Student Workbook

What's Buggin' You?
Let's Fix It.

We want to hear your realistic solution to a local environmental concern.

**You can make it happen.
We can help.**

This workbook belongs to:

Name:_____

School/Club:_____

Grade:_____

Date:_____

Nutrien®
Feeding the Future ™

Call to Action

Take a look around you and think of how you can help protect
and improve our **water**, **air** and **land**.

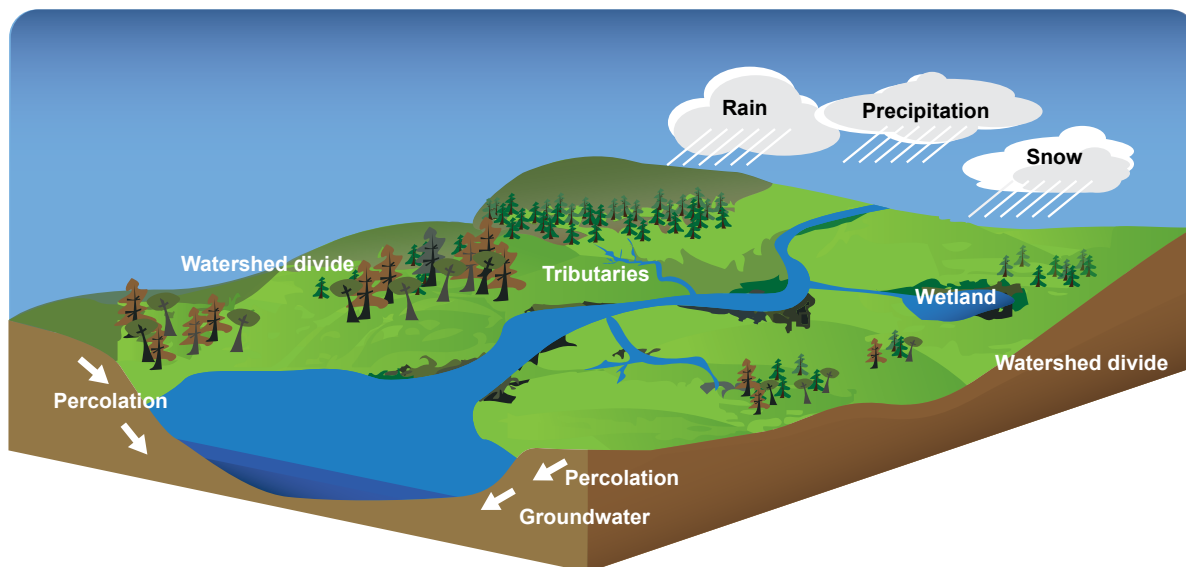Pick one concern and come up with one idea to help fix it.

**You can make a difference and have a chance to win prizes
for yourself and your school or registered not-for-profit club
(such as 4H and FFA).**

Implementation funding is also available.

What is a watershed?

A watershed is all of the land that drains to the same location or body of water. People tend to think only of water bodies such as rivers, lakes and wetlands as being part of their watershed. However any upland whether it be a park, field, or even a parking lot, is also included.

Watersheds know no borders, whether national or international and are key to a healthy environment.

Why are watersheds important?

First and foremost, people and animals rely on surface water (streams, lakes, rivers) and groundwater (water stored underground) for drinking as well as for growing and processing food, creating energy, and manufacturing products. The actions we take on the land can impact the quality and quantity of our water supply. Our local actions not only impact our own environment, economy and society but also our neighbors around the world. Remember, we all live downstream from someone else.

Caring for our Watersheds **Student Workbook**

Your Watershed Facts

What watershed do you live in? _____

How big is your watershed? _____

How many people live in it? _____

What are the main sources of water? *i.e. rivers, lakes, aquifers, rainwater, glaciers...*

_____

What are the names of the major bodies of water? _____

Describe the land *i.e. desert, rocky, mountains, prairies, hills, forests, swamps, wetlands...*

