

# Who Is Benefitting from Factory Fish Farming?

Fact Sheet • July 2011

Offshore aquaculture is factory fish farming of the sea, growing fish in huge, often over-crowded cages out in open ocean waters. It can be problematic for both the environment and the economy. The waste – fecal matter, uneaten food, and any chemicals or drugs used in the operation – flows directly into the ocean, and the result could be long-term damage to the seafloor.<sup>1</sup> Despite its negative impacts, the following groups push for, or would profit from, factory fish farming in the federal waters of the United States.

## The Aquaculture Industry

Extensive research shows that the escape of farmed fish into the wild can result in competition for food and space with native species.<sup>2</sup> A study at a Hawaiian aquaculture facility found that fish farm cages, even in deep ocean waters (115 feet deep, with bottom currents estimated to be no stronger than 98 feet per minute), had “grossly polluted” the sea floor and “severely depressed” marine life at some sampling sites very close to the fish cages, and that, over the course of 23 months, these effects had spread to sites up to 80 meters away.<sup>3</sup> Kona Blue Water Farms, an aquaculture company based in Hawaii, has a questionable track record – from killing a 16-foot tiger shark in the fall of 2005<sup>4</sup> to losing cages in the spring of 2011.<sup>5</sup> Hawaii Oceanic Technology, a fish farm that has a lease to grow tuna in Hawaiian state waters, takes about 42 pounds of wild fish to create 10 pounds of marine farmed fish.<sup>6</sup> Kona Blue Water Farms and Hawaii Oceanic Technology are both members of a trade organization that advocates for the open ocean aquaculture industry.<sup>7</sup>

## The Soy Industry

The use of soy as a non-fish protein in aquaculture feeds is growing. This trend is due to research funding from various soybean industry groups.<sup>8</sup> Since 1995, the United Soybean Board has funded research to develop a market in farmed-raised fish; this program has increased soybean meal in fish feed from 0 to 5 million metric tons within ten years.<sup>9</sup> According to a website hosted by several soybean organizations: “The growing adoption of soy-based aquafeeds can be in part attributed to the investments made by U.S. soybean farmers in research efforts by the United Soybean

Board (USB) and the international marketing work of the U.S. Soybean Export Council (USSEC) known world-wide as ASA-IM.”<sup>10</sup> There are several soy industry groups that are members of a trade organization that advocates for open ocean aquaculture<sup>11</sup> and could stand to benefit from the increase in feed that factory fish farms would require.

## The Copper Industry

The nutrient rich water surrounding factory fish farm cages enhances the growth of algae and other organisms, together called bio-foulants.<sup>12</sup> Copper is used in aquaculture as an anti-foulant as well as a food additive.<sup>13</sup> Metal toxicity may impact the biodiversity of animals living on the sediment near finfish farms.<sup>14</sup> The increased metals in the sediment can affect reproduction success and survival of individual organisms.<sup>15</sup> Many animals living on the sediment are food for other animals; metals like copper can bioaccumulate up the food chain.<sup>16</sup> Human consumption of too much copper creates health problems.<sup>17</sup> The International Copper Association is a member of a trade organization that advocates for the open ocean aquaculture industry.<sup>18</sup>

## Cargill

Cargill created a team dedicated to aquaculture feed products in the 1990s.<sup>19</sup> In April 2001, Cargill acquired Agribrands International, Inc.<sup>20</sup> The Chairman and Chief Executive Officer of Cargill stated that this merger was, “clearly of strategic importance to Cargill.”<sup>21</sup> Combined, the two companies control 178 animal nutrition plants, 108 of which were in the United States.<sup>22</sup> Agribrands’ Pu-

rina is now producing several lines of fish feed under the Cargill name.<sup>23</sup> In May 2004, Cargill acquired another fish feed production company, Burriss Mill. The vice president of Cargill Animal Nutrition was quoted as saying, "Aquaculture is the primary focus of Burriss Mill, and Cargill intends to increase its presence in this industry."<sup>24</sup> Through Cargill's business in feed production the company may gain a larger market if factory fish farming is allowed in federal waters. There are other feed associations that belong to a trade organization supporting the open ocean aquaculture industry.<sup>25</sup>

## Drug Companies

If the factory fish farm industry develops, drug and aquaculture companies can be expected to petition federal agencies to approve a broader range of chemicals, creating additional concerns for consumer health and the environment. The use of drugs in aquaculture leads to the creation of drug-resistant bacteria, and this resistance may transfer into bacteria that infect humans. "Drug-resistant pathogens from the aquatic environment may reach humans directly."<sup>26</sup> The resistant genes from the aquatic bacteria can transfer to pathogens that affect humans, which "severely limits the therapeutic options in human infection."<sup>27</sup> An increase in factory fish farming in federal waters might open a new business opportunity to the drug companies.

## Retailers

Retailers can usually pay less for farmed fish, because artificially subsidized mass production is less costly and less time intensive than traditional fishing.<sup>28</sup> Job loss could occur because fishermen cannot compete with lower fish prices set by aquaculture, especially with the sky-high price for the fuel necessary to run fishing boats. There are seafood distribution companies that are members of a trade organization that advocates for the open ocean aquaculture industry.<sup>29</sup>

## Government Also Promoting Offshore Aquaculture

In 2011, NOAA released its Aquaculture Policy, which will pave the way to permit and manage future factory fish farming projects.<sup>30</sup> The Obama administration's proposed 2012 budget allocated \$8.4 million to NOAA for funding programs relating to factory fish farming.<sup>31</sup> Meanwhile, NOAA has grossly under-requested funds for other important matters, in particular oil spill recovery efforts in the Gulf of Mexico, which have been allocated \$2.9 million dollars.

