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STATE OF HAWAI'I | KA MOKU'ĀINA 'O HAWAI'I  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
KA 'OIHANA KUMUWAIWAI 'ĀINA

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Testimony of  
DAWN N. S. CHANG  
Chairperson

Before the Senate Committee on  
WATER AND LAND

Monday, February 13, 2023  
12:30 PM

State Capitol, Conference Room 229 & Videoconference

In consideration of  
SENATE BILL 1083  
RELATING TO CORAL REEF INSURANCE

Senate Bill 1083 proposes to appropriate funds for a three-year continuation of the wind-generated storm damage reef-insurance policy purchased by The Nature Conservancy (TNC) in November 2022. **The Department of Land and Natural Resources (Department) appreciates the intent of this measure to maintain an insurance policy for the State's coral reefs, but respectfully opposes this bill.**

Coral reef insurance is a novel finance tool with global application. Current coral reef insurance policies in Mexico, the Meso-American Region, and Hawai'i function to finance coral reef emergency response and restoration in the event of storm or hurricane damage. The coral reef insurance policy mentioned in Senate Bill 1083 was purchased by TNC in 2022 at a \$100,000 annual premium to cover the 2023 hurricane season (June 2023-November 2023).

TNC's insurance policy is a "parametric" policy that covers the near-shore waters of Kaua'i, O'ahu, Lāna'i, Moloka'i, Maui, and Hawai'i Island with specific focal areas on O'ahu, Maui, and Hawai'i Island. If the policy is triggered by certain parameters being met (*i.e.*, sustained wind speeds indicative of tropical storms within a certain distance of a focal area), a payout is distributed to TNC. The payout increases with higher wind speeds and proximity to focal areas, up to \$2,000,000. The funds would be used by TNC to remove debris and stabilize coral heads displaced from the reef, which are important actions to increase survivability of a coral reef after a hurricane or tropical storm. However, funds would be paid to TNC, regardless of whether the triggering event caused any actual damage to coral reefs.

DAWN N. S. CHANG  
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Although coral reef insurance is a promising financing tool in coral reef management, utilizing public funds for a private insurance policy may not be the most appropriate way for the State to bolster reef resilience. Coral reef insurance has a limited application that is dependent on a storm event that may or may not impact the coral reef. The Department believes there are more effective ways to promote coral reef resilience, such as investing in projects focused on the proactive management and enhancement of state coral reefs, both through marine efforts, and upland stewardship such as strategic native plantings along water pathways to retain soil and prevent erosion into the ocean. \$300,000 of state funds could be used to support projects such as expanding the Department's Coral Restoration Nursery, implementing a coral bleaching restoration plan, establishing a coral reef mitigation bank site, or developing and implementing a watershed restoration plan.

Utilization of private funds is a key component of coral reef insurance success, and the Department is grateful for the work of TNC and many other conservation nonprofits that partner with Department, and/or conduct complementary work throughout Hawai'i. Under current governance frameworks, diverse entities (NGOs, businesses, philanthropic organizations, as well as government entities) can purchase coral reef insurance. The ability for this finance mechanism to leverage private capital is unique in coral reef management financing which traditionally relies on state and federal funds. Non-traditional funding sources allow for greater flexibility in spending because they are not constrained by state and federal checks and balances that inhibit certain actions.

One of benefits of a non-government insurance policy is the rapid distribution of funds for emergency coral restoration. If State general funds are used, the Department would likely enter into a Memorandum of Understanding with TNC to disburse funds for the premium and co-manage the coral reef insurance policy. This would then require all monies associated with the insurance policy to undergo rigorous checks and balances to ensure proper use of state funds, including the distribution of a payout once a damage event occurs. Funding a coral reef insurance policy with public funds would negate the rapid response benefit of this financing mechanism.

Finally, a coral reef insurance policy is a new concept in the State. The Department would be interested in seeing the application of this insurance policy in the 2023 hurricane season before committing to a multi-year funding initiative.

Mahalo for the opportunity to provide testimony on this measure.



