trust by governments. The 16 Guidelines regarding mine tailings management from Mining Watch Canada's 2020 Report need to be built into new quartz mining legislation, regulations, and policy directives.

Issue 5: Land use planning. Regional land use planning (UFA, chapter 11) needs explicit recognition as the key process for designating sub-regions and landscapes in which mining is precluded (e.g., protected areas), for management of cumulative effects of growing human footprint plus climate change, and for control of access such as new road development. Governments should halt mineral staking well in advance of land use planning so that staked claims do not prejudice land use designations. A mineral strategy should push for greater clarity on the process for periodic reviews of ratified land use plans, and the ongoing incorporation of improved inventories of natural resources.

Issue 7: Climate change adaptation. We recommend that the YMDS state that the mineral exploration and development industry report its annual GHG emissions in absolute (not just intensity-based) measures, and that it be subject to the necessary 30% reductions in GHGs from 2010 levels by 2030 (promoted by the government's climate change plan) as are other sectors of the economy.

Issue 8: Built Infrastructure. We recommend that the YMDS urge the territorial government to implement the proposed Resource Roads Regulation being contemplated in 2018, such that new roads accessing mineral exploration and development sites be classed as private roads, closed to public use, and subject to security and control of the economic entity in control of the mineral resource.

INTRODUCTION

We have written this document in response to the invitation for direct input from the public and organizations in civil society regarding Yukon's Mineral Development Strategy (YMDS). Such a Strategy is now being considered by an Independent Panel appointed jointly by diverse governments in Yukon. WCS Wildlife Conservation Society Canada (WCS Canada) thanks the Panel for this opportunity to put forward our thoughts.

WILDLIFE CONSERVATION SOCIETY CANADA

WCS Canada is a non-profit, charitable organization. Our mission is to save wildlife and wild places through science, conservation action, and inspiring people to value nature. We work at a national scale in Canada with head office in Toronto, and we focus particular attention on three regions: the far north region in Ontario; the western Arctic; and the Northern Boreal Mountains of Yukon and northern British Columbia. WCS Canada scientists have been working in Yukon since 2004 on land use and protected areas planning, land and water management, wildlife conservation research, and policy applications for conservation science. Our role is to provide long-term, site-based, research and syntheses of science that inform policy and practice and that support the implementation of effective conservation measures. We do this by providing technical advice and by engaging relevant decision-makers at all levels, from local to federal.

WCS Canada is engaged in the topic of mineral development because mineral exploration and development are the most geographically extensive human activities affecting the ecology and sustainability of wildlife in Yukon. Mineral reserves have been found in most Yukon landscapes, and the use of aircraft and ground transport to support exploration has resulted in widespread effects on wildlife and increased access to wild places. In addition, the development of individual mines and sets of mineral claims have had intense, and sometimes deleterious, effects on specific ecosystems and on some fish and wildlife populations. These cumulative negative effects emerge from land clearing that destroys local ecosystems, road building that opens up wild places to diverse influences, effluent that pollutes waterways, and a legacy of abandoned infrastructure and modified landscapes that continue to put ecosystems at risk from pollution and are costly to manage.

ASSESSMENT AND RECOMMENDATIONS

We lay out our assessment and recommendations in two sections. The first is a General Review of mineral development in the context of two principles that we think should drive and direct the development of legislation and policy. The second is a set of Responses to the Issues that are raised in the Discussion Paper¹ that has been prepared by YMDS to orient the process.

¹ Yukon Mineral Development Strategy. 2020. Discussion Paper. Version 1.0. Available at: <https://secureservercdn.net/198.71.233.179/cvy.a41.myftpupload.com/wp-content/uploads/2019/10/YMDS-Discussion-Documents-V1.0.pdf>

GENERAL REVIEW

Our general review of mineral development is anchored in two key Principles that we think should drive a strategy and associated set of policies, legislation, and regulations. Here we explain each Principle, and lay out what it means in terms of the qualities of the current mineral development regime in Yukon. Following explanation, we provide Recommendations for consideration in a revised Strategy.

PRINCIPLE A: Minerals are a Common Property Resource

Yukon's short history under colonial governments has exposed it to two major socio-economic forces that have proven to be highly questionable and insufficient morally: racist policies in relationships with Indigenous peoples; imposition of free-market driven, private ownership of land and resources in contradiction to the collective ownership espoused by Indigenous peoples. We are still confronting racism, and trying gradually to reconcile cultures following much turmoil, the application of the Umbrella Final Agreement (UFA)², and the Truth and Reconciliation Commission. Our economic systems have led to significant social inequalities as well as substantial loss of the capital value embodied in natural resources to companies and people based outside of Yukon. Globally, capitalism is in crisis because its various market places do not adequately deal with the ethical dimensions of decision-making including local vision, human safety, ecological integrity, and full cost accounting for socio-economic benefit³. The ownership of Yukon's mineral resources needs to be re-assessed in these contexts.

Apart from the minority of Yukon lands owned by private interests or individual governments, Yukon lands and waters for which Indigenous title has been settled are held in trust for the public collectively by governments. The manner of this collective ownership is intricate, and depends on details within, and interpretation of the UFA, for the majority of the Territory. In regions lacking settled claims of Indigenous title, the manner of collective ownership is still in negotiation. Nevertheless, as with forest and wildlife resources, First Nations without settled claims predominantly view stewardship of the land and the mineral resources it holds to be a collective responsibility and trust.

The collective ownership of minerals should lie at the heart of legislation and policies dealing with mineral exploration and development. At present, it does not. The current regime fails in at least the following areas: (i) the free entry approach to staking claims; (ii) the reactive nature of community consultation and public input regarding all phases of the mining cycle; (iii) the dominance of non-Yukon economic interests and equity ownership in mineral developments; (iv) the inability to get the private-sector developers of mines to adequately pay for mine decommissioning and clean-up.

² The Government of Canada, the Council for Yukon Indians, and the Government of the Yukon. 1993. Umbrella Final Agreement. Available (August 2020) at: <https://cyfn.ca/agreements/umbrella-final-agreement/>

³ Cox, H. 2016. *The Market as God*. Harvard University Press. & Piketty, T. 2013. *Capitalism in the twenty-first century*. Harvard University Press. & Harvey, D. 2010. *The enigma of capital and the crises of capitalism*. Oxford University Press.

Free or Open Entry Mineral Staking

The free or open entry approach to staking claims is one of the main reasons why the current regime for mineral development is failing society at large. Campbell (2004)⁴ and Hoogeveen (2015)⁵ summarize this problem, with emphasis on western and northern Canada, laying out the deep injustices that result from the mineral industry's free entry to claim land. In the free entry regime (still built into Yukon's mining laws), individual citizens or private economic interests have the opportunity to "claim" an area of land and its subsurface minerals and placer resources, just by placing markers on the land, registering their claims with government, and maintaining them with small cost and/or upgrades annually.

The free entry regime puts minerals, even when not yet proven to be present, as the top value that any piece of land can conceivably provide to society, allowing mineral values to over-ride and even exclude other known values. This attitude is a hangover from early colonial times, and is unjust because societal values and legal rulings regarding governments' roles in all values on the land, have dramatically changed in the interim⁶. For example, court cases such as that won by Ross River Dena Council (see under Public Consultation below), have demonstrated the illegality of free entry claims staking on unceded Indigenous lands.

The holders of free-entry claims have dominant influence on what happens on claims, by being granted a legal "right" to the claimed land. Attempts by other citizens or governments to use the claimed lands for other purposes, whether those be different economic activities or conservation, are then held to ransom by the legal "rights" of the claims holders. In effect this turns a diverse set of publicly-owned occurrences of natural phenomena, - plants, animals, surficial materials, water, rocks, and minerals, - into private ownership. For example, mineral and placer claims in conservation areas such as Territorial Parks and the Special Management Areas of the Peel Watershed hold precedence over other land uses and cannot be extinguished without compensation. In Yukon the free entry miner can even lay claim over land already privately owned when that ownership does not include sub-surface rights (e.g., residential developments).

Canada is signatory to the United Nations' Declaration on the Rights of Indigenous Peoples (UNDRIP). One of the Rights is the Right to Participate in Decision Making and Free, Prior and Informed Consent (FPIC), regarding any activities that may affect their lives⁷. This is especially so when those activities are supported and encouraged by the policy and actions of non-Indigenous governments. Free entry staking of mineral claims is supported and encouraged by the Yukon territorial government in the absence of any free, prior, and informed consent from Indigenous communities. Therefore, we can conclude that

⁴ Campbell, K. 2004. Undermining our future: How mining's privileged access to land harms people and the environment. West Coast Environmental Law, Vancouver. Available (August 2020) at: <https://www.wcel.org/publication/undermining-our-future-how-minings-privileged-access-land-harms-people-and-environment>

⁵ Hoogeveen, D. 2015. Sub-surface Property, Free-entry Mineral Staking and Settler Colonialism in Canada. Antipode. Available (August 2020) at: <http://blogs.ubc.ca/geog328/files/2015/09/Hoogeveen-2015-Property-Free-entry-Mineral-Staking-Settler-Colonialism.pdf>

⁶ Campbell, K. 2004. op. cit.; Hoogeveen, D. 2015. op. cit.

⁷ Gunn, B. 2011. Understanding and Implementing the UN DECLARATION ON THE RIGHTS OF INDIGENOUS PEOPLES: An Introductory Handbook. Indigenous Bar Association, Winnipeg.

Yukon government legislation and policy contravene UNDRIP, and need to be changed to allow Yukon to adhere to UNDRIP.

Mineral and placer claims in the hands of private entities give the minerals and their economic value priority consideration over and above other resources whose economic value is more difficult to assess (e.g., fish and wildlife habitats, occurrences of rare species, and water quality) and above spiritual and aesthetic values for which the capitalist market place has no valuation. Even though development of claims can be refused through impact assessments under the Yukon Environmental and Socio-economic Assessment Act, the priority access that free entry allows, plus the economic investment that staking entails, mean that the final, political, decision for or against development (which rests with the Executive Council of the Yukon Government) is prejudiced in favour of the miner.

A particularly unjust use of free entry staking occurs where claims are staked, not for any likely mineral or placer resource *per se*, but to lay claim to a likely right-of-way for future access to a mineral resource. In Yukon, this has occurred in the Beaver River drainage for access to the ATAC Rau property (quartz claims) and on the east side of Kluane Lake along the road access to the lower Gladstone River's placer developments, among other examples.

