

**CALENDAR ITEM  
C111**

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**REQUEST AUTHORITY FOR THE EXECUTIVE OFFICER TO ENTER INTO AN  
AGREEMENT WITH MICHIGAN STATE UNIVERSITY TO SUPPORT A STUDY ON THE  
IDENTIFICATION AND ENUMERATION OF VIRUSES IN BALLAST WATER**

**PARTY:**

California State Lands Commission  
100 Howe Avenue, Suite 100 South  
Sacramento, CA 95825

**BACKGROUND:**

In coastal and estuarine environments, the ballast water of commercial ships has long been recognized as one of the most important mechanisms, or “vectors,” through which nonindigenous species (NIS) are moved to new locations throughout the world. Ballast water is used as a balancing and weight distribution tool necessary for the stability, and efficient propulsion of large seagoing ships. Vessels may take on, discharge, or redistribute ballast water during cargo loading and unloading, as they encounter rough seas, or as they transit through shallow waterways. A vessel takes on ballast water after cargo is unloaded in one port to compensate for the weight imbalance, and will later discharge that ballast water when cargo is loaded in another port. This transfer of ballast water from “source” to “destination” ports results in the movement of thousands of species throughout the globe on a daily basis. Once established, these nonindigenous species can cause significant environmental, economic, and human health impacts. Research suggests that invasive species are responsible for \$120 billion in losses and damages annually in the United States (Pimental et al. 2005).

To limit the introduction of NIS in California waters, the California legislature adopted two-phased (interim and final) ballast water discharge performance standards for vessels carrying, or capable of carrying, ballast water and operating in the waters of the State (Pub. Resources Code, § 71205.3). The performance standards set limits for the concentration of living organisms of various size classes and types in discharged ballast water. Specific to the proposed project, the interim ballast water discharge standards include a virus standard that limits the discharge of viruses to less than 10,000 per 100 milliliters of ballast water.

The Commission’s recent report “2014 Assessment of the Efficacy, Availability, and Environmental Impacts of Ballast Water Treatment Technologies for Use in California Waters” found that no ballast water treatment technologies are currently available to meet the California performance standards. One of the factors limiting both the availability of treatment systems to meet the California standards and the Commission’s assessment of those technologies is a lack of available methods to enumerate viruses in ballast water.

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Public Resources Code section 71213 states that the State Lands Commission shall identify and conduct:

*“...any other research determined necessary to carry out the requirements of this division. The research may relate to the transport and release of nonindigenous species by vessels, the methods of sampling and monitoring of the nonindigenous species transported or released by vessels, the rate or risk of release or establishment of nonindigenous species in the waters of the state and resulting impacts, and the means by which to reduce or eliminate a release or establishment...”*

Further research is necessary to develop methods that may be used by Commission staff, as well as treatment technology developers, to identify and enumerate viruses in discharged ballast water and assess the ability of treatment system to meet the California performance standards.

**PROPOSED ACTIVITY:**

Commission staff proposes to provide funds from the Marine Invasive Species Control Fund to Michigan State University, working in collaboration with the Royal Netherlands Institute for Sea Research, to support a study on the identification and enumeration of viruses in ballast water.

The proposed study will consist of four separate components:

1. An investigation of relevant aquatic virus concentrations and their relation to the California performance standards;
2. An evaluation of the detection limits for viruses in ballast water;
3. An evaluation of the ability of ballast water treatment technologies to reduce the concentration of infectious viruses; and
4. An investigation of the viral abundance in a variety of samples collected during ballast water treatment system approval tests.

This study will provide valuable information about the concentration of viruses in ballast water and the detection limits of sample analysis methodologies. It will also provide valuable information on the ability of current ballast water treatment technologies to reduce the concentration of infectious viruses in ballast water. Current estimates from the University indicate that the cost to perform the study will be \$149,000. Budgeted funds are available for this purpose.

**STATUTORY AND OTHER REGULATIONS:**

- A. Public Resources Code section 6106 (Delegation to execute written instruments)
- B. Marine Invasive Species Act of 2003, Chapter 491, Statutes of 2003
- C. State Administrative Manual section 1200
- D. State Contracting Manual (rev 01/14)

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**OTHER PERTINENT INFORMATION:**

The staff recommends that the Commission find that this activity is exempt from the requirements of the California Environmental Quality Act (CEQA) as a categorically exempt project. The project is exempt under Class 6, Information Collection; California Code of Regulations, Title 14, section 15306.

Authority: Public Resources Code section 21084 and California Code of Regulations, Title 14, section 15300.

**IT IS RECOMMENDED THAT THE COMMISSION:**

1. Find that the activity is exempt from the requirements of CEQA pursuant to California Code of Regulations, Title 14, section 15061 as a categorically exempt project, Class 6, Information Collection; California Code of Regulations, Title 14, section 15306.
2. Authorize the Executive Officer or her designee to award and execute an agreement with Michigan State University in accordance with State policies and procedures to evaluate methods of identification and enumeration of viruses in ballast water.
3. Authorize and direct the Executive Officer or her designee to take whatever action is necessary and appropriate to implement the provisions of the agreement with Michigan State University.