A Pelekane Bay kind of day | Hawaii247.org | Hawaii 24/7



The view down toward Pelekane Bay and Kawaihae Harbor.

Story and photographs by Karin Stanton | Hawaii 24/7 Contributing Editor

The only ones not happy with the progress of the Pelekane Bay Watershed Restoration Project are the feral goats.

Project coordinator Melora Purell and outreach coordinator Barrie Moss are thrilled. The crews are spending their days building fences and sediment dams, and beginning to see the results. The cows don't seem to mind the interlopers on the pasture land.

But the goats are a little irked at being fenced out of thousands of scrubby acres of Kohala land. What they probably don't know is they were part of the problem, along with non-native plants, wildfires and development on the slopes of the 5,280-foot Kohala Mountain.



A cow ignores a handful of feral goats within the Pelekane Bay Watershed Restoration Project area. (Yes, there are goats in there; they are just the same color as the rocks,)

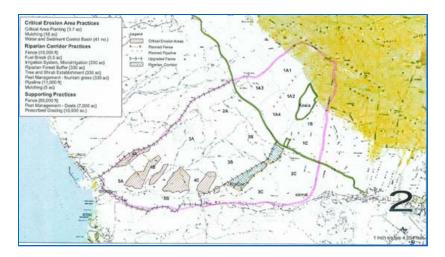
Pelekane Bay – traditionally a sheltered place for young fish to grow and mature – was fed by streams that stretched from the summit of Kohala Mountain down to Spencer's Beach Park and Kawaihae Harbor.

However, the mauka watershed over time has become so badly deteriorated and eroded that tons of sediment is swept into the bay every time there is a storm. Stripped of its native vegetation and forests, the land now looks more like an African plain than a slice of Hawaii paradise.

This led The Kohala Center to spearhead the Kohala Watershed Partnership, which adopted a restoration plan in 2005. Earlier this year, the plan was awarded \$2.69 million in federal funds through a National Oceanic and Atmospheric Administration coastal restoration grant, which in turn is funded through the American Recovery and Reinvestment Act.

Purell, along with a team of 15 field workers, field technicians and consultants, is working to improve the condition of the watershed, which will help restore the coral reef habitat. By taking care of the land from the summit to the shoreline, the bay and the nearshore marine habitat will reap the benefits.

"We're on or ahead of schedule on everything," Purell said, to be complete by December 2010.



Kawaihae Harbor is to the lower left; Waimea town to the lower right; the yellow area is wet forest. The green hash marks outline the restoration area already fenced in.

The goals and the progress

* Goal: Restoration of 400 acres of native vegetation along 6 miles of stream corridors.

Progress: The 400-acre corridor is completely protected by a goat-proof fence and 1,000 plants have been planted across about 7 acres. Goats that remain inside the fence are destined for termination.

* Goal: Restoration of 100 critically-eroding sites (13 acres of erosion control fabric and grass plantings, 1,450 acres of watershed impacted) with at least 50 sediment check dams protecting four miles downstream of check dams.

Progress: At least 30 dams have been constructed. The idea is that water still will flow through the gulches and ravines toward the ocean, but all the soil and debris will be caught at the dams.

On average, each dam is 3 feet deep by 20 feet across and filled with 45 tons of rocks. The field crews push, roll, carry, kick and muscle each of the rocks into place. On a good day, the crews can complete two dams.

The largest dam so far needed 125 tons of rocks.

* Goal: Installation of 100,000 native plants.

Progress: In December, 1,955 plants representing 19 species were transplanted. In four months, more than 19,000 trees, shrubs and groundcovers have been transplanted.

* Goal: Construction of 20 miles of goat-proof fencing to create 11,750 acres free of goats.

Progress: The five-man fence crew has completely enclosed the corridor along the Luahine and Waiakamali streams, totaling almost 4 miles of fence.

A Pelekane kind of day: The nursery



By the time the 18-month project is complete, more than 100,000 native plants will be transplanted from the Waimea nursery.

Last week, Purell and Moss pointed out the highlights and achievements so far.

At the state Division of Forestry and Wildlife tree nursery in Waimea, flats of tiny green sprigs and tall wispy saplings are growing stronger and sturdier. A walk-in freezer houses bags of seeds gathered from across Kohala.