# ROAR



## SB 1083

Coral Reef  
Insurance

to  
the Senate  
Committees  
WTL

The Hawaii State  
Legislature

from

Zhizi Xiong  
(Angela  
Melody  
Young)

Creator

## RESCUE OF ANIMAL RIGHTS

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Aloha Chair, Vice Chair & the WTL Committee,

ROAR testifies to in strong support for SB 1083.

From a published article from the Nature Conservancy, “TNC announced 1st coral reef insurance policy for Hawaii to provide funding for rapid coral reef repair and restoration after hurricane season. The insurance is to support the conservation of ecosystems and the development of green infrastructure—both of which are vital elements in addressing our work to protect our communities from global warming and climate change impacts. The Hawai’i policy adds tropical storms as a covered event. The Hawai’i policy is triggered at windspeeds of 50 knots (57 mph) if sufficiently close to reefs and can provide payouts up to a maximum of \$2 million to allow rapid reef restoration after storm damage. The policy is for the 2023 hurricane season. By investing in nature, our insurance and finance partners are showing it values the coral reefs, a critical, natural, cultural & economic resource.”

According to NOAA, coral is vital marine infrastructure that sustains marine life & fishers and gives economic opportunities to our communities. It is a source of food & new medicines and it provides protection from storms. Why should we care about the reefs? Down to Earth explains the complexities of our reefs and its relation with the ecosystems and us. Since 1950 earth has lost 50% of its reefs. ⅓ of what remains is at risk or damaged. If there is too much heat, 2 degrees higher, the coral becomes stressed and



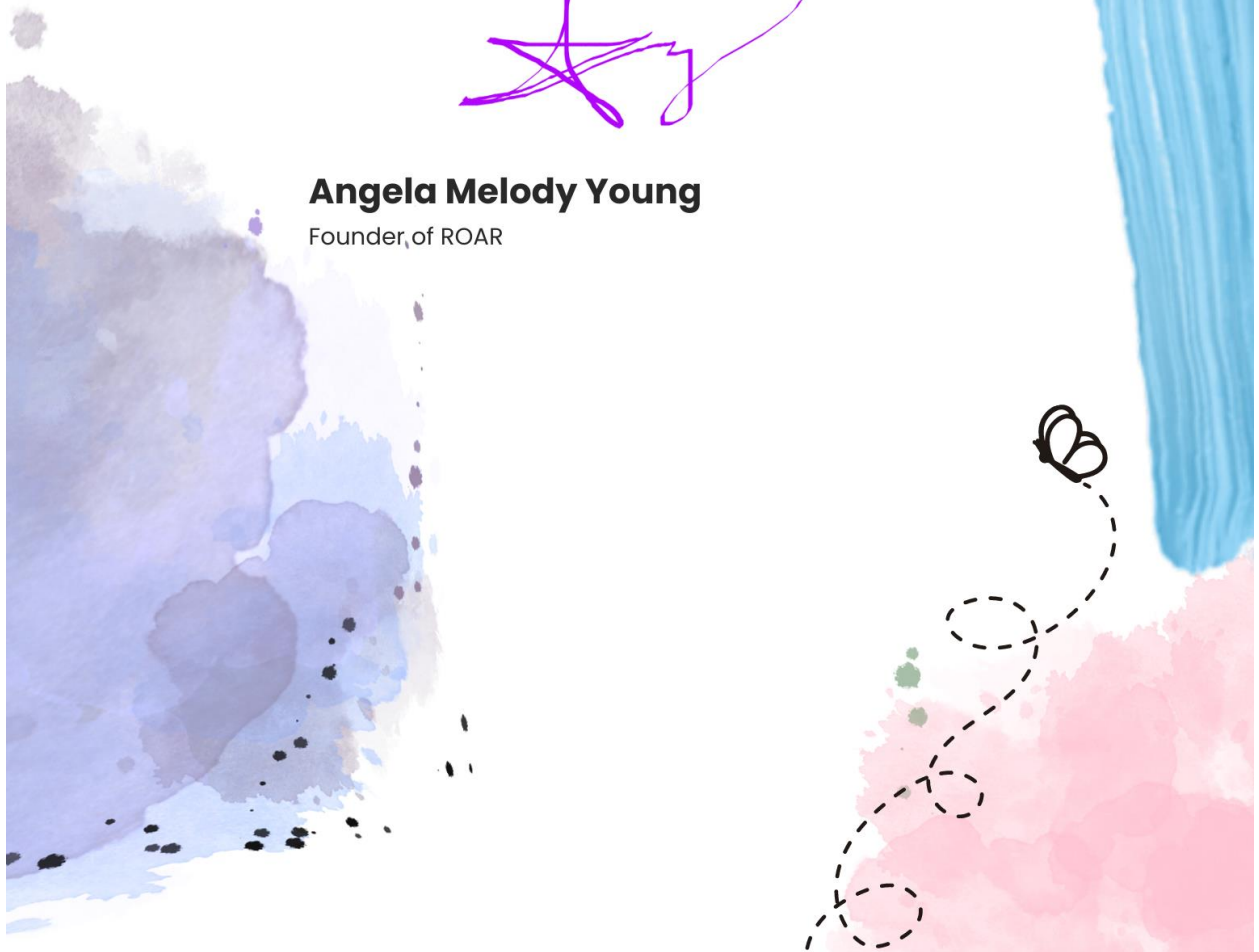
can no longer feed the algae. Algae disappears and fish also disappears. When it gets too hot, it causes bleaching to the coral.

