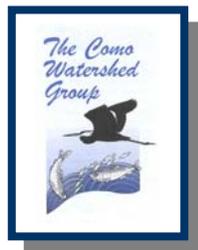
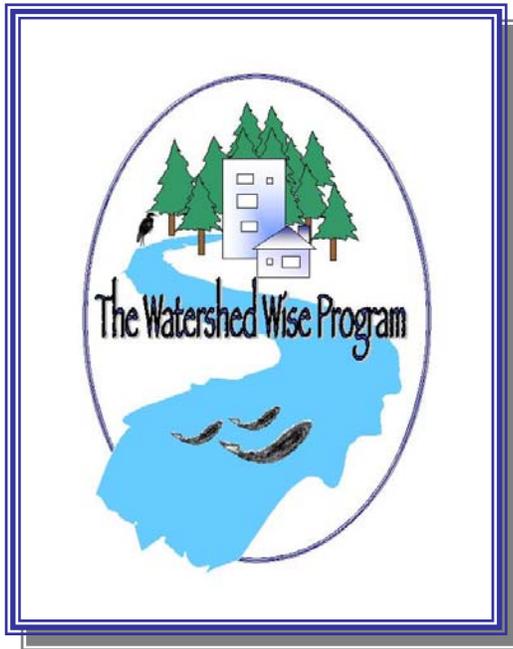


# "Watershed Wise" Linking Stewardship & Urban Wildspace Conservation

## Program Prospectus



Developed & Produced by:  
The Como Watershed Group,  
"A non-profit society committed to the long-  
term conservation of the Como Creek  
watershed and the environmental health of  
our community."



## “Watershed Wise” Linking Stewardship & Urban Wildspace Conservation

### Program Prospectus

#### Funding:

Funding for development of the Watershed Wise Program was provided through the Habitat Conservation Trust Fund. The HCTF was created by an act of legislature to preserve, restore and enhance key areas of habitat for fish and wildlife throughout British Columbia. Anglers, hunters, trappers and guides contribute to the projects of the Trust Fund through licensed surcharges. Tax-deductible donations to assist in the work of the Trust Fund are welcomed.



<http://www.hctf.ca>

## Acknowledgements:

We gratefully acknowledge The City of Coquitlam for their in-kind contribution and support for the Como Watershed Group's development of the Watershed Wise Program.

Personal acknowledgements go to the following for their continued support and assistance in developing Watershed Wise:

- The Board of Directors and members of the Como Watershed Group (society)
- Janice Jarvis, Diane Ramage of the Habitat Conservation & Stewardship Program (Fisheries & Oceans Canada)
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- Mike McPhee with the Habitat Restoration Program (Douglas College – Institute of Urban Ecology)

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Society # S-40387

Mailing Address – P.O. Box 47531, #1-1020 Austin Ave. Coquitlam BC V3K 6T3

Phone: 604-939-0523, Fax: 604-939-0571

e-mail; [cwg@vcn.bc.ca](mailto:cwg@vcn.bc.ca)

Visit us and review the program on-line at: <http://www.vcn.bc.ca/cwg/>

Watershed Wise Program Author: Pamela G. Zevit, August 2002

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# “Watershed Wise” A Resource Program Linking Stewardship & Urban Wildspace Conservation

## Executive Summary:

Welcome to the Watershed Wise Program:

This document has been prepared to provide prospective sponsors and participants with an overview of the program’s goals, objectives and content.

### What is the “Program”?

Watershed Wise is an education and awareness resource program designed to increase understanding of the value of urban watersheds and \*wildspaces. As populations grow and the living landscape is transformed to a built environment, our relationship to what was once wilderness becomes more distant. Watershed Wise has been developed using the principle that mentorship and interaction at the community level is the most effective means of instilling an environmental stewardship and conservation ethic.

\*The term “wildspace” a keyword in the principles of Watershed Wise is employed to reaffirm that those special places are still close to home in our urban environment. Though our notion of wilderness may no longer be the same in our towns and cities, from backyards to corner woodlots to neighbourhood creeks we can still connect back to a sense of the wild.

### The Goals of Watershed Wise:

- To impart a lasting awareness of how fragile and critical urban watersheds and associated wildspaces are;
- To develop skills and tools that can be used to conserve these important areas; and,
- To emphasize the benefits to all of us of conserving, restoring and preserving healthy ecosystems.

These goals are simple, straightforward and achievable.

### Who is the Program for?

As the main theme is learning and awareness through mentorship, the program will be of greatest benefit when delivered to and through groups, organizations and institutions that influence how their communities develop and grow.

