

Mount Arrowsmith Massif Regional Park Management Plan

**DRAFT PLAN
For Stakeholder & Public Review
October 2010**



ACKNOWLEDGEMENTS

To be added at completion of project.



View from the Judge's Route (Photo: H. Rueggeberg).

EXECUTIVE SUMMARY

Mount Arrowsmith Massif Regional Park (MAMRP), recently acquired by the Regional District of Nanaimo (RDN) is a predominant landscape feature on Central Vancouver Island. It is the RDN's largest and newest regional park. The park is valued for its recreational, environmental, scenic, cultural and historical values. The mountain peaks are prominent landscape features seen from both Port Alberni and the communities of east central Vancouver Island. At 1,817m, the peak of Mount Arrowsmith is the highest on south Vancouver Island. The high elevations support unique alpine and sub-alpine zones; the park is home to the largest area of these ecosystems on Vancouver Island, south of Strathcona Provincial Park.

The management plan is intended to guide the operations, development and stewardship of the park for a ten-year period from 2010 - 2020. The plan follows a long-term vision and goals, and describes policies and targeted actions to guide decision-making and provide direction on key park issues. An implementation plan delineates priorities and projected budgets, timelines and responsibilities.

The development of the Management Plan was guided by the Regional District of Nanaimo and partners: the Hupacasath First Nation, the Alpine Clubs of Canada and the Federation of Mountain Clubs of BC. In addition, to help gain insights and develop a plan that responds to the public and stakeholders of the mountain, several consultations were completed.

The park includes a myriad of natural and recreational values. This plan documents known ecology and habitat of the mountain based on previous field studies and reviews how the park is currently being used for recreation.

The following vision statement sets the tone for the long-term management of MAMRP and defines the context within which short-term management actions are made:

Mount Arrowsmith Massif Regional Park is a significant landmark on Central Vancouver Island. Its familiar peaks continue to be accessible for wilderness recreation in sub-alpine and alpine environments. Recreational and ecological values are balanced through stewardship so that important ecosystems and habitats are protected. First Nations stories and other historical accounts of the mountain are recorded and celebrated and research activities are supported and encouraged. Mount Arrowsmith Massif remains an important ecological, recreational, spiritual and visual resource for its neighbours, friends and visitors.

Building on the vision, management goals set the framework for policies and actions for Mount Arrowsmith Massif Regional Park. The goals are developed from stakeholder and public input.

- Goal 1: Ecosystem Conservation
- Goal 2: Wilderness Recreation
- Goal 3: Partners in Stewardship
- Goal 4: Access
- Goal 5: Education
- Goal 6: Celebration of Heritage

Within the context of the above vision and goals the plan lays out a series of Management Policies organized under 9 key issues for Mount Arrowsmith Massif Regional Park identified through this process:

- Balanced Management
- ACRD Mount Arrowsmith Regional Park
- Park Access
- Recreational Use
- Habitat & Environmental Protection
- Education & Research
- Interpretation & Tourism
- Safety & Emergency Planning
- Park Expansion

The policies are supported by implementable actions intended to guide management of the park over the next 5 years and beyond.

“If one were to go into the fastness of Vancouver Island and find a great deposit of coal or ore, the discovery would be hailed as a real achievement of tremendous benefit to this section of British Columbia, and as another big addition to its assets. By the same process of reasoning, when one considers the benefits accruing from tourist travel, it will have to be admitted that the ‘discovery’ of Mt. Arrowsmith is also a great achievement, and that it will prove an asset of incalculable value.”

- excerpt from the 1912 Victoria Daily Colonist

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1 INTRODUCTION

1.1 Park Overview

Mount Arrowsmith Massif Regional Park (MAMRP), recently acquired by the Regional District of Nanaimo (RDN) is a predominant landscape feature on Central Vancouver Island. It is the RDN's largest and newest regional park.

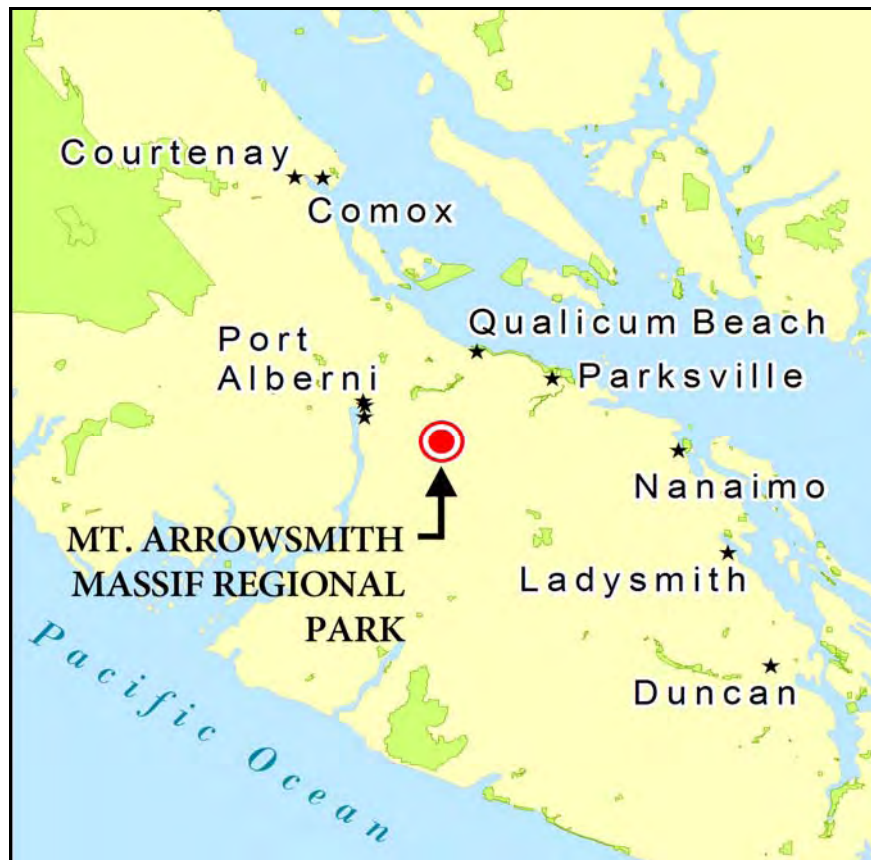


Figure 1.1: Approximate location of MAMRP on Vancouver Island.

The park is valued for its recreational, environmental, scenic, cultural and historical values. The mountain peaks are prominent landscape features seen from both Port Alberni and the communities of east central Vancouver Island.

At 1,817m, the peak of Mount Arrowsmith is the highest on south Vancouver Island. The high elevations support unique alpine and sub-alpine zones; the park is home to the largest area of these ecosystems on Vancouver Island, south of Strathcona Provincial Park.



Mount Arrowsmith Massif from Beachcomber Park near Parksville (Image: RDN).

Park Facts:

Legal Description:

- Block 1380, Cameron Land District, PID 008739668

Park Size:

- 1300 Ha (3,212 acres)

Location:

- Mid-western edge of RDN Electoral Area 'C'
- Approximately 40km west of Qualicum Beach
- Approximately 30km east of Port Alberni

Peaks:

- Mount Arrowsmith – 1,817 m (5,962 ft)
- Mount Cokely – 1,631 m (5,184 ft)

Lakes:

- Fishtail Lake
- Hidden Lake
- Jewel Lake (unofficial name)
- Lost Lake (unofficial name)

Elevations:

- Lower Elevation: ~900 m (varies at park boundary)
- Upper Elevation: ~1,817 m

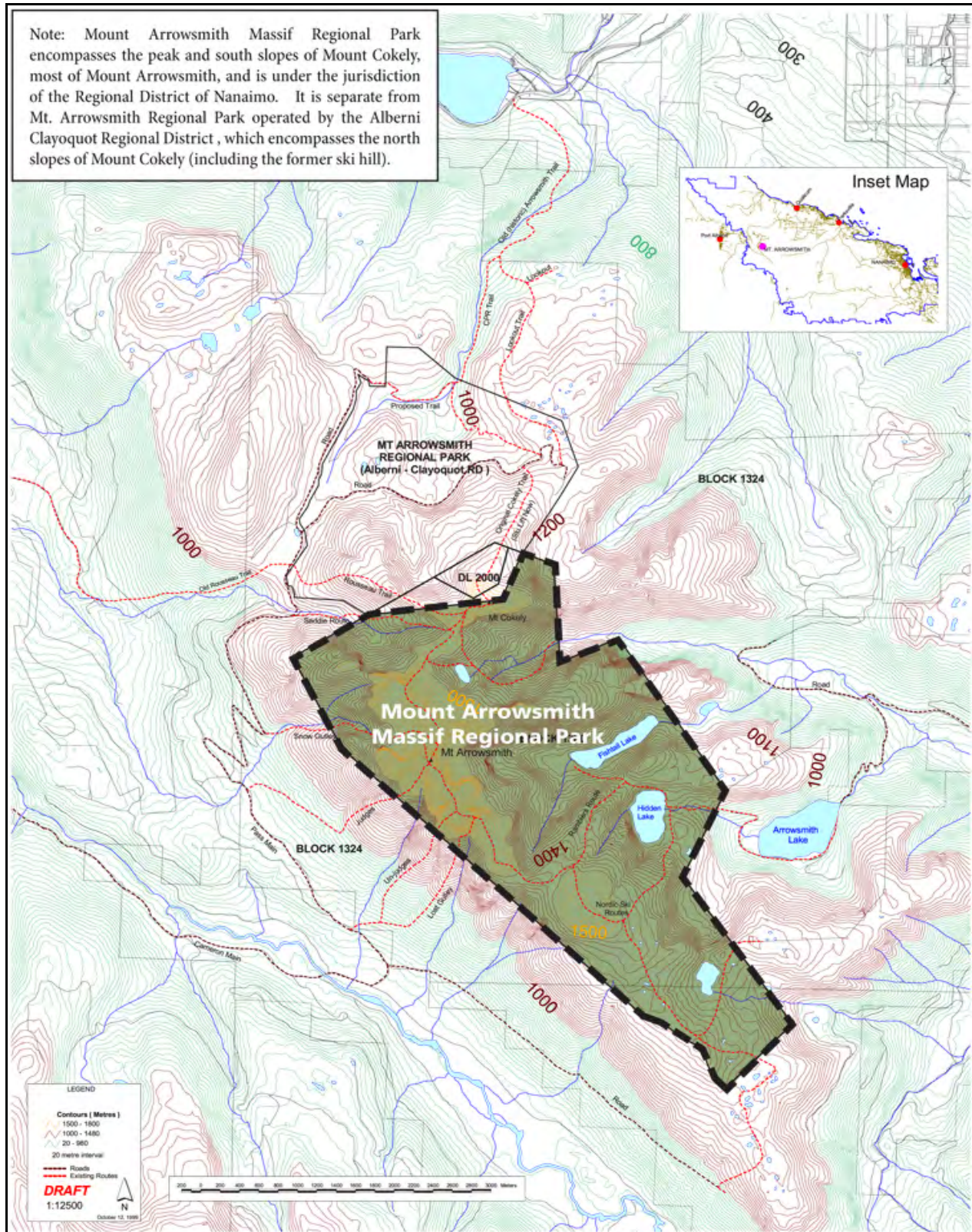


Figure 1.2: Extents of Mount Arrowsmith Massif Regional Park.

1.2 Park Acquisition

While Mount Arrowsmith has long been a well-known recreational destination, its official designation as park did not occur until 2008. Formerly Crown Forest Reserve, Mount Arrowsmith Massif Regional Park was officially established on November 25th, 2008 through a 30-year licence of occupation agreement with the Province of British Columbia. The agreement permits the RDN to develop and manage a Regional Park on the site.



*Official Opening of MAMRP
(Photo: RDN).*

1.3 Purpose of the Management Plan

The management plan is intended to guide the operations, development and stewardship of the park for a ten-year period from 2010 - 2020. The plan follows a long-term vision and goals, and describes policies and targeted actions to guide decision-making and provide direction on key park issues. An implementation plan delineates priorities and projected budgets, timelines and responsibilities.

The plan considers:

- Protection and enhancement of unique natural ecosystems;
- Balancing recreational opportunities in the park with environmental protection;
- Historical and cultural significance of the mountains and surrounding areas;
- Access to the mountain over the next 10 years and beyond;
- Educational values of the site, including research opportunities;
- Safety and emergency planning; and
- Stewardship and park management.

1.4 Role of Regional Parks in the RDN

The Regional District of Nanaimo established a regional park function in 1989. Regional parks in the RDN are created for the benefit of the entire region. The system is financially supported by all electoral areas and municipalities within the RDN. The regional park function allows larger land areas to be secured than can typically be provided by individual municipalities. Regional parks tend to be larger parcels of land, located outside urban cores, with an emphasis on environmental protection and/or outdoor recreation in natural settings.

A *Regional Parks & Trails Plan*, updated in 2005, outlines the RDN's overall goals with respect to land management, stewardship and

recreational use of regionally significant properties. The 2005 Regional Parks & Trails Plan establishes a vision for Regional Parks that “*secures, protects and stewards lands and water features of environmental significance and wildlife habitat value.*” The acquisition of Mount Arrowsmith Massif clearly met this vision.

Currently the RDN manages approximately 2,026 ha of Regional Park and over 60 km of Regional Trail.

1.5 Plan Organization

The MAMRP management plan is organized into the following sections:

- 1 Introduction:** Provides a basic overview of MAMRP and background about Regional Parks in the RDN.
- 2 Management Planning Process:** Summarizes the process used in the development of the plan.
- 3 Defining the Park Values:** Provides an overview of land status and natural, recreational, educational and cultural values.
- 4 Vision, Goals & Principles:** Defines the vision and goals for the park and outlines key principles that affect its planning and operation.
- 5 Management Policies & Actions:** Addresses issues identified for the park through the development of policies and actions.
- 6 Implementation Plan:** Summarizes the recommended actions, with associated budgets, funding sources and responsibilities.

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Panorama looking east from the peak of Mount Arrowsmith (Photo: HB Lanarc).

2 PLANNING PROCESS

2.1 The Approach

A consulting team, led by HB Lanarc Consultants Ltd., guided the planning process for the development of the management plan. The consulting team was overseen by a Staff Working Group consisting of representatives from the RDN Recreation and Parks Department, the Federation of Mountain Clubs of BC and Hupacasath First Nation. A Management Plan Sub-Committee, including of members of the RDN provided review and input at key points in the planning process.



Figure 2.1: Team Organization Diagram

The management plan was developed in five phases, beginning in April 2010 and concluding in December 2010:



Figure 2.2: Process Diagram

1 Defining the Values:

Phase one reviewed and analyzed current park values. Steps included:

- Project start-up and process review;
- Compilation and review of relevant background documents and digital GIS data;
- Review of natural resource values;
- Review of recreation values;
- Review of local demographics and user trends;
- Development of mapping resources to identify park resources and document preliminary park information; and
- Preliminary identification of management issues and opportunities.

2 Consultations Round 1:

The second phase focused on the future of MAMRP through the eyes of the public, stakeholders, staff and board members. Steps included:

- Meetings with the Staff Working Group and Management Plan Sub-Committee to verify gathered information and review the consultation process;
- Identification of stakeholders to be invited to provide direct input into the plan;
- Consultation with identified stakeholders to compile a list of relevant issues;
- Facilitation of two public sessions in which local residents were invited to articulate concerns and issues, share their special knowledge and experiences and identify improvement ideas for Mount Arrowsmith Massif Regional Park; and
- A comprehensive public survey to present background information and gather public views about the park.

3 Draft Plan Development:

The third phase went through the process of developing a draft management plan for review and discussion:

- Development of a preliminary vision and goals to guide development of the management plan;
- Development of preliminary policies for planning, development and management of the park;
- Development of a preliminary action plan to achieve park vision, goals and policies;
- Review and refinement of preliminary vision, goals, policies and actions with the Staff Working Group;
- Review and consultation with key stakeholders on relevant portions of the draft plan;
- Presentation and review of the draft with the Management Plan Sub-Committee; and
- Revisions and dissemination of the draft plan and feedback forms to stakeholders and the public.

4 Consultations Round 2:

Phase four provided opportunity for the public and stakeholders to review the draft plan and point out areas where revisions could be considered:

- Consultation with identified stakeholders to receive comments on the draft plan;
- Facilitation of two public sessions in which local residents were invited to review the draft plan and provide comments; and
- Summarization of input received from stakeholders and the public.

5 Final Plan Development:

The final phase guided the plan to completion:

- Completion of the final plan in consultation with the Staff Working Group and the Management Plan Sub-Committee;
- Completion of the capital and operational cost summary; and
- Submission of the plan to the RDN Board.

2.2 Public & Stakeholder Consultations

The development of the Management Plan was guided by the Regional District of Nanaimo and partners: the Hupacasath First Nation, the Alpine Clubs of Canada and the Federation of Mountain Clubs of BC. In addition, to help gain insights and develop a plan that responds to the public and stakeholders of the mountain, several consultations were completed.

Stakeholder Consultations

A variety of organizations, neighbours, agencies and individuals were identified as having direct interests in the development of a Management Plan for MAMRP. See **Appendix A: Stakeholders** for a list of stakeholders identified in this process. Stakeholders were contacted to inform them about the management plan process, invite them to the public sessions, distribute background information and invite their ideas, concerns and feedback. These groups and individuals were also provided with draft versions of the management plan and were asked to provide direct feedback on the draft.

Public Survey

A public survey was developed to gather preliminary public input and opinions about the future of the park. The survey was made available online and in hard copy at the RDN offices and through email lists. The survey was available from May to June 2010. A total of 142 responses were received. See **Appendix B: Public Survey** for a copy of the survey.

The compiled survey results can be viewed in **Appendix C: Public Survey Results**. The results were used to inform the development of the draft vision, goals, policies and actions.

Public Session #1

The first public sessions for the Management Plan were held on Tuesday, June 22nd, 2010 in Parksville/Qualicum Beach and on Thursday, June 24th, 2010 in Port Alberni. Attendees were introduced to the project and asked to provide input on issues, ask questions about the project and mountain, map their knowledge, share their experiences and provide their ideas for the future of the park. Approximately 50 people attended the sessions. See **Appendix D: Public Session #1 Summary** for a summary of the information received.

Public Session #2

To be added. See **Appendix E: Public Session #2 Summary** for more information.

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Looking up at Mount Cokely from the start of the Saddle Route (Photo: HB Lanarc).

3 DEFINING THE PARK VALUES

3.1 Property & Land Status

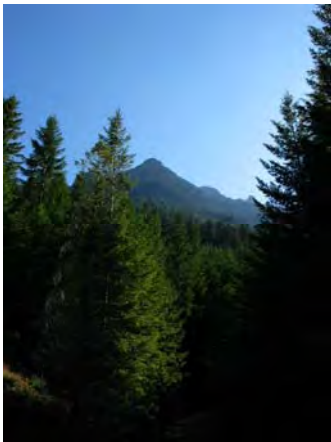
3.1.1 Property Description

Mount Arrowsmith Massif Regional Park encompasses 1300 ha of alpine and sub-alpine land mass encompassing the summits of Mount Arrowsmith and Mount Cokely and the surrounding range. The park is comprised of one parcel, legally described as Block 1380, Cameron Land District, PID 008739668. See *Figure 2: Extents of Mount Arrowsmith Massif Regional Park (p.2)*.

