

**STATEMENT OF LORI WILLIAMS
NATIONAL INVASIVE SPECIES COUNCIL
BEFORE THE U.S. COMMISSION ON OCEAN POLICY
GREAT LAKES REGIONAL PUBLIC MEETING, INVASIVE SPECIES PANEL
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Thank you for the opportunity to address the U.S. Commission on Ocean Policy about invasive species and their impact on the health and vitality of our oceans and the Great Lakes. Although we are meeting in one of the nation's largest urban areas, examples of the impact of invasive species on aquatic ecosystems can be found all around us. These include the collapse of the lake trout fishery due to the invasive sea lamprey in the 1950's, the ongoing impacts on Chicago shoreline caused by the zebra mussel, and the concern that bighead carp could soon enter the Great Lakes, causing future problems. The examples of harm caused by invasive species wherever we are.

Invasive species is defined in Executive Order 13112 that established the Council as an alien (or nonnative) species whose introduction does or is likely to cause economic, or environmental harm or harm to human health. Invasive species may be plants, animals, pathogens or parasites and affect oceans and lake environments around the world. The rate of introductions and thus the magnitude of the problem are growing due to increases in trade, travel and tourism. Today I will provide a brief overview of why dealing with invasive species is essential to meeting the goals of the Oceans Act, and provide highlights of four important strategies to address invasive species for the Commission's consideration, including approaches to:

- 1) Bolster and enhance national and international prevention efforts by taking steps to shut down or mitigate invasive species pathways and by assessing the risk of intentional introduction of new species;
- 2) Enhance and improve invasive species research and monitoring to provide a basis upon which to build more effective prevention, early detection and control strategies; and
- 3) Design an effective, coordinated national invasive species educational campaign to inform the public about the problem and what they can do to protect their oceans and lakes from invasive species.

These strategies are drawn from the National Invasive Species Management Plan, drafted -- with extensive public/stakeholder involvement -- by the 10 federal departments and agencies that make up the National Invasive Species Council which is available on our website or by contacting the Council (National Invasive Species Council 2001).

The Oceans Act calls for a national ocean policy that, among other things, will promote responsible stewardship of ocean and coastal resources, and protection of the marine environment. Similarly, EO 13112 directs the Council develop a comprehensive management plan to deal with invasive species. Invasive species have become established

on all coasts of the U.S. and in the Great Lakes (Carlton 2001). Through predation, competition, alteration of coastal and marine habitats, and other means, aquatic invasive species diminish the abundance of native species. The sea lamprey became infamous when it migrated into the Great Lakes and through predation caused the collapse of fisheries for lake trout and whitefish. (Short et al. 2002). An Aquatic Nuisance Species Task Force analysis of factors in the listing of fish species under the Endangered Species Act found that invasive species were a factor in 70% of the listings, second only to habitat loss (Aquatic Nuisance Species Task Force 1994). Nutria, an invasive rodent, is destroying coastal wetlands in Louisiana, Maryland and other eastern states. Species such as the Asian clam that has invaded the San Francisco Bay is altering the entire ecosystem. Since it was detected in 1986, it has become the dominant benthic organism - with up to 50,000 clams found per square meter. It has displaced native mollusks and reduced phytoplankton blooms, which in turn have reduced the presence of species that prey on the phytoplankton (Short et al.). The State of Hawaii is concerned that several invasive algal species are spreading and may smother valuable coral reefs.

The Oceans Act also calls for enhancement of marine-related commerce; similar to the invasive species EO 13112 and management plan which call for steps to protect the economy from the impacts of invasive species. Invasive species disrupt or impact shipping, recreation, fishing, aquaculture, and power generation. For example, European green crabs caused significant damage to the soft-shell clam fishery in the eastern U.S. during the 1950's when they moved into the Gulf of Maine. Now, forty years later, there is great concern that the introduction of this same species to the west coast could harm native mollusks and crabs as well as aquaculture operations (Short et al.) In addition attempts to control individual species can be very costly. The National Oceanic and Atmospheric Administration (NOAA) estimates that zebra mussel control costs top \$200 million per year, while it continues to spread into new areas. The United States and Canada together spend about \$15 million per year on sea lamprey control and will need to continue for the foreseeable future. In most cases the states pay most control costs, for example, the state of Florida spends about \$30 million each year just to control aquatic weeds in coastal and inland waterways. Although there are many examples, few studies have attempted to estimate total costs. One study done regarding the total estimated costs of all invasive species (including aquatic invasive species) put the total costs to the U.S. economy at about \$137 billion (Pimenthal et al.). In addition, many introductions of invasive invertebrates, parasites and pathogens are likely to have gone unnoticed lack of comprehensive surveys and knowledge about these species. These examples make clear that invasive species issues need to be addressed to protect the ocean and coastal environment and enhance marine-related commerce.

Attempts to control aquatic invasive species are often expensive and at best minimize the harmful impacts of invasive species; however, effective control can help to slow or stop the spread of invasive species. Eradication is rarely achieved once species have become well established. These factors highlight the critical need to focus on prevention of both accidentally and intentionally introduced invasive species. Most aquatic invasive species are introduced accidentally through variety of means called pathways. The ballast water of ships is considered the most significant pathway resulting

in the introduction of the zebra mussel, Asian clam and many other species. In fact, Cholera has also been detected in ballast water (McCarthy and Khambaty 1994). Several other speakers on the panel will address this pathway in detail.

