



# VIRGINIA

## 12th in Beachwater Quality

5% of samples exceeded national standards in 2010

Polluted urban and suburban runoff is a major threat to water quality at the nation’s coastal beaches. Runoff from storms and irrigation carries pollution from parking lots, yards, and streets directly to waterways. In some parts of the country, stormwater routinely causes overflows from sewage systems. Innovative solutions known as green infrastructure enable communities to naturally absorb or use runoff before it causes problems. The U.S. Environmental Protection Agency is modernizing its national rules for sources of runoff pollution and should develop strong, green infrastructure-based requirements.

Virginia has 48 public beaches stretching along 70 miles of Atlantic and Chesapeake Bay waters. The state’s beachwater quality monitoring program is administered by the Virginia Department of Health (VDH).

The stormwater outfall at Fairview Beach in King George County was identified as the main source of elevated bacterial counts in its beachwater in both dry and wet weather. VDH and local officials located several apartments, homes, and trailers on old septic systems and moved them to the community sewer system,<sup>1</sup> reducing the fraction of samples exceeding bacteria standards from an average of 36% between 2006 and 2008 to 25% in 2009 and 2010. VDH conducted microbial source

tracking at Fairview Beach in 2010, revealing that remaining sources of fecal contamination include birds, dogs, wildlife, and humans. Additionally, VDH investigated the relationship between indicator bacteria and pathogenic bacteria (*Shigella* spp.) in sediments.<sup>2</sup> Final results of the 2010 studies will be reported soon.

### KEY FINDINGS IN VIRGINIA

#### Beachwater Contamination

(% of samples exceeding state standards in 2010)

- Festival Beach in Mathews County (38%)
- Hilton Beach in the Independent City of Newport News (32%)
- King/Lincoln Park in the Independent City of Newport News (28%)

#### Reported Sources of Beachwater Contamination Statewide (number of closing/advisory days)

- 81 (100%) unknown sources

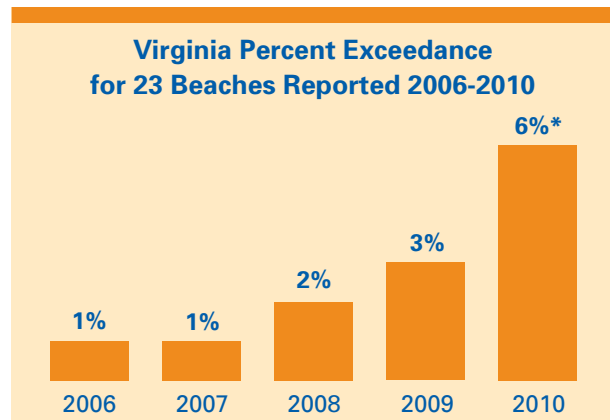
### Monitoring Results

In 2010, Virginia reported 48 coastal beaches. Of these, 45 (94%) were monitored once a week and 3 (6%) were not monitored. For this section of the report, NRDC looked at the percent of monitoring samples that exceeded the state’s daily maximum bacterial standards. In 2010, 5%\* of all reported beach monitoring samples exceeded the state’s daily maximum bacterial standards. The beaches with the highest percent exceedance rates in 2010 were Festival Beach in Mathews County (38%), Hilton Beach (32%) and King/Lincoln Park (28%) in the Independent City of Newport News, Fairview Beach in King George County (25%), Chick’s Beach (13%) and Lesner Bridge East (13%) in the Independent City of Virginia Beach, and Anderson’s Beach in the Independent City of Newport News (13%). Mathews County had the highest exceedance rate (38%) in 2010, followed by King George County (25%), the Independent City of Newport News (22%), the Independent City of Virginia Beach (3%), the Independent City of Hampton (2%), and the Independent City of Norfolk (1%). There were no exceedances in Accomack, Gloucester, Northampton, or York counties.

**Sampling Practices:** The monitoring season runs from mid-May through Labor Day, with some sites sampled through mid-September. In 2010, sampling at Gloucester Beach in Gloucester County and Festival Beach in Mathews County began on June 1.<sup>2</sup>

VDH determines sampling practices, locations, standards, and notification protocols and practices throughout the state. Samples are collected in water 0.5 meters deep, 0.3 meters from the surface.<sup>3</sup>

Sampling sites in Virginia are chosen on the basis of proximity to wastewater outfalls, bather load, and ease of access to the beach.<sup>3</sup> If a beach is placed under advisory or closed, the water is resampled immediately (with a duplicate sample sent for microbial source tracking analysis). The monitoring frequency is increased until the water meets water quality standards, after which the beach is reopened.<sup>2</sup> States that monitor more frequently after an exceedance is found will tend to have higher percent exceedance rates and lower total closing/advisory days than they would have if their sampling frequency did not increase after an exceedance.



The Virginia Department of Environmental Quality and VDH, including the Virginia Division of Shellfish Sanitation, work together to regularly monitor the water and shellfish growing areas for the presence of harmful algal blooms and to conduct surveillance for human health effects.<sup>4</sup>

### Closings and Advisories

Total closing/advisory days for 38 events lasting six consecutive weeks or less increased 59% to 81 days in 2010, from 51 days in 2009. For prior years, there were 29 days in 2008, 50 days in 2007, 43 days in 2006, and 42 days in 2005. There were no extended or permanent events in 2010. Extended events are those in effect more than six weeks but not more than 13 consecutive weeks; permanent events are in effect for more than 13 consecutive weeks. All closing and advisory days in 2010 were due to monitoring that revealed elevated bacteria levels.

