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Vessel Incidental Discharge Legislation in the 115th Congress: Background and Issues

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Summary

Stakeholders broadly agree on the need to control vessel discharges—particularly ballast water discharges, which can introduce numerous contaminants into U.S. and international waters. Ballast water discharge from ships is one significant pathway for introduction of aquatic nuisance species (ANS)—that is, invasive species—that can harm aquatic ecosystems. Federal requirements for ballast water and other incidental discharges from vessels in the United States flow from two laws—the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990, as amended by the National Invasive Species Act of 1996, and the Clean Water Act (CWA)—and related Coast Guard and U.S. Environmental Protection Agency (EPA) regulations. Further, individual state requirements apply in approximately half of the states. Vessels are also subject to a number of international agreements, treaties, and conventions.

The current regulatory scheme presents several complex policy issues.

- **Overlapping Federal Requirements.** The maritime industry has argued for harmonization of what it views as duplicative rules for vessel discharges, especially ballast water discharges, through a single set of requirements. Shipping and other industry groups have raised concerns that EPA and Coast Guard requirements overlap, needlessly increasing cost and complexity. Some have called for centralizing responsibilities with the Coast Guard; others assert that EPA should be responsible if regulation is centralized.
- **State Role and Federal Preemption.** Shipping and other industry groups have objected to conditions that states attach to EPA's permit for vessels. They argue this creates a patchwork of inconsistent requirements that are hard to implement. However, many states oppose federal preemption of state action in this area.
- **Ballast Water Discharge Standards.** Current Coast Guard and EPA requirements for ballast water contain identical discharge standards. Some states, environmental groups, and others favor more stringent standards to eliminate ANS invasions. EPA and the Coast Guard believe that technology to meet more stringent standards is not currently technically or economically achievable.
- **Approval of Ballast Water Management Systems.** Some groups have expressed frustration over the Coast Guard's approval process for systems that can achieve ballast water discharge standards. Although vessels were to comply with the standards by January 2016, the Coast Guard did not approve any systems until December 2016. The testing protocol the Coast Guard uses in approving systems differs from the International Maritime Organization's protocol. Some have argued the Coast Guard's protocol is too restrictive; others argue it is more reliable for ensuring ANS prevention.
- **"Lakers."** "Lakers" are vessels that operate exclusively in the Laurentian Great Lakes. Some argue that such vessels do not introduce ANS and should not need to treat their ballast water. Others argue that Lakers spread ANS in the Great Lakes more quickly and widely than would otherwise occur and should be subject to the same regulations as other vessels.
- **Extending the Moratorium for Small Vessels.** The moratorium on CWA permitting for certain incidental discharges (not including ballast water) from commercial fishing vessels of all sizes and nonrecreational vessels less than 79 feet in length expired January 19, 2018. Many believe these vessels should be

permanently excluded from CWA permitting while others believe it is important to regulate them.

In the 115th Congress, several bills have been introduced to address issues with the regulatory system for ballast water and other discharges incidental to normal vessel operations. Except for one potentially significant exception, H.R. 1154 and S. 168, both titled the "Vessel Incidental Discharge Act," are the same. In March 2017, the Senate Committee on Commerce, Science, and Transportation reported S. 168. In June 2017, the committee reported S. 1129, the Coast Guard Authorization Act of 2017. As reported, S. 1129 includes the text of S. 168. On January 3, 2018, President Trump signed S. 2273 (P.L. 115-100), extending through January 19, 2018, the moratorium on CWA permitting for certain incidental discharges (excluding ballast water) from commercial fishing vessels and nonrecreational vessels less than 79 feet in length. S. 2194 and H.R. 4656 would extend the moratorium through December 18, 2020. S. 2331 would extend it through March 23, 2018.

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Introduction

As part of their normal operations, vessels may discharge a wide range of wastes and contaminants into U.S. and international waters, including nutrients, pathogens, oil and grease, metals such as copper, toxic chemical compounds, conventional pollutants such as suspended solids, and nonnative aquatic nuisance species (ANS)—also referred to as invasive species.[1] The discharges can include shower and laundry facility water, deck washdown and runoff, bilgewater, motor fuel, machinery wastewater, and ballast water, among others. Contaminants in these discharges can have a broad array of effects on aquatic species and human health, many of which can be harmful.

The universe of vessels that may release these discharges is diverse. It includes commercial fishing vessels, cruise ships, ferries, barges, mobile offshore drilling units, tankers, cargo ships, container ships, research vessels, and emergency response vessels, such as firefighting and police vessels. Including recreational vessels, the universe of vessels numbers in the millions.[2]

Ballast water discharges from vessels are a concern to stakeholders particularly because they may introduce ANS—nonnative species that can threaten the diversity or abundance of native species, the ecological stability of infested waters, or commercial, agricultural, aquacultural, or recreational activities dependent on such waters.[3] In certain cases, successful establishments of ANS can result in significant economic losses. In the late 1980s, the introduction of nonnative zebra mussels into the Great Lakes drew national attention to ANS.[4] Zebra mussels compete with native species and cause significant ecological damage. They also attach to hard surfaces such as water intake pipes used for cooling water and municipal water supply, sometimes causing a significant reduction in pumping capacity.[5] Currently, many U.S. areas have ANS, although some areas—the Great Lakes, Hawaii, the West Coast, and Florida—have larger numbers of ANS.[6]

Ballast water discharged from ships is one significant pathway for the introduction of ANS.[7] Ships use large amounts of ballast water to stabilize the vessel during transport. Ballast water is often taken on in the coastal waters in one region after ships discharge wastewater or unload cargo. It is then discharged at the next port of call, where ships load more cargo. The practice of taking on and discharging ballast water is essential to the proper functioning of ships because the water that is taken in or discharged compensates for changes in the vessel's weight as cargo is loaded or unloaded, and as fuel and supplies are consumed. However, ballast water discharge may contain a variety of biological materials, including ANS. If these species are released into lakes or

[1] U.S. Environmental Protection Agency, *2008 Final Issuance of National Pollutant Discharge Elimination System (NPDES) Vessel General Permit (VGP) for Discharges Incidental to the Normal Operation of Vessels Fact Sheet*, December 18, 2008, p. 12. Hereinafter 2008 VGP Factsheet.

[2] Environmental Protection Agency, "Development of Clean Water Act National Pollutant Discharge Elimination System Permits for Discharges Incidental to the Normal Operation of Vessels," 72 *Federal Register* 34241, June 21, 2007.

[3] Aquatic Nuisance Species Task Force, "What are ANS?" https://www.anstaskforce.gov/ans.php.

[4] U.S. Geological Survey, Nonindigenous Aquatic Species Database, "*Dreissena polymorpha* (zebra mussel)," https://nas.er.usgs.gov/queries/FactSheet.aspx?speciesID=5, Revision Date: June 5, 2017.

[5] Ibid.

[6] U.S. Fish and Wildlife Service, "Frequently Asked Questions About Invasive Species," https://www.fws.gov/invasives/faq.html#q4, Revision Date: November 20, 2012.

[7] National Oceanic and Atmospheric Administration Fisheries Service, "Ballast Water – A Pathway for Aquatic Invasive Species," http://www.habitat.noaa.gov/pdf/best_management_practices/fact_sheets/Ballast%20Water%20Factsheet.pdf.

rivers as part of ballast water discharge, they can alter aquatic ecosystems if they become established.

Regulation of Vessel Discharges

Recognizing the potential economic and environmental consequences of ANS invasions, Congress first passed legislation in 1990 to prevent and control infestations of ANS introduced through ballast water and other means.[8] Today, multiple entities—including the Coast Guard, U.S. Environmental Protection Agency (EPA), and some states—regulate discharges incidental to the normal operation of vessels, including ballast water. Some types of vessel discharges—including garbage;[9] oil or hazardous substances;[10] sewage;[11] graywater from commercial vessels operating in the Great Lakes;[12] and air pollutant emissions[13]—are regulated separately and will not be discussed in this report. For the purposes of this report, "vessel discharges" refers to discharges incidental to the normal operation of vessels, including ballast water.