The issue of staked claims having precedence over other potential land uses is particularly problematic in land use planning, which, under the Umbrella Final Agreement, is designed to recommend land use designations and management practices that mediate and solve governments' mandates to find balanced approaches to the use of all natural resources on the land. Extensive, pre-existing claims present significant challenges for Planning Commissions in their efforts to recommend conservation designations, such as Parks or Habitat Protection Areas, in overlapping areas. These claims essentially "bake in" land allocation decisions, thereby placing often significant constraints on the ability to meet the objectives of the process, notably the conservation of essential ecosystem services and the interests of Indigenous communities (see also under Issue 5 below).

Existing claims would have to be dealt with if free entry staking were closed down. This will be the most contentious and politically difficult part of any serious re-orientation of mineral development in Yukon. However, the difficulty should not get in the way of a principled approach to reform. Given the injustices of the current regime, bold political will is required. Injustice cannot be corrected without cost.

Options for dealing with existing claims range from making all existing claims null and void, through selectively voiding claims that lack social licence in a land use planning process (e.g., all claims in designated Special Management Areas in a Recommended Regional Land Use Plan), to letting all claims stand. Any option raises two key issues – compensation for lost claims, and achieving public control over whether, when and how exploration and development might occur on these claims. Whatever the option, we think it is necessary that all existing claims be subject to public scrutiny and the need to achieve social licence before they could be worked. The most logical place to do this would be in regional land use planning (under chapter 11 of the UFA). Land use planning Commissions and processes should be charged with reviewing existing claims, asking the question (through public consultation which is integral to these processes) whether or not existing claims in specific areas should be allowed to stand. The question should be posed on a watershed basis for placer claims, and a mountain block

basis for hard rock claims, because these are the geographic units within which such claims are generally nested. In areas where there is no social licence for further exploration and development, claims should be rescinded and compensated. Regarding control of the economic interest in existing claims that remain in standing (through a land use planning process, or because land use planning has not occurred), the YMDS should urge revision of legislation such that those claims holders be required to collaborate and partner with Development Corporations in future exploration and development.

Recommendation 1: We recommend that Yukon’s Quartz Mining Act and Placer Mining Act be repealed, and replaced with new legislation that, among other things, removes the option for free entry claiming of mineral resources by private entities, and puts Yukon in compliance with the United Nations Declaration on the Rights of Indigenous Peoples. In particular, we recommend that mining claims that were placed on top of already existing private lands be rescinded, and that the process of using mineral claims to appropriate possible rights-of-way for access be made illegal (those claims also rescinded). We also recommend that regional land use planning be the vehicle for achieving general social licence for continuation of existing claims, rescinding claims without such licence, and recommendations for compensation.

All resources become “property” when the incumbent power (i.e. present-day governments in Yukon) permits their development. The question then becomes “whose property”? The immediate answer is that it varies depending on whose land the minerals occur. Under the Umbrella Final Agreement (chapter 5), First Nations governments own the mineral rights on Category A Settlement Lands, and a recent Yukon Government Cabinet Order removes the option for staking on Category B Settlement Lands⁸. However, most of the rest of Yukon is, under the spirit and intent of the UFA, jointly managed by the territorial and Indigenous governments. We interpret this to mean that minerals on these “Crown lands” are common property resources, collectively belonging to Yukoners – Indigenous and non-Indigenous.

Governments can, and ultimately need to, decide whether and how to license access to a common property resource, especially when that resource has substantial economic value. The “place-based” principle of resource development, espoused in the YMDS Discussion Paper⁹, leads logically to the assertion that Yukoners, and specifically Yukon governments representing communities to be affected by mineral development (i.e. the territorial and appropriate Indigenous governments), should be in control of all steps in the mining cycle – inventory, exploration, discovery, development, operation/extraction, closure, remediation/reclamation.

Regarding inventory and exploration for minerals, Yukon has a strong history of the mapping and inventory of geological formations and mineral occurrences based on work of the Geological Survey of Canada and the Yukon Geological Survey (YGS). This is analogous to the Yukon Territorial government being responsible for the inventory of Yukon’s forest or wildlife resources, through the Forest Management Branch or the Fish and Wildlife Management Branch, respectively. Inventory and mapping of geologically distinct bedrock types can lead into exploration which is the incremental process of more

⁸ CBC News, February 2020. Available (August 2020) at: <https://www.cbc.ca/news/canada/north/staking-ban-yukon-settlement-land-1.5461916>

⁹ Yukon Mineral Development Strategy. 2020. op. cit.

and more intensive gathering of rock, soil, and/or water samples, along with remotely sensed imagery, to map and quantify mineral occurrences. With the abolition of the free entry system, we think that an agency mandated by the Yukon territorial government, - probably the Yukon Geological Survey, - should be charged with field inventory and mapping of geological features and associated mineral potential.

Subsequent exploration work, in search of specific mineral occurrences, follows from the primary mapping. At this stage, social licence for an exploration program in particular landscapes would need to be sought from the Yukon public and specifically the First Nation governments in whose territories the program would occur (i.e. free entry would not occur). Ratified regional land use plans (as per Chapter 11 of the UFA) provide some of the social licence, by prescribing sub-regions (i.e. landscape management units, or zones) open to exploration in general. However, a renewed consultation process would be required for the specific landscapes to be explored within a ratified plan, and for regions that lacked ratified land use plans.

If agreement to explore was achieved, then economically-oriented agencies at arm's length from territorial and Indigenous governments (e.g., Yukon Development Corporation, Indigenous government Development Corporations) would be charged with running an exploration program. This could include soliciting interest and investment from the private sector in collaborating in exploration programs. The means of soliciting interest could be by auction, as has been done historically with exploration for oil and gas reserves in the territory, but with the proviso that the Yukon-based Development Corporations would continue to hold equity control of any collaborative venture.

Recommendation 2: We recommend that the identification, inventory, and mapping of mineral and placer resources through early stages of exploration be the responsibility of an agency mandated by, but at arm's length from, the Yukon territorial government, probably the Yukon Geological Survey.

Recommendation 3: We recommend that economically-oriented agencies – notably Yukon Development Corporation and First Nations' Development Corporations – be charged with organizing and implementing the full set of more intensive exploration activities, including acquiring social licence for geographically-specific exploration, raising capital, and partnering with the private sector (perhaps through auctions). The underlying condition would be that the majority equity control of any economic collaboration in exploration would remain with the Development Corporations, in their role as agents for the public good in Yukon as a whole.

Public consultation and accommodation through the mining cycle, and Yukon ownership of mines

Removing the free entry system would effectively keep ownership of mineral resources with the public through the inventory and early exploration phases of the mining cycle. This would help to solve subsequent problem in the cycle, namely the reactive nature of public and community consultation and accommodation regarding intensive exploration and extraction projects, and the dominance of non-Yukon economic interests in the equity ownership of mineral developments.

Currently, the Quartz Mining Act Regulation¹⁰ prescribes 4 classes of exploration. These differ in the kinds and the intensity or extent of various exploration activities. Programs of work under Classes 2 through 4 require an impact assessment under the Yukon Environmental and Socio-economic Assessment Act. Class 1 historically only required that a program of work be presented to the Yukon territorial government's Department of Energy, Mines and Resources, which would then post it on the public record, without review by First Nations' governments or the public, and without an impact assessment. The ease with which staking and class 1 exploration occurred on Indigenous lands where title had not been ceded, and without public endorsement, was unjust¹¹. As a result, Ross River Dena Council successfully litigated¹² against the Yukon territorial government over the First Nation's unceded title and its assertion that all exploration should be subject to consultation and accommodation of the First Nation's interests. Despite the judgement in favour of Ross River Dena Council, the Yukon territorial government still has not come to a resolution at the negotiating table with Ross River as to how to deal with the Indigenous title and mineral exploration. Instead, they have put in place Orders-in-Council to close the Ross River traditional territory to staking¹³. In late 2019, the Yukon government in collaboration with the Council of Yukon First Nations announced that all Class 1 exploration in Yukon would be subject to the duty to consult with Indigenous governments¹⁴.

Despite staking closures and a duty to consult on Class 1, there is no duty to inform or consult with any governments (Indigenous or non-Indigenous) when a private entity intends to access lands with the purpose of staking claims (as outlined above). Therefore, when it comes to consultation over subsequent exploration, the "rights" of the claims holders still prejudice discussion because the claims cannot be questioned. The fact that these private entities hold the claims in the first place was never a matter of consultation: only what might happen on the claims subsequently is open for discussion. In addition, although the Yukon government should be responsible for the inter-governmental consultations, there is an increasing tendency for the private entities to take on the consultation because they hold the claims subject to potential exploration. The Yukon territorial government has the responsibility to lead the consultations and accommodations.

We propose that all phases in the mining cycle – exploration, discovery, development, extraction, closure, and remediation - be placed under the direct control and management (not just regulatory oversight) of governments responsible for the collective ownership of the land in question (i.e. the Yukon territorial government in collaboration with the pertinent Indigenous government(s)). This is in contrast to the present regime, where decisions on progress from exploration through to remediation, are made first and foremost by private companies, based on their economic interests defined by the markets. In our proposed approach, decisions are made by Yukon communities based on a mix of social, environmental, and economic interests and the ethical dilemmas they pose. Although the present

¹⁰ Yukon Quartz Mining Act Regulation. Available (August 2020) at:

http://www.gov.yk.ca/legislation/regs/oic2003_064.pdf

¹¹ Hoogeveen, D. 2015. op. cit.

¹² The Yukon's Open Entry Mining System Declared a Breach of the Duty to Consult with First Nations: Ross River Dena Council v Government of the Yukon 2012 YKCA 14. <https://canliiconnects.org/en/commentaries/29926>

¹³ Order in Council 2020/112. Available (August 2020) at: http://www.gov.yk.ca/legislation/regs/oic2020_112.pdf

¹⁴ Whitehorse Star. Dec.27, 2019. Available (August 2020) at: <https://www.whitehorsestar.com/News/yukon-wide-class-1-notification-is-now-proposed-for-2020>

regime attempts to accommodate social and environmental concerns through an assessment process administered by the Yukon Environmental and Socio-economic Assessment Board (YESAB), that is a reactive process where communities have to respond to proposals from private entities, with proposals built mainly on economic priorities. Also, these proposals have large political momentum because of the investment they require to get to the proposal stage.

A major change in how Yukon engages with mining is required: (i) to put local communities (through their own, for-profit, economically-oriented agencies, plus internal consultations) more in charge of whether, what, when, and how to pursue mineral extraction in the regions they plan and manage; (ii) to load both the opportunities and the responsibilities through the full mining cycle onto one economic agency so that the full benefit-cost regime is clear and directly addressed in decision-making; (iii) to better insure that the heavy public investments (government subsidies and tax breaks) in mining result in most pay-back coming to the Yukon public (not primarily to private corporations who remove much of the economic return from the territory).

