Testimony of
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before the

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Chairwoman Johnson and members of the Subcommittee. Thank you for your invitation to testify before the Subcommittee on Water Resources and Environment. I am the Executive Director of Northwest Environmental Advocates, the plaintiff in the lawsuit against the U.S. Environmental Protection Agency (EPA)[1] concerning the agency's exemption of discharges incidental to vessel operation from regulation under the Clean Water Act.

There is great concern about the outcome of this lawsuit. My testimony today is intended to address that concern in several ways. First, I will explain why the court found the Clean Water Act was always intended to regulate the discharges from vessels. Second, I will review the environmental significance of the volume and content of vessel discharges and their adverse impact on the nation's waters and the world's oceans by way of demonstrating why they require the kind of regulation assured by the Clean Water Act. Third, I will establish that in the absence of court orders or explicit Congressional restrictions – much more than Congressional authorization or even legislative mandates to agencies to develop regulations and programs – the federal regulatory agencies have repeatedly failed to make significant progress in regulating any type of vessel discharges. This argues for several outcomes: that Congress leave intact the CWA permitting program ordered by the court and that any additional regulatory steps be explicitly established by statute rather than left to the agencies to determine. Fourth, despite the many fears associated with the Clean Water Act's permitting program, I will discuss why this is a program that is eminently flexible, adaptable to many types of discharges and pollution sources, and one that evolves with increasing knowledge while providing protection to both public waters and to the dischargers covered by the permits. It is, in short, well suited to regulating vessel discharges in a time of evolving knowledge and developing treatment technology. Last, I note that the carefully crafted and comprehensive Clean Water Act has met with extraordinary success in protecting and maintaining the quality of our public waters.

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[1] *Northwest Environmental Advocates v. U.S. EPA*, No. 03-05760 (N.D. Cal., Sept. 18, 2006) (ordering that EPA's regulatory exclusion from Clean Water Act permitting for "discharge incidental to the normal operation of a vessel" will be vacated on September 30, 2008), *appeal pending*, Nos. 03-74795, 06-17187, 06-17188 (9 Cir.).

I. The Clean Water Act, EPA's Regulation Exempting Discharges Incidental to the Operation of a Vessel from the Clean Water Act, and a Brief History of *Northwest Environmental Advocates v. U.S. Environmental Protection Agency*

In 1972, Congress significantly amended the Federal Water Pollution Control Act, creating what we now know as the Clean Water Act (CWA). The statute is intended "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters."[2] Among other provisions, the CWA prohibits the discharge of any pollutant from a "point source" into navigable waters of the United States without an NPDES permit. The term "point source" includes a "vessel or other floating craft."[3] "Discharge of any pollutant" is defined as "any addition of any pollutant to navigable waters from any point source."[4] The term "pollutant" includes "biological materials."[5] Pursuant to Section 312 of the Act, EPA established treatment requirements governing Marine Sanitation Devices (MSD) used to treat or hold vessel sewage. And, pursuant to Section 311 of the Act, EPA promulgated regulations for the discharge of oil from vessels. But beyond these narrowly-tailored regulations mandated by the statute, EPA declined to regulate vessel discharges or to establish minimum technology requirements for treatment of vessel discharges.

More specifically, shortly after passage of the CWA, EPA promulgated a regulation that expressly exempted "discharges incidental to the normal operation of a vessel" from the requirement that a discharger obtain an NPDES permit. The regulation provides in relevant part:

> The following discharges do not require NPDES permits:
> (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. . . .[6]

EPA's expressed basis for this broad exemption was that vessel discharges do not present a significant environmental threat.[7] For 25 years EPA relied upon this regulation as the basis for not issuing permits to vessels or authorizing States to do so.

In January, 1999, Northwest Environmental Advocates, 11 other environmental organizations, and the Association of California Water Agencies filed a petition with the EPA requesting that the agency repeal its regulation at 40 C.F.R. § 122.3(a) on the grounds that it conflicts with the plain language of the CWA. Following a first round of litigation to compel a response to the

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[2] 33 U.S.C. § 1251(a).

[3] 33 U.S.C. § 1362(14).

[4] 33 U.S.C. § 1362(12).

[5] 33 U.S.C. § 1362(6).

[6] 40 C.F.R. § 122.3(a).

[7] 38 Fed. Reg. 13530 (May 22, 1973).

petition, EPA eventually denied the petition and, in 2003, the petitioners filed suit in the federal District Court of California, San Francisco, seeking to have EPA's regulation declared *ultra vires* under the CWA. Six Great Lakes States – New York, Michigan, Wisconsin, Minnesota, Illinois, and the Commonwealth of Pennsylvania – intervened on behalf of the petitioners. The Court agreed with plaintiffs and on March 31, 2005 granted summary judgment in plaintiffs' favor. In September, 2006 the court subsequently ruled on the remedy, ordering that the first sentence of the regulation at 40 C.F.R. § 122.3(a) will become null and void as of September 30, 2008. The delayed remedy provided EPA with more than two years to develop a permitting system for vessel discharges.

II. The Clean Water Act's NPDES Permitting Program and Vessel Discharges

The Clean Water Act is the nation's primary law for protecting U.S. waters, and represents the most comprehensive and well-coordinated set of policies in U.S. law for addressing point source discharges. The CWA already requires EPA, the nation's preeminent water quality authority, to develop and regularly revise uniform minimum treatment standards based on technology; assures protection of public health and the environment by requiring discharge permits to meet State water quality standards; requires discharge permits be renewed every five years, at which time States, EPA, and the public can re-evaluate treatment levels, monitoring results, and compliance; and has an enforcement scheme that allows States, EPA, and citizens to bring actions against sources discharging without a permit or in violation of permit conditions. The CWA has 35 years of agency experience, public support, and judicial history that make it the most desirable of regulatory platforms to address pollution sources. It is also a demonstrably flexible statute.

A. NPDES Program Elements

NPDES permits are issued by States, if authorized to do so by EPA, or by EPA where a state has not been authorized. Under what is termed a "cooperative federalism" scheme, EPA establishes the minimum requirements that must apply to all entities regulated under the CWA, and states may adopt more stringent standards where they see fit. NPDES permits generally require the gathering and reporting of information and restrictions on the amount of pollutants allowed to be discharged. There are two methods by which these allowable levels are established: technology-based regulations and water quality-based requirements. The technology-based restrictions establish certain minimum treatment equipment or processes regardless of the discharge's impacts may have on the receiving water. In this way, all similar sources are expected to curtail their pollution outputs as a matter of policy. One such technology-based requirement is the use of the "best available technology economically achievable."[8] The water quality-based approach, on the other hand, is based on the water quality standards which are established by States on the basis of permissible level of pollution necessary to protect human health and aquatic life in State waters. The more stringent of the two approaches governs the discharges of the permitted source. NPDES permits are issued for a period not longer than five years, ensuring that the information that has been gathered by the permit holder, and any developments in treatment technology can be incorporated into subsequent permits.

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[8] 33 U.S.C. § 1311(b)(2)(A).

1. Individual and General NPDES Permits

There are essentially three types of permits EPA and/or the states can issue under the NPDES program. First are individual NPDES permits, issued by States with authorized programs or by EPA where States are not authorized. Individual NPDES permits are not contemplated for any vessel discharges, at least in the foreseeable future. Neither EPA nor States have the resources or inclination to issue such permits to any group of sources that have essentially similar discharges, including vessels. The second type of permit is a general NPDES permit, which EPA created as a method for efficiently handling the regulation of largely similar sources with largely similar discharges. General permits are issued by a State or EPA and thereafter any entity that believes it is covered by the general permit submits a "notice of intent" to discharge pursuant to the general permit. General permits cover such stationary discharges as fish hatcheries, industrial stormwater, and food packing plants and such mobile sources such as truck washing and suction dredge mining operations. A general permit can allow a source to discharge upon the agency's receipt of the notice of intent, after a waiting period, or after the permit issuer sends out a confirmation.

