

City of Surrey

Parks, Recreation and Culture
Department

Overview of
The Natural Areas
Management Plan:
Strategic Directions

Greg Ward
Manager, Park Urban Forestry and Environmental Services

Edited by: Diana Wegner
Professional Writer

TABLE OF CONTENTS

Executive Summary	3
Park Natural Areas Defined	3
The Need for a Plan	3
Development of the Plan.....	3
Structure and Content of the Plan	4
Benefits of Natural Areas	4
Cornerstone Principles	5
Sustainability	5
Access	5
Communication Among Stakeholders	5
General Management Themes	5
Strategic Thrusts	6
Implementation of the Plan	8
Introduction to The Plan	10
The Global Context.....	10
The Surrey Mandate.....	10
Surrey Context	11
Cornerstone Principles	13
1. Sustainability	13
2. Access	13
3. Communication Among Stakeholders	13
Natural Areas Management Themes	14
Preservation and Protection	14
Accessibility	15
Collaboration and Community Participation	15
Education	16
Health, Safety and Liability	17
Aesthetics.....	17
Preservation of Property Values and Economic Development	18
Conflict Management	19
Cost-Effectiveness	19
Biodiversity Conservation	20
Strategic Thrusts	21
Vegetation Management Strategy.....	21
Fauna Management Strategy.....	22
Access and Recreation Management Strategy	24
Tree Hazard Management Strategy.....	26
Fire Management Strategy	27
Coarse Woody Debris Management Strategy	29
Yard Waste and Refuse Management Strategy.....	30
References	32

Executive Summary

Park Natural Areas Defined

Park natural areas are defined as parks, or those areas of parks that are relatively undisturbed, contain a high percentage of native plant species and provide for considerable indigenous wildlife habitat. They are natural or near natural in character, or are in the process of recovery from human disturbance. They help to maintain the diversity of living organisms through the conservation of wild genetic resources. Compared to cultured and manicured park areas they require less routine and less intensive management activities to ensure their sustainability; however, they also require active management due in part to their location within a highly urban setting.

The Need for a Plan

The Natural Areas Strategic Management Plan (the Plan) was undertaken to provide strategic direction to the City of Surrey Parks, Recreation and Culture Department, for the management of the City's natural area parklands. Natural areas in Surrey have been enjoyed and protected for many years. Although approximately 60% of existing parkland is natural, only a few appropriate resource management techniques and specific programs have been established.

The decision to undertake the Plan was made during the Parks, Recreation and Culture Department's annual strategic planning processes in 1998. The City of Surrey *Official Community Plan* and the *Parks, Recreation and Culture Master Plan* provided the impetus for the decision, each citing the need for the City to protect and enhance natural areas.

Development of the Plan

The Terms of Reference for the Plan were approved by an in-house steering committee; and this committee provided direction and review throughout the development of the Plan. The Plan was written by a combination of Parks Division staff and consultants, coordinated by the Manager, Parks Urban Forestry and Environmental Services Section. The Green Timbers and Sunnyside Acres Urban Forest Advisory Committees provided input into the Plan. The Environmental Advisory Committee reviewed the Plan and many agencies involved in natural area stewardship were invited to provide comment. The Parks, Recreation and Culture Commission reviewed the Plan and struck a committee to develop policy.

"We fulfill our mission through open communication, a customer focus and respect for individuals"

-Excerpt from the *Parks, Recreation and Culture Mission Statement*.

Structure and Content of the Plan

The Plan consists of eight separate strategy documents. The first document, entitled *Overview of The Natural Areas Management Plan: Strategic Directions*, contains information directed to those interested in a broad overview of the Plan, its major thrusts and a summary of the other seven strategy documents.

This *Overview* document contains the following:

- Executive Summary
- Introduction to the Plan
- Cornerstone Management Principles
- General Management Themes
- Summaries of the Strategic Thrusts
- Implementation of the Plan

The remaining **seven documents** of the Plan contain specific and detailed information for those interested in a comprehensive analysis of the Plan.

Each document can function independently addressing specific natural area management thrusts. They are comprehensive reviews of significant subject areas and contain a host of recommendations, management principles, goals, objectives, maintenance standards and construction specifications for service delivery. As stand-alone documents they are available upon reader request for those interested in a more comprehensive understanding of the details of the Plan.

Benefits of Natural Areas

Park natural areas serve to enhance the quality of life for people and native fauna on local, regional and global levels. The following is a general summary of the benefits derived from having healthy natural areas.

- Better natural environment through improved air quality, stormwater management, climate amelioration
- Provision of habitat for fauna; healthy ecosystems
- Leisure opportunities for residents and visitors
- Increased economic value

- Preservation of natural heritage
- Increased biodiversity

Cornerstone Principles

Three cornerstone management principles for managing Surrey natural park areas have arisen from the development of the Plan as critical elements: **sustainability, access, and communication among stakeholders**. These principles provide the philosophical foundation to assist decision makers and managers in stewarding the natural area lands on behalf of the public.

Sustainability

Sustainability means preserving and enhancing the ecological integrity and biodiversity of Surrey's park natural areas to provide the life-supporting capacity of air, water, and soils—now and for the future.

Access

Preservation of natural areas must be balanced with measures of access where residents of all abilities should be able to enjoy the ecological, spiritual and recreational benefits that healthy natural areas offer.

Communication Among Stakeholders

With interest in protecting and using natural areas growing exponentially, natural area managers must increase communication among stakeholders to develop common ground, increase community ownership and community responsibility for natural areas.

