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Winter 2008

Kiia
looking at the sea



THE INTERNATIONAL
YEAR OF THE REEF

CLASS CALENDAR



WAIKIKI
AQUARIUM

“2008 seems sure to be another great year.”

FROM THE DIRECTOR

Wow — 2008 already! The past year really flew by in a flurry of activity. Among the highlights was a new exhibit featuring Hawaiian wrasses, which opened in April. All our exhibits mimic nature in that they are very much a work in progress, gradually changing with time. The wrasse exhibit is undergoing this maturation process as new fishes and corals are introduced and the rocks develop a healthy living patina of invertebrates and encrusting algae.

When entering the Aquarium, you might also have noticed that the front entrance exhibit has undergone a complete renovation. Emphasizing soft corals, it is already impressive but it, too, will only get more spectacular with time. Many of our living coral exhibits have been established for years, and aquarists from all over the world marvel at the high degree of skill and patience possessed by our staff.

Other exhibit changes last year included the new cuttlefish exhibit, the return of the squid in the cephalopod section, and a completely revamped Kona Coast exhibit, due to open in mid-January.

On the staff front, four of our long-serving staff departed last year. Mary Morioka retired, while Tammy Chun, Kathy Akiyama and Daryl Imose left to pursue new opportunities. We will miss them all and wish

them well in their new vocations.

At the same time, we have been joined by several new faces. After extensive searches and a rigorous selection process we were fortunate to recruit Eric Curtis, Kathryn Harper, Amanda Hendrickson, Aryn Nagahiro and Tammi Tanaka — you can meet them on pages 8 and 9. New-hires Michael Wieneke, Michael Balais, Alex Alconcel and Karen Quinn will also be profiled in our next issue.

Our behind-the-scenes research activities include giant clam growth studies, jellyfish breeding, propagation of South Pacific corals, and conservation-oriented projects on a rare Hawaiian coral and an extremely rare brachiopod called *Lingula*, a primitive shelled animal that is found only in Kāne'ohe Bay. We also completed a project on how best to preserve and dis-

seminate traditional ecological knowledge and are now gearing up for a project on Midway Atoll.

The popularity of our education programs, both established and new, continued unabated, attendance at our Ke Kani O Ke Kai summer concert series surpassed all previous records and Seaduction was another sold-out hit (see the facing page for details on this year's dinner). Phew! No wonder some of us were looking forward to the year-end holidays!

With the accumulated wisdom and experience of our current staff, the expertise and enthusiasm of our new recruits, and the abundance of optimism and ambition the Aquarium possesses, 2008 seems sure to be another great year. We hope you will join us for what promises to be a fascinating and exhilarating ride into research, education and conservation of Pacific marine life.

Happy New Year from all of us at your Aquarium.



Dr. Andrew Rossiter
Director

Kilo i'a

Issue Number 164 Winter 2008

Editor: Alice Keesing

Art Director: Carlos Chang

Graphic Design Assistants: Kelsey Ige, Anna Togias

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Waikiki Aquarium, 2777 Kalākaua Avenue

Honolulu, Hawai'i 96815-4027

Telephone: (808) 923-9741 Fax: (808) 923-1771

Web Address: www.waquarium.org

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Cover photo: Solomon Islands reef by J. Charles Delbeek.



THE HUNT IS ON!

Saturday, March 15

Bring your chickadees down to the Waikiki Aquarium as things get hopping once again with the annual Easter Sea Hunt! Hailed as one of Honolulu's best egg hunts, the Aquarium will be bursting with activities and fun for keiki, including photos with the Easter Bunny. Watch your mailbox for more information, or call 440-9015.



SEA HUNT



Seaduction

Thursday, Feb. 14

Love is in the air — and in the water! Treat your Valentine to a special romantic dinner on Valentine's Day at the Waikiki Aquarium's annual Sea-duction dinner. This exclusive evening is limited to just 36 couples, who dine alongside the award-winning exhibits.

This year's menu will be prepared by the whimsically delicious team from Ginnibberies. Their selection of delectable appetizers will be followed by a three-course love affair of food and wine.

The cost for this very special evening is \$300 per couple. For more information, please call 440-9015.



INTERNATIONAL YEAR



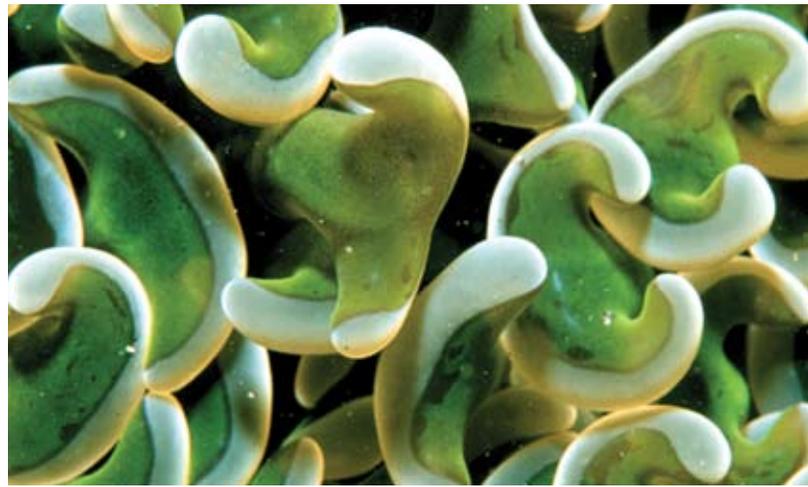
Living reefs are massive structures built up by a community of corals, algae, fishes and invertebrates. This year, people around the world are working to bring special attention to the importance of living reefs and the threats that face them.

