

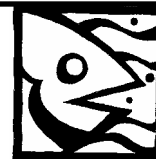
Kanaka Creek

REGIONAL PARK
MANAGEMENT PLAN



JULY 2004





Greater Vancouver Regional District
4330 Kingsway, Burnaby, British Columbia, Canada V5H 4G8

Parks Department
Telephone (604) 432-6350
Fax (604) 432-6296

June 4, 2004

File: PA-03-01-KAN

Dear Park Supporter:

Re: Kanaka Creek Regional Park Management Plan

The Kanaka Creek Regional Park (KCMP) Management Plan was adopted by the Greater Vancouver Regional District Board of Directors on April 30, 2004 and, on behalf of the GVRD, I am pleased to provide you with this document.

The KCMP outlines the goals, objectives, policies, land-use guidelines, and partnership initiatives for the park's management and development over the next 20 years. It also lays the groundwork for continuing to preserve large portions of the park within the context of a rapidly urbanizing area, while providing for a portion of the region's recreation requirements.

As in any worthwhile endeavour none of this could have happened without the untiring involvement of those members of the public who took an interest and made a commitment to participate in the park planning process. On behalf of the GVRD Parks Committee, I thank all those who participated in this effort and encourage you to stay engaged in the implementation and monitoring of the Plan. We trust that this will be a successful plan that provides for the careful protection of this distinctive natural environment while increasing regional recreation opportunities.

GVRD currently operates 22 parks open to the public and 1 greenway for the benefit of all residents. I hope you have an opportunity to enjoy all of them.

Yours Sincerely,

Cllr. Judy Higginbotham
Chair, GVRD Parks Committee
JH/WM/mlt



ACKNOWLEDGEMENTS

Over the four years of work on the plan, many outside partners, educational institutions and agencies supplemented GVRD's research and planning resources to provide a more comprehensive Management Plan for the size and complexity of the park. In the end we pulled together a highly skilled group of contributors and consultants who made this their labour of love. Now it is our turn to thank them and all those who contributed. It includes those who sat on committees and groups including representatives from Kanaka Education and Environmental Partnership (KEEPS), Katzie First Nation, Alouette Field Naturalists, Ministry of Water, Land and Air Protection, Department of Fisheries and Oceans, District of Maple Ridge and many other individuals and groups. Thanks also go to our key environmental consultants who all provided valuable assistance at various stages of the project: Glen Ryder, Mark Adams of Envirowest Consultants Limited, Helmut Urhahn of Tera Planning and to our planning consultant, Patrick Yarnell. Special thanks go to master level students of Landscape Architecture (UBC 2003) who, under the guidance of their professors Patrick Mooney and Stephen Shepard, did exemplary work in studies related to the creek, watershed and wildlife habitat creation.

Special thanks go to: District of Maple Ridge staff Kim Grout, Mike Davies, Jane Pickering, Bruce McLeod and Mike Murray who provided valuable time and resources to the process; Bell-Irving Hatchery Manager John Heaven for his ongoing technical advice for more than 20 years; lastly thanks to all the many GVRD Parks staff who provided information, technical work and critical feed-back especially Gordon Smith, Will McKenna, Rob Keip and Janice Jarvis.

Finally, we want to thank all of those members of the public who regularly attended meetings and contributed their valuable time and insights throughout the years, particularly Bill Archibald.

Wendy DaDalt
GVRD Parks Area Manager
East Area

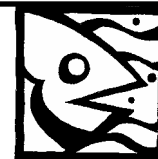


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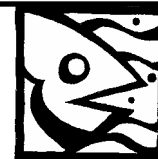
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1.0 INTRODUCTION

1.1 Kanaka Creek and the GVRD Park System

The Greater Vancouver Regional District (GVRD) is a working partnership of 21 municipalities and one electoral area. The GVRD delivers utility services, park lands (Parks) for the community and provides regional level planning policies and implementation strategies.

Kanaka Creek Regional Park (KCRP) is one of 22 regional parks, 3 reserves and 3 greenways managed by GVRD Parks (Figure 1.1.1). Regional parks are located close to the Lower Mainland's population centres, but, in general, are larger wilderness-like parks created to provide recreation and education opportunities and offer protection of unique and sensitive natural features.

1.2 Kanaka Creek Regional Park Context

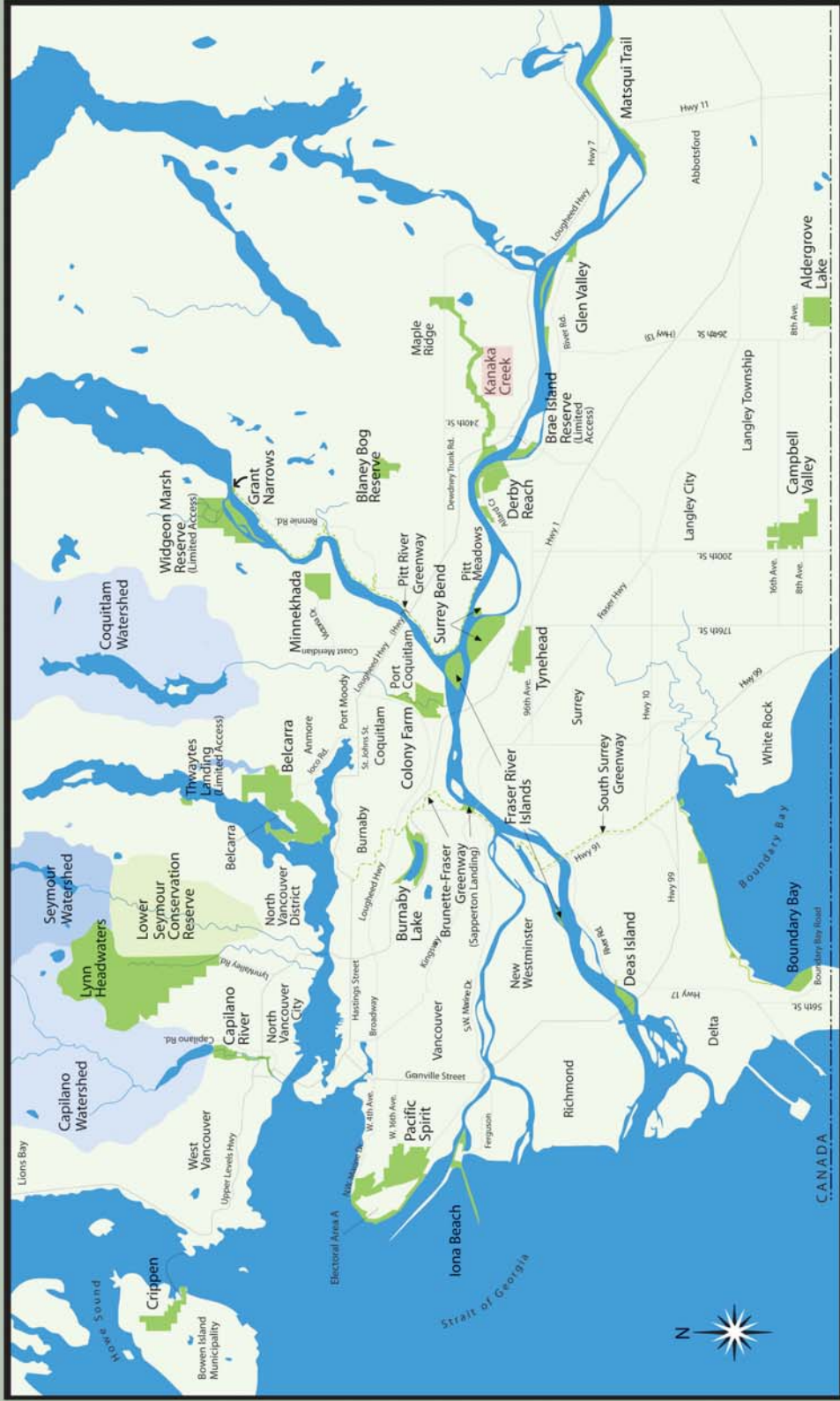
Kanaka Creek Regional Park is a 12 kilometer linear park, located on the north shore of the Fraser River in the District of Maple Ridge (DMR) (Figure 1.2.1), 50 kilometers east of downtown Vancouver. It contains Fraser River frontage, floodplain, riparian forest, steep canyons and upland forests.

The current land base, 413 hectares, embraces much of Kanaka Creek from its upper reaches flowing from Blue Mountain to its estuary and confluence with the Fraser River. Along its path, it grows from a small, tumbling creek into a winding river. The different creek-side natural areas, including mature forest, sandstone canyons and scenic marshes, provide important habitat for a variety of native plants and wildlife. Fish and wildlife in the park include salmon, trout, herons, woodpeckers, tailed frogs, weasels and bears. The diverse landscapes also offer visitors many recreation opportunities, including photography, walking, picnicking and canoeing.

The great diversity of geology, topography, climate, elevation, soils and cultural development in this relatively small area make the creek and park unique in the Lower Mainland. The creek's steeply incised banks are vulnerable to human impacts, but at the same time protect it from human intrusion.

KCRP is bound on the south by the Fraser River and to the north by Blue Mountain Provincial Forest. It encompasses the lower 12 km of Kanaka Creek's 22 km length and flows through a variety of land uses and undeveloped areas. The Riverfront and creek's lower reach area are adjacent to Maple Ridge's rapidly growing urban zones. The upper reaches of the park are surrounded by working agricultural land, rural residences and forested woodlands.

In 1966-67 Kanaka Creek was selected and approved as a regional park by the then Vancouver-Fraser Park District, forerunner to the GVRD Parks system. The well-visited beauty of the Cliff Falls area; the salmon, trout and steelhead stocks; the variety of trees and plants; and the significance of its early cultural history were all strong arguments in favour of establishing Kanaka Creek as a park. It was also a unique opportunity to protect a significant length of a vulnerable creek.



North

Regional Park System Plan

Figure 1.1.1 GVRD Parks System Map

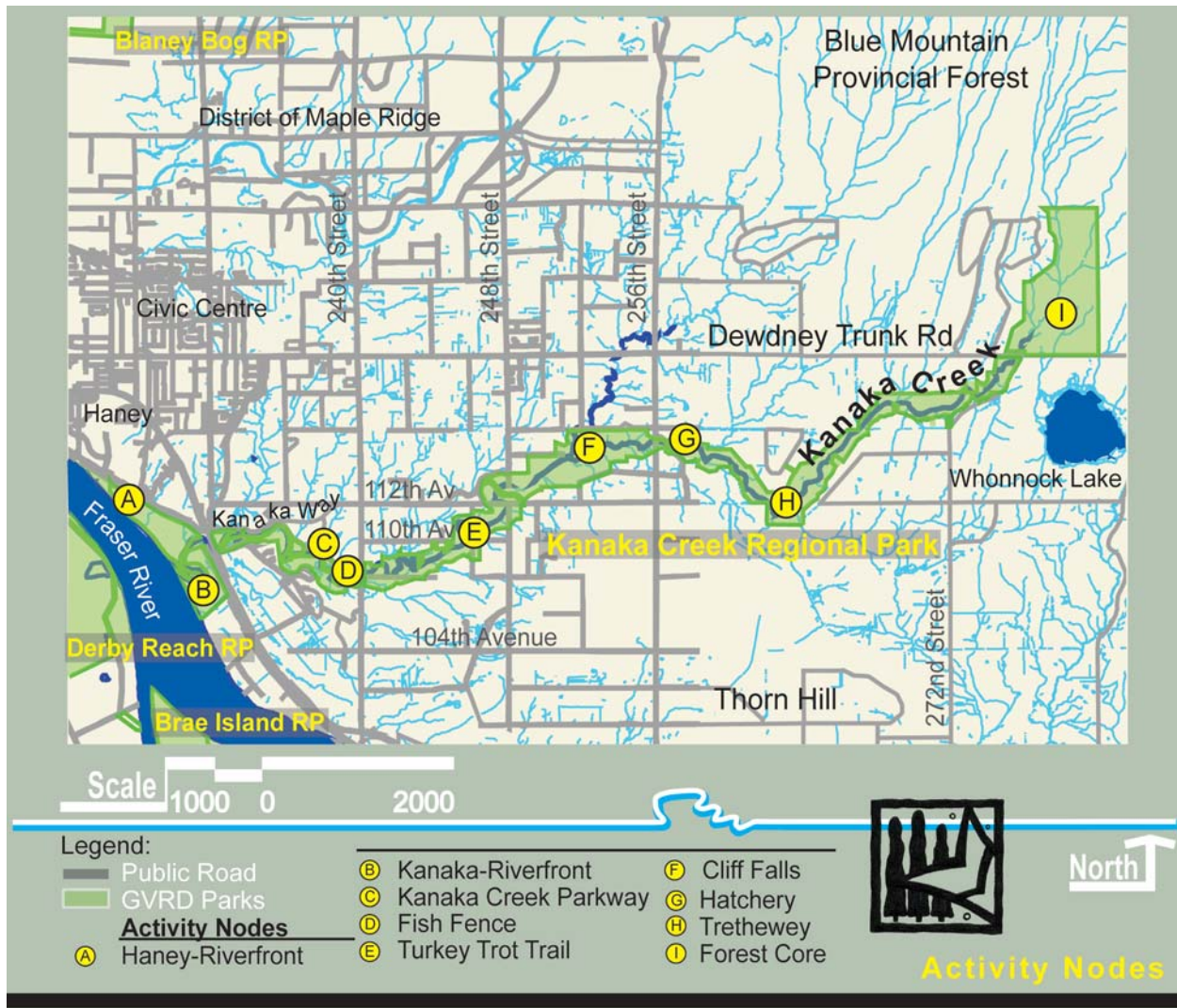


Figure 1.2.1 Kanaka Creek Regional Park

Land acquisition began with the entry of Maple Ridge into the regional park program in 1972. A boundary review took account of new residential development, particularly in the Cliff Falls area. The working boundary and its associated acquisition strategy were established in 1978. GVRD began to assemble parts and pieces of the park from willing sellers and the District of Maple Ridge (DMR) conveyed a significant parcel in the area of Cliff Falls. The 102-hectare Forest Core was transferred in 1980 from the former BC Ministry of Lands, Parks, and Housing. In the 30 years since 1972, the original acquisition plan for KCRP is almost completed, with approximately \$13,000,000 spent for over 280 parcels of land. Only 8 parcels (<5 ha) of land remain to be acquired as of 2004.

The initial concept plan for KCRP, completed in 1981, envisaged a linear park that would protect both banks of the stream with nodes throughout the park for a variety of activities. The plan proposed three activity areas with connecting trails and fishing corridors, and a wildlife sanctuary between the Lougheed Highway and 240th Street (PLC 1981). A subsequent plan for the Kanaka Riverfront activity area directed most of the development during the 1990s. Appendix A – Table A and Figure A lists and locates existing facilities in the park.

GVRD Parks Mission Statement is:

To protect and care for a legacy of diverse ecosystems, wildlife and features which represent the region and provide outstanding opportunities for outdoor recreation, education and community participation.

Sustainable Region Initiative

The GVRD's Sustainable Region Initiative is an evolving and overarching approach to managing regional services, which guides the GVRD's overall corporate policies. It requires that all plans consider the long term social, economic and environmental implications of programs and facilities prior to adoption.

1.3 Purpose of the Management Plan

The KCRP Management Plan guides how the park will be protected, developed and operated over the 20-year life of the plan. It identifies constraints and opportunities for various park uses, and clarifies the management intentions for the park.

The management plan presents the goals, objectives, guidelines and strategies for the park. The objectives, policies and strategies are subject to the park goal, guidelines and mission statement for the department.

1.4 The Planning Process

The KCRP Management Plan updates an initial concept plan prepared in the early 1980s and responds to public values heard during the planning process. The Plan incorporates findings from: GVRD's 1993 Major Parks Plan; DMR's 1996 Official Community Plan (OCP); the province's 1999 "Sensitive Stream" designation and recovery plan process; DMR's 2001 Master Planning for Recreation (PERC 2001); recent environmental and planning studies in KCRP, and on-going plan reviews.



Kanaka Creek

The planning process, carried out in partnership with Kanaka Education and Environmental Partnership Society (KEEPS), focused on issues to be resolved and opportunities to be enhanced. Public involvement was achieved through:

- A park visitor survey;
- A workshop series for stakeholder groups;
- Public open houses with questionnaires;
- Assistance from an Environmental Technical Committee (ETC);
- Participation in parallel processes such as the Sensitive Stream Recovery Strategy;
- Newsletters to summarize the planning process and provide opportunity for submissions and comments; and
- Review of the draft plans with partners, including KEEPS, First Nations and other agencies.

For planning, the park was divided into five park planning and management units" (Figure 1.4.1). Each unit tends to have its own physical characteristics and associated management issues.

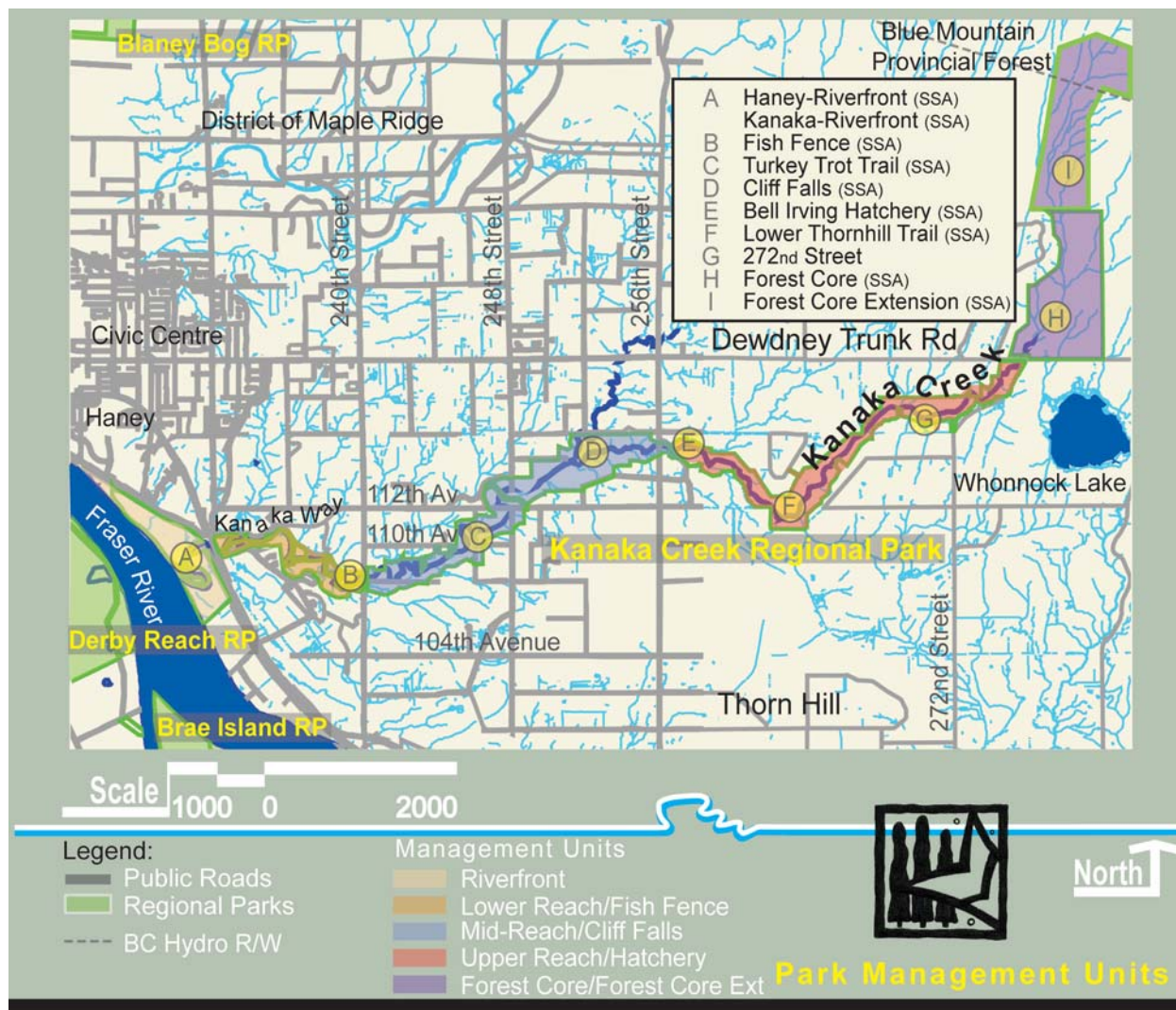


Figure 1.4.1 Park Planning Management Units and Special Study Areas

In addition to the management units, nine special study areas were identified. The designation of a special study area indicated that the location had significant issues to be addressed, such as routes for new trails, changes to creek crossings (improvements or closures), development of a new activity node or consideration of how to accommodate different users. The nine special study areas that evolved during the planning process were: Riverfront, Fish Fence, Turkey Trot Crossing, Cliff Falls, Hatchery, Trethewey Crossing, 272nd St. Crossing, Forest Core, and the Crown Land Connection north of Forest Core.

Parks Partnership Program

As part of the GVRD's Parks Partnership Program, KCRP benefits from the formal involvement of the Kanaka Education and Environmental Partnership Society (KEEPS) as a Park Association. KEEPS was established in 1998 and participates in planning activities for the park, delivers educational programs, operates the Bell-Irving Hatchery, and provides a forum for groups and individuals to coordinate activities and act as stewards for the park and watershed.

1.5 Summary of Stakeholder and Public Involvement

As seen in Appendix B, the planning process included several opportunities for stakeholder and public involvement. After launching the planning process and collecting feedback at a public 1999 public meeting and a 2000 open house, additional environmental studies were conducted. With the new information, the plan then went back to the public in 2003 as well as to KEEPS, stakeholders, DMR, ETC, Katzie First Nation and Kwantlen First Nation before the plan was taken to the GVRD Park Committee and Board for final approval.

In general, the public response showed strong support for the plan based on its appropriate weighting of environmental, social and economic opportunities and constraints. The plans shown to the public recommended limited facility development, increased levels of outside agency cooperation, enhanced environmental protection measures, and expansion of the park and community trail system.

The main themes that had a consistently high level of acceptance for the park were:

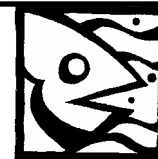
1. Environmental quality (maintain and enhance) ;
2. Education (provide additional opportunities);
3. Recreation facilities and uses (provide additional opportunities but minimize impacts);
4. Boundary encroachments (education and enforcement); and
5. Resourcing (find resources to implement plans and studies by GVRD Parks and partners).

At the final open house in April 2003, a presentation was made to the public and information was presented on management issues, draft objectives, strategies, and locations of special study areas. The public was then asked to provide feedback on the draft management plan. Aside from general, positive comments, the other themes receiving multiple comments focused on the need to protect the headwaters of Kanaka Creek by expanding the park northward up Blue Mountain, and the desirability of protecting the creek and its tributaries from urban development impacts in the lower reaches.

In subsequent Blue Mountain stakeholder meetings, dirt bike and all-terrain vehicle advocates voiced concern that GVRD's proposed expansion of the Forest Core and Greenway use of the BC Hydro ROW would displace their historic use of the area. This interest will be considered in the future Greenway sector plan review and is an ongoing consideration in recreation management planning for the Blue Mountain Provincial Forest lead by the Province of BC.

1.6 Planning Considerations

The following were considered during development of the plan.



Regional Planning Context

The 1996 Livable Region Strategic Plan (LRSP) is Greater Vancouver Regional District's (GVRD's) regional growth management strategy. It provides a vision for livability in the community and a framework for making regional land use and transportation decisions. Municipalities like DMR utilize this higher level policy framework when planning and implementing their official community plan (OCP), bylaws and development regulations. The LRSP has four fundamental strategies:

- Protect the Green Zone
- Build complete communities
- Achieve a compact metropolitan region
- Increase transportation choices

A fundamental goal of the plan is to concentrate growth and increase residential densities as the regional population expands. The plan identifies areas known as Growth Concentration Areas (GCA) to be a focus for metropolitan growth. Plans call for 70 percent of the region's population to live in GCAs by 2021 (currently 67 percent). This strategy minimizes land consumption, provides greater levels of servicing efficiency, enhances environmental protection, makes public transportation systems more accessible and efficient, encourages walking and cycling, provides lower cost housing and concentrates services.

