



# UNIVERSITY OF HAWAII SYSTEM

## TESTIMONY

HB 3163 RELATING TO THE Waikīkī AQUARIUM

Testimony Presented Before the  
House Committee on Higher Education

February 2, 2006

by

Dr. Andrew Rossiter  
Director, Waikīkī Aquarium

Testimony Presented Before the  
House Committee on Higher Education

By

Dr. Andrew Rossiter  
Director, Waikiki Aquarium

On HB 3163: Relating to the Waikiki Aquarium

Chair Waters, Vice Chair Shimabukuro, and Members of the House Higher Education Committee, thank you for the opportunity to testify today on the needs and plans of the Waikiki Aquarium.

Act 184 (SLH 1995) designates the Waikiki Aquarium as the State Aquarium of Hawaii, and provides that the objective of the Aquarium is to enrich the lives of people of all ages by providing public programs, education, research, and exhibits of the aquatic life of Hawaii and the Pacific. The State Aquarium at Waikiki is administered through the University of Hawaii-Manoa Office of the Vice Chancellor for Graduate Education and Research.

To effectively achieve its goals and objectives as the State Aquarium and a part of the University of Hawaii-Manoa, the Waikiki Aquarium needs to regularly update and improve its physical plant and capabilities, much of which has not been significantly addressed since the creation of our present facilities in 1955, or is currently deficient. This budget request addresses some of these issues.

The mission of the Waikiki Aquarium is to inspire and promote appreciation, understanding and conservation of Pacific marine life.

This it does in three main ways:

- a. By undertaking and supporting research on marine life
- b. Through outstanding education programs
- c. Through world class, ecologically accurate displays and exhibits

### **Research Activities**

The University conducts leading and cutting edge research on marine biology. One of my priorities has been to strengthen and diversify the research collaborations between the Aquarium and UH, to support UH research activities, and to make the results and the importance of this research available to the layperson.

As one practical example of our collegial support, in 2005 we donated our entire library collection of scientific journals and publications to the Hamilton Library to help replace books destroyed in the 2004 flood.

On the research front, undergraduate and graduate students from UH-Manoa, community colleges, HPU, and Chaminade now utilize Aquarium facilities for individual research projects.

Research done by Aquarium staff focuses on topics that are of conservation or education focus and which have potential practical benefits to the to the local community and marine ecosystems. For example, we are pioneers and leaders in the study of coral propagation, which has immense potential for renovating damaged reef systems. We house many extremely rare corals, and have plans to serve as a ‘coral ark’ for endangered Hawaiian coral species. In addition, other Aquarium research includes: propagation of target ornamental reef fish, issues relating to Hawaiian monk seals, methods to control alien algae, color retention and culture techniques in giant clams (of relevance to aquaculture), and a planned investigation on the toxic effects of marine paints on corals.

The Waikiki Aquarium thus comprises much more than just the exhibits that the average visitor sees. It is playing an active, diverse and important role in research activities, both on site and on campus. But how much longer this can be sustained is debatable.

Higher Education Stature #-2102 stipulates that ‘[the Waikiki Aquarium] shall also establish and at all times maintain there [at its current site] a marine biological laboratory”, but this stipulation is being barely fulfilled by the cramped and dilapidated physical facility. Aquarium space, equipment, power and water facilities are now at maximum capacity, and in many cases, in a state of disrepair.

Building research capacity is vital to the Aquarium’s future. To maximize this potential and to achieve fruition of projects it is essential that a new research facility be made available. It would be an opportunity missed if the existing conditions were allowed to continue to hamper ongoing activities and to curtail future progress.

### **New Research Facility**

To remedy the existing situation and provide a solid research capacity for the future, we have proposed a two-story research building, 30’ x 120’ footprint, in the grounds of the Waikiki Aquarium. The building will be located along the Ewa fence line, where the plankton culture deck, emergency holding tanks and equipment storage area are now located. The existing wooden building would be demolished and replaced with the new structure, which will address the diverse research needs of the Aquarium now and into the future.

### **Research structure**

To minimize impact on the skyline this two-story structure will be partially sunk 6’ below grade. This will also ensure that the maximum height of the building lies well below the 25’ above-grade maximum height regulation existing for our property. The roof will comprise a flat working area. Thus there will be three working levels.