The economic vehicle for achieving these ends would be the Development Corporations under control of individual First Nations. Such “public corporations” are discussed in general terms in the Umbrella Final Agreement (chapter 22, section 6), and most First Nations have established their own public corporations (most often called Development Corporations) to further their business interests. This can include First Nations without settled claims under the UFA (e.g., Dena Nezziddi Development Corporation owned by Ross River Dena). Our proposal is in sharp contrast with the current regime where private companies are the lead economic agencies, pushing a project forward when it supports their economic interests, and often selling themselves or going bankrupt part way through the mining cycle when they want to avoid risk and responsibility or cannot raise enough capital.

First Nations’ Development Corporations would be better economic entities than private sector companies to lead mineral development projects through the mining cycle in Yukon for various reasons. First, they are directly responsible to the Indigenous communities who should benefit from, but also might suffer most from, various stages in the full mining cycle. This direct relationship with government(s) and community(ies) should make them more aware of, more likely to engage with, and more likely to be responsive to community and local government interests, which are much more than just economic. This would play out through numerous decisions, involving consultations regionally but also open to input from the full Yukon public. For example, decisions regarding where in the region exploration (with potential subsequent mine development) could take place require input from local communities and the Yukon public because some watersheds or landscapes might be viewed as inappropriate. For example, decisions about whether an identified ore body should be mined should depend on whether a community and the Yukon public are satisfied through up-front consultations (not impact assessments after a project is fully proposed to YESAB) that the risks of proposed extraction and treatment processes (e.g., heap-leaching, or massive tailings dams) can be mitigated. For example, decisions on when to prioritize a specific mine should depend on whether or not the community and Yukon public agree that the community and region could support a new mine in terms of socio-economic impacts and infrastructure demands. Land use planning processes make some of these decisions. However, such regional plans are not in place in many regions, so other means of consultation will be needed.

Second, Development Corporations are diversified economic entities, with economic investments and returns in various sectors of the economy. This gives them some extra ability to shelter from economic downturn and loss in the mining sector for at least short periods of time, compared to single purpose mining companies. The volatility of mineral prices in the market place makes mining an inherently risky endeavour. At present the main way that this risk to development of a specific ore body can be at least partly reduced is by selling to a large-scale, generally international, company whose diversity of projects globally helps compensate for project-specific risk and loss. This is problematic because it increases the loss from the territory of profits and economic benefits. It can also lead to international mining companies, with poor human rights and environmental records in countries with relatively corrupt governments¹⁵, owning Yukon projects (e.g., Newmont Mining Company and the Coffee Creek project).

Third, Development Corporations based in Yukon communities are a much more palatable and ethically justifiable economic entities to be receiving government subsidies and assistance for mining, compared to mining companies based outside the territory and often outside the country. The Prospectors and Developers Association of Canada provides a compilation of these direct financial subsidies from governments across the country¹⁶. Key examples available to Yukon-operating companies include the federal Mineral Exploration Tax Credit¹⁷, and the territorial Yukon Mineral Exploration Program¹⁸. In addition, the federal and territorial governments provide huge indirect subsidies to mineral exploration and development through grants to develop infrastructure such as access roads¹⁹.

These various subsidies undermine the argument that mineral development projects in Yukon are competitive in the global marketplace and can proceed on their own strengths. The subsidies also bring into question the federal and territorial governments' commitments to biodiversity conservation. The International Convention on Biological Diversity lists government subsidies to the mineral development industry around the world as one of the key drivers of loss of biodiversity and calls for the elimination of subsidies that promote the loss of species. The International Council on Mining and Metals has put

¹⁵ Tragadero Grande: Land, human rights, and international standards in the conflict between the Chaupe family and Minera Yanacocha: Report of the Independent Fact Finding Mission. (2016). Resolve, Washington, DC. Available (August 2020) at: <https://www.resolve.ngo/docs/yiffm-final-report-english.pdf>

¹⁶ Prospectors and Developers Association of Canada. 2018 Financial Incentives for Mineral Exploration and Prospecting in Canada. Available (August 2020) at: https://www.pdac.ca/docs/default-source/priorities/access-to-capital/flow-through-shares/compilation-of-financial-incentives-for-mineral-exploration-in-canada-may2018_for-website.pdf?sfvrsn=e0e8c98_0

¹⁷ Natural Resources Canada. Mineral exploration tax credit. Information available (August 2020) at: <https://www.nrcan.gc.ca/our-natural-resources/minerals-mining/mining/taxation/mineral-exploration-tax-credit/8874>

¹⁸ Yukon Government. Yukon Mineral Exploration Program. Available (August 2020) at: <https://yukon.ca/en/mineral-exploration-funding>

¹⁹ Cameron, G. 2020. Yukon road project a \$468-million resource gateway. Journal of Commerce. <https://canada.constructconnect.com/joc/news/infrastructure/2020/05/yukon-road-project-a-468-million-resource-gateway#:~:text=COURTESY%20OF%20GOVERNMENT%20OF%20YUKON,the%20Dawson%20and%20Nahanni%20ranges.>

together a best practices document to assist mineral exploration and development projects to minimize impacts on biodiversity²⁰.

Mineral exploration and development is capital intensive. That has long been the argument in favour of opening up the territory to outside, including foreign, economic investors. The need for capital investment from outside the territory would obviously continue. This means that Yukon-based economic entity(ies) in control of the mining agenda (i.e. Development Corporations) would have to develop joint venture partnerships with outside companies (public-private partnerships), beginning in the advanced exploration phase of the mining cycle. Such decisions would be subject to environmental reviews and permitting under YESAB, but also to community consultations.

Implementing this approach will require revamping of current legislation to make it necessary for Development Corporations controlled by Indigenous governments to be the majority owners of economic entities that are responsible for all stages in the mining cycle. The full suite of development rights, economic returns, economic liabilities, and environmental responsibilities would fall to the consortium of economic actors (public-private partnerships) convened by the Development Corporations.

Given the current relatively small economic size and capacity-breadth (asset base, capitalization, skilled employees) of regional Development Corporations run by Indigenous governments, we suggest that the Yukon territorial government establish an arm's-length Development Corporation responsible for the promotion of mineral development, working in collaboration with regional Development Corporations. Such a "Mining Development Corporation" could be a revamping of the existing Yukon Development Corporation whose mandate originally was to "promote the development of Yukon resources on an economic and efficient basis", but whose mandate was restricted in 1993 to just focus on energy development and regulation²¹.

Putting the responsibility for mineral development legislatively in the mandate of an agency working at arm's length from government would help reduce what is currently a conflict of interest embedded in government's role in mineral development in Yukon. At present, the Yukon government's Department of Energy, Mines and Resources, at Ministerial and bureaucratic levels, is the main agency promoting mineral development in the territory. This is a conflict of interest because the same government Minister and bureaucracy is responsible for approval or rejection of decisions and conditions recommended by impact assessments from the YESAB and the Yukon Water Board, and also for enforcing and judging compliance with those conditions. The same Minister is actively searching for and providing incentives for a variety of mineral development projects to go ahead, while having to decide on whether or not to allow specific mineral exploration and development projects to proceed, how to build conditions into their permits, and whether or not to pursue legal actions against those projects for non-compliance. There is a clear case to be made, therefore, for why the Minister of Energy, Mines and

²⁰ Johnson, S. 2006. Good Practice Guidance for Mining and Biodiversity. International Council for Mining and Metals, London. Available (August 2020) at: <https://www.cbd.int/development/doc/Minining-and-Biodiversity.pdf>

²¹ Yukon Development Corporation. Mandate. Available (August 2020) at: <https://ydc.yk.ca/mandate/#:~:text=Develop%20and%20promote%20the%20development,consistent%20with%20sustainable%20development%3B%20and>

Resources should not take on the role of promoting the industry; that is the mandate of economically-oriented agencies at arm's length from governments – notably Development Corporations. The primary mandate of governments themselves is the safety of their citizens and the environment they depend on (i.e. regulatory compliance with legislation).

Giving control of all exploration and mineral development to Development Corporations with strong control by and influence from local communities and governments would go a long way to enhancing place-based planning and decision making. The experience of the Tahltan Nation Development Corporation (TNDC), the business arm of the Tahltan Central Government, in northwest British Columbia, is a case in point²². The TNDC has gradually moved from being a contractor to mining companies, to negotiating substantial Impact-Benefit Agreements with private-sector mine developers, to taking on equity ownership in mine developments in the Tahltan traditional territory. Through negotiated impact agreements with mining companies, it has provided substantial training and employment opportunities for Tahltan citizens. What the TNDC and Tahltan government still lack is direct control of mineral exploration as the British Columbia government still follows a free entry staking regime.

Recommendation 4: We recommend that the current legislation and regulatory regime for mineral exploration and development be completely revamped such that all phases of the mining cycle (exploration through remediation) are the exclusive option and responsibility of economic entities (e.g., Development Corporations working in public-private partnerships) that are legislatively responsible to the Yukon Territorial and Indigenous governments.

Recommendation 5: We recommend that the YMDS urge the territorial government to separate the currently conflicting roles (promotion, permitting, and compliance enforcement) of the Department of Energy, Mines and Resources in regard to mineral exploration and development, by creating a separate agency(ies) for the promotion of the industry.

Abandoned Mines

Yukon has a terrible legacy of abandoned mines²³ that continue to impact and risk environmental values. Impacts include water and soil pollution that contaminates aquatic and terrestrial ecosystems and the foods they produce for people. The private entities that own and run mines generally sell their assets to another company, or go bankrupt, when they decide that operating the mine is no longer economical. This pattern is so common it seems expected. Too often the mine owners have done this well before any clean-up or remediation has taken place. Then the federal, and now Territorial, governments plus Yukon society at large, are left with a legacy of toxic water and/or land that puts various other common property resources such as fish, water, and wildlife at risk. This is the terrible and unfair consequence of letting the private sector own the common property resource when it wants to

²² Tahltan Nation Development Corporation. <https://www.tndc.ca/about>

²³ Northern Abandoned Mine Reclamation process. Crown Indigenous Relations and Northern Affairs Canada. <https://www.rcaanc-cirnac.gc.ca/eng/1565968579558/1565968604553?wbdisable=true>

but letting it abandon the responsibility when it no longer wants it, such that the original owners of the resource – the public and its governments – have to bear the cost of cleanup.

To reduce the risk and cost of this burden of cleanup, and to avoid falling into the same trap as now plagues the federal government in its clean-ups of Yukon's mines from pre-devolution²⁴, the Yukon government now charges bonds (deposits of funds) from mine owners as security against the likelihood that the mine will be abandoned. That practice seems useful in principle, but has failed in application at one mine so far, apparently because it was not implemented effectively and because the security bond was inadequate in size²⁵.