The region has two geographical growth limitations: the mountains and ocean, and administrative boundaries such as the Green Zone and Agricultural Land Reserve (ALR). Besides the delineation of the Metropolitan Core (Vancouver) the plan designates eight Regional Town Centres (RTCs). These are to be considered alternate growth centres so that work and living opportunities would be more geographically attuned. Maple Ridge is one of the designated growth centres but is not included in the GCA. Population density increases in many of the RTCs have been significant, topped by Coquitlam Centre which increased by almost 300 percent from 1991-2001. Maple Ridge Centre on the other hand saw the least density increase at 2.7 percent, however there is good reason to believe that this will change in coming years as the area's strategic location, attractiveness and improved transportation access is recognized.

Although the LRSP has been in place for many years, its underlining principles have only recently been more clearly integrated with a new corporate initiative referred to as the Sustainable Region Initiative (SRI). SRI was created to guide all facets of GVRD's corporate and regional initiatives based on sustainability principles. It requires that all plans consider the long term social, economic and environmental implications of programs and facilities prior to adoption. Every effort has been made to insure that SRI principles have been incorporated into the KCRP Management Plan.



UBC students participate in the planning process



Natural Resources of Watershed and Park

Since 1978, some 98 percent of the lands identified in the park's previously established working boundary have been acquired. The only major private parcel left to purchase is the Northview site at Haney - Riverfront located on the Fraser River between Kanaka - Riverfront and Port Haney. The entire park is located within areas separately identified by Katzie First Nation and Kwantlen First Nation as being part of their ancestor's respective traditional territory.

Preservation of sensitive habitats was an important consideration when establishing the park's original boundaries. Ownership patterns and costs limited the purchase area because there is limited benchlands available for recreational development and staging areas. It is also important to note that the park is strategic in maintaining the watershed's natural qualities, however the majority of fish and wildlife habitat are located on private and public lands located outside the park working boundary. Throughout the plan a common theme is the need to work with adjacent land owners, other levels of government and the public to ensure the preservation of the park and creek.

Park Boundaries

The plan reconfirms the need to complete outstanding acquisitions contained in the current working boundary and identifies other areas that should be considered for incorporation into the park for appropriate recreation uses or for protection of sensitive natural features. Where alienation of Crown lands is concerned, GVRD Parks understands that Katzie First Nation does not want the province to allocate lands to other interests or groups without prior satisfactory completion of treaty negotiations. Where private lands are concerned additional expansion of the park will be accomplished through consultation with partners, private land owners and other levels of government using zoning tools, grants, or by future acquisitions approved subsequent to this Plan.

Stormwater Management



Stormwater flowing to Kanaka Creek

No satisfactory comprehensive strategy for stormwater management in the Cottonwood and Albion Planning Areas currently exists. The Albion and portions of the Cottonwood area are recognized as being especially sensitive to urbanization given their clay soils and rolling hills. During the planning process for KCRP, urbanization and stormwater management were consistently mentioned as high priority issues by all stakeholders, including KEEPS, DMR and the ETC. Generally there was acknowledgment by most commenting groups and individuals that existing development practices can pose a threat to the long-term health of Kanaka Creek and its tributaries.

Municipal Zoning Within the Park

The predominant zoning within the park is generally "one-family rural residential" (RS-3). Major exceptions to these designations are riverfront lots north of Kanaka Creek (park and Haney - Riverfront) which is zoned residential and lands north of 256th Street where there are areas of "suburban residential" and "institutional" (park and school) zoning.



Encroachments

Encroachment into the park by adjacent private landowners is a significant management issue in KCRP. Encroachments are particularly destructive because most of the park is only 200-400 metres wide. Its winding boundary provides ample opportunities for impacts to fish and wildlife habitat by adjacent landowners.

Often encroachment is deliberate, as in cases where adjacent land owners “move in” to the park and clear valuable habitat for personal use or trails. Other times it can be indirect, where a new development is placed adjacent to the park and requires GVRD Parks to remove much of the deciduous tree overstory for safety and property protection. Species richness, diversity and quantities and quality of habitat are all affected in these circumstances. Identified encroachment problems include dumping, creation of unapproved paths, fencing and tree cutting.

Besides the social and environmental loss these actions represent, there is also a substantial economic price as well.

Appropriate zoning and subdivision design administered by DMR could minimize conflicts and maximize environmental benefits when future land development plans are prepared.



Encroachment on park boundary

Local Linkages and Greenways

Kanaka Creek, itself a linear feature, intersects and connects to a large number of existing and planned regional trails and open spaces (Figure 1.6.1). In addition DMR’s *Master Plan for Parks, Recreation and Culture* outlines many equestrian and cycling connections that intersect with KCRP and includes recommendations for acquiring and achieving linear linkages (PERC 2001, 98).

The special study areas that evolved during the planning process for KCRP were heavily influenced by the high priority given to extending trail networks and linking park trails with community bikeways and greenways.

Sensitive Areas

Assembled biophysical data (Tera 1977a, 1977b, 2001; ECL 1999a, 1999b; Shead, Adams and Asp 1999; Krzesinska 2000; UBC 2002a, 2002b) and the provincial Sensitive Stream designation all strongly suggest that portions of KCRP are ecologically sensitive.

Blue Mountain Provincial Forest

Blue Mountain Provincial Forest (BMPF) is a working forest located north of the Forest Core. Currently it has a number of informal recreation (dirt bike, all-terrain vehicle, mountain bike) trails. These activities along with various historic forestry impacts are causing significant environmental concern. The Province of BC has undertaken studies that indicate multi-use of the forest by recreationists and renewable resource extraction is possible. The KCRP Management Plan needs to consider the adjacent recreation and forestry activities.

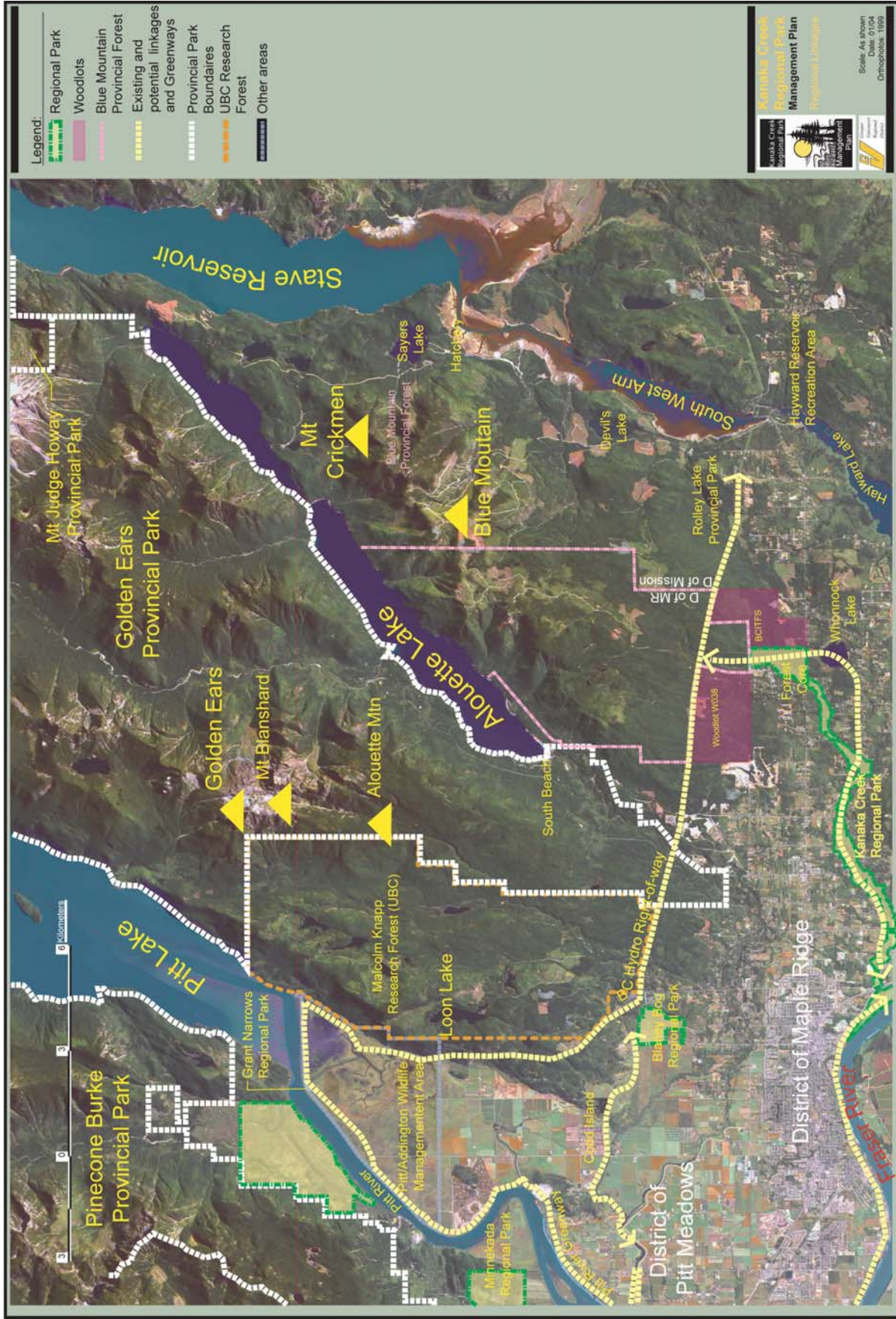


Figure 1.6.1 Regional Linkages



Species at Risk

There are a number of identified potential habitats for species at risk in the park. The plan should consider a long-term program of identification, habitat delineation, protection and enhancement measures in conjunction with partners.

Transportation, Utilities and Public Transit

To see that use of the park will fit with other regional objectives and developments, management planning for the park must consider issues such as long-term projections for transportation and utilities. Management of these issues is shared between GVRD, Translink, the Province of BC and DMR. These issues are driven by the development pressures experienced by the municipality, as reflected in its OCP, and balanced by regional strategies for promoting sustainable living (i.e., the GVRD's *Sustainable Region Initiative*). The following transportation related items were considered in preparation of the KCRP Management Plan with more detailed information contained in Appendix A – Table B.

- The new Fraser River crossing
- Lougheed Highway—River Road intersection realignment
- Haney Bypass and CPR Railway flyover
- Kanaka Creek Road conversion to Kanaka Creek Parkway
- 240th Street bridge improvements to accommodate pedestrians, bicycles and potentially equestrian users
- DMR's current plans for 248th Street and 112th Avenue and impacts to the park
- Other road improvements that could impact park users
- Public transit opportunities
- Blueways (transportation routes via water)

Informal Trails

A number of informal trails have been set up by local groups linking the park to the community. DMR is currently reviewing these and other trails for safety and legal concerns.



2.0 PLANNING CONTEXT

2.1 Demographics

Demographic characteristics play an important role in determining current recreation needs and future trends. Because the park is a regional site it is important to consider the needs of both local community users and broader regional populations. Two issues drive increasing visitor use of regional parks – population growth and increasing demand for outdoor recreational opportunities, particularly trails.

Population

The population of the GVRD census area in 2001 was 2,078,800*. The area's population is projected to grow at an annual rate of 1.3 percent (2001-2021) and 1.1 percent from 2021-2031 or 2,987,800 residents by 2031. Locally in Maple Ridge/Pitt Meadows (Ridge/Meadows) it is expected that the area's population will grow at an annual rate of 2.1 percent (2001-2021) and 1.6 percent from 2021-2031 or 143,000 residents by 2031.

- The average median age of GVRD citizens reached an all time high in 2001 at 37.4 years. Ridge/Meadow's median age of 36.5 is slightly younger than the regional average.
- According to the 1996 census data, the largest increases in age groups has been the 35-44 and 45-54 year group. These two groups combined represent 31 percent of the region's population and, by 2021, most of them will be 60-80 years old.
- Since 1981, seniors have increased 66 percent while the number of persons under 20 has only risen 38 percent. It is projected that in the next 25 years the number of seniors will double while the number of under 20s will rise by only 10 percent.
- The regional median income declined in the period from 1990 to 2000 by a inflation adjusted 3.9 percent lowering area residents' average income to \$58,000 from \$60,250. This was still above the provincial median of \$54,840 and national median income of \$55,016.
- Regional employment in 2001 was 1,061,900 with expected growth of 1.5 and 0.8 percent per annum from 2001-2021 and 2021-2031 respectively a total of 1,541,200 by 2031 (45 percent increase). Ridge/Meadows employment in 2001 was 24,900 with expected growth of 3.2 and 1.4 percent per annum from 2001-2021 and 2021-2031 respectively or total 53,700 by 2031 (115 percent increase).
- Regional housing in 2001 was 796,100 with expected growth of 1.7 and 1.3 percent per annum from 2001-2021 and 2021-2031 respectively or total 1,267,200 by 2031 (59 percent increase). Ridge/Meadows housing in 2001 was 29,300 with expected growth of 2.5 and 1.9 percent per annum from 2001-2021 and 2021-2031 respectively or total 58,000 by 2031 (98 percent increase).
- The region is culturally diverse with a majority of residents having English only (60.2 percent) as their primary language. Visible minorities, representing 31 groups, are significantly underrepresented in Ridge/Meadows at 8.6 percent as compared to 37 percent across the region. The Aboriginal population in Ridge/Meadows is slightly higher (2.4 percent) in proportion to the rest of the GVRD at 1.9 percent.

**Figures based on Urban Futures Projections 2004*



2.2 Recreation Use and Trends

Two major GVRD surveys, the Major Park Plan and Viewpoints Survey, were administered in the Lower Mainland to determine regional recreation trends in the 90s. These recreation surveys identify walking as the most desired activity, followed by viewing natural scenery, beach activities, family gathering, driving for pleasure, picnicking, swimming and cycling. Although the national and regional figures do not indicate it, local equestrian activities are also considered important at KCRP, given recreation orientation and private and public facilities provided in the park and community.

Table 2.2.1 shows figures for regional users based on a telephone sample administered as part of the above studies, a KCRP visitor survey administered in 1999, and a comprehensive US survey of outdoor recreation users (National Survey of Recreation and the Environment (NSRE) administered in 1995.

Table 2.2.1 Recreation Use Survey Data

Activity	GVRD*	KCRP Visitor Survey 1999**	NSRE***
	% Respondents		
Backpacking	13		
Bird watching	20	11	15
Camping	47		
Canoeing/kayaking	24	1	11
Cycling	52		41
Cycling on trails and back country	30		
Dog walking		16	
Driving for pleasure	77		60
Driving motorized off road	13		
Equestrian activities	15	0	11.4
Family gathering			76
Field sports	39		
Fishing	30	1	
Hiking or walking/hiking	43	71	35
Jogging/running		3	
Picnicking	70	7	60
Swimming in ocean, lake or river	61	4	
Going to the beach	83		
Viewing natural scenery	90		70
Walking for pleasure	92		87
Visiting a nature centre/nature trail or zoo	47	4	63

* GVRD- Major Park Plan 1993. GVRD-Viewpoints Survey 1993

** GVRD-Kanaka Creek Regional Park Visitor Survey 1999 (229 participants)

*** National (USA) Survey of Recreation and the Environment (1995-96)-5000 participants



2.3 Kanaka Creek Regional Park Recreation Use



Kanaka riverfront trail

Activities in KCRP include walking, hiking, nature viewing, equestrian use, some cycling, dog walking, picnicking, interpretative and educational programming, canoe launching and, when permitted, fishing. The park's use expanded from 24,258 users per annum in 1989 to 279,000 in 2003, a 1,150 percent increase, making KCRP the fastest growing park in the GVRD system. Since 1999, annual park visitation growth has been much lower (<1 percent) until 2003 when visitations jumped 9.1 percent over 2002. The substantial increase in public use of the park during these periods was fueled by an increasing health conscious aging population base and significant facility and trail development at Riverfront in the 1990s (White 1999). Expansion of use may be expected in the future due to a recent development boom in the region and Ridge/Meadows and the anticipated impacts of the 200th Street bridge over the Fraser River (PERC 2001, 7). These will result in a further boost to recreation demand in the area. Park use peaks in June with the slowest period being November and December, according to Riverfront vehicle counts. Appendix A –Table C contains additional information regarding park uses and users.

2.4 Nearby Recreation Area, Linkages and Facilities

There are several regional parks, reserves and greenways in the Ridge/Meadows area including Kanaka Creek, Grant Narrows, Blaney Bog, Derby Reach, Brae Island and the new Pitt River Greenway. Grant Narrows provides a boat launch to Pitt River, Widgeon Slough and Pitt Lake. Derby Reach Regional Park is opposite Kanaka Creek's mouth, and can be seen from the river's edge. GVRD Parks and its partners are pursuing opportunities to expand the network of regional greenways and blueways to connect these and other parks.

DMR municipal parks and adjacent recreation sites provide recreation opportunities in the community as well and include: Cliff Park, Allco Park, Maple Ridge Park, Memorial Gardens, Riebodt Park, Horsemen's Park, and the Fairgrounds. Whonnock Lake Park located east of KCRP is a typical bog lake of the coastal forest region. It offers canoeing, kayaking, swimming, hiking and nature study.

Located elsewhere in DMR is UBC's Malcolm Knapp Research Forest which is a training facility for forestry students. The facility also has over 20 km of trails available for walkers and hikers. Similar recreation opportunities are available in partnership with the British Columbia Institute of Technology's Forest Society (BCITFS) at their woodlot W007, located immediately east of KCRP's Forest Core, and at Woodlot 038, a privately operated woodlot northwest of the Forest Core. Golden Ears Provincial Park, located to the northwest of KCRP, is 55,625 hectares in size and provides facilities for boating (Alouette Lake) and camping, and has an extensive trail system for hikers, cyclists and equestrians. Other facilities include Blue Mountain Provincial Forest, Rolley Lake Provincial Park and BC Hydro's Stave and Hayward Lake Recreation Areas.

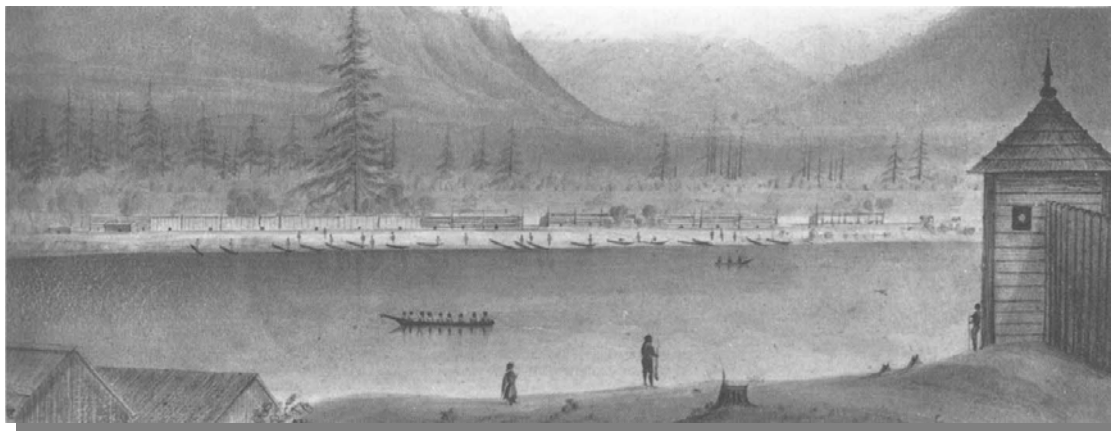
2.5 Cultural Resources

Historic Kanaka Creek

Archaeological evidence suggests there was human activity in the Maple Ridge area as much as 9,000 years ago. The smallpox epidemic of the 1780s greatly reduced the local



First Nations population and disrupted settlement patterns. Coast Salish, or Sto:lo, peoples living in the vicinity of Kanaka Creek in the early part of the 19th century were the Kwantlen and Katzie. Katzie people likely used the forested upland areas for hunting, gathering, fishing and spiritual uses. The Fraser River was a water highway for First Nations and the Riverfront area was potentially used as a stopping place, or summer camp, for any one of a number of First Nations people. When Fort Langley was originally established in the mid 1820s (directly across the Fraser River from the mouth of Kanaka Creek in what is now Derby Reach Regional Park), the Kwantlen are thought to have established a village at the mouth of Kanaka Creek for ready access to trading opportunities. When the original fort was abandoned and re-located in 1839, the Kwantlen relocated to the south side of the river on McMillan Island (SDQ 2003, 33).



Artist's rendering of early life on the Fraser River near Kanaka Creek

The Hudson's Bay Company, along with rival North West Company, often hired Hawaiian islanders to work on their ships and at their many forts. Known as 'Kanakas', these labourers set up residence outside the fort at Kanaka Creek's riverfront. After the Hudson's Bay Company lost its trading monopoly in 1858, many Kanakas working at the first Fort Langley chose to stay and raise their families in this location from 1860-1885. Hence the creek became known as Kanaka Creek and some descendants of these original Hawaiian settlers still reside in the community (Nickols 1999, 4).

Pioneer settlement in Maple Ridge began in 1858. Samuel Robertson began farming land bordered by Kanaka Creek on the north and west in 1858. He gradually expanded his property holdings to include about 800 acres on the flat land north of the Fraser River eventually named Albion in the early 1900s. Another early Settler, Hector Ferguson, farmed the land that now comprises the Riverfront area. He planted many crops, including fruit trees, some of which are still standing along trails.

James Murray Webster came to the area in 1882 to set up a farm inland from the Fraser River in the area now known as Webster's Corner at the junction of Dewdney Trunk Road and 256th Street. Dewdney Trunk Road was built in 1900.



Abernethy and Lougheed logging operation at Kanaka riverfront

The Riverfront was a booming industrial area in the 1920s. It held an active logging operation, the Abernethy and Lougheed Lumber Company, said to be the largest and most innovative at the time. Logs were brought down over an elaborate network of tracks that descended over several large log trestle bridges to the mouth of Kanaka Creek. Here they were dumped into the Fraser River and formed into log booms. The trestle bridge leading to Kanaka Creek was the only one in Canada to cross over the CPR mainline.

A sawmill stood on the west bank of Kanaka Creek near the CPR tracks in the early part of the century. The mill burnt down in the early 1920s and was never rebuilt. A slaughterhouse stood on the east side of Kanaka Creek just west of the present-day washroom building at the riverfront. The concrete foundation of the slaughterhouse remains in the undergrowth.

Given the important influence of the Fraser River, it is not surprising that there has been much activity in the Riverfront area. Unfortunately, because of the Fraser's frequent flooding and heavy sedimentation in conjunction with the impacts of European settlers on the area, few First Nations artifacts have been found and no archeological features are readily apparent.

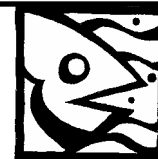
Upstream features in what is now KCRP, also attracted First Nations and early settlers. In particular, the spectacle of Cliff Falls in the canyon has always been a site of importance for nature appreciation and spiritual renewal. Katzie First Nation continues to value the varied natural and spiritual resources of the creek and its watershed, especially those of the upland forests located in Kanaka Creek's Forest Core.

Land Use

The park is surrounded by a variety of land uses over its entire length: forested woodlots, small acreages, non-government operated camps, residential subdivisions, farm operations and industrial. Most urban impacts are on the lower reaches of the creek.

