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COMMENTS OF THE NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PROPOSED RULEMAKING CONCERNING REGULATION OF POLLUTANT
DISCHARGES INCIDENTAL TO THE OPERATION OF VESSELS,
INCLUDING BALLAST WATER.

EPA Docket ID No. EPA-HQ-OW-2007- 0483

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I. Summary

The New York State Department of Environmental Conservation respectfully submits these comments supporting the United States Environmental Protection Agency's (EPA) proposal to promulgate regulations covering pollutant discharges incidental to the operation of vessels, including ballast water.[1] The EPA appropriately proposes to regulate these discharges under the Clean Water Act (CWA) and through the National Pollutant Discharge Elimination System (NPDES). The proposal calls for implementation of NPDES permitting for vessel discharges which would require certain vessels discharging or with the potential to discharge pollutants to come under the NPDES program. EPA has solicited recommendations concerning how to administer the program.

EPA should develop a comprehensive rule regulating the discharge of pollutants from vessels, most especially ballast water, as soon as possible and as ordered by the United States District Court for the Northern District of California.[2] Such a rule is long overdue and of critical importance for the protection of native habitat throughout the Nation. EPA's previous inaction

[1] 71 Fed. Reg. 34241-49 (June 21, 2007).

[2] See Northwest Environmental Advocates ("NWEA") et. al., and the States of New York, Illinois, Michigan, Minnesota, Wisconsin, and the Commonwealth of Pennsylvania, v. United States Environmental Protection Agency, et. al. ("Northwest Environmental"), 2006 U.S. Dist. LEXIS 69476 (N.D. Cal. Sept. 18, 2006).

regarding ballast water discharges of biological materials has led to the introduction of numerous aquatic nuisance species (ANS) resulting in extensive and well-documented injury to the biological integrity of the waters of the United States – just the type of injury the Clean Water Act was meant to address.

The Nonindigenous Aquatic Nuisance Prevention and Control Act (NANPCA), as amended by the National Invasive Species Act (NISA),[3] has not proven effective in preventing ANS introductions. This is demonstrated by the increasing rate of new ANS since the Coast Guard began promulgating regulations under these statutes.[4] NISA's ballast water exchange provisions have not been uniformly enforced and by their nature offer incomplete protections. In our opinion, the "No Ballast on Board" (NOBOB) exception creates a very problematic loophole that allows vessels which declare "no ballast" to evade controls – even though they may be carrying thousands of gallons of ANS-containing residual ballast that will be discharged upon ballasting and deballasting in the waters of the United States.

The text of EPA's comment request, as well as their arguments in the Northwest Environmental case, suggests that implementation of a vessel discharge permit program is an insurmountable task.[5] This view is greatly overstated, particularly with respect to the discharges and vessels that are the central cause of the ANS problem. We recommend that EPA begin with NPDES permitting that focuses on the several thousand most harmful large transoceanic vessels. This approach will not be unduly burdensome, nor will implementation of necessary controls for other vessels be problematic if practical schemes are employed within the overall structure of the Clean Water Act. The alternative is large-scale native eco-system destruction.

We submit that EPA should develop a separate subpart in the federal regulations for vessel discharges. This would be similar to existing regulatory provisions for various specific categories of point sources.[6] EPA should couple such rulemaking with development, first, of a

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[3]16 U.S.C. § 4701, et seq.

[4]A. Ricciardi, Patterns of invasion in the Laurentian Great Lakes in relation to changes in vector activity, 12 Diversity and Distributions 425-433 (2006).

[5]See 71 Fed. Reg. at 34245; EPA, *Rulemaking Petition Related to Ballast Water*, available at http://epa.gov/owow/invasive_species/ballast_water.html (last updated Monday July 2, 2007).

[6]See EPA, Aquatic Nuisance Species in Ballast Water Discharges: Issues and Options at 34-35 (Draft Report, September 10, 2001). This EPA report outlines how a separate subpart could be created for regulating vessel discharges and reviews analogous existing "regulatory provisions for specific categories of point sources such as concentrated animal feeding operations [40 CFR 122.23], concentrated aquatic animal production facilities [40 CFR 122.24], aquaculture projects [40 CFR 122.25], municipal and industrial storm water discharges [40 CFR 122.26], and

general permit for transoceanic vessels, followed by other general permit(s) as appropriate for different categories of vessels, tailored to the pollution problems they present. These initial permits may be followed by refinement of the permitting structure for transoceanic vessels, possibly including the issuance of individual permits or the creation of subcategories of general permits for particular types of vessels.

Consistent with the Clean Water Act, the transoceanic vessel general permits must require the best controls currently available, which may *include* best management practices (BMPs) (e.g., ballast water exchange, which the Coast Guard currently "recommends" as a BMP but does not require for transoceanic vessels in the Great Lakes). General permit(s) for non-transoceanic vessels can require alternative controls commensurate with diminished, albeit significant, environmental threats posed by these vessels (such as the spread of ANS to non-infested waters). EPA should structure its rulemaking in a way that encourages uniformity of controls across states. EPA should give states the option either to administer the vessel discharge program using EPA-developed general permits as a model, or to have EPA do it. This will promote uniformity of controls and give states and permittees flexibility in meeting federal requirements. As soon as reasonably possible, EPA should develop effluent limitation guidelines for harmful vessel pollutant discharges, to further promote uniformity of pollution controls as technology develops. EPA may also, based on a rational record, seek to exempt truly de minimis vessel discharges posing no environmental harm.

