

February 21, 2012

Water Docket  
U.S. Environmental Protection Agency  
1200 Pennsylvania Ave., N.W.  
Washington, D.C. 20460

**Re: Docket ID Number EPA-HQ-OW-2011-0141**  
Draft National Pollutant Discharge Elimination System (NPDES) Vessel General Permit  
for Discharges Incidental to the Normal Operations of Vessels  
Proposed 2013 Vessel General Permit (VGP)

Dear Environmental Protection Agency:

We, the undersigned organizations, on behalf of our thousands of members, respectfully submit the following comments on the proposed 2013 Vessel General Permit, relating to aquatic invasive species and commercial vessels, published in Fed. Reg. Vol.76, No. 236, Thursday, December 8, 2011 (“VGP Permit”).

We appreciate the opportunity to comment on this important permit and applaud the Environmental Protection Agency (“EPA”) for moving forward to regulate ballast water discharges, especially in the Great Lakes and St. Lawrence Seaway. Aquatic invasive species (“AIS”) are biological pollution posing one of the greatest ecological threats to the health of the ecosystems of the Great Lakes and all waters in states and provinces in the region. They also pose a grave economic threat to the Great Lakes region.

While the proposed VGP Permit represents a long overdue step toward needed protection of the ecological and economic health of the region, we believe the proposed discharge standards are too low, the implementation timeline is too slow, and the exemption for existing intra Great Lakes carrier vessels (“Lakers”) perpetuates unacceptably high risks. Given that ballast water has introduced and spread AIS for more than 30 years, resulting in significant, destructive, and generally irreversible changes to the ecology and human uses of Minnesota’s waters, we urge EPA to strengthen the VGP Permit now in order to adequately protect Minnesota waters, economy and quality of life from future invaders. With a new invasive species expected in the Great Lakes every 28 weeks (see Table 1 of the VGP Permit fact sheet) there is no longer time to further delay the implementation of adequate discharge standards that cover all pathways to the waters of Minnesota.

**I. Minnesota’s economy and way of life is at risk.**

Minnesota has a disproportionately large stake in the outcome of the EPA’s deliberations concerning the scope and content of the final VGP Permit. While AIS cost the United States

billions of dollars annually, and ship-borne AIS cost the Great Lakes Region at least \$200 million dollars every year, their steady spread to waters throughout Minnesota threatens not just our economy, but our very culture. Perhaps more than any other state in Great Lakes region, Minnesota's economy and culture are tied to the health of its lakes, rivers and streams. Minnesota leads the nation in both the number of licensed anglers and boat owners per capita. Fishing and boating pervade our culture and water based tourism drives the economy of the northern half of the state. Fishing related activity alone is estimated to support 43,000 Minnesota jobs, generate \$2.8 billion annually in direct retail expenditures and have an economic impact exceeding \$4.7 billion per year when adjusted for expenditures on gas, lodging and the services purchased by fishing-related businesses.<sup>1</sup>

Minnesota waters are particularly vulnerable to ship-mediated introductions (including from the lower Great Lakes via Lakers) given the high volume of ballast water discharges received in its four ports. The Duluth-Superior harbor (located in the St. Louis River estuary) and other Minnesota harbors together more than 7 billion gallons of ballast water discharges annually, and more than half of all ballast water discharges in the entire Great Lakes and St. Lawrence River system.<sup>2</sup>

More ballast water is discharged into Minnesota Lake Superior harbors than any other Great Lakes ports.<sup>3</sup> The Duluth-Superior harbor in 2005, for example, received approximately 5.4 billion gallons of ballast water and the Two Harbors, MN port received approximately 1.9 billion gallons.<sup>4</sup> Minnesota's Lake Superior harbors receive ballast water discharges from both oceangoing vessels ("Salties") and Lakers. The Duluth Seaway Port Authority estimates that approximately 5 percent of the ballast water discharged to Lake Superior is from Salties and 95 percent is from Lakers.<sup>5</sup>

Our concerns are not theoretical, but based upon the invasion of numerous aquatic invaders such as zebra mussels, whose ongoing spread across our inland waters imperils our way of life and imposes huge financial burdens on Minnesota citizens. Zebra mussels were introduced to the United States through ballast water discharges, first discovered in Lake St. Clair in 1988, and then found in the Duluth-Superior harbor in 1989. They have since infested waters across the United States, significantly altered the ecosystems of the Great Lakes, and are now spreading into Minnesota's prime inland fishing and recreation lakes. While the U.S. Fish & Wildlife

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<sup>1</sup> Southwick Associates. (2007) "Sportfishing in America: An Economic Engine and Conservation Powerhouse." Produced for the American Sportfishing Association with funding from the Multistate Conservation Grant Program

<sup>2</sup> Rup et al., *Domestic Ballast Operations on the Great Lakes: Potential Importance of Lakers as a Vector for Introduction and Spread of Nonindigenous Species*, Can. J. Fish. Aquat. Sci. 67(2): 256–268 (2010).

