2012

CLEAN WATER: IT'S ALL ABOUT ME!

Droplets

Newsletter of the Southern Maine Children's Water Festival

Inside this issue:

Who Cleans Up Our Oil Spills?

Susan Pienta, Gulf of Maine Research Institute

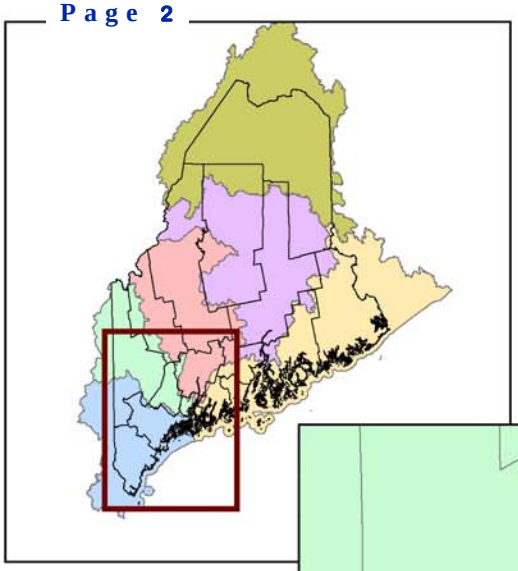
The BP spill in 2010 gushed an estimated 206 million (206,000,000) gallons of oil into the Gulf of Mexico over the course of three months. To try to visualize how much oil this is, picture 200 million gallon jugs filled and set side-by-side in a line. This line would stretch across the country and back two times!

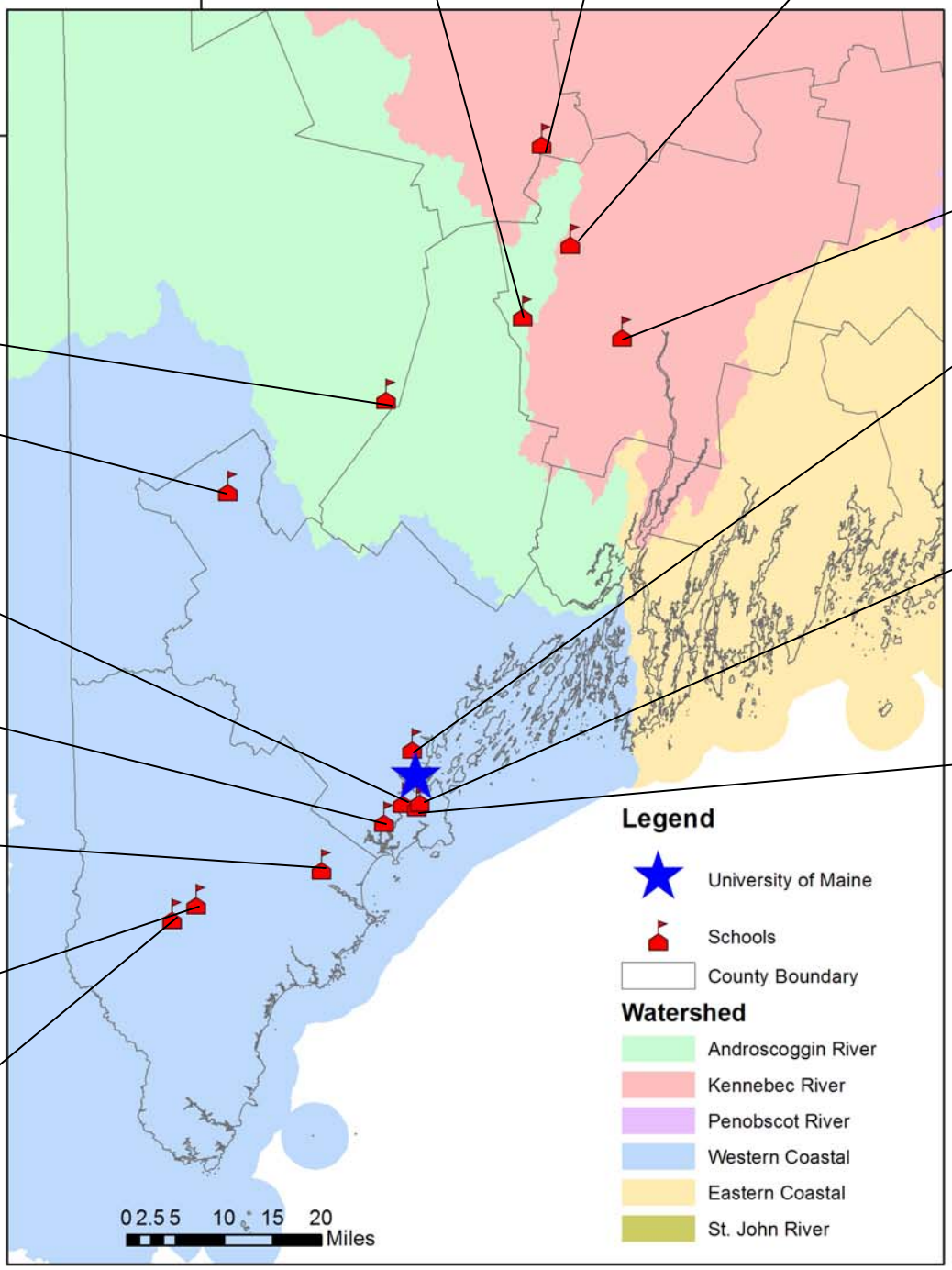
The Maine Department of Environmental Protection (DEP) sent about 30 responders down to the Gulf to assist with clean-up efforts. The DEP brought down two special skimmer boats that suck oil off the surface of the water. Franki Delaney, an Oil and Hazard Materials Responder for DEP is one of the responders that went down to the Gulf for two months to help clean up the oil spill. Delaney says much of her time was spent practicing drills. In one of their drills, small boats go out in the water in a flying V shape (like geese!) and the skimmer boats come behind and collect the oil in the middle of the V.

