

UNIVERSITY OF HAWAI'I SYSTEM LEGISLATIVE TESTIMONY



UOH 881 Aquaria

Testimony Presented Before the
House Committee on Finance

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by

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Budget Requests for Supplemental Budget 2008–2009
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Program I.D. and Title: UOH-881, Aquaria

I. Introduction

The Waikiki Aquarium is the State Aquarium of Hawaii. Its mission is 'to inspire and promote appreciation, understanding and conservation of Pacific marine life'. This it does through outstanding exhibitry and education programs, and by undertaking and supporting research. It plays a uniquely important role in introducing to the local community and to visitors some of the 'hard science' done on the Manoa campus, and in educating them about Hawaii's marine life.

When measured in terms of positive approval ratings from visitor, international recognition, and national awards for exhibitry and for education, the Waikiki Aquarium has achieved a remarkably high level of success in recent years. In 2005 it was selected by its aquarium peers as being among the top four US aquariums. In December 2005, it was featured nationally as part of a PBS documentary to this effect, bringing welcome positive attention to the Aquarium, to the University and to Hawaii in general.

However, our achievements and positives are, in reality, but a thin veneer of success over a core of major structural challenges that are gradually worsening. The decrepit physical structure of the 53 year old building, its substandard and dated infrastructure, and the relative lack of investment afforded to maintenance over the past decades are rapidly outweighing the positives. The deteriorating condition of the building and infrastructure present major challenges to maintaining existing high standards of exhibitry and of service to visitors, and pose a major obstacle to progress. Instead of consolidating our successes and advancing, we are spending an increasing amount of time and money making temporary band aid repairs to mask conditions that in reality require major surgery or amputation. It is unknown as to how much longer this situation can be maintained.

The Aquarium services the residents of Hawaii, and holds a special place in their hearts and minds. It performs a unique and invaluable education, outreach and community service to all, young and old, visitors and residents alike. We strongly urge the Legislature to continue to support the State Aquarium - this jewel of a facility in Waikiki - and not let its 100-year old reputation for excellence in education, entertainment, exhibitry and research become tarnished.

A. Summary of Program Objectives

Act 184 (SLH 1995) designates the Waikiki Aquarium as the State Aquarium, and further provides that the objective of the UOH-881 program 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 other regions. The State Aquarium at

Waikiki is administered through the office of the University of Hawaii-Manoa Vice Chancellor for Research and Graduate Education.

B. Description of Program Objectives

1. Education Programs

Last year over 27,000 school students, teachers, families with children and individuals utilized Waikiki Aquarium marine science education programs. Modest tuition fees are charged for most programs, but Aquarium admission for Hawaii school students remains free. The primary emphasis of Aquarium education programs is science literacy and conservation education. Programs were given by four full time staff, five University of Hawaii student workers, over 20 affiliate staff from Hawaii's research, education and conservation communities, and more than 200 trained volunteers.

Many more people were reached though on-site interpretation at our outdoor reef exhibit staffed by approximately 80 volunteers, statewide through collaborations with DOE teacher training initiatives, environmental media coverage, and internationally through research collaborations and through our highly popular web site.

Included among the education programs are:

- Docent-assisted school visits and outreach programs, that last year served over 7,000 local school children and teachers
- Self-guided school and community tours, last year attended by over 20,000 participants
- Classes, activities, and marine natural history tours for families and adults, each year enjoyed by over 1,700 participants, of all ages
- Educational Video Programs (three teacher/ educator marine science training videos are available for loan or purchase)
- Outreach to Community Fairs and Events; last year over 1,700 children and adults participated in marine science activities at our Education booths
- Public information services, which last year responded to over 1,800 questions about marine life from various sources, from professional consultations through to school children and public information requests from within Hawaii and internationally
- Online education resources; the Aquarium maintains a popular on-line library of natural history information on local and Pacific marine life

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.”* Additional recognition of the quality of the Waikiki Aquarium education program came through the awarding of the 2005 prize in the education category by the State-sponsored ‘Living Reef Program’. The Aquarium’s designated status as a national Coastal Ecosystem Learning Center promises greater access to national education resources for Hawaii residents.

Education staff have contributed towards the design of exhibits and programs for the Hanauma Bay Educational Center and NOAA's Northwestern Hawaiian Islands Ecosystem Reserve Interpretive Center in Hilo. Each year, in May, we hold an annual Sunset Observance event, open to the public, that highlights the importance of the traditional seasonal calendar of native Hawaiians and their interactions with the sea.