The Cottonwood and Albion Planning Areas as defined by DMR, encompass lands immediately north and southeast of Riverfront and the creek's lower reach. The Cottonwood Planning Area encompasses the majority (>90 percent) of the catchment areas of Salamander, Horseshoe and Rainbow Creeks, and the entire catchment area of Cottonwood Creek. The Albion Planning Area encompasses the upper catchment area of Spencer Creek, a portion of Kanaka Creek, and much of eight major tributaries. The Albion Flats area is located south of the park, bounded along its western and southern margins by Lougheed Highway and 240th Street to the east (RSMI 1993). This area does not have special municipal planning status, however a significant component of it is located in the Agricultural Land Reserve (ALR). A large tract of land in the Albion/Thornhill area is designated as Urban Reserve for future urban expansion.

All of the aforementioned areas have seen intense development in recent years, beginning with Cottonwood, and will continue to see a great deal of development over the course of the management plan, especially in Albion. To obtain an understanding of the prospective



extent of development, the OCP for Maple Ridge (1996) is referenced. The population for the Cottonwood Planning Area in 1996 was 3,696 (Table 2.5.1). The predicted population that would result from the OCP land-use designations is 10,454 by the year 2021, almost tripling the population.

The impacts of development on existing land uses in the Albion Planning Area are even more dramatic. The population for this area was 610 in 1996. The predicted population that would result from OCP land-use designations is 9,275 by the year 2021. These figures indicate that within 20 years, the population in the Albion Planning Area may grow by over 15 times the 1996 values. While the increase in population can be expected to deviate somewhat from OCP estimates, the magnitude of the increases is representative.

Table 2.5.1 Projected Population Growth in the Cottonwood and Albion Areas

	1996	2021
Cottonwood	3,696	10,454
Albion	610	9,275

The ALR lands in the Albion Flats area are also subject to development pressures. Removal of lands from ALR exclusion areas have been successful in recent years suggesting that the ALR will offer only limited buffering capabilities in future years from urban growth.

In general, the most intense development, in terms of land use and densities, is along the lower reach, including “business park” zoning adjacent to the park and the residential developments on both sides of the creek and east and west of 240th Street. The steady eastward advancement of development pressure adjacent to the park presents several significant management challenges. The potential impacts of these challenges, including stormwater management, encroachment, and unauthorized uses, are compounded by the sensitive nature of the park and its soils, and the park’s narrow configuration.

2.6 NATURAL RESOURCES

Environment, Geology and Soils

From 1999 through 2002 GVRD Parks conducted several studies on the environmental sensitivity of KCRP (Shead et. al. 1999, Krzesinska 2000, Ryder 2000, Tera 2002, UBC 2002a and b). Topography, vegetation and soils, together with habitat factors, were among the criteria used to identify sensitive areas. As reflected throughout the management plan, the park’s steep clay banks were identified as highly sensitive, meaning they are not stable and not suited to high levels of use (Figure 2.6.1).

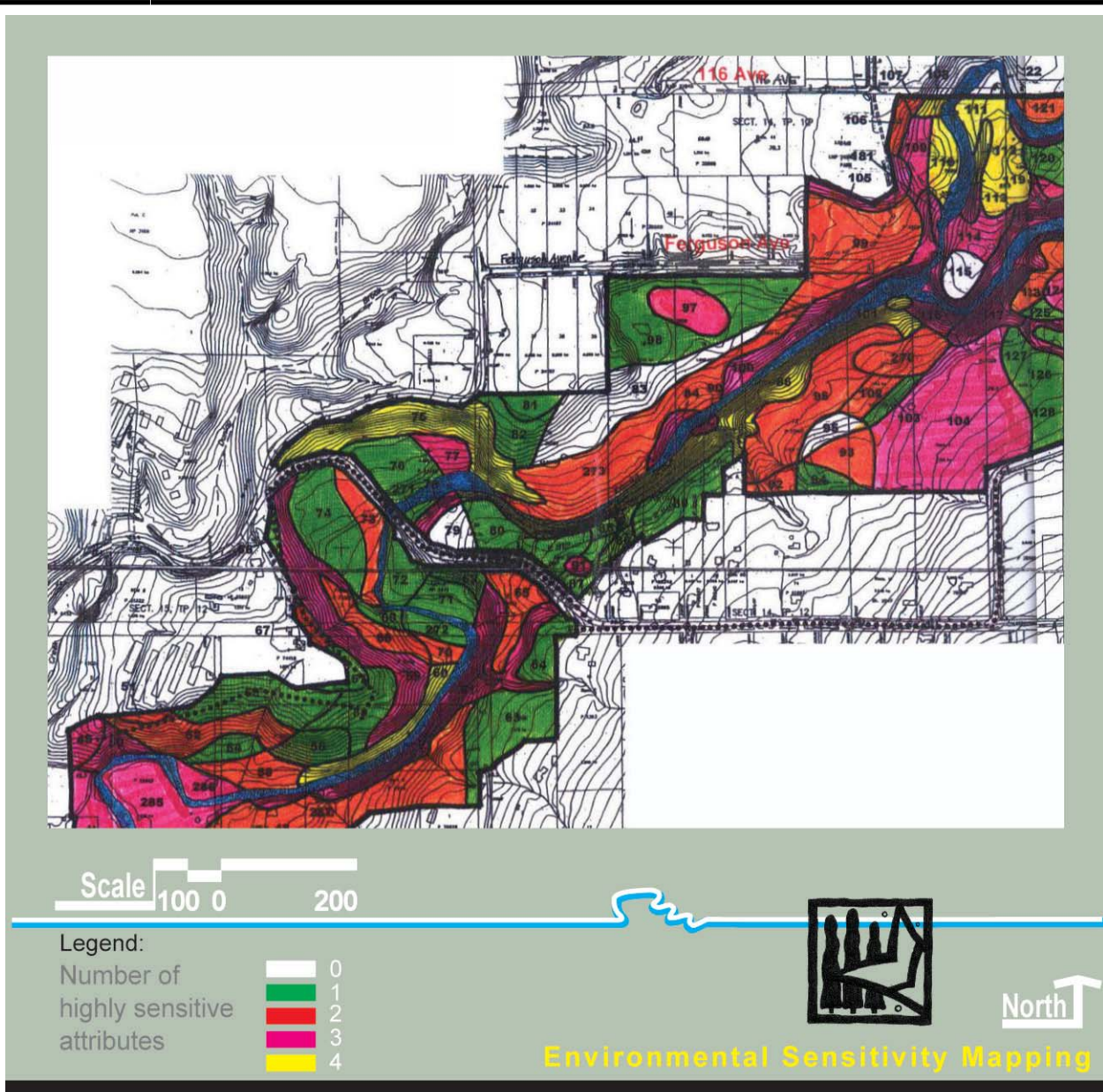


Figure 2.6.1 Environmental Sensitivity Mapping

Kanaka Creek changes character dramatically from its headwaters to its mouth, a reflection of the geological diversity and 14 soil classes in the park.

The mouth and lowlands are characterized by clay and floodplain deposits with minimal slope. These materials are quite impervious and therefore permit very little downward percolation of water. This poor drainage results in flooding and rapid runoff being major concerns for the creek.

Upstream of the low floodplain area, the slope becomes much more obvious, and the soils are those of mountain stream deposits. Here, the outstanding features are the creek gravel deposits, used as spawning beds by fish. The canyon portion of Kanaka Creek is characterized by severe slopes where shale, conglomerate and sandstone cliffs rise abruptly from the stream bank.



The area north of Dewdney Trunk Road changes once again to a more typical Douglas Fir coastal forest. The soil in this area is much more conducive to forest growth and has numerous small steep tributaries with steep slopes covered by thin soils. The headwaters are located in the Blue Mountain Provincial Forest, Forest Core and two local woodlots where the bedrock is intrusive granite. Previous logging operations in the early part of the 20th Century have resulted in significant damage to the hydrological regime of the area. These impacts are compounded by steep slopes and unstable soils.

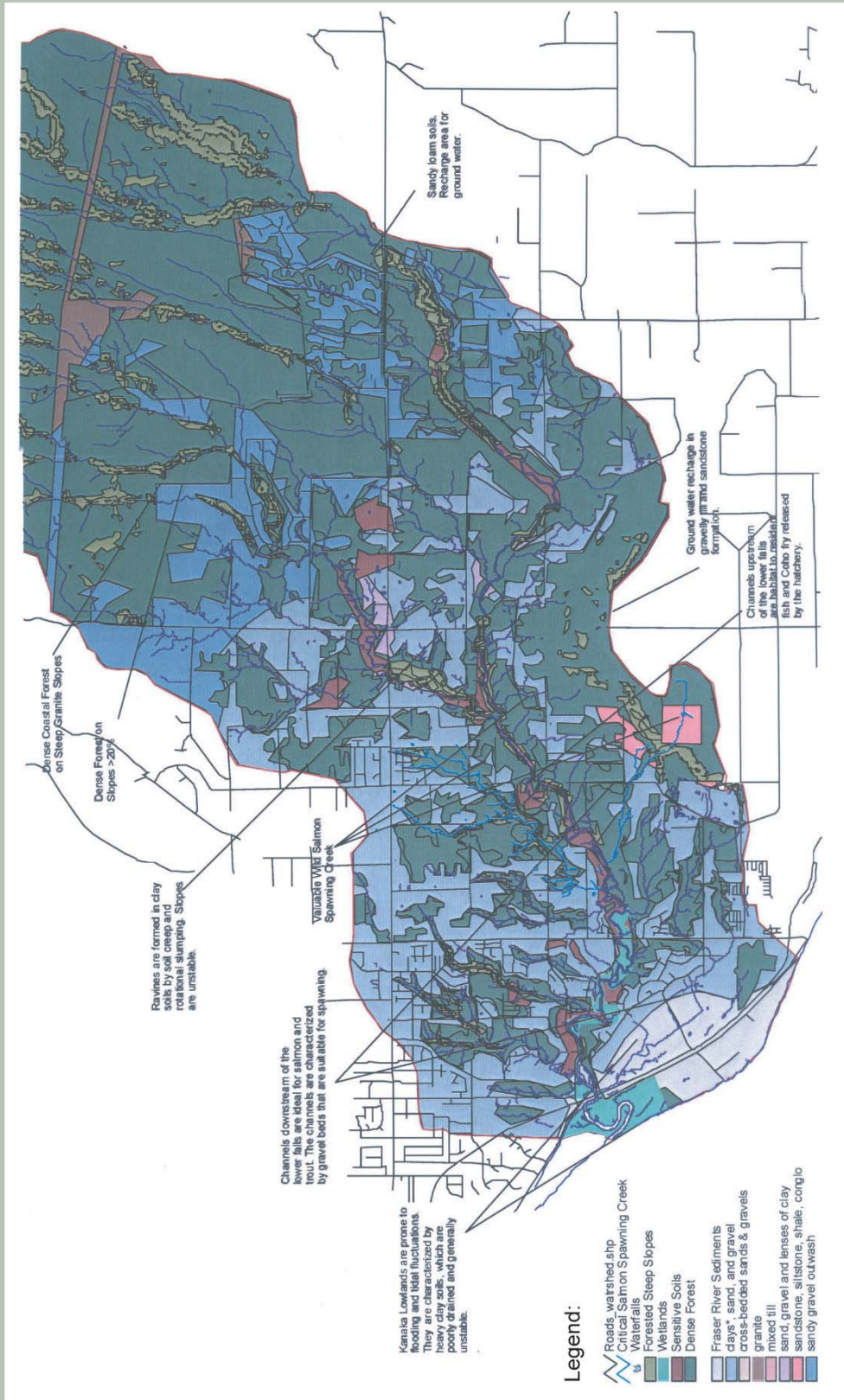
Vegetation

The vegetation of KCRP is part of the eastern variant of the Coastal Western Hemlock Very Dry Maritime Subzone (CWHdm) (Pojar and MacKinnon 1999). At the mouth of Kanaka Creek, we find the Coastal Western Hemlock dm – variants 08, 09 and 10. The dominant tree species in this location are black cottonwood, sporadic aspen with a significant amount of red alder. Virtually all the park has been logged historically, and therefore there are no sizable, representative samples of original, old growth forest. However, some significant veteran trees do remain throughout the park. Of special interest to the forest industry is the particular variety of Sitka spruce (*Picea sitchensis*) found in the Albion area (RSMI, 1993). This “Haney Provenance” strain of Sitka spruce has distinct genetic characteristics that make it fast growing and highly resistant to insect damage. Research into these trees is ongoing by silviculturists at the UBC Research Forest.

Due to the high water table, plants capable of tolerating moist conditions proliferate along the lower reaches of Kanaka Creek. Dense forests of black cottonwood, red alder and various wetland shrubs dominate the floodplain at the confluence of Kanaka Creek with the Fraser River. The major tree species within the deciduous woodlands of the lower reaches is the broadleaf maple. Along with stands of willows, hardhack and wild rose, this plant community comprises most of the riparian zone between the Lougheed Highway and 240th Street. Reed canary grass and deciduous saplings are generally found along the disturbed sections beside roads and cleared sites.

The Albion area of Kanaka Creek watershed, part of the Coastal Western Hemlock biogeoclimatic zone, is characterized by heavy precipitation and mild temperatures. Although originally dominated by a mature coniferous forest (consisting mostly of western hemlock, Douglas fir, western red cedar, grand fir and bigleaf maple), human impacts have allowed other types of vegetation communities to prosper. Deciduous and mixed deciduous/coniferous forests (consisting primarily of red alder, bigleaf maple, vine maple, paper birch, western red cedar, black cottonwood, western hemlock, Douglas fir, Sitka spruce and salmonberry) have proliferated after land clearing, including the conversion of large sections of the watershed into range land for grazing livestock. Open fields are prevalent along the low-lying areas and associated vegetation (primarily grasses and herbs, Scotch broom, Indian plum, young alders and cottonwoods) frequently reflects the high water table. Early successional shrubs such as blackberry, willow, red-osier dogwood and red alder gradually overtake these meadows. In turn, urbanization is quickly replacing these shrub communities with buildings, streets, lawns and gardens.

Tera (1977a,b) outlined the dominant vegetation of the main stem of Kanaka Creek watershed upstream from Cliff Falls. The most prevalent forest type is the multi-layered deciduous forests of bigleaf maple, alder and a variety of coniferous trees. The understory is composed of salmonberry, vine maple, swordfern and foamflower. These stands have become established since 1930s logging. In the higher reaches, there is higher occurrence of conifers, intensifying until they form the dense stands of western red cedar, western hemlock, Douglas fir and mosses typical of BC's south coast.



North

Figure 2.6.2 Kanaka Creek Watershed



There are some veteran trees in the park that were spared from early clearing activity. The massive cedars, hemlocks, Douglas firs and Sitka spruce are used extensively by wildlife for nesting and roosting. The relatively large areas of second-growth forests, consisting of mature deciduous and coniferous trees, and the park's well preserved environment provide important wildlife habitat.

Water

The Kanaka Creek watershed is approximately 47.7 square km in size (figure 2.6.2). The north branch flows through a wide valley with gravel deposits along its entire length. The south (main) branch generally has a higher gradient and flows through a narrow valley from its mountain source. There are excellent gravel deposits in the upper reaches while a cobble-boulder substrate dominates throughout the canyon. The creek emerges from the canyon and continues in a meandering channel across a low-lying plain, becoming slough-like for its final 3.3 km. The lower section is tidally influenced by the Fraser River.

Kanaka Creek is acknowledged to have increasing water quality problems associated with burgeoning urbanization, agricultural and industrial activities, and other human-caused impacts. Nutrient enrichment occurs in the downstream stretches of Kanaka Creek. Causes of eutrophication include livestock wastes, fertilizers applied to fields and lawns, removal of woodlands, and point and non-point sources resulting in the leaching of nutrients. In addition, organic contamination from the approximately 900 septic tanks in the watershed is considered to be a significant factor in the on-going degradation of water quality in Kanaka Creek. BC's Outdoor Recreation Council has made several mentions of Kanaka Creek in its annual list of the province's most endangered rivers.

The majority of water quality problems associated with Kanaka Creek is due to non-point sources of pollution, but some activities contributing point-source pollution have also been identified. Although retention ponds constructed for development projects are designed to contain silt-laden runoff, significant quantities of sediment finds its way into the creek during periods of heavy precipitation. Herbicide and pesticide washing into the creek may also contribute to fish kills, as may chemicals used for industrial purposes. Education programs have been implemented to inform residents of the dangers of releasing toxic wastes into storm drains.

Water flow and volume characteristics have been well documented on the main stem of Kanaka Creek. The mean flow of the creek is 2.88 cubic metres per second (m^3/s). A peak flow of 146 m^3/s was recorded in December 1979. Low summer flows have been documented as a problem for a number of years, these low levels may be a function of the soil's limited capacity for water storage, damage to natural stream courses as well as domestic and agricultural water removal from the creek. There are several water licenses and water-use agreements for agricultural, industrial and hatchery use; however, the bulk of this water use is non-consumptive, meaning the water is returned to the creek.

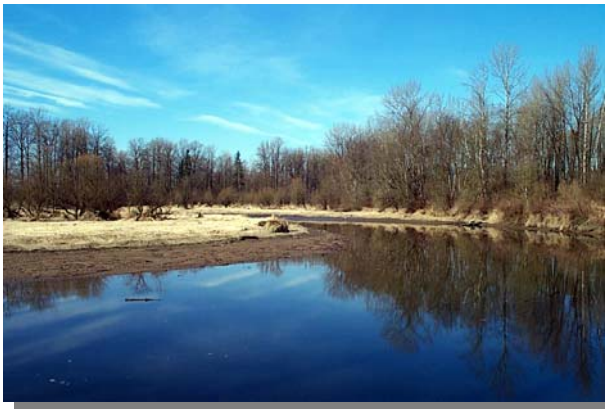
It has been proposed that Kanaka Creek displays a 'flashy' response to rain events due to the impervious clay deposits near the surface that prevent absorption of surface runoff during storm events. Problems associated with high peak flows include flooding in the lower reaches, erosion and siltation, flushing out of sensitive fish stocks and increased channelling of both the main stem and its tributaries. The creek's response and the associated problems are compounded by the naturally high water table in low-lying areas and continued urbanization (buildings and pavement) replacing natural ground cover.



In 1998, Kanaka Creek, including its tributaries, was one of 15 streams designated as “sensitive” under the provincial *Fish Protection Act* by the BC Ministry of Environment, Land and Parks (now Water, Land and Air Protection or WLAP) and the Ministry of Agriculture, Food and Fisheries (MAFF). Further, Kanaka Creek was selected as one of two pilot projects to test the development of “recovery plans.” The designation is made if it is considered that the designation will contribute to the protection of a population of fish whose sustainability is at risk because of inadequate flow of water within the stream, or other degradation of fish habitat. The Province of BC has since suspended the planning process and has taken no further action to assist in the protection of the creek.

Fish

Kanaka Creek and its tributaries support populations of coho, pink, chum, steelhead, rainbow, cutthroat and even the occasional stray chinook salmon in addition to longnose dace. The warm, backwater environment of the lower reaches of the creek also support



Lower Kanaka Creek

populations of black crappie, brown bullhead, northern pikeminnow, peamouth chub, re-sided shiner, prickly sculpin and threespine stickleback (Shead, Adams and Asp 1999, 10).

Anadromous (ocean-going) salmonids have been observed in the creek as far up as Cliff Falls (van Dishoeck 2001) where this natural barrier prevents further upstream migration. The scarcity of salmonids in the lower reaches of the creek is often attributed to elevated stream temperatures and poor stream substrate. Higher temperatures lead to lower levels of dissolved oxygen and higher levels of nutrients. Creek and tributary areas between 240th and Cliff Falls provide the most heavily used spawning and rearing habitat in the watershed. Pools located in the mainstem

500 metres downstream from the 112th Avenue bridge along with the plunge pool located below the Lower falls east of the 112th Avenue bridge have been identified as important holding areas for adult coho. Accessible tributaries also provide excellent spawning and rearing habitat for coho and cutthroat (Babakaiff & Maniwa 2001) (Shead, Adams and Asp 1999; Krzesinska 2000).

Salmonid escapement data has been collected on Kanaka Creek for several decades by DFO and the Bell-Irving Hatchery. Adult coho escapement estimates between 1951 and 2001 have ranged from 25 to 1,900 fish with the largest escapements found in recent years. Chum escapements have ranged from 25 to 12,750 over the same period with the peak occurring in 1998. Both coho and chum returns have been stronger over the last decade, likely due to the enhancement efforts of the Bell-Irving Hatchery. Pink salmon were present in the Kanaka in very small numbers during the late 1950s and early 1960s then disappeared for decades along with many other Fraser River stocks. After a 20 year absence, pink salmon began to reappear in Kanaka Creek in 1989, while chinook salmon was noted for the first time during the 1998 and 1999 spawning season. These fish were believed to be strays from the South Alouette River since both species were being reintroduced by the Alouette Correctional Facility Hatchery coincidental to the sightings in Kanaka Creek (Babakaiff and Maniwa 2001). The Bell-Irving Hatchery has since begun enhancing pink salmon as well.

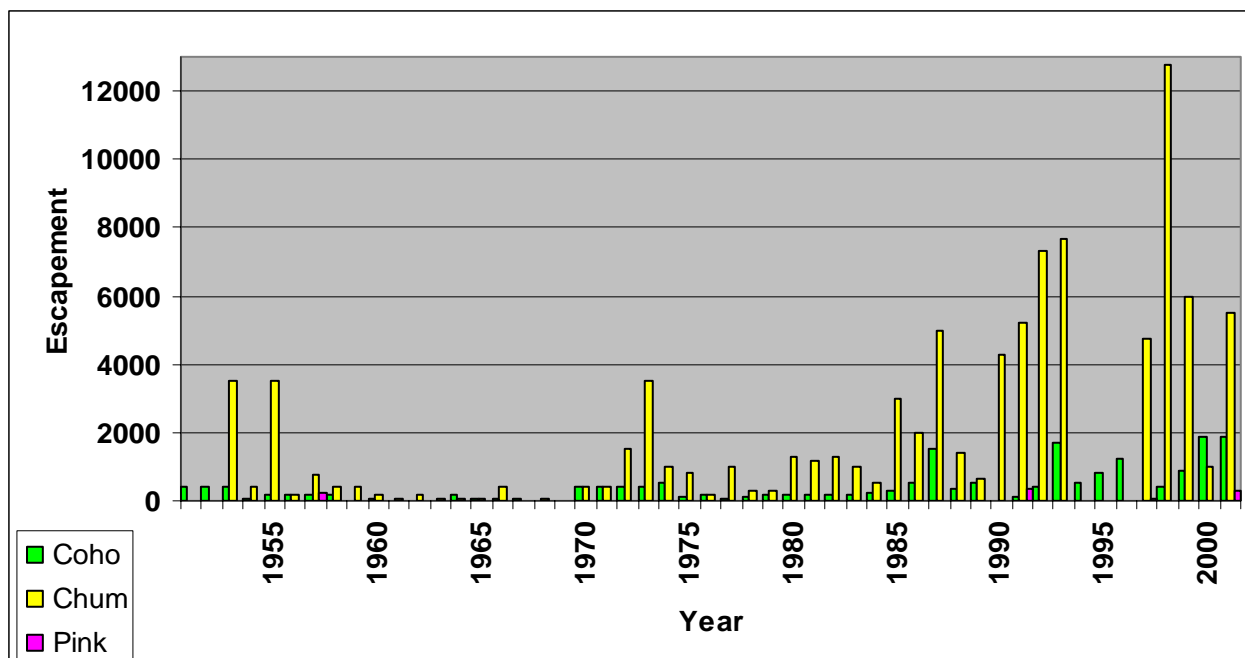
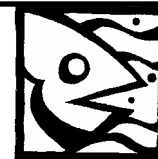


Figure 2.6.3 Kanaka Creek Adult Salmon Escapements 1951-2001
Data source from DFO and Bell-Irving 1997-2001 Fish Fence Reports

Kanaka Creek supports a winter steelhead population that has been the focus of a dedicated recreational fishery in the past. However, poor returns in recent years have reduced the creek's popularity as a fishing destination. Habitat degradation and low steelhead ocean survival are likely responsible for reduced returns (van Dishoeck 2002). Some coastal streams experienced strong adult steelhead returns in 2001. However 2001 snorkel floats in the creek suggest that this system did not experience such improvements. The juvenile survey report done in 2001 also supports the conclusion that steelhead densities in the creek are very low supporting the need for a provincial government recovery plan. Restoration of some steelhead population is considered worthwhile so that species richness in the creek may be maintained and to provide an indicator of stream health.

