

Reference

G: GLOSSARY

The following should serve as a reference for terms used within the Comprehensive Plan.

Non-native species

Species that are not native to the Acadian forest; often they are introduced as the result of human activity, either on purpose or by accident.

Archaeological site

A location that contains the material remains of human land use in the past. Technically, only those sites that date to the historic or pre-Contact periods and that are assigned Borden numbers are true archaeological sites.

Artifact

An object that has been deliberately manufactured or modified by human activity.

Barracks

A residential area for military personnel.

Battery

A group of guns in a fixed fortification for coastal or frontier defence.

Berm

A terrace formed by wave action along the backshore of a beach, or a built-up barrier put there to protect the slope above.

Biostabilization

Slowing or halting erosion by means of selective plantings.

Borden number

Archaeological sites in Canada are registered under a nationwide site-registration system known as the Borden System, which gives a unique alpha-numeric designation to each site. Only sites predating the mid-20th century receive a Borden number.

Buffer zone

An area located between two or more other areas intended to reduce the impact of one zone upon another by some planned means.

Broadleaved tree

Any tree having broad flat leaves; all broadleaf trees found in Point Pleasant Park are deciduous.

Commemoration

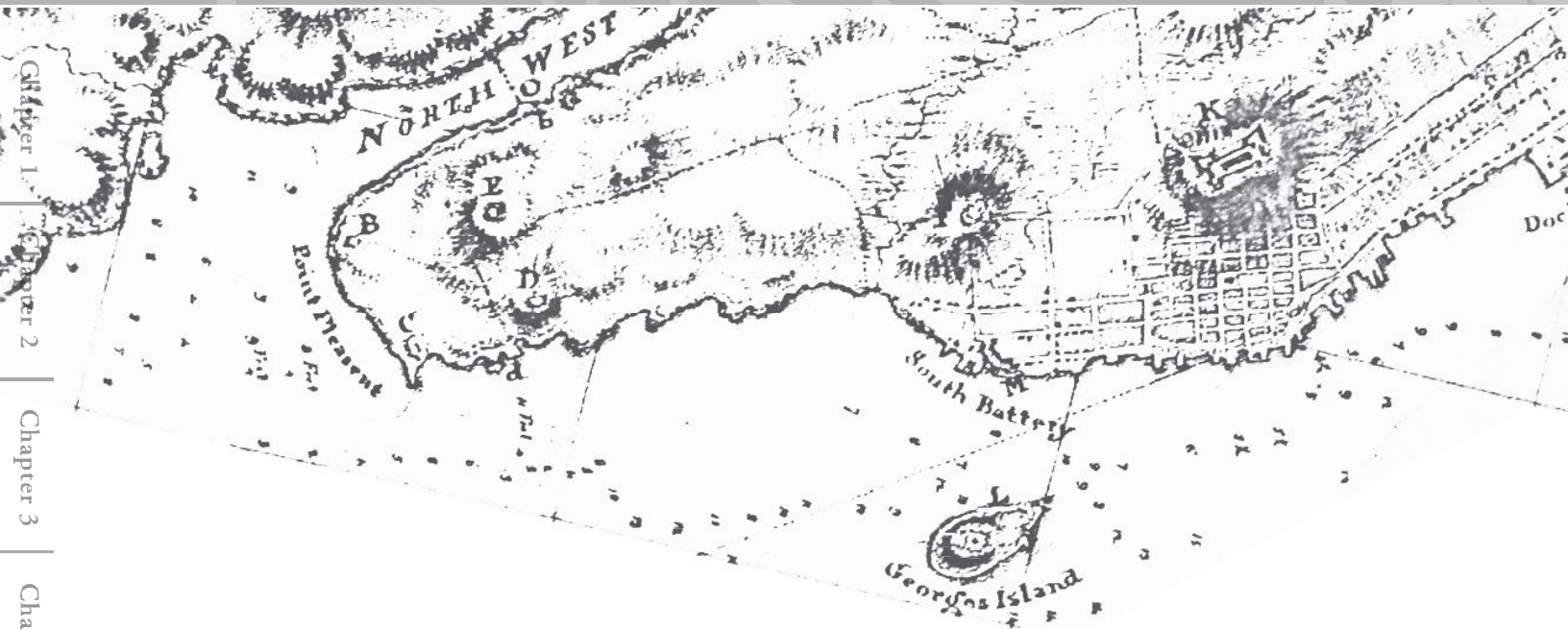
A formal remembrance of a person or event, taking either ceremonial or material form.

Commemorative intent

The memorial reason for which a monument or historic site was established.

Commemorative integrity

Commemorative integrity of a resource is a combination of its state of preservation and its interpretive value in relation to principle commemorative themes.



Chapter 1
Chapter 2
Chapter 3
Chapter 4
Chapter 5
Chapter 6
Appendix A
Appendix B
Appendix C
Appendix D

Conservation

To conserve something for the future, often through physical treatments.

Cultural resource

Assets created by people that are valued for their historic, associative or symbolic significance.

Cultural resource management (CRM)

Preserving and presenting historic, archaeological or paleontological resources.

Cultural resource management objectives

The ways and means of presenting and preserving cultural resources.

Drumlin

A mound of glacial material, often till, shaped in a teardrop-like form, common to the south shore of Nova Scotia (Citadel Hill and Georges Island are both drumlins).

Ethnographic site

A location containing the material remains of human use in the recent past.

Entombment

To conserve by covering with earth or other materials (for example, concrete).

Entrenchment

A type of fortification created by digging.

Erodible

Subject to erosion.

Features

Archaeologically speaking, component parts of a site such as walls, buildings and campsites.

Field marking

Physically marking cultural resources to avoid physical damage during construction or other activities.

First Nations

A broad term referring to those peoples who have inhabited North America since before European contact.

Geomorphology

The study of the evolution and configuration of landforms.

Geotechnical

An engineering term concerned with the properties of earth materials.

GIS

Geographic Information System or Geospatial Information System

A system for storing, analyzing and managing spatial data.

Glacis

A cleared artificial slope (usually an earthen embankment) in front of a fortification, designed to allow a clear sweep of defensive fire and create a bounce in cannonballs, thereby causing less harm to defensive walls.

Groundwater

Water located below the ground surface in soil spaces and in the fractures of geologic formations.

Groyne

A manmade structure of stone or concrete that extends from the shore into the water to prevent a beach from washing away; sometimes built to create a beach where none existed previously.

Historic site

In North America, a site dating between the initial period of European contact with First Nations people to the mid-20th century.

Historic resources

All pre-Contact and post-Contact material remains that predate the mid-20th century.

Inventory

In an archaeological sense, inventory that involves assembling a database of archaeological resources in a given area that is as complete as possible, by using survey, testing, remote sensing or artifacts to find and analyze sites. An inventory is a necessary cultural management tool.

LIDAR

Light Detection and Ranging or Laser Imaging Detection and Ranging; a laser-based remote-sensing technology.

Lifeways

A customary manner of living or way of life; sometimes used to refer to the ecological position of human beings within a larger system.

Magazine

A specific area or room in which ammunition is stored.

Midden

A term used by archaeologists to describe a garbage dump, established intentionally or unintentionally, that contains waste related to everyday human life.

Mitigation

Improvement by planning, consulting and observing to reduce possible negative impacts on something—in this case, historic resources—as a result of human actions or natural agency.

Mixed forest

A forest composed of both broadleaved and needleleaved tree species, but with 40% to 60% needleleaved trees.

Monitoring

In an archaeological sense, monitoring refers to an archaeologist being physically present when activities such as construction or renovation are in progress to avoid or manage negative impacts on cultural heritage.

Needleleaved tree

Any tree having narrow needle-like leaves; synonymous with coniferous trees. With the exception of larches, all needleleaved trees in Point Pleasant Park are evergreen.

Paleontology

The study of prehistoric life forms on Earth through the examination of plant and animal fossils.

Picket

A small hut or huts in which a soldier (or a soldier with no shelter) would be stationed near a fortification or military encampment to challenge those approaching and to warn of an impending attack.

Pre-Contact

The period of First Nations occupation that occurred prior to significant contact with Europeans.

Presentation planning

Involves designing and using appropriate signage, displays, construction and landscaping, as well as written, visual and documentary materials, to present the central message or messages of a site.



Propagule

Any part of a plant that may generate a new plant; often a seed or cutting.

Protocols

Formally established ways and means of responding to various situations and performing certain actions.

Reconstruction

Something that has been rebuilt using parts of the original.

Redoubt

A fort or fort system, usually consisting of an enclosed defensive emplacement outside a larger fortification; an especially common feature of star-shaped forts.

Resin cast

To produce a mould of something through the use of resin. In archaeology, resin casting is performed to make a physical copy when the original is threatened with possible destruction or defacement.