Insuring that a bond is adequately large to cover what are largely unknown clean-up costs in the future is a massive problem. In British Columbia, where private mining companies also have to post bonds as security, the Chief Inspector of Mines reported, in 2018, that the bonds secured by government from industry (\$1.56 billion) fell short of the government's estimated liabilities for cleanup and remediation at those mines (\$2.77 billion) by \$1.21 billion (i.e. 43.7% of the liabilities)²⁶.

Putting mineral exploration and development back in the hands and responsibility of economic entities accountable to the people through their governments (e.g., Development Corporations responsible to various levels of government) would rightly keep the benefits *and risks* of the economic activity in the public sphere. Development Corporations would still have to raise the capital to invest in the security bonds, and the Territorial Government would still control those bonds. The Development Corporations, or their subsidiaries involved in running a mine, would not be allowed to abandon a mine. They would be legally bound to follow the property through to a sufficient level of remediation. Keeping both the economic benefits and the full life-cycle costs of the mine within the same economic entity (i.e. the Development Corporation) should reduce the chances that the Corporation would develop mineral deposits with high risk of environmental impacts and high costs of maintenance and remediation when no longer producing. This is far more responsible than the current situation wherein economic entities can pursue a mine (e.g., the Casino property) with the knowledge that they would not be responsible for the maintenance, over decades and even hundreds of years, of the risk-prone infrastructure (e.g., tailings ponds).

Recommendation 6: We recommend that the Yukon legislation regarding quartz and placer mining be repealed and replaced with new legislation in which the economic entities that are legally allowed to develop mines (i.e. Development Corporations in public-private partnerships) are also obligated to take on the economic responsibility and costs of mine closure and remediation to a satisfactory standard within c. 10 years after the property is producing, and must negotiate with the territorial

²⁴ Northern Abandoned Mines Reclamation process. op. cit.

²⁵ Fox, L. 2020. Yukon seeks \$25 million in outstanding cleanup fees from owners of shuttered, contaminated Wolverine mine. The Narwhal. February 25, 2020. <https://thenarwhal.ca/yukon-seeks-25-million-in-outstanding-cleanup-fees-from-owners-of-shuttered-contaminated-wolverine-mine/>

²⁶ BC Chief Inspector of Mines. 2018 Annual Report. Available (August 2020) at: https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/mineral-exploration-mining/documents/health-and-safety/ci-annual-reports/2018_ci_annual_rpt.pdf

government a security bond to cover some of the longer-term risks (e.g., failure of infrastructure such as tailings dams) that cannot be fully remediated in the short term.

We conclude this section on the principle of common property ownership of mineral resources by stressing that the current regime gives most of the economic benefits of the development of mineral resources to the private sector (e.g., the corporations with international operations who now or have recently operated Yukon's mineral deposits and mines, such as Newmont Mining Corporation (Coffee Gold) and Capstone Mining Corporation (Minto Mine)), while the public take on many of the costs (e.g., road development through government infrastructure funding²⁷; mine cleanup²⁸). Proponents of the current regime would argue that the large amount of economic activity that results from the capital investment in an operating mine is a huge asset to Yukoners, providing direct and indirect jobs, and taxes on income and purchases. This is of course true. However, it is not clear, mainly through lack of detailed economic analysis, that these economic returns provide greater value than the massive costs incurred by Yukoners and the larger Canadian public who are providing infrastructure and subsidies to mining and who are paying for the costs of cleanup and maintenance of abandoned mines. This cost-benefit ledger would be much more favourable for Yukoners if the profits from mining did not leave the territory in the hands of corporations based elsewhere, but remained within the Yukon communities who own the resources and whose territories support the mines.

PRINCIPLE B. Nature Deserves Greater Respect as an Asset

Around the globe, ecosystems that humans depend on for our livelihoods are under massive threat. We face coincident crises of our own making, one from the widespread declines and extinction of organisms (the biodiversity crisis)²⁹, and the other from the disrupting influence of climate overheating on the viability of many species and associated ecosystem services³⁰. These are crises because they threaten the very existence of human societies and cultures; they are not just problems that require technical solutions. Dealing with existential crises such as these requires re-orientation or re-prioritization of societal values towards nature and what we term as the “resources” it provides. Respect for nature as an asset must be a core value for our collective society. It has been a professed value of Indigenous societies³¹. Respect for nature needs to be re-kindled and supported throughout our governance.

²⁷ Yukon Resource Gateway Project – federal funding 2017. <https://www.yukon-news.com/news/trudeau-announces-360-million-for-yukon-road-upgrades/>

²⁸ Northern Abandoned Mine Reclamation Program. op. cit.

²⁹ Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. 2019. Global Assessment on Biodiversity and Ecosystem Services. <https://ipbes.net/global-assessment>

³⁰ International Panel on Climate Change. 2014. Climate Change 2014: Synthesis Report. <https://www.ipcc.ch/report/ar5/syr/>

³¹ Indigenous Circle of Experts. 2018. We Rise Together. Available (August 2020) at: https://static1.squarespace.com/static/57e007452e69cf9a7af0a033/t/5ab94aca6d2a7338ecb1d05e/1522092766605/PA234-ICE_Report_2018_Mar_22_web.pdf & Díaz, S. et al. 2019. Pervasive human-driven decline of life on Earth points to the need for profound change. Science 366: eaax3110.

Compared with other northern latitudes, Yukon is well-endowed with high levels of biodiversity, including high levels of endemic species³². Its ecosystems are still relatively intact in terms of supporting a full set of species and ecosystem processes³³, including the “services” that humans rely on for food and shelter. Yukon’s intactness means it supports native vegetation with relatively little surface disturbance from human activity, and therefore its vegetation stores and absorbs carbon at close to the maximum potential levels. On a global scale this intactness makes Yukon a special region. It gives Yukoners a relatively high ability and responsibility to contribute positively to mitigating the dual crises of biodiversity loss and climate change³⁴.

Mineral exploration and development can worsen the current global crises we face. These activities, at the very least, (i) directly increase the risk of extinction or loss of local populations of some species, (ii) often diminish the ability of ecosystems to provide clean water and rich habitats for species on which humans rely, and (iii) produce substantial greenhouse gases by using lots of energy. Consequently, a Mineral Development Strategy for Yukon needs to take into account the particular opportunities that Yukon offers in both fuelling and mitigating the global crises we face. It can do so by acknowledging and supporting the key role of protected areas in conserving species and storing carbon³⁵. It can also do so by acknowledging and addressing the need to understand the relationship between ongoing human activities (new infrastructure, conversion of ecosystems through land clearing and climate shifts, plus impacts on species and ecosystem processes through mortality and disturbance) and ecosystem integrity in landscapes where resource extraction continues³⁶.

Protected Areas

We can make strides towards realizing the Principle that “nature deserves greater respect as an asset” by establishing protected areas because such spaces best allow ecosystems to function fully and at scale. Protected areas (e.g., Territorial Parks, Habitat Protection Areas) are a cornerstone tool for conserving biodiversity and mitigating climate change in Yukon and globally³⁷. Their designation in Yukon occurs primarily through land use planning (as mandated by chapter 11 of the UFA) through a process which requires the Planning Commissions to judge between different potential designations for land use, including mineral development and conservation. Planning Commissions have the option to designate lands and waters in some form of protection, where conservation is the priority and commercial

³² Nature Conservancy of Canada. 2020. Ours to Save: The distribution, status & conservation needs of Canada’s endemic species. Available (August 2020) at:

<https://storymaps.arcgis.com/stories/23b1ba2f0e2e46ce9a8c27412f414fc1>

³³ Cooke, H.A. 2017. Securing a Wild Future: Planning for landscape-scale conservation of Yukon’s Boreal Mountains. Conservation Report 9, Wildlife Conservation Society Canada. Available (August 2020) at:

https://www.wcsCanada.org/Portals/96/Documents/news_release/WCS_Canada_Yukon_report.pdf?ver=2017-06-05-123617-787

³⁴ Watson, J.E.M. et al. 2018. The exceptional value of intact forest ecosystems. *Nature Ecology and Evolution*, **2**, 599–610 (2018). <https://doi.org/10.1038/s41559-018-0490-x>

³⁵ Gross, J.E. et al. (eds.) 2016. Adapting to Climate Change: Guidance for protected area managers and planners. Best Practice Protected Area Guidelines Series No. 24, Gland, Switzerland: IUCN.

³⁶ Johnson et al. 2020. Growth-inducing infrastructure represents transformative yet ignored keystone environmental decisions. *Conservation Letters* 13:e12696. <https://doi.org/10.1111/conl.12696> & Orr, J.A. et al. 2019. Towards a unified study of multiple stressors: divisions and common goals across research disciplines. *Proc. Royal Soc. Lond. B* <https://doi.org/10.1098/rspb.2020.0421>

³⁷ Watson et al. 2018. op. cit. & Watson et al. 2014. The performance and potential of protected areas. *Nature* 515:67–73.

extraction of resources (e.g., mineral or timber extraction) is not permitted. They can also designate lands for other purposes including “integrated management”, where ecosystem processes are still a priority but cannot continue to function in their entirety because of significant disruptions by people extracting resources for commercial gain. Resource extraction can impact aspects of ecosystem functioning, and implementation of beneficial/best practices cannot completely remove these impacts

Setting lands aside for protection has long been contentious with proponents of mineral exploration and development. They argue that the mineral resources in those regions are then “sterilized” (i.e. lost) to the potential of development and associated economic gain. Conservationists argue similarly, but as advocates for ecosystems functioning at full scale, that high value conservation landscapes have been “lost” from potential protection by the widespread staking of mineral and placer claims through the open entry system which gives precedence to mineral development.

These arguments seem similar, but are not equivalent. The loss of conservation options at full scale is effectively permanent if a new public road is pushed into un-roaded drainages because that road will spur on other developments and likely provide irreversible access for a diversity of human activities³⁸. Consequently, the conservation values are compromised for all citizens, and those values are diverse, encompassing socio-cultural, aesthetic, spiritual, and economic aspects. By contrast, including known mineral resources within protected areas does not result in the loss of those resources. They are still present and uncompromised for future potential value to all citizens. What is lost is only the potential economic value of the proven resource to a small sector of society (i.e. the private entities who have staked the claims and those who might buy the rights) *in the short term*.

This “conflict” between “competing” land uses could be sorted out in a more equitable manner if the principle of common property ownership of mineral resources were properly applied by removal of the open entry staking system and by government taking control and responsibility for the mapping of potential mineral resources (see Recommendation 1 above). Land use planning could then more rationally assess the relative values of regions using data on all common property resources, unprejudiced by existing claims. This is why governments should halt any new staking well in advance of a proposed land use planning process.

