



Maui's Changing Landscape and Ecosystems

Freelance Article by Gemma Hunt

The landscape of Maui is under threat. This is a statement that could easily describe any landscape in the world in the 21st century. Each will have its own particular story, which would describe how it is threatened from a complex mix of problems brought about by natural changes as well as man's exploitation. All we can do is make a commitment to conserve what is good, to repair damaged ecosystems, and to live more in harmony with the land so that it remains productive and healthy. This is the philosophy behind the long range Maui Island Plan, drawn up by the County of Maui Planning Department after five years of consultation with the island's residents. Its aim was to find out what the people needed and wanted, their fears, their dreams and how these could be incorporated into a general policy plan, looking ahead to the year 2030. [1]

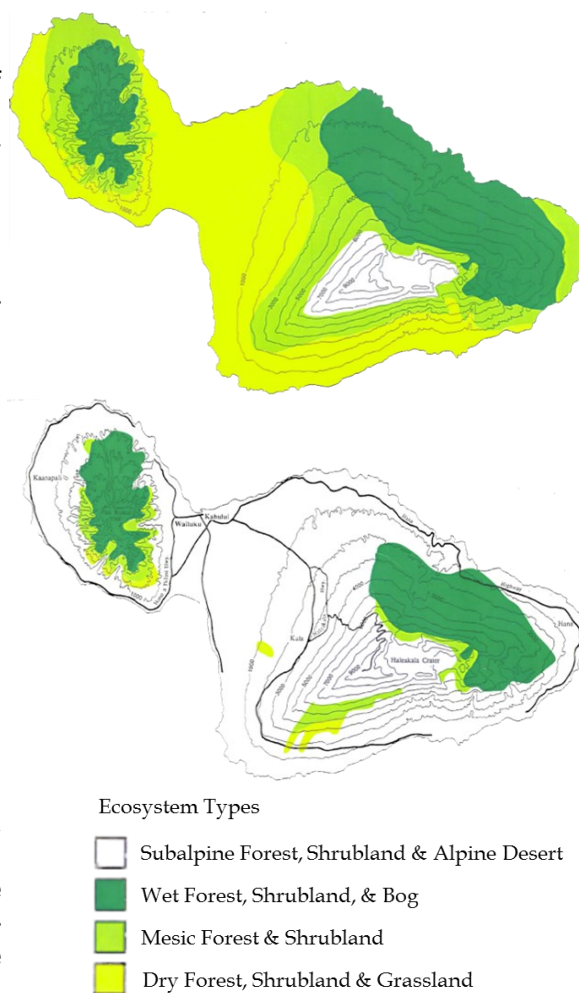
When considering the Maui Island Plan, the main concern of most Maui residents is that the island's characteristic mix of small towns and open countryside is maintained, while also ensuring that quality of life in the larger urban areas does not suffer. These two goals might appear to conflict with one another. However, for example, the town of Kihei has grown rapidly since 2007. To ignore the fact would be unrealistic. Factoring in the needs of urban areas in any environmental policy should enable a proper balance to be achieved, although the fight for recognition of Kihei-Makena's natural gulches and forest areas as "sensitive lands" and protection of the Palaeua and Kamaole dryland forests has shown how valuable areas of natural landscape can be overlooked in any development plan. [2]

Traditional land use

Prior to the first contact between Hawaiians and Europeans, the Hawaiian culture had a distinctive system of land use that did not include private ownership. Land was divided into long sections or ahupua'a, which ran from the sea to the mountains, each division ensuring that no single piece of land was better or worse for cultivation than the next. The size of each ahupua'a varied, with larger

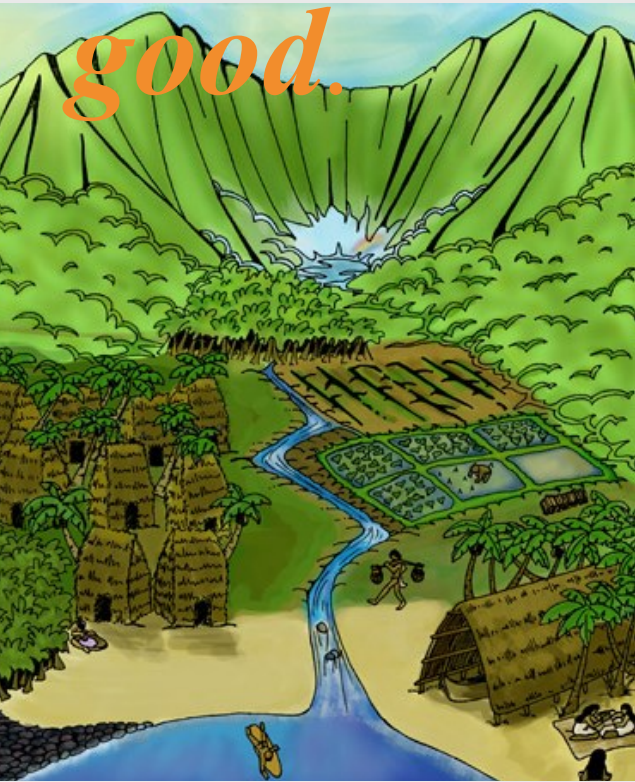
ahupua'a compensating for relative lack of natural resources. These were subdivided for cultivation by individual families, but in harmony with the concept of the self-sustaining parcel of land, which put into practice the native Hawaiians' emphasis on the interrelationship between land, the elements, man, nature and the seasons. [3]