Usually though, Delaney works in Maine, cleaning up oil spills that never make the news. If an oil spill is not cleaned up, it can damage plants and animals or get into people's drinking water and cause health problems. The DEP office in Portland sees up to 1,300 spills each year. Common causes of spills include old and leaking home heating oil tanks, overfilling tanks, and accidents. Delaney says she once reported to a spill that was caused by someone tying their very large dog up to their oil tank.

On the scene of a spill, Delaney determines how far the oil has spread and if it is in or moving toward well water or other bodies of water and if it will cause immediate health problems. Delaney has special tools that measure the amount of oil in the soil. She then makes a plan for the removal of the contaminated soil. Delaney enjoys the fact that her job takes her outside; however, in the middle of the winter, trying to take measurements in the frozen ground under several feet of snow makes the job less enjoyable.

In Which Watershed is Your School?





Classroom Presentations

Whatever classroom presentation you visit, you will learn ways you can make a difference for clean water!

Filter Frenzy
Poland Spring Bottling Company

Bucket Brigade
Surfrider Foundation

Incredible Journey
Portland Water District

Water and Wildlife
Chewonki Foundation

The Earth's Recipe for Food
Maine Agriculture in the Classroom

Biodegradation Bingo
Wells National Marine Estuarine Research Reserve

Low Impact Jeopardy
Maine NEMO

Adult mayfly
www.bio.umass.edu

Exploring My Space
Gulf of Maine Research Institute

Bats, Bugs, Blights and Pesticides
Maine Department of Agriculture

You Be the Judge!
Maine Department of Environmental Protection

Loving Our Lakes
Lake Environmental Association

And more…

A little water humor...

What's in the middle of a jellyfish?
A jellybutton

Where do mermaids go to see movies?
The dive-in

Why did the dolphin cross the beach?
To get to the other tide

Why do ducks watch the news?
To get the feather forecast.

If you drop a white hat into the Red Sea, what does it become?
Wet.

Why didn't the lobster share his toys?
He was too shellfish.

What part of a fish weighs the most?
The scales.

What do you call a fish with no eye?
A fsh.

Why do seagulls fly over the sea?
Because if they flew over the bay they would be Bagels!

How does the ocean say hello to the sand?
It waves.

Where can you find an ocean without water?
On a map.

Dripial Pursuit - Test Your Knowledge

The questions below, along with others not listed here, will be included in the ***Dripial Pursuit Quiz Show*** at the Children's Water Festival!
Make sure to study these questions to prepare for the Quiz Show!!