Judging by the precedents of the North Yukon and Peel Watershed Plans, UFA-mandated land use planning processes in Yukon are likely to recommend new areas for protection. The Dawson Region plan is now being developed, and much of Yukon still has to be planned³⁹. In addition, the federal government has an obligation under the Convention on Biological Diversity for protection of 17% of land and freshwater nationally by 2020, and has promoted the goal of 25% protection by 2025⁴⁰. To help achieve these targets, the concept of Indigenous Protected and Conserved Areas (IPCAs) has been developed and promoted federally⁴¹. A number of First Nations governments in Yukon have responded

³⁸ Johnson, C. et al. 2020. op. cit. & CPAWS Yukon. 2020. Eroding the Yukon’s wild character: resource roads and making better decisions. <https://cpawsyukon.org/eroding-the-yukons-wild-character/>

³⁹ Yukon Land Use Planning Council. <https://www.planyukon.ca/index.php>

⁴⁰ Pathway to Canada Target 1. <https://www.conservation2020canada.ca/the-pathway#:~:text=Canada%20Target%201%20is%20one,other%20effective%20area%2Dbased%20measures> & Mandate Letter to Minister of Environment and Climate Change. <https://pm.gc.ca/en/mandate-letters/2019/12/13/minister-environment-and-climate-change-mandate-letter>

⁴¹ Indigenous Circle of Experts. 2018. We Rise Together. <http://publications.gc.ca/site/eng/9.852966/publication.html>

by putting forward their own IPCA proposals which are now under consideration by the Dawson Region Land Use Planning Commission and through negotiation with the territorial government.

Recommendation 7: We recommend that a Yukon Mineral Development Strategy explicitly recognize the central and necessary role of land use planning, and consequent land use designations, in the future distribution of access to mineral resources. In addition, we recommend that the YMDS propose moratoria on new mineral staking well in advance of the start of planning processes.

Data for land use planning.

Land Use Planning Commissions in Yukon are frequently faced with data gaps. Inventories of many natural resources are incomplete. This is true for biodiversity. For example, the distributions and habitat affinities of rare species are not fully mapped and studied. It is also true for minerals. For example, much more information about mineralization in bedrock could be learned from more intensive and extensive soil and water sampling. The same issue exists for other resources such as water supply, and services such as carbon storage.

Insufficient information can compromise the quality of a land use plan, but planning cannot wait for perfect information. Fortunately, regional land use plans, when ratified, have periodic reviews, and these reviews would be good times to bring forward new information on the distributions of common property resources and all values. The challenge is to find ways to improve the scope of information on a variety of natural resources, during the tenure of the Plan, without compromising any of the land use designations and management regimes in the existing Plan. For example, biologists would like to use field camps, helicopter-assisted access, and collection of specimens to improve the inventories of various species. Geologists would like to use field camps, helicopters, and soil and water sampling to improve the mapping of mineral potential. These activities, with adequate planning and oversight, would not be a problem in many land use zones, but could be a problem in protected areas unless specific provision were made to allow them.

Land use plans, when they are written, need to address the question of how gaps in information, and changing information, about natural resources and human activities (broadly defined to include at least minerals, focal fish and wildlife populations and ranges, species at risk, carbon stores and sinks, timber inventories, maps of human footprint, human harvests of fish and wildlife) could be addressed during the mandates of the plans, on all land use zones. Improving the inventory of mineral resources in protected areas can not include staking of mineral claims; it must be a process administered and funded by governments using their own staff or contracted geologists. However, it could conceivably include some low-impact sampling techniques, such as the collection of rock, soil, and water samples, in environmentally benign ways if all activities were done at appropriate times of year and using appropriate techniques.

Recommendation 8: We recommend that a Yukon Mineral Development Strategy propose mechanisms for ongoing improvements to the inventories of all natural resources and associated values (including minerals) on lands already designated by Land Use Planning Commissions, including those in protected areas. These mechanisms would be part of the Implementation Strategy for each Regional Land Use Plan (and therefore agreed to by the Parties), would have government oversight, would explicitly avoid any staking of mineral claims, and would include only low- or no-impact techniques.

Integrating Ecosystem Functioning and Mineral Development

Outside protected areas many human activities, including mineral exploration and development, will take place within and using ecosystems that continue to function in some capacity. The key question is at what intensity, spacing, or timing do the human activities start to compromise specific ecosystem processes (such as the viability of a population of a particular species, or the availability of an ecosystem service such as clean water) that society has specified as essential for a sustainable future. Investigations of these questions are referred to as impact assessments, or cumulative effects assessments, or multiple stressor assessments.

There is a fairly substantial body of science to be drawn from, but relatively little of it done in Yukon. For example, we have synthesized knowledge on spatial buffers and timing windows for some key habitats for ungulates and raptors⁴², and Yukon government promotes best management practices for flying aircraft over ungulate ranges such as during mineral exploration⁴³. The North Yukon Land Use Plan applies a threshold of human footprint (linear km of cleared rights-of-way per square kilometre of ground surface) in its integrated management zones⁴⁴ because caribou population viability is thought to be compromised at higher levels of human footprint⁴⁵, as has been shown for the boreal population of woodland caribou⁴⁶. In British Columbia, conservation of large-bodied, wide-ranging mammals is directly compromised by increasing human footprint and land development⁴⁷.

In many cases, the existing environmental impact assessment processes administered by the Yukon Environmental and Socio-economic Assessment Board can recommend the necessary measures and interventions for people to take in mitigating or preventing negative impacts of mineral exploration and development. However, the YESAB processes are still deficient when it comes to cumulative effects of multiple developments, despite efforts to get proponents to address the issue. One problem is that we lack Yukon-based science that might indicate the management thresholds or limits in question. WCS Canada is now undertaking some of this science in conjunction with the Yukon Department of Environment and the Canadian Wildlife Service. However, science may not be able to identify clear thresholds, so limits to the human footprint based on social opinion and tolerances may need to be reached within a land use planning process⁴⁸.

One important point here is that the application of a threshold of human activity beyond which additional activity (or cumulative effect) is no longer allowed can be an evidence-based approach to

⁴² Hayes, R.D. & Reid, D.G. 2014. Avoiding disturbance to Yukon's alpine ungulates and raptors: A summary of scientific knowledge on spatial buffers and timing windows. Unpubl. Report, WCS Canada. Whitehorse.

⁴³ Yukon Environment. 2008. Flying in caribou country: How to minimize disturbance from aircraft. MPERG Report 2008-1. Available (August 2020) at: <https://yukon.ca/sites/yukon.ca/files/env/env-flying-caribou-country.pdf>

⁴⁴ North Yukon Regional Land Use Plan. 2009. Available (August 2020) at: <https://yukon.ca/en/north-yukon-regional-land-use-plan>

⁴⁵ Francis, S. R., and J. Hamm. 2011. Looking forward: using scenario modeling to support regional land use planning in Northern Yukon, Canada. *Ecology and Society* 16(4): 18. <http://dx.doi.org/10.5751/ES-04532-160418>

⁴⁶ Environment Canada. 2012. Recovery Strategy for the Woodland Caribou (*Rangifer tarandus caribou*), Boreal population, in Canada. Available (August 2020) at: https://www.registrelep-sararegistry.gc.ca/virtual_sara/files/plans/rs_caribou_boreal_caribou_0912_e1.pdf

⁴⁷ Shackelford, N. et al. 2018. Threats to biodiversity from cumulative human impacts in one of North America's last wildlife frontiers. *Conservation Biology* 32: 672-684.

⁴⁸ Johnson, C. 2013. Identifying ecological thresholds for regulating human activity: Effective conservation or wishful thinking? *Biological Conservation* 168:57-65. <https://www.sciencedirect.com/science/article/abs/pii/S0006320713003297?via%3Dihub>

sustaining nature in conjunction with human activities. When applied properly, it may well preclude some developments that, under the present regime, would be proposed by the private sector with the expectation that only the mineral and capital markets will judge the developments' viability. This is why the mineral development regime needs to change from one run by private entities, through the "ownership" of staked claims, to one run by government-linked Development Corporations whose economic viability is not solely tied to a single mineral reserve and that reserve's viability given mineral prices and capital markets (see Recommendation 2 above). A second important point is that, in Yukon, land use planning processes are the most suitable public processes for dealing with cumulative effects and, hopefully, arriving at targeted limits to human activity that can be monitored in certain land use zones.

Recommendation 9: We recommend that a Yukon Mineral Development Strategy acknowledge the central role that cumulative effects assessment, including projected future climate change effects, should have in directing and defining the intensity and distribution of mineral developments across Yukon regions, and the central role that regional Land Use Planning should play in giving social licence to the application of the science of cumulative effects assessment.

ISSUES IN THE DISCUSSION PAPER

In this section we address each of the eight Issues raised in the YMDS Discussion Paper, and some, though not all, of the specific questions the Paper raises under each Issue. To orient our remarks, we copy some of the text in the Discussion Paper (notably the questions themselves), here in italics.

Issue 1: Sustainable industry development

Sustainable development is a plastic term, interpretable in different ways by different vested interests. The YMDS Discussion Paper does not define it. We turn to the definition in the Umbrella Final Agreement⁴⁹ where this concept is explicitly laid out as a goal for land use planning commissions to promote (section 11.4.5.9 and Definitions): "Sustainable Development" means beneficial socio-economic change that does not undermine the ecological and social systems upon which communities and societies are dependent.

Mineral development can provide economic and related social benefits to communities, and some communities become dependent on those inputs. Mineral development, often at different time scales, can also produce heavy risks and costs that may undermine some ecological and social systems and therefore undermine communities. Any one person's perspective on this real conundrum depends heavily on the time scale over which risks and benefits are assessed, as well as that person's level of vested interest in the development. We argue that achieving sustainability depends on taking the long view, with risks and benefits assessed over many decades, even seven generations, because this is the time scale at which ecological risk will often operate (e.g., risk of pollution from tailings).

⁴⁹ The Government of Canada, the Council for Yukon Indians, and the Government of the Yukon. 1993. Umbrella Final Agreement. Available (August 2020) at: <https://cyfn.ca/agreements/umbrella-final-agreement/>

The International Council on Mining and Metals (ICMM) has put forward a set of Mining Principles⁵⁰ that define good practices for sustainable development of the industry in terms of environmental, social, and governance concerns, and in light of international agreements such as the United Nations Sustainable Development Goals and the Paris Agreement on Climate Change. These Principles cover the full breadth of a development project from human rights and stakeholder engagement through environmental and health and safety concerns. Principles are aligned with Performance Expectations, and provide a comprehensive set of best business practices that a mineral exploration and development entity should follow. Compliance is based on self-assessment of Performance Expectations by the development entity and also third-party validation, and requires annual reporting to the public. The ICMM recognizes the ongoing and positive value of mineral development to society, but also the historical injustices and unethical practices that have plagued the interactions many societies have had with the industry.

