

# Urban Waters

*a marine research center*



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Urban Waters is a marine research center planned for the east side of the Thea Foss Waterway, to house a team of world-class researchers whose mission is to develop solutions to the problems facing urban bay communities.

The proposed research center is the result of a strong partnership among the City of Tacoma, University of Washington, Port of Tacoma, private industry and other municipalities and resource agencies.

- **City of Tacoma** has committed \$7 million to co-locate its analytical lab at the facility, enabling the center to share resources, including access to labs, equipment, reception and conference areas. The City also committed a \$500,000 agreement to support stormwater research as one of the center's first priorities. This research agreement was matched with \$250,000 by the University of Washington.
- **University of Washington** has committed Dr. Arthur Nowell, Dean of the College of Ocean and Fishery Sciences to lead the center's program development.
- **University of Washington Tacoma** is committed to adopting the center as part of the university's program in Tacoma.
- **Port of Tacoma** has committed \$1 million to support an endowed chair at the University of Washington Tacoma who will also be the lead scientist for Urban Waters. This gift was matched with \$500,000 by the University of Washington.
- **SSA Marine** has provided \$500,000 to support a University of Washington Tacoma endowed chair who will also be the lead scientist for Urban Waters. This gift was matched with \$250,000 by the University of Washington.
- **The Russell Family Foundation** supported a funding feasibility study to ensure that regional support existed for the center's concept.

The Department of Ecology, Department of Natural Resources and the Puget Sound Action Team are playing vital roles in the creation of the center. A partnership between Urban Waters, USGS, and the State Dept. of Fish & Wildlife is being formed to carry out the evaluation of ballast water treatment systems. Support for the center also comes from University of Maryland's Center of Marine Biotechnology, whose executive director, Dr. Yonathan Zohar, has joined the team as a scientific adviser.

Our Scientific Advisory Committee, a comprehensive team of environmental and human health scientists led by Dr. Arthur Nowell, Dean of the College of Ocean and Fishery Sciences at the University of Washington, has worked collaboratively to define the center's first research priorities:

- **Ballast water and invasive species:** The transfer of ballast water from one region of the world to another is believed one of the major ways non-native aquatic species are introduced into Puget Sound and other U.S. locations. These introductions can cause severe ecological and economic impacts. Washington is one of only a handful of states in the nation to pass legislation controlling ballast water discharge. The University of Washington is sampling ballast water of ships entering Puget Sound, primarily at the Port of Seattle, and is working with vendors to develop ballast water

treatment systems. The Port of Tacoma, also a major Pacific Northwest shipping hub, joined the effort to create Urban Waters by investing \$1 million toward a University of Washington Tacoma faculty chair to focus on research. Questions to be answered scientifically might include: What non-native aquatic species do ships discharge into Puget Sound? What are the ecological risks posed by these discharges? What non-native species are present in Tacoma waters and sediments? Is ballast water the significant vehicle for such species? What treatment measures can be used to remove these species?

- **Urban water runoff and marine biotechnology:** The loss of nearshore habitat in industrialized areas has disrupted the life cycle of fish and other wildlife. Such persistent organic pollutants as polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), flame retardants and heavy metals continue to present environmental and public health problems even though some of these chemicals were banned more than 30 years ago. In addition to the direct impact of environmental pollutants on the health of aquatic animals, habitat change and the loss of wetlands has contributed to the decline of some species. Questions to be answered scientifically might include: Do co-contaminants affect the biodegradability and toxicity in urban bay sediments and waterways? Can the urban bay sediments around Tacoma be effectively and economically remediated using marine biotechnology?
- **Aquaculture:** While still a relatively undeveloped industry in the United States, aquaculture is the fastest-growing food-producing sector in the world. National demand for seafood is expected to grow by more than 2 million metric tons by 2025. The coastal and offshore waters of the Pacific Northwest are considered one of the most promising regions for future expansion of the national aquaculture industry. Washington possesses significant resources of good-quality seawater, farming sites and the significant capacity to expand local production of a variety of farmed seafood products. A successful aquaculture industry could create jobs, develop economic growth and help stabilize and decrease the \$7.5 billion trade deficit in edible fisheries products. The critical need in aquaculture is to develop total production systems for each target species. This provides investors with complete and reliable control over the biology and husbandry of marketable fish and shellfish, and the necessary life-support systems for raising them in captivity. First questions to address major scientific and policy issues facing this emerging industry include: How do we develop culture technologies for existing and new species? What are the soundest sites for aquaculture facilities? How do we ensure environmental standards and protection while developing the economies of communities?

Commencement Bay provides a unique real-life laboratory for a number of water quality issues affecting urban centers. Urban Waters promises to capitalize on our innate fascination with water by finding ways we can live, work and play near vibrant aquatic and marine life in our bays and estuaries—and share the joy of discovery with generations to come.

## The vision progresses

- 2002:** Potential partners hold workshop to outline vision for center
- 2003:** Russell Family Foundation contributes \$70,000 for funding feasibility study; board and scientific advisory group established
- 2004:** Case statement prepared with facility needs and budget; Collins Group conducts funding feasibility study; scientific advisory group outlines first three research priorities; executive director hired; Port of Tacoma contributes \$1 million, matched by another \$500,000 from the University of Washington, to endow a research chair at the Tacoma campus
- 2005:** SSA Marine and City of Tacoma each contribute \$500,000, matched by another \$500,000 from the University of Washington, to round out Tacoma campus research chair endowment; negotiations begin for facility location
- 2006:** UWT recruits endowed chair and lead scientist

