

# MODULE 5 Watershed Stewardship

## Notes for the Teacher

### Activities Outline:

Notes for the Student — A Backgrounder on Watership Stewardship

Activity 1 – *Get Active!*

Activity 2 – *Get Experienced!*

Activity 3 – *Nature-Scaping 101*

### Subjects/Grades:

Career and Personal Planning 10, 11 & 12

Social Studies 10 & 11

Earth Science 11

Science and Technology 11

## PRESCRIBED LEARNING OUTCOMES

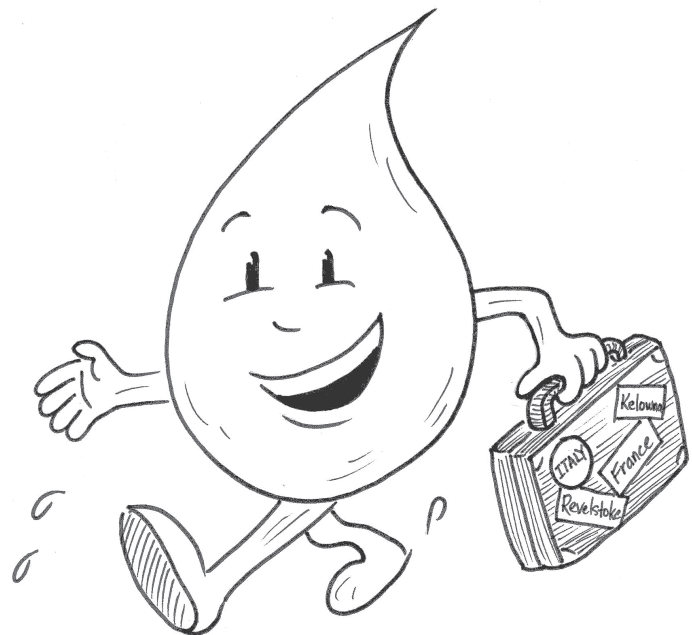
SUBJECT AREA	CURRICULUM ORGANIZER	ACTIVITY
CAPP 10	Planning Process _____	Activity 2
	Career Development _____	Activity 2
CAPP 11 & 12	Planning Process _____	Activity 2
	Career Development (Career Awareness Skills) _____	Activity 2
	Career Development (Career Preparation) _____	Activity 2
SOCIAL STUDIES 10	Applications of Social Studies _____	Activities 1 and 3
EARTH SCIENCE 11	Geological Science (Resources and Environment) _____	Activities 2 and 3
SOCIAL STUDIES 11	Environmental Issues _____	Activity 2
SCIENCE AND TECH 11	Resource Management and Environmental Planning _____	Activity 3
	Pollution _____	Activity 3



## Introduction

An amazing thing starts to happen when people begin to learn about a particular part of the planet: they start wanting to protect that part. This is the beginning of stewardship. Some people work to protect an entire place, like the Great Bear Rainforest in coastal British Columbia; others give their attention to smaller projects such as organizing to conserve a small creek that runs through their community.

Stewardship starts with knowledge about a place. The more we know about a place, the more we appreciate it and want to make sure it remains healthy and vibrant. This desire to protect is stewardship. The goal of an effective environmental steward is to develop the skills necessary to make the world a great place to live in, by ensuring ecological conservation. In the preceding pages we have made a good start at learning more about watersheds. Module 5, ***Watershed Stewardship***, focuses on how we can act to protect watersheds.





*Don't just work in the world, work to change it!*

—LESLEY DUNN

Volunteer Resource Centre,  
Halifax, Nova Scotia

According to *Turtle Island Earth Stewards* (a community-based conservation and environmental education group based in Salmon Arm, B.C.) stewardship is “caring for the Earth, for ourselves and for others. While we may own or rent land and use oceans, we feel we have the responsibility to not just take from it for our own immediate needs, but to be mindful of replenishing it and preserving it for future generations. In learning to be stewards — not only of the land, but of all aspects of our lives — we are learning how we affect others by our actions.”

## NOTES FOR THE STUDENT — *A Backgrounder on Watershed Stewardship*

### What is Stewardship?

Stewardship is one of those words that we hear all the time without really knowing what it means. In fact stewardship is a hard thing to define, but it is about how we are in the world: the way we care for it, respect it, live in it. It is about being actively involved in making the world be a place we want to live in. Our goals as stewards are to develop the skills necessary to make the changes we desire, and to organize ourselves and others to take action in a responsible, caring and knowledgeable way.

