

## On a Desert Hawaiian Paradise

By Marianne Scott

*Editor's note: Although the arid southwest is not a tropical island, the principles that Marianne Scott used in designing her permaculture system apply equally well here. We will be using different species to accommodate our different climate conditions, and, not having a water lens eight feet underground, we will need to create the underground water stores that we presently lack by directing all rainwater to infiltration sites through swaling and other water harvesting techniques.*

Kihei is the fastest growing suburb in Hawaii, a strip of golden beach on the dry side of the Island of Maui. Ten years ago it was all kiawe trees and mango orchards. My site, almost a quarter acre, had some kiawe which fortunately added some humus to the sand. The rainfall here is between 5 to 10 inches a year, usually delivered in a two-day storm which floods out the main road. But this is Maui and the second wettest place on earth is a few miles away, so county water is available, though expensive.

The permaculture design I developed aimed to conserve water while creating a cool shady oasis that produces a variety of foods. The water lens is 8 feet below the ground here, readily accessible by roots as the trees planted on the perimeter of the property mature. Mango, coconut, breadfruit, lychee, avocado, citrus, pomegranate, and Malabou chestnut do well in the dry desert air and pump up the cooling moisture from below. The young trees get a slow daily drip from irrigation pipes that run under the mulch. Sweet potatoes take root in the moist areas and cover the dry earth with green leaves. Snails love this corner and I've recently added a pair of ducks to work on the perimeter while I cultivate vegetables in peace. Their pond is a part of the water strategy; they add considerable enrichment and the water gravity-flows to most of the fruit trees. The pond can be filled from the rainwater catchment system but this is a recent technical advance and not one drop has fallen since the last piece went into the system. Testing is expected within the next year or two.

The greywater from the house supports a hundred feet of bananas that run between the house and the fire sector. The bananas also catch a lot of the dust that blows in with the trade winds.

The beach is two blocks away and an outdoor shower is a necessity of life. Ours supports a thick circle of bananas and Ahuapi shampoo ginger--lush, tropical foliage in return for the shower you were going to take anyway.

Hedges of Surinam Cherry and sugar cane interweave the fence around the boundary to keep out dogs. At the entrance, the gate is shaded by a grapevine on a pergola and the path leads past a first small pond which is home to frogs on pest patrol. The second pond is surrounded by a lush patch of watercress which dangles



its roots over one side of the pond. Water hyacinth keeps the water clean and is the ducks' favorite food. Tilapia eat the mosquito larvae and mint spreads out across the path releasing its smell to every visitor's footstep.

Vegetables are a challenge here. The tasty western ones we like don't like Hawaii's short daylight hours. They don't like the year-round warmth either, but the bugs do and show up in great numbers at the only garden in town. Chinese and Philipino varieties of vegetables do well but only the ducks like them. What does work are circles of beans and corn around the mulched pit of kitchen compost. One central sprinkler waters them all and replenishes the ponds. The birds love it and turn out at sprinkler time.

This landscape is 4 years old and implemented on a shoe-string budget. Every year the water bill goes down as another tree reaches the water lens and every year produces more food.

Our visitors are probably the main reason for practising permaculture in the suburban desert. People are amazed that I grow 14 fruit and nut trees, edible ground covers, shrubs, vines, hedges and vegetables in the space they use for lawn. I always have an excess of papayas, sweet potatoes, bananas and wing beans to give away and this too sets people to thinking. Our island is 2,500 miles from the closest mainland. The news that Hawaii imports 86% of its fresh food and is dependent on oil from elsewhere is beginning to sink in.