### **Program Development & Delivery:**

The Program has been developed by The Como Watershed Group, a non-profit society and local conservation organization in the City of Coquitlam. Content has been developed with input from local government, educators and stewards. The "CWG" is the main vehicle for ongoing program upgrading and delivery to the community. Implementation and coordination through an established, credible local community organization helps ensure that the program "gets out there" and is actively delivered consistently and regularly. As a value added component staff and volunteers with the CWG provide a high level of related professional and personal expertise and knowledge to the program.

### **Program Content:**

Watershed Wise is not the only environmental education program available in the City of Coquitlam or the Lower Mainland. It is however, the only program of its kind to use virtual tools that can be brought to participants to educate them about watersheds and local environmental issues and conservation approaches. Through the "Urban Wildspace Conservation Series," a toolkit of nine PowerPoint presentation modules, participants learn about:

- Watersheds and wildspaces.
- The benefits they provide to the environmental health of our community(s).
- Ways these areas can be protected and enhanced through stewardship and better land use practices.

The modules have been developed for both "beginner" and "advanced" audiences, with emphasis on ecology, sustainability and conservation in the urban context. Interactive discussion sessions taken from the Project Wet curriculum and activity guide, as well as other environmental education teaching aids support and enhance the learning experience of the modules. The program content is designed to meet the diverse awareness levels and knowledge base that can be expected with the various participants and user groups. The ability to mix and match modules and interactive sessions allows the program to be easily tailored to suit the needs of individual target audiences.

### **Community Recognition & Participation:**

As a means to recognize the ongoing efforts of those who demonstrate the principles of "Watershed Wise", individuals, organizations or businesses can be nominated for award of a certificate of recognition. This is similar to the annual recognition received through other programs like "Communities in Bloom".

**Actions or activities considered include:**

- Undertaking naturescaping or restoration activities on private or public lands (i.e. backyard naturescaping, organic community gardens, open space and park enhancement).
- Implementing or adopting environmentally friendly practices at home or in the workplace that provide a model for others (i.e. water and waste conservation and/or recycling, innovative low impact development/redevelopment design).
- Conducting activities that improve local understanding of environmental issues and watershed health such as water quality monitoring, fish and wildlife assessments, education and outreach program development.



This award is accompanied by local media recognition and a profile in the local community via the CWG's website and bi-annual newsletter.

Those who participate in the program through the presentation modules and activity sessions will also receive a Watershed Wise participants certificate and a list of participants will be included in the CWG's annual society report.

### **Mentorship & Training Opportunities:**

As a value added component, the Como Watershed Group provides opportunities for secondary and post secondary students in the field of ecology and environmental studies. These range from projects involving water quality monitoring to fish and wildlife assessments to watershed planning and restoration. Other stewardship groups are also welcome to take advantage of these opportunities to enhance their skill sets and increase technical and planning capability.

### **Program Sponsorship:**

The CWG recognizes that development of "public/private partnerships are key to the longevity of Watershed Wise. Conversely, coordination and delivery through the CWG provides the much needed flexibility, mobility and consistency in local outreach. Those interested in becoming sponsors to support the implementation and delivery of this valuable community program should contact the society directly to obtain the required information for sponsoring.

Phone: 604-939-0523

Fax: 604-939-0571

Mailing address: P.O. Box 47531, #1-1020 Austin Ave. Coquitlam BC V3K 6T3

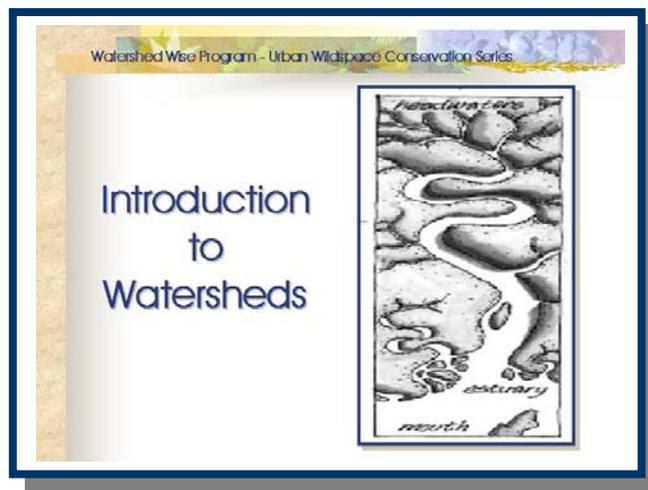
e-mail: [cwg@vcn.bc.ca](mailto:cwg@vcn.bc.ca)