2. General NPDES Permits by Rule

The last method was established by EPA to provide the most streamlined and efficient issuance of general permits. The provisions of EPA's rule 40 C.F.R. § 122.28(b)(2)(v) allow the agency to authorize discharges under a general permit without the discharger submitting an application (notice of intent). This approach is the most appropriate for large numbers of dischargers, such as vessels of certain types.

B. Discharges Incidental to Vessel Operation

Discharges incidental to the operation of a vessel are many, varied, and significant in their environmental impacts. Such discharges include the following pollution streams: gray water (water that has been slightly used, such as water from laundries, showers, sinks, kitchens, and bathing), bilge water (water that has collected on the inside of a vessel, frequently contaminated with oil, grease, and other contaminants and is pumped out), blackwater (sewage), and ballast water (water taken on and discharged to maintain vessel stability in changed cargo and weather conditions and frequently contaminated with invasive species picked up from foreign waters or from previously established populations of invasive species in domestic waters). Vessels discharge polluted water generated by routine maintenance and cleaning. For example, hull surface cleaning and treatment as well as paint removal and application, results in discharges of heavy metal debris, paint effluent, anti-foulants, solvents, oil and grease, fuels, cleaning agents and flush down water and sand-blasting substances. In addition, vessels discharge detergents containing oil dispersants and nutrients, used to break down oils and grease, and strong acids and bases used for vessel cleaning. Commercial and recreational vessels, particularly fishing vessels and cruise ships, dump a variety of debris overboard including plastics, food wastes, nets and lines, and fish cleaning wastes. Many vessels use a wide variety of solvents for maintenance, repairs, and degreasing as well as antifreeze, all of which ends up in vessel discharges. The UNDS program has generated a list of Armed Forces vessel discharges, some of which are

relevant to the NPDES program for regulated incidental discharges from commercial vessels.[9] EPA has the discretion to determine which vessel activities constitute a discharge from a point source of environmental consequence.

C. NPDES Permits Are Routinely Issued In the Absence of Sufficient Information

The NPDES permitting program is premised on the regulatory agencies not having sufficient information. While this is hardly desirable, it is as true today as it was decades ago. There are many reasons. First, permitting takes place against an ever-changing regulatory backdrop. Not only does EPA revise the minimum technology requirements to reflect increasingly more effective and economical treatment methodologies, but the CWA requires that States review their water quality standards every three years to determine if scientific understanding on the impacts of pollution has changed sufficiently to warrant updating the standards. In this way, dischargers are expected to reduce the pollutant loads introduced into public waters as information changes and technologies improve. But dischargers with NPDES permits are not held to restrictions that could not have anticipated or that they have not had the time to implement.

The second reason permits are routinely issued with inadequate information is that agencies do not have a complete understanding of many sources' discharges as well as adequate monitoring of the receiving water's quality. For this reason, many permits require dischargers to collect information that will be used to improve permit conditions in the future. EPA and the States issue compliance schedules to allow time for dischargers to come into compliance with permit terms, balancing the assurance of future compliance with necessary improvements in technology and reductions in pollutant levels with the practical and economic considerations associated with sources installing or updating pollution controls.

The same would be true with regard to vessel discharges. As pollution control technology improves, as information on discharges is better characterized, as the impacts of those discharges on the environment is better understood, NPDES permits for discharges incidental to vessel operation will be revised to respond to emerging information. Initially one could expect permits to be primarily information gathering tools, requiring technology currently required by and mandated, for example, international protocols, with less emphasis on pollution controls. Over

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[9] The UNDS program determined the following 25 discharge types require treatment: Chain Locker Effluent, Elevator Pit Effluent, Hull Coating Leachate, Photographic Laboratory Drains, Surface Vessel Bilgewater/Oil Water Separator, Underwater Ship Husbandry, Weather Deck Runoff, Aqueous Film Forming Foam, Catapult Water Brake, Tank and Post-Launch Retraction Exhaust, Clean Ballast, Compensated Fuel Ballast, Controllable Pitch Propeller Hydraulic Fluid, Dirty Ballast, Distillation and Reverse Osmosis Brine, Firemain Systems, Gas Turbine Water Wash, Graywater, Motor Gasoline Compensating Discharge, Non-Oily Machinery Wastewater, Seawater Piping Biofouling Prevention, Small Boat Engine Wet Exhaust, Sonar Dome Discharge, Submarine Bilgewater, Welldeck Discharges. http://www.epa.gov/owow/oceans/regulatory/unds/batchruleprocess.html#1.

time, pollution controls based on emerging technology would become a more important aspect of vessel discharge permits.

D. Why the NPDES Permit Program Provides Substantial Protections to Dischargers

Not only are permit limits established on the basis of known information but a permit acts as a "shield" against enforcement for pollution discharges that an agency chose not to regulate. While, for example, EPA and citizens may seek enforcement action against a source that discharges without a permit, such enforcement actions against a permit holder are limited to enforcing permit terms and conditions. Thus, for example, if the agency does not deem a wave washing over the bow of a vessel to be a discharge of a pollutant from a point source, the permit will contain no prohibitions on waves washing over bows and there will be no such permit term to be enforced by any entity.

Likewise, EPA still retains significant discretion to judge what constitutes a discharge that requires regulation in the first place. EPA itself raised the issue that some vessel discharges produce only *de minimis* pollution and therefore do not warrant regulation under the NPDES permit program. The District Court declined to rule on this argument because EPA raised at the remedy portion of the case, after briefing and too late in the court proceedings. However, the court noted that "EPA may consider whether any vessel discharges produce only *de minimis* pollution on remand from this Court."

III. Vessel Discharges are Significant in Volume, Pollutants, and Environmental Impacts.

Vessel discharges are a significant source of pollution to the nation's lakes and rivers and to the ocean both individually for large ships and cumulatively for all vessels. Contained in these discharges from vessels are a wide variety of waste streams, each with its own wide variety of pollutants.

A. Oil, Oily Wastes, Oily Sludge and Bilge Water Discharges

All motorized vessels discharge oil and other petroleum products to rivers, lakes, and the ocean. Oil from on-board fuel processing, tank washing, engines and equipment, and cleaning – among many other sources – makes oil a ubiquitous pollutant from vessels of all sizes. Large vessels have numerous waste streams that contain sludge, waste oil, and oily water mixtures, including fuel oil sludge, lubricating waste oil, and cylinder oil, that end up in the bilge. Ships burn so-called bunker fuel, or No. 6 fuel oil, which is highly contaminated and must be constantly purified on-board, producing oily sludge. No. 6 fuel oil contains hazardous and persistent toxic chemicals such as polycyclic aromatic hydrocarbons (PAHs), alkyl PAHs, and metals.[10] The production of sludge is usually at least 1-2 percent of the heavy fuel oil consumed on board. In addition to fuel oil, there are others oils such as lubricating oil for the ship's engines and cylinder

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[10] http://www.atsdr.cdc.gov/toxprofiles/tp123-c3.pdf at 22.

oil comes from the engine cylinder walls. Waste oils are drained to a sludge tank but can and frequently do also contaminate bilge water.

Oil comes from a variety of other sources within ships: oil tankers routinely wash residual oil and oily sludge from cargo tanks. Oil residues from washing are held in slop tanks and discharged at sea. Lubrication and other oils spilled during ship operations and used for cleaning purposes may also be stored in the slop tanks or discharged. In theory, all oily water is processed in an oily water separator which gauges the amount of oil present in the water and prevents excessive oil from entering the ocean.[11] However, there are strong indications that equipment is routinely undersized, that crew are insufficiently experienced to properly run equipment, and that equipment often fails. Moreover, as a spate of criminal prosecutions by the EPA and U.S. Department of Justice against shipping and cruise companies and crew demonstrate, there are powerful incentives to simply bypass all of this equipment and dump the oil into the ocean.[12]

All sizes of vessels are a source of oil and oily waste from running, maintaining, and cleaning engines and other equipment. In 2002, the National Academies' National Research Council estimated that nearly 85 percent of the 29 million gallons of petroleum that enter North American ocean waters each year from human activities comes from land-based runoff, polluted rivers, airplanes, and small boats and jet skis. The report recommended that federal agencies work with State and local environmental agencies to document pollution sources.