General Management Themes

The following themes will require constant attention and vigilance, and should always be forefront in any management processes and planning initiatives that address natural areas.

- **Preservation and Protection**
- **Accessibility**
- **Community Participation**
- **Education**
- **Health, Safety and Liability**
- **Aesthetics**
- **Preservation of property Values and Economic Development**
- **Cost Effectiveness**
- **Biodiversity Conservation**

Strategic Thrusts

A comprehensive analysis of each of the seven strategic thrusts is available in separate, 'stand-alone' documents. The following is summary of the thrusts and the directions that need to be taken.

Vegetation Management

The primary strategic direction is to protect, preserve and enhance the native vegetation resource, providing for wildlife habitat, worthwhile recreational opportunities and environmental benefits.

- Adopt a sustainable approach to vegetation management
- Conduct activities that preserve, protect and enhance the vegetation resource
- Manage and intervene to achieve sustainability

Fauna Management

The primary strategic direction is to acquire and manage natural areas for parkland to ensure the long-term viability and diversity of global, regional and local faunal resources. This includes the protection, enhancement, and restoration of a range of species and habitats for fish, wildlife and other fauna.

- Acquire and manage natural areas for parks to ensure the long term viability and diversity

- Manage natural areas to provide for, protect and enhance fauna habitat
- Implement public education and information strategies to develop an understanding and acceptance of, the need for diverse faunal resources

Access and Recreation Management

The primary strategic direction is to meet the recreational needs of residents and visitors yet maintain the ecological integrity of park natural areas.

- Provide for legitimate access and recreational uses of natural areas without compromising sustainability
- Provide for a high quality trail system
- Provide for a comprehensive plan and actively manage access and recreation in natural areas

Tree Hazard Management

The primary strategic direction is to provide for safe use, reduced corporate liability and the maximum benefits possible to park natural area ecosystems.

- Implement a comprehensive tree hazard management program that will effectively protect park patrons and address City liability
- Prescribe hazard tree abatement work that meets industry standards and, where possible, contributes to the ecological health of natural areas

Fire Management

The primary strategic direction is to protect people and property, and ensure the long-term conservation of natural areas by reducing the risk of fire.

- Implement fire detection and prevention initiatives that include fuel management, fire-risk education and detection
- Conduct fire suppression activities that protect the ecological integrity of natural areas

Coarse Woody Debris Management

The primary strategic direction is to integrate coarse woody debris into the stewardship of natural areas to maximize ecosystem health, and contribute to sustaining or enhancing biodiversity.

- Integration of coarse woody debris management with all other park natural area activities
- Provision for coarse woody debris must establish a balance between ecosystem health, public safety, and aesthetics

Yard Waste and Refuse Management.

The primary strategic direction is to implement programs that change public perception and attitude, and to conduct activities to reverse the impact of dumping in natural areas.

- Implement measures to educate the public on the impact of dumping in natural areas
- Implement measures to develop strong neighbourhood and community relationships for stewardship of natural areas

Implementation of the Plan

Primary responsibility for implementation of the Plan will be with the newly created Urban Forest and Environmental Services Section of the Parks Division. As many of the recommendations affect other Parks Division operations areas, they too will share in the implementation of the Plan.

The following is recommended as a general approach for the Urban Forestry and Environmental Services Section to take in the implementation of the Plan;

1. review the Plan and develop a prioritized and phased implementation of recommendations
2. work with the Parks, Recreation and Culture Commission in the development of natural area management policy
3. first implement those recommendations that address risk and liability issues
4. implement those recommendations that will have the greatest impact in protecting and preserving the health and integrity of park natural areas

“Man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being.”

- Report of the UN Conference on the Human Environment, 1972 Stockholm Declaration.

Executive Summary

5. develop annual operational work plans that include recommendations found within the Plan
6. do a report card that annually reviews yearly accomplishments in terms of the direction and recommendations found within the Plan
7. build critical partnerships with other agencies, non and for profit, to implement the Plan
8. involve the community in the implementation of the Plan.
9. liaise directly with other City business areas to facilitate adoption and implementation of the Plan

Introduction to The Plan

The Global Context

The City of Surrey presents its *Natural Areas Strategic Management Plan* as a serious and comprehensive response to the dual need to work towards environmental sustainability and to enhance the well-being of its residents and visitors. Globally, these are the goals articulated in countless official studies of the dimensions of environmental problems and government responsibilities. The United Nations' 1987 Brundtland Report was one of the first to provide an urgent call to action at the global level:

'As the century closes, . . . major, unintended changes are occurring in the atmosphere, in soils, in waters, among plant and animals, and in the relationships among all of these. The rate of change is outstripping the ability of scientific disciplines and our current capabilities to assess and advise. It is frustrating the attempts of political and economic institutions, which evolved in a different, more fragmented world, to adapt and cope. It deeply worries many people who are seeking ways to place those concerns on the political agendas.' (343)

Cities like Surrey play a significant role in educating residents about the global impacts of environmental degradation, and how involving people at the local level strengthens the bond between individuals, communities and the natural environment. In its "Guide to Agenda 21" for a sustainable environment, the United Nations articulates a similar role for municipalities, those "local authorities," who, "as the level of governance closest to the people, . . . play a vital role in educating and mobilizing the public for sustainable development."

The promise of effective community initiatives and the development of "ecological literacy" at the local level must be realized as part of a larger integrated effort at all government levels. To some extent, the BC government has awakened to this need. In response to public concern, the BC government has articulated a commitment to developing a strategy to create a "collective vision of a sustainable future."

