

Virginia Water Central

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An active sky frames an old water tower at the Hyosung plant in Scottsville, February 11, 2009.

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Editor's Comment



Focusing on the Virginia General Assembly

By Alan Rafllo, *Virginia Water Central Editor*

Article 1 of the 1971 *Constitution of Virginia* is a “declaration of rights made by the good people of Virginia in the exercise of their sovereign powers....” Section 2 of that enumeration states the following: “That all power is vested in, and consequently derived from, the people, that magistrates are their trustees and servants, and at all times amenable to them.”

Virginia citizens’ highest body of “servants,” the 140 members of the General Assembly, recently concluded their 2009 regular session. As usual, the legislature considered thousands of bills and resolutions as well as the state budget, the latter task made more difficult this year by the large budget deficits that Virginia faces.

About 200 of this session’s measures directly affected water resources or affected activities (land use, energy use, etc.) that are likely to affect Virginia’s waters. This issue of *Water Central* is devoted primarily to the newsletter’s annual inventory of General Assembly water-related bills. *Water Central* has compiled these inventories for every session since 1998, and those compilations are available online at www.vwrrc.vt.edu/legislation.html.

During the past two sessions, the water-bill inventory has been posted online at various times during the General Assembly session, along with information about how citizens can follow legislation and contact their legislators. This year, *Water Central* began a new service of compiling online news articles about water-related legislation during the Assembly session and posting annotated links to those articles at <http://delicious.com/arafllo/09VaGenAssembly>.

The Virginia Water Resources Research Center hopes these services make a difference in citizens’ ability to decide whether or not their legislators’ actions are “at all times amenable to them.” We would be grateful for any comments you would like to share about whether the services are valuable to you and about how they might be more useful. In evaluating our work, you might consider two other standards that Article 1 of the *Constitution of Virginia* sets for the government (which includes the Water Center, a state agency): “That government is, or ought to be, instituted for the common benefit, protection, and security of the people...” and “That free government rests, as does all progress, upon the broadest possible diffusion of knowledge....”

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: BIO = biology; CE = civics and economics; ES=earth science; GOV = Va./U.S. government; LS=life science; WG = world geography.

Newsletter Section	Science SOLs	Social Studies SOLs
Feature: Water in the 2009 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
Water Status (precipitation, groundwater, stream flow, drought)	4.5, 4.6, 4.8, 6.5, 6.7, LS.7, LS.12, ES.7, ES.9, ES.13	WG.2
Water Quality and You: Emerging Contaminants	6.7, 6.9, LS.12, ES.9, BIO.9	WG.2, WG.7, GOV.16
For the Record: Hydrology	4.8, 6.5, 6.7, LS.7, ES.3, ES.7, ES.9	WG.7

FEATURE ARTICLE

Water in the 2009 Virginia General Assembly

The 2009 Virginia General Assembly convened January 14 and adjourned February 28. The reconvened (“veto”) session was held April 8. During the session, the Assembly considered 2893 measures (2576 introduced in this session and 317 continued from the 2008 session). This year’s “short session” Assembly also considered amendments to the 2008-10 biennial state budget.

In this article, *Virginia Water Central* lists 188 measures in the 2009 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 could affect Virginia’s water resources.

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.

A box at the end of the article lists several topics and bills from the 2009 Assembly that received attention in various news media. For a selection of online news articles about water-related legislation in the 2009 Assembly, please visit the *Virginia Water Central* News Grouper at <http://delicious.com/araflo/09VaGenAssembly>. Please also see the end of the article for information on tracking legislation and contacting your legislators.

Water Central’s inventories of water-related bills in General Assembly sessions from 1998-2008 are available online at www.vwrrc.vt.edu/legislation.html. For some additional perspective, please see the following page for a sample of George Wills’ cartoons on the water-related stories of previous Assembly sessions.



A Look Back at Water Stories in Past Virginia General Assemblies



1999



2005



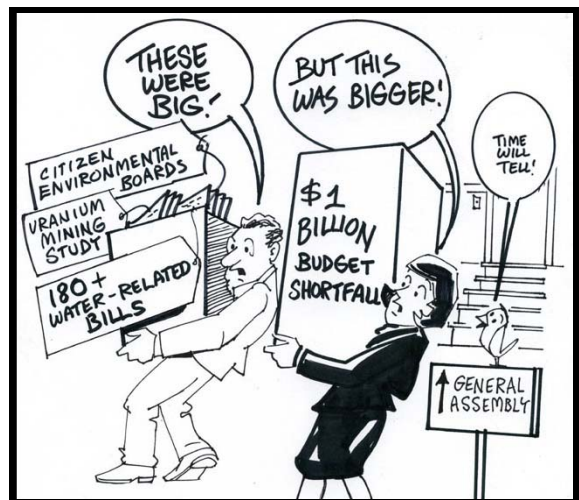
2000



2006



2004



2008

Water-related Bill Inventory and Bill Status as of April 8, 2009

To see complete details about a listed bill, please go enter the desired bill number in the search box at the following Web site: <http://leg1.state.va.us/cgi-bin/legp504.exe?091+men+BIL>.

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

BUDGET

1.	HB1600	Budget Bill. Amendments to the 2008-2010 biennial budget passed by the 2008 General Assembly.	Passed.
2.	SB850	Budget Bill. Amendments to the 2008-2010 biennial budget passed by the 2008 General Assembly.	Passed.

CONSERVATION

Land Conservation Bills

3.	HB 1891	Land preservation tax credit. Reduces from \$100,000 to \$50,000 the amount that may be claimed for taxable years 2009 and 2010. Companion bill is SB 986 (# 9).	Passed.
4.	HB 2536	Easements; injury to servient estate. Provides that, unless otherwise provided for in the terms of an easement, the owner of a dominant estate shall not use an easement in a way that materially damages or injures a servient estate.	Failed in House Courts of Justice.
5.	HB 2566	Purchase of land by Department of Forestry; used for nonstate forest purposes. Clarifies that proceeds derived from properties used for nonstate forest purposes acquired or managed by the Department of Forestry (DOF) are not subject to distribution by the department to those localities in which the properties are located. Currently, the proceeds derived from all lands acquired by the State Forester are distributed to those localities in which the lands are located, based on a specific formula.	Passed.
6.	HB 2598	Department of Conservation and Recreation purchasing certain abandoned railroad rights-of-way. Grants the Department of Conservation and Recreation (DCR) a right of first refusal to purchase certain abandoned railroad rights-of-way.	Failed in House Agriculture, Chesapeake, and Natural Resources (ACNR).
7.	SB 838	Land preservation tax credit; conveyance for public parks or public recreational facilities. Provides that the land preservation tax credit would equal 60 percent of the fair market value of any land that is donated to a state or local governmental entity for the purpose of a public park or public recreational facility, with certain conditions. All other donations under the land preservation tax credit would not be affected by the bill and would be eligible for a 40 percent tax credit as provided under current law.	Passed Senate; failed in House Finance.
8.	SB 908	Public service corporations and land in conservation easements. Prohibits public service corporations from acquiring by	Failed in Senate

		condemnation land (or interest in land) that is subject to conservation easement.	Courts of Justice; subject matter referred to Secretary of Natural Resources.
9.	SB 986	Land preservation tax credit. Reduces from \$100,000 to \$50,000 the amount that may be claimed for taxable years 2009 and 2010. Companion bill is HB 1891 (#3).	Passed.
10.	SB 1024	Conservation easements; Open-Space Lands Preservation Trust Fund. Removes requirement to have additional local co-holder of a conservation or open-space easement when grants from the Open-Space Lands Preservation Trust Fund are used to mitigate the costs of the easement.	Passed.
11.	SB 1115	Land Conservation Fund; public access parkland. Adds “public access parkland” to the uses for which money from the Virginia Land Conservation Fund must be spent in those years when the fund contains more than \$10 million. The Virginia Outdoors Foundation, which administers the Fund, will award grants for public access parkland based on a number of factors	Passed Senate; failed in House ACNR.
12.	SB 1259	Land preservation tax credits. Increases to \$115 million the cap on the aggregate amount of land-preservation tax credits that the state can issue.	Failed in Senate Finance.
13.	SB 1371	Land exchange: Grayson Highlands State Park and Holliday Lake State Park in Appomattox County. Authorizes the DCR to convey to the DOF a parcel of land adjacent to Highlands State Park in Grayson County; the parcel would be used by the DOF as a location for research, and seed sources for native species. In exchange, the DOF would convey to the DCR the rights to a portion of land adjoining Holliday Lake State Park in Appomattox County to be used for possible expansion of Holliday Lake State Park and to protect the park's viewshed.	Passed.

Other Conservation Bills

14.	HB 1814	Plastic bags at retail stores. Bans use by retailers at point of sale unless bags are designed and manufactured for reuse. Companion bill is SB 873 (#36). Also see related SB 971 (#38) and HB 2010 (#182).	Failed in House ACNR.
15.	HB 1831	Virginia Recreational Facilities Authority. Delays from 2009 to 2010 the reversion of real property from this authority to the state.	Passed.
16.	HB 1856	Residential Property Disclosure Act; disclosure of stormwater detention facilities. Provides that a disclosure statement indicate that a property owner makes no representations with respect to the presence of stormwater-detention facilities on the property and that purchasers should exercise due diligence to determine the presence of any such facilities.	Passed.
17.	HB 1918	Coal combustion by-products; use, reuse, or reclamation in a flood plain. Requires a solid waste permit to authorize the placement of unamended coal combustion by-product (fly ash) in a 100-year floodplain. Companion bill is SB 865 (#35). See also related HB 2419 (#132).	Passed.

18.	HB 1925	Clean Water Farm Award. Identifies the type of agricultural best management practices farmers can use to be eligible for the award. See related SJ 375 (#187).	Passed.
19.	HB 1930	Certification of stormwater development property by DCR. Authorizes the DCR to certify stormwater-management development properties as being designed, constructed, or reconstructed for preventing stormwater pollution, allowing the local government to tax the property at a different rate from other classifications of real property.	Passed.
20.	HB 1973	Litter Control and Recycling Fund Grant. Limits awarding of grants to those localities whose litter-prevention and recycling grant applications meet criteria established by the Dept. of Environmental Quality (DEQ).	Passed.
21.	HB 1991	Stormwater management programs; establishment by localities. Extends the time that localities have to adopt a local stormwater management program following the effective date of state regulations.	Passed.
22.	HB 2084	Exemption of certain pollution-control equipment and facilities from local property taxes.	Passed.
23.	HB 2168	Stormwater nutrient offsets. Authorizes stormwater permit-issuing authorities to allow permit holders to comply with nonpoint nutrient runoff water-quality criteria by acquiring nonpoint nutrient offsets that have been certified under the Chesapeake Bay Nutrient Exchange Program. The offsets have to be in the same tributary as the permitted activity and generated in the same or adjacent eight digit hydrologic unit code. Several other conditions are also specified.	Passed.
24.	HB 2175	Energy projects, small renewable; DEQ to develop permit by rule for construction & operation. Directs the DEQ to develop a permit for construction and operation of small renewable energy projects. A project for which such a permit by rule has been issued will be exempt from requirements that the State Corporation Commission permit its construction and operation. A governor's recommendation establishes the Small Renewable Energy Project Fee Fund. Companion bill is SB 1347 (#49).	Passed
25.	HB 2177	Rechargeable battery recycling. Authorizes localities to ban disposal of certain rechargeable batteries in any waste-to-energy or solid waste disposal facility within its jurisdiction, provided the locality has implemented a recycling program that is capable of handling all rechargeable batteries generated within its jurisdiction.	Passed.
26.	HB 2202	Greenhouse gas emissions; mandatory reporting. Requires the State Air Pollution Control Board to adopt regulations requiring the reporting of greenhouse gas emissions from stationary sources that consume carbon-emitting feedstocks, emit more than a de minimis amount of greenhouse gas, and are already required to report emissions of other air pollutants. Companion bill is SB 1145 (#43).	Failed in House ACNR.
27.	HB 2218	Soil and water conservation district director elections; notification. Requires prominent posting of relevant dates for district director elections. Companion bill is SB 1324 (#48).	Passed.
28.	HB 2255	Solid waste disclosure statements; eliminates requirement that applicants provide social security number.	Passed.
29.	HB 2351	Natural Resources Commitment Fund. Requires the DCR to determine the annual funding needs for agricultural best management	Passed.

		practices (BMPs) and to provide this information to the governor. The bill also changes the formula for allocating moneys in the Virginia Natural Resources Commitment Fund, as follows: eight percent will be distributed to soil and water conservation districts, 55 percent will be used for matching grants for BMPs on lands within the Chesapeake Bay watershed, and 37 percent will go to matching grants outside the Chesapeake Bay watershed. See related SB 1050 (#41).	
30.	HB 2469	Waste Management Board; permit issuance process. Makes the process of permit issuance for solid waste management uniform with that of the two other pollution control boards, the Air Pollution Control Board and the State Water Control Board.	Failed in House ACNR.
31.	HB 2525	Small Wind Energy Projects; construction and operating permits.	Incorporated into HB 2175 (#24).
32.	HB 2602	DCR contracts with non-profit organizations. Grants the DCR power to establish non-competitively procured contracts with non-profit organizations that wish to conduct revenue-producing activities on department lands for the benefit of Virginia State Parks or the Natural Area Preserve System.	Passed.
33.	HB 2649	Recycling reports. Removes the requirement that solid-waste planning units submit an estimate of the amount of solid waste managed through recycling.	Failed on House floor.
34.	HJ 713	Compact fluorescent light bulbs: DEQ to study impact of expanded use. Requests the DEQ to study the environmental impact of the expanded use of compact fluorescent light bulbs in the residential sector, including proper disposal and public education.	Passed House; failed in Senate Rules.
35.	SB 865	Coal combustion by-products; use, reuse, or reclamation in a floodplain. Requires a solid waste permit to authorize the placement of unamended coal combustion by-product (fly ash) in a 100-year floodplain. Companion bill is HB 1918 (#17).	Passed.
36.	SB 873	Plastic bags at retail stores; bans use by retailers at point of sale unless designed & manufactured for reuse. Companion bill is HB 1814 (#14). Also see related SB 971 (#38) and HB 2010 (#182).	Failed in Senate ACNR.
37.	SB 930	Statewide Waste Management Plan. Requires the DEQ by 2012 to prepare a statewide waste management plan with goals and minimum recycling rates, strategies to achieve goals and minimum rates, and recommendations for legislative changes needed to implement the goals and minimum rates. The bill would have taken effect unless private funds for developing the plan were found by March 2011.	Passed Senate; passed House ACNR; failed in House Rules.
38.	SB 971	Plastic bags at retail stores; on-premises recycling. Requires that certain stores provide on-premises recycling for plastic bags, and that larger stores provide reusable bags for sale and take back and recycle used plastic bags. See related HB 1814 (#14)/SB 873 (#36) and HB 2010 (#182).	Failed in Senate ACNR.
39.	SB 982	Stormwater regulation by localities. Requires localities to provide full or partial waivers of charges to any person who develops, redevelops, or retrofits outfalls, discharges, or property so that there is a permanent reduction in post-development stormwater flow and pollutant loading, as long as a stormwater permit has been obtained by either the DCR or the DEQ when such permit is required. Under current law, localities have the <i>option</i> of providing such waivers.	Passed.
40.	SB 1026	Nonprofit corporation authorized for Foundation for	Passed.

		Virginia's Natural Resources. Authorizes the Foundation to establish a nonprofit, nonstock corporation to foster partnerships, finance projects, and promote the mission of the Foundation.	
41.	SB 1050	Natural Resources Commitment Fund; funding. Requires the DCR, in consultation with stakeholders, to determine an annual funding amount for effective Soil and Water Conservation District technical assistance and implementation of agricultural best management practices and to provide to the governor the annual funding amount needed for each year of the ensuing biennial period. The bill also changes the formula for distributions from the Fund. See related HB 2351 (#29).	Passed.
42.	SB 1114	Stormwater management; emerging technology. Directs the Virginia Soil and Water Conservation Board to adopt regulations for evaluating and including emerging or innovative stormwater-control technologies that reduce nonpoint source pollution.	Passed.
43.	SB 1145	Greenhouse gas emissions; mandatory reporting. Companion Bill is HB 2202 (#26; please see that bill for summary).	Passed Senate; failed in House ACNR.
44.	SB 1198	State parks; expands Golden Passport program for disabled persons. Establishes a Disabled Veteran's Passport program that entitles the bearer to free admission to state parks and reduces fees on park services.	Passed.
45.	SB 1224	Littering penalties. Provides that littering is punishable by a fine of not less than \$500 or more than \$2,500 and a mandatory minimum of 10 hours of community service.	Passed Senate; failed in House Courts of Justice.
46.	SB 1295	Silvicultural activities; state forester allowed to enter and to inspect land to determine if activities are causing pollution.	Passed.
47.	SB 1317	Electronic meetings by Air Pollution Control Board and State Water Control Board. Requires any electronic communication meetings by these boards to be held in compliance with the Freedom of Information Act; the bill identifies allowable topics of discussion.	Passed.
48.	SB 1324	Soil and water conservation district director elections; notification. Companion bill is HB 2218 (#27; please see that bill for summary).	Passed.
49.	SB 1347	Energy projects, small renewable; DEQ to develop permit by rule for construction and operation. Companion bill is HB 2175 (#24; please see that bill for summary).	Passed.
50.	SB 1361	State park funds; transfers all money in park-operated Concessions Fund to State Park Conservation Resources Fund.	Passed.
51.	SB 1473	State forest land permits. Authorizes the state forester to require a person to obtain a permit to fish or ride a horse on lands under the control of the DOF; currently, permits are required for hunting or trapping on such lands. A permit requirement for riding a mountain bike was in the original bill but was eliminated in the final version.	Passed.
52.	SJ 332	Constitutional amendment (first resolution); tax exemptions for resource-conserving property. Authorizes the General Assembly to enact laws to permit localities to exempt from property taxes any property (real or personal) designed to conserve energy and	Passed.

		natural resources in a manner that meets or exceeds performance standards established for such purposes. The amendment also deletes the authorization for the General Assembly to exempt <i>directly</i> from property taxes resource-conserving property, property designed to abate pollution, and property to transfer or store solar energy.	
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ENERGY CONSERVATION AND RESOURCES

53.	HB 1633	Offshore drilling royalties. Apportions any state royalties from offshore drilling for natural gas and oil among the Transportation Trust Fund, Renewable Electricity Production Grant Fund, Virginia Coastal Energy Research Consortium, and programs developed by the Secretary of Natural Resources to clean up the Chesapeake Bay.	Passed House; failed in Senate Finance.
54.	HB 1707	Energy performance-based contracts; Mines, Minerals and Energy to assist localities. Requires the Dept. of Mines, Minerals and Energy (DMME) to make a reasonable effort to advise localities, upon request, about energy performance-based contracts, and to compile information annually concerning local energy performance-based contracts.	Passed.
55.	HB 1953	Guidelines for schools on recycling and waste reduction activities. Requires the Board of Education to establish guidelines for local school divisions regarding recycling and waste-reduction activities and to submit an annual report of recycling efforts in public schools.	Failed in House Education.
56.	HB 1994	Renewable portfolio standard (RPS) program for investor-owned electric utilities. Adds to the state's RPS program by establishing a goal for investor-owned incumbent electric utilities to have 15 percent of their total electric energy sales be from renewable energy sources by calendar year 2025.	Passed.
57.	HB 2001	Biofuels Production Incentive Grant Program. Distinguishes advanced biofuels—made from winter cover crops, cellulose, hemicellulose, lignin oil, and algae—from standard biofuels that may be made from agricultural feedstocks such as corn. The program will award a \$0.125 per gallon grant for advanced biofuels and a \$0.10 per gallon grant for standard biofuels (requires production of one million gallons per year for eligibility). Companion bill is SB 1186 (#82).	Passed.
58.	HB 2002	Energy Plan; biofuels from non-food feedstocks. Amends the Virginia Energy Plan to recognize the objective of increasing Virginia's use of sustainably produced biofuels made from traditional agricultural crops and other feedstocks, and to support the delivery infrastructure needed for statewide distribution to consumers. Companion bill is SB 1427 (#96).	Passed.
59.	HB 2165	Zoning; small-scale production of biofuels in areas zoned agricultural. Allows farmers to engage in the small-scale production (as defined in the bill) of biofuels in areas zoned agricultural without a special exception or special use permit.	Passed.
60.	HB 2174	Energy savings by state agencies. Establishes a program under which a state agency's operating costs will be held harmless from any reduction in projected operational expenditures that results from energy conservation; state agencies are required to prepare an approved energy-conservation program for each building; energy-conservation guidelines are to be developed by the Dept. of General Services; and that department shall report energy savings for each agency.	Failed in House General Laws.