Upstream of the falls above 112th Avenue, Kanaka Creek and its tributaries primarily contain resident cutthroat. These trout are either descendants of a population established when higher ocean levels permitted anadromous fish to access to this section, or they arose from a stocking in 1933.

Regulations for salmonid fisheries in the DFO's Region 2 may allow for catch-and-release fisheries using barbless hooks. In the past, Kanaka Creek has been open for fishing below the 112th Street bridge. In the late-1990s the fishery on Kanaka Creek was closed, however there is pressure from user groups to re-open a "jack only" coho fishery, which could be supported by the hatchery.

Since the 1970s, DFO has engaged a number of different strategies to enhance the salmon stocks and protect their habitat for the future.

The Bell-Irving Hatchery is located on the south side of the Kanaka Creek mainstem, just upstream (east) of the bridge at 256th Avenue. The hatchery has been in operation since



1983 and currently raises chum coho, and pink salmon for release into Kanaka Creek and other local rivers. Both cutthroat and steelhead have also been cultured in the past. Counting fences have been operated on the mainstem of the creek on an intermittent basis throughout the hatchery's 20 year history. The Bell-Irving Hatchery also serves as a local centre for other enhancement activities: supporting education, aiding public involvement and leading watershed-wide habitat restoration and preservation efforts.

Table 2.6.1 2003 Bell-Irving Hatchery Releases

Species	Stage	Number	Release location
Chum	Fry	100,000	Kanaka Creek
Coho	Fry	50,000	Kanaka Creek
Coho	Smolts	90,000	Kanaka Creek
Chum	Fry	100,000	Other local rivers and creeks*
Coho	Fry	50,000	Brunette River
Coho	Smolts	23,500	Other local rivers and creeks**

* *Brunette River, Spanish Banks Creek, Bryne's creek*
 ***Stoney Creek, Bryne's Creek and Brunette River*

Wildlife

The diversity of habitat types and the linear structure of the park provide ideal conditions for a large variety of wildlife. Biophysical analyses completed over the years confirm the occurrence of 19 species of mammals and over 60 species of birds. Of the larger mammals, bears are frequent users of both the creek bed and upland areas, but tend to seek shelter in the northeast sections of the park (Tera 2002).

Mink, otters, and muskrats have been known to regularly utilize the stream, while the elusive cougar is rarely seen by the casual observer. Coyotes and foxes can tolerate some urban intrusion and likely feed on smaller mammals found in the park, including the Coast mole, common shrew, deer mouse, Douglas squirrel, dusky shrew, long-tailed vole, northern flying squirrel, northwestern chipmunk, Pacific jumping mouse and shrew mole.

Corridors

The relatively undisturbed riparian zone provides intact corridors for mammals, birds and herptiles (reptiles and amphibians) to migrate to and from wilderness refuges such as UBC Research Forest, Golden Ears Provincial Park and Blue Mountain Provincial Forest. Even though the creek is a natural corridor, most wildlife would prefer to use its adjacent benchlands; unfortunately, these lands are generally privately owned and may be fenced or otherwise unfriendly to wildlife. Similarly, due to their steep and unstable valley walls, the narrow ravines supporting Kanaka Creek's tributaries have also been largely spared human disturbance and provide important habitat and migration corridors for wildlife, but some of these natural corridors outside the park continue to be damaged or obstructed.



Species at Risk

The Province of BC identifies species that are threatened, endangered or extirpated, or are at the greatest risk of becoming threatened, endangered or extirpated as red-list species. These species face limiting factors (i.e., habitat loss) that must be reversed in order to preserve the range and viability of the species. Blue-listed, or “vulnerable,” species are considered sensitive and are of special concern because they are at risk of becoming threatened, endangered or extirpated (MSRM 2003). Information on some of the park’s red- and blue-listed species is provided in Appendix C – Table A.

The watershed supports a diverse avian community due in large part to the abundance of large trees, snags and shrubs generating heterogeneous habitat and suitable food. The Purple Martin (*Progne subis*) is a large, insect-eating swallow that is red-listed. Waterfowl use the lower reaches of the creek year-round. The diverse marsh, bog and estuary environments provide good breeding, feeding and nesting habitat. Great blue herons (*Ardea herodias fannini*) and green herons (*Butorides viresceus*) use the creek regularly, especially the floodplain upstream of 240th Street. The great blue heron and green heron are both on the province’s blue-list of vulnerable species. Long-tailed weasels (*Mustela frenata altifrontalis*), a “red-listed” species, are known to use the floodplain areas east of 240th Street.

Seven species of raptors were confirmed in recent biophysical inventories. Bald eagles are relatively plentiful, and Cooper’s hawks have also been sighted near Cliff Falls. Evidence of barn, barred, great horned, short-eared owl, northern saw-whet, and western screech owls, has been found in a variety of locations along the canyon rim (Ryder in Tera 2002).

Seasonal wetlands occur within KCRP where summer freshet flows inundate the floodplain (Shead, Adams and Asp 1999). These wetlands allow the tadpoles of the blue-listed red-legged frog (*Rana aurora*) to mature in the absence of competition from aggressive bullfrogs. An introduced species to this region, bullfrogs have dramatically affected native amphibian populations throughout the Lower Mainland. The water shrew (*Sorex bendirii*) is a red-listed species for which Kanaka Creek provides excellent habitat. Tailed-frogs (*Ascaphus truei*) are a red-listed species found in the upper reaches of the Kanaka Creek watershed (MSRM 2003).

2.7 Existing Condition, Park Uses and Facilities by Planning Units

The following sections provide a brief overview of the park based on the five management unit categories previously described. Listed in Appendix A - Figure A Existing Facility Locations and Appendix A –Table A Existing Facilities are the current facilities provided in the park.

Riverfront

KCRP has 2.1 km of Fraser River waterfront. The soils are typical Fraser floodplain deposits and are quite susceptible to erosion. The natural river dynamics were eroding some of the river edge prior to a revetment project in 1998.

The Fraser River Estuary Management Program (FREMP) has classified the fish habitat along the Fraser shoreline and Kanaka estuary at Riverfront as red-coded. Red coded habitat is prime and is mainly associated with well-treed shores.



The extensive fluvial area of clay and floodplain deposits, with its minimal slopes, relatively poor drainage and tidal fluctuations provides ideal habitat for waterfowl and other marshland wildlife. Vegetation is essentially freshwater marsh with shrubs and trees lining the creek for a considerable width along the banks. The low, inundated grasslands provide habitat for a number of insect types, and these in turn attract much of the avian species so abundant in the area. The creek and its tributaries provide good ecological niches for fish.

Riverfront has been, and continues to be, the recreational focal point of the park. Most come to walk, jog, cycle, picnic, launch their canoe, fish or simply soak up the spectacular scenery of the Fraser River. Riverfront offers a split-level gravel parking lot (30-car upper lot and 20-car lower lot), a canoe launch, picnic tables, interpretive signs and flush toilets. Viewing platforms provide a scenic outlook over Kanaka Creek and adjacent wetlands at the CPR bridge, and at the Oxbow found at the confluence of Kanaka Creek and the Fraser River. The most important features of this area are its interpretive value, riverside trails, viewing platforms and wildlife viewing capabilities. Interpretive signs were installed at Riverfront in 2003.

Beach access is provided at several locations, as are picnic tables and benches. The Riverfront bridge, built in 1992, provides access to the Nature Trail loop and further extensions of the Spit Trail. The Nature Trail loop (535 m) meanders through an unkept heritage orchard, floodplain deciduous forest and remnants of industrial heritage - old railway operations, a log dump and pilings. Pit toilets and picnic tables are located near the end of the Spit Trail.

There are 700 m of log boom storage leased along the Fraser River shoreline. Log boom storage is a source of revenue as well as an erosion control measure.

Lower Reach – Fish Fence

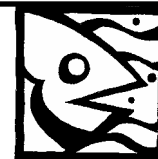
Upstream of the lower marsh area, where the slope becomes more obvious, the ecology takes on a different character. The floodplain continues to provide habitat for numerous waterfowl, and the relatively young mixed forest surrounding the creek provides significant habitat for a variety of birds and wildlife. Below the Fish Fence, spawning habitat is poor but improves significantly between 240th Street and the Lower Falls for both salmon and trout.



Bell-Irving Hatchery Manager John Heaven collecting broodstock at the fish fence

In 2000, a portion of Kanaka Creek Road was closed to vehicular traffic, and plans to redevelop the decommissioned road into a more natural recreational corridor are ongoing. Part of the Trans-Canada Trail, the newly opened Rainbow Bridge (2000) connects the Maple Ridge Fairgrounds and existing 108th Street Loop Trail across Kanaka Creek to the recently redeveloped Kanaka Creek Road. Equestrian use on the north side of the creek is limited to the east of Rainbow Bridge to connect riders with the Fish Fence activity node and 240th Street.

Existing uses of this unit of the park include: community access for school and adjacent subdivisions for recreational pedestrian, cycling, equestrian, roller blading, and jogging use; canoeing and kayaking; fishing (subject to fisheries restrictions and closures) and fish viewing; and interpretive programming and nature study.



The Fish Fence area offers gated access to parking for 30 vehicles. It is open to the public from mid-September to mid-December each year for fish viewing. The fence itself is in place to: estimate adult escapement and run-timing to Kanaka Creek, obtain brood stock for Bell-Irving Hatchery and various Lower Mainland classroom incubation projects, educate and inform the public about Kanaka Creek and its salmonid resources, and to provide an opportunity for students or volunteers to obtain "hands-on" fisheries experience.

Recreational fishing has been an important activity in the lower reaches of Kanaka Creek with most targeting anadromous salmonids. Fishers access to the creek has resulted in negative impacts to the park due to: overuse of the floodplain; inadequate parking; vandalism; proliferation of unauthorized trails; and littering.

Middle Reach – Cliff Falls

Sandstone and shale cliffs rise abruptly from the stream bank, providing another distinct and unique habitat. The rocky substrate and overhanging cliffs provide a humid environment in which a wide variety of ferns and mosses thrive. Veteran Sitka spruce and western red cedar of significant age are found along the canyon rim. This portion of the creek and especially its tributaries support the best spawning habitat for chum, pink, steelhead, coho and cutthroat. The area was logged in the 1930s, but several notable trees were considered too difficult and dangerous to reach; they are the sole remnants of first growth forest. Many of these veteran trees provide important wildlife habitat for bats, squirrels, raccoons, mice and bird species.

The Turkey Trot Trail fords the creek in the park's middle reach in the vicinity of 110th Avenue. This trail, part of the equestrian Trans-Canada Trail, is used by a small number of equestrians, and facilitates a connection from south of the park to the western end of the Les Robson Trail off of Ferguson Avenue at Cliff Falls. In fall 2003, the area endured significant damage due to excessive flooding resulting in large piles of debris in the channel and significant shoreline incising. The existing east-west equestrian trail was permanently closed subsequent to the event because of public safety concerns.

Cliff Falls is situated at the confluence of the North Fork and main stem of Kanaka Creek. Visitors to the GVRD park currently use a 30-car, gravel parking lot belonging to the DMR's Cliff Park, located on the north side of Cliff Falls at the end of 151st Street. The municipal and regional parks at Cliff Falls are very popular, resulting in significant congestion and disturbance to the local community during peak periods, such as tournaments at the municipal ball diamonds. Cliff Falls offers a picnic area with toilets, fire ring and viewing areas. It is a magical site with its misty backdrop overlooking two sets of waterfalls in a



Falls on North Kanaka Creek



deep, sandstone canyon. However, because of its relatively isolated location, vandalism and unauthorized use of the area are a problem.

The main recreational activities in this portion of the park include: walking, equestrian, picnicking, nature study, and enjoyment of solitude in a spectacular setting.

Hatchery – Upper Reach

The Bell-Irving Kanaka Creek Hatchery (1983) is located off of 256th Street immediately south of the creek. Annual fish production goals are guided by the Lower Fraser River Area Salmon Enhancement Plan prepared by DFO. This plan places the highest priority on meeting the conservation objectives of the salmon resource. The hatchery has a 20-car parking lot that is considered inadequate, picnic facilities, pit toilets, rearing ponds and the hatchery building itself. The hatchery, funded by GVRD Parks, DFO and the BC Ministry of Water, Land and Air Protection, has a dual function of fish production and education. Operation of the hatchery is contracted through KEEPS. Visitors to this part of the park are mostly involved in interpretive and educational activities, but also picnic, walk and engage in informal nature study. A annual salmon release event in the spring, “Goodbye Chums”, draws 300-1500 participants to the hatchery. A report (Allaway 2002) on the proposed upgrading of the hatchery to a “Watershed Stewardship Centre” was prepared under separate cover. In this study it was determined that the hatchery served a useful purpose for maintaining adequate creek fish stocks and that its educational, stewardship and research role should be expanded.

The park’s service yard and maintenance building are located near the Hatchery and while the service yard is adequate, office and storage space are limited.

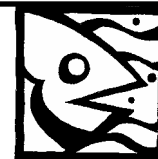
The upper reach area is considered highly sensitive due to the combination of its topography, soils and vegetation. There are also numerous valuable wetlands in the bottomlands of the upper reach where Ryder (2000) observed red-listed tailed frog.

At Trethewey Crescent the Lower Thornhill Trail (equestrian) crosses through the park, splits into an east and west section on the north side of the creek and fords the creek at two separate locations. The trails connect 116th Avenue (via Trethewey Crescent) on the north side of the park to Ferguson, 112th and Grant Avenues on the south side.

Forest Core

The area north of Dewdney Trunk Road is also a distinct habitat type, as the slope, soils, and vegetation change to a more typical Douglas fir coastal forest. Soils and topography are conducive to vegetative growth but most of the southern portion of the site was logged just prior to being included in the park. The bulk of this area is now a typical second growth forest, with dense stands of trees rising above a deeply matted floor of decaying wood interspersed with dense bush. Hemlock trees in the Forest Core are visibly affected by an infection of dwarf mistletoe, which may or may not be an issue for maintaining forest health and park values.

The Forest Core is essentially undeveloped wilderness and is not considered particularly environmentally sensitive except in areas adjacent to the creek (Tera 2002). The area’s hydrological integrity has been significantly impacted by previous forest practices. From the gate at 272nd Street and Dewdney Trunk Road, a service road extends northeast and is regularly used by mountain bikers, equestrians and hikers. Surrounding lands are also used by people on dirt bikes and motorized all-terrain vehicles who access the area via a BC Hydro right-of-way.



2.8 Existing Park Programs

Visitor Services – Education and Interpretation

Since the 1970s, GVRD Parks has provided rich, enjoyable outdoor education and interpretive experiences for schools, community groups and the general public.

At KCRP, programs are offered to interpret local natural and cultural history, sustainability, stewardship messages, park management messages and the role of the Bell-Irving Hatchery in maintaining fish stocks in Kanaka Creek. From 1999-2003, an average of about 1,800 people were contacted annually through various programs. Visitor Services activities included on-site school/group programs, the springtime *Goodbye Chums* event celebrating the release of young salmon fry into Kanaka Creek, and the autumn *Return of the Salmon* event, which focuses on the return of spawning salmon to the creek. GVRD's hatchery interpretive programs are popular, attracting an average of about 700 students annually from 1999-2003. The scope and level of future programming will be based on availability of Parks interpretive staff, and on opportunities to partner with other service providers.

The Kanaka Education and Environmental Partnership Society (KEEPS) assists in bringing watershed stewardship messages to audiences within the park and in the surrounding community. Through special grants and GVRD Parks in-service training assistance, KEEPS programming staff delivered 66 programs both in classrooms and in KCRP, contacting approximately 1,400 participants in 2003.

Given increasing needs for sustainability and stewardship information, interest has been expressed in expanding the role of the Bell-Irving Hatchery into a Watershed Stewardship Center (WSC). The nature and scope of the proposed WSC facility, programs and services will be determined through the combined efforts of GVRD Parks, the Park Association (KEEPS), other funding partners and community involvement.

The Visitor Services program also supports design and delivery of public information, park orientation and educational materials such as publications, signs, kiosks and other self-use media.

Partnerships and Community Development

In 1998, GVRD Parks launched the Park Partnership Program to include community partners in gathering information, expressing community ideas and wishes, and helping to deliver services in the parks. In that year, KEEPS was formed to act as a watershed-based stewardship group, and to work with and advise GVRD Parks on planning and operating Kanaka Creek Regional Park. This relationship between GVRD Parks and KEEPS as a Park Association is defined by a Letter of Intent.



Good-bye Chums



GVRD Parks and KEEPS work together to seek ideas, develop plans and implement strategies that will provide balanced use of park and Kanaka Creek watershed features, facilities and heritage sites for generations to come. KEEPS is committed to:



Rivers Day celebration, 2003

- Conserving and protecting the natural and cultural features of Kanaka Creek Regional Park and other surrounding community resources;
- Encouraging responsible public recreation;
- Assisting in collection of information and public input for the park management plan and future reviews.

Other groups and individuals from the local community are also involved in the park and play an active role in the stewardship of the park and creek. GVRD Parks is committed to encouraging and supporting community involvement.

Operations and Maintenance

Park operations and maintenance are currently performed by two full-time staff, a Park Operator and Park Assistant; and three seasonal staff. The park service building and maintenance yard were built in 1995 and are located just east of 256th Street at the Bell-Irving Hatchery site.

Park Goal

Kanaka Creek Regional Park will protect the natural environment of the creek and conserve native fish, plants and wildlife along with their habitats. The Park will offer community-linked outdoor recreation and education facilities, services and programs, and will promote stewardship of park and watershed resources in partnership with the Park Association and other partners.



3.0 GUIDELINES, GOALS, OBJECTIVES AND STRATEGIES

The management plan moves from the general to the specific, addressing system-wide guidance and then park-specific actions. Consistent with the mission of GVRD Parks and the development guidelines that apply to KCRP, this plan identifies objectives and strategies that guide park management.

Park Development Guidelines

Within the GVRD system of regional parks, KCRP is designated as a “Stream or River Corridor Park.” The following system-wide development guidelines apply to this type of park:

1. Provide a variety of active and passive recreation pursuits in park landscapes that preserve diverse natural and recreational features.
2. Construct trails to take full advantage of the continuous linear nature of the park.
3. Provide frequent access points and connections to other park areas.
4. Provide sufficient land for activity areas and viewpoints where resting, viewing, picnicking, fishing, group camping or other appropriate activities can take place.
5. Ensure that the water quality of the stream is protected and maintained.

(Source: Greater Vancouver Regional Parks: System Plan and Policies, Draft, 1985, Reprinted April 1990, p. 25)

Objectives and Strategies for KCRP

In order to achieve the park’s goal it is necessary to identify objectives which describe issues that must be addressed in the management plan. Strategies are then used to provide more detailed, on-the-ground descriptions of ways to reach



the objectives. The strategies are applied through the specific policies and management programs identified in the management plan.

The management objectives for KCRP presented below are organized according to park programs. Accompanying each of the 12 objectives are management strategies that will help achieve them.

Park Planning and Development

1. *Be a model of applied sustainability principles that considers social, environmental and economic values.*

- Respond to public needs and interests.
- Comply with applicable local, municipal, regional, provincial and federal regulations and standards in the planning, development and operation of the park.
- Consider social, environmental and economic impacts of proposed activities.
- Consider the economic opportunities related to park programs, especially those that may complement local tourism strategies.
- Identify methods and determine feasibility of incorporating alternative systems for sewage treatment, graywater use, recycling, energy, and biofiltration of hard-surface drainage.
- Assist partners in the development of complementary programs that support this management plan, including reviewing and recommending approval of acceptable projects.
- Encourage use of public transit, private buses, bikeways and pedestrian walkways for mobility in park design.
- Continue to undertake, encourage and support ongoing studies and projects to improve environmental quality of the park and watershed.

2. *Manage facilities and uses that minimize degradation of sensitive aquatic and terrestrial habitat.*

- Design the uses and facilities based on the park's natural and cultural resources and the conservation mandate for the park.
- In cases where conflicts are unavoidable, remediate or provide compensation for damaged environmental features.

Resource Management and Stewardship

3. *Identify sensitive features and promote the preservation and enhancement of natural resources in the park and on public and private lands in the watershed, to minimize negative impacts on water quality and quantity, riparian and upland habitat, and wildlife corridors.*

- Recognize and support the provincial designation of Kanaka Creek as a "Sensitive Stream."



- Conduct environmental, cultural and educational inventories, assessments and monitoring where required and resources are available.
 - Educate others regarding the sensitivities of the site and encourage a stewardship role for park users and neighbours.
4. *Develop tools and processes for assessing and controlling stormwater impacts to the main creek and park.*
- Identify and support efforts to continually improve environmental management of the watershed.
 - Assist in establishing and implementing monitoring systems to track the long-term health of the park and creek.
 - Develop criteria and a process for evaluating projects on adjacent lands which have the potential to negatively impact ecosystems within the park, especially related to stormwater drainage.
 - Favour practices that minimize stormwater runoff and reduce the need for engineered works.

Recreation

5. *Provide a mix of quality outdoor activities and facilities to attract users from across the region, and complement features and services provided in nearby public recreation, natural and historical areas.*
- Provide multi-, dual- and single-use trails in the park for equestrians, bicycles, hiking and walking.
 - Provide activity nodes for passive recreation such as picnicking, fish and wildlife viewing, canoeing, nature study, interpretive programs and contemplation.
 - Provide services accessible to all income levels, age and abilities.
 - Provide barrier-free (i.e., wheelchair) access to park facilities wherever practical.
 - Favour facilities that meet multiple objectives and are available to a wide range of groups and interests.
6. *Encourage recreational activities that minimize degradation of sensitive aquatic and terrestrial habitat.*
- Control and monitor access to the park.
 - Plan for and provide appropriate activities.



7. *In cooperation with other levels of government, groups or individuals, provide trails that link the park activity nodes and connect to community and regional networks.*

- Provide a “window” to the Fraser River with trail connections to Old Port Haney and the Albion ferry and facilitate and promote waterway connections to Brae Island and Derby Reach Regional Parks.
- Provide continuous access along the waterfront from Riverfront to Port Haney for pedestrians and cyclists.
- Sustain and enhance regional greenways, including the Trans-Canada Trail, with the park as a key piece in the wider regional network .
- Recognize the park’s function as a “greenway” for recreation and as a wildlife corridor, and balance these uses.

Education and Interpretation

8. *Provide information opportunities on sustainability, natural and cultural history education and interpretation for groups and individuals.*

- Deliver programs and distribute informative, high quality, self-use media.
- In the park’s programs and communication materials, emphasize its unique waterway, its beauty, its geological significance, its fish habitat and other natural and cultural features.



Signage overlooking Kanaka Creek at Riverfront

- Support partners in the development and maintenance of facilities that provide opportunities for education and stewardship programming.
 - Support the development of a Watershed Stewardship Centre at the hatchery.
 - Install and update signage and kiosks that provide visitors with environmental, cultural and operational information at Kanaka Riverfront, Fish Fence, Cliff Falls, Bell-Irving Hatchery the Forest Core and trailheads.
- Provide regional and local information for items such as cultural events, recreation opportunities, greenway connections and sensitive environmental areas.
 - Solicit input from schools, clubs and other users on how their needs are being met.



