

## Why an Industrial Dairy is Unsuitable for Maha'ulepu

1. The six-inch thick HDF Draft EIS report finally acknowledged that all drainage from HDF's site will flow directly and cross the sands of Maha'ulepu Beach before entering the Pacific Ocean:
  - The proposed HDF dairy site is covered with a necessary and extensive ditch network that drains more than 80% of the total acreage (578 acres), clay soil (see attached soil analysis and KSAT information that reports 52.9 % of the farm soils are saturated after 0.2 inches and another 30.5% after 0.6 inches). That soil, before ditches were dug, was covered by a swamp. See 1890 map from Kauai Historic Society. Unfortunately, the clay soil has a low permeability with a high risk for drainage/runoff. HDF cleared and restored the extensive ditch network, filled with vegetation following the close of the sugar plantation there in 1996.
  - HDF admits that their entire ditch network is ultimately drained by the Waiopili Ditch which becomes the Waiopili Stream and then flows across the beach at Maha'ulepu before draining into the ocean. The ditches had to be cleared and restored because HDF reported water pooling and ponding, making it hard to establish their pastures.

"Spread across the pastures on the valley floor are numerous straight agricultural ditches that serve the purpose of draining runoff from various pasture areas. These were nearly all dry during our survey, and the network was not fully explored, nor was it determined how these presently all interconnect. Presumably these drain eventually into one of the three water-filled features on the property as described above." DEIS Volume 2, Biological Surveys, page 19.

"Surface waters draining the project site meet Waiopili Ditch, and will eventually reach the ocean." DEIS Volume 2, Surface Water and Marine Assessment, page 2.

"Hydrologic Assessment for the Pasture Areas, Hawai'i Dairy Farms May 9, 2016

Runoff from the east side of the valley, similarly, sheet flows or is conveyed via shallow concentrated flow through the various system of ridges and valleys along the east side of Māhā'ulepū Valley. Runoff concentrates into several ditches, cut from agricultural operations, before ultimately collecting into one of the major ditches that runs mauka to makai along the central or east side of the farm. This ditch conveys both water collected from the various tributary ditches, but also sheet flow from the central and eastern areas of the farm, to the makai boundary of the farm along Māhā'ulepū Road, before leaving the site and ultimate discharge into the ocean. The flows from these two ditches converge beyond the boundary of Hawai'i Dairy Farms before discharge to the ocean." DEIS Volume 2 pg. 709 of 732

2. In a recent publication, HDF disclosed to the public that "the farm will retain nearly 98 percent of these nutrients in the pasture." See TGI Forum 7/24/2016 [http://thegardenisland.com/news/opinion/guest/dairy-s-pasture-based-model-protects-environment/article\\_2b8400d1-b7b5-5bab-b928-c9ade82321b4.html](http://thegardenisland.com/news/opinion/guest/dairy-s-pasture-based-model-protects-environment/article_2b8400d1-b7b5-5bab-b928-c9ade82321b4.html)  
Also see DEIS, Volume 1, page 4-13, pdf page 105 of 299
3. HDF's claim of capping the runoff at 2% is unsupported. However, if the runoff is somehow limited to 2%, HDF's June 1, 2016 revised Waste Management Plan reports each mature dairy cow will eliminate at least 90 lbs. of wet manure daily. 699 mature dairy cows plus calves that are to be born within weeks of the arrival of each pregnant dairy cow, together with the bulls, will, per HDF, now result in at least 2 million pounds of wet manure produced on site monthly. A 2% loss of that waste, giving HDF the most conservative consideration, will, by their own assessment, result in 40,000 lbs. of waste runoff per month through the many ditches and stream that ultimately empties across Maha'ulepu Beach and into the Pacific Ocean. 20 tons of runoff monthly is not only untenable but in clear violation of the Beach Act and Clean Water Act.
4. The Waiopili Stream that drains the Maha'ulepu valley into the ocean is already alarmingly contaminated. See EPA letter 7/26/2016 DOH, USGS and Surfrider have conducted scientific study over the last 2.5 years that confirms Maha'ulepu Beach, a popular recreation area, is already problematic. To date, the source of the consistent and chronic contaminations remains unknown.

