

****Alliance for the Great Lakes**Buffalo Niagara Riverkeeper**Church Women United of New York State**Flow for Water**Freshwater Future**Friends of the Coves Subwatershed**Grand Haven Charterboat Association**Great Lakes Boating Federation**Great Lakes Sport Fishing Council**Great Lakes United**Hoosier Coho Club**Hydrology and Environment**Izaak Walton League of America- Ohio Division**Kalamazoo River Cleanup Coalition**Lake Erie Waterkeeper**London and District Labour Council**Ludington Area Charter Boat Association**Luna Pier Harbour Club**Milwaukee Riverkeeper**National Wildlife Federation**Natural Resources Defense Council**Nature Abounds**Northwest Indiana Steelheaders**Ohio Environmental Council**Quinte Watershed Cleanup Inc.**River Network**Salmon Unlimited of Illinois**Save Lake Superior Association**Save the River**Sierra Binational Great Lakes Committee**Sisters of St Joseph of Rochester Global Environment Committee**Tip of the Mitt Watershed Council**Trollers Unlimited of Chicago**Vera Cruz Yacht Club**Wastewater Education**Watershed Watchers****

February 21, 2012

Water Docket

U.S. Environmental Protection Agency
1200 Pennsylvania Ave., N.W.
Washington, D.C. 20460
Docket #: EPA-HQ-OW-2011-0141

Dear Environmental Protection Agency,

On behalf of the 36 undersigned organizations, we respectfully submit comments in response to the 2013 Draft Vessel General Permit, as it specifically applies to aquatic invasive species and commercial vessels. Our organizations represent environmental, conservation, hunting, fishing, labor, religious and academic organizations, all sharing a priority of ensuring that invasive species are not introduced into or spread throughout the Great Lakes and St. Lawrence River, with a deleterious impact on their ecosystems, dependent communities and economies.

The Aquatic Invasive Species Problem

Aquatic Invasive Species (“AIS”) are a persistent and unique problem in U.S. coastal and inland waters, costing the United States billions of dollars annually.¹ Ship-borne invasive

¹ Nat'l Aquatic Nuisance Species Task Force, *Aquatic Nuisance Species Impacts*, ANS TASK FORCE.GOV (last visited Jan. 31, 2012), http://www.anstaskforce.gov/more_impacts.php.

species cost the Great Lakes Region alone at least \$200 million dollars every year.² This is a dire problem that must be solved. The EPA estimates that approximately 58 non-indigenous species currently “pose high or medium risk for becoming established in the Great Lakes and for causing ecological harm.”³

AIS pose several dangers to aquatic ecosystems, including: outcompeting native species, threatening endangered species, damaging habitat, changing food webs, and altering the chemical and physical aquatic environment. Invasive species are thought to have been involved in 70% of this century's extinctions of native aquatic species, and 42% of current endangered species are impacted significantly by invasive species.⁴

AIS have caused substantial damage to recreational and commercial fisheries, infrastructure, and water based recreation and tourism. Invasive mollusks such as zebra mussels can also cause boat engines to overheat, and can cover shorelines, diminishing interest in visiting infested beaches.⁵ Industrial facilities can be adversely affected by invasive mussels, which attach to surfaces of water intake structures, navigation dams, pumping stations, and gears, impacting the delivery of public services and resulting in significant industry costs.⁶

Pathogens can also be transported in ballast water.⁷ Non-native strains of epidemic cholera, have previously been confirmed in U.S. waters.⁸ Additional pathogenic bacteria identified in ballast water known to be associated with adverse human health impacts include *E. coli*, enterococci, *Vibrio cholerae*, *Clostridium perfringens*, *Salmonella spp.*, *Cryptosporidium spp.*, and *Giardia spp.*, as well as a variety of viruses.⁹

Positions and Recommendations

² U.S. Dep't of Agric., *Annual Losses to Great Lakes Region by Ship-borne Invasive Species at least \$200 Million*, NATIONAL INVASIVE SPECIES INFORMATION CENTER (July 2008), http://www.glu.org/sites/default/files/lodge_factsheet.pdf.

³ 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*, at 1 (Nov. 2008). Modeling fourteen of the 58 potential invasive species showed that the shallower portions of the Great Lakes appear to be most vulnerable to invasion. *Id.* at 2.

⁴ U.S. EPA, *Invasive Non-Native Species available* at <http://www.epa.gov/owow/watershed/wacademy/acad2000/invasive.html>

⁵ See, e.g., *The Zebra Mussel Invasion*, NOAA: U.S. Dept. of Commerce available at http://www.noaa.gov/features/earthobs_0508/zebra.html; *Zebra Mussels*, National Atlas available at http://nationalatlas.gov/articles/biology/a_zm.html. Similarly, the fishhook water flea can “achieve high population densities, forming ‘clumps’ that can entangle the fishing lines of anglers. Indiana Department of Natural Resources, *Spiny and Fishhook Water Flea*, available at http://www.in.gov/dnr/files/spiny_and_fishhook_water_flea.pdf.