The Surrey Mandate

Implementing the global agenda for the environment and humanity at the local level is clearly part of the City's mandate. Numerous City documents, plans, and public engagement processes strongly articulate the desire of the City's citizenry, Council and administration to carefully



"Global environmental protection begins at the community and bioregional level — the level where complex living systems are most interdependent and vulnerable."
- *Environmental Governance*, Hempel.

and thoughtfully steward the land; that is, to practice a land management ethic that protects natural areas to ensure their integrity into the future.

From the *Future Surrey Vision Process* in 1995, where the citizenry actively participated in defining the community of Surrey, to the City's *Official Community Plan (OCP)*, the City has placed livability and protection of the natural environment in balance with economic development, as critical elements in the making of a great City.

The OCP further affirms that, through civic leadership for the protection of natural areas, environmentally sustainable practices and education are significant core business areas that the City must engage.

Surrey's Cultural Strategic Plan, (Final Report, 1999) also points to the importance of the natural environment to the citizens of Surrey. The consultation process undertaken for this plan identifies that Surrey's parks and green spaces are at the core of what people value in Surrey. For many, this is what makes their community unique.

The City's role in managing its many natural areas is under the auspices of the Parks, Recreation and Culture Department. The Department's Mission Statement affirms commitment to environmental stewardship: 'we enhance the quality of life in our communities by working together to champion environmental stewardship.'

The Parks Division has accepted the primary environmental leadership role within the Department by articulating that "**stewardship of the natural environment**" as one of its key core business areas. To that end the Division implemented an Environmental Program Coordinator staff position in 1996 and, following a Divisional re-organization, created an Urban Forestry and Environmental Services Section that has the singular focus of managing most aspects of park natural areas and providing environmental education and interpretation.

Surrey Context

The ongoing natural areas management challenge for the Parks, Recreation and Culture Department is to find a workable balance between environmental protection of natural parklands and access to these same lands, for the benefit and well being of Surrey residents and visitors. It is the official responsibility of the City to serve these goals, and to facilitate resolution when they come into conflict with one another. The principles, strategic directions and recommendations set out for managing Surrey's park natural areas in the Plan are meant to help the Parks Division accomplish and mediate the duality of this challenge. In recent years the need to do so has become more critical, and more complex.

"The public has placed environmental well-being near the top of the policy agenda, along with economic and social issues. We must develop ways to incorporate values that have, until now, been excluded from the array of relevant costs and benefits.... This proposed strategy would be based on a collective vision of a sustainable future, ecological and social realities, a new process of decision-making, and the identification of strategy priorities."
- British Columbia Provincial Government, *An Economic Framework for Sustainability*, (11).

Sixty percent of Surrey’s parkland inventory is now classified as natural area. They include all types of green space, from dedicated urban forest, riparian areas, wetland, bogs, marshes, grasslands, and fields, to forested areas in parks, greenbelts, boulevards, undeveloped parkland, portions of utility corridors and Parks facilities grounds.

A number of factors related to rapid development and urbanization of Surrey now threaten its natural areas and give rise to questions of balance between ecology and human activity. Between 1989 and 1999 the population of the City grew from approximately 220,000 to 325,000. Corresponding to this growth there has been an increased demand for human use of natural areas. In a recent survey, of those respondents who wanted additional outdoor recreational facilities, 56% favoured an increase in the number of walking and cycling trails, a preference portending significant pressure to increase access. Many natural areas are now bordered immediately by housing, commercial and industry developments: they are in serious need of stepped-up measures for both protection and access. Some of the problems include:

- Illegal dumping of waste and refuse in parklands
- Removal of much needed coarse woody debris
- Blazing of unauthorized trails, inappropriate use of and damage to trails
- Damage to waterways that threatens all species dependent on the surrounding ecology
- Inadequate monitoring and prevention of tree and fire hazards

Greater access for dogs is also an impinging issue. All of these pressures have resulted in greater degradation to natural areas and conflicts over use. The Parks Division has undertaken to develop its management plan to address these issues by adopting a balanced approach—and to carry out its plan in a climate of decreasing government funding.

The general approach in this Plan is based on employing adaptive strategies friendly to both the environment and people, by facilitating public participation and community development, and seeking corporate partnerships.

“To preserve and protect the natural environment and agricultural land, to support preservation of areas, site and features that illustrate and enhance the City’s heritage ...”

-Surrey’s *Official Community Plan*, (1-1 - 1-2).

“The City recognizes the need to maintain a clean, healthy environment and is committed to protecting and enhancing natural and environmentally sensitive areas by establishing parks, open spaces, protected habitats, and conservation areas.”

-City of Surrey *Official Community Plan*, (2-61).

Cornerstone Principles

Three cornerstone management principles have arisen from the development of the Plan as critical elements in managing Surrey's park natural areas: **sustainability, access, and communication among stakeholders.** These principles provide the philosophical foundation in stewarding park natural areas.

1. Sustainability

Sustainability means preserving and enhancing the ecological integrity and biodiversity of Surrey's park natural areas through public education and sanctioned practices of intervention (e.g., vegetation and wildlife enhancement, removal of invasive species, fire prevention, and enhancement uses of coarse woody debris). Wherever possible the array of diverse eco-systems associated with these natural areas must be managed to provide the life-supporting capacity of air, water, and soils—now and for the future.

2. Access

These measures of protection, however, must be balanced with measures of access, except in significant environmentally sensitive areas: residents and other users of all abilities should be able to experience these park natural areas for their well-being and in relative safety. They should be able to enjoy the recreational, ecological, and spiritual benefits that healthy natural areas offer. Where this balance is in question and will result in significant impacts to the value and integrity of natural areas, preservation of those values should be a high priority.

