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STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAII'
DEPARTMENT OF LAND AND NATURAL RESOURCES
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KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

Testimony of
RYAN K.P. KANAKA'OLE
Acting Chairperson

Before the Senate Committee on
WAYS AND MEANS

Tuesday, March 3, 2026
10:17 AM
State Capitol, Conference Room 211

In consideration of
SENATE BILL 3201, SENATE DRAFT 1
RELATING TO CORAL REEF RESILIENCE

Senate Bill 3201, Senate Draft 1 proposes to require the Division of Aquatic Resources (DAR) of the Department of Land and Natural Resources (Department) to: (1) manage and administer aquatic life and resources, with the highest priority being to protect, restore, and maintain ecosystem integrity, using the best scientific data available; (2) make plans by certain dates for the restoration of reef ecosystems and indigenous species to a level that is not less than an unspecified percent of their natural biomass potential; and (3) make a plan by 7/1/2027 for the expansion of live coral cover at not less than 25% on reefs that have historically supported naturally occurring live coral cover; and requires annual reports to the Legislature. **The Department appreciates the intent of this bill and offers the following comments.**

Coral reef ecosystems statewide, and particularly on O'ahu, have experienced significant degradation due to long-term, cumulative impacts from multiple sources, including coastal development, watershed degradation, recreational and commercial overuse, invasive species, fishing pressure, and warming ocean temperatures. While halting or reversing this decline can seem daunting—especially given global climate stressors—coral reef ecosystems are inherently resilient, and evidence shows they can recover when adverse impacts are reduced. In most cases, however, there is no single solution. Threats to ecosystem health vary by location, and identifying the most effective management actions requires a careful understanding of local ecosystem drivers and dynamics. To support this,

managers must rely on the best available science, integrating both western scientific approaches and local ecological knowledge.

DAR understands the importance of ecosystem-based management, as well as the importance of involving local resource users, and has developed a wholistic nearshore management strategy called the Holomua Marine Initiative (Holomua). Holomua, which in the Hawaiian language means “to progress and move forward into the future,” brings local fishers, cultural practitioners, and community representatives together with scientists and resource managers to collaboratively develop island-scale management actions aimed at improving the health of nearshore resources. Importantly, these actions extend beyond fishing regulations to address other key drivers of ecosystem integrity, including water quality and quantity, land-based sources of pollution, commercial and recreational use, and degraded habitats. Addressing these issues requires coordination across multiple agencies and authorities and depends on strong partnerships to achieve shared goals for nearshore ecosystem health and coral reef resilience.

Holomua was first launched on Maui in October 2022 as a pilot management planning process. The Maui planning team is currently finalizing its proposed management plan and draft rules for Maui, and DAR will be launching the Holomua process on Hawai'i island this summer. It may be another two years before the Holomua process is launched on O'ahu.

The requirement for DAR to “restore and maintain reef ecosystems and each indigenous species within the reef ecosystem to a level that is not less than [an unspecified] per cent of the ecosystem or indigenous species’ natural biomass potential within each respective moku” is an unrealistic management goal given the sheer number of indigenous species and the limitations of current monitoring methods. Further, the requirement for DAR to “expand and maintain live coral cover at not less than twenty-five per cent on reefs that have historically supported naturally occurring live coral cover” overlooks the fact that many of the main drivers of coral decline, including water quality and changing environmental conditions, are beyond DAR’s jurisdiction for management.

The Department notes that House Bill 2599, a similar measure that requires DAR to publish goals and create a framework to significantly increase coral reef resilience around O'ahu by 2030, provides DAR with more latitude to set realistic goals and work with local communities and stakeholders to co-develop management actions to achieve those goals.

Mahalo for the opportunity to comment on this measure.

**Testimony of The Nature Conservancy
Commenting on SB3201 SD1, Relating to Coral Reef Resilience
Committee on Ways and Means
March 3, 2026 at 10:17 am
Conference Room 211 and via Videoconference**

Dear Chair Dela Cruz, Vice Chair Moriwaki, and Members of the Committee:

Mahalo for the opportunity to testify today. The Nature Conservancy (TNC) Hawai'i and Palmyra respectfully comments on SB3201 SD1, which requires the Division of Aquatic Resources (DAR) of the Department of Land and Natural Resources (DLNR) to: (1) manage and administer aquatic life and resources, with the highest priority being to protect, restore, and maintain ecosystem integrity, using the best scientific data available; (2) make plans by certain dates for the restoration of reef ecosystems and indigenous species to a level that is not less than an unspecified per cent of their natural biomass potential; and (3) make a plan by 7/1/2027 for the expansion of live coral cover at not less than twenty-five per cent on reefs that have historically supported naturally occurring live coral cover.