3.1.2 Park Acquisition

Members of hiking clubs, including the Federation of Mountain Clubs of BC (FMCBC) and the Alpine Club of Canada (ACC), along with numerous individuals, have been climbing Mount Arrowsmith and Mount Cokely for decades. Club members, along with the general public, advocated for the protection of the area for many years.

Acquisition Highlights of Mount Arrowsmith



Looking up a MAMRP (Photo: HB Lanarc).

1992: The Commission on Resources and Environment (CORE) consider Mount Arrowsmith Massif for Class A Provincial Park Status, but opt to secure more threatened lowland areas, due to the adjacent existing ACRD Regional Park and Mount Arrowsmith's similarities to the already established Strathcona Provincial Park.

1995: The RDN's 1995 Regional Park Plan identifies Mount Arrowsmith as an area of interest for regional park acquisition.

1998: The Public Access Resolution Committee (PARC) garners support from over thirty clubs, societies, federations and outdoor groups to obtain Block 1380 as a regional park. The park is identified by the RDN's 1998 Acquisition Program as one of nine regionally significant acquisition priorities.

1999: The RDN appoints a local citizen committee to provide direction on the potential future of Mount Arrowsmith Massif as a regional park.

2001: A BC Parks Land Evaluation and Acquisition Framework (LEAF) form is completed for Mount Arrowsmith to document the values of the property as a potential provincial park.

2005: The updated RDN Regional Park Plan identifies Mount Arrowsmith Massif as a short-term (1 to 3 year) acquisition priority either as a provincial park or regional park.

October 2006: RDN Board members meet with the Minister of the Environment at the UBCM convention to discuss the designation of Mount Arrowsmith as a park. At this meeting it is recommended that the RDN pursue Regional Park status through the Province of BC's Nominal Rent Tenure process.

February 2007: The RDN Board passes a resolution to begin the Nominal Rent Tenure process.

October 2008: A MoU is signed between the RDN and Hupacasath First Nation to ensure key objectives are captured in planning for the future park.

November 12th, 2008: An offer for 30-year licence of occupation of Block 1380 is received, allowing RDN use of the land for Regional Park purposes.

November 25th, 2008: Block 1380 is declared a RDN Regional Park.

3.1.3 Neighbouring Properties

MAMRP is surrounded to the east, south and west by privately managed forest lands owned by Island Timberlands Ltd. The area is an active forestry area. To the north is the Alberni Clayoquot Regional District's (ACRD) Mount Arrowsmith Regional Park which encompasses the north face of Mount Cokely and was the former ski hill site. Since the ski resort was decommissioned, the site is heavily used as a recreation site by hikers, mountain bikers and motorized recreation enthusiasts. See **Figure 3.1: Neighbouring Lands Map** (next page).

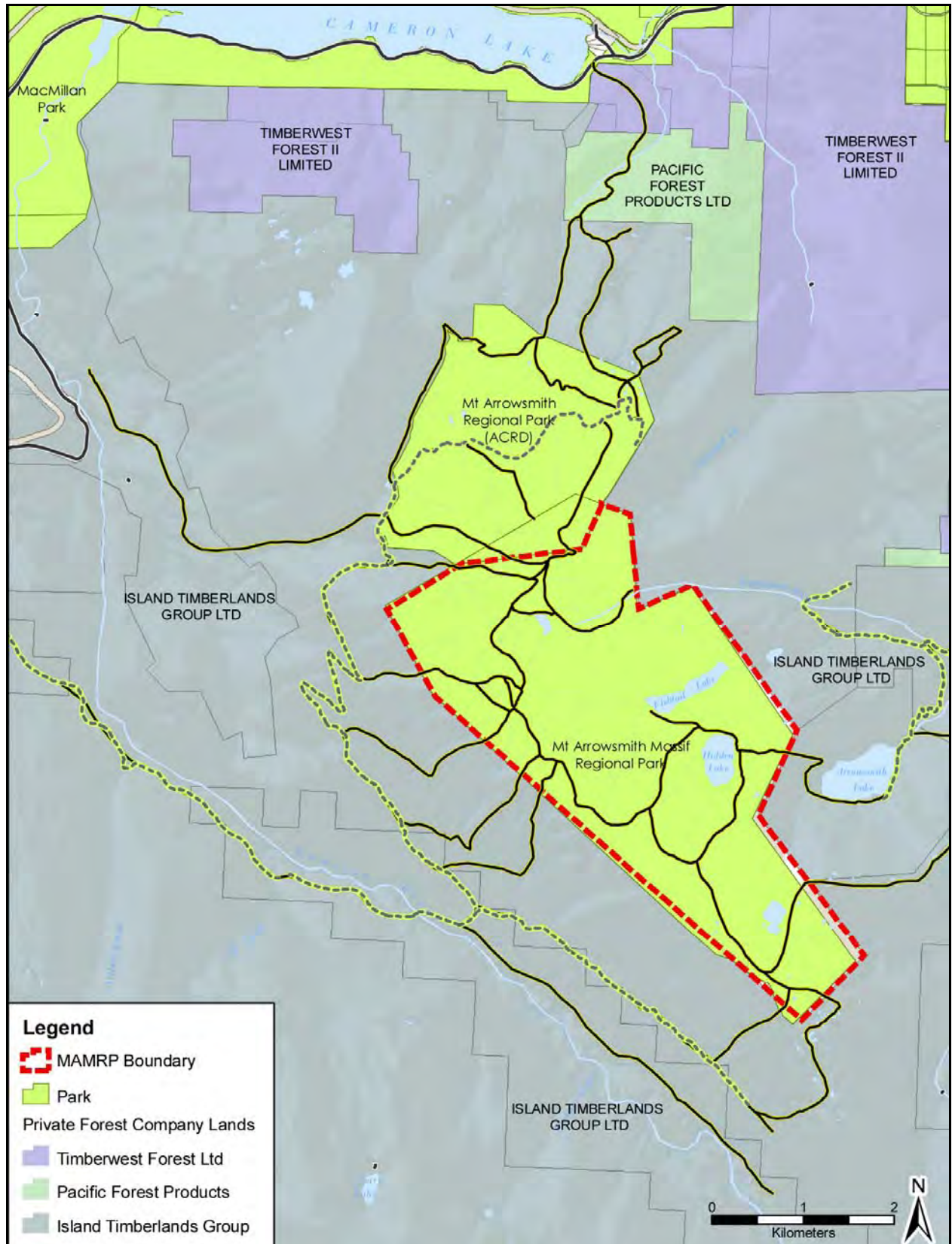


Figure 3.1: Neighbouring Lands Map.

3.1.4 Park Access

There is no public road access to MAMRP. Private logging road networks are utilized to access the park by vehicle, or people are able to hike-in from Cameron Lake using the Old Arrowsmith Trail. Logging roads are currently maintained by forestry companies and level of maintenance is related to logging activity in the area. These roads are gated, but gates are typically left open, except when hazard conditions are present (e.g. high fire risk).

The park currently has three notable access points:

- **West Access – Cameron & Pass Main Forestry Roads:** 95% of people who responded to the survey said they have accessed the park using the private forestry roads from the Alberni Highway (Hwy 4). This is the route formerly used to access the ski facility on Mount Cokely. The forestry road is accessed just west of the Alberni Summit – a small *Mount Arrowsmith* sign is located at the junction. The road forks in several locations and includes steep grades and switchbacks. It is currently accessible by a high-clearance 2WD during non-snow conditions. This route leads to the trails on the western side of the mountain including: the Saddle Route, Judge’s Route, Rosseau Route, Snow Gulley, Un-Judge’s Route, Lost Gully and Judy’s Meadow, all day-hikes from the road. This route also leads into the ACRD Mount Arrowsmith Regional Park, which connects to the Original Cokely Trail and Rosseau Chute.
- **North Access – Old Arrowsmith Trail/CPR Trail from Cameron Lake:** 48% of respondents said they have used the Old Arrowsmith Trail/CPR Trail to access the mountain. These trails are accessed off the Alberni Highway at the east end of Cameron Lake. The route is well-established and a comfortable climb with gentle switchbacks and two alternative trail routes. The route meets up with the ACRD Mount Arrowsmith Regional Park parking lot, and hikers can ascend Mount Cokely from that point. The Mount Arrowsmith Massif is only accessible by technical climbs from this route, and is difficult to complete within a day-hike. The RDN maintains trail licences with Island Timberlands and TimberWest for this route to permit trail use and undertake maintenance on the existing trails. Current licenses are:
 - TimberWest – 5-year agreement, valid until December 2011.
 - Island Timberlands Ltd – 5-year agreement, valid until March 2015.
- **East Access – Englishman River Forestry Road:** 19% of survey respondents said they have visited the park using the forestry roads on the eastern side of the mountain, which provide access to the lakes on the east side of the park. This road begins at Englishman River Road, off Highway 19 just south of Parksville at an Island

Timberlands controlled access. The route follows forestry roads for about 19 km before crossing the Englishman river, and then continues about another 8 km to the gates at Arrowsmith Lake. From the lake, hiking trails lead into the park, connecting with the Ramblers Route which provides access to Fishtail and Hidden Lakes. Input has indicated that these lakes have been used for fishing. Historical sources state that this area was previously a popular nordic ski location when the roads were in better condition.¹

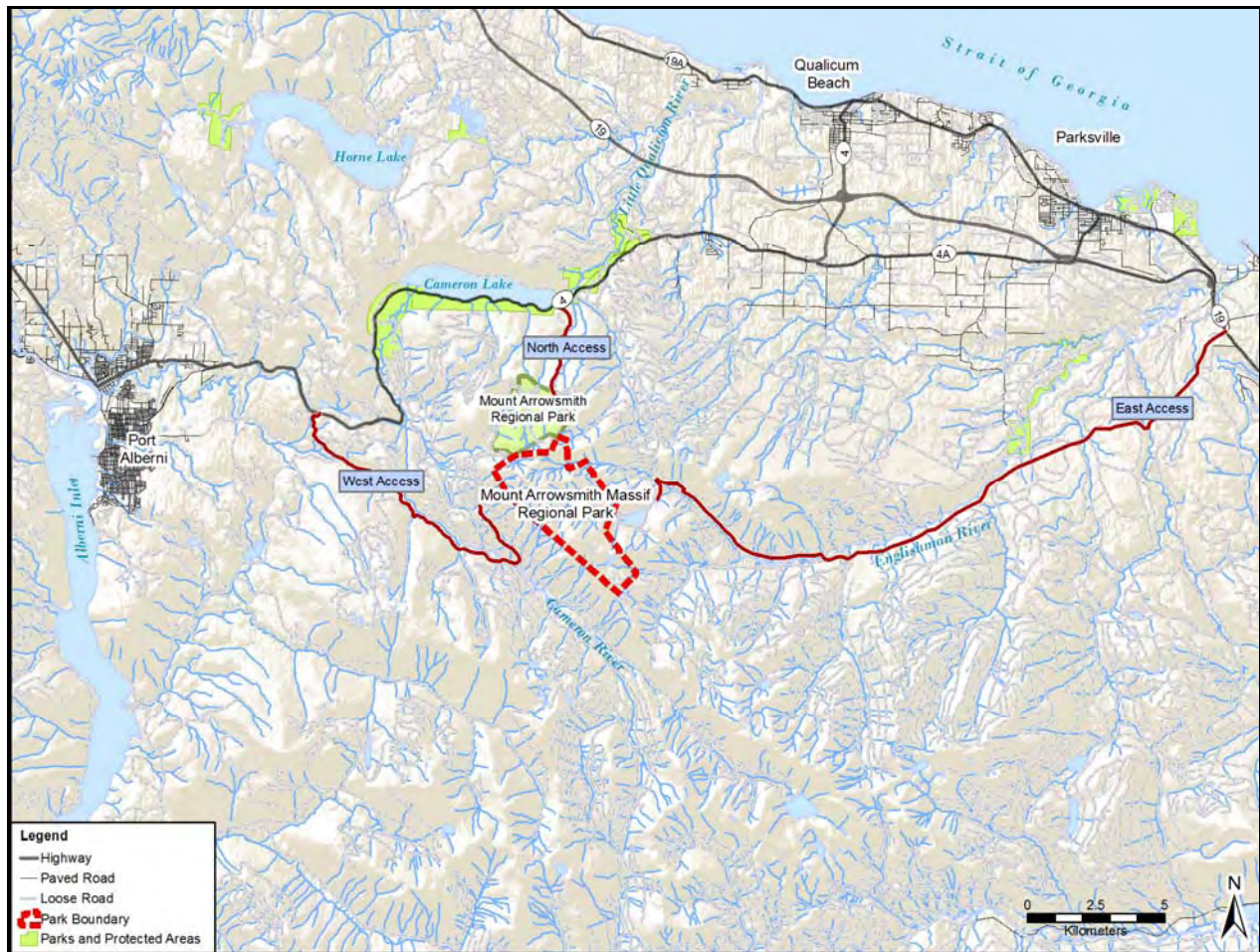


Figure 3.2: Park Access Points Map.

¹ Stone, Phillip. 2003. *Island Alpine: A Guide to the Mountains of Strathcona Park and Vancouver Island*.

3.1.5 Existing Leases & Encumbrances

Communications Towers

Several communications towers are located at the summits of Mount Cokely and Mount Arrowsmith.

- Cercomm Communications has a communications tower at the summit of Mount Cokely, complete with a maintenance shed. The tower is accessed by helicopter or through hike-in from the ACRD Mount Arrowsmith Regional Park parking lot. The tower has been on this site for approximately 40 years. Consultation with Cercomm suggests there are no changes planned for the future and no issues were identified.
- Three repeater stations sit atop Mount Arrowsmith and are operated by Island Timberlands GP.



Repeater stations atop Mount Arrowsmith (Photo: L. Fesiuk).

Mineral Claims

Under the Mineral Tenure Act (RSBC 1996), individuals are able to secure sub-surface mineral claims. The Mineral Titles Online map shows one Cell Claim Tenure with a small area that overlaps into the southeast corner of the park. The claim (603347) was made following designation of the Regional Park and as such, is subject to Section 21 of the Mineral Tenure Act which states that “*Despite any Act, agreement, free miner certificate or mineral title, a person must not locate a mineral title, carry out exploration and development of produce minerals or placer minerals in a park created under an Act of British Columbia...*” As a result, exploration activity by the tenure holder must be conducted outside the park boundary.

3.1.6 Official Community Plan

Mount Arrowsmith Massif Regional Park is within RDN Electoral Area ‘C’. Electoral Area ‘C’ is the RDN’s largest and most rural electoral area encompassing 53% of the RDN, stretching from the Alberni Highway at its northern extents down to the Cowichan Valley Regional District border in the south end. This electoral area is comprised largely of forestry and agriculture lands, with a few small populated areas.

MAMRP sits at the top of the Englishman River Watershed Water Supply Area, which is identified by the OCP as one of Vancouver Island’s most important freshwater sources. In addition, the OCP identifies the Mount Arrowsmith area as an important ecological habitat area.



*Alpine vegetation in the park
(Photo: D. Wheldon).*

Several key objectives from the OCP are directly applicable to MAMRP:

- To preserve and protect environmentally sensitive ecosystems and the nesting trees of protected species.
- Recognize the contribution of Mount Arrowsmith Alpine Recreation Area to the tourist-recreational service sector. (The OCP was developed prior to the acquisition of MAMRP, but it can be assumed it applies to the entire Mount Arrowsmith area.)
- Facilitate the protection and provision of public access to regionally significant, natural landscapes and corridors.
- Protect the quantity and quality of surface and groundwater.

3.2 Park Values

3.2.1 Natural Values

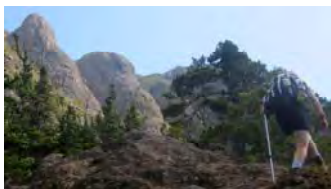
A multitude of natural values have been identified within MAMRP. Ursus Environmental compiled and reviewed existing records and consulted with stakeholders to develop a consolidated summary of environmental data related to the park's natural values.

Environmental Setting

Elevations within MAMRP range from about 900 m to 1,800 m above sea level. Two main Biogeoclimatic Subzones are represented in the park. The lower Subzone, termed the Windward Moist Maritime Mountain Hemlock Subzone (or MHmm), extends from 900 m elevation to between 1,100 m and 1,350 m elevation, depending on aspect. The MHmm subzone covers approximately 55% of the park. The Coastal Alpine Tundra Subzone (or ATc) occurs immediately above the MHmm Subzone and accounts for about 45% of the park's total area. Exposed to moist Pacific air masses for much of the autumn and winter, these Subzones experience long, wet winters, with high snowfall. Total annual snowfall averages around 800 cm in the MHmm Subzone, and over 1,000 cm in the ATc Subzone. It is not unusual for snow cover to persist into July within both Subzones (Green and Klinka 1994).



*Hiking through July snow in
MAMRP (Photo: D. Wheldon).*



The Massif (Photo: L. Fesiuk).

The domed cluster of peaks (or massif) at MAMRP is relatively isolated from other sub-ranges comprising the Vancouver Island Ranges. The nearest mountain chain, the Beaufort Range, occurs about 10 km to the northeast. The mountains are comprised mostly of volcanic rock formed 230 million years ago. They are part of the Karnutsen Formation. The characteristic black basalts of this formation had their origin in undersea lava. The Karnutsen Formation reaches a thickness of approximately 3,000 m around MAMRP (Yorath and Nasmith 2001).

A number of glacial episodes, the latest occurring between 30,000 and 12,000 years ago, have left their mark on the landscape of MAMRP. Mount Arrowsmith's valley slopes and peaks were steepened by the tongues of advancing glaciers and growing cirques. Subdued terrain in the southern part of MAMRP was likely the result of a broader glacial advance. Two prominent peaks were left within MAMRP after the glaciers receded. There is some evidence suggesting parts of Mount Arrowsmith may not have been completely covered by glaciers, possibly providing refuge for some endemic flora of the region.

Watercourses

Mount Arrowsmith Massif Regional Park encompasses the headwaters of the Englishman River, a major Vancouver Island stream draining northeast into the Strait of Georgia. The Englishman River has a large falls presenting a barrier to salmonid migration about 12 km east of MAMRP and 15 km from the river's mouth. Significant salmonid fisheries values are associated with reaches below the falls, and considerable effort has been expended in enhancing habitats and fish populations there. Reaches above the falls support populations of Rainbow Trout and Coastal Cutthroat Trout.

Streams along the eastern flanks of Mount Arrowsmith drain into the Englishman River system through five small lakes that range from about 2 ha to 15 ha in size. Jewel (also unofficially known as Emerald) Lake, the smallest within MAMRP, drains east into the mainstem of the Englishman River. Fishtail Lake, the largest lake in the park, drains to the northeast to the mainstem via a short tributary stream. Water from Hidden Lake drains to the east into Arrowsmith Lake and then courses northeast for about 1.2 km before joining the Englishman River mainstem. A small unnamed basin (sometimes referred to as Lost Lake) located in the southern part of MAMRP flows eastward through a tributary for roughly 6 km before its confluence with the Englishman River. Fishtail and Hidden Lakes have occasionally been stocked with Rainbow Trout.

The western and northern flanks of Mount Arrowsmith make a small contribution to the Cameron River catchment area. The latter drains northward into the west end of Cameron Lake. Runoff and snowmelt from the northeast part of MAMRP, near the peak of Mt. Cokely, makes its way into Lockwood Creek, which is tributary to the Little Qualicum River.



