



Virginia Association of Soil and Water Conservation Districts

Living In Your Watershed

**A Patch Program for Girl Scouts and Cub Scouts
in Grade 4 and Above**



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www.vaswcd.org



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The Conservation Poster Contest Patch Program was developed by the Virginia Association of Soil and Water Conservation Districts and the Henricopolis Soil and Water Conservation District.

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Soil and Water Conservation Districts

The VASWCD Educational Foundation Mission

The Virginia Association of Soil and Water Conservation Districts Educational Foundation is nonprofit and classified as a 501(c)(3) organization that was established in 1990. The VASWCD Educational Foundation provides and promotes leadership in the conservation of natural resources through stewardship and education programs. Funding for activities such as Envirothon, Youth Conservation Camp, Youth Conservation Leadership Institute and the Conservation Poster Contest are provided through donations made by individuals, corporations, organizations and other foundations as well as fundraising efforts. Contributions to the VASWCD Educational Foundation are used to support educational efforts within the Commonwealth.

There are 47 Soil and Water Conservation Districts serving localities throughout the Commonwealth of Virginia. Governed by a board of directors of local citizens, districts work hand-in hand with state, federal and county agencies, other conservation organizations, schools, and many community partners to achieve their conservation objectives.

Districts offer many educational programs which target a variety of audiences. Emphasis is on education programs based on the VA Standards of Learning. Resources include activities, games, models, videos, skits, and more. Many districts also have a variety of resources available to teachers and scout leaders.

Contact information for the Soil and Water Conservation District serving each county in Virginia can be found on pages 4 and 5.

Soil and Water Conservation Districts



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Soil and Water Conservation Districts

Listed by County/City ...

County/City	SWCD
Accomack Co.	Eastern Shore SWCD
Albemarle Co.	Thomas Jefferson SWCD
Alleghany Co.	Mountain SWCD
Amelia Co.	Piedmont SWCD
Amherst Co.	Robert E. Lee SWCD
Appomattox Co.	Robert E. Lee SWCD
Augusta Co.	Headwaters SWCD
Bath Co.	Mountain SWCD
Bedford Co.	Peaks of Otter SWCD
Bedford, City of	Peaks of Otter SWCD
Bland Co.	Big Walker SWCD
Botetourt Co.	Mountain Castles SWCD
Brunswick Co.	Lake Country SWCD
Buchanan Co.	Big Sandy SWCD
Buckingham Co.	Peter Francisco SWCD
Buena Vista, City of	Natural Bridge SWCD
Campbell Co.	Robert E. Lee SWCD
Caroline Co.	Hanover-Caroline SWCD
Carroll Co.	New River SWCD
Charles City Co.	Colonial SWCD
Charlotte Co.	Southside SWCD
Chesapeake, City of	Virginia Dare SWCD
Chesterfield Co.	James River SWCD
Clarke Co.	Lord Fairfax SWCD
Covington, City of	Mountain SWCD
Craig Co.	Mountain Castles SWCD
Culpeper Co.	Culpeper SWCD
Cumberland Co.	Peter Francisco SWCD
Dickenson Co.	Lonesome Pine SWCD
Dinwiddie Co.	Appomattox SWCD

County/City	SWCD
Essex Co.	Three Rivers SWCD
Fairfax Co.	Northern Virginia SWCD
Fauquier Co.	John Marshall SWCD
Floyd Co.	Skyline SWCD
Fluvanna Co.	Thomas Jefferson SWCD
Franklin Co.	Blue Ridge SWCD
Frederick Co.	Lord Fairfax SWCD
Fredericksburg, City of	Tri-County/City SWCD
Galax, City of	New River SWCD
Giles Co.	Skyline SWCD
Gloucester Co.	Tidewater SWCD
Goochland Co.	Monacan SWCD
Grayson Co.	New River SWCD
Greene Co.	Culpeper SWCD
Greenville Co.	Chowan Basin SWCD
Halifax Co.	Halifax SWCD
Hanover Co.	Hanover-Caroline SWCD
Harrisonburg, City of	Shenandoah Valley SWCD
Henrico Co.	Henricopolis SWCD
Henry CO.	Blue Ridge SWCD
Highland Co.	Mountain SWCD
Isle of Wight Co.	Peanut SWCD
James City Co.	Colonial SWCD
King George Co.	Tri-County City SWCD
King & Queen Co.	Three Rivers SWCD
King Williams Co.	Three Rivers SWCD
Lancaster Co.	Northern Neck SWCD
Lee Co.	Daniel Boone SWCD
Lexington, City of	Natural Bridge SWCD

