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Docket Management Facility  
USCG-2001-10486 - 28  
U.S. Department of Transportation  
Room PL-401  
400 Seventh Street SW  
Washington, D.C. 20590-0001

June 3, 2002

Dear Sir or Madam,

The Great Lakes Panel on Aquatic Nuisance Species offers these comments in reply to the Federal Register Notice (Vol. 67, No. 42) "Standards for Living Organisms in Ships' Ballast Water Discharged in U.S. Waters" (USCG-2001-10486).

Chartered under U.S. federal law, the Great Lakes Panel on Aquatic Nuisance Species is responsible for advancing aquatic nuisance species (ANS) prevention and control efforts in the Great Lakes-St. Lawrence system. The Panel is a binational body comprised of representatives from government (state, provincial, federal, tribal), business and industry, universities, citizen environmental groups and the larger user community. Members of the Panel appreciate the opportunity to comment on the U.S. Coast Guard's proposed standards for living organisms in ship's ballast water discharged in U.S. waters. In the Great Lakes Panel's March 2001 *Policy Statement on Ballast Water Management*, under the section addressing establishment of criteria for ballast water, the Panel found that the lack of criteria to assess the quality of ballast water discharge hinders the development of scientifically-based standards and the application of a ballast water management program.

Part of the challenge in developing a standard for ballast water discharge is to meet the qualitative criterion "as effective as ballast water exchange". The current U.S. Coast Guard proposal takes a giant step forward in formulating goals and standards independent of that qualitative statement. Much remains unknown, however, about the science of aquatic nuisance species invasions. The comments below reflect our concern about making recommendations based on imperfect or incomplete data and best professional judgment however, action is required now. The risks of inaction far outweigh the risks of making a decision based on incomplete information.

An ambitious but achievable goal must be set and attained within an ambitious timeframe. The Panel members felt strongly that the goal should be achieved as soon as possible, certainly within ten years. This will likely be achieved through a series of interim ballast water discharge standards. The first of these standards needs to be implemented now, based on the best available research and technology. As the knowledge base of aquatic nuisance species invasion research and technological capabilities expand, the interim standard should be revised and strengthened. These standards should apply to vessels in all ballast conditions. Best management practices should be used until such time that ballast water treatment technology can be developed and standards applied.

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**Goal (Q1):**

The Great Lakes Panel fully supports U.S. Coast Guard adoption of Goal 1 (G1), with the changes noted below to include vertebrates:

*No discharge of viable vertebrates, invertebrates and photosynthetic organisms (including holoplanktonic, meroplanktonic, and demersal zooplankton, phytoplankton and propagules of macroalgae and aquatic angiosperms), inclusive of all life-stages. For bacteria, Enterococci and Escherichia coli will not exceed 35 per 100 ml and 126 per 100 ml of treated water, respectively.*

**Standards (Q2):**

The Panel recognizes that developing a standard for ballast water discharge is a daunting task. Part of the difficulty of this process is that there is still much to be learned about the risk of invasions and the effectiveness of ballast water exchange.

The Great Lakes Panel has some concerns about the approaches suggested in the proposed standards. As proposed, the standards fall into two main categories: one based on limiting organism size the other based on percent removal. The size-limited standards raise three issues. First, it is unclear whether the proposed standards that are size limited (for example, 100 microns) have a biological basis, or whether they are based on current technological capabilities. The physical size limitation should be biologically based. Second, these standards are troubling in that the size standard may direct ballast water treatment technology towards filtration and may too narrowly focus ballast water treatment research and development. The adopted standard should not favor one treatment technology over another.

The use of a percent reduction standard (for example, 95% reduction in organisms) also has shortfalls. In areas with extremely high concentrations of organisms, a 95 percent reduction could leave enough organisms to create an unacceptably high risk of aquatic nuisance species introduction via discharged ballast water. The basis for this concern lies in our incomplete understanding of invasion risk given an initial inoculant concentration. Finally, species-based standards beg the question of which species will be selected and whether a single species array is appropriate for both fresh and saltwater applications.

The Great Lakes Panel supports the use of the phrase “remove, kill or inactivate”, since it is likely that multiple methods will be required to remove, kill or inactivate virtually all organisms in the ballast water discharge. This language allows the flexibility to use multiple treatment methods to meet a specified standard. A standard that specifies a maximum allowable concentration of organisms per liter may be most easily quantified and applied.

Until such time that a biological basis for a size-limiting standard can be determined or research produces the data necessary to determine what percentage of organisms must be removed to eliminate the risk of new introductions, there remains a need to implement an interim standard to stimulate development of ballast water treatment technologies. As a first step, this interim standard should require removal, kill or inactivation of at least 95 percent of vertebrates, invertebrates, and plankton using the best available treatment technologies.

### **Additional Considerations:**

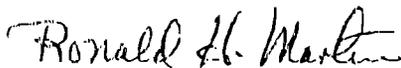
*Evaluation/Assessment:* Whether research and technology can keep pace with the desire to achieve the specified goal within ten years is uncertain, however advances in these areas should be utilized as soon as they are available to improve the stringency of the interim standards. The effectiveness of the standard should be assessed to determine the impact on reducing or eliminating the risk posed by invasive species in ballast water discharge.

*Grandfathering:* The cost of implementing ballast water treatment technology will be high but is more than offset by the economic and ecological costs of additional aquatic nuisance species invasions. Ship owners will bear a disproportionate share of the costs of implementation without directly receiving any of the benefits. As such, they should be provided incentives to help offset the expense of installing the technology needed to meet tightening ballast water treatment standards. A grandfathering period of five years after a new interim standard is applied would allow ship owners to recoup some of the expense of the treatment system investment. At the end of the grandfather period, the vessel owners would have to install treatment systems adequate to meet the current standard. Given the time required to develop and enact new ballast water treatment standards, it is likely a given treatment technology would be in use for eight to ten years before replacement would be required under a grandfathering clause.

*Research/funding:* Achievement of the specified goal will require a significant federal investment in ballast water treatment research and technology; improving this knowledge base will allow for improved decision making in the future. Research is needed to refine existing models to characterize the risk of invasions of various taxa, further our understanding of aquatic invasion science, define a biological basis for size-based standards, investigate and develop promising ballast water treatment technologies and develop means to rapidly implement these technologies.

Thank you for the opportunity to comment on the proposed ballast water discharge standards.

Sincerely,



Ronald H. Martin  
Chair,  
Great Lakes Panel on Aquatic Nuisance Species