



Highlights of [GAO-05-1026T](#), a testimony before the Subcommittee on Regulatory Affairs, Committee on Government Reform, United States House of Representatives

Why GAO Did This Study

Numerous invasive species have been introduced into U.S. waters via ballast water discharged from ships and have caused serious economic and ecologic damage. GAO reported in 2002 that at least 160 nonnative aquatic species had become established in the Great Lakes since the 1800s—one-third of which were introduced in the past 30 years by ballast water and other sources. The effects of such species are not trivial; the zebra mussel alone is estimated to have caused \$750 million to \$1 billion in costs between 1989 and 2000. Species introductions via ballast water are not confined to the Great Lakes, however. The environment and economy of the Chesapeake Bay, San Francisco Bay, Puget Sound, and other U.S. waters have also been adversely affected.

The federal government has been taking steps since 1990 to implement programs to prevent the introduction of invasive species from ships' ballast water discharges. However, species introductions are continuing.

This testimony discusses the legislative and regulatory history of ballast water management and identifies some of the issues that pose challenges for the federal government's program for preventing the introduction of invasive species via ships' ballast water.

www.gao.gov/cgi-bin/getrpt?GAO-05-1026T.

To view the full product, including the scope and methodology, click on the link above. For more information, contact Robin Nazzaro, (202) 512-3841 or nazzaror@gao.gov.

INVASIVE SPECIES

Progress and Challenges in Preventing Introduction into U.S. Waters Via the Ballast Water in Ships

What GAO Found

Congress recognized ballast water as a serious problem in 1990 with passage of the Nonindigenous Aquatic Nuisance Prevention and Control Act, legislation intended to help reduce the number of species introductions in the Great Lakes. A reauthorization of this law in 1996, the National Invasive Species Act, elevated ballast water management to a national level. As directed by the legislation, the federal government has promulgated several regulations requiring certain ships to take steps, such as exchanging their ballast water in the open ocean to flush it of potentially harmful organisms, to reduce the likelihood of species invasions via ballast water. Initially these regulations applied only to certain ships entering the Great Lakes; now they apply to certain ships entering all U.S. ports. In addition to these domestic developments, the United Nation's International Maritime Organization has recently adopted a convention on ballast water management that could affect the global fleet.

Since 1998, Coast Guard data show that compliance with existing ballast water exchange requirements has generally been high. However, key agencies and stakeholders recognize that the current ballast water exchange program is not a viable long-term approach to minimizing the risks posed by ballast water discharges. The primary reasons for this are that:

- many ships are exempt from current ballast water exchange requirements,
- the Coast Guard has not established alternate discharge zones that could be used by ships unable to conduct ballast water exchange for various reasons, and
- ballast water exchange is not always effective at removing or killing potentially invasive species.

Developers are pursuing technologies to provide more reliable alternatives to ballast water exchange, some of which show promise. However, development of such technologies and their eventual use to meet ballast water regulatory requirements face many challenges including the daunting technological task of developing large scale water treatment systems that ships can accommodate, and the lack of a federal discharge standard that would provide a target for developers to aim for in terms of treatment efficiency. As a result, ballast water exchange is still the only approved method for treating ballast water despite the concerns with this method's effectiveness. Consequently, U.S. waters remain vulnerable to the introduction of invasive species via ships' ballast water. State governments and others have expressed frustration over the seemingly slow progress the federal government has made on more effectively protecting U.S. waters from future species invasions via ballast water. As a result, several states have passed legislation that authorizes procedures for managing ballast water that are stricter than federal regulations.