61.	HB 2176	Electric energy efficiency standards; Energy Efficiency and Conservation Fund established.	Incorporated into HB 2506 (#68).
62.	HB 2235	Clean Energy Manufacturing Incentive Grant Program and Fund; created. Repeals the Solar Photovoltaic Manufacturing Incentive Grant Program and creates a program to provide financial incentives for products related to renewable energy, nuclear energy, and energy efficiency. Companion bill is SB 1215 (#84).	Passed House Commerce and Labor; failed in House APP.
63.	HB 2374	State income tax; Renewable Energy Job tax credit. Provides an income tax credit to corporations for each created or filled renewable energy job (as defined by the bill). See related SB 1125 (#78).	Failed in House Finance.
64.	HB 2387	Green Public Buildings Act; certain new or renovated buildings to be built to certain standards. Requires new or renovated building projects (above a certain size) by public bodies to be done to the Green Globes Green Building Initiative green building rating standard or the United States Green Building Council Leadership in Energy and Environment Design green building rating standard (LEED). Companion bill is SB 1252 (#88). See also SB 1127 (#79).	Passed House General Laws; failed in House APP.
65.	HB 2404	Virginia Universities Clean Energy Development and Economic Stimulus Foundation created. Creates the Virginia Universities Clean Energy Development and Economic Stimulus Foundation for i.) research, development, and commercialization of alternative fuels, clean energy production, and related technologies. The Tobacco Indemnification and Community Revitalization Commission is authorized to award to the foundation up to five percent of its endowment each year for five years beginning in 2009.	Passed House; failed in Senate Education and Health.
66.	HB 2417	Covenants regarding solar power; clarifies that community associations may amend to relax restrictions.	Passed.
67.	HB 2418	Solar energy in subdivision ordinances. Strikes language requiring that provisions for establishing and maintaining access to solar energy be applicable to a new subdivision only when so requested by the subdivider.	Failed in House Counties, Cities, and Towns.
68.	HB 2506	Energy efficiency programs; investor-owned electric utilities to recover costs. Authorizes investor-owned electric utilities to recover, through a rate-adjustment clause, the costs of designing and operating energy-efficiency programs that produce measured and verified reductions in electricity use. See related See LIS for significant details. See related SB 1248 (#87).	Passed.
69.	HB 2531	Electricity; demand-side management, energy conservation, energy efficiency, and demand reduction. Directs the State Corporation Commission (SCC) to determine achievable, cost-effective energy conservation targets that can be accomplished through demand-side management portfolios administered by generating electric utilities. The measure also requires the SCC to approve a demand-side management program that is proposed by a certain generating electric utility or a qualified nonutility provider if certain conditions are satisfied. The DEQ is required to adopt regulations that exempt certain customers from the major and minor new source review regulations during verifiable peak shaving periods, to create a class or classes of general permits that would create the same exemptions, or both. See LIS for more details. Companion bill is SB 1348 (#92).	Passed.
70.	HB 2562	Retail Sales and Use Tax; renewable energy exemptions.	Failed in

		Exempts from the retail sales and use tax solar photovoltaic systems, solar thermal systems, and wind-powered electrical generators for residential real property. Companion bill is SB 1216 (#85).	House Finance.
71.	HB 2572	State income tax credit for energy-efficient equipment purchases by individuals (up to 50 percent of purchase). See related HB 2573 (#72), SB 1141 (#80), and SB 1231 (#86).	Failed in House Finance.
72.	HB 2573	State income tax credit for energy-efficient equipment purchases by individuals or corporations (up to 25 percent of purchase). See related HB 2572 (#71), SB 1141 (#80), and SB 1231 (#86).	Failed in House Finance.
73.	HJ 621	Ethanol production; requests U.S. EPA waiver. Requests the U.S. Environmental Protection Agency (EPA) to grant a temporary waiver from the Renewable Fuel Standard under the Energy Independence and Security Act of 2007.	Failed in House ACNR.
74.	HJ 718	Utility-scale energy; study of generation from offshore winds and investment. Creates a joint subcommittee to study utility-scale energy generation from offshore winds and the feasibility of commercial investment in such projects.	Failed in House Rules.
75.	SB 973	Virginia Resources Authority loans for renewable energy. Authorizes the Virginia Resources Authority (VRA) to finance renewable energy projects and permits localities to make loans for renewable energy using funds obtained through VRA's assistance.	Failed in House ACNR.
76.	SB 1065	Wind energy drying devices; no community association shall prohibit an owner from installing.	Passed Senate; failed on House floor.
77.	SB 1124	Commercial clean energy production tax credit. Establishes an income tax credit for electricity that is produced using solar photovoltaic technology or wind power at a commercial facility.	Failed in Senate Finance.
78.	SB 1125	State income tax credit for green jobs. Provides an income tax credit to taxpayers in the amount of \$1,000 per year, for up to three years, for each "green job" (employment in an industry related to renewable alternative energies). See related HB 2374 (#63).	Failed in Senate Finance.
79.	SB 1127	State energy efficiency programs. Requires the Division of Purchase and Supply of the Department of General Services to ensure that, by 2020 and thereafter, 20 percent of the electricity purchased by the Commonwealth is sustainable energy. Also requires state agency building projects above a certain size to be built to energy-performance standards of the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) or equivalent energy performance-standards that provide for the use of Virginia forest products, unless granted an exemption by the Director of the Department of General Services (see related HB 2387 (#64)). Also authorizes the governor to permit any state agency to enter into a contract through the use of competitive negotiation, rather than through the requirements of the Commonwealth's public procurement laws, if it finds that the contract will improve energy efficiency or result in reduced energy expenditures.	Failed in Senate General Laws and Technology.
80.	SB 1141	State income tax credit for renewable energy. Provides a tax credit for individuals and corporations for renewable energy property, not to exceed \$1,000,000 for individuals and \$1,000,000 for corporations in any year. The bill is contingent on supplemental appropriations that may be used for such credit being included in a federal stimulus package adopted by March 27, 2009. See related HB 2572 (#71), HB	Passed Senate; failed in House Finance.

		2573 (#72), and SB 1231 (#86).	
81.	SB 1146	Biodiesel and green diesel; two-percent requirement. Requires state public bodies to procure only diesel fuel containing, at a minimum, two percent, by volume, biodiesel fuel or green diesel fuel. Based on a finding of sufficient availability of biodiesel or green diesel, the Governor may increase the requirement up to 20 percent by volume.	Passed Senate; passed House Commerce and Labor; failed in House APP.
82.	SB 1186	Biofuels Production Incentive Grant Program. Companion bill is HB 2001 (#57; please see that bill for summary).	Passed.
83.	SB 1212	Clean energy financing. Grants localities the authority to create a clean energy financing program	Passed.
84.	SB 1215	Clean Energy Manufacturing Incentive Grant Fund, created. Companion bill is HB 2235 (#62; please see that bill for summary).	Passed Senate; passed House Commerce and Labor; failed in House APP.
85.	SB 1216	Retail Sales and Use Tax; renewable energy exemptions. Companion bill is HB 2562 (#70; please see that bill for summary).	Passed Senate; passed House Finance; failed in House APP.
86.	SB 1231	State income tax credit for energy-efficient equipment purchases by individuals (up to five percent). See related HB 2572 (#71), HB 2573 (#72), and SB 1141 (#80).	Failed in Senate Finance.
87.	SB 1248	Electrical generation; base rates of return for certain types thereof. Authorizes investor-owned electric utilities to recover, through a rate adjustment clause, the projected and actual costs of designing, implementing, and operating energy-efficiency programs and fair and effective peak-shaving programs. The utility may earn a general rate of return on energy-efficiency programs. The State Corporation Commission may allow for the recovery of reductions in revenue related to energy-efficiency programs, to the extent the revenue is not recovered through off-system sales. Certain large general service customers may be exempted from paying the costs of such energy-efficiency programs. The measure also requires electric cooperatives to file assessments of impediments to their implementation of certain rate initiatives. See related HB 2506 (#68).	Passed.
88.	SB 1252	Green Public Buildings Act; certain new or renovated buildings to be built to certain standards. Companion bill is HB 2387 (#64; please see that bill for summary).	Passed Senate; passed House General Laws; failed in House APP.
89.	SB 1296	Energy efficiency and demand response goals. Establishes a goal that every investor-owned utility in the Commonwealth reduce the consumption by their retail customers in the Commonwealth, through implementation of energy efficiency programs, in 2025 by 19 percent compared to the consumption level currently projected for such year.	Failed in Senate Commerce and Labor.

90.	SB 1345	Energy efficiency in state government. Establishes a goal of reducing the annual cost of nonrenewable energy purchases by each executive branch agency and institution by at least 20 percent of fiscal year 2008 expenditures by fiscal year 2012. Also requires building according to Green Globes Green Building Initiative green building rating standard or the United States Green Building Council Leadership in Energy and Environment Design green building rating standard (LEED) (see related HB 2387, #64). Also requires that water systems in new buildings provide water savings of at least 25 percent.	Passed Senate; passed House Commerce and Labor; failed in House APP.
91.	SB 1346	Virginia Coastal Energy Research Consortium. Makes certain technical corrections to the membership of the Consortium. Also broadens one of the responsibilities of the Consortium from researching “the feasibility of recovering fuel gases from methane hydrates and increasing the Commonwealth’s reliance on other forms of coastal energy” to “the feasibility of increasing the Commonwealth’s reliance on all domestic forms of coastal energy.”	Passed.
92.	SB 1348	Electricity; demand-side management, energy conservation, energy efficiency, and demand reduction. Companion bill is HB 2531 (#69; please see that bill for summary).	Passed.
93.	SB 1349	Mid-Atlantic Offshore Wind Energy Infrastructure Development Compact. Establishes this compact among Virginia, Delaware, Maryland, New Jersey, and New York to promote and coordinate wind-energy efforts.	Passed.
94.	SB 1350	Marine Resources Commission; offshore renewable resources. Provides the Marine Resources Commission (VMRC) with authority to lease subaqueous lands for the purpose of generating electrical energy from wave or tidal action, currents, offshore winds, or thermal or salinity gradients and transmit energy from such sources to shore and requires that any leases require a royalty, with all royalties appropriated to the Virginia Coastal Energy Research Consortium. The VMRC is also directed to identify 100 acres suitable for use by the Virginia Coastal Energy Research Consortium as a research site, and to determine whether subaqueous lands exist to support a commercial offshore wind farm and, if so, auction a development lease.	Passed.
95.	SB 1357	Clean fuel vehicle job-creation tax credit; adds cellulosic biofuels. Expands the types of fuels to which new jobs must relate in order to qualify for this credit by including fuels derived from any cellulose, hemicellulose, or lignin that is derived from renewable biomass or algae.	Passed.
96.	SB 1427	Energy Plan; use of sustainable biofuels from non-food feedstocks. Companion bill is HB 2002 (#58; please see that bill for summary).	Passed.
97.	SB 1440	Integrated resource planning; electrical consumption. Requires electric utilities to have a plan for reducing customers’ electricity consumption by 2025 to a level that is 19 percent less than the currently forecasted 2025 consumption level. If a utility fails to comply with a benchmark, it is required to pay an alternate compliance payment. Funds collected from alternate compliance payments are to be deposited in a special fund named the Virginia Energy Efficiency and Integrated Resource Plan Compliance Fund and used to finance grants and loans to persons other than utilities for energy -efficiency and conservation programs. See related SB 1447 #98).	Failed in Senate Commerce and Labor.
98.	SB 1447	Energy efficiency by electric utilities; Virginia Energy	Failed in

		Efficiency Commission established. Besides the provisions include in SB 1440 (#97), this bill requires the State Corporation Commission to develop regulations that provide access to the electrical grid by distributed generators with combined heat and power systems, and creates the Virginia Energy Efficiency Commission as an advisory Commission in the executive branch to evaluate the success of energy-efficiency programs and to identify new cost-effective opportunities for energy efficiency.	Senate Commerce and Labor.
99.	SB 1452	Energy efficiency programs. Imposes a \$1 per month surcharge on rates for retail customers of investor-owned electric utilities and electric cooperatives, to be deposited in the Energy Efficiency Fund. The fund's program administrator is charged with developing energy efficiency plans and, if approved by the SCC, implementing such plans. The SCC shall approve a proposed energy-efficiency plan if it is consistent with energy objectives of the Virginia Energy Plan.	Failed in Senate Commerce and Labor; subject referred to the Commission on Energy and the Environment.
100.	SJ 345	Recycling receptacles; state and local governmental entities to increase usage.	Passed.
101.	SJ 396	Global warming and energy problems. Recognizes the need to use scientific principles in developing a plan to remedy global warming and energy problems, and requests that the General Assembly use such principles when considering energy and environmental legislation.	Failed in Senate Rules.

FISHERIES AND HABITAT OF TIDAL WATERS

102.	HB 1623	Agritourism and marine tourism activity liability. Relieves commercial fishermen that engage in marine tourism activities from liability of the inherent risks of such activity when providing the appropriate warnings to members of the public.	Passed.
103.	HB 1719	Fees for hunting and fishing licenses. Clarifies the authority of the VMRC and the Board of the Dept. of Game and Inland Fisheries (DGIF) to revise certain fees for hunting, fishing, and trapping licenses.	Passed.
104.	HB 1961	Special conservation police officers. Requires any special conservation officer who is appointed after October 1, 2009, to obtain a valid registration as a Special Conservator of the Peace from the Department of Criminal Justice Services.	Passed.
105.	HB 2213	Easement in Baylor Grounds. Removes from the VMRC the authority to grant a 100-foot-wide easement to Virginia Natural Gas across a portion of Baylor Survey Ground No. 3, for a gas pipeline.	Passed.
106.	HB 2223	Recreational saltwater license. Authorizes the VMRC to charge non-residents a higher fee.	Passed.
107.	HB 2248	Marine Resources Commission location. Removes the requirement that the VMRC have a permanent office in the City of Newport News and more broadly requires that the office be located on the Virginia Peninsula (defined by the bill).	Passed.
108.	HB 2256	Fixed fishing devices. Requires the VMRC to adopt regulations that set the distance between any net and the side or end of any fixed fishing device. Currently, the distance is established by statute.	Passed.

109.	HB 2412	Conveyance of subaqueous lands. Authorizes the VMRC to sell certain parcels of subaqueous land to the City of Virginia Beach.	Failed in House ACNR.
110.	HB 2507	Refunds for saltwater fishing licenses. Requires the VMRC to refund saltwater fishing licenses on a prorated basis if the Commission stops selling the license due to fishery-management purposes.	Passed.
111.	SB 1086	Nonresident harvester's license. Increases to \$850 the fee for nonresident commercial harvester's licenses required by the VMRC for those fishing in tidal waters and by the Dept. of Game and Inland Fisheries for those fishing in Back Bay; also changes the formula for allocating the proceeds of the license sales.	Failed in Senate ACNR.
112.	SB 1087	Marine Resources Commission membership. Increases the membership of the VMRC from nine to eleven members and requires that three of the members shall have, at the time of their appointment, earned their livelihood as a commercial fisherman on Virginia's waters for at least five years.	Passed Senate; failed in House ACNR.
113.	SB 1104	Income tax credit for temporary protective enclosures for oysters.	Failed in Senate ACNR.
114.	SB 1111	Blue Crab season in specific area. Authorizes the VMRC to establish periods of time when Blue Crabs may be caught for resale in a specific location in the Chesapeake Bay (currently it is unlawful to do so from June 1 through September 15).	Passed.
115.	SB 1479	Easements and rights-of-way on Elizabeth River. Authorizes the VMRC to grant easements and rights-of-way across the beds of the Elizabeth River, including a portion of the Baylor Survey, to the Dept. of Transportation for the improvement of the Midtown Tunnel.	Passed.
116.	SJ 311	Blue crabs; Congress of U.S. urged to examine equitability of allocation of licenses to harvest. Expresses the concern of the General Assembly to ensure that one state does not inordinately bear the sacrifices necessary to ensure the success of conservation measures for the Blue Crab fishery.	Failed in Senate Rules.
117.	SJ 397	Registry of saltwater anglers. Requests the VMRC to examine the creation of a comprehensive registry of saltwater anglers and to determine whether changes are needed in the saltwater recreational fishing-license program to conform to National Angler Registry requirements.	Passed.
118.	SJ 411	Non-native oysters in the Chesapeake Bay. Encourages the U.S. Army Corps of Engineers to support the introduction of genetically sterile non-native oysters as part of its Bay oyster-management.	Passed Senate Rules; failed in Senate.

