Corporation of the City of
NEW WESTMINSTER

Appendix G

General Guidelines of Preservation, Rehabilitation and Restoration

4.1.7 ECOLOGICAL FEATURES

These guidelines provide direction when an ecological feature has been identified as a character-defining element of an historic place. In the context of these guidelines, an ecological feature is a natural element, such as a marsh, a pond or a stand of trees, which can be part of a larger ecosystem. While ecosystems at an historic place should be evaluated and managed for their natural values by ecologists and other natural resource specialists, these guidelines apply only to the features of those ecosystems determined to have heritage value.

The Melanson Settlement in Annapolis, NS reflects Acadian family communities that settled along the Dauphin (now Annapolis) River, and a form of agriculture unique in North America. One of the site's character-defining elements is the nearness of this settlement to salt marshes that embody natural and ecological values. Documenting and understanding the structure, function and dynamics of this ecological feature is an important step before working on the site.

Ecological features vary in size but are typically studied at the scale of a pond or stand of trees. Character-defining ecological features are also found in urban areas. When using these guidelines, it is important to work with natural resource conservation and environmental assessment specialists, and where appropriate, with aboriginal groups and other partners and stakeholders to ensure that diverse knowledge and information are used to conserve the natural structure, function and dynamics of the entire ecosystem.

The potential for adverse environmental impacts (e.g., introduction or re-introduction of invasive species) must also be considered, regardless of whether it is required by environmental assessment or related legislation. The pan-Canadian approach to ecological restoration described in the "Principles and Guidelines for Ecological Restoration in Canada's Protected Natural Areas" (Parks Canada and the Canadian Parks Council, 2008) provides additional guidance on integrating consideration of natural and cultural heritage values in conservation planning and intervention. This document is particularly relevant when rehabilitation or restoration is the selected approach.

Ecological features are character-defining elements of many Aboriginal cultural landscapes where traditional practices have been sustained for centuries. In addition, ecological features associated with an historic place can extend far beyond its established boundaries.

These guidelines provide general recommendations for the conservation of ecological features in a cultural landscape. Other relevant guidelines, such as Vegetation and Water Features, should be consulted when appropriate.

GENERAL GUIDELINES FOR PRESERVATION, REHABILITATION AND RESTORATION

	Recommended	Not Recommended
1	**Understanding** the ecological features and how they contribute to the natural and cultural heritage value of the cultural landscape.	
2	**Understanding** the natural structure, function and dynamics of the ecological feature and of the ecosystem of which it is part.	
3	**Documenting** the characteristics and condition of the ecological feature and its relationship with the ecosystem of which it is a part, before beginning project work. Documentation should combine the best available scientific and traditional knowledge.	Undertaking interventions that affect a character-defining ecological feature without first documenting and understanding its characteristics, relationships, evolution and condition.
4	**Assessing** the overall condition of the ecological feature early in the planning process, so that the scope of work is based on an understanding of current conditions and predicted changes.	
5	**Protecting** and maintaining the ecological feature by using non-destructive methods in daily, seasonal and cyclical tasks.	Allowing ecological features to degrade by incompatible development or neglect. Using maintenance methods that damage or destroy an ecological feature.
6	**Retaining** intact ecological features and degraded ecological features that can be returned to good ecological condition.	Replacing degraded ecological features that could be returned to good ecological condition; for example, clear cutting a declining forest stand to create a parking lot or meadow.
7	**Repairing** degraded ecological features or parts of ecological features using recognized methods and trained personnel; for example, using a certified arborist to heal a mature tree. The work should be physically and visually compatible with the cultural and natural heritage values of the cultural landscape.	Removing ecological features or parts of ecological features that could be conserved, or using untested methods and untrained personnel, thus causing further damage to fragile features and relationships.
8	**Replacing** extensively degraded or missing ecological features or parts of ecological features based on physical and documentary evidence; for example, replanting a documented shrub species lost through erosion, with the same native species from a local source.	Replacing an entire ecological feature, such as a stand of trees, when limited replacement of deteriorated and missing parts (e.g., one or a few trees) is possible.
9	**Documenting** all interventions that affect the ecological feature, and ensuring that the documentation is available to those responsible for future interventions.	

ADDITIONAL GUIDELINES FOR REHABILITATION PROJECTS

	Recommended	Not Recommended
10	**Repairing** or rejuvenating extensively deteriorated ecological features by using non-destructive methods and materials, such as planting native species to facilitate the regeneration of a deteriorated meadow.	Failing to perform necessary work, including removing invasive species, resulting in the loss of ecological features and their components.
11	**Replacing** in kind an entire ecological feature that is too deteriorated to repair, such as replanting a clear-cut stand of trees with locally obtained saplings, and in similar density.	

ADDITIONS OR ALTERATIONS TO A CULTURAL LANDSCAPE

12	**Introducing** a new element, when required by a new use, that does not have a negative impact on the heritage value and condition of the ecological feature.	