Moss said they have identified about 23 species of native plants, including a half dozen trees, that are viable and appropriate for the watershed.

While other restoration projects may focus on one particular species and end up with a nice well-stocked plantation, this project is designed to restore an entire eco-system.

The corridor is one-half mile wide and weaves five miles down the mountain slope from wet forest to near desert-like conditions. The hope is that the newly restored native habitat will spread to reclaim much of the southwest portion of Kohala mountain and once again be home to native birds and insects.

"The world is starting to realize that the way to survive climate change is to protect native eco-systems," Purell said. "We're demonstrating that vast native eco-systems can survive climate change. We have to figure out how to help them survive, especially the native species."



John Baker lugs another rock to the dam site.

A Pelekane kind of day: The barren lands

All these trees and shrubs hopefully one day will make the trek from the safety of the nursery to the windy slopes above Pelekane Bay. Today the wedge of dry land between Kawaihae Road and Kohala Mountain Road is dotted only with boulders, cows, a sprinkling of hardy trees and, of course, a few stray feral goats.

Restoration crew member John Baker advises everyone in the pickup truck to roll up the windows. There's a dead cow near the rutted track that passes for a roadway through the red, dusty pasture fields.

Baker's window won't wind up. "No problem. I'll just drive fast," he said. It didn't help much. Dead cows smell really bad and the stench stays in your nostrils for quite some time.

Once the watershed is restored, the cattle will have free reign over much of the pasture land, which is largely owned by Queen Emma Land Company (6,600 acres) and state Department of Land and Natural Resources (390 acres), all leased to Parker Ranch. Other landowners within the watershed include Ponoholo Ranch, Kohala Preserve Conservation Trust, state Department of Hawaiian Home Lands, Laupahoehoe Nui LLC, Kahua Ranch and Kamehemeha Schools.

"The livestock management is very, very important. We really need that partnership and cooperation with the cattle owners," Purell said. "It's really well-managed pasture land."

It may be awesome for cows, but it's not so good for passengers in pickup trucks, even with Baker's expert driving. Another 20 minutes of wicked bouncing around and one quick cell phone call to get directions – "do a U-turn at the cows under the tree and go left at the fork – and Baker pulls up behind one of the other work trucks in the middle of the moonscape.



John Pipan explains how the dams will catch sediment before it reaches the bay.

A handful of crew members are dumping rocks and boulders into a gulch. Purell jumps in to lend a hand, while conservation planner John Pipan explains the action.

Crews begin by picking a good spot in the gulch – well defined walls, deep enough, a supply of nearby rocks for raw material, perhaps even a conveniently situated boulder to act as an anchor.

Pipan said crews will be back after the first rainfall to see what the dams catch, how much they catch and whether they are holding up.

It's tough, hot work. And there is always the chance an errant rock will do some damage to fingers or toes. Still, after 30 dams, the crew has the hang of it. Guys at the bottom shoving the base rocks into place; girls gathering smaller chunks to fill in the gaps.

One crew member, the daughter of a doctor, said she sees the gulches and ravines as flesh wounds and the dams are the sutures that will speed recovery of the land.



The field crew works on a dam within the watershed.

A Pelekane kind of day: The upper slopes

The final stop of the day's tour is at the cusp of the wet forest, more than 4,000 feet above Pelekane Bay and straight up another track that cannot be described as a road.

Here Purell points out an undisturbed gulch, carved and fed by a stream from the summit. So deep the treetops are at eye-level, it's filled with healthy native greenery. No human help needed.

Purell pulls over to check on some of the first plantings. It's hard to distinguish the little saplings from the rest of the grass, but Purell is excited to see they are doing well and holding their own.

Meanwhile, the truck over heats. Steam pours out of the engine, adding to the misty rain that scuds across the sky below. Waimea town is wiped from view.

It's quiet, cold, wet, green and exactly how it should be.

— Find out more:
www.kohalacenter.org/kwppelekane/vision
hawp.org/kohala.asp
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Project coordinator Melora Purell shows how much the saplings have grown on the upper slopes of Kohala.



Somewhere down this 'road' is Waimea and Pelekane Bay.