How important are reefs? Well, consider your favorite white sand beach. Sand comes from reef organisms that have calcified body frames and skeletons, including corals and some seaweeds. As the living reef grows and is broken down by waves, parrotfish bites, boring invertebrate animals, abrasion and other natural processes, the fragments wash up on shore to create our famous beaches. These beaches are the places we go to relax, to watch the sunset, or to just get out to the water and have fun.

Speaking of fun, your favorite surf break is probably created by a living reef. As water moves over the perfect underwater formation of reef, rock and sand, the wave breaks in a steady rideable roll. It's the reef that makes the ride!

Not a big surfer, but you like to eat fish? Or look at fish? Or photograph fish? Or just swim with the fish? One of the Hawaiian terms for coral, *ko'a*,

Clockwise from top right: Orange Cup coral, Anchor coral, Staghorn coral, Bubble coral, Stony coral forereef slope, Logolan Island, Solomon Islands. Photos: J.Charles Delbeek.



can also be translated as fishing grounds or fish house. The meaning here is unmistakable: Fishes need to shelter and feed somewhere. Take away the reef and you take away their world.

Threats to living reefs can be reduced with simple changes on our part. Use fertilizers sparingly — when fertilizers run into the ocean they cause an overgrowth of harmful algae. Fish responsibly — take only what you need for today and leave the rest on the reef for tomorrow. Pick up trash on the beach or on the street — our islands are small, and that trash may end up on the reef. When swimming, watch your feet and fin kicks — corals are living animals and you can damage them, not to mention yourself. Finally and most importantly: Learn more!

Long active in reef conservation and research, the Waikīkī Aquarium is doing its part. Working with Outrigger Hotels and the National Oceanic and Atmospheric Administration, the Aquarium hosted a media launch for the Year of the Reef in December. In the coming months, the Live Exhibits staff will continue to lead the way in reef research, working on the growth

and husbandry of rare corals, giant clams and other reef animals of concern, sharing what they learn with colleagues worldwide. The school program will highlight the importance of reefs to thousands of local school children, and our volunteers and gallery interpreters will step up our conservation information for visitors and locals alike.

Join us for this year of reefacular activities. On page 15, you will find a calendar of reef events that the Aquarium will host in the coming months. You can also check the *Kilo i'a* calendar throughout the year and up your reef I.Q. by going on an exploration with Aquarium staff, coming to an overnight, or just visiting the Aquarium more often. It is the year of the reef!

— Mark Heckman

figuring **OUT**

>> hawaii's reefs

300 million Years in which coral reefs have been evolving.

0.5 cm The amount that slow-growing massive corals can grow in one year. Branching colonies grow much faster; in good conditions they can gain as much as 10 centimeters annually.

85 Percentage of the total coral reef in the United States that is found in Hawai'i.

410,000 Number of acres of living reef in the main islands alone; more than the landmass of O'ahu.

\$800 million Annual gross revenues from Hawai'i's nearshore reefs — nearly 10 percent of the total revenues contributed by tourism to the state's economy.

7,000 Number of known species of marine plants and animals in Hawai'i's rainforests of the sea.

1,250 Number of species of marine life on our coral reef ecosystem that are found nowhere else in the world.

700 Number of species of fish that find shelter in our reefs. Four hundred of them can be found in waters less than 200 feet deep.

500 Number of species of marine algae identified in Hawaiian coastal waters. Algae produce more oxygen than all the land plants in the world, combined. They are also an important food source for the ocean's fish and other animals and produce compounds found in gelatin, icecream, jam and many other food products. Coral-line algae create much of the sand on our beautiful beaches.

1 The increase in water temperature in degrees Celsius that can lead to coral bleaching. The bleaching occurs when coral ejects its zooxanthellae. While coral can survive without its photosynthetic partner for several weeks or months, the end result is usually fatal.

63,645 Number of cigarette butts and filters picked up from Hawai'i's beaches in the 2006 coastal cleanup.

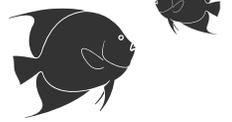
Sources: The Coral Reef Alliance, Hawai'i's Living Reef Program, International Year of the Reef.



AQUARIUM QUERY



Damselfish in Hawai'i
By Gerald Crow, Curator



Q I noticed in Gallery 3 that the Aquarium has an exhibit of two damselfish species, one that occurs naturally and one that's a recent introduction to Hawai'i. How do different species get here?

