July 8th, 2009

Testimony of John Torgan, Narragansett Baykeeper, Save The Bay, Rhode Island

To: The Honorable United States Senate
Committee on Environment and Public Works

On: Invasive Species Management

Madam Chair and Members of the Committee,

The problem of invasive species poses serious environmental and economic risks to rivers, bays, and coastal systems nationally. According to recent estimates, the U.S. spends in excess of $138 billion annually on control measures[1]. While the problem itself isn't new, changing environmental factors and new species introductions have contributed to dramatic shifts in the types of plants and animals we see in our region and across the country, and have opened the door for non-native species to take hold.

In Narragansett Bay and Southern New England, we have observed fundamental changes in the fish and shellfish populations as water temperatures have warmed over the past 30 years. The extent of low-oxygen "dead zones" of the bottom has spread as warmer water and pollution contribute to massive algae blooms. The populations of many classic cold water New England fish and shellfish species like lobster, cod, winter flounder, and scallops are down as jellyfish, algae, and other warm water-tolerant fish like striped bass and menhaden have recently increased[2].

Invasive plants and animals are thriving under these warmer conditions and causing some negative but mostly unknown impacts on the broader coastal ecosystem. Asian shore crabs, first observed in our area in the mid 1990's, are now the most common species of crab on the shoreline by our main office in Providence. Whether they have driven out the native crabs or how they have affected other species is not yet known.

Certain shellfish diseases like Dermo, MSX, and Juvenile oyster disease, once much more common in southern or mid-Atlantic waters, have nearly wiped out the native oyster populations[3]. Lobster disease has further weakened an already struggling industry in Southern New England[4]. Commercial fisheries and the historic seafood industry of the region are now facing unprecedented challenges from these and other changes.

Understanding biological invasions requires knowledge of present and past populations. We are only just beginning to get a clear picture of what lives in our ecosystem today. To adequately begin to address these issues, states need to conduct comprehensive environmental monitoring and perform detailed analyses of natural history records. Many of the non-native species living in our region have been established for many years. Others have recently been introduced and are spreading rapidly. Still others are potential invaders that have not yet been established in the region. Different states and regions

have made varying levels of progress in these baseline assessments and in efforts to prevent and control non-indigenous species.

Rhode Island has just established a citizen-based environmental monitoring program for aquatic invasive species. The monitoring is coordinated between the state's coastal zone management agency, the Rhode Island Coastal Resources Management Council, the Department of Environmental Management, and the University of Rhode Island, which also provides public education and outreach on these issues. My organization participates in this and will use the results and materials in our environmental education and community outreach efforts.

The Rhode Island program has identified seven potential marine invasive species[56] that are not yet established locally and published materials about these and an additional 13 species for a total of 20 "ID cards" to be distributed to the user communities.

The National Invasive Species Act has enabled all of this progress to date. Since its passage, Congress has appropriated $1.7 million per year for states to develop invasive species management plans. Individual states' shares of that money has been declining as more states receive approval for their management plans by the Federal Aquatic Nuisance Species Task Force. Rhode Island's share dropped from $45 thousand to $35 thousand in this past year. It would help states a great deal if Congress were to appropriate the additional $3 million authorized in the Act.

While my organization is primarily focused on coastal waters and estuaries, invasive species on land affect our environment significantly, especially where land and water interface. Coastal wetlands and marshes, among our most valuable habitats, are severely threatened by invasive weeds. In Rhode Island, for example, the majority of our coastal wetlands have already been lost to filling, and much of what remains is being taken over by *Phragmites*, the giant reed with the feathery tops. This invasive *Phragmites* out-competes native grasses and marsh vegetation and converts vast areas into a monoculture that is a less diverse, lower quality habitat and is subject to brush fires, mosquitoes and other hazards.

In the case of *Phragmites*, Save The Bay and our agency and non-profit restoration partners have proven that *Phragmites*-impacted wetlands can be restored and improved using a variety of techniques. In some salt water coastal systems, this may be achieved by restoring natural tidal flow through dredging, changing drainage elevations, and allowing the sea water to knock out the *Phragmites*. Where tidal restoration is not possible, successful techniques involve cutting the plants and treating the roots with approved herbicides over several growing seasons.

Forests in our region are also at risk from invasive species. The clearing of forests impacts water quality. As acres of forests are removed to control the spread of diseases, we lose the buffering, stormwater control, and habitat value of those forested lands. One important local example of that is the case of the Asian longhorned beetle in Worcester, Massachusetts, part of Narragansett Bay's watershed. This beetle, native to Asia, infects

hardwood trees like maples and will kill adult trees. Management requires removal of all known contaminated trees, which can threaten vast forest resources[7].

We know that prevention is the best and most cost-effective management tool for invasive species. An investment in import screening and other controls at ports, airports, and other likely points of entry would help prevent expensive future control efforts.

Once an invader has established itself, eradication, management, or control may be infeasible or even impossible in some cases. In other cases, there are practical, safe, and effective management measures that benefit people and the environment as well as addressing the problem. Active habitat restoration, such as in the *Phragmites* example, is one of the best ways to give a natural system the tools it needs to stay healthy, balanced, and resilient to a wide range of threats.

Another important role for non-governmental organizations in combating invasive species is in public communication, education, and outreach. By directly involving people in the monitoring and response to invasive species, we build a broader network of support and awareness to assist in management and control efforts.

Finally, we believe regional management is the most effective approach to these issues, as this approach engages multiple states. In New England, the Northeast Aquatic Nuisance Species Panel of the Federal Task Force helps to coordinate regional efforts and maintains frequent communications via an e-mail list-serve. We view this as an effective model.

Thank you for this opportunity to testify. I am happy to answer any questions.

[1] NOAA's National Centers for Coastal and Ocean Science, June, 2008
http://coastalscience.noaa.gov/stressors/invasivespecies/welcome.html

[2] Gibson and Oviatt, "Narragansett Bay Turns into the Chesapeake" Profidence Journal, August 1, 2008, Rhode Island Bay Windows, http://www.projo.com/opinion/contributors/content/CT_bay1_08-01-08_QHAV3V3_v50.4126909.html

[3] "Managing Diseases in Shellfish Aquaculture Farms in Rhode Island", Marta Gomez-Chiarri and Dale Leavitt, RI Sea Grant 41N, volume 4, #2

[4] "A Mysterious Disease Afflicts Lobster Shells" WHOI Oceanus, Sara Pratt, 2007

[5] Publications of The Rhode Island Coastal Resources Management Council on Aquatic Invasive Species, 2009. The seven species include *Corella eumyota* (a tunicate), the Chinese Mitten Crab, *Undaria pinnatifidia* (a species of kelp), *Sargassum muticum* (another seaweed), the Veined Rapa Whelk, *Synidotes laevidorsalis* (an isopod), and *Hemigrapsis takenoi*, a species of crab. The Chinese Mitten Crab is particularly feared as it was found in the Hudson River estuary in 2007 and it may be a short matter of time before it arrives in Rhode Island. The Veined Rapa Whelk could have a significant impact on the state's commercial shellfish and aquaculture industries as it is a voracious shellfish predator.

[4] USDA Animal and Plant Health Inspection Service, 2009
http://www.aphis.usda.gov/plant_health/plant_pest_info/asian_lhb/index.shtml