3. Communication Among Stakeholders.

With interest in protecting and using natural areas growing exponentially, public land managers must increase communication among stakeholders to develop common ground and understanding for their management. Divergent viewpoints, conflicting needs and requirements means sound communication strategies will be very important for encouraging community participation with community organizations, environmental advocacy groups, or City volunteers. Improved communication with these constituents through written materials, presentations, public meetings and City-sponsored events should help increase community ownership, individual responsibility for natural areas, and assist policy-makers in critical issue resolution.

Sustainability...
“use, development, and protection of natural and physical resources in a manner or at a rate that enables people and communities to provide for their social, economic, and cultural well-being, and for their health and safety.”

-Dictionary of Natural Resource Management, (309).

Natural Areas Management Themes

Throughout the Natural Area Strategic Management Plan, **recurrent themes** have presented themselves and require highlighting and discussion. These themes will require constant attention and vigilance, and should always be forefront in any management processes and planning initiatives that address natural areas. The principles and themes presented here lay the foundation for the management of Surrey's natural areas.

Preservation and Protection

To protect, enhance, and sustain the biodiversity and health of park natural areas strategic management measures must be taken to prevent unnecessary loss and degradation of park natural areas. This means implementing management strategies that meet the needs of the present without compromising the needs of the future. It means practicing a land stewardship ethic that integrates the growing and nurturing of natural area vegetation with strategies for the conservation of soil, air and water quality, and wildlife and fish habitat. Park planning and development initiatives should place high priority on the values of natural areas as defined in this Plan.

Recommendations

Although throughout the Plan there are many specific recommendations that either directly or indirectly address the theme of preservation and protection of natural areas, the following general recommendations are critical.

- Implement organized and scheduled inspections, monitoring and management activities, and annual work programs directed at protecting the vegetation and wildlife of park natural areas
- Develop a comprehensive inventory database of all park natural areas that will facilitate long term preservation and conservation goals
- Develop and adhere to the prescribed standards and specifications within this Plan for any land development
- Make active and ongoing efforts to acquire additional natural area parkland, and make efforts to reconnect and defragment existing natural areas

Community Development is...
a process of meaningful citizen participation in decision-making, in actively helping to carry out those decisions and in the evolution of the community.
-1998 *Update Report Card on the Parks, Recreation and Culture Master Plan* (16).

Accessibility

Protective activities must be balanced with opportunities for residents of all abilities to access and enjoy many of the park natural areas. Recreational uses of these areas include highly physical activities as well as those that offer solitude, educational and social opportunities, tourist use, and healthy transportation alternatives. By far, the most important management responsibility for providing access is trail development and maintenance.

Throughout this development process one of the most important emerging themes has been **access**, for this reason it has been given its own strategic thrust. The multitude of recommendations that address the theme of access and recreation are detailed in the *Access and Recreation Management Strategy*.

Collaboration and Community Participation

Collaboration with other City Departments (Engineering), senior government agencies (Provincial Ministry of Environment, Lands and Parks), and non-profit environmental groups is essential for success. Each agency or group has some stake and mandated responsibility in the stewardship and management of the natural environment. Surrey is a City of volunteers, yet it can still work more diligently to recognize and mobilize its community potential. Many residents are concerned about the stewardship of the City's park natural areas and would like to see them properly managed, to both preserve their natural values and provide for access and recreation.

Recommendations

The recommendations for achieving this local level of engagement address four general initiatives aimed at nurturing a sustainable community.

- Recognition of current volunteers and attraction of more volunteers for stewardship of natural areas including waste removal and clean-up assistance; organization of community events geared for volunteer participation
- Facilitation of public participation in the planning, designing, construction and maintenance of natural areas
- Creation of partnerships and collaborative initiatives between the City and community groups
- Adoption a community development service delivery model that fully engages the public in natural area management, in keeping with the Departmental Strategic Plan

Advisory groups for Surrey's Urban Forest Parks have been a good beginning, but more must be done to fulfill the City's commitment "to work together, to build, to nurture and to renew relationships in order to achieve common goals" (*Parks, Recreation and Culture Department Strategic Plan*, 3).

Education

The management of natural areas requires a major effort to educate the public. Education at the community level is seen as the only truly effective method of sustaining the environment.

It is critical that the City provide residents and visitors alike with:

- Information on, and an understanding of, the implications of ecological sustainability
- Opportunities to, and an understanding of, the need to take responsibility for protecting natural areas themselves

Educational initiatives should address a number of subjects, ranging from the effects of garbage and dog feces on the environment (and the costs of clean-up), to the differences between indigenous and invasive species, the degradation caused by unauthorized trails, and the differences between a naturally wild aesthetic and the messy eyesores that can result from human traffic in a natural area. A number of different methods can be mobilized to contribute to this effort.

- Signage, brochures, and newspaper articles
- Awareness-raising events, such as the Parks Division's annual "Environmental Extravaganza"
- Presentations to both the community and the City staff

These initiatives can help protect the ecology of natural areas, reduce costs, and increase community stewardship. They also have the additional benefit of enhancing the image and profile of the Parks Division and the City overall.

Recommendations

The following general recommendations are suggested to address the theme of education.

- The Parks, Recreation and Culture Department should undertake an Environmental Education Plan to clearly determine the



"Restoration of the role of communities as potential 'incubators' of environmental awareness should become one of the primary goals of global education"
- *Environmental Governance*, Hempel (238).

