

Virginia Water Central

Virginia Water Resources Research Center

Blacksburg, Virginia

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A gravel fish nest in Tom's Creek in Blacksburg (Montgomery County) attracted several kinds of fish on May 8, 2010.

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S² on H₂O



Oil and Water Don't Mix

*By Stephen Schoenholtz, Director
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The unprecedented environmental disaster created by the ongoing BP Deepwater Horizon oil spill unfolding in the Gulf of Mexico has raised many questions about the future of offshore drilling for natural gas and oil. Here are a few that come to mind. What **costs** to our coastal waters and oceans—and the communities that depend on these resources—are we willing to bear in order to extract fossil-fuels that are vital to our economy but are located miles below the ocean surface? Are the **risks** inherent in such off-shore energy extraction manageable? Are government **regulations** in place and appropriate to protect water resources, while allowing for economic extraction of fossil fuels? If so, is it a case of not adequately **administering regulations** because of conflicts of interest or a lack of financial and human resources? What roles can **alternative sources of energy** play and how quickly can they be developed to ease our reliance on fossil fuels?

The list of questions goes on and expands daily as oil continues to flow and spread within the Gulf and possibly beyond. The consequences are dire for all forms of life reliant on the Gulf's waters, from plankton to humans.

In Virginia, one immediate consequence of the disaster has been to prevent, at least temporarily, the offshore drilling initiative of Gov. Robert McDonnell. In a December 2009 letter to U.S. Interior Secretary Kenneth Salazar, Gov.-elect McDonnell announced that offshore energy exploration and production would be a "priority in [his] administration," with the goal of bringing the economic benefits to Virginia and making the Commonwealth a leader in offshore drilling along the East Coast. The governor has stated his commitment to assure that environmental safeguards will be in place if these efforts move ahead. But the explosion of the Deepwater Horizon well, the death of 11 workers, the several failed attempts to control the flow of oil from the collapsed well, and the expanding environmental consequences all raise serious questions about the future of offshore oil and gas drilling along the Atlantic coastline, as well as in other U.S. waters.

On May 27, President Obama suspended offshore drilling activity and canceled the planned lease sales for drilling off the Virginia coast. The next possible time for exploratory drilling off our coast would be as part of the Interior Department's 2012-2017 Outer Continental Shelf (OCS) program. We should take advantage of this opportunity for some serious reflection and discussion on the future of energy development in the Commonwealth and its potential impacts on our water resources. Oil and water don't mix, but energy resources and water resources are intricately mixed and connected; the Gulf spill shows we can't afford to ignore that connection.

TEACHING WATER Especially for Virginia's K-12 teachers

This Issue and the Virginia Standards of Learning

Below are suggestions for Virginia Standards of Learning (SOLs) that may be supported by items in this issue. The SOLs listed below are from Virginia's 2003 Science SOLs and 2001 Social Studies SOLs. Abbreviations: 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 1: Virginia General Assembly	6.5, 6.7, 6.9, LS.12, ES.7, ES.11	CE.7, WG.7, GOV.8, GOV.9, GOV.16
Feature 2: Hurricane Season Preparedness	4.6, 6.3, 6.6, 6.9, ES.13	WG.2
Water Status (precipitation, groundwater, stream flow, and drought)	4.5, 4.6, 4.8, 6.5, 6.7, LS.7, LS.12, ES.7, ES.9, ES.13	WG.2

FEATURE 1: WATER IN THE 2010 VIRGINIA GENERAL ASSEMBLY

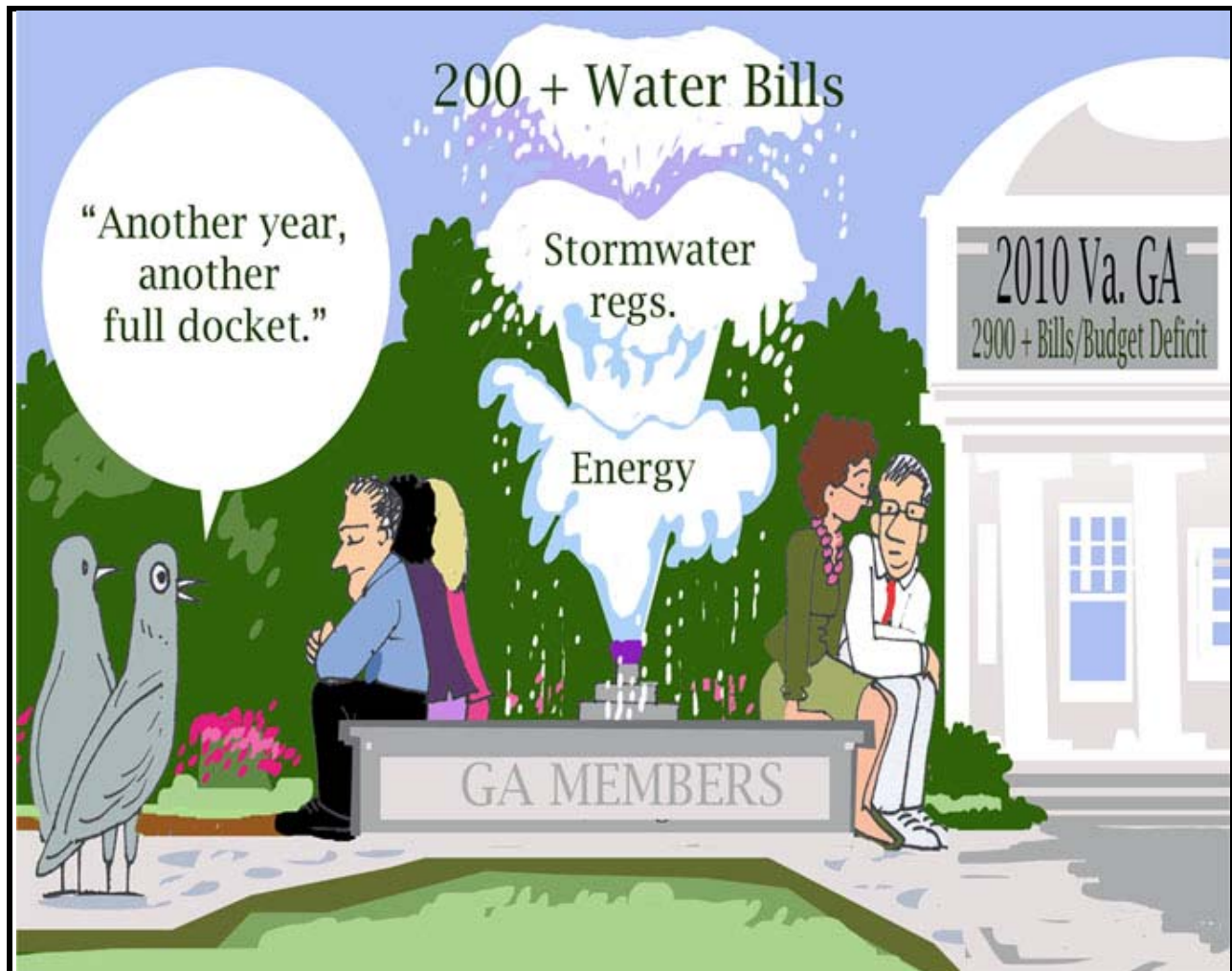
The 2010 Virginia General Assembly convened January 13 and adjourned March 13. The reconvened (“veto”) session was held April 21. During the session, the Assembly considered 2964 measures, passing 1598 of them, defeating 1093, and continuing 273 until 2011. The Assembly also crafted the 2010-12 biennial state budget.

In this article, *Virginia Water Central* lists 201 measures in the 2010 Assembly that dealt with water resources directly or with activities that are likely to affect water. The list comes from the Legislative Information System (LIS) Web site, at <http://leg1.state.va.us>, in the categories indicated by sub-headings below. Bill summaries were also taken from LIS (edited in some cases for space or clarity). Bills are listed under only one category, even if LIS listed them more than once. The categories searched and the bills listed include all those with *direct* water relevance (such as bills in the “Water and Sewer Systems” category) as well as those with a *potential or indirect* relevance to water (such as bills dealing with land conservation and energy-efficiency, two activities that ultimately affect water resources). *Water Central’s* list below *does not necessarily include all bills* that potentially affect Virginia’s water resources (sometimes we miss some!).

Within each category, bills are listed in order of their **bill number**, using the following abbreviations: **HB** = bill started in House of Delegates; **HJ** = joint resolution started in the House; **SB** = bill started in the Senate; and **SJ** = joint resolution started in the Senate. Numbers in the left-hand column have been added by *Water Central*.

A table at the end of the article lists several topics and bills from the 2010 Assembly that received attention in various news media. For a selection of online news articles about water-related legislation in the 2010 Assembly, please visit the *Virginia Water Central* News Grouper at <http://delicious.com/araflo/10VaGenAssembly>.

Water Central’s inventories of water-related bills in previous General Assembly sessions (1998-2009) are available online at www.vwrrc.vt.edu/legislation.html.



2010 Virginia General Assembly Water-related Bill Inventory

If you are reading this article online, click on the bill numbers to access bill information at the Legislative Information System (LIS). **PLEASE NOTE:** In some cases, when opening a bill page your browser may show first a blank window; if this happens, look for a separate tab indicating the LIS site.

Frequently used abbreviations: DCR = Department of Conservation and Recreation; DEQ = Virginia Department of Environmental Quality; DGIF = Department of Game and Inland Fisheries; DMME = Department of Mines, Minerals and Energy; DOF = Department of Forestry; EPA = U.S. Environmental Protection Agency; House ACNR = House Agriculture, Chesapeake, and Natural Resources committee; House APP = House Appropriations committee; SCC = State Corporation Commission; Senate ACNR = Senate Agriculture, Conservation, and Natural Resources committee; VDH = Virginia Department of Health; VDOT = Virginia Department of Transportation; VMRC = Virginia Marine Resources Commission.

BUDGET

1.	HB 29	Budget Bill. Amendments to the 2008-2010 biennial budget.	Passed.
2.	HB 30	Budget Bill. Appropriations for the 2010-2012 biennium (July 1, 2010-June 30, 2012).	Passed.
3.	SB29	Budget Bill. Amendments to the 2008-2010 biennial budget.	Passed Senate; failed in House APP.
4.	SB30	Budget Bill. Appropriations for the 2010-2012 biennium (July 1, 2010-June 30, 2012).	Passed Senate; failed in House APP.
5.	SB 102	Budget process; biennial appropriations shall start on July 1 of odd-numbered years.	Carried over to 2011 in Senate Finance.

CONSERVATION

Land Conservation Bills

6.	HB 141	Land preservation tax credit. Provides that nonprofit organizations holding a conservation easement are <i>ineligible</i> to receive land preservation tax credits for donations of real property.	Passed.
7.	HB 447	Land conservation tax credit fee limitations. Removes the \$10,000 cap on the two-percent fee imposed on the transfer arising from sale of land conservation tax credits and directs up to 50 percent of revenues to the Department of Taxation and the Department of Conservation and Recreation (DCR) first, with remaining revenues transferred to the Virginia Land Conservation Fund. Companion bill is SB 264 (#13).	Passed.
8.	HB 632	Land conservation tax credit increase. Would increase from 40 percent to 50 percent the portion of the value of land donated for conservation purposes that may be taken as a credit.	Carried over to 2011 in House Finance.
9.	HB 717	Civil War Site Preservation Fund. Establishes this fund for the purpose of awarding grants to private nonprofit organizations to preserve endangered Virginia Civil War historic sites. Companion bill is SB 614 (#17).	Passed.
10.	HB 774	Explore Park title reversion from Recreational Facilities Authority. Delays until July 1, 2011, the reversion of title to Explore Park in Roanoke County from the Virginia Recreational Facilities Authority to the Commonwealth, in the event that the Authority ceases to operate. The Authority and Roanoke County are directed to work with other stakeholders to develop an alternate plan for the appropriate utilization and management of the property; the plan shall be completed and transmitted to the Governor and the General Assembly by	Passed.

		December 31, 2010. Companion bill is SB 502 (#16).	
11.	HB 845	Tax credit to taxpayers for easements for trails to a recreation authority.	Carried over to 2011 in House Finance.
12.	SB 233	Land conservation tax credit reduction. Reduces from \$100,000 to \$50,000 the amount of the land preservation tax credit that may be claimed for taxable year 2011.	Passed.
13.	SB 264	Land preservation tax credit; fee for transfer of credits. Companion bill is HB 447 (#7); please see that bill for summary.	Passed.
14.	SB 341	Land preservation tax credit; DCR to provide estimate of land used for production agriculture, etc. Requires the DCR, when preparing its annual report, to consult with the departments of Taxation, Forestry, and Agriculture and Consumer Services to estimate of the amount of land being used for production agriculture and silviculture that has been protected by qualified donations (resulting in tax credits); and the amount of such that has operational best management practices designed to reduce the amount of nutrients and sediment entering public waters.	Passed.
15.	SB 346	Land conservation practices database. Requires the Secretary of Natural Resources to establish and maintain a database of the critical data attributes for onsite best management practices that limit the amount of nutrients and sediment entering state waters.	Passed.
16.	SB 502	Explore Park title reversion to Recreational Facilities Authority. Companion bill to HB 774 (#10); please see that bill for summary.	Passed.
17.	SB 614	Civil War Site Preservation Fund. Companion bill is HB 717 (#9); please see that bill for summary.	Passed.
18.	SB 661	Land preservation tax credit verification for certain donations. Requires the director of the DCR to verify the conservation value of donation under the Virginia Land Conservation Incentives Act of 1999, when the donation is from a property that from which a parcel has received a tax credit in the past three years, and if tax credit from the new donation would be at least \$250,000.	Passed

Other Conservation Bills

19.	HB 3	State parks Disabled Veteran's Passport program. Would have expanded the program to all veterans with a service-related disability, from the current requirement that the veteran be 100-percent disabled.	Failed in House ACNR.
20.	HB 129	Land-disturbing activities; exemptions for certain activities from Erosion and Sediment Control Law. Would have exempted certain harvest of forest products from being considered land-disturbing activities under the Erosion and Sediment Control (E&S) Law if the area was reforested artificially or naturally, or converted to agricultural or improved pasture. Currently, such harvested areas can be exempted from the E&S law if other types of restoration procedures are implemented.	Failed in House ACNR.
21.	HB 326	Mercury thermostats. Requires the Virginia Waste Management Board to adopt regulations to encourage the recycling of thermostats containing mercury, and authorizes localities to prohibit disposal of mercury thermostats in any private landfill within its jurisdiction, if the locality has a mercury thermometer-recycling program.	Passed.

22.	HB 329	Lawn fertilizers and phosphorus. Would prohibit use and application of phosphorus-containing fertilizers on lawns, golf courses, parks, and cemeteries.	Carried over to 2011 in House ACNR.
23.	HB 375	Removal of mercury switches from scrap and recycled vehicles. Would have required manufactures to submit mercury minimization plans to the Department of Environmental Quality (DEQ) and to pay specified costs associated with mercury switch removal; would have required recyclers to remove all switches before transferring ownership of a vehicle to a scrap-processing facility.	Failed in House Transportation.
24.	HB 501	Jordan Scenic River. Designates a seven-mile portion of the Jordan River as a component of Virginia Scenic Rivers System.	Passed.
25.	HB 503	Hughes Scenic River. Designates a 10-mile portion of the Hughes River as a component of Virginia Scenic Rivers System.	Passed.
26.	HB 521	Plastic bags. Would have banned use by retailers at point of sale unless designed and manufactured for reuse.	Failed in House ACNR.
27.	HB 537	Golden Age Card for state parks. Would have required the Provides for the DCR to establish a Virginia Golden Age Card authorizing a 50-percent discount on state park camping to citizens 60 years of age or older.	Failed in House ACNR.
28.	HB 591	Administrative Process Act. Removes obsolete exemptions, including the exemption from the regulatory promulgation process for preliminary program permit fees of the DEQ.	Passed.
29.	HB 619	Erosion and sediment control civil penalties. Removes the specific authority of a locality to impose a \$1,000 civil penalty on a person who engages in a land-disturbing activity without having an approved plan. Instead, any violation of any erosion and sediment control regulation or order of the Virginia Soil and Water Conservation Board, any provision of a local program, or any condition of a permit will be subject to a civil penalty of \$100 to \$1,000.	Passed.
30.	HB 940	Hunting and trapping; reduces penalty for violations. Reduces the penalty for violations of hunting and trapping laws or regulations from a Class 1 misdemeanor to a Class 3 misdemeanor.	Passed.
31.	HB 948	HOT (high-occupancy toll) lanes. Would have required the Virginia Department of Transportation to conduct a National Environmental Policy Act study prior to construction on any portion of I-95 or I-395.	Failed in House Transportation.
32.	HB 951	Blackwater Scenic River. Designates a 56-miles portion of the Blackwater River as a component of Virginia Scenic Rivers System. Companion bill is SB 17 (#43).	Passed.
33.	HB 987	Stormwater regulation; amends current law on waiver. Would remove the requirement that full waivers be given to federal, state, or local government agencies that develop, redevelop, or retrofit outfalls, discharges, or property so that there is a permanent reduction in post-development stormwater flow and pollutant loading. Companion bill is SB 650 (#53).	Carried over to 2011 in House Appropriations.
34.	HB 1100	Stormwater management liability protection. Provides that a common interest community shall enjoy limited liability protection relating to a stormwater management facility located on property owned by that community if the common interest community cedes— via a proper and mutually accepted contract—the responsibility for the maintenance, repair, and replacement of a stormwater management facility to the Commonwealth or a Virginia political subdivision.	Passed.
35.	HB 1180	Russell Fork Scenic River. Designates a nine-mile portion of the	Passed.

		Russell Fork as a component of the Virginia Scenic Rivers System. The bill includes stipulations that the designation is not to be used to preclude land along the river from being mined or to be a criterion for imposing water-quality standards.	
36.	HB 1220	Stormwater management regulations; delay. Delays the effective date for a regulation that establishes stormwater criteria for local programs, water quality, and water-quantity. The delay is until 280 days after the establishment of the U.S. EPA's Chesapeake Bay-wide Total Maximum Daily Load, but no later than December 1, 2011. The bill also directs the Soil and Water Conservation Board to establish an advisory panel to review the regulations and make recommendations on possible revisions. Companion bill is SB 395 (#49). Incorporated HB 155 and HB 1311 .	Passed.
37.	HB 1281	Appomattox Scenic River. Would add 13 miles to the existing 6.2-mile-portion of the Appomattox River designated as a component of the Virginia Scenic Rivers System.	Carried over to 2011 in House ACNR.
38.	HB 1300	Air Pollution Control Board; regulations under the Clean Air Interstate Rule. Retains the authority of the Air Pollution Control Board to provide for participation in the EPA-administered cap-and-trade system for nitrogen oxide (NOx) and sulfur dioxide (SOx), but prohibits the Board from requiring that electric generating facilities located in a non-attainment area meet NOx and SOx compliance obligations without the purchase of allowances from in-state or out-of-state facilities. [These two air pollutants can also affect water resources.] Companion bill is SB 128 (#45).	Passed.
39.	HB 1319	Carbon dioxide emissions; enforcement of federal standards. Would require the Commonwealth to withhold enforcement of any federal standards or cap-and-trade provisions on carbon dioxide emissions, pending the governor's and attorney general's finding of authority by Congress. The bill also would authorize the attorney general to bring an action against the EPA if he finds that the mandated standards are based on a finding that is not scientifically demonstrated. See related HB 1357 (#41).	Carried over to 2011 in House ACNR.
40.	HB 1334	Littering; prohibits disposal of cigarette butts on public property.	Passed House; failed in Senate Courts of Justice.
41.	HB 1357	Carbon dioxide emissions; prohibits state regulation. Would prohibit the Air Pollution Control Board and the DEQ from restricting emission carbon dioxide. The bill would also assert that any federal law or regulation of carbon dioxide emissions shall be without authority or force within the Commonwealth. See related HB 1319 (#39).	Carried over to 2011 in House ACNR.
42.	HR 6	High Bridge Trail State Park. This House resolution commends the DCR and VDOT on efforts to develop this park.	Passed.
43.	SB 17	Blackwater Scenic River. Companion bill is HB 951 (#32); please see that bill for summary.	Passed.
44.	SB 123	Stormwater management in redevelopment. Would have required the developer of a single lot to provide stormwater management when "substantial redevelopment" (defined) of the lot is proposed.	Failed in Senate Local Government.
45.	SB 128	Air Pollution Control Board; regulations under Clean Air Interstate Rule. Companion bill is HB 1300 (#38); please see that bill for summary.	Passed.
46.	SB 175	Law Officers' Retirement System. Would have added conservation officers as members.	Failed in House Finance.