Coast Guard Regulations

The Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (NANPCA, P.L. 101-646), as amended by the National Invasive Species Act of 1996 (NISA, P.L. 104-332), requires the Coast Guard to manage ballast water in U.S. waters.[14] Initially, NANPCA aimed to prevent the introduction and spread of ANS into the Great Lakes by managing vessel ballast water discharge. NANPCA directed the Coast Guard to establish a program and issue regulations (33 C.F.R. §151) to prevent the introduction and spread of ANS into the Great Lakes through the ballast water of vessels, which the Coast Guard promulgated in 1993.[15] These regulations required ballast water management practices for each vessel entering the Great Lakes after operating outside the U.S. Exclusive Economic Zone (EEZ).[16]

Congress amended NANPCA in 1996 (i.e., NISA) to create a national ballast water management program modeled after the Great Lakes program. All ships entering U.S. waters after operating outside the EEZ were directed to undertake high seas (i.e., midocean) ballast exchange, retain their ballast water onboard, or use alternative measures pre-approved by the Coast Guard as

[8] Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990, P.L. 101-646, 16 U.S.C. §4701-4751.

[9] Act to Prevent Pollution from Ships (33 U.S.C. §1901 et seq.) and related Coast Guard regulations (33 C.F.R. §151, Subpart A).

[10] Clean Water Act (CWA) §311; 33 U.S.C. §1321.

[11] CWA §312; 33 U.S.C. §1322.

[12] Ibid.

[13] Act to Prevent Pollution from Ships (33 U.S.C. §1901 et seq.).

[14] 16 U.S.C. §4701-4751.

[15] Department of Transportation, Coast Guard, "Ballast Water Management for Vessels Entering the Great Lakes," 58 *Federal Register* 18330, April 8, 1993.These requirements replaced voluntary guidelines published in 1991. A subsequent final rule amended 33 C.F.R. §151 to extend the mandatory ballast water management requirements into portions of the Hudson River (Department of Transportation, Coast Guard, "Ballast Water Management for Vessels Entering the Hudson River," 59 *Federal Register* 67632, December 30, 1994). The Homeland Security Act (HSA) of 2002, P.L. 107-296, transferred the Coast Guard from the Department of Transportation to the Department of Homeland Security.

[16] The EEZ means the area established by Presidential Proclamation Number 5030, dated March 10, 1983, which extends 200 nautical miles from the baseline from which the breadth of the territorial sea of the United States is measured.

equally or more effective.[17] These national ballast water management practices were initially voluntary, but became mandatory in 2004.[18]

However, some assert that while midocean ballast water exchange may offer some relief from ANS introductions, it has shortcomings. For example, the effectiveness of ballast water exchange in removing organisms from ballast water varies.[19] In addition, ballast water exchange is not always carried out because of safety considerations. Under NISA, a vessel operator is not required to conduct a ballast water exchange if the operator determines that "the exchange threatens the safety or stability of the vessel, its crew, or its passengers because of adverse weather, vessel architectural design, equipment failure, or any other extraordinary conditions."[20]

For this and other reasons, the Coast Guard used its authority under NISA to establish quantitative ballast water treatment performance standards; protocols for testing, verifying, and reporting on treatment technologies; and a program to facilitate experimental shipboard installation and operation of promising technologies. On March 23, 2012, the Coast Guard published a rule that established new requirements for ballast water management, including numeric standards that establish allowable concentrations of living organisms in ballast water discharged into U.S. waters.[21] It also established numeric limits on human health indicator microorganisms, such as intestinal pathogens (see **Table 1** in "EPA Regulations"). The rule applies to all U.S. and foreign vessels equipped with ballast tanks and operating in waters of the United States, unless specifically exempt. Under the rule, the standards applied to new vessels (i.e., those constructed on or after December 1, 2013) on delivery, and applied to vessels constructed prior to that date on a phased schedule. As of January 1, 2016, all new and existing vessels subject to the rule were to be in compliance.

Under the rule, vessel owners and operators have several compliance options. They can

- eliminate ballast water discharge,
- discharge to an onshore facility or to another vessel for the purpose of treatment,

[17] Ballast water exchange involves replacing coastal water with open-ocean water during a voyage. This replaces coastal water and reduces the density of coastal organisms in ballast tanks, replacing them with oceanic organisms with a lower probability of survival in nearshore waters. See National Ballast Information Clearinghouse, Smithsonian Environmental Research Center and the Coast Guard, *Ballast Water Management Options Summary*, https://invasions.si.edu/nbic/managementpract.html.

[18] Department of Homeland Security, Coast Guard, "Mandatory Ballast Water Management Program for U.S. Waters," 69 *Federal Register* 44952, July 28, 2004. As discussed in the rule's preamble, NISA §1101 directed the Secretary of the Department in which the Coast Guard is operating to submit a report to Congress evaluating the effectiveness of the voluntary ballast water management program. If the Secretary determined that the rate of effective compliance with the voluntary guidelines was not adequate or that the reporting by vessels pursuant to the guidelines was not adequate for the Secretary to assess compliance, the Secretary was directed to promulgate mandatory requirements.

[19] See Department of Homeland Security, Coast Guard, "Standards for Living Organisms in Ships' Ballast Water Discharged in U.S. Waters," 77 *Federal Register* 17254, March 23, 2012. Hereinafter 2012 Coast Guard Rule. Per the rule's preamble, some studies suggest that the efficacy of ballast water exchange (i.e., the ability to remove or inactivate organisms by the exchange) in reducing organism concentration is 80 to 99%, although lower efficacies have been reported. Other studies demonstrate that volumetric efficiency of ballast water exchange (i.e., the physical amount of water that is displaced by the exchange) ranges from 50 to 90%.

[20] NISA §1101(k)(1).

[21] 2012 Coast Guard Rule.

- use ballast water that is drawn only from a U.S. public water system that is in compliance with federal drinking water regulations, or
- install a ballast water management system (BWMS) that has been approved (i.e., "type approved") by the Coast Guard.

The rule also detailed procedures for land-based and shipboard testing and Coast Guard approval of treatment technology. In the rule's preamble, the Coast Guard noted that implementing the approval process would likely take at least three years. Accordingly, the rule provided an interim compliance option—use of an Alternate Management System (AMS). An AMS is a BWMS that has been approved by a foreign administration pursuant to standards in the International Maritime Organization (IMO) convention (see "International Maritime Organization (IMO) Standards"), and which the Coast Guard has determined is at least as effective as ballast water exchange.[22] Under the rule, AMSs are allowed for up to five years after a vessel's compliance date.

International Maritime Organization (IMO) Standards

The IMO *International Convention for the Control and Management of Ships' Ballast Water and Sediments*, adopted in 2004, also established ballast water discharge standards.[23] The United States has not ratified the convention, which entered into force on September 8, 2017. The numeric standards in the IMO convention, referred to as the D-2 standards, are similar to the numeric standards in the 2012 Coast Guard Rule.[24] As with the 2012 Coast Guard Rule, the IMO ballast water performance standards identify organisms of various sizes and also identify concentrations of human health indicator microbes in ballast water that management systems are required to achieve prior to discharge (see **Table 1** in "EPA Regulations"). However, the IMO D-2 standards specify the number of allowable "viable" organisms, whereas the 2012 Coast Guard Rule specifies the number of allowable "living" organisms. (See "Approval of Ballast Water Management Systems" for further discussion.)

EPA Regulations

Under the Clean Water Act (CWA), EPA also has authority to regulate vessel discharges. Specifically, CWA Section 301(a) prohibits the discharge of any pollutant from a point source into U.S. waters without a permit,[25] and vessels are defined in the statute as point sources.[26] However, for many years, EPA chose not to regulate most vessel discharges. In 1973, EPA promulgated a regulation that excluded discharges incidental to the normal operation of vessels—including ballast water—from CWA permitting requirements.[27] Decades later, environmental advocacy groups that wanted EPA to address ballast water as a source of ANS in U.S. waters challenged the long-standing regulation. In 2006, a federal district court ruled EPA had exceeded its authority

[22] 33 C.F.R. §151.1504. 2012 Coast Guard Rule, p. 17259. Note that not all IMO approved systems are designated as AMS; manufacturers of such systems must also obtain an AMS acceptance determination from the Coast Guard.

[23] According to IMO, the convention had 63 contracting parties (representing 68.51% of world merchant shipping tonnage) as of August 2017.

[24] New ships must meet the D-2 standard as of September 8, 2017, while existing ships (i.e., those constructed prior to that date) must comply based on an implementation timetable. The timetable is based on the date of the ship's International Oil Pollution Prevention Certificate renewal survey, which must be undertaken at least every five years.

