
Vegetation Management

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Vegetation Management

Introduction

There is a great variety of contexts and objectives within which different forms of vegetation management may be important. Fire management, insect and disease management, vegetation restoration, and plant collecting, are all issues which protected area managers must address. For the purpose of British Columbia's park and ecological reserve system, vegetation management is viewed in its broadest sense. Of most importance is that, wherever issues of vegetation management arise, the principle of long-term protection of the ecosystem prevails.

Definitions

- *Danger Tree*

Any tree that is hazardous to people or facilities because of: location or lean; physical damage; overhead hazards; deterioration of limbs, stem or root system; or a combination of the above.

- *Disposal of Timber*

The removal from a park and sale of trees, or any other process whereby the ownership of timber changes from the province to another party.

- *Exotic Species*

A species introduced through human activities into an ecosystem where it did not formerly occur.

- *Manipulation of Vegetation*

The cutting down, burning, trimming or killing-off of vegetation. Does not necessarily mean the disposal (or removal) of the vegetation from the park.

- *Old Growth*

Old growth is a forest that contains live and dead trees of various sizes, species composition and age class structure that are part of a slowly changing but dynamic ecosystem. The age at which old growth develops the specific structural attributes that characterize old growth will vary widely according to forest type, climate, site characteristics and disturbance regime (see An Old Growth Strategy for British Columbia for working definitions). Old growth is typically distinguished from younger stands by several of the following attributes: large trees for species and site; wide variation in tree sizes and spacing; accumulations of large size dead standing and fallen trees; multiple canopy layers; canopy gaps and understory patchiness; decadence in the form of broken or deformed tops or boles and root decay.

- ***Plant Protection Act (BC)***
Regulates the spread within British Columbia of an insect, pest, or disease destructive to plants; administered by the Ministry of Agriculture, Fisheries and Food.
- ***Dogwood, Rhododendron and Trillium Protection Act (BC)***
Restricts the removal of these three species; administered by the Ministry of Environment, Lands and Parks.
- **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.
- **Ministry of Environment, Lands and Parks Procedures for Avoiding Infringement of Aboriginal Rights, 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.
- **Forest Practices Code of British Columbia**
Guides the sustainable use of forests in provincial forests; administered by the Ministry of Forests, Ministry of Environment, Lands and Parks, and Ministry of Employment and Investment, Energy and Minerals Division. Also provides guidance on grazing (applicable to protected areas established under Schedules D and E of the *Park Act*, and the *Environment and Land Use Act*). The code includes the *Forest Practices Code of British Columbia Act*, *Forest Practices Regulations*, *Forest Practices Standards*, and field guides.

Policy - Management for Representation

British Columbia's park and ecological reserve system will be managed to maintain representative native vegetation types, recognizing their dynamic nature and inter-dependence with other ecosystem components.

Associated Policy

Inventory of Vegetation

- To improve ecosystem management planning and assessment, forest and vegetation inventories will be compiled which record representative vegetation ecosystems occurring in the protected area.
- In protected areas that have been identified by the Protected Areas Strategy gap analysis process as being representative, inventory will be devoted to confirming the presence, distribution and quality of representative vegetation units.
- Species inventories will focus on areas where ecosystem mapping has already been completed or in the absence of ecosystem mapping, species at risk.
- Vegetation inventories will conform to Resource Inventory Committee (RIC) standards whenever possible.

Vegetation Management Planning

- Park or ecological reserve management plans will guide the selection of ecosystems within the protected area that should be managed for representative value rather than special features and which, if any, actions are necessary to maintain them.
- In protected areas that fill a role in conserving representative vegetation, the long-term influence of controlling natural ecosystem processes such as fire, insects, and diseases upon that vegetation must be taken into account.
- As part of the BC Parks' management planning program, separate vegetation management plans may be prepared to guide vegetation management actions, and will reflect, above all else, the importance of the ecological processes and the maintenance of representative values.
- Fire management plans or fire contingency statements will be prepared for every park and ecological reserve and will reflect, above all else, the importance of the ecological processes and the maintenance of representative values.
- Where needed, BC Parks will undertake management activities in support of provincial, interprovincial, and international vegetation-related initiatives such as research, monitoring, or insect and disease control.

Policy - Management for Biological Diversity

British Columbia's park and ecological reserve system will be managed to ensure a natural level of vegetation diversity on the genetic, species, and ecosystem levels.

Associated Policy

A Two-pronged Approach

- BC Parks will support a two-pronged approach to plant biodiversity conservation by:
 - 1) the protection of a complete spectrum of representative areas, and
 - 2) the protection of specific rare, endangered, and endemic plant species.

Inventory

- BC Parks will endeavour to identify and inventory plant species and communities in parks and ecological reserves to determine where conservation management measures are most required (e.g., biodiversity “hotspots”, special habitats).

