

Virginia Water Central

Virginia Water Resources Research Center Blacksburg, Virginia November 2012 (No. 60)



Morning fog, cattails, and reflections at a pond in Blacksburg, Virginia, September 12, 2012.

IN THIS ISSUE

Teaching Water _____	2	Notices _____	37
Feature: Water News Catch-up _____	3	At the Water Center _____	41
Special News Section: Hurricane Sandy _____	23	National Competitive Grants _____	42
Water Status Report _____	26	For the Record: Va. General Assembly _____	43
Va. Govt. Water Issues Overview _____	32	You Get the Last Word _____	44





Snow on Brush Mountain north of Blacksburg, Virginia, on October 31, 2012, was a far-flung impact of Hurricane—then Superstorm—Sandy. For more on Sandy's Virginia effects, please see page 23.

TEACHING WATER

Especially for Virginia's K-12 teachers

This Issue and the Virginia Standards of Learning

Below are suggested Virginia Standards of Learning (SOLs) that may be supported by items in this issue. The SOLs listed are from Virginia's 2010 Science SOLs and 2008 Social Studies SOLs. Abbreviations: BIO = biology; CE = civics and economics; ES=earth science; GOV = Va. and U.S. government; LS=life science; WG = world geography.

Newsletter Section	Science SOLs	Social Studies SOLs
Feature: Catching Up on Water News	4.6, 6.2, 6.5, 6.6, 6.7, 6.9, LS.11 ES.6, ES.8, ES.10, ES.12, BIO.8	CE.1, CE.7, CE.9, WG.2, WG.7, GOV.1, GOV.8, GOV.9, GOV.16
Special News Item: Hurricane Sandy Recap	4.6, 6.5, 6.6, 6.7, ES.1, ES.10, ES.11, ES.12	WG.2, GOV.9, GOV.16
Water Status Report	4.6, 4.9, 6.6, LS.6, ES.6, ES.8, ES.12.	WG.2
For the Record: Following the Virginia General Assembly	6.9, ES. 10.	VS.10, CE.1, CE.7, CE.9, GOV.1, GOV.8, GOV.9, GOV.16

FEATURE ARTICLE

Catching Up on Water News

This article presents a selection of items on water developments in Virginia (primarily) from May 1-November 9, 2012; in some cases, information since November 9 has been added.

Except as otherwise noted, all localities mentioned are in Virginia and all dates are in 2012. All Web sites listed were functional as of 12/18/12; underlined source-article titles indicate that the articles were available online as of 12/18, and quote marks indicate articles no longer available online. Frequently used abbreviations: DEQ = Virginia Department of Environmental Quality; EPA = U.S. Environmental Protection Agency; SWCB = Virginia State Water Control Board; VMRC = Virginia Marine Resources Commission.

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Please visit the Virginia Water Central News Grouper blog at <http://vawatercentralnewsgrouper.wordpress.com/> for regular items on water news, notices, events, and information sources.

Aquatic Systems' Status and Restoration (including Chesapeake Bay)

•In summer 2012, Virginia researchers began a **three-year, \$3-million, state-funded study of algae in the James River**, particularly tidal sections below Richmond. According to the *Richmond Times-Dispatch*, Virginia Gov. Robert McDonnell called for the study in order to assess the state's water-quality standards for chlorophyll, the key molecule in photosynthesis and an indicator for algal levels in aquatic systems. The McDonnell administration has asserted that \$2 billion is needed for Virginia to meet the chlorophyll standards, primarily by reducing nutrients that stimulate algal growth in the James and other water bodies. Excessive algal growth can result in oxygen depletion and other ecological problems, as well as potentially human health impacts. The study is intended to provide information to assess the current chlorophyll standard and to help identify ways to manage the river's algae populations. Virginia's water-quality standards for chlorophyll are in the *Virginia Administrative Code* at section 9 VAC 25-260-185, "Criteria to protect designated uses from the impacts of nutrients and suspended sediment in the Chesapeake Bay and its tidal tributaries (part C)"; 9 VAC 25-260-187, "Criteria for man-made lakes and reservoirs to protect aquatic life and recreational designated uses from the impacts of nutrients"; and 9 VAC 25-260-310, "Special standards and requirements." ([Study targets James River algae that can be harmful](#), *Richmond Times-Dispatch*, 9/10/12; and [Chlorophyll standards a hard sell for James River](#), *Bay Journal*, May 2005.)



Algae in James River near Hatton Ferry (Albemarle/Buckingham county line), July 13, 2009.

●On July 25, the Virginia Chesapeake Bay Restoration Fund Advisory Committee announced that **\$371,841 will be available this year for grants** to conduct Chesapeake Bay-related restoration and education projects. The funds come from sale of Virginia’s “**Friend of the Chesapeake**” vehicle license plates. The Virginia General Assembly established the fund in 1992 and established the advisory committee (made up of General Assembly members) to make recommendations on use of the funds. According to a news release from the committee, \$6.3 million has been disbursed from the fund since 1996. The deadline for applying for a grant from this year’s funds was October 1; the funds are to be awarded in May or June 2013. For more information, visit <http://dls.virginia.gov/commissions/cbr.htm?x=dld>, or contact the Virginia Division of Legislative Services, 910 Capitol Street, Richmond, VA 23219, phone (804) 786-3591.

●On August 28, the National Fish and Wildlife Foundation and the U.S. EPA’s Chesapeake Bay Program announced recipients of **\$9.2 million in grants for 41 habitat-restoration, pollution-reduction, or citizen-involvement projects in the Chesapeake Bay watershed**. The Foundation administers the Chesapeake Bay Stewardship Fund that provides grants under two programs: the Small Watershed Grants Program and the Chesapeake Bay Innovative Nutrient and Sediment Reduction Grants Program. For this funding cycle, \$2.4 million was awarded to 20 projects under the Small Watershed Grants program, and \$6.8 million was awarded to 21 projects under the Innovated Grants program. Grant matches are expected to add another \$13.5 million to the projects (over both programs). Four Virginia projects are the following: 1) Arlington County—\$80,000 to expand its “StormwaterWise Landscapes Program,” which provides incentives for private landowners to install innovative stormwater-management projects; 2) The John Marshall Soil and Water Conservation District—\$49,575 to plant streamside forest buffers on eight farms in Fauquier County; 3) The Potomac Conservancy—\$200,000 to test a model to engage absentee landowners in Northern Virginia and the Shenandoah Valley in adopting conservation practices; and 4) Chesapeake Bay Foundation—\$198,740 to train Virginia farmers in practices to reduce water pollution from livestock grazing and other activities. ([More than \\$9 Million in Grants Awarded to Restore Habitats, Improve Urban Environments and Increase Citizen Engagement around the Chesapeake Region](#), National Fish and Wildlife Foundation News Release, 8/28/12; and “Chesapeake Bay Foundation gets grant to assist Va. farmers,” *Richmond Times-Dispatch*, 8/29/12)

●On August 30, the U.S. Geological Survey (USGS) released a report indicating that the **Susquehanna River delivered more sediment and phosphorus to the Chesapeake Bay in 2011 than in any year since 1978**, when monitoring of this delivery began. The large sediment and phosphorus inputs resulted largely from Tropical Storm Lee in September 2011, in combination with accumulations of sediment over time in three large Susquehanna reservoirs: Safe Harbor Dam and Holtwood Dam in Pennsylvania, and Conowingo Dam in Maryland. The report compared storm-delivery of sediments and nutrients from the Susquehanna over the past 34 years, and it asserts that the sediment accumulations in the reservoirs have increased the potential for sediment delivery during any given storm event.

This effect threatens to counteract some of the extensive basin-wide efforts—through agricultural best management practices, wastewater-treatment plant upgrades, stormwater management, and other actions—to reduce inputs of sediments and nutrients reaching the Bay from its many tributaries. The report’s author, Robert Hirsch of the USGS’ main office in Reston, Va., stated, “In general, the changes we have observed in the reservoirs and the resulting greater impact of storms are already overshadowing the ongoing progress being made in the watershed to reduce the amount of nutrients and sediments entering the Bay.” The report, “Flux of Nitrogen, Phosphorus, and Suspended Sediment from the Susquehanna River Basin to the Chesapeake Bay during Tropical Storm Lee, September 2011, as an Indicator of the Effects of Reservoir Sedimentation on Water Quality” (Scientific



Satellite photo on September 13, 2011, showing the sediment plume in the upper Chesapeake Bay from Tropical Storm Lee’s runoff. The Pennsylvania/Maryland state line is just below the top of the photo. Photo from the NASA’s “Earth Observatory” Web site, <http://earthobservatory.nasa.gov/IOTD/view.php?id=52169>, accessed 12/18/12.

Investigations Report 2012-5185) is available online at <http://pubs.usgs.gov/sir/2012/5185/>; or phone USGS at (888) ASK-USGS (275-8747). ([Sediment reservoirs in lower Susquehanna reach capacity, deliver more pollutants into Bay, Chesapeake Bay Program, 8/30/12](#); and [Increased Sediment and Nutrients Delivered to Bay as Susquehanna Reservoirs Near Sediment Capacity](#), U.S. Geological Survey News Release, 8/30/12)

●On August 30, the Chesapeake Bay Trust and National Oceanic and Atmospheric Administration announced **\$800,000 in grants for projects to create living shorelines along the Chesapeake Bay waterways in Maryland and Virginia**. Living shorelines are areas where wetland plants are used to help stabilize shorelines against erosion. As an alternative to hard structures—such as riprap—to hold shorelines in place, living shorelines also provide habitat for aquatic animals. The \$800,000 in funding will go to 12 recipients in Maryland and to the following four recipients in Virginia: City of Norfolk, \$134,082; Friends of Norfolk’s Environment, \$5,894; Northern Virginia Regional Commission, \$16,500; and The Landings at Bolling Square Community Association, \$11,212. Information on the Living Shorelines Grant Program is available online at http://www.cbtrust.org/site/c.miJPKXPCJnH/b.5457537/k.B2A2/Living_Shorelines.htm. ([Living Shoreline Program Restores Chesapeake Bay Shorelines in Maryland and Virginia](#), Chesapeake Bay Trust News Release, 8/30/12)

●In mid-October 2012, officials with the Chincoteague National Wildlife Refuge (NWR) said that **signs of nutria have been seen in recent months in Accomack County**, on Virginia’s Eastern Shore. Nutria are an aquatic rodent that is native to South America but that has been introduced into the eastern United States, where it has spread and caused extensive damage to marshes and competed with native animals. Eastern Maryland has had considerable problems with Nutria, and the animals are considered common in southeastern Virginia, but before now there have been only a few sightings on Virginia’s Eastern Shore. Responses to the potential spread in Virginia include a planned survey in Accomack County by scientists based at Blackwater NWR in Maryland and a December 2012 Nutria-control coordination meeting at the Chincoteague NWR. ([Va. on lookout for marsh-spoiling nutria](#), [Salisbury, Md.] *Daily Times*, 10/19/12)



Captive Nutria at Blackwater National Wildlife Refuge in Maryland, 2008. Photo by Christine Eustis, accessed at the U.S. Fish and Wildlife Service’s National Digital Library, <http://digitalmedia.fws.gov/cdm/singleitem/collection/natdiglib/id/5491/rec/2>, 12/18/12.

Chesapeake Bay Total Maximum Daily Load (TMDL)

●On July 9, the **Chesapeake Executive Council held its annual meeting** at Gunston Hall in Fairfax County, Virginia (the historical home of George Mason). The Council, established by the 1983 Chesapeake Bay Agreement and revised by the 1987 Agreement, includes the governors of Maryland, Pennsylvania, and Virginia; the administrator of the U.S. EPA; the mayor of the District of Columbia; and the chair of the Chesapeake Bay Commission, a group of state legislators from Maryland, Pennsylvania, and Virginia. At the meeting, the Executive Council received **reports on each Bay jurisdiction’s progress towards meeting two-year “milestones,”** which are interim targets for various actions to reduce nitrogen, phosphorus, and sediment inputs to Bay waters. The interim targets are to build toward ultimate reduction goals to be reached by 2025 under the Chesapeake Bay Total Maximum Daily Load (TMDL) pollution-reduction plan (issued by EPA in December 2010).

A July 6 news release from Virginia Gov. McDonnell’s office on progress toward the milestones highlighted the following three developments: 1) “The U.S. EPA’s Region 3 [Virginia, Delaware, District of Columbia, Maryland, Pennsylvania, and West Virginia]...awarded Virginia their ‘Biggest Loser’ for ranking first in the region and second in the nation for reducing nitrogen pollution as reported through the Clean Water Act *nonpoint source* program.” 2) “Virginia reported more phosphorus and bacteria load reductions than any other state in EPA’s Region 3.” 3) “Virginia’s state budget will allocate \$92 million toward point and non-point water quality programs, the highest general fund appropriations to the Water Quality Improvement Fund in the past five fiscal years.”

Virginia's progress toward its 2009-2011 milestones is shown in the table below, taken from "Part II: 2009-11 Milestones Final Progress" in the meeting materials, available along with other meeting materials online at http://www.chesapeakebay.net/about/ecmeeting/2012_executive_council_meeting (the Part II document includes similar tables for all the other Bay jurisdictions). Links to materials from previous annual meetings (1998 to 2011) are available at http://www.chesapeakebay.net/groups/group/chesapeake_executive_council.

	Original 2011 Commitment	2011 Reported(1)	% Achieved Original Commitment	Adapted 2011 Commitment(2)	% Achieved Adapted Commitment(3)
AGRICULTURE					
Animal Waste Management Systems	241	1,724	715%	1,719	100%
Animal Waste Management/Runoff Control Systems	32	935	2,922%	461	203%
Conservation Tillage (acres/yr)	47,500	96,297	203%	N/A	N/A
Continuous No-Till, State Cost Share (acres)	81,000	95,882	118%	80,900	119%
Cover Crops (acres/yr)	119,000	58,746	49%	118,800	49%
Cover Crops/Harvestable Small grain Commodities (acres/yr)	38,000	21,955	58%	37,900	58%
Forest Buffers (acres)	10,000	18,691	187%	23,045	81%
Grass Buffers (acres)	2,000	54,823	2,741%	11,723	468%
Land Retirement (acres)	19,000	89,165	469%	93,317	96%
Nutrient Management/Agricultural (new acres)	258,000	668,692	259%	875,600	76%
Pasture Grazing BMPs/Off-stream Watering with Fencing (acres)	89,500	150,097	168%	191,205	79%
Stream Restoration/Agricultural (linear feet)	13,000	19,332	149%	30,979	62%
Tree Planting (acres)	12,500	24,217	194%	24,125	100%
Wetland Restoration (acres)	36	495	1,375%	118	419%
URBAN AND SUBURBAN					
Erosion & Sediment Control (acres)	61,000	29,906	49%	20,333	147%
Septic System BMPs/Pumpouts (# systems)	806	28,368	3,520%	N/A	N/A
Additional Urban Nutrient Management (new acres)	133,000	37,997	29%	133,166	29%
Stormwater Management/All Types, Urban/Suburban (acres drained)	49,000	387,781	791%	342,125	113%
WASTEWATER					
	2009-2011 Commitment	Achieved (1/1/09-12/31/11)	% Achieved (1/1/09-12/31/11)		
Wastewater Nitrogen (pounds reduced)	233,000	4,826,996	2,072%		
Wastewater Phosphorus (pounds reduced)	126,000	585,433	465%		

Table notes:

- 1 With the exception of "Stream Restoration, agricultural" and "Additional Urban Nutrient Management", Virginia's 2011 Best Management Practices (BMP) implementation data are the amounts reported by Virginia, not the amounts credited in the Chesapeake Bay Program (CBP) Watershed Model because of the state's disagreement with CBP methods.
- 2 All of Virginia's numeric commitments for 2011 (both original and adapted) were for total amount on-the-ground in 2011. For all practices (cumulative and annual), the 2011 implementation level is compared to the commitment to calculate % achievement.
- 3 For some practices, Virginia has two sets of commitments: Original 2011 Commitment and Adapted 2011 Commitment. With practices that list both sets of commitments, 2011 data is compared to both commitments to determine % achievement of the original and adapted commitments.

●Also at the July 9 annual meeting of the Chesapeake Executive Council, the U.S. EPA announced **14 technical-assistance awards for local governments in the Chesapeake watershed** to help the localities implement policies and projects to meet goals of Phase II Watershed Implementation Plans under the Bay TMDL. The awards come from the Local Government Capacity Building Initiative of the National Fish and Wildlife Foundation. The awards will go to one Delaware recipient, one West Virginia recipient, four Maryland recipients, four Pennsylvania recipients, and the following four Virginia recipients: 1) Hampton, to adapt the Virginia highway beautification program to include bioretention and other innovative stormwater practices in medians and rights-of-way; 2) Harrisonburg and Bridgewater (partnering with the Central Shenandoah Planning District Commission and James Madison University), to assess opportunities to implement stormwater retrofits and habitat restoration in the Blacks Run watershed; 3) the counties of Essex, King & Queen, King William, Gloucester, Mathews, and Middlesex (partnering with the Middle Peninsula Planning District Commission and three towns), to develop a regional stormwater program; 4) and Petersburg, to prioritize the most cost-effective opportunities for stormwater retrofits and habitat restoration, and to develop a sustainable financing strategy to implement the highest-priority projects. ([EPA Administrator Announces Local Governments Receiving Technical Assistance for Green Infrastructure Projects](#), National Fish and Wildlife Foundation News Release, 7/9/12)

●In another assessment of progress toward Bay-restoration goals, in October the Chesapeake Bay Program reported that **in 2011 the number of stream miles planted with streamside trees was 210 miles across the Bay watershed**, a decrease from the average of 756 stream miles planted in Virginia, Maryland, and Pennsylvania between 2003 and 2006. In 2007, the Bay states set a goal of planting 900 miles of streamside forest buffers per year. The Bay Program attributed the reduced plantings in 2011 to higher agricultural commodity prices that provided incentives for farmers to plant crops in acres where trees might have been planted, along with incentives for landowners to implement other kinds of conservation practices. In a related development, in late September the Bay Program reported that between 2010 and 2011, 3775 acres of **tidal and non-tidal wetlands** were established or reestablished in the Bay watershed, towards a watershed-wide goal for wetland restoration of 30,000 acres by 2025. ([Fewer incentives, boost in commodity prices mean decline in on-farm forest buffer restoration](#), Chesapeake Bay Program, 10/4/12; and Chesapeake Bay Program Web site, www.chesapeakebay.net/indicators/indicator/restoring_wetlands, accessed 10/2/12)

●On October 3, Food and Water Watch and Friends of the Earth filed a **lawsuit in federal district court in Washington, D.C., seeking to have nutrient-credit trading removed** from the Bay TMDL. Nutrient-credit trading is a system under which, first, an overall cap on nutrient discharges within a watershed is established, and, second, wastewater-treatment plants, agricultural operations, and other entities in that watershed are then allowed able to buy or sell nutrient credits, depending one exceeds or comes under an individual nutrient quota. No trading program has been established yet for the entire watershed, by state programs exist in Virginia, Maryland, Pennsylvania, and West Virginia. Water-quality trading is addressed in Section 10.2 of the Bay TMDL; access to individual sections is available online at <http://www.epa.gov/reg3wapd/tmdl/ChesapeakeBay/tmdlexec.html>. For information on state nutrient-credit trading programs, see the following links:

Virginia: <http://www.deq.virginia.gov/Programs/Water/PermittingCompliance/PollutionDischargeElimination/NutrientTrading.aspx>;

Maryland: <http://www.mda.state.md.us/nutrad/>;

Pennsylvania: <http://www.dep.state.pa.us/river/Nutrient%20trading.htm>;

West Virginia: <http://www.wri.nrcce.wvu.edu/programs/pwqb/>. ([Suit opposes Chesapeake Bay pollution trading](#), Associated Press, as published in *Virginian-Pilot*, 10/3/12)

Continuing on credit-trading: On May 3, the Chesapeake Bay Commission released “**Nutrient Credit Trading for the Bay: An Economic Study**,” a 56-page report that examined the potential for different trading scenarios (mixing different sources of nutrients and different geographic restrictions) to reduce the overall compliance costs of for nutrient reductions by “significant point sources” (wastewater treatment plants and industrial dischargers) and from “federally regulated urban stormwater sources” under the Bay TMDL. The study asserts that nutrient-credit trading could reduce the costs by 20-to-28 percent (depending on geographic boundaries) if only point sources were involved in trading; 26-to-49 percent if point sources and agricultural nonpoint sources were involved in trading; and about 80 percent if point sources, agricultural nonpoint sources, and urban stormwater sources were involved in trading. ([Chesapeake Bay pollution: Study: Pollution trading could trim bay cleanup costs](#), *Baltimore Sun*, 5/4/12)

●On October 4 in Harrisburg, Penn., U.S. District Judge Sylvia H. Rambo heard about four hours of oral arguments in the **lawsuit against the U.S. EPA by the American Farm Bureau Federation, the National Home Builders Association, and other plaintiffs over the Chesapeake Bay TMDL**. The suit—filed January 10, 2011—alleges that the EPA exceeded its authority, used inaccurate or inadequate scientific information, and followed too short a regulatory timetable in developing the TMDL. Various groups—including the National

Association of Clean Water Agencies, the Chesapeake Bay Foundation, and the National Wildlife Foundation—have sought to intervene on the side of the EPA. ([Court hears legal challenge to Chesapeake Bay 'pollution diet'](#), *Baltimore Sun*, 10/4/12; and “Court Hearing on Bay TMDL Set for Oct. 4,” *Bay Journal*, September 2012, p.10)

For more information on the Bay TMDL: The EPA’s Bay TMDL Web site is <http://www.epa.gov/chesapeakebaytmdl/>; the Virginia Department of Conservation and Recreation’s Bay TMDL Web site is <http://www.dcr.virginia.gov/vabaytmdl/>.