TNC's mission is to conserve the lands and waters on which all life depends, and TNC strongly supports policies that preserve and sustain the integrity of ecosystems in Hawai'i. We believe that only by applying the best available Indigenous and Western science, together with traditional ecological knowledge, can we solve the most challenging conservation problems in Hawai'i. For our reefs, this means supporting flexible management that maintains the composition, function, and structure of ecological systems, so they can withstand environmental pressures, adapt to changing conditions, and continue supporting our communities for generations to come. This includes protecting the diversity and abundance of native species, safeguarding ecological interactions, maintaining water and habitat quality, and ensuring that ecosystems remain resilient in a rapidly changing climate. Maintaining ecosystem integrity preserves not only individual species or places, but the essential functions that enable ecosystems to continue providing environmental, cultural, and economic benefits.

SB3201 SD1 reflects a strong commitment to coral reef resilience, and we deeply appreciate DAR's long-standing leadership in advancing science-based management for nearshore ecosystems in Hawai'i. We strongly support the intent of the bill to restore and maintain ecosystem integrity and this draft's substantive changes from the introduced bill. However, Section 2's quantitative requirements for increasing coral cover and species biomass may continue to present an unachievable mandate given that many key stressors, such as wastewater and stormwater runoff, sedimentation, and increasing marine heat, lie outside DAR's purview. These external factors can

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The Nature Conservancy, Hawai'i and Palmyra

March 3, 2026

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negatively affect ecological recovery regardless of marine management efforts, and DAR should not be held solely accountable for achieving fixed ecological thresholds.

We respectfully suggest that as this bill moves forward, the legislature consider language that provides flexibility to DLNR and does not hold the agency to unachievable statutory mandates. Instead, we recommend that goals and metrics should lie within DAR's authority, such as strengthened management measures, coordinated watershed efforts, and science-based recovery planning that contribute to the ecological outcomes desired.

Mahalo for the opportunity to comment on SB3201 SD1.

Guided by science, TNC 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 84,000 acres in 13 nature preserves and 18 managed areas and have supported over 50 coastal communities to help protect and restore the nearshore reefs and fisheries of the main Hawaiian Islands.

SB-3201-SD-1

Submitted on: 2/28/2026 8:52:22 AM

Testimony for WAM on 3/3/2026 10:17:00 AM

Submitted By	Organization	Testifier Position	Testify
Frederick Smith	Individual	Support	Written Testimony Only

Comments:

Aloha Chair Dela Cruz, Vice Chair Moriwaki, and Members of the Committee,

My name is Frederick Smith, and I am submitting **strong support for SB3201 SD1**, which strengthens the State’s ability to maintain coral reef resilience using a fiscally responsible and administratively efficient framework.

Coral reef decline has direct budgetary and infrastructure implications for the State. As reefs degrade, coastal erosion accelerates, and storm impacts to coastlines intensify, increasing long-term State spending on shoreline protection, road relocations, and hazard mitigation. Proactively maintaining reef resilience is far more cost-effective than responding to ecosystem collapse after the fact.

It’s important to note that once live coral cover falls below roughly 25%, a widely recognized impairment threshold, reefs become far less resilient and far more expensive for the State to manage and recover. Preventing reefs from crossing this threshold is a matter of fiscal prudence as much as ecological necessity.

SB3201 builds upon existing processes and does not create new programs, staff positions, or additional administrative burden. Instead, it provides DLNR with a clearer, more predictable, and transparent statutory basis for identifying resilience needs before they become costly emergencies. This improves administrative efficiency and reduces legal risk by grounding agency actions in explicit legislative direction.

Healthy coral reefs are also essential to maintaining Hawai‘i’s tourism-driven economy. Coral reef degradation reduces visitor satisfaction, harms local businesses, and destabilizes an industry that supports a significant portion of the State’s revenue base. Investing in resilience up front is far less expensive than trying to rebuild ecological and economic losses later.

Because SB3201 strengthens DLNR’s ability to manage resilience within existing resources while helping the State avoid major future expenditures tied to erosion and reef decline, this measure represents good fiscal policy, smart climate adaptation, and a cost-effective approach to safeguarding a key economic and natural asset.

Mahalo for the opportunity to testify.