47.	SB 244	Dam Safety Act. Requires the Virginia Soil and Water Conservation Board to adopt regulations that consider downstream limited-use or private roadways (with low traffic volume and low public safety risk) when determining a dam's hazard-potential classification.	Passed.
48.	SB 327	Material near an easement. Would have required that owner of estate not have any debris within 25 feet of an easement; current law calls for no debris adjacent to an easement.	Failed in Senate Courts of Justice.
49.	SB 395	Stormwater management regulations; delay. Companion bill is HB 1220 (#36); please see that bill for summary. Incorporated SB 245 , SB 677 , and SB 681 .	Passed Senate; in House ACNR.
50.	SB 525	Cooperative Marketing Fund of the Virginia Tourism Authority; dedication of soft drink excise tax and litter tax revenues. Would have dedicated the revenues from soft drink excise tax and litter tax to the Cooperative Marketing Fund administered by the Virginia Tourism Authority. Current law dedicates the revenues from the two taxes to the Litter Control and Recycling Fund.	Failed in Senate Finance.
51.	SB 583	Pesticides and fertilizers application and impervious surfaces. Would have prohibited commercial lawn care and landscaping services from broadly applying pesticides and fertilizers onto streets, driveways, or other impervious surfaces.	Failed in Senate ACNR.
52.	SB 627	Nutrient reduction credits. Clarifies who receives credit for the nutrient reductions associated with a stormwater nonpoint nutrient offset, used to achieve compliance with construction site stormwater nutrient discharge requirements. If the land-disturbing activity using a nonpoint nutrient offset discharges to a municipal separate storm sewer system (MS4), then the locality receives credit toward its nutrient allocation. If the discharge is not to a MS4, then the reductions are applied toward compliance with the nutrient allocation applicable to that area.	Passed.
53.	SB 650	Stormwater regulation; amends current law on waivers. Companion bill is HB 987 (#33); please see that bill for summary.	Carried over to 2011 in Senate Local Government.
54.	SB 659	Outer Continental Shelf; air pollution control regulations. Requires the State Air Pollution Control Board, by January 1, 2011, to adopt any regulations necessary to implement and enforce the requirements of Section 328 of the federal Clean Air Act relating to requirements to control air pollution from Outer Continental Shelf sources. The bill also directs the DEQ to request that the U.S. EPA Administrator delegate to the Commonwealth authority to implement and enforce this section of the Clean Air Act.	Passed.
55.	SB 686	Uniform Environmental Covenants Act. A new act established to authorize the DEQ to enter, along with owners of real property, into environmental covenants that restrict the use of the real property. The bill sets requirements for such covenants and authorizes the DEQ pay for administering the covenants through fees to be paid by property owners subject to covenants.	Passed.

ENERGY CONSERVATION AND RESOURCES

56.	HB 25	Greenhouse gas emissions and transportation. Would have required the Statewide Transportation Plan to include quantifiable measures and goals related to greenhouse gas emissions.	Failed in House Transportation subcommittee.
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57.	HB 92	Renewable energy certificates: tariffs by electric cooperatives. Provides that an electric cooperative is deemed to offer a tariff for electric energy considered to be provided completely from renewable energy <i>if</i> the cooperative provides undifferentiated electric energy <i>and</i> retires a quantity of renewable energy certificates (RECs) equal to 100 percent of the electric energy provided pursuant to such tariff. A REC is defined, with respect to cooperatives, as a tradable commodity or instrument issued by a regional transmission entity that validates the generation of electricity from renewable energy sources or that is certified under a generally recognized REC standard. A cooperative offering renewable energy that involves the retirement of RECs shall disclose to customers information regarding the source of the energy.	Passed.
58.	HB 327	Electric energy-efficiency standard established. Would establish an energy-efficiency standard under which investor-owned electric utilities are required to reduce—through implementation of energy-efficiency and energy-conservation programs—their Virginia retail customers’ energy consumption by 19 percent by the year 2026, compared to the consumption currently projected for that year. See related SB 71 (#86), which failed.	Carried over to 2011 in House Commerce and Labor.
59.	HB 389	Virginia Offshore Wind Project Development Authority. Creates this Authority to facilitate and support the development of the offshore wind industry and wind-powered electric energy facilities located off the Virginia coast beyond the state's three-mile jurisdictional limit. Membership requirements and specific powers of the Authority are identified. Companion bill is SB 577 (#102).	Passed.
60.	HB 436	Donations by localities to organizations for energy-efficiency services. Provides that a locality may make gifts and donations to any nonprofit organization engaged in providing energy-efficiency services or promoting energy efficiency within or without the boundaries of the locality. Companion bill is SB 291 (#98).	Passed.
61.	HB 441	Community and agricultural net metering. Requires the State Corporation Commission (SCC) to establish a program of community net metering, which will allow a group of residential, small commercial, and other customers to establish an “eligible community customer” that can develop a net metered system whereby excess power generation by some members of the group will be used to offset consumption by other members within the group.	Carried over to 2011 in House Commerce and Labor.
62.	HB 442	Electric utilities; authorizes individual retail customers to continue purchasing renewable energy. Provides that, after the expiration or termination of capped rates, individual retail electricity customers in Virginia shall be permitted-to continue purchasing renewable energy pursuant to the terms of a purchase agreement that was in effect on the date on which a utility filed a renewable energy tariff with the SCC.	Passed.
63.	HB 533	Steps to Advance Virginia's Energy Plan (SAVE) Act for natural gas utilities. Authorizes investor-owned natural gas utilities to petition the SCC to implement a separate rider that will allow for recovery of certain costs associated with infrastructure-replacement projects that enhance safety or reliability, do not increase revenues by directly connecting the infrastructure replacement to new customers, reduce greenhouse gas emissions, are not included in the natural gas utility's rate base in its most recent rate case, and are commenced on or after January 1, 2010. Companion bill is SB 112 (#89).	Passed.
64.	HB 545	Machinery and tools tax exemption when used to create recycled	Failed in House

		products. Would have allowed localities to classify separately for taxation purposes tools and machinery used to make from recycled products and to exempt them from state taxation.	Finance.
65.	HB 672	Infrastructure Project Loan Fund. Creates this fund, to be administered by the Virginia Resources Authority, for financing local-government projects to capture gas energy from solid-waste landfills or wastewater treatment plants.	Passed.
66.	HB 756	Offshore drilling revenue to Transportation Trust Fund. Requires that all revenues paid to the Commonwealth as a result of offshore natural gas and oil drilling shall be distributed as follows: (i) 70 percent to the Transportation Trust Fund, (ii) 20 percent to the Virginia Coastal Energy Research Consortium, and (iii) 10 percent to localities for improvements to infrastructure and transportation. Incorporated HB 805 and HB 900 . See related SB 601 (#103) and SB 684 (#107).	Passed.
67.	HB 787	State policy on oil/gas production and development off the Atlantic shoreline. States that it shall be the policy of the Commonwealth to support oil <i>and</i> natural gas exploration, development, and production 50 miles or more off Virginia's coast, taking into account the impact on localities, armed forces, and the mid-Atlantic regional spaceport. The current policy is limited to supporting exploration for natural gas. Companion bill is SB 394 (#100).	Passed.
68.	HB 803	Income tax credit: Green jobs. Allows individual taxpayers a \$500 income tax credit per job for the creation of up to 350 "green" jobs between January 2010 and January 2015. Green jobs are those involving renewable energy. Companion bill is SB 143 (#92).	Passed.
69.	HB 881	Restrictive covenants regarding solar energy collection devices. Would invalidate community associations' restrictive covenants that prohibit or restrict installation or use of solar energy collection devices, but retain community association authority to establish reasonable restrictions on such devices' size and placement.	Carried over to 2011 in House Counties, Cities and Towns.
70.	HB 928	Virginia Universities Clean Energy Development and Economic Stimulus Foundation. Creates this Foundation to obtain and provide funding for research and development of alternative fuels, clean-energy production, and related technologies; support of economic development projects in disadvantaged rural areas; and provision of assistance in commercializing alternative fuels and clean-energy technologies. Companion bill is SB 326 (#99).	Passed.
71.	HB 998	Income tax credit: Renewable energy products. Would provide an income tax credit from 2011-2016 for production and export of renewable energy products, with a \$6-million annual limit on the amount of credits. Companion bill (with slight difference) is SB 657 (#105).	Carried over to 2011 in House Appropriations.
72.	HB 999	Renewable energy manufacturing equipment as separate classification for property tax. Adds tangible personal property and improvements to real property designed and used primarily for manufacturing a product from renewable energy as separate classifications of property for local property tax purposes.	Passed.
73.	HB 1022	Renewable energy portfolio standard program: offshore wind. Provides that an electric utility will receive triple credit toward meeting the goals of the renewable energy portfolio standard program for energy derived from offshore wind. The measure also has provisions related to purchase/sale of renewable energy certificates.	Passed.
74.	HB 1037	Clean Energy Manufacturing Incentive Grant Program. Would repeal the Solar Photovoltaic Manufacturing Incentive Grant Program	Carried over to 2011 in House Appropriations.

		and create a program of financial incentives to companies that manufacture or assemble equipment or products used for energy efficiency or to produce renewable energy or nuclear energy. Companion bill is SB 129 (#91).	
75.	HB 1044	Income tax credit: Renewable energy property and energy audits. Would have allowed an income tax credit to individuals for renewable energy property and residential energy audits	Failed in House Finance.
76.	HB 1046	Income tax credit: Non-profit charitable donations for Energy Star-qualified products. Would have allowed an income tax credit to individual or business who make a cash donation to charitable non-profit organizations that use the donation to construct, purchase, or lease Energy Star-qualified products for their headquarters.	Failed in House Finance.
77.	HB 1051	Retail sales and use tax dealer discounts. Would have eliminated dealer discounts for a variety of taxes, including the tire-recycling fee and motor vehicle fuel taxes. Companion bill is SB 542 (#101).	Failed in House Appropriations.
78.	HB 1222	Voluntary Solar Resource Development Fund. Would have established this fund, required electric utilities to provide customers with the option to make voluntary contributions to the fund, and provided that the fund be allocated by the SCC as grants for projects that involve the installation and operation of solar-energy devices.	Failed in House Commerce and Labor.
79.	HB 1236	Information on energy conservation. Would require electric utilities and natural gas distribution companies to provide information to customers to support and encourage energy conservation. The bill would require the SCC to determine the type of information and set guidelines for information distribution.	Carried over to 2011 in House Commerce and Labor.
80.	HB 1264	Green Public Buildings Act. Would have required new or renovated public buildings of certain sizes or costs to be built to recognized energy-saving and water-saving standards. Companion bill is SB 109 (#87).	Failed in House General Laws.
81.	HB 1274	Energy mandates. Would require the SCC or the Joint Legislative Audit and Review Commission to assess the economic impact on customers and public utilities in Virginia of any proposed state law or other mandate that affects the use, delivery, availability or regulation of energy in the Commonwealth. Companion bill is SB 647 (#104).	Carried over to 2011 in House Commerce and Labor.
82.	HB 1310	Certification of geothermal heat-pump providers. Would have required the Board of Contractors to certify providers of direct-exchange geothermal heat-pump ground-loop systems.	Failed in House General Laws.
83.	HB 1341	Income tax credit: Electric energy from livestock waste nutrients. Would establish individual and corporate income tax credits for property in any locality that has a current five-year annual average unemployment rate of at least 11 percent, and that is part of a facility producing electricity primarily from livestock waste nutrients. Companion bill (with some difference) is SB 678 (#106).	Carried over to 2011 in House Finance.
84.	HB 1342	Renewable energy portfolio standard: poultry litter or other animal waste. Provides that an electric utility will receive quintuple credit toward meeting the goals of the renewable energy portfolio standard program for energy from poultry litter or other animal waste.	Carried over to 2011 in House Commerce and Labor.
85.	SB 39	Renewable energy portfolio standard: tree products. Would have removed the requirement that utilities participating in a renewable energy portfolio standard program collectively use no more than 1.5 million tons of tree products each year towards meeting RPS goals.	Failed in Senate ACNR.
86.	SB 71	Electric energy-efficiency standard established. Would have required electric utilities to implement a portfolio of energy-efficiency	Failed in Senate Commerce and Labor.

		programs to reduce the retail customer consumption of electric energy by its retail customers by 0.3 percent of the forecast consumption for 2011, 3.9 percent of the forecast consumption for 2015, and 12.2 percent of the forecast consumption for 2022. The bill also had provisions for related rate adjustments and for alternative compliance payments. See related HB 327 (#58), which was carried over to 2011.	
87.	SB 109	Green Public Buildings Act. Companion bill is HB 1264 (#80); please see that bill for summary.	Passed Senate; failed in House Appropriations.
88.	SB 110	Clean energy financing in localities. Authorized localities—in order to secure loans for the initial acquisition and installation of clean energy improvements—to place liens equal in value to the loan against any property where such clean energy systems are being installed; also allows localities to bundle loans for transfer to private lenders in a manner that allows the liens to remain in full force to secure the loans.	Passed.
89.	SB 112	Steps to Advance Virginia's Energy Plan (SAVE) Act for natural gas utilities. Companion bill is HB 533 (#63); please see that bill for summary.	Passed.
90.	SB 113	Constitutional amendment on tax exemption for energy-saving buildings, etc. Would provide for a referendum election on an amendment allowing the General Assembly to authorize localities to exempt or partially exempt from real or personal property taxes certain energy- and resource-efficiency equipment, facilities, or devices. The present Constitution allows exemptions for pollution-abatement and solar-energy equipment. SJ 25 (#109) is nearly identical.	Passed Senate; carried over to 2011 in House Privileges and Elections.
91.	SB 129	Clean Energy Manufacturing Incentive Grant Fund. Companion bill is HB 1037 (#74); please see that bill for summary.	Passed Senate; carried over to 2011 in House Appropriations.
92.	SB 143	Income tax credit: Renewable-energy job creation. Companion bill is HB 803 (#68); please see that bill for summary.	Passed Senate; failed in House Appropriations.
93.	SB 150	Energy-efficiency programs and rate recovery by utilities. Would have prohibited utilities from recovering revenue losses resulting from implementation of energy-efficiency programs.	Failed in Senate Commerce and Labor.
94.	SB 174	Retail sales and use tax exemption: renewable energy systems. Would have exempted from this tax certain solar and wind systems purchased for installation on residential property.	Passed Senate; failed in House Appropriations.
95.	SB 221	Covenants regarding natural drying devices. Would have provided no community association shall prohibit an owner from installing or using a natural drying device on that owner's property, but would have allowed reasonable restrictions on the size, placement, duration, and manner of placement of such devices.	Passed Senate; failed in House General Laws.
96.	SB 267	Commission on Energy and Environment; responsibility to review impacts of energy production and use on natural resources. Would have ensured the Commission's responsibility to review and consider the direct and indirect impacts of energy production and use on the Commonwealth's environment and natural resources, and review the impact of environmental laws, regulations, and initiatives on the Commonwealth's energy supplies.	Passed Senate; failed in House Rules.
97.	SB 272	Biodiesel and green diesel; two-percent minimum content in state contracts for vehicle fuel. Requires the Department of General Services to establish the conditions under which state public bodies may procure diesel fuel containing, at a minimum, two percent biodiesel fuel or other “green” diesel fuel.	Passed.

98.	SB 291	Donations by localities to organizations for energy-efficiency services. Companion bill is HB 436 (#60); please see that bill for summary.	Passed.
99.	SB 326	Universities Clean Energy Development and Economic Stimulus Foundation. Companion bill is HB 928 (#70); please see that bill for summary.	Stricken at request of patron in Senate Education and Health.
100.	SB 394	State policy on oil/gas production and development off the Atlantic shoreline. Companion bill is HB 787 (#67); please see that bill for summary.	Passed.
101.	SB 542	Retail Sales and Use Tax dealer discounts. Companion bill is HB 1051 (#77); please see that bill for summary.	Failed in Senate Finance.
102.	SB 577	Virginia Offshore Wind Development Authority. Companion bill is HB 389 (#59); please see that bill for summary.	Passed.
103.	SB 601	Offshore drilling revenue to Transportation Trust Fund. Would provide that 80 percent of any future royalties from offshore oil/gas drilling be deposited in the Transportation Trust Fund. See related HB 756 (#66) and SB 684 (#107).	Carried over to 2011 in Senate Finance.
104.	SB 647	Energy mandates. Companion bill is HB 1274 (#81); please see that bill for summary.	Carried over to 2011 in Senate Rules.
105.	SB 657	Income tax credit: Renewable energy products tax. Companion bill (with slight difference) is HB 998 (#71); please see that bill for summary.	Passed Senate; continued to 2011 in House Appropriations.
106.	SB 678	Income tax credit: Electric energy from livestock waste nutrients. Companion bill (with some difference) is HB 1341 (#83); please see that bill for summary.	Passed Senate; carried over to 2011 in House Finance.
107.	SB 684	Transportation funding, including from offshore energy. Would have provided new and increased taxes, tolls, royalties from offshore natural gas and oil drilling, and general fund revenues for transportation funding. See related HB 756 (#66) and SB 601 (#103).	Failed in Senate Finance.
108.	SB 713	Coastal Energy Research Consortium. Adds George Mason University to the membership and its president (or designee) to the governing board, and directs that a representative of NASA's Langley Research Center serve as a non-voting member of the board.	Passed.
109.	SJ 25	Constitutional amendment on tax exemption for energy-saving buildings, etc. SB 113 (#90) is nearly identical; please see that bill for summary.	Passed Senate; carried over to 2011 in House Privileges and Elections.

FISHERIES AND HABITAT OF TIDAL WATERS

110.	HB 138	Aquaculture opportunity zones. Requires the Marine Resources Commission (VMRC) to establish zones for propagation of shellfish off the shores of the Northern Neck, Middle Peninsula, and Tangier Island.	Passed.
111.	HB 142	Menhaden fisheries quota. Continues the annual menhaden harvest quota of 109,020 metric tons for the Virginia portion of the Chesapeake Bay until January 1, 2014, three years beyond the original sunset date. Companion bill is SB 47 (#119).	Passed.
112.	HB 194	Filled subaqueous land: cost for purchaser. Would have required a purchaser of filled, state-owned, subaqueous lands to pay the cost of preparing and recording transfer documents, as opposed to the current requirement to pay 25 percent of the assessed value of the parcel.	Failed in House ACNR.