[25] 33 U.S.C. §1311(a).

[26] CWA §502(14); 33 U.S.C. §1362.

[27] U.S. Environmental Protection Agency, "National Pollutant Discharge Elimination System," 38 *Federal Register* 13528, May 22, 1973.

under the CWA in exempting these discharges from permitting requirements in the 1973 regulation and later issued an order vacating the regulatory exclusion as of September 30, 2008.[28] The U.S. Court of Appeals for the Ninth Circuit upheld the district court's ruling in 2008.[29]

EPA estimated that the court's ruling could affect and require permits for more than 140,000 commercial fishing, freight and tank barges, and other vessels, plus over 13 million recreational boats.[30] The 110th Congress responded to that estimate by passing two bills to restrict the population of vessels subject to regulation; both were signed into law.[31]

The first, the Clean Boating Act of 2008, provided a *permanent exemption* from CWA permitting requirements for discharges incidental to the normal operation of *recreational vessels of all sizes*.[32] The legislation directed EPA and the Coast Guard to create a regulatory regime under new CWA Section 312(o). To date, regulations have not been issued.[33]

The second measure, P.L. 110-299, provided a two-year moratorium on CWA permitting for *certain incidental discharges* (excluding ballast water) from *commercial fishing vessels of all sizes and nonrecreational vessels less than 79 feet in length*. Ballast water discharges from vessels less than 79 feet in length are not affected by the moratorium and are required to be authorized by permits. Congress has extended this moratorium four times, most recently until January 19, 2018.[34]

In 2008, EPA issued a national CWA permit called the Vessel General Permit (VGP), which gave permit coverage to vessels larger than 79 feet in length and also applied to ballast water discharges from vessels covered by the moratorium.[35] EPA estimated that approximately 61,000 domestic flagged vessels and up to 8,000 additional foreign flagged vessels would be eligible for coverage under the permit.[36] The permit addressed 26 pollutant discharge types or waste streams, including ballast water, that result from the normal operation of covered vessels. The ballast water requirements of the 2008 VGP aligned with what was required by then-existing Coast Guard rules—primarily use of ballast water exchange. As with the Coast Guard rule in effect since 2004, EPA's permit mandated midocean ballast water exchange for ships traveling outside the EEZ.

Upon expiration of the 2008 VGP in 2013,[37] EPA issued a new VGP.[38] The 2013 VGP is similar to the 2008 permit in many respects. It departs from the previous permit by regulating an additional

[28] Northwest Environmental Advocates v. EPA, No. C 03-05760 SI, 2006 U.S. Dist. LEXIS 69476 (N.D. Cal. September 18, 2006).

[29] Northwest Environmental Advocates v. EPA, 537 F.3rd 1006 (9th Cir. 2008).

[30] Environmental Protection Agency, "Development of Clean Water Act National Pollutant Discharge Elimination System Permits for Discharges Incidental to the Normal Operation of Vessels," 72 *Federal Register* 34241, June 21, 2007.

[31] H.Rept. 110-765, p. 3, and Senator Lisa Murkowski, "Congress Passes Murkowski Bill for a Moratorium on Discharge Permits for Commercial Fishing Vessels," press release, July 22, 2008, https://www.murkowski.senate.gov/press/release/congress-passes-murkowski-bill-for-a-moratorium-on-discharge-permits-for-commercial-fishing-vessels.

[32] P.L. 110-288; CWA §402(r); 33 U.S.C. §1342(r).

[33] According to the EPA Regulatory Agenda 2017 Update, the regulatory efforts related to the Clean Boating Act of 2008 are currently in long-term status.

[34] The most recent extension was enacted in December 2017 (P.L. 115-100).

[35] U.S. Environmental Protection Agency, *National Pollutant Discharge Elimination System (NPDES) Vessel General Permit for Discharges Incidental to the Normal Operation of Vessels (VGP)*, December 19, 2008. Hereinafter 2008 VGP.

[36] 2008 VGP Factsheet, p. 11.

[37] Under CWA §402, National Pollutant Discharge Elimination System permits, including the VGP, have fixed terms not exceeding five years.

waste stream—fish hold effluent—and more notably, specifying ballast water numeric discharge limits. The compliance options for meeting the numeric discharge standard are similar to the options under the 2012 Coast Guard Rule.[39] EPA determined, based on reports from the National Research Council[40] and the agency's own Science Advisory Board,[41] that ballast water treatment technologies were available to meet numeric limits established in the 2013 VGP and that the requirements were economically practicable and achievable.[42]

The numeric limits in the 2013 VGP, which are the same as the performance standards in the 2012 Coast Guard Rule and similar to the D-2 standards in the IMO convention, are shown in **Table 1**. The compliance deadlines for these limits are also the same in the 2013 VGP and the 2012 Coast Guard Rule.[43]

Table 1. Ballast Water Numeric Discharge Limits in the 2012 Coast Guard Rule, the 2013 EPA VGP, and the IMO Convention

Organism Size or Type	2012 Coast Guard Rule	2013 EPA VGP	IMO Convention
Organisms ≥ 50 micrometers (μm) in minimum dimension	< 10 living organisms per cubic meter (m^3) of ballast water	< 10 living organisms per m^3 of ballast water	< 10 viable[a] organisms per m^3 of ballast water
Organisms < 50 μm and ≥ 10 μm	< 10 living organisms per milliliter (mL) of ballast water	< 10 living organisms per mL of ballast water	< 10 viable[a] organisms per mL of ballast water
Indicator microorganisms:			
Toxicogenic Vibrio cholera (serotypes O1 and O139)	< 1 colony forming unit (cfu) per 100 mL	< 1 colony forming unit (cfu) per 100 mL	< 1 colony forming unit (cfu) per 100 mL
Escherichia coli	<250 cfu per 100 mL	<250 cfu per 100 mL	<250 cfu per 100 mL
Intestinal enterococci	<100 cfu per 100 mL	<100 cfu per 100 mL	<100 cfu per 100 mL

Sources: 2012 Coast Guard Rule, 2013 EPA VGP, and the IMO convention.

(...continued)

[38] U.S. Environmental Protection Agency, *National Pollutant Discharge Elimination System (NPDES) Vessel General Permit for Discharges Incidental to the Normal Operation of Vessels (VGP)*, December 19, 2013. Hereinafter 2013 VGP.

[39] Like the 2012 Coast Guard Rule, the 2013 VGP provides several compliance options, including eliminating ballast discharge, discharging to an onshore facility or to another vessel for the purpose of treatment, using ballast water that is drawn only from public water systems, and installing a BWMS. However, the latter two compliance options differ somewhat. Under the 2013 VGP, ballast water may be drawn from U.S. or Canadian public water systems in compliance with the respective country's drinking water standards, whereas under the 2012 Coast Guard Rule, the option is limited to U.S. public water systems in compliance with Safe Drinking Water Act regulations. The approval required for BWMS under the 2012 Coast Guard Rule and 2013 VGP also differ slightly (see "Approval of Ballast Water Management Systems").

[40] National Research Council, Committee on Assessing Numeric Limits for Living Organisms in Ballast Water, *Assessing the Relationship Between Propagule Pressure and Invasion Risk in Ballast Water*, 2011.

[41] EPA Science Advisory Board, *Efficacy of Ballast Water Treatment Systems*, EPA-SAB-11-009, 2011.

[42] U.S. Environmental Protection Agency, "Draft National Pollutant Discharge Elimination System (NPDES) General Permits for Discharges Incidental to the Normal Operation of a Vessel," 76 *Federal Register* 76716, December 8, 2011.

[43] 2013 VGP, p. 38.

a. Note that IMO D-2 standards specify less than 10 viable organisms for both of the discharge standards, rather than living as used in the 2012 Coast Guard Rule and 2013 EPA VGP. For further discussion see "Approval of Ballast Water Management Systems."

While they are similar in many respects, the 2012 Coast Guard Rule and the 2013 VGP differ in several ways.