_____

What are the largest towns/cities? _____

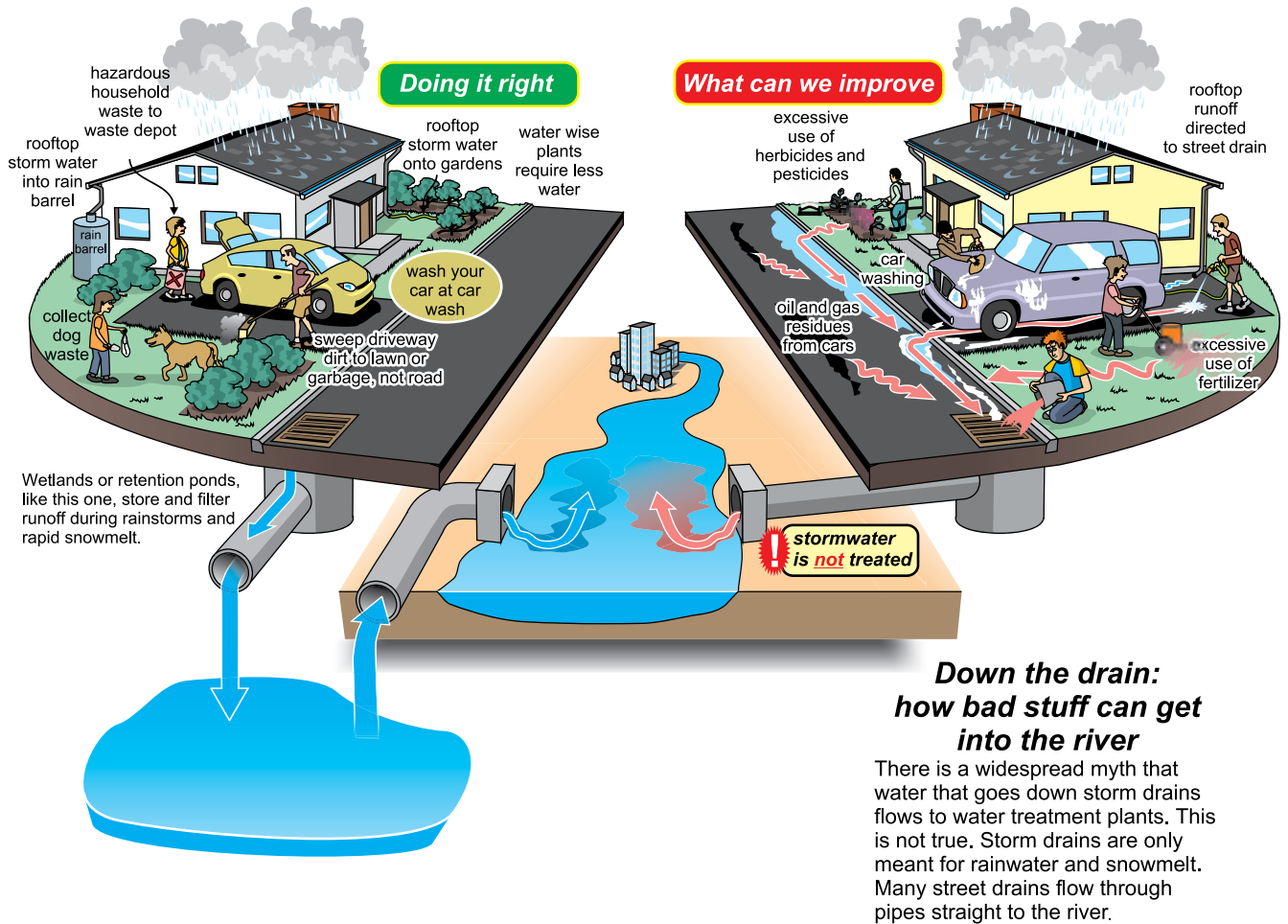Does your watershed cross provincial/state/national borders? If so, what borders?

_____

Where does the water in your watershed come from? Where does it flow to?

_____

What are some of the main businesses in your watershed? *i.e. Agriculture, Manufacturing, Oil & Gas, Recreation, Tourism...*

_____

NOTE: This is for your learning. Only include details relevant to your solution in proposals.

Maintaining Water Quality: Urban

Doing it right

hazardous household waste to waste depot

rooftop storm water into rain barrel

rain barrel

collect dog waste

rooftop storm water onto gardens

water wise plants require less water

wash your car at car wash

sweep driveway dirt to lawn or garbage, not road

Wetlands or retention ponds, like this one, store and filter runoff during rainstorms and rapid snowmelt.

