



## LEAFLET September 2007 Front Page

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### Back to the Garden

**Photo:** Traditional *lo'i* (taro plots), Limahuli Garden, Ha'ena, Kaua'i.

Hawai'i Island has the land, water, weather, and indigenous knowledge base to produce its own food year round. In real terms, Hawai'i has the option to feed itself. Through the resurgence of traditional Hawaiian land use practices and the production of organic, locally grown food, we can create a sustainable food economy. The benefits of local food production are multi-fold, while the costs of continuing to import the bulk of our food supply are mounting.



*"Most people eat industrial grade commodities raised on factory farms. That diet is making us sick. The production methods are destroying the environment. The economics are appalling. We spend \$30 billion a year in various subsidies to support this kind of commodity farming. If we are to have any hope of surviving global warming and the energy crisis, we must find sustainable ways to produce our food. As fossil fuels fail, so will the old industrial models. For Hawai'i, with its high dependence on oil for energy and food transport, well, it's a no-brainer: the food/energy crunch will most likely begin to show up here first."* – [Claire Hope Cummings](#), author, environmental lawyer, food and farming journalist, and featured speaker at the Hawai'i Island Food Summit

On Saturday, October 6, the community is invited to the first [Hawai'i Island Food Summit](#). This conference is the first ripple in a sea of change on the Island. Listen to experts discuss the benefits of agriculture that relies on local inputs, innovative land use policies that support agricultural self-reliance, new opportunities for marketing and distributing food on the Island, and ways to maximize home food production. Learn how to take the first steps toward greater food security for our community. Registration and a detailed schedule are available at [www.kohalacenter.org/food](http://www.kohalacenter.org/food).

The Food Summit will be followed by [Haumea's Garden - A Local Food Exposition](#), an opportunity to meet Hawai'i's food producers and taste fresh island foods. This event is free and open to the public in the Ballroom Foyer at the Sheraton Keauhou Bay Resort. End the day with great music by Keoki Kahumoku, Herb Ohta Jr., and Diana Aki and Friends. The [Back To The Garden Benefit Concert](#) for Hawai'i Island youth agricultural programs runs from 7:30 to 10:00 pm, in the Luau Garden at the Sheraton Keauhou Bay Resort. Tickets are \$20 and are on sale now at [www.kohalacenter.org/food](http://www.kohalacenter.org/food) and at Big Island Surf stores in Hilo, Kailua, and Waimea.

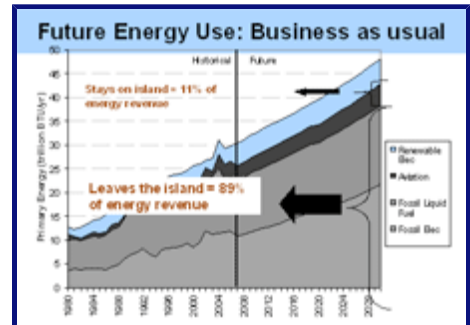
Learn more about ["The Delicious Revolution"](#) in Hawai'i, based on an interview of Claire Hope Cummings by Linda Copman.

### Shifting the Balance

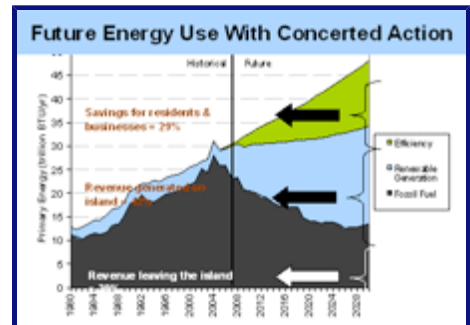
"We can't be short-term thinkers any more. We have to understand lifecycle cost analysis and factor in both economic and environmental costs. Our decisions must be based not just on the initial costs of a technology, energy system, or appliance, but on the costs for the total life of their use." – Betsy Cole, Deputy Director of The Kohala Center

**Images: (top)** Business as usual - where nearly 90% of the energy economy continues to leave the island. **(bottom)** Future with concerted action - where over 70% of the energy economy stays here.