Scarp

One side of a defensive ditch.

Silt

Soil, sediment or till material consisting of very fine particles that are between sand and clay in diameter.

Silvics

The habit or behaviour of a forest tree.

Stabilization

By certain actions, to take something from a changing state to a less-changing or non-changing state.



Submarine mining establishment

A building or buildings related to constructing and maintaining a system of underwater defensive mines.

Surface-visible features

Above-ground archaeological resources.



Testing location

A specific location selected for archaeological investigation by visual inspection or subsurface testing, or a combination of both.

Testpit

A small pit excavated by an archaeologist using a shovel and hand tools.

Till

Unstratified soil deposited by a glacier normally consisting of sand, silt, clay, gravel and boulders mixed together.

Treethrows

Depressions in the ground caused by falling trees. For archaeologists, investigating treethrows is a way to assess subsurface.

Understorey

The layer of vegetation that grows in the shade of the forest canopy; includes shrubs, herbs and young canopy trees.

Viewplane

An artificially created or maintained area designed to allow a view of something else.



Appendix

A: 1999 USER SURVEY SUMMARY

An overwhelming number of Park users identified the preservation of the forest and the “Naturalness of the Park” as a high priority.

Four user surveys of the Park were carried out by the Point Pleasant Park Advisory Committee in 1998–99, one during each season. The surveys in October of 1998 and February of 1999 were quite detailed and included a manual head count and both short and long survey forms. The spring survey was based on survey forms only, while the summer survey was based on head count only.

The October survey showed that half of the Park’s visitors were between the ages of 19 and

25, likely due to the increase in university and college students at that time of year. All surveys showed that the majority of visitors came from local areas, including the south and west ends of Halifax, and that most visits lasted one to two hours at least three times a week.

The Park is primarily used for walking, and 20 to 35 per cent of walkers are accompanied by their dogs. Approximately 15 to 25 per cent of visitors are joggers or runners, and 1 to 4% are

cyclists. Other activities people said they used the Park for were sport, theatre, tai chi, reading, photography, cross-country skiing, studying, contemplation, family outings, visiting monuments, picnics and barbecues, bird watching and boat watching, as well as many other health-and-wellness activities.



Chapter 1
Chapter 2
Chapter 3
Chapter 4
Chapter 5
Chapter 6
Appendix A
Appendix B
Appendix C

An overwhelming number of Park users listed the preservation of the forest and the naturalness of the Park as a high priority. Accessibility for all users and the ability of the Park to be left open and maintained year round was another principal concern.

Other major concerns included arguments both for and against dog off leash areas, forest management, safety and maintenance and potential commercial development.

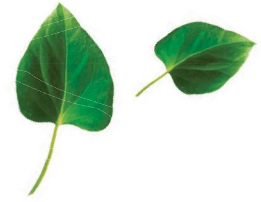
Some suggestions for improvements included new signage and trail markers, bylaw enforcement, water taps or drinking fountains, improved washroom facilities and a cleanup of the shoreline.

A summary of the user survey is provided in the table below.



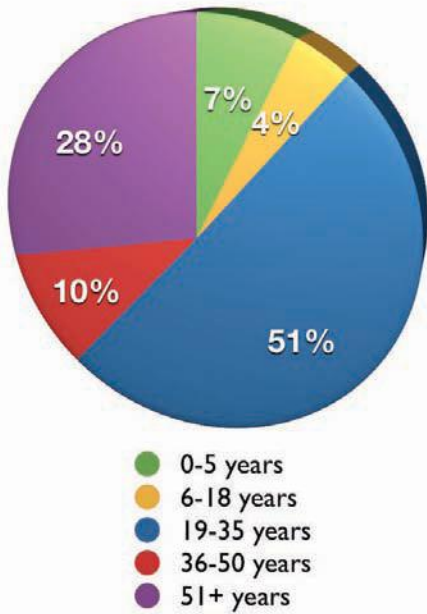
	Wednesday	Sunday	Sunday	Wednesday
	October 7, 1998	February 14, 1999	May 30, 1999	August 18, 1999
	Sunny			Foggy with showers
Park use by age				
0-5 years	7%			
6-18 years	4%			
19-35 years	50%			
36-50 years	10%			
51+ years	28%			
Total	1,746	1,759	5,537	2,055
Park use by sex				
Male	48%	47%		
Female	52%	53%		
Reported Park uses				
Source	PPPAC (1999)	PPPIDC (2005)		
Walking	50%	79%		
Dog walking	21%	38%		
Family outing	17%	n/a		
Visit forts or monuments	13%	n/a		
Theatre	11%	10%		
Picnic or barbeque	3%	13%		
Beach activity	3%	n/a		
Enjoy nature	100%	9%		
Birdwatching	n/a	4%		
Orienteering	n/a	1%		
Photography	n/a	3%		
Tranquility	64%	17%		
Solitude	37%	n/a		
Running or jogging	25%	17%		
Cycling	4%	6%		
Skiing	n/a	11%		
Goup sport	4%	n/a		
Snowshoeing	n/a	1%		
Frisbee	n/a	1%		
Sledding/tobogganning	n/a	1%		
Soccer	n/a	1%		

	Wednesday	Sunday	Sunday	Wednesday
	October 7, 1998	February 14, 1999	May 30, 1999	August 18, 1999
	Sunny			Foggy with showers
Soccer	n/a	1%		
Duration of Park visit				
1 hour	80%			
2 hours	19%			
3 hours	1%			
Frequency of Park use				
First-time visitor	3%			
Repeat visitor	97%			
Daily use	43%			
Three times a week	28%			
Twice a week	13%			
Weekly	6%			
Occasional	10%			
Time of Park use				
Early morning	35%			
Mid morning	17%			
Midday	7%			
Early afternoon	13%			
Late afternoon	19%			
Evening	9%			
Origin of Park Users				
South end Halifax	42%			
Downtown Halifax	5%			
North end Halifax	11%			
West end Halifax	20%			
Dartmouth	5%			
Bedford	1%			
Sackville	1%			
Other locations in HRM	9%			
Other locations in NS	1%			
Other locations in Canada	3%			
Outside Canada	1%			

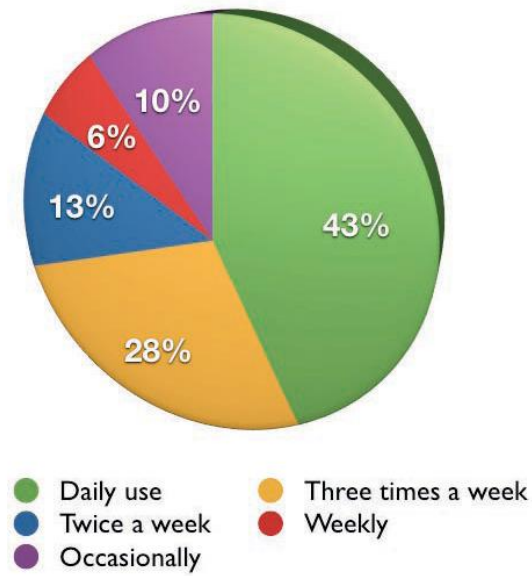


Chapter 1
Chapter 2
Chapter 3
Chapter 4
Chapter 5
Chapter 6
Appendix A
Appendix B
Appendix C

