

Ranching And Land Management In Hawaii: A Delicate Balance

Hawaii is famous for its sandy beaches lined with coconut trees. But, it's what exists beyond the beach that makes these islands so distinctive.

This is the story of one operation and its effort to find the delicate balance between the environment, economics, culture and political issues of ranching and land management in Hawaii. Each of these issues within itself is a delicate balance and the managing of them all is a complex balancing act. This is the story of how the 23,000-acre Ulupalakua Ranch tries to find this delicate balance. It is about the issues that arise for one agricultural company that manages 5% of the land base on Maui.

The Environment

To begin to understand the complexities of trying to balance a cattle operation in Hawaii with the environment in which it exists, one must understand the evolution of that environment. The Hawaiian island chain is a series of ever changing mountains created by volcanic eruptions that are the result of the movement of the Pacific Plate. The oldest of the islands is 30 million years old, while the youngest is only about 400,000 years old and still growing. While we tend to think of evolution in terms of flora and fauna, these islands are in a constant state of evolutionary process.

While some of the islands in this chain are nothing more than atolls and reefs rising only a few feet above sea level, other islands have mountains rising for more than 13,000 feet above sea level. As these mountains grew out of the sea, a wide array of ecosystems developed. Five distinct ecological zones exist in the Hawaiian Islands, Alpine, Sub alpine, Montane, Lowland, and Coastal. Each of these ecological zones is further defined by rainfall and geology creating extremes that range from alpine deserts to tropical rainforests.

The closest landmass to the Hawaiian island chain is 2,400 miles away – or about the distance from Washington D.C. to San Francisco. Given the vast expanse of ocean that separates the Hawaiian Islands from the rest of the world, relatively few plant and animal species found their way to the islands. The flora and fauna that did find its way to the islands underwent an evolutionary process that began with only a few hundred species and evolved into tens of thousands of endemic species. As flora and fauna adapted, they evolved to fit a variety of ecological systems. A balance that included subterranean insects and plants that could grow on highly acidic lava flows. One of the most unique aspects of this balance is that these ecosystems are not separated by tens of miles, but in many cases, only a measure of feet.

As the flora and fauna evolved, it did so with very little protection against diseases and competition. Thus, the introduction of new species disrupted the delicate balance that existed. This disruption was amplified when Captain James Cook arrived in 1779. The islands that were isolated for so long quickly became a part of the world economy. Sandalwood trees were harvested for export to Asia. Endemic plants were replaced with pineapple and sugarcane plantations. Introduced cattle, sheep and goats were grazed on

endemic plants to supply meat and tallow. Other lands were cleared to make way for conventional urban towns and cities. Ornamental plants and recreational animals were introduced for human gratification. Whaling ships made annual winter visits, unintentionally bringing mosquitoes.

In a matter of decades the balance that had evolved over centuries was lost. Today Hawaii leads the world in known extinctions and endangered species. Over 90% of its dry land forests are gone. Thousands of birds, insects, and plants will never be seen again. Many species survive today with only a handful of living representatives.

It is in this unbalanced world that Ulupalakua Ranch exists today. There are nine currently listed endangered species on the Ranch and dozens of more that could qualify for listing. A prime example of this is the a'e plant ([Zanthoxylum hawaiiense Hillebr](#)), which is endemic to the islands of Molokai, Lanai, Maui and the Big Island of Hawaii. There are only 7 trees in the wild and 4 of them live on Ulupalakua Ranch.

Ulupalakua Ranch has spent the past forty years working on reforestation of native plants. Over the years the Ranch has worked in cooperation with the Native Hawaiian Plant Society, The Nature Conservancy, the U.S. Fish and Wildlife Service, the U.S. Geological Service, Biological Division, Ducks Unlimited, and the U.S. Department of Agriculture. The Ranch has put hundreds of acres into enclosures for the purposes of native habitat restoration. This has not been done because it is a feel good measure, but because it is economically important to bring back some sense of balance with the mineral and water cycles that are so important to agricultural operations and society in general.

