

**BY ELECTRONIC MAIL** October 3, 2022

Nicole Coté Director General, Protected Areas Directorate Canadian Wildlife Service Environment and Climate Change Canada Gatineau, Quebec K1A 0H3

## <u>RE: PDAC Comments on Key Conservation Questions from the Canadian Wildlife Service's Protected</u> <u>Areas Directorate</u>

Dear Ms. Coté,

As the voice of Canada's mineral exploration community, the Prospectors and Developers Association of Canada (PDAC) takes an active interest in regulatory and policy initiatives that shape the landscape of our industry, on behalf of our more than 6,000 corporate and individual members.

Canada's vast geographic footprint and mineral exploration potential are virtually unparalleled around the world and are foundational to our future economic growth potential. These traits give Canada the opportunity to reduce carbon emissions by meeting our net-zero goals, and provide the world with the mineral building blocks needed for green technology and renewable energy. Under this backdrop, PDAC aims to foster mutually beneficial relationships between industry and Indigenous peoples, and enshrine transparent and evidence-based regimes, which are essential for Canada to compete on a global stage. PDAC has long advocated for inclusive, data-driven approaches to land management that incorporate mineral resource assessments, which effectively balance economic development and ecological conservation.

PDAC appreciates the work of the Canadian Wildlife Service (CWS), and welcomes collaborative engagement with Environment and Climate Change Canada (ECCC), provincial governments, industry and Indigenous communities. PDAC is advocating for government to apply an evidenced-based approach in working to meet Canada's Target 1 Challenge and conserving 30% of Canada's land and oceans by 2030. To accomplish this, governments must establish protected areas and Indigenous Protected and Conserved Areas (IPCAs) that balance other forms of land withdrawals and overarching federal priorities, such as expanding Canada's capacity to supply critical minerals and achieving net-zero carbon emissions by 2050. A transparent and collaborative process in establishing these areas is paramount to ensure that objectives are achievable and there is consistency in applied methodologies across Canada.

As a federal organization, PDAC supports and endorses the submission made by the Mining Association of Canada to this consultation. While decisions around land management are of great interest to the mining industry as a whole, they are of particular importance to the mineral exploration sector given the nature of work at the earliest stages of the exploration process.



Mineral resources in Canada predominantly lay within rock formations under the surface of the earth and are not readily identifiable through traditional prospecting in the majority of cases. As such, a multifaceted approach to exploration is necessary to make mineral discoveries, quantify value, and make strategic decisions about the commercial viability and economic potential of establishing a producing mine.

Canada has the great benefit of being the second largest country in the world with nearly every type of geological terrain and mineral deposit type present under the surface. Mineral exploration across the country has been far from exhaustive and there is vast potential for new critical mineral discoveries to be made in nearly every region. That said, mineral exploration is an investment-intensive and high-risk business with slim a probability of successfully establishing a mine. History has shown that for every 10,000 prospective mineral showings, only 10% will advance to the detailed exploration stage and only one is likely to result in a new mine. On top of these challenging odds, even a lucrative mineral discovery may have decades elapse between initial exploration and establishing a mine. Given these 1 in 10,000 odds and the potential to generate innumerable social and economic benefits, predesignating proposed protected areas prior to evidence-based process would be a major and unfortunate overstep.

Failing to consider all pertinent information before making major land management decisions will pose significant risks and sequester future opportunities. In this context, due to a lack of available public geoscience data and limited prior exploration activity, the mineral resource potential beneath a particular area could remain undiscovered and the social and economic benefits unrealized.