Operations

9. *Use best operating practices to ensure that park facilities and assets are protected and maintained, providing park users with safe, enjoyable visits.*
- Comply with applicable local, municipal, regional, provincial and federal regulations and standards in park operation.
 - Use construction and maintenance practices that avoid potential conflicts between sensitive or unique environmental, recreational and cultural features.
 - Inform visitors of access limitations and potential risks, such as steep slopes, river hazards, log booms, railway crossings and encounters with wildlife within the context of system-wide policies.
 - Monitor human-wildlife conflicts and undertake measures to minimize same using existing management practices such as temporary or seasonal area closures, signage and public education.
 - Continue active role in encouraging appropriate use of the park.
 - Provide necessary operational, educational, safety and contact information at all major activity nodes and trailheads where applicable.
 - Remove unauthorized signs and similar materials from park kiosks and property (i.e., private/corporate advertising).
 - Maintain a presence of identifiable park staff, vehicles or signage as frequently as practical throughout the park.
 - Perform timely maintenance on park facilities.
 - Collect feedback from park users through personal contact and circulate relevant comments to appropriate staff.

Community Development

10. *Maintain and promote effective communication and working relationships with the Park Partners, District of Maple Ridge, First Nations, other agencies, interest groups and individual stakeholders.*
- Work with First Nations and others to identify pre-and post-contact cultural uses within the park and protect sites of cultural significance.
 - Accommodate interagency involvement and expertise throughout planning and implementation processes.
 - Prepare and solicit support for a formal agreement between GVRD and DMR that will provide for joint cooperation in areas of common interest identified in the Management Plan.



- Work with the District of Maple Ridge, adjacent land owners and developers to ensure that activities adjacent to the park, creek and its tributaries comply with federal and provincial regulations, local bylaws and best management practices.

Managing Cultural and Natural Resources

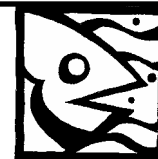
11. Maintain ongoing citizen involvement with planning, developing and managing park programs and facilities, especially through the Park Association.

- Use a shared decision-making model with KEEPS.
- Invite stakeholder and public involvement throughout planning and implementation processes.
- Continue to establish new partnerships with outside groups and individuals.
- Utilize local abilities, skills and facilities that support the park's planning, management and programs.

Resourcing

12. Provide additional resources for the park through fees for value-added services, grants, revenue generating projects, donations and fundraising with park partners and the Pacific Parklands Foundation and by supporting volunteerism.

- Apply fees to group and public registration programs and reservable facilities where appropriate.
- Continue to collect market value rent for rental properties until site required for other uses or until the use is no longer appropriate.
- Continue to attract cost-sharing agreements with local, provincial and federal agencies for the Bell-Irving Hatchery and future Watershed Stewardship Centre.
- Assist partners in the pursuit of funds for development and operation of the Kanaka Creek Watershed Stewardship Centre.
- Encourage volunteerism and community involvement.



4.0 GENERAL MANAGEMENT POLICIES

The policy statements in this management plan are subject to the laws, rules, regulations, development guidelines and corporate and departmental policies that apply to all GVRD Parks. Corporate or departmental policies may supercede park-specific policies included in this management plan.

The management policies presented in this section are a reflection of the descriptions and inventories of the park presented earlier, as well as the objectives and strategies presented in Section 3.0. The policies address management or operational issues for which approaches have been defined specifically for KCRP.

4.1 Cultural Resource Management

GVRD Parks is generally satisfied with its background studies on the park's cultural resources and additional assessments will only be carried out where impacts could occur due to significantly intrusive development.

- CRM 1 GVRD will conduct appropriate background studies and impact assessments to identify, protect and interpret significant cultural resources within the park when significant facilities are proposed for sites likely to contain culturally significant artifacts.
- CRM 2 Wherever appropriate, GVRD Parks will work with the Katzie First Nation, Kwantlen First Nation and the Maple Ridge Museum and Archives, among others, to ensure that significant cultural resources are protected and interpreted in appropriate ways.

4.2 Environment, Geology and Soils Management

Of particular concern to park management are the fine clays in the riparian areas of the middle and upper reaches.

- GEO 1 GVRD Parks will limit trails and other access or facilities on steep, clay slopes within the riparian area of the park's middle and upper reaches.
- GEO 2 Trail maintenance will be performed to minimize soil erosion, including maintaining drainage features (i.e., ditches) on steep sections of trail and closing unauthorized "short-cut" trails that damage vegetation and disturb soils. Educational signage to encourage cooperation/stewardship from park visitors may be required in some instances.

4.3 Vegetation Management

The park's vegetation assemblages are of key importance to maintaining sufficient wildlife habitat, i.e., nesting and feeding.

- VEG 1 Where appropriate, and as resources allow, programs will be developed with partners to eliminate or reduce the impacts of non-native invasive species (Appendix C - Table B) through mapping, monitoring and control programs.
- VEG 2 GVRD Parks will endeavour to preserve and utilize indigenous native species in the park. Where indigenous species cannot meet the necessary planting objectives, non-native and non-invasive species may be considered.



- VEG 3 Operations staff will be trained to recognize and preserve native plants, so that desirable species are not unnecessarily mowed or otherwise removed.
- VEG 4 Vegetation control will favour physical and design-based integrated pest management and control measures based on departmental policy and procedures.
- VEG 5 Hazardous tree assessments will be performed as necessary and trees felled where deemed necessary. Portions of hazardous trees may be retained to create wildlife trees.
- VEG 6 GVRD Parks will minimize fossil fuel emissions, noise disturbance and the use of toxic products wherever possible when maintaining facilities. Consideration will be given to factors that provide significant cost savings or safety improvements when determining maintenance methods.
- VEG 7 Trees or stands infected with disease or vulnerable to windthrow may require investigation for intervention, possibly including removal. Where interventions are widespread they will be subject to consultation with partners and the public.
- VEG 8 As with other specialized issues (cultural resources, geotechnical and biophysical studies), GVRD Parks will build its capacity in vegetation management through studies in consultation with its partners and other knowledgeable professionals.

4.4 Water Resource Management

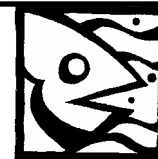
The priorities of water management in the park are to maintain sufficient flows and protect the creek's water quality and temperature. GVRD Parks will work towards this end through interagency cooperation and education.

- WTR 1 GVRD Parks will cooperate with other agencies to protect the park's water and fish resources and support education and outreach programs as necessary.
- WTR 2 With its partners, GVRD Parks will develop a protocol and plan for the long-term monitoring of the creek's water quality and assist in the implementation of this plan.
- WTR 3 GVRD Parks will work with other agencies to see that appropriate tools, laws and regulations are utilized to protect the creek's main stem and tributaries.

4.5 Fish Management

As with water resources, and subject to the policies for water resources, fish management is largely out of the jurisdiction of GVRD Parks. The BC Ministry of Water, Land and Air Protection (WLAP) and DFO are responsible for managing and regulating fish and fisheries in Kanaka Creek.

- FSH 1 Park programming will continue to have a strong focus on fish and water quality, in educational programs at the fish fence and hatchery.
- FSH 2 As a partner with KEEPS, DFO and the WLAP, GVRD Parks supports the fish enhancement and education efforts of the Bell-Irving Hatchery.

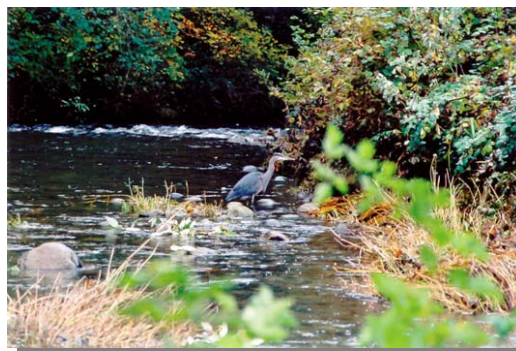


- FSH 3 GVRD Parks will work with its partners, especially KEEPS, DFO and WLAP, to maintain the species richness of Kanaka Creek. We will assist partners on implementing aquatic habitat studies, fish habitat creation/improvement/protection projects.
- FSH 4 Fishing access has been known to cause negative impacts on the park from careless use (litter) and over-use (trails/erosion). Should DFO re-open a fishery on Kanaka Creek, GVRD Parks may restrict fishing access in the park where feasible. It may also be necessary to request parking restrictions on adjacent roadways.

4.6 Wildlife Management

KCRP contains or may contain several threatened or endangered species. In Appendix C - Table A is provided a list of regionally sensitive or desirable wildlife that may require protection or enhancement measures. There is also wildlife, like bears, that potentially pose a risk to park visitors (and vice versa). Listed in Appendix C—Table C is a list of selected wildlife species that may require educational or control measures within KCRP. The wildlife species identified for possible control or enhancement is included in the Management Plan to represent *suggested* species only. Decisions on actual management actions will be based on input from appropriate authorities and partners, site-specific conditions, visitor safety, and so on, in accordance with the objectives and policies of this plan.

- WLD 1 KCRP will be managed to preserve wildlife habitat, to facilitate use of the park and adjoining ravines as wildlife corridors, and to minimize potentially dangerous animal-human interactions.
- WLD 2 Education is the preferred approach to dealing with wildlife-human conflicts. Kiosks at the activity nodes and trailheads from the Fish Fence upstream (Fish Fence, Cliff Falls, Hatchery, Trethewey and Forest Core) will include information about bears. Kiosks in the Forest Core will also provide information about cougars.
- WLD 3 New facilities will be developed using bear-proof technology for garbage disposal where appropriate and existing equipment may be retrofitted to be bear-proof.
- WLD 4 Management of threatened or endangered species will be guided by the Province of BC Recovery Teams and data from the Province's Conservation Data Centre.
- WLD 5 GVRD Parks will support appropriately placed and maintained wildlife enhancement projects, such as providing nesting boxes for waterfowl, birds or bats, and incorporate such programs into the park's education and interpretation programs.
- WLD 6 GVRD Parks will encourage the maintenance of wildlife corridors on other public and private lands in the Kanaka Creek watershed.



Great Blue Heron on Kanaka Creek



WLD 7 Though mosquitoes may be a nuisance to people, they, and other biting insects, are an important part of the food chain. GVRD Parks will follow corporate standards for controlling pests in the park.

4.7 Sensitive Areas and Recreation

Due to various combinations of steep slopes, clay soils, flood risk, and unique plant and animal communities, KCRP has many sensitive areas that should not be subject to high levels of human use. For this reason, it is not desirable to construct a trail system that stretches through all units of the park on both sides of the creek. As emphasized throughout this management plan, such a trail system would be detrimental to water quality in the creek, fish habitat, wildlife habitat and, in many areas, would be unsafe for park users.

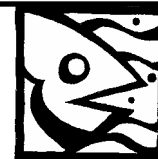
GVRD Parks has conducted detailed biophysical surveys and sensitivity analyses of the park. These background studies are critical tools for park planning.

- SEN 1 GVRD Parks will endeavour to concentrate facilities and activities in areas that have low or moderate sensitivities.
- SEN 2 GVRD Parks will limit the number of creek crossings within the park, giving priority to crossings that link community trail networks, recreation facilities or activity nodes.
- SEN 3 No off-leash dog areas or trails are planned for KCRP, because of site availability and concerns about impacts on vegetation and wildlife, as well as potential conflicts with other visitors.

4.8 Access Management

Unauthorized access, misuse of the park or a sharp transition from park to developed land can damage fish and wildlife habitat, cause impacts on water quality or negatively affect the visual or aesthetic value of the park.

- ACS 1 GVRD Parks will mark entry to the park at all major access points, including staging areas, trailheads and driveways.
- ACS 2 Brochures and signage will direct users to several activity nodes with appropriate facilities, such as parking, toilets and information kiosks.
- ACS 3 Access to the river for boating will be limited to a canoe/kayak launch at Riverfront.
- ACS 4 GVRD Parks discourages motorized watercraft from entering the creek or mooring in the creek's mouth.
- ACS 5 GVRD Parks will work with its Forest Core neighbours to properly sign, monitor or close unauthorized access points used by motorized vehicles or unauthorized mountain bikes.



4.9 Encroachments and Enforcement Management

Encroachment issues include: unauthorized trails; unauthorized uses; waste disposal onto park property, especially of organic materials like yard waste; use of the park for extensions of private yards; and unauthorized planting in the park, including non-native species. Related issues also dealt with in this item include the removal of plant matter from the park, the negative impacts resulting from stormwater run-off and off-site chemical seepage into ground water.

- ENC 1 GVRD Parks will ensure that its rules and regulations are posted at major access points and elsewhere as necessary. A continuum of bylaw compliance methods from education to enforcement will be employed to modify behaviour.
- ENC 3 Where encroachments occur, GVRD Parks will attempt to identify and educate potential offenders. For example, an educational campaign may be required to build stewardship values among adjacent property owners, or a request for specific improvements may be made to individual property owners, developers individuals, organizations or agencies.
- ENC 4 For cases such as off-site chemical use and stormwater management (sedimentation), GVRD Parks will cooperate with the District of Maple Ridge, DFO, WLAP and park neighbours, including CPR, the Ministry of Highways, developers and private homeowners to determine what standards and management practices are acceptable.

4.10 Resourcing

An objective of the park is to weigh environmental, social and economic values, including a strategy to “consider the economic opportunities related to park programs, especially those that may complement local tourism strategies.” Within the 20-year life of this management plan, GVRD Parks or its partners may implement opportunities to obtain resources and generate revenue for the park, especially should new park development occur along the Port Haney waterfront or if the hatchery is upgraded to the proposed Watershed Stewardship Centre.

Any specific opportunities for revenue generation and associated partnerships will be screened against the park’s overall conservation mandate and its objectives for Resource Management and Stewardship.

- REV 1 GVRD parks will continue to rent houses located on inactive land within the park until the properties become unprofitable, inappropriate or required for a park use.
- REV 2 Subject to future concerns about either environmental impacts or visitor safety, GVRD Parks will continue to lease waterfront for log booming.
- REV 3 GVRD Parks will consider allowing its partners or other local or regional businesses or organizations to operate complementary concessions. An example of such services are souvenir or refreshment sales at the future Watershed Stewardship Centre.



5.0 PARK PLANNING AND DEVELOPMENT

The conservation role of KCRP reflects the creek's unique and sensitive ecology. Park planning has weighed the protection of the park's resources and ecosystems against the social benefits of human use, endeavouring to ensure that park development is carried out in a manner that suits both the long-term protection of its resources while helping to meet local and regional community needs for education and recreation opportunities.

5.1 Working Boundary Expansion

The plan recommends expansion of the working boundary to meet recreational or conservation objectives and includes expanding the Forest Core on Crown land along the creek's main stem to provide a linkage between the park and the proposed east-west Greenway (Figure 5.3.1—Item J). This came about after studies resulted in expansion of Park Management Units from five to six. Other future park boundary expansion areas include the north stem of Kanaka Creek to at least Dewdney Trunk, small pockets of land located below the creek's benchlands and other strategic areas where there are no parkland alternatives for contiguous trail locations. In these cases, GVRD Parks will undertake special studies to identify additional land requirements for environmental protection and trail linkages and involve all public parties affected to formulate strategies to meet the plan objectives. Tools to be considered could include conservation easements, land purchases, development set-asides, etc.

5.2 Recreation Use

While it is difficult to accurately forecast anticipated levels of recreation use given the number of unknowns, it is possible to interpret trends and provide projections for future use based on past indicators. Figure 5.2.1 provides a comparative analysis of population trends on a regional and local level and compares these with KCRP visitor numbers from 1994-2003. The chart indicates a close correlation between population increases and increased recreation use although there is a subtle long-term trend towards real growth in recreation use. Using this data a straight line projection has been made showing population and park usage figures up until 2031. These and other data indicate:

- Population to usage figures indicate that park use grew one percent faster from 1995 to 2003 than regional population figures and it is anticipated that this trend will continue.
- By 2025 the park is projected to attract 429,000 (65 percent increase since 2003) visitors annually without additional facilities being provided.
- The park is often at recreation capacity during summer months and peak weekend periods at Cliff Falls and Kanaka Riverfront.

Based on staff comments, there is excess recreation capacity during off-season periods throughout the park. However, Kanaka Riverfront and Cliff Falls are currently over capacity during most of the peak season period (June, July and August) and some of the shoulder months (April, May, September and October).

User satisfaction surveys indicate high levels of user satisfaction, however a large percentage of users did feel that trails were too short and not diverse enough.

The plan attempts to address these concerns by proposing more trail development and increased community linkages to take advantage of DMR's trail development program. Given the recent rapid expansion in population, and with anticipated increases in user access to the park, it is anticipated that park use will exceed recreation capacity in the Riverfront and Cliff Falls area.

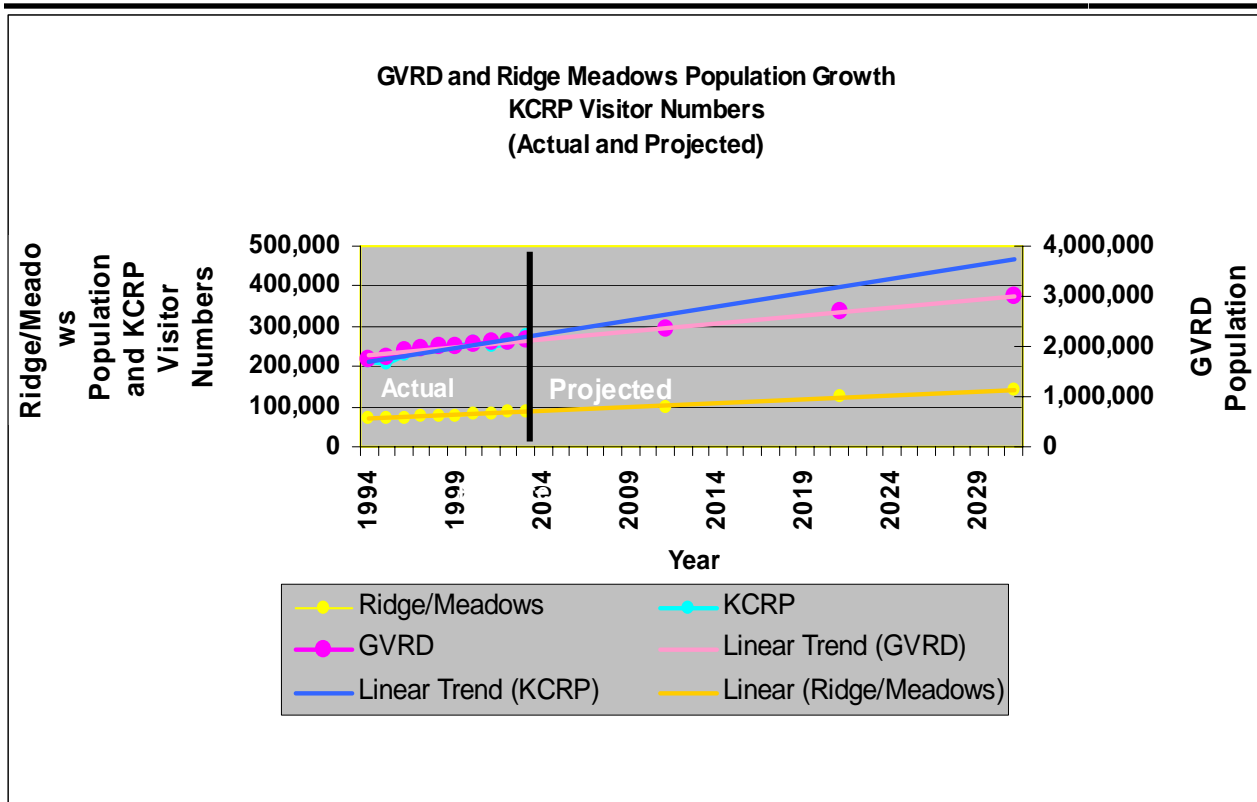


Figure 5.2.1 Population and KCRP Visitor Number Comparison

Therefore KCRP’s recreation capacity has been designed to incrementally increase according to likely population and planning development scenarios. General expansion of capacity is called for given increasing population, higher levels of recreation use and the need to support community health objectives.

5.3 Park Concept

The KCRP Management Plan has more interdependency with the programs and priorities of its host municipality, Maple Ridge, other agencies and the community than any other GVRD regional park plan to date. As a 12-kilometre narrow ribbon of park bisecting a rapidly urbanizing rural municipality and containing a important and sensitive salmonid river, it is both a transportation and development constraint and a valuable natural and recreation resource to protect and enhance.

The established recreational role of the park is to focus recreational activity at the five nodes: (Riverfront; Kanaka Creek Parkway—Fish Fence; Cliff Falls; Bell-Irving Hatchery; and the Forest Core). The management plan largely maintains this pattern and, where possible, calls for expansion of existing activity types such as nature viewing, walking, hiking, education/interpretation and equestrian use, in these same locations. As a result of recreation trends and park characteristics, enhanced cycling opportunities have also been added to this list.

Previous plans calling for a continuous trail, running the length of the park, have since been identified as unsatisfactory and environmentally unacceptable. Alternatively, the plan calls on GVRD Parks in cooperation with DMR to create a series of trails, loops, crossing points and linkages using parklands, roads, unused road right-of-way, easements, utility right-of-ways and contiguous open spaces from the Fraser River to the top of the Forest Core and beyond (Figure 5.3.1 and Figure 1.6.1). The development of the trail network depends on cooperation among GVRD Parks, DMR, BC Ministry of Highways, Canadian Pacific Railway, BC Gas, BC Hydro and others.

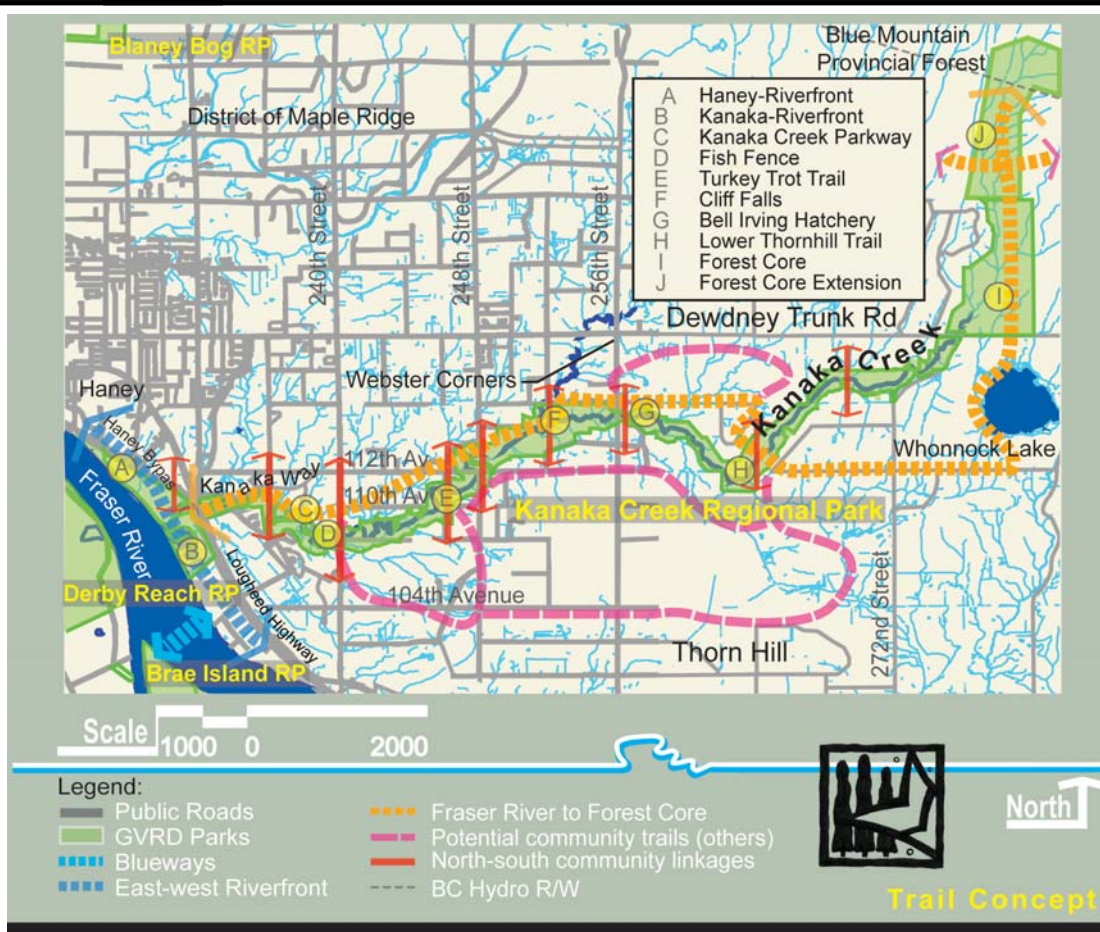


Figure 5.3.1 Trail Concept

Given that communities are anticipated to expand around the park, the plan calls for access to the park to be located at strategic locations along its entire length. These access zones are located in areas where environmental sensitivity is less, damage has already occurred through previous recreation use, or where required for community trail linkages. The KCRP Management Plan also calls for limiting access to the park in areas between access points to maintain the environmental integrity vegetation, slopes, large mammal migratory routes and hydrology.