2. Exhibits

The Aquarium pioneered the display and propagation of living corals, and is world renowned for its research in this area. Its exhibits include one of the largest and most diverse collections of living corals in any aquarium worldwide.

It also houses endangered Hawaiian monk seals; endemic Hawaiian coastal plants; and many fish species exhibited nowhere else in the United States. Moreover, we are currently displaying several species not seen in any other aquarium worldwide; including pink precious corals, a new undescribed Hawaiian butterflyfish, Rose Atoll cardinalfish, Abe's angelfish and Nahackyi's angelfish. We continue to expand the diversity of our collection by also showing freshwater stingrays, threadfin cardinalfish, medusa worms, Hawaiian wrasses and reef squid.

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, whose skills have been recognized through the Aquarium achieving several national awards for excellence.

3. Research Programs

The Hawaii Revised Statutes stipulate that the University maintains a research laboratory at the State Aquarium, and strengthening and diversifying the research collaborations between the Aquarium and UH has become a strong priority for us. Unfortunately, the existing 'laboratory' consists of little more than a white topped table and a sink, rendering most meaningful research there difficult or impossible.

We have therefore refocused our support of research towards providing access to supplies of running filtered seawater, making available holding tanks and life support systems for their live research specimens, and to providing our expertise in maintaining these specimens alive in captivity.

This approach has proven successful. Currently, undergraduate and graduate students and researchers from UH-Manoa, community colleges, HPU, and Chaminade utilize aquarium facilities for individual research projects. Additionally, the proximity of the Aquarium to the Manoa campus provides easy accessibility for UH researchers, and the Aquarium's filtered seawater supply is used freely by many university programs for their research projects on campus.

Ongoing research conducted by aquarium staff includes:

- **Shark and Ray Ecology**
- **Plankton Culture for Research Feeds**
- **Propagation of Chambered Nautilus and other Cephalopods**
- **Jellyfish Husbandry**
- **Captive propagation of endangered Hawaiian corals**
- **Captive maintenance of a threatened shellfish found only in Kaneohe Bay.**

Externally funded research projects include:

- **Coral propagation:** The Waikiki Aquarium has received several grants to develop culture methods for stony corals in order to promote conservation. We have been extremely successful, and our coral propagation program is internationally renowned. For example, over a two-month period in 2006 we donated over 3,000 South Pacific coral pieces, propagated at our facility, to numerous major aquariums and university researchers throughout the world, thereby reducing collecting pressures on natural populations.
- **Hawaiian monk seal research program:** This is a comprehensive and diverse joint effort with various researchers at UH, and at provincial, private sector and federal organizations. Aspects investigated include how physiology and reproduction of monk seals vary with diet, age, and season. The Aquarium's objective is that the research findings can be applied toward conservation of these animals. Given the precarious status of natural populations of these animals in the wild, this research program has immense significance.
- **Pacific giant clam propagation:** This joint research effort with the Oceanic Institute is investigating the function and inheritance of color in clams. Owing to overharvesting, Pacific clams are now threatened throughout much of their natural range. The project is therefore also examining aquaculture and captive propagation techniques, with a conservation/ reintroduction goal.

In 2005, as a collegial gesture to help replace and replenish stocks destroyed in the 2004 flood, we donated our entire library collection of scientific journals and publications to the Hamilton library. We still maintain a comprehensive reference collection of still images of marine life, underwater digital video footage, reprints, archives of the Waikiki Aquarium's history since 1904, original artwork used in exhibits and publications, replicas of Hawaiian fishing artifacts, and numerous marine life artifacts.

C. Meeting our objectives in the upcoming fiscal year

Education programs, exhibit development, and maintenance are funded almost exclusively through earned revenue sources, supplemented by a State appropriation. These earned income sources include admission fees, membership dues, class tuition fees, gift shop proceeds, special events and fund-raisers, gifts and donations, and rental of

the Aquarium facilities for evening functions. All general operating expenses are now paid from earned revenue sources. State general funds cover the salaries of 13 state employees including the education staff and the building maintenance department. An additional 20 employees are hired through the Aquarium's S-fund and the Research Corporation and are paid from earned revenues.

II. Program Performance Results

Despite the serious deficiencies in its infrastructure and the poor physical condition of its facility, the Waikiki Aquarium has achieved a remarkably high level of success in recent years, as measured by increasing visitor attendance, positive visitor approval ratings, and various national awards for exhibitry and for education. However, how much longer this apparent paradox can be maintained is a cause for concern.

