SUSTAINABLE SYSTEMS AND DISSEMINATIONS IN HAWAII

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Vetiver Farms Hawaii's (VFH) main focus is the cultivation and dissemination of vetiver across the Hawaiian Islands. While supporting the conservation of the Hawaiian Islands, we are also addressing the increasing concerns of global climate change. Using a farming model that follows sustainable systems with no heavy machinery, VFH demonstrates that *how* we propagate is just as significant as *what* we propagate. The commitment to organic food sources, livestock, and our minimalist lifestyle illustrates our profound environmental and humanitarian beliefs. We understand that to be successful we must work in harmony, not only with our natural environment, but in collaboration with others to create change. While our society's historical industrial approach to agriculture is being questioned, innovative and natural agricultural practices are becoming increasingly valued. We look forward to working together to create this change that will nurture the earth.

Practicing the principle of *Malama 'aina*: to care for and nurture the land so it can give back all we need to sustain life for ourselves and our future generations. In our grass roots dissemination of vetiver systems to commerce, residents, farmers, and governments, we also acknowledge concerns of global climate change. While propagating vetiver to benefit the Hawaiian Islands it is also important for us to live a sustainable lifestyle, consciously, efficiently, and in unity with nature. Realizing that the Earths invaluable resources are central to our survival we believe that vetiver disseminations play a very important role in our societies future.

Our twenty-two acre organic, commercial farm is located in Papaikou, on the Big Island of Hawaii. At seven-hundred foot elevation up the slopes of Mauna Kea , the annual rainfall reaches an astonishing one-hundred and twenty-six inches. Three small cabins, built from mainly local materials, provide housing for the farm's stewards. The hand built cabins are simple yet functional with no electricity, a composting toilet, and open doors and windows which exemplifies our ideal of living in close communion with our natural environment. A nearby stream provides gravity fed sink water and crop irrigation to the facilities. The farm has a wide variety of crops and fruit trees: native 'awa plants, taro, pineapple, okinawa spinach, cassava, sugar cane, ice cream bean, okra, banana, squash, avocado trees and more. However, this sanctuary is best recognized for its proliferation of one of the oldest plants on earth, vetiver.

The Hawaiian Islands experience many distinct challenges to a fragile eco-system. There are earthquakes of varying magnitude daily, frequent heavy rainfalls, tsunami threats, and left-over pollutants from the now abandoned sugar-cane industries. The Island's soil is low in nitrogen and phosphorus, with high levels of acidity and iron. Hawaii's problematic history with invasive species and grasses, such as wainuku, requires that great caution be used in choosing land management techniques. Mindful of these factors, we have chosen to use environmentally friendly technologies. Our low-tech lawnmowers consist of two horses, and their companion weed-whackers are a herd of twelve sheep, contained by using a solar-powered moveable fence pen. Safe soil amendment is provided by a flock of twenty-two chickens, penned in a moveable tractor. Other sustainable land management methods include inter-cropping vetiver with lemongrass as a weed barrier, use of nitrogen fixing trees/groundcover, applying indigenous microorganisms (IMO), and local bio chard inoculated with fish emulsion. IMO is a fertilization concept with-in "Natural Farming" a method coined by Korean farmer Master Cho. Bio-chard is a fertilization concept that was discovered in the depths of the Amazon after soil testing revealed the effectiveness of their use of charcoal as a sponge for retaining nutrients in the soil.

In order to promote vetiver on a commercial scale, we have developed economical and sustainable methods of production that require minimal use of fossil fuels. We believe this is important factor in mitigating global climate change. One such method is our soil fertilization process: after the horses, sheep and chickens have worked the land, a twelve by one-hundred foot weed mat is tightly stapled down. Approximately one month later, these sections are now naturally and organically fertilized, weeded and ready for planting. These techniques not only help us to provide vetiver at a low cost to the public, but to the environment as well. We strongly believe there is a natural solution to everything, and that vetiver's many uses help promote this understanding.

My introduction to vetiver came from food sustainability guru, Chris Carter. For many years now, Chris has been able to meet all of his nutritional needs by eating exclusively from local farms on the Big Island. In 2006, he shared a few slips of vetiver with me for use in my small personal garden. Impressed with the plant's ability to save the garden from flooding, I began researching means to obtain additional plants.