A The history of fishes colonizing the Hawaiian Islands is complex and interesting. One must remember that the Hawaiian Islands are volcanic hot spots so they basically popped up from the deep ocean floor. Surrounded by deep water with no initial reef, all reef-associated fauna had to colonize or speciate in the Hawaiian Islands. The Hawaiian sergeant, for example, is known only from Hawai'i and Johnston Atoll. Its presence was originally recorded here in 1825.

The Indo-Pacific sergeant, on the other hand, was a later arrival. It was first seen in 1991 at Molokini Atoll off Maui. It was also seen with drift net material in the northern part of the Northwestern Hawaiian Islands. This observation led some to speculate that this species was introduced to the Hawaiian Islands as a hitchhiker on floating debris. It has since become established.

It is apparent that the Hawaiian Islands are still being colonized and that new species are being added all the time. The basic nature and isolation of Hawai'i has prevented some animals from reaching here easily and has allowed others to establish themselves. Clearly, we humans have sped up this colonization with our boats, nets and floating debris.

Got questions about your home aquarium? We've got the experts. Every issue, *Kilo i'a* addresses some of the key concerns and quandaries of the home aquarist.



MEMBERS' NIGHT

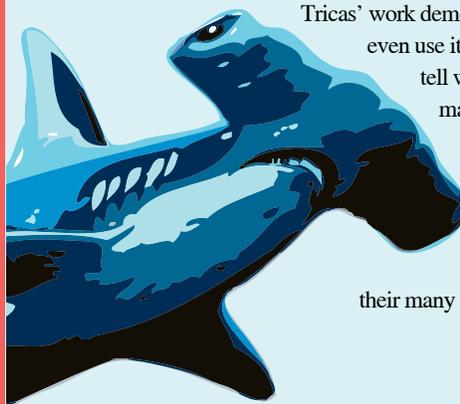
The Aquarium held its annual meeting and members' night on Nov. 4. The 54 attendees enjoyed poke and other delicacies from Ginniberries caterers, a shark and ray craft for the kids and a fascinating presentation on hammerhead sharks.

Dr. Tim Tricas from the UH-Mānoa zoology department and Hawai'i Institute of Marine Biology studies what he calls the hammerhead's "sixth sense" or electro-reception abilities. All living things give off a weak electric current, and sharks are able to detect this thanks to an array of pores in their head called the ampullae of Lorenzini.

Sharks use this non-visual sense to locate their prey in the water.

Tricas' work demonstrates how hammerheads can even use it in mate detection, being able to tell whether a nearby hammerhead is male or female.

The success of Tricas' talk could perhaps be best summed up by the large number of children who gathered around him afterwards with their many enthusiastic questions.





the RETURN of the SQUID

Darting, drifting, with shifting colors, the enigmatic reef squid has become a familiar sight in Hawaiian waters in the last few years. The common reef squid, *Sepiateuthis lessoniana*, was rarely seen in Hawaiian waters until the spring of 2001 when sightings increased dramatically around O‘ahu. Since that time, these delightful reef residents have become a common sight on our reefs. In July 2001, the Waikiki Aquarium became the first aquarium in the state to display these fascinating creatures to the public. Now, they’ve made a popular return to the Jet Set gallery.

Squid are molluscs, like clams and oysters, but their shell is found on the inside of their bodies. The shell, or pen, has the consistency of a fingernail.

Reef squid are often mistaken for their relatives, the cuttlefish, which do not occur in Hawai‘i. Unlike cuttles, reef squid are often found in small groups and they swim as a school. They are also much slimmer in appearance and tend to swim in open water. Among the most streamlined of all

marine organisms, squid are also among the fastest — some species can swim up to 20 miles (32 kilometres) per hour.

Their speed also comes from their jet propulsion system. The animal sucks water into a long tube, or siphon, then pushes it back out — and it can aim the jet of water in any direction.

Adept hunters, they prey on small fishes and invertebrates. They take aim visually then shoot out two long tentacles to capture the food and bring it within reach of their other eight arms. The mouth, located behind the arms, contains a parrot-like beak that the animal uses to tear its prey into bite-sized pieces.

With their excellent eyesight, which is as good as that of many mammals, squid can see you as well as you can see them. So come check them out in the Jet Set gallery — and perhaps they’ll return the favor.

WHODUNIT?

The case of the missing zooxanthellae

Bring your sleuthing skills to the Aquarium on **Feb. 29** and help solve the case of the missing zooxanthellae. Who abducted the microscopic zooxanthellae and killed Seymour Coral? It’s your mission to investigate shady suspects like Seddi Mentation and Glowball Warming.

The Aquarium joins forces with the University of Hawai‘i’s Center for Microbial Oceanography: Research and Education, or C-MORE, to stage this exciting night of mystery. See the calendar on page 12 for more information.





Amanda

Name: **Amanda Hendrickson**
Position: **Visitor Services Coordinator**
Favorite Aquarium resident: **Sailfin snapper**



It is Amanda Hendrickson’s mission to make every visit to the Aquarium an amazing one. As Visitor Services Coordinator, she wants that experience to begin as soon as visitors walk through the front doors. And she wants it to end with people walking out the door saying they’ll be back.

