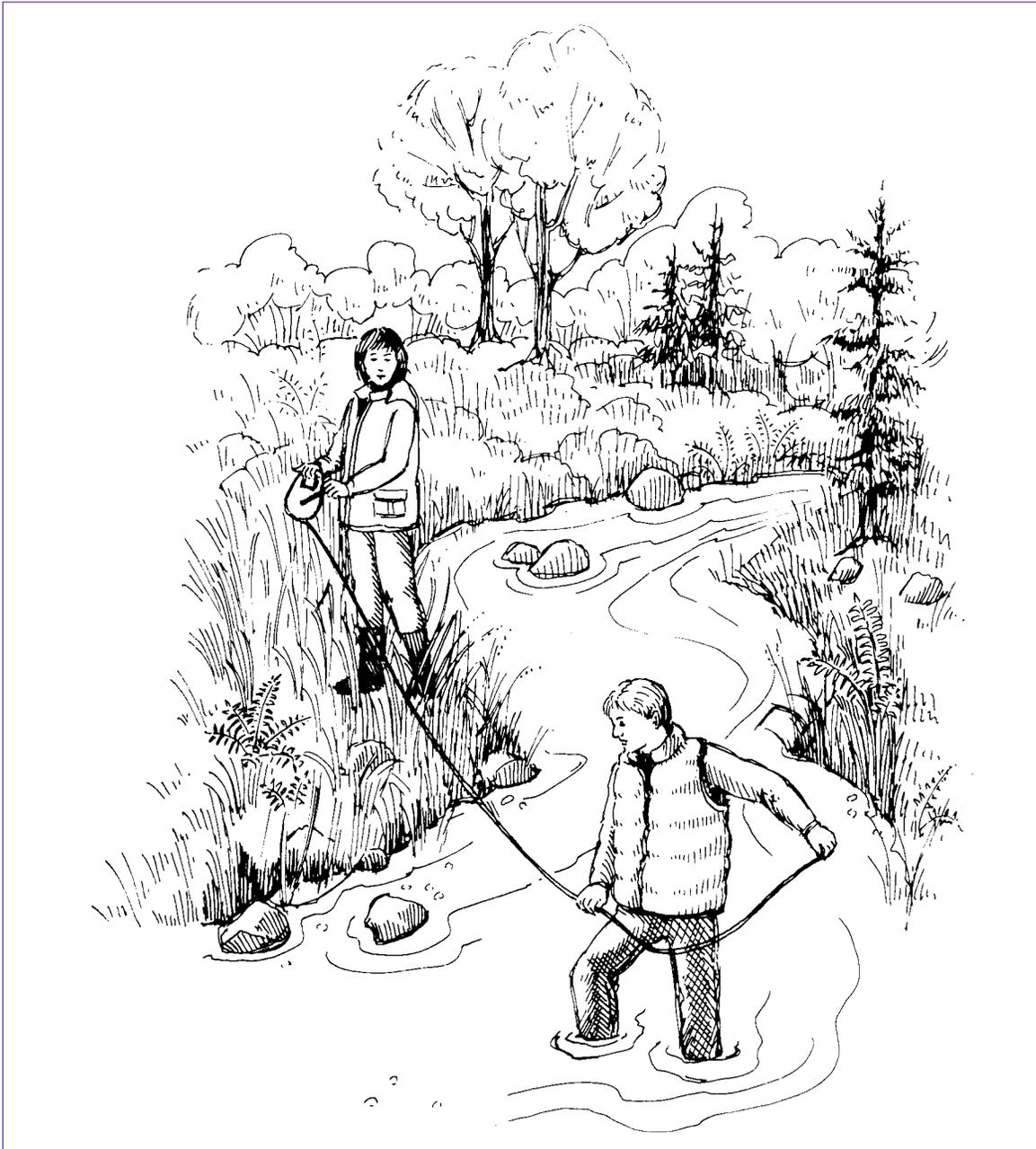


# *The Streamkeepers Handbook*

*A  
Practical  
Guide To  
Stream  
And  
Wetland  
Care*



***STREAMKEEPERS***

***Module 5  
Storm Drain  
Marking***



Project Approval Required	Training	Time Commitment (per year)	Number of People	Time of Year
no	Not necessary	½ day to ongoing	2 or many	Spring through fall

# The **Stewardship** Series

## **MODULE 5:**

# ***Storm Drain Marking***

Welcome to the Streamkeepers Program! The Department of Fisheries and Oceans Community Involvement Program provides Streamkeepers training modules. These modules encourage “hands on” environmental activities in watersheds in British Columbia. Volunteer groups, schools, and individuals are using this material to monitor and restore local waterways. Your local Fisheries and Oceans Community Advisor can provide more information.