For discharges that consist of ballast water, EPA can rely in part on its involvement in preparing a Programmatic Environmental Impact Statement (PEIS) for development of a ballast water discharge standard. This PEIS, underway since 2003, is being prepared jointly by the U.S. Coast Guard, EPA, Fish and Wildlife Service, and National Marine Fisheries Service. As described in the *Federal Register* notice, the PEIS is "for the proposed regulatory action to establish a ballast water discharge standard. The intent of this standard is to establish the required level of environmental protection in preventing introductions and the spread of non-indigenous species from ballast water discharges."[7]

New York State has a strong interest in the promulgation and implementation of such a rule and associated general permits as quickly as possible. Coastal and Great Lakes states have experienced the most severe ecosystem harm from ANS. However, inland states are now also seeing often severe ANS impacts due to inter-basin transfers and migration through interstate waterways.

II. Background: Rulemaking is Necessary to Replace EPA's Illegal Regulatory Exemption.

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silvicultural activities [40 CFR 122.27]."

[7]68 FR 55559 (September 26, 2003).

In 1972 the Clean Water Act (CWA) was passed into federal law in its modern form. The Act prohibits the discharge of any pollutant from any point source into the navigable waters of the United States without a permit.[8] Congress established the NPDES permit program as the cornerstone of the CWA's comprehensive system for control and elimination of water pollution.[9] The Act defines "discharge of any pollutant" as "any addition of any pollutant to navigable waters from any point source."[10] It specifically includes a "vessel or other floating craft" in the definition of a "point source."[11]

EPA has taken the position that discharges incidental to the operation of vessels were excluded from coverage under the Act. EPA issued 40 C.F.R. 122.3(a) which provides in pertinent part:

> The following discharges do not require NPDES permits:
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> (a) Any discharge of sewage from vessels, effluent from properly functioning marine engines, laundry, shower, and galley sink wastes, or any other discharge incidental to the normal operation of a vessel....

While the CWA does specifically exclude "sewage from vessels or a discharge incidental to the normal operation of a vessel of the armed forces" from the definition of a "pollutant,"[12] the Act provides no other exemptions for vessels.

In January 1999, a number of environmental interest organizations petitioned EPA to repeal the exemption contained in 40 C.F.R. 122.3(a), maintaining that EPA did not have authority to categorically exempt point source discharges from CWA controls. Specifically, the petitioners stated that the CWA did not give the EPA authority to exclude "any other discharge incidental to the operation of a vessel" from the NPDES permitting program. EPA denied the petition.[13]

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[8] 33 U.S.C. §§ 1311(a), 1342.

[9] 33 U.S.C. § 1342; see Milwaukee v. Illinois, 451 U.S. 304, 310-11, 318 (1981); Weinberger v. Romero-Barcelo, 456 U.S. 305, 319 (1982).

[10] 33 U.S.C. § 1362(12).

[11] 33 U.S.C. § 1362(14).

[12] 33 U.S.C. § 1362(6).

[13] 68 Fed. Reg. 53165 (September 9, 2003).

In 2003, the petitioning parties filed suit in the United States District Court for the Northern District of California. These plaintiffs were joined by the States of New York, Illinois, Michigan, Minnesota, Wisconsin and the Commonwealth of Pennsylvania as plaintiff-intervenors, while the Shipping Industry Ballast Water Coalition joined EPA as a defendant-intervenor. In that case, the court ruled that the CWA does not give EPA the authority to exclude "discharge[s] incidental to the operation of a vessel" from the requirements of the NPDES permitting program.[14] The court ordered the regulatory exemption vacated as of September 30, 2008.[15] EPA must remove its unlawful exemption from CWA controls by that date.

EPA has appealed the District Court's ruling to the United States Court of Appeals for the Ninth Circuit, but in the meantime has issued the subject request for comments and information on the development of a proposed rule for the regulation of discharges incidental to the operation of a vessel.[16]

We agree with the ruling of the District Court and are pleased with the EPA's initiative in gathering information for a rulemaking. While EPA's appeal of the ruling is within its rights, we believe the illegality of categorical exemptions, such as the vessel exemption discussed above, is settled law, and would prefer that EPA withdraw its appeal and concentrate its energy on developing controls for pollutant discharges from vessel ballast water discharges containing ANS.

III. This Rulemaking is Necessary to Stop the Flood of Aquatic Nuisance Species into the Waters of the United States.

A. Aquatic Nuisance Species Enter the Waters of the U.S. Through Vessel Ballast Water Discharges.

Aquatic Nuisance Species (ANS) are biological pollutants that are non-native to the U.S. waters into which they are introduced, and which cause harm to their new surroundings and to other organisms in their vicinity. ANS can be spread to non-infested waters by ballast water discharges. ANS already have degraded , and continue to threaten, aquatic ecosystems, damaging their structure and function. ANS have competed with, preyed upon and substantially altered the environment of our native species of plants, fish and wildlife.[17] These invasive species have a devastating effect, not only on the environment, but also on the economy. They

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[14] Northwest Environmental, supra note 2.

[15] Id.

[16] 72 Fed. Reg. 34241-49 (June 21, 2007).