Growing up in Santa Barbara, Calif., Hendrickson was always at the beach but her lifelong ambition to become a steward of the marine environment really began when she was 10. That’s when her dad, who was in the Navy, was stationed for two years on the Italian island of La Maddalena.

“The island was very small, so there was nothing to do but go to the beach,” Hendrickson remembers. “That’s where I got my first mask and snorkel and became absolutely fascinated with everything under the ocean.”

Hendrickson was working at the Ty Warner Sea Center in the Santa Barbara Museum of Natural History when she heard about the job opening at the Aquarium — she jumped at the opportunity.

“It’s beautiful out here and the species here are very difficult to keep in California, so this was an opportunity for me to learn about a whole new ecosystem,” she says. “I just really want to help make the general public more passionate and interested in ocean conservation.”

FRESH Faces



Tammy

Name: **Tammy Tanaka**
Position: **Natural Selection Gift Shop Assistant**
Favorite Aquarium resident: **Octopus**



Watching the delight on childrens’ faces as they enter the Natural Selection Gift Shop is one of the things that Tammy Tanaka enjoys about her new job at the Aquarium. The stuffed animals are always favorites, she says, and the kids just love those squeaky sea animals.

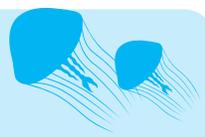
Tanaka grew up on O’ahu and graduated from the Hawaiian Mission Academy on Pensacola Street. Her career has mostly been in retail, including the Warner Bros. store at Ala Moana. Tanaka’s spare time is spent with her three children. She also loves to read.

“If it looks interesting, I’ll read it!” she says.



Eric

Name: **Eric Curtis**
Position: **Disease Specialist**
Favorite Aquarium resident: **The jellies**



Meet the Aquarium’s new fish doctor. Eric Curtis stepped into the Aquarium’s healthcare role in September last year. It’s his job to maintain the health of existing exhibits, troubleshoot when problems arise and manage the quarantine of newly arrived animals.

Curtis took an early love of the ocean and forged himself a niche in a field in which there is very little formal training available. After earning his biology degree at the University of Texas in Corpus Christi, he did his graduate work in aquaculture. He then broadened his experience, working in mariculture, aquarium product research and fish disease diagnostics. Most recently, Curtis headed up the quarantine section at Chicago’s Shedd Aquarium.

Keeping animals healthy in contained systems is not easy, but Curtis loves the challenge.

“I like the fact that it’s not monotonous routine, it’s something new all the time,” he says. “It’s like a puzzle that you’re trying to figure out and there are so many variables coming into play.”

Curtis grew up in Austin, Texas, but his summers were spent with his grandparents in Hawai‘i, which helped foster his fascination with the ocean. Now that he’s living here, he says he’s in, on and around the water as much as he can be.

“It’s a lot better than Chicago,” he says with a laugh. “It freezes over there. There’s something about that that’s just not right.”



Arynn

Name: **Kathy Harper**
Position: **Director, Community Outreach and Institutional Advancement**
Favorite Aquarium resident: **Atlantic sea nettles**



Like many keiki o ka ‘āina, Kathy Harper has magical memories of visits to the Aquarium as a child. She joined the management team in November, and she wants to remind people that the magic of the Aquarium’s exhibits does not fade as you grow up.

A water baby who grew up in Kailua and Hawaii Kai, Harper graduated from Punahou in 1980 and then set off to explore the world. She earned her bachelor’s in history at Antioch University and her master’s in public administration at Seattle University. Then, for six years, she ventured abroad as a cruise ship purser in Hawai‘i, the Caribbean, South America and the South Pacific. The job gave her opportunities to indulge her love of the ocean; it was in Tahiti that she earned her PADI rescue diver certification.

Seattle was her home base for the next 10 years, as she worked for Ackerley Advertising, the Washington State Historical Society & Museum, the Seattle City Attorney, MCI and Microsoft.

Harper returned home to the Islands in 2006. Her most recent



Kathy

employer was Communications Pacific, where she managed communications and outreach for accounts such as Hawaii Superferry, Ward Centers, Hawaiian Telecom and a large environmental remediation consortium in Iwilei.

At the Aquarium, Harper will play a key role in our future plans from strengthening community relations to fundraising for new exhibits. It’s a position, she says, that allows her to bring together her personal interests and her professional experience.

Some days, you can probably expect to see Harper arriving at work on her bicycle. An avid cyclist, she is a member of the Hawaii Bicycling League and usually covers about 50 miles every weekend as she pedals her way around the island.

RESEARCH NEWS

>> LINGULA REEVII

Burrowed in the silty bottom of Kāneʻohe Bay lives an unassuming shellfish known only by its scientific name of *Lingula reevii*. If you didn't know what to look for, this mussel-shaped brachiopod could go completely unnoticed — the only sign of its presence are three pinprick-sized holes in the sand through which the animal siphons water in and out.