### Why Watershed Stewardship?

Ninety percent of the world's water is contained in salt oceans. Of the remainder, 69 percent is in the form of ice and snow. Freshwater for human use, found in lakes, swamps, rivers and underground, makes up only 0.008 percent of the world's water. In British Columbia we are lucky: we have streams, lakes, rivers and estuaries covering 1.25 percent of our province. But as the population grows, more and more of this available water is being contaminated by human development.

Many kinds of skills are useful to a watershed steward, but all stewards share some characteristics. A steward is worthy of trust, demonstrates respect for life, carries a genuine heart, embodies constancy of mind, and acts with autonomy.





## Building an *Activist's Tool Kit*

Being a steward sometimes requires us to be activists for something we believe in. The word activist conjures images of radical people tying themselves to harpoons to stop whaling boats, or living in treetops for weeks on end in order to save an old growth forest. But not all activists are radical. Sometimes being an activist means speaking out in the school or community newspaper, or organizing a group to turn up to a city council meeting. Mostly, being an activist means believing in your ability as an environmental steward.

Here is a basic *Activist's Tool Kit*. Think of it as a magician's bag: it can be colourful, surprising and effective, and can be added to at any time by the activist.

## Activist's Tool Kit

### Write letters

*General rules for good letter writing:*

- Craft your own letter — letters that are individually written are more effective than form letters
- Send the letter to a specific person
- Be brief and specific. Deal with one issue at a time. Stick to one page
- Keep your letter as neat and free of errors as possible
- Make sure your letter is polite. Be wary of your tone and how your phrase requests and criticisms
- End the letter with a specific and realistic request

### Call in to Radio Shows

Call in radio shows give you free access to the airwaves. Listen to a show a few times before you call. Get a sense of the host so you won't be surprised if they disagree with you. It is easy, anonymous and can get your message to a lot of people.

### Organize a Public Event

*Simple rules for a good event:*

- Make sure people know about your event. They should hear about it at least seven times
- Keep your message short, understandable and simple
- Keep your language clear and avoid jargon and acronyms
- Balance critiques with positive alternatives
- Stand out in the crowd. Make your event colourful and interactive
- Be funny — people appreciate and are moved by humour

### Organize a School Environmental Group

Organizing a school group is a great way to get lot of people involved. The group can organize their own events, hold information workshops, start petitions and a million other things!





### ACTIVITY OBJECTIVES

#### In this activity you will:

- Research and identify a watershed issue in your community or region
- Create a campaign plan for your chosen issue
- Create and send an effective press release

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### TIME

A long term project spanning several weeks

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### MATERIALS

Paper, pencil, and brains!

## Key Words

**Activism:** actively working to further an environmental, social, or other cause.

**Press release:** a standard format note the mass media (newspapers, magazines, radio, television) recognize and accept as information from the community.

## Activity 1: *Get Active!*

### First of all...

Taking action on a watershed issue can be spontaneous and fun, but organizing and initiating the campaign requires work. The good news is that some of the larger environmental organizations have developed guidelines to help individuals and groups plan their actions. When you do the following activity, refer to your *Activist Tool Kit* (page 69), the hints from *Writing An Effective Press Release* (opposite) and the tips from *Speak Up! Becoming a Media Spokesperson* (page 72) to get started on the road to becoming a watershed steward!

### Activity Description

1. Brainstorm and research a local watershed issue that needs your attention. Is your river or stream polluted with run-off from nearby storm drains? Is there a proposed development on a wetland that you think is unsuitable? Is there a culvert that should be removed? Should there be an educational campaign for water conservation in your school? Make a list of issues and choose one for the class to work on together.
2. Select a campaign message and theme. For example, "Operation Stream Clean" could be the theme of a restoration project. "Bringing the River Home" could be used for a project that removes a culvert.
3. Develop a strategy: outline how you plan to carry out the campaign, using as much detail as possible, but also leaving room for flexibility throughout the process. Use your *Activist's Tool Kit* to help you. (Remember to be strategic. Who are the people who have the power to make the change you are requesting? How can you best approach them?)
4. Using the information in *Writing An Effective Press Release* (opposite) write a press release to announce your campaign. Brainstorm other methods to get the word out. (Use the notes in *Speak Up! Becoming a Media Spokesperson* to help you prepare if you are organizing a media event.)
5. Begin your campaign.
6. Once you've realized a victory, celebrate.
7. Evaluate so that your next campaign can be even more effective.



