

# EAST MAUI Watershed Partnership



Photo courtesy of The Nature Conservancy

The PowerPoint demonstration, which she shows first, is packed with pictures and sounds of our native forest. Since the East Maui Watershed Partnership routinely works in a pristine native forest, the pictures are amazing and Kat tells the complete story of how our watershed and native forest formed. Asking the students about the pictures and having them listen to the sounds of the forest makes the presentation engrossing.

"What bird do you think this is," she asks the class as they listen to the call from a native honey creeper.

"A Mynah bird", answers one student.

"No, the Mynah isn't native. This is the 'Apapane," says Kat, flashing a picture of the bird on the screen. "If you hear this call, you know there's an 'Apapane close by."

There are sounds of pigs, bird songs, and even helicopters that give the presentation a movie like quality to it which Kat can stop and start at will to ask the students questions and then show them the answers. She directs them into thinking about how the watershed works with its native forest and the negative impact of introduced animals and invasive plants.

## STUDENTS LEARN ABOUT MAUI'S FORESTS

"Oooh this is fun and yucky!" comments one 5th grade student from Carden Academy as he slops his hands in a bin of what looks like white mud. Heaping the white Diatomaceous Earth towards one side of the container to form a slope, the boy smiles, content with the mess he's creating.

This scene may not evoke the image of higher learning we've grown accustomed to, but according to Kat Lui of the East Maui Watershed Partnership its the best kind of learning imaginable.

"I try to make my presentations interactive because I'm all about kids learning through action as opposed to just sitting there and listening to me. I encourage them to feel and touch," she explains.

Teaching students about the importance of our native forests and the human and animal impact upon it, Kat, the educational representative for the East Maui Watershed Partnership, has developed a presentation and an educational program that's scientific, relates directly to Maui, and most importantly, is fun. And she is urging schools and teachers across the island to bring her into the classroom to give students a better idea of how our island works.

"The watershed is important to us because it gives us water. I show how the native forest functions in it. Because it is multi-layered with an upper canopy, sub-canopy, and understory, the native forest is very good at capturing that water. It's like a giant sponge," she says.

Using a PowerPoint demonstration and numerous watershed models that are controlled by student groups, Kat creates the interactive world of our watershed.

After the PowerPoint demonstration of Maui's own watershed, Kat starts the students on a project to create their own. Bins with wet Diatomaceous Earth are given to the groups and the students begin to create a slope which represents the side of a mountain. A bottle of water with a gated spout is placed above the slope and students allow a trickle of water to slowly drip from the spout. As the water collects and makes its way down the slope, an array of erosional features begin to appear.

Depending on how the slope is created by the students, the water may rush straight down forming a deeply cut gorge, stay stationary at the top to form a bog before heading down slope, or move downward into a number of streams. Every model turns out differently and the students roam about the room to observe how each watershed is forming.

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After the erosional features are developed Kat hands out a container of cards, blocks, rocks, wire mesh and food coloring. These simple props turn a fun experiment of water erosion into an intriguing study of the past and present impacts humans have had on Maui's watersheds.

First, the laminated cards with pictures of different elements of the native rainforest are placed upon the eroded slope. The pictures of 'Ohia, 'Akala, Sandalwood, honeycreepers like the Maui 'Akepa, Happy Faced Spiders and the carnivorous caterpillar are placed randomly by the students on their model slope from summit to ocean.

"This is the island after thousands of years of isolation," says Kat.

"After the polynesians arrive things begin to change, now take your green scouring pads which are the lo'i of Taro and put them down. Now use the rocks to make fish ponds in the ocean."

The mountain slope begins to change as humans use their ingenuity to manipulate their environment and use the natural resources to make life easier.

Next, with the arrival of Europeans, new animals are introduced such as pigs, deer, cattle, mosquitoes and plants like Kahili ginger and Miconia. Naturally the students mingle these cards with the cards showing elements of the native forest. Each group is supplied with different cards, so are confronted with different threats to their native forest.

Finally, development is thrown into the mix as students use the building blocks as houses and hotels and the plastic squares for parking lots. Houses are placed everywhere and hotels are located near the ocean. Still, the native forest lies everywhere. This won't last long in the real world and doesn't in their study.

"What do you think will happen to the native forest when these animals and plants are introduced?," asked Kat. "Our native plants will be forced to move uphill, away from development and invasive species".

The students begin to move their cards towards the top of their slopes, transforming their models into the world we live today.

"It's really getting crowded up here," says one girl.

"Some of you have the card with the Maui Akepa on it. You need to take that card out because that bird is now extinct," says Kat.

A small groan comes from a couple of groups as they remove the bright orange honeycreeper from their model.

Now the students realize the destruction development can have on their study. And Kat asks the students to use their wire mesh as a fence to contain certain aspects of their watershed.

Some students use the "fence" to keep deer, pigs, and hikers out of their native rainforest, but some of the models have rats and mosquitoes to deal with. A fence won't help against those intruders.

"Maybe we can use a big plane and spray poison over the area where the mosquitoes are," says one student.

"Or get a big tent and tent the island," laughs another.

"What do think might happen to the animal and plants that we want to keep if we poison the whole area?" asks Kat.

"Hurt them!" many students shout.


Kat instructs the students to put drops of food coloring on different places of their watershed and create a rainstorm using a spray bottle. The food coloring, representing poison and pollution, quickly spreads on the slope and runs easily off the plastic parking lots and down the streams. Pretty soon the fishponds are colored as the water collects in them and the beaches where the hotels are located have colored water standing in front of them.

As a last example of human error, Kat grabs a model where the hotels are placed close to the ocean and simulates the destructive force of a tidal wave as she shakes the model back and forth vigorously. The hotel blocks fall into the ocean.

"Cool!", yells the group of boys as the rest of the class begin to merrily create tidal waves in their own models.

The only challenge now is cleaning up the fun.

***The East Maui Watershed Partnership is the managing entity that coordinates a coalition of large land owners in the preservation of the native forest. To have Kat Lui come to your classroom or lead an excursion into the rainforest call the East Maui Watershed Partnership at 573-6999.***




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