



CONNECTICUT

24th in Beachwater Quality

11% 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.

Connecticut has 66 public beaches stretching along 18 miles of Long Island Sound coastline. The Connecticut Department of Public Health (CT DPH) administers the state's Beach Act grant.

Connecticut's coastal beachwater had an unusual number of water quality exceedances in 2010. Statewide, the number of exceedances was at least double that of recent years. Of the state's elevated fecal indicator bacteria counts, one third were reported between August 23 and August 26. Contaminated runoff may be at least partly to blame, as two inches of rain fell in many locations on August 22.

After reviewing historical data on bacterial densities, Ledge Light Health District permanently removed Kiddie's Beach from service in early 2011 and posted it with no swimming signs. This beach will be out of service for the 2011 swimming season and until further notice.¹

Monitoring Results

In 2010, Connecticut tracked 66 marine beaches for the US EPA under its BEACH Act grant. Due to reduced municipal funding, only 65 beaches were reported as being monitored weekly. (Clark Avenue Beach in New Haven County is monitored twice a week.) For this section of the report, NRDC looked at the percent of monitoring samples that exceeded the state's daily maximum bacterial standards (all reported samples were used to calculate the 2010 percent exceedance rates, including duplicate samples and samples taken outside the official beach season, if any). In 2010, 11%* 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 Kiddie's Beach (54%) and Green Harbor Beach (45%) in New London County, Branford Point Beach in New Haven County (28%), Shady Beach (24%) and Long Beach (Marnick's) (24%) in Fairfield County, Anchor Beach (Merwin Point) #1 in New Haven County (22%), Long Beach (Proper) in Fairfield County (22%), Town Beach (Clinton) in Middlesex County (21%), and Pent Road Beach in New Haven County (20%).

New London County had the highest exceedance rate (15%) in 2010 followed by Fairfield (11%), New Haven (10%), and Middlesex (10%) counties.

KEY FINDINGS IN CONNECTICUT

Beachwater Contamination

(% of samples exceeding state standards in 2010)

- Kiddie's Beach in New London County (54%)
- Green Harbor Beach in New London County (45%)

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

- 94 (66%) stormwater runoff
- 26 (18%) unknown sources of contamination
- 10 (7%) sewage spills/leaks
- 5 (3%) wildlife
- 8 (6%) other, unspecified sources of contamination

Sampling Practices: Connecticut’s monitoring season stretches from Memorial Day to Labor Day.

Monitoring practices at coastal beaches are the responsibility of local health authorities (for municipal beaches) and the Connecticut Department of Environmental Protection (CT DEP) (for state park beaches), who follow state guidelines that samples be taken in water that is 3-4 feet deep, 12-18 inches below the surface. Beaches are assigned to tiers at the end of every bathing season. These tier assignments are not related to extent of beach use or potential for beachwater contamination, but are instead assigned on the basis of the sampling frequency reported by local health departments and the CT DEP for their respective beaches and the number of beach closing events for those beaches.² Beaches that were sampled weekly and had no more than one closure event during the previous swim season are assigned Tier 1 status, beaches that were sampled weekly and had two or three closure events during the previous swim season are assigned Tier 2 status, and beaches that were not sampled weekly or that had more than three closure events during the previous swim season are assigned Tier 3 status.² Sampling frequency and the number of monitoring station locations at a beach are not assigned based on beach tier.²

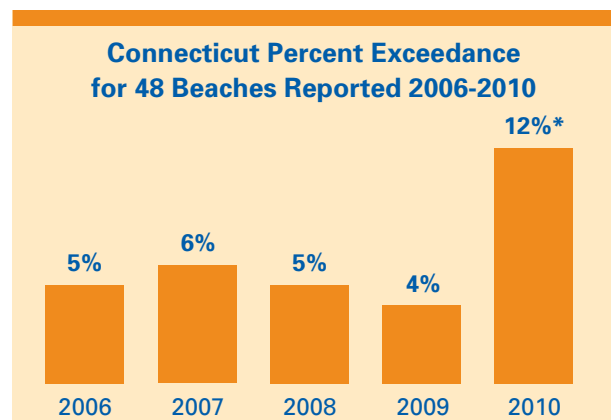
State guidelines suggest additional sampling when there are higher bather loads, at culverts and drainage pipes after rain events, after sewage spills or other pollution events, if waterfowl are congregating, or if sanitary survey information indicates potential for non-point contamination after a rain event.² Resamples are recommended by the state when a sample exceeds standards.³ At the four state park marine beaches monitored by the CT DEP, resampling is done every day once a beach is closed.⁴ States that monitor more frequently after an exceedance is found or after heavy rain will tend to have higher percent exceedance rates and lower total closing/advisory days than they would if their sampling schedule was not altered after an exceedance was found or after heavy rainfall occurred.