[17] See Final Report of the New York State Invasive Species Task Force, (Fall 2005)(available at http://www.dec.ny.gov/docs/istfreport1105(1).pdf).

have harmed recreational and commercial fishing, as well as tainted water supplies and damaged energy production.[18] Ballast water discharges from oceangoing vessels are the main source of ongoing, and increasing, introductions of ANS to U.S. waters.[19]

Perhaps the most famous ANS is the widely known zebra mussel, believed to have first come to the United States through ballast water. Zebra mussels attach themselves to any available underwater hard surface and form layers that can approach 1 million mussels per square meter. They reproduce quickly and filter nutrients needed by other species out of the water. Zebra mussels form layers directly on top of native species of mussels and snails, effectively suffocating them. They clog intake pipes for drinking water supply and energy production, requiring costly remedial work. They also are implicated in discoloration and bad taste in drinking water.[20]

Two other invasive species, the ruffe and the round goby, are small Eurasian fish responsible for the destruction of prime native fish habitat in the U.S. through competition and predation. The round goby also is implicated in the deaths of large numbers of birds, including loons and other waterfowl. These bird deaths apparently result from gobies eating invasive mussels that have taken up botulism from sediments, and the gobies subsequently are eaten by birds which die from the botulism toxin.[21] Other invasive species also have gained notoriety for their destruction of native habitat in most large water bodies in the United States. These biological invaders are now emerging in inland lakes and streams as well, where the same pattern of destroying native species is occurring.[22] Zebra mussels and quagga mussels (another invasive mussel) have now reached as far inland as the lakes of Oklahoma and Nevada. New ANS are

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[18]See 16 U.S.C. § 4701(a).

[19]A.Ricciardi and H. MacIsaac, Recent Mass Invasion of the North American Great Lakes by Ponto-Caspian Species, 15 Trends in Ecology and Evolution 62 (2000); EPA, op. cit., Aquatic Nuisance Species in Ballast Water Discharges: Issues and Options at 4.

[20]U.S. Dept. Of the Interior, National Biological Survey, A. Benson, et al., "Invasion of the Zebra Mussel into the United States," Our Living Resources: A Report to the Nation on the Distribution, Abundance, and Health of U.S. Plants, Animals and Ecosystems, 445-46 (1995).

[21]Ricciardi, supra note 4 at 431; see also Robbins, Outbreaks of Rare Botulism Strain Stymie Scientists, New York Times, Oct. 22, 2002, at D3.

[22]Wisconsin Department of Natural Resources, Wisconsin's Comprehensive Management Plan To Prevent Further Introductions and Control Existing Populations of Aquatic Invasive Species, 14 (September 2003).

discovered in the Great Lakes at the rate of one every 28 weeks,[23] and once every 14 weeks in the San Francisco Bay.[24]

Viral hemorrhagic septicemia (VHS) is a viral fish disease that appeared in the Great Lakes in 2003. The disease causes fish to bleed to death. It has been found in three of the Great Lakes (Ontario, Erie, and Huron) where major fish kills have occurred. Concerned about the further spread of this disease wreaking havoc on recreational and commercial fisheries, the U.S. Department of Agriculture's Animal and Plant Health Inspection Service has issued a VHS alert.[25] How the virus arrived in the Great Lakes is not entirely known, but "Ballast water discharge is considered as a likely vector given its distribution in the lakes and the likely origin of the virus, the Maritime Provinces of Canada."[26] There is an ongoing concern that the virus may be carried into Lakes Michigan and Superior by the ballast water of other ships that operate entirely within the Great Lakes.

The ecological impact of these ANS translates directly to very significant economic costs and hardship. Congress puts the economic loss attributable to the zebra mussel alone in the billions of dollars.[27] The commercial fishing industry has been destroyed in many areas due solely to one or two invasive species. Cleaning zebra mussels from intake pipes costs power producers millions of dollars each year, according to the United States Government

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[23]Ricciardi, supra note 4 at 425; see also Egan, Zebra mussels, other intruders ravage lakes (Milwaukee Journal Sentinel, October 31, 2005).

[24]A. Cohen and J. Carlton, Accelerating invasion rate in a highly invaded estuary, 279 Science 555-558 (1998).

[25]Animal and Plant Health Inspection Service, U.S. Department of Agriculture, Viral Hemorrhagic Septicemia in the Great Lakes Region, Industry Alert, August 2006, www.aphis.usda.gov/publications/animal_health/content/printable_version/ia_VHS_Great_Lakes.pdf, last visited July 27, 2007.

[26]G. Whelan, Viral Hemorrhagic Septicemia (VHS) Briefing Paper, Michigan Department of Natural Resources, February 26, 2007, www.michigan.gov/documents/dnr/Viral-Hemorrhagic-Septicemia-Fact-Sheet-11-9-2006_178081_7.pdf, last visited July 27, 2007.

[27]16 U.S.C. § 4701(a).

Accountability Office.[28] Experts put the total cost of losses, damages, and control of all invasive species (including ANS) in the United States at $137 billion *annually*.[29]

Transoceanic vessel ballast water discharges have long been recognized, even by the EPA, as the primary vector for introduction of ANS.[30] Vessels take on and discharge ballast water in order to balance the weight of the vessel. With large cargo carriers, it is not uncommon for the ship to take on or discharge some ballast water at each port of call as its cargo load changes. These ships average as much as 14 million gallons of ballast water at any one time, but some have capacity for twice that amount. The amount of ballast water discharged in United States waters exceeds 21 billion gallons per year.[31] In a report cited by the EPA, scientists discovered 49 different types of foreign organisms, in 371 unique species, in the ballast water of ships entering Oregon's port of Coos Bay. The organisms were present in many different ships in alarming frequencies.[32] It is estimated that in any one day, 10,000 species are sucked into ballast tanks of ships around the world.[33]

The situation was summarized by the United States District Court for the Northern District of California in the Northwest Environmental case. The Court stated: "There is no dispute that invasive species have been, and continue to be, introduced into the marine ecosystems of this country through ballast water discharges. There is also no dispute over the consequences that their introduction can have on the environment. Once introduced, invasive species can spread rapidly, threaten native species with extinction, and become almost impossible to eradicate."[34]

B. Clean Water Act Controls Must Be Brought to Bear on Harmful Vessel ANS Discharges.

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[28]Invasive Species: Obstacles Hinder Federal Rapid Response to Growing Threat, GAO-01-724 (July 2001).