Fishtail Lake from Mount Arrowsmith peak (photo: HB Lanarc).



Jewel (Emerald) Lake (photo: RDN).

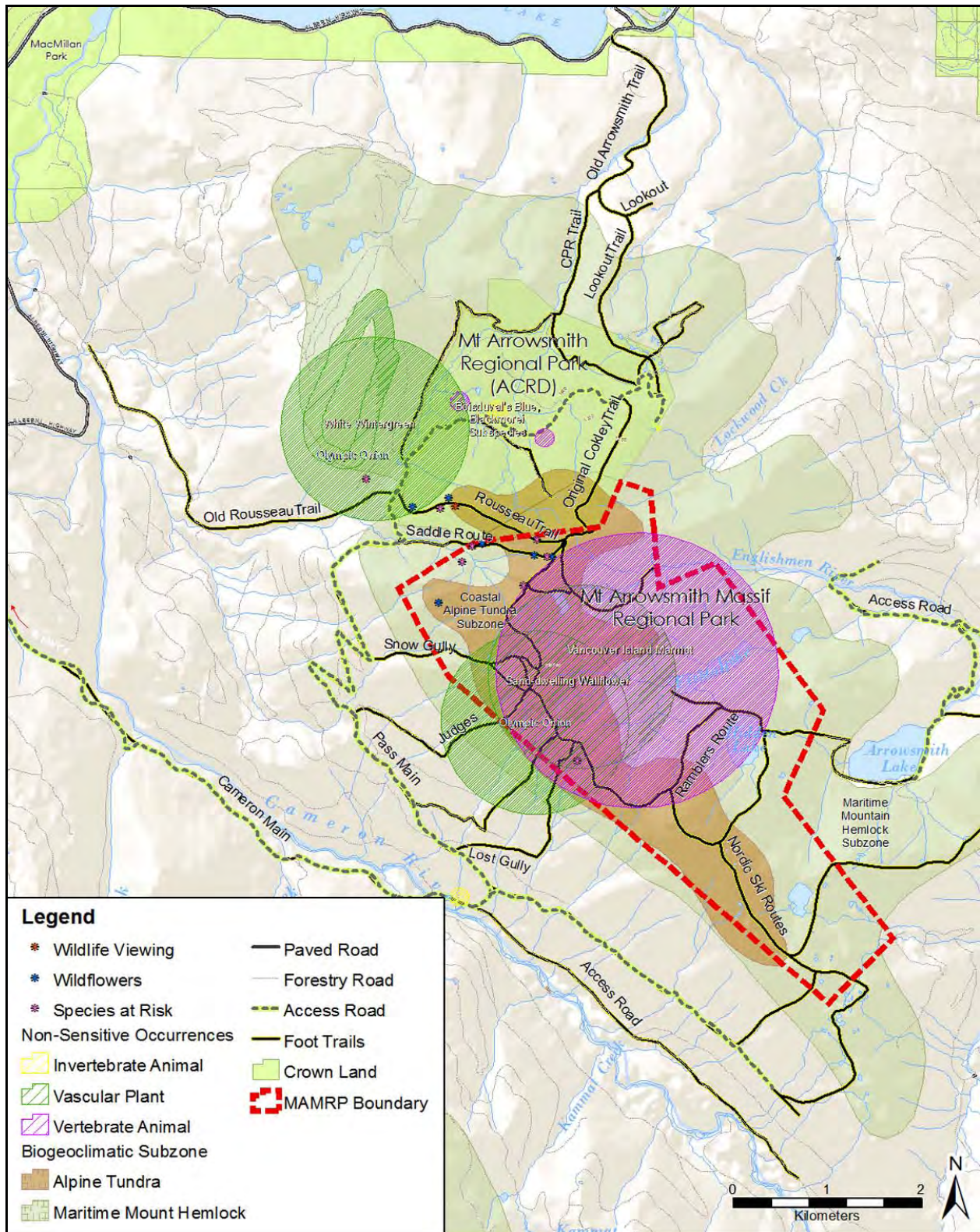


Figure 3.3: Natural Values Map.

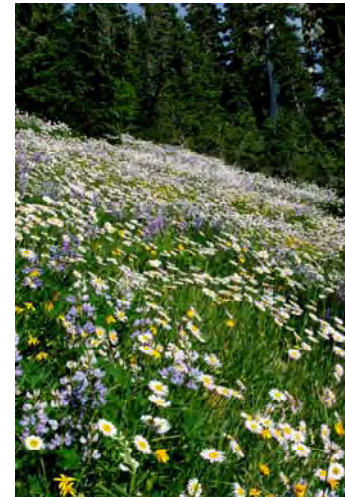
- Notes:
1. "A Non-Sensitive Occurrence indicates the locations of non-sensitive species and ecological communities at risk" (see <https://apps.gov.bc.ca/pub/geometadata/metadataDetail.do?recordUID=3651&recordSet=ISO19115> for information.)
 2. Information gathered through a variety of input sources. Mapping has not been field verified and is for reference only.

Vascular Plants & Plant Communities

Although several plant surveys have been conducted at MAMRP in recent years, no detailed vegetation mapping has yet been completed. The area was not included in the mapping area for the 1997 Sensitive Ecosystem Inventory of Southeast Vancouver Island. No records of rare or threatened plant communities within MAMRP are indicated in the Conservation Data Centre (CDC) Rare Element Database. However, it should be noted that until recently, alpine ecosystems have received little attention from researchers and land managers (Meidinger and Pojar 1991). Research scientists with the B.C. Ministry of Forests and Range are currently developing classification schemes for use within alpine and subalpine ecosystems. The CDC's Plant Ecologist, Adolph Ceska, has suggested that at least four Red-listed and two Blue-listed alpine communities occur on Vancouver Island. These communities are typically described as plant pairings. Of these six communities, only the Red-listed *Lewisia columbiana* – *Allium crenulatum* and Blue-listed *Phylox diffusa* – *Selaginella wallacei* communities have had both of the key species documented within the MAMRP boundaries. Several plant communities containing the sedge *Carex scirpoidea*, which has been documented within MAMRP, may be considered for the CDC's Provincial Red-list.

Based on orthophoto coverage, background review and a limited amount of field reconnaissance, five general types of terrestrial plant communities have been identified within MAMRP's boundaries. These are Subalpine Forest, Subalpine Parkland, Alpine Scrubland, Alpine Meadow and Sparsely Vegetated Areas. Brief descriptions are provided for each plant community in Figure 3.4 below.

Plant Community	Description	Characteristic Plants	Distribution within MAMRP
Subalpine Forest	Generally continuous cover of conifers 8 m to 15 m in height; canopy dominated by Subalpine Fir & Mountain Hemlock.	Subalpine Fir; Yellow Cedar; Mtn. Hemlock; Alaskan/Oval-leaved Blueberry; False Azalea	Occurs below 1300 m elev.; includes slopes around Fishtail Lake & N of the unnamed lake (Lost Lake).
Subalpine Parkland	Irregular patches of stunted & windswept conifers 1 m to 5 m in height; tree patches are often connected by thick shrub cover.	Shore Pine; Pink & White Mtn. Heathers; Dwarf blueberry; Partridgefoot	Bands distributed at elevations of 1,300 m to 1,500 m, depending on aspect.



Alpine meadows on the slopes of Mount Arrowsmith (Photo: R. & L. Avis).



Pink mountain heather in MAMRP (Photo: D. Wheldon).



Partridgefoot in MAMRP (Photo: D. Wheldon).



Mountain arnica in MAMRP
(Photo: D. Wheldon).



Arctic Lupine in MAMRP (Photo:
D. Wheldon).



Sicketop Lousewort in MAMRP
(Photo: D. Wheldon).



Red-listed *Allium crenulatum*
(Olympic Onion) (Photo: Central
Washington Native Plants
database.)

Alpine Scrubland	Treeless areas dominated by low-growing shrubs. Occurs across the lower and middle parts of the Alpine Tundra Zone.	Pink & White Mountain Heathers; Kinnickinick; Crowberry	Broadly distributed above Subalpine Parkland communities.
Alpine Meadow	Located in seepage areas at the base of steep slopes; possess pockets of deep soil.	Mtn. Arnica; Red Columbine; Subalpine Daisy; Arctic Lupine; Red Paintbrush	Area of pocket meadows on NW flank of Mt. Arrowsmith.
Sparsely Vegetated	Areas of thin, nutrient-poor soils, and frost-broken rock; found on peaks, cliff faces, talus fields, and around edges of snowfields.	Kinnickinnick; Villous Cinquefoil; Rosy Pussytoes; Yarrow; Sickletop Lousewort	Present on peaks of Mt. Arrowsmith & Mt. Cokely and along associated ridge crests.

Figure 3.4: General Ecosystem Types occurring within MAMRP.

To date, plant surveys have been carried out in MAMRP by Swerhun *et al.* in 2009 and by local botanist Rick Avis and alpine expert Hans Roemer in 2008. The results of these surveys indicate that, despite its high elevations, MAMRP possesses a diverse flora. As indicated in **Appendix F-1**, at least 167 species of plants have been identified in the park, including: 6 tree species, 21 shrub species and 140 non-woody plants. The non-woody plant assemblage of the park includes strong representation by graminoid plants (25 species), ferns (9 species), saxifrages (9 species), blueberries (6 species) and arnicas (5 species).

Recently observed rare plants in the park include the Red-listed Olympic Onion (*Allium crenulatum*) and Blue-listed Olympic Mountain Aster (*Eucephalus paucicapitatus*). Both species have their main range located outside Canada, along Washington's Olympic Peninsula. The Blue-listed Columbia Lewisia (*Lewisia columbiana* var. *columbiana*) has also been detected in MAMRP in recent years. It is distributed mostly along the Beaufort Mountain Range on Vancouver Island, with a few records near Manning Park in BC's Southern Interior. The Blue-Listed Sand Dwelling Wallflower (*Erysium arenicola* var. *torulosum*) has also been recently observed in abundance within MAMRP. There are historical records for two other Blue-listed plants in MAMRP. These plants are the Lance-fruited Draba (*Draba lonchocarpa* var. *vestita*) and the White Wintergreen (*Pyrola elliptica*). Neither of these plants has been recorded in the park area for at least two decades.

In addition to above listed plants, there are several disjunct species of conservation interest on Mt. Arrowsmith whose main range occurs away from Vancouver Island. Field Locoweed (*Oxytropis campestris*) is mainly distributed to the east of BC's Coast Mountain Range and along the Alaskan Panhandle. Silky Phacelia (*Phacelia sericea*) is widely distributed across BC's Southern Interior, but uncommon elsewhere. With a few exceptions, virtually all Alpine Lewisia (*Lewisia pygmaea*) records are from BC's Okanagan and Skagit Valley regions. Only one recent record exists for the latter species on Vancouver Island, and it is located within a small part of MAMRP. The single occurrence record for this species within MAMRP suggests it could be highly vulnerable to disturbance.



Lewisia pygmaea in MAMRP
(Photo: R. & L. Avis).

Lichens and Fungi

An inventory of lichens occurring at Mount Arrowsmith was prepared in the autumn of 2006 by noted BC lichenologist Trevor Goward at the GLORIA research site, a small area within the park. The results of that inventory are presented in **Appendix F-4**. Over 50 different forms of lichens were identified at that time. Cup lichens of the genus *Cladonia* are the most diverse group occurring at Mount Arrowsmith, with 13 different forms. Rocktripes (genus *Umbilicaria*) are also well-represented, with eight different forms recorded. Other lichen groups with three or more representatives include Reindeer Lichens (*Cladina* spp.), Map Lichens (*Rhizocarpon* spp.) and Snow Lichens (*Stereocaulon* spp.). None of the lichens appearing in **Appendix F-4** are considered rare or threatened in the South Island Forest District.

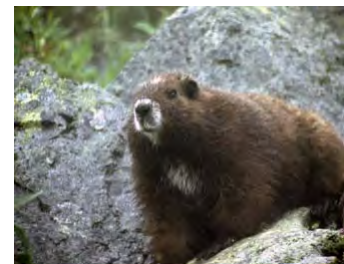
Information about Fungi within MAMRP was not available during this process. Local naturalists and experts were not aware of any studies or park-specific records that have been completed to date.

Wildlife Occurrence

Mammals

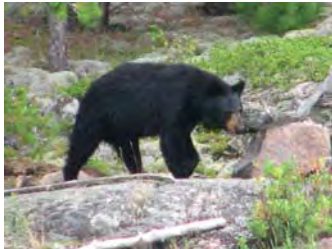
No systematic mammal inventory has been completed within MAMRP. As a result, site-specific information about mammal occurrence is largely lacking. In the absence of such information, potential mammal occurrence has been predicted using published habitat preferences and range maps.

Historically, several colonies of the Red-listed Vancouver Island Marmot (*Marmota vancouverensis*) existed within and near Mount Arrowsmith. However, over the past three decades their numbers had declined to zero, as in many other locations across on Vancouver Island. In the summer of 2009, six marmots from the Vancouver Island Marmot Recovery Facility on Mt. Washington were reintroduced to the west side of Mount Arrowsmith. Five of these apparently remained at the release site and



V.I. Marmot (Photo: The
Vancouver Island Marmot
Recovery Foundation).

survived their first winter in the wild (D. Doyle, Ministry of Environment, personal communication). Before 2008, the nearest known active marmot site had been on Mt. Moriarity, about 10 km to the southeast of Mount Arrowsmith (Vancouver Island Marmot Recovery Team 2008). Marmot sites have been associated with small (0.5–8.0ha) subalpine meadows between 900 m and 1,450 m elevation, possessing moderately steep slopes and a south- to west-aspect (Bryant and Janz 1996). Radio-telemetry work has revealed that a large proportion of second-year marmots move up to 20 km to new habitats (Bryant and Janz 1996).



Black Bear (Photo: D. Gordon; E. Robertson).



Roosevelt Elk (Photo: pnwnature).

Two large carnivores, the Black Bear (*Ursus americanus*) and Cougar (*Felis concolor*), have been reported within MAMRP in recent years. Black bear use of the park is likely highest over the mid-to-late summer period, when a variety of berry-producing shrubs normally provide an abundance of food. Cougars are wide-ranging predators with large home ranges, in the vicinity of 25 km² to 65 km² in this part of Vancouver Island (Hatter 1982). They can be expected in the park in all seasons, but their main prey, the Black-tailed Deer (*Odocoileus hemionus columbiana*), inhabits the high country mainly in summer. Wolves (*Canis lupus*) occur at low densities across this part of Vancouver Island, and generally restrict their activities to valley bottom habitats of the larger river valleys.

Small numbers of Roosevelt Elk (*Cervus elaphus roosevelti*) occupying the adjacent Cameron River and Englishman River Valleys likely range up into MAMRP in summer. Elk use within the park would be concentrated within riparian habitats along lake and wetland margins. Vegetated slide tracks, found along the western margins of the park are considered highly attractive elk summer and fall habitats (Nyberg and Janz 1990).

Preferred habitats of the Marten in Western North America include stands of Subalpine Fir and Amabilis Fir (Powell *et al.* 2003), both of which are found at lower elevations within MAMRP. Marten generally occur at low densities across Vancouver Island, as the abundance and diversity of their prey (small mammals), is very limited in comparison to the adjacent Mainland.

At higher elevations on Vancouver Island, the small mammal assemblage is comprised mainly of the Deer Mouse (*Peromyscus maniculatus*), with an infrequent occurrence of the Dusky Shrew (*Sorex monticolus*) (Nagorsen 1996). Moist, herb-dominated habitats in the subalpine may support populations of Townsend's Voles (*Microtus townsendii*), which often fluctuate widely from year to year.

Birds

The avifauna of the Mt. Arrowsmith area has been well documented by the region's birding community. As shown in **Appendix F-2**, local naturalists have recorded a total of 42 bird species over 2008 and 2009. The assemblage from the high elevation forest supports the greatest diversity of bird species, with 29 species or about two-thirds of all those recorded. Typical birds of high-elevation forests within MAMRP include: Hammond's Flycatcher (*Empidonax hammondii*), Hermit Thrush (*Catharus guttatus*), Gray Jay (*Perisoreus Canadensis*), Three-toed Woodpecker (*Picoides tridactylus*) and Sooty Grouse (*Dendragopus obscurus*). Two Blue-listed birds associated with snags and conifer forests have been noted at Mount Arrowsmith, the Northern Pygmy-owl (*Glaucidium gnoma swarthi*) and Band-tailed Pigeon (*Columba fasciata*). The former is a cavity-nester with an apparent preference for mature stands, while the latter builds loose stick nests in mixed conifer stands, often perching near the tops of dead trees (CDC 2010).

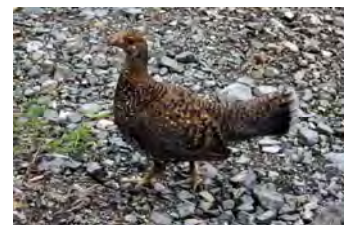
Approximately one-fifth of the recorded bird assemblage at Mount Arrowsmith are associated with open alpine and subalpine parkland habitats (eight species). Representative birds within Mount Arrowsmith's alpine and subalpine zones include Townsend's Solitaire (*Dendroicus townsendi*), American Pipit (*Anthus rubescens*), Common Raven (*Corvus corax*) and Golden Eagle (*Aquila crysaetos*). Due to its cryptic plumage, the Blue-listed White-tailed Ptarmigan (*Lagopus leucurus saxatilis*) is seldom seen, but sightings are frequent enough to consider them a resident species. This subspecies occupies a wider elevational range than Mainland ptarmigan, wintering in lower subalpine parkland and montane forests. Due to this subspecies' restricted range on central Vancouver Island, the Mount Arrowsmith area has been designated a nationally significant Important Bird Area².

Five bird species associated with water occur in the Mount Arrowsmith area. The Common Loon (*Gavia immer*) and Common Goldeneye (*Bucephala islandica*) frequent open water lake habitats, while the Spotted Sandpiper (*Actitis macularia*) and Song Sparrow (*Melospiza melodia*) are associated with lake and wetland margins. The American Dipper (*Cinclus mexicanus*) is seldom seen outside of stream reaches with a combination of riffle and pool habitats.

Though not documented, there is a reasonable probability that MAMRP supports use by three other listed species. A Red-Listed raptor, the Queen Charlotte Goshawk (*Accipiter gentilis laingi*), is associated with mature stands possessing relatively open understories. The nearest known goshawk nest is located roughly 6 km to the southwest, in the upper part of the China Creek Valley. The Blue-listed Marbled Murrelet



Curious Whiskey Jack (Photo: P. Rothermel).



Sooty Grouse (Photo: G. Gidden).



Camouflaged White-tailed Ptarmigan (Photo: P. Rothermel).

² Important Bird Areas (IBAs) are discrete sites that support specific groups of birds: threatened birds, large groups of birds and birds restricted by range or habitat (www.ibacanada.com).

(*Brachyramphus marmorata*) feeds mainly in the marine environment, but typically nests on mossy pads within old-growth forest (Fraser *et al.* 1999). Records from Bird Studies Canada indicate the presence of Olive-sided Flycatchers (*Contopus cooperi*) on the northern flank of Mt. Cokely, just beyond the MAMRP boundary. This Blue-listed bird forages and sings from the tops of tall snags, particularly along forest edges.