URL: <http://www.vcn.bc.ca/cwg/>

## Watershed Wise Program Modules:

There are nine modules in the Watershed Wise Program's "Urban Wildspace Conservation Series". Program coordination through the CWG has been developed to assist participants in determining which module(s), interactive session(s) or support activities will be best for a respective organization or audience:

\* Hardcopy print and softcopy CD Rom versions of the program modules are available at a cost or can be viewed as web based slideshows on CWG's web page <http://www.vcn.bc.ca/cwg/>



### Module 1: Introduction to Watersheds

Estimated presentation time: 25 minutes

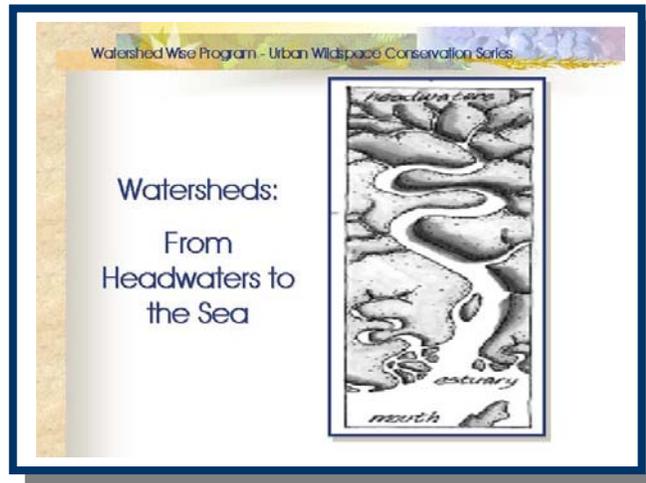
An introductory session on watersheds that uses basic applications for younger age groups or audiences with a less familiar background in watershed concepts.

Key learning outcomes expected are an understanding of the relationship of water on the landscape, ecological relationships and ways to ensure healthy watersheds.

Related applications to provincial education learning outcomes are Science K-7, particularly grades 3-7 Life Sciences, Earth and Space Sciences and BC's Living Resources.

#### Target Audiences:

- Teachers/Student groups (grades 3-7 elementary/middle school)
- Community clubs and organizations
- Local residents and landowners (Strata groups, Ratepayers Associations, Co-op councils).
- Local chamber of commerce, business associations and foundations.



## Module 2:

### Watersheds: From Headwaters to the Sea

Estimated presentation time: 40 minutes

This module builds on the previous one for audiences with more of an interest, familiarity or understanding in the areas of ecology, watersheds or resource stewardship.

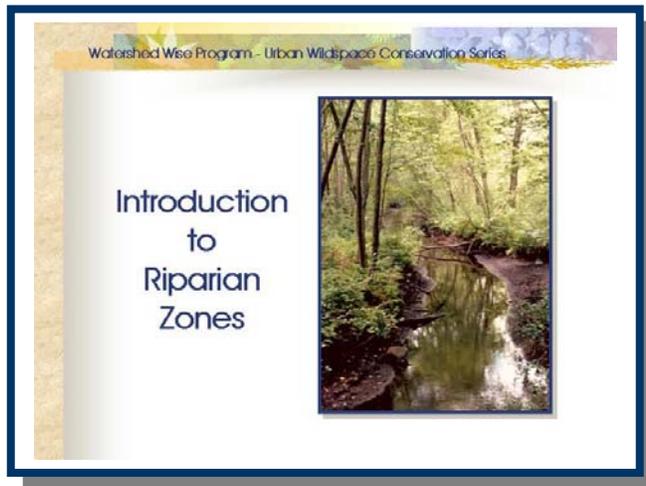
Participants are provided with a more in-depth view of watersheds as ecological systems and fundamental basics in watershed stewardship.

Key learning outcomes expected are an understanding of watersheds as an important resource, ecosystem connectivity, human impacts and opportunities for stewardship and conservation.

Related applications to provincial education learning outcomes are Science 8-10, Science & Technology 11 and Forestry Science particularly diversity, ecosystems, resource management, environment and society.

#### Target Audiences:

- Teacher /student groups (grades 7-12 middle school-secondary/post secondary environmental or ecological related studies).
- Municipal staff.
- Municipal Councils & advisory committees.
- Environmental non-government organizations.
- Planning and development organizations.