113.	HB 294	Menhaden fishery management. Would have provided that the VMRC adopt regulations to implement the Interstate Menhaden Fishery Management Plan; required that any moratorium on the fishery be subject to legislative review; and repealed the governor's authority to implement menhaden management measures by proclamation. Companion bill is SB 185 (#120).	Failed in House ACNR.
114.	HB 296	Federal water zones. Authorizes patrols in these zones by officers of the Department of Game and Inland Fisheries (DGIF) and by marine patrol divisions of police departments in Tidewater localities. Companion bill is SB 398 (#124).	Passed.
115.	HB 1163	Bottomlands rents and royalties. Would remove the authority of the VMRC to charge rent as a condition of a permit for use of state-owned bottomlands.	Carried over to 2011 in House ACNR.
116.	HB 1268	Recreational gill net license. Would establish a new recreational gear license of \$25 for owners of piers who want to affix a staked gill net to their pier (the gill net cannot exceed 300 feet).	Carried over to 2011 in House ACNR.
117.	HB 1291	Commercial fishing license and certain non-residents. Prohibits the VMRC from selling a commercial fishing license to a non-resident whose state of residence does not sell the same or similar license to a resident of the Commonwealth. Companion bill is SB 192 (#121).	Passed.
118.	HJ 74	Study of submerged land on Eastern Shore. Would have requested the Virginia Institute of Marine Science to study management options for state-owned submerged lands on the seaside of the Eastern Shore.	Failed in House Rules.
119.	SB 47	Menhaden fisheries quota. Companion bill is HB 142 (#111); please see that bill for summary.	Passed.
120.	SB 185	Menhaden fishery management. Companion bill is HB 294 (#113); please see that bill for summary.	Stricken from docket in Senate ACNR.
121.	SB 192	Commercial fishing license and certain non-residents. Companion bill is HB 1291 (#117); please see that bill for summary.	Passed.
122.	SB 202	State-owned bottomland permit fees. Would have authorized the VMRC to establish a new structure of permit fees for use of state-owned bottomlands.	Stricken from docket in Senate ACNR.
123.	SB 345	Oyster restoration projects by local governments. Authorizes the Virginia Resources Authority to finance such projects.	Passed.
124.	SB 398	Federal water zones. Companion bill is HB 296 (#114); please see that bill for summary.	Passed.
125.	SB 447	Shellfish sanitation; inspections; fees. Would have required a permit from the State Health Commissioner for any establishment that processes crabmeat or shellfish, with permit fees paid into a fund that supports the shellfish sanitation program.	Passed Senate; failed in House ACNR.
126.	SB 668	Saltwater recreational fishing; licensing in conformance with national registry. Directs the VMRC to establish the Fisherman Identification Program, which is to be consistent with the National Saltwater Angler Registry Program, and to pay for the program through a one-time fee increase of not more than \$10 on the saltwater recreational boat license. Those persons who purchase a saltwater fishing license are <i>not required to register</i> with the program.	Passed.
127.	SB 726	Hampton Roads Maritime Association. Changes name to Virginia Maritime Association in law regarding ballast water control reports.	Passed.
128.	SJ 35	Tidal shoreline management. Requests the Virginia Institute of Marine Science to review tidal shoreline management in Virginia and	Passed.

		similarly situated states; identify potential changes to the regulatory structure of tidal shoreline management to reduce the cost and time required to issue a permit; identify regulatory innovations that would increase adoption of living shorelines among landowners; and make recommendations for sustained protection of tidal shoreline resources.	
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GAME, INLAND FISHERIES, AND BOATING

129.	HB 128	Fishing license for disabled, active-duty military personnel. Authorizes the DGIF to issue free fishing licenses to disabled, active-duty military personnel who are receiving medical treatment from a hospital in Virginia, an adjoining state, or the District of Columbia.	Passed.
130.	HB 168	Personal flotation devices for children. Companion bill is SB 93 (#141), which passed; please see that bill for summary.	Failed in House Militia, Police and Public Safety.
131.	HB 287	Establishment of Marina Fund. Would have requires a certificate to operate from the Department of Health (VDH) for operation of a marina. Fees for certificates would have gone to a new Marina Fund to be used to support the VDH Marina Program.	Failed in House Health, Welfare and Institutions.
132.	HB 373	Hunting, trapping, and fishing license revocation. Clarifies that courts may revoke these licenses upon conviction of violations of laws and regulations related to these activities.	Passed.
133.	HB 487	Board of Game and Inland Fisheries authority on feeding wild animals. Expands the authority of the Board of Game and Inland Fisheries to adopt regulations on the <i>feeding</i> of any game, game animals, or fur-bearing animals; currently, the Board's regulatory authority pertains to hunting, taking, capture, killing, possession, sale, purchase, and transportation of wild animals.	Passed.
134.	HB 74	Boating safety course. Would have exempted a person from taking this course if they possess a valid Coast Guard boat operator's license.	Stricken from docket in House ACNR.
135.	HB 795	Dams and fishways. Would exempt Harvell Dam on the Appomattox River in Petersburg from fish-passageway requirements.	Carried over to 2011 in House ACNR.
136.	HB 801	License to fish; South Holston Reservoir. Adds a new required license for state residents to fish and to harvest trout in the interstate (Virginia-Tennessee) waters of the South Holston Reservoir.	Passed.
137.	HB 802	Antique motorboats registration fee. Would have established a special, one-time, \$100 registration fee for antique motorboats (at least 30 years old).	Stricken from docket in House ACNR.
138.	HB 1029	Special species fishing license. Would have established a special license for the catch or take of fish species that threaten other fisheries or that may have a significant ecological or economic impact.	Stricken from docket in House ACNR.
139.	HB 1218	Waterfowl blinds. Shifts time to obtain licenses to earlier in year.	Passed.
140.	HB 770	DUI arrests, including for boating. One of several provisions would allow an arrest for misdemeanor DUI or "drunk boating" to be made by any officer, whether or not the offense occurred in the officer's presence. This bill incorporates HB 1254 . See similar SB 688 (#148).	Passed.
141.	SB 93	Personal flotation devices (PFDs) for children. Requires children 12 and under to wear a Coast Guard-approved PFD on recreational vessels in waters. Companion bill is HB 168 (#130).	Passed.
142.	SB 217	Recreational boats or watercraft local registration fee. Would have authorized localities to impose an annual registration fee	Passed Senate; failed in House ACNR.

143.	SB 243	Fishing license exemption for active-duty military. Exempts from the fishing-license requirement active-duty military personnel who are residents and on leave; the exemption does not extend to trout-stocking waters.	Passed.
144.	SB 289	Hunting and fishing licenses for under age two. Establishes lifetime hunting and fishing licenses for residents and nonresidents who are younger than two years of age.	Passed.
145.	SB 500	Hunting and fishing licenses for active-duty military. Would have allowed any active member of the military to obtain a resident hunting, fishing, or trapping license.	Stricken in Senate ACNR.
146.	SB 546	Railroad rights-of-way; passage permitted for access to lands used for recreational purposes. Ensures that railroad rights-of-way may be used for recreation and for access to lands being used for recreation without the easement holder owing a duty of care to the user. This exemption from civil liability already exists for landowners, but does not explicitly include railroad rights-of-way.	Passed.
147.	SB 575	Endangered and threatened species. Would have authorized the Board of Game and Inland Fisheries to adopt regulations regarding taking of populations provided for in conservation plans.	Failed in Senate ACNR.
148.	SB 688	DUI arresting, including for boating. Would expand the DUI crimes for which an officer may arrest a person without a warrant. The bill removes the requirement that an arrest for DUI be made within three hours of an accident and allows an arrest for misdemeanor DUI or "drunk boating" to be made by any officer, whether or not the offense occurred in his presence, and removes language from the law providing for transfer of custody from one officer to another in boating DUI incidents. See similar HB 770 (#140).	Carried over to 2011 in Senate Finance.

MINING

149.	HB 1072	Mining: ownership of underground void. Would have broadened the existing statutory provision for ownership of the space opened underground by the removal of minerals and coal.	Failed in House Courts of Justice.
150.	HB 1179	Coalbed methane natural gas. Provides that a conveyance, reservation, or exception of coal shall not be deemed to include coalbed methane gas. Companion bill is SB 376 (#155).	Passed.
151.	HB 1184	Gas and oil wells fee. Would have established a \$50 annual permit renewal fee. Companion bill is SB 560 (#158).	Failed in House Appropriations.
152.	HB 1344	Coalbed methane gas; conflicting claims of ownership; arbitration. Requires that the Virginia Gas and Oil Board order arbitration to resolve conflicting claims of ownership over coalbed methane upon the written request of all parties claiming ownership.	Passed.
153.	HJ 121	Ownership of coalbed methane and other natural gases; study. Directs the Virginia Coal and Energy Commission to study ownership rights of coalbed methane and other natural gases, and opportunities to encourage production and use of natural gas in Virginia.	Passed.
154.	SB 247	Carbon dioxide; regulation of geologic storage. Would have authorized the geologic storage of carbon dioxide by permit issued by the Department of Mines, Minerals and Energy (DMME), including fees established by the DMME; testing and monitoring the geologic storage facility; and any mechanisms needed to ensure the public health and environment subsequent to the closure of operations.	Failed in Senate ACNR.

155.	SB 376	Coalbed methane natural gas. Companion bill is HB 1179 (#150); please see that bill for summary.	Passed.
156.	SB 558	Coal mining; increases license fee. Would have increased the coal mine license fee from \$180 to \$450. See similar SB 559 (#157).	Passed Senate; failed in House Appropriations.
157.	SB 559	Mineral mining; increases license fee. Would have increases the license fee for a mineral mine license from \$180 to \$450 and the license fee for any person engaged in mining sand or gravel on an area of five acres or less from \$48 to \$120. See similar SB 558 (#156).	Passed Senate; failed in House Appropriations.
158.	SB 560	Gas and oil wells fee. Companion bill is HB 1184 (#151); please see that bill for summary.	Passed Senate; failed in House Appropriations.
159.	SB 564	Coal surface mining; prohibiting material disposal in streams. Would have prohibited coal surface-mining operations unless the permit applicant affirmatively demonstrates that no waste materials from mining and reclamation operations would be disposed of in any intermittent, perennial, or ephemeral stream.	Failed in Senate ACNR.

WASTE DISPOSAL

160.	HB 137	Solid-waste disposal in Isle of Wight and Southampton Counties. Would have allowed these two counties to levy solid-waste disposal fees upon households. Identical to HB 894 (#161). Companion bill is SB 19 (#162).	Failed in House Counties, Cities and Towns.
161.	HB 894	Solid-waste disposal in Isle of Wight and Southampton Counties. Identical to HB 137 (#160); please see that bill for summary. Companion bill is SB 19 (#162).	Failed in House Counties, Cities and Towns.
162.	SB 19	Solid-waste disposal in Isle of Wight and Southampton Counties. Companion bills are HB 137 (#160) and HB 894 (#161); please see HB 137 for summary.	Passed Senate; failed in House Counties, Cities and Towns.
163.	SB 234	Hazardous-waste permit fees. Would have authorized the Virginia Waste Management Board to collect hazardous waste facility and transport permit fees in an amount that ensures that general funds are not required to cover the costs of permit issuance and reissuance.	Passed Senate; failed in House ACNR.
164.	SB 235	Nonhazardous solid-waste permit fees. Would have required the Waste Management Board to review periodically permit fees and annual fees for sanitary landfills and other facilities that dispose, treat, or store nonhazardous solid waste, in order to ensure that the fees collected are sufficient to cover at least 75 percent, but no more than 100 percent, of the direct costs of processing an application, performing inspections, and taking enforcement actions.	Passed Senate; failed in House ACNR.
165.	SB 682	Recycling at schools. Would require each local school board to report to the Superintendent of Public Instruction information on recycling voluntarily implemented or in place in any school, including types of items recycled, number of schools participating in the recycling program, and the approximate amount of materials being recycled.	Passed Senate; carried over to 2011 in House Education.

WATER AND SEWER SYSTEMS

166.	HB 82	Public sewer systems: civil penalties. Allows any locality under an order of the Virginia DEQ (under Virginia Code Sec. 62.1-44.19) to establish a uniform schedule of civil penalties for violations of ordinances governing introduction of pollutants into the locality's public	Passed.
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		sewer system. Such civil penalties may not be more than \$100 for the initial summons and not more than \$150 for each additional summons.	
167.	HB 132	Onsite sewage systems in areas with impaired waters. Would have prohibited the VDH from issuing permits from alternative onsite sewage systems in the watershed of any impaired waters if the system were located in a wetland, set back less than 50 feet from any impaired waters, within one foot vertically of any groundwater resource, or discharging directly into a groundwater resource if located in the watershed of any impaired waters. The bill also would have allowed localities that include impaired waters to require maintenance standards and requirements for onsite sewage systems that exceed those established by the State Board of Health.	Failed in House Health, Welfare and Institutions.
168.	HB 332	Alternative onsite sewage systems: testing. Would have prohibited the VDH from requiring that owners of alternative onsite sewer systems with flows of less than or equal to 1,000 gallons per day, and serving a single-family dwelling, provide analyzed samples of effluent on a routine and recurring basis.	Failed in House Health, Welfare and Institutions.
169.	HB 396	Water and wastewater utilities; delinquent payment of rates and charges. Would have removed the authority of localities and of water/waste authorities to hold a <i>non-occupying</i> owner of premises liable for delinquent rates or charges incurred by a tenant or lessee unless the owner is the same person contracting for the service.	Failed in House Counties, Cities and Towns.
170.	HB 484	Water or sewer companies: incorporation. Would require any water or sewer company serving more than <i>25 customers</i> , rather than <i>50 under current law</i> , to incorporate as a public service company.	Carried over to 2011 in House Commerce and Labor.
171.	HB 508	Sewage sludge (or biosolids) land application. Would require the SWCB to adopt a regulation for notifying health-sensitive individuals who live within two miles of a site where sewage sludge is going to be land-applied, and would require the DEQ to establish conditions to ensure that such individuals are not exposed to the sewage sludge. The bill also requires the SWCB to adopt “requirements for the protection from potential damage or injury to surface waters, ground waters, and sensitive natural resource features.”	Carried over to 2011 in House ACNR.
172.	HB 552	Vested rights; includes right to replace failed septic system. Adds under vested-rights protection the right for a property owner to replace failed septic system, even if a new septic system would not otherwise be permitted in that location, <i>unless</i> access to a public sanitary sewer is available to the property.	Passed.
173.	HB 667	Residential Property Disclosure Act. Requires a property disclosure to state that the seller makes no representation about any wastewater system on the property and that the buyer is responsible for ascertaining whether a system exists.	Passed.
174.	HB 707	Water and sewer charges by localities: lien on property. Adds the counties of Caroline and New Kent to those localities that may impose water and sewer charges as a lien on property.	Passed.
175.	HB 1135	Nutrient offsets for wastewater discharges. Requires owners or operators of wastewater-treatment facilities discharging between 1,000 and 39,999 gallons per day—and that has not begun the discharge of pollutants prior to January 1, 2011—to demonstrate to the DEQ that they have acquired waste-load allocations sufficient to offset nitrogen and phosphorus discharges.	Passed.
176.	HB 1340	Sewage sludge (or biosolids) land-application in karst areas. Would authorize localities located in karst areas (defined in the bill) to	Carried over to 2011 in House ACNR.

		prohibit land-application of sewage sludge within their boundaries.	
177.	SB 374	Alternative onsite sewage systems: installation licensure. Would provide a waiver from a written examination for applicants for licensure as an installer of alternative onsite sewage systems if the applicant has been providing such services for at least two years immediately prior to July 1, 2009.	Passed Senate; carried over to 2011 in House Health, Welfare and Institutions.
178.	SB 448	Alternative onsite sewage systems: local prohibition. Would have allowed localities to prohibit use of VDH-approved systems when central sewer systems are <i>not</i> available.	Failed in Senate Local Government.
179.	SB 536	Water-quality testing for private wells. Would have added Bedford County to those localities authorized to establish requirements for compliance with existing drinking-water standards for building permit applicants who propose to use private wells.	Stricken from docket in Senate Education and Health.

WATERS OF THE STATE, PORTS AND HARBORS

180.	HB 4	Roanoke River Basin Advisory Committee. Removes the cap of three consecutive terms on reappointments for non-legislative citizens. Companion bill is SB 317 (#195).	Passed.
181.	HB 121	Virginia ports ownership. Would have required approval both of the governor and the General Assembly before any change in ownership of the Virginia ports. Also see related SB 140 (#193).	Failed in House Transportation.
182.	HB 438	Dam safety. Adds two new requirements for Soil and Water Conservation Board dam-safety regulations: 1) establish an incremental damage-analysis procedure that provides for a new standard for spillway design; 2) adopt regulations that consider the impact of downstream limited-use or private roadways with low traffic volume and low public safety risk in the determination of the hazard potential classification of an impounding structure. The bill also allows dam owners who receive Board recommendations for correction of dam deficiencies to submit their own plan for such corrections. The bill also changes one of the two criteria for designating a dam as unsafe, adding "significant" to the potential property damage needed for a designation.	Passed.
183.	HB 506	Island Ford Road bridge in Harrisonburg. Would have changed the name to the Roy D. Smith, III, Memorial Bridge.	Failed in House Transportation.
184.	HB 515	Wetlands/stream mitigation projects. Prohibits localities from regulating location of projects for wetlands or stream mitigation under a Virginia Water Protection Permit or U.S. Army Corps of Engineers permit, but does not override a locality's authority to determine the allowed uses within its zoning classifications or to approve/reject the siting or construction of wetlands or stream mitigation projects.	Passed.
185.	HB 696	Registration of withdrawals of surface water or groundwater. Would authorize the SWCB to impose a civil penalty, not to exceed \$1,000, upon any person who fails to register and report water withdrawals of more than one million gallons in any month for crop irrigation or a daily average of 10,000 gallons or more in any month.	Carried over to 2011 in House ACNR.
186.	HB 697	Water Protection Permit and state water supply plan. Would authorize the SWCB to consider whether an activity for which a water-withdrawal permit is being sought is in accordance with the state comprehensive water-supply planning process established in 2006 (see <i>Va. Code</i> 62.1-44.38:1).	Failed in House ACNR.
187.	HB 1137	Groundwater-withdrawal permit fees. Would have increased from	Failed in House

		\$6000 to \$12,000 the maximum amount that the SWCB can charge for a 10-year groundwater -withdrawal permit.	Appropriations.
188.	HB 1221	Water Facilities Revolving Fund: loans for stormwater runoff-control best management practices (BMPs). Authorized the SWCB to make loans from the Virginia Water Facilities Revolving Fund to localities for construction or implementation of BMPs that reduce or prevent stormwater pollution.	Passed.
189.	HB 1290	Nutrient-credit trading among basins. Allows wastewater treatment facilities on the Eastern Shore to acquire point-source nitrogen and phosphorus credits from facilities in the Potomac and Rappahannock basins; facilities in other basins remain restricted to acquiring credits from facilities in the same basins.	Passed.
190.	HB 1302	Land conveyance to Roanoke River Rails-to-Trails. Authorizes conveyance of about 1.8 acres of property in the Town of Lawrenceville to Roanoke River Rails-to-Trails to maintain and operate a public trail.	Passed.
191.	HB 1320	Dam safety funds. Authorizes the DCR to award grants from the Dam Safety, Flood Prevention, and Protection Assistance Fund to private entities (current law allows grants only to localities) for dam-break analysis, mapping and digitization of dam-break inundation zones, and incremental damage analysis. The bill also establishes the Dam Safety Administrative Fund, capitalized from the dam application permit fees, for administration of the dam safety program.	Passed.
192.	HB 637	Concealed handgun permit fees for Coast Guard. Waives the concealed handgun permit fee for certain designated boarding team members and boarding officers of the United States Coast Guard.	Passed.
193.	SB 140	Virginia ports ownership. Would have prohibited the Commonwealth, the Virginia Port Authority, any governmental entity, and any other person from selling any harbor, seaport, marine terminal, or other port facility, or inland intermodal facility owned by the Commonwealth or the Authority; prohibited any lease of such facilities for longer than 20 years; and required governor approval for any lease under 20 years. Also see related HB 121 (#181).	Passed Senate; failed in House Rules.
194.	SB 276	Dam safety: spillways. Requires that Impounding Structure Regulations <i>not</i> require any dam in existence or under construction prior to July 1, 2010, and that is classified as high hazard or is subsequently reclassified as high hazard, to upgrade its spillway to pass a rainfall event that is <i>greater</i> than the maximum rainfall event recorded in Virginia. In addition, a dam would be in compliance with spillway requirements if the dam passes <i>two-thirds</i> of the maximum rainfall event and annually meets eight conditions identified in the bill.	Passed.
195.	SB 317	Roanoke River Basin Advisory Committee. Companion bill is HB 4 (#180); please see that bill for summary.	Passed.
196.	SB 569	Water Supply Plan Advisory Committee. Establishes this committee to assist the DEQ in development and implementation of the state water resources plan. The DEQ director is to appoint the members, who are to represent various stakeholders, including water users; water providers; agricultural, conservation, and environmental organization; state and federal agencies; and university faculty. The bill also identifies the issues to be examined by the committee.	Passed.
197.	SB 708	Nutrient Offset Fund. Would have created this sub-fund of the Virginia Water Quality Improvement Fund to be administered by the DEQ for purchase of nutrient reductions (offsets) under the Chesapeake Bay Watershed Nutrient Credit Exchange Program, with	Passed Senate; failed in House Appropriations.

		priority for offsets produced from facilities that generate electricity from animal waste. The offsets purchased with this fund would have been available for sale to new or expanded facilities required to offset nutrient loads.	
198.	SJ 77	Commending the Virginia Resources Authority on the occasion of its 25th anniversary.	Passed.