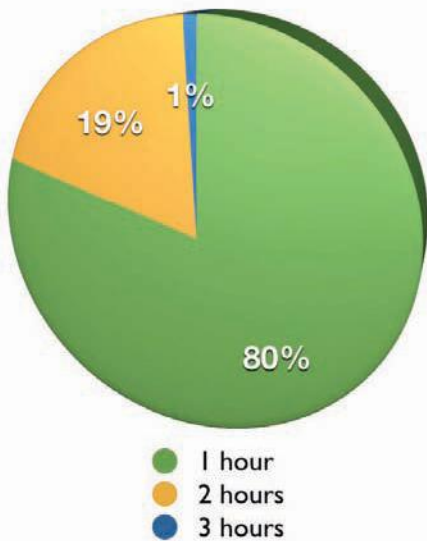
PARK USE BY AGE



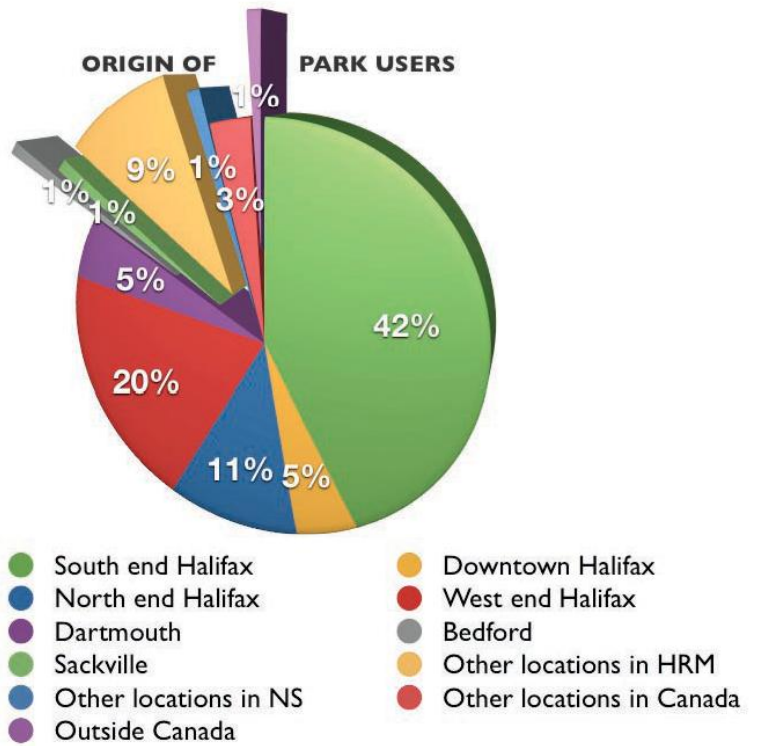
USE



DURATION OF PARK VISIT



ORIGIN OF PARK USERS



Appendix

B: SUMMARY OF WINNING ENTRIES

Key aspects of the five competition finalists:

NIP PAYSAGE

- Differences between existing natural forests and newly planted forests are accentuated and celebrated through varying planting techniques.
- Pathways will be restored and hierarchy of pathways will be defined.
- Open spaces and site amenities will be limited to strategic locations, connecting people, Park and nature and ensuring successful forest regeneration.
- Only materials historically found throughout the site shall be used to create and enhance the identity of the Park. Wood, stone and metal shall be used to create new walls, site furniture, signage and lighting.
- Built structures, gateways and views will be protected and maintained.

EKISTICS PLANNING & DESIGN

- Little intervention shall be made, allowing the Park to regenerate, restore and renew itself through adaptive-management techniques.
- Harvard Forest Study used as a precedent for adaptive-management approach.
- Division of the Park into three management zones: past, present and future.
- Use trails to re-establish important viewsheds.
- Interpretation: audio tours.





View from Fort Ogilvie

Finalists

NORTH DESIGN

- Consider appropriate plant materials and ecological systems aiming to develop a healthy, sustainable, multi-aged forest system that can withstand impacts of disease, insect infestation, weather extremes and human use.
- Celebrate, protect and enhance the site’s physical qualities and historic legacy.
- Plant steep slopes to help prevent further soil erosion.
- Consider soil types, quality, slopes, orientation, exposure, microclimates and programming to predict future forest succession.
- Create link to Halifax urban green corridor.
- Modify existing pathways and trails network to ensure safe biking, walking and Park access and to improve access to the shoreline.

- Use seating and site furniture design to aid creative shoreline protection and remediation structures.
- In-depth project phasing.
- Come up with ideas on promoting community involvement throughout the Park’s regeneration process.

TAKANO LANDSCAPE PLANNING

- Dense plantings will block view toward Halterm container pier.
- Stabilize historical structures.
- Plant a wild garden with traditional healing plants.
- Put a children’s playground and educational areas in the Park.

JANIS FEDOROWICK

- Establish a healthy and diverse forest ecosystem that can resist storms and pests.
- Explore and interpret the many human influences on the landscape.
- Accommodate natural shoreline evolution while improving habitat potential, access and recreation opportunities.
- Create a relaxed atmosphere for low-impact recreational pursuits such as walking, running, cycling, contemplation, learning, socializing, viewing the ocean and communing with nature.



Appendix

C: CASE STUDIES

Efforts to rehabilitate forest areas or convert treed meadows to forest involve intensive planting of native tree and understory shrub species in focused areas.

Mount Royal Park, Montreal

When Jacques Cartier arrived at Montreal in 1535, he found a palisade settlement that sheltered about 1,500 First Nations people in longhouses at the base of the mountain. At that time, the Iroquois had been settled in the region for more than 200 years, and Hochelaga was among the largest of their settlements. The mountain served as an Iroquois burial site; gravesites have been unearthed in several locations on the mountain in the past 150 years (Landry, 1999). As at Point Pleasant Park, early use of the park site by settlers was sometimes met with attack by First Nations inhabitants.

By 1667 the church had recognized the agricultural potential of the mountain and had it surveyed and granted to colonists. In 1742 a naturalist commented that the mountain was covered with gardens and fields to its summit. As the city grew in size and prosperity during the 19th century, suburban development crept up the foot of the mountain, and the estates of gentlemen farmers began to give way to the mansions of the wealthy at the foot of the mountain. In the 1850s, two large cemeteries were established on the western slopes of the mountain; about 20 years later, 450 acres were finally acquired for Mount Royal Park.



Frederick Law Olmsted was hired to design Mount Royal Park and chose to highlight the character of the landscape to create a heightened sense of Mount Royal as a mountain. He set out a gradual ascent to the summit emphasizing the change in landscape and plant communities along the way, resulting in a series of sensory experiences. Olmsted contrasted pastoral landscapes with the picturesque, provided access to key vantage points on the mountain and separated horse and pedestrian traffic. Subsequent interventions have continued to develop park amenities, although not always in agreement with Olmsted's vision; the lookout and chalet are more formal in style and grand in scale than earlier works in the park. The restaurant is a beautiful modern building near Beaver Lake, consistent in spirit, although not in style, with the landscape. The imposition of a public street and parking lot in the centre of the park is more problematic; it short-circuits the intended visitor entry sequence to the park, contrasts with the intended solitude of the area at the park's core and will likely prove to be persistent additions to the park in the future.



From 1889 to 1918, a funicular—a cable-operated system—carried visitors up the steep mountainside. In 1906 the lookout and a tearoom were built to capitalize on southward views of the downtown core. Montreal's signature cross on the mountain was erected in 1924, echoing Maisonneuve's wooden original in 1643. A tram was extended into the core of the park in 1924 and ran until 1957, when the route was changed to automobile traffic and a large parking lot was built. The grand chalet was created in 1932 to replace the earlier tearoom, and Frederick Todd created Beaver Lake in 1937–38, both Depression-era make-work projects. As automobile traffic was introduced to the park in 1961, a modern restaurant was built near Beaver Lake. In 1964 participants in North America's first International Sculpture symposium created new sculptures in public view; their works remain in the meadow facing Smith House.

Park Administration

Parc du Mont-Royal, as it officially known, is a city park occupying the southernmost summit, east- and south-facing slopes of Mount Royal. Two other summits, Outremont and Westmount, are located to the north and west, respectively. The park site occupies about one-seventh of the mountain, with much of the balance having been urbanized, including a substantial institutional presence that buffers the park from the downtown core. The City of Montreal provides planning and implements capital works in the park, while maintenance is the responsibility of the Ville Marie borough.