What can we improve

excessive use of herbicides and pesticides

rooftop runoff directed to street drain

car washing

oil and gas residues from cars

excessive use of fertilizer

! **stormwater is _not_ treated**

Down the drain: how bad stuff can get into the river

There is a widespread myth that water that goes down storm drains flows to water treatment plants. This is not true. Storm drains are only meant for rainwater and snowmelt. Many street drains flow through pipes straight to the river.

Make a list of:

How people are doing it right

What can we improve

Doing It Right

What are some of the opportunities to improve your watershed?

Land/ Water Quantity   Land/ Water/Air Quality

Describe some good things you see people doing to help the environment in your watershed
i.e. Schools recycling paper, community gardens, battery recycling program, highway garbage pick-ups...

How do these things help the watershed either in Quantity or Quality?

Describe the good things you see people doing to help the environment <u>in other watersheds.</u>

True or False

T   F   1. Roots of plants provide the glue that holds streambanks and shorelines together and prevents erosion.

T   F   2. In healthy riparian areas you would find trees and shrubs that are all the same age.

T   F   3. A meander is a bend in the river.

Check your answers on the next page.

Doing It Wrong

What are some of the issues or concerns in your watershed?

    Land/ Water Quantity   Land/ Water/Air Quality

Describe some of the concerns you have
i.e. Car oil washed down storm drains, litter on streets, decreasing green grass areas, 20 minute showers…

How are these things harming the watershed either in Quantity or Quality?

One concern:

From the list above, **LIST ONE CONCERN** you would like to focus on.

One Solution

Identify a realistic solution to address the concern you circled using the following guide:

Think of something **INNOVATIVE** that you could accomplish in your watershed, or a concept that exists, but could be done better.

Briefly describe your solution:

Is your solution...**CREATIVE** and **ACHIEVABLE**?

How so?

What

My idea involves...
 Recreation
 Agriculture
 Manufacturing
 Transportation
 Education
 Other _____

Describe what stakeholders above you are trying to help:

Where

 My idea will start in...
 My Backyard
 School
 Community
 Province/State
 Country
 Other _____

Describe where your idea will take place:

One Solution (cont'd)

When

My idea will occur...

    Right away   Next year   Other _____

Make a timeline for when things will occur:

Month	Month	Month	Month	Month
Task	Task	Task	Task	Task

Who

My idea will need help from...

    Family/Friends   School/Club   Community Members   Industry Expert

    Government   Other _____

Make a list of people who you will need to contact:

Why

My idea will help the...

    Land   Air   Water   Other _____

Describe why this idea will help the watershed:

Sustainable Development Goals

The Sustainable Development Goals put forward by the United Nations outline 17 goals we can all work toward to make the world a better place. Think global, act local! Consider which goal(s) your solution could contribute to. Circle all that apply.

Research the United Nations Sustainable Development Goals and Targets:
https://sustainabledevelopment.un.org/topics/sustainabledevelopmentgoals

Explanation

Explain why you chose the goals you did.

Budget

How much will it cost? Where will you get the money?

A budget describes where the money is being spent (Expenses) and where you are getting it from (Income/Revenue).

A detailed budget must include everything that you will be spending money on. Some important considerations are things like paper, hardware (like toilets, taps), installation, volunteers, etc.

Some items or services may be donated. They may include things like Mr. X from the school will be installing the toilets and so while you are NOT paying him directly, someone else is, or he is volunteering his time. The $ amount that you would have had to pay him can be considered in-kind. If people or an organization gives you materials, that too is considered in-kind. For example, maybe your school will be providing the paper and photocopying for your project. You will have to research how much that paper is costing the school to include it in your budget.

Budget

Item	Amount per item	# items	Total Project Cost	Income/ Revenue Donated	Total Cash Still Needed
Poster paper	$1.00 per sheet	50	$50	$0	$50
Photocopying	$0.10 per sheet	50	$5	$5	$0
Toilets	$200	10	$2000	$0	$2000
Installation Time	$30/hr	20	$600	$600	$0
… etc					
TOTAL			**$2655**	**$605**	**$2050**

This is the amount that is being donated from all sources (cash, in-kind items or services, unconfirmed requests, etc.).

This is how much cash you still need to complete your project.

Remember, you cannot spend money you do not have! If there is still cash needed in your budget, be sure to explain where the funds will come from.

> **Important:**
> Crowdfunding (ie: GoFundMe) is **not** an accepted form of fundraising for the CFW contest. Work with your local Program Coordinator and Teacher/Club Advisor to decide how to best raise any additional funds needed for your project.

