Robinswood Community Park
Natural Resource Enhancement Plan

Introduction

The purpose of this report is to outline Parks and Recreation Department natural resource management recommendations proposed for the forested areas of Robinswood Community Park. This report describes procedures for natural resource management, including planting, thinning and pruning trees, shrubs and other native vegetation; control of exotic weeds; and improvement of existing trails and other user features.

A site analysis and inventory of Robinswood Community Park woodland was conducted in August of 1992. The evaluation documented site history, present condition and ecological processes of the wooded sections of the Park. Long term management recommendations are based on this information. The site analysis/inventory included:

- Property description/site history
- Sensitive areas classification
- Soils/topography
- Vegetation
- Liability/hazard trees
- Wildlife
- Recreation

A description of the management activities follows the site analysis/inventory section.

Property Description/Site History

Robinswood Community Park is located in the NW 1/4 of the NW 1/4 of Section 11, T. 24 N, R. 5 E W.M., bounded by SE 24th St. to the north, SE 28th St. to the south, 153th Ave. SE to the east, and 148th Ave. SE to the west. The study site is roughly the southern half of the park, with the developed portion of Robinswood Park lying to the north. The properties to the south are commercial. The properties to the east are residential. 148th Avenue Southeast borders the site to the west. The site is 17.2 acres and lies approximately 420 feet above sea level.

The previous forest was logged from the site in the 1930's. The regrowth consists primarily of Douglas fir, with madrone, alder, cedar and hemlock found in minor quantities. Advance regeneration in the understory is strong is many areas, but markedly absent in eastern end of the woodland.

Residential subdivision of the surrounding area began in 1955. The Park was acquired from the Lang Estate in 1970. Prior to acquisition, the land was pasture and forest.

Sensitive Areas Classification

The few sensitive areas found on the site are steep slopes. Five percent of the site is 15 to 40% slopes, and less than one percent of the site is over 40% slope. Slope stability is dependent upon vegetation, ground and surface water hydrology and underlying geology. Precautionary measures will be taken to prevent site impact including:

- mulching or erosion fabric in sensitive planting areas where the soil will be exposed
- seeding/hydromulching exposed areas with fast-germinating grasses
- trail locations will be sensitive to site topography
- tree thinning or clearing will be done by hand

Our Forest Management recommendations take all of the slope stability characteristics into consideration and the results of our site enhancement activities will provide added protection to the site from erosion and surface water runoff.

Soils/Topography

the soils within the site belong to the Alderwood series. These are moderately well-drained shallow soils derived from glacial till and underlain by consolidated glacial till. The surface layer is very dark brown to dark grayish brown, with a gravelly sandy loam texture up to 27" thick. They may include up to 30% soils of other series, including Norma, Bellingham, Seattle, Tukwila, and Shalcar soils in poorly drained locations; or up to 15% Everett and Neilton soils derived from gravelly parent material. The Alderwood soils on this site are prone to medium runoff and slight to moderate erosion.

The topography within the site is a gently rolling terrain with low-lying areas in the center that drain northward to the pond in Robinswood Park. The slopes within the site are generally less than 10% (See Sensitive Areas Classification).

Vegetation

Recent field investigations conducted by the Resource Management staff have shown that the forest composition of Robinswood Community Park is typical of a mesic site in the western hemlock (Tsuga heterophylla) zone of Western Washington. Douglas fir (Pseudotsuga menziesii) the dominant overstory species, indicative of a late seral forest. Douglas fir is favored in open, well-lit conditions, but quickly establishes a closed canopy that retards its further establishment. Other areas have been more recently disturbed and are in early seral stage vegetation. Along the southern boundary of the site, pacific madrone stands (Arbutus menziesii) are regenerating vigorously, occasionally mixed with young alder

(Alnus rubra) and cottonwood (Populus trichocarpa) along the edges.

Understory vegetation is predominantly salal, with red huckleberry (Vaccinium parviflorum), twinflower (Linnaea borealis), evergreen blackberry (Rubus laciniatus) and bracken fern (Pteridium aquilinum) as other notable indicators. The understory vegetation in the eastern interior of the site is sparse, and regeneration is absent. Chronic disturbance from equestrian and pedestrian use of this area may be contributing to the lack of vigor observed there. In other areas, exotic blackberry species are established and appear to be outcompeting existing native vegetation. Moreover, throughout the site other exotics, such as European mountain ash (Sorbus aucuparia), cherry laurel (Prunus laurocerasus), English ivy (Hedera helix) and English holly (Ilex aquifolium) seem to be regenerating vigorously.