GAME, INLAND FISHERIES, AND BOATING

119.	HB 1901	Cavalier Wildlife Management Area. Authorizes the Board of Game and Inland Fisheries to convey approximately seven acres within this area in Chesapeake to Beaverdam Properties.	Passed.
120.	HB 2111	Workers' Compensation infectious disease presumption for Virginia Port Authority. Adds sworn Virginia Port Authority police officers to those public safety employees who are entitled to the presumption that certain infectious diseases are occupational diseases compensable under the Workers' Compensation Act.	Passed.

121.	HB 2242	Accident reports by watercraft passengers. Requires persons age 16 or older who are in a vessel during an accident in which a person is injured or killed and who have knowledge of the accident, to ensure that a report is made within 24 hours to a law-enforcement officer.	Failed in House ACNR.
122.	HB 2281	Wildlife Violator Compact. Authorizes the DGIF to adopt regulations necessary to be a party to the Interstate Wildlife Violator Compact.	Passed.
123.	HB 2636	Special hunting and fishing license for youth groups. Authorizes a special group hunting and fishing license to a nonprofit wildlife-education organization that takes youth on hunting and fishing excursions as part of its educational activities.	Passed.
124.	HJ 627	Children's life jacket requirements. Requests the Board and DGIF to consult and coordinate with the boating community and recreational boating safety professional organizations regarding the need for a statewide children's life jacket requirement.	Failed in House ACNR.
125.	HJ 703	Waterfowl hunting study. Establishes a legislative subcommittee to study waterfowl hunting in urban and suburban areas. See related SJ 332 (#130).	Failed in House Rules.
126.	HJ 721	Waterfowl hunting study. Same provision as to HJ 703 (please see that bill, #125, for summary).	Failed in House Rules.
127.	SB 820	Local motorboat registration fee. Authorizes localities to impose a local motorboat registration fee on motorboats subject to the locality's tangible personal property tax, for a registration period of 36 months.	Failed in Senate ACNR.
128.	SB 880	Department of Game and Inland Fisheries: exceptions to disclosure of official records. Provides that records of the DGIF shall be subject to the disclosure provisions of the Freedom of Information Act, except that personal information of individual applicants or holders of any hunting, fishing, boating, or trapping license issued by the DGIF shall be withheld from public disclosure if such individuals have requested that the Department not disclose such information. Statistical summaries or other records that do not identify individual applicants or licensees shall be disclosed.	Failed in Senate General Laws and Technology; subject referred to Freedom of Information Act Advisory Council.
129.	SB 882	Regulation of parking on public highways. Adds Stafford County to the list of counties and towns that may by ordinance regulate the parking of watercraft, boat trailers, motor homes, and camping trailers; also replaces several circumlocutions with the specific names of the designated localities: the counties of Arlington, Fairfax, and Prince William, and the towns of Clifton, Herndon, and Vienna.	Passed.
130.	SJ 322	Waterfowl hunting study. Directs the Crime Commission to study waterfowl hunting in certain urban and suburban areas. See related HJ 703 (#125).	Passed Senate; failed in House Rules.

WASTE DISPOSAL

131.	HB 1872	Hampton Roads area refuse collection and disposal system authority. Sets forth the requirements and rules for any solid waste authority for the cities of Norfolk, Virginia Beach, Portsmouth,	Passed.
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		Chesapeake, and Franklin, and the counties of Isle of Wight, Southampton, and Suffolk.	
132.	HB 2419	Fossil fuel combustion products permit. Requires a solid waste permit when using unamended coal-combustion waste (fly ash) as land cover for recreational facilities or for land contouring. See related HB 1918/SB 865 (#17 and #35, respectively).	Failed in House ACNR.
133.	HB 2576	Electricity generated from solid waste. Expands the definition of a “qualifying project” under the Public-Private Education Facilities and Infrastructure Act of 2002 to include any solid waste management facility that produces electric energy derived from solid waste.	Passed.

WATER AND SEWER SYSTEMS

134.	HB 1681	Construction of wells. Requires a site plan, but not a survey plat, to be included in an application for a permit to construct a private well; also clarifies that it is the landowner's responsibility to ensure that the well is located on his or her property.	Passed.
135.	HB 1788	Alternative on-site sewage systems. Provides that when sewers or sewerage disposal facilities are not available, a locality shall not prohibit the use of alternative onsite sewage systems that have been approved by the Virginia Department of Health for use in the particular circumstances and conditions, and that localities shall not require maintenance standards and requirements for alternative onsite sewage systems that exceed those allowed under or established by the State Board of Health. Companion bill is SB 1276 (#148).	Passed.
136.	HB 1840	Gas and Oil Act; distance limitations of wells. Exempts wells from minimum distance limitations if the proposed drilling application includes a plan for plugging the well in advance of mining that would allow for the mine-through of the well, and requires that permits to drill coalbed methane gas wells include a notice of stimulation if the proposed method of stimulation of the coal seam requires an amount of proppant greater than 10,000 pounds per foot of coal in the coal seam.	Failed in House ACNR.
137.	HB 2074	Wastewater treatment plants: exception to total maximum daily load allocations for certain plants. Establishes an expedited process for the State Water Control Board to review petitions (submitted through July 10, 2010) from certain wastewater-treatment facilities to maintain nutrient allocations based upon a higher design flow and determine whether to grant the facilities an extension to December 31, 2015, to obtain a certificate at a higher design flow (current deadline is December 31, 2010). In any case, facilities would still have to comply with their currently applicable nutrient allocations by January 1, 2011. Companion bill is SB 1022 (#146).	Passed.
138.	HB 2162	Town of Timberville; provides for local advisory referendum on water fluoridation.	Passed House Privileges and Elections; failed in full House.
139.	HB 2188	Onsite sewage systems: survey plat requirement. Directs the Board of Health to establish procedures for requiring a survey plat with any application for an onsite sewage or alternative discharging sewage system, and procedures for waiving such requirement.	Passed.

140.	HB 2247	Water and waste authorities; liens. Provides that a lien may apply for delinquent rates or charges applicable to “three or fewer months” rather than “three or fewer delinquent billing periods not exceeding thirty days each” in order to accommodate quarterly billing.	Passed.
141.	HB 2270	Private residential wells; minimum storage capacity and yield requirements. Requires the Board of Health to include in its regulations minimum storage-capacity and yield requirements for residential drinking wells, and requires that the well-system provider shall certify the storage capacity and yield upon the well’s completion.	Passed.
142.	HB 2323	Fauquier County Water and Sanitation Authority/Vint Hill wastewater treatment plant. Grants exemption to maintain current nutrient waste-load allocations for 10 years.	Incorporated into HB 2074 (#137).
143.	HB 2558	Land-application of biosolids permits. Clarifies that if a biosolids permit is amended to increase land-application acreage by 50 percent or more than was allowed initially, the application shall be treated as a new application requiring public notice and a public meeting.	Passed.
144.	HB 2591	Sampling of sewage sludge: unannounced inspections by DEQ. Requires the DEQ, during an unannounced inspection of land on which biosolids are being applied, to collect samples of the biosolids; to develop a protocol for such sampling; and to have the sample analyzed for possible health-related constituents if there is a documented health complaint.	Failed in House ACNR.
145.	HB 2646	Eligibility for betterment loans. Directs the Board of Health and the director of the DEQ to develop procedures for qualifying the owners of failing septic tanks, underground storage tanks, and contaminated dry cleaning stores, for betterment loans to be provided by private lenders. A betterment loan is defined as “a loan...to repair, replace, or upgrade an onsite sewage system or an alternative discharging sewage system for the purpose of reducing threats to public health and ground and surface waters....”	Passed.
146.	SB 1022	Wastewater treatment plants: exception to total maximum daily load allocations for certain plants. Companion Bill is HB 2074 (# 137; please see that bill for summary).	Passed.
147.	SB 1128	Construction of wells; geothermal heating systems. Requires the Board of Health to develop regulations for the issuance of an express geothermal permit allowing the construction of wells used solely for closed-loop geothermal heating systems.	Passed.
148.	SB 1276	Alternative on-site sewage systems; restriction on local authority to prohibit. Companion bill is HB 1788 (#135; please see that bill for summary).	Passed.
149.	SB 1337	Coal and gas road improvement tax; water/sewer projects. Provides that revenues generated by the coal and gas road improvement tax and designated for local water or sewer projects shall be distributed to the local industrial development authority, economic development authority, or public service authority rather than to the local governing body; also provides that such revenues may be used for the administrative expenses of the locality’s coal and gas improvement fund advisory committee.	Passed Senate; failed in House Finance.
150.	SB 1460	Replacement of water by gas well operators. Requires the operator of <i>any</i> gas well—conventional or coalbed methane—to replace any water supply contaminated or interrupted by an operation that is within 750 feet of a water well; also requires surface landowners to allow gas well operators to take samples from water wells. Currently,	Passed.

		these requirements apply only to coalbed methane wells.	
151.	SB 1471	Stormwater control and water or waste systems; allows governor to disclaim rights of State. Authorizes the governor, upon request of a user of state lands and in a form approved by the attorney general, to disclaim any Commonwealth rights or interest in lands used for stormwater-control systems or water or waste systems, if the governor finds that there is no greater public need or purpose than such use, or that public use and necessity have been established.	Passed.
152.	SB 1509	Septic systems; nitrogen-reducing technology. Clarifies that the DCR may award grants from the Water Quality Improvement Fund for replacement or modification of residential onsite sewage systems to include nitrogen-removal capabilities. The Board of Health may also set nitrogen-reducing performance requirements for alternative onsite and alternative discharging sewage systems that protect public health and the quality of groundwater and surface water.	Passed.

WATERS OF THE STATE, PORTS AND HARBORS

153.	HB 1595	Middle Peninsula Chesapeake Bay Public Access Authority; authorized to develop wetlands mitigation. Authorizes this Authority to receive and expend funds for restoring or creating tidal wetlands within the Authority service region; any wetlands credits from such projects can be used only by Authority member jurisdictions.	Passed.
154.	HB 1611	Veterans Memorial Bridge designation on I-64. Designates the Interstate Route 64 bridges over the Jackson River at approximately mile marker 19 in Alleghany County as "Veterans Memorial Bridge."	Passed.
155.	HB 1713	Holland-Councill Memorial Bridge designation on U.S. 58. Designates the U.S. Route 58 Business bridge over the Blackwater River in Isle of Wight County as "Holland-Councill Memorial Bridge." Companion bill is SB 802 (#171).	Passed.
156.	HB 1739	Virginia ports; change in ownership. Requires approval of both the governor and the General Assembly before any change in ownership of the Virginia ports is permitted.	Failed in House Rules.
157.	HB 1774	Tidal creeks; establishes no-discharge zones for vessels operating in designated areas. Establishes the tidal creeks of the Commonwealth as no-discharge zones for treated or untreated waste from vessels, but only on those creeks where the U.S. EPA has determined that sufficient facilities exist for the removal of sewage.	Passed.
158.	HB 1775	Invasive species; management plan to prevent. Charges the secretaries of Natural Resources and of Agriculture and Forestry with developing an invasive species management plan and establishing an invasive species advisory group, with the goal of preventing introduction of invasive species and controlling and eradicating invasive species already present on Virginia's lands and waters. Companion bill is SB 1211 (#176).	Passed.
159.	HB 1855	Conveyance of subaqueous lands in Fairfax County. Asserts that the conveyance an Alexandria property by Thomas Lord Fairfax in April 1765 to John West, Jr., shall be deemed a valid and proper conveyance by the Commonwealth.	Failed in House ACNR.
160.	HB 1931	Water Facilities Revolving Loan Fund. Authorizes the Virginia Resources Authority to provide to the Va. DEQ a portion of the fees the Authority receives, to cover some of the DEQ's costs for administering	Passed.

		the construction assistance loan program.	
161.	HB 1936	Virginia Resources Authority; eligible projects include site acquisition and development. Clarifies that “projects” eligible for Authority financing may include site-acquisition or site-development work for economic and community development projects for local governments. Companion bill is SB 1476 (#180). See also related SB 989 (#174).	Passed.
162.	HB 2043	Virginia Port Authority; disclosure of certain marketing information. Provides that records of expenses paid to any officer or employee of the Authority or any entity that are incurred for business development or marketing of Virginia ports shall be open to public disclosure in accordance with the Freedom of Information Act (with certain exemptions specified).	Failed in House General Laws.
163.	HB 2056	Advanced shipbuilding training grant program. Establishes a grant program relating to advanced shipbuilding activities involving nuclear warships for the U.S. Navy in Newport News. A maximum of \$25 million in grants would be paid over five years. Companion bill is SB 1321 (#177).	Passed.
164.	HB 2283	Virginia members of Ohio Valley Water Sanitation Commission. Replaces one of the three Virginia commissioners with the director of the DCR.	Passed.
165.	HB 2401	Fallen Heroes Memorial Bridge designations. Designates the following bridges: the U.S. Route 29 bridge over the Rapidan River between Greene and Madison Counties as the “Fallen Heroes Memorial Bridge in honor of Corporal Adam J. Fargo and Private First Class Edwin A. Andino”; and the U.S. Route 340 bridge over Overall Run at the Warren County/Page County line as the “Corporal Larry E. Smedley (USMC) Memorial Bridge.”	Passed.
166.	HB 2413	Craney Island Disposal Area in Portsmouth; constructing marine terminal with dredge material. Provides that the construction of a marine terminal on the eastern side of the Craney Island Disposal Area—using dredge material to extend the disposal area eastward, as defined in the U.S. Army Corps of Engineers Feasibility Study approved on October 24, 2006, and authorized by Congress in the Water Resources Development Act of 2007—is authorized by the General Assembly. See related HJ 712 (#166).	Passed.
167.	HB 2540	Virginia Resources Authority; additional powers. Adds the following to the Authority’s powers: To form corporations, foundations, joint ventures, partnerships, trusts, or other legal entities or any combination thereof, on its own behalf or in conjunction with public or private entities; to acquire (by means other than eminent domain), own, encumber, pledge, sell, transfer, or otherwise dispose of interests in any such legal entity; to authorize any such legal entity to borrow money, issue bonds and notes, and exercise any other power permitted under Virginia law; and to provide financing and other funding to any such legal entity; to assist in coordinating federal, state, regional, and local public and private sector efforts, economic stimuli, and resources; and to support and provide educational and outreach programs to local governments on all aspects of the financing of projects, including financing through public-public and public-private joint and cooperative ventures.	Passed House; passed Senate ACNR; failed in Senate Finance.
168.	HB 2550	Economic development; incentive financing for major employment and investment projects. Authorizes the Virginia	Passed.

		Public Building Authority and the Virginia Resources Authority to finance economic development initiatives for major employment and investment projects (MEI projects, defined in the bill) performed by state and local government entities.	
169.	HJ 689	Public's use of state waters. Requests the Department of Game and Inland Fisheries and the Marine Resources Commission to clarify the public's right to float, fish, and navigate the waters of the Commonwealth.	Passed House; failed in Senate Rules.
170.	HJ 712	Craney Island Eastward Expansion Project; U.S. Congress urged to appropriate its funds to construct. Expresses the sense of the General Assembly in favor of the completion of the Craney Island Eastward Expansion Project and urges Congress to appropriate its share of funds for construction. See related HB 2413 (#166).	Failed in House Rules.
171.	SB 802	Holland-Councill Memorial Bridge on U.S. 58. Companion bill is HB 1713 (# 155; please see that bill for summary).	Passed.
172.	SB 957	Rivanna Scenic River designation expansion. Expands the Rivanna Scenic River designation by about nine miles.	Passed.
173.	SB 984	Chesapeake Bay Preservation Act; stormwater regulations. Requires the Chesapeake Bay Local Assistance Board to adopt regulations treating swimming pools and any other impoundments of surface waters (including fountains and retention ponds) as permeable surfaces for the purposes of stormwater management.	Failed in Senate ACNR.
174.	SB 989	Virginia Resources Authority: definition of power related to local government buildings. Clarifies that the Authority's power to finance "construction of local government buildings" includes financing "administrative and operations systems and other local government equipment and infrastructure." See related HB 1936 (#161).	Passed.
175.	SB 1036	Rappahannock River Basin Commission; membership. Removes the requirement that non-legislative citizen members serving as directors on the Rappahannock River Basin Commission must be <i>elected</i> members of the local governing bodies or the local soil and water conservation districts; the change would allow <i>appointed</i> members of the local governing body or soil and water conservation districts to serve as a Basin Commission director.	Passed.
176.	SB 1211	Invasive species; management plan to prevent. Companion bill is HB 1775 (#158; please see that bill for summary).	Passed.
177.	SB 1321	Advanced shipbuilding training grant program; established. Companion bill is HB 2056 (#163; please see that bill for summary).	Passed.
178.	SB 1405	Richard Daley Mahone Memorial Bridge and John McLaughlin Memorial Bridge. Designates the Virginia Route 143 bridge over Queens Creek in Williamsburg as the "Richard Daley Mahone Memorial Bridge" and the Virginia Route 64 that crosses Interstate 64 in New Kent County the "John McLaughlin Memorial Bridge."	Passed.
179.	SB 1451	Virginia Resources Authority's debt capacity. Increases from \$900 million to \$1.5 billion the Authority's debt ceiling allowed without prior approval of the General Assembly.	Passed.
180.	SB 1476	Virginia Resources Authority; definition of eligible projects includes site acquisition and development. Companion bill is HB 1936 (# 161; please see that bill for summary).	Passed.
181.	SB 1484	Lake Anna; lake level contingency plan. Requires that any lake level contingency plan developed for Lake Anna include documentation	Failed in Senate

		of the impact reductions in water flow will have on recreational uses, and that an applicant for a Virginia Pollutant Discharge Elimination System permit to discharge into the lake must conduct an assessment of recreational use.	ACNR.
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FROM MISCELLANEOUS CATEGORIES

182.	HB 1828	“Green roof” construction: localities and water authorities allowed to offer rate incentives.	Passed.
183.	HB 2010	Paper and plastic bags at retail stores. Imposes a fee on non-durable bags used by purchasers. See related HB 1814 (#14)/SB 873 (#36) and SB 971 (#38).	Failed in House Finance.
184.	HB 2055	Transfer of development rights: extensive changes. Makes extensive changes to provisions initially passed in 2006 for the purpose of making the transfer of development rights process more useable for property owners and localities. The changes are a recommendation of the Joint Subcommittee Studying Transfer of Development Rights. Please see the LIS summary for details.	Passed.
185.	HB 2088	Department of Rail and Public Transportation; recreation and safety regarding new railroad projects. Requires that, no later than December 1, 2009, the Department of Rail and Public Transportation, the DGIF, and the DCR shall develop a process to coordinate and evaluate public recreational access and safety issues related to certain new railroad projects.	Passed.
186.	HB 2663	Water and waste authorities; board membership. Allows appointment of industrial or economic development authority directors to the boards of water and waste authorities.	Passed.
187.	SJ 290	Constitutional amendment (first resolution); taking of private property for public uses. Requires that, except for property taken for public service companies or railroads, property may not be taken if the primary purpose of the taking is private financial gain, private benefit, an increase in tax base or tax revenues, or an increase in employment, and no more property shall be taken than is necessary to achieve the stated public use.	Failed in Senate Privileges and Elections.
188.	SJ 375	Clean Water Farm Award and the Bay Friendly Farm Award. Commends farms selected as winners of the Clean Water Farm Award and the Bay Friendly Farm Award to represent the Commonwealth's 10 major river basins and to recognize the exemplary effort of such farms in implementing nutrient management plans and best management practices. See related HB 1925 (#18).	Passed.