- **Number and types of vessels.** The 2012 Coast Guard Rule applies to about 3,050 vessels that are equipped with ballast tanks,[44] while the 2013 VGP applies to approximately 72,000 vessels,[45] including many that do not discharge ballast water but may discharge other waste streams. In addition, the 2012 Coast Guard Rule exempts crude oil tankers engaged in coastwise trade (i.e., the Coast Guard generally defines coastwise trade as the transportation of merchandise or passengers between points in the United States or EEZ) because such vessels are statutorily exempted under NISA.[46] The CWA does not include a statutory exemption for such vessels; therefore, they must comply with the 2013 VGP.
- **Covered discharges.** The 2012 Coast Guard Rule focuses on ballast water discharges, whereas the 2013 VGP authorizes discharges of ballast water and 26 other waste streams incidental to the normal operation of vessels.
- **Ballast water requirements are similar but not identical.** Both adopt ballast water discharge standards similar to those in the IMO convention, but they include somewhat different monitoring, recordkeeping, and reporting requirements. For example, the 2013 VGP requires monitoring of the ballast water discharge for biocides (and residuals) that vessels may use as part of ballast water management; the 2012 Coast Guard Rule has no such requirements.
- **Enforcement.** Under NISA and the CWA, respectively, the Coast Guard and EPA have enforcement authority, such as civil and criminal sanctions.[47] However, the CWA authorizes citizen suits—that is, the ability of citizens to bring a lawsuit to enforce effluent limitations in a permit.[48]

State Regulations

In addition to federal requirements, vessel discharges are also subject to regulation by approximately half of the states. NISA and the CWA do not preempt the states' authority to regulate vessel discharges.

- **NISA.** NISA Section 1205 preserves the authority of states and localities to adopt or enforce control measures for ANS.[49] The general nonpreemption has allowed states (Michigan, California, and others) to develop ballast water management programs with performance standards or technology requirements that are more comprehensive than the Coast Guard's rules.

[44] 2012 Coast Guard Rule, p. 17300.

[45] U.S. Environmental Protection Agency, *2013 Final Issuance of National Pollutant Discharge Elimination System (NPDES) Vessel General Permit (VGP) for Discharges Incidental to the Normal Operation of Vessels Fact Sheet*, 2013, p. 17. Hereinafter 2013 VGP Fact Sheet.

[46] NISA §1101(c)(2)(L); 16 U.S.C. §4711(c)(2)(L).

[47] CWA §309; 33 U.S.C. §1319; and NISA §1101; 16 U.S.C. §4711.

[48] CWA §505; 33 U.S.C. §1365.

[49] 16 U.S.C. §4725.

- **CWA Section 510.** CWA Section 510 also preserves states' authority to adopt standards, discharge limitations, or other requirements provided that they are no less stringent than federal rules.[50] States sometimes want the flexibility to require standards that are more stringent than federal ones. In addition, this general nonpreemption in the statute gives states the ability to tailor their implementation of federal water quality programs by adopting requirements under state law to address local conditions and circumstances. A few states—including Minnesota, Wisconsin, and Michigan—have used their authority to issue state permits independent of the VGP to regulate ballast water discharges.[51]
- **CWA Section 401.** Under CWA Section 401, an applicant for a federal license or permit to conduct any activity that may result in a discharge into waters of the United States must provide the federal agency with a certification from the state in which the discharge originates or will originate,[52] indicating that the discharge will comply with applicable provisions of the federal law, including state-established water quality standards.[53] Section 401 gives states two distinct powers: (1) the power to indirectly deny federal permits or licenses by withholding certification; and (2) the power to impose conditions on federal permits. Where states impose conditions on a federal permit—such as the VGP—the permittee must meet the additional state limitations as conditions of the federal permit.

Twenty-five states certified the 2013 VGP with additional permit conditions covering one or more of the 27 effluent streams, including ballast water.[54] Of the 25 states, 14 certified the permit with supplementary conditions applicable to ballast water discharges. Examples of such supplementary conditions include specific numeric discharge standards more stringent than those in the 2013 VGP (or the 2012 Coast Guard Rule), state permit requirements, or requirements that discharges meet state narrative (i.e., descriptive) water quality standards.[55] Some states certified with conditions for specific pollutant discharges, such as chlorine, which can harm aquatic life. Oregon and Washington have adopted reporting, recordkeeping, and inspection requirements, as well as certain ballast water open sea exchange measures. California certified the 2013 VGP with ballast water numeric discharge standards 1,000 times more stringent than EPA's and the Coast Guard's.[56] However, California has delayed the implementation date of these standards as discussed further below (see "Ballast Water Discharge Standards"). New York similarly certified the 2008 VGP with numeric standards 100 times more stringent than EPA's and the Coast

[50] 33 U.S.C. §1370.

[51] Information on the permits for these states are available as follows: Minnesota (https://www.pca.state.mn.us/water/vessel-discharge), Wisconsin (http://dnr.wi.gov/topic/wastewater/BallastWater.html), and Michigan (http://www.michigan.gov/deq/0,4561,7-135-3313_71618_3682_3713-153446—,00.html).

[52] Or, if appropriate, from the interstate water pollution control agency having jurisdiction over the navigable waters at the point where the discharge originates or will originate.

[53] 33 U.S.C. §1341.

[54] 2013 VGP, pp. 91-139.

[55] Ibid.

[56] California State Water Resources Control Board, *Order for Clean Water Act Section 401 Water Quality Certification for U.S. EPA Vessel General Permit*, September 27, 2012. Performance Standards for the Discharge of Ballast Water for Vessels Operating in California Waters, California Code of Regulations Title 2, Division 3, Chapter 1, Article 4.7 §§2293-2294.

Guard's,[57] but did not include them as a certification condition of the 2013 VGP. (See "Ballast Water Discharge Standards").

The commercial shipping industry and environmental groups challenged several separate state permits, on differing grounds, but courts have generally upheld the permits. A Minnesota court upheld that state's 2008 permit despite challenges from an environmental group over the state's failure to impose numeric limitations on ballast water discharges, among other assertions.[58] Also, Michigan's permitting program and New York's certification of the 2008 EPA permit were upheld after challenges by shipping industry groups.[59]

Issues in the Regulation of Vessel Discharges

The combination of multiple federal and state requirements presents several complex policy issues. Congress has considered these issues in proposed legislation for more than a decade, including House and Senate versions of the Vessel Incidental Discharge Act in the 115th Congress (discussed below).

Overlapping Federal Requirements

The maritime industry has argued for harmonization of what it views as duplicative federal rules for vessel discharges, especially for ballast water discharges, through a single set of requirements. Shipping and other industry groups have raised concerns that EPA and Coast Guard requirements overlap, making implementation needlessly costly and complex.[60] Many in these groups have called for centralizing responsibilities with the Coast Guard, which has long had administrative and regulatory authority over the industry.[61] However, some other interest groups—particularly environmental advocacy groups—would prefer that EPA be the federal agency to regulate ballast water if Congress were to centralize statutory authority. These groups argue that EPA's sole mission is protecting public health and the environment, while the Coast Guard has several existing missions and responsibilities.[62]

If Congress centralized ballast water management authority with the Coast Guard, policymakers might also consider how to address the additional incidental discharge waste streams in the 2013 VGP. Options could include eliminating regulation of them entirely, centralizing them with the Coast Guard, or having EPA continue to regulate incidental discharges other than ballast water. If EPA were to continue regulating these other incidental discharges, vessels would still be subject

[57] 2008 VGP, p. 84.

[58] In re Request for Issuance of the SDS Gen. Permit MNG300000, 769 N.W.2d 312 (Minn. Ct. App. 2009).

[59] Fednav, Ltd. vs. Chester, 547 F.3d 607 (6th Cir. 2008); Port of Oswego Authority vs. Grannis, 70 A.D.3d 1101 (N.Y. App. Div. 2010).

[60] Letter from American Association of Port Authorities et al. to Chairman John Thune and Ranking Member Bill Nelson, February 17, 2015, http://www.americanwaterways.com/content/coalition-letter-supports-s373-vessel-incidental-discharge-act.

[61] Lake Carriers' Association, "Ballast Water Facts, Not Hype," June 10, 2016, http://www.lcaships.com/2016/06/10/ballast-water-facts-not-hype/.

[62] Letter from David Jenkins, Director of Government Affairs, Alaska Wilderness League, Jared Teutsch, J.D., Water Policy Advocate, Alliance for the Great Lakes, and Jim Bradley, Senior Director of Government Relations, American Rivers, et al. to Senator Rockefeller and Senator Thune, June 19, 2014, https://greatlakes.org/wp-content/uploads/2017/05/VIDA-Letter-5_17-FINAL.pdf. Letter from ADM, AccuTrans, Inc., and AK Steel, et al. to Honorable Mitch McConnell and Honorable Charles Schumer, February 8, 2017, http://steelnet.org/wp-content/uploads/2017/02/VIDA-coalition-letter-to-Senate-leadership-February-2017.pdf.

to those portions of the VGP, and vessel owners and operators would still be subject to two agencies' regulatory regimes.