A. Program performance results achieved

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

Visitor ratings:

	<u>FY2003</u>	<u>FY2004</u>	<u>FY2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
Excellent:	67%	69%	56%	51%	61%
Good:	23%	19%	23%	30%	25%
Average:	6%	9%	13%	15%	10%
Poor:	4%	3%	8%	4%	4%
TOTAL	n = 1,314	n = 1,521	n = 1,284	n = 1,310	n = 1,465

Attendance:

	<u>FY2003</u>	<u>FY2004</u>	<u>FY2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
General	267,736	299,804	309,934	326,856	317,313
Rentals	13,519	20,116	17,767	15,790	13,526
Education	31,393	36,106	36,354	33,742	29,709
Events	4,227	1,749	1,030	3,246	3,672
TOTAL	317,166	357,775	365,385	379,634	363,220

Revenues:

	<u>FY2003</u>	<u>FY2004</u>	<u>FY2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
Revenues	\$1,839,835	\$2,218,242	\$2,423,618	\$2,026,078	\$1,990,898
G-funds	513,716	506,604	601,411	586,936	2,110,813
TOTAL	\$2,353,551	\$2,724,846	\$3,025,029	\$2,613,014	\$4,101,711

B&C. How these results relate to objectives and how effectiveness is measured

Attendance and revenue:

FY 2004 shows an increase in revenue reflecting the recovery in the economy following

the aftermath of 9.11.2001, as well as success in additional marketing efforts for our 100th anniversary in 2004. In August 2004 admission rates were increased with no slowdown in attendance, leading to the most successful fiscal period since reopening in 1994.

According to the DBEDT 2006 Databook, the Aquarium is the #6 paid attraction on Oahu, behind the Polynesian Cultural Center, Atlantis Submarines, the Honolulu Zoo, the Bishop Museum, and the Missouri, but ahead of Waimea Falls Park, the Honolulu Academy of Arts and other local attractions and museums.

Exhibits:

Visitor satisfaction has been consistently favorable, with c. 86% of visitors reporting “good” to “excellent” on voluntary exit surveys in FY 2007. This percentage would be appreciably higher but for the significant number of negative comments received about the inadequate air conditioning in the exhibit galleries.

Education:

Attendance in the Education Program remains strong with over 27, 000 students, adults, families, and other participants in FY 2007. This figure is slightly less than previous years due to a change in the offerings provided by the Education Program.

Research:

The Aquarium continues to perform research in the following areas: plankton culture; coral propagation and conservation; jellyfish taxonomy and husbandry; shark research and husbandry; Chambered Nautilus and other Pacific cephalopods; Monk Seal research and husbandry; Pacific Giant Clam propagation, and reef fish aquaculture. Aquarium staff published several papers and articles in the scientific literature and in aquarist publications in 2007.

C. Recent Performance-Enhancing Initiatives:

1. The Waikiki Aquarium is in the process of submitting an application to the City and County of Honolulu to renew its permit to operate a gift shop at Hanauma Bay Educational Center. Income from this endeavor provides an important revenue stream for joint educational endeavors.
2. New exhibits, renovations, and other improvements have enhanced the Aquarium as a destination, as evidenced by favorable comments from visitors. With a goal of renovation, replacement and renewal, over the past few years the Aquarium has undertaken several refreshing changes and new exhibits in the galleries. Noteworthy in this regard is a new Northwestern Hawaiian Islands exhibit scheduled to open in mid-2008, for which the Aquarium fundraised for over three years. Work on a strategic plan will begin in early 2008, and will be followed by a 5-year master plan focusing on an Aquarium renewal.
3. An audio tour wand (English, Japanese and German languages) included with each paid admission has significantly increased the educational value of the Aquarium. Visitors have overwhelmingly approved this service. A new version of the wand was introduced in late 2006. A project to provide additional languages (Spanish, French,

Hawaiian and a children's version) on the audio wand will be implemented as soon as sufficient funding has been located.

III. Problems and Issues

A&B Current issues and suggested remedies

Issue #1: Aftermath of September 11, 2001

Waikiki Aquarium attendance is about 67% tourists and 33% residents and, accordingly, the Aquarium is very sensitive to changes in tourism. Since 2001, the Aquarium has recovered in terms of attendance, but we are ever vigilant about growing complacent. The downturn in attendance seen over the past year is not of major concern, and can be partly attributed to repeat visitors to the islands seeking fresh entertainment and sightseeing opportunities, and not wishing to revisit sites seen on prior trips. This underlines the necessity for the Aquarium to maintain its renovation and renewal program to provide new exhibits and educational opportunities that will attract visitors and locals alike.