European influence was destructive, bringing infectious diseases that severely depleted the native population, new ideas about land ownership, and increasing demands on the island's resources. In the early 19th century, the sandalwood trade put pressure on the natural forests and diverted many people from food production. This trade ceased when all the sandalwood trees had been cut down. The demand to take on supplies by increasing numbers of ships visiting the islands further depleted native food stocks, which resulted in the famine of 1810. The result of all these pressures was that within fifty years of the first European landing on Hawaii, its culture, population and landscape had been irrevocably damaged. [4]



Hawaii Heritage Program 1991. Ecosystem loss in Hawaii: maps depicting native ecosystems before and after 1500 years of human habitation. Unpublished map series for Hawaii, Maui, Lanai, Molokai, Oahu, and Kauai. The Nature Conservancy of Hawaii, Honolulu.

We can *conserve what is good.*



“Ke Ahupua’a” by Mele McPherson.

Pressures on ecosystems

This process continued with European settlement and the introduction of new crops and livestock that put further pressure on the land and native species. Through necessity, in this small island environment, the native organic agriculture was perfectly suited to the environment, sustainably exploiting a huge variety of plant species for both food and medicine, and adapting methods of cultivation for different habitats, altitude and weather conditions.

In contrast, European and later U.S. influences brought land clearances and cash crop monocultures. This philosophy of exploitation that is insensitive to the natural environment continues today with the unregulated, rapid increase in the use of genetically engineered (GE) crops. [5] All GE plantings are necessarily experimental. They threaten the stability of Maui’s agricultural economy and could irreversibly damage the ecosystem in unpredictable ways. Because they are herbicide-resistant, GE crops promote the indiscriminate use of herbicides, which damage the fertility of the soil, poison wildlife and get into the drinking water. Maui’s groundwater is already significantly contaminated in some areas where conventional pineapple growers have used pesticides indiscriminately, and planting GE crops would only exacerbate the problem. Experimental GE crops have also been used to test whether they can effectively deliver pharmaceuticals through food products. [6] Although

U.S. Food and Drug Administration (FDA) regulations do not permit foods adulterated with potentially harmful pharmaceutical proteins, there is still a

risk of pharmaceutical contamination of the land and water sources in Maui by unregulated commercial agricultural companies using GE crops. [7]

The natural volcanic landscapes of Maui, the beaches, forests and waterfalls, are spectacularly beautiful. Look beyond the tourist views and you’ll find a landscape that is under pressure on all sides, sometimes with subtle effects caused by changes in average rainfall and lowering groundwater that can be seen only after years of observation, or more obviously with the invasion of alien plant and animal species, which can have a devastating effect on native species. [8] Invasive alien species can affect commercial exploitation of natural resources, such as the Maui black coral fishery, which was sustainably exploited up until the mid 1970s, but is now in danger of becoming unsustainable for several reasons: the pressure of over-harvesting, particularly on small colonies of the two black coral species, the growth in popularity of black coral jewelry, and the invasion of the alien *Carijoa rii* overgrowing the black coral’s habitat. [9]

Three quarters of US extinct birds and plants lived on the Hawaiian Islands. The distortion of ecosystems when dominated by alien invaders threatens the habitats of our surviving indigenous species. Vital efforts to halt this process by organizations such as the Miao Forest Bird Recover Project (MFBPR), the Maui Invasive Species Committee (MISC) and the Hawaiian Invasive Species Council (HISC), which provides state government leadership, has ensured that imminent threats can be dealt with quickly, although the challenge remains: new species arrive on the islands almost daily, and the threat to Hawaii’s delicate ecosystems is constant. [10]



Native ohia lehua (*Metrosideros polymorpha*) growing in old lava flow.

Sources

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Gemma Hunt graduated in business and journalism, and worked for a personal finance company for nearly a decade. She then decided to start a family and soon became a mother, which changed her outlook on life.

She now works from home as a freelance writer and covers topics as diverse as her old finance stomping ground, local news, family finances, investment, sustainability and much more

Gemma wrote this article for the Maui Forest Bird Recovery Project. All opinions and facts were researched and written by Gemma Hunt. www.mauiforestbirds.org