

# Pathogens

- Pathogens are disease-causing bacteria and viruses.
- Pathogens enter the Sound from inadequately treated human sewage and domestic and wild animal wastes.
- Primary sources of pathogens:
  - older sewer systems that have combined stormwater and sanitary systems that overflow during rainfalls (called combined sewer overflows),
  - failing septic systems,
  - illegal connections to storm sewers,
  - STP malfunctions, and
  - vessel sewage discharges.

To protect public health, beaches are periodically closed, and many of the Sound's prime shellfish beds are closed, due to indications of pathogen contamination.

**WHEN YOUR PET GOES ON THE LAWN,  
REMEMBER IT DOESN'T JUST  
GO ON THE LAWN.**

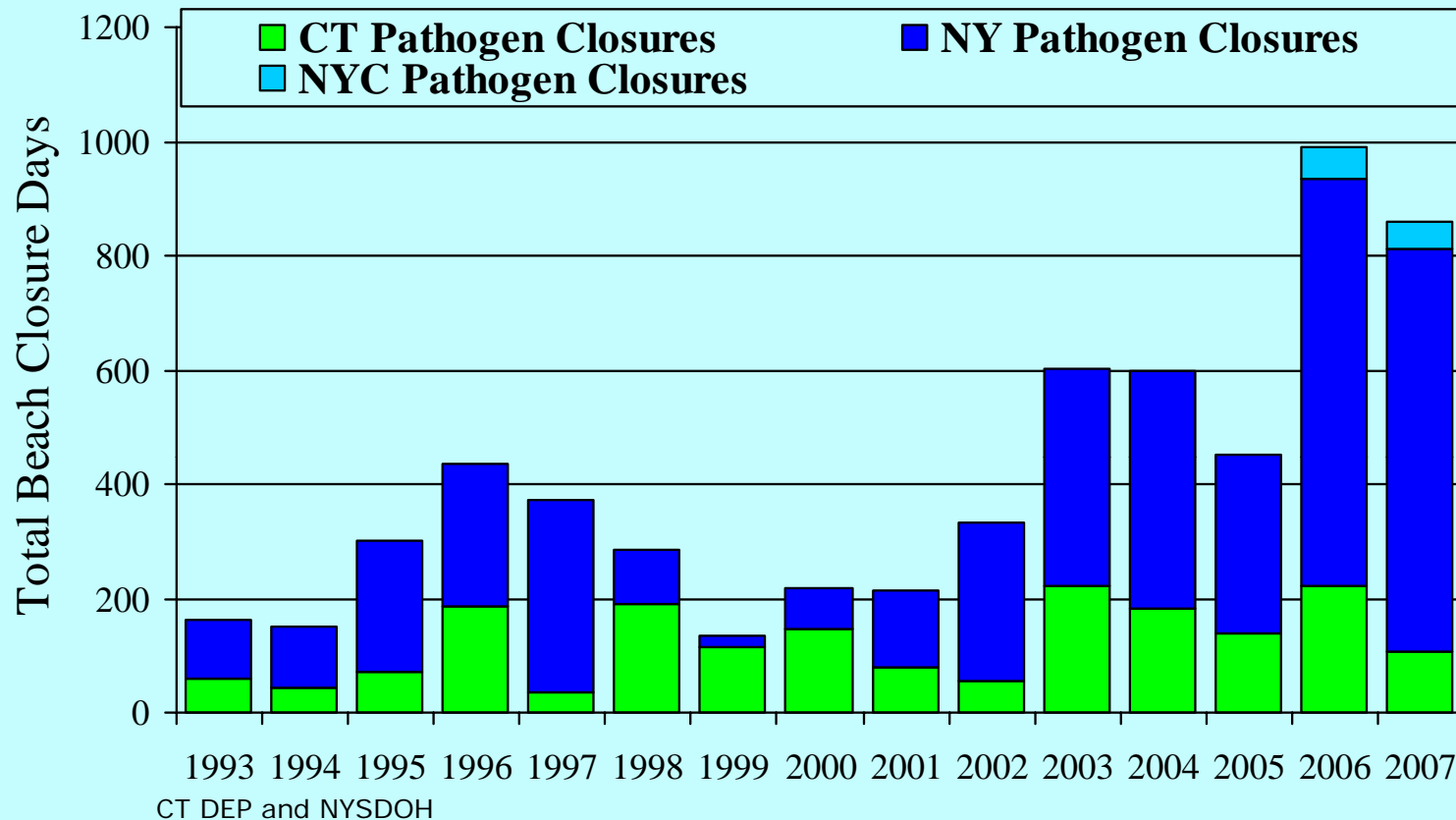
**LONG ISLAND SOUND STUDY**  
A Partnership to Restore and Protect the Sound

When our pets leave those little surprises, rain washes all that pet waste and bacteria into our storm drains. And then pollutes our waterways. So what to do? Simple. Dispose of it properly (preferably in the toilet). Then that little surprise gets treated like it should.