Your Budget

Budget

Item	Amount per item	# items	Total Project Cost	Income/ Revenue Donated	Total Cash Still Needed
TOTAL					

"Don't forget to explain where any cash still needed will come from. This includes requested funding from Nutrien or others"

Creativity

Community judges will be reading your proposal and they like visuals. **Visuals can often sell your idea better than words.**

If your idea involves a brochure, poster, video, song, cartoon, book or model – then make it and attach it to the essay.

If your idea doesn't have a tangible visual then include diagrams, charts, graphs and tables to showcase your facts.

References

Do you know what plagiarism is? If you answered, yes, then don't do it! You'll be disqualified from the Caring for our Watersheds contest. If you're not sure, think of it this way. If you copy and paste content from someone else you have to say who wrote it, when and where. All research that has been quoted, paraphrased or summarized must have proper in-text citations (such as MLA or APA guidelines: http://bcs.bedfordstmartins.com/resdoc5e/RES5e_ch09_s1-0001.html).

Improper Quote
Water is the most important thing to life on this planet without water there is no life. That is why I want to focus my proposal on protecting this most important resource. I think that you can only live without water for like three or 4 days. ———————— No research or expert has been quoted.

Proper Quote
Example 1:
On the Environment Canada website it states that 30% of the water used in the home is flushed down the toilet (Environment Canada, 2001, Water Use. Referenced from: http://www.ec.gc.ca/Water/en/manage/use/e_use.htm)

Example 2:
Bruulsema (2012) said, "4R Nutrient Stewardship is…simple – apply the right source of nutrient, at the right rate, at the right time, and in the right place" (p. 2).

List of References:
Bruulsema, T. (2012). *4R plant nutrition*. Washington, DC: Simon & Schuster.

**Can YOU make this project happen
with the people/time line/budget you've proposed?**

Congratulations! You're nearly ready to enter to win $1,000!

Caring for our Watersheds Contest

Caring for our Watersheds is an international competition that combines the passion from industry, conservation and education into an award winning program for **YOU**. CFW is a contest which is hosted in watersheds around the world - enter the contest closest to you.

By telling community judges your solution you have a chance to win rewards for yourself, your school/club and your idea!

Use the information you have compiled in your Student Workbook to submit a grant-style proposal. Remember, this isn't a description on what a watershed is - this is a proposal to the community on **ONE solution** that you have that would make an actual difference to the watershed. Think your idea through as if you were actually going to do it… and afterwards… we just might fund it!

Prizes

First place is $1,000 cash to you and $1,000 to your school or club.

$10,000 is also up for grabs to turn ideas into reality.

Proposal Checklist

- ❑ Create a name for your project
- ❑ Define your "place" in the local watershed. (1 paragraph)
- ❑ Identify the issue or concern (1-2 paragraphs)
- ❑ Explain your solution (3-4 paragraphs)
- ❑ Explain the scope of your project (3-7 paragraphs)
- ❑ How will your project create a positive impact? (2 paragraphs)
- ❑ Explain how your project contributes to the United Nation's Sustainable Development Goals (SDGs) (2 paragraphs)
- ❑ Describe the resources needed (2 paragraphs)
- ❑ Conclusion (1 paragraph)
- ❑ Include visuals
- ❑ Cite references

SMART Proposal Writing

When you are writing your proposal, ask yourself "is it **S.M.A.R.T**?'

S – Specific Is your plan detailed? Try to keep it from being too broad or general. Talk about what **ONE SOLUTION** and the actions you are going to take to make it happen.

M – Measurable Set clear goals for yourself. What do you want your project to do? Make your goals specific so you can evaluate whether you are successful.

A– Achievable Make your project achievable. If you need help making your idea happen, make sure you identify who needs to be involved (government, industry organizations, conservation groups etc).

R – Realistic Is it possible to complete this project? This project could really happen and the more reasonable it is, the more likely it is to succeed.

T – Timely How long would it take? When would you complete your project by?

Note: paragraphs listed above are suggested lengths. Your proposal does not have to match this exactly.

HINT: Check off items as you write to make sure you have all the information you need in your proposal.