If Congress chooses to centralize regulatory authority with one federal agency, policymakers might also consider the implications of selecting the Coast Guard or EPA as that agency. For example, the CWA provides for citizen suit enforcement,[63] whereas NANPCA does not.

State Role and Federal Preemption

Shipping and other industry groups have also objected to the conditions that states attach to EPA's permit. They argue these conditions create a patchwork of inconsistent requirements that are economically inefficient and cumbersome to implement.[64] A group of commercial shipping operators challenged state certifications under the 2008 VGP, contending that EPA failed to properly consider burdens to the shipping industry from complying with a single federal permit with multiple state requirements. The federal court rejected the challenge, ruling that under the CWA, EPA does not have the power to amend or reject state certifications under Section 401, which must be attached to and become conditions of the federal permit.[65]

Similar concerns were raised about the Coast Guard's 2012 rule. A number of commenters on the rule requested that the Coast Guard preempt all state ballast water treatment standards and requirements in favor of a uniform, national standard. Some argued that states with conflicting regulations burden interstate commerce and create confusion and delays in eliminating ANS invasions.[66] In the final rule, the Coast Guard responded that it cannot legally preempt state action to regulate discharges of ballast water within state waters, citing a "savings provision" of NANPCA, as amended by NISA, that saves to the states or their political subdivisions their authority to "adopt or enforce control measures for aquatic nuisance species, [and nothing in the Act would] diminish or affect the jurisdiction of any State over species of fish and wildlife."[67]

States that have adopted additional requirements, such as their own permits or more stringent standards, strongly oppose proposals to preempt this authority. They argue that doing so would be contrary to Congress's clear intention in both the CWA and NISA.[68]

Ballast Water Discharge Standards

Another policy issue under debate pertains to the appropriate numeric discharge standards for ballast water. As previously discussed, the 2012 Coast Guard Rule and the 2013 VGP both established numeric standards for ballast water, which were in line with standards outlined in the IMO convention. For nonconventional pollutants, such as ANS, the CWA directs EPA to promulgate effluent limitations based on the Best Available Technology Economically Achievable (BAT).[69] In assessing BAT, EPA considers the age of equipment and facilities involved, the process employed and potential process changes, the engineering aspects of the application of

[63] CWA §505; 33 U.S.C. §1365.

[64] Ibid.

[65] Lake Carriers' Association v. EPA, 652 F.3d 1, 10 (D.C. Cir. 2011).

[66] 2012 Coast Guard Rule, p. 17279.

[67] 16 U.S.C. §4725. 2012 Coast Guard Rule, p. 17280.

[68] Letter from Attorney Generals of New York, California, Illinois, Maine, Massachusetts, Michigan, Oregon, Rhode Island, Vermont, and Washington to Honorable Mitch McConnell and Honorable Charles E. Schumer, February 15, 2017, https://ag.ny.gov/sites/default/files/vida_ltr_senate_2_15_17_final.pdf.

[69] CWA §301(b)(2)(A); 33 U.S.C. §1311(b)(2)(A).

various types of control techniques, the cost of achieving BAT effluent reductions, nonwater-quality environmental impacts, and other factors as the EPA Administrator deems appropriate.[70] EPA and the Coast Guard both determined that ballast water treatment technologies were available to meet the numeric limits established in the 2013 VGP and 2012 Coast Guard Rule and that the requirements were economically practicable and achievable.[71]

However, following the issuance of the 2013 VGP, four environmental groups petitioned for review of the VGP, alleging that the EPA acted arbitrarily and capriciously in issuing the ballast water provisions. On October 5, 2015, the three-judge panel of the U.S. Court of Appeals for the Second Circuit unanimously ruled that the EPA did act arbitrarily and capriciously and remanded the permit to the agency to redraft the ballast water sections of the VGP.[72] Regarding the ballast water discharge standards, the court ruling stated that the EPA failed to set permit limits that reflect BAT because the agency did not adequately explain why the IMO standards were adopted instead of stricter technology-based effluent limitations given available technology.[73] The court noted that EPA's Science Advisory Board had identified technologies capable of achieving standards stricter than IMO standards. The court instructed EPA to reconsider the VGP ballast water provisions in accordance with its ruling, but mandated that the VGP remain in effect in the meantime. The 2013 VGP is set to expire in 2018; EPA has not yet responded to the court's ruling.

In addition, as previously mentioned, two states—New York and California—adopted more stringent ballast water standards, although those standards are not currently in effect.

- New York initially included standards, which were 100 times more stringent than the IMO standards, as a condition of its water quality certification of the 2008 VGP. The condition required compliance with the stricter standards by no later than January 2012.[74] However, due to a shortage in the supply of available technologies to meet the standards, the New York Department of Environmental Conservation later postponed the effective date of compliance to December 2013, when the 2008 VGP expired.[75] In the state agency's comment letter to EPA regarding the proposed 2013 VGP, the state commissioner asserted that the proposed IMO standards included in the 2013 VGP were insufficient to address ANS and recommended, among other things, that EPA work to adopt standards 100 times more stringent than the IMO standards by June 2016, with a provision for a different compliance schedule if justified based on availability of technology.[76] The state did not include its more stringent standards as a condition of its certification of the 2013 VGP.
- California also adopted more stringent ballast water standards—standards 1,000 times more stringent than the IMO standards—in 2006.[77] In 2008, California

[70] CWA §304(b)(2)(B); 33 U.S.C. §1314(b)(2)(B).

[71] 2013 VGP Fact Sheet, pp. 74-80; 2012 Coast Guard Rule, p. 17263.

[72] NRDC v. U.S. EPA, 804 F.3rd 149 (2nd Cir. 2015).

[73] Note that the court also addressed several other aspects of the VGP ballast water provisions not discussed here.

[74] 2008 VGP, pp. 84-85.

[75] Letter from James M. Tierney, Assistant Commissioner, New York Department of Environmental Conservation, February 16, 2012, http://www.dec.ny.gov/docs/water_pdf/vesselgpletter.pdf.

[76] Letter from Joe Martens, Commissioner, State of New York Department of Environmental Conservation, to Lisa P. Jackson, EPA Administrator, February 21, 2012, http://www.dec.ny.gov/docs/water_pdf/ballastltr022112.pdf.

[77] California Senate Bill No. 497, Chapter 292. Approved by the Governor September 18, 2006.

> certified the VGP with conditions including the more stringent ballast water discharge standards.[78] The implementation dates for the interim standards (i.e., requiring no detectable living organisms for organisms greater than 50 µm in minimum dimension and less than 0.01 living organisms per mL for organisms 10-50 µm in minimum dimension) were phased, with 2016 as the latest compliance date.[79] The final discharge standard (zero detectable living organisms for all organism size classes) was to be implemented beginning in January 2020. However, in October 2015, the state delayed the implementation date of its interim ballast water discharge standards to January 2020 for new and existing vessels to enable further research and development of treatment technologies that can meet the state's standards.[80]

The Coast Guard's 2012 rule called for a review of its standards in 2016. In May 2016, the Coast Guard published a notice of availability of its practicability review.[81] The agency concluded that, at that time, technology to achieve a significant improvement in ballast water treatment efficacy onboard vessels could not be practicably implemented and that no data demonstrated that BWMS could meet more stringent discharge standards than the existing standards. Moving forward, debate among policymakers and stakeholders as to what standards are appropriate and practicable will likely continue.

Approval of Ballast Water Management Systems

Under NANPCA (as amended by NISA) and the Coast Guard's implementing regulations, as previously discussed, vessels equipped with ballast tanks and operating in waters of the United States, unless specifically exempt, must comply with the numeric ballast water discharge standards through one of the following options: eliminating ballast water discharge, discharging to an onshore facility or to another vessel for the purpose of treatment, using ballast water that is only drawn from a U.S. public water system, or by installing a BWMS *that has been approved (i.e., "type approved") by the Coast Guard*.[82] Under the 2013 VGP (which has similar compliance options) vessel owner/operators utilizing a BWMS to comply with numeric limits must use a system that has been shown to be effective by testing conducted by an independent third party laboratory, test facility, or test organization. The permit explicitly states that a type-approved BWMS and/or AMS will be deemed to meet the "shown to be effective" provision.[83]

Availability of Type Approved BWMS

Although all new and existing vessels subject to the 2012 Coast Guard Rule and the 2013 VGP were to be in compliance with the numeric ballast water discharge standards by January 2016, the Coast Guard did not type-approve any BWMS until December 2016. To date, the Coast Guard

[78] California State Water Resources Control Board, *Order for Clean Water Act Section 401 Water Quality Certification for U.S. EPA Vessel General Permit*, December 17, 2008.

