

Section Five: NATURAL AND CULTURAL RESOURCE MANAGEMENT

Introduction

Management of the Park's natural and cultural resources will be based on three goals:

- Minimize the short and long term effects of industrial activities on the Park and adjacent lands;
- Provide recreation opportunities; and
- Foster a co-operative atmosphere which supports the ongoing process of mineral extraction and the management and protection of the Park's conservation and recreation values.

The objectives and actions identified in this section are based on these goals. Several management principles will be applied:

1. Disturbed lands will be reclaimed (as close to the pre-disturbance state as possible) and as soon as is practicable.
2. Reclamation shall be progressive. Areas no longer required for mining, will be reclaimed in a timely manner.
3. Any surface disturbance will be minimized and will require submission of a Notice of Work and an application for a Park Use Permit that identifies resources impacted, the impacts on those resources and mitigation measures. Prior to works being initiated, Westmin Resources Ltd. must have a Park Use Permit.
4. Surface disturbance for mining exceeding that authorized by existing permits shall be referred to the Vancouver Island Mine Development Review Committee for review.
5. New permit applications or requests for changes in existing permits which involve the use of Park lands will be reviewed in a public forum. The Strathcona Provincial Park Public Advisory Committee will review these requests and provide advice to BC Parks on the public consultation process to be used.

Land

The Park Boundary

The objective of boundary definition is, in most cases, one of optimizing the size of the Park to meet the defined goals of a proposed Park. In this case, the objective is to minimize the area excluded from Strathcona Provincial Park. Closure and final reclamation of the mine will eventually negate the need for Class "B" status.

Objective:

- To return lands to Strathcona Provincial Park as soon as they are not needed for mining

purposes and reclamation has been initiated. This process may be incremental and requires the agreement of Westmin Resources Ltd.

Actions:

- Monitor progress of mining and extent of mineral reserves.
- Monitor reclamation process.
- Add reclaimed lands to Strathcona Provincial Park on an incremental basis subject to agreement with the company.

Land and Resource Tenures

Strathcona-Westmin Provincial Park was created in 1990 as a Class "B" Park by Order-in-Council 1418. Mineral rights on these lands are held by Westmin Resources Ltd. and operated by its Myra Falls Operations. The form of tenure is a combination of mineral claims, mining leases and Crown granted mineral claims. Use of park lands for mining is authorized by Park Use Permit 1363, which expires in 2012. Westmin Resources Ltd. also holds Park Use Permits 1261 and 1364, both of which expire in 2012. While primarily within Strathcona Provincial Park, they authorize water storage and power generation for the mine. All these permits (Figure 5) may be renewed upon expiry. New permit conditions could be negotiated during the renewal process.

Park Use Permit 1261 authorizes the development of hydro-electric potential of Thelwood Creek. Works included in this authorization are dams, penstocks, powerhouse, and transmission lines. Only a portion of the works (the powerhouse, nearly 800 metres of penstock, about a kilometre of road and a transmission line) are in Strathcona-Westmin Provincial Park. The remainder, including dams, penstocks and impoundments, are in Strathcona Provincial Park. The permit includes a requirement for a security bond in the amount of \$100,000 to guarantee performance by the Company.

Park Use Permit 1363 permits the use of lands in the Park for mining activities and specifies the limitations on that use. The permit area coincides with the boundaries of the Park. The uses authorized by this permit have the most significant effect on the Park. The operation of the mine is also covered by a reclamation permit, M-26, issued by Ministry of Energy, Mines and Petroleum Resources. This permit incorporates a performance bond in the amount of \$4,000,000. The level of this bond is related to the actual cost of restoring the site after mining ceases. Park Use Permit 1363 requires a security bond of \$100,000 as well.

Park Use Permit 1364 covers development of the Tennent Creek watershed for hydroelectric power. The permit authorizes the construction of dams, roads, pipelines and transmission lines. Only a small portion, about 400 metres of road, pipeline and buried cable are in Strathcona-Westmin Provincial Park. A security bond of \$100,000 is required by this permit.