Herptiles

Only a few amphibians, and no reptiles, can tolerate the harsh environmental conditions associated with alpine and near-alpine habitats. The Western Toad (*Bufo boreas*) is adapted to cold temperatures, breeding in subalpine lakes over 1,000 m in elevation and inhabiting the northern limits of British Columbia. The Northwestern Salamander (*Ambystoma gracile*) is widely distributed in coastal BC and regularly breeds at higher elevations (up to 1,700 m). Usually the earliest breeding amphibian on Vancouver Island, the Long-toed Salamander (*Ambystoma macrodactylum*) is often present at ponds before the ice has completely melted (Matsuda *et al.* 2006). This species is reported to breed at elevations above 1,500 m, where suitable ponds are present (Alberta Sustainable Resource Development 2010).

Invertebrates

Efforts by the Arrowsmith Naturalist Club to inventory butterflies in the region have so far focused on areas outside of MAMRP. The CDC Rare Element Database contains historic records for two Red-listed butterflies in areas adjacent to the park, Blackmore's Blue (*Icaricia icaroides blackmorei*) and Bremner's Silverspot (*Speyeria zerene bremnerii*). As indicated in **Appendix F-3**, the Arrowsmith Naturalist Club has identified 10 species of butterflies from high elevation sites near MAMRP. One site is located near the headwaters of McBey Creek, just north of the park, and the other is near St. Mary's Lake, about 4 km to the northwest. In general, multi-species wildflower meadows and shallow warm-water puddles are considered attractive butterfly habitats.

3.2.2 Recreational Values

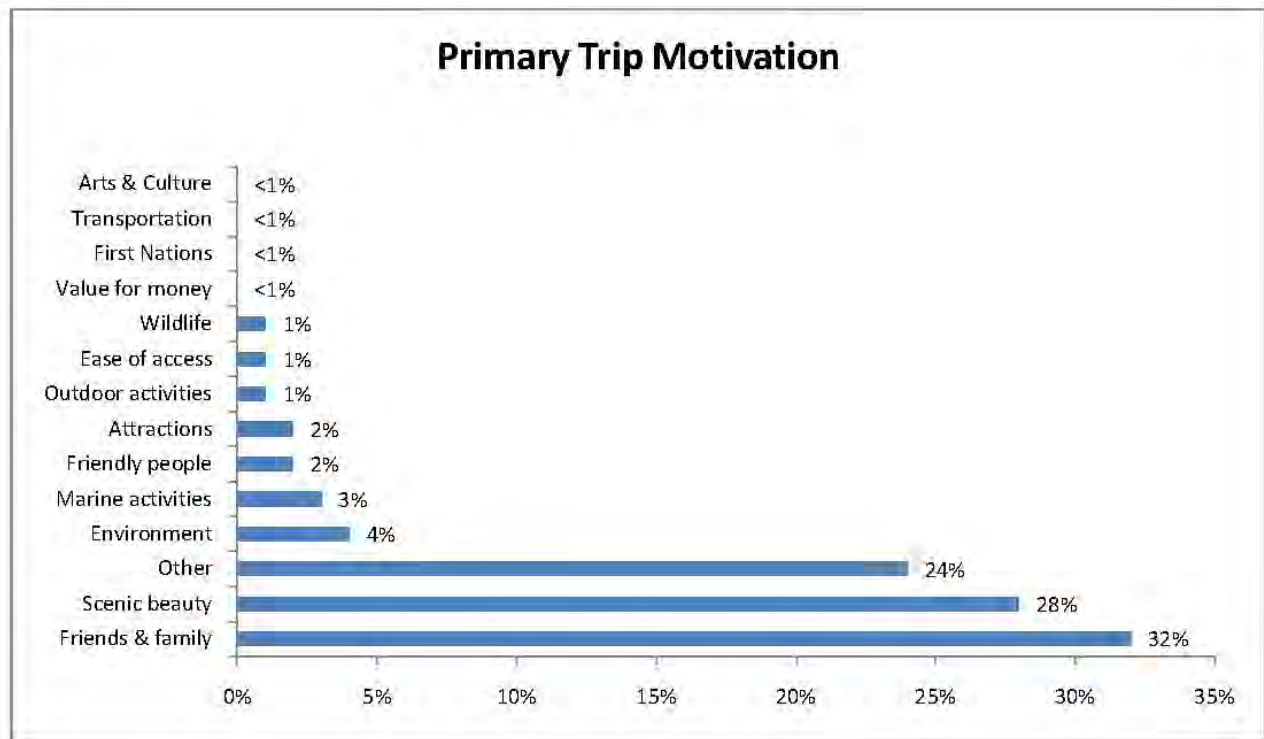
Regional Tourism Trends

The 2008 Vancouver Island Visitor Exit Survey was conducted to discover, among other input, the motivation of people visiting Vancouver Island. When asked their primary motivation for visiting the Vancouver Island Region, 28% said they were visiting because of the Scenic Beauty of the region, second only to Friends and Family being the reason for a visit (32%). People also noted the Environment (4%),

Outdoor Activities (1%) and Wildlife (1%) as primary reasons to visit Vancouver Island (See **Figure 3.4: Primary Trip Motivation**).

Survey respondents also indicated that Scenic Beauty (66%), the Environment (30%), Outdoor Activities (20%) and Wildlife (15%) were among what they like most about the Vancouver Island region (See **Figure 3.5: The Visitor 'Experience'**).

Figure 3.5: Primary Trip Motivation. Source: 2008 Vancouver Island Visitor Exit Survey, Tourism Vancouver Island.



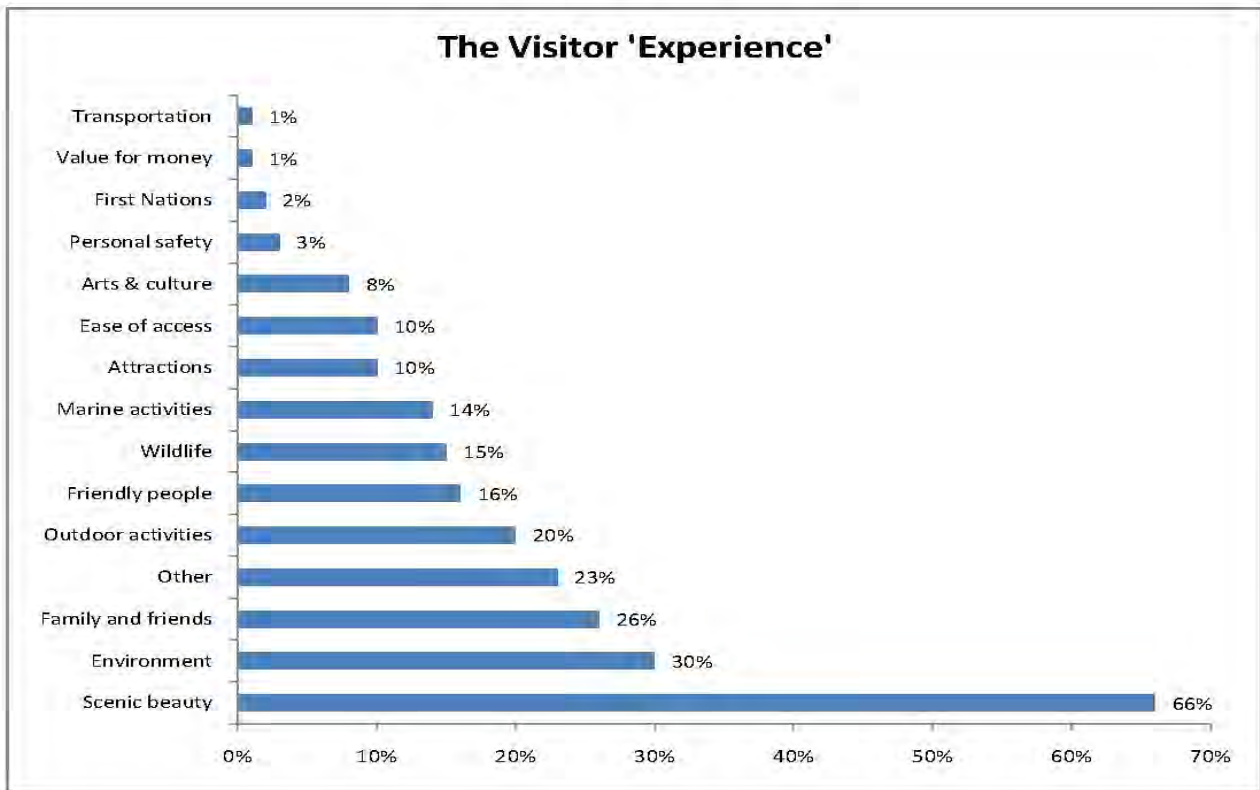
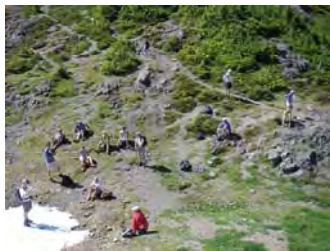


Figure 3.6: The Visitor 'Experience'. Source: 2008 Vancouver Island Visitor Exit Survey, Tourism Vancouver Island.

The value of natural areas to tourism on Vancouver Island is apparent. MAMRP represents an opportunity to encourage tourism within the region, by providing a true wilderness experiences, within easy reach of visitors to all parts of the island.

Regional Recreation Trends

Trends affect the use of parks and recreation throughout the RDN, BC and beyond. Identification of trends helps ensure decisions about planning and management are logical for the future of parks and recreation. Key trends related to the recreation opportunities at MAMRP include:



Mountain visitors in the Saddle
(Photo: RDN).

- **Less Structured Activities:** Non-traditional work schedules, home-based offices and double-income families are becoming more common which make it more difficult for people to make long-term commitments to team or on-going activities; as a result, unstructured activities such as hiking and climbing are gaining popularity.
- **Changing Preferences and Expectations:** Interests in participation in activities that offer challenges, both physically and mentally, are increasing throughout the province and nation.
- **Environmental Connection:** People are becoming increasingly aware of the natural environment and are seeking opportunities to

experience, protect and steward important areas. People are seeking wilderness activities as a way to connect with their environment.³

Mount Arrowsmith Recreation Trends

“Mt. Arrowsmith is arguably the most popular mountain on Vancouver Island and is the highest point on the southern half of the Island.”⁴ Tourism resources identify Mount Arrowsmith as a very important recreational resource on Vancouver Island.

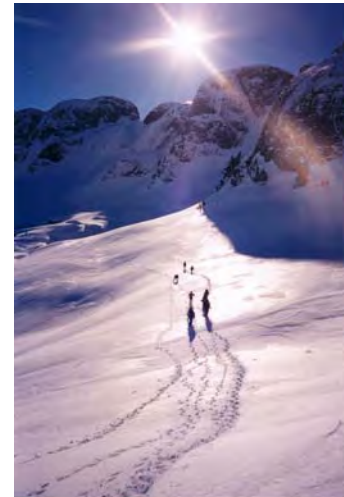
One of the reasons the mountain is a popular recreation destination is its accessibility. MAMRP can be easily reached in a few hours from most populated areas on Vancouver Island; close to 400,000 people live within a three-hour drive of the mountain.⁵ The range of activities available at the mountain, from moderate day-hikes to technical rock and ice-climbing, draw a wide variety of outdoor recreation enthusiasts.

The Arrowsmith Summit Register sits at the peak of Mount Arrowsmith Massif and is monitored by the Alpine Club of Canada. Records from the mid-90s through mid-2000s show an increasing number of visitors to the summit. In 1993, 162 visits were recorded; in 2004, 530 visits and counting.⁶ While the register records only Mount Arrowsmith summit visits on a voluntary basis and therefore is not an accurate description of all people visiting the area, it is a good indicator for the growing popularity of the mountain. The ACC maintains summit records in their archive.

Existing Trails

Mount Arrowsmith has at least 10 well-documented routes that are used regularly for recreation (See **Figure 3.7: Popular Existing Trail Routes**).

- **Saddle Route:** This is the area’s most popular trail route. It starts at a hairpin turn off the Pass Main forestry road and leads into the valley between Mount Arrowsmith and Mount Cokely. The route leads through meadows within the gulley before ascending either to the Cokely summit via a scramble or to the Mount Arrowsmith summit via a technical climb.
- **Judge’s Route:** The Judge’s route begins at an unmarked spur off Pass Main. This is a very steep and at times rocky ascent, but is



People visit Mount Arrowsmith year-round to enjoy a range of experiences (Photo: RDN).



Mount Arrowsmith summit cairn and register location (Photo: L. Fesiuk).

³ Trends from: 2006. BCRPA. “Trends in the Parks, Recreation & Culture Field.” *Excerpt from the Strategic Plan for the Parks and Recreation Sector in BC.*

⁴ Stone, Phillip. 2003. *Island Alpine: A Guide to the Mountains of Strathcona Park and Vancouver Island.*

⁵ Mount Arrowsmith website. www3.telus.net/Mount_Arrowsmith/arrowsmith.html

⁶ *Arrowsmith Summit Register*, Alpine Club of Canada. n.d.



Trail routes provide a variety of experiences from moderate hiking to extreme climbing (Photos: P. Rothermel).

considered the shortest and easiest way to the summit of Mount Arrowsmith.

- **Snow Gulley:** This trail begins at the last switchback on Pass Main. It follows the forest alongside a creek through several couloirs leading up to the summit of Mount Arrowsmith. This includes technical climbs and is a popular route for ice climbing.
- **Un-Judge's Route:** The Un-Judge's Route begins off Pass Main below the Judge's Route. The trail heads up a ridge to the right of the Judge's Route after crossing a creek bed. The ridge is bluffy and exposed with technical climbing. The route ascends at the south summit and follows the ridge to the Mount Arrowsmith summit.
- **Lost Gulley Route:** This route starts from the third spur on Pass Main. The route leads up an open slope and two steep gullies to the South summit, then requires a traverse over to the Mount Arrowsmith main summit.
- **Rosseau Trail:** This route is accessed from Pass Main just before the gate to the ACRD Mount Arrowsmith Regional Park. It is an easy trail leading up Mount Cokely and can form a loop with the Saddle Route.
- **Original Cokely Trail:** This trail begins at the ACRD Mount Arrowsmith Regional Park parking lot and ascends Mount Cokely via a well-graded route through former ski hill terrain.
- **Old Arrowsmith Trail/CPR Trail/Lookout Trail:** The Old Arrowsmith Trail originates at the east end of Cameron Lake off Highway 4. The trail gently switchbacks up Mount Cokely to the ACRD Mount Arrowsmith Regional Park, dividing about a third of the way up into the CPR Trail (right fork) and the Lookout Trail (left fork) before rejoining at the ACRD Mount Arrowsmith Regional Park parking lot.
- **Rambler's Route:** This route is accessed from the east via forestry roads along Englishman River. The trail leads up past Arrowsmith Lake into the park. It extends to Hidden Lake and through some climbs down to Fishtail Lake.
- **Judy's Meadows:** This route leads into the south end of the park from a forestry road spur that heads southeast off the pass main. This route has been rerouted to avoid forestry cut blocks. It connects to the Nordic Ski Route and Ramblers Route.

Multiple websites and guidebooks provide detailed information about the existing trail routes. Additional routes likely exist within the park, but are not as well-used or documented.



Figure 3.7: Popular Existing Trail Routes.

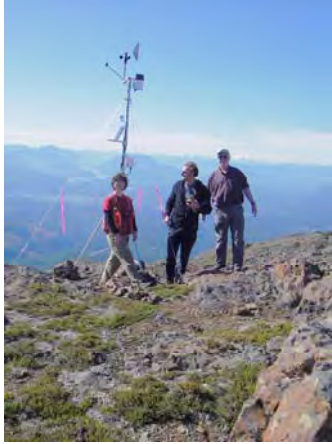
3.2.3 Education & Research Values

Education

The mountain is used as a training site for rock and ice climbing, guiding and alpine leadership uses, due to its ideal conditions and accessible location. While not accurately documented, park users indicate that clubs and organizations, such as school groups, scouts, hiking clubs and others use the mountain for recreational and educational programs.

Research

The unique environments and habitats within MAMRP have inspired many research activities, formal and informal, on the mountain. Key documented activities include:



Installation of the weather station for GLORIA monitoring (Photo: RDN).

- **GLORIA Project:** “The purpose of GLORIA (*GL*lobal *O*bservation *R*esearch *I*nitiative in *A*lpine *E*nvironments) is to establish and maintain a world-wide long-term observation network in alpine environments.”⁷ The data collected during observations will be used to assess and predict losses in biodiversity and other threats to alpine ecosystems due to climate change. Monitoring was established in 2006 on Mount Arrowsmith. The study suggests that resurveying should occur at five-year intervals.⁸
- **Vancouver Island Marmot Recovery:** Mount Arrowsmith has habitat that is suitable to the Vancouver Island Marmot (*Marmota vancouverensis*), a marmot subspecies that exists only on Vancouver Island. Historical records indicate sightings of marmot colonies in the vicinity, although numbers dwindled to near extinction. Recent recolonization activities by the Vancouver Island Marmot Recovery Foundation has led relocation of several marmots to the mountain in 2008/2009. Tracking indicates that they continue to reside on the mountain.
- **Ongoing Volunteer Studies:** Mount Arrowsmith inspires a lot of interest from local expert plant and wildlife researchers. Naturalist organizations, including the Arrowsmith Naturalists Club, and local experts have documented flora and fauna sightings and have developed records and species lists.

3.2.4 Historical and Cultural Values

The area that is now MAMRP has a long history. In addition to the cultural and historical references to the mountain have been recorded, MAMRP has spiritual, experiential and personal values to local residents.

Hupacasath First Nation

The Hupacasath First Nation has strong cultural connections with Mount Arrowsmith and Mount Cokely. The mountains sit within their traditional territory along the southeast boundary. The mountain range

⁷ GLORIA website. www.gloria.ac.at

⁸ Swerhun, K. G. Jamieson, D.J. Smith, and N.J. Turner. “Establishing GLORIA Long-term Alpine Monitoring in Southwestern British Columbia, Canada.” *Northwest Science: Vol. 83, No. 2* (2009): 101-116. Print.

provides a visual border between traditional Hupacasath, Qualicum and Nanoose territories.

MAMRP is within the Hupacasath's Cameron Use Area.⁹ The Cameron Use Area is identified in the Territory Land Use Plan as a Resource Development Area in which, "resource development, such as timber harvesting, mining, tourism and other development can take place while respecting Hupacasath rights and title, and being sensitive to fish, wildlife, culture and other environmental values."¹⁰ As traditional territory, some activities including hunting, trapping and gathering may take place near the park. No concerns or conflicts were noted during the plan development process.

Mount Cokely and Mount Arrowsmith have a history within Hupacasath stories. **Potentially more to add here based on additional input...**

Recreational History

Mount Arrowsmith has been a recreation destination for mountain climbing and exploration for decades.

Historical Highlights of Mount Arrowsmith¹¹:

The native people from the Alberni area call the mountain "Kuth-Kah-Chulth" (pronounced Catch-Catch-Oos) which translates to "that which has sharp pointed faces".

Mid-1800s: The English name the mountain Mount Arrowsmith after cartographers, Aaron Arrowsmith and nephew John Arrowsmith.

1887: Written documentation of an ascent is recorded by John Macoun, Naturalist to Geological Survey, his son James Macoun, Qualicum Tom and his son Jim.