- Department's role in providing environmental education and interpretation
- The Parks, Recreation and Culture Department, and in particular the Parks Division, should be a civic leader in providing natural area education and interpretation opportunities for the general public
 - Collaborate and form partnerships with agencies and stewardship groups in the delivery of educational messages

Health, Safety and Liability

Residents need to know and that they can walk, cycle, jog or ride a horse through natural areas in relative safety. Additionally, the City needs to consider the establishment of operational and maintenance service levels and standards in order to comply with its inherent duty and standard of care in providing for safe natural area experiences, and thereby manage its risk and liability exposure. Measures and standards are recommended throughout various Strategy Sections of the Plan that address providing for public safety and reducing City liability.

Recommendations

The following general recommendations are suggested to address the theme of health, safety and liability.

- The natural area annual management plans and planning initiatives should comprehensively address the health and safety of park patrons
- The City's risk and liability exposure should be a high priority in the development of natural area management plans and planning initiatives

Aesthetics

Aesthetically appealing park natural areas are important for a number of reasons. First, through their visual and design features, they generally heighten the enjoyment of these areas for users. Second, aesthetically pleasing parkland signals active vigilance of these areas to park visitors and those who are less sensitive to the environment and thus discourage destructive and negligent behaviours. Effective aesthetics also enhance tourism opportunities, and a well cared for and well-designed park is by itself an effective vehicle for positive public relations.

“Parks and open spaces increase property value – and therefore, tax revenue, on adjacent land; many developers are automatically including parkland and golf courses as marketing features.”
- *The Benefits Catalogue*, (145).

“The empirical evidence from 20 of the 25 studies reviewed supported the premise that parks and open space contributed to increasing proximate property values.”
-John L. Crompton, *Parks and Recreation Magazine*, (January, 2001).

Community involvement and awareness should help reduce the unsightly messes left by illegal dumping, trail destruction and make a strong contribution to the City's image. Increased awareness will also help residents and visitors learn the distinction between undesirable unruliness and the desirable natural wildness of foliage.

Recommendations

The following general recommendations are suggested to address the theme aesthetics in natural areas.

- The aesthetic qualities of park natural areas should be founded on the cornerstone principle of sustainability and be measured in consideration of the value of natural areas
- Management programs and initiatives to increase aesthetic appeal of park natural areas should be implemented to concurrently address the issues of ecological destruction and respect for natural areas

Preservation of Property Values and Economic Development

There are a number of economic motivations for preserving Surrey's natural areas. Residents of Surrey are inherently motivated to protect the value of their properties. A healthy, well-maintained park system is also a proven amenity that enhances and increases the livability of a community. Additionally, eco-tourism and activities associated with enjoyment of park natural areas, such as bird watching and cycling, can attract tourists that substantially contribute to the economic development of the City. Throughout the Natural Area Management Plan there are many recommendations that will support the preservation of property values, increase livability and socio-economic values, and assist the City's economic development.

Recommendations

The following general recommendations are suggested to address the theme of preservation of property values and economic development.

- The management plans and planning initiatives for natural park areas should consider the impact and potential for maintaining and increasing the livability and socio-economic values of the community
- The City should recognize the value of eco-tourism and undertake initiatives that attract tourists to the City to enjoy

outdoor activities and are compatible with the cornerstone principle of sustainability

Conflict Management

The Plan addresses a number of potential and real issues of conflict that arise over park natural area use. These include disagreements over liability for tree hazards incidents, user conflicts in parks (e.g. dog owners, cyclists, pedestrians) or problems of resident encroachments into parks (e.g. fences). Again, community involvement, good public relations, and effective education strategies can often successfully prevent or diminish the intensity of such conflicts.

Recommendations

The following general recommendation is suggested to address the theme of conflict resolution in the use of park natural areas.

- Publicly inclusive conflict resolution processes should be undertaken, to ensure the principles, strategic directions, goals and objectives of the Natural Areas Management Plan are fully considered in decision-making

Cost-Effectiveness

Throughout the process to formulate a wide range of the Plan's recommendations and standards, strong consideration was given to ensuring they were both cost effective and efficient. The Plan is intended to continually address the need to provide services in a challenging financial climate. From emphasizing improved maintenance and construction techniques, to increased volunteerism, and recommending consolidation of natural area management into one team of technically trained staff.

Recommendations

The following general recommendations are suggested to address the theme of cost-effectiveness.

- Natural area management operations work-plans and development projects should be implemented with cost-effective strategies
- In addition to general tax revenues, alternate funding sources should be actively pursued to conduct natural area management programs and initiatives

Natural Areas Management Themes

- Partnerships with corporate, not for profit and other government agencies should be actively pursued to assist with the management of natural areas

Biodiversity Conservation

The health of the planet depends upon conserving biodiversity and sustaining the viability of ecosystems. The City's park natural areas are representative of a rich variety of habitats, including forests, grasslands, meadows, wetlands, rivers and intertidal zones. These habitats support 1,000's of species of vegetation and fauna.

Natural areas are an integral part of the biodiversity 'puzzle', acquisition, and management of natural areas should consider the critical need to conserve biodiversity.

Recommendations

The following general recommendations support the theme of biodiversity conservation.

- Acquire a wide variety of natural areas for parkland that are representative of the diverse habitats within the City and region
- Implement natural area resource management plans that directly support the need to conserve and promote biodiversity
- Identify threatened and endangered species and habitats within natural areas as a management priority.