*There is no formal school for activists. No university degree qualifies the graduate to practice grassroots organizing... The reality of activism, for the environment or any other cause, is that democracy is at work... For democracy to thrive all citizens should be activists.*

—ELIZABETH MAY

Executive Director, Sierra Club of Canada

## Writing An Effective Press Release

A **press release** is a standard format note the mass media (newspapers, magazines, radio, television) recognize and accept as information from the community.

The **first paragraph** states your message in two sentences.

The **second paragraph** describes the details of what was announced in the first paragraph. State your source here. If you are releasing new statistics or a report, state the findings here. This is where the important story details are found.

The **third paragraph** quotes your spokesperson and offers his or her impressions of what has been released. The quote should make sense as a stand-alone thought. "I'm appalled," said Ms. Smith is not as useful as, "I'm appalled that the Mayor does not support the issue."

The **conclusion** restates the first paragraph, tying the story together. It is also the place to add another interesting detail, if appropriate, for extra zest.

A **fifth paragraph** can be used if an event will be held in relation to the release. Indicate all event details: when, where, who, cost, RSVP information, number to call for more details, etc. Remember to add at the bottom of the press release a spokesperson's name, title, and phone number and alternate spokesperson's name, title, number!



## Speak Up!

### Becoming a Media Spokesperson



Imagine you are a reporter trying to find out about a recent announcement made by your local high school. You go to the school and find the class. You ask to speak to someone about the issue and are told that one person knows some of it, and another person knows more, and a third person knows even more! As a reporter, you get confused; you're not sure if anyone really knows the facts, so you give up and go back to the office.

When your class is dealing with the media, one person should be chosen as “Media Spokesperson”. This person will represent your class to the media and will be prepared to speak on any aspect of the issue. Here are some tips for being an effective Media Spokesperson:

- Be available
- Do your homework and be prepared
- Know what those who will argue your position might say, and address their points — be proactive, not reactive
- If you don't know an answer, never lie or make it up. Tell the reporter you'll get right back to them with the information they want, and do!
- Prepare to answer a few really tough questions. Think of questions you hope you won't be asked, and prepare answers for them
- Make your own messages clear and concise
- Talk in “sound bites” — keep your answers short
- Rehearse your delivery
- Smile and maintain eye contact
- Pay attention to how the interviewer paraphrases you; correct him/her, if necessary
- Offer to follow-up with additional information
- Supply photos, if possible



*sample press release*

## Landmark Decision for Forests on B.C.'s Coastal Rainforest Sets Precedent for Conservation

April 4, 2001

**(Victoria, BC)** Today the B.C. Government made a precedent-setting decision to protect over 600,000 hectares of ancient temperate rainforest on B.C.'s central coast. The Sierra Club hailed the decision as a victory for conservation of temperate rainforests and the magnificent wildlife and cultural resources that they support.

This area lies north of Vancouver Island and south of Alaska, nestled between high alpine peaks and the Pacific Ocean along the central coast of British Columbia. The decision protects substantially large areas of B.C.'s central coast forests and commits to a strategy that will help realize a new economic model — one that incorporates both environmental and cultural values.

“After almost a decade of land use planning, environmental campaigns and negotiations, we are finally seeing a recognition by all parties that land use must change in favour of conservation,” said Bill Wareham, Executive Director of the Sierra Club of B.C. “Although there is still more work to do to ensure conservation of all forest values on the coast, this is a decision worthy of great applause.”

This signifies a monumental change in the approach to land use on the coast. The government decision was identified as an interim step in the land use planning initiative on the Central Coast and came with commitments to develop ecosystem-based planning models for forestry, the establishment of an independent science body and an economic transition package for forest workers.

