CA Ballast Water Regulation and the Future of the State’s Role

I. Executive Summary

Ballast water is essential to the operation of many vessels in order to maintain trim and stability, but when taking up and releasing ballast water, there is risk of introducing non-native aquatic invasive species (AIS) that wreak environmental havoc and create costs in the billions of dollars. For example, the zebra mussel was introduced via ballast water and now infests the Great Lakes and lakes throughout the region.¹ In response, various legislation and ballast water management (BWM) regulations have been made on federal and state levels. Notably, California has set particularly stringent standards for ballast water treatment, but under the 2018 Vessel Incidental Discharge Act (VIDA) state regulations are to be preempted by federal rules. For the shipping industry, this act is important because it institutes uniformity in BWM across the nation, whereas rules varied for each state and even locality. However, there are grave environmental concerns as the rules currently proposed by the EPA are not as strict as California’s, and whether they will be updated appropriately is yet to be seen. Indeed, approaching the issue federally leads to delays in regulation which creates more opportunities for AIS to arrive.²

For example, the EPA is confined to making standards based

on the “best available technology economically achievable” (BAT) and figuring out what constitutes BAT is a slow process.\(^3\) From California’s perspective, they are being prevented from protecting their state’s waters as they see fit. Moving forward, BWM ought to remain federally regulated but standards must be tightened and have a clear timeline that considers what BAT will be available in the future rather than just what is available currently.

II. Background Information

i. Environmental, Economic, and Health Impacts of AIS Introductions

The introduction of AIS through ballast water is of concern because of the cascade of effects that can occur when such a species enters an ecosystem.\(^4\) For example, zebra mussels have displaced native bivalves in the Great Lakes causing changes in zooplankton and phytoplankton assemblages and even transform soft sediments to hard shell-filled reefs.\(^5\) Indeed, AIS can act as ecosystem engineers that alter the physical environment and fundamentally change what species live in a particular habitat. These effects not only disrupt the balance of ecosystems, they cause millions in annual economic damage. The zebra mussel is known to clog water intakes; impair recreational swimming, boating, and fishing; and reduce commercial fish stocks.\(^6\) From 1989 to 2000, zebra mussels are estimated to have cost the economy $750 million to $1 billion, and there has been a lack of more recent studies on economic costs.\(^7\)

Finally, ballast water can carry cholera-causing bacteria which have the potential to be deadly. In 1994, ballast water release off Peru was thought to contribute to a cholera outbreak that caused 10,000 deaths.\(^8\) Each day that ballast water with live organisms is released into US waters risks another environmentally and economically catastrophic introduction.

ii. Legal History of Ballast Water Regulation

The US began regulating ballast water in 1990 with the recognition that AIS, such as zebra mussels, caused great environmental damage. Under the Nonindigenous Aquatic Nuisance and Control Act of 1990 (NANPCA) and later under the National Invasive Species Act (NISA), the USCG, not the EPA, made BWM standards, and states were free to create their own standards. In 2008, ballast water came under the EPA’s purview after the case Northwest Env’t. Advocates vs. U.S. E.P.A., 537 F.3d 1006 (9th Cir. 2008) established that ballast water is a discharge the EPA must regulate under the Clean Water Act. At several points, most recently in 2013, the EPA has issued a vessel general permit (VGP) that includes BWM standards. During this time, states still had free reign to establish their own regulations as affirmed by Fednav vs. Chester, 547 F.3d 607 (6th Cir. 2008).\(^9\) It was during this period of state freedom that CA adopted strict BWM standards that were delayed on several occasions and are now scheduled to go into effect in 2030 and 2040 for interim and final standards, respectively. Then, in 2018, Congress passed VIDA which directed the EPA to promulgate new BWM standards which, once finalized, will preempt all state regulations stricter than the federal standards.\(^10\)

The current proposed national standards\(^11\) are

Above: a diagram outlining the process of the uptake and discharge of ballast water and how it can transport contaminants. Courtesy of IMO.

