Public Comments on the U.S. Commission on Ocean Policy's Preliminary Report

Topic Area: Invasive Species

Comments Submitted by:

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- Mark Sytsma and Robyn Draheim, Portland State University

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Boscawen, New Hampshire

June 3, 2004

US Commission on Ocean Policy
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Via email to comments@oceancommission.gov

Dear Commissioners,

The following are comments to the Ocean Commission from the Northeast Aquatic Nuisance Species (NEANS) Panel of the National Aquatic Nuisance Species Task Force in regards to their recent draft report on action plans pertinent to the prevention and management of invasive species. The NEANS Panel was established in 2001 with the mission to "protect the marine and freshwater resources of the Northeast from invasive aquatic nuisance species through commitment and cohesive coordinated action." The NEANS Panel is hosted by and is a task force of the Gulf of Maine Council on the Marine Environment and addresses issues and concerns relative to the freshwater and marine resources of the states of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, and New York, and the provinces of Quebec, New Brunswick, and Nova Scotia. The panel's members represent state, federal, and provincial governments, academia, commercial and recreational fishing interests, recreational boaters, commercial shipping, power and water utilities, environmental organizations, aquaculture, nursery and aquarium trades, tribal concerns, lake associations, and the bait industry, among others.

In regards to the recommendations on invasive species, described in the Ocean Commission's Preliminary Report, the NEANS Panel submits the following comments:

Recommendation 17-1: The US Coast Guard's national ballast water management program should: apply uniform, mandatory national standards;
Comment: The NEANS Panel supports the use of mandatory ballast water standards at the earliest possible time. These standards must be accompanied by a monitoring system to check for compliance with ballast water management standards. The United States should also adopt a phase-in system for ballast water treatment technology installation in ships entering American waters. This

phase-in period would include strict deadlines and timelines for ships to get ballast water management technologies installed and operational (similar to the ten-year phase-in period for double-hulled oil tankers). In the short-term, the United States should work to ensure that ballast water exchange occurs in areas that reduce the risk of invasive species introductions. This will entail extensive co-operation with Canadian and Mexican authorities to establish ecologically sensible exchange zones and a monitoring program to ensure that ships are using these designated areas in the manner intended. Furthermore, the NEANS Panel recommends that ballast water regulations created apply to ships in partial ballast (so-called NOBOBs).

Ships' hulls are another significant vector for invasive species, as are ballast water sediments. As part and parcel of emerging ballast regulation, the United States should ensure that ships are employing all feasible means to reduce the spread of hull fouling organism through the application of approved anti-fouling paints, period hull cleaning, and inspections. The treatment of ballast water sediments before disposal must also be incorporated into ballast water management schemes. Both of these initiatives should include guidelines for the shipbuilding and repair industry, so that this industry becomes involved in reducing the spread of invasive species by proper disposal of ballast water, sediments, and hull-fouling organisms.

Recommendation 17-2: The National Ocean Council should commission a credible, independent, scientific review of existing U.S. ballast water management research and demonstration programs and made recommendations for improvements.
Comment: The NEANS Panel believes that the regulation of shipping to reduce the risk of the introduction of invasive species is a matter of great urgency. Regulations put in place must be as efficient as possible, and they must be accompanied by monitoring to measure compliance and effectiveness at reducing the risk of biological invasions. The tools are currently available in existing agencies to carry out this task, and the creation of another layer of bureaucracy may un-necessarily slow down much-needed progress on this issue. Therefore, the NEANS Panel strongly encourages existing agencies, such as the Coast Guard, to be given the capacity to tackle this task, without involving another agency such as the NOC.

In regards to non-shipping pathways for invasive species, the NEANS Panel highly recommends that additional outreach efforts be targeted towards industries involved in the trade of live marine species, such as aquaculture, bait, and seafood companies, aquarium pet stores, and marine research institutions. Recent studies and reports have shown that the aquarium trade is a significant vector for exotic marine fish along the east coast. Their involvement in local and federal management plans, regulation development, and public outreach is crucial. Education programs should be developed and tailored to each of these specific industries. The fishing and seafood industry is another possible vector for the introduction of non-native organisms. The reduction of the spread of non-native organisms must be incorporated into fisheries management plans.