## Module 3:

### Introduction to Riparian Zones

Estimated presentation time: 20 minutes

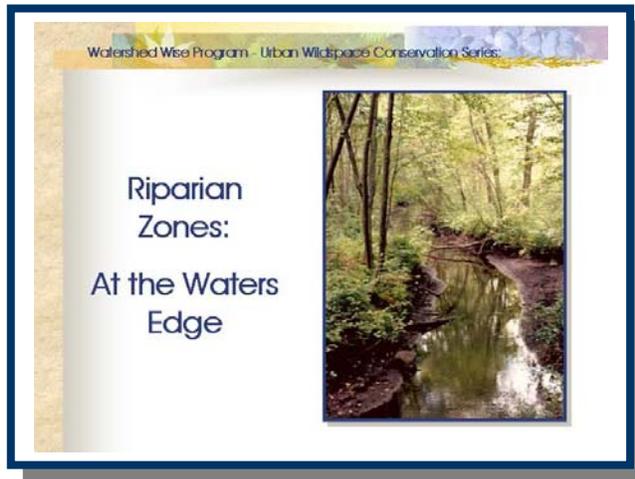
Leading off from Introduction to Watersheds this is a more focused presentation on the role of plants and vegetation around lakes and streams. Like other introductory modules, it employs simpler approaches and graphics to identify the specific role and function of "riparian ecosystems"

Key learning outcomes expected are an understanding of ecological relationships near water, the role of the "zone" in protecting those relationships, the impacts of urbanization and ways to improve and conserve the "zone" locally.

Related applications to provincial education learning outcomes are Science K-7, particularly grades 3-7 Life Sciences and Earth and Space Sciences.

#### Target Audiences:

- Teachers/Student groups (grades 3-7 elementary/middle school)
- Community clubs and organizations
- Local residents and landowners (Strata groups, Ratepayers Associations, Co-op councils).
- Local chamber of commerce, business associations and foundations.



## Module 4:

### Riparian Zones: At the Waters Edge

Estimated presentation time: 30 minutes

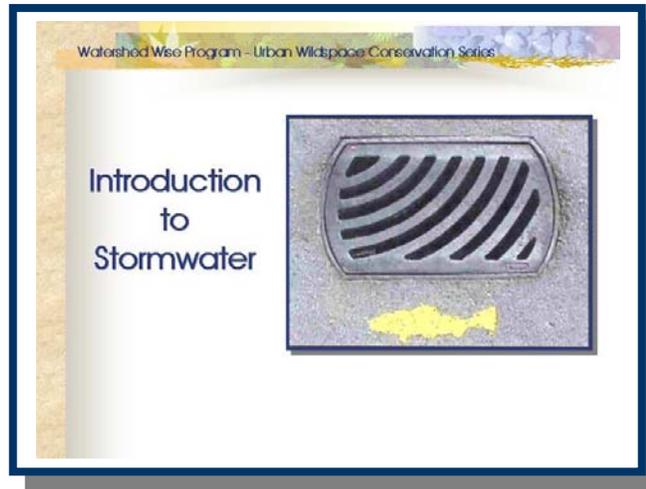
This is another foundation WWP module that builds on the previous one for audiences with more interest or familiarity in fish and wildlife habitat planning, or greenspace management. Participants learn more about the specific ecological relationships of the "zone", related land use impacts and societal pressures on the "zone" and methods to mitigate or avoid those impacts.

Key learning outcomes expected are an understanding of ecological relationships, ecosystem services, the role of the "zone" in protecting those relationships, the impacts of urbanization and ways to improve and conserve the "zone" locally.

Related applications to provincial education learning outcomes are Science 8-10, Science & Technology 11 and Forestry Science particularly diversity, ecosystems, resource management, environment and society.

#### Target Audiences:

- Teacher /student groups (grades 7-12 middle school-secondary/post secondary environmental or ecological related studies).
- Municipal staff.
- Municipal Councils & advisory committees.
- Environmental non-government organizations.
- Planning and development organizations.



## Module 5:

### Introduction to Stormwater

Estimated presentation time: 25 minutes

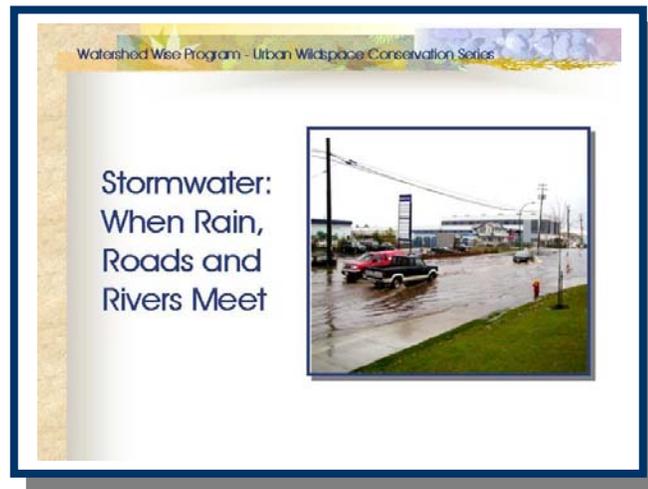
Leading off from Introduction to Watersheds this is a more focused presentation on the issues of urban development and non-point source pollution. Like other introductory modules, it employs simpler approaches and graphics to identify the specific changes and effects that result in runoff and stormwater problems.