It is vital to support our coral reefs in the event of a natural phenomenon. Investing in the insurance policy will help our reefs and our coastal communities. Thank you.

**Blessings,**

**Angela Melody Young**

Founder, of ROAR







# ROAR

## Works cited

1. "Coral Reef Ecosystems." [www.noaa.gov](http://www.noaa.gov),  
[www.noaa.gov/education/resource-collections/marine-life/coral-reef-ecosystems#:~:text=Coral%20reefs%%20coastlines%](http://www.noaa.gov/education/resource-collections/marine-life/coral-reef-ecosystems#:~:text=Coral%20reefs%%20coastlines%20). Accessed 13 Feb. 2023.
2. "The Nature Conservancy Announces First-Ever Coral Reef Insurance Policy in the U.S." The Nature Conservancy, [www.nature.org/en-us/newsroom/first-ever-us-coral-reef-insurance-policy/](http://www.nature.org/en-us/newsroom/first-ever-us-coral-reef-insurance-policy/).
3. Efron, Zack. Down to Earth. Netflix, 2022, [downtoearthzacefron.com/](http://downtoearthzacefron.com/).

**Testimony of The Nature Conservancy  
Supporting SB 1083, Relating to Coral Reef Insurance.**

**Committee on Water and Land  
Monday, February 13, 2023, 12:30 pm  
Conference Room 229 and via Videoconference**

Aloha Chair Inouye, Vice Chair Elefante, and Members of the Committee:

**The Nature Conservancy (TNC) supports SB 1083**, Relating to Coral Reef Insurance, which would appropriate funds for three years of a reef insurance policy.

Life in Hawai'i is concentrated along our spectacular coasts, where islanders and visitors take full advantage of tropical waters and vibrant coral reefs teeming with life. The reefs that line our coasts are environmental, economic, recreational, and cultural treasures that support our island lifestyle and livelihoods. Each year, they also provide flood protection to people, property, and jobs valued at more than \$836 million, support nearshore fisheries worth \$13.4 million, and contribute more than \$1.2 billion through reef-related tourism to the state's economy.

Local pressures from land-based pollution and overfishing have contributed to a 60% decline in Hawai'i's living coral reefs in some areas over the past 40 years. The impacts of global climate change, such as warming and rising seas and more powerful and frequent storms, hasten the loss of coral reefs.