1. What bay is the largest tidal habitat in Maine?
2. If you are a limnologist, what do you study?
3. Sandy beaches comprise what percentage of Maine's coastline?
4. Mussels, clams, scallops, and oysters require the flow of water and mud to capture their food. They are called what type of feeder?
5. Name an anadromous fish that lives in Maine waters.
6. How many miles of coastline are in Maine?
7. What percentage of Maine's area is designated as wetlands?
8. When settlers first came to Maine they realized it was a perfect place for boatbuilding. Name one reason why.
9. What is the biggest dam in Maine?
10. How many lakes are there in Maine?
11. How many miles of rivers and streams are in Maine?
12. On average, how many inches of precipitation fall on Maine in a year?
13. What human activity is the biggest user of water in the world?
14. About how much water should a person consume per day to maintain health?
15. Half of the U.S. population lives within how many miles of coastal waters, including the Great Lakes?
16. How many gallons of water does it take, from start to finish, to make a hamburger, fries, and a soft drink?
17. What percentage of the world's water is found in glaciers?
18. Where is the rainiest place in the world?
19. What fraction of a living tree is water?
20. The boundary between the unsaturated and saturated zones in soil or rock is called the_?
21. What are three of the four longest rivers in Maine?
22. Name one water-related God or Goddess from a myth.
23. How many trillion gallons of water falls on the Earth every day?
24. Phosphorus pollution is a major concern for Maine lakes. Name two sources of phosphorus.
25. How many billion gallons of ground and surface water does the United States use each day?
26. What percentage of an adult human's body is water?
27. This river's watershed contains Maine's second largest lake which holds the record for the largest landlocked salmon caught in the state. This river's watershed is just over 610 square miles and is also referred to as the Casco Bay Watershed. What is the name of this river?
28. What place on earth has the greatest tidal range? (the difference between high and low tides).
29. What country has the longest coastline?
30. Where is the longest coral reef?
31. What is the name of the deepest lake in the world?
32. Approximately how much has the sea level risen on the Maine coast in the last 100 years?
33. What are smaller streams, which flow into a larger stream called?
34. Name two of the four states that are the largest users of water.
35. A river current flowing opposite of the main current is called what?
36. The beginning of a river is known as what?
37. About what percent of Maine's population gets its drinking water from groundwater?
38. What percentage of Maine's electrical energy is produced from hydroelectric power?
39. Name one of the four cloud groups.
40. What is the name for a fertile area where salt water and freshwater mix?
41. What was the first city to chlorinate its drinking water?
42. What is the estimated percentage of people globally without access to a safe water supply and modern sanitation facilities, 5%, 10%, 21%, or 33% ?
43. Name one thing that can cause long term apparent sea level rise.

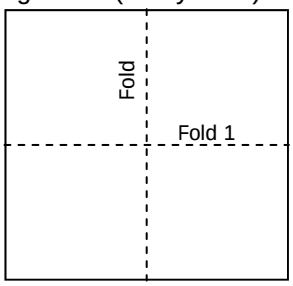
For answers see page 11

How to Fold Your Water Festival Journal

Follow these instructions by "making mountain" folds (_ . . _ . . _) and "valley folds" (_ _ _ _ _ _ _ _). Mountain folds make the edges of the paper fold downwards like this: ^. Valley folds make the edges of the paper fold upwards like this: V.

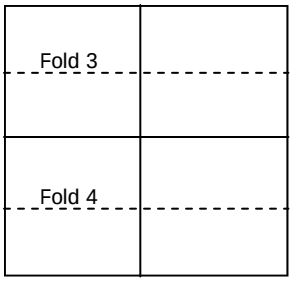
Steps 1 & 2

Remove the center page from this newsletter. Place the paper face down and valley fold in half widthwise, open and valley fold in half lengthwise (valley folds).



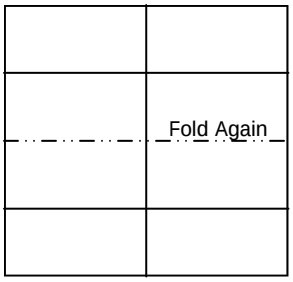
Steps 3 & 4

Open and turn over so the paper is face up. Now make two more valley folds. Because the paper is now face up the first two folds will look like



Step 5

Open and fold in half widthwise again. This fold is the same fold but because the paper is facing up, it is a mountain fold.



Step 5b

Your paper should look like this (with the writing on the outside):

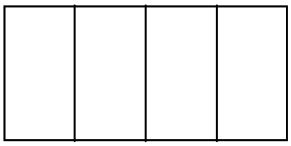
(Open	End)
(Folded	End)

Step 6

Now make a cut along the fold half way up (follow the scissor signs!):

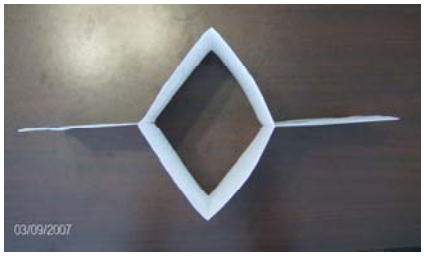
Step 7

Open your paper and fold in half long ways, like this:



Step 8

Now hold the left and right ends and push them towards each other, causing the middle to pop open into a diamond shape.