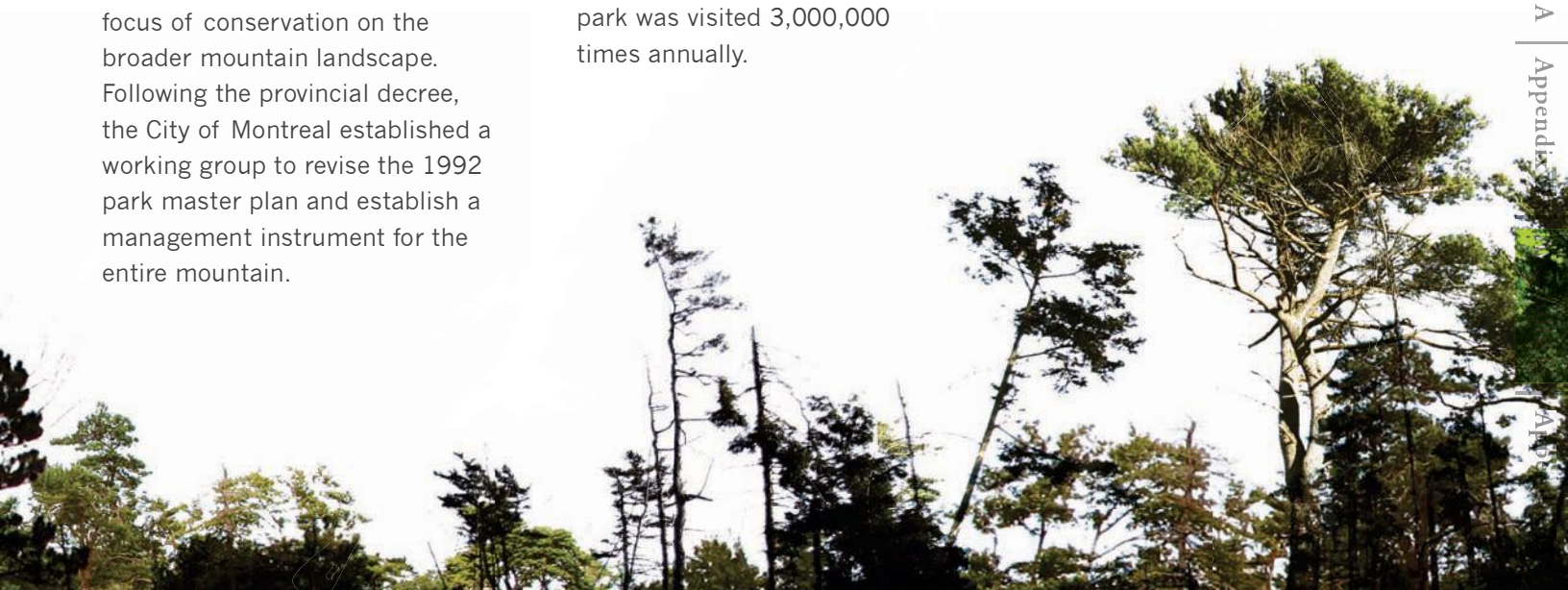


Mount Royal District

“The mountain” is an important icon for the City of Montreal, and recognition of its importance now extends beyond the borders of the park to include the broader mountain landscape. The city introduced building-height restrictions in the 1970s, limiting buildings to the height of the mountain’s summit. In 1987 the City of Montreal granted Mount Royal heritage-site status, including the park, cemeteries, St. Joseph’s Oratory and two universities. At the same time a municipal bylaw extended protection to several trees on adjacent private properties. In 2005 the province created the Mount Royal Historic and Natural District, furthering the outward focus of conservation on the broader mountain landscape. Following the provincial decree, the City of Montreal established a working group to revise the 1992 park master plan and establish a management instrument for the entire mountain.

Guiding Philosophy for Park Management

Management of Mount Royal Park aims to effectively balance cultural, ecological and recreational issues. Cultural priorities centre on preservation of the vision and design for the park set out by Olmstead, Todd and others. Ecological priorities focus on the development of a more natural forest ecosystem, including renewing native plant communities, prevention of soil erosion caused by runoff and informal trails. The park provides only basic recreational amenities, aiming to meet the community’s needs for unstructured activity and to reduce unwanted human impacts on the natural landscape. In 1999 it was estimated that the park was visited 3,000,000 times annually.



Landscape Restoration

Recent efforts reflect a renewed appreciation for the early work of Olmsted and Todd. There is a desire to gently steer the park back to its philosophical roots, while also addressing the impact of such great numbers of visitors and the forces of nature upon the landscape. Some highlights include:

- 1992–93 realization of Olmsted’s path along the crags;
- 1992–96 re-naturalization planting (11,000 trees and 232,000 bushes);
- 1996 restoration of Smith House by Les Amis de la montagne, creating a café, small park museum, gift shop, public washrooms and office for the organization;
- Recent construction of a large refrigerated skating area;
- 2007 restoration of Beaver Lake;



- Restoration of important cultural features in the park has had to come to grips with elements that were not original or entirely consistent with Olmsted’s vision;
- 2006 restoration of modern restaurant at Beaver Lake, originally opened in 1961, keeping the original modern-design character; and
- Upcoming restoration of the cross and refinement of its relationship to the nearby trail.

Challenges of Vegetation Management

Forest management in Mount Royal Park aims to encourage an increasingly natural forest composition in the face of numerous challenges. Park users have created many informal paths in steep hillside areas that contribute to soil erosion. Clearing shrubs and low branches in the forest (completed in the 1950s and '60s) created an opening of the forest interior and helps curb unwanted trampling of the park’s woodland areas. Opening the forest has also encouraged the extensive growth of non-native species in the forest, including buckthorn, honeysuckle and Norway maple. Past disturbance of park soils seems to have caused the spread of wild carrot in localized areas, to the exclusion of native herb species.



Chapter 1
 Chapter 2
 Chapter 3
 Chapter 4
 Chapter 5
 Chapter 6
 Appendix A
 Appendix B
Appendix C
 Appendix D



Ocean Meadow from Heather Road

The ice storm of 1998 caused widespread destruction in the park, damaging much of the forest. An extensive pruning project addressed the damage, though some misshapen trees have been left, to test their ability to recover. Substantial funding was provided for the post-storm cleanup but was offset by reduced funding in subsequent years, which slowed the progress of forest restoration. Reestablishment of the forest in former open areas creates a tension with the preservation of the historic design intent. Public opposition to tree removal limits the park managers' ability to remove larger non-native trees. An inability to address all of these concerns through timely maintenance has allowed some problems to worsen.

Post Ice Storm Cleanup

Damage inflicted by the 1998 ice storm caused a shift in forest management, from aesthetic forestry to the current emphasis on promoting the development of a more resilient park forest. The initial reaction to the ice storm was more retrospective than prospective, emphasizing the restoration of the park as it was rather than looking forward to what it could become. The City of Montreal has adopted a project approach to forest restoration, tackling specific problem areas in the hope that once they are brought up to standard, routine maintenance will be able to cope with ongoing care. Twelve survey plots were created during the ice storm cleanup to monitor the vegetation recovery under different cleanup regimes.

In the wake of the ice storm, the threat of fire and disease posed the most immediate concern for park managers, and a great deal of wood was removed. In retrospect, managers feel that more wood could have been left to provide habitat and help block unwanted paths. At the same time, cleanup following the storm provided an opportunity and a reason to remove invasive tree species and trees blocking important views. Looking back, managers feel that more of these trees could have been removed, and that more openings that showed views from the mountain should have been kept in the years since the cleanup. Funding for restoration in the wake of the ice storm was substantial, and more than \$7 million was spent mitigating tree damage. In subsequent years, funding for work in the park declined dramatically, and only in recent years has stable funding for park improvements been received.

Ongoing Management

Continuing efforts to manage the park forest include monitoring of survey plots established in the wake of the ice storm, as well as path closures, erosion control, planting, path maintenance and eradication of non-natives in tree (Norway maple) and shrub (buckthorn) layers of the forest. The borough lacks the resources to maintain the park to the high standard imagined by all.



Path Closures

Most developed paths in the park tend to follow the contours around the mountain with gradual changes in elevation. Many informal short, cut paths have been created by visitors so they can climb the hill more directly; off-trail mountain bikers also travel through woodland areas. These trails destroy vegetation cover and have caused serious erosion problems in a number of areas. Approved woodland trails have not been maintained in nearly a decade due to a lack of funding, and the maintenance of many unplanned

paths is not possible. The city is developing signage that explains that the trails are closed, blocking the ends of the trail with green chain-link fencing, repositioning deadfall to block trails and planting to restore vegetation and stabilize the soil in affected areas.

Removal of Non-native Species

Park managers balance their desire to remove large non-native trees from the park with public concern over large tree removal. In conspicuous areas, large non-native specimens are only removed on a gradual basis as visual impact allows. Removal of all large non-native trees from the park's more public areas will probably require decades rather than years to complete. Current

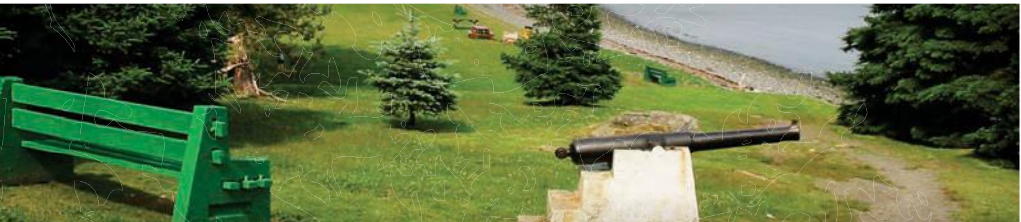
funding does not allow for the wholesale removal of young non-native trees and shrubs from the 175-hectare park. Areas of the forest have high concentrations of Norway maple, buckthorn and honeysuckle, but these tend to be mixed with native species rather than separate from them.

Forest Rehabilitation

Efforts to rehabilitate forest areas or convert treed meadows to forest involve intensive planting of native tree and understorey shrub species in specific areas. Efforts appear to target higher-profile areas and forest patches lacking native plant growth. Some areas once kept as lawn with a tree canopy are being converted to forest. Non-native woody growth is being removed and new planting installed in a way that closely matches the natural occurring species mix and the spacing of woody forest plants. It is expected that completed areas will require less effort in the future to sustain a plant community that more closely resembles the native forest in appearance and ecological function. Forest management also tends to shape species composition to create the desired species mix in light of damage sustained in the ice storm. For example, the volume of red ash that grows in the park is being reduced as a result of the severe breakage it has suffered.



