

Swimming dirty: America's most polluted beaches

Is your shoreline sanitary? See what may be lurking near you

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You've got your high-tech sunscreen, umbrella and ultra-violet protective bathing suit. You're avoiding the sun during peak exposure hours. You're ready for a health-conscious trip to the shore.

But despite those precautions your day at the beach could still end up making you feel sick — thanks to pollution affecting the nation's waters. Two miles of beach in New Jersey closed recently after a pipe broke at the Asbury Park sewage treatment plant, releasing about half a million gallons of partly treated sewage into the water.

Closures and health advisory days at nationwide ocean, bay and Great Lakes beaches topped 20,000 in 2005, the highest number since the Natural Resources Defense Council started tracking the problem 16 years ago. **At fault? Sewage and storm water runoff reaching our beaches are a big part of the problem**, along with people crowding the nation's shores without paying enough attention to their impact.

The national nonprofit organization, which aims to protect public health and the environment, found in its most recent 2006 "Testing the Waters" report that 200 beaches in 24 states had beach water samples that exceeded health standards at least 25 percent of the time. Those standards, set by the federal Beaches Environmental Assessment and Coastal Health Act of 2000, limit the daily maximum of enterococci in marine water and E. coli in fresh water. Violations mean beach waters were contaminated with human and animal waste.

Swimming in polluted waters puts people at risk for a host of health problems, including gastroenteritis, respiratory infections — illnesses common in the Third World countries — as well as pink eye, ear infections and skin rashes. The consequences tend to be worse for children, the elderly, pregnant women, cancer patients and other people with weakened immune systems.

A 2005 U.S. Environmental Protection Agency study of two beaches affected by discharges from waste treatment plants looked at the health of beachgoers 10 to 12 days after their visits. Among swimmers at a Lake Michigan beach in Indiana the incidence of GI illness was 10 percent, compared with 5 percent for nonswimmers. Of swimmers at a beach near Cleveland on Lake Erie, 14 percent of those who immersed their head under water got sick compared with 10 percent of nonswimmers.

It's hard to tell just how many people are getting sick from swimming in dirty water, however, because not everyone with symptoms makes the connection or bothers going to the doctor. After a day of burgers, chips and ice cream, they might just assume it was something they ate.

"They don't know whether it was the hot dog vendor, swimming in the beach [water] or if they caught a virus," says Nancy Stoner, director of NRDC's Clean Water Project.

How it happens

The biggest source of pollution, Stoner says, is storm water runoff. After a heavy rainfall, runoff carries pollutants on the ground's surface into beach water, making it the most dangerous time to take a swim. The amount of rain an area gets can make a big difference, causing variations in its beach water quality year to year.

It's possible some of the beaches in NRDC's report have improved since 2005, the latest year for which data is available. Obvious sources of pollution, such as a storm water pipe discharging onto a beach, can be simple to address, and dry weather also helps. But for most places, Stoner says, there's a continual problem of discharges associated with storm water that occur every time it rains.

In 2005, according to the NRDC, polluted runoff and storm water contributed to 5,333 closing/advisory days, or 23 percent of the year's total. Sewage spills and overflows caused or contributed to 898 closing/advisory days, or 4 percent of the year's total.

Some of the beaches affected by known sewage contamination from spills, storm drains, runoff or leaky septic systems in 2005 included Malibu Beach in California, 10 beaches in Hawaii and Princess Beach in the Virgin Islands, according to the NRDC.

Other states with problem beaches in 2005 included Rhode Island, Louisiana, Maryland, Massachusetts and Georgia. Each had a beach in which at least 25 percent of its water samples exceeded the national standard in 2005.

Fouling factors

Beyond storm water runoff, dry weather runoff can have an impact, says Mark Gold, president of the Santa Monica-based, nonprofit environmental organization Heal the Bay.

Watering your lawn can cause a storm flow to drain in a typically dry month and pick up pollutants, such as fertilizer and pesticides, along the way.

Agricultural runoff is yet another emerging health issue.

"We've seen some health outbreaks related to drinking water and spinach in the last decade or so due to agricultural runoff, probably the most poorly regulated source of runoff in the nation," Gold says.

"We haven't seen outbreaks in swimmers, but a lot of people think it may just be a matter of time."

People problem

Of course, we are also to blame. As people move to coastal areas, development follows, replacing forests and wetlands that would have filtered waste with impervious pavement, sidewalks and rooftops, says Michael Mallin, research professor in the Center for Marine Science at the University of North Carolina Wilmington.

Since 1993 Mallin and a team of researchers have been studying tidal creek areas in Hanover County, an area in southeastern North Carolina with a growing population. Results showed that the average fecal coliform counts were elevated in creeks with higher populations and a higher percentage of developed land in their watersheds.

There are many green building techniques that can cut down on storm water runoff or filter it, such as retention ponds, rain gardens and constructed wetlands, or for more urban areas, sand filters.

But they can be costly.

"The problem with municipalities, with planning boards and with elected officials is that they have to get with the program," Mallin says. "They have to embrace these technologies, and start saying, 'No, you can't just build whatever you want. You have to think of the public trust waters.' "

Small-scale difference

Experts say individuals looking to improve the quality of their local beach waters have options too.

Make sure kids swim in diapers with plastic pants, so they don't leak into the water, says Stoner.

Leaving trash on the sand attracts wildlife, which leave their feces on the beach and contaminate the water. Picking up after your pet also can prevent fecal bacteria from getting into the water. If you're watering your lawn, Gold says, try to make sure the water stays on site by positioning your sprinklers far from pavement.

And don't be afraid to call a local public health official with questions, says Kari Martin, policy communications director for Clean Ocean Action, a nonprofit aimed at improving the quality of the waters off the New Jersey and New York coast. If you see a pipe spewing into beach water, don't swim near it and ask if it's cause for concern. Frequently check your local county Web site for beach closings and advisories. If you're worried about getting sick from swimming, keep your head above water.

"This [report] isn't about keeping people away from beaches or to make people feel bad," Stoner says. "The revenue associated with coastal tourism is a huge driver for water pollution protection. We're just trying to get people to realize what they can do to clean up beach water pollution."