## **Acknowledgments**

The Salmonid Enhancement Program of the Department of Fisheries and Oceans, B. C. Ministry of Environment, Lands and Parks, and the B. C. Conservation Foundation jointly developed the Storm Drain Marking Program.

## **Project Activity and Purpose**

You will paint yellow fish symbols on the road beside storm drains and deliver pamphlets to residents and businesses along your route. These pamphlets remind people that storm drains empty into a fish-bearing creek nearby. They also provide lists of safe waste disposal methods and environmentally friendly household compounds.

Supervised groups of school children, Girl Guides, and Boy Scouts often mark storm drains in residential areas, but anyone can take on this project. Only adults should mark storm drains in commercial or industrial areas because traffic conditions are more hazardous. You may need additional permission from property owners.

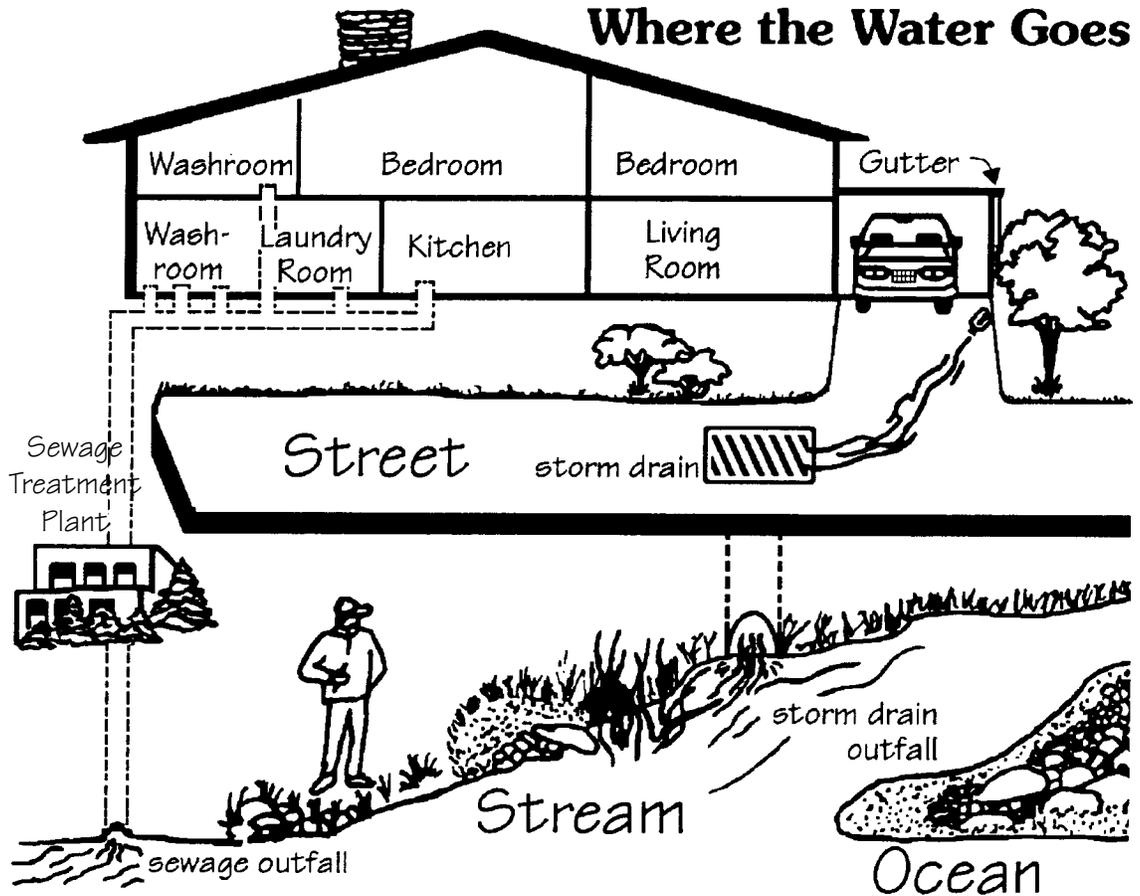
## **Introduction**

In urban areas, storm drains along paved streets and parking lots collect rain and snowmelt water. Paved surfaces prevent rainfall from filtering through the soil naturally, so water runs off quickly into storm drains. The runoff picks up contaminants along the way. Floods and droughts are frequent in watersheds where buildings and paved surfaces cover much of the land.