Some Water Resource Issues (and Related Bill Numbers) Covered by News Media or Organizations During the 2009 Virginia General Assembly.

Agricultural Best Management Practices: HB 1925/SR 375 (Clean Water Farm Award)
Biosolids: HB 2558
Budget: \$4 million in grants/tax credits for “green jobs”/clean energy
Budget: \$20 million for agricultural Best Management Practices
Chesapeake Bay Non-native Oysters: SJ 411
Coal Fly Ash Disposal: HB 1918/SB 865; HB 2419
Eminent Domain: SJ 290 (constitutional amendment)
Energy—Biodiesel: SB 1146
Energy—Electricity Conservation/Efficiency: HB 2506/SB 1248; HB 2531/SB 1348; HJ 713
Energy—Offshore oil/gas drilling: HB 1633
Energy—Renewable energy generally: HB 2175/SB 1347; HB 2404; SB 1141; SB 1212; SB 1215; SB 1216; SB 1350; SB 1357
Groundwater Protection: HB 2646 (betterment Loans for septs, etc.)
Lake Anna Water Levels: SB 1484
Natural Resource Commitment Fund: HB 2351/SB 1050
Plastic shopping bag regulation: HB 1814/SB 873; HB 2010; SB 971
Soil/Water Conservation District Elections: HB 2218/SB 1324
Solid Waste: HB 1872; HB 2649
Stormwater Management: HB 1991; HB 2168
Transfer of Development Rights (TDR): HB 2055
VMRC Membership: SB 1087
Wastewater Treatment Plant Nutrient Allocations: HB2074/SB 1022; HB2323
Wells: HB 2270 (minimum storage and yield)

Sources: *Altavista Journal; Bluefield (West Virginia) Daily Telegraph; Charlottesville Daily Progress; Daily Press [Hampton Roads area]; Eastern Shore News; Fredericksburg Free Lance-Star; Franklin News-Post; Harrisonburg Daily News-Record; Lynchburg News & Advance; Roanoke Times; Richmond Times-Dispatch; Staunton News Leader; Virginia Association of Soil and Water Conservation Districts; Virginian-Pilot; Washington Post.* Each issue was mentioned at least once by one or more of the sources.

Tracking Legislation and Voicing Your Opinion in the Next General Assembly

For current information about the General Assembly (including lists and summaries of all bills, budget information, member information, committee schedules, and more) visit the Legislative Information System Web site at <http://leg1.state.va.us>. You may also check on a bill’s status by phone: for the House of Delegates, (877) 391-3228 (toll-free; in Virginia only), or (804) 698-1500; for the Senate, (888) 892-6948 (toll-free; in Virginia only) or (804) 698-7410.

Various services are available for following legislation during a General Assembly session. Virginia’s **Legislative Tracking Service** allows tracking up to five bills in one “profile”; online registration is at www.virginia.gov/liab/cgi-bin/liab_signup.cgi. To track more than five bills, the **Lobbyist-In-A-Box** subscriber service is available for a fee; visit www.virginia.gov/liab/infopage.htm. If you have questions about these services, contact the Virginia Division of Legislative Automated Systems at (804) 786-1895.

According to the General Assembly’s Web site (http://legis.state.va.us/1_cit_guide/cit_welcome.html#), when the General Assembly is in session the House of Delegates and Senate jointly operate a telephone message center to accept calls from citizens wishing to express an opinion on legislation. The messages are relayed to members’ offices as requested. Phone the Constituent Viewpoint operators (8:30 a.m.-5 p.m., M-F) toll-free at (800) 889-0229 (outside Richmond) or 698-1990 (Richmond area).

To contact your representatives, find their e-mail addresses and phone numbers online at <http://dela.state.va.us/dela/MemBios.nsf/MWebsiteTL?OpenView> (House of Delegates) or [http://sov.state.va.us/SenatorDB.nsf/\\$\\$Viewtemplate+for+WMembershipHome?OpenForm](http://sov.state.va.us/SenatorDB.nsf/$$Viewtemplate+for+WMembershipHome?OpenForm) (Senate) (as of 1/30/08). Or, if you know the number of your legislative districts, you can also use the following code to identify your representatives’ Capitol phone numbers: for delegates, (804) 698-10 + district number (for example, 698-1003 for the District 3 delegate); for senators, (804) 698-75 + district number (for example, 698-7510 for the District 10 senator).

SPECIAL FEATURE: EXPLORING CONNECTIONS BETWEEN PLANTS AND WATER

The following article was written by Gregory R. Sykes, Volunteer Leader for Fairfax County's Invasive Management Area Program. The Virginia Water Resources Research Center thanks the Fairfax County Invasive Plant Management Program for permission to reprint this article (slightly edited).

Fairfax County Celebrates Virginia's First Invasive Plant Removal Day

Invasive, non-native plants threaten worldwide habitats, from tropical ecosystems to polar regions. These aggressive species displace native plants, thereby altering the local habitat by depriving wildlife normal food and shelter. Furthermore, the invasive plant roots often are less capable of retaining soil than native species, especially along stream banks, thereby increasing erosion potential. Removing invasive plants and sowing native flora is a fantastic way to improve water quality and wildlife habitat in any biome.

For the past three years, Fairfax County Park Authority (FCPA) has joined this global cause through the Invasive Management Area (IMA) program. Nearly 40 sites, mostly in stream valleys throughout the county, combine volunteer dedication and technical experience to reduce the coverage of some of our area's worst invaders.

The Fairfax County Board of Supervisors proclaimed April 12, 2008, as Invasive Plant Removal Day—the first such day in Virginia. Participating in this event, 13 IMA sites had weed-eradication workdays, while previous removal efforts enabled volunteers to reestablish native species in cleared zones. To understand the process, [this article provides details on] events at one locality—Royal Lake Park/Pohick Valley Stream Valley Park—which lies within a riparian zone. In riparian areas, erosion control receives top priority. This site works best when we can combine a “pull-and-plant” session. The invasive plants choking this plot included Amur honeysuckle (*Lonicera maackii*), multiflora rose (*Rosa multiflora*), English Ivy (*Hedera helix*), garlic mustard (*Alliaria petiolata*), and autumn olive (*Elaeagnus umbellata*). Invasive plants, combined with the nearby active storm sewer discharge, threaten to degrade this park; besides increased erosion under the shallow roots of the ivy, the storm water spreads seeds further into the park downstream.

Volunteers immediately planted native plants in the holes left after removing invasive shrubs. These new plants can curb any erosion that might result from the now absent invasive plants. Replacing the lost vegetation, volunteers planted an American sycamore (*Platanus occidentalis*), which has extensive surface roots ideal for soil retention, and an American persimmon (*Diospyros virginiana*), a species with an intricate, suckering root system. Part of this site retains water for several days after a rain. This muddy plot provided perfect conditions for moisture-thriving plants, such as buttonbush (*Cephalanthus occidentalis*), silky dogwood (*Cornus amomum*), and winterberry (*Ilex verticillata*). Along a drier hillside, volunteers planted spicebush (*Lindera benzoin*), highbush blueberry (*Vaccinium corymbosum*), and maple-leaf viburnum (*Viburnum acerifolium*). Finally, herbaceous plants—such as woodland sunflower (*Helianthus divaricatus*), golden ragwort (*Senecio aureus*), sensitive fern (*Onoclea sensibilis*), Christmas fern (*Polystichum acrostichoides*), and grey-headed coneflower (*Rudbeckia pinnata*)—filled gaps with native groundcover.

Once these plants mature, this little parcel will be a haven for wildlife, especially birds and butterflies. As for humans, this strip will transform from a previous tangle of festering weeds into a model woodland area. It is an excellent example of how people can both use plants to better serve a critical function (erosion control) while promoting wildlife. Recognition and awareness days, like the one sponsored by our local government, can enhance people's understanding of the critical link between healthy ecosystems and healthy water.



Volunteers participate in invasive-plant removal and native-species planting during a workday in Fairfax County in 2008. Photo/Gregory R. Sykes.

On May 2, 2009, Fairfax County [and a number of organizations in other localities] will participate in the first statewide Invasive Plant Removal Day, being hosted by the Virginia Master Naturalists and the Virginia Native Plant Society. Details for Invasive Plant Removal Day are posted at the Virginia Master Naturalists Web site at www.virginiamasternaturalist.org/invasives/index.html.

For more information on the Fairfax County program, contact the county's Invasive Management Area Volunteer Program Coordinator Kathy Frederick at (703) 324-8681 or katherine.frederick@fairfaxcounty.gov; Web site: www.fairfaxcounty.gov/parks/resources/ima/.

For further reading on native and invasive plants, please look into these Web sites:

“Native Plants for Conservation, Restoration, and Landscaping,” Virginia Natural Heritage Program,

www.dcr.virginia.gov/natural_heritage/nativeplants.shtml.

“Invasive Plants Fact Sheets,” U.S. Forest Service/Northeastern Area,

www.na.fs.fed.us/fhp/invasive_plants/weeds/index.shtm.

...or these books:

Audubon Society of Northern Virginia. 2005. *The Nature of Change—Preserving the Natural Heritage of a Dynamic Region: Audubon at Home in Northern Virginia*. National Audubon Society, Inc.

Burrell, C. Colston. 2006. *Native Alternatives to Invasive Plants*. Brooklyn Botanic Garden, Inc.

Randall, John M. and Janet Marinelli. 1996. *Invasive Plants—Weeds of the Global Garden*. Brooklyn Botanic Garden, Inc.

Slattery, Britt E., Kathryn Reshetiloff, and Susan M. Zwicker. 2003. *Native Plants for Wildlife Habitat and Conservation Landscaping: Chesapeake Bay Watershed*. U.S. Fish & Wildlife Service, Chesapeake Bay Field Office, Annapolis, Md. Available online at www.nps.gov/plants/pubs/chesapeake.

Tallamy, Douglas. 2007. *Bringing Nature Home: How Native Plants Sustain Wildlife in Our Gardens*. Portland, Ore.: Timber Press.

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, April 2008-March 2009

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 (on 4/8/09) at the "Climate" sections of NWS Web sites, as follows:

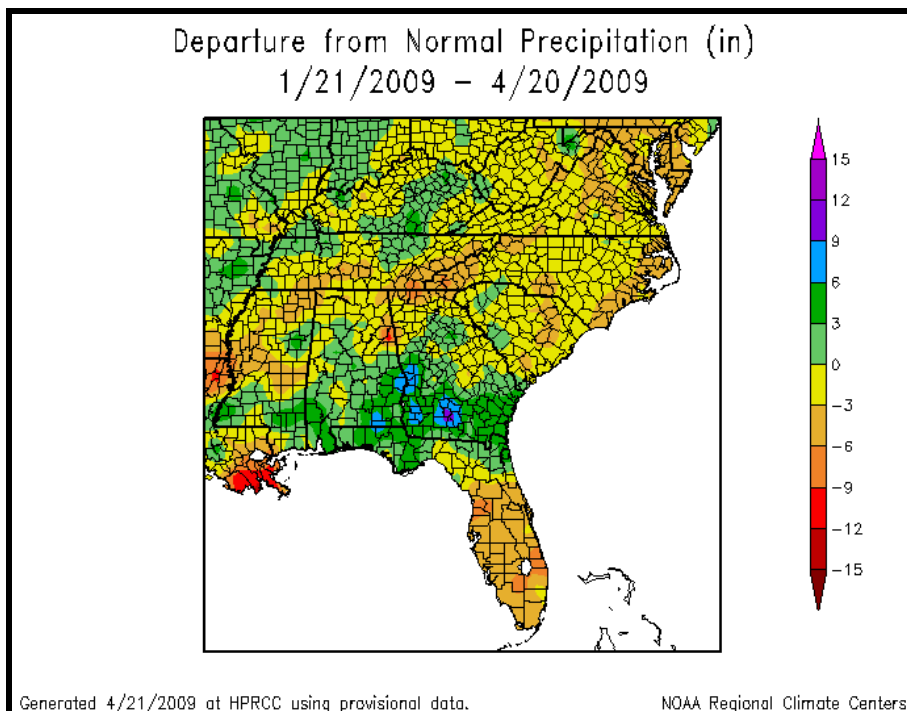
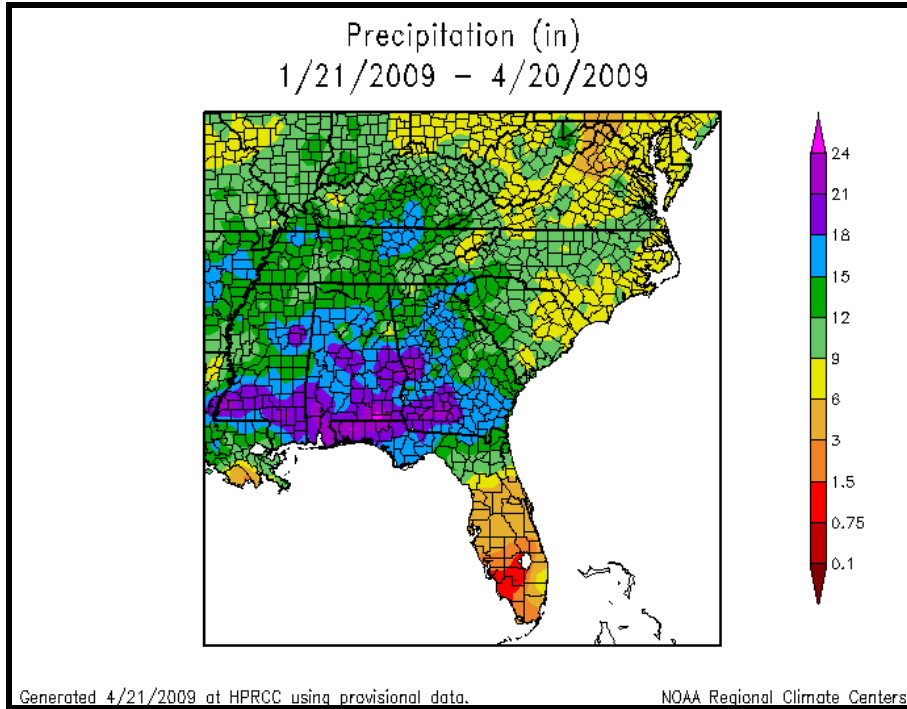
www.weather.gov/climate/index.php?wfo=mrj for the Tri-cities Airport in Tennessee, about 20 miles from Bristol, Va.; www.weather.gov/climate/index.php?wfo=rnk, for Blacksburg, Danville, Lynchburg, and Roanoke; www.weather.gov/climate/index.php?wfo=lxj, for Charlottesville* and Washington-Dulles; and <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/climate_normals/clim81/VAnorm.pdf, as of 4/9/09). RL and RH mean record low or high, respectively, for that month. The recent monthly amounts 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)	Charlot- tes- ville (McCormick Obs., Station 2W)	Danville (Airport)	Lynchburg (Regional Airport)	Norfolk (Internat. Airport)	Richmond (Byrd Intern. Airport)	Roanoke (Woodrum Airport)	Wash.- Dulles Airport
Apr. 2008	2.84 (3.23)	5.69 (3.83)	5.09 (3.34)	5.38 (3.83)	4.39 (3.46)	6.37 (3.38)	8.32 (3.18)	4.94 (3.61)	6.22 (3.22)
May 2008	1.50 (4.32)	3.19 (4.39)	4.93 (4.86)	3.67 (3.96)	2.86 (4.11)	2.88 (3.74)	5.10 (3.96)	2.08 (4.24)	9.38 (4.22)
Jun. 2008	2.26 (3.89)	2.27 (3.93)	2.11 (4.46)	0.88 RL (3.50)	1.94 (3.79)	1.93 (3.77)	3.64 (3.54)	4.64 (3.68)	4.21 (4.07)
Jul. 2008	4.69 (4.21)	4.88 (4.17)	6.61 (4.94)	4.00 (4.44)	1.07 (4.39)	5.19 (5.17)	4.05 (4.67)	3.67 (4.00)	2.18 (3.57)
Aug. 2008	2.99 (3.00)	3.28 (3.68)	5.78 (4.14)	6.92 (3.54)	2.73 (3.41)	0.67 (4.79)	5.73 (4.18)	4.65 (3.74)	2.48 (3.78)
Sep. 2008	2.53 (3.08)	1.99 (3.39)	4.87 (4.85)	6.67 (4.08)	2.28 (3.88)	9.41 (4.06)	5.94 (3.98)	2.20 (3.85)	7.18 (3.82)
Oct. 2008	1.01 (2.30)	1.04 (3.19)	2.14 (4.22)	0.94 (3.71)	2.09 (3.39)	1.47 (3.47)	1.32 (3.60)	1.87 (3.15)	1.31 (3.37)
Nov. 2008	2.09 (3.08)	1.95 (2.96)	2.96 (3.74)	3.54 (3.07)	3.94 (3.18)	5.32 (2.98)	3.51 (3.06)	1.92 (3.21)	2.01 (3.31)
Dec. 2008	4.41 (3.39)	3.43 (2.87)	3.63 (3.26)	3.81 (3.16)	3.48 (3.23)	3.83 (3.03)	4.07 (3.12)	2.25 (2.86)	2.63 (3.07)
Jan. 2009	5.67 (3.52)	3.60 (3.37)	2.09 (3.71)	3.01 (4.03)	3.13 (3.54)	1.82 (3.93)	1.49 (3.55)	2.72 (3.23)	2.64 (3.05)
Feb. 2009	2.24 (3.40)	1.96 (3.02)	0.82 (3.30)	0.97 (3.41)	1.14 (3.10)	1.26 (3.34)	0.74 (2.98)	1.22 (3.08)	0.35 (2.77)
Mar. 2009	2.21 (3.91)	4.58 (3.83)	2.85 (4.05)	4.37 (4.25)	3.23 (3.83)	5.28 (4.08)	4.26 (4.09)	3.47 (3.84)	2.41 (3.55)
Period Total	34.44 (41.33)	37.86 (42.63)	43.88 (48.87)	44.16 (44.98)	32.28 (43.31)	45.43 (45.74)	48.17 (43.91)	35.63 (42.49)	43.00 (41.80)

*Charlottesville data are from the National Climatic Data Center, provided to *Water Central* by the University of Virginia Climatology Office, 4/10/09.