#### **Level 1:**

This partly sunken story will contain large modern holding tanks, grow-out facilities for aquaculture research projects, and a quarantine/fish pathology research section. It will be partly open all around the perimeter. The below-grade location combined with wind blowing through the open building will reduce electrical costs associated with cooling.

### Level 2:

The second floor will contain a fish aquaculture research unit, breeding tanks and experimental holding facilities. A fish-food preparation area and a section devoted to fish nutrition studies will also be located on this level.

### Roof:

The flat roof will be open, surrounded by a safety railing, and will house organisms that require high light levels. By utilizing natural sunlight, research projects on this level will be ecologically friendly, energy efficient and enjoying reduced costs by using less electrical power for artificial lighting. Here will be housed coral propagation studies (in which the Aquarium is a world leader), other coral research, and a 'coral ark' of endangered Hawaiian coral species. Also located here will be an area devoted to research on Pacific giant clam aquaculture, and a section for research on the culture and nutrition of live food for use in commercial aquaculture (plankton, rotifers, algae, etc.).

Planter boxes of live plants will be extensively used at each level. These will assist in providing shade, thereby cooling the building. They will also soften the outline of the building, catering to aesthetic sensibilities of park users.

In total, this building will:

- 1) Provide a modern research facility which addresses a comprehensive array of issues in modern aquatic husbandry and aquaculture research
- 2) Address the requirements of the Aquarium's role in the new UH Aquaculture Program.
- 3) House important conservation-related research of benefit to Hawaii's ecosystem
- 4) Host studies by marine biologists at UH Manoa, who currently do not have easy access to salt water research facilities.

The new facility will allow the Aquarium to strengthen and expand ongoing activities, which have been severely restricted by space and equipment limitations. Included among these research activities are aquaculture, food nutrition, fish pathology, and fish husbandry. It is especially important to note that these comprise the Waikiki Aquarium's recognized areas of expertise in the newly instituted University of Hawaii Aquaculture program founded in January 2006. This program aims at becoming the #1 aquaculture program in the nation, serving local, national and international students and clients.

Additionally, consolidating these research components within a single structure will free up space in the service and maintenance areas within the existing building. This will allow for modern safety grids and handrails to finally be installed, thereby improving the safety of the Aquarium for staff, visiting researchers, and behind the scenes visitors.

The Waikiki Aquarium is already a world-recognized leader in several areas of marine aquatic husbandry and ornamental aquaculture. Aquaculture of ornamental fishes seems certain to become an increasingly important field, and will benefit both the local economy and the environment. With this expanded research capability, the Waikiki Aquarium will be at the forefront of developments and advances in this area. It will play an important role in

training aquaculture managers and scientists, and contribute to future generations of aquaculture workers in Hawaii.

We sincerely request the State Legislature to approve the funding for this facility, which will provide a modern educational and research service that does not currently exist, but one that is of immense benefit to UH, to the aquaculture industry at present, and to future generations of aquaculture workers in Hawaii.

**The Public Aquarium: Education and Exhibitory: Improvements in Air Conditioning, Public Restrooms, Re-roofing, Roadway Resurfacing, and Power Distribution.**

The public face of the aquarium relates mainly to education and exhibitory. Performance results of these programs show both to be successful.

Program effectiveness is measured by visitor satisfaction, total admission numbers, earned revenues, and effectiveness in achieving educational goals. To review:

**Visitor ratings:**

	<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
<i>Excellent:</i>	65%	59%	67%	69%	56.4%
<i>Good:</i>	25%	27%	23%	19%	22.7%
<i>Average:</i>	6%	9%	6%	9%	12.8%
<i>Poor:</i>	4%	5%	4%	3%	8.1%
<b>TOTAL</b>	n = 1,498	n = 1,314	n = 1,314	n = 1,521	n = 1,284

**Attendance:**

	<u>FY2001</u>	<u>FY2002</u>	<u>FY2003</u>	<u>FY 2004</u>	<u>FY 2005</u>
General	291,359	276,871	267,736	299,804	309,934
<i>Rentals</i>	<i>13,519</i>	<i>13,490</i>	<i>13,890</i>	<i>20,116</i>	<i>17,767</i>
Education	31,393	36,805	34,532	36,106	36,354
<i>Events</i>	<i>4,227</i>	<i>3,706</i>	<i>1,008</i>	<i>1,749</i>	<i>1,030</i>
<b>TOTAL</b>	<b>340,498</b>	<b>328,622</b>	<b>317,166</b>	<b>357,775</b>	<b>365,385</b>

**A. Education**

Despite its small size, productivity of the Waikiki Aquarium is very high, even when compared to larger institutions on the mainland U.S. The Aquarium now offers more kinds of education programs to more people on a per capita basis than any of the mainland U.S. Aquariums.