Issue #2: Compliance issues and aging facilities

The Waikiki Aquarium building opened in 1955. In essence, it currently comprises two distinct parts; the award winning exhibits that form the public face of the Aquarium, and the decrepit infrastructure and below par physical conditions that exist behind the scenes. The latter situation results from an aging building, decades of underfunding, and a concomitant inability to undertake regular and adequate maintenance and upkeep.

Extensive renovations to the public side of the building in 1994 brought the Aquarium into compliance with regulations regarding access for persons with disabilities, and corrected other deficiencies. More recently, in FY 2005 the Aquarium received funding from the Legislature to rectify the leaking roof problem and to upgrade the electrical system. The roof repair was completed in December 2007, and the electrical upgrade gets underway in January 2008. We are extremely grateful for the support of the Legislature in this regard.

However, significant deficiencies remain unresolved, including several potentially dangerous structural and systemic conditions. Foremost among these are the two following issues:

- Last updated in 1992, the Central Air Conditioning System is extensively corroded and needs to be replaced. Throughout the year Aquarium visitors regularly complain about the hot and humid conditions in the public gallery areas. Visitors have fainted in the galleries. Local families and adults have cancelled attending education classes at the Aquarium because of the inadequate or absent air conditioning. This situation thus constitutes both an image-related and a health and safety issue. Additionally, a significant portion of our c. \$20,000 monthly utilities bill can be

attributed to the inefficient air conditioning system. We therefore propose to replace the existing system with a DC driven model powered by galvanic cells fuelled by sunlight, thereby providing a cost effective, energy efficient and environmentally friendly solution to this problem. (Total cost - \$720,000)

- The reception area, where staff greet and interact with visitors, is another issue demanding urgent attention.

The reception counter is termite-ridden and structurally unsound. Its open design provides reception staff handling cash with no protection from potential robbery, and is extremely energy inefficient as regards providing a comfortable working environment. But of greatest concern is the advice we have received from State Health Officers regarding the introduction of potential disease epidemics originating from Asia and elsewhere into Hawaii. Given that we are at the forefront of the visitor interface, these experts recommended that we be proactive in taking measures to minimize the potential for transmission of airborne viruses (SARS, bird flu, etc.) to our staff by providing a glass barrier between them and visitors.

To resolve all the above issues, we hope for an enclosed reception desk that is cooled by DC, solar powered fuel cells, providing physical and biological safety to our staff in a comfortable working environment. (Cost \$440,000)

These essential renovations and emergency repairs impact public areas and should therefore be funded by state funds. Any failure of these systems will significantly impact the access of the public to the Aquarium and the level of service they receive.

We foresee additional significant repair work being required in coming years as the Aquarium ages. It is an old building and in many areas no longer meets current building code requirements; this has become a chronic problem and in a State that depends on tourism and quality visitor attractions this situation should be unacceptable.

Issue #3: Kaka'ako Aquarium proposal:

In 1996, then Governor Cayetano proposed the creation of a new world-class aquarium to be built in Kaka'ako. Therefore, since 1996, the Waikiki Aquarium was in limbo until a decision was made as to whether its future would be in Kaka'ako or in Kapiolani Park. In October 2004 the negotiations between the state and the developer were abandoned. With this issue now behind us, it is hoped that revenue flow via state support, donations, and investment will show a significant increase, and that this revenue source will ultimately allow the State Aquarium of Hawaii to achieve its plans for renewal, renovation and diversification of its facilities and infrastructure.

Issue #4: Support of Aquarium research:

The Hawaii Revised Statutes stipulate that the University maintains a research laboratory at the State Aquarium. Unfortunately, the existing laboratory is wholly unsuitable, both for normal Aquarium use or for use by University and visiting scientists.

Consolidating and expanding upon existing research capacity is vital to the Aquarium. To

resolve these issues, a plan to build a two-story research structure has been developed. Several of your colleagues recognized the importance of this project during the last legislative session.

Our plan involves a new, environmentally friendly, aesthetically pleasing and energy efficient building on our existing site. Activities in this new building will focus on research and conservation of Hawaiian marine life; important research activities that are currently not possible or are undertaken in very cramped spaces.

This new research and husbandry facility is essential for the Aquarium's future, and will allow us to set our research and conservation agenda for the coming decades (Cost \$4.5 million).