The NEANS Panel also supports the passage of the National Aquatic Invasive Species Act (NAISA). This bill addresses the introduction of species via ballast water, as well as other pathways, and includes provisions for establishing a screening system for the importation of live aquatic organisms that are currently not in trade. Research provisions in NAISA also ensure the development of more

effective treatment techniques, as well as better overall understanding of invasive species issues.

Recommendation 17-3: The National Ocean Council, working with the Aquatic Nuisance Species Task Force and the National Invasive Species Council, should coordinate public education and outreach efforts on aquatic nuisance species, with the aim of increasing public awareness about the importance of prevention.
The NEANS Panel fully supports coordinated public education on ANS issues, but does not see a role for the NOC. Adequate outreach and education funds should be directed to states and regional panels through the existing ANS Task Force and National Invasive Species Council. The ANS Task Force and the National Invasive Species Council should ensure that education initiatives are coordinated nationally.

Recommendation 17-4: The NISC and the ANS Task Force, working with other appropriate entities, should establish a national plan for early detection of invasive species and a system for prompt notification and rapid response. Congress should provide adequate funding to support the development and implementation of this national plan.
Comment: States and regional panels are best positioned to respond to invasions when they are first identified and need to be at the forefront of planning and funding for rapid response. Federal entities should assist states and regional panels in developing standardized plans and mobilizing federal agency staff and resources in responding to invasions in a timely manner.

These plans must incorporate a process whereby federal and state agencies communicate with stakeholders, community groups, and the general public regarding planned responses to invasive species. Formal consultations with First Nations groups must also be initiated to ensure that their legal rights in this process are respected and upheld.

Recommendation 17-5: The NOC should review and streamline the current proliferation of federal and regional programs for managing marine invasive species...
Comment: The addition of the NOC to oversee the "proliferation" of invasive species programs is not necessary. NISC and the ANS Task Force should be funded adequately to achieve their missions and should continue to coordinate all national, regional, and state invasive species efforts. In instances

when NISC and the ANS Task Force cannot achieve their goals or have a conflict, NOC should be available to help resolve issue.

To date, state and federal agencies have inadequate resources in dealing with the problem of marine invasive species, as evidenced by the continued introduction of non-native species to marine ecosystems.

Recommendation 17-6: The U.S. should take a leading role in the global effort to control the spread of non-native aquatic species by working internationally to develop treaties, agreements, and policies to minimize the introduction and establishment of such species.
Comment: The NEANS panel fully endorses this recommendation and believes that a concerted effort should be made to improve coordination across our borders with Canada and Mexico on invasive species management. A good means

of doing this would be to work with Canada and Mexico to establish a continent-wide ballast water regulatory scheme that would involve standards for treatment, timelines for the installation of ballast water treatment technology, and monitoring. The Commission for Environmental Co-operation has already begun to embark on continent-wide responses to invasive species, and this work should be strengthened and enhanced.

Recommendation 17-7: The NOC should coordinate the development and implementation of an interagency plan for research and monitoring to understand and prevent aquatic species invasions. Congress should increase funding in this area to improve management decisions and avoid future economic losses.
Comment: The NEANS panel endorses this recommendation but believes that it should be implemented by the two existing lead entities with equal involvement from states and regional panels.

The NEANS Panel applauds your efforts to address this important issue and looks forward to working with the Oceans Commission on efforts to prevent and control the spread of invasive species.

Sincerely,

Susan Snow-Cotter
Co-Chair, NEANS Panel

John McPhedran
Co-Chair, NEANS Panel

Memo

To: Governor Kulongoski
CC: Jim Myron, Jim Brown, Bob Bailey, Lindsay Ball, Patty Burke, Bill Bradbury, Michael Carrier, Katy Coba, Michael Grainey, Stephanie Hallock, Ann Hanus, Geoffrey Huntington, Hal Weeks
From: Dr. Mark Sytsma, Robyn Draheim
Center for Lakes and Reservoirs, Portland State University
Date: May 7, 2004

Re: U.S. Commission on Ocean Policy Preliminary Report
Chapter 17. Preventing the Spread of Invasive Species

Thank you for the opportunity to provide you with our comments and recommendations on the preliminary report by the United States Commission on Ocean Policy (the Commission). We appreciate your efforts to engage the state's stakeholders as you formulate your comments to the Commission.