To make the best use of the park's scenic resources and to support tourism in the area, GVRD Parks is recommending that DMR consider the incorporation of a scenic parkway for motorists, cyclists and walkers on DMR road right-of-ways originating at Port Haney. Beginning near the civic centre, the parkway would follow existing scenic country roads along the park, terminating at historic Webster's Corner on Dewdney Trunk Road (Figure 5.3.2) Users could then use many of the nodes GVRD Parks is providing for scenic viewing, walking, cycling, staging or picnicking. The Parkway could have special provisions for maintaining or enhancing the heritage character of the road and area through appropriate zoning, site planning guidelines and architectural/landscape architectural/ engineering standards.

As of 2003, the park's internal trail network included one bridge at Riverfront, one at Tamarack Lane (Rainbow Bridge), four bridges at Cliff Falls and one at 272nd Street. To facilitate north-south community access and provide for a linear contiguous trail system, additional bridges are planned for Riverfront, Turkey Trot, Trethewey and the Forest Core. These bridges will be single, dual and multi-use depending upon user demand, terrain and desire lines. Horses will be permitted to ford the creek in two locations: Turkey Trot Trail

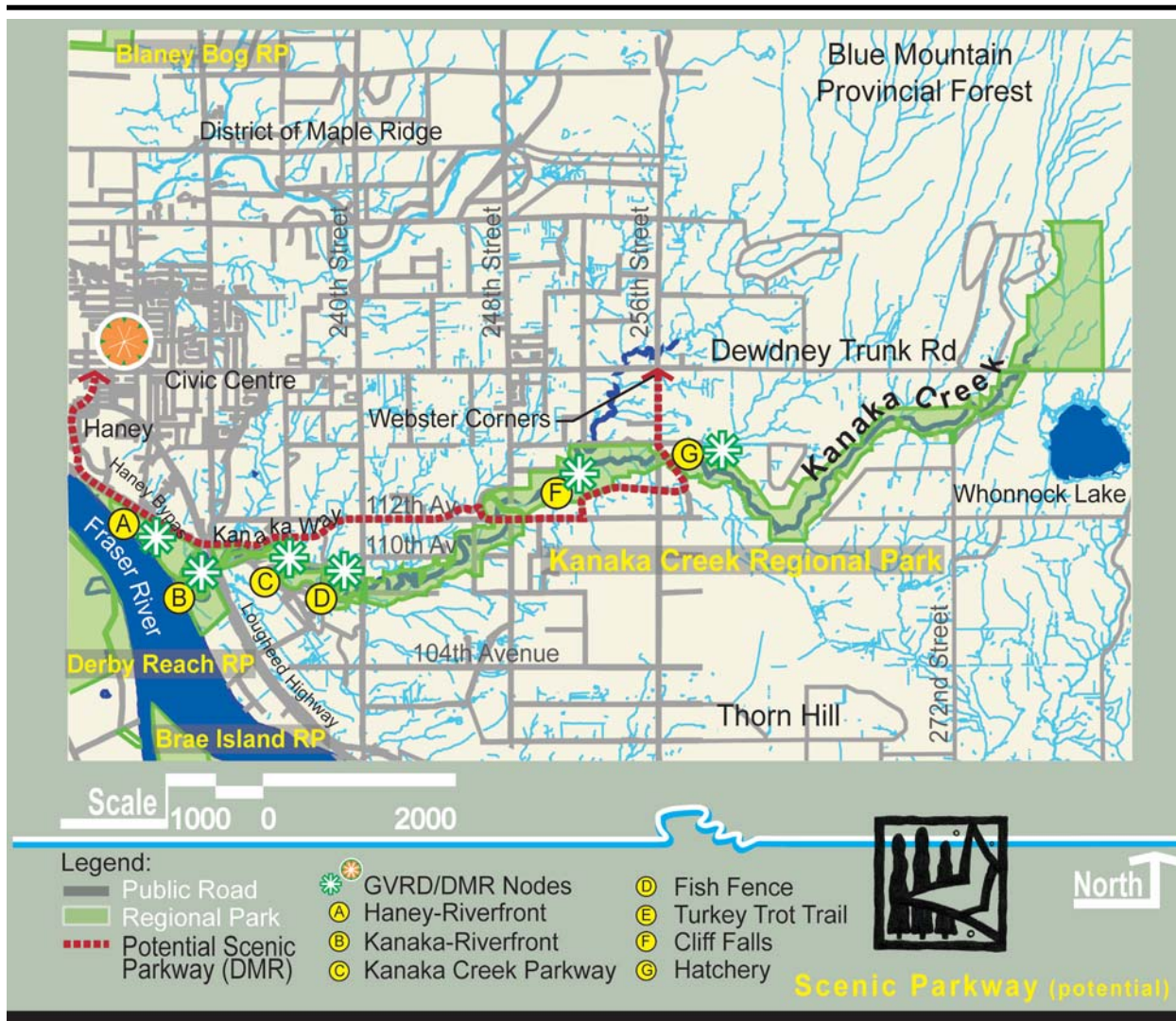


Figure 5.3.2 Scenic Parkway

and Trethewey with appropriate approvals. These sites were identified as acceptable for fording given levels of equestrian use, conditions of the stream substrate, fish habitat criteria and safety concerns.

Expansion of parking has been provided for at all major locations but the plan also looks to promote improved bus access to Kanaka Riverfront, Fish Fence, the Watershed Stewardship Centre and, eventually, Haney Riverfront. DMR will also be approached to establish new development guidelines and locations for alternative staging areas within the community to minimize environmental impacts, duplication of facilities and optimize utilization of public resources.

5.4 Inactive Parkland and Rental Properties

Inactive parkland and park houses may be leased to help fund park programs. These properties are essentially park reserve for future recreation and conservation demands, and are mostly leased for residential purposes. KCRP has eight rental houses and as a result of this plan one house at Fish Fence will be removed prior to 2010.



5.5 Facilities and Programs

Facilities and Programs by Management Units

Described below is a conceptual framework for the development of facilities based on individual park planning units. Maps L1 - L5 provides more detailed facility and activity locations.

Riverfront Map L1

Existing facilities will be maintained. Completion of the 1990s proposal for a second bridge and boardwalk has been re-confirmed. However, priorities for development remain the linkages between the Kanaka Riverfront and the local community and incorporation of additional waterfront (Haney Riverfront), located between the park and Port Haney Wharf.

Trail capacity in the area will increase from 2.5 to 5.6 kilometres with interpretive opportunities proposed for both waterfront areas. Improved access to the Kanaka-Riverfront staging area will be provided with renovations to River Road currently underway and installation of a pedestrian/cycling flyover desired by DMR. Initially access will be altered but in the long-term it is proposed that parking be relocated and expanded from 50 cars to 100 on the decommissioned River Road right-of-way, increasing capacity and visibility. Portions of the current parking area will then be converted to picnic and open space.

The Haney Riverfront section remains a key acquisition interest. The area is intended to provide continuous public access on the riverfront with activities and facilities to accommodate picnicking, open space play, major events, parking (100+ cars), washrooms, promenade, small outdoor entertainment area and cycling. Tying in the riverfront development with the Civic Centre is an important objective as are linkages to Port Haney Wharf, Maple Ridge Museum and the Westcoast Express. The community and DMR may express future interest in other components for a public waterfront. Haney Bypass is proposed to be part of a continuous scenic parkway providing access to the site, short-term parking and a viewpoint of the river.

Lower Reach – Fish Fence Map L2

A separate report (GVRD 2000) presents additional information on the conversion of Kanaka Creek Road to Kanaka Creek Parkway with trails and creek viewpoints. When residential access is no longer required, DMR will decommission the remaining section of Kanaka Creek Road and transfer the old roadway to GVRD. Improvements will include reducing the area of paved surface and removing unnecessary utilities. An equestrian gravel trail will be provided with removal of unused road surfacing. Walking and cycling will be accommodated on trails throughout the area. Trail capacity in the Lower Reach will increase from 2.0 to 3.0 kilometres. New community access locations have been provided along the new parkway.

The Fish Fence will be developed into an activity node for the lower reach, with parking for approximately 100 vehicles (existing 25), and will include washrooms, equestrian staging parking (3), a spawner fish-viewing platform, additional trails and self-guided interpretive signage and a picnic area. Additional land north of this site will be required to accommodate greater levels of use and could be reviewed when the lands are assessed for subdivision potential at a later date. The fish fence will continue to be used as a fish activity/ special events location. Self guided interpretive facilities will be improved at this location.



Investigating aquatic insects and a watershed model during an educational program

Middle Reach – Cliff Falls Map L3

Middle Reach access is to be limited to designated locations. Trails in the area will be expanded from 3 to 5.3 kilometres. Parking spaces will increase in the area from none to 40 spaces at Cliff Falls.

Recreational trail development from Turkey Trot Trail to 240th Street is difficult because of flooding and a lack of suitable public lands. Further land acquisitions along the road right-of-way will be required between the park and 110th Avenue in order to provide east-west access in this area. East-west access across the creek at the end of 110th Avenue is currently unresolved but remains a priority. Three alternative trail alignments are shown on map L3 but other options may later become obvious. If private land acquisition is required, additional public consultation may be necessary.

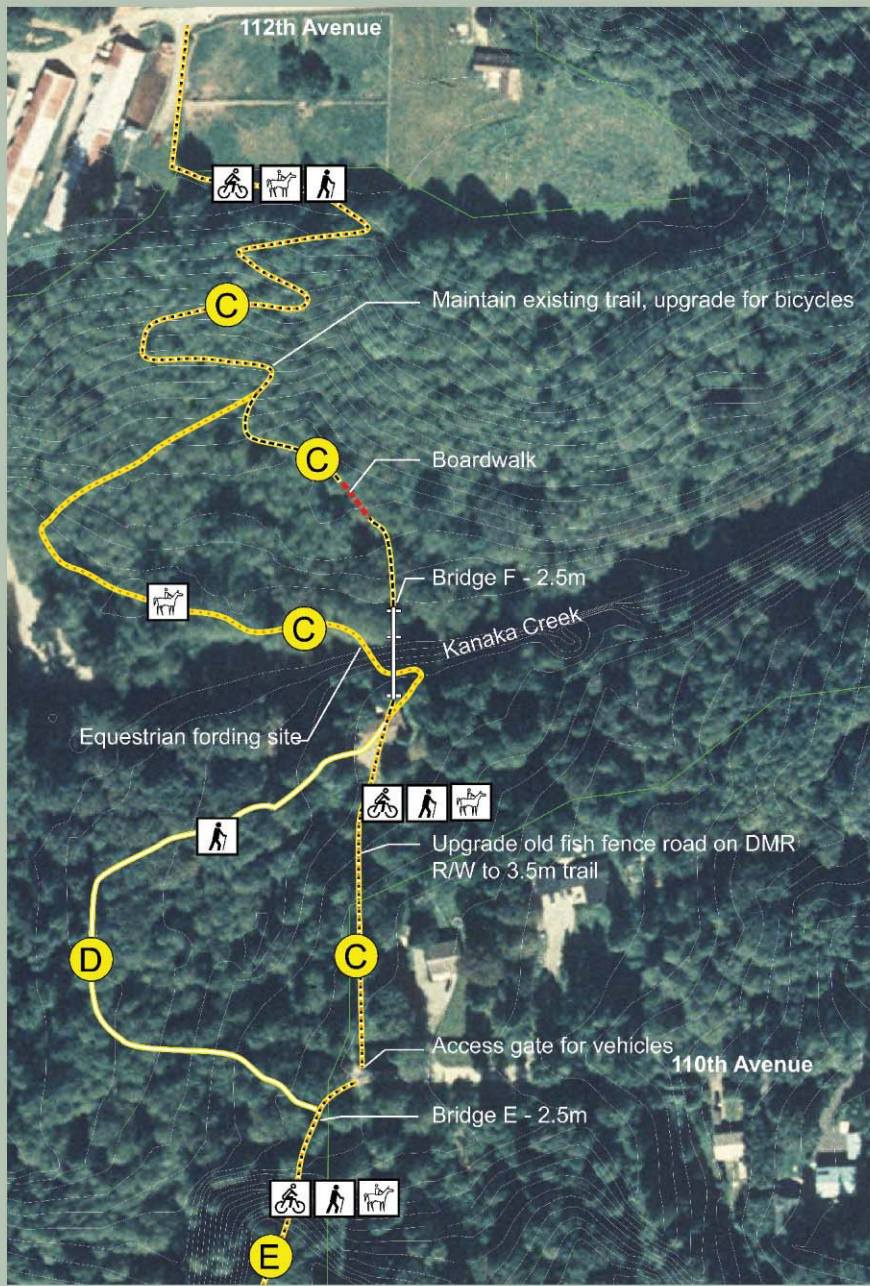
The current east-west equestrian crossing has been permanently closed for a list of reasons: dangerous banks, flood conditions, environmental sensitivity. An alternate trail location is being sought. The north-south equestrian crossing at Turkey Trot will be relocated in 2004 because of river conditions. In the future a pedestrian and cycling bridge will be built (Figure 5.5.1).

Like Riverfront, Cliff Falls is an activity node for the park where more intensive use will continue to be promoted. To enhance the area's attractiveness and use, the plan calls for improved access, a viewpoint on the south bluff of the Falls and the redesignation of Les Robson Trail to allow cycling. To increase the area's capacity and alleviate parking congestion, an additional staging area will be developed off the 112th Avenue Diversion. Facilities to be provided include parking (40), washrooms, open space, and picnicking. To further alleviate parking congestion in the area, DMR will be approached regarding improved parking at Cliff Park.

Hatchery – Upper Reach Map L4

Due to the narrow, steep and sensitive character of the park above the hatchery, there is little opportunity to develop facilities in this portion of the park. Facility development will be limited in this area to the hatchery, 272nd Street, and Trethewey where a bridge crossing for pedestrians and cyclists will be provided. In addition GVRD Parks will work in conjunction with DMR, partners and adjacent land owners to solidify trail access to the top of Thorn Hill and beyond. One site with development potential in the future is the rental property with access from the south side of the park at 272nd Street. Future day-use facilities or group camping are possibilities for this site. Additional capacity for this site may be possible in partnership with DMR when adjacent sites apply for redevelopment permits in the future.

At the hatchery, GVRD Parks and partners agree the existing facility provides a valuable watershed service by assisting in maintaining fish stocks in the creek and providing educational opportunities. It has been found that the pressures on the fish stocks are largely



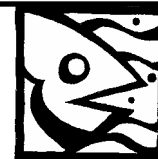
- Legend:
- GVRD Parks' Trail
 - Pedestrian/hiking
 - Cycling
 - Equestrian



North ↑

Turkey Trot Trail

Figure 5.5.1 Turkey Trot Trail North-South Trail Alignment



external and if populations are going to continue it is important that advanced research and education programming be applied to minimize and mitigate external impacts. As a result partners, in conjunction with GVRD Parks, are proposing to create a new Watershed Stewardship Centre that would be complementary to the existing hatchery, providing facilities for watershed education and research (Figure 5.5.2) (Allaway 2002).

The hatchery will be renovated with additional space for reception, lab, displays, class/meeting rooms and offices. Existing fish culture facilities will be upgraded and improved. Fish tanks could be moved outside but existing rearing capacity will be maintained with the exception of incorporating Steelhead into the program (subject to appropriate approvals). Servicing of the site will be enhanced including expansion of parking from 15 to 40 cars and the addition of bus parking (2). Transit will be encouraged in future Translink plans and picnic facilities will be improved.

The existing operations yard boundary will be retained and additional office and storage space will be provided.

Forest Core and Forest Core Extension Map L5

There is significant potential and demand to develop an activity node in the Forest Core in the later part of the management plan period, however most of the development of this area will occur at a time exceeding the KCRP Management Plan's 20-year forecast.

The Forest Core near Dewdney Trunk Road and east of the creek includes large areas that are relatively flat and well-drained which could accommodate future intensive use. Studies indicate that the southern tablelands, located outside riparian areas have the lowest environmental sensitivity ratings of any area of the park. Facilities could include parking (50 cars), a staging area for equestrians (3), washrooms, kiosk, open space and a shelter for group day-use.

To provide access to the planned greenway along the BC Hydro right-of-way and preserve valuable habitat and scenic features, it is proposed that 110 ha of Crown land, located north of the Forest Core (Forest Core Extension), be added to the park. If expanded, the Forest Core would become a staging area for the eastern section of this trail network providing facilities for walkers, hikers, cyclists and equestrians. The plan does allocate capital funds for some minor trail development (4.2 kms of trail) in conjunction with adjacent woodlot licensees.

Given the "wilderness" nature of this area and impact of heavy use, commercial horseback rides are not recommended. In addition, Forest Core has long been discussed as an equestrian camping area. The site may have the capacity for this activity, subject to further public review, but such use will only be permitted if the camp would not significantly impact the natural environment, be compatible with proposed day-use facilities and sponsored by equestrian groups.

There is minor use of the existing Forest Core by mountain bikes and significant use of adjacent Crown lands by motor bikes and all-terrain vehicles. Motorized recreational use of the Forest Core is actively discouraged but the proposed Forest Core Extension does see use. The plan allows for exploration of a cross-over trail in the Forest Core Extension area to connect motorized users of the two adjacent woodlots. Such accommodation of motorized trail use would require environmental assessment and be subject to appropriate review and public consultation. Existing motorized recreation on the proposed greenway must be considered by GVRD and other agencies when planning this trail corridor.

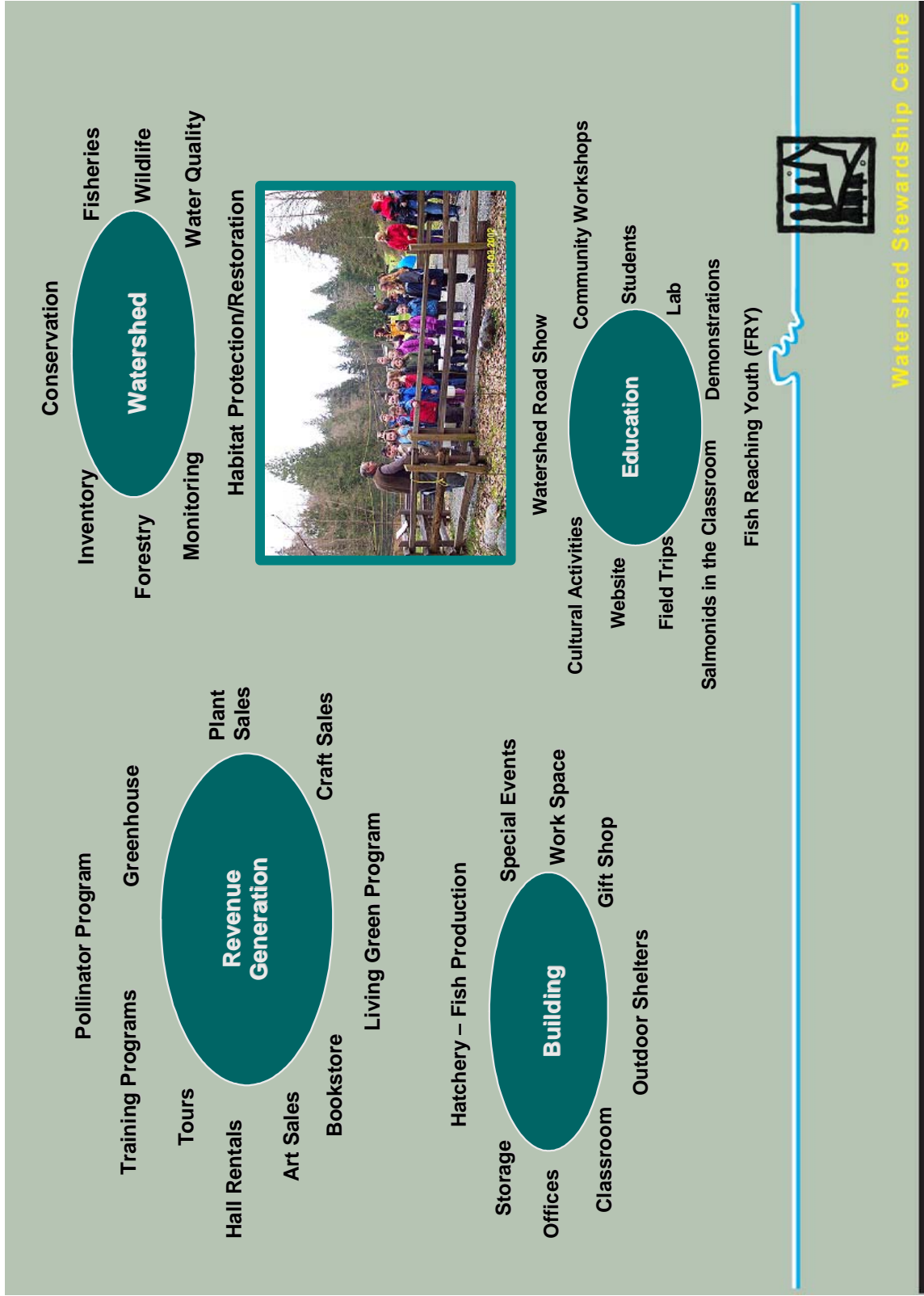


Figure 5.5.2 Proposed Watershed Stewardship Centre Activity Diagram



5.6 Facility, Partnerships and Operational Changes and Costs

Existing and Future Program and Facility Costs

Presently there are no funds in the Parks Basic Facilities Capital Program; however, to respond to recreation and development pressures and opportunities, the KCRP Management Plan proposes a series of strategic capital projects phased over four five-year periods. Order-of-magnitude cost estimates are outlined in Appendix D – Table A, by Park Management Unit. All are forecast in constant 2004 dollars. Implementation priorities range from 1 (highest) to 3 (lowest) and are based on factors such as DMR initiatives and agreements, future community development patterns, and comments provided by the public, user groups, and partners.

Some projects are dependant on external resources, or anticipate cost-sharing with partners. Capital projects that are expected to extend after the 20-year period are identified but costs are not included. No costs are projected for the Haney-Riverfront component because of uncertainties regarding program scope and timing. The estimated total GVRD capital costs for implementing the 20-year program of the KCRP Management Plan is \$1,949,363 with an additional \$695,813 earmarked from external funding.

Capital project estimates after the first 10 years are considered speculative. Order, magnitude and even project priorities may change as part of the normal capital and operating budget projection process. Timing for many of the facilities and programs identified will be dependent upon land acquisition timing, population trends and resources available within GVRD Parks, DMR, partners and other funding bodies.

