

Executive Summary

Section 7 of the BEACH Act of 2000 requires EPA to publish reports to Congress on the implementation of the Act. This is the first Report to Congress since the passage of the BEACH Act in 2000. This report documents the significant progress that the states, territories and EPA have made to implement the BEACH Act.

Our coastal beaches are one of our nation's natural treasures. They are ecologically important, psychologically important, and economically important to us. In 2000, EPA estimated that a third of all Americans visit coastal areas each year, making a total of 910 million trips and spending about \$44 billion (USEPA 2000). For many people, a day at the beach

“The Beach. Say the words and they conjure the gentle tickle of waves against the shore, the harder kick of surf dashing against the rocks, the slap of spray against heated skin. For most of us, the place where earth meets ocean is the very essence of play—romantic, full of novelty and joyful abandon. At the beach, we are all children. As we gambol in the shallow surf and toss in the deeper waves, we feel the freedom of helplessness and the satisfaction of improvising defenses. Unburdened by consciousness or self-consciousness, we are caught in the moment. Suffused with pleasure, we exult in the sheer lightness of being.”

—(Marano, Psychology Today, 1999)



provides recreation, relaxation, and a chance to renew the spirit. Americans also make coastal areas their home. Over half the U.S. population lives in coastal watershed counties, and roughly one-half of the nation's gross domestic product (\$4.5 trillion in 2000) is generated in those counties and in adjacent ocean waters (U.S. Commission on Ocean Policy 2004).

Americans have recognized the need for improved protection of public health at beaches, including stronger beach monitoring programs, and in 2000 Congress passed the Beaches Environmental Assessment and Coastal Health (BEACH) Act. Since then, the EPA, in partnership with state and local governments, has made significant progress in improving public health at our nation's beaches. EPA is pleased to report the following:

1. States have significantly improved their assessment and monitoring of beaches; the number of monitored beaches has increased from about 1,000 in 1997 to more than 3,500 out of approximately 6,000 beaches, as identified to EPA by the states for the 2004 swimming season.
2. EPA has strengthened water quality standards throughout all the coastal recreation waters in the United States; the number of coastal and Great Lakes states with up-to-date water quality criteria has increased from 11 in 2000 to 35 in 2004.
3. EPA has improved public access to data on beach advisories and closings by improving its electronic system for beach data collection and delivery systems; the system is known as "eBeaches." The public can view the beach information at http://oaspub.epa.gov/beacon/beacon_national_page.main.



4. EPA is working to improve pollution control efforts that reduce potential adverse health effects at beaches. EPA's Strategic Plan and recent National Water Program Guidance describe these actions to coordinate assessment of problems affecting beaches and to reduce pollution. (See section 3.5).
5. EPA is conducting research to develop new or revised water quality criteria and more rapid methods for assessing water quality at beaches so that results can be made available in hours rather than days. Quicker tests will allow beach managers to make faster decisions about the safety of beach waters and thus help reduce the risk of illness among beachgoers.

These achievements are the result of specific actions implemented by EPA and the states under the BEACH Act. The actions are summarized in Table ES-1 and described following.

Improving water quality standards, water quality criteria, and water quality

EPA and states took regulatory action to improve the existing water quality standards. In addition, the Agency devoted significant resources for conducting new research and developing new or revised recommended water quality criteria.

Promulgation of water quality standards

EPA responded to the BEACH Act's requirement that the Agency propose water quality standards using its most current water quality criteria if states had not adopted these criteria by April 10, 2004. On November 16, 2004, EPA published a final rule that put federal standards into place for the 21 states without criteria that are as protective of human health as EPA's 1986 criteria for coastal recreation waters.

Technical research

Since passage of the BEACH Act, EPA has initiated and conducted significant research activities. For example, EPA—through its National Epidemiological and Environmental Assessment of Recreational (NEEAR) Water Study—is evaluating rapid indicator methods

to detect fecal contamination and assessing them with epidemiological studies that relate the rapid indicator measurements to human health. EPA has completed its recommended studies of Great Lake waters and is now assessing this new information, as part of a process to develop new or revised water quality criteria. EPA is assessing its further research needs at this time.

Recommendations to improve beach water quality

In its Strategic Plan (USEPA 2003c), EPA identifies “Water Safe for Swimming” as an important objective for the Agency. EPA’s *National Water Program Guidance* for both FY 2005 and FY 2006 (USEPA 2004a and USEPA 2005b) summarized the Agency’s key national strategies and actions to help improve beach water quality. For FY 2005 and FY 2006, EPA’s national strategy for improving the safety of recreational waters includes four key elements:

1. Establish a new generation of pathogen indicators based on sound science.
2. Identify unsafe recreational waters and begin restoration.
3. Reduce pathogens levels in all recreational waters.
4. Improve beach monitoring and public notification.