Chapter 1
Chapter 2
Chapter 3
Chapter 4
Chapter 5
Chapter 6
Appendix A
Appendix B



Other Features

A new stone maintenance building with a copper-coloured roof is located near the centre of the park, with a nearby works yard screened with fencing and vegetation. The building style reflects the local tradition and the design language of Olmstead and Todd. Smith House, a large stone farmhouse near the heart of the park, predates the creation of the park; its recent restoration enhances the park’s character.

Site furnishings in Mount Royal Park are not elaborate but are robust and in keeping with elements found throughout the city. The park uses the same bench that is found throughout public spaces in Montreal, and the heavy black metal railing is generally consistent throughout the park, with the exception of some areas where an older railing may be found. Park policy will not allow new memorials or monuments to be put in the park.

Erosion Control

The steep terrain of Mount Royal makes erosion control a high priority for park management, which appears to be well managed. Broad gravel paths through the park are lined with a cobblestone edge on concrete base; this helps maintain the trail edge and contains the fine crusher-dust trail surfacing, while allowing water to escape. Boulders and low berms have been subtly placed to prevent short cutting at sharp curves. Woodland paths on sloping terrain have been covered with bark and wood chips, and logs have been staked across the path to create steps. Wooden boardwalks have been built on narrow hillside paths to prevent erosion and create safe, flat, walking platforms.

Concrete gutters lined with cobblestone have been built along the base of wooded slopes to move runoff into the storm drainage system. In some areas, berms near the base of steep slopes appear to have been built to slow runoff and filter debris before it reaches the gutter. A subtle dike has been built to create a wooded area that further creates a temporary stormwater-retention pool. Intakes of the stormwater system have been disguised with boulders and land forming in some locations.



Community Involvement

In 1981 students at the Université de Montréal founded the Centre de la Montagne to act as an environmental education organization. Les Amis de la Montagne was established as an advocacy group for the mountain in 1986, in response to a proposal for a major tourist tower on the mountain. The two groups joined forces in 2005-06 and now provide welcoming, education and interpretation functions for the park and advocacy for the broader mountain area. One of their best-known projects has been the annual spring cleanup in the park (Corvée du Mont Royal), and the outcomes of their other activities in the park are equally impressive. In 2005-06 Les Amis' activities resulted in:

- young people participating in educational activities;
- 60,000 people participating in educational or conservation activities;
- 80,000 visitors using services provided by Les Amis; and
- nearly \$1 million raised, with net investment in the park more than \$500,000.

Conclusions

- There are many parallels between Mount Royal Park and Point Pleasant Park, and some of the challenges faced in the restoration, management and operation of Mount Royal could serve as warnings or inspiration for Point Pleasant. The parks share common themes in their origins, development and aims, with the notable exception that Point Pleasant lacks the influence of a strong early physical plan provided by a single visionary creator.
- The outward focus of municipal and provincial government to manage the impact of urban development on Mount Royal Park, and then to begin turning the tide by managing external areas to complement the park itself, are important steps in ensuring the park's long-term integrity. While the damage inflicted by Hurricane Juan has created an inward focus at Point Pleasant Park, the external environment also merits consideration and action to ensure its long-term success.



- Park management at Mount Royal reflects some of the same societal influences on park management that have played out at Point Pleasant, but has ultimately come to emphasize ecology, cultural values and the human experience. Mount Royal managers encouraged planning for Point Pleasant to use the trauma caused by Juan as an opportunity to look forward to what the Park could become, rather than try to produce an exact copy of the original.
- Mount Royal Park has effectively used community groups that have an interest in the park to deliver services and help fund improvements. Both parks share a strong bond with the communities they serve and act as icons for the broader community—a strength that has benefited Mount Royal by involving a variety of agencies.



Chapter 1
Chapter 2
Chapter 3
Chapter 4
Chapter 5
Chapter 6
Appendix A
Appendix B
Appendix C
Appendix D



Harvard Forest Case Study

In 1938 a hurricane levelled 70% of the standing timber in the Harvard Forest, located in Petersham, Mass. In New England forests, catastrophic changes caused by periodic hurricanes play an important role in the structural dynamics of upland forests. Foster and Boose (1992) studied the Harvard Forest and the surrounding landscape to better understand the underlying factors that controlled the forest response to catastrophic wind. Foster (1988) explored species and stand response to catastrophic wind.

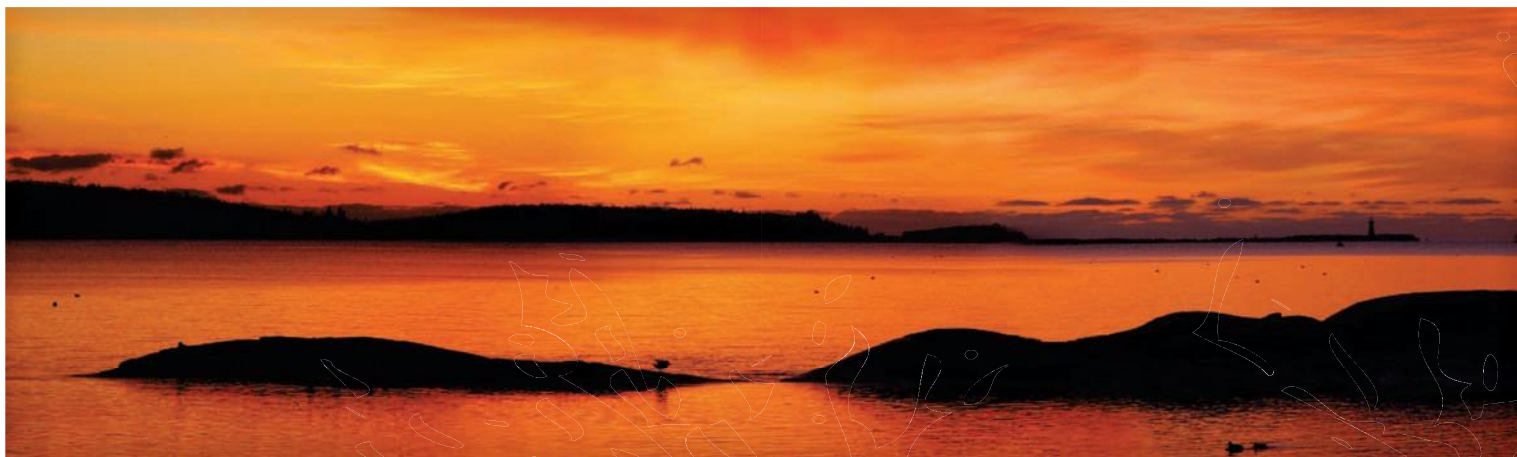
Wind Speed

Hurricanes in the northern hemisphere rotate in a counter-clockwise direction, which combined with the movement of the storm yields the highest wind speeds to the right-hand side of the storm track as it moves forward. Hurricanes moving over water tend to maintain or build strength, gaining energy from warm water and lower surface friction relative to the surface of land (Foster and Boose, 1992).

Wind Impacts and Topography

Wind direction, wind speed and the location of wind breaks interact with the topography of the site to determine forest susceptibility to storm damage. The force of the wind exerted on an object increases with the square of the velocity. Level sites and slopes facing the wind absorb the greatest force; slopes facing away from the wind at more than 10 per cent slope are more sheltered. Slope position is thought to be more important as topography increases in relief. Trees within 10 to 100 metres of open areas in the forest were more susceptible to damage than trees within uninterrupted stands (Foster and Boose, 1992).





Wind Impacts, Tree Species, Age and Tree Height

Foster (1988) found that damage to stands varied in a positive linear relationship to tree height and tree age and negatively with stand density.

Conifers were more susceptible to damage than hardwoods, and the relative proportions of the two within the forest may influence overall susceptibility to hurricane damage (Foster and Boose, 1992). In the Harvard Forest, red and white pines were susceptible to destruction by wind at 15 years of age, and 30-year-old stands were completely destroyed in the 1938 hurricane. For hardwoods, some damage was caused at age 20, but near-total destruction only occurred in 80- to 100-year-old stands (Foster, 1988).

Species susceptibility to damage can also be explained by canopy position. Pioneer species that grow rapidly to become overstorey dominants suffered greater damage than slower-growing and shade-tolerant species in co-dominant, intermediate and suppressed canopy positions.

Other Factors

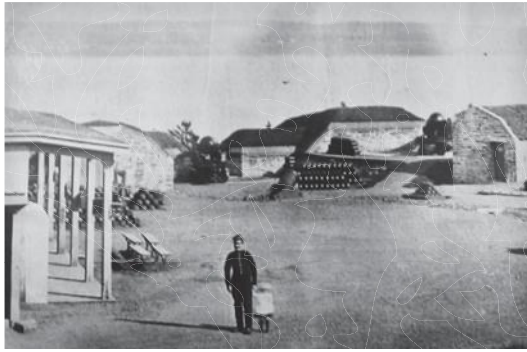
Foster (1998) suggests that heavy rain accompanying the 1938 hurricane may have contributed to the high level of damage from uprooting versus tree breakage, which opposed findings in much of the literature.