Strategic Thrusts

The following is a summary of seven strategic thrusts for managing Surrey's natural areas. For a comprehensive analysis of each strategic thrust, complete with operational program recommendations and detailed issue analysis, please refer to their stand-alone documents, which are available upon request.

Vegetation Management Strategy

Many natural areas have been seriously disrupted by rapid growth and development, and most have been somewhat disrupted. Some species have been eliminated, and many are now endangered or threatened, resulting in a significant loss of biodiversity. To compound this degradation, new aggressive plant species have been introduced into these areas, further displacing native vegetation and animals. Counter-productive management practices have also compromised Surrey's natural area vegetation resources. For example, a lack of resource inventory, non-ecosystem-sensitive management objectives, and non-adaptive planning and development have all exacerbated the problem.

Principles for Vegetation Management

The following principles provide the philosophical foundation for the development of a strategic direction, goals and objectives for vegetation management in park natural areas. The informing principles are that the vegetation:

- Constitutes a valuable global, regional, and community resource, and is critical to wildlife habitat
- Essential to sustainability and biodiversity
- Contributes significantly to park experiences
- Contributes significantly to the cultural and heritage values of the City

Strategic Direction for Managing Vegetation

The primary strategic direction is to protect, preserve and enhance the native vegetation communities, providing for both wildlife habitat and worthwhile recreational opportunities.



Recommendations

To achieve this direction it is recommended that the City:

- Adopt a sustainable approach to managing natural area vegetation
- Integrate vegetation resource management plans with other natural area resource management plans and initiatives
- Actively intervene and manage the vegetation resource to achieve sustainability
- Conduct and maintain an inventory of natural areas
- Implement annual vegetation management programs to ensure the long-term sustainability of the resource
- Monitor the condition of the vegetation resource over a long time
- Regenerate and restore the vegetation resource by conducting activities such as planting
- Control and eliminate invasive plant species
- Implement a zero tolerance for private property encroachments onto natural areas
- Develop site-specific integrated management plans for natural area parks
- Undertake to educate the general public about the requirements of natural area vegetation



Fauna Management Strategy

Surrey's diverse array of landscapes and natural features provide important habitat for a wide range of wildlife species. While the City has identified and mapped environmentally sensitive areas, there has been relatively scant attention paid to the specific needs of wildlife, with perhaps the exception of fish resources. It is now time for the City to take a leadership role in preserving and enhancing the health of fauna resources to protect habitats and ecological functions. Surrey's natural areas provide a number of important features that directly and indirectly support wildlife resources. Some of these are as follows:



Strategic Thrusts

- Habitats for common, rare, endangered or uncommon fish and wildlife species (both resident and migratory)
- Travel corridors and resting places for migratory species
- Breeding and nesting areas for colonial species
- Areas for research, education, and enjoyment of wildlife
- Genetic diversity and species richness



Just as the City accepts its role in providing for recreational amenities within its parkland, such as tennis courts or playgrounds, it also has a mandate to provide for a diverse range of wildlife habitat. Significant environmental, sociological and economic benefits accrue from adopting this strategic direction. Surrey residents expect the City to participate in the care of wildlife, in part to meet the accepted responsibility of environmental sustainability and for their viewing enjoyment.

Principles for Fauna Management

The following principles provide the philosophical foundation for the development of a strategic direction, goals and objectives for managing fauna in park natural areas. The informing principles are that wildlife in park natural areas:

- Constitute a valuable community, regional and global resource
- Contribute significantly to biodiversity and environmental sustainability
- Contribute significantly to park experiences in general
- Contribute significantly to the cultural and heritage values of the City

Strategic Direction for Fauna Management

The primary strategic direction for fauna management is to acquire habitats and manage natural areas to ensure the long-term viability and diversity of global, regional and local faunal resources. This includes the protection, enhancement and restoration of a range of species and habitats for fish, wildlife, and other fauna.



Relocating salamander eggs

Recommendations

To achieve this direction it is recommended that the City:

- Acquire a wide range of faunal habitats that promote the principle of biodiversity
- Identify and designate sensitive wildlife species and habitats to be protected; restrict and prohibit access and recreation to these habitats
- Utilize management techniques, such as wildlife tree creation, to provide for wildlife
- Implement the principle of no net loss of habitat when planning for park natural area uses that may negatively impact sensitive wildlife habitat
- Protect threatened and endangered species habitat
- Re-introduce extirpated species to appropriate habitat
- Monitor wildlife populations
- Integrate vegetation resource management plans with fauna requirements; develop conservation plans
- Ensure all major park planning processes adequately identify wildlife habitat and resources
- Undertake habitat restoration, rehabilitation and enhancement initiatives
- Undertake public education initiatives to develop an understanding of wildlife requirements



Access and Recreation Management Strategy

The greatest challenge facing managers of urban natural areas is the task of fulfilling both the environmental mandate to protect and preserve sensitive ecosystems, and the recreational demands and needs of park users. Recreational activities provide the important values of sensory experiences, solitude and exercise, but they can also be disruptive and destructive to natural systems.

Because these activities are facilitated primarily through trail networks, the Access and Recreation Management Strategy devotes significant attention to the provision and maintenance of trails, giving consideration



Strategic Thrusts

to park patron safety and enjoyment, but at the same time trying to minimize or reverse environmental impacts and reduce long-term costs.