Closings and Advisories

Total closing/advisory days for 67 events lasting six consecutive weeks or less increased 32% to 143 days in 2010 from 108 days in 2009, 135 days in 2008, 108 days in 2007, 224 days in 2006, and 200 days in 2005. In addition, there were no extended events and 1 permanent event (365 days) 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.

For the 67 events lasting six consecutive weeks or less, 65% (93) of closing/advisory days in 2010 were due to monitoring that revealed elevated bacteria levels, and 35% (50) were preemptive (i.e., without waiting for monitoring results) due to heavy rainfall.

Reported sources of beachwater contamination: 66% (94) of closing/advisory days were from stormwater runoff, 18% (26) were from unknown sources of contamination, 7% (10) were from sewage spills/leaks, 3% (5) were from wildlife, and 6% (8) were from other, unspecified sources of contamination.



Standards and Procedures: Local jurisdictions determine how they will apply water quality standards. State guidelines encourage local health departments and the CT DEP to apply the EPA’s single-sample maximum standard for marine and estuarine designated beach areas when considering whether to close a beach or issue an advisory. This standard is 104 cfu/100 ml enterococcus. The state guidelines also encourage local health departments and the CT DEP to consider the geometric mean of the last five samples collected in a 30-day period. If this geometric mean is greater than 35 cfu/100 ml, then the state’s guideline is to consider closing the beach. CT DPH encourages beach managers to take into consideration the range or spread of the sample values that generate geometric mean results greater than 35 cfu/100 ml.[†] Some local health departments use either the single-sample maximum or the geometric mean to trigger closing and advisory decisions, while for other local health departments and the CT DEP, the single-sample maximum triggers advisory and closing decisions, and exceedance of the geometric mean standard may trigger consideration of closings and advisories.

When routine samples exceed the state standards, the state recommends that a resample be taken and a sanitary survey be conducted to determine if raw or partially treated sewage is contributing to the elevated bacterial concentrations. If the survey reveals discharges of raw or partially treated sewage, then the state recommends that the bathing area be closed. If sample results exceed the standards and a sanitary survey reveals no evidence of sewage contamination, the state recommends that the bathing area be examined on an individual basis with consultation from CT DPH before any decision about closure is made. A beach whose samples exceed the standards may remain open if a sanitary survey reveals no sign of a sewage spill.² Local authorities may adopt standards more protective of public health than the state standards and may issue advisories in addition to closures. Most municipalities resample before issuing an advisory and most municipalities also conduct a sanitary survey to determine if sewage is contributing to the elevated bacterial concentrations. Some municipalities collect multiple samples at each monitoring event and in most cases, if more than one sample exceeds the standard, they will close the beach without resample.⁴

Local jurisdictions are also responsible for determining their own preemptive closing and advisory practices. State guidance allows preemptive beach closings based on rainfall data² and many municipalities have adopted a preemptive rainfall threshold for selected beaches. When preemptive rainfall thresholds are reached at these beaches, they are automatically closed until test results indicate that there is no bacterial violation.⁴ State guidance says that preemptive closures may be recommended by local jurisdictions if there is a known waste contamination event such as a sewage bypass, mechanical failure at a sewage treatment plant, or a sewer line break.² If a beach is “impacted by a mass of floating debris,” the beach can be closed for safety reasons.² In addition, local health departments may post an advisory or closure that responds to local conditions and to protect public health. Local health departments may also post an advisory at a beach or close it if there is a harmful algal bloom.⁴ In late 2009, the state issued a framework document that includes recommendations about managing beach hazards for local health departments.²

Shoreline municipalities are sensitive to reports of swimmer’s itch. Swimmer’s itch, also called cercarial dermatitis, appears as a skin rash caused by an allergic reaction to certain parasites that infect some birds and mammals. These microscopic parasites are released from infected snails into fresh and salt water (such as lakes, ponds, and oceans). While the parasite’s preferred host is the specific bird or mammal, if the parasite comes into contact with a swimmer, it burrows into the skin, causing an allergic reaction and rash. Swimmer’s itch is found throughout the world and is more frequent during summer months. Connecticut beaches can be placed under advisory when swimmer’s itch is reported.⁴

† Connecticut’s understanding is that the national geometric mean standard is based on epidemiology studies showing that an exceedance of a geometric mean of 35 cfu/100 ml with a log standard deviation less than 0.7 may result in unacceptable illness rates.²

* 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 % exceedance for this subset of beaches (12%) did not have the same value as the % exceedance for all of the beaches monitored in 2010 (11%).