Much of this oily waste enters the bilge. Bilge water is water that has collected on the inside of a vessel, and is frequently contaminated with oil, grease, and a wide range of other contaminants before it is pumped out. In the context of cruise ships, EPA has described bilge water as follows, demonstrating the wide range of pollutants that make their way to the bilge:

> [b]ilge water is the mixture of water, oily fluids, lubricants, cleaning fluids, and other similar wastes that accumulate in the lowest part of a vessel from a variety of different sources including the engines (and other parts of the propulsion system), piping, and other mechanical and operational sources. It is not uncommon on ships for oil to leak into the bilge from engine and machinery spaces or from fittings and engine maintenance activities. These leaks, along with onboard spills, wash waters generated during the daily operation of a vessel, and

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[11] Within twelve miles of shore, regulations prohibit the discharge of oil unless it is passed through an oil-water separator, and does not cause a visible sheen or exceed 15 ppm. 33 C.F.R. § 151.10. Beyond twelve miles, oil or an oily mixture may be discharged while proceeding en route if the oil content of the effluent without dilution is less than 100 ppm. Vessels are required to maintain an Oil Record Book, which records, among other things, the disposal of oily residues and the discharge or disposal of bilge water. 33 C.F.R. § 151.25.

[12] *See, e.g.*, "Fine for ocean pollution costs shipper $2 million: The chief engineer of the Spring Drake, which dumped waste at sea, gets one month in jail," The Oregonian, March 9, 2004.

> waste water from operational sources (e.g., water lubricated shaft seals, propulsion system cooling, evaporators, and other machinery), collect in the bilge. In addition to containing oil and grease, bilge water may contain solid wastes such as rags, metal shavings, paint, glass, and a variety of chemical substances (EPA, 1997). Bilge water may contain various oxygen-demanding substances, volatile organic compounds, semi-volatile organics, inorganic salts, and metals. Bilge water also may contain other contaminants such as soaps, detergents, dispersants, and degreasers used to clean the engine room. These cleaning agents create an emulsion and prevent separation of oil and water. Moreover, they are often incompatible with Oily Water Separators and Oil Content Monitors. Due to the various sources that contribute to the production of bilge water, the composition of bilge water varies from vessel to vessel, and from day to day. Other waste streams discussed in this report, such as graywater and sewage, are typically contained within their own systems and might only be present in bilge water as a result of leaks.[13]

The routine discharge of oil from vessels due to poor engine design, inadequately separated oily bilge water as a result of a faulty or malfunctioning oily water separators, human error, malfunctioning bilge monitors, and deliberate equipment by-pass exposes marine organisms to petroleum hydrocarbons that can result in mortality due to acute toxicity, physical smothering, or chronic effects. Petroleum hydrocarbons have long-term impacts including: impaired survival or reproduction; chronic toxicity of persistent components; and habitat degradation.[14] Oil, even in minute concentrations, can kill fish or have various sub-lethal chronic effects, such as changes in heart and respiratory rates, enlarged livers, reduced growth, fin erosion, and various biochemical and cellular changes. It can severely damage coral reefs. Oil ingestion by birds leads to their starvation, disease, and predation. For example, a Canadian study has estimated that 300,000 seabirds are killed annually in Atlantic Canada from this type of routine discharge of oily vessel waste. Bunker fuel can contaminate ocean floor and coastal sediments, causing long-term impacts to benthic habitats. [15] Marine mammals can experience skin and eye lesions and interference with swimming ability when they come in contact with oil; gastrointestinal tract hemorrhaging, renal failure, liver toxicity and blood disorders from ingestion of oil; and inflammation of mucous membranes, lung congestion, pneumonia and nervous system disturbances from inhalation of volatile petroleum hydrocarbons.

B. Ballast Water Discharges

Ballast water is taken on or discharged by ships in order to accommodate changes in weight

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[13] Draft Cruise Ship Assessment Report, EPA, December 20, 2007 at 4-1, http://www.epa.gov/owow/oceans/cruise_ships/pdf_disch_assess/section4_ bilgewater.pdf.

[14] *See, e.g.*, Exxon Valdez Oil Spill Impacts Lasting Far Longer Than Expected, Scientists Say, ScienceDaily (Dec. 23, 2003), http://www.sciencedaily.com/releases /2003/12/031219073313.htm.

[15] *Id*. at 4-8.

when cargo is loaded and unloaded. Ships hold ballast water in a variety of locations, ranging from dedicated ballast water tanks to empty cargo and fuel tanks. A tanker ship in the Great Lakes can contain as much as 14 million gallons of ballast water, which would be discharged at port when the ship takes on cargo. Seagoing tankers can have double the amount of ballast water. It is estimated that 21 billion gallons of ballast water are discharged into U.S. ports each year[16] and that globally, over 10,000 organisms may be transported via ballast water on a daily basis.[17]

Ballast water is responsible for carrying foreign aquatic species over long distances, transmitting them to U.S. ports where they can contaminate local ecosystems and infect seafood. The rate at which invasive species are taking root is increasing.[18] The threat posed by invasive species to the U.S. environment and the economy is well established, in particular raising concerns about impacts to threatened and endangered species and commercial and recreational fishing. In addition, there are human health concerns. In 1991, the human cholera bacteria, *Vibrio cholerae,* was found in ships entering the Port of Mobile, Alabama from South America and was later tied to contaminated seafood in the Mobile Bay area.[19] Other forms of bacteria and pathogens that make their way to U.S. coastal waters through ballast water are *Cryptosporidium parvum* and *Giardia duodenalis* (both which cause stomach upset), and enterovirus, which can cause respiratory illness and hand, foot, and mouth disease.[20] Other reports of ballast water contamination include the 1998 strain of *V. parahaemolyticus* which affected oyster beds in the Galveston Bay area of Texas and caused a diarrheal epidemic.[21] Ballast water is also responsible for releasing oil into surrounding waters: more than one source claims that "the discharge of oil from dirty ballast tanks, engine room waste and slops results in more oil entering the sea than the

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[16] James T. Carlton, Donald M. Reid, Henry van Leeuwen, "Shipping Study–The role of shipping in the introduction of nonindigenous aquatic organisms to the coastal waters of the United States (other than the Great Lakes) and an analysis of control options," U.S. Coast Guard Report no. CG-D-XX-92, 1992.

[17] Dr. Jim Carlton, "Invasive species in ballast water," presented at MEPC 43, June 27, 1999, London, England.

[18] Cohen, Andrew and Jim Carlton, "Accelerating invasion rate in a highly invaded estuary, Science, 279 555-558 (1998).

[19] Phillips, Stephen et al., "Ballast Water Issue Paper." Pacific States Marine Fisheries Commission. Aug. 2005.

[20] Lambie, Chris, "Bacteria Hiding in Ship Ballast," 29 May 2008. The Chronicle Herald: Nova Scotia.