The following is a listing of plant species found on the site:

Trees

Scientific name	Common name
Alnus rubra	red alder
Arbutus menziesii	pacific madrone
Cornus nuttalii	pacific dogwood
Populus trichocarpa	black cottonwood
Prunus spp.	cherry
Pseudotsuga menziesii	Douglas fir
Quercus rubra	red oak
Rhamnus purshiana	cascara
Salix spp.	willow
Sorbus aucuparia	European mountain ash
Thuja plicata	western red cedar
Tsuga heterophylla	western hemlock

Shrubs

Acer circinatum	vine maple
Berberis nervosa	Oregon grape
Corylus cornuta v.californica	hazelnut
Gaultheria shallon	salal
Holodiscus discolor	oceanspray
Ilex aquifolium	English holly
Oemlaria cerasiformis	Indian plum
Prunus laurocerasus	cherry laurel
Ribes sanguineum	red-flowering currant
Rosa spp.	rose
Rubus leucodermis	blackcap

- R. laciniatus — evergreen blackberry
- R. parviflorus — thimbleberry
- R. spectabilis — salmonberry
- R. ursinus — pacific blackberry
- R. discolor — Himalayan blackberry
- Sambucus racemosa — red elderberry
- Symphoricarpos mollis — snowberry
- Vaccinium parvifolium — red huckleberry
- Vaccinium ovatum — evergreen huckleberry

Herbs

- Achillea millefolium — common yarrow
- Convolvulus sepium — hedge bindweed
- Epilobium angustifolium — fireweed
- Geranium robertianum — herb Robert
- Hedera helix — English ivy
- Hypochaeris radicata — cat's ear
- Linnaea borealis — twinflower
- Lonicera sp. — honeysuckle
- Polystichum munitum — sword fern
- Pteridium aquilinum — bracken fern
- Solanum dulcamara — nightshade
- Tellima grandiflora — fringecup
- Trifolium sp. — clover
- Urtica dioica — stinging nettle

Liability/Hazard Trees

There are relatively few liability trees in this stand, but the approaching canopy closure will set the stage for decline of subordinant trees. The few mature alders on the site should be monitored closely. This area also supports a substantial number of dogwoods (Cornus nuttalii), some of which have achieved significant size. Endemic anthracnose has not severely affected these trees yet, but its presence creates the potential for decline in the future.

The existing stand of Douglas fir appears healthy, though somewhat suppressed. Thinning now would emulate the natural process of decline in the weaker trees due to competition and thereby boost stand vigor. Lack of vigor can set the stage for disease and insect infestation. Root decays are the most serious disease affecting conifers, especially Douglas fir, in western Washington. The most prevalent is laminated root rot (Phellinus weirii). Another is shoestring or Armillaria root rot (Armillaria mellea). Trees infected with either organism may exhibit suppressed growth, thin crowns, and poor color. Infected trees eventually become weakened and susceptible to blowdown. In 1983, an area directly west

of the Robinswood House was diagnosed with Phellinus weirii. Seventeen trees were removed at the time.

Evaluating the liability of such trees involves not only identifying the hazardous trees, but also evaluating the potential harm or damage that might occur. Where public safety or property is clearly at risk, removal is essential. However, dead trees may be left standing for wildlife habitat in more remote sections of the greenbelt, if no property or trail is targeted, and the trees are a functional component of the forest ecosystem.

Wildlife

Robinswood Community Park supports a variety of wildlife species including:

o	racoons	o	opossum	o	squirrels
o	rabbits	o	mountain beaver	o	voles

A bird count was not conducted on the site, but local bird watchers have documented sighting more than one hundred species in the Bellevue area. The mix of deciduous and coniferous canopy, as well as a complex matrix of understory vegetation, provide a diversity of habitats that foster such a diversity of wildlife. The surrounding open fields, the pond to the north, and the woodlands, taken together, represent a premier wildlife in the area. The resource management practices prescribed will enhance wildlife habitat through planting appropriate plant species, maintaining existing desirable plants, and promoting plant species diversity.

Recreation

Robinswood Community Park context offers active and passive recreational opportunities. The woodland provides opportunities for jogging, walking, horseback riding, aesthetic appreciation, wildlife study, and spiritual renewal to community residents.

In association with the Non-motorized Transportation Committee, the Parks Department has identified trail improvements to connect adjacent trail segments to the Robinswood trail system. Such trail enhancements will allow park users greater access to passive recreational opportunities and create linkages with other established trails in the Bellevue Trail System.

Forest Management

Forest management principals will be implemented in accordance with the City's land use policies for open-space. Sound forest management practices support all the previously described park functions by maintaining and enhancing a biologically diverse community,

consisting of a mixture of age classes and plant species.

The composition of this woodland reflects the change in its management as it went from a private estate to a public park. The uniform stand of Douglas fir is atypical for a stand of this age. Deciduous hardwoods that are normally found in association with young Douglas fir were probably systematically removed when it was a private estate to increase the timber value and create a "park-like" stand. As a public park, it was thinned in 1983 to allow the existing trees more room. More recently, emphasis has shifted to an ecological approach which fosters the natural process of forest succession to achieve our management goals for the site.