1901: Dr. James Fletcher, Canada's first Dominion Entomologist and Botanist, J.R. Anderson, Deputy Minister of Agriculture, Reverend G.W. Taylor, John Clutesi and Rob McKinley record a four day journey up Mount Arrowsmith.

1910: CPR builds a tourist chalet at the eastern edge of Cameron Lake along the railline.



CPR tourist chalet at Cameron Lake, c. 1920 (Photo: BC Archives).



Historical McBey Creek Bridge along Arrowsmith Trail (Photo: BC Archives).

⁹ June 2003. Territory Land Use Plan, Hupacasath First Nation.

¹⁰ June 2003. Territory Land Use Plan, Hupacasath First Nation, p.26.

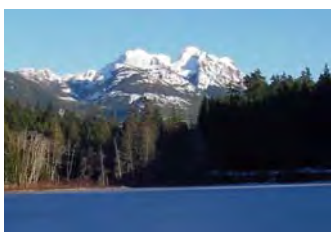
¹¹ Key dates adapted from Peter Rothermel's "A Brief History of the Arrowsmith Massif."



Don Munday and Tom Ingram on the peak of Mount Arrowsmith (Photo: BC Archives).



Former ski lodge on Mount Cokely (Photo: P. Rothermel).



Mount Arrowsmith from Loon Lake (Photo: P. Rothermel).

1912: A pack trail is established from the chalet to an overnight hut at 4,200 feet (1,280 m) on Mount Cokely. The pack trail, named Old Arrowsmith Trail is still used today.

1925: Don & Phyllis Munday record the visual discovery of the Mount Waddington, the highest mountain peak within BC, from the peak of Mount Arrowsmith.

1926/27: Mount Cokely is unofficially named after Leroy Sterling Cokely, a Dominion & BC land surveyor. (Name is officially adopted in 1973.)

1940s/50s: New cabins are built on the massif and the area becomes a winter and summer outdoor destination.

1960s: Logging roads push up the side of the mountain, facilitating day access to the mountain, increasing the popularity of the hiking trails.

1972: 607 ha on the north slope of Mount Cokely is sold to the Alberni Clayoquot Regional District by private forestry company for operation as a regional park and a downhill ski operation is opened.

2001: The RDN and timber companies develop a lease agreement on Old Arrowsmith Trail from Cameron Lake to the ACRD Mount Arrowsmith Regional Park.

2005: The ski lift towers on Mount Cokely (in the ACRD Mount Arrowsmith Regional Park) are decommissioned.

2008: Block 1380 is declared a RDN Regional Park on November 25th.

3.2.5 Community Identity & Sense of Place

The peaks of Mount Arrowsmith and Mount Cokely are prominent visual features on Central Vancouver Island. The snow-topped peaks of the mountains can be seen from several communities year-round and are a powerful visual representation of the notion of sea-to-sky.

Mount Arrowsmith Biosphere Reserve (MABR)

“Biosphere Reserves are areas of terrestrial and coastal/marine ecosystems, or a combination thereof, which are internationally recognized...” There are 553 biosphere reserves in 107 countries throughout the world.¹² MABR is one of 15 reserves of the Canadian Biosphere Reserve Network.

¹² Mount Arrowsmith Biosphere Reserve website. www.mabr.ca

The reserves are established “to promote and demonstrate a balanced relationship between humans and the biosphere” and must “encompass a mosaic of ecological systems¹³.” The Mount Arrowsmith Biosphere Reserve is “envisioned as an area where biological diversity is sustained in functioning ecosystems and where healthy communities enjoy an ecologically sustainable economy.¹⁴”

The Mount Arrowsmith Biosphere Reserve encompasses the entire watershed of Mount Arrowsmith and its borders are determined by the watershed boundaries. Virtually, all precipitation that falls on Mount Arrowsmith ends up in the Little Qualicum or Englishman Rivers and the reach of these watersheds make up the boundaries of the Mount Arrowsmith Biosphere Reserve.¹⁵

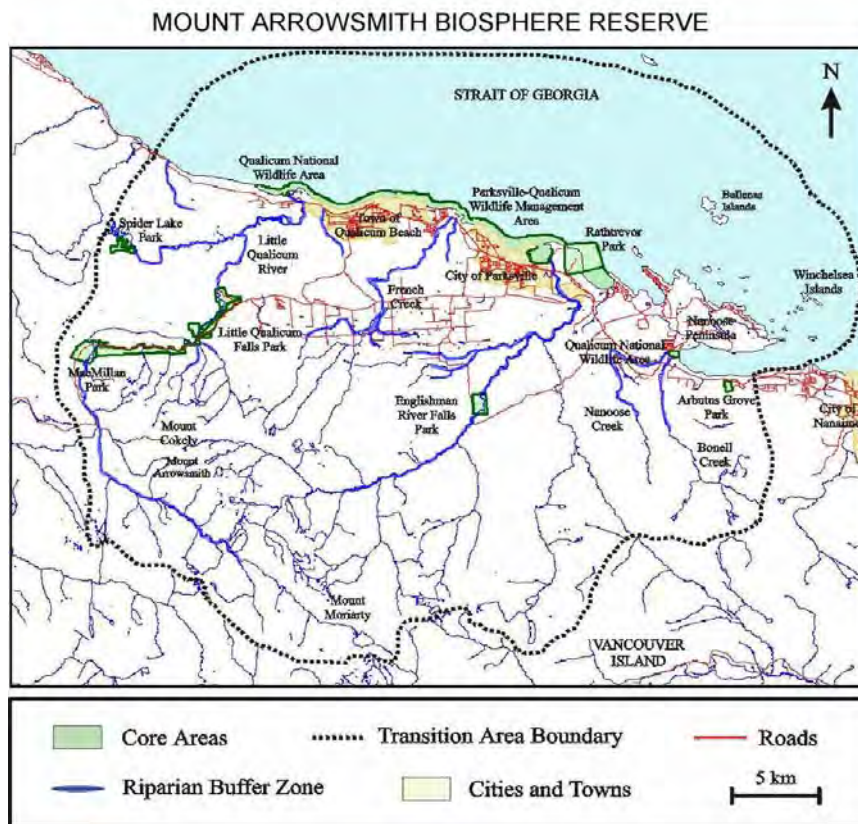


Figure 3.8: Mount Arrowsmith Biosphere Reserve. From the MABR website: www.mabr.ca

¹³ Mount Arrowsmith Biosphere Reserve website. www.mabr.ca

¹⁴ Mount Arrowsmith Biosphere Reserve website. www.mabr.ca

¹⁵ Rothermel, Peter. Personal Communication. 04 Sept. 2010.

The Mount Arrowsmith Biosphere Reserve Foundation (MABRF) is engaged in supporting the future ecological, social and cultural health of the MABR. The Foundation advocates for “a balance of natural ecosystem health and sustainable human activity, with a view to preserving the biodiversity of the region.”¹⁶

The hope of the MABRF is to locate funding and attract researchers to do future work in the area. Currently, the MABRF supports the GLORIA project, and provides indirect support for activities on Mount Arrowsmith, including ptarmigan research, tree ring research, repeat photography and geography, alpine restoration, weather monitoring, snow surveys and marmot recovery.



Opening ceremonies for MAMRP (Photo: RDN).

¹⁶ Crowley, Richard. “Introducing your local biosphere.” Mount Arrowsmith Biosphere Reserve, 2010.

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Photo: P. Rothermel.

4 VISION, GOALS & PRINCIPLES

4.1 Vision Statement

A vision statement sets the tone for the long-term management of MAMRP and defines the context within which short-term management actions are made.

Public and stakeholder input identified several key themes that are integrated into a vision for MAMRP:

Mount Arrowsmith Massif Regional Park is a significant landmark on Central Vancouver Island. Its familiar peaks continue to be accessible for wilderness recreation in sub-alpine and alpine environments. Recreational and ecological values are balanced through stewardship so that important ecosystems and habitats are protected. First Nations stories and other historical accounts of the mountain are recorded and celebrated and research activities are supported and encouraged. Mount Arrowsmith Massif remains an important ecological, recreational, spiritual and visual resource for its neighbours, friends and visitors.

4.2 Management Goals

Management goals set the framework for policies and actions for Mount Arrowsmith Massif Regional Park. The goals are developed from stakeholder and public input.

Goal 1: Ecosystem Conservation

Manage the park to maintain its unique natural habitats. Monitor existing ecosystems to minimize impacts as recreational use of the mountain increases. Encourage the study of the sub-alpine and alpine environments to increase knowledge of the area's unique flora and fauna.

Goal 2: Wilderness Recreation

Maintain sustainable recreation use in the park, with the goal of balancing our recreational footprint with the sensitive ecology of the mountain. Encourage recognition and respect of the mountain's wilderness conditions by park users, stewards and maintenance providers.

Goal 3: Partners in Stewardship

Work with the Mount Arrowsmith community – including Hupacasath First Nation, the Federation of Mountain Clubs of BC, the Alpine Club of Canada, the Alberni-Clayoquot Regional District, neighbouring landowners and volunteers – to steward and maintain the park.

Goal 4: Access

In cooperation with neighbouring landowners, ensure that Mount Arrowsmith Massif remains accessible for public use and enjoyment for generations to come.

Goal 5: Education

Support alpine research, education and training activities that fit within the area's wilderness context.

Goal 6: Celebration of Heritage

Seek opportunities to learn more about the unique history and culture of the mountain and disseminate appropriate information to the public so the significance of the area can be appreciated.

4.3 Management Principles

The following principles represent the basic 'rules' that must be observed by the policies and actions in the Management Plan.

Province of BC Licence of Occupation

MAMRP has been acquired by the RDN through a Nominal Rent Tenure agreement with the Province of BC that grants Licence of Occupation of Block 1380 to the RDN for a 30-year period. The agreement requires the RDN to complete proof of insurance and management planning for the park in collaboration with Hupacasath First Nation, the Federation of Mountain Clubs of BC and the Alpine Club of Canada.

Hupacasath - Regional District of Nanaimo Memorandum of Understanding for Mount Arrowsmith Massif

The RDN and Hupacasath First Nation established the MoU in 2008 to establish a co-operative relationship in managing Mount Arrowsmith Massif Regional Park. The agreement creates a working relationship between the parties to ensure that the park is planned and managed to the satisfaction and benefit of both parties.

RDN Regional Parks & Trails Plan 2005–2015

The RDN's *Regional Parks and Trails Plan 2005–2015* sets out future direction, policies, priorities and actions for regional parks and trails within the RDN. The vision outlined in this plan is for a system that “*protects and stewards natural values while providing rewarding recreational opportunities; fostering education and appreciation of the natural environment; and enhancing the liveability of the Region*”¹⁷. Management decisions for MAMRP are made within the context of this larger vision.

RDN Park Use Regulations Bylaw

The RDN's *Park Use Regulations Bylaw No. 1399 (2004)* regulates park use in RDN community and regional parks. Mount Arrowsmith Massif will be considered a Level 4 Park – “Undeveloped Park, Trail and Other Open Space” and will be governed by the bylaw policies for this level.

Hupacasath First Nation Territory Land Use Plan (2003) & Hupacasath Land Use Plan Phase 2 (2004)

The Land Use Plans are strategic plans that define the Hupacasath First Nation's land and forest values and management objectives at the territorial level. The plans describe cultural and resource values with standards that define how objectives can be met. Management of MAMRP will aim to meet the management objectives outlined in these plans.

Cercomm Electronics Ltd. & Timberlands GP Ltd. Licences

Cercomm Electronics and Timberlands GP have existing licences for communication towers at the summits of Mount Cokely and Mount Arrowsmith that were in place with the Province prior to the declaration of Regional Park. Management activities in the park are required to respect the prior rights of the license holders.

Trail Licences, Old Arrowsmith Trail/CPR Trail

The RDN currently maintains trail licences with Island Timberlands Ltd. and TimberWest for use and management of the Old Arrowsmith Trail/CPR Trail routes that connect Cameron Lake and the ACRD Mount Arrowsmith Regional Park.

Park Access

Several of the hiking trails on Mount Arrowsmith are accessible only through the use of private forestry roads held by Island Timberlands Ltd.

¹⁷ RDN. *Regional Parks and Trails Plan 2005-2015*.

Cooperation between the RDN and these neighbours will be essential to retaining long-term access to the Park.



View to Mount Arrowsmith from Mount Cokely (Photo: H. Rueggeberg).

5 POLICIES & ACTIONS

Through input from committee members, stakeholders and the public, a list of key issues and concerns were generated for MAMRP.

Key Issues List:

- Balanced Management
- ACRD Mount Arrowsmith Regional Park
- Park Access
- Recreational Use
- Habitat & Environmental Protection
- Education & Research
- Interpretation & Tourism
- Safety & Emergency Planning
- Park Expansion

The plan endeavours to address these fundamental issues. The management policies and actions are organized around these issue topics. Each topic area provides:

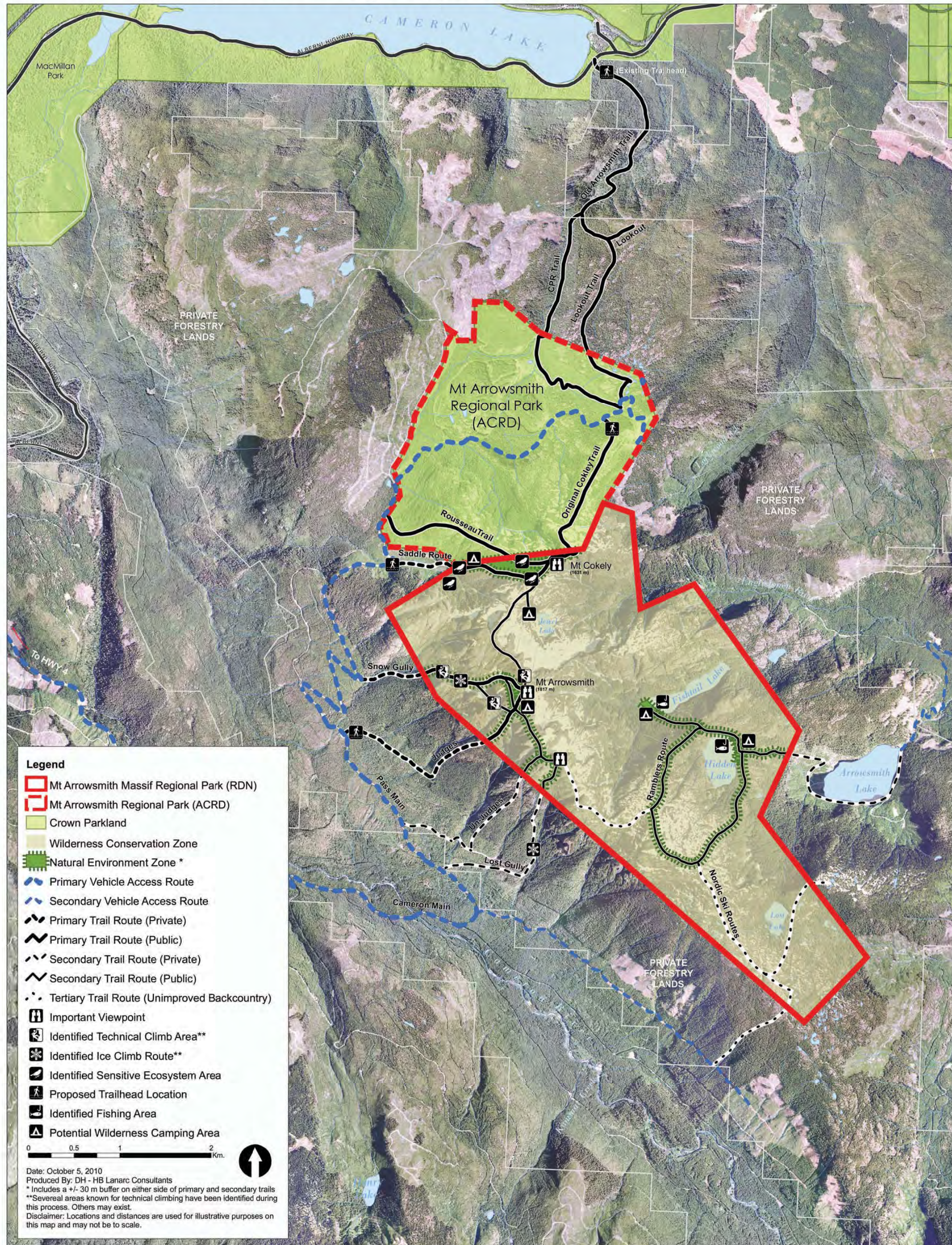
- A brief summary of the issue;
- Management policies that provide direction on how the issue will be addressed; and
- Detailed actions to be completed.

Section 6: Implementation provides a timeline and budget for key actions.

Figure 6.1: Proposed Park Plan Map provides a graphic plan of the park management plan policies.

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Mount Arrowsmith Massif Regional Park Management Plan



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Hiking, a major recreational use in Mount Arrowsmith, must respect the wilderness aspect of the park (Photo: D. Wheldon).

BC Parks has developed a series of parks zones to reflect different balances of recreation and conservation within their parks. These zones typologies can be applied within Mount Arrowsmith Massif Regional Park.

5.1 Balanced Management

Natural ecosystem protection and recreation are the two main functions of MAMRP. While compatible, it is important to use a balanced approach to managing the park so both functions can flourish. Park zoning is a common method for managing park use and maintenance. The zones are used to divide the park into typical park areas that will have the general management objectives. Because Mount Arrowsmith Massif is a wilderness park with limited recreation, the recommended zones protect the wilderness values of the area. This plan recommends two park zones:

- **Wilderness Conservation Zone:** The purpose of the zone is. “to protect a remote, undisturbed natural landscape to provide unassisted backcountry recreation opportunities dependent on a pristine environment where no motorized activities will be allowed.¹⁸” The conservation of natural assets is the top priority in these zones. Typically there are no human-based facilities or improvements in these areas and it is expected that recreation uses in these areas are very low impact. In MAMRP, about 95% of the park area falls within the Wilderness Conservation Zone.
- **Natural Environment Zone:** This zone is designated to, “protect scenic values and to provide for backcountry recreation opportunities in a largely undisturbed natural environment.¹⁹” Typically these areas are low use, but can include key nodes of activity and access. In MAMRP, the high-use areas, hiking trails and trail buffers are included in this zone, totalling about 5% of the MAMRP area.

Policy:

Utilize park use zones to manage Mount Arrowsmith Massif Regional Park for both conservation and recreation.

Actions:

- Manage park areas in accordance with the following park use zones:
 - **Wilderness Conservation Zone:** Maintenance and improvements in these areas are limited to habitat protection or enhancement. New trail development is not supported in this zone.
 - **Natural Environment Zone:** Improvements in these areas are limited to trail maintenance, rerouting, improvements and signage. Trail

¹⁸ BC Parks Zoning.

¹⁹ BC Parks Zoning.

improvements are limited to recreation uses supported in this plan. Improvements to facilitate motorized recreation, biking and horses are not supported.

5.2 ACRD Mount Arrowsmith Regional Park

Since 1972 the Alberni Clayoquot Regional District (ACRD) has owned 607 ha of Regional Park on the north slope of Mount Cokely. The property was obtained through an agreement with private forestry owners and includes several conditions of use. While this park sits within the RDN, ownership and operation of the park is under the jurisdiction of the ACRD. For several years, the park was operated as a ski hill, complete with ski lifts and lodges; however, the operation of the facility proved to not be viable due in part to unpredictable snow conditions, the long drive, unreliable snow conditions, poor winter road conditions and development of larger, more accessible ski hill facilities on the Island (e.g. Mount Washington, est. 1979).