FROM MISCELLANEOUS CATEGORIES

199.	HB 1115	Virginia Waterways Clean Up and Consumer Choice Act. Would have imposes a fee of five cents on paper and non-reusable plastic bags at retail stores, with retailers retaining one cent (two cents if the retailer has a customer bag credit program) and the rest going to the Virginia Water Quality Improvement Fund.	Failed in House Finance.
200.	HB 1211	Above-ground liquid fertilizer storage tanks. Authorizes localities to adopt an ordinance makes it unlawful to construct, maintain, or use any above-ground liquid fertilizer storage tank (of 100,000 gallons or more) without a permit from the local fire official.	Passed.
201.	SB 582	Fertilizer labeling. Would require labeling on proper use and precautions for non-farm fertilizers.	Carried over to 2011 in Senate ACNR.

Some Water Resource Issues Covered by News Media or Organizations during the 2010 Virginia General Assembly.

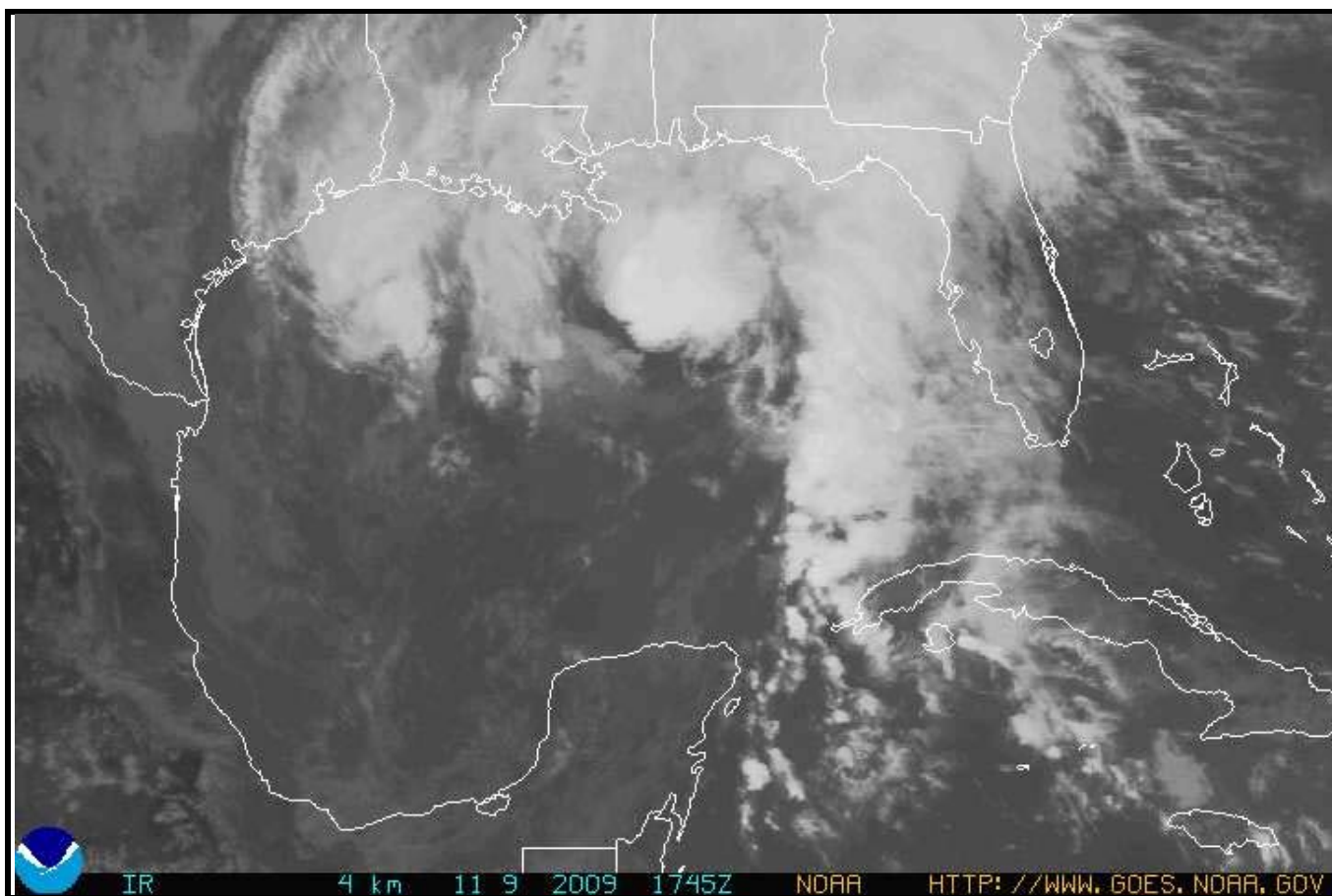
Boating: HB168/SB 93 (children required to wear life vests).
Biosolids: HB 508 (notification of land-application to health-sensitive individuals).
Dam Safety: HB 438, HB 1320.
Energy: Conservation/Demand: SB71 (electricity efficiency standard).
Energy: Offshore oil/gas drilling: HB 787, HB 756, HB 900, SB 601.
Energy: Wood chips in power plants: SB 39.
Energy: Wind: HB 389/SB 577 (Offshore Wind Energy Development Authority).
Erosion and Sediment Control: HB 129, HB 619.
Fertilizer Use: HB 329, SB 582, SB 583 (fertilizers and pesticides).
Fishing Licenses: SB 289, SB 668.
“Green” Building: SB 109.
Land Use/Conservation: SB 346, SB 502.
Menhaden Fishery Management: HB 142/SB 47, HB 294/SB 185
Nutrient-reduction Credits: SB 627
Stormwater Management Regulations: HB 1220/SB 395 (postpones effective date of regulations under review by Soil and Water Conservation Board), HB 155, HB 987, HB 1311, SB 245, SB 650, SB 677, SB 681.
Stormwater Management Facilities: HB 1100.
Waste Management: Plastic bag bans/fees: HB 521, HB 1115.
Water Supply Planning: SB 569 (Advisory Committee).

Sources (each issue was mentioned by at least one source)

MEDIA: *Bay Journal*; *Daily Press* [Hampton Roads area]; *Fredericksburg Free Lance-Star*; *Richmond Times-Dispatch*; *Roanoke Times*; *Virginian-Pilot*.

ORGANIZATION: Virginia Association of Soil and Water Conservation Districts.

FEATURE 2: TIME TO BE READY FOR HURRICANE SEASON



Tropical Storm Ida approaching the U.S. Gulf Coast on November 9, 2009. Ida formerly was a hurricane as it passed through the Caribbean Sea on November 7-8. From November 11 to 14, the remnants of Ida combined with a coastal nor'easter to bring high winds, storm surges, and up to nine inches of rain to Virginia, causing widespread flooding and resulting in six Virginia fatalities. Photo taken from National Hurricane Center Web site, <http://www.nhc.noaa.gov/satellite.shtml>, 11/9/09, 2:15 p.m.

[*Ed. note:* This article updates the hurricane-preparedness article in the June 2008 issue of *Water Central*.]

The Atlantic hurricane season runs from June 1 to November 30, with August to October the usual period of peak activity. On May 27, 2010, the Climate Prediction Center of the National Oceanic and Atmospheric Administration (NOAA) released its outlook for the 2010 Atlantic hurricane season.¹ Allowing for various uncertainties (which are detailed in the full outlook document), the outlook estimated a **85-percent probability of an “above-normal” Atlantic hurricane season in 2010**, and a 70-percent chance for the following ranges of activity: 14 to 23 named storms; 8 to 14 hurricanes; and 3 to 7 major hurricanes (major hurricanes are those rated “Category 3” or higher on the Saffir-Simpson Scale and that have sustained winds of at least 111 miles per hour).

A “near-normal” season typically has 6 to 14 named storms, 4 to 8 hurricanes, and 1 to 3 major hurricanes.

The Climate Prediction Center’s press release on the hurricane season outlook notes that the outlook is “a general guide to the expected overall nature of the upcoming hurricane season. It is not a seasonal hurricane landfall forecast, and it does not imply levels of activity for any particular region. Hurricane disasters can occur whether the season is active or quiet. It only takes one hurricane (or tropical storm) to cause a disaster. Residents, businesses, and government agencies of coastal and near-coastal regions should prepare for every hurricane season regardless of the seasonal outlook.”

¹ A news release on the outlook is available at www.noaanews.noaa.gov/stories2010/20100527_hurricaneoutlook.html, and the full outlook is available at www.cpc.ncep.noaa.gov/products/outlooks/hurricane.shtml (both as of 6/7/10). The outlook is a collaboration of the Climate Prediction Center, the National Hurricane Center, and the Hurricane Research Division, all within NOAA.

Hurricane Preparedness Week, organized by NOAA and the Federal Emergency Management Agency (FEMA), was May 23-29, 2010. The NOAA/FEMA Web site for the week, at www.nhc.noaa.gov/HAW2/english/intro.shtml, includes information about historic tropical storms, **potential impacts of tropical storms**—including high winds, storm surges, tornadoes, and especially *inland flooding*, which is the greatest single cause of tropical-storm-related deaths—and recommended preparation and response actions.

This rest of this article presents hurricane safety and preparedness tips, information regarding safety for your pets, a hurricane-preparedness quiz, and sources of more information.



Safety and Preparedness Tips

The hurricane-preparedness Web site of Virginia Department of Emergency Management (VDEM), at www.vdem.state.va.us/threats/hurricane/index.cfm ([en español](#)), stresses that “[a]ll residents should plan to protect themselves, their families, and their pets in the event of a hurricane or tropical storm...[by taking] three easy, low-cost steps:

- Get a disaster-supply **kit**;
- Make an emergency-response (including evacuation) **plan**;
- Stay informed** before, during, and after a storm or other event.

The following suggestions about **preparing for any disaster** were taken from the VDEM Web site, www.vaemergency.com/prepare/planning/index.cfm, 6/8/10 (edited here for space). Much more information about emergency planning is available at the VDEM site.

1. Understand What Could Happen

Look Around Where You Live

Virginians experience hurricanes, winter storms, thunderstorms, toxic spills, earthquakes, tornadoes, terrorism, flooding and fires. ...Ask yourself what emergencies or disasters could occur in your area.

Learn About Community Disaster Plans

Learn how facilities will handle an emergency where you or your family spend time, such as your workplace, your children’s school or daycare center, and your community.

Know Your Community Warning Sirens

Know what they sound like and what to do when you hear them. Keep a battery-powered radio and extra batteries handy so you can get important information in an emergency, even if the power is out. A NOAA Weather Radio is a valuable source of information. Most models have an automatic alert feature that can be programmed for your specific area.

The **hearing-impaired** might have difficulty hearing sirens or other types of alerts. Consider purchasing an alert system with a visual signal and make special arrangements ahead of time through local emergency management officials.

2. Create a Disaster Plan

Prepare for What Might Happen

Discuss with your family, friends and neighbors the types of disasters and emergencies that are most likely to happen and what to do in each case. Take a first aid, CPR, or other class so that you have the knowledge to help yourself and others if needed. If you do not own a vehicle or drive, learn in advance what your community's arrangements are for those without private transportation.

Contact school officials to learn how they will notify you of your child's status if an emergency occurs. For older children who self-transport, ask them to follow the instructions of authorities.

Have an Out-Of-Town Contact

After a disaster, it's often easier to call long distance than to get a local call to connect. Ask an out-of-town friend or relative to be your family emergency contact. All family members should call this person in an emergency.

Plan for Your Pets

Many emergency shelters will not accept pets other than service animals. Talk to your veterinarian or local humane society in advance about an emergency plan for your pets. Or, plan to shelter your pet with family, friends or in a pet-friendly motel.

Remember that evacuation shelters often do not provide blankets, sheets or pillows. If ordered to evacuate, bring these items with you.

If you have to leave your pet at home, post stickers or signs on doors that are clearly visible from the outside. Specify what types and the number of animals.

[*Ed. note:* For more on emergency care for pets, please see the "Additional Tips for Pets" section below.]

Plan for the Mobility-Impaired

Keep support items in the same place, so they can always be found quickly. For those who have home-health caregivers, particularly for those who are bed-bound, it is essential to discuss emergency procedures with your service representative. Have an alternate plan. Know your neighbors and consider how they can assist you if the home-health caregiver cannot come to you. Contact your local emergency manager to learn what plans are in place to assist you in case of evacuation.

Determine Where to Meet

Decide now where you and your family will meet in case you can't return home because of an emergency. Keep a record of the location's address and phone number, as well as the phone numbers of your family, with you at all times.

Insurance Coverage

Homeowners' insurance typically does not cover flood damage. If you live in an area that's prone to flooding, talk to your insurance agent about purchasing flood insurance.

Inventory Home Possessions

Make a visual or written record of your possessions to help you claim losses in the event of damage. Include photographs of cars, boats, and recreational vehicles. Get professional appraisals of jewelry, collectibles, artwork, or other items that might be difficult to evaluate. Also, photograph the exterior of your home; include the landscaping that might not be insurable but does increase the value of your property for tax purposes. Make copies of receipts and canceled checks for valuable items.

Keep these and other vital records, such as your insurance policies and birth certificates, in one location in a waterproof container or in a safety deposit box. They will help you claim assistance.

3. Make an Emergency Supplies Kit

When a disaster strikes, you might not be able to buy essential items. If businesses close, fallen trees block roads and power goes out in your area, you will need an emergency supplies kit. Have enough supplies on hand to last *at least three days for each member of your household*:

- Three gallons of water per person;
- Foods that require no refrigeration, preparation or cooking, such as canned goods; include a manual can opener;
- Emergency tools such as a battery-powered radio, flashlight, and extra batteries;
- First aid kit that includes a list of any family members' allergies and contact lenses or an extra pair of glasses;
- A week's supply of prescription medications;
- Sanitation supplies, including toilet paper, soap, plastic garbage bags, and personal hygiene supplies;

- A change of clothing, footwear, and blanket or sleeping bag;
- Extra set of car keys;
- Cash in small denominations or traveler’s checks;
- Special items for infants, the elderly, or disabled members of the household. ...Make sure you have contact numbers for your pharmacy and medical supply providers if a household member requires oxygen, dialysis supplies, diabetes supplies, etc.
- Pet** emergency supplies include a carrier or leash, food and bowls, cat litter and litter box, medications and schedules, identification, contact information, veterinary shot records, beds, and toys.

Make sure you store your kit where you can get to it easily and quickly – in an emergency, you might have only minutes to act.

When assembling your emergency kit, be sure it’s not too heavy or bulky for you to carry. You might need to store items in more than one container or a suitcase with wheels. Label your kit with your name and contact information. For those with budgetary concerns, collect these supplies over time. [*Ed. note:* see www.vdem.state.va.us/threats/hurricane/prepare/hurricanekit.cfm for a four-week plan for assembling a disaster-supply kit.]

4. Listen for Local Instructions

Before, during, and after a disaster, it is critical that you listen for the most local, up-to-date information from emergency officials. Local media will convey instructions from local, state, and federal government partners, such as orders to evacuate, details about evacuation routes, locations of evacuation shelters, how to stay where you are safely, where to find assistance, and weather warnings and watches.

Make sure your battery-powered radio is working in case the electricity goes out.

If children are in school during a disaster or emergency, check the local media for announcements about changes in school openings and closings. Parents can pick up their children during the school day, but sometimes the safest place might be the school itself.

If Ordered to Evacuate

- Take your emergency supplies kit.
- Listen to your battery-powered radio or car radio, and use travel routes specified by local authorities. Don’t use shortcuts—certain areas might be impassable or dangerous.
- Implement your pet’s evacuation plan. People who need special help or transportation during an evacuation should listen to local media for instructions about what to do during an evacuation.

If Instructed to Stay Where You Are

- If local emergency officials tell you to “shelter-in-place” or stay where you are, you must remain in your home or office and protect yourself there.
- Lock all windows and exterior doors, and close vents and fireplace dampers. Turn off all fans and heating and air-conditioning systems.
- Get your emergency supplies kit, and make sure the battery-powered radio is working.
- Go to an interior room without windows that is above ground level. Some chemicals are heavier than air and might seep into basements. [*Ed. note:* Safety instructions for **tornadoes or other high-wind events**—including those of VDEM at www.vaemergency.com/threats/tornado/tornrespond.cfm—typically recommend going to a basement if one is available.]
- In case of contaminated air, use duct tape and plastic sheeting to seal all cracks around the door and any vents into the room. Include spaces around pipes.
- Listen to the radio or television until you are told all is safe or you are told to evacuate.

5. When the Disaster is Over

Once the immediate danger has passed, it might take weeks or even months for you and your community to recover.

If you evacuated, be careful when you return home. Structural damage and mold from flooding can cause health risks. Be alert for snakes and other wild animals that could have taken refuge in your home during the disaster. Contact your insurance company if your home is damaged.

If your area is declared a federal disaster area, you might be eligible for assistance such as temporary housing, help with uninsured home repairs, etc. Listen to local news for instructions about how to apply for assistance.

Following an emergency, some people try to take advantage of those affected by disaster through price gouging and other scams. Be alert for such illegal activity. If you suspect someone is trying to take advantage of you, report

it to the Federal Trade Commission at (877) 382-4357 or to the Better Business Bureau on their Web site, www.bbb.org.

6. When an Emergency Occurs—A 10-point Summary

1. Follow your plan.
2. Listen to local radio or television for information about what you should do.
3. Be prepared to evacuate your home if authorities order you to do so.
4. Check for fires, electrical [problems], or other household hazards.
5. Check on your neighbors.
6. Call your family contact to check in.
7. Avoid driving except to evacuate. Be alert for road hazards, such as flooding. ***Never drive through floodwaters***; they might be deep enough to carry your vehicle away.
8. If the disaster occurs near you, be prepared to give first aid and get help for seriously injured people.
9. In darkened areas, check for damage using a flashlight. Do not light matches or candles or turn on electrical switches.
10. If you smell gas or suspect a leak, turn off the main gas valve, open windows and get everyone outside quickly. If you shut off the gas valve, you will need a professional to turn it back on.