Step 9

Keep pushing to flatten the diamond until your paper looks like a plus sign, like this:

Step 10

Make a mountain fold along the fold line between the front and back of the booklet, closing all the pages together and finishing the booklet!

Don't forget to bring your Journal to the Festival!

Clean Water: It's all about ME!

Children's Water Festival

2012 Southern Maine

_____'s Water Journal

Hey STUDENTS ! !

Welcome to the Water Festival!

This is your journal to record all the great things you learn about water today!! As you hear presentations and talk to exhibitors, listen carefully for what you think is the most important or most interesting fact you learn during each session.

The information you write down in this journal will help you with activities when you return to school, and help you remember your time here at the Water Festival!!

Don't know what to write? Here's a Hint: What is one thing that YOU can do to conserve water or keep it clean? Write more than one thing if you can!

After all the things you learned here today, what is the #1 thing you pledge to do— to show that **YOU CAN** make a difference in water quality?

Classroom Activity #1

Title or Organization: _____

Speaker's Name: _____

What did you learn?

_____

_____

_____

Classroom Activity #2

Title or Organization: _____

Speaker's Name: _____

What did you learn?

_____

_____

_____

_____

_____

_____

What did you learn from this booth?

Title or Organization: _____

Booth #3

_____

_____

_____

What did you learn from this booth?

Title or Organization: _____

Booth #2

_____

_____

_____

_____

What did you learn from this booth?

Title or Organization:_____

Booth #1

Going Green at the USM Campus

To protect our water, I can:

- ✓ **Take a short shower instead of a bath.**
- ✓ **Clean up after my pet.**
- ✓ **Walk or ride a bike whenever I can.**

Environmentally friendly projects come in many shapes and sizes. The University of Southern Maine has an example of a big one.

The Wishcamper Center on the east side of the campus is a nearly carbon -neutral facility, though at first glance, you might not see the parts that make the building so "green."

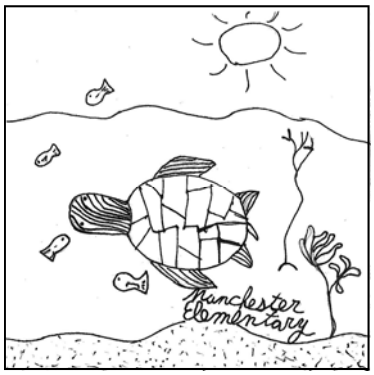
Here are some of the features that make the Wishcamper Center so special:

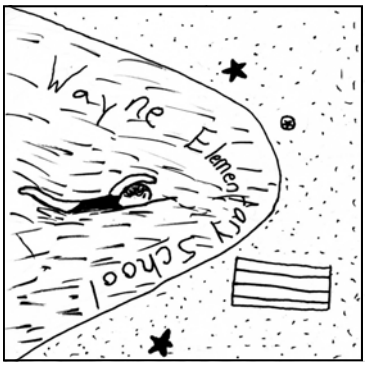
- The second floor forum has a "green roof" covered in vegetation that absorbs and filters water, helping to reduce the building's stormwater impact.
- The walkways around the building use "porous pavement" that allows rainwater to be filtered before entering the City's stormdrain system.
- The building is heated and cooled using geothermal energy from wells drilled 1,500 ft. into the earth.
- Rainwater is collected from the roof and recycled.
- All materials are low emission and contain a high percentage of recycled material and where possible brought in from local sources.
- The majority of the wood products are from Forest Stewardship Council certified forests, which use environmentally responsible forest management techniques.
- The pavement around the building has been restored to living, permeable landscape.
- The fourth floor roof is covered in highly reflective, energy star rated roofing membrane designed to conserve energy use.