Key learning outcomes expected are an introductory understanding of the relationship between surface and ground water and effects of changes in land cover and use. As with the other modules participants will learn about ways to reduce these impacts and better management practices locally.

Related applications to provincial education learning outcomes are Science K-7, particularly grades 3-7 Life Sciences, Earth and Space sciences and BC's Living Resources.

#### Target Audiences:

- Teachers/Student groups (grades 3-7 elementary/middle school)
- Community clubs and organizations
- Local residents and landowners (Strata groups, Ratepayers Associations, Co-op councils).
- Local chamber of commerce, business associations and foundations.



## Module 6:

### Stormwater: When Rain, Roads and Rivers Meet

Estimated presentation time: 40 minutes

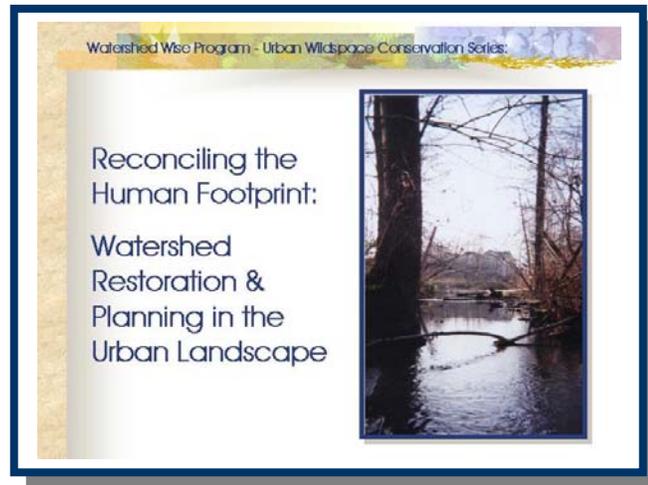
Like module two and four, this module builds on the previous introductory one for audiences with more interest or familiarity in stormwater management issues. Utilizing a local ongoing case study (Como Creek watershed) participants are introduced to some of the methods of applying principles of integrated stormwater management.

Key learning outcomes as in module 5 are an introductory understanding of the relationship between surface and ground water and effects of changes in land cover and use. Participants such as elected officials and municipal departments, watershed based conservation organizations and professionals in the area of stormwater management can benefit from principles and developing applications in the case study as they look at undertaking planning processes of this nature in their own communities.

"Rain, Roads and Rivers" is intended more for post-secondary educational curriculum (i.e. environmental studies or watershed management), but there are some related applications to provincial education learning outcomes in Science 8-10.

#### Target Audiences:

- Teacher /student groups (post secondary environmental studies).
- Municipal staff.
- Municipal Councils & advisory committees.
- Environmental non-government organizations.
- Planning and development organizations.



## Module 7:

### Reconciling the Human Footprint: Watershed Restoration & Planning in an Urban Landscape

Estimated presentation time: 40 minutes

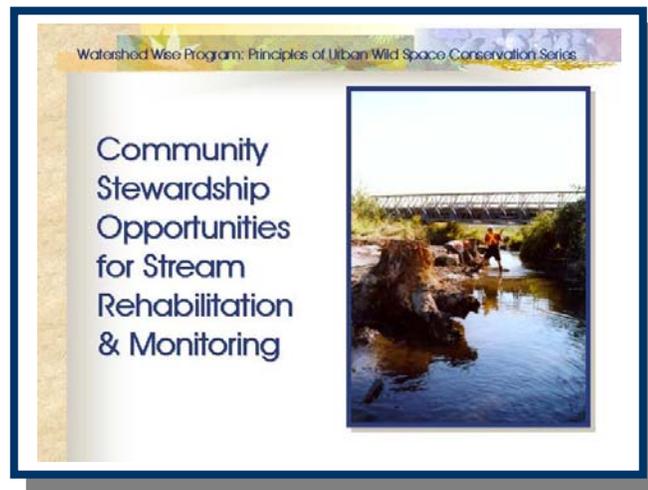
This module is designed for audiences with more of a specific interest in urban watershed restoration, naturescaping or related approaches. Participants are introduced through relevant local examples in the Como Creek watershed to restoration planning concepts and realities in the urban environment.