Another approach in striving for sustainability, in mining and other industries, is to apply the “mitigation hierarchy”⁵¹. This is an ordered, sequential approach to designing, planning, and implementing a development project so as to minimize its environmental harm and risks. It is comprehensive in that it lays out the full range of potential approaches to dealing with environmental harm in a development context. This contrasts with the more common, and constrained, view of mitigation as just an effort to reduce harm knowing full well that harm will occur. The mitigation hierarchy is a set of actions – *avoid, minimize, restore, and offset* – to be undertaken with respect to each identified negative impact or environmental harm. These actions need to be followed in the order presented, with primary effort made to *avoid* harm, and *offsets* only considered as a last resort. The mitigation hierarchy is good guidance for all proponents of development, and would ideally be adopted by YESAB as a framework that they would expect to be followed within impact assessments. The YMDS can help the uptake of the hierarchy by asserting a need for it, to enhance sustainability.

Given that Yukon mineral producers are price takers, and that production costs in the North are higher than in other jurisdictions, how can a Yukon Mineral Development Strategy help encourage sustainable industry development?

Response: On the one hand, trying to develop a mineral deposit in the absence of market demand, or project capitalization, is futile and should not be encouraged. However, when market incentive appears sufficiently high, the current model, wherein all the risk of price taking is taken on by a single economic entity (private sector mining company), is not robust. This is because a single company often lacks the ability to weather market volatility. In contrast, a diversified economic entity, such as multi-faceted Development Corporation, would have a wider portfolio of economic ventures and therefore revenue streams, especially if coupled with a private sector company for capitalization. This more diversified economic entity would be more robust to the risks of price taking, and more likely to sustain a mining enterprise.

⁵⁰ International Council on Mining and Metals. Mining Principles. Available (August 2020) at:

<https://www.icmm.com/mining-principles>

⁵¹ The Biodiversity Consultancy. 2015. A cross-sector guide for implementing the Mitigation Hierarchy. Available (August 2020) at: <https://www.icmm.com/website/publications/pdfs/biodiversity/cross-sector-guide-mitigation-hierarchy.pdf>

How can a Yukon Mineral Development Strategy help ensure that Yukon communities are involved in development activities and that positive benefits accrue to Yukon people over the long term?

Response: Under the current regime, the involvement of, and accrual of positive benefits to, Yukon communities has largely depended on how the communities are informed of, and can respond to, an exploration program or mine development that has been organized and planned outside the community. In other words, the community comes to the table second-hand, and, as is the evolving norm, negotiates an Impact-Benefit Agreement (IBA) under some duress. In most cases, the proponent of development is based outside Yukon and profits flow away from the territory.

We propose an alternative approach, whereby the genesis of an exploration and development project is controlled by a community-based Development Corporation, responsible to the community, and charged with identifying and directing exploration activities. Under this model, the community is directly involved in influencing when and where exploration activities take place, and when and how developments occur. Employment income is then more likely to return directly to the community through local hiring. Profit comes to the Development Corporation and its private sector partners, is more likely to stay within Yukon, and can then be made available for support of local government programs and other economic interests.

What are some concrete actions that industry, communities and governments can take to maximize positive benefits from mining projects and mitigate negative impacts on Yukon communities?

Response: The positive benefits of mineral exploration and mining include payment of royalties and taxes to governments, direct employment of Yukoners, and subsequent downstream spending by citizens and governments in diverse businesses and infrastructure. These benefits can be strengthened if more Yukoners are employed, and if the economic entities in control of the developments are Yukon-based, keeping profits for taxation and reinvestment in Yukon. The community-based Development Corporation model fits this vision.

The negative impacts of mineral exploration and development are potentially numerous. We discuss many of these in regard to other Issues below. In quick overview, many negative impacts, especially the social ones, can be better addressed by more community control of the intensity and timing of exploration and development activities. This is more likely to happen when Development Corporations, responding to community interests, have the powers to make these decisions.

Recommendations – Issue 1:

- A. We recommend that the Mining Principles and associated Performance Expectations of the International Council on Mining and Metals, and the Mitigation Hierarchy, be adopted as necessary business practices for the mineral exploration and development industry in Yukon, and be incorporated into impact assessment, plus regulations and policies.**
- B. We recommend that governments in Yukon mandate that mineral exploration and development be under the control and direction of Yukon-based economic entities (referred to here as Development Corporations) that are under the management influence of the governments and communities in whose territory(ies) the exploration and development is anticipated, and that will return certain proportions of profit directly to those governments.**

Issue 2: Outcomes-based approach to development

The Discussion Paper makes two important points here: (i) that there is a common viewpoint in colonial society that the “hinterland” is empty and valueless until developed, and (ii) that the *outcomes* of an economic activity are fundamentally different from the economic *outputs*. Every square kilometre of Yukon is providing value to Yukoners daily through some kind of ecosystem service (e.g., clean water and air; carbon storage and mitigation for climate change; subsistence food) plus the provision of a home and sense of place to a local community. Mineral exploration and development necessarily diminish those values, and must be viewed as starting the impact-benefit ledger in a deficit position. The extent to which they pull themselves out of a deficit, and actually provide net positive benefits, depends on how their desirable outcomes outweigh their undesirable outcomes.

How can the outcomes of interest to community members be considered in a Yukon Mineral Development Strategy?

How can mineral development be undertaken in a way that delivers a net economic benefit to Yukon communities and Yukon people?

How can mineral development be undertaken in a way that improves the cultural resilience of people in Yukon communities?

Response: These three questions are closely related. In summary, we argue that local control (i.e. place-based development) is the principle that can best improve outcomes, net economic benefits to Yukoners and communities, and enhanced cultural resilience. Mineral exploration and development need to be controlled by community-based institutions with close ties to local governments, so that the links from geological inventory, through exploration, to development, remain in the public sphere. The goal should be to get more direct and informed engagement from the community in visioning, planning, and implementing these activities. This is in contrast to the current regime where the private sector controls the visioning (staking and raising capital), planning (project development), and most implementation of activities.

Issue 3: Mining legislation and regulations

What should be considered in a possible update to the Quartz Mining Act and Placer Mining Act? For example: should the requirement to physically stake a mining claim be replaced with map or online staking? should the free entry staking system be modified?

Response: As we discuss in the General Review above, the Quartz Mining Act and the Placer Mining Act need major changes, and would best be repealed and replaced with completely new legislation. They both reflect a colonial view of human relationships with Indigenous peoples and the land. In that view, anything of monetary value was viewed as the property of the first person to find it, or get to it. In early colonial times that applied not only to minerals, but also to fish, wildlife, timber, and the occupation of the land itself. Indigenous title to the land was not even considered. Novel diseases and the economic regime imposed by colonial powers upended Indigenous livelihoods, demographic resilience, and cultures.

It has taken many decades to gradually address the crisis of racism and lack of inclusion brought on by colonial attitudes, and get to the emerging process of reconciliation where we are today. The two Acts in question do not allow First Nations governments and communities, or even the general Yukon public, to

come up with the vision for mineral development on their lands, nor act as the primary agents directing such economic activities. This is largely because of free entry staking which gives anyone the right to claim land, but also because of the lack of control that Indigenous governments have in other aspects of the mining cycle. The two Acts remain colonial, and therefore contradictory to reconciliation.

It has also taken many decades to gradually put in place some semblance of sustainability and equitability in the settler governments' approaches to "managing" natural resources (fish, wildlife, timber, land itself). The main component of a more equitable and sustainable approach has been the assertion that these resources are common property, belonging to all citizens, and therefore requiring the power and expertise of government to oversee and to regulate harvests or allocations, as a matter of public trust. This common property vision is the cornerstone of current wildlife management in North America, prior to which the opposing principle of free harvest had resulted in massive declines of game species across the continent⁵². It is also central to how we approach fish, timber, and land management. Meanwhile, mineral resources are still viewed as the private property of whoever gets to them first – free entry staking. After the staking has occurred, governments try to deal with the loss of other values that this private land ownership creates, through environmental assessments and permitting conditions. However, the public loses control of the main decisions about whether, when, and how mineral exploration and development should occur.

The process of staking claims is competitive. When mineral prices are high it can lead to a staking rush in which private interests are trying to stake claims as quickly as possible. The resulting surge of people and especially helicopter traffic in the back-country can be an impediment to other land users (e.g., hunters and outfitters) and a major disturbance to wildlife especially in the alpine⁵³. An end to free entry staking would mean that governments, through their own or their collaborators' employees, would lay out boundaries around areas open for exploration. This could be the responsibility of territorial and/or Indigenous governments, but only one agency would be doing the work so the competitive aspect of staking would disappear. In areas of overlap of Indigenous traditional territories, the various governments would have to negotiate which agency takes the lead, and how joint benefits and responsibilities would be held.

How should the Quartz Mining Act and Placer Mining Act be changed to align with: Yukon First Nation Final and Self-government agreements? common law in areas of the Yukon where the land claims process has not been completed?

Response: The current legislation ignores the spirit and intent of the UFA by taking control of mineral resources, and consequently large areas of land, away from First Nations governments, and giving that control to private interests through free entry staking. First Nations governments then have to react to the private sector development proposals, rather than pro-actively producing a vision and their own approach to any developments. Free entry staking is unjust in the context of the UFA.

⁵² Mahoney, S. and V. Geist (eds). 2019. The North American model of wildlife conservation. The Johns Hopkins University Press, Baltimore.

⁵³ National Post. May 13, 2012. The Yukon's gold rush shows no signs of slowing, but environmentalists fear for watershed's safety. <https://nationalpost.com/news/canada/the-yukons-gold-rush-shows-no-signs-of-slowing-but-environmentalists-fear-for-watersheds-safety>

This lack of justice is particularly true for First Nations who have not yet settled their land claims. This was made clear by the Yukon Court of Appeal ruling in favour of Ross River Dena Council's assertion of a need to consult and accommodate prior to the registering of mineral claims⁵⁴. A major overhaul of the legislation is required to give Indigenous governments the power and responsibility to lead and control the mineral staking process. This is particularly true for First Nations without settled land claims, but also should apply to all First Nations in the territory.

Other Issues:

Mining has caused numerous environmental problems globally and across Canada. Water pollution is one of the worst problems. Tailings dams, and the ponds they hold back, are often the sources of water pollution. Dam failures and overflows from ponds have caused many tragic and devastating catastrophes globally⁵⁵. In Yukon, we are dealing with a legacy of abandoned mines that continue to pollute or have high risk of doing so⁵⁶. Mines that are currently operating also pollute water periodically⁵⁷.