For more information please contact:

Bill Wareham, Executive Director, Sierra Club of B.C. Tel: (250) 386-5255

Merran Smith, Forest Campaigner, Sierra Club of B.C. Tel: (250) 847-9497



## ACTIVITY OBJECTIVES

### In this activity you will:

- Describe the types of careers available in your region that concern watersheds, water conservation, water testing, etc.
- Perform a job search for water-related careers and jobs
- Perform a search for volunteer opportunities in a water-related field such as with a conservation or environmental group
- Conduct an informational interview with a person working in a water-related job
- List community groups that might have good volunteer opportunities

## TIME

A long-term project, spanning several weeks

## MATERIALS

- Internet access
- Career section of the local or provincial newspaper
- Telephone book, community directory

## Key Words

**Informational interview:** an interview of a person knowledgeable in some field by a person wanting to glean information about that field.

**Job shadow:** to work with an associate or mentor in order to see first-hand what the job entails.

## Activity 2: *Get Experienced!*

### First of all...

Every year there are more opportunities to work in the environmental field. Students coming out of university with degrees in geography, biology, chemistry, environmental studies, law, and even economics are finding meaningful jobs working to help protect the environment.



*ENVIRONMENTALIST*

Although proper training is very important, employment counselors point out that experience in the field is equally valuable. When it comes to an actual paid job, employers are looking for people who have spent some time in the field. For many students, this means doing some volunteering. Learning through experience is invaluable; so too are the personal connections that can be made through volunteering. Volunteering can mean doing some hands-on work for a company or the government, or it could mean joining a committee at the city hall or at your community association.

Job shadowing, where you work with a mentor, is another way to learn first-hand about what a specific job entails. Is there some position you've been wondering about? Who currently works in that position? It may be that they would be willing to have you join them on the job for an hour or a day. By being a volunteer or conducting a job shadow, you can quickly learn who's who in the job market, and find out what's available for jobs and career opportunities.



*FISHERIES BIOLOGIST*

### Activity Description

1. **Research!** Research what kinds of watershed-related careers or jobs exist in your region by thinking of positions or opportunities that you might already know about (or can imagine that might exist). Ask people you know (personal contacts are some of the best potential job contacts), research via the Internet, check job listings in the newspaper, etc. Report back your findings.



2. List! While researching what types of careers exist, make notes of what sorts of positions interest you personally. Your interest may start with exploring various volunteer opportunities (a great way to gain valuable experience before applying for an actual job).
3. Investigate! Find out what environmental volunteer opportunities or careers exist in community organizations, environmental groups, city hall committees, etc. This is a great way to make valuable personal connections and learn about the issues while doing something meaningful for the planet!
4. Ask questions! Arrange an informational interview with someone already in the field of watersheds/water-related jobs. This will allow you to pick up important information while at the same time making valuable contacts in the field.
5. Job shadow! You may want to arrange to job shadow someone you've met or interviewed in Step 4 (or some other contact you may know of). Remember, this requires a commitment of time and energy on your part, as well as on the part of the person you shadow. Job shadowing can be done in one short session, or can be conducted over several sessions with a person in the field.
6. Volunteer! Arranging to volunteer takes some preparation: find out what tasks are available, who to contact for volunteer enquiries (some groups have a dedicated Volunteer Coordinator), and what their requirements are for volunteers. A volunteer position can take place once or more per week, or might happen only once a month. One of the keys is to arrange a volunteer schedule that fits your own personal and school schedule.



COMMUNITY FORESTER



STREAM HYDROLOGIST



LANDSCAPER

*The best way to find yourself is to lose yourself in the service of others.*

—Gandhi

## Options On-line

Here are a few places to start research on watershed or water-related jobs or volunteer opportunities:

### **JOBS AND CAREER PLANNING — IN GENERAL**

- **WorkScene — BC Work Futures for Youth:** <http://www.workinonet.bc.ca/workscene/>
- **The Work Stream Project:** <http://www.workstreams.bc.ca>
- **BC Workinfo Net:** <http://www.workinonet.bc.ca>
- **Workopolis:** <http://www.workopolis.com/>

### **ENVIRONMENTAL AND WATERSHED RELATED SITES**

- **Slocan Valley Watershed Alliance:** <http://www.watertalk.org/SVWA/links.html>
- **Rivershed Society:** <http://www.rivershed.bc.ca/>
- **Fraser Headwaters Alliance:** <http://www.fraserheadwaters.org/>
- **Stream Keepers:** <http://www-heb.pac.dfo-mpo.gc.ca/PSkF/home.htm>





### ACTIVITY OBJECTIVES

#### In this activity you will:

- Describe reasons for and take steps towards restoring a disturbed area
  - Explain the importance of native plant species in an urban setting
  - Identify native plants that can be used for low-water gardening
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### TIME

Can range from a one-time event to a long-term project

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### MATERIALS

- Gardening books that focus on native plant gardening
- Local gardening clubs and environmental groups
- Contacts for information and support
- Addresses of your Member of the Legislature (MLA) and the Premier of B.C.