Key learning outcomes expected are methods and approaches to reconcile and mitigate some of the impacts of human activities in the urban landscape. Participants such as local municipal environmental departments, watershed based conservation organizations and related professionals can benefit from the lessons learned in undertaking restoration in an urban watershed like Como Creek.

"Reconciling the Human Footprint" is intended more for post-secondary educational curriculum (i.e. environmental studies or watershed management), but there are some related applications to provincial education learning outcomes in Science 8-10, and Forest Science.

#### Target Audiences:

- Teacher /student groups (post secondary environmental studies).
- Municipal staff.
- Municipal Councils & advisory committees.
- Environmental non-government organizations.
- Planning and development organizations.



## Module 8: Community Stewardship Opportunities in Stream Rehabilitation & Monitoring

Estimated presentation time: 35 minutes

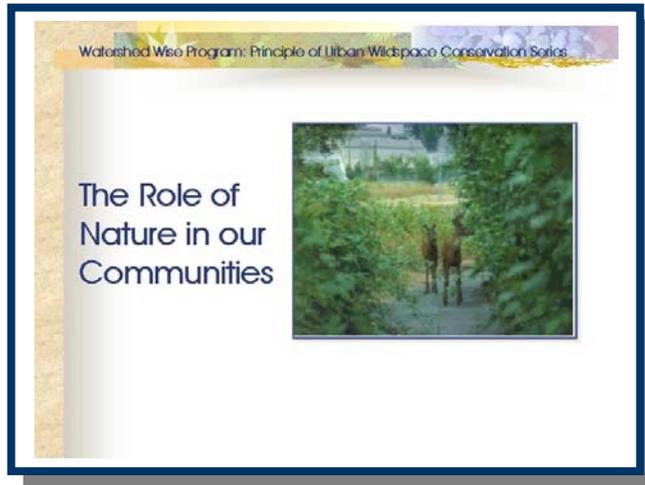
This module is designed mainly for audiences with an interest or involvement in urban stream restoration techniques and monitoring. Participants are introduced through relevant case studies in the Como Creek watershed to methods, responsibilities and requirements for undertaking restoration and rehabilitation work. This module builds more specifically on some of the learning outcomes from #4 - Riparian Zones: At the Waters Edge.

Key learning outcomes expected are understanding of the regulatory (local and senior agency) requirements for undertaking stream restoration projects, approaches for local stewardship organizations, educational institutions or municipal departments (e.g. Engineering, Parks) to undertake such projects and relevant methods and techniques.

'Community Stewardship Opportunities' is intended more for post-secondary educational curriculum (i.e. environmental studies or watershed management), but there are some related applications to provincial education learning outcomes in Science 8-10, and Forest Science.

### Target Audiences:

- Teacher /student groups (post secondary environmental studies).
- Municipal staff.
- Environmental non-government organizations.



## Module 9: The Role of Nature in our Communities

Estimated presentation time: 40 minutes

This module is an introductory exploration of the role and value of nature in our urban society. It is designed for audiences with an interest or familiarity with aspects of conservation ecology, parks and open space management, and community planning. Key learning outcomes expected are understanding of the concepts of biodiversity and ecosystem services, diversity in BC and societal choices and approaches to increasing these values locally.

"Role of Nature" is relevant for secondary and post-secondary educational curriculum (i.e. environmental studies, conservation ecology), as well as related applications to provincial education learning outcomes in Science 8-10, Science & Technology 11 and Forest Science.

### Target Audiences:

- Teacher /student groups (secondary/post secondary environmental studies).
- Municipal staff.
- Municipal Councils & advisory committees.
- Environmental non-government organizations.
- Planning and development organizations.



## Module 10: The Spice of Life: Linking to Nature's Patterns

Estimated presentation time: 50 minutes

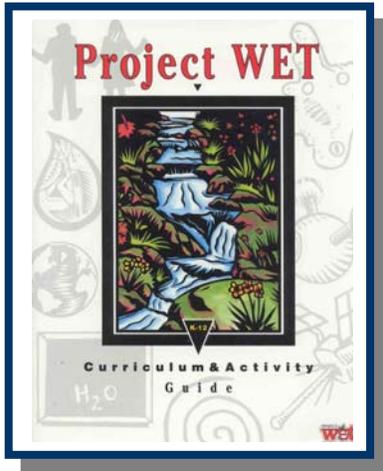
This module is intended more for post-secondary educational curriculum (i.e. environmental studies or watershed management), municipal land use planning or land use and development professionals. However there are some related applications to provincial education learning outcomes in Science 8-10, and Forest Science.