The Proposal - A Detailed Overview

1. **Create a name for your project.**

2. **Define your "place" in your Watershed (Page 3)**
   Tell us which watershed you live in and provide relevant background about your watershed. Keep this section brief. Remember this is not an essay on the state of your watershed but a proposed SOLUTION to a concern in the watershed.

3. **Identify the issue or concern you want to look at (Page 6)**
   Pick one specific issue that you see in your watershed. Then, tell us about that issue: what is causing it, what impact do you see in the watershed (for example: is water quality decreasing), and why you think this issue is important to do something about. Provide evidence to show that your concern is impacting your watershed.

4. **Explain your solution (Page 7)**
   What can you do to address this issue or concern in your watershed? You can consider a solution within your school, your home, or your community. You could educate people, monitor water quality, or create a piece of art; anything that you think could have a positive impact on your watershed. Be specific about what you will do, how long it will take, how it will work, how you will engage your school or community partners, and what it will take to make it happen. Be realistic and innovative!

5. **Explain the scope of your project (Page 8)**
   The scope means: how big of a project this is and how far the effects will go. Is this a local project that will affect your home, your school, your county, or even your state or province? Is this project something that you can do alone, or will you need help? How many people will be affected by this? Think about scope in terms of the amount of work you need to put in, the number of people it affects, and the amount of area it will cover.

6. **How will your project create a positive impact? (Page 8-9)**
   Explain to us how your idea is going to make positive changes in your watershed and possibly other watersheds. Maybe you plan to educate people so they change how they do things. Maybe you'll bring awareness to an issue that people know nothing about. Maybe you will initiate an action that directly conserves water or saves energy. Tell us why your project is going to work, how your plan will showcase equity and inclusion, and how it will benefit the environment and/or your community. Provide evidence to show that your solution will help address your concern.

7. **Explain how your project contributes to the United Nation's Sustainable Development Goals (SDGs) (Page 9)** Research and identify the Sustainable Development Goals that your project will help move the dial on. Be specific! Include the specific targets related to each goal that your project will be contributing to.

8. **Describe the resources needed to make this idea happen (budget) (Page 13)**
   You should be able to implement this project, so describe what you will need to make it happen. What will it cost and where will you get the funding to pay for it? Tell us where and how you will make this project happen. Think about materials needed, the costs involved, as well as the time required to make this project happen.

9. **Conclusion**
   Why should we care about this issue? Any last comments about why you should be moved forward in the contest?

10. **Include visuals**
    Show us what your idea would look like and the impact it will have in a model, drawing, cartoon, video or graph – whatever creative way you want to express your solution. For example, if you want to make a watershed awareness brochure – write and illustrate a brochure! If you want to plant a native garden – draw us a picture or make a collage of the plants you would include, the size it would be, where it would be located etc. **Please submit any visuals with your proposal. Include descriptions where possible in the attachments.**

11. **Cite References**
    Community judges will be reading your proposal and they are often conservation experts so it is important that you cite your references. Who knows... you might be citing some of their research! Include any references from your research (in citations) within your answers and include your full list of references.

Judge's Scoring Rubrics

The top ten entries with the highest score will advance to the final competition.

This is what the judges will be using to mark your completed proposal.

INNOVATION						
Minimal		**Adequate**		**Impressive**		
0	**1**	**2**	**3**	**4**	**5**	**Value**
• Identifies a minor local issue with existing techniques in a common application.		• Identifies an important local environmental issue. • Uses existing techniques in a new application.		• Identifies a substantial environmental issue: local, national or international. • Uses a new approach or an existing technique in a highly creative manner.		

IMPACT POTENTIAL						
0	**2**	**4**	**6**	**8**	**10**	**Value**
• Solution has little or no environmental and/or social improvement. • Solution does not engage school or community partners.		• Solution has positive environmental and/or social improvement but may be difficult to repeat in other places of the watershed. • Solution engages at least one school or community partner.		• Solution could result in a clear environmental and/or social improvement and could easily be repeated in other places in the watershed. • Solution engages multiple school or community partners.		

COMPREHENSIVE SCOPE AND COMMUNICATION						
0	**2**	**4**	**6**	**8**	**10**	**Value**
• Common knowledge has been applied. The proposal presents a basic understanding of the problem and its solution. • Writing is unclear or missing critical details. • 0-1 credible sources cited throughout the proposal. Little research completed.		• The project has an adequate degree of vision and complexity. • Writing is adequate but flow between ideas is weak • 2-4 credible sources cited throughout the proposal. Some research completed.		• The project thoroughly reflects a <u>deep understanding</u> of the local watershed and the issue, its solution, and complexity. • Writing is captivating, clear and is well-balanced. • 5+ credible sources cited throughout the proposal. Extensive research and diverse perspectives considered where needed.		