[79] The interim standards were to apply to new vessels on a phased schedule based on ballast water capacity beginning in 2010, with 2012 as the latest compliance date. The interim standards were to apply to existing vessels beginning in 2014, with 2016 as the latest compliance date. Ibid, Attachment 3, p. 1.

[80] California Assembly Bill No. 1312, Chapter 644. Approved by the Governor October 8, 2015.

[81] Department of Homeland Security, Coast Guard, "Practicability Review: Standards for Living Organisms in Ships' Ballast Water Discharged in United States Waters," 81 *Federal Register* 29287, May 11, 2016.

[82] 33 C.F.R. §151.2025.

[83] 2013 VGP, p. 30.

has type-approved six systems.[84] In the interim, vessel owners/operators that used an AMS were in compliance with both sets of requirements. However, AMS may only be used for five years after a vessel's compliance date, with no certainty they will be approved by the Coast Guard for long-term compliance with the ballast water discharge standards. Thus, some vessel operators may be reluctant to invest in AMS that may not assure compliance beyond that time period.

Under its authorities, the Coast Guard is also able to grant extensions to vessels that can document that compliance with one of the compliance options is not possible;[85] EPA does not have such authority. However, EPA issued a policy letter indicating that if vessels were otherwise in compliance with the 2013 VGP and had applied for and received an extension from the Coast Guard, enforcement of noncompliance with the ballast water discharge standard due to unavailability of type-approved systems would be a low priority.[86] Although the Coast Guard has now type approved several BWMS, the agency continues to have the extension option for vessel owners because the approved systems may not be available for all vessels (e.g., there may be a delay in commercial availability or the BWMS may not be suitable for all vessels). However, vessel owners must prove that installation of a type-approved system is not possible in order to obtain an extension.[87]

Testing Standard for BWMS

Some—particularly BWMS manufacturers—have argued that the testing protocol the Coast Guard uses in determining whether a particular BWMS is effective in meeting the ballast water discharge standards (and should therefore be type approved) is too restrictive.[88] Specifically, the Coast Guard requires BWMS to be tested based on the ability of the system to kill organisms (i.e., a "live/dead" standard).[89] Some assert that the Coast Guard should also allow systems to be tested based on the ability of the system to render the organisms incapable of reproducing (i.e., a "viable/nonviable" standard).[90]

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[84] Department of Homeland Security, Coast Guard, "Approved BWMS and Status of Applications," Revised November 7, 2017. https://homeport.uscg.mil/Lists/Content/DispForm.aspx?ID=311&Source=https%3A%2F%2Fhomeport%2Euscg%2Emil%2Flists%2Fcontent%2Fallitems%2Easpx%3FView%3D%7B9bd1ee24-648a-44d6-ab55-2b397ef7c94b%7D%26RootFolder%3D%252Flists%252Fcontent%252Fenvironmental%26SortField%3DDocIcon%26SortDir%3DAsc&ContentTypeId=0x010077A263807AAFE54DBF09C291D3EAA816008BFEC11A80BC564EB4241068A94ACD2E.

[85] 33 C.F.R. §151.2036.

[86] Letter from Cynthia Giles, Assistant Administrator for Enforcement and Compliance Assurance, U.S. EPA, to Regional Vessel General Permit Enforcement and Program Directors, December 27, 2013, https://www.epa.gov/npdes/enforcement-response-policy-epas-2013-vgp.

[87] Coast Guard, *Ballast Water Frequently Asked Questions*, September 2017, p. 9, https://homeport.uscg.mil/Lists/Content/Attachments/337/Ballast%20Water%20FAQ%20Master%20Document_FINAL_07SEP2017.pdf. See also Coast Guard, *Marine Safety Information Bulletin 003/17*, Ballast Water Management (BWM) Extension Program Update, March 6, 2017, http://www.dco.uscg.mil/Portals/9/DCO%20Documents/5p/MSIB/2017/003_17_3-6-2017.pdf.

[88] See http://mpnballastwaterfacts.com/about-us/ and "Why MPN?," http://mpnballastwaterfacts.com/wp-content/uploads/2016/12/Ballast-Water-Facts-6-Reasons-Dec7.pdf.

[89] The Environmental Technology Verification test protocol, which Coast Guard regulations (46 C.F.R. §162.060) incorporate by reference, specify a test method that detects if organisms are dead or alive (i.e., the vital stain method).

[90] Letter from Kathy J. Metcalf, President and CEO, Chamber of Shipping of America, to Admiral Paul F. Zukunft, Commandant, Coast Guard, February 6, 2016, http://mpnballastwaterfacts.com/wp-content/uploads/2015/12/CSA-Letter-in-Support-of-MPN-Use-as-alternate-test-protocol.pdf. Hereinafter Chamber of Shipping of America Letter.

In 2015, the Coast Guard's Assistant Commandant for Prevention Policy indicated that from the agency's perspective, the IMO guidelines for approval of BWMS technically also required BWMS to be tested based on a live/dead standard.[91] Specifically:

- While the IMO D-2 standards are phrased in terms of "viable" organisms (e.g., "less than 10 *viable* organisms per cubic meter"),[92] the IMO guidelines for approval of BWMS (i.e., the IMO G8 guidelines) at that time specified that for the purposes of approving BWMS, "viable" was defined as "living."[93]
- In addition, the guidelines stated that viability was to be determined through a live/dead judgment.[94]

However, in October 2016, IMO adopted revised G8 guidelines for approval of BWMS, which revised the definition of "viable" to mean "organisms that have the ability to successfully generate new individuals in order to reproduce the species."[95] Additionally, prior to the guidelines being revised, IMO Administrators were using reproductive ability tests to determine viability of organisms when approving BWMS. Specifically, some administrators type-approved ultraviolet light, or UV, systems on the basis of the most probable number (MPN) method, which is used to determine whether organisms are viable/nonviable rather than live/dead.[96]

Accordingly, some systems approved by the IMO are not approved by the Coast Guard, which has frustrated BWMS manufacturers and some in the shipping industry.[97] The Coast Guard has argued that it is not clear that organisms rendered nonviable will remain so over time; they say some evidence indicates that some organisms have repair mechanisms that can undo damage caused by UV radiation and thus restore the ability to reproduce.[98] Additionally, the Coast Guard asserts that culturing all of the types of organisms found in ballast water in the laboratory environment is challenging.[99] Proposed legislation in the 115th Congress (see "Vessel Incidental Discharge Legislation in the 115th Congress" below) seeks to address this issue.

"Lakers"

Considerable debate also surrounds the issue of how to treat vessels that operate exclusively in the Laurentian Great Lakes, commonly referred to as "Lakers."[100] Some in the shipping industry

[91] Rear Adm. Paul Thomas, Assistant Commandant for Prevention Policy, Coast Guard, "Ballast water - Living vs. viable," *Marine Commons*, December 7, 2015. http://mariners.coastguard.dodlive.mil/2015/12/07/1272015-ballast-water-living-vs-viable/. Hereinafter "Ballast water—Living vs. viable."

[92] IMO Convention on Ballast Water, Annex Section D.

[93] IMO 2016 Guidelines for approval of ballast water management systems (G8), Resolution MEPC.279(70)), p. 7.

[94] Ibid, p. 26.

[95] IMO Resolution MEPC.279(70), 2016 Guidelines for Approval of Ballast Water Management Systems (G8), Adopted October 28, 2016.

[96] "Ballast water—Living vs. viable."

[97] Chamber of Shipping of America Letter.