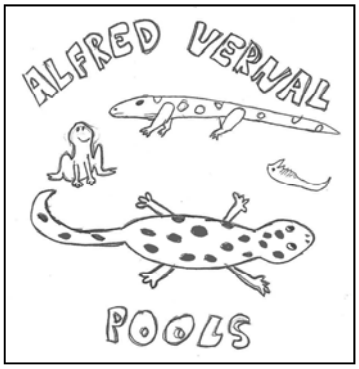
Wishcamper Center
Source: usm.maine.edu

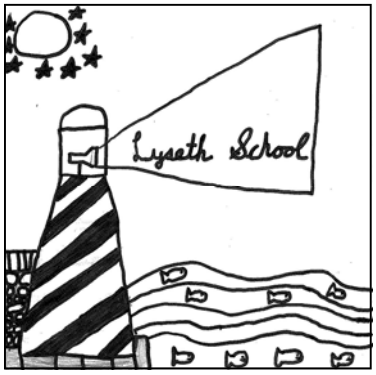
As you travel around the University of Southern Maine for the Water Festival, make sure you look for the Wishcamper Center. See if you can spot other "green" features on campus.

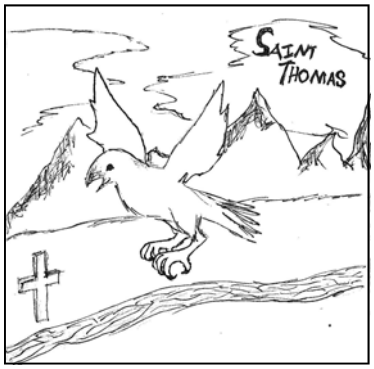
Congratulations to the Students Whose Winning Artwork was Selected!

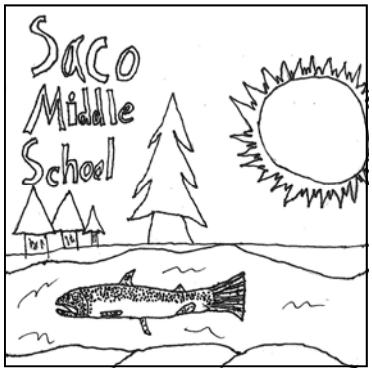


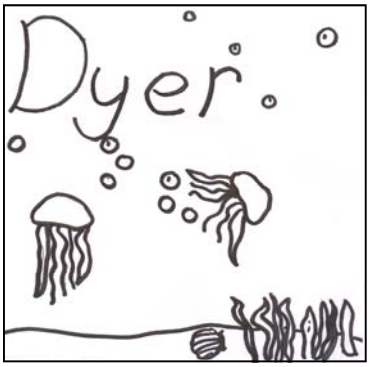












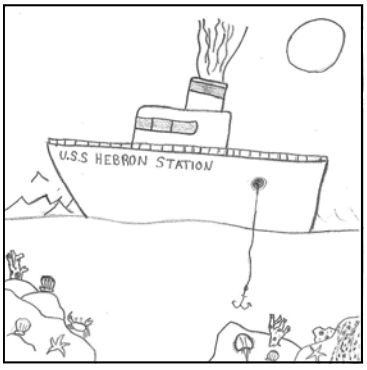


Exhibit Hall

Many organizations will set up learning stations at the Water Festival Exhibit Hall. You'll have to move quickly to see them all!

Explore a Marine Tide Pool
Maine Department of Environmental Protection

Piping Plovers
Maine Audubon Society

Water: Your Clear Choice
Portland Water District

Bacteria Testing In Drinking Water
Maine Water Utilities Association

Disaster Planet
Maine Department of Environmental Protection

Water Animals
Scarborough Marsh Audubon Center

Bugs Down Under
Maine Department of Environmental Protection

Flies Fit to be Tied
Sebago Trout Unlimited, PWD

Fashion a Fish
Scarborough Marsh Audubon Center

Test Your Ocean Trivia Skills
Maine State Aquarium

And more….

Entertainment

Ecology Takes the Stage! is a fun, interactive way to introduce science concepts in a six act play. You will learn about the *ABCs of Ecology*, adaptations, the nutrient and water cycle, sustainability and much more.

This program includes zany costumes, entertaining songs, student and audience participation, science concepts students can understand and apply, and lots of laughs for everyone!

Water cycle

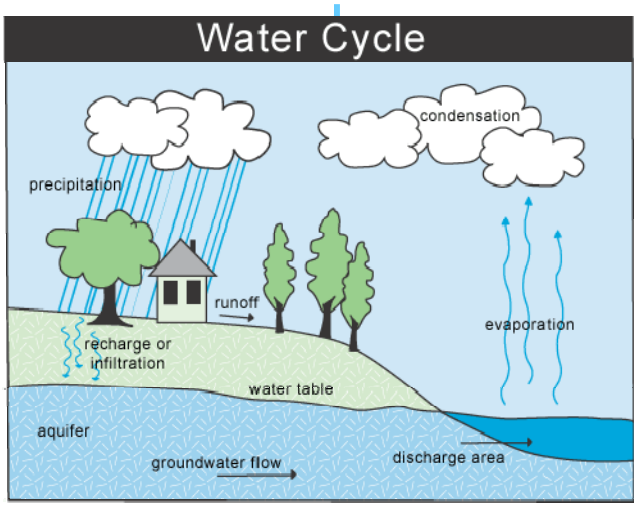


Image from the Groundwater Foundation

In a watershed, rain, rivers, lakes, and wetlands--even our drinking water--are all parts of an intricate cycle.

