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# Geologic Management

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# Geologic Management

## Introduction

Geologic features are basic elements of the visual identity of all areas within British Columbia's park and ecological reserve system. They are predominant factors in determining scenic and recreation qualities and play a critical role in providing the structural foundation for biotic systems. One element of geologic features, often overlooked, is the soil surface. This section on Geologic Management also includes the management of paleontologic features. The following strategic policies address many of the important issues that BC Parks' managers face relative to the geologic features contained within parks and ecological reserves.

## Definitions

- *Karst*  
Landforms resulting from erosion by water in areas dominated by soluble rock, such as limestone.
- *Geologic Features*  
Products of processes or forces acting on the earth, such as mountains, dunes, volcanoes, minerals, rock formations, and soils.
- *Paleontological Features*  
Fossil features of all groups of organisms (e.g., vertebrates, invertebrates, plants, pollen, and spores).

## Legislation and Other Guidance

- *Park Act (BC)*  
Sections 3(1)(b)(c)(d)(e)                      management and control of natural features  
Sections 9(1) and 9(2)                      protection of natural features
- *Ecological Reserve Act*  
Provides for the complete protection of geologic resources within ecological reserves.
- *Waste Management Act (BC)*  
The *Park Act* is subject to this act. Refers to the management of waste material, including storage and disposal, within the province; administered by the Ministry of Environment, Lands and Parks.

- ***Mineral Tenure Act (BC)***  
The *Park Act* is subject to Section 19 of this act. Guides the management of mineral assessment and extraction in British Columbia, including mineral resources found within recreation areas managed by BC Parks; administered by the Ministry of Employment and Investment.
- ***Petroleum and Natural Gas Act (BC)***  
Governs the management of exploration and extraction of petroleum and natural gas within recreation areas; administered by the Ministry of Employment and Investment.
- ***Cultural Property Export and Import Act (CAN)***  
This legislation regulates the exporting of cultural heritage properties, including palaeontological material, administered by the Queen's Privy Council for Canada.
- **BC Parks Permit Administration Manual**  
Outlines policy and procedures concerning the administration of park use, resource use, research, and ecological reserve permits.
- **BC Parks Management Planning Policy**  
Governs the formulation of park and ecological reserve management plans and management direction statements.
- **Procedures for Avoiding Infringement of Aboriginal Rights, Ministry of Environment, Lands and Parks, July 1995**  
The procedures address the Ministry of Environment, Lands and Parks' policy to avoid, mitigate, or justify infringement on aboriginal rights when carrying out its mandate responsibilities, in a manner that is timely and considerate of the rights of all British Columbians. These procedures stem from the Cabinet-approved *Crown Land Activities and Aboriginal Rights Policy Framework* (1996), which applies to all provincial ministries overseeing activities and decisions on Crown land.
- **Ministry of Forests Karst Management Policy**  
A policy of the Ministry of Forests which guides the protection of karst and caves on provincial forest land.

## **Policy – Management for Representation**

*British Columbia's park and ecological reserve system will be managed to maintain representation of the geologic diversity of the province's physical landscapes.*

### ***Associated Policy***

#### **Inventory of Significant Geologic Features and Processes**

- Significant geological features and processes will be identified as part of general inventory programs.
- Soil and terrain features will be mapped to show distribution of soil types.
- Natural shoreline processes will be monitored to document changes over time, and impact, if any, of human activity.
- Geologic inventories will conform to Resource Inventory Committee (RIC) standards whenever possible.

#### **Geologic Management Planning**

- Park or ecological reserve management plans will guide which actions, if any, are required to maintain representative geologic features.
- As part of the BC Parks' management planning program, separate geologic management plans may be prepared for significant geologic and soil features, considered to be sensitive and fragile, to guide geologic management actions. These include, but are not limited to, special features.
- BC Parks will undertake management activities that support provincial, interprovincial, and international geologic initiatives.

## **Policy – Management of Natural Processes**

*BC Parks will strive to manage geologic and soil features in a natural, undisturbed condition, allowing natural processes to continue uninterrupted.*

### ***Associated Policy***

#### **Geological Hazards to Human Use**

- Natural rockfall areas, faults, landslide, debris torrent areas, and similarly dynamic sites will be avoided in protected area development plans, and will be managed to enable natural processes to continue while protecting visitors from harm.