<sup>3</sup> MPCA, Fact Sheet for State Disposal System (SDS) Permit MNG300000 Ballast Water Discharge General Permit, 2008, page 3.

<sup>4</sup> *Id.*

<sup>5</sup> *Id.*

Service estimated the adverse economic impact of zebra mussels to U.S. and Canadian water users within the Great Lakes region to be \$5 billion from 2000 to 2010, this figure does not include the burgeoning costs of efforts to contain the spread from a growing number of inland waters of Minnesota. The Minnesota DNR recently estimated the annual cost of attempting to control the spread of zebra mussels alone to be between \$22 million and \$600 million dollars annually. The cost to inspect all boats leaving those 50 or so lakes currently infested with zebra mussels is estimated to cost \$65 to \$71 million annually.<sup>6</sup> These costs are the direct result of ballast water introductions of zebra mussels into the waters of the Great Lakes. Given the rate of introduction there is no reason to expect that these costs will not continue to rise as more AIS are introduced and spread throughout the region. For example, the administrative and regulatory costs of viral hemorrhagic septicemia (VHS) prevention and monitoring is now on the rise for recreational anglers and our multimillion dollar bait industry since VHS has been spread to Lake Superior.

In addition to the economic impacts associated with fishing and water recreation, AIS put Minnesota's property tax base at risk. There is growing evidence and acceptance that AIS can significantly reduce property values on properties located on infested lakes and rivers.<sup>7</sup> At the same time there is also evidence that rural counties in Minnesota depend greatly on the values of properties associated with water. For example, in Hubbard County in 2011, water influenced properties accounted for 59.40% of the taxable market value of all properties despite the fact that they represent a much smaller percentage of the land use.<sup>8</sup> There is little doubt that the establishment of AIS in lakes and rivers throughout Minnesota will permanently reduce long term property values and undermine the tax base.

In short, the legacy costs of AIS will be staggering and must be factored into the economic analysis used to refine the VGP Permit. The near certainty of future invasions must also be considered. The EPA estimates that approximately 58 other non-indigenous species currently "pose high or medium risk for becoming established in the Great Lakes and for causing ecological harm."<sup>9</sup> This is a dire problem that requires strong action now. Given the real threat

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<sup>6</sup> Minnesota DNR Report "Long-Term Funding Needs for Aquatic Invasive Species Programs" Submitted to Environment and Natural Resources Committees of the Minnesota House and Senate January 15, 2012. ([http://files.dnr.state.mn.us/aboutdnr/reports/legislative/ais\\_long\\_term\\_funding\\_leg\\_report\\_january\\_2012.pdf](http://files.dnr.state.mn.us/aboutdnr/reports/legislative/ais_long_term_funding_leg_report_january_2012.pdf)).

<sup>7</sup> E.g. Horsch, Eric J. Lewis, David J., *The Effects of Aquatic Invasive Species on Property Values: Evidence from a Quasi-Random Experiment*. University of Wisconsin-Madison Department of Agricultural & Applied Economics, Staff Paper No. 530, November 2008; Bell, Frederick W. and Mark A. Bonn, *Economic Sectors at Risk from Invasive Aquatic Weeds at Lake Istokpoga, Florida, The Bureau of Invasive Plant Management*, Florida Department of Environment of Environmental Protection, Tallahassee, Florida, December, 2004; ANS Task Force website (<http://www.anstaskforce.gov/ans.php>).

<sup>8</sup> Report of the County Auditor, Hubbard County, Minnesota.

<sup>9</sup> U.S. Environmental Protection Agency, Office of Research and Development, National Center for Environmental Assessment, *Predicting Future Introductions of Nonindigenous Species to the Great Lakes*, Nov. 2008.

of permanent ecological damage and harm to our economy and way of life, our organizations and members take a very strong interest in ballast water discharges and we find it critical that the VGP Permit be strengthened as proposed below in order to prevent both new introductions and any further spread of ship-mediated aquatic invasive species from the lower Great Lakes to Lake Superior.

