CALENDAR ITEM
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REQUEST AUTHORITY TO ENTER INTO AGREEMENT TO CONDUCT INVASIVE SPECIES RESEARCH TO CHARACTERIZE THE EFFECTS OF TRANSIT ON THE CONDITION, REPRODUCTIVE STATUS, VIABILITY, AND ESTABLISHMENT RISK OF VESSEL FOULING COMMUNITIES

PARTIES:

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BACKGROUND:

Vessel hull fouling has been a long-standing mechanism, or "vector" of species transfers throughout the world, and has led to numerous nonindigenous species (NIS) introductions. Fouling organisms attach to submerged hard surfaces, including the underwater portions of commercial ships. As vessels transit from place to place, they can also transport nonindigenous fouling organisms which can be introduced to regions where they do not occur naturally. In Hawaii, vessel fouling is believed to be responsible for more successful marine introductions than any other mechanism (Eldredge and Carlton 2002). For North America, one study estimated that fouling accounts for at least 36% of all shipping-related introductions of invertebrates and algae (Fofonoff et al. 2003).

Though the importance of vessel fouling for species introductions has been well recognized, critical information gaps remain for determining the risk posed by commercial vessel movements and associated assemblages of fouling organisms. In particular, specific data for the U.S. Coastline is limited. A California State Lands Commission report submitted to the State Legislature in 2006 stated, "The limited amount of scientific research on vessel fouling and NIS in California and the West Coast is the most prominent obstacle to a clear evaluation of the overall risk faced by the State" (Takata et al. 2006).

The Commission's Marine Facilities Division entered into an agreement in 2005 with Portland State University (PSU) to initiate a long term study to analyze the extent and composition of fouling among vessels operating along the U.S. Pacific coast. One

component of this research involved characterization of the potential magnitude of species transfers using wetted hull surface area as an initial proxy. The "wetted surface area" (WSA) statistic provides a very rough approximation of vessel surface that has the potential to be colonized by fouling organisms. Over a two year period, the study estimated that approximately 265 million square meters or 102 square miles of WSA arrived to the U.S. West Coast and approximately 64 percent of vessels arrived from outside of the three western states (Davidson et al. 2006). The large WSA suggests that the potential threat for fouling invasions may be significant. Another component of this research involved underwater surveys of the extent and composition of fouling communities on containerships, which account for over 40 percent of all ship arrivals to California. This research provided valuable insight into the effects of ship husbandry practices and voyage characteristics on the accumulation of fouling organisms.

The Commission's Marine Facilities Division entered into another agreement in 2007 with PSU to build upon the first phase of vessel fouling research. One component of this work involves additional underwater surveys of ships arriving to California, this time focusing on barges which typically exhibit characteristics which are believed to present a greater risk of NIS introductions than containerships and most other ship types. This work complements the work previously completed on container ships and enhances the ability of the Commission to better understand the relationships between certain vessel practices and the risk of accumulating fouling organisms. Another component of this second phase of research has involved an extensive literature review and a critical appraisal and re-analysis of data from the hull fouling literature to enable the Commission to determine how findings from modern studies of vessel fouling in different regions of the world can be applied to California.

Public Resources Code 71213 requires the State Lands Commission to:

" . . .. 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 . . .."

PROPOSED ACTIVITY:

To meet this mandate, the Commission's Marine Facilities Division (MFD) has determined that continued research to characterize the transfer of organisms on ships' hulls for vessels arriving at key port systems in the western US is necessary. Additionally, MFD has determined that evaluation of the condition of the fouling organisms attached to vessels arriving in California is necessary to properly evaluate the risk of NIS introduction. Previous work has focused on the abundance and complexity of the fouling communities on ships arriving to California but there is still a need to determine if these organisms are capable of reproducing and establishing upon

arrival to California. Utilizing funds from the Marine Invasive Species Control Fund budgeted for conducting necessary research, Staff proposes entering into an agreement with Portland State University (PSU) for $175,000 to complement and continue the work begun during the first two phases of research. Specifically, this proposed work will build upon previously completed work and would incorporate investigations of the condition, viability, reproductive status, and parasite loading of the fouling organisms associated with commercial ships arriving to California. The first component of this proposed research will consist of additional sampling of the fouling communities associated with the submerged areas of ships arriving to California. This work will not only focus on abundance and diversity of the fouling communities but also on the condition of the organisms to provide more detailed insight on the risks associated with this vector. The second component will consist of an evaluation of the reproductive status of the fouling organisms collected during the first component. The third component will involve an evaluation of the parasite loading of organisms collected during the vessel sampling (first component) to determine the risk of spreading nonindigenous parasites into California through the vessel fouling vector. Per the California State Contracts Manual, Section 3.06, contracts with a state college or university, from California or any other state, are exempt from competitive bid requirements (PCC 10340). Staff believes that Portland State University is best suited to conduct these studies because of its extensive experience with respect to the evaluation of fouling organisms on commercial and recreational vessels.

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 10/05)

OTHER PERTINENT INFORMATION:

1. Pursuant to the Commission's delegation of authority and the State CEQA Guidelines [Title 14, California Code of Regulations, section 15060(c)(3)], the staff has determined that this activity is not subject to the provisions of the CEQA because it is not a "project" as defined by the CEQA and the State CEQA Guidelines.

Authority: Public Resources Code section 21065 and Title 14, California Code of Regulations, sections 15060 (c)(3) and 15378.

EXHIBIT:

A. Transit effects on ship fouling communities: condition, reproductive status, viability and establishment risk: Prospectus submitted to California State Lands Commission (May 2009)

IT IS RECOMMENDED THAT THE COMMISSION:

1. FIND THAT THESE ACTIVITIES ARE EXEMPT FROM THE REQUIREMENTS OF CEQA PURSUANT TO 14 CAL CODE REGS. 15060(c)(3) BECAUSE THESE ACTIVITIES ARE NOT PROJECTS AS DEFINED BY PUBLIC RESOURCES CODE SECTION 21065 AND 14 CALIFORNIA CODE OF REGULATIONS, SECTION 15378.

2. AUTHORIZE THE EXECUTIVE OFFICER OR HIS DESIGNEE TO AWARD AND EXECUTE CONTRACT WITH PORTLAND STATE UNIVERSITY IN ACCORDANCE WITH STATE POLICIES AND PROCEDURES FOR INVASIVE SPECIES RESEARCH TO CHARACTERIZE THE EFFECTS OF TRANSIT ON THE CONDITION, REPRODUCTIVE STATUS, VIABILITY, AND ESTABLISHMENT RISK OF VESSEL FOULING COMMUNITIES IN AN AMOUNT NOT TO EXCEED $175,000.