[21] Tibbetts, John, "The State of the Oceans, Part 1: Eating Away at a Global Food Source," Environmental Health Perspectives Volume 112, Number 5, Apr. 2004.

major spills from large tanker or bulker accidents."[22]

C. Blackwater: Sewage Discharges

Blackwater is sewage – wastewater from toilets, urinals and infirmaries. Sewage from vessels of all sizes, from cruise ships to recreational boats, is far more concentrated than sewage collected in towns and cities. A cruise ship generates an estimated 8,000 to 21,000 gallons of blackwater per day. Likewise, a small recreational vessel also generates a significant amount of concentrated human waste. According to EPA, "the amount of bacterial pollution (fecal coliforms) from one weekend boater's discharge of untreated sewage is equal to the amount from the treated sewage of 10,000 people during the same time period[.]"[23] EPA exhorts recreational boaters to follow the requirements of the CWA by informing them that untreated sewage discharge from vessels can "suffocate animals and plants living in the aquatic environment" and that "[v]essel sewage discharges increase bioerosion of coral reefs, making them more susceptible to collapse."[24]

The introduction of disease-carrying microorganisms from fecal matter into the coastal aquatic environment puts humans at risk from eating contaminated shellfish and by swimming in contaminated waters resulting in acute gastroenteritis from bacteria and viruses, including hepatitis A and E, typhoid, cholera, *Salmonella, shigella*, and other gastro-intestinal viruses.[25] Pathogen contamination in swimming areas and shellfish beds poses potential risks to human health and the environment by increasing the rate of waterborne illnesses. Shellfish feed by filtering particles from the water, concentrate bacteria and viruses from the water column, and pose the risk of disease in consumers when eaten raw.[26] Studies conducted in Puget Sound, Long Island Sound, Narragansett Bay, and Chesapeake Bay have demonstrated that boats can be a significant source of fecal coliform bacteria in coastal waters, particularly in areas with high boat densities and low hydrologic flushing.[27]

Section 312 of the CWA establishes the treatment and transfer requirements for vessel sewage discharges. However, the Coast Guard regulations and inspection and enforcement mechanisms are completely inadequate to ensure compliance with Section 312. For example, a GAO report on cruise ship pollution incidents found that Coast Guard inspectors "rarely have time during

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[22] Phillips, Stephen et al., "Ballast Water Issue Paper," Pacific States Marine Fisheries Commission. Aug. 2005.

[23] "Have you ever considered the impact of one boater's untreated sewage?" http://www.epa.gov/owow/oceans/regulatory/vessel_sewage/vsdflyer.html.

[24] *Id.*

[25] National Research Council, 1993.

[26] Draft Cruise Ship Assessment Report, EPA, December 20, 2007 at 3-21, http://www.epa.gov/owow/oceans/cruise_ships/pdf_disch_assess/section3_graywater.pdf.

[27] *Id*. citing (Milliken and Lee, 1990; JRB Associates, 1980).

scheduled ship examinations to inspect sewage treatment equipment or filter systems to see if they are working properly and filtering out potentially harmful contaminants."[28] Likewise, there is little if any oversight over the millions of smaller vessels' compliance with CWA Section 312 requirements. As a result, there is a wide discrepancy between sewage treatment policies for municipal dischargers and for vessels and vessel discharges of sewage post a significant and largely unmitigated threat to public health and the environment.

A growing number of cruise ships are employing Advanced Wastewater Treatment (AWT) systems for the treatment of sewage prior to discharge.[29] EPA cites a recent cruise industry estimate that roughly 40 percent of the International Council of Cruise Lines members' 130 ships, two-thirds of the world's cruise fleet, have installed AWTs, with the number growing every year. AWTs are considered a step up from the requirements of the CWA Section 312's Marine Sanitation Devices. EPA describes their function as follows: "AWTs generally provide improved screening, biological treatment, solids separation (using filtration or flotation), disinfection (using ultraviolet light), and sludge processing as compared to traditional Type II MSDs."[30] Sewage sludge from cruise ships is discharged without treatment beyond 12 miles from shore.[31]

Using AWTs is not a solution, however. The use of AWTs gives ships and regulators the confidence to continually discharge treated wastewater while transiting State waters and while docked but the filters employed by AWTs after secondary treatment may not eliminate viruses such as the norovirus that cause illnesses, according to the Washington State Department of Health.[32] While fecal coliform bacteria are the indicators of contamination used to gauge levels of human pathogens, they do not reflect the levels of viruses that are the major cause of food borne illness from consumption of shellfish such as oysters, clams, and mussels.

Human health is not the only concern of untreated or inadequately treated blackwater. The U.S. Fish & Wildlife Service has observed that sewage discharges from boats may degrade water quality by locally increasing biological oxygen demand particularly as the number of boats using

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[28] Marine Pollution – Progress made to reduce marine pollution by cruise ships, but important issues remain,"GAO Report to Congressional Requesters (GAO/RCED-00-48) February 2000, http://www.gao.gov/new.items/rc00048.pdf (January 2003).

[29] Draft Cruise Ship Assessment Report, EPA, December 20, 2007 at 2-6, http://www.epa.gov/owow/oceans/cruise_ships/pdf_disch_assess/ section2_sewage.pdf.

[30] *Id.*

[31] Draft Cruise Ship Assessment Report, EPA, December 20, 2007 at 2-20, http://www.epa.gov/owow/oceans/cruise_ships/pdf_disch_assess/ section2_sewage.pdf.

[32] Assessment of Potential Health Impacts of Virus Discharge from Cruise Ships to Shellfish Growing Areas in Puget Sound, Washington Department of Health, November 2007 http://www.doh.wa.gov/ehp/sf/Pubs/cruise-ship-report.pdf at 1.

coastal waters continues to increase substantially.[33] The organic-rich sewage wastes can depress oxygen levels as they decay in the marine environment. The U.S. Fish & Wildlife Service notes that "[a]lthough the volume of wastewater discharged from boats is relatively small, the organics in the wastewater are concentrated," concluding that the likelihood of localized oxygen suppression is great.[34] Where vessels discharge their sewage from holding tanks contrary to regulatory requirements, particularly in poorly flushed waterbodies, the dissolved oxygen concentrations of the water may decrease. Finally, chemical additives such as chlorine and formaldehyde used to disinfect or control odors of on-board sewage may cause environmental problems. The U.S. Fish & Wildlife has expressed concern about the use of chlorine which is toxic in the aquatic environment and, on vessels, used by untrained operators.

D. Graywater Discharges

Graywater is wastewater from the sinks, showers, galleys, and cleaning activities aboard a ship. It can contain a variety of substances including detergents, oil and grease, and food waste. With few exceptions, the discharge of graywater is not regulated.[35] Under the EPA regulatory exemption, graywater discharges from vessels generally are not regulated under the Clean Water Act, except for graywater from commercial vessels operating on the Great Lakes, where the definition of sewage includes graywater.[36] Discharges of graywater are partially regulated in Alaska.[37] Cruise ships are the largest sources of graywater and graywater is the largest source of liquid waste on cruise ships. While some sources have estimated the generation of more than 1 million gallons of graywater on a typical 7-10 day cruise[38] EPA estimates 36,000 to 249,000 gallons/day/vessel, a range of .4 to 2.5 million gallons for a 10 day cruise.[39] Graywater can

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[33] http://kleanmarine.com/pdf/cvapog.pdf, February 11, 1994.

[34] *Id*. citing (JRB Associates, 1981). The report cites the extremely high biological oxygen demand (BOD) levels for vessel discharges of 1700-3500 mg/l as compared to that of raw municipal sewage (110-400 mg/l) or treated municipal sewage (5-100 mg/l).

[35] Draft Cruise Ship Assessment Report, EPA, December 20, 2007 at 3-3, http://www.epa.gov/owow/oceans/cruise_ships/pdf_disch_assess/section3_graywater.pdf.

[36] 33 U.S.C. § 1322(a)(6).

[37] Departments of Labor, Health and Human Services, and Education, and Related Agencies Appropriations Act, 2001, Pub. L. No. 106-554, 114 Stat. 2763, enacting into law Title XIV of Division B of H.R. 5666, 114 Stat. 2763A-315, and codified at 33 U.S.C. § 1901 Note.

[38] A Shifting Tide: Environmental Challenges and Cruise Ship Responses, Center for Environmental Leadership in Business at 10, http://www.celb.org/ImageCache/CELB/content/travel_2dleisure/cruise_5finterim_5fsummary_2epdf/v1/cruise_5finterim_5fsummary.pdf.