So how do we get from here to there? The Kohala Center has been assisting the County's Department of Research and Development to draft recommendations for energy conservation on Hawai'i Island and for increased use of local and renewable resources. "Energy is a  $\frac{3}{4}$  of a billion dollar issue for the County, yet the County has made virtually no investment in staff to address this issue," says Cole, who is spearheading The Kohala Center's leadership in the current planning effort. Four meetings were held in communities around the island in August to solicit community input on preliminary plan recommendations. The final plan will be presented to the Hawai'i County Council in October 2007. The preliminary plan was drafted with the assistance of faculty and students in the Industrial Environmental Management Program at Yale's School of Forestry and Environmental Studies. The plan identifies seven key steps we can take now to create greater energy sustainability on Hawai'i Island:



click images to enlarge



1. Revise the Model Energy Code for residential buildings and update the energy codes for commercial buildings (*something which has already been done in all the other counties in the State*).
2. Implement a LEAD BY EXAMPLE program, so that the County government maximizes its own energy efficiency.
  - Transition the County vehicle fleet to fuel efficient vehicles.
  - Install photovoltaic modules and solar hot water systems on County buildings.
  - Install photovoltaic or LED street lighting where possible.
  - Make sure all new major County building construction is LEED certified. (LEED stands for Leadership in Energy and Environmental Design.)
3. Create a five-person Energy Commission to determine energy initiative priorities, evaluate resource needs, establish benchmarks, and direct the hiring of County energy specialists.
4. Continue expanding the successful free public transport system.
5. Distribute Hawai'i County-specific Energy Guide Labels for household appliances and all types of vehicles.
6. Continue ongoing efforts to assess the costs, benefits, and environmental impacts of different bio-fuel feedstocks.
7. Initiate a comprehensive public education and outreach program to increase citizen awareness and participation in energy self-sufficiency goals.

Read more about proposed changes to [Hawai'i County's Energy Code](#).

**Hawai'i Marine Mammal Consortium**



**Photo:** Humpback whale (*Megaptera novaeangliae*) head-slapping off the Kohala Coast, HMMC, NMFS permit # 782-1719. Photo by Chris Gabriele, HMMC Board member.

*"Imagine if aliens from another planet observed you by sitting inside your refrigerator, only able to watch you every time the door opened. You can imagine how that would give an incomplete picture of your behavior. This is what it is like trying to learn about whale and dolphin behavior by studying them during the brief times that they are visible at the ocean's surface."* – Tom Freeman, longtime HMMC colleague and independent researcher

The Hawai'i Marine Mammal Consortium (HMMC) was formed in 1998 by a group of [12 marine mammal scientists](#) from institutions around the country. These 12 scientists were hoping to coordinate various research projects focused on marine mammals in the waters surrounding the Hawaiian Islands. Today, HMMC conducts scientific research on Hawai'i's wild populations of whales and dolphins, with the goal of providing high-quality information to the local community and to State and Federal marine resource agencies.

HMMC is always looking for new opportunities to educate the public about marine mammals and the marine environment, in order to help Island communities and visitors value, understand, and protect Hawai'i's marine life. To this end, HMMC has partnered with The Kohala Center on several educational projects. In 2005 HMMC worked with The Kohala Center and Brown University to provide presentations on whale and dolphin biology and research methods to Brown undergraduates at their Ke'ei field site. HMMC scientists later repeated their presentation for high school students involved in the Brown Environmental Leadership Lab ([BELL](#)) program. Read more about [HMMC outreach programs](#).

Learn more about [HMMC's current projects](#).

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### The Delicious Revolution

#### Perspective and Photos by Claire Hope Cummings Based on an Informal Interview with Linda Copman

**Photo:** Claire Hope Cummings harvesting taro in Tweetie Lind's taro patch in Kipahulu, Maui.

*Hawai'i is so fortunate because local food production is not only doable, the food – the fish, the fruit, and the water here are so "ono" (delicious). Alice Waters, a pioneer of the new food movement, calls this "the delicious revolution."*

Hawai'i has a vibrant native culture, a strong sense of kinship with the land, and everything it needs to feed itself. Given the rising cost of imported food and fuel, the current system of imported food cannot continue - a challenge that presents Hawai'i with enormous opportunities.