Respectfully,

Frederick Smith

Captain Cook

Hawai'i Island



A Community Dedicated to Saving Puakō Reef

Return the reef to its historic 70% coral coverage from its existing 7%.

www.Puako4reefs.org * [Puako for Reefs Facebook](#)

Story map of Puakō: [Wahi Pana -A Sacred Place](#)

HEARING FOR STATE SENATE COMMITTEE ON WAYS AND MEANS Tuesday, March 3, 2026 10:17 a.m. Conference Room 211, State Capitol

TO: Senate Committee on Ways and Means Chair, Donovan M Dela Cruz, and Vice-Chair Sharon Y. Moriwaki, and all members

RE: Senate Bill 3201 SD1. RELATING TO CORAL REEF RESILIENCE

Aloha Chair, Committee Members, and Honorable Legislators,

Puakō For Reefs is a volunteer-run 501(c)(3) nonprofit dedicated to protecting the reef near Puakō, Hawai'i Island, and to developing a scalable model to shield all Hawai'i coral reefs from wastewater pollution. We strongly support SB 3201, SD1, in the belief that it will help the State to better manage the health of our coral reefs.

Coral reefs face many stressors and are a direct reflection of the overall health of our land, air, fresh water, and ocean ecosystems. While this bill focuses on ocean waters, we recognize, and appreciate, that reef protection requires attention to all the interconnections.

This bill fills the gap between specific regulations and overall ecosystem health. This broader framing is often missing in our laws and we applaud the Legislature for considering this measure for comprehensive reef stewardship.

Mahalo for the opportunity to testify.

Puakō for Reefs Board members and its many volunteers

Karen Anderson, Board Chair,
Stephanie Erickson, Board Treasurer,
Barbara Bell, Board Secretary, and
George Fry, Board member.

HAWAI'I OCEAN LEGISLATIVE TASK FORCE



March 3, 2026

Hawai'i State Legislature
Senate Committee on Ways and Means

Re: Testimony in **SUPPORT** for SB 3201 SD1, Relating to Coral Reef Resilience

Aloha Chair Dela Cruz, Vice Chair Moriwaki, and esteemed members of the committee,

The Ocean Legislative Task Force—a coalition of more than 150 individuals across over 20 organizations statewide—**supports** SB 3201 SD1, relating to coral reef resilience.

This measure advances Hawai'i's commitment to responsible ocean stewardship by strengthening statutory direction, improving coordination, and ensuring that the protection and long-term resilience of our marine and coastal ecosystems remain a statewide priority. As pressures from climate change, land-based pollution, overuse, and competing ocean demands intensify, proactive and science-based policy solutions are essential.

Healthy nearshore waters, coral reefs, fisheries, and coastal habitats are foundational to Hawai'i's cultural heritage, food security, shoreline protection, and visitor economy. Measures such as SB 3201 SD1 help provide clearer guidance to state agencies, improve accountability, and support thoughtful, data-driven decision-making that prioritizes ecosystem integrity and community well-being.

By reinforcing transparency, strengthening implementation frameworks, and aligning management actions with best available science, this measure supports adaptive management practices that will better equip Hawai'i to respond to emerging environmental challenges. Strong statutory direction also ensures that conservation efforts are not fragmented but instead coordinated and sustained over the long term.

For kānaka maoli, local families, and visitor ocean users alike, thriving marine ecosystems are not optional—they are essential. SB 3201 SD1 represents an important step toward safeguarding Hawai'i's coastal and marine resources for present and future generations.

Mahalo for the opportunity to testify in support of SB 3201 SD1.

The Hawai'i Ocean Legislative Task Force advocates for measures that advance cesspool conversion and wastewater management, protect Hawai'i's coral reefs and reef fish, ensure transparent and sustainable implementation of the Green Fee program and long-term environmental staffing, and support other measures that strengthen Hawai'i's coastal and marine ecosystems.

SB-3201-SD-1

Submitted on: 3/1/2026 2:56:55 PM

Testimony for WAM on 3/3/2026 10:17:00 AM

Submitted By	Organization	Testifier Position	Testify
William Caron	Individual	Support	Written Testimony Only

Comments:

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

I am writing in **strong support** of SB3201, a transformative measure that would reorient the management priorities of the Division of Aquatic Resources (DAR) toward protecting, restoring, and maintaining ecosystem integrity, with specific, measurable goals for coral reef restoration and fish biomass recovery.

Why This Bill Is Necessary

Hawai‘i’s nearshore reefs and waters support more than **7,000 marine life forms, 25% of which are found nowhere else on Earth**. These reefs provide over **\$2 billion each year in flood protection and reef-related tourism alone**. They protect our coastlines, sustain our fisheries, and hold profound cultural significance for our communities. Yet these vital ecosystems are under increasing pressure from sediments, land-based pollutants, unsustainable fishing, and climate change impacts, including rising sea levels and water temperatures.