Boats and Ships

●On May 16, U.S. Interior Secretary Kenneth Salazar announced four new “component connecting” river trails, comprising 841 river miles, as part of the **Captain John Smith Chesapeake National Historic Trail**, a National Park Service unit. The additions include the 220-mile Upper James River Trail in Virginia along with 23 miles in the Upper Nanticoke watershed in Maryland, 46 miles in the Chester River watershed in Maryland, and 552 miles system in the Susquehanna River watershed in Maryland, Pennsylvania, and New York. The Web site for the Smith Water Trail is <http://www.nps.gov/cajo/index.htm>. ([Secretary Salazar Expands Captain John Smith Chesapeake National Historic Trail](#), U.S. Department of Interior News Release, 5/16/12)



Captain John Smith’s 1612 map of Virginia. Image provided for public use by the Maryland State Archives, accessed at “Charts and Maps Used by the Early Settlers of Maryland,” online at <http://msa.maryland.gov/msa/educ/exhibits/html/mpt.html>, 12/10/12.

●On August 28, the Virginia Marine Resources Commission (VMRC) voted unanimously to approve—with 11 conditions—plans by Portsmouth Elizabeth River Properties (PER) to build a **grain storage and shipping facility on the Southern Branch of the Elizabeth River in Portsmouth**. The site of proposed facility is a 16-acre tract that lies next to the Atlantic Wood site, where contamination from decades of a creosote operation is being removed under the federal Superfund law. PER’s grain-port proposal involves filling in about an acre of the river to provide additional land. One additional complicating aspect of the proposed facility is that an owner of land next to the facility site claims that a King’s Grant gives him ownership of some river bottomlands in the area. The City of Portsmouth disputes that claim, and the matter was expected to go to court. ([Va. regulators OK plan to turn site into grain port](#), *Virginian-Pilot*, 8/29/12)

●In September 2012 the U.S. Department of Energy department assumed control from the U.S. Coast Guard of the **Chesapeake Light Tower**, a 120-foot platform and light built in 1965. The Energy Department intends to convert the tower—located about 13 miles offshore of Virginia Beach—to measure winds, waves, and tides for their potential as offshore energy sources. The Energy Department’s National Renewable Energy Laboratory and Pacific Northwest National Laboratory have the task of assessing the work needed and cost of converting the tower for the new purposes. ([Chesapeake Light Tower begins new era](#), *Virginian-Pilot*, 10/13/12)

Education

- In mid-September, the Elizabeth River Project in Portsmouth announced that it will receive a \$140,000 grant from the National Oceanic and Atmospheric Administration to support **lessons about the Elizabeth River for elementary school children aboard the group's "Learning Barge."** The grant will support about 2,500 children taking field trips on the vessel and the training of about 120 area teachers on Elizabeth River issues. The non-profit organization and the University of Virginia launched the Learning Barge in September 2009. The boat is designed with solar energy, water-saving toilets, and other features to have little environmental impact, and its educational features include water-sampling stations and labs. Information on the Learning Barge is available online at http://elizabethriver.org/Projects/The_Learning_Barge.aspx. (*Virginian-Pilot*, 9/19/12 and 9/15/09)
- A partnership among the **Virginia Institute of Marine Science** (VIMS, located in Gloucester County), Spotsylvania County schools, and Wise County schools is providing **high school students an opportunity to learn about computer modeling and simulation**, key tools used by scientists in many fields to help understand and make predictions about natural systems. ([VIMS partners with NASA, teachers to bring computer modeling into classrooms](#), *William and Mary News and Events*, 8/27/12)

Energy Use and Developments/Climate Change Developments

- **Establishing a first-in-the-nation "green energy corridor"** featuring an array of renewable energy sources is the vision under discussion by a committee of the South County Federation of Fairfax County (Web site: <http://southcountyfederation.com/>). Possible activities in the corridor, to be located around the southern Fairfax town of Lorton, could include a solar farm, wind turbines, geothermal-energy network, and methane generated from solid waste, all located around a Lorton solid-waste landfill. A horticultural park is also envisioned to support community gardens and greenhouses. The Lorton Arts Foundation would receive much of the renewable energy generated and would be focal point for education about renewable technologies as well as stormwater management and other Chesapeake Bay-related issues. ([Lorton May Become a Green Energy Corridor](#), Patch.com, 5/3/12)
- A **wind-energy prototype turbine** that was expected to be built off Virginia's coast will apparently not proceed. On May 7, Gamesa Energy USA and Huntington Ingalls Newport News Shipbuilding announced that they had suspended work towards the wind-turbine prototype. The companies asserted that uncertain federal energy policy and possible ending of federal tax credits were reasons for suspending work on the project. At its March 27 meeting, the VMRC had approved construction of a five-megawatt prototype turbine in the Chesapeake Bay, about three miles offshore from the Northampton County town of Cape Charles. The project was intended to test new offshore technology developed by the Gamesa company, which has installed wind-energy projects in some 30 countries. If the companies chose to proceed, the project would still need approval from the U.S. Army Corps of Engineers and the U.S. Coast Guard. ([Plans for Chesapeake Bay wind turbine suspended](#), *Virginian-Pilot*, 5/8/12; [Governor McDonnell Announces Virginia on Track to Install America's First Offshore Wind Energy Turbine](#), Virginia Governor's Office News Release, 3/27/12. For the most recent previous *Water Central* items on offshore wind energy, please see the February 2011 issue, p.6.)
- On May 8, the Virginia State Corporation Commission (SCC) held a public hearing on **Dominion Virginia Power's proposed 15-year plan to meet energy demand by its approximately two million customers**. The plan, dated September 1, 2011, is available online at <http://www.dom.com/about/integrated-resource-planning.jsp>. According to the Associated Press account of the public hearing, key aspects of Dominion's plan include an expected 30 percent increase in electricity demand by 2026, closing of some coal-fired power plants and conversion of three coal plants to biomass fuels, addition of more natural-gas-fired plants, the possibility of a third reactor at the North Anna Nuclear Station, and—according to a Dominion statement—"a broad array of renewable facilities in operation, under construction or in development with the potential to power more than 400,000 homes." Several speakers at the public hearing, including Virginia House of Delegates member Joseph Morrissey, asserted to the SCC that Dominion's plan does address adequately renewable energy sources and energy efficiency. ([Speakers rail against Dominion Virginia Power plans](#), Associated Press, as published in *Norfolk Virginian-Pilot*, 5/8/12)
- In mid-May, Dominion Resources, based in Richmond, announced it had filed a suit in Calvert County (Maryland) Circuit Court asserting the legality of Dominion's plan to **convert from an import facility to an export facility the liquefied natural gas (LNG) terminal at Cove Point in the Chesapeake Bay**. In September, the Maryland chapter of the Sierra Club filed a lawsuit to stop the expansion. The Sierra Club asserts that a 1972 settlement among the Sierra Club, the Maryland Conservation Council, and the owner of the facility at the time requires permission from the two organizations for any expansion of the Cove Point facility or changes to its purpose. The switch to an export facility is a response to a current large supply of natural gas in the United States,

resulting from a large increase of new gas wells in underground formations, such as the Marcellus Shale formation underlying several eastern states (including a small part of Virginia). In February 2012, Dominion received approval from the U.S. Department of Energy to export LNG to about 20 nations with which the United States has free-trade agreements, and the company is seeking federal approval for exporting to any nation except those under trade sanctions. On September 18, the *Pittsburgh Tribune-Review* reported that the U.S. Department of Energy says it will be the end of 2012 before the agency decides whether to grant the broader LNG-export permit to Dominion and 16 other companies. ([Dominion's LNG export bid sparks legal dispute](#), *Baltimore Sun*, 9/21/12; "Politics, environment, global trade issues complicate natural gas exportation," *Pittsburgh Tribune-Review*, 9/18/12; [Dominion sues over right to export natural gas](#), Associated Press, as published by *Bloomberg Business Week*, 5/18/12; [Sierra Club Challenges Natural Gas Terminal](#), Associated Press, 4/30/12; [Dominion moves forward with LNG export terminal as Sierra Club objects](#), *Baltimore (Md.) Sun*, 4/27/12; and [Marcellus shale fracking: Natural gas exports eyed through Calvert County](#), *Baltimore Sun*, 2/10/12)

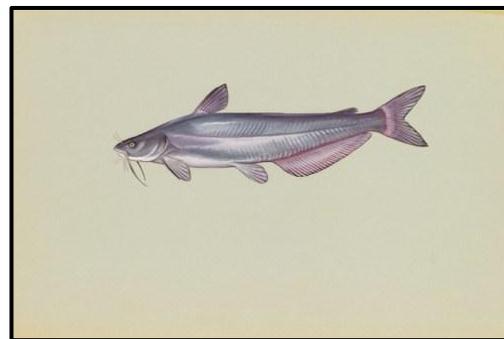
● On June 26, a three-judge panel of the U.S. Court of Appeals for the District of Columbia Circuit found that the **U.S. EPA was within its authority when the agency published its 2009 "endangerment finding" on greenhouse gases**. The appeals court decision was in a case consisting of separate lawsuits by various states and organizations, all combined as a collective plaintiff called the Coalition for Responsible Regulation. Those lawsuits, including one by the Commonwealth of Virginia, had challenged EPA's interpretation of the federal Clean Air Act and its use of scientific information in reaching the finding. The EPA's greenhouse gases endangerment finding, published on December 15, 2009, was the agency's determination that carbon dioxide and five other greenhouse gases endanger human health by contributing to climate change. The EPA's finding followed a 2007 U.S. Supreme Court ruling, in *Massachusetts v. EPA*, that the Clean Air Act authorizes EPA to regulate greenhouse gases; and that the EPA could choose *not* to do so only if the agency found that the gases *do not* cause or contribute to air pollution, or if the agency had a valid reason for not being able to make a determination on this question. (Cornell University Law School syllabus of *Mass. v. EPA*, <http://www.law.cornell.edu/supct/html/05-1120.ZS.html>, accessed 11/15/12; *Richmond Times-Dispatch*, 6/27/12; and [D.C. appeals court upholds EPA regulations to fight global warming](#), *Washington Post*, 6/26/12.)

Fishing and Fisheries

● In a research paper published July 20, scientists at the U.S. Geological Survey (USGS), the U.S. Fish and Wildlife Service (FWS), and the National Park Service reported that **American Eel populations have increased in Shenandoah National Park headwater streams** since the 2004 removal of the Embrey Dam on the Rappahannock River just above Fredericksburg. The Rappahannock basin increases are in contrast to decreases seen elsewhere in populations of the American Eel, which is being considered by the FWS for listing as a threatened species under the federal Endangered Species Act. The research is part of a USGS effort nationwide to assess the physical and biological impacts of removing unused dams from streams and rivers. The research paper is "Dam Removal Increases American Eel Abundance in Distant Headwater Streams," by N.P. Hitt *et al.*, published in *Transactions of the American Fisheries Society* (Vol. 141, No. 5). ([American Eels Return to Mountain Streams After Dam Removal](#), U.S. Geological Survey News Release, 7/31/12)

● On August 13, an Oregon angler caught a **Maryland state record Blue Catfish in the Potomac River** near Fort Washington, Md. The 84-pound fish exceeded the existing record set in February 2012 with an 80-pound blue cat, caught near the same Potomac River location. The new record fish was tagged and released as part of a program by Maryland and Virginia to monitor this non-native, invasive fish species. Native in the Mississippi, Missouri, and Ohio river basins, Blue Catfish have been stocked in several Virginia rivers for many years. In Virginia, the species is now widespread in tidal streams and rivers, especially in Virginia's James and Rappahannock rivers, and the large Blue Catfish populations can diminish other species, such as Channel Catfish and White Catfish. Virginia Department of Game and Inland Fisheries information on Blue Catfish is online at www.dgif.virginia.gov/wildlife/fish/details.asp?fish=010390.

([A record catch for an unwelcome fish](#), *Washington Post*, 9/8/12. For a previous *Water Central* item on management of Blue Catfish in the Potomac River, please see the August 2010 issue, p. 17.)



Blue Catfish drawing, courtesy of U.S. Fish and Wildlife National Digital Library, online at <http://digitalmedia.fws.gov/>.

•River paddlers, anglers, streamside property owners, and students of water-related law and rights were among the groups who followed closely a **lawsuit in Alleghany County Circuit Court** that concluded on October 9 in Covington. (The lawsuit followed a criminal trespassing charge that was dropped in General District Court.) In *North South Development LLC, et al., v. Garden, et al.* (Case no. CL11000043), North-South Development and several owners of property in the company's River's Edge development along the Jackson River near Covington sued two paddlers and anglers who, the plaintiffs alleged, trespassed in June 2010 on stream-bottom property for which streamside property owners claim the right to restrict wading through a **"king's grant"** dating back to the colonial period. In the 1996 *Kraft v. Burr* decision, the Virginia Supreme Court held that property owners may claim such rights—even in navigable waters—if the property has a king's grant that includes authority over the stream bottom (see pp. 11-12 in the Virginia Water Resources Research Center report on this case, listed below). The plaintiffs were seeking \$10,000 in alleged damages and an injunction to prevent wading in the disputed river section. The defendants claimed that, at the time of the alleged trespass, Virginia Department of Game and Inland Fisheries maps at the site and online indicated that the stream section was open for fishing and wading.

The defendants had sought to include the Commonwealth in the case, but the Attorney General's Office declined to intervene, and at a hearing on July 25, 2011, the Circuit Court Judge Malford Trumbo refused a defendants' motion to include the Commonwealth as a defendant. On June 5, 2012, Judge Trumbo issued a partial summary judgment, holding that the plaintiffs had "presented a *prima facie* title to the real property on which the alleged trespass took place," that is, a presumably legitimate claim of title, subject to future evidence that might be presented. Further proceedings would have been needed to determine whether the defendants could successfully challenge that *prima facie* title, but on October 9 the defendants declined to go forward, stating that they lacked the money to continue the case. Consequently, Judge Trumbo approved a consent order prohibiting the defendants from walking or wading in the Jackson River section in question but not ruling on the question of the ownership of the river section. In the consent agreement, the plaintiffs waived the claim for \$10,000.



Downstream of the disputed section in Alleghany County, the Jackson River (at left) meets the Cowpasture River to form the James River in Botetourt County. This view is from July 19, 2010.

Sources:

[Legal Costs Derail Jackson River Suit Over VA Fishing Rights](#), *Bay Journal*, November 2012;

Final Order, October 9, 2012, on Virginia Rivers Defense Fund Blog (defendants), at

<http://www.virginiariversdefensefund.org/court-documents-background>;

Plaintiffs' Web site: <http://www.cliffviewinc.com/index.htm>;

[Troubled waters: Landowners, angler wrangle over access to Va. river](#), *Washington Post*, 8/19/12;

[Murky waters on the Jackson River: The Jackson River is again the center of an access fight between landowners and anglers](#), *Roanoke Times*, 7/31/11;

[Jackson River rights questioned in Alleghany County civil case](#), WSLs-TV (Roanoke), 7/20/11;

[Jackson River fishery access back in court](#), *Roanoke Times*, 7/21/11;

[Virginia Anglers Sued for Fishing on Property Deemed "Public" by Game Dept.](#), *MidCurrent*, 6/28/11.

Virginia Water Center reports on recreational rights in Virginia waters: *Inland Recreational Fishing Rights in Virginia: Implications of the Virginia Supreme Court Case Kraft v. Burr, 1999*, online at

http://vwrrc.vt.edu/special_reports.html#1999; and "Public Recreational Rights on Virginia's Inland Streams," 1980, online at http://vwrrc.vt.edu/special_reports.html#1980.

For a broader perspective on king's grants, see "The Intriguing Tideland Grant," *National Wetlands Newsletter*, Sept.-Oct. 2012 (p. 5). This one-page commentary focuses on tideland grants in Georgia. The *National Wetlands Newsletter* Web site is <http://www.wetlandsnewsletter.org/index.cfm>, but a subscription is required for access to the newsletter. Check your local public or college/university library to see if they have a print or electronic subscription.

Groundwater

●In the October 22 *Virginia Register of Regulations* (Vol. 29, Issue 4), the Virginia Department of Environmental Quality (DEQ) announced **proposed changes to Virginia's groundwater regulations**.

One proposal, affecting *Virginia Administrative Code* section 9 VAC 25-600, Eastern Virginia Groundwater Management Area, would expand this management area to include the counties of Essex, Gloucester, King George, King and Queen, Lancaster, Mathews, Middlesex, Northumberland, Richmond, and Westmoreland, and the areas of Arlington, Caroline, Fairfax, Prince William, Spotsylvania, and Stafford counties east of Interstate 95. In this groundwater management area, entities withdrawing 300,000 gallons or more of groundwater per month are required to obtain a permit, so this requirement would now be applied in the new areas covered. For the announcement on this proposal, see pages 888-891 in the 10/22/12 *Virginia Register*, available online at <http://register.dls.virginia.gov/issfiles.htm>. More information about this proposal is available at <http://townhall.virginia.gov/L/viewaction.cfm?actionid=2966&display=stages>.

The other proposal, affecting *Virginia Administrative Code* section 9 VAC 25-610, Groundwater Withdrawal Regulations, is intended to do the following (according to information provided at the Virginia Regulatory Town Hall Web site; see link listed below): amend the regulations to make them more consistent with current administrative and application processing practices of other water permit program regulations; add new sections addressing surface water and groundwater conjunctive-use permits and supplemental drought-relief permits; revise the water conservation and management plan section to specify conservation measures and requirements that must be met, depending on the use of groundwater; identify information to be provided by permittees to document their need for the groundwater and that alternatives to using groundwater have been investigated and considered; allow a permittee to estimate an area of impact for mitigation of a small withdrawal based on available modeled information instead of requiring geotechnical investigations to occur; make the regulations more consistent with current agency guidance concerning the 80-percent drawdown criteria evaluation; and specify additional conditions to clarify the requirements that groundwater withdrawers must meet. For the announcement on this proposal, see pp. 891-923 in the 10/22/12 *Virginia Register*. More information on this proposal is available at <http://townhall.virginia.gov/L/viewaction.cfm?actionid=2965&display=stages>.



Groundwater has been an important public water source throughout Virginia's history, as shown by this well-preserved "Old Town Spring" building in Winchester, photographed in March 2008. A spring house existed at this location as early as 1840, according to information provided by Winchester's Handley Library.

Public hearings on the proposed changes were held Nov. 26 in Williamsburg and Dec. 4 in Spotsylvania. The public comment period ends January 11, 2013.

Mining

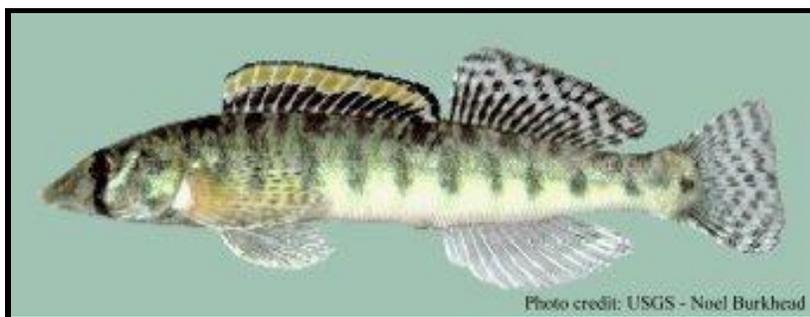
●On July 31, U.S. District Court Judge Reggie B. Walton (federal district court for the District of Columbia) ruled that the U.S. EPA exceeded its authority under the federal Clean Water Act (CWA) and the federal Surface Mining and Reclamation Act (SMRCA) in the July 21, 2011, **regulatory guidance issued to regional EPA offices regarding permits for mountaintop coal-mining in Appalachian states**. (The July 2011 "final guidance" replaced an April 2010 "interim guidance" that had also been challenged in this federal district court.) The judge held that the guidance, in effect, developed a water-quality standard, or a "regional water-quality criterion," in its expectation for states to take into account such mining's impacts stream levels of conductivity (a measure of the amount of solids dissolved in water). The court held that this has illegally infringed upon the states' water-quality standard-setting authority under the CWA. Access to the court opinion is available online at <https://ecf.dcd.uscourts.gov/cgi-bin/Opinions.pl?2012>; the case is Civil Action No. 2010-1220, *National Mining Association v. Jackson et al.* (This case combined three other cases: Civil Action No. 2011-0295, *Huffman et al v. United States Environmental Protection Agency et al*; Civil Action No. 2011-0447, *Gorman Company, LLC et al v.*

Jackson et al.; and Civil Action No. 2011-0446, *Kentucky Coal Association v. United States Environmental Protection Agency et al.*) (Sources: Web site for the U.S. District Court for the District of Columbia, at <http://www.dcd.uscourts.gov/dcd/>, 8/1/12; [US judge: EPA illegally seized powers given to states on water-quality guidance for coal mine](#), Associated Press, as published in *Washington Post*, 7/31/12. Access to the July 21, 2011, guidance and related documents is available via [EPA Issues Final Guidance to Protect Water Quality in Appalachian Communities from Impacts of Mountaintop Mining](#), U.S. EPA News Release, 7/21/11.)