Additional Tips about Pets

The following information is an excerpt (edited here for space) from the National Hurricane Center Web site, “Hurricane Preparedness—Pet Plan,” at www.nhc.noaa.gov/HAW2/english/prepare/pet_plan.shtml (accessed 6/8/10).

Before the Disaster

- Contact your veterinarian or local humane society for information on preparing your pets for an emergency.
- Make sure that your pets have current vaccinations.
- Have a current photograph of your pets.
- Keep a collar with identification on your pet and have a leash on hand to control your pet.
- Have a properly-sized pet carrier for each animal (large enough for the animal to stand and turn around).
- If you plan to shelter your pet, work it into your evacuation route planning. Specialized pet shelters, animal control shelters, veterinary clinics, and friends and relatives out of harm's way are all potential refuges for your pet during a disaster.

During the Disaster

- Bring pets indoors well in advance of a storm; reassure them and remain calm.
- Pet shelters will be filled on first-come, first-served basis; call ahead and determine availability.
- Animals brought to a pet shelter are typically required to have a proper identification collar and rabies tag, proper identification on all belongings, a carrier or cage, a leash, an ample supply of food, water and food bowls, any necessary medications, specific care instructions, and newspapers or trash bags for clean-up.

After the Disaster

- Walk pets on a leash until they become re-oriented to their home. Often familiar scents and landmarks may be altered and pets could easily be confused and become lost. Also, downed power lines, reptiles brought in with high water, and debris can all pose a threat for animals after a disaster.
- If pets cannot be found after a disaster, contact the local animal-control office to find out where lost animals can be recovered. Bring along a picture of your pet if possible.
- After a disaster, animals can become aggressive or defensive; monitor their behavior.

Hurricane Preparedness Quiz

The Virginia Department of Emergency Management's Web site provided this true/false quiz in August 2005 (it's no longer available at the site). It has been slightly edited here for space.

1. Your family disaster plan should include a phone number for an out-of-state contact. T / F
2. Candles are the best source of light during a power outage. T / F
3. Most deaths from a hurricane happen during the height of the storm. T / F
4. It takes as little as two feet of water to carry away most vehicles. T / F
5. Pets are welcome at most emergency shelters. T / F
6. Most homeowners' insurance policies cover flood damage. T / F
7. Virginians need be concerned only about hurricanes that make *landfall* in Virginia. T / F
8. Tropical storms or depressions can cause more damage than hurricanes. T / F

Quiz Answers

1. *True.* During an emergency, long-distance phone lines are more likely to be operational. Local phone lines could be affected by the disaster, and cell phone relay towers might be overloaded. The purpose of an out-of-state contact is for each member of the family to check in and let loved ones know where they are.
2. *False.* Candles pose a fire hazard and should not be used during an emergency, especially if there is a chance that a gas line is broken. Instead, use a flashlight and keep extra batteries.
3. *False.* Most deaths occur *after* the hurricane, during the clean-up phase, when failure to follow proper safety procedures can lead to chainsaw accidents, falls from roofs, or carbon monoxide deaths from improperly ventilated generators.
4. *True.* Very little moving water is needed to move vehicles. Moreover, what looks like shallow water can mask a deep hole where the road has been washed away.
5. *False.* Due to health regulations, only *service animals* are permitted in emergency shelters. Contact animal hospitals or kennels outside your evacuation area that will care for animals during an emergency. If you want to stay with your pet, contact hotels to find ones that accept pets.
6. *False.* Most homeowners' policies do not cover flood damage. If you live in an area that can flood, contact a licensed insurance agent about flood coverage.
7. *False.* Some of the worst storms in Virginia history made landfall in other states; for example, Isabel in 2003 landed in North Carolina.
8. *True.* Tropical storms and depressions can be just as damaging or deadly as hurricanes. For example, Hurricane Gaston in 2004 had weakened to a tropical depression when it moved through central Virginia, but its heavy rain caused record flooding, nine deaths, and major property damage.

Other Hurricane Safety Information Sources

American Red Cross: "[Are You Prepared for a Hurricane?](#)" Web site; or phone your local or regional Red Cross chapter or the national office in Washington, D.C., at (800) 733-2767.

Centers for Disease Control and Prevention (CDC): "Hurricanes: Plus Cyclones, Typhoons, and Other Tropical Storms," <http://emergency.cdc.gov/disasters/hurricanes/> (also available in French, German, Haitian Creole, Portuguese, Spanish, and Vietnamese); or phone (800) CDC-INFO (232-4636); (888) 232-6348 (TTY).

Federal Emergency Management Agency (FEMA): "Are You Ready?—Hurricanes," www.fema.gov/areyouready/hurricanes.shtm; or phone (800) 621-FEMA (3362).

En Español: Fuentes de Información sobre Huracanes

Centros para el Control y la Prevención de Enfermedades: "Huracanes: Salud y seguridad," <http://emergency.cdc.gov/disasters/hurricanes/espanol/>; o llame los Centros a (800) 232-4636.

Cruz Roja Nacional Americana: "¿Preparación para huracán," www.cruzrojaamericana.org/general.asp?SN=200&OP=216&SUOP=244; o llame la Sede Nacional de la Cruz Roja Americana en Washington, D.C. a (800) 733-2767.

Agencia Federal para el Manejo de Emergencias (FEMA, por sus siglas en inglés: "Temporada de Huracanes 2010," www.fema.gov/esp/riesgo/huracan/2010/hu_season10_esp.shtm; o llame FEMA a (800) 621-3362.

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.

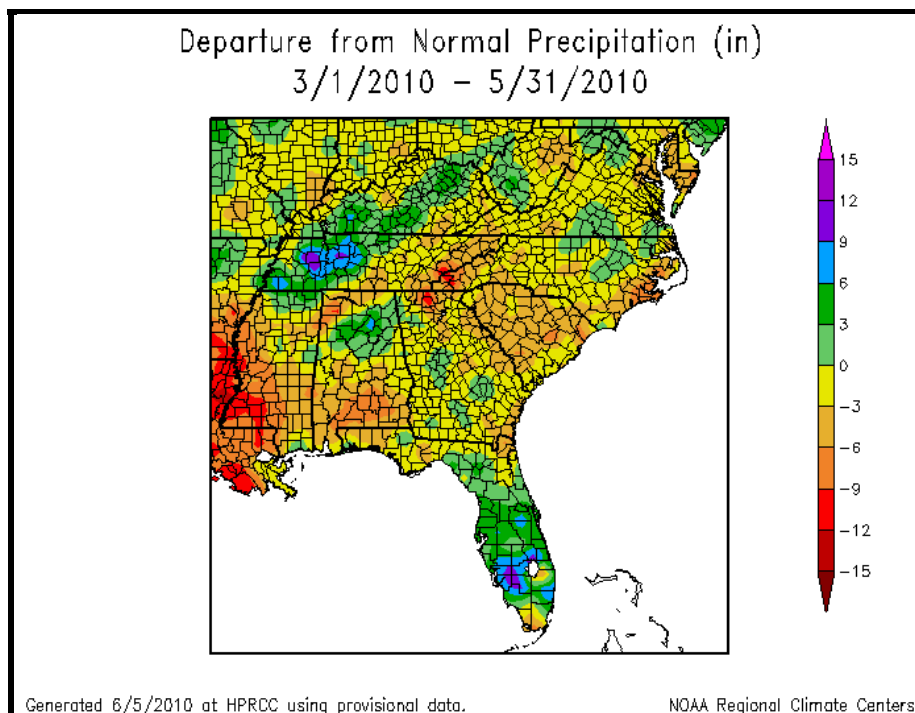
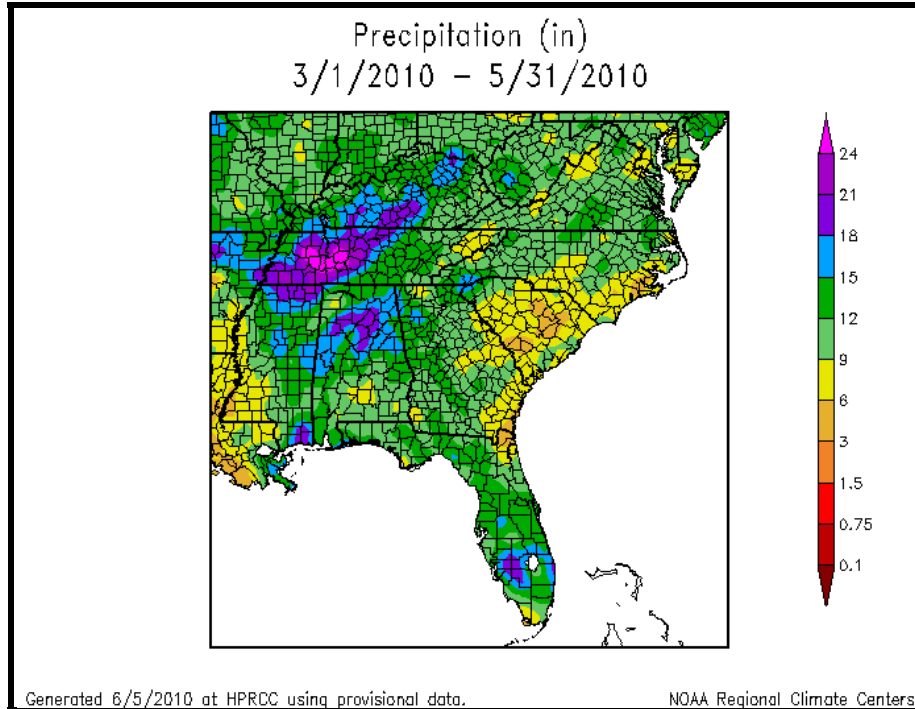
Precipitation in Virginia, June 2009-May 2010

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 upper number for each entry is the **total 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=lwx, for Washington-Dulles; and <http://mi.nws.noaa.gov/climate/index.php?wfo=akq>, for Norfolk and Richmond. The lower number in each entry (in parenthesis) is the **average precipitation** for the locality and month (again, with the average yearly total at the bottom of the chart), over the period 1971—2000, according to the National Climatic Data Center, *Climatology of the United States No. 81* (available online at <http://cdo.ncdc.noaa.gov/climatenormals/clim81/VAnorm.pdf>). RL and RH mean record low or high, respectively, for that month. The amounts listed here are classified by the Weather Service as *provisional* data and are subject to revision; the National Climatic Data Center maintains any edited and *certified* data that are available.

	Bristol (Tri-Cities, Tenn., Airport)	Blacks- burg (Va. Tech Airport)	Danville (Airport)	Lynchburg (Regional Airport)	Norfolk (Internat. Airport)	Richmond (Byrd Intern. Airport)	Roanoke (Woodrum Airport)	Wash.- Dulles Airport
June 2009	3.57 (3.89)	4.06 (3.93)	4.83 (3.50)	3.71 (3.79)	5.81 (3.77)	4.32 (3.54)	4.54 (3.68)	6.69 (4.07)
July 2009	8.51 (4.21)	6.44 (4.17)	3.57 (4.44)	3.09 (4.39)	2.47 (5.17)	3.99 (4.67)	5.84 (4.00)	2.18 (3.57)
Aug. 2009	1.52 (3.00)	3.25 (3.68)	3.35 (3.54)	2.37 (3.41)	13.22 (4.79)	4.04 (4.18)	4.43 (3.74)	2.75 (3.78)
Sep. 2009	4.98 (3.08)	2.33 (3.39)	2.38 (4.08)	2.17 (3.88)	7.77 (4.06)	2.46 (3.98)	3.14 (3.85)	1.83 (3.82)
Oct. 2009	4.02 (2.30)	3.02 (3.19)	3.23 (3.71)	3.17 (3.39)	3.21 (3.47)	3.59 (3.60)	2.69 (3.15)	5.70 (3.37)
Nov. 2009	3.00 (3.08)	5.12 (2.96)	8.33 (3.07)	8.19 (3.18)	9.20 RH (2.98)	9.60 RH (3.06)	7.44 (3.21)	3.71 (3.31)
Dec. 2009	5.64 (3.39)	6.66 RH (2.87)	5.73 (3.16)	6.82 (3.23)	7.57 (3.03)	8.16 (3.12)	8.22 RH (2.86)	5.98 (3.07)
Jan. 2010	3.61 (3.52)	3.91 (3.37)	3.54 (4.03)	4.79 (3.54)	3.81 (3.93)	3.60 (3.55)	4.61 (3.23)	2.01 (3.05)
Feb. 2010	2.21 (3.40)	2.18 (3.02)	2.62 (3.41)	2.29 (3.10)	4.21 (3.34)	2.82 (2.98)	2.07 (3.08)	4.63 (2.77)
Mar. 2010	2.09 (3.91)	3.51 (3.83)	6.28 (4.25)	5.22 (3.83)	6.02 (4.08)	6.17 (4.09)	3.96 (3.84)	3.36 (3.55)
Apr. 2010	2.21 (3.23)	2.42 (3.83)	1.59 (3.83)	2.86 (3.46)	1.00 (3.38)	1.59 (3.18)	1.35 (3.61)	1.29 (3.22)
May 2010	2.58 (4.32)	4.89 (4.39)	4.02 (3.96)	4.56 (4.11)	4.60 (3.74)	2.62 (3.96)	5.35 (4.24)	5.42 (4.22)
Period Total	43.94 (41.33)	47.79 (42.63)	49.47 (44.98)	49.24 (43.31)	68.89 (45.74)	52.96 (43.91)	53.64 (42.49)	45.55 (41.80)

Precipitation, continued

For a more visual presentation over a wider area, the two graphs below—from the National Oceanic and Atmospheric Administration’s (NOAA) Southeast Regional Climate Center, located at the University of North Carolina in Chapel Hill—show the total precipitation (in inches; top graph) over the past three months (March-May 2010) and the departure from normal (in inches above or below normal; bottom graph) over that period. Note that the values represented by a given color differ between the two graphs. *These data are provisional.* These graphs were taken from http://www.sercc.com/climateinfo/precip_maps on 6/8/10.



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, June 2010

As of June 8, 2010, the Virginia Active Water Level Network—maintained by the U.S. Geological Survey (USGS) and available online at <http://groundwaterwatch.usgs.gov/StateMaps/VA.html>—provided access to groundwater levels at 529 wells in 67 Virginia counties and cities. At 116 of these observation wells in 40 localities, *real-time data* (updated every 5 to 60 minutes) were being recorded. The table below shows the June 8 daily average level 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 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 median June level, the deepest (driest) level, and the shallowest (wettest) level (all for each well's period of record). Historical information on groundwater is also available from the USGS' annual reports of groundwater; data for Water Years (October through September) 2002 to 2009 are available online at <http://wdr.water.usgs.gov/>; for previous years, check your local library for printed copies of the reports.

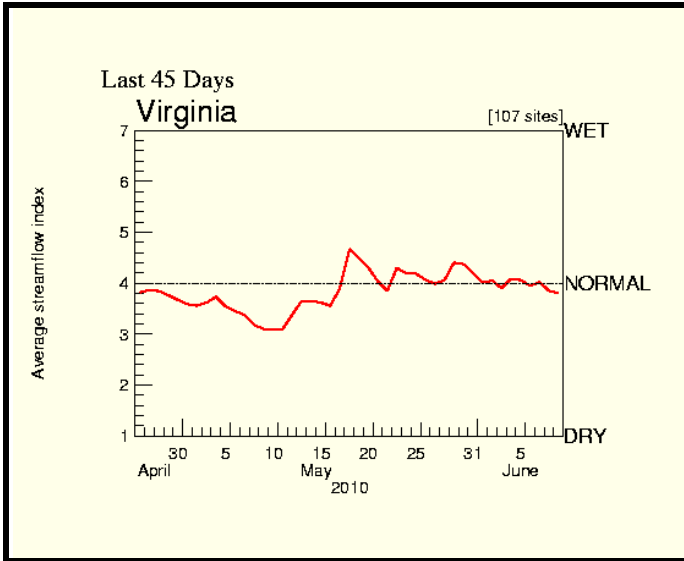
Well (Local #)	6/8/10	3/9/10 Level	11/29/09 Level	June Median	Record Deepest (Driest)	Record Shallowest (Wettest)	Period of Record
Accomack (66M 19 SOW 110S)	9.2	7.4	7.7	9.1	11.3 (Nov. 1981)	6.8 (Mar. 2010)	Since Sep. 1978
Buckingham (41H 3)	15.5	15.5	24.6	20.9	36.7 (Jan. 2002)	7.4 (Apr. 1973)	Since Mar. 1971
Clarke (46W 175)	33.1	32.9	41.6	36.5	45.7 (Sep. 2002)	23.5 (Sep. 2003)	Since Mar. 1987
Fairfax (52V 2D)	13.7	9.8	15.4	12.8	24.9 (Dec. 1998)	6.5 (Mar. 1984)	Since Oct. 1976
Hanover (53K 19 SOW 080)	16.7	12.9	16.5	17.7	22.9 (Aug. 1984)	5.1 (Aug. 2004)	Since Jan. 1978
Loudoun (49Y 1 SOW 022)	58.9	55.7	60.5 (11/19)	58.9	66.5 (Oct. 2008)	48.0 (June 1972)	Since Nov. 1963
Montgomery (27F 2 SOW 019)	4.1	1.7	2.5	4.5	7.3 (Dec. 1969)	< 0.0 (Mar. 1993)	Since Apr. 1969
Northampton (63H 6 SOW 103A)	5.2	1.9	6.2	6.0	10.0 (Oct. 2002)	0.8 (Oct. 1999)	Since Sep. 1977
Orange (45P 1 SOW 030)	22.7	19.1	25.8	23.2	39.0 (Aug. 2002)	11.8 (Apr. 1973)	Since Feb. 1965
Prince William (49V 1)	9.0	7.2	7.6	9.8	13.1 (Sep. 1991)	6.5 (Mar. 2010)	Since Nov. 1968
Roanoke City (31G 1 SOW 008)	19.0	18.8	18.7	18.6	19.3 (Jun. 1987)	12.4 (Feb. 1986)	Since Aug. 1966
Rockbridge (35K 1 SOW 063)	24.3	19.9	23.0	23.6	30.4 (Sep. 2002)	14.3 (Apr. 1987)	Since Jun. 1972
Rockingham (41Q 1)	67.4 (6/5)	65.5	79.7	67.5	99.0 (Oct. 2002)	57.7 (Feb. 1998)	Since Aug. 1970
Shenandoah ² (40U 3 SOW 218)	13.1	See footnote	See footnote	Not available	16.3 (Oct. 2009)	11.2 (Mar. 2010)	Since Oct. 2006
Suffolk (58B 13)	8.4	5.5	6.2	8.8	13.4 (Jan. 1981)	2.0 (Sep. 1999)	Since Mar. 1975
Surry (57E 13 SOW 094C)	8.9	5.9	6.7	8.1	11.2 (Dec. 1981)	3.9 (May 1980)	Since Jul. 1978
Virginia Beach (62B 1 SOW 098A)	3.7	1.8	2.0	4.3	12.0 (Sep. 1980)	0.9 (Nov. 2009)	Since Jun. 1979
Westmoreland (55P 9)	5.9	<0.0	8.1	3.7	12.8 (Dec. 1988)	< 0.0 (Dec. 2009)	Since Jul. 1977
York (59F 74 SOW 184C)	8.3	6.1	7.3	7.5	14.1 (Jan. 2002)	0.9 (Nov. 2006)	Since Jun. 1990

² This is the first time that this Shenandoah County well has been included. Previously, *Water Central's* table included Frederick County well 46X 110, but data collection from that well was discontinued in November 2009.