Shortly after, Lester Sushiro, with the Natural Resources Conservation Service (NRCS) handed me the pamphlet *"Vetiver Grass, a Hedge against Erosion"*. This brochure gave me further motivation to seek out farmers in the deep valleys of the Island that were cultivating and harvesting wetland taro surrounded by vetiver. Robert Joy with the United States Department of Agricultural (USDA) Plant Material Center in Moloka'i, provided our farm with an additional one-hundred plants. After a more comprehensive study of the history and uses of vetiver, I was absolutely inspired to dedicate myself to the propagation and promotion of this miracle plant. We initially obtained approximately five-hundred slips on the farm; a number that today has grown to nearly five-hundred thousand.

When we began our mission in 2007, very few people on the Hawaiian Islands were familiar with vetiver. The dissemination of the various uses of Vetiver Systems (VS) has been done through multiple venues. When Vetiver Network International President Dick Grimshaw provided thousands of pamphlets courtesy of The Vetiver Network International

(TVNI), this allowed for large-scale distribution and recognition in the area. Some government officials were receptive and pamphlets were provided to all USDA and National Resource and Conservation Service (NRCS) offices on both the Big Island and Kaua'i. In response to our persistent efforts, we were invited to give a presentation to state and county highway department staff. The department's head engineers are currently considering VS for Best Management Practices. Recent collaboration with both a large bioremediation company and a phytoremediation company based in the continental United States will result in additional projects. We are very excited to introduce this technology to people who share our vision of nurturing the land.

Additional dissemination to the community has been done through educational presentations at agricultural events, colleges and engineering boards. We also create and submit advertising in newspapers, magazines, and on the world-wide web. VFH was recently honored for our efforts by being featured in the March/April 2011 issue of the Island's leading magazine, *Ke Ola,* (**view article here** Healing Grass: the Amazing and Versatile Vetiver | Ke Ola Magazine | Celebrating the Arts, Culture & Sustainability of Hawaii Island) as well as in the *Pacific Islands USDA* newsletter which showcased our use of vetiver and use of bamboo dibble tubes for transporting. (**View full newsletter here on page 9** ftp://ftp-fc.sc.egov.usda.gov/HI/pub/news/summer09.pdf)

> "Jason is a kind of Johnny Apple seed of vetiver systems. Seems everywhere he looks, he finds examples of where 'Sunshine' vetiver grass could be planted to prevent erosion and resource degradation." Robert Joy USDA newsletter, Summer 2009

Our promotional efforts have resulted in many requests for VS installations around the Islands. These installations have provided land reclamation, carbon sequestering and stabilization for slopes, stream banks, retaining walls, and rural roads. One installation was done for a house which had lost much of its foundation several times over the prior years to erosion during heavy rains. After VS installation, the house withstood thirty-two inches of rain in forty-eight hours with minimal erosion damage.

Additional farm income is being created through the production of vetiver essential oil. This process is done just over a mile up-stream, where a hydro-electric power generator provides the current to distill the sunshine vetiver oil and hydrosols. While oil was not a part of our initial vision, it will soon provide important financial support while further expanding the public's awareness of vetiver.

The increased industrialization of our society has resulted in an immense disconnect with our natural environment. This could explain why professionals in the fields of agriculture, landscaping and engineering may have no awareness of the multiple uses and unparalleled benefits of plants such as vetiver. We are undoubtedly proud to be a part of a network that is working collaboratively and resiliently to further support this reconnection. We look forward to our continued practice of the principles outlined above, at a low cost to both the public and to the environment, while promoting healthy systems for our future generations.

Mahalo nui loa, thank you very much, to all of you who support TVNI and understand how its roots aid in the healing of the earth and humanity.
Before and after / farm photos available at
http://www.vetiverfarmshawaii.com/Recent-Photos.html

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Special acknowledgements go to Bailey Scott, Jessica Kirkwood, Nahko-ese Mendiola, Lester Sushiro, Dick Grimshaw and TVNI, Christine and Bruce Fox, Jim Dahlberg, Richard Alderson, and most of all Scott Havel. These people all play a crucial role in supporting Vetiver Farms Hawaii.