



April 9, 2009

Laura H. Thielen
Department of Land and Natural Resources
1151 Punchbowl Street, Room 130
Honolulu, Hawaii 96813

CC: Bill Spencer, Hawaii Oceanic Technology; George Redpath, Tetrattech; Katherine Puana Kealoha, OEQC

RE: Ahi Aquaculture Project DEIS

Dear Ms. Thielen,

On behalf of Food & Water Watch (FWW), a national non-profit consumer advocacy group that works to promote clean, safe seafood for consumers and the use of common resources for the public benefit, we write to request that you not move forward with the Ahi Aquaculture Project. The Draft Environmental Impact Statement (DEIS) is full of contradictions and is inadequate in the details it provides about the project, such that the public is unable to effectively understand potential impacts.

As expressed in our recent letters concerning Kona Blue Water Aquafarm's Supplemental Environmental Assessment and request for a CDUA permit, FWW and other groups with which we work in Hawaii and throughout the mainland U.S. have a range of concerns relating to the environmental sustainability of open ocean aquaculture in general. Hawaii Oceanic Technology, Inc.'s (HOTI) Ahi project is particularly concerning because of its unprecedented size – 12 times the maximum capacity Kona Blue has ever reached - its use of new ocean thermal energy exchange technology, and its disregard for cultural resources and traditions.

Overarching Concerns With Open Ocean Aquaculture

If not carefully developed and regulated, open ocean aquaculture could damage marine ecosystems, threaten the livelihoods of fishermen and those employed in the tourist industry, and interfere with important cultural traditions and resources. For these reasons, open ocean aquaculture is highly controversial, and a variety of publications by researchers, NGOs, and government offices have noted problems associated with the development of this industry:

- “Little is known about the assimilative capacity of marine ecosystems for the wastes produced by aquaculture operations.” – Report of the Marine Aquaculture Task force, 2007
- “[T]here are strong reasons to do more to address the environmental effects of U.S. aquaculture.” – Pew Oceans Commission Report, 2003
- “New and developmental technology, the risk and uncertainty associated with exposed open ocean locations, lack of operational experience, and high capital



start-up costs make estimating profitability... difficult for new open ocean ventures.” – Congressional Research Service report on open ocean aquaculture, 2006

- “Sea lice epidemics, together with recently documented population-level declines of wild salmon in areas of sea-cage farming are a reminder that sea-cage aquaculture is fundamentally different from terrestrial animal culture... a sea cage... becomes an unintended pathogen factory.” – Study by L. Neil Frazer, University of Hawaii at Manoa
- A Government Accountability Office report's findings illustrate that significant barriers still exist in the development of an environmentally safe offshore aquaculture industry - Rep. Nick Rahall's, Chairman of the House Natural Resources Committee, description of May 2008 GAO report

Due to these concerns, FWW strongly recommends that the precautionary principle be applied to open ocean aquaculture. In other words, open ocean aquaculture projects, such as HOTI's Ahi farm, should not proceed until extensive science has confirmed that it will not harm ecosystems or communities. HOTI's DEIS fails to show this for reasons described below.

New Technology

As stated in the DEIS and application, HOTI proposes to farm Ahi in “Oceanspheres” – offshore, un-tethered, 54m diameter, submerged cages. Existing marine aquaculture projects in Hawaii have been tethered to the ocean bottom, but these cages will use a dynamic positioning system to stay in place. A propulsion system – powered by an ocean thermal energy conversion engine, which draws up cold water from deep below - will be used to maintain the position of the spheres. Although the DEIS describes the technical aspects of how the propulsion and power systems will work (p. 1-13 - 1-14) it fails to describe what impacts this energy conversion will have on the surrounding environment, and fish and other marine life beneath the cages. The following questions should be answered prior to the project moving forward:

1. How will fish and other marine animals/organisms be affected by the drawing up of deeper water?
2. Will the cold water inlet pull in aquatic animals/organisms?
3. How strong is the suction for the water being pumped up?
4. How much water will be pumped up over a specific time frame?
5. Will local current patterns (which supposedly are currently uniquely suited for effluent dispersal) be affected?

Size

A farm of this size is unprecedented in Hawaiian waters. HOTI plans to scale up until annual production capacity is 6,000 tons of Ahi a year – or so it appears. Twice in the document it is written that 12,000 tons of Ahi will be produced each year when the project is completely developed (p.2-29 and 2-134). These discrepancies must be clarified. If 6,000 is the actual expected tonnage, which can be assumed, this will still be



12 times the amount of fish produced last year by Kona Blue Water Farms, which HOTI compares itself to throughout the document. A farm of Kona's size has not even existed long enough to demonstrate that long term and cumulative effects of fish farm effluent are not damaging to the marine environment, so one the size of HOTI must certainly be approached with great caution. There is much to be understood about these effects. For instance, a new Stanford computer simulation has shown that effluent from pens will travel farther, and in higher concentrations than had previously been assumed ("When Fish Farms are Built Along the Coast, Where Does the Waste Go?" *ScienceDaily*, Feb. 25, 2009). This should be taken into careful consideration in Hawaii, where the ocean is especially valued for its beauty, traditional importance to the local way of life and the importance of tourism and recreation to the economy.

