

THE GARDEN ISLAND

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Building in flood-prone areas risky *Scientists say preparation for sea level rise a*

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A manmade canal connected to the Hanalei River is seen in this undated photo. Dredging and developing in natural flood plains can lead to potential flooding conditions, scientists say. Terry Lilley/Save Our Seas

necessity

By Coco Zickos - The Garden Island

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HANALEI — Hanalei residents might have needed a kayak to get to and from their front doors earlier this week as high surf pounded the North Shore.

Despite the lack of rainfall, large waves reportedly pushed

sand into the mouths of Hanalei rivers and banks, blocking inland water from discharging to the sea and causing some low-lying homes along the banks to flood, geologists said.

Although sea level rise is not to blame for this particular situation, the possibility of flooding is something coastal residents — or those near bodies of water connected to the ocean — should be cautious of in the coming years, said University of Hawai'i Department of Geology and Geophysics professor Charles "Chip" Fletcher.

"I think it's time we backed away from allowing homes to be built close to the ocean and that we — in general — stage a retreat from the shoreline as an adaptation to the coming problem of sea level rise," Fletcher said.

Satellite images which have mapped the ocean surface for 15 years have "documented evidence that the global average rate of sea level change is about a foot per century," he said.

Rapid acceleration has been occurring since the 1990's and the rate of ice loss each year is greater than the year before, he said. Satellites have also been tracking the crescendo of melting ice on Greenland and Antarctica.

There is no telling what the situation will be 10 years from now, but it is "highly likely" the rate of rise "will be faster," he said.

"Risks are associated with living in a flood plain," said Dolan Eversole, coastal geologist for the University of Hawai'i's Sea Grant Program.

Sea levels are rising, but one of the "big questions is how high and how fast," he said Thursday.

But Hawai'i is "lagging" behind other global averages, he

added. "Every place will be different."

"So far, we've dodged the bullet of rapid sea level rise, but no one expects that to last through the century," Fletcher said.

Developers and homeowners should use caution going forward, especially when potential impacts associated with climate change could come into play, including more extreme weather patterns, frequent floods and drought conditions, Eversole said.

"We should pay really close attention to elevation," he said.

Flooding is a natural and necessary process, said Department of Land and Natural Resources Division of Aquatic Resources Aquatic Biologist Don Heacock. What is unnatural are homes and buildings constructed along waterways.

Wetlands and flood prone areas should be kept as agricultural land, he said Wednesday.

Sustainable, low-impact development and proper management are necessary because you "can't do anything to change the hydraulic action of a river," he said.

"There is an appropriate place to put every kind of development," he said. And "houses built close to the water's edge" is not safe.

An e-mail from Kaua'i County spokesperson Thursday contained excerpts from the Flood Review Policy.

Any structure built after 1981 must have its location verified by the Flood Insurance Rate Map "to determine if it is in a special flood hazard area," the policy says.

"If the structure is adjacent to a river, stream, storm water channel, outfall area, or other inland water or drainage facility" the area is "subject to special flood hazards."

The FIRM depicts a 100-year floodplain, mapping areas based upon having a one percent chance of flooding per century. "It's an inexact science," Fletcher said.

"Any new development brings potential for new jobs from planning to construction to operations," wrote county Office of Economic Development Director George Costa in an e-mail Wednesday when asked about the business and economical aspect of development. "Most, if not all developers will conduct a feasibility study along with architects and engineers to comply with local laws, zoning ordinances, building codes, etc."

While "new job opportunities" are appreciated, "we must also ask if they are sustainable." Questioning whether the development will be "successful through economic cycles" is important, as well as whether it is "sensitive to our culture and environment."

"(T)heir answers in the future may be different than their answers have been in the past," he said.

Being "conservative and safe" and building where "you're not going to regret in the future," like constructing a home a "couple of feet higher than what's required" is one solution to help avoid potential flood damage, Eversole said.

As far as global climate change adaptation, Fletcher and Eversole are both aware of the skepticism associated with the topic.

"Everyone is entitled to their opinion and healthy skepticism is good, but I would also caution against ignoring

overwhelming scientific evidence," Eversole said.

Fletcher agreed.

A "widespread agreement" currently exists among scientists now regarding global climate change, he said. People are "confusing their personal politics with scientific fact."

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