The native ecosystems evolved in balance with the mineral and water cycles of Hawaii. For Ulupalakua this is very evident in the water cycle. Over the past half century, spring and seep flows on the ranch have declined. The primary cause of this decline is the decline of native habitat that evolved to recover this water for the ecosystem and the introduction of alien plants. The two best examples of this are the eucalyptus from Australia and the endemic koa tree. The eucalyptus tree uses large amounts of water and does its best to keep any competition for that water from growing beneath it. The koa tree on the other hand has evolved to develop phyllodes on the ends of its branches that are perpendicular to the ground in order to capture fog drip from the clouds and distribute this moisture to a large array of under story plants that aid in the protection against erosion and the recovery of mineral and water cycles.

The important role that the environment plays in Ulupalakua Ranch's future is the reason that it is actively trying to find a balance between its operations and the environment in which it operates. The Ranch has a goal to plant 1,000 native plants per year, in an effort to help rebalance the mineral and water cycles that are so important the future of the Ranch and Maui in general. However, Ulupalakua Ranch realizes that this is not a task that it can accomplish alone. The Ranch needs financial and resource cooperation from a wide variety of private and government organizations. Ulupalakua Ranch also understands that revitalizing the water shed on its lands alone will not achieve the results

it desires. Thus, the Ranch has entered into a watershed partnership agreement (the Leeward Haleakala Watershed Restoration Partnership) with other private and public landowners in an attempt to restore the balance of the water cycle to the Southwestern slopes of Maui.

Economics

The economic balance of Ulupalakua Ranch is similar to other ranches across the United States. Like other ranches, the ranches in Hawaii have seen the costs of doing business rise disproportionately to the increase in the price for their product. Workman's Compensation is a great example of this; it has risen from \$12.50 per \$100 to \$21.8 per \$100 in the past three years. Hawaiian cattle ranchers also suffer the same economic costs that come from invasive alien species. The benevolent environment in Hawaii allows species from a wide range of places and ecosystems to thrive and run rampant when introduced. Ulupalakua Ranch has been forced to find a balance in order to survive with such alien species as pamakani, guava, wattle, grass web-worm, yellow sugar cane aphid and senecio. While these plants wreck incredible havoc with native habitats (as miconia has with the rainforest), a balance is usually found on pasture lands.

Another economic factor is Hawaii's isolation. The isolation that was so critical to the evolution of the flora and fauna in Hawaii is detrimental to the business economics in Hawaii. With no raw materials to speak of, Hawaii must absorb the cost of transportation for its goods. Conversely, locally produced products must absorb the cost of transportation to reach its market. This factor is most evident in the cattle industry during drought years. With the transportation cost factor added, low quality hay can cost more than \$200/ton. This is further impacted by the fact that transportation costs are prohibitive when depleting cattle herds and then building them back up after the drought.

The environment also complicates the economic balance of operations in Hawaii due to its topography and geography. Ulupalakua Ranch operates from sea level to 6,000 feet encompassing four of the five ecological zones that exist in Hawaii. The rainfall zones on the Ranch range from 50 inches to less than 10 inches in average annual rainfall. Some of the lands on the Ranch are hundreds of thousands of years old while others are only hundreds of years old. In some areas it is economically feasible to install electric fences, while in others it is unfeasible to install any fences. Due to this wide range of conditions and management styles the ranch utilizes ATV's, horses, helicopters and water traps to manage its livestock operations.

With these difficulties in mind, one might ask why the Ranch doesn't look towards diversifying its operations. The answer to that question is that it has, and it continues to do so today. In fact, over the past 150 years the property has attempted to raise corn, potatoes, pineapples and sugar cane, all of which succumbed to the droughts that frequent the southwestern slopes of the Hawaiian Islands. Ulupalakua Ranch currently runs 2,300 brood cows, an elk herd and a ranch store and deli. The Ranch also leases acreage to a vineyard a, strawberry farmer, and dabbles in tourist ventures.