•In late July, **three organizations filed a lawsuit in the U.S. District Court for the Western District of Virginia in Big Stone Gap (Wise County)** alleging that the Penn Virginia Operating Company violated the federal Clean Water Act by discharging pollutants without a permit to several streams at former mining sites in Wise County. The suit, filed by Southern Appalachian Mountain Stewards, The Sierra Club, and Appalachian Voices, claims that **mine refuse piles, known as “gob piles,”** produced various metals that reached waterways. The suit seeks civil penalties, monitoring of the sites, and remediation of any violations found. On July 30, a spokesperson for Penn Virginia told *The Roanoke Times* that the company believes it is in compliance with regulations. The case is 2:12-cv-00020, *Southern Appalachian Mountain Stewards et al v. Penn Virginia Operating Company, LLC*. ([Lawsuit accuses mining operation of pollution violations in Wise Co.](#), *Roanoke Times*, 7/31/12)

Spills and Similar Incidents and Accidents

•In late April, the U.S. EPA and Blacksburg County Club, located in Montgomery County just outside of the Town of Blacksburg, agreed to a **consent decree over a 2007 herbicide spill** that affected about a mile of the North Fork Roanoke River and killed an estimated 10,335 fish, including an estimated 170 Roanoke logperch, which is a federally listed endangered species. The action settles a federal lawsuit filed by the EPA in February 2012. The consent decree, submitted to the federal district court in Roanoke, calls for the country club to pay \$18,964 to the U.S. Fish and Wildlife Service and to conduct six stream-restoration projects. The country club previously paid about \$42,000 in state fines and expenses to correct problems in its pesticide-storage area. ([Blacksburg Country Club to pay \\$19,000 over spill, fish kill](#), *Roanoke Times*, 5/4/12; and [Blacksburg Country Club hit with federal lawsuit over 2007 fish kill](#), *Roanoke Times*, 2/24/12)



Roanoke logperch (*Percina rex*). Photo by Noel Burkhead, accessed at U.S. Geological Survey/Southeast Ecological Science Center Web site, “Logperches: Masters of the Stone,”

[http://fl.biology.usgs.gov/Southeastern Aquatic Fauna/Freshwater Fishes/Logperch/logperch.html](http://fl.biology.usgs.gov/Southeastern_Aquatic_Fauna/Freshwater_Fishes/Logperch/logperch.html), 12/12/12.

•In mid-October, the Virginia DEQ announced a proposed consent order with Watts Petroleum Company of Lynchburg over the **May 2012 spill of an estimated 7,000 gallons of gasoline and diesel fuel from a tanker truck that overturned on U.S. 460 near Montvale in Bedford County**. The accident resulted in the death of the tanker driver, the closure of the eastbound lanes of the highway during four months of clean-up work, and some water and soil contamination. The proposed consent order calls for the company to pay the Commonwealth about \$16,600 in a fine, contribute another \$27,000 to Bedford County for purchase of environmental clean-up equipment, conduct more clean-up of the site, and monitor surface water and groundwater near the spill area. The public-comment period on the proposed consent order ended November 21. Virginia DEQ proposed consent orders are available online at <http://www.deq.virginia.gov/Programs/Enforcement/PublicNotices.aspx>. ([State fines trucking company \\$43,000 for May fuel spill on U.S. 460](#), *Roanoke Times*, 10/19/12)

Stormwater Management

•Three innovative stormwater-management projects were the focus of a **May 10 “Tour de Stormwater” conducted by the Rivanna River Basin Commission**. The commission conducted the tour for local officials from Albemarle, Fluvanna, and Greene counties and the City of Charlottesville. The stormwater projects visited included a bioswale (a drainage way with plants that can absorb and filter stormwater) at Charlottesville High School, a bioswale and stream-restoration project in Greene County, and an engineered wetlands system near Crozet in Albemarle County. The tour was part of a three-year Commission project to “promote better stormwater management throughout the Rivanna watershed,” according to the Commission’s news release on the tour (available as PDF at <http://ftpcontent.worldnow.com/wvir/documents/Stormwater.pdf>). ([Supervisors Take Stormwater Tour With Money On Their Minds](#), *WVIR TV*, 5/10/12)

•On June 20, the U.S. EPA and the Justice Department announced a **stormwater-violation settlement with the nationwide home-building company Toll Brothers** under which the company will pay a \$741,000 civil penalty for over 600 alleged violations at 373 construction sites in 23 states, including 17 sites in Virginia, 22 in Maryland, 11 in North Carolina, and 55 in Pennsylvania. Besides the civil penalty, the company is required to develop a company-wide stormwater management program to improve oversight and employee training. (U.S. EPA, <http://www.epa.gov/compliance/resources/cases/civil/cwa/tollbrothers.html>, 6/21/12)

•On July 12, Fairfax County and the Virginia Attorney General’s Office—acting on behalf of the Virginia Department of Transportation (VDOT)—filed **suit in federal district court in Alexandria over the U.S. EPA’s requirements on the county to reduce sediment pollution by stormwater in the Accotink Creek watershed**. Accotink Creek, a tributary of Accotink Bay and in turn Pohick Bay and then the Potomac River, flows about 23 miles through Fairfax County and drains a 52-square-mile watershed. The lawsuit alleged that the EPA exceeded its Clean Water Act authority by the water-flow requirements it is imposing on the county as part of a Total Maximum Daily Load, or TMDL, for Accotink Creek watershed. As of mid-July, similar lawsuits against EPA have been filed in four other parts of the country. ([Fairfax County, VDOT sue EPA over Accotink Creek watershed regulations](#), *Washington Post*, 7/13/12)

Uranium Mining (items through December 11, 2012)



Two September 19, 2012, views of the landscape in the vicinity of Coles Hill in Pittsylvania County, Virginia, the site of Virginia Uranium, Inc.’s proposed uranium mining/milling operation. The left photo looks northwest from Cedar Hill Road towards the general area of the uranium deposit; the right photo looks south from Cedar Hill Road towards the corridor of the Bannister River (a Dan River tributary).

•On May 16 in Chatham, the Pittsylvania County seat, the first meeting was held of **group organized around issues of the potential economic impacts of Virginia Uranium, Inc.’s proposed uranium mining operation** in Pittsylvania County. The Alliance for Progress in Southern Virginia includes business owners, farmers, and residents from Southside Virginia who are concerned about potential impacts of the proposed mining on property values, agriculture, and regional economic development. (*Danville Register & Bee*, 5/16/12)

•On May 31, researchers who contributed to the **National Research Council’s December 2011, report, *Uranium Mining in Virginia: Scientific, Technical, Environmental, Human Health and Safety, and Regulatory***

Aspects of Uranium Mining and Processing in Virginia, held a public meeting in Virginia Beach to review the report for the public. The report is available online at <http://dels.nas.edu/Report/Uranium-Mining-Virginia-Scientific-Technical/13266>. ([Public invited to hear uranium-mining study results](#), *Norfolk Virginian-Pilot*, 5/15/12)

●Here’s a summary of some of the major actions in summer and fall 2012 by the **Virginia Uranium Working Group**. According to the Working Group’s Web site, <http://www.uwg.vi.virginia.gov/>, the Working Group was established by Gov. Robert McDonnell in January 2012 to develop a “draft statutory and regulatory framework” for uranium mining and milling in Virginia, should the Virginia General Assembly remove its moratorium on those activities.

●●Between March and November, the Working Group held a series of seven public meetings, some involving the Virginia Coal and Energy Commission and its Uranium Subcommittee. The meeting dates and locations, and documents presented at each meeting, are available at the Working Group’s Web site. The site also provides access to several documents produced for a 1985 task for on uranium in Virginia and by several more recent studies (2009 through 2012).

●●On August 28 in Virginia Beach, the Working Group met to receive **information from the Virginia DEQ on air and water monitoring** and to receive public comments; according to the *Virginian-Pilot*, about 150 people attended the meeting. In a news conference prior the Working Group’s meeting, Patrick Wales—the project manager for Virginia Uranium, Inc., which has proposed a uranium mine in Pittsylvania County—pledged that his company would use underground storage for radioactive waste as a way to prevent water contamination. He also asserted that, should contamination happen, contaminants could be removed to standard levels by water-treatment systems in the Hampton Roads area. Opponents of the proposed mining operation challenged Mr. Wales’ assertions. ([VUI says uranium mining no risk to Va. waters](#), *Danville Register & Bee*, 8/28/12; and [Company that wants to mine uranium vows safety](#), *Virginian-Pilot*, 8/29/12)

●●On September 17, the Virginia Department of Health (VDH) presented to the Working Group a summary of **concerns and questions raised by the public over the potential impacts of a proposed uranium mining and milling operation in Pittsylvania County on private water supplies and on recreational water use**. The comments were gathered in August 2012 from 177 speakers at three public comment meetings and from 47 participants in three small-group discussion meetings; the meetings were held in Chatham, Warrenton, and Virginia Beach. The areas of public concerns identified in the VDH’s September 17 presentation are the following: impacts to **agriculture** (economic and health); impacts to **groundwater and surface water** supplies (quality and quantity; private and public); **baseline testing** for current environmental and health conditions; ongoing monitoring (pre-mining, during operations, and long term); **catastrophic events** (weather related and operational failures); current **regulatory structure** and necessary changes (authority, expertise and resources, public input); **health effects** on residents and on mining/milling workers; overall **economic impacts**; transportation issues; and **public participation** and transparency of the process of considering whether Virginia will keep or revoke its moratorium on uranium mining. The VDH’s September 17 presentation (as a PDF) is available online at the “Study Links and Documents” page of Uranium Working Group’s Web site, at <http://www.uwg.vi.virginia.gov/links.shtml> (scroll down to “Private Wells and Recreational Water Use Meeting Schedule,” and find the September 17 links under that heading). (Additional information: [Uranium and water supply: List of concerns released](#), GoDanRiver.com, as published by WSLs-TV [Lynchburg], 9/17/12)

●●At the Working Group’s October 17 meeting in Chatham, the VDH discussed the different department offices that would be involved and the staffing needs and associated costs, should the Commonwealth lift the state moratorium on uranium mining and milling. Among other things, the VDH would have to institute an indoor-radon monitoring program in the area to establish baseline radon levels. The impact on state resources would also depend on whether Virginia assumes regulation of *milling*—not only *mining*—under an agreement with the Nuclear Regulatory Commission. The VDH presentation, made by Chief Deputy Commissioner Maureen Dempsey, is available online at the Uranium Working Group’s Web site, <http://www.uwg.vi.virginia.gov/links.shtml> (scroll down to Public Meeting Documents/October 17 and click on UWG Presentation 10/17/12). After the VDH presentation, the Working Group answered about 50 written questions submitted by the audience, and a public comment period was held. A detailed account of the October 17 meeting, which was attended by an estimated 200 people, is available at in this article in the 10/24/12 *Chatham Star-Tribune*: [Uranium Working Group focuses on health at Chatham meeting](#).

●●On November 30, the Working Group presented its report to Gov. McDonnell. On December 11 in Chatham, the Working Group presented the report to the Uranium Subcommittee of the Virginia Coal and Energy Commission. Here is a link to the governor’s news release on the report: [Uranium Working Group](#)

[Delivers Report to Governor on Schedule](#), Virginia Governor's Office News Release, 11/30/12. The full report is available at <http://www.governor.virginia.gov/utility/docs/UWG%20Report%20-%20FINAL%2030Nov2012.pdf>.

●On October 1, the George Mason University (GMU) Center for Regional Analysis released a **16-page study of the potential economic benefits** of the proposed uranium operation in Pittsylvania County. The study examined the potential fiscal impact on the county, the potential impacts on the local housing market, and the potential economic benefits to the area. The study concluded that the operation could bring \$1.3 million annually in net tax revenue and \$24 million annually in salaries and other benefits in the area. These values are what could result “if everything works right,” according to the GMU center's director. The 137-page report is available online at the Center's Web site, <http://cra.gmu.edu/>, or contact the Center at (703) 993-2401. ([Uranium report cites Pittsylvania benefit](#), *Richmond Times-Dispatch*, 10/2/12)

●As of late September, the cities of Norfolk, Suffolk, and Virginia Beach, and the Hampton Roads Planning District Commission had passed **resolutions in favor of maintaining Virginia's moratorium on uranium mining and milling**. ([Hampton Roads panel backs uranium mining ban](#), *Virginian-Pilot*, 9/25/12; [Suffolk council OKs resolution against uranium mining](#), *Virginian-Pilot*, 9/6/12)

●On October 24 in Williamsburg, the **Virginia Chamber of Commerce's board of directors** heard opposing positions on the uranium-mining moratorium from two former Chamber chairmen. Advocating for the Chamber to support lifting the moratorium was Whitt Clement, a Danville native (Danville is an independent city on the southern border of Pittsylvania County) and now a lobbyist for Virginia Uranium, Inc., the company proposing the Pittsylvania County mine. Advocating for the Chamber to support keeping the moratorium in place was Ben Davenport, a Chatham native and prominent area businessman. The Chamber plans to decide in January 2013 on its list of legislative positions for the 2013 General Assembly session, which begins on January 9. (“Business pressed to take stand in uranium fight,” *Richmond Times-Dispatch*, 11/7/12)

●On November 7, the **Pittsylvania County Board of Supervisors** passed 4-3 a resolution asserting the county's concerns over potential risks from proposed uranium mining in the county. The resolution did not, however, state explicitly that the county board calls for the Virginia General Assembly to maintain a statewide moratorium on uranium mining, language that the three dissenting supervisors favored. According to the *Chatham Star-Tribune*, the passed resolution also calls for a fund to compensate residents “adversely affected” by uranium mining and milling within five miles of the proposed mine; supports the Pittsylvania County Farm Bureau's call for agriculture to be involved in developing regulations if the ban is lifted; and asks the General Assembly to insure that “the appropriate regulations be in place either by the Nuclear Regulatory Commission and/or by the state of Virginia for the most comprehensive protection of our citizens.” ([Supervisors pass uranium resolution](#), *Chatham Star-Tribune*, 11/7/12; and *Danville Register & Bee*, 11/7/12)

●At its annual convention the last week of November 2012, the **Virginia Farm Bureau Federation voted in favor of the Commonwealth maintaining its 30-year-old moratorium** on uranium mining and milling (in place since 1982). According to a statement to the Associated Press by Andrew W. Smith, the Virginia Farm Bureau's senior assistant director of governmental relations, the vote was due to doubts by members that a uranium operation can be done safely in Virginia at this time. ([Va. Farm Bureau backs uranium ban](#), Associated Press, as published by *Richmond Times-Dispatch*, 11/29/12)

●On December 3, **Virginia State Senator John Watkins (R-10th) announced that he plans to introduce legislation** in the 2013 General Assembly to remove the uranium mining and milling moratorium. Sen. Watkins stated that passage of such legislation would be only the first step in a several-year process before any uranium could be mined. Sen. Watkins is the vice-chair of the Virginia Coal and Energy Commission, whose Uranium Subcommittee on December 11 formally received the report of the Virginia Uranium Working Group. ([State senator to file bill to lift uranium-mining ban](#), *Virginian-Pilot*, 12/4/12)

●On December 11, the **board of directors of the Danville Pittsylvania County Chamber of Commerce** voted to request that the General Assembly maintain the moratorium on uranium mining and milling. ([Chamber backs uranium ban](#), *Chatham Star-Tribune*, 12/12/12)

Waste Management

●On June 27, the Virginia DEQ released its **15th annual report on solid waste management in Virginia**, covering municipal solid waste, construction and demolition debris, vegetative and yard waste, and other types of waste collected in 2011 at 208 permitted facilities. The total amount received at Virginia facilities during 2011 was about 20.7 million tons, an increase of about one million tons from 2010's total. Municipal solid waste comprised about 12.4 million tons; construction and demolition debris about 3.8 million tons. About 5.6 million tons were generated from outside of Virginia. Out-of-state waste came primarily from Maryland (40 percent), New York (28 percent), Washington, D.C. (21 percent), North Carolina (4 percent), and New Jersey (4 percent). Of the 2011 total waste, about 12.9 million tons (75 percent) were disposed of in landfills and about 2.1 million tons (12 percent) were incinerated; the rest was managed by mulching, recycling, or other means. The report for 2011 (30 pages) and reports for previous years are available at

<http://www.deq.virginia.gov/Programs/LandProtectionRevitalization/ReportsPublications/AnnualSolidWasteReports.aspx>.

([Virginia issues solid waste report for 2011](#), Virginia DEQ News Release, 6/27/12)

Then, on October 16, the DEQ released the Commonwealth's **annual report on recycling at solid-waste facilities**. This report also covers activities in 2011. For that year, 71 "solid waste planning units" (which are either a local government or a regional authority) recycled 43.5 percent of municipal and other solid wastes, an increase over the 2010 rate of 40.5 percent and the 2009 rate of just under 39 percent. This year and 2010 were the first two years that the statewide rate had exceeded 40 percent since 1989, when Virginia set minimum recycling rates for localities and authorities. The minimum rates are as follows: 25 percent for each planning unit, but 15 percent for planning units where the population density is less than 100 people per square mile or the unemployment rate is 50 percent or more above the statewide unemployment average. The 2011 report and more information on state recycling programs are available online at

<http://www.deq.virginia.gov/Programs/LandProtectionRevitalization/RecyclingandLitterPreventionPrograms.aspx>. Reports

for 2010 and for previous years are available online at

<http://www.deq.virginia.gov/Programs/LandProtectionRevitalization/RecyclingandLitterPreventionPrograms/Recycling.aspx>.

([Virginia issues 2011 recycling report](#), Virginia DEQ News Release, 10/16/12)

Wastewater

●On July 10, officials with Albemarle County, the City of Charlottesville, and the Rivanna Water and Sewer Authority dedicated the completion of a **\$48-million improvement project at the Moores Creek Wastewater Treatment Plant**, originally built in the 1950s and last upgraded in 1981. The improvements will increase the plant's treatment capacity, improve removal of nitrogen and phosphorus, and allow the plant to be run partially on electricity generated by methane and waste heat recovered from plant operations. ([Water authority celebrates completed upgrades and environmental dividends](#), *Charlottesville Tomorrow*, 7/10/12)

●On September 19, several residents of **Fairview Beach in King George County** met with 16 state and local government agency staff and local elected officials to discuss **the recurring problem of excessive bacterial levels in the beach's Potomac River swimming waters**. No clear source of the contamination is known, but the group agreed that one particular drain pipe should get further testing, particularly sampling above and below the pipe. Testing by local residents around other areas, however, has also shown high bacteria levels. Others areas of concern are some local mobile homes that remain on septic systems and a lack of knowledge about old underground pipes. The meeting was called by the DEQ's regional office in Woodbridge. Beach closures or advisories have been posted at Fairview Beach frequently in recent years due to water-sample bacteria levels exceeding state water-quality standards. For background on bacteria problems at Fairview Beach, please see the first item below under Water Quality. ([River bacteria remains mystery](#), *Fredericksburg Free Lance-Star*, 9/20/12)



The Potomac River (viewed looking downstream) at Fairview Beach, Virginia, 8/12/11.

●As part of a process to **upgrade Front Royal's wastewater treatment plant**, the Warren County town is considering processes that would convert its the solids remaining after treatment from Class B biosolids to Class A biosolids. Class B biosolids are land-applied in many Virginia localities, but the applications are subject to various restrictions, because Class B biosolids contain detectable amounts of bacteria or other pathogens. Class A biosolids do not, so they may be applied without the same restrictions. A heating process for the conversion would be a “multi-million dollar investment,” according to the town’s manager. Instead, Front Royal resident Jerry Scholder has asked the town to consider generating Class A biosolids through a **vermiculture system**, in which worms are used to digest organic material in biosolids, which are then dried to kill the worms and any microorganisms. As of mid-October, town officials had asked Mr. Scholder to present a proposal. ([Worms work magic: Proposal would look to worms to turn waste into nontoxic fertilizer](#), *Northern Virginia Daily*, 10/14/12. For an introduction to biosolids, please see “The Widespread Issue of Spreading Biosolids,” *Virginia Water Central*, Aug. 2005, online at www.vwrrc.vt.edu/watercentral.html; please note: this article was written prior to Virginia's switch [in 2008] of biosolids regulation from the Department of Health to the Department of Environmental Quality.)

