

Yellow Fish Road Program Guide



Protecting our waters, on storm drain at a time...



Yellow Fish Road™
Trout Unlimited Canada

Table of Contents

Introduction	3
What is Yellow Fish Road...?.....	3
What's in the new YFR?	3
Our specific goals	4
What is a Storm Drain?	4
What is storm water pollution?	4
What is a Watershed.....	4
Storm Drain Painting.....	6
Storm drain Painting Checklist:.....	6
Yellow Fish Road Volunteer Agreement	7
Storm drains Painting Instructions:	8
Hanging door hangers Instructions:.....	9
Yellow Fish Road Tally Sheet.....	10
Non-Point Source or Storm water Pollutants-Source and Effects	11
Yellow Fish Road 'Action Ideas'	12

Introduction

What is Yellow Fish Road...?

Trout Unlimited Canada (TUC) is Canada's leading freshwater conservation and education organization whose mission is to "conserve, protect, and restore Canada's freshwater ecosystems, and their coldwater resources, for current and future generations."

The Yellow Fish Road program is Canada's premier water education program targeted to reduce water pollution. Since 1991 this exciting curriculum-linked, action oriented program gets youth participants involved in their community making a difference to the water they use. Developed by Trout Unlimited Canada, the Yellow Fish Road program offers first-hand experiences that help participants understand their connection to water and how our storm drains are often linked to their local water bodies without any purification or treatment.

The Yellow Fish Road program educates the public about the impact of pollution entering our storm drains and how storm water pollution can harm fish, wildlife and reduce water quality for human use. Participants mark local storm drains with yellow fish symbols and distribute educational door hangers to homes in the area, helping to raise awareness of storm water pollution. This program runs best from the beginning of April until the end of October, and is ideal from school classes from Grade 2-12.

In celebration of our 25 Yellow Fish Road anniversary year we have launched the new 'Yellow Fish Road' program for teachers and leaders to use. This new self-delivery model gives teachers the ability to do the program at their own time and speed.



What's in the new YFR?

- Easy to use Teacher's / Leader's Guide
- 'YFR infographics presentation' video
- Presentation supplies for a mini-presentation with safe pollutants.
- 'How to do the action storm drain painting project' video
- Storm drain painting and door hanger supplies for 25 students
- How to register and enter data on-line
- Educational resources for their water exploration journey
- Cross Canada school curriculum links for Grades 1-9.

Our specific goals

- Reduction of storm water pollution
- Protection of rivers, lakes and streams
- Foster youth community action
- Informed citizenry for water protection

This unique program builds on a culture of caring for our most precious resource, water.

What is a Storm Drain?

Storm drains or catch basins are the grates found on the roads by the curb. They allow runoff water from our yards, driveways, sidewalks and roads to go down into these grates, through a network of underground pipes and out an outfall into the local water body. If we didn't have storm drains, excess runoff would flood our homes, our streets and the damage the communities we live in. In most cities storm drain systems are not connected to a treatment plants, however in a few cities they have combined storm drain and sewer systems in which storm water is treated.



What is storm water pollution?