[29]D. Pimentel, et al., Environmental and Economic Costs of Non-Indigenous Species in the United States, 50 Bioscience 53, 61 (2000).

[30]E. Reeves, Exotic Politics: An Analysis of the Law and Politics of Exotic Invasions of the Great Lakes, 2 Toledo J. of Great Lakes Law, Science & Policy 125 (Spring 2000); Ricciardi and MacIsaac, supra note 19; EPA, supra note 6 at 4.

[31] EPA, supra note 6 at 4.

[32]Id.

[33]Id.

[34]Northwest Environmental Advocates, et al. v. EPA, et al., supra note 2 at 34.

EPA has maintained that the current, limited methods of addressing vessel-discharged ANS renders CWA controls unnecessary. The United States Coast Guard currently regulates ballast water in the U.S. under the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (NANPCA), reauthorized and amended by the National Invasive Species Act of 1996 (NISA).[35] Based on overwhelming evidence, it is clear that NANPCA and NISA have proven to be largely ineffective. Moreover, Congress never intended these laws to replace CWA controls, nor do they absolve EPA from its responsibility to protect the waters of the U.S. under the CWA.

NANPCA states "[t]he regulations issued under this subsection shall not affect or supersede any requirements or prohibitions pertaining to the discharge of ballast water into waters of the United States under the [CWA]."[36] While that subsection pertained to the Great Lakes, Congress also enacted the same savings clause with regard to voluntary national guidelines (since made mandatory regulations) issued under NANPCA/NISA.[37]

The ballast water regulations adopted by the Coast Guard pursuant to NANPCA/NISA[38] deal mainly with ballast water management practices. They do not regulate ballast water discharge directly, and most importantly, have not been sufficient to slow the pace of ANS introductions.

The Coast Guard's regulations have proven inadequate at stopping or slowing the introduction of ANS into the United States. New ANS continue to be discovered in the U.S. at the same or higher rate as prior to the regulations.[39] The regulations require a vessel entering the United States to either exchange its ballast water in the open ocean ("flushing" or "exchange"), retain all of its ballast water throughout its time in U.S. waters, or employ environmentally protective measures at least as effective as ballast water exchange.[40]

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[35]16 U.S.C. § 4701 et seq.

[36]16 U.S.C. § 4711(b)(2)(C).

[37]See 16 U.S.C. § 4711(c)(2)(J). On July 28, 2004, the previously voluntary national guidelines became mandatory; see also 69 Fed. Reg. 44952-61.

[38]See 33 C.F.R. Part 151, Subparts C and D.

[39]See Ricciardi, supra note 4; see also International Joint Commission, 11th Biennial Report, The Challenge to Restore and Protect the Largest Body of Fresh Water in the World, 30-31 (2002).

[40]See 33 C.F.R § 151.1510(a).

Ocean flushing or exchange is only partially effective in eliminating ANS in ballast water. Studies conducted on ships have shown that exchanging 95% of a vessel's ballast water results in eradicating only 20-90% of the organisms present.[41] Enforcement is fragmented among several agencies. In the Great Lakes, for example, enforcement is split among at least two U.S. federal agencies, the U.S. Coast Guard and Great Lakes Seaway Development Corporation,[42] and two Canadian entities, Transport Canada and the Great Lakes Seaway Management Corporation.[43] Enforcement consists primarily of checking the salinity of ballast water in selected tanks of oceangoing vessels entering the Great Lakes, which is usually done at Montreal by both U.S. and Canadian inspectors. Ballast water samples that provide salinity readings of at least 30 parts per thousand salt are accepted as evidence that ocean exchange or flushing has been conducted on the tank from which the sample was taken, and by inference, that other ballast tanks on the same ship from which no samples were taken have also been exchanged or flushed. Problems or potential problems with this procedure include the difficulty of obtaining samples from certain tanks,[44] the limited number of tanks tested per vessel, and the typical inspection practice of collecting and checking ballast samples only during a given vessel's first trip into the Great Lakes each year. (Many oceangoing vessels make several trips into the Lakes annually, but the usual practice has been to check compliance only on the vessel's first trip each year.[45]) The overall rate of compliance with the 30 parts per thousand salinity standard is difficult to decipher.

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[41]EPA, supra note 6 at 10. Many vessels do not have the ability to completely empty their ballast tanks due either to the necessity of residual for balance or flaw of design. Many also contain a layer of sediment too heavy to flush, where ANS can hide. Residual amounts of fresh water remaining in the tanks can dilute the salinity of introduced ocean water, thereby allowing freshwater organisms to survive. Some ANS also have a high salinity tolerance at the egg stage of life, allowing the eggs to live until they are deposited into fresh water, whereas they would not have survived the salt water exchange at the adult stage. Id.

[42]See, e.g., 33 C.F.R.§ 401.30(e), and 67 Fed. Reg. 8885-88 (February 27, 2002).

[43]See U.S. Coast Guard Ninth District, 2006 Summary of Great Lakes Ballast Water Management Exams, May 8, 2007, for an overview of the shared inspection responsibility.

[44]Id. at 4, which states that: "Efforts to sample tanks with no pumpable ballast on board (NOBOB) yields results approximately 50% of the time. The reason is simple: the tank is essentially empty, and grabbing a sample of water from the deck is difficult. Unpumpable ballast may pool anywhere in the tank. The ship's trim, list, steel construction, location of suction piping and sediment accumulation will determine the location of residual water. The only easy access to the tank bottom is through a 2 inch (50 mm) sounding tube [that is accessible from the ship's deck]."

[45]Id. at 4, which states that ballast water examination "is not repeated on 2nd or subsequent trips for the calendar year unless the vessel had deficiencies that required follow-up."