5. HDF failed to study or make any provision for the increase in bacteria, nitrate and other chemical pollutants certain to be carried across the beach and into the ocean via the known drainage of their ditch network. With any precipitation in excess of 0.2 inches, 52.9% of the total farm acreage is saturated and at risk for waste laden water runoff/drainage from the site. After 0.6 inches of rain, an additional 30.5% of the total farm acreage is saturated, resulting in more manure and urine laden drainage. Because of its low saturation point, high water table, extensive ditch network, it is truly probable that more than 20 tons of waste will be lost each month from HDF's operation which they acknowledge would produce nearly 2 million pounds of wet manure or 1,000 tons monthly.
6. There is no assessment of impact to human health from the known aerosolized manure particulate matter and biting flies that will be carried by the well-known prevailing trade winds that blow across the Maha'ulepu site and to Koloa and the adjacent coastal resorts and residences. "Wind velocity measurements reported in the HDF DEIS to average 10 miles per hour lack relevance. Such a baseline number ignores the much greater significance of the portion of time when the winds are more intense. Of greater importance is the considerable period of time that the winds blow at velocities greater than 25, or even 20 mph. Such are the winds that would provide evidence of a large-scale Mahaulepu Valley dairy farm for the downwind resorts and residences of Poipu." Charles Blay, PhD. DEIS Comment filed 7/25/16.
7. County Wells C, D, & F that supply water to the communities of Poipu and Koloa are unconfined wells that are fed from the large Koloa aquifer, over which HDF plans to import 699 pregnant cows, expanding to 2,000, with a plan for a 100% land application of all waste. It is staggering that DOH would not question the impacts of this level of contamination to a key water supply in which two of the wells are within 750 feet from the proposed untreated waste dump site. 20% of the farm site has soils that will percolate well, carrying bacteria laden waste and nitrates directly to ground water and the aquifer that recharges the Poipu and Koloa wells. 80% of the site, with clay soils, while poorly permeable, will also absorb nitrates because nitrates tend to bind and be absorbed by the clay surface, increasing the nitrate infiltration into the aquifer and the Koloa wells.
8. HDF summarily concluded there would be no adverse economic impact to the South Shore of Kauai in total disregard of the obvious probability of adverse impact from trade wind born particulate matter, noxious odors and biting flies. The obvious impact to tax base with property devaluation and drop in tourism would affect both the State and the County. Currently, 25% of the Kauai island property tax is generated from South Shore (Koloa and Poipu) properties and a significant amount of the Transient Accommodation Taxes generated for the State.
9. HDF has abandoned the "New Zealand Model" which they claimed their plan would emulate from January 2014 through June 2016. In truth, there is no such thing as a "New Zealand Model". New Zealand's concentrated dairy operations have cost New Zealand nearly 60% of their potable water. Per The Report of the Independent Parliamentary Commissioner for the Environment, 2015.
10. Group 70 International is an architectural firm specializing in resort and large residential developments. Neither Group 70 nor HDF have ever designed or operated a dairy. The Cornell Dairy Model and Island Dairy Model, HDF now claims to be following remain elusive. Equally concerning is that Group 70, the company credited with creating HDF's proposed Dairy and Waste Management Plan, is also the company conducting HDF's EIS. The following unsupported statement appears, word for word, in seven different parts of the Draft EIS text. Group 70 and HDF have created a scientifically unsupported document filled with the following example of their hyperbole:  
**"The farm will be based on the most successful island dairy models in the world, and will utilize a sustainable, pasture-based rotational-grazing system and 21st century technology."** HDF DEIS Vol 2. Page 3 (pdf pg 9 of 732); page 1 (pdf pg 121 of 732); page 1 (pdf pg 277 of 732); page 8 (pdf pg 318 of 732); page 11 (pdf pg 493 of 732); page 1 (pdf pg 693 of 732); and page 17 (pdf pg 709 of 732) This doesn't take into consideration many of HDF's misrepresentations, such as claiming to have an NRCS Permit when no such permit exists.