While mostly outside of the Park, **Park Use Permits 1261** and **1364** are managed along with **1363** as though they were a single permit. The area directly and indirectly affected by the mine and its activities goes beyond the boundaries of the Park. The mine affects the physical

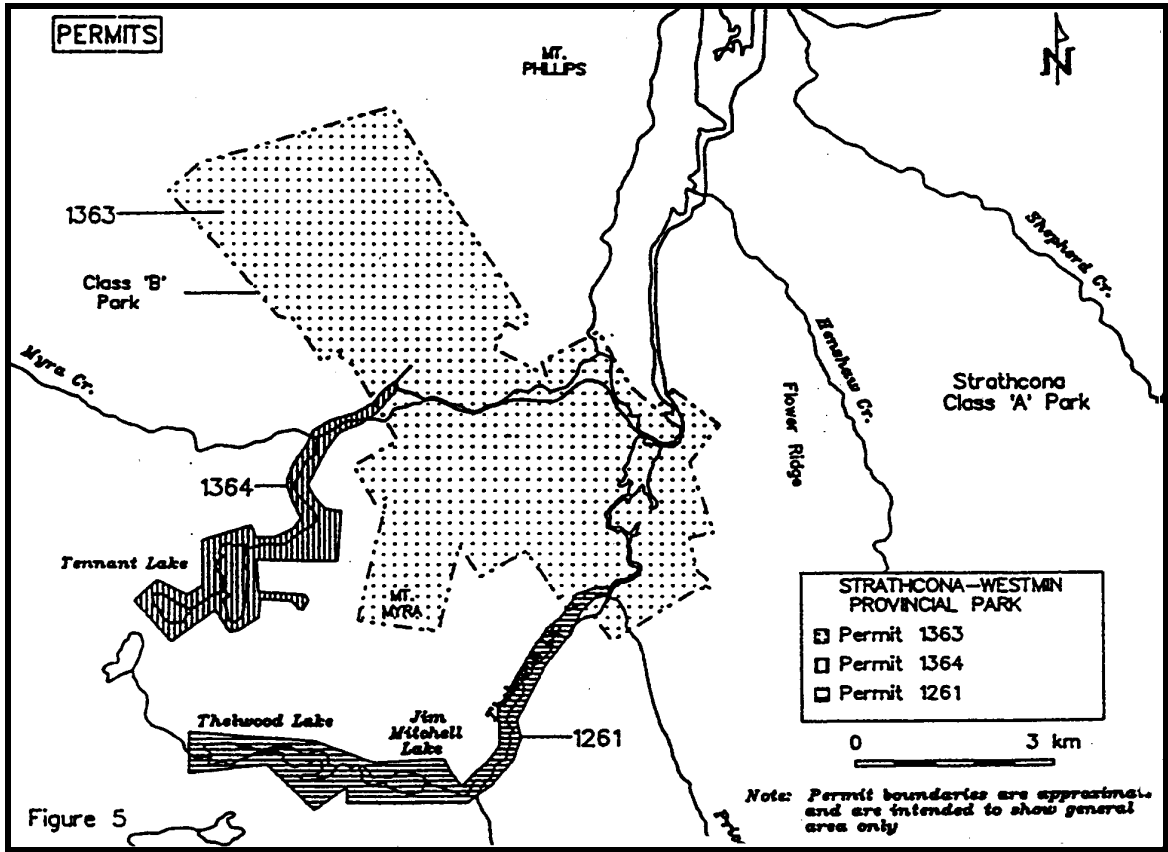
environment through impacts to air and water quality and the quality of visitors' experience through noise, increased traffic on the roads and the presence of industrial activity in a park. Management of the Park will take these impacts into consideration as decisions are being made.

Westmin Resources also holds Water Licences on both Thelwood and Tennent watersheds which allows it to store and use water for electric generation and mining purposes. These licenses apply mostly to waters outside the Park, but the impacts are associated with the mine and its activities. Consequently, management of the Park must include adjacent areas of Strathcona Provincial Park.

Strathcona-Westmin Provincial Park was designated under the *Park Act*. Under this Act, BC Parks is responsible for management of all the lands and waters within the Park. The mine is authorized to occupy Park land by permits issued by BC Parks. The mine operation is regulated and authorized by the Ministry of Energy, Mines, and Petroleum Resources. Several other agencies of the Crown also issue permits or licences (Appendix D) to Myra Falls Operations of Westmin Resources Ltd. to authorize various activities of the mine. Each of these regulatory agencies has various requirements for reporting, inspection, or permitting for various phases of the mine operation. Figure 2 shows the agencies and their responsibilities. This multitude of authorities can lead to confusion and, in some cases, conflicting directions and instructions to Westmin Resources Ltd.

A mechanism is required to ensure that communication between government and Westmin Resources Ltd. is clear and consistent. Several agencies have authority to issue directions to Westmin Resources Ltd.. In order to foster better communication, BC Parks will organize a working group composed of field staff from agencies involved with the mine. BC Parks' Area Supervisor responsible for the Strathcona-Westmin Provincial Park will assume the role of coordinator. Other representatives will be the Mines Inspector, Environmental Protection Officer, Water Management Technician, and Fisheries Officer from Department of Fisheries and Oceans. The purpose of the group will be to discuss agency activities and ensure that the instructions given are understood and not conflict with existing direction given to Westmin Resources Ltd.