Ulupalakua Ranch has in the past and continues today, to look for other viable ventures, such as forestry. However, while many trees have been introduced to the islands for the lumber industry, they are not adapted to the conditions in Hawaii. They either grow too slowly in the mineral poor soils to be of any economic value, or too quickly in the loose soils without establishing a solid root base. These trees without a solid root base are subject to blow downs during tropical storms. Not only are these blow downs economically disastrous they lead to a barren landscape that is prone to erosion in the next storm. If forestry is to be a part of Ulupalakua's future its best chance for success is to probably look for the trees that evolved within the environment.

Culture

Being economically sustainable is important because it allows Ulupalakua Ranch to continue its role in the delicate cultural balance that is so distinctive in Hawaii. About 2,000 years ago the Polynesians arrived on the islands. Over thousands of years the peoples, known today as Hawaiians, developed a complex agricultural system that also incorporated a complex hunting and gathering system. They also developed a social culture that is distinctively Hawaiian.

Over time more peoples, from a variety of ethnic backgrounds arrived in Hawaii, creating a 'melting pot' of cultures and mannerisms. Time also allowed for the development of new industries and the towns and communities that came with them. These industries and communities developed into cultures themselves. Today, Ulupalakua Ranch plays a major role in the cultural fabric of Maui. It continues to protect the archeological sites and other aspects of Hawaiian culture that exist within it, It continues to preserve the values and activities of the Paniolo (Hawaiian cowboy) culture, and is one of the few remaining rural agricultural communities left on Maui.

The Ranch has a deep appreciation of how these factors are an important part of Hawaii today. The Hawaiian culture has always been a major part of the ranches past – even as it disappeared from other parts of the greater Hawaiian community. The resurgence, over the past two decades, of this culture owes a lot to the small communities like Ulupalakua that helped to preserve much of the archeology, the language and culture in their every day lives. As rural economics get tougher, urban sprawl begins to encroach on agricultural lands and swallow up agricultural communities and the culture (like the Paniolo) that goes with them. Ulupalakua Ranch is committed to trying to help preserve this part of Maui's identity and heritage.

The commitment of the Ranch to the preservation of these communities and cultures is exemplified in its promotion with the Maui Agricultural Committee of the Ulupalakua Thing for the past thirteen years. This one day agricultural trade show draws 7,000 to 8,000 people to the ranch every year in an effort to support and preserve agriculture on Maui. The trade show is exclusively intended for agricultural vendors – or those using locally produced agricultural products. The arts and crafts that you see at so many of trade shows today are simply not allowed. Furthermore, the proceeds of this not for profit event are donated to the Maui Community College's agricultural and culinary arts departments and to the local 4-H groups. It is the desire of the Ranch to help the

community keep the value of agriculture in the minds eye and to help young people understand that agriculture is important to their future.

Politics

As with the Ulupalakua Thing, Ulupalakua Ranch lives in a world in which it must interface with the general public and the political issues that go with them. To understand this delicate balance, it is important to look at the land ownership of the Hawaiian Islands, and how they shape political issues. As the ranches and plantations of Hawaii began to grow in the 1800's they began to purchase more land from the Kingdom of Hawaii (which owned the vast majority of the land) and private individuals. The ramifications of this are evident today.

Today, private lands make up 58% of the landownership in Hawaii, with the State owning 39%, Hawaiian Homes (a State Agency) owning 5% and the Federal Government owning 20%. However, the most distinctive part of landownership in Hawaii is that the top 25 landowners own 35% of the land and 61% of all the private lands. This situation creates a very interesting situation for those landowners. It is no coincidence that there is a disproportionate number of rare endemic species remaining on large private ranches compared to urban and publicly accessible lands. These ranches have helped to insulate some of the native flora and fauna from public pressures. The ranches have also protected vast areas of open space that the general public wants to enjoy and that many species need for their survival. Yet, there is considerable public distrust of the ranches for the situation. This distrust occasionally leads to some very interesting political situations.