Principles for Access and Recreation Management

The following principles provide the philosophical foundation for the development of a strategic direction, goals and objectives for managing access and recreation in park natural areas. The informing principles are:

- Natural areas are valuable ecosystems and should be respected
- Wildlife should be protected
- Natural area parks benefit of the general public and should be shared
- Fragmentation of natural areas should be limited when providing access
- Recreational activities must be compatible with the site and should not unduly impact significant habitats and vegetation
- Recreational activities on one site should be compatible with each other
- Access and recreation activities should be legitimate and authorized



020 - Elgin Heritage Park

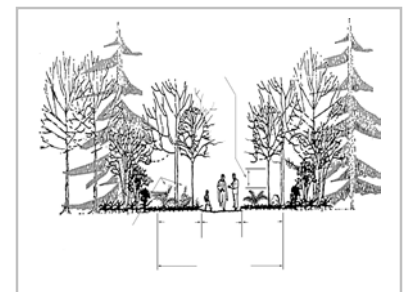
Strategic Direction for Access and Recreation Management

The primary strategic direction for managing access and recreation in natural areas is to meet the recreational needs of residents and visitors yet maintain the critically important ecological integrity of natural areas.

Recommendations

To achieve this direction it is recommended that the City:

- Provide legitimate access and recreational uses of park natural areas for people of all abilities
- Provide a high quality trail system as per the standards and specifications in the Access and Recreation Management Strategy document
- Comprehensively plan for access and recreation activities in park natural areas



Strategic Thrusts

- Implement maintenance and operational work plans that facilitate safe use of natural areas by the public
- De-commission unauthorized trails and reverse illegitimate uses of park natural areas (such as private property encroachments)
- Implement the dog access strategy as found in the Access and Recreation Management Strategy
- Integrate access and recreation plans with vegetation and fauna resource plans

Tree Hazard Management Strategy

Trees in Surrey’s parks can present potential danger to person and property simply because, by their nature, they decay and die. In Surrey’s natural areas, such dangerous conditions can occur on trails and in places where forests are adjacent to private property, urban and rural roadways, and other similar “targets” that could be damaged in the event of a tree failure.

The Risk Management Division of the City reports that tree failures and incidents are the third highest cause of claims, after roads and drainage claims, and that these claims have shown a steady increase over the last five years, by approximately 400%.

The purpose of the tree hazard management strategy is to manage tree failure risk, reduce liability, enable good conflict management, enhance forest ecology, and provide an overall reasonable standard of care in managing tree hazards in natural areas.



Principles for Tree Hazard Management

The following principles provide the foundation for the development of a strategic direction, goals, objectives and management program for tree hazard in natural areas. The informing principles are that:

- The City has a duty and standard of care in managing tree hazards
- The tree hazard management programs should be conducted using ecologically sensitive techniques

Strategic Direction for Tree Hazard Management

The primary strategic direction for managing tree hazards, is to provide for safe use, reduced corporate liability and increased benefits to natural area ecosystems.



Tree failure due to poor structure

Recommendations

To achieve this direction it is recommended that the City:

- Prevent tree failures by planning and designing parks that consider potential risks from wind throw and tree failure
- Prevent tree failures by protecting trees during development and construction
- Prevent unnecessary damage to trees by adopting appropriate park maintenance practices
- Inform park users of the risks and dangers so they can make informed decisions about entering and using natural areas
- Conduct regular and prioritized scheduled inspections of park natural areas for tree hazards
- Respond to requests for tree hazard inspections in a timely manner
- Conduct tree hazard assessments in accordance with industry standards
- Prescribe hazard tree abatement work that not only eliminates the hazard, but also contributes to ecological health
- Implement tree failure tracking and pattern analysis

Fire Management Strategy

Logging history, combined with long-term fire suppression, has substantially altered natural succession within many of the natural areas of Surrey. Fuel accumulation, close proximity to private property and introduced species have all contributed to undesirable changes in the forest fuel complex. In the absence of a fire management program, there is a high probability that the risk of fire will increase in many of the natural area ecosystems of Surrey.

In Surrey, of greatest concern is the large percentage of fires that are deliberately set in close proximity to facilities and structures adjacent to



Illegal fire pit

or within natural areas. These types of fires pose the greatest risk to property and public safety, and are considered the most difficult to control.

Principles for Fire Management

The following principles provide the platform for the development of a strategic direction, goals, objectives and management program for fire management in natural areas: The informing principles are:

- Preserve and protect the integrity of natural area ecosystems
- Protect human life and private property



Strategic Direction for Fire Management

The primary strategic direction for managing fire in park natural areas is to protect people, ensure the long term conservation of natural areas; protect habitat and wildlife; reduce fire hazard; ensure a high level of preparedness for fire suppression and to minimize liability.

Recommendations

To achieve this direction it is recommended that:

- The Parks, Recreation and Culture Department be responsible for all fire-related inventory, mapping, assessment, prevention, detection, and rehabilitation
- The Surrey Fire Department is to be responsible for initial attack, suppression, and mop-up of all fires
- The Parks, Recreation and Culture Department work closely with the Fire Department in all aspects of the fire management strategy
- A comprehensive inventory of fire risk be undertaken
- Prioritized prevention activities be undertaken based on the risk inventory
- Implement fire detection activities and initiatives
- Fire suppression and mop-up be consistent with other natural area management goals (i.e., vegetation and fauna)
- Fire rehabilitation be conducted promptly and appropriately from an environmental and ecological perspective



- Public education programs be developed to increase awareness of risk and consequences of fire in park natural areas

Coarse Woody Debris Management Strategy

Coarse woody debris (CWD) provides a nutrient source that is essential for living plants to begin their lifecycle. It is made up of dead and downed wood such as logs, uprooted stumps, large branches and coarse roots, in all stages of decomposition. The arrangement, diversity, distribution and relative abundance of CWD are critical in the maintenance of a healthy natural area.

