

# Science after an island apocalypse

*Eruption could reveal clues to origin of island life*

**Madeline McCurry-Schmidt, UC Davis California Aggie, 8-30-10**

It started with a daring escape.

Kasatochi, a small island in Alaska's Aleutian island chain, was a wildlife refuge for sea lions, seals and seabirds. Emerald-green land surrounded a crater that held a strikingly blue lake.

In August of 2008, Kasatochi was also home to two biologists from the U.S. Fish and Wildlife Service. The biologists studied the nesting habits of seabirds on the island. But that summer, as they tromped around the island, they felt the ground shake.

"We were uncertain as to where the seismic activity was coming from," said Christopher Waythomas, acting scientist in charge of the Alaska Volcano Observatory. "Kasatochi is one of those volcanoes that we haven't paid a lot of attention."

Seismic readings from instruments positioned on nearby islands helped the scientists narrow the activity down to Kasatochi. On the night of Aug. 6, 2008, Waythomas' team sent the word.

"The Alaska Volcano Observatory told the refuge 'you've got get those people off the island immediately,'" said Tony DeGange, project manager for the U.S. Geological Survey.

There was a hitch. A nearby Coast Guard helicopter - the closest chance for rescue - was down for repairs. Eventually, a local fishing boat volunteered to pick them up. They left the island on the afternoon of Aug. 7.

Thirty minutes later, the volcano erupted. Hot ash, tens of meters deep, fell on the island. Everything died.

The ash plume reached 40,000 feet into the sky, and the sulfur dioxide cloud released in the explosion was big enough to circle the globe twice. Airline pilots reported the smell of sulfur in airplane cabins.

"We'd never really dealt with something like this before," Waythomas said.

Two summers later, Kasatochi is making news as life hesitantly returns. Derek Sikes, an entomologist from the University of Alaska, Fairbanks, has visited the island multiple times to study the arthropod life after the eruption. After the first summer, he found a centipede, a spider, several beetles and some ticks. The majority of the survivors were found on a cliff system that hadn't been hit directly by ash.

This summer, new species arrived. Sikes found a new spider and a colony of arthropods called springtails.

"There were some coming in on driftwood," Sikes said. "That's a good sign."

Plants also appeared after the explosion. Rye grass is spreading in areas where the ash has eroded away.

"Despite the apparent catastrophic eruption, some organisms were able to survive," DeGange said.

Sikes explained that new organisms get to the island through three different methods: wind, water and animal hosts. This is the same slow process that turned the volcanic Hawaiian Islands into a diverse ecosystem.

The chance to watch species re-populate the island is a new opportunity for many biologists. As biodiversity grows on Kasatochi, biologists will get to watch the process that Charles Darwin proposed. When Darwin studied finches on the Galapagos Islands, he wondered how they got there. Why they were similar, but not identical, to finches on the mainland. He believed the birds migrated to the islands and survived through evolution - they weren't just placed there by God.

Darwin saw the Galapagos and worked backwards to figure out the origin of those species. With Kasatochi, biologists today get to see island colonization in action. They're seeing the "before" while Darwin saw the "after."

"It's fascinating having seen the loss and the gain, the fledgling ecosystem assembling itself," Sikes said.