## **II. Specific Comments by Permit Section**

### **Overview of key concerns**

We urge stricter ballast water discharge standards, their application to intra Great Lakes vessels (eliminate unjustifiable exemption for Lakers), and faster adoption by all permittees. We fully support retaining the ballast water exchange requirements for an additional level of protection and urge that the authority of the State of Minnesota to require more protective measures not be impinged upon. We also request that bi-annual reviews of technologies be conducted and the permit provide for modifications based upon report recommendations.

### **Comments on individual sections**

#### **1.9.1 Modification of the VGP**

The final bullet point listed in this section reads: “The cumulative effects of any discharge authorized under the VGP on the environment are unacceptable.” As explained below in comments on section 2.2.3.5 and 2.2.3.5.2 the VGP should be modified immediately based on these criteria alone. The standards are set too low and the schedule for compliance is too long.

This section of the permit should also require a bi-annual review of technologies and require a report that includes recommendations for changes to permit standards based on this review. Establishing a bi-annual review of technologies is important to creating a clear understanding and expectation on the part of permittees that ballast water permit standards will keep pace with current technologies. It is imperative that this general permit take into account the results of these types of studies on at least a bi-annual basis to inform the permit standards beginning in 2013.

#### **1.11 State Laws**

It is essential that the State Of Minnesota retain its authorities under the Clean Water Act and applicable state laws to regulate activities like ballast water discharges which threaten our

waters, economy, and way of life. The State of Minnesota has established a compelling case for the need to regulate ballast water discharges from both oceangoing and Laker vessels.<sup>10</sup>

Citizens of Minnesota, Wisconsin, Michigan and the Province of Ontario have been fortunate so far in that not all invasive species found in the lower Great Lakes have become established in Lake Superior. However, we cannot hope to win this game of roulette in the long run. If the EPA fails in its obligation to act more swiftly, with the stronger, more comprehensive permit requirements needed to effectively prevent the spread of AIS from the lower Great Lakes to Lake Superior (and ultimately into Minnesota's extensive inland waters), then the State of Minnesota must retain its authority under the Clean Water Act and other applicable state laws to act to protect its waters and citizens. However, we strongly favor the EPA strengthening the proposed VGP Permit so that it is truly protective on Minnesota waters, thus obviating any need for Minnesota to act separately.

### **2.2.3.2 Ballast Water Management Plans**

We support strong coordination between the EPA and USCG and the Great Lakes states to create one ballast water management plan that will meet federal and state requirements.

### **2.2.3.3 Mandatory Ballast Water Management Practices: Management measures required of all vessel owner/operators**

The second bullet requires owners, operators, and others to, "Minimize or avoid uptake of ballast water. . ." and then lists a number of areas and situations with higher risks of AIS uptake. This bullet should be changed to read simply "Avoid uptake of ballast water. . ." Use of the additional term "minimize" unnecessarily opens the door for ballast water uptake in these high risk areas and situations. Even with treatment technologies installed in a vessel, uptake of ballast water from these areas and situations will potentially increase the density of AIS in ballast water and increase propagule pressure when discharged.

We support the remaining bullet points in this section, particularly those related to management of ballast tank sediment. Tank sediment has been well documented to contain an abundance of AIS and is a substance that generally reduces the efficacy of ballast water treatment.

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<sup>10</sup> See <http://www.pca.state.mn.us/index.php/water/water-permits-and-rules/water-permits-and-forms/vessel-discharge-ballast-water-program.html?menuid=&redirect=1>

#### **2.2.3.4 Mandatory Ballast Water Management Practices for Existing Bulk Carrier vessels (commonly known as Lakers) built before January 1, 2009, confined exclusively to the Great Lakes upstream of the Welland Canal**

We support the additional measures required for Laker vessels.

#### **2.2.3.5 Ballast Water Numeric Discharge Limitations**

The standards presented in this section are the same as the “Regulation D-2 Ballast Water Performance Standard “established by the International Maritime Organization in their 2004 convention (“IMO standards”).<sup>11</sup>

While we applaud the regulation of ballast water discharges for the first time via numeric standards, nearly 25 years after zebra mussels were found in the Great Lakes, these outdated IMO standards are far too low. They do not provide adequate protection for Lake Superior’s outstanding resources, given the sheer volume of ballast water discharges its harbors receive. They do not establish a practicable standard consistent with available treatment technologies and they do not establish a standard high enough to perform the role which standards historically play, namely, that of driving the development of improved technologies.