The report published by the Indigenous Circle of Experts (ICE), <u>We Rise Together</u>, raises concerns that Indigenous knowledge systems have been inadequately considered in conservation decisions.<sup>1</sup> Many also express concern about the importance of special places for personal and community ceremonies and that culturally significant species are important to the ongoing survival of the people, their ability to be on the land, and their interactions with the land.<sup>2</sup> Our members understand the importance and value of continuous engagement with Indigenous peoples and that establishing and maintaining respectful relationships is integral to the mineral exploration process. Notably, there are over <u>400 active</u> <u>agreements</u> between Indigenous Peoples and mineral industry companies in Canada that incorporate Indigenous traditional knowledge and conservation practices. PDAC will continue to foster collaboration between industry and First Nations to ensure acceptable land management decisions can be achieved. There have been countless industry examples in this regard, such as Skeena Resources Limited returning mineral claim tenures in 2022 in support of the Tahltan Central Government partnership to establish a new 3,500-hectare conservancy to protect the Ice Mountain Lands, adjoining Mount Edziza Provincial Park.<sup>3</sup>

The mineral industry welcomes protected area decision-making that aligns with Indigenous viewpoints, is considerate of culturally significant areas and balances land protection and conservation with natural resource development. Prioritizing the analysis of mineral potential in land management planning is necessary for Canada to be a world leader in achieving its net-zero commitments and social and

<sup>&</sup>lt;sup>1</sup> PA234-ICE Report 2018 Mar 22 web.pdf (squarespace.com)

<sup>&</sup>lt;sup>2</sup> PA234-ICE Report 2018 Mar 22 web.pdf (squarespace.com)

<sup>&</sup>lt;sup>3</sup> https://news.gov.bc.ca/releases/2021ENV0025-000657



economic development for the benefit of all Canadians. With this in mind, PDAC would like to highlight the following high-level recommendations for consideration:

## **Prioritize Mineral Development Potential in Land Management Decisions**

As Canada is striving to meet its environmental commitments to lower carbon emissions, consideration of known mineral resources and the potential for new discoveries based on public geoscience data and industry activity should be a priority consideration, in any land management decision-making.

The following image, produced by NRCan as a part of mapping Canada's green economic pathways for battery minerals, is an example piece of evidence that should be incorporated in a multi-layered assessment process. The CWS should adopt a similar mapping process that considers conservation, species at risk, alternative energy and mineral development priorities to make informed land management decisions.



Figure 1: Mapping Canada's Green Economic Pathways for Battery Minerals Presentation to Natural Resources Canada by Christopher Lawley

Designation of protected areas must first include a mineral potential assessment of the land, operate within clear and transparent processes and prioritize coordination between jurisdictions. Ensuring there is a transparent process will help Canada strategically assess how to maximize protected area designations and secure the critical mineral wealth needed to help Canada reach its net-zero goals well into the future.

## **Ensure Fair and Transparent Coordination with Provinces**

Over the last three years, there have been a number of IPCA funding announcements, however there has been little to no direct consultation with provinces and territories around selection criteria and timelines. In 2020, PDAC wrote a letter to ECCC, about the apparent lack of approval and coordination from the province of Manitoba in the announcement to designate the Seal River Watershed as an IPCA.



Stating such commitments in the public domain, without pre-consultation or notification is contrary to a holistic and inclusive approach, potentially creating an adversarial environment between governments at the earliest stages of the process. Taking such an approach is likely counterproductive to achieving the stated goals of Canada's Nature Legacy initiative to protect and recover species at risk, advance reconciliation with Indigenous Peoples and ensure sustainability of natural resources.

# Ensure Consistency with Other Federal Initiatives such as Canada's Critical Minerals Strategy

With overlapping areas of focus, ECCC and NRCan should collaborate to ensure alignment of individual ministerial initiatives. Coordination between environment and natural resources ministries will be essential to implementing the <u>Canadian Minerals and Metals Plan</u> and in achieving the goals of the <u>Critical Minerals Strategy</u>.

# Facilitate Ongoing Industry Input

PDAC highly recommends that industry consultation must occur prior to establishing new protected areas to ensure plans are balanced, minimize potential land use conflicts, and fully address the identified priorities. As Canada works towards these protection goals, there should be open dialogue and ongoing consideration of industry perspectives. Land management decision-making processes should be ever evolving and include consultation with all stakeholders.

## Learn from Industry Success Stories

Industry is committed to collaborative land management decisions that protect areas of ecological and cultural significance and many successful examples exists, such as ATAC<sup>4</sup> relinquishing Claims in the Peel Watershed Wilderness Area. Additional industry engagement could facilitate new collaborative and dynamic agreements that increase the total area of land protected for long-term environmental stewardship.