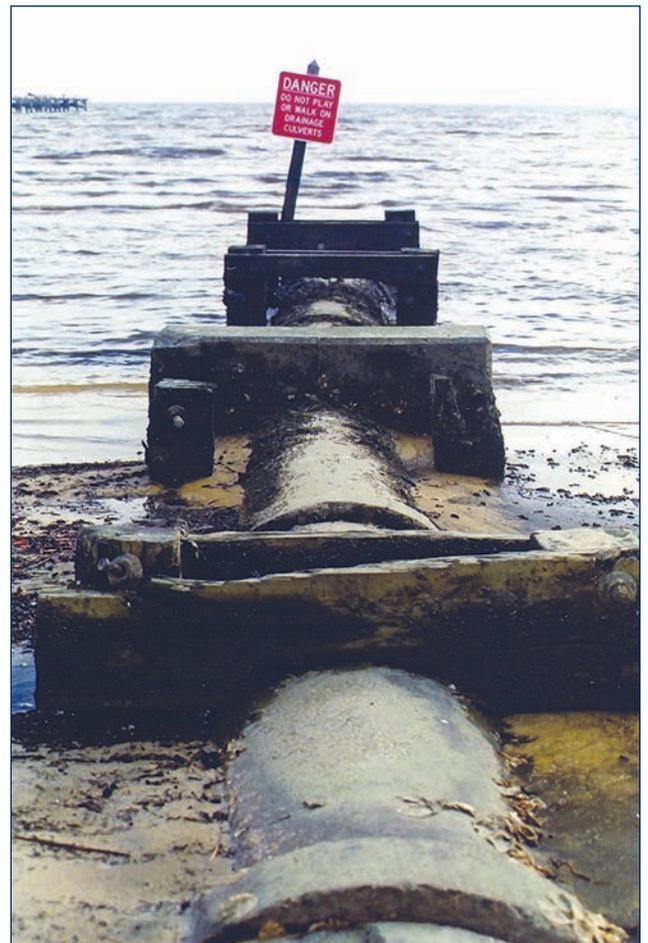
Implementing the BEACH Act

EPA and the states have focused on another set of actions to help reduce the human health risks at beaches through better water quality monitoring and improved public notification. Important progress has been made working cooperatively with state and local environmental and public health agencies. Actions include the following:

- **Beach grants.** EPA provided beach program development grants to states in FY 2001 and has provided implementation grants to all states (except Alaska) since then. EPA has awarded, or is in the process of awarding, approximately \$52 million in grants to states to develop and implement beach monitoring and public notification programs.
- **State and local accomplishments.** Many of the actions discussed [below](#) were accomplished through the diligent efforts of state and local public

health and environmental agencies. State-written “spotlights” that provide detailed descriptions of achievements resulting from state and local beach programs are provided in Section 4.3 and Appendix B of the report.

- **National program requirements and guidance.** EPA published *National Beach Guidance and Required Performance Criteria for Grants* in July 2002. This document established the fundamental framework for beach programs and provides guidance for receiving implementation grants. EPA developed the document in consultation with coastal states and other interested parties over a two-year period.
- **National List of Beaches.** States completed the first national, comprehensive listing of beaches using a risk-based classification scheme to identify monitoring and notification priorities. This list will eventually be linked to detailed geographic identifiers, monitoring stations, and other data systems.



- **eBeaches.** EPA has improved public access to data on beach advisories and closings by improving its electronic system for beach data collection and delivery systems; the system is known as “eBeaches.” This online system includes a database of monitoring results and notification actions, thereby fulfilling the National Pollution Occurrence Database requirement of the BEACH Act. The public can view the beach information at http://oaspub.epa.gov/beacon/beacon_national_page.main.

Recommending improvements to methodologies and techniques for monitoring of coastal recreation waters

EPA and others have taken a number of actions to improve our understanding of beach water quality monitoring and modeling. For example, EPA is developing faster indicator methods that will provide more rapid results than the currently used tests. The goal is to help beach managers quickly test the water and make available the results about the safety of beach waters in hours, rather than days. This technology will help reduce the risk of waterborne illness among beachgoers.

EPA’s Office of Research and Development (ORD) conducted an intensive monitoring program (the Environmental Monitoring for Public Access and Community Tracking, or EMPACT, study) at several beaches to determine what factors influence microbial indicator concentrations. This study provides state and local governments with information for improving the design of site-specific beach monitoring programs. Included is an examination on how environmental factors like sunshine, tide, rain, or wind and sampling variables (such as sampling times and sample depth and distance from the shore) affect fecal indicator levels.