These standards would allow an unacceptably large number of AIS to be introduced into the waters of Lake Superior. In 2005, for example, discharges to just two U.S. ports in Lake Superior (the ports at Duluth-Superior and Two Harbors, MN) totaled over 27.4 million cubic meters of ballast water.<sup>12</sup> This enormous volume of ballast water, even if discharged in compliance with the proposed IMO standard, would allow billions of organisms to be discharged alive into the Duluth-Superior and Two Harbors port (Table 1).

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<sup>11</sup> See [http://www.imo.org/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Control-and-Management-of-Ships%27-Ballast-Water-and-Sediments-\(BWM\).aspx](http://www.imo.org/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Control-and-Management-of-Ships%27-Ballast-Water-and-Sediments-(BWM).aspx)

<sup>12</sup> S. Bailey, M. Rup, C. Wiley, M. Minton, W. Miller, G. Ruiz, H. Maclsaac. *Looking at Lakers: Domestic shipping as a vector for introduction or spread of aquatic nonindigenous species in the Great Lakes*. Slides from a paper presentation at the 2008 meeting of the American Society of Limnology and Oceanography.

Table 1. Potential number of organisms that could be introduced into Lake Superior by ballast water discharges assuming 27.4 million cubic meters at proposed standards.

Parameter	Limit	Potential number of organisms introduced to Lake Superior annually
Organisms >50 um	<10 viable organisms per cubic meter	< 274,934,450
Organisms 10-50 um	<10 viable organisms per mL	< 27,493,445,000
E. Coli	<250 cfu/100mL	< 6,873,361,250
Intestinal interococci	<100 cfu/100 mL	< 2,749,344,500

Thus billions of live organisms, including hundreds of millions of the largest organisms, could be discharged each year into Lake Superior at these two ports alone under the IMO standards. The fact that these ports are on our doorstep is particularly alarming for Minnesotans. This is unacceptable propagule pressure on the Minnesota waters of Lake Superior. The National Academies of Science concluded in 2011 that, “It is abundantly clear that reducing propagule pressure will reduce the probability of invasions, when controlling for all other variables.”<sup>13</sup>

Furthermore, the IMO standards do not take advantage of today’s improved technologies. The IMO standards are based on a 10-year old perspective on ballast water treatment technologies. Much has changed since the IMO drafted these standards in 2004, yet the VGP Permit fails to account for these changes. In contrast, both New York and California have established far higher standards than IMO (100x IMO and 1,000x IMO respectively) for their state ballast water discharge permits, and both have recently reviewed available technologies.

The California State Lands Commission reviewed 60 ballast water treatment systems and determined that 18 systems had sufficient data to test for potential compliance with California’s more stringent ballast water quality standards.<sup>14</sup> In February 2011, the New York

<sup>13</sup> National Academy of Sciences, *Assessing the Relationship between Propagule Pressure and Invasion Risk in Ballast Water*, Washington, DC: The National Academies Press, 2011.

<sup>14</sup> California State Lands Commission, “2011 Update: Ballast Water Treatment Systems for Use in California Waters.” at 33. *See also* [http://www.slc.ca.gov/spec\\_pub/mfd/ballast\\_water/Documents/2011TechUpdateFinal\\_1Sep2011.pdf](http://www.slc.ca.gov/spec_pub/mfd/ballast_water/Documents/2011TechUpdateFinal_1Sep2011.pdf)

State Department of Environmental Conservation (DEC) found that the performance of at least one treatment system, made by Ecochlor, was “at or near the confidence level needed to demonstrate compliance” with New York’s Clean Water Act Section 401 water quality based requirements.<sup>15</sup> The New York DEC has since identified an additional ten treatment systems that have demonstrated the potential to comply with discharge standards that are 100x more stringent than IMO.<sup>16</sup> In addition to these state based reviews of available technology, ongoing research in the Great Lakes region shows great promise, including a federally funded NaOH practicality study, NaOH shipboard trials, and applied research being conducted in collaboratively by the National Park Service, U.S. Geological Survey, and the American Steamship Company.<sup>17</sup> Bench testing of NaOH treatment and other technologies to meet standards more stringent than the IMO standard is showing great promise.<sup>18</sup> The Great Ships Initiative has also produced a guidebook for monitoring ballast water discharges to ensure compliance with standards.<sup>19</sup>

Higher standards than the outdated IMO standards will also serve to create a regulatory environment that is “technology-forcing”. There are long historical and legal precedents for EPA establishing Clean Water Act (“CWA”) standards that encourage the development of technologies to better protect aquatic ecosystems. Establishing federal technology forcing standards for ballast water discharges is long overdue. This approach to standards was taken by New York and California and is already bearing fruit. We see no sound reason for the VGP Permit to take a step backwards.