Storm drains empty into an underground collection system that discharges untreated water into a nearby stream. Runoff does not go into the domestic sewage system. People who do not realize this often dump oil, swimming pool water, and toxic household or industrial compounds into storm drains. Road runoff contains sediment, animal

## The Stewardship Series

waste, oil, and particles from car exhaust. All these substances flow into the nearest stream and harm fish, wildlife, and plants.



Storm drain marking is an excellent way to raise community awareness about stream health. It involves children, leaves a semi-permanent reminder on the street, and distributes information in neighbourhoods close to streams. However, there are some disadvantages to using paint. Paint may be spilled accidentally into the drain. Over time, the paint chips off the road and flows into the storm drain, adding to pollutants already present. One alternative is to attach metal plates with a warning message onto the drains. However, municipal staff would need to do the work, rather than volunteers.

Plans for new urban developments in some municipalities require that storm runoff flow into wetland retention ponds. The ponds are planted with wetland plant species that remove toxins from the water. The ponds also help moderate flood and drought conditions in the receiving stream. You may wish to check on the stormwater collection system proposed for new developments in your area. References for

design of stormwater treatment systems are provided at the end of the module.

There are few storm drains in rural areas. However, domestic and agricultural pollution in drainage ditches can be a major threat to stream health. A solution developed in the Maple Ridge - Pitt Meadows area is to build “fish sticks” and erect them along the ditches. Wooden fish cutouts, painted yellow and mounted on sticks, are being placed along banks by local Boy Scout troops.

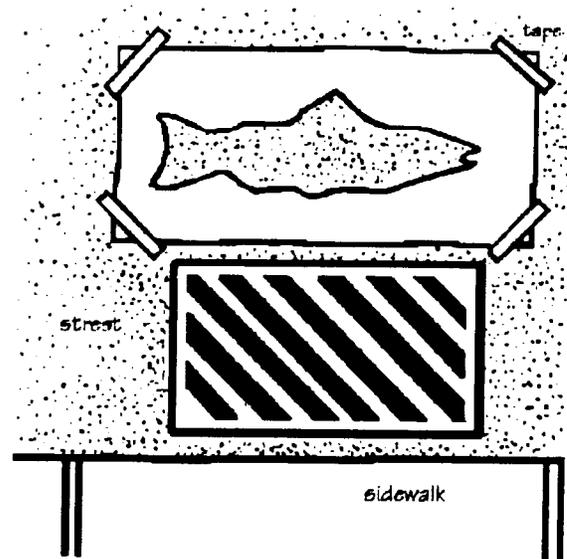
## Project Guidance and Approval

Many municipalities in British Columbia have approved storm drain marking programs for volunteers. You need little or no training. The Community Advisor will refer you to a volunteer coordinator. In areas new to the program, the Community Advisor may help set up the program. Always remember to obtain permission before painting drains on private property.

## Level of Effort

You will be given a cart containing everything you need. You can adapt the project easily to a small group (minimum two) interested in a single outing or a large group interested in a long term commitment. Groups of two to six children, supervised by one adult, work well with each cart.

You can mark ten to fifteen storm drains in an hour when the drains are close together. You may choose to set either a time limit or a specific area as your goal. On well-used roads, you may need to repaint drains after three to five years.



## Time of Year and Working Conditions

You can mark drains during spring, summer, and fall on any dry day. The road must be dry for the paint to stick well. Very hot and cold temperatures interfere with paint drying.

## Safety

Traffic is the greatest hazard for anyone working at the roadside. Adults should supervise children and caution them about road safety. Wear the traffic safety vests provided in the kit and assign a traffic lookout. Leave dogs and very small children at home.

Be careful with the paint. It is lead-free, but try not to spill any, especially near a storm drain. Supervise children and follow the instructions in the cart. Wear grubby clothes and the rubber gloves provided. If you are sensitive to the smell of paint, you can deliver pamphlets or watch for traffic, instead.

Let someone know where you are going and when you will return. Carry emergency phone numbers for police and ambulance, respect private property, and beware of dogs.

## Materials and Equipment

Everything you need is supplied by the volunteer coordinator. The kit usually contains fast-drying latex paint.