Cooperation

- Recognizing the importance of functioning ecosystems for biodiversity protection, BC Parks will develop and implement joint management objectives with adjacent resource area managers.

Policy - Management of Ecosystem Processes

Natural ecosystem processes affecting vegetation including fire, insects, disease, weather (i.e., wind, avalanches, etc.), herbivory by wildlife, and tree mortality due to age, are recognized as natural occurrences shaping vegetation. Ecosystems will be managed to maintain ecological processes in as natural a state as possible.

Associated Policy

Ecosystem Management

- Vegetation management in British Columbia's protected areas will normally aim at maintaining functioning ecosystems, rather than emphasizing single species.
- Vegetation species as well as ecological processes affecting them will be maintained in as natural a state as possible.

Endangered, Threatened, Vulnerable Species

- Species-specific management will be applied only where rare plants are at risk and where this management will not jeopardize other ecosystem components.

Insect and Disease Management

- Insect and disease outbreaks will be assessed relative to their impact on: a) the ecosystem within the boundaries of the protected area, and b) on the broader ecosystem values of which the protected area is a part.
- Control actions will only be undertaken if forest and/or vegetation loss is expected to be severe and detrimental to the ecosystem and/or the value of affected features within, or adjacent to, the protected area is exceptionally high.
- Prior to any treatment of vegetation for insect or disease management, an assessment of the impact of the action on the integrity of the ecosystem will be completed according to the BC Parks Impact Assessment Process.
- BC Parks' primary responsibility in insect and disease management is to maintain natural ecosystems within parks and ecological reserves.

Insect and Disease Control Actions

- Any insect and disease control actions taken in response to potential impacts adjacent to the protected area will be integrated and planned to compliment control actions on the broader ecosystem values of which the protected area is a part.
- Such control actions inside protected areas will be limited to brood reduction and will not include salvage logging or new road construction.

- Options for control which may be considered/implemented on the following descending scale of preference. Option 5 will only be considered where other options are more detrimental to protected area values or are impractical.
 - 1) Allow natural processes to prevail (i.e., do nothing);
 - 2) Pheromone baits and insect traps;
 - 3) Individual tree fall and burn on-site (according to the fire management policy);
 - 4) Large scale prescribed burn (according to the fire management and impact assessment policy); and
 - 5) Skid pile and burn on-site with low impact machinery (over snow is the preferable method, no access roads will be constructed, where remedial work is necessary the policy for restoration management will be followed).
- Appropriate control action will be determined by BC Parks. The BC Parks district manager must consult with Ministry of Forests and ensure the control strategy is integrated with control strategy outside the protected area.
- BC Parks will choose the control option that has the least impact on protected area values while still providing an effective insect or disease control.

Fire Management

- BC Parks recognizes the important role of fire in the maintenance of natural ecosystem diversity, particularly in the creation and/or maintenance of forests at various successional stages.
- BC Parks' primary responsibility in fire management, after the protection of life and property, is to maintain natural ecosystems within parks and ecological reserves.
- All actions made with regard to fire will be directed by the protected area's fire management plan or fire contingency statement. The fire management plan will consider protected area size, fire history, natural fire regimes, effects of fire suppression, historic use of fire by humans, and values in need of protection. Ignition source will not be considered in determining whether or not a fire will be allowed to burn (i.e., human-caused vs. natural strike/lightning).
- Fire management plans will be based on the protected area's goals and objectives, fire hazard, fire danger, values at risk, and related factors of adjacent land use. These plans will identify those areas within each protected area where wildfire will be allowed to burn, where fires will be extinguished, and the location of all known values at risk.
- If no fire management plan exists, traditional suppression measures will be applied.

- Prescribed burning may be used as a tool to reintroduce natural fire events where fire suppression has effectively removed it from the ecosystem or to reduce fuel accumulations that have become a fire hazard (e.g., blowdowns).
- Before undertaking any fire management actions, adequate training will be provided to guarantee a supply of knowledgeable personnel at the district level.
- Cooperative, interagency fire planning and management, including the creation of inter-jurisdictional agreements, will be promoted within all sectors of BC Parks, recognizing the long-standing expertise of other agencies, personnel and the traditional role of others in fire management decision-making.
- All rare and endangered species that are fire-sensitive will be identified prior to the finalization of a fire management plan for subsequent protection from prescribed fires.
- Public information programs will be used to educate the general public on the objectives of fire management in parks and ecological reserves.
- To ensure the maintenance of appropriate management strategies, BC Parks will continue to encourage research relating to fire management and its effect on vegetation diversity.
- As burned areas are prime sites for alien plant invasions, invasive plant monitoring and control will be carried out following all wild and prescribed fires in protected areas.