## **Consider the Cumulative Assessment of Ecological and Economic Impacts**

Just as cumulative impact assessments are being required for industrial development projects in everincreasing areas of consideration, cumulative impact assessments that take into account ecological and socio-economic impacts of establishing a particular protected space or IPCA, should be undertaken before any land protection decisions are made.

<sup>&</sup>lt;sup>4</sup> ATAC Relinquishes Claims in Peel Watershed Wilderness Area - Yukon - Bloomberg



PDAC would like to reflect on the Key Conservation Questions established by the CWS:

- 1. Nature Based Climate Solutions (NBCS): Seeking protected area co-benefits from climate programming
  - How can we best link biodiversity conservation with climate adaptation (e.g., riparian buffer zones) and/ or mitigation (e.g., carbon offsets) for optimal conservation gains?

There are many ways we can best link biodiversity conservation with climate mitigation for optional conservation gains as we have seen through various government pilot programs. PDAC suggests that we consider the following:

- Expand Conservation Exchange Program: PDAC supports expansion of the Conservation Exchange Pilot that would work with resource development companies to support ENGO conservation projects to develop conservation carbon offset programs for future benefit. While early exploration poses fewer opportunities to become involved in offset programs, as companies are still at the very early stages of development, opportunities may exist for companies that are nearing or in operation. An indirect example of this is Snowline Gold <sup>5</sup> in the Yukon, who put solar panels in to replace diesel in partnership with the Tr'ondëk Hwëch'in First Nation. Exploration companies would be interested in avenues to reduce their carbon footprint as much as possible and this program could be useful, over the long-term life of the mine.
- Assess Proposed IPCAs Against Mineral Resource Maps: As the size and scale of conservation projects is expansive and given the significant expansion of protected areas being planned, PDAC recommends that the level of mineral exploration and development activity within a region, as well as the potential for mineral discovery and economic development must be integrated into IPCA pre-assessment processes. This may be accomplished by referencing available public geoscience data, and through coordination with federal and regional geological surveys, government ministries and mineral exploration companies working within a given region. Without doing so, governments and communities cannot effectively balance environmental and socio-economic considerations, and there is risk of sequestration or abandonment of viable mineral projects that could have an overall positive impact on the environment and regional economy.
- 2. **Co-Benefits:** Seeking broader societal co-benefits from protected areas programming
  - What other economic, socio-cultural, health and environmental challenges could nature conservation be a solution for?
  - What are the current limiting factors and what are potential innovative approaches to mitigating concerns around Indigenous Protected and Conserved Areas (IPCAs)?

Nature conservation could be a solution for many different economic, socio-cultural, health and environmental challenges. PDAC is comprised of geologists, environmental engineers and sustainability experts, whose appreciation of our natural environment, passion and curiosity have

<sup>&</sup>lt;sup>5</sup> <u>https://im-mining.com/2022/08/05/snowline-gold-brings-in-solar-generation-system-to-power-yukon-exploration-camp/</u>



resulted in a career in mineral exploration. Conservation goals are our priority when evidence based and informed by science.

In the context of the mineral exploration industry, challenges lay in the consistency, transparency and coordination of establishing IPCAs. To mitigate these challenges, we recommend the following:

