Implementing the BEACH Act of 2000 Report to Congress

Background

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

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. The Act established uniform criteria for testing, monitoring, and notifying public users of possible coastal recreation water problems. The Act also provides funds ($52 million to date) to help state and local governments improve their monitoring and public notification actions.

What does this report contain?

This report provides a synopsis of the health concerns related to pathogens and addresses the requirements set forth in Section 7 of the BEACH Act:

- The need for additional water quality criteria for pathogens and pathogen indicators and other actions that should be taken to improving the quality;
- An evaluation of federal, state and local efforts to implement the Act, including the amendments made by the Act; and
- Recommendation to improve methodologies and techniques for monitoring coastal recreation waters.

The Report also documents the significant progress that EPA and its partners have made in implementing the BEACH Act. Our collaboration with our partners—federal agencies, states, territories, and local environmental and public health agencies—has resulted in better beach monitoring and notification and, thus, better public health protection.

What accomplishments are reported?

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:

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 reported 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 beach information can be viewed 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.
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 will help reduce the risk of illness among beachgoers.

What actions were implemented?

Several actions were implemented by EPA and the states under the Beach Act. The actions are summarized in Table 1 and described below.

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 to determine how they relate them 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, 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 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.

Reducing human health risks

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:

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 in Table 1 were accomplished through the diligent efforts of state and local public health and environmental agencies. State-written "spotlights" provide detailed descriptions of achievements resulting from state and local beach programs.

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 monitoring

EPA and others have taken a number of actions to improve our understanding of beach water quality monitoring and modeling. EPA is developing more rapid methods for assessing water quality at beaches so that results can be made available in hours rather than days.

Table 1. Accomplishments in Implementing the BEACH Act

Activity	Date
Water Quality Criteria and Other Actions To Improve Coastal Recreation Waters	
• **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
• **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
• **Rapid Methods** Developing new water quality tests that will provide rapid results.	2001-present
• **Water Quality Criteria Development** Will update water quality criteria based on ongoing and planned studies.	2001-ongoing
• **Recommendations to improve beach water quality** EPA's strategic plan included combination of actions to improve recreational water quality.	September 2003
Evaluation of Federal, State, and Local Efforts	
• ***National Beach Guidance and Required Performance Criteria for Grants*** Published the *National Beach Guidance and Required Performance Criteria for Grants*, establishing the basic requirements for beach programs that receive federal beach funds.	July 2002
• **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
• ***"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
• ***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
• ***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
• ***Floatables*** Published guidance titled *Assessing and Monitoring Floatable Debris* to help states, tribes, and local governments develop their own assessment and monitoring programs for floatable debris in coastal recreation waters.	August 2004
• ***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
Recommendations to Improve Integrated Coastal Water Monitoring and Modeling	
• ***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
• ***Modeling*** Investigated the USGS Project SAFE model. Collaborated with USGS to design the Virtual Beach model.	2005

EPA's Office of Research and Development (ORD) conducted intensive monitoring (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 Visual 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 Visual 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.

How can I get a copy of this report?

You can download the report in PDF format from the EPA web site at http://www.epa.gov/waterscience/beaches. A limited number of printed copies of the report entitled *Report to Congress on Implementing Beaches Environmental Assessment and Coastal Health (BEACH) Act 2000* are available through our National Service Center at the following address. You can order it by sending them your request, visiting their web site, or calling them. Please ask for document number EPA-823-R-06-001 when placing your order.

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