The Long Island Sound Study thanks the Westchester County (NY) Department of Planning and the Washington State Department of Ecology, King County, and the cities of Bellevue, Seattle and Tacoma. For more information, call (509) 977-1541 or (651) 632-9216 or visit the website [www.epa.gov/realsona/45co/lis/](http://www.epa.gov/realsona/45co/lis/).

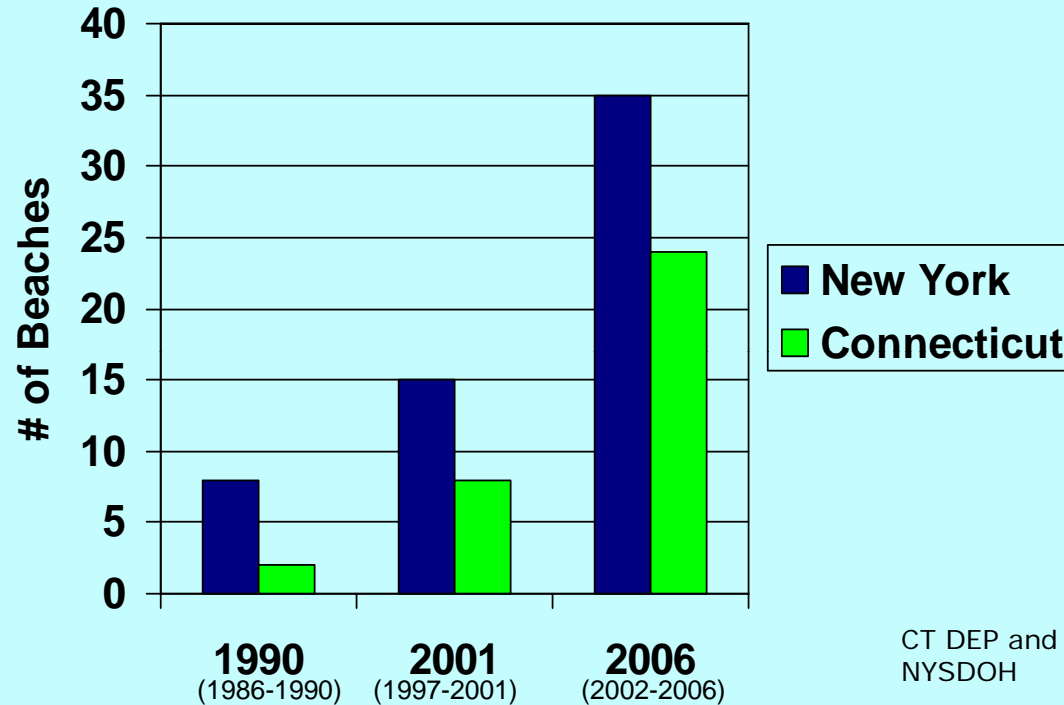
The poster features a man in a green shirt and hat standing on a beach at sunset, holding a leash for a dog. The background shows a calm sea and distant hills under a colorful sky.