- **Prioritize Mineral Potential Consideration in Land Management Decisions:** As Canada is striving to meet its environmental commitments to lower carbon emissions, consideration of known critical mineral resources and the potential for new discoveries based on geoscience data, should be prioritized to create an evidence-based mineral overlay.
- Establish Definition of Future use of a Protected Area: There are varying definitions for protected lands and how they apply to different industries. In BC, conservancies allow a wider range of low-impact, compatible economic opportunities than Class A parks, however, commercial logging, mining and hydroelectric power generation are prohibited.<sup>6</sup> Parks and protected areas are dedicated to preserving the natural environment and providing outstanding outdoor recreation opportunities. Places of special ecological importance are designated as ecological reserves for scientific research and educational purposes.<sup>7</sup> The federal establishment of IPCA's must ensure they align with provincial definitions of protection. In the case of mineral exploration when mineral claims are relinquished for the establishment of a protected area, the parameters of economic development must be clearly understood (ex. further mining on the land, or establishing a contract on the land).
- Ensure Consistency in Rules for Protected Areas Across Industries: There are inconsistent rules for how certain industries interact with a protected area. Inconsistent definitions of protected lands can have a negative impact on future investments. For example, an exploration company may have an agreement with a First Nation community and the government to protect an area of cultural significance, excluding it from mineral exploration. While no further exploration is allowed on the land, forestry has not been exempt and these activities are allowed to continue. The definition of protected areas and their application in various industries should be clarified.
- Ensure Consistent Integration with Other Established Processes: In comparison to laws of general application across provincial territorial jurisdictions, and policies that are built into land-use planning, we need to consider how protected lands integrate with other established processes. For instance, in the Northwest Territories at the start of an exploration program, companies must first go through a conformity check with the established First Nation land-use plan, or you cannot proceed. The federal government needs to ensure these additional protections fall under established land-use plans. There must be clear integration of existing processes that identify areas to ensure industry has legal certainty and knows what they can and cannot do.
- **Provide Clarity on Protected Area Parameters:** ECCC must clearly outline what the establishment of a protected area would mean for land outside of those boundaries. There is a theory that the establishment of protected areas should make it easier to develop projects

<sup>&</sup>lt;sup>6</sup> <u>https://news.gov.bc.ca/releases/2021ENV0025-000657</u>

<sup>&</sup>lt;sup>7</sup> https://news.gov.bc.ca/releases/2021ENV0025-000657



outside of those protected areas. Clarity is required for industry to understand the benefits of new projects outside these areas and how development changes once an area is protected.

- 3. Biodiversity Conservation: Achieving both Quality & Quantity
  - Canada has a TransCanada Trail, a TransCanada Railroad, a TransCanada Highway. How can we create a TransCanada NatureWay, based on Biodiversity Conservation "1st Principles"?

PDAC is not familiar with the intention to create a TransCanada NatureWay and would be interested in learning more. We ask that the development of such an initiative consider the following:

- Establish non-linear, transparent criteria for protected areas based on species use, mineral potential and socio-economic opportunities: As we look to create a network of protected areas for Canadians to enjoy across the country, PDAC believes that there should be no intention to establish a linear NatureWay. Rather protection should be primarily based on species use, access to land for species at risk, protections for animal of concern and areas of cultural significance in coordination with provinces and territories. Finally, we must prioritize the consideration of known critical mineral resources and the potential for new discoveries based on geoscience data.
- Develop transparent criteria for selecting protected spaces that are connected and effectively managed: PDAC supports MAC's feedback to this question, asking that emphasis be placed on outcomes to maintain and restore functioning ecosystems that support species mobility and climate change adaptation. We support their recommendation to develop transparent criteria for selecting protected spaces, considering multiple environmental, social and economic factors, aligning with Target 3's intention to focus on areas of particular importance for biodiversity. In addition, there should be a consideration of innovative ways to enhance connectivity and ensure areas are effectively managed long term.
- 4. Innovative Financing: Using 21st century financial tools for Nature Conservation
  - How can biodiversity conservation economic benefits be converted to financial flows to generate bankable conservation investment opportunities? (Ex. Creation of new protected areas)?
  - What would be the benefits of Canada piloting a Payment for Results system for new protected areas?

Biodiversity conservation's economic benefits can be converted to financial flows to generate bankable conservation investment opportunities by collaborating with cross-ministerial initiatives. For example:

• Cross-ministerial support for the expansion of programs with common biodiversity goals: In 2022, Transport Canada launched the Medium- and Heavy-Duty Zero-Emission Vehicles Program, a 4 year ~\$550 million program, to help businesses and communities



across the country make the switch to zero-emission vehicles.<sup>8</sup> Additionally the \$155 million Clean Growth Program, led by NRCan, seeks to fund clean technology research and development and demonstration projects in the energy, mining, and forestry sectors over 4 years.<sup>9</sup> Supporting the expansion of programs like these to include electric haul trucks and heavy machinery, would increase funding for similar initiatives with the goal to reduce emissions and increase biodiversity at a mineral exploration or mining project.