**Standards and Procedures:** The VDH has the authority to issue advisories and close beaches. Virginia's water quality standard is a single-sample maximum of 104 cfu/100 ml. No geometric-mean standard is applied when making closing and advisory decisions. If more than one sampling site at a beach exists, the average of the results for all sampling sites is used to make closing and advisory decisions for that beach.<sup>2</sup> If a sample (or average of samples) exceeds the standard, an advisory is issued.<sup>2</sup> There is no protocol for delaying or forgoing an advisory or closing when an exceedance is found.

There are no preemptive rainfall standards, but closings and advisories may be considered on the basis of events such as harmful algal blooms, fish kills, oil spills, or sewage spills.<sup>3</sup>

\* Why don't the 2010 percent exceedance values in this summary match? Only samples from a common set of beaches monitored each year from 2006–2010 are included in the bar chart. Because some beaches were not monitored in each of those years, the percent exceedance for this subset of beaches (6%) did not have the same value as the percent exceedance for all of the beaches monitored in 2010 (5%).

Virginia 2010 Monitoring Results and Closing or Advisory Days					
Beach	Tier	Assigned Monitoring Frequency	Total Samples	% of Samples Exceeding State Standards	Closing or Advisory Days
<b>Accomack County</b>					
Assateague Island National Seashore	1	none	0	NA	0
Guard Shore	1	1/wk	17	0%	0
<b>Gloucester County</b>					
Gloucester Point Beach	1	1/wk	18	0%	0
<b>Hampton County</b>					
Buckroe Beach	1	1/wk	17	6%	1
Fort Monroe	1	1/wk	16	0%	0
Salt Ponds	1	1/wk	16	0%	0

Beach	Tier	Assigned Monitoring Frequency	Total Samples	% of Samples Exceeding State Standards	Closing or Advisory Days
<b>King George County</b>					
Fairview Beach	1	1/wk	20	25%	18
<b>Mathews County</b>					
Festival Beach	1	1/wk	26	38%	10
<b>Newport News County</b>					
Anderson's Beach	1	1/wk	16	13%	6
Hilton Beach	1	1/wk	22	32%	8
Huntington Beach	1	1/wk	17	12%	6
King/Lincoln Park	1	1/wk	18	28%	10
<b>Norfolk County</b>					
10th View, Behind Quality Inn, 1010 West Ocean View Avenue	1	1/wk	16	0%	0
13th View, North End	1	1/wk	15	0%	0
21st Bay Street, North End Behind Ships Captain Restaurant	1	1/wk	15	0%	0
5th Bay Street, North End	1	1/wk	16	0%	0
Capeview Avenue, North End	1	1/wk	16	6%	9
East Community Beach, End of East Ocean View Avenue	1	1/wk	16	0%	0
North Community Beach	1	1/wk	16	0%	0
Ocean View Park, East Side of Parking Lot	1	1/wk	16	0%	0
Sara Constance Park, East End	1	1/wk	16	0%	0
<b>Norrtampton County</b>					
Kiptopeke State Park	1	1/wk	17	0%	0
Town Of Cape Charles Public Beach	1	1/wk	17	0%	0
<b>Virginia Beach County</b>					
15th Street	1	1/wk	21	5%	1
28th Street	1	1/wk	20	0%	0
45th Street	1	1/wk	20	0%	0
63rd Street	1	1/wk	19	0%	0
78th Street	1	1/wk	20	0%	0
Back Bay Beach	1	1/wk	20	0%	0
Camp Pendleton	1	1/wk	20	0%	0
Cape Henry Lighthouse	1	none	0	NA	0
Chesapeake Beach	1	1/wk	21	5%	1
Chick's Beach	1	1/wk	23	13%	3
Croatan	1	1/wk	20	0%	0
Dam Neck Middle	1	1/wk	13	8%	2
Dam Neck North	1	1/wk	12	0%	0
Dam Neck South	1	1/wk	12	0%	0
First Landing State Park	1	1/wk	21	5%	1

Beach	Tier	Assigned Monitoring Frequency	Total Samples	% of Samples Exceeding State Standards	Closing or Advisory Days
<b>Virginia Beach County</b>					
Fort Story East	1	none	0	NA	0
Fort Story South	1	1/wk	22	5%	1
Fort Story West	1	1/wk	20	0%	0
Lesner Bridge East	1	1/wk	23	13%	3
Little Island Beach North	1	1/wk	20	0%	0
Little Island Beach South	1	1/wk	20	0%	0
Sandbridge North	1	1/wk	20	0%	0
Sandbridge South	1	1/wk	20	0%	0
Sea Gate	1	1/wk	20	5%	1
<b>York County</b>					
Yorktown Beach	1	1/wk	15	0%	0

## NOTES

- 1 Virginia Department of Health. Virginia's Beaches Environmental Assessment and Coastal Health (BEACH) Program, Final Report on 2001–2009 EPA Beach Monitoring Grant–CU-98389606-0. January 29, 2010.
- 2 Virginia Department of Health. Virginia's Beaches Environmental Assessment and Coastal Health (BEACH) Program, Final Report on 2001–2010 EPA Beach Monitoring Grant–CU-98389607-0. February 28, 2011.
- 3 Dan Dietrich, Virginia Department of Health. Personal communication. June 2007.
- 4 Virginia Department of Health. "Harmful Algal Blooms and Other Organisms of Concern in Coastal Waters" (brochure). Not dated.

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*Testing the Waters 2011 reflects data as of June 27, 2011.*