[39] Draft Cruise Ship Assessment Report, EPA, December 20, 2007 at 3-2, http://www.epa.gov/owow/oceans/cruise_ships/pdf_disch_assess/section3 _graywater.pdf.

legally be pumped overboard almost anywhere the ship sails.[40] According to information gathered by EPA, graywater systems on some cruise ships may include any of the following, regardless of the fact that some of the waste streams do not meet the statutory definition of graywater: wastewater from bar and pantry sinks, salon and day spa sinks and floor drains, interior deck drains, shop sinks and deck drains in non-engine rooms (e.g., print shops, photo processing shops, dry cleaning areas, and chemical storage areas); refrigerator and air conditioner condensate; wastewater from laundry floor drains in passenger and crew laundries; dry cleaning condensate; wastewater from dishwashers, food preparation, galley sinks, floor drains, and the food pulper; wastewater from garbage room floor drains and from sinks in restaurants and cafes; wastewater from whirlpools; and wastewater from medical facility sinks and medical floor drains.[41]

EPA conducted limited sampling of cruise ships operating in Alaska in 2004 and 2005. The agency found that the fecal coliform concentrations in some cruise ship graywater waste streams are one to three orders of magnitude greater than typical fecal coliform concentrations in untreated domestic wastewater.[42] EPA concluded that the fecal indicators from untreated cruise ship graywater consistently exceed the water quality criteria for marine water bathing and shellfish harvesting waters. EPA also found copper, nickel, and zinc at levels approximately 2 to 63 times above national criteria for aquatic life protection. Likewise, arsenic, thallium, Bis(2-ethylhexyl) phthalate, and tetrachloroethylene were found at levels that exceeded national criteria for human health protection and ammonia exceeded aquatic life criteria.[43]

E. Hull Cleaning and Maintenance

Antifoulant paints are used on vessels of all sizes to kill marine life and keep the vessel clean to maintain vessel speed, fuel efficiency, and hull integrity. The chemical tributyl tin, commonly used for this purpose, is extremely toxic to lobster and mollusks such as mussels, clams and oysters. The International Maritime Organization (IMO) has initiated a phased ban of tributyl tin. Studies have found that hull paint toxicants accumulate in the sediment of some harbors, such as San Diego Bay.[44] Other less toxic paints, primarily based on the use of copper, are now available but they too contaminate waters and sediments and require careful treatment to prevent contamination of waterways.[45] The use of copper in antifouling paints is being reevaluated by numerous agencies yet striking the right balance between reducing invasive species transport on

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[40] *Id*.

[41] *Id*. at 3-2.

[42] *Id*.

[43] *Id.*

[44] http://seagrant.ucdavis.edu/bpecon.htm.

[45] Underwater Hull Cleaner's Best Management Practices (BMPs), http://seagrant.ucdavis.edu/underwater.htm.

vessels and preventing toxic contamination has been, to date, elusive.[46] Substantial outreach and education is required to convince boat owners to take fairly complicated precautions to prevent toxic contamination.[47] Toxic pollution is generated during the routine maintenance and cleaning of commercial and recreational vessels, during hull surface cleaning and treatment as well as paint removal and application. Heavy metal debris, paint effluent, anti-foulants, solvents, oil and grease, fuels, cleaning agents and "flush down water and sand-blasting substances" are all discharged into the surrounding water.[48]

F. Solid Waste

Solid waste generated on ship can include glass, paper, cardboard, aluminum and steel cans, incinerator ash, plastics and kitchen grease. Cruise ships generate large amounts of solid wastes; on average, each cruise ship passenger generates at least two pounds per day, plus two bottles and two cans multiplied by up to 3,000 passengers.[49] While there is an international ban on ocean dumping of plastics,[50] plastic wastes such as utensils may be mixed with other wastes such as food. Food waste that has passed through a grinder can be discharged three miles from shore.[51] Other types of garbage, such as paper products, rags, glass, metal, bottles, crockery, lining and packing materials can be legally discharged 25 miles from shore with the exception of certain "Special Areas," such as the Caribbean, deemed to require additional protections.[52] However, even in the Caribbean, an exception is made for food waste, which can be discharged 12 or more nautical miles from shore.

Solid waste becomes marine debris, which harms marine aquatic life including mammals, birds, fish, and invertebrates. In particular fishing nets, ropes, and lines from commercial fishing

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[46] Environmental Policy Conflicts on the Horizon: Vessel Antifouling Paints, Coastal Water Quality, and Invasive Species, Leigh Taylor Johnson and Jamie Anne Gonzalez California Policy Research Center, University of California, August 2006, http://seagrant.ucdavis.edu/CPRCPolicyReport2006.pdf.

[47] *See, e.g.*, http://seagrant.ucdavis.edu/publications.htm.

[48] Hayman, Brian et al. "Technologies for reduced environmental impact from ships - Ship building, maintenance and dismantling aspects," 2000.

[49] http://www.celb.org/ImageCache/CELB/content/travel_2dleisure/cruise_5finterim_5fsummary_2epdf/v1/cruise_5finterim_5fsummary.pdf at 14.

[50] Annex V of the International Convention for the Prevention of Pollution from Ships (MARPOL); Act to Prevent Pollution from Ships (APPS; 33 U.S.C. § 1901 et seq.).

[51] 33 C.F.R. § 151.69.

[52] 60 Fed. Reg. 43374, IMO Special Areas, August 21, 1995, http://www.epa.gov/docs/fedrgstr/EPA-GENERAL/1995/August/Day-21/pr-551.html (February 2003).

vessels entangle whales, turtles and other wildlife.[53] Fishing gear is a significant concern:

> The impacts of derelict fishing gear on marine wildlife are dramatic. In Hawaii, derelict fishing gear is the most serious human-related threat to the fragile coral reefs of the Northwestern Hawaiian Islands where it abrades, enshrouds, encrusts and breaks corals. It also injures and kills wildlife, including the endangered Hawaiian monk seal and protected sea turtles and cetaceans: between 1982 and 2000, over 200 Hawaiian monk seals were entangled in derelict nets (Boland and Donohue, 2003). In Washington State's Puget Sound and Northwest Straits region, hundreds of derelict crab pots and gill nets have been documented on the seafloor. Divers observed 1 to 3 foot deep accumulations of bird bones under just one derelict net off the San Juan Islands, where presumably bones had drifted down from decomposing carcasses, likely for years (NRC 2004).[54]

In 1993, the National Park Service released a study linking the shrimping industry to an accumulation of debris near the Padre Island National Seashore.[55] The study reported that the local shrimping vessels were responsible for polluting the local waters with items such as wood disks (used on shrimp nets), rubber gloves, salt bags and more. Between March 1994 and February 1995 alone more than 40,000 debris items were collected in a 16-mile area off the island, 65 percent of which was used by the shrimping industry. The study found that during peak shrimping time, there was a correlation of nearly five times more debris in the area than during times of little shrimping activity.

While there are many types of solid waste discharged both directly and indirectly to the ocean and rivers, by far the one of most concern is plastics. For example, the Algalita Marine Research Foundation's investigation of plastic in the North Pacific Central Gyre of the Pacific Ocean showed that the mass of plastic pieces was six times greater than zooplankton floating on the water's surface.[56] Most of the marine debris in the world is comprised of plastic materials with an average proportion between 60 to 80% of total marine debris. The majority of this debris is believed to come from land-based sources from urban runoff through storm drains but substantial amounts also come from ocean-going vessels. Plastics are carried by currents and can circulate continually in the open sea. The impacts of plastics are significant and of growing concern.

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[53] Sheavly, Seba B. San Mateo Countywide Water Pollution Prevention Program. The Ocean Conservancy. 2004.

[54] Reducing Marine Debris: Derelict Fishing Gear Removal Programs in Hawaii, Washington, and California, Kirsten Gilardi, et al., http://conference.plasticdebris.org/ whitepapers/ Kirsten_Gilardi.doc.

[55] Heinrich, Katherine M. New Study Traces Padre Island Trash to Shrimpers. National Parks: Washington. Sept. 1995. Vol. 69. Iss. 9-10; pg. 21.

[56] http://www.plasticdebris.org/, citing C.J. Moore, S.L. Moore, M.K. Leecaster, and S.B. Weisberg, A Comparison of Plastic and Plankton in the North Pacific Central Gyre, Marine Pollution Bulletin, 13 February 2004.