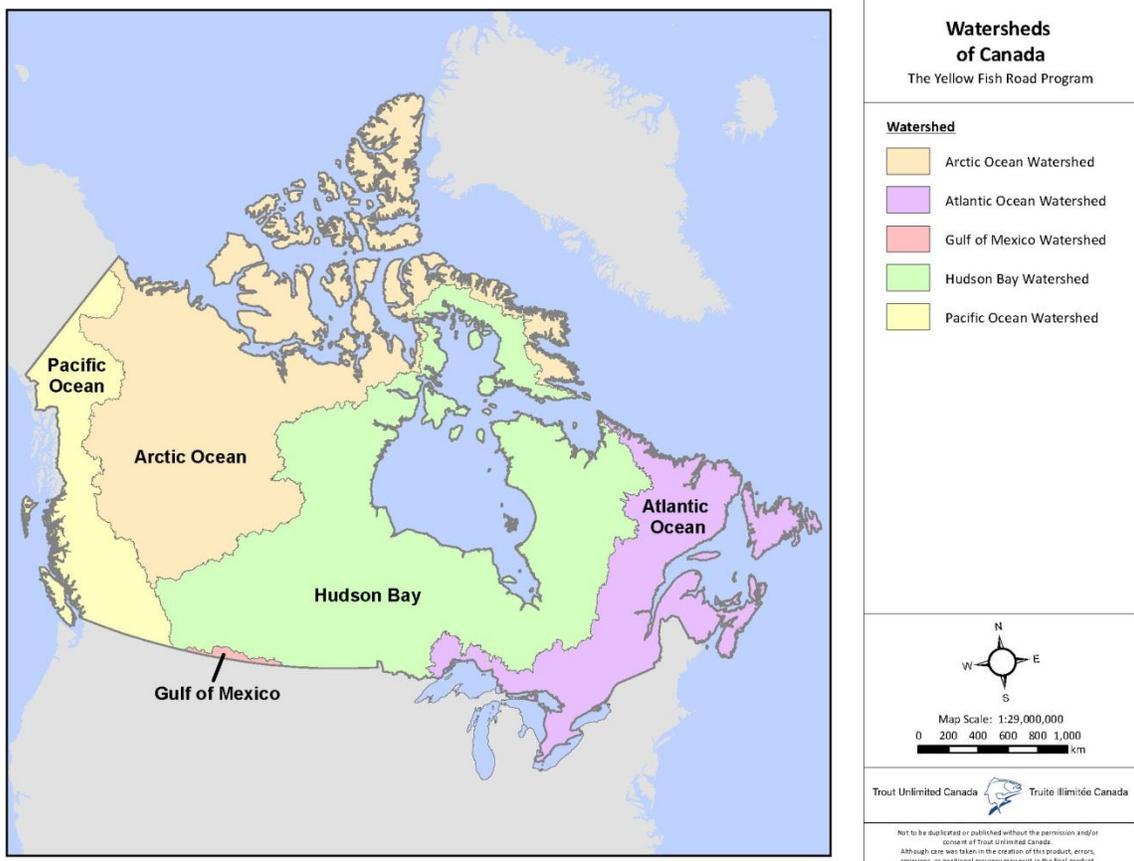
Storm water pollution is anything other than clean rain, snow, hail or water that gets into our storm drains. Common contaminants include car soap, fertilizer, pesticide, herbicide, dirt, oil, car fluids, pet feces, garbage and construction materials. These all impact our waterways and the life they support. Polluted runoff happens anywhere people use or alter the land, and water falls on hard surfaces like roofs, driveways, parking lots and roads and cannot seep into the ground. These impervious surfaces create a large amount of runoff and fast pathway for pollutants to be carried to our waterways.



A watershed is an area of land that drains to a common water body. It is like a giant funnel, collecting and draining water from up high by the way of smaller brooks and streams, wetlands and riparian areas to lakes and rivers at the low part of the watershed. We all live in a watershed, from the mountains to rivers, from the playground to the street, from our homes to our schools; it is all part of a watershed. Eventually all the water from our rivers flows into the oceans.

All this water comes from precipitation; rain, hail and snow and is drained into local water bodies, some water soaks into the ground, where it becomes ground water, other water flows across forests and fields, into towns and cities as surface water before it flows into local water bodies. This water in cities that flows across streets, parking lots, sidewalks, driveways, lawns and gardens is called storm water runoff. Watersheds are homes to plants, wildlife and places for people to live, work and play. We depend on water within our watersheds to give us clean drinking water, water to grow the food we eat, water to wash our clothes, water to bath in and water to power our homes.

Canada has five major watersheds (see below). Which river basin or watershed do you live in? Where do you think does the water flowing in your rivers and creeks begin and where does it end up?



Storm Drain Painting

Storm drain Painting Checklist:

Teachers

- Call your local municipality or local Yellow Fish Road partner to ensure they know when and where you are doing the storm drain painting. Staff may be available for safety and guidance.
- Take a walk and scout the streets and storm drains near you that you want to paint. Map their locations for groups.
- Pick only residential streets with low traffic volume and no busy bus routes.
- Fill out the Volunteer Request Form so you understand your role and responsibilities.
- Send the Request Form to Trout Unlimited Canada so we can keep track of your progress.
- As the teacher you should not have a group so you can trouble shoot for others.
- Depending on the age of your group, 6 kids can paint 6 storm drains in an hour.
- Plan for an alternate 'Rain Day' for the painting in the case of rain or bad weather. You can't paint on wet streets plus it not fun for the participants.

Volunteers

- Organize your volunteers; you will need one adult helper for every 6 students. Plan to have a one or two extra volunteers in case others can't make it, extra hands are always helpful.
- Distribute and assign the streets you have chosen amongst the group leaders. Providing group leaders with simple maps of where you want them to mark or paint.

Students

- Remind students to wear old clothing as the paint does not come out of clothing easily.
- Have everyone stay with a partner for safety and since most jobs you are with someone.
- Remind students to stay hydrated, wear sunscreen and/or bug spray if needed
- Most importantly have fun, you are a making a difference to your waters!



