

# Hawaii's beaches are shrinking

*Scientists say the trend will accelerate with global warming*

**Audrey McAvoy, Associated Press, 11-14-09**

KAILUA, HAWAII — Jenn Boneza remembers when the white sandy beach near the boat ramp in her hometown was wide enough for people to build sand castles.

"It really used to be a beautiful beach," said the 35-year-old mother of two. "And now when you look at it, it's gone."

What's happening to portions of the beach in Kailua — a sunny coastal suburb of Honolulu where President Barack Obama spent his last two family vacations in the islands — is being repeated around the Hawaiian Islands.

Geologists say more than 70 percent of Kauai's beaches are eroding while Oahu has lost a quarter of its sandy shoreline. They warn the problem is only likely to get significantly worse in coming decades as global warming causes sea levels to rise more rapidly.

"It will probably have occurred to a scale that we will have only been able to save a few places and maintain beaches, and the rest are kind of a write-off," said Dolan Eversole, a coastal geologist with the University of Hawaii's Sea Grant program.

The loss of so many beaches is an alarming prospect for Hawaii on many levels. Many tourists come to Hawaii precisely because they want to lounge on and walk along its soft sandy shoreline. These visitors spend some \$11.4 billion each year, making tourism the state's largest employer.

Disappearing sands would also wreak havoc on the environment as many animals and plants would lose important habitats. The Hawaiian monk seal, an endangered species, gives birth and nurses pups on beaches. The green sea turtle, a threatened species, lays eggs in the sand.

Chip Fletcher, a University of Hawaii geology professor, says scientists in Hawaii haven't yet observed an accelerated rate of sea level rise due to global warming.

Instead, the erosion the islands are experiencing now is caused by several factors including a steady historical climb in sea levels that likely dates back to the 19th century.

Other causes include storms and human actions like the construction of seawalls, jetties, and the dredging of stream mouths. Each of these human actions disrupts the natural flow of sand.

But a more rapid rise in sea levels, caused by global warming, is expected to contribute to erosion in Hawaii within decades. In 100 years, sea levels are likely to be at least 1 meter, or 3.3 feet, higher than they are now, pushing the ocean inland along coastal areas.

Fletcher says between 60 to 80 percent of the nation's shoreline is chronically eroding. But the problem is felt particularly acutely in Hawaii because the economy and lifestyle are so dependent on healthy beaches.

The state is doing everything it can to keep the sand in Waikiki, for example, joining with hotels in the state's tourist hub on a plan to spend between \$2 million and \$3 million pumping in sand from offshore.

Sam Lemmo, administrator of the state's Office of Conservation and Coastal Lands, says the state would need a variety of adaptation strategies for different beaches.

It would likely have to abandon hope for beaches in posh Lanikai and suburban Ewa Beach on Oahu because they're already lined with seawalls and are badly eroded.

The same probably goes for shoreline next to highways or other critical public infrastructure, where seawalls already exist or may have to be built.

Seawalls protect individual properties from encroaching waters but they exacerbate erosion nearby by preventing waves from reaching the sand needed to replenish the beach.

For undeveloped shoreline, the state wants to make sure these areas stay pristine. This happened recently when a Florida-based developer announced plans to build luxury homes on sand dunes in Kahuku on Oahu's North Shore.

"We just kind of went nuts, pulled out all the guns on that one, basically got them to back off," Lemmo said. "We're working pretty hard to keep any new development away from these areas."

The University of Hawaii's Sea Grant program is working with a consultant to develop a beach management plan for Kailua that would address how to deal with a 1 meter rise in sea level. The state hopes this will be the first of many site-specific management plans for Hawaii's beaches.

A "triage," strategy could be applied to Kailua, which is lined by multimillion-dollar homes but doesn't have seawalls.

Fletcher proposes identifying areas where a land conservation fund would buy five or six adjoining properties. The state would tear down buildings on these plots and allow the beach to shift inland.

He said when erosion hits more sections of Kailua beach, there's going to be a clamor to put up seawalls.

"That will be a very important moment," Fletcher said. "If we allow the first home to put up a seawall, then we're probably dooming the entire beach over the course of a couple of decades . . .

Ultimately the beach will disappear. Or we could have an alternative to that, to identify now some portions of Kailua shoreline where we want the beach to live."