Water Quality

●In June, the Natural Resources Defense Council (NRDC) released the 2012 edition of *Testing the Waters: A Guide to Water Quality at Vacation Beaches*, (available online at <http://www.nrdc.org/water/oceans/ttw/>; the Virginia state summary is online at <http://www.nrdc.org/water/oceans/ttw/va.asp?loc=Virginia>). The 2012 report covers conditions in 2011 at 3591 beaches or beach segments—in 30 states—at which water quality is monitored at least once a week and reported to public agencies. The report identifies beach closings, advisories, and reasons for closings by state. Nationally, the report documented 23,481 days of closings and advisories in 2011, a decrease from the 24,091 days in 2010 (the 2010 total was the second-highest in the 21 years of NRDC reports) but still higher than the 2009 total of 18,682 days (for 3,333 monitored beaches during that year). Seventeen Virginia beaches—out of 47 monitored—posted at least one closing or advisory in 2011. Collectively, the Virginia beaches posted closings or advisories on 69 days in 2011, compared to 81 days in 2010, 51 days in 2009, 29 days in 2008, 50 days in 2007, 43 days in 2006, and 42 days in 2005.

Besides closings/advisories, another focus of the report is the number of **beach samples that exceed state standards for bacteria**. In Virginia, four percent of monitoring samples in 2011 did not meet bacterial standards, compared to six percent in 2010, three percent in 2009, two percent in 2008, and one percent in 2006 and 2007. The nationwide exceedance rate in 2011 was eight percent, the same as in 2010; the rate was seven percent from 2006-2009. Five states (Delaware, New Hampshire, North Carolina, New Jersey, and Florida) had a lower (better) percentage than Virginia, and Hawaii tied the Commonwealth at four percent. At 32 Virginia beaches, all samples in 2011 met bacterial standards (0 percent exceedance rate). The Virginia beaches with the highest rates of samples exceeding bacteria standards were Fairview Beach in King George County (33 percent), Hilton Beach in Newport News (30 percent), Huntington Beach in Newport News (25 percent), Anderson’s Beach in Newport News (20 percent), and King/Lincoln Park in Newport News (11 percent). A notable improvement was Festival Beach in Mathews County at 0 percent in 2011 compared to 38 percent in 2010. For a previous *Water Central* item on this annual report, please see the August 2010 issue, p.15.

●On September 11, **Gerald McCarthy announced that he will retire in 2013 as the executive director of the Virginia Environment Endowment (VEE)**. The VEE was started in 1977 with \$8 million of the \$13.2 million assessed on Allied Chemical Corporation for pollution of the James River with the pesticide Kepone from the company’s Hopewell plant. Since then, the VEE has awarded about \$27 million in over 1200 grants for environmental education, scientific research, organization or growth of environmental groups, and other activities to “...encourage all sectors to work together to prevent pollution, conserve natural resources, and promote environmental literacy,” according to the organization’s mission statement. Mr. McCarthy has been the only executive director in VEE’s history. More information about the VEE, which is located in Richmond, is available online at <http://www.vee.org/>. ([Virginia environmental leader to retire](#), *Richmond Times-Dispatch*, 9/12/12)

Water Supply and Conservation

●On June 19, 2012, Gov. McDonnell’s office announced that \$6.2 million in Community Development Block Grants (CDBG) has been awarded to nine Virginia localities for infrastructure, economic development, and health care projects. The water-related grants include the \$887,000 for the Exeter water-line replacement in the **Town of Appalachia (Wise County)**; \$1,000,000 for Phase IIIB of the Hurley Regional Water Project in

Buchanan County; \$720,000 for the Drytown Sewer Project in the **Town of Tazewell (Tazewell County)**; and \$356,800 for the Mendota Water System Improvements in **Washington County**. CDBG grants are federally funded, awarded competitively (12 out of 30 proposals received funding in the current cycle), administered by the Virginia Department of Housing and Community Development, and designed to assist primarily low- and moderate-income communities. ([Governor McDonnell Announces More Than \\$6.2 Million in Community Development Block Grant Funding](#), Virginia Governor's Office News Release, 6/19/12)

•As of mid-July, Henrico County was working to acquire the 1500 acres needed for the planned **Cobbs Creek Reservoir project in Cumberland County**. The \$280-million project, which will use James River water, is the result of a 2010 agreement among Cumberland, Henrico, and Powhatan County. Under the agreement, Henrico will own the reservoir and will pay Cumberland (which originally started the reservoir planning and asked Henrico and Powhatan to be partners) \$1.55 million for previously incurred design costs and \$56.6 million over 50 years in lieu of property taxes, while Cumberland and Powhatan will buy water from Henrico. As of late July, Powhatan County had not yet signed a memorandum of understanding that would constitute formal agreement to the arrangement; three county supervisors elected in 2011 and a county administrator appointed in 2012 all wished to review the 2010 agreement. Construction of the 1,110-acre reservoir (with 400 acres of land around it)—to be formed by two dams—is expected to be completed in 2019, with two more years needed to fill it with water pumped from the James River. When operational, the reservoir will be allowed to release up to 100 million gallons a day (MGD), with 30 MGD allocated to Henrico, 10 MGD to Powhatan, 7 MGD to Cumberland, and 53 MGD for water-flow needs in the James. ([New reservoir a decade away for Henrico, but work is fast-paced](#), *Richmond Times-Dispatch*, 7/15/12; and [Powhatan's partnership in regional reservoir isn't official yet](#), *Richmond Times-Dispatch*, 7/23/12)

Weather

(For Hurricane Sandy items please see the special section that follows the News items.)

•Hurricane Sandy was the biggest tropical storm story of 2012, but it certainly wasn't the only one. On December 1, 2012, the National Hurricane Center in Miami, Florida, published a **summary of the entire Atlantic tropical storm season (June 1-November 30)**. As in 2011, 19 named tropical storms and 10 hurricanes occurred, above the annual average of 12 named storms and six hurricanes seen during the 30-year period 1981-2010. Only one "major" hurricane (Category 3 or above) occurred in 2012—Hurricane Michael in early September—and this was below the annual average of three for the 30-year period. The report also noted that the "accumulated cyclone energy" for 2011—combining strength and duration of storms—was about 40 percent above the 1981-2010 median.

Here is the Hurricane Center's **list of all tropical storms during the 2012 Atlantic season** (H = hurricane; MH = major hurricane; TD = tropical depression; TS = tropical storm):

Name	Dates	Maximum Wind Speed (mph)
TS Alberto	May 19-22	60
TS Beryl	May 26-30	70
H Chris	Jun. 19-22	75
TS Debby	Jun. 23-27	60
H Ernesto	Aug. 1-10	85
TS Florence	Aug. 4-6	60
H Gordon	Aug. 15-20	110
TS Helene	Aug. 9-18	45
H Isaac	Aug. 21-Sep. 1	80
TS Joyce	Aug. 22-24	40
H Kirk	Aug. 28-Sep. 2	105
H Leslie	Aug. 30-Sep. 11	75
MH Michael	Sep. 3-11	115
H Nadine	Sep. 11-Oct. 4	90
TS Oscar	Oct. 3-5	50
TS Patty	Oct. 11-13	45
H Rafael	Oct. 12-17	90
H Sandy	Oct. 22-29	110
TS Tony	Oct. 22-25	50

When completed, reports on individual 2012 storms (including tracks) will be available online at <http://www.nhc.noaa.gov/2012atlan.shtml>.

As part of its November 29 news release on the 2012 tropical storm season, the National Oceanic and Atmospheric Administration (NOAA) posted a **composite video** (4 minutes/ 28 seconds) showing satellite views of the entire 2012 tropical storm season. Labels of named storms appear as the storms take shape, and the passing months are indicated. The “You Tube” Web address of the video is <http://www.youtube.com/watch?v=dmLYjs0kwnc&feature=youtu.be>. It’s worth watching!

(Sources: National Hurricane Center, “Monthly Atlantic Tropical Weather Summary”, <http://www.nhc.noaa.gov/index.shtml>, 12/7/12; and [Busy 2012 hurricane season continues decades-long high activity era in the Atlantic](#), National Oceanic and Atmospheric Administration (NOAA) News Release, 11/29/12.)



Hurricane Isaac in the Gulf of Mexico, approaching landfall, 8/28/12, 2:45 p.m. EDT. Photo taken from the National Oceanic and Atmospheric Administration Web site at <http://www.goes.noaa.gov/browse.html>, on 8/28/12, 3:25 p.m. EDT.

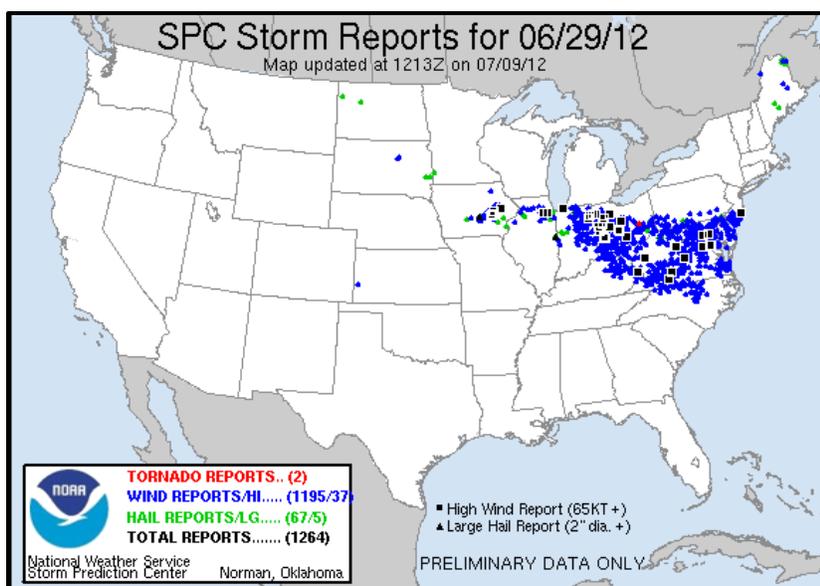
● **May 14-15 brought widespread heavy rain to parts of Virginia.** According to data available on May 15 at the Web site of the [Community Collaborative Rain, Hail, and Snow Network](http://www.cocorahs.org/state.aspx?state=va) or CoCoRaHS (<http://www.cocorahs.org/state.aspx?state=va>), the highest rainfall amounts reported for the previous 24 hours, approximately, as of the early morning of May 15th were as follows:

- 7.7 inches in Boones Mill (Franklin County);
- 5.4 inches in Moneta (Bedford County);
- 4.9 inches in Hardy (Franklin County);
- 4.5 inches in Rocky Mount (Franklin County);
- 3.0 inches in Union Hall (Franklin County);
- 2.4 inches in city of Buena Vista.

Many other locations reported amounts between 1 and 2 inches.

● **Severe weather on June 1 brought several reports of tornadoes and many reports of hail** in Virginia, Maryland, and North Carolina, according to the National Weather Service/Storm Prediction Center’s report for that day (online at <http://www.spc.noaa.gov/exper/archive/event.php?date=20120601>). As of June 4, Virginia officials reported that about 500 homes had been damaged, but only minor injuries were reported, by an EF0 tornado that struck Petersburg and an EF1 tornado that struck Hampton. ([Officials Visit Storm Damage in Cities of Hampton and Petersburg](#), Virginia Governor’s Office News Release, 6/4/12)

● **The June 29, 2012, derecho in Virginia and other states**, followed by June 30-July 1 hail and thunderstorms, resulted in 15 deaths in the Commonwealth, knocked out power for hundreds of thousands of customers, damaged properties, blocked roads, affected water systems, and affected communications systems. The map below from the NWS Storm Prediction Center shows the large number and concentration of high-wind reports from June 29.



The National Weather Service's Storm Prediction Center map of preliminary storm reports for June 29, 2012; accessed at http://www.spc.noaa.gov/climo/reports/120629_rpts.html on 12/14/12.

The water-related impacts in Virginia included loss of well-pumping capacity by many rural residents, public waterworks losing power and unable to provide adequately treated water (requiring boil-water notices), and wastewater-treatment plants losing power and unable to treat wastewater fully. Following are two sample headlines from early July: "James River showing few adverse signs from Lynchburg sewage spill," *Lynchburg News & Advance*, 7/4/12; and "Water shipment delayed as thousands still lack A/C," *Charlottesville Daily Progress*, 7/1/12. Daily situation reports from the Virginia Department of Emergency Management included lists of public water suppliers or wastewater treatment systems affected; those reports are available online at <http://virginiaderecho.tumblr.com/>.

On July 27 the Federal Emergency Management Agency (FEMA) approved Virginia's request for federal disaster assistance towards 62 localities' response to the derecho and the June 30-July 1 severe storms. On July 20, Gov. McDonnell had requested assistance for reimbursement to localities and for hazard mitigation in the wake of these severe weather events. The request was to FEMA's Public Assistance for storm-response costs in the following localities: Albemarle, Alleghany, Amelia, Amherst, Appomattox, Arlington, Augusta, Bath, Bedford, Bland, Botetourt, Buckingham, Campbell, Carroll, Charlotte, Clarke, Craig, Culpeper, Cumberland, Dinwiddie, Fauquier, Floyd, Fluvanna, Frederick, Giles, Greene, Halifax, Highland, Louisa, Lunenburg, Madison, Nelson, New Kent, Nottoway, Orange, Page, Pittsylvania, Powhatan, Prince Edward, Pulaski, Rappahannock, Roanoke, Rockbridge, Rockingham, Shenandoah, Tazewell and Warren and the cities of Bedford, Charlottesville, Covington, Danville, Fairfax, Fredericksburg, Lexington, Lynchburg, Manassas Park, Martinsville, Radford, Roanoke, Salem, Staunton and Winchester. ([FEMA approves Governor McDonnell's request for federal disaster assistance in the wake of June 29-July 1 storms](#); Virginia Governor's Office News Release, 7/27/12; and [Governor McDonnell Requests Federal Disaster Assistance for June 29-July 1 storms](#), Virginia Governor's Office News Release, 7/23/12)

•As if the severe weather from June 29-July 1 weren't enough, the **approach of a cold front on July 8 brought additional severe storms, damage, and power outages**. The NWS Storm Prediction Center map of preliminary storm reports for that day is online at http://www.spc.noaa.gov/climo/reports/120708_rpts.html. ([Governor Issues Update on Tonight's Severe Weather](#), Virginia Governor's Office News Release, 7/8/12)

Wetlands

•According to the July 2012 e-newsletter from the Center for Coastal Resources Management (CCRM) at the Virginia Institute of Marine Science, "July 1, 2012, marked the **40th anniversary of the Virginia Tidal Wetlands Act**, which recognized the environmental value of tidal wetlands; established a permitting system for their protection; and authorized a network of local wetlands boards to make decisions on development projects within individual localities." You can sign up for the CCRM e-newsletter at <http://www.ccrm.vims.edu/>. Information about federal and state wetlands laws and regulations in Virginia is available at the Virginia DEQ's

Web site at <http://www.deq.state.va.us/Programs/Water/WetlandsStreams.aspx>. The Virginia Tidal Wetlands Act of 1972 is codified in Title 28.2, Chapter 13 of the *Virginia Code*, online at <http://leg1.state.va.us/cgi-bin/legp504.exe?000+cod+TOC2802000>.

- As of the end of October 2012, the U.S. Army Corps of Engineers was asserting that **potential wetlands impacts would prevent the Corps from granting a permit for the Virginia Department of Transportation's (VDOT) preferred alternative for an expansion of U.S. 460 in southeastern Virginia**, between Suffolk and Petersburg. VDOT proposes to build a new 55-mile road paralleling the existing 460. The Corps has asserted that a preferred option would be to expand and add urban by-passes to the existing 460 corridor. Under the federal Clean Water Act, the Corps has permitting jurisdiction over projects that affect wetlands considered part of the "waters of the United States." According to a VDOT statement in October, the state agency and the Corps were in an "open dialogue" over the issue. According to the Corps' Norfolk District, VDOT had not yet submitted a permit application and the two agencies had been trying for several months to solve the matter. ([U.S. 460 plan hits speed bump over wetlands](#), *Virginian-Pilot*, 10/31/12; and [Route 460 road project to rely on public bonds](#), *Virginian-Pilot*, 10/10/12)

Out of Virginia

- As of May in the **Pennsylvania community of Allenwood**, near Williamsport and the West Branch of the Susquehanna River, a **nutrient-credit pilot project was underway**. A \$280,000 grant from the National Fish and Wildlife Foundation grant was being used to restore about 500 feet of a stream to reduce erosion and nutrient-runoff from an adjacent golf course. The project is being evaluated by Pennsylvania for the process of generating marketable nutrient credits that would be available for sale to a nutrient-discharger, such as a wastewater-treatment plant. Calculations of credits generated in the Allenwood project will be used by the state Department of Environmental Protection for determining how many credits similar projects could generate. ([Charting a course with nutrient credits](#), *Williamsport Sun-Gazette*, 5/9/12)

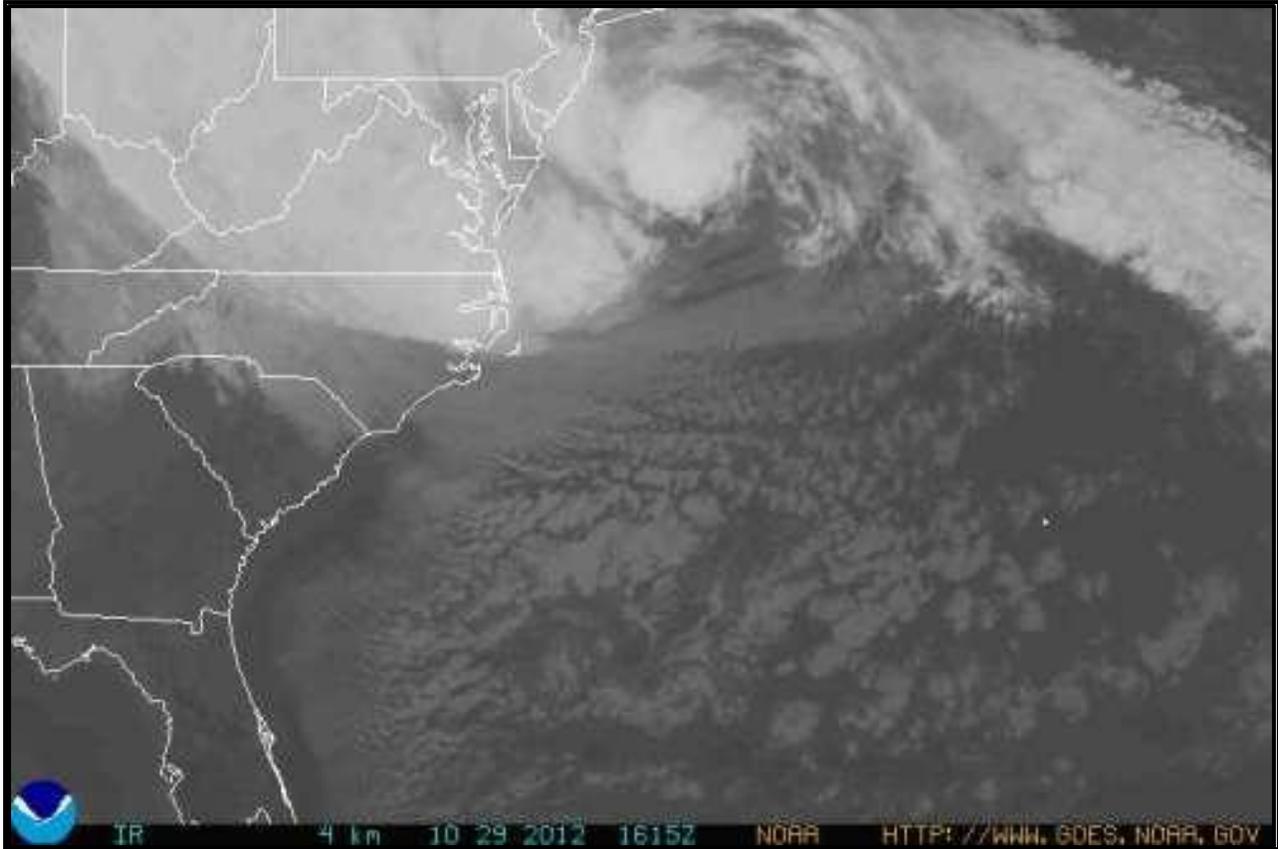
- In summer 2012, **Howard County, Maryland** (located southwest of Baltimore), began a **collaboration to employ 40 area young people to learn about and build stormwater-reduction facilities** for roofs, parking lots, and other impervious surfaces on private properties in the county. Groups assisting in the "Restoring the Environment and Developing Youth" (READY) program include the non-profit organization People Acting Together in Howard (PATH), the Alliance for the Chesapeake Bay, Maryland Sea Grant, the Center for Watershed Protection (headquartered in the Howard County seat of Ellicott City, with an office in Charlottesville, Va.), and the Parks and People Foundation. ([Howard County Establishes Partnership to Create Green Summer Jobs for Young Adults](#), Howard County News Release, 5/2/12).