Yellow Fish Road Volunteer Agreement

We understand, as volunteers for Trout Unlimited Canada’s Yellow Fish Road™ (YFR) Program, it is the responsibility of our class/group to:

1. Designate a group leader to read the YFR Program Guide and be responsible for the group while implementing the YFR Program.
2. Obtain the necessary supplies and permissions, as outlined in the YFR Program Guide, whether through an YFR Partner, or through our own means.
3. Ensure group members understand and follow the safety and painting procedures outlined in the YFR Program Guide (or by an YFR Partner or the municipality).
4. Ensure the group is supervised at all times while marking the storm drains.
5. Ensure that any class/group members under the age of majority have written parental consent to participate; and ensure that parents understand that the group leader, not Trout Unlimited Canada, will be supervising the storm drain painting.
6. Ensure a minimum of 1:6 adult to child ratio for the painting/marking.

As volunteers for Trout Unlimited Canada’s Yellow Fish Road™ Program, your group will be covered by Trout Unlimited Canada’s commercial general liability insurance subject to the policy coverage, exclusions, and conditions for the date(s) of the storm drain marking. Such coverage will only apply while the volunteers are performing authorized duties. Trout Unlimited Canada is not responsible for bodily injury incurred or damage to or loss of personal property incurred while implementing the Yellow Fish Road™ Program.

I have read, understood and agree with this Volunteer Agreement.

Please email this completed page to the Education Director at lrobb@tucanada.org

Please note we must receive your Volunteer Agreement 7-10 days prior to your stenciling event.

Signature:		Name (please print):	
Email Address:		Today’s Date:	
School/Group Name:			
Mailing Street Address:			
City.	Prov.:	Postal Code:	
Phone Number including area code and/or extension:			
Date (s) of Yellow Fish Road™ Stenciling:			
Estimated # Participants:		Estimated # Storm drains painted/door hangers hung:	

Storm drains Painting Instructions:

Ensure each group that has a kit has a 6:1 ratio of 6 youth: 1 adult leader to supervise.

There are three jobs: safety people, painters and door hangers. Rotate the duties so everyone gets a chance at them all. One group of two can hang door hangers while the other four paints, but they must always be within sight of the adult leader.

1. Safety First (1 leader: 2 people as 'Safety Heroes')

- **Adult:** Sets up a safety zone, places two pylons on the road away from either side of the storm drain and 1 metre out from the storm drain. Alternately you can paint set up along the curb.
- **For Ontario: Street painting**-place eight pylons tapered into the curb on both sides of the storm drain (semi-circle), 1 metre out from the storm drain. Once the pylons are in place the 'Safety Heroes' can stand guard from the curb or the street.
- **Curb painting**- place 2 pylons adjacent to the storm drain and on either side of the curb you are painting
- **Safety Heroes:** Two children will stand on the curb and wait until the pylons are set on the street. They then put on the safety vests and step out inside the safety zone onto the street. Their job is to ensure everyone remains within the safety zone.
- If a vehicle approaches, observe it, notify your group and ensure that everyone remains with the safety zone. If the vehicle comes too close, stop your work and move to the curb for safety until it has passed by.



2. Clean and Paint (2 people)

- Two painters: Wear protective gloves (cloth or vinyl) and use the broom provided to sweep debris around the storm drain into the dustpan and then deposit it into the garbage bag.
- Secure the stencil provided down on the road or pavement beside the storm drain, whatever is smoothest and carefully squeeze paint into the fish shape (loonie size).
- Use the paint roller to fill the stencil shape and add more paint as needed. Using too much paint smudges. When doing the words, flip the roller on its end and dab paint into the letters.
- Carry onto the next storm drain covering the roller with a sandwich bag provided so it doesn't dry out or get paint on your clothing as you walk



Hanging door hangers Instructions:

3. Door hangers (2 people)

- Stay on the same street as the group and go door to door to hang the door hangers. If a door has a sign that says 'No Flyers' respect their wishes and do not leave a door hanger.
- Door hangers: Place one door hanger at each house (in the following preference)

1. In or hanging on the mailbox
2. On the doorknob of the door
3. Inserted securely into the door



4. Fill out the Tally Sheet

Keep a record of your work. This information is so important!

- How many adults and how many youth participated?
- How many storm drains painted and door hangers hung?

Then go on-line to our website <http://tucanada.org/yellow-fish-road/> and let us know how you did by filling out the Storm Drain Data Form. We keep track all across the country! We appreciate your feedback as we use it in our grant applications and reports. Thank you for making a difference and protecting our waters!