Issue #5: Remaining viable:

We are working toward establishing a new master plan for our renovation and renewal. It is our vision that the Waikiki Aquarium will continue to entertain and educate visitors, residents, students, and school groups through the next century, if not beyond. Therefore, we need to continue marketing to target audiences and raising funds for new exhibits, exhibit renovations, and programs.

We have been invited to become a founding aquarium member of the International Union for the Conservation of Nature (IUCN), the premiere conservation organization worldwide. Paperwork pursuant to our application is currently in preparation.

Likewise, we have been invited to join the World Association of Zoos and Aquariums (WAZA), the international zoos and aquariums society. Paperwork pursuant to our application is currently in preparation.

Despite its small physical size and limited staffing, the Waikiki Aquarium is highly productive, even when compared to larger institutions on the mainland U.S. The Aquarium now offers more kinds of programs to more people on a per capita basis than any of the mainland U.S. Aquariums. There is no other aquarium in the U.S. with the same diversity of educational programs and offerings, none with the same impact in the development of unique new displays of marine life, and few which can boast the same degree of success in research programs or publications. This is particularly significant when it is realized that the Waikiki Aquarium is among the oldest and smallest aquariums in the United States.

Perhaps most revealing is the fact that, despite the decrepit physical structure of the building, despite the substandard and dated infrastructure, and despite the relative lack of investment afforded to it, in 2005 the Waikiki Aquarium was selected by its aquarium peers as being among the top four US aquariums, and was featured nationally as part of a PBS documentary to this effect. The exhibits are widely acknowledged by aquarium professionals as being among the best anywhere, worldwide.

If the aquarium can achieve this despite all its hardships and hurdles, imagine what heights it might reach were the Aquarium to be afforded appropriate investment and attention. We strongly urge the Legislature to continue to support the State Aquarium - this jewel of a facility in Waikiki - and not let its 100-year old reputation for excellence in education, entertainment, research and exhibitry become tarnished.

IV. Expenditures for FY 2007–2008:

	Appropriation FY 2008	Collective Bargaining	Transfers In/Out	Restriction	Estimated Total Expenditures
	20.00				20.00
Personal Services	1,823,513	22,598	70,000		1,916,111
Current Expenses	2,808,680		(70,000)		2,738,680
Equipment	75,000				75,000
Motor Vehicles	50,000				50,000
Total	4,757,193	22,598	0	0	4,779,791
By MOF:					
	13.00				13.00
General Funds	613,504	22,598			636,102
	7.00				7.00
Special Funds	3,143,689				3,143,689
	0.00				0.00
Revolving Funds	1,000,000				1,000,000
	4,757,193	22,598			4,779,791

A. Transfers within program ID:

Transfer special funds from current expenses to cover projected payroll

B. Transfers between program ID:

None

C. Restrictions:

None

V. Supplemental Budget Changes for FY 2009:

	Budget Request FY 2008-2009
	20.00
Personal Services	1,859,524
Current Expenses	2,761,418
Equipment	125,000
Motor Vehicles	
Total	4,745,942
By MOF:	
	13.00
General Funds	614,753
	7.00
Special Funds	3,131,189
	0.00
Revolving Funds	1,000,000
	4,745,942

There are no supplemental budget adjustments requested.

VI. Restrictions/Reductions:

None

VII. and VIII. Capital Improvements Request/Lapsing in CIP:

The CIP is discussed in a separate part of the testimony.

POSITIONS VACANT AS OF DECEMBER 1, 2007

ATTACHMENT 8

Date of Vacancy	Program I.D.	PositionTitle	Position Number	Exempt (Y/N)	Budgeted Amount	Actual Salary Last Employee Paid	MOF	Authority to Hire (Y/N)
11/21/03	UOH 881	Research Support	0081754	N	35,256	39,696	A	Y
12/1/07	UOH 881	Physical Plant Mgmt	0081634	N	62,628	62,628	A	Y
7/1/96	UOH 881	Media Design & Prod	0080336	N	0	0	B	Y
7/1/96	UOH 881	Research Support	0080412	N	0	0	B	Y
7/1/96	UOH 881	Research Support	0081413	N	0	0	B	Y
7/1/96	UOH 881	Academic Support	0081414	N	0	0	B	Y
7/1/96	UOH 881	UH Pub Info Officer	0094536	N	0	0	B	Y
7/1/96	UOH 881	UH Educational Sp	0094538	N	0	0	B	Y
7/1/96	UOH 881	Secretary II	0094539	N	0	0	B	Y