ADDITIONAL GUIDELINES FOR RESTORATION PROJECTS

	Recommended	Not Recommended
13	**Restoring** an ecological feature if an evaluation of its overall condition determines that more than preservation is required; i.e., if an intervention on the ecological feature is necessary to sustain it into the future. For example, removing invasive tree species from a character-defining escarpment and replanting it with a mix of plant material corresponding to the natural conditions of the escarpment. This work should be based on physical and documentary evidence.	Restoring an ecological feature to an historic condition that is no longer sustainable given current physical and ecological conditions, including climate.
14	**Repairing** or rejuvenating a declining ecological feature that contributes to the sustainability of the cultural landscape, by using non-destructive methods.	Replacing an entire ecological feature when repair or rejuvenation is possible, or using destructive repair or rejuvenation methods, causing further damage to the ecological feature.
15	**Replacing** in kind an entire ecological feature that contributes to the sustainability of the cultural landscape when that feature is too deteriorated to repair or rejuvenate. The new work should be well documented to guide future research and treatment.	Removing an ecological feature that is beyond repair and not replacing it, or replacing it with an inappropriate ecological feature.

4.1.8 VEGETATION

Honeywood Nursery in Saskatchewan was established and operated by Dr. A. J. (Bert) Porter, a self-taught, award-winning horticulturalist who developed many fruits and ornamental plants capable of thriving on the Prairies. The property's planting beds, orchards and examples of various plant varieties are character-defining elements that illustrate Mr. Porter's contributions to the development of Saskatchewan's horticulture.

These guidelines provide direction when vegetation has been identified as a character-defining element of an historic place. For direction on how to treat vegetation as part of a natural system that is a character-defining element, also refer to the Guideline on Ecological Features.

Vegetation refers to trees, shrubs, herbaceous plants, grasses, vines, aquatic and wetland plants, and other living plant material. Vegetation may include individual plants, such as a sentinel (single specimen) tree in a pasture, or specimen trees in a garden; designed groupings, such as hedges, *allées* and perennial borders; and groupings used to control sun and wind patterns. Vegetation can also refer to planted crops, re-forested hillsides and naturally occurring plant communities.

Vegetation may have historical associations as well as functional and aesthetic qualities. As well, vegetation may have historical and scientific value, which can contribute to maintaining the biodiversity of native, horticultural or agricultural varieties. Vegetation in a cultural landscape can also represent the genetic repository of species once present, but now largely disappeared.

The Trappist Monastery Ruins recall a complex of religious architecture unique to Manitoba and the early French-speaking Métis community. Damaged by fire in 1983, the stabilized ruins, and the grounds featuring mature trees, expanses of lawn and open fields, now form the Trappist Monastery Provincial Heritage Park. Protecting and maintaining the vegetation is essential to preserving the site's historical values.

Vegetation is often the most dynamic and memorable feature in a cultural landscape. In addition to the continuous cycle of growth and decay, there will be variations in form, colour and canopy across the seasons. In describing vegetation as a character-defining element, the following concepts should be considered: growth habit, including juvenile or mature form; leaf and bloom; colour and texture; bark; bloom periods; fruit; fragrance; and context. Vegetation also contributes to other character-defining elements, such as land patterns, visual relationships and spatial organization.

These guidelines provide general recommendations for the conservation of vegetation in a cultural landscape. Other relevant guidelines, such as Ecological Features and Spatial Organization, should be consulted when appropriate.

A large site in Calgary's inner city that evolved during the early 20th century, this naturalistic rock garden is significant for its association with the noted horticulturalist William Reader and as a botanical laboratory to study the receptivity of Alberta's soils to a variety of plant species. The extensive arrangements of local rocks and plantings, many of which had become overgrown, were meticulously restored using careful plant analysis and by referring to William Reader's own detailed documentation.

GENERAL GUIDELINES FOR PRESERVATION, REHABILITATION AND RESTORATION

	Recommended	Not Recommended
1	**Understanding** vegetation and how it contributes to the heritage value of the cultural landscape.	
2	**Understanding** the evolution of a landscape's vegetation over time, using archival resources, such as plans and photographs or, when appropriate, archaeological analysis or minimally destructive techniques. This could include using resistivity testing to determine the age of a tree, or understanding the heritage value of a vegetation feature, such as the oak as a symbol of fortitude.	Undertaking interventions, such as indiscriminately clearing a woodland understorey without understanding its impact on historic vegetation.
3	**Understanding** the roles of people, animals and insects in producing and maintaining the existing vegetation.	
4	**Documenting** the extent and condition of vegetative cover in forests, woodlands, meadows, planted and fallow fields, and the genus, species, calibre, height, colour, form and texture of significant, individual tree specimens, before beginning project work.	Undertaking interventions that affect character-defining vegetation, without preparing a survey of existing plant material and its condition.
5	**Assessing** the overall condition of the vegetation early in the planning process so that the scope of work is based on current conditions.	
6	**Protecting** and maintaining the vegetation by using non-destructive methods and daily, seasonal and cyclical tasks, including pruning or establishing colonies of beneficial insects that protect fruit trees from pests.	Failing to perform preventive maintenance on character-defining vegetation.
7	**Using** maintenance practices that respect the habit, form, colour, texture, bloom, fruit, fragrance, scale and context of the vegetation.	Using maintenance practices and techniques that fail to recognize the individual plant materials' uniqueness. Examples include poorly timed pruning or application of insecticide, which may alter fruit production.
8	**Using** traditional horticultural and agricultural maintenance practices when those techniques are critical to maintaining the vegetation's character, such as manually removing dead flowers to ensure continuous bloom.	
9	**Retaining** and perpetuating vegetation by preserving seed collections and stock cuttings to preserve the genetic pool.	Failing to propagate vegetation from original stock cuttings, when few or no known sources for replacement are available.