Preventing the spread of invasive species, both into and within the marine and coastal waters of the United States, is an important issue and we are pleased that the Commission has acknowledged its significance by including this topic in their report. We agree with much of the Commission's report regarding invasive species and, in fact, are already pursuing many of the strategies outlined. We believe, however, that there are pressing invasive species issues important to Oregon and the West Coast that the Commission has not yet addressed. In summary, the Report should:

- call for better enforcement of U.S. Coast Guard ballast water management rules within the Department of Homeland Security or transfer of the program to another Department;
- recommend that the U.S. Coast Guard develop regulations to prevent the spread of invasive species between domestic ports;
- recognize the potential importance of hull fouling as a vector for invasive species introduction and should recommend additional research to better define the threat;
- recommend that existing laws prohibiting the transport of nonnative species, e.g., Lacey Act, be enforced through increased funding of responsible enforcement programs;
- acknowledge efforts by states and recommend federal funding of state-developed outreach and education efforts;
- endorse rapid management response to all new invasive species infestations;
- support development of narrowly focused detection and response plans that will be effective when implemented rather than national plans that are likely to be too general;

- acknowledge state and local efforts and focus new efforts on research and management that directly address the invasive species problem, rather than recommend creation of additional "structural" elements that already exist;
- recommend formation of state invasive species councils to facilitate streamlining of programs within and between states;
- examine disparity in funding between regions of the country and recommend more even distribution of federal funds for aquatic invasive species management;
- recognize the value of a sustainability paradigm in considering shipping related invasive species management; and
- recommend that the National Invasive Species Act be passed and that new and existing programs for invasive species management be funded at authorized levels.

In the following sections we summarize the recommendations of the USCOP on invasive species management, provide information on how we are already implementing similar programs on a local and regional scale, and provide a rationale for our suggestions for improving the USCOP report to better address invasive species issues in Oregon.

Making Prevention the First Line of Defense

While prevention should indeed be the first line of defense against invasive species the Commission does not adequately communicate that prevention is most often the only defense available against the introduction and subsequent impacts of aquatic invaders. Unlike terrestrial invasions, few eradication projects have been attempted on marine species and ever fewer have been termed "successful".[1] Most often, by the time that aquatic invasions are documented, it is far too late to attempt anything but adaptation to the invader.

17-1 Improvements to the U.S. Coast Guard's national ballast water management program

The primary need for improvement of the U.S. Coast Guard ballast water management program is funding. Coast Guard efforts on invasive species have suffered since the agency was moved into Homeland Security. The Portland Marine Safety Office of the Coast Guard has stopped enforcing ballast water management regulations, resulting in a substantial decline in compliance with existing federal requirements. Improved Coast Guard rules are scheduled to become effective this summer, however, without adequate enforcement the rules will not be an effective deterrent to new introductions. The Ocean Policy Commission Report should call for better enforcement of U.S. Coast Guard ballast water management rules within the Department of Homeland Security or transfer of the program to another Department.

17-2 Independent scientific review of existing ballast water management research

[1] *Caulerpa taxifolia*, an invasive marine alga whose management is cited in the USCOP report, may be only one of a handful of successful marine eradication projects in U.S. waters out of more than 250 known non-native marine and coastal species found just on the West Coast (Cohen and Carlton 1995).

Program review should be an ongoing effort within any program, including the ballast water management research program. The need for review, however, presupposes that there is activity to review. To date, funding of ballast water management research has been inadequate to mount a research effort adequate to meet the threat of aquatic bioinvasions. Increased funding of ballast water management research is needed.

Until successful ballast water treatment protocols and tools have been developed, tested, and successfully implemented, currently available ballast water management methods – primarily ballast water exchange – must be made more effective. Research conducted at the Center for Lakes and Reservoirs at Portland State University, in collaboration with the Smithsonian Environmental Research Center and the U.S. Coast Guard, is aimed at developing methods for verification that ballast water exchange has occurred.