The impact of the 1938 hurricane on the Harvard Forest was probably accentuated by historical factors; the development of the pine forest on abandoned agricultural land and subsequent management for pine probably lead to a high level of hurricane damage, since tall conifers are more susceptible to damage.

Conclusions

Understanding the interplay of wind events with the forest provides a number of areas for action in the design and management of regenerating forests in Point Pleasant Park. While the knowledge of how to foster a forest that can better resist extreme winds is valuable, the passage of time, local weather, site topography, exposure, soils and existing vegetation will also play an important role in shaping the character of the forest that develops.





Fort Ogilvie



Halifax Defence Complex Case Study

For more than 250 years, Halifax has been an internationally important military location, and the military installations at Point Pleasant Park have been vital in the defence of the city over this time. In the 18th and 19th centuries, Halifax's harbour and strategic location helped it play a pivotal role in Britain's acquisition and defence of much of Canada. In the First and Second World Wars, Halifax was a centre for Allied trans-Atlantic convoys and a base for the Allies' North Atlantic operations. The Halifax Harbour defence system has been recognized as unique in North America because it contains a broad range of defences from the mid-18th century to the Second World War. Excluding structures at the Halifax Citadel, the Halifax Defence Complex contains more than 300 structures and other manmade features. The federal government has designated, acquired and managed five sites as national historic sites within the complex: the Halifax Citadel, Georges Island, Prince of Wales Tower, York Redoubt and Fort McNab (Department of the Environment Canada Park Service, 1993).

Prince of Wales Tower National Historic Site of Canada

In the late 18th century, the batteries of Point Pleasant formed a robust coastal defence against naval attack on Halifax but left the settlement vulnerable to land attack. Following his arrival in Halifax in 1794, H.R.H. Edward the Duke of Kent observed this weakness and initiated the construction of the Prince of Wales Tower in 1796-97. The cylindrical design of the Tower was a precursor to the Royal Engineer's development of the Martello Tower eight years later. As with other works in the Park and the broader defence complex, changes in military technology led to modifications of the building and its role over time. The introduction of rifled muzzle-loading guns lead in 1860 led to the substantial modification of the Tower for reuse as a self-defending magazine for the renewed Point Pleasant defences. The Tower was abandoned for use as a magazine in 1881.

The entire Park remains federal property leased to Halifax Regional Municipality, although Parks Canada controls a small area of land that includes the Prince of Wales Tower. The Tower was designated a national historic site in 1943, then restored and opened to the public seasonally in the 1960s. The designated site includes the Tower and circle of land around the Tower, which measures 180 feet in diameter. As a national historic site, the Tower receives only one-tenth of the total visitation of the Halifax Citadel, and most visits are relatively short, lasting 10 to 15 minutes. For most visitors, the Tower is not a main destination while in the Park. Parks Canada's planning workshops have revealed that many visitors are unaware that the Tower is open to visitors seasonally.





Parks Canada Guiding Principles and Operational Policies (2006)

This document outlines the goals and supporting policy that guides Parks Canada's efforts to protect and honour our natural and cultural heritage. They aim to meet national and international responsibilities for heritage recognition and conservation and encourage public understanding, appreciation and enjoyment of our heritage, while ensuring long-term ecological and commemorative integrity. The policy mainly focuses on the management of protected heritage sites over which Parks Canada retains direct control, but their policies are relevant to all natural and cultural heritage sites.

Parks Canada uses the concept of commemorative integrity as benchmark to measure the well-being of national historic sites. This is done when resources are not impaired or under threat, when its historic significance is effectively communicated to the public and when decision-makers respect the sites' heritage value. This concept may provide a general guideline for the conservation of both cultural and natural resources in Point Pleasant Park. Policies set out the principles, practices and activities of cultural resource management in general terms (for more information, see www.pc.gc.ca/docs/pc/poli/princip/index_e.asp).

Standards and Guidelines for the Conservation of Historic Places in Canada (2003)

This manual provides general guidance on the preservation, rehabilitation and restoration of cultural resources, and gives advice on specific approaches to archaeological resources, landscapes, buildings and engineering works. Adherence to the standards and guidelines may be imposed as a condition of funding for conservation work obtained from federal or other sources.

An understanding of the object of conservation is fundamental to the application of the standards and guidelines; recommended practices for preservation, rehabilitation and restoration vary. In Point Pleasant Park, the aims of conservation will likely vary depending upon the resource and its significance, sensitivities and condition. The standards and guidelines focus on the active conservation of resources but still provide guidance that would be relevant in a situation where some cultural resources can be expected to gradually deteriorate over time.



Implementation of certain standards and guidelines in Point Pleasant Park will require creativity and flexibility. The standards warn against creating a false sense of historic development that can result from mixing elements from different eras. This is a real concern and challenge in Point Pleasant Park, where cultural resources from four centuries of human occupation create a rich, but potentially confusing, pattern in the landscape. Landscape guidelines also call for the preservation of plant material, which plays an important role in the heritage value of the landscape; at times, this may oppose efforts to create a more natural forest composition.

Halifax Defence Complex Management Plan (1993)

The management plan deals with the four subsidiary sites of the defence complex. A new draft management plan for the five sites has been prepared by Parks Canada, and once it has been tabled in parliament it will become available to the public. Parks Canada has indicated that there are currently few major changes proposed in the new management plan that would directly affect Point Pleasant Park. The 1993 management plan sets out a thematic framework that outlines the primary and secondary themes to be communicated in the defence complex and how these relate to each of the five sites (see table below).

Halifax Defence Complex: Themes					
Sites → Themes ↓	Halifax Citadel	York Redoubt	Georges Island	Prince of Wales Tower	Fort McNab
Halifax Harbour	M	M	M	M	M
Physical Setting	S	S	S	S	S
Settlement & Commerce	S				
Imperial Naval Station	M		M		
British Garrison	S				
Royal Navy			S		
Defence of Halifax Harbour	M	M	M	M	M
Defences Landward	S			S	
Technology of Defence	S			S	
Defences Seaward		S	S		
Technology of Defence		S	S		

M - Major Themes
S - Minor Themes / Sub-themes

The management plan places priority on the long-term stabilization of Level 1 cultural resources, which are determined by Cultural Resources Management Policy. Some of the principles outlined for the management of cultural resources specific to the Halifax Defence Complex include the importance of the preservation of and presentation on nationally

significant cultural resources as the primary public benefit to be achieved through management; the need for new work to respond sensitively to the character of related cultural resources and not overwhelm cultural resources; and the need for sensitivity to extend to the use of cultural resources, to respect and be compatible with their historical character.

The management plan recommends strengthening the links between the Tower and other historic resources in the Park, in co-operation with Park management. The plan states that the main goal is to conserve resources, followed by making improvements to allow public access where it is safe, then offering basic interpretation and visitor services. The plan recommends that walking tours among the defences in the Park could be developed to strengthen the understanding of their role as part of a larger complex, and that signage could be used to clarify the relationship between resources. The plan notes that the public recommended tree cutting as a means to emphasize the relationship in two separate surveys prior to Hurricane Juan, although this idea was not supported by the plan for its potential impact on the character of the Park and expected public opposition.



Point Pleasant Park

Historical research related to Point Pleasant Park as a whole provides a more rounded sense of the historical significance of the Park site. The four predominant themes have emerged in writings on the Park history:

- 1) First Nations use of the site before and after contact with Europeans;
- 2) Early British civilian occupation of the area from 1749–98;
- 3) British military use of the Park from 1762–1944; and
- 4) The use of Point Pleasant as a place of leisure from the early days of Halifax to the official creation (ca. 1870) and development of Point Pleasant Park.

Archaeological examination of treethrows in the Park caused by Hurricane Juan led to the discovery of new evidence of early British civilian occupation—evidence that is unlikely to exist in such abundance elsewhere on the Halifax peninsula (Schwarz, 2005). Awalt has also documented the oral history of the Mi'kmaq community related to Point Pleasant Park, highlighting its importance as a location for the Spring Feast celebrations, a possible burial ground for noteworthy Mi'kmaq figures and associates of the Mi'kmaq and the association of several renowned Mi'kmaq warriors within the Park.





Point Pleasant postcards - circa 1900

Conclusions

The Halifax Defence Complex Management Plan recognizes that not all cultural resources within the complex need to be conserved to achieve their management aims. With the most highly valued resources designated as national historic sites, the question of what will happen to the Park's other resources remains. Parks Canada provides guidance on conservation priorities and techniques, but the work of conserving cultural resources in the Park is challenged by financial and environmental factors.