When I was practicing law in the 1980's, I met Dr. Emmett Aluli and he introduced me to J. Kalani English in Hana. Kalani and I formed the first native land trust there, *Hui 'Aina o Hana*. Then Hui member Mahealani Cypher invited me to work in Halawa Valley, to mitigate the impacts of the H-3 Freeway on the cultural resources there.

For the past 30 years, I have been working on cultural preservation issues. Cultural preservation is not just about saving the past: it means ensuring the ongoing cultural survival of living people, including their food traditions. That, of course, means working to preserve the land, water, plants, fish, knowledge, and stories which are embedded in the landscape. A healthy food system relies upon family and multigenerational ties to place.

The main benefit of eating local food is improved health, though it also ensures the cultural continuity of communities. I am using the word "health" very broadly to include our personal physical health and the health of our family, especially our children, as well as our community health - the security of our common welfare, which is the basis for both environmental and economic health.



**Photo:** Nancy Redfeather's diversified farm/garden in Kona, Hawai'i Island.

The food system is part of a living set of systems that includes economics and ecology. A healthy food system circulates the wealth within a community: the common wealth of clean water, renewable energy, and adapted complex systems of plants, insects, fish, and animals. A healthy food system includes everything that produces food, including natural and scenic beauty, as well as historic and cultural continuity. A healthy food system can help meet our needs for recreation as well as spiritual renewal. If public policy takes into

account this multifunctional view of the agricultural economy, it has a chance of success.

*The industrial economic model defines agriculture as a purely economic activity. It is all about productivity per acre. The current movement toward a renewal of local food production recognizes the economic benefits, as well as the environmental, public health, social, and cultural benefits of food. In the final analysis, it comes down to making a fundamental choice: How do we want to live?*

The **RMI report** did a superb job of laying out all the benefits of local food production in Hawai'i. I encourage everyone to read it. The big picture for Hawai'i is clear – the price of continuing to import industrial food is going to increase beyond what most people can afford.

Every community needs to figure out for itself how to re-localize its own food system, but in Hawai'i, this transformation needs to be incorporated into the growing resurgence of traditional Hawaiian land use practices.

**Photo:** Tweetie Lind, who is restoring Hawaiian food, farming, and medicinal plant traditions in Kipahulu, Maui (**left**) with Claire Hope Cummings (**right**).



Public policy plays a crucial role in the transformation of the food system. Ideally, policy codifies a shared vision and gives us a common language to use so that we can identify and then reach our goals. The key to effective policy making is the process - ensuring that it works to formulate that common vision, and that all those affected have an opportunity to participate. Good policy making can bring a community together.

Existing food and farming policies in Hawai'i act as a barrier to change because they are designed to facilitate the economic and industrial model. They do not take into account the environmental, health, and cultural importance of food. And they leave too many segments of the community without a voice or opportunity to participate in the economy.

*There need to be sticks and carrots. Communities who are re-localizing their economy are finding this can be very profitable and energizing. "Growth" is not necessarily always a matter of bigger; it can be generated by doing things better, or in more innovative ways.*

Changes can be made at many levels. Policies could require the tourist industry to focus on local food, and hotels could do better at recycling and saving more water and energy. The Hawai'i Tourism Authority could spend some of its multi-million dollar budget on supporting agricultural tourism and local food and farming. Local government agencies and businesses could source their materials from local producers and invest in renewables, for everything from their food service to office supplies to transportation. Local planning mechanisms could be adjusted to promote small business opportunities for food producers.



**Photo:** Marion Kelly (**left**), a well known archeologist who first described Native Hawaiian farming methods in Kona. Kelly is credited with research that helped begin the resurgence of traditional Native culture in 1960s and 1970s. Claire Hope Cummings (**right**) wearing a lei made by Marion Kelly.

When I lived and farmed in Southeast Asia, I realized that it is women who feed the world. Most of the world's farmers are women. Women are the ones who worry about feeding their families and they care deeply about health and safety issues. If I could suggest one change, it is one that is seldom discussed in this context – the need to ensure that the status of women in the community is protected. That means equal rights to education, childcare, health services, jobs and economic opportunities, and freedom from drug abuse and domestic violence. Where women and children are safe and able to thrive, you will find health and prosperity. Women's welfare is a predicate for, not a product of, a healthy

economy.