Storm drain Kit Contents

1 Carrying Caddy (To carry all the needed supplies)
1 Clipboard & pencil (Instructions, Permit & Tally Sheet)
2 Pylons or 8 for Ontario (To set up traffic safety zone)
2 Safety Vests (To wear while watching for traffic)
1 Dustpan/Broom (For cleaning around the storm drain)
1 Garbage bag (To collect garbage around the storm drain)
1 Plastic locking bag (For carrying the wet roller or brush)
2 Pairs of gloves (Protect hands while cleaning & painting)
1 Paint roller or paint brush
1 Reusable fish and 'Water Only' stencil
50-100 Informative Yellow Fish door hangers



Yellow Fish Road Tally Sheet

General Information:

School/Group:	
Teacher/Group Leader Name:	Date:
City/Town:	# Students/Youth:
Neighborhood	# Adults:

Storm Drain and Fish Hanger Tally:

Keep track of the number of storm drains you stencil / fish hangers you distribute for each street.

Name of the Street You Are Painting On?	Storm Drain Tally (# Painted)	Fish Hanger Tally (# Distributed)
Total:		

Litter Check:

Record any unusual litter you find in or around the drain.

Comments:

Let us know if you encountered anything else or if you have any ideas or suggestions for improvement of the program.

Non-Point Source or Storm water Pollutants-Source and Effects

Pollutants	Source	Effects
Soap/Detergent	<ul style="list-style-type: none"> Washing cars in the driveway Dumping wash water onto the street Washing siding or windows 	<ul style="list-style-type: none"> Can strip away the protective mucous coating on a fish –without this protective coating, fish will absorb more chemicals and are more susceptible to disease. High concentrations can kill fish eggs and adult fish.
Litter/Garbage	<ul style="list-style-type: none"> Litter from people, houses, industrial areas and construction sites 	<ul style="list-style-type: none"> Can cause unsightly debris and bad odors. When ingested by an animal, litter can be dangerous, causing death Dangerous litter can harm people or animals (e.g. glass).
Heat	<ul style="list-style-type: none"> Even heat can be a pollutant! Since the storm drain water is coming from runoff over land and roads, storm drain outfall is usually warmer than the local water body. 	<ul style="list-style-type: none"> Increased temperatures can affect certain species of fish, invertebrates, and plants, which are adapted to living in a certain range of temperatures. Fish are particularly sensitive to temperature changes during spawning. Warmer water holds less dissolved oxygen, which can be a problem for species that require a certain oxygen level in the water. Coldwater fish, such as trout, prefer waters that are cooler than 14°C.
Heavy Metals (i.e. Aluminum, copper)	<ul style="list-style-type: none"> Industrial sites Washing cars in the driveway Metal corrosion (e.g. from cars and pipes) Pesticides and herbicides 	<p>The levels of heavy metals found in water are generally low, however, due to <i>bioaccumulation</i>, higher concentrations can be found in wildlife.</p> <ul style="list-style-type: none"> Bioaccumulation is an increase in the concentration of a chemical in an organism over time. As an organism drinks and eats contaminated sources, it will accumulate chemicals in its body over time. Accumulation can lead to a reduction in aquatic biodiversity and hinder plant growth
Nitrates/Phosphates	<ul style="list-style-type: none"> Nitrates come mainly from fertilizers, and some from animal waste Phosphates are found in detergents and fertilizers 	<ul style="list-style-type: none"> Can cause <i>eutrophication</i> or <i>algal bloom</i>. Nitrates and phosphates are nutrients that plants need for growth. Algae will grow very quickly if there is a high concentration of these nutrients in the water, causing algal blooms. Too much algae in the water leads to less oxygen for other organisms, less light reaching other plants, can clog the gills of fish and clog water drainage systems
Oil/Grease (Hydrocarbons)	<ul style="list-style-type: none"> Leakage of oil and other lubricating agents from cars and other motorized machines 	<ul style="list-style-type: none"> There is a wide array of hydrocarbon compounds, some of which are known to be toxic to aquatic life. More oil comes from storm drain pollution than from oil tanker spills! For instance one drop of oil can contaminate 23 liters of water
Pathogens (Disease causing organisms)	<ul style="list-style-type: none"> Can be found in pet and livestock wastes, and faulty septic systems 	<ul style="list-style-type: none"> Pathogens include bacteria like <i>E. coli</i> and <i>Salmonella</i>, protozoan parasites like <i>Giardia lamblia</i> (beaver fever), and viruses like <i>Norwalk</i>. They can cause disease in humans and wildlife.
Pesticides	<ul style="list-style-type: none"> Excess herbicides and insecticides from residential and agricultural lands 	<ul style="list-style-type: none"> Can harm plants, wildlife and humans through chronic low concentration or sudden high concentration exposures. Effects include: loss in production, changes in growth, development and/or behavior and death of species
Salts	<ul style="list-style-type: none"> Sidewalk and roadway application Irrigation practices 	<ul style="list-style-type: none"> Salt dissolves very easily in runoff and can increase the salinity of the local waterbody. In some places, spring runoff can cause the salinity of the local waterbody to reach ocean salinity levels! Freshwater species of plants and animals are not adapted to the high level of salinity, like saltwater species are, and can be adversely affected. The dissolved salts are difficult and expensive to remove. High salinity water may also be corrosive to piping systems
Sediments	<ul style="list-style-type: none"> Includes organic debris, silt and sand from roadways, improperly managed construction sites, crop and forest lands and eroding stream banks 	<ul style="list-style-type: none"> Can increase <i>turbidity</i>, or the cloudiness of the water, which can clog fish gills, decrease the amount of dissolved oxygen in the water and suffocate trout and other organisms' eggs. Added sediments can change the course of a river or a stream and damage habitat – it doesn't take much sediment to do this. <p>Sediment and particles such as silt, clay, and organic matter are suspended in water Total Suspended Solids (TSS) are often a vehicle in which contaminants are transported. High TSS concentrations degrade fish and aquatic environments</p>
Chlorine, Bromine, Copper and Muriatic Acid	<ul style="list-style-type: none"> Swimming pool water 	<p>Pool water has chemicals that are very toxic to fish and other organisms in the water. Please drain it into the sewer system or down your house drains.</p>