Most plastic floats near the sea surface where some is mistaken for food by birds, fish, and marine invertebrates. This suggests that plastic particles may be considered a mimic of natural food, such as zooplankton, in marine habitats. In addition, small plastic particulates on the marine ecosystem have been found to accumulate polycyclic aromatic hydrocarbons, chlorinated and legacy pesticides and other persistent organic pollutants, and to contain hormonally active additives.[57]

IV. Congressional Mandates and Authorization to Regulate Vessel Discharges Has Been Implemented by Federal Agencies Poorly if At All.

Since passage of the Clean Water Act in 1972, Congress has authorized, and in some cases mandated, a number of programs to regulate certain types of discharges from certain types of vessels. In each case, the federal agencies charged by Congress to implement these regulatory programs have taken an extraordinary amount of time to carry them out or have ignored the mandates altogether. EPA and the Department of Defense have made only slow progress carrying out the UNDS program for Armed Forces vessels. EPA has slowly moved towards establishing regulations on cruise ship sewage discharges, has exempted by regulation a variety of vessel discharges from the CWA, and has failed to update the requirements on sewage treatment and pump out from vessels. EPA has also refused or only very slowly responded to two administrative petitions concerning vessel discharges. Likewise, the Coast Guard has failed to carry out Congressional mandates to protect the Great Lakes from invasive species carried in ballast water tanks and similarly refused to response to an administrative petition to do so. In other words, the experience over the last decades strongly suggests that nothing short of Congressional fiat or court order will result in timely action, whether the regulatory agency is the EPA or the Coast Guard. It would be a mistake to not learn from this history.

A. The Uniform National Discharge Standards (UNDS) for Armed Forces Vessels is Proceeding Very Slowly if At All

In 1996, Congress passed the Uniform National Discharge Standards for Armed Forces Vessels Act (UNDSAF) which amended the CWA to exempt incidental discharges from Armed Forces vessels from the normal requirements of the CWA.[58] Congress passed this act out of concern that some coastal states could attempt to enforce CWA requirements against Armed Forces vessels discharging ballast water. The Senate Report explained:

> The Navy wishes to clarify the regulatory status of certain non-sewage discharges from Navy vessels. Vessels are point sources of pollution under the Clean Water Act. Any discharge from a point source, including a vessel, into the waters of the

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[57] Density of Plastic Particles found in zooplankton trawls from Coastal Waters of California to the North Pacific Central Gyre, C.J. Moore, et al. Algalita Marine Research Foundation, http://conference.plasticdebris.org/whitepapers/CJ_Moore_Comparision _of_Debris.doc.

[58] 33 U.S.C. § 1362(6)(A).

> United States is prohibited unless specifically permitted under section 402 or 404 of the Act. Notwithstanding this prohibition, discharges from vessels have generally not been subject to the permit requirements.[59]

The primary effect of the UNDSAF was to amend the definitions section of the CWA so as to exclude discharges incidental to the normal operation of a Armed Forces vessels from the definition of a pollutant.

As a result of the UNDSAF, EPA began a three-phase approach to regulating Armed Forces vessels. On May 10, 1999, EPA and the Department of Defense (DOD) published the Phase I final rule.[60] The Phase I rule identified all discharges incidental to the normal operation of armed forces vessels, and characterized each discharge to determine if it required control, based on its potential to have an environmental impact. The rule determined the types of vessel discharges that require control by a marine pollution control device (MPCD) and those that do not require such controls. EPA and DOD identified a total of 39 types of discharges, 25 of which would require control by an MPCD and 14 requiring no controls.[61] In the intervening nine years, EPA and DOD have focused on developing Phase II discharge controls for 7 of the 25 types of discharges requiring controls. Following Phase II, DOD, in consultation with EPA and the U.S. Coast Guard, will have one year to establish regulations governing the design, construction, installation, and use of MPCDs onboard Armed Forces vessels necessary to meet the performance standards promulgated in Phase II. The Phase II performance standards do not become effective, nor does the preemption of state regulation of armed forces vessel discharges become effective, until Phase III requirements are in place.[62]

The UNDS program began with a promising start. Nine years, however, have lapsed since the agencies identified which discharges require controls and no Phase II performance standards have been issued. It is unclear from EPA's website if the agencies have a time frame for completion of even the first batch of 7 Phase II regulations, let alone the remaining 18 discharge types. The UNDS program, a good idea, has to all appearances completely stalled out.

B. Coast Guard Fails to Regulate Great Lakes Transoceanic Vessels Declaring No Ballast On Board Despite the Passage of NISA and a Petition by States for Regulations Consistent with the Statute

The Coast Guard's failure to implement the Non-indigenous Aquatic Nuisance Prevention and Control Act (NANPCA),[63] as re-authorized and amended by the National Invasive Species Act of

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[59] S. Rep. No. 104-113, at 1 (1995).

[60] 64 Fed. Reg. 25126; 40 CFR Part 1700.

[61] http://www.epa.gov/owow/oceans/regulatory/unds/batchruleprocess.html#3.

[62] *Id*.

[63] 16 U.S.C. § 4701.

1996 (NISA), is another example of how Congressional mandates to establish regulatory controls over vessel discharges have been ignored by the implementing agency. NANPCA/NISA was adopted by Congress to spur regulation of ballast water discharges, although the legislation clearly was not intended to preempt or limit the CWA with respect to ballast water discharges.

> The 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 Federal Water Pollution Control Act.[64]
>
> The voluntary guidelines issued under this subsection shall . . . not affect or supersede any requirements or prohibitions pertaining to the discharge of ballast water into waters of the Untied States under the Federal Water Pollution Control Act . . . . [65]

NANPCA/NISA required that no later than 2 years after November 29, 1990, the Secretary of the Department in which the Coast Guard was then operating "issue regulations to prevent the introduction and spread of aquatic nuisance species into the Great Lakes through the ballast water of vessels."[66] NANPCA, as amended by NISA in 1996, specified in pertinent part that such regulations must:

> (A) apply to all vessels equipped with ballast water tanks that enter a United States port on the Great Lakes after operating on the waters beyond the exclusive economic zone; NISA, passed 12 years ago, required the Coast Guard to address the problem of invasive species carried in ballast water to the Great Lakes.

and

> (B) require a vessel to:
>
> (i) carry out exchange of ballast water on the waters beyond the exclusive economic zone prior to entry into any port within the Great Lakes;
>
> (ii) carry out an exchange of ballast water in other waters where the exchange does not pose a threat of infestation or spread of aquatic nuisance species in the Great Lakes and other waters of the United States, as recommended by the Task Force [established under 16 U.S.C. § 4712]; or
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> (iii) use environmentally sound alternative ballast water management methods if the Secretary determines that such alternative methods are as effective as ballast water exchange in preventing and

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[64] 16 U.S.C. § 4711(b)(2)(C).

[65] 16 U.S.C. § 4711 (c)(2)(J).

[66] 16 U.S.C. § 4711(b)(1).

controlling infestations of aquatic nuisance species.[67]

The statute is clear that the Coast Guard's regulations under NANPCA/NISA must prevent the introduction and spread of aquatic nuisance species and require all vessels equipped with ballast water tanks that enter a United States port on the Great Lakes after operating beyond the exclusive economic zone (the "EEZ"), with no exemption for those claiming to have no ballast on board, to carry out ballast water exchange or some other alternative. Contrary to the statute, however, the current Coast Guard program neither prevents the introduction of invasive species nor applies to all vessels with ballast tanks.

Instead, the Coast Guard's regulations[68] contain an applicability provision providing that "[t]his subpart applies to each vessel that carries ballast water," contrary to the statutory requirement that the regulations shall apply to vessels with ballast water tanks, regardless of the amount of ballast water in those tanks. As a direct consequence of these regulations, vessels claiming to have "no ballast on board" – so-called NOBOBs – are not generally required to take any measures to prevent the harmful release from their ballast tanks of invasive species into the Great Lakes. The Coast Guard acknowledged this gap over five years before the States' petition was filed – that is to say over nine years ago – and stated that it was working to identify management methods to reduce the threat from NOBOBs, but that "it would be premature to issue regulations specifically for these (NOBOB) vessels at this time."[69] This failure has been exacerbated by rules promulgated regarding penalties for non-submission of ballast water management (BWM) reports, in which rulemaking the Coast Guard stated that "NOBOBs will still be exempt from conducting BWM practices."