Blowdown Management

- It is recognized that, in certain ecosystems, blowdown is an important part of the natural disturbance regime leading to ecosystem renewal.
- BC Parks' primary responsibility in blowdown management, after the protection of life and property, is to maintain natural ecosystems within parks and ecological reserves.
- Upon occurrence, blowdown will be assessed in relation to high risk factors including visitor safety, recreational values, and risk of insect infestation.
- Blowdown will be removed where it obstructs traffic and/or poses a safety risk in high-use areas, or significantly impacts on established recreational use of an area.
- The potential of blowdown to lead to insect infestation will be assessed jointly with the Ministry of Forests.
- Unless necessary for safety reasons, removal will be considered only where assessment indicates significant risks to the broader ecosystem values of which the protected area is a part, or to recreational values inside high-use parks.
- Potential revenue to the province from salvaged timber will not be a factor in the removal of blowdown from protected areas.

Policy – Conservation and Use

The conservation of viable, natural vegetation ecosystems in British Columbia's park and ecological reserve system will always take precedence over their use by people.

Associated Policy

Visitor Use

- Permanent or temporary closures of selected areas are appropriate means of reducing or eliminating undesirable impacts of human use on critical vegetation features, even if such closures affect visitor use or park operations.

Sustenance Use

- Those First Nations who have an aboriginal or a treaty right to use vegetation for spiritual and/or ceremonial purposes may do so in all protected areas managed by BC Parks, subject to conservation requirements and public safety concerns.

Policy – Management of Special Features

Management priority will be given to special or unique vegetation communities, rare, threatened, and endangered species.

Associated Policy

Rare and Endangered Species

- BC Conservation Data Centre lists of endangered, threatened and vulnerable species (red- and blue-listed status) will form the basis for the minimum required level of BC Parks' inventory and assessment program.
- Endangered, threatened, and vulnerable species whose habitats occur in parks and ecological reserves will receive high priority in management attention and consideration.

Special Habitats

- Recognizing that the protection of rare and unusual habitats and ecosystems is important to conservation goals and to the protection of endangered, threatened, and vulnerable species, rare habitats will be identified and fully assessed.

Outstanding Specimens, Historic Landscapes, and Culturally Modified Vegetation

- Exceptional trees and stands of old growth will be managed with a high degree of protection emphasis.
- To conserve scarce old-growth forests and to ensure public safety, BC Parks will not develop campgrounds, visitor centres, interpretation centres, picnic sites, parking lots, in old-growth forest stands.
- Parks and special management zones within parks established for their historical significance, and which include a historic (including non-native species) vegetation cover, may be managed to maintain the feature. This may include the arrest of successional advancement of vegetation or fire suppression.

Policy – Ecosystem Manipulation of Vegetation

Deliberate manipulation of vegetation may occur in parks and ecological reserves under special circumstances.

Associated Policy

Vegetation Removal or Modification

- BC Parks recognizes the role that dead and/or downed vegetative material plays in ecosystem structural diversity, microclimatic habitat characteristics, and nutrient cycling.
- BC Parks recognizes that removal or modification of vegetation may be necessary in order to restore natural ecosystem processes/functioning.
- Under certain conditions, removal or modification of vegetation may be necessary to:
 - 1) enhance visitor safety, facility security, or rare plant and animal habitat,
 - 2) preserve or maintain recreational values in intensive use zones within parks,
 - 3) combat insect or disease conditions when other controls are ineffective,
 - 4) undertake site development in pre-determined areas, and
 - 5) accommodate pre-existing rights (within the terms of existing provincial standards).
- Proposals for large-scale vegetation removal will be submitted to BC Parks' Park Management Committee or a public process for consideration prior to any actions being taken.
- Prior to any approved removal of vegetation, an assessment of the impact of the action on the integrity of the ecosystem will be completed.
- The use of chemical herbicides in parks and ecological reserves will be eliminated where possible in favour of biological, mechanical, or design methods for vegetation control.

Danger Trees

- BC Parks' managers will conduct an on-going danger tree monitoring program consisting of inspection, hazard rating, and recommended actions.
- Successional stage and ecosystem health will be considered when assessing danger trees and developing mitigation options.
- Danger trees will be removed only from within intensive use zones and along high use corridors.

- If removal or modification of hazard trees threatens high conservation values, visitor use patterns may be altered to eliminate the need for such actions.