Other pollutants can be found in our waterways that do not necessarily come from the storm drain system, including:

- Acid deposition (e.g. smog, acid rain) Pharmaceutical and personal care products (e.g. lotions, soaps, make – medications (e.g. antibiotics, aspirin and hormones) these products may not be completely filtered out at the wastewater treatment plants



Yellow Fish Road 'Action Ideas'

Take action around home:

- Pull weeds by hand, use small specialized tools or have a work bee to get the job done
- Plant native grasses and add grass seed or wildflower mixes to your lawn
- Snip, prune and discard insect infested leaves and branches
- Dislodge insects with insecticidal soap or a high pressure spray of water
- Practice companion planting which assists in the growth of plants
- Drain your swimming pool water into the wastewater system or down your household drain
- Set out ant and wasp traps instead of using chemical sprays and powders
- Apply natural insecticides such as diatomaceous earth, and insecticidal soap
- Invite natural insect predators to your yard by building bird houses/bat boxes, and leaving leaves for ladybugs
- Fertilize with natural materials like new top soil, compost, compost tea, vermi-compost, bone meal or peat

Take action around the community:

- Wash your car at a car wash, not in your driveway where soap/ water goes from the storm drain to the river
- Clean up after your pets and ensure their wastes (containing germs-bacteria/viruses) are disposed of properly
- Maintain your vehicle(s) and safely dispose of chemicals (oils, antifreeze, etc.) at lube shops.
- Stay on bike and walking paths to avoid sediment and soil from eroding into the river
- Sweep up leftover topsoil, leaves and bark chips from landscaping projects, as it washes down the drains.
- Direct rain spouts to lawns and gardens not onto the street and down storm drains
- Harvest rainwater in rain barrels and use it to water your lawn and garden
- Plant diverse groupings of plants and use native and/or water wise plants that require less water/maintenance
- Plant roof-top green gardens, container plantings, bio swales and bio-retention gardens
- Have less hard surfaces and pavement and more porous surfaces (i.e. interlocking stones or bricks)

Take action around your school:

- Learn more about water pollution and water issues in your own watershed
- Support the use of natural/organic fertilizers and pesticides in your neighborhood yards and parks
- Start your own Water Conservation or Protector Club at school or in your school or community
- Find out where to dispose of harmful chemicals properly in your community (i.e. specified Fire Halls)
- Protect your storm water through Low Impact Development practices that mimic the natural water cycle
- Write away for more information on environmentally-friendly products and methods
- Urge and support federal, provincial and municipal action on non-point source pollution issues
- Join and support local and national environmental groups that work to solve non-point source pollution
- Inform your friends and neighbors and help educate people you know about storm water pollution
- **Take Action, and do a Yellow Fish Road™ Storm Drain Stenciling activity in your community!**