⁶ The U.S. Geological Survey has estimated potential economic impact at \$5 billion from 2000 to 2010 to U.S. and Canadian water users within the Great Lakes region alone, USGS, Dept. of the Interior (2011) available at http://www.glsc.usgs.gov/_files/factsheets/2000-6%20Zebra%20Mussels.pdf. Maintenance of pipes clogged with zebra mussels costs the power industry up to \$60 million per year while temporary shutdowns caused by reduced water flow can cost over \$5,000 an hour. It is estimated that the cost of the zebra mussel invasion to the US will be \$3.1 billion over the next ten years. Lynn Jackson, *Marine Biofouling: An Assessment of Risks and Management Initiatives*, Global Invasive Species Programme (2008) available at <http://www.gisp.org/publications/toolkit/BiofoulingGuidelines.pdf>.

⁷ Lisa A. Drake et al, *Potential Microbial Bio-invasions via Ships' Ballast Water, Sediment, and Biofilm*, 55 *Marine Pollution Bulletin* 333-341(2007).

⁸ Centers for Disease Control (CDC). *Isolation of Vibrio Cholerae 01 from Oysters – Mobile Bay, 1991, 1992*. Morbidity and Mortality Weekly Report, Feb. 12, 1993, Vol. 42(05): 91-93.

⁹ Reynolds, K.A., I.T. Knight, C.S. Wells, I.L. Pepper, and C.P. Gerba. 1999. Detection of Human Pathogenic Protozoa and Viruses in Ballast Water Using Conventional and Molecular Methods. Presented at the General Meeting of the American Society for Microbiology, Chicago, IL, Abstract Q-318, p. 594. Ballast water is also a vector for the microorganisms associated with the “red tide” or harmful algal bloom phenomenon. This phenomenon occurs when certain species of algae release toxins into an aquatic environment, which adversely impacts aquatic life and can also impact human health if fish contaminated with the toxin are consumed. See Hallegraeff, G. M., and C. J. Bolch, Transport of diatom and dinoflagellate resting spores via ship's ballast water: implications for plankton biogeography and aquaculture. *Journal of Plankton Research* 14:1067-1084 (1992).

The Clean Water Act requires EPA to place limits on ballast water discharges that eliminate the threat of invasive species. The Draft 2013 Vessel General Permit makes considerable changes to the requirements for commercial vessel ballast discharges, but the undersigned organizations strongly urge that it be strengthened.

In particular the undersigned organizations support the development of strong federal ballast program that would prevent the introduction and spread of aquatic invasive species from commercial vessels. We stress that we fundamentally support the following approaches taken within the 2013 Draft Vessel General Permit:

- The significant transition from physical ballast tank management requirements to technology requirements.
- Requiring ballast water exchange performed in conjunction with treatment and technologies used in freshwater ecosystems, but only as the best available technology economically achievable. While ballast water exchange, in combination with treatment requirements, is not an acceptable water quality-based effluent limitation, ballast water exchange should be performed in conjunction with treatment systems operating in freshwater environments to enhance protection. This combination approach should lower propagule pressure of potentially harmful freshwater species, introduce an environmental barrier, and potentially allow some treatment systems to operate more effectively as open ocean water contains less debris and plankton than coastal port waters. This combination approach should reduce the overall number of non-indigenous freshwater species being released in the Great Lakes, even if the absolute number of individuals released after treatment remains the same.¹⁰

However, as it pertains to ballast water discharge requirements in the Draft 2013 Vessel General Permit, we strongly recommend that the following improvements be made:

- The EPA should adopt a zero discharge water quality-based effluent limitation.

EPA must set zero detectable living organisms as a numeric water quality-based effluent limitation unless the agency is able to determine that there is a level of discharge greater than zero that would not result in the establishment of reproducing populations of the species in different water bodies. Such a water quality-based effluent limitation encourages the development of technology to better protect aquatic ecosystems. This includes, for example, the development of novel ballasting technology and techniques, such as flow through ballast tanks or other mechanisms that would result in no movement of ballast-mediated live organisms or water, from one bioregion to another.

- EPA must establish more stringent technology-based effluent limitations. These standards should be at least as stringent as the highest standards established by the states or other federal agencies.

¹⁰ Development of Guidelines and Other Documents for Uniform Implementation of the 2004 BWM Convention. Submitted by Canada to the International Maritime Organization. December 10, 2010.