Feed

According to the DEIS, Ahi requires two pounds of dry feed for every one of wet weight that they grow. Once the company is scaled-up to its anticipated size, it will need a massive 1,000 tons of feed every month – 12,000 tons annually. Typically, a primary issue with tuna farming is the amount of wild fish needed to farm tuna – a farm in Mexico reported using 12 pounds of wild fish to grow just one pound of farmed tuna (Sylvia, Paula C. "Current Status of Bluefin Tuna Farming in North America." Hubbs-SeaWorld Research Institute, Aqua 2006 Meeting Abstract). HOTI says it can minimize wild fish input by using feed that will be composed of 85 percent soy or other protein, 1 percent vitamins and 15 percent fish meal or oil. Sources of feed ingredients are said to be determined by the commercial supplier that HOTI will purchase from (p. 1-15). The following questions must be answered to determine the impacts of this feed use:

1. What is the true ratio of ingredients? These percentages add up to 101 percent.
2. What percentage of fishmeal versus fish oil? The document groups fish meal and oil together into percentage of total feed composition, but in order to understand how much wild fish will be needed to produce this feed, and thus the effects on wild fish populations, this must be specified. If the feed were 15 percent meal, for example the wild fish to farmed fish ratio would be 1.5:1 – which would be quite low, relatively, for tuna production. However, if that 15 percent were oil, which takes more wild fish to produce per unit, the wild fish to farmed fish ratio would be 6:1.
3. What are the effects of adding a significant amount of soy – a terrestrial plant - to the aquatic environment? Soy is high in estrogen, which studies have shown can have damaging effects on wild fish populations, by impacting their ability to reproduce (Kidd, Karen. "Effects of Synthetic Estrogen on Aquatic Population: A Whole Ecosystem Study," Freshwater Institute, Fisheries and Oceans Canada).
4. What precautions will be taken to ensure that the fishmeal and oil is free of contaminants or disease?
5. Where will ingredients be sourced? What fishery will supply the fishmeal/oil and how will soy or other protein be farmed? Will soy be GMO?



Marine mammals/animals

The DEIS states that “all outcomes on dolphins and other marine mammals are unknown at this point (p.2-65).” This is highly inadequate. It is crucial that any operations allowed within Hawaiian waters protect the 22 species of marine mammals living here, including dolphins, sea turtles, sharks, six endangered whale species and endangered monk seals. The proposed site for this project is just outside the Hawaiian Islands Humpback Whale National Marine Sanctuary – a site specifically designated to protect humpback whales and their habitat, and yet it is unclear how the farm will affect migration patterns as whales traverse the site. Also, the DEIS notes that sharks around the cage may need to be killed and removed in order for the operation to be successful – this would not be unprecedented, as Kona Blue Water Aquafarm, nearby, has had to kill a tiger shark that regularly appeared around the facility. Sharks are revered in Hawaiian cultural lore as an *aumakua*, a family guiding spirit or totem, so this would raise cultural sensitivity issues.

Cumulative Impacts

Little is known about the long-term effects from fish farm effluent on the marine environment, especially the cumulative impacts from locating multiple farms in one area. We are yet to fully understand how far pollution is carried, where it can accumulate, how this will impact the aquatic environment over the years, or how much “diluted” pollution one area can hold. If the Ahi aquaculture project is approved, there will already be two farms (including Kona Blue) in the area, and FWW has been informed that other companies are making plans to apply for farms, pending the decision on the Ahi project. In light of this, Hawaii must decide if the islands really want to open the door to this increasing industry before all impacts are understood and scientifically verified.

Cultural conflicts and disruption to fishermen

FWW understands that the Kanaka Council considers this DEIS to be inadequate to traditional, cultural and religious rights, which should be protected under the Constitution of the State of Hawaii:

Article XII, Section 7. The State reaffirms and shall protect all rights, customarily and traditionally exercised for subsistence, cultural and religious purposes and possessed by ahupua'a tenants who are descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778, subject to the right of the State to regulate such rights.

In addition to the conflict with sharks, as mentioned above, this farm poses serious threats to traditional fishermen. Not only is there inadequate native Hawaiian input concerning the cultural assessment, but there is insufficient information to prove that traditional fishing rights do not exist in the proposed site. In addition, although the DEIS recognizes that: “... ‘ōpelu ko‘a (traditional fishing grounds) are very important natural and cultural resources and could be considered as an ATI (area of traditional importance) (p. 2-120),”



it fails to adequately discuss how these might be effected by the project. The document states that some fishermen felt that the Oceanspheres would act as fish aggregating devices, affecting the movement patterns of mahi, ono, opelu and bottom fish (p. 2-9) and claims that any ill effects of this will be mitigated by allowing fishermen to fish for the attracted fish on site. However, the question must be raised: if, indeed, the proposed area is not considered to be a ko'a, but opelu are attracted away from the ko'a to the oceanspheres, would not this disruption be considered damaging to traditional fishing practices?

Economic Impacts

The DEIS claims that beneficial impacts for socioeconomic conditions were identified, but fails to sufficiently prove this. The huge farm only plans to employ twenty-two full-time staff by year five of the operation. Also, the farm will not contribute significantly to local food-security; the primary markets for HOTI's Ahi will be California and Japan. Although proponents of open ocean aquaculture would like to argue that Hawaiian-based operations will help to provide the U.S. with more domestically produced seafood, this is disingenuous, when operations such as HOTI actually plan to export product to countries like Japan for a higher dollar.

Conclusion

The DEIS fails to provide adequate information about the new technology used, the source and components of the massive amount of feed that will be purchased and discharged into the ocean, or the impacts on marine animals. It also fails to prove the environmental or cultural impacts can be mitigated. FWW urges DLNR to adopt the precautionary approach to open ocean aquaculture, to reject this DEIS, and not to move forward with HOTI's proposal at this time.

Sincerely,

A handwritten signature in black ink, appearing to read "Marianne Cufone".

Marianne Cufone
Director, Fish Program
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