BUDGET						
0	**1**	**2**	**3**	**4**	**5**	**Value**
• No costs of project have been mentioned or values mentioned appear unrealistic.		• Costs of the project have been analyzed. Values appear accurate but a few costs may be missing.		• A detailed budget has been included. Values appear accurate and all encompassing.		

REALISTIC SOLUTION						
0	**2**	**4**	**6**	**8**	**10**	**Value**
• Project may not adhere to existing laws. • This project is unlikely to be implemented. • Little to no evidence that steps have been taken to implement.		• Project complies with existing laws. • This project is likely to happen at the local level. • Evidence is provided that this project MIGHT be implemented however, specific dates, times, locations etc are missing.		• Project complies with existing laws and avoids undesirable side effects. • This solution is <u>highly practical</u> and may benefit other watersheds. • Evidence is provided that this project has been or will be implemented within one year.		

VISUALS						
0	**1**	**2**	**3**	**4**	**5**	**Value**
• Visuals are incorrect, unattractive or ambiguous. • Visuals do not add new information.		• Some visuals are used, but are not clearly explained. • Visuals support the project.		• Visuals are unique, appealing, descriptive, and accurate. • Visuals significantly enhance the idea, such as PowerPoint, videos, displays, poems or charts.		

SUSTAINABLE DEVELOPMENT GOALS (SDGS)						
0	**1**	**2**	**3**	**4**	**5**	**Value**
• No mention of the SDGs. • No details are provided.		• Mentions the Sustainable Development Goals and provides some detail on what goal(s) the solution will contribute to. • Does not explain how their local project fits into the global community and supports moving the dial on the SDGs.		• Clearly addresses what Sustainable Development Goals the solution will contribute to and includes specific SDG targets. • Clearly explains how their local project fits into the global community and supports moving the dial on the SDGs.		

Competition Details

What can you do to improve your watershed?

1. You can work by yourself or in a group of up to 4 people.

2. Identify an **environmental concern.**

3. Research the concern (discuss the idea with parents, teachers, friends and local experts).

4. Identify a **REALISTIC SOLUTION** to address the concern.

5. Explain your idea through an approximately **1,000 word grant proposal.** Use graphics, models, pictures or videos to supplement your idea.

6. Entries are **judged** on: (See judges rubric on page 16 for details)
- Innovation
- Impact Potential
- Comprehensive Scope and Communication
- Budget
- Realistic Solution
- Visuals
- Sustainable Development Goals (SDGs)

7. Submit your entry online at www.caringforourwatersheds.com or by mail. All support materials not submitted online must be sent to the local Program Coordinator <u>before the contest deadline.</u>

8. Ten finalists will be selected to make a **5 minute verbal presentation** to a panel of judges and a public audience. Everyone at the finals receives a cash award.

9. Win awards for yourself and your school/club*!
Content Score 35% + Verbal Score 65% = Final Score Determines Winner

10. Implement your idea (this is optional). Funding is available.

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* Please note:

If a **Home School** child enters their school reward will go to a not-for-profit charity of their choice.

If a team enters with students from **multiple schools** the school award must be shared equally.

Student Action

Across the WORLD students are making their ideas a reality!

All students are encouraged to implement their ideas. Funding is available. Here are a few examples:

Riffle Crossings
Cromer, Manitoba, Canada

Photograph Calendar Contest
San Antonio de Areco, Argentina

Bat Boxes and Bird Houses
Calgary, Alberta, Canada

Eco-Friendly Car Wash Solution
Alexandria, Virginia, USA

Children's Activity Book
Ponoka, Alberta, Canada

Native Plant Pollinator Garden
Antelope, California, USA

Rain barrels
Saskatoon, Saskatchewan, Canada

Solar Panels on High School
Camrose, Alberta, Canada

Thank YOU for participating in the program

A written proposal is required to enter the Caring for our Watersheds contest.

Student Workbooks do not qualify as a proposal.

Canadian contests

American contests

Outside North America contests

**Enter your local contest at
www.CaringForOurWatersheds.com**

Acknowledgements