- On July 24 arguments were heard in the **State of New York's lawsuit seeking a federal environmental impact analysis of the potential water-resources impacts of hydraulic fracturing** for natural gas extraction. New York filed the suit in May 2011 in the U.S. District Court for the Eastern District of New York (Brooklyn). The July 24 arguments addressed whether the Delaware River Basin Commission is a federal agency and therefore can be sued in federal court (the Commission is responsible for water-related natural-gas extraction regulations in the Delaware Basin, located in New York, Delaware, New Jersey, and Pennsylvania); whether any injury has in fact occurred hydraulic fracturing; and whether such a lawsuit can be brought before the Commission issues any regulations. The court was also considering the standing of several energy trade groups seeking to intervene in the suit. The case is *New York v. U.S. Army Corps of Engineers*, 11- cv-2599. ([U.S. Says New York State Can't Sue Over Fracking Regulations](#), *Bloomberg News*, 7/24/12)

- A **September rock concert** is one way the town of **Williamsport, Maryland**, hopes to find **money to pay for stormwater improvements** and other tasks needed to comply with the Chesapeake Bay Total Maximum Daily Load (TMDL). The Washington County town, which is located on the Potomac River, estimates it will have to pay about \$1.1 million over the next 13 years to meet obligations under Maryland's Bay TMDL Watershed Implementation Plan. The town hoped to raise as much as \$70,000 from the concert. ([Rockin' at River Bottom concert event to raise funds for water quality upgrade](#), *Hagerstown Herald-Mail*, 9/12/12)

SPECIAL NEWS SECTION

Hurricane Sandy Recap

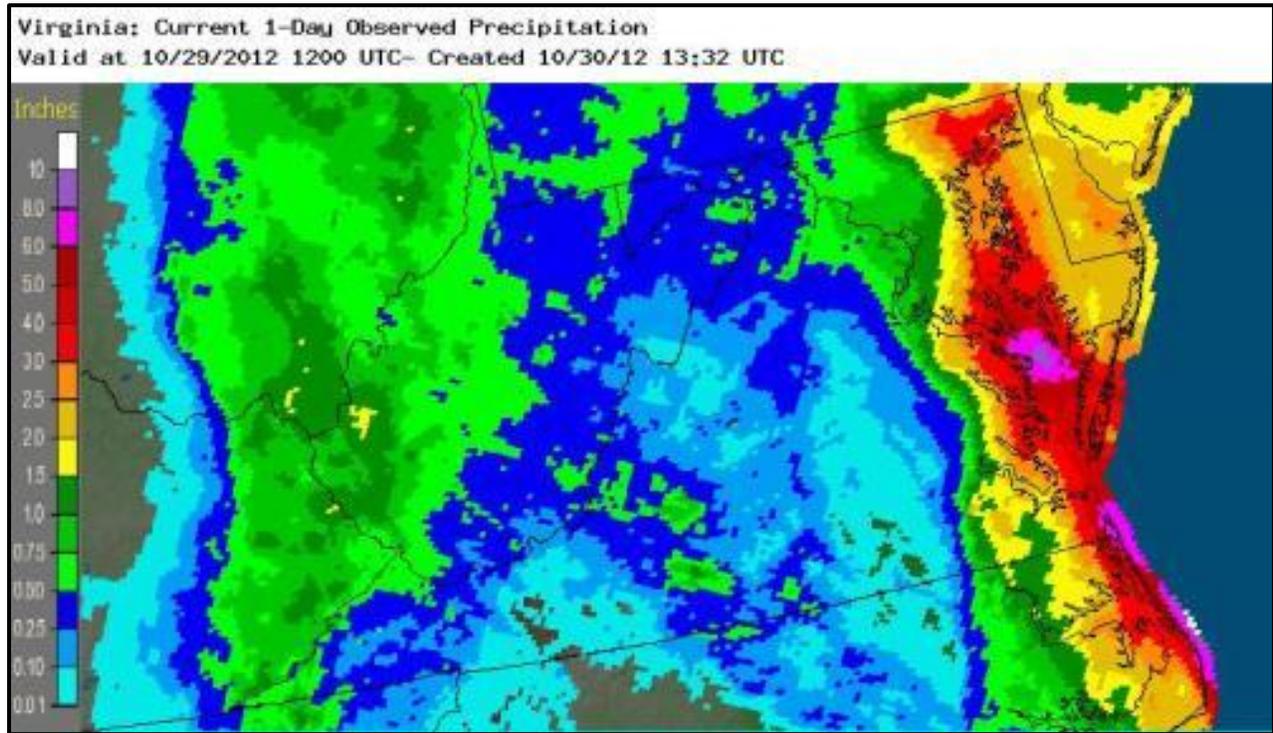


Hurricane Sandy, 12:15 p.m. EDT, 10/29/12; Photo from NOAA Web site
<http://www.goes.noaa.gov/browse.html>, accessed 10/29/12, 1:20 p.m.

•Here are the **highest wind gusts** recorded on October 29-30, 2012, at various Virginia locations, according to National Weather Service (NWS) information available on 10/30/12 at the following NWS forecast office Web sites: Blacksburg, Va., <http://www.erh.noaa.gov/er/rnk/>; Morristown, Tenn., <http://www.srh.noaa.gov/mrx/>; Baltimore-Washington, <http://www.erh.noaa.gov/er/lwx/>; and Wakefield, Va., <http://www.erh.noaa.gov/er/akq/>.

Abingdon	26 mph	10/29, approx. 9 p.m.
Accomack County	62 mph	10/29, approx. 2:30 p.m.
Blacksburg	45 mph	10/29, approx. 11 p.m.
Charlottesville	40 mph	10/29, approx. 9 p.m.
Danville	40 mph	10/30, approx. 4 a.m.
Dulles Airport (Loudoun County)	54 mph	10/29, approx. 10 p.m.
Fredericksburg	41 mph	10/29, approx. 6 p.m.
Newport News	47 mph	10/29, approx. 7 p.m.
Norfolk	52 mph	10/28, approx. 2 p.m.
Richmond	38 mph	10/29, approx. 7 p.m.
Roanoke	60 mph	10/29, approx. 9 p.m.
Virginia Beach	49 mph	10/28, approx. 8 p.m.
Winchester	53 mph	10/29, several times between 6 p.m. and 8 p.m.
Wise	37 mph	10/30, approx. 2 a.m.
Wytheville	30 mph	10/29, approx. 6:15 a.m.

●Below is a **color-coded map of precipitation (rain and snow) amounts** in Virginia and nearby areas on October 29, 2012. The map was accessed at the National Weather Service/Advanced Hydrologic Prediction Service Web site at <http://water.weather.gov/precip/>. (At that site, you can view precipitation for given states and time periods.)



●On October 29, 2012, the **Virginia Department of Health (VDH) closed various coastal and tidal waters to shellfishing** because of the threat of contamination from floodwaters. On November 1 the VDH reopened parts of the lower Rappahannock River, the lower York River, and Mobjack Bay. On November 8, the VDH lifted restrictions on the Poquoson River, Back River, and a portion of the upper James River. Parts of the lower James were reopened on November 15, while other parts of the lower James, the Lynnhaven River, and the Nansemond River remained closed until November 18. The VDH's "Shellfish Sanitation" Web page is <http://www.vdh.virginia.gov/EnvironmentalHealth/Shellfish/index.htm>. ([Some Va. waters to be opened to shellfish harvesting](#), *Virginian-Pilot*, 10/31/12; [Virginia Department of Health Opens the Poquoson River, Back River, and a Portion of the Upper James River to Shellfish Harvesting](#), VDH News Release, 11/8/12; [Portion of lower James re-opening to shellfishing](#), Associated Press, as published in *Virginian-Pilot*, 11/15/12)

●According to the *Richmond Times-Dispatch*, **Tangier Island** in the Chesapeake Bay was "lashed" and "ravaged" by Hurricane Sandy, but almost all of its approximately 500 residents sheltered in place during the storm, which flooded streets and homes. Tangier Island, about three miles long, is part of Virginia's Accomack County and is home to about 500 people, including some 125 commercial watermen. During an October 31 visit by Governor McDonnell to view Sandy's damage, island residents pressed their case for state and federal assistance in constructing a series of breakwaters on the island's eastern (Atlantic) side. (A rock jetty was built on the western side of Tangier some 20 years ago.) On November 20, Gov. McDonnell and Col. Paul Olson, commander of the Army Corps of Engineers' Norfolk District, announced a harbor-protection project for Tangier that will include building a 430-foot seawall, building a 50-foot spur jetty off the seawall, and armoring 170 feet of shoreline with stone. The project is expected to cost \$4.2 million, with the federal government to pay \$3.2 million and the Commonwealth to pay \$950,000 over the next five years (this funding was approved by the 2012 Virginia General Assembly). A two-year feasibility study of the project would cost the state an additional \$271,000 (a 50-percent share, with the Corps also contributing 50 percent); the governor is expected to request these funds from the 2013 General Assembly. Current plans are for completion of the project by 2017; the Corps is to oversee design and construction. ("On Tangier

Island, riding out Hurricane Sandy,” *Richmond Times-Dispatch*, 10/30/12; and “In the wake of Sandy, Tangier makes its case for help,” *Richmond Times-Dispatch*, 11/01/12; [Governor Bob McDonnell and Army Corps of Engineers Announce Funding for Tangier Island Seawall](#), Virginia Governor’s Office News Release, 11/20/12)

- On October 31, the U.S. Geological Survey (USGS) projected that **peak flows in Chesapeake Bay tributaries from Hurricane Sandy’s rainfall** would be significantly lower than the peaks seen after Hurricane Irene and Tropical Storm Lee in August-September 2011. The Susquehanna River’s peak flow was expected to be 155,000 cubic feet per second (cfs) on November 1, compared to the Irene/Lee peak flow of over 775,000 cfs. In the Potomac River, the peak flow was expected to be 140,000 cfs on October 31, compared to the record in 1936 of 484,000 cfs. Along with monitoring flows, federal and state natural resource officials were monitoring waters for increased levels of contaminants from the post-Sandy high flows. [River Flow into Chesapeake Bay Following Hurricane Sandy Lower than Expected](#), USGS News Release, 10/31/12; and [USGS Sampling Water for Nutrients, Sediment, and Pesticides in Hurricane Sandy’s Aftermath](#), USGS News Release, 11/1/12)

- Some **1,600 Virginia electrical workers** were sent by Dominion Virginia Power, Appalachian Power, and five electrical cooperatives to help with repairs of Hurricane Sandy damage in New York and New Jersey. Also, the Virginia Department of Emergency Management and the City of Alexandria sent two **emergency-management officials** each to New York for a two-week assignment at the New York State Emergency Operations Center. ([Governor Bob McDonnell Thanks Virginia Utilities and Emergency Crews as They Assist NY and NJ Storm Recovery](#), Virginia Governor’s Office News Release, 11/2/12)

- In Suffolk during the first week after Hurricane Sandy, **a sewage pipe believed to have been broken during the hurricane spilled about 1,000 gallons per minute of untreated wastewater into Shingle Creek**, a Nansemond River tributary (in turn, the Nansemond River flows into Hampton Roads and the Chesapeake Bay). On Thursday, November 8, HRSD completed a by-pass of the broken section, which stopped the spill and allowed repair to begin on the break. HRSD estimated on that day that 18.3 million gallons of sewage were spilled during the leak but asserted that there had been no impacts on drinking water. One of HRSD’s responses to the spill was to activate on November 13 equipment that pulls water from Shingle Creek and adds oxygen to the water before returning it to the stream. (Excess organic material in spilled wastewater results in increased bacterial decomposition, which removes dissolved oxygen from water.) [Broken pipe still spilling sewage into Suffolk creek](#), *Virginian Pilot*, 11/6/12; [Workers stop massive sewage spill into Suffolk creek](#), *Virginian-Pilot*, 11/9/12; and [HRSD to pump oxygen into creek](#), *Suffolk News-Herald*, 11/13/12)

- 9) On November 26, Gov. McDonnell announced that the Federal Emergency Management Agency (FEMA) granted the Commonwealth’s request for **federal disaster relief for impacts from Hurricane Sandy in 28 localities**. The approval is for **Public Assistance Program funds** that reimburse state and local governments for disaster response and recovery costs. The localities included are the counties of Accomack, Arlington, Clarke, Craig, Culpeper, Essex, Fauquier, Frederick, Greene, Highland, King and Queen, Lancaster, Loudoun, Madison, Mathews, Middlesex, Nelson, Northampton, Northumberland, Prince William, Rappahannock, Shenandoah, Surry, Warren, and Westmoreland; and the cities of Fairfax, Falls Church, and Manassas. Then, on December 7, the governor’s office announced that the **U.S. Small Business Administration (SBA) will make low-interest loans** available to Eastern Shore homeowners, renters, and businesses that were affected by Hurricane Sandy. (FEMA denied the Commonwealth’s request for Individual Assistance funds.) According to the governor’s office’s news release, the SBA approval means the following: “loans up to \$200,000 are available to homeowners to repair or replace damaged or destroyed real estate; both homeowners and renters are eligible for loans up to \$40,000 to repair or replace damaged or destroyed personal property; and businesses and nonprofit organizations of any size may borrow up to \$2 million to repair or replace damaged or destroyed real estate, machinery and equipment, inventory and other business assets.” ([Federal Disaster Assistance Approved to Aid State and Local Governments with Recovery Costs from Hurricane Sandy](#), Virginia Governor’s Office News Release, 11/26/12; and [Governor McDonnell Announces Low-Interest Disaster Recovery Loans for Eastern Shore](#), Virginia Governor’s Office News Release, 12/7/12)

VIRGINIA WATER STATUS REPORT

This section of Water Central presents recent and historical data on Virginia's precipitation, groundwater levels, stream flow, and occurrence of drought conditions.

Precipitation in Virginia, December 2011-November 2012

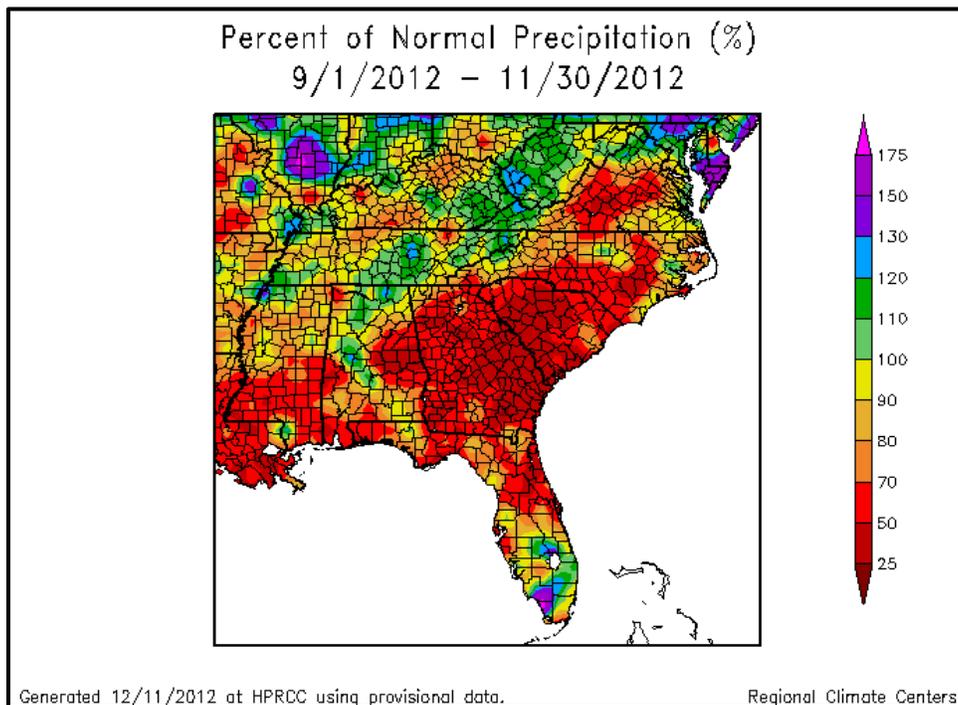
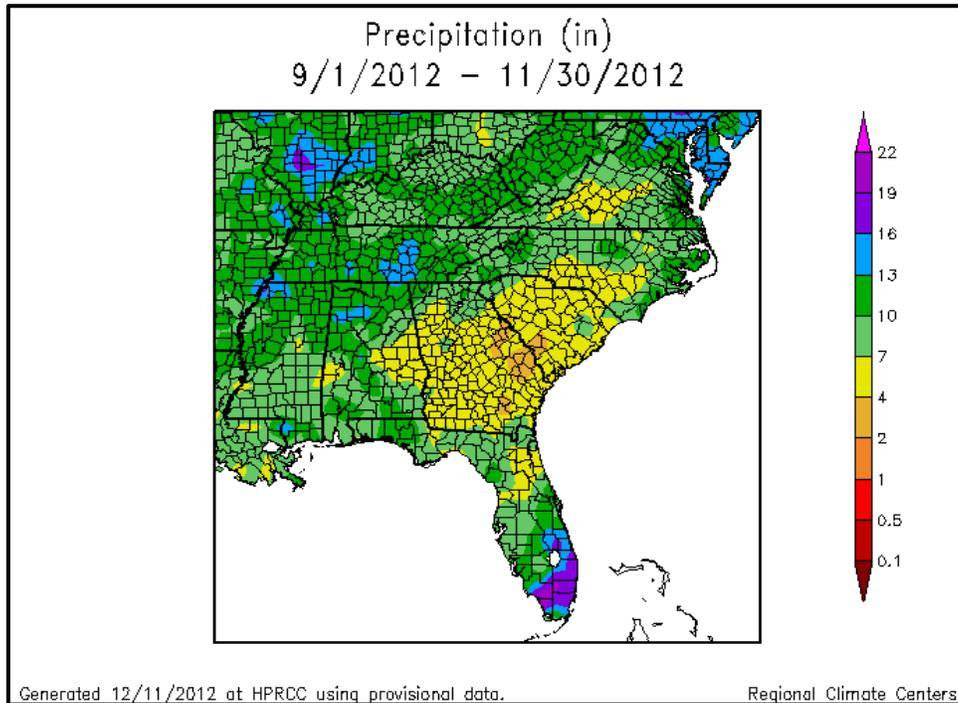
The chart below shows precipitation (in inches) over the last 12 months at nine National Weather Service (NWS) observation sites in or near Virginia. The numbers in the rows marked "O" are **observed precipitation** for the respective site and month (with yearly total at the bottom of the chart), including the equivalent amount of water contained in any snowfall or other frozen precipitation. These values were found at the "Climate" sections of NWS Web sites, as follows: www.weather.gov/climate/index.php?wfo=mrx for the Tri-cities Airport in Tennessee, about 20 miles from Bristol, Va.; www.weather.gov/climate/index.php?wfo=rnk, for Blacksburg, Danville, Lynchburg, and Roanoke; www.weather.gov/climate/index.php?wfo=lxw, for Washington-Dulles; and <http://mi.nws.noaa.gov/climate/index.php?wfo=akq>, for Norfolk, Richmond, and Wallops Island. The number in the rows marked "N" (in red) are the **normal** (average) **precipitation** for the locality and month, from 1981-2010 records that were released from the National Climatic Data Center (NCDC) in 2011 (<http://www.ncdc.noaa.gov/oa/climate/normals/usnormals.html>). The amounts listed here are classified by the NWS as *provisional* data and are subject to revision; the NCDC maintains any edited and *certified* data that are available.