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 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 4/22/09.



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, April 2009

As of April 9, 2009, 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 485 wells in 65 Virginia counties and cities. At 85 of these observation wells in 38 localities, *real-time data* (updated every 5 to 60 minutes) were being recorded. The table below shows the April 8, 2009, 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 April level, the deepest (driest) level, and shallowest (wettest) level for each well's period of record. Historical information on groundwater is also available from the USGS' annual reports of groundwater; annual reports for Water Years (October through September) 2002 to 2008 are available online at <http://wdr.water.usgs.gov/>; for previous years, check your local library.

Well (Local #)	4/8/09 Level	1/6/09 Level	10/6/08 Level	April Median	Record Deepest (Driest)	Record Shallowest (Wettest)	Period of Record
Accomack (66M 19 SOW 110S)	8.8	8.81	10.1	8.8	11.3 (Nov. 1981)	7.4 (Nov. 2006)	Since Sep. 1978
Buckingham (41H 3)	24.0	26.4	26.7	20.4	36.7 (Jan. 2002)	7.4 (Apr. 1973)	Since Mar. 1971
Clarke (46W 175)	39.9	38.4	38.8	35.7	45.7 (Sep. 2002)	23.5 (Sep. 2003)	Since Mar. 1987
Fairfax (52V 2D)	12.9	15.5	15.8	10.1	24.9 (Dec. 1998)	6.5 (Mar. 1984)	Since Oct. 1976
Frederick (46X 110)	43.6	41.2	39.2	30.7	47.9 (Jun. 2006)	18.2 (Sep. 2004)	Since Nov. 2002
Hanover (53K 19 SOW 080)	15.8	18.3	20.8	14.7	22.9 (Aug. 1984)	5.1 (Aug. 2004)	Since Jan. 1978
Loudoun (49Y 1 SOW 022)	58.0	60.3	60.4	57.0	66.5 (Oct. 2008)	48.0 (June 1972)	Since Nov. 1963
Montgomery (27F 2 SOW 019)	3.6	6.3	6.8	3.5	7.3 (Dec. 1969)	< 0.0 (Mar. 1993)	Jul. 1953, then since Apr. 1969
Northampton (63H 6 SOW 103A)	7.1	7.3	8.2	5.4	10.0 (Oct. 2002)	0.8 (Aug. 2004)	Since Sep. 1977
Orange (45P 1 SOW 030)	25.5	28.4	31.2	19.1	39.0 (Aug. 2002)	11.8 (Apr. 1973)	Since Feb. 1965
Prince William (49V 1)	7.8	8.8	10.0	8.5	13.1 (Sep. 1991)	6.6 (May 2008)	Since Nov. 1968
Roanoke City (31G 1 SOW 008)	18.8	18.7	18.8	18.2	19.3 (Jun. 1987)	12.4 (Feb. 1986)	Since Aug. 1966
Rockbridge (35K 1 SOW 063)	23.6	27.0	28.6	21.3	30.4 (Sep. 2002)	14.3 (Apr. 1987)	Feb. 1964, then since Jun. 1972
Rockingham (41Q 1)	79.7	83.4	81.1	66.6	99.0 (Oct. 2002)	57.7 (Feb. 1998)	Since Aug. 1970
Suffolk (58B 13)	6.2	8.2	11.6	7.7	13.4 (Jan. 1981)	0.0 (Feb. 2008)	Since Mar. 1975
Surry (57E 13 SOW 094C)	7.4	8.2	10.1	7.1	11.2 (Dec. 1981)	3.9 (May 1980)	Since Jul. 1978
Virginia Beach (62B 1 SOW 098A)	2.4	6.8	3.4	2.5	12.0 (Sep. 1980)	0.9 (Aug. 2004)	Since Jun. 1979
Westmoreland (55P 9)	0.3	8.5	9.5	0.7	12.8 (Dec. 1988)	< 0.0 (May 2008)	Since Jul. 1977
York (59F 74 SOW 184C)	5.7	8.5	11.1	3.1	14.1 (Jan. 2002)	0.9 (Nov. 2006)	Since Jun. 1990

Stream Flow in Virginia, March-April 2009

The graphs on this page, 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>, 4/22/09), compare recent Virginia stream flow to historical records.

The data in the graphs come from 103 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;

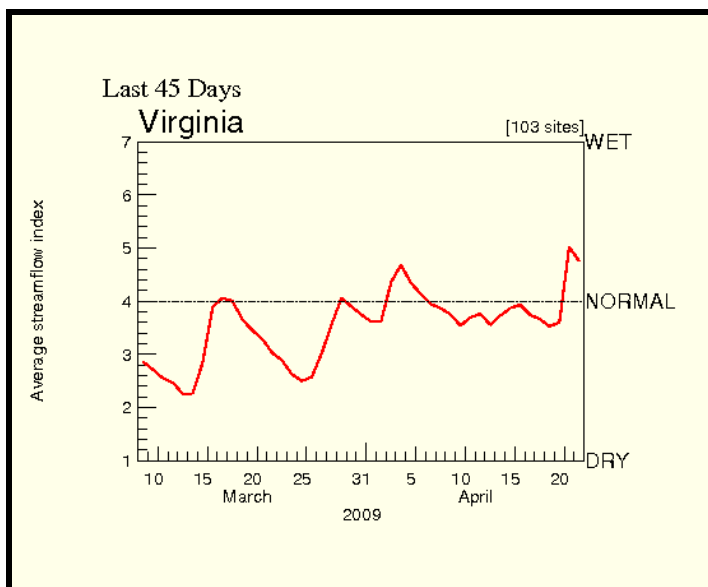
7 = average daily flow for the graphed date is record high for that date.

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.

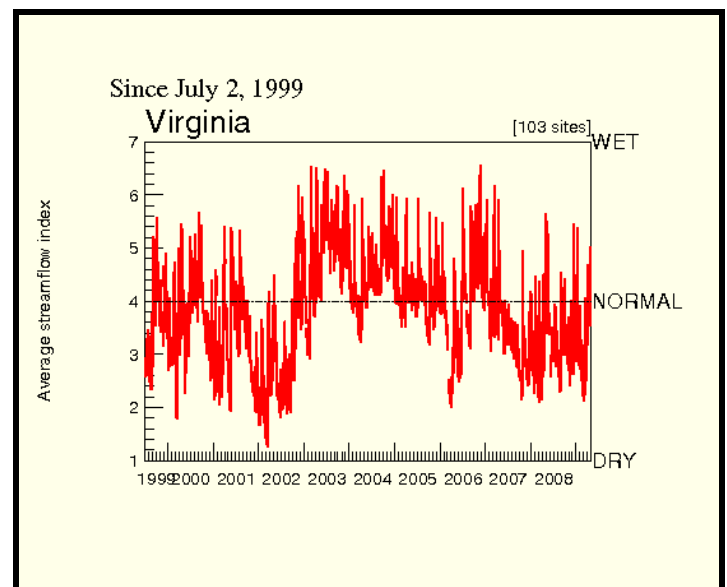
A USGS **map of current stream flow conditions** (with links providing access to details for each measuring station) compared to historical flows is available online at <http://water.usgs.gov/waterwatch/?m=real&r=va>. This Web site also has maps that show average flows over the previous 7-, 14-, and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

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

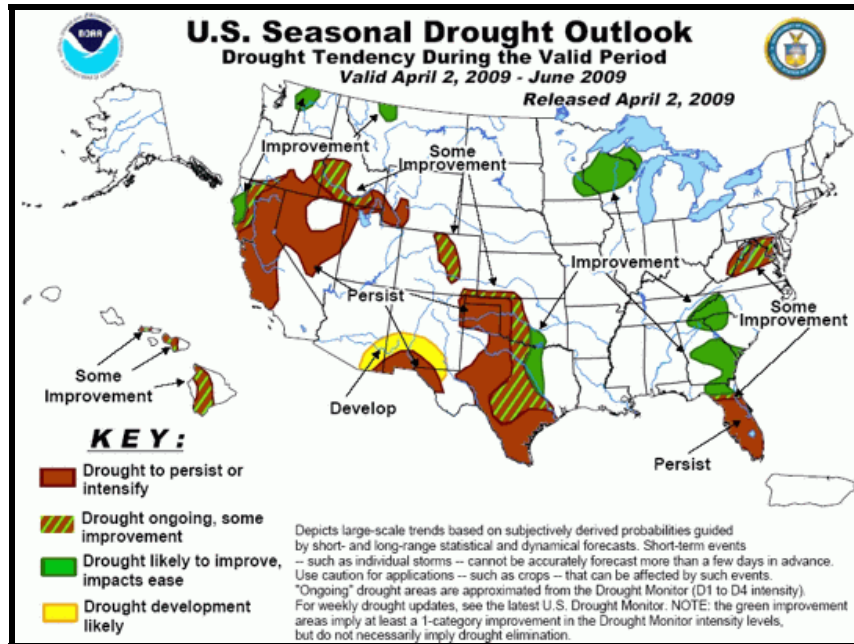
For March 8—April 22, 2009



For July 1999—April 2009



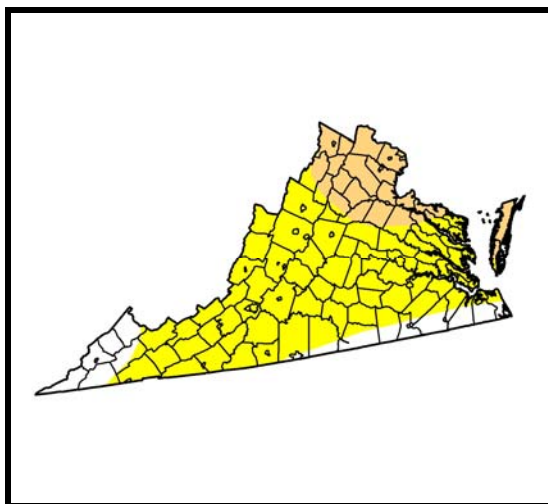
Drought Update



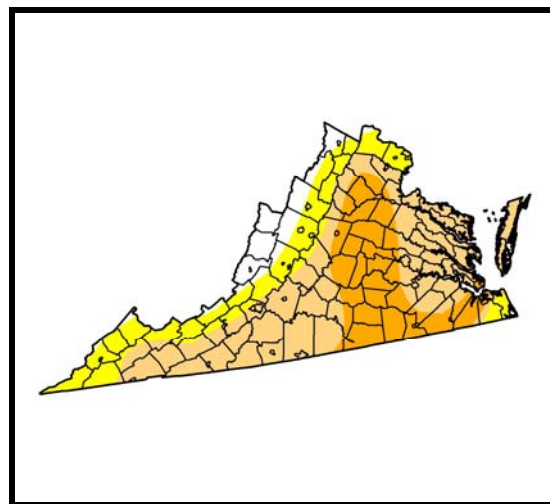
The national drought outlook for April-June 2009, according to the National Oceanic and Atmospheric Administration (NOAA) Climate Prediction Center Web site, www.cpc.ncep.noaa.gov/products/expert_assessment/seasonal_drought.html, accessed 4/10/09.

From the U.S. Drought Monitor: 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 April 7, 2009, compared to April 8, 2008. Note the lack of any areas of severe drought in early April 2009, but that relatively dry conditions still covered most of the state.



April 7, 2009



April 8, 2008

= 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, 4/10/09. Authors: Mark Svoboda, National Drought Mitigation Center, for 4/7/09 image; Rich Tinker, NOAA, for 4/8/08 image.

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. Note the significant reduction since last year in the percentage of Virginia experiencing *severe* drought.

Drought Monitor Report Date	Percentage of area rated “abnormally dry” (D0) or worse	Percentage of area rated “severe drought” (D2) or worse
4/7/09	U.S. = 39% Va. = 87%	U.S. = 8% Va. = 0%
3/3/09	U.S. = 46% Va. = 100%	U.S. = 7% Va. = 0%
2/3/09	U.S. = 41% Va. = 37%	U.S. = 8% Va. = 0%
4/8/08	U.S. = 44% Va. = 92%	U.S. = 7% Va. = 24%

From the Virginia Drought Monitoring Task Force

As of April 10, 2009, the latest report from the Virginia Drought Monitoring Task Force was issued March 15, 2009. Here are some excerpts from that report:

Precipitation: “Statewide precipitation for the previous water year (October 1, 2007 through September 30, 2008) was in the normal range (85% of normal) (precipitation greater than 85% of normal is considered to be in the normal range). Statewide precipitation for the current water year (from October 1, 2008 through March 15, 2009) was below normal (76%), with below normal precipitation in the following drought-evaluation areas : Big Sandy (75%), Eastern Shore (78%), Middle James (69%), Northern Coastal Plain (78%), Northern Piedmont (76%), Roanoke (71%), Shenandoah (69%), Southeast Virginia (78%), and Upper James (83%). Precipitation during...January and February was far below normal...”

Public Water Supplies: “Twenty five public water-supply systems have initiated voluntary water-conservation requirements and three systems have initiated mandatory water-conservation requirements, [a significant decrease since the last report [November 2008] when 48 systems were on voluntary restrictions and three systems required mandatory conservation.”

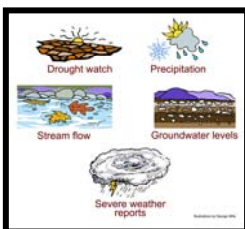
Drought disaster declarations: “In 2008, 37 counties requested the governor’s assistance in obtaining federal agricultural disaster designation due to drought conditions. As of February 5, 2009, the U. S. secretary of agriculture had named 35 [Virginia] localities as primary disaster areas due to drought and excessive heat.”

Streamflow, Groundwater, and Reservoirs: “Streams in the western and southwestern areas of the state are very low for this time of year. Many streams are currently at levels of what we would expect to see during the mid-summer period. ...[There was] little precipitation in January and February and very little winter recharge of the groundwater system. ...Without significant spring precipitation, summer streamflows will be well below normal. ...North of Interstate 64, most [groundwater] observation wells are recording levels well below normal, while south of Interstate 64 most...are recording levels in the normal to below normal ranges. ...Levels of large reservoirs in the western portion of the Commonwealth have generally rebounded. Water surface elevations of...reservoirs in southwestern, northern, and eastern Virginia are mostly normal.”

The complete November report and previous reports (since February 2002) from the Drought Monitoring Task force 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 at the left, at www.vwrrc.vt.edu/water_status.html.

IN AND OUT OF THE NEWS

Newsworthy Items You May Have Missed

The items in this section are based on information in the source(s) indicated at the end of each item. Items for this issue were collected January-April 2009. Except as noted, localities are in Virginia and dates are in 2009.