The environmental community, often in conjunction with other agencies, has put a lot of effort into understanding why dams fail and why mines are not engineered and built to reduce the high risks that these structures bring. Problems abound, from the choice of location with respect to human settlements, to the quality of the engineering standards, to the levels of tolerance for changing conditions, to the levels of inspection and compliance enforcement, and to the legal enforcement of responsibility. In response to these issues in general, and in particular to the irresponsible actions of the industry in the Mount Polley tailings dam collapse in British Columbia, Mining Watch Canada has published a set of 16 guidelines to direct industry and governments in the design and oversight of more responsible and less risky tailings dams and ponds⁵⁸. These guidelines are the most up-to-date, and attuned to the Canadian circumstance, of sets of standards worldwide. They need to be incorporated into new quartz mining legislation, regulations, and policy directives in Yukon.

Recommendations – Issue 3:

A: The Quartz Mining Act and the Placer Mining Act should be repealed and replaced with legislation that removes the process of free entry staking, asserts the common property ownership of minerals held as public trust by governments, and gives those governments (territorial and Indigenous) the power and responsibility to lead the full mining cycle (exploration, discovery, extraction, closure, remediation) with their own, arm's-length, economic entities, and in collaborations with the private sector.

⁵⁴ Court of Appeal for Yukon: Ross River Dena Council v. Government of Yukon, 2012 YKCA 14. Available (August 2020) at: <https://www.canlii.org/en/yk/ykca/doc/2012/2012ykca14/2012ykca14.pdf>

⁵⁵ Roche, C., Thygesen, K., Baker, E. (Eds.) 2017. Mine Tailings Storage: Safety Is No Accident. A UNEP Rapid Response Assessment. United Nations Environment Programme and GRID-Arendal, Nairobi and Arendal, www.grida.no. Available (August 2020) at: https://miningwatch.ca/sites/default/files/2017-11-uneprapid-response-assessment-finalreport_0.pdf

⁵⁶ Northern Abandoned Mines Reclamation process. op. cit.

⁵⁷ Yukon News, July 15, 2020. Victoria Gold reports small water spill at Eagle Gold mine. <https://www.yukon-news.com/news/victoria-gold-reports-small-water-spill-at-eagle-gold-mine/>

⁵⁸ Mining Watch Canada. 2020. Safety First: Guidelines for Responsible Mine Tailings Management. Available (2020) at: <https://miningwatch.ca/sites/default/files/safetyfirst-mainreporten-final.pdf>

B: The YMDS should urge the territorial government to build the 16 Guidelines regarding mine tailings management from Mining Watch Canada’s 2020 Report into new quartz mining legislation, regulations, and policy directives.

Issue 4: Royalty Distribution

The return of mineral resources to public ownership, under the joint responsibility of Indigenous and territorial governments, would change the whole context for discussion of distribution of profits. Most of the royalty or tax arrangements in play in the industry in Yukon and elsewhere would no longer be appropriate. The distribution of profits would have to be negotiated on a project by project basis, depending on the amount of capital investment brought to the project by each level of government (through their arm’s-length economic entities – e.g., Development Corporations) and the level of investment brought by private sector partners in the project.

Issue 5: Land Use Planning

Where does the regional land use planning process fit within the development of a Yukon Mineral Development Strategy?

Response: As we argue above, in our General Review, regional land use plans (as per Chapter 11 of the UFA) are necessary and extremely strong sources of regional direction and influence on how mineral exploration and development will happen in the territory. Their strong influence does, and should, flow from:

- Their legislated mandate, as government-to-government consultation and accommodation processes, where each affected Indigenous community through its own Indigenous government, as well as the public of the Yukon through the territorial government and direct input, is a Party to the Plan. They are crucial to reconciliation.
- Their mandate to direct where mineral exploration and development can occur in each region. This stems from their mandate to divide the regions into land management units with different primary purposes, including protected areas (Special Management Areas in the Plans) where ecosystem conservation is paramount, and zones where other primary land uses are allowed.
- Their ability to control the timing and intensity of mineral development, and other human activities, by directly addressing cumulative effects of land-based activities. Mineral exploration and development, with its associated roads and transmission corridors, is often the dominant human activity in question. Addressing cumulative effects is a key component of achieving sustainability in a development context. This can lead to landscape-based limits or thresholds on human footprint or activity, derived through ecological science and/or social licence.
- Their ability to define the primary corridors, if any, within which major infrastructure such as new roads and transmission routes, would be allowed.

A YMDS has to acknowledge that land use planning is a more powerful and influential process of public engagement, legally and in terms of moral imperative, than mineral development itself.

Are sub-regional land use plans — such as the Beaver River Land Use Plan — a reasonable alternative to regional land use plans from a resource development point of view?

Response: In a word, no. The Beaver River Land Use Plan should be viewed as a one-off venture, in this case resulting from a flawed YESAB ruling. Sub-regional plans are envisaged within chapter 11 of the

UFA, as being processes that Indigenous and territorial governments can enter, alone or together, for lands under their jurisdictions. However, when they agree to develop a sub-regional plan jointly (as with the Beaver River process), they must follow the provisions of the rest of chapter 11 with respect to that Plan (see clause 11.8.4). That means they have to engage the Yukon Land Use Planning Council in the process, establish a Commission, and deal with the other funding and process mechanisms that are required of a full regional land use plan. This has not been done in the Beaver River Land Use Plan, so it is not a valid model to follow.

Above is a legalistic argument as to why the Beaver River planning model should not be used, when regional land use plans have not been drawn up. More importantly, individual resource developments (such as the proposed gold mine and access road that stimulated the Beaver River Land Use Plan) should not stimulate numerous sub-regional planning processes, because such sub-regional plans are likely to be done at scales that are ecologically inappropriate, and then will prejudice the options available to a Planning Commission dealing with a full regional plan at a later date. True strategic land use plans should make decisions on trade-offs between different land use designations, and cumulative effects, over regions large enough to include the full range of land use designations at the scales they need to operate. In balancing land use designations for socio-economic, cultural and ecological outcomes, this means regions at least the size of entire First Nation's traditional territories (i.e. c. 20,000 to 80,000 km²). Small regions, such as the Beaver River drainage (c. 5,000 km²), do not have room to allow all potential land use designations (protected areas; resource extraction zones; Indigenous economy zones) at the scales required. For example, a viable population of grizzly bears (which could vary widely from c. 30 to 225 bears, depending on habitat quality, degree of population isolation, and period of time for high probability of persistence), at densities ranging from about 7 to 20 bears per 1,000 km², would need to occupy areas ranging from 1,500 to 32,000 km² in northwest Canada⁵⁹. We lack up-to-date, and statistically rigorous estimates of grizzly bear densities in Yukon, but these figures show the scale of landscapes required to make protected areas useful for this species, and show that regional planning on the scale of the Beaver River drainage (c. 5,000 km²) would have difficulty in dealing with ecosystem conservation at appropriate scale.

How can a Yukon Mineral Development Strategy help ensure that cumulative effects from development are adequately considered?

Response: Regional Land Use Plans, based on chapter 11 of the UFA, are the most useful processes for dealing with cumulative effects. Generally speaking, impact assessments for individual projects, such as those done by YESAB, are not effective at dealing with cumulative effects. This is because they assess impacts at inappropriate temporal and spatial scales. As we argue, in General Review above, dealing with cumulative effects means coming to agreement on how much human activity can be tolerated by ecosystems, focal wildlife species, and human cultures. Many things drive these effects, including: removal or conversion of surface vegetation (i.e. habitat loss); development of linear infrastructure such as roads and their associated noise (i.e. increased mortality risk, disturbance, and habitat alienation); influx of businesses and people to local communities (i.e. cash flow, employment, personal abuse, substance abuse, stress to social and health services, noise), plus climate change (i.e. shifting weather regimes and extreme events). Evidence from scientific studies can define how focal wildlife species and

⁵⁹ Data ranges taken from Schwartz et al. 2003. Grizzly Bear. Pgs. 556-586 In Feldhamer, G.A. et al. (eds.). Wild Mammals of North America. The Johns Hopkins University Press, Baltimore.

ecosystems might be responding to various levels of human activity and climate change, but these studies are few and far between. Evidence from human experience on the land and in communities can also inform how ecosystems, communities, and cultures are responding to cumulative effects. The YMDS could assist land use planning in dealing with cumulative effects by: explicitly urging land use plans to deal with the issue; explicitly urging land use planning processes to investigate the socio-cultural dimension of cumulative effects (not just the ecological dimensions) because these have direct feedbacks to intensity of developments (e.g., number of person-days of mining operations allowed concurrently) on the land in the region; urging governments to put more effort into researching the topic.

Should regional land use plans be subject to periodic review to consider changes in factors such as land use patterns, climate change and advances in geologic thinking?

Response: Yes. Chapter 11 of the UFA (clause 11.4.5.10) currently allows for possible amendment of an approved Land Use Plan, along with a monitoring regime. The North Yukon Regional Land Use Plan includes a section on Plan Revision, and indicates three mechanisms for changes to the Plan based on new information and value judgements (Plan Variance – minor changes; Plan Amendment – alterations to management strategies; Plan Review – entire re-evaluation)⁶⁰. This seems like a useful precedent for other Plans to follow.

As we state in our General Review (above), the amount and quality of information available to land planners will change over time and plans have to be living documents that can be revised. However, care must be taken to avoid major changes to the Plan, and therefore the social licence behind an approved Plan, without a genuine re-evaluation of all aspects of the Plan and its social licence. The YMDS could help clarify this issue by pointing out that the UFA lacks much clarity on the issue of plan review, and/or by putting forward the model of plan revision laid out in the North Yukon Regional Land Use Plan (section 7.2) as an appropriate model.

Recommendations – Issue 5:

- A. The YMDS needs to acknowledge, and explicitly endorse, the roles of land use planning in relation to mineral exploration and development (i.e. promoting reconciliation; defining land use zones including Special Management Areas; achieving social licence for the continuation of existing mineral and placer claims and referring for compensation those without licence; managing cumulative effects; directing access corridors), and be clear that land use planning, because it is legally mandated by the UFA, will have region-specific influence and control over how a YMDS unfolds.**
- B. The YMDS should not recommend that mineral exploration and development projects be subjected to sub-regional planning processes as a matter of course. The YMDS needs to recommend that the territorial and federal governments become more pro-active in doing regional land use planning under chapter 11 of the UFA, to get ahead of the problems resulting from development proposals in landscapes for which regional land use planning is not yet in place.**
- C. The YMDS should provide assistance and direction to chapter 11 land use planning processes in dealing with cumulative effects by: explicitly urging that land use plans**

⁶⁰ North Yukon Regional Land Use Plan. 2009. op. cit.

