



## Assessing the Effectiveness of the Beaches Environmental Assessment and Coastal Health (BEACH) Act Notification Program

### Fact Sheet

#### Introduction

- Since 2002, EPA has made available approximately \$10 million in grants per year to eligible coastal and Great Lakes states, territories, and tribes through the Beaches Environmental Assessment and Coastal Health (BEACH) Act. The grants are to develop and implement programs to monitor water quality at coastal and Great Lakes' beaches and to notify the public when water quality problems exist.
- The EPA beach program and EPA's Office of Policy, Evaluation Support Division, sponsored this program evaluation to assess the effectiveness of the notification component of the BEACH Act program.

#### Evaluation Questions

- How are grantees using BEACH Act funding to notify the public of beach conditions?
- Which notification methods are the most effective in *reaching* the public?
- How has beachgoers' *awareness* of beach advisories and closures, *understanding* of water quality risks, and beach visitation *behavior* changed in response to notifications?

#### Evaluation Methods

- The evaluation used several methods to answer the evaluation questions:
  - A review of past studies and the relevant literature;
  - The collection of new data through interviews with state, tribal and local beach managers and other stakeholders; and
  - Development of site-specific case studies to explore selected aspects of the findings in greater detail.

#### Key Findings

##### How are grantees using BEACH Act funding to notify the public of beach conditions?

- States and local beach programs use a combination of methods to notify the public about beach water quality, with the various methods typically complementing and reinforcing each other. On average, the states and localities interviewed for this evaluation used more than four different notification methods, some of which (e.g., signs) are targeted to beachgoers at the beach, and others (e.g., websites) are targeted to potential visitors before they travel to the beach.
- State, tribal, and local beach programs reviewed in this evaluation all use websites as part of their notification programs and all but one post signs at their beaches. After websites and signs, e-mail outreach and press releases are the next-most common notification methods. Several states and local beach managers use social media (e.g., Facebook and Twitter) as a means of expanding the reach of traditional notification methods.

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How are grantees using BEACH Act funding to notify the public of beach conditions?  
(continued)

- In addition to notifying the public about advisories, several states and local beach managers conduct general outreach and education efforts to raise public awareness of water quality issues. Some states also conduct trainings for local beach managers about monitoring and notification issues.

Which notification methods are the most effective in terms of *reaching* the public?

- Overall, the evaluation finds that a *combination* of notification methods is necessary to reach the largest possible share of the beachgoing public.
- Beach signs, the Internet, and television are the most common ways beachgoers learn of beach advisories or closings. Given the large size of the target audience, it can be difficult for beach notifications to reach the majority of beachgoers.
- Beach managers are increasingly using social networking tools (e.g., Facebook and Twitter) to expand the reach of their notification. However, social networking tools typically only reach subscribers. Traditional media approaches (e.g., press releases to local television stations and newspapers) can also help extend the reach of notification messages.
- In addition to selecting a range of appropriate notification methods, it is important to craft the notification methods within the context of an overall risk communications strategy. As a part of developing this strategy, it is necessary to identify the goal of the program (i.e., to *inform* or to *influence* the public), identify stakeholders, and earn the trust of key stakeholder groups.
- An analysis of beach advisory signs and websites for states and localities reviewed in this evaluation suggests that there is no standard format used across the country. The content and wording of messages, as well as the level of detail and contextual information provided, varies widely. Part of the reason for this diversity may be that beach programs tailor the content and format of their communications based on their target audiences (e.g., residents vs. tourists) and based on the goal of the communications (e.g., to *inform* vs. to *influence* beachgoer behavior).
- While it is not possible to directly contrast the effectiveness of one approach versus another, some features of signs and websites are likely to be relatively effective in informing and influencing behavior, based on comments from interviewees and the literature. The evaluation identified good practices for beach signs and websites (Exhibit 1).