In the Chesapeake Bay

- On February 3, Virginia submitted to the U.S. Commerce Department the state's plan for using \$10 million in federal funds designated for Virginia under the **Blue Crab fishery disaster declaration**. The plan includes \$3 million for license buy-backs, \$4.2 million to pay watermen for two years to retrieve discarded crabbing equipment, \$2 million funds to help crabbers shift to oyster aquaculture, \$400,000 for crabbing-equipment and marine-protection research, \$100,000 for a crab stock assessment, and \$300,000 for a Fishery Resources Grant Program. Virginia expected Commerce Department approval quickly and was to begin using funds before crabbing season began on March 17. *Virginian-Pilot*, 2/7/09
- Legislation introduced on February 12 by U.S. Rep. Robert Wittman (R-Va. 1st) would require a budget document showing **all federal money spent on Chesapeake Bay restoration**, and would require the U.S. EPA to develop and implement an adaptive management process for federal Bay-restoration programs. The bill is H.R. 1053; as of April 22, the bill was in two House committees. For details of the bill and its legislative status, please see <http://thomas.loc.gov>. (*Fredericksburg Free Lance-Star*, 2/17/09)
- In February, two Virginia watermen, one Virginia business, and five Maryland watermen pled guilty to violations of federal Lacey Act due to a **Rockfish (Striped Bass) poaching operation** in the Chesapeake Bay and Potomac River. This followed a four-year probe by the U.S. Fish and Wildlife Service, Virginia Marine Police, and Maryland Natural Resource Police, reportedly the largest investigation ever into illegal fishing activities in the Chesapeake Bay or Potomac River. (*Annapolis Capital*, 2/8/09 and 2/20/09)
- Non-native oyster developments:** On March 24, the Virginia Seafood Council announced that it was abandoning its years-long efforts to introduce non-native oysters into the Bay. On April 6, Virginia, Maryland, and the U.S. Army Corps of Engineers announced a new Bay oyster-restoration strategy that does not include moving forward with non-native oysters. (*Daily Press*, 3/25/09; and *Virginian-Pilot*, 4/7/09)
- "Report cards" on the Chesapeake:** The annual report on by the Chesapeake Bay Program (released on March 19) rated the habitat, water quality, and fisheries (collectively) of the Bay in 2008 at a score of 38 out of a possible 100, the same score as in 2007. Meanwhile, in April the Chesapeake Bay Foundation's annual assessment of 13 habitat, water quality, and living resources factors rated the 2008 conditions in the Bay at a score of 28 out of a possible 100 (with 100 representing pre-European settlement conditions). This is the same score as the rating for 2007 conditions. For the past 10 years, the annual Bay Foundation rating has never exceeded 29. (*Virginian-Pilot*, 3/20/09 and 4/16/09)

Elsewhere in Virginia

- In 2009, the Virginia Outdoors Foundation helped place **65,000 acres in Virginia under conservation easements**, the second-largest amount in the Foundation's history. Amelia County, with 6,999 acres, had the highest total of any locality. (*Richmond Times-Dispatch*, 1/20/09)
- On January 12, a **barge carrying 1,600 tons of fertilizer** (ammonium sulfate) from the Honeywell plant in Hopewell sank in the James River. About 400 tons of the cargo were recovered, and the barge was raised on January 22. (*Richmond Times-Dispatch*, 1/22/09)
- Loudoun County is considering using **discontinued stone quarries as water supply reservoirs**. Water would be pumped to the quarries from the Potomac River during high flows. (*Washington Post*, 1/27/09)
- A Virginia company, Norfolk Tug, is an example of attempts to increase the use of **"short sea shipping"**—that is, using inland or coastal shipping routes as alternatives to trucks or rail for moving freight. (Associated Press, as printed in *Roanoke Times*, 2/23/09)
- On March 4, the Stafford County board of supervisors authorized a \$14.2 million contract to purchase a second area of 1200 acres on the **Crow's Nest peninsula**. A 1720-acre parcel was purchased in spring

2008. The federal Coastal and Estuarine Land Protection Act (S. 170 in the U.S. Senate) might provide some money towards the purchase (for details of this bill and its legislative status, please see <http://thomas.loc.gov>). (*Fredericksburg Free Lance-Star*, 3/5/09)

- **Fluvanna County** is considering creating a **joint water authority with Louisa County**, with one of the key issues being a proposed pipeline for three million gallons per day of water from the James River, which would serve Fluvanna on its way to a terminus in Louisa. (*Charlottesville Daily Progress*, 3/19/09)

- On March 25, Congress passed the **Omnibus Public Land Management Act of 2009** (H.R. 146), which extends wilderness protection to over two million acres of federal lands, including land in Virginia's Jefferson National Forest. President Obama signed the bill on March 30. The large bill also contains a number of water and climate provisions. For details of the bill and its legislative status, please see <http://thomas.loc.gov>. (*Land Letter*, at www.eenews.net, 4/2/09)

Energy Use and Climate Change Items

- At least six sites in Virginia are being considered for **new hydroelectric facilities at existing dams**. (*Lynchburg News & Advance*, 3/21/09)

- In January, the Federal Energy Regulatory Commission (FERC) approved a **liquefied natural gas (LNG) terminal in the Chesapeake Bay** off Baltimore Co., Md., and an associated 88-mile pipeline. Virginia-based AES Corporation is proposing the project. Maryland elected officials planned to continue to oppose the project through the remaining permitting processes by the U.S. Fish and Wildlife Service, U.S. Coast Guard, and U.S. Army Corps of Engineers. (*Baltimore Examiner*, 1/16/09)

- On January 21, the Suffolk City Council approved the proposal by Ciba Specialty Chemical to have GPC Green Energy LLC build a **power plant that would use methane from a regional landfill** operated by the Southeastern Public Service Authority. This would apparently be Virginia's first "co-generation" plant producing both electricity and steam from landfill gas. (*Virginian-Pilot*, 1/22/09)

- As of February, the planning phase had been completed for a **wind-turbine project proposal** by Virginia Coastal Energy Research Consortium, to be located about 12 miles offshore from Virginia Beach. The consortium's next step was to seek money for the pilot-program phase. (*Virginian-Pilot*, 2/4/09)

- On February 28, Green Energy Partners applied to **Loudoun County** for permission to build an \$813-million, 600-900 megawatt **energy plant using natural gas and treated wastewater** for steam generation (plus some solar energy). (*Washington Post*, 3/5/09)

- Public meetings and permit reviews continue for Old Dominion Electric Cooperative's (ODEC) proposed **Cypress Creek coal-fired plant in Surry County**. The Town of Dendron and Surry County began considering the proposal in early 2009; the company has said that some 50 federal, state, and local permitting processes will be needed. Here is some background on the proposed plant: the estimated cost is \$4 to 6 billion; the capacity could be as much as 1,500 megawatts (for comparison, the new plant being built in Wise County has a 585-megawatt capacity); it would use water from the James River, requiring a new pipeline; it would use biomass for two to three percent of its fuel stock; and 2016 is ODEC's target for beginning operations. (*Virginian-Pilot*, 2/27/09 and 3/19/09)

Out of Virginia

- A Texas-based company, Water Standard, has developed a **seawater-desalination vessel** as an alternative to land-based desalination methods. (*Arizona Water Resource*, Sep.-Oct. 2008)

- **Water-conservation bills in Congress** include H.R. 469, which directs the U.S. Department of Energy to begin a program to improve technology for using water generated from energy projects; and H.R. 631, which directs the U.S. EPA to establish a research and development program for reuse of stormwater and of "gray water" from household sinks, baths, and appliances. For details of the bills and their legislative status, please see <http://thomas.loc.gov>. (*Land Letter* at www.eenews.net/, 2/12/09)

- On March 24, the U.S. EPA put halted processing of permit applications for **mountaintop-removal mining** by at two projects in Kentucky and West Virginia, so that the agency could review the environmental impacts of the method. (*E&E News*, at www.eenews.net, 3/24/09)

WATER QUALITY and YOU

Emerging Contaminants: Help keep them out of our water!

This article was originally published in *Conservation Currents* (Vol. 36, Issue 2; Spring 2009), from the Northern Virginia Soil and Water Conservation District (NVSWCD). Some information from the original was omitted due to space, and information in brackets [] has been added by *Water Central*. *Water Central* thanks the NVSWCD for permission to reprint this article. A Spanish translation (by *Water Central*) follows on the next page.

A 2002 nationwide study by the U.S. Geological Survey (<http://toxics.usgs.gov/pubs/FS-027-02/index.html>) determined that certain organic chemical contaminants, including pharmaceuticals and hormones, are finding their way into our rivers and streams. [Such contaminants are often referred to as **emerging contaminants** because either they have only recently been identified as potential risks to health or aquatic life, or they have only recently started to be detected in water samples.¹ One may also see the abbreviation **PPCP**, for **pharmaceuticals and personal-care products**, used to refer to certain types of these contaminants. Another term often seen in connection with emerging contaminants is **endocrine disruptors**, used to refer to contaminants that can affect the hormonal systems of fish and other aquatic organisms.] Common residential, industrial, and agricultural chemicals were detected in trace amounts in 80 percent of the water bodies sampled for the study. These chemicals enter our streams and rivers primarily through wastewater.

Steroids, non-prescription drugs, and insect repellents were the most commonly identified groups of contaminants. Caffeine, disinfectants, and detergents were also frequently found. Detergents, steroids, and plasticizers (chemicals that are used to increase the fluidity of concrete, wallboard, and plastics) were measured at the greatest concentrations.

Generally, these emerging contaminants occur in our rivers and streams at very low concentrations. In Fairfax County, drinking water and wastewater treatment processes remove some of these chemicals. A March 2008 statement by Fairfax Water (http://fairfaxwater.org/current/special_statement_030808.htm) indicated that there is no evidence that [PCPPs in that system] pose a drinking water-related human health concern.

However, the health effects of these emerging contaminants are still being investigated. A 2008 USGS study of contaminants in drinking water [available online at <http://toxics.usgs.gov/regional/emc/index.html>] found that several of these chemicals—notably cholesterol, the herbicide metachlor, and cotinine (a substance produced by the body's metabolism of nicotine)—are present in municipal drinking water supplies. Scientists are undertaking studies to determine if emerging water contaminants, in combination with each other and at observed concentrations, could pose a health risk.

What can you do to help?

1. Dispose of unwanted medicines properly:

- Keep the medicines in their original container.
- Cross out your name and prescription number to protect your identity.
- For pills, add some salt water to the vial. For liquids add an absorbent, inedible substance like cat litter, dirt, or ash.
- Seal the container and secure with duct or packing tape.
- Put the container in your trash!

2. Replace toxic cleaning products with non-toxic alternatives.

Recipes for non-toxic homemade cleaning products are available on-line from the Boulder, Colorado-based non-profit Ecocycle at <http://www.ecocycle.org/hazwaste/recipes.cfm>.

3. Limit herbicide and pesticide use.

Visit the University of California at Davis' Web site (<http://www.ipm.ucdavis.edu/IPMPROJECT/landscaperesources.html>) to find out how to avoid use of toxins in your home and landscape.

More information on chemicals and drugs in water is available online from Fairfax County, at www.fairfaxcounty.gov/opa/chemicals_drugs_water.htm. [Other online sources of information about emerging contaminants: U.S. EPA, at <http://www.epa.gov/ppcp/faq.html>; U.S. Geological Survey, at Web site listed above; Virginia Department of Health, at www.vdh.state.va.us/news/Alerts/DrinkingWater.htm.]



Image/Courtesy of Fairfax County

¹ Tamim Younos, "Emerging Threats to Drinking Water Quality," *Renewable Resources Journal*, Vol. 23, No. 2 (Summer 2005), pp. 6-12.

LA CALIDAD de AQUA y USTED

Ayude prevenir contaminentes emergentes en nuestros aguas

Este artículo fue publicado originalmente en *Conservation Currents* (Volumen 36, Edición 2/Primavera 2009) del Northern Virginia Soil and Water Conservation District (Distrito de Virginia del Norte para Conservación de Tierra y Agua; por su siglas en inglés NVSWCD). Alguna información de el artículo original ha sido omitida debido a espacio, y la información en los paréntesis [] ha sido añadida por *Water Central*. Gracias a NVSWCD por el permiso para reimprimir este artículo, y a Barbara Kraft y Pedro Pena por su ayuda con esta traducción. Todos errores en la traducción son la responsabilidad de *Water Central*.

Un estudio nacional en 2002 por el U.S. Geological Survey (Medición Geológica de los Estados Unidos; por su siglas en inglés USGS) (<http://toxics.usgs.gov/pubs/FS-027-02/index.html>, en inglés) determinó que algunos contaminentes, incluyendo farmacéuticos y hormonas, están llegando en nuestros ríos y arroyos. [Tales contaminentes se refieren como **contaminentes emergentes**, porque han sido identificados solo recientemente como un peligro para la salud o la vida acuático, o solo recientemente han empezado a ser detectados en muestras del agua. Usted puede leer también la abreviatura inglés “PPCP,” de las palabras inglés para **farmacéuticos y productos por la cuidado personal**, uno grupo de estos contaminentes. Un otro término inglés usado a menudo en relación con contaminentes emergentes es **endocrine disruptors** (perturbadores endocrinos), lo que refiere a aquellos contaminentes que pueden afectar los sistemas hormonales de peces y otros animales acuáticos.] Químicos comunes en residencias, industria, y agricultura fueron detectados en cantidades muy bajas en 80 por ciento de las aguas muestreadas en el estudio por USGS. Estos químicos entran en nuestros ríos y arroyos principalmente por aguas residuales.

Esteroides, drogas sin receta, y repelentes insectos fueron los grupos de contaminentes más comúnmente identificados. Cafeína, desinfectantes, y detergentes también fueron encontrados con frecuencia. Detergentes, esteroides, y “plasticizers” (químicos los que se usan para aumentar la fluidez de concreto, table de yeso, y plásticos) fueron medidos a las concentraciones más altas.

Generalmente, estos contaminentes emergentes ocurren a concentraciones muy bajas en nuestros ríos y arroyos. En el condado de Fairfax, los procesos para el tratamiento del agua para beber y del agua residual quitan algunos de estos químicos. Un informe publicado en marzo 2008 por Fairfax Water (Agua de Fairfax) (http://fairfaxwater.org/current/special_statement_030808.htm, en inglés) indicó que no hay evidencia de PPCPs en esa sistema representando uno preocupación relacionada con agua de beber para la salud humana.

Pero los efectos para salud de estos contaminentes emergentes aún se están investigando. Un estudio de USGS en 2008 sobre contaminentes en agua para beber [disponible en el Internet a <http://toxics.usgs.gov/regional/emc/index.html>, en inglés] encontró que varios de estos químicos—notablemente colesterol, la herbicida “metalchlor,” y “contine” (una sustancia producida por el metabolismo de nicotina en el cuerpo)—están presentes en [algunos] suministros municipales de agua para beber. Científicos están emprendiendo estudios para determinar si los contaminentes emergentes del agua, en combinación uno a otro y a concentraciones observadas, podrían representar un peligro para la salud.

¿Que Puede Hacer para Ayudar?

1. Deshacerse de medicinas superfluas correctamente:

- Guarde las medicinas en su contenedor original.
- Tache su nombre y el número de la receta para proteger su identidad.
- Para pastillas, añada algún agua salado a la botella. Para líquidos, añada un sustancia absorbenta y incombible, como arena higiénica para gatos, suciedad, or ceniza.
- Selle el contenedor y asegúrelo con cinta.
- Ponga el contenedor en la basura,



Imagen/Cortesía del Condado Fairfax

2. Sustituya los productos tóxicos para limpiar con alternativos no tóxicos.

Recetas para productos limpiadores no tóxicos está disponibles en el sitio Web de Ecocycle (en Boulder, Colorado), a <http://www.ecocycle.org/hazwaste/recipes.cfm> (en inglés).

3. Limite el uso de herbicidas y pesticidas.

Visite el sitio Web de la University of California (universidad de California) a Davis (<http://www.ipm.ucdavis.edu/IPMPROJECT/landscaperesources.html>) para aprender como evitar el uso de toxinas en su casa y paisaje.

Más información sobre químicos y drogas en agua está disponible a el sitio Web de el condado de Fairfax a www.fairfaxcounty.gov/opa/chemicals_drugs_water.htm (en inglés). Otras funetes en el Internet para información sobre contaminentes emergentes son las siguientes: U.S. EPA (la Agencia de Protección Ambiental de EE.UU), a <http://www.epa.gov/ppcp/faq.html> (en inglés); USGS, a el sitio Web mencionado arriba; y el Virginia Department of Health (Departamento de Salud de Virginia), a www.vdh.state.va.us/news/Alerts/DrinkingWater.htm (en inglés).

VIRGINIA GOVERNMENT WATER ISSUES OVERVIEW

This section lists water issues under current consideration (study or regulation) by state boards, commissions, or agencies in Virginia. The first part identifies areas undergoing Total Maximum Daily Load (TMDL) processes. The second part identifies areas where solid waste facilities are undergoing a groundwater monitoring or corrective-action process. The third part covers other water-related topics of statewide concern that are currently being considered. The final part gives information on the regularly scheduled meetings of key water-related boards and commissions.

Information in this issue is based on public meetings listed **January 8-April 18, 2009** 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; also, the Town Hall site includes various water-related meeting on relatively local issues that are *not listed here*, such as water-treatment plant permit hearings or meetings about specific scenic rivers. 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 4/7/09.

Total Maximum Daily Load (TMDL) Meetings

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

Location	Water(s) & Impairment	Larger Watershed(s)	Most Recent Meeting Date	For More Information
Accomack County	Sandy Bottom Branch for aquatic life impairment.	Chesapeake Bay	2/18/09	Jennifer Howell
Arlington and Fairfax counties and cities of Alexandria and Falls Church	Cameron Run, Holmes Run, and Hunting Creek for bacteria.	Potomac River	3/25/09 (public meeting on TMDL development)	Katie Conaway
Appomattox and Charlotte counties	Cub Creek, Big Cub Creek, Buffalo Creek, Little Cub Creek, and Turnip Creek, all for bacteria	Roanoke River	3/26/09 (second public meeting on development of TMDL implementation plan)	Ram Gupta
Chesterfield, Henrico, and Powhatan counties and Richmond City.	James River and several tributaries—Almond, Bernard, Falling, Gillies, Goode, No Name, Powwhite, and Reedy creeks--all for bacteria.	Chesapeake Bay	3/10/09 (final public meeting on TMDL development)	Margaret Smigo
Clarke County	Page Brook for bacteria; South Fork Shenandoah River and Spout Run for aquatic life (benthic) impairment and bacteria.	Potomac River	3/24/09 (first public meeting on TMDL development)	Robert Brent
Franklin, Henry, and Pittsylvania counties	Old Womans Creek and Pigg River watersheds for bacteria.	Roanoke River	2/19/09	Mary Dail
Lancaster County	Beach and Greenvale	Rappahannock River	4/8/09 (public)	May Sligh

	creeks for bacteria.		meeting on TMDL implementation plan)	
Lancaster County	Shellfish waters in tidal Mosquito and Oyster creeks and tributaries for bacteria.	Chesapeake Bay	1/8/09 (final public meeting on TMDL development)	Margaret Smigo
Northampton County	Mill Creek for aquatic life impairment (low oxygen) and Oyster Harbor shellfishing impairment.	Atlantic Ocean	2/24/09	Jennifer Howell
Northumberland County	Shellfish-growing areas along Little Taskmakers Creek, Owens Pond, and an unnamed tributary to the Chesapeake Bay, all for bacteria.	Chesapeake Bay	3/12/09 (final public meeting on TMDL study)	Margaret Smigo
Rockbridge County	Little Calfpasture River for aquatic life (benthic) impairment.	Maury River/James River	4/14/09 (first public meeting on TMDL development)	Robert Brent
Rockingham and Shenandoah counties	Smith Creek for bacteria and sediment.	Shenandoah River	1/22/09 (final public meeting on implementation plan)	Tara Sieber
Virginia Beach City	Middle West Neck Creek, Milldam Creek, and Nanney Creek, all for bacteria.	Back Bay and North Landing River	1/26/09 (public meeting on TMDL implementation plan)	Jennifer Howell
Westmoreland County	Bonum, Gardner, and Jackson creeks shellfish areas for bacteria.	Potomac River	2/11/09 (first advisory committee meeting and first public meeting on TMDL development)	Margaret Smigo

Ongoing Solid Waste Groundwater Program Situations

The Virginia Department of Environmental Quality's (DEQ) Waste Management Division regulates solid waste landfills and other sites where contaminants potentially can seep into groundwater. When this occurs, a monitoring program or corrective action plan may be needed, and various public meetings are held during development of such plans. Information on the DEQ's Solid Waste Groundwater Program and solid waste groundwater remediation is available online at www.deq.virginia.gov/waste/groundwater.html. The following table lists locations where groundwater monitoring programs or corrective action plans were addressed in public meetings during the period noted at the beginning of this section.