Research shows that severe hurricanes can cause a 50% or more loss of live coral cover, and the loss of just one meter of reef height could result in a doubling of the cost of damage. In 2018, Hawai'i was threatened by two Category 3+ hurricanes and in 2020, Category 1 Hurricane Douglas came within 30 miles of the state.

As the risks to our reefs and coastal resources increase, so too does our need to develop new funding sources to protect and restore them. Reef insurance is a proven source of funding to repair reefs after a natural disaster.

In 2022, following years of feasibility assessment and research, TNC purchased the first-ever coral reef insurance policy in the United States for Hawai'i. The policy will provide funding for rapid coral reef repair and restoration across Hawai'i immediately following hurricane or tropical storm damage. Rapid response is key for expediting essential reef repair activities such as debris removal and coral re-attachment following a natural disaster. TNC developed the Hawai'i policy to pilot the concept after the State Legislature adopted SCR 159 in 2021 requesting a reef insurance evaluation, and following a 2020 Bank of America-supported feasibility study finding that coral reefs in Hawai'i could be insured against natural disasters.

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The Hawai'i policy is triggered at windspeeds of 50 knots (57 mph) of a named storm if sufficiently close to reefs and it can provide payouts up to a maximum of \$2 million to allow rapid reef repair and restoration after storm damage. The policy will be in place through the 2023 hurricane season.

When a hurricane or tropical storm triggers a payout, TNC will activate an advisory committee in coordination with the Division of Aquatic Resources (DAR) and other local partners to guide the use and distribution of the funds for reef repair and restoration. Next month, TNC, DAR and other partners will convene to develop a response plan to guide first responders and reef managers to address impacts from storms rapidly and effectively. The plan will reflect global restoration expertise and lessons learned from post-storm repair on the Mesoamerican reef.

TNC and partners developed the world's first reef insurance policy specifically around hurricane damage, a major risk to coral reefs, in Quintana Roo, Mexico, in 2019. Proceeds from that policy were used to repair damage from Hurricane Delta in 2020. Since then, the Mesoamerican Reef (MAR) Fund, working in collaboration with Willis Tower Watson (WTW)'s Climate and Resilience Hub and governments in the region, has built out a parametric insurance program across the full extent of the MAR from southern Mexico through Belize, Guatemala and Honduras.

As the Committee considers the bill, we would propose the following amendments:

- Section 2, page 3, lines 20-21: "There is appropriated out of the general revenues of the State of Hawaii the sum of \$300,000 or so much thereof as may be necessary for the fiscal year 2023-2024 and the same sum or so much thereof as may be necessary for fiscal year 2024-2025 for the department of land and natural resources to fund a three-year ~~continuation of The Nature Conservancy's~~ coral reef insurance policy that covers the coral reefs surrounding O'ahu, Moloka'i, Lāna'i, Maui, Kaua'i, and Hawai'i islands."

As we undertake the current pilot program, we expect to learn much and that the insurance policy that fits best for Hawai'i may be different from the initial policy purchased. To ensure that the State has the flexibility to implement the most appropriate reef insurance policy, we would recommend not requiring that the reef insurance policy purchased be constrained to the current policy. Removing the clause leaves the option to continue the current policy but allows flexibility if a different policy is found to be more appropriate for the State.

- Section 1, page 3, line 12: "The purpose of this Act is to build upon the work of The Nature Conservancy by funding a ~~continuation of their~~ coral reef insurance policy by three years through the department of land and natural resources."

Similar to the discussion above, we feel removing the reference to a continuation of the current policy allows for more flexibility to determine the most appropriate policy for the State.

- Section, page 2, line 8 and 11: "The legislature further finds that in November 2022 the Nature Conservancy purchased an insurance policy to cover wind-generated storm damage

by named storms to the coral reefs surrounding O'ahu, Moloka'i, Lāna'i, Maui, Kaua'i, and Hawai'i islands through the December 2023 hurricane season. The policy is triggered when a named storm has windspeeds of fifty knots, or fifty-six miles per hour, and can provide payouts up to a maximum of \$2,000,000 to allow for rapid reef repair and restoration after damage is inflicted upon the reefs.”