For the last five years I have been investigating the issues around agricultural biotechnology in Hawai'i. As an environmental lawyer and journalist I have been concerned about the contamination issues, but also the impact this form of agriculture has on the islands. One question is: given the need for Hawai'i to begin feeding itself and to design a non-fossil-fuel using transportation system, could this form of agriculture help?

The answer is no. The reasons are that it is not sustainable, and the economics are all wrong. The multinational agrochemical companies that are engaged in agricultural biotechnology here are not part of the communities where they farm. And they are doing only the bare minimum in terms of controlling the environmental impacts of their activities.

**Photo:** Spraying at a GMO test site on the west shore of Kaua'i.

More and more scientific studies are coming out that confirm the environmental and health risks caused by GMO (genetically modified organisms) crops. But there are other problems to consider. For instance, the raw material for GMOs is taken from the common heritage of all humanity. All of our essential food plants and the farming methods used to raise them were developed by indigenous communities and traditional farmers. But now they have been patented and converted into private property. Patents are the life blood of agricultural biotechnology. You can accomplish most of what genetic engineering does with traditional breeding, but GMOs are patentable, so they are preferred by industry. There are two worrisome results from this: one is that the genetic basis for agricultural diversity is narrowing, and the other is that farmers have lost the right to save seed.



*Now even ordinary people are losing the ability to feed themselves. This is happening just when we need food self-reliance the most.*



**Photo:** GMO corn testing site in an isolated area along the south shore of area of Kaua'i.

The economics of growing GMOs in Hawai'i also deserves closer scrutiny. The biotechnology industry in Hawai'i is subsidized by the State. But these are highly profitable multinational agrochemical companies. They get federal and State money, tax breaks, and research and development tax advantages. Meanwhile, little or nothing is done to support local, organic, or native Hawaiian farming.

*So how do we transform Hawai'i's food system? Two words: eat local.*

**Photo:** Bicycle-powered blender for smoothies in Kipahulu, East Maui, where this entire cafe is run on alternative energy.

That means both buying from local farmers and growing food yourself. In fact, everywhere, if this one change was made, it would have enormous beneficial impact on the environment, the economy, and on the overall quality of life for everyone. Even the nutritional level of food grown and consumed locally is superior to food transported over long distances.



I would add one more useful change: ban plastic water bottles. Not only would this save everyone money, it stops all the waste created by the bottles and indirectly protects the very decent water supplies that already exist. Most of the bottled water is tap water anyway. Shipping tap water in small bottles to Hawai'i makes no sense. Instead, we could use and reuse glass

bottles and recycle them. Local governments and businesses in Northern California are banning the use of bottled water, providing pitchers and glasses in meeting rooms, and even banning plastic bags – all with resounding success.

I have seen farmer’s markets in Hawai’i that are swamped with hundreds of shoppers. People are hungry for good food produced where they live. And, the money that visitors bring to Hawai’i can be used to help build the infrastructure for a local food system – including the farms, the farmers, the needed skill sets and markets, and the appropriate land use changes. There are many ways to build the local food economy. This is definitely still a time when Hawaiians can say, “if we build it, they’ll come.”



**Photo:** The Waipa farmers market on the north shore of Kaua’i creates a huge traffic jam when it opens on Tuesday mornings, as hundreds of cars enter to shop.

Anyone who attends the **Hawai’i Island Food Summit (HIFS)** will be present at the beginning of one of the most important changes to take place in Hawai’i ever – the way forward toward food security. Every great social change movement I have had the privilege of being involved in has had great music, good food, and a heady mix of people from all backgrounds coming together for a common cause. HIFS organizers have done a great job pulling all these elements

together. Come and be a part of this astounding opportunity!

It’s not my place to say what should happen next - that’s up to the people who live and work here. I will be at HIFS to talk about the experience and vision of other communities who are also working for local food security, to provide some inspiration for the work ahead here.