Lingula is one of the oldest extant brachiopod genera on Earth. It was once widely distributed but is now considered rare. Kāneʻohe Bay is the only place in Hawaiʻi where it is found; and while it has been recorded in Indonesia and Japan, researchers have yet to do the genetic work to determine if these are the same species.

Researchers sharpened their focus on the brachiopod when they realized that its numbers in Kāneʻohe Bay were in sharp decline. A 1969 survey found 500 individuals in one square metre; by 1981 that had dropped to 100; and by 2000, researchers found just four animals in the same-sized survey area.

For that reason, the National Marine Fisheries Service listed *L. reevii* as a species of concern. As part of conservation efforts, NMFS provided funding to the Aquarium to work on the husbandry of the animal, along with Hawaiʻi's other species of concern, the coral *Montipora dilatata*.

Seven months ago, the Aquarium received seven specimens of *L. reevii* from Kāneʻohe Bay. Aquarist Norton Chan, who is heading

the Aquarium's *Lingula* husbandry project, placed them in a tailor-made shallow tank on the research deck behind the scenes and gave them daily feedings of fine particulate matter. After three months, the shellfish all had grown on the order of one to two millimetres.

This marks the longest time that anyone has kept *L. reevii* in captivity. Keeping them alive and growing is just the first step in understanding and ultimately protecting the small brachiopod. Researchers don't know why their numbers are dropping, although one theory is that the decline began when sewage was diverted away from the bay in the late 1970s. The filter-feeding brachiopod could well have flourished because of the nutrient-rich waters that the sewage provided. Another significant threat to the animal is the smothering carpets of alien algae that flourish in the bay.

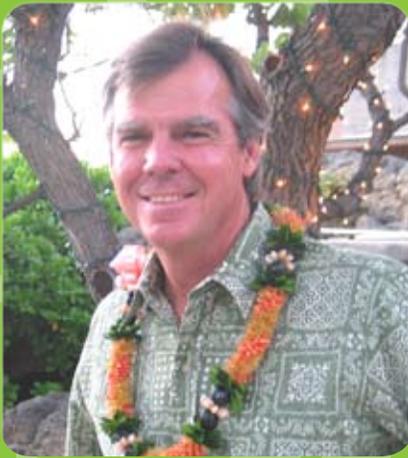
The animals' falling numbers also spell more doom: *L. reevii* is a broadcast spawner, which means it needs a minimum population density to ensure successful fertilization of its gametes. For this reason, future work at the Aquarium could involve propagating the animal so as to repopulate Kāneʻohe Bay.

You can read more about *Lingula* and other species of concern at: www.nmfs.noaa.gov/pr/species/concern.



The inarticulated brachiopod *Lingula reevii* grows to around 2.5 centimetres long and can live for five to eight years. The animal's tail-like pedicle — which it can regrow if damaged — helps anchor it beneath the sand.

on BOARD



Name:
Bruce Anderson

Joined FOWA board:
November 2006

Can also be found at:
Oceanic Institute, where he is president.

Favorite Aquarium resident: Octopus

What inspired you to become a FOWA board member?

As a young boy, my parents frequently took me to the Waikiki Aquarium. I loved seeing the electric eel and all the other exotic creatures I never dreamed existed. My wife, Suzie, and I spent many afternoons there when my daughter and son, Elise and Andrew, were growing up. It was always a cool, relaxing place to visit. Over time, Elise and Andrew got to know the common names of almost every species in the exhibits. They were always excited to see the changes. Andrew now keeps his own saltwater tank at home and we frequently go to back to the Aquarium to get clean saltwater and new ideas for him.

I hope I can help Director Andy Rossiter and his creative staff and volunteers find new ways to make the Aquarium even more exciting and enjoyable for other kids like Elise and Andrew.

What do you enjoy most about the Aquarium?

Even though it is a relatively small aquarium, the exhibits are first class. I make a point of visiting aquariums whenever I go on trips to the Mainland. None combine more adventure in such a limited space. Creatures like the chambered nautilus are fascinating to me and, I'm sure, to the tens of thousands of school kids who visit every year. There is always something new to see and learn at the Aquarium. I particularly like the new sea jelly exhibit. I am intrigued that such beautiful animals could come from a drainage canal like the Ala Wai.

What do you believe is the Aquarium's role in Hawai'i?

The Aquarium was the first place I was exposed to the incredible diversity of marine life around the Hawaiian Islands. It should be a positive and eye-opening experience for everyone who visits, young and old. Hopefully, everyone will come away with a sense of the importance of preserving and protecting corals, fish and other marine creatures. The Aquarium has also been a place for ground-breaking research on propagating rare and endangered marine species, which should continue. For example, scientists at Oceanic Institute, an affiliate of Hawaiʻi Pacific University, are collaborating with the scientific staff at the Waikiki Aquarium to identify water quality and other environmental conditions required to propagate Pacific giant clams. Hopefully, we will find ways to produce these animals in captivity so as to take pressure off the natural stocks in Palau and other areas where they are harvested for food and the aquarium trade.