"Spice of Life" takes a more in-depth look at the science behind biological diversity (biodiversity) and the issues surrounding ecosystem function and thresholds. It is designed for audiences with an interest or familiarity with aspects of conservation ecology, parks and open space management, and ecologically based land use planning. Key learning outcomes expected are understanding of the concepts of biodiversity and ecosystem services, diversity in BC and societal choices and approaches to increasing these values locally.

### Target Audiences:

- Teacher /student groups (late secondary and post secondary environmental studies).
- Municipal staff.
- Environmental non-government organizations.

## Interactive Support Tools and Field Sessions:



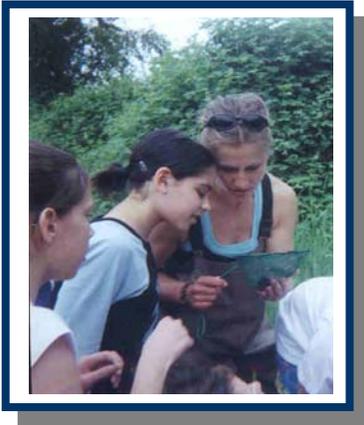
Project Wet website: <http://www.projectwet.org>  
A Canadian supplement is available for review  
through Wild BC:  
<http://www.hctf.ca/wild/resources/index.html>

### Project Wet:

For those familiar with the curriculum from the U.S. based "Project Wet" program there are numerous activity sessions applicable to BC's water and watershed issues. Most of the key support activities are designed for kindergarten – 12 age groups with applicability to adult audiences as well. The goal of Project WET is to facilitate and promote the awareness, appreciation, knowledge and stewardship of water resources through the development and dissemination of classroom ready lessons. The activity guide contains 91 fun, hands-on and easy-to-use activities that focus on the following themes:

1. Water has unique physical and chemical characteristics;
2. Water is essential for all life to exist;
3. Water connects all Earth systems;
4. Water is a natural resource;
5. Water resources are managed;
6. water resources exist within social contexts; and
7. Water resources exist within cultural contexts.

The main activities used to date include breakout groups to create watershed models, role-playing and land use "scenario" activities and easily constructed two and three-dimensional tools that show cause and effect applications. The CWG and Watershed Wise Program coordinator assess local knowledge needs and relevant application of these tools to provide a balanced, optimal learning experience for individual groups and lead session organizers.



### **The Living Classroom:**

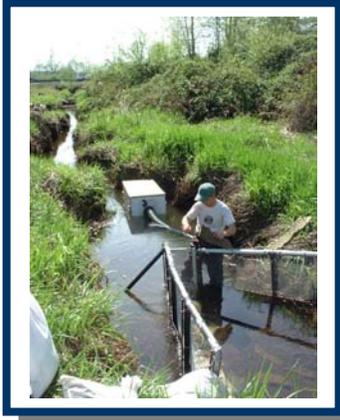
Local parks, streams and open space provide a host of opportunities for potential target audiences to experience the learning outcomes. Even a playing field can suffice for an exploration of many of the concepts presented in the modules. Participants can see first hand the impacts of land use on natural systems, use role-playing games to learn about the effects of stormwater and pollution then explore nearby wildspace to understand those relationships first hand. There are also many potential opportunities to undertake planning and implementation of naturescaping or enhancement projects on adjacent private or public lands. Resources, guidance and expertise are provided to interested parties through the program.

As a non-profit society committed to conservation The Como Watershed Group provides facilitation and coordination of the Watershed Wise Program with utmost care for the environment. Any activities involving access or use of the “living classroom” are undertaken with the principle of protecting the resource and leaving no footprint. Participants or session organizers will need to ensure that authorization and/or permission to conduct activities in local greenspace or property is received.

### **Maximizing the Learning Experience:**

Watershed Wise is most effective when it is part of a continuum of education and awareness activities. This is especially important for elementary school age groups who benefit from the content if they receive hands on primers from visits to local nature education centers or similar facilities. The program modules then dovetail with those experiences to truly enforce and enhance the learning outcomes. As facilitators of the Watershed Wise Program, The Como Watershed Group can provide organizations, educators or other interested participants with assistance in connecting to local nature education center programs and facilities that are readily accessible and cost effective.

## Mentorship and Training Opportunities:

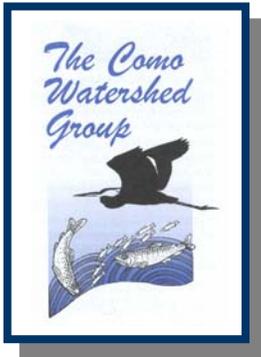


As a value added component to the program the Como Watershed Group provides opportunities for secondary and post secondary students in the field of restoration ecology and environmental studies. The group undertakes annual activities intended to provide long-term monitoring on environmental health in the Como Creek watershed. These range from fish and wildlife inventory and assessments (including fisheries productivity and distribution studies) to biodiversity inventories to assess species use on restoration sites. Water quality monitoring is also a key activity given the ongoing impacts and threats due to urban non-point source pollution and stormwater issues. Opportunities exist for monitoring of water quality parameters such as metals, organics and standard studies as well as instream aquatic invertebrate studies.