Soil and Water Conservation Districts

Listed by County/City



County/City	SWCD
Loudoun Co.	Loudoun SWCD
Louisa Co.	Thomas Jefferson SWD
Lunenburg Co.	Southside SWCD
Lynchburg, City of	Robert E. Lee SWCD
Madison Co.	Culpeper SWCD
Mathews Co.	Tidewater SWCD
Mecklenburg Co.	Lake Country SWCD
Middlesex Co.	Tidewater SWCD
Montgomery Co.	Skyline SWCD
Nelson Co.	Thomas Jefferson SWCD
New Kent Co.	Colonial SWCD
Northampton Co.	Eastern Shore SWCD
Northumberland Co.	Northern Neck SWCD
Nottoway Co.	Piedmont SWCD
Orange Co.	Culpeper SWCD
Page Co.	Shenandoah Valley SWCD
Patrick Co.	Patrick SWCD
Petersburg, City of	Appomattox River SWCD
Pittsylvania Co.	Pittsylvania SWCD
Powhatan Co.	Monacan SWCD
Prince Edward Co.	Piedmont SWCD
Prince George Co.	James River SWCD
Prince William Co.	Prince William SWCD
Pulaski Co.	Skyline SWCD
Rappahannock Co.	Culpeper SWCD
Richmond Co.	Northern Neck SWCD
Roanoke, City of	Blue Ridge SWCD
Roanoke Co.	Blue Ridge SWCD
Rockbridge Co.	Natural Bridge SWCD

County/City	SWCD
Rockingham Co.	Shenandoah Valley SWCD
Russell Co.	Clinch Valley SWCD
Scott Co.	Scott County SWCD
Shenandoah Co.	Lord Fairfax SWCD
Smyth Co.	Evergreen SWCD
Southampton Co.	Chowan Basin SWCD
Spotsylvania Co.	Tri-County/City SWCD
Stafford Co.	Tri-County/City SWCD
Staunton, City of	Headwaters SWCD
Suffolk, City of	Peanut SWCD
Surry Co.	Peanut SWCD
Sussex Co.	Chowan Basin SWCD
Tazewell Co.	Tazewell SWCD
Virginia Beach, City of	Virginia Dare SWCD
Warren Co.	Lord Fairfax SWCD
Washington Co.	Holston River SWCD
Waynesboro, City of	Headwaters SWCD
Westmoreland Co.	Northern Neck SWCD
Williamsburg, City of	Colonial SWCD
Winchester, City of	Lord Fairfax SWCD
Wise Co.	Lonesome Pine SWCD
Wythe Co.	Big Walker SWCD
York Co.	Colonial SWCD



Earning the Patch

The Living In Your Watershed patch is designed for Girl Scouts and Boy Scouts in Grade 4, but may be enjoyed by older Scouts as well. Scouts must complete all 6 activities to earn the patch.

1. Rivers, lakes and bays are waterways that can be found in our watershed. Find out the characteristics of each one. Is there a river, lake or bay near your home?
2. Water is a natural resource. Compare a natural resource with a man-made resource.
3. What is a watershed? How does a watershed work?
4. What is your watershed address? Using a topographic map, find out your watershed address.
5. Find out the three types of water pollution. Water pollution is often described by its source. Compare point source and non-point source pollution. Why is non-point source pollution such a threat to our watersheds?
6. There are some very simple ways to reduce the pollution that travels from our neighborhoods to our waterways. Find out 4 ways we can reduce non-point source pollution.

