

Water Quality

<http://www.blacksrungreenway.org/cleanupday.html>

Title: Blacks Run Greenway

Sponsoring organization: Friends of Blacks Run Greenway

Topics of interest: Pollution and the efforts put forth to restore Blacks Run to its natural health.

Helpful because: Links to maps of Blacks Run through Harrisonburg, the pollution levels and types that Blacks Run is facing, when and how to volunteer to help clean up the waterway and how to support the Friends of Blacks Run Greenway

<http://www.google.com/local?hl=en&lr=&q=blacks+run&near=Harrisonburg,+VA&sa=X&oi=localr>

Title: Map of Blacks Run in Harrisonburg, Va.

Sponsoring organization: Google

Topics of interest: Location of Blacks Run's course through Harrisonburg and the Businesses that line its banks.

Helpful because: Relates student's home knowledge base to the concepts of the spread of pollution, local businesses and urban development affects on streams.

<http://ga.water.usgs.gov/edu/>

Title: Water Science for Schools: All about water!

Sponsoring organization: United States Geological Survey

Topics of interest: Earth's water, water basics, water-use information, special concerns about water, picture gallery, glossary of water terminology.

Helpful because: U.S. Geological Survey's (USGS) Water Science for Schools web site! We offer information on many aspects of water, along with pictures, data, maps, and an interactive center where you can give opinions and test your water knowledge. You can choose a topic from the menu below, get a description of our main water topics, or view our site map. This Web site is also available in Spanish . Investigate the water cycle (in over 50 languages!)water sciences in school – very user friendly site, although may be above some ability levels.

[http://ww2010.atmos.uiuc.edu/\(Gh\)/guides/mtr/hyd/run.rxml](http://ww2010.atmos.uiuc.edu/(Gh)/guides/mtr/hyd/run.rxml)

Title: Runoff: transfer of land water to the oceans

Sponsoring organization: Department of Atmospheric Sciences (DAS) at the University of Illinois at Urbana-Champaign

Topics of interest: The causes and effects of runoff

Helpful because: This website has an animated diagram of how runoff can cause problems far away and also provides short paragraphs written on a middle school level, good for conversation starters and critical thinking reading activities.

<http://www.healthywater.org/resources.html>

Title: Healthy Water, Healthy People

Sponsoring organization: Healthy Water, Healthy People

Topics of interest: Using the Healthy Water, Healthy People Water Quality Educators Guide, What is Water Quality, Principles of Water Quality Illustrate the Concept of Good Science, Water Quality Must Be Monitored and Interpreted, Water Quality is a Vital Component of Healthy Communities and Individuals, Water Resources Are Managed to Promote Water Quality and Prevent Degradation, Plants and Animals Are Affected by Changes in Water Quality, New Management Strategies and Technologies Offer Hope For the Future

Helpful because: This interactive resources section connects the Healthy Water, Healthy People publications directly with additional resources, activity materials, and internet links.

<http://extension.usu.edu/files/natrpubs/wqedmat.pdf>

Title: Water Quality Education Resources

Sponsoring organization: Utah State University

Topics of interest: Pollution, connections to stream and groundwater protection, water cycle and how to make an impact on cleaning our water supplies.

Helpful because: A PDF file that features resources for lesson plans, videos, demonstrations and literature.

<http://www.extension.umn.edu/water/nitrate.html>

Title: Nitrate in Drinking Water

Sponsoring organization: The University of Minnesota

Topics of interest: The sources and ailments associated with nitrates present in drinking water.

Helpful because: Ties in with the effects of pollution and why intervention is necessary.

<http://www.grida.no/geo2000/english/0036.htm>

Title: Nitrogen loading

Sponsoring organization: United Nations Environmental Protection

Topics of interest: Graphs/data, a read-aloud activity followed by a critical thinking writing prompt, the concept of nitrates coming from over-fertilization and that this is toxic to plants

Helpful because: Although the language of this article is technical, the information is helpful in understand scientifically why nitrates are harmful. There is a graph showing an increase in the amount of fertilizers over time can be used in the classroom.