Habitat Manipulation Parameters

- Situations where manipulation may occur include those where:
 - 1) lack of action is expected to cause adverse effects to the natural features of the protected area or to the broader ecosystem values of which the protected area is a part,
 - 2) habitat of endangered, threatened, or vulnerable plants or animals is at risk,
 - 3) natural processes put irreplaceable forest stands, species or specimens of plants at risk,
 - 4) an individual successional stage is to be maintained to preserve key conservation or recreation features,
 - 5) interim non-conforming rights have to be accommodated,
 - 6) park facilities are to be developed or maintained,
 - 7) mineral extraction is approved within a recreation area,
 - 8) restoration of natural processes is desirable (i.e., reintroduction, fire), and
 - 9) where fire suppression has altered the natural vegetation pattern over the landscape.
- Habitat manipulation in protected areas will not be undertaken to encourage larger wildlife populations for consumptive purposes unless specifically stated in an approved management plan. It is not permitted at any time in ecological reserves.

Disposal of Timber

- Where any of the above described circumstances require the removal of timber from a protected area and the ownership of that timber changes in the process, the timber will be disposed of under the *Forest Act* and no net financial/ economic benefit will accrue to BC Parks.

Forest Practices Code

- Although there is no legal requirement to follow the Forest Practices Code in British Columbia's protected area system, BC Parks will comply with the minimum requirements of the Forest Practices Code in those situations where forest manipulations within a protected area is considered necessary to comply with the *Park Act*.

Policy – Management for Restoration

Restoration of natural ecosystem processes and major vegetative and landscaping projects within British Columbia's park and ecological reserve system will use native plant species appropriate to the site and ecosystem.

Associated Policy

Restoration of Natural Ecosystem Processes

- BC Parks will endeavour to restore disturbed or lost natural ecosystem processes where compatible with essential protected area objectives. Examples are reforestation of logged or human-damaged forested areas, restoration of natural fire regimes or of predator/prey relationships. An essential condition of all restoration programs is the necessity for follow-up effectiveness surveys.

Revegetation

- Local native plant species, their seeds, or vegetative parts will be used to revegetate damaged areas within protected areas. Provided that there is no adverse impact on the source, plant material for propagation will be derived from the vicinity.
- Under certain circumstances where site disturbance is severe, non-native pioneer species may be used to stabilize the disturbed area as a first stage in a series of stages designed to restore local native species, as long as they will not become permanently established on the site.
- Non-native species may be used within intensive use zones where native species are unable to sustain high visitor impacts (e.g., playground) and areas where later stages of succession are not wanted, such as road cuts and banks. However, no species may be used that has the potential to become established beyond the immediate area of use.
- Non-native species that may attract bears to the site (e.g., clover, bromegrasses, dandelions) should not be used.

Reintroduction

- Native plant species, if extirpated from the protected area, may be reintroduced when scientific research indicates that the original extirpation was human-caused, the prospect for natural re-establishment is minimal, and no significant negative ecological impacts in the protected area, or adjacent lands, are expected.

Policy – Collection of Vegetation

Scientific collecting, picking, and gathering of botanical 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 botanical material from a park or ecological reserve for any purpose relating to trade or consumption.
- Scientific collecting, where deemed to be necessary, will be limited by the specific terms of a research permit. Permits to collect provincially rare (red- and blue-listed) or locally rare species will not normally be given in parks or ecological reserves.
- Any plant specimens that are collected for scientific research will remain the property of the province of British Columbia.
- Those First Nations who have an aboriginal or a treaty right to collect vegetation for ceremonial purposes may do so in all protected areas managed by BC Parks, subject to conservation requirements and public safety concerns.

Policy – Management of Exotic Plant Species

Exotic or non-native plant species will be managed and/or controlled to protect and/or conserve ecosystem health and biodiversity.

Associated Policy

Noxious Weeds

- Terrestrial and aquatic weeds, as defined by the *Weed Control Act* and BC Parks' guidelines, will be removed from parks and ecological reserves in accordance with policies outlined in this section.

Exotic Species

- BC Parks will consider control measures against invasive species where:
 - 1) such species lead to competitive elimination of native species or vegetation types,
 - 2) such species pose a danger to the public in high-use areas (e.g., poisonous foreign plants),
 - 3) the presence of such species will impair the ecological integrity of the protected area,
 - 4) the control measures will not lead to a long-term loss of native species.
- No control measure will be undertaken in protected areas without an adequate problem analysis (including base-line inventory of species in the treatment area) and commitment to a long-term monitoring program before and (up to ten years) after the treatment.

Policy – Management of Knowledge

BC Parks will promote acquiring and sharing of knowledge to facilitate the effective conservation of vegetation within British Columbia's park and ecological reserve system.

Associated Policy

Staff Training

- BC Parks will train its staff to ensure that they have knowledge of, and the skill to apply, sound vegetation management principles.

Community/Partner Involvement

- Recognizing that the effective conservation of vegetation relies on a well-informed and involved public, BC Parks will assist academic, public, and private groups and individuals by providing existing vegetation 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.