On a personal note: My passion these days is saltwater fly fishing. I spend far more time than I should wading the reef flats around Oʻahu looking for oio (bonefish) and trying to entice them to take a fly, a shrimp imitation I make out of my dog's hair. I tag them with a dart tag just below their dorsal fin and release them as part of an extended Sea Grant research project. It's a great excuse to go fishing regularly. I also like to surf and play tennis. Whatever else tempts me, I try to make it a priority to spend time with Suzie, Elise and Andrew at the beach, hiking, or doing whatever we can together.

There are 12 people currently serving on the Friends of the Waikiki Aquarium board. To acquaint you with these people who volunteer their time to help the Aquarium, *Kilo 'i'a* features one board member each issue.

CLASSES & ACTIVITIES

January-March 2008

Marine Munchies

Mon (except holidays) 4:15-6:00 p.m.

Discover animals' adaptations for capturing their meals and what they eat here at the Aquarium. Included is an exclusive after-hours animal feeding. Watch the octopus eat. See the seadragons slurp up shrimps. Then it's your turn to feed the animals in our Edge of the Reef exhibit. Minimum age 5 years; youngsters must be accompanied by an adult. \$16/adult, \$12/child (\$20/\$15 for non-members).

Exploring the Reef at Night

Jan 7, Mon 6:30-9:00 p.m.

Jan 20, Sun 6:30-9:00 p.m.

Feb 19, Tue 6:30-9:00 p.m.

Mar 5, Wed 7:00-9:30 p.m.

Join us as we explore the reef at night in an experience you'll not forget. Aquarium staff and participants wade up to their knees on these wet and wild excursions. Test your nocturnal vision as we search for crabs, shrimps, eels and octopus. For adventurers aged 5 and up; youngsters must be accompanied by an adult. \$10/adult, \$8/child (\$12/10 for non-members).

Aquarium After Dark

Jan 25, Fri 6:30-8:30 p.m.

Discover if fish sleep, sea snails snooze or weedy seadragons doze on an after-dark flashlight tour of the Aquarium exhibits. Minimum age 5 years; youngsters must be accompanied by an adult. \$8/adult, \$6/child (\$10/7 for non-members).

Digital Photography Techniques

Feb 5, Tue 6:30-8:30 p.m.

Got a new camera for Christmas? Are you ready to learn some simple techniques to take better pictures? Join professional photographer Keoki Stender for an evening of practice and picture taking. Keoki begins the program with some simple steps to improve your images before you practice on the animals in the galleries. Images still not perfect? Wrap-up includes simple methods for fixing your digital photos on the computer. For photographers aged 14 and up. \$10/person (\$12 for non-members).

Educators' Workshop, NOAA Ocean Explorers

Feb 9, Sat 1:00-4:00 p.m.

Bring the excitement of modern day explorers to your teaching. The NOAA Ocean Explorers' curriculum and website focuses on explorations into extreme environments. Sponsored by the National Marine Sanctuary Foundation, stipends will be provided to all participants to cover time, teaching materials and travel costs (including costs from neighbor islands) and a copy of Learning Ocean Sciences through Ocean Exploration curricula and CD-ROM. To register, call Reservations at 440-9011 or e-mail reservations@waquarium.org.

This is the only classes and activities calendar that you will receive. Please cut it out and post it on your fridge or bulletin board.

REGISTRATION INFORMATION

- Questions about course, enrollment or disability accommodations? Call the Waikīkī Aquarium Education Department at 440-9007.
- Preregistration is required for all activities.
- FOWA members are allowed up to four total registrants at FOWA rate.
- Overpayments (\$5 or less) cannot be refunded.
- A handling fee of \$5 will be assessed for withdrawals.
- No refunds can be made for no-shows or for withdrawals made seven days or less before an activity.

Full payment must accompany completed registration forms. Please, no cash. Make checks payable to **University of Hawai'i**.

Mail registration. Fill out the registration form over the page; send check or credit card information for the total amount to:

Waikīkī Aquarium Education Department
2777 Kalākaua Avenue
Honolulu, HI 96815

Marine Educators' Night

Feb 9, Sat 6:00-9:00 pm

NOAA and the Waikiki Aquarium invite teachers to an evening under the stars for marine educators. Explore the Aquarium while discovering new education resources and old friends. NOAA's Ocean Explorer's curricula will be highlighted and representatives from many marine education organizations will have tables set up with instructional materials. Refreshments will be provided. The evening is free for educators and their guest. To register, call Reservations at 440-9011 or e-mail reservations@waquarium.org.

Seaduction

Feb 14, Thu

Reserve your table for two at the Aquarium's annual Valentine's Day dinner. Couples dine in the exclusive nighttime glow of our galleries, enjoying champagne and a three-course meal from Ginnibberies. For information and reservations, call 440-9015.

Small Fry

Feb 20-March 19, Wed

A Session 8:30-10:00 a.m.

B Session 10:30 a.m.-noon

April 2-30, Wed

A Session 8:30-10:00 a.m.

B Session 10:30 a.m.-noon

For the youngest learners. An adult and their 1- to 3-year-old team up to discover the amazing undersea world of the Aquarium. Five weekly sessions include crafts, song, play and exploration of the exhibits. For adult-child teams. \$50/adult & child (\$80 for non-members).