- confront the issue of cumulative effects; explicitly urging land use planning processes to investigate the socio-cultural dimensions of cumulative effects because these have direct feed-backs to intensity (pace and scale) of developments on the land in the region; urging governments to put more appropriate effort into researching the topic.**
- D. The YMDS could help clarify the issue of periodic re-assessment of land use plans, by pointing out that the UFA lacks much clarity on the issue of plan review, and/or by putting forward the model of plan revision laid out in the North Yukon Regional Land Use Plan (section 7.2) as an appropriate model.**
 - E. The YMDS should urge governments to put moratoria on mineral staking in advance of the commencement of a specific regional land use planning process so that land use designations and management decisions recommended by the Commission are not prejudiced by changing tenures on the ground.**

Issue 6: Regulatory Coordination

The mineral development industry is concerned that there is too much regulation, and that it spends too much time and effort on regulatory processes and compliance. These claims have to be assessed against some ideal circumstance in which there is a “reasonable” amount of regulation and effort invested. That ideal circumstance is never made clear. So, we suspect that some of the rhetoric around levels of regulation and regulatory coordination is political posturing.

In addition, there is likely a cultural reason within the mineral development industry for their position with respect to regulation. The free entry staking stage of the mining cycle is virtually free of regulation. This fact leads to a general attitude that access to the resource should be free of government intervention. With this cultural attitude in place, the various regulatory hurdles in subsequent stages in the cycle are immediately viewed as excessive and onerous. It is not sufficiently clear to all involved that minerals, and the lands they are found on, are common property resources and therefore are the responsibility of governments to oversee and manage well. In taking on their role relatively late in the mining cycle (i.e. after early exploration and staking), governments have to play a reactive role as they administer impact assessment and permitting reviews in response to the staking and private sector interests in exploration and development. While always reacting to the proposals and demands of industry, governments still actually own the resource and still remain responsible for the ultimate health and integrity of the lands affected through the mining cycle.

More governments have to address and give their approval to mineral exploration and development projects in Yukon than most other jurisdictions, because we have at least one First Nation government, plus the territorial government and its associated regulatory agencies such as the Yukon Water Board and YESAB, for each project proposal. So, it is a plain fact of life that regulatory review and approval may take longer here because there are more powers with a mandated voice in the decisions.

However, if governments were the proponents (through their Development Corporations) of mineral exploration and development, as we propose in this document, a substantial portion of the consultations and accommodations at the community level would precede formal proposals for exploration and for development, so social licence would be decided on early in the mining cycle. This would streamline regulatory processes. At present, much of the time and effort in regulatory processes

result from government agencies and the public reviewing previously undeclared proposals from the private sector. Many of these previously undeclared proposals don't have social licence at first. They are surprises that automatically arouse suspicion, sometimes antagonism, and therefore significant scrutiny that often forces new conditions and information gathering on the proponents. Social licence needs to be won at first much earlier in the process than it currently is (i.e. before any exploration and staking begins), and be re-affirmed, at least, between discovery of an economically viable deposit and any proposal for development. Social licence will be easier to achieve if the proponent agency is based in the region.

Issue 7: Climate Change Adaptation

How can a Yukon Mineral Development Strategy be integrated with the Yukon's climate change adaptation efforts?

The first point to make is that a YMDS needs to be integrated with Yukon's climate change mitigation measures more so than adaptation measures. Climate change threatens the viability and reliability of the building blocks of any society – supplies of food and shelter. We have a more pressing need to reduce greenhouse gas emissions than a need to develop new mineral resources. Mitigation is about reducing those greenhouse gas (GHG) emissions. So, a YMDS needs to recognize and assert that mineral exploration and development industries comply with government initiatives to significantly reduce GHGs.

The Yukon government's draft plan to reduce GHGs is currently being revised based on public consultations. In the version of late 2019⁶¹, it was weak in its vision of how the mining industry should take on its responsibility. It stated that the industry would not have to reduce total GHGs (in contrast to other economic sectors) but would only have to reduce the intensity of those emissions (i.e. the GHG per unit production). It also stated that emissions from mining would not be included in the Yukon's annual tally of GHGs, thereby hiding the role of this industry in the climate crisis. It also laid out 6 suggested activities, 3 of which were effectively subsidies to industry to help them adapt (e.g., provide financial support for energy audits; support research on reducing carbon footprint).

The mining industry needs to be held to the same account as other economic sectors when dealing with mitigation measures for climate change. This means having its emissions built into the territorial accounting of GHGs in absolute, not intensity-based, terms, and being audited for compliance with the necessary reductions.

Also, land use planning will increasingly address how we adapt to climate change. Nature is not responding uniformly to the ongoing changes. Some regions or landscapes are relative refuges, experiencing slower rates of change⁶². Other regions will increasingly support key species who are shifting their ranges to adapt to change. Both sets of regions have particularly high value for biodiversity conservation. Land use planning processes will have to weigh these values against the value of mineral development when making land use designations.

⁶¹ Yukon Government. 2019. Our Clean Future: A Yukon strategy for climate change, energy and a green economy. Available (August 2020) at: <https://yukon.ca/sites/yukon.ca/files/env/env-our-clean-future-draft.pdf>

⁶² Stralberg, D. et al. 2020. Climate-change refugia in boreal North America: what, where, and for how long? *Frontiers in Ecology and the Environment* 18(5): 261–270. <https://doi.org/10.1002/fee.2188>

How can climate change adaptation knowledge be harnessed for more effective adaptation strategies in the mineral sector?

What can be done to address vulnerabilities to climate change at mine sites such as loss of permafrost during the post-operational phase of mines?

Response: These two questions are about adaptation. They largely deal with the design and engineering of mines and their infrastructure to deal with climate change impacts, and the gathering and transmission of new knowledge quickly to the mining industry.

Climate change brings increased variability in weather, with far more extreme events. We suggest that there are three key features of dealing with such novelty and its uncertainty: (i) **building** mines and infrastructure to withstand extreme events of much higher magnitude than have ever before been considered; (ii) setting in place more thorough **monitoring** of potential risks; (iii) focusing new **research** to refine understanding of extreme events and risks.

Regarding how mines and infrastructure are built, we can expect extreme events in terms of run-off from snow-melt and rain, higher intensity storms including electrical storms, more frequent catastrophic forest fires, and more frequent slope failures with permafrost melt. To some extent these can be modelled, and then permitting standards can be refined to reflect extreme scenarios in the models. But whose responsibility should it be to do this? Ultimately it may be government's responsibility, because government sets the permitting conditions. However, industry needs to be pro-active in being risk-averse. Recent examples of failure to build to extreme events are two water spills at the Victoria Gold mine in 2020 resulting from "unexpected" rapid snow melt and "unexpected" heavy rainfall⁶³. Whose modelled "expectations" were exceeded in the engineering and landscaping of the sites?

Regarding monitoring and research, there is clearly a need for government, industry, and probably academic researchers, to collaborate well in establishing the appropriate monitoring regimes and uncovering new approaches to understanding risks. We think that a key ingredient is a sense of urgency and vigilance on the part of the technical staff in industry and government, so as to avoid the trap of resorting to historical norms.

Recommendation - Issue 7:

We recommend that the YMDS state that the mineral exploration and development industry report its annual GHG emissions in absolute (not just intensity-based) measures, and that it be subjected to the necessary 30% reductions in GHGs from 2010 levels by 2030 as are other sectors of the economy in the government's climate change plan.

Issue 8: Built Infrastructure

Given the Yukon Government's limited capacity to debt finance new infrastructure, how can the repair and maintenance of existing infrastructure, and the development of new infrastructure, be funded?

What kinds of investment partnerships with Yukon First Nation governments could be used to finance the development of new built infrastructure for use in the Yukon's mineral sector?

⁶³ Yukon News, July 15, 2020. Victoria Gold reports small water spill at Eagle Gold mine.

<https://www.yukon-news.com/news/victoria-gold-reports-small-water-spill-at-eagle-gold-mine/>

Response: There are two main types of infrastructure in question - roads and power transmission lines – and two distinct processes – building new infrastructure and maintaining or upgrading existing infrastructure. Whether or not governments are involved in financing and/or implementing such developments should first depend on achieving social licence. Social licence needs to come first through compliance with the designations and management directions in a regional land use plan (if completed), second through an environmental and socio-economic assessment review, and third through partnership and endorsement from regional First Nation governments. It is a major mistake for governments to endorse and promote developments, especially new ones, without first achieving social licence.

It is not necessarily government's role to take on financial liability for the development of new roads and power transmission lines. That is especially true if effective ownership of the resource remains in the private sector, as is currently the case after claims are staked. In such cases, the private sector should be financially responsible for implementing the necessary new infrastructure. For example, this approach was taken by Victoria Gold when it committed to covering the cost of the transmission line to link its mine to the Yukon grid and Yukon Energy committed to supplying the necessary electricity⁶⁴. When new roads are proposed, those should be private roads, built, maintained, and secured by the mining company, without public access, as per the draft Resource Road Regulation that the territorial government was developing⁶⁵.

Under a different model, in which ownership of the minerals rests with the community-based and territorial Development Corporations (as we propose here), the respective governments may well take on financial liability for the infrastructure developments. The collaborative partners in such investments could include the private sector and the federal government.

Regarding maintenance and upgrades to existing infrastructure, if that infrastructure supports substantial public use and benefit in addition to just the mining operation, then the territorial government should take on the financial liability in partnership with other governments and the industry, as has been done with the Resource Gateway project⁶⁶. Many such roads are public highways under the Yukon Highways Act, in which case the territorial government has the responsibility to maintain them.

Recommendation – Issue 8:

We recommend that the YMDS urge the territorial government to implement the proposed Resource Roads Regulation being contemplated in 2018, such that new roads accessing mineral exploration and development sites be classed as private roads, closed to public use, and subject to security and control of the economic entity in control of the mineral resource.

⁶⁴ Yukon Energy New Release. Nov. 14, 2017. Yukon Energy and Victoria Gold Sign Power Purchase Agreement. Available (August 2020) at: <https://yukonenergy.ca/about-us/news-events/yukon-energy-and-victoria-gold-sign-power-purchase-agreement>

⁶⁵ Yukon Department of Energy, Mines and Resources. 2018. What We Heard: Developing a Resource Roads Regulation for Yukon. Available (August 2020) at: https://yukon.ca/sites/yukon.ca/files/resource_roads_wwh_v9.pdf

⁶⁶ Yukon Government: Resource Gateway Project. Available (August 2020) at: <https://yukon.ca/en/doing-business/funding-and-support-business/learn-about-yukon-resource-gateway-project>