A major component of the park's capital project budget is the Watershed Stewardship Centre. The project is a major initiative of KEEPS in partnership with GVRD Parks (other potential partners include DMR, DFO, the Province and others). The Centre is considered a high priority given corporate sustainability objectives and the need to deliver additional education and interpretive programs in the park and the north shore. A preliminary cost estimate for the Watershed Stewardship Center facility is \$500,000 of which GVRD Parks would provide \$100,000 in matching funds for the Centre and \$150,000 for necessary site and utility improvements associated with its development. Other costs associated with the Centre, but not accounted for, will be staff time and resources to assist with planning and implementing the project.

Enhanced services are anticipated at Haney Riverfront due to the area's proximity to the District's downtown and waterfront locations. However, the site presents major issues given its current industrial use, Fraser River shoreline, access constraints and soil conditions. Site restoration and development will be costly. GVRD Parks' major objectives are to secure access for a staging area with adequate parking, public transit, public washrooms, and some open space; and to provide a continuous trail along the waterfront linking Haney to Kanaka – Riverfront. The community and DMR may wish to explore ancillary services that might offset some of this cost.



Falls on Kanaka Creek, north of the Forest Core



Appendix D – Table B indicates the type and scope of stewardship projects and studies required. Studies include inventories, analysis and recommendations on what management prescriptions should be considered for forest health, pest management, fire safety and hazard tree removal. Proposed projects include hydrological restoration assessments for restoring groundwater regimes in the Forest Core and invasive species control and monitoring programs. GVRD Parks' costs for these programs are expected to be \$50,500; a similar amount will be provided by external funding sources. Depending upon the recommendations of these studies, additional funds or efforts may be required in future implementation stages. Where recommendations could result in significant differences in existing management policies or impacts, additional consultation may be undertaken with partners, stakeholders, other agencies, and the public.

Staffing and cost implications for Operations and Visitor Service programs are provided for the park as a whole in Appendix D—Table C for the first ten years of the plan. These figures do not include departmental costs for other area-wide functions such as administration, planning or community development.

Operations and Maintenance

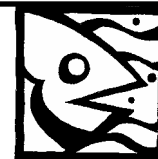
Park operations and maintenance are currently performed by two full-time staff, a Park Operator and Park Assistant; and three seasonal staff for a total of 40 worker-months. Existing staffing levels are thin given the number of activity nodes, size of the park, travel distances, stewardship issues, and existing use. The figures in Table C provide proposed staffing levels to handle increased park use due to population trends and the addition of new facilities. The KCRP Management Plan calls for incremental growth in Operation's staff with the immediate creation of a new temporary full-time Park Assistant in 2005. This will grow into a new regular full-time Park Assistant at the beginning of the second period, for an increase of 1.0 FTE (\$52,500) per annum by year six of the plan's implementation.

Also shown in Table C are modest cost increases for vehicles and materials and supplies and an annual \$5,000 allocation to maintain environmental conditions related to stewardship efforts. It is anticipated that there will be modest growth in external funding for the Bell-Irving Hatchery.

Existing and Future Visitor Services and Costs

Visitor Services Education and Interpretation programs in East Area are currently delivered by one full-time Park Interpretation Leader and two seasonal Interpretive staff across nine parks. KCRP and other parks on the north shore of the Fraser River are allocated a small percentage of interpretive program time, due to the need to accommodate a broad range of local and regional programming requests. KEEPS is now providing enhanced levels of educational programming through various grants, and through in-service training support provided by Parks staff.

The proposed Watershed Stewardship Centre (WSC) would be a base for programming in the Ridge/Meadows regional parks and greenway, with special emphasis on sustainability and watershed conservation issues for Kanaka Creek. When fully operating, it would have one full-time Park Interpretation Specialist and .75 FTE new seasonal staffing; 80 percent of new staff time would be earmarked for KCRP, at an additional cost of \$86,000 per annum by year six (includes associated new material costs). Programming levels in the meantime will be dependent on available existing GVRD Interpretive staff time, supplemented by partner support if grant funding is continued.



Other Programs, Revenue and Service Sources

Revenues to fund capital and operations of the park are largely based on the use of tax funded dollars through the regional levy. The plan calls for expenditures over a period of years and is based on a high level of anticipated growth in the community and region, thus requiring increasing services to meet demand. To support these expenditures the plan calls for external funding (\$788,509) to be contributed through the efforts of the Pacific Parklands Foundation; DMR; KEEPS; DFO; the Province and other funding partners. Additional funds raised beyond the amounts outlined may be used for enhanced facilities, or to bring forward scheduled projects.



BC Rivers Day with KEEPS, 2003



6.0 IMPLEMENTATION AND MONITORING

This management plan provides a transparent framework for how GVRD Parks will consider decisions about the future of Kanaka Creek Regional Park. The objectives of implementing and monitoring the management plan are to:

- Achieve the park goal and follow the management framework, and
- Bring about the proposed developments of facilities and programs.

Follow-up studies, possibly including environmental impact assessments and costing estimates, may be required to determine the impacts of specific facilities or large scale programs on the park. In addition, many of the proposed actions in this plan depend not only on GVRD Parks, but also on the priorities and resources of other agencies, such as DFO, WLAP and DMR. Implementation of the plan and projects must remain flexible to take into account changes in community needs, visitor use, environmental sensitivities or the availability of human and financial resources to GVRD Parks or its partners.

Implementation Plan

GVRD Parks will monitor the impact of facilities and programs in and outside the park that impact the park's resources and where necessary adapt policies and procedures to accommodate change so as to minimize park or recreation user impacts.

Consultation with park partners (KEEPS) or agencies (DMR, DFO, WALP) will be ongoing during the entire period of the plan's implementation. However, where GVRD Parks thinks it necessary, public consultation opportunities will be provided for review of detailed plans prior to project implementation. Criteria for specific public consultation will be based on size and scope of project; social, environmental or economic impacts anticipated because of detailed plans; and significance of impacts.

Monitoring, Evaluation and Reporting

A critical element of the management plan is collecting data to support informed decisions. Several of this plan's strategies involve the need for monitoring recreation users and park resources and operations. Therefore, an ongoing challenge in implementing this management plan is to develop and improve systems and practices for collecting and reporting information on the park's uses and conditions by GVRD Parks, partners and other agencies. Ideally, indicators that reflect these uses and conditions will be collected in standardized ways and reported periodically so that trends can be assessed and used to adapt the implementation of this plan and liaise with others in the best interests of the park.



APPENDIX A

Figure A: Existing Facility Locations

Table A: Existing Facilities

Table B: Transportation Issues

**Table C: KCRP Recreation Use and Travel
Habit Survey**

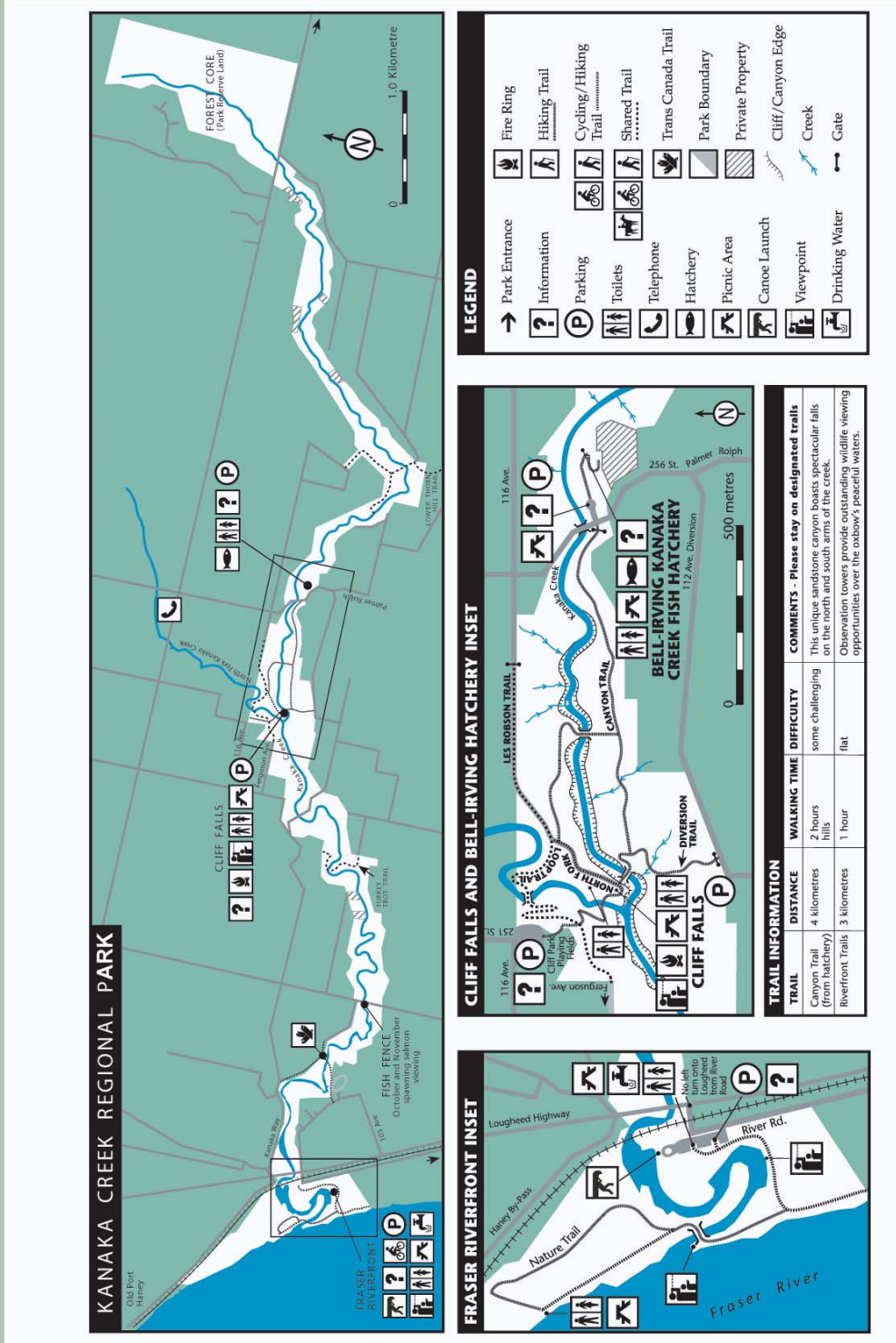


Figure A Existing Facilities

Table A Existing and Future Facilities

Location	Existing Description/ <i>Future</i>	Unit	Existing Quantity	Future Quantity	Total
Kanaka-Riverfront	Bridges	ea	1		1
Kanaka-Riverfront	Trails	km	2.3	3.3	5.6
Kanaka-Riverfront	Parking	stalls	53	47	100
Kanaka-Riverfront	Washrooms	ea	1		1
Kanaka-Riverfront	Picnic tables	ea	8	4	12
Kanaka-Riverfront	Canoe launch	ea	1		1
Lower Reach—Fish Fence	Trails	km	2.0	1.0	3.0
Lower Reach—Fish Fence	Bridge	ea	1		1
Lower Reach – Fish Fence	Parking	stalls	26	74	100
Lower Reach – Fish Fence	Picnic tables	ea		10	10
Mid Reach—Turkey Trot	Bridges	ea	0	1	1
Mid Reach—Turkey Trot	Trails	ea	.7	2.0	2.7
Mid Reach – Cliff Falls	Bridges	ea	4		4
Mid Reach—Cliff Falls	Trails	km	3.0	.3	3.6
Mid Reach – Cliff Falls	Washroom	ea	1	1	2
Mid Reach – Cliff Falls	Parking	stalls	0	40	40
Mid Reach – Cliff Falls	Picnic tables	Ea	5	6	11
Hatchery—Upper Reach	Trails	km	1	.3	1.3
Hatchery—Upper Reach	Parking	stalls	15	25	40
Hatchery—Upper Reach	Picnic tables	ea	11	4	15
Hatchery—Upper Reach	Hatchery/Watershed Stewardship Centre	ea	1		1
Forest Core/Extension	Trails	km	0	2.7/1.5	2.7/4.2



Table B Transportation Issues

<p>Fraser River Crossing</p>	<p>During the preparation of this management plan, the District was conducting a transportation review, based in part on the possible replacement of the Albion ferry with the new “Fraser River Crossing” bridge. This new crossing will result in an increase in park use as Langley and Surrey residents discover the parks facilities and visitor services.</p>
<p>Lougheed Highway, Haney Bypass and CPR Railway</p>	<p>Access to the park at Riverfront is to be relocated 250 metres east across the CPR tracks in 2004, where a new full-service intersection is proposed. This will solve many of the accessibility problems for Riverfront and will provide the opportunity of directing trail users north to the Trans Canada Trail and Rainbow Bridge and west along Lougheed to Kanaka Way and the Park.</p>
	<p>Haney Bypass located north of Kanaka - Riverfront is not pedestrian friendly and the CPR track presents a major access barrier. Access is required for people located north of the park, however crossing this road is not a safe alternative except at the Lougheed Highway/Haney Bypass intersection. DMR has identified the need to connect the park to northern communities and has proposed providing a pedestrian flyover at some future date. Purchase of the Northview lands for park use at Port Haney would provide an opportunity for recreation users from the Haney community and DMR civic center to access the Haney - Riverfront area.</p>
<p>Kanaka Creek Road</p>	<p>On the north side of the creek off of Kanaka Way, Kanaka Creek Road has been incorporated into the KCRP. The road is part of the Trans-Canada Trail and provides access to Rainbow Bridge which also provides a valuable community linkage. The road from the existing access at Kanaka Way east to 240th Street is to be transferred from DMR to the GVRD and will provide for designated park access, walking, cycling and equestrian activities.</p>
<p>240th Street</p>	<p>In the Fish Fence area, 240th Street will be upgraded to an arterial road as a main north-south connector. Planning will need to be coordinated to ensure that the larger road can safely accommodate pedestrians, bicycles and potentially equestrian users. The 240th bridge is scheduled for replacement around 2007-2010. The bridge is not expected to affect access to Kanaka Creek Road (Fish Fence). Safe access across or under 240th Street is a priority for any future trail development.</p>



<p>248th Street and 112th Avenue</p>	<p>The 1996 OCP calls for a new vehicle crossing of Kanaka Creek at 248th Street to accommodate north south traffic movement. This crossing would have significant impacts on the park and will be discouraged. Alternative alignments have been identified. Care should be taken to retain the rural, scenic character of this stretch of 112th Avenue. The 112th Avenue bridge is scheduled to be replaced for seismic upgrading around 2006-2007 and is to retain its rural standard.</p>
<p>Other</p>	<p>Other key road improvements that could affect park users include the designation of bicycle and equestrian routes that complete loops through the park and connect the park with nearby recreation opportunities. For example, 112th Avenue eastward from KCRP at Ferguson Avenue and Trethewey crossing to Whonnock Lake, around the lake as proposed by DMR, then crosses Dewdney Trunk Road north to the Forest Core.</p>
<p>Public Transit</p>	<p>Public transit at Riverfront is to be enhanced in 2004 with two additional routes proposed for the Riverfront area. Translink is also proposing to put in a new station at the Albion Ferry if the existing Ferry is discontinued after 2007. Train stations and train bus connections at Haney Centre and Haney Wharf provide an excellent opportunity to lower automobile dependency and are to be encouraged. Bus stop access at the Riverfront will be coordinated with DMR and the Crown. Adjacent to the Haney - Riverfront the Translink station is used for commuter train (Westcoast Express) service from Mission to downtown Vancouver on weekdays. Future use by regional users of the train or train bus service could provide a tangible alternative to automobile access to the park by regional users.</p>
<p>Blueways</p>	<p>The Fraser River has been historically a super highway for indigenous people and early settlers. The Fraser River Bridge Crossing at 200th Street may result in the discontinuance of the Albion ferry. Retaining some form of ferry service is vital to maintaining recreational and interpretive "blueway" connections between Port Haney, KCRP, Derby Reach Regional Park, Brae Island Regional Park and Fort Langley. GVRD Parks sees significant recreation and tourism potential with increased private and public investment in water-based connections and facilities, including expanded canoeing and kayaking opportunities, tours or transportation using paddlewheeler boats and improved riverfront trails.</p>



Table C KCRP Recreation Use and Travel Habit Survey

Park use and travel habits were surveyed in 1999 with samples (229) being taken at KC – Riverfront, Cliff Falls, Hatchery and Fish Fence. The survey found that:

- Most users (62%) drove less than one hour to reach the park;
- 90% spend two hours or less in the park;
- 15% of visitors were regular users, visiting more than five times with over half of respondents visiting the park three -times or more per month;
- 88% of users arrived at the park by car, 3% by bike and 9% walked or ran;
- Respondents were most likely to be 31-50 years old (38%), with 26% being children 12 and under;
- Residency of respondents was generally Ridge/Meadows (69%) with the balance of respondents coming from surrounding communities;
- Respondents visited the following locations most frequently, Riverfront (38%), Cliff Falls (31%), Fish Fence (8%) and Bell-Irving Hatchery (5%);
- When asked what attracted them to the park, most respondents found ambiance (49%), convenience (21%), and socializing (11%) primary reasons;
- 40% of visitors go to fish focused areas;
- Most users (93%) rated their level of user satisfaction as high or excellent;
- Even satisfied users can have concerns. Survey results identified the following requests: more shady picnic tables and benches (14%), ladder down cliff (11%), more washrooms (10%), larger, different trails (8%), and a dog off-leash area (8%);
- Riverfront users were most likely to be dissatisfied with existing facilities (41%) requesting larger trails and more shady picnic tables. Cliff Falls users were most likely to ask for a ladder down the cliff, a dog off-leash area and more washrooms. Hatchery users were most likely to ask for more shady picnic tables, post scientific names for various species, a drinking fountain, a play structure, better security and different trails. Fish Fence users were most likely to request better security, different trails, more shady picnic tables and more washrooms;
- 9% of users participated in guided interpretive programs with many more (51%) interested in these programs in future.



APPENDIX B

Table A Public Involvement



Table A Public Involvement

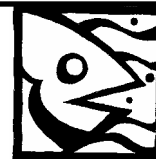
Planning Program Launched	January 1999
Public Information Meeting	June 28, 1999
Newsletter Summary	April 2000
Public Open House	May 16, 2000
Public Open House*	2001
Katzie First Nation	October 31, 2002
Blue Mountain Kanaka Creek Conservation Group	May 14, 2003 October 2003
KEEPS	February 26, 2003
Kwantlen First Nation	January 2004
Stakeholder Focus Group meetings	January-March 2003
Public Open House	April 16, 2003*

** Advertised in local community papers*

Environmental Technical Committee Meetings	June 16, 1999 July 12, 1999 September 21, 1999 January 26, 2000 March 22, 2000 November 28, 2000 February 27, 2001 April 2, 2003 February 27, 2004
Blue Mountain Provincial Forest Ad-hoc Advisory Group	

Written and e-mail comments received

Bill Archibald
John Heaven
Wes Rempel
Yukiko Tanaka
John Castiello
KEEPS



APPENDIX C

**Table A Regionally Sensitive or Desirable
Wildlife that may Require Protection or
Enhancement Measures**

Table B Selected List of Invasive Plants

**Table C Selected List of Wildlife Requiring
Monitoring for Safety and Potential
Control Measures**



Table A Regionally Sensitive or Desirable Wildlife that may Require Protection or Enhancement Measures

Animal	Issue	Possible Enhancement
Bats - various		Nesting boxes.
Black bear	Habitat encroachment	Corridor identification; secure garbage disposal; user/neighbour education; possible seasonal trail or
Black-capped chickadee		Resident. Food-rich vegetation. Mid-canopy cavities.
Douglas squirrel		Require cavities and debris. (Conifer, closed canopy and
Hérons	Blue-listed (threatened)	Undetermined habitat protection.
Long-tailed weasel	Red-listed (endangered)	Undetermined habitat protection, possible limitations on use. Opportunity for research and education. (Floodplain above 240 th .)
Northern flying squirrel		Nest boxes possible. (Conifers,
Owls - various		Retention of wildlife trees and old
Pileated woodpecker		Hollow trees or nesting boxes.
Purple Martin	Red-listed (endangered)	Cavities, crevices or nesting boxes in colonies. (Riverfront.)

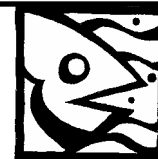


Table A Regionally Sensitive or Desirable Wildlife that may Require Protection or Enhancement Measures (Continued)

Animal	Issue	Possible Enhancement (Location)
Red-legged frog	Blue-listed (threatened)	Protection from predation. Requires vegetated bodies of permanent, slow-moving water for breeding. (Note that this is also considered prime mosquito habitat).
Salamanders - various		Various habitat/breeding requirements for different species, generally moist, dark debris.
Tailed frog	Red-listed (endangered)	Protected breeding ponds; signage and possible trail improvements. (Upper Reach, Canyon Trail.)
Water shrew	Red-listed (endangered)	Areas of high humidity and heavy cover. (Riverfront.)
Wood duck		Nesting boxes and tree cavities.

(Source: UBC 2002a)



Table B Selected List of Invasive Plants

Plant	Location(s)
English Ivy*	Various.
Himalayan blackberry*	Throughout, along roadways.
Japanese knotweed*	Near Turkey Trot, 112 th and 256 th .
Periwinkle*	Riverfront.
Policeman's helmet*	Extensive in Middle Reach riparian areas.
Reed canary grass*	Riverfront and Lower Reaches.
Lamium*	Various.
Western Hemlock - Witches Broom	Upper Reach and Forest Core
Others including : Butternut, Blue Periwinkle, Holly, Laurel, Bamboo	Various.

Table C Selected List of Wildlife Requiring Monitoring for Safety and Potential Control Measures

Animal	Issue	Possible Control	Unit(s)
Beaver	Flooding, property damage.	Undetermined, low likelihood. Tree protection.	Riverfront and Lower Reaches.
Black bear	Human-bear conflicts.	Signage, education and garbage control. Relocations.	Throughout the park.
Bullfrog	Non-native invasive species. Voracious predator of many desirable species.	Undetermined, possible eradication.	Riverfront and Lower Reaches.
Cougar	Potential human-cougar conflicts.	Signage/education if necessary.	Mid Reach and above, especially Forest Core.
Coyote	Population/nuisance.	Undetermined, low likelihood.	Throughout the park.
Raccoon	Population/nuisance.	Undetermined, low likelihood.	Throughout the park.