Sea Stars

Feb 27-Mar 12, Wed 3:00-4:15 p.m.

April 16-30, Wed 3:00-4:15 p.m.

Is your preschool-age child ready to graduate from Small Fry? Bring your 3- to 5-year-old keiki to spend three afternoons singing and dancing, playing and creating. Learn about camouflage, locomotion, predators and prey in this three-session class. \$36/adult & child (\$48 for non-members).

Ka'ena Point Coastal Hike

Feb 23, Sat 8:00 a.m.-2:00 p.m.

Waikiki Aquarium naturalists guide this 5-mile nature walk along one of O'ahu's last shoreline wildernesses. The rugged and beautiful Ka'ena coastline features diverse coastal ecosystems, unique geology and a fascinating history. Whales are abundant offshore this time of year and the Laysan albatross are nesting. For adults, 16 years and older; participants provide own transportation. \$10/person (\$8 for members).

Mystery at the Waikiki Aquarium: The Case of the Missing Zooxanthellae

Feb 29, Fri 6:30-8:30 p.m.

E-ghad! Who has abducted the microscopic zooxanthellae and killed Seymour Coral? Is the menacing new gang in town, All-gal Bloom, to blame? Has Seddi Mentation smothered Mr. Coral in his sleep? Or did Glowball Warming murder Mr. Coral in the sauna? Join forces with the local Sheriff to help solve this watery whodunit. Participants will help solve the murder mystery by matching the suspects' DNA fingerprints with those left at the crime scene. For detectives aged 7 to 12 years old; one adult may accompany up to three detectives. \$16/adult & child team. (\$20 for non-members).

Sea Hunt 2008

March 15, Sat

It's time! Hop on down for the Aquarium's annual family day and Easter egg hunt. Watch your mailbox for more information or please call 440-9015.

Home for a Hermit Crab

March 27, Thu 9:00-10:30 a.m. (Spring Break)

Spend a morning investigating hermit crabs and their housemates through storytelling, art and up-close encounters with these crusty creatures. Adults and their 4- to 6-year-olds will meet left-handed, elegant and anemone hermit crabs and then create a crab of their own design. \$16/adult & child team (\$12 for members).

ACTIVITY REGISTRATION FORM

Name(s)

Adults _____ Phone (home) _____

Children/Ages _____ Phone (work) _____

Address _____

City/State/Zip _____

Please register me for

Activity	Session	Date(s)	Number of Adults/Children	Price
_____	/	_____	_____	_____
_____	/	_____	_____	_____
_____	/	_____	_____	_____
_____	/	_____	_____	_____
_____	/	_____	_____	_____

Total amount of payment enclosed (check payable to University of Hawai'i) : _____

If paying by credit card

Credit card # _____ Visa Mastercard

Expiration date: _____ Last three digits of security code on back of card: _____

I am a FOWA Member Yes No Please send me information on becoming a FOWA Member Yes No

sea squirts



Coral Guard Crab
(*Trapezia intermedia*)
Protects coral by fending off predators with its large claws.



Hawaiian Coral Croucher
(*Caracanthus typicus*)
Often seen deep in the branches of cauliflower coral.



Speckled Scorpionfish
(*Sebastapistes coniaris*)
Leaves the protection of their coral shelter to hunt on the reef at night.



Commerson's Frogfish
(*Antennarius commersoni*)
By dangling its fishing lure in front of its mouth, the frogfish attracts its next meal.



Petroglyph Shrimp
(*Alpheus deuteropus*)
Creates grooves on lobe coral that resemble Hawaiian petroglyphs.



Christmas Tree Worm
(*Spirobranchus giganteus*)
Burrows into live corals.



Cauliflower Coral Shrimp
(*Alpheus lottini*)
Helps to protect coral from predators.



Feather Hydroid
(*Gymnangium hians*):
Captures zooplankton with its stinging cells.

Can you find eight animals that live within Hawaiian Corals?



NEW & RENEWING FOWA MEMBERS

The Development and Membership Department recorded these new and renewing memberships between Aug. 22 and Nov. 15, 2007.

Mr. & Mrs. Gary Akiona
Mr. & Mrs. Kaai Adams
Aina Haina School
Mr. & Mrs. Arthur Akau
Mr. & Mrs. Stanley Ali
Mr. & Mrs. Carey G. Allen
Mr. and Mrs. Tony Altomare
Mr. & Mrs. Chad Amantiad
Mr. & Mrs. Channon Anderson
Mr. & Mrs. James Apana
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Ms. Krystal Perreira
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Mr. & Mrs. Thomas Asada
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Mr. & Mrs. Bill Barber
Barbers Point Elementary
Mr. & Mrs. Christopher Bearden
Ms. Ruthann Bechtel
Mr. Stewart & Dr. Charlene Bell
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Mr. Michael Berger
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Mr. Jervin Bisquera
Mr. & Mrs. Ron Black
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Heather Conahan-Taras
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Mr. & Mrs. Mark Taylor
Mr. & Mrs. Edward Telles
Mr. & Mrs. Eric Tema
Mrs. Diana Teruya
Dr. Vivien Tham & Mr. Kwong Tan
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Mr. & Mrs. David Tribble
Mr. & Mrs. Alan Umakoshi
Mr. & Mrs. Richard I. Uyeda
Mr. & Mrs. Carl A. Vasquez