The draft VGP Permit appears to be based on a flawed review of available technologies, with a limited scope that does not reflect today’s technological realities and abandons the proven approach of incentivizing technology development. We recommend that the VGP Permit establish concentration-based discharge standards that are at least 100x greater than IMO standards. Setting these higher standards will reduce propagule pressure by two orders of magnitude compared to the IMO standards. It appears to be practical given today’s available technologies, is consistent with the New York standards, and will help drive the development,

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<sup>15</sup> Letter from James M. Tierney, Assistant Commissioner, Office of Water Resources, New York State Department of Environmental Conservation (Feb. 7, 2011).

<sup>16</sup> Letter from Joseph J. Martens, Commissioner, New York State Department of Environmental Conservation, to Lisa Jackson, Administrator, U.S. Environmental Protection Agency (Oct. 20, 2011).

<sup>17</sup> Sodium Hydroxide (NaOH) Practicality Study. Prepared for the National Parks of Lake Superior Foundation. File Number 09129.01. February 2010. Available at [http://yosemite.epa.gov/sab/sabproduct.nsf/953CCBEB820F0470852577920076316D/\\$File/NaOH+Practicality+Study.pdf](http://yosemite.epa.gov/sab/sabproduct.nsf/953CCBEB820F0470852577920076316D/$File/NaOH+Practicality+Study.pdf); National Parks of Lake Superior project fact sheet *available at* <http://www.nplsf.org/documents/NPLSFBallastTreatmentProjectsOverview.pdf>

<sup>18</sup> See <http://www.nemw.org/GSI/outcomes.htm>

<sup>19</sup> See <http://www.nemw.org/GSI/BallastDischargeMonitoringGuidebook.pdf>



testing and installation of ballast water treatments that better protect our waters and economy health.

This section of the permit states, “EPA will continue to explore new technologies with industry and states and, when warranted, will make this numeric limit more stringent in the future.” We renew our request that EPA formally establish a bi-annual review of technologies and create a clear expectation on the part of permittees that ballast water permit standards will keep pace with developing technologies. It is imperative that the VGP Permit account for these bi-annual reviews and enable the results and recommendations therefrom to inform the discharge standards beginning in 2014.

#### **2.2.3.5.1.1 Ballast Water Management using a Ballast Water Treatment System**

We believe it is important to have a backup system in place in the event installed technology fails. EPA should take the lead in developing a system to reduce risks when shipboard treatment fails, perhaps in partnership with the National Park Service’s ongoing development of emergency treatment systems intended to ensure treatment is available prior to ballast water release. Such systems are being developed with some support from EPA’s Great Lakes Restoration Initiative funds, but additional support is needed. It also appears there is no allowance for skid mounted or hybridized systems on a permanent or intermittent basis similar to the NPS emergency treatment process. We urge EPA to implement and support emergency treatment systems, including skid mounted and hybridized systems.

#### **2.2.3.5.1.2 On-shore treatment of Ballast Water**

This alternative to on-board treatment seems largely unexplored. We believe that this alternative should be more seriously considered as an option for the Great Lakes and particularly in Lake Superior, where a handful of ports receive almost all of the discharged ballast water.

#### **2.2.3.5.1.3 Use of Public Water supply**

We support this alternative method to reduce risks of AIS introductions.