## Procedure

The following instructions for storm drain marking are repeated from the manual prepared by the Department of Fisheries and Oceans, B. C. Ministry of Environment, Lands and Parks, and the B. C. Conservation Foundation. The volunteer coordinator may have municipal sewer and drainage maps. The maps are useful in relating the storm drains to a particular stream or watershed.

### PREPARATION

Read all the instructions and become familiar with the equipment in the cart. Give each child one or more of these simple tasks:

#### Suggested Tasks:

- Traffic Watchdog
- Record Keeper
- Whisk Broom Sweeper
- Brochure Deliverer
- Stencil Positioner
- Cleaner-upper
- Eye Artist
- Painter



**Cart Contents:**

- 1 tin yellow paint
- 1 fish template
- 5– 3cm paint brushes
- waiver claim form
- 1 funnel
- 1 stir stick
- 1 x-acto knife
- 1 pair tweezers
- 2 rolls masking tape
- 1 whisk broom
- 5 pairs rubber gloves
- 10 garbage bags
- 3 safety vests
- fish-eye stickers
- record forms
- information brochures
- 3 – 500ml squeeze bottles for paint



Return the cart cleaner than it was when you got it. A squeeze bottle of paint is enough for about 20 drains. Usually, there are four or five houses between storm drains.

**Organizing Teams:**

Make up teams of four to six people. For safety reasons, each team should work on one side of the street and not cross over, so send two teams out together. A buddy system of two older children and two younger children plus an adult is an ideal group.

Set up mini-kits using the supplies in the cart, along with tin cans, shampoo or ketchup bottles, and extra brushes from home.

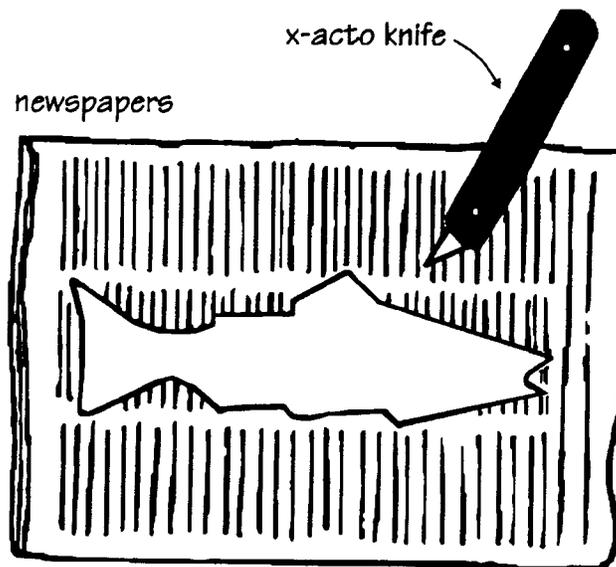
**A mini-kit should contain:**

- 1 roll masking tape
- 1 ice cream bucket/small box
- 1 paint squeeze bottle
- 1 paint brush
- 1 page of fish eye stickers
- 1 pair of tweezers
- 1 plastic garbage bag
- 1 – 2 pairs rubber gloves
- 1 safety vest, fluorescent hat or t-shirt
- 1 shopping bag of brochures ready for home delivery
- 1 shopping bag with 20 precut stencils
- Record forms

## HOW TO MARK A STORM DRAIN

### Before you Start:

1. Complete the waiver claim form.
2. Prepare stencils with x-acto knife and several layers of newspaper. Use metal template as a cutting guide only.
3. Prepare handouts by stuffing brochures into available bags.
4. Explain procedures and assign jobs to participants.
5. Fill squeeze bottles with yellow latex paint (use stir stick and funnel provided).