Dive into the International Year of the Reef

at the Waikiki Aquarium

The whole world is doing it, so why not join in? There's something happening at the Aquarium every month during this International Year of the Reef, so come on down and learn more, marvel more and participate

Ms. Shannon J. &
Dr. Judith R. Vergun
Mr. & Mrs. James Viso
Mr. Bruce Wade & Ms. Liane Sunn
Mr. & Mrs. John D. Waihee
Mr. & Mrs. Merrill Walker
Mr. & Mrs. Charles D.C. Wang
Ms. Alyson Watanabe
Mr. & Mrs. James Wataru
David Waters
Mr. & Mrs. William Watson
Trip & Kathleen K. Webster
Ms. Darlene E. Weingand &
Mr. Roger P. Couture
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Ms. Jaime M. Wheeler &
Mr. Derrick Mamiya
Mrs. Candace Whiting
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Mr. Yong Zheng & Mrs. Tao Weng
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Ms. Kay K. Zukeran &
Mr. Niel G. Eltagonde

If your name is not listed or is listed incorrectly, please accept our apologies for the error and our most sincere thanks for your support.

January

The Aquarium participates in the State Coral Reef Outreach Network's International Year of the Reef kickoff event at the State Capitol.



February

Teachers gather for An Evening at the Waikiki Aquarium for Marine Educators. Funded by the National Marine Sanctuaries Foundation, this event highlights the NOAA Ocean Explorer program and showcases ocean- and reef-related education materials available for teachers from state, local and federal agencies.

March

In conjunction with the University of Hawai'i's Center for Microbial Ecology, the Aquarium presents The Case of the Missing Zooxanthellae, an evening whodunit where families get to solve a coral reef mystery, crime scene-style.



April

Earth Week kicks off with Taking Care of our Waters from the Mountains to the Sea, a collaborative event between the Aquarium, Ala Wai Watershed Association, Hawai'i state Clean Water Branch and Department of Land and Natural Resources' Anuenue Fisheries Research Center. The event culminates with the release of tagged fish into the Waikiki Marine Life Conservation District.

May

Edge of the Reef volunteer training runs evenings and weekends this month. Join our cadre of expert volunteers who teach reef etiquette and conservation to thousands of locals and visitors from around the world at our hands-on Edge of the Reef exhibit.



June

World Ocean Day arrives on June 8. This is also the month when corals begin their synchronized spawning. Two to five days after the new moon in June, July and August, all of the rice corals in Hawai'i spawn at the same time. The Aquarium hosts the state's longest-running public coral spawning event with our Reef Romance evening in early June.

July

July brings Conservation Week and the Hawai'i Conservation Conference. This year, the Aquarium will highlight its ongoing coral reef research and conservation projects. This month also marks the middle of our award-winning concert series, Ke Kani O Ke Kai. Concert-goers relax on the Aquarium lawn and watch the sunset over the ocean as they listen to acclaimed local musicians. Interpreters in the galleries highlight the Aquarium's research and conservation efforts through our stunning living coral reef exhibits from across the Pacific.



August

Everyone can join in the reef celebration at the Aquarium's Second Annual Family Night: picnic on the lawn and enjoy the hands-on activities. If the evening program doesn't provide enough time to enjoy the exhibits, come to the Bioluminescence Overnight and sleep in the glow of the coral exhibits.

September

Help change the world one child at a time and become an Aquarium docent. The extensive training program for our school program is held this month. September also has International Coastal Clean Up Day. As part of the Federal Coastal America Learning Center, the Aquarium hosts local clean-up efforts and provides education on marine debris.



October

The Aquarium's popular school tours start. Aquarium volunteers give fun hands-on presentations and guided tours to children in kindergarten through sixth grade. There is so much to discover and learn. More than 8,000 local school children and teachers pass through Aquarium Education programs every year.

November

Fall brings low tides in the early evenings and the beginning of the Exploring the Reef by Night season. Join Education staff for an evening adventure onto the reef fronting the Aquarium. Every night brings different surprises: maybe a sleeping parrotfish, a ghost shrimp snacking on seaweed or a hunting slipper lobster. Sign up early, these classes fill up quickly.



December

The Aquarium's mission is to inspire and promote understanding, appreciation and conservation of Pacific marine life. As the International Year of the Reef draws to a reefacular close, think about giving a gift for the reefs to your favorite ocean organization or non-profit. Volunteer your time, donate or participate; we can all make a difference.

Staghorn coral, Solomon Islands.
Photo: J. Charles Delbeek.

THE WAIKĪKĪ AQUARIUM'S MISSION

To inspire and promote understanding, appreciation and conservation of Pacific marine life.



University of Hawai'i at Mānoa
Waikīkī Aquarium
2777 Kalākaua Avenue
Honolulu, HI 96815-4027

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