([https://www.imo.org/en/MediaCentre/HotTopics/Pages/BWM-default.aspx](https://www.imo.org/en/MediaCentre/HotTopics/Pages/BWM-default.aspx)).
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less stringent than CA’s standards (Appendix A).12

VIDA
Passed in 2018 with the Coast Guard Reauthorization Act, VIDA creates a framework for the creation of a set of national BWM standards that will preempt all existing state standards. The EPA is charged with promulgating standards and the USCG must make implementation rules based on those standards. Notably, VIDA restricts the EPA to making standards that are in line with the “best available technology economically achievable” (VIDA §903(a)(4)(B)(i)(III)). Originally, regulations were to be made within two years, but regulations have still yet to be finalized. VIDA requires that the EPA make regulations “in consultation with interested governors” (VIDA §903(a)(4)(A)(iii)) and allows for objections from governors, so states are granted input in addition to the federalism consultation.

iii. Stakeholders and their Priorities
a. California, Coastal States, and Environmental Groups

Coastal states such as CA have an interest in preventing additional AIS introductions in order to preserve the integrity of their ecosystems and avoid potential economic costs. They are choosing a proactive approach that will save them from increased spending in the future on AIS control and removal. States are looking for freedom and flexibility to set their own standards, which VIDA infringes on. However, CA also must take the economic impact of strict standards into account, for they risk the $294 billion in goods that moves through the Port of Los Angeles alone.13 Environmental groups have similar interests in that they, too, seek to protect native species, particularly those that are endangered, from the invaders and the “terrible bureaucrats” of the EPA.14

b. EPA and the Federal Government

The EPA is focused on promulgating standards that both meet the BAT standard and create the strongest protections for preventing AIS introductions. Under VIDA, the EPA must also take states’ input into account, which has potential to improve the overall quality of standards but may complicate the process. The EPA will also have the continued role of reviewing the standards every five

Below: Timeline outlining the recent history of CA and federal ballast water management.
years and considering updates to specific standards when requested by states.

c. Shipping Industry

In general, the shipping industry seeks uniformity in regulations in order to improve operations and prevent confusion among crews regarding which BWM standards should be followed at any given time.\textsuperscript{15,16} The industry also has an interest in avoiding a situation in which expensive retrofits need to be completed in order to comply with changing BWM standards.\textsuperscript{17} In particular, they would like to avoid having to complete a retrofit only to have standards change again and the newly installed technology becomes obsolete, which itself causes waste and is unsustainable.\textsuperscript{18}

Above: Image demonstrating the engineering conflicts caused by installing BWM systems. Pipes must often collide, making retrofits difficult and expensive. (Goltens Greens Technologies).

iv. Current Status of Ballast Water Regulation

Currently, CA has adopted the federal standards (under the 2013 VGP) for BWM, for its strict standards have been delayed until 2030 and 2040. Of course, once the EPA and USCG finish their rulemaking processes, CA’s standards will be preempted. Currently, the EPA is continuing work on their proposed standards, and it is unclear whether they will release another set of proposed standards or simply move forward with the standards they first proposed. This depends in part on how much deference they plan to grant input from public comment and from states based on listening sessions. Note also that the standards were originally meant to be made within two years of VIDA, yet it is now four years later, and standards are not in place, largely due to delays related to the COVID-19 pandemic.

III. Analysis of Past, Current, and Proposed Policies

i. Past Policy

In the era before VIDA, there were many challenges to the shipping industry in that individual states, such as CA, often had strict standards which varied from state to state. In fact, these varying standards remain in place while the EPA standards are being created. One shipping industry source stated that they had created a 60 or 70 page guide for all the different regulations across states and municipalities. Suffice it to say, the industry is looking forward to VIDA. The industry also seeks a guarantee that they will not have to retrofit vessels, which is expensive and causes delays, not to mention having to replace systems again if standards change.\textsuperscript{19} Such a guarantee was certainly not coming pre-VIDA. For states, pre-VIDA was a time in which they had nearly complete control over BWM.\textsuperscript{20} The states on the U.S.’s west coast including WA, OR, and CA worked together to harmonize their BWM standards, which would have aided industry operations on the west coast.\textsuperscript{21} Indeed, efforts such as those make clear that the complicated mess of standards may not have been so messy as the industry made it out to be.\textsuperscript{22} Of course, with stricter state standards available (though delayed on multiple occasions\textsuperscript{23}), this was a better time for conservation and protection of the environment.\textsuperscript{24} For industry, sources described positive interactions with CA agencies including the State
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While priorities differed, interactions were by no means adversarial.