Location	Facility	Meeting Date(s)	For More Information
Loudoun County	Woods Road Disposal Unit	1/13/09	Ladun Olaseni

Other Topics Under Current Consideration

The following lists topics considered in public meetings held during the period noted at the beginning of this section. The focus of this section is topics of broad or statewide concern; generally, meetings about individual permits or strictly local issues are not included. 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; 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.

Aquaculture Enhancement Zones—State Water Control Board (SWCB) Public Hearing: 1/28/09. The SWCB is considering amending Virginia’s Water Quality Standards to establish “aquaculture enhancement zones” to protect clam and oyster fisheries on the Eastern Shore. More information: Elleanore Daub.

Biosolids Regulations (9 VAC 25-20, 25-31, and 25-32)—SWCB’s advisory committee on biosolids regulations met 1/9/09, 2/13/09, and 3/20/09. More information: William K. Norris.

Clean Water Revolving Loan Fund: Use of 2009 Federal Stimulus Funds—Public meeting: 4/15/09.

Annually DEQ develops a plan and a project priority list for the use of revolving loan funds for construction of publicly owned wastewater treatment facilities and other clean-water projects. The Intended Use Plan and Project Priority List for FY 2009 were originally approved in December 2008, but approximately \$77 million in additional federal funds became available as part of the 2009 Federal Stimulus Package.

Accordingly, DEQ issued another solicitation for loan applications and developed a separate draft project priority list for stimulus funds; that list is open for public comment until 4/15. The draft list is available under “Announcements” at www.deq.state.va.us/cap. More information: Walter Gills.

Coal Combustion By-products Regulation (9 VAC 20-85)—Advisory Committee meeting: 3/24/09. The DEQ has established an advisory committee to review and make recommendations on this regulation, including location restrictions, design and construction requirements, operations, closure, testing of materials prior to placement, public notice, and other topics. DEQ expects that a rulemaking will be initiated to amend the regulation. More information: Melissa Porterfield.

Game and Inland Fisheries Board’s Wildlife and Boat Committee: general business meeting, 2/5/09. More information: Beth Drewery.

Game and Inland Fisheries Board’s Education, Planning, and Outreach Committee—General business meeting: 2/5/09. More information: Beth Drewery.

Mined Land Reclamation—Dept. of Mines, Minerals and Energy’s (DMME) **Abandoned Mined Land External Work Group** met 2/3/09. More information: Richard Davis, DMME. On 2/20/09, DMME’s Division of Mined Land Reclamation (DMLR) held its public conference on its 2009 Abandoned Mine Land Grant Application; more information: Roger Williams, DMME.

Non-metallic Mineral Mining Discharge General Permit Regulation (9 VAC 25-190)—SWCB public hearing: 2/4/09. The SWCB is considering reissuance, including possible amendments, to this regulation. More information: George Cosby, DEQ.

Recycling—DEQ’s Recycling Markets Development Council meeting: 3/4/09. More information: Michael Ward, Virginia Petroleum Council, (804) 225-8248 or m.ward7@verizon.net.

Sewage Handling and Disposal Regulations (12 VAC 5-610)—VDH’s advisory committee meetings: 1/23/09 and 3/20/09. More information: Robert W. Hicks.

Sewage Handling and Disposal Regulations (18 VAC 160-20)—Public hearing: 2/5/09. The Board for Waterworks and Wastewater Works Operators and Onsite Sewage System Professionals is considering changes to regulations for licensing onsite sewage system professionals; the proposed changes were published in the *Virginia Register* on 1/5/09; the public comment period ends 3/6/09. More information: David E. Dick.

Scenic River Program’s 40th Anniversary—Meeting of the committee planning activities for the anniversary: 1/13/09. More information: David Dowling.

State Parks—Public meetings on park master plans: Bear Creek Lake State Park (Cumberland County), 3/12/09; Kiptopeke State Park (Northampton County), 3/19/09; Hungry Mother State Park (Smyth County), 4/13/09; Natural Tunnel State Park (Scott County), 4/15/09. More information: Bill Conkle, DCR.

Stormwater Best Management Practices (BMPs)—Virginia Stormwater BMP Clearinghouse Committee meeting: 1/13/09. The BMP Clearinghouse Committee, coordinated by the Va. DCR and the Virginia Water Resources Research Center, is working to develop a publicly accessible Web site that will serve as Virginia’s reference site for stormwater BMPs. More information: David Dowling.

Underground Storage Tank Operator Training Requirements Regulation (9 VAC 25-580)—Advisory committee meeting: 1/14/09. The SWCB is considering whether to amend this regulation, and an advisory committee is assisting in development of possible amendments. More information: Russell Ellison.

Water-quality standards (9 VAC 25-260) triennial review (remaining issues)—Advisory committee meetings: 2/18 and 3/26/09. According to the Regulatory Town Hall notice: “At its October 16-17, 2008, meeting, the SWCB approved changes to the Virginia Water Quality Standards regulation as part of the triennial review of the standards. Due to the scientific complexity behind the numeric criteria for several toxic pollutants, the Board also directed staff to reconvene the triennial review advisory committee to consider updates to aquatic life criteria for ammonia, copper, cadmium, cyanide, and lead in 9 VAC 25-260-140, and consider the need for a prohibition of any new or expanded mixing zones for persistent bioaccumulative toxic substances in 9 VAC 25-260-20.” The advisory committee is to meet monthly with DEQ staff through June 2009. More information: Alex Barron.

Regular Meetings of Statewide Boards and Commissions

Marine Resources Commission—Meets monthly; most recent meetings: 1/27/09, 2/24/09, and 3/24/09; minutes of all VMRC meetings are available online at www.mrc.virginia.gov/calendar.shtml. More information: Jane McCroskey; phone (757) 247-2200, TDD (757) 247-2292.

State Water Control Board—Meets quarterly; most recent meeting: 12/4/08; minutes of SWCB meetings are available at the Virginia Regulatory Town Hall Web site, <http://www.townhall.state.va.us/L/meetings.cfm> (click on “Past Year” to access meeting minutes from the past 12 months). More information: Cindy Berndt; phone (800) 592-5482.

Board of Health’s water-related committees:

1) **Onsite Sewage Handling and Disposal Engineering Design Review Panel**—Most recent meetings: 1/13/09 and 3/10/09. The Virginia Department of Health’s (VDH) Engineering Design Review Panel reviews decisions by VDH to disapprove onsite sewage system designs submitted by professional engineers. More information: David S. Tiller.

2) **Onsite Sewage Handling and Disposal Appeals Review Board**: Most recent meetings: 1/21, 2/25, and 4/1/09. 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.

Cave Board— Meet three times per year; most recent meeting: 4/18/09. More information: phone (804) 786-7951; Web site: www.dcr.virginia.gov/natural_heritage/cavehome.shtml.

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

Game and Inland Fisheries Board—Meets bimonthly; most recent meetings: 2/17/09 (Finance, Audit, and Compliance Committee); 2/27/09 (full board); 4/6/09 (member nominations committee); 4/7/09 (full board). More information: Beth B. Drewery; Web site: www.dgif.virginia.gov/about/.

Gas and Oil Board—Meets the third Tuesday of each month; most recent meeting: 2/17/09. More information: phone (276) 676-5423; Web site: <http://www.dmme.virginia.gov/divisiongasoil.shtml>.

Groundwater Protection Steering Committee—Meets third Tuesday of odd-numbered months; most recent meeting: 3/17/09. More information: Mary Ann Massie; Web site: www.deq.virginia.gov/gwpsc/.

Land Conservation Foundation—Meets about three times per year; most recent meeting: 3/27/09. More information: phone (804) 786-3218; Web site: www.dcr.virginia.gov/virginia_land_conservation_foundation/index.shtml.

Licensing and Regulation Boards—Licensing boards for engineers, geologists, 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 quarterly; most recent meeting: 4/1/09. More information: Bobbie Cabibbo at (540) 327-7727; Web site: www.virginiaoutdoorsfoundation.org.

Scenic River Advisory Board—Meets at least two times a year. More information: Lynn Crump, DCR, (804) 786-5054 or lynn.Crump@dcr.virginia.gov; Web site: www.dcr.virginia.gov/recreational_planning/srmain.shtml.

Soil and Water Conservation Board—Meets bimonthly; most recent meetings: 1/27/09 and 3/19/09. More information: DCR (804) 786-1712; www.dcr.virginia.gov/soil_water/vs&wcb.shtml.

Waste Management Board—Meets about three times per year. More information: contact: Dept. of Environmental Quality, (800) 592-5482; 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 April 20, 2009. For reports listed below, if you do not have Internet access and no contact information is given, please try your local library.

Chesapeake Bay Small Watershed Grants

The Chesapeake Bay Small Watershed Grants Program provides grants of \$20,000 to \$200,000 to organizations and local governments for projects that improve small watersheds in the Chesapeake Bay basin. The request for proposals is available online at www.nfwf.org/smallwatershed; **application deadline is May 1**. For more information: Lacy Reimer Alison at (202) 595-2445 or Lacy.Alison@nfwf.org.

VLWA's Leo Bourassa Scholarship

The Virginia Lakes and Watersheds Association is offering two scholarships for 2009 to Virginia residents who are attending an accredited Virginia college or university. The purpose of the scholarships is to support and acknowledge students for their academic and personal accomplishments in the field of water resources. Past scholarship award amounts have each been approximately \$2,500. The application deadline is **June 1, 2009**. Eligible applicants must be a full-time undergraduate student, or a full-time or part-time graduate student, enrolled in a curriculum related to water resources. Past scholarship recipients are allowed to reapply. For more information, please contact Shelly Frie at (757) 671-6222 or shelly.frie@ch2m.com.

Status of Virginia's Water Resources

This annual report to the governor and the General Assembly was released in October 2008 by the Virginia Department of Environmental Quality's (DEQ) Office of Surface and Ground Water Supply Planning. The report, which focuses largely on water use, is available online at www.deq.virginia.gov/export/sites/default/watersupplyplanning/documents/pdf/Oct2008_AWRR_FINAL.pdf.

Virginia's Web Site for Federal Stimulus Funds

In February, Virginia began a centralized online location, <http://stimulus.virginia.gov>, for information about the use of funds from American Recovery and Reinvestment Act of 2009, the federal stimulus bill. Many water-related projects were among the thousands of proposals submitted through this site.

Economic Analysis of Virginia Stormwater Regulation Revisions

A December 2008 report on the economic impacts associated with a proposed comprehensive revision of Virginia stormwater regulations, along with other documents about the proposed changes, is available online at www.dcr.virginia.gov/lr2b.shtml (see the tab for "Stormwater Parts 1, 2, 3, and 13 at the top of this Web page).

Virginia Aquaculture Training Workshop

A one-day aquaculture training workshop is available from Virginia Tech and Virginia State University. The workshop covers topics pond construction and management, fish health and water quality, economics, and other topics. For more information, contact Michael Schwartz at (757) 727-4861 or mschwartz@vt.edu.

Chesapeake Bay Living Shorelines Reference

Management, Policy, and Engineering of Nonstructural Erosion Control in the Chesapeake Bay is the 152-page proceedings publication from the December 2006 "Living Shoreline Summit," held in Williamsburg. The publication is online at www.vims.edu/cbnerr/coastal/recentlivings.htm.

National Wetlands Report for 1998—2004

Status and Trends of Wetlands in the Coastal Watersheds of the Eastern United States—1998-2004 was published in 2008 by the National Marine Fisheries Service and the U.S. Fish and Wildlife Service. The 32-page report covers coastal wetlands along the Atlantic Ocean, Gulf of Mexico, and Great Lakes. This report, previous national reports going back to 1986, and various regional reports are available online at www.fws.gov/wetlands/statusandtrends/index.html.

Citizen Monitoring Web page by the Va. DEQ

The DEQ Web page for citizen monitoring is at www.deq.virginia.gov/cmonitor. For more information, contact: Stuart Torbeck, Virginia Department of Environmental Quality, Water Quality Data Liaison at (804) 698-4461 or cstorbeck@deq.virginia.gov.

National Water Quality Inventory Report

The *National Water Quality Inventory: Report to Congress* (2004 Reporting Cycle) was released by the U.S. Environmental Protection Agency (EPA) in January 2009. The report, available at <http://www.epa.gov/owow/305b/2004report/>, summarizes water-quality assessments submitted by the states to EPA under section 305(b) of the Clean Water Act, and includes information from assessments of 16 percent of the nation's 3.5 million river and stream miles, 39 percent of its 41.7 million acres of lakes, ponds and reservoirs, and 29 percent of its 87,791 estuary square miles.

Virginia Toxics Release Inventory Report for 2007

This annual accounting of releases under permit of toxic substances to air, land, and water was made public in March 2009. The report, from the Virginia DEQ, is available online at <http://www.deq.virginia.gov/sara3/3132007.html>. For more information, contact the Sara Title II Programs Office at (804) 698-4159.

National Year of Science 2009

The Coalition for the Public Understanding of Science (online at www.copusproject.org) is organizing Year of Science 2009, an effort to help people understand how and why science is important. The Year of Science Web site, at www.yearofscience2009.org/home/, lists the themes for each month in 2009 (for example, the April theme is Energy), and provides links to events occurring in each state.

Energy/Climate Reports and Resources

- **Virginia Cooperative Extension's "Energy Resource Guide for Virginia" Web site**, at www.energyguide.ext.vt.edu/index.php, provides links to many information sources on use and conservation of energy and water. The site also has several fact sheets on home energy issues, accessible at www.energyguide.ext.vt.edu/wattwise/HomeEnergyFactSheets.php.

The **Virginia Energy Savers Handbook**, produced by the Virginia Department of Mines, Minerals and Energy, is available online at www.dmme.virginia.gov/DE/ConsumerInfo/energysaverhandbook.shtml. The guide includes chapters on water heating and water conservation.

- The **U.S. EPA's Office of Water's** online resources about climate and water are available at www.epa.gov/ow/climatechange.

- **"Engineering Strategies for Global Climate Change,"** published in July 2008, is a special, 73-page issue of the American Society of Civil Engineer's *Leadership and Management in Engineering* publication. Selected articles from the publication and a link for purchasing the entire issue are available online at http://pubs.asce.org/journals/leadership/Global_Warming/.

- In January 2009, the U.S. Climate Action Partnership (USCAP) released *A Blueprint for Legislative Action*, a detailed set of policy recommendations for a national climate-protection program. USCAP is a coalition of businesses and environmental organizations. The report is available online at www.us-cap.org.

Also Out There...

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

Ecosystem Services of Tidal Shorelines—This issue of *Rivers and Coast* (Vol. 4, No. 1; Winter 2009), the newsletter of the Virginia Institute of Marine Science's Center for Coastal Resources Management (CCRM), discusses the ecological functions of tidal wetlands and proposes a new tidal-wetland classification system based on these functions. Available online at <http://ccrm.vims.edu/publications/pubs/rivers&coast/index.html>; or contact CCRM at (804) 684-7380.

"How Offshore Energy Exploration Would Work in Virginia"—*Virginian-Pilot*, 3/1/09. This item, from the 3/1/09 *Virginian-Pilot*, describes offshore oil/gas exploration, including a timeline of related events since the first U.S. oil well in 1859, diagrams of continental slope geology, and how the bidding process for offshore leases is to proceed; it includes audio and animation. Available online at <http://hamptonroads.com/2009/02/how-offshore-energy-exploration-would-work-virginia>.

Upcoming Conferences, Workshops, and Other Events

If you would like to receive a weekly e-mail notification about *upcoming meetings, conferences, and other events related to water quality*, you may do so by joining the Virginia Water Monitoring Council; contact Jane Walker at the Water Center at (540) 231-4159 or janewalk@vt.edu.

Also, please see the Water Center's "Quick Guide to Water-related Meetings and Conferences in Virginia," on our Web site at www.vwrrc.vt.edu/VAConfQuickGuide.html.

Events In Virginia

May 16, Leesburg: **Walking for Water**. Fundraiser walk to support wells in the African country of Burkina Faso. More information: shoughlinks@aol.com; Web site: www.wisdomspring.org.

May 19-24, Fairfax: **International Marine Conservation Conference**. Organized by the Society for Conservation Biology. More information: John A. Cigliano at (610) 606-4666, x3702, or John.Cigliano@cedarcrest.edu; Web site: www2.cedarcrest.edu/imcc/index.html.

May 29, Cumberland: **Managing Energy on Virginia Farms Conference**. Organized by Virginia Foundation for Agriculture Innovation and Rural Sustainability (FAIRS). Registration due by May 22. More information; Brenda Fleming at (804) 290-1155.

May 30, Gloucester Point: **Marine Science Day**. Annual open house of the Virginia Institute of Marine Science. More information: (804) 684-7000; Web site: www.vims.edu/public/marinescienceday/index.php.

May 30, Christiansburg: **Virginia Master Well Owner Network Volunteer Training Workshop**. Organized by the Virginia Tech Department of Biological Systems Engineering. More information: Erin James at (540) 231-9058 or ejames@vt.edu; Web site: www.wellwater.bse.vt.edu/become_a_mwo.php.

Jun. 20, Patrick County: **Annual Virginia Covered Bridge Festival**. More information: (276) 930-2127 or coverdbridgesfestival@yahoo.com; Web site: www.patrickvirginia.org/events.cfm?attrID=0.