These additions would clarify the trigger for the current reef insurance policy. A storm is typically given a name by the National Weather Service's National Hurricane Center when it displays a rotating circulation pattern and the wind speed reaches 39 miles per hour.

As we invest in managing local stressors and restoring coral reefs, we can now insure that investment. It is a small price to pay for the peace of mind that comes from knowing we can repair the reefs that provide our food and livelihoods while protecting homes and businesses across the state. The State's commitment of funding could help to garner support and active participation from the private sector actors that benefit from coral reefs.

Mahalo for the opportunity to provide testimony supporting SB 1083.

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*The Nature Conservancy of Hawai'i and Palmyra is a non-profit organization dedicated to the preservation of the lands and waters upon which all life depends. The Conservancy has helped protect more than 200,000 acres of natural lands in Hawai'i and Palmyra Atoll. We manage 40,000 acres in 13 nature preserves and work in over 50 coastal communities to help protect and restore the nearshore reefs and fisheries of the main Hawaiian Islands. We forge partnerships with government, private parties, and communities to protect forests and coral reefs for their ecological values and for the many benefits they provide to people.*

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# SIERRA CLUB OF HAWAI'I

## SENATE COMMITTEE ON WATER AND LAND

February 13, 2023 12:30 PM Conference Room 229

**In SUPPORT of SB1083:** Relating to Coral Reef Insurance

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Aloha Chair Inouye, Vice Chair Elefante, and Members of the Water and Land Committee,

On behalf of our 20,000 members and supporters, the Sierra Club of Hawai'i **supports SB1083**, which will help us to maintain and recover our ecologically, culturally, economically, and socially invaluable coastal coral reef ecosystems from the impacts of climate destabilization.

The climate crisis has already reached Hawai'i's shores, in the form of historic floods, droughts, wildfires, coral bleaching events, a proliferation of invasive species, and the continued extinction of native species, among others. Our ongoing dependency on ever more expensive fossil fuels to meet our energy needs, as well as to import food and other goods, also has and will continue to place an increasing burden on our economic stability and climate vulnerability.

**Unfortunately, these impacts will only become worse over time: even with massive investments in carbon capture technology and an unprecedented shift away from greenhouse gas production, our climate will continue to destabilize for decades or longer.<sup>1</sup>**

Accordingly, Hawai'i can expect to see continued and worsening extreme weather events that will increasingly damage our already impaired coral reef ecosystems, undermining a foundation of our islands' food security, cultural integrity, social fabric, economy, and climate resilience.

**By investing in an insurance policy that can help to accelerate coral ecosystem recovery after extreme weather events, this measure would provide a critical safeguard to mitigate the deleterious and compounding impacts that climate destabilization will have on life as we know it here in Hawai'i nei.**

Accordingly, we respectfully urge the Committee to **PASS** SB1083.

Thank you very much for this opportunity to provide testimony.

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<sup>1</sup> See Sharde Freitas, Navigating a Climate in Crisis: A Mālama Monthly Series, July 2022, *available at* <https://sierraclubhawaii.org/blog/climate-july-2022> (interview with Charles "Chip" Fletcher, Ph.D., on the climate crisis).



2/13/2023

WTL Committee  
Hawaii State Capitol  
Honolulu, Hawaii 96813

Dear Chair Inouye, Vice Chair Elefante, and Members of the Committee on Water and Land,

**Position: Support SB1083**

The Surfrider Foundation is a national nonprofit organization dedicated to the protection and enjoyment of our ocean, waves, and beaches. Surfrider maintains a network of over 150 chapters and academic clubs nationwide, including four chapters in the Hawaiian Islands. The Surfrider Foundation focuses on many aspects of the environment such as coastal protection, plastic pollution, and water quality.

The Surfrider Foundation, Hawaii region, is testifying in **strong support of SB1083**, which would appropriate funds for a three-year continuation of the wind-generated storm damage reef-insurance policy purchased by The Nature Conservancy in November 2022.

