

February 9, 2015

RE: Testimony in Opposition

Aloha County Council Members,

I am writing in opposition to Bill 883 regarding aquarium fish.

For my master's research at Washington State University, I studied the West Hawaii aquarium trade from 2010-2012. My study focused on venting, decompression, holding, and transport of live Yellow Tang in the West Hawaii aquarium fishery.

In addition, I now would like to specifically address Section 2 Chapter 188:

Section 188 - (e)(1)

My research on barotrauma in Yellow Tang showed that *there was no tissue damage detected in Yellow Tang subjected to surfacing at a rate of 0.25m/s (SCUBA ascent rate), and there was no mortality when venting was implemented following surfacing.* To quote our study, "Histopathologic examination of heart, liver, head kidney, and swim bladder tissues in fish 0d and 21d post-collection revealed no significant barotrauma- or venting-related lesions in any treatment group."

Section 188 - (e)(2)

My research on venting (piercing the swimbladder with a hypodermic needle to release expanded swimbladder gas) indicates that the venting implemented by Hawaiian fishers does not cause mortality in Yellow Tang. In June-July of 2011, I collaborated with fishers in Kona, and caught 360 Yellow Tang from the reef, and held them for 21 d at the Natural Energy Laboratory Hawaii Authority (NELHA). My study shows that when fishers implemented venting there was a *100% survival rate of these fish during collection and holding at NELHA.* To quote our study, "Common collection methods in the fishery, ascent without decompression stops coupled with venting, or one long decompression stop coupled with venting, resulted in no mortality." (Munday, et al. 2015).

Section 188 - (e)(4) & Section 188 - (e)(5)

My research on fish holding and transport indicated that the practices implemented by Hawaiian fish exporters do not cause mortality in yellow tang. In June of 2012, I collaborated with fishers and exporters in Kona, and caught 60 yellow tang from the reef, held them in a working export facility, and shipped them from Kona, HI to Portland, OR. The fish were then transported to the Hatfield Marine Science Center in Newport, OR where they resided for 6 months. My study shows *100% survival rate of these tangs during collection, holding in the export facility, air transport, and after a 6-month holding period.* In fact, the fish have now become part of an exhibit at the Hatfield Marine Science Center about sustainability in the aquarium trade and I have received no reports of mortality after 2.5 years.

In my study, fish were withheld food in the export facility and during transport. Withholding food serves a very important purpose for fish transport. Withholding food prevents fish from fouling their bags. If they are unable to "clean out" their system prior to transport, they will foul their bags, creating a buildup of ammonia, which is toxic to fish. Therefore, *withholding food is a best practice to be used prior to shipping fish and any regulation prohibiting food withholding is uninformed and would be detrimental to fish health.*

In my study, aquarium exporters used the standard volume of water to transport the tang, and discussed above, no mortality occurred. *The requirement of a gallon of water for fish transport is unnecessary and unfounded.*

I would also like to speak to the sustainability of the Hawaii aquarium trade. The exhibit I helped create at the Hatfield explains the practices of the Hawaii aquarium trade, and how Hawaii's trade differs from other areas of the world. If we take a global perspective, Bill 883 is damaging to the ocean. This is because the demand for aquarium fish is not decreasing, and such a bill would simply shift the demand for aquarium fish from Hawaii where they are collected using nondestructive methods, to places like the Philippines where fishers regularly use cyanide to stun and capture fish and have a tremendously negative impact on reefs there. Though this might seem like just a local or state issue, the reality is that the aquarium trade is a global trade and Hawaii contributes a sustainably sourced product to aquarium fish hobbyists.

Thank you for hearing my testimony.

Sincerely,
Emily S. Munday, M.S.