The richness of the cultural resources in Point Pleasant Park challenges the preservation and presentation of different themes over time. The relative emphasis to be placed on different historic themes, and the coherent presentation of these themes over time, is a challenge. At times, the preservation and presentation of cultural resources in Point Pleasant Park will be at odds.

Our evolving understanding of the Park may alter the approach to preservation and presentation of cultural resources over time. Given recent discoveries in the wake of Hurricane Juan, there may be value in presenting the settlement and commerce of Halifax as a sub-theme at the Prince of Wales Tower. The Mi'kmaq presence in the Park and the 1758 Feast of St. Aspinquid's Day skirmish may be another opportunity to develop a link between the defence complex and the 18th-century quest for peace between the British and Mi'kmaq communities.



- Chapter 1
- Chapter 2
- Chapter 3
- Chapter 4
- Chapter 5
- Chapter 6
- Appendix A
- Appendix B
- Appendix C**
- Appendix D

Appendix

D: REFERENCES

References

Anon. "Copy of a Letter from One of the Settlers in Nova Scotia, Dated Chebucto Harbour, July 28 1749." *Gentleman's Magazine*, XIX (September 1749): 408-410.

Awalt (Byrd), Don. "The Mi'kmaq and Point Pleasant Park: The Mi'kmaq and Amtoukati: An Historical Essay in Progress by Don (Byrd) Awalt." Unpublished manuscript, Halifax, n.d.

Baskerville, G.L. "Adaptive Management: Wood Availability and Habitat Availability." *Forestry Chronicle* 61 (1985): pp. 171-175.

Bennett, Karen. "Ice Storm '98 Revisited." [online]. [cited 7 December, 2007]. Available from: <http://extension.unh.edu/Forestry/Docs/icerevis.PDF>.

Burley, Scott, Robinson, Sarah L. and Lundholm, Jeremy T. "Post-hurricane Vegetation Recovery in an Urban Forest." Academic paper, Saint Mary's University, Halifax, 2007.



CABE Space. "Decent Parks? Decent Behaviour? The Link Between the Quality of Parks and User Behaviour." [online]. [Cited 4 December, 2007] Available from: <http://www.cabe.org.uk/AssetLibrary/2274.pdf>.

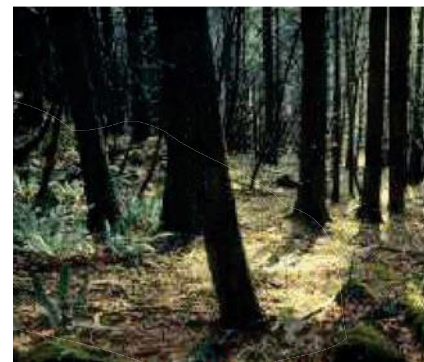
Canada Green Building Council. LEED Certified Buildings. [online]. [cited 10 December, 2007]. Available from: http://www.cagbc.org/green_building_projects/leed_certified_buildings.php.

Canada Green Building Council. "LEED Green Building Rating System & Addendum for New Construction & Major Renovations: LEED Canada-NC Version 1.0." 2004.

Canadian Hurricane Centre. Hurricane Juan September 2003. [online]. Updated October 29, 2003. [cited 21 March, 2007]. Available from: http://www.atl.ec.gc.ca/weather/hurricane/juan/summary_e.html.

CCFM. "Defining Sustainable Forest Management in Canada: Criteria and Indicators." Ottawa: Canadian Council of Forest Ministers, 2003.

Charles, J., Leblanc, R. and Duinker P. "Point Pleasant Park Phase I Restoration Protocols." Unpublished manuscript prepared for Halifax Regional Municipality, Halifax, 2006.





Chartier, Daniel, Graham, Wendy and Rocray, Jean-Emile. Interview and site visit at Parc du Mont-Royal, 17 May, 2007.

CSA. Sustainable Forest Management: Requirements and Guidance: Z809-02. Mississauga, Ont.: Canadian Standards Association, 2002.

Duinker, P.N. and Trevisan L.M. "Adaptive Management: Progress and Prospects for Canadian Forests" in *Towards Sustainable Management of the Boreal Forest: Emulating Nature, Minimizing Impacts and Supporting Communities*. Edited by Adamowicz V., Burton P., Messier C. and Smith D, pp.857-892. Ottawa, Ont.: NRC Press, 2003.

Environment Canada. Canadian Climate Normals 1971-2000: Halifax Citadel, Nova Scotia. [online]. [cited 22 March, 2007]. Available from: <http://www.climate.weatheroffice.ec.gc.ca/index.html>.

Foster, David R. "Species Stand Response to Catastrophic Wind in Central New England, U.S.A." *Journal of Ecology*. 76,1 (March 1988):135-151.

Foster, David R. and Boose Emery R. "Patterns of Forest Damage Resulting from Catastrophic Wind in Central New England, USA." *Journal of Ecology*, 80 (1992): 79- 98.

Goldstein, B.D. "The Precautionary Principle and Scientific Research are not Antithetical." *Environmental Health Perspectives* 107 (1999): A594-595.

Guscott, Bob. "Point Pleasant Park Forest Health Survey June 8-10, 2000." Nova Scotia Department of Natural Resources Report, 2000.

Halifax Regional Municipality A. Comments. [online]. [cited 7 December, 2007]. Available from: <http://www.pointpleasantpark.ca/site-ppp/competitionwebsite/ppp.isl.ca/inside4c04.html?cmPageID=133>.

Halifax Regional Municipality B. Halifax Historic Downtown Walk. [online]. [cited 10 December, 2007]. Available from: <http://visitors.halifax.ca/historic-halifax.shtml>.

Halifax Regional Municipality C. "HRM Public Art Policy and Procedures (Draft)." Unpublished manuscript, Halifax, n.d.

Halifax Regional Municipality D. Metro Transit Schedules and Route Maps. [online]. [cited 10 December, 2007]. Available from: <http://www.halifax.ca/metrotransit/Schedules/index.asp>.

Halifax Regional Municipality E. Point Pleasant Park International Design Competition: Stakeholders Advisory Team Report. [online]. [cited 18 July, 2007]. Available from: <http://www.pointpleasantpark.ca/media/documents/SATR.pdf>.

Halifax Regional Municipality F. Point Pleasant Park International Design Competition: Technical Advisory Team Report. [online]. [cited 18 July, 2007]. Available from: <http://www.pointpleasantpark.ca/media/documents/TATR.pdf>.

Halifax Regional Municipality G. Public Participation Workshop and Questionnaire Summary 2005. [online]. [cited 26 October, 2007].

Available from: http://www.pointpleasantpark.ca/site-ppp/competitionwebsite/ppp.isl.ca/media/documents/General_PPP_Public_Participation_2005.pdf.

Halifax Urban Greenway Association. *The Halifax Urban Greenway*. [online]. [cited 7 December, 2007]. Available from: <http://www.halifaxurbangreenway.org/index.html>.

Holling, C.S. (editor). *Adaptive Environmental Assessment and Management*. Toronto: John Wiley and Sons, 1978.

Idziak, Christina and Rusak, Helena. "The State of Point Pleasant Park." Graduate student paper prepared for Halifax Regional Municipality, University of Toronto, 1997.

IPCC. *Intergovernmental Panel on Climate Change Fourth Assessment Report: Climate Change 2007 Synthesis Report Summary for Policy Makers*. [online]. [cited 4 January, 2008]. Available from: http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr_spm.pdf.



Johnson, W.L. "Forest Renewal Action Plan Point Pleasant Park." Report, 1989.

Jotcham, Jim R., Strong Kim W. and Marvin, Kenneth T. "An Ecological Survey of Point Pleasant Park." Marbicon Inc. and Maritime Testing Limited Report, Berwick and Dartmouth, N.S., 1991.

Kalkreuth, Johanna M. and Duinker Peter N. "Characterizing Post-hurricane Coarse Woody Debris and Overstorey in Point Pleasant Park, Halifax, N.S." Academic paper, Dalhousie University, Halifax, 2006.

Kaplan, Rachel, Kaplan Stephen and Ryan Robert L. "With People in Mind: Design and Management of Everyday Nature." Washington, D.C.: Island Press, 1998.

Keyes, Kevin. "Ground Disturbance Survey for Point Pleasant Park: Post-Hurricane Juan Cleanup." Nova Scotia Department of Natural Resources Report, 2004.

Kitz, Janet F. and Castle, Gary. "Point Pleasant Park: An Illustrated History." Halifax: Pleasant Point Publishing, 1999.

LaHave Forestry Consultants Ltd. "A Forest Management Strategy for Point Pleasant Park." Consultant Report for City of Halifax, Bridgewater, 1984.

Landry, Maurice. "Mount Royal: Montreal's Natural Monument." Montreal: Centre de la Montagne Inc., 1999.