In addition to the inherent limitations of ballast water exchange and its current fragmented enforcement, the devastating regulatory gap maintained by the Coast Guard is the lack of controls for vessels entering the United States declaring "no ballast on board," or NOBOB. For many years, the Coast Guard has exempted these ships from any substantive ballast water management requirements. While the Coast Guard recently has issued voluntary guidelines that encourage these ships to flush their ballast tanks,[46] it refuses to make flushing a mandatory requirement.

NOBOB ships typically enter the United States full of cargo and with their ballast tanks supposedly "empty." Vessels crossing the Atlantic fully loaded usually need no ballast.[47] They then offload cargo at several ports and take on ballast water in each of those ports to compensate for the lost weight and counterbalance their remaining cargo. The threat posed by these NOBOBs is that they actually do contain ballast water, generally from their last port of departure. As a general rule, all ships equipped with ballast tanks are carrying residual ballast water, either an amount deliberately carried to balance the ship, or an amount that cannot readily be pumped out of the tanks. These vessels generally declare NOBOB status and, despite the flushing guidelines, often perform no flushing or exchange. However, their ballast tanks can contain up to 100 tons of residual water and sediment, which can contain ANS.[48] A study by the University of Michigan and the Great Lakes Environmental Research Laboratory found an average of more than 40 tons of residual ballast water in the NOBOB ships it tested.[49] When these ships take on additional ballast water within U.S. waters such as the Great Lakes, any ANS in the residual water will mix with the larger volume of water and will typically be discharged at the next port (e.g., another Great Lakes port) at which the ship loads cargo. Introduction of ANS into the Great Lakes by NOBOB vessels is a longstanding problem[50] which studies have shown can be

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[46]70 Fed. Reg. 51831-36 (August 31, 2005).

[47]R. Vaughan, State Options for Controlling Aquatic Invasive Species in the Great Lakes, 18 National Environmental Enforcement Journal, 3, 5 (November 2003).

[48]Id.

[49]T. Johengen et al., Assessment of Transoceanic NOBOB Vessels and Low-Salinity Ballast Water as Vectors for Non-indigenous Species Introductions to the Great Lakes, University of Michigan and NOAA-Great Lakes Environmental Research Laboratory, final report, April 2005. Available at www.glerl.noaa.gov/res/projects/nobob/products/nobobfinalreport20050415.pdf.

[50]A former Coast Guard Commander wrote of the NOBOB problem, "This is a gaping hole in the protection provided by our current regulatory regime, and it is likely to be just as large a problem for any expansion of an exchange regime to areas where vessels make more than one port stop along the coast." Reeves, supra note 30 at 145 (Spring 2000). He also acknowledged that the Coast Guard had never developed a plan for regulating NOBOBs.

reduced by midocean flushing,[51] yet the Coast Guard consistently refuses to make flushing mandatory. The problem is especially severe in the Great Lakes, where an estimated 90% of the transoceanic ships entering the Lakes claim NOBOB status.[52] These vessels' discharges present the greatest threat to the Lakes of continuing ANS invasions.[53]

The urgent need for EPA to develop CWA controls for vessel-discharged ANS is evident from the lack of effectiveness of NANPCA/NISA, which have failed to slow the introduction of new invasive species into the United States. The EPA must develop and implement a comprehensive regulatory system as quickly as possible to stem new ANS introductions. The threat of not regulating ballast water through the NPDES program is the destruction of our freshwater ecosystems as we know them, loss of recreational opportunities, and massive economic harm.

IV. Recommended Regulatory Structure.

We recommend a comprehensive, detailed, and enforceable regulatory structure for controlling vessel pollutant discharges. The CWA requires control over these discharges, as explained in Section II above. Protective NPDES permit requirements must be developed quickly for the most threatening category – transoceanic vessel ballast water discharges – to prevent further environmental harm from ANS. Some states have already begun to regulate ballast water through their own state laws, in part due to lack of prior action by EPA. EPA must begin to fulfill the role Congress intended it to play under the CWA, and create uniform baseline pollution controls to address a significant nationwide problem.[54]

As an initial step, we recommend that EPA promulgate a rule for vessel discharges and develop several NPDES general permits. States should have the option under the rule of either allowing EPA to administer the new NPDES vessel permitting, or of administering the program as part of their EPA-approved state program, using EPA general permits as models.

The most stringent regulatory controls, and the most important general permits, must focus upon large transoceanic vessel discharges of ANS-containing ballast water. Discharges

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[51] Johengen et al., supra note 49.

[52] I. Grigorovich, et al., Ballast-Medicated Animal Introductions in the Laurentian Great Lakes: Retrospective and Prospective Analysis, 60 Canadian Journal of Fisheries and Aquatic Sciences 740, 741, 745-46 (2003).

[53] Supra note 49 at vii, 2-7, 2-20, 6-2, 6-10.

[54] See Arkansas v. Oklahoma, 503 U.S. 91, 110 (1992) (citing "Act's purpose of authorizing EPA to create and manage a uniform system of interstate water pollution regulation.").

from these vessels pose the largest environmental threat. Different general permits for non-oceangoing ships could require more flexible controls, as such vessels do not pose the same environmental threat as larger oceangoing ships. Based on a rational record, EPA can evaluate whether there are some vessel discharges presenting truly de minimis pollution concerns that require no regulatory controls.

Finally, we ask that the EPA, in developing a vessel discharge program, continue to seek involvement and input from the States throughout the regulatory development process.