#### **2.2.3.5.2 Schedule for when Ballast Water Treatment Becomes BAT (and Therefore Required)**

The vessel compliance dates for existing vessels do not provide adequate protection under the Clean Water Act (“CWA”), given the known risks of AIS introductions and spread in the Great Lakes. New vessels will be required to comply with the IMO standards immediately but all existing vessels will not even need to begin complying until after 2014. These timelines are unacceptable given the requirements of the CWA and the imminent threat of permanent ecological and economic harm which AIS pose to our region. We understand that, as a general

rule, the CWA requires that permits like the VGP Permit must contain technology-based effluent limitations (TBELs) and that permittees must comply immediately with them based on Best Available Technologies (BAT) to further the statute's goal that all discharges of pollution ultimately be eliminated<sup>20</sup>. The EPA may not use compliance schedules to extend this statutory deadline.<sup>21</sup> Consequently, we believe the proposed VGP Permit establishes a compliance schedule that is inconsistent with the CWA.

EPA has apparently assumed that the installation of technologies to meet the standards depends entirely on a vessel's drydock schedule. No evidence is presented in the fact sheet or proposed permit that drydock is, or will be, required in order to install technologies to meet permit standards. It appears from the fact sheet that this assumption of mandatory drydocking allows vessels to delay installation of treatment technologies for three to five additional years. We do not believe that this assumption is warranted and are aware of evidence to the contrary. The U.S. Coast Guard evaluated this issue in 2009 and found that none of the treatment systems required a vessel to be drydocked for installation.<sup>22</sup> It appears that EPA is simply accepting without investigation the unsupported claims of the shipping industry that they cannot install technologies in a timely fashion. This must stop.

We urge that the VGP Permit be changed to require that all vessels meet the conditions of the permit as soon as it goes into effect.

#### **2.2.3.5.3.3 Existing Bulk Carrier Vessels (Commonly Known as Lakers) Built Before January 1, 2009, Confined Exclusively to the Great Lakes Upstream of the Welland Canal**

We strongly oppose the exemption of existing Laker vessels from ballast water discharge standards. Lakers discharge nearly 20 times as much ballast water as Salties and must be held to the same standards as Lakers to prevent the secondary spread of AIS within the Great Lakes. The EPA has offered no sound justification why these intra Great Lakes vessels should be allowed to continue to spread AIS to Lake Superior from the other Great Lakes. The EPA will fail in its obligation under the Clean Water Act to prevent degradation of Lake Superior and Minnesota's inland waterways unless it corrects this critical omission.

Minnesota is uniquely positioned to suffer a disproportionate impact from the failure to adequately regulate Lakers. The Duluth-Superior harbor (located in the St. Louis River estuary) and Two Harbor, MN harbor together receive nearly 7.3 billion gallons of ballast water

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<sup>20</sup> 33 U.S.C. § 1311(b) (requiring compliance with BAT effluent limitations no later than March 31, 1989)

<sup>21</sup> 40 C.F.R. § 122.47

<sup>22</sup> U.S. Coast Guard Office of Standards Evaluation and Development, Preliminary Regulatory Analysis and Initial Regulatory Flexibility Analysis (June 2008), Doc. No. USCG-2001-10486-0140.1, at 49.

discharges per year. Approximately 95 % of these discharges are from Lakers.<sup>23</sup> Although Lakers may not introduce AIS to the Great Lakes ecosystem as a whole, they transport invasive species to portions of the ecosystem where they were not found, dispersing them wider and faster than those species could have spread on their own.<sup>24</sup> Rup et al concluded that, “The volume of ballast water moved by Lakers is 20 times the volume of local ballast transferred by Salties and Coastal vessels combined, likely rendering Lakers the most important ballast-mediated pathway of secondary spread within the Great Lakes. With ballast transfers being overwhelmingly in the upstream direction, the potential distance and speed of secondary spread of [AIS] are much greater than would be achieved by natural, passive dispersal.”<sup>25</sup> Minnesota ports are the overwhelming recipients of this “upstream” movement of AIS from the lower Great Lakes. Lakers thus pose a great risk for transfer of aquatic invasive species among the Great Lakes and must be held to the same standards as ocean-going vessels in order to adequately protect Minnesota waters and water quality standards.<sup>26</sup> We urge in the strongest terms that this exemption be stricken from the VGP Permit.