Waterways



A body of water is any significant accumulation of water on a planet's surface. A body of water doesn't have to be still. Sometimes water moves from one place to another. Below are the most common bodies of water:

Bay - an area of water bordered by land on three sides, similar to, but smaller than a gulf.

Brook - the smallest body of water, found above ground and is often called a creek.

Creek - a small stream.

Gulf - a part of a lake or ocean that extends so that it is surrounded by land on three sides, similar to, but larger than a bay.

Lake - a body of water, usually freshwater, of relatively large size contained on a body of land.

Ocean - a major body of salty water that, in totality, covers about 71% of the Earth's surface.

River - a natural waterway that flows above ground in a particular direction and usually has a large volume of water in it.

Stream - a body of water with a detectable current, confined within a bed and banks.

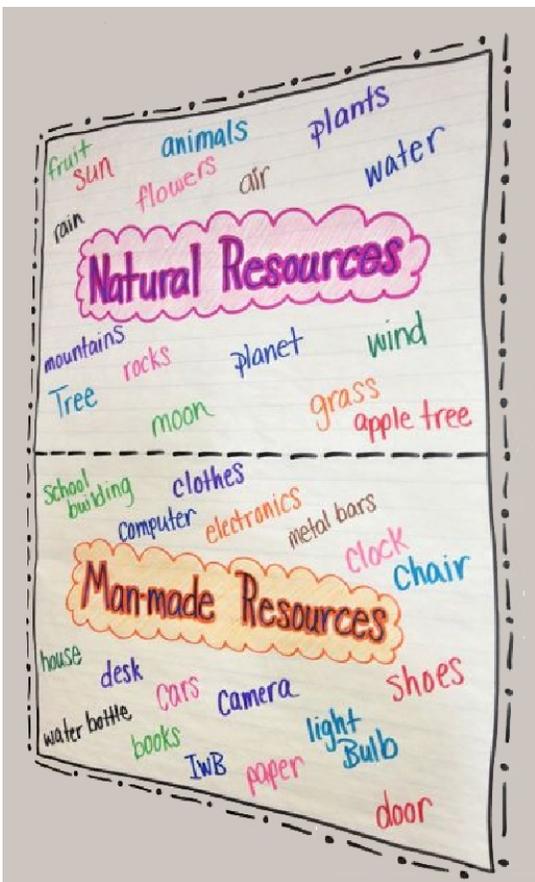


Natural vs. Manmade Resources

A man-made resource is a resource that has been created through the acts of humans. For example, bleach is a man-made resource. It does not exist in nature (in any significant quantity), and is produced and consumed by humans.

A natural resource is a resource that exists naturally. It might also be defined as a resource which man did not create (i.e. not man-made). For example, coal is a natural resource. It only exists in nature, and it is consumed by humans.

Some resources are both. For example, forests can be both natural and man-made resources. Forests that were planted by humans are man-made resources, while forests that were not planted by humans are natural resources. Baking soda is another example of a man-made or natural resource. Most baking soda is made by humans from other materials, but baking soda can also be mined from the ground in certain locations.



Examples of Natural Resources::

1. Water resources like oceans, lakes and rainwater.
2. Food resources (vegetarian and non-vegetarian)
3. Forest resources which includes all the forest cover on Earth.
4. Land resources which includes all the land cover on Earth.
5. Mineral ores like Iron.
6. Energy resources like coal, fossil fuels and petroleum.
7. Earth, Suns, Moons and all the Stars.

Examples of Man-made Resources::

1. Chemicals like fertilizers and pesticides.
2. Electricity.
3. Nuclear power.
4. Drugs and medicines.
5. Plastics.
6. Alloys like Brass.
7. Man-made elements having high atomic weights like Plutonium

What is a Watershed?



A watershed is the area of land that water flows across or under on its way to a river, lake or wetland.

When rain falls to earth, it will either soak into earth and become part of the “ground water” that plants and animals use, or it will run over the soil and collect in the lakes and rivers.