Rain falls onto the land and soaks into the earth. Some runs off to streams; some evaporates before it ever reaches the earth.

The water that soaks into the ground becomes part of the groundwater and feeds streams and wetlands and supplies much of our drinking water.

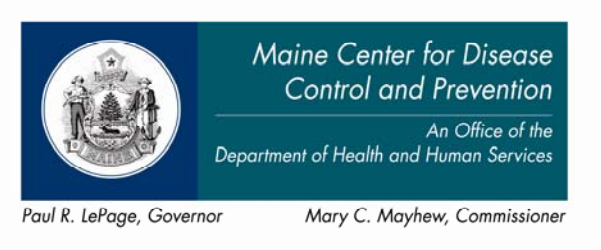
Surface runoff forms streams, ponds, lakes: then rivers that eventually empty into the ocean.

Rivers are the sign that the cycle is working, returning water to where it can evaporate, form clouds, and fall again.

Dripial Pursuit Answers

1. Merrymeeting Bay (Kennebec and Androscoggin Rivers)
2. Lakes
3. 1 %
4. Filter-feeder
5. Anadromous fish migrate upriver to spawn. Examples are Atlantic Salmon, Shad, Alewife, Lamprey eel
6. About 3,000 (accept a range that falls with 2900 to 3100 miles.)
7. 25% (including coastal and inland marshes, bogs, dunes, forest and shrub wetlands)
8. The rivers were deep. The rivers had banks, perfectly pitched to build and launch boats. Initially there was a tremendous source of lumber upriver that could be felled and floated down to the boatyards.
9. Wyman Dam in Bingham on the Kennebec River
10. 5785
11. 31,672 Miles
12. 42 Inches
13. irrigation for agriculture
14. 8- 8 oz glasses (or 8 cups)
15. 50 Miles
16. 1,500 Gallons
17. 2%
18. Hawaii
19. About 75%
20. Water table
21. St. John, Penobscot, Androscoggin, and Kennebec
22. Neptune, Poseidon, Athena, Amphitrite, Calypso, Acheron, Triton, Oceanus, Ganges
23. 4 Trillion
24. Eroded soil, fertilizer, septic systems, manure
25. 408 billion gallons
26. 50-66% (women are closer to 50%, men 60-66%)
27. The Presumpscot River.
28. The Bay of Fundy in Nova Scotia, Canada. (At times during the year the difference between high and low tides can be as much as 53 feet.)
29. Canada. (Its coastline is 56,453 miles long.)
30. The Great Barrier Reef is off the northeastern coast of Australia, and measures about 1200 miles long.
31. Lake Baikal in Russia, it has a maximum depth of 5,315 feet.
32. One foot.
33. forks, tributaries, or branches
34. California, Texas, New York, or Florida
35. An eddy
36. Source or headwater
37. About 60%
38. About 21%
39. Stratus, cumulus, cirrus, nimbus
40. Estuary
41. Jersey City, NJ
42. 33%
43. Sinking land, melting ice caps, thermal expansion of ocean water as it heats up (storm surges, tsunamis, tidal effects are all short term)

Special thanks to our sponsors...



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...and the planning committee:

Megh Rounds, Lynne Richard, Katrina Venhuizen: **Portland Water District**;

Marianne DuBois, Denise Blanchette, Kristin Feindel, Wendy Garland, Peter Patenaude, Barb Welch: **Maine Department of Environmental Protection**;

Mark DuBois, Heather McBean: **Poland Spring Bottling Company**;

Tamara Whitmore: **Friends of the Cobbossee Watershed**;

Rob Sanford, Irwin Novak: **University of Southern Maine**;

Sarah Plummer: **Cumberland County Soil and Water Conservation District**;

Linda Woodard, **Environmental Education Consultant**

Erika Bonenfant: **Maine CDC Drinking Water Program**

Mao Lin**: U.S. Fish and Wildlife Service**

Susan Pienta: **Gulf of Maine Research Institute**