ORD has also been investigating means to improve the monitoring of beach water quality and to develop strategies, including modeling, for timely notification of the public when bacterial contamination poses a risk to bathers. New software called Virtual Beach is being developed to support both empirical and physical approaches in an integrated application. In collaboration with the U.S. Geological Survey (USGS),

EPA is developing a prototype of Virtual Beach to automate statistical analytical techniques developed by USGS. The goal is to develop a user-friendly application that can help beach managers predict the need for a beach advisory or closing up to three days in advance.

References

- U.S. Commission on Ocean Policy. 2004. *An Ocean Blueprint for the 21st Century*. Final report. U.S. Commission on Ocean Policy, Washington, DC.
- USEPA (U.S. Environmental Protection Agency). 1986. *Ambient Water Quality Criteria for Bacteria 1986*. EPA 440/5-84-002. U.S. Environmental Protection Agency, Office of Research and Development, Washington, DC.
- USEPA (U.S. Environmental Protection Agency). 2000. *Liquid Assets 2000: America’s Water Resources at a Turning Point*. EPA-840-B-00-001. U.S. Environmental Protection Agency, Office of Water, Washington, DC.
- USEPA (U.S. Environmental Protection Agency). 2003. *2003–2008 EPA Strategic Plan: Direction for the Future*. U.S. Environmental Protection Agency, Office of Water, Washington, DC.

Table ES-1. Accomplishments in Implementing the BEACH Act

Activity	Date	Page
Water Quality Criteria and Other Actions To Improve Coastal Recreation Waters		
<ul style="list-style-type: none"> • Existing Water Quality Standards Promulgated water quality standards for states and territories that had not yet adopted water quality criteria for bacteria that were as protective of human health as EPA's 1986 bacteria criteria. 	November 2004	3-1
<ul style="list-style-type: none"> • National Epidemiological and Environmental Assessment of Recreational (NEEAR) Water Study Initiated joint study with the CDC, USGS, and others to test potential new water quality indicators. 	2001-present	3-3
<ul style="list-style-type: none"> • Rapid Methods Developing new water quality tests that will provide rapid results. 	2001-present	3-3
<ul style="list-style-type: none"> • Water Quality Criteria Development Will update water quality criteria based on ongoing and planned studies. 	2001-ongoing	3-5
<ul style="list-style-type: none"> • Recommendations to improve beach water quality EPA's strategic plan included combination of actions to improve recreational water quality. 	September 2003	3-7
Evaluation of Federal, State, and Local Efforts		
<ul style="list-style-type: none"> • National Beach Guidance and Required Performance Criteria for Grants Published the <i>National Beach Guidance and Required Performance Criteria for Grants</i>, establishing the basic requirements for beach programs that receive federal beach funds. 	July 2002	4-1
<ul style="list-style-type: none"> • Awarded BEACH Grants EPA has awarded, or is in the process of awarding, approximately \$52 million in grants to states to develop and implement beach monitoring and public notification programs. 	2000-present	4-3
<ul style="list-style-type: none"> • "eBeaches" Designed, built, and implemented an electronic data system called eBeaches to collect, store, and provide beach information to the public. http://oaspub.epa.gov/beacon/beacon_national_page.main. 	May 2005	4-4
<ul style="list-style-type: none"> • National Health Protection Survey of Beaches Continued the National Health Protection Survey of Beaches through 2002 to collect information about state and local beach programs. 	1997-2002	3-5
<ul style="list-style-type: none"> • National List of Beaches Developed and published a "list of beaches" ("list of waters") that includes those with a monitoring and notification program, as well as those without a program. 	2004-present	4-7
<ul style="list-style-type: none"> • Floatables Published guidance titled <i>Assessing and Monitoring Floatable Debris</i> to help states, tribes, and local governments develop their own assessment and monitoring programs for floatable debris in coastal recreation waters. 	August 2004	4-7
<ul style="list-style-type: none"> • State and Territory Accomplishments States and territories have used BEACH Act grant funds to implement and improve their beach monitoring and public notification programs. 	2001-present	4-9
Recommendations to Improve Integrated Coastal Water Monitoring and Modeling		
<ul style="list-style-type: none"> • Environmental Monitoring for Public Access and Community Tracking (EMPACT) Beaches Project Conducted a study to identify those characteristics of a beach environment that have a significant impact on monitoring in coastal recreation waters. 	September 2005	5-1
<ul style="list-style-type: none"> • Modeling Investigated the USGS Project SAFE model. Collaborated with USGS to design the Virtual Beach model. 	2005	5-2