This diverse range of programs remains extremely popular. Last year 36,654 school students, teachers, and individuals utilized Waikiki Aquarium marine science education programs. Aquarium admission for Hawaii school students remains free.

Beyond their popularity, the programs are also successful:

- 1) The most-recent accreditation team from the American Zoo and Aquarium Association reported that our *“education program is particularly good: Waikiki dedicates more staff with many more programs than many larger facilities....(and) the University acts as a resource in providing students, forums, and consulting staff that many zoos and aquariums can only hope to acquire.”*
- 2) In August 2005 the quality and importance of the Waikiki Aquarium education program was further recognized through the awarding of the first prize in the education category by the State-sponsored ‘Living Reef Program’.

## **B. Exhibits**

The Aquarium’s exhibits and programs emphasize ecology, natural history, biological diversity, and conservation. Exhibit concepts, design and execution are carried out entirely by staff. The quality is such that the Aquarium regularly wins national prizes for aquarium and zoo exhibitry and for its conservation efforts.

The Aquarium exhibits focus on quality, and highlight Hawaii’s marine life

- 1) We hold one of the largest and most diverse collections of living corals in the world.
- 2) We are in discussion with DLNR to establish a coral ark of Hawaiian corals at the Aquarium.
- 3) We are one of only two places worldwide where the public can see Hawaiian monk seals.
- 4) Currently, we are displaying many fish species seen in no other US aquariums.
- 5) Currently, we are displaying several fish species not seen in any other aquarium worldwide.

As a visitor attraction the aquarium remains popular.

- 1) According to the DBEDT 2004 Data book, the Aquarium improved its rank from #5 to the #4 paid attraction on Oahu.
- 2) Visitor satisfaction has been consistently favorable, with >79% of visitors reporting “good” to “excellent” on voluntary exit surveys in FY05.

The quality of its exhibits has also been recognized.

- 1) At the national level, in 2005 the Waikiki Aquarium was selected by its aquarium peers as being among the top four US aquariums.
- 2) In December 2005, it was featured nationally as part of a PBS documentary to this effect, bringing distinction to UH and to Hawaii.

## **C. Overview of achievements and current situation**

When measured in terms of increasing visitor attendance, positive visitor approval ratings, and various national awards, and research achievements and programs, the Waikiki Aquarium has achieved a remarkably high level of success in recent years. However, there exist major shortcomings in its infrastructure and in the physical condition of its aging facility. It is unknown as to how much longer this apparent paradox can be maintained.

Visitors have fainted in the galleries, one child had a seizure because of the heat, and several parents have cancelled attending classroom-based classes because of the poor air conditioning. Obviously this is an issue both of image and of health and safety.

There are leaks in the ceiling into the public areas, roadway resurfacing is needed to appropriately channel runoff, the public restrooms need major work, and new exhibits are being severely constrained due to power limitations.

In reality the Waikiki Aquarium currently consist of two distinct parts; the award winning exhibits that form the public face of the aquarium, and the decrepit infrastructure and below par physical conditions behind the scenes. The latter situation is a product of decades of under-funding, and a concomitant inability to undertake regular and adequate maintenance.

- Significant deficiencies remain unresolved in this 50-year old building, including several potentially dangerous structural and systemic conditions.
- These essential renovations and emergency repairs should be funded by state funds since they impact public areas. Any failure of these systems will significantly impact the viability of the Aquarium's public access.

The positives are testimony to the commitment, the ingenuity and the talent of the Aquarium staff. But the dike has been leaking for many years, and there are only so many fingers available to put in the ever increasing and larger holes in the dike. It is only a matter of time before the dike bursts – and I need not raise the spectre of another Lyon Arboretum.

To conclude, we strongly urge the Legislature to approve funding to address these CIP issues, and not let the Aquarium's 100-year old reputation for excellence in education, entertainment, research and exhibitry become tarnished.