Figure 5, Park Use Permits



Objectives:

- To ensure that clear direction and instructions are provided to the company in a timely manner.
- To ensure that all plans and permits carry adequate bonding and meet current standards for environmental protection and quality.

Actions:

- Review reclamation and decommissioning plans, for the long term, to ensure that funding and measures meeting environmental quality standards are included.
 - Establish a field level management coordinating group chaired by BC Parks to ensure that there is a unified Order-in-Council for government direction to Westmin Resources Ltd.
 - Incorporate objectives of this plan in negotiated amendments to the existing Park Use Permits.
 - Review permits and make any technical corrections required.
 - Review bonding levels through VIMDRC.
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Water

Waters from Myra and Thelwood Creeks flow through the Park. The ore and some of the waste rock resulting from mining are acid generating. This represents the most significant environmental risk of mine operation as uncontrolled acid rock drainage can have significant effects on downstream ecosystems.

Westmin Resources Ltd. and regulatory agencies have implemented comprehensive measures to deal with acid drainage. While these measures represent the best approaches with our current understanding, acid rock drainage will remain a concern and be the focus of continued research and technological improvement. Acid generation after closure of the mine will remain an issue and will be a dominant focus for the decommissioning plan. Monitoring of water quality is an ongoing program that will continue after the mine closes.

The Environmental Protection Branch of the Ministry of Environment, Lands, and Parks is responsible for ensuring that water quality is monitored and issuing orders to correct any problems.

Water use and storage is authorized by the Water Management Branch of the Ministry of Environment, Lands and Parks. Outside this Park, but within Strathcona Provincial Park, Westmin Resources has dammed portions of both Tennent and Thelwood watersheds. The Strathcona Provincial Park Master Plan directs that once the dams and associated structures such as penstocks, powerhouse and transmission lines are no longer needed, they be removed and the areas affected by water storage and power generation be restored to a condition representative of the area prior to their use for power generation.

There may be a need for treatment and reclamation programs after the final closure of the mine. Power will be required to maintain these programs. The removal of the dams and other power

generation structures may have to be postponed while those programs requiring power are in place.

Removal of dams and the return of water flow regimes to natural regulation may impact fish. These potential impacts need to be assessed prior to final removal of storage structures.

Objectives:

- To ensure that water quality is maintained.
- To ensure that impacts resulting from water storage and use are minimized.
- To ensure that structures and works associated with water use are removed and the areas affected restored during the decommissioning process.

Actions:

- In association with the Environmental Protection Branch of the Ministry of Environment, Lands and Parks, ensure water quality is monitored.
- Review the reclamation and decommissioning plans and include the need to remove water storage, power generation and access works when mining activity finally ceases. Include restoration of affected areas in reclamation works.
- Assess the impact of dam removal on fish stocks indigenous to the creeks prior to impoundment.

Vegetation

Vegetation patterns of the Park reflect a long history of disturbance. In 1958, the Strathcona Dam was completed and upstream areas began flooding. Much of this upstream area was logged prior to flooding. The Thelwood fire burned much of the lower Thelwood Valley and adjacent slopes; this area was salvage logged. In 1965 and 1982, portions of the Myra Valley were cleared to accommodate the mining operations.

Reclamation of disturbed areas associated with the mine is an active process. The goal of reclamation will be to establish plant communities representative of the site before mining. Reclamation will favour the use of indigenous plant material for restoration and be based on sound ecological principles.

One area of particular concern is an open pit created in the early phase of the mine. Special attention will be required to rehabilitate this area such as recontouring and revegetating.

Objectives:

- To ensure that reclamation measures are based on sound ecological principles with the goal of establishing native/indigenous plant communities on disturbed sites.
- To monitor the health and recovery of disturbed areas outside the mine operating area.
- To protect remaining undisturbed native plant communities.

Actions:

- Review reclamation plans to ensure that native plants are used to establish vegetative cover on disturbed areas such as the open pit.
- Based on existing information, facilitate an inventory of the vegetation of the Park, describe the native plant communities and use these descriptions to design and assess the adequacy of the revegetation plans.
- Use the inventory to identify remaining undisturbed areas and provide protection for these resources through detailed management planning.

Fish and Wildlife

Alpine, sub-alpine, and forested habitats seem to dominate the Park. However, the riparian and wetland habitats of the lower Thelwood Valley are of special significance. The diversity and complexity of these habitats greatly enhance the significance of the Park to fish and wildlife.

Several provincially significant species - Roosevelt Elk, Trumpeter Swans, White-tailed Ptarmigan use park habitats. Their significance is measured by being on the BC Environment Red and Blue List³, as vulnerable to becoming endangered or threatened.