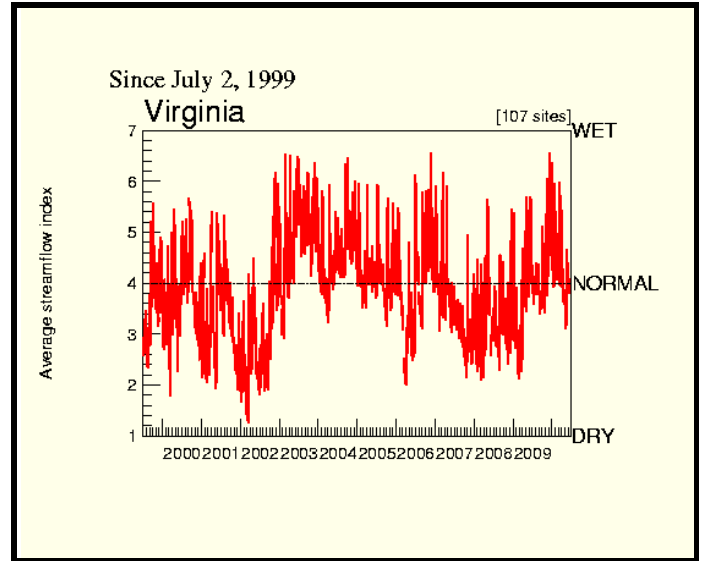
Stream Flow in Virginia, Late April-Early June 2009

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

For April 25-June 4, 2010



For July 1999—June 2010



The graphs above, from the U.S. Geological Survey's (USGS) "WaterWatch—Current Water Resources Conditions" Web site (<http://water.usgs.gov/waterwatch/?m=real&r=va&w=real%2Cplot>, 12/1/09), compare recent Virginia stream flow to historical records.

The data in the graphs come from 107 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:

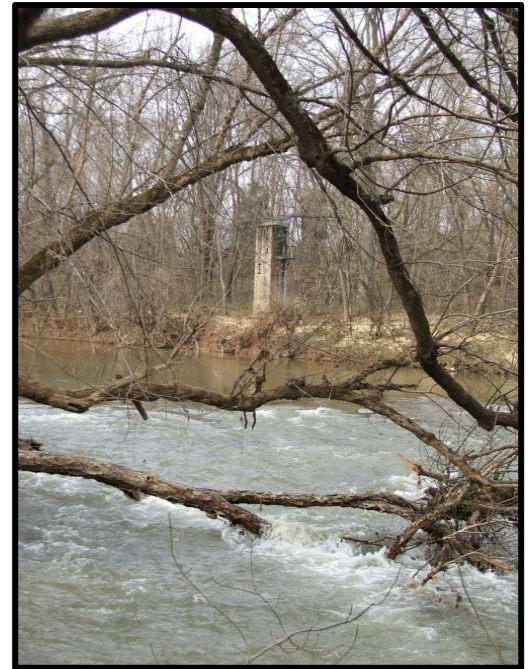
- 4 = average daily flow exceeds the lowest 25 percent of historical values for that date, but is less than the highest 25 percent of values.

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 for the graphed date is record high for that date.

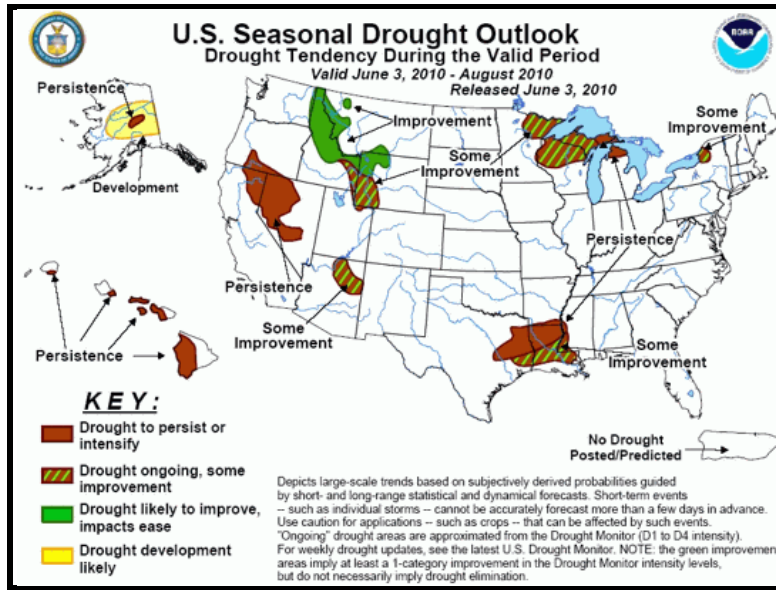
Gaps in the data: Data are not plotted for days when less than two-thirds of the sites report data (due to equipment or weather problems), because a statewide average on those days may misrepresent actual conditions.

A USGS **map of current stream flow conditions** compared to historical flows is available online at <http://water.usgs.gov/waterwatch/?m=real&r=va>. This Web site also has maps that show average flows over the previous 7-, 14-, and 28-day periods.



Gaging station on Goose Creek south of Leesburg (Loudoun County), March 21, 2010.

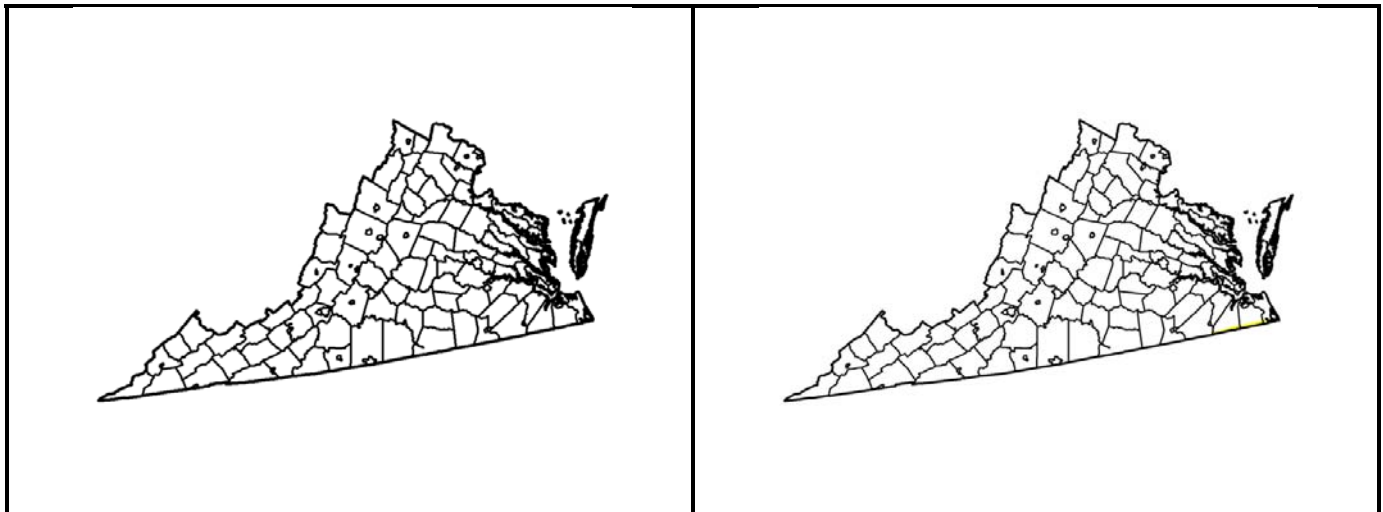
Drought Update



The national drought outlook for June-August 2010, according to the National Oceanic and Atmospheric Administration’s Climate Prediction Center Web site, www.cpc.ncep.noaa.gov/products/expert_assessment/seasonal_drought.html, accessed 6/9/10.

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

The U.S. Drought Monitor, available online at www.drought.unl.edu/dm/monitor.html, is a weekly nationwide drought assessment by federal agencies and state climatological centers. The following graphs show Drought Monitor assessments of Virginia conditions on June 1, 2010, compared to June 2, 2009. The lack of color in the graphs indicates a lack of drought conditions. After a nearly drought-free period from mid-May to late June 2009, abnormally dry conditions returned to parts of Virginia from July to November 2009. But from November 3, 2009, to June 1, 2010, every weekly Drought Monitor report—except for two weeks in May 2010—categorized Virginia as drought-free.



June 1, 2010

June 2, 2009

- = 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, www.drought.unl.edu/dm/archive.html, 6/9/10. Author for both images: Brian Fuchs, National Drought Mitigation Center.

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
6/1/10	US = 29%; VA = 0%	US = 3%; VA = 0%
5/4/10	US = 33%; VA = 4%	US = 2%; VA = 0%
4/6/10	US = 31%; VA = 0%	US = 2%; VA = 0%
3/2/10	US = 30%; VA = 0%	US = 1%; VA = 0%
6/2/09	US = 30%; VA = 0.4%	US = 5%; VA = 0%

From the Virginia Drought Monitoring Task Force

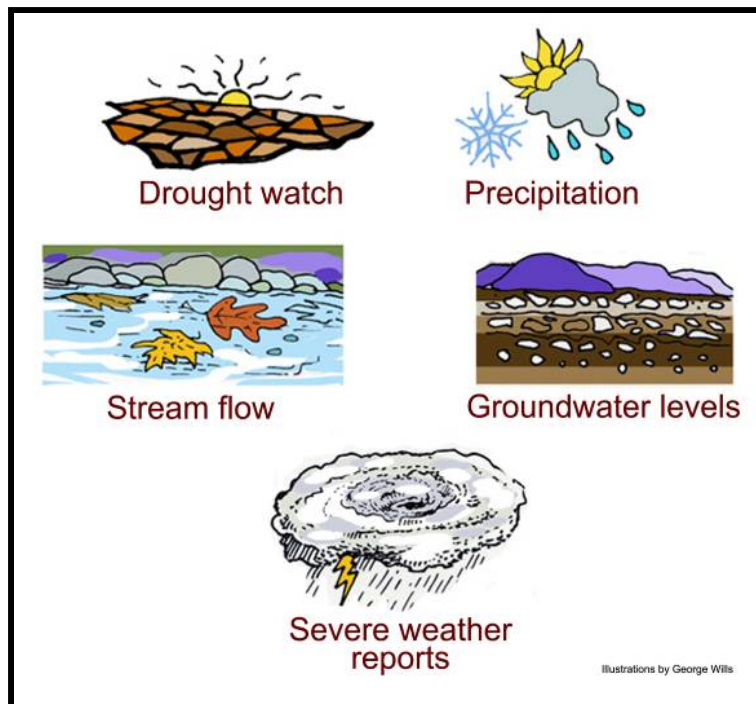
As of June 9, 2010, no reports had been issued from the Virginia Drought Monitoring Task Force since October 27, 2009. Reports from the Task Force since February 2002 are available online at www.deq.virginia.gov/waterresources/drought.php.

Other Useful Sources of Information Online

- Virginia Forestry Department list of burn bans: <http://www.dof.virginia.gov/fire/burn-bans.shtml>.
- Virginia Department of Environmental Quality water-conservation tips: www.deq.virginia.gov/waterresources/waterconservation.html.

Don't Forget the Water Center's Online Water Status Page!

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. Look for the image below, at www.vwrrc.vt.edu/water_status.html.



IN AND OUT OF THE NEWS

Newsworthy Items You May Have Missed

Because of the length of this issue of *Water Central*—due to the General Assembly article—only two major news topics are included below. For many additional news items collected between March 3 and June 1, please see the May 2010 *Water Central* News Supplement (17 pages), available online at www.vwrrc.vt.edu/pdfs/newsletter/May2010NewsSupplement.pdf.

If you'd like a weekly report on Virginia water news and upcoming events, including government meetings, try **Virginia Water Radio**, at www.virginiawaterradio.org. The site has each edition's audio file and transcript, and you can sign up for an RSS feed or a podcast download.

Chesapeake Bay Restoration—Legal Developments

•2010 will bring a series of deadlines and required actions towards a **Chesapeake Bay Total Maximum Daily Load, or TMDL**, also being referred to frequently as a “pollution diet” or “pollution budget” that will guide restoration of the Bay’s water quality and aquatic habitat. The federally mandated TMDL process—a requirement of the Clean Water Act for water bodies that do not meet standards for biological, physical, or chemical characteristics—is being led by the U.S. EPA in collaboration with Virginia, the other five Bay watershed states, and the District of Columbia. EPA and the Bay jurisdictions have agreed to publish the final TMDL by December 31, 2010. Here are several actions necessary to meet that goal: 1) In April, EPA and the jurisdictions are to adopt nutrient (nitrogen and phosphorus) and sediment goals, by major river, that will allow the Bay overall to meet nutrient and sediment standards. 2) June 1: Jurisdictions are to submit to EPA preliminary Watershed Implementation Plans that identify nutrient and sediment goals for specific pollution sources (wastewater treatment plants, agriculture, construction, etc.), the reductions necessary by each sector to meet the goals, and plans for programs to accomplish needed reductions; EPA will have until July 1 to review the plans and ask for revisions, if necessary. 3) Aug. 15-Oct. 15: The draft TMDL, including watershed plans, is available for public comment. 4) By Nov.1: Jurisdictions must submit final Watershed Implementation Plans. If EPA judges the plans insufficient to meet TMDL goals, the agency may impose certain additional requirements. (*Bay Journal*, March 2010)

•On May 10, the U.S. EPA and the Chesapeake Bay Foundation (CBF) signed a settlement of the **January 2009 lawsuit by CBF and seven other plaintiffs** who claimed that the EPA failed to comply with the federal Clean Water Act in not taking adequate measures to protect and restore the Bay. The other plaintiffs were former Maryland State Senator Bernie Fowler, former Maryland Governor Harry Hughes, former Virginia Secretary of Natural Resources Tayloe Murphy, former District of Columbia Mayor Anthony Williams, the Maryland Saltwater Sportfisherman's Association, Inc., the Maryland Watermen's Association, and the Virginia State Waterman's Association. The settlement identifies several actions required of the EPA, including (according to the EPA news release) “...establishing the stringent Chesapeake Bay total maximum daily load (TMDL), putting in place an effective implementation framework, expanding its review of Chesapeake Bay watershed permits, ...initiating rulemaking for new regulations for concentrated animal feeding operations and urban and suburban stormwater,... [and establishing] a publicly accessible tracking and accounting system to monitor progress in reducing pollution through the TMDL and two-year milestones. CBF information about the lawsuit and settlement are at <http://www.cbf.org/Page.aspx?pid=1840>. (U.S. EPA News Release, 5/11/10)

•On May 12 the Obama administration released the final version of its “**Strategy for Protecting and Restoring the Chesapeake Bay Watershed.**” The strategy resulted from President Obama’s May 2009 Executive Order calling for an increased federal role in restoration of the Bay. A draft of the strategy was released for public comment in November 2009. Key aspects of the final strategy, as stated by the Chesapeake Bay Program’s news release, are as follows: “To restore clean water, the EPA will implement the Chesapeake Bay Total Maximum Daily Load (TMDL)...; expand regulation of concentrated animal feeding operations (CAFOs) and stormwater runoff from cities, towns and suburbs; and increase enforcement activities and funding for state regulatory programs. The U.S. Department of Agriculture (USDA) will provide farmers and forest owners throughout the Bay watershed with the resources to prevent soil erosion and keep nutrients out of local waterways; target federal funding to the places where it will have the greatest impact on reducing water pollution; ensure that agricultural producers’ conservation efforts are accurately reported; and lead a federal initiative to develop a watershed-wide environmental services market

that would allow producers to generate tradable water quality credits in return for implementing conservation practices....To protect priority lands, the Department of the Interior will launch a collaborative Chesapeake Treasured Landscape Initiative; expand land conservation by coordinating federal funding and providing community assistance; and develop a plan for increasing public access to the Bay and its rivers.” The strategy and executive order are available online at <http://executiveorder.chesapeakebay.net>. (Chesapeake Bay Program News Release, 5/12/10)

Offshore Energy

•Here is a review of some key developments—before and after the Deepwater Horizon oil rig explosion, fire, and oil spill in the Gulf of Mexico—on **proposed offshore oil/gas exploration and drilling in the Atlantic Ocean off of Virginia’s coast**. (For two detailed articles on offshore oil/gas exploration and Virginia, please see the June 2006 *Water Central*, p.14, and the September 2006 issue, p.1.)

••On March 31 **President Obama announced a new federal energy policy proposal** that, among other things, would allow exploration for oil and natural gas off the Atlantic coast from Delaware to Florida. The president’s policy, which could be changed by Congressional action and requires support from affected states, also would open for oil exploration new areas in the eastern Gulf of Mexico and off the northern coast of Alaska, but would prohibit exploration in Alaska’s Bristol Bay. The federal government has estimated that the new offshore areas could provide up to 15 years of oil and 23 years of natural gas at expected U.S. consumption rates. The first sale of leases for exploration in the Atlantic Ocean in 20 years was expected to be in a 2.9-million-acre area of the Virginia coast—the so-called Lease Sale 220 area—which had already been designated for possible exploration prior to the president’s March 31 announcement. The federal Minerals Management Service’s Web site on the area (<http://www.mms.gov/offshore/220.htm>) states that the area is estimated to contain up to 130 million barrels of oil and 1.14 trillion cubic feet of natural gas. (*Christian Science Monitor*, 3/31/10; *Daily Press*, 4/1/10; *Virginian-Pilot*, 3/31/10; and U.S. Department of Interior news release, 3/31/10)

•• In a report released on May 18, the **Department of Defense** said that about 75 percent of the proposed offshore oil/gas Lease Sale 220 area would interfere with military operations, particularly those of the Norfolk Naval Base. The Defense Department does not have an absolute veto over proposed offshore drilling operations, but the Department of Interior has never before approved drilling in an area to which Defense objected, according to Dorothy Robyn, deputy under secretary of defense for installations and environment. “Report: Va. offshore drilling would interfere with military ops,” Associated Press, 5/19/10.

••On May 27, in the wake of the Gulf of Mexico oil spill, President Obama and the U.S. Department of the Interior took **actions to stop several offshore oil/gas exploration projects**, including cancelling the sale of leases for oil and gas exploration in Lease Area 220. The next opportunity for lease sales to occur in that area would be as part of Interior’s 2012-to-2017 Outer Continental Shelf program. Interior’s news release on the changes said that decisions on the 2012-2017 program will be “based on public input, scientific analysis, and the results of on-going investigations and reviews into the BP oil spill.” In a news release in response to the cancellation, **Virginia Governor Robert McDonnell** said that he understood and respected the President’s decision and the need for delay and investigation, but that he did not believe that cancellation of the lease sale was the only alternative. The governor said he thought that “because the sale was not due to occur until two years from now, and actual drilling would likely take place years after that, the two-year environmental impact statement already underway would provide ample information about the wisdom of proceeding on to an actual lease sale.” He also said that he hoped the President’s action does not end the possibility of oil and gas exploration and production off Virginia’s coast. (U.S. Dept. of Interior News Release, 5/27/10; and Virginia Governor’s Office News Release, 5/27/10)

•In April, the Virginia Coastal Energy Research Consortium published the results of a three-year study of the potential for **wind-energy generation off Virginia’s coastline**. The report asserts that 25 potential lease sites exist beyond 12 miles offshore (beyond the sight horizon) that would not conflict with military operations and that could provide 11 million megawatts/year of electricity, or 10 percent of Virginia’s annual electricity demand. The report estimates that the wind-generated electricity would cost \$105-130 per megawatt-hour, compared to \$85-100 per megawatt hour for a coal-fired power plant. Fossil fuel plants, however, may eventually face costs to capture carbon dioxide, and the report estimates those costs could raise electricity from coal-fired power plants to \$135-150 per megawatt hour, making wind-energy competitive in that scenario. The report, *Virginia Offshore Wind Studies—July 2007 to March 2010*, is available online at <http://www.vcerc.org/report.htm>. (*Daily Press*, 5/3/10; for a previous *Water Central* item on Virginia offshore wind: Feb. 2010, p. 16.)