<http://www.ngwa.org/educator/lessonplans/aquiferuseability.htm>

Title: All About Aquifers Usability of Aquifer Water

Sponsoring organization: National Ground Water Association

Topics of interest: Water and its influence and need about ecosystems, wildlife and its physical affects.

Helpful because: A page made for educators with links to sites about water resources for students, as well as a plan for introducing and checking comprehension.

<http://www.doe.virginia.gov/VDOE/LFB/lessonplans>

Title: Lesson Plans

Sponsoring organization: Virginia Department of Education

Topics of interest: Journey of a Raindrop to the Chesapeake Bay, Does It Soak Right In?, Wetlands: Here All Year?, Types of Pollution, Stream Creatures: Clues to Stream Health, Muddying the Waters, Grasses, Grasses Everywhere, Who Killed CAV?, A River Runs through It, Riparian Buffers, Captain John Smith's, Chesapeake Bay, Succession and Forest Habitats, Bay and Pond Food Webs, Native vs. Non-native Species: Who Will Win?, Wasting Water, Going for Water

Helpful Because: Since this page is made by the VDOE, all activities are related to SOL's.

<http://www.cln.org/themes/water.html>

Title: Water Quality Theme Page

Sponsoring organization: Community Learning Network

Topics of interest: Properties of water, pollution and pollution control, watersheds

Helpful because: A number of links to Internet sites which contain information and/or other links related to the specific theme of water quality.

Riparian Buffers

<http://www.ny.gov/governor/press/05/1103052.htm>

Title: GOVERNOR ANNOUNCES MORE THAN \$9.1 MILLION TO IMPROVE LONG ISLAND WATER QUALITY AND HABITATS

Sponsoring organization: The State of New York

Topics of interest: Current event article about state governments investing money for the health of riparian system.

Helpful because: This site gives figures on how much they are spending to restore estuaries. The article could tie into math and critical thinking about the "emotional" price of water quality prevention.

<http://www.tippecanoeswcd.org/Misc.%20Documents/Rural%20Conservation%20Committee%20Priorities.htm>

Sponsoring organization: Tippecanoe County SWCD

Topics of interest: Local government's policy on riparian systems, policy-making Process, causes of pollution and degradation of riparian areas.

Helpful because: A real-life example of how a community goes about identifying, addressing and preventing deterioration of riparian systems and the causes of this phenomenon.

<http://www.chesapeakebay.net/info/forestbuff.cfm>

Title: Riparian Buffer Forests

Sponsoring organization: Chesapeake Bay Program

Topics of interest: The roles of riparian buffers, their affect on the watershed (as pertaining to the Chesapeake area) and what individuals can do to improve the quality of the riparian system.

Helpful because: Written in a simple language that informs and could be used in a reading activity.

Fact Sheet #1:

Title: Functions of Riparian Areas for Flood Control

Sponsoring organization: Commonwealth of Massachusetts

Helpful because: This PDF file gives detailed yet easy to understand information.

Fact Sheet #2:

Title: Functions of Riparian Areas for Storm Damage Prevention

Sponsoring organization: Commonwealth of Massachusetts

Helpful because: This PDF file gives detailed yet easy to understand information.

Fact Sheet #3:

Title: Functions of Riparian Areas for Wildlife Habitat

Sponsoring organization: Commonwealth of Massachusetts

Helpful because: This PDF file gives detailed yet easy to understand information.

Fact Sheet #4:

Title: Function of Riparian Area for Fisheries Protection

Sponsoring organization: Commonwealth of Massachusetts

Helpful because: This PDF file gives detailed yet easy to understand information.

Fact Sheet #5:

Title: Function of Riparian Areas for the Protection of Public and Private Water Supplies

Sponsoring organization: Commonwealth of Massachusetts

Helpful because: This PDF file gives detailed yet easy to understand information.