Although ballast water has received the most attention for obvious reasons, it is critical to look at other pathways including ship biofouling, accidental releases from aquaculture, release of live bait, seafood, and aquatic pets, and recreation – among others. Each pathway requires research and analysis to determine best method to reduce introductions. In some cases (which many argue is the case for ballast water) government regulations may be needed. For other pathways, best management practices (BMPs) such as those being developed by the pet trade, may at least be a part of the solution. The Aquatic Nuisance Species Task Force (ANSTF) efforts to educate recreational boaters are designed to reduce transfer of boats with zebra mussels other species. What is important is to use a variety of methods and identify the measure best suited to the particular pathway. Close cooperation with stakeholders, state and local areas is also critical. Implications for domestic and international trade must also be considered as well as many other factors. Many pathways are international and need to be dealt with on a global as well as national basis.

A lesser number of aquatic invasive species are intentionally imported into U.S. for aquaculture, live food, fisheries, pet trade and other uses. The Council's Management Plan calls for the development of a risk-based screening system for intentionally introduced species in a series of phases and as appropriate for the different taxa of invasive species. The Council is already working in conjunction with the ANSTF, stakeholders, and state and local entities, to develop a process for screening aquatic organisms. The lack of information about many species that would be used in completing risk assessments is an important factor. Determining how to deal with current levels of uncertainty is a critical issue to be addressed before effective screening systems can be put into place. As with pathways, international trade implications and opportunities for international cooperation and information sharing are important considerations.

In many cases we do not know enough to effectively deal with invasive species issues and their impacts our coastal and marine ecosystems. Problems associated with the lack of critical biological and technical information, as well as need for better data on the environmental and economic impacts of invasive species points to the need to enhance and strengthen our invasive species research and information sharing capacities. If species are to be identified before they become established and while less costly eradication is possible, better and more comprehensive surveys, monitoring, information sharing protocols, and research on the biology and control methodologies for invasive species are needed. As later speakers will address in the case of ballast water, significant research is needed in order to ensure that methods to address key pathways and prevent the introduction of many potentially invasive species, are efficient, safe and effective. Targeted and coordinated research is critical to enhance economic analysis of the impacts of invasive species and improve the ability to predict which species will become invasive.

Enhanced international research collaboration is also critical to dealing with the global problem of invasive species and their impacts on coastal and ocean ecosystems.

The Oceans Act calls for analysis of the adequacy of current laws, institutions and regulations to address critical ocean issues that is parallel for the analysis called for by the Invasive Species Management Plan. A number of laws deal with aquatic invasive species, including the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (NANCPA), which is due to be authorized in the next year. NANCPA (subsequently reauthorized by the National Invasive Species Act of 1996) established the Aquatic Nuisance Species Task Force -- charged with overseeing and coordinating federal agency invasive species activities. The companion reauthorization bills introduced just last week, on September 18, 2002, by Congressman Gilchrest and Senator Levin are more broadly focused than prior aquatic nuisance legislation and should be considered by the Commission. Other laws that govern invasive species include: the injurious wildlife provisions of the Lacey Act (governing injurious wildlife) and the Plant Protection Act of 2000. The listing process under the Lacey Act has been considered by many to be cumbersome and relatively few (12) species/genera have been listed (Short et al.). However, recent experience has shown that given adequate interest in and information about a particular species, the Act can be utilized effectively, as with the proposed listing as injurious wildlife last month of a number of species of the invasive snakehead fish after their discovery in a Maryland pond.

Jurisdiction over the three laws mentioned above is divided among the three co-chair departments of the National Invasive Species Council, USDA, Commerce and Interior, which was established by Executive Order 13112 in 1999. In addition, the Order established a nonfederal Invasive Species Advisory Committee to provide stakeholder and expert input to the Council. The Council is made up of the Secretaries or Administrators of the 10 member departments and agencies and is charged with providing leadership and coordination as well as drafting and revising the national management plan. Rather than take additional time today, please view our website, www.invasivespecies.gov for additional information on about the Council and for to view the National Invasive Species Management Plan.

The Oceans Act emphasizes the importance of “the expansion of human knowledge of the marine environment”. Both the invasive species EO and the Council’s Plan also emphasize the important role of education and outreach is critical not only to inform the public and key stakeholders about the problem of invasive species, but what steps people can take to reduce the likelihood they will accidentally introduce or transfer an invasive species to region or ecosystem. There is great interest and concern for the Great Lakes and our marine environment that could serve to focus public’s attention on critical issues and concerns such as invasive species. The Commission could work with industry, public aquariums and many other groups to “get the word out” and this and other ocean issues. The Council’s management plan calls for the establishment of a national invasive species education and outreach campaign. The ANSTF and Sea Grant have excellent educational programs. By working together and building upon current

efforts, we can provide valuable information to the public and critical stakeholder groups to enhance awareness and prevention efforts.

Given the importance of invasive species to the health and protection of our oceans, we stand ready at the Council to offer any additional information or assistance to the Commission as it completes its work. That completes my statement and I would be happy to answer any questions.

Citations

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