How can Hawai’i feed itself? The changes that need to happen to get things started can take many forms: sharing information about the challenges and successes on this front elsewhere, providing links to experts who are working on these issues, and telling the stories of the people in Hawai’i who are feeding themselves and their communities to others who are watching what is happening here. The fact is, Hawai’i can create a sustainable food economy that can serve as a model for the rest of the world. We will all need this when the energy crunch comes.

Read **The Whole System Agricultural Report for Hawai’i Island**, by Lionel Bony and Laura Schewel of the Rocky Mountain Institute, to learn more about the benefits of local food production in Hawai’i.

## Proposed Code Changes for Hawai’i County

**By Howard C. Wiig, Energy Analyst  
Department of Business, Economic Development, and Tourism**

**Image:** Lifecycle energy cost comparison of standard incandescent vs. compact fluorescent light bulbs. Image courtesy of Claire Gagne, Yale School of Forestry and Environmental Studies.

*By adopting a model energy code, we can reduce costs for consumers and increase the comfort of people inside our buildings. This code makes builders do the right thing. Initial construction investments are very quickly recouped in light of Hawai’i’s astronomical energy costs.*

Hawai’i County is the only county in the State that has not updated its energy code. Most of the technology cited in the present code is obsolete. Hawai’i County currently uses a national building energy code known as ASHRAE 90.1-1989.

ASHRAE is the American Society of Heating, Refrigerating, and Air Conditioning Engineers, a nationally



recognized association of some 65,000 mechanical engineers and related professionals producing dozens of building-related standards and guidelines. The number 90.1 refers to the energy sector and 1989 is the year this particular code was issued, meaning the research that went into producing the existing code reflects primarily 1980's technology.

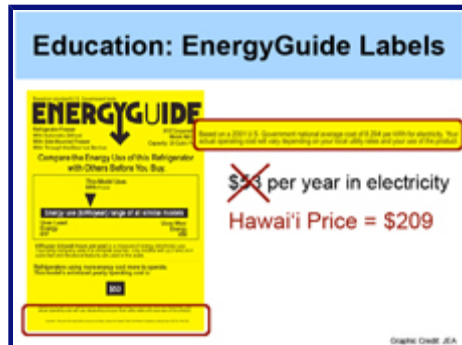
We are proposing that Hawai'i County revise its energy code to ASHRAE 90.1-2004. The most important revisions made between 1989 and 2004 are in air conditioning and lighting. The air conditioning equipment in the 2004 revision is on average about 17% more efficient than the equipment ratings cited in the 1989 version. Lighting efficiencies are increased by about 25%, meaning that 25% fewer watts are allowed in a given space to produce the desired level of illumination. In both cases, the improved efficiency mirrors industry-wide improvements made between 1989 and 2004. More efficient equipment is now the industry norm and may be purchased "off the shelf" at reasonable prices.

*Energy codes are intended to dissuade the use of older, outmoded equipment.*

Many buildings are currently built above ASHRAE 90.1-2004 standards because the builder who owns the building wishes to minimize energy costs and optimize occupant comfort.

Hawai'i County's existing residential energy code has not been updated since 1994. No rules exist for homes designed without air conditioning or designed for window-unit air conditioners.

The proposed residential code update will apply to all new homes and deal with the roof, walls, and windows. Many homes are uncomfortably hot because they are inadequately insulated and allow the sun to heat the interior to over 90 degrees on hot days. Homes that comply with the proposed new code will be at least eight degrees, and in some cases, 12 degrees cooler than an un-insulated home. This reduction in temperature often negates the need for air conditioning. If air conditioning is needed, a smaller unit can be purchased at a considerably lower price.



**Image:** Revised Energy Guide label for a refrigerator, showing annual operating costs at Hawai'i County's electric rates. Image courtesy of Claire Gagne, Yale School of Forestry and Environmental Studies.

In the roof, the proposed code would allow not only conventional fiberglass or foam insulation, but the use of radiant barriers, cool roofs, and solar fans as means of keeping the attic, and hence the interior, naturally cool. The Counties of Honolulu and Maui have this type of roof code in place.

Each of these methods is extremely affordable.