After ski resort operations closed, the area continued to be used for backcountry skiing, hiking, cycling and motorized recreation. In 2005, the ACRD decommissioned all remaining infrastructure on the site, including the ski lifts, stations and storage tanks to alleviate vandalism and environmental contamination concerns. Today, the park continues to be used for a variety of recreation types. The two parks share common access routes, trails and ecosystem values that warrant consideration for cooperative management.

Policies:

Work cooperatively with the ACRD to manage mutual resources/responsibilities related to the adjacent parks.

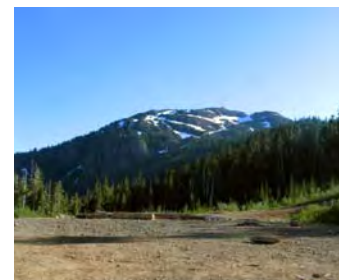
Encourage communication to ensure that improvements or changes in both parks are completed in consultation with the neighbouring regional district.

Actions:

- Establish regular lines of communication between the ACRD and RDN by identifying key staff members and setting up communication channels.
- Arrange a regular meeting schedule (e.g. once/year) to have discussions on management and planning for both parks.
- Consult with the ACRD to determine their plans for the future of Mount Arrowsmith Regional Park.

In comparison to the RDN MAMRP, the ACRD Mount Arrowsmith Regional Park has more open space and more gradual slopes, which makes it a preferred destination for motorized recreation enthusiasts.

The current ACRD Regional Park agreement notes that if the Regional Park function of the property ceases, the land is to be returned to private forestry ownership.



The parking lot at the ACRD park is a convergence point for many key trails (Photo: HB Lanarc).

- Support the continuation of the Regional Park function at the ACRD park.
- Discuss the function and future of continued vehicle access via logging roads into the parks (see Section 5.3.2: Vehicle Access).
- Work with the ACRD on information and communication initiatives to present the parks as an integrated public area (see Section 5.4.6: Signage & Information).
- Discuss cooperative ecosystem management planning and documentation (see Section 5.5: Habitat & Environmental Protection).

5.3 Park Access

MAMRP is surrounded by privately-owned forestry property to the east, south and west. It abuts the ACRD Mount Arrowsmith Regional Park to the north. Three main access points to the park been identified by the public: vehicle access from the east – Cameron & Pass Main Forestry Road from Alberni Highway, trail access from the north – Old Arrowsmith Trail/CPR Trail from Cameron Lake and vehicle access from the west – Englishman River Forestry Road. (See Section 3.1.4: Park Access for detailed descriptions of each route).

5.3.1 Trail Access

In all cases, trail routes from each park access point cross private property before entering the park. Ensuring that people continue to have access to the park in the long-term was identified as a priority by survey responders and public session participants.



Typically, trails in MAMRP originate outside the park boundaries, often on privately-owned property (Photo: D. Wheldon).

Policies:

Work cooperatively with neighbouring landowners to ensure that key trail routes into the Park continue to be available for public access.

Actions:

- Renew the existing licenses with Island Timberlands Ltd. and TimberWest for trail licenses on the Old Arrowsmith/CPR Trail routes. (TimberWest – Renewal Dec, 2011; Island Timberlands Ltd. – Renewal March 2015).
- Work with the ACRD to develop a use/access agreement for trails and facilities (e.g. parking and roads) that originate within the ACRD Park to secure ongoing access to MAMRP.
- Work with Island Timberlands to secure agreements for continued public use of existing trail routes that originate on neighbouring private property to the west/northwest of MAMRP. Trails routes to secure ongoing access to, in order of priority, are:
 - Saddle Route

- Judges Route
 - Snow Gulley Route
 - Un-Judges Route
 - Lost Gulley Route
 - Judy's Meadow Route
- Discourage development of new trail routes that utilize private property.

5.3.2 Vehicle Access

West - From Alberni Highway

94% of people that responded to the park survey utilize forestry roads (Cameron Main and Pass Main) from the Alberni Highway (Hwy 4) to access trail routes on the west side of Mount Arrowsmith and the northwest side of Mount Cokely, as well as to access the ACRD park.

As private forestry property, these roads are maintained to forestry road standards by landowners, and at times can be rough and potentially hazardous. Forestry companies only maintain roads as long as forestry is active in the area. When forestry roads are no longer in use, companies may be obligated to decommission roads and to mitigate environmental impacts. In the unlikely event that the park access roads were decommissioned, public access to the park would be severely compromised.

During the summer months, fire hazards restrict use of private forestry roads. The gate at the Alberni Highway entrance may be closed during drought conditions and the west trail routes cannot be accessed during this time. Typically, private forestry companies provide notice before gate closures occur.

East - From Englishman River

20% of park survey respondents noted that they have accessed MAMRP from Highway 19, along Englishman River forestry roads to Arrowsmith Lake. Comparatively fewer comments and concerns were received about this access point, than about the west access point.

Policies:

Ensure that vehicle access from the west (from Alberni Highway) to the park continues to be available in the long-term.

Because current use of the vehicle access route from the east (from Englishman River) is comparatively low, no action for pursuing access agreements is recommended in the short-term.



Forestry roads are required for vehicle access into the park (Photo: RDN).

Island Timberlands currently runs a blog to provide information about activities on their land, including gate closures, that may affect people travelling on it: blog.islandtimberlands.com

The RDN provides a link from their website to the blog.

Because of Mount Arrowsmith's remote setting, people usually access the park by vehicle. Without vehicle access, day-hikes to the park would be considerably restricted.

Ensure that roads continue to be passable for personal vehicles, with priority given to ensuring access during non-snow months.

Actions:

- Meet regularly with neighbouring landowners to discuss continued availability of forestry roads for park access.
- If, in the future, road conditions deteriorate substantially, consult with the ACRD and private timber companies to develop an agreement to facilitate road improvements and maintain roads to a rough 2WD standard to continue public park access.
- Work with the ACRD on initiatives related to road access, improvements and maintenance on roads that are used to access both Regional Parks.
- Continue to provide access to gate closure information via a link to the Island Timberlands blog. Consider developing a stakeholder notification list that can be contacted to communicate closures.
- In the medium-term, re-evaluate use of and demand for vehicle access from the east (from Englishman River). If access needs have increased or issues have been identified, consider negotiating agreements.

Winter Access

While the ski resort is no longer there, people still participate in winter activities in the Mount Arrowsmith/Mount Cokely area. Skiing, snowshoeing, winter hiking and ice climbing are popular winter activities. Snowmobiling happens within the ACRD park.

The high altitude of the park means that roads are typically snow-covered during winter months. Snow clearing is currently performed on the private forestry roads by landowners when access is needed for forestry activities. The expense of road clearing limits snow removal for recreational purposes.

Snow was identified by public response as an issue for park access in the wintertime. People accessing the park during the winter can often find themselves trapped on the mountain at the end of the day due to softening snow conditions. SAR or other emergency response efforts have been needed in some cases where people are trapped.

Policy:

Recognizing the limitations associated with snow removal, develop information strategies to increase safety and minimize rescue efforts associated with winter road conditions.



Winter recreation currently occurs in MAMRP, despite difficult winter access conditions (Photo: P. Rothermel).

Actions:

- Post general winter hazard information on the RDN website to advise people of the conditions to expect when accessing MAMRP during winter months.
- Consult with Island Timberlands to discuss the feasibility of providing winter road condition information on the Island Timberlands blog (e.g. last known snow-clearing date and expected road conditions).
- Consult with Island Timberlands about posting a winter hazard driving sign on roads at a lower elevation to discourage winter travel without appropriate provisions (e.g. snow tires, 4WD).

5.3.3 Parking

Currently, parking at MAMRP consists of informal pull-outs along the forestry roads. Consultations with stakeholders and the public indicate that parking has not been identified as a conflict to date; there are enough places for people to park without impacting forestry traffic. If park use continues to increase, parking may become a future concern.

Public parking is available in the ACRD Mount Arrowsmith Regional Park. Generally this lot is used by people using the Original Cokely Trail or participating in other activities with the ACRD park.

Policy:

Ensure that parking does not encroach on active roads through monitoring user volume and demand.

Actions:

- Coordinate with the ACC to obtain annual registry numbers of people accessing Mount Arrowsmith. Track incremental increases.
- Consider placing a register at the summit of Mount Cokely to monitor ascents.
- Include parking conduct information in park documents (e.g. ensuring cars are pulled completely off the roadways).
- Continue to consult with neighbouring landowners to obtain feedback on any parking issues that arise.
- In the short-term, continue informal parking. If, in the long-term, parking volume appears to become an issue, negotiate with neighbouring landowners to obtain and develop dedicated parking areas at popular trailheads.

5.4 Recreational Use

5.4.1 Trail Accessibility

Generally, public feedback acknowledged that MAMRP is rugged wilderness and responses showed limited interest in substantially increasing accessibility or expanding park uses at this time.



The challenging terrain in MAMRP is a limitation for accessibility (Photo: D. Wheldon).

MAMRP is the RDN's most remote regional park. Currently, the peaks of Mount Arrowsmith and Mount Cokely are accessible only by foot due to steep terrain. The trail routes within the park are very steep and rugged, limiting use by physically challenged, elderly, very young or those otherwise unable to climb. While certain routes are less difficult, no routes could be considered accessible.

Public feedback indicated that MAMRP trails are typically too steep for use by mountain bikes, horses or motorized vehicles. Motorized vehicle users are present in the ACRD Mount Arrowsmith Regional Park. At no point in area's history has an accessible route to the summit of Mount Arrowsmith or Mount Cokely been available.

Policies:

Maintain current levels of accessibility on park trail routes.

Increase public information about the range of difficulty levels of park routes.

Do not permit motorized vehicle use within Mount Arrowsmith Massif Regional Park, as per RDN Park Use Regulation Bylaw 1399.

Actions:

- Identify through park information materials the varying levels of route difficulty and provide descriptions of the level of fitness needed for particular trail routes. Ensure descriptions are accurate and easy to understand.

5.4.2 Climbing

A potential issue associated with climbing within the park, is general public use of trails that lead to climbing sites. Scenarios can occur where inexperienced climbers find themselves stranded in terrain that is beyond their abilities.

Rock and ice climbing are current activities within MAMRP. There are multiple rock faces and ice walls within the park that are popular destinations for the climbing community. Climbing is a relatively common activity in public parks throughout BC. This plan acknowledges the dedicated interests in these activities and it is expected that this recreational use will continue within MAMRP. Safety and environmental impacts are two key considerations for climbing in MAMRP:

- **Safety:** It is the responsibility of climbers to rely on themselves and other climbers for safety. It is expected that safety will continue to be the responsibility of climbers.

- **Environmental Impacts:** If the popularity of this activity significantly increases over time, there could be impacts on sensitive ecosystems that are found on rocky bluffs.

Policy:

Continue climbing as a permitted park use within MAMRP, while working with local climbing associations to encourage safe and environmentally sensitive use of the mountain.

Actions:

- Work with local climbing groups such as the Climbers Access Society of BC,²⁰ to document popular climbing locations within MAMRP and where permanent climbing protection (e.g. bolts) has been installed.
- Work with local climbing groups to monitor permanent protection locations for safety and to monitor environmental impacts related to increasing use of the mountain. Where concerns are noted, take management actions to mitigate, through improvements, removals or, if required, closures.
- General public use of trail routes that include ‘climbs’ should either be passively discouraged through limiting signage and not providing public information about these routes, or where ‘climbs’ exist along previously identified public routes, care should be taken to inform people of the technical nature of the route and discourage use of the area by inexperienced climbers.



Rappelling the cliffs in MAMRP (Photo: P. Rothermel).



Ice climbing in MAMRP (Photo: P. Rothermel).

5.4.3 Wilderness Camping

While limited, wilderness camping is a recognized use in MAMRP. Currently, the RDN *Regional Park Bylaw No. 1399* does not permit camping within regional parks, except in designated camping areas. There are currently no designated wilderness camping areas in the RDN. The primary reason for this bylaw is that wilderness camping can overwhelm the capacity of the backcountry to absorb camping impacts, destroying habitat and undermining wilderness experiences. In addition, campfires can be a wildfire hazard.

Wilderness camping is effectively monitored in other BC parks through the use of Wilderness Camping Permits and/or Registration which are used to track the number of visitors to different areas of the park to limit

²⁰ “The Access Society represents everyone who supports public access to the cliffs and mountains of B.C. and conservation of them.” (Society website: www.access-society.ca)

overcrowding, overuse and damage. Registration can also aid in locating overdue or lost parties.

Policies:

Recognizing that wilderness camping is a desirable activity within MAMRP, the RDN will consider wilderness camping a viable recreation use, as long as it is completed sensitively and safely.

Campfires associated with wilderness camping will not be permitted in MAMRP.

Actions:

- Amend RDN Regional Park Bylaw No. 1399 to allow wilderness camping in MAMRP.
- Identify appropriate and desirable locations for wilderness camping and direct campers to these locations to afford greater protection of park ecosystems and, if in case of emergency, facilitate rescue operations.
- Develop a process for Wilderness Camping Registration that is easy to use, regardless of location (e.g. on-line or in-park registration).
- Monitor environmental impacts of camping at designated sites. If extensive damage is observed, consider setting daily maximum numbers for wilderness camping registration.
- Provide appropriate information with wilderness camping registration, including locations of camping areas, code-of-conduct information, restrictions (e.g. no fires) and emergency contact information.



Wilderness camping in Glacier National Park (Photo: Parks Canada).

5.4.4 Trail Conditions

The trails within MAMRP are typically steep, rocky and difficult. Generally, public response indicated:

- 63% of respondents were satisfied or very satisfied with the trail conditions and maintenance;
- 60% were satisfied or very satisfied with the trail safety;
- 54% were satisfied or very satisfied with the ease of navigation; and
- 48% were satisfied or very satisfied with the technical climbing areas.

This feedback indicates that most people using the trail routes in the park understand and respect that they are participating in a wilderness recreation experience.

Two key maintenance concerns were identified in the public responses:

- Erosion and environmental damage on popular trail routes, mainly the Saddle and Judge's Routes.



Erosion on the Judge's Route (Photo: H. Rueggeberg).

- Loss of route identification on trailheads that originate on privately-owned forestry lands due to forestry activities. When forestry activities occur, tree markers and other route identification features can be lost.

Policy:

Trail maintenance activities and park improvements will continue to respect the wilderness nature of the park.

Actions:

- Develop and maintain a project list of potential trail improvements for the park. Prioritize potential projects based on:
 - **Priority One:** Trail improvements where significant safety concerns have been identified.
 - **Priority Two:** Trail improvements to keep main trail routes operational.
 - **Priority Three:** Projects to improve conditions where environmental impacts are problematic. This process identified trail encroachment on sensitive ecosystems on the Saddle Route and erosion issues on both the Saddle and Judge's Routes as significant concerns.
 - **Priority Four:** Other projects identified by users or staff that would improve the experience of the trail routes.
- Create a user input system that encourages park users to identify trail maintenance issues and recommend potential improvement projects.
- Request Island Timberlands to provide consultation about planned forestry activities that would impact use of existing trails on their properties that connect to MAMRP trail routes. If existing trail routes will be affected, work with Island Timberlands to provide public information and develop a strategy for reestablishment of future trail access.

5.4.5 Volunteer Stewardship

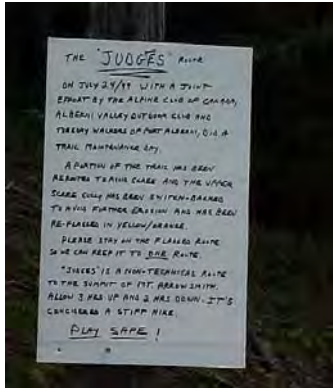
The years of effort by stakeholders and the public to protect Mount Arrowsmith as a park attests to the level of commitment park users have to the area. Due to the size and remote nature of MAMRP, the RDN will need to seek feedback and assistance from local user groups to maintain and steward the mountain.

Currently, the majority of maintenance on the existing trails is completed on a volunteer basis by the FMCBC, ACC and other trail users. Groups and individuals generally undertake minor maintenance activities such as:

- **Trail debris removal** where fallen trees or other debris are significant barriers on routes;



Volunteer maintenance crews at work (Photo: P. Rothermel).



Temporary signage recording maintenance activities (Photo: RDN).

- **Trail reinforcement and cribbing** where erosion or safety concerns are identified;
- **Trail relocation** where trail braiding has occurred or existing trails are disrupting important ecosystems, species or habitats; and
- **Trail flagging** where routes are identified by tree flags or markers by trail users (see to Section 5.4.6: Signage & Information).

The majority of these tasks are completed ad hoc and on a volunteer basis, typically using on-site materials and resources. Any improvements to trail routes must be accomplished without the need for vehicle or machine support.

While trail maintenance will form the largest portion of park maintenance, other stewardship activities, such as sign posting, flagging, litter removal and park observation will also be required.

Policy:

Seek to continue trail maintenance activities on a volunteer basis, by coordinating with partners, existing user groups, organizations and individuals that can provide volunteer support for trail improvements and general park stewardship.

Actions:

- Continue to establish and train volunteer park wardens for MAMRP through the Park Warden Program.
- Document general standards for trails maintenance that can be shared with all groups completing maintenance activities in the park.²¹
- Coordinate with Hupacasath First Nation, and members of the FMCBC, ACC and other organizations to discuss potential maintenance and improvement projects.
- Maintain a record of trail improvements and dates work is completed.



Completed erosion control measures (Photo: P. Rothermel).

5.4.6 Signage & Information

Currently, signage in MAMRP is very limited and without local experience and knowledge, some trail routes can be difficult to identify. Typically, signage within the park is limited to trail flagging. When asked what limits their use of Mount Arrowsmith Regional Park, 20% of respondents said there was not enough information available about the park. Several types of information should be considered for the park:

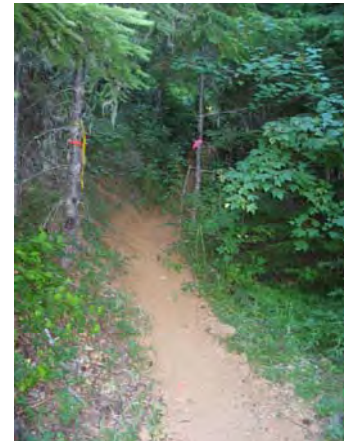
²¹ Previous trail maintenance standards have been developed for Mount Arrowsmith and may warrant consideration as a starting point for updated standards.