WATER QUALITY and YOU/ LA CALIDAD de AGUA y USTED

In this section, *Water Central* offers suggestions for how individuals can help maintain and improve the condition of Virginia's waters and aquatic habitats. Unless otherwise noted, you are welcome to reproduce and distribute items in this section, but please retain the credits to the original source(s). All Web sites mentioned were functional as of 6/14/10. This information was previously included in the September 2008 issue of *Water Central*.

A Spanish translation is on the following page. *Para información en español, por favor vea la página proxima.*



If you are one of the many people who change their own motor oil, you need to know how to dispose of the used oil properly. Did you know that the used oil from one oil change can contaminate 1 million gallons of fresh water—a years' supply for 50 people!

If you change your own motor oil, protect our environment by recycling this valuable resource. Take your used motor oil to your nearest collection center, such as a service station, lube center, or automotive store. Oil dumped down storm drains contaminates our water. To find your nearest oil-collection center, call 800-CLEANUP (800-253-2687) or visit www.cleanup.org/ (goes to <http://earth911.com>).

Source: The graphic and text are from the U.S. EPA's "Used Oil Management Program" Web site (www.epa.gov/epawaste/conserva/materials/usedoil/index.htm) and the agency's "You Dump It, You Drink It" campaign.

The "You Dump It, You Drink It" campaign focuses on the proper management of used motor oil and includes a variety of free, printed materials that are available in both English and Spanish. Materials are available online at www.epa.gov/epawaste/conserva/materials/usedoil/ydiydi.htm, or you can order materials by phoning (800) 490-9198 (operator available M-F, 7:30 a.m.-5:30 p.m., Eastern Time; leave an order 24 hours a day).

En Español

En esta sección, *Water Central* le ofrece sugerencias de como individuales pueden mantener y mejorar la condición de las aguas y los habitats acuáticos de Virginia. Aprovechese de reproducir y distribuir esta pagina, pero por favor retenga los créditos a los originales. Todos los sitios Web mencionados funcionaban el 14 junio 2010.

Si usted es una de las de las muchas personas que cambia el aceite de motor de su propio vehículo, usted necesita saber cómo desechar adecuadamente del aceite usado. ¿Sabía usted que el aceite de motor usado de un cambio de aceite podría contaminar hasta un millón de galones de agua dulce--el suministro anual para 50 personas?!

Si le cambia el aceite a su motor, puede proteger el medio ambiente al reciclar este valioso recurso. Lleve su aceite usado de motor al centro de recolección más cercano; ya sea una estación de gasoline, un taller que cambia aceite, o una tienda automotriz. El aceite que se tira por la acantarilla de aguas pluviales contamina nuestra agua. Para obtener más información sobre el centro de recolección de aceite usado más cercano a usted, llame gratis al (800) 253-2687 o visítenos en Internet en www.cleanup.org (ahora <http://earth911.com>).

Fuente: La información susodicha viene de “Programa para el manejo de aceite usado” sitio de Web de la Agencia de Protección Ambiental de EE.UU (por su siglas en inglés EPA) a www.epa.gov/epawaste/conservation/materials/usedoil/index.htm, y de la campaña “Si lo tira, se lo toma” de la EPA.

La campaña “Si lo tira, se lo toma” se centra en el manejo adecuado del aceite usado de motor e incluye una variedad de materiales informativos impresos gratuitos que están disponibles en español y en inglés. Los materiales están en el Internet a www.epa.gov/epawaste/inforesources/pubs/espanol/index.htm, o puedes ordenarlos por teléfono a (800) 490-9198 (operador disponible los lunes-los viernes, 0730-1930 ET; o puedes dejar un mensaje 24 horas al día).

Muchas gracias a John Flores y Barbara Kraft para su ayuda con esta página.

VIRGINIA GOVERNMENT WATER ISSUES OVERVIEW

For a preview of the upcoming week's government meetings on Virginia water resources, please check out the weekly editions of Virginia Water Radio, online at www.virginiawaterradio.org.

This section lists water issues under current consideration (study or regulation) by state boards, commissions, or agencies in Virginia. Information in this issue is based on public meetings listed **March 1—May 31, 2010**, on the **Virginia Regulatory Town Hall** Web site, at www.townhall.state.va.us/L/meetings.cfm. The Town Hall site posts agendas of upcoming meetings and minutes of past meetings held by Virginia's boards, commissions, and departments; **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 www.employees.state.va.us/directory-search.cfm. You can also request state employee phone numbers by calling (800) 422-2319. All Web sites listed in this section were functional as of 6/15/10.

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; unless otherwise noted, the contacts listed for more information are with the Virginia Department of Environmental Quality. Information on the status of all TMDLs in Virginia is available online at www.deq.state.va.us/tmdl/.

Location	Water(s) & Impairment	Larger Watershed(s)	For More Information
All of Virginia in the Chesapeake Bay watershed	Chesapeake Bay and tributaries for nutrients and sediment	Atlantic Ocean	Allan Pollock
Alleghany and Botetourt counties and the City of Covington	Jackson River for dissolved oxygen and aquatic life impairments	James River	Jason Hill
Amherst, Bedford, and Campbell counties and City of Lynchburg	James River and tributaries Blackwater Creek, Burton Creek, Fishing Creek, Ivy Creek, Judith Creek, and Tomahawk Creek for bacteria	Chesapeake Bay	Paula Nash
Arlington County and the City of Alexandria	Four Mile Run (tidal portion) for bacteria	Potomac River	Katie Conaway
Brunswick and Greensville counties	Fontaine Creek for bacteria	Meherrin River/Chowan River/Albemarle Sound, N.C.	Margaret Smigo
Buckingham County	Slate River (and tributaries Austin Creek, Frisby Branch, North River, and Troublesome Creek) and Rock Island Creek, all for bacteria	James River	Ram Gupta
Dinwiddie and Sussex counties	Hatcher Run in Dinwiddie County and unnamed tributary to Nebletts Mill Run in Sussex County, both for bacteria	Nottoway River/Chowan River	Margaret Smigo
Dinwiddie, Prince George, Surry, and Sussex counties and City of Petersburg	Blackwater River, Blackwater Swamp, tributary to Coppahaunk Swamp, Otterdam Swamp Second Swamp, and	Chowan River	Margaret Smigo

	Warwick Swamp—all for bacteria		
Campbell County	Beaver Creek for bacteria	James River	Kelly Hitchcock, Region 2000 Local Govt. Council, (434) 845-5678 ext: 218, khitchcock@region2000.org
Fauquier County	Browns Run, Craig Run, and Marsh Run, all for bacteria	Rappahannock River	Bob Slusser
Henry County and City of Martinsville	Smith River aquatic-life impairment	Dan River/ Roanoke River	Mary Dail
Isle of Wight County and City of Suffolk	Upper Nansemond River watershed for bacteria	Chesapeake Bay	Jennifer Howell
James City County	Mill Creek and Powhatan Creek watersheds for bacteria	James River	Jennifer Howell
King and Queen, King William, and New Kent counties	Shellfish waters in the lower Mattaponi, lower Pamunkey, and upper York rivers for bacteria	York River	Margaret Smigo
Northumberland County	Non-tidal Mill Creek and Kissinger Millpond—both for bacteria	Yeocomico River/Potomac River	Margaret Smigo
Southampton and Sussex counties	Portions of Assamoosick Swamp, unnamed tributary to Assamoosick Swamp, Black Swamp, German Swamp, Seacorrie Swamp, and unnamed tributary to Seacorrie Swamp—all for bacteria	Chowan River	Margaret Smigo
City of Suffolk	Shellfish waters in lower Nansemond River and tributaries Bennett Creek, Bleakhorn Creek, and Knotts Creek for bacteria	Chesapeake Bay	Jennifer Howell

Other Topics Under Current Consideration

The following lists topics considered in public meetings held during the period noted at the beginning of this section. Items are listed alphabetically by topic, followed by the agency or group coordinating state study or action and then a contact name. Minutes of most meetings listed are available at the Virginia Regulatory Town Hall Web site, www.townhall.state.va.us. Agency 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://legis.state.va.us/Laws/AdminCode.htm>. “NOIRA” stands for Notice of Intended Regulatory Action.

Biosolids Land-application Permits—

- 3/4/10 public meeting in McKenney on application by Recyc Systems, Inc., to land-apply biosolids on approximately 6659 acres in Dinwiddie County. Public comment period through 4/5/10. More information: Seth Mullins, DEQ.
- 3/16/10 public meeting in Rustburg on application by Nutri-Blend, Inc., to land-apply biosolids on approximately 3536 acres in Campbell County. Public comment period through 3/31/10. More information: Kevin Crider, DEQ.
- 3/16/10 public meeting in Bealton on application by Recyc Systems, Inc., to land-apply biosolids on approximately 4464 acres in Fauquier County. Public comment period through 3/31/10. More information: Beth Biller, DEQ.

- 3/30/10 public meeting in St. Stephens Church on application by Agri-Services Corporation to land-apply biosolids on approximately 2193 acres in King and Queen County. Public comment period through 4/29/10. More information: Scott Haley, DEQ.
- 3/31/10 public meeting in Saluda on application by Recyc Systems, Inc., to land-apply biosolids on approximately 3398 acres in Middlesex County. Public comment period through 4/30/10. More information: Scott Haley, DEQ.
- 5/26/10 public meeting in Spring Grove on application by Recyc Systems, Inc., to land-apply biosolids on approximately 775 acres, and by Synagro, LLC, to land-apply biosolids on approximately 3922 acres, all in Surry County. Public comment period through 6/25/10. More information: Seth Mullins, DEQ.

Chesapeake Bay Preservation Act Local Regulations—Chesapeake Bay Local Assistance Board's Northern and Southern Area Review Committees both met on 5/11/10. More information: David Dowling, DCR.

Coal Surface Mined Land Reclamation:

- 4/2/10 meeting of DMME's Abandoned Mined Land Advisory Committee; more information: Roger L. Williams, DMME.
- 5/6/10 informal public hearing on a notice of violation at Cumberland River Coal Company's Black Mountain mine near Dunbar. More information: Harve Mooney, DMME.

Coin-operated Laundry Discharge General Permit Regulation (9 VAC 25-810)—Public hearing: 5/26/10. The SWCB is considering reissuance, including possible amendments, to this regulation. The NOIRA appeared in the April 27, 2009, issue of the *Virginia Register of Regulations*. More information: George Cosby, DEQ.

Confined Animal Feeding Operations (CAFOs) General Discharge Permit (9 VAC 25-191)—Advisory Committee meeting: 3/29/10. The SWCB is working toward reissuance and possible amendment of this regulation. More information: Betsy Bowles, DEQ.

Energy from Biomass General Permit (9 VAC 5-520)—Advisory committee meeting: 5/14/10. The Air Pollution Control Board and the DEQ are developing a general permit for energy generators using biomass. More information: Mary E. Major, DEQ.

Groundwater Management Area (Eastern) Regulations (9 VAC 25-600 et seq.) and Groundwater Withdrawal Regulations (9 VAC 25-610 et seq.)—Advisory committee meeting: 4/1/10. The SWCB published in the July 6, 2009, *Virginia Register of Regulations* a Notice of Intended Regulatory Action (NOIRA) for the periodic review of these regulations. According to the Agency Statement accompanying the NOIRA, the purpose of this regulatory action is to “consider amending the regulation to address the increasing demand on limited groundwater resources, changes to the administrative review process, and regulatory changes necessitated by new information on the coastal plain aquifer system.” The public comment period on the NOIRA ended 8/19/09. More information: Melissa Porterfield, DEQ.

Nitrogen and Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed General Discharge Permit Regulation (9 VAC 25-820)—Advisory Committee meetings: 3/29, 4/21, and 5/19/10. The SWCB is working toward reissuance and possible amendment of this regulation. More information: George Cosby, DEQ.

Poultry Waste Management Regulation (9 VAC 25-630)—SWCB public hearings: 5/13 and 5/18/10. The SWCB is considering amendments to the Virginia Pollution Abatement (VPA) General Permit Regulation on managing poultry waste. The VPA General Permit Regulation for Poultry Waste Management governs the management of poultry feeding operations that confine 200 or more animal units (20,000 chickens or 11,000 turkeys) and establishes the utilization, storage, tracking, and accounting requirements related to poultry waste. The general permit is due to expire on November 30, 2010; the amendment extends the permit for 10 years and applies permit requirements to the end users of poultry waste transferred off-site. The proposed regulation was published in the 4/12/10 issue of the *Virginia Register of Regulations*. The public comment period ends 6/11/10. More information: Betsy K. Bowles.

Recycling—DEQ's Litter Control and Recycling Fund Advisory Board meeting: 4/16/10. More information: Sheila Mary Barnett, DEQ.

Roanoke River Issues in Virginia and North Carolina—Meetings of the Roanoke River Bi-State Commission and the Virginia Roanoke River Basin Advisory Committee: 3/31/10. More information: Tammy Stephenson, DEQ.

Scenic Rivers—Statewide Advisory Board meeting: 4/23/10. Specific river advisory committees meetings: Goose Creek Advisory Committee: 3/10/10. More information: David C. Dowling, DCR.

Seafood Processing Facilities General Discharge Permit Regulations (9 VAC 25-115)—Advisory Committee meetings: 3/24 and 4/14/10. The SWCB is working toward reissuance and possible amendment of this regulation. More information: George Cosby, DEQ.

Sewage Handling and Disposal: Onsite Sewage Handling and Disposal Appeals Review Board:

Most recent meeting: 4/7/10. The VDH's Sewage Handling and Disposal Appeals Review Board hears all administrative appeals of denials of onsite sewage disposal system permits and appeals of refusals of indemnification requests filed pursuant to *Virginia Code* Sec. 32.1-164.1:01. More information: Donna Tiller, VDH.

Sewage Handling and Disposal Regulations (12 VAC 5-610)—VDH's advisory committee meeting: 3/19/10. More information: Allan Knapp, VDH.

State Parks—Advisory committee or public meetings on park master plans:

- Claytor Lake (Pulaski County), 4/22/10; more information: Robert Munson, DCR.
- Middle Peninsula (Gloucester County), 4/6, 4/19, 5/4, and 5/17/10; more information: Robert Munson, DCR.
- Staunton River Battlefield (Halifax County), 4/6/10; more information: Robert Munson, DCR.

Stormwater Best Management Practices (BMPs)—Virginia Stormwater BMP Clearinghouse Committee meeting: 4/19/10. The BMP Clearinghouse Committee, coordinated by the Va. DCR and the Virginia Water Resources Research Center, is working to develop design guidelines and Web site that will serve as the Virginia's reference point for stormwater BMPs. More information: David Dowling, DCR.

Wastewater Discharges under 1,000 Gallons per Day (9 VAC 25-110)—Advisory Committee meetings: 3/9/10 and 4/27/10. The SWCB is undertaking the reissuance, and amendment if necessary, of the Virginia Pollution Discharge Elimination System (VPDES) general permit for wastewater discharges under 1000 gallons per day. More information: George E. Cosby, DEQ.

General Information for Key Water-related Statewide Boards and Commissions

Marine Resources Commission—Meets monthly; minutes of meetings are available online at www.mrc.virginia.gov/calendar.shtm. More information: phone (757) 247-2200, TDD (757) 247-2292; main Web page: www.mrc.virginia.gov/index.shtm.

State Water Control Board—Meets quarterly; minutes of meetings are available at the Virginia Regulatory Town Hall Web site, www.townhall.state.va.us/index.cfm (search for "State Water Control Board," then click on "Meetings" to access links to meetings over the past year). More information: Cindy Berndt, DEQ.

Cave Board— Meet three times per year. More information: phone (804) 786-7951, larry.smith@dcr.virginia.gov; Web site: www.dcr.virginia.gov/natural_heritage/cavehome.shtm.

Chesapeake Bay Local Assistance Board—Meets March, June, September, and December. More information: phone (800) 243-7229; Web site: www.dcr.virginia.gov/chesapeake_bay_local_assistance/board.shtm.

Conservation and Recreation Board—Meets at least three times/year, upon call of chair. More information: David C. Dowling, DCR; Web site: www.dcr.virginia.gov/bcr.shtm.

Game and Inland Fisheries Board—Full board meets bimonthly; committee meetings at other times. More information: Beth B. Drewery, DGIF; Web site: www.dgif.virginia.gov/about/.

Gas and Oil Board—Meets monthly, usually in southwestern Virginia. More information: David Asbury, DMME; Web site: www.dmme.virginia.gov/divisiongasoil.shtm.

Groundwater Protection Steering Committee—Meets third Tuesday of odd-numbered months. More information: Mary Ann Massie; Web site: www.deq.virginia.gov/gwpsc/.

Land Conservation Foundation—Meets about three times per year. More information: phone (804) 786-3218; Web site: www.dcr.virginia.gov/virginia_land_conservation_foundation/index.shtm.

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: www.dpor.virginia.gov/dporweb/boards.cfm.

Outdoors Foundation—Meets at least quarterly. More information: Bobbie Cabibbo at (540) 327-7727, bcabibbo@vofonline.org; Web site: www.virginiaoutdoorsfoundation.org.

Scenic River Advisory Board—Meets at least two times a year. More information: Lynn Crump, DCR; Web site: www.dcr.virginia.gov/recreational_planning/srmain.shtm.

Soil and Water Conservation Board—Meets bimonthly. More information: David C. Dowling, DCR; Web site: www.dcr.virginia.gov/soil_and_water/vs_and_wcb.shtm.

Waste Management Board—Meets about three times per year. More information: Cindy Berndt, DEQ; Web site: www.deq.virginia.gov/cboards/homepage.html#waste.

N O T I C E S

If you would like to receive 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.

All Web sites listed in this section were functional as of June 14, 2010.

Scenic Virginia Photo Competition - Enter by June 30

The Scenic Virginia, Inc., 2010 Viewshed Photo Competition is open for entries until June 30, 2010. Categories for entries are Coastal/Chesapeake Bay, Cities and Towns/Urban Landscapes, Farmland/Open Space, Mountains (Celebrating the 75th Anniversary of the Blue Ridge Parkway), and Rivers/Waterways (Celebrating the 40th Anniversary of the Virginia State Scenic Rivers program). For more information, visit the Competition Web site at www.scenicvirginia.org/photocontest.html, or contact Scenic Virginia at (804) 643-8439 or email@scenicvirginia.org.

Virginia Citizen Monitoring Grants for 2011

The Virginia Department of Environmental Quality (DEQ) will offer Citizen Water-quality Monitoring Grants for Fiscal Year 2011. The DEQ expects to put out a Request for Proposals around July 1, with a submission deadline of September 1 and announcement of awards by December 1. These awards will cover monitoring activities from January 1—December 31, 2011. The maximum award will be \$5,000; mini-grants will not be available. For more information, visit the DEQ citizen monitoring Web site at www.deq.virginia.gov/cmonitor, or contact Stuart Torbeck at (804) 698-4461 or Charles.torbeck@deq.virginia.gov.

Healthy Streams Initiative

Since fall 2009, the Virginia Department of Conservation and Recreation (DCR) and Virginia Commonwealth University's Center for Environmental Studies have been leading a "**healthy streams initiative**." The initiative seeks to identify ecologically healthy waterways and rank them—using the stream's habitat characteristics and biological communities—as "exceptionally healthy," "healthy," or "restoration candidate." These rankings will then be used to focus protection and restoration money and effort and to help guide local land use and planning decisions. More information about the initiative, including access to the publication "Healthy Waters – A New Ecological Approach to Identifying and Protecting Healthy Waters in Virginia," is available at the DCR Web site at http://www.dcr.virginia.gov/soil_and_water/healthy_waters/index.shtml.