PDAC would need more clarity on a Payment for Results system before being able to offer substantial feedback. We would be interested in learning more about how the government sees a program like this working in practice. There would be minimal if any benefits to redirecting tax revenue to offset the potential economic development benefits that could be realized from sequestering land, as this essentially saddles the country's taxpayers with providing compensation for the elimination of economic development prospects at a regional level.

- 5. Stakeholder Engagement: Expanding the conservation tent
  - How do more traditional conservation stakeholders best engage new/ non-traditional ones (Canadian extractive sector members etc.)?
  - What is the role for large philanthropic conservation Foundations (e.g. Bezos' Earth Fund), in Canadian conservation? What is the role of the public sector?

Both traditional and non-traditional conservation stakeholders must keep an open mind to achieve common goals. For stakeholder engagement, we recommend:

- **Dynamic and Ongoing Engagement with Industry:** PDAC requires transparency in how land protection decisions are made, including how sites will be selected, implemented and administered. The exploration and development sector prides itself on successful relationship building with Indigenous and local communities in proximity to mining projects. Establishing relationships for mutual social and economic development is the foundation of the sector. The same is true with ensuring project partners are well informed, and in support of our projects. We welcome feedback, want to find common ground and ask to be engaged at all stages.
- Build Greater Ministerial Understanding of Mineral Exploration Claims and Environmental Disturbance: There continues to be a lack of public awareness around the mineral exploration process in relation to environmental disturbance. The total area of all a company's mineral claims does not equal total surface disturbance. Staking a mineral exploration claim gives a company the right to explore the area within the claim for potential mineral resources. For as long as the company holds a claim block, other companies may not conduct exploration within that block. Companies may stake dozens or even hundreds of square kilometers of claims in a

<sup>&</sup>lt;sup>8</sup> <u>https://www.canada.ca/en/transport-canada/news/2022/07/minister-of-transport-announces-new-incentives-for-medium--and-heavy-duty-zero-emission-vehicles-program.html</u>

<sup>&</sup>lt;sup>9</sup> <u>https://www.nrcan.gc.ca/climate-change-adapting-impacts-and-reducing-emissions/canadas-green-future/clean-growth-programs/20254</u>



single block, particularly in early exploration when there is a high degree of uncertainty about the potential presence of a mineral deposit(s), and the size and extent of such deposits. Despite staking such large claim blocks, the exploration may be focused in a relatively small portion of the block, with no activity in other portions of the block, or activity limited to airborne surveys or geological mapping. A mining claim allows exploration but does not allow the extraction and sale of mineral resources from the area claimed.

- Build Greater Public Awareness Around Industry's "Environmental Footprint": Ongoing concerns regarding impacts of mineral exploration and mining projects on the environment continue to shape perceptions of the industry, and is a primary point of discussion by governments, Indigenous communities, NGOs and the public. PDAC outreach has demonstrated that there is often a lack of awareness about the activities and potential impacts or "environmental footprint" of mineral exploration. This lack of understanding has been the impetus for legislative amendments to environmental assessment processes, and contributed to challenges such as a lack of community acceptance of mineral projects and negative perceptions of the minerals industry. Appendix A below provides detail around the steps within the mineral development sequence, illustrates the disturbance along a project lifecycle (Figure 2) and analyzes mineral exploration claims compared to a disturbed area.
- Invest in Research and Tools that Monitor Disturbance: PDAC and the Mining Association of Canada, launched a project to develop a methodology to measure the physical disturbance that occurs as a result of mineral exploration and mining operations, by surveying a variety of projects in different biogeographic regions across Canada. Findings will be used to more accurately inform regulatory frameworks decision-makers, and the public about mineral industry activities and government or future researchers can adopt and apply the methodology to additional projects. We look forward to sharing the result of the study with the CWS and stakeholders across government. We invite government or the private sector to adopt the methodology to study additional case studies, to help inform land management decisions.