A. A New Rule for Vessel Discharges Employing EPA-developed General Permits is the Best Approach.

Throughout the NWEA case and in the current request for information, EPA has maintained that it would be impractical to regulate millions of vessels across the nation and their different types of discharges.[55] This "parade of horribles" approach is misguided. It is much easier to balk at new responsibilities than to take a serious look at options for breaking down the problem into more achievable categories. Regulatory controls will be feasible when discharges are identified, vessels classified and options narrowed. EPA has been able to accomplish this in the past, for example, in issuing general permits for ubiquitous stormwater discharges under the CWA.[56]

The most effective way for EPA to regulate vessel discharges is through one or more NPDES general permits. General Permits are issued to cover a category or subcategory of discharges that are similar or related in nature.[57] They allow EPA to regulate entire classes of discharges, lessening the administrative burdens that would be present if each discharger were to be permitted individually. Individual permits may still be required for if circumstances warrant.[58]

Permit issuance through the NPDES program, rather than by various states based solely on state law, is critical to the uniform floor of pollution control that Congress intended in the CWA. This is particularly true given the nationwide problem posed by vessel-discharged ANS. Currently, several states have implemented their own statutory programs to regulate vessel discharges. These programs, as even these states admit, are not the ideal approach, given the geographic limits of individual state regulatory authority and the movement of ANS across state boundaries. However, this became the only available option in the absence of needed involvement by EPA. An EPA rule, together with EPA-developed NPDES general permits,

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[55] See 71 Fed. Reg. 34241-49 (June 21, 2007).

[56] See 40 C.F.R. §§ 122.26, 122.30-37.

[57] 40 C.F.R. § 122.28.

[58] See 40 C.F.R. § 122.28(b)(3).

would provide the basis for continuity between state standards for ships entering the waters of more than one state, even when administered by states through their EPA-approved programs.

A regional approach, in which groups of states work jointly with EPA in areas such as the Great Lakes, could be used to develop a regional general permit or permits.[59] Under this approach, one general permit could control vessel discharges throughout a region. This approach could avoid duplicative regulatory efforts and minimize regulatory burdens. In addition, while applicants for general permits typically submit a Notice of Intent (NOI) in order to be covered under the permit, federal regulations provide for issuance of a general permit without the submission of an NOI depending on the circumstances of the discharge(s).[60] This kind of flexible regulatory provision could greatly ease regulatory burdens for identified lower risk vessel discharges.[61] EPA should seek to exercise such flexibility for smaller watercraft, presumably including most recreational boats, in order to ease regulatory burdens in a manner consistent with the CWA.

B. Commercial Oceangoing Vessels and their Ballast Water Discharge Should be the Initial Focus of Regulation.

We are especially concerned with large transoceanic vessels and the destruction caused to our ecosystems and economy by the invasive species discharged in their ballast water. These vessels are the primary cause of what is clearly the most serious environmental threat posed by the heretofore exempted discharges, and they must be the first focus of regulation. We recommend that these ships be subject to a general permit requiring the best available controls and monitoring. We estimate that this subgroup is relatively small in relation to the overall number of vessels that potentially may be regulated, encompassing approximately 8000 vessels. The remainder of vessels should be permitted in phases by class-specific permits with differing requirements.[62]

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[59]EPA's general permitting regulations envision area coverage by combinations of political boundaries, including states. See 40 C.F.R. § 122.28(a)(1)(iii), (vii).

[60]See 40 C.F.R. § 122.28 (b)(2)(v).

[61]Cf. Environmental Defense Center, Inc., et al. v. EPA, et al., 344 F.3d 832 (9th Cir., 2003) (EPA "Phase II" municipal storm sewer rule, that failed to require "meaningful review" of discharger-designed stormwater management programs contained in NOI for general permit, contravened statutory provisions that such permits require controls reducing discharges "to the maximum extent practicable.").

[62]We recommend that EPA develop a general permit for sub-classes of vessel similar to the following: a) large commercial, oceanic; b) small commercial, oceanic; c) large and small commercial, non-oceanic; and d) large and small recreational. Another option would be to include all of those applicable classes in the same permit, with distinct requirements for each;

C. Best Management Practices (BMPs) for Vessel Discharges Can Be Used Pending Development of Numeric Effluent Limitations.

Best Management Practices (BMPs) are measures to prevent or mitigate water pollution that can include schedules of activities, prohibitions, practices and procedures.[63] BMPs may be NPDES permit conditions when numeric effluent limitations are infeasible, and generally to carry out the remedial purposes of the CWA.[64] For transoceanic vessels, the partially effective ballast water BMPs developed by Coast Guard, which incorporate ballast water exchange and flushing practices, may need to be included in EPA's initial permits for these vessels. In particular, EPA should require mandatory flushing and exchange as a BMP that could be implemented immediately, pending the development of numeric effluent limitations.

Because of their inherent flexibility,[65] BMPs can be creatively employed to require practical, common sense practices for classes of vessels not needing the very stringent controls that are necessary for transoceanic vessels.[66] Indeed, many vessels may require few controls. BMPs for many vessels may also be achieved on schedules of compliance within general permit(s).

Another option for implementing BMPs could be EPA-developed guidance that could be enhanced over time. This guidance could serve as EPA's declaration of the best management practices available at the time, and how they should be used to prevent or minimize discharges. General permits could make reference to the guidance document and require permittees to employ the BMPs contained therein. This approach would ensure that the most up-to-date BMPs are always incorporated into the permit. Such a structure could also reduce the need for permit modification in order to facilitate compliance with the BMPs. We believe this approach would serve the interest of administrative flexibility while directly implementing BMPs as they evolve, consistent with the purposes of the CWA.

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however, this option may be confusing to applicants and not the best option for effective regulation.

[63]40 C.F.R. § 122.2.

[64]40 C.F.R. § 122.44 (k)(3), (4).

[65]See EPA, Guidance Manual for Developing Best Management Practices, 2.2.2 (available at www.epa.gov/npdes/pubs/owm0274.pdf).