NOAA has reported that healthy reefs can absorb up to 97% of a wave's energy, serving as a critical buffer between coastal ecosystems and communities from the potential damage from storms, currents, and waves. This reef-insurance policy is the first of its kind in the U.S., modeled after The Nature Conservancy's successful implementation of a similar policy in Quintana-Roo, Mexico.

The Nature Conservancy reports: "Each year, reefs provide coastal flood protection to people and property, jobs worth more than \$836 million and more than \$1.2 billion to the state's economy through reef-related tourism. Hawaii's prized reef fisheries generate \$13.4 million annually, with \$10 million of that providing food and income for local families. Yet local pressures, such as overfishing and land-based pollutants, have contributed to a 60% decline in live coral cover on some of Hawaii's reefs in the last 40 years and declines of up to 90% in some fisheries in the last century."<sup>1</sup> As a frequent freediver myself, I have seen firsthand the degradation of our islands' reefs. The critical cultural and economic importance of healthy coastal ecosystems cannot be overstated for the people of Hawaii, and the extension of this insurance policy is a proven method to ensure longevity of healthy reefs and protection of our coastal communities and ecosystems.

Thank you for your consideration of this testimony in support of SB1083, submitted on the behalf of the Surfrider Foundation's four Chapters in Hawaii and all of our members who live in the state and visit to enjoy the many coastal recreational opportunities offered by all of the islands' coastlines.

Sincerely,

Camile Cleveland  
Volunteer Policy Coordinator  
Surfrider Foundation, O'ahu Chapter

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<sup>1</sup> <https://www.nature.org/en-us/newsroom/first-ever-us-coral-reef-insurance-policy/>

**SB-1083**

Submitted on: 2/10/2023 4:06:11 PM

Testimony for WTL on 2/13/2023 12:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Carissa Cabrera	Individual	Support	Remotely Via Zoom

Comments:

Aloha Chairs, Vice Chairs, and Members of the Committee,

My name is Carissa Cabrera and I work directly with local ocean conservation efforts, including scaling the important coral restoration work conducted by Kuleana Coral Restoration. I'm testifying in strong support of SB1083 as an individual, which would support the innovative and demonstrated successful approach of insuring our coral reefs against inevitable climate and fossil fuel disasters. This "blue infrastructure," generates irreplaceable ecosystem services to our communities, including coastal protection, serving as critical fish habitat for subsistence and recreational fishers, a thriving dive industry for visitors and residents, and as a keystone species contributing to the health of our coastal ecosystems.

According to a NOAA commissioned study, the ecological, economic, cultural, and recreational value of coral reefs in Hawaii exceeds 33 billion dollars, and natural assets of this scale must be protected. As an individual who would contribute to the development of restoration response capacity in Hawai'i, this concept is essential to funding the immediate recovery work needed.

Mahalo for hearing my testimony today.

Best,

Carissa Cabrera

**Testimony in Support of SB1083  
Senate Committee on Water and Land**

**LATE**

Aloha Chair Inouye, Vice Chair Elefante, and Members of the Committee

My name is Dr. Jack Kittinger, and I am testifying as an individual in strong support of SB1083, helping support the establishment of a coral reef insurance program in Hawai'i.

Through my work as a conservation professional for over 15 years, I've had the privilege to understand the catalytic impact that appropriate financing mechanisms can provide for natural resource management in other areas of the world. The Mesoamerican reef insurance program piloted by The Nature Conservancy (TNC) is one example of how innovative insurance instruments can help to preserve the vital functions that coral reefs provide to residents and the economy. I fully support the expansion of the existing pilot program that TNC and the State of Hawaii have established here at home.

I want to thank the committee for hearing this bill and my testimony today. The resources at stake are paramount to Hawai'i, and deeply intertwined with our way of life. This bill is a clear pathway to protecting, restoring, and enhancing Hawai'i for our local communities and the visitors we share it with.

Mahalo for the opportunity to testify,

Dr. Jack Kittinger