EXHIBIT 1: GOOD PRACTICES FOR BEACH SIGNS AND PROGRAM WEBSITES	
BEACH SIGNS	BEACH PROGRAM WEBSITES
<ul style="list-style-type: none"> <li>• Use large signs, placed in a prominent location.</li> <li>• Convey meaning using widely-recognized symbols and icons, along with simple text.</li> <li>• Explain the cause of the advisory or closure.</li> <li>• Highlight consequences of water contact and provide advice on activities that may be unsafe.</li> <li>• Use a scale to communicate the severity of the risk (e.g., colors commonly associated with increasing risk levels such as green-yellow-red scale).</li> <li>• Translate text into relevant languages for residents and visitors.</li> <li>• Identify the agency responsible for the advisory.</li> <li>• List other sources where beach users can obtain additional information.</li> </ul>	<ul style="list-style-type: none"> <li>• Summary information on the program home page or through a clearly identifiable link.</li> <li>• Status of each beach (selected from a list or map) or list of all beaches under advisory.</li> <li>• Ability to search for current status and history.</li> <li>• Information about the day the beach was last sampled and frequency of monitoring.</li> <li>• Clear indication of the implication of the testing results (e.g., beach open, closed, or under advisory).</li> <li>• Explanation for the cause of any advisories and testing methods.</li> <li>• Information about health consequences to beach users and advice on activities that may be unsafe.</li> <li>• Simple, direct language, translated into languages relevant to key audiences.</li> <li>• Links to other sources where beach users can obtain additional information.</li> <li>• Information about beaches other than water quality (e.g., weather and beach amenities) to draw visitors to the beach website.</li> </ul>

#### To what extent do notifications affect the *awareness* of beachgoers?

- Research on beachgoer awareness is limited. Prior studies indicate varying percentages of beachgoers who are aware of notifications.
  - For beach signs, for example, public awareness ranges from 2% to 54%, depending on the survey. Awareness of the existence of *any* notification method tends to be higher; for example one survey found that 65% of residents and 45% of non-residents were aware of at least one source of information on water quality.
  - Posting signs at the beach is crucial, since it is estimated that only 20% of beachgoing survey respondents check for information about water quality before visiting a beach.
- Findings suggest that simply making sure beachgoers see signs and hear about other notification methods prior to visiting a beach may be the greatest challenge for beach managers.

#### To what extent do notifications affect the *understanding* of beachgoers?

- Very little data are available on the extent to which notifications affect beachgoer understanding of risks. A few studies tested beachgoer understanding of beach signs in particular; these studies suggest that the signs reviewed do communicate messages effectively to the public.

#### To what extent do notifications affect the *behavior* of beachgoers?

- Studies that consider factors influencing beachgoer behavior suggest that beach advisories influence some members of the public in avoiding contact with water at a beach under an advisory.
- Analysis of beach attendance data collected at one beach suggests that there is a relationship between beach advisories and the number of beachgoers at this site, and that other factors such as season, day of the week, weather, and water temperature are also important influences on beach attendance.
- Beach managers interviewed for this evaluation note that an unknown proportion of individuals choose to engage in water contact recreation (e.g., swimming, surfing) even when advisories are in place.
- Reasons that individuals choose to contact the water when an advisory is in place, include not only being unaware of the advisory, but also other factors such as lack of understanding of the potential health consequences, lack of access to alternative beaches, or individuals' attitude toward risk (belief that *they* will not get sick).

#### Additional Findings

- There are very limited data that can provide a foundation for a comprehensive evaluation of beach notification programs. While a few programs have conducted targeted studies to identify areas to improve, most programs have not conducted such research, and no programs have conducted a series of studies over time to assess changes in behavior as the beach notification programs evolved.
- The scarcity of data on the effects of beach notification substantially limits an evaluation of the outcomes or effectiveness of beach notification programs. Additional research in the form of surveys of beachgoers, tracking attendance records, and observational studies (all of which were outside the scope of this evaluation) would help assess program effectiveness.
- Interviews with state, tribal, and local beach program managers suggest that funding is a limiting factor, and therefore the paucity of primary research may be due to lack of resources to gather data.

## Conclusions

Overall, this evaluation found that:

- Beach notification programs use a complementary suite of notification messages.
- The content and format of beach notification messages varies, and examples drawn from states and localities suggest good practices.
- Notification messages reach only a fraction of beachgoers, but social networking tools, as well as traditional media, can expand the reach of these messages.
- Public awareness of beach advisories varies; but beachgoers who are aware of signs often find them helpful.
- Beach advisories appear to have some effect on behavior, but other factors may predominate.
- Beach notification programs have evolved based on experience, but little systematic evaluation of program effectiveness has been completed.

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