The vessels at issue include up to 90 percent of all transoceanic vessels entering the Great Lakes. These NOBOBs do not need to have ballast on board at the time they enter the Great Lakes because they arrive fully laden with cargo. However, their ballast tanks typically contain up to 100 tons of residue, consisting of a layer of water and accumulated sediments lying below the ships' ballast pump intakes. This residue can contain invasive species. Once a NOBOB vessel has entered the Great Lakes, it typically takes on lake water as ballast when it unloads its cargo at a Great Lakes port. In the process, the residue in the ballast tanks, including any nonindigenous species that may be present, is mixed with lake water. Subsequently, the vessel typically discharges its ballast when it reloads at another Great Lakes port, before leaving the Great Lakes fully loaded with cargo. The discharge of such NOBOB ballast is believed to represent an important pathway for the introduction of invasive aquatic nuisance species into the Great Lakes.

Following years of inaction by the Coast Guard, seven Great Lakes States filed a petition with the

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[67] 16 U.S.C. § 4711(b)(2)(A)&(B).

[68] 33 C.F.R. § 151.1502.

[69] 64 Fed. Reg. 26675 (May 19, 1999).

Coast Guard[70] in July 2004 – four years ago – on which the Coast Guard has yet to take any action, either by responding to the petition or with regard to regulating the so-called NOBOBs. Against the backdrop of the Coast Guard's inaction and its failure to protect the Great Lakes from invasive species, the St. Lawrence Seaway Development Corporation, in conjunction with its Canadian counterpart, began this year to require ballast water exchange for ships before they enter the Great Lakes.

C. EPA Making Only Slow Progress on Cruise Ship Regulations Authorized by Statute and Requested by an Administrative Petition

EPA is well aware of the significant waste streams generated by cruise vessels. The agency comments on its website that there are more than 230 cruise ships operating world wide functioning as "literally floating cities" for more than 3,000 passengers and crew, and often operating in pristine coastal waters. Waste streams include the same list of discharges incidental to the operation of a vessel cited above, such as bilge water, sewage, graywater, and ballast water. In addition, however, cruise ships also generate a significant amount of solid waste (food waste and garbage) and waste streams with hazardous materials such as from dry cleaning, photography labs, beauty parlors, and swimming pools.[71]

In December 2000, Congress passed HR 4577, the Departments of Labor, Health and Human Services, and Education, and Related Agencies Appropriations Act, 2001 which contained Title XIV, called "Certain Alaskan Cruise Ship Operations."[72] Title XIV established discharge standards for sewage and graywater from large cruise ships (those authorized to carry 500 or more passengers for hire) while operating in certain Alaska waters. It also authorized EPA to develop additional standards for these discharges in Alaska. Over three years passed before EPA sampled wastewater from four cruise ships in Alaska. That same year, 2004, EPA also distributed an extensive survey of cruise ships operating in Alaska. To date, four years later and eight years after the Act was passed, EPA has not promulgated any additional regulations based on either its sampling or its surveys.[73]

Eight months before the passage of Title XIV, in March 2000, the Bluewater Network on behalf of 53 organizations petitioned EPA to assess, and where necessary control, cruise ship

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[70] Petition of the States of New York, Wisconsin, Minnesota, Ohio, Illinois, the Commonwealth of Pennsylvania, the Michigan Department of Environmental Quality, and Great Lakes United to Require the Amendment of Regulations and Regulatory Practices Governing Ballast Water Management for Control of Nonindigenous Aquatic Nuisance Species in the Great Lakes to Admiral Thomas H. Collins, Commandant, United States Coast Guard and Tom Ridge, Secretary, United States Department of Homeland Security, July 14, 2004.

[71] Cruise Ship White Paper, EPA, August 22, 2000 at 15, http://www.epa.gov /owow/oceans/cruise_ships/white_paper.pdf.

[72] 33 U.S.C. § 1901.

[73] http://www.epa.gov/owow/oceans/cruise_ships/sewage_gray.html.

discharges.[74] Eight years later, EPA issued a Cruise Ship Discharge Assessment Report[75] in which EPA quantified waste stream volumes; made a scientific assessment of the impacts on water quality, the marine environment, and human health of sewage, graywater, hazardous waste, solid waste, and oily bilge water. EPA declined, however, to assess the adequacy of existing regulations to control these waste streams, to formulate any recommendations on whether, and if so how, any existing EPA regulations should be revised. EPA stated its intention to identify a range of options and alternatives to address certain waste streams, namely sewage and graywater, in the completed Assessment Report, which it hopes to finalize by the end of 2008, nearly nine years after the petition was filed.[76]

In the context of evaluating cruise ship sewage discharges, EPA noted that its regulations governing sewage discharges from vessels in general, pursuant to Section 312 of the CWA, might not be adequate. EPA stated that it might want to consider

> whether the standards for MSDs should be revised. Those standards were developed in 1976 and may no longer be sufficiently stringent in light of available new technologies. There is information to indicate that the performance of many MSDs decreases over time. New or revised standards could account for the operational life of MSDs.[77]

EPA also noted that it could interpret section 312 as applying to any waters where the discharge of sewage from vessels might affect waters within the three mile limit. "Under this approach, section 312 would be brought to bear on cruise ship discharges to waters that are beyond the three mile limit but within bays, fords, sounds, or other water bodies and likely to adversely affect water quality inside the three mile limit."[78]

As part of its cruise ship regulatory assessment, EPA specifically declined to evaluate "a number of other waste streams that may be generated onboard cruise ships, some of which may be considered incidental to the normal operation of a vessel (e.g., ballast water, deck runoff, hull coat leachate)" because, "as part of a separate effort, EPA has begun an administrative process to prepare for regulation of discharges incidental to the normal operation of a vessel that, as of

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[74] Letter from Russell Long, Bluewater Network, to Carol Browner, EPA, March 17, 2000, http://www.epa.gov/owow/oceans/cruise_ships/petition.pdf.

[75] Cruise Ship White Paper, EPA, August 22, 2000, http://www.epa.gov/owow/oceans/cruise_ships/white_paper.pdf.

[76] Letter from Benjamin Grumbles, EPA, to Russell Long, Bluewater Network, January 31, 2008, at 2, http://www.epa.gov/owow/oceans/cruise_ships/Bluewater_Network_Petition_Response_20_31_08.pdf.

[77] Cruise Ship White Paper, EPA, August 22, 2000, at 13, http://www.epa.gov/owow/oceans/cruise_ships/white_paper.pdf.

[78] *Id*.

September 30, 2008, will no longer be excluded from Clean Water Act permitting requirements . . . ."[79]

D. Some Oil Discharges Have Been Deregulated by EPA

Despite the serious hazards posed by oil from vessel engines, EPA has deregulated this discharge. Section 311 of the CWA establishes that "it is the policy of United States that there should be no discharges of oil or hazardous substances into or upon the navigable waters of the United States, adjoining shorelines, or into or upon the waters of the contiguous zone."[80] The Act also defines "discharges" in the context of oil pollution to include "spilling, leaking, pumping, pouring, emitting, emptying or dumping." Section 311 only covers discharges not regulated by NPDES permits by excluding from the definition of oil discharges covered by this section, those discharges of oil that are (1) in compliance with an NPDES permit, (2) identified, reviewed, and subject to conditions in an NPDES permit, and (3) anticipated to be intermittent or continuous that are identified in an NPDES permit or an application and are within the scope of relevant operating and treatment systems.[81] In other words, Congress intended that oil discharges covered by an NPDES permit would not subject to the limitations in Section 311 but rather be subject to the conditions of the NPDES permit itself.

