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Climate Change

This Buddhist Temple Is Collapsing Into The Sea Off Maui

With nearby graves already swallowed by the ocean, sea level rise and coastal erosion are now threatening to destroy an iconic Zen mission and cemetery.

By Paula Dobbyn / August 25, 2024

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A Zen Buddhist graveyard on Maui's north shore is supposed to be a place of eternal rest. Instead, the cemetery is battling an ever-encroaching sea.

Pounded by relentless surf, an alluvial bluff supporting the cemetery has eroded to the point that waves have washed away dozens of graves containing human remains.

Just down the beach, Paia Mantokuji Soto Mission faces a similar fate. Built in 1906 to serve Japanese immigrant laborers, the seaside temple and associated buildings are perched precariously close to the ocean. Fabric-covered cages filled with sand, called geotechnical containers or revetments, are the only thing keeping the temple and nearby structures from being swept out to sea.



A grave marker sits on the new edge of the Paia Mantokuji Soto Mission cemetery in July. The Soto Zen Buddhist temple was founded in 1906 on Maui's north shore. Land upon which the mission sits is eroding into the ocean. (Kevin Fujii/Civil Beat/2024)

The dramatic scene along Mantokuji Bay in lower Paia, where the temple, graveyard, bell tower, commercial kitchen and clergy house are located, is a familiar one playing out across the Hawaiian archipelago.

Sea level rise and coastal erosion fueled by climate change are undermining shoreline buildings and devouring beaches statewide,

including the sandy habitat that endangered sea turtles use to rest. Typically 10 or more green sea turtles can be spotted napping on what's left of the Mantokuji beach although 60 were documented on a single day within the last year.

Coastal erosion is a particularly acute problem on Maui where some beaches are eroding faster than on other Hawaiian islands, scientists say.

The temple's board of directors hired engineering firm Oceanit in 2018 to figure out a solution, a complicated process that is ongoing.

"We looked at a variety of options and not all of them are feasible," said Michael Foley, senior engineer.



Green sea turtles, or honu, use the shrinking beach below the Mantokuji Soto Mission to rest. As the beach disappears, the erosion not only threatens the temple and graveyard but an important source of habitat for these endangered species. (Kevin Fujii/Civil Beat/2024)

The possibilities have included ongoing erosion mitigation to the temple's foundation, rebuilding the beach and headlands through an approach called coastal ecosystem restoration, or attempting to move everything inland, a strategy known as managed retreat.

No final decisions have been made but Foley believes whatever the climate adaptation strategy that's ultimately chosen for Mantokuji Bay could serve as a model for other parts of Hawaii where at least 13 miles of beach have already been lost due to sea level rise and where 70% of beaches statewide are threatened, according to the [state climate change portal](#).

A 2020 [study](#) by the University of Hawaii found that 40% of Oahu's beaches could be gone by mid-century. Those researchers urged state and county officials not to allow any more hardening of shorelines but to let beaches migrate landward because seawalls, revetments and other mitigation structures end up leading to beach loss.

Kammie Tavares, who co-authored the study, said in an interview this week that's still her viewpoint. But adapting to climate change must be place-based and site-specific, she said, and there may be instances where communities want to protect culturally significant buildings and hardening might be appropriate.

Other scientists say hardening destroys public trust resources, namely beaches, and approaches like beach nourishment have their own [impacts](#) on coral reefs and sea creatures, and only delay the inevitable inundation that sea level rise will cause.

"The only long-term solution is managed relocation," said West Maui shoreline advocate Kai Nishiki in an email. "Ultimately if we want beaches in the future, we must support the landward migration of our beaches by getting out of the way with all structures and hardening."

Many ocean engineers favor beach nourishment. In the case of Mantokuji, it would buy the Buddhist temple and its community some time and constitute a middleground approach, Foley said.

It would be a compromise between doing nothing or attempting to relocate inland.

Honoring Ancestors

While uncertainty about the temple and graveyard's future is never far from the minds of congregants, the mood was festive on a late afternoon in mid-July as scores gathered at the Mantokuji Soto Mission for a special annual event.

Young taiko drummers performed as community members lined up under paper lanterns for steaming bowls of chow fun and Asian-inspired delicacies. Participants view the annual O-Bon Dance Festival as a time to welcome back the spirits of their ancestors, express gratitude and assure them that all is well.



Taiko drummers performed during the annual O-Bon Dance Festival at Mantokuji Soto Mission in Paia, an iconic structure built in 1906 to serve the community of Japanese immigrant laborers who serviced the plantations of Maui. (Paula Dobbyn/Civil Beat/2024)

With a membership of about 140 people, the temple hosts weekly meditation practices, an annual bazaar and other community events.

Prior to the O-Bon festival's pre-sunset start, Oceanit staff gave a public presentation about their work at Mantokuji Bay.

Speaking at the Paia Community Center across the road from the temple, Foley explained what's at stake if nothing is done to change the course of natural events at the bay.

The Mantokuji Bay shoreline is moving inland at an average rate of about 1.6 feet per year, a pace that's accelerating according to research by the

Coastal Geology Group by the University of Hawaii, he said.



Sandbag revetments, also known as geotechnical containers, try to keep erosion at bay on the makai side of the Mantokuji Soto Mission. They are a temporary solution while the temple's board of directors and Oceanit try to figure out how to permanently protect the temple and associated graveyard from falling into the ocean. (Kevin Fujii/Civil Beat/2024)

He spoke about how his company is approaching the problem, including involving local high school and Maui College students in a [six-month internship](#) to collect sea life, sand composition, water quality, wave action and other data to assemble a [climate change toolkit](#) aimed at raising public awareness about the problem. The internship program received support from the state's 2023 [grants-in-aid program](#).

Of the various alternatives to save the temple, graveyard and associated buildings, managed retreat has been pretty much ruled out.

Termites have weakened the temple and the building would likely collapse were it to be moved, Foley said. It may also be impractical to contemplate moving the hundreds of gravesites mauka.



The possibility of moving the temple inland and out of harm's way has practically been eliminated because the building is structurally not sound enough to withstand such a relocation, according to Oceanit, the contractor that has been hired to figure out a solution to the massive coastal erosion that area is facing. (Kevin Fujii/Civil Beat/2024)

“Mantokuji believes that beach ecosystem restoration is a viable, nature-based approach that we will explore,” said Eric Moto, head of the board of directors. “We are in the early stages of plan development and community outreach.”

Outreach involves talking with Mantokuji Bay neighbors, the greater Paia community, and anyone interested in maintaining and protecting shoreline environments in Hawaii, Moto said by email.

It also includes fundraising and grant-writing as it'll likely take tens of millions of dollars to fix and maintain the beach. In addition to its climate-fueled erosion problems, Mantokuji was also mined of its sand in the last century for county road-building projects and lost more sand in a [1946 tsunami](#).

Besides seeking private donations and philanthropy, Foley said the project team will approach state and county lawmakers for funding as well as trying to tap the Federal Emergency Management Agency.

FEMA has a hazard mitigation [grant program](#) that funds projects aimed at reducing long-term risks to people and property from future disasters.

The Maui Emergency Management Agency is also a potential source of funding, according to the temple's [May newsletter](#).

Nishiki said beach nourishment is a costly, never-ending approach — basically a money pit.

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Paula Dobbyn is a reporter for Civil Beat based on the Big Island. Reach her by email at pdobbyn@civilbeat.org, phone at 808-983-9405, on Twitter [@pauladobbyn](https://twitter.com/pauladobbyn) or on Instagram [@bigislandreporter](https://www.instagram.com/bigislandreporter).

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