The Commission's preliminary report does not address the most pressing ballast water issue in Oregon: *coastal transport of ballast water*. Current U.S. Coast Guard regulations only address ballast water in transoceanic shipping; the regulations do not address ballast water transport between domestic ports. Because Columbia River ports are typically a second port of call for ships on the West Coast, Oregon is particularly at risk to movement of invasive species in ballast water taken on board ships in domestic ports, such as those in San Francisco Bay[2]. Not only are these ballast water releases not covered under the federal ballast water guidelines, they may pose an even greater risk to coastal ecosystems than transoceanic ballast because shorter travel times enhance survival rates and the nonnative species being transported have already been successful in a similar habitat. Because of the high risk, West Coast states have begun implementing their own regulations concerning coastal shipping and ballast water exchange. Disagreements over exchange requirements have led to different and sometimes contradictory policies, a problem that will likely not be remedied until coastal shipping and ballast water are addressed on a national scale. The USCOP Report should recommend that the U.S. Coast Guard develop regulations to prevent spread of invasive species between domestic ports.

The Commission's preliminary report correctly recognizes that there are pathways of invasive species introduction other than ballast water that are important, and recommends public education to address them (Recommendation 17-3). The report does not mention, however, one of the potentially most important pathways: *hull fouling*[3]. The surface area of hulls arriving from

[2] See *Report on the Oregon Ballast Water Program in 2002*, which was prepared by the Center for Lakes and Reservoirs at Portland State University for the Oregon legislature. The report is available at http://www.clr.pdx.edu.

[3] Hull fouling (that is those communities of marine organisms that grow or encrust the undersides of vessels) has long been known as a vector for transporting invasive species. San Francisco Bay, Coos Bay, the Columbia River estuary and Puget Sound all are home to numerous species that are believed to have been transported in the fouling communities of ship hulls (See Carlton, J.T. 1979. *History, Biogeography, and Ecology of the Introduced Marine and Estuarine Invertebrates of the Pacific Coast of North America*. PhD Thesis, University of California, Davis. 904pp.). Two recent marine introductions to Hawaii have been directly attributed to hull fouling. A bivalve, *Chama macerophylla,* and a sponge, *Gelliodes fibrosa* were introduced in the fouling community of a floating drydock towed to Hawaii from the Philippines in 1992. Recent surveys of the nonnative marine species in the Hawaiian Islands suggest that 90% (or 212 of 343 species) arrived in hull fouling communities (See Godwin, L.S., 2003. *Hull Fouling as a Pathway For Marine Invasions to Hawaii: Analysis of Vectors and Developing Management*

foreign ports into the United States is estimated at about 438 million square meters each year. That is comparable to an area 1.5 times the size of Vermont. Based only on scale, hull fouling may represent a much larger potential threat for bioinvasions than does ballast water[4]. The Report should recognize specifically the potential importance of hull fouling as a vector for invasive species introduction and should recommend additional research to better define the threat.

Hull fouling concerns are greatest with barges, floating dry docks, mothballed fleets and other floating structures that may reside in marine waters for extended periods of time before being moved to new locations. Significant amounts of barge traffic along the West Coast suggest that hull fouling may be a significant threat to Oregon. Furthermore, the International Maritime Organization's recent ban on (toxic) anti-fouling paint, may result in an increase in hull fouling of maritime vessels and an increase in movement of invasive species on hulls.[5] The Center for Lakes and Reservoirs at Portland State University is initiating a study of the importance of hull fouling as a vector of invasive species introduction to the Columbia River. This work will help define the problem and inform policy development to reduce the threat of this vector.

17-3 Increase public awareness about the importance of prevention

Alerting the general public to behaviors that lead to invasive species introductions is a vitally important component of any comprehensive plan to manage invasive species. Recommendation 17-3 and subsequent steps appear to have been suggested in lieu of recommending regulations be implemented or enforced in industries that import and sell nonnative aquatic species to the general public. The Report should recommend that existing laws prohibiting the transport of nonnative species, e.g., Lacey Act, be enforced through increased funding of responsible enforcement programs.