Jul. 10-14, James River State Park to Breemo Bluff: **James River Sojourn**. Organized by the Alliance for the Chesapeake Bay-Virginia office. More information: Anna Mathis at (804) 775-0951 or amathis@acb-online.org; Web site: www.acb-online.org/JamesSojourn09.cfm.

Jul. 11, James River (entire length): **James River Run-off Run-down**. Organized by the James River Association. More information: (804) 788-8811; Web site: www.jamesriverassociation.org.

Sep. 17-20, Cape Charles (and surrounding area): **17th Annual Eastern Shore Birding and Wildlife Festival**. Organized by the Eastern Shore of Virginia Chamber of Commerce. More information: (757) 787-2460; Web site: www.esvachamber.org/festivals/birding/.

Events Elsewhere

May 11-13, Washington, D.C.: **"Tapping the Future: Hydropower, Energy Demand, and Water Supply."** Annual conference of the National Hydropower Association. More information: www.hydro.org/conference2009/.

May 14-17, Pine Mountain, Ky.; and Jun. 1-3, Beckley, W. Va.: **Training for watershed groups** (water quality monitoring, grant writing, project development, and environmental education). Organized by the Eastern Coal Regional Roundtable. More information: (304) 294-1005; Web site: www.easterncoal.org/A/welcome.htm.

May 21-23, Boone, N.C.: **New River Symposium 2009**. Organized by several groups and agencies. More information: Chris Thaxton at (828) 262-6836 or thaxtoncs@appstate.edu; Web site: <http://thenewriversymposium.org>.

May 21-Jun. 1, Baltimore: **River Rally 2009**. Organized by River Network. More information: Katherine Luscher at (503) 542-8384; Web site: www.rivernetnetwork.org/rn/rally/.

Jul. 7-9, Chicago: **"Urban Water Management: Issues and Opportunities."** Annual conference of the Universities Council on Water Resources and the National Institutes for Water Resources. More information: Rosie Gard at (618) 536-7571 or gardr@siu.edu; Web site: www.ucowr.org.

Aug. 16-20, Washington, D.C.: **"Emerging Contaminants (Pharmaceuticals and Personal Care Products) and Organohalogens in Wastewater and Municipal Biosolids."** National meeting of the American Chemical Society. More information: 800) 227-5558 or help@acs.org; Web site: <http://portal.acs.org/>.

Sep. 14-16, Raleigh, N.C.: **2nd International Conference on Forests and Water in a Changing Environment**. Organized by the U.S. Forest Service's Southern Global Change Program. More information: www.sgcp.ncsu.edu:8080/.

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.

Three Welcomes and One Farewell for Water Center Staff



In January 2009, **Kevin McGuire** joined the Water Center and the Virginia Tech Department of Forestry as a research assistant professor; his position is also in partnership with the Virginia Department of Forestry. At the Water Center, he will work with graduate students on research in forest hydrology and management. Kevin received his Ph.D. from Oregon State University in forest engineering with a focus in forest hydrology. He previously worked at Plymouth State University in New Hampshire as an assistant professor of hydrology and as the research hydrologist at the Hubbard Brook Experimental Forest in New Hampshire.

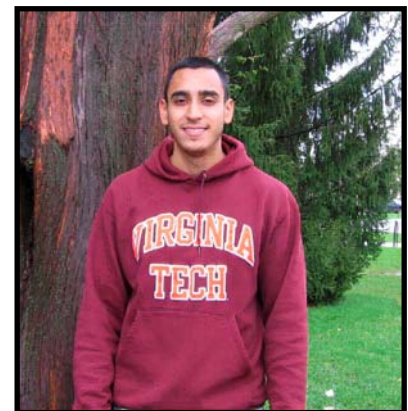
As the Water Center's communications manager, **Patrick Fay** is responsible for development and implementation of public relations activities, including online communications, information campaigns, news writing, and audio/visual coverage of Water Center events. Prior to coming to Virginia Tech in October 2008, he was art director and senior artist for a Lewisburg, W. Va. advertising firm; assistant director of academic advising for Liberty University's distance learning program; co-founder of a non-profit communications organization; creative designer for a Lynchburg marketing agency; and a professional freelance photographer. Patrick received his bachelor's degree in communications and master's degree in business administration from Liberty University.



In spring 2009, **Sheila Christopher** began work as a research scientist at the Water Center. Sheila is from Rochester, N.Y., very near to Lake Ontario, so water issues have always been of interest to her. She received a B.S. in Biology/Aquatic Ecology from Allegheny College and a Ph.D. from the Department of Environmental and Forest Biology at State University of New York-ESF, where she focused her studies on watershed processes. Her research focuses on how water-borne substances—particularly nitrogen—are linked between land and water, and how these links are affected by air emissions, global climate change, and other disturbance. At the Water Center, Sheila will work on a project examining the water-quality

effects of intercropping cellulosic biofuel crops (specifically switchgrass) in forests.

John Flores, from Woodbridge, Va., will graduate in May 2009 from Virginia Tech with a B.S. in Business Information Technology. John has worked at the Water Center since February 2008, scanning dozens of Water Center publications to make them available online. He also provided a variety of other computer system services and help to the Water Center staff. After graduation, John will be working for Lockheed Martin at the Pentagon in Arlington. The Water Center staff thanks John for his excellent work and wishes him the best of luck in his career.



FY09-FY10 VWRRC Research Proposals

If you're interested in knowing what water resources issues Virginia faces, one way to find out is to examine the ideas proposed for research by Virginia's water scientists.

Following is the list of 12 proposals submitted to the Virginia Water Resources Research Center in response to the Center's January 2009 call for research proposals for funds in Fiscal Year 2009-01. The proposals are presented in alphabetical order of the first researcher listed on each proposal; bolding of key words has been added by *Water Central*. Peer reviews of the proposals will take place April 10-May 10, and successful proposals will be announced end of May. Funding will be provided for one year starting July 1, 2009. The Water Center expects that the funds available this year will support one or two proposals in the range of \$15,000 to \$20,000. For more information about this Water Center activity, please contact Tamim Younos at (540) 231-8039 or tyounos@vt.edu.

Changwoo Ahn, Department of Environmental Sciences and Policy, George Mason University:

“Denitrification potential and denitrifying **bacteria** community composition in **created and natural wetlands** of Virginia as affected by hydrologic connectivity and soil properties.”

Chris Burbage and Margaret Mulholland, Department of Ocean, Earth and Atmospheric Sciences, Old Dominion University: “The potential for including **microalgal assemblages** in biological nutrient removal process for **wastewater treatment facilities**.”

Elizabeth A. Canuel, Professor and Yuehan Lu, Virginia Institute of Marine Sciences, College of William and Mary: “The **effects of land use** on sources and bioreactivity of organic matter (OM) in streams in the upstream watershed of the **York River Estuary**, Virginia.”

Teresa B. Culver, Department of Civil and Environmental Engineering, University of Virginia: “Leveraging community **TMDL models** for integrated **water supply management**.”

William A. Hopkins, Department of Fisheries and Wildlife Sciences, Virginia Tech: “Consequences of **watershed land use** on physiology, immune function, and the prevalence of an emergent disease in **Virginian stream fauna**.”

Wu-Seng Lung and Lisa M. Colosi, Department of Civil and Environmental Engineering, University of Virginia: “A methodology to determine in-site attenuation rates of **endocrine-disrupting chemicals** (EDCs).”

Christine May, Department of Biology, James Madison University: “The effects of **sedimentation on gravel-spawning fish**: an experimental approach with applications for stream restoration.”

Biswarup Mukhopadhyay, Virginia Bioinformatics Institute, Virginia Tech: “Evaluating the effects of **dairy manure treatment systems** on pathogen reduction using a novel quantitative PCR-based method.”

Margaret Mulholland, Department of Ocean, Earth and Atmospheric Sciences, Old Dominion University: “Environmental controls on the formation and transport of **Cochlodinium polykrikoids blooms** in lower Chesapeake Bay and its tributaries—implications for stormwater management and nutrient retention.”

John T. Novak, Department of Civil and Environmental Engineering, Virginia Tech: “Generation of odor-causing compounds from anaerobically digested **biosolids**.”

Amy Pruden-Bagchi and Marc Edwards, Department of Civil and Environmental Engineering, Virginia Tech: “Development of polymerase chain reaction (PCR) and quantitative PCR (qPCR) methodology to identify and quantify **Legionella pneumophila and Acanthamoeba** in potable water supplies.”

Kimberly Reece, Howard Kator, Corinne Audemard, and Martha Rhodes, Virginia Institute of Marine Science, College of William and Mary: “Occurrence, levels, and persistence of selected indicators and pathogens in **biosolids** applied to farmlands in Virginia.”

FOR THE RECORD

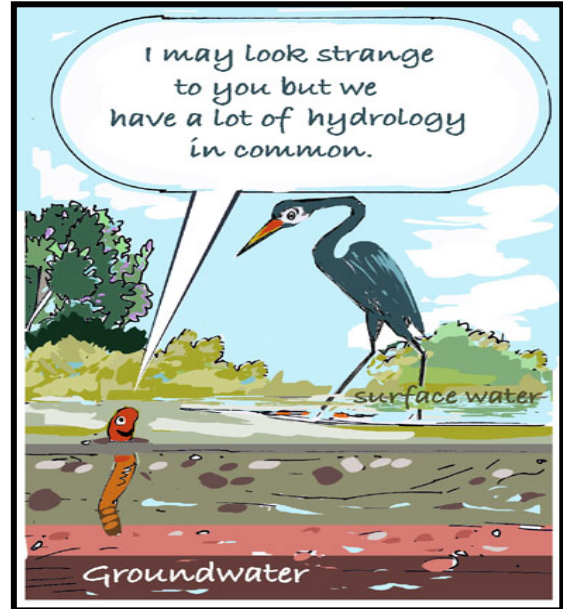
Sources for Selected Water Resources Topics

Hydrology (Water Quantity) Information Sources

Previous articles on hydrology information sources were in the December 1998 and February 2002 issues of *Water Central*. All Internet links listed below were functional as of 4/21/09.

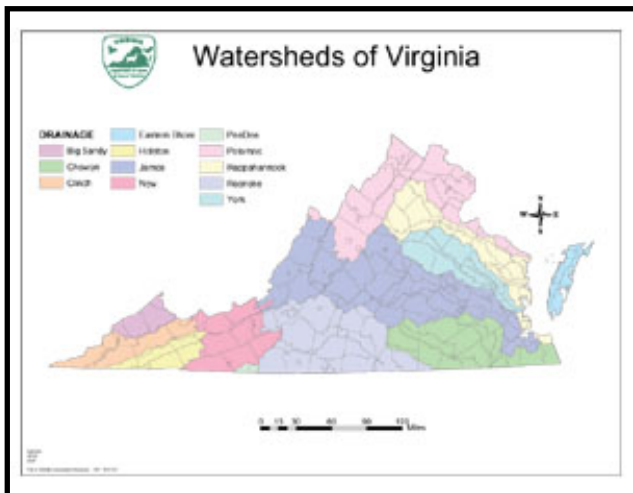
The preface to *Stream Hydrology: An Introduction for Ecologists* defines hydrology as the study of the interrelationships and interactions between water and its environment in the hydrologic cycle.¹ The hydrologic (or water) cycle has three main stages: water in the atmosphere, surface water, and groundwater. Weather forecasts provide information on where water in the atmosphere is located, and when this water precipitates it becomes either surface water or groundwater. If the precipitation drains into a nearby stream, it becomes surface water; to become groundwater, the water must first move into ground and then collect in **aquifers**. This article provides sources of information on hydrology—the location, quantity, and movement of water—in the surface water and groundwater phases of the hydrologic cycle.

A good starting point to learn more about the hydrologic cycle is the Virginia Water Resources Research Center's "Water Status Information" Web page, at www.vwrrc.vt.edu/water_status.html. This Web site offers links to many of the sites mentioned in this article.



Surface Water

Watersheds determine where water that lands in a certain area will flow into bodies of surface water. The Virginia Department of Game and Inland Fisheries' Web site at www.dgif.virginia.gov/education/sol/watersheds.asp displays four maps of Virginia's watersheds, from the major watersheds (such as that of the Chesapeake Bay) down to those of smaller tributaries. An example of one of these maps is shown below.



The United States Geological Survey (USGS) has a Web site devoted to monitoring stream flow called "WaterWatch." The national WaterWatch map can be found at <http://water.usgs.gov/waterwatch/>.

The data for the WaterWatch map comes from river and stream **gages** that measure **discharge** (how much water flows through that point at a given time) and **stage** (how high the water is above a reference elevation). WaterWatch presents real-time data—continuous measurements updated every 5-60 minutes—as well as data averaged over various time periods. On the WaterWatch map, stream gages are indicated by dots that are color-coded to indicate whether the current reading for each stream gage is low or high in comparison to the historical average.

By clicking on a state, the national WaterWatch map opens a map of the selected state. From there,

¹ Brian L. Finlayson, Nancy D. Gordon, and Thomas A. McMahon, *Stream Hydrology: An Introduction for Ecologists* (Brisbane: University of Melbourne, 1992) p. xiii.

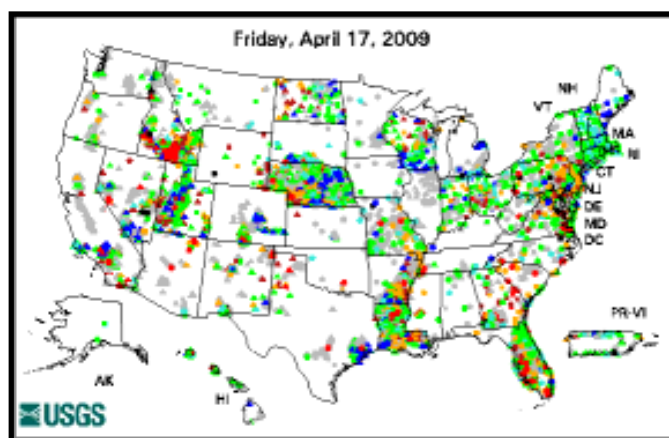
clicking on a dot reveals a window with a summary of information (including drainage area, discharge, flood stage, etc.), a **hydrograph** (showing the recorded stream flow values in chart form), and annual peak stages for that site. Some sites feature a hydrograph with *forecasted* stage values.

For historical data on stream discharges and stages at about 500 gaging stations in Virginia, see the 2009 report by Samuel Austin and Ute Wiegand, *Annual Maximum Stages and Discharges of Selected Streams in Virginia through 2007* (USGS Open-File Report 2009-1007, 733 pages), available online at <http://pubs.water.usgs.gov/ofr2009-1007>.

A recent report from the Virginia Department of Environmental Quality (DEQ) is another source of information on Virginia surface water hydrology. In October 2008, the Virginia DEQ Office of Surface and Ground Water Supply Planning compiled “A Report on Virginia’s Water Resources Management Activities” available online at www.deq.state.va.us/waterresources/homepage.html. Although primarily about water use, this report has information on Virginia’s surface water, groundwater, and the springs that connect them. It also describes how the USGS monitors water levels and collects data. The current DEQ contact for questions concerning the Virginia’s surface hydrology is James K. Lambert, at (434) 293-3031 or james.lambert@deq.virginia.gov.

Groundwater

A similar site to “WaterWatch” that monitors groundwater levels can be found at <http://groundwaterwatch.usgs.gov/>. On the Groundwater Watch home page are four national maps showing different groundwater-monitoring networks: 1) an active network of sites where measurements were made at least once in the past year; 2) a climate-response network of wells in a nationwide system for monitoring the effects of climate variation on groundwater; 3) a real-time network that updates measurements every 5-60 minutes; and 4) a network that monitors aquifers in the High Plains region of the United States. The active groundwater network map, (shown on this page) incorporates the other three maps and includes data from roughly 20,000 wells. Information is recorded only periodically for most wells on the active map, so if you are interested in finding daily records for a particular location, consult the real-time map. As with the WaterWatch map for surface water, click on the national map to access Virginia or any other state.



Two other useful USGS resources are the following reports:

1.) A 2008 report on the availability of groundwater, *Ground-Water Availability in the United States*, is available online at <http://pubs.usgs.gov/circ/1323/> (available in print by phone at 888-ASK-USGS or e-mail to infoservices@usgs.gov). The report examines groundwater by regions of the United States. It also discusses challenges in determining the availability of groundwater and what the United States can expect in the future regarding our groundwater.

2.) *The Ground Water Atlas of the United States* is available online at <http://pubs.usgs.gov/ha/ha730/> (to enquire about a print version, phone 888-ASK-USGS). The online version features summaries and maps of aquifers across the nation, organized by region.

The Virginia DEQ has groundwater characterization specialists who concentrate on different parts of the state. These people are available if you have questions about groundwater in a certain locality or region. Coastal Plain Region: Todd Beach, at (804) 698-4281 or tabeach@deq.virginia.gov; Piedmont/Blue Ridge Region: Brad White, at (434) 293-1028 or bawwhite@deq.virginia.gov; Valley and Ridge Region: Joel Maynard, at (540) 574-7864 or jpmaynard@deq.virginia.gov.

—By James Dodson.

Mr. Dodson, a Virginia Tech English major graduating in July 2009, was an intern at the Virginia Water Resources Research Center in Spring 2009.

Virginia Water Central

Published by the Virginia Water Resources Research Center (0444), 210 Cheatham Hall, Blacksburg, VA 24061; (540) 231-5624; fax (540) 231-6673; Stephen Schoenholtz, director. *Water Central* staff: Alan Raflo, editor (araflo@vt.edu); George Wills, illustrator; photographs by Alan Raflo, unless otherwise noted.

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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!

YOU GET THE LAST WORD

Please answer the following questions to let us know whether the newsletter is meeting your needs. Please mail this page to the Water Center address listed in the box above, or e-mail your responses to araflo@vt.edu. Thank you.

1. Would you rate the content of this issue as good, fair, or poor?
2. Would you rate the appearance as good, fair, or poor?
3. Would you rate the readability of the articles as good, fair, or poor?
4. What length is about right: 8 pages? 12 pages? 16 pages? 24 pages? More? ____ Less? ____
5. What frequency is about right: 4 issues per year? 6 per year? More? ____ Fewer? ____
6. Please add any other **comments** you wish to make.