	Bristol (Tri-Cities Airport)	Blacks- burg (VT Airport)	Danville (Station #37)	Lynchburg (Regional Airport)	Norfolk (Internat. Airport)	Richmond (Byrd Intern. Airport)	Roanoke (Woodrum Airport)	Wash.- Dulles Airport	Wallops Island
Dec11 O	4.10	3.62	2.19	4.61	1.56	2.03	4.19	4.46	1.12
Dec N	3.37	2.95	3.27	3.24	3.26	3.26	2.94	2.96	3.43
Jan12 O	4.60	2.09	1.99	2.22	1.80	1.73	1.69	1.85	2.12
Jan N	3.37	3.08	3.42	3.14	3.40	3.04	2.92	2.68	3.04
Feb12 O	3.71	3.52	2.12	2.61	2.67	3.22	2.21	2.24	4.54
Feb N	3.45	2.81	3.01	2.93	3.12	2.76	2.89	2.74	2.76
Mar12 O	2.58	3.84	3.55	5.78	2.62	2.51	3.52	1.52	2.18
Mar N	3.44	3.64	4.11	3.58	3.68	4.04	3.46	3.38	4.00
Apr12 O	3.83	4.81	2.76	2.44	2.95	2.40	3.04	1.82	3.78
Apr N	3.33	3.48	3.46	3.31	3.41	3.27	3.37	3.47	3.07
May12 O	2.07	3.77	2.12	2.36	6.43	2.45	4.03	5.38	3.64
May N	3.80	4.33	3.88	3.73	3.41	3.78	4.06	4.55	2.90
Jun12 O	1.20	2.96	3.53	1.71	5.27	4.27	3.25	1.79	2.72
Jun N	3.90	4.00	3.85	3.62	4.26	3.93	3.83	3.98	3.29
Jul12 O	12.70*	3.87	2.57	2.73	4.81	5.29	3.14	2.43	3.46
Jul N	4.69	4.26	4.59	4.36	5.14	4.51	4.04	3.67	4.09
Aug12 O	1.96	2.86	1.47	2.70	6.13	3.50	3.94	3.02	5.97
Aug N	3.47	3.59	3.97	3.26	5.52	4.66	3.56	3.53	4.19
Sep12 O	6.01	3.60	3.87	2.35	1.27	4.05	3.60	2.71	5.76
Sep N	2.99	3.10	3.96	3.88	4.76	4.13	3.89	3.92	3.98
Oct 12 O	2.95	1.72	1.92	1.68	8.98	4.00	1.30	8.87	10.40
Oct N	2.10	2.78	3.53	3.11	3.42	2.98	2.89	3.25	3.17
Nov12 O	0.54	1.08	0.48	0.61	0.94	0.27	0.61	1.12	0.56
Nov N	3.10	2.87	3.36	3.41	3.15	3.24	3.40	3.41	2.87
TOTAL O	46.25	37.74	28.57	31.80	45.43	35.72	34.52	37.21	46.25
TOTAL N	41.01	40.89	44.41	41.57	46.53	43.60	41.25	43.04	40.79

* Record high for month.

Precipitation, continued: Regional Precipitation September-November 2012

For a more visual presentation over a wider area, the two graphs below show the total precipitation (in inches; top graph) for September 1-November 30, 2012, and the departure from normal (in percentage of normal; bottom graph) over that period. *These data are provisional.* These graphs were taken from the National Oceanic and Atmospheric Administration's (NOAA) **Southeast Regional Climate Center**, located at the University of North Carolina in Chapel Hill, accessed online at http://www.sercc.com/climateinfo/precip_maps, 12/19/12.



More Virginia climate information and data are available from the **University of Virginia Climatology Office**, online at <http://climate.virginia.edu>. To contact the office in Charlottesville, phone (434) 924-0548 or send e-mail to climate@virginia.edu.

Groundwater Levels at Selected Virginia Wells, Mid-December 2012

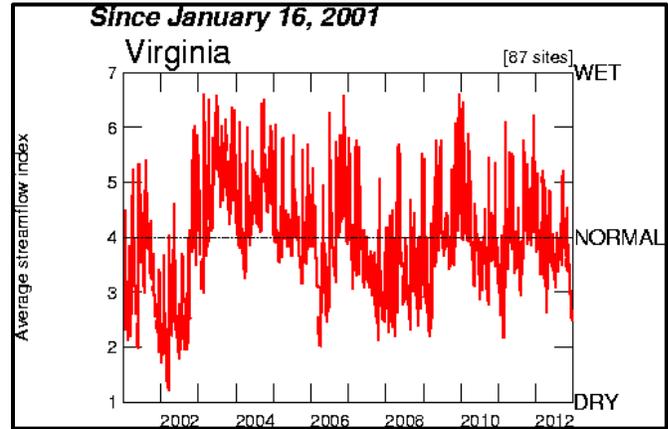
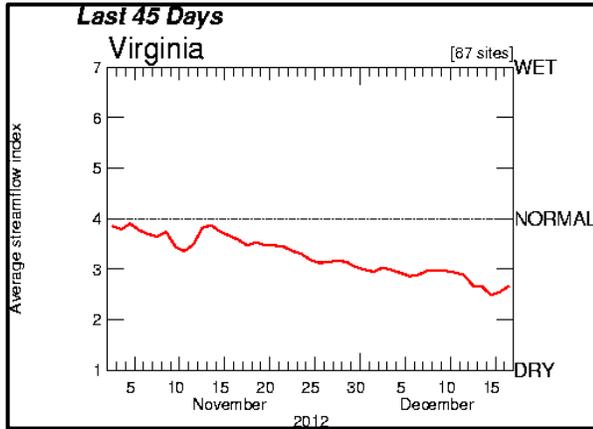
(Please note: The Web site for the Virginia Active Water Level Network, maintained by U.S. Geological Survey and found online at <http://groundwaterwatch.usgs.gov/StateMaps/VA.html>, is normally used for this section of *Virginia Water Center*, but that Web site was unavailable at the time of this writing. As a result, monthly median values normally shown in this section's table were not available.)

As of December 19, 2012, the U.S. Geological Survey (USGS) National Water Information Service, online at <http://waterdata.usgs.gov/nwis/current/?type=gw>, provided real-time groundwater-level readings for 123 Virginia wells. The table below shows the December 19 readings at about 10 a.m. EST from real-time wells in 19 localities. These readings are *provisional* (i.e., subject to revision). All measurements are in **feet below the land surface**, rounded (by *Virginia Water Central*) to the nearest 0.1 foot; **a smaller value means wetter conditions, while a larger value means drier conditions**. The table also shows levels reported in previous issues of *Water Central*, plus the deepest (driest) level, and the shallowest (wettest) level for each well's period of record. Historical information on groundwater is also available from USGS annual reports of groundwater, available online at <http://wdr.water.usgs.gov/> for years 2002 to 2011; for previous years, check your local library for printed copies of the reports.

Well (Local #)	12/19/12 Level	8/16/12 Level	5/22/12 Level	1/10/12 Level	Record Deepest (Driest)	Record Shallowest (Wettest)	Records Since
Accomack (66M19SOW110S)	9.2	10.1	9.1	9.6	11.3 (Nov. 1981)	6.8 (Mar. 2010)	Sep.1978
Buckingham (41H 3)	30.4	28.1	24.0	24.7	36.4 (Oct. 2002)	7.4 (Apr. 1973)	Mar. 1971
Clarke (46W 175)	38.5	40.3	39.4	37.4	45.7 (Sep. 2002)	23.5 (Sep. 2003)	Mar. 1987
Fairfax (52V 2D)	15.8	16.3	13.4	12.3	24.9 (Dec. 1998)	6.5 (Mar. 1984)	Oct. 1976
Hanover (53K 19 SOW 080)	21.2	20.1	16.3	15.7	22.9 (Aug. 1984)	5.1 (Aug. 2004)	Jan. 1978
Loudoun (49Y 1 SOW 022)	59.9	60.3	58.8	58.6	62.0 (Feb. 2008)	48.0 (June 1972)	Nov.1963
Montgomery (27F 2 SOW 019)	5.9	5.7	4.2	3.4	7.3 (Dec. 1969)	< 0.0 (Mar. 1993)	Jul. 1953
Northampton (63H 6 SOW 103A)	7.9	8.5	8.1	8.2	10.0 (Oct. 2002)	0.8 (Aug. 2004)	Sep.1977
Orange (45P 1 SOW 030)	30.7	31.3	26.4	22.3	39.0 (Aug. 2002)	11.8 (Apr. 1973)	Feb. 1965
Prince William (49V 1)	9.5	10.9	9.4	8.6	15.4 (Jul. 2011)	6.5 (Mar. 2010)	Nov.1968
Roanoke City (31G 1 SOW 008)	19.1	19.0	18.8	18.8	19.3 (Jun. 1987)	12.4 (Feb. 1986)	Aug.1966
Rockbridge (35K 1 SOW 063)	28.5	25.6	21.4	23.3	30.4 (Sep. 2002)	14.3 (Apr. 1987)	Feb. 1964
Rockingham (41Q 1)	85.7	73.5	67.6	69.9	99.0 (Oct. 2002)	57.7 (Feb. 1998)	Aug.1970
Shenandoah (40U 3 SOW 218)	14.1	13.0	14.0	14.1	16.3 (Oct. 2009)	10.6 (May 2011)	Oct. 2006
Suffolk (58B 13)	8.8	9.4	9.8	9.7	13.4 (Jan. 1981)	2.0 (Sep, 1999)	Mar. 1975
Surry (57E 13 SOW 094C)	7.5	8.1	9.2	8.2	11.3 (Sep. 2010)	3.9 (May 1980)	Jul. 1978
Virginia Beach (62B 1 SOW 098A)	1.9	2.4	1.8	2.7	12.0 (Sep. 1980)	0.8 (Nov. 2009)	Jun. 1979
Westmoreland (55P 9)	10.4	9.0	2.3	1.4 (11/5/11)	12.8 (Dec. 1988)	< 0.0 (Dec. 2009)	Jul. 1977
York (59F 74 SOW184C)	8.8	9.0	7.8	9.0	14.1 (Jan. 2002)	0.9 (Nov. 2006)	Jun. 1990

Stream Flow in Virginia: Nov.-Dec. 2012, and 2001-2012

Average Daily Stream Flow Index, Compared to the Historical Average for the Date



The graphs above, accessed 12/19/12 from the U.S. Geological Survey's (USGS) "WaterWatch" Web site, at <http://water.usgs.gov/waterwatch/?m=real&r=va> (for Virginia), compare recent Virginia stream flow to historical records.

Insert photo here The data in the graphs come from 87 sites that have at least 30 years of records. Each graph uses a "stream flow index," which measures how a site's average stream flow over 24 hours (the **average daily stream flow**) compares to the historical average stream flow for that same site and date. The graphs show a further average: the stream flow index averaged over all monitoring stations.

Index values (1-7 on the vertical axis in the graphs) mean the following:

Values indicating dry conditions:

- 1 = average daily flow is record low for that date;
- 2 = average daily flow is in the lowest 10 percent of historical values for that date;
- 3 = average daily flow is in the lowest 25 percent of historical values for that date, but exceeds the lowest 10 percent.

Value indicating "normal" flow:

- 4 = average daily flow exceeds the lowest 25 percent of historical values for that date, but is less than the highest 25 percent of values.

Values indicating wet conditions:

- 5 = average daily flow exceeds 75 of historical values for the date, but is lower than the highest 10 percent of values.
- 6 = average daily flow exceeds 90 percent of historical values for that date;
- 7 = average daily flow is record high for that date.

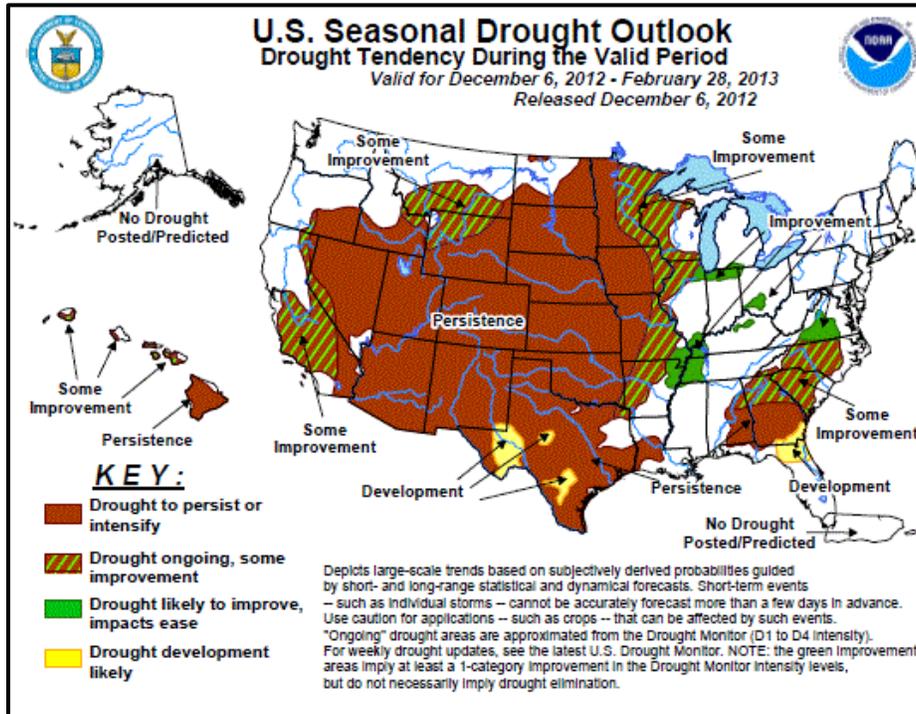
Gaps in the data: Data are not plotted for days when less than two-thirds of the sites report data (due to equipment or weather problems), because a statewide average on those days may misrepresent actual conditions.

The USGS WaterWatch site also has maps of stream flow conditions compared to historical records for current levels and for average levels over the previous 1 day, 7 days, 14 days, 28 days, and month.



Stream-gaging station on the Middle River at Mt. Meridian (Augusta County), 12/16/09.

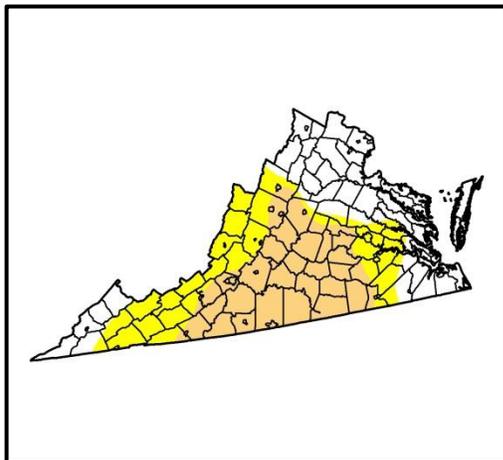
Drought Update



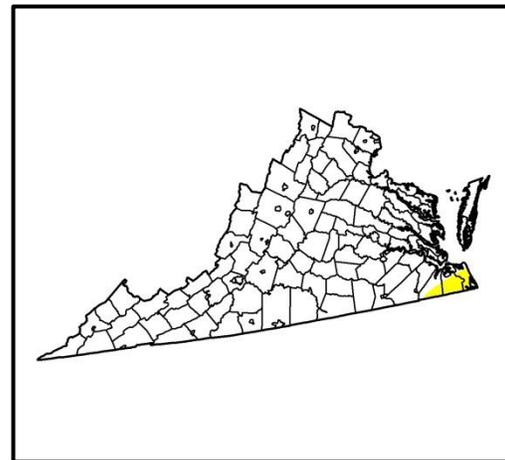
The national drought outlook for December 6, 2012—February 28, 2013, according to the National Oceanic and Atmospheric Administration (NOAA) Climate Prediction Center Web site, www.cpc.ncep.noaa.gov/products/expert_assessment/seasonal_drought.html, accessed 12/19/12.

From the U.S. Drought Monitor: Virginia Conditions Now and One Year Ago

The U.S. Drought Monitor, available online at <http://droughtmonitor.unl.edu/>, is a weekly nationwide drought assessment by federal agencies and state climatological centers. The following graphs show Drought Monitor assessments of Virginia conditions on December 11, 2012, compared to December 13, 2011.



December 11, 2012



December 13, 2011

= D0 Abnormally Dry
 = D1 Moderate Drought
 = D2 Severe Drought
 = D3 Extreme Drought
 = D4 Exceptional Drought

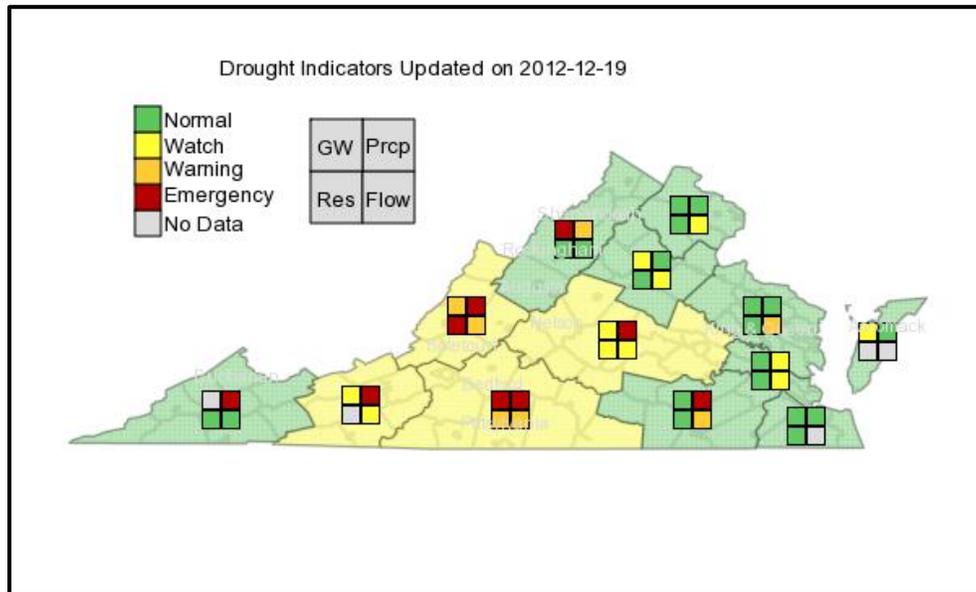
Source: Images taken from archive of U.S. Drought Monitor, <http://droughtmonitor.unl.edu/archive.html>, 12/19/12. Authors: Rick Tinker, Climate Prediction Center/NOAA, for 12/11/12 map; Matthew Rosencrans, Climate Prediction Center/NOAA, for 12/13/11 map.

The Drought Monitor also gives *percentages* of the country, of regions, and of individual states classified in the drought categories. The following table shows how much of the country and of Virginia received different Drought Monitor ratings in recent months and one year ago.

Drought Monitor Report Date	Percentage of area rated “abnormally dry” (D0) or worse	Percentage of area rated “severe drought” (D2) or worse
12/11/12	US = 69%; VA = 64%	US = 36%; VA = 0%
11/13/12	US = 65%; VA = 38%	US = 30%; VA = 0%
10/16/12	US = 68%; VA = 37%	US = 32%; VA = 0%
9/11/12	US = 71%; VA = 53%	US = 35%; VA = 0%
12/13/11	US = 36%; VA = 2%	US = 17%; VA = 0%

From the Virginia Drought Monitoring Task Force

Another look at water conditions comes from the **Virginia Drought Monitoring Task Force**, which produces a daily map rating groundwater levels, precipitation deficits, reservoir storage, and streamflow conditions across the Commonwealth. The December 19, 2012, map is shown below. In each area, a color code indicates “normal,” “watch,” “warning,” or “emergency conditions.” The current map and more information on drought status in Virginia, including current drought watch advisories, are available online at <http://www.deq.virginia.gov/Programs/Water/WaterSupplyWaterQuantity/Drought.aspx>.



Other Useful Sources of Information Online

- Va. Dept. of Forestry map of local burning restrictions: <http://www.dof.virginia.gov/fire/burn-bans.htm>.
- Va. Dept. of Environmental Quality water-conservation information: <http://www.deq.virginia.gov/Programs/PollutionPrevention/VirginiaGreen/ResourcesLinks/Water.aspx>.

Don't Forget the Water Center's Other Water Status Services!

The Water Center's online "Water Status Information" area has links to current and historical information on drought, groundwater, precipitation, stream flow, and severe weather. Find it at http://vwrrc.vt.edu/waterstatus_new.html. And the Virginia Water Central News Grouper, at <http://vawatercentralnewsgrouper.wordpress.com/>, posts a Virginia water-status update at the beginning of each month and a mid-month drought update. Click the "Weather" category for past posts.

VIRGINIA GOVERNMENT WATER ISSUES OVERVIEW

For an online list of upcoming Virginia government meetings on water-related topics, updated weekly, visit the “Quick Guide to Virginia Water-related Events,” at <http://virginiawaterevents.wordpress.com/> and click on the “Government” category (right side of page).

This section lists water issues under consideration (study or regulation) between **September 3, 2012-January 7, 2013**, by state boards, commissions, or agencies in Virginia. This list *does not necessarily include all* meetings of significance to Virginia water resources, and *does not list regular meetings* of state boards or commissions. Information in this issue is based on public meetings listed on the **Virginia Regulatory Town Hall** Web site, at <http://townhall.virginia.gov/L/meetings.cfm?time=future>. The Town Hall site posts agendas of upcoming meetings and minutes of past meetings; the site can be searched for “water” or other specific topics. Unless otherwise noted, all contact people listed in this section are Virginia state employees. **To find the e-mail address any state employee**, go online to <http://www.employeeDirectory.virginia.gov/>. You can also request state employee phone numbers by calling (800) 422-2319. All Web sites listed in this section were functional as of December 19, 2012.