Instilling in the general public a sense of personal responsibility for of invasive species prevention is a process that needs to be developed cooperatively. Resource agencies should work cooperatively with those industries and stakeholders that traditionally benefit directly from nonnative species sales to ensure that fewer groups feel unfairly targeted and that the message is successfully distributed to the target audiences. Furthermore, an outreach and education effort should be based on a thorough understanding of the types of messages that resonate with the target audience. The message may vary geographically, demographically, and by audience activity.

Strategies, Bishop Museum. Proceedings of the Third International Conference on Marine Bioinvasions, La Jolla, California, March 16-19, 2003, p. 45.).

[4] Ruiz, G. Ships as Vectors: Assessing the Role of Hull Fouling in Biological Invasions. 11th International Congress on Marine Corrosion and Biofouling. University of San Diego, California. 22 July to 26 July 2002

[5] On January 1, 2003 the International Convention on the Control of Harmful Anti-Fouling Systems went into effect prohibiting the use of harmful organo-tins (which act as biocides and over time leach into surrounding water) in anti-fouling paints used on ships. It also established a mechanism to prevent the future use of other harmful substances and pollutants in anti-fouling systems. By January 1, 2008 all organo-tin anti-fouling compounds must be removed from vessels and platforms or coated with an approved sealant to prevent further leaching. See http://www.imo.org for more information.

Oregon is leading the effort on the West Coast in public education on invasive species. The Oregon Invasive Species Council (OISC) is developing a statewide marketing campaign and an "umbrella" message about the importance of prevention of invasive species introduction. The effort will be based upon thorough market research to "fine-tune" the message for particular audiences. The Report should acknowledge efforts by states and recommend federal funding of state-developed outreach and education efforts.

Accelerating Detection and Response

We agree with the Commission that prevention is the best tool against invasive species. Faced with the reality of accelerating invasion rates, however, detection, and rapid response plans are crucial. The Report calls for a national rapid response plan that is triggered by a threshold for action. One well-established rule of invasive species management is that small infestations that are discovered early can be eradicated, while the probability of effective control decreases and cost for control increases as the invader's population size increases. The Report should endorse rapid management response to all new invasive species infestations; the trigger should be for inaction, i.e., rapid response should occur unless the population size is too large or widespread to result in a likely probability of control.

17-4 Establish and fund a national plan for detection, notification and rapid response

This is a critically important recommendation. The Commission correctly noted that limited resources and jurisdictional squabbles hinder the development and implementation of these plans. The Report called for development of a national plan for rapid response. T o be effective, however, response plans should be species/taxa or location-specific. A national plan would likely be too generic to be useful.

In Oregon, the Oregon Department of Agriculture and the Center for Lakes and Reservoirs at Portland State University have collaborated on a response plan for spartina, an invasive plant in West Coast estuaries.[6] Large infestations of spartina exist in Washington and California, while Oregon has only a small infestation that is under eradication. Thus, a detection and rapid response plan that is narrowly focused can be effective; similar efficacy has yet to be demonstrated with more general response plans. While admittedly more resource intensive, the Report should support development of narrowly focused detection and response plans that will be effective when implemented rather than national plans that are likely to be too general.

Basic information on species distribution is fundamental to invasive species management. This information is lacking for many, if not most, coastal systems in the U.S. The need for comprehensive surveys and monitoring outlined in Recommendation 17-4 addresses one of the greatest deficiencies in marine invasive species management. A significant increase in funding will be required to address the problem.

[6] See Pfauth, M, M. Sytsma and D. Issacson. 2003. *Oregon Spartina Response Plan.* Prepared for Oregon Department of Agriculture. 61pp.

In 2001, the Center for Lakes and Reservoirs at Portland State University initiated the Lower Columbia River Aquatic Nonindigenous Species Survey (LCRANS). LCRANS was undertaken to provide comprehensive information about the aquatic invasive species present in the lower Columbia River. The results of this investigation will serve as a baseline for evaluating the rate of species introductions to the river, permit measurement of the efficacy of ballast water regulations, and help understand bioinvasions at larger geographic scales. In addition, the data will be useful for determining where the lower Columbia River is vulnerable to invasion and for evaluating effects of introductions on important ecological processes. To-date our research has established that more than 70 nonnative plants and animals are present in the lower Columbia River and suggests that the rate of new species invasion has increase during the past 30 years.[7]