We anticipate that organizations representing the Laker-based shipping industry will strongly support this unjustifiable exemption. They have often claimed Lakers are not part of the problem, that Lakers are constructed and ballast water discharged in such a way that it is impossible to treat their discharges, and that any attempt to regulate Lakers will shut down the shipping industry and several others. Recent testing of sodium hydroxide in bench tests and a practicality review for a Laker vessel have demonstrated that this treatment option is likely to be a practical, effective, and relatively low cost option for Lakers.<sup>27</sup> Treatment costs were estimated between 16 and 19 cents per ton of cargo and this could be reduced by up to 70% if a pH of 11.5 is deemed to meet the discharge standards. Surely an industry that is spending \$75 million this winter (2011-12) to maintain and modernize its 56 vessels fleet (\$1.34 million per vessel on average) can find a way to put more pipefitters and other skilled craftsmen to work protecting our resources by installing treatment technologies.<sup>28</sup> Indeed, they must be required by the VGP Permit to do so, in order to protect the 43,000 Minnesota jobs in the

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<sup>23</sup> MPCA, Fact Sheet for State Disposal System (SDS) Permit MNG300000 Ballast Water Discharge General Permit, 2008, page 3.

<sup>24</sup> Rup et al., *Domestic Ballast Operations on the Great Lakes: Potential Importance of Lakers as a Vector for Introduction and Spread of Nonindigenous Species*, *Can. J. Fish. Aquat. Sci.* 67(2): 256–268 (2010).

<sup>25</sup> *Id.*

<sup>26</sup> *Id.*

<sup>27</sup> Sodium Hydroxide (NaOH) Practicality Study. Prepared for the National Parks of Lake Superior Foundation. File Number 09129.01. February 2010 *available at* [http://yosemite.epa.gov/sab/sabproduct.nsf/953CCBEB820F0470852577920076316D/\\$File/NaOH+Practicality+Study.pdf](http://yosemite.epa.gov/sab/sabproduct.nsf/953CCBEB820F0470852577920076316D/$File/NaOH+Practicality+Study.pdf)

<sup>28</sup> Lakes Carriers Association, Press Release December 13, 2011. Investment Averages \$1.4 million Per Vessel Maintaining and Modernizing U.S. Flag Lakers Will Keep Great Lakes Shipyards Busy This Winter.

fishing industry alone which are dependent upon preventing more AIS from reaching Minnesota waters via ballast water from the lower Great Lakes.

### **2.2.3.6 Interim requirements for vessels not meeting.....**

We strongly support the continued use of ballast water exchange to reduce the risks of introducing AIS to the Great Lakes region. In review of the literature, open ocean ballast water exchange has proven effective at reducing the concentration of coastal organisms compared to ballast water which has not been so exchanged.<sup>29</sup>

### **2.2.3.7 Vessels entering the Great Lakes**

We strongly support the use of ballast water exchange. In review of the literature, ballast water exchange has proven to reduce the risks of introducing AIS. This applies even more to the freshwater Great Lakes.

### **Conclusion**

We are united in our firm conviction that swift, strong, comprehensive federal action is needed now to ensure that new aquatic invasive species are not introduced into the Great Lakes and St. Lawrence River, and existing invaders in the lower Great Lakes not spread to Lake Superior.

Respectfully Submitted,

Scott Strand  
Executive Director  
MN Center for Environmental Advocacy

John P. Lenczewski  
Executive Director  
Minnesota Trout Unlimited

Darrell Gerber  
Clean Water Action Alliance  
Of Minnesota

Larry Dolphin  
President, Minnesota Division  
Izaak Walton League of America

Andrew Slade  
Minnesota Environmental Partnership

Don Arnosti  
Policy Director  
Audubon Minnesota

Gary Botzek  
Executive Director  
Minnesota Conservation Federation

Brian Nerbonne  
MN Chapter- American Fisheries Society

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<sup>29</sup> National Research Council. *Assessing the Relationship Between Propagule Pressure and Invasion Risk in Ballast Water*. Washington, DC: The National Academies Press, 2011; Ruiz, G.M., & Reid, D.F. (Ed.). (2007). *Current state of understanding about the effectiveness of ballast water exchange (BWE) in reducing aquatic Nonindigenous species (ANS) introductions to the Great Lakes Basin and Chesapeake Bay, USA: synthesis and analysis of existing information* (NOAA Technical Memorandum GLERL-142). Ann Arbor, MI: NOAA.

Jeff Forester  
Executive Director  
Minnesota Seasonal Recreational  
Property Owners Association

Lois Sinn-Lindquist  
Executive Director  
Minnesota Waters

Lance Ness  
President  
Fish and Wildlife Legislative Alliance

Vern Wagner  
President  
Anglers for Habitat

Dan Kittilson  
Minnesota Coalition of Lake Associations

Le Lind  
Save Lake Superior Association

Richard Carlson  
New Ulm Area Sport Fishermen