**lowen1-Kyli**

**From:** mailinglist@capitol.hawaii.gov
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**Subject:** Submitted testimony for HB666 on Feb 1, 2013 08:00AM

**HB666**
Submitted on: 2/1/2013
Testimony for WAL/OMH on Feb 1, 2013 08:00AM in Conference Room 325

| Submitted By | Organization | Testifier Position | Present at Hearing |
|---|---|---|---|
| Christopher P. Jury | Individual | Oppose | Yes |

Comments: Testimony for HB666 Committee on Water and Land, and Committee on Ocean, Marine Resources, and Hawaiian Affairs DATE: Friday, February 1, 2013 TIME: 8:00 a.m. PLACE: Conference Room 325 State Capitol 415 South Beretania Street To whom it may concern, I am writing this testimony in opposition to the proposed bill, HB666, relating to the "one gallon per person per day" rule governing sand and rubble collection from the marine environment. The motivation for this bill is not made explicit, though it appears that this bill was introduced due to concerns over the potential for over-utilization of the resource and subsequent degradation of beaches and the marine environment. However, as I show below the estimated rate of sand and rubble removal under the "one gallon per person per day" exception is trivial compared to the natural rate of sand production by our marine environment, and very small even in comparison to the incidental removal of sand by ocean users, which would be exempted under the bill. This bill would do nothing to protect marine resources, but would significantly harm people who keep marine aquariums and collect "live sand" for those aquariums, the primary users of the "one gallon per person per day" exception. Marine aquarists sometimes use "live sand"—that is, natural sand collected from the subtidal marine environment—for use in their aquariums because the natural diversity of microbes and small plant and animal life that is found in this sand provides a very effective filter in marine aquariums. Indeed, the "one gallon per person per day" exception was written with this use in mind and almost no other resource users collect "live sand" nor would they have any use for it. It is estimated that in the United States there are approximately 800,000 marine aquarists, out of a population of 313 million people. Extrapolating this rate of aquarium ownership means that the island of Oʻahu is estimated to have about 2,436 people who keep marine aquariums (out of a population of about 953,000). Let us round that figure up to 2500 people, a high estimate of the number of people on Oʻahu keeping marine aquariums. At the current legal limit of one gallon of "live sand" per person per day this translates to a maximum annual rate of collection of 912,500 gallons per year. To put this number into perspective, let us consider the rate of production of new sand by calcifying algae and other organisms in the ocean around Oʻahu. Harney and Fletcher III (2003) produced a sediment budget for Kailua Bay. They estimated that in the Bay carbonate sand is produced at a rate of 4,048 ± 635 cubic meters per year, or an average of 1,070,900 gallons per year. Hence, even at the maximum legal limit the aquarists of Oʻahu could only collect about 85% of the sand produced by a single, small area of the coastline. However, it is totally unrealistic to expect that anyone would want to collect 365 gallons of sand per year for personal use in an aquarium. Realistically only between ¼ gallon and 10 gallons of sand would be required to set up any normal aquarium (e.g., 10-300 gallon aquarium) and such collection is a one-time event over the life of that tank. Realistically, the average aquarist likely collects an average of not more than1 gallon of sand per year, or about 2500 gallons per year on

O‘ahu. This is equivalent to only about 0.23% of the sand produced per year in Kailua Bay alone. Clearly this level of collection would have no detectable impact even if it were restricted to a single beach, which it is not. Let us now compare the impact of the “one gallon per person per day” exception to the impact of incidental sand removal by beachgoers. Whenever I go to the beach I usually end up tracking back a bit of sand with me—perhaps a teaspoon or two worth of sand. Let us estimate that the average person accidentally removes at least 1 teaspoon worth of sand from the beach per month. This means that the 953,000 people on O‘ahu accidentally remove at least 14,890 gallons of sand per year—almost six times as much sand as is likely removed under the “one gallon per person per day” exception. If the millions of tourists who visit O‘ahu each year are factored in, then clearly this value would increase substantially (by a factor of perhaps 2-10). Hence, the incidental removal of sand by beachgoers clearly removes far, far more sand from the ocean and beaches than the collection of sand under the “one gallon per person per day” exception, but both of these sources of sand removal are trivial compared to the huge amount of sand that is produced naturally every year in the ocean around our coastlines. I strongly oppose HB666 because it does nothing to protect our marine resources by does serious harm to marine aquarists who would collect “live sand” for use in their aquariums. I urge the legislature to vote down HB666. Sincerely, Christopher P. Jury Hawai‘i Institute of Marine Biology University of Hawai‘i at Mānoa P.O. Box 1346 Kāne‘ohe, HI 96744 Citation: Harney, JN, Fletcher III, CH. 2003. A budget of carbonate framework and sediment production, Kailua Bay, O‘ahu, Hawai‘i. Journal of Sedimentary Research. 6:856-868.

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