Improving the Control of Invasive Species

Agency cooperation and coordinated regional actions are crucial when dealing with the complicated issue of marine invasions, and establishing clear jurisdiction, mandates and funding for aquatic invasive species within those agencies is also a necessary step to successful management. Oregon is involved in several coordinating organizations. The Center for Lakes and Reservoirs at Portland State University hosted the inaugural meeting of the Western Regional Panel on Aquatic Nuisance Species to coordinate activities in the West and co-founded the Pacific Ballast Water Group, an association of industry, regulatory, and academics that focuses on regional coherence in ballast water management regulation. Portland State University also co-founded the Columbia River Aquatic Nuisance Species Initiative, which brings together ports, shipping, academic, and political leaders to address invasive species problems associated with shipping on the Columbia River. The Commission's preliminary report does not recognize the grassroots, locally initiated efforts that are ongoing on the West Coast. The Report should acknowledge local efforts and focus new efforts on research and management that directly address the invasive species problem, rather than recommend creation of additional "structural" elements that already exist. The problem is not lack of opportunity to coordinate activities – it is the lack of activities that need to be coordinated.

17-5 Streamline federal and regional programs for managing marine invaders

Increased support for regional and state programs responsible for preventing introductions is imperative for successful management of marine invasions. Even with funding for the Oregon Aquatic Invasive Species Management Plan, which was created by the Center for Lakes and Reservoirs at Portland State University and approved by Governor Kitzhaber, money and personnel are spread too thin. In addition, conflicting and unresolved jurisdiction issues hinder the implementation and enforcement of existing management. The Oregon Invasive Species Council provides a venue for working toward clarification of conflicts in jurisdiction and management goals within Oregon. The Report should recommend formation of state invasive species councils to facilitate streamlining of programs within and between states.

[7] See *Lower Columbia River Aquatic Nonindigenous Species Survey: Interim Report* prepared by R. Draheim, M. Sytsma, J. Cordell, and J. Chapman. 2003. Available at http://clr.pdx.edu

Under current federal legislation, funding for ballast water and aquatic invasive species research and management is heavily weighted on the Great Lakes and Chesapeake Bay. The Report should examine disparity in funding between regions of the country and recommend more even distribution of federal funds for aquatic invasive species management.

International Partnerships

The introduction and spread of marine invasive species is indeed a global issue and one that cannot be fully addressed without cooperation and partnerships throughout the global community. As noted above, lack of a strong federal program on ballast water has resulted in a proliferation of state programs that complicate international partnerships.

17-6 Take a leading role in the global effort to control the spread of non-native species

The USCOP is correct in acknowledging the need for the U.S. to become a world partner in preventing the spread of invasive species. The Center for Lakes and Reservoirs At Portland State University participates in the Pacific Northwest Economic Region Invasive Species Committee, which includes representatives from Canadian provinces as well as U.S. states. The Oregon emphasis on sustainability could be a model for the U.S. and the world in this regard. Shipping is critical to the Oregon economy, but shipping is also a major mode of dispersal of damaging aquatic invasive species. In the Columbia River, introduced species threaten our state and region's natural resources and investment in salmon recovery. The Report should recognize the value of a sustainability paradigm in considering shipping related invasive species management.

Research Needs

17-7 Develop and implement an interagency plan for research and monitoring

Clearly, a coordinated response among state, federal, and tribal agencies is required for effective invasive species management. As noted throughout this report, for the most part it is not the lack of capability that is lacking, it is lack of funding. Funds for existing programs are often not funded at authorized levels. Furthermore, the National Invasive Species Act, which is a vehicle for accomplishing many of the planning, management, and coordination functions called for in the Report, has stalled in Congress. The Report should recommend that the National Invasive Species Act be passed and that new and existing programs for invasive species management be funded at authorized levels.

Thank you for taking the time to review our recommendations. The Commission's report will provide an important basis for future ocean management. Therefore, the Commission's final recommendations should be visionary and build upon current programs. We hope this memorandum highlights successes in invasive species management in Oregon, needed improvements to federal invasive species management, and invasive species issues not adequately addressed by the Commission's preliminary report.