To comply with the new code, windows should have a minimum 0.40 solar heat gain coefficient. This means that only 40% (or less) of the sun's heat striking a window penetrates through the window. In contrast, a standard single-pane window allows about 90% of the heat through, creating a greenhouse effect in the home. High-performance glass is now the industry standard for all manufacturers, making the price of more efficient windows cost competitive with older types of window glass.

The proposed code revisions would effectively:

1. Lower monthly utility bills for the homeowner over the life of the home;
2. Reduce electricity growth rates and stress on the electricity grid; and
3. Reduce County dependency on imported fossil fuel.

Editor's Note: Howard C. Wiig made two presentations on proposed revisions to the County's Energy Code to Hawai'i County Council members in August 2007. Council Chair Pete Hoffmann plans to introduce legislation to update the County's current energy code before the end of the year.



## HMMC: Current Projects

### By Susan Rickards, HMMC Board Member

**Photo:** Spinner dolphin (*Stenella longirostris*) mother and calf off the Kohala Coast, HMMC, NMFS permit # 774-1714. Photo by Suzanne Yin, HMMC Board member.



HMMC is a Hawai'i Island-based marine research and education group that formed in 1998 and officially became a non-profit 501(c)(3) organization in 2003.

From 2003 to 2006, HMMC was the Island's representative in **SPLASH** (Structure of Populations, Levels of Abundance and Status of Humpbacks), an international collaboration aimed at improving our understanding of humpback whale migratory destinations and genetic structure. Two key goals of SPLASH were to estimate the number of humpbacks in the entire North Pacific Basin and to identify anthropogenic threats (for example, fishing gear entanglement, disease, and contaminant loads) to the whales in each region of the North Pacific. Researchers from all the main Hawaiian Islands, from along the West Coast of the U.S. (including California, Oregon, Washington, Alaska, the Aleutian Islands and the Bering Sea), and from Japan, Mexico, Central America, the Philippines, Russia, and Canada simultaneously collected humpback whale data in 2003-2006. The results of the various aspects of SPLASH are slowly becoming available. For updates, visit the [Hawaiian Islands National Marine Sanctuary](#) and [Cascadia Research Collective](#) web sites over the next several months.

HMMC has no official ties to the Hawaiian Islands Humpback Whale National Marine Sanctuary. However, the Sanctuary supports scientific research that is consistent with its goals and objectives and, thus, it has partnered with HMMC on SPLASH and other projects, including our [shore-based research](#).

After SPLASH, HMMC research returned to its main focuses of migration, inter-island movement, male and female behavioral patterns, calving intervals, and acoustic behavior of whales and dolphins. HMMC also conducts long-term [shore-based scans](#) for whales each winter, to facilitate detection of trends in the relative distribution and abundance of Hawai'i's whale population. HMMC works closely with the recently-established [Pacific Islands Photo-Identification Network \(PIPIN\)](#) to gather photographs from spinner dolphin researchers in Hawai'i into a communal database, so that movements and life histories of individual dolphins can be tracked. HMMC also works cooperatively with the [Hawaiian Islands Disentanglement Network](#) and has been involved in several humpback whale disentanglement efforts off the Kohala Coast in the past few years.

2007 HMMC educational ventures included a visit from three college students from Yokohama, Japan, and a week hosting six Alaska native high school students to learn about humpback whale migration and Hawaiian culture in collaboration with whale researcher Jan Straley of the University of Alaska Southeast, Sitka Campus, and Dr. Jason Turner of University of Hawai'i Hilo. This collaboration was funded by a grant from the Cooperative State Research Education and Extension Service (CREES) program under the U.S. Department of Agriculture and will continue in winter 2008. HMMC also helped with [Cornell University's bioacoustics research course](#) in Kohala for the fourth consecutive year.

Like many non-profit organizations, HMMC has a small and limited operating budget and [donations](#) are always welcome. Island residents can also contribute by specifying HMMC as the recipient of their recycling refunds, when recyclables are brought to the County's recycling stations run by Arc of Hilo. Read the HMMC Spring 2007 Newsletter at [www.hmmc.org](http://www.hmmc.org). Community members are invited to join the HMMC e-mail list by writing to [info@hmmc.org](mailto:info@hmmc.org).

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