Connecticut 2010 Monitoring Results and Closing or Advisory Days					
Beach	Tier	Assigned Monitoring Frequency	Total Samples	% of Samples Exceeding State Standards	Closing or Advisory Days
Fairfield County					
Bell Island Beach	1	1/wk	31	6%	2
Burying Hill Beach	1	1/wk	12	8%	2
Byram Beach	3	1/wk	57	18%	7
Calf Pasture Beach	2	1/wk	59	12%	4
Compo Beach	1	1/wk	50	12%	2
Cummings Beach	2	1/wk	45	2%	7
East (Cove Island) Beach	2	1/wk	45	4%	7
Great Captain’s Island Beach	1	1/wk	30	10%	1

Beach	Tier	Assigned Monitoring Frequency	Total Samples	% of Samples Exceeding State Standards	Closing or Advisory Days
Fairfield County					
Greenwich Point Beach	1	1/wk	48	4%	1
Hickory Bluff Beach	1	1/wk	15	0%	2
Island Beach	2	1/wk	32	13%	2
Jennings Beach	1	1/wk	34	9%	2
Long Beach (Marnick's)	2	1/wk	17	24%	11
Long Beach (Proper)	2	1/wk	32	22%	12
Marvin Beach	1	1/wk	18	11%	2
Pear Tree Point Beach	1	1/wk	98	13%	1
Penfield Beach	1	1/wk	33	9%	2
Quigley Beach	2	1/wk	15	7%	7
Rowayton Beach	1	1/wk	15	0%	2
Sasco Beach	1	1/wk	34	9%	2
Seaside Park Beach	1	1/wk	75	7%	0
Shady Beach	2	1/wk	84	24%	4
Sherwood Island State Park Beach	1	1/wk	51	8%	2
Short Beach	2	1/wk	48	19%	9
South Pine Creek Beach	1	1/wk	16	6%	2
Southport Beach	1	1/wk	34	12%	2
Weed Beach	1	1/wk	61	15%	1
West Beach	2	1/wk	45	4%	7
Middlesex County					
Harvey's Beach	1	1/wk	14	7%	2
Middle Beach/Stannard Beach	1	1/wk	12	17%	0
Town Beach (Clinton)	2	1/wk	14	21%	5
Town Beach (Old Saybrook)	1	1/wk	16	6%	1
Westbrook Town Beach/West Beach	1	1/wk	34	6%	0
New Haven County					
Anchor Beach (Merwin Point) #1	1	1/wk	18	22%	0
Anchor Beach (Merwin Point) #2	1	1/wk	15	7%	0
Branford Point Beach	1	1/wk	25	28%	2
Clark Avenue Beach	1	2/wk	23	17%	2
East Haven Town Beach	1	1/wk	38	13%	3
East Wharf Beach	1	1/wk	15	7%	0
Gulf Beach	1	1/wk	14	7%	0
Hammonasset Beach State Park Beach	1	1/wk	86	3%	0
Jacobs Beach (Town Beach)	1	1/wk	51	8%	0
Lighthouse Point Beach	1	1/wk	12	0%	0
Pent Road Beach	1	1/wk	15	20%	0
Silver Sands State Park Beach	1	1/wk	76	12%	2
Stony Creek Beach	1	1/wk	14	7%	2

Beach	Tier	Assigned Monitoring Frequency	Total Samples	% of Samples Exceeding State Standards	Closing or Advisory Days
New Haven County					
Surf Club Beach	1	1/wk	30	10%	0
Walnut Beach	1	1/wk	33	12%	0
West Haven East Beach	1	1/wk	284	9%	2
West Haven West Beach	1	1/wk	138	12%	2
West Wharf Beach	1	1/wk	15	13%	0
Woodmont Beach	1	1/wk	15	7%	0
New London County					
Dubois Beach	3	None	0	NA	0
Eastern Point Beach	1	1/wk	29	10%	0
Esker Point Beach	1	1/wk	15	7%	0
Green Harbor Beach	1	1/wk	42	45%	3
Hole-in-the-Wall Beach	1	1/wk	16	13%	0
Kiddie's Beach	1	1/wk	13	54%	0 (365)*
Mccook Point Beach	1	1/wk	15	7%	0
Noank Dock	1	1/wk	15	7%	0
Ocean Beach Park	1	1/wk	50	14%	0
Pleasure Beach	1	1/wk	14	0%	0
Rocky Neck State Park Beach	3	1/wk	76	11%	12
Soundview Beach	1	1/wk	13	0%	0
Waterford Town Beach	1	1/wk	50	8%	0
White Sands Beach	1	1/wk	13	0%	0

*Reported closing or advisory days are for events lasting six consecutive weeks or less. Number of days in parentheses are for events lasting more than six consecutive weeks.

NOTES

- 1 Jon Dinneen, Connecticut Department of Public Health. Personal communication. April 2011.
- 2 Connecticut Department of Public Health. Connecticut's 2010 Annual Report for the US EPA Beach Grant with Summary Data for 2003-2010. Jan 10, 2011.
- 3 Connecticut Department of Public Health and Connecticut Department of Environmental Protection. Quality Assurance Project Plan for the Beach Monitoring and Notification Program for Connecticut Coastal Beaches. October 2009.
- 4 Jon Dinneen, Connecticut Department of Public Health. Personal communication. February 2011.

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