## Activity 3: *Nature-Scaping 101*

### First of all...

Natural ecosystems such as watersheds are often altered in the name of a growing human population. Humans need more land to build on, more fresh water to drink, more resources to carry on their lifestyles. The trouble is this ecosystem alteration can lead to troubles down the road: polluted water, degraded habitats for plants and animals, soil erosion and loss, air and noise pollution, etc. Often it is worthwhile putting time and resources into restoring an ecosystem so that it is as close as possible to its original natural state.

This activity can be as short as a one-time project to help clean up a creekside or forest park, or it can be expanded to include a plan and action for removing alien species, replanting with native plants, and doing other restoration actions over a longer period of time. Choose the project suited for your time and resources.

### Activity Description

#### PART I:

1. Locate an outdoor spot in your community or near your school that needs a little tender loving attention (and natural restoration). This could be an area right in the schoolyard, or might be part of a creek that has been buried or displaced or otherwise disturbed and requires some care.
2. You may decide this area is in need of a clean-up effort. If so, follow the steps outlined in *How to Plan a Stream Clean-Up* (page 78), to plan and host a stream-side clean-up.

#### PART II:

1. Alternatively, you may decide that what your selected spot requires is some restoration — with native plants, that is! Research what sort of natural habitat really ought to be there. What was there before the spot was disturbed? Was it rainforest? Semi-arid desert? Deciduous forest? Garry oak meadow? Use this as a guide for what sort of plant species you might consider re-introducing to restore the spot to close to its original state.
2. Research “nature-scaping” your selected spot. Read the information in *Nature-Scaping Notes* (page 77). A good source of information for this is NatureScape BC. Check out their website for more information: <http://www.env.gov.bc.ca/hctf/nature.htm>. As well, check the Greening Schoolgrounds website: <http://www.greengrounds.org/> for great information on how to green your schoolground!





3. Get greening! Meet with your school principal, parent advisory group, key teachers or other key people, and propose a nature-scaping project. This could be on or off school grounds, and could involve you, your class or your entire school! There are often community resources such as native gardening experts, who will be happy to visit the class, walk to your spot, and offer solid advice on how to achieve your restoration project with as much success and as little cost as possible.

## Key Words

**Biodiversity** (or biological diversity): the variety of life in all its forms, including species, genetic and ecosystem diversity.

**Conservation:** the act or practice of conserving or preserving; protection from loss, waste, etc.

**Environmental stewardship:** taking care of and nurturing the health of the natural ecology and using the land wisely and in a sustainable way.

**Habitat:** a place or type of place where a plant or animal or community of plants or animals naturally or normally thrives; the place provides food, water, space and shelter.

**Native species:** species that are found in the area from which they originate.

**Sustainability:** the use and consideration of environmental, economic and social aspects in making land use decisions so that the needs of the present generation are met without compromising the ability of future generations to meet their needs.

*A weed is a plant whose virtues have not yet been discovered.*

—RALPH WALDO EMERSON

## Nature-Scaping Notes

**N**ature-scaping is a way of creating or re-creating native habitat, right in your own backyard! A variety of habitats and plants are necessary if you want to provide an inviting spot for various native animals, birds and insects. This may include ground-cover vegetation for small lizards or rodents, medium shrubs for certain species of birds, and trees for nesting and cavity-dwelling animals and birds (such as woodpeckers and squirrels).

*Greening Schoolgrounds* is a program of the *Wild Bird Trust of British Columbia*. Through *Greening Schoolgrounds*, schools throughout British Columbia participate in schoolyard greening projects, through the design, establishment and maintenance of schoolground based gardens and green spaces. To learn more about their projects, their schoolground guide, how to do on-site schoolyard greening, and other participating pilot schools, check out their website: <http://www.greengrounds.org/>.