[98] "Ballast water—Living vs. viable." For further discussion see Lisa A. Drake, Timothy P. Wier, and Evan W.J. Parson, et al., *Review of a Request for Approval of an Alternative Method for Ballast Water Testing (46 CFR 162.060-10(b)(1)): Trojan Marinex's Method for Assessing Organisms ≥ 10 µm and <50 µm*, Department of the Navy, Naval Research Laboratory, February 3, 2016, http://www.dco.uscg.mil/Portals/9/MSC/BWMS/NRL_report_6130-1622.pdf?ver=2017-12-12-130633-120.

[99] 2012 Coast Guard Rule, p. 17274.

[100] Specifically, per the 2013 VGP, Lakers are vessels that operate exclusively in the Laurentian Great Lakes—that is, upstream of the waters of the St. Lawrence River west of a rhumb line drawn from Cap de Rosiers to West Point, (continued...)

argue that such vessels, which are confined to a geographically limited area, do not introduce ANS and should not need to treat their ballast water.[101] Others—including the National Park Service and environmental groups—argue that Lakers spread ANS from one area in the Great Lakes to other areas more widely and quickly than would occur through normal migration.[102]

Under the 2013 VGP, Lakers built before January 2009 are exempt from meeting the numeric ballast water discharge standard. These pre-2009 Lakers are instead required to comply with best management practices for ballast water including developing sediment management measures, minimizing ballast water uptake in nearshore areas, and requiring inspection of sea chest screens and repair as necessary. Lakers built after January 2009 are required to comply with ballast water treatment limits in the 2013 VGP. In making the distinction, EPA stated that the special characteristics of pre-2009 Lakers rendered treatment technologies or other strategies to meet the limits unavailable and economically unachievable at that time (i.e., found that no treatment technology was available for these vessels, either shipboard or onshore).[103] However, in *NRDC v. EPA* (discussed above under "Ballast Water Discharge Standards"), the Second Circuit found that EPA's decision was arbitrary and capricious because EPA failed to properly consider the possibility of onshore treatment. The court also noted that post-2009 Lakers face many of the same challenges and constraints as pre-2009 Lakers (e.g., short voyages, high pumping rates, and freshwater environment) and found no support for distinguishing between the two.[104]

Coast Guard regulations currently exempt Lakers from complying with numeric ballast water discharge standards. In its 2012 rule, the Coast Guard stated that it fully intends to expand the standards to such vessels, but determined at that time that additional analysis was necessary to support the expansion.

Extending the Moratorium for Small Vessels

Another issue for congressional policymakers is the temporary moratorium on EPA permitting of commercial fishing and small vessels that Congress enacted in December 2014.[105] The moratorium, which covered discharges incidental to the normal operation of vessels *other than ballast water*, expired January 19, 2018. Upon expiration, nonrecreational vessels and fishing vessels less than 79 feet in length that have discharges incidental to their normal operation into U.S. waters require coverage under EPA's small Vessel General Permit (sVGP).[106] Commercial

(...continued)

Anticosti Island, and west of a line along 63 W. longitude from Anticosti Island to the north shore of the St. Lawrence River.

[101] U.S. Congress, Senate Committee on Commerce, Science, and Transportation, Subcommittee on Oceans, Atmosphere, Fisheries, and Coast Guard, *The Impacts of Vessel Discharge Regulations on Our Shipping and Fishing Industries*, 114th Cong., 1st sess., February 4, 2015, S. Hrg. 114-107 (Washington: GPO, 2015), p. 10.

[102] Letter from Scott Strand, Executive Director, MN Center for Environmental Advocacy, John P. Lenczewski, Executive Director, Minnesota Trout Unlimited, and Darrell Gerber, Clean Water Action Alliance of Minnesota, et al. to Environmental Protection Agency, February 21, 2012, EPA Docket ID # EPA-HQ-OW-2011-0141. Letter from Gary Rosenlieb, Chief (Acting) National Park Service Water Resources Division, to U.S. EPA, February 17, 2012, EPA Docket ID # EPA-HQ-OW-2011-0141-0742.

[103] 2013 VGP Fact Sheet, p. 72.

[104] NRDC v. EPA, 804 F.3d 149 (2d Cir. 2015). Note that EPA argued that anyone building a ship designed to enter the market after 2009 was aware of the impending VGP requirements and could anticipate its impact on shipbuilding.

[105] The original moratorium was included in P.L. 110-299. The most recent extension of the moratorium was enacted in P.L. 115-100. See CRS Report R42142, *EPA's Vessel General Permits: Background and Issues*, by Laura Gatz, for additional discussion.

[106] EPA, "Final National Pollutant Discharge Elimination System (NPDES) Small Vessel General Permit for (continued...)

fishing vessels greater than 79 feet with such discharges require coverage under the 2013 VGP.[107] For more information on the sVGP, see CRS Report R42142, *EPA's Vessel General Permits: Background and Issues*, by Laura Gatz.

Many commenters believe that discharges incidental to the normal operation of these small vessels are not a significant source of harm to aquatic life in U.S. waters when compared with discharges from larger vessels. They assert that it would be appropriate, both administratively and environmentally, to exclude them permanently from CWA permitting.[108] Others assert that potential environmental impacts can result from such incidental discharges and believe it is important to regulate them as well.[109]

Vessel Incidental Discharge Legislation in the 115th Congress

In the 115th Congress, some Members have introduced bills intended to address issues with the existing regulatory system for ballast water and other discharges incidental to the normal operation of vessels. H.R. 1154 and S. 168, both titled the "Vessel Incidental Discharge Act," are the same with one potentially significant exception discussed below. The House has not acted on H.R. 1154 since it was introduced in February 2017. The companion bill in the Senate, S. 168, was reported out of the Committee on Commerce, Science, and Transportation in March.[110] In addition, in June 2017, the committee reported S. 1129, the Coast Guard Authorization Act of 2017.[111] As reported, S. 1129 includes the text of S. 168 as Title VIII.[112] These bills are similar to those introduced in previous sessions of Congress, but do differ in some respects.

Several bills address only the moratorium on CWA permitting for certain incidental discharges (excluding ballast water) from commercial fishing vessels of all sizes and nonrecreational vessels less than 79 feet in length. S. 2273 (P.L. 115-100), signed by President Trump on January 3, 2018, extended the moratorium that expired on December 18, 2017, through January 19, 2018. S. 2194 and H.R. 4656 would extend the moratorium through December 18, 2020. S. 2331, introduced on January 23, 2018, would extend the moratorium through March 23, 2018.

Vessel Incidental Discharge Act (VIDA)

Each of the proposed VIDA bills (S. 168, H.R. 1154, and Title VIII of S. 1129) would create a free-standing statute—the Vessel Incidental Discharge Act (VIDA). Discharges incidental to the normal operation of vessels would no longer be regulated under the CWA and no longer subject to citizen suit enforcement. Additionally, NANPCA would be amended to explicitly state that ballast

(...continued)

Discharges Incidental to the Normal Operation of Vessels Less than 79 Feet," 79 *Federal Register* 53702, September 10, 2014.

[107] Ibid.

[108] U.S. Environmental Protection Agency, *Responses to Public Comments: EPA NPDES Small Vessel General Permit*, Docket ID#: EPA-HQ-OW-2011-0150, August 21, 2014.

[109] Ibid.

[110] S.Rept. 115-16.

[111] S.Rept. 115-89.

[112] The text in S. 1129 parallels S. 168 with the exception of technical edits and to specifically include the Hudson River under §804.

water and discharges incidental to the normal operation of a commercial vessel shall be regulated under VIDA.

If enacted, VIDA would establish a single federal ballast water management standard, specifying the Coast Guard's 2012 numeric standards as the baseline. Under the proposed legislation, these standards would supersede existing state standards or permits and EPA's ballast water management requirements under the CWA. The Coast Guard, in consultation with EPA, would be directed to conduct a review in 2022 and then every 10 years, to determine whether to revise the standard to reduce the risk of ANS invasions. States would be allowed to petition for stricter ballast water and incidental discharge standards. If the Coast Guard, in consultation with EPA, determined to revise the standard, it would become a national requirement. The legislation would also direct the Coast Guard, in consultation with EPA, to issue a rule to establish best management practices for vessel discharges other than ballast water.