[66]For example, EPA currently regulates "rubbish, trash, garbage, or other such materials discharged overboard" from a vessel. 40 C.F.R. § 122.3(a). See also, e.g., Wisconsin Statute Section 30.715 (Placement of boats, trailers, and equipment in navigable waters to control invasive species).

For transoceanic vessel ballast water discharges, EPA should develop and require best available technology as soon as possible. Presently, treatment options for ballast water are not widely used by vessels. This is due in part to the fact that numeric effluent limitation guidelines have not yet been established by EPA – resulting in a lack of regulatory incentive for ships to install and for manufacturers to produce the necessary treatment equipment. Reasonably available and effective treatment methods can be implemented, however. Michigan's Department of Environmental Quality has determined after several years of study that one or more ballast water treatment methods are available to prevent the introduction of ANS.[67] And a recent report by Lloyd's Register reviews treatment systems that are currently available or under development.[68]

The development of onboard treatment systems for vessel discharges should not preclude the development and approval of onshore or "shoreside" treatment facilities. These are facilities to which vessels could discharge their ballast water (instead of discharging directly to U.S. waters), which would then treat the ballast water before releasing it as NPDES-permitted discharges to U.S. waters.

D. Standard Setting and Compliance Considerations.

A numerical effluent limitation for the discharge of biological organisms in ballast water has yet to be developed, but the ongoing PEIS for a ballast water treatment standard, which EPA has been preparing jointly with the Coast Guard and other agencies, may be nearing completion. This standard should provide much of the information needed for a numerical effluent limitation. Overall, this is a high priority for the development of effective regulatory controls. In the interim, while numeric effluent limitations are pending, EPA should require monitoring, reporting and sampling of ballast water contents and discharge through their initial permitting. As part of this data acquisition, EPA should obtain and test representative samples of ballast water discharges from oceangoing vessels that conduct exchange/flushing, including such vessels that discharge ballast below the water line, in order to establish a quantitative baseline for current and near-term ANS discharges from oceangoing vessels. These types of data acquisition will provide necessary insight into exactly what the water contains, and what the limits should be.

To provide an example, the State of Washington has implemented effluent limitations in its state ballast water discharge standards. Washington State's ballast water law requires the inactivation or removal of ninety-five percent of zooplankton organisms and ninety-nine percent

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[67] See Final Determination and Notice Regarding Ballast Water Treatment for Oceangoing Vessels in the Great Lakes, April 13, 2005 (available at www.michigan.gov/deq/0,1607,7-135-3313-3677-8278---,00.html).

[68] Lloyd's Register, Ballast Water Treatment Technology: Current Status, London, England, June 2007.

of phytoplankton and bacteria organisms.[69] This applies to vessels that choose to treat ballast water rather that exchange it in the ocean. Vessels that perform ocean exchange or flushing are not required to meet the treatment standards.[70]

Developing effective compliance/enforcement mechanisms is vital to a successful regulatory program. A key technical consideration regarding vessel compliance is whether enforcement will be based on 1) routine testing of the *contents* of ships' ballast tanks, based on an assumption that samples from tanks are representative of ballast water that will ultimately be discharged from those tanks; 2) routine testing of the *discharge stream* from ships' ballast tanks, as taken from a *sample port* in the discharge pipe which is upstream from the discharge outlet, based on an assumption that the sample from the sample port is representative of the full quantity of ballast water being discharged; 3) routine testing of the *discharge stream* from ships' ballast tanks, as taken from the *discharge outlet*, based on an assumption that the sample from the discharge outlet is representative of the full quantity of ballast water being discharged; or 4) verification of proper functioning of onboard ballast water treatment equipment, but without routine testing of the discharged water, where the ability of the properly functioning onboard equipment to meet a technology-based ballast water discharge standard has been previously demonstrated in tests that are assumed to be representative.

Any of these methods of compliance verification presents technical challenges that EPA will need to address. One such challenge is the fact that the ballast water discharge outlet for many ships is below the water line. This creates a logistical difficulty for collecting samples, especially representative samples, from the discharge outlet. Despite this difficulty, the discharge outlet is the ultimate location where compliance needs to be verified. Before any surrogate measure of compliance is adopted, its relationship to the numerical effluent limitation at the point of discharge needs to be established. If such a relationship is statistical, its statistical validity needs to be fully demonstrated, and confidence limits need to be set at a level that will achieve the desired objective of preventing the introduction of ANS.

A major part of the challenge is the substantial variability, in both time and space, of the biological species and concentrations of species that will be found in the ballast water of a given ballast tank. Tank contents cannot necessarily be assumed to be well-mixed for various reasons, including the presence of sediment that may provide shelter or habitat for certain species, possible temperature stratification which may affect biological viability and reproduction of certain species, the ability of certain mobile species either to avoid capture during compliance testing or to avoid being entrained into a stream of ballast water during normal ballast water pumpout, etc.

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[69]WAC § 220-77-095(1).

[70]RCW § 77.120.030(1).

The above enforcement/compliance verification strategies generally rely on data collection to demonstrate that the overall goal of preventing ANS invasions is being met. In order to ensure that data acquisition is properly designed and can serve the intended purpose of preventing species invasions, EPA will need to follow its own Data Quality Objectives (DQO) process.[71]

In setting an effective numerical effluent limitation for ballast water discharges, EPA will need to consider an extremely low discharge limit for biological species as a goal if not an immediate standard. EPA will also need to address the statistical problem of verifying compliance with such a standard. ANS differ from chemical pollutants in that they are a self-replicating form of pollution. Invasions of new species generally begin on a small scale (as comparatively few individuals of a nonindigenous species, perhaps just eggs or cysts, are discharged with ballast water into U.S. waters), but the problem then grows over time as the organisms reproduce. Given the low numbers of organisms, eggs, and/or cysts that may thrive and multiply after being introduced into U.S. waters, the limit on the allowable number of viable life forms in a given volume of ballast water must be quite low. Such a standard must be based on sound scientific evidence that the allowable concentration of viable life forms is sufficiently low to prevent ANS from being introduced and established in U.S. waters via ballast water discharges.