GENERAL GUIDELINES FOR PRESERVATION, REHABILITATION AND RESTORATION

	Recommended	Not Recommended
10	**Securing** and protecting deteriorated vegetation by structural reinforcement, or correcting unsafe conditions, as required, until additional work is undertaken; for example, using steel cables to support large branches.	Failing to secure and protect deteriorated vegetation, thus putting it at risk of further deterioration.
11	**Replacing** in kind extensively deteriorated or missing parts of vegetation where there are surviving prototypes. The new plantings should match the old in species, colour and texture.	Removing deteriorated vegetation that could be stabilized and conserved, or using untested techniques and untrained personnel, thus causing further damage to fragile elements. Introducing or re-introducing a species or variety that is known or suspected to be invasive. Replacing entire vegetation when limited replacement of deteriorated and missing parts is appropriate. Using replacement material that does not match the historic vegetation.
12	**Documenting** all interventions that affect the vegetation, and ensuring that this documentation is available to those responsible for future interventions.	

ADDITIONAL GUIDELINES FOR REHABILITATION PROJECTS

	Recommended	Not Recommended
13	**Rejuvenating** historic vegetation by corrective pruning, deep-root fertilizing, aerating the soil, renewing seasonal plantings, and/or grafting onto historic root stock.	Replacing vegetation when rejuvenation is possible, including removing a deformed or damaged plant when corrective pruning could be successfully employed.
14	**Replacing** a deteriorated or declining vegetation feature with a new feature, based on the physical evidence of its composition, form and habit. If using the same kind of material is not technically, economically or environmentally feasible, then a compatible substitute material may be considered. For example, a diseased sentinel tree in a meadow may be replaced with a disease-resistant tree of similar type, form, shape and scale.	Replacing a deteriorated feature with a new feature that does not convey the same appearance, such as replacing a large, declining canopy tree with a dwarf flowering tree.
15	**Replacing** missing historic features by installing a new vegetation feature. It may be a new feature that is compatible with the habit, form, colour, texture, bloom, fruit, fragrance, scale and context of the historic vegetation; for example, replacing a lost vineyard with hardier stock similar to the historic plant material.	Creating a false historical appearance because the replacement vegetation is based on insufficient physical, documentary and oral evidence.

ADDITIONAL GUIDELINES FOR REHABILITATION PROJECTS

	Recommended	Not Recommended
ADDITIONS OR ALTERATIONS TO A CULTURAL LANDSCAPE		
16	**Introducing** new vegetation, when required by a new use, to ensure that the heritage value of the cultural landscape is preserved, including planting a hedge to screen new construction.	Placing a new feature where it may cause damage or is incompatible with the character of the historic vegetation; for example, erecting a new building or structure that adversely affects the root systems of historic vegetation. Locating a new vegetation feature that detracts from, or alters the historic vegetation; for example, introducing exotic species in a landscape historically comprised of only indigenous plants. Introducing a new vegetation feature that is incompatible in terms of its habit, form, colour, texture, bloom, fruit, fragrance, scale or context.

ADDITIONAL GUIDELINES FOR RESTORATION PROJECTS

	Recommended	Not Recommended
17	**Rejuvenating** declining vegetation from the restoration period by corrective pruning, deep-root fertilizing, aerating the soil, renewing seasonal plantings, and/or grafting onto historic stock.	Replacing vegetation from the restoration period when rejuvenation is possible, or using destructive repair methods, thus causing further damage to fragile plant material.
18	**Replacing** in kind a declining vegetation feature from the restoration period that is too deteriorated to repair, using the physical evidence as a model to reproduce the feature. The new work should be well documented to guide future research and treatment.	Removing a deteriorated vegetation feature from the restoration period and not replacing it, or replacing it with a new feature that does not convey the same appearance.
REMOVING EXISTING FEATURES FROM OTHER PERIODS		
19	**Removing** or altering non character-defining vegetation from periods other than the chosen restoration period, such as removing later foundation planting or aggressive exotic species.	Failing to remove non character-defining vegetation from another period that confuses the depiction of the chosen restoration period.
RECREATING MISSING FEATURES FROM THE RESTORATION PERIOD		
20	**Recreating** a missing vegetation feature that existed during the restoration period, based on physical, documentary and oral evidence. For example, replanting crop types based on pollen analysis.	Planting vegetation that was part of the original design, but was never installed, or installing vegetation thought to have existed during the restoration period, but for which there is insufficient documentation.