Fact Sheet #6:

Title: Functions of Riparian Areas for the Protection of Groundwater

Sponsoring organization: Commonwealth of Massachusetts

Helpful because: This PDF file gives detailed yet easy to understand information.

Fact Sheet #7:

Title: Functions of Riparian Areas for the Protection of Land Containing
Shellfish

Sponsoring organization: Commonwealth of Massachusetts

Helpful because: This PDF file gives detailed yet easy to understand information.

Fact Sheet #8:

Title: Functions of Riparian Areas for Pollution Prevention

Sponsoring organization: Commonwealth of Massachusetts

Helpful because: This PDF file gives detailed yet easy to understand information.

Fact Sheet #9:

Title: The Importance of Protecting Riparian Areas along Smaller Brooks and Streams

Sponsoring organization: Commonwealth of Massachusetts

Helpful because: This PDF file gives detailed yet easy to understand information.

<http://www.rivers.gov.au/acrobat/facts03.pdf>

Title: Improving Water Quality

Sponsoring organization: Land and Water Australia

Topics of interest: Riparian buffers and their roles, placement and how to restore them.

Helpful because: PDF file that is on a readable level and introduces the concept of riparian buffers in a visual and easily understood fashion.

<http://ecoaccess.org/download/library/docs/watuntm1.pdf>

Title: An Introduction to Riparian Buffers

Sponsoring Organization: TJCOG

Topics of interest: Benefits of riparian buffers, water quality benefits, pollutant removal, ecosystem protection and restoration.

Helpful because: This site has a diagram that illustrates the role of riparian buffers. A very well rounded PDF file that is technical but informative and encompassing.

http://www.cblad.virginia.gov/docs/RipBuffBrochure_Final.pdf

Title: Got Buffer?

Sponsoring organization:

Topics of interest: Retaining existing riparian buffers, benefits of buffers, what riparian buffers are and why are they important, buffers and the Chesapeake Bay Preservation Act.

Helpful because: This is probably the most basic and all around fundamental source for riparian buffers. This PDF file was written for everyone to understand and use.

These next websites are only two or three paragraphs long and could be used in a classroom activity.

http://www.na.fs.fed.us/spfo/pubs/n_resource/buffer/part10.htm

Title: Insects, the Favorite Food of Trout, are Abundant in Stream Reaches Cooled by Streamside Forests...

Sponsoring Organization: United States Department of Agriculture

Topics of interest: Riparian system's connection to animals in the ecosystem.

Helpful because: This website gives graphs, figures and information on the affects of riparian buffers on water and the ecosystem as well as a farm's affect on a stream.

http://www.na.fs.fed.us/spfo/pubs/n_resource/buffer/part8.htm -

Title: The Streamside Forest Acts as a Sink by Storing Nutrients for Extended Periods of Time

Sponsoring Organization: United States Department of Agriculture
Topics of interest: Riparian Buffer's role in the nitrogen cycle.

http://www.na.fs.fed.us/spfo/pubs/n_resource/buffer/part9.htm

Title: The Streamside Forest Provides a Source of Energy for Aquatic Life

Sponsoring Organization: United States Department of Agriculture

Topics of interest: The necessity of riparian systems for the livelihood of stream dwelling animals.

http://www.na.fs.fed.us/spfo/pubs/n_resource/buffer/part11.htm

Title: Streamside Forests Control Habitat-Damaging Sediments and Provide Organic Energy to Downstream Reaches.

Sponsoring Organization: United States Department of Agriculture

Topics of interest: Showcases how riparian systems are essential to wildlife beyond being a source of nutrients.

http://www.na.fs.fed.us/spfo/pubs/n_resource/buffer/part4.htm

Title: Streamside Forests Remove Pollutants in Several Ways

Sponsoring Organization: United States Department of Agriculture

Topics of interest: Illustrates why riparian systems are so important for clean water.