As mentioned above, S. 168 and H.R. 1154 are the same with one exception. S. 168 specifies that the ballast water discharge standard and any future revisions to the standard would be based on BAT, whereas the House bill does not include that language. The CWA directs EPA to use BAT as the technology-based standard in setting effluent limitations for nonconventional pollutants, such as invasive species organisms.[113] The implications of the difference between the language in S. 168 and H.R. 1154 are not clear for two reasons. First, S. 168 requires BAT but does not define it. Because the bill, if enacted, would remove regulation of discharges incidental to the operation of vessels (including ballast water) from the scope of the CWA, it is not clear how the Coast Guard (in consultation with the EPA) would define BAT in implementing S. 168. The agencies could define BAT consistent with the way it is currently defined in the CWA, as interpreted by the courts, or in some other manner. Second, H.R. 1154 does not specify what level of pollution control (i.e., does not require that discharge standards be based on BAT) should apply to the ballast water discharge standard. Consequently, it is less clear under H.R. 1154 what bases the Coast Guard and EPA would apply when revising a ballast water discharge standard.

The following discussion describes the provisions of the Senate legislation—S. 168. For the purposes of this section, "Secretary" refers to the "Secretary of the department in which the Coast Guard is operating," and "Administrator" refers to the Administrator of the EPA.

Table 2. Summary of the Vessel Incidental Discharge Act (S. 168) Provisions

Section	Summary
1	Section 1 is the short title and table of contents.
2	Section 2 defines key terms, including ballast water, ballast water discharge standard, ballast water management system, and discharge incidental to the normal operation of a commercial vessel.
3	Section 3 would preserve the existing regulations issued pursuant to NANPCA until they are superseded by regulations issued under VIDA. In addition, sanctions under NANPCA for violating a regulation under that act would apply to violations issued under VIDA.
4	Section 4 would require vessel owners or operators discharging ballast water into navigable waters to meet the ballast water discharge standard (by applying BAT)[a] and to discharge in accordance with other requirements established by the Secretary.

[113] CWA §301(b)(2)(A)

Section	Summary
	It would also require commercial vessels entering the Great Lakes through the Saint Lawrence River after operating outside the EEZ to comply with the ballast water discharge standard, to conduct a complete ballast water exchange 200 nautical miles or more from any shore, and to conduct saltwater flushing if appropriate.[b] The section would codify elements of the existing Coast Guard rules that provide exemptions from ballast water discharge standards for safety reasons and for vessels that do not discharge ballast water (i.e., vessels that carry all of their ballast water in sealed tanks), vessels that use continuous ballast flow-through systems that do not discharge ANS, or vessels with ballast water taken aboard from a public or commercial source that meets requirements under the Safe Drinking Water Act. It would also exempt vessels that operate exclusively within a geographically limited area[c] (e.g., Lakers) or are in an alternative compliance program established pursuant to Section 6 (discussed below). The section would also require the Secretary to publish a policy letter describing type-approval testing methods capable of measuring the concentration of organisms in ballast water that are capable of reproduction (i.e., viable/nonviable standard). It would also require the Secretary to type approve BWMS that render organisms nonviable if the BWMS undergoes testing at an independent laboratory and meets the Coast Guard's BWMS requirements (46 C.F.R. §162.060)—other than requirements related to staining methods or measuring organisms based on a live/dead standard—and if the laboratory uses a testing method described in the Secretary's policy letter.
5	Section 5 would require the Secretary, in consultation with the Administrator, to conduct an "effectiveness review" of the ballast water discharge standard by January 2022, and then every 10 years thereafter, to determine whether revising the ballast water discharge standard based on BAT[a] would result in a reduction in the risk of ANS introduction or establishment. It would also allow states to request such a review if significant new information is available and would establish the requirements for that petition process. The section would also require the Secretary, in consultation with the Administrator, to conduct a "practicability review" if he or she determines that revising the standard would reduce the risk of ANS introduction or establishment. The Secretary would be required to revise the discharge standard if he or she determines, based on the practicability review, that a BWMS capable of achieving the standard is economically achievable and operationally practicable, and testing protocols that can ensure compliance can be practicably implemented. The section details criteria to be followed in conducting the practicability review. The section would also establish compliance time frames for any revised ballast water discharge standards, require the Secretary to establish a process for extensions of such time frames that includes factors detailed in the bill, and allow a BWMS to be used for the service life of the equipment, even if more stringent regulations are later issued.
6	Section 6 would allow the Secretary, in consultation with the Administrator, to develop an alternative compliance program for vessels with less than 8 cubic meters of ballast water capacity or that have less than three years of service life.
7	Section 7 would allow vessel owners or operators to discharge ballast water to an onshore or offshore reception facility. It would require the Administrator, in consultation with the Secretary, to establish standards for such facilities.
8	Section 8 would require the Secretary, in consultation with the Administrator to establish best management practices for discharges incidental to the normal operation of a commercial vessel for vessels that are greater than or equal to 79 feet in length (specifically excluding fishing vessels). It would also maintain requirements under the existing VGP, other than state conditions attached to the permit, until the effective date of the newly established best management practices. The provision would also allow states to request that the Secretary revise a best management practice. If the Secretary, in consultation with the Administrator, determines that the best management practice should be revised, based on the process and criteria described in the section, the best management practice would become a national requirement. The section would also make permanent the current permit moratorium for small vessels that expired January 19, 2018.

Section	Summary
9	Section 9 would provide rules for judicial review, stating that review of final regulations under VIDA shall be in the U.S. Court of Appeals for the District of Columbia Circuit. The bill would not authorize citizen suits to enforce any of its provisions.
10	Section 10 would allow the Secretary to enter into an agreement with a state to authorize the state to enforce the act.
11	Section 11 addresses the effect of the bill on state authority. The section would prohibit a state or political subdivision from adopting or enforcing any law or rule concerning discharges of ballast water from commercial vessels or discharges incidental to the normal operation of commercial vessels. However, it preserves the authority of states to regulate water or other substances discharged or emitted from a vessel in preparation for transport of the vessel by land from one body of water to another.
12	Section 12 addresses the effect of the bill on other laws. The CWA would no longer apply to discharges of ballast water or discharges incidental to the normal operation of vessels into navigable waters of the United States.[d] The section would also amend NANPCA to specify that ballast water and other incidental discharges as such terms are defined in VIDA would be regulated under VIDA and require actions taken under VIDA to be consistent with international law. The section also clarifies that the bill would not affect regulation of certain other types of vessel discharges that are regulated under laws such as the CWA or the act to Prevent Pollution from Ships (e.g., garbage; oil or hazardous substances; sewage; graywater from commercial vessels operating in the Great Lakes; and air pollutant emissions).[e]

Source: CRS analysis of S. 168, the Vessel Incidental Discharge Act.

Notes:

a. H.R. 1154 does not contain a reference to BAT under this section.

b. Under existing Coast Guard rules (33 C.F.R. §401.30) saltwater flushing is already required for every vessel that carries only residual amounts of ballast water and/or sediment that were taken onboard the vessel outside the EEZ. Per the regulation, saltwater flushing is defined as the addition of midocean water to ballast water tanks, the mixing of the flushwater with residual water and sediment through the motion of the vessel, and the discharge of the mixed water such that the resultant residual water remaining in the tank has as high a salinity as possible, and is at least 30 parts per thousand.

c. Under Section 2 of the bill, "geographically limited area" is defined as an area "with a physical limitation that prevents a commercial vessel from operating outside the area, such as the Great Lakes and Saint Lawrence River, as determined by the Secretary; or that is ecologically homogeneous, as determined by the Secretary in consultation with the heads of other Federal departments or agencies the Secretary considers appropriate."

d. The exception to this is for the transition period, under Section 8 of the bill, between enactment of the bill and the effective date of new best management practices established by the Coast Guard and EPA.

e. CWA §311 or 312 (33 U.S.C. §1321 and 1322). Act to Prevent Pollution from Ships (33 U.S.C. §1901 et seq.).

Conclusion

For more than a decade, some Members of Congress have introduced legislation intended to modify and clarify regulation and management of ballast water discharges that can be a source of ANS in U.S. waters. In recent years, these bills have focused on establishing uniform, national standards for ballast water and other incidental discharges and providing the authority to regulate these discharges primarily with the Coast Guard (in consultation with EPA). Many in the maritime industry strongly support the legislation discussed in this report, arguing that without it, the confusion and inefficiencies they associate with the current regulatory scheme will continue to grow. Others, including some states and environmental advocacy groups, continue to oppose aspects of the proposals—especially the preemption of state authority and the CWA in regulating

the discharges. Considering the complex policy issues associated with the regulation of ballast water and other incidental discharges will likely continue to be of interest to Congress.

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