Philanthropic conservation foundations and the public sector can both play a big role in Canadian conservation. We recommend:

- Focus Funding on Capacity Building Initiatives: Private and public funding should be targeted to capacity building funding for Indigenous communities to be able to participate in land management decision-making, in the way that serves them best. In many cases, companies have covered the consultation service fees for First nations to reduce this cost barrier.
- 6. Landscapes and Sustainable Natural Resource Use: IUCN Category V and VI
  - How can Canada better recognize landscapes and natural resource use that protect biodiversity?

Canada can better recognize landscapes and natural resource use that protect biodiversity in the following ways:

• **Consider Adoption of all IUCN Categories of Protected Areas:** PDAC suggest government must consider adoption of all 7 International Union for Conservation of Nature's (IUCN) conservation categories to help establish protected areas and meet biodiversity goals. These areas are



described as "A clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values."<sup>10</sup> Our current approach to conservation can be broadened to include all 7 categories, provided they align with Canada's broader economic, ecological and conservation priorities.

• Conduct Further Assessment in the Application of all IUCN Categories: There have been inferences that if we were to reclassify conservation areas and provincial parks that may not fall within existing protected areas definitions; we would already be at approximately 25-30% protection. CWS should consider the assessment of the application of all IUCN categories to propel achievable land management targets.

We appreciate the Canadian Wildlife Services collaborative efforts to improve and inform decisionmaking to achieve effective biodiversity protection goals and look forward to ongoing coordination. If you would like to discuss the issue further or would like additional information, please contact Jeff Killeen, PDAC's Director of Policy and Programs at jkilleen@pdac.ca.

Sincerely,

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Lisa McDonald Executive Director Prospectors & Developers Association of Canada (PDAC)

<sup>&</sup>lt;sup>10</sup> https://leap.unep.org/knowledge/glossary/protected-area



## **Appendix A:**





# Disturbance Along the Project Cycle

### Early & Intermediate Exploration

Field activities conducted during early exploration, such as surveying, rock, soil, and water sampling, rarely result in physical disturbances.

In the intermediate exploration stage, line cutting, excavation of small, shallow pits and trenches, and construction of drill pads and small trails can result in limited, often temporary, land disturbances.

### **Advanced Exploration**

As projects progress to an advanced stage, disturbances increase with the addition of new drill pads, increased mechanized stripping of overburden, and blasting. Road construction may be required to facilitate bulk sampling.

### **Mine Development and Operation**

Mine Development often requires construction of roads, pipelines, and transmission lines to service the mine site. Significant earth-moving work is required to make way for mine facilities, including tailings impounds, and, potentially, open pits. Most of these large disturbances will remain during mine operation. Exploration work may continue within the mining lease or adjacent mining claims, resulting in some additional, limited, disturbances.

## Closure

Can occur following any of the previous stages. In this stage, facilities are removed. Often, economic infrastructure such as roads, transmission lines, and pipelines remain in place to service communities and other economic activities. Tailings facilities typically remain a permanent feature of the landscape. Reclamation activities designed to restore the site to its natural state, including planting of vegetation, refilling excavations, and restoring topographical features are undertaken.

### **Post-Closure**

Focuses on monitoring long-term closure measures to ensure site safety. Routine inspections and care and maintenance of tailing facilities, pit slopes, and topographical features, effluent testing and treatment, and replanting of vegetation may occur over the longterm. However, no additional mining or exploration related disturbances are associated with this stage.

Figure 2: Disturbance along the Project Cycle

Typical activities that may lead to physical disturbances at each phase of the lifecycle are summarized below, together with closure and reclamation activities.

#### Reclamation Activities Involves restoring the site to

involves restoring the site to its natural state, including revegetation, recontouring of topographical features, and refilling excavations. Reclamation activities are undertaken progressively at each stage of the project cycle.