Abbreviations: DCR = Dept. Conservation and Recreation; DEQ = Dept. Environmental Quality; DGIF = Dept. Game and Inland Fisheries; DMME = Dept. Mines, Minerals and Energy; DPOR = Department of Professional and Occupational Regulation; SWCB = State Water Control Board; VDH = Department of Health. “VAC” numbers indicate the *Virginia Administrative Code* section for a particular regulation; you can access and search the VAC at <http://leg1.state.va.us/cgi-bin/legp504.exe?000+men+SRR>. “NOIRA” stands for Notice of Intended Regulatory Action.

Total Maximum Daily Load (TMDL) Processes

Under the federal Clean Water, when a water body fails (with a certain frequency) to meet state water-quality standards, the water is to be designated as “impaired,” requiring development of a total maximum daily load (TMDL). A TMDL *study* identifies the pollutant source(s) causing the impairment and determines how much of the pollutant(s) the water can receive (the “load”) and still meet standards. A TMDL *implementation plan* (required by Virginia law) maps a process for reducing the pollutant load to the TMDL level. Many Virginia TMDLs are underway, each involving many public meetings. The table below lists those where public meetings were held during the period noted above. Information on the status of all TMDLs in Virginia is available online at <http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/TMDL.aspx>.

Location	Water(s) & Impairment	Larger Watershed(s)	Most Recent Meeting Date	For More Information
Accomack and Northampton counties	Bacteria impairments in the Machipongo River. Aquatic life (dissolved oxygen) and bacteria impairments in Red Bank Creek.	Chesapeake Bay	12/13/12	Jennifer Howell, DEQ
Albemarle County and City of Charlottesville	Aquatic life (benthic) impairments in the Schenks Branch, Meadow Creek, Lodge Creek, and Moores Creek.	James River	9/20/12	Tara Sieber, DEQ
Clarke County	Aquatic life (benthic) and bacteria impairments in Spout Run. Bacteria impairments in Page Brook and Roseville Run.	Shenandoah River/ Potomac River	12/5/12	Nesha McCrae, DCR

TDMLs, cont.				
Location	Water(s) & Impairment	Larger Watershed(s)	Most Recent Meeting Date	For More Information
Halifax County	Bacteria impairments in the Lower Banister River, Polecat Creek, and Sandy Creek.	Dan River/ Roanoke River	9/20/12	Heather Vereb, DCR
Halifax County	Aquatic life (dissolved oxygen) impairment in Gibson Creek. Bacteria impairments in Winn Creek and the Banister River.	Dan River/ Roanoke River	11/1/12	Paula Nash, DEQ
Rockingham County	Aquatic life (benthic) and bacteria impairments in Linville Creek.	Shenandoah River/ Potomac River	11/27/12	Nesha McCrae
Wythe County	Bacteria impairments in Cove Creek, Mill Creek, Miller Creek, Reed Creek, South Fork Reed Creek, Stony Fork, and Tate Run.	New River	9/4/12	Martha Chapman, DEQ

Other Topics

Items below are listed alphabetically by topic, followed by the agency or group coordinating state study or action and then a contact name. More information on the meetings listed is available at the Virginia Regulatory Town Hall Web site, <http://townhall.virginia.gov/L/meetings.cfm?time=future>, (organized by date, going back one year). If you are reading this online, click on the meeting dates to go directly to the Town Hall entry.

Biosolids (Treated Sewage Sludge) Land-application Permit Requests

[11/15/12](#): On the permit application by Reyc Systems to land-apply biosolids to **485 acres in Amelia County**. Contact: Seth Mullins, DEQ.

[11/26/12](#): On the permit application by Synagro Central LLC to land-apply biosolids to **5531 acres in Appomattox County**. Contact: Mark Coppage, DEQ.

[11/28/12](#): On the permit application by Synagro Central LLC to land-apply biosolids to **3492 acres in Buckingham County**. Contact: Mark Coppage, DEQ.

[12/18/12](#): On the permit application by Milton F. Trucking, Inc., to land-apply biosolids to **839 acres in Lancaster County**. Contact: Anita Tuttle, DEQ.

[12/19/12](#): On the permit application by Milton F. Trucking, Inc., to land-apply biosolids to **1677 acres in Northumberland County**. Contact: Anita Tuttle, DEQ.

Chesapeake Bay Preservation Act

[9/27/12](#): **Soil and Water Conservation Board training on Virginia Chesapeake Bay Preservation Act**. As of July 2, 2012, the Soil and Water Conservation Board assumed responsibility for local programs under Virginia's Chesapeake Bay Preservation Act. Contact: David Dowling, DCR.

Groundwater

[11/26/12](#) and [12/4/12](#): DEQ public hearings on proposed expansion of the **Eastern Virginia Ground Water Management Area** (Section 9 VAC 25-600 in the *Virginia Administrative Code*); and on proposed amendments to the **Ground Water Withdrawal Regulations** (Section 9 VAC 25-610) For more information on the management area proposal, see pages 888-891 in the 10/22/12 *Virginia Register*, available online at <http://register.dls.virginia.gov/issfiles.htm>, or the Regulatory Town Hall Web site at <http://townhall.virginia.gov/L/viewaction.cfm?actionid=2966&display=stages>. For more information on the withdrawal regulations proposal, see pages 891-923 in the 10/22/12 *Virginia Register*, or the Regulatory Town Hall Web site at <http://townhall.virginia.gov/L/viewaction.cfm?actionid=2965&display=stages>. Contact: Melissa Porterfield, DEQ.

Infrastructure Construction Funding—Wastewater Treatment

11/7/12: DEQ public meeting on the **proposed Fiscal Year 2013 Revolving Loan Fund Priority List**. This meeting considered the proposed list of recipients of loans for wastewater infrastructure or stormwater management. The list was developed from applications for projects submitted after the DEQ solicited applications on May 31, 2012. Contact: Walter Gills, DEQ.

Mined Land Reclamation

12/4/12: Dept. of Mines, Minerals and Energy (DMME) public hearing to receive comments on **proposed changes to mineral mining reclamation regulations**. The relevant section of the *Virginia Administrative Code* is 4 VAC 25-31. The public comment period ended 12/21/12. More information is available online at <http://townhall.virginia.gov/L/viewaction.cfm?actionid=3020&display=stages>. Contact: Michael Skiffington, DMME.

Renewable Energy

9/7/12: **Local Government Stakeholder Group/Renewable Energy Solar Technical Group**. The DEQ is meeting with these stakeholders to facilitate development of a model local ordinance for solar projects. Contact: Carol Wampler, DEQ.

9/13/12 and 10/11/12: **Virginia Offshore Wind Development Authority**. Contact: Evie Christopher, DMME.

12/18/12: **DEQ Local Government Outreach Group for Renewable Energy**. Contact: Carol Wampler, DEQ.

Scenic Rivers

9/19/12: **Goose Creek Scenic River Advisory Committee**. Contact: David Dowling, DCR.

Solid or Hazardous Waste Management

11/6/12: Waste Management Board/DEQ public hearing on **proposed amendments to the Voluntary Remediation Regulations**. The proposed amendments relate to remediation levels; sampling and analysis methods; improved reporting requirements; and clarification of eligibility, termination, and application requirements. The public comment period ran 9/24/12 through 11/23/12. The relevant section of the *Virginia Administrative Code* is 9 VAC 20-160. Contact: Gary Graham, DEQ.

State Water Supply Plan

10/3/12 and 12/12/12: **State Water Supply Plan Advisory Committee**. The Water Supply Plan Advisory Committee was established by the 2010 Virginia General Assembly to assist the Department of Environmental Quality in developing, revising, and implementing a state water resources plan. The bill creating the committee was SB 569; information about that bill is at the Virginia Legislative Information System Web site, at <http://leg1.state.va.us/cgi-bin/legp504.exe?101+sum+SB569>. Contact: Tammy Stephenson, DEQ.

Stormwater

9/6/12: **MS4 General Permit Advisory Panel**. The panel is assisting the Soil and Water Conservation Board in considering possible revisions of regulations for municipal separate storm sewer systems (MS4s). Contact: David Dowling, DCR.

9/13/12, 10/11/12, and 12/18/12: **Stormwater Local Government Advisory Committee**. The committee is advising the DCR on the process of developing local stormwater programs statewide under the **new stormwater management regulations by the July 1, 2014, implementation date**. According to the Regulatory Town Hall notice for the Dec. 18 meeting, the committee is “advising the Department on local model ordinance development, local program development and submittal processes, development of the DCR e-Permitting System, and other aspects of statewide program roll-out.” Contact: David Dowling, DCR.

9/19/12, 10/4/12, 10/17/12, 11/1/12, 11/13/12: **Regulatory Advisory Panel on general permit for construction activities**. Contact: David Dowling, DCR.

10/22/12, 11/13/12: **Virginia Stormwater Best Management Practices Clearinghouse Committee**. The Stormwater Best Management Practices (BMPs) Clearinghouse is a Web site on design standards and specifications of all stormwater BMPs approved for use in Virginia to control the quality and/or quantity of stormwater runoff. The Clearinghouse Committee advises the Department of Conservation and Recreation and the Soil and Water Conservation Board. More information about the

Stormwater BMP Clearinghouse Committee is available at <http://www.vwrrc.vt.edu/swc/>. Contact: David Dowling, DCR.

[12/3/12](#), [12/5/12](#), [12/7/12](#): DCR public hearings on the proposed **general permit regulation for discharges of stormwater from small municipal separate storm sewer systems (MS4s)**. The relevant sections in the *Virginia Administrative Code* are 4 VAC 50-60-10 and 4 VAC 50-60-1200. The public comment period ends Jan. 4, 2013. More information on the proposals is available online at <http://townhall.virginia.gov/L/viewaction.cfm?actionid=3634&display=stages>. Contact: David Dowling, DCR.

Stormwater Program Integration Training Sessions

From October 18-December 17, 2012, the DCR held **10 six-hour training sessions** designed to educate local government staff and other stakeholders about the history and implementation of Virginia's Stormwater Management Law and Regulations and the 2012 Virginia General Assembly bills ([HB 1065](#) and [SB 407](#)) that integrated elements of the Commonwealth's Erosion and Sediment Control Act, Stormwater Management Act, and Chesapeake Bay Preservation Act. The DCR's Web page for the Virginia Stormwater Management Program is http://www.dcr.virginia.gov/stormwater_management/stormwat.shtml. Contact: R. Vlent Lassiter, DCR.

Uranium Mining

[9/17/12](#): **VDH public meeting** on issues related to potential uranium mining and milling in Virginia. The agenda included the following: 1) a presentation by the VDH summarizing comments and questions received by the agency regarding private wells and recreational water issues related to uranium mining and milling (VDH held a series of six public-input meetings in summer 2012 on these issues); 2) a presentation by the DEQ on ground water, surface water, and air quality issues related to uranium mining and milling; 3) an opportunity for public comments. Contact: Jim Bowles, VDH.

[10/17/12](#) and [11/27/12](#): **Uranium Working Group**. This group was established by Gov. McDonnell in January 2012 to create a "draft statutory and conceptual regulatory framework" for possible uranium mining" (according to the group's Web site, <http://www.uwg.vi.virginia.gov/>). On [12/11/12](#), the Working Group presented its final report to the **Coal and Energy Commission's Uranium Mining Subcommittee**.

Wastewater Permits

[10/9/12](#): **Advisory Group Reevaluation of Trading Ratio for Nutrient Allocation Acquisition**. This advisory group has been established to help reevaluate the nutrient-credit trading ratio for new or expanding wastewater facilities registered under the Chesapeake Bay Watershed General Virginia Pollutant Discharge Elimination System (VPDES) Permit. The reevaluation is required by legislation passed by the Virginia General Assembly in 2012 ([HB 176](#) and [SB 77](#)). Contact: Russ Baxter, DEQ.

[12/13/12](#): **Nutrient Credit Certification Regulatory Advisory Panel**. The 2012 General Assembly bills [HB 176](#) and [SB 77](#) also require the Soil and Water Conservation Board to adopt regulations related to certification of nutrient credits from non-point sources, including credits generated from agricultural and urban stormwater best management practices, incineration or management of manures, land use conversion, stream or wetlands restoration, shellfish aquaculture, algal harvesting, and other methods of nutrient control or removal. Contact: David Dowling, DCR.

More information about Virginia's nutrient credit trading program is available online at <http://www.deq.virginia.gov/Programs/Water/PermittingCompliance/PollutionDischargeElimination/NutrientTrading.aspx>.

[10/19/12](#): DEQ Technical Advisory Committee on reissuance and possible amendment of the regulation establishing a **general permit for discharges from potable water-treatment plants**. The relevant section in the *Virginia Administrative Code* is 9 VAC 25-860. Contact: Elleanore Daub, DEQ.

[11/26/12](#) and [12/20/12](#): State Water Control Board's Technical Advisory Committee/Regulatory Advisory Panel on proposed amendments to **regulations regarding permits for confined animal feeding operations (AFO)**. The relevant sections of the *Virginia Administrative Code* are 9 VAC 25-32, Virginia Pollution Abatement (VPA) Permit Regulation; and 9 VAC 25-192, VPA General Permit for Animal Feeding Operations. According to the Agency Statement on the June 1, 2012, Notice of Intended Regulatory Action, available online at <http://townhall.virginia.gov/L/viewstage.cfm?stageid=6237&display=documents>: "The current VPA general permit expires on November 15, 2014. The VPA General Permit Regulation for AFOs governs the pollutant management activities of animal wastes at AFOs not covered by a Virginia Pollutant

Discharge Elimination System (VPDES) permit, and having 300 or more animal units utilizing a liquid manure-collection and -storage system.” Contact: William Norris, DEQ.

[12/5/12](#): DEQ public hearing on the **general discharge permit for concrete products facilities**. The relevant *Virginia Administrative Code* section is 9 VAC 25-193. The public-comment period ends January 11, 2013. More information on the regulation is available online at <http://townhall.virginia.gov/L/viewaction.cfm?actionid=3613&display=stages>. Contact: Elleanore Daub, DEQ.

Water Quality Regulation and Standards

[11/2/12](#): **Scientific Advisory Group on the James River Chlorophyll Study**. The advisory group is assisting the DEQ on the approach, scope, and design of a study to reexamine the current chlorophyll-a criteria for the tidal James River. The relevant *Virginia Administrative Code* section is 9 VAC 25-260-310 bb. Contact: Arthur Butt, DEQ.

Water Reclamation and Reuse Regulation

[12/13/12](#): DEQ public hearing on proposed amendments to this regulation. The relevant *Virginia Administrative Code* section is 9 VAC 25-740. The public comment period ends January 11, 2013. More information on the regulation is available online at <http://townhall.virginia.gov/L/viewaction.cfm?actionid=3380&display=stages>. Contact: William Norris, DEQ.

General Information for Key Water-related Statewide Boards and Commissions

Marine Resources Commission—Meets monthly. Phone (757) 247-2200, TDD (757) 247-2292. Web site: <http://www.mrc.virginia.gov/index.shtm>.

State Water Control Board—Meets quarterly. Phone (800) 592-5482 (main number for DEQ; toll-free in Virginia). Web site: <http://www.deq.state.va.us/LawsRegulations/CitizenBoards.aspx>.

Cave Board—Meet three times per year. Phone (804) 786-7951 (DCR’s Natural Heritage Program); Web site: www.dcr.virginia.gov/natural_heritage/cavehome.shtml.

Conservation and Recreation Board—Meets at least three times/year, upon call of chair. Phone: (804) 786-1712 (main number for DCR); Web site: www.dcr.virginia.gov/bcr.shtml.

Game and Inland Fisheries Board—Full board meets bimonthly; committee meetings at other times. Phone: (804) 367-1000 (main number for DGIF); Web site: www.dgif.virginia.gov/about/board/.

Gas and Oil Board—Meets monthly, usually in southwestern Virginia. Phone: (276) 415-9700 (DMME’s Division of Gas and Oil); Web site: www.dmme.virginia.gov/divisiongasoil.shtml.

Groundwater Protection Steering Committee—Meets third Tuesday of odd-numbered months. Phone: Mary Ann Massie, (804) 698-4042; Web site: <http://www.deq.state.va.us/Programs/Water/WaterSupplyWaterQuantity/GroundwaterProtectionSteeringCommittee.aspx>.

Land Conservation Foundation—Meets about three times per year. Phone (804) 225-2048; Web site: www.dcr.virginia.gov/virginia_land_conservation_foundation/index.shtml.

Licensing and Regulation Boards—Licensing boards for engineers, geologists, onsite sewage system professionals, soil scientists, waste-management facility operators, waterworks and wastewater works operators, and wetland delineators are under the Dept. of Professional and Occupational Regulation. Phone (804) 367-8500, TDD (804) 367-9753; Web site: <http://www.dpor.virginia.gov/Boards/>.

Outdoors Foundation—Meets at least quarterly. Phone: (540) 327-7727; Web site: www.virginiaoutdoorsfoundation.org.

Soil and Water Conservation Board—Meets bimonthly. Phone: 804) 786-2064 (DCR’s Stormwater Management Division); Web site: http://www.dcr.virginia.gov/stormwater_management/vs_and_wcb.shtml.

Waste Management Board—Meets about three times per year. Phone: (800) 592-5482 (main number for DEQ). Web site: <http://www.deq.state.va.us/LawsRegulations/CitizenBoards.aspx>.

N O T I C E S

If you would like to receive **regular e-mail notifications** about meetings, reports, and other items related to water quality and water monitoring, you may do so by joining the **Virginia Water Monitoring Council**; contact Jane Walker at (540) 231-4159 or janewalk@vt.edu.

For a regularly updated, online list of Virginia water-related events, please see the Water Center's "Quick Guide to Virginia Water Conferences, Meetings, and Other Events," at <http://virginiawaterevents.wordpress.com/>. All Web sites listed in this section were functional as of 12/20/12.

Chesapeake Bay Trust Environmental Education Mini-Grants – Deadline Jan. 11, 2013

January 11, 2013, is the deadline to apply for environmental education mini-grants—up to \$5000—for 2012-2013 from the Chesapeake Bay Trust. According to the Trust's application information, the "Mini Grant Program for Environmental Education is designed to engage citizens and students in D.C., Delaware, Pennsylvania, Maryland, Virginia, and West Virginia in activities that raise public awareness and participation in the restoration and protection of the Chesapeake Bay and its rivers." Those eligible for grants are 501(c)3 private, non-profit organizations; faith-based organizations; community associations; service, youth, and civic groups; municipal, county, regional, state, federal public agencies; soil/water conservation districts and resource conservation and development councils; forestry boards and tributary teams; public and independent primary, intermediate, and secondary schools; and public and independent higher educational institutions. For more information:

http://www.cbtrust.org/site/c.miJPKXPCJnH/b.5457547/k.28ED/Mini_Grant.htm; or phone (410) 974-2941.

For additional environmental-education grant opportunities in Virginia, visit the Virginia Department of Conservation and Recreation's "Virginia Naturally/Grants and Funding" Web site at http://www.dcr.virginia.gov/virginia_naturally/grants.shtml.

Hurricane Sandy Impact Photos

In November 2012, the U.S. Geological Survey (USGS) released a series of before/after aerial photographs showing the impacts of Hurricane Sandy on the coastlines and coastal towns of New York, New Jersey, Delaware, Maryland, Virginia, and North Carolina coastlines. Here are links for the different states:

New York: <http://coastal.er.usgs.gov/hurricanes/sandy/photo-comparisons/>;

New Jersey: <http://coastal.er.usgs.gov/hurricanes/sandy/photo-comparisons/newjersey.php>;

Delaware and Maryland: <http://coastal.er.usgs.gov/hurricanes/sandy/photo-comparisons/delaware-maryland.php>;

Virginia: <http://coastal.er.usgs.gov/hurricanes/sandy/photo-comparisons/virginia.php>;

North Carolina: <http://coastal.er.usgs.gov/hurricanes/sandy/photo-comparisons/northcarolina.php>.

What's Two Feet Long, Lives in Large Streams and Rivers, and Has a Wicked Name?

That would be an Eastern Hellbender (*Cryptobranchus alleganiensis*), North America's largest salamander, found in Virginia from the New River westward (in the Ohio/Mississippi River basin). Growing to approximately 12 to 29 inches as an adult, Hellbenders have a fearsome appearance but play an important ecological role. Virginia Tech's University Relations has produced a 3-minute video featuring Dr. Bill Hopkins, from the Tech Department of Fish and Wildlife Conservation, showing a Hellbender and discussing its biology and connection to water quality. The video—posted August 8, 2012—is online at

http://www.unirel.vt.edu/audio_video/2012/08/080912-cnre-hellbender.html.



Dr. Bill Hopkins of Virginia Tech's Department of Fish and Wildlife Conservation holds an Eastern Hellbender. Photo courtesy of the Virginia Tech College of Natural Resources and Environment.