- **Trail Marking:** When asked what limits their use of Mount Arrowsmith Massif Regional Park, 15% of respondents said that they don't know how to navigate within the park. In a remote, wilderness setting, getting lost is a definite reality. Reports from Search-and-Rescue indicate that they are regularly called to search for people lost in the area. Generally, public survey responses indicated strong support (83%) for having more directional trail signage within the park.
- **Trailhead Signage:** All trailheads to MAMRP start outside the park boundary; a large portion originating on private forestry property. Currently, trailheads are not well marked, so users must rely mainly on local knowledge, maps and guidebooks for trailhead locations.
- **Park Regulatory and Use Information:** Consultations with stakeholders suggest that information about emergency contacts, appropriate park behaviour, restrictions, park hazards, private property information, wilderness park preparedness and other informative material would be valuable assets for the park. Public responses also recorded an interest in having more detailed information about the park and its recreational trails – e.g. trail distances, level of difficulty, travel time, etc. In addition to on-site signage, information about parks can be obtained via websites, brochures, maps, guidebooks and more.
- **Interpretive Information:** Interpretive information can heighten the experience of a site by providing information about its history, culture, environment, visual experience and more. Generally, public response supported interpretive information being available for the park (71% support for natural information; 69% for historical & cultural information). However, public input also indicted a desire not to introduce extensive signage within the park. Park interpretive information can be delivered successfully through brochures and website information which people can carry during park visits.

Consultations with neighbouring landowners indicates that issues such as liability concerns, land use conflicts and potential safety issues, when information about trails does not identify private lands. To this respect, it is important to recognize that the majority of Mount Arrowsmith's trails begin on private property. Information communicated about these trails will need to reflect this reality.

Policy:

Develop a strategic information strategy that combines signage within the park and information available remotely, including website, brochures and publications, to increase the accurate information readily available to park users.



Flags marking a trail (Photo: HB Lanarc).

Because Mount Arrowsmith Massif has been a popular hiking area for years, a wealth of information is available.

The RDN Trans Canada Trail is cited as an example of a successful trail agreement on private property. Signage notifies people when they are on private forestry land, and trail information recognizes that the trail may be closed and/or relocated to respond to private land activities. The RDN has posted signage to indicate to users when activities are happening in the vicinity of the trail.

Actions

- Develop, in consultation with neighbouring landowners, information that acknowledges the use of trails on private forestry land.
- As part of discussions with neighbouring landowners around trail access (*See Section 5.3: Park Access*), include discussion on posting trailhead signage with park regulatory, use, safety and other notifications at key trail starting points (on private property). Trailhead signage should be located up the trail from major road junctions to minimize vandalism and signs should be durable and easy to install. (*See Figure 6.1: Proposed Park Plan Map for recommended trailhead locations*).
- Consult with Island Timberlands about posting/improving directional signage along forestry roads to the park.
- Consult with the ACRD to determine if a partnership should be considered for the development of unified signage and information materials.
- Consider posting signs on trails at the private/public boundary to indicate to park users when they are on private property.
- Provide flagging along main mapped trail routes from start-to-finish for user safety. Develop flagging standards and colours to aid in the identification of appropriate routes.
- Consider utilizing a system of trail monuments that may be linked to GPS coordinates on main trail routes (e.g. Saddle and Judge's Route) to record and map trail locations. These monuments could be as simple as numbered reflectors or flags with the purpose of people using them to report trail maintenance issues, record trail maintenance activities, report emergencies, etc.
- Develop a plan to routinely check all mapped trail routes to inspect signage and flagging and add new flags as needed. This could be managed through a volunteer program.
- Develop website and brochure information that provides, at minimum, the following information:
 - A map of trail routes within the park and, pending agreements with neighbouring landowners, trail routes on adjacent private lands.
 - Information about trail use in private forestry areas.
 - Information about park features, including viewpoints, significant geological formations, interesting ecological and cultural features, etc.
 - Trail information to summarize level of difficulty, trail distances, anticipated time allowances, etc.
 - Safety and hazard information including wilderness hiking guidelines, fire prevention information, limited cell phone coverage and emergency contact information.



Trailhead signage at the start of the Old Arrowsmith Trail, outside MAMRP (Photo: P. Rothermel).

- Code of conduct information and park regulations, including permitted uses, trail use, garbage disposal, etc.
- Work with volunteers to develop interpretive materials about the park, including historical documentation and ecological information.
- Provide information and publications to partners, stakeholders and neighbouring landowners for review prior to public distribution.
- Produce and distribute hard copy materials about the park through the RDN offices, Hupacasath First Nation, RDN member municipalities, local tourism agencies, local clubs and organizations and other avenues indentified.

5.4.7 Park Amenities

Generally, public response indicated little desire to see the introduction of benches, garbage receptacles, shelters or other man-made amenities into the wilderness setting. Some public input suggested that toilets may be a desirable amenity, but given the remoteness of the park, and the fact that trailheads are located on private property, these facilities are not feasible at this time.

Policy

Beyond limited signage, the RDN will not introduce additional user amenities to the park in the short-term.

5.4.8 Code of Conduct

Currently, user facilities within MAMRP are minimal and this plan does not recommend introducing extensive amenities. In the absence of extensive park amenities, appropriate wilderness conduct is particularly important. Human tread in these areas must be minimized to protect sensitive ecosystems and habitat.

Key topics related park conduct include:

- **Garbage & Human Waste:** General observation and public feedback indicated that most park users practice responsible wilderness recreation techniques. Garbage receptacles and toilets are not available within the park. To ensure that people continue to use their park responsibly, park information should be provided through the park information strategy about proper waste management and “Leave no Trace” use of the park (see www.lnt.org for more information).
- **Vandalism:** Park users reported incidents of vehicle vandalism and theft while using trails in MAMRP. This particular issue is difficult to monitor in remote settings, but may need to be addressed if incidences increase.



Broken glass at a popular parking area (Photo: HB Lanarc).

One of the main reasons for establishing a Regional Park on this site was to ensure that the area's ecology would remain protected.

- **Pets:** The public survey results show that 30% of respondents visit MAMRP with their pet. Public comment showed a split opinion on whether pets should be permitted in the park. Potential conflicts of pets in the park include wildlife interaction, habitat damage and conflicts with other park users. The *RDN Park Use Bylaw 1399* requires pets in regional parks to be under control of their owner at all times, either being on-leash or responding to owner commands. In a wilderness setting, control is essential, and pets who would not respond immediately to commands must either be leashed or not taken into the park. Pet waste removal must also be addressed.

Policy:

The RDN will provide information to support and promote respectful use of the park.

Actions:

- Ensure that park information includes details about appropriate garbage and waste management techniques.
- Encourage park users to report incidences of vandalism and theft, including information on where and how to make reports. If vandalism and theft continues to increase, consider park monitoring through volunteer programs.
- Provide within park information, details about personal property protection, including removing valuables from vehicles.
- Provide code-of-conduct information about pets in the park.

5.5 Habitat & Environment Protection

5.5.1 Ecosystem Monitoring & Protection

MAMRP is well-recognized for its unique ecology and flora and fauna (see Section 3.2.1: *Natural Values for a summary of natural values*). As park use increases, it will be important to maintain a balance of recreation and conservation, ensuring increases in recreation use do not result in irreparable damage to natural ecosystems. The more that is known about ecological features, conditions and processes, the more effective park management can be in protecting ecological features.

Policies:

Work with partners to increase the volume and detail of natural ecosystem information about the park.

Plan and manage the park to minimize negative impacts on identified ecological resources.

Actions:

- Consider additional inventory efforts to determine if Red-Listed Queen Charlotte Goshawk and Marbled Murrelet occur in the park. Goshawks respond to call-playbacks, while Marbled Murrelets require dawn surveys.
- Prior to completing trail improvements, conduct research to verify that rare/unusual plants and plant communities will not be affected. UTM coordinates already exist for Red and Blue-listed plants in CDC Database, but detailed locations for disjunct species and uncommon lichen communities are needed as well.
- Where recreation uses are identified as substantially conflicting with sensitive ecosystems, consider re-routing or closing areas to recreational use.
- Where recreation and ecology can safely overlap, encourage public education and interests in ecological resources (e.g. provide information about the Mount Arrowsmith Marmots to promote education about the species).
- Work with the research community to undertake vegetation mapping for use in long-term planning. Initial focus should be on delineating and classifying communities containing elements of potential Red- or Blue- listed communities (i.e. *Lewisia Columbiana*, *Allium crenulatum*, *Phlox diffusa*, *Selaginella wallacei*, *Carex scirpoide* and *Carex sitchensis*). Map remaining areas when Alpine ecosystem classification guidelines become available.
- Maintain GIS mapping of rare/unusual flora and fauna occurrences within MAMRP. Continue to update the data when new information becomes available. Consult with local naturalist organizations and individuals to seek assistance in gathering data and input for the mapping.
- Include environmental monitoring as a component of park maintenance and stewardship programs (See Section 5.4.5: *Maintenance & Stewardship*). Work with local ecologists to determine monitoring procedures and indicators.
- Maintain a record of research and studies completed on the mountain (See Section 5.6: *Education & Research*).

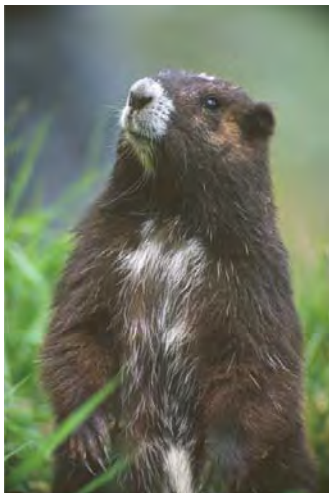


Alpine meadows (Photo: P. Rothermel).



Rare Lewisia pygmaea growing on a trail (Photo: R. & L. Avis).

Consultation with the Vancouver Island Marmot Recovery Project has indicated that two transplants of captive marmots to Mount Arrowsmith in 2009 have shown signs of success, with at least five of six marmots remaining on site through the past winter.



Vancouver Island Marmot (Photo: Unknown).

5.5.2 Vancouver Island Marmot

Discussions with stakeholders indicate that human presence in marmot colony areas is not expected to be detrimental to the species, and could in fact provide the positive effect of reducing the presence of natural predators in their habitats. It is not anticipated that recreational trail use will negatively impact marmot recolonization efforts on Mount Arrowsmith.

Policy:

Support the habitat needs of the Vancouver Island Marmot and recolonization efforts of this species to Mount Arrowsmith.

Actions:

- Request that the Vancouver Island Marmot Recovery Project communicate with the RDN on marmot colonization activities planned for MAMRP.
- If the RDN plans to undertake any major projects that could impact the V.I. Marmot, notably in the Saddle Route area, consultation should be undertaken with the Vancouver Island Marmot Recovery Project to ensure animals will not be jeopardized.
- Provide public information about the species and provide a link to the Vancouver Island Marmot Recovery Project webpage from the RDN website and in other publications where appropriate.

5.6 Education & Research

Past research activities within MAMRP and surrounding area have provided a wealth of information about the area's habitats and ecosystems.

Policy:

Encourage the continued use of MAMRP as a site for environmental research.

Actions

- Support efforts for ongoing GLORIA research conducted on the mountain. Support the completion of the 2011 monitoring for the project.
- Coordinate with the Mount Arrowsmith Biosphere Reserve Foundation to support their continuing efforts to increase research on Mount Arrowsmith.

- Encourage local educational institutions, including VIU, UVic and others to explore opportunities to utilize MAMRP and its ecosystems within educational and research programs (inventory, mapping, monitoring, restoration, etc).
- Maintain a record of research and studies completed on the mountain. Request people conducting research in the area to supply the RDN with information documented.
- Where required, ensure that planned research activities complete the appropriate park permit process, as laid out in the *Park Use Regulation Bylaw 1399*.

5.7 Interpretation & Tourism

5.7.1 First Nations History & Culture

Hupacasath First Nation has very strong historical and cultural ties to Mount Arrowsmith and Mount Cokely.

Policies:

Help residents and visitors understand the unique first nations' history and culture of the area.

Ensure identified cultural and historical resources, artefacts and areas within MAMRP are protected.

Actions:

- Continue to work with the Hupacasath First Nation to ensure that any identified culturally significant sites are not impacted by activities within the park.
- Ensure policies of the existing MoU are addressed when initiating park projects.
- Together with Hupacasath First Nation, consider developing interpretive materials that share stories and facts about the mountain's history.

5.7.2 Recent History

The work of volunteers has helped to increase historical knowledge of the Mount Arrowsmith area. Photos and accounts have been collected, dating back to the 19th century. The information helps to paint a vibrant picture of the mountain's recent history.

Policies:

Encourage and support the collecting and distribution the area's recent history through interpretive materials.

Actions:

- Support volunteer efforts to obtain historical and cultural information about the area.
- Consider developing historical interpretive materials as a component of the larger information strategy for the mountain (*see Section 5.4.6: Signage & Information*).

5.7.3 Volunteer Tourism

The remote wilderness of MAMRP can be a barrier for both visitors and residents wanting to access the park. The park can be difficult to find, and once there, difficult to navigate.

Guided hikes to the mountain can introduce people to MAMRP in a way that is safe and enjoyable. Hikes could be offered through RDN Leisure Services or could be provided by user groups that are willing lead introductory hikes up the mountain. Guided hikes also have the advantage of demonstrating to first-time park visitors appropriate park conduct, user preparedness and may be an opportunity to share interesting environmental, historical or cultural information.



Group hike up Mount Arrowsmith
(Photo: P. Rothermel).

Policy:

Encourage public use of MAMRP by providing opportunities to visit with an experienced guide.

Actions:

- Continue to offer regular guided hikes, led by experienced volunteer guides, on an annual/semi-annual basis through the RDN's leisure services.
- Investigate opportunities for First Nations cultural hikes to support cultural tourism.
- Encourage existing hiking clubs to offer introductory hikes to the mountain. Consult with clubs to determine if the RDN can direct potential hikers to contacts within the clubs.

5.7.4 Commercial Tourism

Commercial guiding programs use Mount Arrowsmith for tourism and training and activities. The 2005 *Regional Parks and Trails Plan* policy for commercial activities in regional parks is to “allow commercial

services that are program-oriented, personal services, such as guided programs or outdoor recreation activity training, and that meet the following conditions:

- *The service or activity is an appropriate outdoor recreation activity;*
- *The service is compatible with the particular regional park management plan;*
- *The services could not be operated effectively outside the Park boundary.”*

Commercial activities within region parks are required to obtain a permit issued under the *Park Use Regulation Bylaw 1399*.

In addition to permitting by the regional district, neighbouring landowners also require permits for commercial tourism that utilizes private property adjacent to MAMRP.

Policies:

Commercial guiding, training and interpretive programs will be permitted within MAMRP subject to the provisions of a permit issued under the Park Use Regulation Bylaw.

Activities perceived to negatively impact the wilderness character of the park, through introduction of new infrastructure or high-impact activities, will not be permitted in the park.

Actions:

- Ensure that existing commercial operations are aware of the regional park status and proper permits are obtained under the *Park Use Regulation Bylaw 1399*.
- Work with Island Timberlands to consider developing a streamlined permitting process through the RDN that would require a single permit for activities that traverse the MAMRP and adjacent private property boundaries.

5.8 Emergency Services

5.8.1 Fire Management

Much of MAMRP Park is comprised of alpine and sub-alpine environments that have a less fuel sources, and therefore lower risk, than forested areas. Consultations with stakeholders indicated that there have been no recent responses to fire in MAMRP. In addition, the types of park uses, hiking, climbing, snowshoeing, etc., are not typically considered high-risk. Higher-risk activities such as motorized vehicle use are not permitted within the park. Consultations also revealed that lightening strikes are not as common in this area as other areas.

Currently, the RDN is undertaking a study that assesses fire risks in all RDN Regional Parks. The RDN maintains cost-sharing agreements for fire protection on multiple Regional Parks. This arrangement is negotiated annually to provide fire protection. The fee is based on risk and start-potential.

Policy:

The RDN will reduce fire risk through hazard management and information in MAMRP.

Actions:

- Continue to include MAMRP in the cost-sharing agreement with the Coastal Fire Centre.
- Implement recommendations provided in the RDN Fire Risk Study.
- Consult with the ACRD to determine how fire hazard mitigation is performed in Mount Arrowsmith Regional Park. Consider partnering with the ACRD on a fire information strategy.

5.8.2 Search & Rescue

Emergency response to Mount Arrowsmith Massif Regional Park is generally provided by local Search and Rescue (SAR) organizations. The park is considered within the jurisdiction of both the Alberni Valley and Arrowsmith Search and Rescue. SAR organizations have responded to numerous calls to Mount Arrowsmith over the years.

Consultations with the SAR organizations revealed concerns about the ability of the organizations to respond to snow-based rescues. WorkSafe BC does not permit the SARs to put their volunteers in high-risk situations such as avalanche terrain due to liability issues. This makes them unable to respond to avalanche-based rescues. The nearest avalanche rescue squad is located in Squamish.

Policy:

The RDN will provide information to local SAR organizations as needed to support effective emergency responses.

Actions:

- Provide, where appropriate, mapping and other park information to SAR organizations for their use in planning and executing activities.
- Provide opportunities for SAR volunteers to participate in guided hikes of the area to share local knowledge.

- Post emergency contact information on the RDN website and other park brochures at key locations within/near the park.
- Identity a response plan and contacts for avalanche emergencies.

5.9 Future Park Expansion

Future acquisitions, while not identified as a priority through the public input process, should still be a consideration if desirable opportunities or conditions arise. Generally, input on future acquisition centred around expanding the park to include existing trails and key natural features.

Aside from the ACRD Regional Park, all lands surrounding Mount Arrowsmith Massif Regional Park are privately-owned.

Policy:

The RDN will not actively pursue acquisition at this time, however the RDN should consider opportunities that arise to acquire properties that would enhance the recreational aspects of the park, protect identified cultural features or protect important environmental features.

Actions:

- Develop a list of desirable recreational, cultural and environmental features that would be considered assets to Mount Arrowsmith Regional Park. Potential considerations could include:
 - Expanded, continuous corridor from Cameron Lake to the ACRD Mount Arrowsmith Regional Park (encompassing the Old Arrowsmith Trail) that would facilitate protection of a wildlife corridor.
 - Expansion of the park to encompass existing trail routes and trailheads within the park boundaries.
 - Inclusion of the existing cabin sites or other identified cultural features outside the park boundaries.
 - Other sites identified by the RDN, stakeholders or the public.
- Consult with neighbouring landowners to request that RDN be provided opportunity to acquire, through purchase, donation or other means, adjacent land areas, should the land owner wish to remove the land from their landbase.



Sunrise over Mount Arrowsmith (Photo: P. Rothermel).

6 IMPLEMENTATION SUMMARY

The implementation summary provides an overview of the approach recommended to complete the actions included in this management plan. The project priorities and estimates are provided for consideration within the context of annual planning and budget considerations.

The following tables provide a consolidated summary of the actions contained in **Section 5: Policies & Actions**. More information and rationales for the actions contained in these tables is located in Section 5 of the plan.