The scientific evidence is clear: we must move beyond passive management to active, science-based restoration. SB3201 provides the statutory mandate to do exactly that.

What SB3201 Does

This bill establishes a clear hierarchy of management priorities and sets specific, measurable restoration goals:

1. **Ecosystem Integrity as Highest Priority:** The bill requires DAR to manage aquatic life and resources with the **highest priority being to protect, restore, and maintain ecosystem integrity**, using the **best scientific data available**. This codifies what should already be our guiding principle: the health of the ecosystem comes first.
2. **Restoration Targets:** The bill requires DAR to make plans by specified dates for the restoration of reef ecosystems and indigenous species to a level that is not less than an **unspecified per cent of their natural biomass potential**. While the percentage remains to be determined, the mandate to establish a target is itself a critical step forward.
3. **Coral Cover Goal:** Most concretely, the bill requires DAR to make a plan by **July 1, 2027**, for the expansion of live coral cover at **not less than twenty-five per cent on reefs**

that have historically supported naturally occurring live coral cover. This is an ambitious but necessary target.

Building on Existing Planning Efforts

This bill does not ask DAR to start from scratch. The Division has already done significant foundational work through the **Hawai'i Coral Reef Strategy 2030** and the **Makai Restoration Action Plans**. In 2020, DAR teamed up with experts from the Hawai'i Institute of Marine Biology, The Nature Conservancy, and NOAA to form a "core hui" dedicated to drafting action plans addressing the state's biggest coral restoration priorities .

Those plans identified three priority goals: addressing coral bleaching, enhancing coastal protection, and improving fish habitat. The Makai Restoration Action Plan for coral bleaching was published in 2023, identifying five geographic focus areas across Hawai'i Island, Maui, and O'ahu. Plans for coastal protection and reef habitat are in development.

SB3201 builds on this foundation by translating planning into **legislatively mandated goals with deadlines**. It provides the accountability mechanism to ensure that good plans become real action.

The Science Supports Ambitious Goals

Research demonstrates that coral restoration can drive meaningful increases in reef health and function. Studies from Florida show that restoration of branching corals increased reef-accretion potential to **2.8 mm per year** and drove significant increases in structural complexity within 2-6 years following outplanting. Restored sites not only surpassed erosion rates but achieved mean net carbonate production rates of **9.41 kg CaCO₃ m² yr⁻¹** in some cases. These findings highlight the potential for restoration to significantly bolster reef resilience and ecosystem services.

Importantly, the bill's focus on herbivorous fish populations aligns with the best available science. Healthy populations of herbivorous fishes—such as kala, nenu, and uhu—play a crucial role in controlling seaweed growth that can smother corals. The Legislature has previously recognized this through resolutions requesting studies on herbivore populations and policies to substantially increase them within a decade. SB3201 continues and strengthens this work.

The Role of Community Engagement

The Hawai'i Coral Reef Strategy 2030 emphasizes the inclusion of communities in coral restoration and conservation, recognizing the need to work **mauka to makai**, from ridge to reef, to promote resilience. DAR has already brought on a full-time fisher-liaison to oversee communications and gather insights from the fishing community for the Reef Habitat Plan. Community engagement in planning restoration activities, including through workshops and collaborative research processes, is essential to the strategy's success. SB3201's requirement for planning should continue and deepen this community-centered approach.

Accountability and Transparency

By requiring DAR to make plans by specific dates and report to the Legislature, SB3201 creates a transparent process with clear accountability. The Legislature and the public will be able to track progress and hold DAR responsible for results. The 25% live coral cover goal by 2027 provides a concrete benchmark against which to measure success.

Conclusion

Our coral reefs are too valuable—ecologically, economically, and culturally—to leave their fate to chance. They face existential threats from climate change, pollution, and overfishing. Passive management is no longer sufficient. We need active, science-driven restoration with clear goals and accountability.

SB3201 provides exactly that framework. It builds on years of planning, aligns with the best available science, and sets measurable targets for recovery. I urge this committee to pass SB3201 and commit Hawai'i to the ambitious, science-based reef restoration our ecosystems—and future generations—deserve.

Mahalo for the opportunity to testify.