Over time, there has been a serious decline in the abundance and diversity of CWD in natural areas, particularly within forest ecosystems, in Surrey. Logging and park management practices, and even residents themselves, have contributed to this deficiency. In the past, park management has tended to focus on making the forest “clean” and “tidy,” and residents have often hauled away large branches and logs for disposal at landfills.



Principle for Managing Coarse Woody Debris

The following principle provides the foundation for the development of a strategic direction, goals, objectives and management program for coarse woody debris management in park natural areas: The informing principle is:

- Coarse woody debris is an integral part of healthy natural area ecosystems

Strategic Direction for Coarse Woody Debris Management

The primary strategic direction for managing CWD in natural areas is to integrate CWD into the stewardship of natural areas to maximize natural area ecosystem health and contribute to sustaining or enhancing biodiversity.



Recommendations

To achieve this direction it is recommended that the City:

- Adopt coarse woody debris guidelines, standards and specifications found in the CWD Management Strategy document.
- Establish a balance between ecosystem health, public safety and aesthetics when providing for CWD in natural areas.
- Establish CWD as an integral part of vegetation and fauna management.
- Educate the public on the values of CWD.
- Conduct regulatory and enforcement activities to limit the removal of wood from natural areas.
- Re-introduce CWD to natural areas deplete of coarse woody debris.
- Enhance CWD by cutting, shaping and companion planting.

Yard Waste and Refuse Management Strategy

Surrey's natural areas are frequently viewed as vacant, derelict lands and are often used for disposal of unwanted refuse. With its large inventory of natural areas in an urbanized environment, Surrey experiences a high incidence of illegal dumping. Residents and commercial and industrial contractors often opt for illegal dumping as an easy method of waste disposal. Such dumping in natural areas results in a very high cost to the environment. In most cases, the wastes contain harmful substances that will negatively affect the fragile habitats of natural areas. These negative impacts include unsightly messes, unpleasant odours, pollutants, pest rodents and insects, erosion, invasive species, hazard trees, and root damage—with the further effects being lowered property values and costly clean up.

Principles for Yard Waste and Refuse Management

The following principles provide the platform for the development of a strategic direction, goals, objectives and management program for yard waste and refuse debris management in park natural areas. The informing principles are that:

- Ecological and social values of natural areas are to be preserved



- Yard waste and refuse threaten natural area ecological and social values

Strategic Direction for Yard Waste and Refuse Management

The primary strategic direction for managing the deposition of yard waste and refuse in natural areas is to implement programs that change public perception and attitude to reduce the incidence of dumping in natural areas and conduct activities to reverse the impact of dumping in natural areas.



Recommendations

To achieve this direction it is recommended that the City:

- Conduct educational and informational initiatives aimed at changing public perceptions and attitudes toward natural areas
- Implement the yard waste and refuse management operations program found in the *Yard Waste and Refuse Management Strategy* document
- Develop strong community and neighbourhood relationships for stewardship of natural areas
- Immediately devote resources to removing waste from natural areas
- Change current park operation and maintenance practices where 'spoil' is indiscriminately deposited in natural areas
- Adopt a zero tolerance for the deposition of wastes into natural areas unless approved by the land managers, currently the Urban Forestry and Environmental Services Section of the Parks Division
- Develop a Parks Division organic-waste disposal program
- Utilize existing regulations and by-laws to fine and prosecute offenders



References

—. *The Brundtland Challenge and the Cost of Inaction*. Eds. A. Davidson and M. Dence. The Royal Society of Canada. Halifax: The Institute for Research on Public Policy, 1988.

—. *Caring for the Earth: A Strategy for Sustainable Living*. Gland, Switzerland: IUCN, UNEP, and WWF, 1991.

—. *Dictionary of Natural Resource Management*. Eds. Julian and Katherine Dunster. Vancouver, UBC Press, 1996.

—. *An Economic Framework for Sustainability*. British Columbia Round Table on the Environment and the Economy, 1993.

Hempel, L.C. *Environmental Governance: The Global Challenge*. Washington, DC: Island Press, 1996.

—. *The Global Partnership for Environment and Development: A guide to Agenda 21*. UNCED. Geneva: 1992.

—. *Living with the Land: Communities Restoring the Earth*. Eds. C. Mayer and F. Moosang. Philadelphia and Gabriola Island: New Society Publishers, 1992.

British Columbia. *Annual Report 1999*. Ministry of Environment, Lands and Parks Government of British Columbia, 1999.

Planning and Development Department. *Official Community Plan*. City of Surrey, 1996.

—. *Our Common Future: World Commission on Environment and Development*. Oxford: Oxford University Press, 1987.

Parks, Recreation and Culture Department. *Parks, Recreation and Culture Department Strategic Plan*. City of Surrey, 2000.

References

Parks, Recreation and Culture Department. *Parks and Recreation Master Plan*. City of Surrey, 1996.

Parks, Recreation and Culture Departments, *Urban Forest Management Task Force*. City of Surrey. 1996.

Parks, Recreation and Culture Department. 1996-2000 *Marketing Plan: New Directions in Leisure Excellence*. City of Surrey, 1996.

Parks, Recreation and Culture Department. *1998 Update: A Report Card on the Master Plan*. City of Surrey, 1998.

j:\park-rec\parks\natural areas management plan\the plan\overview\final doc\final draft of overview with photos.doc

LLG 3/14/03 2:15 PM