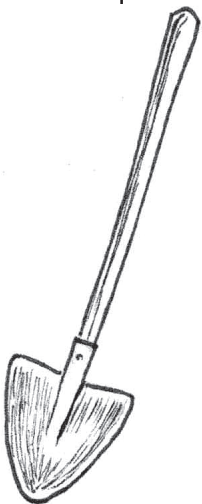
## How to Plan a Stream Clean-Up

**T**he King County Department of Natural Resources — Water and Land Division — have come up with a terrific action plan for hosting a Watershed Clean-up. The following steps have been adapted from their website: <http://splash.metrokc.gov/wlr/PI/cleanup.htm>.

Before jumping into a creek and removing all debris, litter, logs, and anything else that catches your eye, ask yourself if you are doing more harm than good. All stream clean-up activities should be planned and carried out to help you realize your goal of improving the environment. When you consider doing a stream clean-up, we recommend that you be selective in the material you choose to remove. A simple rule of thumb: if the object is more than half-buried and a great deal of sediment would be stirred up by its removal, leave it there.

*Things to consider before getting your feet wet:*

1. Make sure that you have adequate numbers of people to assist you for the area you intend to cover.
2. List the tasks to be accomplished and the dates by which information is needed. Hold meetings and assign tasks to people.
3. Well in advance of your planned clean-up day do the following:
  - Obtain the property owner's permission to access your adopted stream, and make sure you have (any) required permits
  - Arrange for garbage cans and bins at the clean-up site. Also ask people to bring trucks and wheelbarrows to haul trash and debris
  - Advertise the clean-up to your community — ask for more help
  - Arrange in advance for the ultimate destination of the debris collected and the means to get it there. (Your friends' and neighbors' pick-up trucks generally work quite well.)
4. The day of the clean-up do the following:
  - Pick a staging area and staff it at all times
  - Have the volunteers sign in as they arrive. Get names and addresses
  - Make sure everyone is aware of safety issues: i.e. work in pairs, wear rubber gloves, don't pick up anything hazardous, etc.
  - Make a map of where people will be working and keep track of everyone involved in the clean-up
5. After you dry your feet off, you'll want to tie up a few loose ends.
  - Remember to record the amount and types of debris collected. Take pictures!
  - Provide this information to the media in a press release
  - Send thank you notes to your volunteers
  - Set up a "garbage watch" to prevent more junk from being dumped into your creek



*By following these simple steps, your stream clean-up effort will be a success!*



### Extension Ideas

1. Through your investigations, did you come across a situation where you felt your community watershed needed a voice for conservation? Consider writing a letter to your local Member of Legislative Assembly (MLA), or to the Premier of B.C. or other relevant government officials, asking for tough legislation to protect B.C. watersheds.
2. During your research did you decide you wanted to know more about your local stream or waterway? On the right are just a few of the many organizations you can contact to get more information about watershed stewardship in B.C. There may be a water users group in or near your community. Most of these groups can be researched and contacted through the Internet.



### FOR MORE INFO ON WATERSHIP STEWARDSHIP IN B.C.:

- *BC Tapwater Alliance*: <http://www.alternatives.com/bctwa/>
- *Comox Valley Watershed Society*: <http://valleylinks.net/community/environment/watershed.html>
- *David Suzuki Foundation*: <http://www.davidsuzuki.org/>
- *Elliot / Anderson / Christian / Trozzo Water Users Committee*: <http://www.watertalk.org/svwa/eact/home.htm>
- *Fraser Headwaters Alliance*: <http://www.fraserheadwaters.org/>
- *Friends of Watersheds (Greater Vancouver)*: <http://www.vcn.bc.ca/ourwater/>
- *Georgia Strait Alliance*: <http://www.georgiastrait.org/>
- *Perry Ridge Water Users Association*: <http://www.watertalk.org/svwa/perryridge/>
- *Rivershed Society of BC*: <http://www.fraser2000.com/>
- *Save Saltspring Society*: <http://www.savesaltspring.com/>
- *Sierra Club of BC*: <http://www.sierraclub.ca/bc/>
- *Slocan Valley Watershed Alliance*: <http://www.watertalk.org/SVWA/>