In assessing compliance with a numerical effluent limitation, EPA will need to deal with the statistical and DQO issues mentioned above. Enforcement of any ballast water standard or limitation will typically depend on the collection of a relatively small sample volume that will be checked for viable organisms. The logic of such a sample is that it represents the large volume of heterogeneous water, sediments, and biota in a ship's ballast tanks, but, as noted above, the relationship is not a matter of simple proportion. The fact that no viable organisms are detected in a small ballast sample is *not* a reliable basis for concluding that no viable organisms are present in the entire quantity of ballast water that a ship may discharge. To avoid or minimize this problem, an adequate sample must be taken. A factory that produces millions of widgets a day faces a similar problem in deciding how many widgets to test for quality control purposes. If every millionth widget is taken as a sample, and no defects are found when the sample widgets are tested, this does not necessarily mean that the intervening 999,999 widgets are free of defects. EPA will need to undertake a rigorous statistical analysis to demonstrate the level of sampling needed for enforcing a numerical effluent limitation for ballast water.

Despite the technical challenges that will need to be met, we believe that enforcement is crucial to making this law work. Without effective enforcement, we risk replication of the currently ineffective regulatory regimes. We also believe that this is a major factor holding back available treatment technology from being adopted industry-wide. For too long, vessels have refused to adapt because they have never been forced to.

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[71]EPA, Guidance on Systematic Planning Using the Data Quality Objectives Process, EPA/240/B-06/001, February 2006.

Identifying vessels with the greatest potential for harmful discharges, and constantly monitoring their compliance, may be an effective way to focus enforcement. Ships could be identified on amount of ballast, NOBOB status, history of past compliance, ports visited in the United States, foreign ports of call, etc., in relation to the historic rate of ANS invasion or general likelihood of ANS impacts in the particular U.S. waters where a vessel will discharge. It may be useful to develop a priority scale for these factors, with the most weight given to those vessels carrying the most ballast water from foreign ports, etc.; however, a scale of this type must recognize that the Great Lakes, for example, have experienced high rates of ANS invasion despite the comparatively small size of oceangoing vessels that enter the Lakes. A properly constructed priority scale would be useful for allocating enforcement resources.

A permit should give EPA or the regulating state authority to enter upon a ship for the purposes of inspecting the vessel's records and checking compliance with the permit. Manpower resources must be allocated to this purpose in order to perform checks on ships entering jurisdictional waters. States could assist in easing EPA's administrative burden by allocating state resources and personnel to inspect vessels operating under an approved state permit. Random checks should be done proactively, as well as in response to complaints and inquiries. Random checks of all types of regulated vessels should be conducted in addition to scheduled checks of priority ships.

For the Great Lakes, consideration should be given to an enforcement mechanism at the gateway to the Lakes, on the St. Lawrence River. Establishing an inspection station before regulated ships are allowed to enter the Great Lakes could assist substantially in preventing more invasive species from entering into the world's largest concentration of fresh water. Such a mechanism, perhaps funded jointly by states and/or user fees, should be considered to stop the transfer of ANS into the Great Lakes altogether.

The vessel regulatory system may not be perfect at first, but should improve over time with refinement of the flexible controls available under the CWA. One goal must be kept in mind at all times, however. Shipping companies that wish to do business in the United States must be made to understand that they must follow the rules which the EPA has enacted, and that the government of the United States takes the threat of ANS to its environment very seriously and will not tolerate unregulated discharges into its waters.

V. Conclusion

A. EPA Must Take Seriously the Impact Of Ballast Water Discharges on both Economy and Ecology

EPA's historical lack of investment in the problems of ballast water and ANS has contributed to the introduction of many harmful invasive species into the waters of the United States. EPA's continued justifications for its exemption of "discharges incidental to the normal operation of a vessel" from the plain language and overriding purpose of the CWA demonstrate

an unfortunate unwillingness to deal with an extremely important environmental problem, and an undue deference to the shipping industry.

While shipping offers many economic benefits to the United States, dischargers must respect the waters upon which they travel. For years, vessel dischargers have not been required by EPA to change practices known to be extremely harmful. This has occurred in the name of commercial interests and administrative inconvenience. In order to effect meaningful change and do what is right for the environment – and required by the CWA – EPA must weigh the huge costs and ecological devastation associated with invasive species and recognize that both the economic benefits of shipping and its own administrative concerns pale in comparison to the ongoing harms caused by these pollutant discharges.

EPA must take the threat of ANS invasion through ballast water to be the serious matter that it is, and no longer stand on the sidelines. EPA's proposed rulemaking must produce a rule with teeth and substance, one that effectively addresses ANS in ballast water discharges.

B. EPA Should Work Collaboratively with the States to Quickly Accomplish Practical, Effective Regulatory Controls.

We urge EPA to develop a practical, workable program for vessel discharges that will require little or no change for the vast majority of boats and ships that ply U.S. waters. Changes in practice will clearly be necessary for the large oceangoing vessels that are key contributors to the ANS epidemic. Beyond these several thousand vessels EPA will need to develop a rational record to determine appropriate levels of regulation for other watercraft.

We would like to work collaboratively and productively with EPA to achieve our common goal of protecting and restoring the Nation's waters.

Respectfully Submitted:

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