The Como Watershed Group is also actively involved in the planning and implementation of \*habitat restoration, including design and installation of instream enhancement projects and riparian and upland forest ecosystem restoration. Projects of this nature are supported through the society's native plant nursery at Colony Farm Regional Park and partnership projects with the City of Coquitlam Operations and Parks departments. Another facet of work the society is involved in is advocacy for better land use and development practices (i.e. principles of BC's Naturescaping Program, "Smart Growth", and environmentally friendly community design applications). Through providing an ongoing credible voice in local community and regional programs and initiatives, the society hopes to provide a vehicle for attitudinal change towards environmental conservation.

\*The CWG like all proponents must acquire senior environmental agency and municipal approval before undertaking projects of this nature.

## Information for Prospective Program Sponsors



### **About the Como Watershed Group:**

The Como Creek watershed encompasses approximately 8.7 km<sup>2</sup> in south Coquitlam, a medium sized municipality in the northeastern portion of the Greater Vancouver Regional District. It includes Como Lake (headwaters of Como Creek), four main tributaries, several significant parks and wildlife corridors as well as a host of residential, commercial and light industrial areas. The watershed flows south from its headwaters at Como Lake Avenue to the Fraser River east of historic Fraser Mills, and is within one of BC's oldest communities (Maillardville).

Founded in 1996 through a municipal initiative, the society began life as the "Como Lake-Keepers" involved in stewardship of Como Lake. The lake is a renowned urban fishing and recreation area in the City of Coquitlam as well as the Lower Mainland. By 1998, the organization had grown and expanded recognizing the need for taking a holistic watershed approach to the community. The CWG was incorporated as a society in 1999 and has a membership of over 80 individuals, a core group of active volunteer members, a board of directors and an executive. Presently the society is involved in a host of collaborative activities from water quality monitoring to watershed restoration to input into land use planning processes and environmental education. Members provide a diverse array of professional and personal expertise to the group enhancing its ability to provide a credible long-term resource to the city and the community. More recently, the CWG has participated along with other stakeholders in an integrated stormwater planning strategy for the watershed, local trail planning and neighbourhood revitalization and growth strategies.

Watershed Wise evolved out of the experiences and lessons learned from the society's involvement in local conservation issues. It was recognized that there was a significant niche to fill in respect to advocating, engaging and empowering the local community to effect positive change in conserving the natural values of the watershed. The Como Creek watershed represents one of the last urban watersheds in the Tri-cities that support a wild stock of coho salmon as well as other species at risk such as cutthroat trout and the green heron.

### **Sponsorship of the Watershed Wise Program:**

Though methods for cost recovery are intended to be part of program delivery, the Watershed Wise Program is presently provided at no cost to certain sectors (e.g. Schools and environmental stewardship groups). Funding for delivery and implementation of the program relies mainly on public and private sponsors through:

- Annual in-kind, public, corporate and municipal sponsorship.
- Direct grant and cash contributions (workshop fees).
- In-kind contributions of expertise, equipment and materials.

As delivery of the program is first and foremost reliant on credible professional expertise, contributions are prioritized towards staff and coordination. As an example the estimated cost of delivering one module, including resources for the interactive sessions (which can run up to three hours) and factoring in travel is approximately \$300.00.

Reporting and program performance review is provided publicly through the society's annual report to members, sponsors and the Province of British Columbia's Registrar of Societies.

### **Estimated Requirements & Costs for Implementation and Delivery:**

Total estimated annual budget for overall delivery and implementation of all society programs and services: \$150,000.00/yr.

Estimated annual gross operating costs for the Watershed Wise Program is approximately \$85,000.00. The society employs one fulltime program and operations staff (presently covered under the Executive Director's roles and responsibilities) and one half-time administrator, both overseen by the CWG's board of directors. Up to 40% of the ED's position is dedicated to coordinating and marketing Watershed Wise.

#### **Cost Breakdown:**

The estimated cost of delivering one module, including resources for the interactive sessions (approximately three hours) and related operational costs is \$300.00 based on the following:

- Facilitation and professional costs: \$200.00
- Workshop materials/preparation and printing costs: \$50.00 (includes all handouts, and related presentation expenses)
- Overhead and travel: \$50.00