Water Alert from the USGS

WaterAlert, a new service announced in May 2010 by the U.S. Geological Survey, provides customized notifications via e-mail or cell phone about well or streamflow conditions. Users may select a specific site, a preferred delivery method (e-mail or text), the frequency of delivery (hourly or daily), the data parameter(s), and the parameter threshold(s). To subscribe, go online <http://water.usgs.gov/wateralert>. For more information, contact Robert Mason at (703) 648-5305 or rrmason@usgs.gov.

Pollution-prevention Posters for the Rivanna Watershed

The Rivanna Conservation Society offers a series of posters urging citizens to help prevent five key water-quality pollutants: used oil, automobile tires, automobile batteries, excessively used lawn-care chemicals, and pet waste. The posters include facts specific to the Rivanna watershed. The posters are available for download at <http://www.rivannariver.org/drink-up-posters.html>, or contact the organization at (434) 977-4837 or RCS@rivannariver.org.

Source Water Protection Plans

Throughout 2010 the Virginia Rural Water Association is working with different communities to write Source Water Protection Plans. These plans describe in detail public water systems, delineate protection areas, and describe how best to enact that protection. The process is not regulatory and is designed to be guided by a committee of citizens. VRWA offers the service free of charge. If you feel your town would be a

good candidate for a Source Water Protection Plan, please contact J.P. Gannon at (540) 449-9400, or visit vrwaswp.wordpress.com. The main Web site for the Association is www.vrwa.org.

Source Water Protection Tool

“Your Water, Your Decision” is an online tool to help people make a customized guide on local source-water issues for presentation to local officials and other land-use decision makers. The guide, produced by the **Source Water Collaborative** (a group of federal and state agencies and organizations; see www.protectdrinkingwater.org/), is available online at www.yourwateryourdecision.org/.

LandServer Mapping Tool

LandServer is an online mapping tool that helps landowners map their land and generate information on the land’s natural resource composition, eligibility for traditional conservation incentive programs, ecosystem services provided by the land, and landowner eligibility for participating in ecosystem-service markets. As of mid-June 2010, map layers for Delaware and Maryland are available; map layers for Virginia are expected to be available by the end of June or early July 2010. For more information about the tool and about area workshops on its use, contact visit www.landserver.org, or contact Lou Etgen at the Alliance for the Chesapeake Bay, (410) 377-6270, e-mail: letgen@acb-online.org.

EPA Enforcement Actions in the Chesapeake Watershed

In April 2010, the U.S. EPA created “Progress on Chesapeake Bay Enforcement,” a Web site that provides a map and chart of current EPA enforcement actions for violations of water-quality or air-quality regulations in the Bay watershed. The site is located at www.epa.gov/compliance/civil/initiatives/progress-chesapeakebay.html.

Legal Assistance for Chesapeake Bay Watershed Issues

The Chesapeake Legal Alliance, started in 2009 in Annapolis, Md., is a network of lawyers who donate time to represent environmental organizations, citizens’ associations, and individuals on any legal matters affecting the Chesapeake Bay or its tributaries. For more information, contact the organization at (202) 360-1144 or info@chesapeakelegal.org; Web site: <http://www.chesapeakelegal.org/>.

National Fish Habitat Action Plan

The National Fish Habitat Action Plan is an effort to protect, restore, and enhance aquatic habitats through partnerships among public agencies and private organizations. Information about the initiative is available online at <http://fishhabitat.org/>, or contact coordinator Tom Busiahn, with the U.S. Fish and Wildlife Service in Arlington, Va., at (703) 358-2056 or tom_busiahn@fws.gov.

A Review of National Park Service Work in Chesapeake Country

On March 26, 2010, the National Park Service’s (NPS) Chesapeake Bay Office released *2009: Year in Review*, summarizing the office’s involvement with and support for the Chesapeake Bay Gateways and Watertrails Network, the Captain John Smith Chesapeake National Historic Trail, the Star-Spangled Banner National Historic Trail, and several other trails, parks, museums, and other sites. The report also lists the key strategies of the NPS Chesapeake Treasured Landscape Initiative developed in response to President Obama’s May 2009 Executive Order on the Chesapeake Bay. A news release and link to the full report are available at www.baygateways.net/viewrelease.cfm?press_release_id=281; or contact the NPS’ Bay Office in Annapolis, Md., at (410) 260-2488.

Genetically Engineered Crops, Farm Sustainability, and Environmental Effects

Impact of Genetically Engineered Crops on Farm Sustainability in the United States, a 2010 report from National Research Council (NRC), is a comprehensive examination of the economic, social, and environmental effects of genetically modified crops. The report discusses particularly the impacts on water quality of changes in pesticide use due to genetic modifications. A news release and access to the report are available online at <http://www8.nationalacademies.org/onpinews/newsitem.aspx?RecordID=12804>, or contact the NRC’s Office of Public Information at (202) 334-2138.

Water Availability for Agriculture

Water, People, and the Future: Water Availability for Agriculture in the United States is a 20-page report released in November 2009 by the Council for Agricultural Science and Technology (CAST), located in Ames, Iowa. The report looks at how the challenge of long-term supplies of water for agriculture and competing uses is being addressed in four areas: Arizona, California, Florida, and the High Plains region (served by the Ogallala Aquifer). The report is online at www.cast-science.org/displayProductDetails.asp?idProduct=167, or contact CAST at (515) 292-2125.

Groundwater Quality in Public-supply Wells

Quality of Water from Public-supply Wells in the United States, U.S. Geological Survey (USGS) Circular 1346, is a report from the USGS' National Water Quality Assessment (NAWQA) program on groundwater quality in 932 public water-supply wells nationwide. The report is available online at http://water.usgs.gov/nawqa/studies/public_wells/. For more information about the study, contact Patricia Toccalino, USGS, 6000 J Street, Placer Hall, Sacramento, CA 95819; (916) 278-3090 or ptocca@usgs.gov.

National Lakes Study

In December 2009, the U.S. Environmental Protection Agency (EPA) released its most comprehensive study of the nation's lakes to date. The study and associated documents are available online at www.epa.gov/lakessurvey/. The study looked at a random sample of 1,028 lakes and ponds at least one meter deep and 10 acres in area (not including the Great Lakes or Great Salt Lake), intended to represent the condition of the approximately 50,000 lakes in the lower 48 states. Approximately 20 lakes in Virginia were included. Researchers made an estimated 680,000 measurements water quality (such as nutrients, dissolved oxygen, and algal density); biological indicators (such as plankton); recreational indicators (such as algal toxins and pathogens); and physical habitat indicators (such as lakeshore and shallow water cover). The study rated 56 percent of the lakes in good biological condition, 21 percent in fair condition, and 26 percent in poor condition. EPA has produced reports using a similar approach for streams (*The Wadeable Streams Assessment*) and estuaries and coastal waters (*The National Coastal Condition Reports*). National studies of rivers and streams and wetlands are currently being conducted. Information about these national surveys is available at www.epa.gov/aquaticsurveys; or contact the EPA's Office of Office of Wetlands, Oceans, and Watersheds in Washington, D.C., at (202) 566-1191.

Energy and Climate Notices

•**Classroom Resources on Water-Energy Connections:** In celebration of National Environmental Education Week 2010 (www.eeweek.org/; EE Week 2010 was April 11-17), Earth Day Network (www.earthday.net/?skip=1) developed four lesson plans for middle- and high-school students on connections between water and energy. The lessons are designed to be interdisciplinary and correlated to national content standards in science, language arts, social studies, and math. EE Week also collaborated with River Network (<http://rivernetwork.org/>) to produce a fact sheet on the water-energy connections. The fact sheet and the Earth Day Network lesson plans are available online at www.eeweek.org/water_and_energy_wise/connection#activities.

•A January 2010 article in the scientific journal *Estuarine, Coastal and Shelf Science* (Vol. 86, No. 1, pp. 1-20) reviews the **current understandings of potential climate-change impacts on the Chesapeake Bay**. The paper asserts that atmospheric carbon dioxide, water temperature, and sea level are all "virtually certain to increase," but less certain and predictable are the specific effects on a range of biological, chemical and physical factors, such as coastal flooding, salinity, harmful algae, low dissolved oxygen conditions (hypoxia), and submerged aquatic vegetation, with the greatest uncertainty associated with changes in annual streamflow. The article is "Potential climate-change impacts on the Chesapeake Bay," by Raymond Najjar of Penn State and 12 co-authors, including Carl Hershner of the Virginia Institute of Marine Science and Margaret Mulholland of Old Dominion University.

•A U.S. Department of Energy video (2 min. 54 sec.) on the **federal home weatherization program** is available on "You Tube" at <http://www.youtube.com/watch?v=hdXkCqyDjGg>.

•In April, the U.S. EPA posted online four new, two-page fact sheets on the causes and effects of climate change: 1) "Climate Change Science Facts" describes the causes of climate change, signs of climate change, and projections of future changes; 2) "Climate Change and Ecosystems" discusses impacts on biodiversity, oceans, forests, invasive species, and life-cycle events (including migrations); 3) "Climate Change and Health Effects" describes climate change effects on heat-related illnesses and deaths, allergies,

etc.; and 4) “Climate Change and Society” discussed potential impacts on water resources, coastal communities, food production, and energy. The fact sheets are available the EPA’s Climate Change Basic Information page at <http://www.epa.gov/climatechange/basicinfo.html>; or contact the EPA Climate Change Division at (202) 343-9990.

•“**Offshore Wind—Testing the Water,**” published in the Winter 2010 issue of *Coastal Heritage* by the South Carolina Sea Grant Consortium, is a good introduction to the status, issues, and challenges of developing wind power off the Atlantic coastline. Included are photos simulating views of wind turbines are various distances from shore. Available online at <http://www.scseagrant.org/Content/?cid=433>, or contact S.C. Sea Grant at 287 Meeting Street, Charleston, SC 29401; (843) 953-2078; annette.dunmeyer@scseagrant.org.

Upcoming Conferences, Workshops, and Other Events

For a regularly updated, online list of Virginia water-related educational events, please see the Water Center’s “Quick Guide to Virginia Water Conferences, Meetings, and Other Events,” at www.vwrrc.vt.edu/VAConfQuickGuide.html.

Events In Virginia

- Jun. 25, Breaks Interstate Park, Dickenson County: **Big Sandy River Watershed Conference.** Organized by the Big Sandy River Basin Coalition. More information: Bobbie Rasnick, (276) 926-6621; Web site: <http://www.bigsandybasin.org>.
- Jul. 8-11: **Potomac River Ramble.** Organized by the Interstate Commission on the Potomac River Basin. More information: (301) 984-1908 or info@icprb.org; Web site: <http://www.potomacriver.org/cms/>.
- Jul. 24-Aug. 18: **New River Expedition.** Organized by the National Committee for the New River. More information: (336) 982-6267, info@ncnr.org; Web site: <http://www.ncnr.org/>.
- Aug. 14, Holiday Lake 4-H Center near Appomattox: **Volunteer Monitoring: The Next Generation.** Annual Summit of the Virginia Citizens for Water Quality. More information: David Jennings, Virginia Office of the Alliance for the Chesapeake Bay, (804) 775-0951 or djennings@acb-online.org.
- Aug. 18-19, Roanoke: **Aquacultural Engineering Society (AES) Issues Forum.** The forum focuses on three topics: (1) Biofloc Session, (2) Advanced Oxidation Processes (AOP) in Recirculating Aquaculture Systems, and (3) Marine Aquaculture Systems. More information: Greg Boardman at (540) 231-1376, or gboard@vt.edu; Web site: <http://www.recircaqua.com/aesforum.html>.
- Aug. 20-22, 2010, Roanoke: **8th International Conference on Recirculating Aquaculture.** More information: Ms. Terry Rakestraw at (540) 231-6805 or aqua@vt.edu; Web site: www.recircaqua.com/icra.html.
- Aug. 21, VFW Event Grounds, Front Royal: **On the River 2010 Festival.** Paddling, exhibits, and festivities along the Shenandoah River. More information: <http://www.canoecapital.org/events.htm>.
- Sep. 15-16, Montpelier Estate, Orange: **2010 Virginia Environmental Education Conference.** Organized by the Virginia Department of Environmental Quality’s Office of Environmental Education. More information: Sheila Barnett, (804) 698-4055; Web site: www.vanaturally.com/vanaturally/eeconference10.html.
- Sep. 16-17, Northern Virginia 4-H Center, Front Royal: **Invasive Plant Control for Habitat Restoration.** Organized by Virginia Cooperative Extension. More information: Adam Downing at (540) 948-6881, or adowning@vt.edu.
- Oct. 14-16, Hotel Roanoke and Conference Center, Roanoke: **Imagining the Blue Ridge Parkway for the 21st Century: Sustaining Communities, Environments, and Economies.** A symposium in connection with year-long observances of the Parkway’s 75th anniversary. Organized by the Virginia Tech College of Natural Resources and Environment and Blue Ridge Parkway 75, Inc. More information: Bob Smith, (540) 231-7679 or rsmith4@vt.edu; Web site: <http://blueridgeparkway75.org/>.

Events Elsewhere

- Jul. 13-15, 2010, Seattle, Wash.: **HydroFutures: Water Science, Technology, and Communities.** Annual conference of the Universities Council on Water Resources (UCOWR) and National Institutes of Water Resources (NIWR). More information: (618) 536-7571, ucowr@siu.edu; Web site: www.ucowr.siu.edu.

- Aug. 10, 2010, Socorro, N. M.: **2010 New Mexico Water Research Symposium**. Organized by the New Mexico Water Resources Research Institute. More information: Cathy Ortega Klett at 575-646-1195; Web site: <http://wrri.nmsu.edu/conf/tc10/symposium.html>.
- Aug. 23-27, 2010, Madison, Wisc.: **2010 Watershed Management Conference—Innovations in Watershed Management Under Land Use and Climate Change**. Organized by the American Society of Civil Engineers. More information: (800) 548-2723, ewri@asce.org; Web site: <http://content.asce.org/conferences/watershedmanagement2010/index.html>.
- Sep. 7-9, 2010, Helena, Mont.: **2010 Montana Watershed Symposium**. Organized by the Montana Watershed Coordination Council. More information: Alicia Vanderheiden, (406) 244-4420 or info.mwcc@gmail.com; Web site: <http://mtwatersheds.org/default.asp>.
- Sep. 12-15, 2010, Washington, D.C.: **25th Annual Water Reuse Symposium**. Organized by the WaterReuse Association, Water Environment Federation, and American Water Works Association. More information: Courtney Tharpe, (703) 548-0880, ext. 101 or ctharpe@watereuse.org; Web site: <http://www.watereuse.org/conferences/symposium/25>.
- Sep. 27-30, 2010, Portland, Me.: **Working Waterways and Waterfront: A National Symposium on Water Access**. Organized by Maine Sea Grant. More information: (207) 288-2944, x5834 or nspringuel@coa.edu; Web site: www.wateraccessus.com.
- Sep. 28-30, 2010, West Yellowstone, Mont.: **Wild Trout X Symposium—Conserving Wild Trout**. More information: Dirk Miller, symposium chair, dirk.miller@wgf.state.wy.us; Web site: www.wildtroutsymposium.com/index.php.
- Oct. 6-7, 2010, Morgantown, W. Va.: **West Virginia Water Resources—Threats and Opportunities**. Annual West Virginia Water Conference, organized by the West Virginia Water Research Institute. More information: wvwaterconference@mail.wvu.edu; Web site: www.wvwaterconference.org/index.cfm.
- Oct. 6-8, 2010, Biloxi, Miss.: **Southeast Stormwater Association Annual Conference**. This association covers Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee. More information: (850) 561-0904; Web site: www.seswa.org/content.asp?pl=296&sl=309&contentid=309.
- Oct. 19-20, 2010, St. Paul, Minn.: **Minnesota 2010 Annual Water Resources Conference**. Organized by the University of Minnesota Water Resources Center. More information: Nicole Freese or Heather Dorr at (612) 624-3708 or cceconf5@umn.edu; Web site: <http://wrc.umn.edu/waterconf/>.
- Oct. 25-26, 2010, Chapel Hill, N.C.: **Water and Health: Where Science Meets Policy**. Organized by the University of North Carolina's Water Institute and Institute for the Environment. More information: Tony Reevy at (919) 966-9927 or tony_reevy@unc.edu; Web site: www.ie.unc.edu/content/news_events/symposia/2010/index.cfm.
- Nov. 1-4, 2010, Philadelphia, Penn.: **2010 American Water Resources Association (AWRA) Annual Water Resources Conference**. Sponsored by the Delaware and New Jersey sections of the AWRA. More information: (540) 687-8390 (AWRA headquarters in Middleburg, Va.); Web site: <http://www.awra.org/meetings/Philadelphia2010/index.shtml>.
- Nov. 2-5, 2010, Henderson, Nev.: **Floodplain Management Association Annual Conference**. More information: (619) 204-4380 or admin@floodplain.org; Web site: <http://www.floodplain.org/conference.php>.
- Nov. 14-17, 2010, Baltimore, Md.: **TMDL 2010—Watershed Management to Improve Water Quality**. Organized by the American Society of Agricultural and Biological Engineers (the symposium chair is Brian Benham, of Virginia Tech's Department of Biological Systems Engineering). More information: Sharon McKnight, (269) 932-7033, mcknight@asabe.org; Web site: www.asabe.org/meetings/TMDL2010/.
- Nov. 11-14, 2010, Shepherdstown, W. Va.: **5th Annual Chesapeake Watershed Forum**. More information: Lou Etgen, (410) 377-6270 or letgen@acb-online.org; Web site: <http://www.rivernet.org/events/chesapeake-watershed-forum>.

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.

New Publications

The following recently published Water Center reports are available at our Web site at

http://www.vwrrc.vt.edu/special_reports.html:

SR48-2010: *The Stroubles Creek Watershed: History of Development and Chronicles of Research*, by Tammy Parece, Stephanie DiBetitto, Tiffany Sprague, and Tamim Younos.

SR49-2010: *Water Use and Sustainability in La Altagracia, Dominican Republic*, by Caitlin Grady and Tamim Younos.

William R. Walker Award Winner

Congratulations to Jeanne Roningen, the recipient of the 2010 William R. Walker Graduate Fellowship. Jeanne is working on a master degree in Physical Hydrogeosciences in the Geosciences Department at Virginia Tech. The Walker Fellowship, established to honor the late Bill Walker, the Water Center's founding director, is awarded annually to an individual pursuing graduate work in a field different from the field of emphasis as an undergraduate, or an individual with work experience returning to graduate school.

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Follow updates on Twitter and receive Virginia Water Center notices about state and national water news, links to new information sources, notices of upcoming events, and other updates. You can follow them and subscribe at <http://twitter.com/VaWaterCenter>.

Virginia Water Radio: Started in January 2010, this weekly radio show and podcast presents news and notices about Virginia's water resources. Audio files and show notes are available online at www.virginiawaterradio.org. You can also sign up for an RSS feed or a podcast download feed.

The **Virginia Water Monitoring Council** provides **regular e-mail announcements** about meetings, reports, and other items related to water quality and water monitoring. To receive these announcements, join the Virginia Water Monitoring Council by contacting Jane Walker at (540) 231-4159 or [janewalk@vt.edu](mailto:jnewalk@vt.edu); Web site: <http://www.vwrrc.vt.edu/vwmc/default.asp>.



Virginia Water Central

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Water Central is available online at www.vwrrc.vt.edu/watercentral.html. If you would like an e-mail notification when new issues are posted, please notify us at (540) 231-5463 or araflo@vt.edu. Also, please let us know if your e-mail address has changed or if you no longer wish to receive the e-mail notification.

If you do not have Internet access and would like a photocopy of the newsletter, please contact us. Thank you!

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