## Conclusion

Factory fish farming is fraught with uncertainty. Our oceans are a resource shared by all Americans. Before going forward with plans that may harm the oceans, the federal government should consider what is driving the push for this problematic industry.

## Endnotes

- 1 Alston, D.E. et al. "Environmental and Social Impacts of Sustainable Offshore Cage Culture Production in Puerto Rican Waters." University of Puerto Rico - University of Miami, unpublished, 2005.
- 2 Marine Aquaculture Task Force, "Sustainable Marine Aquaculture: Fulfilling the Promise; Managing the Risks." January 2007. One species with two biologies: Atlantic salmon (*Salmo salar*) in the wild and in aquaculture. Canadian Journal of Fisheries and Aquatic Sciences 55(Suppl. 1):131-144.
- 3 Lee, Han W. et al., Temporal Changes in the Polychaete Infaunal Community Surrounding a Hawaiian Mariculture Operation." *Marine Ecology Progress Series*, Vol. 307, 175-185 (January 2006).
- 4 Lucas, Carolyn. "Fish farm seeks second location." *West Hawaii Today*, May 6, 2006.
- 5 Flickinger, Reed. "Towed aquaculture fish pens break free." *West Hawaii Today*. March 29, 2011.
- 6 Hawaii Oceanic Technology, Inc. "Hawaii State Land Board Grants 35 Year Lease for First Deep Ocean Aquaculture Site in United States." Available at <http://www.hioceanictech.com/2010/10/hawaii-state-land-board-grants-35-year-lease-for-first-deep-ocean-aquaculture-site-in-united-states/> accessed on June 3, 2011.
- 7 Ocean Stewards Institute "About us" and "Members" Available at [www.oceanstewards.org/](http://www.oceanstewards.org/) accessed on June 1, 2011.
- 8 U.S. Soybean Export Council. "U.S. Soy Industry Empowers Global Aquaculture Trends." Fact sheet. 2008 at 4.
- 9 Gatlin, Delbert et al. Expanding the utilization of sustainable plant products in aquafeeds: a review. *Aquaculture Research*, vol. 38. 2007 at 552.
- 10 "Welcome." Available at <http://www.soyaqu.org/>. website sponsored by US-SEC, USB, ASA accessed May 4, 2011.
- 11 Ocean Stewards Institute "About us" and "Members".
- 12 Dean, Rebecca et al "Copper, zinc and cadmium in marine cage fish farm sediments: An extensive survey." *Environmental Pollution* vol.145, 2007 at 85.
- 13 *Ibid* at 85.
- 14 *Ibid* at 92.
- 15 *Ibid* at 92.
- 16 *Ibid* at 85.
- 17 Brewer, George J. "Risks of Copper and Iron Toxicity during Aging in Humans." *Chemical Research in Toxicology* vol. 23. 2010 at 319-326
- 18 Ocean Stewards Institute "About us" and "Members".
- 19 Whitty, Gerry "Small Ponds Serve A Big Fish." *Feed & Grain* June/July 2007
- 20 "Agribands Shareholders Approve Merger with Cargill." PR Newswire April 26, 2001
- 21 Grainnet. "Cargill to Acquire Agribands." December 8, 2000. Available at [Grainnet.com](http://Grainnet.com) accessed on may 20, 2011.
- 22 *Ibid*.
- 23 Cargill. "Agribands Purina (JiaXing) Feedmill Co., Ltd." Available at [Cargill.com](http://Cargill.com) accessed on June 10, 2011.
- 24 "Cargill to acquire Burriss Mills & Feed Inc." The Fish Site
- 25 Ocean Stewards Institute "About us" and "Members".
- 26 Heuer, Ole. E et al. "Human health consequences of use of antimicrobial agents in aquaculture." *Clinical Infectious Diseases* vol.49, iss.8, October 2009 at 1248.
- 27 *Ibid*.
- 28 Knapp, Gunnar. "Challenges and Strategies for the Alaska Salmon Industry." Institute of Social and Economic Research. University of Alaska, Anchorage. April 2002.
- 29 Ocean Stewards Institute "About us" and "Members".
- 30 NOAA "Commerce and NOAA release national aquaculture policies to increase domestic seafood production, create sustainable jobs, and restore marine habitats." Available at [http://www.noaanews.noaa.gov/stories2011/20110609\\_aquaculture.html](http://www.noaanews.noaa.gov/stories2011/20110609_aquaculture.html). June 9, 2011.
- 31 NOAA Budget Office "The FY 2012 Federal Budget for the Department of Commerce." Available at [http://www.corporateservices.noaa.gov/~nbo/12bluebook\\_highlights.html](http://www.corporateservices.noaa.gov/~nbo/12bluebook_highlights.html) Chapter 3 at 77 & 117.

### For more information:

web: [www.foodandwaterwatch.org](http://www.foodandwaterwatch.org)

email: [info@fwwatch.org](mailto:info@fwwatch.org)

phone: (202) 683-2500 (DC) • (415) 293-9900 (CA)

Copyright © July 2011 Food & Water Watch