Policy Area	Action	Capital Budget	Timeline	Responsibility/ Partners
Issue 1: Balanced Management				
	Manage park areas in accordance with the defined park use zones.	n/a ¹	Ongoing	RDN
Issue 2: ACRD Mount Arrowsmith Regional Park				
	Establish regular lines of communication between the ACRD and RDN by identifying key staff members and setting up communication channels.	Staff Time	2011	RDN ACRD
	Arrange a regular meeting schedule (e.g. once/year) to have discussions on management and planning for both parks.	Staff Time	Ongoing	RDN ACRD
	Consult with the ACRD to determine their plans for the future of Mount Arrowsmith Regional Park	Staff Time	Ongoing	RDN ACRD
Issue 3: Park Access				
Trail Access				
	Work with the ACRD to develop a use/access agreement for trails and facilities (e.g. parking and roads) that originate with the ACRD Park to secure ongoing access to MAMRP.	TBD	2011	RDN ACRD
	Renew Existing lease with TimberWest for a trail lease on the Old Arrowsmith/CPR Trail Route.	\$500	2011	RDN
	Work with Island Timberlands to secure agreements for continued public use of existing trail routes that originate on neighbouring private property to the west/northwest of MAMRP.	TBD	2011 - 2012	RDN Island Timberlands
	Renew existing lease with Island Timberlands Ltd. for a trail lease on the Old Arrowsmith/CPR Trail Route.	\$700	2015	RDN
	Discourage development of new routes that utilize private property.	n/a	Ongoing	RDN
	Meet regularly with neighbouring landowners to discuss continued availability of forestry roads for park access.	Staff Time	Ongoing	RDN
	Work with the ACRD on initiatives related to road access, improvements and maintenance on roads that are used to access both Regional Parks.	TBD	Ongoing	RDN ACRD
Vehicle Access				

¹ Please note that the table data is preliminary only, and should not be considered complete or accurate. These sections will be revised after the Draft Review is complete.

Policy Area	Action	Capital Budget	Timeline	Responsibility/ Partners
	<p>Continue to provide access to gate closure information via a link to the Island Timberlands blog. Consider developing a stakeholder notification list that can be contacted to communicate closures.</p> <p>In the medium-term, re-evaluate use of and demand for vehicle access from the east (from Englishman River). If access needs have increased or issues have been identified, consider negotiating agreements.</p> <p>If, in the future, road conditions deteriorate substantially, consult with the ACRD and private timber companies to develop an agreement to facilitate road improvements and maintain roads to a rough 2WD standard to continue public park access.</p>	n/a	Ongoing	RDN
Winter Access	<p>Post general winter hazard information on the RDN website to advise people of the conditions to expect when accessing MAMRP during winter months.</p> <p>Consult with Island Timberlands to discuss the feasibility of providing winter road condition information on the Island Timberlands blog (e.g. last known snow-clearing date and expected road conditions).</p> <p>Consult with Island Timberlands about posting a winter hazard driving sign on roads at a lower elevation to discourage winter travel without appropriate provisions (e.g. snow tires, 4WD).</p>	TBD	2016	RDN Island Timberlands
	<p>Post general winter hazard information on the RDN website to advise people of the conditions to expect when accessing MAMRP during winter months.</p> <p>Consult with Island Timberlands to discuss the feasibility of providing winter road condition information on the Island Timberlands blog (e.g. last known snow-clearing date and expected road conditions).</p> <p>Consult with Island Timberlands about posting a winter hazard driving sign on roads at a lower elevation to discourage winter travel without appropriate provisions (e.g. snow tires, 4WD).</p>	n/a	2011	RDN
	<p>Coordinate with the ACC to obtain annual registry numbers of people accessing Mount Arrowsmith. Track incremental increases.</p> <p>Consider placing a register at the summit of Mount Cokely to monitor ascents.</p> <p>Include parking conduct information in park documents (e.g. ensuring cars are pulled completely off the roadways).</p> <p>Continue to consult with neighbouring landowners to obtain feedback on any parking issues that arise.</p> <p>In the short-term, continue informal parking. If, in the long-term, parking volume appears to become an issue, negotiate with neighbouring landowners to obtain and develop dedicated parking areas at popular trailheads.</p>	Staff Time	2011	RDN ACCD Island Timberlands
Parking	<p>Post general winter hazard information on the RDN website to advise people of the conditions to expect when accessing MAMRP during winter months.</p> <p>Consult with Island Timberlands to discuss the feasibility of providing winter road condition information on the Island Timberlands blog (e.g. last known snow-clearing date and expected road conditions).</p> <p>Consult with Island Timberlands about posting a winter hazard driving sign on roads at a lower elevation to discourage winter travel without appropriate provisions (e.g. snow tires, 4WD).</p>	n/a	2012	RDN
	<p>Post general winter hazard information on the RDN website to advise people of the conditions to expect when accessing MAMRP during winter months.</p> <p>Consult with Island Timberlands to discuss the feasibility of providing winter road condition information on the Island Timberlands blog (e.g. last known snow-clearing date and expected road conditions).</p> <p>Consult with Island Timberlands about posting a winter hazard driving sign on roads at a lower elevation to discourage winter travel without appropriate provisions (e.g. snow tires, 4WD).</p>	n/a	2012	RDN
	<p>Post general winter hazard information on the RDN website to advise people of the conditions to expect when accessing MAMRP during winter months.</p> <p>Consult with Island Timberlands to discuss the feasibility of providing winter road condition information on the Island Timberlands blog (e.g. last known snow-clearing date and expected road conditions).</p> <p>Consult with Island Timberlands about posting a winter hazard driving sign on roads at a lower elevation to discourage winter travel without appropriate provisions (e.g. snow tires, 4WD).</p>	n/a	2012	RDN
	<p>Post general winter hazard information on the RDN website to advise people of the conditions to expect when accessing MAMRP during winter months.</p> <p>Consult with Island Timberlands to discuss the feasibility of providing winter road condition information on the Island Timberlands blog (e.g. last known snow-clearing date and expected road conditions).</p> <p>Consult with Island Timberlands about posting a winter hazard driving sign on roads at a lower elevation to discourage winter travel without appropriate provisions (e.g. snow tires, 4WD).</p>	Staff Time	Ongoing	RDN Island Timberlands
	<p>Post general winter hazard information on the RDN website to advise people of the conditions to expect when accessing MAMRP during winter months.</p> <p>Consult with Island Timberlands to discuss the feasibility of providing winter road condition information on the Island Timberlands blog (e.g. last known snow-clearing date and expected road conditions).</p> <p>Consult with Island Timberlands about posting a winter hazard driving sign on roads at a lower elevation to discourage winter travel without appropriate provisions (e.g. snow tires, 4WD).</p>	TBD	2016 – 2020	RDN Island Timberlands

Policy Area	Action	Capital Budget	Timeline	Responsibility/ Partners
Issue 4: Recreational Use				
Trail Accessibility	Identify through park information materials the varying levels of route difficulty and provide descriptions of the level of fitness needed for particular trail routes. Ensure descriptions are accurate and easy to understand.	n/a	2012	RDN FMCBC
Climbing	Work with local climbing groups such as the Climbers Access Society of BC, ² to document popular climbing locations within MAMRP and where permanent climbing protection (e.g. bolts) has been installed. General public use of trail routes that include 'climbs' should either be passively discouraged through limiting signage and not providing public information about these routes, or where 'climbs' exist along previously identified public routes, care should be taken to inform people of the technical nature of the route and discourage use of the area by inexperienced climbers. Work with local climbing groups to monitor permanent protection locations for safety and to monitor environmental impacts related to increasing use of the mountain. Where concerns are noted, take management actions to mitigate, through improvements, removals or, if required, closures.	Staff Time n/a	2012 Ongoing	RDN Climbers Access Society of BC RDN Climbers Access Society of BC
Wilderness Camping	Amend RDN Regional Park Bylaw No. 1399 to allow wilderness camping in MAMRP. Identify appropriate and desirable locations for wilderness camping and direct campers to these locations to afford greater protection of park ecosystems and, if in case of emergency, facilitate rescue operations. Develop a process for Wilderness Camping Registration that is easy to use, regardless of location (e.g. on-line or in-park registration). Provide appropriate information with wilderness camping registration, including locations of camping areas, code-of-conduct information, restrictions (e.g. no fires) and emergency contact information. Monitor environmental impacts of camping at designated sites. If extensive damage is observed, consider setting daily maximum numbers for wilderness camping registration.	TBD Staff Time Staff Time TBD n/a	2011 2012 2012 2012	RDN RDN RDN RDN RDN

² "The Access Society represents everyone who supports public access to the cliffs and mountains of B.C. and conservation of them." (Society website: www.access-society.ca)

Policy Area	Action	Capital Budget	Timeline	Responsibility/ Partners
Trail Conditions	Request Island Timberlands to provide consultation about planned forestry activities that would impact use of existing trails on their properties that connect to MAMRP trail routes. If existing trail routes will be affected, work with Island Timberlands to provide public information and develop a strategy for reestablishment of future trail access.	Staff Time	2011	RDN Island Timberlands
	Develop and maintain a project list of potential trail improvements for the park. Complete projects on a priority basis.	TBD	2012 – Ongoing	RDN
	Create a user input system that encourages park users to identify trail maintenance issues and recommend potential improvement projects.	TBD	2013	RDN
Maintenance & Stewardship	Document general standards for trails maintenance that can be shared with all groups completing maintenance activities in the park. ³	Staff Time	2012	RDN FMCBC Hupacasath
	Coordinate with Hupacasath First Nation, and members of the FMCBC, ACC and other organizations to discuss potential maintenance and improvement projects.	Staff Time	Ongoing	RDN FMCBC Hupacasath
	Continue to appoint and train volunteer park wardens for MAMRP through the Park Warden Program.	Staff Time	Ongoing	RDN
Signage & Information	Maintain a record of trail improvements and dates work is completed.	Staff Time	Ongoing	RDN
	Develop, in consultation with neighbouring landowners, information that acknowledges the use of trails on private forestry land.	TBD	2011	RDN Island Timberlands
	Consult with Island Timberlands about posting/improving directional signage along forestry roads to the park.	TBD	2011	RDN Island Timberlands
	Consult with the ACRD to determine if a partnership should be considered for the development of unified signage and information materials.	Staff Time	2011	RDN ACRD
	Develop website and brochure information (<i>see Section 5.4.6 for information recommended for inclusion</i>).	\$10,000	2012	RDN Hupacasath

³ Previous trail maintenance standards have been developed for Mount Arrowsmith and may warrant consideration as a starting point for updated standards.

Policy Area	Action	Capital Budget	Timeline	Responsibility/ Partners
	Produce and distribute hard copy materials about the park through the RDN offices, Hupacasath First Nation, RDN member municipalities, local tourism agencies, local clubs and organizations and other avenues identified.	\$5,000	2012	RDN Hupacasath FMCBC, ACC Municipalities
	As part of discussions with neighbouring landowners around trail access (See Section 5.3: Park Access), include discussion on posting trailhead signage with park regulatory, use, safety and other notifications at key trail starting points (on private property). Trailhead signage should be located up the trail from major road junctions to minimize vandalism and signs should be durable and easy to install. (See Figure 6.1: Proposed Park Plan Map for recommended trailhead locations).	\$12,000	2013	RDN Island Timberlands ACRD
	Consider posting signs on trails at the private/public boundary to indicate to park users when they are on private property.	\$2,000	2013	RDN Island Timberlands
	Provide flagging along main mapped trail routes from start-to-finish for user safety. Develop flagging standards and colours to aid in the identification of appropriate routes.	\$1,000	2014	RDN Hupacasath FMCBC, ACC
	Consider utilizing a system of trail monuments that may be linked to GPS coordinates on main trail routes (e.g. Saddle and Judge's Route) to record and map trail locations. These monuments could be as simple as numbered reflectors or flags with the purpose of people using them to report trail maintenance issues, record trail maintenance activities, report emergencies, etc.	\$1,500	2014	RDN Hupacasath FMCBC, ACC
	Develop a plan to routinely check all mapped trail routes to inspect signage and flagging and add new flags as needed. This could be managed through a volunteer program.	Staff Time	2014	RDN Hupacasath FMCBC, ACC
	Work with volunteers to develop interpretive materials about the park, including historical documentation and ecological information.	\$1,000	2015	RDN Hupacasath FMCBC, ACC
	Provide information and publications to partners, stakeholders and neighbouring landowners for review prior to public distribution.	Staff Time	Ongoing	RDN
Code of Conduct	Ensure that park information includes details about appropriate garbage and waste management techniques.	n/a	Ongoing	RDN

Policy Area	Action	Capital Budget	Timeline	Responsibility/ Partners
	Encourage park users to report incidences of vandalism and theft. If vandalism and theft continues to increase, consider park monitoring through volunteer programs.	n/a	Ongoing	RDN
	Provide within park information, details about personal property protection, including removing valuables from vehicles.	n/a	Ongoing	RDN
	Provide code-of-conduct information about pets in the park.	n/a	Ongoing	RDN
Issue 5: Habitat & Environment Protection				
Ecosystem Monitoring & Protection	Consider additional inventory efforts to determine if Red-Listed Queen Charlotte Goshawk and Marbled Murrelet occur in the park. Goshawks respond to call-playbacks, while Marbled Murrelets require dawn surveys.	TBD	2015	RDN ABRF
	Prior to completing trail improvements, conduct research to verify that rare/unusual plants and plant communities will not be affected. UTM coordinates already exist for Red and Blue-listed plants in CDC Database, but detailed locations for disjunct species and uncommon lichen communities are needed as well.	Staff Time	Ongoing	RDN Hupacasath FMCBC, ACC ABRF
	Where recreation uses are identified as substantially conflicting with sensitive ecosystems, consider re-routing or closing areas to recreational use.	TBD	Ongoing	RDN Hupacasath FMCBC, ACC
	Where recreation and ecology can safely overlap, encourage public education and interests in ecological resources (e.g. provide information about the Mount Arrowsmith Marmots to promote education about the species).	TBD	Ongoing	RDN
	Work with the research community to undertake vegetation mapping for use in long-term planning. Initial focus should be on delineating and classifying communities containing elements of potential Red- or Blue- listed communities (i.e. <i>Lewisia Columbiana</i> , <i>Allium crenulatum</i> , <i>Phlox diffusa</i> , <i>Selaginella wallacei</i> , <i>Carex scirpoide</i> and <i>Carex sitchensis</i>). Map remaining areas when Alpine ecosystem classification guidelines become available.	TBD	Ongoing	RDN Hupacasath FMCBC, ACC ABRF
	Maintain GIS mapping of rare/unusual flora and fauna occurrences within MAMRP. Continue to update the data when new information becomes available. Consult with local naturalist organizations and individuals to seek assistance in gathering data and input for the mapping.	Staff Time	Ongoing	RDN

Policy Area	Action	Capital Budget	Timeline	Responsibility/ Partners
	<p>Include environmental monitoring as a component of park maintenance and stewardship programs (See Section 5.4.5: <i>Maintenance & Stewardship</i>). Work with local ecologists to determine monitoring procedures and indicators.</p> <p>Maintain a record of research and studies completed on the mountain (See Section 5.6: <i>Education & Research</i>).</p>	n/a	Ongoing	RDN Hupacasath FMCBC, ACC
Vancouver Island Marmot	<p>Request that the Vancouver Island Marmot Recovery Project communicate with the RDN on marmot colonization activities planned for MAMRP.</p> <p>Provide public information about the species and provide a link to the Vancouver Island Marmot Recovery Project webpage from the RDN website and in other publications where appropriate.</p> <p>If the RDN plans to undertake any major projects that could impact the V.I. Marmot, notably in the Saddle Route area, consultation should be undertaken with the Vancouver Island Marmot Recovery Project to ensure animals will not be jeopardized.</p>	Staff Time	Ongoing	RDN
		Staff Time	2011	RDN
		Staff Time	2012	RDN VIMRP
		Staff Time	Ongoing	RDN VIMRP
Issue 6: Education & Research				
Education & Research	<p>Support efforts for ongoing GLORIA research conducted on the mountain. Support the completion of the 2011 monitoring for the project.</p>	TBD	2011	RDN MABRF Research Community
	<p>Coordinate with the Mount Arrowsmith Biosphere Reserve Foundation to support their continuing efforts to increase research on Mount Arrowsmith.</p>	Staff Time	2011	RDN MABRF
	<p>Encourage local educational institutions, including VIU, UVic and others to explore opportunities to utilize MAMRP and its ecosystems within educational and research programs (inventory, mapping, monitoring, restoration, etc).</p>	Staff Time	Ongoing	RDN
	<p>Maintain a record of research and studies completed on the mountain. Request people conducting research in the area to supply the RDN with information documented.</p>	Staff Time	Ongoing	RDN
	<p>Where required, ensure that planned research activities complete the appropriate park permit process, as laid out in the <i>Park Use Regulation Bylaw 1399</i>.</p>	n/a	Ongoing	RDN
Issue 7: Interpretation & Tourism				

Policy Area	Action	Capital Budget	Timeline	Responsibility/ Partners
First Nations History & Culture	Continue to work with the Hupacasath First Nation to ensure that any identified culturally significant sites are not impacted by activities within the park.	Staff Time	Ongoing	RDN Hupacasath
	Ensure policies of the existing MoU are addressed when initiating park projects.	n/a	Ongoing	RDN Hupacasath
	Together with Hupacasath First Nation, consider developing interpretive materials that share stories and facts about the mountain's history.	TBD	2012	RDN Hupacasath
Recent History	Support volunteer efforts to obtain historical and cultural information about the area.	TBD	Ongoing	RDN Volunteers
	Consider developing historical interpretive materials as a component of the larger information strategy for the mountain (<i>see Section 5.4.6: Signage & Information</i>).	n/a	2015	RDN Hupacasath Volunteers
Volunteer Tourism	Continue to offer regular guided hikes, led by experienced volunteer guides, on an annual/semi-annual basis through the RDN's leisure services.	n/a	Ongoing	RDN Volunteers
	Investigate opportunities for First Nations cultural hikes to support cultural tourism.	n/a	Ongoing	RDN Hupacasath
	Encourage existing hiking clubs to offer introductory hikes to the mountain. Consult with clubs to determine if the RDN can direct potential hikers to contacts within the clubs.	n/a	Ongoing	RDN FMCBC, ACC
Commercial Tourism	Ensure that existing commercial operations are aware of the regional park status and proper permits are obtained under the <i>Park Use Regulation Bylaw 1399</i> .	Staff Time	2011	RDN
	Work with Island Timberlands to consider developing a streamlined permitting process through the RDN that would require a single permit for activities that traverse the MAMRP and adjacent private property boundaries.	Staff Time	2011	RDN Island Timberlands
Issue 8: Emergency Services				
Fire Management	Continue to include MAMRP in the cost-sharing agreement with the Coastal Fire Centre.	TBD	Ongoing	RDN
	Implement recommendations provided in the RDN Fire Risk Study.	TBD	TBD	RDN
	Consult with the ACRD to determine how fire hazard mitigation is performed in Mount Arrowsmith Regional Park. Consider partnering with the ACRD on a fire information strategy.	TBD	2012	RDN ACRD

Policy Area	Action	Capital Budget	Timeline	Responsibility/ Partners
Search & Rescue	Provide, where appropriate, mapping and other park information to SAR organizations for their use in planning and executing activities.	Staff Time	Ongoing	RDN SAR
	Provide opportunities for SAR volunteers to participate in guided hikes of the area to share local knowledge.	n/a	Ongoing	RDN SAR
	Post emergency contact information on the RDN website and other park brochures at key locations within/near the park.	n/a	2011	RDN
	Identify a response plan and contacts for avalanche emergencies.	Staff Time	2012	RDN SAR
Issue 9: Future Park Expansion				
	Develop a list of desirable recreational, cultural and environmental features that would be considered assets to Mount Arrowsmith Regional Park.	Staff Time	2011 – Ongoing	RDN
	Consult with neighbouring landowners to request that RDN be provided opportunity to acquire, through purchase, donation or other means, adjacent land areas, should the land owner wish to remove the land from their landbase.	Staff Time	2011 – Ongoing	RDN Island Timberlands ACRD Other private landowners

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