# Beach Closure Days



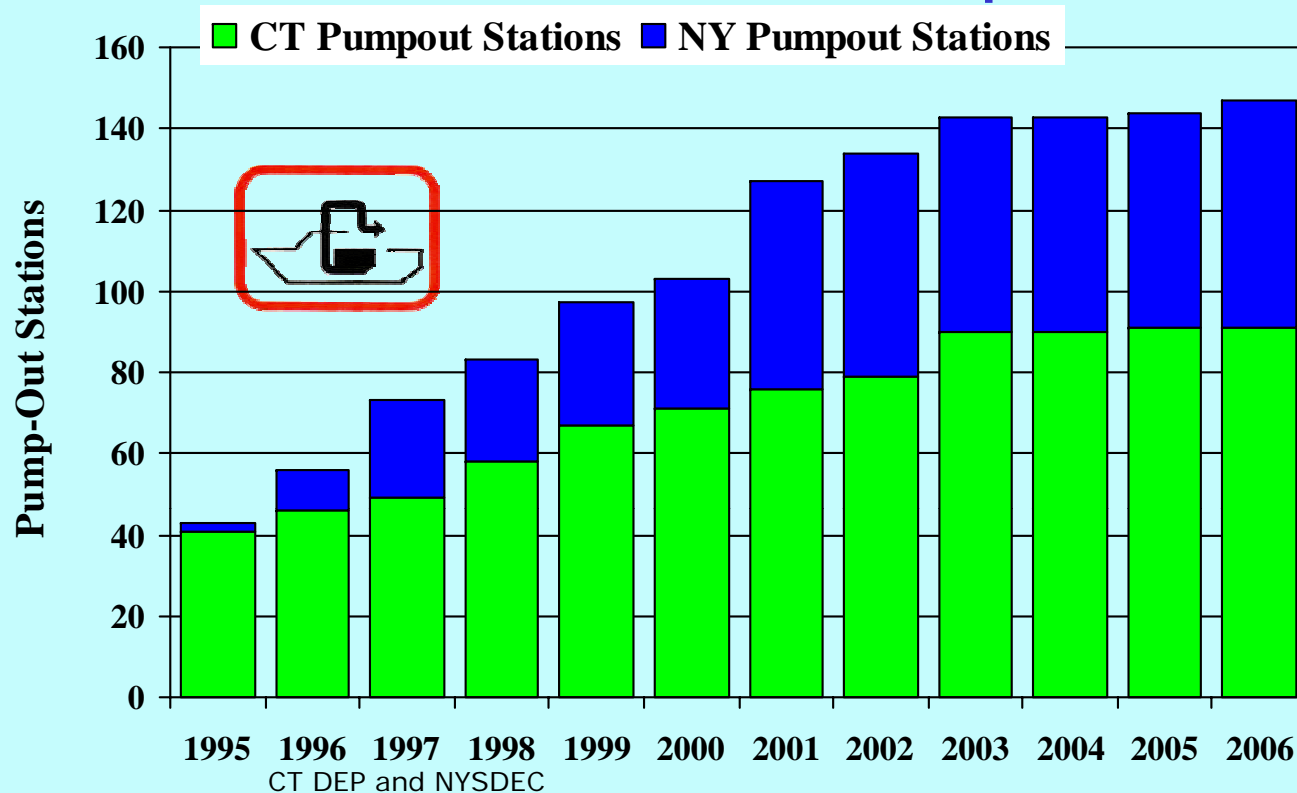
There are 203 monitored beaches along Long Island Sound's shoreline (66 in Connecticut and 137 in New York) that provide valued recreational opportunities. Yearly variations in closures are a product of rainfall patterns and incidents such as sewer-line ruptures. For instance, the high incidents of closures in 2006 were attributed to heavy rainfall. Some health departments also indicate that beach closures have increased since the adoption of a new test for bacterial pathogens for marine waters (the enterococcus standard). For this indicator, New York City beaches were added in 2006.

# Chronically Closed Beaches



Chronically closed beaches are beaches closed more than 3 days a year for three years out of a five year period. Beaches are often closed as a precaution following a storm in case stormwater runoff contains sufficient pathogens to cause harm. Chronically closed beaches were first calculated by LISS in 1990. The increase in chronically closed beaches in 2002-2006 may be the result of increasing rainfall during the beach season, and the adoption of a new test for bacterial pathogens for marine waters (the enterococcus standard). The LIS 2003 agreement calls for the elimination of all chronically closed beaches.

# Vessel Pumpout Stations



**In 1995, there were 43 vessel pumpout stations in the Sound. Eleven years later there are 147 plus 22 dump stations, a four-fold increase, in locations around the Sound with more expected in the future.**

The Federal Clean Water Act requires all vessels with an installed head to have a Coast-Guard approved marine sanitation device (MSD) attached to the toilet. Most recreational boats with an installed head have a holding tank to collect sewage (Type III MSD). Until Clean Vessel Act (CVA) funds became available in 1993 there were few pumpouts available to remove the sewage from holding tanks for proper treatment on shore. Both states have utilized CVA funding to provide grants to marinas for installation of pumpout facilities. Both states also have mobile pumpout boats that provide sewage removal services to boaters. Pumpout boats travel to where the recreational vessels are berthed or moored, pump their holding tanks, and transport the sewage to shore for proper disposal.

# No Discharge Zones in Long Island Sound



U.S. EPA

In 2007, the U.S. EPA approved CT's designation of all coastal waters of Connecticut as a no discharge area (NDA) for vessels. CT was the third New England state to receive NDA designation for its coastal waters. A key criteria to the designation was CT's ability to provide adequate boat pump-out facilities throughout the state. Mamaroneck, Huntington and Port Jefferson are no discharge areas in New York. The 2003 LIS agreement calls for the nominations of NDA sites for all New York embayments.

**Indicator Type: Response**

**LISS Indicators: Water Quality (2.3)**