(Source: UBC 2002a)



APPENDIX D

Table A Management Plan Capital Cost and Scheduling Implications

Table B Stewardship Program Cost Implications and Timelines

Table C Operating Cost and Staffing Implications

Table A Management Plan Capital Cost and Scheduling Implications

Summary For Park-Wide Facilities			Period (years)					Funding		Potential Resourcing Partners	Total Project Cost		
Park Area	Items	Description	Priority	0-4	5-9	10-14	15-19	20+	GVRD	Others			
Park wide	Sign Plan	Directional sign study for park	1	15,000					15,000			15,000	
	Interpretive Plan	Interpretive sign study for park	2		25,000					25,000		25,000	
	Directional Signs Installation	Directional signs for park	2	15,000	5,000				20,000			20,000	
	Sub-total			30,000	30,000	0	0	0	60,000	0		60,000	
Summary by Park Management Unit													
Park Area	Items	Description	Priority	0-4	5-9	10-14	15-19	20+	GVRD	Others	Potential Resourcing Partners	Total Project Cost	
Haney-Riverfront		Haney-Riverfront with waterfront promenade at Port Haney. Open space, picnicking, washrooms, parking and possible commercial services. Costs not estimated but believed to be high. Plan in conjunction with DMR and community.									Potential partnership with DMR		
	Kanaka - Riverfront	Bridge B	Bridge for pedestrians and bicyclists across Kanaka Creek	2									
		Trails	New trail	2	13,500		60,000	65,000		138,500			138,500
		Staging Area Improvements	Redevelopment of picnic area and parking at reconfigured Riverfront entrance/staging area	2	95,000					95,000			95,000
		Kiosk Materials	Kiosk materials at parking lot	1	5,000					5,000			5,000
		Information Signs	Riverfront information signs	1	7,000					7,000			7,000
		Interpretive Signs	Completion of interpretive sign program in area	3		15,000				15,000			15,000
		Programming Shelter	Interpretive programming shelter	3							12,500	KEEPS, PPF, others	12,500
		Sub-total			120,500	0	75,000	65,000	0	260,500	12,500		273,000
	Lower Reach - Fish Fence	Kanaka Way Bike Path	Completion of trail on Kanaka Way	1	0					0	13,500	DMR	13,500
Wheelchair-accessible Nature Trail			2			11,813			11,813	27,563	PPF, Trail users, Others	39,375	
Interim Parkway Closure		Kanaka Parkway, continued closure of Kanaka Creek road and interim conversion to trail.	1	40,000					40,000			40,000	
Permanent Trail Conversion		Kanaka Parkway, permanent conversion to trail	3			51,750			51,750			51,750	
Kanaka Way Trail Planting		Riparian planting and slope stabilization	1	0					0	0	KEEPS, Tree Canada, Others	0	
Fish Fence Trail		Trail through picnic area and main trail extension	2		31,688				31,688			31,688	
Fish Fence		Fish Fence development including parking (74), equestrians parking (3), washrooms and picnicking	2		255,000				255,000			255,000	
Streamside Spawner Platform		Program accommodation	3		0				0	12,500	KEEPS, PPF, Others	12,500	
Signs		Kanaka Parkway, main park entry, Fish Fence	1	18,000		6,000			24,000				24,000
Interpretive Signs		Fish Fence interpretive materials and signs	2			15,000			15,000			15,000	
	Sub-total		58,000	286,688	84,563	0	0	429,250	53,563			482,813	
Middle Reach - Cliff Falls	Siegel Creek Bridge and Trail	Pedestrian, cycling, equestrian bridge	1	70,500					70,500	45,000	Trail users, PPF, BCIT	115,500	
	110th Ave Bridge and Trail to South Albion	Pedestrian, cycling, equestrian bridge	2			58,000			58,000		Trail users, PPF, BCIT	58,000	
	Turkey Trot Trail Bridge	Pedestrian, cycling, bridge w equestrian ford	1			280,000			280,000			280,000	
	Turkey Trot Trail North	Pedestrian, cycling, equestrian trail	1			29,250			29,250			29,250	
	Turkey-Trot Trail Loop	Pedestrian, equestrian trail	1	4,875					4,875			4,875	
	Turkey-Trot Trail - East West	Pedestrian, cycling, equestrian trail-alignment and costs to be determined	1		26,813				26,813			26,813	
	248th Street Trail	Link to DMR development trails	3				12,000		12,000			12,000	
	Cliff Falls Trails	Trail to viewpoint and reconfiguration of steep sloped trail at falls	3		20,000				20,000			20,000	
	Cliff Falls Staging Area	Washrooms, parking (40 cars), picnicking, open space, drinking water, signs	1	205,425					205,425			205,425	
	Cliff Falls Viewing Platform	Viewing platform on south side of falls	3		12,750				12,750	24,750	BCIT, PPF	37,500	
	Sub-total		280,800	59,563	367,250	12,000	0	719,613	69,750			789,363	

Summary by Park Management Unit (continued)

Park Area	Items	Description	Priority	Period (years)					Funding		Potential Resourcing Partners	Total Project Cost	
				0-4	5-9	10-14	15-19	20+	GVRD	Others			
Upper Reach - Hatchery	Hatchery and Picnic Area Improvements	Parking (25), washrooms, picnic tables	1	150,000					150,000	37,500	PPF, KEEPS, DFO, Province, DMR, others	187,500	
	Watershed Stewardship Centre	Centre for sustainability and watershed preservation education and scientific research programs by partners	1	100,000					100,000	400,000	PPF, KEEPS, DFO, Province, DMR, others	500,000	
	Interim Programming Space	Space for interpretive staff and programs	1	10,000					10,000	10,000	KEEPS, PPF	20,000	
	Interpretive Signs	Interpretive signs for Centre (contingent on Centre)	2		15,000				15,000			15,000	
	Kiosk Materials	Kiosk for Centre (contingent on Centre)	1	8,000					8,000			8,000	
	Signs and Kiosk		2	12,000			6,000		18,000			18,000	
	Maintenance Yard Expansion	Office and storage space	3		60,000				60,000			60,000	
	Lower Thornhill Bridge and Trail	For cyclists and pedestrians	3									0	
	Lower Thornhill South Trail		3					0				0	
	Sub-total				280,000	75,000	0	14,000	361,000	447,500		808,500	
Forest Core	Main Trail South		3		15,000				15,000	15,000	Trail Users	30,000	
	South Waterfall Trail	South waterfall trail	3		14,000				14,000	14,000		28,000	
	Staging Area	Road access, washroom, water, picnicking, open space	3					0	0	0	BCIT, PPF	0	
	South waterfall Viewing Platform		3				15,000		15,000	15,000	BCIT, PPF	30,000	
	Signage	Forest Core signage	3		10,000				10,000			10,000	
	Hazardous Tree Removal Rssessment	Safety related studies	1	10,000					10,000			10,000	
	Sub-total				10,000	39,000	0	15,000	64,000	44,000		108,000	
	Forest Core Extension	Main Trail North - Bridge	Bridge to cross Kanaka Creek for Blue Mountain North Trail and Greenway	2					0	0	0		0
		Tributary Bridge							0	0	12,000	BCIT, PPF	12,000
		Cross-over Trail	Trail providing access across park between woodlots with signage						0	0	24,000		24,000
Nature Trail								10,000	10,000	0	Trail users, PPF, BCIT	10,000	
Main Trail North								40,000	40,000	10,000	Trail users, PPF, BCIT	50,000	
North Waterfall Viewing Platform								0	0	20,000	PPF, BCIT	20,000	
Hazardous Tree Assessment Study		Safety tree assessment			5,000				5,000	2,500		7,500	
Sub-total					0	55,000	0	0	55,000	68,500		123,500	
COST SUMMARY TOTALS				779,300	545,250	526,813	98,000	1,949,363	695,813		2,645,175		



Table B Stewardship Projects Cost Implications and Timelines

Park Area	Items	Description	Priority	Period (years)				Funding		Potential Resourcing Partners	Total
				0-4	5-9	10-14	15-19	GVRD	Others		
Park-wide	Forest Core Forest Management	Inventory, analysis and plan	2		4,500			4,500	4,500	BCIT, UBC, KEEPS, PPF	9,000
	Forest Core Hydrological Restoration	Inventory, analysis and plan	1	6,000				6,000	6,000	BCIT, UBC, KEEPS, PPF	12,000
	Invasive Plant Species	Invasive species, inventory, planning control measures, replanting and monitoring	1	5,000	5,000	5,000	5,000	20,000	25,000	KEEPS, PPF, Evergreen	45,000
	Forest Core Extension Vegetation Management	Inventory, analysis and plan	3						4,500	BCIT, UBC, KEEPS, PPF	4,500
	FCE Hydrological Restoration	Inventory, analysis and plan	3						6,000	BCIT, UBC, KEEPS, PPF	6,000
	Urban Storm Drainage Study & Policy	Research and establish policies for urban drainage projects affecting the park	1	20,000				20,000	20,000		20,000
	Sub-total			31,000	9,500	5,000	5,000	50,500	46,000		96,500

Table C Operating Cost and Staffing Implications

EXPENDITURES	EXISTING										Cumulative Impact	
	Year 0 2005	Year 1 2006	Year 2 2007	Year 3 2008	Year 4 2009	Year 5 2010	Year 6 2011	Year 7 2012	Year 8 2013	Year 9 2014		
Operations and Mtce.												
Base Staffing (Full time Equivalents FTE's)	3.33	3.33	3.33	3.33	3.33	3.33	3.33	3.33	3.33	3.33	3.33	
New	0.33	0.33	0.33	0.33	0.33	1	1	1	1	1	1	1.0 FTE
Total Staffing	3.33	3.66	3.66	3.66	3.66	4.33	4.33	4.33	4.33	4.33	4.33	
<i>The .33 seasonal FTE increase is absorbed in Year 5 and .66 added to create 1 new Regular Employee</i>												
Budget												
Base Salaries & Benefits	218,217.00	218,217.00	218,217.00	218,217.00	218,217.00	218,217.00	218,217.00	218,217.00	218,217.00	218,217.00	218,217.00	218,217.00
New	17,500.00	17,500.00	17,500.00	17,500.00	17,500.00	52,500.00	52,500.00	52,500.00	52,500.00	52,500.00	52,500.00	350,000.00
Base Vehicles	34,403.00	34,403.00	34,403.00	34,403.00	34,403.00	34,403.00	34,403.00	34,403.00	34,403.00	34,403.00	34,403.00	34,403.00
New						6,000.00	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00	30,000.00
Base Hatchery Centre Mtce.	59,627.00	59,627.00	59,627.00	59,627.00	59,627.00	59,627.00	59,627.00	59,627.00	59,627.00	59,627.00	59,627.00	
New						10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	110,000.00
Base Hatchery Revenues	-29,500.00	-29,500.00	-29,500.00	-29,500.00	-29,500.00	-29,500.00	-29,500.00	-29,500.00	-29,500.00	-29,500.00	-29,500.00	-29,500.00
New						-5,000.00	-5,000.00	-5,000.00	-5,000.00	-5,000.00	-5,000.00	-55,000.00
Plan Stewardship	0.00	5,000.00	5,000.00	5,000.00	5,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	75,000.00
Base Materials & Supplies	52,817.00	52,817.00	52,817.00	52,817.00	52,817.00	52,817.00	52,817.00	52,817.00	52,817.00	52,817.00	52,817.00	52,817.00
New	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	150,000.00
Log Booming Revenues	-11,500.00	-11,500.00	-11,500.00	-11,500.00	-11,500.00	-11,500.00	-11,500.00	-11,500.00	-11,500.00	-11,500.00	-11,500.00	-11,500.00
Total Costs	324,064.00	356,564.00	356,564.00	356,564.00	361,564.00	422,564.00	422,564.00	422,564.00	422,564.00	422,564.00	422,564.00	660,000.00
Net Growth		0.00	0.00	0.00	5,000.00	61,000.00	0.00	0.00	0.00	0.00	0.00	98,500.00
Visitor Services -- Education & Interpretation												
Staffing												
Base Staffing	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
New					0.8	1.4	1.4	1.4	1.4	1.4	1.4	1.4 FTE's
Total Staffing	0.18	0.18	0.18	0.18	0.98	1.58	1.58	1.58	1.58	1.58	1.58	
Budget												
Base Salaries and Ben.	\$17,910	\$17,910	\$17,910	\$17,910	\$17,910	\$17,910	\$17,910	\$17,910	\$17,910	\$17,910	\$17,910	\$17,910
New					\$52,000	\$76,000	\$76,000	\$76,000	\$76,000	\$76,000	\$76,000	\$432,000
Base Material and Other	\$1,800	\$1,800	\$1,800	\$1,800	\$1,800	\$1,800	\$1,800	\$1,800	\$1,800	\$1,800	\$1,800	\$1,800
New					\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$60,000
Total Costs	\$19,710	\$19,710	\$19,710	\$19,710	\$81,710	\$105,710	\$105,710	\$105,710	\$105,710	\$105,710	\$105,710	\$492,000
Net Growth		\$0	\$0	\$0	\$62,000	\$24,000	\$0	\$0	\$0	\$0	\$0	\$86,000

Staffing and costing scenario based on completion of the Watershed Stewardship Centre.





APPENDIX E

Glossary and List of Abbreviations



Glossary and List of Abbreviations

Access Management	Policies related to protecting the park boundary, and designating where users can enter the park and what activities are allowed.
Activity Node	An intensive-use site where access to the park is concentrated and a variety of visitor facilities may be provided.
Adaptive Management	An iterative cycle of monitoring and decision-making where management decisions are based on the best available information and relevant data is collected on an on-going basis.
BCITFS	British Columbia Institute of Technology Forest Society. Operators of woodlot W007 immediately east of KCRP in the Forest Core.
Blueway	A water-based “trail” that is designated to connect trail systems and recreation opportunities across the water (i.e., the Fraser River).
CDC	The BC Conservation Data Centre collects information on BC’s threatened and endangered plants, animals and plant communities. The CDC is part of the BC Ministry of Sustainable Resource Management.
Complementary Reports	Several reports were prepared under separate cover from the management plan, and are companion, or complementary documents that essentially form part of the plan. For example, as of 2003, there are complementary reports that address the decommissioning of Kanaka Creek Road, and the proposed Watershed Stewardship Centre.
CPR	Canadian Pacific Railway. The railway crosses the park and bridges the creek at Riverfront on the south side of Lougheed Highway.
DFO	Fisheries and Oceans Canada, also called the Department of Fisheries and Oceans.
DMR or the District	District of Maple Ridge, also called the municipality.
Encroachment	Incidents where the park’s boundary and mandate are not respected and private interests have a negative impact on the park or its resources, including direct and indirect physical and visual impacts.
ETC	An Environmental Technical Committee was struck by GVRD Parks to provide technical input into the Kanaka Creek Management Plan. It included representation from DFO, WLAP, DMR, KEEPS, the Hatchery and Katzie First Nation.



Greenway	A multi-use, regional trail system that connects communities.
Growth Concentration Area (GCA)	Identified in LRSP as area where urban growth will be concentrated.
KCRP	Kanaka Creek Regional Park.
KEEPS	Kanaka Education and Environmental Partnership Society. A Park Association established in 1998 to participate in park planning for KCRP, advise GVRD Parks and deliver educational programming.
Livable Region Strategic Plan (LRSP)	Regional Growth Strategy adopted in 1996.
Living Document	The management plan is a static, reference document, written to remain relevant over a long period. Because inventories and priorities may change over time, the plan is complemented by several “living documents” that are updated more frequently. Living documents identified in the KCRP management plan include: land status and working boundary, facilities summary, rental properties, and biophysical inventories. These exist in the form of internal reports and databases.
Long-term	Arbitrarily stated as beyond 12 years from the writing of this plan (2003), beyond 2015.
Medium-term	Arbitrarily defined as within 7 to 12 years of this plan, 2010 – 2015.
Neighbourhood Access	A point of access to the park that is essentially an unimproved trailhead that will be signed, but not promoted as a concentrated access point or major parking area.
Objectives	Objectives describe issues that are addressed in the management plan to help achieve the park’s goal. Objectives and strategies can be used to measure the implementation of the plan.
OCP	Official Community Plan (of the District of Maple Ridge).
Partners	As a Park Association, KEEPS is formally a partner of GVRD Parks. The term is also used in reference to other agencies (DFO, WLAP, and DMR), academic institutions, consultants and others.
Planning Unit	A specific area of the park, generally defined along the lines of a natural “reach” of the creek, which is named for the purposes of planning, management and discussion.
Policies	Policies provide guidance for decision-makers and stakeholders about how the park is managed. Once approved by the GVRD Park Committee, a management plan becomes departmental policy.



Regional Town Centres (RTC)	8 Regional town centres were identified in the LRSP besides the Vancouver metropolitan core.
Sedimentation/Siltation	Runoff laden with silt (tiny soil particles) can deposit a fine-grained mud over the creek's natural, rocky bed, causing a negative impact on water quality and aquatic habitat.
Sensitive Area	Sensitivity is based on a combination of environmental factors, normally including vegetation, soil, slope (steepness), wildlife habitat and aquatic habitat.
Short-term	Arbitrarily defined as within the first 6 years of this plan, or before 2010.
Special Study Area or SSA	A site or area within or adjacent to the park that evolved into an area of particular interest.
Species at Risk	including definition for red yellow and blue listed species
Staging Area	A site where access to the park exists, and some facilities may be provided, such as parking and an information kiosk, but facilities and activities are less intense than at an "activity node."
Stakeholder	Unlike public involvement, stakeholder participation involves people with known interests in the park, such as recreation clubs, environmental organizations and neighbourhood associations.
Stormwater	Runoff, especially surface water, which is collected in (typically urbanized) upland areas and delivered to creeks/tributaries via an engineered system, such as sewers and ponds.
Strategy	Strategies provide on-the-ground descriptions of ways to achieve objectives. The strategies are then applied through policies, management programs and actions.
Sustainability	Considering the balance of environmental, social and economic values, as guided by the GVRD's Sustainable <i>Region Initiative</i> , and weighing these values in terms of the needs and rights of future generations.
WLAP	BC Ministry of Water, Land and Air Protection
Working Boundary	Beyond the GVRD's existing land ownership, GVRD Parks has identified a "working boundary" that incorporates its ideal land acquisition interests.



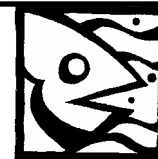
APPENDIX F

References and Supporting Documents



REFERENCES AND SUPPORTING DOCUMENTS

- Allaway, Jim. 2002. "Final Report on 'Envisioned Future and Sustainability': Kanaka Creek Bell-Irving Planning Workshops, June 25, 2002 and September 12, 2002." September. 17pp.
- Bakewell, David. 1998. Letter-report about Sitka Spruce erosion to Dick Bullinger, Operations Supervisor, GVRD Parks East Area. 22 March.
- (ECL) ECL Envirowest Consultants Limited. 1999. "Application for Environmental Review: Kanaka Creek Regional Park Trail." 13 December. Application to Jean Cook, Ministry of Environment, Lands and Parks. 5pp.
- _____. 2001. "Environmental Monitoring Report: Trail and Bridge Construction at Kanaka Creek Regional Park Lower Reach, Maple Ridge, B.C." 11 April. Report to Rod Marining, Ministry of Environment, Lands and Parks, BC File 76910-60/99.2289A. 5pp.
- Enfor Consultants Ltd. 2003. "Blue Mountain Provincial Forest: Forest Recreation Management Strategy." Prepared for Chilliwack Forest District/Ministry of Forests, 12 March. 31pp.
- (DMR) District of Maple Ridge. 2003. "Community Information, 'Snapshot 2002 – Condensed Summary.'" April. Available on-line at <http://www.mapleridge.org/documents.html#CommunityInformation>.
- _____. 1996. "Official Community Plan." Bylaw No. 5434 – 1996, adopted September 10, 1996. Consolidated up to and including Bylaw 5993-2001, December 11, 2001. 145pp.
- (FREMP) Fraser River Estuary Management Program. 2003. Estuary Management Plan, Fish and Wildlife Habitat, Colour Coding. April. Available on-line at <http://www.bieapfremf.org/fremf/managementplan/colourcoding.html>.
- GO B.C. 1993. "Kanaka Creek/Port Haney Fraser Riverfront Project." November. Project No. GO 91-1612. Final report from GVRD Parks and District of Maple Ridge.
- Goodman, Jennifer. 1999. "Community Mapping for Kanaka Creek Regional Park: Final Report." 1 June. 4pp.
- (GVRD Parks) Greater Vancouver Regional District, Regional Parks Department. 2000. "The Kanaka Creek Road Closure: Part of the Kanaka Creek Regional Park Management Plan." 10 September. East Area. 12pp.
- _____. 1999. GVRD Parks – Strategic Plan 1999-2001. 1 April. 39pp.
- _____. 1994. "Regulatory By-law No. 745 (1993)." May. A Bylaw to establish regulations governing the management, maintenance, operation, control and use of any property in regional parks or on regional trails. 14pp.
- _____. 1985. "Greater Vancouver Regional Parks: System Plan and Policies." Draft. Reprinted April 1990. 88pp.



_____. Riverfront.

_____. 1978. "Kanaka Creek Regional Park, District of Maple Ridge, British Columbia: Boundary Plan." 29 November. By-law Number 305.

(KEEPS) Kanaka Education and Environmental Partnership Society. 2003. <http://www.keeps.org/>.

_____. 2000. "Kanaka is for K.E.E.P.S.: Kanaka Creek Watershed Guide." Awareness booklet for land owners. 20pp.

Krzesinska, Lucyna. 2000. "Study of Kanaka Watershed: Water Quality and Quantity and General Habitat Assessment." April. Prepared for the Kanaka Education and Environmental Partnership Society. 29pp.

(MSRM) BC Ministry of Sustainable Resource Management and BC Ministry of Water, Land and Air Protection. 2003. "Endangered Species in British Columbia; 'Species Explorer.'" April. Available on-line at <http://srmwww.gov.bc.ca/atrisk/>.

Nickols, Sheila. 1999. "Cultural History Overview of Kanaka Creek Regional Park." December. Prepared for the Greater Vancouver Regional District, Regional Parks Department. 50pp.

(PERC) Professional Environmental Recreation Consultants Ltd., Wilson and June Consultants, and Catherine Berris Associates Inc. 2001. "Maple Ridge and Pitt Meadows: Master Plan for Parks, Recreation and Culture." April. Prepared for Ridge Meadows Parks and Leisure Services. 107pp.

(PLC) Pacific Landplan Collaborative Ltd. 1981. "Kanaka Creek Regional Park, District of Maple Ridge: Interim Report." 7 January. Prepared for the Greater Vancouver Regional District, Parks Department. 22pp.

(Lill) AF Lill and Associates Ltd. 2002. "Greater Georgia Basin Steelhead Recovery Action Plan." September. Prepared for the Pacific Salmon Foundation with staff assistance from Ministry of Water, Land and Air Protection, and BC Conservation Foundation. 107pp.

Pojar, Jim and Andy Mackinnon, eds. 1994. *Plants of Coastal British Columbia including Washington, Oregon and Alaska*. BC Ministry of Forests and Lone Pine Publishing. 527pp.

(RSMI) Resource Systems Management International Inc. 1993. "Environmental Assessment and Development Guidelines for the 'Albion' Area." June. Prepared for the Corporation of the District of Maple Ridge. 64pp.

Ryder, Glenn. 2000. "Kanaka Creek Biophysical Inventory: Fish Fence to Fish Hatchery." Field work/filed notes for biophysical inventory. Reported in Tera 2002.

(SDQ) Sharp & Diamond Landscape Architecture and Quadra Planning Consultants. "Fraser River Plan: Bedford Channel Portion" Draft, 9 May. 75pp.

Shead, R.M., M.A. Adams and K.E. Asp. 1999. "Kanaka Creek Regional Park Lower Reach: Environmental Inventory and Assessment." November. Prepared by ECL Envirowest Consultants Limited, New Westminster, B.C. Prepared for Greater Regional District, Regional Parks – East Area. 26pp.



- (Stats Can) Statistics Canada. 2003. Community Profiles from the 2001 Census. April. Available on-line at <http://www12.statcan.ca/english/profil01/PlaceSearchForm1.cfm>.
- (Tera) Tera Planning Consultants Limited. 1977a. "Study of Environmental Impacts and Guidelines for Residential and Trail Development in Kanaka Creek Regional Park. August. Prepared for the Greater Vancouver Regional District. 46pp.
- _____. 1977b. "An Environmental Assessment of Kanaka Creek." September. Prepared for the greater Vancouver Regional District. 67pp.
- _____. 2002. "An Environmentally Sensitive Area Analysis of Kanaka Creek Regional Park between 240th Street and Dewdney Trunk Road. February 2001, updated January 2002. Prepared for the Greater Vancouver Regional District, Parks Department. 47pp.
- (UBC) University of British Columbia Landscape Architecture Program. 2002a. "Kanaka Creek Regional Park Management Plan: Riverfront Wildlife Habitat Study. Spring. Prepared by LARC 504A (Prof. Patrick Mooney). Prepared for GVRD Parks – East Area. 57pp.
- _____. 2002b. "Kanaka Creek Regional Park in Context: Open Space Planning across Boundaries." 25 February to 5 April. Prepared by Open Space Planning Studio (Prof. S. R. J. Sheppard). Prepared for the Greater Vancouver Regional District and District of Maple Ridge. 48pp.
- White, Doug. 1999. "Greater Vancouver Regional District: Kanaka Creek Regional Park Survey 1999." 20 December. Prepared for GVRD Parks Visitor Services Coordinator. Prepared by White/Barton Research Associates Inc. 22pp.