A small herd of elk has established itself in the Thelwood and Price Creek drainage. They use the alder flats in the lower portion of Thelwood Creek extensively during the winter. Roosevelt Elk are a Blue-Listed species. Trumpeter Swans, another Blue-Listed species, frequent the mouth of Thelwood Creek during the winter. Wetland and riparian areas in the lower valley are very important as spring forage areas for black bears. These same wetlands support a variety of waterfowl, song birds and a small population of beaver. The beaver is significant because of its isolation from other beaver populations in the region. The lower portions of Thelwood Creek are also important spawning areas for cutthroat and rainbow trout.

³ The Red and Blue List is a system developed by BC Environment's Fish and Wildlife Branch to classify species at risk. The Blue List identifies species that are vulnerable and could become candidates for the Red List. The Red List is for species that are endangered or threatened.

The flood plain and riparian areas of the lower Thelwood Valley make a special contribution to habitat complexity and species diversity, giving them a significance beyond their physical size. Maintenance of this area's habitats will be a priority.

The Park is also home to another Blue-Listed species, the White-tailed Ptarmigan, which has been reported from the area around Mount Myra. The Vancouver Island wolverine and Vancouver Island marmots, both Red-Listed species, may be expected in adjacent areas of Strathcona Provincial Park and may also use parts of the Park. Wildlife surveys for these species would be required to document their presence.

Other large mammals found in the Park are black bear, cougar, wolves and deer. Black bears and the impact on them of human activity is a special concern. Low elevation valley bottoms are good spring and summer habitat for bears. The status of the population is not known but indications are that they are abundant (Blood, 1989). The potential for conflict between bears and humans is significant. Bears represent an important natural resource for the Park.

The Park is closed to hunting.

Although Buttle Lake is open to fishing, all streams entering Buttle Lake are closed. This closure was enacted to protect fish while spawning and rearing. Significant spawning and rearing areas were lost as a result of reservoir filling. In cooperation with the Recreational Fisheries Branch of the Ministry of Environment, Lands and Parks, regular surveys of fish in these rivers are undertaken. BC Parks also provides the Recreational Fisheries Branch angler use information by carrying out annual creel surveys on Buttle Lake.

Objectives:

- To maintain species diversity in the Park.
- To protect the habitats of key species such as elk, bears, wolves, and cougars.
- To protect fish habitat.
- To endorse practices that minimize conflicts between bears and humans.

Actions:

- Assess existing inventory information including the biophysical mapping to determine habitat values and data gaps. Develop habitat protection prescriptions for critical habitat areas.
- Conduct fish census on a regular basis.
- Monitor location and status of the elk herd.
- Initiate inventories to fill gaps in existing information.
- Prepare a bear management plan.

Cultural Resources

The Park is part of the area claimed by the Nuu-Chah-Nulth Tribal Council as its traditional territory.

Objective:

- To ensure that First Nations' rights and interests are included in planning and management of the Park.

Action:

- Establish contact with the tribal council and discuss planning and management issues.
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Visual Resources

The views from the highway corridor and park roads are an important part of the visitor's experience. Continued mining activity may affect the quality of those views. Retention and enhancement wherever possible of existing visual quality will be a consideration in designing and approving works within the Park. Restoration and repair of previous modifications to the views will be given consideration. In addition, the Thelwood powerhouse produces considerable noise, and ways to reduce the levels should be investigated.

Opportunities for improving the aesthetic quality of the mine site exist. This could involve the use of vegetation to screen buildings or colour schemes which are less obtrusive.

Objective:

- To maintain or restore, if impaired, visual and auditory quality where possible.

Actions:

- Restore visual qualities of disturbed areas to a pre-modification condition through landscaping and the reclamation process.
 - Through the Park Use Permit process, ensure that mine buildings and facilities are of an acceptable visual standard.
 - Work with BC Hydro to restore visual quality and habitat values of flooded areas along Buttle Lake.
 - Work with Westmin Resources Ltd. to reduce noise levels associated with mining activities.
 - Work with Westmin Resources Ltd. to minimize the visual impact of the mine and its related facilities.
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Outdoor Recreation Features

In comparison with Strathcona Provincial Park, Strathcona-Westmin's Provincial Park's recreational features are of moderate significance. These features include the falls on Myra Creek, remaining valley bottom old growth forest and riparian zones, particularly the spawning beds and beaver/wetland of Thelwood and Price Creeks. Arnica Lake is a significant backcountry destination in a sensitive subalpine environment. These features offer significant day use and overnight opportunities but are sensitive to the impacts of human activity.

Both mining operations and recreational activities could affect the quality and security of conservation features.

Objectives:

- To ensure that recreation use and mining operations consider protection of conservation features.
- To protect the Arnica Lake corridor and the area around the Lake as special conservation features.

Action:

- Manage recreation use and mining operations to minimize impacts on natural features.