The protection of private property rights and the duty of protecting and preserving the open space is a delicate balance that Ulupalakua Ranch faces every day. As the urban sprawl (that exists all across the United States) advances the pressures of this balance become even greater. The humans that come with that urban sprawl want their own personal elbow room. They want space to hike, ride and hunt – and they want to do it on Ulupalakua Ranch. The political consequences of the percentage of land ownership have led to a belief that the public has the right to enter these private lands. There is a new attitude of 'I am not doing anything wrong – so why are you bothering me.' The issue of population growth and recreational space is further complicated by the liability issues that landowners face today.

In an effort to try and find this balance the Ranch has had a long history of its willingness to allow for organized tours and events on its property. The Ranch believes that it is not only important to balance its environment, its economics, and its cultures – but, to also share this balance with the public. While the Ulupalakua Thing accomplishes some of this, the ranch also actively welcomes groups that wish to visit its native restoration projects – especially school children whom will be responsible for the continuation of maintaining the balance in years to come.

The political issues that the ranch faces were exemplified in a lawsuit brought by the Earth Legal Justice Foundation against the U.S. Fish and Wildlife Service in Hawaii. As

a result of this lawsuit the USF&WS was required to develop a critical habitat designation plan for the State of Hawaii. This issue caused the proposal of placing more than 50% of the lands owned by Ulupalakua Ranch under critical habitat designation. Obviously this was not an acceptable balance for the Ranch. The Ranch was forced to react by pointing out that if the designation went through it would be forced to react by discontinuing its efforts to find the balance between economics, culture, the environment and politics – because this political issue would in one action cause that balance to be completely upset.

The ranch pointed out that not only did it have a long history of proactively working to protect the native flora and fauna that existed on its property, but that its cattle operations had several beneficial affects in protecting the plants. First and foremost – it was willing to spend economic resources for the purposes of protecting and reinvigorating native habitats. With all of the environmental needs in the Hawaii, it is the sharing of the economical and resource burdens that will allow us to restore some balance – partnerships are critical. Secondly, the vast majority of the land on which Ulupalakua Ranch operates has no known native plants left – let alone endangered ones. There was no rational in the full scope of the lands proposed for critical habitat designation. Thirdly, by publicly designating these lands it becomes public knowledge and the potential ramifications of unauthorized public access to these highly sensitive endangered species would devastating. Finally, it was pointed out that cattle ranching was an important deterrent to wildfires that could destroy what was left of millions of years of evolution in a matter of minutes. One particular study Murray Blackmore and Peter Vitousek {*Cattle Grazing, Forest Loss, and Fuel Loading in a Dry Forest Ecosystem at Pu'u Wa'aWa'a Ranch, Hawai'i*: *Biotropica* 32(4a): 625-632, 2000}, pointed that ungrazed kikuyu grass burns at a rate more than 50 times faster than grazed kikuyu grass. Being that the predominant grass on Ulupalakua Ranch lands is the introduced African kikuyu grass, the grazing of livestock on these lands is actually helping to find the balance in modern Hawaii.

Equilibrium between the environment, economics, culture and politics in Hawaii can't be found by merely looking at our current situation. Today, the here and now is only a flashpoint between our past and our future. Just like the ever-evolving volcanic islands that we live on, change is the only constant variable that these principles share. If we are to find a point of balance, space must be allowed for new species, economic change, new cultures and new political thinking. We can't go back in time, but we can hold true to those values and lessons learned from our past. What has been done can't be undone, but that does not mean that we are chained to the outcome either. Ulupalakua Ranch is just one operation trying to find that delicate balance that benefits from the past, lives today and allows for that sustainability in the future.