As forests mature, they naturally progress towards a balance in composition. While foresters cannot recreate old-growth communities, they can accelerate the rate of forest succession. Historic disturbances such as clearcut logging and clearing for land development have determined the type of plants found in Robinswood Community Park today. For example, when bare soil was exposed during earlier logging operations, the first plants to establish themselves were rapid growing species which thrive in full sun. These types of plants are said to be intolerant, because they cannot reproduce under shade competition. Intolerant species such as red alder usually are short-lived (80 to 100 years) and tend to have weak or brittle wood. As the forest ages, the intolerant species become overcrowded, leading to their decline. When such trees fall over, the resulting openings in the tree canopy allow more light to reach the saplings of more shade-tolerant species, such as western hemlock and western red cedar, which eventually replace the intolerant species.

The management goal for Robinswood Community Park is to take advantage of natural succession by creating scattered breaks in the forest cover. Increased light penetration into the area, along with planting to augment the stock of regenerating saplings, will promote growth of desirable plant species faster than would occur in an unmanaged forest. By implementing the Forest Management Plan, the Parks Department will be able to control the number and distribution of openings in the canopy, and ultimately the amount and type of vegetation. This process of planned reforestation will provide the greatest degree of biological diversity, thus enhancing the woodland. Left unmanaged, natural regrowth of desirable species would be irregular and, in many cases, will not occur where aggressive exotic species (notably Himalayan and evergreen blackberry) invade and establish.

In implementing the Forest Management Plan, the Parks Department will systematically remove liability trees. Trees which have been topped or otherwise damaged will be chosen for removal over healthy ones. Areas of root disease will be identified and disease resistant species planted. With no management of the site, the inevitable decay and deterioration of the forest would present a risk to neighborhood residents and park users.

The following management prescription for Robinswood Community Park has identified specific forest types within the woodland and based its recommendations on the unique conditions and resources found in each habitat.

Site Specific Management Prescription

Dense Mixed Hardwoods

Along the margins of the woodland, human activities have created episodes of disturbance. Edge conditions has caused a flush of seral tree species, both native and exotic. Selective thinning of these trees will allow the remaining stems to mature, while creating opportune conditions for growth of an understory.

Black cottonwood can be found mixed with some stands of alder in areas of greater disturbance. Its aggressive root system is notorious for lifting and breaking pavement. Therefore, they will be preferentially selected for removal where they are found close to existing pavement.

Madrone Regeneration

Two significant areas are supporting vigorous regeneration of madrone. Inhabiting drier, less disturbed sites, madrone usually regenerates slowly. Their longevity, high aesthetic value, and decline in other parts of western Washington make them a valuable resource in the park. Management objectives consist of monitoring these stands for health, thinning of select areas to promote mature tree development, and protecting them from competition and disturbance.

Douglas Fir/Salal

The majority of the site contains these overstory/understory dominants. Where no other management considerations were observed, this unit was identified as requiring minimal forest management. Thinning of the most suppressed conifers will boost stand vigor by reducing competition. Selective control of understory exotics will be undertaken to insure the preservation of native forest character on the site.

Dense Salal

This unit is similar to the Douglas fir/Salal unit described above, but where public safety considerations require increased visibility into the park from the street. View corridors will be created by mowing the salal to a low shrub layer, retaining tall salal groupings around the bases of trees and in clumps away from the sidewalk. Where repeated mowing removes the salal, low Oregon grape (Mahonia nervosa) and twinflower (Linnaea borealis) will be planted in its place.

Blackberry

Exotic blackberry species, notably evergreen blackberry (Rubus laciniatus) and Himalayan blackberry (R. discolor) are notorious aggressive weeds, capable of outcompeting most of our native species in forest edges. Complete eradication of these brambles would be a laborious and long-term process. The current management objective for Robinswood Park is to control their spread. They now occupy small patches, and still coexist with native species in many places. Selective control would give natives a competitive advantage that would last 2 to 3 years before the blackberries regain their vigor. In this way, the native character of the Robinswood Park woodland can be preserved over the long term.

Suppressed Understory

The understory in the eastern portion of the woodland does not exhibit the vigorous growth. The soil surface is exposed over much of this area, and the existing shrubs have not achieved the mass that they typically have elsewhere on the site. Repeated trampling from trail users are likely causes of this disturbance. Other contributing factors may be excavation by foraging wildlife and low light levels from a closed canopy above. Management goal for this area is to achieve advance regeneration of the overstory. This will be achieved by:

1) Thinning and replanting - a portion of the trees in this unit will be cut to stimulate remaining trees and to provide light gaps for shrub reestablishment and tree regeneration. Approximately 120 hemlock and cedar will be planted in the gaps created to provide the next generation of trees for the forest, emulating the normal course of natural succession.

2) Limiting disturbance - The planned trail improvements will encourage park users to remain on the existing trails. A few redundant spur trails will be closed by replanting with shrubs, and newly trampled paths will be restored and disguised as they are found. In addition, when thinning and replanting gets underway, temporary signs will be posted at various points along the trails in this unit to keep trail users on the paths while the vegetation is allowed to reestablish.