SB-3201-SD-1

Submitted on: 3/1/2026 3:01:13 PM

Testimony for WAM on 3/3/2026 10:17:00 AM

Submitted By	Organization	Testifier Position	Testify
Ted Bohlen	Testifying for Hawaii Reef and Ocean Coalition	Support	Written Testimony Only

Comments:

STRONG SUPPORT!

Aloha Chair Dela Cruz, Vice Chair Moriwaki, and members of WAM,

I am the Hsiao Endowed Professor of Marine Biology at UH Mānoa, testifying as a private citizen in **conditional support of SB3201-SD1**. I have studied Hawai'i's coral reefs since the 1970s, so I have personally witnessed the degradation of our reefs over the decades. It is truly sad that some fishers and members of state agencies are in denial regarding the need for immediate action to restore our reefs and fisheries. Overwhelming data in peer-reviewed scientific journals and the consensus of the marine science community is that many Hawaiian coral reef ecosystems have collapsed or are very close to collapse, especially around O'ahu. Fortunately, abundant data also show that local actions can strongly enhance the ecological resilience (recovery and resistance) of our reefs, even in the face of ever-worsening ocean warming and coral bleaching. Unfortunately, after decades of neglect, the absence of immediate and substantial remedial action is now a major issue that must be faced. Our reefs simply cannot wait another 3-5 years for the Holomua Marine Initiative to play-out on O'ahu.

If target percentages are re-inserted and realistic timelines established, then SB3201-SD1 would address the present lack of immediate strong action to save our coral reefs by establishing explicit benchmarks and schedules for remedial regulations. Here are my recommended amendments based on peer-reviewed scientific studies:

- In Section 2(a), the species that must be increased in abundance to enhance reef recovery are not every indigenous species, as presently worded, but rather the herbivorous fishes that keep reef surfaces clean of benthic algae so corals can settle, survive, and grow. These critically important and often depleted fishes include the parrotfishes (uhu, Family Scaridae), certain surgeonfishes (especially kala, Family Acanthuridae), and chubs (nenu, Family Kyphosidae). SB2972-SD1 is an example of such immediate remedial action. Regarding target abundances for herbivorous fishes, the best available science indicates that these species must be at a density of about 30-40 grams of fish per square meter of reef to enhance coral growth. O'ahu, for example, presently has an herbivore density of less than 10 grams per square meter. Note that percentages of unfished biomass are not realistic targets because of a lack of relevant data for most species.
- Regarding Section 2(b), the goal of increasing live coral cover to 25% would certainly increase the productivity and resilience of our reefs, yet given that the average statewide is about 15% live coral cover, and the fact that our corals grow slowly, this goal will take many years to accomplish. A realistic timeline is on the order of decades, not years.
- I believe Section 5(3) "to increase the density of all other indigenous species not otherwise specified" by some percentage is unrealistic because we will never have sufficient population dynamics data for all species.

I imagine you will hear the opposition berating this bill for trampling on traditional fishing rights, destroying commercial fishing, and being based on worthless data by clueless scientists

and erroneous assertions by alarmist environmentalists. I have witnessed this scenario play-out elsewhere in the world multiple times. In all cases, ignoring the science resulted in collapsed fisheries and ecosystems, some of which will never recover. I urge you to pass this bill with realistic amendments and lobby for its passage into law. Our keiki will never forgive us if we simply let our reefs die.

Mahalo for your consideration,

A handwritten signature in black ink, appearing to read "Mark Hixon". The signature is fluid and cursive, with the first name "Mark" being more prominent than the last name "Hixon".

Mark Hixon

SB-3201-SD-1

Submitted on: 3/2/2026 9:41:20 AM

Testimony for WAM on 3/3/2026 10:17:00 AM

Submitted By	Organization	Testifier Position	Testify
Carrie Ostroski	Individual	Support	Written Testimony Only

Comments:

Aloha Chair, Vice Chair, and members of the Committee,

I write in strong support of SB3201, relating to Coral Reef Resilience. I'm personally and professionally invested in coral, reef, and near shore resilience and restoration. I volunteer, I donate, I see the work and commitment of cultural and community leaders and exceptional non-profit leaders. Systemic change requires all entities in the system to work together and have skin in the game. Protecting, restoring, and maintaining ecosystem integrity using scientific and cultural knowledge is critical. Setting benchmarks and making commitments to saving our coral reefs has never been more important. The time is now. Please help all of us propel and fuel this window of tremendous opportunity for the health of our coral reefs and the people who rely on and recreate within these spaces. The health of the reef is the health of the people.

Mahalo for considering your support of SB3201.

Carrie Ostroski

Waikoloa, cwostroski@gmail.com