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Testimony of
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Before the Oregon House Energy and Environment Committee

Support for House Bill 3451 that establishes the Oceangoing Research Vessel Program
March 28, 2013

Ocean research vessels enable scientists to observe the linkages between the California Current, which is tens of miles offshore of Oregon, and our nearshore territorial sea. The data gathered by offshore research provides better understanding of the short-term and long-term changes in marine ecosystems and how these changes relate to both human activities and natural variability. Oregon's ability to gather the information it needs to develop effective marine and coastal policies (consistent with the State's Territorial Sea Plan), explore the impacts of marine renewable energy, and map our seafloor, will depend on the continued presence of a large, research-class ship based in its coastal waters.

These vessels also provide an unparalleled learning experience for our students – both undergraduate and graduate. Teachers from both K-12 institutions and Oregon community colleges have also participated in these research cruises. Opportunities for real-world experiments and engagement increase student retention and success in science, technology, engineering and mathematics (STEM). An Oregon State University research vessel gives Oregon students the chance to participate in science-based activities. Students will have the opportunity to define their own research program, and this will enable Oregon to become a leader in curricula in the STEM fields, helping the State achieve its 40-40-20 educational goal.

From 1975 until 2012, the Research Vessel Wecoma fulfilled these missions of research and teaching. After the Wecoma was decommissioned last year, the National Science Foundation (NSF) deployed its sister ship, the Oceanus, to fulfill this mission. Now NSF has selected Oregon State University as the "lead institution" as part of the federal plan to rejuvenate the academic research fleet. It is NSF's plan that the first ship will become available in 2020 and NSF intends to maintain the Oceanus until the new ship can take her place.

However, NSF is under growing budget pressure to reduce its operating costs, and one approach it has taken is to layup existing ships if there is insufficient demand for their services by the science community. Such layups greatly reduce crew salary and operating costs. Since the Oceanus is nearly 40 years old, it is possible that any layup between now and 2020 would be permanent. State of Oregon support for ship time for the Oceanus would greatly reduce the odds of this unfortunate turn of events coming to pass.

Oregon State University (OSU) has a long and rich history as an operator of scientific research vessels. Since the early years of oceanography at OSU, we have operated research vessels as part of the national oceanographic fleet known as University National Oceanographic Laboratory System (UNOLS). Research vessels are important because they provide:

- Research performed in the College of Earth, Ocean, and Atmospheric Sciences as well as several other colleges on campus. This research includes the Oregon Sea Grant Program, the Hatfield Marine Science Center (HMSC), and two cooperative institutes with the National Oceanic and Atmospheric Administration: the Cooperative Institute for Marine Resources Studies (CIMRS) and the Cooperative Institute for Oceanographic Satellite Studies (CIOSS).
- Central access to the US west coast for all oceanographic researchers. This access will result in many national and international scientists working in Oregon and coming to appreciate our state and ocean environment;
- A well-regarded docking and maintenance facility in Newport. This facility will in turn provide a temporary dock to be used by other UNOLS vessels staging local experiments, as well as the research vessel Elakha*;*
- The activities of the Northwest National Marine Renewable Energy Center at OSU. Research vessels will assist in the design and testing of wave energy facilities;
- Annual expenditures of approximately $3,600,000 (10 year average). Most of these expenditures are spent in Oregon.
- Status for Oregon as an ocean state and as a responsible steward of our coastal ocean.
- Learning opportunities for students and teachers. These include both student-led research programs as well as field experiences for courses. Approximately 100 graduate students participate in research cruises every year.

State Support is Needed to Sustain Existing Research Vessels

State support for a fixed number of operating days every year will enhance knowledge of our ocean environment, sustain economic opportunities by retaining high-paying jobs associated with ship operations and research, and provide unique educational opportunities for Oregon students across multiple institutions. Institutions that can demonstrate a commitment to shared responsibility for vessel operations will have a greater chance of sustaining federal support for existing research vessels and retaining these vessels in the future. State-supported operating days can help avoid a permanent layup of the Oceanus.

States that operate research vessels on behalf of NSF have a long track record of providing support for ship operating days.

- **Rhode Island** (population of just over 1 million): Rhode Island provides $500k annually to support the research vessel Endeavor*,* which is operated by the University of Rhode Island. The Rhode Island program "emphasizes scientific marine research, education, and technical training that requires a sea-going platform." State support is allocated annually

through a proposal process that is available for educational and research projects, including those outside the university research community, such as state environmental agencies.

- **California**: Through state appropriations of over $1M annually, the University of California has supported ship time on several of the research vessels operated by Scripps Institution of Oceanography for several decades. Ship time is awarded through a proposal process to students and faculty at Scripps and two other UC campuses.
- **Washington**: Through state appropriations of over $1.67M annually, the University of Washington supports 45 days per year of ship time for student research and course activities.

These commitments establish a foundation of state support that demonstrates to federal funding agencies a high level of commitment to the operation of a research vessel.

Oregon is the only state among the operators of research vessels that does not provide state support for vessel operations. The return on investments for the other states has been both a continuing commitment by the federal government to the operations of their research fleet in the waters of those states as well as access to vessel days that enable research that reflects state priorities. Such state support helps ensure continuing federal support for the bulk of the vessel operations costs and prevent long layups of existing vessels.

What State Support Would Buy

OSU's highest priority is to obtain continuing support for operating days on the Oceanus similar to the program in Rhode Island that supports its sister ship, the Endeavor. Ten days of ship time each year would enable a variety of scientific research and observation programs, as well as state agency operations and tasks. These efforts could include:

- Mapping of the sea floor in Oregon's territorial sea and analysis of marine ecosystems as part of proposed marine protected areas;
- Assessments of fisheries in conjunction with ODFW's new Nearshore Strategy; and
- Deployment of instrumentation to support monitoring of the impacts of wave energy systems and marine reserves, etc.;
- Provide more opportunities for Oregon students (K-12, community college, and university) to participate in research and learning.

Unlike California, Washington, and Rhode Island, Oregon could establish a broadly representative advisory committee that would evaluate and rank proposals on an annual basis, rather than rely on a committee composed of university staff. Moreover, proposals for vessel time would not be restricted to OSU students and faculty. Proposals would be evaluated based on the quality of the management, research, and/or educational rationale as well as the feasibility of accommodating the proposed work within the federally-funded schedule for the Oceanus. Ship days could be available to any State agency or OUS institution and would be scheduled as part of the Federal ship scheduling process.

Proposed Program Costs

Oregon could establish its own track record of support with the current research vessel Oceanus by funding ten vessel days per year in the FY13/15 biennium (at a cost of $330,000 for the biennium). The program could be increased to 20 days per year in the FY15/17 biennium (for a total a cost of $660,000). As the replacement vessel for the Oceanus becomes available, the program could plateau at 25 days per year in the FY17/19 biennium (for a total cost of $1,000,000 for the biennium). The higher cost during the third biennium reflects the slightly higher operating costs of the new NSF-constructed research vessel that will replace the R/V Oceanus.

A State commitment is needed for Oregon to maintain operations the R/V Oceanus until 2020, when a new vessel should become available. Moreover, it will enhance Oregon's competitiveness for a new vessel. It would continue Oregon's heritage of ocean research while building stronger ties between the scientific community, management agencies, and coastal communities.

The signs of significant and perhaps long term changes in our ocean ecosystems are now appearing and demonstrate the need for new investments that will ensure the long-term health and sustainability of our ocean and the people who depend on it. If Oregon fails to sustain operations of the Oceanus, it is quite possible that the West Coast leading edge ocean observation, research, and modeling would be conducted solely by the states to the north and south of us.

For Further Information

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