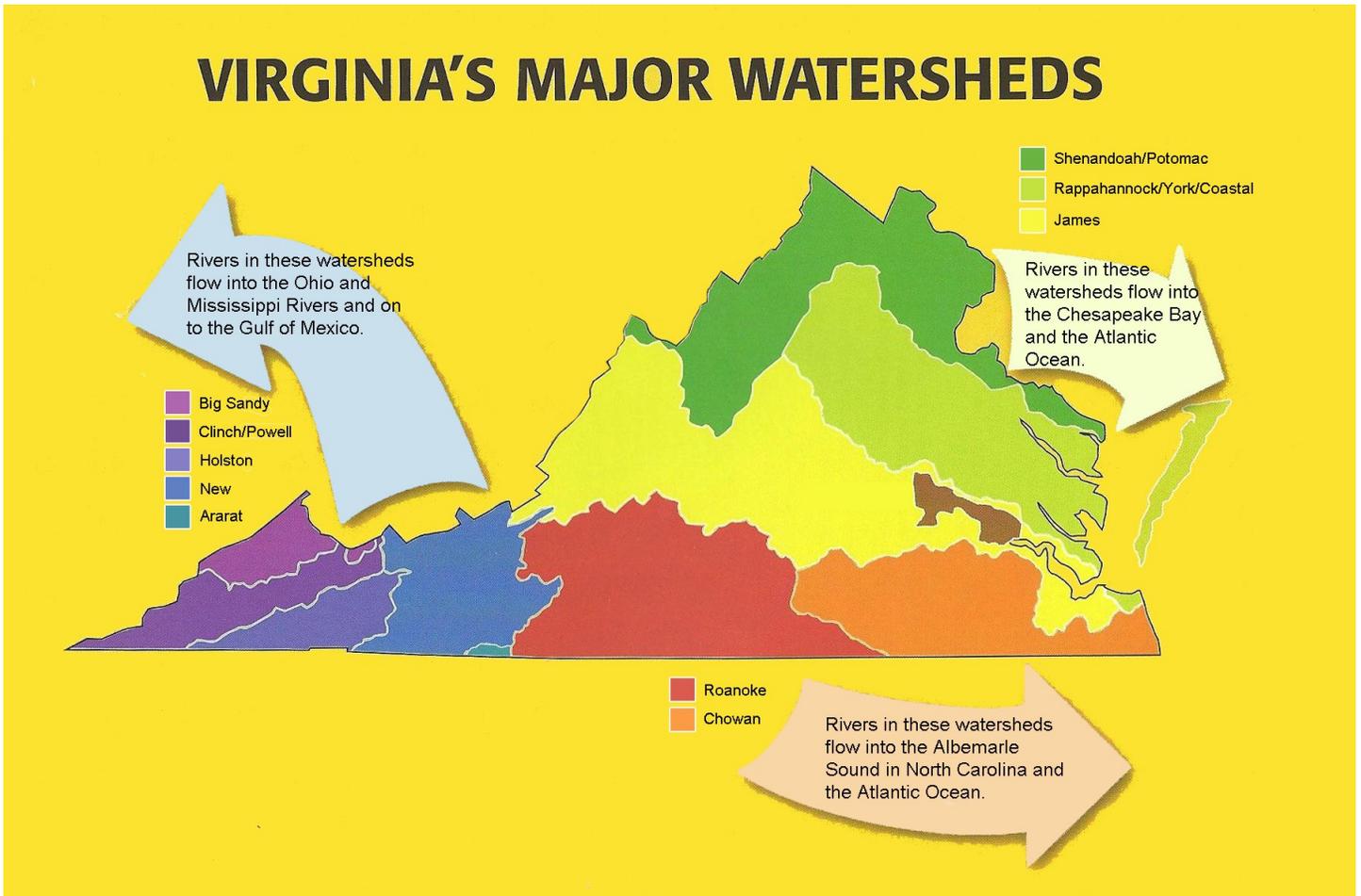
When land is developed, it changes from a surface that allows water to soak into the soil to a hard surface over which water runs quickly.