Research has shown that the International Maritime Organization standards, which the EPA proposes for use, are not sufficient to prevent new non-indigenous species from invading our nation's waters. Moreover, the risk of invasive species is driven by many factors in addition to the concentration of organisms discharged. The States of California and New York have established numeric concentration-based effluent limits for ballast water two to three orders of magnitude more stringent than IMO standards.¹¹ In February 2011, the New York State Department of Environmental Conservation found that at least one treatment systems was “at or near the confidence level needed to demonstrate compliance” with New York’s Clean Water Act Section 401 water quality based requirements that vessels meet standards equivalent to 100x IMO. The California State Lands Commission found that there are now at least ten (10) commercially available treatment systems that have the potential to meet California’s standards, and that the technology continues to develop rapidly.¹²

We recommend that EPA take advantage of the efforts of New York and California and use their standards as the starting point for developing effluent limits for the next VGP. We believe that EPA should not propose or adopt effluent limits less stringent than the standards adopted by California and New York.

- EPA must develop stringent numeric effluent limits for Lakers.

The lack of stringent numeric effluent limitations for “laker” vessels that only travel within the Great Lakes creates a serious hole in managing the spread of invasive species. Laker vessels take up and discharge billions of gallons of ballast water every year as they travel from port to port within the Great Lakes, playing a significant role in spreading invasive species after they have been introduced.¹³ Roughly 90% of the commercial shipping operations in the Great Lakes area are domestic, and lakers account for over 95% of the volume of ballast water transferred.¹⁴ Thus, although lakers may not introduce non-indigenous species 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.¹⁵

¹¹ The standards being implemented by California under its state law, and by New York for new vessels under its Section 401 certification of the VGP, are:

- Organisms 50 or more micrometers in dimension – no detectable living organisms
- Organisms less than 50 and more than 10 micrometers in dimension – less than 0.01 living organism per milliliter
- Indicator microbes – all ballast water discharges shall contain:
 - Less than 1 colony forming unit of toxicogenic *Vibrio cholera* per 100 milliliters or less than 1 colony forming unit of than microbe per gram of wet weight of zoological samples;
 - Less than 126 colony forming units of *Escherichia coli* per 100 milliliters; and
 - Less than 33 colony forming units of intestinal enterococci per 100 milliliters.
- Any ballast water discharge shall contain less than 1,000 bacteria per 100 milliliters and less than 10,000 viruses per 100 milliliters.

¹² California State Lands Commission, “2011 Update: Ballast Water Treatment Systems For Use In California Waters,” at 33, available at http://www.slc.ca.gov/spec_pub/mfd/ballast_water/Documents/2011TechUpdateFinal_1Sep2011.pdf (last visited Feb. 5, 2012).

¹³ See Michigan Department of Environmental Quality (MDEQ), Comments Received on the Draft Section 401 Water Quality Certification (Dec. 8, 2008), available at http://www.michigan.gov/documents/deq/wb-swas-401cert-response_258951_7.pdf (Response to Comment 2); 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).

¹⁴ *Id.*

¹⁵ *Id.*

- EPA must compress the compliance timeline

The draft VGP's allowance for vessels to comply with IMO ballast water discharge standards according to the IMO implementation schedule, and only after their first drydocking, is an unjustified delay. As most vessels typically drydock on a three to five year cycle, the EPA proposal allows vessels an additional three to five year period before having to comply with IMO ballast water discharge standards, based on the assumption that any shipboard ballast water management system would have to be installed during the vessel's scheduled drydocking. (*See* Draft VGP Fact Sheet at 107 ("EPA expects that most existing vessels will need to enter a drydock to install a ballast water management system. . . ."). However, both the U.S. Coast Guard and many vendors have stated that ballast water treatment systems can be installed without drydocking.

The EPA should not allow for these additional delays. The EPA should compress the implementation timeline and require that technology-based effluent limitations be met on the date that the new permit goes into effect.

In conclusion, aquatic invasive species are the biggest threat facing the Great Lakes and St. Lawrence River biodiversity today. A strong federal program to prevent the introduction and spread of invasive species into the U.S. and Great Lakes is urgently needed. We believe the proposed changes to the EPA's Vessel General Permit are in the right direction, but fall short of protecting the country's natural resources, communities and economies. We urge the EPA to accept our recommendations to establish a much stronger federal program than that originally proposed. Please do not hesitate to contact Jennifer Nalbone from Great Lakes United (716-213-0408; jen@glu.org), Neil Kagan from National Wildlife Federation (734-887-7106; kagan@nwf.org), or Thom Cmar from Natural Resources Defense Council (312-651-7906; tcmar@nrdc.org) if you have any questions or need clarification of our position.

Sincerely

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