Lee, K.N. *Compass and Gyroscope: Integrating Science and Politics for the Environment.* Washington, D.C.: Island Press, 1999.

Lenth, Benjamin, Brennan, Mark and Knight Richard L., "Effect of Dogs on Wildlife Communities." [online]. [cited 7 December, 2007]. Available from: http://www.coboulder.net/openspace/management_plans/north_foothills/Dog_moratorium_2006/dog_moratorium_pdfs/BCPOS_FinalReport-Lenth.pdf.

Les Amis de la Montagne. "Annual Report 2005/2006." Unpublished report, n.d.

Lundholm, Jeremy T. Personal communication, February 11, 2008.

Jacques, Marc and Hill, Darcy, August 2001. "Looking Beyond the Trees: Visual Stewardship of the Working Forest Conference Compendium of Papers." Ministry of Forests, Forest Practices Branch.

McKay, Tom. "What Makes a Park Safe." [online]. [cited 10 December, 2007]. Available from: <http://www.peelpolice.ca/Crime%20>

[Prevention/CPTED/ecms.aspx/\\$prp/pdf-files/crime%20prevention/WhatMakesAParkSafe.pdf](http://www.peelpolice.ca/Crime%20Prevention/CPTED/ecms.aspx/$prp/pdf-files/crime%20prevention/WhatMakesAParkSafe.pdf).

Natural Resources Canada. "Brown Spruce Longhorn Beetle." [online]. [cited 18 July, 2007]. Available from: <http://cfs.nrcan.gc.ca/index/brownsprucelonghornbeetle>.

Neily, Peter, Keys, Kevin and Quigley, Eugene. "Forest Ecosystems of Point Pleasant Park." Nova Scotia Department of Natural Resources Report, 2004.

Neily, P.D., Quigley, E.J., Stewart, B.J. and Keys K.S. "Forest Disturbance Ecology in Nova Scotia." Draft report for Nova Scotia Department of Natural Resources Renewable Resources Branch, Forestry Division, Ecosystem Management Group, Truro, 2007.

Nova Scotia Museum. "The Natural History of Nova Scotia." Halifax: Nova Scotia Department of Education and Nimbus, 1996.

OCL Group. "Evaluation of the Potential Trail Alignments for the Trans Canada Trail and the Shubenacadie Trail, Final Report." Consultant Report for Halifax Regional Municipality, 2006.

Park Planning Committee. "Point Pleasant Park Management Plan (draft)." Unpublished Report, 1994.

Parks Canada. Halifax Citadel National Historic Site of Canada. [online]. [cited 7 December, 2007]. Available from: http://www.pc.gc.ca/lhn-nhs/ns/halifax/index_e.asp.

Parks Canada. "Cultural Resource Management Policy," n.d.

Parks Canada. "Halifax Defence Complex National Historic Sites Management Plan." 1993.

Parks Canada. "Parks Canada Guiding Principles and Operational Policies." [online]. [cited 7 December, 2007]. Available from: http://www.pc.gc.ca/docs/pc/poli/princip/index_e.asp.

Parks Canada. "Standards and Guidelines for the Conservation of Historic Places in Canada." 2003.





Point Pleasant Park Advisory Committee. "Point Pleasant Park Advisory Committee User Survey." [online]. [cited 26 October, 2007]. Available from: http://www.pointpleasantpark.ca/site-ppp/competitionwebsite/ppp.isl.ca/media/documents/General_PPP_User_Survey_1999.pdf.

RCMP. "Crime Prevention Through Environmental Design (CPTED)." [online]. [Cited 4 December, 2007]. Available from: http://www.rcmp-grc.gc.ca/ccaps/safecomm_e.html.

Schwarz, Frederick A. "Archaeological Assessment and Monitoring, 2004 Hurricane Juan Remediation Work, Point Pleasant Park, Halifax, N.S." Consultant Report prepared for Halifax Regional Municipality and Nova Scotia Museum, 2005.

Schwarz, Frederick A. "Point Pleasant Park Archaeology: Historic Sites Guidelines." Unpublished manuscript prepared for Halifax Regional Municipality, Halifax, N.S.

Schwarz, Fred and Schwarz, Lynne, "Point Pleasant Park: Cultural Resource Management Activities Following Completion of Hurricane Remediation." Consultant Report Prepared for Department of Parks and Open Spaces, Halifax Regional Municipality, 2006.

Steenberg, James W.N. and Duinker, Peter N. "Post-hurricane Regeneration in Point Pleasant Park, Halifax, N.S." Academic paper, Dalhousie University, Halifax, 2007. (UNCED) United Nations Conference on Environment and Development. Rio Declaration on Environment and Development. Publ. No. E.73. II.A.14. Stockholm, Sweden: United Nations, 1992.

Van Dijk, Petronella. "Mount Royal Revisited." Montreal: Centre de la Montagne Inc., n.d.

Walters, C. "Adaptive Management of Renewable Resources." New York: MacMillan Publishing Company, 1986.

Wheaton, Carla (Parks Canada). Personal communication June 20 - July 3, 2007.

PPPIDC Steering Committee. 2005. Point Pleasant Park International Design Competition Questionnaire.

Ogilvie, R. Point Pleasant Park Management Plan, Section 1.0, Resource Description, Nova Scotia Museum of Natural History, 1994.

Willison, 1989; Johnson 1989.

Anon 2005 – workshop

Anon 2006 – Sep/Oct workshop

HRM Cultural Plan

HRM Monuments and Signing Guidelines Draft

- Chapter 1
- Chapter 2
- Chapter 3
- Chapter 4
- Chapter 5
- Chapter 6
- Appendix A
- Appendix B
- Appendix C
- Appendix D**

Appendix

E: BOTANICAL AND COMMON NAMES OF TREES AT POINT PLEASANT PARK

Native Broadleaved and Needleleaved plants in the Park.



Chapter 1
Chapter 2
Chapter 3
Chapter 4
Chapter 5
Chapter 6
Appendix A
Appendix B
Appendix C
Appendix D

Botanical and Common Names of Trees in Point Pleasant Park

Native Broadleaved Trees	<i>Acer pensylvanicum</i>	Striped maple
	<i>Acer rubrum</i>	Red maple
	<i>Acer saccharum</i>	Sugar maple
	<i>Acer spicatum</i>	Mountain maple
	<i>Amelanchier spp.</i>	Serviceberry
	<i>Betula alleghaniensis</i>	Yellow birch
	<i>Betula papyrifera</i>	White birch
	<i>Betula populifolia</i>	Grey birch
	<i>Fagus grandifolia</i>	American beech
	<i>Fraxinus americana</i>	White ash
	<i>Fraxinus nigra</i>	Black ash
	<i>Fraxinus pennsylvanica</i>	Green ash and red ash
	<i>Populus tremuloides</i>	Trembling aspen
	<i>Populus grandidentata</i>	Largetooth aspen
	<i>Quercus rubra</i>	Red oak
<i>Tilia americana</i>	American basswood	
<i>Ulmus americana</i>	White elm	
Non-Native Broadleaved Trees	<i>Acer negundo</i>	Manitoba maple
	<i>Acer platanoides</i>	Norway maple
	<i>Acer pseudoplatanus</i>	Planetree maple
	<i>Aesculus hippocastanum</i>	Common horse chestnut
	<i>Fagus sylvatica</i>	European beech
	<i>Populus alba</i>	European white poplar
	<i>Quercus robur</i>	English oak
	<i>Robinia pseudoacacia</i>	Black locust
<i>Tilia x europaea</i>	European linden	
Native Needleleaved Trees	<i>Larix laricina</i>	Eastern larch
	<i>Picea glauca</i>	White spruce
	<i>Picea rubens</i>	Red spruce
	<i>Picea mariana</i>	Black spruce
	<i>Pinus banksiana</i>	Jack pine
	<i>Pinus resinosa</i>	Red pine
	<i>Pinus strobus</i>	White pine
	<i>Thuja occidentalis</i>	Eastern white cedar
	<i>Tsuga canadensis</i>	Eastern hemlock
Non-Native Needleleaved Trees	<i>Picea abies</i>	Norway spruce
	<i>Pinus nigra</i>	Austrian pine
	<i>Pinus sylvestris</i>	Scots pine
	<i>Pseudotsuga menziesii</i>	Douglas fir

“Climb the mountains and get their good tidings. Nature’s peace will flow into you as sunshine flows into trees. The winds will blow their own freshness into you... while cares will drop off like autumn leaves.”

– John Muir



POINT PLEASANT PARK

COMPREHENSIVE PLAN

October 2008

submitted by:

NIPpaysage

Ekistics Planning and Design

in association with:

LandDesign

Engineering Services

Peter N. Duinker PhD

Black Spruce

Heritage Resources

Form:Media