## **Policy – Conservation and Use**

*The conservation of geologic features in British Columbia's park and ecological reserve system will always take precedence over their use by people.*

### ***Associated Policy***

#### **Visitor Use**

- Public use/park facilities associated with geologic features will only be permitted where it is demonstrated that the activity will not adversely affect the geologic feature.

## **Policy – Management of Special Features**

*Within the provincial system of parks and ecological reserves, BC Parks will manage sites that protect sensitive, special, geologic features of the province.*

### **Associated Policy**

#### **Fragile Sites**

- Geologic sites considered to be fragile or potentially damaged by human activity will be protected through public education, access restriction, not publicizing site locations and/or existence, or special management prescription as outlined in a special geologic management plan.

#### **Cave Management**

- BC Parks is committed to the management of caves and cave features for the purposes of protection and conservation.
- For each cave system within parks and ecological reserves, a cave management plan will be formulated that outlines:
  - 1) how the cave system will be protected and perpetuated,
  - 2) the opportunities for scientific study and research,
  - 3) an inventory of cave features/systems, and
  - 4) the opportunities to provide education and recreation opportunities, including restrictions in particularly fragile cave systems.
- A process of impact monitoring will be implemented in each cave accessible to the public, including the establishment of carrying capacity.
- Recognized cave management standards will be adhered to for purposes of:
  - 1) classifying caves,
  - 2) developing visitor facilities within cave environments,
  - 3) maintaining facilities and monitoring cave features,
  - 4) restricting access, and
  - 5) research and restoration.

#### **Palaeontological Site Management**

- BC Parks is committed to the protection and preservation of palaeontological features (i.e., fossils) within British Columbia's park and ecological reserve system.

- Unless its existence, and thus its value to society, is threatened by natural forces such as erosion or by public extraction, removal of any palaeontological feature from parks or ecological reserves will not be permitted. Where removed, such materials will remain the property of the province of British Columbia, regardless of where they are stored.

### **Geothermal Features and Mineral Springs**

- Recognizing that a direct relationship exists between ground water supply and geothermal/mineral springs, BC Parks will strive to ensure that development projects outside of parks and ecological reserves do not have a negative impact on any geothermal/mineral springs system within a protected area.
- To verify actual changes to flow properties within a park or ecological reserve, special monitoring will be implemented when suspicion of change is presented by BC Parks' managers or the public.

### **Volcanic Features**

- Evidence of volcanics, particularly special features such as basalt columns, cinder cones, lava pillows, and other formations, will be protected to assure they remain substantially unaltered.

### **Erosion Features/Shoreline Features**

- Fragile or dynamic erosion features, such as hoodoos, sand dunes, and sensitive beach areas, will be protected from disturbances that may impair the feature's integrity or natural geological process.

## **Policy – Collection of Geologic Materials**

*Scientific collecting, and gathering of geologic material from British Columbia's park and ecological reserve system will be directed and regulated where necessary.*

### ***Associated Policy***

#### **Collection Purposes**

- As directed in the *Park Act* and *Ecological Reserve Act*, there will be no removal of geologic material from a park or ecological reserve for any purpose relating to trade.
- Scientific collecting, where deemed to be necessary, will be limited by the specific terms of a research permit.
- Any geologic material that is collected for scientific research will remain the property of the province of British Columbia, regardless of where it is stored.

## **Policy – Management of Knowledge**

*BC Parks will promote acquiring and sharing of knowledge to facilitate the effective conservation of geologic features within BC Parks' park and ecological reserve system.*

### ***Associated Policy***

#### **Staff Training**

- BC Parks will train its staff to ensure that they have knowledge of sound geologic management principles.

#### **Community/Partner Involvement**

- Recognizing that the effective conservation of geologic features relies on a well-informed and involved public, BC Parks will assist academic, public, and private groups and individuals by providing existing geologic data related to parks and ecological reserves.
- BC Parks will encourage involvement with partners, academic, private, and public, in such activities as inventory, monitoring, and research to assist in acquiring more knowledge.

#### **Sensitive Information**

- Data which is sensitive for conservation reasons will not be released in response to routine requests, in accordance with the *Freedom of Information Act*, s. 18. Exceptions will be made only under specific circumstances (e.g., research necessary for conservation management purposes, impact assessments, etc.) and on the understanding that the information will not be released.