**Early and Intermediate Exploration:** Activities during early and intermediate exploration may include:

- Building gravel access roads or short airstrips, as well as gravel landing pads for helicopters
- Establishing a small camp to house personnel, office space, and storage (typically tents)
- Clearing narrow (e.g., 2-3m wide) lines through the forest to conduct ground-based geophysical surveys referred to as cut lines
- Clearing small (e.g., 5-10m square) areas to install diamond drills, potentially including the use of local materials (e.g., cut trees and soil) to level the pads
- Clearing narrow (e.g., 5-10m wide) trails to move diamond drills and other equipment and supplies
- Clearing small areas of bedrock or digging small trenches

<u>Advanced Exploration</u>: For exploration projects that proceed to advanced exploration, activities may include those associated with early and intermediate exploration, as well as:

- Establishment of larger camps with semi-permanent structures (e.g., trailers instead of tents)
- Establishment of on-site power generation or connection to the existing electrical grid
- Improvement to access roads or enlargement of airstrips
- Establishment of small-scale open pit or underground mine workings to collect large samples, referred to as bulk samples
- Establishment of facilities for water management

**Mine Development and Operation:** For advanced exploration projects that proceed to mine development and operation, a wide range of infrastructure is established for the operation of the mine:

- Improvement to access roads or airstrips
- Construction of permanent buildings for accommodations, ore processing, storage, vehicle maintenance, etc.
- Construction of underground or open pit mine workings
- Establishment of facilities for the management of mine waste (waste rock and tailings) and water (e.g., settling ponds for water treatment)

**<u>Reclamation and Closure</u>**: Reclamation can occur during any life cycle phase and is a key activity during closure. Closure takes places following the end of activities – exploration or mine operation. Reclamation and closure activities typically include:

- Demolition of buildings removed from site or safely disposed of on-site
- Removal of power transmission lines, pipelines, etc.
- Removal or safe on-site disposal of fuel and other supplies and hazardous materials



- Flooding of open pits
- Removal of vehicles and other equipment
- Securing mine openings to protect public safety
- Recontouring and revegetation of disturbed areas, such as where buildings or roads were located
- Revegetation of waste rock piles, which may include recontouring and adding cover material
- Securing tailings facilities to ensure that they continue to function as designed, which may include revegetation
- Some infrastructure may be retained to support closure and post-closure activities, such as access roads and power supply needed for ongoing water treatment or the continued operation, maintenance, and surveillance of tailings facilities

## **Mineral Exploration Claims Compared to Disturbed Area**

Staking a mineral exploration claim gives a company the right to explore the area within the claim for potential mineral resources. Individual claims are small areas (varies by jurisdiction) and claims are typically staked in blocks of multiple claims (properties). For as long as the company holds a claim block, other companies may not conduct exploration within that block. For a company to retain their claims, they need to spend a certain amount on exploration and development activities (again the amount varies by jurisdiction), but as long as the claim block is contiguous, the exploration and development work can be focused in just a portion of claims within the block.

Companies may stake dozens or even hundreds of square kilometers of claims in a single block, particularly in early exploration when there is a high degree of uncertainty about the potential presence of a mineral deposit(s), and the size and extent of such deposits. Despite staking such large claim blocks, the exploration may be focused in a relatively small portion of the block, with no activity in other portions of the block, or activity limited to airborne surveys or geological mapping.

If exploration proceeds, companies may retain these large claim blocks for further exploration or allow a portion of their claims to lapse. Once a claim has lapsed, that company can no longer explore in the claim area, but another company may stake that claim. A claim can also be sold to another company.

Particularly for projects that proceed to advanced exploration or into mine development and operation, it is typical for other companies to stake adjacent claims. Thus, the claim block of the company conducting advanced exploration or with a project in mine development and operation may be surrounded by claims held by other companies.

A mining claim allows exploration but does not allow the extraction and sale of mineral resources from the area claimed. Thus, before mine development can begin, the claims within the footprint of the proposed mine site (typically including associated infrastructure such as mine waste management facilities), need to be converted to a mining lease. Within the lease area, the company has ownership of the land (claims apply only to subsurface rights) and is able to develop and operate the mine.



The company may retain claims outside the lease area for further exploration or allow some or all of those claims to lapse. Companies typically retain at least some of these claims well into the mine development and operations phase, as exploration typically continues throughout much of this phase.

As exploration winds down and the end of the operations phase nears, companies will typically release more and more of the claims outside of their mining lease.