EPA has interpreted the statute in what is referred to as the "No-Sheen" Rule:

> For purposes of section 311(b) of the Act, discharges of oil into or upon the navigable waters of the United States or adjoining shorelines in such quantities that it has been determined may be harmful to the public health or welfare of the United States except as provided in § 110.7 of this part [deeming oil discharges from properly functioning engines, but not bilges, not harmful] include discharges of oil that:
> a) Violate applicable water quality standards; or
> b) Cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.[82]

As a result of EPA's regulations implementing Section 311 and its regulatory exemption for discharges incidental to the operation of a vessel, vessel discharges of oil have not been authorized to obtain NPDES permits and are, therefore, only subject to the requirements of Section 311. Additionally, since EPA has created regulatory exemptions for oil discharges from

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[79] *Id*.

[80] CWA § 311(b)(1).

[81] CWA § 311(a)(2).

[82] 40 C.F.R. § 110.3 (as to navigable waters); 40 C.F.R. § 110.4 (as to contiguous zone): 40 C.F.R. § 110.5 (as to areas beyond contiguous zone); 61 Fed. Reg. 7421, (Feb. 28, 1996).

properly functioning engines both from NPDES permits and from the requirements of Section 311,[83] oil discharges from properly functioning marine engines have been exempted from the Clean Water Act entirely. There is no indication that Congress intended such an outcome. Rather, it intended that either the NPDES permit program or Section 311 would apply to oil discharges from a vessel. The outcome of EPA's regulations is directly contrary to the policy interests of the United States.

E. Sewage Discharges: Regulated by Statute But Implementation is Outdated and Wholly Inadequate

The discharge of untreated or inadequately treated sewage from vessels has long been recognized as a serious threat to public health and the environment. Section 312 of the CWA establishes effluent standards for marine sanitation devices (MSDs) for all commercial and recreational vessels equipped with installed toilets; on-board equipment designed to treat or store vessel sewage before discharging it; and procedures for the designation of "no-discharge zones" (NDZs) for vessel sewage. Section 312 does not apply to vessels beyond the three-mile limit of U.S. territorial waters. EPA is responsible for developing effluent performance standards for MSDs and the Coast Guard is responsible for MSD design, construction, installation, and operation regulations, and certifying MSD compliance with EPA regulations.[84] There are three types of MSDs, any one of which may be used by vessels under 65 feet in length. Two types discharge after treatment and one is a holding tank where sewage is kept until it can be disposed onshore. Vessels over 65 feet in length are restricted to one of two types. Most cruise ships employ holding tanks. Whether a cruise ship discharges sewage in the open ocean or to onshore facilities depends on the circumstances of its voyage.

The regulations implementing Section 312 date back to 1976 and, as EPA has noted, are very likely outdated. Moreover, the MSD regulations are not working. Anecdotal evidence suggests that particularly in crowded marinas, particularly on weekends, vessels equipped with holding tanks are simply discharging untreated sewage as it is convenient rather than to onshore facilities. This is common knowledge amongst people who work at marinas but has not been translated by EPA and the Coast Guard into any improved requirements for sewage holding and treatment, or the implementation of programs more likely to be used (e.g., sewage pump outs like garbage pick-ups). The entire system relies upon educational efforts which are not sufficient to overcome the practical realities of a failed system.

F. Ballast Water Discharges: EPA Fails to Act in Absence of Court Order

In the face of inaction by EPA and the Coast Guard, citizens groups and States have sought their own ways to restrict the discharge of untreated ballast water to the nation's waters. Even so, the result has been excessive delays. The petitioners in the lawsuit to overturn EPA's regulatory exemption for discharges incidental to vessel operation filed their administrative petition with

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[83] 40 C.F.R.§ 110.7.

[84] CWA § 312(b)(1).

the agency at the outset of 1999, nine and a half years ago. At the time the District Court issued its order on remedy, the court observed that EPA had had over six years since the petition was filed to consider the problem of regulating vessel discharges – particularly ballast water discharges – under the NPDES program. The court also found that EPA had demonstrated its intimate familiarity with the subject matter in materials submitted in the lawsuit, thereby concluding that two years was an adequate amount of time for EPA to begin regulating vessel discharges.

The Michigan legislature, weary of waiting for federal actions, passed a bill requiring discharge permits for ballast water to ships starting in January 1, 2007. The State has issued a general permit that covers oceangoing vessels that do not discharge ballast water into the waters of the state or choose to discharge ballast water treated by one of four ballast water treatment methods determined by the Michigan Department of Environmental Quality to be environmentally sound and effective in preventing the discharge of aquatic nuisance species.[85] This program has been challenged by shippers.[86]

This April, in response to a citizens lawsuit, a Minnesota court ordered the Minnesota Pollution Control Agency to begin issuing NPDES discharge permits to ships discharging ballast water into Minnesota waters starting on October 1, 2008. The court found that the State was remiss in taking no action to prevent the spread of the viral hemorrhagic septicemia (VHS), described by the U.S. Department of Agriculture as "an extremely serious pathogen of fresh and saltwater fish."[87]

Other States have taken various approaches to ballast water controls and treatment in an attempt to fill the void left by EPA and the Coast Guard, including the States of California, Oregon, and Washington.

Conclusion

Vessels of all sizes, from ocean-going tankers and cruise ships to the millions of motorized recreations vessels plying the nation's rivers and lakes, discharge a myriad of pollutants that pose a hazard to human health, the fish and shellfish many commercial and recreational boat

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[85] Permit No. MIG140000, Ballast Water Control General Permit, Port Operations and Ballast Water Discharge, Michigan Department of Environmental Quality, http://www.deq.state.mi.us/documents/deq-water-npdes-generalpermit-MIG140000.pdf.

[86] *See Fednav, Ltd. v. Chester*, 505 F.Supp 2d 381 (E.D. Mich., 2007), *appeal pending*, No. 07-2083 (6th Cir.) (rejecting shipping industry challenges to Michigan's ballast water law).

[87] *State of Minnesota ex rel., Minnesota Center for Environmental Advocacy v. Minnesota Pollution Control Agency*, File No. 62-CV-07-2224 (Ramsey Co. Dis. Ct., State of Minnesota, April 21, 2008) (court ordered Minnesota Pollution Control Agency to begin issuing Clean Water Act discharge permits to ships by October 1, 2008 to stop or mitigate the spread of Viral Hemorrhagic Septicemia) at 2.

users are seeking to catch, birds and mammals, and the integrity of the ecosystems that support a wide range of aquatic life. Our understanding of these threats is more than adequate to know they are substantial and less than fully adequate to know how to perfectly control, treat, and regulate them. However, after over 35 years of working to implement and refine the Clean Water Act, we know this: the nation's preeminent water pollution control law offers the best approach to protecting the nation's waters under evolving circumstances. The Act was established to adapt to changing information about pollution impacts as well as to the development of new pollution treatment technologies. It has lofty goals but offers substantial flexibility on how and when to meet those goals. The Clean Water Act balances the need to provide a high level of protection to public waters with providing certainty and "permit shields" to those dischargers covered under its NPDES permits. It encourages the gathering of information on both discharges and the nations' water quality to ensure that science is the basis for future regulatory actions.

EPA is now poised to regulate vessel discharges under the Act, to take timely action in place of its and the Coast Guard's refusal to implement clear Congressional mandates. As the agency has stated repeatedly in its response to a citizens' petition to regulate the massive discharges from cruise ships, it need not invent new regulations as it already has them at hand and is preparing to implement them with regard to vessel discharges.[88] Allowing the agency to move forward after so many years of delay – to assure the eventual treatment of ballast water, sewage, graywater, and bilge water – is the best course of action.

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[88] *See, e.g.*, Letter from Benjamin Grumbles, EPA, to Russell Long, Bluewater Network, January 31, 2008 at 2, http://www.epa.gov/owow/oceans/cruise_ships/ Bluewater_Network _Petition_Response_20_31_08.pdf; Draft Cruise Ship Assessment Report, EPA, December 20, 2007 at 3-30, http://www.epa.gov/owow/oceans/cruise_ships /pdf_disch_assess/section3_graywater.pdf.