\textbf{ii. Current Policy}

At present, the EPA continues work on the federal BWM standards, a process which includes a federalism consultation as well as consultation with governors to receive state input. In general, the EPA has at least listened to states’ input in various listening sessions, though notably, the agency became more receptive once the Biden administration arrived in 2021. Whether that input will be incorporated into the proposed standards remains to be seen, though the governor’s objection section in VIDA allows for a governor to challenge a standard, and the EPA must either change the relevant standard or provide concrete reasoning for why it is in place. Thus, while the agency has acted in good faith so far, there is no guarantee under VIDA that the EPA will integrate any state input. The shipping industry, of course, appreciates the coming uniformity once standards are in place. While not required under VIDA, the EPA has held informative public hearings and a listening session for the industry, so they can provide input in addition to public comments. Additionally, an issue with VIDA is that it requires standards be set according to BAT and not water quality standards, so there is less incentive for technology to develop in order to meet higher quality standards. Essentially, the current policy of federal regulation based on BAT works for the industry in creating nationwide uniformity and preventing more stringent regulation but fails for states that wish to protect their waters from aquatic invaders and properly safeguard their marine ecosystems, not to mention preventing economic costs.

\textbf{iii. Proposed Policy}

Currently, there is no immediate proposed policy to change the balance of power between states and the federal government in creating ballast water standards. One policy proposed in a legal note in 2010 calls for the creation of a nationwide task force including state and federal officials, but excluding members of the shipping industry, to work together on creating appropriate and implementable standards. This task force would be an extension of the NISA. Based on conversations with the shipping industry, they would be understanding of the separation of private industry from government regulation but would insist on opportunities to provide input, which in general they have received in the past and present. As an alternative to the retrofit of vessels, if standards were to become stricter, there is evidence that moving to a barge-based solution in which vessels transfer their ballast water to another vessel or to a land facility for treatment could be more effective. However, this solution may easily be rejected, for it causes delays and introduces another provider and layer of complication to the process.

\textbf{IV. Recommendations for Change}

There are improvements to be made in terms of who is involved in making BWM standards, what the standards are based on, and the timeline on which they are implemented. First, the federal government should...
continue setting ballast water restrictions for the nation. This will help the shipping industry find uniformity and will consolidate the process for making and harmonizing standards. Further, consistent national standards will make enforcement easier. Of course, the federal government should not and cannot be the only party working on the standards. States must continue to have a prominent role in drafting the standards and that role must be explicitly laid out in law.

Next, standards should no longer be restricted to BAT. Of course, shippers cannot be expected to meet standards that are impossible given current technology, but standards should shift to become stricter and be based on water quality and number of live organisms rather than BAT. This will allow for better environmental protection and provide greater impetus for technological advancement, for if standards were only based on BAT, there would be less reason for innovation than if standards challenged the technology. Of course, the expectations for industry to update must be kept to a reasonable timeline to allow technology to develop and to allow operators to upgrade their vessels. Finally, there must be a timeline that lays out what standards are to be implemented when and what technology needs to be developed to allow that to happen. As the timeline progresses, the standards will become stricter and technology will ideally keep up, rather than the other way around. To help technology keep up, the federal government should proactively subsidize research into BWM technology. Laying out this policy ahead of time will allow shipping companies to strategically plan for the future and limit inefficiency.

In short, to reform BWM legislation: 1) power should remain with the federal government but with mechanisms in place to guarantee state input, 2) the standards ought to be based on water quality and number of living/viable organisms not BAT, and 3) the timeline for implementation must be clear and reasonable to allow for the necessary technology to develop.
Endnotes


[16] Industry Source. Personal interview. 22 April 2022.


[18] Supra at n. 16.

[19] Supra at n. 16.

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[21] Id.
[22] Id.
[26] Supra at n. 20.
[27] Weiler, Katherine. Personal Interview. 15 April 2022.
[28] Supra at n. 20.
[29] Supra at n. 16.
[31] Supra at n. 9.
[32] Supra at n. 16.
[34] Carlton, James T. Personal Interview. 21 April 2022.

Appendix A – Quantified BWM Standards

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<tr>
<th>Class</th>
<th>Proposed EPA*</th>
<th>CA 2030</th>
<th>CA 2040</th>
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*Matches International Maritime Organization D-2 standards, **cfu=Colonial Forming Units