Pollutants on the hard surfaces get washed down the storm drain and into streams





Your Watershed Address



Above is a map of the major watersheds in Virginia. Most of the state falls within the Chesapeake Bay Watershed. Your watershed address is the path that water takes from your location to the ultimate collection point. Using a topographic map, find your location and the closest body of water. Trace the waterways toward your collection point, noting each waterway.

Water Pollution



There are three types of water pollution.

Physical pollution is all the stuff we see along the roads and highways, as well as dirt and soil that is washed into the water. **Chemical pollution** is fertilizers from our lawns and gardens and oil from roads, driveways and parking lots. **Biological pollution** is animal waste.



Water pollution is also described by its source. **Point source water pollution** flows from pipes or specific places such as industrial plants and goes directly into the waterway. **Non-point source water pollution** is carried down the storm drain and into the nearest waterway. Non-point source pollution is a threat to our waterways because it comes from everywhere in the watershed every day. It's very difficult to isolate and manage.





Preventing Water Pollution

Here are some very simple things we can do to reduce or prevent non-point source pollution:



Pick up after your pet.



Put trash in the trash can.



Have your soil tested.



Keep your car in good shape.

Resources



Find what watershed you are in

<http://cfpub.epa.gov/surf/locate/index.cfm>

Know Your Watershed

<http://www.ctic.purdue.edu/Know%20Your%20Watershed/>

USDA-NRCS – Water Page – Water landscape interactive and New Water Cycle Poster

<http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/water>

After the Storm

<http://water.epa.gov/action/weatherchannel/index.cfm>

Watershed Management Resources - EPA

http://water.epa.gov/type/watersheds/datait/watershedcentral/upload/WMR_factsheet_508.pdf

Saratogo Lake Watershed Education Activities

http://www.skidmore.edu/academics/wri/fletcher_mueller.pdf

Nonpoint Source (NPS) Outreach Toolbox

<http://cfpub.epa.gov/npstbx/index.html>

Watershed Management Resources

http://water.epa.gov/type/watersheds/datait/watershedcentral/upload/WMR_factsheet_508.pdf

Earth Gauge

<http://www.earthgauge.net/>

Watershed Related Clip Art

<http://water.epa.gov/type/watersheds/outreach/outpixnonjs.cfm>

Nutrient Pollution Outreach and Education Materials

<http://water.epa.gov/polwaste/nutrientoutreach.cfm>



Resources

ACTIVITIES:

Watershed Excursion – SW FL Water Management District

<http://www.swfwmd.state.fl.us/education/interactive/watershed/pdf/teachguide.pdf>

Activities, Coloring Pages and More Watershed Student Page

http://www.bouldercolorado.gov/index.php?option=com_content&view=article&id=5605&Itemid=2428

Kansas Ag In The Classroom Watershed Activities

<http://www.agintheclassroom.org/TeacherResources/InterestApproaches/Kansas%20Watershed%20Materials.pdf>

National Geographic Earths Watercycle http://education.nationalgeographic.com/education/activity/earths-water-cycle/?ar_a=1

National Geographic Project Fieldscope http://education.nationalgeographic.com/education/program/fieldscope/?ar_a=1

Watershed Model Activity

http://www.in.gov/dnr/nrec/files/Tarp_Activity.pdf

CoCoRaHS "Rain gauge at every school" campaign

<http://www.cocorahs.org>

NACD Education

<http://www.nacdnet.org/education/resources/>

How to: Rain Garden

Arkansas Department of Environmental Quality

<http://www.awag.org/Brochures/Rain%20Garden.pdf>

North Carolina Cooperative Extension

<http://www.bae.ncsu.edu/topic/raingarden/Building.htm>

The Patch!



The Living In Your Watershed patch is available through your local Soil and Water Conservation District. Contact your SWCD to request a workshop or to order patches after completing the activities on your own. A list of SWCDs and the counties they serve are listed on pages 3-5.