The Plastic Worm (Re-)Turns at Orange County High School

In summer 2012, the Orange County High School Anglers began a campaign to encourage proper disposal and recycling of plastic bait worms, in order to prevent the worms from getting in Virginia's waterways and being eaten by fish. The group has designed a logo and label to place on containers for individual anglers and on collection buckets at marinas and other locations. For more information on the project, contact Rebecca Gore, at (540) 661-4300 ext. 1154, or at Orange County High School, 201 Selma Rd, Orange, VA 22960. For more information on the OCHS Anglers, visit <http://www.ochsanglers.com/>.

Chesapeake Bay Program Video Highlights Brook Trout Waters in West Virginia

"From the Field: Linking Land and Water in Brook Trout Conservation" is an approximately three-minute video on work in West Virginia to maintain or restore stream conditions—including streamside tree buffers—that provide the cool-and-clean-water habitat needed by Brook Trout. The video, provided by the Chesapeake Bay Program in November 2012, is available online at <http://vimeo.com/54398984>.



Brook Trout drawing from U.S. Fish and Wildlife Service's National Digital Library, <http://digitalmedia.fws.gov/cdm/>, 11/29/12.

Clean Water Act Jurisdictional Handbook, 2nd Edition

In May 2012, the Environmental Law Institute (ELI) published the second edition of the *Clean Water Act Jurisdictional Handbook*, replacing the 2007 edition. The handbook provides background and guidance on the federal Clean Water Act and the U.S. Supreme Court cases in 2001 and 2006 that affect how the U.S. Army Corps of Engineers, the U.S. EPA, and other federal and state agencies determine whether wetlands and streams are covered by the federal act. The publication is available for electronic download or print-copy purchase at http://www.elistore.org/reports_detail.asp?ID=11425; or contact ELI at 2000 L Street, NW, Suite 620, Washington, DC 20036; phone (202) 939-3800; e-mail: law@eli.org.

Nationwide Surveys of Aquatic Resources

Here is an update on four nationwide aquatic-resources surveys being coordinated by the U.S. EPA with cooperation of many federal, state, and tribal partners. This update, as of November 2012, comes from the Fall 2012 issue of *National Monitoring News*, from the National Water Monitoring Council (online at <http://acwi.gov/monitoring/>, or contact the newsletter editor, Cathy Tate, at (303) 236-6927 or cmtate@usgs.gov. More information on the surveys is available online at http://water.epa.gov/type/watersheds/monitoring/aquaticsurvey_index.cfm.

- **National Rivers and Streams Assessment**—The draft report on conditions sampled in 2008-2009 is undergoing peer review, with expected publication in December 2012. The previous assessment was for conditions in 2004.

- **National Lakes Assessment**—Field sampling of approximately 1250 sites ended in September 2012; samples and data are being processed in various laboratories.

- **National Coastal Condition Assessment**—Field sampling was done in 2010; data are being analyzed and the report is being written, with expected publication in 2013.

- **National Wetlands Condition Assessment** (first-ever nationwide survey of ecological conditions in wetlands)—Field work was done in 2011 and a report is expected in 2013. This report is intended to provide a new national baseline on the *quality* of wetlands in the United States and to be used in conjunction with the *Wetland Status and Trends* reports by the U.S. Fish and Wildlife Service (available online at <http://www.fws.gov/wetlands/Status-and-Trends/index.html>), which inventory the *quantity* of wetlands.

Energy and Climate Notices

- **FracTracker**, online at <http://www.fractracker.org/>, provides information on natural gas wells using hydraulic fracturing in the Marcellus shale area of New York, Ohio, Pennsylvania, and West Virginia. (The Marcellus formation also underlies part of Maryland and Virginia, but the site does not focus on those

states). The site includes maps of the locations of natural gas wells, maps of other shale formations in the United States, a calendar of related events, and links to articles and data. The site is provided by the non-profit organization FracTracker Alliance.

Also Out There...

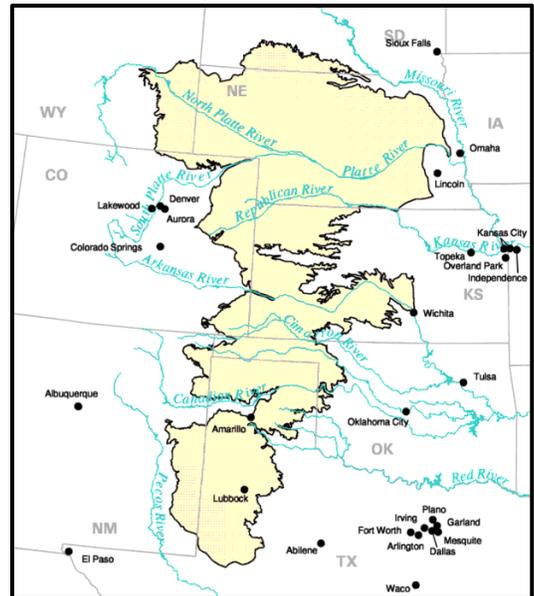
(Brief descriptions of some interesting articles *Water Central* has recently discovered.)

•**“Border Water Source of Conflict and Cooperation,”** in *Arroyo 2012*, from the Arizona Water Resources Research Center in Tucson. This 12-page feature examines the history and current challenges of managing surface waters and groundwater shared by the United States and Mexico along the international border from California to Texas. Available online at <http://wrrc.arizona.edu/publications/arroyo>, or contact the Arizona center at (520) 621-9591; e-mail: wrrc@cals.arizona.edu.

•**“My Summer in Singapore,”** in the Summer 2012 issue of *Arizona Water Resource* (p. 9), also from the Arizona Water Resources Research Center. In this one-page article, University of Arizona faculty member Shane Snyder describes Singapore’s “long history of striving for water independence.” Since 1868, the now independent city-state of Singapore, with over five million people on a 272-square-mile island, has been using reservoirs, imported water from Malaysia, recycled water, and desalination in an effort to have a stable and sufficient water supply. The city has hosted the Singapore International Water Week since 2008 (<http://www.siiw.com.sg/>). *Arizona Water Resource* is available online at <http://wrrc.arizona.edu/publications/awr>.

•**“Drought, Heat, and Water Use Made 2011 a Year for the Record Books,”** in the July 2012 issue of *The Cross Section*, from the High Plains Underground Water Conservation District No. 1 of Lubbock, Texas. This newsletter presents data on groundwater changes over the past one, five, and 10 years in a 16-county, northwestern Texas portion of the Ogallala Aquifer (also known as the High Plains aquifer), a groundwater-bearing formation that provides water to several Midwestern and Great Plains states. Available online at <http://www.hpwd.com>, or contact the District at (806) 762-0181; e-mail: info@hpwd.com.

The Ogallala Aquifer extends from South Dakota to Texas. Map from High Plains Underground Water Conservation District No. 1 of Lubbock, Texas, accessed at <http://www.hpwd.com/aquifers/ogallala-aquifer>, 12/20/12.



•**“Old Forge Borehole offers intrigue and concern for state, local leaders,”** *Scranton (Penn.) Times-Tribune*, 8/28/12. This article describes what one observer called “the biggest, baddest source of mine drainage in the east”: a “borehole” in Old Forge, Pennsylvania, designed to release underground water from an old mining system that, if left unreleased, can cause surface flooding. The borehole works to help prevent flooding, but its discharge of some 60 million to 100 million gallons per day results in acidic drainage in the Lackawanna and Susquehanna rivers. The Susquehanna is a major tributary of the Chesapeake Bay. Click on the title to access the article, or contact the *Scranton Times-Tribune* at 800-22-TIMES (228-4637).

•**“No Worries? The New Science of Risk and Choice,”** in the Summer 2012 issue of *Coastal Heritage*, from the South Carolina Sea Grant Consortium. This nine-page article discusses concepts of how people make decisions and choices, including those that involve risks from hurricanes and other natural disasters. Available online at <http://www.scseagrant.org>, or contact the S.C. Sea Grant Consortium at (843) 953-2078; e-mail: Annette.dunmeyer@scseagrant.org.

•**“Coal ash decision stymied in election year,”** *Washington Post*, 10/14/12. This article examines the issue of disposal of an estimated 140 million tons of coal ash (the solid material remaining after coal combustion) from 431 coal-fired power plants in the United States, including consideration by the U.S. EPA of stricter regulation on coal ash disposal. Click on the title to access the article, or contact the *Post*’s back copy department at (202) 334-7239.

• **Coast Guard investigations help watershed projects flourish**, *Baltimore Sun*, 10/21/12. This article describes U.S. Coast Guard monitoring of pollution from ocean-going vessels, the role of informants within vessels' crews, and the use of enforcement fines in various pollution-prevention projects in the Chesapeake Bay area (the examples are from Maryland). Click on the title to access the article, or contact the "Baltimore Sun Store" at 410-332-6800; e-mail: sunstore@baltsun.com.

Upcoming Conferences, Workshops, and Other Events

Events In Virginia

- Jan. 30-31, 2013, Richmond: **Virginia Energy and Sustainability Conference**. Organized by Virginia Commonwealth University and the Virginia Sustainable Building Network. More information: <http://www.vsbn.org/vcu-esc2013/index.html>; (703) 486-2966; e-mail: vsbn@vsbn.org.
- Feb. 4-5, 2013, Inn at Virginia Tech, Blacksburg: **21st Annual Conference of the Virginia Association of Forest Health Professionals**. More information: <http://vafhp.org/conference/>; Rachel Habig, phone (703) 792-4066.
- Mar. 3-5, 2013, Holiday Inn Select Koger Conference Center, Richmond: **Virginia Water Conference 2013**. Organized by the Virginia Lakes and Watersheds Association. More information: <http://www.vlwa.org>.
- Apr. 9-11, 2013, Lexington: **24th Annual Environment Virginia Symposium**. Organized by Virginia Military Institute (VMI). More information: VMI Center for Leadership and Ethics, http://www.vmi.edu/Conferences/Environment_Virginia/Environment_Virginia/; phone (540) 464-7361; e-mail: cle@vmi.edu.

Events Elsewhere

- Jan. 12-14, 2013, Denver, Colo.: **Colorado Water Congress Annual Convention**. More information: <http://www.cowatercongress.org/AnnualConvention/index.aspx>; phone (303) 837-0812; e-mail: edorn@cowatercongress.org.
- Jan. 15-17, 2013, Washington, D.C.: **"Disasters and Environment—Science, Preparedness, and Resilience."** Thirteenth National Conference on Science, Policy, and the Environment. Organized by the National Council for Science and the Environment. More information: <http://www.disastersandenvironment.org>; phone (202) 530-5810; e-mail: conference@ncseonline.org.
- Jan. 27-30, 2013, Cape May, N.J.: **Delaware Estuary Science and Environmental Summit**. The theme this year is "Weathering Change—Shifting Environments, Shifting Policies, Shifting Needs." Organized by the Partnership for the Delaware Estuary. More information: http://www.delawareestuary.org/news_pde_science_conference.asp; Dr. Danielle Kreeger at (800) 445-4935, ext. 104; or Lisa Wool at (800) 445-4935, ext. 105.
- Feb. 21-22, 2013, Toronto, Canada: **Annual International Stormwater and Urban Water Systems Modeling Conference**. Organized by CHI (Computational Hydraulics International) of Guelph, Ontario, Canada. More information: <http://www.chiwater.com/Training/Conferences/conferencetoronto.asp>; phone Stephanie Cressman at (519) 767-0197; e-mail: stephanie@chiwater.com.
- Mar. 5, 2013, Tucson, Ariz.: **"Water Security from the Ground Up."** Annual conference of the Arizona Water Resources Research Center. The conference focuses on several aspects of maintaining quantity and quality of groundwater resources. More information: <http://wrrc.arizona.edu/conferences>; phone (520) 621-9591; e-mail: wrrc@cals.arizona.edu.
- Mar. 25-27, 2013, St. Louis, Mo.: **"Agricultural Hydrology and Water Quality II"—the 2013 Spring Specialty Conference of the American Water Resources Association**. Abstracts for presentation proposals accepted until October 9, 2012. More information: <http://www.awra.org/meetings/Spring2013/>; phone (540) 687-8390 (AWRA headquarters in Middleburg, Va.) or Karl Williard at williard@siu.edu.
- Jun. 24-26, 2013, and Jun. 26-28, 2013, Hartford, Conn.: **Summer Specialty Conferences of the American Water Resources Association**. Jun. 24-26 is "Environmental Flows"; more information: <http://www.awra.org/meetings/EnvironmentalFlows2013/>. Jun. 26-28 is "Healthy Forests and Healthy Water"; more information: <http://www.awra.org/meetings/HealthyForest2013/>. E-mail contact for either meeting is info@awra.org.

AT THE WATER CENTER

To reach the Virginia Water Resources Research Center: phone (540) 231-5624; FAX (540) 231-6673; e-mail water@vt.edu; Web site www.vwrrc.vt.edu.

Staff Notes

Tony Timpano began work at the Water Center as a research associate in March 2011. Before joining the Water Center, Tony completed a master's degree at Virginia Tech, with his research focusing on salinity in Appalachian streams. At the Water Center, with funding from the U.S. Office of Surface Mining, Tony continues to investigate impacts of increasing salinity on aquatic life in coal mining-influenced Appalachian headwater streams. The current work expands upon Tony's master's degree research by seeking to characterize salinity *changes over time* (caused by seasonal wet and dry climatic patterns) to determine whether and to what extent such variation affects the health of stream insects and other invertebrates (*please see Editor's Note below*). Tony stated, "Pursuit of my research on salinization was motivated by my experience as an environmental consultant to the coal industry, during which time I realized there was a critical need to better understand the aquatic life effects of this particular stressor of public concern." You can reach Tony at atimpano@vt.edu.



Photo: Virginia Tech University Relations.

In Summer 2012, the Water Center bid farewell to **Sheila Christopher**, who is now working as a research assistant professor at the University of Notre Dame in South Bend, Indiana. Sheila was a research scientist at the Water Center from January 2009 to June 2012, during which time she used a hydrologic model to examine the potential water-resources impacts effect of large scale biofuel production—specifically, large-scale switchgrass production in the southeastern United States. For Notre Dame's Environmental Change Initiative (<http://environmentalchange.nd.edu/>), Sheila will use hydrologic models and watershed monitoring to understand how water resources are affected by best management practices (BMPs) at the watershed scale.



Photo: Patrick Fay.

Editor's Note on Stream Invertebrate Research

Benthic macroinvertebrates are organisms that live on the bottom (the *benthic* area) of streams or other water bodies; are *macroscopic*, that is, large-enough to be seen without a microscope; and have no backbone (or vertebrae), which makes them an *invertebrate*. This large and diverse group of organisms is useful in biological assessment (or **bioassessment**) of water quality and habitat because they are relatively easy to collect and identify, they do not move out of stream areas as readily as fish, and they exhibit a wide range of tolerances to pollution and other stresses. Three insect groups in particular receive a lot of attention in macroinvertebrate bioassessment: **mayflies**, **stoneflies**, and **caddisflies**. For more on bioassessment using benthic macroinvertebrates, please see "Bottom-dwellers Tell Stories about the Water Above," in the April-June 2002 issue of *Virginia Water Central*.

National Competitive Grants Program Water Resources Research

Request for Proposals

Fiscal Year 2013

From the U.S. Geological Survey and the National Institutes for Water Resources

The U.S. Geological Survey (USGS), in cooperation with the National Institutes for Water Resources (NIWR), requests proposals for the FY 2013 National Competitive Grants Program authorized by Section 104G of the federal Water Resources Research Act of 1984.

Proposals are requested for matching grants to support research on the topic of improving and enhancing the nation's water supply, including the following specific subjects;

- evaluation of innovative approaches to water treatment, infrastructure design, retrofitting, maintenance, management, and replacement;
- evaluation of the dynamics of extreme hydrological events and associated costs;
- development of methods for better estimation of the physical and economic supply of water;
- alternative approaches and governance mechanisms for integrated management of groundwater and surface waters; and
- the evaluation and assessment of conservation practices.

Proposals are sought regarding not only the physical dimensions of supply but also the role of economics and institutions in water supply and in coping with extreme hydrologic conditions.

Any investigator at an accredited institution of higher learning in the United States is eligible to apply for a grant through a Water Research Institute or Center established under the provisions of the Water Resources Research Act of 1984, as amended. In Virginia, that is the Virginia Water Resources Research Center. Proposals involving substantial collaboration between the USGS and university scientists are encouraged. Proposals may be for projects of 1 to 3 years in duration and may request up to \$250,000 in federal funds. Successful applicants must match each dollar of the federal grant with one dollar from non-federal sources.

Proposals must be filed on the Internet at <https://niwr.net/> by 4:00 p.m., Eastern Time, Thursday, February 21, 2013, and must be approved for submission to the National Competitive Grants Program not later than 4:00 p.m., Eastern Time, Thursday, March 7, 2013, by the Institute or Center through which they were submitted. Funds have not yet been appropriated for this program for FY 2013. The Government's obligation under this program is contingent upon the availability of funds.

A copy of the RFP announcement is available at https://niwr.net/competitive_grants/RFP. For more information about submitting proposals in Virginia, contact Dr. Stephen Schoenholtz at the Water Center at stephen.schoenholtz@vt.edu or (540) 231-6673.

FOR THE RECORD

TRACKING THE 2013 VIRGINIA GENERAL ASSEMBLY

Following Bills and Contacting Legislators

The 2013 Virginia General Assembly session convenes January 9. The General Assembly's Web site, <http://viriniageneralassembly.gov/>, offers several useful features, including member lists, session calendars, live video of floor sessions, and information on legislative processes. The Legislative Information System (LIS) Web site at <http://lis.virginia.gov/lis.htm> provides lists and summaries of all bills, searchable by topic, member, committee, etc.

To express an opinion on legislation, citizens are requested to contact their respective delegate or senator. If you do not know your representatives or their contact information, you can use the online "Who's My Legislator" service, available at <http://conview.state.va.us/whosmy.nsf/main?openform>. You can find members' contact information at these links:

House: <http://dela.state.va.us/dela/MemBios.nsf/MWebsiteTL?OpenView>;

Senate: <http://apps.lis.virginia.gov/sfb1/Senate/TelephoneList.aspx>.

If you know the numbers of your legislative districts, you can also use the **following code to identify your representatives' Capitol phone numbers:** for delegates, (804) 698-10 + district number (for example, 698-1003 for the District 3 delegate); for senators, (804) 698-75 + district number (for example, 698-7510 for the District 10 senator).

The **Lobbyist-In-A-Box** subscriber service also offers free tracking for up to five bills, and it offers tracking of more than five bills for a fee; visit <http://lis.virginia.gov/h015.htm>. For assistance, phone Legislative Automated Systems at (804) 786-9631.

2013 Session Key Dates

(Click [here](#) to go to the General Assembly Web site's calendar page; the session calendar will also be posted at <http://dls.state.va.us/pubs/calendar/welcome.htm>.)

January 9 - General Assembly convenes.

January 18 - All bills and joint resolutions must be filed with clerk.

January 31 - Committees responsible for revenue bills to complete work.

February 3 - Committees responsible for revenue bills to complete work by midnight.

February 5 - Each house to complete work on its own legislation except for its own Budget Bills.

February 7 - Each house to complete work on its own Budget Bill.

February 12 - Committees considering revenue bills of other house to complete work.

February 13 - Each house to complete work on the other house's Budget Bill and revenue bills and appoint budget conferees.

February 16 - First conference on revenue bills to complete work.

February 19 - First conference on Budget Bill to complete work.

February 21 - Budget Bill conference report due by noon; last day to put bills in conference.

February 22 - Only conference reports and certain joint resolutions can be considered.

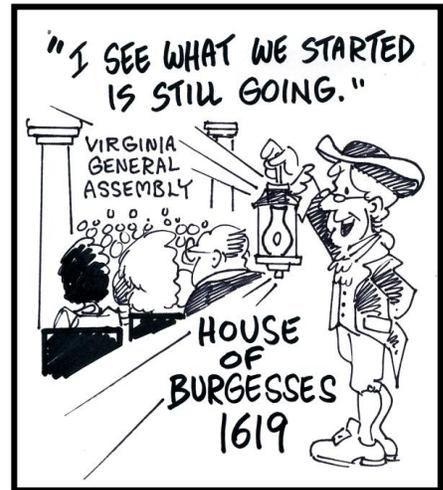
February 23 - Adjournment *sine die*.

April 3 - Reconvened ("veto") session.

Water Central's Water Bills and News Services

Beginning in late January, *Virginia Water Central* will post water-related legislation (from information provided by the Virginia LIS) on the Water Center's Web site at www.vwrrc.vt.edu/legislation.html, with occasional updates during the session. Water-related bill inventories for sessions back to 1998 are also available at this site. *Water Central* will publish a final inventory of water-related legislation in the first newsletter issue following the close of the General Assembly.

Also, the *Virginia Water Central* News Grouper posts links to online news articles about water-related legislation in the General Assembly. At <http://vawatercentralnewsgrouper.wordpress.com/>, click on the "Categories" box on the right and look for "2013 Virginia General Assembly."



Virginia Water Central

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