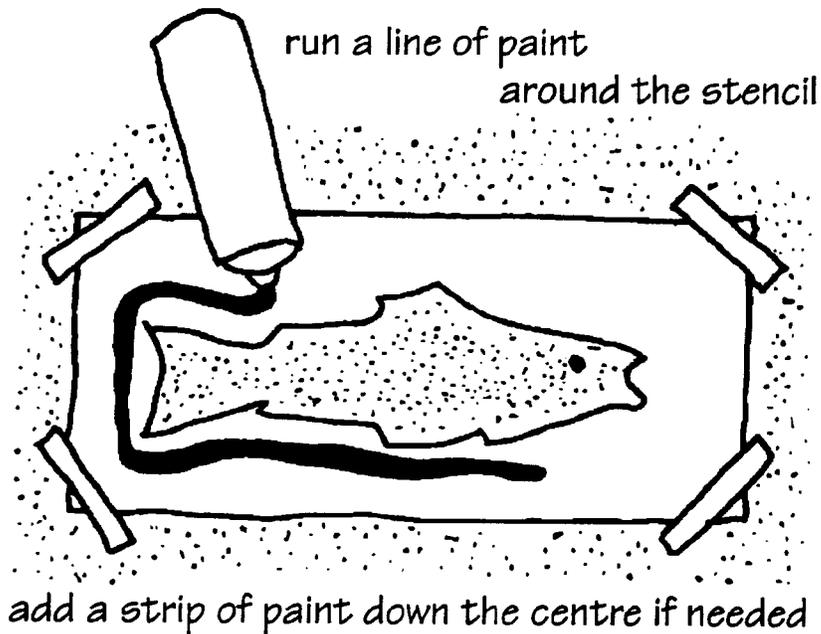


### Prepare the Drain:

1. Wear safety vest and gloves while painting drains. Post a watchdog to watch for cars.
2. Use whisk broom to sweep dust, gravel and dirt from the pavement.
3. Position stencil on the road (not the sidewalk) about 5 to 10 cm above the storm drain. The fish should look right side up when viewed from the sidewalk.
4. Fasten each corner of the newspaper template in position with masking tape.
5. Position the dot sticker for the eye within the fish outline.

### Paint the Drain:

1. Use squeeze bottle to squeeze paint on the newspaper template 1 cm from the edge, following the outline of the fish symbol. Add more paint in the centre of the fish if needed.
2. Brush toward the centre of the fish. Add more paint from squeeze bottle as required. Continue brushing until the road surface within the outline of the fish is completely and evenly painted.
3. The paint dries in approximately 10 to 15 minutes.



**Clean-Up:**

1. Remove eye sticker with tweezers and discard in a garbage bag.
2. Carefully remove the newspaper template and tape from the road surface and reuse to mark other drains. Carefully discard in garbage bag.
3. When you are finished for the day, clean the brushes with soap and water. Dispose of wash water in the sink. Leave the cart and equipment clean and tidy.

**Deliver Brochure Information:**

1. Deliver the brochures to each house on the street where storm drains have been marked. Hang the bags on doorknobs or place in mailboxes. Do not knock on doors.

**Record Marking Information:**

1. Complete record form with number of drains.
2. Indicate on the map streets where you have marked drains.

## Collecting, Reporting and Evaluating Information

The volunteer coordinator keeps a master database, to keep up to date on areas that need painting or repainting. You may wish to survey people in the area after you finish the project, to find out whether attitudes and behaviour have changed. Children and adults who help mark storm drains also become good teachers. If records are kept about stream problems related to storm drains, you can compare data on the frequency of problems before and after the project.

Send a copy of the Summary Sheet to the Streamkeepers Database. The current address is in the Handbook.

## Public Relations

You can clean up streams, monitor their condition, and undertake enhancement projects, but you need the support of your community for these projects to succeed. Talk about your project with others whenever and wherever you can, including at schools and public meetings.

## References

B.C. Ministry of Environment, Lands, and Parks. 1992. *Urban Runoff Quality Control Guidelines for the Province of British Columbia*. B.C. Ministry of Environment, Lands, and Parks, Victoria, BC. (call 1-250-387-9985 for a copy).

Schueler, T. R. 1992. *Design of Stormwater Wetland Systems*. Metropolitan Washington Council of Governments, Washington, DC. (call 1-202-962-3256 for a copy).

Chilabeck, B. 1992. *Land Development Guidelines for the Protection of Aquatic Habitat*. Joint publication of Department of Fisheries and Oceans and Ministry of Environment, Lands and Parks. 128pp.

*send the data to the Streamkeepers Database*

**MODULE 5:  
STORM DRAIN MARKING SUMMARY SHEET**  
(see Module 1 for additional information)

<b>Stream Name</b>	<b>Date</b>
<b>Organization name and municipality</b>	<b>Crew size</b>
<b>Contact name</b>	<b>Phone#</b>

<b>Details of drain marking</b>	
<b>number of drains marked</b>	
<b>number of volunteers involved</b>	
<b>number of hours spent</b>	
<b>names of streets marked</b>	
<b>How long does the paint last?</b>	

